

Robolux Multiway Multiport Diaphragm valve, standard product range



Type 3236 can be combined with ...



Type 2035

Pneumatically operated
Diaphragm valve



Type 8055

Full bore
magflowmeter



Type 2103

Pneumatically operated
Diaphragm valve



Type 3233

Manual operated
Diaphragm valve

This manual multiway, multiport diaphragm valve was constructed as a system for control of ultrapure, sterile or aggressive media.

It enables optimal sampling, draining or diverting of critical process fluids.

The valve range is based on the patented Robolux technology, where two seats are placed under one diaphragm. This design eliminates dead legs and will minimize the flow system volume.

The valve body is machined from a single piece of bar stock stainless steel. The high quality diaphragms are available in several different mit USP VI approved materials.

All valves will be delivered with 3.1 certificate, manufacturer's declaration for membranes, installation drawing and manual delivered.

Applications

- Pharma
- Biotechnology
- Food industry
- Photo/Image industry

- Increased process efficiency
- Reduced installation costs, minimal place required
- Reduced number of valves and welds
- Zero dead volume and no contamination
- Certificates FDA, CE, USP VI, 3.1

Technical data	
Valve sizes	1/4" ... 2", DN 4 - 50
Materials	
Valve body	▪ 1.4435 stainless steel (316L) ▪ PP (ultrapure polypropylene) ▪ PP (polypropylene USP VI) ▪ PVDF (polyvinyl-difluoride)
Diaphragm	▪ EPDM, Silicone, PTFE PFA / EPDM, FKM, Technoflon® PFR91
Actuator	▪ Epoxy coated aluminium
End connections	
Weld ends	▪ EN ISO 1127 (ISO 4200) ▪ DIN 11850 series 2 ▪ ASME BPE ▪ SMS 3008 ▪ BS 4825 (Further versions: Clamp and threaded port, on request)
Surface qualities	
Internal	Ra ≤ 0.5 µm passivated
External	Ra ≤ 3.2 µm glass bead blasted
Optional	Electropolished
Medium pressure	RV50 max. 8 bar, RV70/RV110 max. 6 bar (depending on diaphragm and body materials)
Temperature	
Medium	Plastic: -10 to max. +40 °C (see chart on page 2) St. Steel: -10 to max. +120 °C (max. +140 °C 30 min.) PFA-Diaphragm: 0 to max. +95 °C
Ambient	-10 to max. +60 °C (higher temperatures on request)

