

# Pipe-Pro Pillow Plugs

## General Safety Operation

### **I. GENERAL SAFETY & USAGE INSTRUCTIONS**

- 1. DEATH, BODILY INJURY AND/OR PROPERTY DAMAGE MAY RESULT IF PLUG FAILS FOR ANY REASON.**
- 2. READ AND UNDERSTAND THIS SAFETY INSTRUCTION MANUAL BEFORE USING PLUG.**
- 3. MUST WEAR SAFETY GLASSES AND A HARD HAT.**
- 4. DO NOT ENTER DANGER ZONE WHEN PLUG IS IN USE.**
- 5. MEASURE PIPE DIAMETER BEFORE SELECTING PLUG.**
- 6. INSPECT PLUG FOR DAMAGE BEFORE AND AFTER USE.**
- 7. NEVER USE A PLUG IN A PIPE SIZE DIFFERENT FROM RECOMMENDED USAGE RANGE (REFER TO THIS SAFETY INSTRUCTION MANUAL).**
- 8. ALWAYS ATTACH AN INFLATION EXTENSION HOSE SO PLUG CAN BE INFLATED AND DEFLATED FROM OUTSIDE THE DANGER ZONE.**
- 9. NEVER REMOVE THE INFLATION HOSE UNTIL ALL BACK PRESSURE IS RELEASED AND THE PLUG IS DEFLATED.**
- 10. MUST INFLATE PLUG TO THE PRESSURE SHOWN ON PLUG.**
- 11 . ALWAYS USE PROPERLY CALIBRATED PRESSURE GAUGES.**
- 12 . DO NOT EXCEED RECOMMENDED MAXIMUM ALLOWABLE BACK PRESSURE (REFER TO THIS SAFETY INSTRUCTION MANUAL).**
- 13 . ALWAYS RELEASE BACK PRESSURE FROM THE PIPE FIRST, BEFORE DEFLATING PLUG.**

**MEASURE THE PIPE AND SELECT THE PROPER PLUG AND RELATED EQUIPMENT. EVERY PIPELINE PLUG HAS A MINIMUM AND MAXIMUM SEALING SIZE RANGE AND A MAXIMUM ALLOWABLE BACK PRESSURE RATING.**

The allowable sealing size usage range and maximum allowable back pressure are outlined on the [pipepluggers.com](http://pipepluggers.com) website.

Nominal plug size is clearly marked on the product. However, certain types and classes of pipe may have actual inside diameters that vary considerably from nominal diameters and may, therefore, be larger or smaller than the plug's sealing size usage range.

**MEASURE THE INSIDE DIAMETER OF THE PIPE. VERIFY THE DIAMETER IS WITHIN THE PLUG'S RECOMMENDED SEALING SIZE USAGE RANGE. NEVER EXCEED MAXIMUM ALLOWABLE BACK PRESSURE. VERIFY THAT THE PROJECTED BACK PRESSURE IS WITHIN THE PLUG'S MAXIMUM ALLOWABLE BACK PRESSURE RATING.**

**PNEUMATIC PLUGS ARE ONLY RECOMMENDED FOR TEMPORARY SEALING.**

Pneumatic pipeline plugs are to be used only for the few hours that are necessary to perform a task! If a pneumatic plug must be used for extended periods, the inflation pressure must be checked and adjusted (if necessary ) every few hours . Over time, a small volume of air will leak through the elastomeric body of every pneumatic plug. The lost air must be replaced or under-inflation may result allowing the plug and any media restrained to dislodge from the pipe. A regulated pressure source may be permanently attached to the plug's inflation inlet port as an alternative to periodically checking and adjusting the inflation pressure. Consult with a registered professional engineer for the construction and maintenance of such a pressure regulated inflation source.

**PNEUMATIC PLUGS VERSUS MECHANICAL PLUGS.**

Pneumatic plugs have many advantages over mechanical plugs. They normally have a much wider sealing range than mechanical plugs. Some pneumatic plugs may even be used in multiple sizes of pipes. Pneumatic plugs easily seal minor imperfections in pipe and can seal non-circular pipe shapes. Pneumatic plugs normally have a long contact area with the pipe which minimizes leakage in rough or porous pipe. They also can be inflated and deflated from a remote location out of the Danger Zone and can be positioned in many areas that are not accessible to mechanical plug use. Mechanical plugs

# Pipe-Pro Pillow Plugs

## General Safety Operation

have the advantage of not relying on inflation pressure to provide proper sealing and are a better choice for long term or permanent usage. When the plugging application requires a minimum sealing length, a narrow mechanical plug may be the only viable option, as proper installation of a long pneumatic plug may not be possible. Mechanical plugs generally have a much shorter sealing length requirement.

