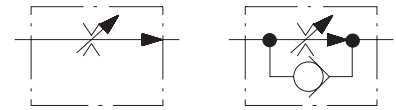


- Sandwich plate design for use in vertical stacking assemblies
- For use in meter-in, meter-out or bleed-off applications
- Available with reverse free-flow check valve
- Flow rate setting with adjustment knob
- Installation dimensions to ISO 4401-AB-03-4-A and DIN 24 340 -A6
- Subplates - see catalogue HA 0002



## Functional Description

Pressure compensated flow control valves are designed to provide adjustable controlled flow rates independent of changes in inlet and/or outlet pressure.

2 way valves are used in meter-in, meter-out or bleed-off and or parallel applications.

The flow control valve consists basically of housing (1), throttling spool (2), spring (3), pressure compensator (4) and a hand knob (5) with adjustment mechanism.

### Flow control valve VSS1-206-A

Fluid from port A1 passes through orifice area (6) of the throttling spool, proceeds through its internal bore to the orifice area (7) modulated via the metering edge of the pressure compensator (4) and onwards to port A2. The flow rate depends on the orifice area (6) and is determined by rotating the adjustment knob (5). The knob can be fixed at the adjusted position via tightening screw (9). The spring pushes both the throttling spool and the spool of the pressure compensator to their extreme positions and provided that there is no flow through the valve, holds the orifice area (7) fully open. An introduction of flow to port A1 exposes inlet pressure through bore (8) to the bottom area of the compensator spool and causes this spool to move in closing direction, thus decreasing the pressure difference at the orifice area (6) of the throttling spool. The movement of the

compensator stops as soon as a new equilibrium is reached. The pressure compensator compares continuously the pressure difference at the orifice area (6) with the amount preset by the spring pretension and modulates the orifice area (6) accordingly, thus holding the flow rate constant.

### Flow control valve VSS1-206-B

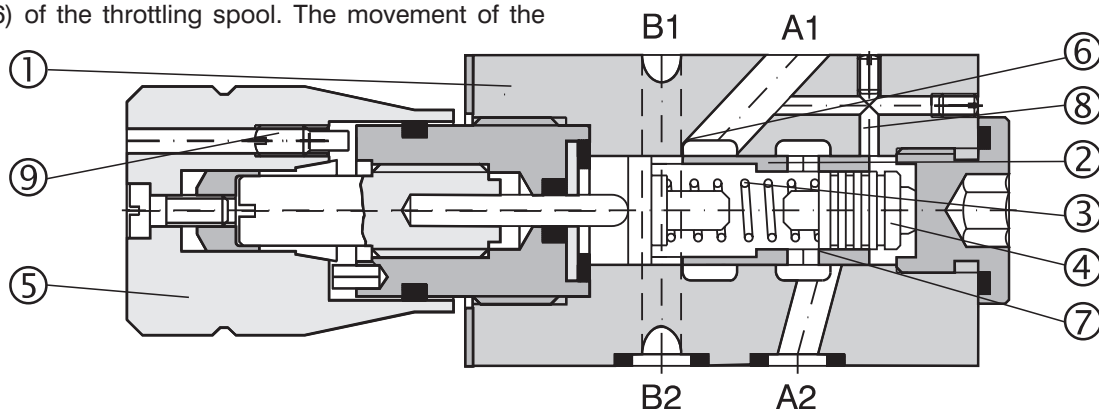
This type of valve functions on the same principle as the previous one, however, reverse free-flow from port A2 to port A1 is provided for by the built-in check valve.

Connection of port A1 with port P1 is ensured by cover plate or by directional valve situated at the upper face of housing (1) - see Functional symbols (vertical stacking assemblies).

### Flow control valve VSS1-206-C

This valve has the same function as the valve described above, the only difference being the changed flow direction, i.e. controlled flow in direction A2 → A1 and free-flow in direction A1 → A2.

The basic surface treatment of the valve housing is phosphate coated, whereas the surface of the other parts are zinc coated.



