

Description

The type 640 is an extremely compact pneumatically actuated valve with many features which makes it ideal for pharmaceutical and bio-processing applications.

Sanitary Diaphragm Valve

Pneumatically operated

Standard Features

- Stainless steel actuator - type 640
- Extremely compact design
- Sanitary internals
- Visual position indicator
- Maintenance-free piston actuator
- FDA compliant diaphragms
- Body material 316L stainless steel
- Triclamp®, O.D. Tubing, ISO, and DIN end connections
- Sizes 1/4" - 2"

Available Options

- Electrical limit and proximity switches
- Stroke limiter
- Pneumatic and electro-pneumatic positioners
- Autoclavable
- Field bus valve interface module
- Safety packing available upon request

Special connections

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

Fabrications

Cluster valve assemblies for horizontal and vertical orientations, Bottle 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 640

Type 640 A00 A0 A1 A5 Technical Data

Size Diameter (in)	Nominal Diameter (mm)	Body configuration D = straight through	C _v - value (gpm, OD Tubing)				Control pressure (psi)	Weight (lbs)			
			A 00	A 0	A 1	A 5		A 00	A 0	A 1	A 5
1/4	8	D	0.7	-	-	-	60-90psi CF-1, 40-60psi CF-2+3	.66	-	-	-
3/8	10	D	1.5	2.6	-	-		.66	2.4	-	-
1/2	15	D	2.3	2.6	-	-		.68	2.5	4.6	-
3/4	20	D		4.4	5.1	-			2.9	4.9	-
1	25	D			14.3	-				5.5	14.1
1 1/2	40	D				34.5					15.2
2	50	D				59.2					18.7

All pressures values are specified in psi above atmospheric. C_v values may be different according to body, diaphragm and connection variants. Please see out data sheet "Technical Information"
* Consult Factory

Body Configuration	Ref.no.	Diaphragm material	Ref.no.
Tank bottom valve body	B	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 3A
2-way valve body	D		
2-way angled valve body	E	2nd generation, modified PTFE with Ethylene-propylene backing	TFM/EPDM 5A
Multiported valve body	M		
Zero Static T-Valve	T		
U-bend	U	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 6A
		2nd generation, modified Teflon® with Ethylene-propylene backing 2-piece molded closed	TFM/EPDM 5E
		2nd generation, modified Teflon® with Silicone backing 2-piece molded closed	TFM/VMQ 5S
		Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 13
		Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 16
		2nd generation, modified Teflon® with Ethylene-propylene backing (2-piece)	TFM/EPDM 50
		2nd generation, modified Teflon® with Ethylene-propylene backing	TFM/EPDM 52

Connection	Ref.no.	Diaphragm material	Ref.no.
DIN	0		
DIN 11850/Series 1	16		
DIN 11850/Series 2	17		
DIN 11850/Series 3	18		
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	59	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 13
Schedule 10 pipe	63	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 16
Tri-clamp®	80	2nd generation, modified Teflon® with Ethylene-propylene backing (2-piece)	TFM/EPDM 50
O.D. Tubing by Triclamp®	93	2nd generation, modified Teflon® with Ethylene-propylene backing	TFM/EPDM 52
Extended O.D. Tubing	94		
Extended O.D. Tubing by Triclamp®	95		

Body material	Ref.no.	Control function	Ref.no.
Investment cast body Stainless steel 316 L \pm 1.4435 (BN2) Fe < 0.5%	32	Normally closed	1
Stainless steel 1.4539 (UNS N 08904)	33	Normally open*	2
		Double acting*	3
Forged Body Stainless steel 316 L \pm 1.4435 (ASTM A 182)	40		
Stainless steel 316 L \pm 1.4435 (BN2) Fe < 0.5%	42		
Machined block Stainless steel 316 L \pm 1.4435 (ASTMA 479)	41		
Special versions (Consult factory for special material reference numbers)	91		

All diaphragms listed conform to the FDA code of Federal Regulations paragraph 177.2600 of section 21.

A = The following diaphragm materials are identical:
12 & 2A, 13 & 3A, 16 & 6A, 52 & 5A

Diaphragms with code "A" are only suitable for valve types:
601, 602, 603, 605, 618, 641 and 640 (dependent on valve and actuator size)

*Check with factory for availability

Surface finish		BPE Surface Designation		Ra Average [Note (1)]		Ra Max		Ref.no.
μ -in.		μ -in.	μ m	μ -in.	μ m	μ -in.	μ m	
32	Mechanical	SFV3	25	0.625	30	0.750	1502	3
25	Mechanical	SFV3	25	0.625	30	0.750	1502	1502
20	E-pol	SFV6	20	0.500	25	0.625	1508	1508
20	Mechanical	SFV2	20	0.500	25	0.625	1507	1507
15	E-pol	SFV5	15	0.375	20	0.500	1537	1537
11	Mechanical	SFV1	15	0.375	20	0.500	1536	1536
10	E-pol	SFV4	10	0.250	15	0.375	1516	1516

GENERAL NOTE: All Ra readings are taken across the grain.
NOTE: (1) The average Ra is derived from two readings taken at different locations.

