

Failure Indication Elements

Although the XSz safety valves **do not require an external electrical monitoring** to fulfil the safety function, some applications need to have a visual electrical or acoustic signalling of a malfunction. This can be achieved by failure indication elements mounted on the XSz safety valve. There are three kinds of failure indication elements:



A Pressure switch 18 D
Cat. No. 0881400

Features

Switches every time the valve switches, response time acct. valve. The electrical signal has to be delayed for about 50 - 160 ms

Ordering example

To order, quote part number **0881400** for a pressure switch 18 D, flange surface with pressure range 1 - 16 bar.



B Failure indication module
Cat. No. 1028063

Features

Switches only in case of malfunction, response time \approx 500 ms, can be used to indicate pressure on port 1 (P).

Ordering example

To order, quote part number **1028063** for a failure indication module, flange surface with pressure range 1 - 16 bar.



C Pressure balance
Cat. No. 1028100

Features

For separately used clutch and brake, switches only in case of malfunction, response time \approx 120 ms

Ordering example

To order, quote part number **1028100** for a pressure balance, flange surface with pressure range 1 - 16 bar.

Mounting possibilities

	XSz 8	XSz 10	XSz 20	XSz 32	XSz 50	XSz 10 V
A Pressure switch	X	X	X	X	X ¹⁾	X
B Failure indication	X	X	X	X	X	X
C Pressure balance				X	X	

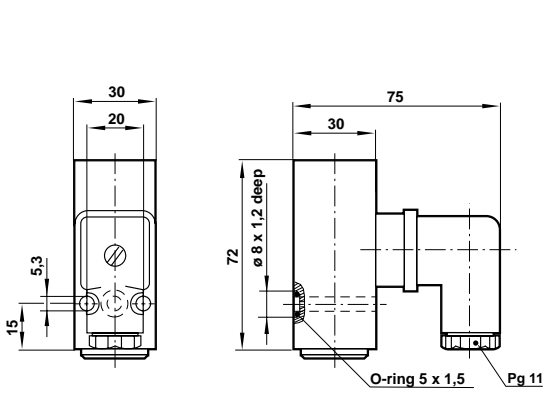
¹⁾ Mounting only possible with flange cat. no. 0545005.

For further information on pressure switches please see corresponding brochure no. 5.11.021 and 5.11.020.

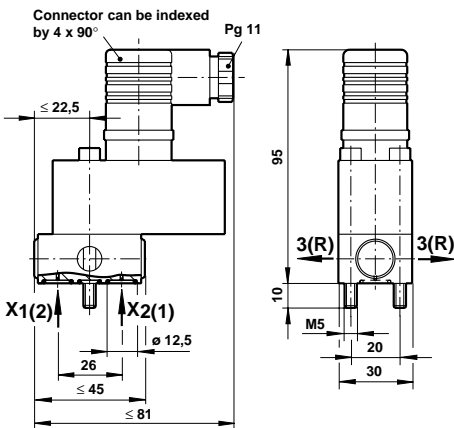
For information on installation, operation and maintenance please see brochure no. 5.4.323.



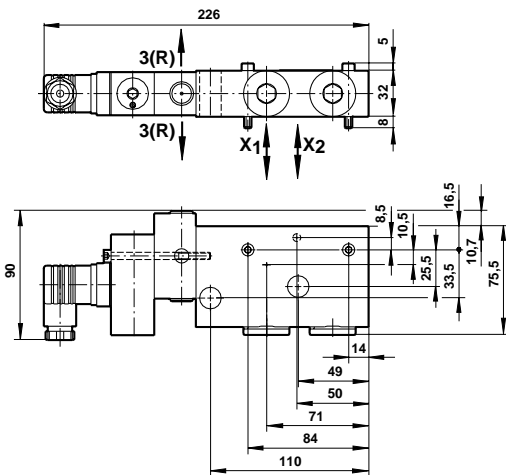
Dimensional drawings (mm)



