DC or AC valve solenoid

3
Product group

X BR 1ST Supplement

- According to DIN VDE 0580
- Armature space pressure tight up to 50 bar static pressure
- Armature with spring-supported sealing nipples at both ends
- Insulation materials of the excitation winding correspond to thermal class F
- Electrical connection and protection class when properly installed:
  - Plug connection by spade connectors according to DIN 46247
    Protection class according to DIN VDE/ DIN EN 60529 – IP 00
  - Plug connection via plug connector type Z KC according to DIN EN 175301-803
    Cable gland (capable of 180° rotation)
    Protection class according to DIN VDE 0470/ DIN EN 60529 – IP 65
- Fastening via flange with 2 countersunk screws M 3
  Central thread
- Simple exchange of the solenoid body without opening the pneumatic circuit
- Sealing between solenoid and valve by o-ring
- Please contact us for application related solutions
- Please take into consideration that the physically generated noise caused by AC solenoids may be disturbing in quiet rooms, particularly if mounted on a resonant base!
- Application examples:
  Actuation of 2/2 and 3/2-way-seat-valves, especially for pneumatics and other gasiform and fluid neutral media

Fig. 1: X BR P 022 K54 A01

Technical data

X BR P 22			
Relative operating mode			S1 (100%)
Rated Power P_{20}	DC	(W)	6,8
	AC	(VA)	10 / 7,5
Stroke s		(mm)	0,5
Reference temperature ϑ_{11}		(°C)	50
Magnetic force F_M (N) without spring	DC	Stroke 0 m	22
		Stroke s m	4,5
	AC	Stroke 0 m	7,0
		Stroke s m	3,8
Solenoid weight m_M		(kg)	0,085
Armature weight m_A		(kg)	0,006

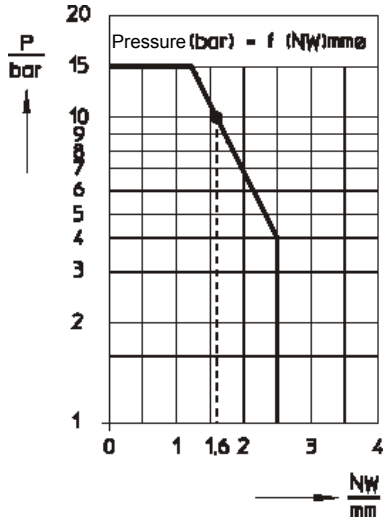


Fig. 2: Switchable pressure as function of the nominal width of the valve seat.

Rated voltage ⎓ 24 V, resp. 230 V / 50 Hz, the exciter coil can be adjusted to a rated voltage of maximum ⎓ 220 V resp. 250 V / 50-60 Hz on request.

Standard values for voltage and operating mode: 24 V DC, 24 V / 50 Hz, S1 (100%).

The force values indicated in the tables refer to 90% of the rated voltage without spring (UN = ⎓ 24 V resp. 220 V / 50 Hz, for other voltages deviations of the magnetic force may occur) and to the normal operating temperature. Due to natural dispersion the force values may deviate by ± 10% from the values indicated in the tables.

We recommend to use compressed air corresponding to DIN ISO 8573/1, class 3. Elastomer neutral oils shall be used for oiling of the compressed air, otherwise please consult the manufacturer.

The normal operation temperature is based on:

a) Mounting on heat-insulating base

b) Rated voltage ⎓ 24 V resp. 230 V / 50 Hz

c) Operating mode S1

d) Reference temperature 50 °C

The response times and the maximum operating frequency are not indicated, because they depend on the respective application case and pressure. According to the application the maximum operating frequency may be up to 36.000 S/h.

These data apply for the media compressed air and application as 3/2-way-valve de-energized closed. The nominal width for deaeration has to be adapted accordingly to the nominal width of the valve.

Information and remarks concerning European directives can be taken from the correspondent information sheet which is available under *Produktinfo.Magnet-Schultz.com*.

Please make sure that the described devices are suitable for your application. Our offers for these devices are based on the assumption of maximal 8 in an FMEA severity table, i. e. in case of malfunction of the device model as offered, there is, amongst others, no jeopardy of life or limb. Supplementary information concerning its proper installation can be taken also from the –Technical Explanation, the effective DIN VDE0580 as well as the relevant specifications.

This part list is a document for technically qualified personnel.

The present publication is for informational purposes only and shall not be construed as mandatory illustration of the products unless otherwise confirmed expressively.

