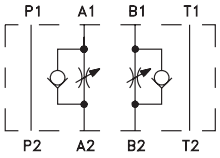
Double Throttle Check Valves Sandwich Plates

2VS3-06

Size 06 • p_{max} up to 320 bar • Q_{max} up to 80 L/min

HA 5051
5/2008

Replaces
HA 5051 1/2003

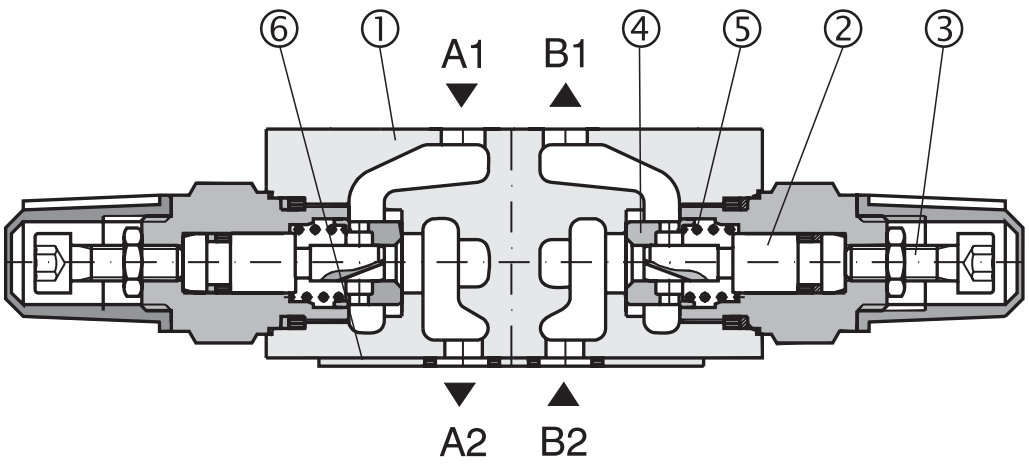


- **Sandwich plate design for use in vertical stacking assemblies**
- **Meter-in or meter-out control as required**
- **Three possible arrangements:**
  - throttle valve in channel A
  - throttle valve in channel B
  - throttle valves in channels A and B
- **Flow adjustment - three adjustment elements**
- **Installation dimensions to ISO 4401:1994 and DIN 24 340-A6**
- **Subplates - see Catalogue HA 0002**

Functional Description

Double throttle valves are used to control flow rates in two separate lines (A, B) of a hydraulic circuit. The modular design provides six functional symbols.
The throttle valve is built into channel A or B or into channels A and B. The valve restricts the fluid flow in one direction while providing reverse free-flow in the opposite direction. The throttling spool (2) is adjusted by means of a set screw (3) and each spool position corresponds with a certain passage area.
Fluid entering port A1 is throttled to port A2 via a groove and an annulus area. Fluid returning from port B2 shifts the valve seat (4) against the spring (5), thus creating a passage which allows reverse free-flow to port B1 (function as a check valve).

The sandwich design enables simple stacking with other components of the same size.
The separate O-ring plate (6) with fitted O rings provides sealing of the valve connecting surface. According to the valve arrangement, the meter-in or meter-out control is provided. Changing the meter-in mode into the meter-out mode can be done by turning the valve by 180° around its horizontal axis. The orientation of the throttle check valves in the valve body corresponds with the symbols shown on the name plate. The set screw can be operated by a key, by a hand knob or by a hand knob with keylock.
The basic surface treatment of the valve housing is phosphate coated, whereas the surfaces of the other parts are zinc coated.



