



# Installation Instructions for Continuous Aluminum or Copper Gutters

(for the laymen/do-it-yourselfer)

updated 4/2011

## **Removal Tools:**

Sturdy ladder w/ladder w/stabilizer (to rest the ladder on the roof over the gutter), knee pads, 5 gallon bucket, garbage bag, claw hammer, cats paw, tool belt with pouches, T head wrecking bar, tape measure, tin snips, drill, 1/4" hex socket, #2 Phillips tip

## **Removal:**

Clean out the gutters, so they are not so heavy and will not make a huge mess when you dislocate them. Remove any screws holding the DSP (downspout pipes) in place under the gutter. Use a hammer and cats-paw to remove all the nails holding the DSP in place on the siding and set the DSP aside. For gutter removal use a T head wrecking bar to knock loose the nail spikes and pry them out. Collect those nails and ferrules in your tool-belt pouch as you go, so you don't have to hunt them down later hidden in the bushes. It help to have some tin snips with you to cut the gutters in short 8 to 9' length as you go, so there is less risk of damaging something below as the gutters drop to the ground. Cut the front and back wall of the gutter, so it will just swing down. Then you can more easily cut the floor of the gutter. Be ready to catch it before it drops to the ground as you make that last snip. Then you can toss it in a safe place, or carry them down the ladder. You will need a hammer to knock the caulked corners open after removing the zip screws. They may have nailed the back of these corners, so that would hold you up until they are removed.

## **Disposal:**

Stack those old gutter lengths into each other to compact for transportation to the scrap yard. If you have cut the metal gutters up in 9½' sections or less when I am out there to deliver the gutter parts I will haul them off for you and recycle them at no charge, although plastic gutter will cost you for the dump fee, since they will not recycle PVC.

## **Storm-drain Pipe Preparation:**

If you don't have a storm drain system in place you will need to have it installed. This is very important. Without a proper storm drain system to divert the rain water far away from your foundation gutters are not only pointless, they will do more harm than good. You would be better of with no gutters at all and have that rain water dribble off evenly along the roof edges than to dump all that water in one spot.

If you do have a storm drain system in place this is a good time to check your SDP (storm-drain pipes) for any blockage. It may be clogged with years of decomposed debris and roof sand from the gutters. Use a garden hose to check it to see if it is flowing properly. It should be able to take the full stream of water for 5 to 10 minutes w/o backing up and overflowing. If it is clogged you may be able to clear it with a small fire-hose type nozzle on the end of your hose. A small shut-off valve would also help. Work the end of the hose down into that SDP with the water running to blast through and free up the blockage as far as you can.

If that does not take care of it within a half hour of working on each SDP that's clogged you may need to call in a plumbing/sewer company to clear out the blockages. They are usually successful in clearing out these blockages. They should have high pressured water and a motorized snake tool that can even grind up roots that may



have some how grown inside your SDP. As well as a small camera to see what is down there if needed. This way they can see if the pipe is broken and dislocated underground.

If your SDP extend up more than a foot above the ground, you may want to cut it down a bit for appearance sake, or extend them up if they are less than 6" from the ground. A short SDP can allow for rocks and other debris to fall into them and plug them up.

### **Measurements:**

After the old gutters are removed you'll need to get exact measurements of the roof line, fascia boards, and each rafter tail if there is no fascia boards. Write all this information on the chart to replace the loose measurements you have. Where there are just end-caps add 1/2" to the measurement of the width of the roofing on each end. For corner configurations measure the fascia boards and then add 5.5" to form the gutter out past the ends of the fascia for each side of the corner. If you do not feel you're going to be able to seal the 2 ends of the gutter together you can use the box-miter piece for the 90 degree inside and outside corners. In that case the gutters would be only as long as the fascia boards for an outside corner, and 5" short for an inside corner. Sealing up corners is the most challenging aspect of this work. Carefully measure the outlet locations for the DSP placements. Use the plumb-bob for straight outlet placement down to the SDP.

### **Installation Tools:**

Ladders (I use a 4' step, 8' extension/step w/stabilizer, 32' extension w/stabilizer & leg levelers), pair of padded sawhorses (to work on the gutters up off the ground. The top covered w/ padded outdoor carpet to avoid scratches, but cardboard taped on can work), marking pen or fine point marker, plumb-bob, cordless impact driver, left & right offset tin snips, 1/4" magnetic hex socket, new #2 & #3 Phillips tip, 4" to 5" extension, a swivel joint (to help with corner screws), 1" bi-metal hole saw, 1/8" drill bit, pliers, 3" offset seamer, hacksaw or chop saw, rivet hand tool, downspout crimper, caulk gun, 2' level

### **Installation Instructions:**

#### 1. Pre-install Gutter Supports:

Set out the new gutters on the pair of padded sawhorses and trim to the exact length. Place the HH (hidden hangers) in the gutters every 2 feet or to line up with each rafter tail if there is no fascia board. Pull the back of the HH up into the safety hem. While pulling the HH up tight pre-drill the screw holes with a small 1/8" drill bit. Then start a pair of Stainless Steel screws into the back of the HH outer holes. Use the 1" to 1 1/2" SS screws for fascia board attachment, or 2" to 2.5" screws for rafter tail attachment, which you will want to have them angle in towards each other. The alignment of these HH will need to be very precise for rafter tail attachment. If there is a fascia board do not try to align the HH with the nails going into the rafter tails, but you should check to see if the fascia boards are well attached before mounting the gutters. You can add some 3" deck screws to make sure they are secure and can support the weight of a gutter full of water and icicles.

