

TEGA DOST COUPLER INSTALLATION INSTRUCTIONS

Components of Dost Coupler

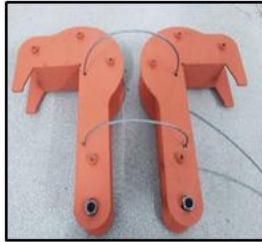


IMPORTANT NOTES

- Below instructions should be followed absolutely step by step.
- The fusible pipe series are shown in the SDR labeling on coupler.
- Installation technician must be trained and certified to install Tega large diameter couplers.
- Fusion with other pipe materials such as PP, PVC etc. is not possible.
- Installation can be done at ambient temperatures between 0 °C and +45 °C. If ambient temperature is not within these limits use of welding tent is required.
- For general safety reasons, keep a distance of min. 1 m to the fusion site during fusion process.

NECESSARY TOOLS

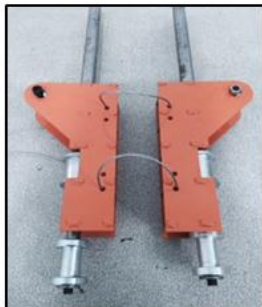
Pulling tool



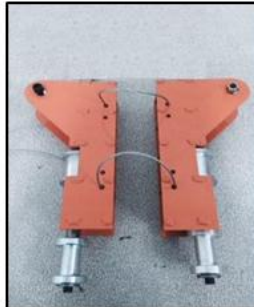
Hook



Lever Hoist



Straight base Part 1



Straight base Part 2

1-Scraper



2-Gap gauge and Vernier Caliper



3-Marker



4-EF Welding Machine and Generator



5-Tape meter



6-Ratchet strap



7-Test Jack



8-PE cleaning agent and cloth

9-Welding tent

10- Circometer

INSTALLATION PROCEDURE

1. Pipe Cutting:

For the pipe cutting, a suitable cutter for plastics must be used. The pipes are to be cut in a right angle to the pipe axis square with this cutting tool.



Attention

If the pipe is not cut at right angles, this results in missing contact between heating coils and the pipe, which causes uncontrolled flow of molten due to overheating.

Pipe toe-in or reduction in diameter should be checked to ensure that the pipe diameter is within tolerance at 50 mm from the end. Severe toe-in may require the removal.

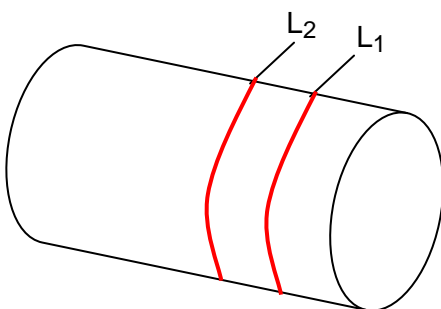
2. Marking the fusion zone:

Fusion zone which is the insertion depth of coupler must be marked with a marker on the pipe end or on the spigot end. Measure the total length of coupler and calculate the half length. Mark the coupler half length + 10 mm on pipe surface.

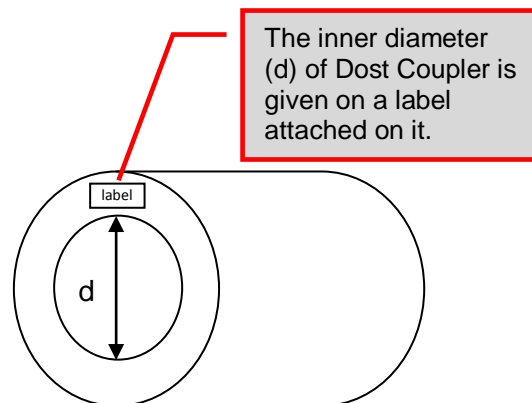


3. Measuring the pipe diameter and pipe ovality:

Pipe circumference must be measured with circumference tape/circometer (or tape measure) at two points (L_1 and L_2) as shown in below sketch.



Pipe



Dost Coupler

The inner diameter (d) of Dost Coupler is given on a label attached on it.

The inner diameter of Dost coupler written on label is the value measured at 20°C. Since job-site ambient temperature may change, inner diameter of Dost coupler is also changes.

