XSz 8 ... XSz 50
Solenoid actuated fail-safe safety valve

- 3/2-way
  Port size: G1/4 ... G2, 1/4 ... 2 NPT
- Double valve control system, inherently fail-safe without residual pressure
- Dynamic self monitoring
- For use with pneumatic clutch and brake systems and other 3-way safety functions
- Fast exhaust capability
- Quick and easy adjustment of 'overlap' on mechanical presses
- Improves safety and reduces downtime
- With the appropriate application, performance level „e" (cat. 4) of DIN EN ISO 13849-1 is achieved for the safety function "Pressure building up from '1' to '2' and pressure dropping from '2' to '3'. DGUV and other approvals
- No additional electrical monitoring required
- XSz8 & XSz10 also available with c UL us 'UL-recognized' solenoids

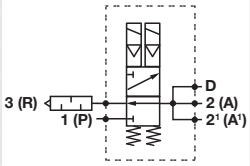
Technical features

Medium:
Compressed air, filtered ≤ 50 µm, lubricated or non-lubricated
Suitable oils:
Shell Tellus S2 MA 32, ExxonMobil Febis K 32 or comparable oil with DVI values < 8 (DIN ISO 1817) and ISO viscosity class 32-46 (DIN 51519)

Operating Pressure:
2 ... 10 bar (29 ... 145 psi)
For more details please see table overleaf.
Mounting position:
Preferably upright with solenoids on top
Ambient/Media temperature:
-10 ... +60°C (14 ... +140°F)
Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F)

Additional equipment:
Soft clutch module
- documentation no 5.14.320
Soft brake module
- documentation no 5.14.350
Safety silencer
- documentation no 5.14.525 and 5.14.550
Failure indication elements
- documentation no 5.14.420

Technical data
Port size: ISO G thread



Series	Pressure range (bar)	Pressure range (psi)	Flow 1 (P) »2 (A) (m³/h)	Flow 2 (A) » 3 (R) (m³/h)	Port sizes 1 (P)	2 (A)	2¹ (A¹)	3 (R)	Weight (kg)	Drawing No.	Model *
XSz 8 *1)	3 ... 10	43 ... 145	77	93	G1/4	G1/4	–	G1/4	1,1	1	24928063052
XSz 8 *1)	3 ... 10	43 ... 145	77	98	G1/4	G1/4	–	G3/8	1,1	1	24928083052
XSz 8 *1)	3 ... 10	43 ... 145	77	93	G1/4	G1/4	–	G1/4	1,1	1	24928063048 *5)
XSz 8 *1)	3 ... 10	43 ... 145	77	98	G1/4	G1/4	–	G3/8	1,1	1	24928083048 *5)
XSz 10 *2)	2 ... 10	29 ... 145	190	390	G1/2	G1/2	(G1/2)	–	2,2	2	24929323052
XSz 10 *4)	2 ... 10	29 ... 145	190	390	G1/2	G1/2	(G1/2)	G3/4	1,9	2	24929303052
XSz 10 *2)	2 ... 10	29 ... 145	190	390	G1/2	G1/2	(G1/2)	–	2,2	2	24929323048 *5)
XSz 10 *4)	2 ... 10	29 ... 145	190	390	G1/2	G1/2	(G1/2)	G3/4	1,9	2	24929303048 *5)
XSz 20 *2)	2 ... 8	29 ... 116	210	795	G3/4	G3/4	G1	–	6,0	3	24930320200
XSz 20 *4)	2 ... 8	29 ... 116	210	795	G3/4	G3/4	G1	G1	3,6	3	24930300200
XSz 32 *2)	2 ... 8	29 ... 116	440	1380	G1	G1	G1 1/2	–	10,3	4	24931050800
XSz 32 *2)	2 ... 8	29 ... 116	440	1380	G1	G1	G1 1/2	–	11,2	4	24931060800 *3)
XSz 32 *4)	2 ... 8	29 ... 116	440	1380	G1	G1	G1 1/2	G1 1/2	8,0	4	24931300800
XSz 32 *4)	2 ... 8	29 ... 116	440	1380	G1	G1	G1 1/2	G1 1/2	8,9	4	24931310800 *3)
XSz 50 *4)	2 ... 8	29 ... 116	1100	3300	G1 1/2	G2	–	G2	15	5	24932300800
XSz 50 *4)	2 ... 8	29 ... 116	1100	3300	G1 1/2	G2	–	G2	16	5	24932310800 *3)

* To order please insert voltage requested for each valve. All solenoids are delivered without plugs.
*1) XSz 8 valves are delivered with silencer.
*2) Valves delivered with integrated silencer and without flange (R ports).
*3) With pressure balance Model 1028100.
*4) Valves delivered without silencer and with flange.
*5) With UL recognized solenoid (24VDC, other voltages on request)

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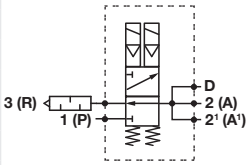
Technical data
Port size: NPT thread

