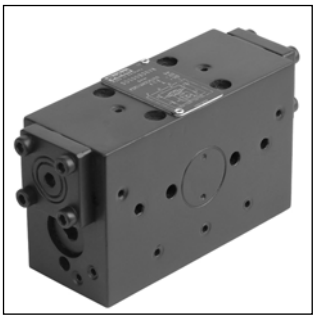
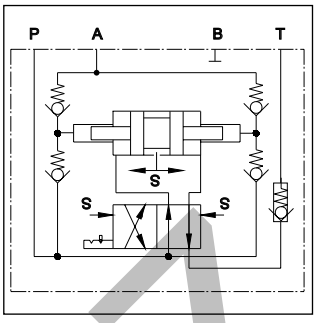
Pressure intensifiers are used wherever a particular section of a hydraulic system has to be pressurized to a substantially higher pressure than the available primary pressure (clamping functions). With an intensification ratio of 1 : 4 (1 : 2, 1 : 6) it enables a cost-effective system solution especially in clamping applications, with primary pressures up to 125 bar. A pilot operated check valve can be flanged underneath the pressure intensifier for quick filling and decompression of the high pressure section.





Features

- Mounting pattern NG06, DIN 24 340 Design A, CETOP, ISO
- Check valve attachable to bottom flange
- High pressure up to 500 bar
- Volume flow formed with low pulsation
- Compact design

Design

Main functional parts of the pressure intensifier:
piston, rocker mechanism, slide valve with lock,
4 check valves which separate the high pressure section from the low pressure section, check valve in the tank port to partition of the tank section from the primary pressure.

Function

After the high pressure section is filled with oil, (e.g. extension of a clamping cylinder), the pressure intensifier begins operation: The low pressure moves the intensifier piston because of the surface ratio and compresses the oil column in the high pressure section.

At the end of the intensifier's piston stroke, the rocker mechanism switches the directional slide valve to the crossed switching position, and the intensifier piston pumps oil from the piston rod area into the high pressure section. The process repeats itself until the pressure ratio corresponding to the surface ratio has lead to a balance of force on the intensifier piston.

The pressure intensifier switches itself off and immediately on again when the high pressure (e.g. due to external leakage) begins to drop (pay attention to the flow characteristic). The switching speed of the slide valve is dependent on the operating speed of the intensifier piston.

Note

- To avoid exceeding the admissible maximum pressure, a pressure relief or pressure control valve must be fitted on the primary side (pressure setting, max. 125 bar / 1 : 4, max. 250 bar / 1 : 2 or max. 83 bar / 1 : 6).
- There must be no pressure peak on the primary side when operating in the maximum pressure range.
- It is recommended to mount a 10µm filter on the primary side to ensure damage-free operation.

Ordering code

SD	**500**	☐	**06**	**V**	☐
Pressure intensifier	**Working pressure 500 bar (max. pressure)**	**Intensification ratio**	**Nominal size (pressure intensifier) Interface DIN 24 340 Design A, CETOP, ISO**	**Seals FPM**	**Design series** (not required for ordering)

Code	Intensification ratio
A	**1 : 4**
B	**1 : 2**
C	**1 : 6**

Bold letters =
Short-term availability

Technical data

General		
Symbol		DIN 24 300
Design		Piston and poppet valve in body
Mounting type		NG06, DIN 24 340, design A, CETOP, ISO
Ports		Subplate
Mounting position		unrestricted
Ambient temperature	[°C]	-20...+60
$MTTF_D$ value	[years]	150
Weight	[kg]	3.0 kg
Hydraulic		
Max. operating pressure Port A Port P, B, T	 [bar] [bar]	 500, 125 (ratio 1:4), 250 (ratio 1:2)
Fluid		Hydraulic oil according to DIN 51524
Fluid temperature	[°C]	+10...+70
Viscosity, permitted recommended	[cSt] / [mm^2/s] [cSt] / [mm^2/s]	20 ... 400 30...80
Filtration		ISO 4406 (1999); 18/16/13
Flow		see performance curve
Intensification ratio		$p_P : p_A$ = 1 : 4, 1 : 2, 1 : 6
Flow volume		$Q_P : Q_A$ = 4 : 1, 2: 1, 6 : 1
Stroke volume	[cm^3]	3 (per double stroke)
Operating		Hydraulic-mechanic automatic control

