



Ultra High Purity Products

h i g h r q u a l i t y r
t r u s t r **W E** r i n n o
v a t i v e r p r e m i u
m r **C O N N E C T** r w e l
l m a d e r c h a l l e n
g e r s e r v i c e r a g
i l e r **T H E** r **W O R L D**
m a n u f a c t u r i n g
r g r o w t h w i t h u s

Ultra High Purity Products

Weld Fittings



- **Size** 1/4" to 1"
- **Surface finish** BA, EP
 - BA : Ra 10μin
 - EP : Ra 5μin
- **Material** SS316L, SS316L VAR
 - JIS G4303, 3214, 5121, 3459, 3463
 - ASTM A479, 276, 182, 351, 312, 269

DCR Fittings



- **Size** 1/4" to 1"
- **Surface finish** BA, EP
 - BA : Ra 10μin
 - EP : Ra 5μin
- **Material** SS316L, SS316L VAR
 - JIS G4303, 3214, 5121, 3459, 3463
 - ASTM A479, 276, 182, 351, 312, 269
 - Gasket material: Nickel, SS316L (ASTM B162, ASTM A167)

VC(Visual Check)DCR Fittings



- **Size** 1/4" to 1"
- **Material**
 - Female Nut : SS316 / SS316L
 - Gasket : SS316L / Nickel
- **Slotted Nut w / Installation check mark**
- **Gasket w / Material type**

Bend Fittings



- **Size** 1/2" to 6", 15A to 300A (up to 600A)
- **Surface finish** AP, MP, BA, EP
 - AP : Ra 40 ~ 100 μin
 - MP : Ra 15 ~ 20 μin
 - BA : Ra 15 ~ 28 μin
 - EP : Ra 5 ~ 10 μin

Diaphragm Valves(Low Pressure)



- **Size(Cv)** 1/4" to 3/4"(0.3, 0.7), 1/4"(0.27), 1/2" to 1"(2.8, 3.5)
- **Max Working** 145, 250, 270psig
- **Surface finish** AP, MP, BA, EP
 - AP : Ra 40~100μin
 - MP : Ra 15~20μin
 - BA : Ra 15~28μin
 - EP : Ra 5~10μin
- **Material** SS304, SS316L, SS316L VAR
 - Diaphragm : Ni-Co Alloy
 - Seat : PCTFE, PFA

Diaphragm Valves(High Pressure)



- **Size(Cv)** 1/4" to 1/2"(0.1, 0.8), 1/4"(0.2), 1/4"(0.14, 0.3)
- **Max Working** 3,000, 3,045, 3,500psig
- **Surface finish** BA, EP
 - BA : Ra 10μin
 - EP : Ra 5μin
- **Material** SS316L, SS316L VAR
 - Diaphragm : Ni-Co Alloy
 - Seat : PCTFE, PFA

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Regulators



- **Size(Cv)** 1/4"(0.04 or 0.2), 1/2"(0.5)
- High flow type: 1/2" to 3/4"
- **Max inlet pressure** 150, 600, 1000, 3500psig
- **Outlet pressure range** 30, 60, 100, 150, 250psig
- **Surface finish** BA, EP
- **Material** SS316L, SS316L VAR
- Diaphragm : Hastelloy C-22
- Seat : PCTFE, PI
- Poppet : SS316L, Hastelloy C-22
- Spring : SS316L, Inconel X750

Micro Regulators



- **Size(Cv)** 1/4"(0.04)
- High flow type: 1/4"(0.08)
- **Max inlet pressure** 150psig
- **Outlet pressure range** 30, 60, 100psig
- **Surface finish** EP
- **Material** SS316L VAR
- Diaphragm: Hastelloy C-22
- Seat: PCTFE
- Poppet: Hastelloy C-22
- Spring: SS316L

Bellows Valves (Low Pressure)



