



DOUBLE BLOCK AND BLEED OPERATING PROCEDURES



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PLEASE READ THROUGH ALL OPERATING PROCEDURES THOROUGHLY AND CAREFULLY BEFORE ATTEMPTING INSTALLATION. COMPLIANCE TO THESE INSTRUCTIONS CAN PREVENT SAFETY HAZARDS.

1. Before Installation

- Check the *Line Size* and *Schedule* of the pipe being tested. Verify that the stamping on the plug confirms to the pipe size and schedule in which it is being installed.
- Visually inspect the *Plug* every time before installation. Worn or damaged parts can be purchased separately, if needed for replacement.
- Prior to installation, clean and dry the internal surface of the pipe. Remove any moisture, debris and excessive scale from the internal surface of the pipe.
- Lubricate the *Threads* on the *Shafts* to reduce the friction between *Hex Nuts* and *Shafts* during installation. This will ensure that most of the energy is transferred to the *Seals* during the *Hex Nuts* being torqued.
- Connect the Upstream Monitoring Gauge to monitor the upstream pressure and pressure source to pressurize between *Seals* for isolation. Upstream vapors may be vented by attaching the hose approximately 50 feet long to a tee fitting simultaneously with the upstream pressure monitoring gauge.
- Fully insert the *Plug* in the pipe such that both the *Seals* are inside the pipe and as far away from the weld area as possible (temperatures in excess of 180°F for extended periods of time will cause the seal to fail).



Urethane seals are rated at 180°F continuous operating temperature. High temperature seals are available upon request.

2. Plug Installation

- Each size plug has a minimal torque required to safely install the plug. Depending on the internal surface of the pipe, this torque might vary. Also there is a maximum torque value that can be applied to each size plug, which should never be exceeded.
- Tightening the *Hex Nuts* to a specific torque value is important for proper operation of *Double Block and Bleed Isolation Plugs*. The normal torque values are listed in *Table 1* on the last page of this manual and should be adequate for most installations. During installation, torque the *Plug* in increasing increments starting at normal installation torque. If maximum torque is applied and the *Plug* still leaks, visually inspect the *Seal* and check the seal size.
- Tighten the *Hex Nut* with hand to remove any slack from the parts. Then use a combination wrench or socket wrench capable of producing the required torque. Start tightening the bottom *Hex Nut* and then follow in a star pattern which will ensure proper centering of *Plug* and equal torquing of each *Shaft*. Make sure that the *Seals* have fully contacted with the pipe ID. Complete installation by using a calibrated torque wrench to ensure that the *Hex Nuts* are tightened to the prescribed torque value.



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3. Pressurization

- Prior to pressurization, ensure that the *Plug* is installed properly inside the pipe and the upstream monitor gauge and pressure source are connected.
- During pressurization there might be some settling of the *Plug*. If the *Plug* at any time moves more than 0.125", the test must be halted and the pressure should be released immediately. Inspect the *Plug* and pipe internal surface for damage. After the required corrective action is taken, reinstall the *Plug*. If the situation continues please **contact USA Industries** for technical assistance.
- During pressurization all the personnel should remain clear of the test plug and immediate test area.
- Slowly introduce the test pressure and if necessary hold the desired pressure with pump running for about 5 minutes. This will allow parts to settle. Do not exceed maximum pressure given in *Table 1* on the last page of this manual.

4. Plug Removal

- After the isolation application is complete, ensure that all back pressure is released.
- Loosen the *Hex Nuts* in incremental fashion using the same star pattern used for torquing to relax the *Seal*. This will ensure equal distribution of load on all shafts.
- Remove the *Plug* from the pipe.

5. Plug Inspection After Use

- Inspect the *Plug* for wear and replace the damaged parts. **Contact USA Industries** for additional components for replacement.
- Prior to storage, clean and dry the *Plug*. Re-lubricate the *Shaft Threads* and *Hex Nuts* and store in a safe area.



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Table 1. Double Block and Bleed Installation Torque Specification Chart

LINE SIZE	PIPE SCHEDULE	NORMAL INSTALLATION TORQUE (ft - lbs)	MAXIMUM INSTALLATION TORQUE (ft - lbs)	MAXIMUM PRESSURE BETWEEN THE SEALS (psi)	MAXIMUM UPSTREAM PRESSURE (psi)
3/4 "	40	3.0	7.0	2250	50
3/4 "	80	2.5	4.0	2250	50
1 "	40	5.0	7.5	2250	50
1 "	80	4.0	7.0	2250	50
1 1/2 "	40	15.0	20.0	2250	25
1 1/2 "	80	15.0	20.0	2250	25
2 "	40	30.0	50.0	2250	25
2 "	80	30.0	50.0	2250	25
2 1/2 "	40	60.0	100.0	2250	25
2 1/2 "	80	60.0	100.0	2250	25
3 "	40	150.0	200.0	2250	25
3 "	80	150.0	200.0	2250	25
4 "	40	300.0	400.0	2250	15
4 "	80	275.0	375.0	2250	15
6 "	40	75.0	125.0	2250	10
6 "	80	75.0	125.0	2250	10
8 "	40	135.0	225.0	2250	10
8 "	80	135.0	225.0	2250	10
10 "	40	220.0	315.0	2250	10
10 "	80	220.0	315.0	2250	10
12 "	40	270.0	375.0	2250	10
12 "	80	270.0	375.0	2250	10
14 "	40	240.0	375.0	2250	5
14 "	80	240.0	375.0	2250	5
16 "	40	235.0	375.0	2250	5
16 "	80	235.0	375.0	2250	5
18 "	40	350.0	450.0	2250	2
18 "	80	350.0	450.0	2250	2
20 "	40	300.0	425.0	2250	2
20 "	80	300.0	425.0	2250	2
24 "	40	350.0	500.0	2250	2
24 "	80	350.0	500.0	2250	2