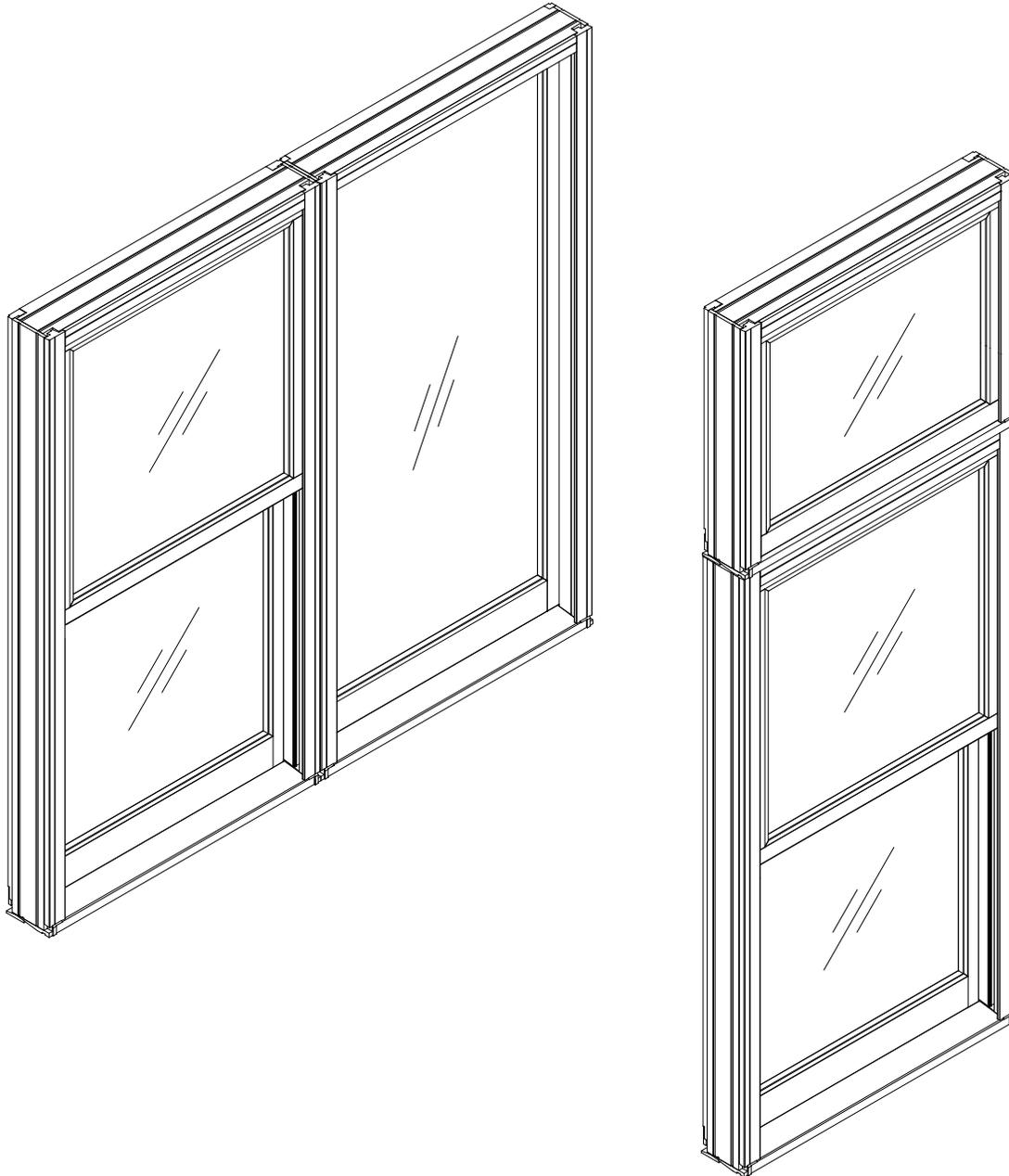


Ultimate Wood Double Hung

Mulling Instructions



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Before You Begin

All wood units should be ordered with casing shipped loose or will need exterior casing removed prior to attempting the following field mulling procedures.



Marvin treats exposed millwork on windows and doors with a water repellent wood preservative. If any portion of the millwork is cut off or otherwise disturbed, untreated wood will be exposed to the elements and may deteriorate. Untreated wood must be protected by a water repellent wood preservative which contains at least 0.5% IPBC. Apply as recommended by the treatment manufacturer. Failure to retreat properly or adequately voids warranty.

VERTICAL MULLING

NOTE: Numbers listed in parentheses () are metric equivalents in millimeters rounded to the nearest whole number.

