

Petersen
Products Company

145-9 Series Mechanical Plug Instruction Manual

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WARNING

Read and understand instructions before using Petersen Mechanical Plugs!
Failure to comply may result in property damage, serious injury or death!
These instructions must be available to all users. Train all personnel for proper use.

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Important Safety Instructions

Safety is Everyone's Responsibility



WARNING

Extremely high forces are involved in many pipeline-plugging situations that may cause injury or even death. Forces increase dramatically as pressure and pipe diameter increase. Extreme care is required to ensure the safe use of any Plug.

- All line stop plugs must be anchored adequately.
- Do not use mechanical plug as the primary protection for personnel downstream.
- Debris or protrusions into the pipeline can damage a seal or reduce the pressure rating. NEVER use a test pressure greater than the capacity of the weakest pipe or component in the system.
- Consult qualified personnel if you cannot calculate the risks or forces involved.
- Do not exceed the pressures on the plug label.
- Never use equipment when a failure could result in injury or significant property damage.
- Because of the many possible variables, these general instructions must be adapted by an engineer for each specific project. Instructions and training must be provided to all plug users and workers on the job.

Personnel Safety



CAUTION

Keep all personnel away from the plug end area.

- Wear required PPE including but not limited to eye protection, helmet, hearing protection.
- Follow all confined space safety controls. Confined space authorization, air monitor, and ventilation may be required.

Safety Inspections

- Survey the work area for unsafe conditions. Verify all people have read the Product Labels, Scope of Work, and instructions developed specific to the project.
- Thoroughly inspect the mechanical plug for abrasions, cuts, or physical damage. Clean the plug if required.
- Gather all required tools. Have all personnel ready when installing and removing any type of mechanical plug.
- Prepare to equalize pressure on both sides of the mechanical plug before installation **and** removal.
- Verify that the pipeline flow is stopped.
Contact the project engineer or Petersen if needed. Safety is the highest priority.

Common Anchoring Methods

- Use a strongback outside the pipe.
- Drill anchor points into tunnel walls.
- Weld anchor lugs into the pipe.
- Petersen can make an anchor ring with set screws to fit with your Inflatable Plug.

Torque and Pressure Figures



WARNING

If sufficient torque is not applied, physical damage or personal injury can occur.

- Follow the figures listed on the Data Tag or website petersenproducts.com.

