Hydrogen Refueling Systems
The WALTHER high pressure refueling systems of the HG series were developed for safe and fast refueling with gaseous hydrogen. The usual application is the refueling of vehicles with fuel cell drive up to an operating pressure of 875 bar.

The refueling nozzles are tested and validated to SAE J2600:2002 - 70 MPa, the worldwide standards of the refueling interface. WALTHER-PRÄZISION has significantly contributed to the achievement of the standard and thus set the standard of high-pressure sealing in 2006. We are offering a validated technology for the mobility of the future.
# Hydrogen Refueling System

## Product finder

<table>
<thead>
<tr>
<th>Image</th>
<th>Description</th>
<th>Feature + options</th>
<th>Max. operating pressure [bar / psi]</th>
<th>Operating temperature [°C / °F]</th>
<th>Type</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Parking station / holster" /></td>
<td>Parking station / holster with integrated purging system „dry Connect“, stainless steel plate version</td>
<td>Simple and safe parking of the refuelling nozzle and actuation system to detect the correct parking</td>
<td>Purge pressure max. 6</td>
<td>-40 to +85 -40 to +185</td>
<td>HG-004-B</td>
<td>4</td>
</tr>
<tr>
<td><img src="image2.png" alt="Refueling nozzle" /></td>
<td>Refueling nozzle for gaseous hydrogen acc. to SAE J2600:2002 - 70 MPa with or without IR module</td>
<td>Simple and reliable operation in push-pull technology and highest safety through pressure-active unlocking protection</td>
<td>875 12,688</td>
<td>-40 to +85 -40 to +185</td>
<td>HG-004-0</td>
<td>6</td>
</tr>
<tr>
<td><img src="image3.png" alt="Breakaway coupler" /></td>
<td>Breakaway coupler, shut-off valves, connection to hose set and dispenser</td>
<td>Non-destructive emergency separation at approx. 600 N and safe pressure reduction by using the venting tool</td>
<td>875 12,688</td>
<td>-40 to +85 -40 to +185</td>
<td>HG-006</td>
<td>8</td>
</tr>
<tr>
<td><img src="image4.png" alt="Hose set" /></td>
<td>Hose set for a reliable connection between the refueling nozzle and the breakaway coupling, length = 4,000 mm</td>
<td>Consisting of HP hose 70 MPa and IR cable with e-plug and protective hose</td>
<td>875 12,688</td>
<td>-40 to +85 -40 to +185</td>
<td>95721-B</td>
<td>10</td>
</tr>
<tr>
<td><img src="image5.png" alt="Venting tool" /></td>
<td>Venting tool for the for a safe pressure relief after separation</td>
<td>Easy operation by connecting to the breakaway coupler (nipple-side) and venting by turning the screw with suitable tools</td>
<td>875 12,688</td>
<td>-40 to +85 -40 to +185</td>
<td>HG-006-B</td>
<td>11</td>
</tr>
<tr>
<td><img src="image6.png" alt="Refueling receptacle" /></td>
<td>Refueling receptacle for gaseous hydrogen acc. to SAE J2600:2002 - 70 MPa, connection inner thread 9/16-18 UNF 2B</td>
<td>Robust and reliable design for bulkhead connection and dust cap with tab</td>
<td>875 12,688</td>
<td>-40 to +85 -40 to +185</td>
<td>HG-004-9</td>
<td>12</td>
</tr>
</tbody>
</table>

**We would be happy to provide you with support and advice. Please contact us:**

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info@walther-praezision.de
Parking Station / Holster HG-004

**Characteristics:**
- Integrated connection for purging system with nitrogen or dry air
- High operating comfort and safe locking system
- Robust mechanical actuation to detect the correct parking of the refueling nozzle
- Reliable protection of the refueling nozzle with front-side sealing
- Multiple mounting angles are possible

**Benefits:**
- A freezing of the refueling nozzle is thus safely prevented
- Misuse is impossible
- Simple and reliable proximity switch on customer side
- Damage is avoided, low service costs. Penetration of air, water or pollution is prevented.
- Adaptable design of the dispenser
Parking Station / Holster HG-004

