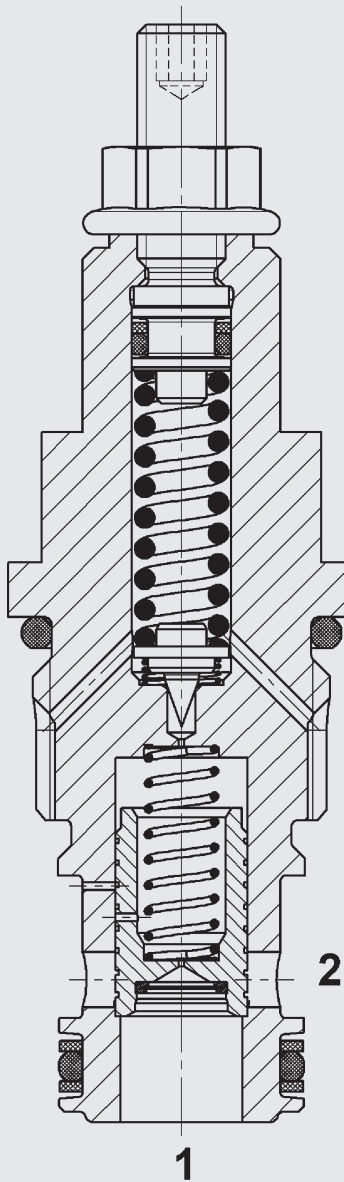


## Pressure relief valve DB12PK-01

kickdown  
spool type, pilot-operated  
Cartridge UNF – 350 bar

### FUNCTION



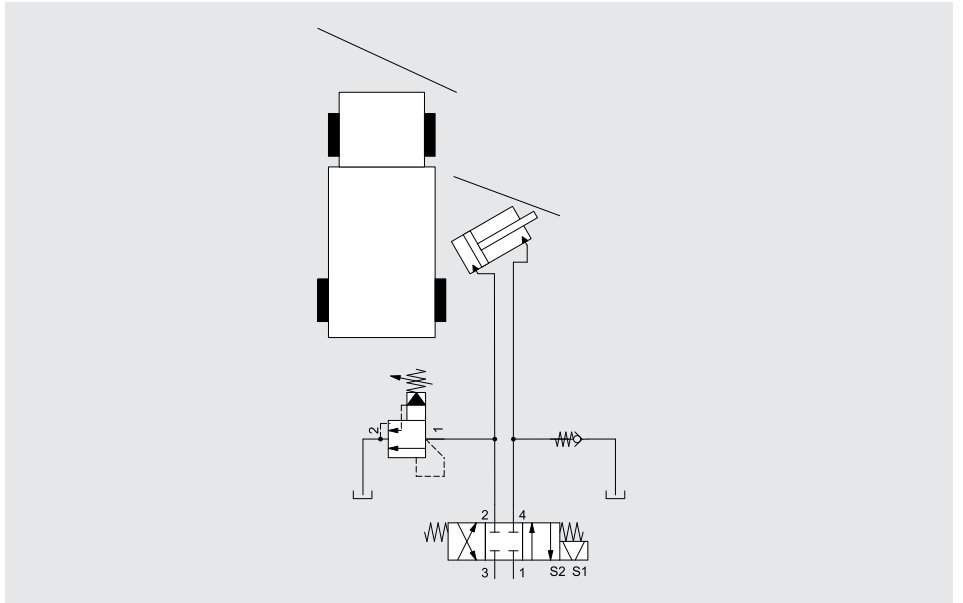
### PRODUCT ADVANTAGES

- When the pressure setting is reached, the valve relieves the system to the tank
- Relief is maintained until the relief flow has dropped below a threshold of roughly 8 l/min (see performance)
- Available in several pressure setting ranges
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1,000 h salt spray test)

### FUNCTION DESCRIPTION

The pressure relief valve is a pilot-operated, spool type valve. If the pressure at port 1 exceeds the pressure setting, the pilot stage opens, creating a small flow via the orifice of the pilot stage to the tank. This causes pressure to drop at the pilot orifice – the main control stage follows the pilot stage, opens to the tank and allows oil to flow from port 1 to port 2. At the same time, the space behind the main control stage is relieved to port 2. This causes the valve to close the connection from 1 to 2 once little or no flow is fed to the valve.

### APPLICATION EXAMPLE CLEARING VEHICLE



If the side plate meets an obstacle, the pressure in the cylinder line in front of DB12PK suddenly increases.

