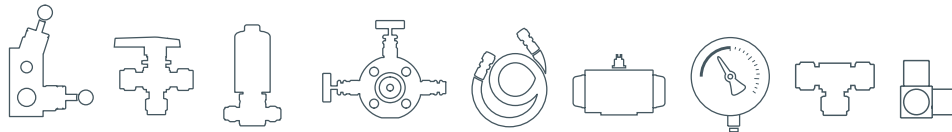




# Products at a Glance





## HAM-LET CONNECTORS



## LET-LOK®

### COMPRESSION TUBE FITTINGS

1/16" THROUGH 2" 2 MM THROUGH 50 MM

- The HAM-LET LET-LOK® range of compression tube fittings was developed to provide the market high performance, quality products for use in pressure up to 12,000Psi (depending on OD size).
- HAM-LET LET-LOK® are used for both sealing and gripping of tubing.
- Used in a variety of applications and industries such as Oil & Gas, Industrial Gas Manufacturers, Analytical, Semiconductor, and other major industries.
- HAM-LET LET-LOK® fittings comply with industry standards and have been TUV tested and hold DNV, ABS, and CNG certifications.
- HAM-LET LET-LOK® fittings are available in a wide variety of sizes and materials and can be installed by anyone.
- Raw materials: Stainless Steel 316, Brass, Alloy 400/R-405, Alloy C-276, Alloy 625, SM0 254, Alloy 825, SD 2507

### ACCESSORIES



Indication

Sealing

Assembly

G-Rapid paste



### ONE-LOK®

A single-ferrule fitting that provides a leak-proof secure connections in various pressures, vibration, and vacuum environments.  
**Sizes:** 1/16" to 1" 3mm to 25mm  
**Pressure:** Up to 12000Psi (depending on OD size)



### PIPELINE

Precision instrument fittings, made for threaded piping.  
**Sizes:** 1/16" to 2"  
**Pressure:** Up to 11000Psi (depending on connection)



### SAE37°FLARE®

Fittings with a 37° flare that meet SAE Standard J514. The SAE 37° Flare series features 3-pieces and metal to metal sealing.  
**Sizes:** 1/8" to 2"  
**Pressure:** Up to 5000Psi (depending on OD size)



### WELDLINE

Intrusion fittings in a variety of weld types, including elbows, unions, crosses, and tees. These fittings feature Butt Weld and Socket Weld for both tubes and pipes.  
**Sizes:** 1/4" to 1-1/2"  
**Pressure:** Up to 10300Psi (depending on connection)



### HOSE-END™

Fittings created to specifically work with a variety of hose ends.  
**Sizes:** 1/4" to 1"



### UHLINE

Fittings manufactured for use in ultra-vacuum systems, featuring finger-tight assembly (with a knurled nut).  
**Sizes:** 1/4" to 1"



### FLANGS

Flange connectors for LET-LOK and NPT Male/Female fittings up to 2". One piece not welded. Our flange adapters work per a variety of standards including ASME B 16.5, DIN EN 1092, and JIS 2220.



### ACCESSORIES





## HI-TECH COMPONENTS - HTC



# HTC<sup>®</sup> HI-TECH COMPONENTS

## ORBITAL WELD AND METAL GASKET FACE SEAL FITTINGS

- Ham-Let HTC<sup>®</sup> specializes in the design and production of high-quality, specially manufactured fittings for High Purity and Ultra High Purity applications.
- Cutting edge technology gives us the ability to improve the electro polishing processes, ensuring out HTC products the highest level of performance.
- The complete line features the critical requirements needed in the semiconductor, biotech, and pharmaceutical industries.
- Ham-Let HTC<sup>®</sup> is a leader in the manufacturing of fittings for clean industries.
- Ham-Let HTC<sup>®</sup> has broken new ground when it comes to surface-finishing techniques by implementing improved electro-polishing processes.

