PLCS, LLC

Flowstop Bags

PLCS Flowstop Bags are designed with the bladder held inside a thin yet strong synthetic fabric. This thin wall construction permits mains entry through a smaller tap hole than competitive brands.

- **PLCS Flowstop Bags are barrel shaped to increase load on the pipe wall to retain position and increase the surface seal area to minimize gas bypass.**
- **Bags are clamped to a semi-rigid inflation core to control entry direction and prevent reversal in the main.**
- **Double end retention prevents bag loss during a sudden deflation.**
- **Standard sizes are available for all cast iron and steel mains from 2"- 48".**
- **Special sizes are available for PE plastic pipe.**
- **Bags are rated at 1¼ psi for mains up to 12".**

In an "open-hole" Double Block and Bleed shutdown, PLCS Flowstop Bags are recommended for use in pairs at each end of the shutdown. It is also possible to substitute one PLCS Flowstop Bag with a PLCS Sensor Bag (see separate literature) at each end and be able to continuously record the upstream and downstream pressure during the shutdown.

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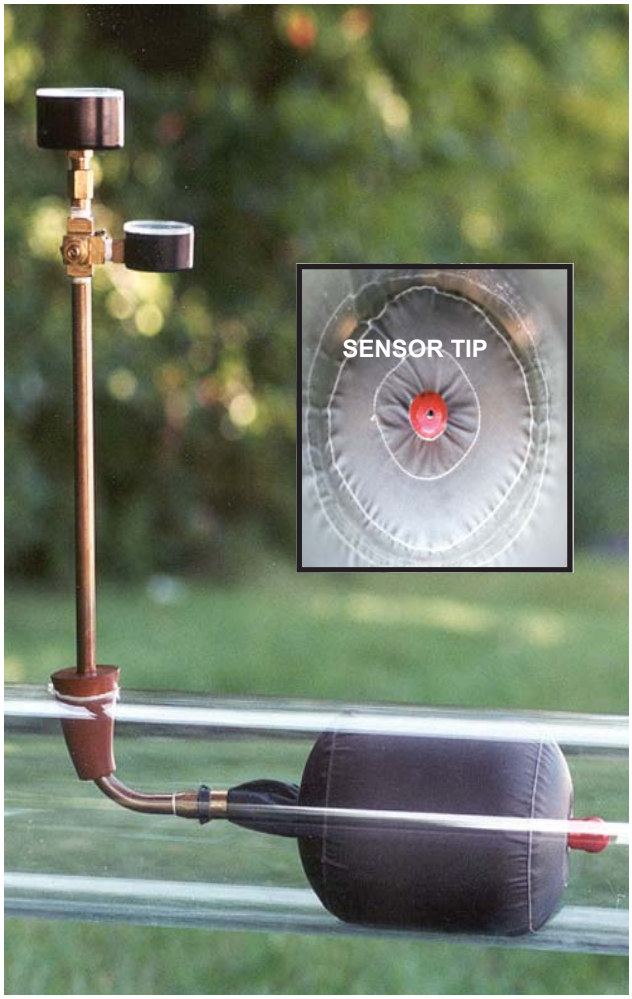
PLCS, LLC

Sensor Bags

PLCS Sensor Bags continuously monitor pressure in the main during shutdown, without the need for an additional tap.

The bladder like the Flowstop Bag is held inside a synthetic fabric permitting mains entry through a significantly smaller tap hole than any competitive product.



- **Gauges record the internal bag pressure and continuously record the upstream pressure in the main throughout a shutdown operation**
- **The bags are barrel shaped to increase load on the pipe wall to retain position and at the same time increase the surface seal area to minimize gas bypass**
- **Sensor Bags are clamped to a semi-rigid inflation core to control entry direction and prevent reversal in the main or bag loss during sudden deflation**
- **Standard sizes are available for all cast iron and steel mains from 2"-48"**
- **Special sizes for PE plastic pipe**
- **Rated at 1¼ psi for mains up to 12"**
- **Available with rigid inflation control tee and rubber entry stopper**

In an "open-hole" Double Block and Bleed shutdown, Sensor Bags are recommended for use in pairs at each end of the shutdown. By using 2 Sensor Bags not only is the internal bag pressure recorded, but it is possible to confirm a zero pressure zone between the bags as well as separately monitor the upstream and downstream mains pressures.

