

SkillsUSA 2010 Contest Projects

TeamWorks

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Founding Sponsors

Bosch Power Tools

Stanley Tools

Advisory Sponsors

Lowe's

NARI

State Farm

Program & Contributing Sponsors

3M

Bernzomatic

Bricklayer's Association

Copper Development Association

Ferguson

IEC

Mortar Net

Pactiv

Protecto Wrap

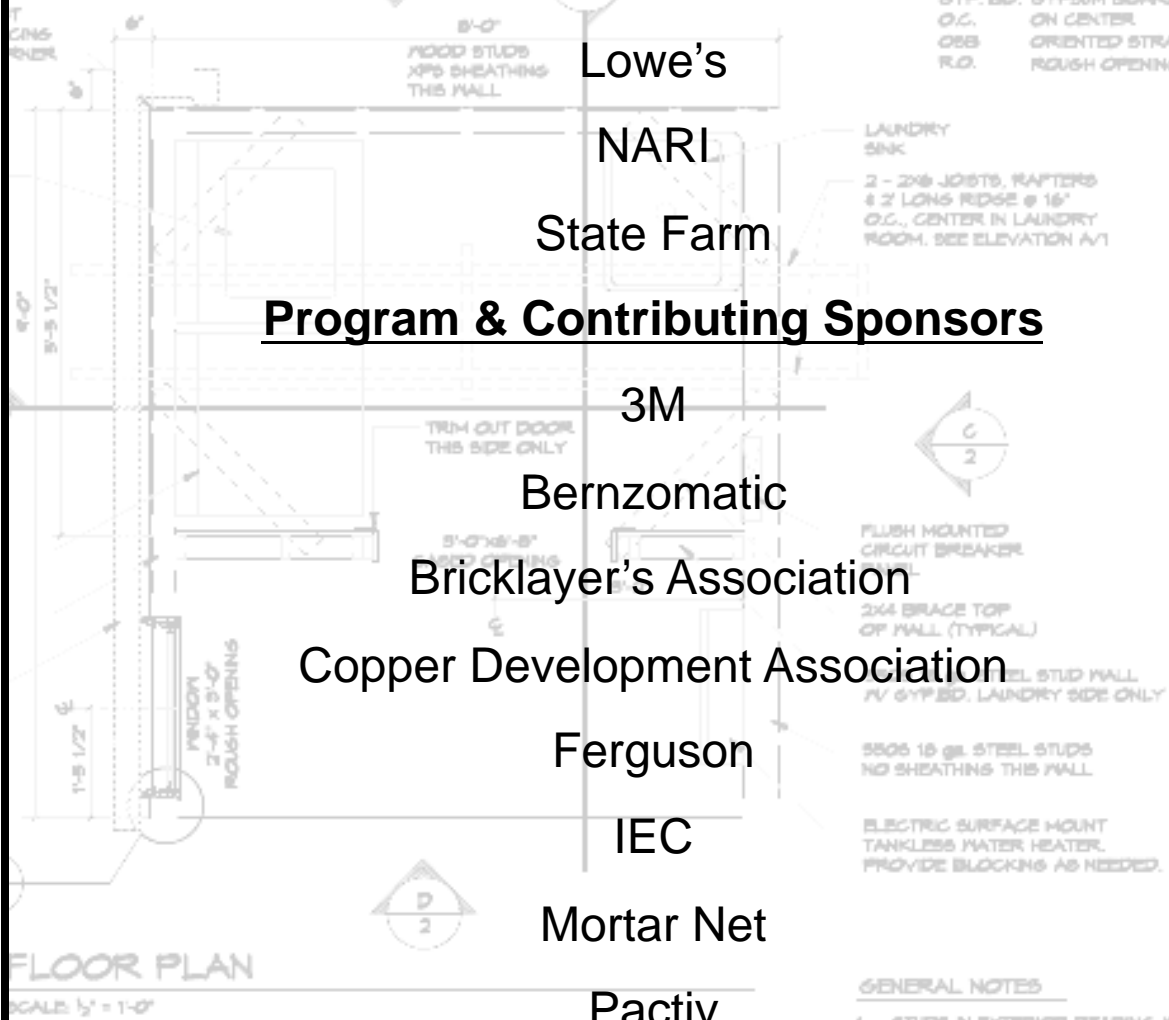
Simpson Strong Tie

Spec Mix

Steel Framing Alliance

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
APA	AMERICAN PLYWOOD ASSOC
CMU	CONCRETE MASONRY UNIT
DBL	DOUBLE
GYF. BD.	GYPSUM BOARD
O.C.	ON CENTER
OSB	ORIENTED STRAND BOARD
R.O.	ROUGH OPENING



GENERAL NOTES

1. STUDS IN EXTERIOR BEARING WALLS TO BE 2x4 @ 16" O.C. IV DOUBLE 2x4 TOP PLATE (UNLESS NOTED OTHERWISE).

FLOOR PLAN

SCALE 1/2" = 1'-0"

2009 NATIONAL TEAMWORKS COMPETITION



About TeamWork's

TeamWork's was introduced at the 2000 SkillsUSA Championships in Kansas City to promote and establish a model for "best in class" communication and coordination between trade disciplines; to support and develop skilled personnel capacity within the building trade disciplines; to encourage, recognize and celebrate the most talented young people who have elected a building trade career path; and, to strengthen the link between industry needs and building trade technology and management curriculum.

TeamWork's is a competition where teams of four, with training in carpentry, electrical, plumbing and masonry, compete in planning, scheduling and building a project over a two-day period, in a simulated real-world situation. This two-day competition places a special emphasis on individual trades with students working collaboratively to coordinate all phases of project execution.

The Technical Committee's Mission Statement is;

To provide a learning experience for all participants where they demonstrate relevant competencies that meet the changing needs of industry.



Rules & Regulations

Purpose

TeamWork's is a competition to evaluate team preparation for employment and to recognize outstanding students for excellence and professionalism in the fields of residential carpentry, masonry, plumbing, electrical and teamwork skills.

Refer to the General Regulations in the SkillsUSA Championships Technical Standards.

Clothing Requirement

Official SkillsUSA khaki work shirt and pants, black or brown leather work shoes, and safety glasses with side shields or goggles. Safety prescription glasses can be used only if they are equipped with approved side shields. If not, they must be covered with goggles. To purchase official work clothes, order online at:

<http://www.skillsusastore.org/skillsusa/welcome.asp> or call 800-401-1560.

Eligibility

Open to a team of four SkillsUSA members enrolled in program(s) with building trades as the occupational objective. Two contestants from each team will be required to have an OSHA Certification prior to competition. Judges will check for OSHA certification during the team presentations. For every additional member with the OSHA Certification additional points will be awarded to the team. You can learn more about OSHA Certification at <http://www.skillsusa.org/educators/careersafe.shtml>

Safety Requirement

Both the instructor and the contestants certify, by their enter in this contest, that the contestants have received instructions and have satisfactorily passed an examination on the safe use of portable electric power tools (including cordless) and all hand tools. The contestants are responsible for inspecting the tools supplied and that they are in safe working condition. Further, they agree that SkillsUSA, Inc. the SkillsUSA Championships Technical Committees, volunteers and the national judges are released from all responsibility relating to personal injuries resulting from their use. Contestants will be removed from competition if proper training has not been provided and/or they are use the equipment in an unsafe manner.



Rules & Regulations

Equipment and Materials

The Technical Committee will supply all equipment, materials and all necessary tools. Contestants who wish to use their own tool belt may do so after Technical Committee approval. If a contestant does not bring their own tool belt one will be provided by the Technical Committee. Any tools that contestants will be required to bring will be published in the April Update (published on www.skillsusa.org annually on April 15 and distributed to state association directors by SkillsUSA).



Rules & Regulations

Scope of Contest

Each team will be given the project drawing at the contest orientation meeting and given two hours to meet as a team, analyze the drawing and formulate a written action plan. Each team will prepare and conduct a 3 to 5-minute professional presentation to the judges on how their team plans to accomplish the project. Every team member will be required to have an active part in the presentation. The written action plan and the presentation will be judged.

Contestants will demonstrate their ability to perform jobs and skills selected from the following list of competencies considered essential by the SkillsUSA Championships Technical Committee. Committee members include: Robert Bosch Tools Corporation, Stanley Black & Decker, Train2Build, Construction Management Advisory Group, and State Farm Insurance Companies and Lowe's.

Contest Elements

I. Team Action Plan and Presentation

- a. Analyze the project drawing
 - Interpret and determine dimensions from multiview drawings
 - Interpret specifications, abbreviations, symbols and drawing notes
 - Interpret oral and written changes
 - Prepare material "Take-Off" from blueprint
- b. Write the action plan and give a presentation
 - Be able to organize, prepare and present an action plan
 - Use of data display instruments such as flow chart or cause and effect diagrams is recommended (reference Total Quality Curriculum)
 - As a team, develop a presentation that is 3 to 5 minutes long portraying how your team will accomplish the building project including the team's safety plan
 - Use of visuals is permitted. Each team will be provided with a flip chart, stand and markers for this component

II. Teamwork

- Demonstrate the ability to work as a team
- Demonstrate group problem solving techniques
- Demonstrate team proficiency in construction of a building project
- Other teamwork competencies as determined by the Technical Committee



Rules & Regulations

III. Trade Skills

Carpentry

- a. Materials, Estimating and Tools
 - Identify, receive and inspect materials
 - Store lumber and other materials properly
 - Use the correct amount of materials for the project in the correct manner
 - Correctly identify and use carpentry hand and power tools in a safe manner

- b. Rough Framing
 - Frame and install sill plate, girders, floor joists and bridging
 - Use of dimensional and engineered wood products and steel products
 - Frame floor opening and install sub-floor
 - Frame and brace walls to include corners, openings, trimmers, cripples, partitions, plumbing partitions, fixture backing and sheathing
 - Frame stair stringer and other components
 - Calculate and use the rise and run of a common roof
 - Layout a common roof plan
 - Lay out, cut and install common rafters, ridge board, ceiling joists and collar ties
 - Install roof sheathing

- c. Finish Carpentry
 - Install interior door unit plumb and square
 - Install interior trim to include miter cuts and or copped joints
 - Install siding and related trim pieces
 - Install windows to include weather resistant barrier and flashing



Rules & Regulations

Masonry

- a. Materials, Estimating and Tools
 - Arrange masonry materials for efficient use
 - Place mortar pans properly
 - Keep areas neat and organized
 - Estimate amount of brick, block, mortar mix and sand to be used
 - Correctly identify and use masonry hand and power tools in a safe manner

- b. Tooling and Polishing Joints
 - Tool concave, rake weather, V-jointer, grapevine and struck joints
 - Polish the joints
 - Tuck-point a wall
 - Brush and touch up a wall

- c. Lay a Brick/Block Wall
 - Lay out a wall in preparation for building a straight and/or corner wall
 - Spread and furrow mortar correctly for brick units
 - Construct a straight wall
 - Construct an outside and inside corner lead
 - Spread bed joints and throw on full head joints for block units
 - Build a block corner to a specified height
 - Properly install lintels and moisture drainage such as masonry flashing and wee holes
 - Be prepared to install brick detailing



Rules & Regulations

Plumbing

- a. Materials, Estimating and Tools
 - Determine type and amount of materials needed
 - Store materials correctly around work area
 - Identify fittings from a isometric drawing of a plumbing system
 - Correctly identify and use plumbing hand and power tools in a safe manner

- d. Rough In
 - Calculate the slope required for waste and vent lines
 - Rough in waste and vent lines for sinks, lavatories, bathtubs, showers and water closets
 - Install cleanout drains
 - Secure horizontal and vertical lines of pipe to wood, metal or masonry surfaces
 - Rough in water supply lines for sinks, lavatories, bathtubs, showers and water closets
 - Perform pressure tests on water supply system

- e. Joining Pipes
 - Cut, ream and join copper tubing using the sweat method
 - Cut, ream and join copper tubing using the compression method
 - Cut, ream and join CPVC and other similar pipe
 - Cut, ream and join PVC pipe
 - Cut, ream and join ABS pipe
 - Cut, ream and join copper tubing by sweat, compression or other methods



Rules & Regulations

Electrical

- a. Materials, Estimating and Tools
 - Use and apply the current National Electrical Code
 - Plan work and lay out electrical installations
 - Select proper amount and size of materials
 - Correlating specifications, prints and job sites
 - Correctly identify and use electrical hand and power tools in a safe manner

- b. Rough In
 - Choose size and install ganged, octagon and surface mount boxes to a specified height
 - Install and staple all electrical wire essentially free from hazard according to a blueprint
 - Make all necessary splices and junctions in boxes
 - Install distribution panel with main disconnect and breakers

- c. Device and Fixture Installation
 - Install the following devices:
 - Single pole switch
 - Three-way switch
 - Four-way switch
 - Duplex grounded receptacle
 - Ground fault circuit interrupter
 - Light fixtures
 - Install wall plates

Other Competencies That May Be Considered

- Conduit in the electrical unit
- Troubleshooting the electrical circuits
- Installing plumbing fixtures
- Installing electric fixtures
- Repair or replace a P trap
- Brick/block composite wall
- Exterior or interior carpentry finish work
- Install shingles
- Install window(s)
- Install door(s)
- Install underlayment
- Install floor coverings



Rules & Regulations

Team Presentation Judging Criteria

The presentation phase is designed to evaluate the team's awareness and understanding of "non-physical" and "non-technical" expectations. It is intended to reinforce the need for the participants to develop a broad range of physical and non-physical skills needed in order to achieve success. Scoring will be based on a team presentation made to the judges.

Trade Specific Judging Criteria

The construction phase of the TeamWork's competition will be evaluated using the criteria from score sheets located in the SkillsUSA Championships Technical Standards. For example, the carpentry portion of the competition will be judged using the same score sheet as the Carpentry Rules in the Technical Standards. The plumbing portion of the competition will be judged using the Residential Plumbing score sheet in the Technical Standards.



COMPETITION SCHEDULE

Tuesday, June 22rd

- 9:00am – 10:00am Orientation
Wagstaff Auditorium
- 11:00am – 1:00pm Team Presentations
Refer to Schedule Grid for Your Team's Location & Time
(Lunch will be served for students)
- 2:00pm – 3:00pm Site Visit – teams are allowed to visit their site and inspect their tools
Hale Arena

Wednesday, June 23rd

- 8:00am – 2:00pm Competition Build
Hale Arena

Thursday, June 24th

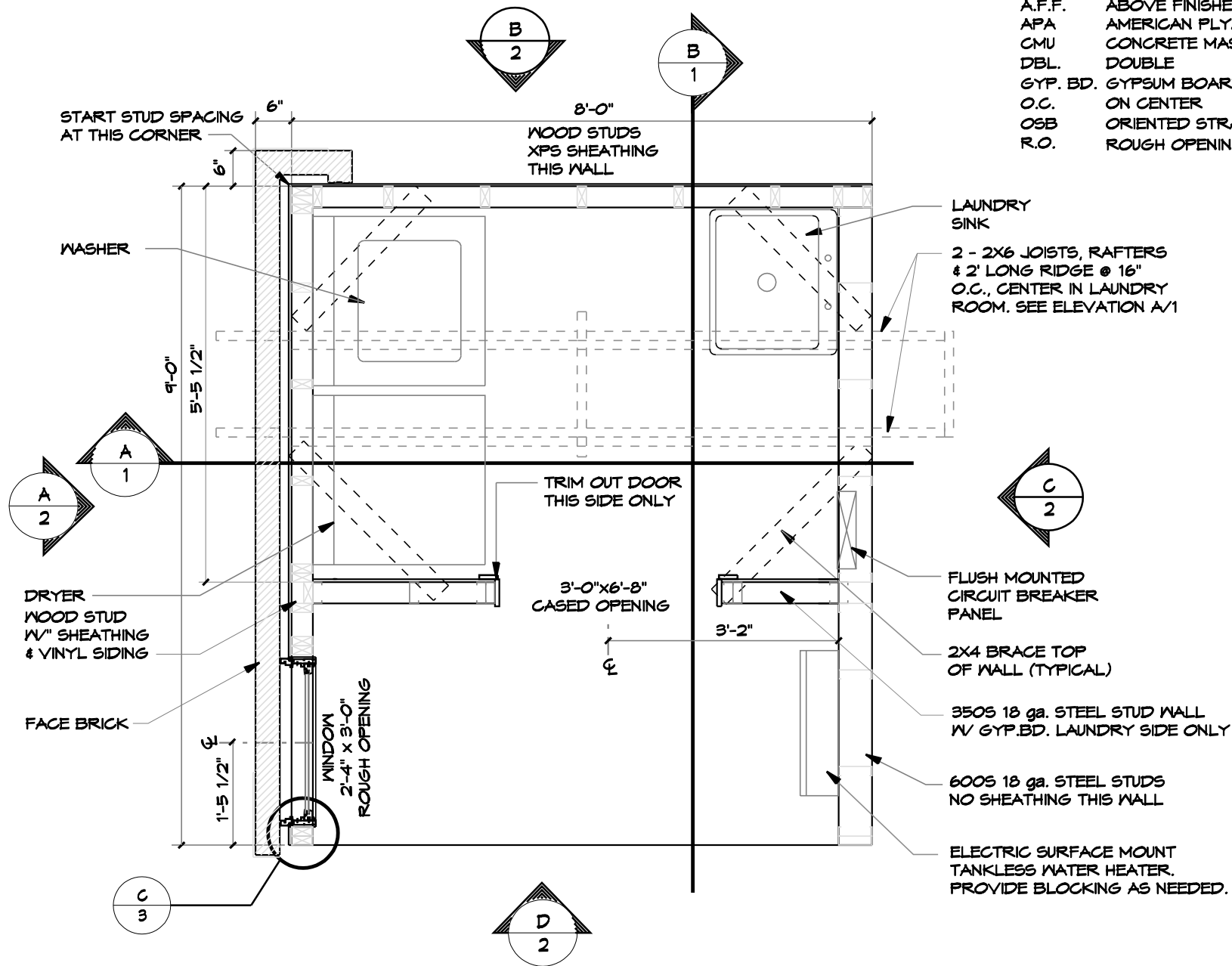
- 8:00am – 5:00pm Competition Build
Hale Arena
- 5:00pm – 5:15pm Site Visit – teams, instructors and family members are allowed to visit their site for an up-close look at the project and photos
Hale Arena

Friday, June 25th

- 7:45am – 8:00am Site Visit – teams, instructors and family members are allowed to visit their site for an up-close look at the project and photos
Hale Arena
- 8:00am – 10:00am Demolition – all teams must demolish their project, collect and return their tools. Only students are allowed on the site during demolition
- 10:30am – 12:00pm Debrief
Wagstaff Auditorium
(Lunch will be served for students and their instructors)

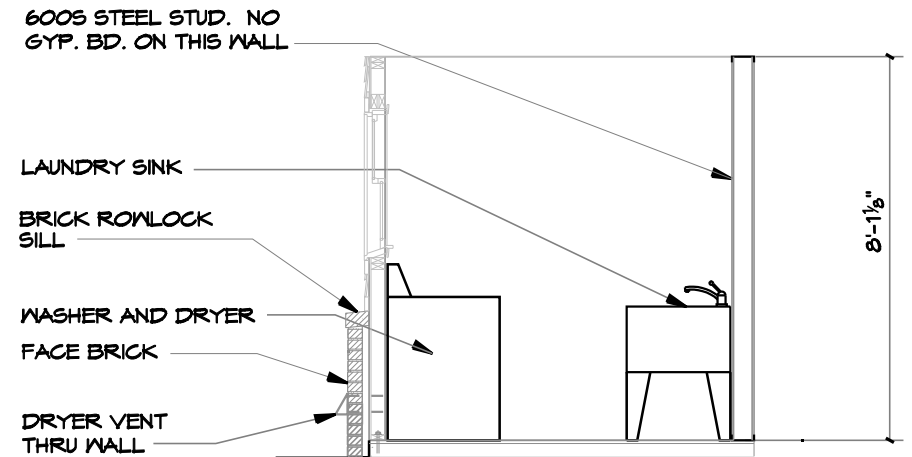
ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
APA	AMERICAN PLYWOOD ASSOC.
CMU	CONCRETE MASONRY UNIT
DBL.	DOUBLE
GYP. BD.	GYPSUM BOARD
O.C.	ON CENTER
OSB	ORIENTED STRAND BOARD
R.O.	ROUGH OPENING

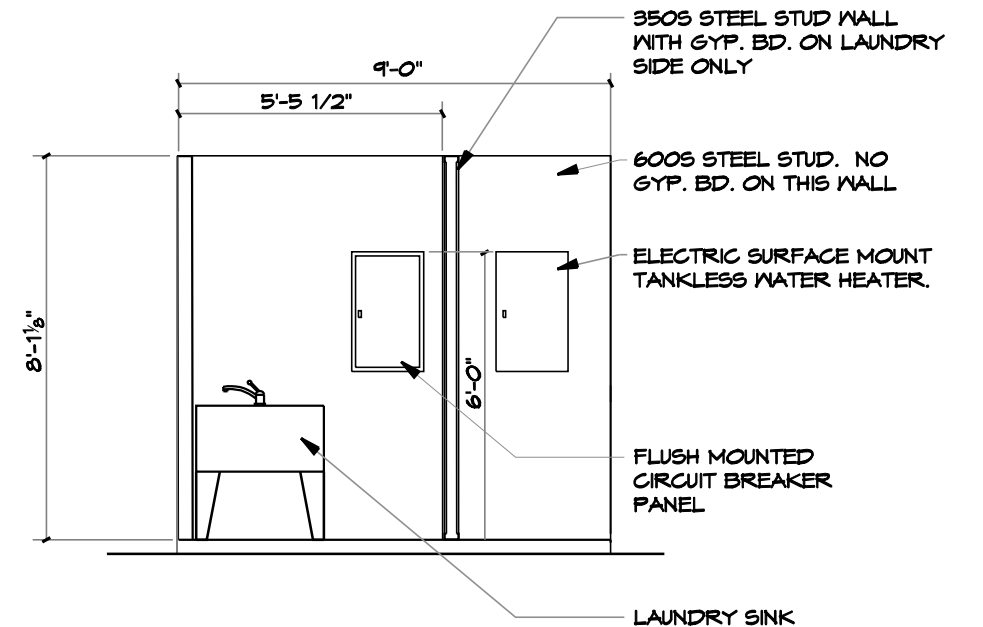


FLOOR PLAN

SCALE: 1/2" = 1'-0"



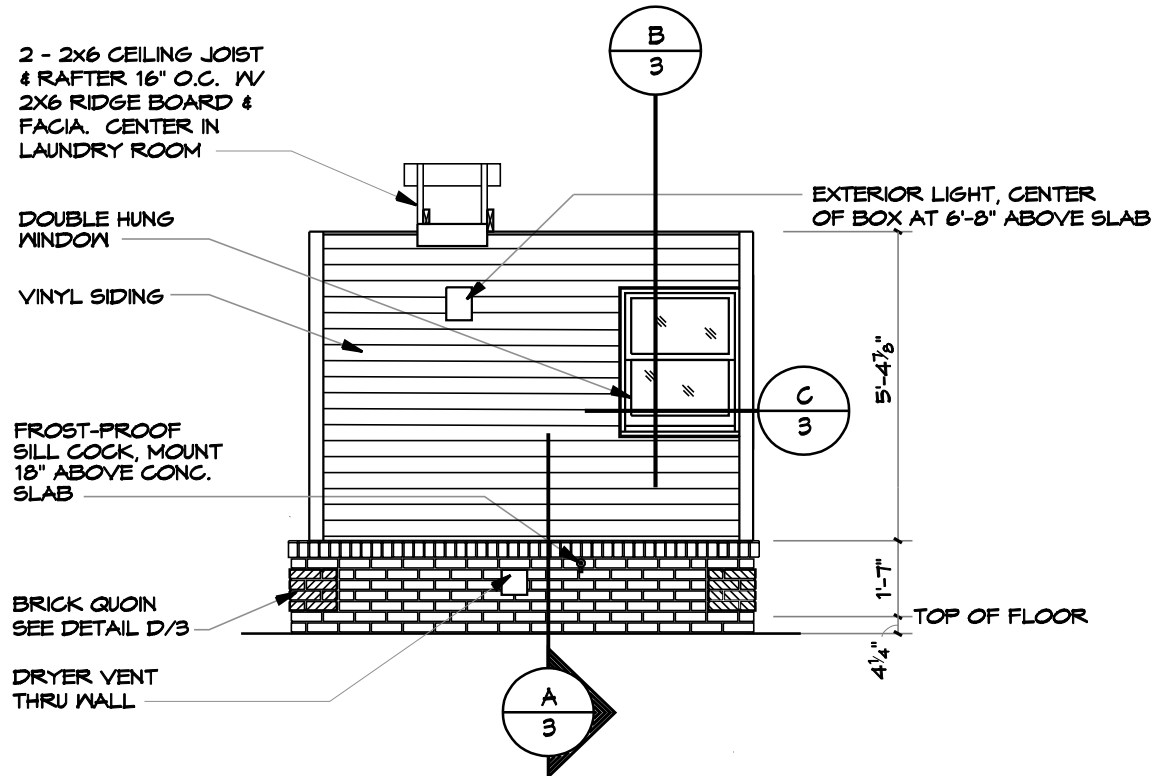
A BATHROOM ELEVATION
SCALE: 1/4" = 1'-0"



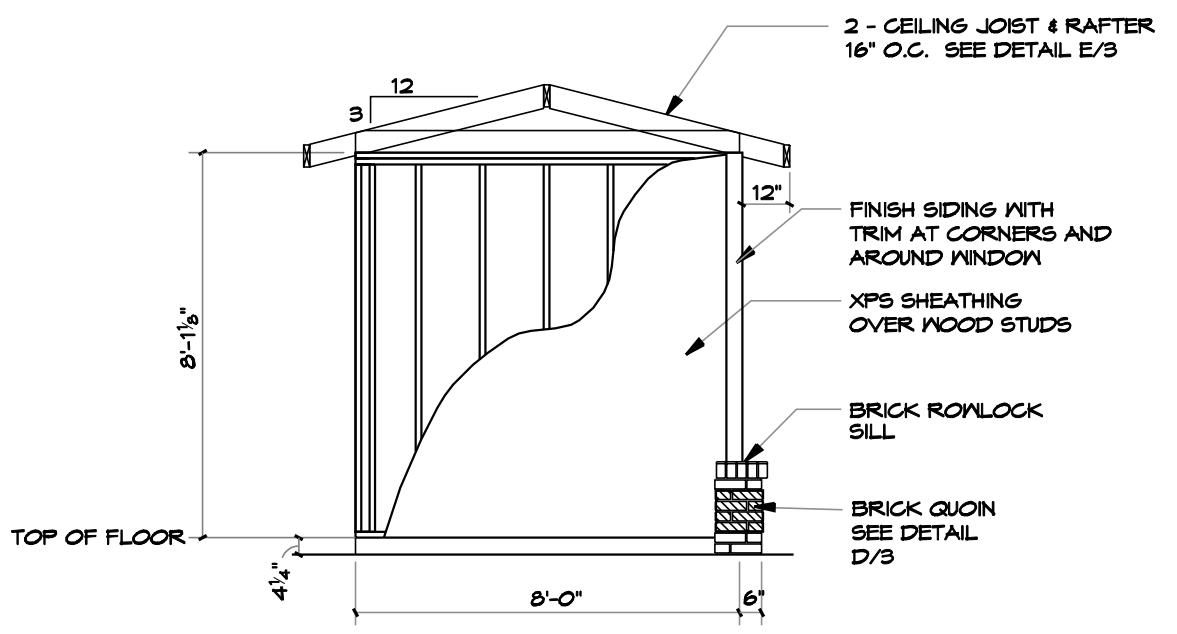
B BATHROOM ELEVATION
SCALE: 1/4" = 1'-0"

GENERAL NOTES

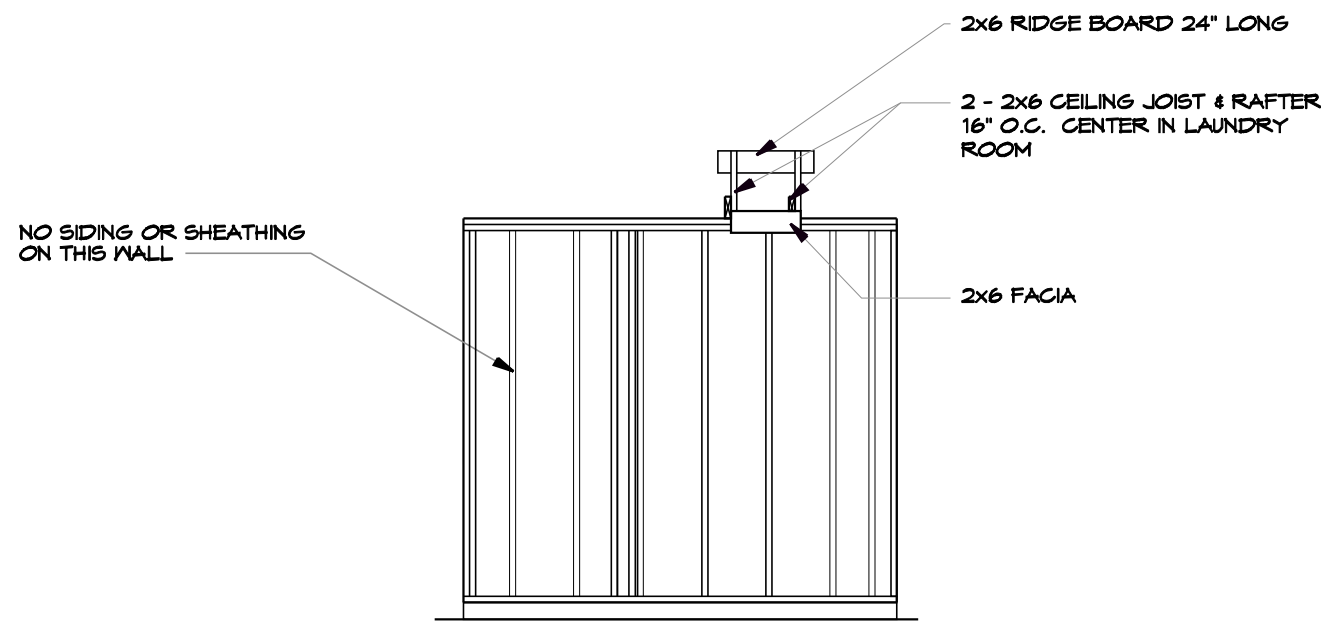
1. STUDS IN EXTERIOR BEARING WALLS TO BE 2X4 @ 16" O.C. W/ DOUBLE 2X4 TOP PLATE (UNLESS NOTED OTHERWISE).



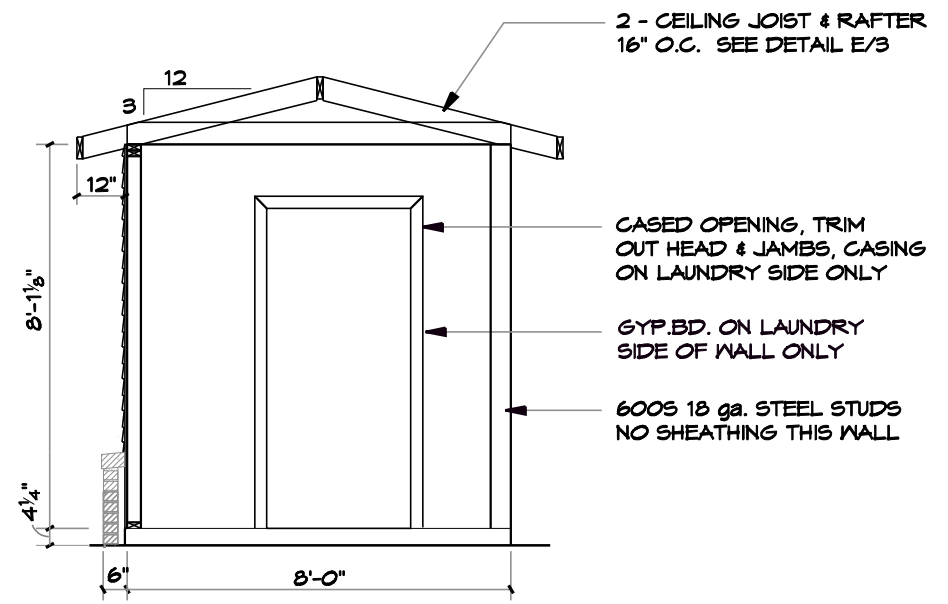
A
2
EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



B
2
EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

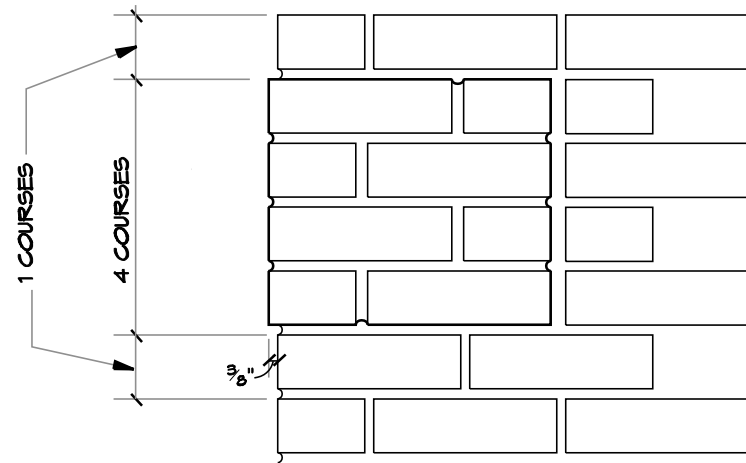


C
2
EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

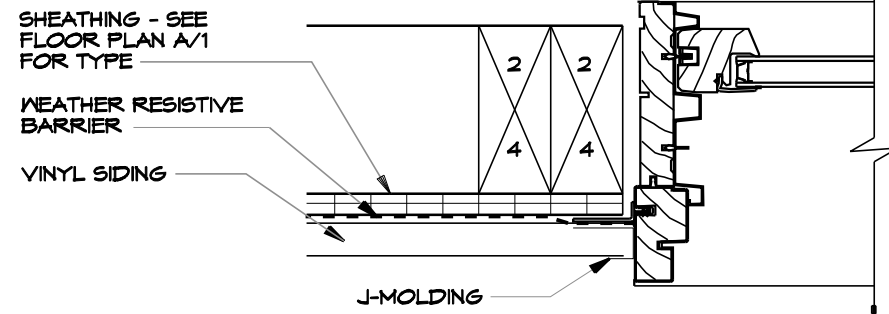


D
2
EXTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

Last date revised: 6/03/2010



D
3
BRICK QUOINED CORNER DETAIL
SCALE: 1 1/2" = 1'-0"



C
3
WINDOW JAMB
SCALE: 3" = 1'-0"

SHEATHING - SEE FLOOR PLAN A/1 FOR TYPE

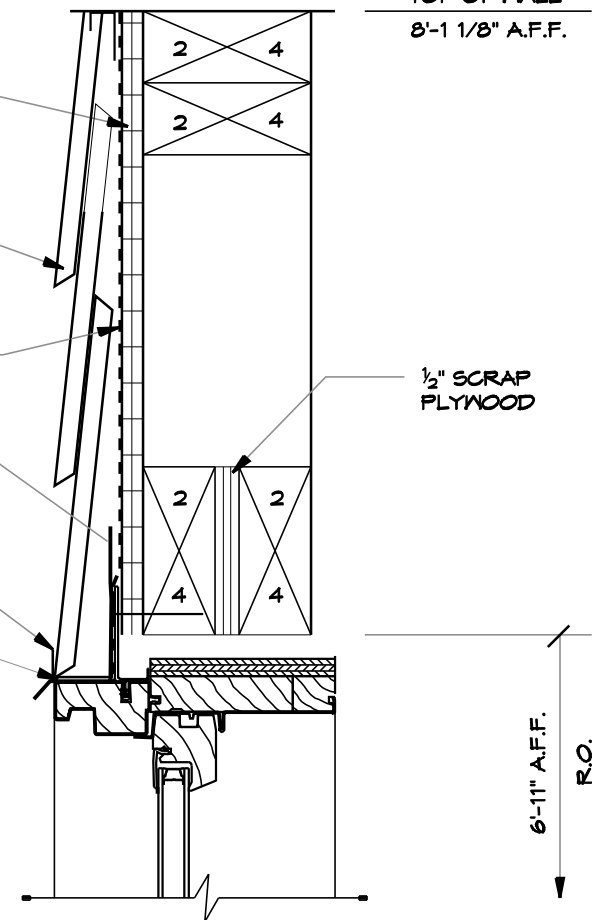
VINYL SIDING

WEATHER RESISTIVE BARRIER

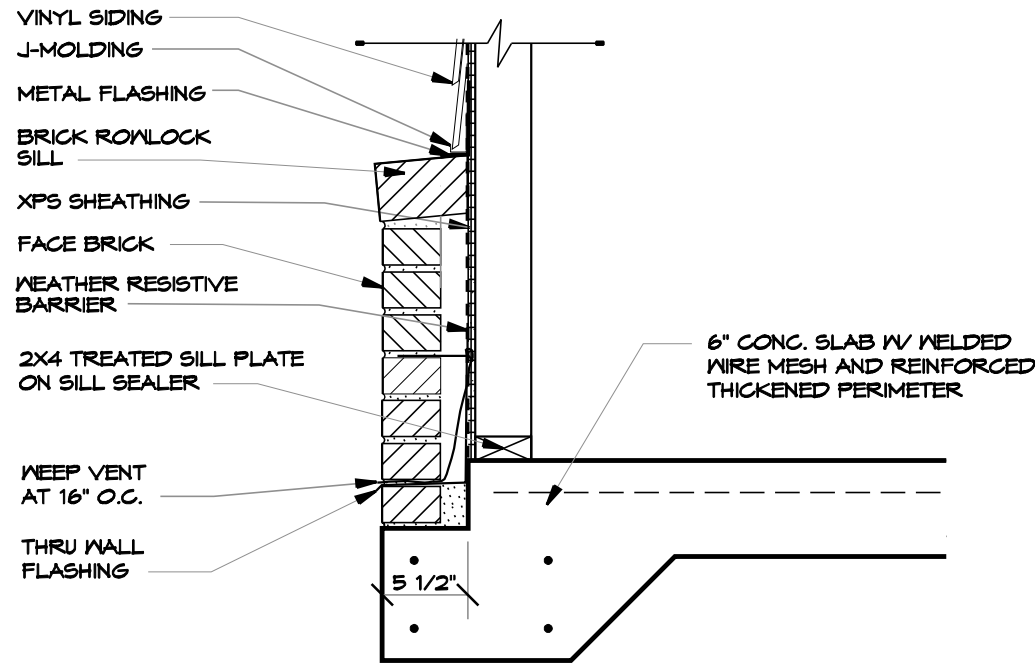
HEAD FLASHING

J-MOLDING

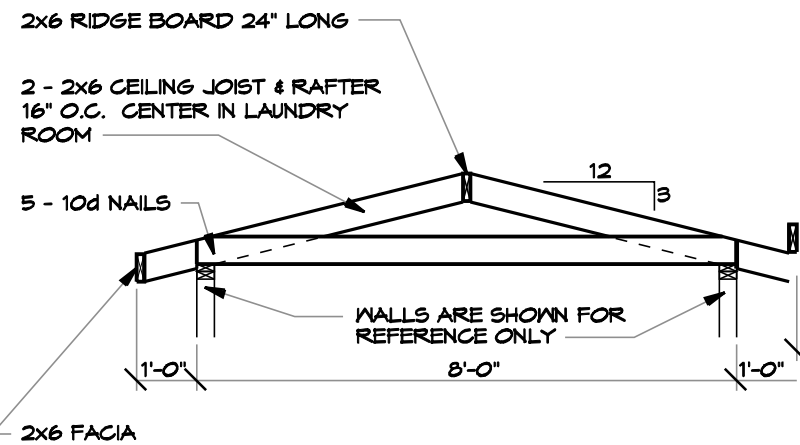
METAL DRIP EDGE



B
3
WINDOW SILL & HEAD DETAILS
SCALE: 3" = 1'-0"



A
3
FOUNDATION / FLOOR SECTION
SCALE: 1" = 1'-0"



E
3
RAFTER DETAIL
NO SCALE

Last date revised: 6/03/2010

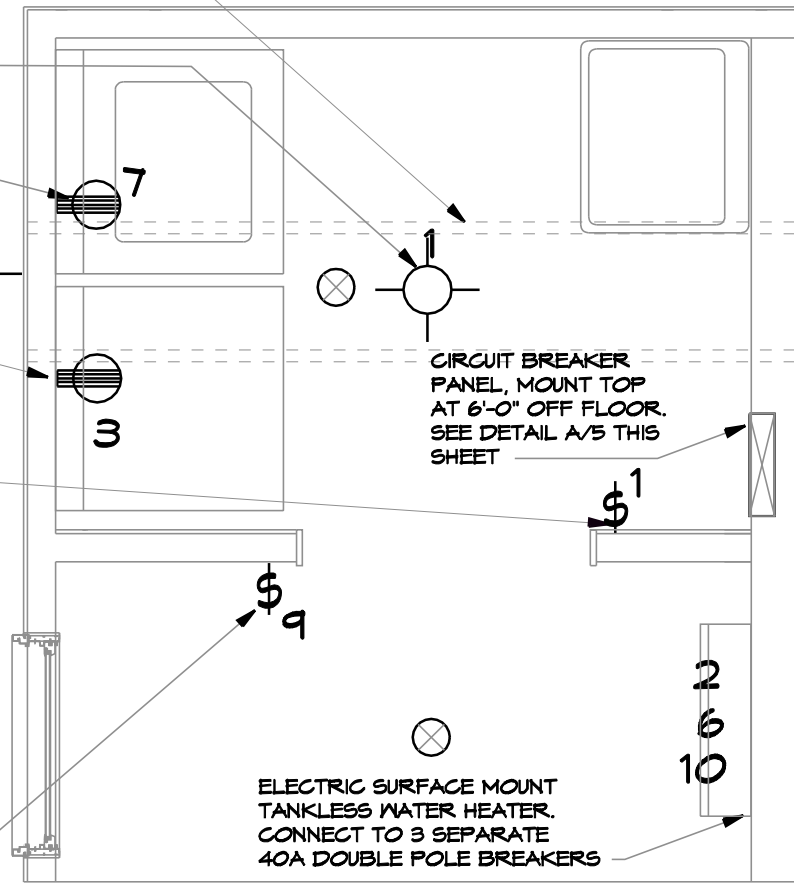
LAUNDRY SINK
CEILING JOISTS ABOVE

LIGHT FIXTURE
GFI DUPLEX, 4'-0" A.F.F. FOR WASHER

EXTERIOR LIGHT
DRYER OUTLET, 4'-0" A.F.F.

SWITCH FOR INTERIOR LIGHT

SWITCH FOR EXTERIOR LIGHT



POWER FLOOR PLAN

SCALE: 1/2" = 1'-0"

ELECTRICAL LEGEND

- GFI GROUND FAULT INTERRUPTER
- A.F.F. ABOVE FINISH FLOOR
- 3 GFI DUPLEX OUTLET & CIRCUIT NUMBER
- \$ SINGLE POLE SWITCH
- (M) APPLIANCE MOTOR

INTERIOR LIGHT	1	2	TANKLESS WATER HEATER
DRYER	3	4	TANKLESS WATER HEATER
DRYER	5	6	TANKLESS WATER HEATER
WASHER GFI	7	8	TANKLESS WATER HEATER
EXTERIOR LIGHT	9	10	TANKLESS WATER HEATER
NOT USED	11	12	TANKLESS WATER HEATER

A BREAKER PANEL CIRCUITS
5 NO SCALE

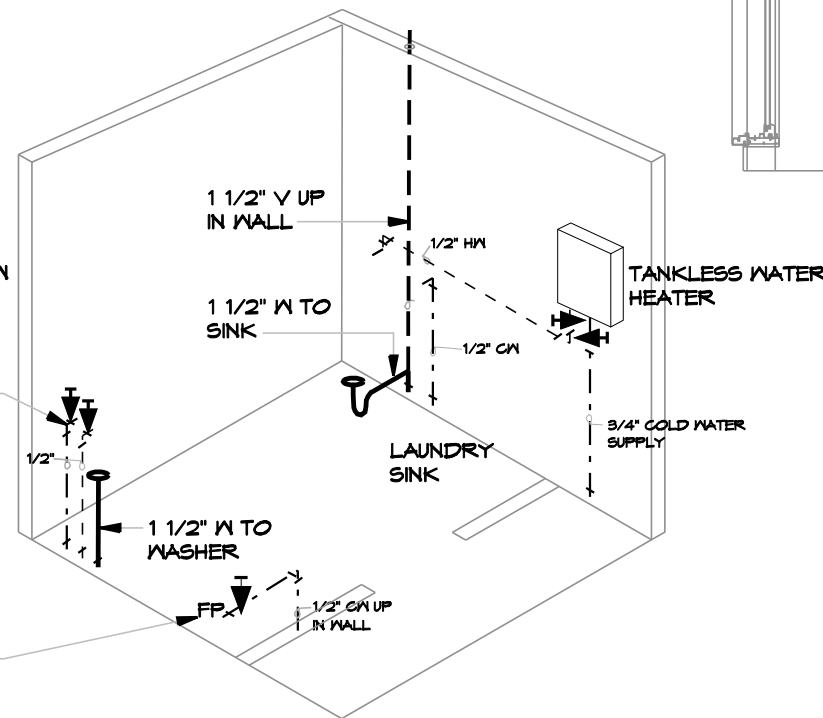
PLUMBING LEGEND

- ▽ STOP VALVE
- - - V VENT
- W WASTE
- - - CW COLD WATER
- - - HW HOT WATER
- WC WATER CLOSET
- LAV LAVATORY
- ▽FP FROST-PROOF SILL COCK
- CO CLEAN OUT
- ⊗ FIRE SPRINKLER HEAD

NOTES:
1. ALL PIPING IS TO BE EXTENDED FROM STUB-UP AT FLOOR
2. PROVIDE TRAPS FOR ALL PLUMBING FIXTURES

EXTEND CW & HW SUPPLY FROM FLOOR TO WASHING MACHINE SHUT-OFF VALVE

FROST-PROOF SILL COCK



B PLUMBING STACK DIAGRAM
4 NO SCALE

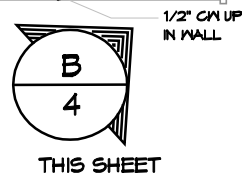
EXTEND CW & HW SUPPLY FROM FLOOR TO WASHING MACHINE SHUT-OFF VALVE

EXTEND 1 1/2" W FROM FLOOR UP IN WALL FOR WASHING MACHINE DRAIN HOSE

FROST-PROOF SILL COCK

EXTEND 1 1/2" W FROM FLOOR UP IN WALL FOR SINK AND 4" ABOVE WALL FOR VENT

EXTEND DRYER VENT THRU EXTERIOR WALL



CONNECT 3/4" CW & 1/2" HW WITH SHUT-OFF VALVES TO WATER HEATER

ELECTRIC SURFACE MOUNT TANKLESS WATER HEATER.

PLUMBING PLAN

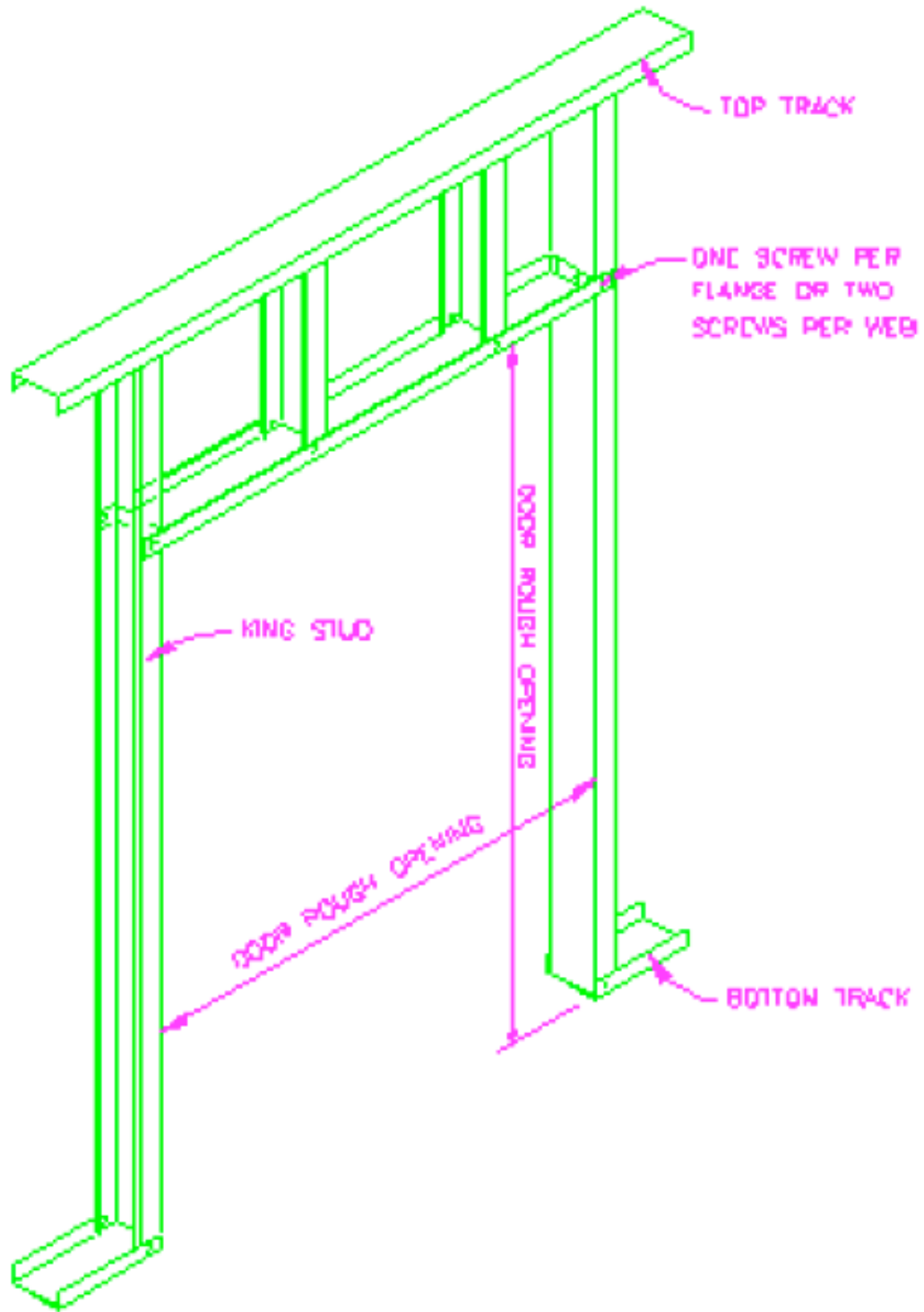
SCALE: 1/2" = 1'-0"

EXTEND CW & HW SUPPLY FROM FLOOR TO SINK WITH 1/2" X 3/8" COMPRESSION STOP VALVE

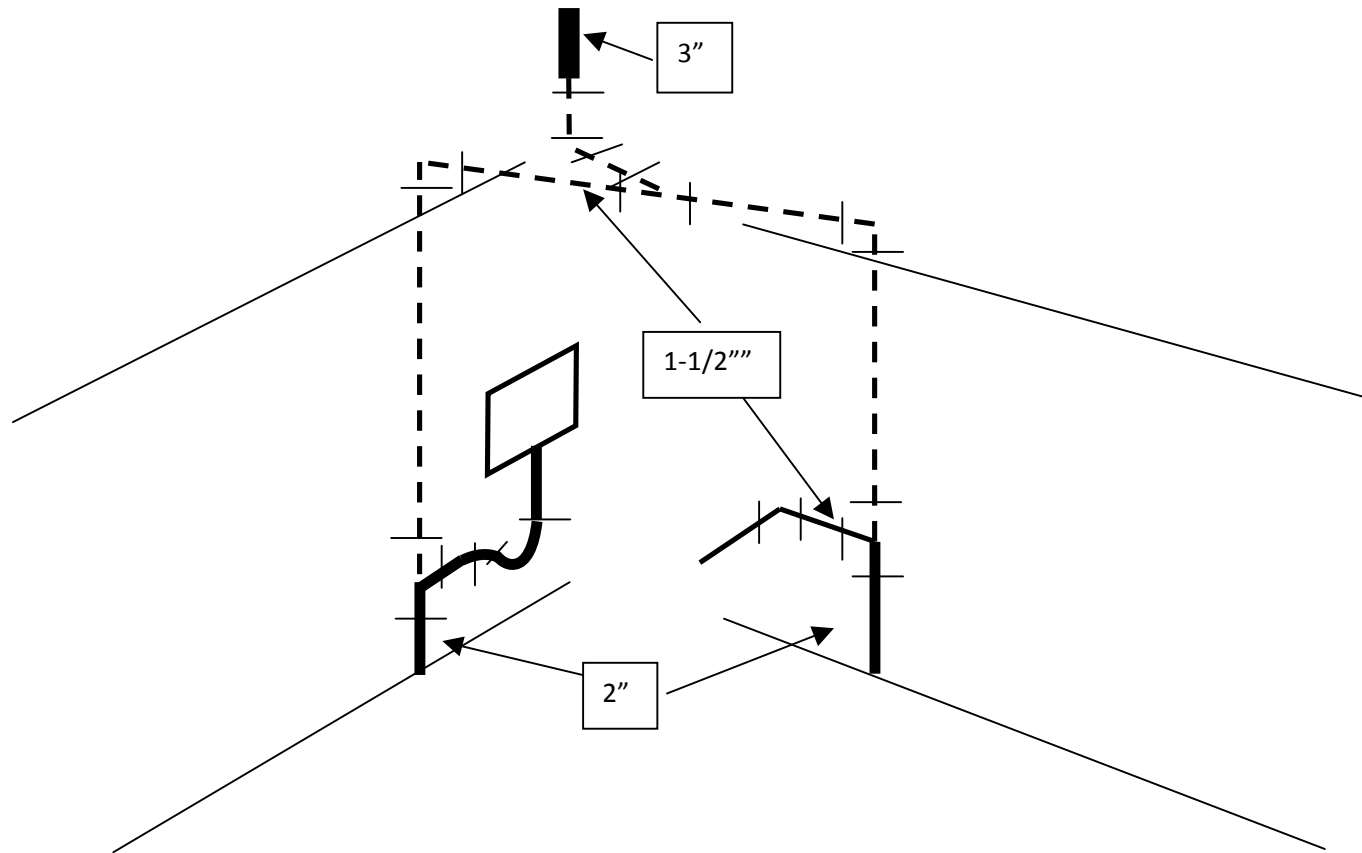
LAUNDRY SINK

ELECTRICAL

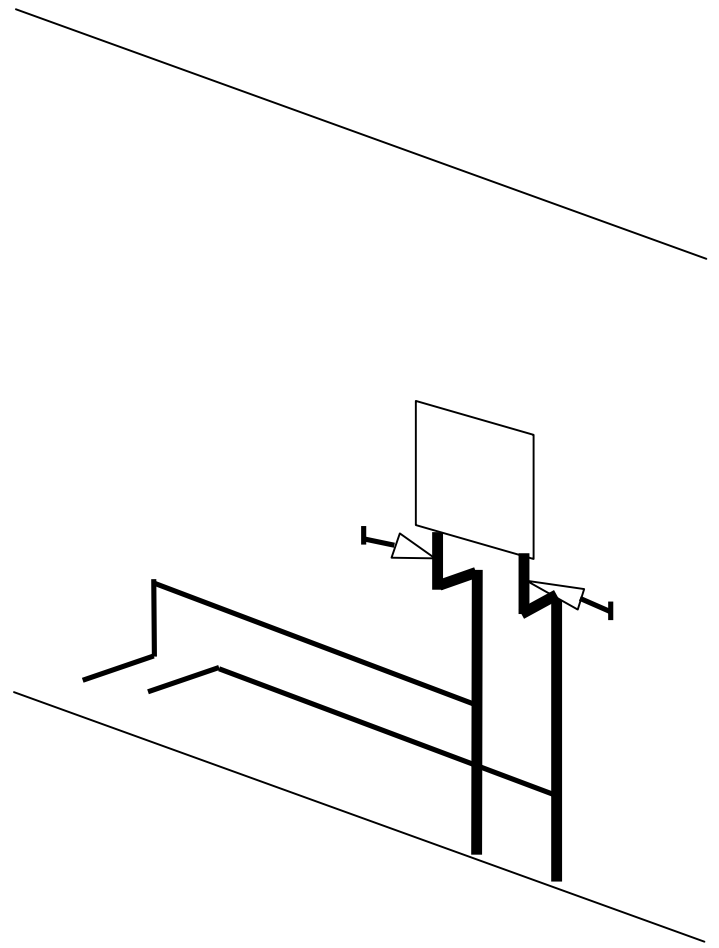
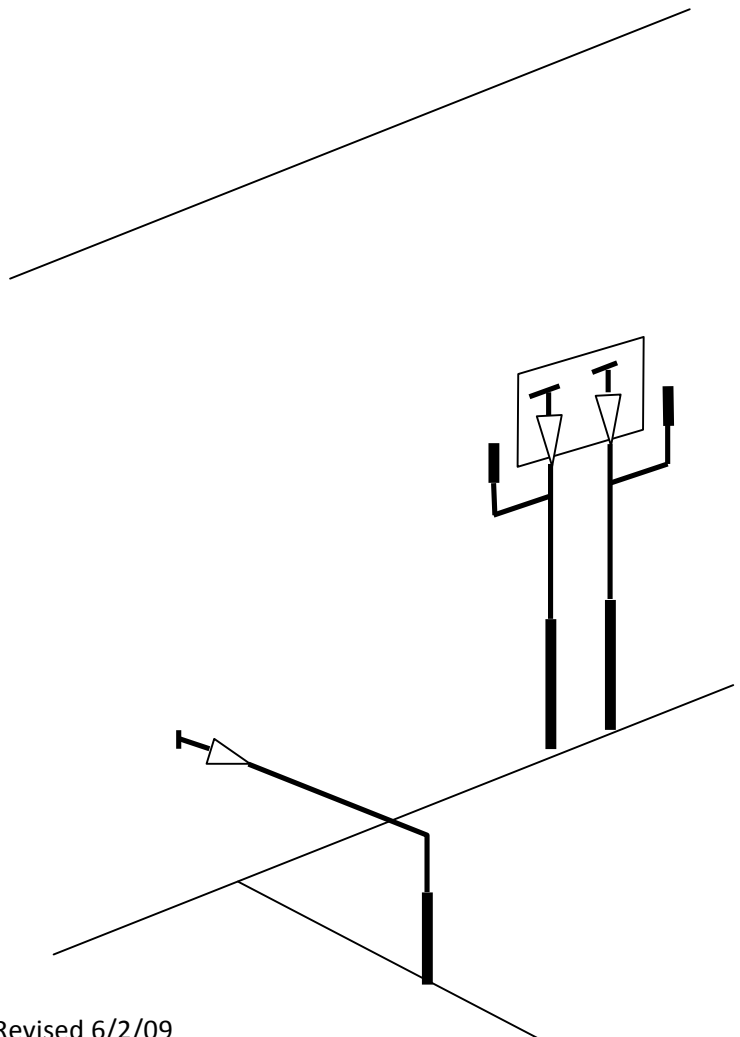
PLUMBING



PVC for TeamWork's 2009



Revised May 7, 2009

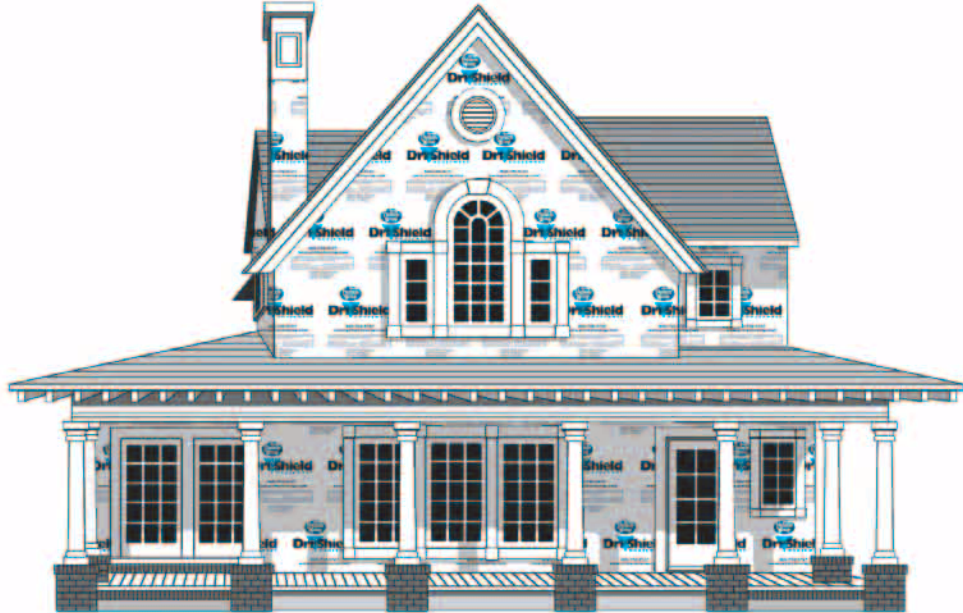




Premium Building Products
That Protect

Dri-Shield™ HOUSEWRAP

Another energy saving product from Protecto Wrap®



Dri-Shield™ Housewrap is a perforated polyolefin membrane that is installed beneath exterior siding to help reduce air and moisture infiltration. Dri-Shield™ Housewrap is not intended for use as a primary water barrier. Used in residential and commercial building, installing housewrap on an entire home or structure is generally the most common industry practice.

ADVANTAGES:

- Meets all building codes including SBCCI-ES 9737B, BOCAI-ES 21-56, and ICBO-ES ER-4449
- Dri-Shield™ Housewrap has achieved a permeance rating of 9 perms (average) and meets or exceeds all moisture/vapor transmission standards for building codes
- Helps stop mold and mildew by stopping moisture infiltration
- Perforated, high-quality, woven Polyolefin construction provides superior tear resistance
- Advanced perforated polyolefin membrane allows vapor to escape and prevent air infiltration and windblown rain from entering your home
- Protected with UV inhibitors and thermal degradation stabilizers to provide up to 365 day exposure
- Good contact clarity provides ease of stud recognition for precise fastener placement
- Works as a system application with all Protecto Wrap Products

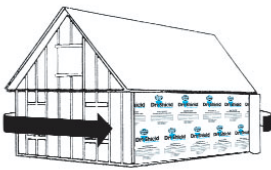
PRODUCT WARRANTY:

Protecto Wrap Company warrants materials to be free of defects and will replace or, at our option, refund the purchase price of any materials proven to be defective. This limited warranty is in lieu of any other warranty or guarantee, expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event will Protecto Wrap Company be liable for incidental or consequential damages nor shall liability, if any, extend beyond the purchase price of the material. Protecto Wrap Company does not warrant the workmanship of the applicator.



INSTALLATION INSTRUCTIONS:

- Dri-Shield™ Housewrap should be installed on the exterior side of the exterior wall with the printed side facing outward.
- Place the roll 2-3 feet from the corner and fasten to studs with staples or roofing nails.
- Unroll the sheet horizontally around the building and fasten to studs and plates.
- Space the fasteners every 12"-18" along the vertical studs using large-headed or plastic cap nails or minimum 1" crown staples.
- Lap the sheet a minimum of 12 inches and tape it in both the vertical and horizontal dimensions.
- Seal all edges with an approved pressure sensitive tape.



FOR FINED WINDOWS AND DOORS:

Cut the Dri-Shield™ even with the rough opening at the sill and header, trim back one inch at side jambs. Make relief cuts at the corners, fold back to expose exterior sheathing at the sides and top of the rough opening. Install window in accordance with manufactures instructions, flash with Protecto Wrap's BT25XL window and door sealing tape or Protecto Flex flexible flashing tape. After window is installed fold the Dri-Shield to cover the flashing and tape all seams.

For superior air infiltration resistance:

- Sill plates should be covered and taped or caulked.
- The wrap-around is completed with a 6 inch (152 mm) or greater overlap.
- All horizontal joints created by multiple layers must be positioned with the upper layer overlapping the lower layer by at least 2 inches (51 mm).
- Seal all edges, overlaps and punctures with a 2 inch minimum strip of BT25XL Window Sealing Tape, Housewrap seaming tape or equivalent product. **BT25XL Flashing Tapes have proven superior sealing and longevity over standard housewrap tapes.**

Protecto Wrap Dri-Shield™ Housewrap must be covered by approved siding product following the siding manufacturer's installation instructions and prevailing building codes within 12 months of installation for maximum product performance and warranty. Protecto Wrap Dri-Shield™ Housewrap is not intended to perform the function of an exterior siding product.

DIMENSIONS:

Weight:	27 lbs/1,500 sq. ft.
Thickness:	5 mils
Roll Sizes/Widths Available:	9', 10'
Roll Sizes/Lengths Available:	150'

WARNING:

Protecto Wrap Dri-Shield™ Housewrap is slippery and should not be walked on. Dri-Shield™ Housewrap is not to be used directly with cedar siding. A cedar breather must be installed for correct air flow. Also, Protecto Wrap Company recommends code-approved kickbacks or scaffolds for exterior labor above the first floor.

PROTECTO WRAP COMPANY

1955 South Cherokee Denver, Colorado 80223 (303) 777-3001 Fax (303) 777-9273 (800) 759-9727

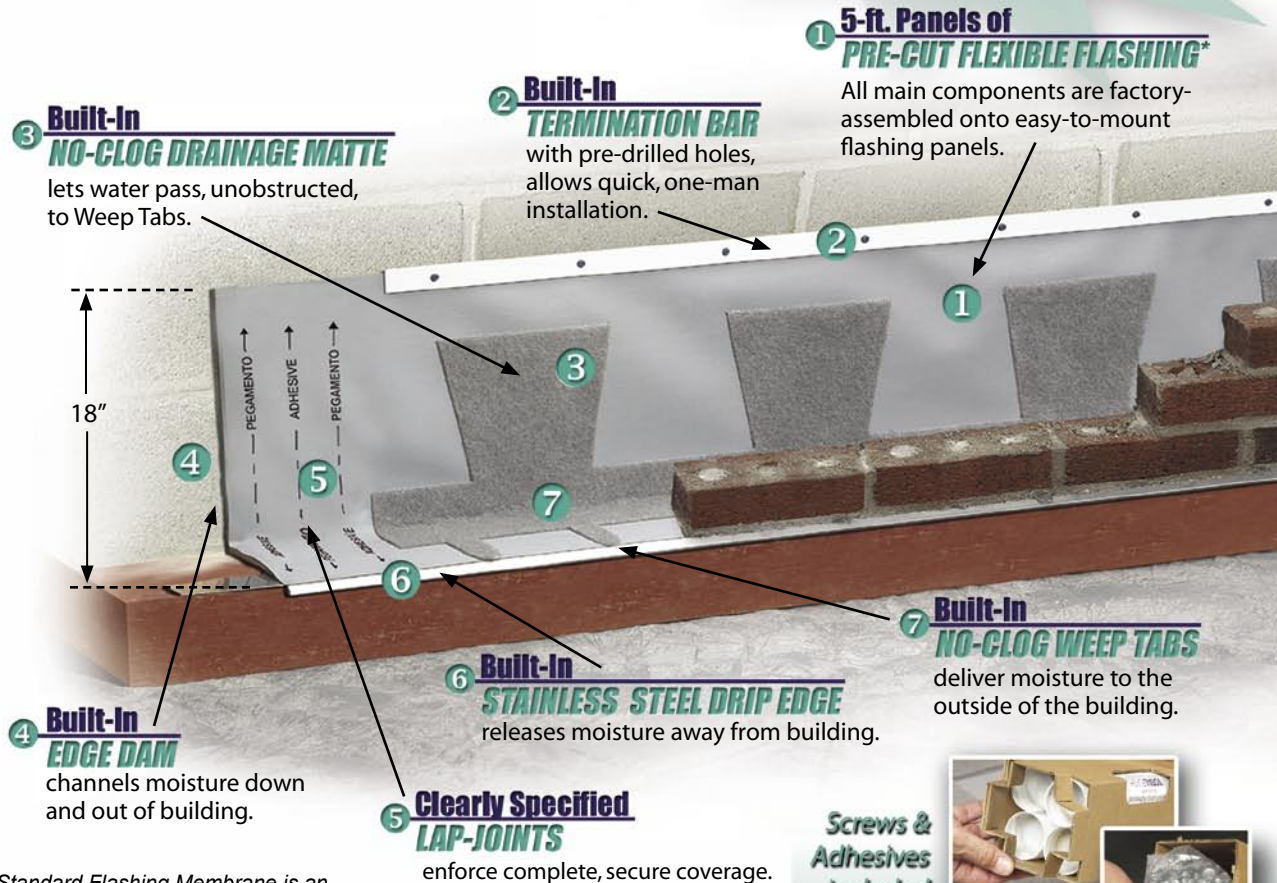
www.protectowrap.com

Dri-Shield 001 12/05

TOTALFLASH™

CAVITY-WALL DRAINAGE SYSTEM
by Mortar Net USA, Ltd.

**Special Sizes for Restoration
or Remediation Jobs, Too!**



**1 5-ft. Panels of
PRE-CUT FLEXIBLE FLASHING***

All main components are factory-assembled onto easy-to-mount flashing panels.

**2 Built-In
TERMINATION BAR**

with pre-drilled holes, allows quick, one-man installation.

**3 Built-In
NO-CLOG DRAINAGE MATTE**

lets water pass, unobstructed, to Weep Tabs.

**4 Built-In
EDGE DAM**

channels moisture down and out of building.

**5 Clearly Specified
LAP-JOINTS**

enforce complete, secure coverage.

**6 Built-In
STAINLESS STEEL DRIP EDGE**

releases moisture away from building.

**7 Built-In
NO-CLOG WEEP TABS**

deliver moisture to the outside of the building.

Screws & Adhesives Included

in each package of TOTALFlash™ panels.



*Our Standard Flashing Membrane is an 18-inch, 40-mil polymeric, reinforced, UV stable membrane, incorporating DuPont's Elvaloy® KEE polymer.

**IT'S 100 YEARS OF MOISTURE-CONTROL TECHNOLOGY
THAT YOU CAN HOLD WITH ONE HAND.**

Wondering how anyone could give you twice your usual protection (or more), with half your usual time & labor (or less)? Just see what our masonry experts have managed to build into each handy, 5-foot panel of premium flashing.

With
**TOTALFlash™ -
Everyone Wins!**

Flashing alone isn't enough to meet today's rigorous moisture-control demands. But until now, higher protection meant higher expenses for time & labor.

TOTALFlash™ changed all that, delivering higher protection with lower costs. But the benefits don't end there:

BUILDERS see quicker completion while lowering the risk of future wall-damage or mold-growth.

MASONS no longer have to order an array of components, then hope everything arrives on time.

- They no longer have to struggle with "field-cutting" awkward flashing-rolls.
- Our new Pre-Formed Corners get them off to a quicker start.
- **TOTALFlash™** high-speed installation lets them start laying brick much sooner.

ARCHITECTS get the coverage they specified. (Our clearly marked Lap Joints make it foolproof!)

OWNERS enjoys greater peace-of-mind and a longer building-life.

TENANTS breathe easier, knowing there's far less chance of moisture-related illness.

What will



www.MortarNet.com
800-664-6638

TOTALFLASH™
 CAVITY-WALL DRAINAGE SYSTEM
 by Mortar Net USA, Ltd.

NOTHING to Cut



The job starts with corners, but you don't have to make them by hand any more. Our flawless, factory-built Corner Boots save you time & trouble. And of course our new TOTALFlash™ means masons can quit being roofers, because each panel comes pre-cut to a handy, 5-foot length. (See inside.)

NOTHING Faster



TOTALFlash™ can be installed by one worker, at speeds twice as fast as anything else they've used. Half the labor, half the time--it adds up to nice savings all around.

NOTHING Protects Better



For example, even when mortar or grout droppings pile up to the top of the flashing-panel, water will still escape through TOTALFlash™ layer of no-clog polyester mesh.

The Beauty of *Green*

Ideally, masonry buildings should last for centuries. Such longevity isn't just a benefit to the building's owner, it's a plus for our whole environment. Demolition wastes the resources that went into the old building, then spends new resources to build its replacement.

TOTALFlash™ guards against the damage trapped moisture can cause to a building's exterior masonry walls, thus helping to prevent costly waste. It also works to suppress the air-quality hazards that can arise in damp wall cavities.

SECOND Chances

It happens that TOTALFlash™ was invented by Tom Sourlis, who restored the masonry of Chicago's famed Water Tower and many other historic landmarks.

Tom made sure to create TOTALFlash™ in sizes that could be easily installed in existing structures, without removing any additional courses of brick.

It can give older buildings a new lease on life, while helping to sustain our nation's resources.



The use of TOTALFlash™ may help your project to qualify for LEED credits.

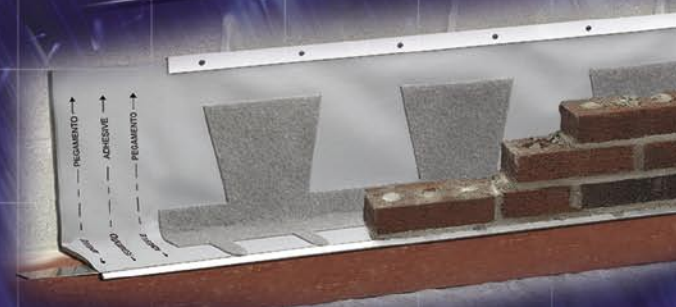


NEW

TOTALFLASH™
 CAVITY-WALL DRAINAGE SYSTEM
 by Mortar Net USA, Ltd.

THE FIRST MASONRY FLASHING SYSTEM...

That Has It All!



Super Protection.
 Super-Quick Installation.
 Super Savings.

TOTAL Protection That Installs In A FLASH

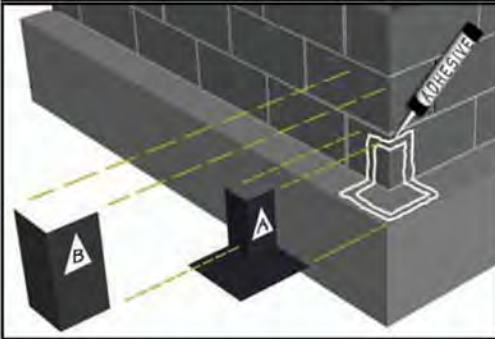
Mortar Net®
 USA LTD.

541 South Lake Street, Gary, IN 46403
 800-664-6638
 www.MortarNet.com

What will
Mortar Net®
 think of next?

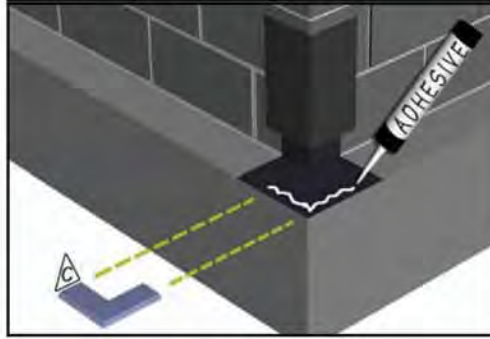
(800) 664-6638

1 STEP ONE



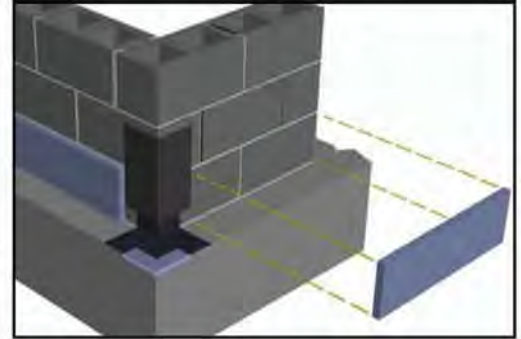
INSTALL PREFORMED CORNER **A** USING 2 BEADS OF ADHESIVE. APPLY PEEL & STICK LEGGING **B** OVER PRE FORMED CORNER BOOT.

2 STEP TWO



APPLY SEALANT / ADHESIVE TO PREFABRICATED STAINLESS STEEL CORNER **C** AND INSTALL OVER BOOT.