- **Size(Cv)** 1/4" to 1/2"(0.36, 1.1),
1/2" to 3/4"(2.0, 2.8)
 - **Working pressure** 145 psig
 - **Surface finish** BA, EP
- BA : Ra 10 μin
- EP : Ra 5 μin
 - **Material** SS316L, SS316L VAR
- Bellows : SS316L
- Seat : PCTFE
-

Forging Bellows Valves (Low Pressure)



- **Size** 15A~25A, 32A~50A
 - **Working pressure** 145 psig
 - **Surface finish** AP, BA, EP
- AP : Ra 40μin
- BA : Ra 10μin
- EP : Ra 5μin
 - **Material** SS304, SS316L, SS316L VAR
- Bellows : SS316L
-

Casting Bellows Valve (Low Pressure)



- **Size** 65A~300A (up to 500A)
- **Working pressure** 145 psig
- **Surface finish** AP, BA, EP
- AP : Ra 40μin
- BA : Ra 10μin
- EP : Ra 5μin
- **Material** SS304, SS316L, SS316L VAR
- Bellows : SS316L

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Check Valves



- **Size(Cv)** 1/4" to 1" (0.55~4.7)
- **Working pressure** 3,000, 4,700~6,000psig
- **Surface finish** BA, EP
- BA : Ra 10μin
- EP : Ra 5μin
- **Material** SS316L, SS316L VAR, HC276
- Seal : FKM, FFKM, EPDM, NEOPRENE

Key Lock Type Ball Valves



- **Size** Pipe : 15A, 20A, 25A / Female: 1/2", 3/4", 1"
- **Max Working** 1,000psig
- **Handle Type** KB(Blue), KR(Red), KBK(Black)
- **Material** SS316
- Seat : PTFE

VR Series Tube Fittings



- **Size** 1/4" to 1", 6 to 25 mm
- UHP applications: 1/4"~1", 6M~25M
- Instrument applications: 1/4"~1", 6M~25M
- **Material** SS316
- ASTM A276, A479
- ASME SA479, JIS G4303

Integrated Gas Systems



• Valves

Modular Substrate Components

- Pneumatic Valve
- Manual Valve
- Pneumatic Block Valve
- Check Valve
- Metering Valve
- Regulator

• Blocks & Gaskets

Modular Substrate Components

- Base Block
- Joint Block
- W-Seal & C-Seal Gasket
- Joint Bolt

Manufacturing Process

Process 1



DK-Lok Specification

Chemical Compositions	316L Stainless		316L Stainless VAR		Remark
	Spec	Act	Spec	Act	
S	0.005	0.001	0.003	0.001	Weldability
Mn	1.000	0.423	0.500	0.020	

Process 2



- Forging pressure : up to 1000 ton

Process 3



- CNC and MCT operation
- Six spindle lathe
- Five-axis machines with robotic arm

Process 4



- DK-Lok's own EP system inner surface Ra 5 μ in
- After EP, surface passivated

Process 5



- Ultrasonic hot DI water
- Electric-resistivity 18M Ω ·cm
- Final DI water cleaning, N2 Purge, and vacuum drying in a class 1000

Process 6



- Assembled in class 10

Process 7



Inspection

- Surface roughness measurement
- Particle counting test (ASTM F1394)
- Helium leak test (SEMA 90120391B-STD)
- Function & Cv testing
- Surface composition & chemical components (SEMA 91060573B, SEMA 90120430B-STD)
- Moisture analysis (SEMA 90120397B-STD)
- Redual oil content (≤ 0.01 mg/ft²)

Process 8

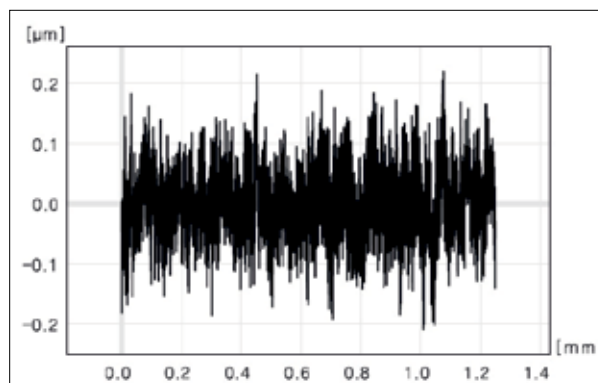


- Double packing in class 100

Inspection Testing

- Surface Roughness Measurement

Surface roughness affects the cleanliness of the UHP products. The wetted surface of fittings and valve bodies are prepared with electropolishing and passivation. Surface roughness is measured and controlled by SPC (Statistical Process Control) to ensure either EP grade (Ra 5 μm) or BA grade (Ra 10 μm).