ATTENTION: The following instructions detail mulling two Wood Ultimate Double Hung units with a vertical mull (side by side). More complex or multiple wide/multiple high configurations may require additional steps not covered here. Consult your Marvin representative for more information prior to attempting to mull units in these configurations.

YOU WILL NEED TO SUPPLY

Safety glasses
Clamps
Tape measure
Power miter saw or miter saw
5/8" x 1/2" crown staples with gun

Hammer
1 1/4" finishing nails

STANDARD PARTS NEEDED

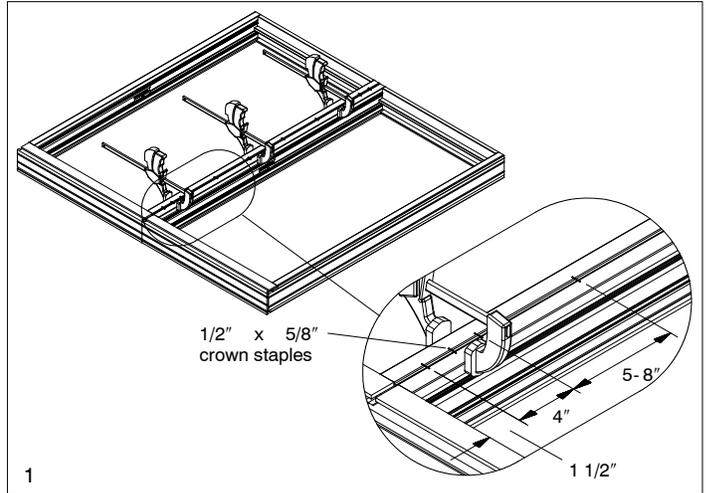
ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	Vertical mullion casing	W1032
	Mull trim	W1065
	Subsill (optional)	W2134

Vertical Mulling Procedures

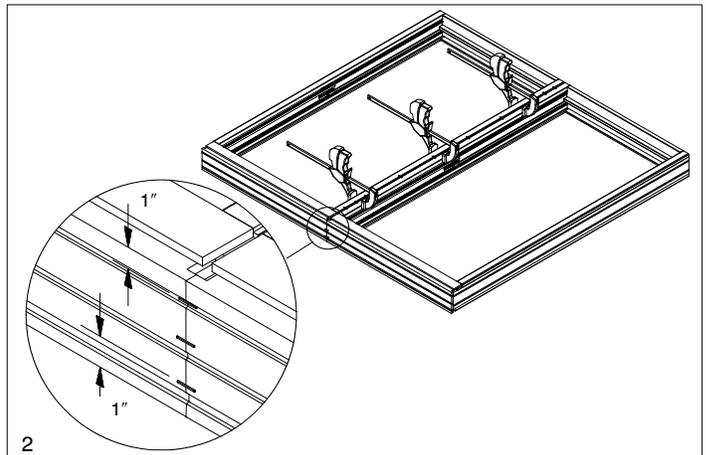
1. Remove sash and any shipping material including corner braces. Remove any staples or nails from the frame that will interfere with the mulling and/or installation of assembly. Lay frames to be mull on a flat sturdy surface in the desired mulling configuration, interior side up.

2. Lightly clamp units on the interior with the jamb liners even and frames flush at the sill. See illustration 1. Mull the interior jambs with 1/2" x 5/8" crown staples. Insert three staples at each end of the mull joint, 1" (25) apart and 1 1/2" (38) from the edge of the unit. For the balance of the mull insert staples every 5" - 8" (127- 203). See illustration 1.

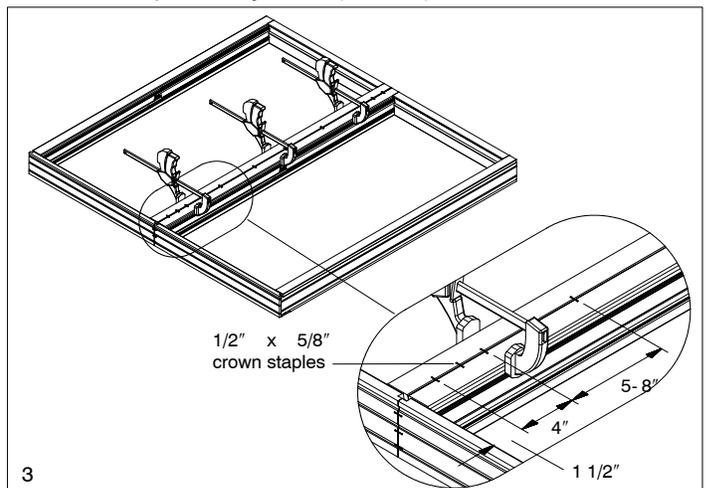
NOTE: There will be a 1/32" gap at the top of the jamb liner.