Feature chart | Parking Station / Holster

<table>
<thead>
<tr>
<th>Standard</th>
<th>Technical features</th>
<th>WEDISO</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>• End connection G 1/4 female thread as interface to connect gas supply with nitrogen or dry air</td>
<td>Material</td>
<td>AAAV: stainless steel, POM-C, black</td>
<td></td>
</tr>
<tr>
<td>• Actuator system for refueling nozzle detection by customer provided initiator</td>
<td>Seals</td>
<td>FKM</td>
<td></td>
</tr>
<tr>
<td>• Easy assembly via a provided mounting plate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Multiple mounting angles</td>
<td>Material</td>
<td>AAAT: aluminium, POM-C, black</td>
<td></td>
</tr>
</tbody>
</table>

Optional

- Alternatively we offer a parking station made of high quality aluminium full material design

HG-004-B-Y08
Full material aluminium housing (Optional)

HG-004-B-Y14
Stainless steel plate housing housing (Standard)

Product chart | Parking station / Holster

<table>
<thead>
<tr>
<th>Product type</th>
<th>A</th>
<th>B</th>
<th>H</th>
<th>L</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking station (Standard)</td>
<td>BSPP 1/4 for gas supply</td>
<td>92</td>
<td>306</td>
<td>109</td>
<td>146061</td>
<td>HG-004-B-00006-AAAV-Y14</td>
</tr>
<tr>
<td>Parking station (Optional)</td>
<td>BSPP 1/4 for gas supply</td>
<td>110</td>
<td>305</td>
<td>135</td>
<td>115782</td>
<td>HG-004-B-00004-AAAT-Y08</td>
</tr>
</tbody>
</table>

A - Connection (dry air/nitrogen) / not shown  B - Width [mm]  H - Height [mm]  L - Length [mm]
Refueling Nozzle HG-004

Characteristics:
• Double locking technology
• Pressure-active locking system (form fit)
• IR module can be exchanged on-site
• Scraper ring at the front removes moisture and dirt between connecting
• Ergonomic design with push-pull technology

Benefits:
• Disconnecting under pressure is safely prevented
• Maintenance and service friendly = low service costs
• Penetration of dirt and moisture is prevented
• Simple and reliable operation = high customer acceptance
Refueling Nozzle HG-004

Feature chart | Quick coupling systems

<table>
<thead>
<tr>
<th>Technical features</th>
<th>WEDISO</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• High protection by dual locking technology and pressure-active locking system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suitable for Ultracoldfill until -40° C gas temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• With or without IR technology according to SAE J2601 and with ATEX conformity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• End connection 9/16-18 UNF male thread for HP hose</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• IR module can be exchanged on-site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Fully-developed technology applied since 2001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Tested and validated according to SAE J2600:2002 - 70 MPa</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Material**
- Stainless steel, POM-C, black/blue

**Seals**
- H₂ resistant

**Options**
- BB = manufacturing according to DIN EN 10204-3.1
- Y16 = with IR interface
- Y17 = without IR interface

### Hose side

HG-004-0-...-Y16/Y17
High pressure refueling nozzle

**Material**
- Stainless steel, POM-C, black/blue

**Seals**
- H₂ resistant

**Options**
- BB = manufacturing according to DIN EN 10204-3.1
- Y16 = with IR interface
- Y17 = without IR interface

### Product chart | Quick coupling systems

<table>
<thead>
<tr>
<th>NB</th>
<th>Product type</th>
<th>A</th>
<th>D</th>
<th>D1</th>
<th>L</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Refueling nozzle (with IR)</td>
<td>9/16-18 UNF with sealing cone</td>
<td>75</td>
<td>50</td>
<td>319</td>
<td>160627</td>
<td>HG-004-0-XX004-AABA-Y16-BB</td>
</tr>
<tr>
<td>4</td>
<td>Refueling nozzle (without IR)</td>
<td>9/16-18 UNF with sealing cone</td>
<td>75</td>
<td>50</td>
<td>319</td>
<td>160886</td>
<td>HG-004-0-XX004-AABA-Y17-BB</td>
</tr>
</tbody>
</table>