Use the following table to calculate actual inner diameter (d) of Dost depending on ambient temperature.

Ambient Temperature (°C)	Multiplier
0	0.9980
5	0.9985
10	0.9990
15	0.9995
20	-
25	1.0005
30	1.0010
35	1.0015
40	1.0020
45	1.0025

To find the actual inner diameter (d) of coupler;

- Choose the multiplier from the table according to ambient temperature of site.
- Multiply the inner diameter of Dost (given on label) with Multiplier

Measure and record pipe circumference at two points. (L_1 and L_2)



First calculate the pipe diameters at these two points:

$$D_1 = L_1 / 3.14$$

$$D_2 = L_2 / 3.14$$

Calculate the mean pipe diameter (D);

$$D = \frac{D_1 + D_2}{2}$$

Calculate the difference between coupler inner diameter (d) and mean pipe outer diameter.

$$1 \text{ mm} < d - D < 3 \text{ mm}$$

Difference should be between 1 mm to 3 mm.

D_{\min} and D_{\max} must be measured at the surface of pipe with a tape measure. Minimum and maximum pipe diameters should be





Write the following information on pipe surface:

Mean pipe outer diameter; D

Minimum diameter; D_{min}

Maximum diameter; D_{max}

Ovality ($= D_{max} - D_{min}$)

$$\text{Ovality \%} = \frac{D_{max} - D_{min}}{D} \times 100$$

Ovality must be less than 14%

4. Scraping the pipe surface:

In order to remove the oxide layer of the pipe, pipe surface must be scraped carefully by a proper scraper (eg. Rotation scraper). Inspect the entire scraped area to ensure total scraping coverage.

The inner diameter of Dost Coupler is given on a label attached on it.

The difference between coupler inner diameter and pipe outer diameter should be between 1 mm-3 mm. So scraping should be done carefully not to exceed this limit. If necessary, scraping can be done more than one times.



In order to remove the oxide layer completely, the pipe must be scraped so that shavings are formed and marking line is removed.

The prepared surface must be protected against unfavorable weather conditions.

5. Fusion of Flex Restraints:

In order to create the supports of pulling tool, flex restraints should be fused on both pipes. Two of flex restraints should be fused on each pipes ends with following distances:

- 1) Couplers between d 315 – d 500mm size: at a distance half length of coupler + 30 mm.
- 2) Couplers bigger than d 500 mm size: at a distance half length of coupler + 40 mm.



6. Assembly of Straight Bases:

Straight base part 1 (which has stopper) should be fixed on first pipe end by using ratchet straps. Straight base part 2 should be fixed on the second pipe end by using ratchet straps. Bases on both pipe ends should stand by flex restraints.



7. Cleaning the fusion area:

Remove coupler from its packaging without touching the fusion surface. Make a visual check to ensure coupler is undamaged.

The prepared pipe end and internal face of coupler must be degreased with a suitable cleaning agent and a white absorbent and no fibrous paper/cloth.

As a cleaning agent; isopropyl alcohol can be used (The alcohol content must be more than 96% by volume).



Degreased surfaces must be protected against dirt or unfavorable weather conditions

8. Placing the hooks onto coupler:

Place the hooks onto coupler as shown in picture.

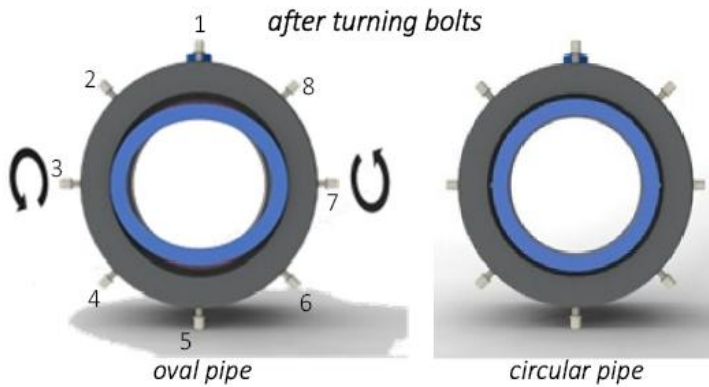


Attach the lever hoist and operate it to pull coupler.