Further technical data

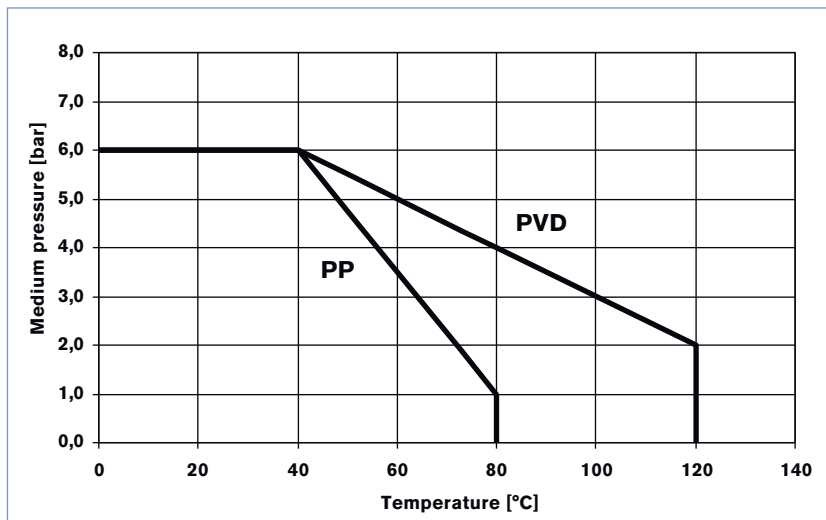
Kv value and CIP rate

Orifice DN Port connec- tion [mm]	Valve size	Actuator size	Actuator designa- tion	Kv value water diaphragm EPDM/FKM [m³/h]	Kv value water diaphragm PFA [m³/h]	CIP rate [m/s] at 1 bar ¹⁾	
						EPDM / FKM	PFA
10	3/8"	050	RV50	0.8	0.7	3.1	2.7
15	1/2"	050	RV50	2.5	2.0	5.5	4.4
20	3/4"	050	RV50	3.5	3.3	3.9	3.4
25	1"	070	RV70	10.0	9.0	6.6	6.0
40	1 1/2"	110	RV110	27.0	22.0	6.6	5.4
50	2"	110	RV110	35.0	27.0	5.1	4.0

¹⁾ Pressure data [bar]: Overpressure with respect to atmospheric pressure

Remark: All Kv values are measured on valves with port connection according ASME BPE.

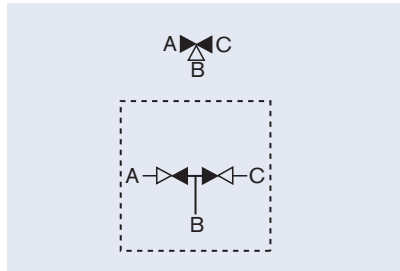
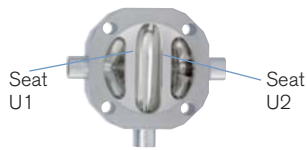
Permissible medium pressure as a function of medium temperature in plastic valve bodies



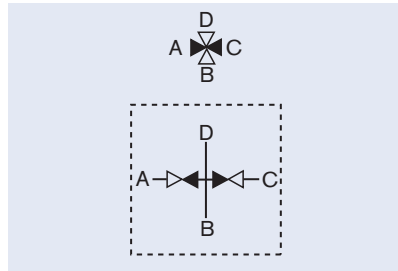
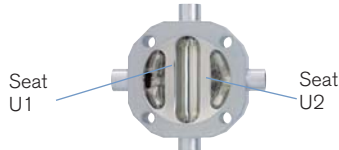
Note: The specified maximum medium pressure refers to the static leakage. For more information, see operating instructions.

Valve symbols and flow patterns

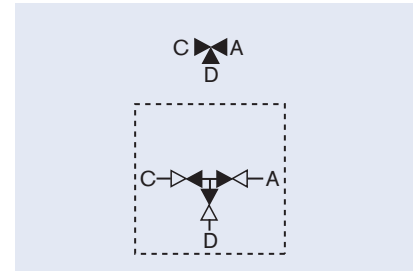
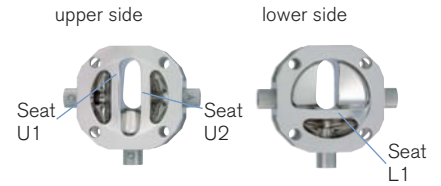
3Connections 2Seats;
3C2S (formerly 3w3p)



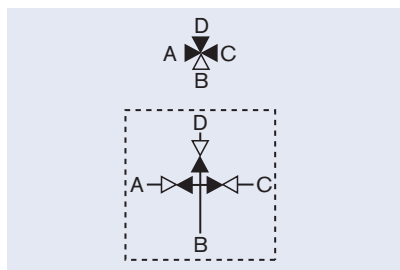
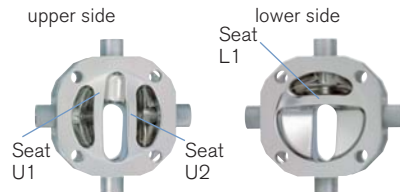
4Connections 2Seats;
4C2S (formerly 3w4p)