Ordering Code

2VS3 - 06 - ☐ ☐ ☐

Double Throttle Check Valve

Nominal size

Functional Symbols
- A — check valve in line A*
- B — check valve in line B*
- **C** — check valves in lines A and B*

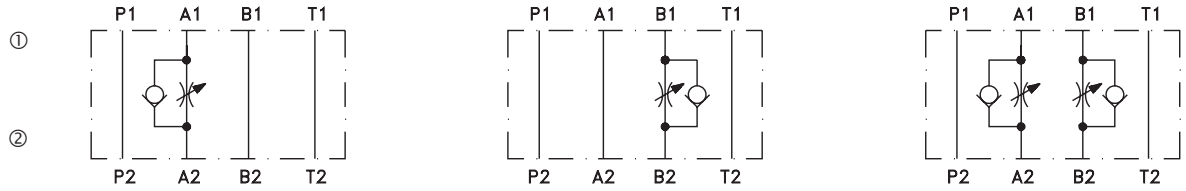
* see Functional Symbols

Adjustment element
- **S** — Hexagon set screw with locknut and protective cap
- R — Hand knob with scale
- Z — Hand knob with scale and keylock

Seals
- **no designation** — NBR
- V — Viton

FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE AND TABLE OF PREFERRED TYPES ON PAGE 3

Functional Symbols



Notes: ① valve side
② subplate or manifold side
The orientation of the throttle check valves in the valve body corresponds with symbols shown on the name plate.

Technical Data

Nominal size	mm	06
Maximum flow rate	L/min	80
Maximum operating pressure	bar	320
Hydraulic fluid		Hydraulic oils of power classes (HL, HLP) to DIN 51524
Fluid temperature range for (NBR)	°C	-30 ... +100
Fluid temperature range for (Viton)	°C	-20 ... +120
Viscosity range	mm^2/s	20 ... 400
Maximum degree of fluid contamination		Class 21/18/15 according to ISO 4406 (1999)
Weight	kg	1,2
Mounting position		optional

Spare Parts

Seal kit

Type	Dimensions, quantity			Ordering number
	O-ring	Square ring	Back-up ring	
Standard NBR	18 x 2.65 NBR70 (2 pcs.)	9.25 x 1.68 (4 pcs.)	6.73 x 9.43 x 1.14 (2 pcs.)	525-9900
	6.9 x 1.8 NBR70 (2 pcs.)	-	17.83 x 22.19 x 1.14 (2 pcs.)	
Viton	17.12 x 2.62 (2 pcs.)	-	9.43 x 6.73 x 1.14 (2 pcs.)	525-9940
	9.25 x 1.78 (4 pcs.)	-	17.83 x 22.19 x 1.14 (2 pcs.)	
	6.75 x 1.78 (2 pcs.)	-	-	