Dimension table

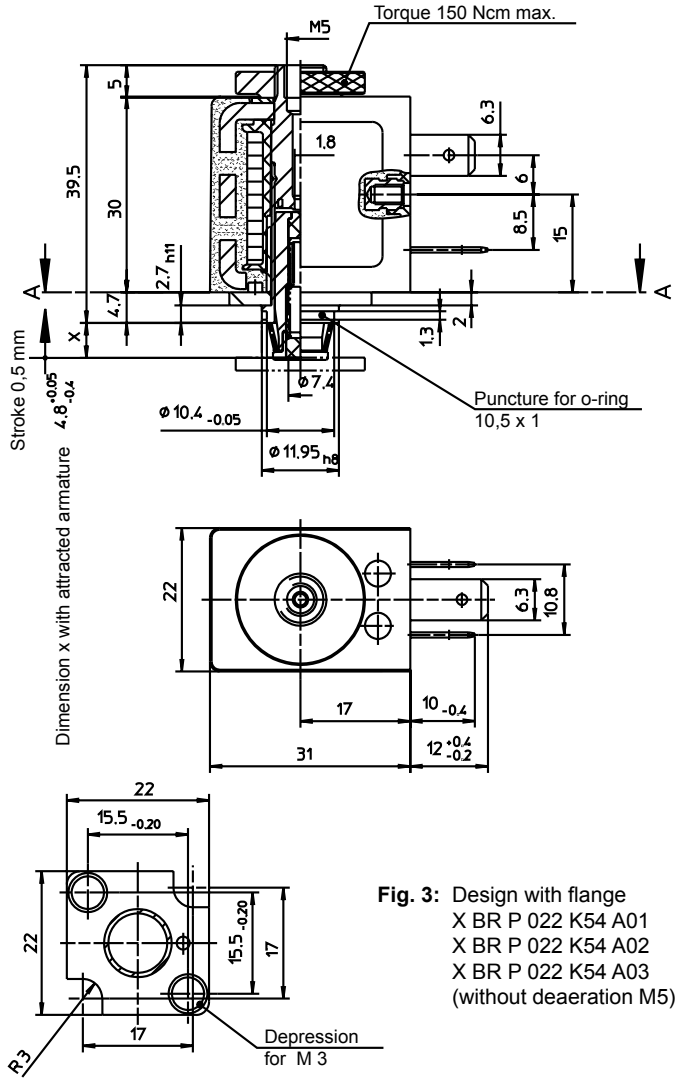


Fig. 3: Design with flange
X BR P 022 K54 A01
X BR P 022 K54 A02
X BR P 022 K54 A03
(without deaeration M5)

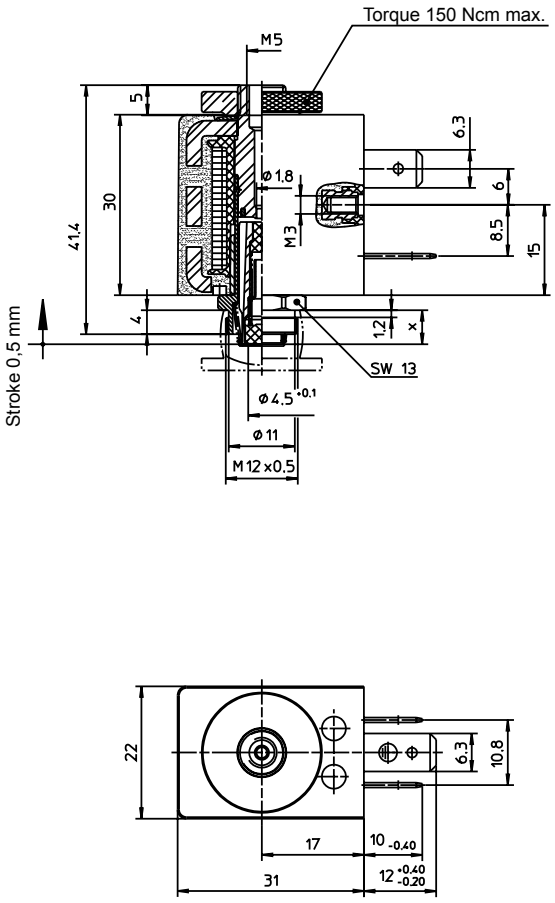


Fig. 4: Design with central thread
X BR P 022 K54 A11
X BR P 022 K54 A12
X BR P 022 K54 A13
(without deaeration M5)