Symbol	Series	Pressure range		Flow 1 (P) »2 (A)	Flow 2 (A) » 3 (R)	Port sizes			Weight	Drawing	Model *
		(bar)	(psi)	(m^3/h)	(m^3/h)	1 (P)	2 (A)	3 (R)	(kg)	No.	
	XSz 8 *1)	3 ... 10	43 ... 145	77	93	1/4 NPT	1/4 NPT	1/4 NPT	1,1	1	24928053052
	XSz 8 *1)	3 ... 10	43 ... 145	77	98	1/4 NPT	1/4 NPT	3/8 NPT	1,1	1	24928073052
	XSz 8 *1)	3 ... 10	43 ... 145	77	93	1/4 NPT	1/4 NPT	1/4 NPT	1,1	1	24928053048 *5)
	XSz 8 *1)	3 ... 10	43 ... 145	77	98	1/4 NPT	1/4 NPT	3/8 NPT	1,1	1	24928073048 *5)
	XSz 10 *2)	2 ... 10	29 ... 145	190	390	1/2 NPT	1/2 NPT	–	2,2	2	24929333052
	XSz 10 *4)	2 ... 10	29 ... 145	190	390	1/2 NPT	1/2 NPT	3/4 NPT	1,9	2	24929313052
	XSz 10 *2)	2 ... 10	29 ... 145	190	390	1/2 NPT	1/2 NPT	–	2,2	2	24929333048 *5)
	XSz 10 *4)	2 ... 10	29 ... 145	190	390	1/2 NPT	1/2 NPT	3/4 NPT	1,9	2	24929313048 *5)
	XSz 20 *2)	2 ... 8	29 ... 116	210	795	3/4 NPT	3/4 NPT	–	6,0	3	24930330200
	XSz 20 *4)	2 ... 8	29 ... 116	210	795	3/4 NPT	3/4 NPT	1 NPT	3,6	3	24930310200
	XSz 32 *2)	2 ... 8	29 ... 116	440	1380	1 NPT	1 NPT	–	10,1	4	24931070800
	XSz 32 *2)	2 ... 8	29 ... 116	440	1380	1 NPT	1 NPT	–	11,0	4	24931180800 *3)
	XSz 32 *4)	2 ... 8	29 ... 116	440	1380	1 NPT	1 NPT	1 1/2 NPT	7,8	4	24931200800
	XSz 50 *4)	2 ... 8	29 ... 116	1100	3300	1 1/2 NPT	2 NPT	2 NPT	15	5	24932200800
	XSz 50 *4)	2 ... 8	29 ... 116	1100	3300	1 1/2 NPT	2 NPT	2 NPT	16	5	24932180800 *3)

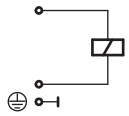
* To order please insert voltage requested for each valve. All solenoids are delivered without plugs.
*1) XSz 8 valves are delivered with silencer.
*2) Valves delivered with integrated silencer and without flange (R ports).
*3) With pressure balance Model 1028100.
*4) Valves delivered without silencer and with flange.
*5) With UL recognized solenoid (24VDC, other voltages on request)

Technical data – solenoids

Model	0200, 0800, 3048 (UL) and 3052
Standard voltages	24 V d.c. and 230 V a.c., other on request
Duty cycle	100% ED
Protection class	IP65
Electrical connection	DIN EN 175301-803 (DIN 43650), form A & Form B

Model	Power consumption V DC (W)	Current Inrush V AC (VA)	Hold (VA)	Connector
0200	11	22	15	Form A
0800	16	50	27	Form A
3048	3,7	-	-	Form A
3052	4,8	12	8,5	Form B

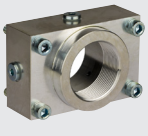
Circuit diagram



Accessories

Series	Connector DIN EN 175301-803	Silencer	Integrated silencer	Integrated silencer	High efficiency silencer
					
XSz 8	0680003 / UL: 0570275	MB002B (G 1/4), MB003B (G 3/8)	–	–	–
XSz 8	0680003 / UL: 0570275	MB002A (1/4 NPT), MB003A (3/8 NPT)	–	–	–
XSz 10	0680003 / UL: 0570275	–	0016422	–	–
XSz 20	0570275	–	–	0016622	0016520
XSz 32	0570275	–	–	0016622	0016620
XSz 50	0570275	–	–	–	0016720

Caution: the safety is related to the quality of the silencer, use only Norgren original silencers

Serie	
	
XSz 50	0545005 (port A, G2, and pressure switches port G1/4)

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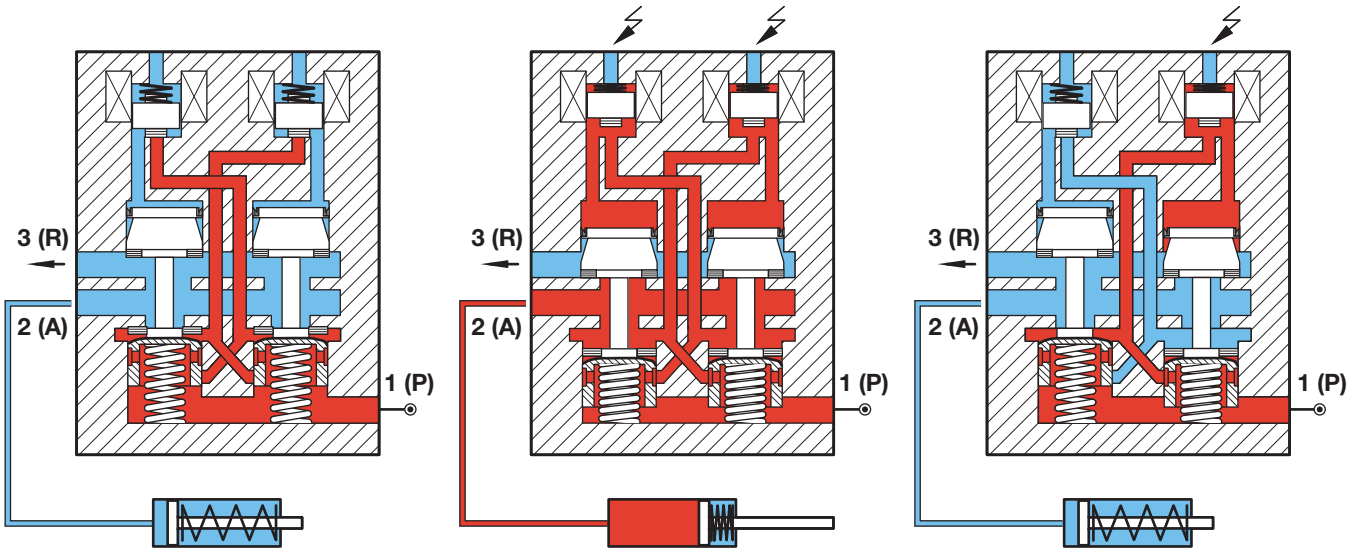
Spare parts

Series	Model (G-thread)	Model (NPT-thread)	Spare parts kits
XSz 8	24928063053	24928053053	0101534
XSz 10	24929323053	24929333053	0110641
XSz 20	24930320201	24930330201	0111104
XSz 32	24931050801	24931070801	0558631
XSz 32	24931060801	24931180801	0558631
XSz 50	24932300801	24932200801	0542576
XSz 50	24932310801	24932180801	0542576



Solenoids de-energized:
A port is exhausted. P port is closed, no connection from P to A. No residual pressure on port A as port A is freely exhausted through port R. No acting pressure on port A.