# Ordering Code

**VSS1-206-**

Flow Control Valve

2 way design

Nominal size

Flow rate L/min

Q = 6,3

Q = 12

Q = 22

**6,3**

**12**

**22**

no designation  
V

**Seals**

NBR

Viton

**Model**

**A-02** for subplate mounting - without check valve

**A-11** sandwich plate design - without check valve

**B-11** sandwich plate design - with check valve, meter-in mode

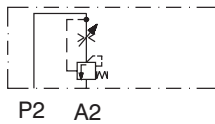
**C-11** sandwich plate design - with check valve, meter-out mode

**FOR PREFERRED TYPES SEE BOLD TYPING IN ORDERING CODE AND TABLE OF PREFERRED TYPES ON PAGE 6**

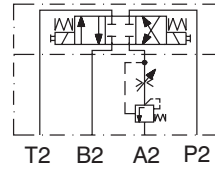
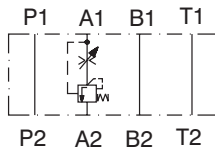
# Functional Symbols

**A** - without check valve

Model A-02



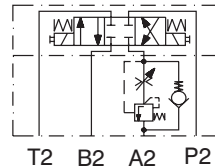
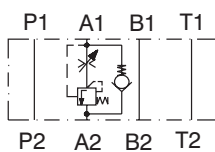
Model A-11



Typical application of the valve in stacking assembly \*

**B** - with check valve, meter-in mode

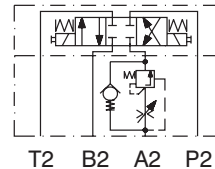
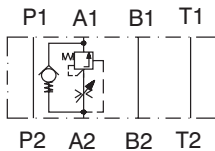
Model B-11



Typical application of the valve in stacking assembly \*

**C** - with check valve, meter-out mode

Model C-11



Typical application of the valve in stacking assembly \*

\* Directional valve must be ordered separately.

# Technical Data

Nominal size	mm	06		
Maximum flow rate	L/min	6,3	12	22
Minimum flow rate	cm <sup>3</sup> /min	60		
Max. operating pressure	bar	320		
Minimum pressure drop	bar	see performance curves		
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 <sup>2</sup> /s	20 ... 400		
Maximum degree of fluid contamination for Q ≤ (1 L/min) for Q > (1 L/min)		Class 20/17/14 according to ISO 4406 (1999) Class 21/18/15 according to ISO 4406 (1999)		
Weight	kg	0.8		
Mounting position		optional		

# Characteristics

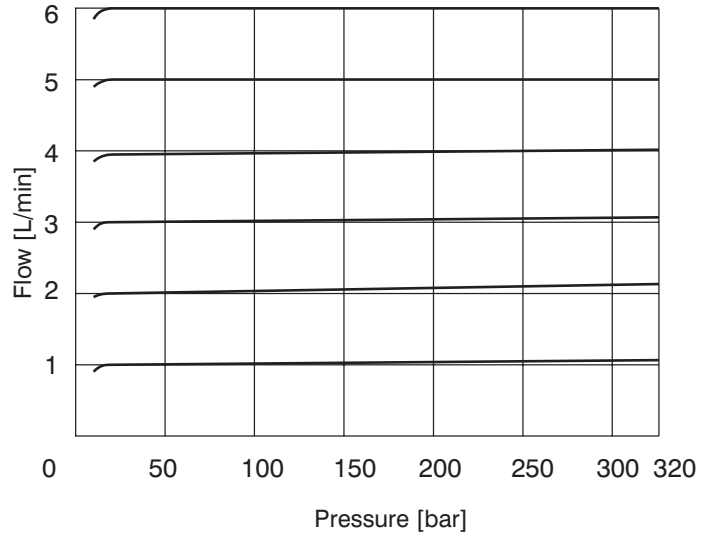
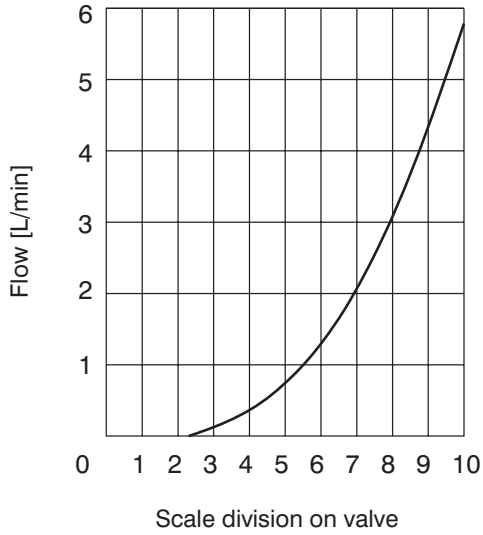
Measured at  $v = 32 \text{ mm}^2/\text{s}$

Flow rate dependent upon scale adjustment setting  
(flow control P → A)

