

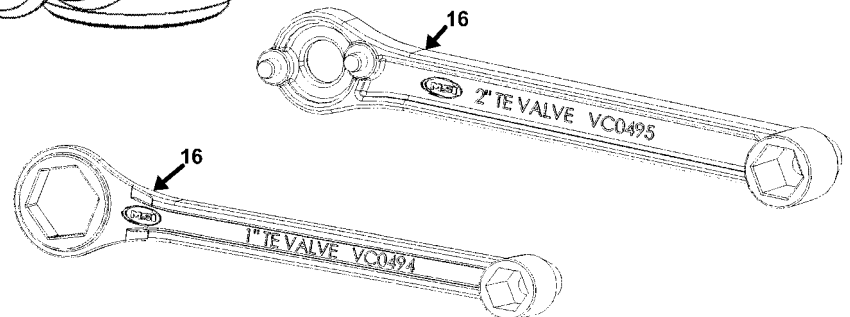
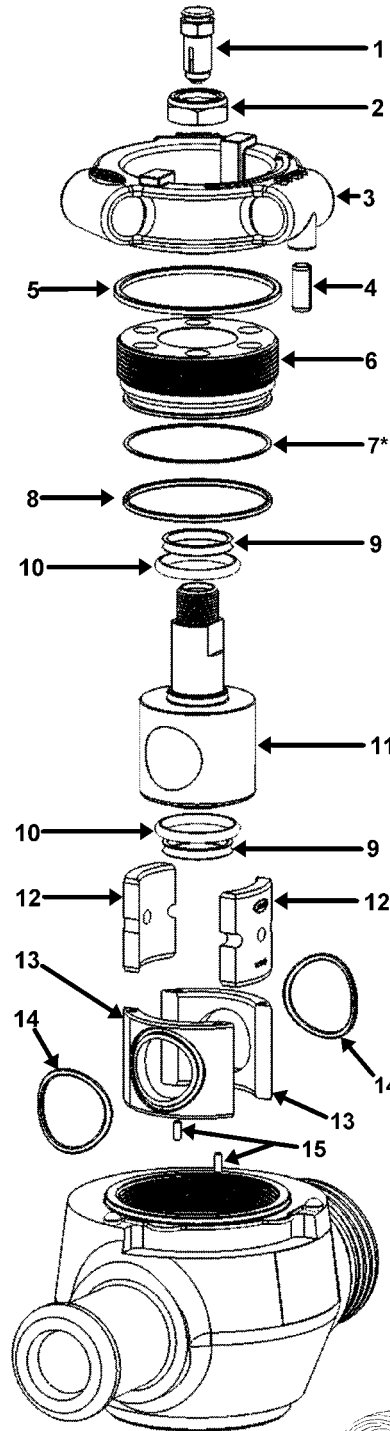
Repair Guide - TE Plug Valve



TE Valve Parts List

Assembly

- Secure the valve body in a vise or other fixed position. Smear a thin film of grease to the entire cavity area below the acme threads
- Clean and visually inspect all new and used parts. Make sure all dirt, rust and old grease is removed prior to assembly.
- Press the segment o-rings (14) into the grooves of each segment (13). Plug valve grease may be smeared over the o-rings to ensure that they remain in position in the grooves.
- Apply a thin film of plug valve grease to the primary sealing surface of the segments (13) and install both segments in the valve body. Make sure the holes of the segments are positioned over the dowel pins in the body cavity.
- Insert two side segments (12) between the seal segments and adjacent to the valve cavity wall. They may be installed halfway to serve as a guide when installing the plug.
- Apply a generous amount of plug valve grease onto the large diameter of the plug (11) along with the plug seal surfaces at each end.
- Press the plug seal o-rings (10) onto the nylon support rings (9) install each assembly onto the top and bottom of the plug (11).
- Holding the threaded end of the plug (11), align the chamfers of the plug and segments. Press the plug down through the segments and the side segments until the plug seats on the bottom of the valve cavity. If necessary, a soft-face mallet may be used to fully seat the plug. If necessary, press down the side segments (12) until they touch bottom.
- Install the o-ring (8) (and backup ring (7) if required) onto the body cap (6). The backup ring must be closest to the threads and its concave surface must be touching the o-ring.
- Apply anti-seize compound to the body cap (6) threads and o-ring area and install into the valve body.
- Use the appropriate valve wrench (16) to tighten the body cap (6).
- Install the valve handle (3), making sure that the pin (4) slots into the groove on the valve body. Secure the handle with the lock nut (2). *If the valve has an actuator or gear operator, bolt it back on the valve body and verify full 90° rotation. Adjust limit stops as necessary.*
- Install the SafeTap® grease fitting (1) into the top of the plug using 50-60 ft-lbs of torque. *Teflon tape should not be used with SafeTap grease fittings since they do not seal on the threads. See back page for more details on the SafeTap® grease fitting.*
- Grease the valve in the open position to approximately 3000psi, cycle once, and then grease one more time. GreaSeal® plugs should be greased in the open position to pack the valve cavity but may also be greased in the closed position prior to testing or while in service. **See back page for more details on GreaSeal® plugs.**