Solenoids energized:
Pilots are synchronously energised. Connection from port P to A. Working pressure on A. No passage from P to R. Dynamic self monitoring of both
pilot systems, checking each other at each cycle for proper functioning.

Malfunction:
Pilots non-synchronously energised. Dynamic monitor notices failure operation and prevents the pistons from giving connection from P to A. Synchronously port A exhausts through R. No residual pressure remains in the system since P and A are not connected. The pilot line has lost the pressure and is locked.

1 (P) = Air pressure port / 2 (A) = Power port (clutch / brake) / 3 (R) = Exhaust
Norgren XSz Safety valves comply with the Category IV of DIN EN ISO 13849-1, if the operating system has been designed and realised according to Category IV.

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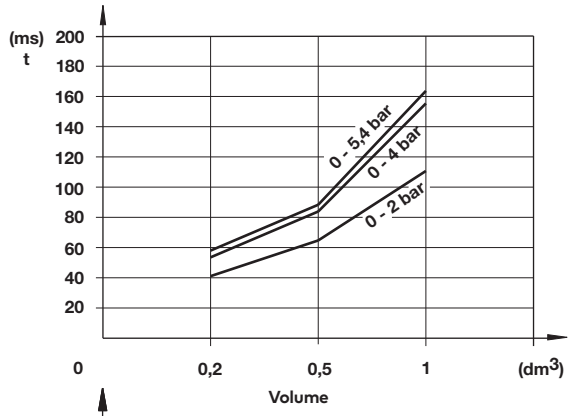
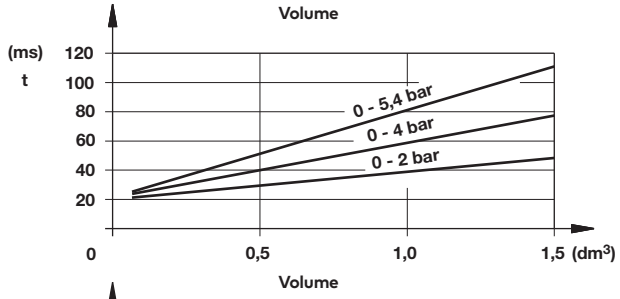
Pressurisation

