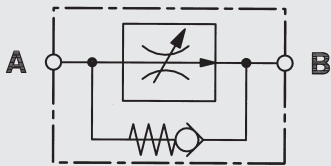
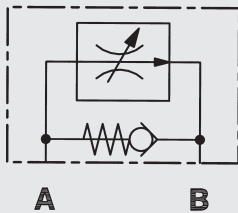


Pressure Compensated Flow Control Valves SRVR/SRVRP

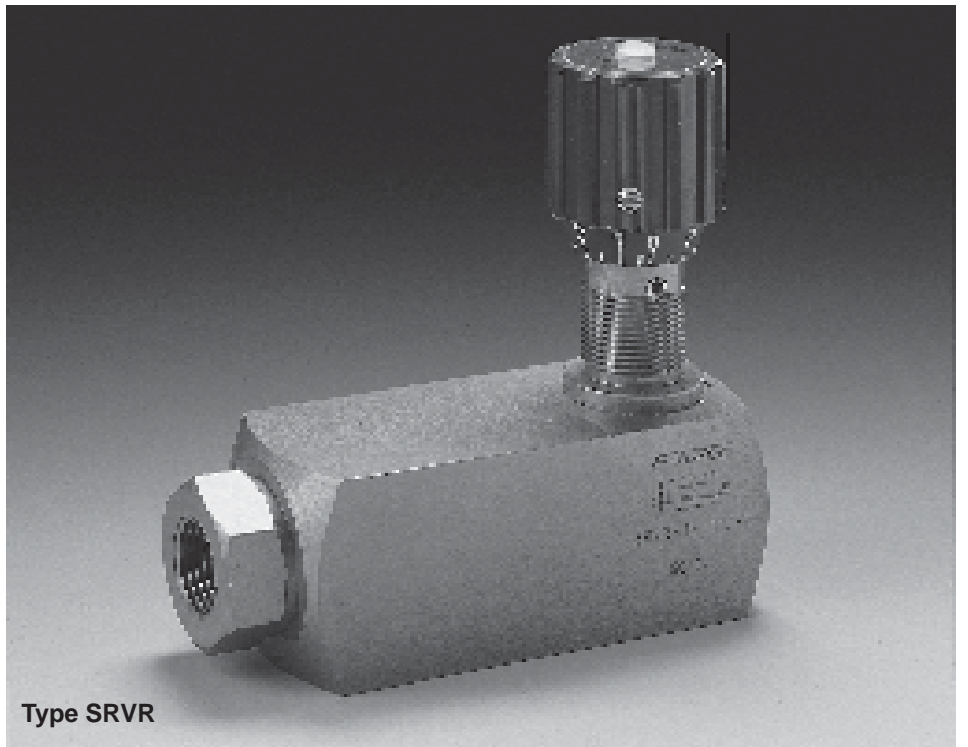
SRVR



SRVRP



up to 210 bar
up to 160 l/min



1. DESCRIPTION

1.1. GENERAL

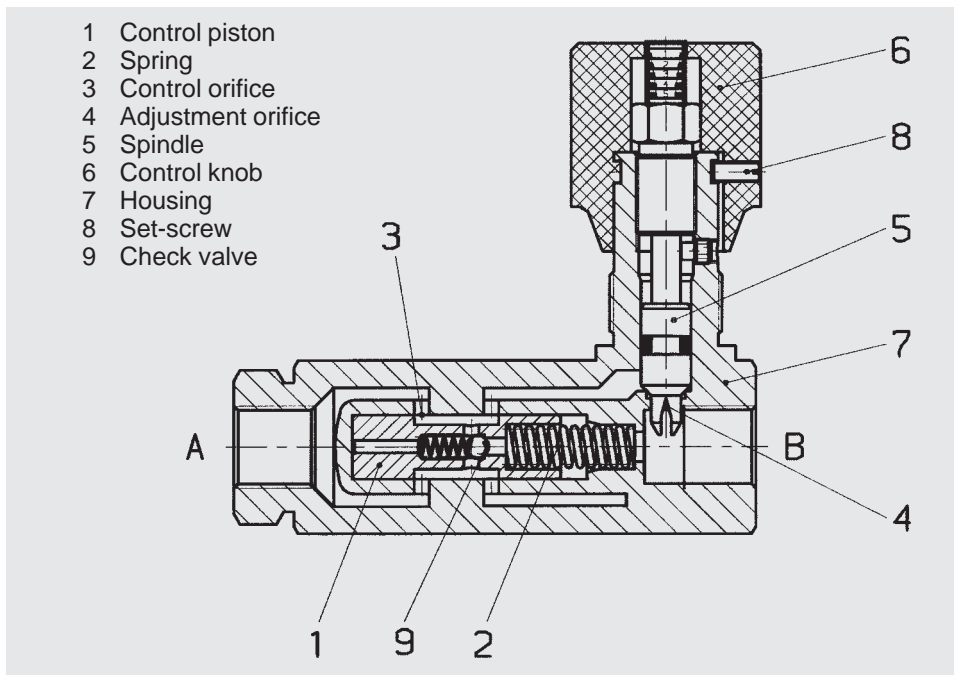
HYDAC pressure compensated flow control valves SRVR ... with check function are, in accordance with DIN-ISO 1219, valves for oil hydraulic systems which maintain a constant outlet flow by means of a control function. The flow rate is largely independent of pressure and viscosity. They enable fine adjustment of the controlled flow rate from A to B. Unrestricted flow in the reverse direction is via the built-in check valve.

Further advantages of these valves are:

- Space-saving installation due to compact construction
- SRVRP for fitting to control blocks and cylinders
- Choice of sizes ensures best possible adaptability to any system
- Pressure compensated over the whole setting range
- Free flow from B to A via a built-in check valve
- A high level of safety is achieved through patented spindle safety mechanism
- A set-screw locks the setting
- Mounting position is optional

1.2. FUNCTION

HYDAC pressure compensated flow control valves type SRVR allow free return line flow from B to A via the built-in check valve and are pressure compensated across the full adjustment range in direction A to B. The compensating piston basically consists of a control piston, a spring and the control orifice. The adjustment orifice, which consists primarily of a spindle and control knob, determines the flow cross section. If oil is flowing from A to B, a pressure drop occurs at the adjustment orifice. The compensating piston moves into a control position which corresponds to the force equilibrium from the force of the pressure drop via the adjustment orifice multiplied by the control piston surface on the one hand and the spring force on the other.



