Vacuum Insulated Transfer Siphon

... for low-loss transfer of liquid helium
The liquid helium is withdrawn from a vessel using a siphon, which is available in various configurations:

- Angle siphon
- Siphon with flexible hose
- Siphon with rigid hose

Cryotherm siphons are made from super-insulated hoses and provided a permanent vacuum. These features guarantee the lowest transfer losses at all times.

Convincing advantages:

- Highly flexible hoses for easy handling and versatile applications
- Improved insulation using thin-walled tubes and spacers
- Low heat transfer through optimised super-insulation
- Easy handling
- High functionality
- Extendable filling and withdrawal tubes
- Bend protection for high mechanical utilisation
- Manufactured from robust stainless steel
- Outer jacket options (from pressure-resistant and robust to super-light and highly flexible)
- Individually customised products
- Valves and connections installed according to customer requirements
Options:

- **Manual shut-off valve DN9, O-ring sealed**
  - Short transfer times
  - Flexible use with add-on adapter set
  - Standard for STRATOS® vessels
  - Combined with anti-oscillation device

- **Manual shut-off valve DN5/DN7, bellows sealed**
  - Installed in the filling tube to save space
  - Low maintenance
  - Valve seat at the end of the filling tube (minimising the evaporation rate and contamination by air)

- **Solenoid valve DN4**
  - Electrically controllable
  - For automatic filling operations

Permanently installed siphon in STRATOS® vessel with patented anti-oscillation device:

- Low evaporation rate
- No helium loss during siphon installation
- Ideal for room with low height
- Low wear of siphon due to vessel integration

**Example:** LHe-siphon, 2-piece with coupling and extraction valve (model: super-light and highly flexible)

**LHe transfer from storage vessels (HELIOS®) to transport vessels (STRATOS®)**

...for 2 transfer siphons with anti-oscillation device
Item no. 78206335
Models

... the appropriate siphon for every application

Standard Siphon VHF DN5

View A

Vacuum seal-off and safety device DN 16

Maximum operating pressure: 2 bar

A: Withdrawal Tube

B: Transfer line flexible with braiding

B1: 1350/2450 mm

C: Filling tube

C1: 700 mm

C2: 12 mm

D: Shut-off valve integrated into the filling tube

D: Shut-off valve integrated into the filling tube

B1: 1350/2450 mm

A1: 1600 mm

A2: 12 mm

A3: 145 mm

A4: 50 mm

A5: 50 mm

A6: 50 mm

A7: 50 mm

Vacuum seal-off and safety device DN 16

Maximum operating pressure: 2 bar

Variants on Standard

<table>
<thead>
<tr>
<th>A</th>
<th>Withdrawal Tube</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Length A1 (mm)</td>
<td>1600</td>
</tr>
<tr>
<td>A2</td>
<td>Diameter A2 (mm)</td>
<td>12</td>
</tr>
<tr>
<td>A3</td>
<td>Extension A3 (mm)</td>
<td>-</td>
</tr>
<tr>
<td>A4</td>
<td>Small flange connection A4 DN</td>
<td>-</td>
</tr>
<tr>
<td>A5</td>
<td>Straight withdrawal tube</td>
<td>-</td>
</tr>
<tr>
<td>A6</td>
<td>Angle section length (mm)</td>
<td>-</td>
</tr>
<tr>
<td>A7</td>
<td>Without withdrawal tube (with variant B4)</td>
<td>-</td>
</tr>
</tbody>
</table>

Variant A3

Uninsulated extension

Variant A4

Small flange connection

Variant A5

Straight withdrawal tube

Variant A6

Extended Angle
Easy withdrawal from helium vessels

### Transfer line

<table>
<thead>
<tr>
<th>B</th>
<th>Transfer line</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>Length B (flexible) (mm)</td>
<td>1350/2450</td>
</tr>
<tr>
<td>B2</td>
<td>Special length (flexible) B=1000-6000 mm</td>
<td>-</td>
</tr>
<tr>
<td>B3</td>
<td>Length B=1000-2500 mm (rigid)</td>
<td>-</td>
</tr>
<tr>
<td>B4</td>
<td>Coupling</td>
<td>-</td>
</tr>
</tbody>
</table>

### Filling tube

<table>
<thead>
<tr>
<th>C</th>
<th>Filling tube</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1</td>
<td>Length C1 (mm)</td>
<td>700</td>
</tr>
<tr>
<td>C2</td>
<td>Diameter C2 (mm)</td>
<td>12</td>
</tr>
<tr>
<td>C3</td>
<td>Extension C3 (mm)</td>
<td>-</td>
</tr>
<tr>
<td>C4</td>
<td>Small flange connection C4 DN</td>
<td>-</td>
</tr>
<tr>
<td>C5</td>
<td>Straight filling tube</td>
<td>-</td>
</tr>
<tr>
<td>C6</td>
<td>Angle section length C6 (mm)</td>
<td>145</td>
</tr>
<tr>
<td>C7</td>
<td>Without filling tube (with variant B4)</td>
<td>-</td>
</tr>
</tbody>
</table>

### Integrated Valve in filling tube

<table>
<thead>
<tr>
<th>D</th>
<th>Integrated Valve in filling tube</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1</td>
<td>Without valve in filling tube</td>
<td>-</td>
</tr>
<tr>
<td>D2</td>
<td>Valve in male coupling</td>
<td>-</td>
</tr>
<tr>
<td>D3</td>
<td>Valve in female coupling</td>
<td>-</td>
</tr>
<tr>
<td>D4</td>
<td>Angle shaped solenoid valve</td>
<td>-</td>
</tr>
</tbody>
</table>