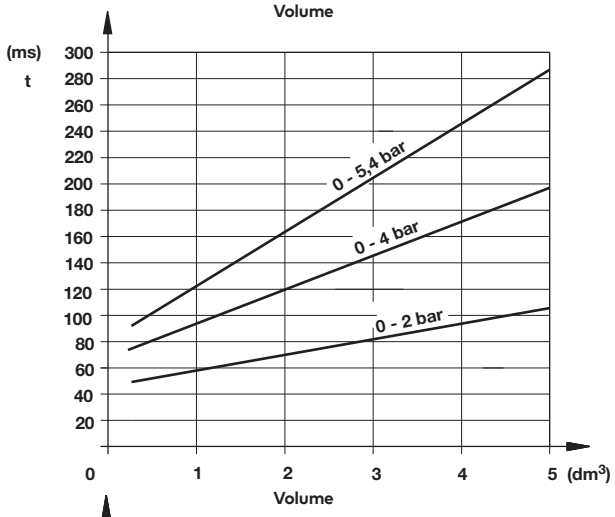
XSz 8



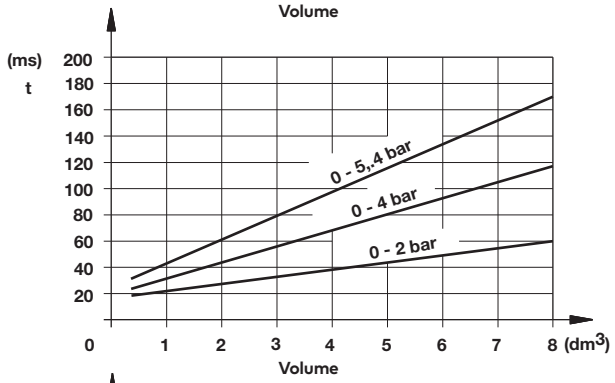
XSz 10



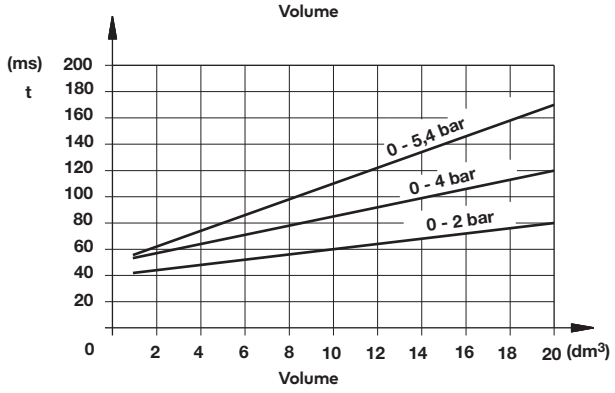
XSz 20



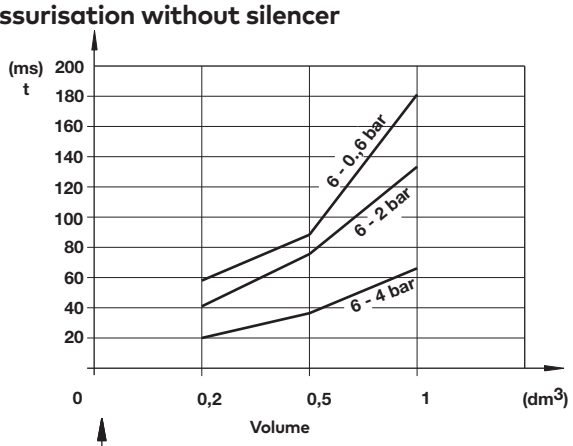
XSz 32

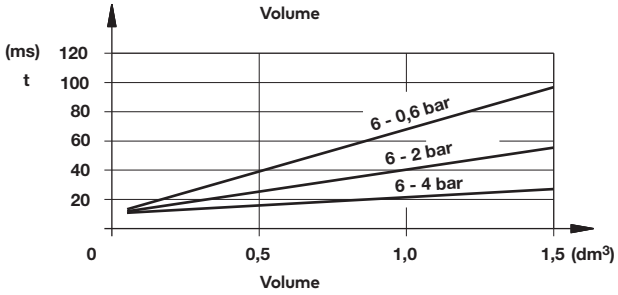


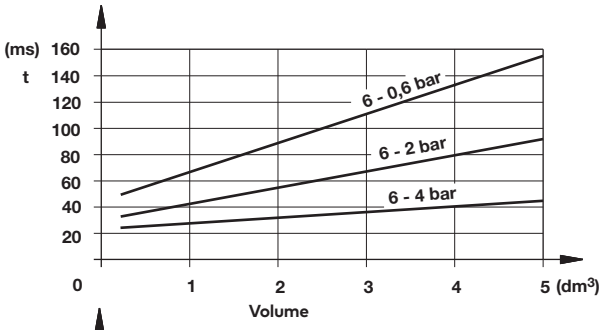
XSz 50

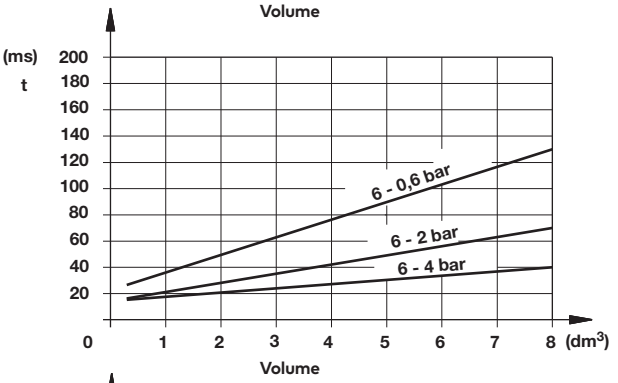


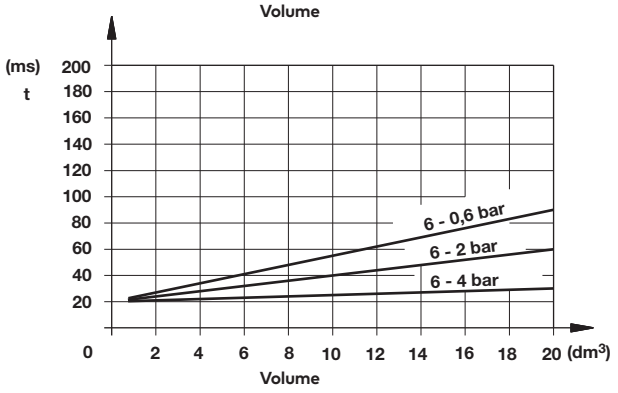
Depressurisation without silencer











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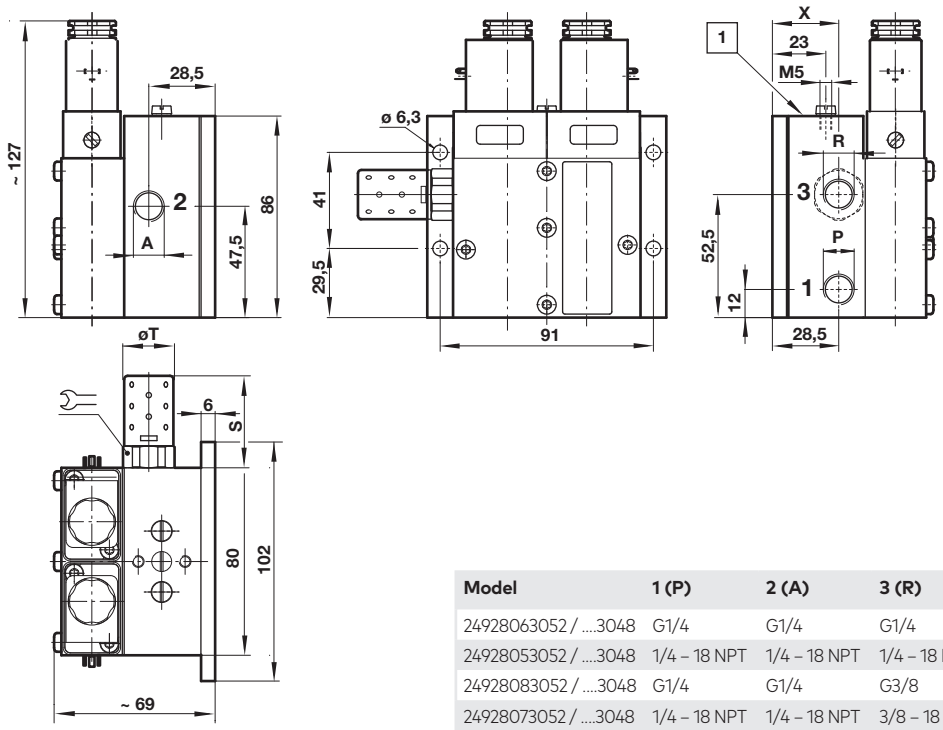
Drawings

(1)

XSz 8 - with silencer

Dimensions in mm
Projection/First angle



Model	1 (P)	2 (A)	3 (R)	S	øT	X	
24928063052 / 3048	G1/4	G1/4	G1/4	42	21	–	21
24928053052 / 3048	1/4 – 18 NPT	1/4 – 18 NPT	1/4 – 18 NPT	42	21	–	21
24928083052 / 3048	G1/4	G1/4	G3/8	75	32	26,5	32
24928073052 / 3048	1/4 – 18 NPT	1/4 – 18 NPT	3/8 – 18 NPT	75	32	26,5	32