As the flow rate increases, e.g. increasing pressure drop, the diameter of the control orifice is reduced in accordance with the increased pressure drop, until a force equilibrium exists once again.

Due to the continuous adjustment of the compensating piston in accordance with the prevailing pressure drop, a constant flow rate in control direction A to B is achieved. In the reverse direction B to A there is free flow via the built-in check valve and the pressure drop is small.

HYDAC pressure compensated flow control valves can be adjusted easily and accurately using the control knob. Starting with the control spindle in the fully closed position, the flow rate increases as the number of turns of the control knob is increased. The control knob with its coloured scale and scale rings permits accurate repetition of the settings. The size of the coloured triangle on the rings indicates the size of the flow area. An increase in the size of the coloured triangle corresponds to an increase in flow area. A set-screw locks the setting.

1.3. APPLICATION

HYDAC pressure compensated flow control valves provide almost constant lifting and lowering speeds, even with changed loads and oil temperatures.

If the HYDAC pressure compensated flow control valve is fitted in the outlet, correct adjustment can safely prevent the permissible lowering speed from being exceeded.

If the HYDAC pressure compensated flow control valve is fitted in the feed line to the user unit, its compensating pistons can react very quickly to the change in load in the user unit.

Sensitive flow rate setting is possible from a low flow rate (0.2 to 1.0 l/min depending on nominal bore) up to the maximum flow rate. It is also possible to control the speed of hydraulic cylinders and motors independently of pressure as easily as regulating and limiting control oil flows.