3 STEP THREE



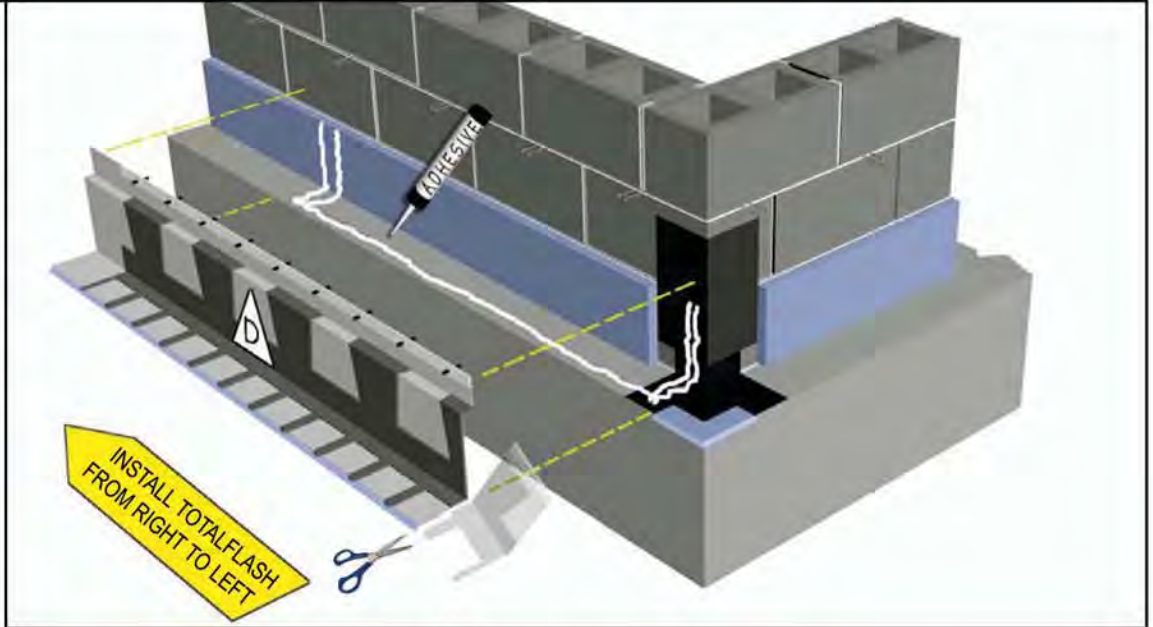
INSTALL 8" HIGH SECTIONS OF RIGID INSULATION BOARD AGAINST BACKUP WALL. HOLD INSULATION 6" FROM EACH CORNER.

4 STEP FOUR

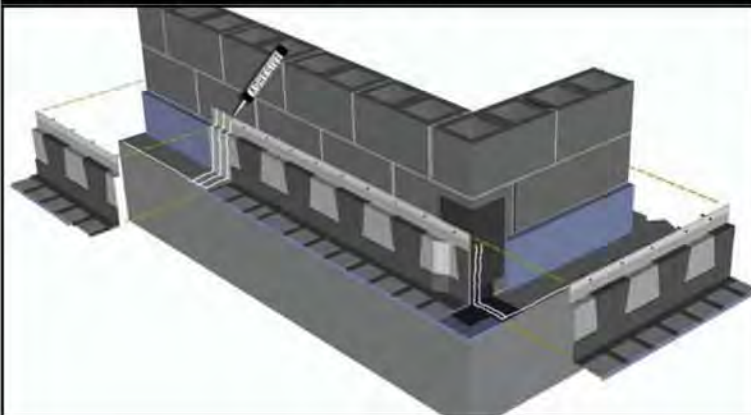
TRIM 6" LAP SECTION FROM RIGHT SIDE OF FIRST SECTION OF TOTALFLASH.

INSTALL TOTALFLASH **D** ADJACENT TO CORNER DRIP USING ADHESIVE.

INSTALL THE FIRST SECTION AT THE RIGHTMOST CORNER AND LAP SUBSEQUENT SECTIONS FROM RIGHT TO LEFT.

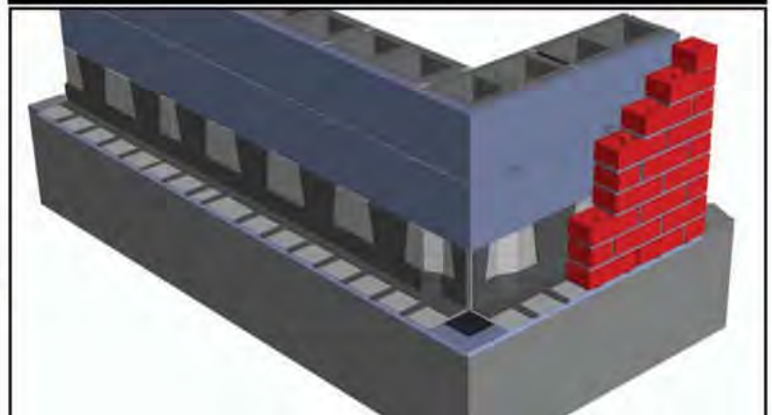


5 STEP FIVE



INSTALL REMAINING SECTIONS USING THE INTEGRATED LAP SYSTEM AND SEALANT, TRIM END SECTION FLUSH WITH CORNER DRIP. CAULK TOP OF TERMINATION BAR.

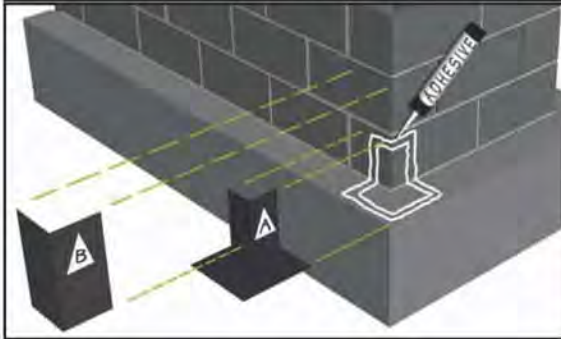
6 STEP SIX



INSTALL REMAINING RIGID BOARD INSULATION ABOVE TOTALFLASH.

1

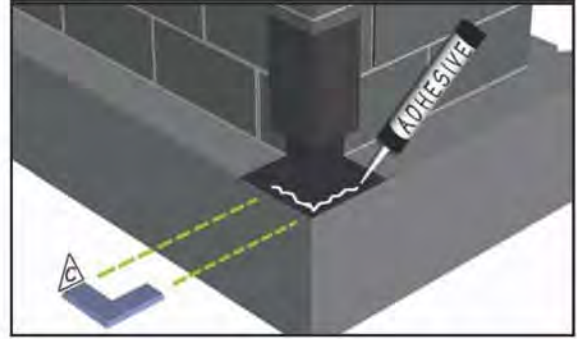
STEP ONE



INSTALL PREFORMED CORNER A. USING 2 BEADS OF ADHESIVE. APPLY PEEL & STICK LEGGING B. OVER PRE FORMED CORNER BOOT.

2

STEP TWO



APPLY SEALANT / ADHESIVE TO PREFABRICATED STAINLESS STEEL CORNER C. AND INSTALL OVER BOOT.

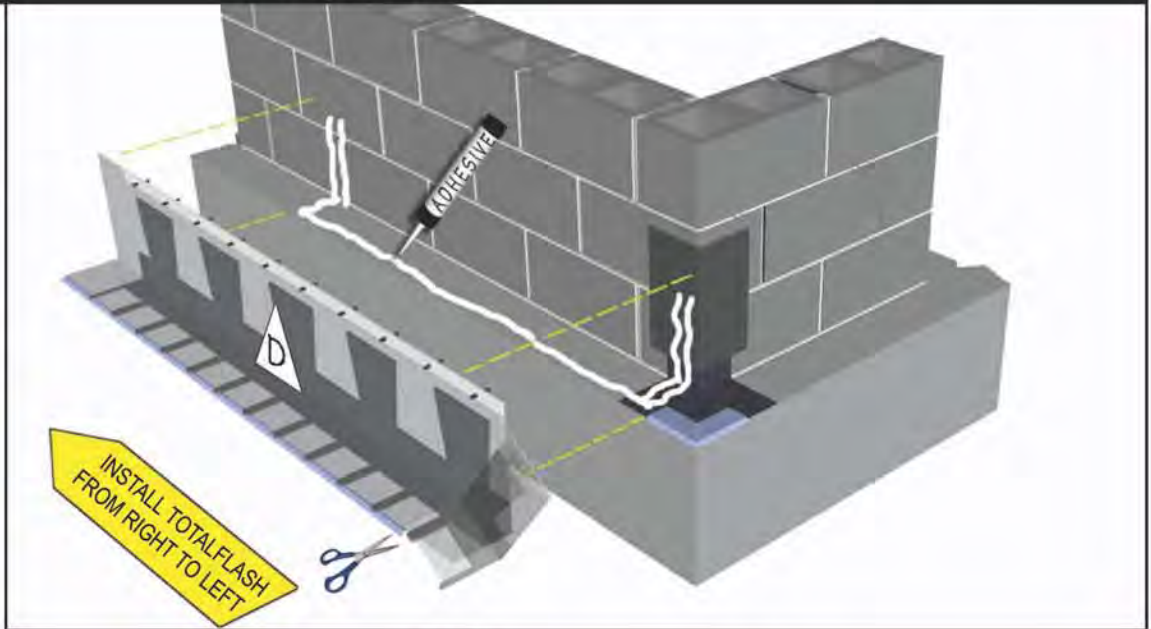
3

STEP THREE

TRIM 6" LAP SECTION FROM RIGHT SIDE OF FIRST SECTION OF TOTALFLASH.

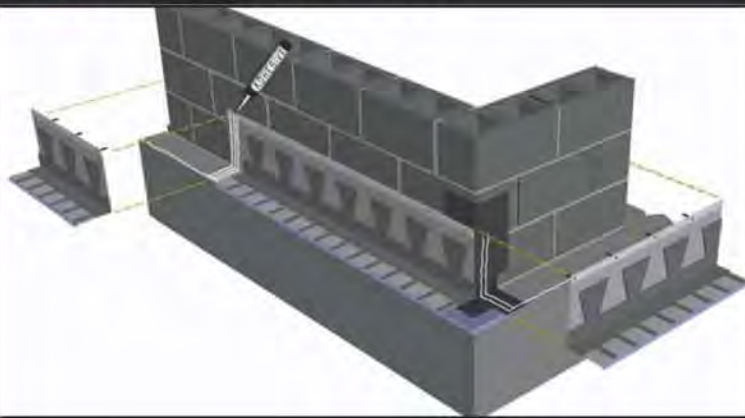
INSTALL TOTALFLASH D. ADJACENT TO CORNER DRIP USING ADHESIVE.

INSTALL THE FIRST SECTION AT THE RIGHTMOST CORNER AND LAP SUBSEQUENT SECTIONS FROM RIGHT TO LEFT.



4

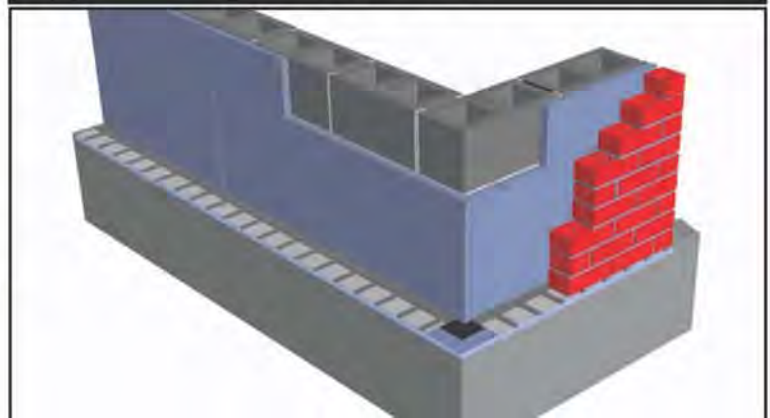
STEP FOUR



INSTALL REMAINING SECTIONS USING THE INTEGRATED LAP SYSTEM AND SEALANT, TRIM END SECTION FLUSH WITH CORNER DRIP. CAULK TOP OF TERMINATION BAR.

5

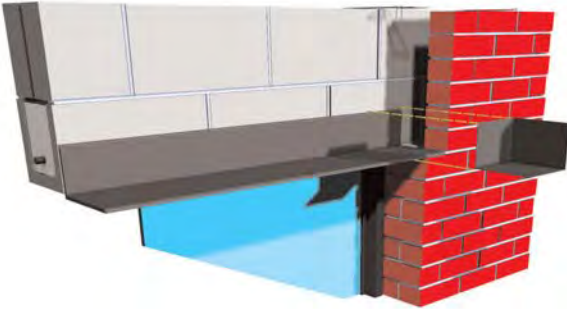
STEP FIVE



INSTALL RIGID BOARD INSULATION ABOVE TOTALFLASH.

1

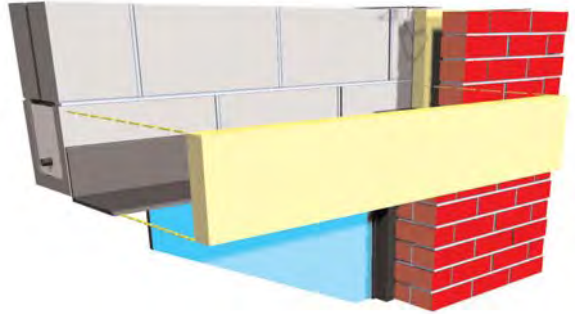
STEP ONE



INSTALL SELF ADHERED PREFORMED END DAM ON BOTH ENDS OF OPENING, TRIM TO FIT.

2

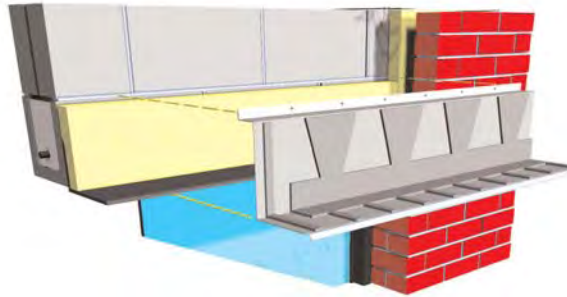
STEP TWO



INSTALL 8" HIGH SECTION OF RIGID INSULATION BOARD AGAINST THE BACKUP WALL AT LINTEL.

3

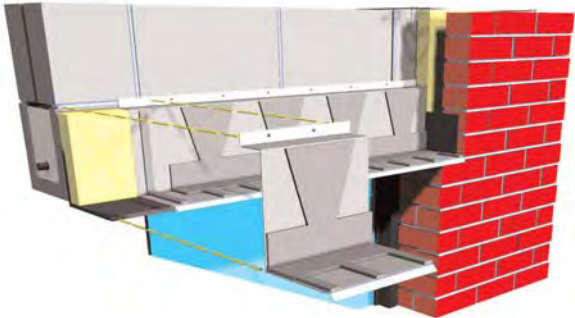
STEP THREE



INSTALL FIRST SECTION OF TOTALFLASH ADJACENT TO END DAM USING ADHESIVE AND PRESSURE BAR SCREWS.

4

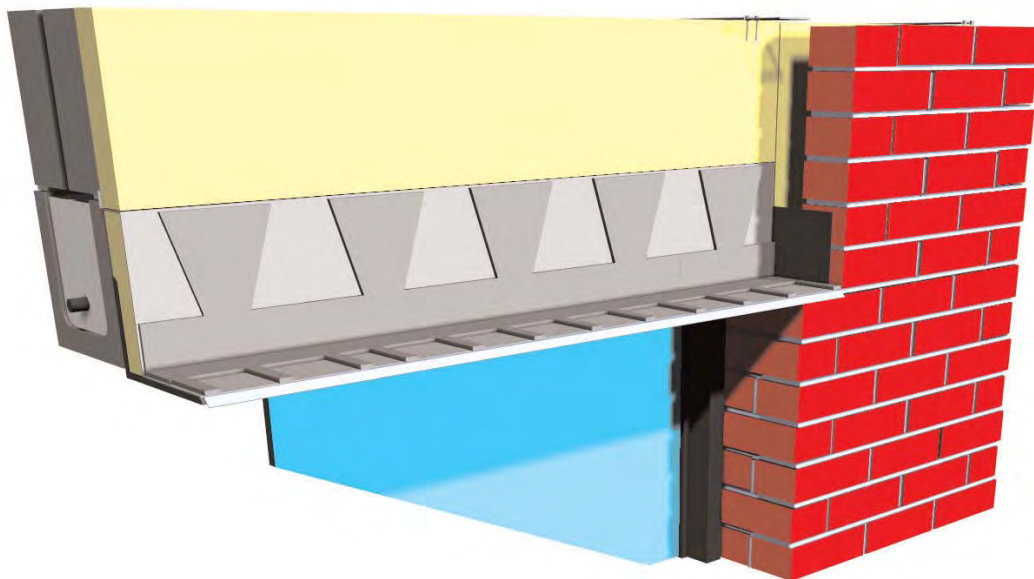
STEP FOUR



INSTALL REMAINING SECTIONS OF TOTALFLASH AS NEEDED USING THE INTEGRATED LAP SYSTEM, SEALANT AND SCREWS. CAULK TOP OF TERMINATION BAR.

5

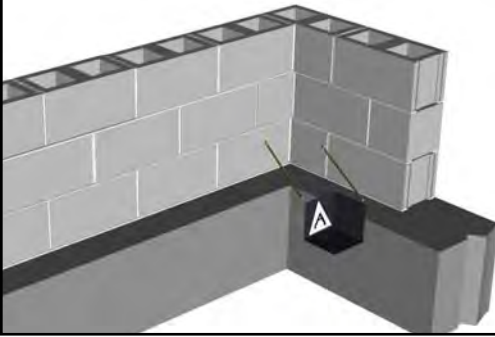
STEP FIVE



INSTALL REMAINING RIGID BOARD INSULATION ABOVE TOTALFLASH.

1

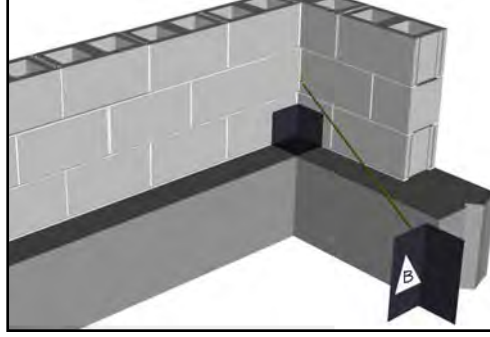
STEP ONE



INSTALL PREFORMED CORNER **A** USING 2 BEADS OF ADHESIVE.

2

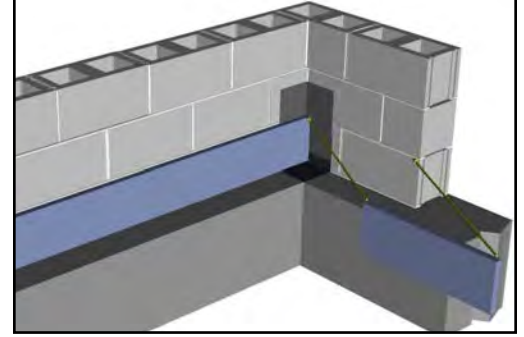
STEP TWO



APPLY PEEL & STICK LEGGING **B** OVER PREFORMED CORNER BOOT.

3

STEP THREE



INSTALL 8" HIGH SECTIONS OF RIGID INSULATION BOARD AGAINST BACKUP WALL..

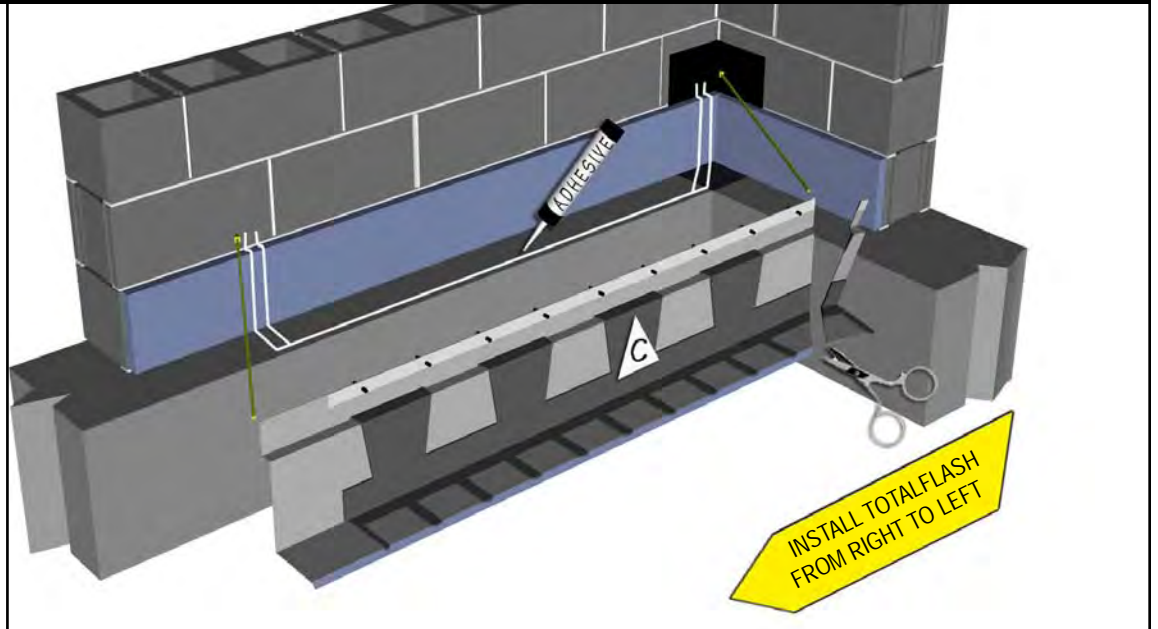
4

STEP FOUR

TRIM 6" LAP SECTION FROM RIGHT SIDE OF FIRST SECTION OF TOTAL FLASH AT A 45 DEGREE ANGLE.

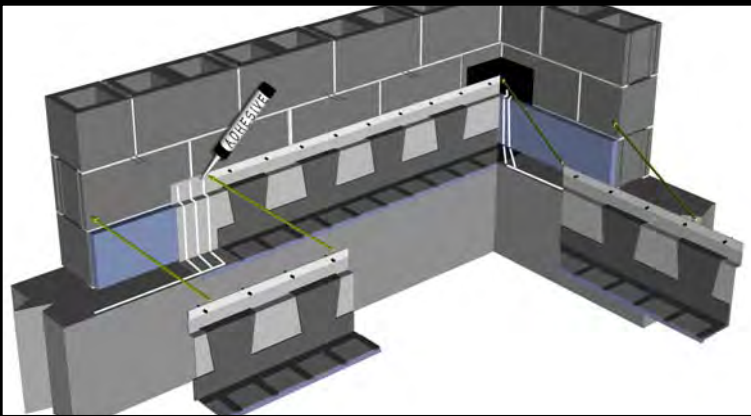
INSTALL TOTALFLASH **C** ADJACENT TO INSIDE CORNER USING ADHESIVE AND TERMINATION BAR SCREWS.

INSTALL THE FIRST SECTION AT THE RIGHTMOST CORNER AND LAP SUBSEQUENT SECTIONS FROM RIGHT TO LEFT.



5

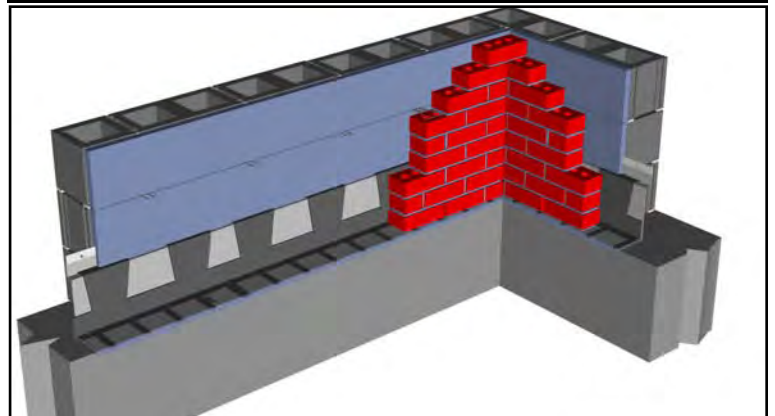
STEP FIVE



INSTALL REMAINING SECTIONS USING THE INTEGRATED LAP SYSTEM AND SEALANT, MITER END SECTION FLUSH WITH INSIDE CORNER. CAULK TOP OF TERMINATION BAR

6

STEP SIX



INSTALL REMAINING RIGID BOARD INSULATION ABOVE TOTALFLASH



HouseNet™
by Mortar Net®

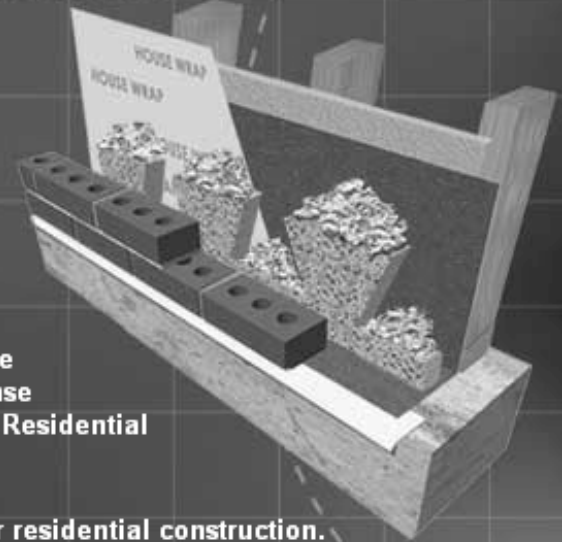
The Residential HouseNet™ Drainage System - Installation

Residential HouseNet is easy to use. It requires no fasteners or adhesives, not special skill or tools. After the first one or two courses of bricks are laid, place a continuous row of Residential HouseNet in the cavity on the flashing against the back of the brick at the base of the wall. Flashing should extend to at least 6" above the top of the Residential HouseNet.

Mortar Net® USA, Ltd. recommends a minimum 1" cavity air space for residential construction. Mortar bridging can occur in cavities that are smaller. Should mortar bridging occur across the cavity space as the brick veneer wall is constructed, the mason should clean the mortar protrusions and bridges off the back of the bricks. Reasonable care must be taken to prevent excessive mortar droppings.

Cavity should be no more than ¼" wider than 1.0" and 2.0 thick material, and 0.4" thick material should touch both the outer and inner wall, insulation, or filler used to adjust the cavity size. Residential HouseNet is compressible to allow for variation in wall cavities.

Residential HouseNet must be used in conjunction with impermeable through wall flashings that are recommended by the flashing manufacturer for that use. Residential HouseNet used in combination with fast acting weep materials such as Mortar Net® Weep Vents create a system for proper water drainage and ventilation.





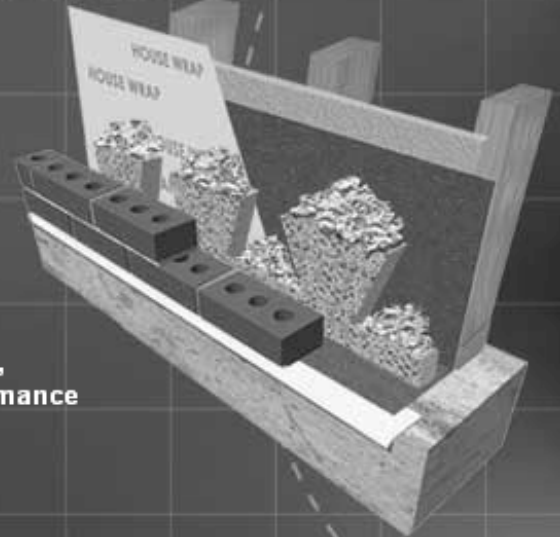
Residential **HouseNet™** by Mortar Net®

The Residential HouseNet™ Drainage System - Technical Data and Sizes

Residential HouseNet is made of recycled polyester with an anti-microbial additive to control mold growth. This material will not oxidize, rot, promote mold or fungus, or react with other common building materials such as mortar, cement, asphalt, modified bitumen, PVC, Copper, or galvanized metal, thereby ensuring long-term performance for all materials.

Residential HouseNet Sizes

Width	Height	Length	Package Qty
2.0"	7.75"	5'	80 lf
1.0"	7.75"	5'	80 lf
0.4"	7.75"	5'	80 lf



RESIDENTIAL HOUSENET™ CAVITY WALL SPECIFICATIONS

1/6

MASONRY ACCESSORIES 04090

This MANU-SPEC utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*, *SectionFormat*, and *PageFormat*. A MANU-SPEC is a manufacturer specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications. Optional text is indicated by brackets (); delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This MANU-SPEC specifies a fabricated open mesh intended to catch and permanently suspend mortar droppings above weep holes, marketed under the Residential HouseNet™ brand name, as manufactured by Mortar Net USA, Ltd. (Patent Reissue #36676) When placed in the collar joint or cavity on top of the flashing at the base of a wall, the Mortar Net catches and permanently suspends mortar droppings in an irregular pattern above the weep hole vents. Due to its unique trapezoidal shape and strong plastic construction, mortar droppings cannot fall to the base of the flashing, so weep hole vents stay open. Because it prevents mortar droppings from forming a continuous dam, and due to its 90% open weave, moisture can pass quickly and easily to the weeps and air pressure differentials between the cavity and the exterior can equalize through the open weeps and Mortar Net itself. Revise MANU-SPEC section number and title below to suit project requirements, specification practices and section content. Refer to CSI MasterFormat for other section numbers and titles. Including 04050 Basic Masonry Materials & Methods; 04090 Masonry Accessories; 04200 Masonry Units; and 04800 Masonry Assemblies.

SECTION 04090 MASONRY ACCESSORIES (MASONRY ASSEMBLIES)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes: Mortar dropping collection device for masonry veneer walls.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and title per CSI MasterFormat and specifier's practice.

B. Related Sections: Section(s) related to this section include:

1. Unit Masonry: Division 4 Unit Masonry Assembly Section.
2. Wall Flashing: Division 7 Flashing Section.
3. Brick and Block Vents: Division 10 Vents Section.

Specifier Note: Retain paragraph below to suit project requirements. Coordinate with Part 2 Products herein and other Contract Documents.

C. Unit Prices: Products and Installation included in this section are specified by unit prices. Refer to Division 1 Unit Prices Section for unit prices amounts and requirements.

1. Unit Price: Unit price is per lineal foot (304.8 mm).

1.02 SYSTEM DESCRIPTION

- A. System Description: Use Residential HouseNet™ as part of standard masonry veneer wall flashing/weep hole wall drainage systems. The Residential HouseNet™ keeps weep hole vents open and flashing free of mortar droppings and debris by catching and permanently suspending droppings above the level of the top of the weep hole vents, by preventing mortar from forming a continuous barrier against proper water flow to the weeps and by providing routes through the body of the product itself for water to flow to the flashing and weeps.
- B. Performance Requirements: Provide (Section/Product Title) which has been manufactured, fabricated and installed to withstand loads from (specify code/standard reference,) and to maintain (specify performance criteria,) performance criteria stated (certified) by manufacturer without defects, damage or failure.

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.

1.03 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B. Product Data: Submit product data, including manufacturer's SPEC-DATA product sheet, for specified products.
- C. Samples: Submit selection and verification samples.
- D. Quality Assurance Submittals: Submit the following:
 - 1. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria.
 - 2. Manufacturer's Instructions: Manufacturer's Installation Instructions.
- E. Closeout Submittals: Submit the following:
 - 1. Warranty: Warranty documents specified herein.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate below article with Division 1 Quality Assurance Section.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

- B. Regulatory Requirements: (Specify applicable requirements of regulatory agencies.)

Specifier Note: Coordinate paragraph below with Division 1 Project Management and Coordination (Project Meetings) Section.

1.04 QUALITY ASSURANCE (cont.)

- C. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 1 Product Requirements Section.

1.05 DELIVERY, STORAGE AND HANDLING

- A. General: Comply with Division 1 Product Requirements Sections.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Packing, Shipping, Handling and Unloading: (Specify applicable requirements.)

Specifier Note: Products of 1", 2", and .4" thick material are shipped 80 lineal feet (24,384 mm) per cardboard box, with sixteen 5' (1524 mm) sections per box. Product requires no special handling, is very lightweight, and boxes and loose materials are easily handled by 1 person. Secure loose and boxed material during strong winds.

- D. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- E. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
 - 1. Do not expose material to direct sunlight for more than 2 weeks. If material is protected from exposure to direct sunlight it may be stored indefinitely.

1.06 SEQUENCING

- A. General: Install the Residential HouseNet™ product after flashing has been installed, the first 1 or 2 courses of brick have been laid, and weep holes have been created. Install product before third or higher courses of brick have been laid.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.07 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

1.07 WARRANTY (cont.)

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements. Mortar Net USA, Ltd. warrants its products to be of the quality and composition stated and free of manufacturer's defects. It will replace or refund the purchase price of any product proved defective. This limited warranty is the only warranty extended by Mortar Net USA, Ltd. In regard to its product, Mortar Net USA, Ltd.'s liability shall not exceed the purchase price of the material in question. Every construction project is unique; therefore, every use of Residential HouseNet™ and Mortar Net Weep Vents must be evaluated and approved by a qualified professional such as an architect or engineer familiar with the project.

1. Warranty Period: (Specify term,) years commencing on Date of Substantial Completion.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 MASONRY VENEER WALL DRAINAGE SYSTEM

A. Manufacturer: Mortar Net USA, Ltd.

Specifier Note: Paragraph below is an addition to CSI SectionFormat and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

1. Contact: 541 South Lake Street, Gary, IN 46403; Telephone: (800) 664-6638, (219) 939-3870; Fax: (219) 939-3877, E-mail: webmaster@mortarnet.com Website: www.mortarnet.com

Specifier Note: The Mortar Net is manufactured of nylon, high density polyethylene (HDPE) or polyester, fabricated in a 90% open mesh, 2", 1" or 0.4" (51, 25.4, 10.2 mm) thick. It has no negative reaction to PVC, polyethylene, polystyrenes, copper, lead, rubberized asphalt, or stainless steel and will not degrade or decompose over the life of the building. It will not absorb or trap moisture and water, and it will not support mold or fungus. The Mortar Net is patented, U.S. Patent Reissue #36676.

B. Proprietary Product(s)/System(s): The Residential HouseNet™ accessory.

1. Mortar Net MN 10-1: 7¾" (196.9 mm) high x 1" (25.4 mm) thick material.
2. Mortar Net MN 10-4: 7¾" (196.9 mm) high x 0.4" (10.2 mm) thick material.
3. Mortar Net MN 10-2: 7¾" (196.9 mm) high x 2" (51 mm) thick material.

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 SUBSTITUTIONS

A. Product Substitutions: No substitutions permitted.

2.03 MATERIALS

Specifier Note: 1" (25.4 mm) material is high density polyethylene (HDPE), 0.4" (10.2 mm) thick material is nylon, and 2" (51 mm) thick material is recycled polyester. None of these materials will oxidize, rot, support mold or fungus, or react with common building materials, including mortar, cement asphalt, modified bitumen, PVC, copper, steel, or galvanized metal, and they are not edible by insects. The material retains its slope anti-rigidity and is undamaged by extended exposure to normal field temperatures, and is highly resistant to UV degradation.

- A. Materials: Manufacturer's standard Residential HouseNet™ material for specified product.
1. All dimensions are nominal. Measurements are inclusive of the continuous bottom strip and the dovetail shape.
 2. Four available sizes: 1" (25.4 mm) and 0.4" (10.2 mm) thicknesses by 10" (254 mm) height by 5' (1524 mm) long. 2" (51 mm) thick by 10" (254 mm) x 5' (1524 mm) long.
 3. Continuous bottom strip on all sizes of material is 3" (76.2 mm) high, regardless of material thickness or overall material height.
 4. 1" (25.4 mm) thick product is high density polyethylene (HDPE), 0.4" (6.4 mm) thick product is nylon, and 2" (51 mm) thick material is recycled polyester. Product is a 90% open weave mesh in a dovetail configuration connected by a continuous bottom strip.

2.04 SOURCE QUALITY

- A. Source Quality: Obtain the Mortar Net materials from a single manufacturer.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI SectionFormat and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections are acceptable for product installation in accordance with manufacturer's instructions.
1. Match product size to cavity size. Cavity should be no more than 1/4" (6.4 mm) wider than 1" (25.4 mm) thick material and 2" (51 mm) thick material, and 0.4" (10.2 mm) thick material should touch both the outer wythe and the inner wall. For cavities larger than 2" (51 mm), place rigid insulation of sufficient height to extend at least 6" (152 mm) above the top of the Residential HouseNet™ against the outside of the inner wythe and of appropriate thickness to reduce the cavity to the appropriate size.
 2. Inspect for and repair holes in flashing immediately prior to installing Residential HouseNet™.

3.03 PREPARATION

- A. Preparation: Clean flashing and weep holes so they are free of mortar droppings and debris immediately prior to installing Mortar Net. If wicks are used (not recommended), prevent mortar from coating or covering wicks inside the cavity. Washing flashing with water or chemicals prior to installation is not necessary.

Specifier Note: Coordinate article below with manufacturer's recommended installation details and requirements.

Specifier Note: Manufacturer recommends placing 1 continuous row of Residential HouseNet™ in the collar joint or cavity on the flashing at the base of the wall, at each flashing level and over lintels. Position with the zigzag side up (see manufacturer's CAD details). The Mortar Net should fit snugly in cavity, so if cavity is greater than 2" (51 mm) wide, either use several thicknesses of The Mortar Net or use appropriately sized styrofoam board (or equivalent) not less than 16" (406 mm) high as a spacer to fill excess space. Place spacer against the outside of the interior wall so The Mortar Net is against the inside of the exterior wythe. If no spacer is used, flashing should extend not less than 6" (152 mm) above the top of The Mortar Net to avoid the possibility of mortar bridging between the exterior wythe and interior wall. Adhesives, fasteners, special skills or tools are not required.

3.04 INSTALLATION

A. Mortar Net Installation:

1. For most walls, install 1 continuous row of The Mortar Net at base of wall and over all wall openings directly on flashing.
2. To prevent mortar bridging between the outer wythe and inner wall, install flashing extending from the bottom of The Mortar Net to at least 6" (152 mm) above the top of The Mortar Net.
3. Multiple thicknesses of Residential HouseNet™ may be installed to match cavity widths and if excessive droppings are expected. Inspection, preparation and installation procedure for multiple thicknesses is the same as for single thickness. When installing multiple thicknesses, align the dovetail sections with each other.
4. To match cavity width to product thickness without using multiple thicknesses of Residential HouseNet™, place rigid insulation of appropriate thickness against outside face of inner wall.
5. Lay the first 1 or 2 courses of brick at flashing level, then install Residential HouseNet™ continuously by placing it against the inside of the openings. No fasteners or adhesives are required, and mortar need not have set.
6. Residential HouseNet™ shall not come in contact with wall ties standard wall tile installations, but if it does, it may be cut or torn to accommodate wall ties, conduit, plumbing or other materials that bridge or intrude into cavity between inner and outer walls.
7. Compress Residential HouseNet™ horizontally so it can be forced into cavities slightly smaller than its nominal thickness without affecting Mortar Net or wall performance.
 - a. When forcing Residential HouseNet™ into a cavity, be sure mortar has set sufficiently to resist outward pressure from product.

B. Related Products Installation: Refer to other sections for installation of related products as follows:

1. Masonry: Refer to Division 4 Unit Masonry Sections.

3.05 PROTECTION

1. Protection: Protect installed product from damage during construction.

END OF SECTION

[HOME](#)[COMPANY PROFILE](#)[PRODUCTS](#)[CONTACT US](#)[PRODUCT OVERVIEW](#)[TECHNICAL DATA & SIZES](#)[HOW TO ORDER](#)

Mortar Net[®] **WEEP VENT**

Mortar Net Weep Vents - Technical Data

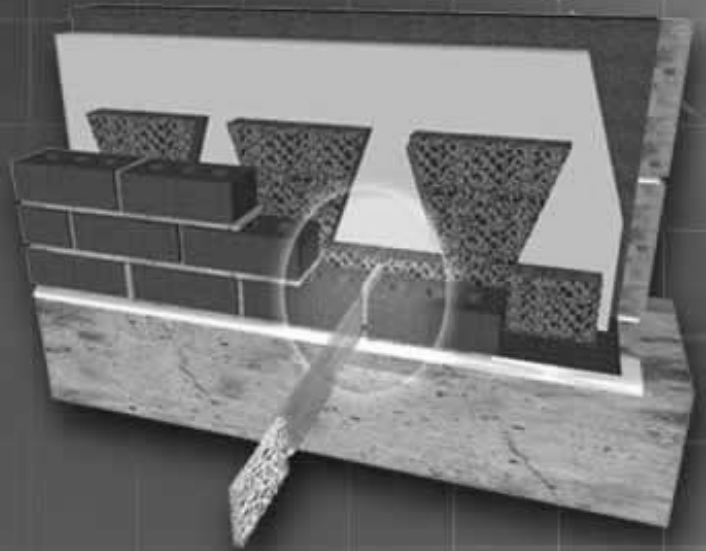
Mortar Net Weep Vents are made from recycled polyester with a 90% open mesh, and are bonded with a flame retardant adhesive to provide resiliency and strength, plus an anti-microbial additive to control mold growth.

Sizes

Width	Height	Thickness	Package Quantity
2.25"	3.5"	0.5"	125

Installation

Mortar Net Weep Vents are quick and easy to install. After the first course of brick simply place a Weep Vent in open head joint 24" O.C. No fasteners, adhesives or special tools are required. Mortar Net Weep Vents are slightly compressible to allow for variations



Available in these colors:



Call 800-664-6638
Mortar Net USA, Ltd.

[CONTINUED ED](#)[NEWS/RELATED TOPICS](#)

Installation Instructions For New Construction Single Hung, Double Hung And Picture Windows.

(The manufacturer's warranty is voided if these instructions are not followed.)

Window Opening

The rough opening must be plumb, level and square and 1/2 inch larger than window size in width and height, not including the nailing fins (See fig. 1). Close and lock the sash to aid in keeping the window square during installation.

Apply a 3/8-inch continuous bead of silicone caulking to the interior surface of the nailing fin covering the holes in the fin, to seal the window's fin to the sheathing or house wrap. If the rough opening is larger than the window unit by more than 1/2 inch, also apply the caulk to the sheathing or house wrap making sure the bead is no more than 1/4 inch from the edge of the rough opening, so that it is covered by the nailing fin when the window is installed.

Setting Shims

The sill of the window must be supported in a straight and level position at a minimum of three points, at either end and in the middle. Windows wider than 30 inches should be supported at a maximum of every 12 inches. (See fig. 2)

Placing Shims

Place 1/4 inch shims on the sill plate of the window opening spaced as described above. Multiple twin or triple windows should have a shim under each mullion. (See fig. 2)

Setting Window

Set window on the shims and adjust side clearance to be equal on both sides. Tack one upper corner of the fin to keep window in place. Check sill with a level and adjust thickness of shims as required to level sill. Re-adjust side clearance if necessary. Shims must be cut to exact thickness to fit snug and not fall out but do not force shims into place, pushing the sill upward out of level. Shim both sides of window (see fig. 2) and adjust thickness of shims to make diagonal measurements equal with the window plumb and square.

If the above has been done correctly the width across the top, middle and bottom will measure the same. The wool pile clearance between the sash stile and jamb mainframe will be equal. The meeting rail and lock rail will align evenly at the top of the bottom sash with parallel sight lines. The sweep latches should lock smoothly.

FIG.3, EXTERIOR VIEW

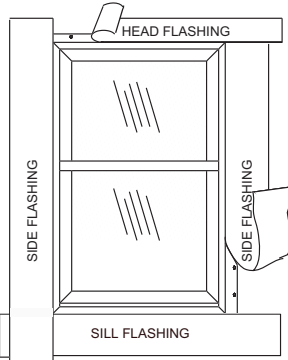
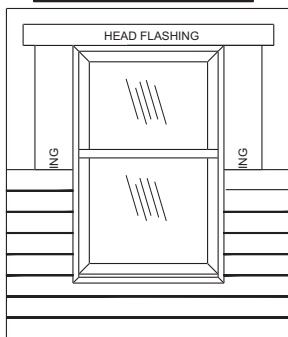


FIG.4, EXTERIOR VIEW



Please call our hot line
1-(800) 234-4228
for any installation help
that you might need.

Nailing Windows Fins

Use stainless or galvanized steel roofing nails, long enough to penetrate studs a minimum of 1 inch.

Nail the entire perimeter of the nailing fin to the sheathing using every other slotted hole at minimum. Multiple windows twins & triples must be nailed directly under and 6" either side of each mullion. Make sure jambs are not bowed out.

Nail the fin snug but do not "sink" the nails similar to installing siding. Nailing should be just tight enough to hold window but not stop the movement of the "Frame-Work" underneath during expansion and contraction. Make sure the head and sill are **NOT** crowned up or down, or the jambs bowed in or out.

Flashing

Use self adhesive flexible flashing a minimum of 4" wide which has a self-adhering surface on one side, approved for use on vinyl, wood & other substances such as house wrap. This flashing material must meet a minimum water resistance of 24 hours in accordance with ASTM-D779.

(See fig. 3) Sill flashing is applied first up against the bottom of the window sill and over the fin extending beyond the sides of the window jamb fin and side flashing at least 2 inches. Apply jamb flashing next over the jamb-nailing fin, continuing over and beyond the sill flashing, 2 inches below. Apply head flashing similarly extending 2" past either side of the jamb flashing, to complete the window flashing detail.

(See fig. 2) Install batt insulation between the window and rough opening. It is very important that these openings are not over stuffed and warp the frame. Do not **NOT** use expanding foam. Doing so will void warranties.

Cautions

- Remove or cut ventilation holes in plastic shipping wrap if windows are not installed immediately.
- Do not lay windows flat or store in the sun. The heat will shrink the plastic wrapping and warp the frame.
- Do not caulk or plug weep holes.
- Do not drill into or through the sill of the window.
- Protect the window during construction and plastering.
- Do not lift window by top of frame, only by jambs.
- Protect vinyl sill from traffic and damage.

FIGURE 1

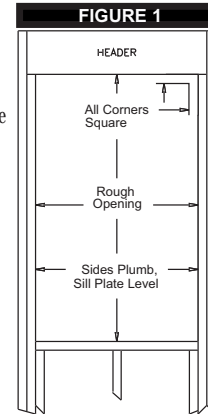
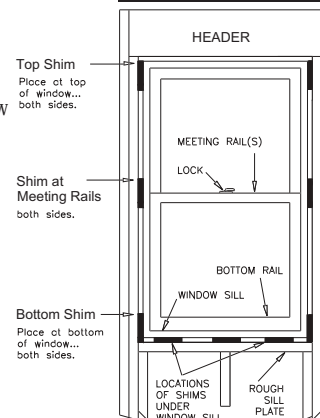
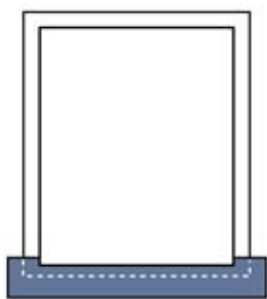


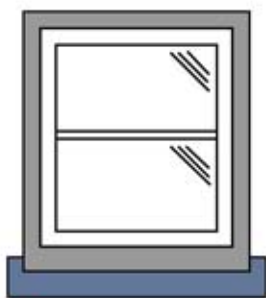
FIG. 2,
EXTERIOR VIEW



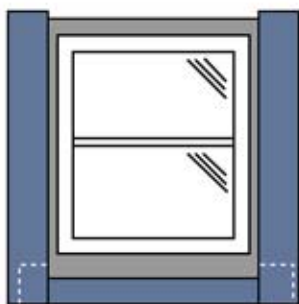
WINDOW APPLICATION



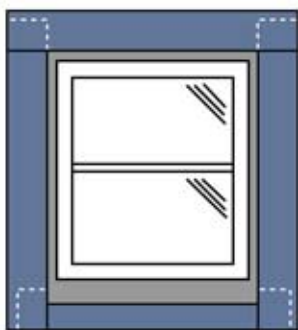
- 1.** Apply a piece of BT25XL on top of the window sill prior to setting the window.



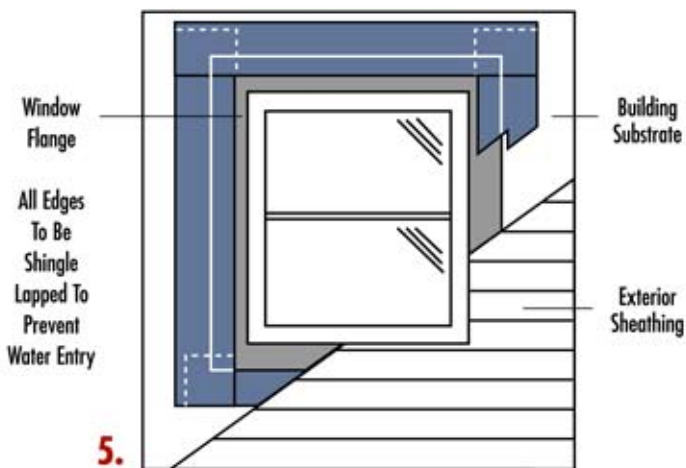
- 2.** Set the window and mechanically fasten the fins to the building substrate.



- 3.** Apply the vertical pieces of BT25XL on top of the window fin.



- 4.** Apply the final top horizontal piece of BT25XL on the top of the window fin.



BT-PRIMER and PROTECTO-TAK SPRAY ADHESIVE DATA SHEET

DESCRIPTION:

BT-Primer and Protecto-Tak Spray Adhesive are high tack primers for use under the BT-Series products over Dens-Glass Gold*, all OSB board, black sheathing board, metal, wood, dry concrete and dry masonry. When used over Dens-Glass Gold*, BT-Primer is moisture tolerant and is suitable for use on moist or damp Dens-Glass Gold*. BT-Primer is VOC compliant.

PROPERTIES:

	BT-Primer	Protecto-Tak Spray Adhesive
Adhesion to wood	Excellent	Excellent
Adhesion to steel	Excellent	Excellent
Adhesion to dry concrete	Excellent	Excellent
Adhesion to dry masonry	Excellent	Excellent
Adhesion to membrane	Excellent	Excellent
Coverage	150 sq. ft./gal.	2 oz: 4" x 100' roll
Shelf life (min.)	One Year	One Year
Tack free time (minutes)	10-20 minutes	10 sec to 15 min
Flash Point	24°F TCC	-42°F TCC

DIRECTIONS FOR USE:

PREPARATION:

BEFORE HANDLING read material safety data sheets for health information.

- The surface shall be cleaned so that all dirt, dust, loose concrete, or other contaminants that may adversely affect the adhesion of the membrane are removed.

BT-PRIMER APPLICATION:

- Apply primer to all surfaces by roller or brush.
- Primed surface shall be free of runs, puddles or excessive primer as this could cause blistering. Brush or roll out all primer puddles or drips immediately.
- Prime only as much area as can be covered in half a day's work. Re-prime areas not covered in half a day's work with a light coat of BT-Primer.
- Tack free time is approximately 10 to 20 minutes.

NOTE: Some bubbling in the primer may occur on the surface as it cures. This has no effect on the performance of the product and will smooth out as the membranes are applied.

PROTECTO-TAK SPRAY ADHESIVE APPLICATION:

- Shake can before using.
- Turn spray tip so arrow points to dot on rim.
- Hold can 6 – 8 inches from surface to be sprayed and apply to surface.
- After use, invert can, depress spray tip until spray is free of adhesive. Clean spray tips with turpentine.
- Clean oversprayed areas with a mix of 25% - 30% water added to isopropyl alcohol.

PACKAGING AND WEIGHTS:

BT-PRIMER

QUANTITY	PACKAGING	WEIGHT
1 U.S. Gallon	4 gallons/carton	38 lbs
5 U.S. Gallon pail	1 pail	46 lbs

PROTECTO-TAK SPRAY ADHESIVE

QUANTITY	PACKAGING	WEIGHT
16.5 oz can	12 cans/carton	19 lbs

**Dens-Glass is a registered trademark of Georgia-Pacific Corporation*



**Premium Building Products
That Protect**

1955 South Cherokee St., Denver, Colorado 80223
(303) 777-3001 • Fax (303) 777-9273 • 1-800-759-9727
www.protectowrap.com



BT25XL Window and Door Sealing Tape

Forms a permanent waterproofing air/vapor seal around doors and windows that prevents air and moisture leaks.



- Stop moisture intrusion that causes black mold
- No special tools needed, peel and stick installation
- Meets or exceeds all building codes including ASTM 2112
- Meets or exceeds ICC Code Approval ESR1825
- The only flashing tape that passed hurricane level windblown rain test ASTM E331-90
- Adheres to vinyl, plywood, OSB, foam, metal, aluminum, and masonry
- Can be left exposed up to 120 days



Protecto Wrap's building tape **BT25XL** is a tough-faced superior self-adhering, air/vapor barrier and waterproofing membrane for vertical and horizontal above grade substrates. **BT25XL** seals window perimeters to building substrates to create an impenetrable barrier. This 20-mil polyethylene-backed aggressive rubberized adhesive membrane can be applied to vinyl, plywood, OSB, concrete, metal, aluminum, polyethylene, building wrap products, block and masonry surfaces to form an air/vapor moisture barrier system. **BT25XL is the only window sealing tape that can be installed and left exposed for 120 days without UV degradation.**

EASE OF INSTALLATION

Since BT25XL is a peel and stick self-adhering membrane, you simply center the tape over the area to be sealed and firmly **roll** the BT25XL against the surface. BT25XL also seals itself around nails, screws and staples.

ENERGY EFFICIENT

Not only will BT25XL waterproof around doors and windows, it stops air leakage, thus reducing heating and air conditioning costs to the homeowner.

Using this field tested product will prove that you are a builder who cares about providing the highest quality building materials to your customers.

Protecto Wrap's BT25XL is suitable for sealing the following applications:

- Window and door perimeters to the building substrate
- Joints in stucco insulation systems
- Sheet rock joints in roof assemblies
- Beneath metal cap flashings
- Full building coverage as an air/vapor barrier
- Sealing joints on gypsum sheathing in cavity wall construction
- Other areas where a water or air seal is required.

APPLICATION

There should be no solvent-based caulks used in conjunction with Protecto Wrap BT25XL.

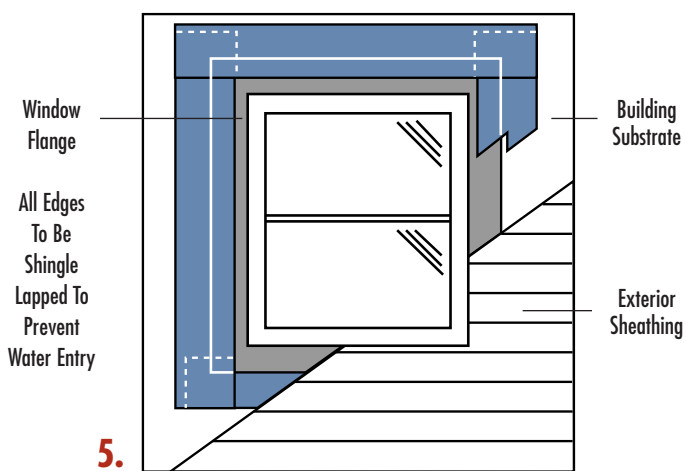
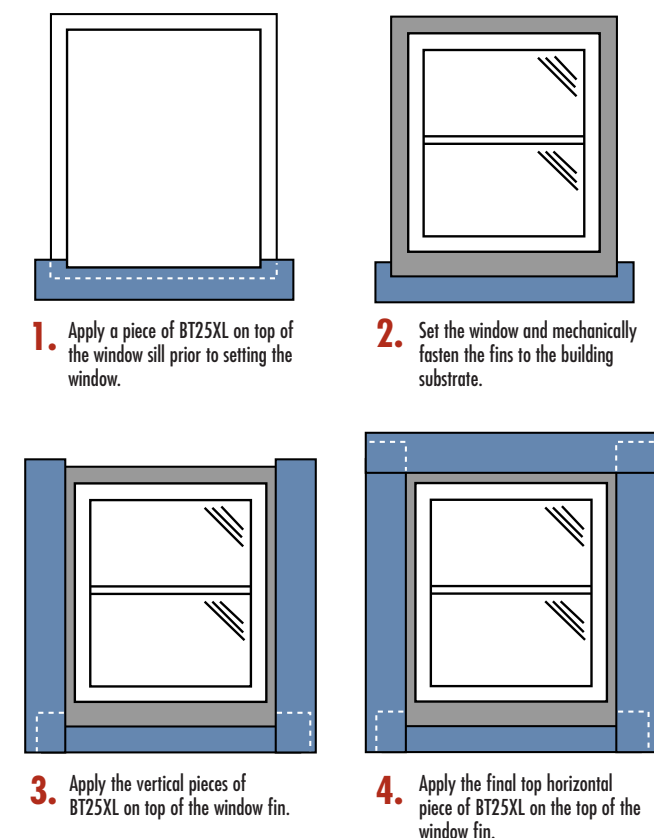
Surfaces should be clean, dry, free of dirt and other foreign matter. For best results, BT25XL should be applied at a temperature above 45°F (7°C). For applications from 20°F to 45°F (-6°C to 7°C), the material must be stored in a warm area prior to use and used with Protecto Wrap BT-Primer or Protecto-Tak Spray Adhesive. When used as an air/vapor barrier system, all lap and butt joints must overlap a minimum of 4". Masonry ties should be placed on top of the BT25XL and sealed with Protecto Wrap's JS160H Mastic. Cut a piece of BT25XL in a length that can be easily handled. Begin application by removing approximately 12 inches of the release paper and center the tape over the area being sealed. **Firmly roll** the BT25XL against the surface and

continue pulling off the release paper while rolling the tape into place. Rolling the BT25XL is essential to gain 100% surface contact of the BT25XL adhesive to the substrate and will minimize trapping air beneath the tape. **Do not stretch BT25XL.** Lap building wrap material 4" on top of BT25XL and seal the building wrap to BT25XL.

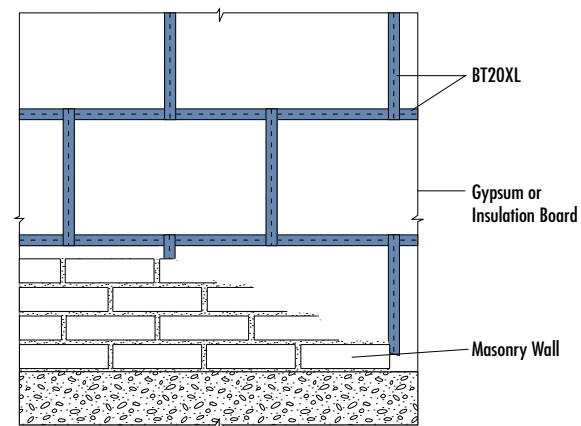
NOTE: When applying BT25XL to masonry, concrete, black sheathing board and OSB products or Dens-Glass Gold*, the surface must be primed with Protecto Wrap BT-Primer or Protecto-Tak Spray Adhesive.

*Dens-Glass is a registered trademark of Georgia-Pacific Corporation

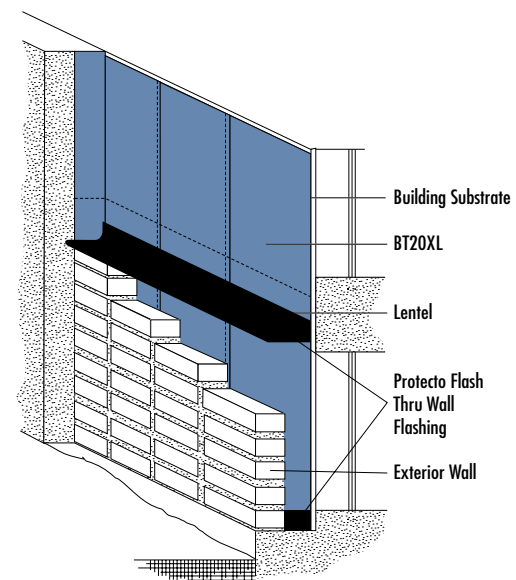
WINDOW APPLICATION



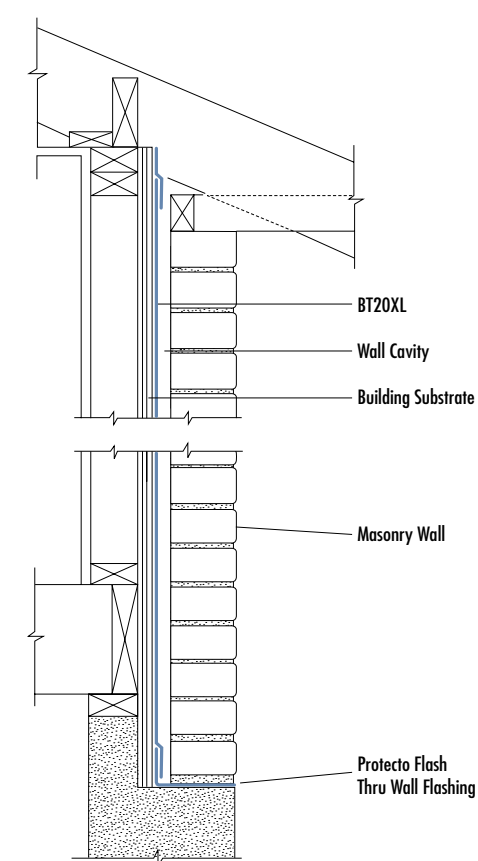
BT25XL as a Seam Sealing Tape



BT25XL for Cavity Wall Protection



BT25XL as a Thru-Wall Flashing



TESTING

BT25XL is the only flashing tape to pass hurricane level wind-driven rain testing. (ASTM E331-90, test method for water penetration of exterior windows.) Meets ASTM 2112. Meets or exceeds ICC Code Approval ESR1825.

PROPERTIES

Property	Value	Test Method
Color:	White	
Thickness:	25+ mils	
Tensile Strength:	975 psi	ASTM D412
Elongation:	over 500% (rubberized adhesive only)	ASTM D412
Moisture Vapor Transmission Rate:	0.01 perms max.	ASTM E96
Max. Exposure Time:	120 Days	

PRECAUTIONS

1. Rolling the BT25XL is essential to gain 100% surface contact of the BT25XL adhesive to the substrate and will minimize trapping air beneath the tape.
2. When Protecto Wrap's BT25XL is used as an air/vapor barrier, the dew point must be engineered to the exterior of the building.
3. Care should be taken not to leave the membrane exposed to direct sunlight for over 120 days.
4. Any caulking that contains solvents must not be used on or around the BT25XL membrane.
5. Do not stretch BT25XL. Stretching will adversely affect the adhesion of the product.
6. BT-Primer or Protecto-Tak Spray Adhesive must be used in applications with temperatures below 45°F (7°C).
7. BT-Primer or Protecto-Tak Spray Adhesive must be used on weathered surfaces, masonry, concrete and Dens-Glass Gold*, black sheathing board and OSB.
8. Some chemicals used in the production of OSB may adversely affect the adhesion of BT25XL. BT-Primer or Protecto-Tak Spray Adhesive will enhance the adhesion of BT25XL to OSB.
9. BT25XL must be stored in a location with temperatures above 50°F (10°C).
10. Protecto Wrap's EIFS Tape is recommended if stucco is to be applied directly to the air/vapor barrier.

Known for its outstanding performance qualities, vinyl siding is increasingly the material of choice for homeowners, remodeling contractors, architects, and builders. Compared to other siding products, vinyl is attractive, durable, easy to maintain, and cost-effective. Siding is available in a variety of textures, ranging from matte surfaces to deeply embossed wood grain surfaces, which simulate wood clapboard siding.

For best results, it is recommended that vinyl siding meet the requirements of the Vinyl Siding Institute Sponsored Certification Program. See www.vinyl-siding.org for a current list of certified products.



This manual sets forth the basic guidelines for vinyl siding installation. The instructions herein are based, in part, on ASTM Specification D4756, the standard method for installation of vinyl siding and soffit. Updated information has been added as necessary. Additionally, it is recommended that installers review applicable building codes for variations that may apply to specific products or geographic areas.

The method of applying vinyl siding and soffit is essentially the same for new construction and residing. However, where required, special instructions for new construction and residing are included, as well as recommendations for historic restoration. In all applications, care should be exercised to properly prepare the structure. See the Basic Installation Rules and additional details throughout this document for proper installation techniques.

This publication is not intended to provide specific advice, legal or otherwise, on particular products or

processes. Readers should consult with their own legal and technical advisors, building material suppliers, and other appropriate sources (including but not limited to product or package labels, technical bulletins or sales literature) that contain information about known and reasonably foreseeable health and safety risks of their proprietary products and processes. As the manufacturer of the vinyl siding we do not assume any responsibility for the users' compliance with applicable laws and regulations, nor for any persons relying on the information contained in this guide.

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The manufacturer has provided these suggested instructions as installation guidelines. The manufacturer, however, neither installs the panels nor has any control over the installation. It is the responsibility of the contractor and/or the installer to ensure panels are installed in accordance with these instructions and any applicable building codes. The manufacturer assumes no liability for either improper installation or personal injury resulting from improper use or installation.

Fire Safety Information

Vinyl building materials require little maintenance for many years. Nevertheless, common sense dictates that builders and suppliers of vinyl products store, handle, and install vinyl materials in a manner that avoids damage to the product and/or the structure. Owners and installers should take a few simple steps to protect vinyl building materials from fire.

To Home and Building Owners:

Vinyl siding is made from organic materials and will melt or burn when exposed to a significant source of flame or heat. Building owners, occupants, and outside maintenance personnel should always take normal precautions to keep sources of fire, such as grills, and combustible materials, such as dry leaves, mulch and trash, away from vinyl siding.

To the Building Trades, Specifiers, Professionals, and to Do-It Yourself Installers:

When vinyl siding is exposed to significant heat or flame, the vinyl will soften, sag, melt, or burn, and may thereby expose materials underneath. Care must be exercised when selecting underlayment materials because many underlayment materials are made from organic materials that are combustible.

It is important to ascertain the fire properties of underlayment materials prior to installation. All building materials should be installed in accordance with local, state, and federal building code and fire regulations.

Storage and Transportation

When transporting vinyl siding and accessories to the job site, make certain to keep the cartons flat and supported along their entire length. At the job site, take the following precautions when storing panels:

- Store the cartons on a flat surface and support the entire length of the cartons.
- Keep the cartons dry.
- Store the cartons away from areas where falling objects or other construction activity may cause damage.
- Do not store the cartons in stacks more than 6 boxes high.
- Do not store the cartons in any locations where temperatures may exceed 130° F (e.g., on blacktop pavement or under tarps or plastic wraps without air circulation).

Residing over Asbestos Siding

Asbestos siding is a regulated material and the appropriate environmental agency should be contacted before residing over this product begins.

The manufacturer has provided these suggested instructions as installation guidelines. The manufacturer, however, neither installs the panels nor has any control over the installation. It is the responsibility of the contractor and/or the installer to ensure panels are installed in accordance with these instructions and any applicable building codes. The manufacturer assumes no liability for either improper installation or personal injury resulting from improper use or installation.

1. Installed panels must move freely from side to side.
2. Do not stretch horizontal siding panels upward when applying: instead, push upward on the bottom of the panel you are installing, until the locks fully engage. Nail in place. Panels should hang without strain after nailing. Stretching the panel upward pulls the natural radius out of the panel and increases the friction of the locks.
3. Always nail in the center of the slot. **WARNING: Do not nail at the end of a slot!** Doing so will cause the siding panel to be permanently damaged. If you must nail near the end of a slot to hit a stud, etc., extend the length of the slot with a nail slot punch tool.
4. Do not nail tightly. Allow a minimum of $1/32$ " between the back of the nail head, screw or staple crown and the nailing strip. Nails or staples should be placed approximately 12" to 16" apart. Drive fasteners straight and level to prevent distortion and buckling of the panel. For fastening specs, see page 13.
5. Leave a minimum of $1/4$ " clearance at all openings and stops to allow for normal expansion and contraction. When installing in temperatures below 40° F, increase minimum clearance to $3/8$ ".
6. Do not caulk the panels where they meet the receiver of inside corners, outside corners, or J-Channel Trim. Do not caulk the overlap joints.
7. Do not face-nail or staple through siding. Vinyl siding expands and contracts with outside temperature changes. Face-nailing can result in permanent ripples in the siding.
8. Panels should be overlapped approximately 1". Fasten panels approximately 8" or more from the overlap seam for best lap appearance.
9. Avoid the use of unstable or uneven underlayment. Keep in mind that siding can only be as straight and stable as what lies under it. See Section "Preparing the Walls" for more information.
10. When installing shutters, cable mounts, etc., make sure screw hole in the siding is $1/4$ " larger than the attachment screw diameter. (Example: an $1/8$ " screw requires a $3/8$ " hole in the siding.) This will allow the panel to still expand and/or contract.
11. Never attach fixtures directly to panels. When attaching fixtures, first drill a hole in the siding $1/4$ " larger than the diameter of the fasteners, allowing for expansion and contraction. Note: Fasteners for fixtures must penetrate the solid substrate.



The beauty of vinyl siding is maintained with little effort. Although vinyl siding will get dirty, like anything exposed to the atmosphere, a heavy rain will do wonders in cleaning it. Or, it's possible to wash it down with a garden hose. If neither rain nor hosing does a satisfactory job, follow these simple instructions:



1. Use an ordinary, long-handled car washing brush. This brush has soft bristles, and the handle fastens onto the end of the hose. It allows the siding to be washed just like a car. Avoid using stiff bristle brushes or abrasive cleaners, which may change the gloss of the cleaned area and cause the siding to look splotchy.

2. When washing down your entire house, start at the bottom and work up to the top in order to prevent streaking. Rinse Cleaning Solution with water before it dries. If your house has brick facing, cover the brick so that it is not affected by the runoff.

3. Follow the precautionary labeling instructions on the cleaning agent container. Protect shrubs from direct contact with cleaning agents.

4. To remove soot and grime found in industrial areas, wipe down the siding with a solution made up of the following:

1/3 cup powdered detergent [(e.g. Fab®, Tide®, or equivalent powder detergent)]*

2/3 cup powdered household cleaner [(e.g., Soilax®, Spic & Span®, or equivalent)]*

1 gallon water

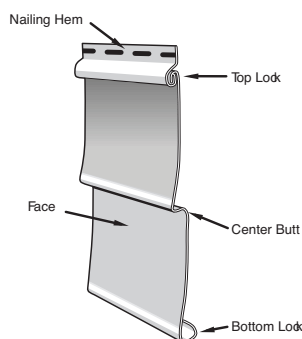
5. If mold and mildew are a problem, add one quart of liquid laundry bleach to the cleaning solution mentioned above.

6. For stubborn stains, use the chart on the right. (page 6)

• Cleaning materials are listed in alphabetical order. The manufacturer does not endorse proprietary products or processes and makes no warranties for the products referenced herein. Reference to proprietary names is for illustrative purposes only and is not intended to imply that there are not equally effective alternatives.

STAIN*Bubble Gum**Crayon**DAP [Oil-based caulk]**Felt-Tip Pen**Grass**Lipstick**Lithium Grease**Motor Oil**Paint**Pencil**Rust**Tar**Topsoil***CLEANERS***Fantastik[®], Murphy's Oil Soap[®],
or solution of vinegar [30 percent] and
water [70 percent]Lestoil[®]Fantastik[®]Fantastik[®] or water-based cleanersFantastik[®], Lysol[®],
Murphy's Oil Soap[®], or Windex[®]Fantastik[®], or Murphy's Oil Soap[®]Fantastik[®], Lysol[®],
Murphy's Oil Soap[®], or Windex[®]Fantastik[®], Lysol[®],
Murphy's Oil Soap[®], or Windex[®]Brillo[®] Pad or Soft Scrub[®]Soft Scrub[®]Fantastik[®], Murphy's Oil Soap[®],
or Windex[®]Soft Scrub[®]Fantastik[®], Lysol[®],
or Murphy's Oil Soap[®]**CAUTION:** Do not use or mix sodium hypochlorite with other household chemicals
or products containing ammonia. To do so will release hazardous gasses.

*Cleaning materials are listed in alphabetical order. The manufacturer does not endorse proprietary products or processes and makes no warranties for the products referenced herein. Reference to proprietary names is for illustrative purposes only and is not intended to imply that there are not equally effective alternatives.



Backerboard/Underlayment—a flat material used on the face of the house, between the studs and the siding, to provide a flat surface for the siding.

Bottom Lock—the bottom edge of a siding or a soffit panel, or accessory piece, opposite the nailing slots, which locks onto the preceding panel.

Channel—the area of the accessory trim or corner post where siding or soffit panel is inserted. Channel also refers to the trim itself, and are named for the letters of the alphabet they resemble (e.g., J-Channel, F-Channel, etc.).

Course—a row of panels, one panel wide, running the length of the house. Or, in the case of vertical siding, from top to bottom.

Drip Cap / Head Flashing—an accessory installed to channel water away from siding panels and sub-wall. Drip cap is often used on the tops of windows/doors and when transitioning from horizontal to vertical siding.

Face—refers to the side of a siding or soffit panel that is exposed once the panel has been installed.

Fascia Board—(sometimes referenced as a sub fascia) board attached to the ends of the rafters between the roofing material and the soffit overhang.

Fascia Cap—the covering installed on the fascia board.

Flashing—a thin, flat material, usually aluminum, positioned under or behind J-Channels, Corner Posts, Windows, etc., to keep draining water from penetrating the home.

Furring/Furring Strip—a wooden framing material, usually 1" x 3", used to provide an even nailing base. To “fur” a surface means to apply these strips.

H-Mold (Double Channel Lineal)—a siding accessory that joins the ends of vertical siding and soffit panels.

Housewrap—weather-resistant, breathable film used to cover wood underlayment prior to the installation of siding.

Lap—to overlap the ends of two siding panels or accessory pieces to join the panels/pieces and allow for expansion and contraction of the vinyl product.

Lug/Crimp—the raised “ears” or tabs on a siding panel, created by a snaplock punch, which can be used to lock a siding panel into undersill trim when the nailing hem has been removed.

Miter—to make a diagonal cut, beveled to a specific angle (usually 45°).

Nailing Hem (or Flange)—the section of siding or accessories where the nailing slots are located.

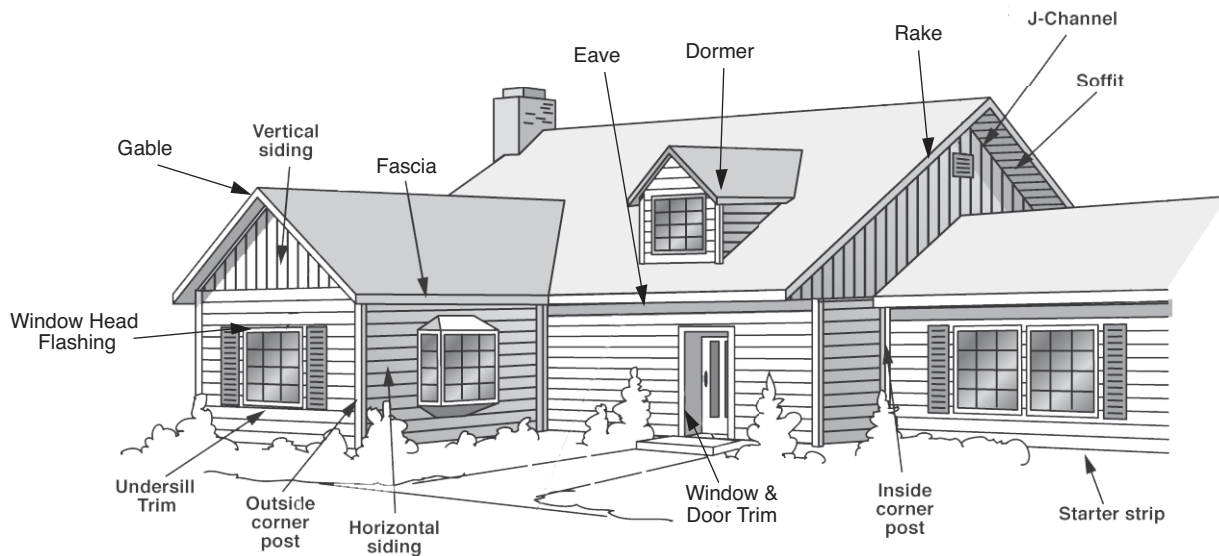
Plumb—a position or measurement that is truly and exactly vertical, 90° from a level surface.

Scoring—running a utility knife blade across a soffit or siding panel face without cutting all the way through the panel. This weakens the vinyl surface in a specific area and allows the panel to be bent and broken off cleanly.

Soffit—material used to enclose the horizontal underside of an eave, cornice or overhang.

Starter Strip—an accessory applied directly to the surface of the building and used to secure the first course of siding to the home.

Weep Holes—openings cut into the siding panel or accessories during the manufacturing process to allow for water runoff.



Outside and Inside Corner Post

Corner posts are used to provide a finished edge at an inside or outside corner. The siding from adjoining walls fits neatly into the inside or outside corner post channels.

NOTE: We produce various sizes of J-Channels and Corner Posts. Remember to order accessories of the proper size to accommodate the siding panels.

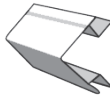
Trim and Molding

A complete line of accessories is used to give every installation a professional, weather-resistant appearance. Common accessories include Corner Posts, Starter Strips, F-Channels, Undersill Trim, and J-Channels (left). Each of these accessories will be addressed in more detail throughout this manual.

