

Description

The types 601 and 602 are extremely compact valves with many features which make them ideal for pharmaceutical and bio-processing applications.

Tri-Canada

1000 Edgeley Blvd. #2, Vaughan, ON L4K 4V4
Tel: **905.677.9000** • Toll Free: **1.800.486.7863**
www.tricanada.com

Standard Features

- Compact design
- Ultem® 1000 handwheel, standard with type 601
- Stainless steel handwheel, standard with type 602
- Stainless steel bonnet with sanitary internals
- Internal adjustable travel stop (U.S. Pat. 5 377 956)
- Adjustable minimum flow regulator
- Autoclavable
- Visual position indicator
- FDA compliant diaphragms
- Body material 316L stainless steel
- Triclamp®, O.D. Tubing, ISO, and DIN end connections
- Sizes 1/4", 3/8", 1/2"

Available Options

Special connections

Hose barb, tube extensions, Swagelok®, Cajon VCR®, Ingold®, and others available upon request.

Fabrications

Cluster valve assemblies for both horizontal and vertical orientations, Zero Static T-valves, Duplex, Multiported, Bottle Sampling, Tank Bottom/Side Sampling, and custom fabrications upon request.

Materials

AL-6XN®, Hastelloy®, Titanium®, and others available upon request.

Typical Applications

- Pharmaceutical manufacturing
- Bioprocessing
- Cosmetic
- Brewery Service
- Food and Beverage
- Semiconductor
- High Purity Chemicals



Type 601



Type 602

Type 601/602 Technical Data

Size (In.)	Nominal bore (mm)	Operating pressure (psi)	C _v -value (gpm)		Body configuration D = straight through	Weight (lbs)	
			ISO Connection	O.D. Tubing		601	602
-	4	0 - 150		-	D	.35	.49
-	6	0 - 150		-	D	.35	.49
1/4	8	0 - 150		0.7	D	.35	.49
3/8	10	0 - 150		1.5	D	.35	.49
1/2	15	0 - 150		2.3	D	.35	.49

Max. perm. temperature of the operating medium: 302° F (150°C)
(Depending on diaphragm material)

The valve is completely sealed in both flow directions up to full operating pressure.

All pressure values are specified in psig.