Sizes: 1/8" to 1"

Materials: 316L, 316L VAR, VIM/VAR



Glands



Mini Butt welds



Shaped Unions



Long Weld Shaped Connectors



Threaded Straight Connectors



Caps, Nuts & Plugs



Swivel Connectors



Gaskets



High Flow Connectors



## HAM-LET HIGH PRESSURE



- The new HAM-LET High Pressure (HHP) product line is a line of High pressure Valves, Fittings, Tubes, Tooling, Pipe Connections and Accessories.
- The HHP line supports a wide range of gas and liquid systems in various industries, such as oil & gas, chemical and petrochemical, laboratories and research, water-jet cleaning and water-jet cutting.
- The new HHP products support the industry standard elevated pressures gas and liquid systems with working pressures of:
  - Low pressure up to 15,000 PSI with Taper seal and Pipe connection 1/16", 1/8", 1/4", 3/8", 1/2", 3/4", and 1"
  - Medium pressure up to 20,000 PSI with Thread and Cone connection 1/4", 3/8", 9/16", 3/4" and 1"
  - High pressure up to 100,000 PSI with Thread and Cone connection 1/4", 3/8", 9/16"
  - Ultra-High pressure up to 150,000 PSI with Thread and Cone connection 1/4", 3/8", 9/16"
- HHP can be provided in a variety of exotic materials and for sour gas applications.
- The HHP line is a new HAM-LET line and therefore we are constantly researching and developing the line's innovation, as with all HAM-LET products.





## HAM-LET INSTRUMENTATION VALVES



Ham-Let Group features an extensive line of innovative instrumentation valves solutions. Our valves comply with wide range of pressure and temperature standards and conditions. Ham-Let group manufactures a range of solutions that includes Ball, Needle, Toggle, Metering, Check, Relief and Excess Flow Valves and extensive line of pneumatic actuators and 1,2,3,4, and 5 ways of instrumentation manifolds.

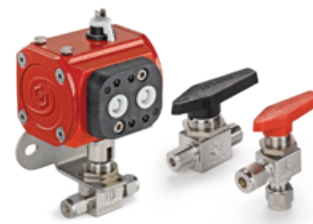
Power Generation | Oil and Gas industry | Transportation | Analytical systems  
Pharmaceutical and Food



**High Performance  
Ball Valves** - H-6800 series  
MAWP: 6000Psi (413 bar)  
MAWT: 500°F (260°C)



**3 Piece Ball Valves**  
H-500 series  
MAWP: 3000 psi (206 bar)  
MAWT: 450°F (232°C)



**Compact One Piece  
Ball Valves** - H-800 series  
MAWP: 3000Psi (206 bar)  
MAWT: 300°F (149°C)



**Ball Valves with Locking  
Device** H-700 series  
MAWP: 2000Psi (137 bar)  
MAWT: 400°F (204°C)



**Metering Valves**  
H-1300 series  
MAWP: 2000Psi (137 bar)  
MAWT: 450°F (232°C)



**Metering Ball Valves**  
MBV series  
MAWP: 2000Psi (137 bar)  
MAWT: 300°F (150°C)



**Integral Bonnet Needle  
Valves** H-300U series  
MAWP: 5000Psi (345 bar)  
MAWT: 446°F (230°C)



**High Pressure Needle Valves**  
H-300U series  
MAWP: 10,000Psi (690 bar)  
MAWT: 1200°F (648°C)



**Toggle Valves**  
H-1200 series  
MAWP: 300Psi (20 bar)  
MAWT: 20° to 200°F (-28° to 93°C)



**Check Valves - High  
Pressure, One Piece &  
Adjustable**  
H-400 series  
MAWP: 6000Psi (413 bar)  
MAWT: -40° to 250°F (-40° to 121°C)



**QCLOK®  
Quick Connectors**  
1/4", 3/8", 1/2"  
MAWP: 3000Psi (413 bar)  
MAWT: 500°F (260°C)



**Relief Valves**  
H-900 & H-900HP series  
MAWP: 6000 psi (413 bar)  
MAWT:



**T-Type & In-Line Filters**  
H-600 series  
MAWP: 6000Psi (413 bar)  
MAWT: 900°F (482°C)



**Excess Flow Valves**  
H-911 series  
MAWP: 6000Psi (413 bar)  
MAWT: 400°F (204°C)



**Ham-Let Sample Cylinder  
and Needle Valve with  
Rupture Disc**  
MAWP: 3,000psi (206Bar)  
MAWT: -58F to 450F (-50C to 232C)



**Valves for CNG/NGV  
Applications**  
ECE R110 approved





## ULTRA CLEAN DIAPHRAGM VALVES | LOW & HIGH PRESSURE

Ham-Let Group offers a wide variety of Ni-Co Alloy Ultra Clean Valves, in both high pressure and high flow varieties. Our campus houses both Class 10 and Class 100 clean rooms allowing us to produce High-Purity and Ultra High-Purity grade valves.