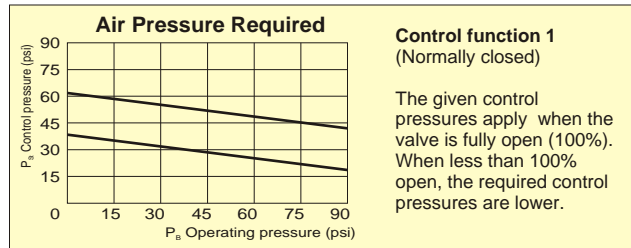
Actuator Size	Ref.no.
640 (1/4" - 1/2")	00
640 (3/8" - 3/4")	0
640 (1/2" - 1")	1
640 (1-1/4" - 2")	5

K-Numbers	Ref.no.
Special versions	UXXXX

Type 640 A00 A0 A1 A5 Technical Data

Flow Medium
 Max. Permissible temperature of working medium: 302° F
 (Depending on diaphragm material)

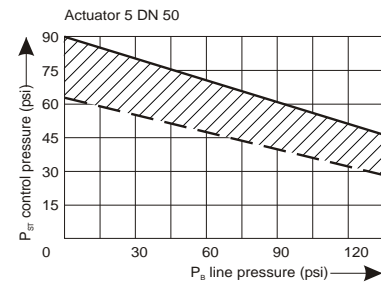
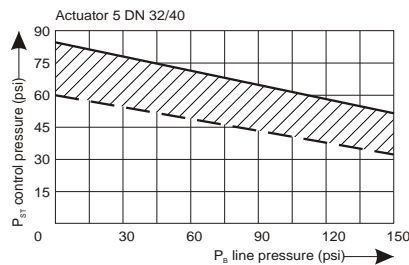
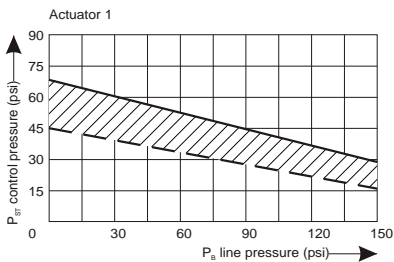
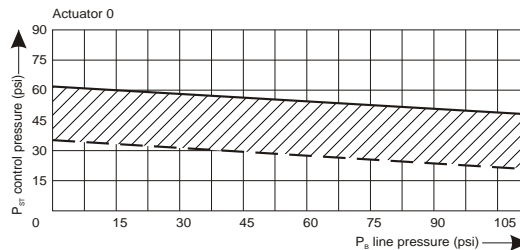
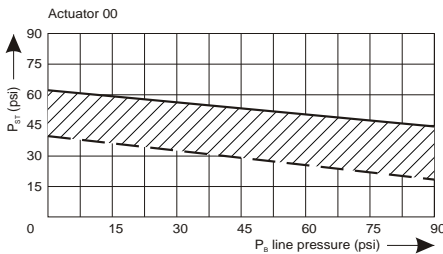
Control medium
 Max. Perm. Temperature of the pilot medium: 104° F
 Filling volume:
 A00 3.7 cu in.
 A0 12.8 cu in.
 A1 40.3 cu in.
 A5 150.7 cu in.



Pressure Ratings

Actuator Size		00		0		1		5	
Valve Size		EPDM	PTFE	EPDM	PTFE	EPDM	PTFE	EPDM	PTFE
DN	Inch	S		S		S		S	TFM
4	-	0 - 118	0 - 90						
6	-	0 - 118	0 - 90						
8	1/4	0 - 118	0 - 90						
10	3/8	0 - 118	0 - 90	0 - 150	0 - 120				
15	1/2	0 - 118	0 - 90	0 - 150	0 - 120	0 - 150	0 - 90		
S15*	S1/2*			0 - 113					
20	3/4					0 - 150	0 - 90		
S20*	S3/4*					0 - 150			
25	1					0 - 150	0 - 90		
32	1-1/4							0 - 150	0 - 90
40	1-1/2							0 - 150	0 - 90
50	2							0 - 120	0 - 75

*Actuators are interchangeable with Saunders valve bodies



Order Example	-640	025	D	80	40	13	1	1			1537
Type of valve	-640										
Size DN		025									
Body configuration			D								
Connection (valve body)				80							
Body material					40						
Diaphragm material						13					
Control function							1				
Actuator size								1			
Locking device											
Pipe main size											
Pipe main connection											
Surface finish											1537
Special version (XXXX)											

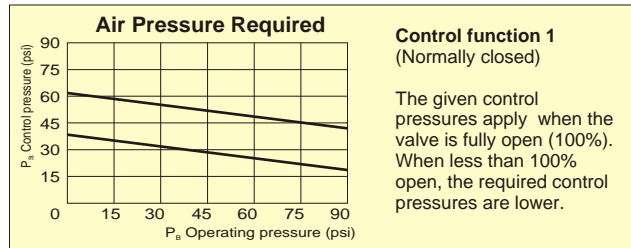


GEMÜ® VALVES, ACTUATORS AND CONTROL SYSTEMS

Type 640 A00 A0 A1 A5 Technical Data

Flow Medium
 Max. Permissible temperature of working medium: 302° F
 (Depending on diaphragm material)