STANDARD SERVICE

NO.	DESCRIPTION	QTY	1"	2"
1	GREASE FITTING (SafeTap)**	1	HC0226	HC0226
2	LOCK NUT	1	HC0197	HC0198
3	HANDLE ADAPTER	1	VC0492	VC0493
4	ROLL PIN (HANDLE ADAPTER)	1	HC0196	HC0196
5	FELT GASKET	1	VC0498	VC0499
6	BODY CAP	1	VC0490	VC0491
7	BODY CAP O-RING BACKUP	1	N/A	OC0089
8	BODY CAP O-RING	1	OC0088	OC0088
9	PLUG SEAL SUPPORT RING	2	VC0496	VC0497
10	PLUG SEAL O-RING	2	OC0087	OC0090
11	PLUG**	1	VC0500	VC0507
11	PLUG (GreaSeal)**	1	VC0519	VC0520
12	SIDE SEGMENTS	2	VC0502	VC0508
13	SEGMENT SET***	1	VC0501	VC0508
13	SEGMENT SET (UNIsert)*	1	VC0501U	VC0508U
14	SEGMENT O-RING***	2	OC0092	OC0091
15	DOWEL PIN	2	VC0513	VC0513
16	VALVE WRENCH	1	VC0494	VC0495
	SEAL KIT	1	VA0584	VA0586
	REPAIR KIT	1	VA0585	VA0587
	REPAIR KIT (UNIsert)*	1	VA0610	VA0612
	REPAIR KIT (UNIsert/GreaSeal)*	1	VA0611	VA0613

H2S (SOUR) SERVICE

NO.	DESCRIPTION	QTY	1"	2"
1	GREASE FITTING (SafeTap)**	1	HC0226	HC0226
2	LOCK NUT	1	HC0197	HC0198
3	HANDLE ADAPTER	1	VC0492	VC0493
4	ROLL PIN (HANDLE ADAPTER)	1	HC0196	HC0196
5	FELT GASKET	1	VC0498	VC0499
6	BODY CAP	1	VC0525	VC0526
7	BODY CAP O-RING BACKUP	1	N/A	OC0098
8	BODY CAP O-RING	1	OC0095	OC0097
9	PLUG SEAL SUPPORT RING	2	VC0496	VC0497
10	PLUG SEAL O-RING	2	OC0096	OC0099
11	PLUG**	1	VC0521	VC0523
11	PLUG (GreaSeal)**	1	VC0531	VC0532
12	SIDE SEGMENTS	2	VC0502	VC0506
13	SEGMENT SET***	1	VC0522	VC0524
13	SEGMENT SET (UNIsert)*	1	VC0522U	VC0524U
14	SEGMENT O-RING***	2	OC0100	OC0101
15	DOWEL PIN	2	VC0513	VC0513
16	VALVE WRENCH	1	VC0494	VC0495
	SEAL KIT	1	VA0614	VA0618
	REPAIR KIT	1	VA0615	VA0619
	REPAIR KIT (UNIsert)*	1	VA0616	VA0620
	REPAIR KIT (UNIsert/GreaSeal)*	1	VA0617	VA0621

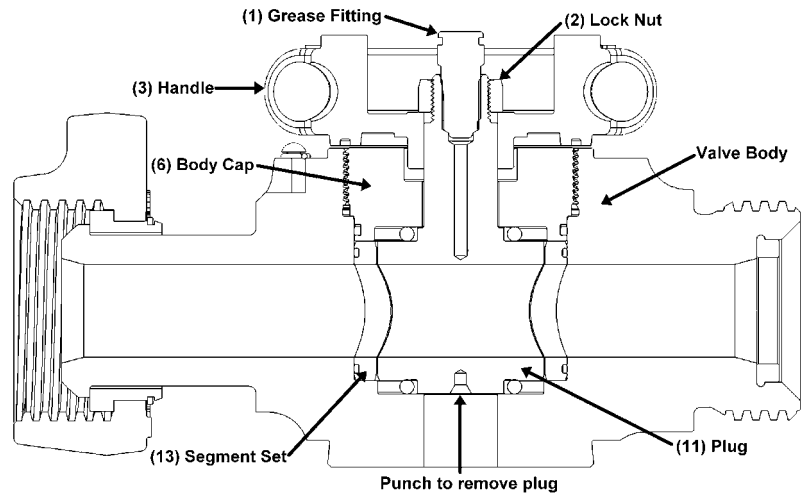
*The MSI UNIsert is recommended for high pressure dry gas environments.

