

# TESTING PLUGS

reece™

civil

**A diverse range of pipeline plugs and equipment are available at Reece Civil. Recognised as the premium brand of testing plugs in the market, Plug-it plugs feature higher inflation pressures, polyester cord or DuPoint Kevlar reinforcement, safety relief valves and suit a range of applications.**

### **Key things to consider:**

#### Testing pressure

Test plugs are available to complete low pressure air or water tests on pipelines. The testing pressure must be known before selecting the appropriate testing plug.

#### Back Pressure

Specific plugs are used to block off pipelines to stop the flow of water or waste. The back pressure must be known before selecting a testing plug to block a pipe.

#### Level of flow

Bypass Plugs feature a bypass that allows the flow of water or waste to continue through the pipeline at a reduced capacity. The isolated section of the pipe can then be worked on while bypass is in place. The level of flow must be known when selecting a bypass plug for a specific situation.

## IMPORTANT

- Always read the safety manual before operation
- All plugs require bracing
- Use the correct inflation hose/rope to operate the plug outside the danger zone
- Know your back pressure safety first



## PLUG QUICK REFERENCE CHART

Series	Plug Type					Size		Accessories			
	Back Plug	Small Bypass/ Leak Test	Cleaning	High Pressure Test	Bypass / Flow Diverter	Single	Multi	Inflation Hose & Gauge	Read Back Hose	Compressor Hose	Changeable Bypass Plates on larger plugs
100	X					X		X			
200					X	X		X			
250					X	X		X			
280					X	X		X			
400					X		X	X			X
600	X						X	X			
650		X					X	X	X	X	
700			X				X	X			
800				X		X		X			



- Used for blocking off of pipes only
- The most economical choice for plugging 100-150mm pipe
- Manufactured from all natural, soft & durable rubber
- Field replaceable inflation fitting
- Pole attachment available
- 125 Series Inflation Hose/Safety Rope (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Max Allowable Back Pressure			
							Air		Water	
					PSI	BAR	PSI	BAR	PSI	BAR
7003452	100 - 150	90	240	0.91	30	2.1	10	0.69	10.8	0.7

## SERIES 100 - SINGLE SIZE PNEUMATIC PLUG



- Used for blocking off of pipes only
- No bypass
- Cost effective option
- Manufactured from all natural, soft and durable rubber
- One piece forged zinc plated eyelets
- Field replacement inflation fitting

### Accessories:

- Pole attachment available
- 125 Series Safety Inflation Rope/ Hose (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Max Allowable Back Pressure			
							Air		Water	
					PSI	BAR	PSI	BAR	PSI	BAR
7705850	90-125	90	140	0.67	25	1.7	10	0.69	10.8	0.7
7705851	125-175	125	152	1.4	25	1.7	10	0.69	10.8	0.7
7705852	225-265	200	254	3.6	20	1.4	10	0.69	10.8	0.7
7705961	275-325	275	305	5.6	20	1.4	10	0.69	10.8	0.7
7705962	350-400	350	381	10.9	25	1.7	10	0.69	10.8	0.7
7705963	425-470	425	457	15.5	25	1.7	10	0.69	10.8	0.7
7705964	475-550	475	533	19.1	20	1.4	8	0.55	8.7	0.6

## SERIES 200 - SINGLE SIZE PNEUMATIC PLUG WITH BYPASS



- Used for bypass pumping, keeps the flow going whilst testing
- A cost effective alternative if bypass is required
- Manufactured from all natural, soft and durable rubber
- One piece forged zinc plated eyelets
- Field replacement inflation fitting

### Accessories:

- Pole attachment available
- 125 Series Safety Inflation Rope/ Hose (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Bypass Size (mm)	Required Inflation Pressure		Max Allowable Back Pressure			
								Air		Water	
						PSI	BAR	PSI	BAR	PSI	BAR
7705853	90-125	90	203	0.67	25.4	25	1.7	10	0.69	10.8	0.7
7705854	125-175	125	203	1.4	25.4	25	1.7	10	0.69	10.8	0.7
7705855	205-255	205	330	3.9	76.2	20	1.4	10	0.69	10.8	0.7
7705965	275-325	275	381	7	101.6	20	1.4	10	0.69	10.8	0.7
7705966	350-400	350	483	14.5	101.6	25	1.7	10	0.69	10.8	0.7
7705967	425-470	425	533	18.4	101.6	25	1.7	10	0.69	10.8	0.7
7705968	475-550	475	610	22	101.6	20	1.4	8	0.55	8.7	0.6

## SERIES 250 - SINGLE SIZE PLUG WITH HIGH FLOW DIVERTER



- Used for high flow bypass pumping
- Largest bypass available
- All aluminium construction
- Makes ventilation easier for confined space entry

### Accessories:

- Pole attachment available
- 125 Series Safety Inflation Rope/ Hose (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Required Inflation Pressure		Bypass Size (mm)
				PSI	BAR	
7003453	100	76	305	25	1.7	51
7003454	150	127	305	25	1.7	102
7003455	225	220	255	25	1.7	152
7003456	300	254	432	25	1.7	254
7003457	375	343	457	25	1.7	305
7003458	450	406	457	25	1.7	356
7003459	525	495	457	25	1.7	457
7003460	600	572	457	25	1.7	508
7003461	675	648	457	25	1.7	610
7003462	750	724	457	25	1.7	610

## SERIES 280 - SINGLE SIZE HIGH/NO FLOW PLUG



- Used in rehab, relining and new construction
- Used when flow needs to be restricted during pipe work
- No confined space entry necessary to control flow or place plug
- Stronger, more durable plug than the 250 series
- Multiple blockages (see image)
- Not to be used for air testing

- Leak control
- Seals 98% of flow

### Accessories:

- Pole attachment available
- 127 Series Safety Inflation Rope/ Hose (7705997)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Max Inside Diameter (mm)	Required Inflation Pressure				Max Allowable Back Pressure	
					Outside Bladder		Inside Bladder		Water	
					PSI	BAR	PSI	BAR	PSI	BAR
7003463	150	127	305	76	25	1.7	0-10	0-0.69	6.5	0.5
7003464	228	200	354	125	25	1.7	0-10	0-0.69	6.5	0.5
7003465	300	254	457	229	25	1.7	0-10	0-0.69	6.5	0.5
7003466	375	343	457	279	25	1.7	0-10	0-0.69	6.5	0.5

## SERIES 400 - HIGH FLOW MULTI SIZE PLUG WITH BYPASS



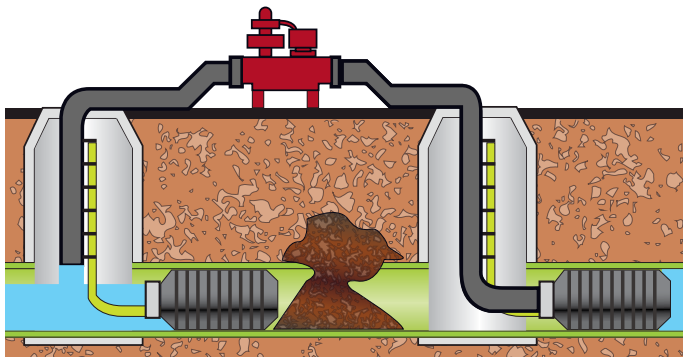
- Use for low pressure pipeline testing vacuum, air & water or high flow bypass pumping
- Premium Kevlar material provides extra strength and durability
- Aluminium
- 400 series plugs have a fixed bypass through to 420mm
- Adaptable flange plates required for 400 series plugs above 425mm in size