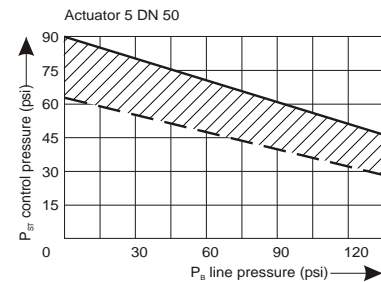
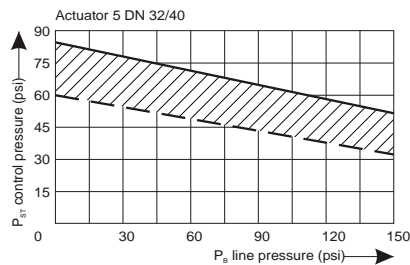
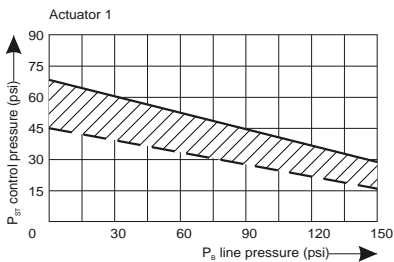
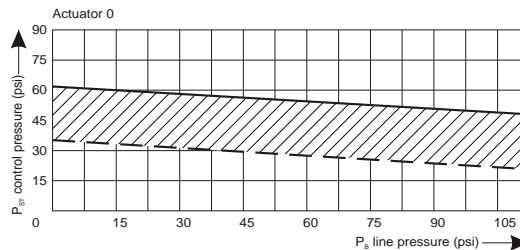
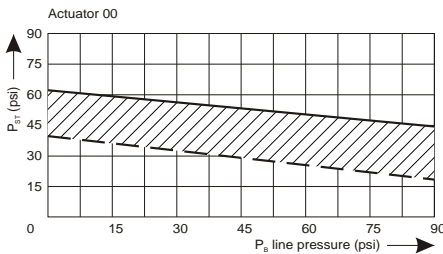
Control medium
 Max. Perm. Temperature of the pilot medium: 104° F
 Filling volume:
 A00 3.7 cu in.
 A0 12.8 cu in.
 A1 40.3 cu in.
 A5 150.7 cu in.



Pressure Ratings

Actuator Size		00		0		1		5	
Valve Size		EPDM	PTFE	EPDM	PTFE	EPDM	PTFE	EPDM	PTFE
DN	Inch	S		S		S		S	TFM
4	-	0 - 118	0 - 90						
6	-	0 - 118	0 - 90						
8	1/4	0 - 118	0 - 90						
10	3/8	0 - 118	0 - 90	0 - 150	0 - 120				
15	1/2	0 - 118	0 - 90	0 - 150	0 - 120	0 - 150	0 - 90		
S15*	S1/2*			0 - 113					
20	3/4					0 - 150	0 - 90		
S20*	S3/4*					0 - 150			
25	1					0 - 150	0 - 90		
32	1-1/4							0 - 150	0 - 90
40	1-1/2							0 - 150	0 - 90
50	2							0 - 120	0 - 75

*Actuators are interchangeable with Saunders valve bodies



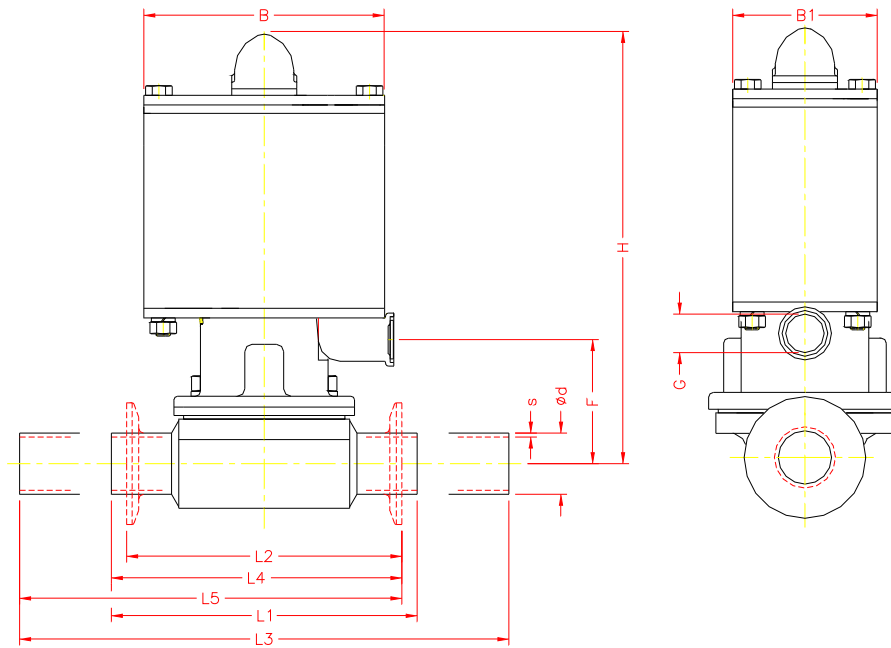
Order Example	-640	025	D	80	40	13	1	1			1537
Type of valve	-640										
Size DN		025									
Body configuration			D								
Connection (valve body)				80							
Body material					40						
Diaphragm material						13					
Control function							1				
Actuator size								1			
Locking device											
Pipe main size											
Pipe main connection											
Surface finish											1537
Special version (XXXX)											