Inside Corner Post



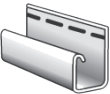
Outside Corner Post



Undersill Trim



J-channel



Starter Strip



F-channel

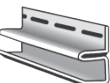


Fig. 1

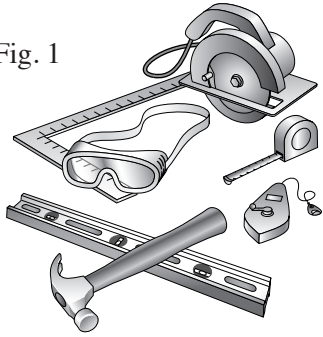


Fig. 2

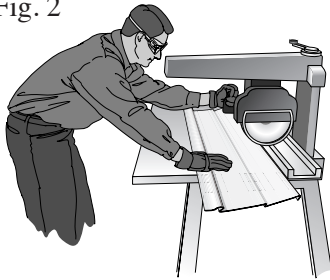
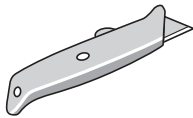


Fig. 3



Hand Tools

Common hand tools, such as a hammer, saw, square, chalkline, level, and tape measure are needed for proper installation (Fig. 1). Safety glasses are recommended for eye protection. Other basic tools include:

Power Saw

A bench or radial-arm power saw can speed the cutting of the siding. A finetooth blade (12 to 16 teeth per inch) should be used with the blade installed in the reverse direction. Some applicators prefer a hand-held power saw and a field-built cutting table. In extremely cold weather, move the saw through the material slowly to prevent chipping or cracking (Fig. 2).

NOTE: A saw blade set up in reverse direction should be used only for cutting vinyl. **DO NOT** attempt to use it on other materials such as wood, plywood, etc.

Utility Knife

Vinyl is easy to cut, trim and score with a utility knife or scoring tool (Fig. 3).

Tin Snips

Good quality tin snips and compound aviation-type snips will speed the cutting and shaping of the vinyl (Fig. 4).

Snaplock Punch

A snaplock punch is used to punch lugs in the cut edges of siding to be used for the top or finishing course at the top of a wall, or underneath a window (Fig. 5).

Nail Hole Punch

Occasionally, it may be necessary to elongate a nail slot. The hole is elongated to allow for expansion and contraction (Fig. 6).

Unlocking Tool (Zip-Lock Tool)

Remove or replace a siding panel with the unlocking tool. Insert the curved end of the tool under the end of the panel and hook onto the back lip of the buttlock. To disengage the lock, pull down and slide the tool along the length of the panel. Use the same procedure to relock a panel (Fig. 7).



Fig. 4

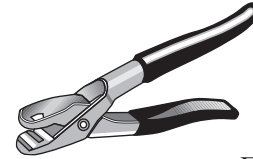


Fig. 5

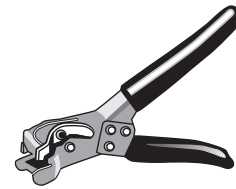


Fig. 6

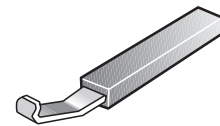
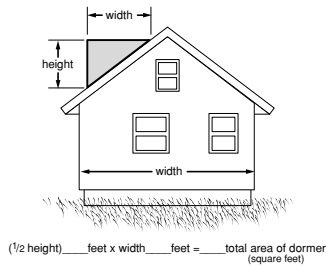
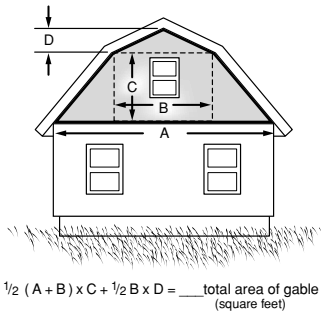
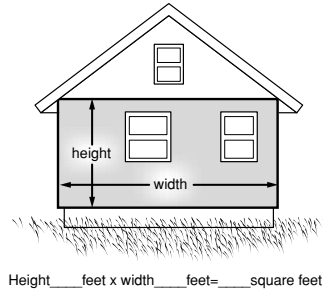
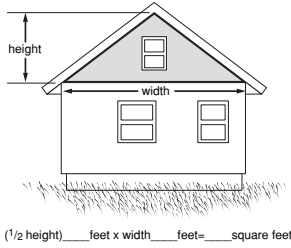


Fig. 7



1. All houses can be broken down into shapes of rectangles, triangles or a combination of both.

2. The area to be sided can be determined by measuring the height and width of the house, including windows (below).

3. Total all of the measurements for the areas to be sided. Windows and doors are not usually deducted. Including them will provide an allowance factor for waste. If the windows and doors are extremely large (such as garage or sliding glass doors), some deductions can be made. Dormers and gables are prone to material waste due to cutting and fitting.

4. To estimate the amount of starter strip required, measure the linear feet around the entire base of the house. When measuring linear footage, add a factor of 10 percent to allow for waste.

Use the following worksheet to estimate the required materials:

Siding Walls		___ square feet	
Gable ends		___ square feet	
Upper gambrel walls		___ square feet	
Total wall surface area		___ square feet	
Large areas not covered [garage doors/sliding doors]	<u>x0.50=</u>	___ square feet [A]	
Uncovered area		___ square feet [B]	
<u>Subtract B from A for</u>			
Total net surface area		___ square feet	
Soffit		___ square feet	
Porch Ceiling		___ square feet	
Accessories	Starter Strip	___ linear feet	
	Utility trim	___ linear feet	
Receiving channel	J-Channel	___ linear feet	
	Flexible J-Channel	___ linear feet	
	F-trim	___ linear feet	
	3 1/2" and 5" Window & Door Surround	___ linear feet	
Outside corners	Outside corner post	___ linear feet	
	Fluted corner trim	___ linear feet	
Inside corners	Inside corner post	___ linear feet	
	J-Channel	___ linear feet	
Other	Soffit cove trim	___ linear feet	
	H-molding	___ linear feet	
	Light blocks	___ linear feet	
	Width of accessory recess opening: [please circle one] 1/2" 5/8" 3/4" 1 1/8"		
Nails	Pounds required		
	Length [1 1/2" minimum]	___ pounds	
Tools needed	___ hammer	___ tin snips	___ chalkline
	___ utility knife	___ square	___ hacksaw
	___ nail hole punch	___ tape measure	___ level
	___ power saw	___ unlocking tool	
	___ snaplock punch	___ finetooth saw blade	

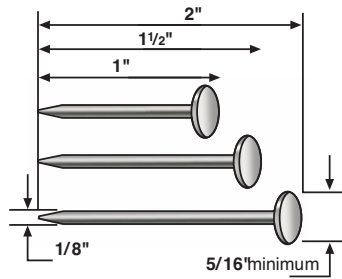
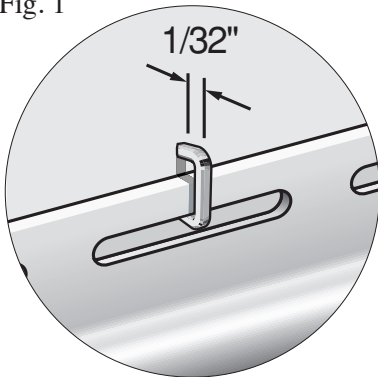


Fig. 1



Use aluminum, galvanized steel or other corrosion-resistant nails, staples or screws when installing vinyl siding. Aluminum trim pieces require aluminum or stainless steel fasteners.

Nails

Nail heads should be 5/16" minimum in diameter. Shank should be 1/8" in diameter.

Minimum nail lengths are as follows:

- 1 1/2" for general use
- 2" for residing
- 1" to 1 1/2" for trim

Screw Fasteners

Screw fasteners can be used if the screws do not restrict the normal expansion and contraction movement of the vinyl siding panel on the wall. Screws must be centered in the slot with a minimum 1/32" space between the screw head and the vinyl.

Screws should be:

- Size #8, truss head or pan head.
- Corrosion-resistant, self-tapping sheet metal type.

Staples

If staples are being used instead of nails or screws, they must be:

- Not less than 16-gauge semi-flattened to an elliptical cross-section (Fig. 1).
- Wide enough in the crown to allow free movement of the siding.
- 1/32" clearance between staple crown and nailing hem of the siding panel. Make sure to adjust staple gap to allow for 1/32" clearance.

**** All fasteners must be long enough to penetrate into the framing 3/4 of an inch.***

Vinyl siding can expand and contract 1/2" or more over a 12' 6" length with changes in temperature. Whether using a nail, screw or staple to fasten the siding, the following basic rules must be followed:

Step 1

Make sure the bottom lock of the panels are fully engaged along the entire length of the panel.

WARNING: Push the panel up fully but do not stretch the panel by pulling it from the top.

Step 2

Do not drive the head of the fastener tightly against the siding nail hem. Leave a minimum of 1/32" (the thickness of a nickel) between the fastener head and the vinyl. Tight nailing, screwing, or stapling will cause the vinyl siding to buckle with changes in temperature (Fig.1). If the head or crown contacts the vinyl panel it may "pimple" or distort due to heat build-up.

Step 3

After locking the panel, fasten the panel in the center, work in, to both ends. This method helps keep panels running straight.

Step 4

Nail 8" or more away from the end of a panel that will be overlapped with another panel. This will help the overlap appearance.

Center the fasteners in the slots to permit expansion and contraction of the siding (Fig. 2).

Step 5

Drive fasteners straight and level to prevent distortion and buckling of the panel (Fig. 3).

Step 6

Space the fasteners a maximum of 16" apart for horizontal siding panels, 12" apart for vertical siding panels, and 8" to 10" apart for the accessories.

Step 7

Start fastening vertical siding and corner posts in the top of the upper-most slots to hold them in position. Place all other fasteners in the center of the slots (Fig. 4).

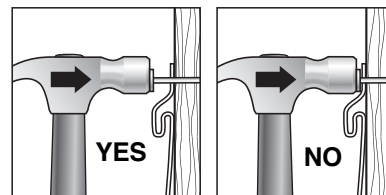


Fig. 1

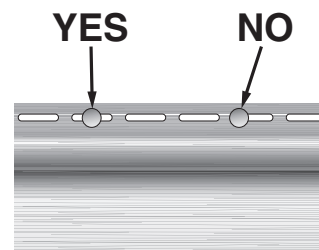


Fig. 2

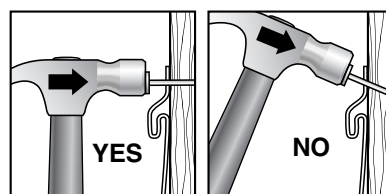


Fig. 3

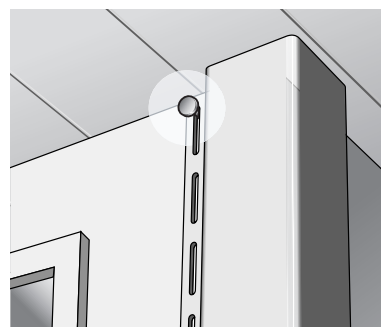


Fig. 4

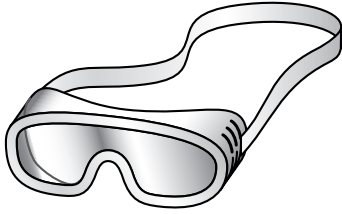


Fig. 1

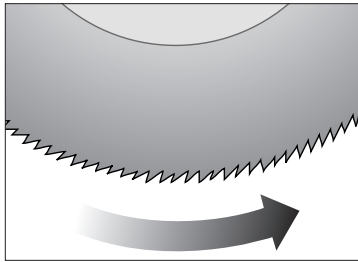


Fig. 2

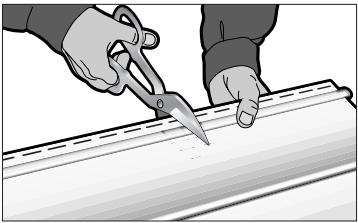


Fig. 3

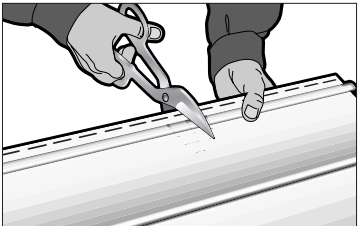


Fig. 4

When cutting vinyl siding, follow these guidelines:

Step 1

Safety goggles are always recommended for all cutting and nailing operations. As on any construction job, use proper safety equipment and follow safe construction practices (Fig. 1).

Step 2

With a circular saw, install the fine-toothed (plywood) blade backward on the saw for a smoother, cleaner cut. Cut slowly. Do not attempt to cut materials other than vinyl with a reversed direction saw blade (Fig. 2).

Step 3

With a utility knife or scoring tool, score the vinyl face up with medium pressure and snap it in half. It is not necessary to cut all the way through the vinyl (Fig. 3).

Step 4

With tin snips, avoid closing the blades completely at the end of a stroke for a neater, cleaner cut (Fig. 4).

Sheathing/Backerboard

Our vinyl siding should be applied over a sheathing that provides a smooth, flat, stable surface. Consult local building codes for sheathing requirements. Vinyl siding should never be applied directly to studs without sheathing. **We recommend that wood-based sheathings be protected utilizing moisture-resistant housewrap or building paper prior to the installation of the siding and accessories. Some building codes now require this protection.**

Flashing

Flashing, such as aluminum coil, roofing felt or house wrap, should be applied around windows, doors, other openings, inside and outside corners, and the intersection of walls and roofing to prevent water infiltration.

New Construction

Step 1

Make sure all studs are straight and true to avoid bulges or dips in the finished wall. Correct any bowed studs at this time.

Step 2

Make sure all sheathing is properly fastened to the framing according to building code requirements and/or the sheathing manufacturer's

recommendations.

NOTE: Sheathing behind vinyl siding must be smooth, flat, stable and appropriate for use on the type of construction being erected. Increasing requirements in building codes, especially in the areas of fire and wind resistance, make the appropriate choice and fastening of wall sheathing an important area of consideration. Check local building codes for the allowable type and thickness of sheathing that can be utilized on the type of structure being sided.

Step 3

Make sure subwall assembly is weathertight before applying siding. Vinyl siding and vinyl siding accessories alone do not constitute a waterproof installation. The combination of proper subwall preparation and siding installation result in the desired protection of the structure.

Wall sheathing should be weather-resistant, or covered with a weather-resistant barrier such as fanfold insulation, housewrap, or building paper. **Independent VSI studies indicate that the combination of a weather resistant barrier plus a housewrap result in improved weather performance of the vinyl siding.** Some building

code jurisdictions are currently requiring this protection.

A weather-resistant covering should be properly fastened according to the manufacturer's instructions, and be smooth and even. Flashing and caulking should be added as needed in areas such as windows, doors, and other openings to control moisture and to protect the subwall assembly.

WARNING: A smooth, flat, stable wall surface is necessary for the proper installation of vinyl siding. Waviness in the finished siding resulting from uneven or inadequate backerboard sheathing constitutes misapplication under the terms of the warranty.

TIP: Place the drywall in the house, on the floor of the room where it is going to be applied, prior to the installation of the siding when possible. This will help load the floor system and the floor band prior to applying siding. This can help reduce panel bulging in the floor band areas where compression and shrinkage typically occur.

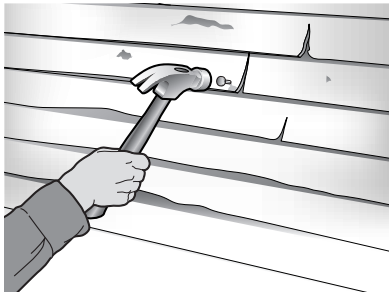


Fig. 1

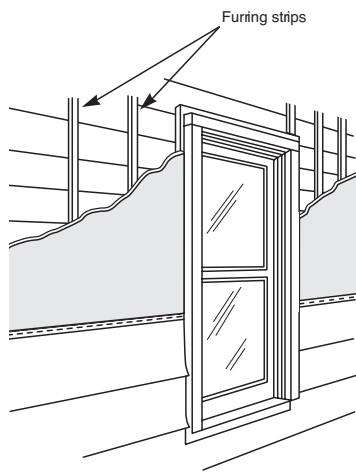


Fig. 2

Residing Existing Structures

Step 1

Nail down any loose boards on existing siding, and replace any rotten wood as needed. **DO NOT INSTALL VINYL SIDING OVER ROTTEN WOOD.** (See Fig. 1)

Step 2

Scrape off loose caulk and any other buildup that may interfere with the siding installation. Remove all items such as gutters, downspouts, and light fixtures as needed.

Step 3

Install suitable sheathing, as needed, to provide a smooth, flat, and stable surface for the installation of the vinyl siding. See information previously given in this segment for additional instructions on subwall protection and flashing.

Step 4

Install furring in areas needing straightening and leveling. Apply rigid sheathing to cover and level the furring strips. Do not apply vinyl siding directly to furring strips without sheathing, because the siding may conform around the furred areas causing an uneven appearance. (See Fig 2)

Step 5

Window and door casings may need additional attention or preparation. Depending on vinyl siding moldings being used, a window/door casing generally needs to extend out from the finished subwall sufficiently, to allow a J-Channel or similar molding to butt to it. In some situations, building out the casings, or using special purpose moldings such as Window and Door Surround may be necessary.

Over Masonry Sub-surface

A minimum 1" x 3" wood strips are installed with masonry nails over the masonry area to be sided (Fig. 1). For increased decay resistance, use pressure treated furring strips.

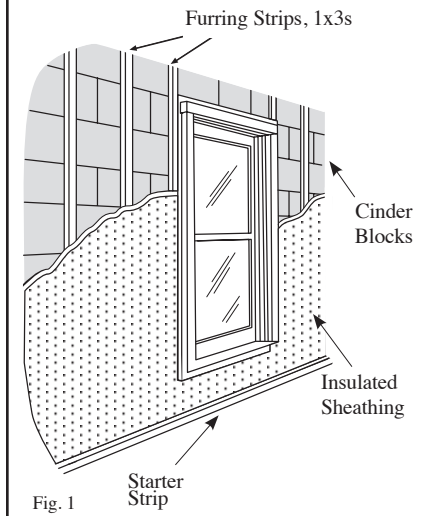
Step 1

For horizontal siding, strips should be installed vertically 16" on center. They should be installed completely around doors, windows and other openings, at all corners, and at the top and bottom of the area to be sided.

Step 2

For vertical siding, furring is essentially the same as for horizontal siding. Strips should be nailed horizontally 12" centers.

NOTE: Furring strips should be covered with insulated sheathing or the spaces between the furring strips should be filled in with insulated sheathing equal in thickness to the furring strips. This will provide an even wall surface for the siding and help avoid any waviness.



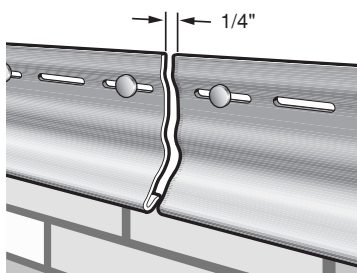


Fig. 1

Before the vinyl siding itself can be installed, a number of accessories must be installed first, including starter strips, corner posts, window flashing, trim and J-Channels.

Step 1

In order for the vinyl siding to be installed properly in a level fashion, the starter strip at the bottom of the wall must be level.

Step 2

The starting chalk line should be located so that it represents the top, not the bottom, of the starter strip.

Chalk lines are normally established from the lowest corner of the house. In situations where the ground at the corner of the house is not level, chalk lines must be measured from the soffit location to assure a uniform panel at the top of the walls.

Step 3

Attach a chalkline: go to the next corner and pull the line taut.

Step 4

Snap the chalkline and repeat the procedure around the entire house.

Step 5

Using the chalkline as a guide, install the top edge of the starter strip along the bottom of the chalkline, nailing at 10" intervals. Allow space for accessories (corner posts, J-Channels, etc.)

Step 6

Keep the ends of starter strips at least 1/4" apart to allow for expansion (Fig. 1).

Step 7

Nail in the center of the starter strip nailing slots.

Step 8

Starter strip fasteners should be driven just flush in the center of the slots to take out starter looseness, but should not be overdriven to where it indents the starter.

In most situations a typical starter strip is used to start the first course of siding. Special circumstances (panel application around decking, special roof lines and other unique applications) may require other techniques to secure the first panel locking leg. This can be accomplished in several manners (as illustrated in Figures 1 & 2).

Anytime a J-Channel is used as a starter strip it must have a $3/16$ " diameter hole drilled no greater than 24" on center to allow for water drainage.

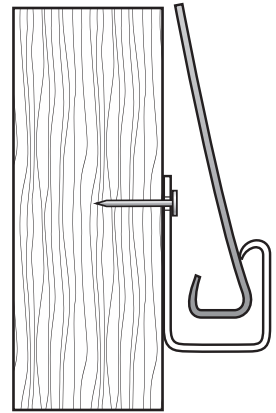


Fig. 1
Inside J-Channel

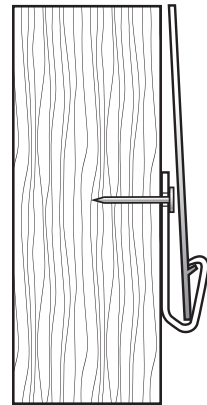


Fig. 2
Undersill with Snaplock

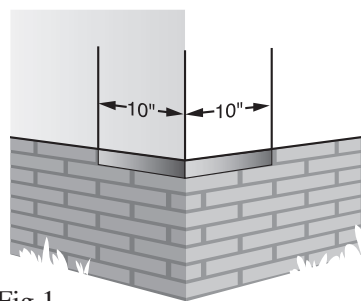


Fig. 1

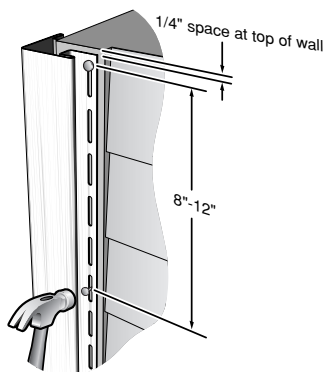


Fig. 2

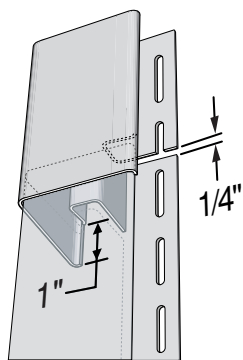


Fig. 3

Step 1

A water-resistant material should be used to flash the inside and outside wall corners a minimum of 10" on each side before installation of the corner posts. A housewrap would be an adequate flashing (Fig. 1).

Step 2

Place the corner post in position, allowing a 1/4" gap between the top of the post and the eave or soffit (Fig. 2).

NOTE: If vinyl or aluminum soffit will be installed, either install prior to corner post installation or allow for soffit and accessory thickness when positioning the height of the corner.

Position a nail at the top of the upper slot on both sides of the corner post, leaving a 1/32" gap between the nail heads and the corner post nailing hem. The corner post hangs from these nails. The balance of the nailing should be in the center of the slot, 8" to 12" apart, again leaving 1/32" between the nail head and the corner post. This allows for the expansion and contraction to occur at the bottom. The corner post should extend 3/4" below the starter strip. Make sure the posts are vertically straight and square.

Do not nail corner post tight.

Step 3

If more than one length of corner post is required, overlap the upper corner post over the lower corner post.

Splicing Outside Corner Post

Remove 1" from the nail hem and receiving channel of the bottom end of the top piece. Position uncut top end of lower post under bottom edge of upper post allowing a 1/4" gap at the nail for expansion and contraction. (Fig. 3).

Splicing Inside Corner Post

Cut 1" off all but the outer face of the upper portion of the bottom corner post. (Fig 4) Lap 3/4" of the upper post over the lower post, allowing 1/4" for expansion.

This method will produce a visible joint between the two posts, but will allow water to flow over the joint, reducing the chance of water infiltration.

Capping a Corner Post

Step 1

Corner posts on homes with a second-story overhang need to be capped by making the cuts shown. Allow approximately 2" extra length on the corner post. Trim away everything except the 2 faces. Fold the flaps created over each other as indicated (Fig. 5).

Step 2

Drill a 1/8" hole in the center through both layers of vinyl, and install a pop rivet to hold them in place. Cut a notch in both layers to allow clearance for the corner (Fig. 5).

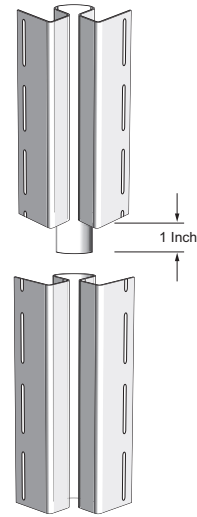


Fig. 4

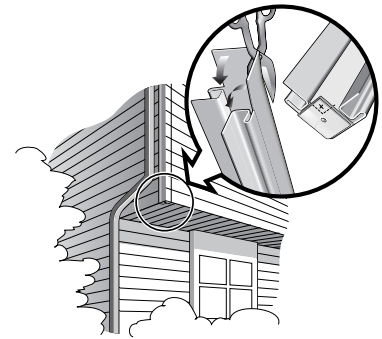


Fig. 5

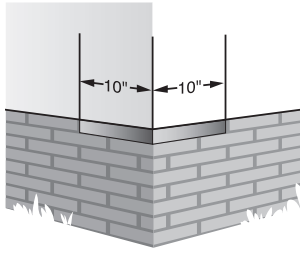


Fig. 1

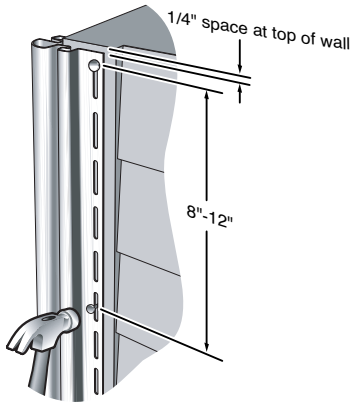


Fig. 2

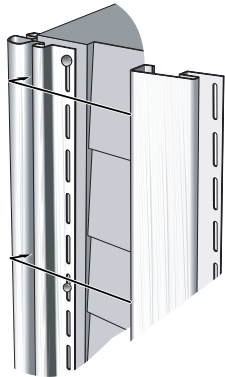


Fig. 3

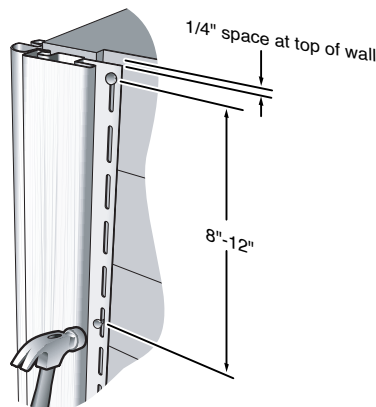


Fig. 4

Step 1

A water-resistant material should be used to flash the inside and outside wall corners a minimum of 10" on each side before installation of the 3-piece corner system (Fig. 1).

Step 2

Place the Decorative Corner Starter on the outside wall corner, allowing a 1/4" gap between the top of the post and the eave or soffit, and extending 3/4" below the siding starter strip. Cut to length (Fig. 2).

Position a nail at the top of the upper full slot on both sides of the Decorative Corner Starter, leaving a 1/32" gap between the nail heads and the corner post nailing hem. The Decorative Corner Starter hangs from these nails. The balance of the nailing should be in the center of the slot, 8" to 12" apart, again leaving 1/32" between the nail head and the Decorative Corner Starter. This allows for proper expansion and contraction clearance. Make sure the Decorative Corner Starter is installed vertically straight and true.

Do not nail corner post tight.

Step 3

For typical installations, cut two 3-1/2" or 5" Window & Door Surround lineals to the same length as the Decorative Corner Starter. Snap the locking side of a Window & Door Surround into one side of the receiving lock section of the Decorative Corner Starter (Fig. 3). Repeat the procedure for installing the other Window and Door Surround.

Step 4

Make sure that all 3 parts are fully locked and line up evenly at the top and bottom. Fasten the Window & Door Surround lineals to the wall following the same nailing procedures outlined in Step 2 (Fig. 4).

Lineals

Step 1

Create a watertight seal:

Apply a 1/8" bead of caulk around the perimeter of the window or door frame before installation.

Apply caulk around the corner of the nail fin and where the window or door meets the sheathing.

Measure the width of the top of the frame and cut a piece of starter strip 1/8" less than the frame. (Fig.1)

Step 2

Butt the starter strip against the opening, center it and nail every 8" to 12" being sure to nail in the center of the nailing slots.

(Starter strips are available for both new construction and remodeling applications.)

Continue to measure and cut starter strips for the other sides of the frame. Be sure to cut starter strips 1/16" less than each measurement. (Fig.2)

Step 3

Install the starters. For vertical starter strips, nail the first nail in the upper most edge of the first slot. All other nails should be centered in the slots every 8" to 12". (Fig.3)

Step 4

Measure and cut the lineals. For 3-1/2" lineals add 7" to your measurement in order to accommodate their widths at corners. For 5" lineals, add 10".

Lineals should be installed in the following order: top, sides, bottom. (Fig. 4)

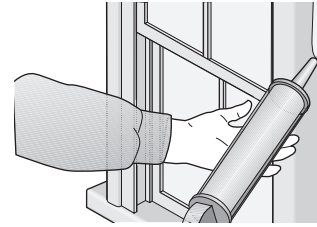


Fig.1

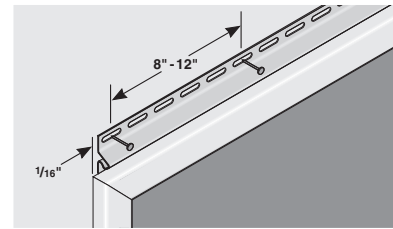


Fig. 2

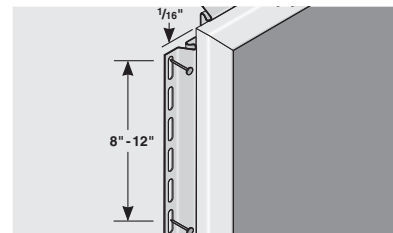


Fig. 3

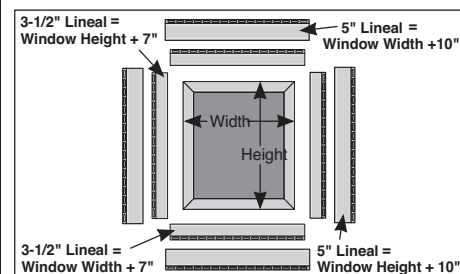


Fig. 4

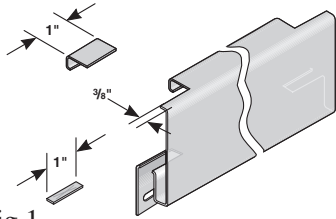


Fig. 1

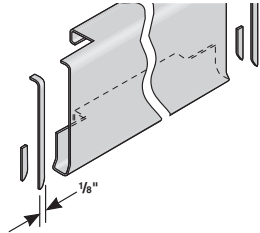


Fig. 2

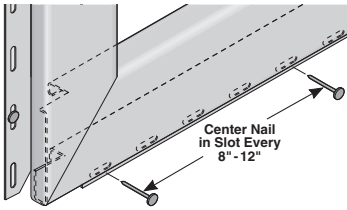


Fig. 3

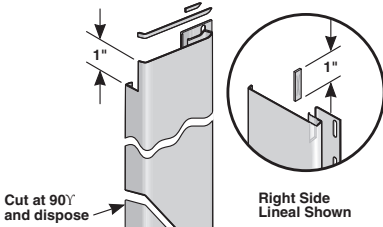


Fig. 4

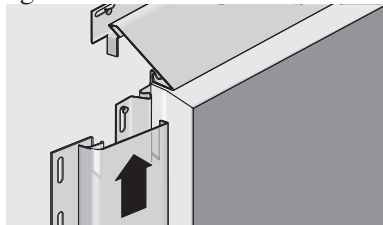


Fig. 5

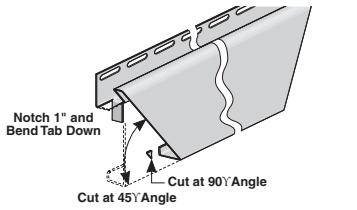


Fig. 6

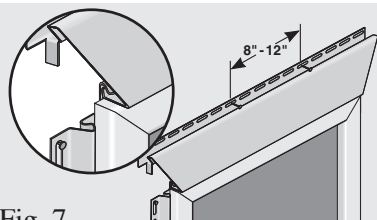


Fig. 7

To install the bottom lineal

Cut a notch on each side of the back of the lineal as shown. Cut a 1" notch out of the nailing hem side. (Fig. 1)

Make a 1/8" curved sliver cut on the bottom front of the lineal. Push the locking leg of the lineal into the channel of the starter.

Nail the bottom lineal into place only after the side lineals are installed.

Work the bottom lineal into place by flexing the material to fit it together with the side lineals, lapping the side lineals over the bottom lineal.

Complete by nailing the bottom lineal every 8" to 12" with nails centered in slots. (Fig. 2 & Fig. 3)

To install side lineals

Cut a 1" notch off the legs for the top of the lineal and a 45° miter cut for the bottom. Cut a 1" notch out of the nailing hem side. Make curved sliver cuts on the top of the lineal. *NOTE: Right and left lineals should have opposite cuts.* (Fig. 4)

Push side lineals into the channel of the Starter about 2" down from the header and slide the lineal into place.

Fit tabs of the header lineal down into the side lineals.

Nail top nail of the side vertical lineal into the top of the slot, then nail lineals into place every 8" to 12" with nails centered in slots. (Fig. 5)

To install the top lineal...

Miter each end of the lineal at a 45° angle. Notch the channel 1" to form a flap and bend it down (do this on both ends) (Fig. 6)

Push the locking leg of the lineal into the channel of the starter and center it above the frame. Nail every 8" to 12" with nails centered in slots of lineal. (Fig. 7)

Window Mantels

Standard Length Mantels

Locate the centerline of where the mantel will be installed. Measure to each side of the centerline as specified for each length mantel (see chart below).

<u>Mantel Length</u>	<u>Measurement</u>
36"	16-5/8"
40"	18-5/8"
44"	20-5/8"

Scribe a vertical line approximately 6". These lines will correspond to the locking legs on the back of the mantels. Install 2 mounting clips to each line with the bottom of each clip at least 2" above the bottom of the mantel, and the top of the other clip no higher than 4-3/4" above the bottom of the mantel. (Fig.1)

Position the mantel over the clips and snap into place. (Fig.2)

NOTE: When applying clips over beveled siding, you will have to shim and/or bend the top of the clips to keep the clip throats the same distance from the wall.

To Install End Caps

(For non-standard window sizes.)

Cut the window mantel to the required length minus 3/8". **NOTE:** The cut on a mantel with dentil blocks must be 1/8" to the right (facing the mantel) of a full dentil block. Clean any shavings or grit from the cut end(s). Insert the end cap into the mantel and mark the mantel on the inside. Remove the end cap and spread adhesive on both the

lip of the end cap and the end of the mantel where marked.

Insert the end cap into the mantel and clamp each side. Allow 10 minutes for drying and then install the mantel into place as described above. (Fig.3)

To Shorten a Mantel

Determine length and make two cuts to remove excess material from the center of the mantel. Be sure to cut through the center of the dentil blocks.

Turn the mantel sections face down. Drill a 3/16" hole in the second indented hole marker 2-3/4" from the cut edge of both mantel sections. Place mantel overlay face down under the cut and drilled mantel sections. The mantel overlay screw bosses will align with the 3/16" drilled clearance holes. A paper pattern is included to locate screw location. Fasten together with #8x1/2" self-tapping screws.

NOTE: Mantels must be installed directly over brick or stucco siding. If vinyl siding is to then be applied, panels will have to be cut to fit around the end caps. Mantels can also be installed in remodeling applications over vinyl siding.

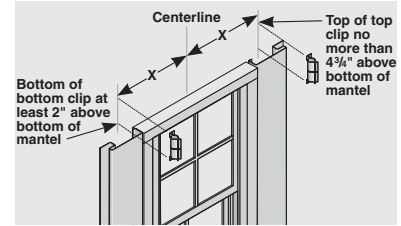


Fig.1

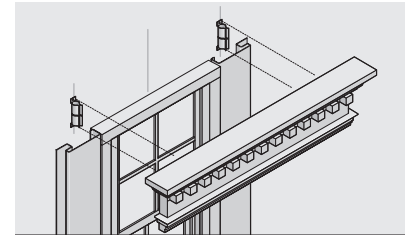


Fig.2

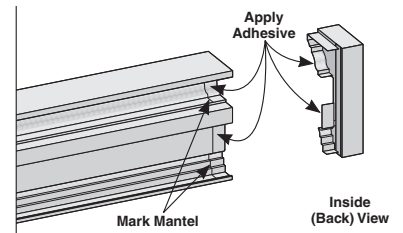


Fig.3

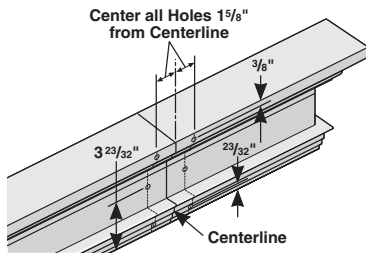


Fig. 1

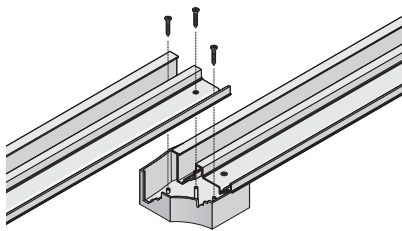


Fig. 2

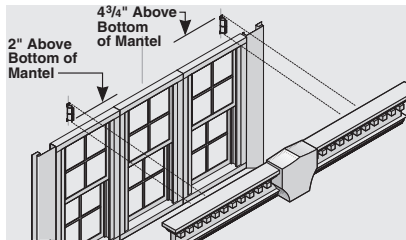


Fig. 3

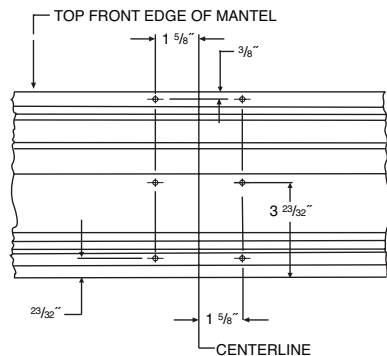


Fig. 4

To Install a Keystone (to shorten or lengthen a mantel)

NOTE: Mantel keystones can be purely decorative, or can be used to modify mantels.

Determine the length of mantel necessary. Using this measurement, cut two equal pieces of the mantel (each will be one-half the length of the required total length). (Fig. 1)

Clean the cut ends.

Drill three holes $3/16"$ in diameter into each mantel piece spacing holes $1-5/8"$ from the centerline (along the cut ends of the mantels). (Fig. 4)

If placing mantel keystone over dentil blocks, you may need to cut away a thin section on both sides of mantel to accommodate keystone over dentil blocks.

Place keystone face down on clean work area. Insert one mantel section into keystone and align drilled holes with molded screw bosses in keystone and fasten with three screws. Insert and fasten second mantel section with three screws. (Fig. 2)

To set clip locations when mantel has modified or cut, measure from new mantel cut centerline to the locking legs. Install clips as described.

Install clips to wall. You must determine the distance to place clips from the center of modified mantel. (Fig. 3)

To stabilize the mantel system, it is recommended that a piece of fitted plywood be screwed into the back of the mantel system behind the keystone.

Install mantel as described in Standard Mantel installation.

Long Length Mantel System

NOTE: If installing mantel over existing siding or masonry surfaces, use brick end caps. If installing new siding, the mantel system should be installed using siding end caps with integrated J-Channels before the siding is applied.

Determine the type of siding accessory to be used around opening. When using a standard J-Channel, cut the mantel to the width of the opening. (Fig.1)

When using a 3-1/2" window and door casing lineal, determine the width of the opening and add 5", then cut the mantel.

When using a 5" corner lineal, determine the width of the opening and add 8", then cut the mantel.

Clean the cut ends of the mantel. (Fig.2)

Insert the end cap into the mantel and mark the end cap with a pencil. Remove the end cap.

Spread a thin coat of styrene adhesive (included with caps) onto the end cap. **CAUTION: Contact with styrene adhesive will cause painted surfaces to smear.** (Fig. 3)

Install mantel end caps to both sides of the mantel. Allow adhesive to set 10 minutes using clamps to hold end caps in place.

Before installing the mantel, apply a 1/4" caulking bead along the back edge of the window/door framing, and on the backside perimeter of the mantel and end caps.

Center the mantel with attached end caps over the frame and fasten through the pre-drilled holes, using screws/washers provided. (Fig.4)

Install cover strip onto the mantel. (Plain & dentil cover strips are available.) (Fig.5)

NOTE: When installing dentil cover strip, it may be necessary to trim cut from both ends to center the dentil blocks on the mantel.

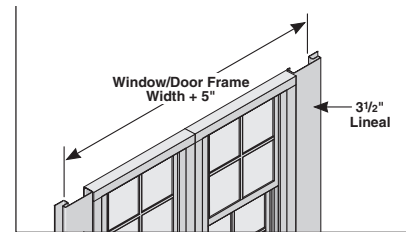


Fig. 1

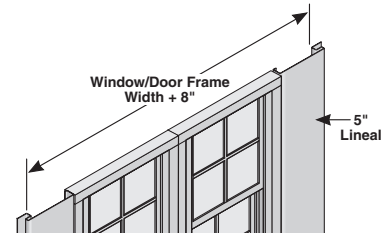


Fig. 2

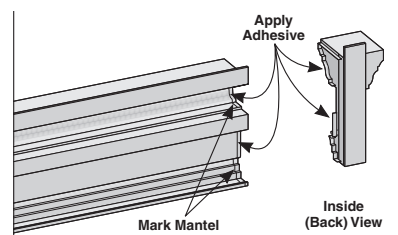


Fig. 3

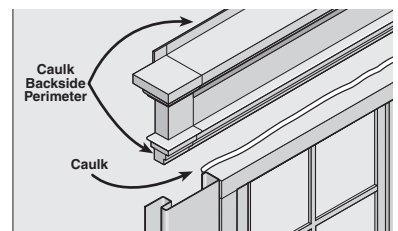


Fig. 4

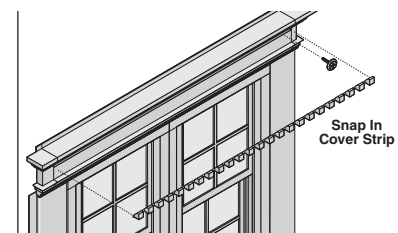


Fig. 5

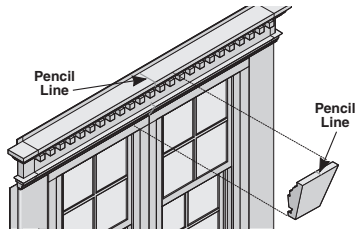


Fig. 1

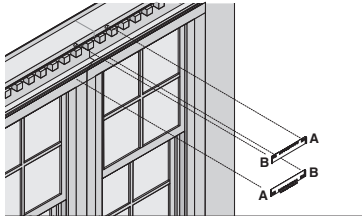


Fig. 2

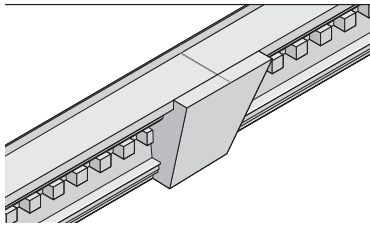


Fig. 3

Installing Long Length Mantel System Keystones

With the mantel already mounted to the wall, pencil a centerline on the top and bottom of both the mantel and keystone.

Using the drill jig provided with the keystone, place on the mantel's top edge and align slotted holes over the penciled centerline on the mantel.

Drill 1/4" holes through hole pattern of drill jig. Repeat second set of holes on bottom edge of mantel. (Fig.1)

Install the keystone clips making sure end "A" is inserted first, then snap in end "B".

Slide clip back 1/16" to ensure clamping legs are fully locked into place. (Fig.2)

Position the keystone using the centerline as the guide and snap it into place starting at one end of the top of the keystone. You may need to trim the sides of the keystone when using dentil cover strips. (Fig.3)

NOTE: When installing keystone over two-piece mantel, make sure mantel pieces are cut to equal lengths. Use the cut ends to form the centerline for clips and keystone. Caulk bottom ends then install.

Installing Over Brick or Existing Siding

To apply on brick or over other existing siding materials, cut mantel to desired length, allowing for brick end caps.

Clean cut ends, insert with adhesive and allow to dry as described in “Long Length Mantel System.”

Score the groove on back of mantel 3-5 times with utility knife and snap off mantel’s top flange.

Secure mantel to wall with anchors, screws and washers provided.

Install cover strip or dentil cover strip as described in “Long Length Mantel System.”

For keystone installation, see Installing Long Length Mantel System Keystones. (Fig.1)

*Siding Applications**Installing Accessories Over Top of Mantel*

1. Use J-Channel for vertical siding or horizontal panel applications.
2. Use dual utility trim for a Dutch lap applications.
3. Use finish trim for regular panels. (Fig. 2)

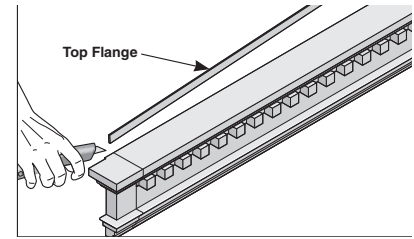


Fig.1

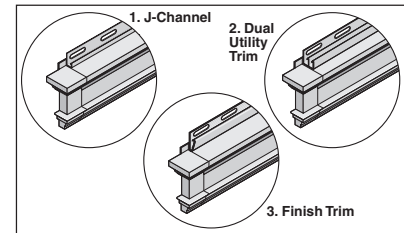


Fig. 2

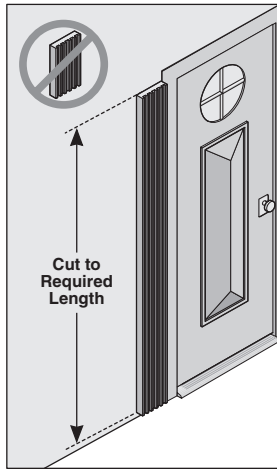


Fig.1

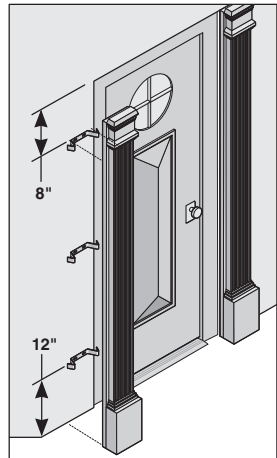


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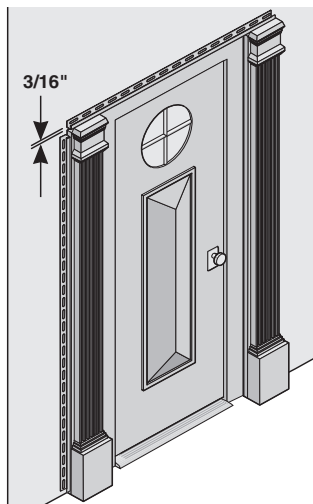


Fig. 3

Door Surrounds

Installation of Pilasters on Brick, Stucco or before vinyl siding.

Measure and cut pilasters to the required length. (Fig. 1)

To attach pilaster caps, use template enclosed in the carton. Mark and drill holes into back of pilasters (use 3/16" drill bit). **IMPORTANT:** When installing during new construction before vinyl siding, use lower set of holes on the template. This will ensure that the caps will sit 3/4" above the top of the pilasters. Attach caps to pilaster using 4 screws (enclosed).

To attach pilaster bases, use template enclosed in the carton. Mark and drill holes into back of pilasters (use 3/16" drill bit). Attach caps to pilaster using 4 screws (enclosed). (Fig.1)

Attach mounting clips and pilasters (three sets for 96" and four sets for 144") by locating top clips 8" from top and bottom clips 12" from the ground. Space third set at mid-point for 96" pilasters. Evenly space the other two sets for 144" pilasters. If

the clips are being applied to beveled wood or vinyl siding, bend the two tabs on the clips so that the clips are installed in a vertical position.

Locate clips 1/8" from door trim. Attach the clips onto the substrate with two screws (enclosed).

Place pilasters over clips and snap into place. (Fig. 2)

Installation With Vinyl Siding

Follow Installation of Pilasters and then install J-Channels around the pilasters.

Make sure to allow a small gap (3/16") between the top of the pilasters and the top J-Channel to allow the pilaster to expand.

Install vinyl siding, completing the wall before installing the top mantel. (Fig.3)

Installation of Mantel Full Length-Mantel

Develop a chalk line that represents the bottom of the mantel. Mark the center of the mantel on the chalk line.

Mark 17-11/16" from both sides of centerline. Draw an 8" vertical line at both marks.

Attach two clips on both lines. Make sure that both clip throats fall in the area that is 3-1/8" to 7-3/8" from the chalk line. When applying on beveled siding you will have to shim and or bend the top of the clips to keep the clip throats the same distance from the wall. (Fig.1)

Place locking legs over the four clips and snap into place. *NOTE: In new construction applications using vinyl siding, the mantel will sit on top of the cap. In all other situations the mantel will sit on the pilaster behind the cap.* (Fig.2)

Modified Length-Mantel

To lengthen a mantel, cut the ends off two mantels. The mantels should be equal in length and must span the required distance. (Fig. 3)

To shorten a mantel, cut out a center piece to make two equal size mantels totaling the required length.

Place the two cut mantels face down and locate hole for mantel overlay. From centerline (cut edge) of mantels measure over 2-3/4", and from top of mantels measure down 4-1/8". At these locations, drill one 3/16" hole into each mantel piece. Place mantel overlay face down located under the two mantel sections. Make sure to tightly butt the two mantel parts and then fasten the two mantels to the overlay with two #8x1/2" screws (provided). (Fig. 4)

To stabilize the system (especially longer lengths) it is recommended that you screw a 6" by 7-3/4" piece of plywood centered into the back of the two mantels. This will eliminate sagging.

To install clips and mount the mantel system to one of the locking legs to determine the location of your clips. *NOTE: Seal gaps at top of mantel if Pediment / Urn system is not used.* (Fig. 5)

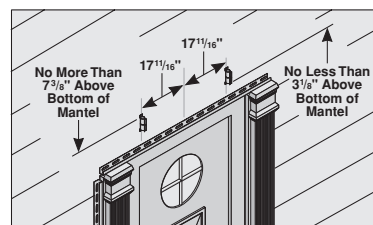


Fig.1

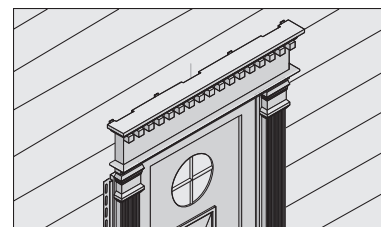


Fig. 2

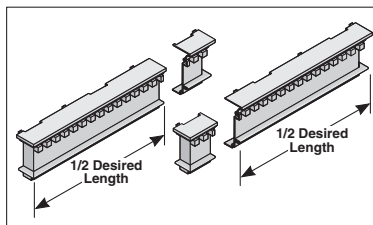


Fig. 3

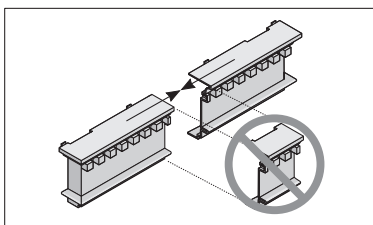


Fig. 4

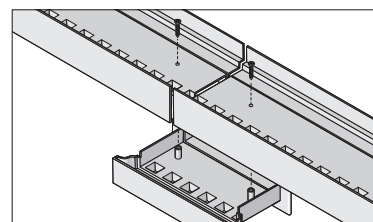


Fig. 5

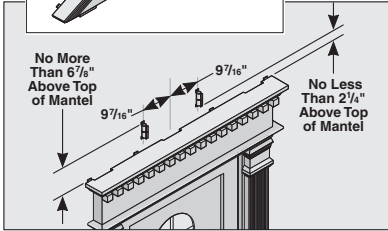
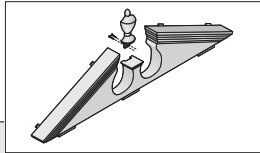


Fig. 1

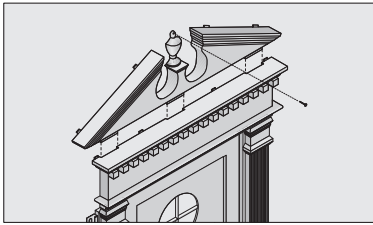


Fig. 2

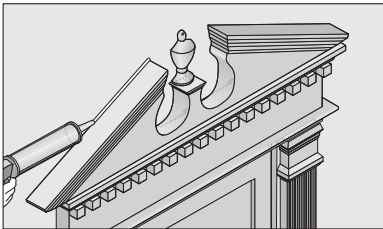


Fig. 3

Pediment and Urn Installation (Fits Standard Size Mantel Only)

Attach urn to pediment by sliding urn into place from back. Fasten with #8x1/2" self-tapping screws.

Measure 9-7/16" to each side of the mantel center line and scribe a vertical line approximately 8" long.

On each side of the lines, install two clips. Be sure the bottom of the bottom clip throats are located at least 2-1/4" above the top of the mantel and the top of the top clip throat is no higher than 6-7/8" above the top of the mantel. (Fig. 1)

Position the pediment over the mantel by inserting the three male lugs on the bottom of the pediment into the matching slots in the top of the mantel.

Align the ribs over the clips and snap into place.

Secure the top of the urn to the wall by nailing through nail hole in urn. (Fig. 2)

With brick or stucco walls, caulk space between top of pediment and wall and other places where water seepage is possible. (Fig. 3)

Window Trim Capping

Measure the required dimensions to cover window trim. Also, determine the required lengths of trims.

Cut trim sheet to the measurements and form each sheet on a bending break. (Fig.1)

Trim sheet should be installed in the following order: bottom, sides, top.

Place the trim sheet on the window frame and mark it for cutting.

Create tabs into the trim sheet (both ends of bottom piece and tops of both side pieces) so that it covers the edge areas.

Miter the bottom of the side pieces and both ends of the top piece. (Fig. 2)

Nail into place using painted aluminum or stainless steel trim nails. Pre drill nail holes and do not nail tight. The top piece should be the last section to be nailed into place. (Fig. 3)

NOTE: Dissimilar Materials: Direct contact of aluminum products with certain dissimilar materials, or contact with water run-off from dissimilar materials, is likely to result in corrosion. Accordingly, care should be taken during installation to avoid such contact of aluminum with dissimilar materials including dissimilar metals (e.g. copper, zinc, steel, etc.), concrete, stucco, asbestos siding, pressure treated/pretreated lumber, masonry, roofing materials or roofing systems containing metallic granules or strips, or corrosive non-metallic materials.

A barrier must be used to separate trim from any pre-treated lumber. Optional barriers include: plastic, house wrap, roofing felt, foam, or a high quality primer or paint.

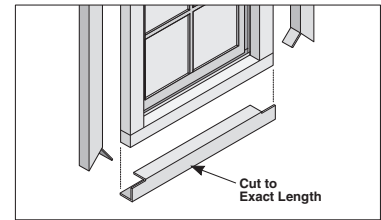


Fig.1

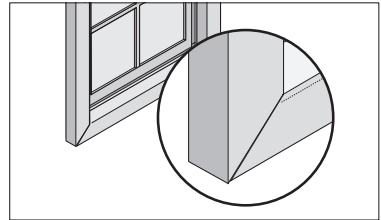


Fig. 2

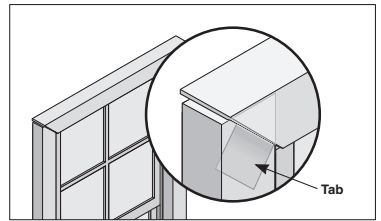


Fig. 3

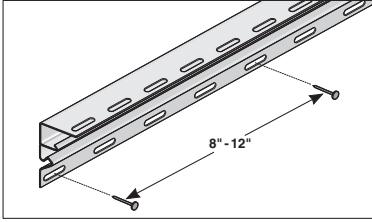


Fig. 1

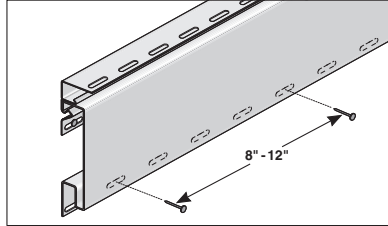


Fig. 2

Lineals

Choose either a 3.5" or 5" lineal, depending on the look you want to achieve.

At Eave or Gable, butt the small leg of the starter against, but not under the J-Channel that was installed to receive the soffit.

Nail the starter in place every 8" to 12" with nails centered in nailing slots. (Fig.1)

Push the locking leg of the lineal into the starter channel.

Nail the Lineal in place every 8" to 12" with nails centered in nailing slots.

Install utility trim into the lineal receiving channel, making sure to align nail slots with lineal nail slots.

Install last course of siding. (Fig. 2)

In some situations you may have to shim the utility trim or you can use a Double utility trim.

Band Board Installation

Option 1: Choose either a 3.5" or 5" lineal, depending on the look you want to achieve.

For easy installation (when possible), lock the lineal onto the last full course of siding.

Nail every 8" to 12" with nail centered in the nailing slots.

A drip cap must be installed along with a starter strip or J-Channel to receive the 1st course of siding above the lineal. (Fig. 4, 5 & 6)

The drip cap should be formed so that it extends up the wall 4" and extends over the face of the lineal by 3/4". (Fig. 4)

Proceed with standard panel application by installing the siding into the lineal J-Channel.

Option 2: (Fig. 2) & (Fig. 3)

Determine the location of the band board in relation to the siding making certain it does not interfere with the butt of the siding panel.

Strike a chalk line and install utility trim along the line nailing every 8" to 12" with nails centered in the nailing slots.

Lock the band board into the utility trim and nail every 36". (Fig. 2)

Once the band board is in place, install another piece of utility trim by aligning the nails slots of the finish trim with the band board lineal. You may have to shim the utility trim. Nail every 8" to 12".

To install siding panels, use a snap-lock tool to create tabs in each panel and install them into the utility trim. (Fig. 3)

Once the siding is in place, install a drip cap (field or factory formed) on top of the band board lineal to prevent water intrusion. (Fig. 4)

Finally, for horizontal siding applications, install a universal starter strip over the drip cap nailing every 8" to 12" centered in slots. Make sure to attach starter strip 1/4" above drip cap to allow siding to lock. (Fig. 5)

For vertical siding applications, install a J-Channel over the drip cap and proceed with standard panel application.

Drill 1/8" holes in base of J-Channel every 24" to allow for water to run off. (Fig. 6)

continued on next page

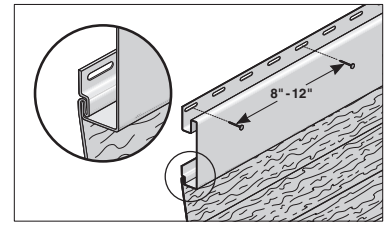


Fig. 1

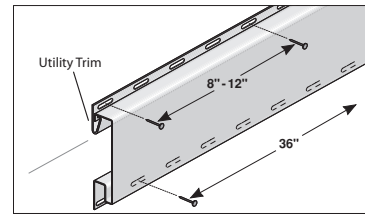


Fig. 2

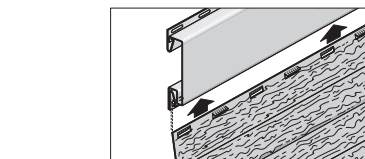
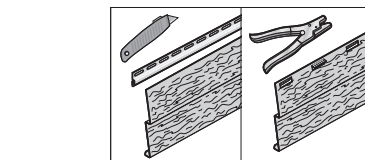
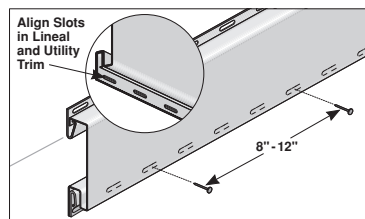


Fig. 3

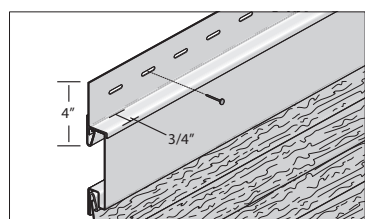


Fig. 4

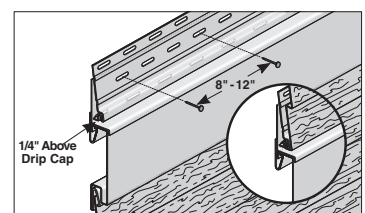


Fig. 5

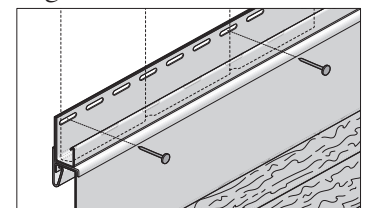


Fig. 6

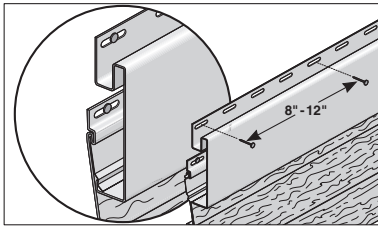


Fig. 1

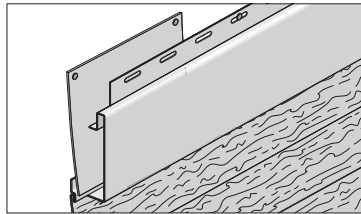


Fig. 2

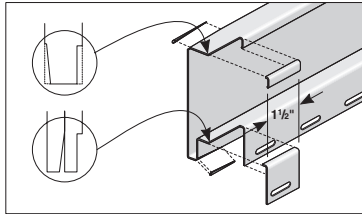


Fig. 3

Option 3:

Determine the band board location.

Install siding to that location and then install the band board. Nail every 8" to 12" with nails centered in slots.

Utilize field form aluminum to adjust the location of the lineal at the desired height.

Proceed with standard panel application for vertical or horizontal siding. (Fig. 1)

Overlapping Lineals

Notch the back legs of the lineal to be overlapped by making a series of cuts as indicated in the diagram.

Cut a tapered notch into the radius at the top and bottom of the lineal on the end to be overlapped.

Slip the un-notched lineal 1" over the notched lineal, leaving 1/2" for expansion. (Fig. 3)

NOTE: For best appearance, be sure the overlaps are away from the direction that the house is most commonly viewed.

Dentil Molding

Vinyl Siding

Snap a chalk line 6-1/2" down from the soffit panel location (chalkline.) (Fig.1)

Prepare the dentil molding either by cutting the soffit flange to create a tab, or by removing a portion of the upper soffit flange and slotting. Center of slots should be spaced 16" apart. (Fig. 2)

Butt the dentil molding to the chalk line and nail into place every 16".

If siding panels are to be terminated with finish trim to complete sidewall application, dentil mold should be slotted and nailed prior to final course of siding. Cover slots with utility trim. (Fig. 3)

Brick, Stucco or Masonry Installation

If a nailable, flat surface is not available, dentil mold can be applied as a decorative element by placing bottom edge of dentil mold into utility trim and nailing tabs to a 1"x6" or 1"x8" board. (Fig. 4)

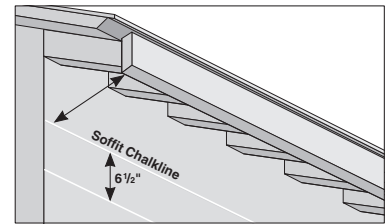


Fig.1

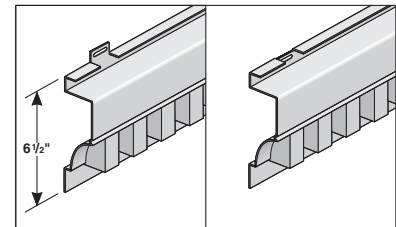


Fig. 2

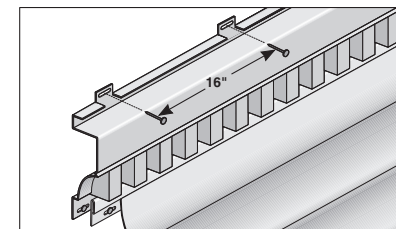


Fig. 3

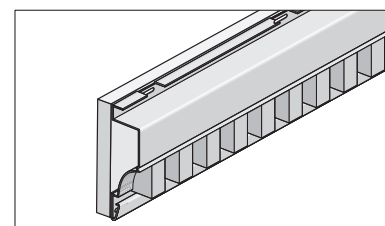


Fig. 4

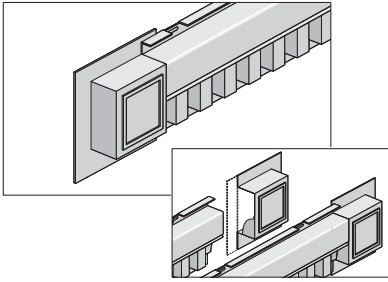


Fig. 1

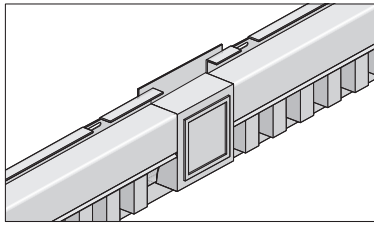


Fig. 2

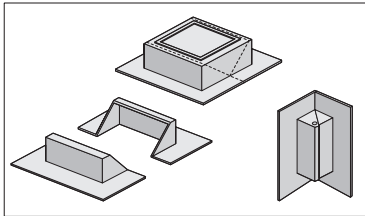


Fig. 3

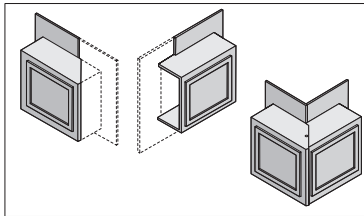


Fig. 4

Dentil Blocks

Dentil blocks finish dentil molding and can be installed at the ends, center, corners or the outside.

To install at ends, position the dentil-molding flange and trim as indicated in the illustration. (An option to installing at the end position is to scribe a line onto the dentil block, remove that portion and then position the dentil block at the end of the dentil molding.) (Fig. 1)

To install at the center, position the end block at the center of the opening and then butt the dentil molding ends into the end of the block. (Fig. 2)

To install inside corners, cut and remove sections as shown in the illustration. Once removed, pop rivet the two pieces together and then fasten it to the wall. (Fig. 3)

To install outside corners, cut and remove sections as shown. Once removed, pop rivet the two pieces together and then fasten it to the wall. (Fig. 4)

Gable Vents

For Vinyl and Aluminum Siding

Using the inward edges of the vent base as a guide, mark the area to be cut in the exterior wall surface, then cut the hole.

Center the base of the vent over the opening and level the base.

Note the word "TOP" on the base when positioning it.

Nail the base onto the wall surface through the slotted nailing flange. A water diverter should be installed at the base. (Fig.1)

Siding can now be installed around the vent base. Be sure to leave a 1/4" clearance between the cut siding and the base to allow for expansion and contraction. (Fig. 2)

Snap the face into the base by pressing firmly.

Should it be necessary to remove the face, firmly pull the face from the base. (Fig. 3)

Gable vents can be installed without cutting a hole if you want it to be decorative only.

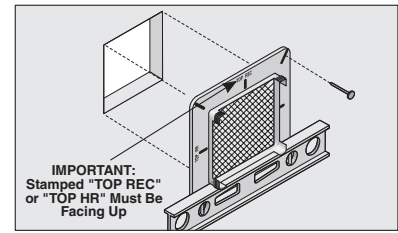


Fig.1

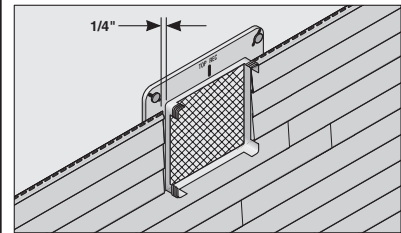


Fig. 2

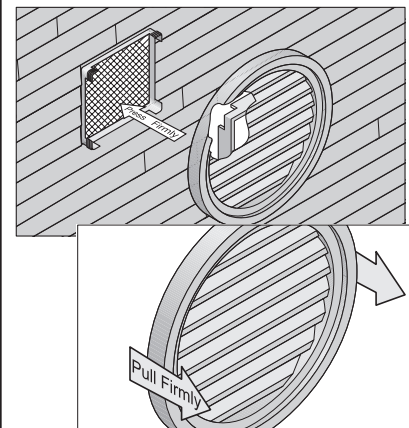


Fig. 3

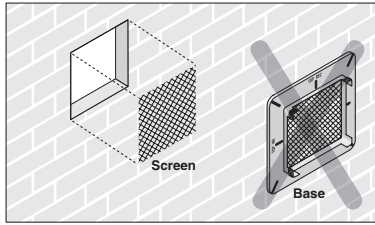


Fig.1

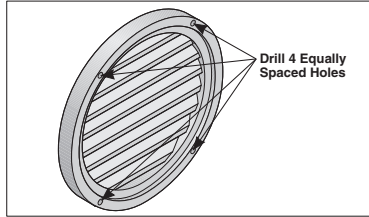


Fig. 2

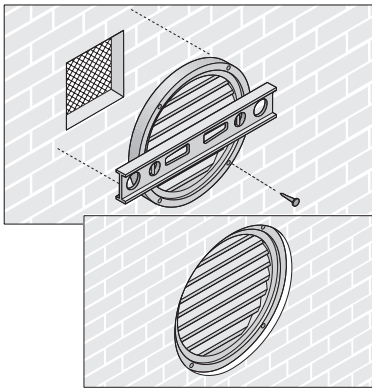


Fig. 3

For Installation onto Masonry Surfaces

Fasten the screen to the inside or outside of the wall opening. Discard the base. (Fig.1)

Drill four equally spaced holes around the outer front surface of the vent face. (Fig. 2)

Place the vent face over the exterior wall opening, level it and fasten it to the wall using masonry fasteners. (Fig. 3)

NOTE: On new homes, the vent face may be recessed into the brick.

Preparation

Determining proper ventilation

For best results, vents must provide 1.5 sq. inches of net free area per sq. ft. of attic floor area, including enclosed overhang. (Fig.1)

Placing proper ventilation

Ideally 50% of the required free ventilating area should be placed at the ridge and 25% in each opposing soffit. Soffit ventilation area may be slightly larger than ridge ventilation area. Do not have more ventilation area in ridge than in the soffit.

The slope/pitch must not be less than 3:12 or greater than 6:12. Wood cant strips should be used for slopes outside this range. (Fig. 2)

NOTE: Do not apply generic ridge vent part on roof hips.

Preparing an existing roof

Remove ridge cap shingles along the roof ridge.

Snap chalk lines on both sides of the ridgeline to the dimensions shown in the illustration at left, depending on your specific roof construction.

Cut out ventilation opening along the ridge at chalk lines with ventilation opening end 12" short of outside walls, chimneys, or roof protrusion.

Remove cutout portion of sheathing and shingles, leaving a clean open slot.

For new construction

Plywood can be set or cut back to the required dimension leaving a total opening of 1-1/2". Shingles should then be installed up to the edge of the sheathing. *NOTE: Never cut ventilation opening in overhang.*

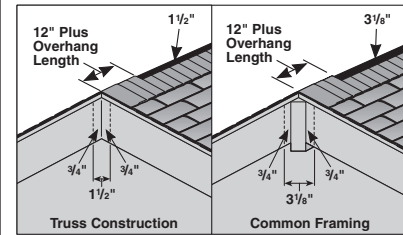


Fig.1

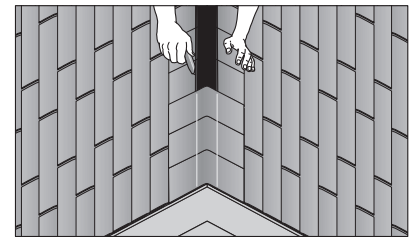


Fig. 2

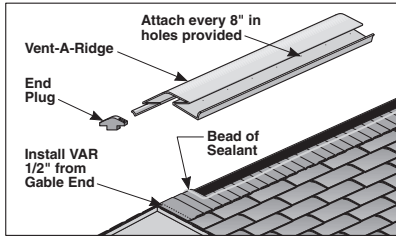


Fig. 1

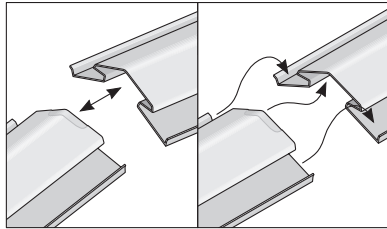


Fig. 2

Insert ends on an angle.

Insert baffles and top angle over or under as indicated by the arrows.
Slide together, closing notch.

NOTE: Aluminum or stainless steel nails or screws should be used to attach ridge every 8" (both sides). The fasteners should protrude at least 1/2" through sheathing. Sealant is required on the underside of all end plugs and both baffle legs.

Attaching the Vent

Starting with the male end, place the first vent on the ridge, making sure the center of the vent aligns with the center of the ridge slot. (For best appearance, place the vent 1/2" from the end of the gable end.) A chalk line can be used to assist in the alignment.

Nail or screw one side of the vent to the roof every 8" through nail holes. Attach the other side of the vent, making sure the vent lies flat on the roof.

Align the next piece, slide and lock into place, then nail. Make sure the vent aligns with the center of the ridge. Install additional pieces in the same manner.

Cut the final section of the vent to the required length. Make sure to position and seal an end plug as desired for a starter piece. Nail into place.

NOTE: Ridge can be modified to be used in vertical and peak roof applications.

J-Channel at roof line

Step 1

Install the flashing before the J-Channel to prevent water infiltration along the intersection of a roof and wall.

Step 2

Keep the J-Channel at least 1/2" from the roofline. Chalk a straight line up the roof flashing to guide J-Channel installation.

NOTE: Vinyl J-Channels should not be in direct contact with roofing shingles, since the shingles may transfer enough heat to the vinyl J-Channel to cause distortion. With dark shingles, or a south or west exposure, it is recommended to either use a metal J-Channel or raise the vinyl J-Channel approximately 2" off the shingles

J Channel

J-Channels are designed to receive the siding panels and must be installed around all windows, doors, other large openings and in the gables where built-in J-channels are not present. J-Channels can be installed over old wood casing or placed next to the casing leaving the old window casing exposed.

Water runoff can also be accomplished by making a series of notches and tabs in the J-Channel. (Fig. 2)

Install J-Channel in this order:
Bottom, Sides then top.

and install, having first ensured that there is sufficient flashing behind the J-Channel to prevent water infiltration.

Step 3

Overlap the J-Channel (lapping the upper piece over the lower piece) if it is necessary to use more than one piece.

Step 4

Extend the J-Channel past the edge of the roof, channeling water into the gutter, in order to ensure proper runoff.

Miter J-Channels at corners to prevent gaps and allow for proper water drainage. (Fig. 3)

Flex-J

Flexible J-Channels are designed for curved surfaces such as arched windows.

Begin nailing at one end of the arch one-half inch of the end of the channel. Never begin at the crown or middle of the arch.

Nail every six inches. (Fig. 4)

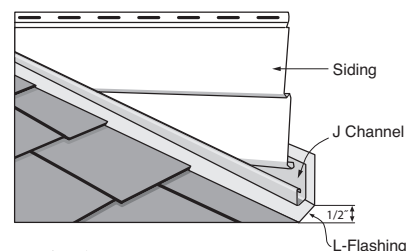


Fig. 1

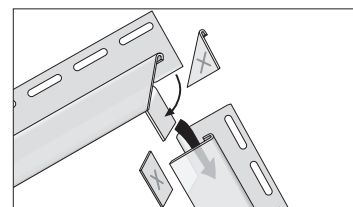


Fig. 2

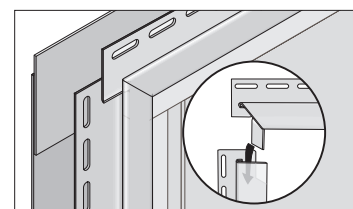


Fig. 3

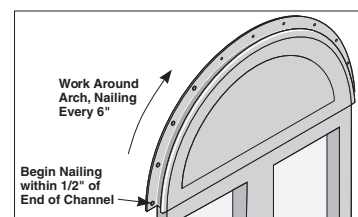


Fig. 4

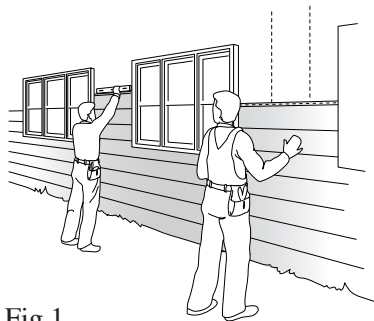


Fig. 1

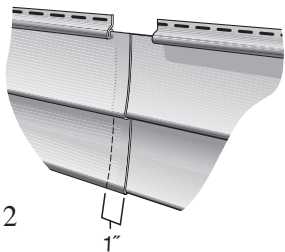


Fig. 2

Step 1

The first panel (or course) should be placed in the starter strip and securely locked along the entire length of the siding panel.

NOTE: Always overlap joints away from entrances and away from the point of greatest traffic. This will improve the overall appearance of the installation.

Step 2

Be sure to fasten the panels according to the instructions on page 14. Allowance should be made for expansion and contraction by leaving a 1/4" gap between the siding and all corner posts and channels (increase to 3/8" when installing in temperatures below 40°F).

Step 3

Do not drive the head of the fastener tightly against the nail slot. Leave 1/32" between the fastener head and the panel nailing strip.

Step 4

Do not stretch the panels up when fastening. Panel locks should be fully engaged; however, the panels should not be under vertical tension

or compression when they are fastened.

Step 5

Since vinyl siding moves as the temperature changes, make certain that the vinyl panels can move freely in a side-to-side direction once fastened.

Step 6

Check every fifth or sixth course for horizontal alignment (Fig. 1). **[Check siding alignment with adjoining walls]**

Step 7

When panels overlap, make sure they overlap approximately 1" (Fig. 2).

