RAINIER SHADE

Retractable Awning Systems

Installation Instructions

rev.9 - June 2018

RAINIER LATERAL ARM AWNING
INSTALLATION GUIDE

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BEFORE YOU START

1. Please read these instructions – different mounting applications will require additional tools and materials.
2. Check the complete contents of the awning box for all required parts.
3. Measure the awning width and compare it to your mounting area. Look for any obstructions.
4. Check to see that you have all the required tools to perform the installation.
5. An assistant will be helpful to install the unit into the brackets due to the awning weight.
6. Allow approximately 2 hours for complete installation.
7. Be patient and take your time when installing the mounting brackets. A good, solid, level mounting; is key to a successful installation.

LIST OF RECOMMENDED TOOLS

- 3/8" electric reversible drill (hammer drill is suggested if mounting into brick, masonry, or concrete)
- 10 & 13mm sockets, 7/16" socket, and a 3/8" ratchet with 3/8" extension
- 10, 13 & 17mm open end/box wrench
- Metric Allen wrench set and 6mm T-handle Allen wrench.
- 1/8", 1/4", 5/8" drill bits (1/8" probing bit should be 8-10" long, 5/8" masonry bit if mounting into brick or masonry)
- One 6" level and one larger level
- 30' tape measure
- Rubber mallet
- Chalk line
- Safety glasses
- 2 ladders – 8' tall minimum
- Impact drill (assists when inserting lags)

If the awning is being roof mounted, additional tools and material are needed. Please see "Fastening to the Roof" section for this information on page 8.

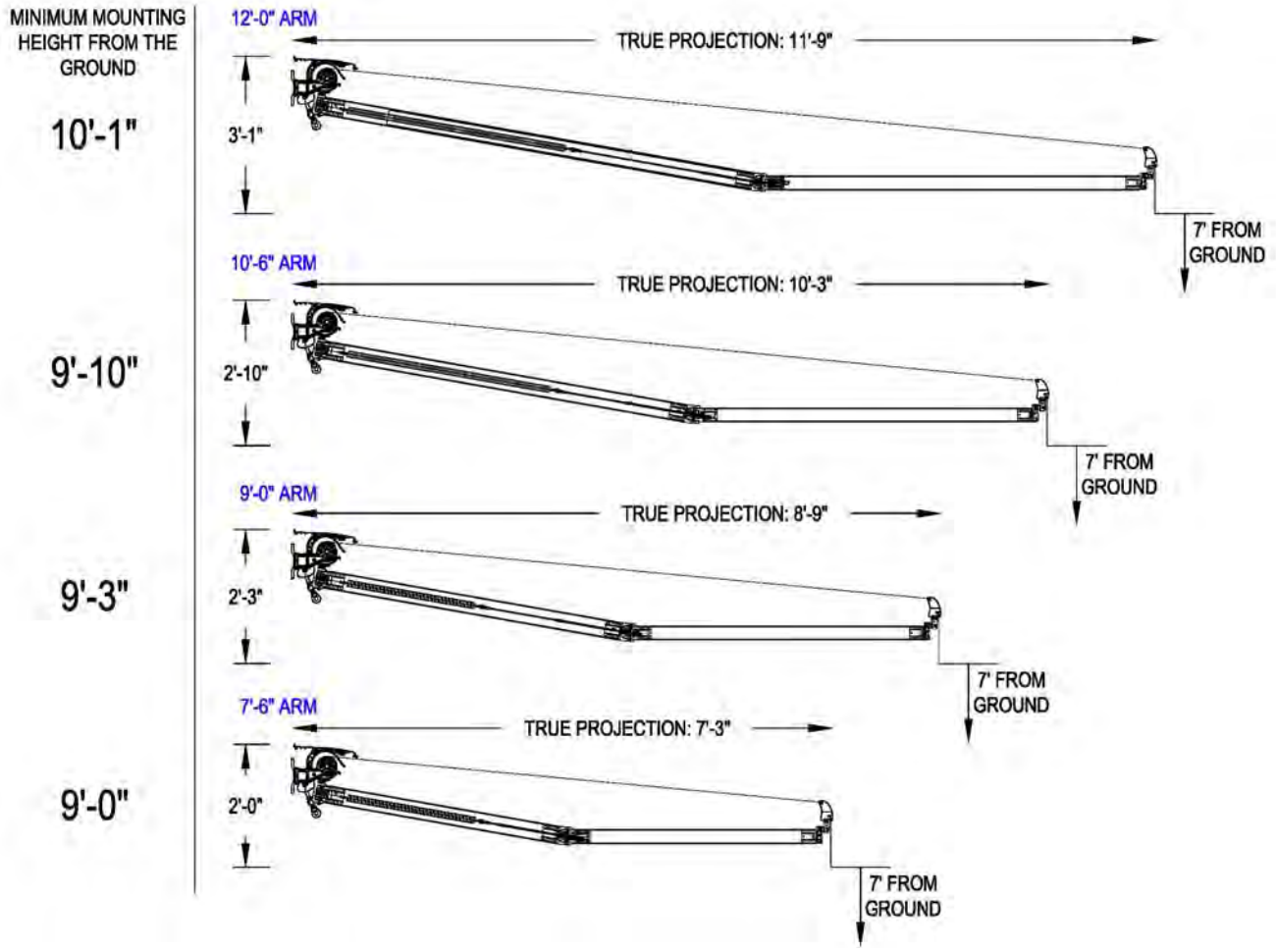
If there are any questions or concerns about your awning install, please call our Rainier Shade Technical Support at 1-855-212-6851.

DETERMINE THE MOUNTING HEIGHT

True Projection: *The distance from the mounting wall to the front bar, based on a standard 15° pitch. This distance may vary in the field; depending on how the pitch is set.*

Minimum Mounting Height: *Rainier's recommendation for mounting height. Customer requirements or site conditions will determine the final* height. Distance shown is from grade to the top of the hood.

