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Low Pressure Packers

Model 800 Data Sheet

Low Pressure Pneumatic Packers

Model 800

These simple inexpensive packers inflate with a hand pump and are available in 1.8" and 3.9" (46 mm and 99 mm) diameters. Primarily for short term use in 2" and 4" (51 mm and 102 mm) monitoring wells, they can also be used in smooth boreholes and wells with 1.9 – 5" (48 – 127 mm) inside diameters. Typical inflation pressures for the 1.8" (46 mm) packers are from 20 – 40 psi (140 – 275 kPa) above hydrostatic pressure, and from 20 – 30 psi (140 – 205 kPa) for the 3.9" (99 mm) packers.

The Packers utilize a gland of black carbon reinforced rubber (BCR) on a Sch 80 PVC body. They are lowered on a support cable or a rigid PVC drop pipe. If a rigid drop tube is not required for your application, it is recommended to attach a safety line to the eyebolt provided. The Solinst Model 103 Tag Line provides a convenient, graduated support cable that can be used for this purpose, as well as for measuring placement depth. The inflation line is standard LDPE tubing and connects to the packers using a simple push fitting.


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Single or Straddle Packers

Solinst packers are ideal for use with Solinst Bladder Pumps or Double Valve Pumps, which can be easily attached above the packers. The water inlet can be below a single packer, or through perforated pipe fitted between straddle packers. For hydraulic conductivity testing, Solinst Leveloggers can also be suspended, either below or between packers, from the eyebolt on the bottom of the packer.

800M Mini Pneumatic Packers

The 800M Mini Packers are 1 ft. (305 mm) in length and 1.8" (46 mm) in diameter, available in single or straddle packer setups. They are designed for falling head tests, and work easily with the Solinst Model 415 12V Pump to isolate groundwater sampling zones and reduce purge volumes in nominal 2" OD wells. They are also useful when multiple, shorter well intervals need to be isolated, e.g. during aquifer testing.

Accessories & Optional Equipment

- Perforated Straddle Pipe
- 800 or 800M Inflation Valve Assembly
- 1/4" OD LDPE Inflation Tubing (1/8" OD for 800M)
- Inflation Pump
- Tag Line (Model 103 - marked support cable)
- Water Level Meter (Models 101, 102)
- Pumps (Models 404, 407, 408, 408M, 410, 415 w/ 800M)
- Leveloggers (Model 3001)

Applications

Isolating discrete zones for short term monitoring:

- Water sampling
- Hydraulic conductivity testing
- Datalogging with a Levelogger
- Minimizing purge volumes
- Reducing well development time
- Slug and pumping tests
- Injection of tracers, amendments or other materials
- Air sparging (low pressure)



Solinst®

Low Pressure Packers

800 Packer Specifications		
Packer Size OD	1.8" (46 mm)	3.9" (99 mm)
Access ID	1/2" (12.7 mm)	1" (25.4 mm)
Gland Length	23" (584 mm)	30" (762 mm)
Overall Length	29" (737 mm)	36" (914.4 mm)
- with centralizers	Same	44" (1,117.6 mm)
Weight	1.5 kg (3.4 lbs)	4.3 kg (9.4 lbs)
Borehole Size	1.9 – 2.4" (48 – 61 mm)	4.0 – 4.4" (102 – 112 mm)
- with centralizers (trim to suit)	2.5 – 3.5" (63 – 89 mm)	4.5 – 5.0" (114 – 127 mm)
Pipe Fittings	1/2" NPT Female	1" NPT Male
- with centralizers	Same	1" NPT Female

800M Packer Specifications	
Packer Size OD	1.8" (46 mm)
Access ID	1/2" (12.7 mm)
Gland Length	7" (178 mm)
Overall Length	12" (305 mm)
- with centralizers	n/a
Weight	0.5 kg (1.2 lbs)
Borehole Size	1.9 – 2.1" (48 – 53 mm)
- with centralizers (trim to suit)	n/a
Pipe Fittings	1/2" NPT Female
- with centralizers	n/a

Packer	800 1.8" O.D. (46 mm)	800 3.9" O.D. (99 mm)	800M 1.8" O.D. (46 mm)
Borehole Size Inflation Pressure	1.9 – 2.4" (48 – 61 mm) 20 – 30 psi 140 – 205 kPa	4.0 – 4.4" (102 – 112 mm) 20 psi 140 kPa	1.9 – 2.1" (48 – 53 mm) 20 – 30 psi 140 – 205 kPa
With Centralizers (800 Packers only)			
Borehole Size Inflation Pressure	2.5 – 3.5" (63 – 89 mm) 35 – 40 psi 240 – 275 kPa	4.5 – 5.0" (114 – 127 mm) 25 – 30 psi 170 – 205 kPa	n/a

Notes:

- Inflation pressures must be added to hydrostatic pressure at the packer location.
- Maximum submergence = 150 ft (46 m)
- Maximum pressure for 1.8" (46 mm) 800 packer, = 50 psi or 345 kPa above hydrostatic pressure.
Maximum pressure for 3.9" (99 mm) 800 packers = 30 psi or 205 kPa above hydrostatic pressure.
Maximum pressure for 1.8" (46 mm) 800M packer, = 30 psi or 205 kPa above hydrostatic pressure.
e.g.: Required pressure for: Packer placed 100 ft (30 m) below water
 - 1.8" 800 packer in 2" well: 20 psi min + (100 ft x 0.43 psi) = 20 + 43 = 63 psi.
(46 mm packer: 140 kPa min + (30 x 9.8 kPa) = 140 + 294 = 434 kPa)
- 1 ft water = 0.43 psi, 1 m water = 9.8 kPa