- Particle Counting Test (ASTM F1394)

By using a laser particle counter, the particle testing is performed to verify the cleanliness of the fitting or valve. We measure/analyze particles above 0.1 μm in accordance with ASTM F1394.

• Test conditions

Particle inspection for EP grade only, Pressure 60 ~ 80 psig, N2 Gas 1 cfm.



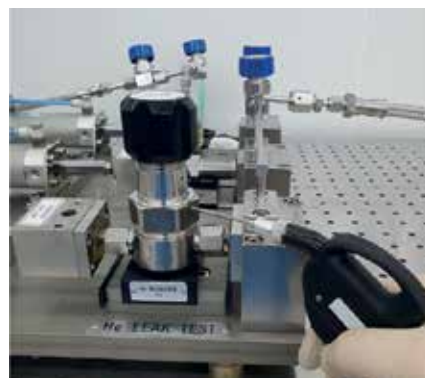
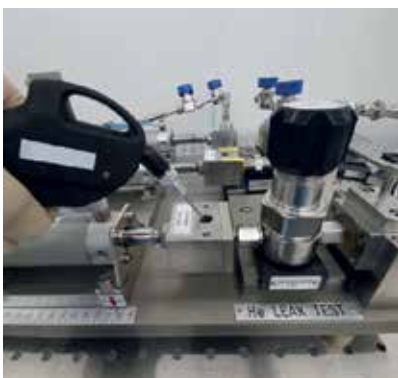
Inst Model	9110-01		
Serial #	91101722002		

Sample #	1034		
Start Time	12/5/2019, 13:53:55		
End Time	12/5/2019, 13:54:55		
Zone	None		
Location	Unknown		
Recipe	Default		
Sample Time	00:01:00		
Volume	28.3 L		
Instrument Status: OK			
Particle Counts:			
Size	Diff	Cumul	Alarm
0.10	2	3	
0.15	1	1	
0.20	0	0	
0.25	0	0	
0.30	0	0	
0.50	0	0	
1.00	0	0	
5.00	0	0	

Inspection Testing

- Helium Leak Test

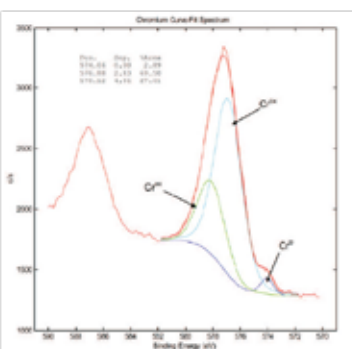
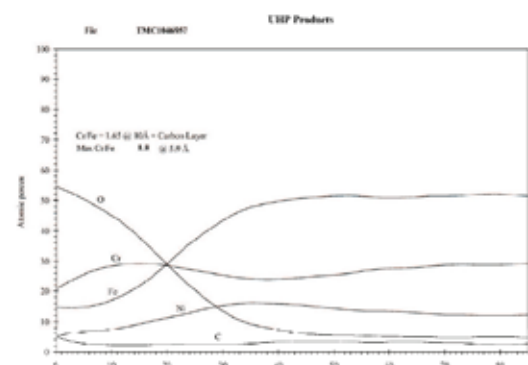
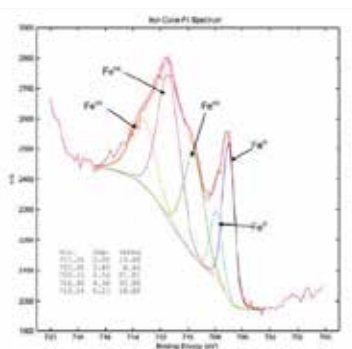
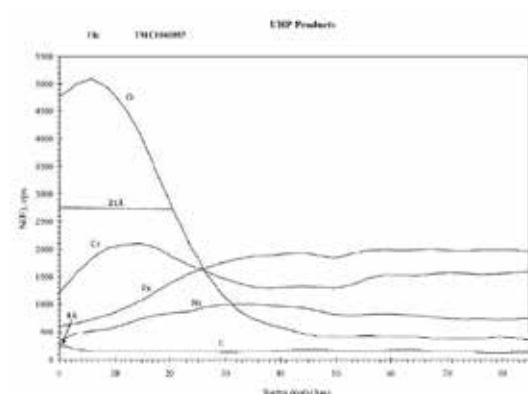
Primary function of a fitting or valve is to provide leak-free sealing in a fluid or gas system. Inboard and Outboard Helium Leak Testing, in accordance with SEMA 90120391M-STD, is performed on Metal Gasket Face Seal fittings & valves.