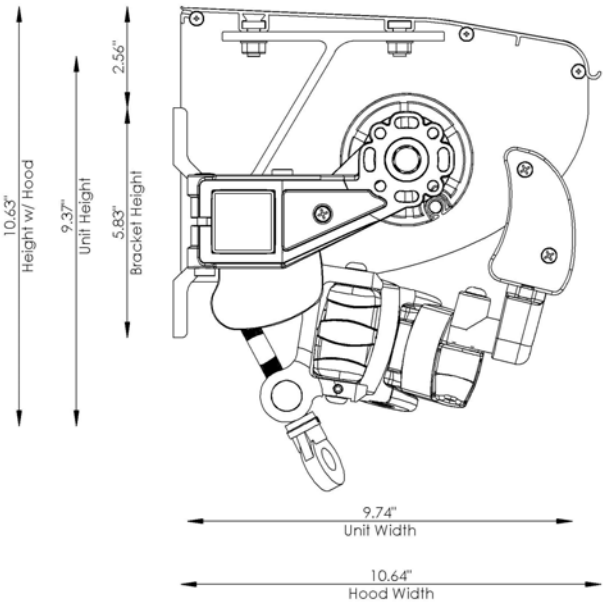
7'-0" From Ground: *The distance from grade to the bottom of a standard valance.*

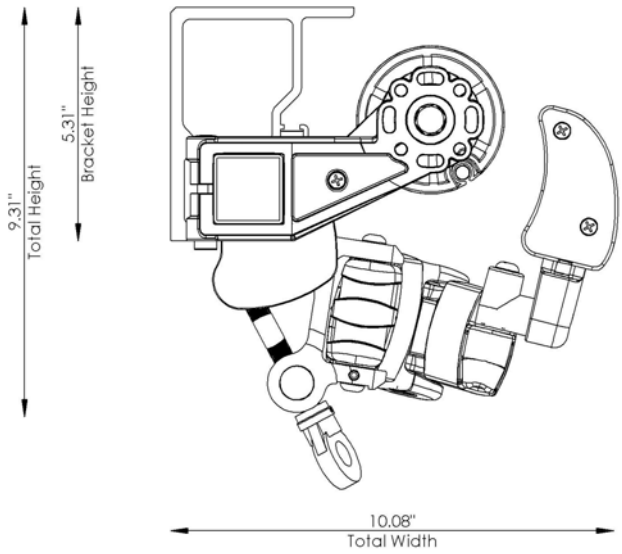


Rainier awnings are assembled with a 15-degree pitch at the factory. This is the minimum pitch the awning should be set at to prevent rain from pooling rain water. Other factors may impact the awnings ability to shed water. If the intent of the awning is to be left out, unattended during periods of rain, the installer should set the pitch steeper as appropriate. If you REDUCE THE PITCH LESS THAN 15°, YOU MAY VOID THE WARRANTY as it provides an opportunity for the cover to pool water and possibly cause arm failure. The heights shown are based on a full extended unit with a standard pitch of 15°, a standard 8" valance, and a 7'-0" clearance from grade (at the valance).

For cross-arm units, an additional 4" must be added to the minimum mounting heights.

DETERMINE WHICH MOUNTING BRACKETS TO USE



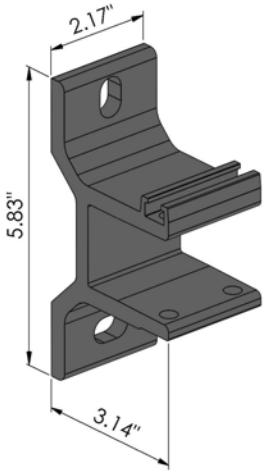


There are two primary styles of installation brackets.

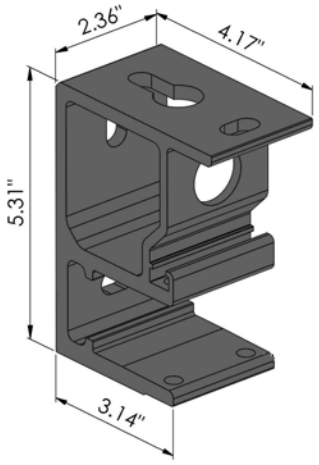
1. The "**wall bracket**" is designed for to a vertical surface, such as a wall.
2. The "**soffit brackets**" is designed primarily to mount to the underside of a soffit but can also be mounted to vertical surfaces.

Awnings that will mount to roofs will use Rainier roof-mount brackets with wall brackets. Roof mounting is very common on single story homes or where adequate mounting height cannot be obtained when mounting to a wall or soffit.

You will need to specify which type of mounting brackets to use prior to ordering your Rainier awning. Specify the appropriate brackets when you order the awning.



Wall Bracket



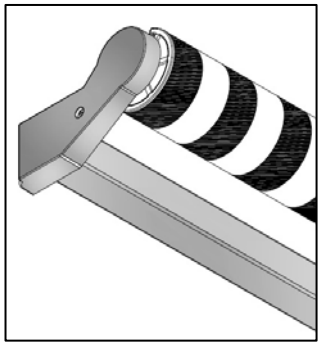
Soffit Bracket

DETERMINE BRACKET LOCATION

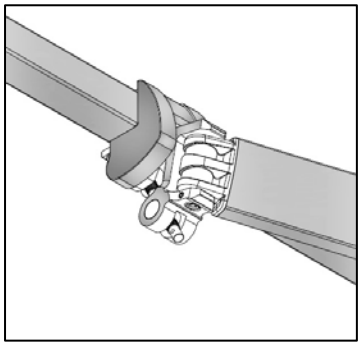
Inspect the torsion tube (square tube). The torsion tube is the back-bone of the awning. The roller tube, arms and hood will all be mounted to the torsion tube. Note the position of this hardware so you can determine were to position the mounting brackets on the wall, soffit, or roof. Avoid mounting the brackets where they will conflict with the position of end brackets and arms. These areas are considered “dead mounting areas” and should be noted on the wall as areas where a bracket CANNOT be mounted.

Place a bracket no less than 5” and no greater than 18” from the arm attachment point on either side of the unit.

Determine the exact location height of the mounting brackets and mark the wall using a level and chalk line. Evenly space any remaining brackets along the torsion bar. The unit width and projection will determine the number of brackets. The ideal installation is to “bracket” each arm (a bracket on each side of the arm), which offers excellent unit stability. This is dependent on arm placement on the torsion bar and not all units can be mounted in this way. Check the arm placement on your unit to see if this option is available to you. In some cases it may be necessary to re-locate the position of the arm on the torsion tube (and front bar). If necessary it is suggested the movement be limited and each arm be moved to maintain symmetry.