[1] Flange surface for pressure switch and failure indicator unit

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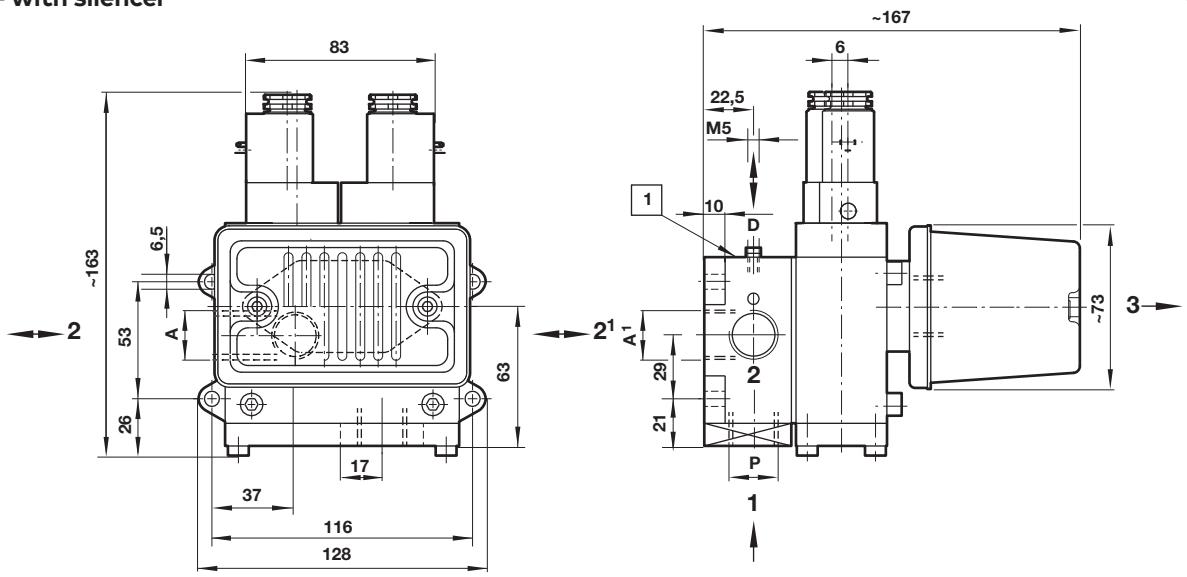
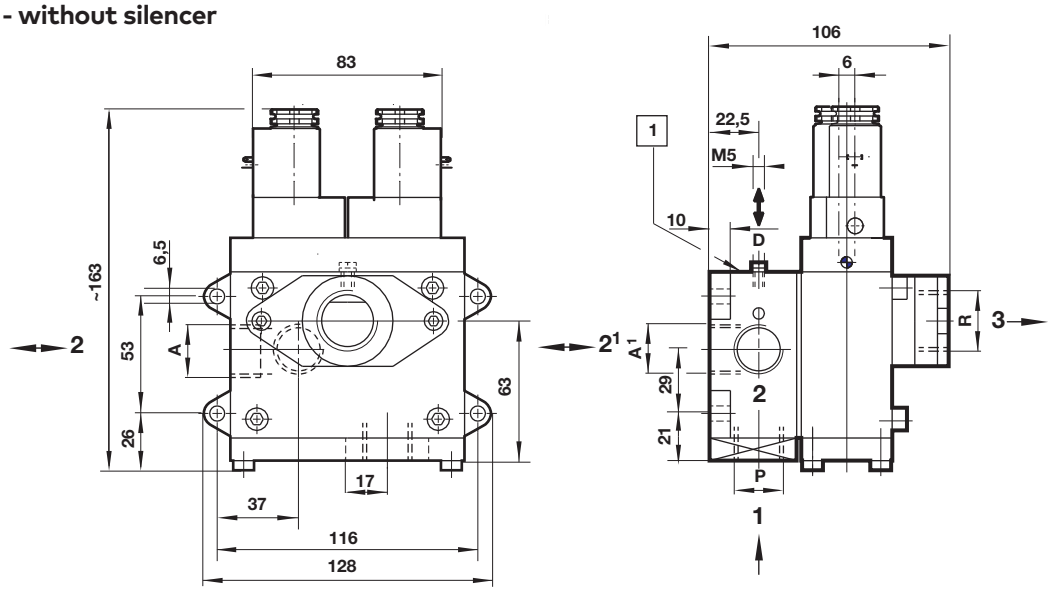
2

Dimensions in mm
Projection/First angle

XSz 10 - with silencer



XSz 10 - without silencer



1 Flange surface for pressure switch and failure indicator unit

Model	1 (P)	2 (A)	2¹ (A¹)	3 (R)
24929323052 / 3048	G1/2	G1/2	G1/2 *	–
24929333052 / 3048	1/2 NPT	1/2 NPT	–	–
24929303052 / 3048	G1/2	G1/2	G1/2 *	G3/4
24929313052 / 3048	1/2 NPT	1/2 NPT	–	3/4 NPT