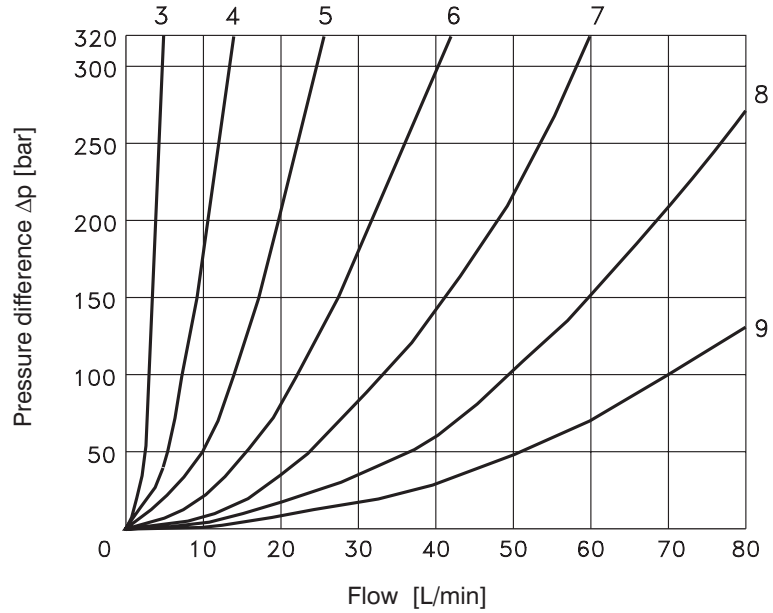
Δp-Q Characteristics

Measured at $\nu = 32\ mm^2/s$

Throttle valve

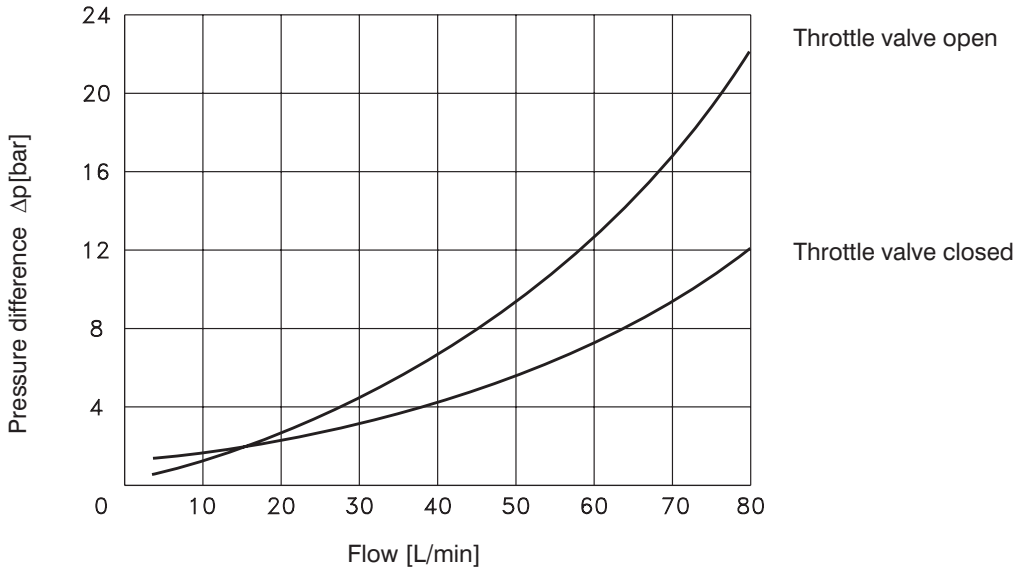
Pressure defference Δp related to flow from A1 to A2, (from B1 to B2)

- Throttle setting in turns (from the end stop)



Check valve

Pressure difference Δp related to flow from A2 to A1, (from B2 to B1)



Preferred Types of Valves

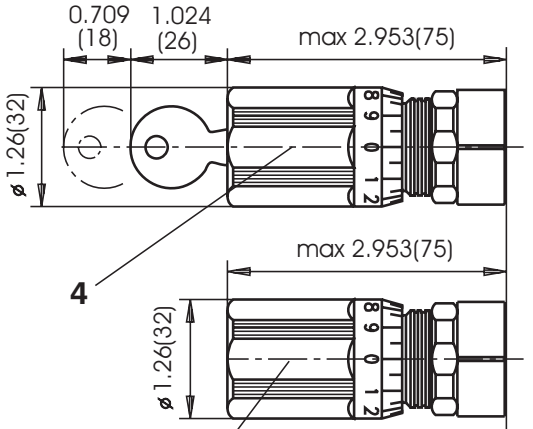
Type	Ordering Number
2VS3-06-CS	525-0023

Caution!

- The packing foil is recyclable.The protective plate can be returned to manufacturer.
- Mounting bolts must be ordered separately. Tightening torgue is 8.9 Nm.
- If the valve is used separately without a directional valve, a cover plate DK1-06/32-1 is to be ordered. This plate connects port A1 with B1 and A2 with B2 respectively (suitable for models 2VS3-06-Ax and 2VS3-06-Bx) - see catalogue Cover Plates and Crossover Cover Plates HA 0003.
- The technical information regarding the product presented in this catalogue is for descriptive purposes only. It should not be construed in any case as a guaranteed representation of the product properties in the sense of the law.