NOTE: Overlap with factory ends whenever possible. If you must use cut ends, duplicate the factory notches before installing. Avoid stair-step lapping.

Step 8

Stagger the siding end laps so that no two courses are aligned vertically, unless separated by three courses.

Beaded Horizontal Siding

Beaded panels are factory notched in three places (Fig. 1). For best results, overlap panels using factory notched ends only. **This panel should be overlapped 1" due to the unique design of the locking and lapping system.** Overlapping more than 1" will result in less than optimal laps and increase the chances of panel restriction (Fig. 2). For easiest panel installation, start locking the panel at one end and tap the lock into place toward the other end. This panel will not lock by pushing straight up as in standard panel installation.

TIP Always overlap joints away from entrances and away from the point of greatest traffic. This will improve the overall appearance of the installation.

Fitting Siding around Fixtures

For handling protrusions around the wall, refer to the figure (Fig. 3) for hand fabricating, or use manufacturers' accessories specifically designed for this purpose. In addition, the following tips are suggested:

- Always begin a new course of siding at the fixture to avoid excess lap joints.
- Cut a slot 1/4" bigger than the fixture. (Fig. 3)
- When cutting, match the shape and contour of the obstruction. (Fig. 4)

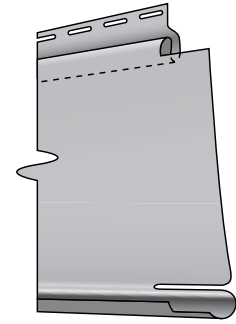


Fig. 1

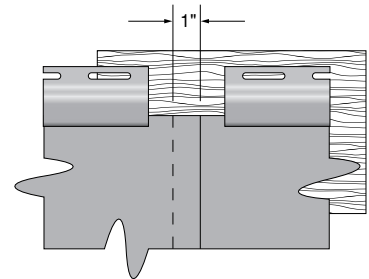


Fig. 2

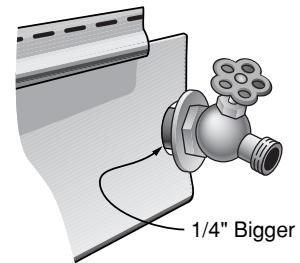


Fig. 3

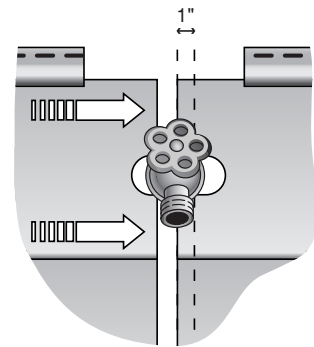


Fig. 4

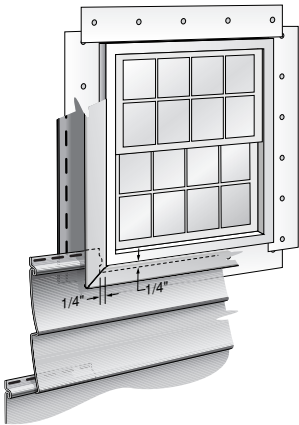
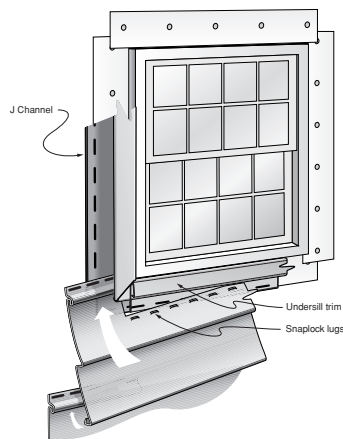


Fig. 1



Fitting under Windows

To mark the section to be cut, perform the following:

Step 1

Hold the panel under the window and mark the width of the window opening on the panel. Add 1/4" to both sides to allow for expansion and contraction of the siding. These marks represent the vertical cuts (Fig. 1).

Step 2

Lock a small piece of scrap siding into the lower panel next to the window. This will be used as a template for the horizontal cuts. Mark it 1/4" below the sill height (Fig. 1).

Step 3

Transfer the horizontal measurement to the panel, which will be installed under the window (Fig. 1).

Step 4

Cut the panel with tin snips and/or a utility knife.

The cut panel is now ready for installation under the window. Perform the following:

Step 5

Install undersill trim under the window, inside previously installed J-channel as a receiver for the cut siding. Undersill trim is used any time the nail hem has been removed from the siding. Furring may be needed to maintain the face of the panel at the desired angle.

Step 6

Use a snaplock punch to place lugs facing out in the cut edge of the panel every 6"-10".

Step 7

Install the siding panel, making sure the lugs (from the snaplock punch) lock into the undersill trim (Fig. 2).

Finishing at the Top

Before the final course of siding is installed on the wall, any soffit accessories that will be used on the eaves must be installed.

Gable Ends

To install into gable ends, make a pattern that duplicates the slope of the gable (Fig. 1).

Step 1

Lock a short piece of siding into the gable starter course (i.e., the last course before the gable starts).

Step 2

Hold a second piece of siding against the J-Channel at the slope of the gable. Mark the slope with a pencil on the short piece of siding.

Step 3

Remove the short piece and cut along the pencil line as a pattern for the gable angle cuts. Repeat the procedure on the opposite side of the gable.

Step 4

It may be necessary to fasten the last panel at the gable peak with a trim nail. Use a 1 1/4" to 1 1/2" nail. **[This is the only time a nail should be placed in the face of the vinyl siding (Fig. 2).]**

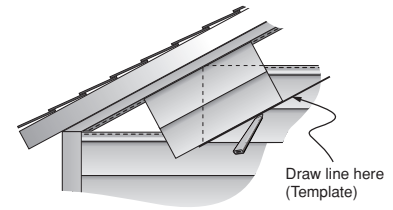


Fig.1

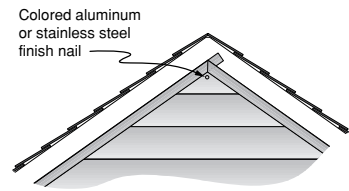


Fig. 2

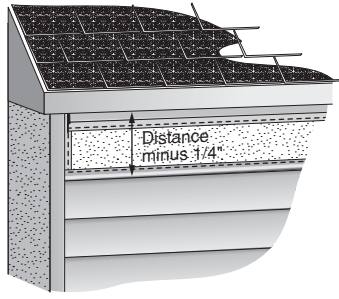


Fig.1

Eave Treatment

The last course of siding will generally need to be cut to fit the eave opening (Fig.1).

Step 1

Install undersill trim under the eave or overhang as a receiver for the cut siding. Undersill trim is used anytime the top or bottom lock has been removed from the siding. Furring may be needed to maintain face of the panel at the desired angle.

Step 2

Measure from the top of the undersill trim to the bottom of the upper lock on the previous course of panels. Subtract 1/4". Mark this dimension on the panel to be cut, measuring from the bottom edge of the panel.

Step 3

Using a snaplock punch, punch the vinyl siding along the cut edge every 6" to 10", so the raised lug is on the outside face.

Step 4

Install the siding panel, making sure the lugs (from snaplock punch) lock into the undersill trim.

Starter Strip

You must use the required starter strip (with 1/2" step). (Fig. 2)

Chalk lines are normally established from the lowest corner of the house. In situations where the ground at the corner of the house is not level, chalk lines must be measured from the soffit location to assure a uniform panel at the top of the walls.

The starting chalk line should be located so that it represents the top, not the bottom, of the starter strip (Fig.1)

Note: Make sure starter strip works with insulated siding.

Align the top of the starter strip with the chalk line.

Nail the starter strips 8" on center and in the middle of each nail slot. Do not drive nails tight. Always nail in the lowest row of the nail slots allowable. (Fig. 2)

Allow at least 1/4" separation between pieces of starter strips for expansion and contraction. (Fig. 3)

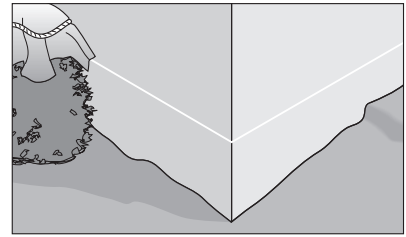


Fig.1

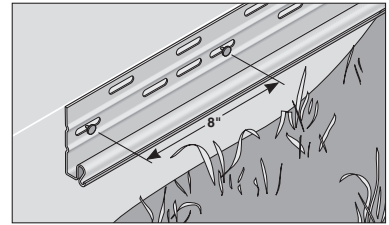


Fig. 2

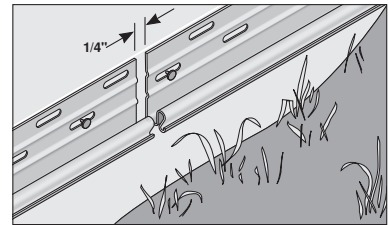


Fig. 3

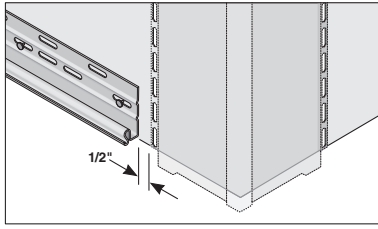


Fig.1

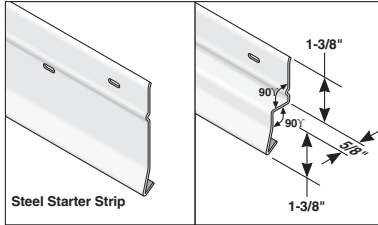


Fig.2

Starter Strip and Accessories

Cut the starter strip back from each corner so the corner post nailing hem may be installed without touching the starter strip. Leave a 1/2" gap from all corner post nail hems.

Cut the corner post so that it hangs 3/4" below the bottom of the starter strip. (Fig.1)

When installing panels above exposed overhang areas, the 3-1/2" steel starter strip can be modified by bending the starter in two locations as shown. (Fig.2)

Corner Post Options

The preferred corner post is the foam-filled corner. This corner post has a 1-1/4" opening to receive the Insulated panel. (Fig.1)

NOTE: Nail all corner posts as described in Basic Accessory Installation, "Installing Corner Posts."

NOTE: For the best appearance do not start any course with factory ends. Remove the factory notch by cutting the first 2" of the panel. This is important in high altitude, high heat applications.

If other corner posts are used, follow the steps below:

1. Attach 1/2" thick shims under the nail hems of the corner.
2. 2" of foam must be cut to allow the panel to be installed into the corner. (Fig. 2)

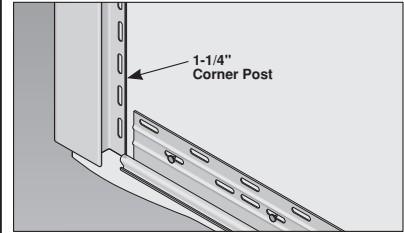


Fig.1

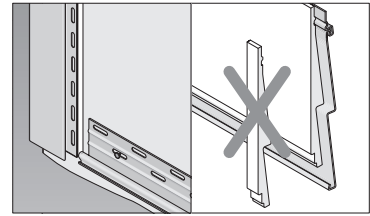


Fig. 2

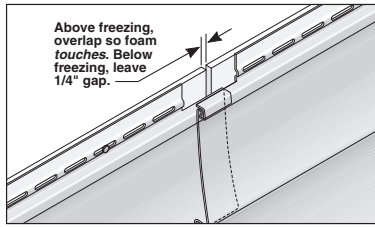


Fig.1

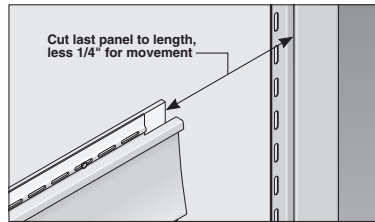


Fig.2

Panel Installation

When installing at overlaps, the vinyl of one panel should slide between the foam and the vinyl of the adjacent panel. With panel overlaps at temperatures above freezing, the Structure foam should touch. At applications below freezing, leave a 1/4" gap at the foam area. (Fig.1)

When determining the length of the final panel of a course, measure from the edge of the foam on the installed panel to the corner, less 1/4". Apply this measurement to the final panel, measuring the foam instead of the panel. This will insure foam to foam contact with the necessary amount of room for expansion of the siding. (Fig.2)

Installing Around Openings

The preferred J-Channels are 1-1/4" or 2-1/2". They should be installed as described in Basic Accessory Installation, "J-Channel, Flex-J, and Flashing."

Utilize a flexible water diverter at the bottom of all openings (see General Siding Installation). A flexible water diverter should be housewrap, plastic, or roofing felt. (Fig.2)

To measure for a window or other opening:

- a. Set the panel below the

opening.

- b. Mark the J-Channel location, allowing for a 1/4" gap on all sides of the opening for expansion and contraction.

(Fig.3)

Cut the panel as marked using either a utility knife or tin snips. Cut back foam 2" for 1-1/4" or 3-1/2" for 2-1/2". (Fig.4)

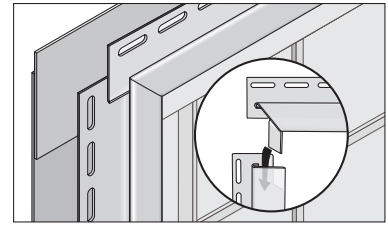


Fig.1

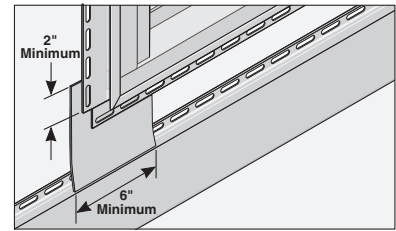


Fig.2

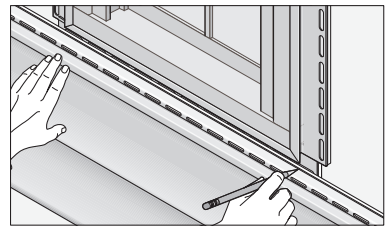


Fig.3

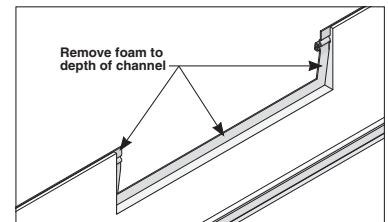


Fig.4

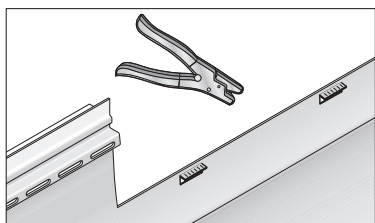


Fig.1

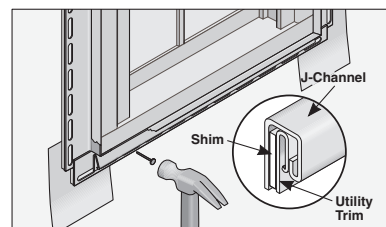


Fig.2

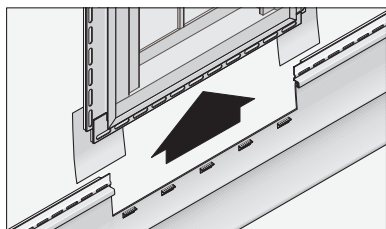


Fig.3

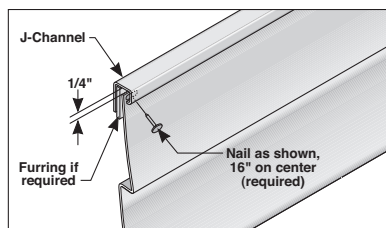


Fig. 4

Installing Around Openings continued

Use a snap-lock tool to create a tab every 16" on the cut edge of the panel. These tabs should face out. (Fig.1)

Install a finish trim into the bottom J-Channel at the opening. A shim must be installed behind the finish trim. The foam that was cut from the panel can be used as the finish trim shim. (Fig.2)

Snap the tabs of the cut edge of the panel into the finish trim under the windowsill. (Fig.3)

A shim must be installed. (Fig.4)

An optional method for this area is to nail slot the cut edge of panel every 16" on center.

The face of the channel can be held to facilitate nailing. Nail in middle of every slot.

Final Course

Take the height measurement of the remaining open section in several locations.

Subtract 1/4" from each location to allow for movement. (Fig.1)

Cut the panel to required measurement. (Fig.2)

Cut back foam 2" for 1-1/4" J-Channels or 3-1/2" for 2-1/2" J-Channels (Fig.3)

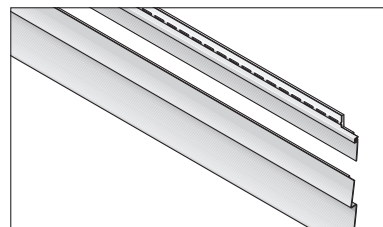
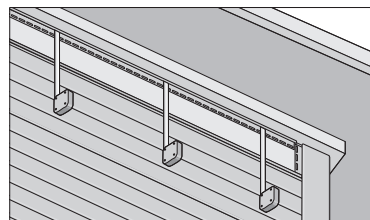


Fig.2

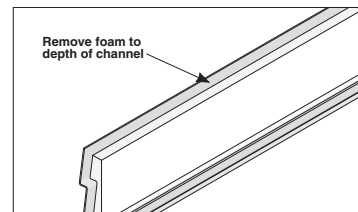


Fig.3

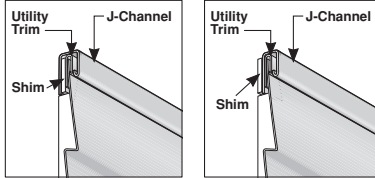
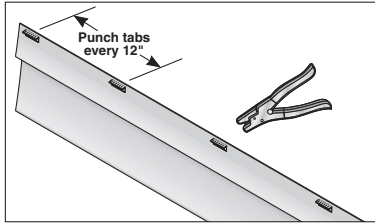
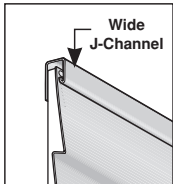
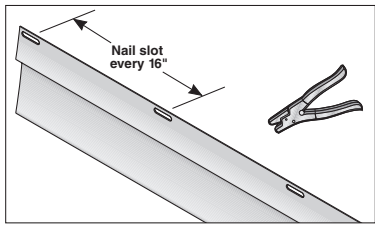
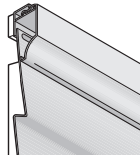


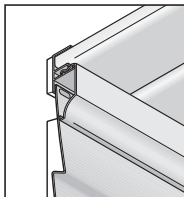
Fig.1



Wide Window Casing Trim



Snap-In Crown and Mount



Snap-In Crown and Mount with J-Channel

Fig.2

Snap Lock Options (Fig.1)

Use a snap-lock tool to create a tab every 12" on the cut edge of the panel. These tabs should face out. A utility trim must be used with this option.

Nail Slot Options (Fig.2)

A second option is to nail slot the top of the panel. A utility trim is not used with this option. See fig. 2 for the use of the snap in crown system.

NOTE: If Permatabs are used, nail slot the top of the panel every 16".

Transition from Horizontal to Vertical (Fig. 1)

Finish the last course of horizontal siding with the J-channel and finish trim. Install a drip cap and a J-channel. The top piece of J-channel must have minimum 3/16" (4.8mm) diameter weep holes drilled no more than 24" (610mm) apart to allow for water runoff.

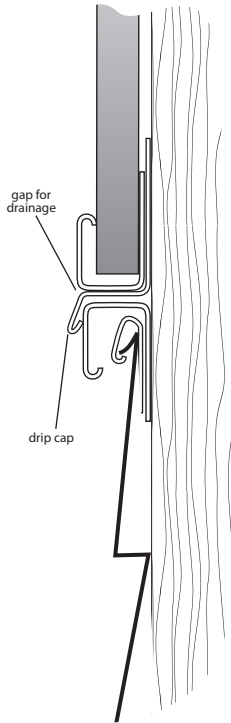


Fig.1

VERTICAL SIDING INSTALLATION

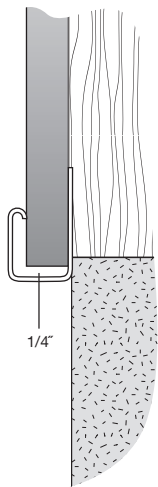


Fig. 1

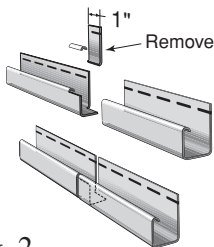


Fig. 2

When installing vertical siding, follow these steps:

Preparation

Step 1

Install a solid, nailable sheathing prior to applying vertical siding, if needed, to level the surface or provide sufficient material for proper fastener penetration. Use minimum 7/16" plywood, OSB or equivalent.

Step 2

Snap a level chalkline around the base of the sidewalls. Typically, the chalkline is positioned so that the bottom of the J-Channel is 1/4" below the lowest point on the wall that will be sided. (See the "Installing Accessories" section for tips on snapping a chalkline.) Install a J-Channel along the chalkline as a receiver for the vertical siding.

Installation

Step 1

Install vinyl outside corner posts, inside corner posts, and door/window trim, and/or J-Channel as needed. See previous sections for corner post installation techniques.

Step 2

Install top and bottom J-Channel: Apply J-Channel along the top and bottom of the walls to receive the siding panels (Fig. 1).

A Install the bottom J-Channel. Overlap J-Channels 3/4". To do this, cut out a 1" section of the nailing flange and face return (see Fig. 2).

B Install inverted J-Channel along the top of the wall, under the eave and the gable. Overlap J-Channels 3/4" to allow for expansion.

NOTE: If you're going to install soffit, you may want to install the receiving channels for the soffit prior to this point.

If a wall requires more than one course of vertical siding, use two lengths of J-Channel, back-to-back and flashing, at the joint between the two courses (Fig. 1).

If a wider wall is being covered, then you can start with a full width vertical panel. In this case you can install that first piece by utilizing a starter strip on the cut nailing hem of a vertical panel. (Fig. 1)

If a smaller wall is being covered, you should try to create a balanced appearance.

- To create a balanced appearance (Fig. 2) divide the length of the wall by the exposure of the vertical panel to be used. For example, if the wall requires 20 full panels plus an additional 8" (203mm), then the first and last pieces installed would be cut to a new width of 4" (102mm). Make sure to allow for proper depth in the receiving channels of the accessories at both ends when measuring.
- To install the siding, if partial panels are required, mark the line to cut by measuring from the edge of the lock of the panel and cut the panel to the proper width. This will leave a panel with an intact nail hem and proper exposure.

The top J-Channel must have a minimum of 3/16" (4-8mm) diameter weep holes drilled no more than 24" (610mm) apart to allow for water runoff.

Step 1

Panel installation should begin at the end of a wall section at a corner post or J-Channel. An undersill trim piece should be installed and fastened inside the opening of the corner post or J-Channel to secure the edge of the first and last course of siding. Snaplock punch the cut edge every 6" to 10", and snap the edge into the secured undersill trim. Cut and install last course in similar fashion. (Fig. 3)

Step 2

TIP: A furring strip may be needed behind the undersill trim before fastening to shim it out and maintain the lines of the vertical panel.

Maintain a 1/4" gap at each end of panels where they butt to trim pieces such as J-Channel. Failure to maintain this gap may result in permanent panel warpage. Maintain a 3/8" gap if installing at temperatures 40° F or below.

Step 3

Fasten panels every 12" through the middle of the nailing slots. Maintain 1/32" minimum clearance between the fastener crown and nail hem of panel.

Special note for vertical panel installation: Vertical panels should be cut to allow clearance as specified. Panels should be positioned on wall allowing equal clearance top and bottom. One fastener should be placed at the top of a nail slot within the upper 12" of the panel when installed. The panel will hang on this fastener and will expand in both directions rather than only upward. Balance of fastening should take place in the center of the nailing slots (Fig. 4).

Step 4

Undersill trim should be installed inside J-Channel, or built-in window receiver on the sides of windows and/or doors to secure cut edge of vertical panels. Vertical panels should be snap-locked before insertion into the undersill trim (Fig. 3). A furring strip may be needed behind the undersill trim to maintain the lines of the vertical panel.

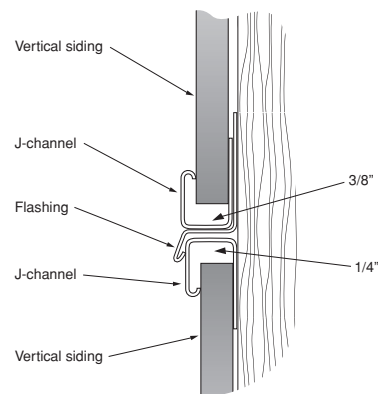


Fig.1

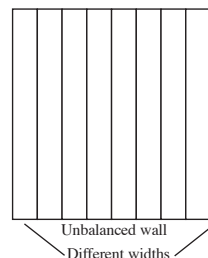
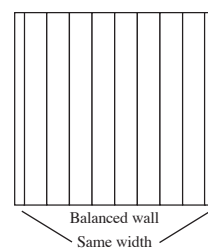


Fig. 2

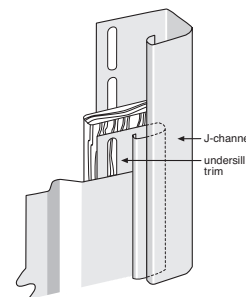


Fig. 3 Start and or finish

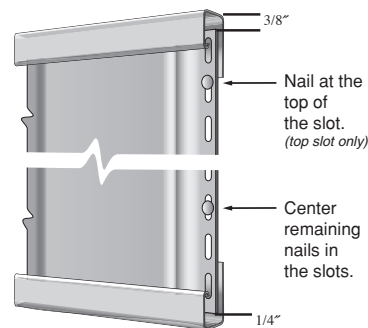


Fig.4

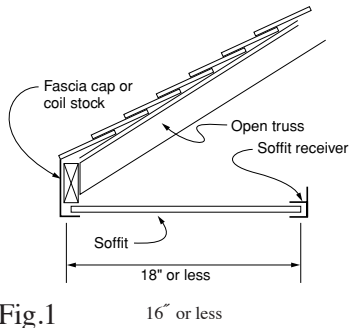


Fig. 1

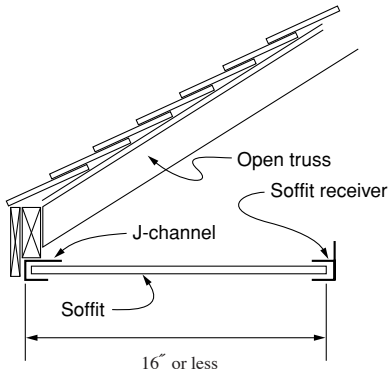


Fig. 2

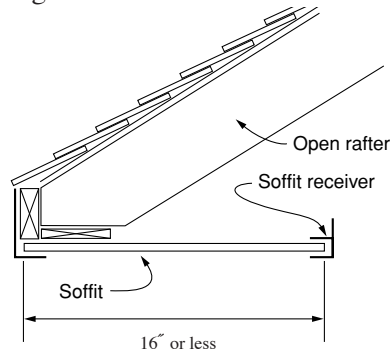


Fig. 3

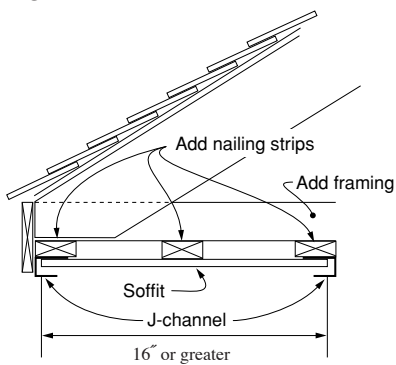


Fig. 4

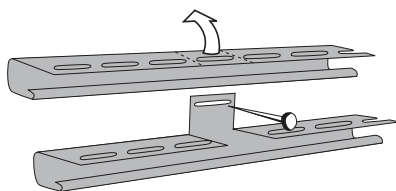


Fig. 5

Soffit is the name given to materials used to enclose the underside of eaves and porch ceilings. The installation of soffit will determine the positioning of the inside and outside corner posts.

Vinyl soffit is designed to be easily installed in residing or new construction. Soffit panels are similar to vertical siding. Soffits are available in aluminum or vinyl. Can be solid, fully perforated or lanced, or combination soffits. Also available in vinyl is a hidden vent system.

NOTE: Proper attic ventilation is important for any home. Consult a local building official for the appropriate requirements for a specific geographical area, and use vented soffit or other vented products as necessary.

Preparation

Inspect and plan the job in advance. For residing applications, nail down any loose panels, boards or shingles. Check surfaces for straightness and fur when necessary. Surfaces should be uniform and straight from various viewing angles.

The procedure used to install soffit depends on the construction of the eaves. There are two different types of eaves:

TYPE ONE

Open eaves with exposed rafters or trusses are typical of new construction. Open eave installation procedures are also used when removing damaged soffit during a residing project.

TYPE TWO

Enclosed eaves (eaves with a wood or plywood soffit already in place) are typical of residing projects.

Installation Over Open Eaves:

Step 1

Install receiving channels (F-Channel or J-Channel).

There are several ways to install receiving channels for soffit. You can use accessories such as J-Channel or F-Channel. The best approach is to select a method that works most effectively with the construction techniques used to create the eave.

Examine the illustrations at left and find one that most closely resembles the construction methods used for your particular project (Figs. 1-4). Another option is to cut tabs into J-Channel and to nail into those tabs.

Install the receiving channels following the details shown in the illustrations. Nail channels every 12", positioning the nail in the center of the slot. Fasten channels, just snug to take out excessive play. Do not over-drive fasteners.

NOTE: If the eave span is over 16", nailing strips must be installed (Fig. 4).

5-step procedure continued:

Step 2

Measure soffit panels 1/2" shorter than opening. Mark this dimension on a soffit panel and cut using a power saw with a reversed finetooth blade or snips.

Step 3

Insert one end of the panel into the channel on the wall, nail the other end to the wood fascia. (Fig. 1)

- Make certain the panel is perpendicular to the wall, and then nail. Depending on the installation method being used, nails will be hammered either into a nailing strip or fascia board.
- Do not nail soffit panels tightly.
- Continue the installation by locking and nailing the panels. Make certain the panels are fully locked along their entire length.

Step 4

To turn a corner, measure from the channel at the wall corner to the channel at the corner of the fascia board (Fig. 1). Subtract 1/4" for expansion. Cut and install H-Molding lineal or back-to-back J-Channel. If necessary, install nailing strips to provide backing for the lineal. Miter cut the corner soffit panels and install as described in Step 3.

Step 5

Install aluminum fascia as needed to finish installation. (see section on fascia installation)

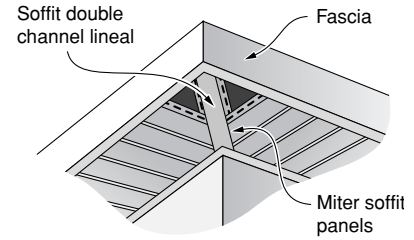


Fig. 1

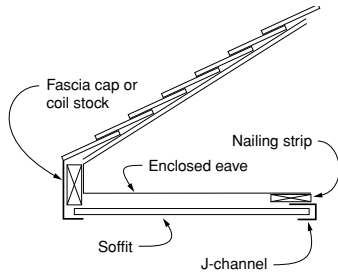


Fig.1

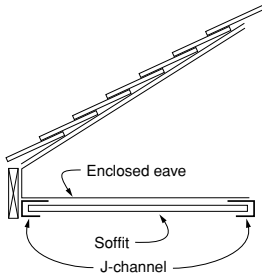


Fig. 2

Type 2

Installation Over Enclosed Eaves

The procedure used to install soffit over enclosed eaves is almost identical to that used for open eaves. A J-Channel or F-Channel can be used to receive soffit panels. (Fig. 1& 2)

Determine the preferred method of installing soffit at the fascia board.

NOTE: If the existing soffit is rotted or damaged, remove it completely before installing vinyl soffit, then use the instructions for open eaves.

Step 1

Install soffit per instructions stated previously. Choose the soffit installation method that applies to your specific needs.

Step 2

Install metal drip edge, gutter trim, undersill trim, etc. along the top of the fascia board to receive and secure the top edge of the aluminum fascia.

Step 3

Measure from the lower side of the soffit panels to the top of the trim installed on the upper side of the fascia board. Deduct approximately 1/8" from this dimension and cut fascia panel using snips, or score and break with a utility knife and straight edge.

Step 4

For the best appearance, we suggest that you do not face nail aluminum fascia. The recommended procedure

is to slip the top edge of the fascia into the drip edge (or utility trim) and secure the fascia in place with trim nails installed through the bottom side (Fig.1). Nail no greater than 2' on center.

Step 5

Outside corners: bend a 1" flange at a 90-degree angle so it turns the corner. Then cut the overlapping fascia and position as shown (Fig. 2).

Inside corners: Use same technique as outside corners.

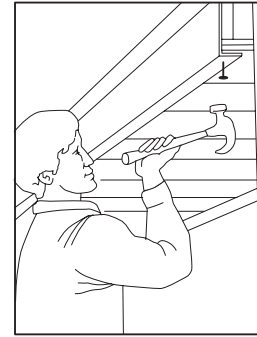


Fig. 1

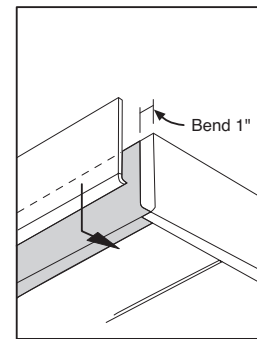


Fig. 2

NOTE: Nails or fasteners installed through the bottom of the aluminum fascia panel may penetrate the ends of the soffit panels in some installations. The following procedures are recommended if this situation occurs.

- * Line up the aluminum fascia fasteners with the V-grooves in the soffit panels to avoid cupping the soffit panel faces.*
- * If vinyl soffit panels are over 24" in length, enlarge the fastener hole in the soffit panel 1/4" larger than the fascia fastener diameter. This will allow the soffit panels to expand normally and avoid potential buckling.*
- * When fastening aluminum trim, you can only use aluminum or stainless steel painted trim nails. You should always pre-drill (1/8") diameter hole in the aluminum and do not drive the nail tight.*

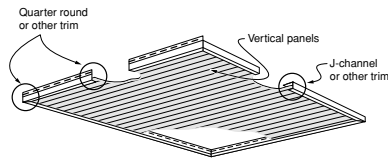


Fig. 1

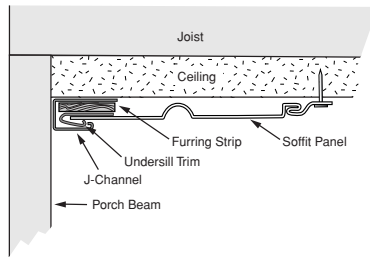


Fig. 2

Porch Ceilings

The procedures to install a porch ceiling are in many ways similar to those used to install soffit. These procedures vary slightly, depending on whether the installation is a new construction or a residing project.

INSTALLATION TIP: In hot climates or in attics with limited ventilation, it is advisable to install solid sheathing to the underside of the porch ceiling joists. This will protect vinyl soffit panels from excessive heat.

New Construction

Step 1

Begin by installing receiving F- or J-Channels on all four sides of the porch (Fig. 1). If F-Channels are being used, nail them to the existing walls or porch beams. If J-Channels are being used, a nailing base will have to be installed.

Step 2

When planning to use light blocks to attach external light fixtures, install them to adequate backing.

Step 3

Plan the layout of the ceiling panels to achieve an even balance or to align with adjacent work. If the ceiling joists run parallel to the direction of the soffit panels, additional 1" x 3" wood furring nailing strips will have to be installed. Install these nailing strips perpendicular to the ceiling joists, placing a strip every 12".

Step 4

Install an undersill trim shimmed down by a furring strip into the J-Channel or F-Channel on the starting end (Fig. 2). Cut the hook side (opposite the nailing hem) off the panel and install snap locks every 6" to 10". Install the soffit panel locking the cut edge into the undersill trim and nailing the other side through the nailing slots. **DO NOT NAIL TIGHTLY.** Install remaining panels.

Step 5

For large areas where more than one panel length is needed, use a H or T mold or back-to-back J-Channel to separate the sections.

Step 6

To install last soffit panel, use same technique as outlined in step 4 and Figure 2, except that the nailing hem sidewall be trimmed and snap lock punched every 6" to 10". Install the final panel by locking the hook side of the panel on the previous panel and inserting the cut edge into the undersill trim for a secure fit.

Residing

Step 1

Check to be sure the existing ceiling can serve as a solid nailing base.

Step 2

If the existing ceiling is solid, remove all existing moldings and fixtures from the ceiling and begin by nailing inverted J-Channels along the perimeter of the ceiling area. Then follow Steps 2 through 6 in the instructions under "New Construction". With a solid ceiling, however, additional nailing strips are not necessary. Use the existing ceiling as the nailing base for the panels.

If the existing ceiling is not solid, install nailing strips to provide a secure nailing base, then install the J-Channels. Additional nailing strips should be installed if the ceiling panels are to run parallel to the ceiling joists. Follow the instructions in Steps 2 through 6 for "New Construction".

Vinyl Siding Panel

To repair or replace a siding panel, insert the zip-lock tool under the butt of the course above the damaged panel.

Pull downward and slide the tool along the length of the panel.

Remove the nails of the damaged panel.

Install the replacement panel making sure the lock is re-engaged. (Use the ziplock tool to re-engage the panel by forcing the bottom lock over the newly replaced panel.) (Fig.1)

When re-nailing, be sure panel can move freely in a horizontal direction to allow for expansion and contraction. (Fig. 2)

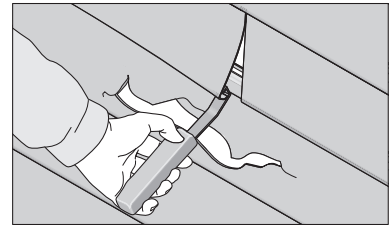


Fig. 1

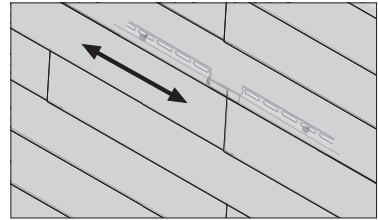


Fig. 2

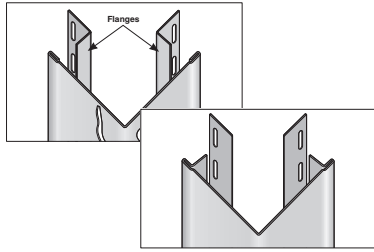


Fig. 1

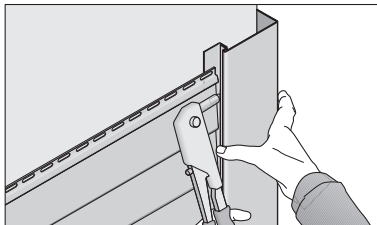
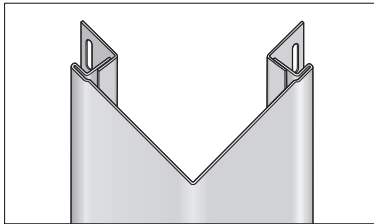


Fig. 3

Corner Posts

Using a utility knife cut away the nailing hem of the damaged corner. Be sure to leave the flange.

Trim the new corner post to fit (leaving the same flange). (Fig.1)

Position the new corner in place with flanges overlapping. (Fig. 2)

Attach the new corner posts to the existing flange with pop rivets. (Fig. 3)

J-Channel

Cut away the face of the channel.

Cut the new J-Channel away from the nailing hem. (Fig.1)

Position the new J-Channel over the old. (Fig.2)

Pop rivet the new piece into place. (Fig.3)

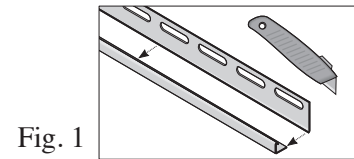
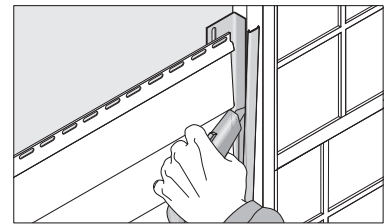


Fig. 1

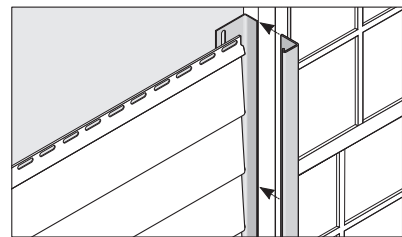


Fig. 2

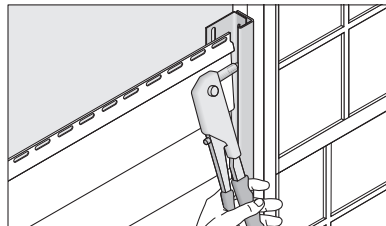


Fig. 3

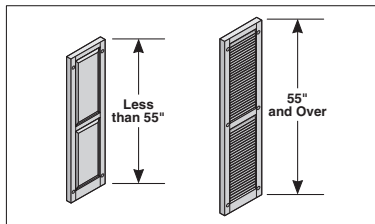


Fig. 1



Fig. 2

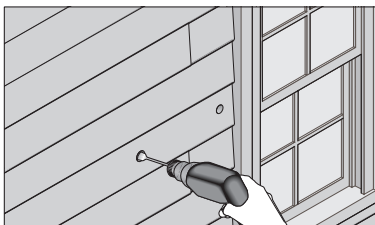


Fig. 3

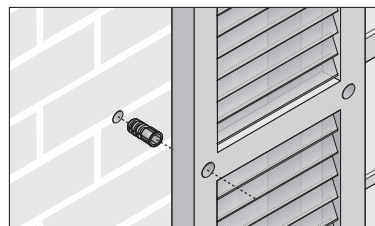


Fig. 4

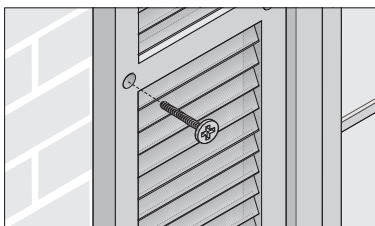


Fig. 5

Shutters

Two types of fasteners are included within the packaging of the shutter product; **metal screws** and **polymer shutterplugs**.

Use four fasteners for shutters less than 55" in length. Position top screw/plug approximately 6" down from the top of the shutter, and bottom screw/plug approximately 6" up from the bottom of the shutter. (Fig.1)

Use six fasteners for shutters 55" and longer in length. Attach the two additional screws at the midpoint along the length of the shutter. (Fig.2)

Following are the instructions when using the two types of fasteners:

Polymer Shutterplugs

Suggested for permanent, non-removable installations; works well on brick or block; solid-base construction material required; not for vinyl over foam insulation without sheathing.

Locate shutter beside window.

Drill a 1/4" diameter hole in shutter and into solid base material a minimum of 2" deep (into mortar joint locations for masonry).

Insert plug by tapping lightly with a hammer.
DO NOT FORCE SHUTTERPLUG SO TIGHTLY AS TO CAUSE DEPRESSION OF SHUTTER SURFACE.

Metal Screws

Can be used for all solid wall surfaces.

Wood Substrates

Locate shutter beside window

Drill 7/32" diameter hole in shutter and in wood surface.

For vinyl siding applications, redrill a 3/4" hole in the vinyl siding only to allow for expansion and contraction.

Screw shutter in place with 3" long metal screws (included). **DO NOT FORCE SCREW TIGHT ONTO SHUTTER SURFACE.** (Fig.5)

Masonry Construction

Locate shutter beside window.

Drill 7/32" hole into shutter making sure to position at mortar locations.

Drill hole in mortar joint of masonry as instructed by insert manufacturer. (Fig.4)

It is necessary to incorporate inserts (not supplied in shutter packaging) to provide holding power for the screw.

Place insert in hole with hammer.

Position shutter and screw in place with 3" long screws. **DO NOT FORCE SCREW TIGHT ONTO SHUTTER SURFACE.** (Fig.5)

NOTE: Allow 1/4" gap between shutter and window and all other stops to allow for expansion and contraction.

Optional hidden fasteners for standard shutters are available from your distributor.

The tough, long-lasting polypropylene construction of Cedar Discovery® Siding will bring years of beauty to a home without the maintenance required with natural cedar.

To avoid waste and make installation faster, please take a few minutes to read and understand these instructions.

Tools Required

- Hammer
- Pencil
- Snips
- Nail Slot Punch
- Circular Saw with 18-24 Tooth Carbide Tipped Blade (not reversed)
- Chalk Line
- Utility Knife
- Tape Measure
- Level
- Corrosion-Resistant Siding Nails or Screws

IMPORTANT

A SOLID NAILABLE SHEATHING, SUCH AS PLYWOOD OR OSB IS NECESSARY FOR A PROPER AND SECURE INSTALLATION.

PANELS MUST BE INSTALLED FROM RIGHT TO LEFT.

When nailing through slots, always nail in CENTER of slot. DO NOT NAIL TIGHT. Panels must be able to move to allow for expansion and contraction caused by temperature change.

All panels (full and partial) must have the following nailing sequence:

1. First, nail through center of Nail Slot at the right end of panel.
2. Nail through center of Nail Slot toward the left end of panel. Note, Do NOT nail through the far left nail slot.
3. Nail through center of the Nail Slot in the Left Side Flange.
4. Nail through Nail Hole (NOT Nail Slot) at the center of panel.
5. For maximum wind load nail through center of Nail Slots every 8".

Panels should be acclimated to air temperature by placing them in the

general work area at least one hour prior to installation. Air temperature should be checked when installing the first course of each new wall to determine the amount of panel overlap. As air temperature changes, it is NOT necessary to go back and adjust the spacing of previously installed panels.

Installation Tip for Cedar Discovery Triple 5: For the best appearance, it is very important to be aware of panel temperature instead of air temperature. To accomplish this, the panels should be placed in a shaded area before being installed to acclimate to the ambient temperature. Another option is to measure the panel temperature with an Infrared Temperature device, In either case, install the panel to the appropriate temperature gauge mark.

Special thought should be taken to eliminate short pieces.

Allow 1/4" clearance for all stops, such as corner posts and J-Channels. When installing products in very cold temperatures (<40°F), allow 3/8" clearance for expansion and contraction.

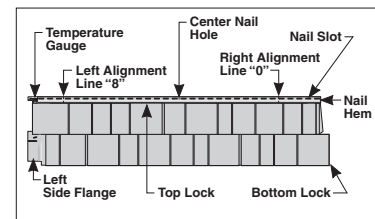
In order to finish the wall without a short course at the top, measure down from the soffit and adjust as needed.

This product is for exterior use only, and should be installed on flat, vertical walls to maintain an even appearance. It can be installed on mansard roofs with a slope of 45/12 or greater (15-degree angle or less). See Mansard Roof Installation instructions.

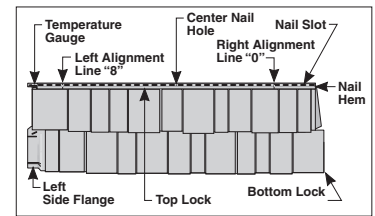
Maintenance

To clean, use mild soap with warm water to remove dirt, dust or surface stains that may collect from time to time.

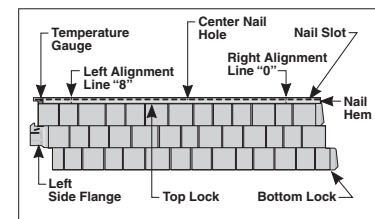
- Product should not be painted.



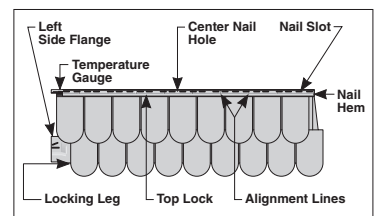
Cedar Discovery® Perfection Shingle Double 7"



Cedar Discovery® Hand-Split Shake



Cedar Discovery® Perfection Shingle Triple 5"



Cedar Discovery® Half-Round

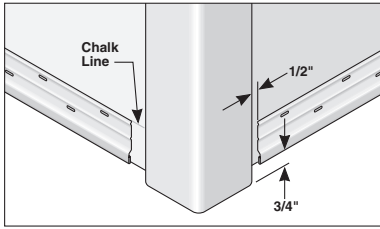


Fig. 1 (Cedar Discovery® Perfection Shingle Double 7")

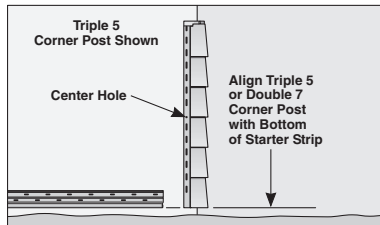


Fig. 2 (Cedar Discovery® Perfection Shingle Triple 5")

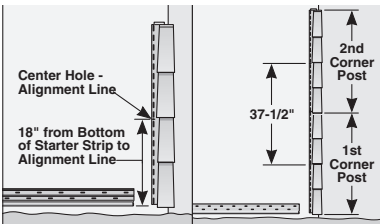


Fig. 3 (Cedar Discovery® Hand-Split Shake)

Starter Strip Installation

Snap a chalk line on all walls to align the top edge of the starter strip (or J-Channel). Make sure to use the special starter strip for Cedar Discovery®.

Installation of starter strip (or J-Channel) and panels should begin on the lowest wall.

Install starter strip (or J-Channel) along the chalk line, nailing in nail slots to allow for penetration into solid wood. Wood stripping may be required to accomplish this. Nail every 6-8". **DO NOT NAIL TIGHT.**

To allow for movement, install starter strip (or J-Channel) 1/2" from corner post. Let corner post hang 3/4" below the bottom of the starter strip (see Figure 1).

Install all accessories including J-Channel, corners, etc.

NOTE: Accessories must have 3/4" receiver for all Cedar Discovery panels with the exception of the hand-split shakes, which require 7/8" pocket accessories.

Corner Post Installation

For all four Cedar Discovery panels, the Universal Corner Post can be used. In this case, hang the corner post 3/4" below the starter strip or J-Channel. (see Figure 1).

For Cedar Discovery Perfection Shingle Triple 5" and Double 7", align bottom of corner post with bottom of starter strip or J-Channel (see Figure 2).

1. Nail through center hole.
2. Continue nailing corner post every 8" through center of nail slot.

NOTE: Do Not Nail Tight.

Installing Cedar Discovery Hand-Split Shake Corner Post

1. Measure up 18" from bottom of Starter Strip and mark wall (see Figure 3).
2. Position Alignment Line with mark, and nail through Center Hole.
3. Continue nailing Corner Post every 8" through center of Nail Slots.

NOTE: Do Not Nail Tight.

4. To install additional Corner Post sections, measure and mark 37-1/2" from previous post Alignment Line.
5. Position Alignment Line with mark, and nail.
6. Repeat Steps 4 and 5 as needed.

Installing Less Than Full Length Corner Post

Remainder of cut corner post can be used as starter corner post. Cut and remove section below last full cap.

1. For Triple 5" and Double 7", install modified corner aligning it with the bottom of starter.
2. Full length corner post can be installed as previously described.
3. For Hand-Split Shake Corners, the first alignment line should be adjusted to allow for the modified corner post by adding increments of 9-3/8" as needed.

Nailing Procedures

NOTE: Be sure panel is pulled up. Do not nail tight.

All panels (full and partial) must have the following nailing sequence: (see Figures 1-2).

1. First, nail through center of Nail Slot at the right end of panel. (See "N1").
2. Nail through center of Nail Slot toward the left end of panel. (See "N2").
NOTE: Do NOT nail through the far left nail slot.
3. Nail through center of the Nail Slot in the Left Side Flange. (See "N3").
4. Nail through Nail Hole (NOT Nail Slot) at the center of panel. (See "N4").
5. For maximum wind load nail through center of Nail Slots every 8".

NOTE: For full panels, center hole is marked on nail hem (Fig. 2). For cut panels, measure to locate center point on nail hem.

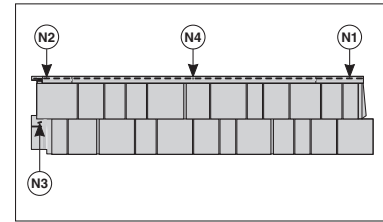


Fig. 1

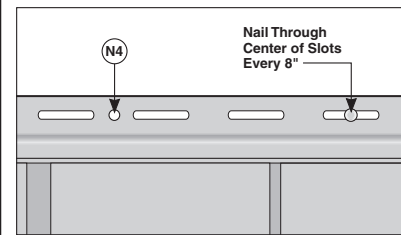


Fig. 2

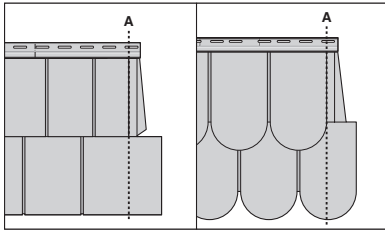


Fig. 1

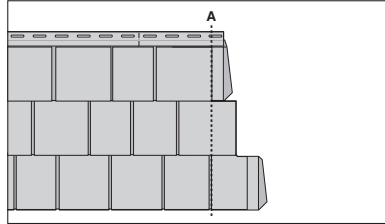


Fig. 2 (Cedar Discovery® Perfection Shingle Triple 5")

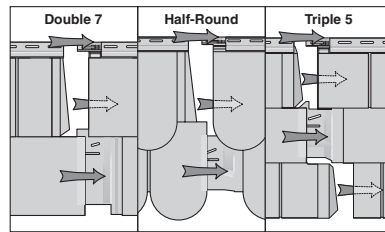


Fig. 3 Perfection Shingle 7" & Hand Split Shake.

Air Temperature (°F)	20°	30°	40°	50°	60°	70°	80°	90°	100°
Temperature Mark	1/2	3/8	1/4	1/8	0				
Panel Overlap									

Fig. 4 Perfection Shingle 5"

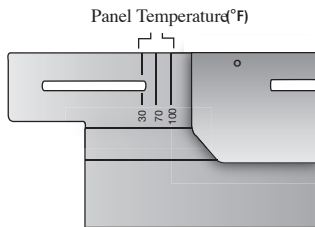


Fig. 5 Half Rounds

Air Temperature (°F)	10°	30°	50°	70°	90°
Temperature Mark	1/4		1/8	0	
Panel Overlap					

Fig. 6

First Course

NOTE: PANELS MUST BE INSTALLED FROM RIGHT TO LEFT.

- a. Cut the first panel at "A" (see Figures 1-2).

NOTE: To provide for panel movement, allow 1/4" gap at all corner posts, J-channels, or other stops.

- b. Engage bottom lock firmly into Starter Strip. Nail according to "NAILING PROCEDURES."
- c. Slide the next panel into position. For Perfection Shingle Double 7", Hand-Split Shake and Half-Rounds, the top half of the panel, except the Nail Hem, slides under, and the bottom half slides over the previous panel. For Perfection Shingle Triple 5", the top section of the panel (except the Nail Hem) and the bottom section of the panel slide under, and the middle section slides over the previous panel. On all products, the Nail Hem will be on top of the previous panel (see Figure 3).

For Perfection Shingle Double 7" and Hand-Split Shake overlap amount, see (Figure 4). For Perfection Shingle Triple 5" overlap, see (Figure 5). For Half-Rounds overlap, see (Figure 6).

NOTE: The amount of panel overlap is important and varies depending on air temperature. Check and monitor air temperature when starting to install the first course on each wall. See chart for amount of overlap (see Figures 4-6).

Installation Tip for Cedar Discovery® Triple 5: For the best appearance, it is very important to be aware of panel temperature instead of air temperature. To accomplish this, the panels should be placed in a shaded area before being installed to acclimate to the ambient temperature. Another option is to measure the panel temperature with an Infrared Temperature device. In either case, install the panel to the appropriate temperature gauge mark.

- d. Nail according to "NAILING PROCEDURES."
- e. Install additional full panels, repeating Steps b-d.

Last Panel on Each Course

For *Perfection Shingle Double 7"*, *Hand-Split Shake* and *Half-Rounds*, measure the distance from the correct line on the temperature gauge into the corner post, less 1/4" (see "A" on Figure 1).

For *Triple 5"*, measure the distance from the correct line on the temperature gauge to the edge of the corner post and ADD 1/4".

Cut off left end of panel (see "B" on Figure 1).

Engage lock into starter strip or continuous lock of previous course, pull up tight and nail according to "NAILING PROCEDURES."

Installation Tip: Panels will flex to allow installation. To minimize waste, cut pieces can be used as starter pieces on adjacent wall.

Using Alignment Lines

NOTE: Temperature gauge is used only for installation of the first course on each wall. Do NOT adjust temperature gauge on panels after 1st course is complete "except when adjusting panels for windows or last panel of each course".

Perfection Shingle Double 7", *Triple 5"* and *Hand-Split Shake Panels* – For 2nd and subsequent courses, align Left Side Flange with Left "8" or Right "0" Alignment Line of previous course, according to instructions.

Half-Rounds – For 2nd and subsequent courses, align Left Side Flange with nearest Alignment Line that allows proper fit and overlap of shingles. Be sure to cut panel to stagger vertical laps.

Second Course (and all even courses)

a. *Perfection Shingle Double 7"* and *Hand-Split Shake* – Measure the distance from the Left Alignment Line "8" of the panel below into the corner post or J-Channel, less 1/4" (see "A" on Figure 2).

b. *Perfection Shingle Triple 5"* – Measure the distance from the Left Alignment Line "8" of the panel below into the corner post or J-Channel, PLUS 1/4" (see "A" on Figure 3), and subtract 1/4".

b. *Perfection Shingle Double 7"*, and *Hand-Split Shake* – Measure from the Left Side Flange of panel and cut to this length (see "B" on Figure 2).

Perfection Shingle Triple 5" – Measure from the Left End of the Lowest Panel and cut to this length (see Figure 3).

Half-Rounds - Measure appropriate distance from the Left Side Flange of panel (allowing for staggered vertical laps) and cut (see Figure 4).

c. *Perfection Shingle Double 7"* and *Hand-Split Shake* – Align Left Side Flange with Left Alignment Line "8" of the course below (see Figure 5).

Perfection Shingle Triple 5" – Align Lowest Panel Left Edge with Left Alignment Line "8" of the course below (see Figure 6).

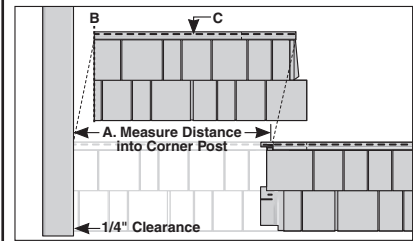


Fig. 1

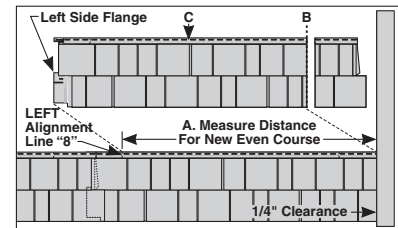


Fig. 2

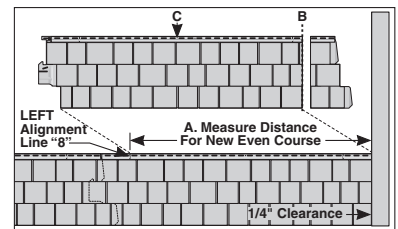


Fig. 3

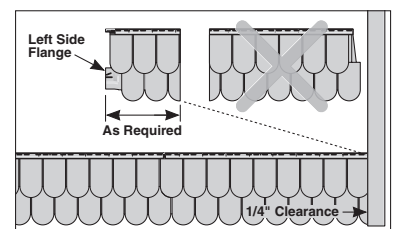


Fig. 4

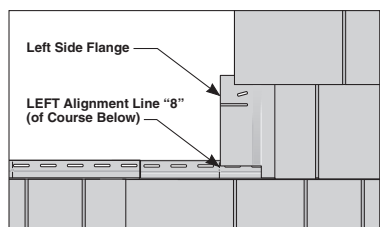


Fig. 5

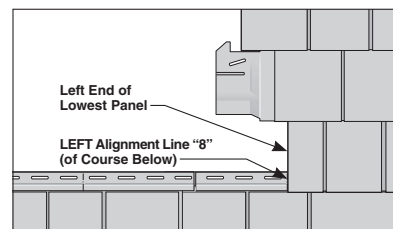


Fig. 6

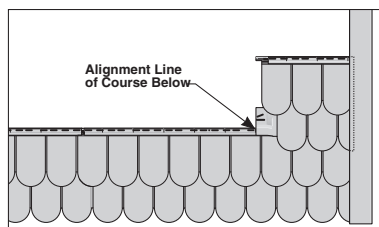


Fig.1

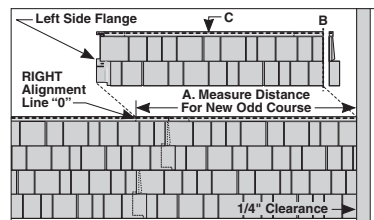


Fig.2

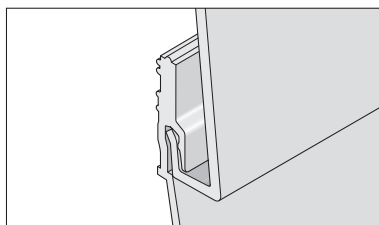


Fig.3

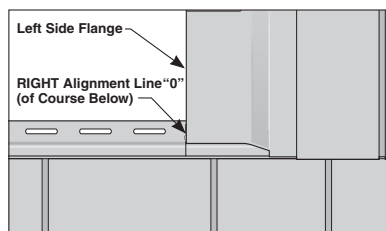


Fig.4

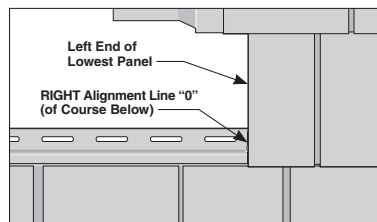


Fig.5

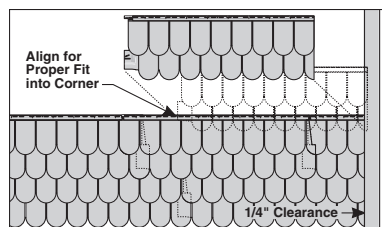


Fig.6

Half-Rounds

Align Left Side Flange with nearest Alignment Line of course below that allows for proper fit into corner post or J-Channel (see Figure 1).

d. Engage lock securely into continuous top lock of course below (Figure 3).

e. Pull up tight and nail according to “NAILING PROCEDURES.”

f. Continue installing full panels in the course, following Steps c-e.

g. To finish course, refer to previous section titled “Last Panel on Each Course”.

Third Course (and all odd courses)

a. *Perfection Shingle Double 7”, Triple 5” and Hand-Split Shake* – Measure the distance from the first RIGHT Alignment Line “0” of the course below into the corner post or J channel and subtract 1/4” (see “A” on Figure 2).

b. *Perfection Shingle Double 7” and Hand-Split Shake* – Measure from the Left Side Flange of panel and cut to this length (see “B” on Figure 2).

Perfection Shingle Triple 5” – Measure from the Left End of the Lowest Panel and cut to this length.

c. Engage lock securely into continuous top lock of course below.

d. *Perfection Shingle Double 7” and Hand-Split Shake* – Align Left Side Flange with RIGHT Alignment Line “0” of the course below (see Figure 4).

Perfection Shingle Triple 5” – Align Lowest Panel Left Edge with Right Alignment Line “0” of the course below (see Figure 5).

Half-Rounds – Align Left Side Flange with nearest Alignment Line of course below that allows for proper fit into corner post or J-Channel (see Figure 6).

e. Pull up tight and nail according to “NAILING PROCEDURES.”

f. Continue installing full panels in the course, following Steps c-e above.

g. To finish course, refer to section titled “Last Panel on Each Course” on page 58.

Securing Panels Around Windows

Measure and cut panels around windows, allowing 1/4" into all window channels for movement. (see Figure 1).

Make sure to install water diverters at the bottom corners of the window (refer to Basic Accessory Installation Section Installing J-Channel, Flex-J and Flashing).

Use a nail slot punch to create nail slots every 8" on the cut edge of the panel.

Furr as needed.

Slide panel into window channel.

Pull up tight and nail according to

Installation Tip: A nail set can be used to ease installation.

Installing Final Course

NOTE: A crown molding, J-Channel or wide window casing can be used in eaves and gables to receive the final course (see Figure 2).

Measure the required width for last course less 1/4" to allow for panel movement.

Cut panel height as required.

Punch nail slots every 8".

Nail through center of slots.

NOTE: Furring may also be required.

Alternative Method:

Cut 2" wide piece of utility trim. Nail into the eave J-Channel, making sure to locate them at the flat areas of the shakes. Using the snaplock punch, install a lug at each utility trim location.

Cedar Finish Trim

The Cedar Finish Trim can also be used to help provide a finished appearance and to help secure cedar products around windows and at the last course of siding. The Cedar Finish Trim has a wider opening that allows for the extra material thickness. Secure the panel with a finish trim nail.

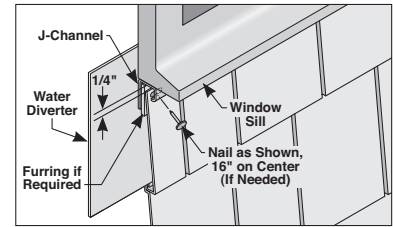


Fig. 1

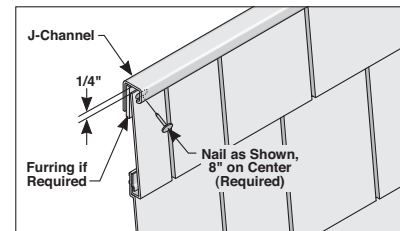
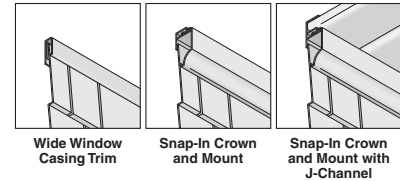


Fig. 2

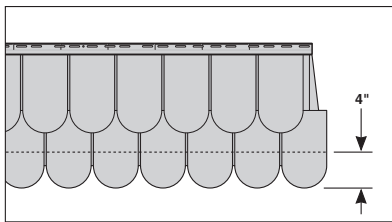


Fig. 1

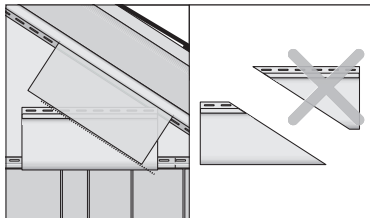


Fig. 2

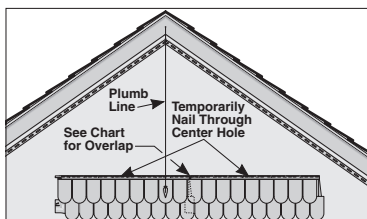


Fig. 3

Air Temperature (°F)	10	30	50	70	90
Temperature Mark	1/4		1/8		0
Panel Overlap	[Diagram showing 1/4 inch overlap]		[Diagram showing 1/8 inch overlap]		[Diagram showing 0 inch overlap]

Fig. 4

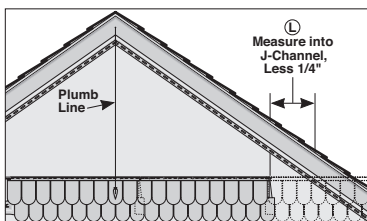


Fig. 5

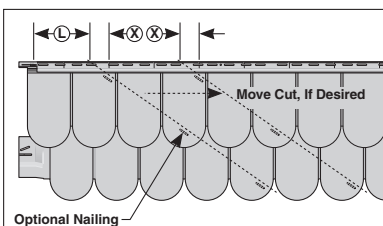


Fig. 6

Installing Cedar Discovery[®] Half-Rounds on Gable Ends

Cedar Discovery Half-Rounds can be locked directly onto other Cedar Discovery panels. If desired for transitions, panels can be installed using Starter Strip (CDSS) over Drip Cap, or into T-Channel or Lineals. When installing into any channel or lineal, cut 4" from the bottom of the Half-Round (see Figure 1). Allow 1/4" gap for panel movement.

NOTE: PANELS MUST BE INSTALLED FROM RIGHT TO LEFT. Do not nail tight. Allow 1/4" into all channels, posts and stops. Make a template for gable angle by locking a short piece of siding into the gable starter course. Hold a second piece against the gable finish trim. Mark angle on first piece and cut (see Figure 2). Make templates as needed.

Centering Cedar Discovery Half-Rounds on Gable Ends

When installing Half-Rounds in gables, the last piece should be centered at the peak of the gable for proper appearance.

a. For symmetrical appearance at peak, position and lock full panel in the first course with Half-Rounds at center of the gable (see Figure 3). Temporarily fasten through center hole. Continue temporarily installing full panels toward right side of the gable (see chart, Figure 4, for overlap).

b. When less than full panel is needed, measure top of Nail Hem into gable end trim, less 1/4" (see Figure 5). Use this dimension (L) to cut first piece for installation.

c. To locate the cut mark on 1st panel, measure from the appropriate temperature mark to the right and mark top of Nail Hem (see "L" on Figure 6).

d. Use template and cut at mark. If needed for secure installation, move the mark an equal distance (X on Figure 6) from any Alignment Line.

e. Remove temporarily nailed panels.

Installing First Course on Gable End

- a. Use panel cut in step “d” in the previous section. If installing into Siding or Starter Strip, lock firmly, pull up tight and nail according to “*NAILING PROCEDURES.*”
- b. Slide the next panel into position. The top half of the panel, except the Nail Hem, slides under, and the bottom half slides over the previous panel. The Nail Hem will be on top of the previous panel (Figure 1). Nail slots can be placed at angle cut for additional nailing.
- c. If this is your first course of Half-Rounds, refer to chart for over lap amount (Figure 2).
- d. If this is not your first course of Half-Rounds, align Left Side Flange with nearest Alignment Line of course below that allows for proper fit into right end finish trim.
- e. Engage bottom lock firmly into Siding or Starter Strip, pull up tight and nail according to “*NAILING PROCEDURES.*”
- f. Install additional full panels, repeating Steps c-e.

Last Panel on Each Course

- a. Make template for angle if needed.
- b. Measure distance from correct line on temperature gauge into the gable end trim, less 1/4” (see “L” on Figure 3).
- c. Measure panel from right end of Nail Hem and cut at correct angle (see “L” on Figure 4).
- d. Engage lock into starter strip or continuous lock of previous course, pull up tight and nail according to “*NAILING PROCEDURES.*”

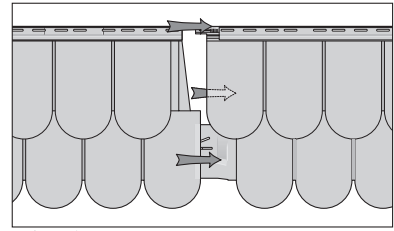


Fig. 1

Air Temperature (°F)	10	30	50	70	90
Temperature Mark	1/4		1/8		0
Panel Overlap					

Fig. 2

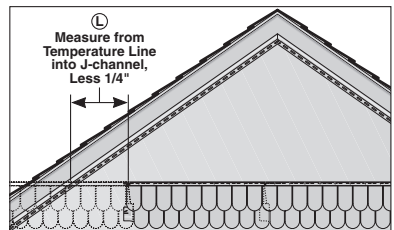


Fig. 3

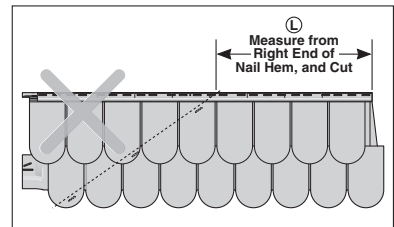


Fig. 4

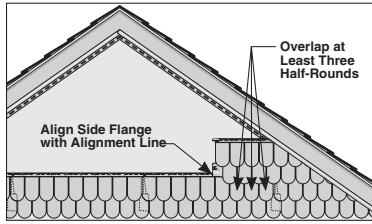


Fig. 1

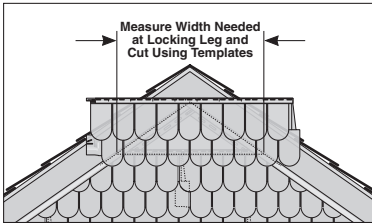


Fig. 2

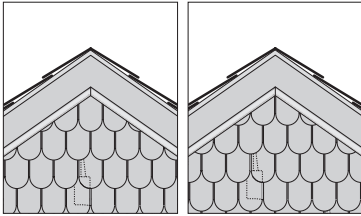


Fig. 3

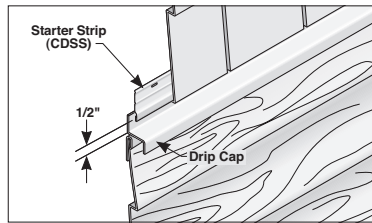


Fig. 4

Second and Subsequent Courses on Gable End

- a. Make new template for angle if needed.
- b. Measure from the Left Side Flange making sure to stagger the laps by at least 3 half-rounds (Figure 1).
- c. Align Left Side Flange with nearest Alignment Line of course below (Figure 1).
- d. Insert Bottom Lock into Top Lock of course below. Pull up tight and nail according to "NAILING PROCEDURES."

- e. For second and subsequent panels, align Left Side Flange with nearest Alignment Line of course below that allows for proper fit. Insert Bottom Lock into Top Lock of course below. Pull up tight and nail according to "NAILING PROCEDURES."
- ### *Final Course on Gable end*

Measure width needed at bottom lock (see Figure 2).

Carefully check alignment of Half Rounds to center full or partial rounds as needed and cut (see Figure 3).

Insert Bottom Lock of final course into Top Lock of course below, pull panel up tight, and nail at peak using a color matching trim nail.

Installing Above Horizontal Siding

Starter Strip "CDSS" with Drip Cap (see Figure 4).

Mansard Roof Installation Instructions

Cedar Discovery® can only be installed on mansard roofs with a slope of 45/12 or greater (15-degree angle or less). It must be attached with standard siding nails into a solid wood substrate.

The sheathing must be covered with either:

1 layer 30 lb. roofing felt with a 6" minimum horizontal and vertical laps.

2 layer 15 lb. roofing felt (see Figure 1).

A field formed flashing must be installed at the bottom of the mansard. This can also be the cap for the soffit. The flashing should go up the roof a minimum of at least 4". (see Figure 2).

The Cedar Discovery starter strip should be installed onto the flashing. Follow the standard installation guidelines. (see Figure 3).

Install any 3/4" corner post system at all transitions. The bottom of these corner posts should be closed off by bending flaps as shown (see Figure 4).

Install all Cedar Discovery courses cutting the last course as required. Slot nail holes and nail into top of mansard following standard installation guidelines for last panel installation (see Figure 5).

Form a cap from trim sheet that will cover the top of the mansard and come down to cover the nails that are holding the last course of Cedar Discovery. It is recommended that this flashing be installed under the top roofing or behind the sidewall system (see Figure 6).

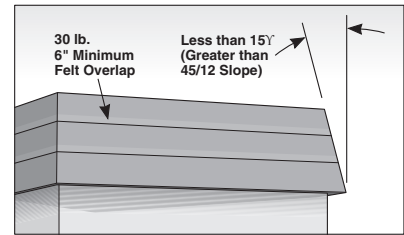


Fig. 1

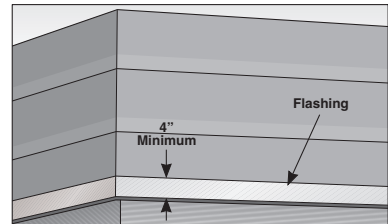


Fig. 2

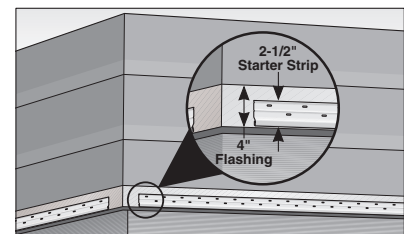


Fig. 3

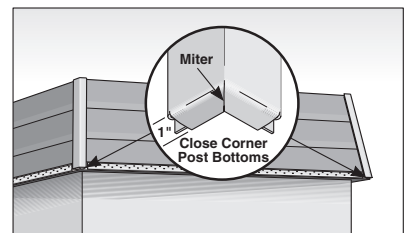


Fig. 4

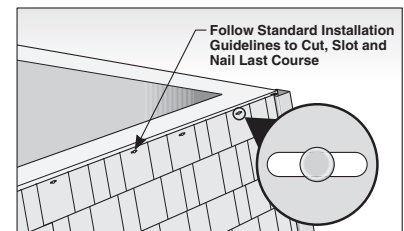


Fig. 5

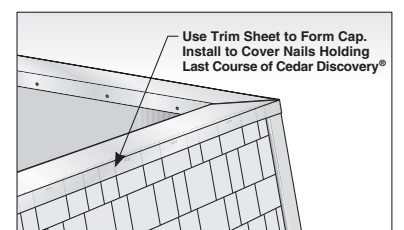


Fig. 6

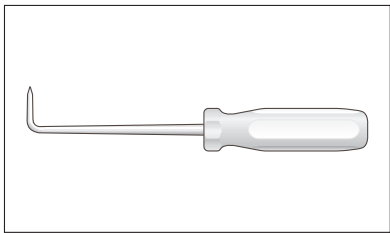


Fig. 1

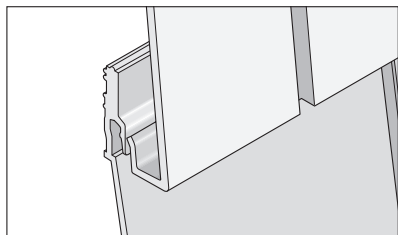


Fig. 2

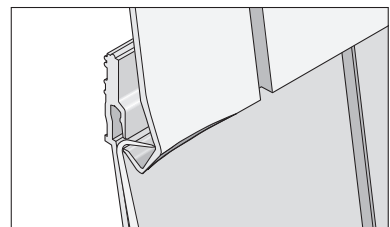


Fig. 3

Replacing A Damaged Panel

To repair or replace a damaged panel, unlock panel above the damaged panel in order to expose nail hem of damaged panel.