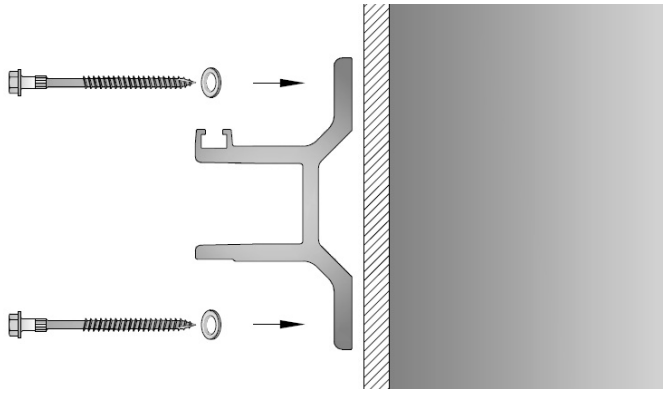
End Bracket



Arm Bracket

INSTALL MOUNTING BRACKETS

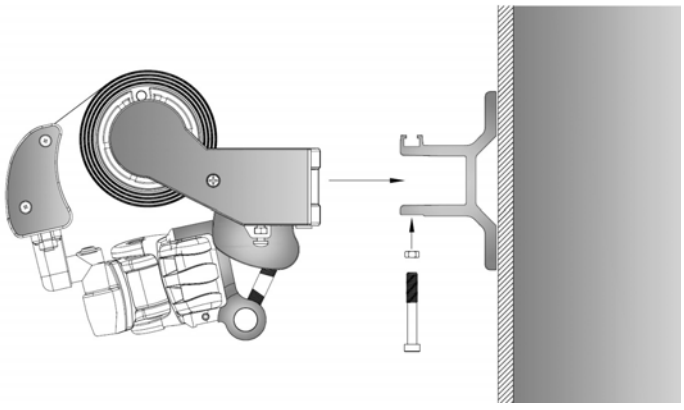
Remove the two bolts & nuts from each mounting bracket with a 6mm Allen wrench. Mark the top and bottom holes of the install bracket. Attach the bracket to the wall. Do not fully tighten the lower screw; this will allow for an easier install of the torsion bar into the brackets.



MOUNT AWNING TO BRACKETS

Remove the plastic wrap from the awning without cutting the fabric. Correctly orientate the awning; fabric roll on top, arms on the bottom. Lift the unit into the mounting brackets. Once the unit is properly positioned from right to left, and placed fully into the brackets, reinstall the 6mm socket head bolts & nuts into all mounting brackets and fully tighten so that no rocking of the torsion bar occurs.

Fully tighten all mounting hardware. Caulk the entire perimeter of each mounting bracket and over the heads of all mounting hardware.



SPECIAL NOTES FOR SOFFIT INSTALLATION

When establishing the final position of the awning, confirm that nothing will swing out and hit the awning: top of a door, windows, etc. You will need a minimum of 9¼" from the bottom of the soffit to clear the awning's frame hardware, and 13½" total from the bottom of the soffit to clear the standard 8" valance when the unit is retracted.

If possible, open the soffit area to determine if adequate mounting structure is available. If the tail ends of the roof rafters are near your mounting area, you may want to run a header board across the rafter ends then mount the unit to the header board. If a header board is utilized, make sure it is level. Lags should penetrate into the rafter at least 3".

With the header board built out even to the bottom of the soffit, reinstall your soffit covering and install your mounting brackets through the covering and into the header board. If header board is not used, make sure the unit will clear the soffit lip when you go to place the unit into the brackets.

SPECIAL NOTES FOR BRICK OR MASONRY INSTALLATION

Brick walls are typically a veneer and not considered structural. Installers are cautioned to confirm the suitability of any brick wall before using it as the sole support for a lateral arm awning.

- Do not drill into mortar. Center bracket holes on the brick as best as possible.
- Do not fasten into the top two levels of brick.
- Consider an epoxy fastening approach such as Hilti's HIT System™ which gives a far superior mounting to brick or masonry.
- If hanging the unit on brick veneer, you should consider drilling completely through the brick and attaching the unit to the existing wall studs or floor joist located behind the veneer. If there is an air space behind the brick or veneer, you will need to put support in the hole to the mounting surface behind the brick to support the bracket to avoid pulling the brick into the air gap and to achieve maximum strength from the structure behind the brick to the surface of the brick.
- If the wall is an uneven surface, you will need a 2" x 8" (minimum) header board (see note below).

SPECIAL NOTES FOR VINYL AND ALUMINUM SIDING INSTALLATION

There are two generally acceptable ways to mount to vinyl and aluminum siding...

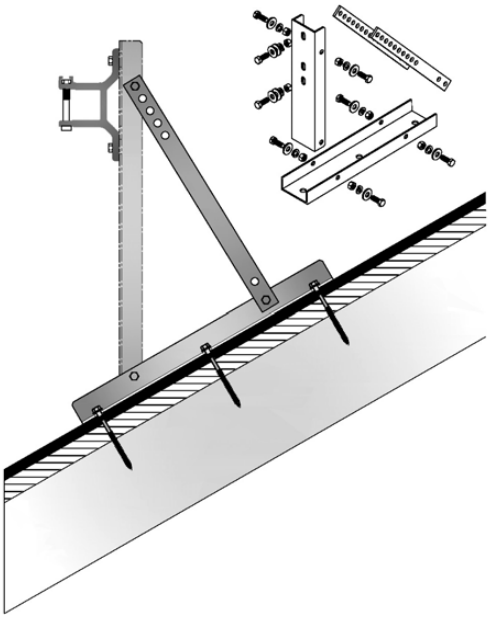
Use a Header Board

1. Purchase a pressure treated 2”x8” plank equal to the width of the awning (to be used as a header board) and (2) 2½”-long x 1/2”-diameter carriage bolts (with nuts and washers) for each mounting bracket.
2. Determine mounting bracket height and location as explained in STEP #1 (Installing Mounting Bracket). Cut and remove the siding and, if present, all foam board located where the header board will mount. You goal is to get down to the plywood (sheathing).
3. Locate the supporting framework in the wall and mark the header board where the mounting hardware will be located.
4. Determine the installation bracket placement on the header board as explained in STEP #2 (Mounting Bracket Location) and mount the installation brackets to the header board using the 2½”-long by ½”-diameter carriage bolts. Insert the carriage bolts through the header board from the backside of the board. Level and tighten all install brackets.
5. Pre-drill through the header board into supporting framework of the structure using a ¼” drill bit. Be sure to reach at least 3” deep and into the center of the studs. Attach header board (with the install brackets securely attached) to wall surface then tightening all lag bolts.
6. Caulk around the entire perimeter of the header board, the install brackets, and all bolt heads.
7. Continue with installation as outlined in STEP #4 (Mounting the Awning into the Brackets).

Use Build-out Blocks

1. Purchase a pressure treated 2”x8” plank as stock to cut your build-out blocks from. Some dealers choose to prepare blocks ahead of time and have a supply readily available for use during the busy season. This saves precious time at the job site during your install.
2. Determine mounting bracket height and location as explained in STEPS #1 & #2 (Mounting Bracket Installation & Mounting Bracket Location). Locate and mark supporting framework behind where the build-out blocks will be located. Cut and remove the siding and, if present, all foam board located where the build-out blocks will mount. You goal is to get down to the plywood beneath the siding and foam board.
3. With the build-out block held in place, pre-drill through the block and into the supporting framework of the structure using a ¼” drill bit. Be sure to reach at least 3” deep and into the center of the studs. Attach build-out block and installation bracket to wall surface. Level install bracket then fully and evenly tighten all lag bolts.
4. Caulk around entire perimeter of build-out block, the install brackets, and all bolt heads.
5. Continue with installation as outlined in STEP #4 (Mounting the Awning into the Brackets).

