

# Series V5066

## Three-way bellows sealed control valve

### SPECIFICATION



Three-way valve for mixing (V5066B) and diverting (V5066A) application. The adjustment valves of this series are characterised by their quality and versatility.

These bellows sealed valves are designed for use in heat-conveying systems of processing plants where several mineral oils, glycerin and similar media are applied as heat carrier. The control valves are actuated by pneumatic actuators Series 2000 or electric actuators Series E2000. The combination with Honeywell linear actuators ML642/ML742 ist also possible.

### Features

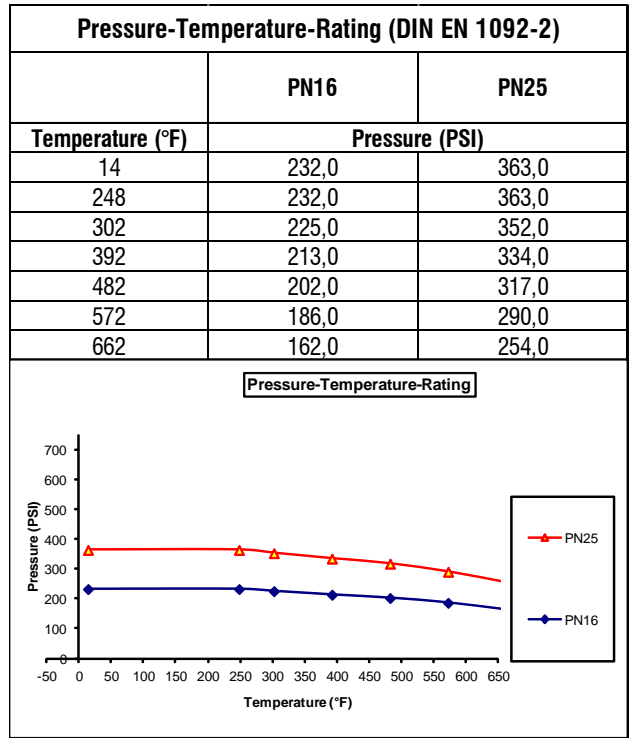
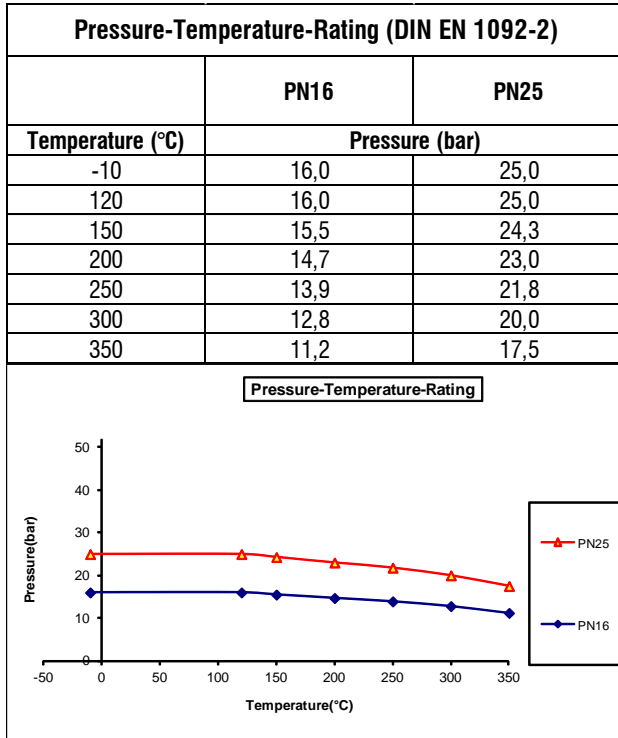
- Rugged and proven design
- Rebuilding between mixing and diverting version without additional parts possible
- Compact design
- Full accessory range
- Sizes DN 15 up to DN 80 (1/2" – 3")
- PN16 –PN25 and ANSI300 (ANSI150 on request)
- -10°C – 350°C
- Leakage rate < 0,1% of Kvs-value
- Burnished stem
- Double wall bellows seal with anti-rotation assy
- Safety packing
- All parts as spares available
- Serial production