### **CORRUGATED PIPE.**

Pneumatic plugs may be used in corrugated pipe. However, the plug will not fully fill the pipe corrugations, resulting in reduced contact area. Maximum allowable back pressure, therefore, must be reduced by 50% (eg. a plug normally rated for 30 feet of back pressure must be derated to 15 feet). Minor media leakage may still result along the longitudinal pipe construction seams. When a plug is used in spiral type corrugated pipe, a section of corrugations must be filled with a material such as cement grout to prevent major leakage around the spirals.

### **PLUGS MAY NOT TOTALLY SEAL SOME TYPES OF PIPE.**

When pipes have rough or very uneven surfaces, such as brick lined pipe, the plug may allow minor leakage of the restrained media. Some concrete pipe is very porous and media may leak past the plug through the pipe itself. The surface of the pipe may need to be coated with sealant to prevent such leakage. Other concrete pipe has a cast in place plastic liner, and leakage may occur under the liner. The edges of the plastic liner may require caulking to provide a leak free seal. Other pipe with sharp (90°) corners, longitudinal seams or defects may provide a leakage path past the plug. **DO NOT** attempt to prevent the leakage described above by over-inflation of the plug. Over-inflation will not provide a better seal and the plug may rupture catastrophically and dislodge at high velocity. Such leakage may only be minimized or eliminated by mechanically blocking the leakage path with material such as caulk or cement grout.

### **CLEAN PLUG AND RELATED EQUIPMENT BEFORE EVERY USE AND INSPECT FOR DAMAGE.**

**CLEAN PLUG.** Pneumatic plugs may be cleaned with a solution of mild detergent and water. After cleaning, flush the plug with clean water and allow it to air dry thoroughly before use.

### **INSPECT PLUG AND RELATED EQUIPMENT.**

Carefully inspect the pneumatic plug and all related equipment for indications of wear or deterioration prior to each use. The plug may be inflated slightly (1 PSIG - refer to warning on following page) to aid in the inspection process. After inflation, apply a solution of water and detergent to the equipment or submerge the product completely under water as an aid in locating leaks. Bubbles will form at the site of any air loss. Look very carefully for evidence that any material of the plug assembly and related equipment has been damaged, weakened or is missing. The inspection should include but not be limited to looking for:

- a. Cuts.
- b. Abrasions.
- c. Punctures.
- d. Presence of a proper inflation source.
- e. Bulges.
- f. Cracked castings.
- g. Softening of elastomer.
- h. Cracks in elastomer.
- i. Corrosion.
- j. Loose, corroded or damaged fittings.
- k. Leaks from or damage to inflator assembly.
- l. Leaks from or damage to inflation extension hoses.
- m. Dirt or debris lodged in the inflator valve which may cause a slow inflation leak.

# Pipe-Pro Pillow Plugs

## General Safety Operation

- n. Inflator valve core in place, properly tightened and leak free in the inflation fitting.
- o. Presence of a properly calibrated inflation pressure gauge to accurately determine inflation pressure.

**IF ANY EVIDENCE OF DAMAGE, DETERIORATION, MISSING COMPONENTS, OR EXCESS WEAR IS OBSERVED, CONSULT Pipe Pro Division of PROLIFTBAGS, INC. AND MAKE ARRANGEMENTS TO RETURN THE PRODUCT FOR INSPECTION, REPLACEMENT OR DESTROY.**

### **CLEAN PIPE BEFORE PLACING PNEUMATIC PLUG. PROPERLY CLEAN THE PIPELINE BEFORE INSTALLING A PNEUMATIC PLUG.**

Clean any debris or foreign substances which may reduce back pressure holding capability from the pipe before the plug is installed. Such foreign substances may include grease, mold, algae, sediment, seashells, coral, sand and/or any other material that prevents solid contact between the plug and the pipe wall. Cleaning methods may include using a high pressure cleaner or by using a wire brush followed with a water flush. Remove any sharp objects that may puncture plug upon inflation. If any debris remains in the pipe, it may cause the plug to seal improperly or cause damage to the plug upon inflation.