GEMÜ® VALVES, ACTUATORS AND CONTROL SYSTEMS

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Type 640 A00 A0 A1 A5 Technical Data



Take Out Dimensions For Standard Connections

	Size	DN	Units	Con. Ref. No.						
				BS OD Tubing	(59)	(80)	(94)	(93)	(95)	
				Ød	s	L1	L2	L3	L4	L5
A00	1/4	8	mm	6.35	1.25	72.00	63.50	148.20	67.75	105.85
			in	0.250	0.049	2.835	2.500	5.835	2.667	4.167
	3/8	10	mm	9.53	1.25	72.00	63.50	148.20	67.75	105.85
A0	3/8	10	mm	9.53	1.25	108.00	88.90	184.20	98.45	136.55
			in	0.375	0.049	4.252	3.500	7.252	3.876	5.376
	1/2	15	mm	12.70	1.65	120.00	101.60	196.20	110.80	148.90
A1	1/2	15	mm	12.70	1.65	120.00	101.60	196.20	110.80	148.90
			in	0.500	0.065	4.724	4.000	7.724	4.362	5.862
	3/4	20	mm	19.05	1.65	120.00	101.60	196.20	110.80	148.90
A5	1 1/2	40	mm	38.10	1.65	153.00	139.70	229.20	146.35	184.45
			in	1.500	0.065	6.024	5.500	9.024	5.762	7.262
	2	50	mm	50.80	1.65	173.00	158.75	249.20	165.88	203.98
			in	2.000	0.065	6.811	6.250	9.811	6.531	8.031

L1 = Standard butt-weld take out
 L2 = Standard clamp take out
 L3 = Standard butt-weld extension (AWF) take out
 L4 = Standard butt-weld X clamp take out
 L5 = Standard clamp X butt-weld extension (AWF) take out

Drain Angles

Act	Size	DN	Degrees
A00	1/4	8	55°
	3/8	10	60°
	1/2	15	65°
A0	3/8	10	60°
	1/2	15	65°
	3/4	20	70°
A1	1/2	15	46°
	3/4	20	55°
	1	25	60°
A5	1 1/4	32	65°
	1 1/2	40	65°
	2	50	70°
	2 1/2	65	70°
	3	80	70°
	4	100	70°

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

Optional Spigot Dimensions

	ISO		DIN Kz. 0		DIN 11850, Kz. 16, 17, 18						SMS 3008			
	DN	L1	d	s	Series 1		Series 2		Series 3		d	s		
					d	s	d	s	d	s				
A00	4	72	-	-	6	1	-	-	-	-	-	-		
	6	72	-	-	8	1	-	-	-	-	-	-		
	8	72	13,5	1,6	10	1	-	-	-	-	-	-		
	10	72	-	-	12	1	-	-	-	-	-	-		
A0	10	108	17,2	1,6	12	1	-	-	-	-	-	-		
	15	108	21,3	1,6	18	1,5	18	1	19	1,5	20	2	-	-
A1	15	120	21,3	1,6	18	1,5	18	1	19	1,5	20	2	-	-
	20	120	26,9	1,6	22	1,5	22	1	23	1,5	24	2	-	-
	25	120	33,7	2,0	28	1,5	28	1	29	1,5	30	2	25,0	1,2
A5	32	153	42,4	2,0	34	1,5	34	1	35	1,5	36	2	33,7	1,2
	40	153	48,3	2,0	40	1,5	40	1	41	1,5	42	2	38,0	1,2
	50	153	60,3	2,3	52	1,5	52	1	53	1,5	54	2	51,0	1,2

BS DN 25 L₁ dimension only available as forged body.
 L₁ only available as precision casting body.

