ME854 & ME855 SERIES SWIVEL CONNECTOR INSTRUCTION MANUAL

WARNING: Product contains pinch points between the rotating body and stationary body. Keep hands and fingers clear.

WARNING: These products contain a chemical known to the state of California to cause cancer and birth defects or reproductive harm.

WARNING!

Failure to follow these instructions or to properly install and maintain this equipment could result in an explosion and/or fire causing property damage and personal injury or death.

Install, operate and maintain Marshall Excelsior Co. equipment in accordance with federal, state, and local codes and these instructions. The installation in most states must also comply with NFPA standards 54, 58 and 59.

Only personnel trained in the proper procedures, codes, standards and regulations of the LP-Gas industry should install, maintain and service this equipment. Be sure all instructions are read and understood before installation, operation and maintenance. These instructions must be passed along to the end user of the product.

GENERAL WARNING!

Marshall Excelsior products are mechanical devices that are subject to wear, contaminants, corrosion, and aging of components made of materials such as elastomers and metal. Over time these devices will eventually become inoperative. The safe service life of these products will reflect the environment and conditions of use that they are subjected to. REGULAR INSPECTION AND MAINTENANCE IS ESSENTIAL. Marshall Excelsior products have a long record of quality and service; thus, end users of the equipment may overlook the hazards that can arise from using aging devices that have outlived their safe service life.

Do not attempt to remove the Swivel Connector until you have bled off the system pressure. On systems with meters, the differential valve will keep liquid under pressure in the pump, meter and piping even when the hose is emptied.

NOTICE

Flanged Swivel Connector with welded connections

The Flanged Swivel Connector contains O-ring seals that will be damaged if welding is done with these O-rings installed.

Prior to welding the piping, remove the O-rings from the inlet and outlet flanges. Without the Swivel connected to them, weld the inlet and outlet flanges to the piping. Reinstall the inlet and outlet flange O-rings.

NOTICE

At temperatures below -20° F (-28.9° C) materials have reduced impact strength. Provisions should be made to prevent tools and other objects from impacting any pressure containing components of the pumping system.

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WARNING!

Swivel Connector contains a mechanical seal that will eventually leak product. Before leakage occurs, replace the Swivel or repair Swivel using MEC seal repair kit. Conduct periodic leakage tests with suitable leak detector such as MEC "Leak Detector". The Swivel contains an advanced mechanical seal designed for continuous rotation. Swivel Connector tested as per U.L. – 567 Standard involves an endurance test, deformation test, hydrostatic test, electrical continuity test, and external leakage test.

ME854 & ME855 Series Swivels do not require any lubrication maintenance. They contain a sealed radial contact ball bearing that supports the rotating end of the swivel. Do not attempt to push grease or other lubricant into the swivel. The vent fitting on the swivel main housing is designed as a point of leakage, in the event the internal mechanical seal is damaged. Should leakage develop, pushing grease into the swivel will not stop leakage. Should leakage develop, replace swivel or repair with seal kit per kit instructions.

NOTICE

For Hose Reel Installation, the rotating end should be attached to the Hose Reel. The stationary end should be installed to a Flex-Connector. The Flex-Connector will ensure that severe misalignment problems will not adversely affect the ball bearing in the swivel.

Once installed, there is no break-in period required. However, if the MEC Swivel is used to replace another brand swivel on another brand Hose Reel other than MEC, the brake on the non-MEC Hose Reel may need to be adjusted. This is because of the Low-friction design of MEC Swivels allowing easier rotation than other brands.
CAUTION: If the Hose Reel Brake is not adjusted, the Non-MEC Hose Reel may wind-up faster than wanted.

1/4" NPT Side ports: Swivel Connectors are shipped with an appropriate number of 1/4" NPT plugs for the number of side ports on the Swivel's main body. These will be shipped with the Swivel instead of installed, for ease of using alternate port options in the field. Depending on the version ordered, one of these plugs may be replaced with a brass or stainless Hydrostatic Relief Valve. See Form 417 for proper installation of relief valve.