Possible applications are:

- Machine tools
- Printing and paper machines
- Construction and construction materials machines
- Test machines
- Parking systems
- Rolling mill installations
- Scissor-lift platforms
- Theatre stages
- Agricultural machinery

1.4. NOTES

If the required control pressure differential is not reached, the valve operates as a speed control valve.

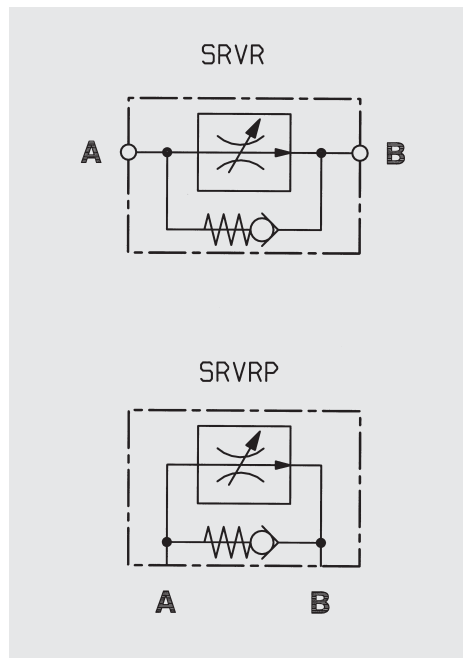
The cracking pressure of the check valve increases by the pressure across port A.

2. TECHNICAL SPECIFICATIONS

2.1. GENERAL

2.1.1 Designation and symbol

Pressure compensated flow control valve with bypass check valve
SRVR/SRVRP



2.1.2 Model code (also order example)

SRVR - 10 - 01. X / 0

Designation

SRVR = flow control valve for inline mounting
with bypass check valve
SRVRP = flow control valve for manifold mounting
with bypass check valve

Nominal size

08
10
12
16
20 (for SRVR only)

Type

01 = technical specifications as per this brochure
12 = nickel-plated housing,
adjustment with tool and protective dome nut
(only for SRVR 10 to 16 and SRVRP 10 and 12)

Series

(determined by manufacturer)

Threaded connection (not applicable to SRVRP)

0 = threaded connection to DIN 3852, Part 2-X)

Standard models

Stock no. (order no.)	Model code
706 067	SRVR-08-01.X/0
706 075	SRVR-10-01.X/0
706 083	SRVR-12-01.X/0
706 091	SRVR-16-01.X/0
706 115	SRVR-20-01.X/0
706 151	SRVRP-08-01.X
706 153	SRVRP-10-01.X
706 155	SRVRP-12-01.X
706 157	SRVRP-16-01.X

Please quote stock no. when ordering. Delivery for non-standard models is longer and the price is higher.

2.1.3 Type of construction

SRVR and SRVRP differential pressure regulators with built-in adjustment orifice and bypass check valve.

2.1.4 Type of mounting

SRVR
Inline mounting
SRVRP
Manifold mounting

2.1.5 Mounting position

Optional

2.1.6 Weight

See point 3

2.1.7 Flow direction

From A to B controlled flow
From B to A free flow via built-in check valve

2.1.8 Ambient temperature

Min. -20 °C
Max. +80 °C

2.1.9 Materials

Housing: free-cutting steel,
phosphate-plated
Control piston: hardened and
polished steel
Spindle: free-cutting steel,
phosphate-plated
Control knob: polyamide
Seals: FPM and PTFE

2.1.10 Nominal sizes

NG08
NG10
NG12
NG16
NG20 (not for SRVRP)

2.1.11 Type of connection

SRVR
For connections with male thread
Form A, B and E to DIN 3852,
Part 2 and 11.

SRVRP
Manifold connection
(for dimensions, see point 3)
Mounting screws are not supplied
with the valve.

2.2. HYDRAULIC DETAILS

2.2.1 Nominal pressure

$p_N = 210$ bar on all ports

2.2.2 Operating pressure range

Δp = the required control pressure differential = pressure differential via adjustment orifice (see point 2.2.7).