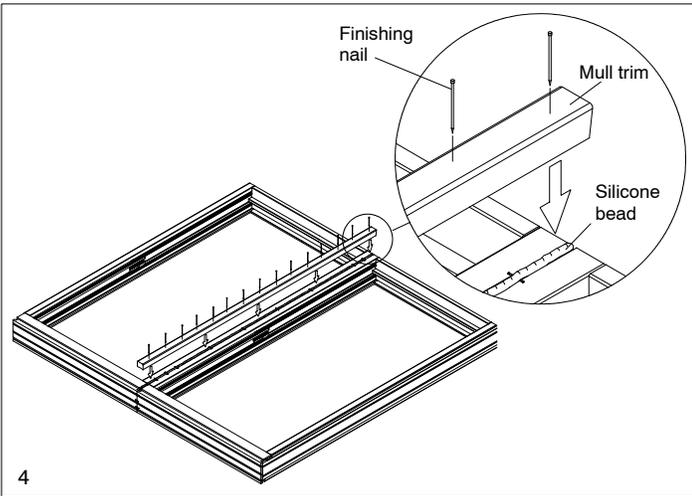
3. Mull both sill and header mull joints with 1/2" x 5/8" crown staples placed in the center and two more staples placed 1" (25) in from the exterior of the frame. See illustration 2.



4. Carefully turn assembly over (exterior side up). Lightly clamp units and mull exterior with 1/2" x 5/8" crown staples. Insert three staples at each end of the mull joint, 1" (25) apart and 1 1/2" (38) from the edge of the unit. For the balance of the mull insert staples every 5" - 8" (127- 203). See illustration 3.



5. Draw a bead of caulk down the length of the sill and apply subsill.
6. Apply a 1/4" bead of silicone down the mull joint. Measure and cut the exterior mull trim flush with the exterior casing groove located on the header blind stop and flush with the sill. Apply the exterior mull trim over the silicone bead centered on the mull joint. Fasten exterior mull trim using 1"x 1/4" finishing nails staggered along the mull joint. See illustration 4.



7. Apply exterior casing lined up on the casing groove on the exterior blind stops and secure into place with finishing nails taking care not to nail into the vinyl jamb carrier.
8. If applicable, jamb extension can now be applied. Follow installation instructions provided for installing unit in rough or masonry opening. Interior mull trim should be applied after unit is completely installed and interior casing has been applied.

HORIZONTAL MULLING

YOU WILL NEED TO SUPPLY

Safety glasses
Clamps
Tape measure
Power miter saw or miter saw
5/8" x 1/2" crown staples

Hammer
1 1/4" finishing nails

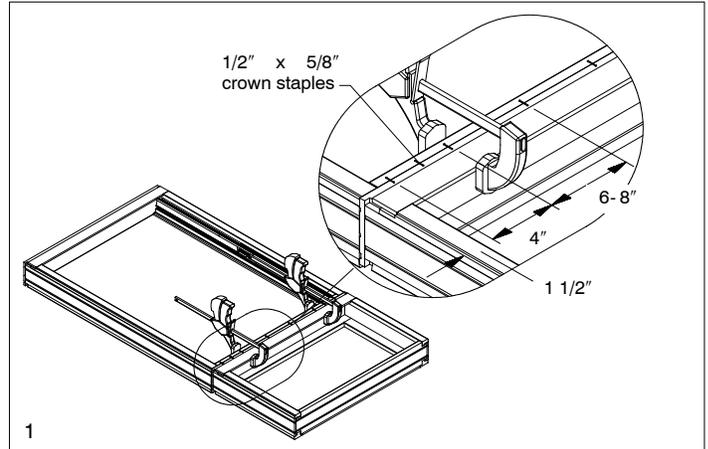
STANDARD PARTS NEEDED

ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	Exterior horizontal mull trim	W1094
	Interior mull trim	W1243

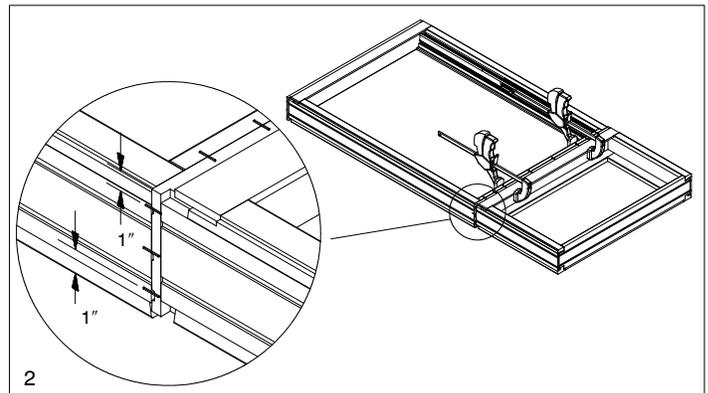
Horizontal Mulling Procedures

ATTENTION: The following instructions detail mulling a Wood Ultimate Double Hung Transom above an operator unit (horizontal mull). Consult your Marvin representative prior to attempting to mull multiple wide or multiple high configurations. These configurations may require additional steps not covered in these instructions.