* closed

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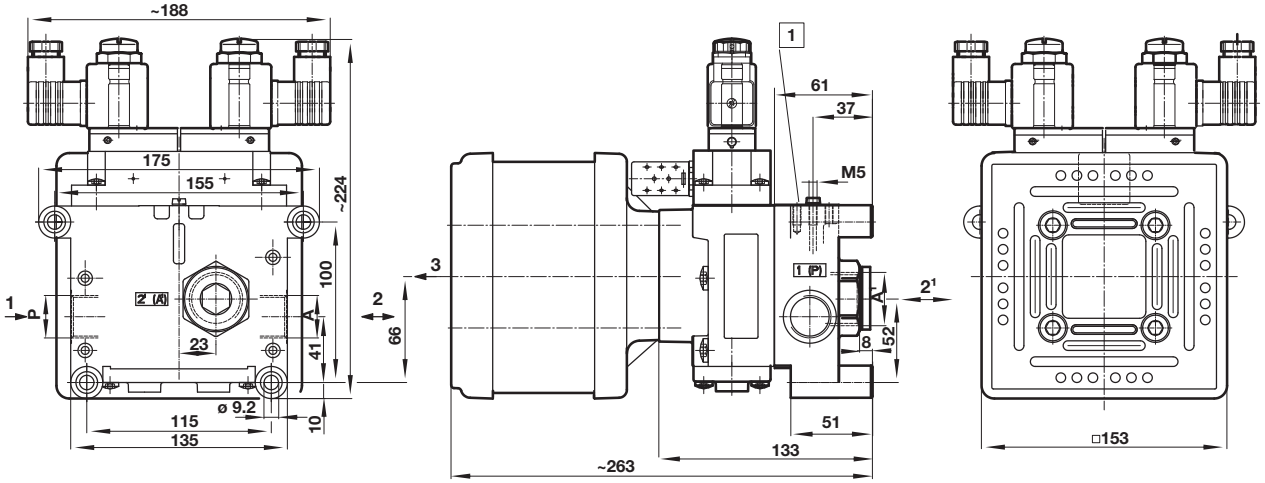
3

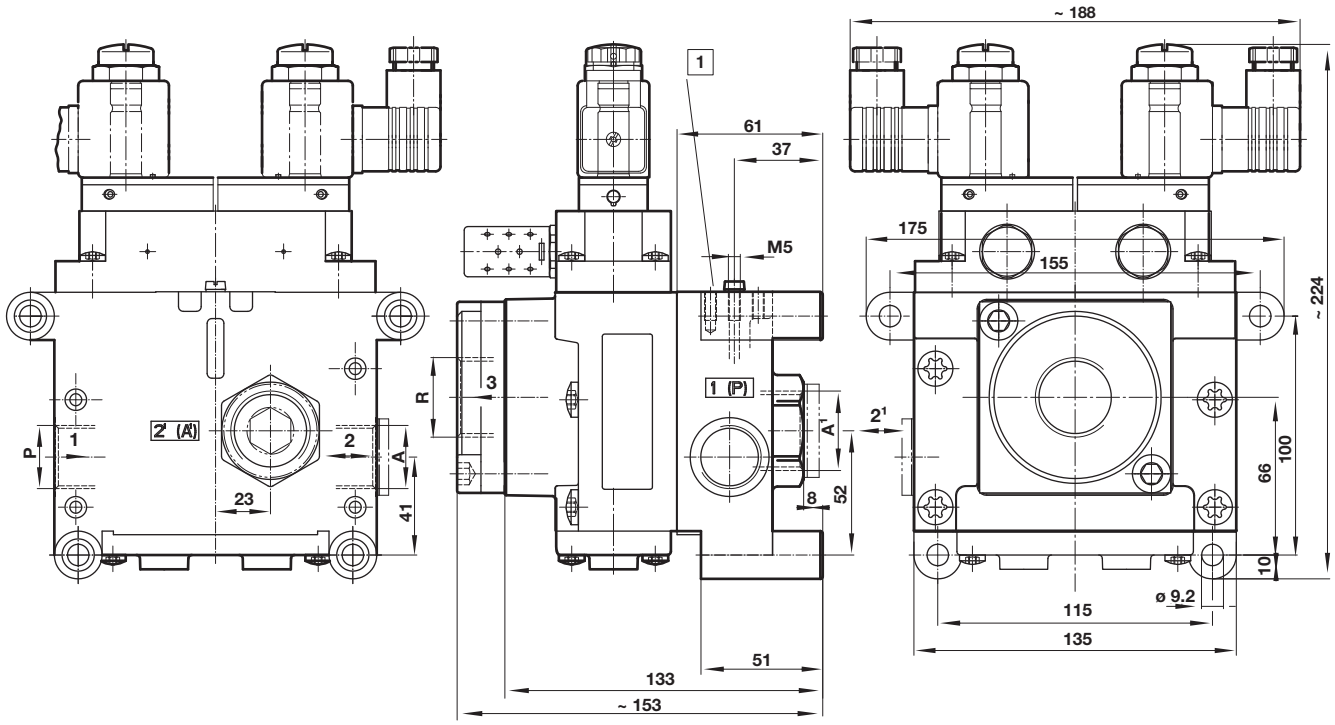
XSz 20 - with silencer

Dimensions in mm
Projection/First angle



1 Flange surface for pressure switch and failure indicator

XSz 20 - without silencer



1 Flange surface for pressure switch and failure indicator unit

Model	1 (P)	2 (A)	2¹ (A¹)	3 (R)
24930320200	G3/4	G3/4	G1	–
24930330200	3/4 NPT	3/4 NPT	–	–
24930300200	G3/4	G3/4	G1	G1
24930310200	3/4 NPT	3/4 NPT	–	1 NPT

