

# GCTEC®

ULTRA - HIGH PURITY VALVES & FITTINGS



GCTEC®  
ADVANCED CONTROL TECHNOLOGY



### Connector (VCR) ←

Size : 1/8 to 1 inch←

Material : SS316L, SS316LVAR←

- Allows leak-free sealing from vacuum to positive pressure range.←
- Offers high purity (BA grade) and ultra-high purity (EP grade) connectors.←
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity.←



### Ultra-High Purity Inert Connector ←

Size : 1/8 to 1 inch←

Material : SS316L, SS316L VAR, SS316L VIM-VAR←

- Suitable for manual and automated welding equipment.←
- Designed for small ferrule systems.←
- Allows for compact component proximity.←
- Provides flow and usage levels equivalent to large welded joints.←
- Offers high purity (BA grade) and ultra-high purity (EP grade) connectors.←
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity



## Ultra-High Purity Diaphragm Valve

Size : 1/4 to 3/4 inch

Material : SS316L, SS316L VAR, SS316L VIM-VAR

Operating Pressure : Low pressure 150psig, High pressure 3045psig

- Offers manual and pneumatic diaphragm valves.
- Internally electro-polished finish with a surface roughness of up to Ra 5µin.
- Offers high purity (BA grade) and ultra-high purity (EP grade) products.
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity.
- Every product undergoes helium leak test before being released to market.



## Ultra-High Purity Cylinder Connector (

Material : SS316L, SS316L VAR

- Offers a full range of CGA/DISS cylinder connectors.
- Provides gaskets made from nickel, PVDF, and PCTFE.
- Every product has a unique serial number, enabling full traceability.
- Offers high purity (BA grade) and ultra-high purity (EP grade) connector.
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity.



### Ultra-High Purity Pressure Regulator

Size : 1/4 to 1 inch  
Material : SS 316L, SS316L VAR  
Inlet Pressure Options : 300psig or 3500psig  
Outlet Pressure Options : 10, 30, 60, 100, 150psig

- Metal-to-metal diaphragm seal.
- Internally electro-polished finish with a surface roughness of up to Ra 5µin.
- Small internal volume.
- Provides high-flow pressure regulators.
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity.
- Every product undergoes helium leak test before being released to market.



### All-Welded High-Purity Check Valve

Size : 1/4 to 1/2 inch  
Material : SS 316L, SS 316L VAR  
Operating Pressure : 3045psig.

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- All-welded design ensures reliable/ stable fluid control in systems.
- Internally electro-polished finish with a surface roughness of up to Ra 5µin.
- Various end connection types available.
- High standard cleanliness assembly and packaging suitable for the semiconductor industry that requires ultra-high purity.
- Every product undergoes helium leak test before being released to market.



## Filter

**Size** : 1/8 to 1/2 in. and 3mm to 12mm

**Material** : SS 316L, Alloy, Brass

- Filtration accuracy of 0.1 microns.
- Available in straight-through and three-way filter designs.
- Straight-through filters can be used in space-restricted areas.
- Three-way filters allow inline filter element replacement without disassembling the body.



## Pressure Gauge

**Operating Pressure Options** : high or low pressure.

- Allows various end connections: VCJ connectors, threaded, ferrule, and ferrule tube welding.
- Provides two mounting options: axial back connection and radial connection.
- Imported Bourdon tubes available.
- Every product undergoes helium leak test before being released to market.



## Ferrule Fittings

**Size** : 1/16 to 2 in. and 2 mm to 50 mm

**Material** : SS 316, SS 316L, Alloy, Brass

- Designed with active load and dual ferrule.
- Easy to install correctly.
- Does not transfer torque to the ferrule tube during installation.
- Fully compatible and replaceable with imported ferrule fittings.



### Integral Ball Valve

Size : 1/16 to 3/4 in. and 3 mm to 12 mm

Material : SS 316L, Alloy

Operating pressure : 3000psig.