Plug connector DIN 43650-BM2 on request

Application example and switching function

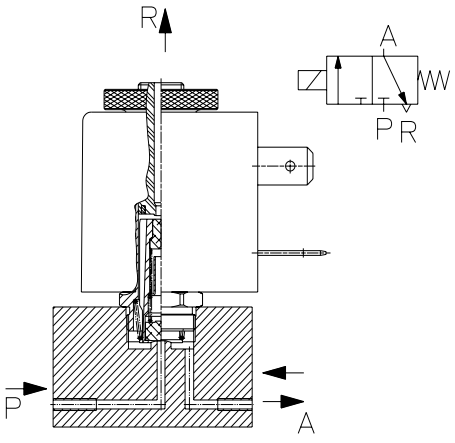


Fig. 5: X BR P 022 K 54 A01 or
X BR P 022 K 54 A11
for 3/2-way valve, NC

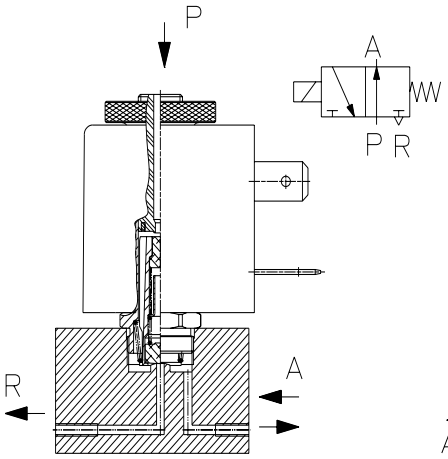


Fig. 6: X BR P 022 K 54 A02 or
X BR P 022 K 54 A12
for 3/2-way valve, NO

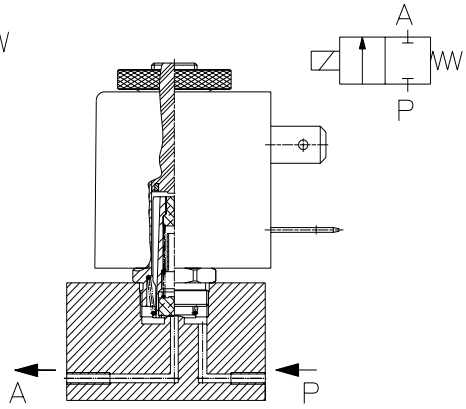
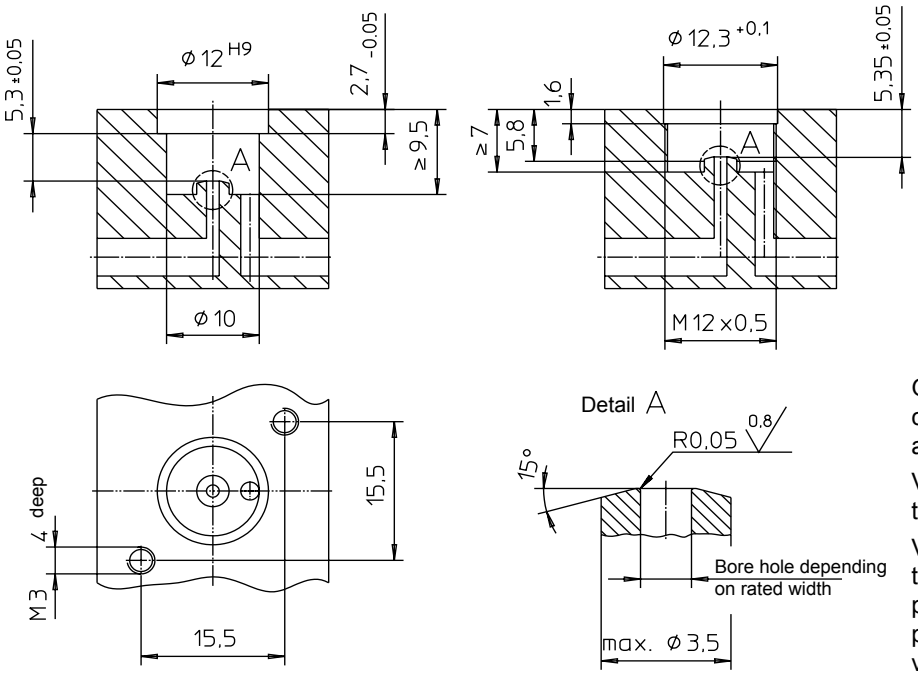


Fig. 7: X BR P 022 K 54 A03 or
X BR P 022 K 54 A13
for 2/2-way valve



Guideline values for the valve construction corresponding to the indicated list values (stroke and rated width).

Valve construction shall be executed according to fig. 8.

Valve seat with the utmost perpendicularity to the armature axis of the solenoid and tapered profile with smooth surface ensure a maximum performance and service life of the solenoid valve.

Fig. 8: Valve to X BR P 022 K54 A01

Type code

X	BR	P	022	K	54	A01

Device group
Series
Modifications
Size in the series
Execution in the series
Protection code
Design number

Order example

DC:	Type	X BR P 022 K54 A01
	Voltage	⎓ 24 V DC
	Operating mode	S1 (100 %)
AC:	Type	X BR P 022 K54 A01
	Voltage	230 V / 50 Hz
	Operating mode	S1 (100 %)

Specials designs

Please do not hesitate to ask for our assistance with the solution of your application-oriented task. In order to find rapidly a reliable solution we need complete details about your application conditions. The details should be specified as precisely as possible in accordance with the relevant -Technical Explanations.

If necessary, please request the support of our corresponding technical office.