

Description

The type 612 is a compact valve with many features which make it ideal for pharmaceutical and bio-processing applications.

Sanitary Diaphragm Valve

Manually operated

Standard Features

- Compact design
- Ultem® 1000 handwheel
- 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
- 316L stainless steel body
- Triclamp®, O.D. Tubing, ISO, and DIN end connections
- Sizes 3/8", 1/2", 3/4"

Available Options

Special connections

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

Fabrications

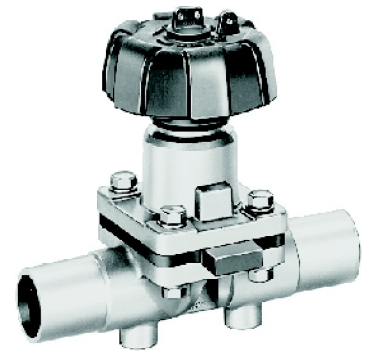
Cluster valve assemblies for both horizontal and vertical orientations, Zero Static T-valves, Duplex, Multiported and custom fabrications upon request.

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



Shown with an ISO body

Type 612

Type 612 Technical Data

Size (In.)	Nominal bore (mm)	Body Configuration D=straight through	Working pressure (psi)	C _v -value (gpm)		Connection Welded spigots	Weight (lbs)
				ISO Connection	O.D. Tubing		
3/8	10	D	0 - 150		2.6	See table	1.0
1/2	15	D	0 - 150		2.6		1.5
3/4	20	D	0 - 150		4.4		1.9

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

The valve will seal against flow in either direction up to a working pressure of 150 psi (gauge pressure)

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		
2-way valve body	D	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 13
2-way angled valve body	E		
Multiported valve body	M		
Zero Static T-Valve	T	Ethylene-propylene Rubber for saturated steam max 302° F	EPDM 16
U-bend	U		
		2nd generation, modified Teflon® with Ethylene-propylene backing (2-piece)	TFM/EPDM 50
		2nd generation, modified Teflon® with Ethylene-propylene backing	TFM/EPDM 52
<i>All diaphragms listed conform to the FDA code of Federal Regulations paragraph 177.2600 of section 21.</i>			
Connection	Ref.no.	Control function	Ref.no.
DIN	0	Manually operated	0
DIN 11850/Series 1	16		
DIN 11850/Series 2	17		
DIN 11850/Series 3	18		
Butt weld OD tubing	59		
Sizes 1/4-3/8" 20 gauge .035" wall			
Sizes 1/2-3" 16 gauge .065" wall			
Sizes 4" 14 gauge .083" wall			
ISO	60		
Schedule 10 pipe	63		
Tri-clamp®	80		
O.D. Tubing by Triclamp®	93		
Extended O.D. Tubing	94		
Extended O.D. Tubing by Triclamp®	95		
Body material	Ref.no.	Surface finish	Ref.no.
Investment cast body			
Stainless steel 316 L \cong 1.4435 (BN2) Fe < 0.5%	32		
Stainless steel 1.4539 (UNS N 08904)	33		
Forged Body			
Stainless steel 316 L \cong 1.4435 (ASTM A 182)	40		
Stainless steel 316 L \cong 1.4435 (BN2) Fe < 0.5%	42		
Machined block			
Stainless steel 316 L \cong 1.4435 (ASTMA 479)	41		
Special versions	91	Special versions	UXXXX