- 40 PSI inflation pressure
- BSP threads
- Short plug size for ease of use

### Accessories:

- 125 Series Safety Inflation Rope/ Hose (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Bypass Size (mm)	Required Inflation Pressure		Pipe Size (mm)	Max Allowable Back Pressure			
									Air		Water	
						PSI	BAR		PSI	BAR	PSI	BAR
7705979	100-200	97	559	3.2	51	40	2.8	100	15	1	19.5	1.3
								150	15	1	17.4	1.2
								200	15	1	15.2	1
7705980	150-275	140	559	5.9	76	40	2.8	150	15	1	19.5	1.3
								200	15	1	17.4	1.2
								250	15	1	15.2	1
7705981	175 -325	165	559	8.2	102	40	2.8	200	15	1	19.5	1.3
								250	15	1	17.4	1.2
								300	10	0.7	15.2	1
7705982	225-400	216	559	11.8	152	40	2.8	250	15	1	19.5	1.3
								300	15	1	19.5	1.3
								400	10	0.7	15.2	1
7003467	275-450	254	559	15.4	152	40	2.8	300	15	1	17.4	1.2
								375	15	1	15.2	1
								450	10	0.7	12.9	0.9
7705983	350-550	343	610	20.9	152	40	2.8	375	15	1	17.4	1.2
								450	15	1	15.2	1
								525	10	0.7	12.9	0.9
7003468	425-625	406	622	27.2	152	40	2.8	450	15	1	17.4	1.2
								525	15	1	15.2	1
								600	10	0.7	12.9	0.9



## SERIES 400 - HIGH FLOW MULTI SIZE PLUG WITH BYPASS - ADAPTOR REQUIRED



- Use for low pressure pipeline testing vacuum, air & water or high flow bypass pumping
- Operator will need interchangeable flange plate
- 40 PSI inflation pressure
- Durable, rugged construction

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Pipe Size (mm)	Max Allowable Back Pressure			
								Air		Water	
					PSI	BAR		PSI	BAR	PSI	BAR
7003469	425-775	406	1041	43.1	40	2.8	450	15	1	17.4	1.2
							600	15	1	15.2	1
							750	10	0.7	12.9	0.9
7003470	550-950	546	1041	58.9	40	2.8	600	15	1	17.4	1.2
							750	15	1	15.2	1
							900	10	0.7	12.9	0.9
7003471	850-1250	838	1041	97.5	40	2.8	900	10	0.7	10.8	0.7
							1050	8	0.6	10.8	0.7
							1200	5	0.3	8.7	0.6
7003472	1150-1550	1143	1041	147.3	40	2.8	1200	8	0.6	8.7	0.6
							1350	8	0.6	8.7	0.6
							1500	5	0.3	6.5	0.5

## SERIES 400 - INTERCHANGEABLE BOLT-ON BYPASS ADAPTORS/PLATES



- Adapts to series 400 plugs from size 425mm and larger
- Plates have offset bypasses of 152mm
- Male BSP threads
- PVC cap provided through 150mm
- Threaded available up to 250mm

Product Code	For Use With	Size (mm)	Bypass Size (mm)
7003473	7003469	425-775	152
7003474	7003470	550-950	152
7003475	7003471	850-1250	152
7003476	7003472	1150-1550	152



## SERIES 401 - PROTECTIVE SLEEVES



- A slide on, flexible and durable rubber sleeve to protect investment of the plug
- The sleeves will extend the plugs life and eliminate cuts on the plug surface
- Perfect for the rental industry and frequent users
- For use with 400 series

Product Code	For Use With	Size (mm)	Thickness (mm)
7003477	7003469	425-775	6.4
7003478	7003470	550-950	6.4
7003479	7003471	850-1250	6.4
7003480	7003472	1150-1550	6.4

## SERIES 600 - MULTI SIZE PNEUMATIC PLUG



- Used for blocking off pipes only
- Premium Kevlar material provides extra durability
- Higher inflation pressure for increased safety margin
- No bypass
- Protected with pressure relief valve to help prevent over inflation

### Accessories:

- 125 Series Safety Rope/Inflation hose for plugs up to 425mm (7705860, 7705990)
- 124 series Read back hose use with 119 series to inflate 650 series plugs 475mm and larger (7705865/7705991)
- 119 series (7705866/7705992) used to inflated 650 series plugs 475mm and larger with the 124 series (7705865/7705991)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Pipe size (mm)	Max Allowable Back Pressure			
					PSI	BAR		Air		Water	
7705856	100-150	89	330	1.1	35	2.4	100	10	0.7	10.8	0.7
7705858	150-250	127	559	3.3	35	2.4	150	15	1	17.4	1.2
7705969	200-300	178	572	4.5	35	2.4	200	15	1	17.4	1.2
7705970	225-400	224	635	7.3	35	2.4	250	15	1	17.4	1.2
7705971	275-450	267	711	9.7	35	2.4	300	15	1	17.4	1.2
7705972	275-625	267	1194	13.6	25	1.7	300	15	1	17.4	1.2

## SERIES 600 - MULTI SIZE PNEUMATIC PLUG (CONTINUED)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Pipe size (mm)	Max Allowable Back Pressure			
								Air		Water	
					PSI	BAR		PSI	BAR	PSI	BAR
7705973	350-550	330	800	13.6	35	2.4	375	15	1	17.4	1.2
7705974	400-625	394	902	17.5	35	2.4	450	15	1	17.4	1.2
7705975	425-775	406	1194	30.8	25	1.7	450	15	1	17.4	1.2
7705976	475-950	457	1651	43	25	1.7	500	15	1	17.4	1.2
7705977	575-1250	546	2286	65.7	25	1.7	600	15	1	17.4	1.2
7705978	900-1550	864	2286	106.5	20	1.4	900	15	1	15.2	1
7003497	1050-2000	1016	2591	135.9	15	1	1050	6	0.4	6.1	0.4
7003498	1200-1850	1168	2286	147.2	20	1.4	1200	15	1	15.2	1
7003499	1500-2450	1473	2794	249.2	12	0.8	1500	6	0.4	6.1	0.4

## SERIES 650 - MULTI SIZE PNEUMATIC PLUG WITH BYPASS



- Used for low pressure air & water testing of pipeline when combined with a 600 series plug
- Higher inflation pressure than series 100 and 200 for increased safety margin
- Four ports – safety relief valve, inflation point and two bypass ports
- Premium Kevlar material provides extra strength and durability
- Can be capped off to transform to a “plug only”

### Accessories:

- 124 series (7705865/7705991)  
Read back hose for 650 series / also use with 119 series to inflate 650 series plugs 475mm and larger
- 119 Series (7705866/7705992)  
Compressor space hose used to inflate the test space 650 series plugs 425mm and larger
- Also used with 124 series to inflate 650 series plugs 475mm and above
- 118 series (7705993/7705994)  
Inflation hose for 650 series up to 425mm

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Pipe size (mm)	Max Allowable Back Pressure			
								Air		Water	
					PSI	BAR		PSI	BAR	PSI	BAR
7705857	100-150	89	330	1.1	35	2.4	150	10	0.7	10.8	0.7
7705859	150-250	127	559	3.3	35	2.4	200	15	1	15.2	1
							250	15	1	15.2	1
7705868	200-300	178	572	4.5	35	2.4	250	15	1	15.2	1
							300	15	1	15.2	1
7705984	225-400	224	635	7.3	35	2.4	300	15	1	15.2	1
							375	15	1	15.2	1
7705985	275-450	267	711	9.7	35	2.4	375	15	1	15.2	1
							450	15	1	15.2	1
7705986	275-625	267	1194	13.6	25	1.7	450	13	0.9	12.9	0.9
							600	10	0.7	10.8	0.7

