Kleiss MCS Flow Stopping Systems

In 1998, Kleiss & Co. developed an industry changing flow stopping system for the natural gas industry. What makes these systems unique is the patented sealing component – Multi-Dimensional Safety (MDS) Stopper – which is a fiber reinforced elastomer inflatable device. The current systems are designed for up to 120 psi pressure with the ability to work on all pipe material – cast iron, polyethylene, steel, and PVC.


Current Systems

<table>
<thead>
<tr>
<th>System</th>
<th>Nominal Pipe Size</th>
<th>Pipe ID Range</th>
<th>Maximum System Pressure</th>
<th>Inflation Pressure</th>
<th>Design Burst Pressure</th>
<th>Hot Tap Size</th>
<th>Plug Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kleiss MCS3-216</td>
<td>2” - 16”</td>
<td>1.97” - 16.14”</td>
<td>3 psi</td>
<td>22 psi</td>
<td>65 psi</td>
<td>1-1/8”, 1-1/2”, 2”</td>
<td>One Step Valve with Cap</td>
</tr>
<tr>
<td>Kleiss MCS7-2PVC</td>
<td>2”</td>
<td>1.97” - 2.2”</td>
<td>7.5 psi</td>
<td>22 psi</td>
<td>65 psi</td>
<td>1-1/8”</td>
<td>Threaded Brass Plug</td>
</tr>
<tr>
<td>Kleiss MCS15-316</td>
<td>3” - 16”</td>
<td>2.76” - 16.14”</td>
<td>15 psi</td>
<td>37 psi</td>
<td>108 psi</td>
<td>2-1/2”</td>
<td>Threaded Brass Plug</td>
</tr>
<tr>
<td>Kleiss MCS60-38</td>
<td>3” - 8”</td>
<td>2.76” - 8.46”</td>
<td>60 psi</td>
<td>120 psi</td>
<td>350 psi</td>
<td>2.2”</td>
<td>Threaded Brass Plug</td>
</tr>
<tr>
<td>Kleiss MCS60-1016</td>
<td>10” - 16”</td>
<td>9.84” - 16.14”</td>
<td>60 psi</td>
<td>120 psi</td>
<td>350 psi</td>
<td>3-3/4”</td>
<td>Locking Plug</td>
</tr>
<tr>
<td>Kleiss MCS120-24</td>
<td>2” - 4”</td>
<td>1.97” - 4.2”</td>
<td>120 psi</td>
<td>170 psi</td>
<td>510 psi</td>
<td>2-1/2”</td>
<td>Threaded Brass Plug</td>
</tr>
</tbody>
</table>
System Advantages

• **User Friendly, Simple Design**
The Kleiss MCS Systems are made up of four components – fitting to access the pipe, tapping/completion tool, MDS stopper, stopping tool. They are easy to learn and can be quickly executed. The same operation and procedures are used in all applications.

• **Safe Working Conditions**
All critical components have a 3X safety factor. System pressure monitoring gauges are part of the deployment tool’s standard configuration. The Kleiss MCS Systems can also vent or evacuate gas safely through the system, if required.

• **Lightweight and Portable**
The Kleiss MCS Systems can easily be handled by the crews and requires minimal heavy equipment.

• **Cost Savings**
Reduced operational expenses on every stop. The combined system benefits – simplicity of operation, faster site preparation and minimal welding, need for fewer fittings to monitor the operation, lightweight design – make it an ideal solution for natural gas flow stopping.

**MDS Stopper Technology**
The key component in the Kleiss flow stopping system is the use of a patented Multi-Dimensional Safety (MDS) Stopper instead of conventional flow stopping methods. The MDS Stopper is a user friendly, flexible, inflatable device which can stop off gas in any type of pipe material or wall thickness and various pipe diameters. The technology used in the MDS Stopper allows the systems to stop flow up to 120 psi. This means that one system can be used in many applications no longer needing a unique system for each pipe material.

**Patented Material**
The patented MDS Stoppers are manufactured with fiber reinforced natural rubber. Using this strong and flexible material offers many advantages:

• Great sealing capabilities even on less than perfect pipe ID’s

• Designed with gripper to prevent slipping and to keep the stopper in the correct position

• Fiber reinforcement offers burst strengths greater than three times the system pressure

• Single layer construction eliminates any potential wrinkling effect (removes leak paths)

**Maximum Sealing Area**
The MDS Stopper uses fiber reinforced material plus a spring mechanism to fully apply the internal inflation forces to the pipe’s internal surface. As the inflation pressure increases, the spring action contracts the stopper to allow maximum sealing area with the maximum internal force.

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