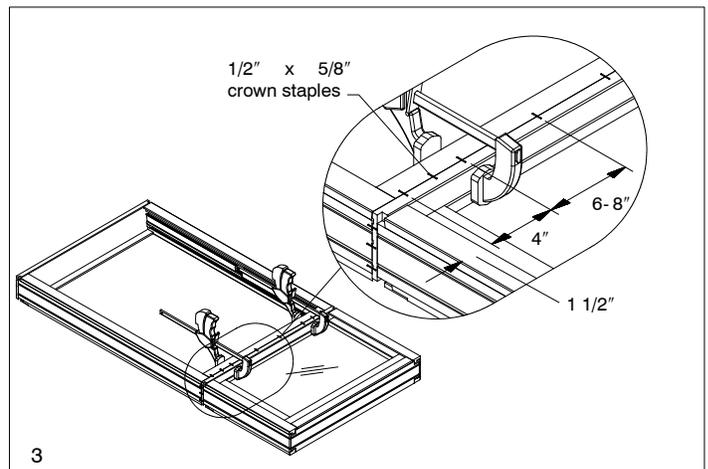
1. If applicable, remove sash and packaging material. Remove any staples, corner braces or nails from the frame that may interfere with the mulling and/or installation of assembly.
2. Lay frames to be mullled on a flat sturdy surface in the desired mulling configuration, interior side up. Lightly clamp units together on interior so that transom sill and operator head jamb are flush on the interior and even at the ends. Mull units together with 1/2" x 5/8" crown staples. Insert three staples at each end of the mull joint, 1" (25) apart and 1 1/2" (38) from the edge of the unit. For the balance of the mull insert staples every 6" - 8" (152-203). See illustration 1.



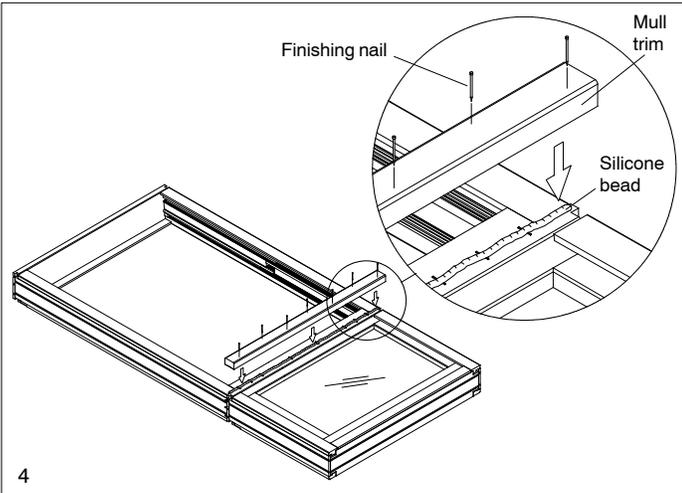
3. Mull both sill and header mull joints with one 1/2" x 5/8" crown staple placed in the center and two more staples placed 1" in from the exterior of the frame. See illustration 2.



4. Carefully turn assembly over (exterior side up). Lightly clamp units and mull units together with 1/2" x 5/8" crown staples. Insert three staples at each end of the mull joint, 1" (25) apart and 1 1/2" (38) from the edge of the unit. For the balance of the mull, insert staples every 6" - 8" (152-203). See illustration 3.



- Apply a 1/4" bead of silicone down the mull joint. Measure and cut the horizontal mull trim flush with the exterior casing groove located on the blind stops at each end of the mull joint. Apply the exterior mull trim over the silicone bead centered on the mull joint and fasten trim using 1 1/4" finishing nails. See illustration 4.



4

- Apply exterior casing flush with the casing groove on the blind stops.
- If applicable, jamb extension can now be applied. Follow installation instructions provided for installing unit in rough or masonry opening. Interior mull trim should be applied after unit is completely installed and interior casing is applied.

