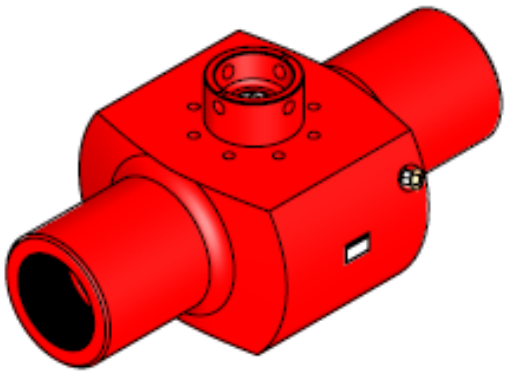
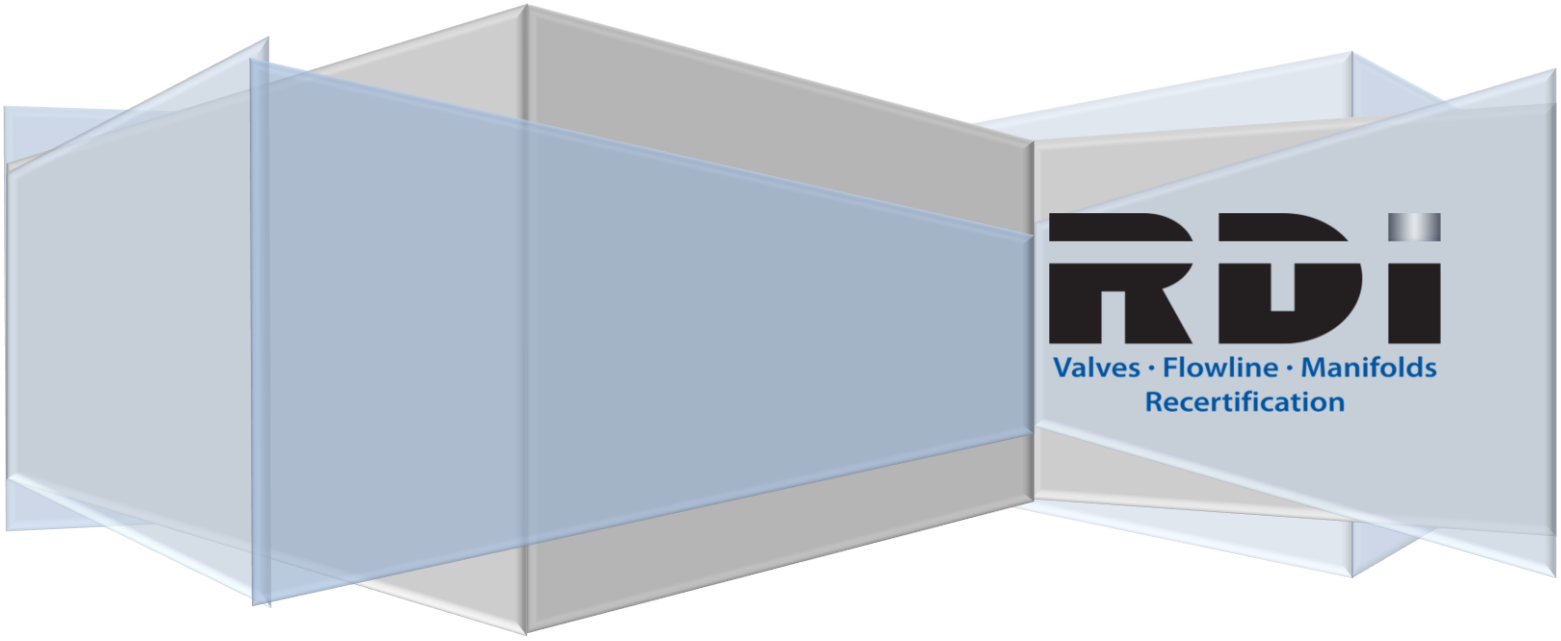
Red Deer Ironworks



