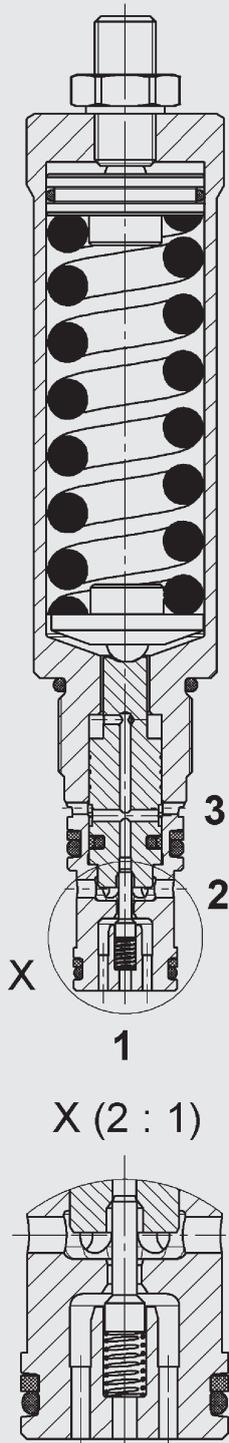


up to 25 l/min
up to 450 bar

3-way pressure reducing/relieving valve **DRM10121-12**

poppet type, direct-acting
Metric Cartridge – 450 bar

FUNCTION



PRODUCT ADVANTAGES

- Optimum control behaviour
- Low hysteresis
- High repeatability
- Very low leakage in seat-tight control position
- Compact design
- Adjusting range up to 320 bar
- Low offset for the pressure relief function
- Also available as a low-temperature version
- Exposed surfaces zinc-nickel plated for increased corrosion protection (1,000 h salt spray test)

FUNCTION DESCRIPTION

The pressure reducing/relieving valve is a direct-acting 3-way poppet valve that reduces an inlet pressure at port 1 (P) to a lower outlet pressure for the consumer at port 2 (A).

The level of the reduced pressure can be set at the valve.

When the pressure at the consumer reaches this pressure setting, the valve closes leak-free at the control point which prevents leakage at the consumer.

If the consumer pressure increases above the set outlet pressure, the valve opens to tank port 3 (T) and thus limits the pressure at the consumer.

Note:

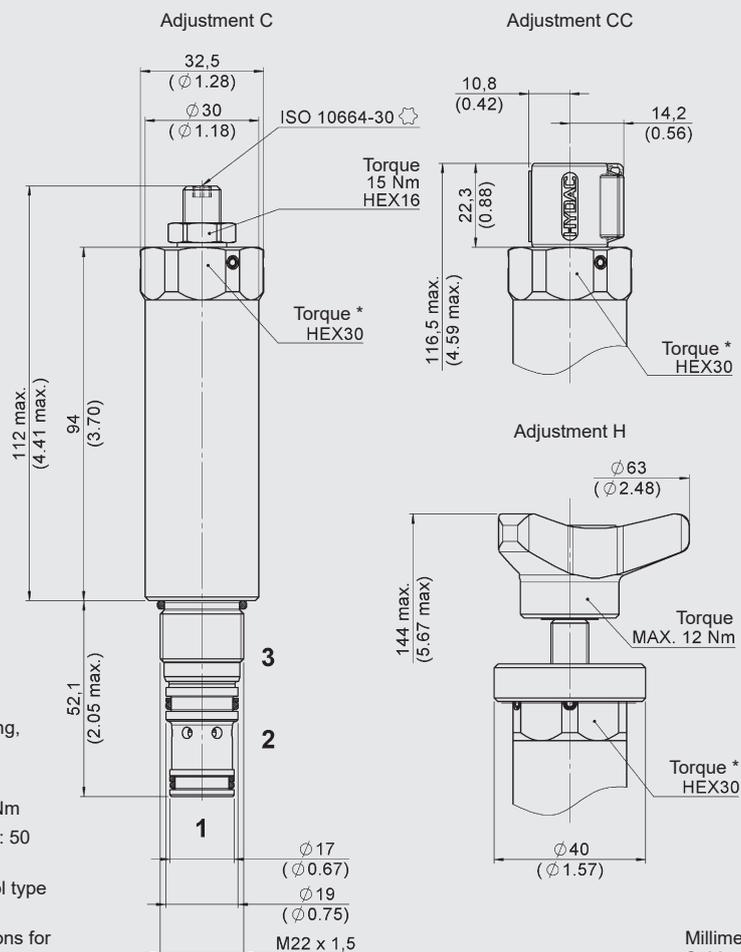
The tank pressure adds to the set pressure.
The valve is primary pressure-dependent.