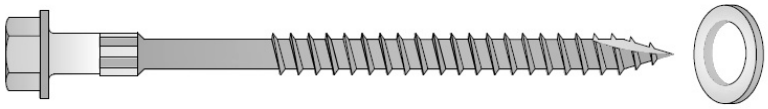
SPECIAL NOTES FOR ROOF MOUNTING APPLICATIONS



Required Tools: Tape measure, rubber mallet**,** drill, 6" level, 1/8" long pilot drill bit, 1/4" drill bit, 9/16" socket, 3/4" wrench, hacksaw or heavy duty pliers, 3/8" lags, and flat washers; length of lags determined by thickness of roofing material. Roof Cement (Black Jack) or 100% Silicone Roofing Cement (average use is ¾ tube per bracket), drill (also impact drill for inserting lags is good), chalk line, marker and blade saw.

1. Mark overall width of awning on roof and locate roof joists (rafters) within this area. If soffit is closed and you cannot easily see rafters, you might have to locate by probing with 1/8" pilot drill bit. Do this carefully by slightly rising shingle edge and drilling to see if you hit the joist. Need to determine where center is once located. If nothing, fill hole with roof cement and continue with process until located.
2. Place the three holed roof mount base, making sure it is straight up and down, approximately 12" back on the roof (often the 2nd or 3rd rung of shingles). Goal here is to have the awning hood about mid way over the roof gutter system if there is one. Mark with chalk line so other brackets will be in line, then pre-drill ¼" pilot holes for 3/8" lags (making sure each time you drill you have solid wood).
3. Fill all holes, and place a bead of Roof Cement or 100% Silicone on the bottom of the bracket across the back, down each side and around the three holes.
4. Lag the three holed roof bottom bracket to the roof rafters making sure bracket is evenly tightened into the roof. This will ensure correct angle of mounting bracket.
5. It is important that lag is in the center of roof rafter and goes in straight, at least 3" deep into the rafter.
6. Assemble roof bracket, making sure the face plate is vertically upright. If a true vertical position cannot be obtained, tip the plate back one hole. **Never position the face plate leaning forward under any circumstance!** The excess length of the support arms may need to trimmed (cut) off after they have been installed.
7. Roof Cement or Silicone all around base of bracket, with exception of very bottom of bracket to allow for drainage/air flow if needed. Make sure to heavily silicone all lag ends as they are inserted.
8. Attach install brackets making sure bracket is plumb using your 6" level. You will be utilizing only two of the holes on the roof mount bracket. The top hole should line up with the upper hole on the wall bracket and the bottom hole on the bracket should line up with lower hole on the face plate.
9. Carefully remove the excess of the adjustable Kick Brace by either using hacksaw or bending back and forth (vise grips make easy work of this). Caution: Once Kick Brace has been broken off, it will have sharp uneven edges.
10. Carefully remove the plastic wrap from the awning. Be careful not to cut towards the fabric. Situate the awning right side up, fabric roll on top, arms on the bottom. With the help of an assistant, lift the awning up into the installation brackets. Once the unit is properly positioned from left to right and fully in all the brackets, insert the nuts and 6mm Allen bolts through the brackets. Fully tighten all bolts; there should be no rocking motion of the torsion bar in any of the installation brackets. **Do not operate the awning until all bolts are fully tightened.**

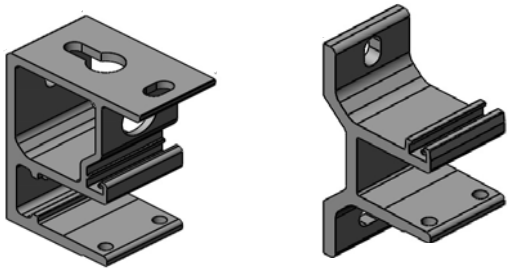
AWNING FASTENER GUIDE



You will need two lag screws and washers for each mounting bracket. **Lag screws and washers are not included with your awning.** Be sure to use all of the mounting brackets provided.

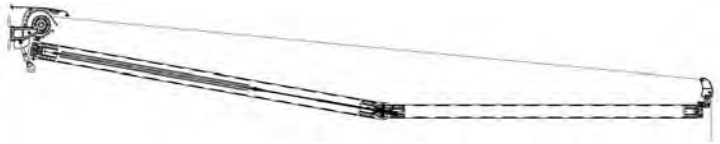
To avoid injury or possible equipment failure, proper fastening to a solid structure is required for any awning installation. If you are installing on a wood framed home, you will want to have your lag screws reach AT LEAST 3" into the wall studs, floor joist, or any other supporting framework. Siding, plywood, or any other sheathing material will not be able to support the unit when in use. If you have questions surrounding this issue, please consult a building specialist. The information below is ONLY A GUIDE. You can determine the exact length needed for your unique application by probing with a 1/8" drill bit. We also recommend you remove all compressible material from behind the mounting area before you begin. This material, commonly found under vinyl and aluminum siding, will break down over time and cause movement in the mounting brackets and possible mounting failure in the future.

Unit Width	# of Mounting Brackets
6'0" to 7'11"	2
8'1" to 15'11"	4
16'0" to 19'11"	6
20'0" to 40'0"	8



MINIMUM WIDTHS AND ARMS REQUIRED

The minimum width of a unit is determined by the torsion bar length needed when the arms are fully retracted. The figures below apply to all units regardless of gear or motor operation.

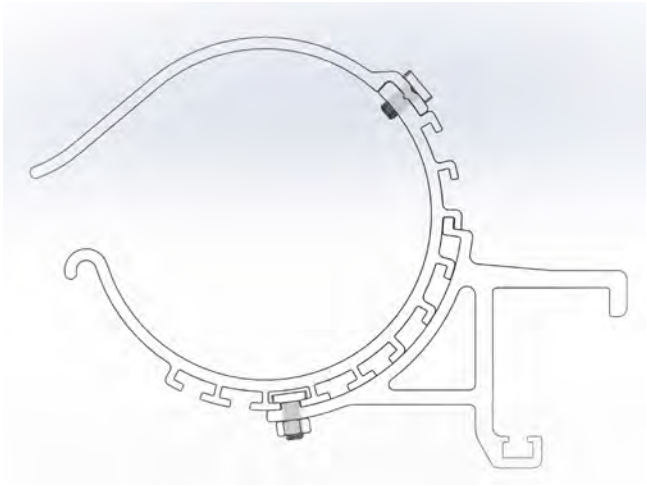


Unit Projection	Minimum Unit Width	Unit Width	Number of Arms
7'6"	6'0" (Cross Arm) 8'3" Standard	6'0" to 20'0" over 20'0" to 40'0"	2 4
9'0"	6'0" (Cross Arm) 9' 10" Standard	6'0" to 20'0" over 20'0" to 30'0" over 30'0" to 40'0"	2 3 4
10'6"	7'0" (Cross Arm) 11'5" Standard	7'0" to 20'0" over 20'0" to 30'0" over 30'0" to 40'0"	2 3 4
12'0"	8'0" (Cross Arm) 13'2" Standard	8'0" to 21'0" over 21'0" to 30'0" over 30'0" to 40'0"	2 3 4

The FABRIC WIDTH on an awning will be approximately 4½" to 5½" narrower than the overall width of the unit. This is due to end brackets, gudgeons, gears and motors on the ends of the roller tube that the fabric is mounted to.