If the differential pressure is lower, the valve operates as a speed control valve.

2.2.3 Operating fluid

Hydraulic oil to DIN 51524, Part 1 and 2

2.2.4 Fluid temperature range

Min. -20 °C
Max. $+80$ °C

2.2.5 Viscosity range

Min. 2.8 mm²/s
Max. 380 mm²/s

2.2.6 Filtration

Max. permissible contamination level of the operating fluid to ISO 4406 Class 21/19/16 (NAS 1638, class 10). We therefore recommend a filter with a minimum retention rate of $\beta_{20} \geq 100$.

The installation of a filter and the regular replacement of the filter element ensures the correct functioning of the valves, reduces wear and tear and increases the service life.

2.2.7 Flow rate

Nom. size	Max. flow rate (l/min)	Required control pressure differential = pressure differential via adjustment orifice (bar)
08	12	7
10	22	7
12	55	7
16	90	7
20	160	12

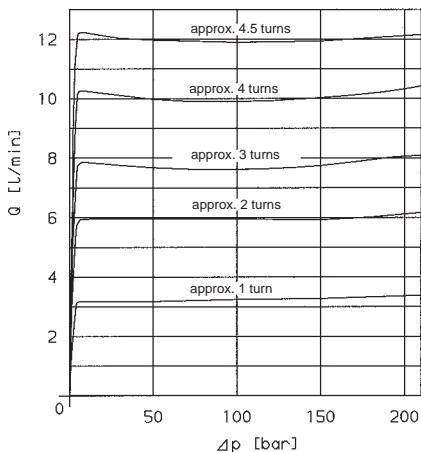
2.2.8 Flow rate,

dependent on pressure

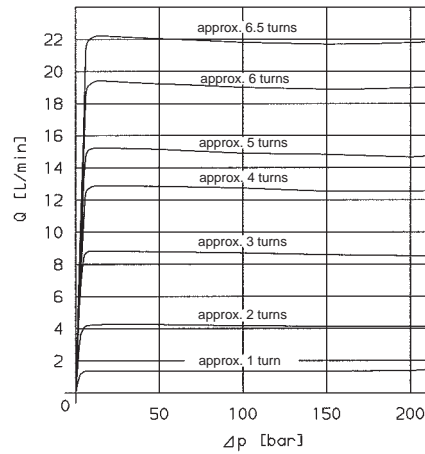
Flow direction A to B

Q- Δp graph measured at $v = 34$ mm²/s and $t_{oil} = 46$ °C

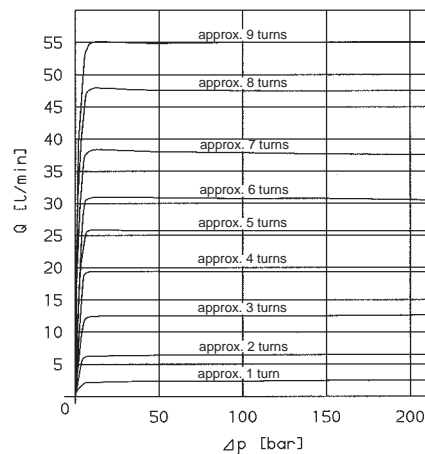
SRVR/SRVRP-08-01.X



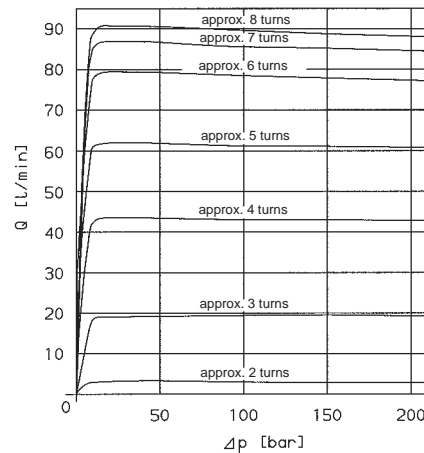
SRVR/SRVRP-10-01.X



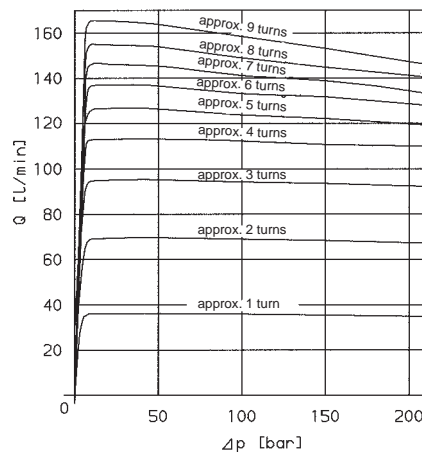
SRVR/SRVRP-12-01.X



SRVR/SRVRP-16-01.X



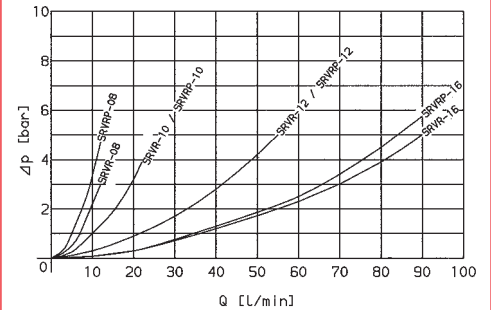
SRVR-20-01.X



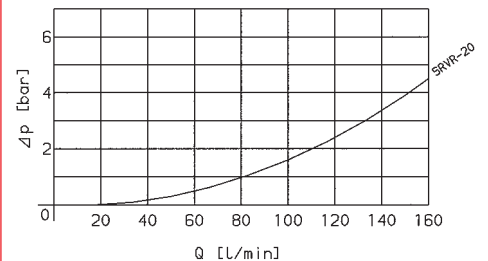
2.2.9 Pressure drops, dependent on flow rate

Flow direction from B to A
Pressure differential Δp dependent on flow rate Q via adjustment orifice and check valve with fully open spindle measured at $v = 34$ mm²/s and $t_{oil} = 46$ °C