* In a controlled gas environment

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PLCS Flowstop Gas Bag Parts List

Gas Main Shut Down

Main Size	Flowstop Bag Part #	Flowstop Bag Only	Complete Assembly with Rigid Tube (C) Includes Brass Sweep, 0-15 psi Inflation Gauge, Mini Ball Valve, Bung, Schrader Valve	Complete Assembly with Flexible Tube (F) Includes Flexible Hose, 0-15 psi Inflation Gauge, Mini Ball Valve, Schrader Valve
2”	47-A0120 (C) or (F)			
3”	47-A0121 (C) or (F)			
4”	47-A0122 (C) or (F)			
*5”	47-A0123 (C) or (F)			
6”	47-A0124 (C) or (F)			
*7”	47-A0125 (C) or (F)			
8”	47-A0126 (C) or (F)			
*9”	47-A0127 (C) or (F)			
10”	47-A0128 (C) or (F)			
*11”	47-A0128A (C) or (F)			
12”	47-A0129 (C) or (F)			
*15”	47-B0129 (C) or (F)			
16”	47-B0130 (C) or (F)			
*18”	47-A0184(C) or (F)			
20”	47-B0131 (C) or (F)			
*24”	47-B0132 (C) or (F)			
*26”	47-B0135 (C) or (F)			
*30”	47-B0133 (C) or (F)			
*36”	47-B0134 (C) or (F)			

- To order replacement *Bag Only* request part number only without the letter (C), or (F).
- To order complete bag assembly with brass stem include (C) to the part number.
- To order complete bag assembly with a flexible hose instead of the brass stem add (F) to the part number.
- NOTE – the flexible hose option is not available with a rubber bung.
- Complete includes brass insertion tube, inflation & deflation valve, bag inflation gauge with protective cover and rubber bung (“C” option ONLY).
- *Special order only, non -stock item.

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PLCS Sensor Gas Bag Parts List

Gas Main Pressure Reading and Shutdown from One Hole.

Main Size	Sensor Bag PLCS Part #	Sensor Bag Only	Complete Assembly with Rigid Tube (C) Includes Brass Sweep, 0-15 psi Inflation Gauge, Mini Ball Valve, Bung, Sniffer Connector, Schrader Valve Does not come with LP Gauge. Must order separately (Part # 10-715).	Complete Assembly with Flexible Tube (F) Includes Flexible Hose, 0-15 psi Inflation Gauge, Mini Ball Valve, Sniffer Connection, Schrader Valve Does not come with LP Gauge. Must order separately (Part # 10-715).
2”	47-A0682 (C) or (F)			
3”	47-A0683 (C) or (F)			
4”	47-A0684 (C) or (F)			
6”	47-A0685 (C) or (F)			
8”	47-A0686 (C) or (F)			
10”	47-A0687 (C) or (F)			
12”	47-A0688 (C) or (F)			
16”	47-A0689 (C) or (F)			
20”	47-A0691 (C) or (F)			
*24”	47-A0693 (C) or (F)			
*30”	47-A0696 (C) or (F)			
*36”	47-A0698 (C) or (F)			
WIKA Low-Pressure Main Monitoring Gauge • **0”-30”** • **¼” MNPT** • **Center Backed**		**Part#: 10-715**		

- ***A suitable low-pressure gauge or manometer must be installed for the bag system to operate as designed.***
- To order replacement *Bag Only* request part number only without the letter (C) or (F).
- To order complete bag assembly with brass stem include (C) to the part number.
- To order complete bag assembly with a flexible hose instead of the brass stem add (F) to the part number.
- NOTE – the flexible hose option is not available with a rubber bung.
- Complete includes brass insertion tube, inflation & deflation valve, bag inflation gauge with protective cover and rubber bung (“C” option ONLY).
- *Special order only, non -stock item.

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WARNING

READ BOTH SIDES BEFORE USE

TEST BAG BEFORE EACH USE

DO NOT OVERINFLATE BAGS this may cause bag to burst.

DO NOT use bags in gasoline, kerosene, oil, acid or similar substances.

DO NOT use petroleum based solution to “soap test” the bag.

DO NOT allow sparks, hot metal or welding slag to come into contact with bag.

DO NOT expose bag to temperatures in excess of 150°F or lower than -20°F.

DO NOT store, or leave bags in direct sunlight for extended periods.

Store bags flat in a cool, dry area.

DO NOT store anything on top of the bags.
Inflate with an inert gas or clean dry air from an “oil-free” supply.
Use with adequate ventilation.

Additional information is available on our web site:

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WARNING

READ BOTH SIDES BEFORE USE

TEST BAG BEFORE EACH USE

Test: Inflate to **¼ of maximum bag pressure**
for a minimum of 15 minutes.
Replace bag and/or components if defective.
Pressures shown below assume bags are on a rigid brass/copper stem and because of potential bag slippage do not apply to bags on a flexible hose.
Please contact PLCS for more information.