9. Removing the ovality and insertion of pipe into coupler:

Special design of Tega Dost coupler can tolerate up to 14% ovality. With the help of lever hoist, pull the coupler till it passes the squeezing bolts. Check the gap between pipe and coupler along the whole circumference. If there is any local gap and ovality, eliminate it by using bolts, thus ensure a uniform gap along the whole circumference.



Pull the coupler up to the mark.



Prepare the other pipe for installation. The beveled entrance of coupler can accommodate up to 9° deflection/misalignment of pipes.

By using the lever hoist pull the other pipe end up to the mark. Special design of Dost coupler tolerates misalignment and thus pipes can be aligned on the same axis.



On both sides at least 6 m pipe length must be free to tolerate the bending of the pipe.

Be careful at cold weather temperatures ($<10^{\circ}\text{C}$), since the flexibility of pipe decreases.

10. Cleaning the fusion areas by pressurized air and fusion operation:

Measure and record the local gaps and ensure that gap size is max. 2 mm.



If local gap is 2 mm - 4 mm, preheating should be done. Please contact your local dealer for "Preheating Procedure".

11. Electrofusion process:

Provided that information given in instructions is followed step by step, connect fusion cables to the terminals of the first side of the coupler. Fusion parameters are contained in the main barcode. Fusion data can be transferred to machine by using reader.

After reading of barcode, compare data on barcode and data shown on display. Start fusion process. Wait until cooling time has elapsed before moving pipe and coupler. Cooling time is given on barcode and identified by CT.

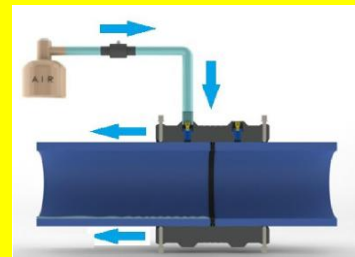
Fuse the other part of coupler. It is possible to fuse both ends of coupler simultaneously by using 2 welding units.



KEEP IN YOUR MIND

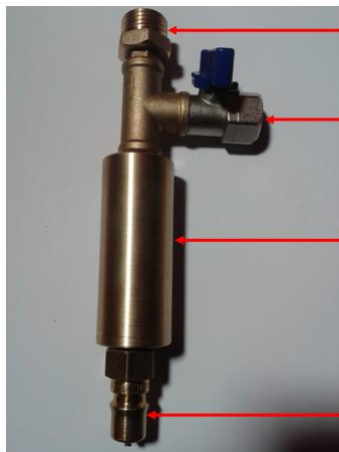
Before starting EF process, it is possible to apply pressurized air to sweep away any particles of water, dust etc. between pipe and coupler.

To do this; just remove the pressure test EF caps and apply pressurized air.



12. Pressure test:

Tega Dost coupler has the ability to do on-site test without filling the pipeline.



Top

Ball valve

Casing

Bottom (male to fit test point on Dost coupler)

Test jack

After 24 hour has elapsed, hydraulic or pneumatic test can be done. Dost coupler is equipped with pressure test point. A test jack is delivered together with coupler.

Connect bottom of jack with test point on coupler. It is very important to vent air completely during water filling. This can be achieved by opening and closing of ball valve on test jack.



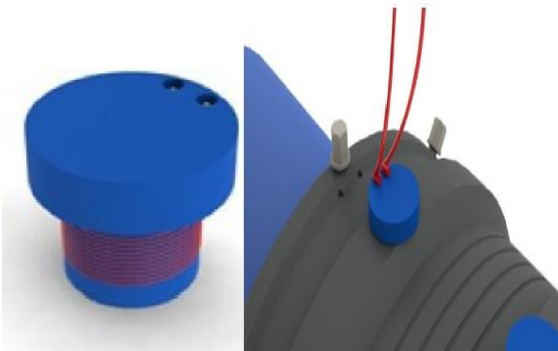
After ensuring air ventilation; apply a pressure of 24 bar during 1 hour. Check the fusion areas if there is any leakage.

Remove the test jack by moving the casing downwards.



13. Electrofusion of EF caps:

After completing the pressure test successfully, EF caps can be fused.



*(Threaded test cap is an option for DOST coupler. With threaded test cap, there is no need for EF welding)