PIPE PURGING SYSTEMS

PURGE OXYGEN MONITORS

PIPE STOPPERS

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When welding stainless steel, titanium and other corrosion resistant materials, the perfect environment for welding is paramount to maintaining the corrosion resistant properties. During the welding process, the weld seam is subjected to heat and air, which causes oxidation, if the correct processes are not adhered to. For the best results, oxidation must be prevented. The quality of the exotic corrosion resistant material welding is dependent on the correct purging methods to minimize or eliminate oxidation.

WHY PURGE?

Argon Purge 12ppm
Vol. 0² Content

Argon Purge 60ppm
Vol. 0² Content

Argon Purge 70ppm
Vol. 0² Content

Argon Purge 200ppm
Vol. 0² Content

Argon Purge 250ppm
Vol. 0² Content

Argon Purge 500ppm
Vol. 0² Content
Pipe Purge

Tape

0.01

1. Create a seal (dam) either side of the weld and close off the weld gap with E-Z Zone Purge Tape to create the weld chamber

2. Fill the chamber with inert gas (such as argon or nitrogen) to expel oxygen from the chamber

3. Use a weld purge monitor to recognize when the required level of oxygen has been met

4. Welding can then be carried out, guaranteeing no oxidation or discoloration of the weld

Weld Quality

The effective welding of stainless steel, titanium and other exotic materials for the nuclear, petrochemical, pharmaceutical, semi-conductor, aerospace and food industries requires the proper tools to create a perfect weld environment. Purging equipment and its use has a major impact on preventing oxidation and improving final weld quality. The basic principles of purging can be seen below. PPM supplies a comprehensive range of systems to create the correct welding environment, whatever the application.

Principles of Purging
Double Inflatable Pipe Weld Purging Systems

Used for 90% of the traditional pipe weld purging applications to provide bright, shiny, oxide free weld roots. The PPM Pipe Purge System is quick and easy to use providing a very rapid weld purge. High quality materials are used in the manufacture of these systems guaranteeing perfect oxide-free weld roots in very little time.

Due to the design of these systems, the volume of gas used to purge is minimized, resulting in significant savings in both time and the quantity of inert gas used. Return on investment can be achieved in as little as just one or two welds. These robust systems can be used over and over again paying for themselves in very little time.

Features and Advantages

- PPM’s Inflatable Pipe Purging Systems dramatically reduce purging times leading to significant savings in labor costs
- **Typical purge times for 4” pipe = 1½ mins; 8” pipe = 4 mins; 12” pipe = 8 mins**
- Ready to use, connects to a dedicated and regulated gas supply. Choose any flow rate up to 20l a min. Through the pre-set purge valve
- Gas pressure control ensures an even positive root bead with no notching
- Quick and easy to install simplifying the process of inert gas purging
- Heat resistant up to 70ºC continuously
- Use less inert gas. The volume of purge gas used is less than 2% of that required for a conventional purge

Luminous strip allows the operator to locate the centre of the bag system to the weld gap with ease

The Gas Release Valve is pre-set and sealed, so requires no adjustment

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How it works

The Purge Bag Systems in the range manufactured by PPM are designed around the principle of using 2 dams to create a seal either side of the weld, just far enough away from the weld not to be effected by heat but close enough to the joint to provide the fastest weld purge time. These dams are connected by an armoured spinal tube.

Once ready to start purging, the system is inserted into the bore of the pipe using the luminous strip to centre the system to the weld gap.

When the gas flow is started, the dams inflate and, upon reaching the pre-set pressure, the valve releases the gas gently into the weld chamber, to purge the interspace without turbulence. The Oxygen is removed from the weld chamber through the integral exhaust tubes in the bags. Used in conjunction with PPM’s Oxygen Monitors to indicate when the required low level of oxygen has been reached, welding can then commence, with the inert gas enabling the welder to produce an even oxidation free penetration weld bead. Afterwards, the dams are deflated simply by disconnecting the purge gas feed and the system easily withdrawn. The design of these systems means that only one gas connection is required for both dam inflation and weld purging.

Sizing and Specification

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>NOMINAL PIPE SIZE</th>
<th>WEIGHT</th>
<th>INTERNAL DIAMETER RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB02</td>
<td>50 mm</td>
<td>2&quot;</td>
<td>1 lbs. / 0.34 kg</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1.73 - 2.24 / 44 - 57 mm</td>
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<tr>
<td>PB03</td>
<td>75 mm</td>
<td>3&quot;</td>
<td>1 lbs. / 0.34 kg</td>
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<tr>
<td></td>
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<td>2.28 - 3.30 / 58 - 84 mm</td>
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<tr>
<td>PB04</td>
<td>100 mm</td>
<td>4&quot;</td>
<td>1 lbs. / 0.34 kg</td>
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<td>3.14 - 4.33 / 80 - 110 mm</td>
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<tr>
<td>PB05</td>
<td>125 mm</td>
<td>5&quot;</td>
<td>1 lbs. / 0.38 kg</td>
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<td></td>
<td>4.05 - 5.31 / 103 - 135 mm</td>
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<tr>
<td>PB06</td>
<td>150 mm</td>
<td>6&quot;</td>
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<td>4.88 - 6.37 / 124 - 162 mm</td>
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<tr>
<td>PB08</td>
<td>200 mm</td>
<td>8&quot;</td>
<td>2 lbs. / 0.90 kg</td>
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<td>6.88 - 8.38 / 175 - 213 mm</td>
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<tr>
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<td>250 mm</td>
<td>10&quot;</td>
<td>2 lbs. / 1 kg</td>
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<td>12&quot;</td>
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<td></td>
<td>10.43 - 12.00 / 265 - 305 mm</td>
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<td>14&quot;</td>
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<td>14.96 - 15.94 / 380 - 405 mm</td>
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<tr>
<td>PB18</td>
<td>450 mm</td>
<td>18&quot;</td>
<td>3 lbs. / 1.8 kg</td>
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<td>16.92 - 17.91 / 430 - 455 mm</td>
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<td>PB20</td>
<td>500 mm</td>
<td>20&quot;</td>
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<tr>
<td>PB22</td>
<td>550 mm</td>
<td>22&quot;</td>
<td>4 lbs. / 2.2 kg</td>
</tr>
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<td></td>
<td>21.06 - 22.04 / 535 - 560 mm</td>
</tr>
<tr>
<td>PB24</td>
<td>600 mm</td>
<td>24&quot;</td>
<td>5 lbs. / 2.5 kg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>23.03 - 24.01 / 585 - 610 mm</td>
</tr>
</tbody>
</table>

Larger sizes and specials available on request, however Rapid Purge strongly recommended over 12"
RAPID PURGE™ SYSTEM
Sizes: 8 - 80" (190 - 2,044 mm)

Purge larger diameter pipes faster than ever!

Used for Stainless, duplex, chrome steels, titanium, nickel and other alloy materials, the PPM Pipe Purge Bag System™ systems enable high speed welding of larger diameter pipe joints that have to be purged. Designed to enable the user to produce high quality, reliable and repeatable welding of stainless steel tube and pipe joints to ensure a very fast weld purge time and a very high quality weld root, free from oxidation and discoloration.

A 36" diameter pipe will purge to below 0.1% oxygen in less than 10 minutes and all smaller pipes correspondingly faster. Dramatic savings of time, gas and money can be made by using these systems.

Due to the quality of the materials used, the Rapid Purge™ systems can be used over and over again further reducing manufacturing costs.