Flow rate dependent upon pressure

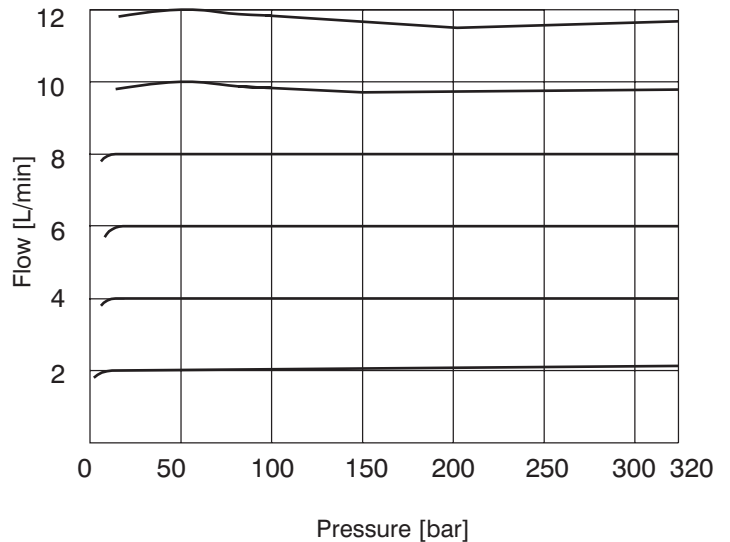
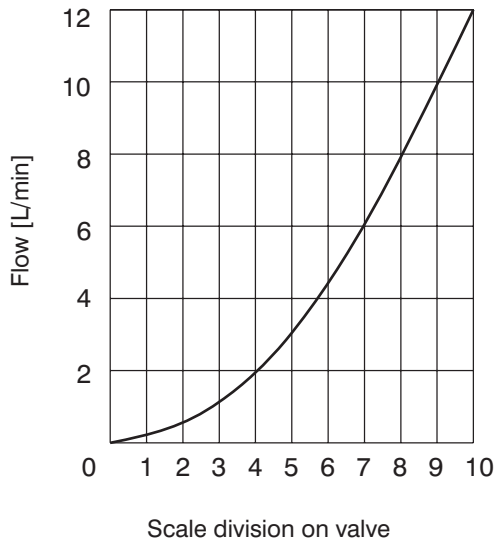
## Model

VSS1-206-6.3x-xx



## Model

VSS1-206-12x-xx



# Characteristics

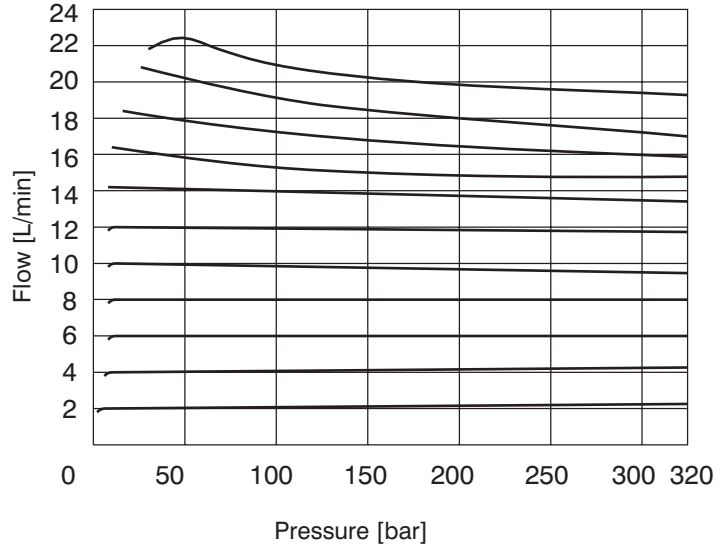
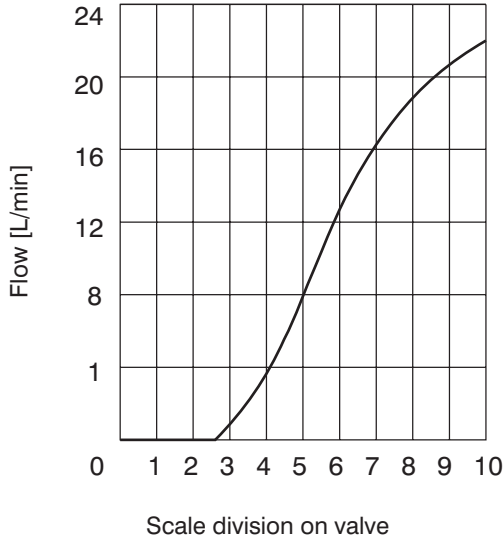
Measured at  $v = 32 \text{ mm}^2/\text{s}$

Flow rate dependent upon scale adjustment setting  
(flow control P → A)