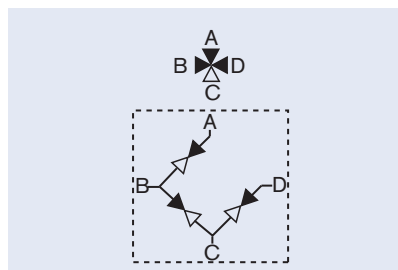
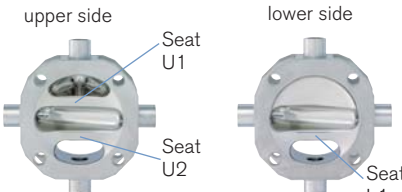
3Connections 3Seats;
3C3S (formerly 4w3p)



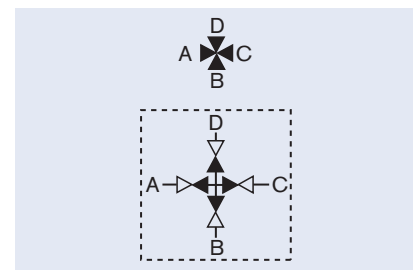
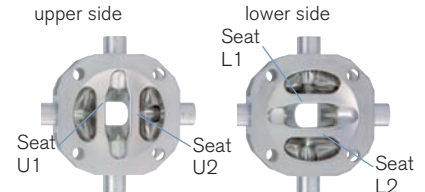
4Connections 3Seats;
4C3S (formerly 4w4p)



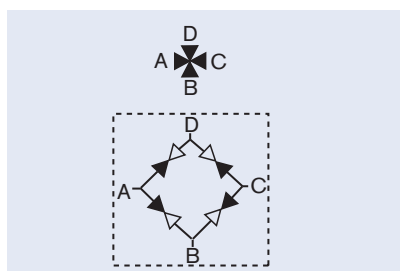
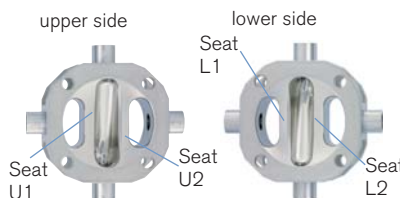
4Connections 3Seats; 4C3S BD
(formerly 4w4p BD) filter valve



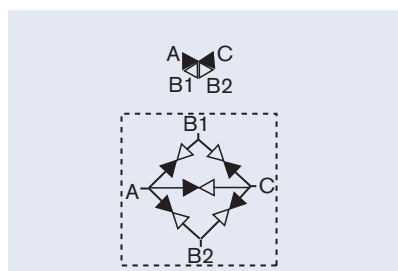
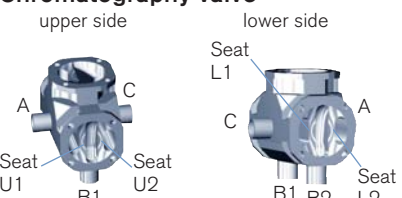
4Connections 4Seats
4C4S (formerly 6w4p)



4Connections 4Seats;
4C4S DFP (formerly 4w4p DFP)



4Connections 5Seats;
4C5S CHR (formerly 5w4p)
Chromatography valve



Approvals

Certificates are delivered together with the valves.

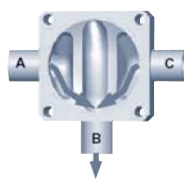
- Valve bodies EN ISO 10204 3.1; polypropylene USP VI
- Diaphragms FDA CFR 177.2600 for EPDM, FKM and Silicone
FDA CFR 177.1550 for PTFE PFA
USP VI for EPDM, PTFE PFA/EPDM, Silicone and PFR91

Draining operation of the valve

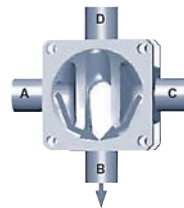
The draining is achieved differently depending on the valve type. It is very important to fully understand the flow paths of each individual valve body before deciding which port / connection (marked with A, B, C or D) to select for draining. If you have further questions please contact us.

The examples below show how to get the optimum draining for the 3C2S/4C2S and 4C3S valves.

