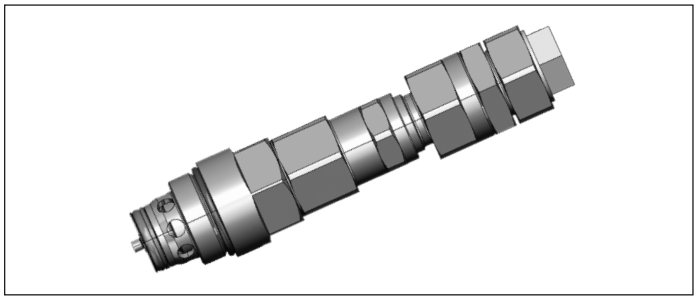
rexroth
A Bosch Company

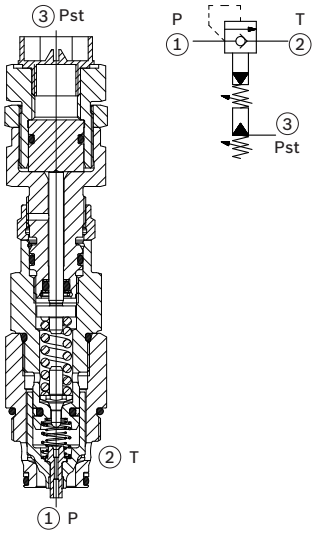
Pressure relief pilot operated poppet type and anti-cavitation valve with pressure sequencing Special cavity, FB

VBB1-16 VBB1.SFB

RE 18319-13
Edition: 11.2023
Replaces: 07.2023



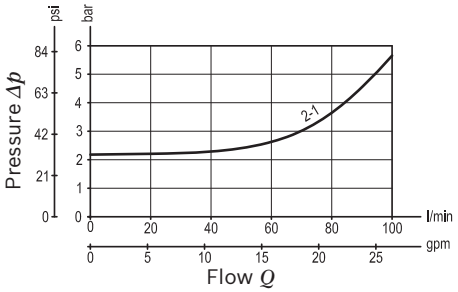
Description
Flow is blocked from 1 to 2 until pressure increases to meet the selected valve setting, lifting the conical, pilot-stage poppet from its seat. This action exhausts oil above the main-stage poppet (low-leakage, seat type), allowing it to shift and provide relief flow through 2 to tank. Pressure at 2 is additive to the relief setting of the valve.
The anti-cavitation function makes up for lacking oil volumes caused, for example, by leakage when pressure valves respond or in the case of leading loads. If the pressure at main port 1 is lower than the one at main port 2, the spool will be lifted out of its seat. Hydraulic fluid flows from main port 2 to main port 1. Pressure sequencing function occurs by connecting pilot oil pressure to the external port 3 Pst for increasing the preload of the main spring and the maximum set system pressure.
Pressurization at the external port 3 has an effect on the pressure at the main port 1 at a ratio of 21:1.

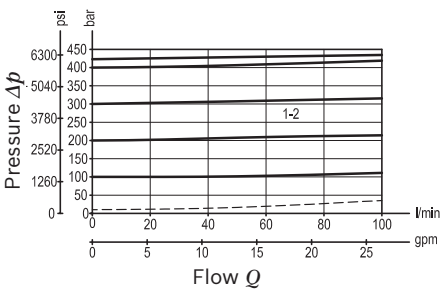


Technical data	
Max. operating pressure port 1 (P)	420 bar (6000 psi)
Max. pressure admitted port 2 (T)	50 bar (725 psi)
Max pilot pressure port 3 Pst	30 bar (435 psi)
Arithmetic gera ratio	21:1
Max. flow	100 l/min (63 gpm)
Max. internal leakage[1)]	15 drops/min.
Fluid temperature range	-20 to 120 °C (-4 to 248 °F) (Viton)
Installation torque[2)]	90 Nm (66,4 ft-lbs)
Weight	0.315 kg (0.69 lbs)
Special cavity	FB (see data sheet 18325-75)
Lines bodies and standard assemblies	Please refer to section “Hydraulic integrated circuit” or consult factory
Seal kit (Viton)[3)]	Code: RG16R2040520100
	material no: R931002593
Fluids	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 380 mm²/s (cSt)
Recommended degree of fluid contamination	Nominal value max. 10µm (NAS 9) / ISO 4406 20/18/15
Installation position	No restrictions
MTTFD	150 years see RE 18350-51
Other Technical Data	See data sheet 18350-50
Without surface protection	In case of need of surface protection, please consult factory.