**SERIES 650 - MULTI SIZE PNEUMATIC PLUG WITH BYPASS (CONTINUED)**

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Pipe size (mm)	Max Allowable Back Pressure			
								Air		Water	
					PSI	BAR		PSI	BAR	PSI	BAR
7705987	350-550	330	800	13.6	35	2.4	450	15	1	15.2	1
							525	10	0.7	12.9	0.9
7705988	400-625	394	902	17.5	35	2.4	525	15	1	15.2	1
							600	10	0.7	12.9	0.9
7705989	425-775	406	1194	30.8	25	1.7	525	15	1	15.2	1
							600	10	0.7	15.2	1
							775	10	0.7	12.9	0.9
7003508	475-950	457	1651	43	25	1.7	600	15	1	15.2	1
							775	10	0.7	15.2	1
							900	10	0.7	12.9	0.9
7003509	575-1250	546	2286	65.7	25	1.7	775	15	1	15.2	1
							900	15	1	15.2	1
							1050	10	0.7	12.9	0.9
							1200	10	0.7	10.8	0.7
7003510	900-1550	864	2286	106.5	20	1.4	1050	15	1	15.2	1
							1200	13	0.9	12.9	0.9
							1350	10	0.7	10.8	0.7
							1500	8	0.6	8.7	0.6
7003511	1050-2000	1016	2591	135.9	15	1	1350	6	0.4	6.1	0.4
							1700	6	0.4	6.1	0.4
							2000	6	0.4	6.1	0.4
7003512	1200-1850	1168	2286	147.2	20	1.4	1350	13	0.9	12.9	0.9
							1500	10	0.7	10.8	0.7
							1700	8	0.6	8.7	0.6
							1800	8	0.6	7.8	0.5
7003513	1500-2450	1473	2794	249.2	12	0.8	1850	6	0.4	6.1	0.4
							2150	6	0.4	6.1	0.4
							2450	6	0.4	6.1	0.4

## SERIES 601 - PROTECTIVE SLEEVES



- A slide on, flexible and durable rubber sleeve to protect investment of the plug
- The sleeves will extend the plugs life and eliminate cuts on the plug surface
- Perfect for the rental industry and frequent users
- For use with 600 series
- Adds an extra 1/4" of protection

Product Code	For Use With	Size (mm)	Thickness (mm)
7003500	7705974/7705988	400-625	6.4
7003501	7705975/7705989	425-775	6.4
7003502	7705976/7003508	475-950	6.4
7003503	7705977/7003509	575-1250	6.4
7003504	7705978/7003510	900-1550	6.4
7003505	7003497/7003511	1050-2000	6.4
7003506	7003498/7003512	1200-1850	6.4
7003507	7003499/7003513	1500-2450	6.4

## SERIES 1100 - REGULATED AIR ACCEPTANCE PANEL



- Controls the complete test area from the one test box. This includes plug inflation, test space filled/emptied and test pressure reading for low pressure air tests
- Suited to 650 series only
- Simple single gauge and valve operation

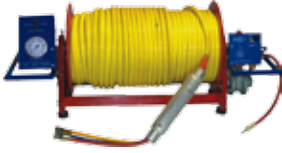
### Test panel

- Low pressure test kit
- Use with triple hose 7705862/7003662

#### Product Code

7705861

## SERIES 1100 - LEAK LOCATION REEL



- Used with 650 series plugs for low pressure air testing (not compulsory)

### Product Code

7003663

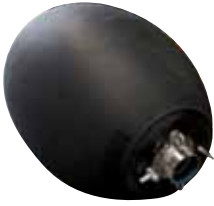
## SERIES 1100 - TRIPLE AIR HOSE



- For used with the regulated air acceptance pane (7705861) & 650 series plugs for low pressure air tests

Product Code	Hoses	Length
7705862	3/4" X 3/8" X 1/4"	15.2 M
7003662	3/8 X 3/8 X 1/4	15.2 M

## SERIES 675 - MULTI SIZE PNEUMATIC PLUG WITH BYPASS



- Used for low pressure vacuum, water or air tests & bypass pumping with large bypass
- Same as series 650 however, bypass is 152mm

### Accessories:

- 124 series is used with the 119 series to inflate
- 119 Series Compressor hose used with the 124 series to inflate

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)	Required Inflation Pressure		Bypass Size (mm)	Pipe size (mm)	Max Allowable Back Pressure			
					PSI	BAR			Air		Water	
7003514	575-1250	546	2286	79.3	20	1.4	152	775	15	1	15.2	1
								900	15	1	15.2	1
								1050	10	0.7	12.9	0.9
								1200	10	0.7	10.8	0.7
7003515	900-1550	864	2286	134	20	1.4	152	1050	15	1	15.2	1
								1200	13	0.9	12.9	0.9
								1350	10	0.7	10.8	0.7
								1500	8	0.6	8.7	0.6
7003516	1200-1850	1168	2286	175	20	1.4	152	1350	13	0.9	12.9	0.9
								1500	10	0.9	10.8	0.7
								1700	8	0.6	8.7	0.6
								1800	8	0.6	7.8	0.5

## SERIES 700 - MULTI SIZE PNEUMATIC CLEANING PLUG



- Wash ball
- A cost effective option for cleaning out new lines prior to commissioning and testing
- Used for the removal of grease build up in existing lines

- Can be used with series 100 and 600 blank plugs

- Steel, zinc plated swivel

### Accessories

- 125 series Inflation hose and gauge (7705860, 7705990)

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Weight (kg)
7003517	125-200	114	356	2.7
7003518	200-300	165	559	3.6
7003519	250-375	229	572	5.4
7003520	300-450	279	635	8.6
7003521	350-550	343	711	11.3
7003522	425-600	419	800	15.9
7003523	475-775	470	902	22.7
7003524	475-850	470	1219	34
7003525	600-950	521	1651	45.3
7003526	750-1250	572	2286	79.3
7003527	1200-1550	889	2337	133.7

## SERIES 800 - SINGLE SIZE HIGH PRESSURE PLUG WITH BYPASS



- Used for high pressure plug requirements including high pressure testing up to 150psi
- Series 800 plugs are suitable for high pressure applications
- Suitable for water mains - air or water
- High quality, made of DuPoint Kevlar
- Plugs 100 to 300mm are aluminum construction
- Plugs 350mm and larger are steel construction
- Plugs 350mm and larger have a 50mm bypass
- Bracing required

### Accessories:

- 123HP Series (7705995/7705996) inflation hose/rope

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003528	100-125	89	457	200	13.8	150	10.3
7003529	150-175	127	457	200	13.8	150	10.3
7003530	175-225	165	457	200	13.8	150	10.3
7003531	225-275	203	457	200	13.8	150	10.3
7003532	275-325	254	457	200	13.8	150	10.3
7003533	350-400	330	457	200	13.8	150	10.3
7003534	425-475	406	457	200	13.8	150	10.3
7003535	500-550	483	457	200	13.8	150	10.3
7003536	575-625	559	457	200	13.8	150	10.3
7003537	650-700	635	457	200	13.8	150	10.3
7003538	750-800	711	457	200	13.8	150	10.3
7003539	800-850	787	457	200	13.8	150	10.3
7003540	900-950	864	457	200	13.8	150	10.3
7003541	950-1000	940	457	200	13.8	150	10.3
7003542	1050-1100	1016	457	200	13.8	150	10.3
7003543	1100-1150	1092	457	200	13.8	150	10.3
7003544	1200-1250	1168	457	200	13.8	150	10.3
7003545	1350-1400	1321	457	200	13.8	150	10.3
7003546	1500-1550	1473	457	200	13.8	150	10.3
7003547	1650-1700	1626	457	200	13.8	150	10.3
7003548	1800-1850	1778	457	200	13.8	150	10.3
7003549	1950-2000	1930	457	200	13.8	150	10.3
7003550	2100-2150	2083	457	200	13.8	150	10.3
7003551	2250-2300	2235	457	200	13.8	150	10.3
7003552	2400-2450	2388	457	200	13.8	150	10.3



