



Update 09/2016
Control valves PN16



Building HVAC components

Belparts is specialized in the development, production and marketing of components for the automation of HVAC-systems in buildings. We design field components that exactly match market needs. Throughout the development process, we ensure functionality, quality and reliability.

Belparts produces field components for all areas of HVAC, whether production, distribution, or terminal control of heating and cooling, as well as ventilation. Whatever the HVAC-application, we have it covered.

Our field components are designed to be smoothly integrated with any Building Management System (BMS), Direct Digital Controller (DDC), Programmable Logic Controller (PLC), and Supervisory Control and Data Acquisition (SCADA) system.

A leading player for more than two decades

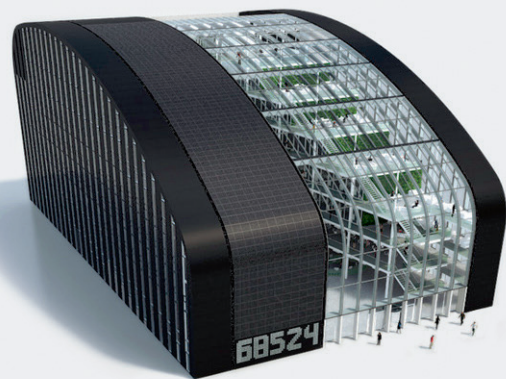
Belparts was established in 1987 by professionals from the HVAC-industry. Since then, we have developed a reputation for intelligent product design and reliable solutions. Our company has enjoyed a healthy success ever since its foundation.

Market driven innovation

We constantly strive for product and system optimizations. Our engineers incorporate the latest proven technological developments into the design of new HVAC-components and understand how to combine high quality with product affordability.

Shared competency and values

The Belparts staff shares a common passion for technology, product design, quality, and HVAC-applications. Each of our team members is both customer and results-oriented, and is trained to think 'innovation'. Integrity and responsibility are prerequisites for every employee.



energetx



Belparts produces a broad range of components that save costs at every single point in your HVAC-system. By selecting the optimal component for each individual situation, considerable amounts of energy can be saved. Our **energetx**-range of products includes control valves, rotating valves, valve and air damper actuators, terminal control valves, and sensors.

dynamx



Based on our revolutionary Dynamic Flow Networking (DFN) concept, our **dynamx**-valves adjust the flow of energy exactly to the desired conditions. This ensures that only the exact amount of energy is delivered at the right place and at the right time. The result is optimal comfort and reduced energy costs.

energetx

1. Control valves PN16



3-way control valves PN16

Threaded connection	6
Flanged connection	12

2-way control valves PN16

Threaded connection	16
Flanged connection	22

Product key

The product identification key contains all essential data defining the unique features of the valve/actuator combination.

Example: type RH3F080A-160U44

RH	3	F	080A	160	U	4	4
Valve			Actuator				

Type of control valve
RH control valve PN16

Number of ports
2 2-port
3 3-port

Connection type
D threaded
F flanged

DN and Kvs value
080A DN80, Kvs 100m³/h
080B DN80, Kvs 80m³/h

Actuator type
160 force 1600N

Type of control signal
F 3-point (3-wire)
U modulating 0..10Vdc + 3-point (4-wire)
i modulating 4..20mA + 3-point (4-wire)

Power supply
2 AC 230 Volt
4 AC 24 Volt

Running time
4 4s/mm

Order reference

The Belparts motorized valves can be ordered with a single order reference number. The selection table shows nominal size DN, Kvs value and maximum differential pressures on the right page (odd page numbers). Do you want to order control valve and electric actuator as separate parts, you will find all information required on the left page (even page numbers).



Please feel free to contact us for free selection and calculation support of the control valves. We will be pleased to help you determine the most energy efficient solution.



Overview

Symbol	Symbol	DN	SERIES	Image	PN16	Threaded	Flanged	Kvs [m³/h]	Medium T° 1)	Material valve body			Page
										Brass	Bronze Rg-5	Cast iron GG-25	
•		15..25	RZ3D		•	•		0,25..8	0..+120°C	•			6
•		15..50	RBV3		•	•		1,6..40	0..+100°C	•			8
•		15..50	RH3D		•	•		0,63..40	-15..+150°C		•		10
•		15..150	RH3F		•		•	0,63..315	-10..+150°C			•	12
•		125..300	RE3F		•		•	125..1600	-10..+180°C			•	14
	•	15..25	RZ2D		•	•		0,25..8	0..+120°C	•			16
	•	15..50	RBV2		•	•		4..63	0..+100°C	•			18
	•	15..50	RH2D		•	•		0,63..40	-15..+150°C		•		20
	•	15..150	RH2F		•		•	0,63..315	-10..+150°C			•	22
	•	125..300	RE2F		•		•	125..1600	-10..+180°C			•	24
Accessories													26


How to determine the appropriate control valve? It's that simple!

Control valves and actuators may be ordered separately or with a single order reference number. This reference number can easily be derived from the selection table.

- 1 Select the control valve based on the diameter (DN) and Kvs-value (m3/h) of the control valve.
- 2 Choose the actuator based on power supply, control signal and actuating force.
- 3 For each combination selected, the maximum differential pressure in kPa, and the unit price can be read from the table.
- 4 Scan the QR code in order to view the corresponding data sheet.


3-port control valves type RZ3D.. PN16 • DN15..DN25

- Valve body: brass
- Medium: water 0°C..+120°C
- A ▶ AB: equal percentage
- Sealings: EPDM O-rings
- Threaded connection ISO 228-1, with coupling parts ISO 7-1 (Rp)
- Tight sealing EN1349, VI G1

Valve	TYPE	DN	Rp	Kvs [m³/h]	Stroke	PN	Price €/pc
	RZ3D015A ▲	15	3/8"	2,5	6,5mm	16bar	98,-
	RZ3D015B	15	3/8"	1,6	6,5mm	16bar	98,-
	RZ3D015C	15	3/8"	1	6,5mm	16bar	98,-
	RZ3D015D	15	3/8"	0,63	6,5mm	16bar	98,-
	RZ3D015E	15	3/8"	0,4	6,5mm	16bar	98,-
	RZ3D015F	15	3/8"	0,25	6,5mm	16bar	98,-
	RZ3D020A ▲	20	1/2"	4	6,5mm	16bar	112,-
	RZ3D025A ▲	25	3/4"	8	6,5mm	16bar	197,-
RZ3D025B	25	3/4"	6,3	6,5mm	16bar	197,-	

Actuators for RZ3D.. control valves

- Automatic self-calibration, overload protected
- Manual override
- IP40
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P or 0..10Vdc
- Actuating time 20s/mm

Actuator	TYPE	Max. stroke	Force	AC 24 Volt	AC 230 Volt	3P	0..10Vdc	VA	Price €/pc
	20U42.RZ ▲	9mm	150N	●	-	●	●	2,5	152,-
	20M22.RZ	9mm	150N	-	●	●	-	2,5	181,-

▲ standard

Motorized 3-port control valves PN16 • DN15..DN25

RZ3D..