5” Plug Valve
Maintenance Manual



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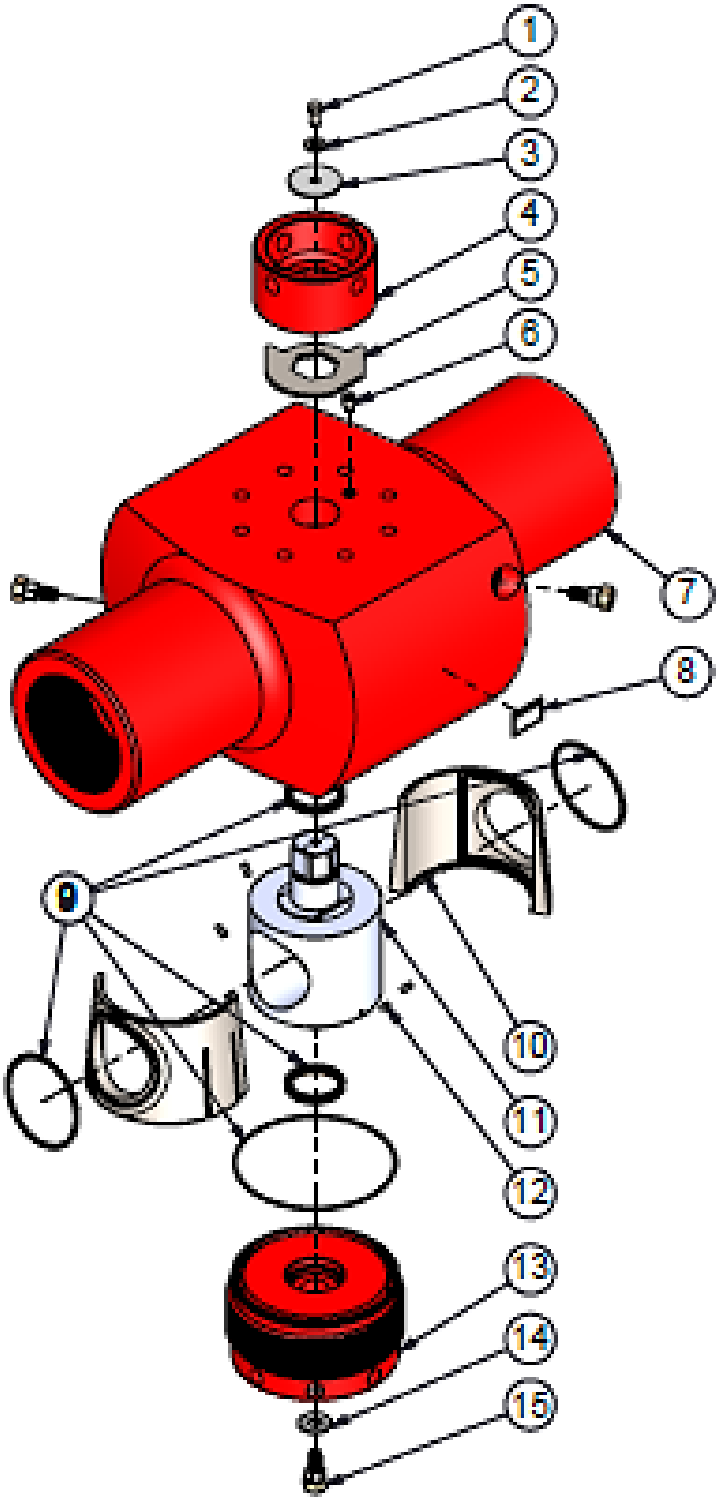
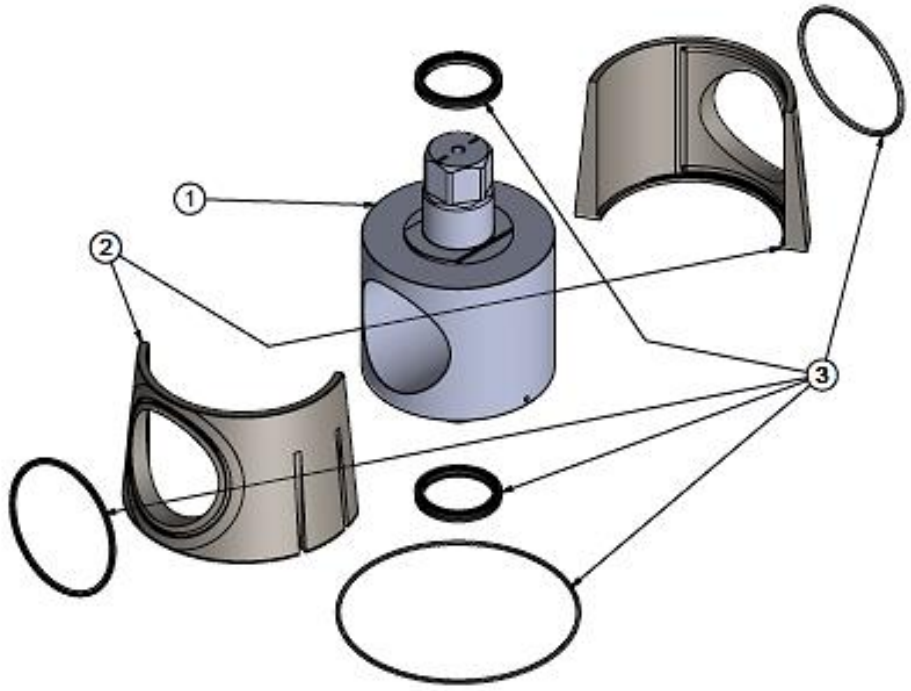
EXPLODED VIEW - PV5X8ACMEBBLTSTD