### **PROPER PNEUMATIC PLUG INFLATION. PLACEMENT OF PLUGS BEFORE INFLATION.**

In most applications, plugs can simply be placed into proper position and then inflated to the proper inflation pressure. The inflation is performed from outside the Danger Zone using an inflation hose and a proper pressure source.

**NOTE:** Other applications may require a plug to be held in position until the plug body fully contacts the pipe (eg. attachment of fittings which cause the plug to tip during inflation). From a location outside the immediate Danger Zone the user may employ a device, such as a pole with attached hook, to position the plug. All plugs should be inflated using an inflation extension hose until it expands to make pipe wall contact. After initial pipe contact the user moves to a new position well outside the Danger Zone and continues inflation until the recommended pressure is reached.

**USE PROPERLY CALIBRATED PRESSURE GAUGES** to monitor inflation pressure and back pressure. Use of non-calibrated gauges may result in a condition of over-inflation or under-inflation (refer to following warnings).

**NOTE:** Rough handling, contamination or a sharp impact can quickly cause any pressure gauge to fall out of calibration. Other pressure gauges (eg. some inexpensive tire type gauges) are extremely inaccurate and should not be used. The user must select and maintain properly calibrated pressure gauges for use with pneumatic plugs.

**INFLATE PLUG TO RECOMMENDED PRESSURE.** Do not exceed this pressure. Proper inflation pressure is clearly marked on each product, and included on the [pipepluggers.com](http://pipepluggers.com) website.

### **CHECK THE INFLATION PRESSURE AT LEAST EVERY FEW HOURS.**

A small volume of inflation air over time may/will leak through the elastomeric body of every pneumatic plug. This lost air must be replaced or under-inflation may result allowing the plug and any media restrained to dislodge from the pipe. A regulated pressure source may be permanently attached to the plug's inflation inlet port as an alternative to periodically checking and adjusting the inflation pressure. Consult with a registered professional engineer for the construction and maintenance of such a pressure regulated inflation source.

### **INFLATION PRESSURE VERSUS TEMPERATURE.**

Any temperature increase or decrease will cause a corresponding change in inflation pressure. Monitor and adjust plug inflation pressure as necessary to compensate for temperature changes. **NOTE:** Temperatures in pipelines may vary widely from outside ambient temperatures. Monitor inflation pressure closely and adjust as necessary to maintain recommended pressure.

# Pipe-Pro Pillow Plugs

## General Safety Operation

**A HOSE AND SHUT OFF VALVE MAY BE ATTACHED TO THE BY-PASS OF A PIPE PRO PLUG.** The valve is opened from outside the Danger Zone to release back pressure. The back pressure may be released by gravity flow or the hose may be attached to the inlet of a water pump.

**RELEASE THE AIR IN THE PNEUMATIC PLUG** from outside the Danger Zone through the inflation extension hose until the plug is completely deflated. Full plug deflation minimizes possibility of plug damage during the removal process. **NOTE:** A vacuum pump may be used to speed the deflation of larger plugs. The suction hose of a water pump may be needed to aid deflation of any plug inflated with water. These deflation aids may require fabrication of special inflation extension hose assemblies. Consult with a registered professional engineer for the design and construction of such assemblies.

**REMOVE THE PLUG FROM THE PIPE.** Fully deflate small plugs and simply pull on the attached chain and ring assembly to remove the plug. Fully deflate larger plugs and pull on the attached Poly-Lift Line or tether device to remove the plug. If unexpected resistance is encountered, stop pulling and carefully inspect the plug installation. Prevent damage to the plug and/or accessories by eliminating any obstructions before proceeding.

### **CLEAN AND INSPECT PLUG AFTER EVERY USE AND STORE PROPERLY.**

**A. CLEAN AND INSPECT PLUG** as outlined earlier in this manual.

**B. STORE THE PLUG IN A CLEAN DRY PLACE,** away from sunlight or other sources of ultra-violet light and away from sources of ozone, such as electrical equipment. Ozone and ultra-violet light may cause the elastomer to weaken and fail prematurely.