- Valve body: brass
- Medium: water 0°C..+120°C
- A ▶ AB: equal percentage
- Electric actuator: 150N
- Power supply U_v : AC 24 Volt or AC 230 Volt
- Control signal Y: 3P or 0..10Vdc




TYPE			U_v	Y
	●	-	AC 24 Volt	3P
	●	-	AC 24 Volt	0..10Vdc
	-	-	AC 24 Volt	4..20mA
	-	●	AC 230 Volt	3P
	-	-	AC 230 Volt	0..10Vdc
	-	-	AC 230 Volt	4..20mA
	20	20	s/mm	
	150N	150N		

DN	TYPE	Kvs	Δp_s	
			kPa	Price
15	RZ3D015A ▲	2,5	kPa	300
			€	250,-
15	RZ3D015B	1,6	kPa	300
			€	250,-
15	RZ3D015C	1	kPa	600
			€	250,-
15	RZ3D015D	0,63	kPa	600
			€	250,-
15	RZ3D015E	0,4	kPa	600
			€	250,-
15	RZ3D015F	0,25	kPa	600
			€	250,-
20	RZ3D020A ▲	4	kPa	300
			€	264,-
25	RZ3D025A ▲	8	kPa	150
			€	349,-
25	RZ3D025B	6,3	kPa	150
			€	349,-

▲ standard


3-port control ball valve type RBV3.. PN16 • DN15..DN50

- Valve body: brass (CW602N)
- Medium: water 0°C..+100°C ¹⁾
- A ► AB: equal percentage
- Sealings: EPDM O-rings
- Female (inside) thread ISO 7/1 (Rp)
- Valve leakage: 0,001% of the Kvs value

Valve	TYPE	DN	Rp	Kvs [m ³ /h]	∠	PN	Price €/pc
	RBV3T015A	15	1/2"	6,3	90°	16bar	67,-
	RBV3T015B ▲	15	1/2"	4	90°	16bar	67,-
	RBV3T015C	15	1/2"	2,5	90°	16bar	67,-
	RBV3T015D	15	1/2"	1,6	90°	16bar	67,-
	RBV3T020A ▲	20	3/4"	6,3	90°	16bar	75,-
	RBV3T020B	20	3/4"	4	90°	16bar	75,-
	RBV3T025A ▲	25	1"	10	90°	16bar	85,-
	RBV3T032A ▲	32	1 1/4"	16	90°	16bar	104,-
	RBV3T040A ▲	40	1 1/2"	25	90°	16bar	161,-
RBV3T050A ▲	50	2"	40	90°	16bar	261,-	

Actuators for RBV3.. control ball valves

- Microprocessor-controlled, overload protected
- With manual override
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P or 0..10Vdc
- Actuating time fixed

Actuator	TYPE	∠	Torque	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	LAN4SR	90°	4Nm	●	-	-	-	●	-	9	²⁾
	RAN2 ▲	90°	8Nm	-	●	●	-	-	-	1,7	141,-
	RAN4 ▲	90°	8Nm	●	-	●	-	-	-	1,7	141,-
	RAN4SR ▲	90°	8Nm	●	-	-	-	●	-	9	165,-

¹⁾ can also be used with medium temperatures -10°C..+130°C by using specific accessories (order separately)

²⁾ on request



▲ standard

Motorized 3-port control ball valves PN16 • DN15..DN50

RBV3..

- Valve body: brass (CW602N)
- Medium: water 0°C..+100°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 4Nm or 8Nm
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P or 0..10Vdc



TYPE				U _v	Y
	RAN2	RAN4	RAN4SR		
	-	●	-	AC 24 Volt	3P
	-	-	●	AC 24 Volt	0..10Vdc
	-	-	-	AC 24 Volt	4..20mA
	●	-	-	AC 230 Volt	3P
	-	-	-	AC 230 Volt	0..10Vdc
	-	-	-	AC 230 Volt	4..20mA
	120	120	120 ²⁾	Running time [s]	
	8Nm	8Nm	8Nm		

DN	TYPE	Kvs	Δp _s	Price			
			kPa				
15	RBV3T015A	6,3	kPa	2000	2000	2000	
			€	208,-	208,-	232,-	
15	RBV3T015B ▲	4	kPa	2000	2000	2000	
			€	208,-	208,-	232,-	
15	RBV3T015C	2,5	kPa	2000	2000	2000	
			€	208,-	208,-	232,-	
15	RBV3T015D	1,6	kPa	2000	2000	2000	
			€	208,-	208,-	232,-	
20	RBV3T020A ▲	6,3	kPa	2000	2000	2000	
			€	216,-	216,-	240,-	
20	RBV3T020B	4	kPa	2000	2000	2000	
			€	216,-	216,-	240,-	
25	RBV3T025A ▲	10	kPa	2000	2000	2000	
			€	226,-	226,-	250,-	
32	RBV3T032A ▲	16	kPa	2000	2000	2000	
			€	245,-	245,-	269,-	
40	RBV3T040A ▲	25	kPa	2000	2000	2000	
			€	302,-	302,-	326,-	
50	RBV3T050A ▲	40	kPa	2000	2000	2000	
			€	402,-	402,-	426,-	

¹⁾ can also be used with medium temperatures -10°C..+130°C by using specific accessories (order separately)

²⁾ actuating time selectable: 35s, 60s or 120s (default factory setting)

▲ standard

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3-port control valves type RH3D.. PN16 • DN15..DN50

- Valve body: bronze Rg-5 (CC491K)
- Medium: water 0°C..+150°C ²⁾
- A ▶ AB: equal percentage
- Sealings: EPDM O-rings
- Threaded connection ISO 228-1, with coupling parts ISO 7-1 (Rp) ¹⁾
- Tight sealing EN1349, VI G1

Valve	TYPE	DN	Rp	Kvs [m³/h]	Stroke	PN	Price €/pc
	RH3D015A ▲	15	1/2"	4	12mm	16bar	134,-
	RH3D015B ▲	15	1/2"	2,5	12mm	16bar	134,-
	RH3D015C ▲	15	1/2"	1,6	12mm	16bar	134,-
	RH3D015D ▲	15	1/2"	1,25	12mm	16bar	134,-
	RH3D015E ▲	15	1/2"	0,63	12mm	16bar	134,-
	RH3D020A ▲	20	3/4"	6,3	12mm	16bar	137,-
	RH3D020B ▲	20	3/4"	5	12mm	16bar	137,-
	RH3D025A ▲	25	1"	10	14mm	16bar	163,-
	RH3D025B ▲	25	1"	8	14mm	16bar	163,-
	RH3D032A ▲	32	1 1/4"	16	14mm	16bar	196,-
	RH3D032B ▲	32	1 1/4"	12,5	14mm	16bar	196,-
	RH3D040A ▲	40	1 1/2"	25	14mm	16bar	244,-
	RH3D040B ▲	40	1 1/2"	20	14mm	16bar	244,-
	RH3D050A ▲	50	2"	40	14mm	16bar	334,-
RH3D050B ▲	50	2"	31,5	14mm	16bar	334,-	

¹⁾  each valve is delivered with connection parts ISO 7-1 included: 3 pieces of threaded connection parts and sealings.

Actuators for RH3D.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time selectable

Actuator	TYPE	Max. stroke	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	55F25.14	14mm	600N	-	●	●	-	-	-	7	240,-
	55F45.14 ▲	14mm	600N	●	-	●	-	-	-	3	223,-
	55U45.14 ▲	14mm	600N	●	-	-	-	●	-	3	223,-
	55I45.14 ▲	14mm	600N	●	-	-	-	-	●	3	223,-
	100U29.20 ▲	20mm	1000N	-	●	-	³⁾	●	-	12	442,-
	100I29.20 ▲	20mm	1000N	-	●	-	³⁾	-	●	12	442,-
	100U49.20 ▲	20mm	1000N	●	-	-	³⁾	●	-	6	415,-
	100I49.20 ▲	20mm	1000N	●	-	-	³⁾	-	●	6	415,-
	160U24.14 ▲	14mm	1600N	-	●	-	³⁾	●	-	12	553,-
	160I24.14 ▲	14mm	1600N	-	●	-	³⁾	-	●	12	553,-
	160U44.14 ▲	14mm	1600N	●	-	-	³⁾	●	-	6	525,-
	160I44.14 ▲	14mm	1600N	●	-	-	³⁾	-	●	6	525,-

²⁾ with stem heater for media temperatures down to -15°C (order separately) ▲ standard

³⁾ 3-point, 4 wire connection

Motorized 3-port control valves PN16 • DN15..DN50

RH3D..

