

Stacking Sequence and Preload Valve, size 5 with integral Bypass Check Valve, Seated Pilot Stage, Spool-type Main Stage, Series SDVB-3 ...



- 350 bar, 140 l/min
- With two-stage 10 mm pressure relief cartridge DVPA-3-10...
- 350 bar, 140 l/min on all ports
- Cartridge spring chamber is drained to port T
- Optionally available with hand knob, or lockable hand knob, adjuster
- Also available with solenoid controlled two-pressure cartridge WUVPB-3...-10
- ISO 4401 / CETOP R35H size 5, NFPA D05, DIN 24 340 A10 interface

1. Description

Series SDVB-3...-10 stack valves are used for sequence- and preload functions. They are equipped with the two-stage pressure relief cartridge type DVPA-3-10... . When closed, the valves shut off the relief path with spool-type leakage (see performance graphs). The cartridge spring chamber is drained to port T - the pressure setting is unaffected by fluctuations of the secondary pressure. The bypass

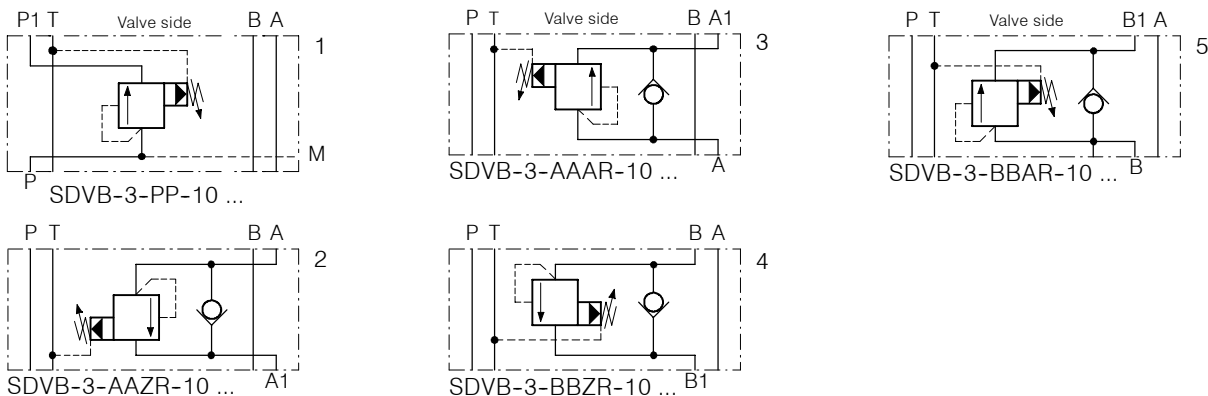
check valve in models SDVB-3-...AR-10... and SDVB-3-...BR-10... allows reverse flow from A1 to A, or B1 to B.

NOTE: after the connection P → P1 (or A → A1, B → B1) has opened, pilot oil drain flow to T will increase with rising system pressure (see performance graphs).

Turning model SDVB-3-AAZR-10 upside down about its short axis pro-

duces the SDVB-3-BBAR-10 function and vice versa. Ditto SDVB-3-AAAR-10 and ...-BBZR... The side-mounted nameplate indicates the correct orientation for the required function. The screw-in design of the cartridge valve provides for straight-forward, trouble-free maintenance. Interface sealing is by means of a seal plate and 5 O-rings.

2. Symbols



3. Main characteristics

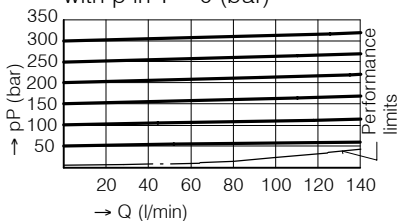
| | | |
|-----------------|----|--|
| Designation | | Stacking pressure sequence valve |
| Design | | two-stage, seated pilot, sliding spool |
| Mounting method | | stack mounting |
| Size | | ISO 4401 size 5 interface |
| Weight | kg | SDVB-3-PP-10 ... = 2,9, SDVB-3-...AR / ZR-10 ... = 2,8 |

| | | |
|---------------------------------|--------------------------|--|
| Mounting attitude | | unrestricted |
| Flow direction | | see symbols |
| Operating pressure range | bar | ... 350 in P, A, B and T |
| Adjustment ranges | bar | pressure range N = 010 ... 350 pressure range M = 010 ... 210 pressure range L = 010 ... 065 |
| Flow rate, Q _{max} | l/min | 1 ... 140, see performance limits |
| Fluids | | HL and HLP hydraulic oils to DIN 51 524; for other fluids, please consult BUCHER |
| Fluid temperature range | °C | -25 ... +85 |
| Ambient temperature | °C | -25 ... +85 |
| Viscosity range | mm ² /s (cSt) | 10 ... 650, recommended 15 ... 250 |
| Minimum fluid cleanliness level | | 18/14 to ISO 4406 / CETOP RP70H; 8 ... 9 to NAS 1638 |