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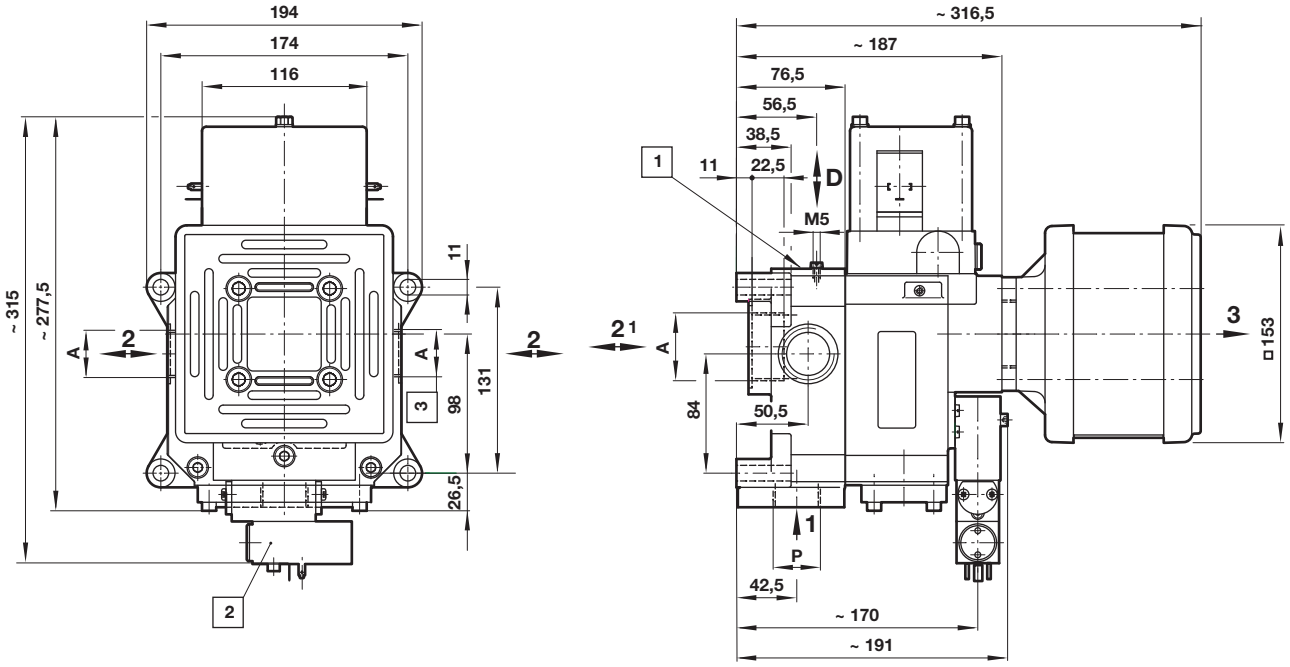
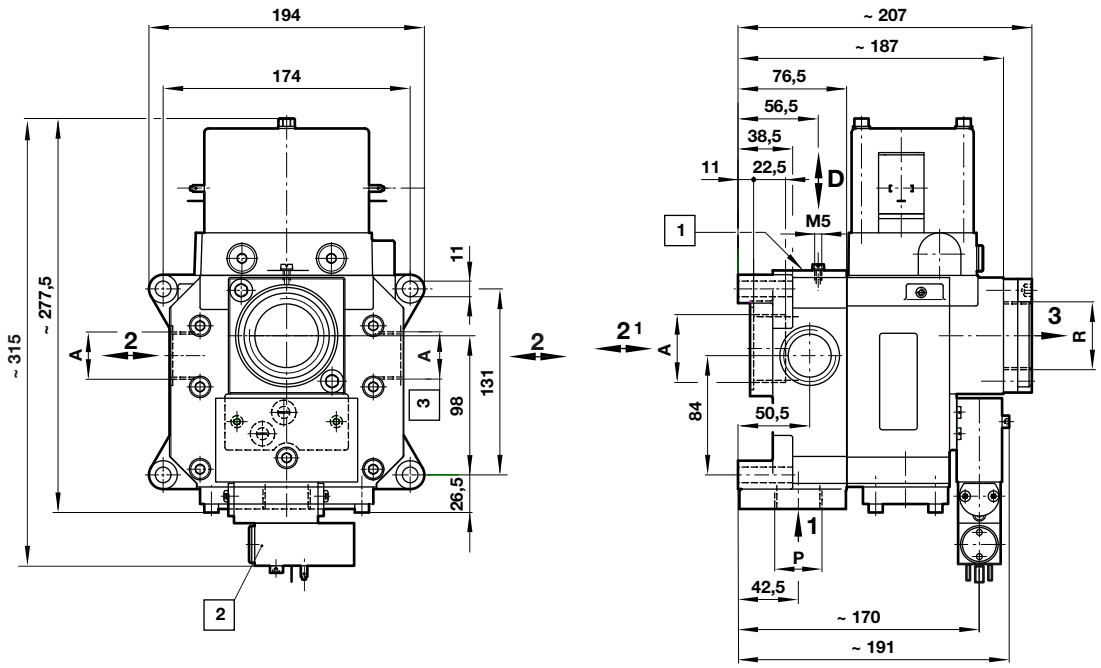
4

XSz 32 - with silencer and pressure balance

Dimensions in mm
Projection/First angle



XSz 32 - without silencer, with pressure balance



1 Flange surface for pressure switch and failure indicator unit
2 Pressure balance
3 ISO G thread only

Model	1 (P)	2 (A)	2¹ (A¹)	3 (R)
24931060800	G1	G1	G1 1/2	–
24931310800	G1	G1	G1 1/2	G1 1/2
24931300800	G1	G1	G1 1/2	G1 1/2
24931050800	G1	G1	G1 1/2	–
24931180800	1 - 11.5 NPT	1 - 11.5 NPT	–	–
24931070800	1 - 11.5 NPT	1 - 11.5 NPT	–	–
24931200800	1 - 11.5 NPT	1 - 11.5 NPT	–	1 - 11.5 NPT