- Valve body: bronze Rg-5 (CC491K)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 600N..1600N
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA




TYPE						U _v	Y
	-	●	-	4)	4)	AC 24 Volt	3P
	-	-	●	●	●	AC 24 Volt	0..10Vdc
	-	-	2)	2)	2)	AC 24 Volt	4..20mA
	●	-	-	3) 4)	3) 4)	AC 230 Volt	3P
	-	-	-	3)	3)	AC 230 Volt	0..10Vdc
	-	-	-	3)	3)	AC 230 Volt	4..20mA
	5	5	5	9	4	s/mm	
	600N	600N	600N	1000N	1600N		

DN	TYPE	Kvs	Δp _s		Price					
			kPa	€						
15	RH3D015A	4	kPa	1500	1500	1500	1600			
			€	374,-	357,-	357,-	549,-			
15	RH3D015B	2,5	kPa	1500	1500	1500	1600			
			€	374,-	357,-	357,-	549,-			
15	RH3D015C	1,6	kPa	1500	1500	1500	1600			
			€	374,-	357,-	357,-	549,-			
15	RH3D015D	1,25	kPa	1500	1500	1500	1600			
			€	374,-	357,-	357,-	549,-			
15	RH3D015E	0,63	kPa	1500	1500	1500	1600			
			€	374,-	357,-	357,-	549,-			
20	RH3D020A	6,3	kPa	1250	1250	1250	1600			
			€	377,-	360,-	360,-	552,-			
20	RH3D020B	5	kPa	1250	1250	1250	1600			
			€	377,-	360,-	360,-	552,-			
25	RH3D025A	10	kPa	750	750	750	1500			
			€	403,-	386,-	386,-	578,-			
25	RH3D025B	8	kPa	750	750	750	1500			
			€	403,-	386,-	386,-	578,-			
32	RH3D032A	16	kPa	450	450	450	900	1500		
			€	436,-	419,-	419,-	611,-	721,-		
32	RH3D032B	12,5	kPa	450	450	450	900	1500		
			€	436,-	419,-	419,-	611,-	721,-		
40	RH3D040A	25	kPa	250	250	250	550	950		
			€	484,-	467,-	467,-	659,-	769,-		
40	RH3D040B	20	kPa	250	250	250	550	950		
			€	484,-	467,-	467,-	659,-	769,-		
50	RH3D050A	40	kPa	150	150	150	350	600		
			€	574,-	557,-	557,-	749,-	859,-		
50	RH3D050B	31,5	kPa	150	150	150	350	600		
			€	574,-	557,-	557,-	749,-	859,-		

- ¹⁾ with stem heater for media temperatures down to -15°C (order separately)
²⁾ Y: 4..20mA to be specified when ordering (no extra cost)
³⁾ extra cost: to be defined using data on the previous page
⁴⁾ 3-point, 4 wire connection






3-port control valves type RH3F.. PN16 • DN50..DN150

- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Flanged connection EN1092-2 type 21
- Tight sealing EN1349, VI G1
- Sealings: EPDM O-rings

Valve	TYPE	DN ²⁾	Kvs [m ³ /h]	Stroke	PN	Price €/pc
	RH3F050A ▲	50	40	14mm	16bar	379,-
	RH3F050B	50	31,5	14mm	16bar	379,-
	RH3F065A.XX ▲	65	63	20 or 30mm ³⁾	16bar	509,-
	RH3F065B.XX	65	50	20 or 30mm ³⁾	16bar	509,-
	RH3F080A ▲	80	100	30mm	16bar	649,-
	RH3F080B	80	80	30mm	16bar	649,-
	RH3F100A ▲	100	160	30mm	16bar	1.096,-
	RH3F100B	100	125	30mm	16bar	1.096,-
	RH3F125A ▲	125	250	50mm	16bar	1.619,-
RH3F150A ▲	150	315	50mm	16bar	1.914,-	

Actuators for RH3F.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time selectable

Actuator	TYPE	Max. stroke ³⁾	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	55F25.XX	14 or 20mm	600N	-	●	●	-	-	-	7	240,-
	55F45.XX ▲	14 or 20mm	600N	●	-	●	-	-	-	3	223,-
	55U45.XX ▲	14 or 20mm	600N	●	-	-	-	●	-	3	223,-
	55I45.XX ▲	14 or 20mm	600N	●	-	-	-	-	●	3	223,-
	100U29.20 ▲	20mm	1000N	-	●	-	⁴⁾	●	-	12	442,-
	100I29.20 ▲	20mm	1000N	-	●	-	⁴⁾	-	●	12	442,-
	100U49.20 ▲	20mm	1000N	●	-	-	⁴⁾	●	-	6	415,-
	100I49.20 ▲	20mm	1000N	●	-	-	⁴⁾	-	●	6	415,-
	160U24.XX ▲	14 or 30mm	1600N	-	●	-	⁴⁾	●	-	12	553,-
	160I24.XX ▲	14 or 30mm	1600N	-	●	-	⁴⁾	-	●	12	553,-
	160U44.XX ▲	14 or 30mm	1600N	●	-	-	⁴⁾	●	-	6	525,-
	160I44.XX ▲	14 or 30mm	1600N	●	-	-	⁴⁾	-	●	6	525,-
	250U22.XX ▲	30 or 50mm	2500N	-	●	-	⁴⁾	●	-	25	927,-
	250I22.XX ▲	30 or 50mm	2500N	-	●	-	⁴⁾	-	●	25	927,-
	250U42.XX ▲	30 or 50mm	2500N	●	-	-	⁴⁾	●	-	18	877,-
	250I42.XX ▲	30 or 50mm	2500N	●	-	-	⁴⁾	-	●	18	877,-
	500U22.XX ▲	30 or 50mm	5000N	-	●	-	⁴⁾	●	-	25	957,-
	500I22.XX ▲	30 or 50mm	5000N	-	●	-	⁴⁾	-	●	25	957,-
	500U42.XX ▲	30 or 50mm	5000N	●	-	-	⁴⁾	●	-	18	907,-
	500I42.XX ▲	30 or 50mm	5000N	●	-	-	⁴⁾	-	●	18	907,-

¹⁾ with stem heater for media temperatures down to -10°C (order separately)
²⁾ also available DN15..DN40 (on request)

³⁾ max. stroke (xx) to specify when ordering
⁴⁾ 3-point, 4 wire connection

Motorized 3-port control valves PN16 • DN50..DN150

RH3F..



- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 600N..5000N
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA




TYPE							U _v	Y
	-	●	●	●	●	●	AC 24 Volt	3P ⁵⁾
	●	●	●	●	●	●	AC 24 Volt	0..10Vdc
	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾	AC 24 Volt	4..20mA
	-	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	3P ⁵⁾
	-	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	0..10Vdc
	³⁾	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	4..20mA
	5	9	4	2,5	0,4	2,5	s/mm	
	600N	1000N	1600N	2500N	4000N	5000N		

DN ⁴⁾	TYPE	Kvs	Δp _s		Price							
			kPa	Price								
50	RH3F050A ▲	40	kPa	150	350	600	-	-	-			
			€	602,-	794,-	904,-	-	-	-			
50	RH3F050B	31,5	kPa	150	350	600	-	-	-			
			€	602,-	794,-	904,-	-	-	-			
65	RH3F065A ▲	63	kPa	100	150	350	600	950	1250			
			€	732,-	924,-	1.034,-	1.386,-	1.401,-	1.416,-			
65	RH3F065B	50	kPa	100	150	350	600	950	1250			
			€	732,-	924,-	1.034,-	1.386,-	1.401,-	1.416,-			
80	RH3F080A ▲	100	kPa	-	-	230	350	650	850			
			€	-	-	1.174,-	1.526,-	1.541,-	1.556,-			
80	RH3F080B	80	kPa	-	-	230	350	650	850			
			€	-	-	1.174,-	1.526,-	1.541,-	1.556,-			
100	RH3F100A ▲	160	kPa	-	-	140	250	400	500			
			€	-	-	1.621,-	1.973,-	1.988,-	2.003,-			
100	RH3F100B	125	kPa	-	-	140	250	400	500			
			€	-	-	1.621,-	1.973,-	1.988,-	2.003,-			
125	RH3F125A ▲	250	kPa	-	-	-	160	200	370			
			€	-	-	-	2.496,-	2.511,-	2.526,-			
150	RH3F150A ▲	315	kPa	-	-	-	120	130	270			
			€	-	-	-	2.791,-	2.806,-	2.821,-			

- ¹⁾ with stem heater for media temperatures down to -10°C (order separately)
- ²⁾ Y: 4..20mA to be specified when ordering (no extra cost)
- ³⁾ extra cost: to be defined using data on the previous page
- ⁴⁾ also available DN15..DN40 (on request)
- ⁵⁾ 3-point, 4 wire connection
- ▲ standard