- Used for high pressure plug requirements including high pressure testing up to 200psi
  - Used when back pressure exceeds 150psi but is less than 200psi
  - Similar to the Series 200, however Series 825 plugs are suitable for high pressure applications
  - Suitable for fire services
  - High quality, made of DuPont Kevlar
  - Plugs 100 to 300mm are aluminum construction
  - Plugs 350mm and larger are steel construction
  - Plugs 350mm and larger have a 50mm bypass
  - Bracing required
- Accessories:**
- 123HP Series (7705995/7705996) inflation hose/rope

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003553	100-125	89	457	250	17.2	200	13.8
7003554	150-175	127	457	250	17.2	200	13.8
7003555	175-225	165	457	250	17.2	200	13.8
7003556	225-275	203	457	250	17.2	200	13.8
7003557	275-325	254	457	250	17.2	200	13.8
7003558	350-400	330	457	250	17.2	200	13.8
7003559	425-475	406	457	250	17.2	200	13.8
7003560	500-550	483	457	250	17.2	200	13.8
7003561	575-625	559	457	250	17.2	200	13.8
7003562	650-700	635	457	250	17.2	200	13.8
7003563	750-800	711	457	250	17.2	200	13.8
7003564	800-850	787	457	250	17.2	200	13.8
7003565	900-950	864	457	250	17.2	200	13.8
7003566	950-1000	940	457	250	17.2	200	13.8
7003567	1050-1100	1016	457	250	17.2	200	13.8
7003568	1100-1150	1092	457	250	17.2	200	13.8
7003569	1200-1250	1168	457	250	17.2	200	13.8



## SERIES 850 - SINGLE SIZE HIGH PRESSURE PLUG WITH BYPASS



- Used when back pressure exceeds 200psi but is less than 250psi
  - Similar to the Series 200, however Series 850 plugs are suitable for high pressure applications
  - For use under water
  - High quality, made of DuPont Kevlar
  - Plugs 100 to 300mm are aluminum construction
  - Plugs 350mm and larger are steel construction
  - Plugs 350mm and larger have a 50mm bypass
  - Bracing required
- Accessories:**
- 123HP Series (7705995/7705996) inflation hose/rope

Code	Size Range (mm)	Diameter (mm)	Length (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003570	100-125	89	457	300	20.7	250	17.2
7003571	150-175	127	457	300	20.7	250	17.2
7003572	175-225	165	457	300	20.7	250	17.2
7003573	225-275	203	457	300	20.7	250	17.2
7003574	275-325	254	457	300	20.7	250	17.2
7003575	350-400	330	457	300	20.7	250	17.2
7003576	425-475	406	457	300	20.7	250	17.2
7003577	500-550	483	457	300	20.7	250	17.2
7003578	575-625	559	457	300	20.7	250	17.2
7003579	650-700	635	457	300	20.7	250	17.2
7003580	750-800	711	457	300	20.7	250	17.2
7003581	800-850	787	457	300	20.7	250	17.2
7003582	900-950	864	457	300	20.7	250	17.2
7003583	950-1000	940	457	300	20.7	250	17.2
7003584	1050-1100	1016	457	300	20.7	250	17.2



- Used to test a permanent pipe joint or to isolate leaks in piping systems
- Steel construction and heavy duty wheels
- DuPont Kevlar reinforced bladder
- For use where access is not restricted
- Doubles as a grout packer
- Comes with test panel

**Accessories:**

- Test panel can also be purchased individually (7003585)

HIGH PRESSURE							
Code	Size Range (mm)	Diameter (mm)	Width (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003586	600-800	533	610	150	10.3	100	6.9
7003587	750-950	686	610	150	10.3	100	6.9
7003588	900-1100	838	610	150	10.3	100	6.9
7003589	1050-1250	991	610	150	10.3	100	6.9
7003590	1200-1400	1143	610	150	10.3	100	6.9
7003591	1350-1550	1295	610	150	10.3	100	6.9
7003592	1500-1700	1448	610	150	10.3	100	6.9
7003593	1650-1850	1600	610	150	10.3	100	6.9
7003594	1800-2000	1753	610	150	10.3	100	6.9
7003595	1950-2150	1905	610	150	10.3	100	6.9
7003596	2100-2300	2057	610	150	10.3	100	6.9
7003597	2250-2450	2210	610	150	10.3	100	6.9
7003598	2400-2600	2362	610	150	10.3	100	6.9
7003599	2550-2750	2515	610	150	10.3	100	6.9

LOW PRESSURE							
Code	Size Range (mm)	Diameter (mm)	Width (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003600	600-800	533	610	75	5.2	25	1.7
7003601	750-950	686	610	75	5.2	25	1.7
7003602	900-1100	838	610	75	5.2	25	1.7
7003603	1050-1250	991	610	75	5.2	25	1.7
7003604	1200-1400	1143	610	75	5.2	25	1.7
7003605	1350-1550	1295	610	75	5.2	25	1.7
7003606	1500-1700	1448	610	75	5.2	25	1.7
7003607	1650-1850	1600	610	75	5.2	25	1.7
7003608	1800-2000	1753	610	75	5.2	25	1.7
7003609	1950-2150	1905	610	75	5.2	25	1.7
7003610	2100-2300	2057	610	75	5.2	25	1.7
7003611	2250-2450	2210	610	75	5.2	25	1.7
7003612	2400-2600	2362	610	75	5.2	25	1.7
7003613	2550-2750	2515	610	75	5.2	25	1.7

## SERIES 910A - ALUMINIUM MULTI SIZE JOINT TESTERS / GROUT PACKERS - LOW PRESSURE



- Same as Series 910 however is made of aluminium
- Used to test a permanent pipe joint or to isolate leaks in piping systems
- Light weight and resistant to rust
- DuPont Kevlar reinforced bladder
- For use where access is not restricted
- Doubles as a grout packer
- Comes with test panel

### Accessories:

- Test panel can also be purchased individually (7003585)

Code	Size Range (mm)	Diameter (mm)	Width (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003614	600-800	533	610	75	5.2	25	1.7
7003615	750-950	686	610	75	5.2	25	1.7
7003616	900-1100	838	610	75	5.2	25	1.7
7003617	1050-1250	991	610	75	5.2	25	1.7
7003618	1200-1400	1143	610	75	5.2	25	1.7
7003619	1350-1550	1295	610	75	5.2	25	1.7
7003620	1500-1700	1448	610	75	5.2	25	1.7
7003621	1650-1850	1600	610	75	5.2	25	1.7
7003622	1800-2000	1753	610	75	5.2	25	1.7
7003623	1950-2150	1905	610	75	5.2	25	1.7
7003624	2100-2300	2057	610	75	5.2	25	1.7
7003625	2250-2450	2210	610	75	5.2	25	1.7
7003626	2400-2600	2362	610	75	5.2	25	1.7
7003627	2550-2750	2515	610	75	5.2	25	1.7