Example:



Installation for draining operation
for a 3C2S valve body



Installation for draining operation
for a 4C3S valve body

Diaphragms



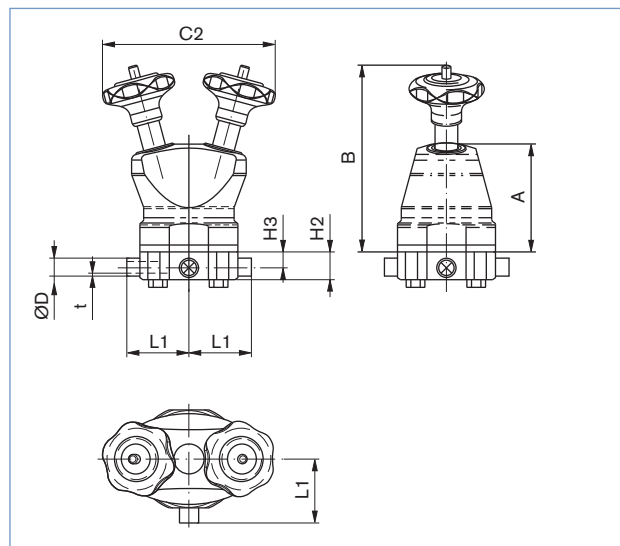
Diaphragm material	Material description	Application	Actuator designation		
			RV50	RV70	RV110
EPDM	peroxide-vulcanized ethylene-propylene	oxidation chemicals, steam and hot water	■	■	■
FKM	fluorinated rubber	acids and mineral oils	■	■	■
PFA-lined EPDM	PTFE PFA-lined on EPDM backing	most chemicals and acids	■	■	■
PFR 091	Technoflon® PFR91 perfluor rubber	organic and inorganic acids, alkaline solutions, ketones, esters, alcohols and steam	■	■	■
Silicone	Pt-stabilized silicone rubber	aliphatic oils	■	■	on request

Dimensions

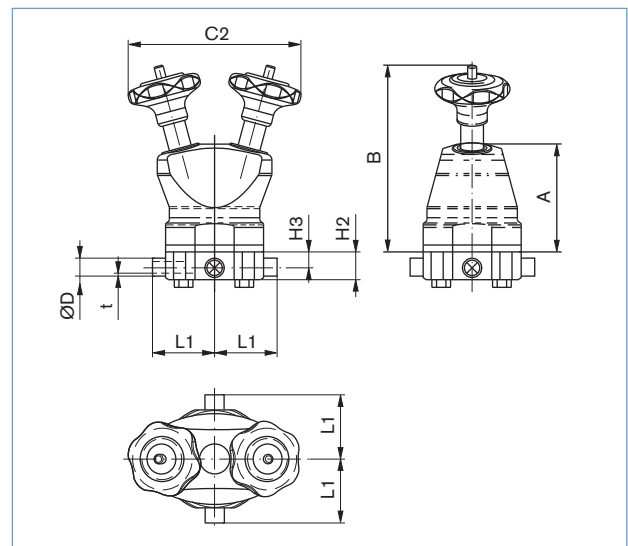
3Connections 2Seats; 3C2S / 4Connections 2Seats; 4C2S

Ori- fice DN [mm]	Actuator	EN ISO 1127 (ISO 4200)			DIN 11850 series 2			ASME BPE			A	B	C2
		L1	H2	H3	L1	H2	H3	L1	H2	H3			
15	RV50	50.5	26	14.4	50.5	21	10.5	42.5	16	8.7	71	124	115
20	RV50	-	-	-	-	-	-	50.5	21	10.5	71	124	115
20	RV70	69	32	17.6	69	26	13.5	61.5	26	15.5	97.5	181	137
25	RV70	-	-	-	69.0	32	16.5	69	32	18.3	97.5	181	137
25	RV110	90.5	38	20.2	-	-	-	-	-	-	124	217	175
40	RV110	90.5	56	30.9	90.5	44	22.5	90.5	44	24	124	217	175
50	RV110	90.5	62	30.9	90.5	62	34.5	90.5	56	29.6	124	217	175