ROUND TOP MULLING

ATTENTION: The following instructions detail mulling a Wood Ultimate Double Hung Round Top above an operator unit (horizontal mull). More complex or multiple wide/multiple high configurations may require additional steps not covered here. Consult your Marvin representative for more information prior to attempting to mull units in these configurations.

YOU WILL NEED TO SUPPLY

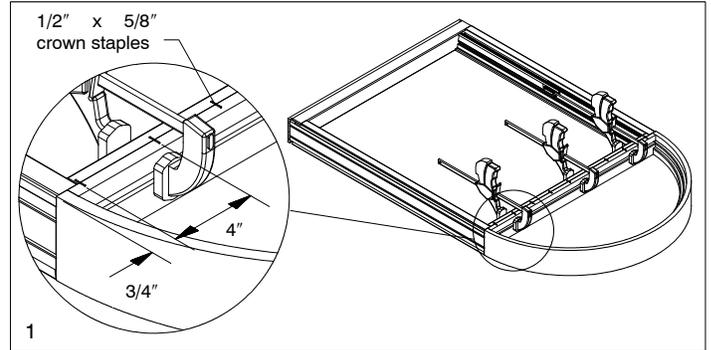
- Safety glasses
- Clamps
- Tape measure
- Power miter saw or miter saw
- 5/8" x 1/2" crown staples
- 1/2" x 1/2" crown staples
- Hammer
- 1 1/4" finishing nails

STANDARD PARTS NEEDED

ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	Exterior horizontal mull trim	W1094
	Interior mull trim	W1065

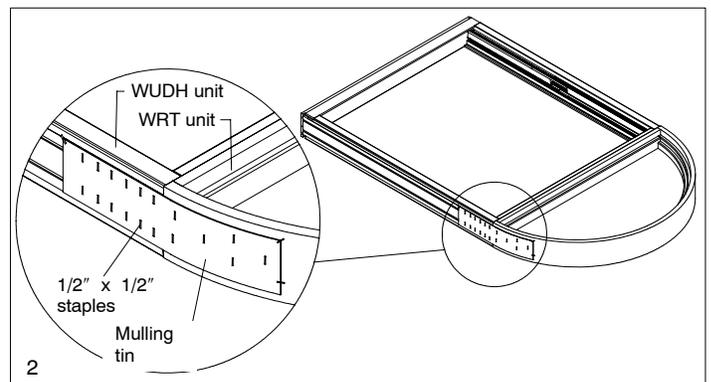
Round Top Mulling Procedures

- If applicable, remove sash and any shipping material including corner braces. Remove any staples or nails from the frame that will interfere with the mulling and/or installation of assembly.
- Lay frames to be mull on a flat sturdy surface in the desired mulling configuration, interior side up. Lightly clamp units together on interior so that Round Top sill and operator head jamb are flush on the interior and even at the ends. See illustration 1. Lightly clamp units together on the interior and fasten lower unit to Round Top sill with 5/8" x 1/2" staples 3/4" (19) from each end and every 4" (102) between. See illustration 1.



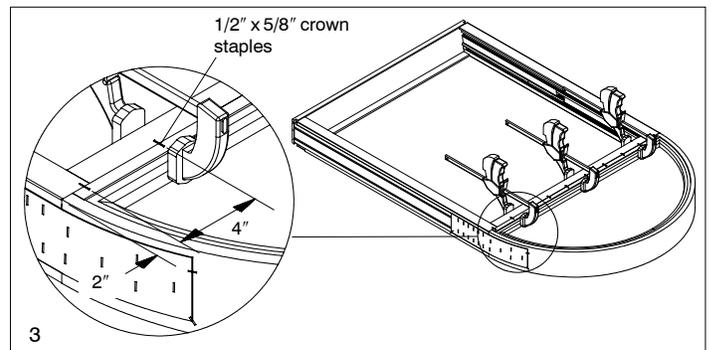
1

- Center mulling tin over mullion 3/8" (10) from interior and fasten to RT unit and wood jamb of WUDH unit with 1/2" x 1/2" staples following the pattern shown in illustration 2.



2

- Carefully turn assembly over (exterior side up). Lightly clamp units and mull exterior with 1/2" x 5/8" crown staples 2" (51) from each end and spaced every 3-5" (76-127). See illustration 3.



3

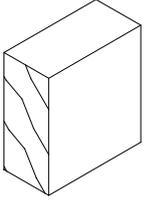
- Apply exterior casing flush with the casing groove on the blind stops.
- If applicable, jamb extension can now be applied. Follow installation instructions provided for installing unit in rough or masonry opening. Interior mull trim should be applied after unit is completely installed and interior casing has been applied.