NOTE: This can be done by either pulling out at bottom lock with your hand, or using a Hook & Cotter Pin Puller Tool (NAPA Auto Parts No. 3470 or equivalent) (see Figure 2).

Remove nails from damaged panel, and unlock from previous course. (see Figure 3).

Install replacement panel by locking into course below, then nailing according to "NAILING PROCEDURES".

Using a Hook & Cotter Pin Puller Tool (NAPA Auto Parts No. 3470 or equivalent), start at the left end of the panel, and begin locking the panel above to the new installed panel (see Figure 1).

NOTE: For best results, engage 3"-4" of lock at a time, continuing from left to right along the length of the panel.

When historic restoration projects arise, the manufacturer recommends the following:

Step 1

If a building is in a historic area, local Historic District or has been designated as a historic building, make sure that approval for the use of vinyl siding has been obtained from the local historic society or local Historic District Commission. This applies to building additions as well.

Step 2

Before a historic building is resided, it should be examined for moisture, insect infestation, structural defects, and other problems that may be present. These problems should be addressed and the building pronounced “sound” before residing with any material.

Step 3

Do not damage or remove the original siding. If at all possible, do not alter the original structure, so that the application of vinyl siding is reversible (i.e., the original siding would remain intact in the future, so that if desired, the vinyl siding could be removed). Exception: “In cases where a non-historic artificial siding has been applied to the building, the removal of such a siding before application of vinyl siding would, in most cases, be acceptable”.

1Preservation Briefs, Number 8, U.S. Department of Interior, 1984.1

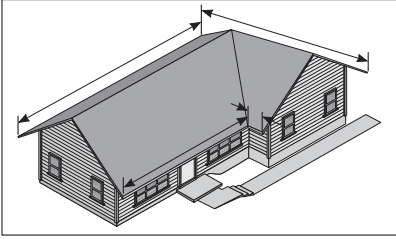
Step 4

Exercise every care to retain architectural details wherever possible. Do not remove, cover, or add details until the building owner’s written approval has been obtained. Determine that the owner has consulted the local historic society for approval.

Step 5

Use siding that closely approximates the appearance of the original siding in color, size and style. In historic districts, the goal is to match the product as closely as possible and retain the original trim.

*For further information, contact:
Historic Preservation at www2.cr.nps.gov*



Planning, Measuring and Available Systems

Determine the lengths of gutters necessary. Minimize seams by selecting from various gutter lengths available.

Determine the number of accessories necessary.

Calculate the number of downspouts necessary. The number and placement of downspouts used determine the water carrying capabilities of a gutter. Use the following guide to calculate the proper amount of downspouts:

- a 2x3 downspout will carry an average rainfall amount of 600 sq. ft. of roof area
- a 3x4 downspout will carry an average rainfall amount of 1,200 sq. ft. of roof area

Sectional Gutters and Accessories Hangers

Determine which of these hanger systems will work best. All hangers should be attached with two 1-1/4" stainless steel screws or screw shank aluminum nails.

Snug Fit Hanger

This hanger is ideal for remodeling use where it is necessary for the back leg of the gutter to fit tightly under roof shingles. A chalk line should be struck along the fascia to act as a guide when installing these hangers. These hangers will allow the gutter to be installed level or with a slight slope. After all hangers are installed, the gutter is attached by engaging the front lip of the gutter into the front lip of the hanger and rotating the back leg of the gutter up against the fascia. The clip at the back of the hanger should be loosened so that it is free to slide under the lip on the back leg of the gutter. Once the clip is engaged in the back leg of the gutter, the nut and bolt should be tightened.

Combination Hanger

This hanger is ideal for both remodeling and new construction use. A chalk line should be struck along the fascia to act as a guide when installing these hangers. These hangers can be installed level or with a slight slope. Once the hangers are installed, the gutter is attached by engaging the front lip of the gutter into the front lip of the hanger and rotating the back leg of the gutter up against the fascia so that the two hooks on the back of the hanger lock into the lip on the back of the gutter.

Strap Hanger

Use in combination with roof or fascia apron* – This combination is ideal for new construction and re-roofing applications. In lieu of a drip edge, the roof apron should be installed continuously along the edge of the roof above the fascia and nailed every 16" with 1-1/4" aluminum nails through the top flange of the roof apron. The gutter is then attached by sliding the back leg of the gutter up under the roof apron so that the lip on the gutter locks into the hook portion of the roof apron. Once the gutter is locked up along the entire length of the roof apron, strap hangers can be installed by engaging the front of the strap hanger into the front lip of the gutter and rotating the other end of the hanger down into the roof surface. This type of installation is designed for level applications of gutter or an application which is parallel to the roof edge of fascia.

**NOTE: Roof apron is not applicable for slopes greater than 6:12. Hanger is to be installed on roof sheathing under shingles.*

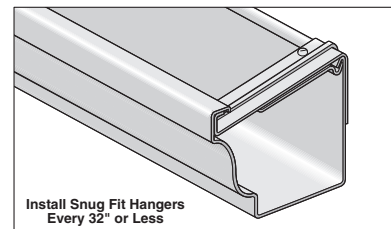


Fig. 1

	5"	6"
Hanger	OG91	N/A
Leaf Relief®	TP53ZIP	

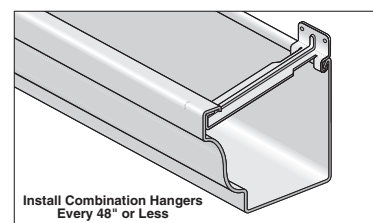


Fig. 2

	5"	6"
Hanger	OG101	OG1061
Leaf Relief®	TP53ZIP	N/A

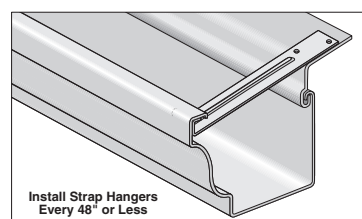


Fig. 3

	5"	6"
Hanger	OG111	OG1161
Leaf Relief®	See page 97	See page 97

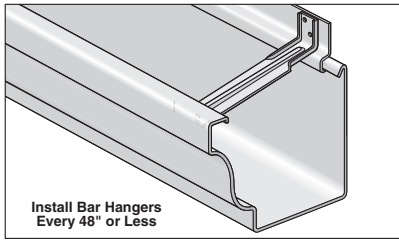


Fig. 1

	5"	6"
Hanger	OG12R1	OG12R61
Leaf Relief®	TP53ZIP	N/A

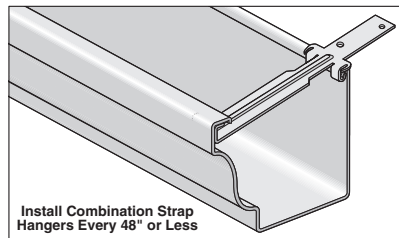


Fig. 2

	5"	6"
Hanger	OG141	N/A
Leaf Relief®	TP53ZIP	N/A

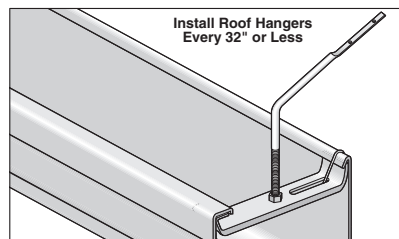


Fig. 3

	5"	6"
Hanger	OG131	OG1361
Leaf Relief®	N/A	N/A

Bar Hanger

When used with a fascia apron, this combination is ideal for remodeling applications. The fascia apron should be installed continuously along the top of the fascia and nailed every 16" into the fascia. The fascia apron can be installed level, parallel to the roof edge or to a desired slope. The gutter is then attached by sliding the back leg of the gutter up under the fascia apron. Once the gutter is locked into the fascia apron continuously, the bar hangers are installed by engaging the front of the bar hanger into the front lip of the gutter and rotating the back of the bar hanger down to rest on the fascia apron. Bar hangers should be fastened into a solid fascia board (minimum 3/4" thickness) through the fascia apron with two 1-1/4" stainless steel screws or screw shank aluminum nails. (Figure 1)

Combination Strap Hanger

This hanger is ideal for re-roofing or new construction applications. The hanger should be fastened into solid roof sheathing (minimum 1/2" thickness). The gutter is attached by engaging the front lip of the gutter into the front lip on the hanger and rotating the back leg of the gutter up so that the top lip engages into two hooks on the back of the hanger. The back leg is then locked in place by bending down the two tabs on either side of the hanger. This hanger will provide for a level installation, assuming that the edge of the roof and fascia are level. (Figure 2)

NOTE: Hanger is to be installed on roof sheathing under shingles.

Roof Hanger

This hanger is ideal for new construction or remodeling work. It can be used in applications where there is no existing fascia board, a crown molding exists, or the fascia is attached to the rafter ends which are not parallel to the walls of the home. There is a flattened relief portion of the aluminum rod of the roof hanger that is designed to be bent to the pitch of the roof. After the rod has been bent to the pitch of the roof, the top flattened portion of the rod should be nailed into solid roof sheathing (minimum 1/2" thickness). Once the hangers are nailed into place, they can be adjusted up or down by loosening or tightening the two nuts on either side of the hanger bracket for a level or sloped installation. (Figure 3)

The gutter is attached by engaging the front lip of the gutter into the front of the hanger and rotating the back leg of the gutter up so that the top lip of the gutter engages on the back leg of the hanger bracket. The metal tab on the hanger is then bent up over the back leg of the gutter to lock the back leg of the gutter into place. (Figure 3)

NOTE: Hanger is to be installed on roof sheathing under shingles.

Preparing Gutters for Leaf Relief® Application

Installing NEW Gutters using Snap-In (Free Float) Gutter Hangers (OG13LR5) with Roof Apron or Fascia Apron

Prepare gutters with drop tubes, miters and endcaps as required.

Snap back of gutter into the hook portion of the apron.

Hook front of gutter hangers into front lip of gutter every 24" along length of gutter.

Position block of wood inside gutter at hanger locations. Using claw hammer, apply pressure to bottom of each hanger until hanger engages into existing roof apron or fascia apron. Remove wooden block.

If desired, begin installing TP5300 Leaf Relief® product. Refer to Leaf Relief® instructions for proper installation.

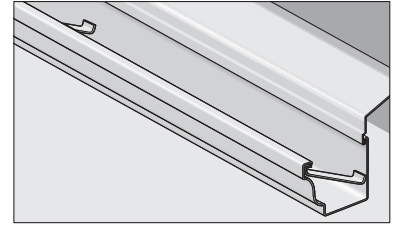


Fig. 1

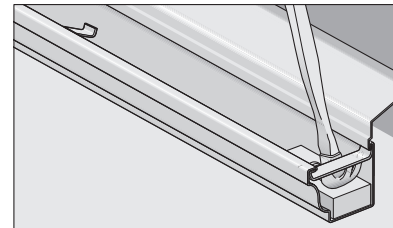


Fig. 2

	5"
Hanger	OG13LR5
Leaf Relief®	TP5300

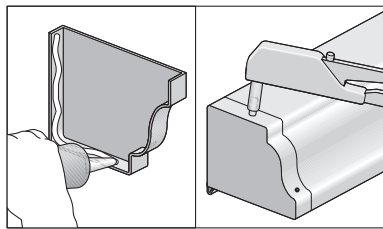


Fig. 1

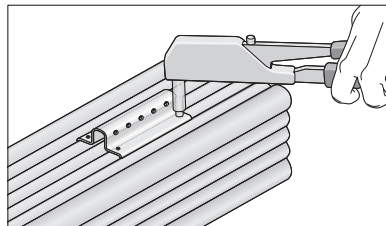


Fig. 2

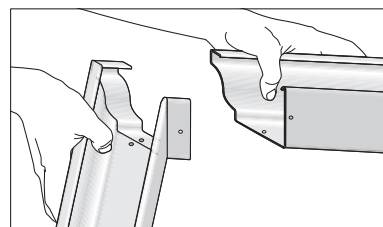


Fig. 3

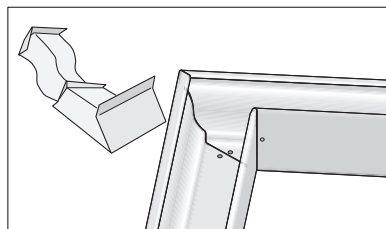


Fig. 4

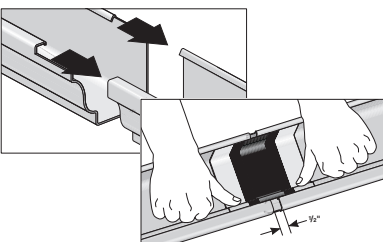


Fig. 5

Installing the Gutter

Using a hacksaw or a power saw, cut the gutter to the proper length.

Install end caps by first applying a bead of sealant to the ends of the gutter and then rivet the end caps into place with aluminum rivets. (Figure 1)

Using aluminum blind rivets, attach downspout clips to the back of the gutter downspouts approximately every eight feet. (Figure 2)

Cut a hole in the gutter to accommodate the eave tube (where the gutter attaches to the downspout). Be sure to allow sufficient clearance on all sides for the flange of the eave tube. (Figure 3)

Apply a bead of gutterseal and rivet the eave tube in place.

Assembling Miters

Occasionally, it will be necessary to miter gutter around an inside or outside corner. Determine the proper point on the gutter to be mitered and cut both left and right-hand gutter lengths at an approximate 45° angle for both inside and outside miters. Seal and rivet miter to one section of gutter and then position gutters onto hangers. Seal and attach miter to second gutter. (Figure 4)

NOTE: Most outside or inside corners are 90° angles.

The second option is to install both gutter sections onto the hangers. The strip miter can then be placed over the top of the mitered joint. Using Gutterseal, seal and pop rivet the strip miter to the two pieces of gutter and then seal all rivet heads and joints on the interior of the gutter.

Installation of Expansion Joints

To join gutter sections together, modify one end by notching the top front bead and rear hook edge 2". Overlap sections 1-1/2" as shown. Apply sealant to all laps and rivet.

On long runs over 37', or where there is no room for expansion, apply expansion joint. Notch gutter as shown and apply a sealant under both sides of the joint. Center the expansion joint over the 1-1/2" metal lap and rivet. (Figure 5)

Installing the Downspouts

Step 1

Attach an elbow to the eave tube, drill holes and rivet the elbow to the eave tube with aluminum rivets. (Figure 1)

Measure and square off the downspout cutting it with either a hack saw or power saw.

It may be necessary to use a second piece of downspout to connect the downspout with the eave tube. If so, rivet all three together, otherwise rivet the downspout directly to the eave tube.

Measure for the downspout clamp.

Step 2

Make a 3/4" hole through the siding only using a boring bit. (Figure 2)

Step 3

Nail or screw the clamp through the center of the oversized hole. (Figure 3)

Step 4

Attach the downspout to the clamp and rivet. (Figure 4)

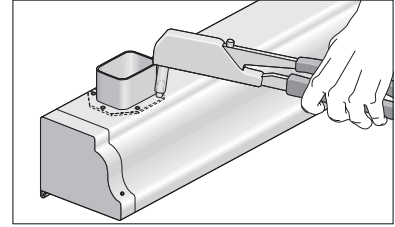


Fig. 1

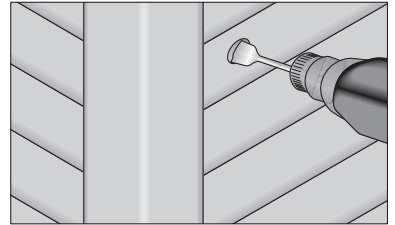


Fig. 2

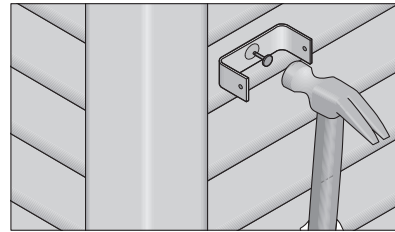


Fig. 3

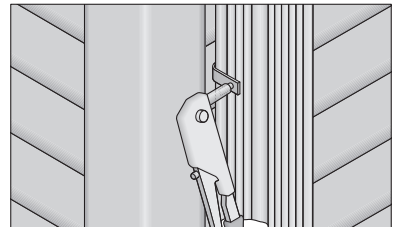

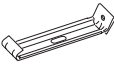
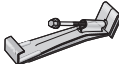


Fig. 4










GUTTERS, DOWNSPOUTS AND LEAF RELIEF

Leaf Relief® Chart

Seamless Gutters

	Spike/ Ferrule	Hidden Hanger Systems	Zip Hanger Systems	No Hanger/ New Gutter
				
TP5300/ TP6300	✓	✓		
TP5100/ TP6100	✓	✓		
SN5200S SN6200S				✓
TP53ZIP TP63ZIP			✓	

Foldover Style Gutter

	Snap In (Free Float) (OG13LR5)	Combin- -ation (OG101)	No Hanger	Snug Fit (OG91)	Bar 5" (OG12R1)	Bar 6" (OG12R61)	Strap 5" (OG111)	Combin- -ation Strap 5" (OG141)	Roof Hanger 5" (OG131)	Roof Hanger 6" (OG1361)
										
TP5300/ TP6300	✓								■ ✓	■ ✓
TP5100/ TP6100	✓								■ ✓	■ ✓
SN5200S SN6200S			✓							
TP53ZIP		✓		✓	✓			✓		
TP63ZIP						✓				
OG13LR5							★ ✓			

- Field notch Leaf Relief® at rod.
- ★ Cut or remove existing hanger.

NOTE: See product guide for ordering code.

5¹/₆" Leaf Relief[®] New Gutter Installation

Prepare the Gutter

Prepare the gutter for downspouts and end caps (including sealant) according to job requirements.

NOTE: Shingles shall extend past drip edge no more than 1/2".

Install Leaf Relief[®] System

Option One (Preferred)

Use snap-lock punch (Malco SL5) or end-cap crimping tool (Malco SL2 – adjustment required) to create lugs every three feet on the back of the gutter (open lug toward fascia). (Figure 1)

Clip the Leaf Relief[®] into the front of the gutter and snap it over the lugs on the back. (Figure 2)

Clip subsequent Leaf Relief[®] sections with 1/2" overlap. (Figure 3)

Lift the gutter and system into place against the fascia and align for proper drainage to outlet.

Fasten into the fascia every 24" using #9x1-1/2" gasketed screws. (Figure 4)

NOTE: Required to use a 6" extension on drill for inserting screws.

Option Two
(when no drip edge is present)

Clip the Leaf Relief[®] system on the gutter (overlap sections 1/2") and secure every two feet by screwing #9x1-1/2" gasketed screws.

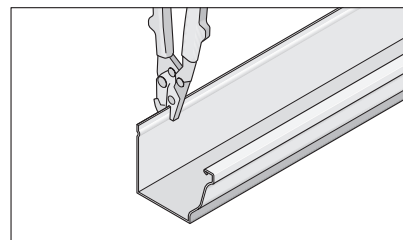


Fig. 1

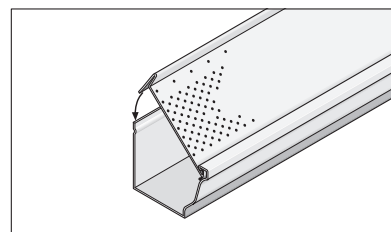


Fig. 2

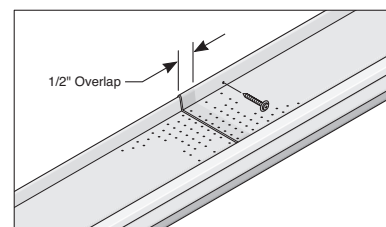


Fig. 3

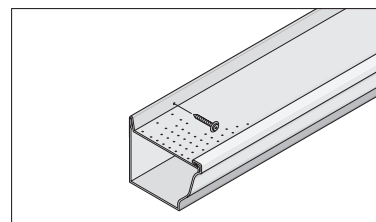


Fig. 4

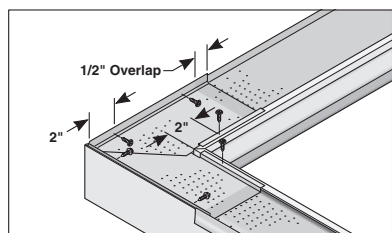


Fig. 1

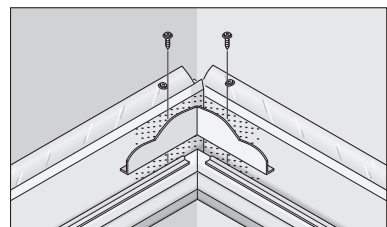


Fig. 2

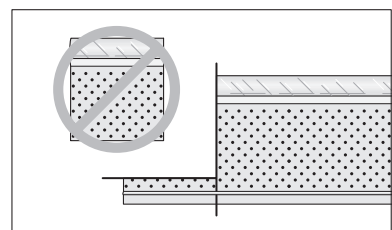


Fig. 3

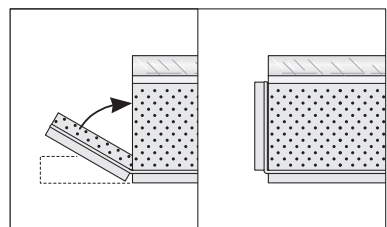


Fig. 4

Install Leaf Relief® Corners

At inside/outside corners, install Leaf Relief® sections towards the corner with a minimum 1/2" overlap with adjacent Leaf Relief® sections.

Attach Leaf Relief® 5" corners (IC5220/ OC5220) or 6" corners (IC6220/OC6220) using 6 screws as shown in the drawing. (Figure 1)

NOTE: Prefabricated corners must be at the same level as the Leaf Relief® sections.

Important

Downspouts 3" x 4" or larger are recommended for proper function in a coniferous tree zone.

To prevent overflow, all inside corners and valleys must have a water diverter/deflector. Diverter/deflector must be installed on the top surface of the Leaf Relief® (behind front lip). (Figure 2)

The flow from high-level gutters must be transferred within downspouts directly into lower-level gutters and sealed. An alternative to this would be to install water diverters.

In applications where the Leaf Relief® is level with the endcap.

At the end of the run, make a 4" cut on the back of the Leaf Relief® up to the lip on the front. (Figure 3)

Cut parallel to the front about 1/2" from the lip.

Make another cut in the opposite direction to the lip.

Turn and fold under the excess material. (Figure 4)

NOTE: If Leaf Relief® is lower than the endcap, stop the Leaf Relief® 1/16" short of the endcap.

Preparing Existing Foldover Gutters for Leaf Relief® Application

Replacing Strap Hangers or Bar Hangers on Existing Gutters

Hook front of snap-in (free float gutter hangers (OG13LR5) into front lip of gutter every 24" along length of gutter. (Figure 1)

NOTE: See product guide for ordering code.

Position block of wood inside gutter at hanger locations. Using claw hammer, apply pressure to bottom of each hanger until hanger engages into existing roof apron or fascia apron. Remove wooden block. (Figure 2)

For strap hangers use a metal cutting tool, such as a reciprocating saw, to cut old strap hangers at drip edge and remove from gutter system. (Figure 3)

For bar hangers remove nail or screw and remove bar hanger from gutter system.

Begin installing TP5300 Leaf Relief® product. Refer to Leaf Relief® instructions for proper installation.

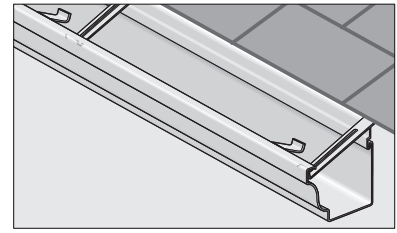


Fig. 1

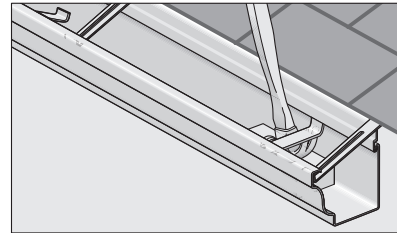


Fig. 2

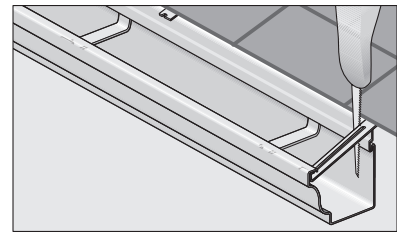


Fig. 3

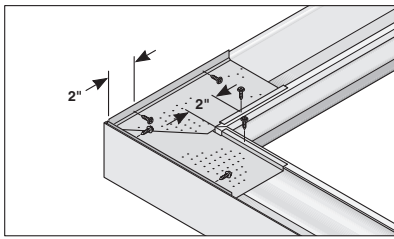


Fig. 1

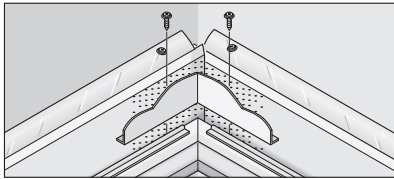


Fig. 2

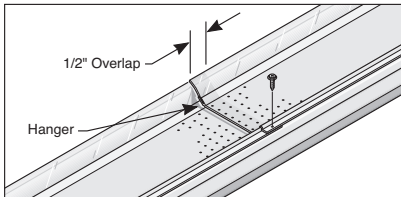


Fig. 3

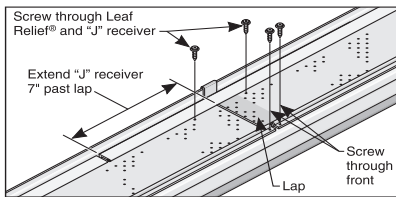
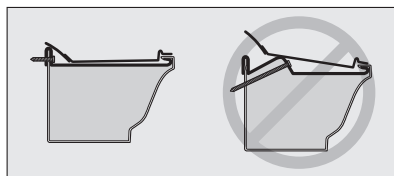


Fig. 4



For application using zip hangers, see Leaf Relief[®] Installation (Zip Hangers) section.

5 1/2" Leaf Relief[®] Retro-Fit Installation on Flat Hangers or Spike/Ferrule

Prepare the Gutter

Clean and flush existing gutters and downspouts thoroughly with water.

Install Leaf Relief[®] Corners

Attach Leaf Relief[®] 5" corners (IC5220/ OC5220) or 6" corners (IC6220/OC6220) using 6 screws as shown in the drawing. (Figure 1)

NOTE: Pre-fabricated corners must be at the same level as the Leaf Relief[®] sections.

Important

Downspouts 3" x 4" or larger are recommended for proper function in a coniferous tree zone.

To prevent overflow, all inside corners and valleys must have a water diverter/deflector (ASDIV). Diverter/deflector must be installed on the top surface of the Leaf Relief[®] (behind front lip). (Figure 2)

The flow from high-level gutters must be transferred within downspouts directly into lower-level gutters and sealed. An alternative to this would be to install water

diverters.

Install Leaf Relief[®] System

NOTE: For TP5100P and TP6100P; slide "J" receiver onto the Leaf Relief[®] sections.

Place the Leaf Relief[®] sections on top of the gutter with the vinyl strip against the fascia or drip edge. For proper function, the Leaf Relief[®] surface (front-to-back) must be level or have a slight slope toward the fascia. Do not install Leaf Relief[®] over hangers that will result in a forward slope.

For best support, place Leaf Relief[®] so that the piece nearest the hanger is beneath the adjoining Leaf Relief[®] section (overlap 1/2" with adjacent Leaf Relief[®] section – do not butt). Add or replace hangers as needed for proper support (maximum support spacing is 30"). (Figure 3)

Starting at one end, fasten front of Leaf Relief[®] to gutter every 24" using #6-3/8" screws. (Figure 4)

NOTE: For TP5100P and TP6100P; adjust the "J" receiver to fit the width of the gutter. Using same screws as noted above, attach every 2' as shown.

Installing Leaf Relief[®] on Half-Round Gutters

Wrap-Around Fascia Hangers

Lay Leaf Relief[®] on gutter in front of hanger and mark location of bracket (see Figure 1).

Notch back of Leaf Relief[®] as shown in Figure 2.

Firmly press back of Leaf Relief[®] behind gutter, and pivot down to rest on front lip of gutter (see Figure 3).

Attach with screws through Leaf Relief[®] and front lip of gutter every 24" (Figure 4).

Continue installing Leaf Relief[®] panels, overlapping 1/2". As required, a screw can be inserted through overlapping panels to reduce sagging.

Spring Clip Bar Hangers

Lay Leaf Relief[®] on gutter in front of hanger and mark location of bracket (see Figure 5).

Cut and notch Leaf Relief[®] as shown in Figure 6.

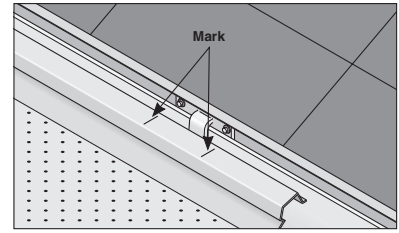


Fig. 1

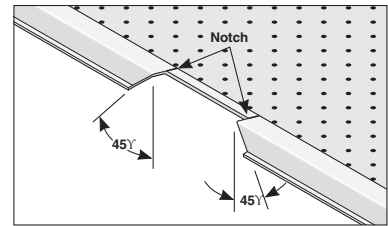


Fig. 2

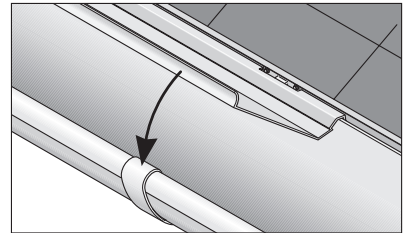


Fig. 3

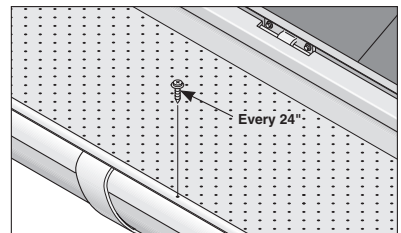


Fig. 4

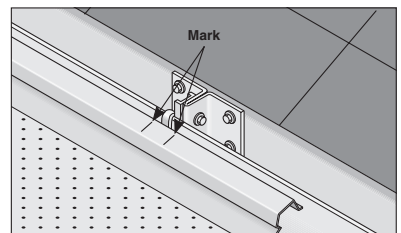


Fig. 5

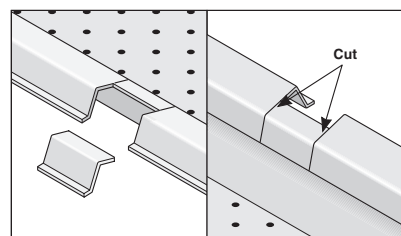


Fig. 6

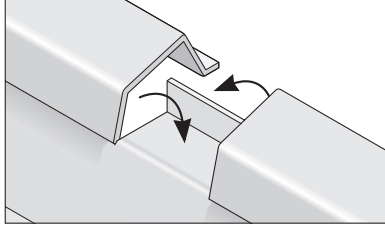


Fig. 1

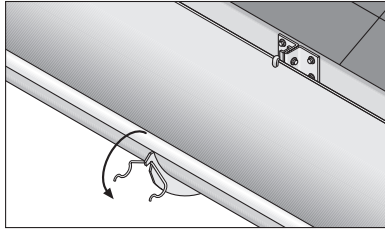


Fig. 2

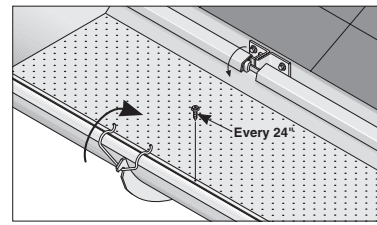


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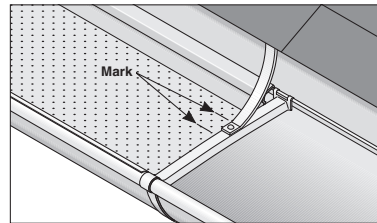


Fig. 4

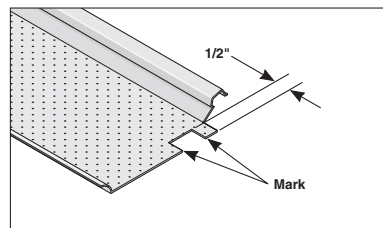


Fig. 5

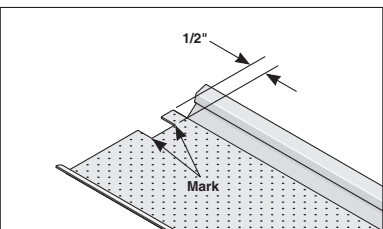


Fig. 6

Installing Leaf Relief[®] on Half-Round Gutters continued

Spring Clip Bar Hangers continued

Bend tab on Leaf Relief[®] as shown in Figure 1.

Release spring clip on front of gutter and bend up back tab holding gutter. (Figure 2).

Place Leaf Relief[®] on gutter, bend hanger back tab over the back of the Leaf Relief[®]. Fasten hanger spring clip over Leaf Relief[®] (Figure 3).

Continue installing Leaf Relief[®] panels, overlapping 1/2", attaching with screws through Leaf Relief[®] and front lip of gutter every 24". As required, a screw can be inserted through overlapping panels to reduce sagging.

Wrap-Around Strap Hangers (Existing Gutters)

Place first Leaf Relief[®] panel on gutter in front of hanger and mark location of strap (see Figure 4).

Cut and notch Leaf Relief[®] as shown in Figure 5 and lay in position on gutter.

Place next section of Leaf Relief[®] on gutter, mark location of strap, then cut and notch as shown in Figure 6.

Installing Leaf Relief® on Half-Round Gutters continued

Wrap-Around Strap Hangers (Existing Gutters) continued

Install on gutter in position so that it overlaps previous section by 1/2".

Attach with screws through Leaf Relief® at every hanger overlap. Also, attach the Leaf Relief® every 24" through the front lip of the gutter (Figure 1). As required, a screw can be inserted through overlapping panels to reduce sagging.

Wrap-Around Strap Hangers (New Gutter Installation)

Plan location of strap hangers and Leaf Relief® panels. Remember that Leaf Relief® must overlap 1/2". Notch Leaf Relief® at each hanger as shown in Figure 2.

Install Leaf Relief®, overlapping panels by 1/2". Screw through front edge of Leaf Relief® into front lip of gutter every 24" (see Figure 3). As required, a screw can be inserted through overlapping panels to reduce sagging.

Attach hangers, over Leaf Relief®, to gutters (Figure 4).

Install gutters to structure per manufacturer's instructions.

Mitering Corners

For Outside Corners:

Use perforation pattern as a guide to create corners. Using tin snips, cut diagonally along the perforation to create a 45° angle, starting at the outside edge and cutting as shown. Notch and remove one inch of the front edge from the newly formed angle (Figure 5).

When mounted, the pieces will overlap one inch and form a 90° outside corner. Place one screw through the overlapping pieces (Figure 6).

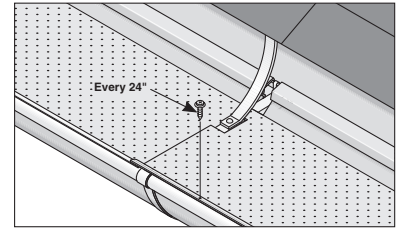


Fig. 1

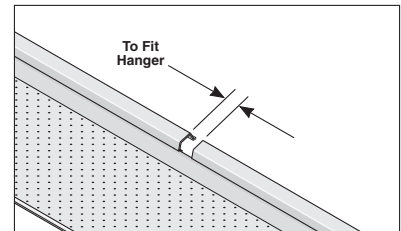


Fig. 2

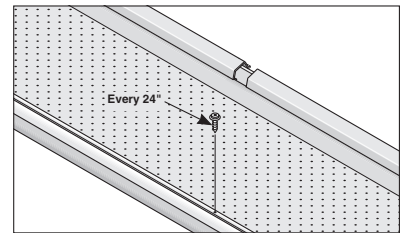


Fig. 3

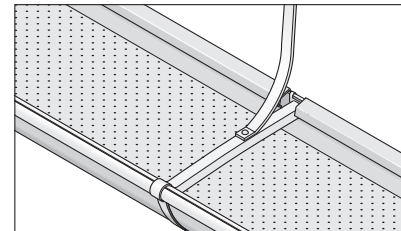


Fig. 4

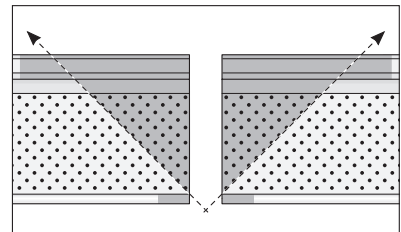


Fig. 5

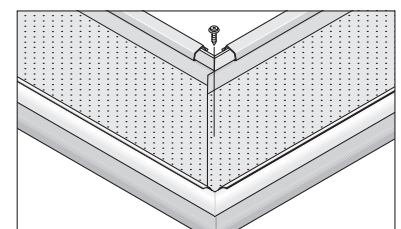


Fig. 6

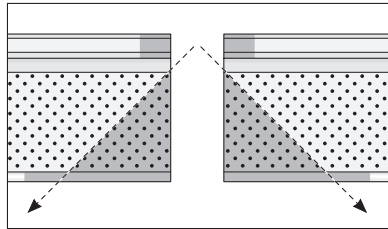


Fig. 1

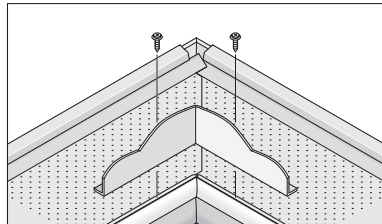


Fig. 2

Installing Leaf Relief[®] on Half-Round Gutters continued

Mitering Corners continued

For Inside Corners:

Use perforation pattern as a guide to create corners. Using tin snips, cut diagonally along the perforation to create a 45° angle, starting at the rear edge and cutting as shown. Notch and remove one inch of the front edge from the newly formed angle (Figure 1).

When mounted, the pieces will overlap one inch and form a 90° inside corner. Place one screw through the overlapping pieces (Figure 2).

NOTE: To prevent overflow, all inside corners and valleys must have a water diverter/deflector. Diverter/deflector must be installed on the top surface of Leaf Relief[®].

Leaf Relief® Installation (Zip Hangers)

Prepare the Gutter

Clean and flush existing gutters and downspouts thoroughly with water.

Important

Downspouts 3" x 4" or larger are recommended for proper function in a coniferous tree zone.

To prevent overflow, all inside corners and valleys must have a water diverter/deflector. Diverter/deflector must be installed on the top surface of the Leaf Relief® (behind front lip).

The flow from high-level gutters must be transferred within downspouts directly into lower-level gutters and sealed. An alternative to this would be to install water diverters.

Install Leaf Relief® System

Place the Leaf Relief® sections on top of the gutter with the vinyl strip against the fascia or drip edge. For proper function, the Leaf Relief® surfaces (front-to-back) must be level or have a slight slope toward the fascia. (Figure 1)

For best support, place Leaf Relief® so that the piece nearest the hanger is beneath the adjoining Leaf Relief® section (overlap 1/2" with adjacent Leaf Relief® section – do not butt). Add or replace hangers as needed for proper support (maximum support spacing is 30"). (Figure 2)

Starting at one end, fasten front of Leaf Relief® to gutter every 24" using #6-3/8" screws (SQ6X038).

NOTE: To prevent overflow, all inside corners and valleys must have a water diverter/deflector. Diverter/deflector must be installed on the top surface of Leaf Relief®.

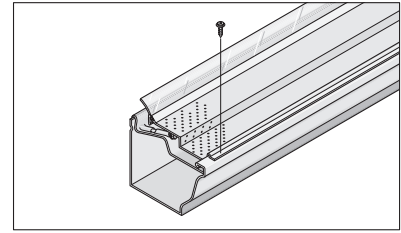


Fig. 1

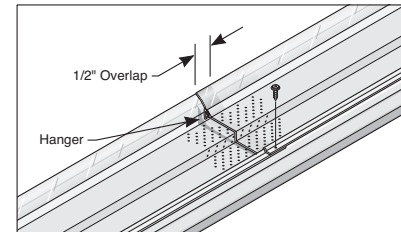


Fig. 2

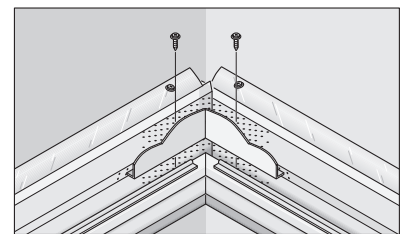


Fig. 3

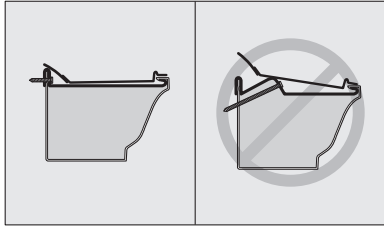


Fig. 1

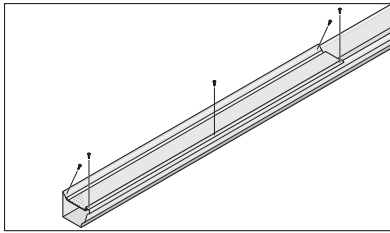


Fig. 2

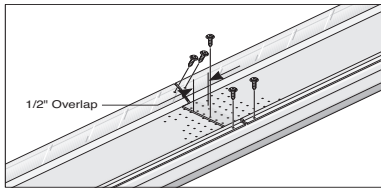


Fig. 3

Leaf Relief® EZ5340-DIY Installation

Prepare the Gutter

Clean and flush existing gutters and downspouts thoroughly with water.

Install Leaf Relief® System

For proper function, the Leaf Relief® surface (front to back) must be level or have a slight slope toward the fascia. (Figure 1)

NOTE: Call 1-800-962-6973 for assistance with hangers that cause a forward slope.

Mounting to Gutter

Using the existing spikes or hidden hangers for support, place Leaf Relief® section flat on the gutter (see sticker denoting “This Side Down”).

Using screws provided, attach Leaf Relief® with three (3) screws on front and two (2) screws through the plastic strip on back as shown. (Figure 2)

Attach remaining pieces, making sure to overlap 1/2" with adjacent Leaf Relief® sections. Place one screw through metal overlap. (Figure 3)

Leaf Relief® Installation (Mitered Corners)

Outside Corners

Use perforation pattern as a guide to create corners. Using tin snips, cut diagonally along the perforation to create a 45° angle, starting at the outside edge and cutting as shown, through the plastic strip. Notch and remove one inch of the front edge and plastic strip from the newly formed angle. When mounted, the pieces will overlap one inch and form a 90° outside corner. Place one screw through the overlapping pieces. Attach to back through plastic strip, with screws, two inches from the point of the corner.

TP53ZIP/TP63ZIP – Inside Corner

NOTE: Because TP product has profile, pre-fabricated corners can not be used.

Use the perforated pattern to cut a 45° angle at the ends of the Leaf Relief sections. Then cut away 1" from the front and back of one section as shown.

The sections will overlap by 1" and be attached with a #6x3/8" stainless steel screw.

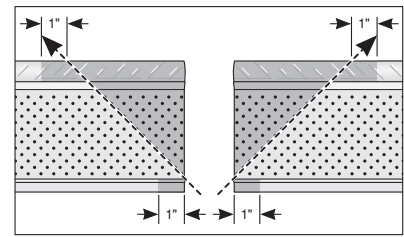


Fig. 1

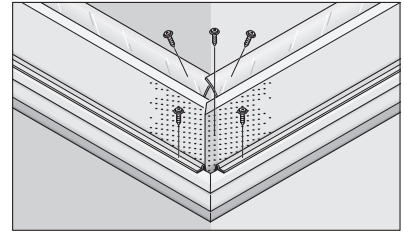


Fig. 2

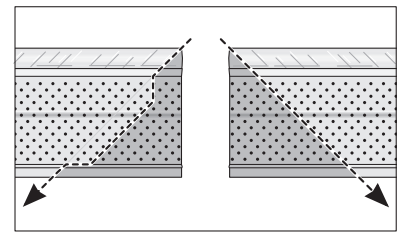


Fig. 3

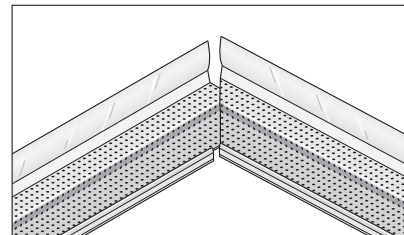


Fig. 4

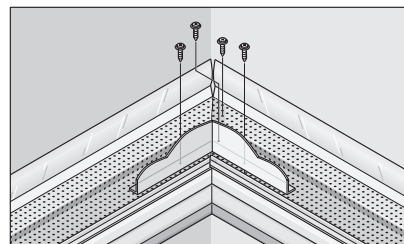


Fig. 5

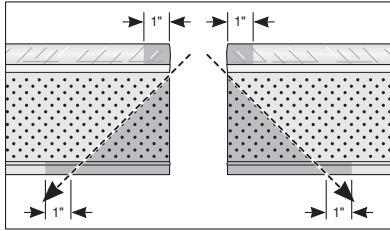


Fig. 1

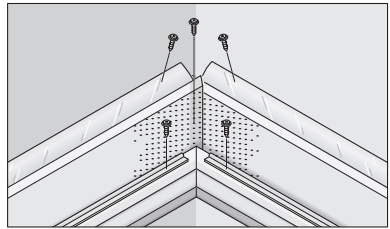


Fig. 2

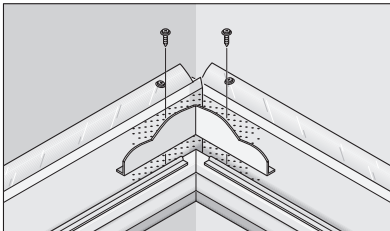


Fig. 3

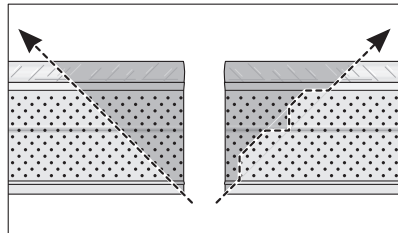


Fig. 4

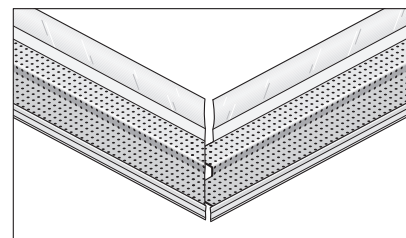


Fig. 5

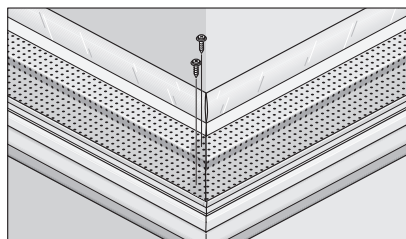


Fig. 6

Leaf Relief® Installation (Mitered Corners) continued

Inside Corners

Use perforation pattern as a guide to create corners. Using tin snips, cut diagonally along the perforation to create a 45° angle, starting at the rear edge (plastic strip) and cutting as shown, until complete. Notch and remove one inch of the front edge and plastic strip from the newly formed angle. When mounted, the pieces will overlap one inch and form a 90° inside corner. Place one screw through the overlapping pieces. Attach to back through plastic strip, with screws, two inches from the point of the corner.

Important

To prevent overflow, all inside corners and valleys must have a water diverter/deflector, sold separately. Diverter/deflector must be installed on the top surface of the Leaf Relief® (behind front lip).

TP53ZIP/TP63ZIP – Outside Corner

Use the perforated pattern to cut a 45° angle at the ends of the Leaf Relief sections. Then cut away 1" from the front, first step and back of one section as shown.

Overlap sections by 1" and attach with a #6x3/8" stainless steel screw.

Lined area for notes with horizontal ruling lines.

REDRING

For Questions contact :

BBT NORTH AMERICA
Bosch Group



Bosch Water Heating
340 Mad River Park
Waitsfield VT 05673
TOLL FREE
866-330-2729



www.boschhotwater.com

Handbook for

PowerStar
electric tankless water heaters

MODELS

AE115 AE125

SINGLE PHASE

IMPORTANT: This booklet should be given to the customer after installation and demonstration.

Important Safety Instructions

When using this electrical equipment, basic safety precautions should always be followed, including the following:

1. **READ AND FOLLOW ALL INSTRUCTIONS.**
2. This appliance must be grounded.
3. Disconnect this product from the electrical supply before cleaning, servicing or removing the cover.
4. To reduce the risk of injury, close supervision is necessary when the product is used near children or elderly persons.
5. Warning: Mount the unit onto a flat section of wall, well away from any potential splashes of water or spray and away from areas where direct moist or wet contact could occur.
6. Warning: Do not install the heater in a location where it may be subject to freezing.
7. Warning: Do not install a check valve or any other type of back flow preventer within ten feet of the cold water inlet.
8. The electrical installation must conform to current National Electrical Codes.
9. Warning: Do not switch the heater on if you suspect that it may be frozen. Wait until you are sure that it has completely thawed out.
10. The PowerStar is designed to heat potable cold water for domestic purposes. The **maximum** inlet water temperature it can handle is 86 degrees F. Contact Bosch Water Heating before specifying or installing the appliance in any other application.
11. Additional Canadian safety instructions:
 - a) As per the Canadian Electrical Code, C22.1-02 Section 26-744, an auxiliary terminal block must be fitted to the unit before connecting to the electrical supply (Kit Part N° "AE Canada Kit"). (See Page 7).
 - b) A green terminal (or a wire connector marked "G," "GR," "GROUND" or "GROUNDING") is provided within the control. To reduce the risk of electrical shock, connect this terminal or connector to the grounding terminal of the electrical service of supply panel with a continuous copper wire in accordance with the Canadian Electrical Code, Part I.
 - c) This product shall be protected by a Class A ground fault circuit interrupter.

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Starting up the PowerStar	8
How the PowerStar works	9
Using the PowerStar	10
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SAVE THESE INSTRUCTIONS

Keep this guide in a safe place once your unit has been installed.
You may need to refer to it for general instructions or future maintenance.

Specifications

	AE115 Unit	AE125 Unit
Voltage supply	2 x 240V AC (Canada 240VAC)	3 x 240V AC (Canada 240VAC)
Amperage	2 x 40 A (Canada 80 A)	3 x 40 A (Canada 120 A)
Maximum output	17.25 kW	26.85kW
Temperature control range	95°F to 131°F	95°F to 131°F
Pressure range	15 psi to 150 psi	15 psi to 150 psi
Minimum flow rate	0.6 US gal / min	0.8 US gal / min
Maximum flow rate	See Graph 1, Page 8	See Graph 1, Page 8
Dimensions (excl. water couplers)	15½" H x 15¼" W x 4½" D	15½" H x 15¼" W x 4½" D
Weight (without water)	20 lbs	22 lbs

Note: The unit will work at lower supply voltages but the following changes will apply:

Maximum output	15kW at 220V 13kW at 208V	22.5kW at 220V 20kW at 208V
Temperature control range	87°F to 116°F at 220V 82°F to 108°F at 208V	87°F to 116°F at 220V 82°F to 108°F at 208V
Maximum flow rate (refer to Graph 1, Page 8)	84% of maximum at 220V 75% of maximum at 208V	84% of maximum at 220V 75% of maximum at 208V

Installing the PowerStar

WARNING:

If water supply has a high mineral content, a water softening system is strongly recommended. Damage to the water heater resulting from scale or hard minerals will not be covered under warranty.

DISCLAIMER:

In the Commonwealth of Massachusetts a licensed plumber or electrician must perform the installation. (Approval number: P1-09-25).

Locating the Powerstar

WARNING:

Do not install the water heater in an area where there is a chance of freezing. Damage to the water heater as a result of freezing will not be covered under warranty.

- If being used in a public place, locate the heater out of easy reach to discourage vandalism.
- Mount the unit onto a flat section of wall, well away from any potential splashes of water or spray and away from areas where direct moist or wet contact could occur.

Should it be necessary to service the Powerstar, observe the following clearances. These are not required clearances, but would facilitate any service work.

Recommended minimum clearances for servicing			
Top	12"	Bottom	6"
Sides	0"	Front	12"

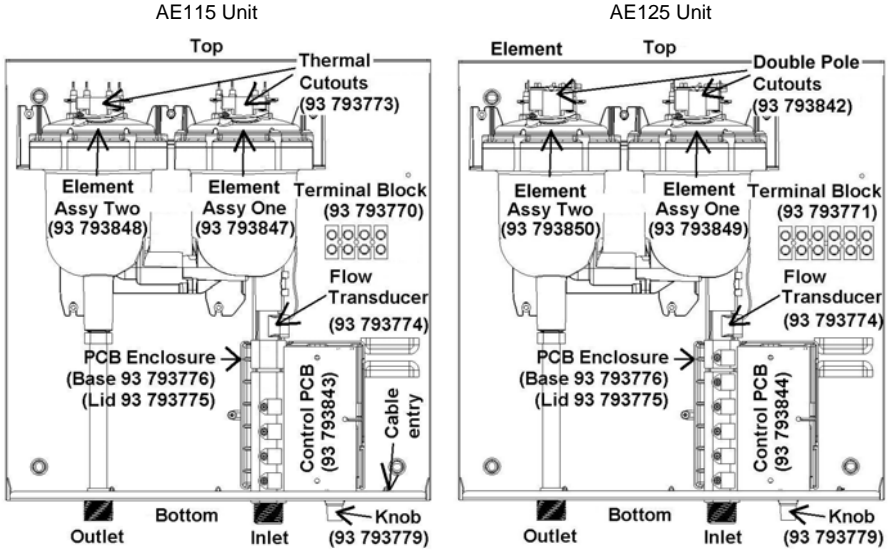
Mounting the Powerstar

WARNING:

The heater must only be installed in the orientation shown in Diagram 1 i.e., mounted in a vertical position with the water fittings located at the bottom of the heater. **Under no circumstances should the heater be mounted differently.**

- Undo the retaining screws on the front cover and take the cover off the heater. Hold the back plate in position against the wall and mark the four mounting holes
- Drill the holes and secure the heater using the four wood screws supplied.

Diagram 1



Water Connections

WARNING:

Do not install a non-return check valve within 10 feet of the inlet.

WARNING:

Do not apply heat or solder to connections or pipe if they are already connected to the unit.

DISCLAIMER:

In the Commonwealth of Massachusetts a pressure relief valve shall be installed on the cold water side by a licensed plumber. (MGL 142 Section 19, Approval number P1-09-25)

- The heater must be connected directly to the main cold water supply and **not to pre-heated water.** (The inlet water temperature must not be greater than 86°F.)
- The heater must be installed with shutoff valves on both the inlet and outlet connections.
- It is recommended that you use ¾ inch or ½ inch copper or high-pressure flex connections.

- Do not use plastic piping within 3 feet on either side of heater.
- Use Teflon tape for sealing pipe threads. Do NOT use pipe dope.
- Remember to keep the hot water pipe runs as short as possible.
- After the heater has been plumbed, and before you wire it, flush it with water to remove any debris or loose particles. Heater must be full of water and air purged before power is turned on. Failure to do so may make the heater inoperable.
- The inlet and outlet connections are clearly marked on the heater. They each have a ¾ inch NPT connector.
- Check the pressure of the main water supply. To operate correctly, the heater needs the following running pressures:

Recommended water pressures			
Min water pressure	15 psi (1 Bar)	Max water pressure	150 psi (10 Bar)

Electrical connections

WARNING

The unit must be wired by a qualified electrician, in accordance with the current version of the National Electrical Code US) or Canadian Electric Code (Canada).

IMPORTANT

When the heater is not within sight of the electrical circuit breakers, a circuit breaker lockout or additional local means of disconnection for all non-grounded conductors must be provided that is within sight of the appliance. (Ref NEC 422.31.)

IMPORTANT

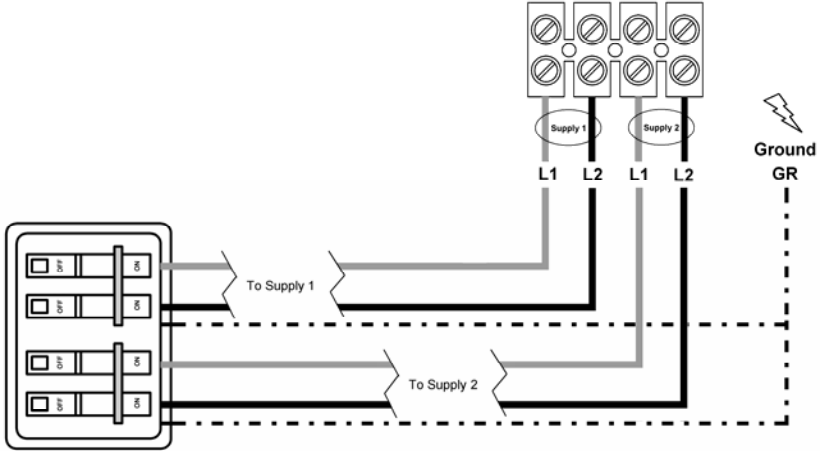
As per the Canadian Electrical Code, C22.1-02 Section 26-744, an auxiliary terminal block must be fitted to the heater before connecting to the electrical supply. This is available as a kit from Bosch Water Heating, Part Number "AE Canada Kit". (Contact 866-330-2729).

US wiring

- The minimum recommended wire size is 8 AWG. (The terminal block will accept cables up to 6 AWG size.)
- The cable entry is via the 1 ¼ inch cable entry hole on the bottom right hand edge of the back plate.
- Strip back the insulation on the power wires about ½ inch. Connect the live wires to the terminals marked "L1" and "L2." There are two pairs of live wires in the AE115 and three pairs of live wires in the AE125. (See Diagrams 2 or 3 on page 6).
- Any insulation on the ground wires should be stripped back about ¾ inch. The ground leads must be connected to the pillar terminal marked "GR". (See Diagrams 2 and 3, Page 6).
- Make sure the terminal block screws are tightened securely. Loose connections can cause wires to heat up.
- Make sure that the ground wires are wrapped around its terminal stud and into the saddle washer. The nut should be tightened securely.
- Attach the front cover and tighten the retaining screws.

Diagram 2

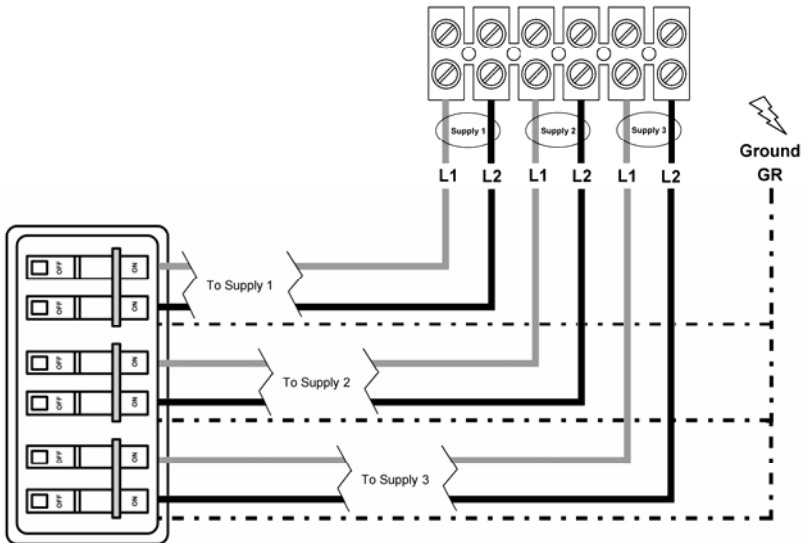
AE115 Terminal Block Connection



The AE115 requires two independent 240V AC circuits protected by two separate and independent double pole breakers (as shown) rated at 40 A each.

Diagram 3

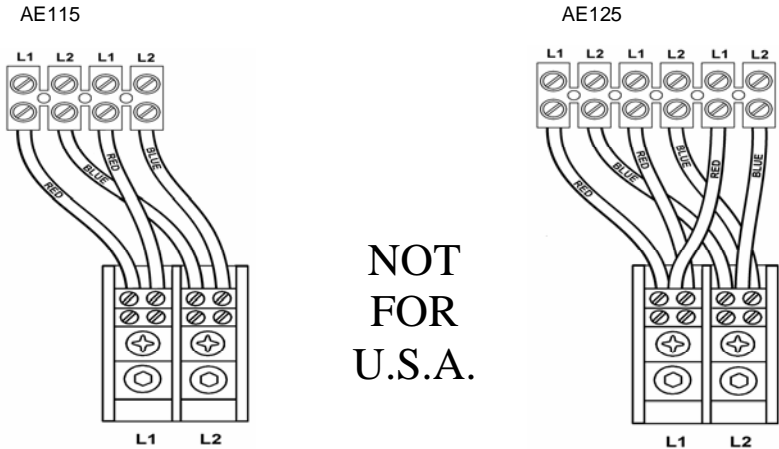
AE125 Terminal Block Connection



The AE125 requires three independent 240V AC circuits protected by three separate and independent double pole breakers (as shown) rated at 40 A each.

Canada wiring – auxiliary terminal block and connections

Fitting the auxiliary terminal block (see diagram below).



- Connect the red wires from the left hand terminal of the new block to the L1 terminals in the unit. (There are two red wires required in the AE115 and three in the AE125).
- Connect the blue wires from the right hand terminal of the new block to the L2 terminals in the unit. (There are two blue wires required in the AE115 and three in the AE125).
- Push and click the auxiliary terminal block onto the louvered rail in the backplate.

Connecting the supply cable - Canada only - not for the USA.

- The AE115 requires an 80A 240V AC single phase supply protected by an 80A double pole circuit breaker.
- The AE125 requires a 120A 240V AC single phase supply protected by a 120A double pole circuit breaker.
- The power cable size and the installation must be in accordance with the Canadian Electrical Code, C22.1-02.
- The incoming hole diameter on auxiliary terminal block can accept up to 1/0 AWG size cables.
- The cable entry is via the 1 ¼ inch cable entry hole on the bottom right hand edge of the backplate.
- Strip back the insulation on the power wires about ½ inch. Connect the ungrounded conductors to the terminals "L1" and "L2" on the auxiliary terminal block.
- Any insulation on the ground wire should be stripped back about ¾ inch. The ground lead must be connected to the pillar terminal marked "GR."
- Make sure the terminal block screws are tightened securely. Loose connections can cause wires to heat up.
- Make sure that the ground wire is wrapped around its terminal stud and into the saddle washer. The nut should be tightened securely.
- Attach the front cover and tighten the retaining screws.

Starting up the PowerStar

Checking for leaks and purging air

- Verify all circuit breakers supplying power to the water heater are turned off.
- Open all hot water taps supplied by the water heater and inspect all water connections for leaks.
- With all hot water taps still open, inspect each tap to ensure all air in the lines has been purged out.
- With the air purged and taps still flowing, turn on all circuit breakers supplying the water heater.
- Close all hot water taps and proceed to the next section.

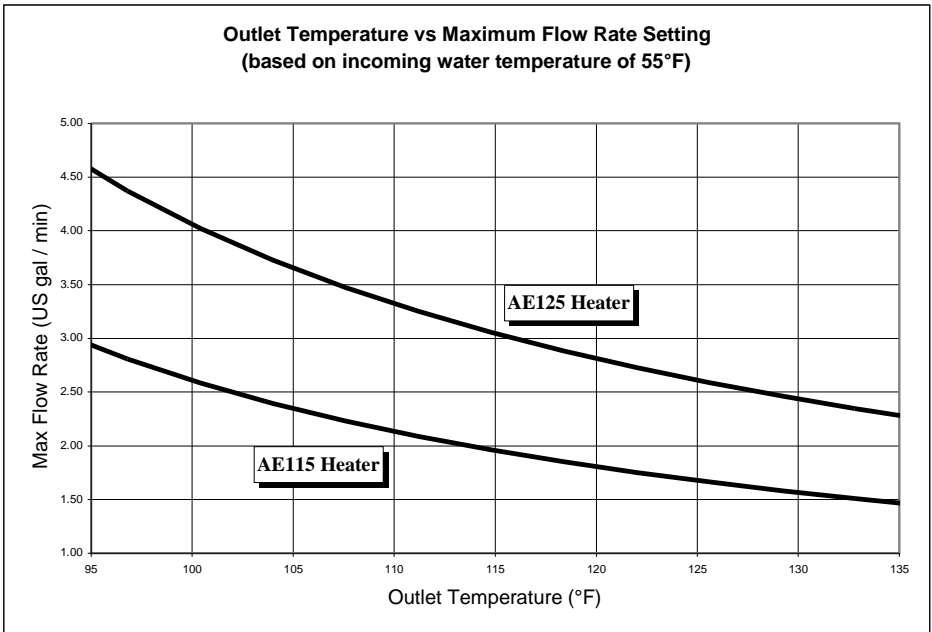
Adjusting the temperature dial

- The temperature adjustment is made using the dial on the bottom edge of the unit. The adjustment is between approximately 95°F and 135°F. Turning the dial clockwise increases the temperature setting as indicated by the marking on the unit.

Adjusting the flow

- Open fully both inlet and outlet shut-off valves at the heater, then :
- Turn on fully the highest flowing hot water faucet (e.g., bathtub) served by the water heater.
- Adjust the outlet shut-off valve until the water flow rate from the hot faucet corresponds to the value given in Graph 1 below.

Graph 1



For example:

- For the AE115 unit, using the outlet ball valve, ensure the flow rate does not exceed 2.3 gallons / minute.
- For the AE125 unit, using the outlet ball valve, ensure the flow rate does not exceed 3.5 gallons / minute.

Note: These figures are based on an inlet water temperature of 55°F and a supply voltage of 240 volts. If the inlet water temperature is lower than 55°F, or if the supply voltage is less than 240 volts, then the outlet temperature will be lower than what is shown in Graph 1. If a higher outlet water temperature is desired, then reduce the flow rate and/or supply the unit with 240 volts.

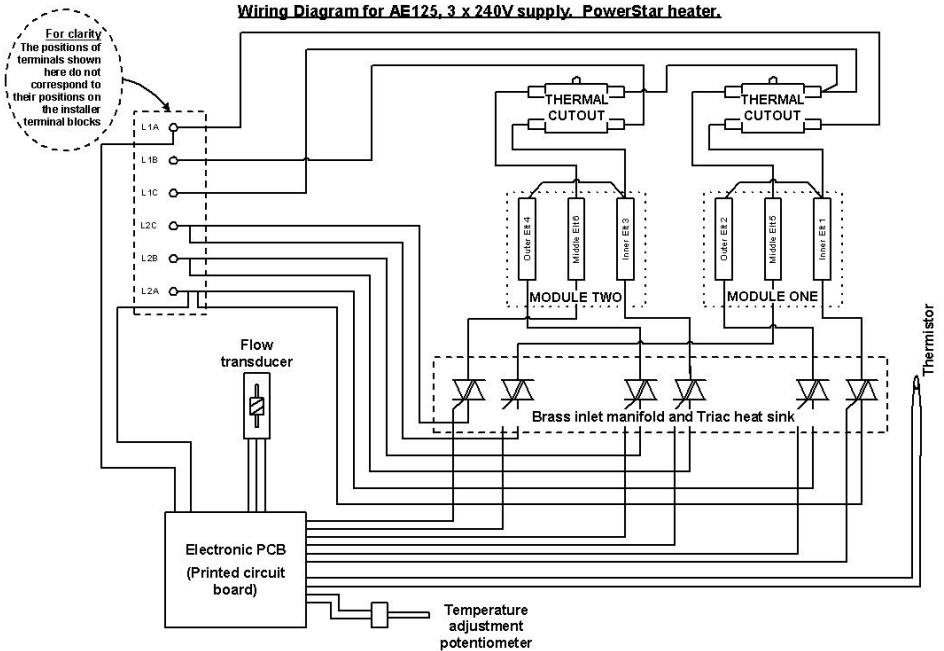
IMPORTANT

Before leaving the site, the installer should demonstrate the unit to the user and give them this guide.

How the PowerStar works

- The PowerStar heats water continuously as it flows through the heater modules.
- The electronic control PCB monitors the flow rate and the incoming water temperature and then switches on the required number of heater elements to reach the temperature set by the adjustment dial.
- As the flow rate or the incoming water temperature changes, the electronic control adjusts the number of heater modules used so that the outlet temperature is maintained.
- The outlet water temperature can change slightly as the flow rate changes due to the steps in power as different heater modules are switched on and off.
- The outlet water temperature can also vary if the maximum flow rate is exceeded (see Graph 1) or if the supply voltage changes.
- Each heater module is protected by an electro-mechanical thermal cut-out. If the temperature of any of the heater modules gets too high, then the cut-out will trip and cut the power to that heater module. If the cut-out trips, it must be reset while the circuit breakers are off. If you are not comfortable or qualified to perform this task, consult the original installer or a licensed electrician. This cut-out will only trip in exceptional circumstances.
- The AE115 unit is supplied from two independent voltage supplies and the AE125 unit from three independent voltage supplies. (In Canada the unit has just one voltage supply).
- Depending on the region of the country, the temperature of the water supply can vary between 40°F in winter to 70°F in summer, with an average of 55°F.

Diagram 4: Internal wiring schematic for single phase AE125 unit. (AE115 does not have Elt 5 & 6 fitted and uses two supplies). (In Canada an auxiliary terminal block is fitted during installation).



Using the PowerStar

WARNING

Do not use the unit if you think it may be frozen, as this could result in serious damage to the unit. Wait until you are sure that it has completely thawed out before you switch it on.

- Check that the power is switched on at the circuit breaker panel.
- Turn on the hot water faucet FULLY. The hot water temperature can be changed by adjusting the temperature dial on the bottom surface of the unit. (The dial adjusts the temperature typically between 95°F and 131°F. The factory sets the temperature dial at the lowest position.)
- There are internal safety thermal cut-outs which will trip if the unit overheats. If the cut-out trips, it must be reset while the circuit breakers are off. If you are not comfortable or qualified to perform this task, consult the original installer or a licensed electrician.
- If the unit has been used recently, run the water through for a few seconds to let the temperature cool down. You may initially get a short burst of very hot water that was in the plumbing lines from previous use.
- If a second outlet connected to the unit is also turned on, the hot water will be shared between the two.

Spare Parts

Part Number	Description (Refer to Diagram 1, Page 4)	
93 793770	4 way term. block (for AE115)	<p>For further information ask your local dealer.</p> <p>FOR SERVICE AND INSTALLATION QUESTIONS CALL TOLL FREE:</p> <p>866-330-2729 (Toll Free)</p> <p>Fax: 802-496-6924</p> <p>BBT NORTH AMERICA</p> <p>Bosch Group</p> <p>Bosch Water Heating 340 Mad River Park Waitsfield, VT 05673 Phone 866-330-2729 Fax 802-496-6924</p> <p>www.boschhotwater.com techsupport@boschhotwater.com</p>
93 793771	6 way term. block (for AE125)	
93 793772	Front cover (white)	
93 793773	Thermal cut-out (AE115)	
93 793842	Double pole cut-out (AE125)	
93 793774	Flow transducer	
93 793775	PCB enclosure (lid)	
93 793776	PCB enclosure (base)	
93 793843	Control PCB (for AE115)	
93 793844	Control PCB (for AE125)	
93 793779	Adjustment knob	
93 793845	O Ring set	
93 793846	Fixing screws for heater flange	
93 793784	¾" Inlet filter screen	
93 793847	Heater element assembly 1 (AE115)	
93 793848	Heater element assembly 2 (AE115)	
93 793849	Heater element assembly 1 (AE125)	
93 793850	Heater element assembly 2 (AE125)	

Maintenance

Check inlet water filter screen once a year

- Shut off the installer supplied cold water isolation valve to the heater. If one is not installed, install before proceeding.
- Open nearest hot water tap to relieve pressure in the plumbing lines.
- Position a bucket under the cold water inlet connection of the heater to catch any water that may drain.
- Loosen cold water plumbing connection (bottom right of heater) to access filter screen (See Diagram 1, Page 4).
- Remove filter, clean with water and inspect for damage. If the filter is at all damaged, it should be replaced.

Troubleshooting

WARNING

Always switch off the electricity supply to the unit before you remove the cover.

IMPORTANT:

If you are unable to perform the tasks listed below, or need additional assistance please contact your original installer/licensed electrician.

Cold water only – Neon light off

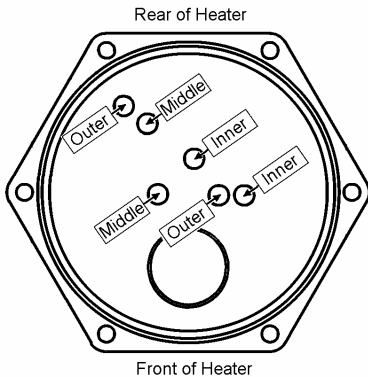
Flow rate is too low	Verify the flow rate out of fixture is at or above the minimum activation rate required for the unit to activate. (Activation rates: AE115 = 0.6 GPM, AE125 = 0.8 GPM).
The water supply is connected to the outlet of the unit	Verify plumbing connections are correct (See Diagram 1, Page 4). Reconnect the water supply to the inlet of the unit (marked blue).
Plumbing crossover	To test for a plumbing crossover, turn off power supply to the heater. Close installer supplied cold water shut off valve (if none installed, install before proceeding). Open all hot water taps supplied by the heater. Wait 5 minutes and check all taps. Any water running is a sign of a plumbing crossover. Consult a local plumber or service person for help in correcting a plumbing crossover. To return the heater to service, reinstall cover, open the inlet water supply to the heater and open all hot water taps. Let all taps run until there is no air coming out of the fixtures. Shut off all hot water taps. Turn power supply on to the heater. Return heater to service. (This procedure will prevent the heating elements from burning out).
The flow transducer is not spinning	Turn off the power supply to the heater and remove the cover. Observe if the flow transducer "spins" when the water is turned on. Please note the flow transducer spins at a high speed and can appear to be stopped when actually spinning. It is recommended to observe the flow transducer without water flowing, then turn on a hot water tap while observing the flow transducer. If the flow transducer is not spinning, remove and flush flow transducer. See the technical support section of www.boschhotwater.com for more detailed instruction on removing the flow transducer.
One or more of the heating module thermal cut-outs has tripped	Turn off the power to the heater, remove the cover and locate thermal cutouts on the top of each heating module. Try resetting each cutout by pushing the reset button located in the center of the cutout. Determine and fix the cause of the overheating. Obstructions in the water path can restrict the flow of water through the heater causing it to overheat. Verify the heater's inlet filter screen and all outlets served by the heater are clear of debris. Ensure the heater is not being fed preheated water. This water heater is designed for a cold water supply only. If thermal cut out does not reset, check for continuity through each cutout (less than 0.5 Ohms). If any cutout reads more than 0.5 Ohms or open, then it may be defective and should be replaced.
No electricity at the heater or one of the supplies has failed	Have a licensed electrician verify proper wiring and adequate voltage on the terminal block inside the water heater. See the "Electrical connections" section on Page 5 of this manual.

Water too cold – Neon light on

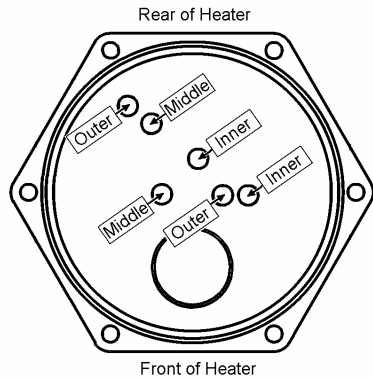
Temperature dial is turned too low	Turn the temperature dial located on the bottom of the water heater clockwise for hotter temperatures. Refer to Graph 1 for outlet temperature vs. flow rate variance.								
Water flow is too high	Adjust water flow to stay within the water heater's specifications. See Graph 1 on Page 8 of this manual.								
One or more of the heating module thermal cut-outs has tripped	Shut off the power to the unit, remove the cover and locate thermal cutouts on the top of each heating module. Try resetting each cutout by pushing the reset button located in the center of the cutout. Determine and fix the cause of the overheating. Obstructions in the water path can restrict the flow of water through the heater causing it to overheat. Verify the heater's inlet filter screen and all outlets served by the heater are clear of debris. Ensure the heater is not being fed preheated water. This water heater is designed for a cold water feed only. If thermal cut out does not reset, check for continuity through each cutout (Less than 0.5 Ohms). If any cutout reads more than 0.5 Ohms or open, then it may be defective and should be replaced.								
The power supply voltage has dropped	<p>This is likely an issue with the incoming power supply. Have a qualified electrician measure voltage on the water heater's terminal block while operating at maximum flow and maximum temperature setting. The AE115 / AE125 models are rated for 240V and will also operate at 220V or 208V with reduced output. The output will vary in accordance with the following ratios:</p> <table border="1"> <tr> <td>Volts</td> <td>208</td> <td>220</td> <td>240</td> </tr> <tr> <td>Output Ratio</td> <td>0.75</td> <td>0.84</td> <td>1.0</td> </tr> </table>	Volts	208	220	240	Output Ratio	0.75	0.84	1.0
Volts	208	220	240						
Output Ratio	0.75	0.84	1.0						
The inlet water temperature is too cold	Verify the heater is sized appropriately for its geographic location. Turn temperature knob located on the bottom of the water all the way clockwise for maximum temperature setting. Ensure flow rates are within the heater's specifications. Refer to Graph 1 on Page 8 of the manual. Use of an isolation valve on the hot water outlet to control flow rate is recommended.								
One of the power supplies is not on	Have a licensed electrician verify adequate voltage on the terminal block inside the water heater. Verify circuit breakers serving the heater are not tripped. See the "Electrical connections" section on Page 5 of this manual.								
Premature element failure	Shut off power to the unit and remove cover. Use an ohmmeter to verify correct resistance on each element. If readings are different than listed specifications on Page 14, contact Technical Support (866) 330-2729 for further instruction.								