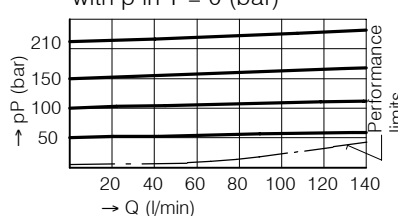
4. Performance graphs

Measured with oil viscosity 33 mm²/s (cSt)

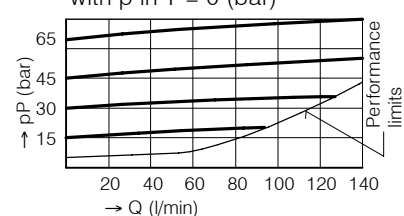
SDVB-3-PP-10-..N
p-Q characteristics
with p in T = 0 (bar)



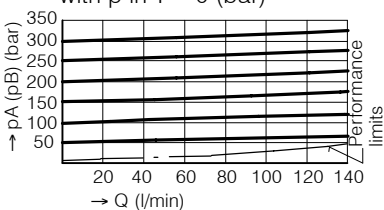
SDVB-3-PP-10-..M
p-Q characteristics
with p in T = 0 (bar)



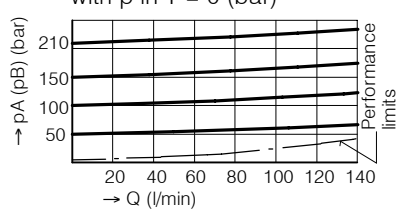
SDVB-3-PP-10-..L
p-Q characteristics
with p in T = 0 (bar)



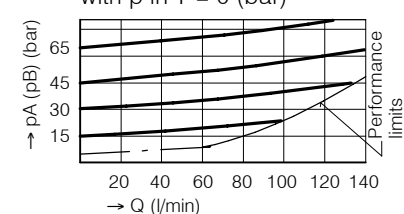
SDVB-3-..AR / ZR-10-..N
p-Q characteristics
with p in T = 0 (bar)



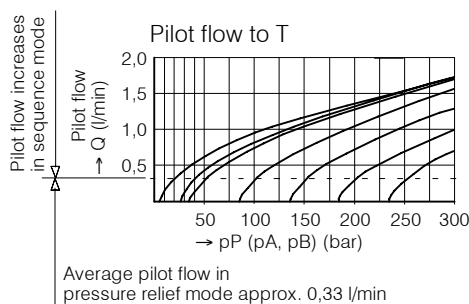
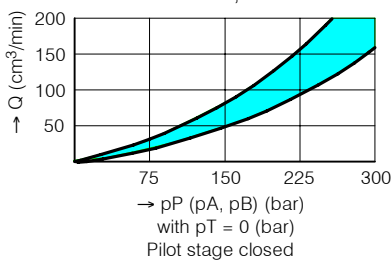
SDVB-3-..AR / ZR-10-..M
p-Q characteristics
with p in T = 0 (bar)



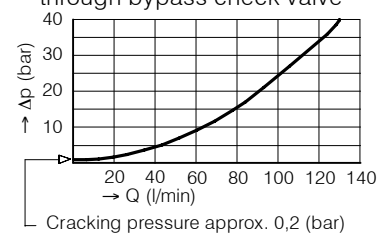
SDVB-3-..AR / ZR-10-..L
p-Q characteristics
with p in T = 0 (bar)