## SERIES 925 - MULTI SIZE COLLAPSIBLE JOINT TESTERS - LOW PRESSURE



- 925 Series is collapsible
- Used when there are access issues
- Used to test a permanent pipe joint or to isolate leaks in piping systems
- Made of aluminium
- 750-1500mm pipe
- Heavy duty, adjustable wheels
- Removable DuPont Kevlar reinforced bladder
- Successfully tests T-lock pipe

### Accessories:

- Test panel can also be purchased individually (7003585)

Code	Size Range (mm)	Diameter (mm)	Width (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003628	600-750	525	457	50	3.5	25	1.7
7003629	750-950	686	457	50	3.5	25	1.7
7003630	900-1100	838	457	50	3.5	25	1.7
7003631	1050-1250	991	457	50	3.5	25	1.7
7003632	1200-1400	1143	457	50	3.5	25	1.7
7003633	1350-1550	1295	457	50	3.5	25	1.7

## SERIES 950 - SINGLE SIZE JOINT TESTER – HIGH PRESSURE



- Similar to series 900, however is only single size making it a cheaper option
  - Used to test a permanent pipe joint or to isolate leaks in piping systems
  - Steel construction
  - Doubles as grout packer
  - DuPont Kevlar reinforced bladder
  - Successfully tests T-lock pipe
  - Comes with test panel
- Accessories:**
- Test panel can also be purchased individually (7003585)

Code	Size Range (mm)	Diameter (mm)	Width (mm)	Required Inflation Pressure		Max Allowable Back Pressure	
				PSI	BAR	PSI	BAR
7003634	600	533	457	150	10.3	100	6.9
7003635	700	610	457	150	10.3	100	6.9
7003636	750	686	457	150	10.3	100	6.9
7003637	850	762	457	150	10.3	100	6.9
7003638	900	838	457	150	10.3	100	6.9
7003639	1000	914	457	150	10.3	100	6.9
7003640	1050	991	457	150	10.3	100	6.9
7003641	1150	1067	457	150	10.3	100	6.9
7003642	1200	1143	457	150	10.3	100	6.9
7003643	1350	1295	457	150	10.3	100	6.9
7003644	1500	1448	457	150	10.3	100	6.9
7003645	1650	1600	457	150	10.3	100	6.9
7003646	1800	1753	457	150	10.3	100	6.9
7003647	1950	1905	457	150	10.3	100	6.9
7003648	2100	2057	457	150	10.3	100	6.9
7003649	2250	2210	457	150	10.3	100	6.9
7003650	2400	2362	457	150	10.3	100	6.9

## SERIES 900 - TEST PANEL FOR JOINT TESTER



- Used with the 900, 910, 910A, 925 and 950 series joint testers
- Comes with joint testers and is sold individually

Water or air test panel

7003585

## SERIES 1000 - VACUUM TEST PLATE



- Vacuum test plates sit on top of manholes and are used when constructing new manholes
- Sucks to negative pressure
- Strong, lightweight aluminum construction

- Simple and easy to use with either a Venturi or vacuum test pump

### Accessories:

- Used with a Venturi pump or a vacuum pump

Product Code	Diameter (mm)	Weight (kg)
7003651	356	4.5
7003652	660	11.3
7003653	965	19.1
7003654	1118	24.9
7003772	660	11.3
7003773	965	19.1
7003774	1118	24.9

## SERIES 1000 - VENTURI VACUUM UNIT



- Unit is used with an air compressor for low pressure vacuum tests manhole or pipeline
- If the contractor has a compressor this unit will create the vacuum

- Lightweight, fast use
- Does not require oil, gas or belts

Code	Description
7003655	40CFM
7003656	27CFM

## 1000 SERIES - VACUUM PUMP



- Used for vacuum testing manholes or pipeline when a venturi & compressor are not available

Code	Cubic Feet Per Minute
7003657	25 CFM @ 15 IN.HG.
7003658	50 CFM @ 15 IN.HG.

## HIGH FLOW HYDROSTATIC TESTERS



- Used for pumping in water when testing
- High pressure
- Water mains

Part Number	Max Pump Pressure		Max Flow Rate (lpm)	Engine	Pump (rpm)	Weight (kg)
	PSI	BAR				
7003775 (DIESEL)	568	40	75	L100 YANMAR ELECTRIC START DIESEL	550	96
7003776 (PETROL)	568	40	75	GX390 13 HP HONDA RECOIL PETROL	550	78



- Used to repair holes and cracks in pipe
- Used with fibreglass wrapping kits
- Larger sizes than CLA series
- Semi flexible patch kits are available

Code	Size Range (mm)	Diameter (mm)	Required Inflation Pressure		Bypass size (mm)	Length (mm)	Approximate Contact Area (mm)			Optional Wheel Kit Part Number	Optional Cage Kit Part Number
			PSI	BAR			DIAMETER OF PIPE				
7003698	100-150	64	25	1.7	25	1500	100	150		N/A	7003715
							1270	1270			
7003699	150-250	108	25	1.7	64	1500	DIAMETER OF PIPE			7003707	7003716
							150	200	250		
7003700	200-300	133	25	1.7	76	1500	1270	1270	1194	7003708	7003717
							200	250	300		
7003701	250-375	184	25	1.7	102	1500	1219	1168	1143	7003709	7003718
							250	300	375		
7003702	300-450	222	25	1.7	152	1500	1219	1168	1143	7003710	7003719
							300	375	450		
7003703	375-550	305	20	1.4	152	1500	1245	1118	1092	7003711	N/A
							375	450	550		
7003704	450-600	375	20	1.4	152	1500	1245	1118	1092	7003712	N/A
							450	550	600		
7003705	525-775	381	20	1.4	152	1500	1194	1118	1067	7003713	7003720
							550	600	750		
7003706	600-900	457	20	1.4	152	1500	1143	1067	991	7003714	7003721
							600	750	900		

## CA SERIES - REHABILITATION WHEEL KITS

Product Code	Suitable for
7003707	7003699
7003708	7003700
7003709	7003701
7003710	7003702
7003711	7003703
7003712	7003704
7003713	7003705
7003714	7003706



- For use with CA carrier plugs

## CA SERIES - REHABILITATION CAGED KITS

Product Code	Suitable for
7003715	7003698
7003716	7003699
7003717	7003700
7003718	7003701
7003719	7003702
7003720	7003705
7003721	7003706



- For use with CA carrier plugs

## CLA SERIES - REHABILITATION LATERAL POINT REPAIR



- Plugs repairs holes and cracks in pipe
- Used with fibreglass wrapping kits
- Point repair for laterals
- Smaller sizes than CA series

### Accessories:

- 125 series inflation hose (7705860, 7705990)

Product Code	Size Range (mm)	Diameter (mm)	Length (m)	Required Inflation Pressure	
				PSI	BAR
7003722	75-100	44	1.1	25	1.7
7003723	100-150	70	1.1	25	1.7
7003777	100-150	70	3	25	1.7
7003778	100-150	70	4	25	1.7
7003724	150-200	118	1.1	25	1.7
7003725	PUSH ROD KIT - 6.1 M				



## HT SERIES - SINGLE SIZE PLASTIC MECHANICAL PIPE PLUG



- Used to plug off or to conduct a low pressure air test
- Larger sizes than the TM Series
- Plastic
- Manual use
- Economical
- Unscrew centre bolt for access to pipe
- Turn the handle to expand