SPECIFICATIONS*

Operating pressure	max. 450 bar (max. supply pressure at port 1)	
Tank pressure	max. 30 bar	
Flow rate	Pressure reducing function 1 → 2 max. 25 l/min Pressure relief function 2 → 3 max. 5 l/min Higher flow rates on request	
Pressure setting range	10 to 70 bar 20 to 110 bar 20 to 250 bar 20 to 320 bar	
Pressure offset	See typical performance (dependent on control pressure)	
Primary pressure dependence	As primary pressure increases, the control pressure drops 8% ± 3% of the primary pressure change	
Internal leakage	Leakage-free, Change in consumer pressure max. ± 2 bar in 10 seconds at consumer volumes of approx. 100 cm ³	
Media operating temperature range	NBR: min. -30 °C to max. +100 °C FKM: min. -20 °C to max. +120 °C TT NBR: min. -40 °C to max. +80 °C (low temperature)	
Ambient temperature range	NBR: min. -30 °C to max. +100 °C FKM: min. -20 °C to max. +100 °C TT NBR: min. -40 °C to max. +80 °C (low temperature)	
Operating fluid	Hydraulic oil to DIN 51524 Part 1, 2 and 3	
Viscosity range	min. 10 mm ² /s to max. 420 mm ² /s	
Filtration (to ISO 4406)	< 210 bar: min. 20/18/15 > 210 bar: min. 18/16/13	
MTTF _d	150–1200 years, measurement according to DIN EN ISO 13849-1	
Installation	No orientation restrictions	
Materials	Valve body	Hardened steel
	Piston	Hardened and ground steel
	Seals	NBR (standard) FKM TT-NBR (-40 °C to +80 °C)
	Back-up rings	PTFE
Cavity	10121 metric	
Weight	0.48 kg	

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

DIMENSIONS



The valve must be adjusted by screwing in the adjusting mechanism. To reduce the pressure setting, the valve must be in a relieved state.

*Torque:

Steel manifold (tensile strength > 360 N/mm²): 70 Nm

Aluminium manifold (tensile strength > 330 N/mm²): 50 Nm

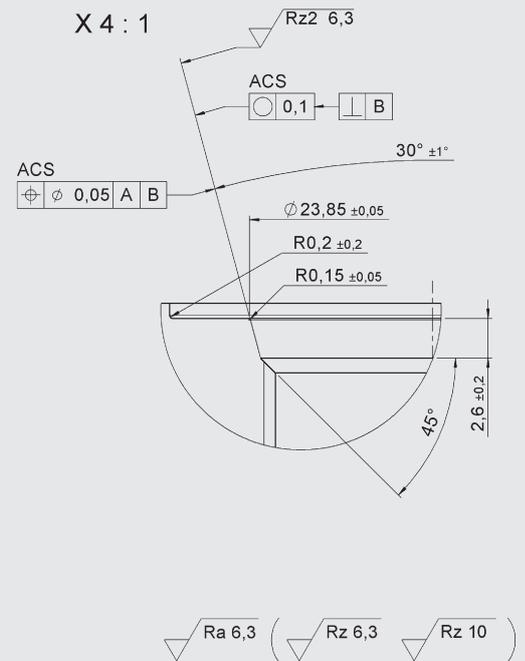
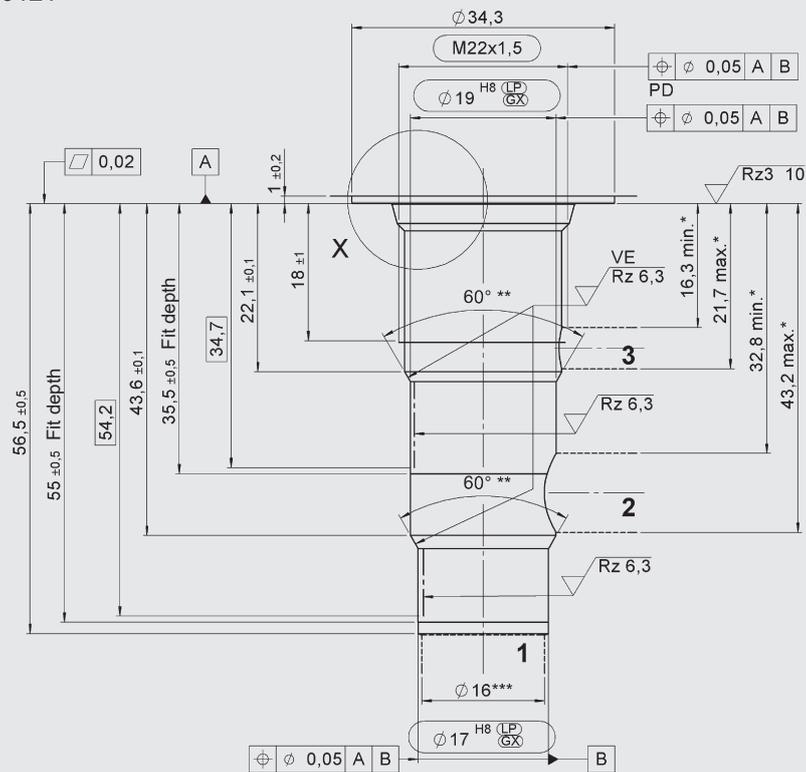
(With torque tool in acc. with DIN EN ISO 6789, tool type II class A or B)

For more information see "Conditions and Instructions for Valves" in brochure 53.000

Millimetre (inch)
Subject to technical modifications

CAVITY

10121



- 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

DRM10121 - 12 - C - N - 250 - C - 250 - TT

Basic model

3-way pressure reducing/relieving valve, metric

Type

12 = spring chamber relief to tank (port 3)

Body and ports

C = cartridge only

Sealing material

N = NBR (standard)

V = FKM

Pressure ranges

070 = 10 to 70 bar

110 = 20 to 110 bar

250 = 20 to 250 bar

320 = 20 to 320 bar

Adjustment type

C = adjustable with tool, sealable (delivered without seal cap)

CC = preset, with mounted seal cap

H = with handwheel and locking via knurled nut

Pressure setting

No details = no pressure setting

250 = preset customer-specific pressure setting (specified in bar)

Low temperature

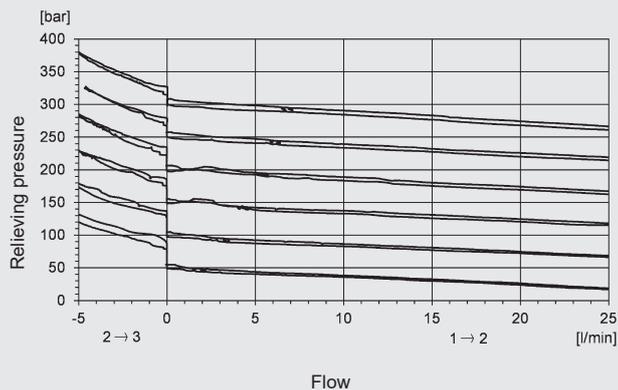
Not specified = not suitable for low temperatures