Caution: valve combination can produce shut-off areas, which must be secured with a safety valve. Combination of variants D3 and D4 without a safety valve is possible.
LHe filling system from a 40’ LHe vessel into LHe transport vessels

### Optional:
- Adapter for 40’ LHe vessel
- Large coupling to small coupling
  - Item No. 78200346

### 3 m hose
- with plug-in coupling suitable for 1½ UNF vessel
- Item No. 79428581

### Filling angle with integrated LHe shut-off valve and small flange connection
- Item No. 79404403

### Other available diameters

<table>
<thead>
<tr>
<th>Valve DN4</th>
<th>Valve DN5</th>
<th>Valve DN7</th>
</tr>
</thead>
<tbody>
<tr>
<td>9,6</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>12</td>
<td>12,7</td>
<td>16</td>
</tr>
</tbody>
</table>

---

... various applications

**Clamping ring KF25**
- Item No. 79405158

**Centering ring and O-ring KF25**
- Item No. 0647981

**O-Ring fitting D16 to KF25**
- Item No. 79402556
LHe transfer system from transport vessels (STRATOS®) to MR tomographs or cryostats

**LHe angle adapter PHILIPS**
Item No. 79422293

**LHe angle adapter ELSCINT**
Item No. 79422488

**Helium siphon for STRATOS® 250 SL or other LHe vessels**
Item No. 78200926

**Siphon extension**
GENERAL ELECTRIC Item No. 79422294

**Siphon extension SHIMADZU**
Item No. 79423745

**Siphon extension TOSHIBA**
Item No. 79422810

**LHe angle adapter PHILIPSF2000**
Item No. 79423724

**LHe transfer from storage vessel (HELIOS®) to transport vessel (STRATOS®)**

**P/T measuring unit for automatic filling shut-off for installation into He exhaust line**
NITROGEN VESSELS
APOLLO® LIN-Supply Vessel (50 - 350 l) · JUNO® LIN-Supply Vessel (30 l)
SIRIUS® LIN-Supply Vessel (1,000 - 2,000 l) · SATURN® LIN-Transport Vessel (50 - 300 l)
MERKUR® LIN-Transport Tank (500 - 3,000 l) · STELLA®-Working Vessel (0.5 - 10,000 l) · LAB® Series (4 - 50 l)

BIOSAFE*-SYSTEMS / LIFE SCIENCE
BIOSAFE® MDß-Sample Storage System (Medical Product) (120 - 1,400 l) · BIOSAFE® SCß-Sample Storage System (120 - 1,400 l)
BIOSAFE-CONTROL® · CRYO-MESSENGER® Remote Monitoring System · BIOSAFE® X/S-Series · Vapor Shipper
STELLA®-Working Vessel (0.5 - 10,000 l) · Controlled Rate Freezers (3.3 - 16 l)

BIOSAFE*-RACK SYSTEMS
Racks · Drawers and Cryoboxes for Vials · Canisters for Straws in Goblets · SBS-Boxes (Microtiter)
Cassettes for Freezing Bags

HELIUM VESSELS
HELIOS® LHe-Storage Vessel (100 - 15,000 l) · STRATOS® LHe-Transport Vessel (100 - 1,000 l) · LHe Siphon

OTHER VESSELS
HYDROS® Lh, Transport Vessel (1,000 - 15,000 l) · STRATOS® Transport Vessel (100 - 1,000 l)
APOLLO® Supply Vessel (50 - 350 l) · MERKUR® Transport Tank (500 - 3,000 l)

CRYO LINE SYSTEMS
Rigid Line Systems (DN 14 - 300) · Flexible Line Systems (DN 20 - 150) · Phase Separator Stations (50 - 200 l)
Gas Separator (5 l) · LHe Multiline

CONTROL AND MONITORING TECHNOLOGY FOR CRYOGENIC GASES
BIOSAFE-CONTROL® · CRYO-MESSENGER® Remote Monitoring System · CRYO LC® Level Measurement and Control Device
LHe Level Measurement and Control Device · Capacitive Level Measurement · Oxygen-Deficiency Warning System

TRANSPORT COOLING FOR VEHICLES
CRYOGEN®-TRANS-SYSTEM

CUSTOMISING / TURNKEY SOLUTIONS / CRYO COOLER / COOLING BATHS
Do you have the right partner for your highly specific research tasks? Whether you work in microelectronics, analytics, environmental protection or one of the many other areas of research, we have the specialist staff who know your field and speak your language.

CRYO ACCESSORIES & AFTER-SALES SERVICE
Accessories · Installation/Assembly · Start Up · Function Qualification IQ / OQ · Repair/Maintenance
Spare Parts Service · Vessel Hire · Instructor/Training · Operating Manual · Service Hotline +49 2741 958575

Contact
Cryotherm GmbH & Co. KG
Euteneuen 4
57548 Kirchen/Sieg, Germany
☎: +49 27 41 95 85-0
☎: +49 27 41 69 00
✉: info@cryotherm.de
✉: www.cryotherm.de

Cryotherm Inc.
5126 South Royal Atlanta Drive
Tucker, GA 30084, USA
☎: +1 770-274-2410
☎: +1 770-934-3384
✉: info@cryotherminc.com
✉: www.cryotherminc.com

04.17 · Technical specifications subject to change without notice. Reproduction, reproduction and copying of all drawings, pictures, photographs, graphics and texts of brochures only after written approval by Cryotherm GmbH & Co. KG.