**Compact Model-2LE**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C

**Flow Control-2LM**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C

**Standard Model-2LD**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C

**3/4" High Flow-2LDS12**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C

**Low Pressure-EV**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C

**General Purpose EVZ**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 80°C

**High Pressure Valve 2LH**  
MAWP: 15.9 MPa (2300 Psi)  
MAWT: -10 to 60°C

**High Pressure High Flow 2LS**  
MAWP: 21 MPa (3060 Psi)  
MAWT: -10 to 40°C

**High Pressure Standard Model EVH**  
MAWP: 15.9 MPa (2300 Psi)  
MAWT: -10 to 60°C

**Standard Model Metal Seat 3LD**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 150°C



**High Temp. Metal Seat 3LT**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 250°C



**Compact Model Metal Seat 3LE**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 150°C



**High Pressure High Flow Metal Seat 3LS**  
MAWP: 21 MPa (3060 Psi)  
MAWT: -10 to 150°C



**High Pressure Metal Seat 3LH**  
MAWP: 21 MPa (3060 Psi)  
MAWT: -10 to 150°C



**Metal Diaphragm Manual Handle HM**  
MAWP: Up to 300 Psi  
MAWT: -10 to 60°C



**Metal Diaphragm Air Operated HM**  
MAWP: Up to 300 Psi  
MAWT: -10 to 60°C



**Surface Mount HMS**  
MAWP: Up to 150 Psi  
MAWT: -10 to 60°C



**Compact Surface Mount HMSC**  
MAWP: Up to 150 Psi  
MAWT: -10 to 60°C



**Ultra Clean Metal Diaphragm Valve HMC**  
MAWP: Up to 300 Psi  
MAWT: -10 to 60°C



**Air Operated Manual Override (Hybrid) 2LN**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C



**Economic Diaphragm Valve HD**  
MAWP: Up to 300 Psi  
MAWT: -10 to 60°C



**High Pressure High Flow HP**  
MAWP: Up to 3060 Psi  
MAWT: -10 to 60°C



**Multi Port Monoblock Valve HMB**  
MAWP: Up to 150 Psi  
MAWT: -10 to 60°C



**Multi Port Monoblock Valve 2BE**  
MAWP: 1 MPa (150 Psi)  
MAWT: -10 to 60°C



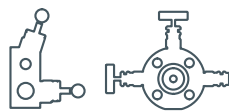
**Ultra Fast Diaphragm Valve UF/UFS**  
MAWP: Up to 150 Psi  
MAWT: -10 to 120°C



**Compact Welded Check Valve CMW**  
MAWP: 20.6 MPa (3000 Psi)  
MAWT: -10 to 80°C



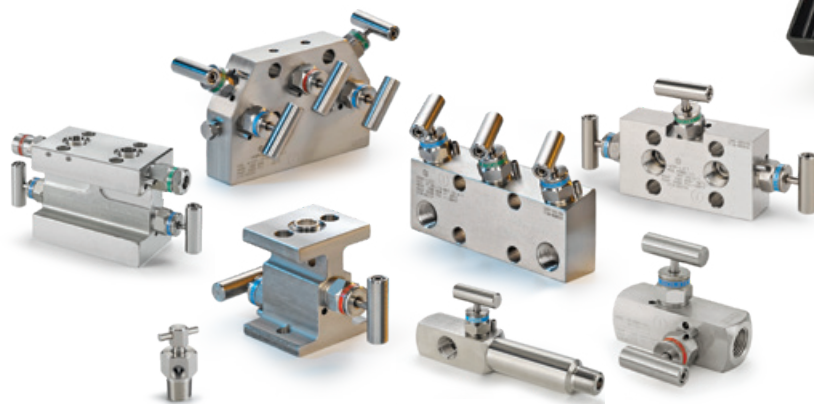




## MANIFOLDS INSTRUMENT ENCLOSURES & MONOFLANGE



The HAM-LET ASTAVA Line of Instrument Manifolds consists of a full range of 1, 2, 3, 4, and 5-way instrument manifolds, which are fully compatible with the requirements of the Oil & Gas and Petro-chemical industries, and meet the requirements of most pressure, differential level and flow applications.



