



HOSE JOINER & WELDING

INSTRUCTIONS



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PRODUCT SUPPORT TEAM AT 309-300-3120

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HOSE JOINER INSTALLATION



BEFORE YOU BEGIN

COMPONENTS NEEDED



Hose Joiner Assembly Part# 570986

Install Tool Part# 576908

Clamping Fixture Part# 576909

1/2" Drive Ratchet with 24" cheater bar

7/8" Deep well socket (1/2" drive)

Pipe Wrench 4"

Channel Locks 4"

Rubber Mallet

Thread sealant

Red lock-tite

360 RAIN machine assembly will require multiple sections of hose to be joined together. To connect two sections of hose, a joiner is used. The steps included here should be followed to correctly installing a joiner for best results.

STEP 1

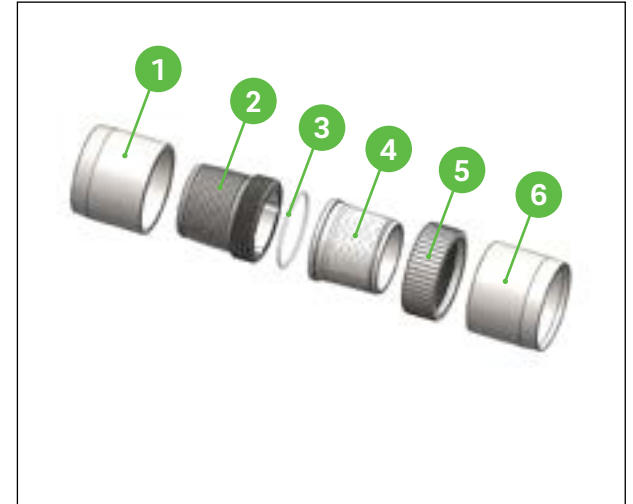
SQUARE HOSE ENDS



Cut both ends of hose as square as possible. Take a pocketknife and remove any plastic burrs from the OD and ID of each hose end.

BEFORE YOU CONTINUE

PARTS



The following steps will use the hose joiner pieces pictured above. Their part numbers are below for reference.

- 1 570987 Hose Collar
- 2 570985 Male Insert
- 3 202330 O-ring
- 4 570984 Female Insert
- 5 570983 Joiner Ring
- 6 570987 Hose Collar

HOSE JOINER INSTALLATION



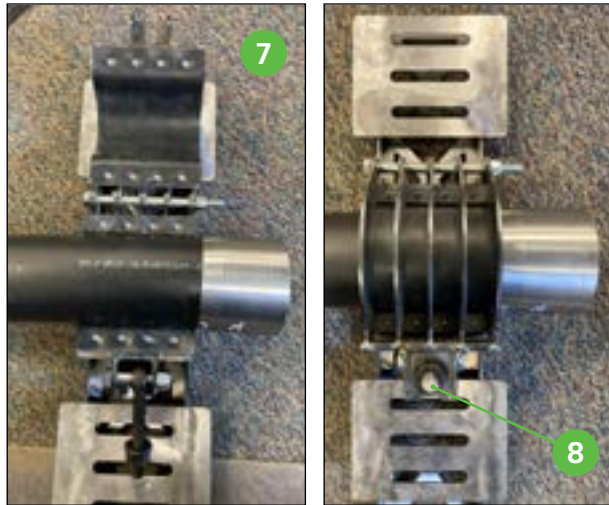
STEP 2 INSTALL COLLAR



Slide a collar **1** (chamfered end first) onto each of the hose ends. Collars should be slid on until the lip on the collar catches on the end of the hose.

NOTE: You may need to squeeze the hose with channel locks to aid in the install if the hose is oval in shape.

STEP 3 CLAMP HOSE IN FIXTURE



With the collar installed place the hose in the hose fixture **7**. Once positioned as pictured above, close the clamp and tighten completely using 1/2" ratchet **8**.

STEP 4 APPLY LUBRICANT

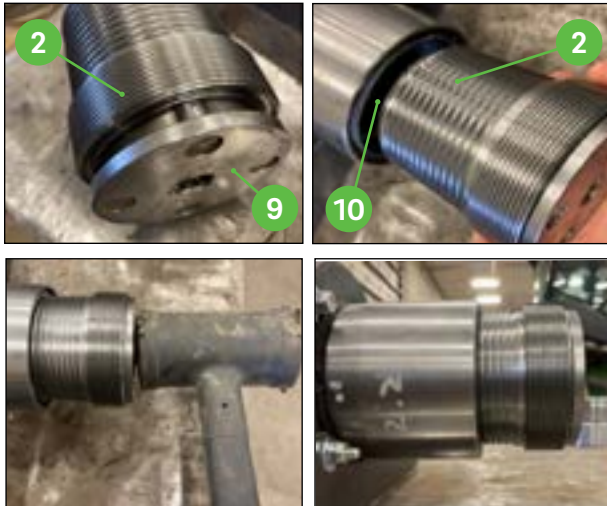


Lube inside of hose for about 3" with the thread sealant.