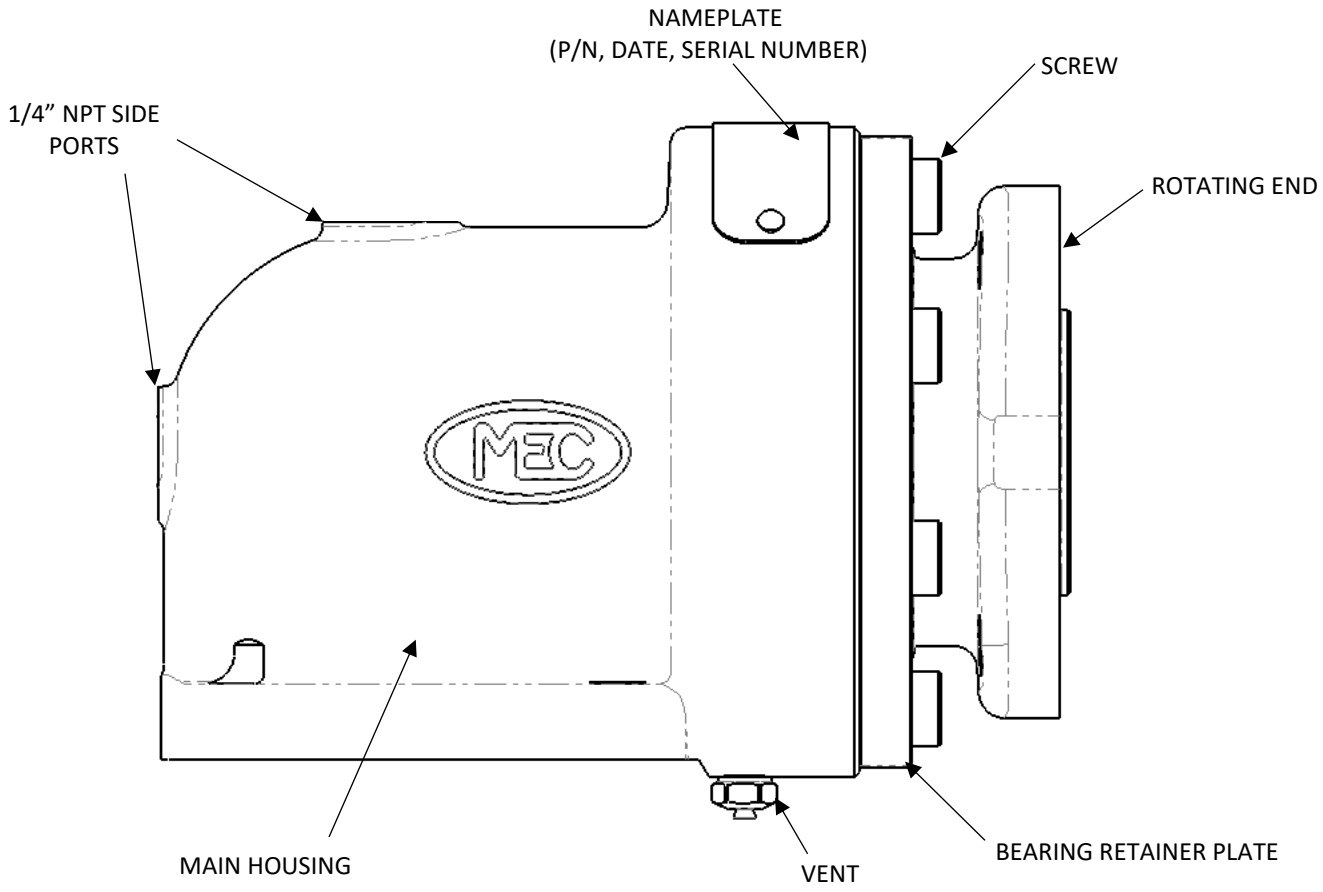


Figure 1: 90° Flange x Flange Swivel Connector
(Main Housing and Rotating End vary depending on model number)

Installation - Flange by Flange Swivel Connector

When installing the Swivel Connector, follow the Flange installation procedure below. Refer to ***(Table 1)*** for guidelines on bolt torques and tightening sequences.