Body Configuration	Ref.no.	Diaphragm material	Ref.no.																																																															
Tank bottom valve body 2-way valve body 2-way angled valve body Multiported valve body Zero Static T-Valve U-bend	B D E M T U	Ethylene-propylene Rubber for saturated steam max 302° F 2nd generation, modified PTFE with Ethylene-proplene backing Ethylene-propylene Rubber for saturated steam max 302° F	3A 5A 6A																																																															
Connection	Ref.no.	All diaphragms listed conform to the FDA code of Federal Regulations paragraph 177.2600 of section 21.																																																																
DIN DIN 11850/Series 1 DIN 11850/Series 2 DIN 11850/Series 3 Butt weld OD tubing Sizes 1/4-3/8" 20 gauge .035" wall Sizes 1/2-3" 16 gauge .065" wall Sizes 4" 14 gauge .083" wall	0 16 17 18 59	Control function	Ref.no.																																																															
Tri-clamp® O.D. Tubing by Triclamp® Extended O.D. Tubing Extended O.D. Tubing by Triclamp®	80 93 94 95	Manually operated	0																																																															
Body material	Ref.no.	Surface finish	Ref.no.																																																															
Investment cast body Stainless steel 316 L ± 1.4435 (BN2) Fe < 0.5% Stainless steel 1.4539 (UNS N 08904)	32 33	<table><tr><th colspan="2">μ-in.</th><th>BPE Surface Designation</th><th colspan="2">Ra Average [Note (1)]</th><th colspan="2">Ra Max</th></tr><tr><th colspan="2"></th><th></th><th>μ-in.</th><th>μm</th><th>μ-in.</th><th>μm</th></tr><tr><td>32</td><td>Mechanical</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>25</td><td>Mechanical</td><td>SFV3</td><td>25</td><td>0.625</td><td>30</td><td>0.750</td></tr><tr><td>20</td><td>E-pol</td><td>SFV6</td><td>20</td><td>0.500</td><td>25</td><td>0.625</td></tr><tr><td>20</td><td>Mechanical</td><td>SFV2</td><td>20</td><td>0.500</td><td>25</td><td>0.625</td></tr><tr><td>15</td><td>E-pol</td><td>SFV5</td><td>15</td><td>0.375</td><td>20</td><td>0.500</td></tr><tr><td>11</td><td>Mechanical</td><td>SFV1</td><td>15</td><td>0.375</td><td>20</td><td>0.500</td></tr><tr><td>10</td><td>E-pol</td><td>SFV4</td><td>10</td><td>0.250</td><td>15</td><td>0.375</td></tr></table>	μ-in.		BPE Surface Designation	Ra Average [Note (1)]		Ra Max					μ-in.	μm	μ-in.	μm	32	Mechanical						25	Mechanical	SFV3	25	0.625	30	0.750	20	E-pol	SFV6	20	0.500	25	0.625	20	Mechanical	SFV2	20	0.500	25	0.625	15	E-pol	SFV5	15	0.375	20	0.500	11	Mechanical	SFV1	15	0.375	20	0.500	10	E-pol	SFV4	10	0.250	15	0.375	3 1502 1508 1507 1537 1536 1516
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15	E-pol	SFV5	15	0.375	20	0.500																																																												
11	Mechanical	SFV1	15	0.375	20	0.500																																																												
10	E-pol	SFV4	10	0.250	15	0.375																																																												
Forged Body Stainless steel 316 L ± 1.4435 (ASTM A 182) Stainless steel 316 L ± 1.4435 (BN2) Fe < 0.5%	40 42	GENERAL NOTE: All Ra readings are taken across the grain. NOTE: (1) The average Ra is derived from two readings taken at different locations.																																																																
Machined block Stainless steel 316 L ± 1.4435 (ASTMA 479)	41	Special Versions	Ref.no.																																																															
Special versions (Consult factory for special material reference numbers)	91	Special versions	UXXXX																																																															

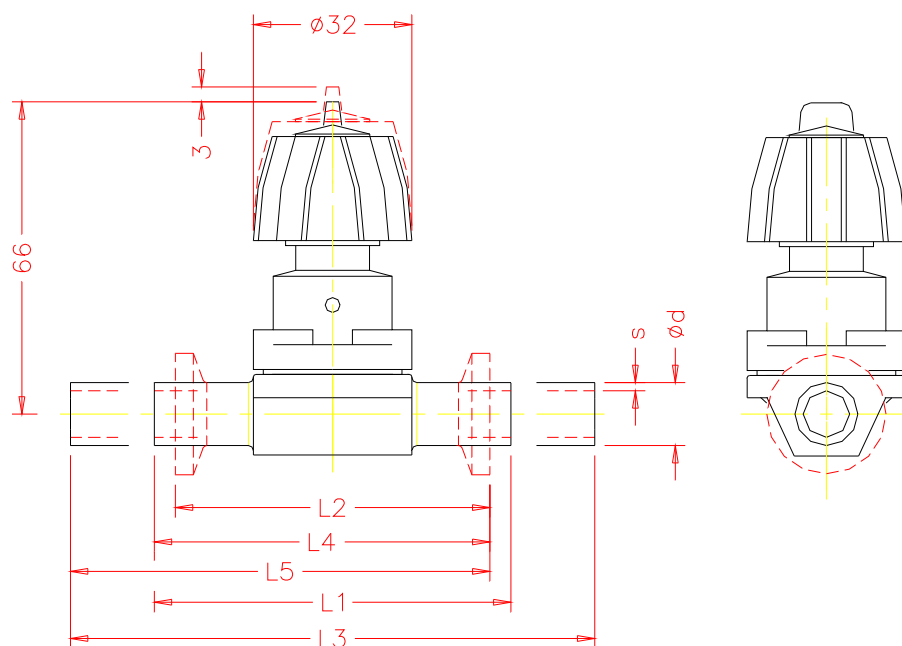
Order Example	-601	015	U	80	41	3A	0			040	94	1537		
Type of valve	-601													
Size DN		015												
Body configuration			U											
Connection (valve body)				80										
Body material					41									
Diaphragm material						3A								
Control function							0							
Actuator size														
Locking device														
Pipe main size										040				
Pipe main connection											94			
Surface finish												1537		
Special version (XXXX)														