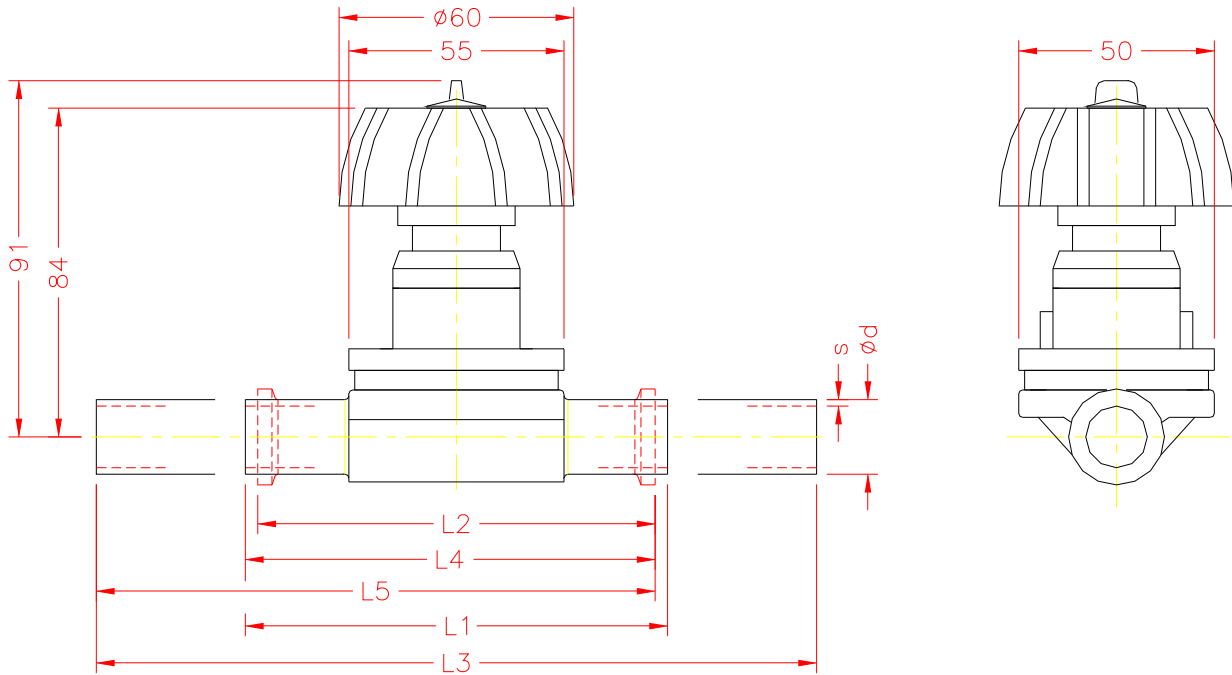
μ-in.	BPE Surface Designation	Ra Average [Note (1)]		Ra Max			
		μ-in.	μm	μ-in.	μm		
32	Mechanical					3	
25	Mechanical	SFV3	25	0.625	30	0.750	1502
20	E-pol	SFV6	20	0.500	25	0.625	1508
20	Mechanical	SFV2	20	0.500	25	0.625	1507
15	E-pol	SFV5	15	0.375	20	0.500	1537
11	Mechanical	SFV1	15	0.375	20	0.500	1536
10	E-pol	SFV4	10	0.250	15	0.375	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.

Order example	-612	015	U	80	41	13	0	040	94	1537
Type	-612									
Nominal bore (mm)		015								
Body configuration (U)			U							
Connection (ref.no.)				80						
Body material (ref.no.)					41					
Diaphragm material (ref.no.)						13				
Control function (ref.no.)							0			
Pipe main (size)								040		
Pipe main connection (code i.e., 55)									94	
Surface finish (ref.no.)										1537
Special versions (XXXX)										



Type 612 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
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	108.00	88.90	184.20	98.45	136.55
		in	0.500	0.065	4.252	3.500	7.252	3.876	5.376
3/4	20	mm	19.05	1.65	108.00	101.60	184.20	104.80	142.90
		in	0.750	0.065	4.252	4.000	7.252	4.126	5.626

- 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

Connection Reference No.			DIN 0	DIN 11850 Series 1	DIN 11850 Series 2	DIN 11850 Series 3	ISO 60					
Size	DN	L ₁	s	Ø d	s	Ø d	s	Ø d	s	Ø d		
3/8"	10	108	-	-	1	12	1.5	13	2	14	1.6	17.2
1/2"	15	108	1.5	18	1	18	1.5	19	2	20	1.6	21.3