HOSE JOINER INSTALLATION



STEP 5 INSTALL MALE INSERT



Insert the install tool ⑨ into the male insert ② and press it into the open hose end ⑩.

Use the rubber mallet to drive the male insert ② in further into the hose end. You should be able to drive it in about 1" with the mallet.

IMPORTANT: Make sure the insert is aligned with the hose. If the insert is not aligned with the hose, it will thread in at an angle and cause joint failure.

STEP 6 THREAD



Insert 1/2" ratchet into the install tool ⑪ and begin threading the insert into the hose. The cheater bar will be needed to thread the insert all the way in.

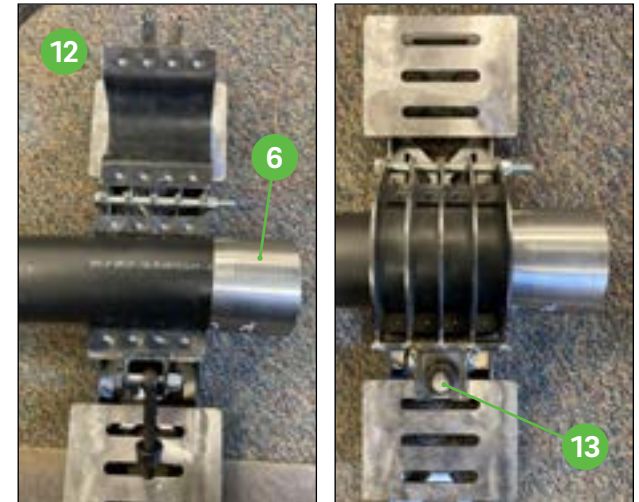
IMPORTANT: Do not use an impact wrench with the install tool.

The insert is completely seated when there is a 1/16" gap between the collar and the edge of the small threads.

IMPORTANT: Do not reverse the threads after the insert is seated, this will result in leaking and joint failure.

Remove the hose end from the fixture.

STEP 7 FEMALE INSERT



Locate the next section of hose that you are joining. We will be installing the female insert on this end of the connection.

With the collar installed ⑥, place the hose in the hose fixture ⑫.

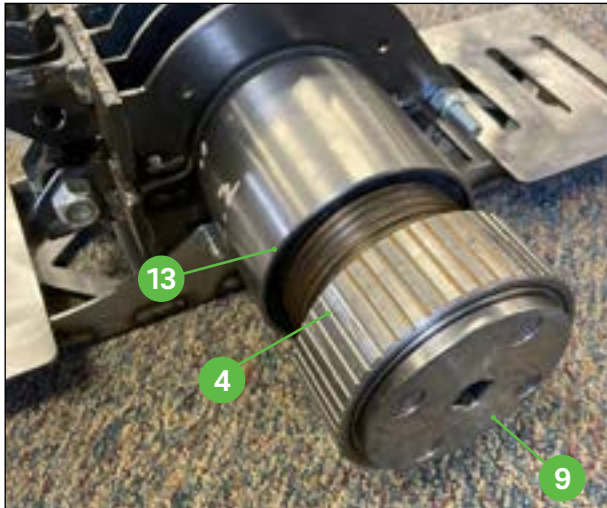
Once positioned as pictured above, close the clamp and tighten completely using 1/2" ratchet ⑬.

Lube inside of hose for about 3" with the thread sealant.

HOSE JOINER INSTALLATION



STEP 7 CONTINUED FEMALE INSERT



Insert the install tool **9** into the female insert **4** and press it into the open hose end **13**.

Use the rubber mallet to drive the insert in further into the hose end. You should be able to drive it in about 1" with the mallet.

IMPORTANT: Make sure the insert is aligned with the hose. If the insert is not aligned with the hose, it will thread in at an angle and cause joint failure.

STEP 8 THREAD FEMALE INSERT



Insert 1/2" ratchet into the install tool **14** and begin threading the insert into the hose. The cheater bar will be needed to thread the insert all the way in.

IMPORTANT: Do not use an impact wrench with the install tool.

The insert is completely seated when there is a 1/16" gap between the collar and the edge of the small threads.

IMPORTANT: Do not reverse the threads after the insert is seated, this will result in leaking and joint failure.

Remove the hose end from the fixture.

STEP 9 O-RING INSTALL



Insert O-ring **3** into the groove on the male insert and thread the joiner nut on the female side onto the threads on the male side. Some thread sealant in the O-ring groove may be helpful to ensure the O-ring stays in the groove during this process.

Apply red lock-tite to the threads at this time before tightening the 'nut'.

HOSE JOINER INSTALLATION



STEP 10

JOIN MALE TO FEMALE



Thread the male and female inserts together.

Tighten the nut with the pipe wrench as tight as possible.
Use the channel locks and or the hose fixture to keep the hose from rotating.

Hose joint is now complete.

HOSE WELDING



STEP 1 CUT HOSE ENDS



This hose welding process is used to join the start of the first coil of hose to the 90 degree elbow and the end of the last coil to the flange adapter. All other connections should be made with the hose joiners.