3-port control valves type RE3F.. PN16 • DN200..DN300

- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+180°C ¹⁾
- A ▶ AB: equal percentage
- Flanged connection EN1092-2 type 21
- Valve leakage ≤0,01% Kvs (EN1349, IV L1)
- Sealings: EPDM O-rings

Valve	TYPE	DN ²⁾	Kvs [m³/h]	Stroke	PN	Price €/pc
	RE3F200A ▲	200	630	60mm	16bar	10.142,-
	RE3F200B	200	500	60mm	16bar	10.142,-
	RE3F200C	200	400	60mm	16bar	10.360,-
	RE3F200D	200	315	60mm	16bar	10.360,-
	RE3F250AA ▲	250	1000	80mm	16bar	13.358,-
	RE3F250A ▲	250	800	80mm	16bar	13.358,-
	RE3F250B	250	630	80mm	16bar	13.358,-
	RE3F250C	250	500	80mm	16bar	13.358,-
	RE3F300AA ▲	300	1600	90mm	16bar	⁵⁾
	RE3F300A ▲	300	1250	80mm	16bar	18.476,-
	RE3F300B	300	1000	80mm	16bar	18.476,-
	RE3F300C	300	800	80mm	16bar	18.476,-
	RE3F300D	300	630	80mm	16bar	18.476,-

Actuators for RE3F.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time fixed

Actuator	TYPE	Max. stroke ³⁾	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	1003U21.XX ▲	60 or 80mm	10kN	-	●	-	⁴⁾	●	-	63	2.434,-
	1003I21.XX ▲	60 or 80mm	10kN	-	●	-	⁴⁾	-	●	63	2.434,-
	1003U41.XX ▲	60 or 80mm	10kN	●	-	-	⁴⁾	●	-	50	2.307,-
	1003I41.XX ▲	60 or 80mm	10kN	●	-	-	⁴⁾	-	●	50	2.307,-
	1503U22.XX ▲	60 or 80mm	15kN	-	●	-	⁴⁾	●	-	63	2.477,-
	1503I22.XX ▲	60 or 80mm	15kN	-	●	-	⁴⁾	-	●	63	2.477,-
	1503U42.XX ▲	60 or 80mm	15kN	●	-	-	⁴⁾	●	-	50	2.355,-
	1503I42.XX ▲	60 or 80mm	15kN	●	-	-	⁴⁾	-	●	50	2.355,-

¹⁾ with stem heater for media temperatures down to -10°C (order separately)

²⁾ also available DN15..DN150 (on request)

³⁾ max. stroke (xx) to specify when ordering

⁴⁾ 3-point, 4 wire connection

⁵⁾ on request

▲ standard

Motorized 3-port control valves PN16 • DN200..DN300

RE3F..

- Valve body: cast iron GG-25 (EN-JL1040) ¹⁾
- Medium: water 0°C..+180°C ²⁾
- A ▶ AB: equal percentage
- Electric actuator: 10kN or 15kN
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA



TYPE	1003U41	1503U42	U _v	Y
	●	●	AC 24 Volt	3P ⁵⁾
	●	●	AC 24 Volt	0..10Vdc
	³⁾	³⁾	AC 24 Volt	4..20mA
	⁴⁾	⁴⁾	AC 230 Volt	3P ⁵⁾
	⁴⁾	⁴⁾	AC 230 Volt	0..10Vdc
	⁴⁾	⁴⁾	AC 230 Volt	4..20mA
	1	2	s/mm	
	10kN	15kN		


DN	TYPE	Kvs	Δp _s	Price	
				kPa	€
200	RE3F200A ▲	630	kPa	200	370
				€	12.449,-
200	RE3F200B	500	kPa	200	370
				€	12.449,-
200	RE3F200C	400	kPa	200	370
				€	12.667,-
200	RE3F200D	315	kPa	200	370
				€	12.667,-
250	RE3F250AA ▲	1000	kPa	100	220
				€	15.664,-
250	RE3F250A ▲	800	kPa	100	220
				€	15.664,-
250	RE3F250B	630	kPa	100	220
				€	15.664,-
250	RE3F250C	500	kPa	100	220
				€	15.664,-
300	RE3F300A ▲	1250	kPa	-	150
				€	-
300	RE3F300B	1000	kPa	-	150
				€	-
300	RE3F300C	800	kPa	-	150
				€	-
300	RE3F300D	630	kPa	-	150
				€	-

- ¹⁾ can also be delivered in spheroidal cast iron GGG-40.3
²⁾ with stem heater for media temperatures down to -10°C (order separately)
³⁾ Y: 4..20mA to be specified when ordering
⁴⁾ extra cost: on request
⁵⁾ 3-point, 4 wire connection
▲ standard

Other actuator types and/or higher Δp_{max} values or larger Kvs values available on request!
This series of control valves are always delivered as a pre-assembled unit.


2-port control valves type RZ2D.. PN16 • DN15..DN25

- Valve body: brass
- Medium: water 0°C..+120°C
- A ▶ AB: equal percentage
- Sealings: EPDM O-rings
- Threaded connection ISO 228-1, with coupling parts ISO 7-1 (Rp)
- Tight sealing EN1349, VI G1

Valve	TYPE	DN	Rp	Kvs [m³/h]	Stroke	PN	Price €/pc
	RZ2D015A ▲	15	3/8"	2,5	6,5mm	16bar	72,-
	RZ2D015B	15	3/8"	1,6	6,5mm	16bar	72,-
	RZ2D015C	15	3/8"	1	6,5mm	16bar	72,-
	RZ2D015D	15	3/8"	0,63	6,5mm	16bar	72,-
	RZ2D015E	15	3/8"	0,4	6,5mm	16bar	72,-
	RZ2D015F	15	3/8"	0,25	6,5mm	16bar	72,-
	RZ2D020A ▲	20	1/2"	4	6,5mm	16bar	78,-
	RZ2D025A ▲	25	3/4"	8	6,5mm	16bar	153,-
	RZ2D025B	25	3/4"	6,3	6,5mm	16bar	153,-

Actuators for RZ2D.. control valves

- Automatic self-calibration, overload protected
- Manual override
- IP40
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P or 0..10Vdc
- Actuating time 20s/mm

Actuator	TYPE	Max. stroke	Force	AC 24 Volt	AC 230 Volt	3P	0..10Vdc	VA	Price €/pc
	20U42.RZ ▲	9mm	150N	●	-	●	●	2,5	152,-
	20M22.RZ	9mm	150N	-	●	●	-	2,5	181,-

▲ standard

Motorized 2-port control valves PN16 • DN15..DN25

RZ2D..

- Valve body: brass
- Medium: water 0°C..+120°C
- A ▶ AB: equal percentage
- Electric actuator: 150N
- Power supply U_v : AC 24 Volt or AC 230 Volt
- Control signal Y: 3P or 0..10Vdc



TYPE	20U42	20M22	U_v	Y
	●	-	AC 24 Volt	3P
	●	-	AC 24 Volt	0..10Vdc
	-	-	AC 24 Volt	4..20mA
	-	●	AC 230 Volt	3P
	-	-	AC 230 Volt	0..10Vdc
	-	-	AC 230 Volt	4..20mA
	20	20	s/mm	
	150N	150N		


DN	TYPE	Kvs	Δp_s	
			kPa	Price
15	RZ2D015A ▲	2,5	kPa	300
			€	224,-
15	RZ2D015B	1,6	kPa	300
			€	224,-
15	RZ2D015C	1	kPa	600
			€	224,-
15	RZ2D015D	0,63	kPa	600
			€	224,-
15	RZ2D015E	0,4	kPa	600
			€	224,-
15	RZ2D015F	0,25	kPa	600
			€	224,-
20	RZ2D020A ▲	4	kPa	300
			€	230,-
25	RZ2D025A ▲	8	kPa	150
			€	305,-
25	RZ2D025B	6,3	kPa	150
			€	305,-

▲ standard




2-port control ball valves type RBV2.. PN16 • DN15..DN50

- Valve body: brass (CW602N)
- Medium: water 0°C..+100°C ¹⁾
- A ▶ AB: equal percentage
- Sealings: EPDM O-rings
- Female (inside) thread ISO 7/1 (Rp)
- Valve leakage: 0,001% of the Kvs value