3C2S valve



4C2S valve



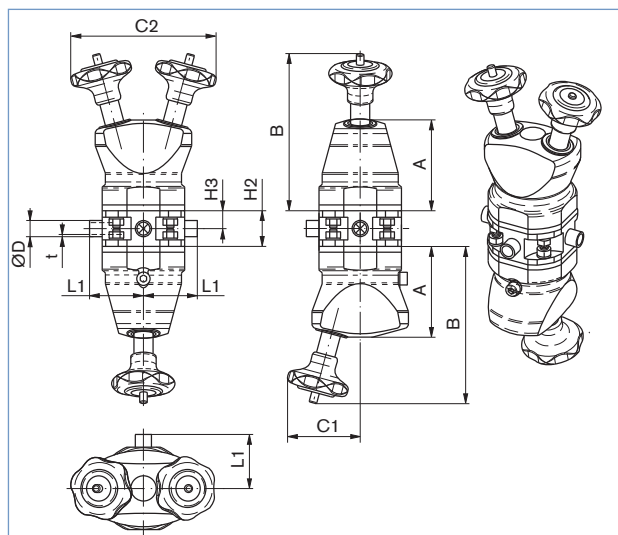
Dimensions, continued

3Connections 3Seats; 3C3S / 4Connections 3Seats; 4C3S standard / 4Connections 3Seats BD; 4C3S BD

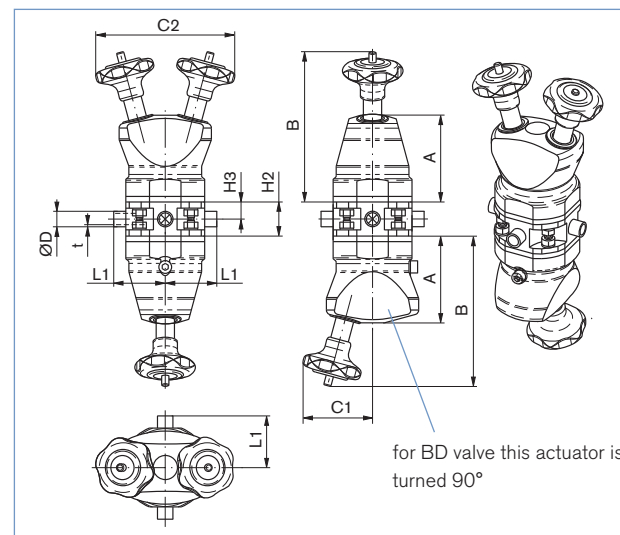
Ori- fice DN [mm]	Actuator size	EN ISO 1127 (ISO 4200)			DIN 11850 series 2			ASME BPE		
		L1	H2	H3	L1	H2	H3	L1	H2	H3
15	RV50	50.5	34	17	50.5	34	17	42.5	28	14
20	RV50	-	-	-	-	-	-	50.5	34	17
20	RV70	69	48	24	69	40	20	61.5	40	20
25	RV70	69	38	19	69.0	38	19	69	48	24
40	RV110	90.5	70	35	90.5	70	35	90.5	70	35
50	RV110	90.5	75	37.5	90.5	70	35	90.5	70	35

Ori- fice DN [mm]	Actuator size	A	B	C1	C2
15	RV50	71	124	58	115
20	RV50	71	124	58	115
20	RV70	98	181	69	137
25	RV70	98	181	69	137
40	RV110	124	217	87	175
50	RV110	124	217	87	175