Temperature : 53 to 148°C

- Integral design with fewer leakage points, no dead zone, and allows bidirectional flow.
- Requires less installation space.
- Ball valve designed for fully open or fully closed positions.
- Every integral ball valve undergoes helium test at 1000psig before being released to the market.



### Integral Bonnet Needle Valve

Size : 1/8 to 3/4 in. and 3 mm to 12 mm

Material : SS 316L, Alloy

Operating Pressure : Up to 6000psig

Temperature : Up to 315°C.

- Compact design.
  - Every integral bonnet needle valve undergoes helium test at 1000psig before being released to the market.
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### **PTFE Hose**

End connection Size : 1/4 to 1 in. and 6 mm to 25 mm

Maximum Operating Pressure : 3000psig

- PTFE hose with anti-permeation feature.
- Smooth-bore PTFE inner tube.
- Custom lengths available.
- Various end connection types available.

### **Diaphragm Valves**

High-purity, cleanroom-compatible solutions.

### **High-Pressure Regulators**

Precision control for demanding applications.

### **Fittings & Connectors**

Stainless steel components ensuring zero leaks.



Contact us to discover our customized solutions.

# Ultra High-Precision & Purity Stainless Steel Tubes & Pipes



## AP - Stainless Steel Pickling Tube

Material : TP316L, 304L, 310S, 317L, 321H, 347H, UNS, S31803, S32205, S32750, etc. (Other materials available upon request)

Size Range : OD 6.00mm - OD 114.30mm

Product Description :

2 Types Available: Welded Stainless Steel Pickling Tubes and Seamless Stainless Steel Pickling Tubes.



## BA - Stainless Steel Bright Annealed Tube

Material : 316L, 304L, Hastelloy, and other alloys available upon request.

Size Range : 1/16" - 2", 10A - 40A

Surface Finish : BA-grade Ra value: 0.4 - 0.8 $\mu$ m

Cleaning & Packaging Description :

- All tubes undergo ultrasonic cleaning, followed by nitrogen purging, and are packaged with two end caps and single-layer PE packaging.
- 18M $\Omega$  deionized water cleaning at 25°C, nitrogen drying, and Class 1000 cleanroom packaging is available upon request.



### MP - Mechanically Polished Tube

Material : 316L, 304L, Hastelloy, and other alloys available upon request.

Size Range : 3/4" - 12", 10A - 400A

Surface Finish : MP Ra value: 0.4 - 0.8 $\mu$ m

#### Cleaning & Packaging Description:

- All tubes undergo mechanical polishing, ultrasonic cleaning, nitrogen purging, and are packaged with two end caps and single-layer PE packaging.
- 18M $\Omega$  deionized water cleaning at 25°C, nitrogen drying, and Class 1000 cleanroom packaging is available upon request.



### EP/MEP - Electro-Polished Stainless Steel Tube

Material : 316L, 304L, Hastelloy, and other alloys available upon request.

Size Range : (EP) 1/16" - 2", 10A - 40A

: (MEP) 3/4" - 12", 10A - 400A

Surface Finish : EP-grade (internally electro-polished tube) Ra value: 0.1 - 0.25 $\mu$ m

: MEP-grade (mechanically polished before electro-polishing) Ra value: 0.1 - 0.25 $\mu$ m

#### Product Description:

- Internal surface undergoes electro-polishing, removing oxidation layers and chromium depletion layers.
- Tube undergoes two acid pickling processes, followed by smooth surface formation and removal of oxide scale.

#### Cleaning & Packaging Description:

- All tubes undergo 18M $\Omega$  deionized water cleaning at 25°C, nitrogen drying, and Class 1000 cleanroom packaging.
- Packaged with nitrogen purging and single-layer PE packaging.



### **BEND FITTINGS - Pipe Fittings**

**Material** : BA (316L, 304L), EP (316L)

**Size Range** : 1/4" - 8", 10A - 300A

**Surface Finish** : BA Grade: Ra value < 0.4 - 0.8  $\mu\text{m}$   
EP Grade: Ra value < 0.1 - 0.25  $\mu\text{m}$

#### **Cleaning & Packaging:**

- All BA-grade fittings undergo ultrasonic cleaning, nitrogen purging, and are packaged with two end caps and single-layer PE packaging.
- All EP-grade fittings undergo 18M $\Omega$  deionized water cleaning at 25°C, nitrogen purging, and are packaged with two end caps and double-layer PE packaging.
- Class 1000 cleanroom packaging is available upon request.