Product Code	Pipe Size (mm)	Bypass & Read Back Port (mm)	Weight (kg)	Max Allowable Back Pressure			
				Air		Water	
				PSI	BAR	PSI	BAR
7003676	100	12.7	0.45	5	0.34	4.3	0.3
7003677	125	12.7	0.45	5	0.34	4.3	0.3
7003678	150	12.7	0.68	5	0.34	4.3	0.3
7003679	200	12.7	1.1	5	0.34	4.3	0.3
7003680	250	12.7	2.5	5	0.34	4.3	0.3
7003681	300	12.7	2.9	5	0.34	4.3	0.3
7003682	375	12.7	5.2	5	0.34	4.3	0.3
7003683	450	12.7	7.5	5	0.34	4.3	0.3

## HT SERIES - SINGLE SIZE PLASTIC MECHANICAL PIPE PLUG – NON PRESSURE

Product Code	Pipe Size (mm)
7003674	50
7003675	75



- Used to cap off exposed pipes not pressurised
- Smaller sizes than the HT Series pressure plugs
- Manual use
- Cheaper option

## TM SERIES - SINGLE SIZE NON PRESSURE PLUGS

Product Code	Pipe Size (I.D) (mm)
7003668	25
7003669	32
7003670	38
7003671	50
7003672	63.5
7003673	76



- Used to cap off exposed pipes not pressurised
- Smaller sizes than the HT Series
- Manual use
- Economical

## ME SERIES - SINGLE SIZE MECHANICAL PLUG WITH BYPASS



- Made of aluminium
- Two bypass ports
- Can be used for low pressure air or water test
- Often used when plug is required for long periods; plug stays expanded

Product Code	Pipe Size (mm)	Bypass & Read Back Port (mm)	Weight (kg)	Max Allowable Back Pressure			
				Air		Water	
				PSI	BAR	PSI	BAR
7003684	150	6.4 & 6.4	1.8	5	0.34	17.4	1.2
7003685	225	6.4 & 19.1	2.7	5	0.34	17.4	1.2
7003686	250	6.4 & 19.1	3.6	5	0.34	17.4	1.2
7003687	300	6.4 & 19.1	4.5	5	0.34	12.9	0.9
7003688	375	6.4 & 19.1	4.5	5	0.34	12.9	0.9
7003689	450	6.4 & 19.1	8.2	5	0.34	8.7	0.6

## WE SERIES - SINGLE SIZE BACK PLUG ONLY - SHORT



- Used for blocking off of pipes only, for use by everyday plumber
- No bypass
- Similar to the 100 Series but for small pipe sizes (30-100mm)
- Come in different lengths

Product Code	Pipe Size (mm)	Length (mm)	Required inflation pressure		Max Allowable Back Pressure			
					Air		Water	
			PSI	BAR	PSI	BAR	PSI	BAR
7003690	30-40	75	40	2.8	13	0.9	12.9	0.9
7003691	50	40	40	2.8	13	0.9	12.9	0.9
7003692	75	80	32	2.2	13	0.9	12.9	0.9
7003693	100	95	32	2.2	13	0.9	12.9	0.9

## WE SERIES - SINGLE SIZE BACK PLUG ONLY - LONG



- Used for blocking off of pipes only, for use by everyday plumber
- No bypass
- Similar to the 100 Series however, for small pipe sizes (50 -150mm)
- Come in different lengths

Product Code	Pipe Size (mm)	Length (mm)	Required inflation pressure		Max Allowable Back Pressure			
					Air		Water	
			PSI	BAR	PSI	BAR	PSI	BAR
7003694	50	750	40	2.8	13	0.9	12.9	0.9
7003695	75	800	32	2.2	13	0.9	12.9	0.9
7003696	100	900	32	2.2	13	0.9	12.9	0.9
7003697	100-150	700	40	2.8	13	0.9	12.9	0.9

## DEFLECTION GAUGE

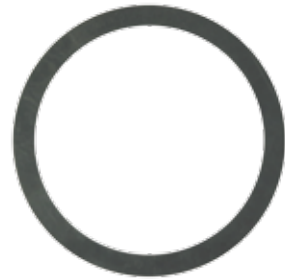
Product Code	Description (mm)
7705867	100
7705863	150
7705864	225
7003762	300
7003763	375
7003764	450
7003765	525
7003766	600



- Made from Polypropylene
- For use in manholes up to 600mm, custom sizes also available
- Pipe deflection gauges are used to determine if the pipe has deflected after installation or on existing pipelines to determine if pipe has collapsed

## PROVING RINGS

Product Code	For use with
7707007	100MM DEFLECTION GAUGE
7707008	150MM DEFLECTION GAUGE
7707009	225MM DEFLECTION GAUGE
7003767	300MM DEFLECTION GAUGE
7003768	375MM DEFLECTION GAUGE
7003769	450MM DEFLECTION GAUGE
7003770	525MM DEFLECTION GAUGE
7003771	600MM DEFLECTION GAUGE



- Made from Polypropylene
- For use in manholes up to 600mm
- Used as an onsite certification tool to prove the ovality of the deflection tool

### 118 SERIES - INFLATION HOSE

Product Code	Length (m)
7705993	6.1
7705994	10

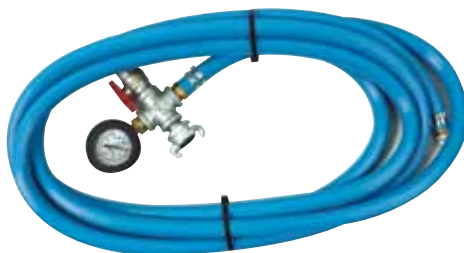
- For use with 650 Series up to 7705989



### 119 SERIES - INFLATION / SPACE HOSE

Product Code	Length (m)
7705866	6.1
7705992	10

- Space hose on 650 series 7705984 & above
- Used with 7705865/7705991 when inflating 7705976/7003508 and above



### 123HP - SERIES INFLATION HOSE

Product Code	Length (m)
7705995	6.1
7705996	9.1

- For use with the 800, 825 and 850 series high pressure plugs



## 124 SERIES - READ BACK HOSE

Product Code	Length (m)
7705865	6.1
7705991	9.1

- For use with 119 series to inflate 600/650 series plugs above 425mm
- For use with 600/650 series plugs for low pressure air tests



## 125 SERIES - INFLATION HOSE

Product Code	Length (m)
7705860	6.1
7705990	9.1

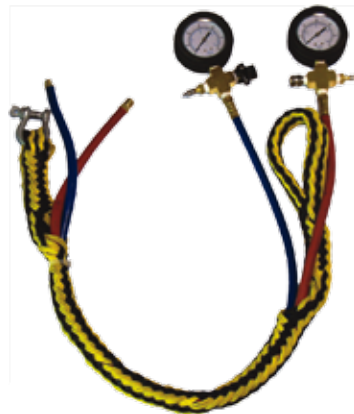
- Inflation hose suitable to a large range of testing plugs



## 127 SERIES - SAFETY INFLATION HOSE

Product Code	Details
7705997	2 X 6M X 6MM WITH 60 PSI & 30PSI GAUGE

- For use with 280 series plugs



## SAFETY PRESSURE RELIEF VALVES

Product Code	Details (psi)
7003755	25
7003756	35
7003757	20
7003758	25



## GAUGE BLOCK ASSEMBLIES

Product Code	Details (psi)
7003747	GAUGE BLOCK ASSEMBLY WITH BALL VALVE 0-60 PSI



## GAUGES AND BLOCK

Product Code	Details
7003729	0-15 PSI GAUGE
7003730	0-60PSI GAUGE
7003731	0-300 PSI GAUGE
7003732	100KPA/30HG/14.5PSI
7003733	RUBBER PROTECTION BOOT



## REMOTE PLACEMENT POLE

Product Code	Details
7003726	1/2" POLE ATTACHMENT
7003727	5/8" POLE ATTACHMENT
7003728	TELESCOPIC POLE 6M



## QUICK COUPLERS

Product Code	Details
7003748	1/4" FX 1/4" FIP
7003749	1/4" F X 1/4" MIP
7003750	1/4" M X 1/4" MIP
7003751	1/4" M X 3/8" MIP
7003752	3/4" FEMALE DIXON
7003753	3/4" MALE DIXON



## INFLATION FITTINGS

Product Code	Details
7003754	1/4" M





# A guideline for the installation, handling & removal of plug-it products pneumatic pipe plugs.

## WARNING

This safety manual is provided as a general guideline only. It is the user's responsibility to comply with any Local, State, and/or Federal Safety Regulations as they pertain to their geographical location or job situation.