As with all of the PPM Pipe Purge Bag System inflatable purging systems, the Rapid Purge™ come with pre-set valves, so are ready to use ‘straight out of the box’.

Rapid Purge™ has been developed specifically to enable high speed purging for any pipe welding application.

Features and Advantages

- **Typical purge times of less than 10 minutes!!!**
- The unique “thru-bore” design of the central sleeve minimizes the area to be purged, dramatically reducing the volume of gas required
- Friction free coatings allow easy movement through pipes from one joint to another, even around bends and elbows
- Ready to use, connects to a dedicated and regulated gas supply. Choose any flow rate up to 80l/min. through the twin pre-set purge valve
- A central (glow in the dark) strip allows fast and accurate alignment of the system to the center-point of the weld area
- The inflatable dams and umbilical hose are covered with a heat resistant material and insulated accordingly for use at temperatures up to 250ºC

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How it works

The Rapid Purge™ Inflatable Pipe Purging Systems for pipe and vessel purging comprises a tandem inflatable dam system connected by an umbilical hose and collar to reduce the volume being purged. A gas exhaust valve is installed between the primary and secondary dam, along with an auxiliary argon purge line.

Each Rapid Purge™ System is covered with heat protective material, so that the higher temperatures closer to the weld do not damage the system. The robust design of the Rapid Purge™ Inflatable Pipe Weld Purging Systems allows for many years of repeatable trouble free use.

Sizing and Specification

<table>
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<tr>
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<th>DESCRIPTION</th>
<th>PRODUCT SIZES</th>
<th>EXPANSION RANGE</th>
<th>WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP08</td>
<td>Rapid Purge™</td>
<td>200 mm 8&quot;</td>
<td>7.48&quot; - 8.46&quot; / 190 - 215 mm</td>
<td>3 lbs. / 1.4 kg</td>
</tr>
<tr>
<td>RP10</td>
<td>Rapid Purge™</td>
<td>250 mm 10&quot;</td>
<td>9.52&quot; - 10.51&quot; / 242 - 267 mm</td>
<td>3 lbs. / 1.7 kg</td>
</tr>
<tr>
<td>RP12</td>
<td>Rapid Purge™</td>
<td>300 mm 12&quot;</td>
<td>11.45&quot; - 12.44&quot; / 291 - 316 mm</td>
<td>4 lbs. / 2.1 kg</td>
</tr>
<tr>
<td>RP14</td>
<td>Rapid Purge™</td>
<td>350 mm 14&quot;</td>
<td>12.51&quot; - 13.50&quot; / 318 - 343 mm</td>
<td>5 lbs. / 2.5 kg</td>
</tr>
<tr>
<td>RP16</td>
<td>Rapid Purge™</td>
<td>400 mm 16&quot;</td>
<td>14.52&quot; - 15.51&quot; / 369 - 394 mm</td>
<td>5 lbs. / 2.7 kg</td>
</tr>
<tr>
<td>RP18</td>
<td>Rapid Purge™</td>
<td>450 mm 18&quot;</td>
<td>16.53&quot; - 17.51&quot; / 420 - 445 mm</td>
<td>6 lbs. / 3 kg</td>
</tr>
<tr>
<td>RP20</td>
<td>Rapid Purge™</td>
<td>500 mm 20&quot;</td>
<td>18.54&quot; - 19.52&quot; / 471 - 496 mm</td>
<td>7 lbs. / 3.4 kg</td>
</tr>
<tr>
<td>RP22</td>
<td>Rapid Purge™</td>
<td>550 mm 22&quot;</td>
<td>21.77&quot; - 22.71&quot; / 553 - 577 mm</td>
<td>7 lbs. / 3.6 kg</td>
</tr>
<tr>
<td>RP24</td>
<td>Rapid Purge™</td>
<td>600 mm 24&quot;</td>
<td>22.51&quot; - 23.50&quot; / 572 - 597 mm</td>
<td>8 lbs. / 3.8 kg</td>
</tr>
<tr>
<td>RP26</td>
<td>Rapid Purge™</td>
<td>650 mm 26&quot;</td>
<td>24.40&quot; - 25.39&quot; / 620 - 645 mm</td>
<td>9 lbs. / 4.5 kg</td>
</tr>
<tr>
<td>RP28</td>
<td>Rapid Purge™</td>
<td>700 mm 28&quot;</td>
<td>26.41&quot; - 27.40&quot; / 671 - 696 mm</td>
<td>12 lbs. / 5.5 kg</td>
</tr>
<tr>
<td>RP30</td>
<td>Rapid Purge™</td>
<td>750 mm 30&quot;</td>
<td>28.42&quot; - 29.40&quot; / 722 - 747 mm</td>
<td>13 lbs. / 6 kg</td>
</tr>
<tr>
<td>RP32</td>
<td>Rapid Purge™</td>
<td>800 mm 32&quot;</td>
<td>30.39&quot; - 31.37&quot; / 772 - 797 mm</td>
<td>17 lbs. / 8 kg</td>
</tr>
<tr>
<td>RP36</td>
<td>Rapid Purge™</td>
<td>900 mm 36&quot;</td>
<td>34.40&quot; - 35.39&quot; / 874 - 899 mm</td>
<td>20 lbs. / 9.1 kg</td>
</tr>
<tr>
<td>RP40</td>
<td>Rapid Purge™</td>
<td>1,000 mm 40&quot;</td>
<td>38.97&quot; - 39.96&quot; / 990 - 1,015 mm</td>
<td>21 lbs. / 9.9 kg</td>
</tr>
<tr>
<td>RP42</td>
<td>Rapid Purge™</td>
<td>1,050 mm 42&quot;</td>
<td>40.27&quot; - 41.25&quot; / 1,023 - 1,048 mm</td>
<td>29 lbs. / 13.2 kg</td>
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<tr>
<td>RP44</td>
<td>Rapid Purge™</td>
<td>1,100 mm 44&quot;</td>
<td>44.29&quot; - 45.27&quot; / 1,125 - 1,150 mm</td>
<td>30 lbs. / 13.7 kg</td>
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<tr>
<td>RP48</td>
<td>Rapid Purge™</td>
<td>1,200 mm 48&quot;</td>
<td>46.25&quot; - 47.24&quot; / 1,175 - 1,200 mm</td>
<td>33 lbs. / 15 kg</td>
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<tr>
<td>RP54</td>
<td>Rapid Purge™</td>
<td>1,371 mm 54&quot;</td>
<td>53.50&quot; - 54.48&quot; / 1,359 - 1,384 mm</td>
<td>39 lbs. / 18 kg</td>
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<tr>
<td>RP60</td>
<td>Rapid Purge™</td>
<td>1,524 mm 60&quot;</td>
<td>59.52&quot; - 60.51&quot; / 1,512 - 1,537 mm</td>
<td>44 lbs. / 20 kg</td>
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<tr>
<td>RP72</td>
<td>Rapid Purge™</td>
<td>1,828 mm 72&quot;</td>
<td>71.49&quot; - 72.48&quot; / 1,816 - 1,841 mm</td>
<td>61 lbs. / 28 kg</td>
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<tr>
<td>RP80</td>
<td>Rapid Purge™</td>
<td>2,032 mm 80&quot;</td>
<td>79.48&quot; - 80.47&quot; / 2,019 - 2,044 mm</td>
<td>66 lbs. / 30 kg</td>
</tr>
</tbody>
</table>

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www.SFE-BRANDS.com
Systems for the fast Purging of High Temperature Pipework

The PPM Pipe Purge Bag and Rapid Purge Systems are both available as heat resistant versions. Designed for use when high temperatures will be encountered during the process of pipe welding; such as pre-heated pipework, and pipes where very high temperatures are required for welding. These versions of our inflatable pipe purging systems are heat resistant up to 350ºC (572ºF) for up to 24 hours, or up to 500ºC for short periods of time, as with the standard systems, the heat resistant systems are available for all pipe diameters from 3 - 80" (63 - 2,035 mm).