With its wide variety of solutions, choice of materials, options for standard packing, and range of valve configurations and flow schemes, the HAM-LET ASTAVA line of manifolds will meet all your needs.

The HAM-LET ASTAVA line provides a total solution with a full range of instrument hook-ups including protection housings, heating, and junction boxes, all complying with international standards.

All 316 stainless steel construction with packing or O-ring concept.

Other material options are available as standard.

NACE MR-01-75 as standard.

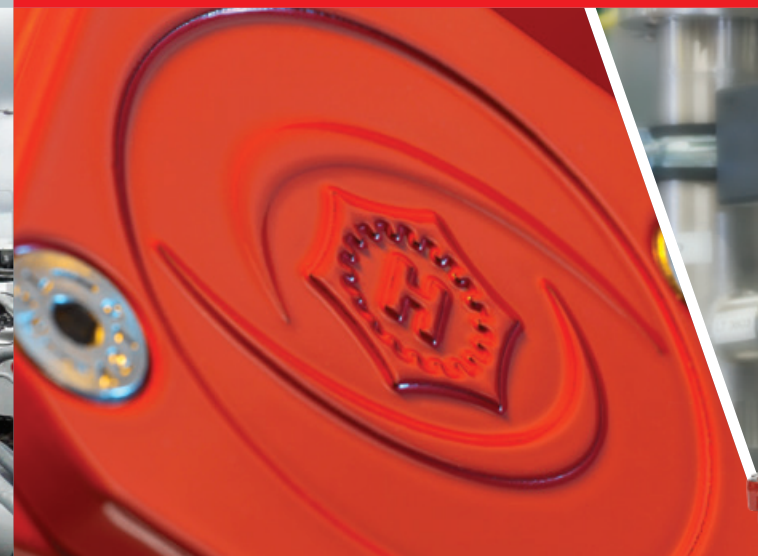
Working pressures up to 9000 psig.

Temperatures up to 600°C with Grafoil® packing.

**HAM-LET ASTAVA**



## HAM-LET PNEUMATIC ACTUATORS



### HAM-LET PNEUMATIC ACTUATORS



Ham-Let Group offers a variety of Pneumatic Rack and Pinion Actuators that feature improved operational speed, enabling better valve opening and closing control.

**90° Actuation for 2-way valves (Straight & Angle)**

**180° Actuation for 3-way (T-type) valves**

- Actuators comply with industry standards for interface with ISO 5211, NAMUR and VDI/VDE 3845.
- ATEX certification of our Valves-Actuator assemblies is available.
- Standard Temperature range: -32°C to 90°C (-25.6°F to 194°F)

#### Optional:

- High Temperature: -30°C to 120°C (-22°F to 248°F)
- Low Temperature: -50°C to 80°C (-58°F to 176°F)
- Limit switches, proximity sensors, position indicators, pilot
- valves and other accessories are available upon request.

### ACCESSORIES KITS



**Inductive limit switch**  
for visual and electric indication of actuator position  
voltage: 8V DC, Enclosure IP67



**Electric actuator**  
has been designed to control valve with 90 deg rotation 15W, IP66.  
Option 1: 90-240V, 50/60HZ, 90-350V DC,  
Option 2: 15-30V, 50/60HZ, 12-48V DC



**Solenoid valve,**  
attached to the actuator to create an electro pneumatically actuated ball valve. DC 24V, 2.5W 4/2 Way for double acting and spring return. Enclosure IP65  
Options: 110VAC, 50HZ and 3/2, 5/2 Way.



**ATEX mechanical limit switch**  
for use in hazardous locations zone 2, temp range (-20°C to 60°C) (-4°F to 140°F) ATEX Inductive limit switch is available as an option.