Main Diameter	Suggested Tap Hole Size	Max Bag Inflation Pressure (psi)	Max Mains Pressure (psi)
2”	1”	14	5
3”	1”	10	5
4”	1”	10	5
6”	1 ¼”	8	4
8”	1 ½”	6	4
10”	2”	5	1.25
12”	2”	5	1.25
16”	2.5”	4	1.25
20”	3”	3	1.25
24”	4”	3	1.25
30”	5”	1.5	0.75
36”	5”	1.5	0.75
48”	6”	1	0.5

- Always follow OSHA and gas company safety practices and standards when working on live mains.
- Remove all sharp edges from inside tap hole.
- Good stop-offs are usually achieved well below maximum inflation pressures.

BAG SIZE _____

PLCS

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July 22nd, 2014

PLCS Sensor and Flowstop Bag & Component Replacement Instructions

Flowstop Bags:

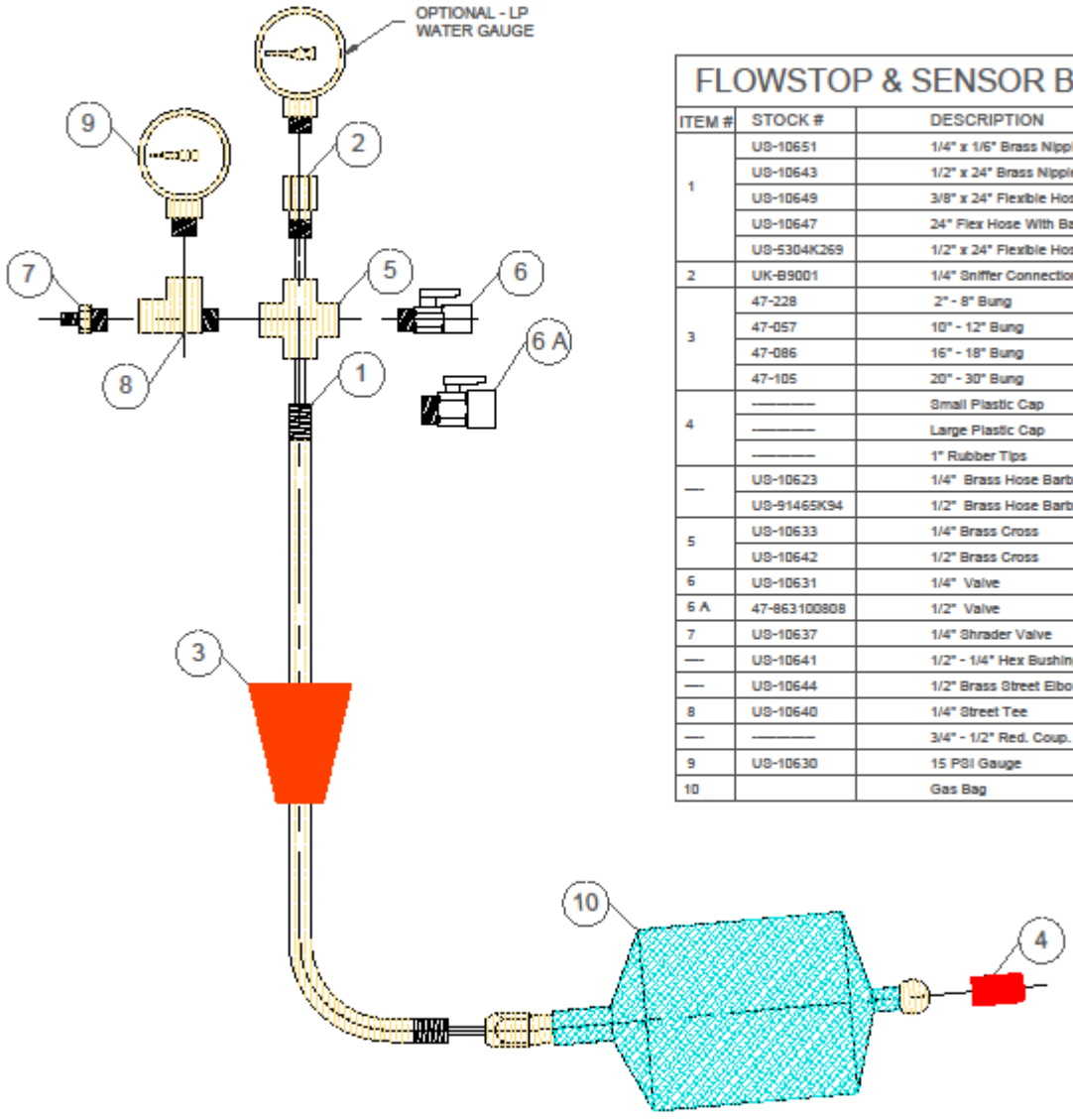
1. Flowstop Bags require schematic part #'s 1, 3, 4, 5, 6, 7, 9 and 10.
2. Remove existing bag from the brass tube or flexible hose.
3. Check ALL bag tube fittings and replace if worn or damaged, pay close scrutiny to the inflation gauge.
4. Clean and re-tape all male threads with three wraps of Military Grade PTFE tape.
5. If replacing the rubber bung push it onto the brass curved nipple with the narrow end of the taper pointing towards the bend (as shown).
6. **DO NOT OVER-TIGHTEN BRASS FITTINGS.** Brass fittings are soft metal; over-tightening could crack fittings causing leakage.
7. In a vice tighten together parts 5, 6, 7, and 9. Note: # 7 is set into the top outlet of the cross and # 9 is set into a side outlet. Remove fittings from the vice.
8. Using "soft" jaws secure the brass nipple into the vice.
9. Attach and tighten the Flowstop bag to the short leg with the curvature facing upwards (allows easy insertion into the main**). DO NOT OVER TIGHTEN.**
10. Attach the completed top fittings to the opposite end of the brass nipple.
11. Close valve and inflate bag with an inert gas or clean dry air from an OIL – FREE supply to 25% of maximum bag pressure indicated on bag tag. Monitor for pressure decay for a minimum of 15 minutes. **DO NOT soap test bags with a petroleum based product.**