CENTER SUPPORT

A center support is used to support the roller tube and reduce deflection on wider units. A center support is included on all units with a width greater than 20'0".



The friction between the fabric and the center support can cause a discoloration or scarring of the fabric. Rainier places the center support(s) on the fabric seam(s) only to minimize this effect. This discoloration is minimal as the center supports are coated with a low friction treatment

The inevitable scarring of the fabric, caused by center support usage, is not covered under any warranty. To ensure customer satisfaction we suggest:

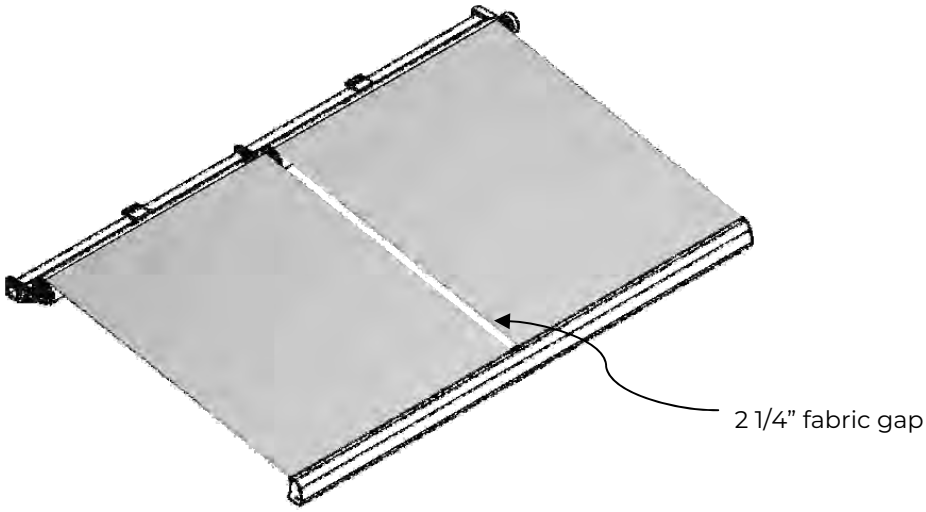
1. Use lighter colored, striped fabrics if center support is required.
2. Limit unit width to 20', or consider a split roller at no additional charge.

SPLIT ROLLER

Guidelines:

- Use a one piece front bar & valance, unless otherwise specified.
- Roller tube sections are always equal length, unless otherwise specified.
- Fabric covers are always equal in width, unless otherwise specified.

Split Roller Units (Instead of Using Center Support):
Units over 20'0" require a center support, but many dealers opt for a split roller coupling instead because fabric damage caused by a center support is not covered by any warranty. A split roller coupling supports the roller tube and eliminates the need for a center support.

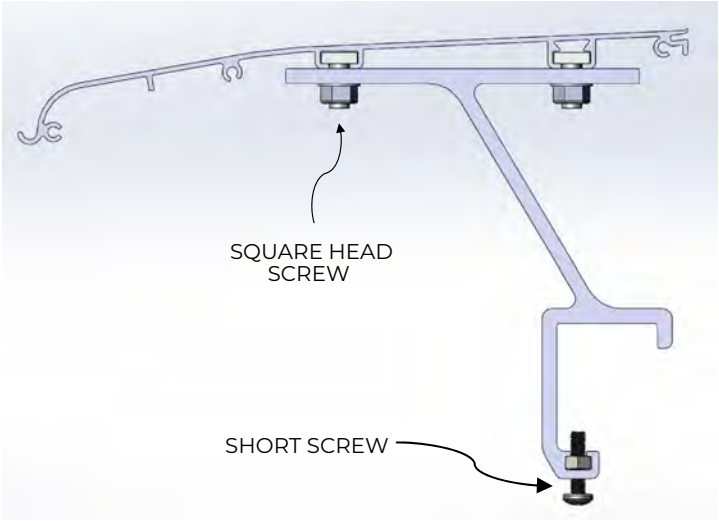


OPTIONAL HOOD

Hood Brackets: The unit width determines the number of hood brackets required. Listed below is the number of hood brackets that will ship with your order when the optional hood is selected. Each hood ordered will automatically receive a pair of end plates and mounting screws for the hood. **Remember the optional hood will be 1" wider than the total unit width ordered.**

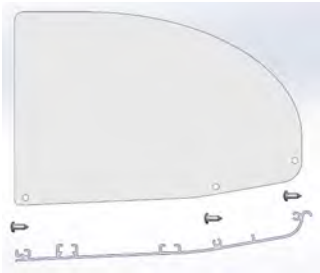
Unit Width	# of Hood Brackets
Up to 15'11"	4
16'0" to 20'11"	6
21'0" to 40'0"	8

The distance between hood brackets should not exceed 5'-0". Outer brackets should be no more than 2'-0" from either end.



INSTALLATION

1) Lay the hood on a section of cardboard, flipped over so the channels are facing up



2) Install the hood side covers on both ends with the three stainless screws provided for each side. Do not tighten the screws until you have all three of them started, best to use a screwdriver not a power driver as they strip out easily.

3) Verify you have the proper bolt in the top and bottom of the hood bracket (see drawing). Determine approximate hood bracket locations working around your new and larger "dead areas" (where arms are mounted, installation brackets are mounted, etc.) to determine where brackets should be placed on the hood. Mark the hood where the brackets will be placed.

4) Before you place your hood brackets into the appropriate slots on the hood where you have indicated, make sure bolt on bottom of the bracket (part that goes on to torsion bar) is backed out unit it is flush with the nut on the inside. Align hood bracket flanges with those on the hood and slide into place. Tighten the top bolt to lock bracket in place. Next place your fully assembled hood over the awning, ensuring all hood brackets are fully seated on the torsion bar. Tighten the bottom bolt locking the hood bracket onto the torsion bar.

IMPORTANT NOTE REGARDING THE PITCH ADJUSTMENT

We recommend that our lateral arm awnings have a pitch of at least 15°. If you have an inadequate amount of mounting height, you can install the awning with less than a 15° pitch; however, you must inform the customer that EXTREME CAUTION must be exercised when using the awning in times of rain and wind. An awning installed with inadequate pitch will hold and collect large amounts of water, potentially stretching the fabric and possibly even causing structural damage to the awning. Damage due to water accumulation is not covered under the product warranty. A retractable awning's ability to withstand wind is also dependent upon the pitch. The less pitch an awning has, the less wind it can withstand. Damage caused by wind is not covered under the product warranty.