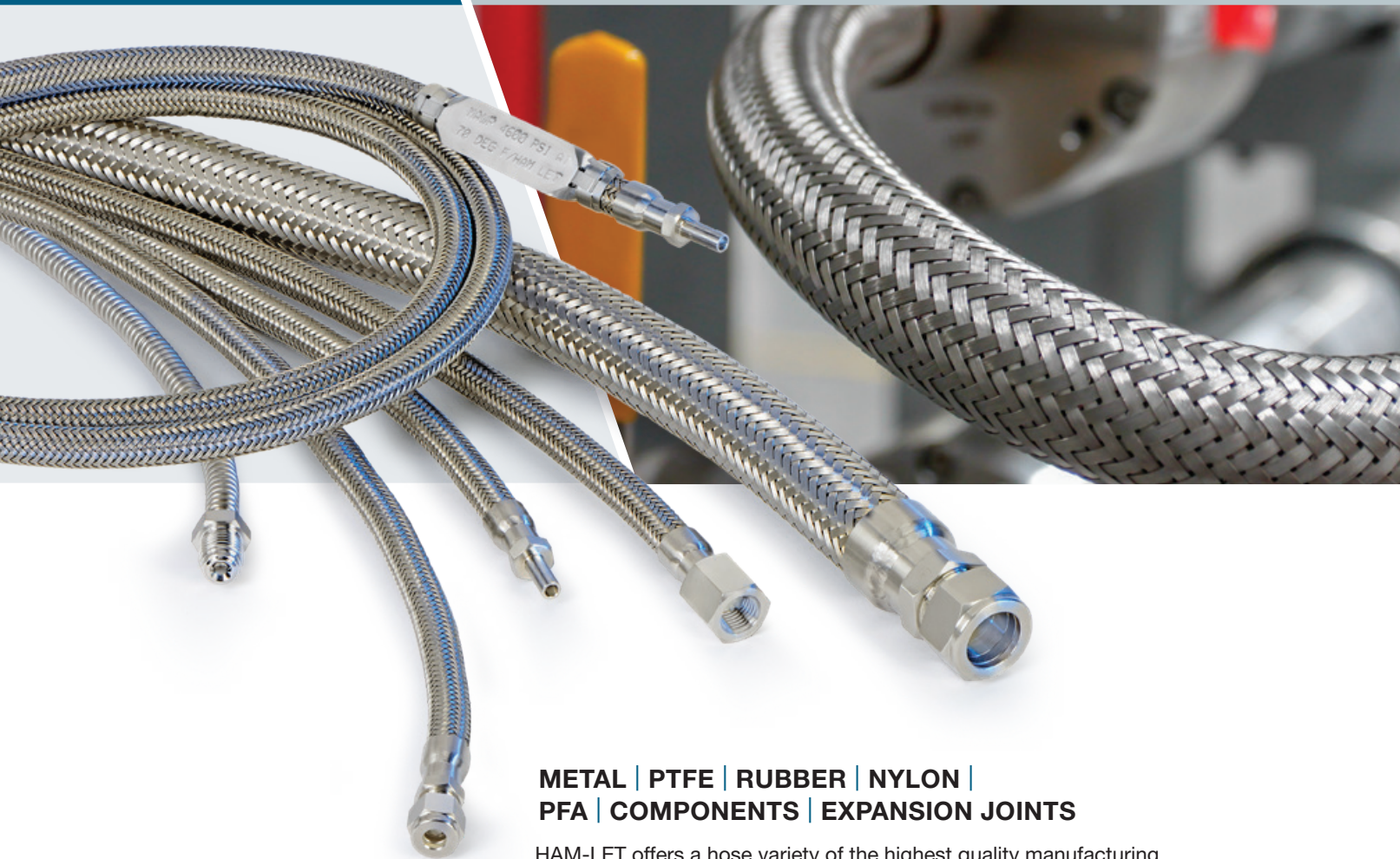


**90 degree Stainless Steel pneumatic actuator,** operating pressure max. 8 bar (116 PSI). Standard working temperature -32°C to 90°C (-25.6°F to 194°F)





## HAM-LET HOSES



**METAL | PTFE | RUBBER | NYLON |  
PFA | COMPONENTS | EXPANSION JOINTS**

HAM-LET offers a hose variety of the highest quality manufacturing methods and materials, that fully support the high demands of industrial, instrumentation, and OEM requirements.