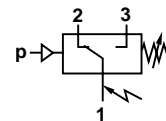
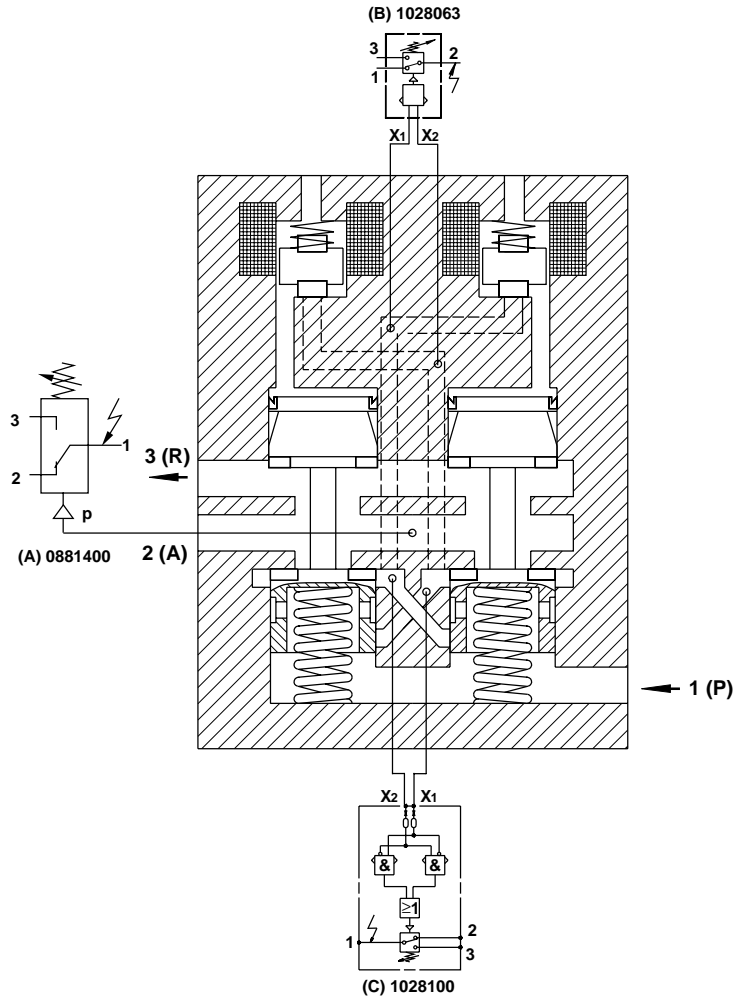
A Pressure switch 18 D



B Failure indication module



C Pressure balance



Switching function:
Microswitch SPDT
Terminals 1 - 3:
Contacts close on
rising pressure.
Terminals 1 - 2:
Contacts open on
rising pressure.

Contact ratings / Change-over switch with silver spring contacts

Type of power supply	Type of load	Switching voltage U_s [V]			
		24	60	110	230
		Max. switching current I [A]			
AC	Ohmic	15	12	7	7
AC	Inductive $\cos \varphi = 0.7$	12	9	5	5
DC	Ohmic	10	1.5	0.65	0.25
DC	Inductive $L/R \approx 10$ ms	5	0.5	0.06	0.03
DC	Inductive, spark quenching diode	8	1	0.4	0.15



Overlap Adjustment

The overlap adjustment kit is only used on presses with separate clutch and brake.

In this case clutch and brake are actuated by two single acting pneumatic cylinders with spring return. Each cylinder is piloted by a safety valve.

To prevent unnecessary noise, wear and tear when starting and stopping the machine it is important that:

- when machine starts, brake opens before clutch closes and
- when machine stops, clutch opens before brake closes

The overlap correction kit allows to solve this problem and helps reducing downtime and repair costs. It is available for safety valves XSz 32 and XSz 50, (XSz 8 and XSz 10 are mostly used to control clutch-brake-combinations – no overlap problem)

Start delay (clutch valve)

To achieve a delay in starting the machine, nozzles are mounted on the clutch valve between pilot and main piston.

Start delay is not available for the XSz 8, XSz 10 and XSz 20.

See figure 1.

Stop delay (brake valve)

To achieve a slight delay of the depressurization phase, nozzles of the brake valve are fitted in the exhaust line of the pilot stage (XSz 32) or directly in the quick exhaust valve (XSz 50).