1) At 80% of pressure setting.
2) Torque value valid for installation in cast iron and steel manifolds. In case of different body materials, please consult factory.
3) Only external seals for 10 valves.

Characteristic curve





Ordering code

VBB1.SFB.VG	*

Pressure relief pilot operated poppet type and anti-cavitation valve with pressure sequencing

	SPRINGS		O-RING
	Maximum set pressure bar (psi)	Pressure increase bar/turn (psi/turn)	Material
000	420 (6090)	272 (3945)	Viton (FKM)

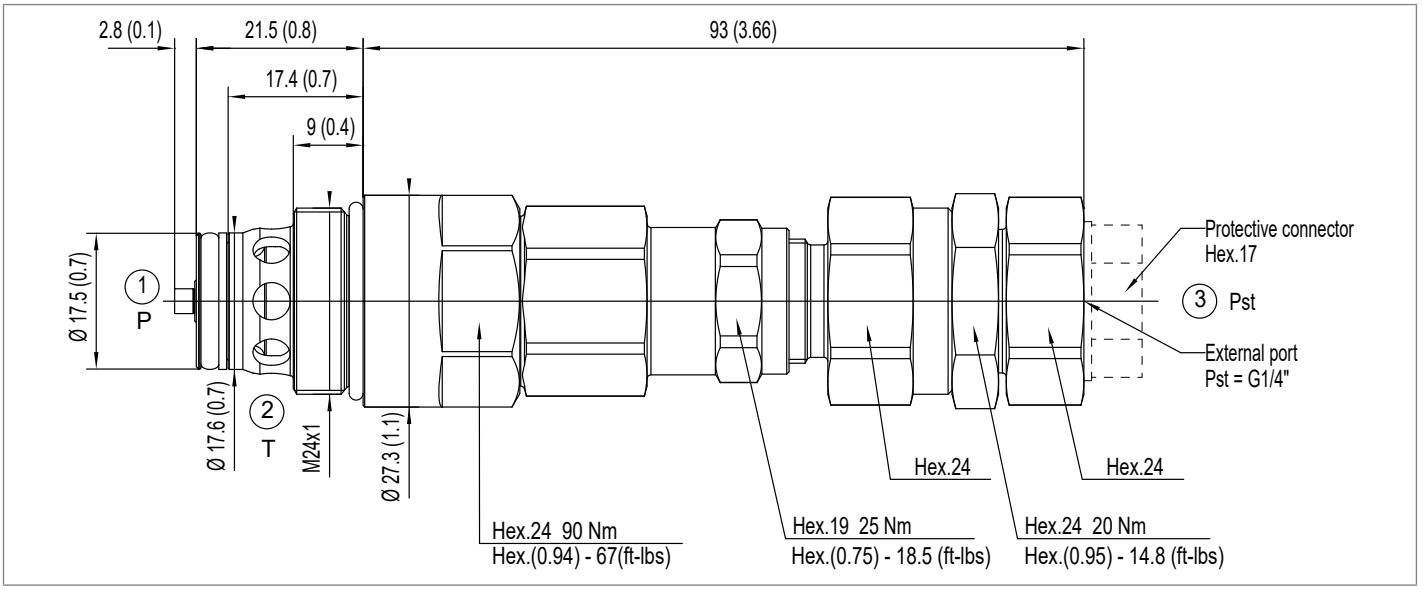
* Valves are delivered set at pressure setting <25 bar and with adjustment device not tighten. Fine setting to be done by customer. For case of request of factory set valve, please consult factory.

Preferred types

Type	Material number
VBB1.SFB.VG.000	R930077184

Type	Material number

Dimensions



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