**NB** - Nominal bore [mm]  | **A** - Connection  | **D** / **D1** - Diameter [mm]  | **L** - Length [mm]
Breakaway Coupling HG-006

Characteristics:
• Unique and IP protected system with integrated pressure compensation
• Large deflection in all directions due to rope suspension
• Non-destructive emergency release
• Venting with special utility tool possible (see page 11)

Benefits:
• Blow-back proven design and close to power-neutral emergency release
• Consistent level of the necessary emergency release forces
• Quick and easy restoring of the operational readiness
• Highest level of safety at emergency release
Breakaway Coupling HG-006

Feature chart | Quick coupling system

<table>
<thead>
<tr>
<th>Technical features</th>
<th>WEDISO</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Suitable for Ultracoldfill until -40° C gas temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Breakaway IR-plug for emergency separation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Impact protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Consistent emergency separation force by unique design principle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Connectable with venting tool for safe ventilation after an emergency separation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Optional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• After an emergency separation, simple recovery of availability by manual connection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Safe initiation of emergency separation force by reliable deviation of suspension</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material: Stainless steel, PUR special
Seals: H2 resistant

BB = manufacturing according to DIN EN 10204-3.1

IR cable L = 5 m for connection with station-side IR-control unit
HG-006-2-XX002-AAAL-Y06-BB: Breakaway Coupling, hose side, shutting off for connection to the hose package, type 95721
HG-006-0-XX004-AAAK-Y06-BB: Breakaway Coupling, station side (flexible connecting line provided by customer)
HG-006-B-0002-AAAD-Y01-BB: Venting tool for safe ventilation after emergency separation, connectable with HG-006-2-....-Y06

Product chart | Quick coupling system

<table>
<thead>
<tr>
<th>NB</th>
<th>Product type</th>
<th>A</th>
<th>SW</th>
<th>SW₁</th>
<th>D</th>
<th>D₁</th>
<th>L₁</th>
<th>L</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Breakaway coupling (hose side)</td>
<td>9/16-18 UNF with sealin cone (HD hose), M40 x 1,5 mm (protection hose)</td>
<td>80</td>
<td>260</td>
<td>417</td>
<td>144414</td>
<td>HG-006-2-XX002-AAAL-Y06-BB</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB - Nominal bore [mm]  A - Connection  SW / SW₁ - Wrench size [mm]  D / D₁ - Diameter [mm]  L₁ / L - Length [mm]
Hose Package 95721

Description:
• Hose set L = 4,000 mm for connection of refueling nozzle with breakaway coupling including IR cable
• Protection hose is pricked so that condensation water can drain
• Protection hose made of high-quality PUR, high pressure hose - plastic with stainless steel wire reinforcement
• Electronically conductive

### Feature chart | Hose package

![Image of hose package](image_url)

### Product chart | Hose package

<table>
<thead>
<tr>
<th>NB</th>
<th>Product type</th>
<th>A</th>
<th>L</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Hose set</td>
<td>A</td>
<td>4,000</td>
<td>121137</td>
<td>95721-B-00007-AAAC</td>
</tr>
<tr>
<td></td>
<td>HP hose: (Spir Star)</td>
<td></td>
<td>9/16-18 UNF M-Swivel protection hose: M40 x 1,5, cable 5-way double-sided M12 E-plug/emergency separation plug</td>
<td></td>
<td>95721-B-00008-AAAD</td>
</tr>
<tr>
<td>4</td>
<td>Hose set</td>
<td>A</td>
<td>4,000</td>
<td>141099</td>
<td>95721-B-00007-AAAC</td>
</tr>
<tr>
<td></td>
<td>HP hose: (Parker)</td>
<td></td>
<td>9/16-18 UNF M-Swivel protection hose: M40 x 1,5, cable 5-way double-sided M12 E-plug/emergency separation plug</td>
<td></td>
<td>95721-B-00008-AAAD</td>
</tr>
</tbody>
</table>