TT = suitable for low temperatures, with TT-NBR seal

TYPICAL PERFORMANCE

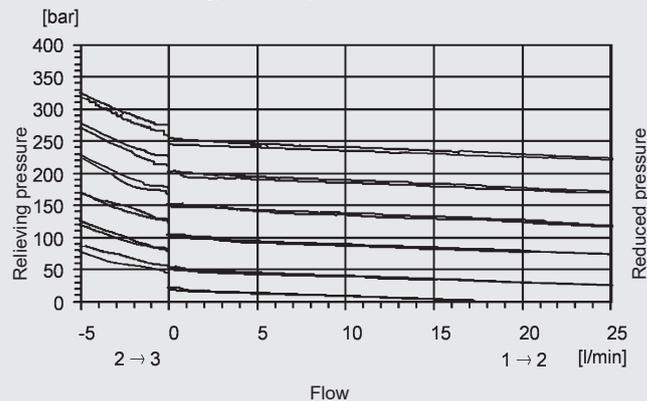
DRM10121-1.-C.-.320

Measured at $v = 33 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$, $p_1 = 400 \text{ bar}$



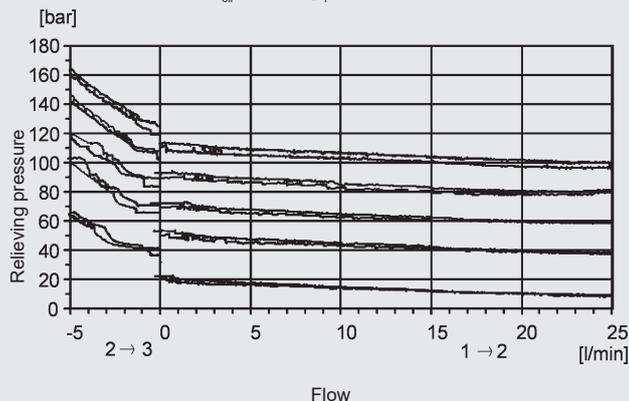
DRM10121-1.-C.-.250

Measured at $v = 33 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$, $p_1 = 350 \text{ bar}$



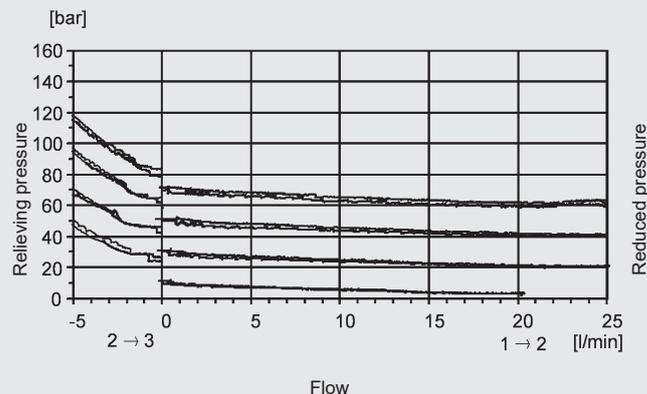
DRM10121-1.-C.-.110

Measured at $v = 33 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$, $p_1 = 200 \text{ bar}$



DRM10121-1.-C.-.070

Measured at $v = 33 \text{ mm}^2/\text{s}$, $T_{\text{oil}} = 46 \text{ }^\circ\text{C}$, $p_1 = 160 \text{ bar}$



MATERIAL OVERVIEW

Standard models

Model code	Part no.
DRM10121-12-C-N-070C	4255715
DRM10121-12-C-N-110C	4255564
DRM10121-12-C-N-250C	4179291
DRM10121-12-C-N-320C	4313908

Other versions on request

Spare parts seal kits

Code	Material	Part no.
DRM10121-NBR-TT	TT-NBR (low temperature)	3676021

Other seal kits on request

Accessories, standard in-line bodies

Code	Material	Ports	Pressure	Part no.
H-R10121-SB4/2	Steel, zinc-plated	G1/4", G1/2"	420 bar	395236

Other housings on request

Accessories, form tools for cavity

Tool	Part no.
Countersink	163910
Reamer	163911

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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