Flow rate dependent upon pressure

## Model

VSS1-206-22x-xx

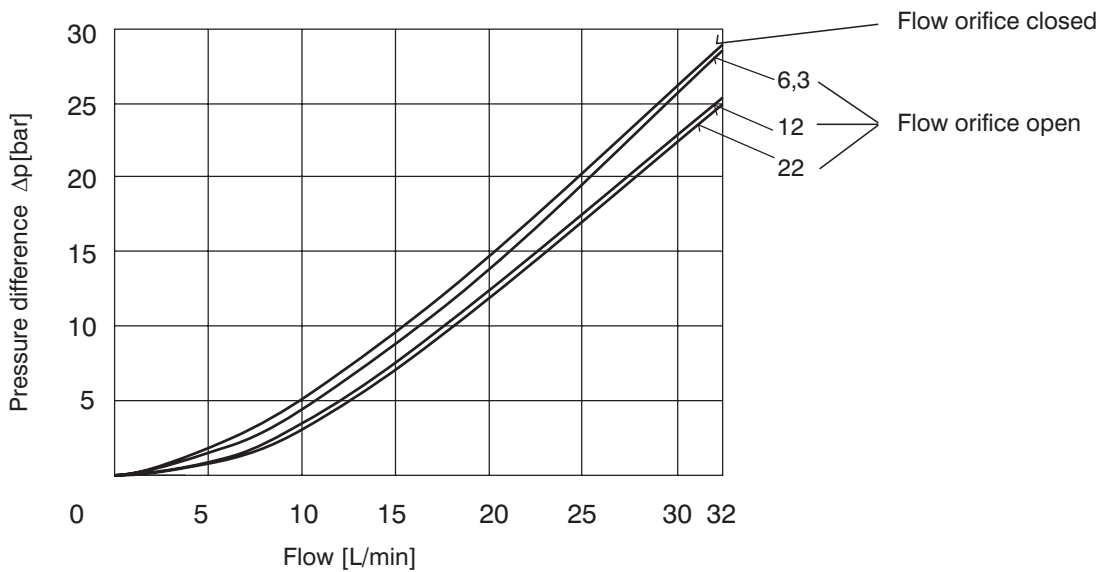


# Δp-Q Characteristics

Measured at  $v = 32 \text{ mm}^2/\text{s}$

## Check valve

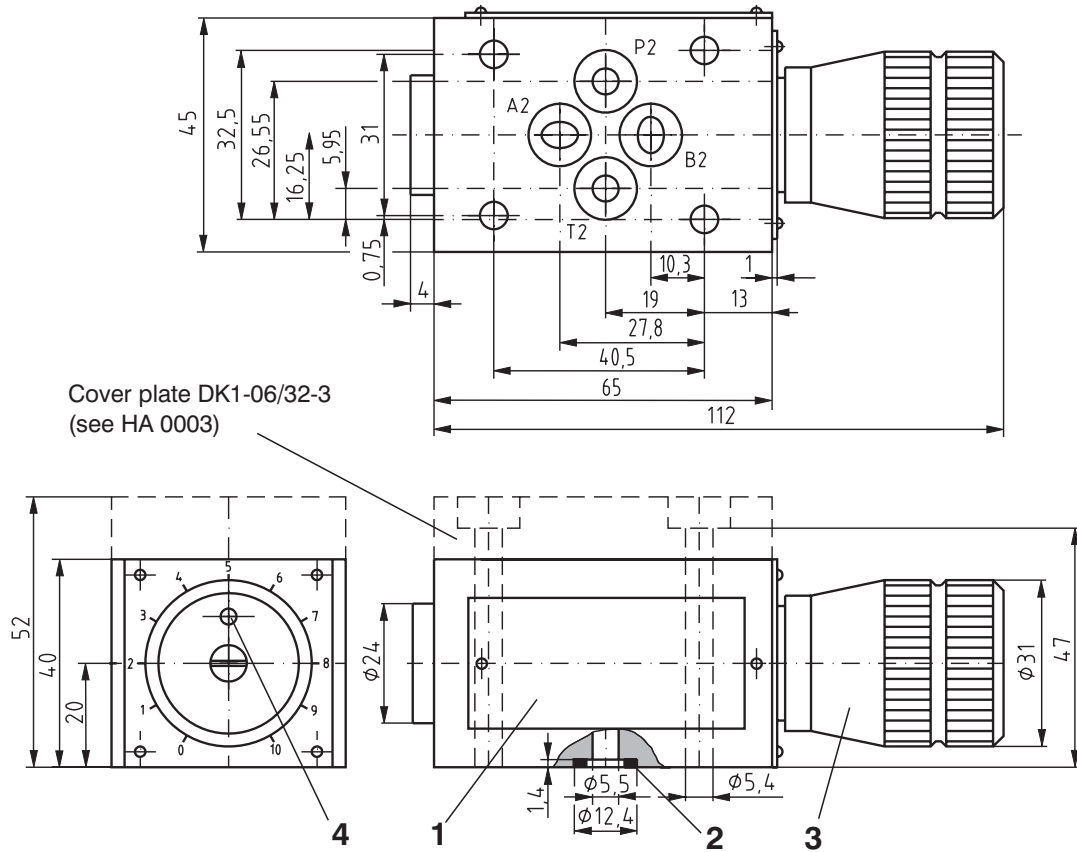
Pressure difference  $\Delta p$  related to flow from (A → P)