Leakage P→P1
A→A1, B→B1



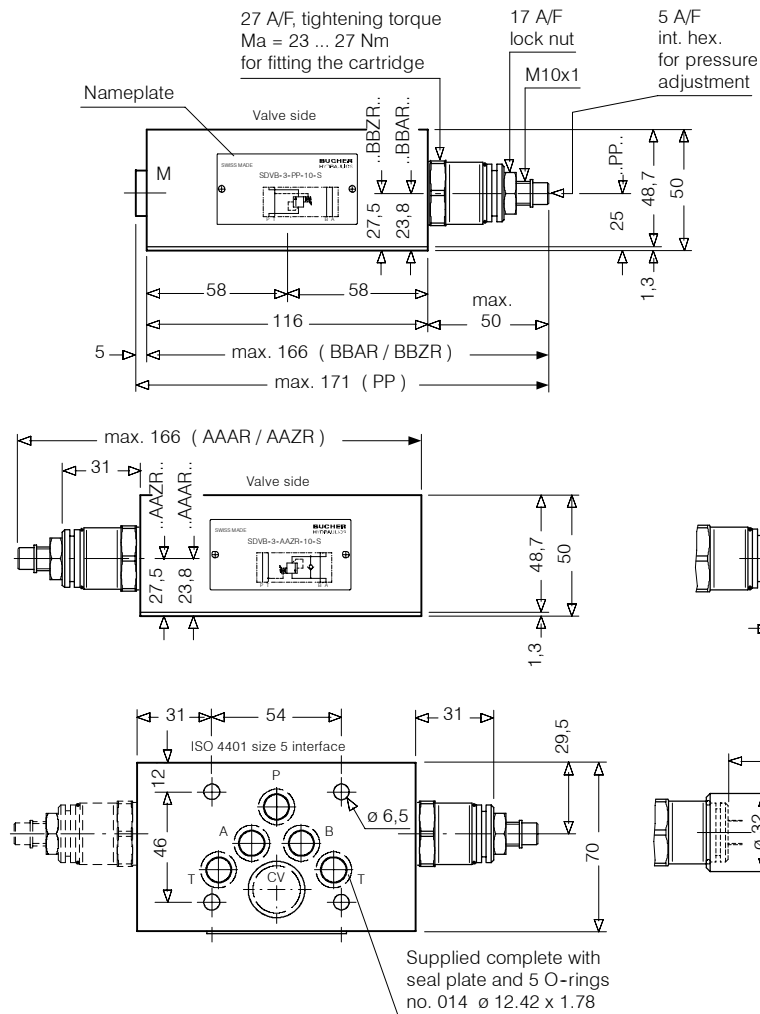
Δp-Q char. A1→A bzw. B1→B
through bypass check valve



Rate of pressure change
when turning the adjusting screw:

| | |
|------------------|------------------------|
| SDVB-3-..-10-..N | 1 turn ≅ app. 60 (bar) |
| SDVB-3-..-10-..M | 1 turn ≅ app. 38 (bar) |
| SDVB-3-..-10-..L | 1 turn ≅ app. 13 (bar) |

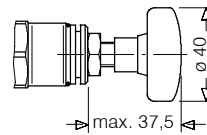
5. Dimensions



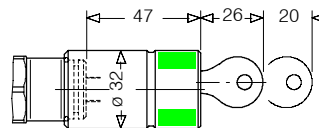
Adjuster style S
(Standard)

OPTIONS

Adjuster style H
Hand knob (can be
fitted later by user)

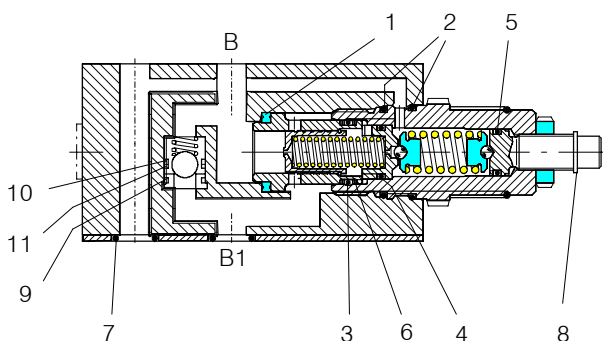


Adjuster style Z4
Lockable hand knob
type 2H complies with
Volkswagen Factory
Specification BV 1.09
(factory option only)



6. Schematic section

showing the relevant ports
Ex. SDVB-3-BBZR-10 ...



Seal kit no. DS-221, comprising *):

| Itm. | Qty. | Qty. | Description | Size |
|------|------|------|----------------|-----------------------------------|
| 1 | 1 | 1*) | Seal | \varnothing 22,1 x 16,5 x 2,5 |
| 2 | 2 | 2*) | O-ring no. 020 | \varnothing 21,95 x 1,78 N90 |
| 3 | 1 | 1*) | O-ring | \varnothing 14 x 2 |
| 4 | 1 | 1*) | O-ring no. 013 | \varnothing 10,82 x 1,78 N90 |
| 5 | 1 | 1*) | O-ring no. 012 | \varnothing 9,25 x 1,78 N90 |
| 6 | 2 | 2*) | Backup ring | \varnothing 13,7/1,5x1,4 FI0751 |
| 7 | 5 | 5*) | O-ring no. 014 | \varnothing 12,42 x 1,78 N90 |
| 8 | 1 | 1*) | Snap ring | \varnothing 9 type SS |
| 9 | - | 1*) | O-ring no. 018 | \varnothing 18,77 x 1,78 N90 |
| 10 | - | 1*) | O-ring no. 016 | \varnothing 15,60 x 1,78 N90 |
| 11 | - | 1*) | Backup ring | \varnothing 15,3/1,5x1,4 FI0751 |