PARTS LISTING - PV5X8ACMEBBLTSTD

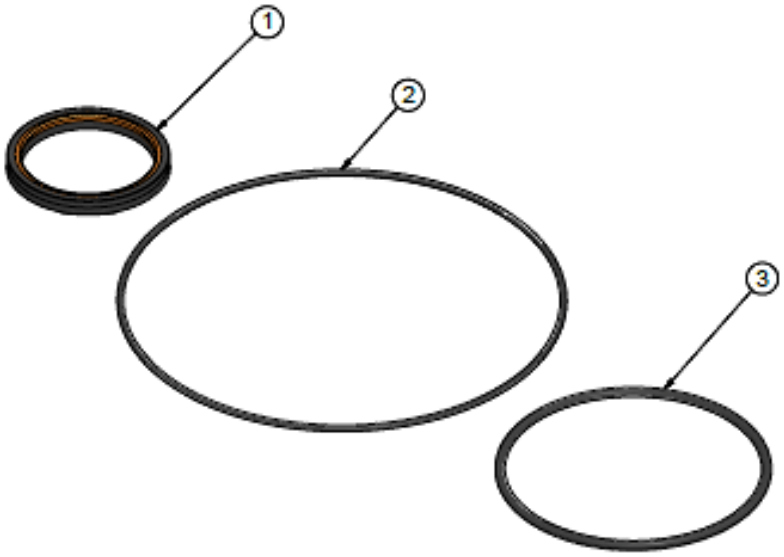
Item	Qty	Description	Part #
1	1	Hex Bolt, 1/2-20 X 1 X 1 Thread Length	HBOLT 0.5000-20x1x1-N
2	1	Flat Washer - 1/2	FW 0.5
3	1	1/2" Flat Washer - 3 1/4in OD	PV5LTWASHER
4	1	Plug Valve Handle	PV5HDLLT
5	1	Stop Plate	PV5HDLSTOPLT
6	1	Cap Screw, Socket Head, Hex, 1/2-20 X 1/2 X 1/2 Thread Length	SHCS 0.5-20x0.5x0.5-N
7	1	Plug Valve Body	PV5X8ACMEBBLTSTD
8	1	Name Plate	VLVTAG-P001
9	1	Plug Valve - 5in Low Torque Minor Repair Kit 15,000psi Standard Service	PVRK5LTMINSTD
10	2	Seat Carrier Body	PV5FINSEATCARRLTSTD
11	1	Plug Body	PV5FINPLUGLTSTD
12	4	Grooved Pin - 0.3125in DIA X 0.75in Long	PV3PIN
13	1	Cap Body	PV5BODCAPLTSTD
14	1	Flat Washer - 3/4	FW 0.75
15	3	3/4" - 16 TPI Giant Button Head Grease Fitting W/ Vent Cap (Bh33s6-80)	SH-045

MAJOR REPAIR KIT PARTS LISTING



Item	Qty	Description	Part #
		Major Repair Kit	**PVRK5LTMAJSTD**
1	1	Plug Body	PV5FINPLUGLTSTD
2	2	Seat Carrier Body	PV5FINSEATCARRLTSTD
3	1	Plug Valve - 5in Low Torque Minor Repair Kit 15,000psi Standard Service	PVRK5LTMINSTD