Using an Ohmmeter to check for Premature element failure

LEFT MODULE Top View



RIGHT MODULE Top View



Meter probes	Ohm Reading
Outer to Outer	10.5 ± 0.5 Ohms
Middle to Middle	11.5 ± 0.5 Ohms
Inner to Inner	15.0 ± 1 Ohms

Meter probes	Ohm Reading
Outer to Outer	10.5 ± 0.5 Ohms
Middle to Middle	11.5 ± 0.5 Ohms
Inner to Inner	21.0 ± 1 Ohms

Note: On AE115 model, there is no middle element.

Water flow too low	
There are restrictions in the plumbing	Obstructions in the water path can restrict the flow of water through the heater. Verify the heater's inlet filter screen, faucet aerators, showerheads and whole house filters are clear of debris. Verify proper flow on the outlet side of the heater with the hot water pipe disconnected. Maximum flow rates for each unit are as follows. AE115 = 2.3gpm, AE125 = 3.5gpm.
Water supply pressure too low	Verify incoming water supply is at least 30psi. For people on well systems, the recommended pressure range is 30-50psi.
Outlet shut-off valves are set too low	Adjust installer supplied outlet valve as described below: <ul style="list-style-type: none"> • Completely open both installer supplied inlet and outlet shut-off valves at the heater. (if none installed, install before proceeding) • Completely open hot water on the highest flowing hot water fixture served by the heater (i.e. bathtub). • Slowly close the outlet shut-off valve, slowing the water flow rate until the temperature at the hot water faucet corresponds to the values given on Graph 1 on Page 8 of the manual, or desired water temperature is reached.

Water Temperature Too Hot

Temperature dial set too high	Turn the temperature knob located on the bottom of the water heater counterclockwise for cooler temperatures.
There are restrictions in the plumbing	Obstructions in the water path can restrict the flow of water through the heater causing overheating. Verify the heater's inlet filter screen, faucet aerators, showerheads and whole house filters are clear of debris. Verify proper flow on the outlet side of the heater with the hot water pipe disconnected. Opening hot water isolation valve fully may be necessary. Maximum flow rates for each unit are as follows. AE115 - 2.3gpm, AE125 - 3.5gpm.
Inlet water temperature is too warm	Verify the heater is being feed with cold water only. This water heater is not designed for preheated water or recirculation applications. Increase flow rate where ever possible. Replacing low flow showerheads and aerators with higher flowing (GPM) ones may be necessary.

Water Temperature Fluctuates

Cold mix, heater deactivates	If inlet water temperature is over 70°F, water may be very hot out of the tap. This requires a lot of cold water to be added in order to get a usable hot water temperature. The addition of too much cold water will overpower hot water demand from the water heater. This slows the flow within the water heater, decreasing it below the activation point, which shuts off the heater. The end result is nothing but cold water coming out of the outlet. Increase the flow rate by cleaning or replacing fixtures and lower the setting on the temperature adjustment knob. See service bulletin TWH-E2-04 at www.boschhotwater.com for further troubleshooting on this symptom.
Fluctuating water pressure	If the water pressure in the home is erratic and the water flow is not consistent while a tap is opened, then the temperature of hot water will fluctuate. The minimum water pressure for the home should be 30psi or greater. For people on well systems the minimum pressure range is 30-50psi. The use of a pressure reducing/regulating valve is an effective way to maintain constant water pressure to the water heater. Watts brand 25AUB- ¾" or N35B-¾" pressure reducing/regulating valves or equivalent is suggested.
Changing flow rate	Major changes in flow rate can adversely affect the output water temperature of the heater. Increases from one major fixture running to multiple fixtures running at one time can cause the temperature to fluctuate. Stay within the heater's specifications. See Graph 1 on page 8.

PowerStar LIMITED 10 YEAR WARRANTY

COVERAGE

BOSCH WATER HEATING (herein after BBT) guarantees this water heater to the original owner of the water heater at the original installation location against defects in material and workmanship for the periods specified below.

WARRANTY PERIOD

1. The Heating Modules – If the original heating module leaks or fails within ten (10) years from the date of original installation of the water heater because of a defect in material or workmanship, BBT will furnish to such an owner a replacement heater of the then-prevailing comparable model.

(Continued...)

(...Continued)

However, if the water heater is installed in other than a single family dwelling this heating modules warranty is limited to two (2) years from the date of original installation and operation.

Note : Damage caused by exposure to freezing conditions is not covered by the warranty.

Note : Damage caused by scale formation is not covered by the warranty.

2. Any Component Part Other Than the Heating Modules – If any other component part (other than the heating modules) proves to be defective in material or workmanship within one (1) year from the date of original installation of the water heater, BBT will furnish the owner with a replacement of the defective part(s).
3. Verification of Date of Original Installation – When owner cannot verify or document the original date of installation, the warranty period begins on the date of manufacture marked on the tag affixed to the water heater.

EXCLUSIONS

1. THIS LIMITED WARRANTY SHALL BE THE EXCLUSIVE WARRANTY MADE BY THE MANUFACTURER AND IS MADE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED (WHETHER WRITTEN OR ORAL), INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
2. Manufacturer shall not be liable for incidental, consequential, special or contingent damages or expenses arising, directly or indirectly, from any defect in the water heater or the use of the water heater.
3. Manufacturer shall not be liable for any water damage arising, directly or indirectly, from any defect in the water heater component part(s) or from its use.
4. Manufacturer shall not be liable under this warranty if:
 - a) The water heater or any of its component parts has been subject to misuse, alteration, neglect or accident, or;
 - b) The water heater has not been installed in accordance with the applicable local plumbing and/or building code(s) and/or regulation(s), or;
 - c) The water heater has not been installed in accordance with the printed manufacturer's instructions, or;
 - d) The water heater is not continuously supplied with potable water.
5. The owner and not the manufacturer or his representative shall be liable for and shall pay for all field damages for labor or other expenses incurred in the removal and/or repair of the product or any expense incurred by the owner in order to repair the product.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHERS.

IMPORTANT: OWNER SHALL KEEP THIS CERTIFICATE

NOTE: A water heater must be installed in such a manner that if it should leak, the resulting flow of water will not cause damage to the area in which it is installed.

The person who initially installed the unit is the best one to contact for help.

You can also call BBT toll free at 866-330-2729. Please have this guide, model number, serial number and date of installation with you when you call.

BBT NORTH AMERICA
Bosch Group

Bosch Water Heating
340 Mad River Park
Waitsfield VT 05673

TOLL FREE: 866-330-2729
Fax: 802-496-6924

www.boschhotwater.com

11.22.06

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555-2028-10D



Bosch Nexxt® 500 Series Electric Dryer

Models / Modèle / Modelo:

WTMC3321US, WTMC3321CN, WTMC332SUS & WTMC332SCN



en Operating, Care and Installation Instructions
fr Seche-linge: Notice d'utilisation, de maintenance et d'installation
es Secador: Operación, cuidado y instrucciones para la instalación

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Congratulations on having selected a Bosch clothes dryer, the choice of those that demand exceptional drying performance and care from their clothes dryer.

This dryer complies with UL 2158/CAN/CSA-C22.2 No. 112-97 Clothes Dryers

A distinctive feature of your dryer is low energy consumption.

An easy operation philosophy, a variety of customized drying programs and a solid touch and feel make this appliance a user-friendly assistant in your household.

The Bosch dryer offers the following standard features:

- High efficiency precision drying system
- Large 6.4 cu.ft. (181 l) stainless steel drum with a capacity up to 17.6 lbs (8 kg)
- Large port hole (18"/457 mm), door lock with automatic drum stop function
- Exceptionally quiet operation
- Sensor controlled auto cycles
- Timed cycles
20, 40 and 60 minutes

Each dryer which leaves our factory has undergone a thorough performance test and is in full working condition. If you have any questions especially concerning installation of the dryer – our customer service team will be happy to assist you.

Further information and a selection of our products can be found on our web site:

www.boschappliances.com

Information

Please read and follow these operating and installation instructions and all other information enclosed with the dryer.

Definitions




WARNING – This indicates that death or serious injuries may occur as a result of non-observance of this warning.



CAUTION – This indicates that injuries may occur as a result of non-observance of this warning.

CAUTION

CAUTION – This indicates that damage may occur as a result of non-observance of this warning.

-  This symbol is used to draw the user's attention to important matters.

IMPORTANT SAFETY INSTRUCTIONS



To reduce the risk of fire, electric shock, serious injury or death to persons and /or damage when using your dryer, follow basic precautions, including the following.

1. Read all instructions before using the dryer. Bosch dryers are provided with Operating, Care and Installation Instructions.
2. Do not dry articles that have been previously cleaned, washed, soaked, or spotted with gasoline, dry cleaning solvents, other flammable, or explosive substances as they give off vapors that could ignite or explode.
3. Do not allow children to play on or with the appliance. Close supervision of children is necessary when the appliance is used near children.
4. When children become old enough to operate the appliance, it is the legal responsibility of the parents or legal guardians to ensure that they are instructed in safe practices by qualified persons.
5. Before the appliance is removed from service or discarded, remove the door to the drying compartment.
6. Do not reach into the appliance if the drum is rotating.
7. Do not install or store this appliance where it will be exposed to the weather.
8. Do not tamper with the controls.
9. Do not repair or replace any part of the appliance or attempt any service unless specifically recommended in the user-maintenance instructions or in published user repair instructions that you understand and have the skills to carry out.
10. Do not use fabric softeners or products to eliminate static unless recommended by the fabric manufacturer.
11. Do not use heat to dry articles containing foam rubber (may be labeled latex foam) or similarly textured rubber-like materials. Foam rubber materials can ignite by spontaneous combustion.
12. Clean lint screen before or after each load.
13. Keep area around the exhaust opening and adjacent surrounding areas free from the accumulation of lint, dust and dirt. An obstructed port might reduce the airflow.
14. The interior of the machine and exhaust duct should be cleaned periodically by qualified service personnel.
15. Always be sure to unplug the dryer from the electrical supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
16. Store all laundry chemicals and aids in a cool dry place according to the manufacturer's instructions in an area where children cannot reach them.
17. To reduce the risk of fire, clothes, cleaning rags, mop heads and the like which have traces of any flammable substance, such as vegetable oil, cooking oil, petroleum based oils or distillates, waxes, fats, etc., must not be placed in the dryer. These items may contain some flammable substance(s) even after washing, which may smoke or catch fire by itself.
18. Do not place items exposed to cooking oils in your dryer. Items contaminated with cooking oils may contribute to a chemical reaction that could cause a load to catch fire.
19. Do not sit on top of the dryer.
20. To reduce the risk of fire or electrical shock, DO NOT use an extension cord or an adapter to connect the dryer to the electrical power supply.
21. The dryer must only be used for its intended purpose.

22. Always check pockets and remove any objects. Cigarette lighters are particularly hazardous.
23. Replace worn out power cords and/or loose plugs.
24. Do not operate the dryer if any guards and/or panels have been removed.
25. Do not operate the dryer if any parts are missing or broken.
26. Do not bypass any safety devices.
27. Do not use a plastic or non-metal flexible duct with this dryer. Plastic or non-metal flexible duct are a potential fire hazard.
28. Do not operate this dryer until you are sure that the dryer has been installed according to the INSTALLATION INSTRUCTIONS and that installation and grounding are in compliance with all local regulations and/or other applicable regulations and requirements.
29. Failure to install, maintain and/or operate the dryer according to the manufacturer's instructions may result in injury and/or damage.
30. To avoid floor damage and mold growth, do not let spills or splashout cause standing water around or under the appliance.

Notes:

- A The IMPORTANT SAFEGUARDS and WARNINGS presented in this manual do not cover all possible conditions that may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the dryer.
- B Always contact your dealer, distributor, service agent or the manufacturer about any problems or conditions that you do not understand.
- C Follow also the Safety Information in the INSTALLATION INSTRUCTIONS and the OPERATING INSTRUCTIONS.

GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for the electric current.

For U.S.A.

Your dryer comes without a power supply cord. The power cord must meet the following requirements:

- UL listed in the USA
- 208 – 240 volt rated (minimum)
- 30 amps
- Type SRDT or DRT (UL 2158)
- Five feet long (minimum)

For CANADA

This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

⚠ WARNING ⚠

Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the dryer is properly grounded. DO NOT modify the plug provided with the appliance. If it will not fit the outlet, have a proper outlet installed by a qualified electrician.

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE.

In case of change of ownership, manual should be conveyed with the dryer.

SAVE THESE INSTRUCTIONS

INSTALLATION INSTRUCTIONS

Introduction

Read these installation instructions completely and carefully. They will save you time and effort and help to ensure optimum dryer performance. Be sure to observe all listed warnings and cautions.

These installation instructions are intended for use by qualified installers. In addition to these instructions the dryer must be installed in accordance with all local codes or, in the absence of a local code:

- In the **U.S.A.**, in accordance with the National Electric Code,

ANSI/NFPA70 – latest edition/State and Municipal codes and/or local codes.

- In **Canada**, in accordance with the Canadian Electric Code C22.1 – latest edition/Provincial and Municipal codes and/or local codes.

Information concerning waste disposal

Disposal of the packaging

⚠ WARNING ⚠

Keep children away from shipping carton and packaging components. Danger of suffocation from plastic foil and folding cartons.

All packaging materials are environmentally friendly and can be reused. Please dispose of packaging in an environmentally friendly manner. Please ask your dealer or inquire at your local authority about the current means of disposal.

Disposal of the old appliance

⚠ WARNING ⚠

If appliance is no longer usable, pull out main plug, cut off power cord and discard with main plug.

To prevent children from locking themselves in the appliance, remove the door.

Old appliances are not worthless rubbish! Valuable raw materials can be reclaimed from environmentally friendly recycling.

Please ask your dealer or inquire at your local authority about the current means of disposal.

Before installing the dryer

Unpacking the appliance

⚠ CAUTION ⚠

The dryer is very heavy. Do not lift it by yourself. Do not lift the appliance by projecting components (e.g. door) – due to risk of breakage.

CAUTION

Remove the appliance packaging carefully to prevent damage to the surfaces.

Check the dryer for transportation damage. Do not connect a dryer which is visibly damaged. If in doubt, contact your dealer.

Supplied components
For U.S.A.

CAUTION

The dryer is supplied without a power cord. The power cord must be connected by qualified persons only.

CAUTION

After removing the packaging, immediately remove any objects from the drum.

The dryer is delivered as a complete unit. The operating instructions and supplied accessories can be found in the drum.

Installation location

WARNING

Do not install the dryer:

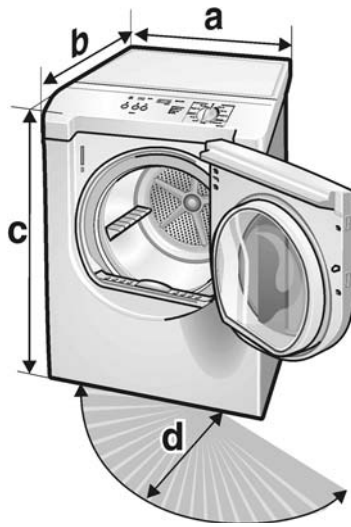
- outdoors
- in an environment with dripping water,
- near flammable materials,
- in rooms which are at risk of frost,
- in rooms which may contain gas or other fuels,
- in cupboards with lockable doors or in alcoves.

The installation room must be well ventilated, otherwise the dryer will operate below optimum performance. Do not operate the dryer at temperatures above 104°F (40°C) and below 41°F (5°C). Low temperatures affect the automatic program sequence and may prolong the drying times.

The installation surface for the dryer must be clean, level and firm. Do not install the appliance on carpets! Compensate for uneven floors with the height-adjustable feet.

Install the dryer and level side to side and front to back. Use a bubble level. Never remove the height-adjustable feet!

The size of the installation area depends on the dimensions of the dryer. Ensure that there is adequate room for the swivel range of the door!



Dimension	Weight
a	125 lbs (56 kg)
b	with packaging
c	143 lbs (64 kg)
d	170 – 180°

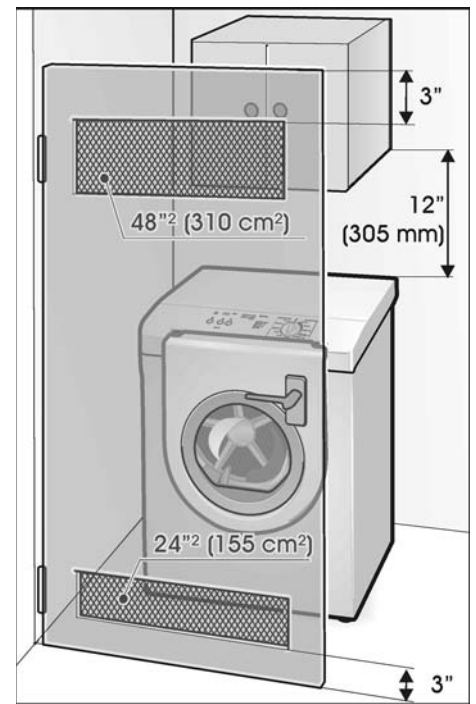
If installing the dryer in a closet, observe the minimum distances according to the following table:

Minimum Installation Clearances	
Closet	
Sides	0" (0 mm)
Top	12" (305 mm)
Rear*	0" (0 mm)

* as close to wall as venting will allow.

Important information concerning minimum distances:

- Depending on the location of the exhaust air connection, an additional minimum distance of 5½ inch (14 cm) must be provided on this side for pipes/brackets (see page 7).
- Distances above the indicated minimum dimensions reduce the risk of mold formation behind the appliance.
- Additional distances reduce noise transmission.
- Additional distances facilitate installation and service.
- If the dryer is installed in a small room, the doors of the room must be fitted with vents of a specified minimum size.



The dryer door is delivered with hinges on the right. If required, the door hinges can be switched to the left side.

If the door hinges are to be changed over, please contact your dealer or our customer service-team (see page 20)

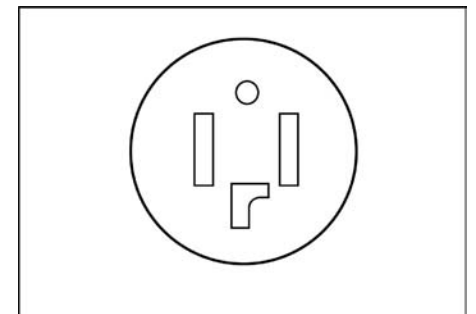
Electrical connection

WARNING

Power cord must be connected by a qualified person only. Connect to individual Branch Circuit. Do not use an adapter. Do not use an extension cord. Do not remove ground prong.

For CANADA

Your dryer comes with a power supply cord, CSA listed in Canada. The Bosch dryer requires a 4-wire receptacle.



When installing the receptacle for the dryer cord, ensure that the power supply cord is accessible when the dryer is in the installed position.

The power cord should only be replaced by a qualified person. Use a 4-wire power supply cord (see electrical connection U.S.A. below).

For U.S.A.

Your dryer comes without a power supply cord. The power cord must meet the following requirements:

- UL listed in the USA
- 208 – 240 volt rated (minimum)
- 30 amps
- Type SRDT or DRT (UL 2158)
- Five feet long (minimum)

⚠ WARNING ⚠

Power cord must be connected by a licensed electrician only. Use only a U.L. approved 30 amp power cord with strain relief clamp – note manufacturer's instructions. Do not plug end of power cord into a live receptacle before connecting power cord to appliance terminals and closing junction/splitter box as described below.

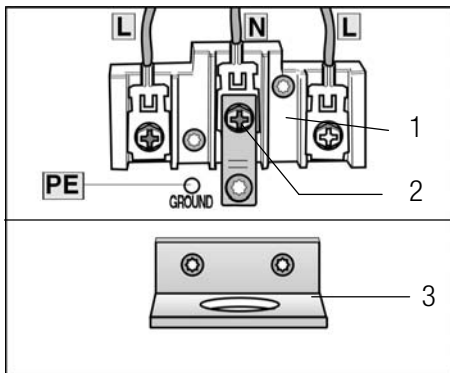
Do not reuse old power cord. Cord must have closed loop or upturned end wire terminating connectors.

Do not make a sharp bend or crimp wiring/conductor at connections.

Only a 4-conductor cord shall be used when the appliance is installed in a mobile home, in a recreational vehicle, in a new branch circuit installation or an area where the local codes do not permit grounding through the neutral.

Connecting 4-wire power supply cord

1. Remove the screws from the cover of the terminal block located at the top rear of the appliance.



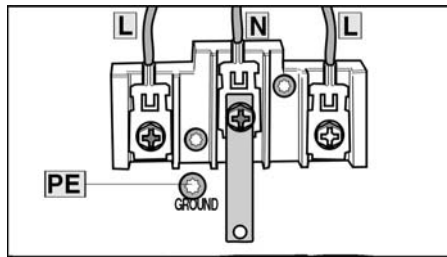
1 – terminal block

2 – grounding strap

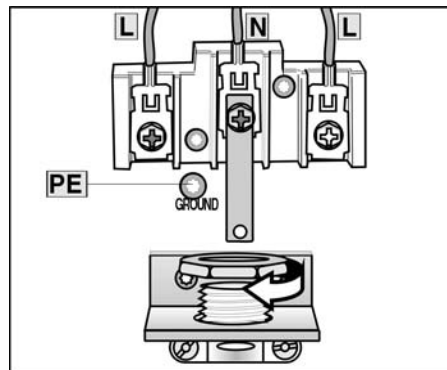
3 – Angle bracket for strain relief clamp

2. Loosen the bottom screw of the grounding strap. Place the screw

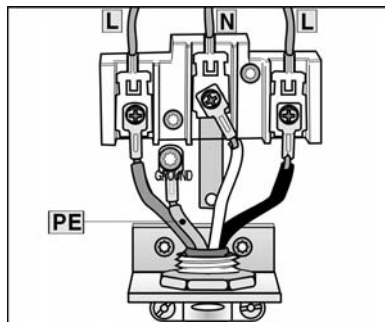
to the GROUND location. Straighten the grounding strap and hang loosely.



3. Fix the strain relief clamp to the angle bracket. Tighten the nut.



4. Loosen the 2 screws labeled L and the screw labeled N in the terminal block. and the screw of the GROUND terminal.
5. Thread the 4 wire cable through the U.L. strain relief clamp.
6. Tighten the screws (2.5 Nm) of the U.L. strain relief clamp so that the power cord cannot be moved.
7. Attach the power cord ground conductor (green) to the GROUND terminal. Tighten the screw (2.5 Nm) so that the ground conductor is held securely in place.
8. Attach the 2 power cord outer conductors (red and black) to the 2 terminals labeled L and the remaining power cord conductor (white) to the terminal labeled N.
9. Tighten all 3 screws (3 Nm) so that the power conductors are held securely in place .



10. Check the U.L. strain relief clamp to make sure that it is tight and cannot be turned.

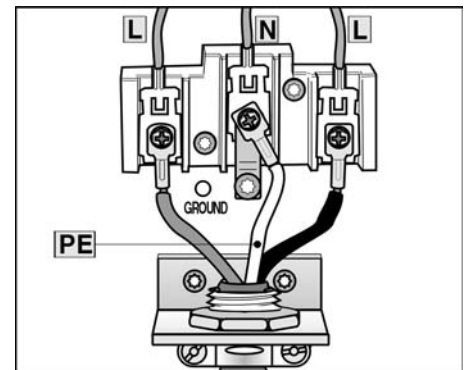
11. Replace the cover on the terminal block and fasten in place.

- i Make sure that the U.L. strain relief clamp is outside the cover!

The appliance is now ready to be plugged into the 4-wire receptacle of the power rating.

Connecting 3-wire power supply cord

1. Remove the screws from the cover of the terminal block located at the top rear of the appliance.
2. Make sure that there is a grounding strap.
3. Fix the strain relief clamp to the angle bracket. Tighten the nut.
4. Loosen the 2 screws labeled L and the screw labeled N in the terminal block.
5. Thread the 3-wire cable through the U.L. strain relief clamp.
6. Tighten the screws (2.5 Nm) on the U.L. strain relief clamp so that the power cord cannot be moved.
7. Attach the 2 power cord outer conductors (red and black) to the 2 terminals labeled L and the remaining power cord conductor (white) to the terminal labeled N.
8. Tighten all 3 screws (3 Nm) so that the power conductors are held in place securely.



9. Check the U.L. strain relief clamp to make sure that it is tight and cannot be turned.
10. Replace the cover on the terminal block and fasten in place.

- i Make sure that the U.L. strain relief clamp is outside the cover!

Additional grounding procedure

- Some local regulations may require a separate ground. In such cases, the required accessory ground wire, clamp and screw must be purchased separately.
- Never ground the dryer to plastic plumbing lines, gas lines or water pipes.

Grounding instruction

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for the electric current.

For Canada the dryer comes with a cord which has an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet which has been properly installed and grounded in accordance with all local regulations and ordinances.

⚠ WARNING ⚠

Improper connection of the equipment grounding conductor may result in electric shock. Have the appliance checked by a qualified electrician or service technician if you are in doubt as to whether the dryer has been properly grounded.

Exhaust air connection

⚠ WARNING ⚠

1. To reduce the risk of fire, this dryer **MUST BE EXHAUSTED OUTDOORS**.
2. To reduce the risk of fire, do not use the ductwork longer than recommended.
3. **DO NOT** use a plastic or non-metal duct with this dryer.
4. **DO NOT** use a duct smaller than 4 inches in diameter.
5. **DO NOT** use exhaust hoods with magnetic latches.
6. **DO NOT** exhaust the dryer into a chimney, furnace cold air duct, attic, crawl space, or any other ductwork used for venting.
7. **DO NOT** install a flexible duct in an enclosed wall, ceiling or floor.
8. **DO NOT** crush or kink the duct.
9. Do clean and inspect the exhaust system on a regular basis; at least once a year.
10. The exhaust duct must terminate in a manner to prevent back drafts or entry of birds or other wildlife.

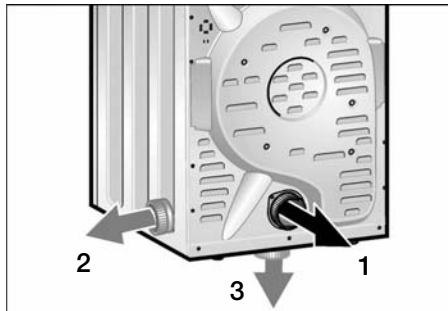
The Bosch dryers are intended to be vented outdoors. To prevent build-up of moisture and accumulation of lint indoors, as well as to maintain maximum drying efficiency, it is recommended that the dryer is vented outdoors.

Exhaust air outlet on the dryer

The dryer is delivered with an exhaust air outlet on the rear of the appliance.

To take account of the spatial requirements and an existing exhaust air system, the following connection options are possible for the exhaust air outlet:

- on right side of the appliance,
- on the underside of the appliance.



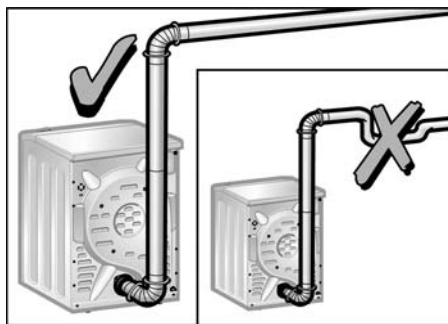
- 1 – Exhaust air outlet on the rear of the appliance (standard)
- 2 – Exhaust air outlet on the side (optional)
- 3 – Exhaust air outlet on the underside of the appliance (optional)

Special exhaust air connections must be obtained from your dealer or part supplier for either connection type (see page 8).

- Side exhaust kit
- Bottom exhaust kit

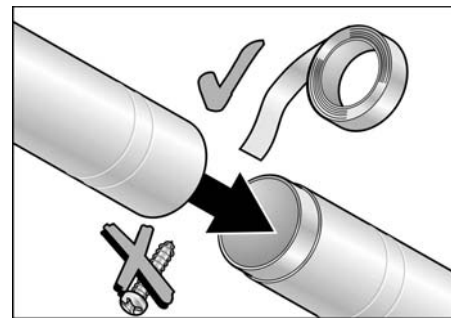
A qualified technician should change the exhaust air outlet to the optional connection location.

Ductwork



To ensure optimum performance, the ducting system of the dryer should be as short as possible with a minimum number of elbows. Your dryer will work best when the venting system has as few air flow restrictions as possible. Exhaust ducting which is longer than recommended may extend drying time, cause lint to accumulate and affect dryer performance and dryer life-time. Four-inch (approx. 100 mm) diameter ducting should be used. Use either rigid metal or flexible metal ducting material. **DO NOT** use plastic or non-metal duct with this dryer.

DO NOT assemble the ductwork with screws or fasteners that extend into the duct. They will serve as an accumulation point for lint. Joints should be secured with aluminum tape.



All joints should be tight to avoid leaks. The male end of each duct section must point away from the dryer.

Whether connecting to an existing venting system or a new venting system, make sure that all ducting is clean and free of lint.

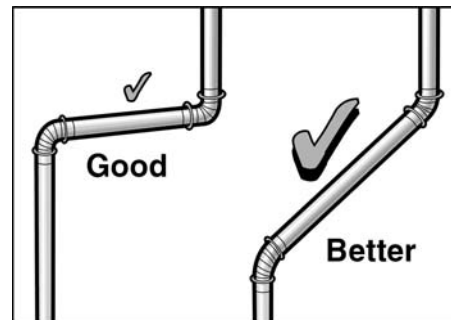
The maximum permitted length for both rigid and flexible metal duct is shown in the table below.

Number of 90° Turns or Elbows	Rigid Duct	Flexible Duct
0	66 ft. (2011 cm)	45 ft. (1372 cm)
1	56 ft. (1707 cm)	36 ft. (1097 cm)
2	48 ft. (1463 cm)	29 ft. (884 cm)
3	39 ft. (1189 cm)	22 ft. (671 cm)
4	30 ft. (914 cm)	16 ft. (488 cm)

Note:

Side and bottom exhaust installations have a 90° turn inside the dryer. To determine maximum exhaust length, add one 90° turn to the chart.

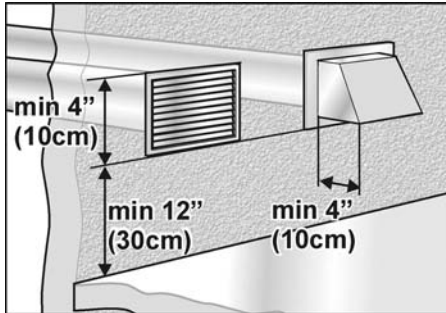
More than two 90° turns are not recommended. For best performance, separate all turns by at least 4 ft. of straight duct, including distance between last turn and exhaust hood.



Exhaust vent hood

The exhaust duct must end with an approved exhaust vent hood with swing out damper(s). DO NOT use an exhaust vent hood with magnetic latches.

To avoid exhaust restriction, the outlet must be a minimum of 12 inches (30 cm) above ground level or any other obstructing surface.



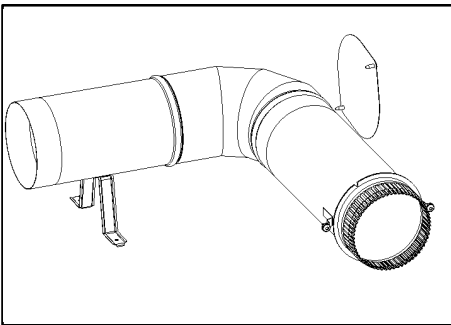
Required parts

The parts required for the exhaust air system (elbows, lines, exhaust air outlets) are not included in standard delivery of the dryer.

Accessories

The parts required for the exhaust air system can be obtained from customer service or your local dealer. Please follow the installation instructions supplied by the appropriate manufacturer!

Side exhaust kit



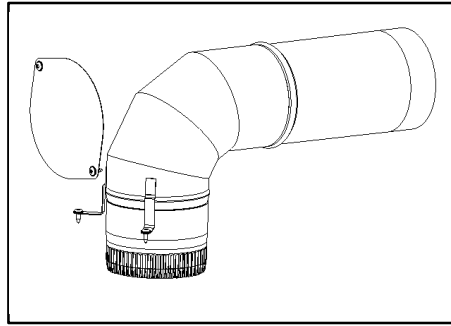
part no. **WTZ 1265**

Note:

The maximum permitted number of 90° elbows (including this side exhaust kit) is four!

- i** Special tool for cutting the hole in prepared side panel is required. Contact local dealer!

Bottom exhaust kit

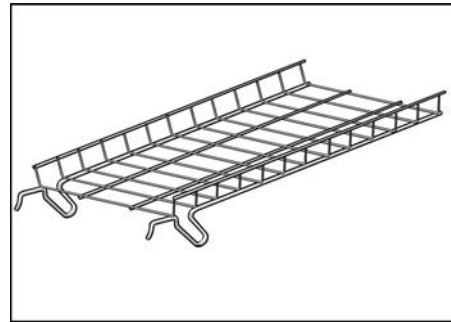


part no. **WTZ 1270**

Note:

The maximum permitted number of 90° elbows (including this side exhaust kit) is four!

Dryer rack



part no. **WTZ1290**

Use the dryer rack to dry washable woolen textiles (e.g. sweaters) and shoes.

Left hinge kit

part no. **WTZ1260** (White Dryers)

part no. **WTZ126S** (Silver Dryers)

The door catch can be reversed if necessary. The door is hinged on the right at the factory.

Pedestal Mounting Kit

part no. **WTZ 1295** (White Dryers)

part no. **WTZ 1295S** (Silver Dryers)

If mounting the dryer on the pedestal follow the instructions supplied with the pedestal.

Installation – step by step

1. Unpack the dryer.
2. Remove all objects from the drum.
3. Check the dryer for visible damage.
4. Position the dryer near the installation location.
5. If required, change the door hinges to the left (see page 5).
6. If required, have customer service install the exhaust air outlet on the dryer (see page 7).

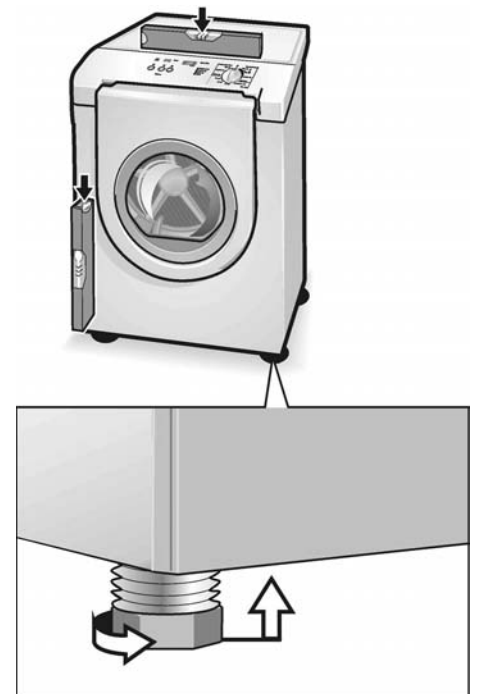
7. Have the power supply cord fitted by an authorized technician (see page 5).
8. Install exhaust duct if necessary. Follow the installation instructions supplied by the appropriate manufacturer!

- i** If space is very restricted, it is recommended to fit the initial parts of the exhaust duct to the dryer before the dryer is moved to its final installation location.
9. Move the dryer to its final location and align.

CAUTION

Do not slide dryer across the floor if height-adjustable feet have been extended. Feet and/or dryer base may be damaged if dryer is slid across floor with height-adjustable feet extended.

10. Position and then level the dryer.



The dryer should be level with all four feet firmly on the ground. The dryer must not wobble. If the dryer is not level or if it does wobble, the feet must be adjusted. Adjust the height-adjustable feet until the dryer does not rock and is level, both front-to-back and side-to-side.

11. Connect the exhaust duct to the exhaust air outlet on the dryer.
12. Insert plug into the wall receptacle.

Check list before using the dryer

1. Check that steps 1–12 have been implemented properly.
2. Ensure that the dryer is connected to the power supply.
3. Read the operating instructions to understand how your dryer operates.
4. Conduct an appliance test:
 - Check that the drum is empty.
 - Close the dryer door.
 - Switch the dryer to "Extra Dry" and then press the Start button.
 - After 3–5 minutes press the Stop button and open the door.
5. If the interior of the dryer feels warm, the dryer has been connected properly. Switch the dryer to "OFF".
6. If the dryer does not work, switch the dryer to "OFF". Look in the troubleshooting section (page 19) of the OPERATING INSTRUCTIONS and find the fault.

Preparing to transport the dryer – step by step

1. Rotate the program selector to "OFF".
2. Pull out the power supply plug.
3. Disconnect the exhaust duct from the exhaust air outlet on the dryer.
4. Place any accessories in the drum.
5. Close the door and secure with adhesive tape.
6. Screw the height-adjustable feet of the dryer into the housing to prevent them from being damaged during transportation.

OPERATING INSTRUCTIONS

Your new dryer

Open the door (colored marking)



....and close the door.

Lint filter



Panel

Start/Stop button

Starts, interrupts and ends the drying process.

Buttons for Options (in addition to the program if required). See page 14.

Delicates low temp.

Press for temperature-sensitive textiles (e.g. acrylic fibers). The temperature of the drying process is reduced, the drying time is extended correspondingly.

Signal

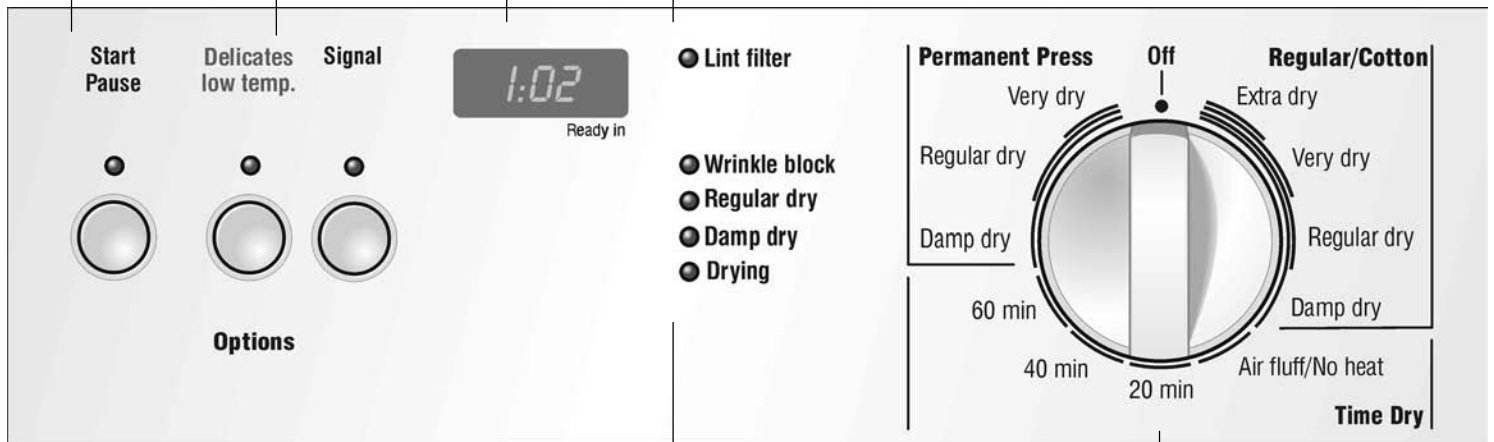
An acoustic signal indicates the end of the program.

Display

Indicates the estimated remaining time of programs.

Indicator light (LED)

Serves as a reminder to clean the lint filter



Program selector

Selects a program. See page 14. Can be rotated in both directions.

To switch off the dryer, rotate the program selector to "Off".

Indicator lights (LED)

Indicate the current state of the drying process.

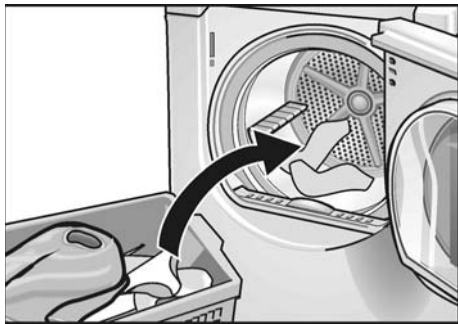
Summary of instructions

CAUTION

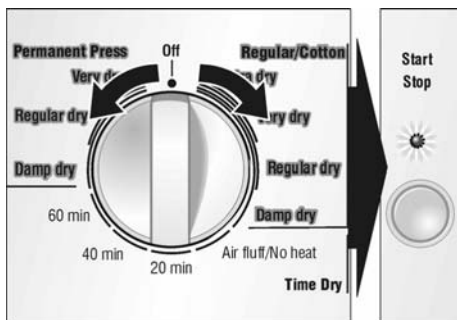
Before using your dryer read and follow all installation and operating instructions.

Preparing the dryer

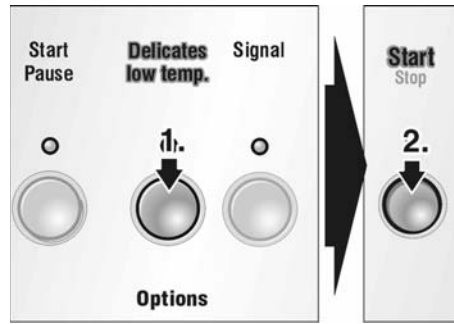
i Check the lint filter. The filter should be cleaned before and after every drying process.



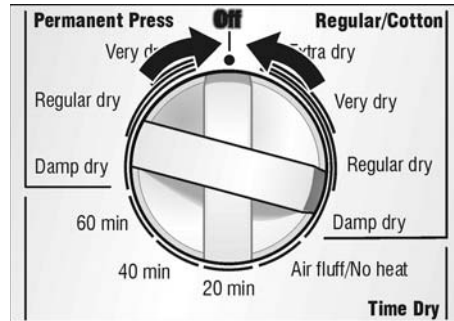
Selecting a program



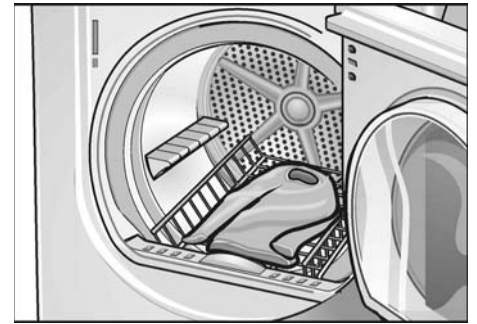
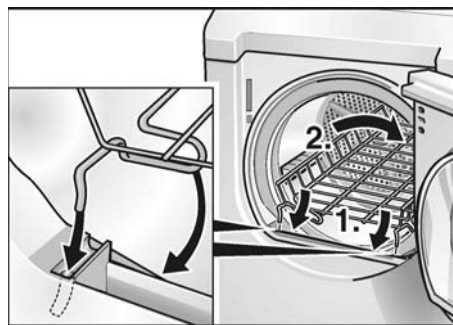
Choose an option...



...and start the dryer. Switch off the dryer



Using the dryer rack (Option, see page 8)



Safety information

WARNING

Always follow the IMPORTANT SAFETY INSTRUCTIONS (see page 23).

WARNING

TO AVOID EXPLOSION HAZARD!
Keep flammable materials and vapors, such as gasoline, away from the dryer.
Do not dry anything that has ever had anything flammable on it (even after washing).
Do not dry anything that has ever had any type of oil on it (including cooking oils).
Items containing foam, rubber or plastic must be dried on a clothes-line or by using an air fluff-cycle.
Do not allow items containing flammable materials, such as lighters, to remain in clothes while drying.
Failure to follow these instructions may result in explosion or fire.
To avoid risk of death or injury!

Use the dryer only in the house or the garage for drying normal amounts of laundry for the household.
Use only for drying textiles which were washed with water.

Before switching on the dryer

Install the dryer in accordance with the installation instructions (from page 4).

Do not use a dryer which is visibly damaged. If in doubt, contact your dealer.

Using the dryer

Do not leave children unsupervised near the dryer.

Keep pets away from the dryer. Before closing the door, check the contents of the drum.

Remove all objects from pockets. Lighters are particularly hazardous.

Risk of explosion!

Switch off the dryer at the end of the program.

Protecting the dryer

Do not climb on the dryer.

Do not lean or sit on the door.

Risk of dryer tipping over!

Do not store or use solvent detergent boosters or stain remover in the vicinity of the dryer.

The dryer could be damaged.

Do not lift the dryer by projecting components.

Risk of breakage!

- **Do clean and inspect the exhaust system on a regular basis!**

Blockages may extend drying time.

Before using the dryer for the first time

Before you use the dryer for the first time:

1. Read these operating instructions carefully.
2. Check that the supply voltage corresponds with the voltage specifications on the rating plate of the dryer, see picture page 20
3. Remove all objects from the drum.
4. Check the dryer for visible damage. If damages found contact your dealer.
5. Wipe the inside of the drum with a damp cloth.
6. Conduct an appliance test, see page 9.
7. If the dryer does not work, switch the dryer to "Off". Look in the troubleshooting section (page 19) of the operating instructions and find the fault.

Protection of the environment

Tips on saving energy

To save energy, money and time, Bosch recommends the following:

- **Drain the laundry thoroughly!** Before drying, spin the laundry thoroughly in the washing machine. Use the highest possible spin speed for the type of laundry! Higher spin speeds reduce the drying time and the energy consumption.
- **Use optimum load!** Use maximum recommended loads. However, do not exceed loads.
- **Clean filter!** Clean the filter before and after each drying process (see page 18).
- **Ventilate the room!** During the drying process provide an adequate supply of fresh air.
- **Do not dry unsuitable materials!** Do not dry rubberized or air-tight items.

Temporary disconnection of the dryer

Operate your dryer only when you are at home. If you intend going on vacation or are not using your dryer for an extended period of time, you should:

1. Turn off the circuit breaker.
2. Pull out the power supply plug if possible.
3. Clean the lint filter.

Laundry

Identification of fabrics

Observe the treatment symbols on the textile labels. They provide valuable information as well as limitations about the drying process.

Do not dry the following textiles in the dryer:

- Air-tight textiles (e.g. rubberized)
- Delicate fabrics (silk, synthetic curtains)

i Dry woolen or wool-rich textiles with dryer rack only!

i Use the time program "Air fluff/No heat" to dry articles containing foam rubber or similarly textured rubber-like materials.

Drying tips

In principle, the following applies to all drying programs:

- To ensure a uniform drying result, sort the laundry according to fabric type and drying program.
- Fasten zippers, hooks and eyes. Fasten loose belts, apron strings, etc..
- Do not overdry easy-care laundry – risk of wrinkling! Leave laundry to dry in the air.
- Do not iron laundry immediately after drying. Place the laundry in a pile for a short while. Residual moisture will then be distributed uniformly.
- Knitted textiles (e.g. T-shirts, cotton jersey laundry) often shrink when dried for the first time. Do not use the "Very dry/Extra dry" program.

Program selection

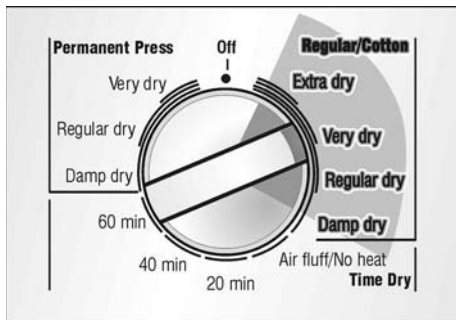
For optimum drying results your dryer offers several program groups and additional options.

Select the required drying program from the program table according to the examples (see page 15).

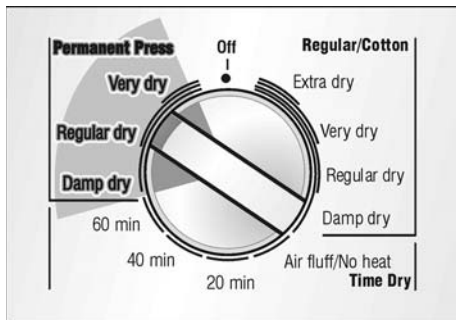
Automatic programs

There are automatic programs for different types of textiles. (Regular/Cotton or Permanent Press).

Regular/Cotton

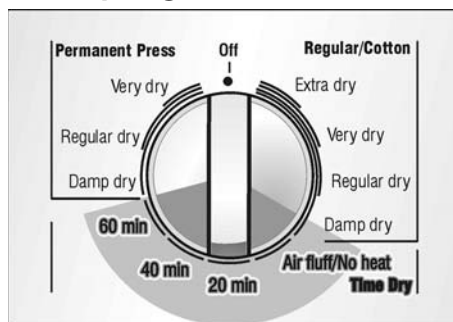


Permanent Press



The program sequence of automatic programs is controlled via sensors. The duration of the program depends on the measured degree of moisture in the laundry and on the selected degree of dryness (e.g. Damp dry or Extra dry).

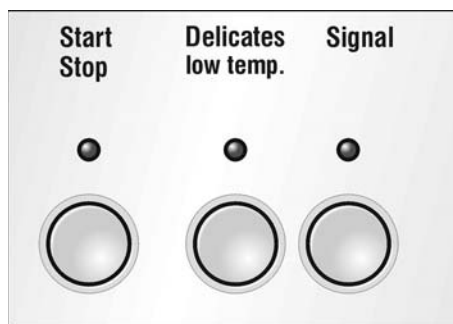
Time programs



Time programs run for a specific time (20, 40, 60 minutes). In the "Air fluff/No heat" stage the dryer runs on ambient air without a heat supply for 20 minutes.

i Dry woolen or wool-rich textiles with dryer rack only!

Options



Delicates low temp.

Press the "Delicates low temp." button for temperature sensitive textiles. Observe the care information or symbols on the textiles. The temperature of the drying process is reduced, the drying time is extended.

Signal

Your dryer outputs different signals, if the "Signal" button is pressed.

Signal	Type
Start	Short tone
End	Sequence of short tones
Mal-operation	Sequence of long tones
Warning of malfunction	Sequence of long tones

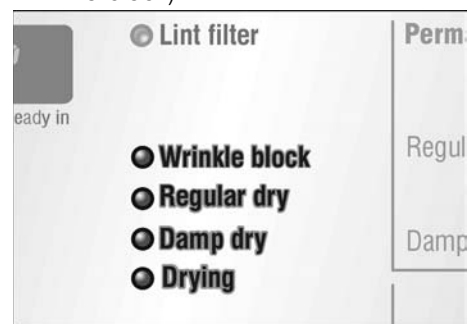
i The signal "Warning of malfunction" is active in any case.

Indicator of program sequence

The dryer uses an electronic scanning system for all programs except the time programs. A moisture sensor continuously checks the moisture in the laundry. Drying ends automatically as soon as the selected degree of dryness has been reached.

The drum continues to rotate at specific intervals for one hour to prevent creasing.

The current degree of drying and the level reached during the program sequence is indicated via indicator lights (Drying, Damp dry, Regular dry, Wrinkle block).



i If the indicator light "Wrinkle block" illuminates when the program selector is in Off-Position – turn off the circuit breaker and call for customer service!

Program selection table

Automatic programs		
For Cottons and coloreds made of cotton or linen. Press "Delicates low temp." button for temperature-sensitive textiles.		"Regular/Cottons" Automatic program
	For laundry,	
Bed linen, table linen, towels	which is to be ironed	Damp dry
Bed linen and table linen, towels, T-shirts, sports shirts, overalls		
T-shirts, sports shirts, dresses, trousers, overalls, underwear		
Terry towels, kitchen towels, hand towels, bed linen, underwear, cotton socks	which is not to be ironed	Regular dry
Terry towels, kitchen towels, hand towels, bed linen, underwear, cotton socks	which is not to be ironed, thick multi-ply	Very dry
Terry bathrobes and terry bed linen,	which is particularly thick or multi-ply	Extra dry
Easy-care (drip-dry) laundry made of synthetic and blended fabric, cotton e.g. polyester Press the "Delicates low temp." button for very temperature-sensitive textiles.		"Permanent Press" Automatic program
	For laundry,	
Trousers, dresses, skirts, shirts, blouses, leggings, sports clothing with synthetic-rich fibers, lingerie	which is not to be ironed or only lightly ironed	Damp dry
Shirts, blouses, sports clothing	which is not to be ironed	Regular dry
Bed linen and table linen, track suits, comforters, blankets	which is not to be ironed, thick multi-ply	Very dry
Time programs		"Time Dry"
Pre-dried textiles with low moisture content, individual small items, e.g. bath towels, bathing suits, dish cloths. For the smallest loading condition from 0.22 lb – 0.44 lb (i. e. one small towel), for this a time dry program should be selected Press the "Delicates low temp." button for temperature-sensitive textiles option. – Cottons and coloreds made of cotton or linen. – Temperature-sensitive textiles.		20, 40, 60 min 20, 40, 60 min
Freshening or airing little worn items of clothing and drying of extreme sensitive textiles. For all textile types inclusive foam rubber (e.g. pillows, stuffed toys), plastic (e.g. shower curtains, table clothes), rubber (e.g. backed rugs), sheer nylon, polypropylene.		Air fluff

Operation

Using the dryer

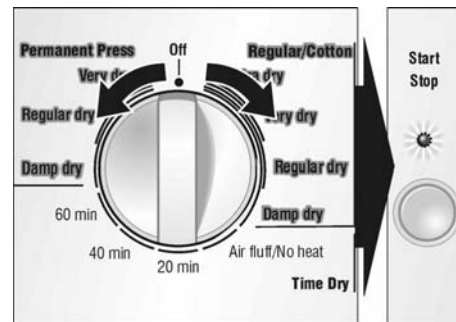


1. Open the door.



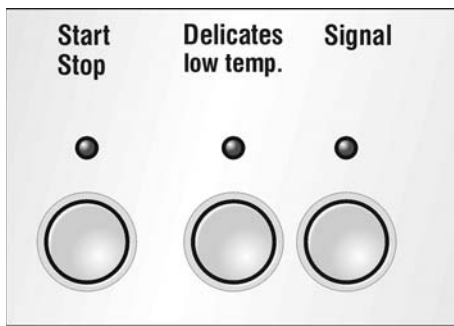
2. Check lint filter.

The filter should be cleaned after and before every drying process. Cleaning the filter reduces the drying time and saves energy.



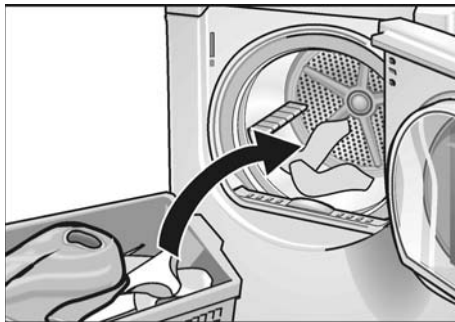
3. Rotate program selector to the desired program.
Select the program which corresponds to the laundry in the dryer from the program selection table (see page 15).
The dryer light turns on inside the drum.

i The "Start/Stop" indicator light starts flashing.



4. If required, select "Option" by pressing the button. The "Options" are explained on page 14.

i The estimated remaining time will be updated.



5. Place laundry in the empty drum. Put each piece of laundry into the machine separately. For best results the laundry to be dried must be sorted according to type of laundry and desired degree of drying. For further information see page 13.

i Observe drying symbols of the laundry manufacturer. If drying woolen clothing and shoes, see the information on page 16.

Ensure that there is only laundry in the drum. Check that all items are completely in the drum.

6. Close the door.

The "Start/Stop" indicator light continues flashing.

i If the door has not been closed properly, the dryer will not start.



7. Press the "Start/Stop" button. The "Start/Stop" indicator light illuminates.

i The program starts with an acoustic signal (if set). If a standard program has been selected, the indicator lights indicate the progress of the program sequence.

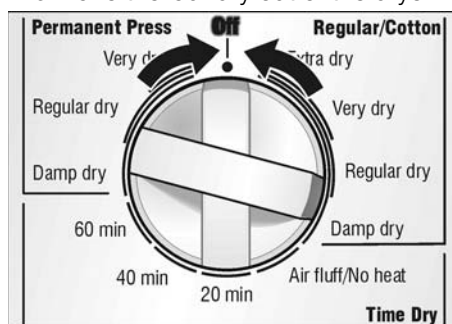


i At program end an acoustic signal is emitted (if set) and the LED "Wrinkle block" illuminates.

i When the drying process is complete (program or selected time program ended), the drum rotates at specific intervals for 1 hour. This prevents the laundry from creasing. The laundry remains loose and fluffy until it is removed. The laundry should be removed before this time has elapsed.



8. Open the door.
9. Take the laundry out of the dryer.

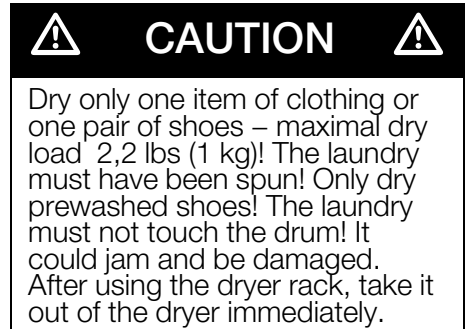


10. Rotate the program selector to "Off". The dryer light goes out.
11. Clean the filter. The filter should be cleaned after each drying process. Cleaning the filter reduces the drying time and saves energy.
12. Close the door.

Using the dryer rack

(Option, see page 8)

Use the dryer rack to dry washable woolen textiles (e.g. sweaters) and shoes. The dryer rack remains stationary while the drum rotates. Damp wool should not be moved, as it has a tendency to matt. Drying shoes without a rack could damage the drum.

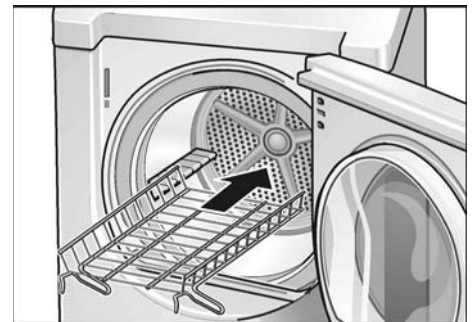


Inserting the dryer rack

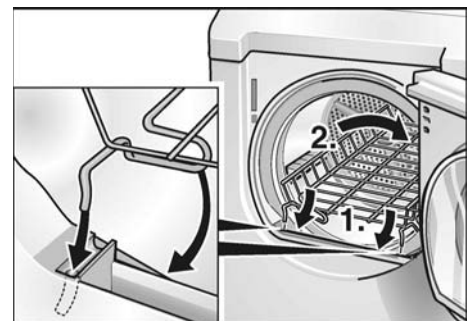
1. Open the dryer door.
2. Check that the drum is empty.



3. Remove the lint filter.



4. Lift the dryer rack horizontally into the drum.



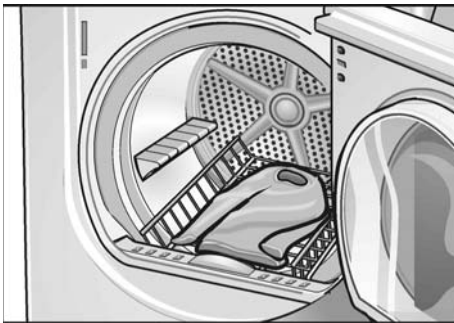
- Place the dryer rack so that the catches are inserted at the front in the locating holes.



- Insert the lint filter. The lint filter must be inserted flush with the drum edge!

Drying laundry items on the dryer rack

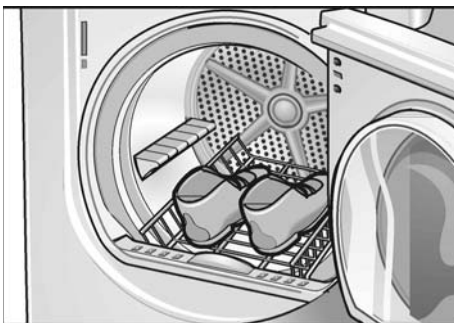
- Fold laundry to fit the dryer rack.



- Place laundry loosely on the basket. Do not crush! Laundry must not touch the drum! Do not allow items to hang over the dryer rack!
- Close the door.
- Follow directions for time program on next page.

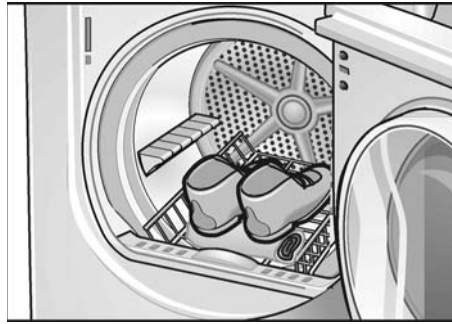
Drying shoes on the dryer rack:

- Prepare shoes.
 - Clean shoes to prevent the drum from becoming soiled.
 - If preparing sports shoes, extend the tongue.
 - Loosen or remove shoe-laces.
 - Remove insoles and heel pads.



- Place shoes on the rack.

- Directly on the dryer rack
or

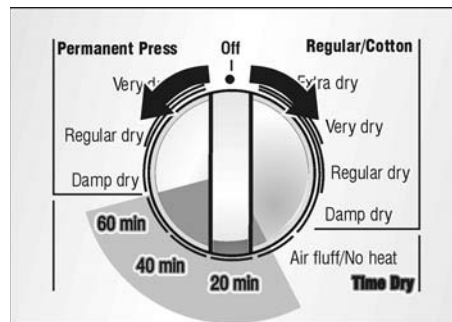


- Roll up a towel and place the heels of the shoes on the towel. This will ensure a more uniform drying result.



- Close the door.

Choose a time program



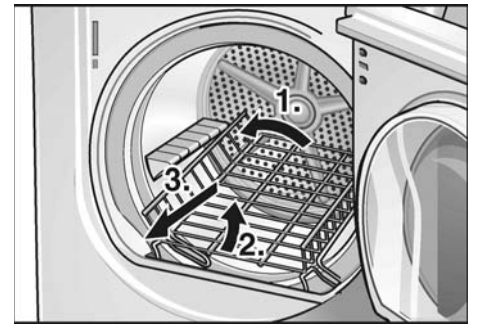
- Rotate program selector to "Time dry/.... min.".
- Select the drying time from the following table according to the laundry type.

Laundry type	Required drying time
Thin woolen pullover (approx. 0,8lbs/350 g)	80 min. (e.g. 60 + 20 min)
Thick woolen pullover (approx. 1,9lbs/850 g)	90–120 min. (e.g. 60 + 40 min)
Skirt	60–90 min.
Trousers	60–90 min.
Small items (e.g. gloves)	30 min.
Shoes	30 min.

- Press the "Start/Stop" button. The "Start/Stop" indicator light illuminates.
- If the item of clothing still contains residual moisture after the indicated drying time:
 - Fold the item of clothing so that the damp parts are on the outside.
 - Restart the program and reduce the drying duration depending on the degree of residual moisture.

- After drying, spread out the laundry at air for approx. 15 min. (shoes for approx. 30 min.).

- Remove the lint filter.



- Take the dryer rack out of the drum.



- Re-insert the lint filter.

Cleaning and care

Cleaning the dryer

⚠ WARNING ⚠

TO AVOID RISK OF EXPLOSION!
Never use solvents or highly flammable liquids for cleaning.

CAUTION

Incorrect cleaning may damage the dryer. Do not spray with a water jet. Do not use scouring agents or all-purpose cleaners. Do not use steam cleaners.

Wipe the housing and fascia with a soft cloth and soapy water only. Wipe the drum, door seal and inside of the door with a damp cloth only.

Cleaning the lint filter

A dirty filter extends the drying time and increases energy consumption.

The filter should be cleaned before and after each drying process.

If a warning signal and an E01 warning message are emitted during a drying program, clean the filter immediately and check the exhaust duct.

i The program interrupts automatically.

1. Switch off the dryer. Program selector to "Off".

2. Open the door.



3. Remove the lint filter.



4. Remove lint by stroking your hand over the filter.

The filter should be lightly scrubbed twice a year with warm soapy water. The filter is cleaned when it no longer holds water. The filter must be dried thoroughly before being replaced.



5. Insert the filter.
6. Close the door.

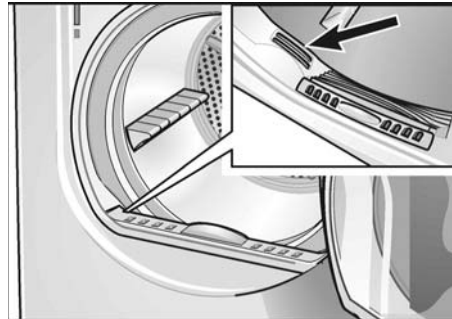
Cleaning the exhaust duct

Inspect and clean the exhaust ducting at least once a year to prevent clogging. A partially clogged exhaust can lengthen the drying time.

- Turn off the circuit breaker
- Pull out power supply plug
- Disconnect the duct from the dryer.
- Vacuum and reconnect the duct.

Cleaning the moisture sensor

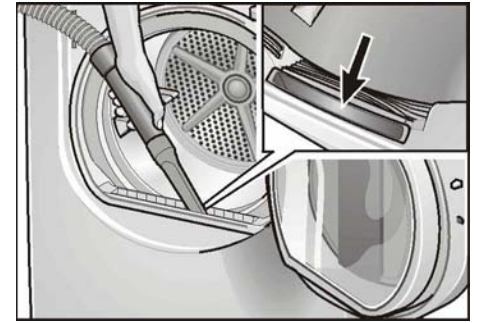
The moisture sensor has to be cleaned because a fine layer of transparent buildup is deposited on the sensors.



This deposit can easily be removed by wiping the sensors (the two bars next to the lint filter) with a cloth and a little white vinegar. Use white vinegar only! Clean the moisture sensor once a month.

Cleaning the bearing shield

Over time, fluff from the drying process collects in the bearing shield.



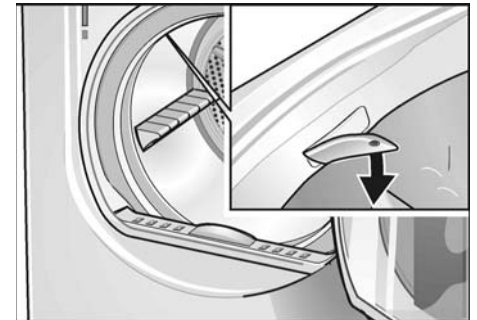
This fluff can be easily removed using your vacuum cleaner, at least once a month.

Change the light bulb

The dryer light turns on inside the drum when you open the door.

To change the light bulb:

- Set program selector to "Off".
- Turn off the circuit breaker.
- Pull out power supply plug.
- Open the door and locate the light bulb on the upper left side of the seal.



- Loosen the screw of the cover and open the cover.
- Turn bulb counterclockwise. Replace the bulb with a new appliance bulb only (obtainable through parts department).
- Replace the cover and secure with the screw.
- Plug in dryer or reconnect power supply.

Troubleshooting

WARNING

TO AVOID RISK OF ELECTRICAL SHOCK!
Repairs or replacement of parts may be carried out by authorized technicians only.

Before calling the customer service, check whether you can rectify the fault yourself by means of the following table.

If a fault cannot be rectified or a repair is required:

1. Set program selector to "Off".
2. Turn off the circuit breaker.
3. Pull the main plug out of the socket.
4. Call customer service (see page 20).

Problem	Possible cause	Remedial action
Dryer does not start. "Start/Stop" indicator light does not illuminate.	Main plug not inserted at all or not inserted correctly.	Insert main plug correctly.
	A fuse of power supply has tripped.	Replace/switch on fuse.
	"Start/Stop" button not pressed.	Press "Start/Stop" button.
	No program selected.	Select program.
	Door not closed.	Close door.
	Ambient temperature below 41 °F/5 °C.	Increase room temperature.
Program has been interrupted. A warning signal is emitted and the display shows "E:01".	Lint filter dirty.	Clean filter as described on page 18. Switch off/switch on again.
	Exhaust air duct is blocked or too long.	Clean exhaust air duct. Reduce exhaust air duct to maximum length as described on page 7. Switch off/switch on again.
	Fault in program sequence or malfunction.	Switch off dryer, leave to cool down for 30 min, switch on again. Restart program.
	The room/cabinet is not adequately ventilated.	Provide an adequate supply of fresh air. Switch off/switch on again.
Degree of drying has not been reached or the drying time is too long. Display may indicate "E:03".	Moisture sensor dirty.	Clean moisture sensor as described on page 18. Switch off/switch on again.
	Exhaust air duct is blocked or too long.	Clean exhaust air extraction. Reduce exhaust air duct to maximum length as described on page 7. Switch off/switch on again.
	Lint filter dirty.	Clean filter as described on page 18. Switch off/switch on again.
	Laundry was too wet.	Spin laundry at higher speed in the washing machine. Switch off/switch on again.
	Unsuitable program selected.	Select program with aid of the program selection table (see page 15). Switch off/switch on again.
	Maximum drying time was exceeded.	Clean lint filter (see page 18). Check exhaust air extraction. Spin laundry at a higher speed in your washer.
	Motor limit temperature was exceeded.	Switch off dryer, leave to cool down for 30 min. Switch on again. Start program.
Drum light does not function.	No program selected.	Select program.
	Light bulb defective, light bulb burned out.	Change light bulb, see page 18.
	No power supply.	Guarantee power supply.
	Light bulb is loose.	Tighten light bulb. Remove and reinstall the cover as directed on page 24.
"Start/Stop" indicator light does not illuminate. "Wrinkle block" indicator lights. The display shows "000".	Fault in program sequence or malfunction.	Switch off dryer, leave to cool down for 30 min, switch on again. Restart program.
Lint filter LED is blinking after lint filter has been cleaned	Blinking of lint filter LED is not an indication of a problem. It is used only as a reminder.	No action required. Light will stop blinking.

SERVICE and REPAIR

⚠ CAUTION ⚠

CAUTION – Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation. verify proper operation after servicing.

The Bosch dryers require no special care other than the care and cleaning noted above.

i If you are having a problem with your dryer, before calling for service please refer to Table on page 19, following.

If service becomes necessary, contact your dealer or installer or an authorized service center. Do not attempt to repair the appliance yourself. Any work performed by unauthorized personnel may void the warranty.

If you are having a problem with your Bosch dryer and are not pleased with the service you have received:

- First, please contact your installer or the Bosch Authorized Service Contractor in your area and explain to them why you are not satisfied. This will usually correct the problem.
- If after working with your installer or service person the problem still has not been resolved to your satisfaction, please let us know by either writing to us at,
 BSH Home Appliances
 5551 McFadden Avenue
 Huntington Beach, CA 92649

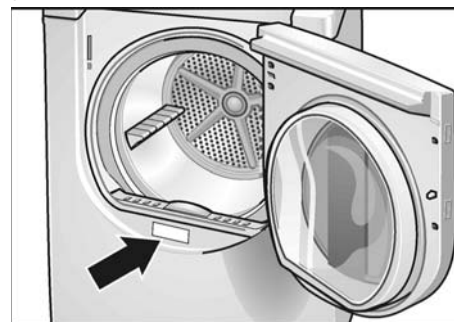
or, calling us at
1-800-944-2904.

Please be sure to include, if writing, or have available, if calling, the following information:

- Model Number
- Serial Number
- Date of Original Purchase
- Date Problem Originated
- Explanation of Problem

Also, if writing, please be sure to include a daytime telephone number and a copy of the sales invoice.

You will find the model number and serial number information on the rating plate located on the inside of the front panel.



STATEMENT OF WARRANTIES BOSCH CLOTHES DRYERS

The warranties provided by BSH Home Appliances ("Bosch") in this Statement of Warranties apply only to Bosch

Clothes dryers sold to the first using purchaser by Bosch or its authorized dealers, retailers or service centers in

the United States or Canada. The Warranties provided herein are not transferable.

LENGTH OF WARRANTY	SCOPE OF WARRANTY
1 Year Full Limited Warranty From Date of Installation*	Bosch will repair or replace, free of charge, any component part that is proven defective under conditions of normal home use, labor and shipping costs included. Warranty repair service must be performed by an authorized Bosch Service Center.
2 Year Limited Warranty From Date of Installation*	Bosch will provide replacement parts, free of charge, for any component part that is proven defective under conditions of normal home use, shipping costs included, labor charges excluded.
2 Year Limited Warranty on Electronics From Date of Installation*	Bosch will repair or replace, free of charge, any microprocessor or printed circuit board that is proven defective under conditions of normal home use from the date of original installation, labor charges excluded.
2 Year Limited Warranty on Motor From Date of Installation*	Bosch will repair or replace, free of charge, any motor or component part of the motor that is proven defective under conditions of normal home use from the date of original installation, labor charges excluded.

* Date of installation shall refer to the earlier of the date the clothes dryer is installed or ten business days after the delivery date.

Exclusions

This warranty does not cover service calls or repairs to correct the installation of the clothes dryer, to provide instructions on the use of your clothes dryer, to replace house fuses or correct plumbing or the electric wiring in your home or to repair any clothes dryer that's use was in a manner other than what is normal and customary for home use. In addition, the warranties provided in this Statement exclude any defects or damage arising from accident, alteration, misuse, abuse,

improper installation, unauthorized service work, external forces beyond Bosch's control, such as fire, flood, and other acts of God, or installation not in accordance with local electrical and plumbing codes. Labor charges incurred in the repair or replacement of any clothes dryer after a period of one year from date of installation shall not be covered by this warranty. Any and all replaced and/or repaired parts shall assume the identity of the original for purposes of the applicable warranty period. TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY IS IN LIEU

OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BOSCH DOES NOT ASSUME ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. TO OBTAIN WARRANTY SERVICE, CONTACT THE NEAREST BOSCH AUTHORIZED SERVICE CENTER OR CALL 1-800-944-2904, OR WRITE TO:

BSH HOME APPLIANCES CORP.,
 5551 MCFADDEN AVENUE

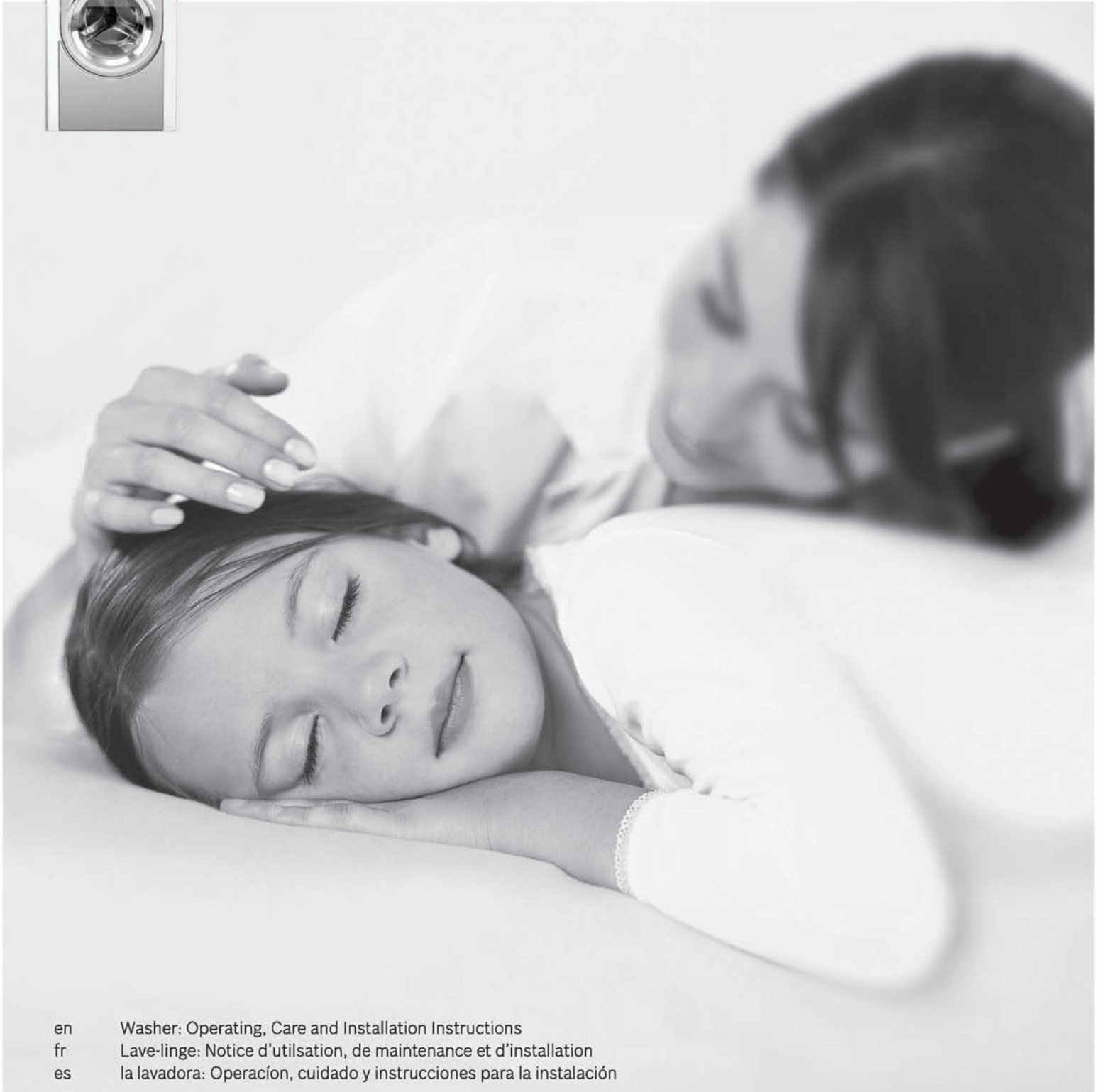


Bosch Nexxt® 500 Plus Series Washer

Models / Modèle / Modelo:
WFMC5301UC, WFMC530SUC, WFMC530RUC



BOSCH
Invented for life



en Washer: Operating, Care and Installation Instructions
fr Lave-linge: Notice d'utilisation, de maintenance et d'installation
es la lavadora: Operación, cuidado y instrucciones para la instalación

Features and Benefits of Your New Washer

SENSOTRONIC® Technology

The Bosch **SENSOTRONIC®** technology optimizes the wash process at every stage of the cycle by sensing load size, water level and temperature needs for superior results. Digital sensors care for all fabrics including wool, mohair and silk. This machine virtually operates at the touch of a button.