SRVR/SRVRP, NOMINAL SIZES 8-16



SRVR - 20



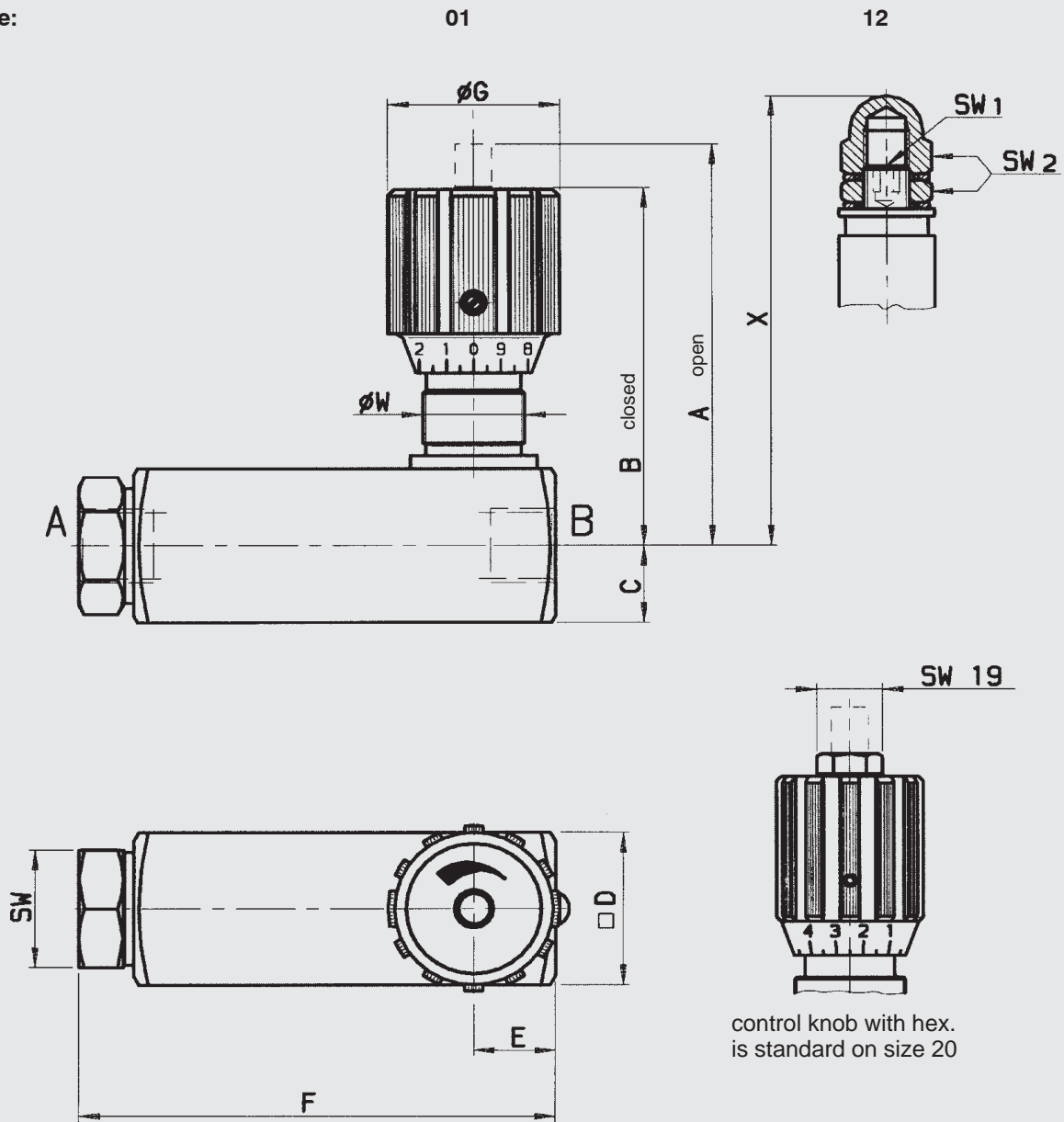
2.2.10 Seal kits

Stock no. Type

555090	NG08 DV/P DRV/P DVE RVP SRVR/P
555091	NG10 DV/P DRV/P DVE RVP SRVR/P
555092	NG12 DV/P DRV/P DVE RVP SRVR/P
555093	NG16 DV/P DRV/P DVE RVP SRVR/P
555094	NG20 DV/P DRV/P RVP SRVR

3. DIMENSIONS SRVR

Type:

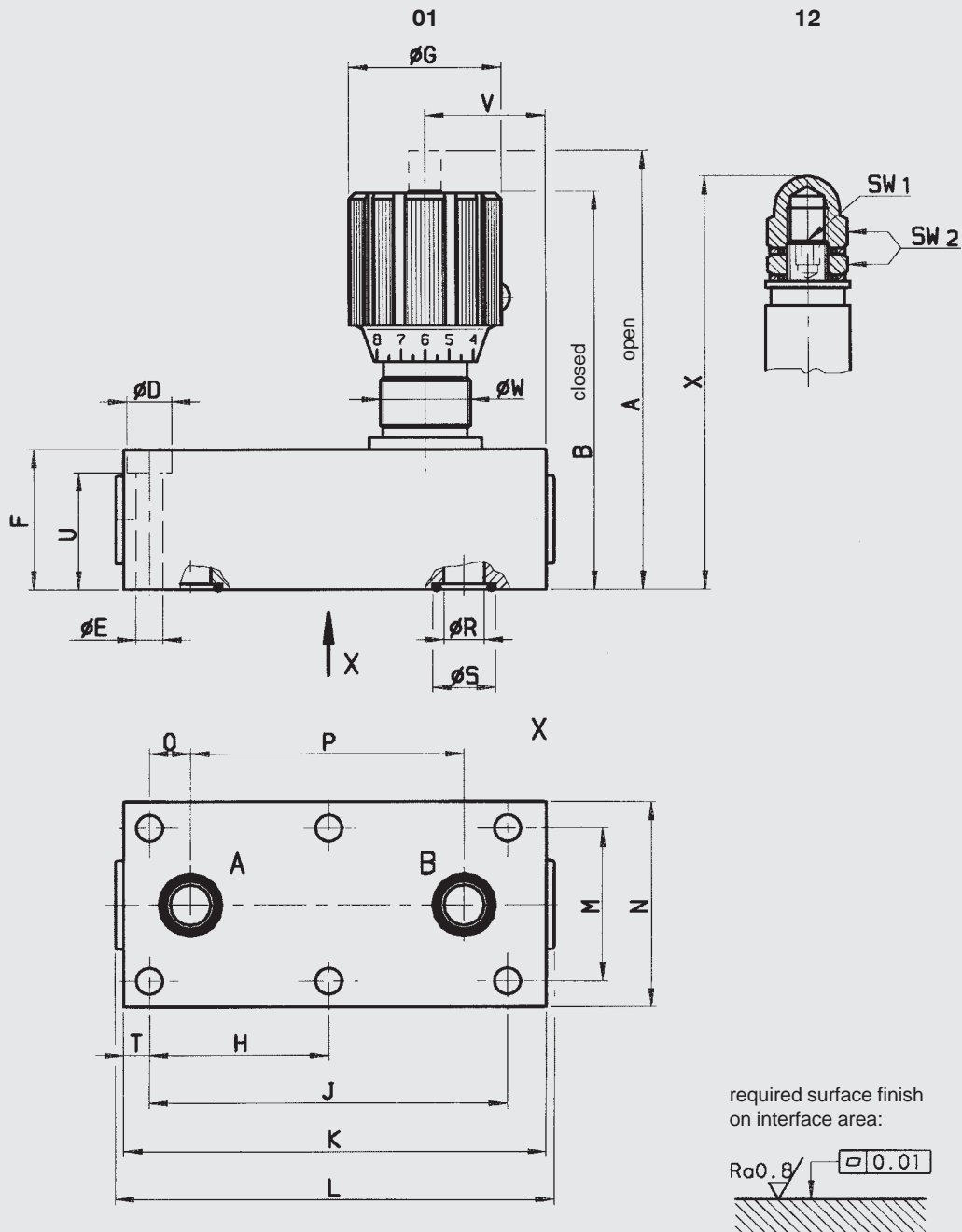


control knob with hex.
is standard on size 20

Nom. size	Threaded connection	A	B	C	D	E	F	G
08	G 1/4	76	68	15	30	17.5	92	29
10	G 3/8	91	81.5	17.5	35	18	105	38
12	G 1/2	106.5	96.5	22.5	45	21	125	38
16	G 3/4	109	100	25	50	26	140	38
20	G 1	150	134	30	60	33	175	49

W	SW	SW1	SW2	X	Weight (kg)
PG11	24	—	—	—	0.60
PG16	27	5	17	85.5	0.90
PG16	32	6	19	104.5	1.70
PG16	41	6	19	107	2.20
PG29	50	—	—	—	4.00

SRVRP



Nom. size	A	B	D	E	F	G	H	J	K	L
08	91	83	11	6.6	30	29	–	73	86	89
10	108.5	99	11	6.6	35	38	–	89	105	107.5
12	129	119	11	6.6	45	38	–	105	118	121.5
16	134	125	15	9	50	38	62	124	145	145.5

M	N	O	P	R	S	T	U	V	W	SW1	SW2	X	Weight (kg)
33.5	45	9.5	54	7.5	12.7	6.5	23	22.5	PG11	–	–	–	0.85
38	51	10.2	68	10	15.6	6.4	28	30	PG16	5	17	103	1.40
44.5	60	12.5	79	13	18.6	6.5	38	29.5	PG16	6	19	127	2.30
54	70	16	92	17	24.5	10.5	41	39	PG16	–	–	–	3.30

4. NOTE

The information in this brochure relates to the operating conditions and applications described. For applications or operating conditions not described, please contact the relevant technical department. Subject to technical modifications.