**NB** - Nominal bore [mm]  **A** - Connection  **L** - Length [mm]
Venting Tool

Feature chart | Quick coupling systems

Description:
- Safe ventilation of breakaway coupling (hose side) after an emergency separation
- Stainless steel, bronze
BB = manufacturing according to DIN EN 10204-3.1

Product chart | Quick coupling systems

<table>
<thead>
<tr>
<th>NB</th>
<th>Product type</th>
<th>L</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Venting tool</td>
<td>198</td>
<td>85108</td>
<td>HG-006-B-00002-AAAD-Y01-BB</td>
</tr>
</tbody>
</table>

NB - Nominal bore [mm]  L - Length [mm]
Refueling Receptacle HG-004

Feature chart | Receptacle

**Description:**
- Suitable for ultracoldfill until -40°C gas temperature
- Interfaces to the vehicle for bulkhead 2 - 4 mm and reception IR transmitter (car side)
- Available with different high pressure end connections
- No maintenance necessary due to high-quality materials including dust cap made of PUR
- Successfully tested according to: TRANS/WP.29/GRPE/2004/3 Part 1 resp. EIHP 12B, SAE J2600:2002 - 70 MPa

**Material:** Stainless steel, PUR

**Special seals:** Hz resistant

BB = manufacturing according to DIN EN 10204-3.1

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Product chart | Quick coupling system

<table>
<thead>
<tr>
<th>NB</th>
<th>Product type</th>
<th>A</th>
<th>SW</th>
<th>SW1</th>
<th>D</th>
<th>L</th>
<th>N</th>
<th>ID no.</th>
<th>Part number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Refueling receptacle</td>
<td>23</td>
<td>36</td>
<td>32</td>
<td>42</td>
<td>121</td>
<td>40</td>
<td>98432</td>
<td>HG-004-9-SA514-AAAL-Y07-BB</td>
</tr>
</tbody>
</table>

*NB - Nominal bore [mm]  A - Connection  SW / SW1 - Wrench size [mm]  D - Diameter [mm]  N - Adaptor [mm]  L - Length [mm]
Description of the Refueling Process

**Step A - Start refueling process**
1. Hold on to the black grip and push the refueling nozzle upwards.
2. Remove the refueling nozzle out of the parking station/holster.

**Step B - Engage nozzle with receptacle**
1. To connect push the refueling nozzle straight onto the receptacle.
2. A green ring signals a successful locking. The refueling nozzle is ready for refueling the fuel cell car!

**Step C - Start refueling**
Start the refueling process at the dispenser and wait 3-5 minutes for a full load of H₂ at 70 MPa.

**Step D - Disengage refueling nozzle from receptacle**
1. Hold on to the black grip.
2. Pull the blue sleeve backwards over the green ring with the free hand.

**Step E - Finish refueling process**
1. Push the refueling nozzle upwards to the parking station/holster counterpart.
2. Push the refueling nozzle into the locking mechanism inside the holster and double check that the nozzle is placed correctly.

The refueling process has finished successfully!
Worldwide in Operation for our Customers

Austria • Canada • Denmark • France • Germany • Japan • Korea • Netherlands • Singapore • USA

Head Quarter: | Haan | North Rhine-Westphalia (Germany)
Safety Instructions and Liability

Liability

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Due to the different working modes and the versatile applications of quick coupling systems, WALTHER-PRÄZISION cannot guarantee with its dealership network that a particular quick coupling system is suitable for each specific application. Not all technical details to be considered during the selection of a quick coupling system are analysed. The user is personally responsible for the following after conducting their own analyses.

- For the safe operation and the observance of maintenance and servicing.
- The selection of their quick coupling system.
- Meeting the end user requirements.
- The safety precautions that are necessary during the use of quick coupling systems to prevent personal injury and property damage.
- Independent technical alterations.

Safety Instructions

Our extensive safety instructions can be found on our website under „Service“ or by using the provided QR code.

Pressure Equipment Directive

In accordance with the Pressure Equipment Directive 2014/68/EU of the European Union the series HG is classified as pressure-maintaining component. The member of the series HG (excluding hose, tools and accessory) are in conformance to the classification of the Pressure Equipment Directive and are delivered with CE marking.
Hydrogen Refueling Systems

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