Valve	TYPE	DN	Rp	Kvs [m³/h]	∠	PN	Price €/pc
	RBV2T015C ▲	15	1/2"	4	90°	16bar	39,-
	RBV2T020A	20	3/4"	10	90°	16bar	44,-
	RBV2T020B ▲	20	3/4"	6,3	90°	16bar	44,-
	RBV2T020C	20	3/4"	4	90°	16bar	44,-
	RBV2T025A	25	1"	16	90°	16bar	59,-
	RBV2T025B ▲	25	1"	10	90°	16bar	59,-
	RBV2T025C	25	1"	6,3	90°	16bar	59,-
	RBV2T032A	32	1 1/4"	25	90°	16bar	83,-
	RBV2T032B ▲	32	1 1/4"	16	90°	16bar	83,-
	RBV2T032C	32	1 1/4"	10	90°	16bar	83,-
	RBV2T040A	40	1 1/2"	40	90°	16bar	118,-
	RBV2T040B ▲	40	1 1/2"	25	90°	16bar	118,-
	RBV2T040C	40	1 1/2"	16	90°	16bar	118,-
	RBV2T050A	50	2"	63	90°	16bar	198,-
	RBV2T050B ▲	50	2"	40	90°	16bar	198,-
RBV2T050C	50	2"	25	90°	16bar	198,-	

Actuators for RBV2.. control ball valves

- Microprocessor-controlled, overload protected
- With manual override
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P or 0..10Vdc
- Actuating time fixed

Actuator	TYPE	∠	Torque	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	LAN4SR	90°	4Nm	●	-	-	-	●	-	9	²⁾
	RAN2 ▲	90°	8Nm	-	●	●	-	-	-	1,7	141,-
	RAN4 ▲	90°	8Nm	●	-	●	-	-	-	1,7	141,-
	RAN4SR ▲	90°	8Nm	●	-	-	-	●	-	9	165,-

¹⁾ can also be used with medium temperatures -10°C..+130°C by using specific accessories (order separately)

²⁾ on request

▲ standard

Motorized 2-port control ball valves PN16 • DN15..DN50

RBV2..

- Valve body: brass (CW602N)
- Medium: water 0°C..+100°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 4Nm or 8Nm
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P or 0..10Vdc



TYPE				U _v	Y
	RAN2	RAN4	RAN4SR		
	-	●	-	AC 24 Volt	3P
	-	-	●	AC 24 Volt	0..10Vdc
	-	-	-	AC 24 Volt	4..20mA
	●	-	-	AC 230 Volt	3P
	-	-	-	AC 230 Volt	0..10Vdc
	-	-	-	AC 230 Volt	4..20mA
	120	120	120 ¹⁾	Running time [s]	
	8Nm	8Nm	8Nm		



DN	TYPE	Kvs	Δp _s		Price	
			kPa	€		
15	RBV2T015C ²⁾ ▲	4	kPa	3500	3500	3500
			€	180,-	180,-	204,-
20	RBV2T020A	10	kPa	3500	3500	3500
			€	185,-	185,-	209,-
20	RBV2T020B ▲	6,3	kPa	3500	3500	3500
			€	185,-	185,-	209,-
20	RBV2T020C	4	kPa	3500	3500	3500
			€	185,-	185,-	209,-
25	RBV2T025A	16	kPa	3500	3500	3500
			€	200,-	200,-	224,-
25	RBV2T025B ▲	10	kPa	3500	3500	3500
			€	200,-	200,-	224,-
25	RBV2T025C	6,3	kPa	3500	3500	3500
			€	200,-	200,-	224,-
32	RBV2T032A	25	kPa	2400	2400	2400
			€	224,-	224,-	248,-
32	RBV2T032B ▲	16	kPa	2400	2400	2400
			€	224,-	224,-	248,-
32	RBV2T032C	10	kPa	2400	2400	2400
			€	224,-	224,-	248,-
40	RBV2T040A	40	kPa	2400	2400	2400
			€	259,-	259,-	283,-
40	RBV2T040B ▲	25	kPa	2400	2400	2400
			€	259,-	259,-	283,-
40	RBV2T040C	16	kPa	2400	2400	2400
			€	259,-	259,-	283,-
50	RBV2T050A	63	kPa	2400	2400	2400
			€	339,-	339,-	363,-
50	RBV2T050B ▲	40	kPa	2400	2400	2400
			€	339,-	339,-	363,-
50	RBV2T050C	25	kPa	2400	2400	2400
			€	339,-	339,-	363,-

¹⁾ actuating time selectable: 35s, 60s or 120s (default factory setting)

²⁾ also available with other Kvs values: 10 - 6,3 - 2,5 - 1,6 - 1 m³/h

2-port control valves type RH2D.. PN16 • DN15..DN50




- Valve body: bronze Rg-5 (CC491K)
- Medium: water 0°C..+150°C ²⁾
- A ▶ AB: equal percentage
- Sealings: EPDM O-rings
- Threaded connection ISO 228-1, with coupling parts ISO 7-1 (Rp) ¹⁾
- Tight sealing EN1349, VI G1

Valve	TYPE	DN	Rp	Kvs [m³/h]	Stroke	PN	Price €/pc
	RH2D015A ▲	15	1/2"	4	12mm	16bar	134,-
	RH2D015B ▲	15	1/2"	2,5	12mm	16bar	134,-
	RH2D015C ▲	15	1/2"	1,6	12mm	16bar	134,-
	RH2D015D ▲	15	1/2"	1,25	12mm	16bar	134,-
	RH2D015E ▲	15	1/2"	0,63	12mm	16bar	134,-
	RH2D020A ▲	20	3/4"	6,3	12mm	16bar	137,-
	RH2D020B ▲	20	3/4"	5	12mm	16bar	137,-
	RH2D025A ▲	25	1"	10	14mm	16bar	163,-
	RH2D025B ▲	25	1"	8	14mm	16bar	163,-
	RH2D032A ▲	32	1 1/4"	16	14mm	16bar	196,-
	RH2D032B ▲	32	1 1/4"	12,5	14mm	16bar	196,-
	RH2D040A ▲	40	1 1/2"	25	14mm	16bar	244,-
	RH2D040B ▲	40	1 1/2"	20	14mm	16bar	244,-
	RH2D050A ▲	50	2"	40	14mm	16bar	334,-
RH2D050B ▲	50	2"	31,5	14mm	16bar	334,-	

¹⁾  each valve is delivered with connection parts ISO 7-1 included: 2 pieces of threaded connection parts and sealings.

Actuators for RH2D.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time selectable

Actuator	TYPE	Max. stroke	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	55F25.14	14mm	600N	-	●	●	-	-	-	7	240,-
	55F45.14 ▲	14mm	600N	●	-	●	-	-	-	3	223,-
	55U45.14 ▲	14mm	600N	●	-	-	-	●	-	3	223,-
	55I45.14 ▲	14mm	600N	●	-	-	-	-	●	3	223,-
	100U29.20 ▲	20mm	1000N	-	●	-	³⁾	●	-	12	442,-
	100I29.20 ▲	20mm	1000N	-	●	-	³⁾	-	●	12	442,-
	100U49.20 ▲	20mm	1000N	●	-	-	³⁾	●	-	6	415,-
	100I49.20 ▲	20mm	1000N	●	-	-	³⁾	-	●	6	415,-
	160U24.14 ▲	14mm	1600N	-	●	-	³⁾	●	-	12	553,-
	160I24.14 ▲	14mm	1600N	-	●	-	³⁾	-	●	12	553,-
	160U44.14 ▲	14mm	1600N	●	-	-	³⁾	●	-	6	525,-
	160I44.14 ▲	14mm	1600N	●	-	-	³⁾	-	●	6	525,-

²⁾ with stem heater for media temperatures down to -15°C (order separately) ▲ standard

³⁾ 3-point, 4 wire connection

Motorized 2-port control valves PN16 • DN15..DN50

RH2D..