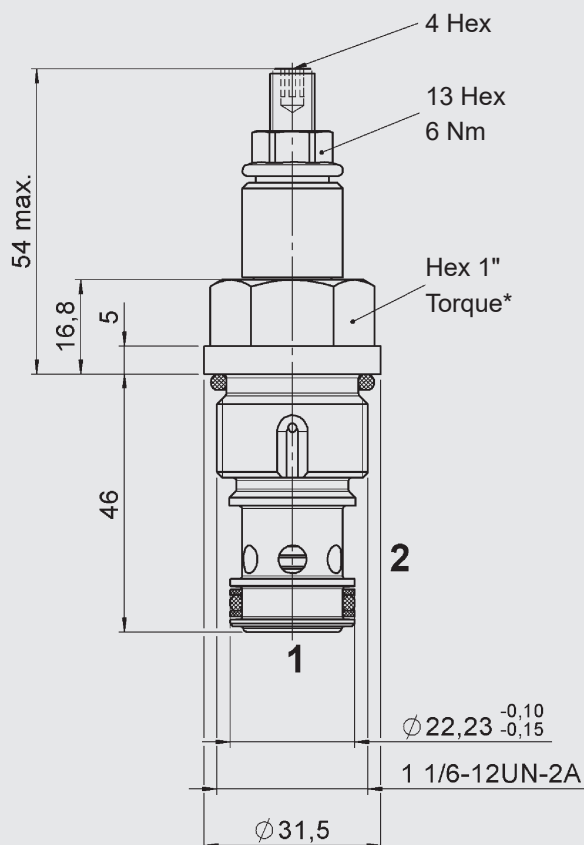
This activates the kickdown function and oil flows to tank - the side plate folds in. To extend the side plate, the directional spool valve is activated.

## SPECIFICATIONS\*

Operating pressure	max. 350 bar		
Flow rate	max. 200 l/min		
Pressure setting range	2 to 35 bar		
	2 to 62 bar		
	2 to 125 bar		
	4 to 230 bar		
	4 to 345 bar		
Internal leakage	< 0.5 l/min at 350 bar		
Media operating temperature range	NBR: min. -30 °C to max. +100 °C		
	FKM: min. -20 °C to max. +120 °C		
Ambient temperature range	NBR: min. -30 °C to max. +100 °C		
	FKM: min. -20 °C to max. +100 °C		
Operating fluid	Hydraulic oil to DIN 51524 Part 1, 2 and 3		
Viscosity range	min. 7.4 mm <sup>2</sup> /s to max. 420 mm <sup>2</sup> /s		
Filtration (to ISO 4406)	≤ 210 bar: min. class 20/18/15		
	> 210 bar: min. class 19/17/14		
MTTF <sub>d</sub>	150 – 1200 years, measurement according to DIN EN ISO 13849-1		
Materials	Valve body	Steel	
	Piston	hardened and ground steel	
	Seals	NBR (standard)	
		FKM	
	Back-up rings	PTFE	
Cavity	FC12-2		
Weight	0.26 kg		

\* see "Conditions and Instructions for Valves" in brochure 53.000

## DIMENSIONS

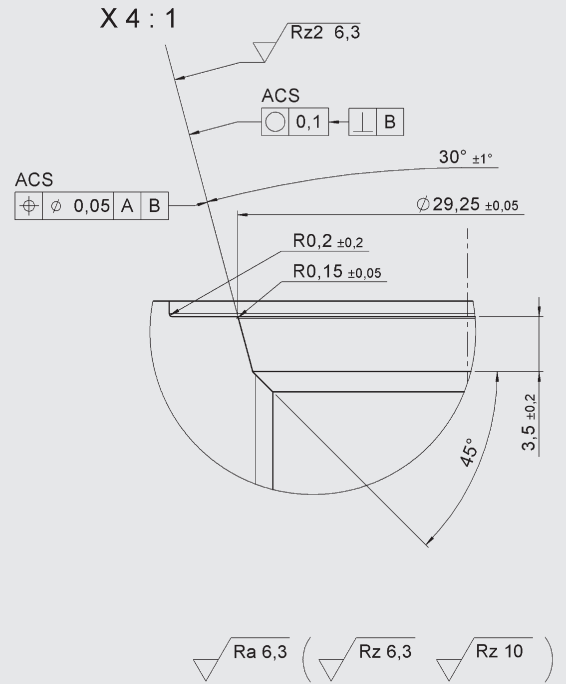
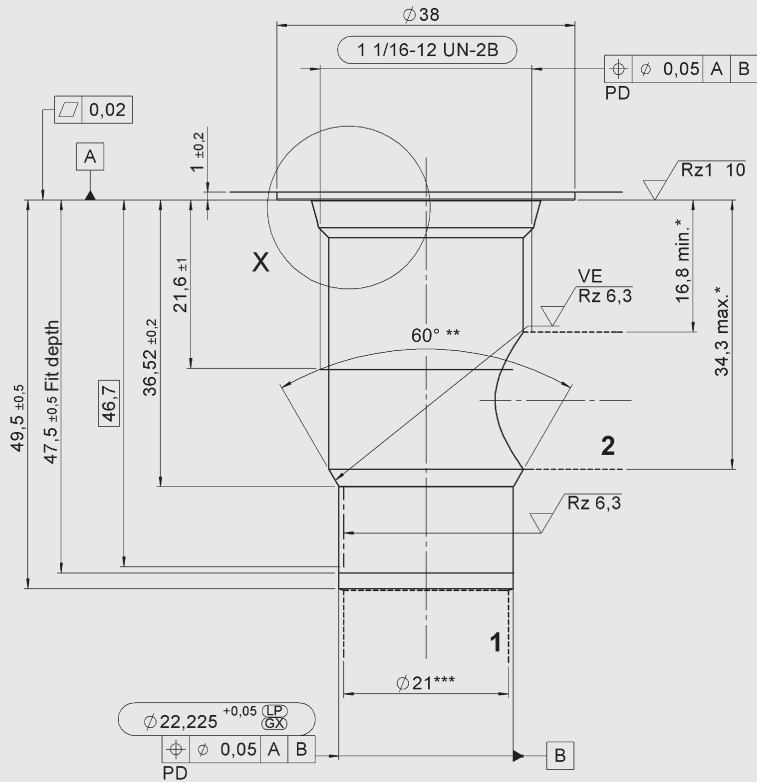