3C3S valve



4C3S standard and 4C3S BD (Barrier Drain) valve



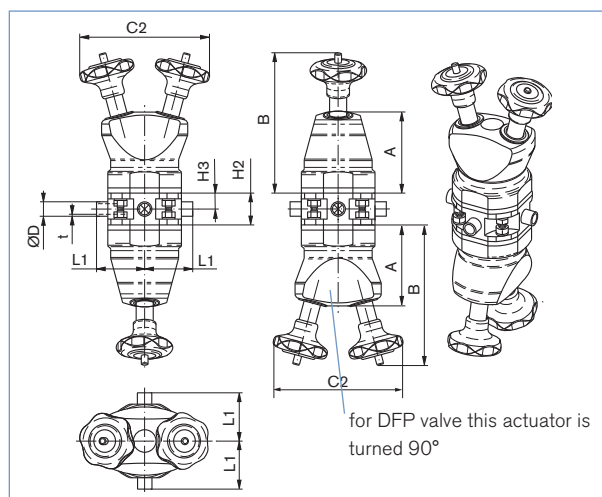
Dimensions, continued

4Connections 4Seats standard; 4C4S / 4Connections 4Seats DFP; 4C4S DFP

Ori- fice DN [mm]	Actuator size	EN ISO 1127 (ISO 4200)			DIN 11850 series 2			ASME BPE			A	B	C2
		L1	H2 ²⁾	H3 ²⁾	L1	H2 ²⁾	H3 ²⁾	L1	H2 ²⁾	H3 ²⁾			
15	RV50	50.5	34	17	50.5	34/28	17/14	42.5	28	14	71	124	115
20	RV50	–	–	–	–	–	–	50.5	34/28	17/14	71	124	115
20	RV70	69	48/44	24/22	–	–	–	61.5	40	20	97.5	181	137
25	RV70	–	–	–	–	–	–	69.0	48/40	20	97.5	181	137
40	RV110	–	–	–	–	–	–	90.5	70/60	35/30	124	217	175
50	RV110	90.5	75/85	37.5/ 42.5	90.5	70	35	90.5	70	35	124	217	175

2) Dimensions for 4C4S DFP / 4C4S

4C4S standard and 4C4S DFP (Double Flow Path) valve



Note

You can fill out the fields directly in the PDF file before printing out the form.

Robolux valves – request for quotation

► Please fill out and send to your nearest Bürkert facility* with your inquiry or order

Company	Contact person
Customer no.	Department
Address	Tel./Fax
Postcode/town	E-Mail

☐ = mandatory fields to fill out Quantity Required delivery date

Operating data

Pipe line	DN	PN
Pipe material		
☐ Process medium		
☐ Type of media	☐ Liquid ☐ Steam ☐ Gas	

Valve features

Surface finish	☐ Standard Ra 0,5 Internal/Ra 3,2 External internal external
Seal material	☐ EPDM ☐ PFA lined EPDM ☐ FKM ☐ Silicon ☐ PFR91
Medium pressure	Pmed
Orifice	DN
Type of connection	☐ Weld end ☐ Clamp
Standard connection	☐ ISO ☐ DIN R2 ☐ ASME BPE ☐ other
Please specify item no. if known: 	

Valve features

Specification key	
(automatically transferred from p. 9)	

Certifications

☐ Attestation of compliance with the order EN-ISO 10204 2.1 ☐ Test report EN-ISO 10204 2.2 ☒ Certification of Conformity for Raw Material EN-ISO 10204 3.1 ☐ Certification of Conformity for the Surface Quality DIN4762-DIN4768-ISO/4287/1	☐ Certification of Conformity for Pickling and Electropolishing Processes ☒ FDA and USP compliance
---	--

Comment / sketch

Specification key (other versions on request)