- Valve body: bronze Rg-5 (CC491K)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 600N..1600N
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA



TYPE						U _v	Y
	-	●	-	4)	4)	AC 24 Volt	3P
	-	-	●	●	●	AC 24 Volt	0..10Vdc
	-	-	2)	2)	2)	AC 24 Volt	4..20mA
	●	-	-	3) 4)	3) 4)	AC 230 Volt	3P
	-	-	-	3)	3)	AC 230 Volt	0..10Vdc
	-	-	-	3)	3)	AC 230 Volt	4..20mA
	5	5	5	9	4	s/mm	
	600N	600N	600N	1000N	1600N		

DN	TYPE	Kvs	Δp _s	Price							
				kPa	€	kPa	€	kPa	€	kPa	€
15	RH2D015A	4	kPa	1500	1500	1500	1600				
			€	374,-	357,-	357,-	549,-				
15	RH2D015B	2,5	kPa	1500	1500	1500	1600				
			€	374,-	357,-	357,-	549,-				
15	RH2D015C	1,6	kPa	1500	1500	1500	1600				
			€	374,-	357,-	357,-	549,-				
15	RH2D015D	1,25	kPa	1500	1500	1500	1600				
			€	374,-	357,-	357,-	549,-				
15	RH2D015E	0,63	kPa	1500	1500	1500	1600				
			€	374,-	357,-	357,-	549,-				
20	RH2D020A	6,3	kPa	1250	1250	1250	1600				
			€	377,-	360,-	360,-	552,-				
20	RH2D020B	5	kPa	1250	1250	1250	1600				
			€	377,-	360,-	360,-	552,-				
25	RH2D025A	10	kPa	750	750	750	1500				
			€	403,-	386,-	386,-	578,-				
25	RH2D025B	8	kPa	750	750	750	1500				
			€	403,-	386,-	386,-	578,-				
32	RH2D032A	16	kPa	450	450	450	900	1500			
			€	436,-	419,-	419,-	611,-	721,-			
32	RH2D032B	12,5	kPa	450	450	450	900	1500			
			€	436,-	419,-	419,-	611,-	721,-			
40	RH2D040A	25	kPa	250	250	250	550	950			
			€	484,-	467,-	467,-	659,-	769,-			
40	RH2D040B	20	kPa	250	250	250	550	950			
			€	484,-	467,-	467,-	659,-	769,-			
50	RH2D050A	40	kPa	150	150	150	350	600			
			€	574,-	557,-	557,-	749,-	859,-			
50	RH2D050B	31,5	kPa	150	150	150	350	600			
			€	574,-	557,-	557,-	749,-	859,-			

¹⁾ with stem heater for media temperatures down to -15°C (order separately)


²⁾ Y: 4..20mA to be specified when ordering (no extra cost)

³⁾ extra cost: to be defined using data on the previous page

⁴⁾ 3-point, 4 wire connection






2-port control valves type RH2F.. PN16 • DN50..DN150

- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Flanged connection EN1092-2 type 21
- Tight sealing EN1349, VI G1
- Sealings: EPDM O-rings

Valve	TYPE	DN ²⁾	Kvs [m ³ /h]	Stroke	PN	Price €/pc
	RH2F050A ▲	50	40	14mm	16bar	433,-
	RH2F050B	50	31,5	14mm	16bar	433,-
	RH2F065A.XX ▲	65	63	20 or 30mm ³⁾	16bar	557,-
	RH2F065B.XX	65	50	20 or 30mm ³⁾	16bar	557,-
	RH2F080A ▲	80	100	30mm	16bar	714,-
	RH2F080B	80	80	30mm	16bar	714,-
	RH2F100A ▲	100	160	30mm	16bar	1.201,-
	RH2F100B	100	125	30mm	16bar	1.201,-
	RH2F125A ▲	125	250	50mm	16bar	1.762,-
RH2F150A ▲	150	315	50mm	16bar	2.105,-	

Actuators for RH2F.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time selectable

Actuator	TYPE	Max. stroke ³⁾	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	55F25.XX	14 or 20mm	600N	-	●	●	-	-	-	7	240,-
	55F45.XX ▲	14 or 20mm	600N	●	-	●	-	-	-	3	223,-
	55U45.XX ▲	14 or 20mm	600N	●	-	-	-	●	-	3	223,-
	55I45.XX ▲	14 or 20mm	600N	●	-	-	-	-	●	3	223,-
	100U29.20 ▲	20mm	1000N	-	●	-	⁴⁾	●	-	12	442,-
	100I29.20 ▲	20mm	1000N	-	●	-	⁴⁾	-	●	12	442,-
	100U49.20 ▲	20mm	1000N	●	-	-	⁴⁾	●	-	6	415,-
	100I49.20 ▲	20mm	1000N	●	-	-	⁴⁾	-	●	6	415,-
	160U24.XX ▲	14 or 30mm	1600N	-	●	-	⁴⁾	●	-	12	553,-
	160I24.XX ▲	14 or 30mm	1600N	-	●	-	⁴⁾	-	●	12	553,-
	160U44.XX ▲	14 or 30mm	1600N	●	-	-	⁴⁾	●	-	6	525,-
	160I44.XX ▲	14 or 30mm	1600N	●	-	-	⁴⁾	-	●	6	525,-
	250U22.XX ▲	30 or 50mm	2500N	-	●	-	⁴⁾	●	-	25	927,-
	250I22.XX ▲	30 or 50mm	2500N	-	●	-	⁴⁾	-	●	25	927,-
	250U42.XX ▲	30 or 50mm	2500N	●	-	-	⁴⁾	●	-	18	877,-
	250I42.XX ▲	30 or 50mm	2500N	●	-	-	⁴⁾	-	●	18	877,-
	500U22.XX ▲	30 or 50mm	5000N	-	●	-	⁴⁾	●	-	25	957,-
	500I22.XX ▲	30 or 50mm	5000N	-	●	-	⁴⁾	-	●	25	957,-
	500U42.XX ▲	30 or 50mm	5000N	●	-	-	⁴⁾	●	-	18	907,-
	500I42.XX ▲	30 or 50mm	5000N	●	-	-	⁴⁾	-	●	18	907,-

¹⁾ with stem heater for media temperatures down to -10°C (order separately)
²⁾ also available DN15..DN40 (on request)

³⁾ max. stroke (xx) to specify when ordering
⁴⁾ 3-point, 4 wire connection

Motorized 2-port control valves PN16 • DN50..DN150

RH2F..

- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+150°C ¹⁾
- A ▶ AB: equal percentage
- Electric actuator: 600N..5000N
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA




TYPE							U _v	Y
	-	●	●	●	●	●	AC 24 Volt	3P ⁵⁾
	●	●	●	●	●	●	AC 24 Volt	0..10Vdc
	²⁾	²⁾	²⁾	²⁾	²⁾	²⁾	AC 24 Volt	4..20mA
	-	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	3P ⁵⁾
	³⁾	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	0..10Vdc
	³⁾	³⁾	³⁾	³⁾	³⁾	³⁾	AC 230 Volt	4..20mA
	5	9	4	2,5	0,4	2,5	s/mm	
	600N	1000N	1600N	2500N	4000N	5000N		

DN ⁴⁾	TYPE	Kvs	Δp _s		Price						
			kPa	€							
50	RH2F050A ▲	40	kPa	150	350	600	-	-	-	-	-
			€	656,-	848,-	958,-	-	-	-	-	-
50	RH2F050B	31,5	kPa	150	350	600	-	-	-	-	-
			€	656,-	848,-	958,-	-	-	-	-	-
65	RH2F065A ▲	63	kPa	100	150	350	600	950	1250	-	-
			€	780,-	972,-	1.082,-	1.434,-	1.449,-	1.464,-	-	-
65	RH2F065B	50	kPa	100	150	350	600	950	1250	-	-
			€	780,-	972,-	1.082,-	1.434,-	1.449,-	1.464,-	-	-
80	RH2F080A ▲	100	kPa	-	-	230	350	650	850	-	-
			€	-	-	1.239,-	1.591,-	1.606,-	1.621,-	-	-
80	RH2F080B	80	kPa	-	-	230	350	650	850	-	-
			€	-	-	1.239,-	1.591,-	1.606,-	1.621,-	-	-
100	RH2F100A ▲	160	kPa	-	-	140	250	400	500	-	-
			€	-	-	1.726,-	2.078,-	2.093,-	2.108,-	-	-
100	RH2F100B	125	kPa	-	-	140	250	400	500	-	-
			€	-	-	1.726,-	2.078,-	2.093,-	2.108,-	-	-
125	RH2F125A ▲	250	kPa	-	-	-	160	200	370	-	-
			€	-	-	-	2.693,-	2.654,-	2.669,-	-	-
150	RH2F150A ▲	315	kPa	-	-	-	120	130	270	-	-
			€	-	-	-	2.982,-	2.997,-	3.012,-	-	-