SDVB-3-AAAR/ZR / BBAR/ZR-10 ...
SDVB-3-PP-10 ...

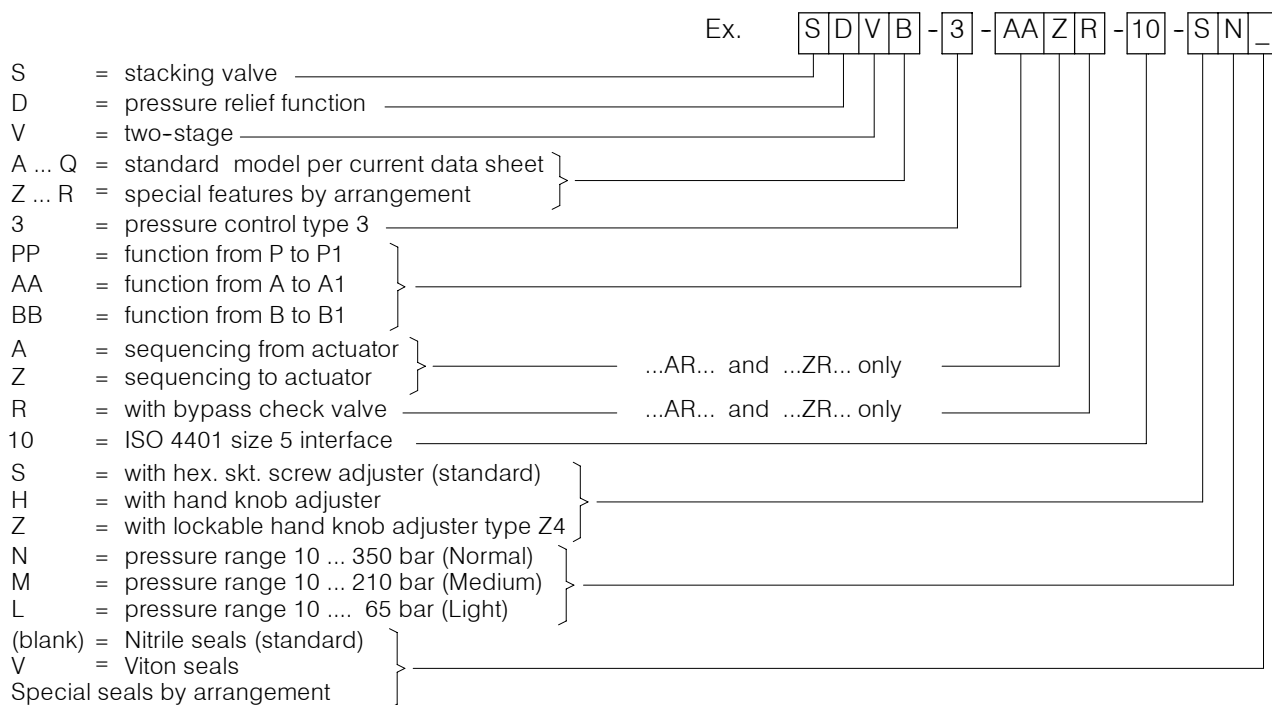
7. Installation and servicing

All installation and servicing must be carried out with care, and by qualified personnel only. At installation, be sure to mount the valve with the correct

faces contacting the adjacent units and with all interface connections lining up properly. When changing seals, the new seals should be thoroughly oiled or

greased before fitting them to the valve. Use the correct tightening torques when fitting the cartridge.

8. Ordering code



9. Related data sheets

| Old no. | New no. | |
|---------|----------------|--|
| i-00 | 400-P-010101-E | Table of interface equivalents |
| i-41 | 400-P-050101-E | DIN 24 340 size A10 interface |
| D-4.33 | 400-P-280121-E | Two-stage pressure relief cartridge, 10 mm, series DVPA-3-10 ... |
| G-45 | 400-P-810901-E | Seal plate type DB-10 |

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