Example

32R50 AB VH SA42 AE D44 D44 NO22 + NO25

Specification key

Please make a choice

Connections-Seats, Actuators*	
32R50	3C2S, actuator RV50
32R70	3C2S, actuator RV70
32R11	3C2S, actuator RV110
42R50	4C2S, actuator RV50
42R70	4C2S, actuator RV70
42R11	4C2S, actuator RV110
33R50	3C3S, actuator RV50
33R70	3C3S, actuator RV70
33R11	3C3S, actuator RV110
43R50	4C3S, actuator RV50
43R70	4C3S, actuator RV70
43R11	4C3S, actuator RV110
43B50	4C3S BD, actuator RV50
43B70	4C3S BD, actuator RV70
43B11	4C3S BD, actuator RV110
44R50	4C4S, actuator RV50
44R70	4C4S, actuator RV70
44R11	4C4S, actuator RV110
44D50	4C4S DFP, actuator RV50
44D70	4C4S DFP, actuator RV70
44D11	4C4S DFP, actuator RV110
45C50	4C5S CHR, actuator RV50
45C70	4C5S CHR, actuator RV70
45C11	4C5S CHR, actuator RV110

Variable codes		
Surface finish external		
NO22	glass-blasted $Ra \leq 3.2 \mu m$	Standard
Surface finish internal		
NO14	mechanical polished $Ra \leq 0.5 \mu m$	Standard
NO25	electro polished $Ra \leq 0.5 \mu m$	

Actuators lower side*	
D44	Double actuator
SE4	Single actuator
000	without actuator

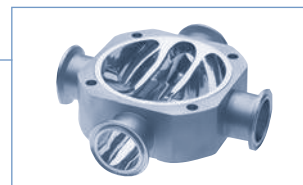
Actuators upper side*	
D44	Double actuator
SE4	Single actuator

Actuator material	
AE	epoxy coated aluminium

***Remark:** The actuator size depends on the size of the port connection (see *Specifications* page 10 and 11)

Diaphragm material	
AB	EPDM
PN	PTFE PFA-lined EPDM
FF	FKM
PR	Technoflon® PFR 91
SK	Silicone

Body material	
VH	stainless steel AISI 316L, 1.4435
PP	polypropylene
PR	polypropylene USP VI
PD	polyvinyl difluoride
Other body materials on request!	



continued on page 10

Specification key (other versions on request)

Port connections weld ends

Ori- fice DN [mm]	EN ISO 1127 (ISO 4200)	Port connections for valves with actuator size RV50				BS4825	ASME BPE
		DIN 11850					
		Series 0	Series 1	Series 2	Series 3		
4		SC40=6x1.0					
6	SA78=10.2X1.6	SC41=8x1.0					
8	SA40=13.5x1.6	SC42=10x1.0				SODB=6.35x1.2	SA90=6.35x0.89
10	SA41=17.2x1.6		SF40=12x1.0	SD40=13x1.5	SE40=14x2.0	SODC=9.53x1.2	SA91=9.53x0.89
15	SA42=21.3x1.6	SC43=18x1.5	SF41=18x1.0	SD42=19x1.5	SE42=20x2.0	SODD=12.7x1.2	SA92=12.7x1.65
20		SC44=22x1.5	SF42=22x1.0			SODE=19.05x1.2	SA93=19.05x1.65

Ori- fice DN [mm]	EN ISO 1127 (ISO 4200)	SMS 3008	Port connections for valves with actuator size RV70				BS4825	ASME BPE
			DIN 11850					
			Series 0	Series 1	Series 2	Series 3		
20	SA43=26.9x1.6				SD43=23x1.5	SE43=24x2.0		SA93=19.05x1.65
25		SA60=25.0x1.2	SC45=28x1.0	SF43=28x1.0	SD44=29x1.5		SODF=25.4x1.65	SODF=25.4x1.65

Ori- fice DN [mm]	EN ISO 1127 (ISO 4200)	SMS 3008	Port connections for valves with actuator size RV110				BS4825	ASME BPE
			DIN 11850					
			Series 0	Series 1	Series 2	Series 3		
25	SA44=33.7x2.0					SE44=30x2.0		SODF=25.4x1.65
32	SA45=42.4x2.0		SC46=34x1.5	SF44=34x1.0	SD45=35x1.5	SE45=36x2.0		
40	SA46=48.3x2.0	SA62=38.0x1.2	SC47=40x1.5	SF45=40x1.0	SD46=41x1.5	SE46=42x2.0	SODH=38.1x1.65	SODH=38.1x1.65
50	SA47=60.3x2.0	SA63=51.0x1.2	SC48=52x1.5	SF46=52x1.0	SD47=53x1.5	SE47=54x2.0	SODI=50.8x1.65	SODI=50.8x1.65