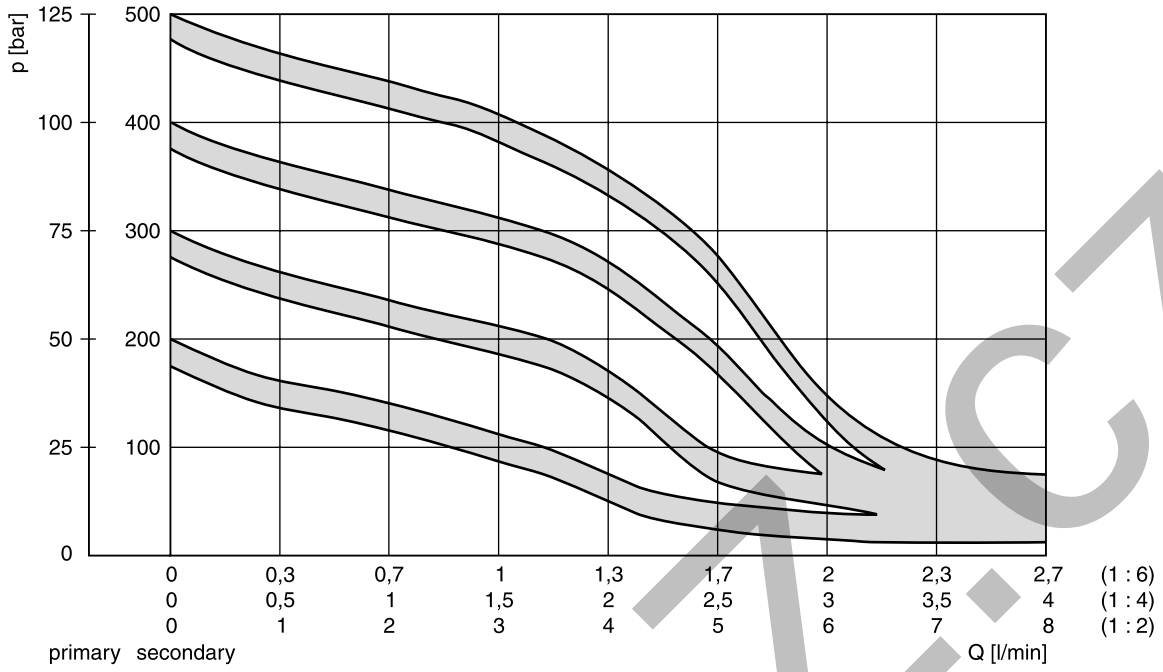
Accessories

Type	Description	Number
SD 500*06V	Seals	
	9.25 x 1.78	3
	10.82 x 1.78	1
	M5 x 75 ISO 4762-12.9	4

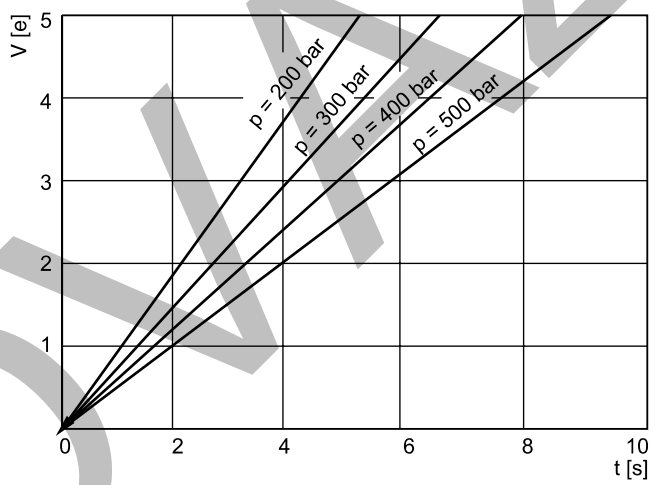
Seals are included in delivery.
Mounting screws are not included in delivery.

Surface finish	Kit		
$R_{max}6.3$ 0.01/100	BK401	4x M5x75 ISO 4762-12.9	9.0 Nm

Flow characteristics

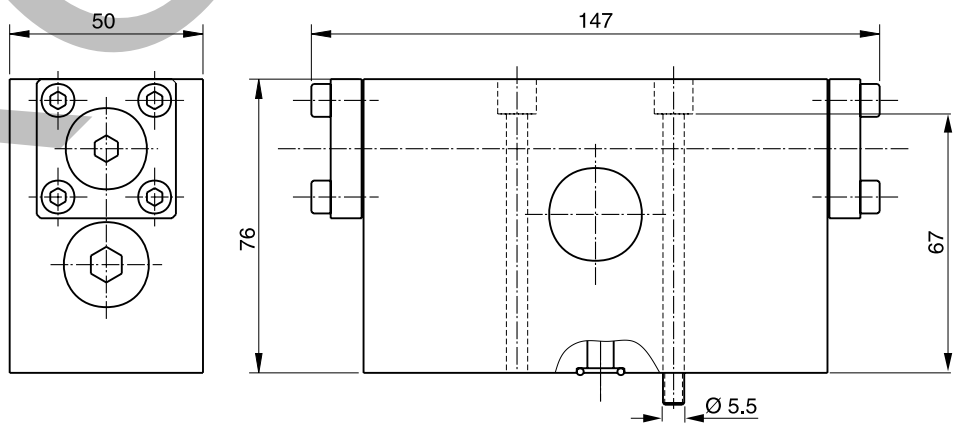


Approximate values of the compression time for compressing a filled volume to target pressure (1 : 4)



All characteristic curves measured with HLP46 at 50 °C.