## Specifications

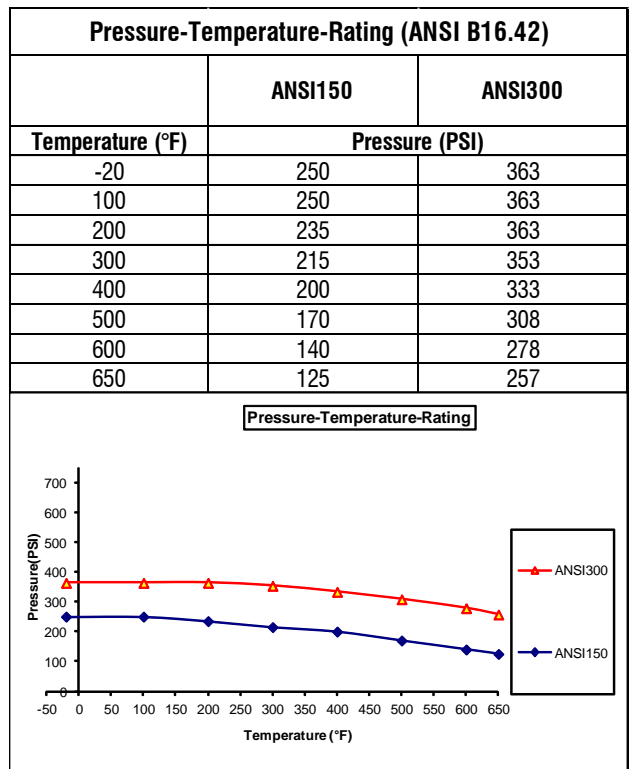
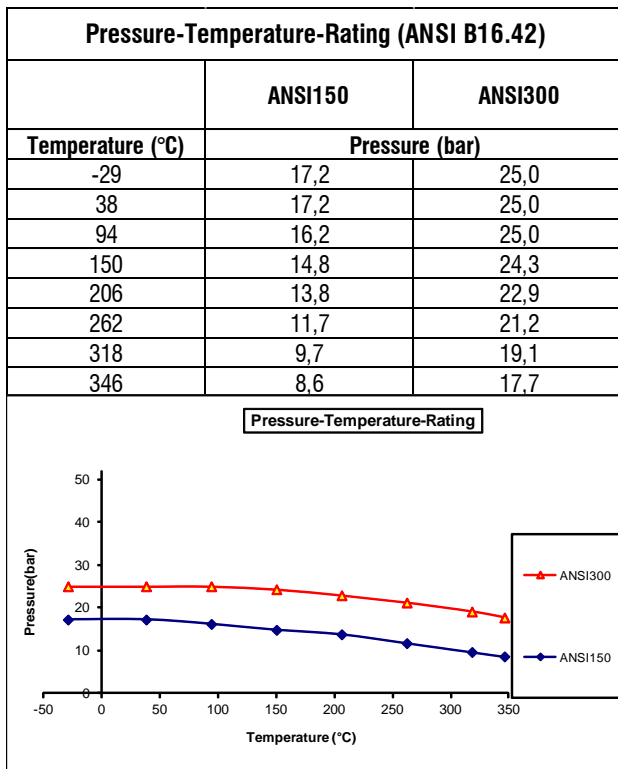
### General details

Typ	Three-way mixing or diverting service with bellows seal bonnet and safety packing										
Sizes	DIN-DN mm ANSI inch	15 ½	20 ¾	25 1	32	40 1 ½	50 2	65 2 ½	80 3		
Pressure ratings	PN16 – PN25 , ANSI 300 (ANSI150 on request)										
Endconnection and Face-to face dimension	DIN: Flanged acc. DIN EN 1092-2 / Face to face acc. DIN EN 558 row 1 ANSI: Flanged acc. ANSI 16.5 / Face to face acc. ISA 75.08 (75.03)										
Stem sealing	Stainless steel double wall bellows with safety packing										
Characteristic	A → AB: linear, B → AB: linear (equal percentage on request)										
Flow coefficients	Valve Size	DIN-DN ANSI	mm inch	15 ½	20 ¾	25 1	32	40 1 ½	50 2	65 2 ½	80 3
	Seat diameter	mm inch		25 0.98	25 0.98	25 0.98	32 1.26	40 1.57	53 2.09	65 2.56	90 3.54
	Kvs-values	Full capacity 1. Reduction 2. Reduction		4 2.5 2.5	6.3 4 2.5	10 6.3 4	16	25	40	63	100
	Cv-values	Full capacity 1. Reduction 2. Reduction		4.7 2.9 2.9	7.4 4.7 4.7	12 7.4 4	19	29	47	74	120
Trim	Trimstyle	Flow direction	FL							XT	
Valve factors FL und XT	V-port (all sizes)	Flow to open	Full Kv 0,90					reduced Kv 0,92		0,72	
Valve stroke	20mm / 0.79 inch für all sizes										
Rangeability	30 : 1										
Leakage rate	Sealing seat / trim	Leakage class acc. DIN EN 1349 ((ANSI B 16.104)							% of Kvs-value		
	Metallic sealing	Leakage class III (Leakage class IVa on request (Leakage class IV on request							0,1 % 0,05 % ) 0,01 % )		
Pneumatic Actuators	Series 2000										
Electric Actuators	Series E2000H and E2000P Honeywell Linear Actuators ML6421 und ML7421										