Actuator dimensions

Act	Size	DN	Units	H	B	B1
A00	1/4	8	mm	109.7	53.0	33.2
	3/8	10	in	4.32	2.09	1.31
	1/2	15	mm	109.7	53.0	33.2
A0	3/8	10	mm	109.7	53.0	33.2
	1/2	15	in	4.32	2.09	1.31
	3/4	20	mm	151.5	80.0	40.0
A1	1/2	15	mm	151.5	80.0	40.0
	3/4	20	in	5.96	3.15	1.57
	1	25	mm	151.5	80.0	40.0
A5	1 1/2	40	mm	177.0	100.0	60.0
	2	50	in	6.97	3.94	2.36
	2 1/2	65	mm	177.0	100.0	60.0
A5	1 1/4	32	mm	177.0	100.0	60.0
	1 1/2	40	in	6.97	3.94	2.36
	2	50	mm	233.0	160.0	80.0
			in	9.17	6.30	3.15
			mm	233.0	160.0	80.0
			in	9.17	6.30	3.15
			mm	248.0	160.0	80.0
			in	9.76	6.30	3.15

Type 640-A00 Dimensional Data

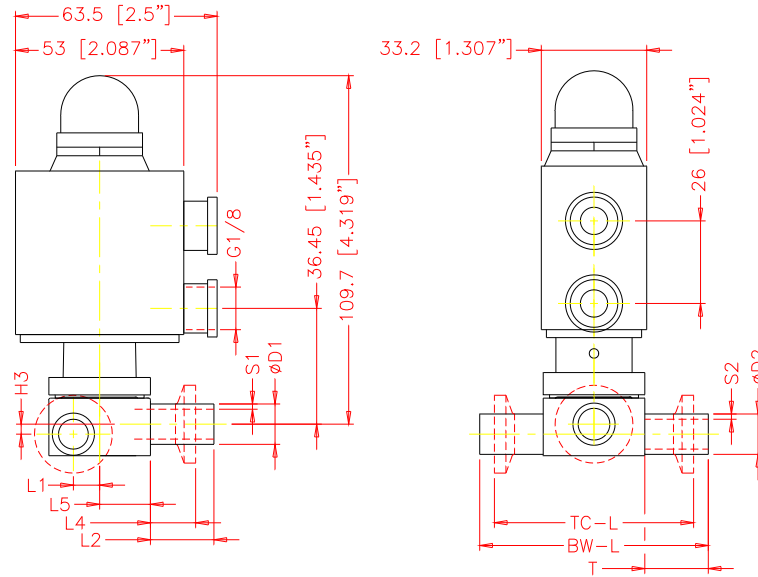
GEMÜ® Zero Static T-Valve

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

TOL ±1mm Note: Dimension subject to change		Size DN	¾	3/8	½	¾	1	1½	2	2½	3	4
		8	10	15	20	25	40	50	65	80	100	

Order Example	-640	015	T	80	41	3A	1	00	040	94	1537
Type of valve	-640										
Size DN		015									
Body configuration			T								
Connection (valve body)				80							
Body material					41						
Diaphragm material						3A					
Control function							1				
Actuator size											00
Locking device											
Pipe main size										040	
Pipe main connection										94	
Surface finish											1537
Special version (XXXX)											



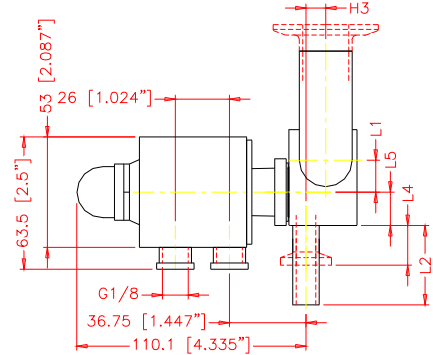
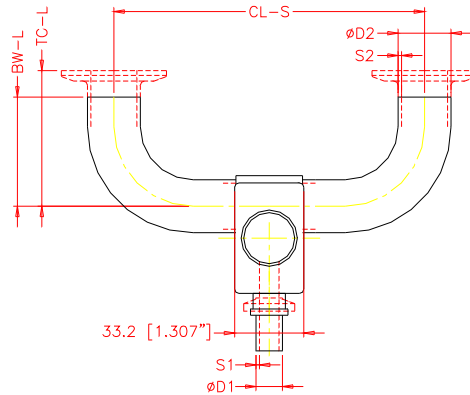
GEMÜ® VALVES, ACTUATORS AND CONTROL SYSTEMS

Type 640-A00 Dimensional Data

GEMÜ® Zero Static U-Bend Valve

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		L4	L5	CL	BW-L	TC-L
								L2	L2	L2	L2					
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	¼	¾	½	¾	1	1½	2	2½	3	4
DN	8	10	15	20	25	40	50	65	80	100

Order Example	-640	015	U	80	41	3A	1	00	040	94	1537	
Type of valve	-640											
Size DN	015											
Body configuration	U											
Connection (valve body)	80											
Body material	41											
Diaphragm material	3A											
Control function	1											
Actuator size	00											
Locking device												
Pipe main size	040											
Pipe main connection	94											
Surface finish	1537											
Special version (XXXX)												