DIN EN ISO 9001
Zertifikat: 09 100 542



Type 601/602 Dimensional Data



Take Out Dimension For Standard Connections

Size	DN	Units	Con. Ref. No.		(59)	(80)	(94)	(93)	(95)
			Ød	s	L1	L2	L3	L4	L5
1/4	8	mm	6.35	0.89	72.00	63.50	148.20	67.75	105.85
		in	0.250	0.035	2.835	2.500	5.835	2.667	4.167
3/8	10	mm	9.53	0.89	72.00	63.50	148.20	67.75	105.85
		in	0.375	0.035	2.835	2.500	5.835	2.667	4.167
1/2	15	mm	12.70	1.65	72.00	63.50	148.20	67.75	105.85
		in	0.500	0.065	2.835	2.500	5.835	2.667	4.167

L1 = Connection Code 59 = Standard butt-weld

L2 = Connection Code 80 = Standard clamp

L3 = Connection Code 94 = Standard butt-weld extension (AWF)

L4 = Connection Code 93 = Standard clamp X butt-weld

L5 = Connection Code 95 = Standard clamp X butt-weld extension (AWF)

Optional Spigot Dimensions

		DIN (0)	DIN Series 1 (16)		DIN Series 2 (17)		DIN Series 3 (18)		ISO (60)		O.D. Tubing (59)	
Size	DN	L ₁	s	Ø d	Ø d	s	Ø d	s	Ø d	s	Ø d	s
-	4	72	1	6	-	-	-	-	-	-	-	-
-	6	72	1	8	-	-	-	-	-	-	-	-
1/4"	8	72	1	10	-	-	-	-	13.5	1.6	.250	.035
3/8"	10	72	-	-	12	1	13	1.5	14	2	.375	.035
1/2"	15	72	-	-	-	-	-	-	-	-	.500	.065

Drain Angles

Size	DN	Degrees
1/4"	8	55°
3/8"	10	60°
1/2"	15	65°

Drain angles are for BS O.D. Tubing only.

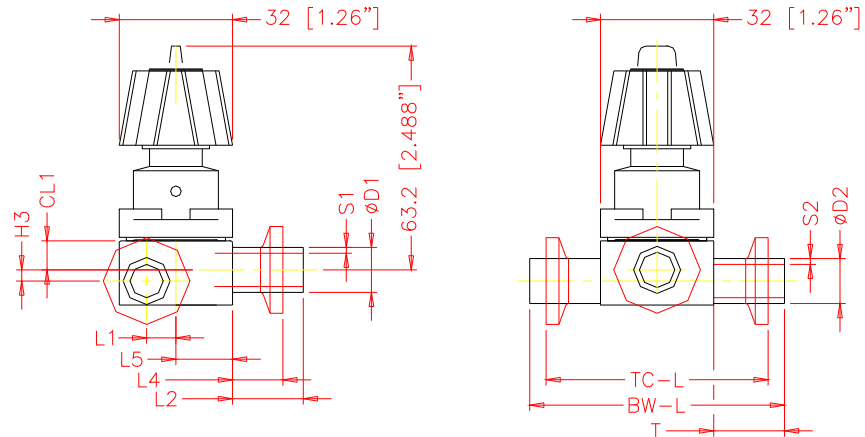
Type 601/602 Dimensional Data

Standard Features

- Sterile design
- Mechanical parts isolated from process
- Zero dead-leg with no bacteria entrapment
- Maximum drainage, leaving virtually no residue
- Body machined from 316L stainless steel solid bar stock or specified material
- Compact design
- Minimum tube length of 1.5" for automatic orbital welding