**C. STORE PLUGS BELOW 110 DEGREES F (43 degrees C).** Exposure to excessive temperatures may cause damage to the elastomer of pneumatic plugs. **NOTE:** Storage of plugs in non-ventilated structures (such as metal buildings) may expose the plugs to excessive temperatures which may damage the plugs and possibly result in a plug failure.

**D. PLUGS MAY BE STORED SUSPENDED VERTICALLY OR PLACED HORIZONTALLY.**

When storing a plug, it is recommended that the plug be partially inflated to 1 PSIG only (see inflation warning below), which will prevent a permanent crease from forming in the plug body. A crease may cause a weakened area resulting in premature failure upon plug inflation or use.

**SEE WARRANTY SECTION ON FOLLOWING PAGE**

# Pipe-Pro Pillow Plugs

## General Safety Operation

### LIMITED WARRANTY

Manufacturer warrants all pneumatic plugs manufactured by it and shown in this manual will be free from defects in material and workmanship for ONE (1) year following the date of manufacture. If any of the goods are found to be defective, such goods will, at manufacturer's option be replaced or repaired at manufacturer's cost. The parties hereto expressly agree that buyer's sole and exclusive remedy against the manufacturer shall be for the repair and/or replacement of defective goods as provided herein. (The sole purpose of the stipulated exclusive remedy shall be to provide the buyer with free repair and replacement of defective goods in the manner provided herein. The exclusive remedy shall not be deemed to have failed of its essential purpose so long as the manufacturer is willing and able to repair or replace defective goods in the prescribed manner.) Goods which may be sold by manufacturer but are not manufactured by it are not warranted by manufacturer, but are sold only with the warranties, if any, of the original manufacturers thereof. (This warranty does not cover labor or other costs or expenses to remove or install any defective, repaired or replaced goods.) Manufacturer's warranty does not apply to any goods which have been subjected to misuse, mishandling, misapplication, neglect (including but not limited to use of unauthorized parts or attachments), or adjustment or repair performed by anyone other than manufacturer or one of manufacturer's authorized agents. Any claim by buyer with reference to the goods sold hereunder shall be deemed waived by the buyer unless submitted in writing to manufacturer within the earlier of (1) thirty (30) days following the date buyer receives or by reasonable inspection should have discovered, any claimed breach of the foregoing warranty. Any cause of action for breach of the foregoing warranty shall be brought within one year from the date the alleged breach was discovered or should have been discovered, whichever comes first.

### LIMITATION OF LIABILITY

Manufacturer's liability (whether under the theories of breach of contract or warranty, negligence, or strict liability) for its goods shall be limited to repairing or replacing parts found by the manufacturer to be defective, or at manufacturer's option, to refunding the purchase price of such goods or parts thereof. **DISCLAIMER OF CONSEQUENTIAL DAMAGES.** In no event shall manufacturer be liable for consequential damages arising out of or in connection with this agreement, including without limitation breach of any obligation imposed on manufacturer hereunder or in connection herewith. Consequential damages for purposes hereof shall include, without limitation (including death) to any person, or loss or damage to property (including without limitation property handled or processed by the use of the goods). Buyer shall indemnify manufacturer against all liability, cost or expense which may be sustained by manufacturer on account of any such loss, damage or injury.

### DEFECTIVE PRODUCTS POLICY

To obtain performance under this warranty, any product suspected of having a manufacturing defect in materials or workmanship at manufacturer's request must be returned to PROLIFTBAGS INCORPORATED, freight prepaid, for inspection.

A verbal returned goods authorization must be obtained before shipping any product back to PROLIFTBAGS, INC. Call 1-850-892-6466 and ask for customer service.

**CUSTOMER TRANSPORTATION REIMBURSEMENT.** Whenever PROLIFTBAGS repairs or replaces a product at PROLIFTBAGS expense, PROLIFTBAGS will reimburse the distributor by credit memo, the same surface freight amount it cost PROLIFTBAGS to return the warranty items. The foregoing warranty is in lieu of all other warranties express or implied, including those of merchantability or fitness for any purpose not expressly set forth herein. No affirmation of manufacturer, by words or action, other than as set forth in this language shall constitute a warranty.