Mirroring the features of the standard range of inflatable purging systems, the heat resistant range comes with a central band for rapid centering of the system to the weld root for the fastest set up times. The welder can position these systems prior to pre-heating and leave them in place throughout the pre-heating, welding and post-weld heat treatment cycles, allowing the weld to be purged continuously for up to 24 hours if necessary.

Features and Advantages

- Heat resistant up to 350ºC (572ºF) for up to 24 hours, or up to 500ºC for short periods
- Available for all pipe diameters from 3 to 80" (63 to 2,044 mm)
- Designed to be flexible, for ease of insertion, use and withdrawal from pipes, bends, elbows etc. Suitable for 24 hour cycles including pre-heat, welding and post-weld heat treatment
- A central strip allows fast and accurate alignment of the system to the center-point of the weld area
- Manufactured to Nuclear Quality Standards with nuclear approved materials, these systems guarantee bright, shiny, coke and oxide-free welds
- Designed and manufactured specifically for the power industry where high strength chrome alloy Steels are more frequently used
- Ready to use, connects to a dedicated and regulated gas supply. Choose any flow rate (Purge Bags - up to 20l/min/Rapid Purge up to 80l/min) through the twin pre-set purge valve

www.SFE-BRANDS.com
How it works

Both the Heat Resistant Pipe Purge System and the Heat Resistant Rapid Purge™ System work identically to the standard systems, but are made using a purposely designed Nomex and Kevlar mix material to withstand the temperatures typically encountered when welding exotic materials.

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<tbody>
<tr>
<td>PB03/HR</td>
<td>Purge Bag Heat Resistant</td>
<td>76 mm</td>
<td>3&quot; 2.48&quot; - 2.95&quot; / 63 - 75 mm</td>
<td>2 lbs. / 1.1 kg</td>
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<tr>
<td>PB04/HR</td>
<td>Purge Bag Heat Resistant</td>
<td>100 mm</td>
<td>4&quot; 3.62&quot; - 3.93&quot; / 92 - 100 mm</td>
<td>2 lbs. / 1.2 kg</td>
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<tr>
<td>PB05/HR</td>
<td>Purge Bag Heat Resistant</td>
<td>125 mm</td>
<td>5&quot; 4.44&quot; - 4.92&quot; / 113 - 125 mm</td>
<td>2 lbs. / 1.25 kg</td>
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<tr>
<td>PB06/HR</td>
<td>Purge Bag Heat Resistant</td>
<td>150 mm</td>
<td>6&quot; 5.43&quot; - 5.90&quot; / 138 - 150 mm</td>
<td>2 lbs. / 1.3 kg</td>
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<td>PB07/HR</td>
<td>Purge Bag Heat Resistant</td>
<td>175 mm</td>
<td>7&quot; 6.41&quot; - 6.88&quot; / 163 - 175 mm</td>
<td>3 lbs. / 1.4 kg</td>
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<tr>
<td>RP08/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>200 mm</td>
<td>8&quot; 7.48&quot; - 8.46&quot; / 190 - 215 mm</td>
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<tr>
<td>RP18/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>450 mm</td>
<td>18&quot; 16.53&quot; - 17.51&quot; / 420 - 445 mm</td>
<td>6 lbs. / 3 kg</td>
</tr>
<tr>
<td>RP20/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>500 mm</td>
<td>20&quot; 18.54&quot; - 19.52&quot; / 471 - 496 mm</td>
<td>7 lbs. / 3.4 kg</td>
</tr>
<tr>
<td>RP22/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>550 mm</td>
<td>22&quot; 21.77&quot; - 22.71&quot; / 553 - 577 mm</td>
<td>7 lbs. / 3.6 kg</td>
</tr>
<tr>
<td>RP24/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>600 mm</td>
<td>24&quot; 22.51&quot; - 23.50&quot; / 572 - 597 mm</td>
<td>8 lbs. / 3.8 kg</td>
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<tr>
<td>RP26/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>650 mm</td>
<td>26&quot; 24.40&quot; - 25.39&quot; / 620 - 645 mm</td>
<td>9 lbs. / 4.5 kg</td>
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<tr>
<td>RP28/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>700 mm</td>
<td>28&quot; 26.41&quot; - 27.40&quot; / 671 - 696 mm</td>
<td>12 lbs. / 5.5 kg</td>
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<tr>
<td>RP30/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>750 mm</td>
<td>30&quot; 28.42&quot; - 29.40&quot; / 722 - 747 mm</td>
<td>13 lbs. / 6 kg</td>
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<tr>
<td>RP32/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>800 mm</td>
<td>32&quot; 30.39&quot; - 31.37&quot; / 772 - 797 mm</td>
<td>17 lbs. / 8 kg</td>
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<tr>
<td>RP36/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>900 mm</td>
<td>36&quot; 34.40&quot; - 35.39&quot; / 874 - 899 mm</td>
<td>20 lbs. / 9.1 kg</td>
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<tr>
<td>RP40/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,000 mm</td>
<td>40&quot; 38.99&quot; - 39.96&quot; / 990 - 1,015 mm</td>
<td>21 lbs. / 9.9 kg</td>
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<tr>
<td>RP42/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,050 mm</td>
<td>42&quot; 40.27&quot; - 41.25&quot; / 1,023 - 1,048 mm</td>
<td>29 lbs. / 13.2 kg</td>
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<tr>
<td>RP44/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,100 mm</td>
<td>44&quot; 44.29&quot; - 45.27&quot; / 1,125 - 1,150 mm</td>
<td>30 lbs. / 13.7 kg</td>
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<tr>
<td>RP48/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,200 mm</td>
<td>48&quot; 46.25&quot; - 47.24&quot; / 1,175 - 1,200 mm</td>
<td>33 lbs. / 15 kg</td>
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<tr>
<td>RP54/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,371 mm</td>
<td>54&quot; 53.50&quot; - 54.48&quot; / 1,359 - 1,384 mm</td>
<td>39 lbs. / 18 kg</td>
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<tr>
<td>RP60/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,524 mm</td>
<td>60&quot; 59.52&quot; - 60.51&quot; / 1,512 - 1,537 mm</td>
<td>44 lbs. / 20 kg</td>
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<tr>
<td>RP72/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>1,828 mm</td>
<td>72&quot; 71.49&quot; - 72.48&quot; / 1,816 - 1,841 mm</td>
<td>61 lbs. / 28 kg</td>
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<tr>
<td>RP80/HR</td>
<td>Rapid Purge™ Heat Resistant</td>
<td>2,031 mm</td>
<td>80&quot; 79.48&quot; - 80.47&quot; / 2,019 - 2,044 mm</td>
<td>66 lbs. / 30 kg</td>
</tr>
</tbody>
</table>

Larger sizes and specials available on request

www.SFE-BRANDES.com
Purge pipes fast with minimal gas usage

PPM also manufactures The Silicone Double Seal purging system that has been designed to further reduce both inert gas use and purging time. These systems use silicon discs to form an airtight seal, reducing purge times, and gas usage for maximum efficiency.