### Pressure-temperature-rating PN16 / PN 25:



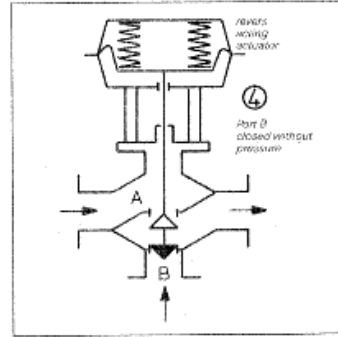
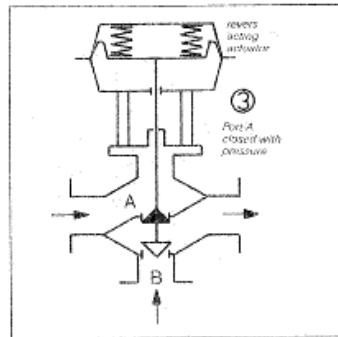
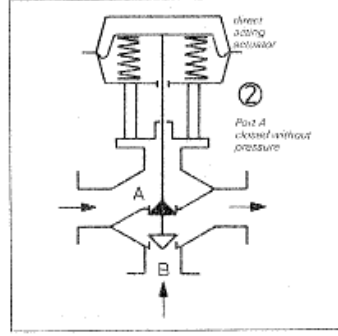
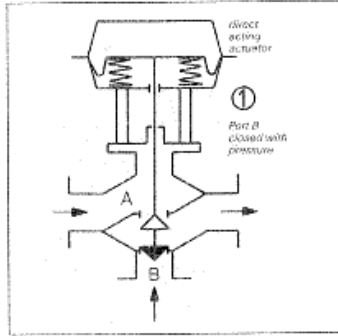
### Pressure-temperature-rating ANSI150 / ANSI300:



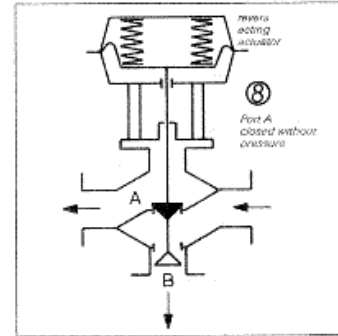
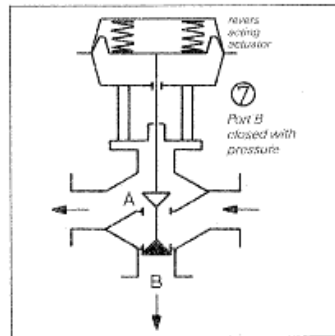
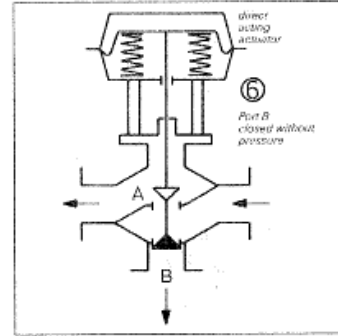
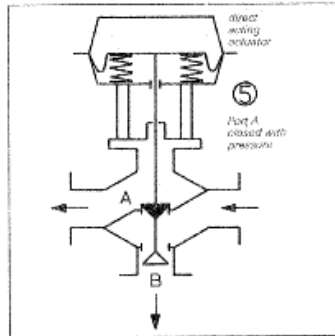
Bellows seal housing of EN-GJS-400-18LT PN25. Therefore pressure-temperature-rating for ANSI150 acc. ANSI B16.42 (Ductile Iron Flanges) and for ANSI300 acc. DIN EN 1092-2.