- ¹⁾ with stem heater for media temperatures down to -10°C (order separately)
²⁾ Y: 4..20mA to be specified when ordering (no extra cost)
³⁾ extra cost: to be defined using data on the previous page
⁴⁾ also available DN15..DN40 (on request)
⁵⁾ 3-point, 4 wire connection
▲ standard

2-port control valves type RE2F.. PN16 • DN200..DN300

- Valve body: cast iron GG-25 (EN-JL1040)
- Medium: water 0°C..+180°C ¹⁾
- A ▶ AB: equal percentage
- Flanged connection EN1092-2 type 21
- Valve leakage ≤0,01% Kvs (EN1349, IV L1)
- Sealings: EPDM O-rings

Valve	TYPE	DN ²⁾	Kvs [m ³ /h]	Stroke	PN	Price €/pc
	RE2F200A ▲	200	630	60mm	16bar	8.123,-
	RE2F200B	200	500	60mm	16bar	8.341,-
	RE2F200C	200	400	60mm	16bar	8.123,-
	RE2F200D	200	315	60mm	16bar	8.341,-
	RE2F250AA ▲	250	1000	80mm	16bar	10.695,-
	RE2F250A	250	800	80mm	16bar	10.695,-
	RE2F250B	250	630	80mm	16bar	10.695,-
	RE2F250C	250	500	80mm	16bar	10.695,-
	RE2F300AA ▲	300	1600	90mm	16bar	⁵⁾
	RE2F300A ▲	300	1250	80mm	16bar	14.786,-
	RE2F300B	300	1000	80mm	16bar	14.786,-
	RE2F300C	300	800	80mm	16bar	14.786,-
	RE2F300D	300	630	80mm	16bar	14.786,-

Actuators for RE2F.. control valves

- Automatic self-calibration, overload protected
- Manual override with power supply interruption
- IP54
- U_v: AC 24 Volt or AC 230 Volt
- Y: 3P, 0..10Vdc or 4..20mA
- Actuating time fixed

Actuator	TYPE	Max. stroke ³⁾	Force	AC 24 Volt	AC 230 Volt	3P	3P (4 wire)	0..10Vdc	4..20mA	VA	Price €/pc
	1003U21.XX ▲	60 or 80mm	10kN	-	●	-	⁴⁾	●	-	63	2.434,-
	1003I21.XX ▲	60 or 80mm	10kN	-	●	-	⁴⁾	-	●	63	2.434,-
	1003U41.XX ▲	60 or 80mm	10kN	●	-	-	⁴⁾	●	-	50	2.307,-
	1003I41.XX ▲	60 or 80mm	10kN	●	-	-	⁴⁾	-	●	50	2.307,-
	1503U22.XX ▲	60 or 80mm	15kN	-	●	-	⁴⁾	●	-	63	2.477,-
	1503I22.XX ▲	60 or 80mm	15kN	-	●	-	⁴⁾	-	●	63	2.477,-
	1503U42.XX ▲	60 or 80mm	15kN	●	-	-	⁴⁾	●	-	50	2.355,-
	1503I42.XX ▲	60 or 80mm	15kN	●	-	-	⁴⁾	-	●	50	2.355,-

- ¹⁾ with stem heater for media temperatures down to -10°C (order separately)
²⁾ also available DN15..DN150 (on request)
³⁾ max. stroke (xx) to specify when ordering

- ⁴⁾ 3-point, 4 wire connection
⁵⁾ on request
▲ standard

Motorized 2-port control valves PN16 • DN200..DN300

RE2F..

- Valve body: cast iron GG-25 (EN-JL1040) ¹⁾
- Medium: water 0°C..+180°C ²⁾
- A ▶ AB: equal percentage
- Electric actuator: 10kN or 15kN
- Power supply U_v: AC 24 Volt or AC 230 Volt
- Control signal Y: 3P, 0..10Vdc or 4..20mA



TYPE	1003U41		1503U42		U _v	Y
	●	●	●	●		
●	●	●	●	●	AC 24 Volt	0..10Vdc
3)	3)	3)	3)	3)	AC 24 Volt	4..20mA
4)	4)	4)	4)	4)	AC 230 Volt	3P ⁵⁾
4)	4)	4)	4)	4)	AC 230 Volt	0..10Vdc
4)	4)	4)	4)	4)	AC 230 Volt	4..20mA
1	1	2			s/mm	
	10kN	15kN				

DN	TYPE	Kvs	Δp _s	Price	
				kPa	€
200	RE2F200A ▲	630	kPa	200	370
				€	10.430,-
200	RE2F200B	500	kPa	200	370
				€	10.649,-
200	RE2F200C	400	kPa	200	370
				€	10.430,-
200	RE2F200D	315	kPa	200	370
				€	10.649,-
250	RE2F250AA ▲	1000	kPa	100	220
				€	13.002,-
250	RE2F250A ▲	800	kPa	100	220
				€	13.002,-
250	RE2F250B	630	kPa	100	220
				€	13.002,-
250	RE2F250C	500	kPa	100	220
				€	13.002,-
300	RE2F300A ▲	1250	kPa	-	150
				€	-
300	RE2F300B	1000	kPa	-	150
				€	-
300	RE2F300C	800	kPa	-	150
				€	-
300	RE2F300D	630	kPa	-	150
				€	-

- ¹⁾ can also be delivered in spheroidal cast iron GGG-40.3
²⁾ with stem heater for media temperatures down to -10°C (order separately)
³⁾ Y: 4..20mA to be specified when ordering
⁴⁾ extra cost: on request
⁵⁾ 3-point, 4 wire connections
▲ standard

Other actuator types and/or higher Δp_{max} values or larger Kvs values available on request!
This series of control valves are always delivered as a pre-assembled unit.

Electric actuators for third party control valves

Adaption kits for third party control valves: available on request (Satchwell, ARI, Siemens SBT, Honeywell, Danfoss, Sauter, TAC...). See also chapter 4.

Accessories for control valves and electric actuators

On request accessories for control valves and electric actuators are available:

TYPE	Description	Valve	Actuator	Price €/pc
T.HH.ZV12.xx	Stainless steel plug 1.4305	●		1)
T.HH.ZV13.xx	Stem heater for PN16 control valves, type RH.. (chapter 1)	●		1)
T.HH.ZV14.xx	Epoxy resin varnish (corrosion prevention)	●		1)
T.HH.ZV16.xx	Technical silicon free version	●		1)
T.HH.ZA70.yy	Auxiliary position switch (2x, potential free)		●	1)
T.HH.ZA71.yy	Auxiliary position switch (2x, potential free, adjustable)		●	1)
T.HH.ZA72	IP65 protection		●	1)
T.HH.ZA75	Power supply AC 115 Volt		●	1)
T.HH.ZA76	Feedback signal X: 0 .. 20mA or 4 .. 20 mA		●	1)

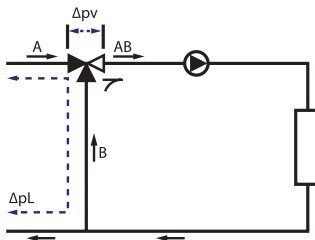
1) on request **xx:** refers to the size of the control valve (DN) **yy:** refers to the type of actuator

Conversion table

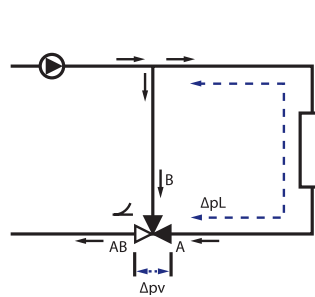
	kcal	kcal/h	J	kPa	bar	m H ₂ O
1 kcal			~ 4186,8			
1 J	2,38844 x 10 ⁻⁴					
1 kW		860				
1 kPa					~ 0,01	~ 0,1
1 mbar				~ 0,1		~ 0,01
1 bar				~ 100		~ 10
1 mm H ₂ O				~ 0,01	~ 0,0001	

Hydraulics

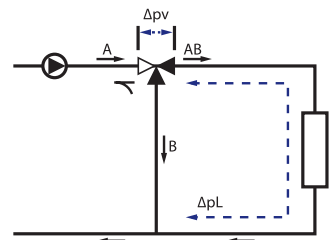
Mixing circuit



Diverting circuit (with mixing valve)



Diverting valve/circuit



When mounting the valve in the hydraulic circuit the flow direction as marked on the valve body (arrow) must be applied.