Dimensions



12

Pilot operated check valve plate NG06

Description

Pilot operated check valve plates are flanged under the pressure intensifier for quick filling and decompression.

Design

The check valve plate is equipped with a hydraulic, pilot operated check valve.

Opening ratio: Main valve 2.5 : 1

Pilot ratio 10 : 1

Technical data

General		
Design		Spring loaded ball seat valve
Mounting type		Flange
Mounting position		any
Ambient temp.	[°C]	-20...+60
Weight	[kg]	1.3
Hydraulic		
Operating pressure range		
Port A	[bar]	max. 500,
Port P, B, T	[bar]	max. 125 / 1:4 and 250 / 1:2
Fluid		Hydraulic oil according to DIN 51524
Fluid temperature	[°C]	+10...+70
Viscosity, perm. [cSt] / [mm²/s]		20...400
recom. [cSt] / [mm²/s]		30...80
Filtration		ISO 4406 (1999); 18/16/13
Flow		see characteristic curve
Pilot ratio		Main valve 2.5:1, pre-discharge 10:1
Opening pressure	[bar]	approx. 0.5

Ordering code

H06 SDV

Bold letters =
Short-term availability

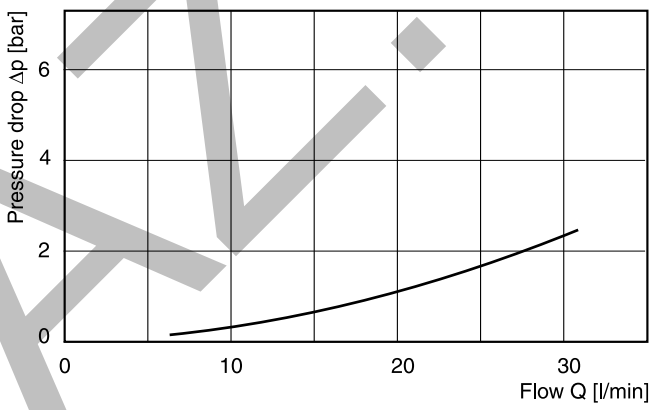
Accessories

Type	Description	Number
H06SDV	Seals	
	9.25 x 1.78	4
	M5x115 ISO 4762-12.9	4

Seals are included in delivery.
Mounting screws are not included in delivery.

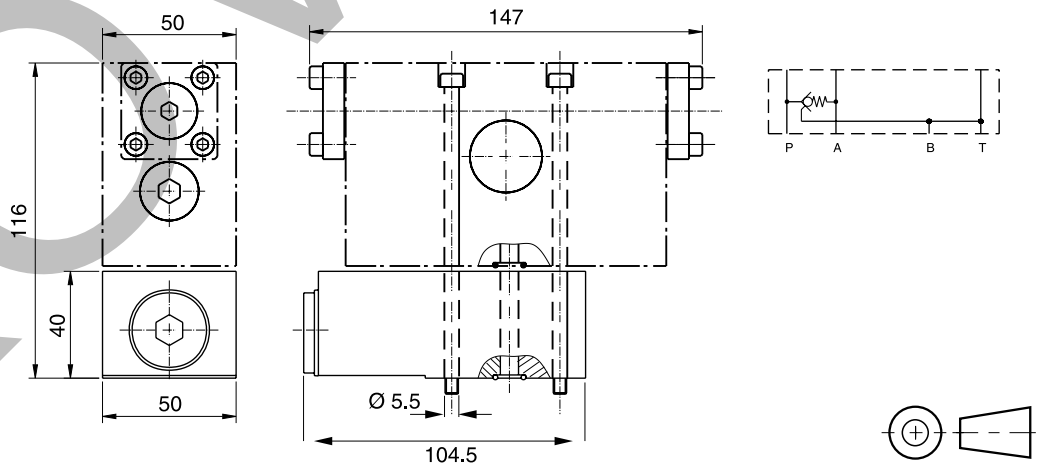
Characteristic curve

Pilot operated check valve



Curve measured with HLP46 at 50 °C.