Exclusive Hinge and Gasket System

A reinforced hinge and a new, revolutionary gasket design keep the door shut. They also seal in the heat, allowing your laundry to reach the optimum temperature, which eliminates even the toughest stains.

3-Part Detergent Dispenser

A 3-part dispenser automatically distributes the appropriate amounts of detergent, bleach and softener at exactly the right times. And, working together with our unique suds sensor, you can be sure your clothing is rinsed completely clean.

XXTRASANITARY™ Cycle

With this innovative cycle, a thermostat-controlled, intelligent sensor heats up the water to 170° F and maintains the temperature for exactly 3 minutes. After killing 99.9% of most common household bacteria, the water temperature is reduced to a gentler 150° F to prevent clothing breakdown. The clothes are thoroughly cleaned and sanitized with no damage to fibers.

KIDSCARE™ Cycle

The littlest people in the house usually account for the toughest stains. This cycle heats the wash water up to 150° F to remove even the most stubborn stains with ease.

Archie Paddles

As your wash gently tumbles, Archie paddles cascade water from high above, rinsing away suds and giving your laundry a complete, even clean. An inclined drum works with them to ensure not a single shirt goes unturned.

Stainless Steel Drum

The **Nexxt** washer drum has hundreds of smooth double punched holes, which allow your garments to gently tumble completely snag-free.

Internal Water Heater

An Internal Heating Element heats the water to up to 170° F while a Digital Temperature Sensor continually monitors the water temperature. Bosch **Nexxt®** washers deliver the most efficient and accurate water heating method for each selected fabric type.

Quiet Performance

Bosch laundry appliances use brushless motors, suspended pump systems and special sound-deadening material to keep them exceptionally quiet while in operation. Which means they can be installed virtually anywhere in the home without causing a disturbance.

SYNCRO™ Technology

Manage your washer and dryer times with the **SYNCRO™** Technology Operation Logic. The **Nexxt®** Dryers coordinate with the spin speed of the washer, based upon the fabric setting and water temperature of your wash load. Therefore, your wash pile won't stack up as you wait for your dryer to finish its cycle.

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Congratulations!

The new washing machine you just purchased is a modern, high quality domestic appliance.

This modern washing machine cleans your laundry using the most sophisticated washing processes to obtain superior cleaning results.

Excellent engineering and reliability reduces operating costs significantly.

An easy operation philosophy, a variety of customized washing programs and a solid touch and feel makes this appliance a user-friendly assistant in your household.

It offers the following standard features:

- Low noise level for washing and spinning.
- High door with pull-lock (magnetic door lock).
- Door opening 16 inches (41 cm), quality sturdy hinge, opening angle –180°.
- Drum capacity 17.6 lbs (8 kg) for regular cotton.

Each washing machine which leaves our factory has undergone a thorough performance test and is in full working condition. The appliance may contain residual water due to the testing procedures. If you have any questions concerning installation of the washing machine, our customer service will be happy to advise you.

Further information and a selection of our products can be found on our Web site: www.boschappliances.com

Please read and follow these operating and installation instructions along with all other information enclosed with the washing machine.

These operating and installation instructions describe various models. Differences are indicated in the appropriate places.

The illustrations may show different details than your washer.

Definitions



WARNING



WARNING – This indicates that death or serious injuries may occur as a result of non-observance of this warning.



CAUTION

CAUTION – This indicates that injuries may occur as a result of non-observance of this warning.

ATTENTION

ATTENTION – This indicates that damage may occur as a result of non-observance of this warning.



This symbol is used to draw the user's attention to important matters.

IMPORTANT SAFETY INSTRUCTIONS



WARNING



To reduce the risk of fire, electric shock, serious injury or death when using your washing machine, follow basic precautions, including the following:

1. BOSCH washers are provided with an Operating, Care and Installation Instructions Manual. Read and understand all instructions before using the washing machine.
2. Do not wash articles that have been previously cleaned, washed, soaked, or spotted with gasoline, dry cleaning solvents, other flammable or explosive substances as they give off vapors that could ignite or explode.
3. Do not add gasoline, dry cleaning solvents, or other flammable or explosive substances to the wash water. These substances give off vapors that could ignite or explode.
4. Under certain conditions hydrogen gas may be produced in a hot water system that has not been used for 2 weeks or more. HYDROGEN GAS IS EXPLOSIVE. If the hot water system has not been used for this length of time, turn on all hot water faucets and let the water flow out of each faucet for several minutes before using the washing machine. This will release any accumulated hydrogen gas. As the gas is flammable, do not smoke or use an open flame while carrying out this procedure.
5. Before the appliance is removed from service or discarded, remove the door and the power cord/plug.
6. Do not reach into the appliance if the wash drum is moving.
7. Do not install or store this appliance where it will be exposed to the weather.
8. Do not tamper with the controls.
9. Do not repair or replace any part of the appliance or attempt any service unless specifically recommended in the user maintenance instructions or in published user repair instructions that you understand and have the skills to carry out.
10. Always unplug the washing machine from the power supply before attempting any service. Disconnect the power cord by grasping the plug, not the cord.
11. To reduce the risk of fire, clothes, cleaning rags, mop heads and the like which have been soiled with any flammable substance, such as vegetable oil, cooking oil, petroleum based oils or distillates, waxes, fats, etc., must be kept away from any source of ignition, including a clothes dryer. These items may contain flammable substances which, even after washing, may smoke or catch fire.
12. Do not machine wash fiberglass materials (such as curtains and window coverings that use fiberglass materials). Small particles may remain in the washing machine and stick to fabrics in subsequent wash loads causing skin irritation.

13. When children become old enough to operate the appliance, it is the legal responsibility of the parents or legal guardians to ensure that they are instructed in safe practices by qualified persons.
14. Do not allow children to play on or with the appliance. Close supervision of children is necessary when the appliance is used near children.
15. Keep pets away from the washing machine.
16. Do not insert/pull out the power plug with wet hands.
17. Do not touch the door if washing at high temperatures.
18. Use caution when draining hot water.
19. Do not climb onto the washing machine and/or lean on the open door.
20. Do not sit or stand on the top of the washing machine.
21. To reduce the risk of fire or electrical shock, DO NOT use an extension cord or an adapter to connect the washing machine to the power supply.
22. The washing machine must only be used for its intended purpose.
23. Always follow the fabric care instructions recommended by the clothing manufacturer.
24. Do not use the washing machine if it has a worn power cord or loose plug. If this is the case, contact an authorized service agent.
25. Make sure that all water connections to the washing machine have shut-off valve(s) that are readily accessible. Close the washing machine water shut-off valve(s) at the end of each wash day.
26. Check the fill hose connections on a regular basis to ensure that they are tight and not leaking.
27. Always read and follow the instructions of the manufacturer of the detergent(s), cleaning aid(s), fabric softener(s) and static eliminator(s) which you are using. Heed all warnings and precautions.
28. Store all laundry chemicals and aids in a cool dry place according to the manufacturers' instructions.
29. To reduce the risk of poisoning or chemical burns, keep all cleaning products out of the reach of children.
30. Do not operate the washing machine if any guards, panels and/or fasteners except transport fixing bolts have been removed.
31. Do not operate the washing machine if parts are missing or broken.
32. Do not bypass any safety devices.
33. To avoid floor damage and mold growth, do not let spills or splashes cause standing water around or under the appliance.
34. Do not operate this washing machine until you are sure that:
 - a. the washing machine has been installed according to the INSTALLATION INSTRUCTIONS.
 - b. all water, drain, power and grounding connections are in compliance with all local regulations and/or other applicable regulations and requirements.
35. Failure to install, maintain and/or operate the washing machine according to the manufacturer's instructions may result in injury and/or damage.
36. Removing any panel, including the round service panel in the front can expose sharp edges and points, electrical connections and hot surfaces.
37. To avoid damage to the door, do not push against the door when moving the unit. Precautions should be taken to avoid damage to the floor.
38. The water connections should be made and tested before electrical power is applied to the machine.



Notes:

- A. The IMPORTANT SAFE-GUARDS and WARNINGS indicated in this manual do not cover all possible conditions which may occur. Common sense, caution and care must be exercised when installing, maintaining or operating the washing machine.

- B. Always contact your dealer, distributor, service agent or the manufacturer about any problems or conditions that you do not understand.

GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electric shock by providing a path of least resistance for the electric current. This appliance is equipped with a cord that has an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

	WARNING	
<p>Improper connection of the equipment grounding conductor can result in electric shock. Connect to an individual branch circuit. Check with a qualified electrician or serviceman if you are in doubt as to whether the washer is properly grounded. DO NOT modify the plug provided with the appliance – if it will not fit the outlet have a proper outlet installed by a qualified electrician.</p>		

KEEP THESE INSTRUCTIONS FOR FUTURE REFERENCE.

In case of change of ownership, manual should be conveyed with the washer.

SAVE THESE INSTRUCTIONS

INSTALLATION INSTRUCTION

Introduction

CAUTION

TO AVOID RISK OF INJURY
The washing machine is heavy. Lift with caution.

Be sure to observe all listed warnings and cautions.

ATTENTION

Frozen hoses can tear/burst. Do not install the washing machine outdoors or in an area exposed to freezing conditions.

These installation instructions are intended for use by qualified installers. In addition to these instructions, if installing the washing machine:

- In the United States comply with the National Electric Code, ANSI/NFPA70 – latest edition/State and municipal and/or local regulations.
- In Canada comply with the Canadian Electric Code C22.1 – latest edition/Provincial and Municipal and/or local regulations.

If the washing machine is located in a room which will be exposed to temperatures below freezing, or if it is located in a cabin that is being shut down for the winter, any residual water in the pump or water inlet hose(s) **must** be drained.

Take care not to damage the washing machine. Do not hold on to protruding parts (e.g. door) when lifting.

In addition to the safety information listed here, the local water and electricity supplier may have special requirements.

If in doubt, have the appliance connected by an authorized technician.

Information concerning waste disposal

Disposing of the packaging

The shipping package has protected your new appliance on its way to your home. All packaging materials are non-polluting and recyclable. Please contribute to a better environment by disposing of packaging materials in an environmentally friendly manner. Please ask your dealer or local authority about the best means of disposal.

WARNING

Keep children away from shipping carton and packaging components. Danger of suffocation from plastic foil and folding cartons.

Disposing of your old appliance

Old appliances are not worthless rubbish! Valuable raw materials can be reclaimed from environmentally friendly recycling.

WARNING

If appliance is no longer usable, pull out main plug, cut off power cord and discard.

To prevent children from locking themselves in the appliance, disable the door lock or remove the door.

Intended Use

Your washing machine is intended:

- For domestic use only.
- For washing machine washable fabrics in washing water.
- For operation using cold and hot (140 °F/60 °C) tap water and conventional additives that are suitable for use in residential washing machines.

Environmental Protection / Conservation Issues

Your washing machine uses water, energy and detergent efficiently, thereby protecting the environment and reducing your household costs.

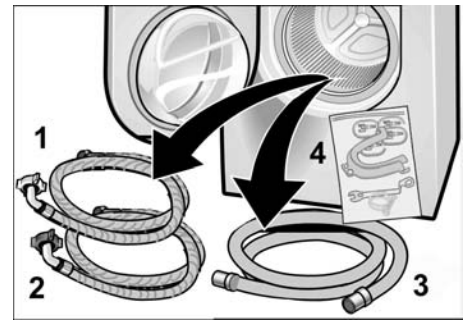
To use your washing machine in an efficient and non polluting manner:

- Avoid using too much detergent.
- Use detergent bearing HE symbol for high efficiency and front loading washers.
- Add detergent according to the degree of soiling, amount of laundry and water hardness, and follow the detergent manufacturer's instructions.

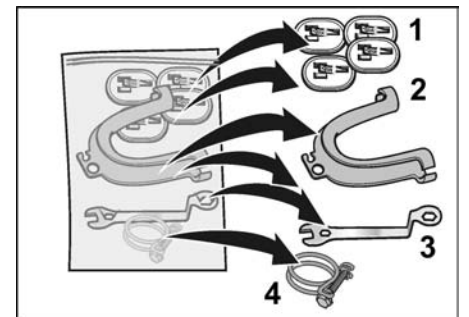
Factory-supplied Equipment

There is a packet of accessory parts supplied with your washer. Check that all the accessory parts supplied for your model are there. If any parts are missing contact your dealer immediately.

The drum contains:



1. Water supply hose for cold water (blue marking).
2. Water supply hose for hot water (red marking).
3. Water drain hose.
4. Accessory parts bag (see below)



The accessory parts bag contains:

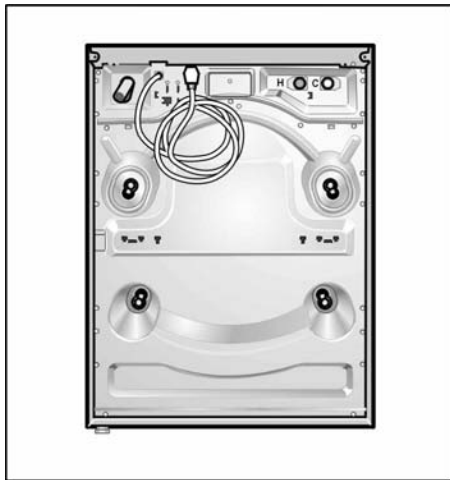
1. Covers to be placed over the holes for the transport bolts (after removing them).
2. Elbow for attaching the drain hose, e.g. to a sink.
3. Wrench for leveling.
4. Clamp for drain hose.

Depending on the type of connection, the following may also be required:

- Y-connector (can be obtained from any hardware store) in case there is only a cold water connection available.

Any residual moisture inside the drum is due to the final testing which every washing machine undergoes before leaving the factory.

Connections located on the rear of the appliance:

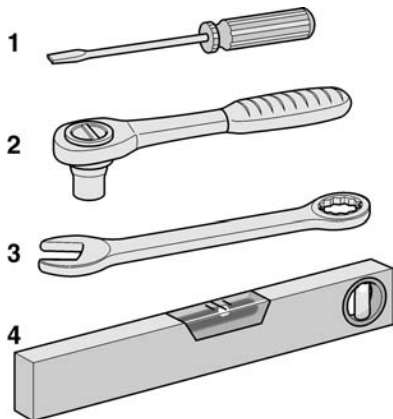


- Power cord with plug.
- H** = hot water connection
- C** = cold water connection

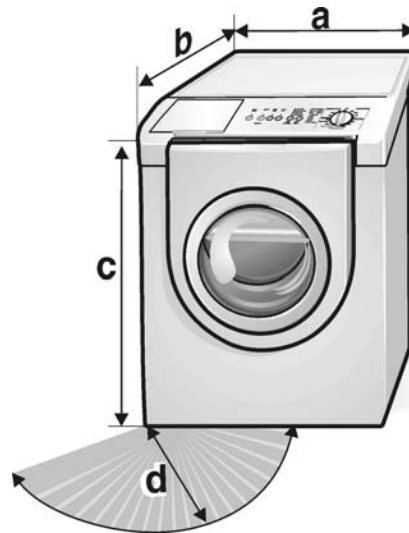
Useful tools

The following tools are helpful:

1. Flat head screwdriver.
2. Socket wrench (1/2" / 13mm).
3. Closed wrench (1/2" / 13 mm).
4. Bubble Level.



Dimensions



- a = 27.0 inches (686 mm)
- b = 30.7 inches (780 mm)
- c = 37.0 inches (940 mm)
- d = 16.0 inches (407 mm)
- Door opening angle 180°
- Approx. weight = 220 lbs (100 kg)

Installation area

⚠ WARNING ⚠

Never ground the washer to plastic plumbing lines, gas lines or hot water pipes.

This appliance must be installed on a solid floor and well leveled due to the higher spin speeds available. If installing the machine on a wood floor over a basement or on a second floor, the floor may need to be reinforced. Sound, vibration, and risk of "walking" will be affected depending on the structure and stability of the floor surface where it is installed.

If the washing machine is to be installed on a weak wood floor consider the following:

- Soft floor surfaces, such as carpets or surfaces with foam backing, are not suitable. If possible, place the washing machine in a corner of the room.
- Screw a water resistant wooden board (at least 3/4" thick) to the floor.
- Secure the feet of the washing machine with holding brackets. Order the holding brackets (set) from Bosch Customer Service (WMZ 2200).

- Units are not designed to be stacked.
- Units are not designed for under counter installation

Pedestal Mounting

If mounting the washer on the Bosch pedestal (accessory no. WTZ1295 for solid white color WTZ 1295P for duo tone silver WTZ1295R, for duo tone red Follow the instructions supplied with the pedestal.

i Install pedestal prior to removing transport bolts.

Closet

If installing the washer in a closet, observe the minimum distances according to the following table:

Minimum Installation Clearances

	Closet
Sides	1/4" (6 mm)
Top	12" (305 mm)
Rear	2.5" (64 mm)
Front	1/4" (6 mm)

Ventilation:

Top: 48 sq. in (310 sq. cm),
Bottom: 24 sq. in (155 sq. cm)

Checklist for Installation

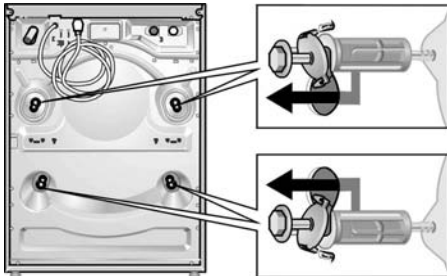
	Page
completely remove 4 shipping bolts	8
move the washer into place	8
connect the water supply line and drain pipe	8
connect the electrical power	10
slide the washer into its final location	11
level the washer as low as possible	11
before first use, run a cleaning cycle	15

Removing the transport bolts

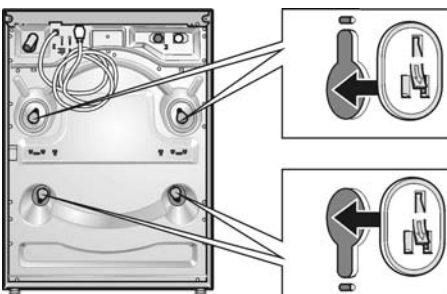
CAUTION

To avoid possible injury and damage to the appliance and adjacent surfaces, all 4 transport bolts must be removed before using the appliance for the first time and must be retained for any future transport (e.g. when moving).

- ❑ Loosen all four bolts before removing any of the bolts all the way from the unit.
- ❑ Remove the bottom two bolts prior to removing the top two bolts.
- ❑ Loosen the bolts using the closed end of the 1/2" wrench provided. Loosen them until they can be removed freely.
- ❑ The recessed bottom bolts may be more easily removed using a 1/2" (13 mm) socket wrench.



- ❑ Completely remove all 4 transport bolt assemblies (bolt, spring, washer and bushings) by reaching through the open washing machine door and pulling the drum slightly forward to loosen, then pull out from the back.
- ❑ If the bushings do not come out when removing the bolts, place the bolts back into the bushings and carefully try again. It is important to do this with the bolts, otherwise the bushings will not come out properly.
- ❑ To store the bolts for future use, do not remove the bolts from the plastic bushings.

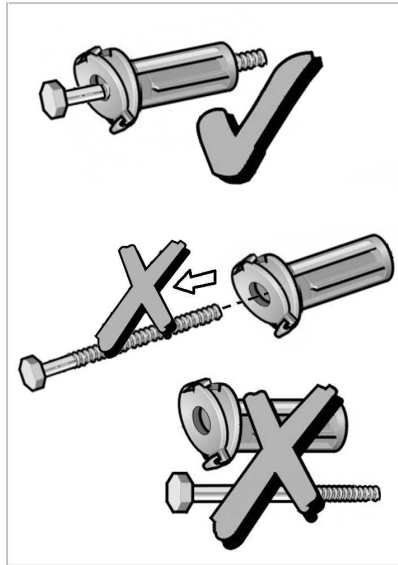


- ❑ Insert the covers until they snap in completely.

Storing the transport bolts

Always keep the transport bolts for future transportation of the appliance (such as when moving out).

- ❑ Store the transport bolts with the washer and bushing attached.



Water connection

Water supply

ATTENTION

The washing machine must only be operated with cold and hot (max. 140 °F / 60 °C) tap water. Do not connect the appliance to the mixer tap of an unpressurized hot-water boiler.

If in doubt, have the water connection installed by an authorized technician.

The water supply hoses must not be:

- Bent or flattened.
- Modified or cut (integrity can no longer be guaranteed).

Observe the water pressure in the supply network:

- The water pressure should be between 14.5 and 145 p.s.i. (1 and 10 bars) when the tap is turned on, at least 2.2 U. S. gallons (8 liters) of water should be discharged per minute.
- A pressure regulator valve must be installed if the maximum water pressure is exceeded.

ATTENTION

To prevent water damage, the hot and cold water valves should be accessible when the washing machine is in place and should always be turned off when the washing machine is not in use.

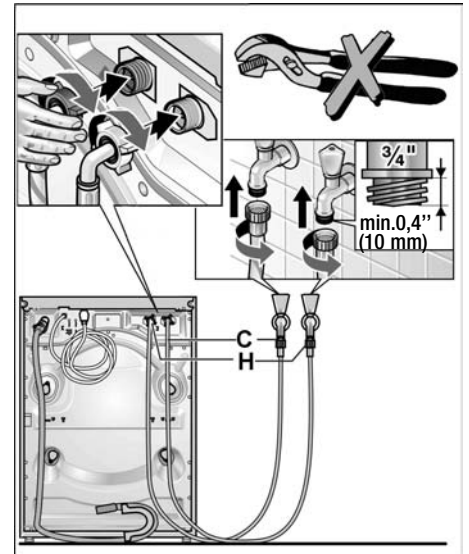
ATTENTION

If installing the washing machine in a new building or a building in which the plumbing system was recently installed or upgraded, flush the lines before installing the washing machine to remove any sand, dirt or residue.

Supply Line Connection

C Cold water connection and
H Hot water connection
(max. 140 °F / 60 °C)

- ❑ Plastic threads must only be tightened **by hand** when connecting the water supply hoses to the back of the unit. Do not remove the strainers from the water supply hoses.



- ❑ After connecting, turn on the water completely, and check that connection points are watertight.

CAUTION

The connection points are under full water pressure. Check seal with tap fully open.

Water drainage

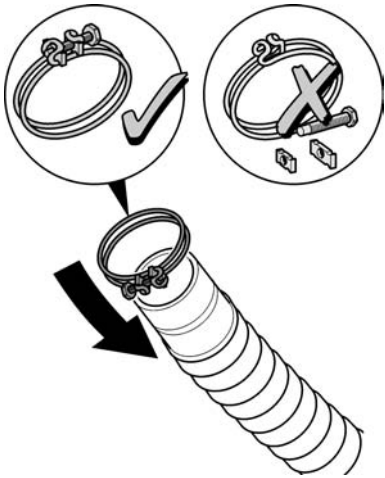
ATTENTION

Do not bend or pull the water drainage hose.

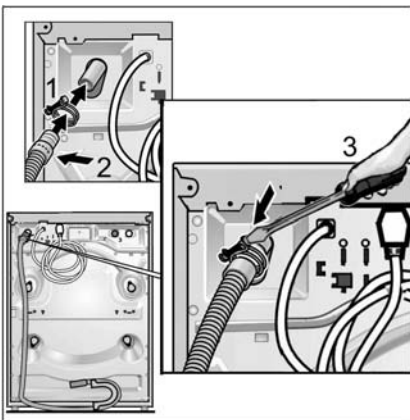
Height difference between the installation location of the washing machine and the drainage point: Maximum 8 feet / 244 cm, minimum 2 feet / 60 cm.

Connecting the water drainage hose

- ❑ Do not remove the screw from the clamp assembly. Loosen the screw only enough so that the clamp will slide freely onto the water drain hose.

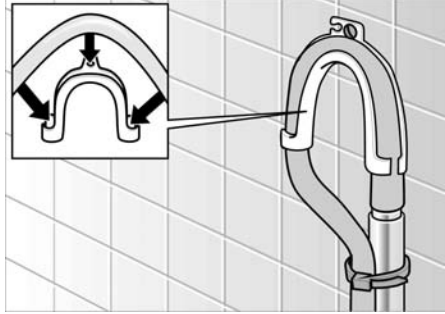


1. Place the hose clamp over the end of the drain hose before attaching the drain hose to the appliance.



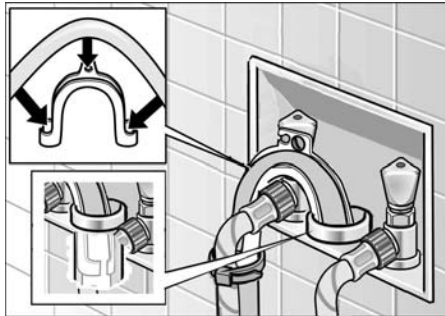
2. Attach the drain hose to the drain hose connection on the back of the appliance; position the hose clamp approximately 3/8 inch (9 mm) from the end of the hose.
3. Tighten the clamp with a screwdriver

Standpipe Installation



- ❑ Use the elbow. Attach the elbow to the end of the hose and insert end of hose into standpipe.
- ❑ Use a strap or cable tie to hold hose in place.

In-Wall Installation



- ❑ Use the elbow. Attach the elbow to the end of the hose and insert the end of the hose into the wall drain.
- ❑ The hose and elbow should extend into the open drain pipe as far as the elbow allows when seated as shown in the above picture.

- ❑ Use a strap or cable tie to hold hose in place.

Drainage into a siphon

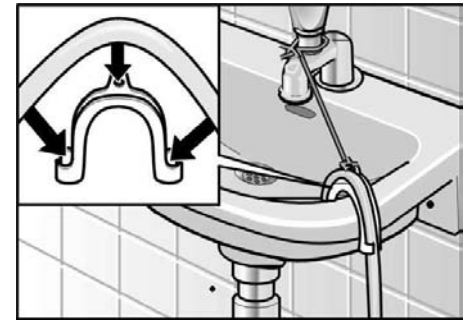


- ❑ Secure the connection point with a hose clip (not included in factory-supplied equipment).

Drainage into a sink

ATTENTION

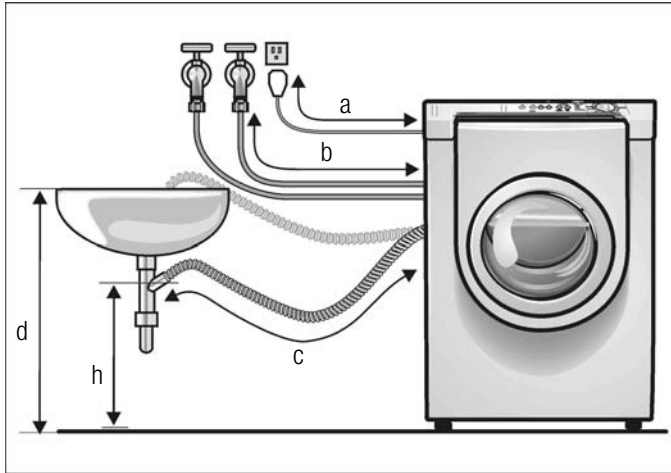
Ensure that the plug is not in the drain hole.



- ❑ Attach water drain hose securely to sink.
- ❑ Use a strap or cable tie to hold hose in place.
- ❑ When the water is being drained, check that the water flow out of the sink is adequate.

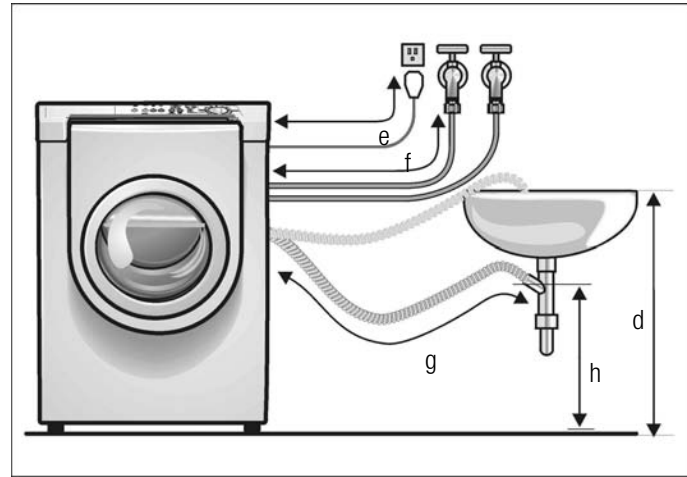
Hose and cable lengths

Left-hand connection



a = 55.0 in. / 140 cm (approx.)
 b = 51.0 in. / 130 cm (approx.)
 c = 33.5 in. / 85 cm (approx.)
 d = 39.0 in. / 100 cm (max.)

Right-hand connection



e = 69.0 in. / 175 cm (approx.)
 f = 34.6 in. / 88 cm (approx.)
 g = 55.0 in. / 140 cm (approx.)
 h = 24.0 in. / 60 cm (approx.)
 h = minimum drain point height

Other hoses

Available from appliance dealers:
 – Extended supply hose
 (approx. 96.1 in. / 2.44 m).

Electrical connection

GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of a malfunction or breakdown, grounding will reduce the risk of electrical shock by providing a path of least resistance for the electric current.

This appliance features a cord with an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet which has been properly installed and grounded in accordance with all local regulations and ordinances.

on the washing machine (rating plate, see page 25).

Connection specifications as well as the required fuses are stipulated on the appliance rating plate.

Volts	Hertz	Amperes	Watts
110–120	60	15	1350 (max.)

Make sure that:

- the power plug fits into the socket.
- the wire size is sufficient.
- the grounding system is properly installed.

The power cord may be replaced by an electrician only.

Replacement power cords are available from Customer Service.

⚠ WARNING ⚠

Improper connection of the equipment grounding conductor may result in electric shock. Have the appliance checked by a qualified electrician or service technician if you are in doubt as to whether the washer has been properly grounded.

Do not modify the plug provided with the appliance – if it will not fit in the outlet, have a proper outlet installed by a qualified electrician.


⚠ WARNING ⚠

The washing machine must only be connected to an individual branch circuit via a socket which has been properly installed and grounded.

The household electrical voltage must correspond to the voltage specification

⚠ WARNING ⚠

To reduce the risk of fire or electrical shock, DO NOT use an extension cord or an adapter to connect the washing machine to the power supply.

If a ground fault circuit breaker is to be used, only use types marked with the following symbol: .

Only this symbol can guarantee compliance with all current regulations. Do not insert/remove the power plug with wet or damp hands.

Touch the plug only when removing the plug from the socket.

Leveling Procedure

1. The appliance should now be in its final position, ready for leveling (moving the appliance after leveling can make it unlevel again.)

Each foot of the appliance or pedestal must be placed firmly on the floor to prevent the washing machine from wobbling.

Start with all four feet screwed in as far as possible, then back individual feet out as necessary to level the washer.

2. Use the bubble level to level the washer front to back and side to side (be sure the level fits between the edges of the washer, and is not elevated at more end on a ridge on the surface of the washer.)
3. Adjust the leveling of the washer with the four height-adjustable feet. Level the washer as low as possible to help reduce vibration.



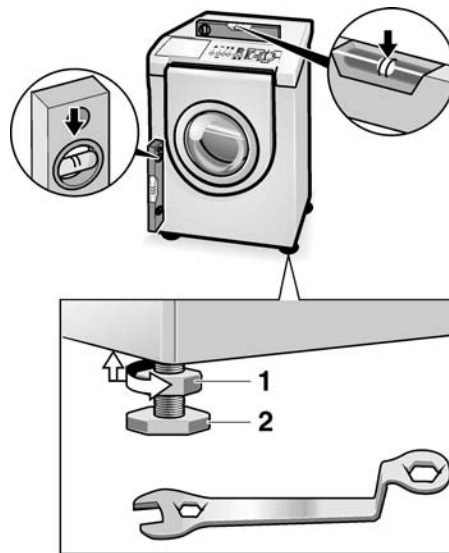
CAUTION

TO AVOID RISK OF INJURIES—Take care when using the wrench.

- Loosen the lock nut **1** (1 on the illustration) by turning it clockwise. Use the wrench provided (or a 5/8" – 16mm open end wrench). When you turn the lock nut, the foot (**2** on the illustration) it is locked against will turn with it. This will extend the height of the foot.
- Turning the foot out (clockwise) will raise the corner of the washer, turning the foot in (counter-clockwise) will lower the corner of the washer. When the corner of the washer is satisfactorily raised or lowered, lock the height-adjustable feet in place by turning the lock nut counter-clockwise until it locks tightly against the washer housing.

i It may be necessary to hold the washer foot with a pair of pliers to keep it from turning while tightening the lock nut. If the foot does turn, it will change the height of the corner.

- After making preliminary adjustments, press down on each corner of the washer to make sure the unit does not wobble. If it does wobble, lower the foot on that corner until the foot touches the floor firmly.
4. Use a bubble level (24" or less in length) to check the leveling status of the appliance.
 - Lay the bubble level across the unit worktop to check the level from side to side and from front to back.
 - A center-located bubble indicates the unit is leveled. Otherwise, repeat the leveling procedure until the unit is leveled. Tip: if the bubble is closer to one end, it indicates the high side of the unit. To level the unit, either lower the higher side or raise the lower side.
 - After leveling the unit from side to side, then turn the level so that it lays on the worktop from front to back to also check the level in that direction.



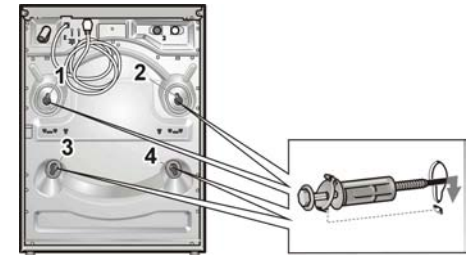
5. Fine tune the leveling by placing a small load of laundry in the machine, starting it in spin cycle and then leveling the washer again.
 - i** If the test spin cycle is manually stopped before its completion, then the door may remain locked for 10 seconds.

Transport, such as as when moving out

Before transporting the washing machine:

- Turn off the water.
- Disconnect the washing machine from the power outlet.
- Dismantle the supply and drainage hoses.
- Install the transport bolts.

Preparing and inserting the transport bolts



- Remove the covers.
- Prepare the transport bolts: Loosen the screw in the sleeve until the end of the screw is level with the end of the sleeve.
- Insert and tighten all transport bolts. Make sure that the tab on the transportation bolt is inserted in the slot on the washing machine back panel.

OPERATING INSTRUCTION

Your new washer

Filling laundry detergent and/or additives into dispensers



Open the door (colored marking) ...



...and close the door



⚠ CAUTION The access panel located on the bottom right of the washer is for Service Access and is only to be opened by an Authorized or Qualified Service Technician.

Panel

Buttons for additional options

(in addition to the program if required)

ECO e: Reduces the amount of energy used for the washing program.

Rinse Plus: Additional rinsing cycle.

Heavy duty: Increased wash time for heavily soiled loads.

Additional options can be combined at any time.

Additional option selected:

Indicator light is lit red.

Switch off additional option:

Press button again. Indicator light turns off.

Display

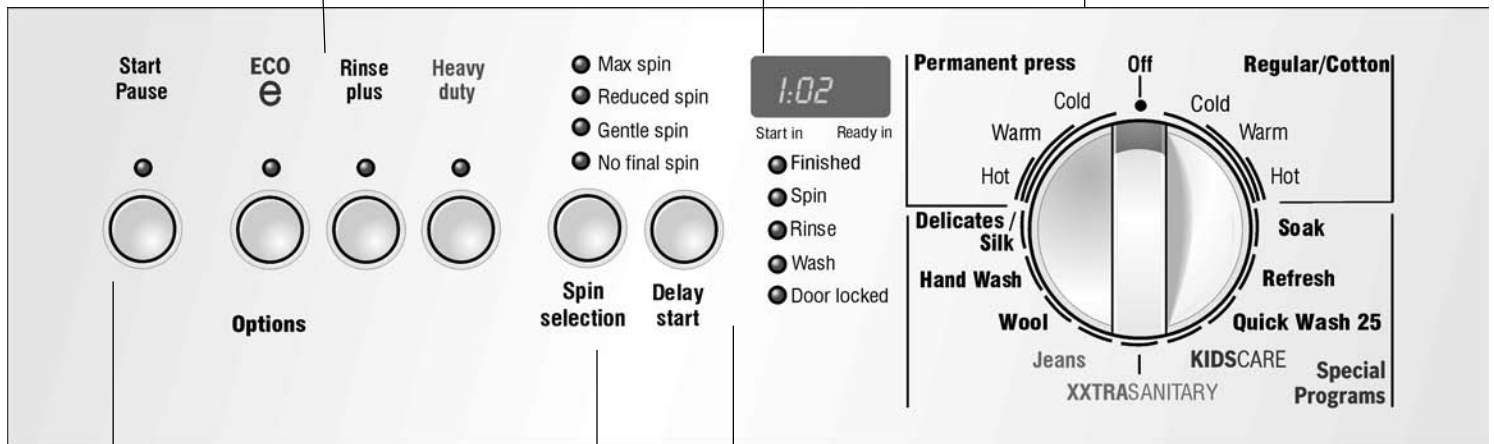
The **Ready in** time is displayed, if a program is selected.

The **Start** time is displayed, if this function is additionally selected.

Program selector

Switches the machine on and off and selects the program. Can be turned in both directions.

The program selector does not turn while the program is running – the program sequence is electronically controlled.



Start/Pause button

Starts or interrupts the washing cycle (program must first be selected).

Indicator light

Indicator light flashes red: Settings can be changed, the wash cycle can be started, door is locked for reasons of safety or program is in "Pause" mode.

Indicator light is lit red: Program is running and "Pause" can be activated.

The indicator light is off: Program is finished or no program selected.

Indicator lights

The **door locked** lights up if a program is selected and the **Start** button is pressed.

The **wash, rinse and spin** lights up if the respective program segment runs.

The **finished** lights up if the program has ended.

Indicator lights flash: Operation error!

Delay Start button

The **Start** time can be delayed by hours up to a maximum of 19 hours (if required).

The display shows the **Delay Start** time.

Spin Selection button

For changing the spin speed (if required). The indicator light of the selected spin speed is lit red.

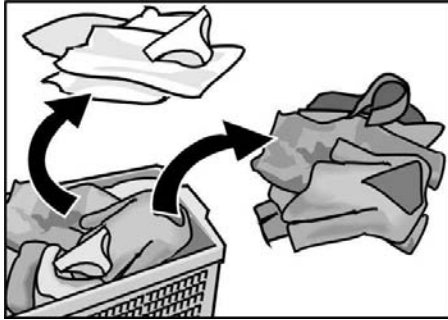
Summary of instructions

Before using

⚠ Warning

Before using your washing machine, read and follow all installation and operating instructions.

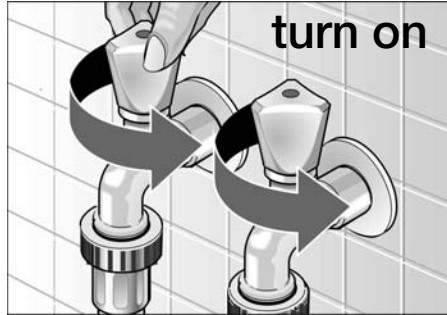
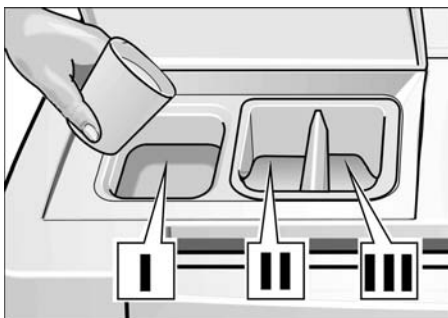
Preparing the laundry



xxtra sanitary 170 °F 77 °C	KIDSCARE 150 °F 66 °C	hot 120 °F 49 °C
		warm 90 °F 32 °C
		cold 60 °F 15 °C

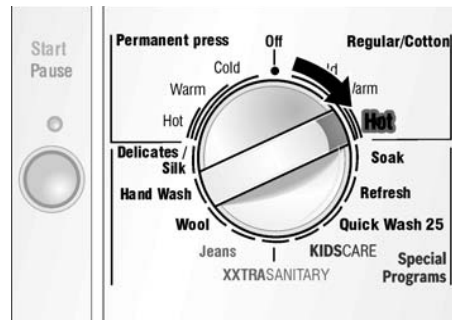


load

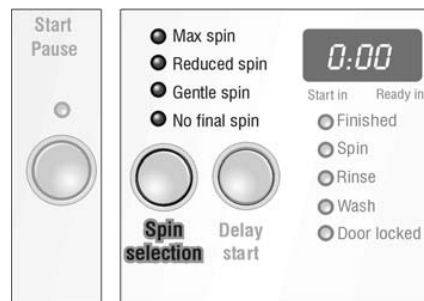


turn on

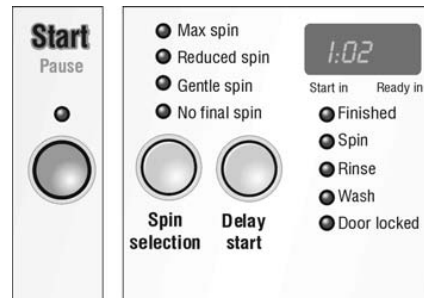
Select a cycle and start the machine



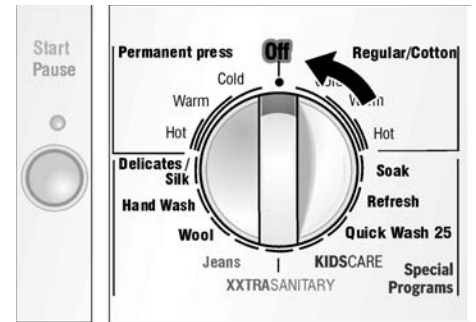
Select desired settings



press start



After washing



close



unload

Before Using For the First Time

The washing machine must be installed and connected properly (refer to Page 6).

Before using your washing machine for the first time:

- Make sure that the supplied voltage is the same as the voltage shown on the rating plate.
- Check that the water valves for the washing machine have been connected correctly and are open.

Using For the First Time

First washing cycle (without laundry)

Your appliance was tested before leaving the factory. To ensure a fresh wash with your initial load of clothes, run the washer a complete cycle, without clothes, in advance.

- Do not load any laundry.
- Turn on the water tap.
- Open the flap of the detergent dispenser.
- Pour approx. 1 quart (1 liter) of water into the detergent chamber I; see Page 16.
- Pour 1–2 Tbsp. detergent into detergent chamber I.
- Do not use special detergents for delicates or wool (this will cause excessive sudsing).
- Close the flap of the detergent dispenser.
- Close the door.
- Set the program selector to **Regular/Cotton Hot**. The **Start/Pause** indicator light flashes red.
- Press the **Start/Pause** button. The program starts. The indicator light is on (red).

i The display shows the run time of program.

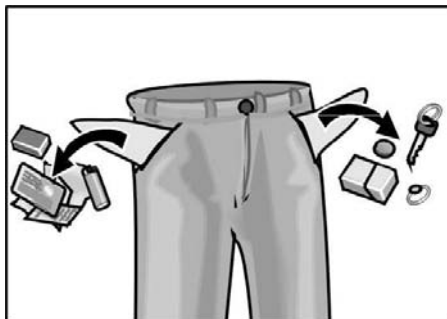
When the display shows "0:00":

- Open the door.
- Turn the program selector to **Off**.

Preparing the laundry

ATTENTION

Loose debris (coins, paper clips, nails and other hard objects) can damage items of clothing as well as parts of the washing machine (e.g. drum).



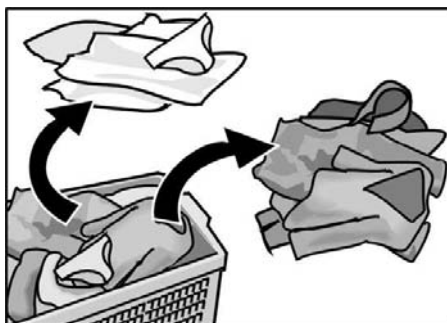
- Empty all pockets.
- Brush off lint and dirt.
- Close zippers, button up duvets and hooks.
- Remove curtain rings or tie them up in a net bag.
- Remove pins, buttons, buckles and other hard objects to avoid scratching the washer interior.
- Remove non-washable trim and ornaments.
- Turn synthetic knitwear inside-out to avoid pilling.
- Treat spots and stains.

To prevent loss or damage to laundry and the machine, the following items should be washed in a mesh laundry bag:

- Baby socks (small items)
- Hosiery
- Belts
- Underwired bras (directly washed in the washer, the wire may come loose during washing and cause damage)

Sorting the laundry

According to color and degree of soiling



ATTENTION

Items of clothing may become discolored. Never wash new multi-colored items together with other items.

White items may become gray. Always wash white and colored items separately.

Degrees of soiling

Slight dirt

No recognizable dirt or staining. Laundry may have some body odor.

- Light summer clothing.
- T-shirts, shirts and blouses that have been worn for up to one day.
- Bed linen and guest towels that have been used for one day.

Normal dirt

Visible dirt and/or some light recognizable staining.

- T-shirts, shirts and blouses that are very sweaty or have been worn several times.
- Dish towels, hand towels and bed linen that have been used for up to one week.
- Sheer curtains (without smoke staining) that have not been washed for up to 6 months.

Intensive dirt

Dirt and/or staining recognizable.

- Kitchen hand towels that have been used for up to one week.
- Cloth napkins.
- Bibs.
- Children's outer clothing or sportswear with grass and soil stains.
- Working clothes such as overalls or baker's and butcher's coats.

Typical stains

- Body oils, cooking oils/grease, sauces, mineral oil, wax (containing fat/oil).
- Tea, coffee, red wine, fruit, vegetables.
- Blood, egg, milk, starch (containing protein/ carbohydrate).
- Soot, soil, sand (pigments), red clay.

Removing stains

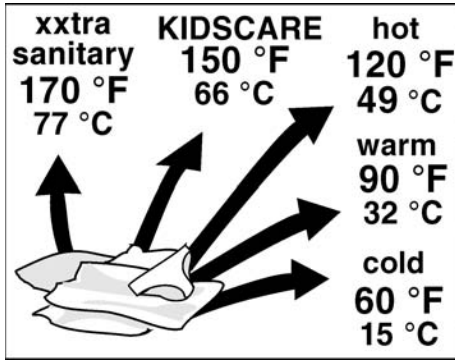
If possible, pretreat stains while they are still fresh.

First, dab soapy water onto the stain. Do not rub.

Subsequently, wash the items of clothing using the appropriate program.

Occasionally, several wash cycles may be required in order to remove persistent, dried on stains.

Sorting laundry according to care label specifications



Fabric Types

- Machine Wash, Cottons
- Machine Wash, Permanent Press
- Machine Wash, Delicates
- Hand Wash



Temperatures

- Cold
- Warm
- Hot



Do not wash clothes in washing machine if the care label says "Do Not Wash" or the DO NOT WASH symbol is on the care label.

Loading the laundry

WARNING

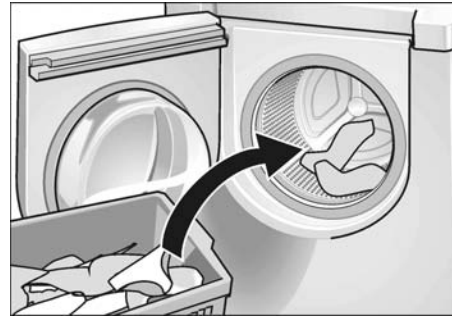
TO AVOID EXPLOSION HAZARD!
Items of clothing that have been pretreated with solvent-based cleaning agents, e.g. stain remover and dry cleaning solvents, represent an explosion hazard once loaded into the washing machine. Therefore, these items must first be rinsed thoroughly by hand.

ATTENTION

Loose debris in the washing machine drum can damage the laundry. Before loading the laundry, check that there is no debris in the drum.



☐ Open the door.



☐ Unfold the sorted items of clothing and place them loosely into the drum. Mix up large and small items. Items of varying size will distribute better during the spin cycle.

i Do not exceed the maximum load. Overloading will cause poor wash results and increase wrinkling.

For best results it is recommended to load the drum depending on the fabric type, see special programs Page 17 for information on bulky items, e.g. comforters :

Full Load
Cotton and Linens

½ Load
Permanent Press, Synthetic Blends and Knitwear

⅓ Load
Wool, Delicates, Silk



i Close the door. Do not trap any items of clothing between the door and rubber seal. Door should be able to close easily, not by force.

Laundry Detergents and Additives

Dispensing the correct amount of detergent

WARNING

TO AVOID RISK OF POISONING!
Keep detergents and additives out of the reach of children.

Measure out the detergent (powder or liquid) according to:

- The water hardness. This information can be obtained from your local water authority. Soft water requires less detergent.
- The amount of laundry.
- The degree of soiling. Information on soiling can be found on Page 15.
- The specifications of the detergent manufacturer. Measuring the correct amount of detergent relieves the strain on the environment and ensures optimum washing results.

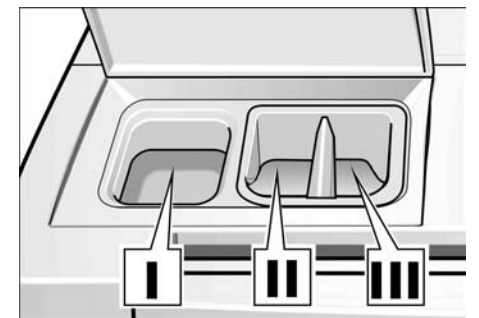
Too little detergent:

The laundry is not cleaned properly and will eventually become gray and stiff. Grayish brown spots (fat globules) may appear on the laundry. The heater may calcify.

Too much detergent:

Not environmentally friendly, excessive suds reduce wash agitation producing poor washing and rinsing results or may prevent proper spinning.

Filling laundry detergent and/or additives



- ☐ Open the flap of the detergent dispenser.
- ☐ Add the detergent and/or additive.

Dispenser I:
Dispenser for detergent, stain remover.

i We recommend HE detergents because they are particularly designed to deliver optimum performance from your front-loading washer. Not using HE detergent could cause problems such as oversudsing, extended cycle periods, or a decrease in wash performance.

Dispenser II:
Cleaning additives, e.g. fabric softener, fabric conditioner. Do not fill over edge of max line!

Dispenser III:
Dispenser for liquid bleach (chlorine bleach, color safe bleach).
Do not overfill!

i Concentrated or thick fabric softener, conditioner and powder-bleach must be diluted with a little water before being poured into the dispenser (prevents overflow due to obstruction).

i Bleach may cause discoloration of the washer's colored surface. Therefore, it is important to keep the bleach away from the colored surface of your washer. If any bleach spills on the surface, use a moist paper towel to thoroughly clean it immediately.

i Close the flap of the detergent dispenser. **Please ensure the lid is entirely closed.**

Decolorizing

ATTENTION

Dyes may contain sulphur or chlorine. These substances may cause parts of the washing machine to corrode. Do not dye items of laundry in the washing machine.

Programs and Functions

Cycle time will vary depending on cycle selected, temperature and pressure of incoming water, water hardness, size of load, type of fabrics and distance of unit from the drain.

The maximum spin speeds of the programs are dependent upon the cycle. For adjusting the spin speed, see page 18.

Basic programs

Regular/Cotton Hot

Normally and/or heavily soiled colorfast fabrics. Sturdy, hard wearing items made of cotton or linen such as work clothes and underwear.

Regular/Cotton Warm

Lightly and/or normally soiled non-colorfast fabric. Sturdy, hard wearing items made of cotton or linen such as jeans, T-shirts and sweatshirts.

Regular/Cotton Cold

Lightly soiled non-colorfast fabric. Sturdy, hard wearing items made of cotton or linen (colors that may bleed or fade).

Permanent Press Hot

Items consisting of normally soiled colorfast cotton, permanent press, linen, synthetic or blended fabrics and outer garments. Clothes requiring a special tumble sequence and spin speed to minimize creasing.

Permanent Press Warm

Items consisting of lightly and/or normally soiled non-colorfast cotton, permanent press, linen, synthetic or blended fabrics and outer garments. Clothes requiring a special tumble sequence and spin speed to minimize creasing, such as blouses, shirts and overalls.

Permanent Press Cold

Items consisting of lightly and/or normally soiled non-colorfast cotton, permanent press, linen, synthetic or blended fabrics and outer garments. Clothes requiring a special tumble sequence and spin speed to minimize creasing.

Special programs

Delicates/Silk

Delicates/Silks settings are intended for use with delicate easy care items made of cotton, satin, synthetic or blended fabrics and curtains, dresses, skirts and blouses.


Bulky items, e.g. comforters, can be washed with this cycle because of gentle action and additional rinse

(automatically added).
No spinning between rinse cycles.

Hand wash

Hand Wash settings are intended for very delicate, easy care items that usually require hand washing.

This cycle has been specifically designed to provide extremely gentle treatment of fabrics.

Silk or other items marked with the "Hand wash" symbol  on the care label can be safely washed with this cycle.

Wool

Woolens (machine wash and hand wash).

Jeans

Specially designed for jeans and heavy denims, this program reduces fading and wrinkling.

XXTRASANITARY

This program was specifically designed to eliminate most common household bacterium while providing gentle treatment of fabrics. At the beginning of the washing phase, hot water is introduced and then the internal heating element heats the water to 167°F–174°F for a minimum of three minutes. Clothes will be saturated in the hot water long enough to kill most common household bacterium, yet without causing additional wear and tear to the clothes.

Used for heavily soiled and/or stained colorfast fabrics that need to be sanitized, such as, towels, underwear, socks, bed sheets, table clothes, etc.

KIDSCARE

For stained, heavily soiled, and hard-wearing fabrics, like children's jeans, sheets, t-shirts.

i Do not wash new multicolored laundry with other laundry together.

Quick Wash 25

For mixed load, e.g. cotton, linen, synthetic materials or blended fabrics, lightly soiled.

Refresh

Program for rinsing unsoiled textiles, e.g. swimwear, and for removing detergent residue from textiles. Ends with a spin cycle.

Spin cycle for spinning wet, hand washed laundry.

Water is drained before and during the spin cycle.

Soak

A cycle for pre-treatment of heavily stained items. The soak cycle lasts 2 hours and ends with a short spin cycle.

Maximum spin speeds of the programs

The indicator light "max spin speed" is lit red.

Revolutions per minute	Program
1100	Regular/Cotton
800	Permanent Press
600	Delicates/Silk
800	Wool
800	Jeans
1100	XXTRA SANITARY
1100	KIDSCARE
1000	Quick Wash 25
1100	Refresh

Reduced spin

The indicator light "reduced spin" is lit red only if you have selected a reduced spin speed for gentle treatment of your laundry.

Gentle spin speeds

The indicator light "Gentle spin speed" is lit red.

Revolutions per minute	Program
400	Hand Wash
400	Soak

No final spin

The indicator light "no final spin" is lit red.

All water is drained but no spinning occurs.

Modifiers

Spin Selection

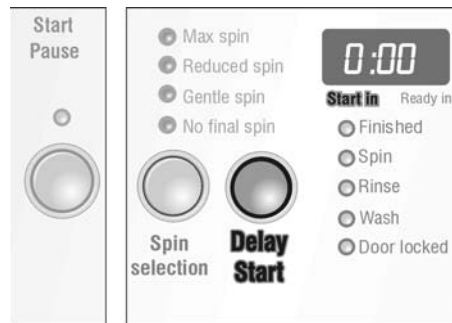
Preset cycle setting of max. spin speed can be changed.



Press this button until the desired setting lights up.

Delay Start

Before starting a program you can modify by when the cycle should be started.



Press **Delay Start** button. The display shows the start time **0:00**.

The time can be delayed up to a maximum of 19 hours (with 1 hour increments) by pressing the **Delay Start** button repeatedly.

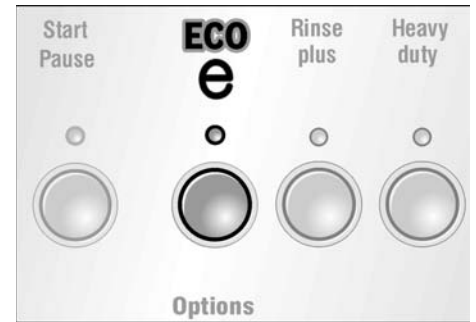
The **Start** time begins running immediately after pushing the **Start/Pause** button. This is indicated by the points between the digits flashing.

i Changes to the **Start** time are possible at any time, press the **Delay Start** button until the new time appears.

i If the program is changed or if the program is interrupted, the preselected **Start** time is also interrupted. The **Ready in** time of the program is displayed. The **Start** time must be reselected.

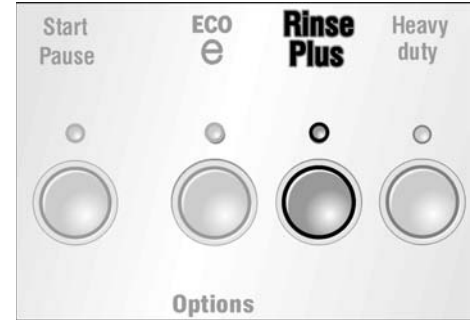
Option buttons

ECO e



This option reduces the amount of energy used for the washing program by reducing the wash temperature and increasing the washing time. This option is not available for cold programs.

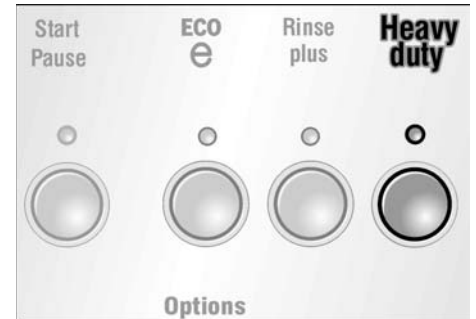
Rinse Plus



When this button is pressed, an additional rinsing cycle will be added to the selected cycle.

Washing cycle time is extended accordingly.

Heavy duty



The Heavy duty option is recommended for use **ONLY for heavily soiled clothes that require the removal of tough, ground-in protien-based stains**. It is **NOT** recommended to use the Heavy duty option with other cycles when laundering normal or lightly soiled clothes.

Washing time is extended. Only cold water is introduced to the drum. The washing machine then heats the water to the selected wash temperature. By raising the temperature from cold up to the set temperature all components of the detergent are activated in stages for best stain removal and cleaning results.

Acoustic Signal

An acoustic signal indicates program statuses (e.g. start/end of program and operating faults.)

To activate the signal:

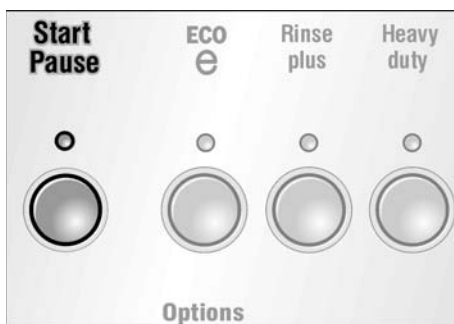
- Select a program.
- Press two of the Option Buttons (e.g. Bleach and Rinse Plus) until a long signal is emitted.

To deactivate the signal:

- Select a program.
- Press two of the Option Buttons and hold until a short signal is emitted.

i Do not activate/deactivate the acoustic signal during a cycle.

Indicator light above the "Start/Pause" button



The indicator light conveys the following information:

- Indicator light **flashing red**: Program can be started.
- Adding laundry is possible.
- Indicator light is lit **red**. Program is running.
- Adding laundry is not possible because the door is locked for safety reasons.

Laundry may be added after pressing the **Start/Pause** button.

Special features

Auto Load adjust

"Auto Load adjust" adjusts the water and energy consumption for each program and determines the amount of laundry and type of fabrics.

This process is built into your machine and occurs automatically.

This control reduces water and energy consumption when washing small loads.

Unbalanced load detection system

The automatic unbalanced load detection system spins the laundry several times to ensure even distribution.

If the wash load is unevenly distributed, it will not spin (for safety reasons) or the final spin speed is reduced.

In the wool program the appliance will attempt to start the spin cycle only twice in order to prevent shrinking.

Displayed Time

Due to these and other characteristics of the controls the actual cycle time will vary.

When a program has been selected, the expected program duration is displayed.

The following will effect the displayed time:

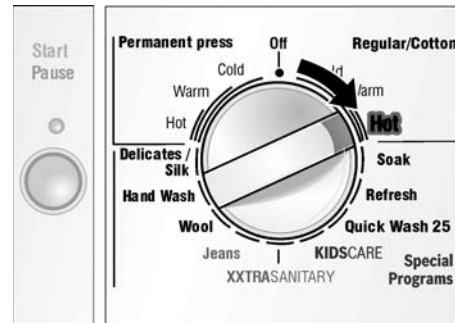
- Load size
- Repeated spin attempts to evenly distributed load
- Additional rinse cycles if excessive foam occurs
- Water pressure is too low
- Selection of additional options, e.g. "Rinse plus"

i You may notice these effects (more or less time) changes the displayed time when they occur in the cycle. If no options are selected and these effects do not occur, the time indicated will count down until the end of the cycle.

Washing



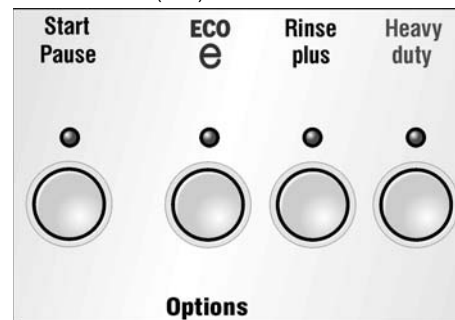
- Turn on the water taps.



- Turn the program selector to the desired program.

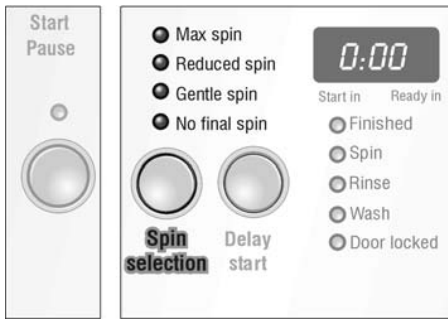


- Load the washing machine and close the door. The **Start/Pause** indicator light flashes (red).

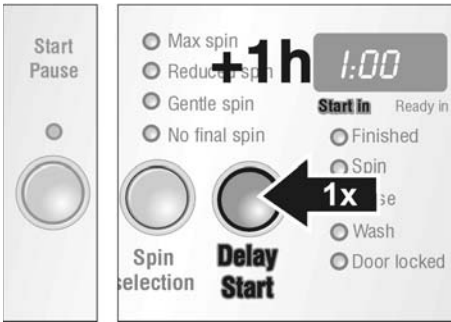


- If necessary, press the button(s) for additional option(s). The indicator light of the selected button is lit (red).

i If an incorrect combination was inadvertently selected, the indicator light of the selected button is turned off.



- ❑ If necessary, change the spin speed with the **Spin selection** button until the the desired spin speed indicator light is lit.



- ❑ If necessary, change the **Start** time. Press the **Delay Start** button until the desired **Start** time is displayed.



- ❑ Press the **Start/Pause** button. The indicator light is lit (red). Display shows the run time of the selected program. The program starts.



- i** Each program step is indicated by the indicator lights under the display.

During Washing

- i** Due to the highly engineered suspension of this appliance, it may experience a shudder or shake when progressing from lower to higher spin speeds. This behavior is normal due to shifting of the drum system and should not cause concern.

Changing a program

- ❑ Turn the program selector to **Off**.
- ❑ Turn the program selector to a newly selected program. The **Start/Pause** indicator light flashes.
- ❑ If required, change the settings; see from Page 18.
- ❑ Press the **Start/Pause** button. The program starts. The indicator light is lit.

Add a garment / Interrupting the program

You can put laundry in the drum after washing begins, take laundry out of the drum early or interrupt the program at any time.

- i** It is not recommended to add laundry after the washing phase is complete.
- i** You can add or reduce laundry as long as the **Start/Pause** indicator light flashes (red).
- ❑ Press the **Start/Pause** button. The **Start/Pause** indicator light flashes.
- ❑ Open the door.
- ❑ Place/remove the laundry.
- ❑ Close the door.
- ❑ Press the **Start/Pause** button. The program continues. The indicator light is lit (red).
- i** When the **Start/Pause** indicator light is lit (red), the program can be interrupted, however the door cannot be opened for safety reasons (water level, temperature or speed too high).
- i** If the spin speed is too high, the **Start/Pause** indicator light is lit (red). Laundry can be added in "Pause" mode when the drum is at a standstill.

Canceling an active program

If you would like to terminate a program and remove the laundry:

- i** If a program is interrupted at a high temperature, leave the laundry to cool down until the glass is cool to touch.
- ❑ Turn the program selector to **Off**.
- ❑ Turn the program selector to **Refresh**.
- i** Select the desired spin speed (but not **no final spin**).
- ❑ Press the **Start/Pause** button.
- ❑ Wait until this program ends.
- ❑ Open the door.
- ❑ Unload the laundry.
- i** If a program is interrupted at a high temperature, the door may remain locked until the appliance has cooled down.
- i** If the program is terminated by switching off the appliance, the door may remain locked.

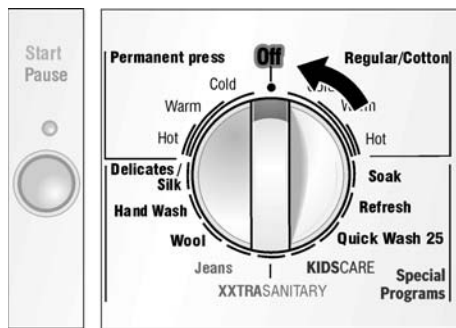
After Washing

The **Start/Pause** indicator light goes out.

0:00 appears in the display.



- Open the door.



- Turn the program selector to **Off**.
 - Close the taps.
 - Remove the laundry.
- i** After washing, leave the loading door ajar to allow the inside of the washing machine to dry.

Cleaning and Care

Cleaning the washer

⚠ WARNING ⚠

TO AVOID RISK OF ELECTRIC SHOCK!
Always disconnect the appliance from the power outlet before cleaning.
Never clean the washing machine with a pressure washer.

⚠ WARNING ⚠

TO AVOID RISK OF EXPLOSION!
Never use flammable solvents to clean the appliance.

ATTENTION

Occasionally check for any foreign objects (e. g. coins, paper clips) between the drum and rubber seal
–To avoid risk of rust!

Cleaning the appliance housing and control panel

As required:

- Use hot soapy water or a mild, non-abrasive cleaning agent.
- Rub dry with a soft towel.

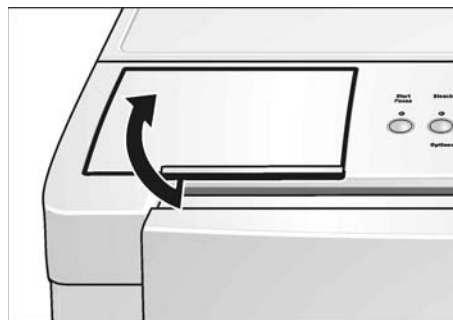
Cleaning the drum

If rust spots have formed due to left-over debris (e.g. coins, paper clips, nails):

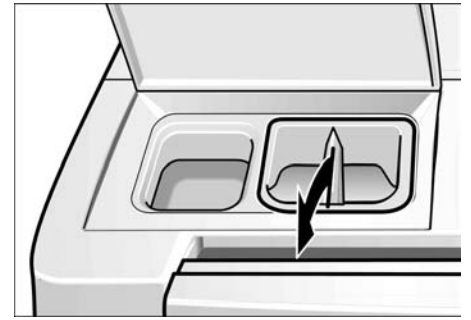
- Use a chlorine-free cleaning agent. Follow the manufacturer's instructions. Never use steel wool.

Cleaning the detergent dispenser

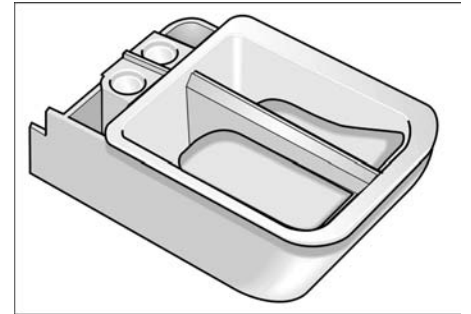
If residual detergents or additives have accumulated or if softener/bleach are not fully rinsed out:



- Open the flap of the detergent dispenser.



- Pull out the softener/bleach compartment in a vertical direction and remove.
- Clean the detergent dispenser under running water. The detergent dispenser can be disassembled into two parts.



- Insert the detergent dispenser until it clicks into place.

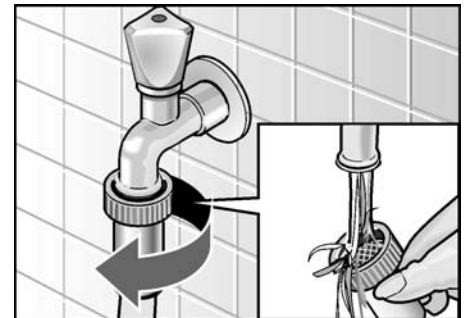
Cleaning water inlet strainers

This is necessary if very little or no water flows into the washing machine. First release the water pressure in the supply hoses:

- Turn off the water taps.
- Turn the program selector to any program.
- Press **Start/Pause** button and wait approximately ten seconds.
- Turn the program selector to **Off**.

Cleaning the strainer(s) on the water tap

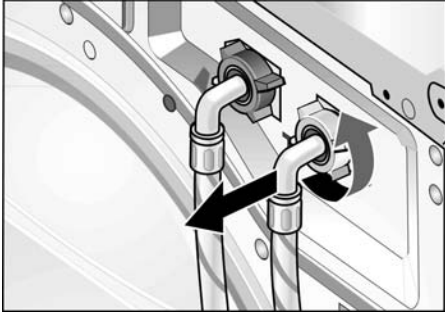
In both the hot and cold water tap:



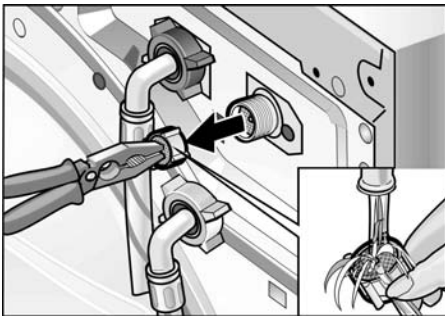
- Disconnect the hose from the water tap.
- Rinse the strainer under running water.
- Reconnect the hose.

Cleaning the strainers on the washing machine

On both the hot and cold water tap:



- Disconnect the hose from the back of the washing machine.



- Pull out the strainer and rinse under running water.
- Insert the strainer and reconnect the hose.
- Turn on the water taps and check that there are no leaks. If water is leaking, check that the strainer is properly attached.
- Turn off the water taps.

Cleaning Tips

It is recommended that a small amount of household bleach be run through the washer every 3 months.

With no laundry in the machine, run the machine as follows:

- Pour 1 cup of bleach in Detergent compartment of the dispenser
- Run a Regular/Cotton Hot program

Descaling the washing machine

ATTENTION

Descaling agents contain acids which may attack parts of the washing machine and discolor the laundry.

Provided that you use the correct type of detergent, it is not necessary to descale the washing machine.

If white spots, lime or mineral deposits appear on the interior of the washing machine drum you can use a descaling agent to remove them.

However, if the appliance has to be descaled, please follow the instructions provided by the descaling agent manufacturer.

Troubleshooting of Minor Faults

⚠ WARNING ⚠

TO AVOID RISK OF ELECTRIC SHOCK!

Repairs should only be carried out by an authorized technician.

If repairs are necessary, and you cannot eliminate the fault yourself with the aid of the following table:

- Turn the program selector to **Off**.
- Disconnect the washing machine from the power outlet.
- Turn off the water taps.
- Call Customer Service (refer to Page 25).

Fault	Possible cause	Action
The door cannot be opened.	Power failure.	An interrupted program will be resumed when power is restored. If the laundry is to be removed during a power failure, call Customer Service (refer to Page 25).
	Program is running and/or the door is locked for safety reasons.	Wait until the program ends; see Page 21.
	Plug is loose or not inserted.	Eliminate the cause.
	Program selector turned to Off before end of program.	Select a program.
Door cannot be opened, even though the appliance has been switched off and on again.	For safety reasons the door has been locked because the water level, temperature or speed is too high.	See "Add a garment/Interrupting the program", Page 20.
Control lights do not light up.	A fuse has blown.	Reset circuit breaker. Call Customer Service if this fault recurs.
	Power failure.	An interrupted program will be resumed when power is restored. If the laundry is to be removed during a power failure, call Customer Service (refer to Page 25).
Program does not start. Start/Pause indicator light flashes.	Start/Pause button not pressed.	Press the Start/Pause button.
Program does not start. Indicator light " end " is lit and display is flashing " E:01 ".	Door not closed properly.	Check whether laundry is trapped in door. Close the door (a click should be heard). Program continues.
Spin speed cannot be selected.	Spinning is already in progress; during spin cycle the speed cannot be changed.	Select speed before spinning.
Detergent residue in the detergent dispenser.	Detergent was damp or lumpy.	Clean and dry the detergent dispenser; see Page 21. Use the cap of the detergent bottle to measure liquid detergents.
Water does not enter the machine or detergent is not washed away. Indicator light " spin " is lit and display is flashing " E:02 " or " E:03 ".	Water tap(s) not turned on.	Turn on water tap(s) and press Start/Pause button. Program continues.
	Supply hose kinked or pinched.	Eliminate the cause.
	Strainers in supply hose clogged.	Clean the water inlet strainers; see Page 21.
Water cannot be seen in drum.	Water pressure too low.	Eliminate the cause.
	This is not a fault. The water level is below the visible part of the drum.	
Indicator light "rinse" is lit and display is flashing " E:04 " with no water remaining in tub.	Suds or pump is blocked.	Use less detergent for future wash loads. Detergents specifically designed for your High Efficiency washer produce fewer suds and will include the letters "HE" on the packaging. Clean the water drainage pipe and/or drain hose. Run any program to remove the excess suds.

Fault	Possible cause	Action
Water is flowing out from underneath the machine.	The thread of the supply hose is not tight. Leak in the drain hose.	Tighten the thread. Replace the drain hose.
Suds coming out of the detergent dispenser.	Too much soap or non-HE soap used, pump could not remove suds.	Mix 1 tablespoon of fabric softener with 1 pt (½ litre) of water and pour into detergent dispenser III . Use less detergent for future wash loads. Detergents specifically designed for you High Efficiency washer produce fewer suds and will include the letters “HE” on the packaging.
Repeated spinning.	This is not a fault. The imbalance compensation system is attempting to balance the load through repeated spins.	Always load the drum with large and small items together.
The laundry was not spun.	Large items of clothing have become entangled and could not be distributed evenly in the drum. For safety reasons the high-speed spin cycle was automatically suppressed.	Always load the drum with large and small items together.
Program duration extended.	This is not a fault. The suds detection feature has activated an additional rinsing cycle to reduce the amount of suds.	Add a more appropriate amount of detergent.
Unsatisfactory washing result.	This is not a fault. The imbalance compensation system is attempting to balance the load through repeated spins.	Always load the drum with large and small items together.
	The degree of soiling was higher than estimated.	Select suitable program or Heavy duty as an additional option.
Detergent residue on the laundry.	Not enough detergent.	Add detergent according to the manufacturer’s specifications.
	Some phosphate-free detergents contain water-insoluble residues that may appear as light spots on the laundry.	Brush off spots when laundry is dry.
Gray residue on the laundry.	Dirt accumulation from ointments, fats or oils.	Add the maximum amount of detergent and select the highest permissible temperature.
System shakes or shudders when passing from lower to higher speed spinning.	Drum system suspension can shift during speed up, this is not a failure.	Mix small and large laundry pieces in load to minimize this effect.

If the fault cannot be eliminated with the aid of the above table, switch the appliance off, wait 5 seconds, switch the appliance on again, select and start the program.

If the fault continues, call customer service; see Page 25.

Customer Service

The washing machine requires no special care other than the care and cleaning noted previously. If you are having a problem with your washing machine, please refer to page 23 before calling for service.

If service becomes necessary, contact your dealer or installer or an authorized service center. Do not attempt to repair the appliance yourself. Any work performed by unauthorized personnel may void the warranty.