- AES (Auger Electron Spectroscopy) / XPS (X-ray Photoelectron Spectroscopy)

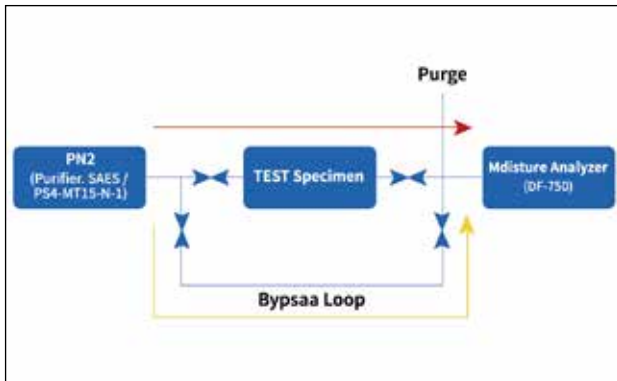
To verify electropolishing and passivation on electropolished surface, the Cr/Fe elemental ratio, Cr-oxide/Fe-oxide chemical species ratio and oxide layer thickness are measured by using AES and XPS.

In addition, the quantities of residual contaminants on the surface are measured. The test method is performed in accordance with SEMA 91060573B & SEMA 90120430B-STD.



- Moisture Analysis

Amount of moisture absorbed on the interior of product is measured/analyzed in accordance with SEMA 90120397B-STD. We maintain the residual oil contents of UHP product to equal or less than 0.01mg/ft2.



- Residual Oil Content

Maintains the residual oil contents of high purity clean product to equal or less than 0.01mg/ft2.



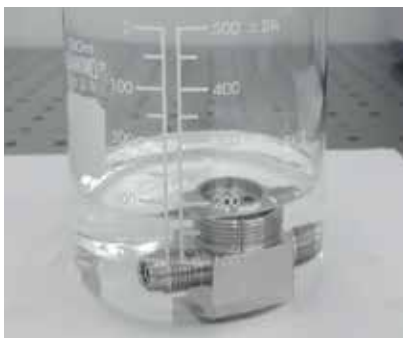
Grand 100ml



Auto Zero Calibration



Measure ment



VCD Body 150ml



Auto Zero Calibration



Measure ment

GLOBAL NETWORK



North America USA / Canada South America Mexico / Peru / Brazil / Ecuador / Chile / Bolivia EUROPE Germany
 / Swiss / Poland / Czech / Sweden / Norway / U.K. / Italy / Austria / Hungary / Finland / Spain / The Netherlands / Belgium /
 Luxembourg / Turkey / France / Russia MIDDLE EAST UAE / Saudi Arabia / Kuwait / Bahrain / Oman / Israel / Iraq ASIA
 Thailand / Malaysia / China / India / Singapore / Brunei / Indonesia OCEANIA New Zealand / Australia AFRICA Egypt

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