Port connections Clamp

Remark: Clamp xx = outer dimensions of the clamp

Orifice DN [mm]	Port connections for valves with actuator size RV50					Others
	ISO 2852 for tube ISO 4200	DIN 32676	BS 4825	for tube ASME BPE		
4						TG20 = clamp 25 - Dint = 4
6						TG21 = clamp 25 - Dint = 6
8	TC40 = clamp 34 - Dint = 10.3		TH40 = clamp 25 - Dint = 3.95			TG22 = clamp 25 - Dint = 8
10	TC41 = clamp 34 - Dint = 14	TD41 = clamp 34 - Dint = 10	TH41 = clamp 25 - Dint = 7.12	TG01 = clamp 25 - Dint = 7.74		TG23 = clamp 25 - Dint = 10
10						TG25 = clamp 25 - Dint = 10
15	TC42 = clamp 50.5 - Dint = 18.1	TD42 = clamp 34 - Dint = 16	TH42 = clamp 25 - Dint = 10.3	TG02 = clamp 25 - Dint = 9.4		TG24 = clamp 25 - Dint = 16
20			TH43 = clamp 25 - Dint 16.65	TG03 = clamp 25 - Dint = 15.75		

Specification key (other versions on request)

Port connections for valves with actuator size RV70					
Orifice DN [mm]	ISO 2852 for tube ISO 4200	for tube SMS	DIN 32676	BS 4825	for tube ASME BPE
20	TC43 = clamp 50.5 - Dint = 23.7		TD43 = clamp 34 - Dint = 20		TG03 = clamp 25 - Dint = 15.75
25		TG10 = clamp 50.5 - Dint = 22.6	TD44 = clamp 50.5 - Dint = 26	TH44 = clamp 50.5 - Dint = 22.1	TH44 = clamp 50.5 - Dint = 22.1

Port connections for valves with actuator size RV110					
Orifice DN [mm]	ISO 2852 for tube ISO 4200	for tube SMS	DIN 32676	BS 4825	for tube ASME BPE
25	TC44 = clamp 50.5 - Dint = 29.7				
32	TC45 = clamp 50.5 - Dint = 38.4		TD45 = clamp 50.5 - Dint = 32		
40	TC46 = clamp 64 - Dint = 44.3	TG11 = clamp 50.5 - Dint = 35.6	TD46 = clamp 50.5 - Dint = 38	TH46 = clamp 50.5 - Dint = 34.8	TH46 = clamp 50.5 - Dint = 34.8
50	TC47 = clamp 77.5 - Dint = 56.3	TG12 = clamp 64 - Dint = 48.6	TD47 = clamp 64 - Dint = 50	TH47 = clamp 64 - Dint = 47.5	TH47 = clamp 64 - Dint = 47.5

Remark: For each Clamp connection with clamp diameter 25 mm or 34 mm you have to add a length of 13 mm; for each Clamp connection with clamp diameter 50.5 mm or 77.5 mm you have to add a length of 20 mm.

Port connections Clamp for PP or PVDF housing (only versions 3C2S and 4C2S)

Port connections for valves with actuator sizes RV50			Port connections for valves with actuator size RV70
Clamp			Clamp
CL20 = clamp 25 - Dint = 6	CL21 = clamp 25 - Dint = 10	CL22 = clamp 25 - Dint = 14.2	CL30 = clamp 50.5 - Dint = 21.2

ATTENTION: The dimensions for plastic housings are different from the stainless steel versions.

i Further versions on request