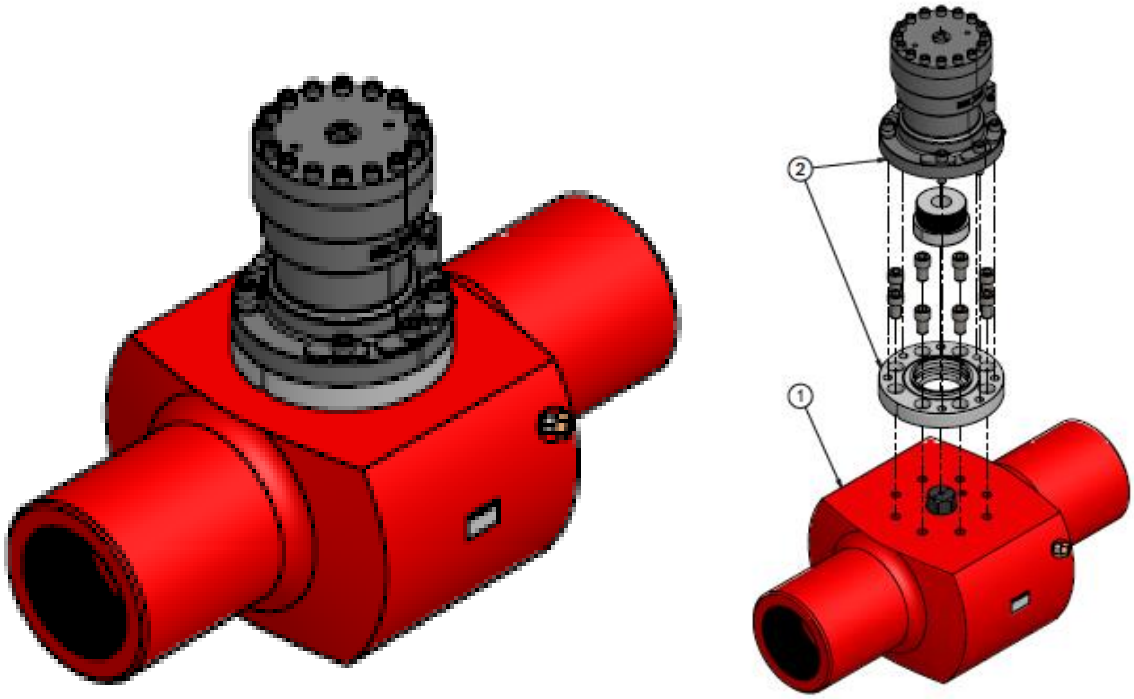
MINOR REPAIR KIT PARTS LISTING



Item	Qty	Description	Part #
		Minor Repair Kit	**PVRK5LTMINSTD**
1	2	Plug Seal	PV415LTPLUGSEALSTD
2	1	O-Ring 273	OR-N90-273
3	2	O-Ring 359	OR-N90-359

HYDRAULIC ACTUATED - PV5X8ACMEBBLTHASTD

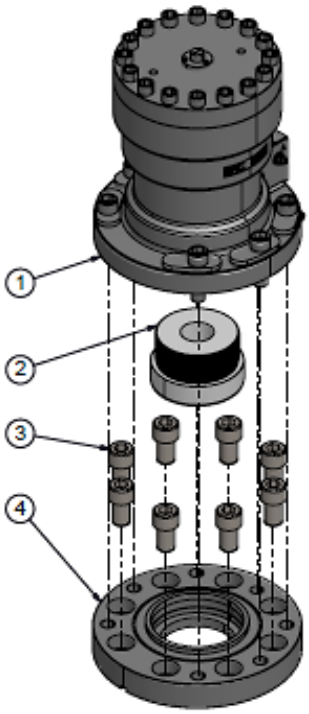
(this part is optional)



Item	Qty	Description	Part #
1	1	Plug Valve - 5in Low Torque With 8 ACME BOX X BOX Connections (Actuator Prepared) 15,000psi Standard Service	PV5X8ACMEBBLTAPSTD
2	1	BRC 8000 Hydraulic Actuator - 5in Low Torque Plug Valve	PV5LTHA-BRC8K

Note: The HYRAV AS008 (DWG PV5LTHA-HYRAV8K-A001) is an equivalent actuator that can be used as an alternative to the BRC 8000. Contact Sales for more information.

PARTS LISTING - PV5LTH-BRC8K
(BRC 8000 HYDRAULIC ACTUATOR)



Item	Qty	Description	Part #
1	1	BRC 8000 Hydraulic Actuator	BRC8000HA
2	1	Modified OEM Drive Gear	BRC8KDG
3	8	Cap Screw, Socket Head, Hex, 1-8 x 1-3/4 x 1-3/4 Thread Length	SHCS 1-8x1.75x1.75-N
4	1	Modified OEM Mounting Plate	BRC8K5PVMP

Note: Contact Sales for a copy of the B.O.M. for the HYRAV AS008 (DWG PV5LTHA-HYRAV8K-A001).