#### 2. End-caps:

Position the end-caps on the ends of the gutters where needed. While holding it in place seal with caulk along the inside seam. Press the caulk deep in the joint with your finger. Clamp the outside end-cap flanges closed tight with pliers or a 3" seamer (if you have that tool). Drill rivets holes through the 3 layers of metal of the outside flange. At least 2 on each of the 3 faces, 6 total. Use spray paint inside the gutter over the caulk to use as a solvent to smoothen the caulk again with your finger. Then spraying one last time to shade the caulk from harmful Sunlight.

#### 3. Outlets:

Flip the gutter upside down and place the elbow on the bottom of the gutter pointed in the right direction. Trace the outside of the elbow touching the floor of the gutter. Cut a hole in the center of the outline mark with the 1" hole saw. Use the left and right tin snips to cut from the hole out to the 4 corners of your marks. Use the pliers to pry the metal up at a right angle. Caulk the inside rim of the elbow near the edge. Then position it on the bottom of the gutter where you made the outlet. Rivet through the side of the elbow and the flanges of the bottom of the gutter you bent. Flip the gutter back over right side up and crimp the back wall of the gutter with the DSP crimper on each side of the outlet to give the gutter a dip at the outlet, so the water can flow down from both directions.

#### 4. Attaching the Gutters:

Set the ladder in the middle position of where the gutter goes. Rest the ladder stabilizers on the roofing just above where the gutter goes in place leaving enough room under the ladder for the gutter to fit up under it. Holding the gutter where it is balance in the middle lift the gutter up into position under the ladder as best you can while being safe. A long gutter will be bowing a bit, but as long as it is not more than 50' long it should be fine to install with just 1 person. Drive the center

screws in with the cordless impact driver and the #3 Phillips tip in a 6" long extension. As you run the screw in it should pull the gutter tight against the wood and cinch down, but if it continues to spins instead you may have cracked the wood, striped out the hole, or there is too much dry rot for a good hold. You will need to change the angle of the screw, reposition the hidden hanger to the side, or use a longer set of screws to dig deeper in the wood to find some good solid wood for a secure attachment. You should know each time if the screw did not have a good hold. If you have cedar fascia boards it is a very soft wood that will strip out easily, so be careful not to over tighten the screws.

#### 5. Sideways Alignment:

Check the ends of the gutter to see that the sideways position is correct before setting all the screws. Lift the end of the gutter up to meet the roof and check it to be ½" out past the edge of the shingles or lined up with the end of the fascia board where there is a corner. Measure the correction needed, and go back to the center to reposition that center screw. Make a mark on the drip-edge of where you need the screws repositioned sideways. Run the screw out and slide the gutter into the corrected position and run the screws back in. then you're ready to drive in the rest of the screws along the gutter length.

#### 6. Leveling:

Go to the end away from the outlet. Lift the gutter up into position as high as it can be set under the drip-edge flashing and drive the end screws in. Set the level in the bottom of the gutter against the back wall of the gutter to get a good reading. Keep in mind that sand under the level can give you a false reading, so make sure the floor of the gutter and the bottom of the level is clean of any debris no matter how small. Be careful to adjust gutter height with the bubble in the level touching the line away from the direction you need the water to flow, as opposed to dead center. This gives the gutter a slight slope towards the outlet, but not too drastic. Work your way towards the center driving the screws in while checking the level as you go. You may need to temporarily drive a screw in on the outlet end to loosen the center screw for height readjustment. As you work your way to the middle again reposition the height of that center screw as needed. Finish driving all the screws in checking with the level to make sure it has the right grade down to the outlet.

#### 7. Corner Pieces:

Caulk and rivet any corners you may have. Use 4 to 5 rivets across the bottom, 3 to 4 in the face, 1 on the top of the outer lip, and 2 to 3 stainless steel screws w/washers in each inside seam. Caulk over inside seams and the rivets inside the gutter. Smoothen the caulk with paint and your finger like you did in the end-caps.

#### 8. Downspout Installation:

Install the Leaf-Catcher first with the screen to be positioned 3' above the standing surface (see LC instruction sheet). Hold the other DS elbows up in position to get the measurements between the elbows and down into the LC 1.5". Cut the DS pipe to length and assemble with 2 rivets for each connection. Rivet the pipe cleats on the back of the DSP. They should not be more than 6' apart. Use the wider head SS screws to install the DSP on the house. Do not rivet the upper DSP assembly onto the LC, or to the upper elbow under the gutter. That will be the connections that are left loose to be able to remove the DSP off the siding if needed.

Note: Try to set the gutters with a slight slope towards the outlet if possible to avoid standing water when some debris begins to accumulate. Be sure there is a healthy overhang to the roofing shingles and drip-edge flashing of ½" to 1" over hanging the roof edge, Any more and there is little room to fit your hand in the gutter for cleaning. The drip-edge flashing should always be installed so the bend lining up with the edge of the shingles. Not tight to the fascia board.

Best luck. Any questions can be directed to David Rich of DMR Gutters though the web site or cell # (503) 351-7082 if it is a rush.

**If your local Gutter Contractor cannot get the parts we outline here you can order them through us:**

**<http://dmr-gutters.com>**