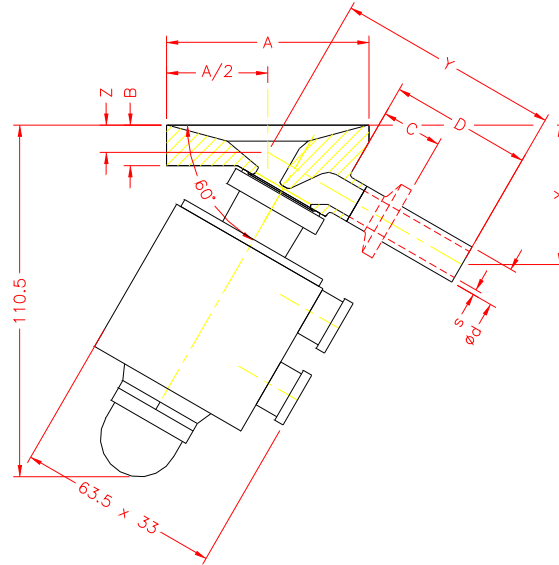


Type 640-00 Dimensional Data

GEMÜ® Tank Bottom / Side Sampling Diaphragm Valve

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
Code 59 BS OD Tubing	1/4	8	mm in	6.35 0.250	1.20 0.047	63.50 2.500	12.70 0.500	15.88 0.625	41.28 1.625	65.32 2.571	44.86 1.766	12.21 0.481
Code 59 BS OD Tubing	3/8	10	mm in	9.53 0.375	1.20 0.047	63.50 2.500	12.70 0.500	15.88 0.625	41.28 1.625	66.23 2.608	43.48 1.712	10.37 0.408
Code 59 BS OD Tubing	1/2	15	mm in	12.70 0.500	1.65 0.065	63.50 2.500	12.70 0.500	15.88 0.625	41.28 1.625	67.15 2.644	42.11 1.658	8.54 0.336

TOL ±1mm Note: Dimension subject to change

Size	¼	3/8	½	¾	1	1½	2	2½	3	4
DN	8	10	15	20	25	40	50	65	80	100

Order Example	-640	015	B	80	41	3A	1	00				1537
Type of valve	-640											
Size DN		015										
Body configuration			B									
Connection (valve body)				80								
Body material					41							
Diaphragm material						3A						
Control function							1					
Actuator size								00				
Locking device												
Pipe main size												
Pipe main connection												
Surface finish												1537
Special version (XXXX)												