\*Torque:  
 Steel manifold (tensile strength > 360 N/mm<sup>2</sup>): 71 Nm  
 Aluminium manifold (tensile strength > 330 N/mm<sup>2</sup>): 62 Nm  
 (With torque tool in acc. with DIN EN ISO 6789, tool type II class A or B)  
 For more information see "Conditions and Instructions for Valves" in brochure 53.000

millimetre (inch)  
 subject to technical modifications

# CAVITY

FC12-2



- VE = Visual examination
- \* Permitted drilling zone (for manifold design)
- \*\* Sharp edges should be avoided by rounding to a radius of 0.1 mm to 0.2 mm
- \*\*\* Largest pre-drilling diameter (nominal tool diameter)

millimetre (inch)  
subject to technical modifications

## MODEL CODE

**DB12PK - 01 - C - N - 330 V 330**

### Basic model

Pressure relief valve with kickdown, UNF

### Type

01 = standard

### Body and ports

C = cartridge only

### Sealing material

N = NBR (standard)

V = FKM

### Pressure setting range

050 = 500 PSI (35 bar)

090 = 900 PSI (62 bar)

180 = 1800 PSI (125 bar)

330 = 3300 PSI (230 bar)

500 = 5000 PSI (345 bar)

### Adjustment type

V = adjustable using tool

F = factory-set, not adjustable

Other adjustment types on request

### Cracking pressure

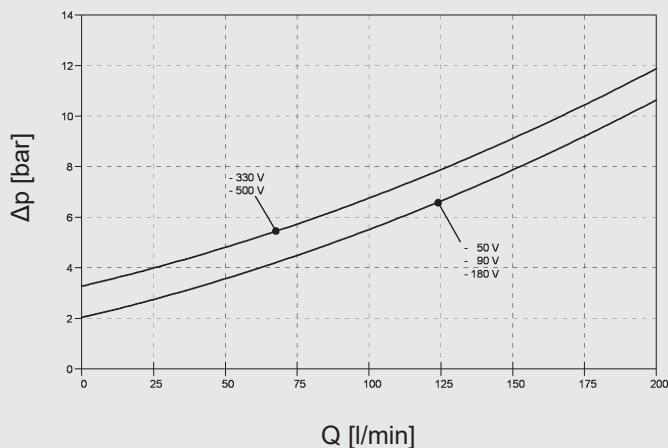
Not specified = no cracking pressure

330 = customer-specific cracking pressure (specified in PSI)

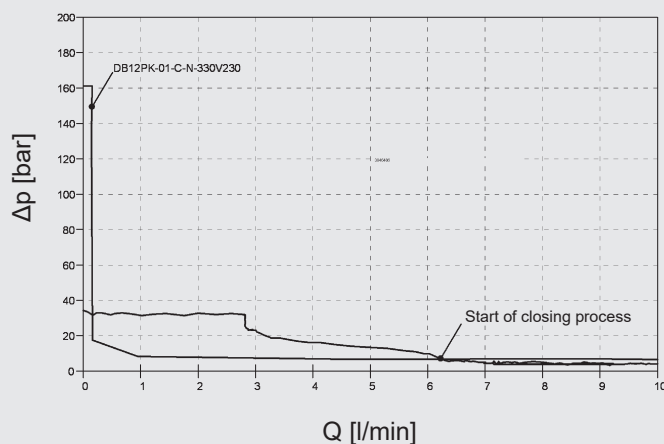
## TYPICAL PERFORMANCE

measured at  $v = 34 \text{ mm}^2/\text{s}$ ,  $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$

### Pressure drop



### Function



## MATERIAL OVERVIEW

### Standard models

Model code	Part no.
DB12PK-01-C-N-050V	4145719
DB12PK-01-C-N-180V	4145722
DB12PK-01-C-N-500V	4145723

Other versions on request

### Spare parts seal kits

Code	Material	Part no.
FS UNF 12/S2/N	NBR	3651537
FS UNF 12/S2/V	FKM	3651539

### Accessories, standard in-line bodies

Code	Material	Ports	Pressure	Part no.
FH122-SB6	3053782	Steel, zinc-plated	G3/4"	350 bar
FH122-AB6	3053843	Aluminium, anodised	G3/4"	210 bar

### Accessories, form tools for cavity

Tool	Part no.
Countersink	176951
Reamer	176952

## 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.

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