Typical Applications

- WFI point-of-use
- DI systems
- SIP (steam-in-place)
- CIP (clean-in-place)
- Sampling
- Product transfer
- Draining
- Diverting applications of critical process fluids



D1 x D2	Units	D1	s1	D2	s2	H3	L1	Code 59			Code 94			Code 80		
								L2	T	BW-L	L2	T	BW-L	L4	L5	TC-L
1/4 x 1/4	mm in	6.35 0.250	1.2 0.047	6.35 0.250	1.2 0.047	-0.02 0.0	5.4 0.2	20.0 0.8	20.0 0.8	72.0 2.8	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 1/2	mm in	6.35 0.250	1.2 0.047	12.7 0.500	1.65 0.065	3.15 0.1	8.2 0.3	20.0 0.8	20.0 0.8	72.0 2.8	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 3/4	mm in	6.35 0.250	1.2 0.047	19.05 0.750	1.65 0.065	6.33 0.2	11.7 0.5	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 1	mm in	6.35 0.250	1.2 0.047	25.4 1.000	1.65 0.065	9.5 0.4	15.3 0.6	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 1 1/2	mm in	6.35 0.250	1.2 0.047	38.1 1.500	1.65 0.065	15.85 0.6	22.3 0.9	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 2	mm in	6.35 0.250	1.2 0.047	50.8 2.000	1.65 0.065	22.2 0.9	29.4 1.2	20.0 0.8	30.0 1.2	92.0 3.6	38.1 1.5	44.5 1.8	120.9 4.76	19.7 0.8	16.0 0.6	71.4 2.8
1/4 x 2 1/2	mm in	6.35 0.250	1.2 0.047	63.5 2.500	1.65 0.065	28.55 1.1	36.4 1.4	20.0 0.8	30.0 1.2	92.0 3.6	38.1 1.5	44.5 1.8	120.9 4.76	19.7 0.8	16.0 0.6	71.4 2.8
3/8 x 1/2	mm in	9.525 0.375	1.2 0.047	12.7 0.500	1.65 0.065	3.15 0.1	8.2 0.3	20.0 0.8	20.0 0.8	72.0 2.8	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
3/8 x 3/4	mm in	9.525 0.375	1.2 0.047	19.05 0.750	1.65 0.065	6.33 0.2	11.7 0.5	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
3/8 x 1	mm in	9.525 0.375	1.2 0.047	25.4 1.000	1.65 0.065	9.5 0.4	15.3 0.6	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
3/8 x 1 1/2	mm in	9.525 0.375	1.2 0.047	38.1 1.500	1.65 0.065	15.85 0.6	22.3 0.9	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
3/8 x 2	mm in	9.525 0.375	1.2 0.047	50.8 2.000	1.65 0.065	22.2 0.9	29.4 1.2	20.0 0.8	30.0 1.2	92.0 3.6	38.1 1.5	44.5 1.8	120.9 4.76	19.7 0.8	16.0 0.6	71.4 2.8
1/2 x 1/2	mm in	12.7 0.500	1.65 0.065	12.7 0.500	1.65 0.065	3.15 0.1	8.2 0.3	20.0 0.8	20.0 0.8	72.0 2.8	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/2 x 3/4	mm in	12.7 0.500	1.65 0.065	19.05 0.750	1.65 0.065	6.33 0.2	11.7 0.5	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/2 x 1	mm in	12.7 0.500	1.65 0.065	25.4 1.000	1.65 0.065	9.5 0.4	15.3 0.6	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/2 x 1 1/2	mm in	12.7 0.500	1.65 0.065	38.1 1.500	1.65 0.065	15.85 0.6	22.3 0.9	20.0 0.8	25.0 1.0	82.0 3.2	38.1 1.5	38.1 1.5	108.2 4.26	19.7 0.8	16.0 0.6	71.4 2.8
1/2 x 2	mm in	12.7 0.500	1.65 0.065	50.8 2.000	1.65 0.065	22.2 0.9	29.4 1.2	20.0 0.8	30.0 1.2	92.0 3.6	38.1 1.5	44.5 1.8	120.9 4.76	19.7 0.8	16.0 0.6	71.4 2.8