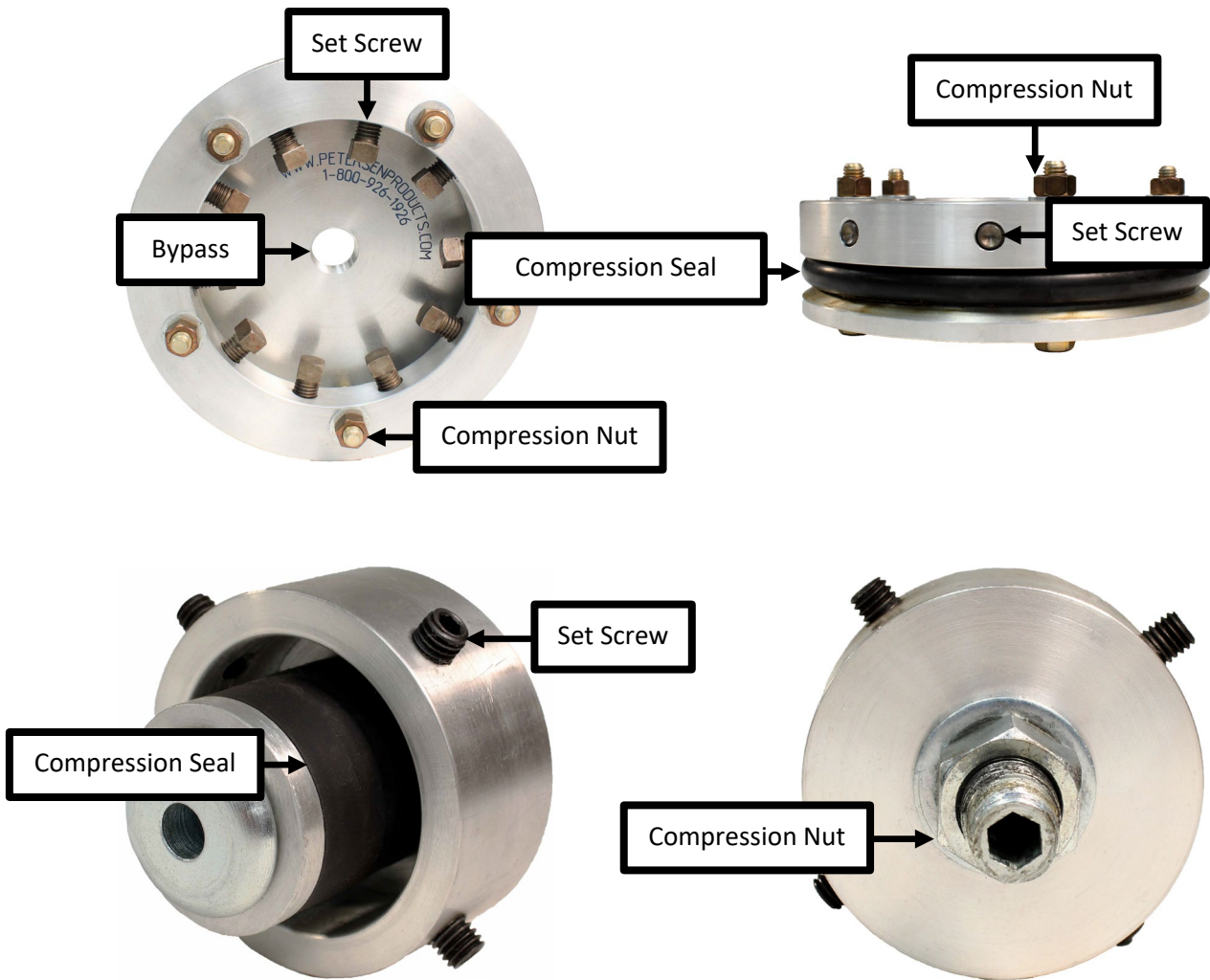
Pre-Insertion Inspection

The Petersen 145-9 Series Mechanical Plugs can be used for multiple pipeline systems and may require a variety of tools. Verify all required tools and equipment are available. Appearances may vary depending on size and model.



Note

Confirm all information on the Data Tag.



NOTE

Petersen recommends inspecting the mechanical plug after every use. Possible damage can occur when inserting a Plug into a Pipe. Often mechanical plugs can be refurbished and recertified by Petersen Products to like-new condition or set interval to match quality standards.

Contact Petersen to confirm the suitability of the line stop plug if needed.

Inserting the Plug

The Mechanical Plug requires the solid back plate be against the pressure, unless specifically designed for reverse pressure.

1. Inspect the Plug for any possible physical damage before each use.
2. Inspect the Set Screws for any physical damage. Replace as needed.
NOTE: Dull, damaged, or clogged points will not hold rated pressure.
3. Remove any dirt, debris, or from the pipe ID. The Plug requires a clean landing area for an effective seal.
4. If smaller model, fit the plug around the pipe. Verify that the plug is flush against the edge of the pipe.
5. If larger model, insert the plug into the pipe. Verify that the plug is fully inserted and not sticking out.
6. Square the plug by lightly tapping the Plug face with a leather mallet. Do not damage the Plug.
7. If needed, install the Pipe Clamp. Thin wall pipes must be supported by a pipe clamp on the OD of the pipe. The Set Screws will not hold without adequate support. Contact Petersen if a Pipe Clamp is needed.



Note

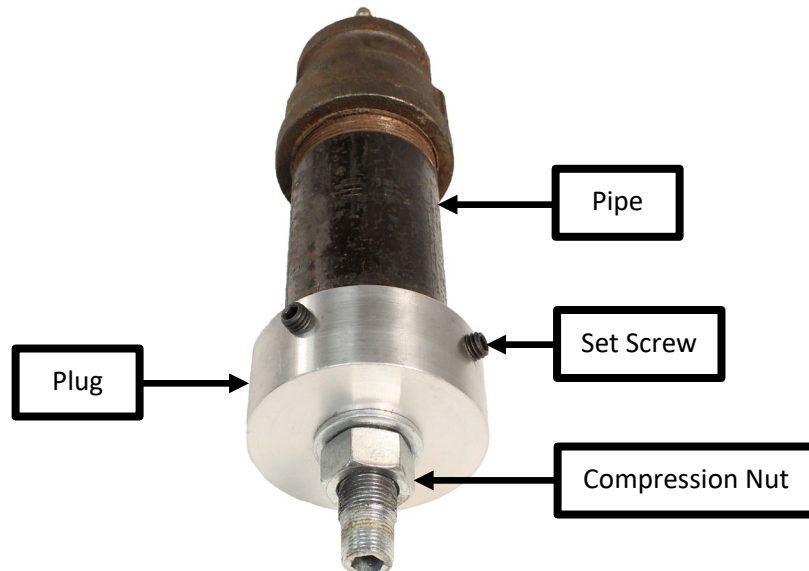
The Plug will not hold the rated pressure if the Set Screws and Compression Nut are not torqued correctly.

