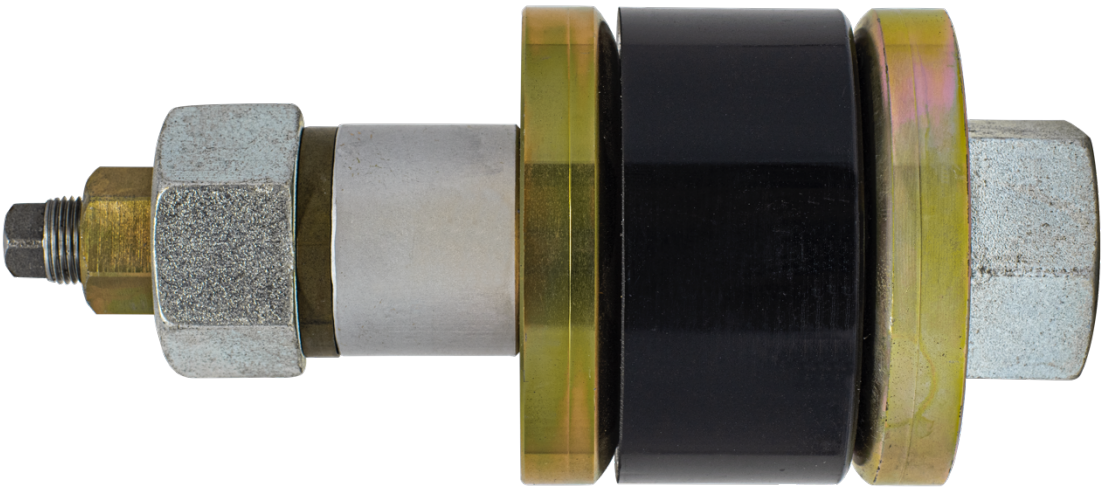
USA INDUSTRIES

SINCE 1982

HEAVY DUTY INDUSTRIAL ISOLATION PLUG OPERATING MANUAL



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INDUSTRIAL ISOLATION PLUG – OPERATING PROCEDURE

> ⚠ **WARNING:** Please read through the operating procedure carefully before attempting installation. Compliance to these instructions could prevent any 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.
- Insert the plug into the pipe such that both the seal and both compression rings are completely inside the pipe.

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 installation of Industrial Isolation plugs. The normal torque values are listed in Table 1 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 pipe wrench or socket wrench capable of producing the required torque. Make sure that the seal has fully contacted with the pipe ID. Complete installation by using a calibrated torque wrench to ensure that the hex nut is tightened to the prescribed torque value.

Table 1. Isolation Plug Installation Torque Specification Chart

Line Size	Normal Installation Torque [ft-lbs]	Maximum Installation Torque [ft-lbs]
3/4”	2.5	4.0
1”	4.0	7.0
1 1/2”	15.0	20.0
2”	30.0	50.0
2 1/2”	60.0	100.0
3”	150.0	200.0
4”	275.0	375.0
6”	475.0	625.0
8”	150.0	250.0
10”	200.0	250.0
12”	200.0	250.0
14”	200.0	250.0
16”	200.0	250.0
18”	200.0	275.0
20”	225.0	300.0
24”	300.0	350.0

3. Pressurization

⚠ **WARNING** - Industrial Isolation Plugs are not intended for test purposes and ***should be used for vapor barrier isolation purposes ONLY***. Isolation plugs are not designed for pressure retention; therefore, caution must be taken if any pressure builds up behind the plug. The use of a safety gag is strongly recommended for isolation plugs. If holding pressure is a requirement, please refer to USA Industries GripSafe®ST pressure retaining plugs.

- Always ensure the vent port on the plug is either 1) clear and open or 2) constantly monitored with a pressure gauge to ensure the Maximum Upstream Pressure is never exceeded.
- While in the line all personnel should remain clear of the front of the Isolation Plug.

4. Plug Removal

- After the Isolation application is complete, ensure that all the 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 the plug in a safe area.