TOL ±1mm Note: Dimension subject to change

		Size DN		1/4	3/8	1/2	3/4	1	1 1/2	2	2 1/2	3	4
				8	10	15	20	25	40	50	65	80	100
Order Example		-601	015	T	80	41	3A	0					
Type of valve		-601							040	94	1537		
Size DN			015										
Body configuration				T									
Connection (valve body)					80								
Body material						41							
Diaphragm material							3A						
Control function								0					
Actuator size													
Locking device													
Pipe main size								040					
Pipe main connection									94				
Surface finish										1537			
Special version (XXXX)													



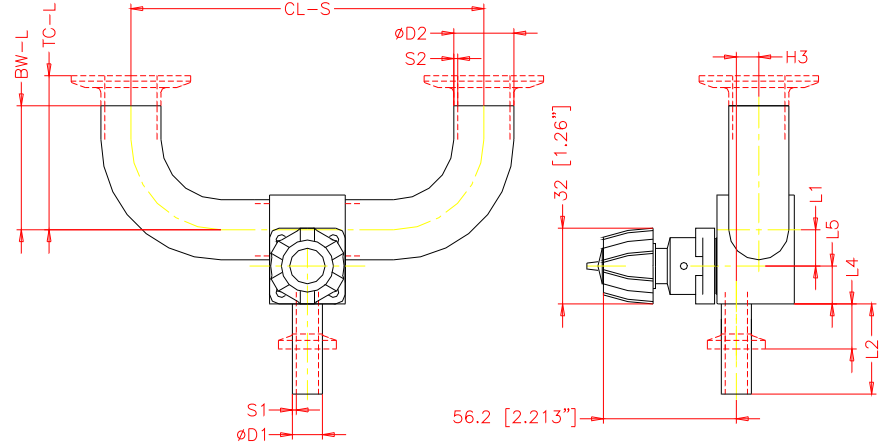
Type 601/602 Dimensional Data

Standard Features

- Sterile design
- Mechanical parts isolated from process
- Zero dead-leg with no bacteria entrapment
- Maximum drainage, leaving virtually no residue
- Body machined from 316L stainless steel solid bar stock or specified material
- Compact design
- Minimum tube length for automatic orbital welding

Typical Applications

- WFI point-of-use
- DI systems
- SIP (steam-in-place)
- CIP (clean-in-place)
- Sampling
- Product transfer
- Draining
- Diverting applications of critical process