See figure 2 and 3.

Several nozzle kits are available for requested time delays. They are specified in the diagrams on following page. Each nozzle kit contains a certain number of nozzles which can be chosen to adjust the start/stop delay according to your needs.

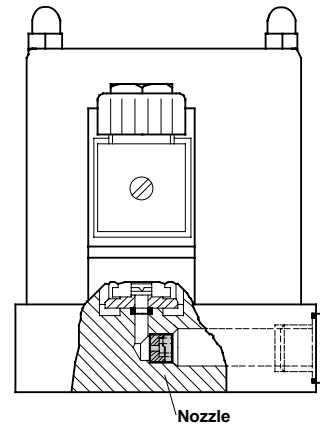


Fig. 1 Start delay XSz 32 and 50

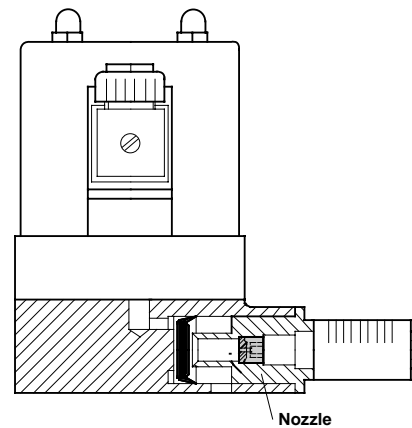


Fig. 2 Stop delay XSz 50

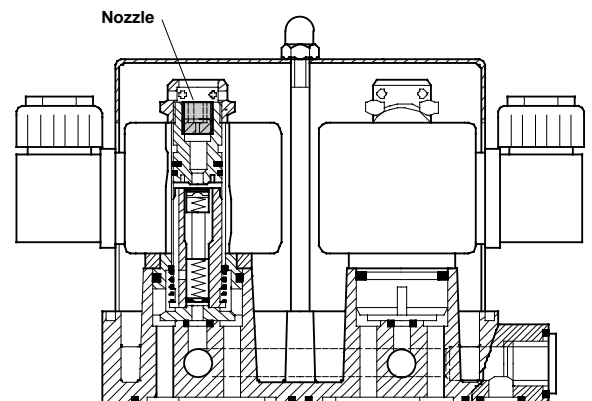


Fig. 3 Stop delay XSz 32

It is the responsibility of the purchaser and/or installers of the Norgren-Herion 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.

Repair, maintenance and testing has to be performed in accordance with the operation and maintenance manual and the requirements of the relevant safety associations of the country where the unit is operated.

For information installation, operation and maintenance of failure indication elements and overlap adjustment kits please see brochure no. 5.4.323.

For information on safety valves please see the data sheet no. 5.4.303 and maintenance manual no. 5.4.325.

All liability is denied for unauthorised modification of the units, installation or usage not in accordance with the manual, the local safety requirements or the principles of EN 692 and EN 954-1.

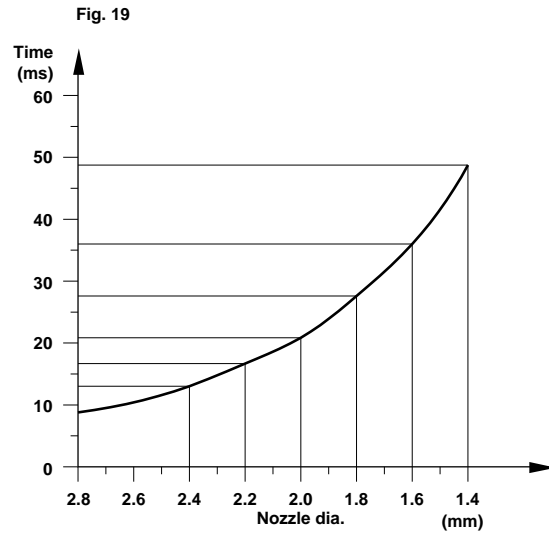
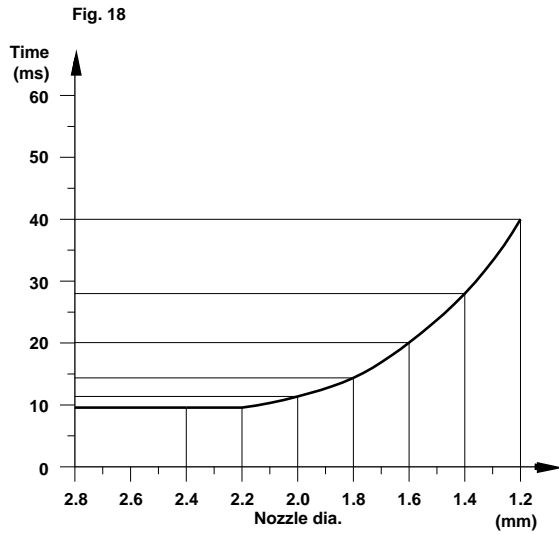


