Safety device with multiple function: **DG91N-VA**

**Type DG91N-VA for protection of single cylinder and tapping points**

The safety device DG91N-VA according to DIN EN ISO 5175-1:

- avoids dangerous gas mixtures by a gas non-return valve (NV)
- stops flashback through flame arrester (FA)
- a temperature-sensitive cut-off valve stops the gas flow when a predetermined temperature is exceeded (TV)
- a dust filter protects the gas non-return valve against contamination
- every safety device is 100% tested
- all metal components in stainless steel 1.4305 / spring 1.4310

**Safety elements of the IBEFA safety device DG91N-VA:**

- NV  Gas non-return valve
- FA  Flame arrester
- TV  Temperature-sensitive cut-off valve

**Additional features:**

- DF  Dust filter

**Maintenance:**

The safety devices are to be tested by a qualified and authorised person at regular intervals according to country specific regulations. The safety device is to be tested for gas tightness, gas flow and gas return at least once a year.

We would be pleased to offer you the flashback arrester testing unit model PVGD.

It is not allowed to open the safety devices.

**Technical Data:**

<table>
<thead>
<tr>
<th>Gas types:</th>
<th>Acetylene (A)</th>
<th>Hydrogen Industrial gas (H) (C)</th>
<th>Natural Gas (Methane) Propane (M) (P)</th>
<th>Oxygen (O)</th>
<th>Compressed Air (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working pressure:</td>
<td>0,15 MPa 1,5 bar</td>
<td>0,40 MPa 4,0 bar</td>
<td>0,50 MPa 5,0 bar</td>
<td>2,5 MPa 25 bar</td>
<td>2,5 MPa 25 bar</td>
</tr>
<tr>
<td>Cracking pressure:</td>
<td>50 mbar position-independent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas temperature:</td>
<td>-20°C up to +70°C (Oxygen -20°C up to +60°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-20°C up to +70°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threads: ANSI/ASME B1.20.1</td>
<td>1/4NPT F/F(^3)</td>
<td>1/4NPT F/M(^3)</td>
<td>1/4NPT M/F(^3)</td>
<td>1/4NPT F/F(^3)</td>
<td>1/4NPT F/M(^3)</td>
</tr>
<tr>
<td>Measure and weight:</td>
<td>diameter: 32,0 mm</td>
<td>length: 103 mm</td>
<td>weight: 370,0 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications:</td>
<td>welding up to 30 mm</td>
<td>cutting up to 700 mm</td>
<td>heating &gt; 100 mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other materials, surface finishing, gas types and additional connections available on request.

The working pressures approved by the UL are different to what is stated above.

Further information in this regard can be provided on request.

\(^3\) F = Female, M = Male
Safety Device according to DIN EN ISO 5175-1, AS 4603

**Type:** DG91N-VA

**Flow rates [air]:**
- \( p_v \) = Primary pressure
- \( p_h \) = Secondary pressure
- \( \Delta p \) = Primary pressure minus Secondary pressure

**Conversion Factors:**
- 0.1 MPa = 1 bar = 100 kpa = 14,504 psi
- 1 m³/h = 35.31 cu ft/h

**Table:**

<table>
<thead>
<tr>
<th>A</th>
<th>H</th>
<th>P</th>
<th>M</th>
<th>M</th>
<th>O</th>
<th>E</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₂H₂</td>
<td>H₂</td>
<td>C₃H₈</td>
<td>CH₄+C</td>
<td>CH₄</td>
<td>O₂</td>
<td>C₂H₆</td>
<td>C₃H₈</td>
</tr>
<tr>
<td>F</td>
<td>1.2</td>
<td>3.8*</td>
<td>0.90</td>
<td>1.25</td>
<td>1.4</td>
<td>0.95</td>
<td>1.02</td>
</tr>
</tbody>
</table>

* Conversion factor 2.5 for devices comprising a flame arrestor
  The conversion factor for free flow is 3.8.
  (Reference: BAM report 220, D. Lietze)

**Example:**

\[ Q_G = Q_D \times F \]

\[ Q_G = 6,4 \times 1.2 = 7,68 \text{ m}^3/\text{h} \text{ C}_2\text{H}_2 \]

**Certification/Technical Standards/Rules**
- TRBS German Technical rules for operation safety
- DVS German Association for Welding, Cutting and Allied Processes
- DGUV German Employer’s liability insurance association rules and regulations

**Standards/Approvals**
- CE-marking according to: Pressure Equipment Directive 2014/68/EU

*(Subject to change without notice)*