There are 2 styles of silicon double seal systems available:

- The Gas Finger system is designed for small pipes and tubes from 16 - 38 mm i/d
- The Double Seal systems are made for pipes from ¼ - 12” (16 - 320 mm)

Features and Advantages

- Typical purge times of less than 2 minutes (e.g. an 8” pipe will purge to below 0.01% Oxygen in less than 2 minutes)
- High quality silicon sealing disks that prevent them tilting or falling over inside the pipe
- Guaranteed gas tight seal
- UV and temperature resistant up to 330ºC continuously or 450ºC for short periods
- Suitable for purging pipes, elbows and fittings
- The silicon seal units can be separated and used as a gas finger and pipe stopper respectively

Single Gas Finger for smaller pipe and tubes

Shown with flexible hose connection for purging elbows and fittings.

Available as a kit (3 sizes)
How it works

The gas inlet and outlet are provided with twin sealing discs separated by a flexible, rigid or a spring-type tube. The design also guarantees that at least one disc will always remain tight to the pipe wall creating a 100% seal. The discs are UV and temperature-resistant up to 330ºC continuously or up to 450ºC for short periods. The gas is diffused into the chamber via the built in sintered diffuser and exits through the exhaust holes in the secondary twin disc unit.

This process of gas diffusion provides an even flow of gas and prevents any gas turbulence behind the weld, thereby minimizing the risk of oxygen in the welding chamber while, at the same time, achieving an extremely short purge time. These extremely short purge times result in valuable cost savings in gas and time.

Besides the very short purging time, the Silicon Seal System also offers the possibility to cover various nominal pipe diameters by one pair of baffles enabling highly economic use of the device.

The double seal system can be purchased individually or in kit form for a range of pipe diameters.

---

**Sizing and Specification**

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>PIPE I/D RANGE</th>
<th>HOSE LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS16-19</td>
<td>Flex</td>
<td>0.62&quot; - 0.74&quot; / 16 - 19 mm</td>
<td>3.93&quot; / 100 mm</td>
</tr>
<tr>
<td>DS19-24</td>
<td>Flex</td>
<td>0.74&quot; - 0.94&quot; / 19 - 24 mm</td>
<td>3.93&quot; / 100 mm</td>
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<tr>
<td>DS24-29</td>
<td>Flex</td>
<td>0.94&quot; - 1.14&quot; / 24 - 29 mm</td>
<td>3.93&quot; / 100 mm</td>
</tr>
<tr>
<td>DS29-34</td>
<td>Flex</td>
<td>1.14&quot; - 1.33&quot; / 29 - 34 mm</td>
<td>3.93&quot; / 100 mm</td>
</tr>
<tr>
<td>DS34-38</td>
<td>Flex</td>
<td>1.33&quot; - 1.49&quot; / 34 - 38 mm</td>
<td>3.93&quot; / 100 mm</td>
</tr>
<tr>
<td>DS38-43</td>
<td>Flexible or Rigid</td>
<td>1.49&quot; - 1.69&quot; / 38 - 43 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DS43-48</td>
<td>Flexible or Rigid</td>
<td>1.69&quot; - 1.88&quot; / 43 - 48 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DS47-53</td>
<td>Flexible or Rigid</td>
<td>1.85&quot; - 2.08&quot; / 47 - 53 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
</tr>
<tr>
<td>DS52-58</td>
<td>Flexible or Rigid</td>
<td>2.04&quot; - 2.28&quot; / 52 - 58 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DS64-72</td>
<td>Flexible or Rigid</td>
<td>2.51&quot; - 2.83&quot; / 64 - 72 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DS78-86</td>
<td>Flexible or Rigid</td>
<td>3.07&quot; - 3.38&quot; / 78 - 86 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DS90-101</td>
<td>Flexible or Rigid</td>
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<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS100-112</td>
<td>Flexible or Rigid</td>
<td>3.93&quot; - 4.40&quot; / 100 - 112 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS120-130</td>
<td>Flexible or Rigid</td>
<td>4.72&quot; - 5.11&quot; / 120 - 130 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS124-138</td>
<td>Flexible or Rigid</td>
<td>4.88&quot; - 5.43&quot; / 124 - 138 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS144-155</td>
<td>Flexible or Rigid</td>
<td>5.66&quot; - 6.10&quot; / 144 - 155 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS150-165</td>
<td>Flexible or Rigid</td>
<td>5.90&quot; - 6.49&quot; / 150 - 165 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS197-206</td>
<td>Flexible or Rigid</td>
<td>7.75&quot; - 8.11&quot; / 197 - 206 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS209-220</td>
<td>Flexible or Rigid</td>
<td>8.22&quot; - 8.66&quot; / 209 - 220 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
</tr>
<tr>
<td>DS246-257</td>
<td>Flexible or Rigid</td>
<td>9.68&quot; - 10.11&quot; / 246 - 257 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DS260-280</td>
<td>Flexible or Rigid</td>
<td>10.23&quot; - 11.02&quot; / 260 - 280 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
</tr>
<tr>
<td>DS290-320</td>
<td>Flexible or Rigid</td>
<td>11.41&quot; - 12.59&quot; / 290 - 320 mm</td>
<td>5.90&quot; - 3.93&quot; / 150/100 mm</td>
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<tr>
<td>DSK16-165</td>
<td>Complete Kit</td>
<td>0.62&quot; - 6.49&quot; / 16 - 165 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
</tr>
<tr>
<td>DSK16-220</td>
<td>Complete Kit</td>
<td>0.62&quot; - 8.66&quot; / 16 - 220 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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<tr>
<td>DSK16-320</td>
<td>Complete Kit</td>
<td>0.62&quot; - 12.59&quot; / 16 - 320 mm</td>
<td>4.72&quot; - 2.36&quot; / 120/60 mm</td>
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</table>
FLANGE DOUBLE SEAL SYSTEMS

The perfect solution for purging pipe to flange

Purge pipes fast with minimal gas usage

PPM also manufactures The Silicone Double Seal purging system that has been designed to further reduce both inert gas use and purging time. These systems use silicon discs to form an airtight seal, reducing purge times, and gas usage for maximum efficiency.

Features and Advantages

- Typical purge times of less than 2 minutes (e.g. an 8" Pipe will purge to below 0.01% Oxygen in less than 2 minutes)
- High quality silicon sealing disks that prevent them tilting or falling over inside the pipe
- Guaranteed gas tight seal
- UV and temperature resistant up to 330ºC continuously or 450ºC for short periods
- Suitable for purging pipes to flanges