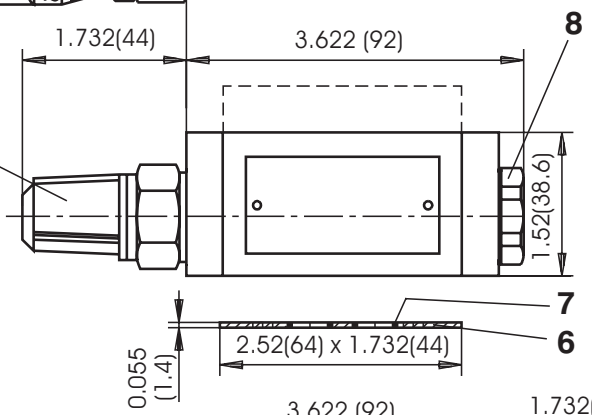
Valve Dimensions

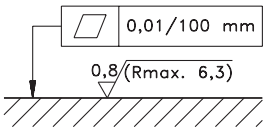
Dimensions in millimetres



1 Name plate
2 Adjustment element - Inside HEX 5 with lock nut and protective cup
3 Adjustment element - hand knob with scale
4 Adjustment element - hand knob with scale and keylock
With all adjustment elements:
clockwise rotation reduces flow
counter - clockwise rotation increases flow
5 Locknut HEX10
6 O-ring plate - supplied in delivery packet
7 Square ring 9.25x1.68 (4 pcs.) - supplied in delivery packet
8 Closing screw

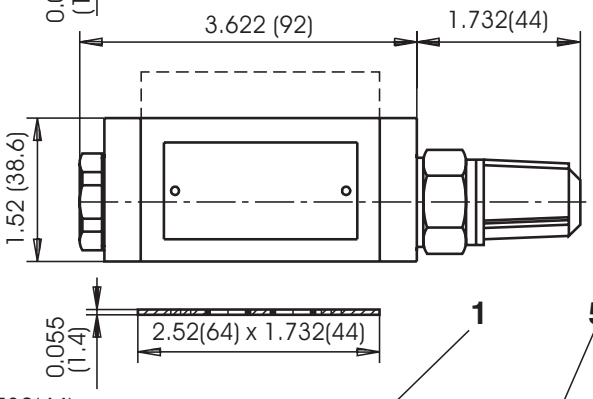
2VS3-06A





Required surface finish of interface

2VS3-06B



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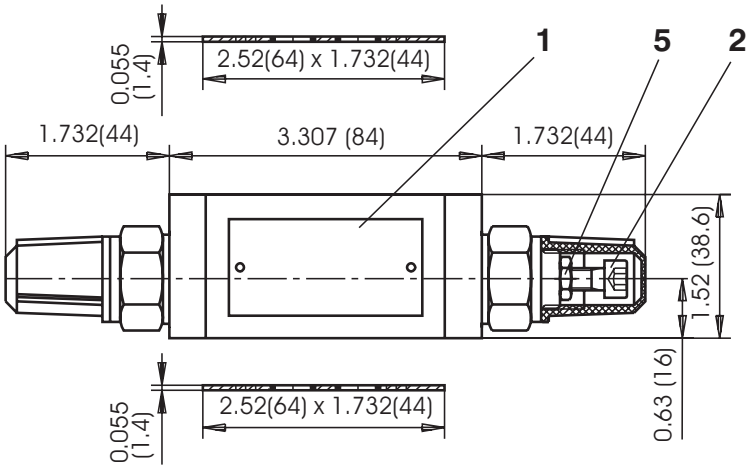

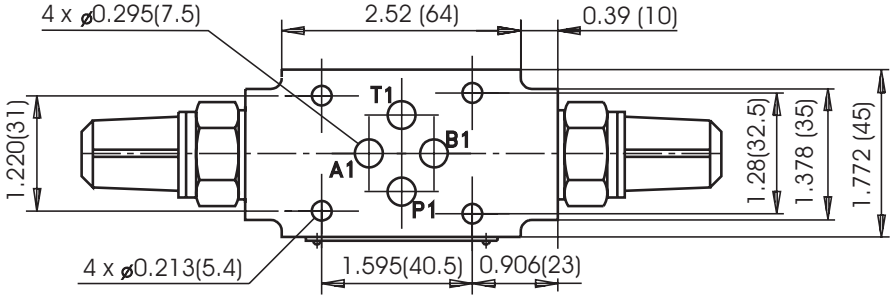

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