2/2 & 3/2 Solenoid Valves
High Pressure Pneumatic Applications - 40 bar
2/2 & 3/2 Solenoid Valves for High Pressure pneumatic applications - 40 bar

Product offering:
- 2/2 valves and 3/2 way valves - pilot operated
- Pipe mounting (G 1/2- 3/4) or sub-base mounting
- 1.5 (2) - 40 bar
- Normally open or closed
- Internal or external pilot pressure supply

Customer Value Proposition:
- Safety of operation
- Reliability
- Response time stability
- Repeatability
- No leakage
- Integrated non return valve (421version)

The use of high pressure gases became a necessity in the new technologies developed during the last years.

The control of these fluids can be done through the solenoid valves specially designed by Parker Lucifer for high pressure applications (maximum 50 bar).

The life expectancy of several millions of cycles, with response time of few milliseconds, allows the use of these valves on intensive applications and on high technology machines, as the plastic bottle blowing machines, or the laser cutting machines.

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs. Please contact your agent for more information.
Application Example

Plastic Bottle Blowing

Three 2-way solenoid valves permit to control the required blowing functions to produce plastic bottles.

In a first phase the N.O. valves (322 H 35) and N.C. valves (421 H 35) are energised. The pressure in the circuit is therefore established to a pre-determined level (2 to 15 bar). During the same time the 3/2 valve (331 B 31) maintains the mould closed with a 40 bar pressure.

In a second phase, the N.C. valve 321H35 is energised and the pressure increases up to 40 bar. Independently from the position of the 421H35 valve, the 321H35 valve assures by design that the 40 bar pressure is maintained and cannot go back into the "low pressure" circuit.

In a third phase, the N.O. valve 322H35 is de-energised and permits the discharge of the circuit down to 0 bar.

Laser Cutting

For this application, few 2/2 Normally closed valves control the gas inlet, in order to assure the different phases and options of the laser cutting. The valves 321H35 are used for inert gases as Air, Argon, Nitrogen. A special model 321HS... is used for oxygen applications.

Electronic pressure regulators type EPP... regulate the pressure from 0 to 20 bar, according to cutting conditions.
Application Example

Main Technical Specifications

Function

<table>
<thead>
<tr>
<th>2/2 pilot operated:</th>
<th>Normally closed (with internal pilot pressure) 321H/F type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Normally closed (with external pilot pressure) 421H/F type</td>
</tr>
<tr>
<td></td>
<td>Normally open (with internal pilot pressure) 322H/F type</td>
</tr>
</tbody>
</table>

| 3/2 pilot operated: normally closed (with internal pressure) 331B type |

ISO diagram

<table>
<thead>
<tr>
<th>321H/F</th>
<th>322H/F</th>
<th>421H/F</th>
<th>331B</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Diagram" /></td>
<td><img src="image2" alt="Diagram" /></td>
<td><img src="image3" alt="Diagram" /></td>
<td><img src="image4" alt="Diagram" /></td>
</tr>
</tbody>
</table>

Mounting

- For direct pipe mounting G 1/2" or 3/4" (2/2 Valve type H); G 1/4 (3/2 Valve type B)
- For sub-base mounting (type F)

Nominal diameter

15 mm (type H), 14 mm (type F)

Pressures

For the version with external pilot pressure, the pilot pressure must always be higher than the controlled pressure

External Leakage

0 Ncc/min.

Internal Leakage

< 20 Ncc/min.

Fluids

Dry lubricated or non lubricated air, Argon, Nitrogen. Oxygen on request

Proof pressure

200 bar

Filtration

< 1 µm

Life expectancy

> 2 \(10^6\) cycles (dry and clean air)
> 8 \(10^6\) cycles (lubricated air)

Temperatures

Ambient / fluid mini: -10 °C
Ambient / fluid maxi: +50 °C

Materials specifications

- Body/cover: 2/2 Valves: Brass - 3/2 Valves: Aluminium
- Pilot seals: PUR
- Main seals: FKM (Viton®) with isolating diaphragm from PUR
- Tube and plunger: Stainless steel
- Coil: Encapsulation from PA66 + 30% fiber glass

Options

Δp maxi 50 bar on request

Response Time

Depends on application

Mounting Position

Indifferent

Specials

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs. Please contact your agent for more information.
### Available electrical parts:
You will find standard available coil details on the next pages. Due to the innovative sleeve design it is also possible to use all listed Parker valves with special solutions, like water tight (IP67) or explosion proof designs.

Please consult your local agent for more details.
## Electrical Parts Availability

**32 mm Electrical Parts Availability**

481865 Series - Standard Coil Mono-Frequency, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only. This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power Consumption</th>
<th>Reference</th>
<th>Approvals</th>
<th>Ambient Temperature</th>
<th>Class of insulation</th>
<th>Dimensional Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/50</td>
<td>8 W</td>
<td>481865A2</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>48/50</td>
<td>8 W</td>
<td>481865A4</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>110/50</td>
<td>8 W</td>
<td>481865A5</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>220-230/50</td>
<td>8 W</td>
<td>4818653D</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>380/50</td>
<td>8 W</td>
<td>481865A9</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>24/60</td>
<td>8 W</td>
<td>481865B2</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>230/60</td>
<td>8 W</td>
<td>481865J3</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>115/60</td>
<td>8 W</td>
<td>481865K8</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>12 DC</td>
<td>9 W</td>
<td>481865C1</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>24 DC</td>
<td>9 W</td>
<td>481865C2</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>48 DC</td>
<td>9 W</td>
<td>481865C4</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>110/V DC</td>
<td>9 W</td>
<td>481865C5</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
</tbody>
</table>

**Voltage Tolerances:** -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC)

**Duty:** Continuous duty coil (100%ED)

**Weight:** 130 g (without plug)

All dimensions are in mm

---

### Dimensional Drawing

- Dimensions: 32 mm
- Weight: 130 g

---
32 mm Electrical Parts Availability

483510 Series - Standard Bi-Frequency Coil, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only.

This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Power Consumption</th>
<th>Reference</th>
<th>Approvals</th>
<th>Ambient Temperature</th>
<th>Class of insulation</th>
<th>Dimensional Drawing</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/50-60</td>
<td>9 W</td>
<td>4835101W</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>24/50-60</td>
<td>9 W</td>
<td>483510P0</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>48/50-60</td>
<td>9 W</td>
<td>483510S4</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>110-115/50</td>
<td>9 W</td>
<td>483510S5</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
<tr>
<td>220-240/50</td>
<td>9 W</td>
<td>483510S6</td>
<td>-</td>
<td>-40°C to +50°C</td>
<td>F Class 155°C</td>
<td>8</td>
</tr>
</tbody>
</table>

Voltage Tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC)

Duty: Continuous duty coil (100%ED)

Weight: 130 g (without plug)

All dimensions are in mm
Dimensions

Dimensions Reference N° 1

Dimensions Reference N° 2

A  B  C  D  E
G3/4”  80  32  53  17.5
G1/2”  75  27  53  13.5

Dimensions Reference N° 3

Dimensions Reference N° 4

Dimensions Reference N° 5

Dimensions Reference N° 6

Dimensions Reference N° 7
WARNING - USER RESPONSIBILITY
FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH,
PERSONAL INJURY AND PROPERTY DAMAGE.

• This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further
investigation by users having technical expertise.
• The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance,
endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry
standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or
authorized distributors.
• To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the
user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the
components or systems.
At Parker, we’re guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.