Sizing and Specification

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>PIPE I/D RANGE</th>
<th>HOSE LENGTH</th>
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<tr>
<td>FDS16-19</td>
<td>Flex</td>
<td>0.63&quot; - 0.75&quot;/16-19 mm</td>
<td>3.93&quot;/100 mm</td>
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<td>3.93&quot;/100 mm</td>
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<td>FDS24-29</td>
<td>Flex</td>
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<td>3.93&quot;/100 mm</td>
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<td>FDS29-34</td>
<td>Flex</td>
<td>1.14&quot; - 1.34&quot; /29-34 mm</td>
<td>3.93&quot;/100 mm</td>
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<td>3.93&quot;/100 mm</td>
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<td>FDS38-43</td>
<td>Flexible or Rigid</td>
<td>1.50&quot;-1.69&quot; /38-43 mm</td>
<td>4.72&quot;-2.36&quot; /120/60 mm</td>
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<td>FDS43-48</td>
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<td>4.72&quot;-2.36&quot; /120/60 mm</td>
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<td>Flexible or Rigid</td>
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<td>4.72&quot;-2.36&quot; /120/60 mm</td>
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<td>FDS90-101</td>
<td>Flexible or Rigid</td>
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<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<td>FDS100-112</td>
<td>Flexible or Rigid</td>
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<td>FDS120-130</td>
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<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<td>FDS124-138</td>
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<td>FDS144-155</td>
<td>Flexible or Rigid</td>
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<td>FDS150-165</td>
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<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<td>FDS197-206</td>
<td>Flexible or Rigid</td>
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<td>Flexible or Rigid</td>
<td>8.23&quot;-8.66&quot; /209-220 mm</td>
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<td>FDS246-257</td>
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<td>9.69&quot;-10.12&quot; /246-257 mm</td>
<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<td>FDS260-280</td>
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<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<tr>
<td>FDS290-320</td>
<td>Flexible or Rigid</td>
<td>11.92&quot;-12.60&quot; /290-320 mm</td>
<td>5.90&quot;-3.93&quot; /150/100 mm</td>
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<tr>
<td>FDSK16-165</td>
<td>Complete Kit</td>
<td>0.63&quot;-6.50&quot;/16-165 mm</td>
<td>4.72&quot;-2.36&quot; /120/60 mm</td>
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<tr>
<td>FDSK16-220</td>
<td>Complete Kit</td>
<td>0.63&quot;-8.66&quot;/16-220 mm</td>
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<td>4.72&quot;-2.36&quot; /120/60 mm</td>
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HANDY PURGE 100 SELF CALIBRATING WELD PURGE MONITOR

Measures oxygen levels down to 0.01% (100ppm)

The entry level, welders’ toolbox monitor

Inert gas welding requires the exclusion of oxygen from the weld zone during the welding process. Prior to the welding process, the residual oxygen concentration must be reduced to a required minimum. The Handy Purge is specifically designed to indicate oxygen concentration up to 0.01% and to exactly measure oxygen concentration up to 0.1%. Within this range, it is absolutely safe to weld and produce an oxygen-free weld seam (exceptions include special metals such as titanium, zirconium, etc.). The Handy Purge can be used both for continuous monitoring during the welding process and for taking samples. Routine inspections for quality control are extremely simplified using this device. The analyser works with all purge systems and argon welding systems. It is small, easy to handle and has a rugged enclosure.

Features and Advantages

• Self calibrating
• Minimum waiting time. The device tells you exactly when the residual oxygen concentration of a purge gas is low enough to start welding. You need no longer rely on rough estimations. This saves both time and gas.
• Reduced purge gas consumption. Exact monitoring of the residual oxygen avoids unnecessary purge gas consumption and allows you to produce oxygen-free weld seams
• Top-quality weld seams
• Top quality is guaranteed, as too early welding and hence porous, colored or even charred weld seams can be avoided
• Duplex / Stainless Steel. The Handy Purge Weld Purge Monitor can be used for all stainless steel, duplex and certain titanium welding applications
• Eliminates guess work

<table>
<thead>
<tr>
<th>TECHNICAL SPECIFICATIONS</th>
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</thead>
<tbody>
<tr>
<td>Part No.</td>
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<tr>
<td>Measuring range</td>
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<td></td>
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<tr>
<td>Accuracy</td>
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<td></td>
</tr>
<tr>
<td>Dimensions</td>
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<tr>
<td>Power source</td>
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<td>Display</td>
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DIMENSIONS AND WEIGHT FOR SHIPMENT

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<tbody>
<tr>
<td>12” x 10” x 3” / 310 x 260 x 80 mm</td>
<td>2 lbs. / 870g</td>
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The kit consists of:

• Handy Purge Weld Purge Monitor
• 1m hose with flow adapter
• Stainless Steel probe
• Vacuum hand pump
• Plastic Carry Case
• Instructions
• Calibration Certificate

Replacement sensors and spares available from stock

www.SFE-BRANDS.com
The Handy Purge Pro 5 is the ultimate hand-held Oxygen monitor, measuring the level of oxygen in the designated atmosphere down to 5ppm (parts per million)!!! The new Handy Purge Pro 5 Weld Purge Monitor is essential for reading oxygen levels for titanium welding. The interface option enables the Handy Purge Pro 5 to be connected (via a cable or Bluetooth dongle) to a PC and printer to record the readings. A rechargeable battery pack and multi range power plug are standard features of the Handy Purge Pro 5, and its light weight and ergonomic shape make it the ideal portable instrument for all orbital welding applications. The unit incorporates an internal pump and is designed for measuring rest oxygen in inert gases such as argon. This unit can be used up to 4 hours before recharging is necessary.

Features and Advantages

- Measures oxygen levels down to 5ppm (parts per million)
- Rechargeable batteries, standby life approx. 4hrs
- Temperature regulated zirconium cell (maintenance free)
- Graphic display screen changes color relative to process and function
- Built-in recognition for 110V/240V power sources
- Portable for remote and difficult access sites using rechargeable batteries (supplied)
- Integrated programmable sound function
- Multi language: English, French and German
- Low permeability measuring hose for accurate measurements
- Data logging of up to 250 entries - Connects via RS 232 interface or Bluetooth

### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Part No.</th>
<th>HPPS</th>
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<tbody>
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<td>Measuring Range</td>
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<tr>
<td>Dimensions</td>
<td>11” x 5” x 2” (L x W x H) 290 x 130 x 60 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>2 lbs. / 0.8 kg</td>
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<td>Supply Voltage</td>
<td>7 VDC, 2850 mAh rechargeable batteries</td>
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</tbody>
</table>
The Pro Purge 1 Weld Purge Monitor is the ideal tool for many welding applications where critical weld standards are required.

Used for Production of Semi-conductors, Nuclear, Aerospace, Pharmaceutical, Energy, Dairy, Brewery and Food processing where strict welding guide lines to eliminate weld-quality issues associated with atmosphere contaminated welds are required.

The Pro Purge 1 Weld Purge Monitor enables Welders and Welding Engineers on site or in the workshop to precisely monitor rest oxygen levels to the point where precision welding can take place, resulting in “perfect conditions” for consistent high-quality repeatable welds.

The Pro Purge 1 Weld Purge Monitor contains a stabilized zirconium oxide cell with a regulated heater to maintain a cell temperature of 750ºC which enables it to accurately measure levels from 206,400 ppm down to as low as 0.5 ppm.

The zirconium oxide ceramic sensor in the Pro Purge 1 provides very accurate readings, with a deviation of less than 5% in the 1 to 10 ppm range. This means that its resolution is ½ a part per million (0.5ppm).

The Pro Purge 1 Weld Purge Monitor can be unplugged for up to one hour, before the internal battery must be recharged. Making it ideal for testing weld joints in the shop, or in the field.