Drain Angles

Size	DN	Degrees
3/8"	10	60°
1/2"	15	65°
3/4"	20	70°

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

Type 612 Dimensional Data

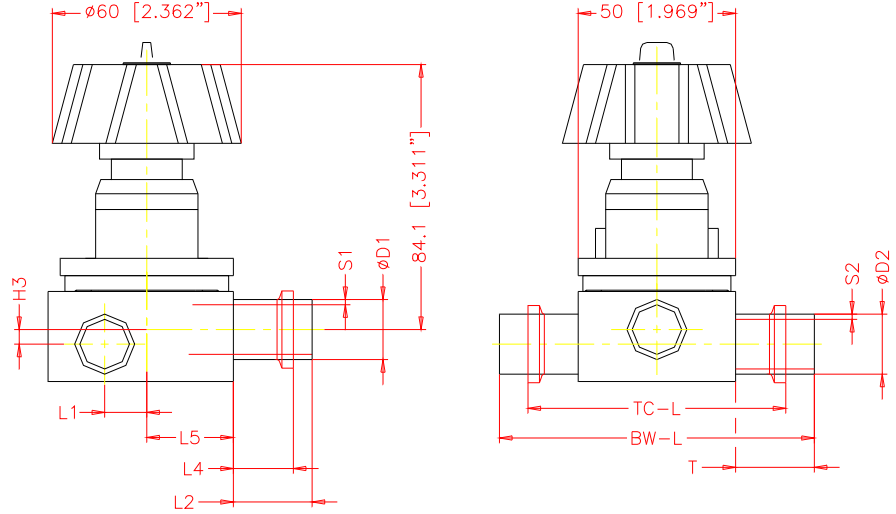
GEMÜ® Zero Static T-Valve

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	¼	3/8	½	¾	1	1½	2	2½	3	4	6
DN	8	10	15	20	25	40	50	65	80	100	150

Order Example	-612	015	T	80	41	13	0		040	94	1537					
Type of valve	-612															
Size DN	015															
Body configuration	T															
Connection (valve body)	80															
Body material	41															
Diaphragm material	13															
Control function	0															
Actuator size																
Locking device																
Pipe main size	040															
Pipe main connection	94															
Surface finish	1537															
Special version (XXXX)																



Type 612 Dimensional Data

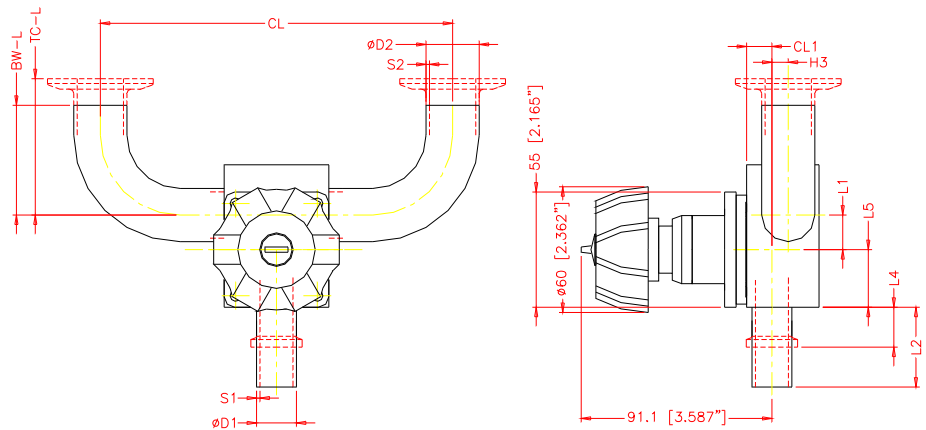
GEMÜ® Zero Static U-Bend Valve

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		CL	Code 94		Code 80	
								L2	L2	L4	L5		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		