### Ham-Let Hoses End Connections



LET-LOK®



Tube Adapter



ONE-LOK®



UH Line



Male NPT



Male BSPP



Female NPT



Female BSPP



Butt Weld



Male Face  
Seal Swivel



Female Face  
Seal Swivel



Male  
JIC 37° Flare



Female  
JIC 37° Flare



## HAM-LET INDUSTRIAL MECHANICAL PRESSURE GAUGES



### Full line of industrial and process mechanical pressure gauges

The mechanical pressure gauges are measuring devices, designed to meet the highest quality standards and operation methods. The gauges guarantee long life with durability for in-door and out-door industrial, process and instrumentation applications.

### IMP Products range comprises of 11 product series:



Heavy Duty series,  
bayonet ring.

#### IMPH

Case sizes: 40, 63, 100,  
160mm (1½", 2½", 4", 6")



General-Use series  
Crimped-on ring.

#### IMPG

Case sizes: 50, 63, 100,  
160mm (2", 2½", 4", 6")



Safety Pattern series  
bayonet ring, break-proof  
solid front and a pressure  
relief back.

#### IMPS

Case sizes: 63, 100, 160mm  
(2½", 4", 6")



Process series,  
thermoplastic case.

#### IMPP

Case sizes: 4½" (115 mm)  
Vacuum - 1,000 bar (15,000 psi)



Low Pressures series,  
capsule mechanical device.

#### IMPL

Case sizes: 63, 100, 160mm  
(2½", 4", 6")



Machinery series specially  
designed and constructed  
for different machineries  
and industrial settings.

#### GMPPM

Case sizes: 50, 63,  
100mm (2", 2 1/2", 4")

#### GMPPH

Case sizes: 40, 63, 100,  
160mm (1½", 2½", 4", 6")

#### GMPPG

Case sizes: 50, 63, 100mm  
(2", 2½", 4")

#### GMPPS

Case sizes: 100, 160mm  
(4", 6")

#### GMPP

Case size: 4½" (115 mm)

Utility series designed  
and constructed for use  
in varied applications and  
utilizations.

#### GMPPU

Case sizes: 40, 50, 63,  
100mm (1 1/2", 2", 2  
1/2", 4")

### HAM-LET Pressure Gauges Process Connections



HAM-LET Tube adapter



HAM-LET Face Seal  
Male swivel



HAM-LET Face Seal  
Female swivel



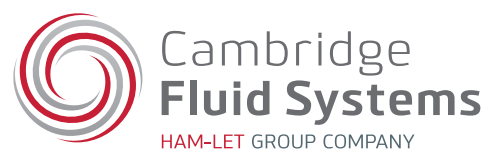
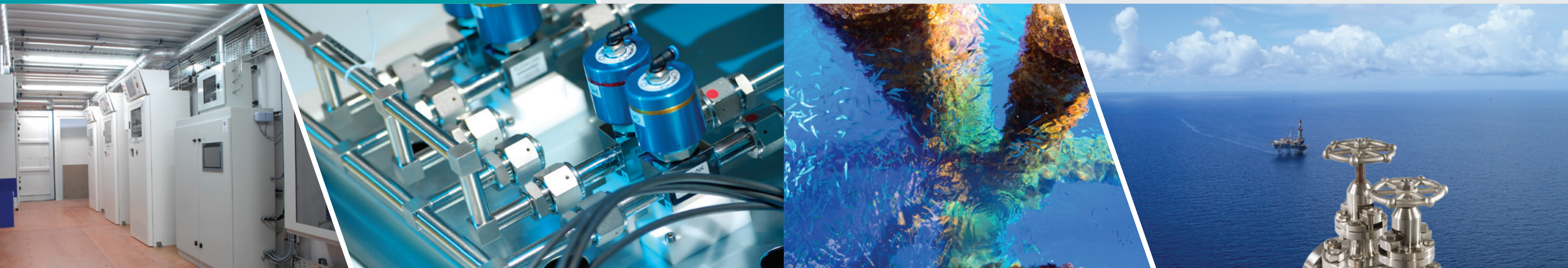
BSP-P Thread



NPT Thread







Cambridge Fluid Systems is a supplier of equipment and services for Ultra High Purity Gas Solutions. We can provide repeatable fabrication or unique one-off solutions to your specifications, supplied as system parts or installed into an existing facility.