## NOTICE TO EMPLOYERS, CONTRACTORS AND USERS

All personnel who use or work in close proximity to Plug-It Products pneumatic plugs must be instructed and become familiar with proper installation, handling, and removal procedures. YOUR LIFE MAY DEPEND ON IT.

Plug-It Products pneumatic plugs are designed and manufactured with a firm commitment to quality and safety. We strive to produce and provide the best quality plug available. However, we cannot control or predict the unlimited workplace variables that can affect safety conditions. General safety conditions are overwhelmingly the result of workers adhering to and utilizing proper safety practices. (Natural rubber plugs are not for use in oil, gas, or petroleum applications)

UNDERSTAND THAT EVERY JOB IS DIFFERENT and must be carefully examined to insure the safest procedure possible for each circumstance encountered. The safest plug on earth will not save you if it is handled improperly or if safety practices are ignored.

## BEFORE YOU BEGIN

### 1. CHECK YOUR TOOLS

As with any repair and maintenance procedure, it is important to use ONLY the proper tools designed for your task and know how to use them correctly. Inspect your tools closely to insure that they are in proper working condition.

Maintaining consistent and accurate air pressure is extremely important in working with plugs. Be sure that your pressure gauges are calibrated accurately and capable of holding a steady pressure setting.

### FAILURE TO MAINTAIN CONSISTENT AIR PRESSURE CAN RESULT IN PLUG FAILURE RESULTING IN POSSIBLE INJURY OR DEATH.

Also, be sure that you are utilizing any specialized tools or equipment that may be required by Local, State, and/or Federal Regulations.

## 2. EVALUATE THE JOB

Individual and unique characteristics of the working environment can greatly influence the proper repair procedure and affect the performance of personnel and equipment.

It is the supervisor's responsibility to examine each situation to determine proper repair and safety procedures. In addition, the supervisor must be aware of any Local, State, and/or Federal Regulatory requirement that may be required to insure worker or public safety. It is extremely important to allow only experienced personnel to function in this decision-making capacity. Provide close supervision for individuals considered to be "assistants" or are "in training".

### FAILURE TO RECOGNIZE INHERENT DANGERS AT THE JOB SITE CAN BE DEADLY!

IF ANYONE IS UNSURE OF ANY ASPECT REGARDING SAFETY – DO NOT PROCEED! Consult your Supervisor, Safety Engineer, or Governing Authority for proper instruction.

## 3. SECURE THE JOB SITE

Reroute pedestrian and vehicle traffic as necessary by using traffic cones or provide other security measures as outlined by local ordinance or as required by governing authorities to insure worker and public safety.

Do not allow unauthorized or untrained individuals inside the work perimeter. This is for their safety – and yours!

## INSPECT THE WORK AREA

### 4. TEST THE ATMOSPHERE

The work area may contain toxic or flammable gases or be oxygen deficient. It is important to ventilate confined areas such as manholes before allowing anyone to enter the work area. Always ventilate a manhole, starting from the bottom. Noxious gases are usually heavier than air and will be found in greater concentrations at the lowest levels. **REMEMBER:** Always reinstall ventilation hoses after lowering workers into the manhole.

### 5. USE PROPER ENTRY PROCEDURES

**NEVER WORK ALONE.** When entering confined workspaces, insure that the line tender utilizes the proper harnesses, ropes, gloves, and other safety equipment. Consult with your supervisor for established safe entry procedures and correct equipment to use.

### 6. CLEAN THE PIPE

Plug-It Products plugs are designed to be used in clean dry pipes **ONLY!** It is important to remove any debris from the area within the pipe to insure proper seal. Failure to clear the pipeline of debris will cause the plug to slip and fail, resulting in possible injury or death.

### 7. INSPECT THE PIPE

Inspect the pipeline for evidence of damage, cracks, or breaks. Plug pressure applied to damaged pipe can further damage the pipe, causing failure of both pipe and plug.

## MAKING NECESSARY CALCULATIONS

### 8A. MEASURE THE DIAMETER OF THE PIPE

Carefully measure the inside of the pipe you will be working with to determine its' diameter. Measure this dimension in inches.

### B. DETERMINE THE BACKPRESSURE

(Air or Liquid) The pressures that a plug must withstand are measured in PSIG (pounds per square inch gauge). These pressures can be calculated by determining the height of water that accumulates (Head Feet) from the centerline of the pipe.

### C. DETERMINE THE PIPE'S AREA (square inches) $R \times R \times 3.14$

(1) Divide the pipe's diameter by 2 to get the radius.

(2) Multiply the radius by the radius.

(3) Multiply that number by 3.14. The resulting total will be the pipe's total square inches.

**Example:**

Step (1) 60" pipe diameter divided by 2 = 30"

Step (2) 30" x 30" = 900"

Step (3) 900" x 3.14 = 2826 Total Square Inches

### D. CALCULATE THE TOTAL POUNDS OF FORCE THE PLUG MUST WITHSTAND.

Multiply the Total PSI by the total Square Inches of the pipe. The resulting total will give you the Total Pounds of Force that the plug must withstand.

**Example:**

10 Ft. of water = 4.33 PSI

4.33 PSI x 2826 Sq.In. = 12,236.58 Pounds of Force

FOLLOW THE CHART BELOW TO DETERMINE THE BACK PRESSURE:

ALWAYS CALCULATE MAXIMUM HEIGHT OF WATER THAT MAY ACCUMULATE

HEAD FEET OF WATER TO POUNDS PER SQUARE INCH (PSI) CONVERSION TABLE			
HEAD FEET	PSI	HEAD FEET	PSI
1	0.43	39	16.89
2	0.87	40	17.32
3	1.30	41	17.75
4	1.73	42	18.19
5	2.16	43	18.62
6	2.60	44	19.05
7	3.03	45	19.48
8	3.46	46	19.92
9	3.90	47	20.35
10	4.33	48	20.78
11	4.73	49	21.22
12	5.20	50	21.65
13	5.63	51	22.08
14	6.06	52	22.52
15	6.49	53	22.95
16	6.93	54	23.38
17	7.36	55	23.82
18	7.79	56	24.25
19	8.23	57	24.68
20	8.66	58	25.11
21	9.09	59	25.55
22	9.53	60	25.96
23	9.96	61	26.31
24	10.39	62	26.85
25	10.82	63	27.28
26	11.26	64	27.71
27	11.69	65	28.14
28	12.12	66	28.58
29	12.66	67	29.01
30	12.99	68	29.44
31	13.42	69	29.88
32	13.86	70	30.31
33	14.29	71	30.74
34	14.72	72	31.18
35	15.15	73	31.61
36	15.53	74	32.04
37	16.02	75	32.47
38	16.45		

## INSPECTION OF PNEUMATIC PLUGS

Now that you have calculated (1) THE TOTAL BACKPRESSURE being exerted, (2) THE TOTAL PIPE AREA in square inches (3) THE TOTAL POUNDS OF FORCE the plug must hold back, you are now ready to select the correct Plug-It Products plug to suit your job application.