- Check flanges, gasket, bolts / studs and nuts for proper material and defects
- Apply a high quality lubricant or anti-seize on bolt / stud threads and nut contact surfaces
- Torque bolts in sequence according to the following increments (refer to chart for recommended torque values)
  1. Snug / hand-tight checking for even gap between flanges
  2. 30% of final torque
  3. 60% of final torque
  4. 100% of final torque
- Check for leaks at maximum working pressure before putting connection into service
- Re-Torque to final recommended torque after 24 hours (due to gasket / bolt relaxation)
- Consider providing additional corrosion protection, such as paint or protective coating, as necessary

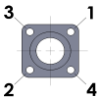
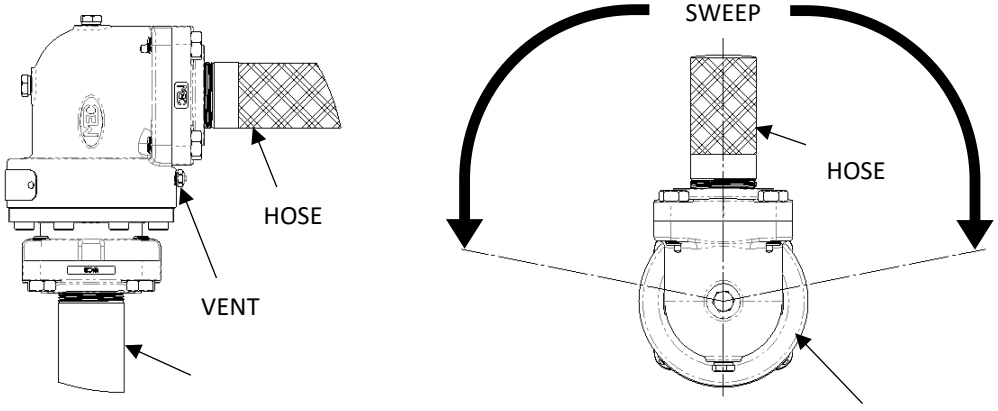
Flange Type		**4-Bolt Square Type A / B**
Size (Inch)		**1-1/4, 1-1/2 & 2**
Tightening Sequence		
Bolt / Stud	Size (Inch)	Ø 1/2
	Thread	1/2-13 UNC
	Min. Grade	**8**
Torque [1, 2, 3] **(Ft-Lb)**	**Lubricated**	**75(101.7Nm)**
	Dry	**100(135.6Nm)**
Wrench Size	(Inch)	3/4

Table 1: Flange Installation Guide

[1] Threaded flange material and thread engagement with stud must be capable of achieving final torque
[2] The torque wrench used should have a minimum accuracy of 5% of full scale or 10% of indicated value
[3] Xylan coated studs and bolts should be installed to the "Lubricated" torque spec. due to its low friction

Installation – Stationary Bulk-Head Loading/Off-Loading Application

For loading/off-loading installation, the Swivel Connector can be used for “sweep” movement of the hose (see figure 2).
Note the Swivel Connector is installed “upside down” for this application with the rotating end connected to the stationary pipe. This allows for wide sweeping movement of the hose.