SPACE MULLS

YOU WILL NEED TO SUPPLY

Safety glasses	Hammer
Clamps	1 1/4 finishing nails
Tape measure	Power miter saw or wood saw
1/2 x 5/8 crown staples with gun	

STANDARD PARTS NEEDED

ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	Wood blocking 72" (1829)	
	W6016 (3/8")	32249310
	W6128 (1")	32249312
	W6271 (2")	32249314
	W6304 (3")	32249316
	W6466 (4")	32249318

Frame Preparation

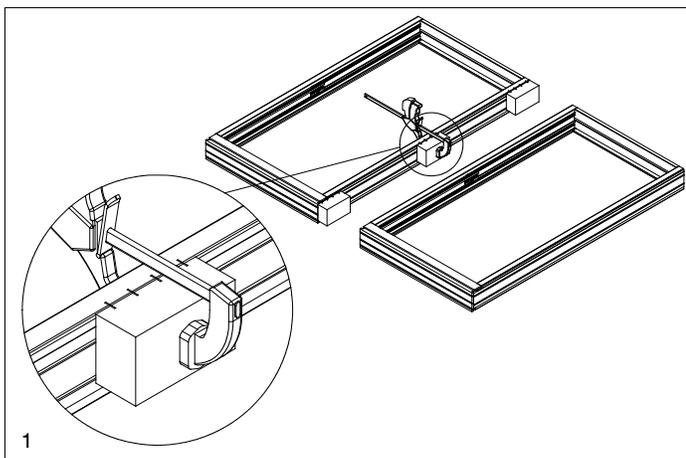
NOTE: For ease in mulling units, remove operating sash prior to attempting the following procedures.

ATTENTION: The following instructions detail space mulling two Wood Ultimate Double Hung frames either horizontally or vertically. More complex or multiple wide/multiple high configurations may require additional steps not covered here. Consult your Marvin representative for more information prior to attempting to mull units in these configurations.

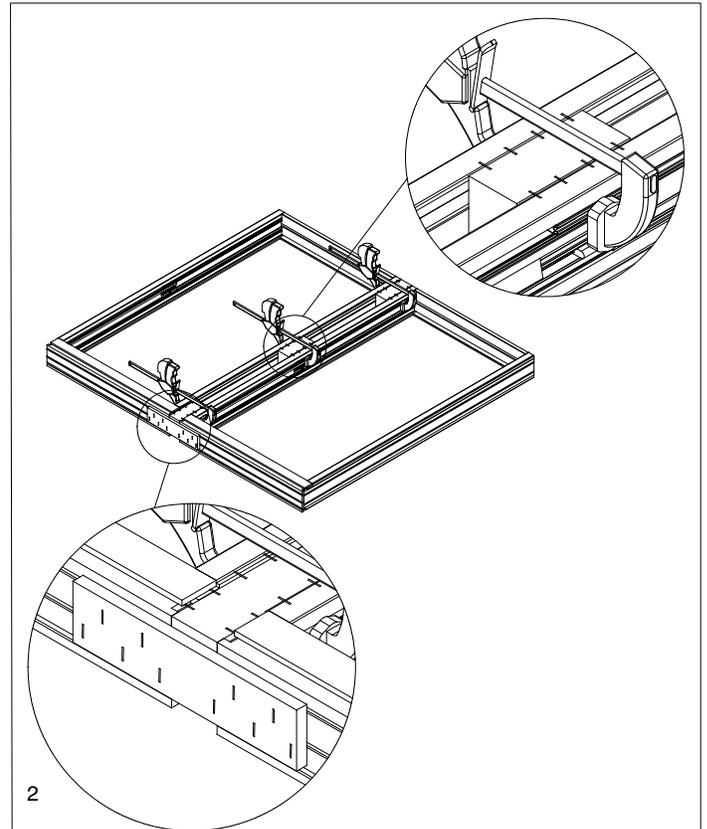
1. Cut wood blocking into 7" (178) lengths. A minimum of two blocks per mull is necessary, 3 blocks will be needed for mull lengths of 48" (1219) or greater.

NOTE: For a 3/8" space mull, wood blocking must be cut to fit the full length or width of the mull.