**TECHNICAL DATA**

<table>
<thead>
<tr>
<th>Part No</th>
<th>PP1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring Range</td>
<td>0.5 - 206,400ppm</td>
</tr>
<tr>
<td>Dimensions</td>
<td>8” x 6” x 3”</td>
</tr>
<tr>
<td>Weight</td>
<td>7 lbs. / 3.3 kg</td>
</tr>
<tr>
<td>Supply Voltage</td>
<td>110V/240V</td>
</tr>
</tbody>
</table>

**Connects via RS 232 interface, Bluetooth, CAN-Bus, AUX (AMI)**

**Can be calibrated to ambient oxygen**

**Software updates available**

**Multi language: English, French, German, Dutch, Czech, Danish**

**Data logging up to 250 entries internally or externally on a PC**

**Connected via a Bluetooth Dongle with a range of up to 100m to a mobile phone. Via the phone all relevant data including rest oxygen level, sensor temperature will be displayed. Using simple commands the PRO PURGE 1 can be operated remotely.**

**Connecting a printer via the RS232 interface. Capable of readout documentation (per second) that can be logged via a printer.**

**www.SFE-BRANDS.COM**
Expandable test plugs for purging and general pipe blocking

Pipe stoppers, or drain plugs, as they are sometimes known, are used to temporarily seal the end of a pipe or opening for many different testing applications. Pipe stoppers are mainly used to seal off from water, gases and foreign objects in newly laid pipes, or pipework systems that are under repair.

PPM Pipe Purge System range of pipe stoppers are available in a number of different styles to suit many applications for pipe sizes from 1½" - 72". Special Pipe stoppers are also available for pressure testing.

How it works
A central spindle/shaft on which two plates are fitted with a natural rubber tire (ring) between them, a wing nut on the shaft moving the two plates together compressing the tire and making the seal in the pipe. These stoppers can also be supplied with a hollow shaft version for screwing on standard hose connections or for using fixed or free nipple caps.

Expandable Pipe Stoppers are available in three different types.

Aluminium Plugs - 1½" - 36" (40 mm - 900 mm)
To complement the range of nylon expanding plugs, we offer all sizes of Aluminium plugs. These are provided in sizes from 1½" upwards and are suitable for more arduous duties such as immersion in chemicals and/or higher temperatures.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PIPE SIZE INTERNAL NOMINAL DIAMETER</th>
<th>WILL FIT PIPES WITH INTERNAL DIAMETER</th>
<th>MINIMUM INSERTION INTO PIPE</th>
<th>OVERALL LENGTH</th>
<th>DIAMETER OF WATERWAY</th>
<th>MAXIMUM ALLOWABLE BACK PRESSURE</th>
<th>APPROX. WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>METRIC</td>
<td>IMPERIAL</td>
<td>MINIMUM</td>
<td>MAXIMUM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AES1.5</td>
<td>40 mm 1½&quot;</td>
<td>38 mm</td>
<td>50 mm</td>
<td>45 mm</td>
<td>94 mm</td>
<td>½&quot;</td>
<td>30 p.s.i.</td>
</tr>
<tr>
<td>AES2</td>
<td>50 mm 2&quot;</td>
<td>49 mm</td>
<td>62 mm</td>
<td>43 mm</td>
<td>90 mm</td>
<td>½&quot;</td>
<td>30 p.s.i.</td>
</tr>
<tr>
<td>AES2.5</td>
<td>65 mm 2½&quot;</td>
<td>62 mm</td>
<td>77 mm</td>
<td>43 mm</td>
<td>92 mm</td>
<td>½&quot;</td>
<td>30 p.s.i.</td>
</tr>
<tr>
<td>AES3</td>
<td>75 mm 3&quot;</td>
<td>73 mm</td>
<td>89 mm</td>
<td>43 mm</td>
<td>94 mm</td>
<td>½&quot;</td>
<td>20 p.s.i.</td>
</tr>
<tr>
<td>AES3.5</td>
<td>90 mm ¾&quot;</td>
<td>84 mm</td>
<td>103 mm</td>
<td>53 mm</td>
<td>96 mm</td>
<td>½&quot;</td>
<td>15 p.s.i.</td>
</tr>
<tr>
<td>AES4</td>
<td>100 mm 4&quot;</td>
<td>94 mm</td>
<td>110 mm</td>
<td>47 mm</td>
<td>94 mm</td>
<td>½&quot;</td>
<td>10 p.s.i.</td>
</tr>
<tr>
<td>AES4.5</td>
<td>114 mm 4½&quot;</td>
<td>112 mm</td>
<td>130 mm</td>
<td>56 mm</td>
<td>140 mm</td>
<td>½&quot;</td>
<td>10 p.s.i.</td>
</tr>
<tr>
<td>AES5</td>
<td>125 mm 5&quot;</td>
<td>125 mm</td>
<td>142 mm</td>
<td>60 mm</td>
<td>95 mm</td>
<td>¾&quot;</td>
<td>10 p.s.i.</td>
</tr>
<tr>
<td>AES6</td>
<td>150 mm 6&quot;</td>
<td>146 mm</td>
<td>168 mm</td>
<td>48 mm</td>
<td>96 mm</td>
<td>¾&quot;</td>
<td>10 p.s.i.</td>
</tr>
<tr>
<td>AES7</td>
<td>175 mm 7&quot;</td>
<td>175 mm</td>
<td>200 mm</td>
<td>64 mm</td>
<td>100 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES8</td>
<td>200 mm 8&quot;</td>
<td>193 mm</td>
<td>220 mm</td>
<td>64 mm</td>
<td>100 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES9</td>
<td>225 mm 9&quot;</td>
<td>220 mm</td>
<td>240 mm</td>
<td>64 mm</td>
<td>170 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES10</td>
<td>250 mm 10&quot;</td>
<td>245 mm</td>
<td>270 mm</td>
<td>73 mm</td>
<td>178 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES11</td>
<td>275 mm 11&quot;</td>
<td>274 mm</td>
<td>328 mm</td>
<td>100 mm</td>
<td>200 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES12</td>
<td>300 mm 12&quot;</td>
<td>295 mm</td>
<td>325 mm</td>
<td>77 mm</td>
<td>200 mm</td>
<td>1&quot;</td>
<td>7 p.s.i.</td>
</tr>
<tr>
<td>AES13</td>
<td>325 mm 13&quot;</td>
<td>325 mm</td>
<td>360 mm</td>
<td>120 mm</td>
<td>230 mm</td>
<td>1&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES14</td>
<td>350 mm 14&quot;</td>
<td>350 mm</td>
<td>385 mm</td>
<td>110 mm</td>
<td>215 mm</td>
<td>1&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES15</td>
<td>375 mm 15&quot;</td>
<td>370 mm</td>
<td>410 mm</td>
<td>110 mm</td>
<td>225 mm</td>
<td>1&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES16</td>
<td>400 mm 16&quot;</td>
<td>390 mm</td>
<td>435 mm</td>
<td>110 mm</td>
<td>225 mm</td>
<td>1&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES18</td>
<td>450 mm 18&quot;</td>
<td>445 mm</td>
<td>495 mm</td>
<td>110 mm</td>
<td>225 mm</td>
<td>2&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES20</td>
<td>500 mm 20&quot;</td>
<td>495 mm</td>
<td>550 mm</td>
<td>145 mm</td>
<td>255 mm</td>
<td>2&quot;</td>
<td>5 p.s.i.</td>
</tr>
<tr>
<td>AES21</td>
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<td>520 mm</td>
<td>575 mm</td>
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<td>255 mm</td>
<td>2&quot;</td>
<td>3 p.s.i.</td>
</tr>
<tr>
<td>AES24</td>
<td>600 mm 24&quot;</td>
<td>595 mm</td>
<td>650 mm</td>
<td>145 mm</td>
<td>255 mm</td>
<td>2&quot;</td>
<td>3 p.s.i.</td>
</tr>
</tbody>
</table>

All plugs conform to British Standards BS8005 for low pressure testing and sealing of pipes.
Larger sizes available upon request
### Nylon Plugs - 1½ - 6" (38 mm - 150 mm)