### Mode of action of the pneumatic actuator:

**mixing service, V 5066 B**



**diverting service, V 5066 A**

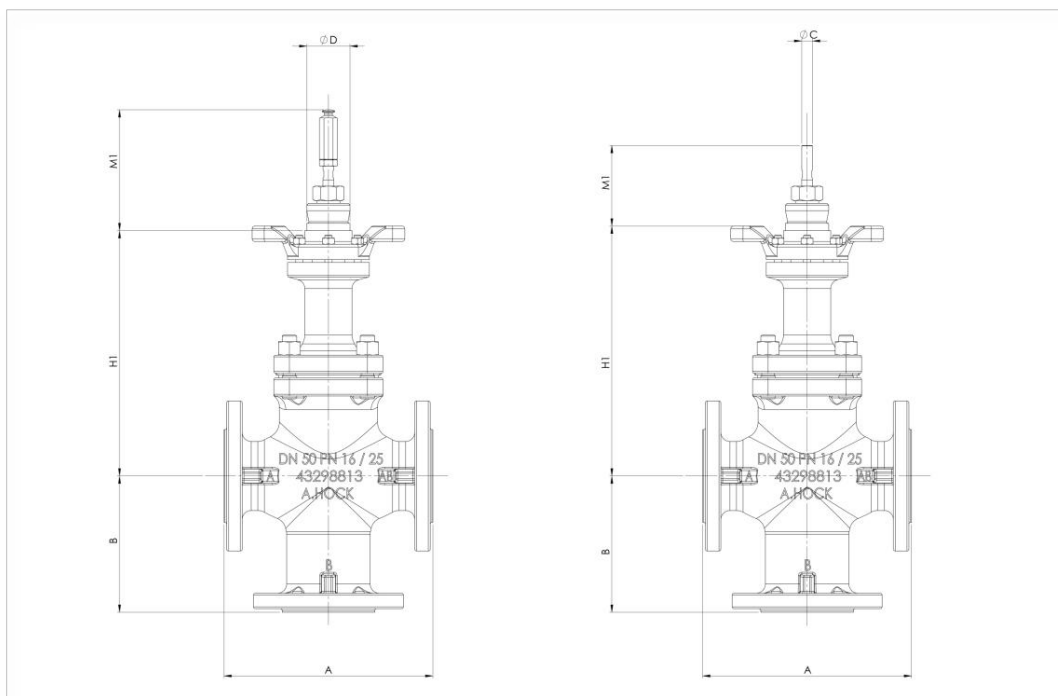


### Dimensions in mm

Size mm	A	B	C	DØ	H1	M1	M2
15	130	120	M10x1	34,8	227	89	93
20	150	120	M10x1	34,8	227	89	93
25	160	120	M10x1	34,8	227	89	93
32	180	135	M10x1	34,8	227	89	93
40	200	140	M12x1	47,6	272	133	93
50	230	150	M12x1	47,6	272	133	93
65	290	165	M12x1	47,6	272	133	93
80	310	220	M12x1	47,6	286	133	93

### Dimensions in inch

Size inch	A	B	C	DØ	H1	M1	M2
1/2	5,12	4,72	M10x1	1,37	8,93	3,5	3,66
3/4	5,9	4,72	M10x1	1,37	8,93	3,5	3,66
1	6,33	4,72	M10x1	1,37	8,93	3,5	3,66
1 1/4	7,08	5,31	M10x1	1,37	8,93	3,5	3,66
1 1/2	7,87	5,51	M12x1	1,87	10,7	5,23	3,66
2	9,05	5,9	M12x1	1,87	10,7	5,23	3,66
2 1/2	11,41	6,49	M12x1	1,87	10,7	5,23	3,66
3	12,2	8,66	M12x1	1,87	11,25	5,23	3,66