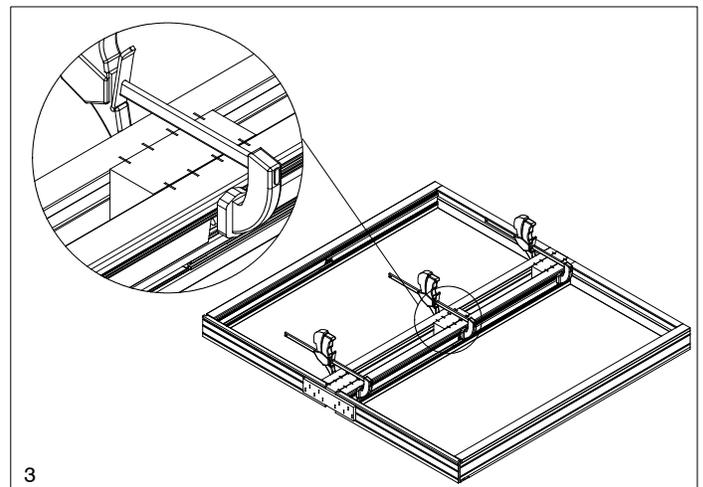
2. When mulling multiple assemblies with both direct mulls and space mulls (eg. 2W2H configuration w/vertical space mull), mull all direct mulls first.
3. Remove sash and any shipping material including corner braces. Remove any staples or nails from the frame that will interfere with the mulling and/or installation of assembly. Lay frames to be mull on a flat sturdy surface in the desired mulling configuration, interior side up.
4. Install blocking to both ends and one at the middle of the frame on mull lengths over 48". Clamp space mull blocking to interior jambs on one frame or sill of transom on horizontal mulls. Make sure blocking is flush with ends of exterior frame and interior surfaces. Fasten with 5/8" x 1/2" staples spaced every 1" apart. See illustration 1.



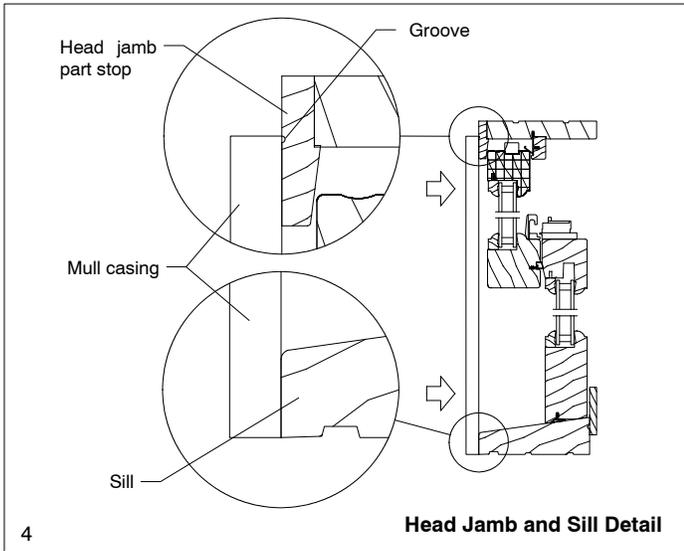
5. Clamp frames together making sure interior surfaces and head jamb or jambs are flush. Fasten in the same manner as before. Attach blocking to head jamb, sill and jambs with 5/8" x 1/2" staples. See illustration 2. Attach temporary bracing to frames across the end of the mull joint to avoid possible damage to frames while moving assembly. See illustration 2.



6. Carefully turn assembly over so the exterior is facing up.
7. Attach blocking to exterior jambs with 5/8" x 1/2" staples spaced 1" apart. See illustration 3.



8. Measure and cut the exterior space mull casing to fit between the exterior casing groove located on the header blind stop and flush with the sill. See illustration 4.



9. Apply sub-sill and exterior casing lined up on the casing groove on the exterior blind stops and secure into place with finishing nails taking care not to nail into the vinyl jamb carrier.
10. If applicable, jamb extension can now be applied. Follow installation instructions provided for installing unit in rough or masonry opening. Interior mull trim should be applied after unit is completely installed and interior casing has been applied.

3/8" STRUCTURAL MULL REINFORCEMENT

ATTENTION: The following instructions detail mulling two Wood Ultimate Double Hung frames either horizontally or vertically utilizing mull reinforcement. More complex or multiple wide/multiple high configurations may require additional steps not covered here. Consult your Marvin representative for more information prior to attempting to mull units in these configurations.