**MSI Plugs must be paired with MSI SafeTap grease fittings

***MSI Segments must be paired with o-rings and do not use the square seals

Disassembly

1. Secure the valve assembly in a vise or other fixed position.
2. Remove the grease fitting (1) and the lock nut (2) from the top of the valve.
3. Remove the valve handle (3) or actuator/gear operator and mounting bracket.
4. Remove the body cap (6) using the appropriate valve wrench (16).
5. Remove the plug (11) by lifting up and twisting back and forth.
 - If necessary, the valve handle may be attached to the plug and secured with the lock nut. Use a bar to twist and lift the plug out of the valve.
 - The plug may also be hammered out by using a punch through the bottom of the valve.
6. Remove the side segments (12) by prying them away from the body cavity wall.
7. Remove the seal segments (13). If the seal segments must be pried loose, avoid scoring or denting the body cavity wall.
8. Remove all seals including: body cap o-rings (7) (8), segment o-rings (14), and plugseal o-ring/support ring (9)(10).
9. Remove all grease and debris from all valve components



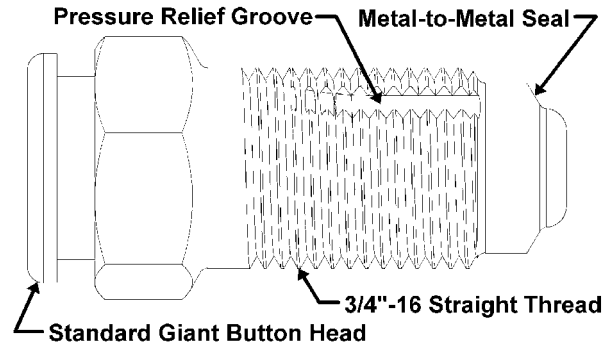
Inspection and Repair

1. After degreasing the parts, visually inspect for wear, corrosion, or any other physical damage.
2. Inspect the primary sealing surface of the plug (11) and segments (13) for any scratches or dings. Parts with heavy dings or deep scratches in the sealing surfaces should be replaced. For light wear or superficial blemishes, use 600-grit sandpaper along with a solvent to polish.
3. All surfaces which contact the elastomeric seals must be smooth and free of rust and pitting. Use sandpaper to polish. Parts with excessive pitting and rust should be replaced.

SafeTap® Grease Fitting

SafeTap® grease fittings are design to provide maximize safe operation in the field with these key features:

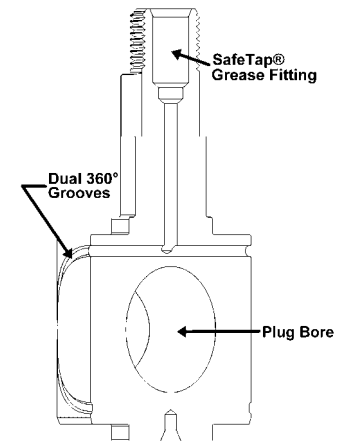
- The unique metal-to-metal seal eliminates wetted threads and pipe taps. Since the threads do not perform a sealing function they do not require Teflon tape or other sealing aids.
- The heavier cross section stands up better to impacts.
- Each fitting has a slot machined through the threads which serves as a pressure relief path in the event of a leak.
- The metal-to-metal seal and the pressure relief slot of the SafeTap® grease fitting also allows a means to safely bleed any residual internal pressure.



GreaSeal® Plug

The patented GreaSeal® plug is designed to provide maximum lubrication in the harshest field conditions. Key features include:

- The only plug that allows greasing in the opened or closed position while in service.
- Dual 360° grease channels
- Forces grease into 360° of the seal area when closed.
- Allows for complete distribution of lubricant immediately prior to opening a valve when exposure to high temperatures and well fluids may have compromised the existing grease.
- Greasing in the closed position can stop or significantly slow leaks in valves with worn or damaged parts.



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