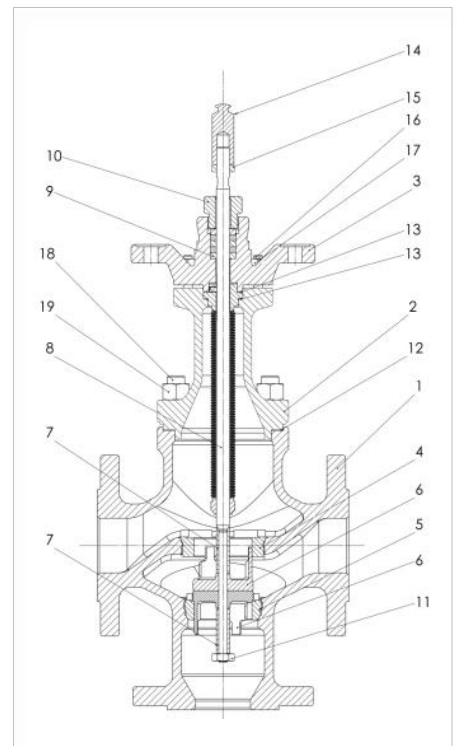


### Shipping weights (only valve without actuator)

Size mm	Size inch	kg	Lbs
15	1/2	9	20.5
20	3/4	10	22
25	1	11	25
32	1 1/4	13	29
40	1 1/2	19	42
50	2	23	51
65	2 1/2	30	67
80	3	47	105



Part description	Pos. Nr.	Material
Valve housing (DIN DN20-80)	1	EN-GJS-400-18LT
Valve housing (DIN DN15)		1.0619 (A-216 WCB)
Valve housing (ANSI 1/2"-3")		1.0619 (A-216 WCB)
Bellows seal bonnet	2	EN-GJS-400-18LT
Bonnet	3	EN-GJS-400-18LT
Uper seating	4	1.4305
Lower seating	5	1.4305
Plug lin.	6	1.4305
Spacer	7	1.4305
Valvelstem with bellows	8	1.4571
Packing	9	Graphit
Packing gland	10	1.4104
Safety nut	11	1.4305
Sealing	12	Graphit
Sealing	13	Graphit
Connection nut (for Honeywell Actuators)	14	1.0711
Hex. Nut (for Honeywell Actuators)	15	1.0711
Stud screw	16	1.7258
Hex. Nut	17	1.7258
Stud screw	18	1.7258
Hex. Nut	19	1.7258
Flow direction indicator	20	1.4301



## Actuators:

### Pneumatic Actuators:

Max. possible differential pressure (closing pressure) by back pressure  $p_2=0$  bar

Pneumatic Actuators Series 2000			direct action							
	mixing service		port B closed with pressure				port A closed without pressure			
	diverting service		port A closed with pressure				port B closed without pressure			
Valve Size	spring range	bar	0.2 - 1.0				0.2 - 1.0	0.8 - 2.2	1.2 - 3.0	1.5 - 3.8
		psi	3 - 15				3 - 15	11 - 31	11 - 31	11 - 31
mm (inch)	supply pressure	bar	1,2	2,4	3,5	6.0	-	-	-	-
		psi	17	34	50	86	-	-	-	-
Actuator size										
15 (1/2")	2009		4,7	25	25	25	4,9	25	25	25
20 (3/4")	2009		4,7	25	25	25	4,9	25	25	25
25 (1")	2009		4,7	25	25	25	4,9	25	25	25
32 (1 1/4")	2009		2,3	25	25	25	2,5	25	25	25
40 (1 1/2")	2009		1,1	25	25	25	1,2	16	25	25
50 (2")	2009		0,3	16	25	25	0,3	9,2	15,4	19,8
65 (2 1/2")	2009		0,24	10,6	20,4	25	-	5,9	10	12,9
80 (3")	2009		-	5,3	10,4	22	-	2,8	5	6,5

Max. possible differential pressure (closing pressure) by back pressure  $p_2=0$  bar

Pneumatic Actuators Series 2000			reverse action							
	mixing service		port A closed with pressure				port B closed without pressure			
	diverting service		port B closed with pressure				port A closed without pressure			
Valve Size	spring range	bar	0.2 - 1.0				0.2 - 1.0	0.8 - 2.2	1.2 - 3.0	1.5 - 3.8
		psi	3 - 15				3 - 15	11 - 31	11 - 31	11 - 31
mm (inch)	supply pressure	bar	1,2	2,4	3,5	6.0	-	-	-	-
		psi	17	34	50	86	-	-	-	-
Actuator size										
15 (1/2")	2009		10,1	25	25	25	10,5	25	25	25
20 (3/4")	2009		10,1	25	25	25	10,5	25	25	25
25 (1")	2009		10,1	25	25	25	10,5	25	25	25
32 (1 1/4")	2009		3,5	25	25	25	3,7	25	25	25
40 (1 1/2")	2009		1,4	25	25	25	1,5	21,2	25	25
50 (2")	2009		0,3	18,5	25	25	0,3	10,4	17,4	22,4
65 (2 1/2")	2009		-	11,5	22,1	25		6,4	10,8	14
80 (3")	2009		-	5,5	10,8	22,9		2,9	5,2	6,8