CRITICAL INFORMATION REGARDING PITCH ADJUSTMENT MINIMUMS

The factory default pitch adjustment is set at approximately 15°.

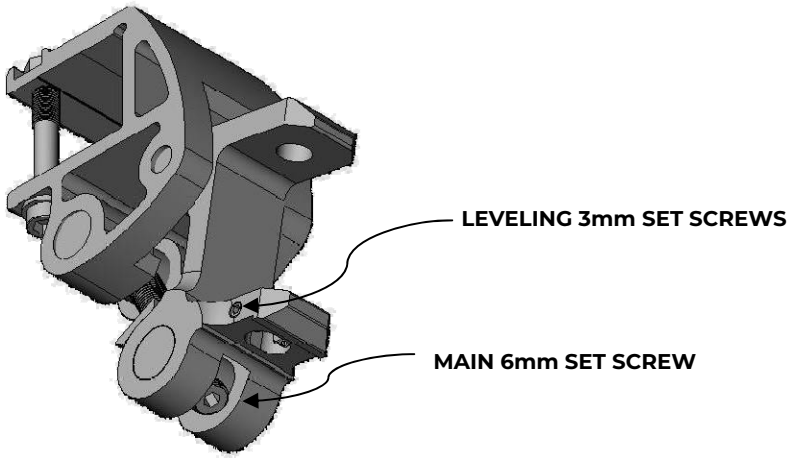
TO ADJUST THE PITCH

Adjusting the arms has to be done in increments, by going back and forth between the two or more arms. These increments should not exceed lowering the front bar more than 10" at a time.

1. Using a 6mm Allen wrench (using a T-Allen wrench is easiest), turn the 6mm set screw in the bottom of the pitch adjustment shaft. Counter clockwise will lower the arm (increase the pitch) and clockwise will raise the arm (decrease the pitch).

Adjusting the arm pitch, up or down, is easier if the arms are extended and you lift the front bar (slightly) to relieve the pressure on the pitch adjustment assembly as you turn the adjustment screw.

2. Adjust the small 3mm set screws on the bottom of the shoulder shaft (each side) to level out elbows when the arms are retracted.



OPERATING YOUR RAINIER RETRACTABLE AWNING

Manual Unit

- Hook the hand crank into the gear eye located on the bottom end of the gear at the end of the unit.
- Turn the handle to extend the unit, but do not roll it out to the point where the elbows lock out and the fabric begins to sag. If this occurs,
- Turn the crank, extending the awning until the arms are fully extended and the fabric sags slightly. Then, turn the crank in the opposite direction until the fabric is taut and you see ¼" gaps at the elbows – this is considered fully extended. The arms will still have some bend to them which allows the unit to react in changing weather conditions. Not having the gap in the elbow, and having the elbow locked, could result in damage to the arm in windy conditions.
- To retract the unit, simply turn the crank until fully retracted. The fabric **SHOULD ALWAYS** roll off the top of the roller tube and **NEVER** from the underside.

Motorized Unit - Standard Motor Using A Wall Switch

- Simply flip the wall switch and the awning will extend to the preset projection, stopping automatically. You can stop the unit at any desired position by flipping the switch back to its neutral (middle) position white it's extending or retracting.
- To retract, flip the wall switch and the awning will retract and stop automatically. If the unit does not fully retract or fully extend, the motor limit switches may have to be readjusted. Please contact the company that sold and installed your Rainier Retractable Awning.

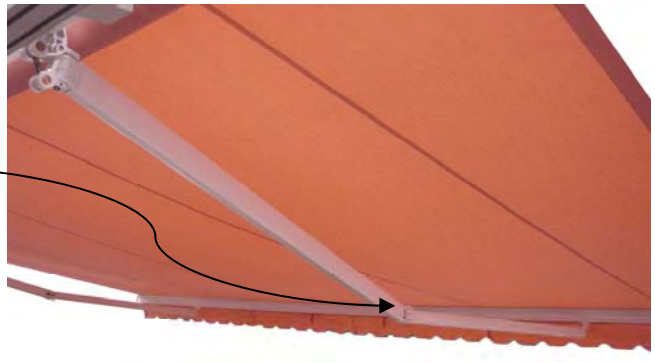
Motorized Unit – RTS Motor using a Remote Control

- 3 button hand remote control: **Bottom button** sends the awning out, with a single push of the button, to its preset outward limit. **Middle button** (listed as my on remote) is the stop button regardless of which direction awning is moving. Top button retracts the awning, with a single push of the button, automatically to its preset inward limit.
- If the unit does not fully retract or fully extend, the motor limit switches may have to be readjusted. Please contact the company that sold and installed your Rainier Retractable Awning.
- Consult with your dealer on proper operation of other styles of remote control units.

Motorized Units with Built-in Override Option

- Operates the same as a regular motorized unit. To operate the override (hand crank) option. A wall switch must be in the middle position (neutral) and with a remote control the stop button (middle button called my) must be pushed; otherwise you will just hear a clicking noise when you turn the crank handle.

ELBOWS STILL BENT WHEN ARM IS FULLY EXTENDED



AWNING CARE & MAINTENANCE

TO CARE FOR YOUR AWNING, NEVER

- **NEVER** leave your awning unattended while extended.
- **NEVER** extend your awning in during strong winds.
- **NEVER** barbecue under your extended awning.
- **NEVER** let birds and animals to nest on your awning.
- **NEVER** permit leaves or debris to roll in your awning.
- **NEVER** rely on optional wind sensors or sun/ wind controls to protect your awning against wind damage (which is not covered under the warranty).
- **NEVER** allow rain to accumulate and bag the fabric on an extended awning. This may cause product damage or failure and is not covered under the warranty.
- **NEVER POWER-WASH THE FABRIC.**

FABRIC

Rainier Industries retractable awning system utilizes Glen Raven Sunbrella® fabrics, which are made from 100% acrylic fiber. These fabrics, manufactured in the United States, and set the industry standards for strength and durability. Sunbrella® fabrics have a 10 year warranty against excessive loss of color or strength from normal exposure, including sunlight, mildew, rot, and atmospheric chemicals.

CLEANING OF SUNBRELLA® FABRICS

- Brush off loose dirt.
- Hose down.
- Prepare a cleaning solution of cool water and mild soap such as Ivory Snow, Deft or Woolite (no detergents)
- Use a soft bristle brush to clean
- Allow cleaning solution to soak into the fabric.
- Rinse thoroughly until all soap residue is removed.
- Air dry.