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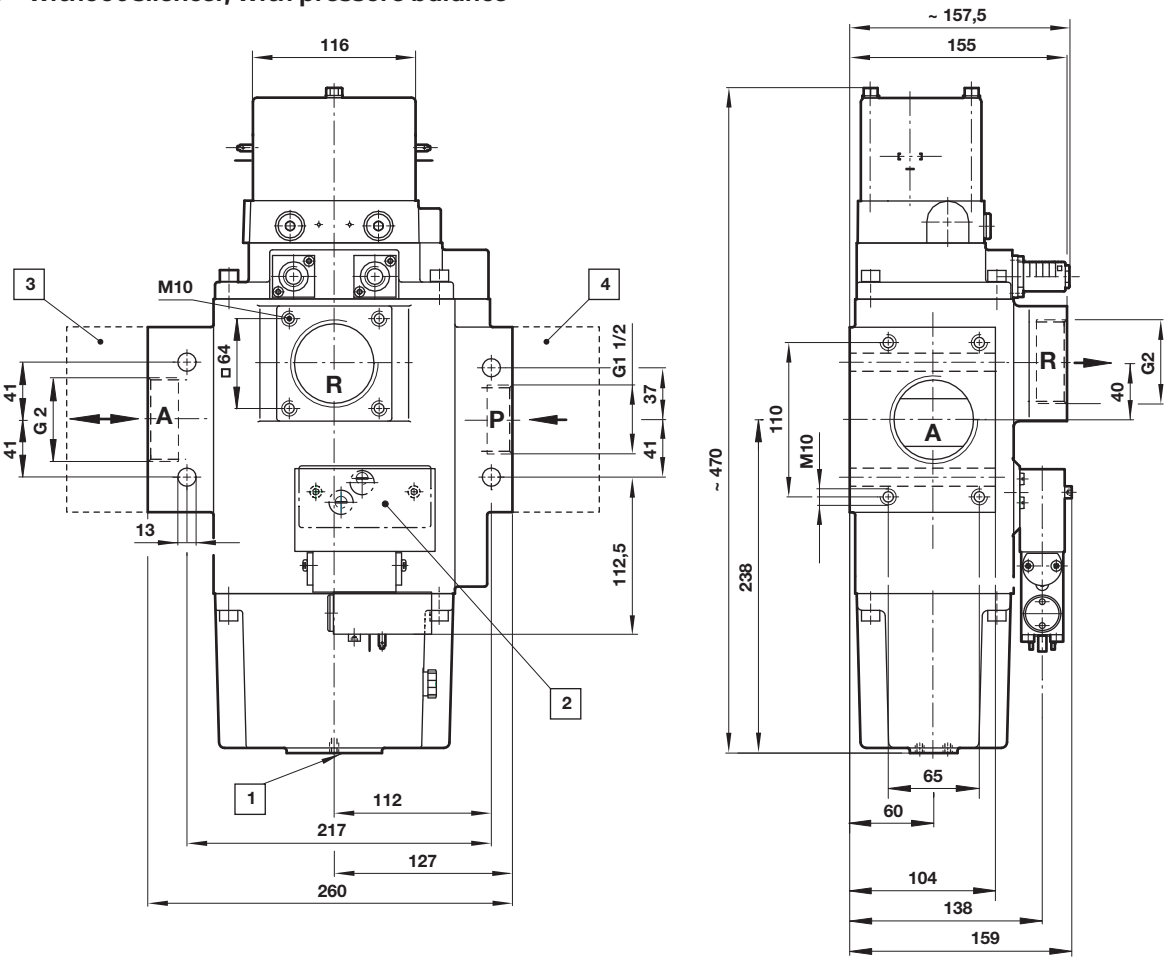
5

XSz 50 - without silencer, with pressure balance

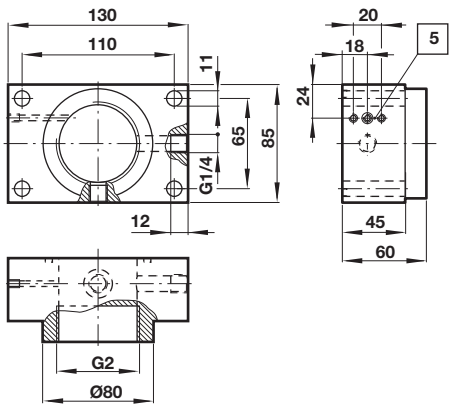
Dimensions in mm
Projection/First angle



1 Flange surface for pressure switch and failure indicator unit
2 Pressure balance
5 Flange surface for 18D pressure switch

Flange

Model: 0545005 (for position 3



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Dimensions in mm
Projection/First angle

For external indication (e.g. visual, electrical or acoustic signal) of a malfunction, the installation of a failure indication element is recommended.
Such an element is not necessary to fulfil the safety function of the valve. (For further information please see the corresponding data sheet no. 5.14.420).
A suitable air treatment unit (dehydration, filtration, lubrication) must be connected upstream of pressure port 1(P). Lubrication can only be omitted if the connected consuming device and all additional equipment is suited for oil-free operation.
Degree of filtration: 50 µm. The lubrication should be adjusted to supply only enough oil to form a film on the valve spool and bore. Excessive lubrication may cause a build-up of oil in the pilot lines and cause sluggish operation of the valves.The size of pressure regulator, lubricator and filter must be consistent with the inlet port size. An accumulator tank is
recommended between the pressure regulator and safety valve. The operating pressure must not drop below 2 bar and the use of a pressure
switch is suggested. Safety valves must be installed as close as possible to the clutch and brake.
Caution: Non controllable elements such as quick exhaust valves, nozzles, non return valves, etc. must not be mounted between safety valve and clutch brake. It is the responsibility of the purchaser and/or installer of the Norgren safety valves to make sure that the valve and all other components comply with all relevant national regulations and the specifications of the local safety associations.
The valves should be checked at intervals depending on the loads to which they are subjected, at least, however, once a year. The relevant tests must be carried out according to the corresponding operation and
maintenance instructions of the unit and the local safety regulations. In case of malfunctions the unit has to be tested and/or replaced immediately. Repairs and maintenance must only be carried out by the after-sales service of the valve manufacturer or by a qualified engineer trained by the valve manufacturer. Important for use at presses: The
combination with the electrical press control must meet the DIN EN ISO 13849-1 requirements. If two separate valves are used to control the clutch and brake, please observe data sheet no. 5.14.420.

All liability is denied for unauthorised modification of the units, installation or usage not in accordance with the manual, the local safety requirements and the principles of DIN EN ISO 13849-1.

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where pressures and temperatures can exceed those listed under **»Technical features/ data«**.
Before using these products with fluids other than those specified, for non-industrial applications, life-support systems or other applications not within published specifications,
consult Norgren.
Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.
System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.
System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Our policy is one of continued research and development. We therefore reserve the right to amend, without notice, the specifications given in this document. (2002 - 5313I) © 2022 Norgren