Characteristic curves and catalogue numbers

Start delay

Type XSz 32

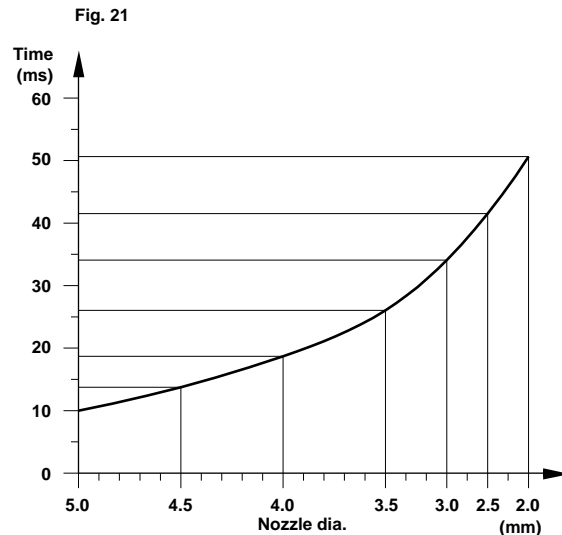
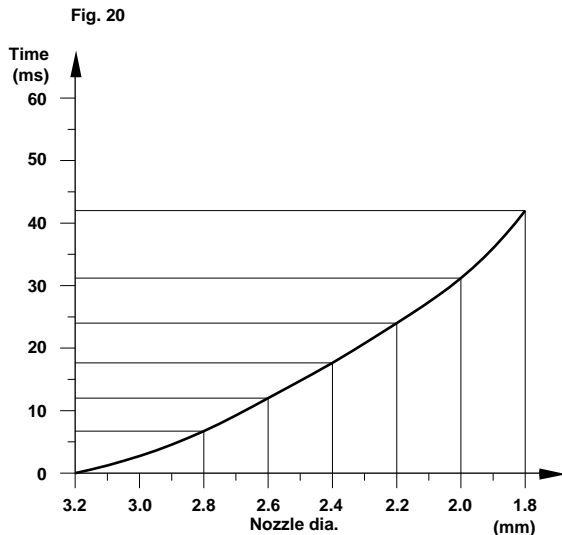
Stop delay



Start delay

Type XSz 50

Stop delay



Example: (Switching-times without delay)
 With a chamber volume of 6 dm³, the valve has following switching times:
 Pressure rise from 0 to 4 bar: 98 ms
 Pressure drop from 6 to 2 bar: 60 ms

Example: (Pressure drop with delay)
 Volume of brake: 6 dm³
 Switch-off time for XSz 32 from 6 to 2 bar: 60 ms
 Delay time with nozzle dia. 1.8: 28 ms
 Switch-off time with nozzle: 60 ms + 28 ms = 88 ms

Important: Specified times are only given as an indication.

Precise setting of the negative overlap between the brake and clutch (determination of orifice sizes) should be carried out by means of an oscilloscope. Optimum setting is achieved when an adequately short braking distance is produced without overlap between clutch and brake. Before installation and commissioning please assure that specifications of relevant trade and safety associations, technical inspections associations etc. are met.

Nozzle sets

For valve	Start delay (clutch valve) cat. no.	Stop delay (brake valve) cat. no.
XSz 32	0556356	0556357
XSz 50	0556358	0556359