STUBBORN STAINS AND MILDEW

- Eight ounces (1 cup) of chlorine bleach.
- Two ounces (1/4 cup) of mild soap and/or detergent.
- One gallon of cool water.
- Clean with soft bristle brush.
- Allow mixture to soak into fabric for up to 15 minutes.
- **Rinse thoroughly** until all soap residue is removed.
- Air dry.

FRAME

The frame is made of non-corrosive materials. It's recommended that you occasionally hose off the framework and wipe down with a soft cloth. Spray silicone on the moving parts after the unit is dry. Avoid spraying the silicone on the fabric since this may cause discoloration. The framework may also be waxed using a non-abrasive polish if desired.

MOTORS

Motors are self-contained and require little to no maintenance. Inspect visible cords for possible wear or damage. If your motor goes out of adjustment or fails to function properly, contact the local dealer from whom you purchased. For motor and electrical safety information, refer to the Somfy® literature found in the transmitter box with your awning or go to www.somfy.com for more detailed information. Any electrical site work should be done by a licensed electrician in accordance with local laws and codes.

For more detailed information and cleaning instructions for Sunbrella® fabrics you can visit our webiste here - ***http://www.rainier.com/shade/awnings/sunbrella-awnings***
or for a stain chart visit Sunbrella's website here - ***https://www.sunbrella.com/en-us/how-to-clean/stain-chart***

REPLACEMENT PROCEDURES

Most arm damage occurs when the awning has been subjected to excessive winds. Wind damage is ***not*** ***covered*** under the Rainier Warranty. Product failure and credit is only determined or issued when the damaged arm has been returned and inspected at Rainier and deemed faulty not due to consumer neglect. Additional damage may occur and the awning should be inspected closely for, among other things, the following:

1. Scars or 1 ½" slices in the awning's fabric directly above the arms when extended, where the fabric would have been caught between the arm and the hood (if applicable) or roller tube when the extended unit was lifted by the wind.
2. Bent roller tube or front bar. Also inspect for damage to the front bar where the arm wrist attaches as sometimes the channel is widened due to stress.
3. Arms appearing undamaged may have stress cracks even while seeming to function properly. Inspect carefully.
4. If you are unable to retract the awning to remove the arm, then you will have to do it while the unit is fully extended. See Arm Replacement Open Unit.

It is recommended that you always order a completely new arm assembly. This will include hardware, shoulder housing and cover. It is recommended that you replace the entire assembly regardless of appearance as damage may not always be visible.

To determine which arm is broken, stand away from the house and look at the awning. Your right or left coincide with what is considered as the awning's right or left. This is important to ensure that you will receive the correct arm. Note that a three arm system will have the additional arm in the center. The right or left needs to be indicated, as it may vary from system to system.

ARM REMOVAL – Unit Open

If the unit is in the open position and cannot be retracted due to the damage or no power, then the damaged arm(s) need to be removed with the unit in the open position. It is important to get all the arms off the unit and get the fabric either rolled up onto the roller tube or lashed down so that it is not swinging in the wind and possibly causing additional damage or injury.

a. Mark the front bar where the wrist is attached.
b. Remove the front bar from the unit by loosening the wrist nuts (13mm) and removing them from all wrists (Keep the front bar from bending or dropping).
c. Retract the fabric and front bar by motor or hand crank.
d. Mark the location of the shoulder of the damaged arm on the Torsion Bar before removing the arm.
e. Remove the (6mm) bolts at the back of the shoulder where it is locked onto the Torsion Bar (support the arm so it does not fall).
f. Remove the damaged arm and repeat this process for any additional arms on the unit.

ARM REINSTALLATION – Unit Open

Reinstall the arm by reversing the removal steps. Make sure to align your arm shoulder on the torsion bar with the mark you made prior to removal to insure it is in the proper location. Tighten all nuts and bolts. Rainier retractable awning arms are under **severe spring tension so** ***VERY*** ***CAREFULLY*** remove the strapping that has the arm folded and gently let the arm unfold (again, remember the arm is under sever tension to spring outward). Roll out the fabric and front bar. Reattach the wrist by aligning it with the marks made on the front bar from the old arm, tighten wrist nuts. Run the unit in and out then adjust pitch as needed and replace plastic caps.

NOTE: The elbow should be no more than ½" from the torsion tube.

ARM REMOVAL – Unit Retracted

All Rainier retractable awning arms are under severe spring tension. It's "CRITICAL" that you read this fully before unbolting or loosening anything. You should follow the steps as they are described below.

If there are any questions or concerns, please call our Rainier Shade Technical Support at 1-855-212-6851.

1. The awning should be in the closed position. The front arm extrusion (small part of the arm) must be secured to the rear arm extrusion (large part of the arm) close to the wrist (see picture). If the arm is damaged to the point you cannot retract the awning:

    1a) Remove the damaged arm and any good arms from the front bar first, then from the torsion bar while in the open position. Then retract the awning.

    1b) You will need to fold and secure good arms for reinstallation (caution: arms under severe spring tension, use two people to fold and secure the arm).

2. Now that the large & small extrusions are secured together, proceed to secure the arm to the torsion bar near the elbow (see picture).

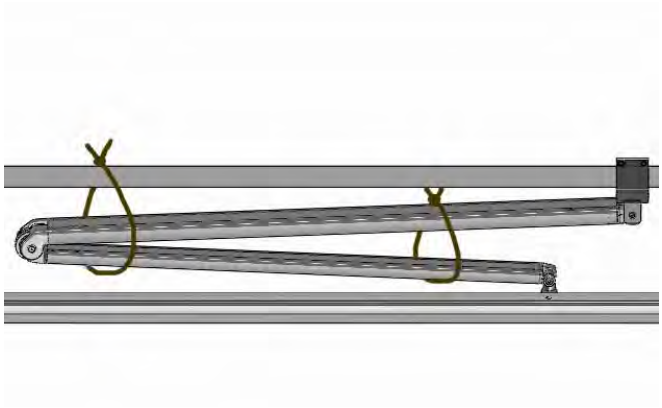
3. Last we want to put a restraint (rope) around the complete unit. This should drape completely around the roller tube, torsion bar and front bar. It should be tied loosely allowing the restraint to cradle the roller tube should it need to be removed and for safety.

Now that the arms are secured properly, you can proceed to remove them. Mark the front bar where the wrist attachment is and do the same on the torsion bar where the arm shoulder is. First loosen and remove the front bar wrist attachment, then remove the bolts holding the shoulder attachment to the torsion tube. Cut the restraint that is around the elbow and torsion bar. Make sure to support the arm so it does not fall as you remove it.

ARM REINSTALLATION – Unit Retracted

Reinstall the arm by reversing the removal steps. Make sure to align your arm shoulder on the torsion bar with the mark you made prior to removal to insure it is in the proper location. Reattach the roller tube if it was disconnected if applicable. Tighten all nuts and bolts. Reattach the wrist by aligning it with the marks made on the front bar from the old arm, tighten wrist nuts. Remove any restraints/ ties and operate the unit as usual. Adjust pitch as needed and replace plastic caps that were removed.