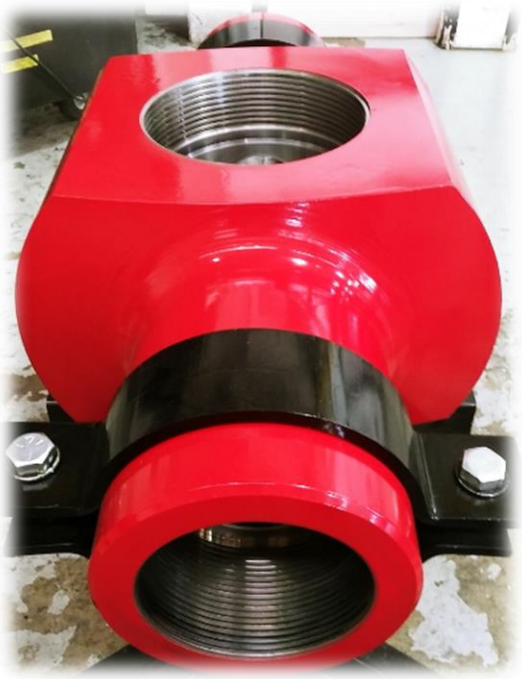
ASSEMBLY PROCEDURE

Pictorial - PV5X8ACMEBBLTSTD

It is important that the workstation is clean and free of any contaminants such as metal shavings, dirt, etc. Do not sand or de-burr any items while at the assembly workstation.

Note: RDI-6430 (assembly grease), RDI 2015 (grease stick) and Nikal (anti-seize compound) are used in this procedure. Use of grease other than this is not recommended as it may adversely affect the performance and functionality of the Plug Valve.

1. Clean and inspect all parts for any damage (i.e. dents, scratches, sharp edges and burrs), particularly on the sealing areas and threads prior to assembly.



2. Coat **O-Ring 273 (Minor Repair Kit #2, pg.5)** with **assembly grease** then install it into the outer groove on the **Cap Body (#13)**.

3. Apply **assembly grease** into the seal pocket of the **Cap Body**. Coat the **Plug Seal (Minor Repair Kit #1, pg.5)** with **assembly grease** then install it into the seal pocket of the **Cap Body** with the copper piece facing down.

4. Pack the groove with **assembly grease** and apply it liberally on the bottom flat surface and in the bottom pocket of the **Cap Body** as shown.

5. Apply a liberal amount of **RDI 2015 (grease stick)** on the sealing surface of the **Plug Body (#11).**

   Note: The **Plug Valve Handle (#4)** is temporarily used here as a stabilizer to keep the **Plug Body** from falling over - insert the hex end of the Plug into the hex hole of the **Plug Valve Handle**.

6. Apply a liberal amount of **RDI 2015 (grease stick)** on the sealing surface of the **Seat Carrier Bodies (#10).**

7. Coat **O-Rings 359 (Minor Repair Kit #3, pg.5)** with **assembly grease** then install them into the grooves of the **Seat Carriers.**

8. Install the **Seat Carriers** onto the **Plug Body.**

9. Align the bores of the **Seat Carriers** and the **Plug Body.**

10. Using a crane, install the **Cap Body** onto the **Plug Body.**

11. Use one of the three **Giant Button Head Grease Fittings (#15)** and the **Flat Washer - ¾ (#14)** to secure the **Cap Body.** Lightly tighten turning **clockwise**.

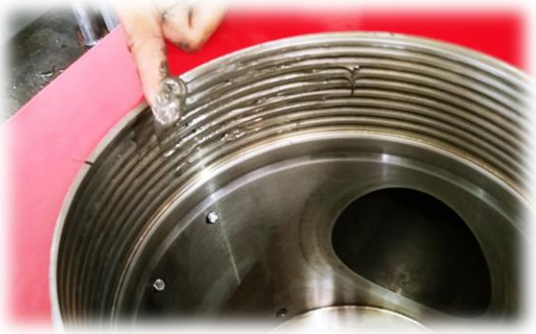
12. Apply **anti-seize compound** on the external threads of the **Cap Body.**

13. Insert the **Grooved Pins (#12)** into the pin holes on both sides of the **Plug Valve Body (#7)**. Seat the **Grooved Pins** using a flat head punch (ensure they are fully engaged).