Dimensions



Surface finish	Kit		
R_{max}6.3 ⏥ 0.01/100	BK406	4x M5x115 ISO 4762-12.9	9.0 Nm

12

Pilot operated check valve plate NG10

Description

Pilot operated check valve plates are flanged under the pressure intensifier for quick filling and decompression.

Design

The check valve plate is equipped with a hydraulic, pilot operated check valve.

Opening ratio: Main valve 2.5 : 1

Pilot ratio 10 : 1

Technical data

General		
Design		Spring loaded ball seat valve
Mounting type		Flange
Mounting position		any
Ambient temp.	[°C]	-20...+60
Weight	[kg]	2.3
Hydraulic		
Operating pressure range		
Port A Port P, B, T	[bar] [bar]	max. 500, max. 125 / 1:4 and 250 / 1:2
Fluid		Hydraulic oil according to DIN 51524
Fluid temperature	[°C]	+10...+70
Viscosity, perm. [cSt] / [mm²/s] recom. [cSt] / [mm²/s]		20...400 30...80
Filtration		ISO 4406 (1999); 18/16/13
Flow		see characteristic curve
Pilot ratio		Main valve 2.5:1, pre-discharge 10:1
Opening pressure	[bar]	approx. 0.5

Ordering code

H10 SDV

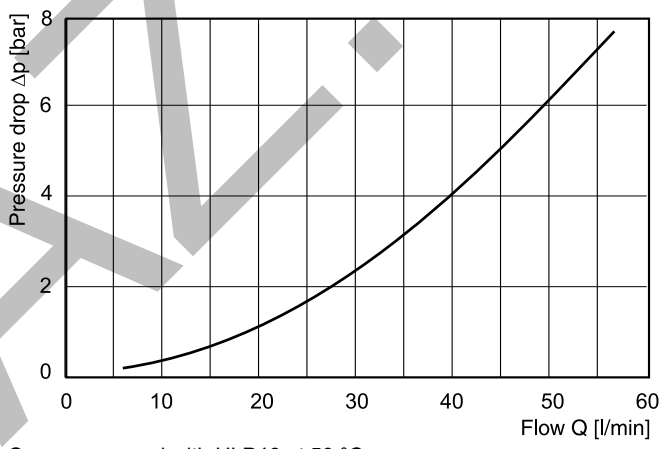
Accessories

Type	Description	Number
H10SDV	Seals	
	12.24 x 1.78	4
	M5x75 ISO 4762-12.9	4
	M6x50 ISO 4762-12.9	4

Seals are included in delivery.
Mounting screws are not included in delivery.

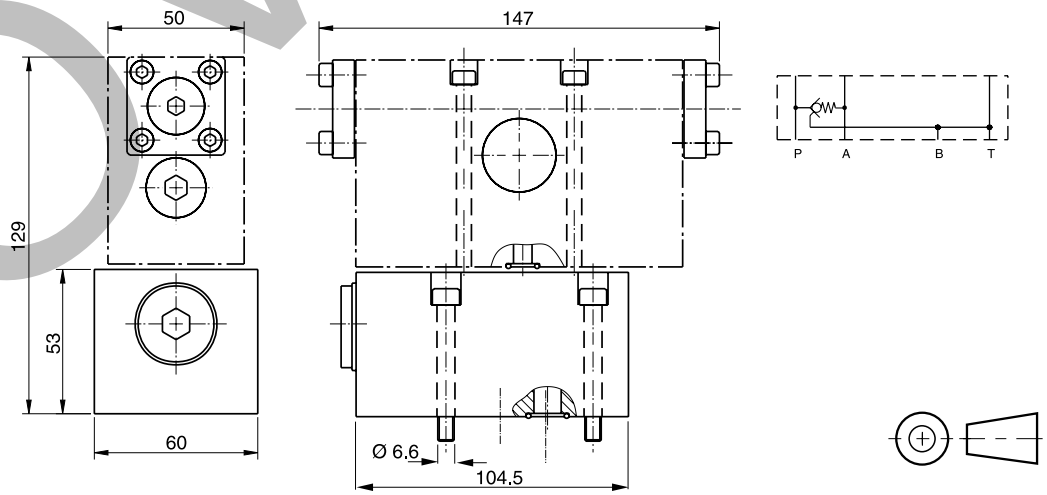
Characteristic curve

Pilot operated check valve



Curve measured with HLP46 at 50 °C.

Dimensions



Surface finish	Kit		
R_{max}6.3 ⏥ 0.01/100	BK490	4x M5x75 4x M6x50 ISO 4762-12.9	9.0 Nm 18.0 Nm