NOTE: The elbow should be no more than ½" from the torsion tube.



REMOVING / REPLACING A MANUAL GEAR

One person can make do this replacement. Key thing to remember is that you have to make sure the pivot pin remains in the roller tube assembly while performing the exchange of gears.

1) Tie the arms together as indicated on the previous page.
2) Tie the roller tube to the torsion bar near the pivot end and again about 2/3rds of the way towards the gear.
3) Carefully remove the plastic cover on the end bracket, mark its location on the torsion bar, then loosen the end bracket bolt with a 5mm Allen wrench. Pull off the gear and end bracket, again making sure the roller tube is secure and not pulling away from the pivot pin.
4) Mark location of bolts holding the gear to the end bracket then remove the bolts.
5) Replace new gear making sure to put bolts in the same location.
6) Reinstall the end bracket with the new gear onto the torsion bar (using mark you made on the torsion bar) while aligning the square shaft from the gudgeon on the roller tube with the square hole in the gear.
7) Tighten end bracket bolt with a 5mm Allen wrench and replace the plastic cover.

REMOVING OR REPLACING THE FABRIC COVER

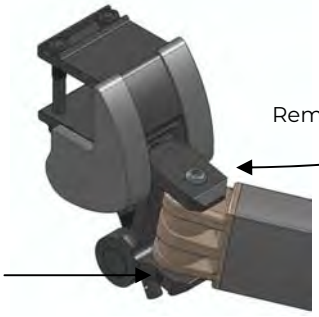
One person can make do this replacement. Just be careful to securely restrain the tensioned arms.

1) Position the front bar approximately 6" out from the roller tube, tie off the arms and then tie them to the torsion bar.
2) Roll the fabric out by either the motor or hand crank as if you were extending the awning. Help the fabric roll out over the front bar until the roller tube is exposed. If a motorized unit, use the manual hand crank to go beyond the out limit (make sure remote out button was pushed). If no manual override on system, you will have to remove the "out" limit.
3) On the side opposite the motor or gear, remove the front bar end cap. Loosen all fabric locks. Two on roller tube and 4 on the front bar. Remove the valance. To remove the cover, pull it from the roller tube (opposite end from drive) and front bar at the same time.
4) Before installing new cover, make sure fabric lock is in place at drive side of unit on the roller tube and front bar. Locate the top of the cover and at the same time slide the "top" PVC into the roller tube groove and the "bottom" PVC into the front bar groove. Once the fabric is in position, roll the fabric back onto the roller tube until snug. Install valance. Trim excess PVC and replace fabric locks and tighten all. Replace front bar end cap.
5) Untie arms and extend the awning. Adjustment of the "in" and "out" limits may be required.

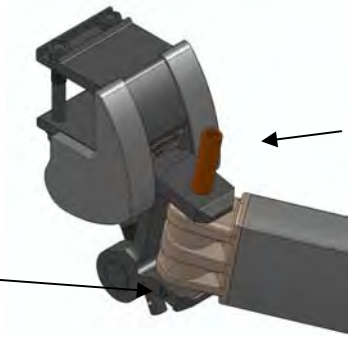
REMOVING THE ARM FROM THE PITCH ADJUSTMENT SHOULDER

Once the arm has been tied off and removed from the torsion bar of the unit, you can remove the shoulder section to replace just the arm assembly or to replace just the shoulder itself. Generally, if the arm was damaged, it is best to replace the complete arm assembly including the shoulder to insure there is no damage that is not visible in the shoulder or arm. ***It's very important to always keep the arm tied off as it may still be under severe tension and could cause bodily harm if released unexpectedly.***

1. Remove the 5mm screw from the top and bottom of the connection between the arm and shoulder



2. Tap out the pin that connects the upper arm fork to the shoulder. Once this is done, the shoulder will separate from the upper arm fork.



REATTACHING THE ARM TO THE PITCH ADJUSTMENT SHOULDER

Reverse the procedures listed above, making sure to add a drop of Locktite on the threads of the 5mm new screws as they are inserted into the pin in the upper arm fork and shoulder.

REVERSING THE DRIVE SIDE

1. First you need to make sure both arm extrusions are tied together at the wrists and then the arms are tied to the torsion bar.
2. When the arms are secured, extend the awning so the fabric drapes over the front of the front bar and the fabric is completely off the roller tube (the out limit will have to be removed to accomplish this).
3. Cover the ground underneath the unit as the fabric will probably touch this area during the reversal process.
4. Disconnect the roller tube from the system and bring down to the ground. Slide the roller tube away from the fabric, making sure the fabric rests on the protection you have placed on the ground.
5. Remove the pivot bolt from the roller tube end bracket and place it in the roller tube end bracket at the other end.
6. Reverse the roller tube so that the pivot gudgeon and motor or gear gudgeon are at the correct ends. Slide the roller tube back onto the fabric.
7. Raise the roller tube to the pivot end and place on the pivot bolt and align the motor/gear with the motor/gear end bracket.
8. Tighten all nuts and bolts that were loosened previously.
9. Roll the fabric back onto the roller tube (make sure the fabric rolls over the top of the roller tube).
10. Free the arms and operate the awning to reset both the outer and inner limits. Check the systems operation one final time.

REPLACING A MOTOR

1. First you need to make sure both arm extrusions are tied together at the wrists and then the arms are tied to the torsion bar.
2. When the arms are secured, tie the front bar and the roller tube to the torsion bar at the pivot end and again about 2/3rds of the way towards the motor end. This will allow movement of the roller tube but protect it from falling if it came out of the pivot end.
3. Carefully remove the plastic cover on the end bracket, mark its location on the torsion bar, then loosen the end bracket bolt with a 5mm Allen wrench. With a rubber mallet, lightly tap the end bracket off the torsion bar. Pull straight out until the motor is removed from the roller tube, making sure the roller tube does not pull off the pivot bolt at the other end.
4. Mark location of the bolts holding the motor to the end bracket. Remove the motor from the end bracket and re-attach the new motor and tighten nuts and bolts.
5. Slide the motor into the roller tube, aligning the groves in the drive and crown with the grove in the roller tube. As you slide the new motor back in, align the end bracket with marks on the torsion bar.
6. Tighten end bracket bolt with a 5mm Allen wrench and replace the plastic cover.
7. Untie all restraints and follow your Somfy directions on programming the new motor and resetting the limits.

MOTORIZED UNITS – May require some manipulation to make sure the motor cable is protruding from the back of the motor. It is also possible that additional motor cord may be necessary to make it to the same electrical outlet prior to switching the drive side of the unit.