Note: Insert **Pins** small end first. Use an air nozzle to blow out the inside of the **Plug Valve** to remove any contaminants.

14. Apply a moderate amount of **assembly grease** into the bottom seal pocket of the **Plug Valve**. Coat the **Plug Seal** with **assembly grease** then install it into the seal pocket of the **Plug Valve** with the copper piece facing down.

15. Apply **anti-seize compound** on the internal threads of the **Plug Valve.**



16. Apply a moderate amount of **assembly grease** to the internal wall of the **Plug Valve.** Using a crane, slowly insert the **Plug/Cap/Seat Carrier Assembly** into the **Plug Valve** in the open position (**Plug Bore** aligned with **Valve Bore**).

Note: Ensure that the notches on both **Seat Carriers** will pass freely on the **Grooved Pins**. Mark the position of the **Grooved Pins** on the **Plug Valve** with a Sharpie to visibly align the notches.

17. Using a bar, tighten the **Cap Body** till snug, then back off a ¼ turn to allow free movement of the **Plug Body**.

18. Tighten the **Giant Button Head Grease Fitting** till snug.

Note: Check the bore alignment of the **Plug, Seats** and **Plug Valve**. Adjust the **Cap Body** if necessary but **DO NOT** over loosen - alignment can be achieved within the quarter turn.

19. Thread the two remaining **Giant Button Head Grease Fittings** into both sides of the **Plug Valve** - tighten till snug.

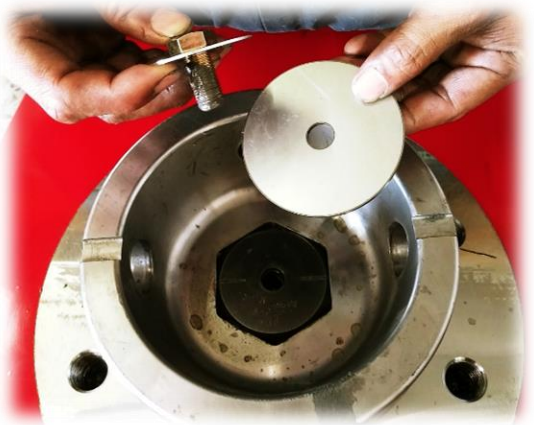
20. Flip or rotate the **Plug Valve** over and thread the **Cap Screw (#6)** into the ½-20 threaded hole.

21. Slide the **Stop Plate (#5)** onto the **Plug Body** hex as shown for proper orientation in the open position.

Note: Ensure that position of the **Plug Body** corresponds to the open/closed positions of the **Stop Plate** when turning the **Plug**.

22. Secure the **Handle** on top of the **Stop Plate** with the **Hex Bolt (#1)** and **Flat Washers (#2 & #3)** and tighten it snugly.

Note: For proper orientation refer to the Exploded View on pg.2.



GREASING INSTRUCTIONS

Ensure you have the most recent version of the RDI Greasing Instructions by visiting:

https://rdironworks.com/products/plug-valves/

or contact our sales team, toll-free:

1.855.973.4766

TEAR-DOWN PROCEDURE

WARNING: If the **Plug Valve Handle** is hard to cycle or turn and the **Plug Valve** seems to be stuck or locked, there may be pressure trapped in the **Valve**, also known as “pressure locking”. If this happens, **DO NOT** continue to tear-down a **Pressure Locked Plug Valve**. (See Pressure Relieving Procedure for instructions).

Refer to the steps in the Assembly Procedure to tear-down the **Plug Valve**.
Thoroughly degrease and clean all parts that are disassembled. Check for any damage, replace as necessary.

PRESSURE RELIEVING PROCEDURE

Pressure locking is caused by a rapid decrease in line pressure which traps fluid at the original line pressure. The trapped pressure causes a net upward force of the plug due to a differential in pressure area from top to bottom.

Best Practice for relieving trapped pressure in a **Plug Valve**. Connect the **Valve** and bring it to its last highest pressure. This will set the internal components in equilibrium and allow you to actuate the **Plug** while gradually decreasing the in-line pressure. This will ensure the **Plug** maintains freedom of rotation.

RDI SALES & SERVICE CENTERS

For a list of our locations visit our website @
https://rdironworks.com/contact-a-location-near-you/.

Toll Free Phone: 855.973.4733
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