Bag tags shows bag Maximum Inflation Pressures when inserted in a main. When testing bags out of the main the bag is unsupported and MUST NOT be tested to a pressure greater than 25% of the maximum inflation pressures.

Sensor Bags:

1. Sensor Bags require schematic part #'s 1, 2, 3, 4, 5, 6, 7, 8, 9, and 10.
2. Remove existing bag from the brass tube or flexible hose.
3. Check ALL bag tube fittings and replace if worn or damaged, pay close scrutiny to the inflation gauge.
4. Clean and re-tape all male threads with three wraps of Military Grade PTFE tape.
5. If replacing the rubber bung push it onto the brass curved nipple with the narrow end of the taper pointing towards the bend (as shown).
6. **DO NOT OVER-TIGHTEN BRASS FITTINGS.** Brass fittings are soft metal, over-tightening could crack fittings causing leakage.
7. In a vice tighten together parts 5, 6, 7, 8 and 9 as shown with part # 8 at 90° to the cross. Remove fittings from the vice.
8. Using "soft" jaws secure the brass nipple into the vice.
9. Attach the Sensor bag hand -tight only onto the brass nipple short leg by inserting the white tube into and through the brass nipple.
10. Position the pre-tightened fittings (5, 6, 7, 8, & 9) over the ⅛" white tube and hand-tighten. Moisten the leading edge of the ⅛" tube and carefully lower the sniffer connection over it and into the brass cross and tighten. Tighten the top fittings onto the brass nipple. The ⅛" white tube is too long at this time but will be cut to length later.
12. Tighten the bag with the curvature facing upwards (allows easy insertion into the main). **DO NOT OVER TIGHTEN.**
11. Trim the white inner tube to length by pushing the white tube into the sniffer connector as far as it will go, hold the tube between your thumb and finger as an indicator of its position then pull up on the tube. Using a sharp knife cut the ⅛" tube approximately ¼" below finger and thumb. The tube is now long enough to prevent it sliding back below the o-ring in the sniffer connector but short enough to allow the installation of a monometer gauge.
12. Close valve and inflate bag with an inert gas or clean dry air from an OIL – FREE supply to 25% of maximum bag pressure indicated on bag tag. Monitor for pressure decay for a minimum of 15 minutes. **DO NOT soap test bags with a petroleum based product.**

Bag tags show bag Maximum Inflation Pressures when inserted in a main. When testing bags out of the main the bag is unsupported and MUST NOT be tested to a pressure greater than 25% of the maximum inflation pressures.