## Electric Linear Actuators:

Max. possible differential pressure (closing pressure) by back pressure  $p_2=0$  bar

Electric Linear Actuators E2000H, E2000P, ML6421, ML7421 (further ML-actuators on request)									
(Mixing service B closed / Diverting service A closed)									
Valve Size	mm	15	20	25	32	40	50	65	80
	inch	1/2"	3/4"	1"	1/4"	1 1/2"	2"	2 1/2"	3"
Actuator-Typ	Force (N)								
E2000P-PSL-201	1000	13,1	13,1	13,1	7,4	4,4	2,1	1,2	-
ML6421A/ML7421A	1800	25	25	25	17,4	-	-	-	-
ML6421B/ML7421B	1800	-	-	-	-	10	5,4	3,4	1,5
E2000H-SBA20	2000	25	25	25	19,9	12,3	6,6	4,2	1,9
E2000P-PSL-202	2000	25	25	25	19,9	12,3	6,6	4,2	1,9
E2000H-SBA45-2	3500	-	-	-	25	24,3	13,4	8,7	4,3
E2000H-SBA45-3	4500	-	-	-	25	25	18	11,7	5,9
E2000P-PSL-204	4500	-	-	-	25	25	18	11,7	5,9
E2000H-SBA45-4	6000	-	-	-	-	-	24,8	16,2	8,2
E2000P-PSL-208	8000	-	-	-	-	-	25	22,3	11,4

Max. possible differential pressure (closing pressure) by back pressure  $p_2=0$  bar

Electric Linear Actuators E2000H, E2000P, ML6421, ML7421 (further ML-actuators on request)									
(Mixing service A closed / Diverting service B closed)									
Valve Size	mm	15	20	25	32	40	50	65	80
	inch	1/2"	3/4"	1"	1/4"	1 1/2"	2"	2 1/2"	3"
Actuator-Typ	Force (N)								
E2000P-PSL-201	1000	25	25	25	11	5,5	2,4	1,3	-
ML6421A/ML7421A	1800	25	25	25	25	-	-	-	-
ML6421B/ML7421B	1800	-	-	-	-	13	6,4	3,8	1,7
E2000H-SBA20	2000	25	25	25	25	15,5	7,5	4,6	2
E2000P-PSL-202	2000	25	25	25	25	15,5	7,5	4,6	2
E2000H-SBA45-2	3500	-	-	-	-	25	15,2	9,5	4,5
E2000H-SBA45-3	4500	-	-	-	-	25	20,4	12,7	6,1
E2000P-PSL-204	4500	-	-	-	-	25	20,4	12,7	6,1
E2000H-SBA45-4	6000	-	-	-	-	-	25	17,6	8,6
E2000P-PSL-208	8000	-	-	-	-	-	25	24,2	11,9

(Versions with Leakage class IVa (0,05% of Kvs-value) and IV (0,01% of Kvs-value) on request)



# Ordering Checklist

Parameter	Items to check
Pipe size	Valve-Size, pressure rating
Service	Mixing- or diverting service
Housing-DN	Nominal pipe size, unless others then requested
Ports	DIN or ANSI
Nominal pressure	Working pressure and -temperature
Leakage rate	Leakage class
Ambiente temperature	Deviations from standardvalues
Actuator	Pneumatic – or electrical linear actuator
Positioner	Pneumatic, electro-pneumatic, digital, EX-version
Accessories	Details by means of actuator choise

Valvetyp (Series V5066)	Valve service + action (direct/reverse)	Housing + Size	Pressure rating	Kvs - value	Actuator typ / spring range	Actuator size	Pneumatic Positioner	Electropneumatic Positioner	Digital Positioner	Pressure regulator / booster	Stroke transmitter / limit switches	Solenoidvalve
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