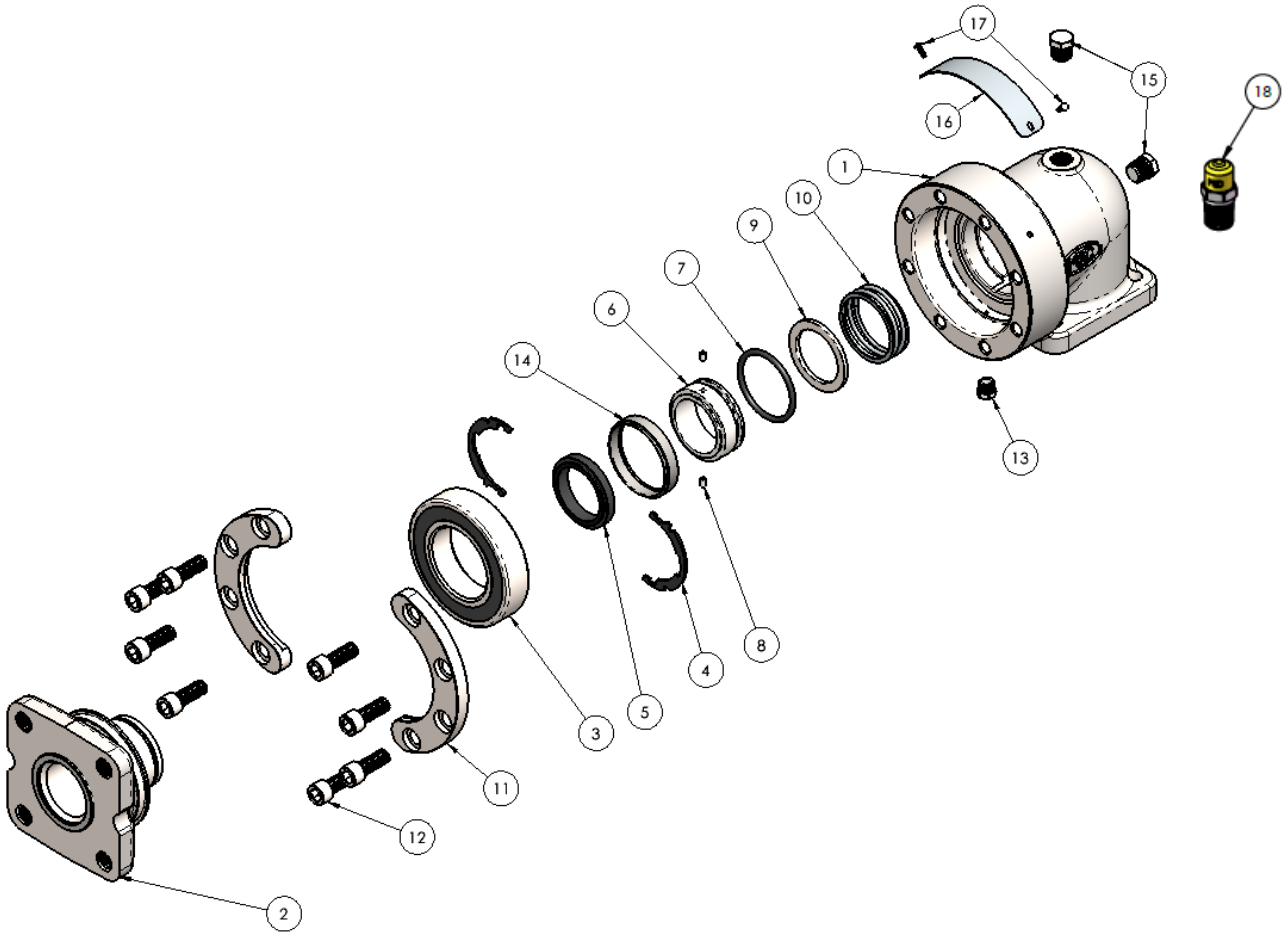


Figure 3: Exploded view – 90° Flange X Flange Swivel Connectors

Parts List		
Ref. #	**DESCRIPTION**	**QTY**
1	MAIN HOUSING	1
2	ROTATING END	1
3	BALL BEARING	1
4	SPLIT RETAINING RING	2
5	SEAL RING	1
6	STATIONARY SEAL	1
7	O-RING, STATIONARY SEAL	1
8	PIN, STATIONARY SEAL	2
9	SPACER	1
10	SPRING	1
11	BEARING RETAINER PLATE	2
12	SCREW, RETAINER PLATE	8
13	1/8" NPT VENT	1
14	SEAL SLEEVE	1
15	1/4" NPT VALVE PLUG	*
16	NAMEPLATE	1
17	DRIVE SCREW	2
18	RELIEF VALVE	*