## 9. SELECT THE PROPER PLUG

Plug-It Products plugs are clearly marked with minimum and maximum usage ranges. Select the proper plug for your particular job application. Select an air hose that is long enough to place you OUTSIDE OF THE DANGER ZONE during plug inflation and use.

**WARNING:** DO NOT INSTALL A PLUG WHERE THE PRESSURES AND FORCES EXCEED THE MAXIMUM RATING LISTED ON THE PLUG. IF YOU DO NOT HAVE THE RIGHT PLUG FOR YOUR SPECIFIC APPLICATION – **DO NOT PROCEED.** USING THE WRONG PLUG OR OVERINFLATING A PLUG TO COMPENSATE FOR EXERTED PRESSURES CAN RESULT IN PLUG FAILURE, PIPE DAMAGE, INJURY, OR DEATH.

## 10. WARNING: INSPECT THE PLUG

ALWAYS inspect the plug for damage before putting one into service. IF A PLUG LOOKS QUESTIONABLE – **DO NOT USE IT!** Damage may consist of, but is not limited to, bulges, cuts and abrasions, loose or distorted fittings, or apparent bond releases.

IMPORTANT: MARK DAMAGED OR QUESTIONABLE PLUGS WITH BRIGHTLY COLORED PAINT AND TAG FOR REPAIR OR DISPOSAL AND SET ASIDE IN A SEPARATE LOCATION.

FAILURE TO CAREFULLY INSPECT EACH PLUG BEFORE USE COULD BRING DIRE CONSEQUENCES – PROPERTY DAMAGE, INJURY OR DEATH.

USE OF A DAMAGED PLUG MAY RESULT IN PLUG SLIPPAGE AND FAILURE RESULTING IN PROPERTY DAMAGE, INJURY OR DEATH.

## 11. CLEAN THE PLUG

After carefully inspecting the plug for damage, clean with detergent and water. Allow the plug to thoroughly dry before use, repeat this cleaning procedure after each use.

NEVER USE SOLVENTS OR PETROLEUM PRODUCTS TO CLEAN PLUGS. The rubber composition and bonding materials used in their construction may be severely weakened resulting in catastrophic failure of the plug.

## INSTALLATION OF PNEUMATIC PLUGS

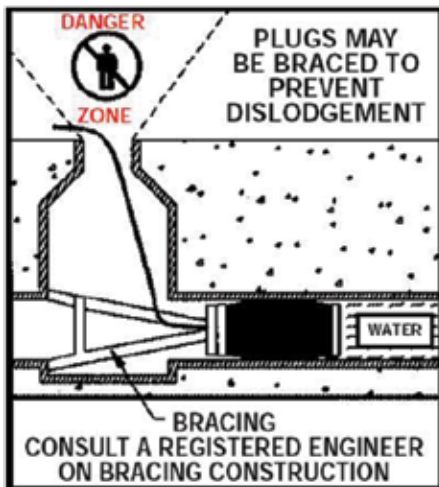
### 12. INSTALL BRACING AND BACK-UP SYSTEM

Tremendous and potentially deadly forces are present when plugging a pipeline. It is therefore **ABSOLUTELY ESSENTIAL** that you provide bracing for the plug to insure your safety in the event of an accidental dislodge. This block or brace should be designed to contain a dislodged plug and all materials behind it, should the plug fail during use.

**CONSULT A REGISTERED ENGINEER FOR PROPER DESIGN AND CONSTRUCTION OF SUCH A BRACE**

Additional back up plugs, placed upstream from your main plug, may be used to prevent leakage and reduce the pressures on the main plug.

**NEVER RELY SOLELY ON A SINGLE PLUG TO PREVENT PROPERTY DAMAGE OR LEAKAGE. ALWAYS PROVIDE A BACK-UP SYSTEM!**



### 13. WARNING! ALWAYS AVOID THE DANGER ZONE!

This is the area directly in front of the pipeline and plug. It is an invisible funnel shaped zone, increasing in size as it moves outwards from the plug. It is essentially a blast area, acting much like the explosion of launching a projectile from a cannon. Should the plug fail, the plug and accompanying debris will launch outward with a tremendous, and deadly force. Surrounding obstacles may also deflect flying debris. This ricocheting factor adds a further unpredictable element to an already dangerous plug failure.



### 14. ATTACH THE INFLATION AIR LINE & ROPES – USE CAUTION!

Improper attachment of inflation hose may cause the plug to deflate unexpectedly resulting in plug failure. Make note of Inflation Pressure before inserting plug into pipe.

### 15. LOWER THE PLUG INTO THE PIPE CAREFULLY.

Metal eyebolts are provided for handling the plug. **NEVER USE THE EYEBOLTS TO SECURE A SAFETY ROPE OR AS A MEANS TO RESTRAIN THE PLUG DURING DEFLATION. THESE ITEMS ARE NOT DESIGNED TO WITHSTAND THE PRESSURES AND FORCES INVOLVED.**

## 16. CAREFULLY INSERT THE PLUG INTO POSITION.

- Insert plug into pipeline a minimum of the diameter measurement of the pipe.
- Do not allow plug to protrude from pipeline while inflating
- Do not insert plug over or near sharp objects or obstruction.
- Do not insert plugs where 2 pipes intersect. Plugs are designed to work by applying plug pressure evenly from the sides of the plug.

## 17. INFLATE THE PLUG

Check the air pressure gauge to insure that the pressure is holding steady. PARTIALLY INFLATE PLUG. Check the air pressure at the gauge. Repeat this cycle of inflating & checking until the plug is fully inflated to maximum air pressure.

- TAPE OFF THE AIR VALVE TO PREVENT ACCIDENTAL PRESSURE RELEASE.
- CONTINUE TO MONITOR THE AIR PRESSURE GAUGE TO INSURE CONSISTENT PRESSURE.
- NEVER EXCEED THE MAXIMUM AIR PRESSURE; FAILURE OF THE PLUG WILL RESULT.
- NEVER USE AN UNDER INFLATED PLUG, IT WILL SLIP & FAIL.

DO NOT REMOVE OR DISABLE PRESSURE RELIEF VALVE.

## 18. REMOVAL OF PNEUMATIC PLUGS

### A. DEFLATING THE PLUG.

Before attempting to deflate the pneumatic plug you must release all pipe pressure. Stay out of DANGER ZONE! Remove the tape that secures the air valve.

### B. SLOWLY DECREASE THE AIR PRESSURE until the plug is COMPLETELY deflated.

- a. REMOVE THE PLUG SLOWLY by pulling on the ¾" rope attached to the metal eyebolts provided for that purpose.
- b. DO NOT ATTEMPT TO PULL THE PLUG FROM A PIPELINE BEFORE THE PLUG IS COMPLETELY DEFLATED.
- c. DO NOT USE THE AIR INFLATION HOSE TO PULL THE DEFLATED PLUG FROM THE PIPELINE.
- d. INSPECT AND CLEAN the plug before storing it away for future use.



**WHAT  
YOU WANT.  
WHEN YOU  
NEED IT.**

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