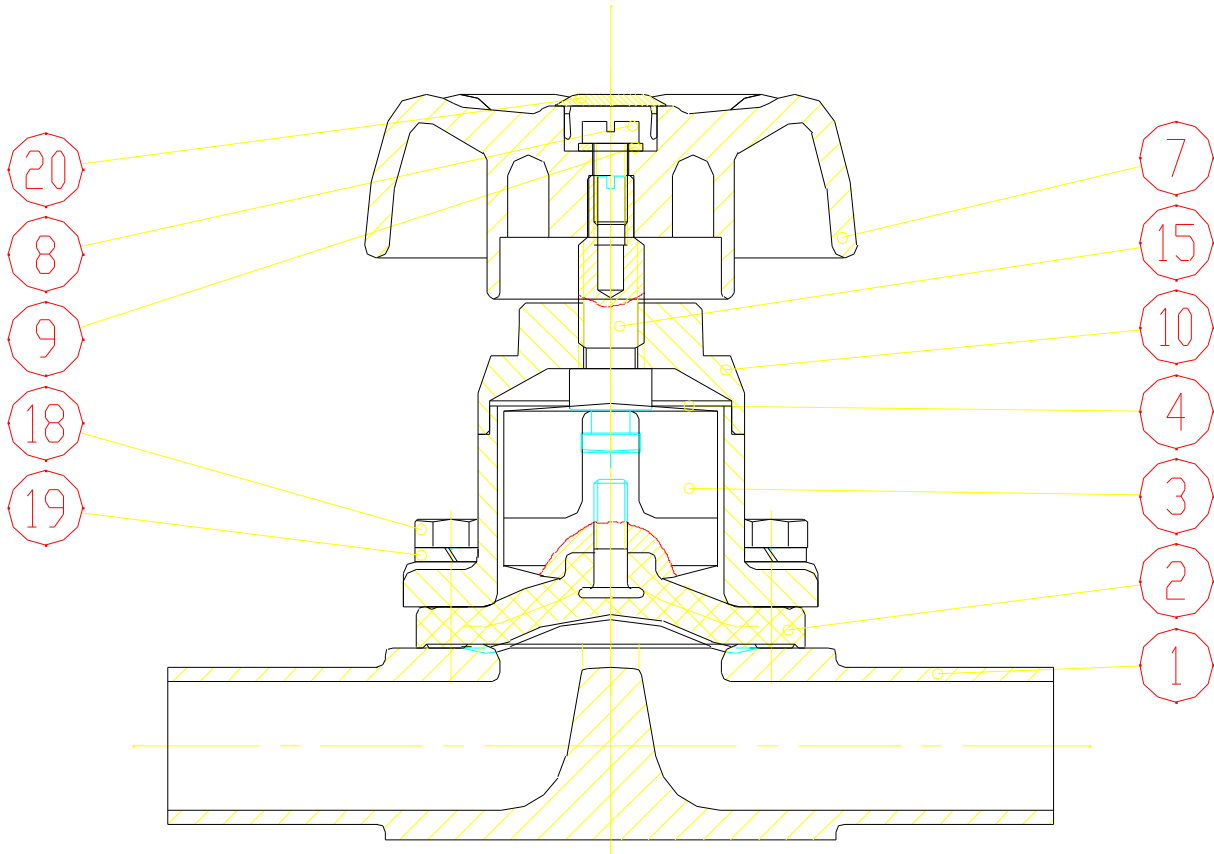
TOL ±1mm Note: Dimension subject to change

Size DN	¼	3/8	½	¾	1	1½	2	2½	3	4	6
	8	10	15	20	25	40	50	65	80	100	150

Order Example	-612	015	U	80	41	13	0		040	94	1537					
Type of valve	-612															
Size DN		015														
Body configuration			U													
Connection (valve body)				80												
Body material					41											
Diaphragm material						13										
Control function							0									
Actuator size																
Locking device																
Pipe main size									040							
Pipe main connection										94						
Surface finish											1537					
Special version (XXXX)																



Type 612 Spare Parts



ITEM	PART
1	Valve Body
2	Diaphragm
3	Compressor
4	Bearing Plate
7	Hand Wheel
8	Bolt
9	Washer
10	Bonnet
15	Threaded Spindle
18	Bolt
19	Washer
20	Cap
30	Nut
32	Hex Nut