Cambridge Fluid Systems specializes in sophisticated, fabricated gas and fluid control systems. We are fluid engineering experts with extensive industrial and systems engineering experience.

#### Capabilities:

- Procurement and supply chain management
- Industrial Engineering (Mechanical, Electrical, Software, DFMA, Value added engineering, Concurrent product development, Embedded engineering development)
- Complex Integration (Automation, Power distribution, Modules, Controls, Ultra high purity gas & liquid delivery, Full functional integrity testing, Electrical, Vision systems)
- Fabrication (Frames, Sheet metal, Machining, Welding)
- Analytical Testing (Ground bond, Hi pot, Communications, Mass flow technology test, Particle testing, Helium inert gas leak testing, Life cycle/marathon, Power)
- Installation (3D modelling and infrastructure layout, liquid & gas installation, exhaust/drainage systems)

**Products:** Extracted VMB's, Gas handling units, Gas detection systems, Gas mixing pods, Gas delivery units for seismic research, Extraction systems, Ultra High Purity Gas Panels, Ultra High Purity Gas Manifolds



Acquired by Ham-Let Group in September 2016 Norvalves is an innovative fast-track valve manufacturer, supplying the oil and gas industry. Norvalves valves are designed for the tough challenges in the North Sea and fulfill all the required standards for almost all installations.

#### Subsea Valves:

Valves for the subsea industry, machined from bar or forged bar material, giving unique production flexibility. Designed to last in a subsea environment up to 40 years.

**Types:** Ball Valve, Rotary Gate Valve, Check Valve, DB&B with receptacle, connectors

#### Topside valves:

Valves designed and manufactured in-house with high precision and short lead time according to international standards such as: ANSI, API, EN, and more.

**Types:** Ball Valve, Globe Valve, Gate Valve, Check Valve, Double Block & Bleed, Safety Valve, Needle Valve, Strainer, Modular Injection Valve







PRODUCTS ENGINEERING

HAM-LET QUALITY



NGV distribution manifold



Miniature optimized ball valve manifold for precise gas sampling



Special DBB for precise gas sampling



High temperature, fully submersible UCV (200°)



NGV receptacle hub manifold



Tailor made UCV Manifold.

Research & Development is a core value at Ham-Let Group. Ham-Let's global R&D department is spread across seven countries, allowing us to work worldwide on innovative solutions.

Ham-Let values in development are customer application oriented. We see strength in helping our customers, who we see as partners, succeeding while using our innovation. We work to create innovative answers to any challenge our partners may face. Ham-Let Group houses labs with advanced equipment, paired with high-level testing capabilities, ensuring that our products are of the highest quality. We also feature finite element and CFD analytics capabilities.

We look forward to working with you, to create innovative solutions.



Quality is an integral part of the development, engineering, production and planning processes at the HAM-LET Group. It is incorporated into the project starting from raw materials inspection, followed by ongoing quality assurance during production using Statistical Process Control (SPC) 6 and Total Quality Management (TQM), and finally through testing of the final product before delivery.

HAM-LET Group quality levels meet the highest standards including: ISO 9001, Lloyds, DNV, S.A.E. CE (P.E.D.), ISO 15500, ECE Regulation 110, ASME Standards and ASTM Standards.







Notes:

Notes:



## HAM-LET VALVES & FITTINGS

Founded in 1950, HAM-LET Group specializes in the design, development production and marketing of high quality instrumentation valves and fittings in a wide variety of materials for high pressure, high temperature and vacuum applications. An accent on quality combined with ongoing research and development has given the company an international reputation for excellence. As a result, HAM-LET Group today is the fastest growing company in this industry. We are Totally Committed to our customers providing highest quality products and best of breed service. Our products are used around the world in a wide range of industries, including Energy, Oil & Gas, Ground Turbines, Chemical and Petrochemical, CNG/NGV, Semiconductor, Analytical and others.

### Ham-Let Group's global presence

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Mail: usa@ham-let.com

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Fax: +31 522237040  
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