8.1 For Smaller Models:

8.2 Tighten the set screws in a cross pattern. Sequence the torque three times 30%, 70%, 100% of the rated torque. Tighten and torque the compression nut to the rated torque.

NOTE: See the Data Tag or visit petersenproducts.com for torque figures.

8.3 Stress relaxation can occur. Retorque the Set Screws and Compression Nut until the torque holds at the required values.

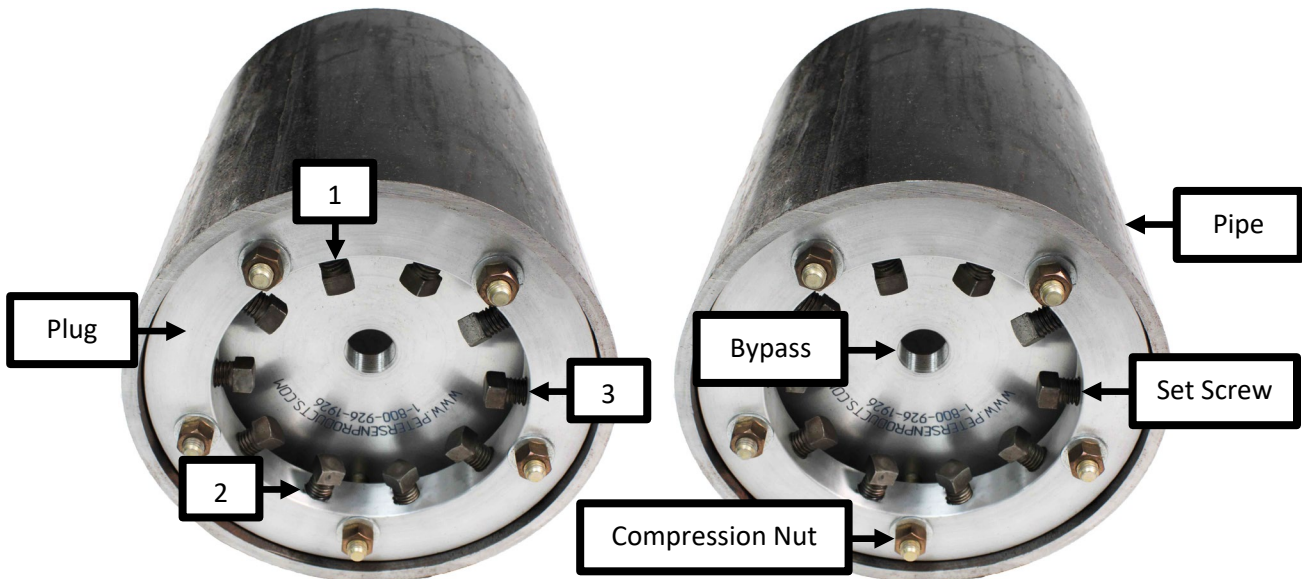




Note

The Plug will not hold the rated pressure if the Set Screws and Compression Nuts are not torqued correctly.

- 9.1 For larger models:
- 9.2 tighten 3 Set Screws to center the Plug. See image below.
- 9.3 Tighten the remaining Set Screws in a cross pattern. Sequence the torque three times 30%, 70%, 100% of the rated torque. Tighten and torque the plug nuts to the rated torque.
NOTE: See the Data Tag or visit petersenproducts.com for torque figures.
- 9.4 Stress relaxation can occur. Retorque the Set Screws and Compression Nuts until the torque holds at the required values.
10. Install bypass if needed.



Removing the Plug

Follow these guidelines for removing the Plug:

1. Verify that all pressure is released from both sides of the Plug.
2. Removed any bypass 5 if present.
3. Loosen the Compression Nuts to Relax the seal.
4. Loosen the Set Screws in a cross pattern until the Plug is free. Remove the Plug from the Pipe.

Cleaning and Storing

1. Completely relax all compression nuts.
2. Inspect for any possible cuts, tears, or any other physical damage.
3. Clean with mild soap and water if needed.
4. After the Plug is dry, remove all fasteners and lightly lubricate, and re-install.
5. Store Plug away from direct sunlight and out of the weather. Ultraviolet exposure will deteriorate the compression seal.
6. Keep the instructions with the Plug

Call Petersen with any questions. We're here to help.

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