								Code 59	Code 94					Code 94	Code 80
D1 x D2	Units	D1	s1	D2	s2	H3	L1	L2	L2	L4	L5	CL	BW-L	TC-L	
1/4 x 1/4	mm	6.35	1.2	6.35	1.2	-0.02	5.4	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.250	0.047	0.250	0.047	0.0	0.2	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
1/4 x 1/2	mm	6.35	1.2	12.7	1.65	3.15	8.2	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.250	0.047	0.500	0.065	0.1	0.3	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
1/4 x 3/4	mm	6.35	1.2	19.05	1.65	6.33	11.7	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.250	0.047	0.750	0.065	0.2	0.5	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
1/4 x 1	mm	6.35	1.2	25.4	1.65	9.5	15.3	20.0	38.1	19.7	16.0	198.4	76.2	50.8	
	in	0.250	0.047	1.000	0.065	0.4	0.6	0.8	1.5	0.8	0.6	7.8	3.0	2.0	
1/4 x 1 1/2	mm	6.35	1.2	38.1	1.65	15.85	22.3	20.0	38.1	19.7	16.0	236.5	95.3	69.9	
	in	0.250	0.047	1.500	0.065	0.6	0.9	0.8	1.5	0.8	0.6	9.3	3.8	2.8	
1/4 x 2	mm	6.35	1.2	50.8	1.65	22.2	29.4	20.0	38.1	19.7	16.0	287.3	120.7	88.9	
	in	0.250	0.047	2.000	0.065	0.9	1.2	0.8	1.5	0.8	0.6	11.3	4.8	3.5	
1/4 x 2 1/2	mm	6.35	1.2	63.5	1.65	28.55	36.4	20.0	38.1	19.7	16.0	325.4	139.7	108.0	
	in	0.250	0.047	2.500	0.065	1.1	1.4	0.8	1.5	0.8	0.6	12.8	5.5	4.3	
3/8 x 1/2	mm	9.525	1.2	12.7	1.65	3.15	8.2	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.375	0.047	0.500	0.065	0.1	0.3	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
3/8 x 3/4	mm	9.525	1.2	19.05	1.65	6.33	11.7	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.375	0.047	0.750	0.065	0.2	0.5	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
3/8 x 1	mm	9.525	1.2	25.4	1.65	9.5	15.3	20.0	38.1	19.7	16.0	198.4	76.2	50.8	
	in	0.375	0.047	1.000	0.065	0.4	0.6	0.8	1.5	0.8	0.6	7.8	3.0	2.0	
3/8 x 1 1/2	mm	9.525	1.2	38.1	1.65	15.85	22.3	20.0	38.1	19.7	16.0	236.5	95.3	69.9	
	in	0.375	0.047	1.500	0.065	0.6	0.9	0.8	1.5	0.8	0.6	9.3	3.8	2.8	
3/8 x 2	mm	9.525	1.2	50.8	1.65	22.2	29.4	20.0	38.1	19.7	16.0	287.3	120.7	88.9	
	in	0.375	0.047	2.000	0.065	0.9	1.2	0.8	1.5	0.8	0.6	11.3	4.8	3.5	
1/2 x 1/2	mm	12.7	1.65	12.7	1.65	3.15	8.2	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.500	0.065	0.500	0.065	0.1	0.3	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
1/2 x 3/4	mm	12.7	1.65	19.05	1.65	6.33	11.7	20.0	38.1	19.7	16.0	198.4	76.2	41.3	
	in	0.500	0.065	0.750	0.065	0.2	0.5	0.8	1.5	0.8	0.6	7.8	3.0	1.6	
1/2 x 1	mm	12.7	1.65	25.4	1.65	9.5	15.3	20.0	38.1	19.7	16.0	198.4	76.2	50.8	
	in	0.500	0.065	1.000	0.065	0.4	0.6	0.8	1.5	0.8	0.6	7.8	3.0	2.0	
1/2 x 1 1/2	mm	12.7	1.65	38.1	1.65	15.85	22.3	20.0	38.1	19.7	16.0	236.5	95.3	69.9	
	in	0.500	0.065	1.500	0.065	0.6	0.9	0.8	1.5	0.8	0.6	9.3	3.8	2.8	
1/2 x 2	mm	12.7	1.65	50.8	1.65	22.2	29.4	20.0	38.1	19.7	16.0	287.3	120.7	88.9	
	in	0.500	0.065	2.000	0.065	0.9	1.2	0.8	1.5	0.8	0.6	11.3	4.8	3.5	

TOL ±1mm Note: Dimension subject to change

Size	1/4	3/8	1/2	3/4	1	1 1/2	2	2 1/2	3	4
DN	8	10	15	20	25	40	50	65	80	100

Order Example	-601	015	U	80	41	3A	0			040	94	1537	
Type of valve	-601												
Size DN		015											
Body configuration			U										
Connection (valve body)				80									
Body material					41								
Diaphragm material						3A							
Control function							0						
Actuator size													
Locking device													
Pipe main size										040			
Pipe main connection											94		
Surface finish												1537	
Special version (XXXX)													