Nylon plugs are the standard ‘Drain Plugs’ for testing leak tightness of foul water lines at the time of installation. Furthermore, the range of sizes make these plugs ideal for a number of other applications in the water and gas industries as well as applications in all other industries where pipes are used or where there are holes to be blocked.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PIPE SIZE INTERNAL NOMINAL DIAMETER</th>
<th>WILL FIT PIPES WITH INTERNAL DIAMETER</th>
<th>MINIMUM INSERTION INTO PIPE</th>
<th>OVERALL LENGTH</th>
<th>DIAMETER OF WATERWAY</th>
<th>MAXIMUM ALLOWABLE BACK PRESSURE</th>
<th>APPROX. WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>METRIC</td>
<td>IMPERIAL</td>
<td>MINIMUM</td>
<td>MAXIMUM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NES38</td>
<td>38 mm</td>
<td>1½&quot;</td>
<td>38 mm</td>
<td>42 mm</td>
<td>36 mm</td>
<td>58 mm</td>
<td>n/a solid</td>
</tr>
<tr>
<td>NES50</td>
<td>50 mm</td>
<td>2&quot;</td>
<td>48.5 mm</td>
<td>62.2 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES63</td>
<td>63 mm</td>
<td>2½&quot;</td>
<td>65 mm</td>
<td>77 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES75</td>
<td>75 mm</td>
<td>3&quot;</td>
<td>74 mm</td>
<td>86 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES88</td>
<td>88 mm</td>
<td>3½&quot;</td>
<td>82 mm</td>
<td>96 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
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<td>NES100</td>
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<td>4&quot;</td>
<td>95 mm</td>
<td>105 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES115</td>
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<td>4½&quot;</td>
<td>114 mm</td>
<td>124 mm</td>
<td>36 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES125</td>
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<td>5&quot;</td>
<td>117 mm</td>
<td>127 mm</td>
<td>40 mm</td>
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<td>0.5&quot; bsp</td>
</tr>
<tr>
<td>NES150</td>
<td>150 mm</td>
<td>6&quot;</td>
<td>146 mm</td>
<td>155 mm</td>
<td>42 mm</td>
<td>110 mm</td>
<td>0.5&quot; bsp</td>
</tr>
</tbody>
</table>

### Steel Plugs - 1½ - 36" (40 mm - 900 mm)

PPM Pipe Purge System also manufactures a range of Steel plugs from 1½ - 72” in diameter. These plugs are typically suitable for more arduous duties such as long immersion in water and use at higher temperatures or contact with acidic or alkaline environments for which the Nylon and Aluminium plugs may be unsuitable.

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>PIPE SIZE INTERNAL NOMINAL DIAMETER</th>
<th>WILL FIT PIPES WITH INTERNAL DIAMETER</th>
<th>MINIMUM INSERTION INTO PIPE</th>
<th>OVERALL LENGTH</th>
<th>DIAMETER OF WATERWAY</th>
<th>MAXIMUM ALLOWABLE BACK PRESSURE</th>
<th>APPROX. WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>METRIC</td>
<td>IMPERIAL</td>
<td>MINIMUM</td>
<td>MAXIMUM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SES1.5</td>
<td>40 mm</td>
<td>1½&quot;</td>
<td>37 mm</td>
<td>50 mm</td>
<td>31 mm</td>
<td>81.5 mm</td>
<td>¾&quot;</td>
</tr>
<tr>
<td>SES2</td>
<td>50 mm</td>
<td>2&quot;</td>
<td>50 mm</td>
<td>61 mm</td>
<td>32.7 mm</td>
<td>82.8 mm</td>
<td>¾&quot;</td>
</tr>
<tr>
<td>SES2.5</td>
<td>65 mm</td>
<td>2½&quot;</td>
<td>61 mm</td>
<td>75 mm</td>
<td>33.2 mm</td>
<td>80.5 mm</td>
<td>¾&quot;</td>
</tr>
<tr>
<td>SES3</td>
<td>75 mm</td>
<td>3&quot;</td>
<td>73 mm</td>
<td>85 mm</td>
<td>34 mm</td>
<td>80.5 mm</td>
<td>¾”</td>
</tr>
<tr>
<td>SES3.5</td>
<td>89 mm</td>
<td>3½&quot;</td>
<td>84 mm</td>
<td>100 mm</td>
<td>41 mm</td>
<td>81 mm</td>
<td>¾”</td>
</tr>
<tr>
<td>SES4</td>
<td>100 mm</td>
<td>4&quot;</td>
<td>94 mm</td>
<td>108 mm</td>
<td>37.5 mm</td>
<td>83.3 mm</td>
<td>¾”</td>
</tr>
<tr>
<td>SES4.5</td>
<td>114 mm</td>
<td>4½&quot;</td>
<td>110 mm</td>
<td>125 mm</td>
<td>40 mm</td>
<td>83.3 mm</td>
<td>¾”</td>
</tr>
<tr>
<td>SES5</td>
<td>125 mm</td>
<td>5&quot;</td>
<td>124 mm</td>
<td>139 mm</td>
<td>37 mm</td>
<td>83.3 mm</td>
<td>¾”</td>
</tr>
<tr>
<td>SES6</td>
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<td>6&quot;</td>
<td>145 mm</td>
<td>160 mm</td>
<td>39.7 mm</td>
<td>83.3 mm</td>
<td>¾”</td>
</tr>
<tr>
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<td>200 mm</td>
<td>46 mm</td>
<td>130 mm</td>
<td>1”</td>
</tr>
<tr>
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<td>195 mm</td>
<td>215 mm</td>
<td>37 mm</td>
<td>130 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES9</td>
<td>225 mm</td>
<td>9&quot;</td>
<td>210 mm</td>
<td>230 mm</td>
<td>58 mm</td>
<td>150 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES10</td>
<td>250 mm</td>
<td>10&quot;</td>
<td>245 mm</td>
<td>260 mm</td>
<td>55 mm</td>
<td>150 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES12</td>
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<td>12&quot;</td>
<td>296 mm</td>
<td>320 mm</td>
<td>85 mm</td>
<td>150 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES14</td>
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<td>14&quot;</td>
<td>340 mm</td>
<td>385 mm</td>
<td>85 mm</td>
<td>210 mm</td>
<td>1”</td>
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<tr>
<td>SES15</td>
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<td>15&quot;</td>
<td>370 mm</td>
<td>415 mm</td>
<td>100 mm</td>
<td>210 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES16</td>
<td>400 mm</td>
<td>16&quot;</td>
<td>390 mm</td>
<td>430 mm</td>
<td>95 mm</td>
<td>210 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES18</td>
<td>450 mm</td>
<td>18&quot;</td>
<td>448 mm</td>
<td>495 mm</td>
<td>100 mm</td>
<td>210 mm</td>
<td>1”</td>
</tr>
<tr>
<td>SES20</td>
<td>500 mm</td>
<td>20&quot;</td>
<td>495 mm</td>
<td>550 mm</td>
<td>145 mm</td>
<td>255 mm</td>
<td>2”</td>
</tr>
<tr>
<td>SES21</td>
<td>525 mm</td>
<td>21&quot;</td>
<td>520 mm</td>
<td>575 mm</td>
<td>145 mm</td>
<td>255 mm</td>
<td>2”</td>
</tr>
<tr>
<td>SES24</td>
<td>600 mm</td>
<td>24&quot;</td>
<td>595 mm</td>
<td>650 mm</td>
<td>145 mm</td>
<td>255 mm</td>
<td>2”</td>
</tr>
</tbody>
</table>
Single inflatable dams for blocking and testing

