

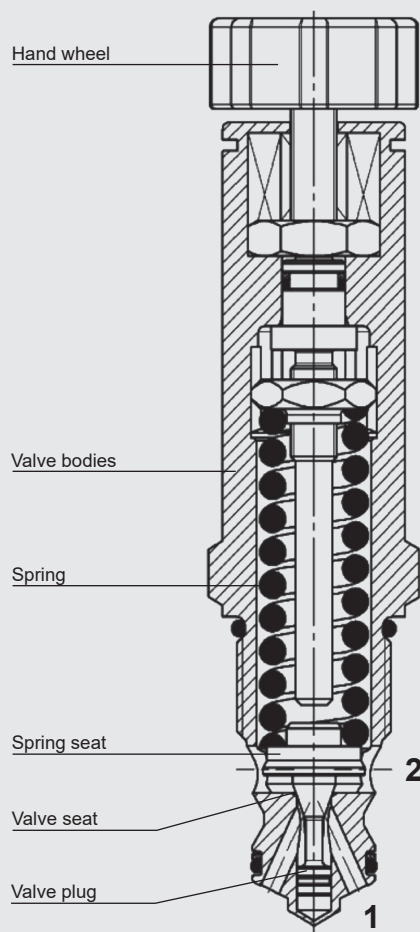
up to 110 l/min  
up to 400 bar

## Safety valve

### DB12120A-011-HL-CE DB12120A-011-HL-UKCA

Poppet type, direct-acting,  
relieves cartridge valve, metric – 400 bar

#### FUNCTION



#### PRODUCT ADVANTAGES

- With relief for checking the response pressure during system inspections
- Low hysteresis and accurate pressure control
- Excellent stability over the entire flow range
- Various pressure ranges up to 400 bar
- External surfaces with advanced corrosion protection thanks to ZnNi coating (1,000 h salt spray test)

#### DESCRIPTION OF FUNCTION

The safety valve is rated as a standard relief valve on the basis of its opening characteristics in accordance with AD 2000. The design corresponds to that of a direct-acting, spring-loaded safety valve.

With approval for the European market and the UK

- EU: in acc. with PED 2014/68/EU
- GB: in acc. with PE(S)R 2016

The compression spring exerts a force on the sealing cone and presses it onto the valve seat. If the hydraulic pressure is below the pre-set spring force, the valve will stay closed. Only if the hydraulic force exceeds the pre-set spring force does the valve open and flow is diverted to the tank via port 2. This continues until the pressure force drops below the spring force and the valve closes again.

#### Hand wheel:

The hand wheel can be used to partially relieve the spring preload. The valve then responds at a pressure value lower than the factory-set adjustment value.

#### Please note:

The valve does not have a device for locking the adjustment value set before delivery. Unauthorised alteration of the adjustment value will therefore not be recognisable. The owner must take appropriate precautions as necessary.

To do so, it is essential to refer to the operating manual supplied with the product.

#### Summary of key points:

- No oil accumulation or pressure build-up permitted in the tank connection (port 2) (in acc. with DIN EN ISO 4126-1)
- If the safety valve is connected to the wrong connections, it will not work as intended, i.e. will not work as a safety valve.
- The hand wheel has to be turned clockwise to the end stop to ensure that the valve will operate at the factory-set pressure value.
- The valve must not be disassembled

## TECHNICAL CHARACTERISTICS<sup>1)</sup>

Operating pressure	Port 1: max. 400 bar Port 2: depressurised
Operating pressure range	30 to 400 bar
Flow rate	max. 110 l/min (depending on pressure range – see table “Permitted flow rate”)
Temperature range of pressure fluid	min. -20 °C to max. +80 °C
Ambient temperature range	min. -20 °C to max. +80 °C
Pressure fluid	Hydraulic oil according to DIN 51524 part 1, 2 and 3
Viscosity range	min. 8 mm <sup>2</sup> /s to max. 230 mm <sup>2</sup> /s or 350 mm <sup>2</sup> /s - (see table “Permitted flow rate”)
Filtration	Permitted operating fluid contamination level according to ISO 4406 Class 21/19/16 or higher
Installation position	user definable
Materials	Valve bodies: Steel Closing element: Steel, hardened and ground Seals: FKM (standard) Back-up rings: PTFE
MTTF <sub>D</sub>	Not applicable, assessed to PED, already rated as Cat. IV
Cavity	12120A
Weight	0.6 kg

## PERMITTED FLOW RATE

Range for cracking pressure [bar]	Max. flow rate [l/min]	Max. viscosity [mm <sup>2</sup> /s]
30 - 35	4.5	230
36 - 39	15	
40 - 49	72	
50 - 90	80	
91 - 99	100	
100 - 400	110	
150 - 400	110	350

## PURPOSE AND ACTUATION OF THE RELIEF FUNCTION

The hand wheel usage described below must only be performed with the aid of a pressure gauge attached near the valve inlet (1) to monitor the currently applied system pressure.