Table 2: BOM – 90° Flange x Flange Swivel Connector

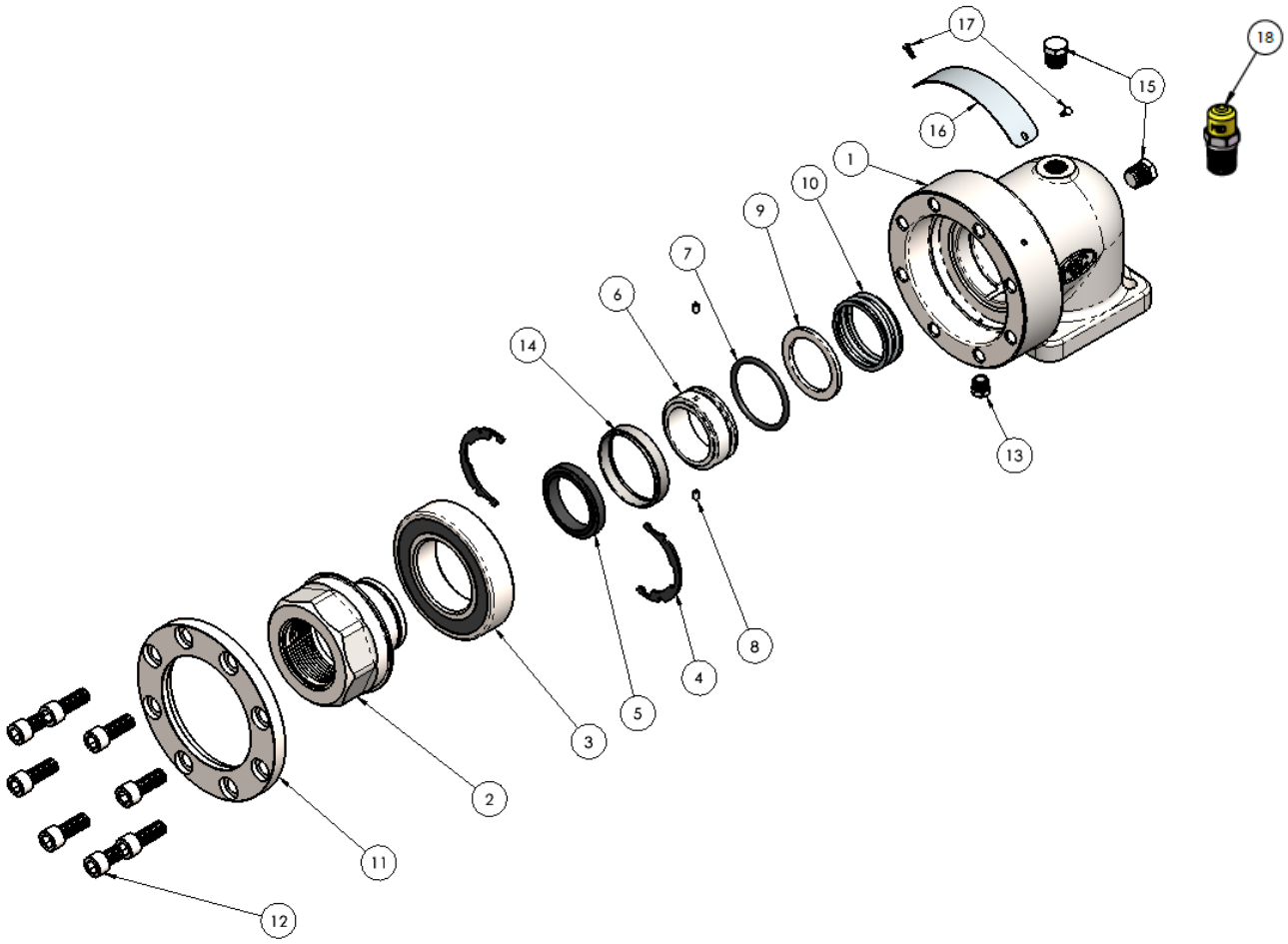


Figure 4: Exploded view – 90° Flange X NPT Swivel Connector

Parts List		
Ref. #	**DESCRIPTION**	**QTY**
1	MAIN HOUSING	1
2	ROTATING END	1
3	BALL BEARING	1
4	SPLIT RETAINING RING	2
5	SEAL RING	1
6	STATIONARY SEAL	1
7	O-RING, STATIONARY SEAL	1
8	PIN, STATIONARY SEAL	2
9	SPACER	1
10	SPRING	1
11	BEARING RETAINER PLATE	1
12	SCREW, RETAINER PLATE	8
13	1/8" NPT VENT	1
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