YOU WILL NEED TO SUPPLY

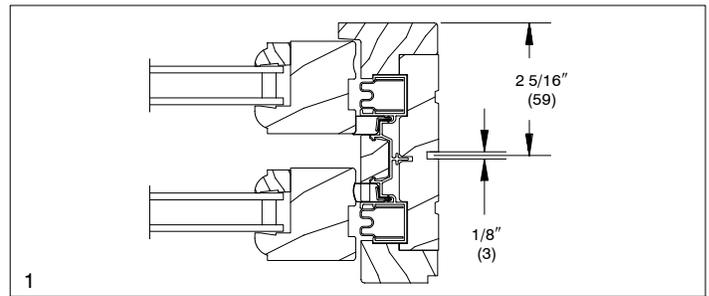
- | | |
|---|------------------------|
| Safety glasses | Hammer |
| Clamps | 1 1/4" finishing nails |
| Tape measure | Power miter saw |
| Grade NS Class 25 sealant per ASTM C920 | |

Wood Mull Reinforcement Kit 150 (3810) Part Number 11873100 Standard Parts Included with Kit

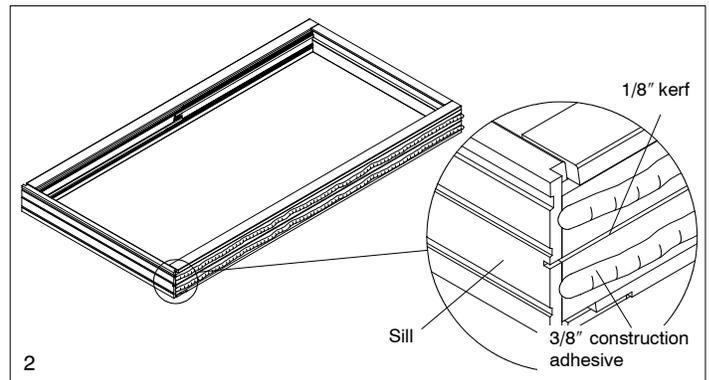
ILLUSTRATIONS (not to scale)	DESCRIPTION AND COLOR	PART/PROFILE NUMBER
	A302 Mull reinforcement steel - mill finish (RH) 150" (3810)	16075000
	A303 Mull reinforcement steel - white (LH) 150" (3810)	16074000
	W1242 Mull trim 150" (3810)	32249198
	2 pkgs. of 32- #7x5/8" Phillips self tapping flat head wood screws	11873002
	1 pkg. of 16- #7x 1/2" Phillips pan head screws	11873000
	1 pkg. of 4- #8x5/8" Phillips pan head wood screws	11873010

Frame Preparation and Assembly

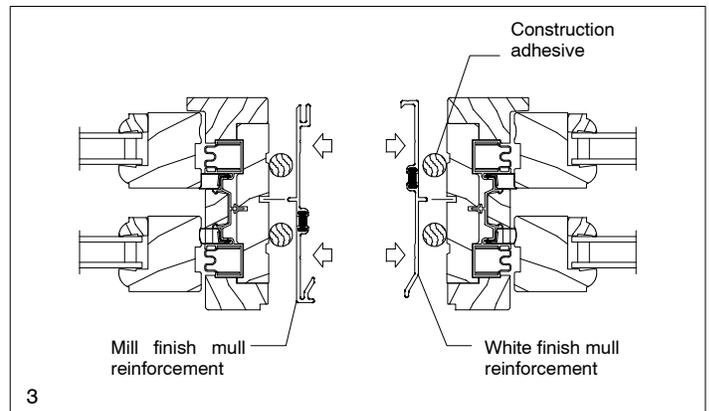
1. Remove sash and any shipping material including corner braces. Remove any staples or nails from the frame that will interfere with the mulling and/or installation of assembly. Lay frames to be mull on a flat sturdy surface in the desired mulling configuration, interior side up.
2. Saw an accessory kerf into the wood portion of the jambs, head jambs or sills. Measure and mark a line 3 3/16" (76) from exterior on all unit frame members that will receive structural reinforcement. Set circular saw depth to no more than 3/16" deep and carefully cut a 1/8" (3) kerf on line. See illustration 1.



3. Mull any partial assemblies that will not take structural mull reinforcement. Follow procedures for vertical or horizontal mulling configurations found earlier in this instruction.
4. Measure length of the structural mull and cut steel mull reinforcement to measured length using a power miter saw.
5. Apply a 3/8" (10) continuous bead of construction adhesive on both sides of accessory groove cut earlier. See illustration 2.



6. Place the white finish mull reinforcement on the left hand jamb or sill of transom unit. Place the mill finish mull reinforcement on the right hand jamb or head jamb of lower unit. Set the reinforcement components into the groove on frame. The mill finish reinforcement will have a "Y" shaped channel toward the exterior. Install the white reinforcement with the flat side to exterior. See illustration 3.



7. Press the mull reinforcement components into place and pull away to flash the adhesive. Place components into place once again and fasten to frame with #7 x 5/8" wood screws using the pre-drilled screw holes provided.
8. Repeat procedures to install additional reinforcements for all frames in mull assembly.
9. Apply exterior casing sill first, verticals second and then the top casing.
10. After the unit has been installed and interior casing applied, install the interior trim cover.