PPM offers a range of shapes and sizes of inflatable stoppers, suitable for all applications. Made from a natural rubber bladder covered in waterproof polyurethane coated nylon to prevent friction and static electricity build up. There are six different types available:

- **Cylindrical** - These are generally used for blocking pipes where access is restricted
- **Spherical** - These stoppers have less contact area than cylindrical stoppers, and are most suited to applications where access is further limited. Due to its shape the spherical inflatable stopper can be used at any angle
- **Square / Rectangular** - These stoppers have a variety of applications, including in air conditioning ducting and venting.
- **Doughnut** - These stoppers require minimal space and are perfectly suited to larger diameter pipes as there is less inflation required
- **Sausage** - The design of this type gives more contact area between the stopper and the pipe wall enabling these stoppers to hold back more pressure
- **Heat Resistant** - These stoppers are made from a specially designed kevlar and nomex mix material to withstand temperatures up to 500ºC for applications involving higher temperatures such as pre heating

Each inflatable stopper comes with an inflation hose fitted with a schrader valve enabling inflation with a standard airline, bicycle or foot pump.

PPM Pipe Purge System inflatable stoppers are supplied as standard with no through tube. Through tubes can be supplied when the stoppers are required for weld purging applications. When deflated, the inflatable stoppers can be inserted and withdrawn with ease.
## Sizing and Specification

<table>
<thead>
<tr>
<th>PART NO.</th>
<th>INFLATABLE STOPPER SIZE (mm / INCH)</th>
<th>MIN ID (mm)</th>
<th>MAX ID (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPS2</td>
<td>50 mm / 2&quot;</td>
<td>1.77&quot; / 45 mm</td>
<td>2.16&quot; / 55 mm</td>
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<td>IPS3</td>
<td>75 mm / 3&quot;</td>
<td>2.75&quot; / 70 mm</td>
<td>3.14&quot; / 80 mm</td>
</tr>
<tr>
<td>IPS4</td>
<td>100 mm / 4&quot;</td>
<td>3.74&quot; / 95 mm</td>
<td>4.13&quot; / 105 mm</td>
</tr>
<tr>
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<td>4.72&quot; / 120 mm</td>
<td>5.11&quot; / 130 mm</td>
</tr>
<tr>
<td>IPS6</td>
<td>150 mm / 6&quot;</td>
<td>5.70&quot; / 145 mm</td>
<td>6.10&quot; / 155 mm</td>
</tr>
<tr>
<td>IPS7</td>
<td>175 mm / 7&quot;</td>
<td>6.69&quot; / 170 mm</td>
<td>7.08&quot; / 180 mm</td>
</tr>
<tr>
<td>IPS8</td>
<td>200 mm / 8&quot;</td>
<td>7.67&quot; / 195 mm</td>
<td>8.07&quot; / 205 mm</td>
</tr>
<tr>
<td>IPS9</td>
<td>225 mm / 9&quot;</td>
<td>8.66&quot; / 220 mm</td>
<td>9.05&quot; / 230 mm</td>
</tr>
<tr>
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<td>250 mm / 10&quot;</td>
<td>9.64&quot; / 245 mm</td>
<td>10.03&quot; / 255 mm</td>
</tr>
<tr>
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<td>275 mm / 11&quot;</td>
<td>10.62&quot; / 270 mm</td>
<td>11.02&quot; / 280 mm</td>
</tr>
<tr>
<td>IPS12</td>
<td>300 mm / 12&quot;</td>
<td>11.61&quot; / 295 mm</td>
<td>12.00&quot; / 305 mm</td>
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<tr>
<td>IPS13</td>
<td>325 mm / 13&quot;</td>
<td>12.59&quot; / 320 mm</td>
<td>12.99&quot; / 330 mm</td>
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<tr>
<td>IPS14</td>
<td>350 mm / 14&quot;</td>
<td>13.58&quot; / 345 mm</td>
<td>13.97&quot; / 355 mm</td>
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<tr>
<td>IPS15</td>
<td>375 mm / 15&quot;</td>
<td>14.56&quot; / 370 mm</td>
<td>14.96&quot; / 380 mm</td>
</tr>
<tr>
<td>IPS16</td>
<td>400 mm / 16&quot;</td>
<td>15.55&quot; / 395 mm</td>
<td>15.94&quot; / 405 mm</td>
</tr>
<tr>
<td>IPS17</td>
<td>425 mm / 17&quot;</td>
<td>16.53&quot; / 420 mm</td>
<td>16.92&quot; / 430 mm</td>
</tr>
<tr>
<td>IPS18</td>
<td>450 mm / 18&quot;</td>
<td>17.51&quot; / 445 mm</td>
<td>17.91&quot; / 455 mm</td>
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<tr>
<td>IPS19</td>
<td>475 mm / 19&quot;</td>
<td>18.50&quot; / 470 mm</td>
<td>18.89&quot; / 480 mm</td>
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<tr>
<td>IPS20</td>
<td>500 mm / 20&quot;</td>
<td>19.48&quot; / 495 mm</td>
<td>19.88&quot; / 505 mm</td>
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<tr>
<td>IPS21</td>
<td>525 mm / 21&quot;</td>
<td>20.47&quot; / 520 mm</td>
<td>20.86&quot; / 530 mm</td>
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<td>550 mm / 22&quot;</td>
<td>21.45&quot; / 545 mm</td>
<td>21.85&quot; / 555 mm</td>
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<tr>
<td>IPS23</td>
<td>575 mm / 23&quot;</td>
<td>22.44&quot; / 570 mm</td>
<td>22.83&quot; / 580 mm</td>
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<td>IPS24</td>
<td>600 mm / 24&quot;</td>
<td>23.42&quot; / 595 mm</td>
<td>23.81&quot; / 605 mm</td>
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<td>IPS26</td>
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<td>25.39&quot; / 645 mm</td>
<td>25.78&quot; / 655 mm</td>
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<td>IPS27</td>
<td>675 mm / 27&quot;</td>
<td>26.37&quot; / 670 mm</td>
<td>26.77&quot; / 680 mm</td>
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<tr>
<td>IPS28</td>
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<td>39.17&quot; / 995 mm</td>
<td>39.56&quot; / 1,005 mm</td>
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<td>43.11&quot; / 1,095 mm</td>
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<td>47.04&quot; / 1,195 mm</td>
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<td>58.85&quot; / 1,495 mm</td>
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<td>62.78&quot; / 1,595 mm</td>
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<tr>
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<td>66.73&quot; / 1,695 mm</td>
<td>67.12&quot; / 1,705 mm</td>
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<td>70.66&quot; / 1,795 mm</td>
<td>71.06&quot; / 1,805 mm</td>
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<tr>
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<td>74.60&quot; / 1,895 mm</td>
<td>75.00&quot; / 1,905 mm</td>
</tr>
<tr>
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<td>78.54&quot; / 1,995 mm</td>
<td>78.93&quot; / 2,005 mm</td>
</tr>
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<td>79.92&quot; / 2,030 mm</td>
<td>80.31&quot; / 2,040 mm</td>
</tr>
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</table>

Larger sizes available upon request
PPM can manufacture to any size, shape and material dependant on the client's requirements any style or inflatable stopper, bag or system.

Please see examples below: