**Description**

To maintain system performance HYDAC recommends that the gas precharge pressure is checked regularly. A loss in the gas precharge pressure will cause a drop in the system efficiency and could cause damage to the bladder, diaphragm, or piston accumulator.

HYDAC charging and gauging units allow hydro-pneumatic accumulators to be precharged with dry nitrogen. For these purposes, a charging and gauging unit is connected to a commercially available nitrogen bottle via a flexible charging hose.

These units also allow maintenance personnel to check the current gas precharge pressure of an accumulator. For critical systems, consider the use of a permanent gauging block (see page 43) which will allow constant monitoring.

All HYDAC charging and gauging units incorporate a gauge and check valve in the charging connection, and a manual bleed valve with a T-handle.

HYDAC offers two types of charging and gauging units:

---

**Model FPS**

For use with gas valve version 4. (except on top repairable bladder accumulators)

**Model FPK**

For use with gas valve version 1.

**Adapter A3 (FPK/SB)**

An adapter that must be used with the FPK model in order to fit HYDAC gas valve version 4, including top repairable bladder accumulators.

---

**Gas Valve Version 4 on a Bottom Repairable Bladder Accumulator**

- Valve protection cap (where applicable)
- Valve seal cap
- O-ring

**Gas Valve Version 1**

- Valve protection cap (where applicable)
- O-ring (where applicable)
- Allen Wrench 6 mm
- Socket Head Cap Screw (M8)
- Seal ring

**Gas Valve Version 4 on a Top Repairable Bladder Accumulator**

- Valve protection cap
- Valve seal cap
- O-ring
**Model Code**

**Series**
- **FPK** = for use with Gas Valve Version 1 (M28 x 1.5) for SBO and SK
- **FPS** = for use with Gas Valve Version 4 (8VI-ISO 4570) for SB, SBO and SK
  
  **NOTE:** SB Top repairable bladder accumulators must use FPK with FPK/SB adapter

**Gauge Pressure Range**
- 10 = 0 to 145 psi (0 to 10 bar)
- 25 = 0 to 350 psi (0 to 25 bar)
- 100 = 0 to 1400 psi (0 to 100 bar)
- 250 = 0 to 3500 psi (0 to 250 bar)
- 400 = 0 to 5800 psi (0 to 400 bar)

**Charging Hose**
- **F** = with cap screw G1 (thread W24, 32x1/14 - DIN477)

**Charging Hose Length**
- 2.5 = 8 ft. (2.5 m)
- 4.0 = 13 ft. (4 m)

**Adapter**
- **G4** = USA (only for CGA 580 gas bottle connections)
- **G4.1** = USA (only for CGA 680 gas bottle connections)
  
  only available with 400 bar Guage and integral 4m high-pressure hose
- **G1** = Germany (integral part of charging hose)
- **G2** = Australia, Great Britain, India
- **G3** = France
- **G5** = Italy
- **G6** = Japan - Taiwan
- **G7** = Japan - South Korea
- **G8** = Brazil
- **G9** = China
- **G10** = Russia

**Case**
- **K** = plastic carrying case (standard)

**Additional Accessories:**
- ADAPTER A3 (FPK/SB) = adapter for using FPK Charging Unit with top repairable bladder accumulators
  
  **NOTE:** for other adapters please consult factory.
- 6mm Allen Wrench (for HYDAC Gas Valve Version 1)
- 14mm Open End Wrench (for HYDAC gauge)

Operating and Installation Instructions are included with each charging kit. This is also available for download in PDF format on our web site: [www.hydacusa.com](http://www.hydacusa.com)

For spare parts see page 63.

---

**Note:** For Oil, Gas & Marine specific charging & gauging units please refer to page 46
Adapters
Connecting Charging & Gauging Units to 3000 psi Accumulators

**FPS Unit**
with Adapter D4/D7

**FPK Unit**
with Adapter A*

---

**Adapter D4/D7**
Part Number 02067646
Used with FPS Charging & Gauging Unit

---

**A Adapters**
Used with FPK Charging & Gauging Unit

- A1 PN 00361619
  - M28x1.5
  - M16x1.5
- A2 PN 00361605
  - M28x1.5
  - 5/8-18UNF
- A3 (ADAPTER FPK/SB) PN 00291533
  - M28x1.5
  - 7/8-14UNF
- A4 PN 00291536
  - M28x1.5
- A5 PN 00291531
  - M28x1.5
- A6 PN 02108819
  - M28x1.5
  - G3/4A
- A7 PN 02110629
  - M28x1.5
  - G1/4
- A8 PN 02124524
  - M28x1.5
  - G3/4
- A9 PN 02128638
  - M28x1.5
  - Vg8
- A10 PN 02128849
  - M28x1.5
  - 7/8-14UNF
- A11 PN 03018210
  - M28x1.5
  - M16x2
Adapters
Connecting Charging Hose to Gas Bottle

Charging Hoses

<table>
<thead>
<tr>
<th>Length</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5 m</td>
<td>00236514</td>
</tr>
<tr>
<td>4.0 m</td>
<td>00236515</td>
</tr>
<tr>
<td>10.0 m</td>
<td>00373405</td>
</tr>
<tr>
<td>15.0 m</td>
<td>02115552</td>
</tr>
<tr>
<td>20.0 m</td>
<td>02109765</td>
</tr>
<tr>
<td>28.0 m</td>
<td>02109574</td>
</tr>
</tbody>
</table>

G Adapters
From N2 Bottle to Charging Hose

- **G2** (PN 00236376)
  - Australia
  - Argentina
  - Great Britain
  - Vietnam
  - Others
  - **SW 32**
  - **G5/8 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**
  - **G1 adapter**
  - **charging hose**
  - **nitrogen bottle**
  - **hydraulic accumulator**

- **G5** (PN 00236373)
  - Italy
  - **SW 32**
  - **G5/8 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G6** (PN 02103423)
  - Japan
  - **SW 32**
  - **G5/8 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G7** (PN 00236377)
  - Korea
  - **SW 32**
  - **G1/2 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G8** (PN 02103425)
  - Brazil
  - Chile
  - Columbia
  - Others
  - **SW 32**
  - **G1/2 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G9** (PN 00241168)
  - Taiwan
  - **SW 32**
  - **G1/2 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G10** (PN 02103427)
  - Russia
  - Trinidad
  - Tobago
  - Venezuela
  - **SW 32**
  - **ISO 228 - G 3/4**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

- **G11** (PN 00308678)
  - China
  - **SW 32**
  - **G1/2 - ISO 228**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**

**CGA 580 Adapter** (for USA only)
From G4 Adapter to Regulator

- **CGA adapter**
  - 1/4" NPT
  - **W24.32x1/4"**
  - seal ring A6x10
  - **G1 hose connection**
  - **M hose connection**
  - **charging hose**
  - **nitrogen bottle**
  - **adapter G4 only**
Description

To maintain system performance HYDAC recommends that the gas precharge pressure is checked regularly. A loss in the gas precharge pressure will cause a drop in the system efficiency and could cause damage to the bladder, diaphragm, or piston accumulator.

HYDAC charging and gauging units allow hydro-pneumatic accumulators to be precharged with dry nitrogen. For these purposes, a charging and gauging unit is connected to a commercially available nitrogen bottle via a flexible charging hose.

These units also allow maintenance personnel to check the current gas precharge pressure of an accumulator. For critical systems, consider the use of a permanent gauging block which will allow constant monitoring.

All HYDAC charging and gauging units incorporate a gauge and check valve in the charging connection, and a manual bleed valve with a T-handle.

Model Code

Charging and Gauging Unit

FPO = for use with Gas Valve Version 4 (8VI-ISO 4570) for SB, SBO and SK

Gauge Pressure Range

210 = 0 to 3000 psi (0 to 210 bar)

Charging Hose

F = with nitrogen bottle connection CGA-580

Charging Hose Length

3.0 = 10 ft. (3 m)

Case

K = plastic carrying case (standard)

Additional Accessories:

Gas Valve Extension Rod - to be used with top repairable accumulators

Operating and Installation Instructions are included with each charging kit. This is also available for download in PDF format on our web site: www.hydacusa.com

Note: For the full line of charging & gauging units please refer to page 35

Parts

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Item</th>
<th>Quantity</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>FPO 210 Replacement Kit consists of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Gauge, 3000 PSI</td>
<td>1</td>
<td>1</td>
<td>02701622</td>
</tr>
<tr>
<td>T-Handle Lock Chuck</td>
<td>2</td>
<td>1</td>
<td>02701615</td>
</tr>
<tr>
<td>Charging Manifold, FPO</td>
<td>3</td>
<td>1</td>
<td>consult factory</td>
</tr>
<tr>
<td>Tank Valve</td>
<td>4</td>
<td>1</td>
<td>02701617</td>
</tr>
<tr>
<td>Bleeder Valve</td>
<td>5</td>
<td>1</td>
<td>consult factory</td>
</tr>
<tr>
<td>Hose Assembly FPO 210 (CGA 580) consists of:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Pressure Coupling (swivel)</td>
<td>6</td>
<td>1</td>
<td>02701590</td>
</tr>
<tr>
<td>Hose, FPO 3000 PSI, 3m</td>
<td>7</td>
<td>1</td>
<td>02701621</td>
</tr>
<tr>
<td>Nipple Gland, CGA-580</td>
<td>8</td>
<td>1</td>
<td>02701620</td>
</tr>
<tr>
<td>Nut, CGA-580</td>
<td>9</td>
<td>1</td>
<td>02701619</td>
</tr>
</tbody>
</table>