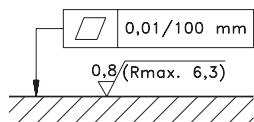
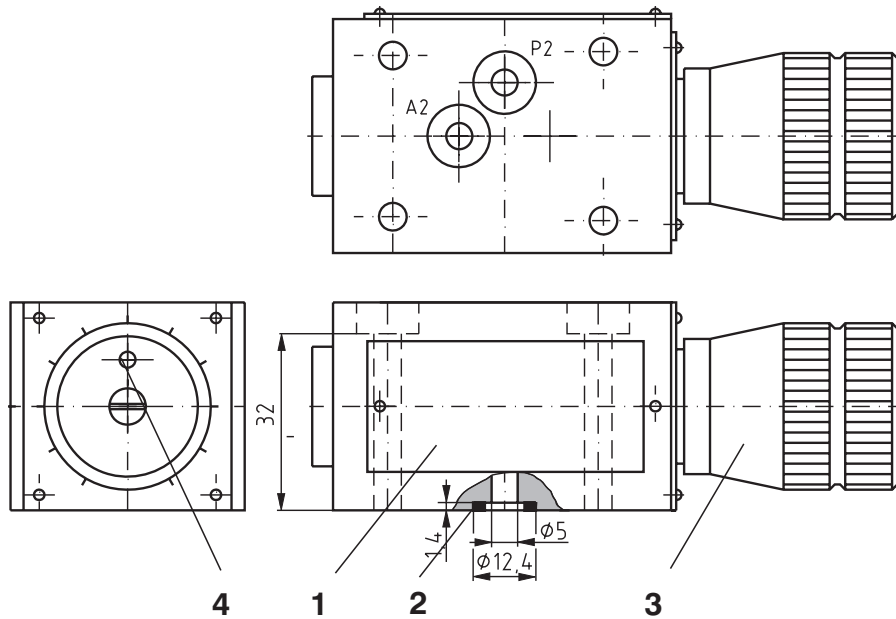
# Valve Dimensions

Dimensions in millimetres

## Models A-11, B-11, C-11



## Models A-02



Required surface finish of interface

- 1 Name plate
- 2 O-rings, Type Square ring 012 (9.25x1.68) (4pcs.) or compatible supplied in delivery packet
- 3 O-rings, Type Square ring 012 (9.25x1.68) (2pcs.) or compatible supplied in delivery packet
- 4 Adjustment mechanism:  
clockwise rotation - flow decrease  
counter-clockwise rotation - flow increase
- 5 Hole with set screw for fixing the handknob in set position

## Spare Parts

### Seal kit

Type	Dimensions, quantity		Ordering number
	O-ring	Square ring	
Standard NBR	24/20 (1 pc.)	9.25 x 1.68 (4 pcs.)	418-9900
	8/4 1078 NBR80 (1 pc.)	-	
	16 x 2 (1 pc.)	-	
	14 x 2 (1 pc.)	-	
	10/6 (1 pc.)	-	
Viton	19.3 x 2.4 (1 pc.)	-	418-9800
	3 x 2.4 (1 pc.)	-	
	16 x 2 (1 pc.)	-	
	9.25 x 1.78 (4 pcs.)	-	
	14 x 2 (1 pc.)	-	
	5.3 x 2.4 (1 pc.)	-	

## Preferred Types of Valves

Type	Ordering Number	Type	Ordering Number
VSS1-206-6,3A-11	418-0004	VSS1-206-12B-11	418-0032
VSS1-206-6,3B-11	418-0028	VSS1-206-22A-11	418-0012
VSS1-206-12A-11	418-0008	VSS1-206-22B-11	418-0036

## Caution!

- The packing foil is recyclable.
- The transport plate is to be returned to the supplier.
- 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.

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