GEMÜ® VALVES, ACTUATORS AND CONTROL SYSTEMS

Type 640-A0 Dimensional Data

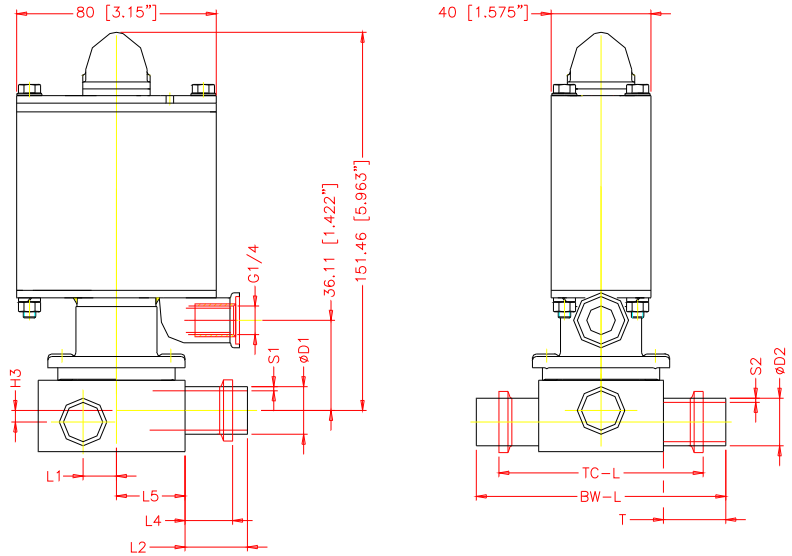
GEMÜ® Zero Static T-Valve

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
1/2 x 1/2	mm in	12.7 0.500	1.65 0.065	12.7 0.500	1.65 0.065	1.45 0.1	9.4 0.4	20.0 0.8	20.0 0.8	90.0 3.5	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
1/2 x 3/4	mm in	12.7 0.500	1.65 0.065	19.05 0.750	1.65 0.065	4.63 0.2	12.9 0.5	20.0 0.8	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
1/2 x 1	mm in	12.7 0.500	1.65 0.065	25.4 1.000	1.65 0.065	7.8 0.3	16.5 0.6	20.0 0.8	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
1/2 x 1 1/2	mm in	12.7 0.500	1.65 0.065	38.1 1.500	1.65 0.065	14.15 0.6	23.5 0.9	20.0 0.8	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
1/2 x 2	mm in	12.7 0.500	1.65 0.065	50.8 2.000	1.65 0.065	20.5 0.8	30.6 1.2	20.0 0.8	30.0 1.2	110.0 4.3	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
1/2 x 2 1/2	mm in	12.7 0.500	1.65 0.065	63.5 2.500	1.65 0.065	26.85 1.1	37.6 1.5	20.0 0.8	30.0 1.2	110.0 4.3	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
3/4 x 3/4	mm in	19.05 0.750	1.65 0.065	19.05 0.750	1.65 0.065	4.63 0.2	12.9 0.5	25.0 1.0	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
3/4 x 1	mm in	19.05 0.750	1.65 0.065	25.4 1.000	1.65 0.065	7.8 0.3	16.5 0.6	25.0 1.0	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
3/4 x 1 1/2	mm in	19.05 0.750	1.65 0.065	38.1 1.500	1.65 0.065	14.15 0.6	23.5 0.9	25.0 1.0	25.0 1.0	100.0 3.9	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
3/4 x 2	mm in	19.05 0.750	1.65 0.065	50.8 2.000	1.65 0.065	20.5 0.8	30.6 1.2	25.0 1.0	30.0 1.2	110.0 4.3	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 3.5
3/4 x 2 1/2	mm in	19.05 0.750	1.65 0.065	63.5 2.500	1.65 0.065	26.85 1.1	37.6 1.5	25.0 1.0	30.0 1.2	110.0 4.3	38.1 1.5	44.9 1.8	139.7 5.50	19.7 0.8	27.5 1.1	89.4 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	-640	015	T	80	41	13	1	0		040	94	1537				
Type of valve	-640															
Size DN		015														
Body configuration			T													
Connection (valve body)				80												
Body material					41											
Diaphragm material						13										
Control function							1									
Actuator size								0								
Locking device																
Pipe main size										040						
Pipe main connection											94					
Surface finish													1537			
Special version (XXXX)																

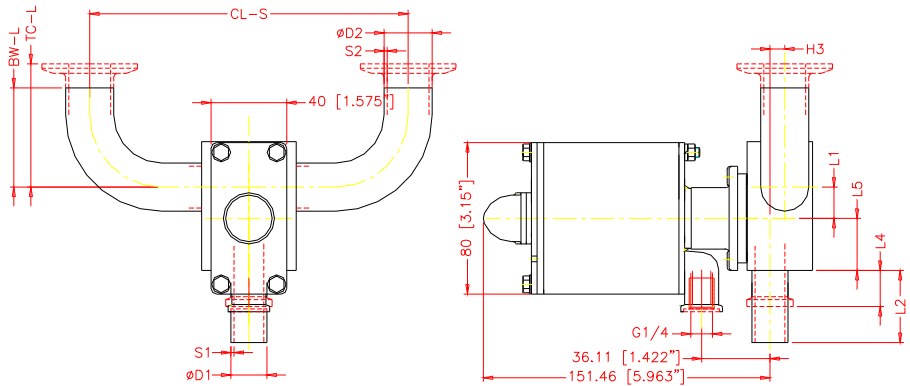


Type 640-A0 Dimensional Data

GEMÜ® Zero Static U-Bend Valve

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		L4	L5	CL	Code 94		TC-L
								L2	L2	BW-L	TC-L						
1/2 x 1/2	mm in	12.7 0.500	1.65 0.065	12.7 0.500	1.65 0.065	1.45 0.1	9.4 0.4	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	216.4 8.5	76.2 3.0	41.3 1.6			
1/2 x 3/4	mm in	12.7 0.500	1.65 0.065	19.05 0.750	1.65 0.065	4.63 0.2	12.9 0.5	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	216.4 8.5	76.2 3.0	41.3 1.6			
1/2 x 1	mm in	12.7 0.500	1.65 0.065	25.4 1.000	1.65 0.065	7.8 0.3	16.5 0.6	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	216.4 8.5	76.2 3.0	50.8 2.0			
1/2 x 1 1/2	mm in	12.7 0.500	1.65 0.065	38.1 1.500	1.65 0.065	14.15 0.6	23.5 0.9	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	254.5 10.0	95.3 3.8	69.9 2.8			
1/2 x 2	mm in	12.7 0.500	1.65 0.065	50.8 2.000	1.65 0.065	20.5 0.8	30.6 1.2	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	305.3 12.0	120.7 4.8	88.9 3.5			
1/2 x 2 1/2	mm in	12.7 0.500	1.65 0.065	63.5 2.500	1.65 0.065	26.85 1.1	37.6 1.5	20.0 0.8	38.1 1.5	19.7 0.8	27.5 1.1	343.4 13.5	139.7 5.5	108.0 4.3			
3/4 x 3/4	mm in	19.05 0.750	1.65 0.065	19.05 0.750	1.65 0.065	4.63 0.2	12.9 0.5	25.0 1.0	38.1 1.5	19.7 0.8	27.5 1.1	216.4 8.5	76.2 3.0	41.3 1.6			
3/4 x 1	mm in	19.05 0.750	1.65 0.065	25.4 1.000	1.65 0.065	7.8 0.3	16.5 0.6	25.0 1.0	38.1 1.5	19.7 0.8	27.5 1.1	216.4 8.5	76.2 3.0	50.8 2.0			
3/4 x 1 1/2	mm in	19.05 0.750	1.65 0.065	38.1 1.500	1.65 0.065	14.15 0.6	23.5 0.9	25.0 1.0	38.1 1.5	19.7 0.8	27.5 1.1	254.5 10.0	95.3 3.8	69.9 2.8			
3/4 x 2	mm in	19.05 0.750	1.65 0.065	50.8 2.000	1.65 0.065	20.5 0.8	30.6 1.2	25.0 1.0	38.1 1.5	19.7 0.8	27.5 1.1	305.3 12.0	120.7 4.8	88.9 3.5			
3/4 x 2 1/2	mm in	19.05 0.750	1.65 0.065	63.5 2.500	1.65 0.065	26.85 1.1	37.6 1.5	25.0 1.0	38.1 1.5	19.7 0.8	27.5 1.1	343.4 13.5	139.7 5.5	108.0 4.3			