### **KF Vacuum Pipe Fittings**

**Material** : 316L, Hastelloy, and other alloys available upon request.

**Size Range** : 1/8" - 1"

**Surface Finish** : BA Grade: Ra value < 0.4 - 0.8  $\mu\text{m}$   
EP Grade: Ra value < 0.1 - 0.25  $\mu\text{m}$

#### **Cleaning & Packaging Description :**

- All BA-grade fittings undergo ultrasonic cleaning, vacuum-sealed bag packaging.
  - All EP-grade fittings undergo 18M $\Omega$  deionized water cleaning at 25°C, nitrogen purging, and are vacuum-sealed in double-layer bags.
  - Class 1000 cleanroom packaging is available upon request.
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### ISO Vacuum Tube Fittings

Application : Vacuum Systems  
 Material : 304 or 316L  
 Flange Dimension : ISO63-630  
 Vacuum Range : 760 Torr -  $1 \times 10^{-3}$  Torr  
 Gasket Material : Fluorine rubber or nitrile rubber  
 Operating Temperature : -196°C to 450°C



### Vacuum Valve Series

Application : Vacuum Systems  
 Material : 304 or 316L  
 Operation : Manual, Pneumatic  
 Connection Types : KF, ISO, CF  
 Vacuum Range : 760 Torr -  $1 \times 10^{-3}$  Torr  
 Gasket Material : Fluorine rubber or nitrile rubber  
 Operating Temperature : -196°C to 450°C



### Vacuum Bellows

Material : 316L, 304L  
 Size Range : KF16-KF50, ISO63-ISO150  
 Connection : Flange connection, ferrule connection  
 Temperature Range : -30°C to 400°C  
 Application : Widely used in semiconductor vacuum systems

#### Product Description:

- Stainless steel bellows serve as flexible pipe components in vacuum pipelines, allowing positional adjustments and absorbing dynamic loads.
- Capable of vibration damping and is flexible, high-quality, corrosion-resistant, and high-temperature resistant.



### Three Piece Welding Valve

- Material : 316L, 304L
- Size Range : 1/2" - 8", 10A - 300A  
(250A and 300A are double flange ball valves)
- Connection Types : 5S automatic welding, 10S manual welding, flange connection, ferrule connection
- Operating Pressure : 1000PSI
- Operation : Handle and pneumatic
- Internal Polish & Surface Cleanlines : BA grade, Ra < 0.4 $\mu$ m, degreased
- Temperature Range : -40°C to 180°C (-40°F to 356°F)



### PANDA High-Pressure Flexible Hose

- Material : Inner and outer layers made of PVC (polyvinyl chloride), reinforced with high-strength polyester fiber
  - Size Range : 3/8", 1/2", 3/4", 1"
  - Connection Types : NJ, TJ, NTJ
  - Operating Pressure : 1000PSI
  - Temperature Range : -15°C to 50°C
  - Features : Flexible, clean, odorless, environmentally safe.
  - Application : Widely used in electronics and PCW cooling water systems.
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### Regulator Flange Series

Material : 316L, 304, Hastelloy  
Size Range : DN50 - DN2000 (customizable upon request)  
Connection Types : Threaded, welded, bolt-connected  
Output Pressure : PN10/PN16  
Temperature Range : -20°C to 150°C



### Flange Valve Series

Material : 316L, Hastelloy  
Size Range : 1/4" - 3/4" (customizable upon request)  
Connection Types : Ferrule, welded, threaded  
Maximum Input Pressure : 3000PSI  
Output Pressure Options : 0-25PSI, 0-50PSI, 0-1000PSI, 0-250PSI, 0-500PSI  
Temperature Range : -40°F to 165°F (-40°C to 74°F)