For best quality results, perform fusion welding with a minimum ambient temperature of 60 degrees fahrenheit.

Before you begin, plug in heater to give it adequate time to reach desired temperature.

The following instructions for use with 3" PE hose and fittings. Cut both ends of the PE pipe relatively square.

STEP 2 CLAMP HOSE ENDS



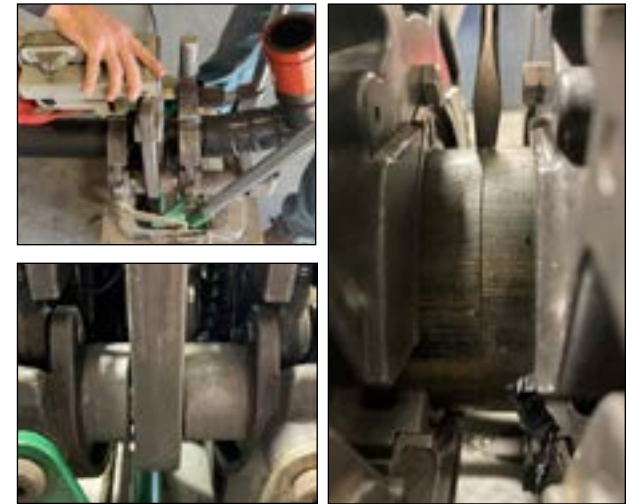
Clamp both the hose and the 90° elbow into the clamps leaving about 1" of hose protruding past the face of each jaw.

When clamping each end, make sure that hose is entering straight into the jaws. If the hose enters crooked, the two faces will not line up correctly.

NOTE: If hose is curved a support will ensure hose enters the jaws straight.

Ensure the elbow is pointing in the appropriate direction to follow the curvature of the hose.

STEP 3 FACE HOSE ENDS



Insert the hose facer into the chuck and latch in place. Switch facer on and slowly move the two jaws together with the levers until the jaws bottom out on the facer stops. Switch the facer off and wait until it completely stops spinning. Remove it carefully.

After facing, use the levers to bring both hose ends together and verify that they are aligned.

See next page for guidelines on proper alignment.

HOSE WELDING



STEP 3 CONTINUED HOSE FACE ALIGNMENT



There should not be an offset more than 10% of the wall thickness, approximately 0.020".

If misalignment is greater than 10%, remove hose ends and start back over at Step 2.

STEP 4 CLEAN ENDS



Make sure both hose ends are clean and free from contaminants such as dirt or oil. If necessary, use water or isopropyl alcohol with a clean, lint free, non-synthetic cloth to clean hose ends thoroughly.

NOTE: Make sure hose is dry before proceeding.

STEP 5 HEATING ELEMENT



Make sure heater is between 425-450 °F.

NOTE: Use infrared thermometer on heater plate face, to verify that temp gauge on heater is accurate for best results.

Ensure the heater faces are clean prior to making contact with the hose.

HOSE WELDING



STEP 6 WELD HOSE

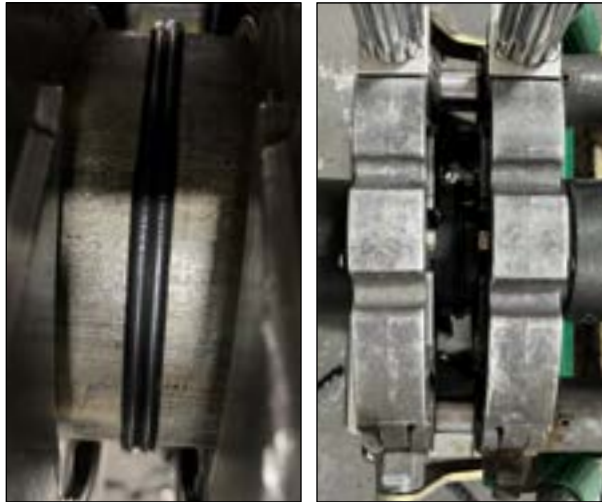


Insert heater and firmly bring each hose end to meet the heater plate.

While bead forms, ensure no air gaps until an 1/8" bead forms on both sides of the heater plate.

NOTE: Do not use force to hold sides together during this process. Slow heat is best. Depending on ambient temperature this process should take approximately 1.5 minutes.

STEP 4 CLEAN ENDS



After minimum melted bead has formed, remove heater carefully and bring the hose ends together smoothly.

IMPORTANT: Hose ends must be brought together after heater is removed within 8 seconds to ensure proper temperature is maintained.

Continue applying steady pressure until the combined width of both beads is between 1/4" and 11/32".

Use latch to maintain pressure on the joint after bead size is reached. Let the joint cool for a minimum of 10 minutes before removing from the jaws.

COMPLETE WELD



Hose weld complete.

NOTE: Wait at least 30 minutes before applying stress installing on the machine, or running liquid through the base.

The elbow can now be reinstalled on the reel and the remaining hose coils can be joined using the hose joiners and reeled onto the machine.

After joining all the required hose coils using the hose joiners and reeling it onto the machine, weld the flange adapter to the end of the end of the last hose coil using the welding process.