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

TOL ±1mm Note: Dimension subject to change

Order Example	-640	015	U	80	41	13	1	0	040	94	1537
Type of valve	-640										
Size DN		015									
Body configuration			U								
Connection (valve body)				80							
Body material					41						
Diaphragm material						13					
Control function							1				
Actuator size								0			
Locking device											
Pipe main size									040		
Pipe main connection										94	
Surface finish											1537
Special version (XXXX)											



GEMÜ® VALVES, ACTUATORS AND CONTROL SYSTEMS

Type 640-1, 5 Dimensional Data

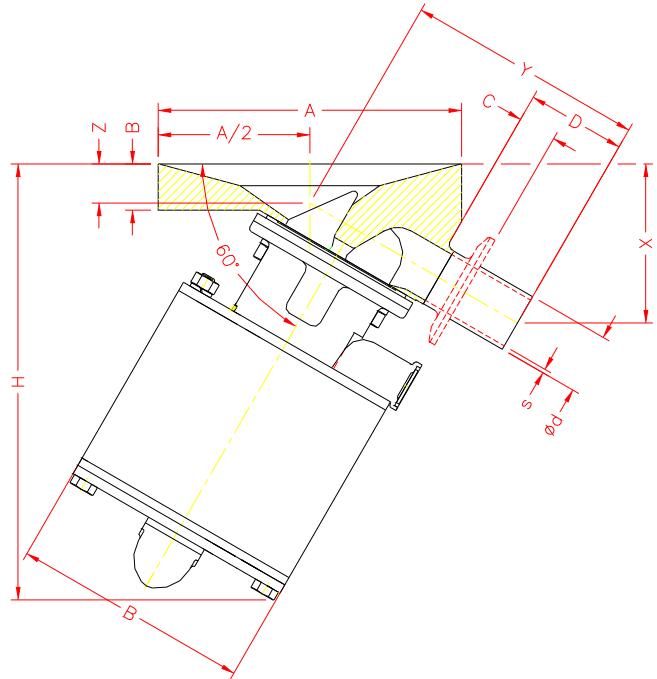
GEMÜ® Tank Bottom / Side Sampling Diaphragm Valve

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



Size	DN	59		A	A/2	B	C	D	X	Y	Z	ØB	H	
		Ød	s											
1/2	15	mm	12.70	1.65	127.00	63.50	19.30	16.06	41.46	72.11	96.56	23.83	100 x 60	182.30
		in	0.500	0.065	5.000	2.500	0.760	0.632	1.632	2.839	3.802	0.938		
3/4	20	mm	19.05	1.65	127.00	63.50	19.30	16.06	41.46	69.35	98.39	21.08	100 x 60	182.30
		in	0.750	0.065	5.000	2.500	0.760	0.632	1.632	2.730	3.874	0.830		
1	25	mm	25.4	1.65	127.00	63.50	19.30	16.06	41.46	66.50	100.30	16.35	100 x 60	182.30
		in	1.000	0.065	5.000	2.500	0.760	0.632	1.632	2.618	3.949	0.644		
1 1/2	40	mm	38.1	1.65	177.80	88.90	22.22	17.46	42.86	77.73	122.23	16.62	160 x 80	290.30
		in	1.500	0.065	7.000	3.500	0.875	0.687	1.687	3.060	4.812	0.654		
2	50	mm	50.8	1.65	203.20	101.60	25.40	17.46	42.86	84.41	133.01	17.90	160 x 80	303.95
		in	2.000	0.065	8.000	4.000	1.000	0.687	1.687	3.323	5.237	0.705		
2 1/2	65	mm	63.5	1.65	203.20	101.60	25.40	17.46	42.86	79.02	136.62	10.72	160 x 80	303.95
		in	2.500	0.065	8.000	4.000	1.000	0.687	1.687	3.111	5.379	0.422		

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	-640	025	B	80	41	13	1	1					1537
Type of valve	-640												
Size DN		025											
Body configuration			B										
Connection (valve body)				80									
Body material					41								
Diaphragm material						13							
Control function							1						
Actuator size								1					
Locking device													
Pipe main size													
Pipe main connection													
Surface finish													1537
Special version (XXXX)													