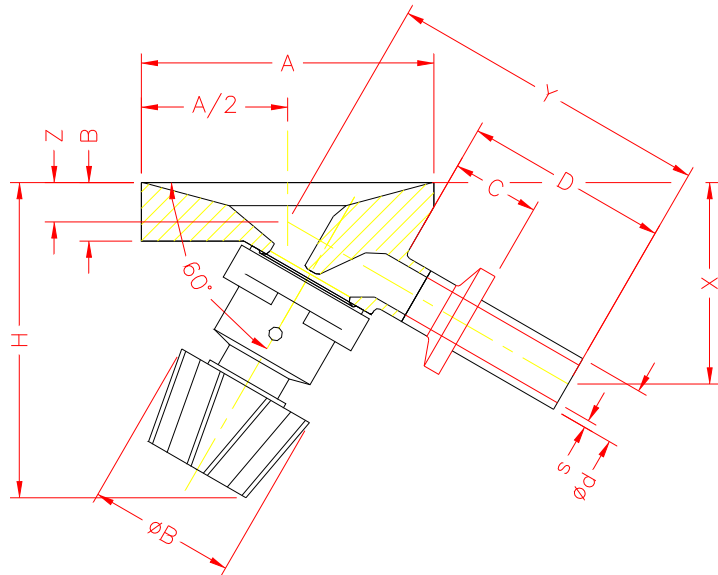
Type 601/602 Dimensional Data

Standard Features

- Sterile design
- Mechanical parts isolated from processes
- Designed to minimize fluid flow resistance
- Maximum drainage, leaving virtually no residue
- Pocket-free interior surface with no entrapment areas
- Body machined from 316L stainless steel bar stock ASME SA-479 (UNS S31 603)
- Complies with ASME Boiler & Pressure Vessel code requirements, section VIII Division #1

Typical Applications

- Media fill and transfer vessels
- CIP (clean-in-place) tanks
- Bioreactor & Fermentation vessels
- Water for Injection storage vessels (WFI)
- Sterile receivers
- Any process vessels used in pharmaceutical / bioprocessing applications



Connection Type	Size	DN		Ød	s	A	B	C	D	Y	X	Z	ØB	H
Code 59	1/4	8	mm	6.35	1.20	63.50	12.70	15.88	41.28	65.32	44.86	12.21	32.00	68.40
BS OD Tubing			in	0.250	0.047	2.500	0.500	0.625	1.625	2.571	1.766	0.481	1.260	2.693
Code 59	3/8	10	mm	9.53	1.20	63.50	12.70	15.88	41.28	66.23	43.48	10.37	32.00	68.40
BS OD Tubing			in	0.375	0.047	2.500	0.500	0.625	1.625	2.608	1.712	0.408	1.260	2.693
Code 59	1/2	15	mm	12.70	1.65	63.50	12.70	15.88	41.28	67.15	42.11	8.54	32.00	68.40
BS OD Tubing			in	0.500	0.065	2.500	0.500	0.625	1.625	2.644	1.658	0.336	1.260	2.693

TOL ±1mm Note: Dimension subject to change

Size	1/4	3/8	1/2	3/4	1	1 1/2	2	2 1/2	3	4
DN	8	10	15	20	25	40	50	65	80	100

Order Example	-601	015	B	80	41	3A	0						1537	
Type of valve	-601													
Size DN		015												
Body configuration			B											
Connection (valve body)				80										
Body material					41									
Diaphragm material						3A								
Control function							0							
Actuator size														
Locking device														
Pipe main size														
Pipe main connection														
Surface finish													1537	
Special version (XXXX)														



Type 601/602 Spare Parts