To test correct functioning, the valve can be set to a lower response value via the hand wheel. A connected system part is then partially depressurised. The fluid flows to the tank.

To do so, the hand wheel needs to be turned anticlockwise. Once the upper end stop has been reached, the largest possible depressurisation has been achieved. The system pressure displays a residual value despite maximum depressurisation via the valve. If the hydraulic circuit is to be opened, the residual system pressure must therefore be reduced in a controlled way (e.g. via a separate drain valve).

Once the function test is completed, the valve must be returned to its original delivery state before the system is started up again. This is done by turning the hand wheel clockwise until the lower end stop is reached. This returns the valve to its original preset configuration and the response pressure set by the notified body.



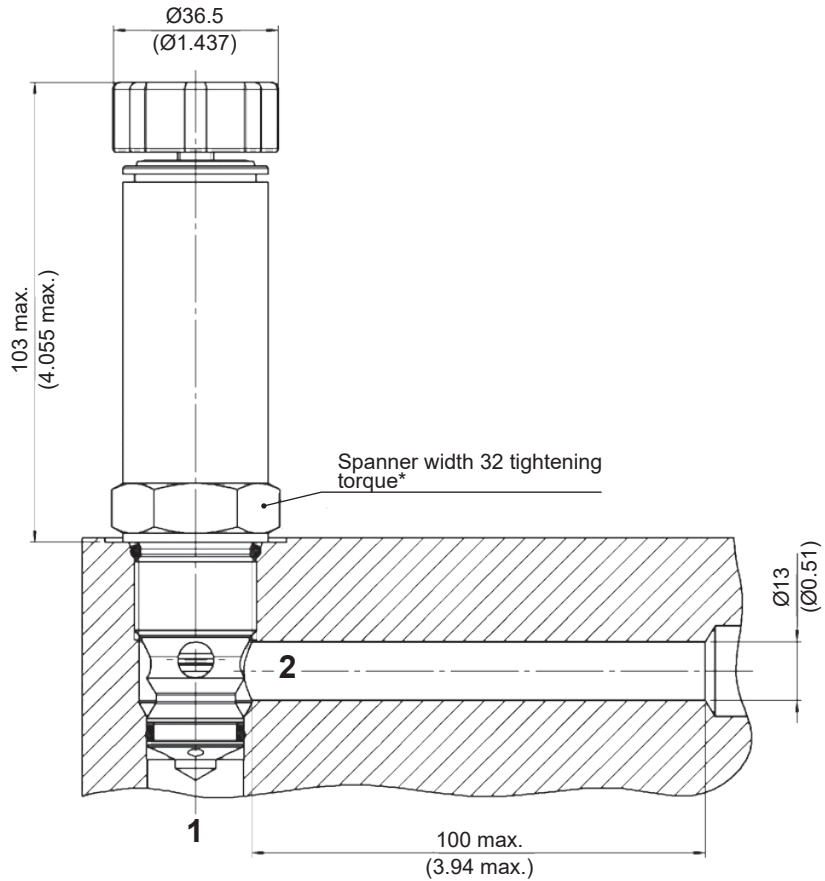
The symbol indicates the direction in which the pressure is changed when turned:

Anticlockwise rotation – pressure is reduced.

Clockwise rotation – pressure is increased.

Badge represents the notified body, which, in this example, is TÜV SÜD.

# UNIT DIMENSIONS



\* Tightening torque:

Steel housing (burst strength > 360 N/mm<sup>2</sup>): 65 Nm

Aluminium housing (burst strength > 330 N/mm<sup>2</sup>): 55 Nm

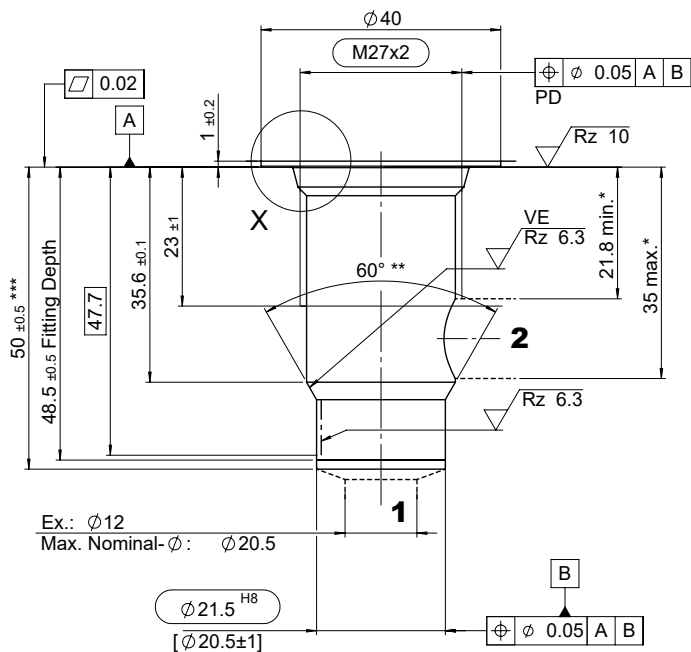
(With torque tool according to DIN EN ISO 6789, tool type II class A or B).

Millimetre (inch)

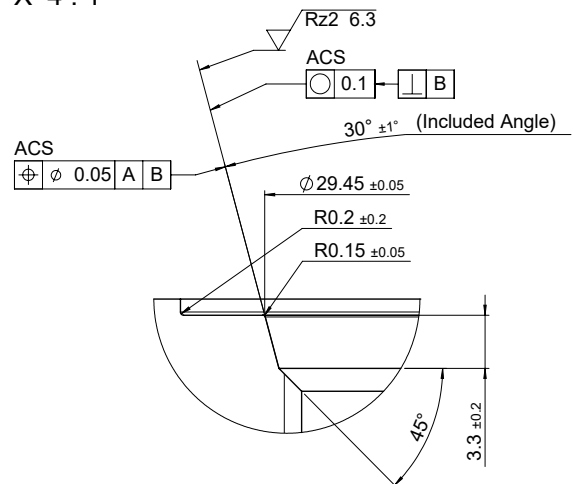
Subject to technical modifications.

# CAVITY

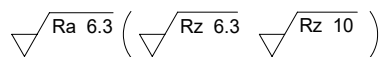
12120A



X 4 : 1



VE = Optical Examination



\* Permitted boring zone (for block design).

\*\* Sharp edges should be avoided by using a radius of 0.1 mm to 0.2 mm

\*\*\* Largest pre-drilling diameter (nominal tool diameter).

Millimetre

Subject to technical modifications.

## MODEL CODE



DB12120A - 01 1 HL - CEXXXX.ENISO4126.6L. XXX. XXX

### Description

Safety valve, metric

### Version

### Version number

Determined by manufacturer

### Adjustment method

HL = hand wheel, relief function for inspection purposes

### Type approval code

XXXX stands for the identification number of the notified body and CE to EN ISO 4126

### Max. permitted flow rate

080 = 80 l/min

Rate depends on the pressure range (see table "Permitted flow rate")

### Cracking pressure

100 = 100 bar, factory-set cracking pressure (see table "Permitted flow rate")

Note: Cracking pressure can be adjusted in 5 bar increments, e.g.: ... 95; 100; 105 ... bar.

## UKCA IDENTIFICATION



DB12120A -X HL - UKCA0168.6L . XXX . XXX

### Designation

Safety valve

### Version number

### Adjustment type

### Type approval code

UKCA and notified body

### Flow rate [l/min]

### Cracking pressure [bar]

## DOCUMENTATION

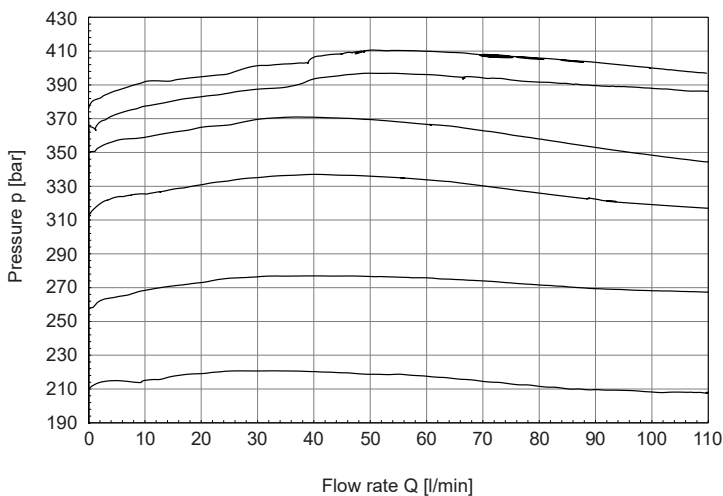
The following documents are enclosed with every valve:

- Operating instructions
- Declaration of conformity
- Conformity certificate

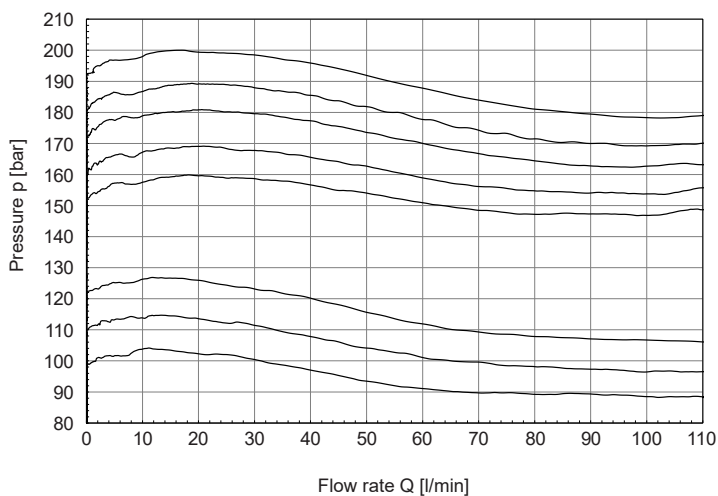
## SAMPLE CHARACTERISTICS

The sample characteristics are for a HLP 32 oil and an oil temperature of 40 °C. The sample flow ranges are greater because of the lower viscosity. The max. permitted flow rate depends on pressure and viscosity.

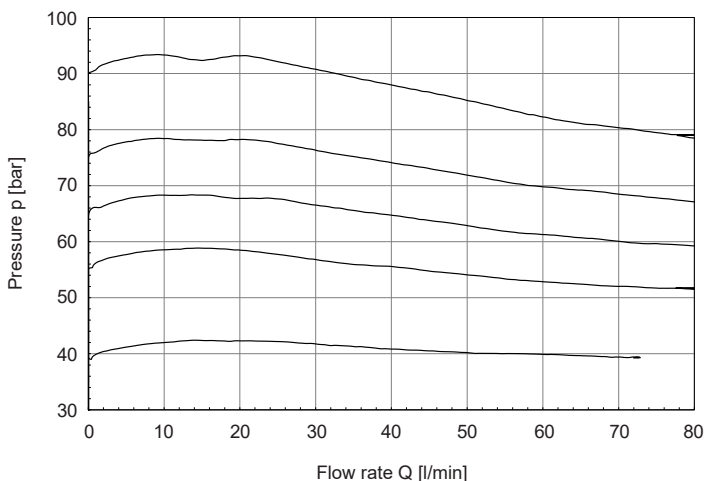
**p/Q characteristic** measured at  $v = 32 \text{ mm}^2/\text{s}$ ,  $T_{\text{Oil}} = 40 \text{ °C}$   
Cracking pressure 210 / 260 / 320 / 350 / 365 / 380



**p/Q characteristic** measured at  $v = 32 \text{ mm}^2/\text{s}$ ,  $T_{\text{Oil}} = 40 \text{ °C}$   
Cracking pressure 100 / 110 / 120 / 150 / 160 / 170 / 180 / 190



**p/Q characteristic** measured at  $v = 32 \text{ mm}^2/\text{s}$ ,  $T_{\text{Oil}} = 40 \text{ °C}$   
Cracking pressure 40 / 55 / 65 / 75 / 90



## MATERIAL OVERVIEW

### Standard models

Designation	Part no.
DB12120A-011HL-CE-ENISO4126.6L.110.150	4241051

Other versions on request.

### Spare parts, seal kits

Designation	Material	Part no.
FS METRIC 121..AV	FKM	3651611

### Accessories, cavity tools

Designation	Part no.
Countersink	173958
Reamer	174874
Screw tap	1002625

### Inline connection housing

Designation	Material	Connections	Pressure	Part no.
R12120A-01X-01	Steel, zinc-plated	G 3/4"	400 bar	396489

## COMMENT

The information in this brochure relates to the operating conditions and applications described. For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.

Documents are only valid if they have been obtained via the website and are up-to-date.

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