FLOWSTOP & SENSOR BAG		
ITEM #	STOCK #	DESCRIPTION
1	UB-10651	1/4" x 1/6" Brass Nipple
	UB-10643	1/2" x 24" Brass Nipple
	UB-10649	3/8" x 24" Flexible Hose
	UB-10647	24" Flex Hose With Barbs
	UB-5304K269	1/2" x 24" Flexible Hose
2	UK-B9001	1/4" Sniffer Connection
3	47-228	2" - 8" Bung
	47-057	10" - 12" Bung
	47-086	16" - 18" Bung
	47-105	20" - 30" Bung
4	————	Small Plastic Cap
	————	Large Plastic Cap
	————	1" Rubber Tips
—	UB-10623	1/4" Brass Hose Barbs
	UB-91465K94	1/2" Brass Hose Barbs
5	UB-10633	1/4" Brass Cross
	UB-10642	1/2" Brass Cross
6	UB-10631	1/4" Valve
6 A	47-863100808	1/2" Valve
7	UB-10637	1/4" Shrader Valve
—	UB-10641	1/2" - 1/4" Hex Bushing
—	UB-10644	1/2" Brass Street Elbow
8	UB-10640	1/4" Street Tee
—	————	3/4" - 1/2" Red. Coup.
9	UB-10630	15 PSI Gauge
10		Gas Bag

PLCS 102 Gaither Drive, Unit 1 Mt. Laurel, NJ 08054 August 10th, 2016

Operating & Storage Procedures for PLCS Low-Pressure Flowstop & Sensor Bags:

Receipt:

1. Check bag(s) for any damage that may have been caused during shipping. Report damage immediately to delivery carrier and PLCS.

2. Inflate bag(s) to 25% of maximum pressure shown on bag label with an inert gas or clean dry air from an OIL-FREE supply. Monitor for any pressure loss for a minimum of 15 minutes. DO NOT soap test bags with a petroleum based product. If bag pressure cannot be maintained contact PLCS immediately. No claims for malfunctioning product will be honored 30 days past shipping.

Use & Storage:

1. All bags have a manufactured date (MM-YY) stamped on the NPT hex brass fitting.

2. Shelf Life:
   - Shelf life is 36 months from manufactured date and prior to first use.
   - If a bag is unused and properly inventoried it will be "fit for purpose" up to thirty six months after manufactured date.
   - Used bags cannot be returned for credit as PLCS could not control the conditions under which they were used.
   - Any bag older than thirty six months should not be used.

3. Correct Storage of Gas Bags:
   a) Store in a cool, dry environment out of direct sunlight and not subject to excessive changes in temperature.
   b) Do not stack anything on top of bags during storage.
   c) Bags MUST be stored flat, NOT folded, wrinkled or rolled up.
   d) Rotate bag inventory – first in first out. Bags may be returned to PLCS for testing and/or component replacement. Please contact PLCS for details and pricing.

4. Prior to each use of the bag:
   a) Visually inspect bag and fittings for any damage and replace if necessary.
   b) Check bag by inflating to 25% of maximum bag pressure shown on bag label and monitor for any pressure decay for a minimum of 15 minutes. If a pressure drops, check all connections and re-tighten as necessary. DO NOT OVER INFLATE BAG AS THIS MAY CAUSE IT TO BURST. If any damage is observed, or the bag cannot retain pressure, discard the bag.
   c) Avoid contact with petroleum based products as these will have a detrimental effect on the life of the latex bladder. Any oil contaminated bags should be removed and replaced with new bags.

Operating Procedures:

- Use with adequate ventilation, wear protective clothing, gloves and safety glasses.
- Use breathable air when working in a gaseous environment.
- Read and follow directions on Bag Tag.
- Carefully insert bag through the tap hole into the main then slide the rubber bung down to create a good seal. If necessary, pack duct seal around each tap hole after bag is inserted and fully expanded to prevent gas vapors escaping into work area.
- Inflate bags with an inert gas or clean, dry air from an **OIL-FREE** supply.
- Always double bag and use vent pipes with flame traps between stop offs. Vents should extend at least 8 feet above ground level.
- **DO NOT** use bags in gasoline, kerosene, oil, acid or any similar substances.
- **DO NOT** use petroleum based solution to "soap" test bag.
- **DO NOT** allow sparks, hot metal or welding slag to come into contact with bags.
- **REMOVE** all sharp edges from inside and around tap hole to prevent damage to bags.
- **DO NOT** exceed maximum bag or indicated mains pressure as this may cause bag failure.
- **DO NOT** expose bags to temperatures in excess of 150ºF or lower than -20ºF.
- **AFTER USE** return bags to storage (see item 3 above for correct storage procedures).
- **ALWAYS** follow OSHA safe practices and gas company procedures when working on live gas.

Please Note: These instructions are supplied as a guide and DO NOT replace your company policies or procedures. Always follow your company procedures and safety standards when working on live gas.

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