- ▷ port with constant flow
- ▶ port with variable flow

The inside of the valve body can be damaged by dirt in the pipe system. Therefore it is recommended to use adapted filtering methods as well as to take care of permanent monitoring of water quality in the system (according the VDI2035 directives).

Kv value

$$K_v = \frac{V}{\sqrt{\Delta p}}$$

V: m³/h
Δp: bar

Flow V [m³/h]

$$V = \frac{P}{\Delta T \cdot c \cdot \rho} = \frac{P \text{ [kW]} \times 0,86}{\Delta T \text{ [K]} \cdot c \left[\frac{\text{kcal}}{\text{kg} \cdot \text{K}} \right] \cdot \rho \left[\frac{\text{kg}}{\text{m}^3} \right]}$$

Valve authority a

$$a = \frac{\Delta p_v}{\Delta p_L + \Delta p_v} \cdot 100$$

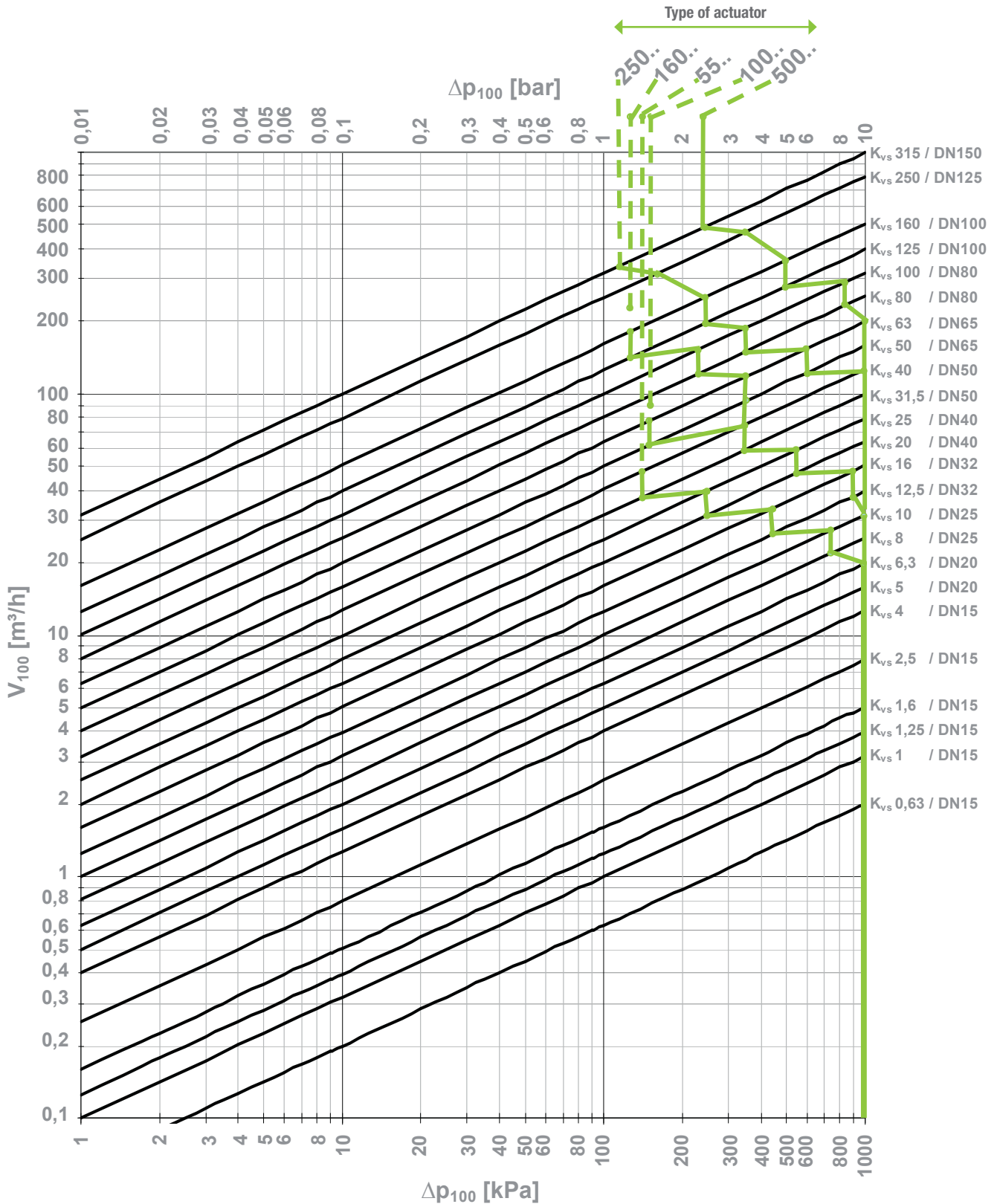
For water circuits (or equivalent media) pumps and control valves are defined in order to ensure a authority a ≥ 0,3..0,5.



HyPro software

HyPro offers optimal design of hydronic systems in extremely short times. The integrated simulation module allows mapping of the energy consumption.

Diagram



Definitions

Nominal pressure PN

Each valve is developed for a specific nominal pressure (in bar).

Together with the medium and the medium temperature range, the nominal pressure (PN) is defining the choice of valve body material, sizing of the flanges, etc.

The value (for example PN16) corresponds to the pressure (16bar) for which the valve body has been designed. For medium temperatures below +120°C this value correspond to the working pressure (static pressure).

Working pressure

The working pressure is the maximum operational pressure of the valve body.

The working pressure depends on the medium temperature due to the thermal properties of the different types of material.

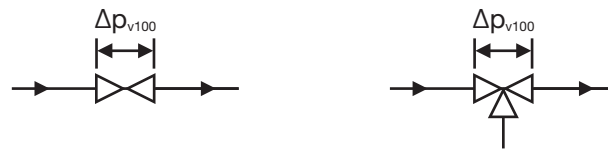
Maximum closing pressure Δp_s

The actuator type defines directly the maximum closing pressure Δp_s of the motorized control valve.

This value corresponds to the maximum differential pressure for which the actuator will be able to ensure the tight sealing of the valve in its closed position.

Maximum differential pressure Δp_{v100}

Δp_{v100} is the maximum pressure difference at fully opened control valve H_{100} . If this value is exceeded, the flow rates will increase and even influence the flow characteristic/curve, creating unacceptable noise levels and cavitation inside the valve can occur.



Maximum differential pressure $\Delta p_{v\max}$

$\Delta p_{v\max}$ is the maximum differential pressure over the control valve, allowing the modulating function of the valve

Differential pressure Δp_l

Δp_l is the differential pressure over the circuit with variable flow.

Dimensioning

The dimensioning of the control valves is based on:

- the DN size of the valve (flow rate)
- the control characteristic (differential pressure)

All working conditions regarding flow will be considered for the dimensioning of the motorized control valve, including the maximum flow rate.

Dimensioning will have an important impact on the working conditions of the installation. In an optimal situation the flow through a fully opened control valve will correspond with the full load flow rate of the user.

The authority of the control valve will be the determining factor for the stability of the circuit.

K_v value

The K_v value of the control valve is defined as follows (VDI/VDE 2173): the K_v value corresponds to the water flow rate (in m³/h) at a water temperature of +5 up to +30° C for a control valve in a opening position H , and with a differential pressure of Δp_v 1bar.

K_{vs} value

The K_{vs} value (in m³/h) is determined for each range of control valves. The K_{vs} value corresponds to a K_v value flow through a fully opened valve H_{100} .