If you are having a problem with your washing machine and are not pleased with the service you have received:

- ❑ First, please contact your installer or the Authorized Service Contractor in your area and explain to them why you are not satisfied. This will usually correct the problem.
- ❑ If after working with your installer or service technician the problem still has not been resolved to your satisfaction, please let us know either by writing to us at:

BSH Home Appliances
5551 Mc Fadden Ave.
Huntington Beach, CA 92649

or calling us:
1-800-944-2904

If writing or calling, please provide the following information:

- Model Number
- Serial Number
- Date of Original Purchase
- Date Problem occurred
- Explanation of Problem

If writing, please also include a daytime telephone number and a copy of the sales invoice.

You will find the model number and serial number on the rating plate located on the housing and is visible with the door open.



STATEMENT OF LIMITED PRODUCT WARRANTY

What this Warranty covers & Who it Applies to:

The limited warranty provided BSH Home Appliances ("BOSCH") in this Statement of limited product Warranty applies only to the Bosch Nexxt washer ("Product") sold to you, the first using purchaser, provided that the Product was purchased: (1) for your normal, household (non-commercial) use, and has in fact at all times only been used for normal household purposes: (2) new at retail (not a display, "as is", or previously returned model), and not for resale, or commercial use; and (3) within the United States or Canada, and has at all times remained within the country of original purchase. The warranties stated herein apply only to the first purchaser of the Product and are not transferable.

- i** Please make sure to return your registration card: while not necessary to effectuate warranty coverage, it is the best way for Bosch to notify you in the unlikely event of a safety notice or product recall.

How Long the Warranty Lasts:

Bosch warrants that the Product is free from defects in materials and workmanship for a period of three hundred sixty-five (365) days from the date of purchase. The foregoing timeline begins to run upon the date of purchase, and shall not be stalled, tolled, extended, or suspended, for any reason whatsoever.

Repair/Replace as Your Exclusive Remedy: During this warranty period, Bosch or one of its authorized service providers will repair your Product without charge to you (subject to certain limitations stated herein) if your Product proves to have been manufactured with a defect in materials or workmanship. If reasonable attempts to repair the Product have been made without success, then Bosch will replace your Product (upgrade models may be available to you, in Bosch's sole discretion, for an additional charge). All removed parts and components shall become the property of Bosch at its sole option. All replaced and/or repaired parts shall assume the identity of the original part for purposes of this warranty and this

warranty shall not be extended with respect to such parts. Bosch's sole liability and responsibility hereunder is to repair manufacturer-defective Product only, using a Bosch-authorized service provider during normal business hours. For safety and property damage concerns, Bosch highly recommends that you do not attempt to repair the Product yourself, or use an un-authorized servicer; Bosch will have no responsibility or liability for repairs or work performed by a non-authorized servicer. If you choose to have someone other than an authorized service provider work on your Product, **THIS WARRANTY WILL AUTOMATICALLY BECOME NULL AND VOID.** Authorized service providers are those persons or companies that have been specially trained on Bosch products, and who possess, in Bosch's opinion, a superior reputation for customer service and technical ability (note that they are independent entities and are *not* agents, partners, affiliates or representatives of Bosch). Notwithstanding the foregoing, Bosch

will not incur any liability, or have responsibility, for the Product if it is located in a remote area (more than 100 miles from an authorized service provider) or is reasonably inaccessible, hazardous, threatening, or treacherous locale, surroundings, or environment; in any such event, if you request, Bosch would still pay for labor and parts and ship the parts to the nearest service provider, but you would still be fully liable and responsible for any travel time or other special charges by the service company, assuming they agree to make the service call.

Out of Warranty Product: Bosch is under no obligation, at law or otherwise, to provide you with any concessions, including repairs, pro-rates, or Product replacement, once this warranty has expired.

Warranty Exclusions: The warranty coverage described herein excludes all defects or damage that are not the direct fault of Bosch, including without limitation, one or more of the following: (1) use of the Product in anything other than its normal, customary and intended manner (including without limitation, any form of commercial use, use or storage of an indoor product outdoors, use of the Product in conjunction with air or water-going vessels); (2) any part's willful misconduct, negligence, misuse, abuse, accidents, neglect, improper operation, failure to maintain, improper or negligent installation, tampering, failure to follow operating instructions, mishandling, unauthorized service (including self-performed "fixing" or exploration of the appliance's internal workings); (3) adjustment, alteration or modification of any kind; (4) a failure to comply with any applicable state, local, city, or county electrical, plumbing and/or building codes, regulations, or laws, including failure to install the product in strict conformity with local fire and building codes and regulations; (5) ordinary wear and tear, spills of food, liquid, grease accumulations, or other substances that accumulate on, in, or around the product; and (6) any external, elemental and/or environmental forces and factors, including without limitation, rain, wind, sand, floods, fires, mud slides, freezing temperatures, excessive moisture or extended exposure to humidity, lightning, power surges, structural failures surrounding the appliance, and acts of God. In no event shall Bosch have any liability or responsibility whatsoever for damage to surrounding property, including cabinetry, floors, ceilings and other structures or objects around the Product. Also excluded from this warranty are scratches, nicks, minor dents, and cosmetic damages on external surfaces and exposed parts; Products on which the serial

numbers have been altered, defaced, or removed; service visits to teach you how to use the Product, or visits where there is nothing wrong with the Product; correction of installation problems (you are solely responsible for any structure and setting for the Product, including all electrical, plumbing or other connecting facilities, for proper foundation/flooring, and for any alterations including without limitation cabinetry, walls, floors, shelving, etc.); and resetting of breakers or fuses. **TO THE EXTENT ALLOWED BY LAW, THIS WARRANTY SETS OUT YOUR EXCLUSIVE REMEDIES WITH RESPECT TO PRODUCT, WHETHER THE CLAIM ARISES IN CONTRACT OR TORT (INCLUDING STRICT LIABILITY, OR NEGLIGENCE OR OTHERWISE. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED. ANY WARRANTY IMPLIED BY LAW, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, SHALL BE EFFECTIVE ONLY FOR THE PERIOD THAT THIS EXPRESS LIMITED WARRANTY IS EFFECTIVE. IN NO EVENT WILL THE MANUFACTURER BE LIABLE FOR CONSEQUENTIAL, SPECIAL, INCIDENTAL, INDIRECT, "BUSINESS LOSS", AND/OR PUNITIVE DAMAGES, LOSSES, OR EXPENSES, INCLUDING WITHOUT LIMITATION TIME AWAY FROM WORK, HOTELS AND/OR RESTAURANT MEALS, REMODELLING EXPENSES IN EXCESS OF DIRECT DAMAGES WHICH ARE DEFINITELY CAUSED EXCLUSIVELY BY BOSCH, OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, AND SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.** No attempt to alter, modify or amend this warranty shall be effective unless authorized in writing by an officer of BSH.

How to Obtain Warranty Service: To obtain warranty service for your Product, you should contact the nearest Bosch authorized service center.

BSH Home Appliances –
5551 McFadden Avenue
Huntington Beach,
CA 92649
1-800-944-2904

STATEMENT OF WARRANTIES FOR BOSCH CLOTHES WASHERS

The warranties provided by BSH Home Appliances ("Bosch") in this Statement of Warranties apply only to Bosch

Clothes washers sold to the first using purchaser by Bosch or its authorized dealers, retailers or service centers in

the United States or Canada. The Warranties provided herein are not transferable.

LENGTH OF WARRANTY	SCOPE OF WARRANTY
1 Year Full Limited Warranty From Date of Installation*	Bosch will repair or replace, free of charge, any component part that proves defective under conditions of normal home use, labor and shipping costs included. Warranty repair service must be performed by an authorized Bosch Service Center (excluded cosmetic parts).
2 Year Limited Warranty From Date of Installation*	Bosch will provide replacement parts, free of charge, for any component part that proves defective under conditions of normal home use, shipping costs included, labor charges excluded.
2 Year Limited Warranty on Electronics From Date of Installation*	Bosch will repair or replace, free of charge, any microprocessor or printed circuit board that proves defective under conditions of normal home use for two years from the date of original installation, labor charges excluded.
2 Year Limited Warranty on Motor From Date of Installation*	Bosch will repair or replace, free of charge, any motor or component part of the motor that proves defective under conditions of normal home use for two years from the date of original installation, labor charges excluded.

* Date of installation shall refer to the earlier date the clothes washer is installed or ten business days after the delivery date.

Exclusions

This warranty does not cover service calls or repairs to correct the installation of the clothes washer, to provide instructions on the use of your clothes washer, to replace house fuses or correct plumbing or the electric wiring in your home or to repair any clothes washer that is used in a manner other than what is normal and customary for home use.

In addition, the warranties provided in this Statement exclude any defects or damage arising from accident, alteration, misuse, abuse, improper installation, unauthorized service work, external forces beyond Bosch's control, such as fire, flood, and other acts of God, or installation not in accordance with local electrical and plumbing codes.

Labor charges incurred in the repair or replacement of any clothes washer after a period of one year from date of installation shall not be covered by this warranty.

Any and all replaced and/or repaired parts shall assume the identity of the original for purposes of the applicable warranty period.

TO THE EXTENT PERMITTED BY LAW, THIS WARRANTY IS IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. BOSCH DOES NOT ASSUME ANY RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

TO OBTAIN WARRANTY SERVICE. CONTACT THE NEAREST BOSCH AUTHORIZED SERVICE CENTER OR CALL 1-800-944-2904 OR WRITE TO: BSH HOME APPLIANCES ATTN. SERVICE 5551 MC FADDEN AVE. HUNTINGTON BEACH, CA 92649 BE SURE TO PROVIDE YOUR CLOTHES WASHER MODEL NUMBER, SERIAL NUMBER, PURCHASE DATE, THE SELLER'S NAME AND ADDRESS, DATE PROBLEM OCCURRED, EXPLANATION OF PROBLEM, DAYTIME TELEPHONE NUMBER WHERE YOU CAN BE REACHED AND A COPY OF THE SALES INVOICE.

Dispositifs et avantages de votre nouveau lave-linge

Technologie SENSOTRONIC®

La technologie Bosch SENSOTRONIC® optimise le processus de lavage à tous les stades du cycle, et ceci au moyen de sondes détectant la charge de linge, le niveau d'eau et la température, et donne d'excellents résultats. Les sondes numériques protègent tous les textiles, la laine, le mohair et la soie. Cette machine fonctionne de facto par simple effleurement d'un bouton.

Système exclusif de charnière & joint

Une charnière renforcée et un joint nouveau, révolutionnaire, maintiennent le hublot bien fermé. Ils retiennent aussi la chaleur prisonnière et permettent à votre linge d'atteindre une température optimale d'éliminer les salissures même les plus rebelles.

Bac à produit lessiviel à 3 compartiments

Un bac à produit lessiviel à 3 compartiments distribue automatiquement les quantités appropriées de détergent, de produit blanchissant et de produit adoucissant exactement aux bons moments. Ce bac interagit avec notre sonde détectrice de mousse, unique en son genre, pour assurer que votre linge soit rincé jusqu'à obtention d'une propreté parfaite.

Cycle XXTRASANITARY™

Pendant ce cycle innovant, une sonde intelligente commandée par thermostat fait chauffer l'eau jusqu'à 170° F et maintient cette température pendant exactement 3 minutes, ce qui tue 99,9% des bactéries domestiques les plus courantes. Ensuite, la température est ramenée à 150° F pour ne pas abîmer le linge. Ce cycle le nettoie et l'assainit en profondeur sans endommager les fibres.

Cycle KIDSCARE™

Ce sont habituellement les plus jeunes occupants de la maison qui sont à l'origine des taches les plus tenaces. Ce cycle porte l'eau jusqu'à 150° F pour enlever facilement les tâches même les plus rebelles.

Pales de brassage

Tandis que votre linge est brassé en douceur, les aubes font tomber de l'eau en cascade depuis une hauteur importante, évacuant ainsi la mousse et conférant à l'ensemble du linge une propreté uniforme. Un tambour incliné interagit avec les pales pour assurer que pas une chemise n'échappe au malaxage.

Tambours en acier inoxydable

Le tambour du lave-linge Nexxt™ présente des centaines de trous double perforation à bords arrondis permettant à vos vêtements d'être malaxés en douceur sans risque de s'accrocher.

Chauffe-eau interne

Une résistance chauffante interne porte l'eau à 170° F tandis qu'une sonde thermométrique numérique surveille en permanence la température. Les lave-linge Bosch Nexxt® offrent la méthode de chauffage la plus efficace et la plus précise, pour chaque type de textile sélectionné.

Fonctionnement silencieux

Les lave-linge Bosch font appel à des moteurs sans balais, à des systèmes de pompage suspendus et à des matériaux insonorisants pour qu'ils dégagent extrêmement peu de bruit pendant leur fonctionnement. Ceci signifie qu'il est possible de les installer de facto n'importe où dans la maison, sans qu'ils ne gênent personne.

Technologie SYNCHRO™

Gérez vos temps de fonctionnement du lave-linge et du sèche-linge avec le système d'exploitation technologique SYNCHRO™. Les sèche-linge Nexxt® coordonnent leur action avec la vitesse d'essorage du lave-linge, selon les textiles sur lesquels il a été réglé et selon la température de lavage. Grâce à cette technologie, plus d'accumulation de linge lavé en attente que le sèche-linge finisse son cycle.

Bosch Nexxt™ Laundry Pedestals

**Models / Modèles / Modelos: WTZ1500, WTZ1500S
WTZ1500P, WTZ1500C**



BOSCH
Invented for life



en Operating, Care and Installation Instructions
fr Socle: Notice d'utilisation, de maintenance et d'installation
es Pedestal: Operación, cuidado y instrucciones para la instalación

Important Safety Information

Please read and follow these **Installation Instructions** along with all other information enclosed with the pedestal.

Definitions

WARNING

WARNING – This indicates that death or serious injuries may occur as a result of non-observance of this warning.

CAUTION

CAUTION– This indicates that minor or moderate injury may occur as a result of non-observance of this warning.

NOTICE

NOTICE – This indicates that damage may occur as a result of non-observance of this warning.

i This symbol is used to draw the user's attention to important matters.

Tools and Parts

Confirm receipt of the following parts and tools in the pedestal drawer:

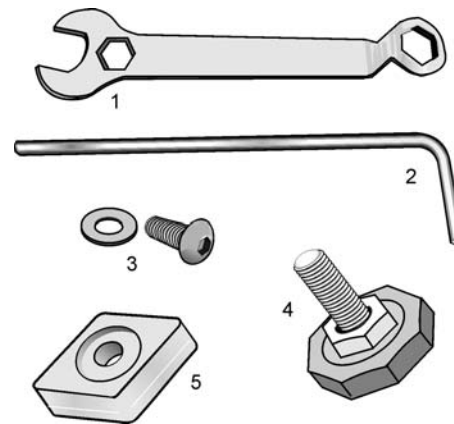


Figure 1

1. 17 mm open end wrench
2. 6 mm Allen (Hex) wrench
3. (4) Socket Head Cap Screws and (4) Flat Washers
4. (4) Height Adjustable Feet
5. (4) Spacers
6. Warranty Card (not pictured)

Before You Start

i **Important:** If your appliance is already installed, it **MUST** be uninstalled before continuing.

If you need to uninstall your appliance, refer to the “**Operating, Care and Installation Instructions**” provided with your appliance for tools and information required.

CAUTION

Excessive Weight Hazard

Use two or more people to move and uninstall the appliance. Failure to do so can result in injury.

CAUTION

Do not lift the appliance by the door or door opening.

Keep the door closed at all times during the pedestal installation.

Preparing Your Appliance

Existing Appliance – If you are installing the pedestal on an appliance that has already been in use, begin with the *“Preparing Your Existing Appliance”* section immediately below.

New Appliance – If you are installing the pedestal on a new washer or dryer, proceed to the *“Preparing Your New Appliance”* section on the page following.

Preparing Your Existing Appliance

1. Pull the appliance away from the wall so it can be positioned on its left side.

Step 2 below applies to washers. For dryers go directly to step 3.

NOTICE

Make sure the washer transportation bolts are reinstalled prior to pedestal installation to prevent potential damage to the washer drum.

i Your washer was originally shipped with four transportation bolts installed to protect the drum during transit. The washer installation instructions required these bolts to be removed during the original setup. The transportation bolts must now be reinstalled prior to pedestal installation.

2. To reinstall the transportation bolts:
 - ❑ Locate the four transportation bolt assemblies originally shipped with your washer (see **Figure 2**).

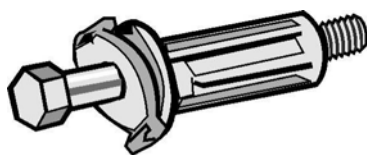


Figure 2

- ❑ Remove the four transportation bolt hole covers on the back of the washer. (1) Push the tab inward with your thumb while (2) sliding the cover in the direction of the two vertical slots in the plastic cover (see **Figure 3**).

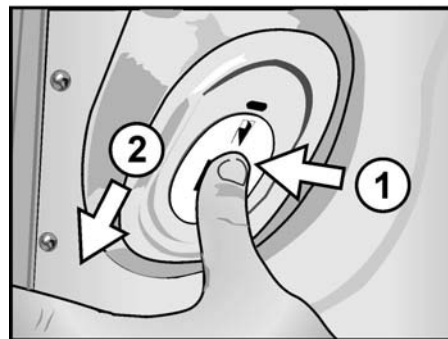
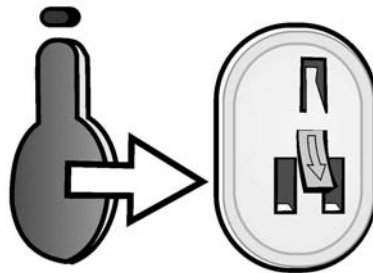


Figure 3

- ❑ Insert the bolt assemblies. Start with the lower left and install all four assemblies going counterclockwise. Align each one into the hole until the plastic bushing is all the way inside the back panel of the washer and the rectangular collar is oriented to fit the slot. This aligns the bolt assembly so the bolt will thread correctly into the drum. Slide the bolt assembly in the direction of the slotted area.
- ❑ When installing the first bolt assembly, it is necessary to push against the drum with the assembly to allow it to slide into place.

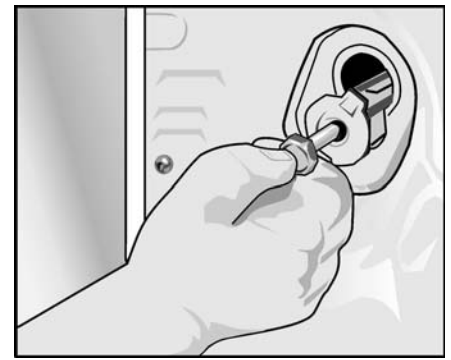


Figure 4

- ❑ Make sure the tab on the transportation bolt washer is inserted in the slot on the washing machine back panel.

i Do not thread any of the bolts until all four are in place, then tighten each one.

NOTICE

Damage to the drum may result if the plastic bushing is removed from the bolt prior to tightening.

3. Protect the floor and the side of the appliance by laying a sufficiently large piece of cardboard (such as the pedestal carton) or other suitable protective covering flat on the floor to the left of the unit.

Support the appliance approximately 1 1/2” to 2” off the floor (see **Figure 5**).

Helpful Hint: Rolled up towels can be used as support.



CAUTION

When lifting or lowering the appliance onto its side, avoid sliding it against the floor as this may result in injury or damage.

4. Lay the appliance on its **LEFT** side (see **Figure 6**).

Note for Washers: Slight water spillage may be noticed due to laying washer on its side.

5. Go to the *“Installing the Pedestal”* section of this manual.

Preparing Your New Appliance

1. Position the original packaged appliance close to the final location. Using a utility knife, cut the two packaging straps.

NOTICE

If installing the pedestal to a new washer, **do not remove the washer transportation bolts** prior to installing the pedestal.

2. Remove the protective film, four corner supports, and two foam packaging pieces.
3. Protect the floor and the side of the appliance by laying a sufficiently large piece of cardboard (such as the pedestal carton) or other suitable protective covering flat on the floor to the left of the unit.

Support the appliance approximately 1 1/2" to 2" off the floor.

Helpful Hint: Place the two corner supports from your appliance packaging (see **Figure 5**).

If corner supports are not available, items such as rolled up towels can be used.



Figure 5

4. Lay the appliance on its **LEFT** side (see **Figure 6**).

Note for Washers: Slight water spillage may be noticed due to laying washer on its side.

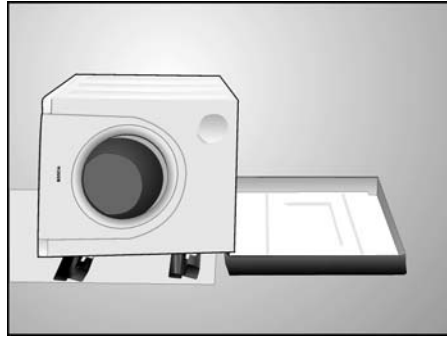


Figure 6

5. Remove the bottom of the packaging.
6. Go to **"Installing the Pedestal"** section of this manual.

Installing the Pedestal

CAUTION

Do not place fingers near the bottom of the pedestal while moving the drawer.

Doing so can result in a cut or pinch injury.

1. Remove the feet originally installed in the appliance (see **Figure 7**). **DO NOT** reinstall these feet into the pedestal. Retain the feet in case the appliance needs to be reinstalled later without the pedestal.

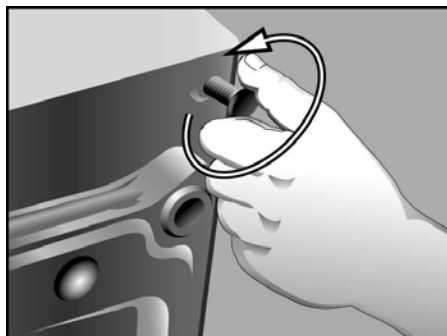


Figure 7

2. Protect the floor and the side of the pedestal by laying a sufficiently large piece of cardboard or other suitable protective covering flat on

the floor under the pedestal.

Remove the drawer from the pedestal by depressing the drawer release levers located in the drawer slide rails. Set the drawer aside.

Helpful hint: It is recommended to have an assistant hold the pedestal housing during drawer removal.

Push **up** on the drawer release lever on the **left side** and **down** on the drawer release lever on the **right side** while removing the drawer (see **Figure 8**).

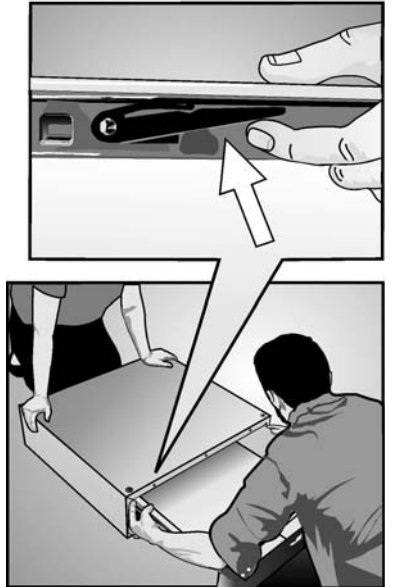


Figure 8

CAUTION

Excessive Weight Hazard

Use two or more people to install the pedestal. Failure to do so can result in injury.

3. Place the top of the pedestal against the appliance bottom. Ensure the pedestal drawer opening and appliance door face the same direction (see **Figure 9**).

Helpful hint: Foam packaging may be used to help align the pedestal and the appliance.

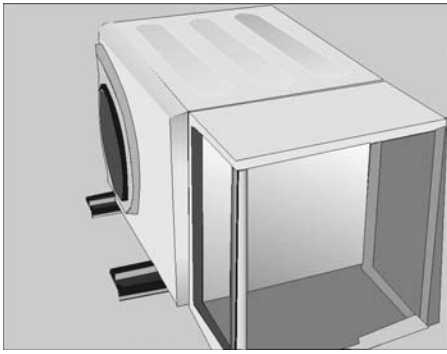


Figure 9

- Using the 6 mm Allen (Hex) wrench, install the socket head cap screws and flat washers (see Figure 10).

Insert the square spacer between the pedestal housing and the appliance housing. Holding the spacer in place, insert the bolt so it passes through the flat washer, pedestal housing, then the spacer, and into the protruding threaded bushing in the appliance base. Repeat for all four bolts.

Make sure the webbed side of each spacer is down toward the base of the pedestal. The spacer should fit up against the appliance housing. Align the outer edges of the spacer with the appliance and pedestal housings. Loosely thread all four bolts with the washers and spacers in place before tightening any of the bolts completely.

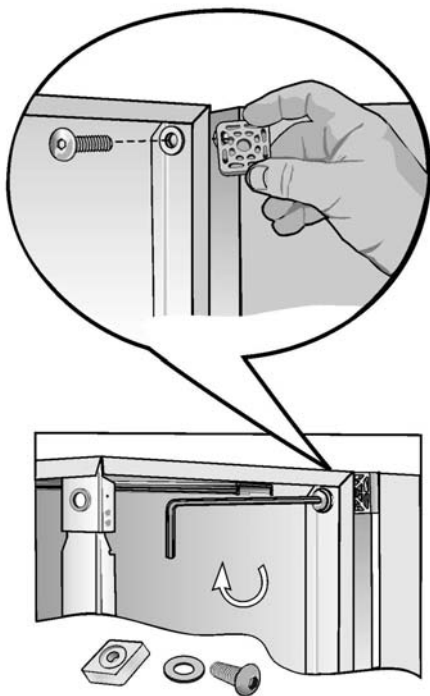


Figure 10

Use the wrench to **HAND TIGHTEN** all screws (see Figure 10).

Helpful hint: Do not tighten any screws completely until all are started into their threads.

After all screws are hand tight, use the wrench to tighten an additional 1/3 to 1/2 turn (see Figure 11).

Note: Tightening torque for the pedestal screws is a minimum of 10 ft-lb (14 N-m) to 13 ft-lb (18 N-m).

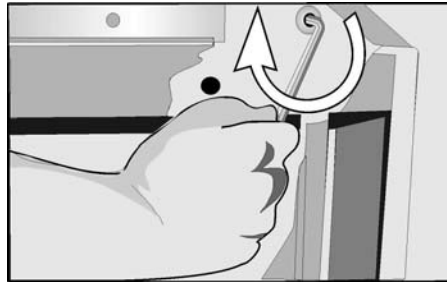


Figure 11

- Install the four new feet that are included with the pedestal. Screw the feet into the threaded corner holes in the base of the pedestal.

NOTICE

Use only the feet supplied with the pedestal. Do not use the feet that originally came with the appliance.

Using the supplied 17 mm open end wrench, tighten only the two rear feet locknuts against the pedestal housing (see Figure 12).

The front two feet should be hand tightened only, so the appliance can be leveled later.

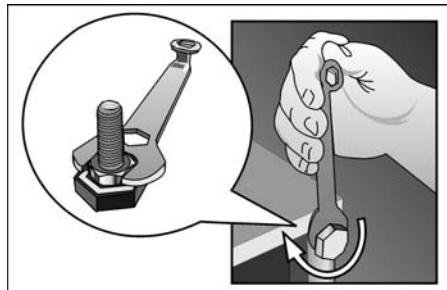


Figure 12

CAUTION

When lifting the appliance, be careful not to allow it to slide against the floor.

If the appliance slides, it may cause injury or damage.

- Lift the appliance and pedestal assembly back to an upright position (use of an assistant is required) (see Figure 13).

CAUTION

Avoid holding the appliance by the pedestal when lifting it.

To avoid damaging the pedestal do not use a dolly to lift or move the appliance once the pedestal is installed.

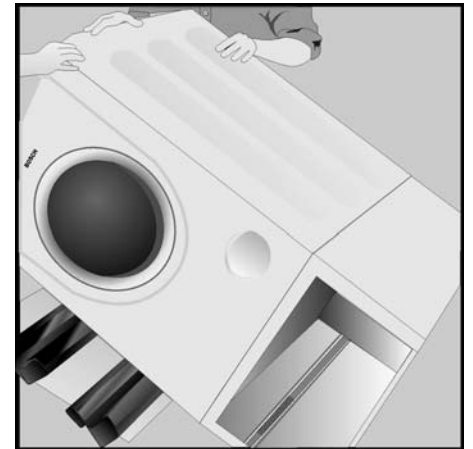


Figure 13

Step 7 below applies to washers. For dryers go directly to step 8.

- Remove the transport bolts.

CAUTION

To avoid possible injury and damage to the appliance and adjacent surfaces, all four transport bolts must be removed before using the appliance. Retain the bolts for use in any future transport (e.g. when moving).

- ❑ Loosen all four bolts before removing any of the bolts all the way from the unit.
- ❑ Remove the bottom two bolts prior to removing the top two bolts.

- ❑ Loosen the bolts using the closed end of the 17mm wrench provided. Loosen them until they can be removed freely.
- ❑ The recessed bottom bolts may be more easily removed using a 1/2" (13 mm) socket wrench.

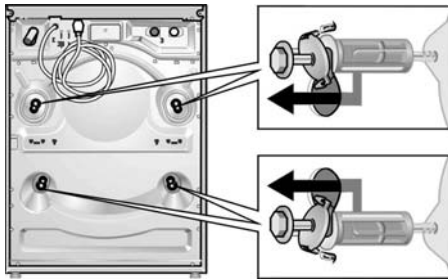


Figure 14

- ❑ Completely remove all 4 transport bolt assemblies (bolt, washer and bushings) by reaching through the open washing machine door and pulling the drum slightly forward to loosen, then pull them out from the back (see **Figure 14**).
- ❑ If the bushings do not come out when removing the bolts, place the bolts back into the bushings and carefully try again. It is important to do this with the bolts, otherwise the bushings will not come out properly.

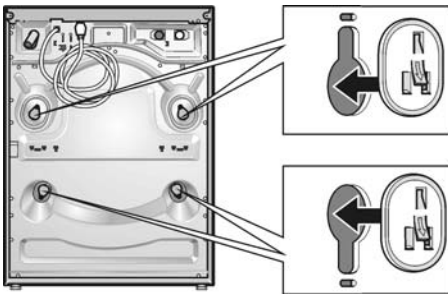


Figure 15

- ❑ Insert the covers until they snap in completely (see **Figure 15**).

Storing the transport bolts

Always keep the transport bolts for future transportation of the appliance (such as when moving out).

- ❑ Store the transport bolts with the washer and bushing attached.

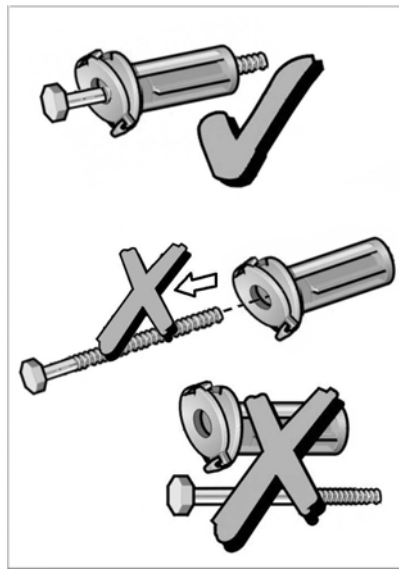


Figure 16

8. Follow the Installation Instructions that came with your appliance to finish installing or reinstalling your appliance (i.e., hoses, vents, etc.)
9. Slide the appliance to its final location.

Leveling Procedure

1. The appliance should now be in its final position, ready for leveling (moving the appliance after leveling can make it unlevel again.) Each foot of the appliance or pedestal must be placed firmly on the floor to prevent the appliance from wobbling. Start with all four feet screwed in as far as possible, then back individual feet out as necessary to level the appliance. Move the feet as little as possible to help reduce vibration.
2. Use a bubble level (24" or less in length) to check the leveling status of the appliance (be sure the level fits between the edges of the appliance, and is not elevated at one end on a ridge on the surface of the appliance.)
 - ❑ Lay the bubble level across the unit worktop to check the level from side to side and from front to back.
 - ❑ A center-located bubble indicates the unit is leveled. Otherwise, repeat the leveling procedure until the unit is leveled. Tip: if the bubble is closer to one end, it indicates the high side of the unit. To level the unit, either lower the higher side or raise the lower side.
 - ❑ After leveling the unit from side to side, then turn the level so that it lays on the worktop from front to back to check if it is level in that direction.



CAUTION

To avoid risk of injuries –Take care when using the wrench.

- ❑ Loosen the lock nut (see **Figure 17, item 1**) by turning it clockwise. Use the wrench provided (or a 5/8" – 16mm open end wrench). When you turn the lock nut, the foot (see **Figure 17, item 2**) it is locked against will turn with it. This will extend the height of the foot.

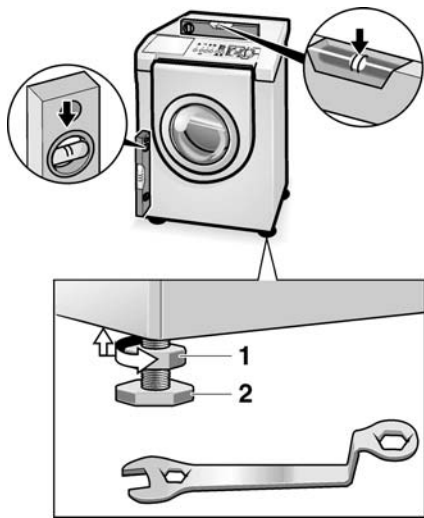


Figure 17

- Turning the foot out (clockwise) will raise the corner of the appliance, turning the foot in (counter-clockwise) will lower the corner of the appliance.

When the corner of the appliance is satisfactorily raised or lowered, lock the height-adjustable feet in place by turning the lock nut counter-clockwise until it locks tightly against the pedestal housing.

i It may be necessary to hold the appliance foot with a pair of pliers to keep it from turning while tightening the lock nut. If the foot does turn, it will change the height of the corner.

- After making preliminary adjustments, press down on each corner of the appliance to make sure the unit does not wobble. If it does wobble, lower the foot on that corner until the foot touches the floor firmly.

3. **For Washers:** Fine tune the leveling by placing a small load of laundry in the machine, starting it in spin cycle and then leveling the appliance again.

i If the test spin cycle is manually stopped before its completion, then the door may remain locked for 10 seconds.

Note: Correct adjustment of feet (equal weight distribution to all feet) is required to minimize vibration and movement of the appliance during operation.

4. Use the supplied 17mm open-end wrench to securely tighten both locknuts for the front feet against the pedestal. **All locknuts must be tightened firmly to prevent the height adjustable feet from moving during appliance use.**
5. Slide the ball bearing rails on the pedestal side to the front (see Figure 18).

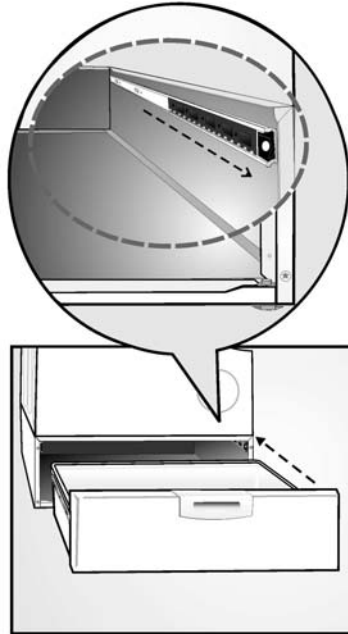


Figure 18

6. Replace the drawer by aligning it to the drawer slides. Ensure slides of pedestal and drawer are aligned correctly (see Figure 19).

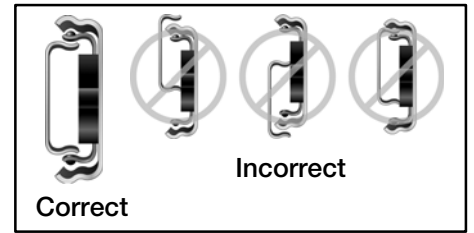


Figure 19

7. Close the drawer.
Ensure drawer slides are correctly engaged by freely opening and closing the drawer.

CAUTION
Do not use the drawer as a step.

For problems with or service on your pedestal contact **BSH Home Appliances**. Contact information is available in the "Customer Service" section of the appliance manual.

WARRANTY

Full One-Year Warranty on Mechanical Parts

For one year from the date of purchase, when this pedestal is installed with the listed washer or dryer and operated according to the instructions provided in the washer or dryer **“Operating, Care and Installation Instructions”**, supplier will repair or replace any of its mechanical parts if defective in material or workmanship.

Warranty Restriction

If the Pedestal is subject to other than private family use and/or used with any other product than those listed in the **Installation Instructions**, the warranty is null and void.

Warranty Service

Warranty service is available by contacting the retailer where the Pedestal was purchased. If retailer is not available, please refer to the **“Operating, Care and Installation Instructions”** that came with the washer or dryer that is installed with the Pedestal and contact the service department listed there.

This warranty applies only while the Pedestal is in use in the United States or Canada*. This warranty gives you specific rights and you may also have other rights which vary from state to state or province to province.

*Warranty terms may vary in Canada.

In the space below, record the purchase date of your pedestal and model and serial number of the appliance on which the pedestal is installed.

Save these instructions and your sales receipt for future reference.

Purchase Date ____/____/____

Appliance Model Number _____

Appliance Serial Number _____



4700 W. 160th St.
Cleveland, Ohio 44135
Ph: (800) 321-9532
Fax: (800) 321-9535
www.oatey.com

QUADTRÖ® Washing Machine Outlet Boxes

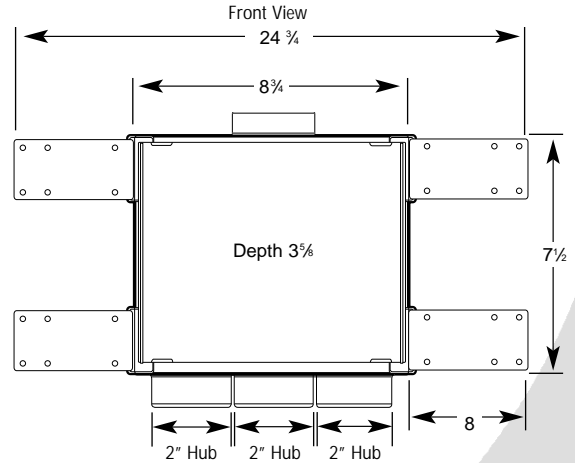
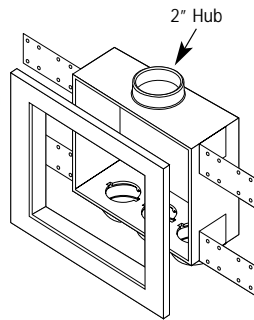
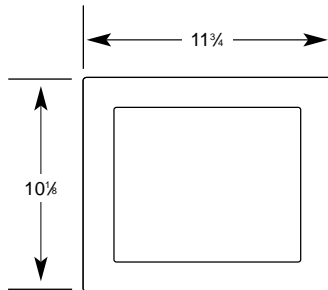


SUBMITTAL SPECIFICATION

Engineering Specification: Oatey QUADTRÖ® washing machine outlet boxes can be used in commercial or residential applications which require supply valves and waste drain recessed into the wall. Available water hammer arrestor option provides water pressure shock arrestors required for installation on supply lines to quick closing valves.

Job Reference

Visit www.oatey.com for updates.



- (All dimensions in inches)
- 2" drain opening fits PVC or ABS Sch. 40 DWV pipe
 - All washing machine outlet boxes are shipped 12 per carton
 - Box made of high impact polystyrene
 - 4 support brackets included for mounting
 - Easy to remove knockout
 - Snap-on faceplate frame accommodates up to 1" drywall

✓	Part #	Description
	38530	1/4 Turn Brass Ball Valve – Copper Sweat – Standard Pack
	38531	1/4 Turn Brass Ball Valve – CPVC – Standard Pack
	38532	1/4 Turn Brass Ball Valve – ASTM F1807 PEX – Standard Pack
	38533	1/4 Turn Brass Ball Valve – ASTM F1960 PEX – Standard Pack
	38534	1/4 Turn Brass Ball Valve – ASTM F1974 PEX – Standard Pack
	38535	Single Lever Ball Valve – Copper Sweat – Standard Pack
	38536	Single Lever Ball Valve – CPVC – Standard Pack
	38537	Single Lever Ball Valve – ASTM F1807 PEX – Standard Pack
	38538	Single Lever Ball Valve – ASTM F1960 PEX – Standard Pack
	38539	Single Lever Ball Valve – ASTM F1974 PEX – Standard Pack
	38540	1/4 Turn Brass Hammer Ball Valve – Copper Sweat – Standard Pack
	38541	1/4 Turn Brass Hammer Ball Valve – CPVC – Standard Pack
	38542	1/4 Turn Brass Hammer Ball Valve – ASTM F1807 PEX – Standard Pack
	38543	1/4 Turn Brass Hammer Ball Valve – ASTM F1960 PEX – Standard Pack
	38544	1/4 Turn Brass Hammer Ball Valve – ASTM F1974 PEX – Standard Pack
	38545	Single Lever Hammer Ball Valve – Copper Sweat – Standard Pack
	38546	Single Lever Hammer Ball Valve – CPVC – Standard Pack
	38547	Single Lever Hammer Ball Valve – ASTM F1807 PEX – Standard Pack
	38548	Single Lever Hammer Ball Valve – ASTM F1960 PEX – Standard Pack
	38549	Single Lever Hammer Ball Valve – ASTM F1974 PEX – Standard Pack
	38550	Plain Box – No Valves – Standard Pack
	38551	1/4 Turn Brass Ball Valve – Compression – Standard Pack
	38552	Brass Boiler Drain Valve – Copper Sweat – Standard Pack
	38553	Brass Boiler Drain Valve with Screw Driver Stop – Copper Sweat – Standard Pack
	38554	North American Brass Boiler Drain Valve – Copper Sweat – Standard Pack
	38555	1/4 Turn Brass Ball Valve – F2080 PEX – Standard Pack
	38556	1/4 Turn Brass Ball Valve – 3/8" PEX – Standard Pack
	38557	1/4 Turn Brass Ball Valve – Standard Pack
	38560	1/4 Turn Brass Ball Valve – Copper Sweat – Contractor Pack
	38561	1/4 Turn Brass Ball Valve – CPVC – Contractor Pack
	38562	1/4 Turn Brass Ball Valve – ASTM F1807 PEX – Contractor Pack
	38563	1/4 Turn Brass Ball Valve – ASTM F1960 PEX – Contractor Pack
	38564	1/4 Turn Brass Ball Valve – ASTM F1974 PEX – Contractor Pack
	38566	1/4 Turn Brass Hammer Ball Valve – F2080 PEX
	38567	Single Lever Hammer Ball Valve – F2080 PEX

US Patent #6,155,286 and Patents Pending

10/07



Data is subject to manufacturing tolerances.

Valves meet ASME A112.18.1
Water Hammer Arrestors meet ASSE 1010

Part #	Description
38941	Plastic Faceplate for Quadtro Center and Offset WMOB
38768	Plastic Brackets, 4" Long, for Plastic Boxes
38648	Plastic Brackets, 12" Long, for Plastic Boxes
38576	Quadtro Test Cap
38577	Quadtro Hug/O-ring



HDU Holdown

HDU Holdowns are pre-deflected during the manufacturing process, virtually eliminating deflection under load due to material stretch. They use Simpson Strong-Tie® Strong-Drive® screws (SDS) which install easily and provide reduced fastener slip. Using SDS screws results in a greater net section, when compared to bolts, as no material is removed.

The HDU series of holdowns are designed to replace previous versions of the product such as PHD's as well as bolted holdowns. The HDU2, 4 and 5 are direct replacements for the PHD2, 5 and 6, respectively.

For more information on holdown options, [contact Simpson Strong-Tie](#).

Special Features:

- ⌄ Pre-deflected body virtually eliminates deflection due to material stretch.
- ⌄ Uses SDS screws which install easily, reduces fastener slip, and provides a greater net section area of the post compared to bolts.
- ⌄ SDS screws are supplied with the holdowns to ensure proper fasteners are used.
- ⌄ No stud bolts to countersink at openings.

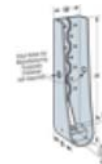
Material: See [table](#).

Finish: Galvanized.

Installation:

- ⌄ Use all specified fasteners. See [General Notes](#).
- ⌄ For use in vertical and horizontal applications.
- ⌄ No additional washer required.
- ⌄ To tie multiple 2x members together, the Designer must determine the fasteners required to join the members to act as one unit without splitting the wood. See [SDS Screw information](#).
- ⌄ See [SB and SSTB Anchor Bolts](#) for anchorage options.
- ⌄ SDS screws install best with a low speed high torque drill with a 3/8" hex head driver.
- ⌄ Refer to [Anchor Designer Software™ for ACI 318](#) for anchoring solutions.

For holdowns, per ASTM test standards, anchor bolt nuts should be finger-tight plus 1/3 to 1/2 turn with a hand wrench, with consideration given to possible future wood shrinkage. Care should be taken to not over-torque the nut. Impact wrenches should not be used.

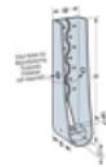
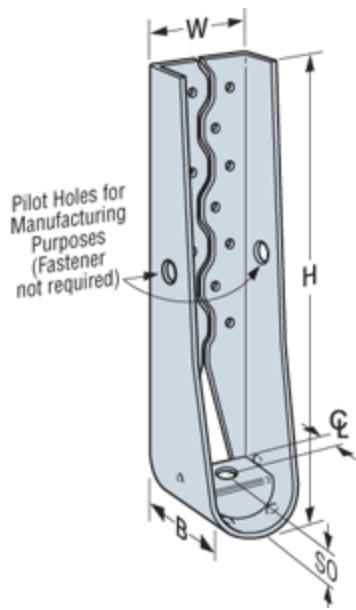


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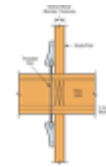
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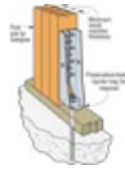
[roll over images below to see larger image](#)



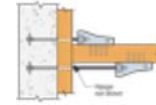
HDU
U.S. Patent
6,112,495



Typical HDU Tie Between Floors



Vertical HDU Installation



Horizontal HDU Offset Installation

(Plan View)
See footnote 7.

Load Table: See [code report listings](#) below

▲ top

Model No.	Ga	Dimensions (in.)					Fasteners		Minimum Wood Member Thickness ⁴ (in.)	Allowable Tension Loads (l (160)) ¹		
		W	H	B	ϕ	SO	Anchor Bolt Dia. (in.)	SDS Screws		DF/SP	SPF/HF	Def Allow.
HDU2-SDS2.5	14	3	8 ¹ / ₁₆	3 ¹ / ₄	1 ¹ / ₁₆	1 ³ / ₈	5 ⁸ / ₁₆	6-SDS 1/4"x2 1/2"	3	3075	2215	
HDU4-SDS2.5	14	3	10 ¹ / ₁₆	3 ¹ / ₄	1 ¹ / ₁₆	1 ³ / ₈	5 ⁸ / ₁₆	10-SDS 1/4"x2 1/2"	3	4565	3285	
HDU5-SDS2.5	14	3	13 ³ / ₁₆	3 ¹ / ₄	1 ¹ / ₁₆	1 ³ / ₈	5 ⁸ / ₁₆	14-SDS 1/4"x2 1/2"	3	5645	4065	
HDU8-SDS2.5	10	3	16 ⁵ / ₁₆	3 ¹ / ₂	1 ³ / ₁₆	1 ¹ / ₂	7 ⁸ / ₁₆	20-SDS 1/4"x2 1/2"	3	5980	4305	
									3 ¹ / ₂	6970	5020	
									4 ¹ / ₂	7870	5665	
HDU11-SDS2.5	10	3	22 ¹ / ₄	3 ¹ / ₂	1 ³ / ₁₆	1 ¹ / ₂	1	30-SDS 1/4"x2 1/2"	5 ¹ / ₂	9535	6865	
									7 ¹ / ₄	11175	8045	
HDU14-SDS2.5	7	3	25 ¹ / ₁₆	3 ¹ / ₂	1 ¹ / ₁₆	1 ¹ / ₁₆	1	36-SDS 1/4"x2 1/2"	7 ¹ / ₄	14390 ⁸	10360	
									5 ¹ / ₂ ⁸	14925 ^{8,9}	10745	

- Allowable loads have been increased for wind or earthquake load durations with no further increase allowed; reduce where other load durations govern.
- The Designer must specify anchor bolt type, length and embedment. See [SB and SSTB Anchor Bolts](#). Refer to [Anchor Designer Software™](#) for ACI 318 for anchoring solutions.
- Structural composite lumber columns have sides that show either the wide face or the edges of the lumber strands/veneers. Values in the tables reflect installation into the wide face. See technical bulletin [T-SCLCOLUMN](#) for values on the narrow face (edge).
- Post design by Specifier. Allowable load values are based on a minimum wood member thickness in the direction of the fastener penetration. Posts may consist of multiple 2x members provided they are designed to act as one unit independently of the holdown fasteners. Holdowns shall be installed centered along the width of the attached post.
- Tension values are valid for holdowns flush or raised off of sill plate.
- Deflection at Highest Allowable Tension Load includes fastener slip, holdown elongation, and anchor bolt elongation (L = 6"). Additional elongation of anchor bolts longer than 6" shall be added to holdown deflection.
- Tabulated loads may be doubled when the HDU is installed on opposite sides of the wood member provided either the post is large enough to prevent opposing holdown screw interference or the holdowns are offset to eliminate screw interferences.
- Noted HDU14 allowable loads are based on a 5 1/2" wide post (6x6 min.). All other loads are based on 3 1/2" wide post minimum.
- Requires heavy hex anchor nut to achieve tabulated loads (supplied with holdown).

Code Reports (PDFs):

▲ top

					LEGACY REPORTS		
	IAPMO ESR	ICC-ES ESR	CITY OF LOS ANGELES	STATE OF FLORIDA	ICC-ES NER	ICC-ES ER	ICC-ES ES
HDU	See specific model numbers for code listings.						
HDU11-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU11-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU14-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU14-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU2-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU4-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU5-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			
HDU8-SDS2.5		ESR-2330 / ESR-2523 *	RR25720	FL10441			

* ESR-2523 is an Index of many of Simpson Strong-Tie Stamped and Welded Cold-formed Steel Products for Wood or Cold-formed Steel Construction

Drawings: To download drawings, right-click or Ctrl-click on the link, then choose "Save Target As..."

DWG

Orthographic

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[HDU2](#) [HDU2 front view](#) [HDU2 right view](#) [HDU2 top view](#) [HDU4](#)
[HDU4 front view](#) [HDU4 right view](#) [HDU5](#) [HDU5 front view](#) [HDU5 right view](#) [HDU8](#)
[HDU8 front view](#) [HDU8 right view](#) [HDU11](#) [HDU11 front view](#) [HDU11 right view](#)
[HDU11 top view](#)

DXF

Orthographic

[HDU2](#) [HDU2 front view](#) [HDU2 right view](#) [HDU2 top view](#) [HDU4](#) [HDU4 front view](#)
[HDU4 right view](#) [HDU5](#) [HDU5 front view](#) [HDU5 right view](#) [HDU8](#) [HDU8 front view](#)
[HDU8 right view](#) [HDU11](#) [HDU11 front view](#) [HDU11 right view](#) [HDU11 top view](#)

Catalog Pages (PDFs):

[C-2009 \(Wood Construction Connectors\), page 37](#)

Order [free catalogs](#) by mail

Anchoring Solutions:

Refer to [Anchor Designer Software™ for ACI 318](#) for anchoring solutions.

Related Categories:

[Holdowns - Concrete](#) (Wood Construction)

[Tension Ties](#) (Wood Construction)

Technical Bulletins (PDFs):

Panelized Roof Systems **Expiration extended to 1/31/09**

Connectors Installed on SCL Columns

Fliers (PDFs):

The Effects of Wind

New Longer Titen HD[®]s Can Be Used With Simpson Holdowns

Holdowns for Alternate Braced Wall Panels

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For Residential and Commercial Applications

Job Name _____

Job Location _____

Engineer _____

Approval _____

Contractor _____

Approval _____

Contractor's P.O. No. _____

Representative _____

Series TWH

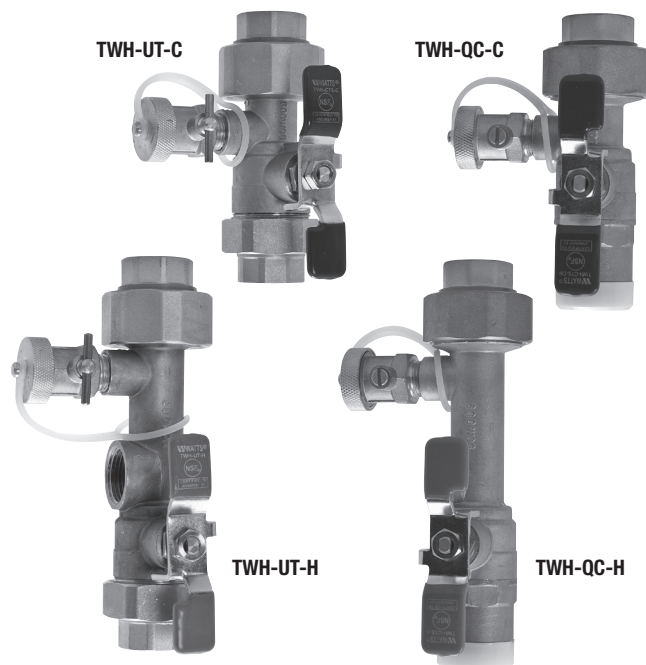
Tankless Water Heater Valves

Size: 3/4" (20mm)

Series TWH tankless water heater valves are designed to simplify the installation, maintenance and operation of tankless water heaters.

Features

- 3/4" FPT unions for connection to water heater (all models)
- 3/4" FPT unions for connection to water lines (UT models)
- 3/4" Quick-Connect end connections to water lines (QT models)
- 3/4" FPT connection to water lines (FT models)
- 3/4" FPT/sweat unions for connection to water lines (UTS models)
- Full-port, quarter-turn ball valve with color-coded tee handle and union
- Quarter-turn purge and drain valve with hose connection and tethered brass cap
- Optional 3/4" pressure relief valve 150psi (10.3 bar)
- Optional integral spring check valve in cold water valves
- Hot and cold valves certified to NSF/ANSI 61
- Staggered connection points for ease of installation and access
- Valves are suitable for most tankless installations
- No additional adapters required
- 600 WOG rated



Specifications

A tankless water heater valve shall be installed where indicated on the plans. The valve shall facilitate isolation of the water heater from the water lines, water heater purging, draining and a provision for a pressure relief valve. The valve shall be a Watts Regulator Company Series TWH.

Materials

- Body:** Forged brass
Ball: Plated brass
Seats: Virgin PTFE

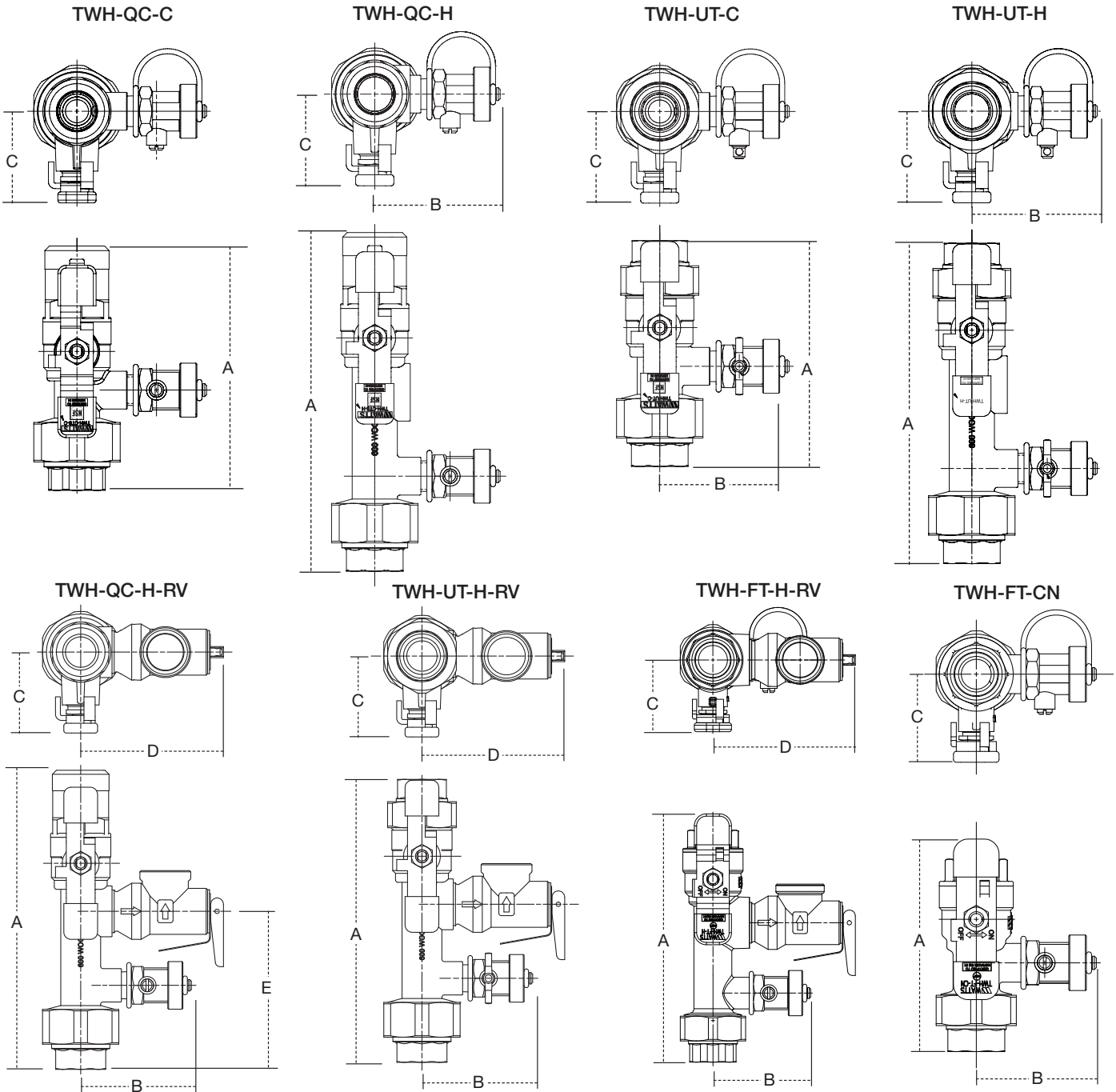
Models

Model Nomenclature

<p>TWH tankless water heater]</p> <p>UT union with female threaded tailpieces for connection to water lines</p> <p>UTS union with female threaded and sweat tailpieces for connection to water lines</p> <p>QC Quick Connect fittings to water lines</p> <p>FT Female pipe thread connection to water lines</p> <p>H hot water valve</p> <p>C cold water valve</p> <p>CN cold water valve without integral spring check</p> <p>HC hot and cold valve set</p> <p>HCN hot and cold valve set, no spring check</p> <p>RV 150psi relief valve]</p>	<div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px; text-align: center; font-weight: bold;">TWH</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px; text-align: center; font-weight: bold;">UTS</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px; text-align: center; font-weight: bold;">HCN</div> <div style="border: 1px solid black; width: 40px; height: 20px; margin-bottom: 5px; text-align: center; font-weight: bold;">RV</div>
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Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.





Dimensions – Weights

MODEL	CONNECTIONS	DIMENSIONS										WEIGHT	
		A		B		C		D		E		lbs.	kgs.
		in.	mm	in.	mm	in.	mm	in.	mm	in.	mm		
TWH-UT-C	Union x Union	4 ¹⁵ / ₁₆	125	2 ¹³ / ₁₆	71	2	51	–	–	–	–	2.2	1.0
TWH-UT-H	Union x Union	6 ¹⁵ / ₁₆	177	2 ³ / ₄	69	2	51	–	–	–	–	2.5	1.1
TWH-QC-C	Quick-connect x Union	5 ⁵ / ₁₆	135	2 ¹³ / ₁₆	71	2	51	–	–	–	–	2.0	.9
TWH-QC-H	Union x Quick-connect	7 ³ / ₈	187	2 ³ / ₄	69	2	51	–	–	–	–	2.4	1.1
TWH-UT-H-RV	Union x Union	6 ¹⁵ / ₁₆	177	2 ³ / ₄	69	2	51	3 ¹ / ₂	89	3 ⁷ / ₈	99	2.5	1.1
TWH-QC-H-RV	Quick-connect x Union	7 ³ / ₈	187	2 ³ / ₄	69	2	51	3 ¹ / ₂	89	3 ⁷ / ₈	99	2.4	1.1
TWH-FT-CN	Union x FPT	4 ¹ / ₁₆	103	2 ¹ / ₂	64	1 ⁷ / ₈	47	–	–	–	–	1.9	0.9
TWH-FT-H	Union x FPT	6	152	2 ¹ / ₂	64	1 ⁷ / ₈	47	3 ¹ / ₂	89	2 ⁷ / ₁₆	62	2.1	0.9

WATTS®

A Watts Water Technologies Company



**ISO 9001-2000
CERTIFIED**

USA: 815 Chestnut St., No. Andover, MA 01845-6098; www.watts.com

Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca

Tankless Water Heater $\frac{3}{4}$ " Service Valve Set

Installation Instructions

STOP!

Before connecting any components, be sure to read all of the tankless water heater manufacturer's installation instructions. Failure to follow instructions below can result in serious injury, death and/or property damage.

1. Identify all components and orientations before beginning installation

- HOT WATER SERVICE VALVE (Fig.1)
Identified by the red insulator handle.
- COLD WATER SERVICE VALVE (Fig.2)
Identified by the blue insulator handle.
- PRESSURE RELIEF VALVE (Fig.3)
Identified by a silver test lever.
Note: ANSI Z21.22 and local codes govern the installation of pressure relief valves.

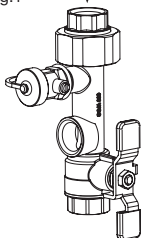
2. Before attaching any components to the tankless water heater, attach PRESSURE RELIEF VALVE to HOT WATER ISOLATION VALVE (Figure 4)

CAUTION: Do not over tighten relief valve. Do not tighten more than 2 turns past hand tight.

- Apply thread sealant to the exposed threads of the pressure relief valve.
- Thread the pressure relief valve into the $\frac{3}{4}$ " port on the side of the hot water valve and hand tighten. Using a wrench, tighten the pressure relief valve until the discharge on the pressure relief valve is positioned downward on the isolation valve, as shown in Figure 4.

Attach this end to tankless water heater

Fig.1



Attach this end to tankless water heater

Fig.2

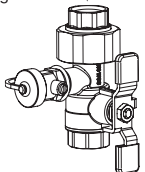
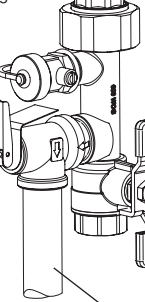


Fig.3



Fig.4



Drain Line



TWH-FT

3. Install COLD WATER SERVICE VALVE onto cold water inlet of tankless water heater

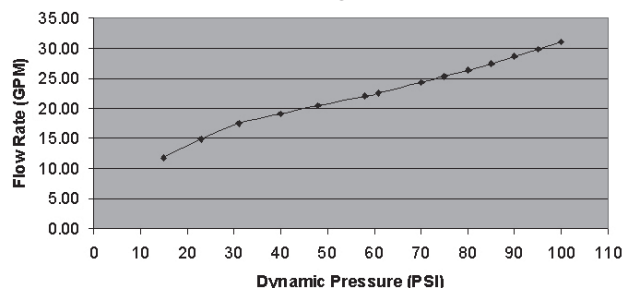
- Locate the cold water threaded inlet on the tankless water heater and apply thread sealant to the threads.
- Slightly loosen the union nut on the top of the cold water valve so that the union tailpiece rotates freely.
- Holding the cold water valve beneath the cold water inlet, thread the union tailpiece onto the inlet and hand tighten. Using a wrench, tighten the union tailpiece. Next, position the cold water valve with the purge port pointing forward, towards the front of the water heater, and hand tighten the union nut.
- Tighten the union nut with a wrench, making sure that the valve does not rotate out of position.

4. Install HOT WATER SERVICE VALVE onto hot water outlet of tankless water heater

WARNING: There should not be a shutoff located between the tankless water heater and pressure relief valve. (See direction arrow in Fig. 5.)

- Locate the hot water threaded outlet on the tankless water heater and apply thread sealant to the threads.
- Slightly loosen the union nut on the top of the hot water valve so that the union tailpiece rotates freely.
- Holding the hot water valve beneath the hot water outlet, thread the union tailpiece onto the outlet and hand tighten. Using a wrench, tighten the union tailpiece. Next, position the hot valve with the purge port and pressure relief valve pointing forward, towards the front of the water heater, and hand tighten the union nut. Tighten the union nut with a wrench, making sure that the valve does not rotate out of position.

Hot Service Valve Purge Port Flow Data



ATTENTION INSTALLER: After installation, please leave this Instruction Sheet for occupant's information.

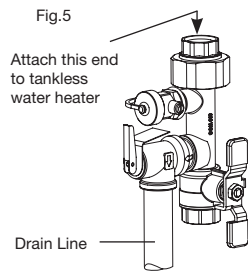
IMPORTANT: Inquire with governing authorities for local installation requirements.

WARNING!

For valves with CPVC or PEX end connections do not exceed the tubing manufacturers pressure and temperature ratings. Refer to the tubing manufacturers product specifications for that information.

5. Connect water line and pressure relief drain line

- Attach the HOT water supply line to the 3/4" threaded connection on the HOT WATER VALVE using thread sealant on the threads of the water fitting.
- Attach the COLD water supply line to the 3/4" threaded connection on the COLD WATER VALVE using thread sealant on the threads of the water fitting.
- Attach the drain line to the pressure relief valve and run line per local code requirements.



6. Start-up & Normal Operation

- Before turning on the supply water to the heater, make sure that the main valve handles on both the hot & cold valves are closed (perpendicular to the main valve bodies). Also ensure that the purge port valve caps are tightened down and that the valves are in the closed position (slot perpendicular to the purge port valve body). **NEVER RELY ON THE PURGE CAP TO STOP THE WATER FLOW.**
- For water heater start-up, refer to the water heater owners' manual.
- During normal operation, the main water valves are open when the main valve handle is parallel with the main valve body and closed when the main valve handle is perpendicular to the main valve body.
- For the purge port valves, the purge port valve is open when the slot is parallel with the purge port valve body and closed when the slot is perpendicular to the purge port valve.

7. Inspection and Maintenance

- See tag attached to pressure relief valve for details.

WARNING: Hot water may be present in the system, use extreme caution when servicing tankless water heater. Hot water can cause personal injury, death and/or property damage.

8. Drain/Flush Operation

Note: The following are suggested instructions for the use of the service valves during draining and flushing of the tankless water heater. Please refer to the water heater owner's manual for specific instructions.

- Disconnect the power supply to the water heater.
- Close the main water valve handles on the cold water valve (blue handle) and the hot water valve (red handle) by rotating each until they are perpendicular with the respective valve body. This shuts off the incoming cold water to the water heater and isolates the water heater from the hot water piping within the rest of the home.
- The purge valve on the cold water valve (blue) is used as the flushing inlet and the purge valve on the hot water valve (red) is used for the flushing outlet or drain. Ensure that the purge port is closed (perpendicular to the purge port valve body) before removing the purge port valve cap.
- Slowly open the drain caps on each purge port valve. Ensure that the rubber washer stays in the cap.

CALIFORNIA PROPOSITION 65 WARNING

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (California law requires this warning to be given to customers in the State of California.)

For more information: www.watts.com/prop65

- Continue with the manufacturer's recommendations for attachment of the lines and for specific draining and flushing instructions. To open the purge port valves, the slots are rotated so that they are parallel to the purge port valve body.
- When flushing is complete and before the lines are removed, ensure that the purge port valves are closed. Remove the lines and reinstall the purge port valve caps, ensuring that the rubber washer is in the cap, and tighten.

8. Diagnostic & Testing

Note: Diagnostic and testing of the water heater can be performed using the purge port on the hot water valve. Diagnostic testing such as flow rate, firing rate and temperature testing can also be performed. Please refer to the water heater owner's manual for the manufacturer's specific testing instructions and specifications. All testing must be done in accordance with manufacturers' recommendations.

Purge port valve flow rate data is provided in the graph below. Refer to this data during diagnostic testing of the tankless water heater.

- Close the main water valve handle on the hot water valve (red handle) by rotating until it is perpendicular with the valve body. Ensure that the hot valve purge port is closed (perpendicular to the purge port valve body) before removing the purge port cap.
- Slowly open the hot valve purge port cap. Ensure that the rubber washer stays in the cap. Attach the drain line and confirm that line is run to a safe and acceptable area for discharge of hot water.
- Continue with the manufacturer's recommendations for diagnostics and testing.
- When testing is complete and before the drain line is removed, ensure that the hot valve purge port valve is closed (the tee handle should be perpendicular to the purge port valve body). Remove the drain line and reinstall the purge port valve cap, ensuring that the rubber washer is in the cap, and tighten.

Limited Warranty and Disclaimers

Limited Warranty: Watts Regulator Co. (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of original shipment. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labor charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product. Some States do not allow limitations on how long an implied warranty lasts, and some States do not allow the exclusion or limitation of incidental or consequential damages. Therefore the above limitations may not apply to you. This Limited Warranty gives you specific legal rights, and you may have other rights that vary from State to State. You should consult applicable state laws to determine your rights. **SO FAR AS IS CONSISTENT WITH APPLICABLE STATE LAW, ANY IMPLIED WARRANTIES THAT MAY NOT BE DISCLAIMED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO ONE YEAR FROM THE DATE OF ORIGINAL SHIPMENT.**

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Water Safety & Flow Control Products

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Canada: 5435 North Service Rd., Burlington, ONT. L7L 5H7; www.wattscanada.ca

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Safety Guidelines

In addition to the **Safety Briefing** please read the ***Jobsite Safety Handbook*** inserted in this binder's back pocket.

TeamWork's 2010 Tear Down Plan

Laundry Room Project

Phase One

- Remove and salvage
 - Remove Washer Box and Valves
 - Remove Laundry Sink
 - Re-Box Sink
 - Remove Frost Proof Sill Cock
 - Remove Tank Less Water Heater
 - Carry plumbing fixtures to designated location for
Plumbing
SAVE all parts and place in bags provided by us

- Remove Light Fixtures and Re-Box
- Remove Breaker Panel with Breakers
- Carry items to designated location for ***Electrical***
- The brick will be taken apart and stacked neatly on pallets.
- Just around the window only remove trim and siding
 - Take all the siding and trim pieces to the location for
 - ***Siding Recycle***
- Carefully remove the window
 - Carry window to designated location for ***Window***

Phase Two

- ❑ Remove copper pipes and wire from walls and take to *Copper Recycle* area.
- ❑ Remove the PCV from the walls and take to *PVC Recycle* area.
- ❑ Remove the steel studs and track, take the studs and track apart, then to the *Steel Recycle* area.
- ❑ Remove the both wall with wood studs, take them to the *Wood Wall* area and stack for banding.
- ❑ Remove any pipe and connectors from the slab sections.
- ❑ Take the both slab sections to the *Slab* area and stack for banding.

Phase Three

- ❑ Teams that have completed previous tasks can remove the house wrap floor covering and discard in trash receptacle
- ❑ Sweep up all debris and place in trash bins
- ❑ Help other teams as needed
- ❑ Skid loader will then pick up the debris.
- ❑ Take tools to the tool area
- ❑ Wait quietly for further directions

Teams that have completed this segment should help the slow teams.

Demolition is complete, wait for instructions on where to go from here.

ajp



CHANGE ORDER FORM

Date: _____

Deletion:

Addition:

Comments:

Signature _____



In the upcoming days of the competition you will receive all the hand and power tools you will need to complete your project. You are responsible for those tools and should treat them with the same care you would afford borrowed from a good friend tools.

You should inventory the tools to ensure all the items on your Tool Checklist are there. If there are missing items, you must inform a Technical Committee member immediately.

Once you have all your tools it is your responsibility to charge all your batteries so the tools are ready to be used the next morning.

At the end of demolition, your tools will be checked as you return them. Failure to return a tool or returning a tool in a poor condition may impact your score.

If at any point during the competition you have a problem with a hand or power tool, please talk with a Technical Committee member so your problem can be addressed.

Remember, job site safety includes tool safety. Use your tools only for their intended use so you do not hurt yourself, others around you or damage the tool. Always use your eye protection and maintain a clean work area.

Best of luck in the competition

TeamWorks Technical Committee

ITMES TO BE RETURNED				
Quantity per Team	Quantity Received	Quantity Returned	Item #	Description
1			15-106	Coping Saw
1			16-300	3pc Stanley Chisel Set
				1/2" Chisel (16-308)
				3/4" Chisel (16-312)
2				1" Chisel (16-316)
			58-930	3pc Cushion Grip Nail Set
				1/32 Nail Set (58-911)
				2/32 Nail Set (58-912)
				3/32 Nail Set (58-913)
2			55-099	FatMax Xtreme FuBar
1			55-515	Wonder Bar Pry Bar
1			55-035	Nail Puller
1			16-328	FatMax Brick Set
1			16-334	FatMax Mason's Chisel
1			20-046	FatMax 15" Saw with Blade Armor
1			20-531	FatMax High Tension Hacksaw
1			20-556	FatMax Drywall Saw
1			42-345	24" FatMax Brassbound Level
1			42-350	48" FatMax Brassbound Level
1			43-649	48" FatMax Extreme Magnetic Box Beam Level
1			45-011	Premium Aluminum Rafter Square
2			43-512	Lighted Magnetic Torpedo Level
2			46-053	Premium Adjustable Quick Square
1			46-131	16" Combination Square
1			47-482	2pc FatMax Xtreme Chalk Set
				Chalk Reel (47-480)
				4oz Bottle Blue Chalk
4			10-815	FatMax Xtreme Retractable Utility Knife

<i>ITMES TO BE RETURNED</i>				
Quantity per Team	Quantity Received	Quantity Returned	Item #	Description
2			14-563	Straight Cut Aviation Snips
1			15-614	Bi-Metal Hacksaw Blades (10 per card)
2			51-167	FatMax Xtreme AntiVibe Framing Hammer
4			51-165	FatMax Xtreme AntiVibe Nailing Hammer
2			66-565	6pc Vinyl Grip Screwdriver Set
				1/4" x 1/4" Standard
				3/16" x 6" Cabinet
				3/16" x 3" Cabinet
				5/16" x 6" Standard
				1pt x 3" Phillips
				2pt x 4" Phillips
2			89-858	MaxSteel Diagonal Cutting Pliers
2			89-863	MaxSteel Lineman Pliers
2			89-870	MaxSteel Long Nose Pliers with Cutter
2			84-199	Wire Stripper
2			85-610	MaxGrip Locking Adjustable Wrench
2			84-816	MaxSteel C Clamp Locking Pliers
1			84-024	Bi-Material Groove Joint Pliers
1			37001	50 Gallon Mobile Tool Chest
1			60601	Set of Sawhorses
1				Masonry Utility Brush
4				Adjustable Line Stretchers
2				10" Narrow London Brick Trowel
1				Convex Jointer
1				Convex Sliderunner
1				Modular Spacing Rule
4				Wood Block Line Pair
1				18oz Brick Hammer
1				Mortar Stands

<i>ITMES TO BE RETURNED</i>				
Quantity per Team	Quantity Received	Quantity Returned	Item #	Description
1				Canvas Tool Bag

<i>ITMES TO BE RETURNED</i>				
Quantity per Team	Quantity Received	Quantity Returned	Item #	Description
1			3912	12" Compound Miter Saw
1			17618B	18V Brute Tough™ ½" Hammer Drill/Driver
1			25618B	18V Impactor™ Impact Driver
1			CRS180B	18V Reciprocating Saw
1			36618B	18V Compact Tough™ Drill/Driver
1			PS30-2A	12V Max 3/8" Drill Driver
1			CS10	15A Circular Saw
1			1380SLIM	7.5A Small Angle Grinder
4			BAT618	18V Fat-Pack Battery
1			BC630	18V Battery Charger
2			2610944955	Jobsite Carry Bag
1			DR01-1100	Rotozip Tool

ITEMS STUDENTS MAY KEEP

Quantity per Team	Quantity Received	Quantity Returned	Item #	Description
1			CC2480	12 Pc Screwdriver Bit Set
1			HB25M	25 Pc Bi-Metal Hole Saw Kit
1			DSB5005	6 Pc Spade Bit Set w/Extension
1			PCM12	7/16" Mandrel for Hole Saws
1			HCBG21	5/8" Dia. X 12" Length Blue Granit™ Hammer Drill Bit
1			RDN9V-25B	Demolition For Wood/Nails Reciprocation Blade
1			CB724AB25	7 ¼" Circular Saw Blade
1			XB-DW10	Drywall X-Bit
1			XB-MPGP2	Multi Purpose X-Bit
1			TDSL681012	Slotted 6-8, 8-10, 10-12 2" Titanium Bit Set
1			TDP123203	Phillips #P1, #P2, #P3 Titanium Bit Set
1			CC90396	6 Pc Torx Bit Set
1			TI18	18 Pc Titanium Drill Bit Set
1			NKLT10	5/8" Nailkiller™ Auger Bit
4			33-890	25' FatMax Xtreme Tape