

# Counterbalance, 4 port vented poppet type external drain, counterclockwise adjustment Sun cavity interchange, T-22A

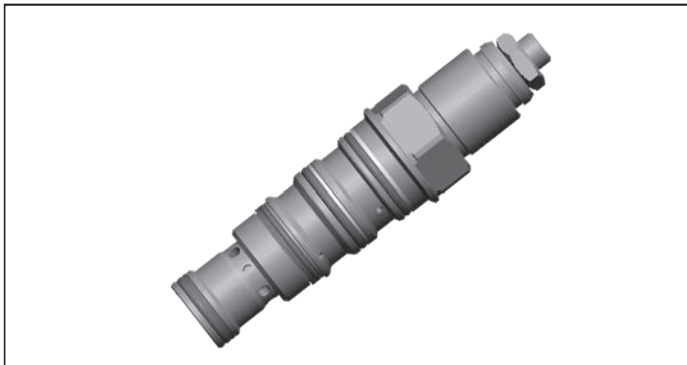
VBSY-12U-RS

04.59.33 - X - 86 - Z

**RE 18320-27**

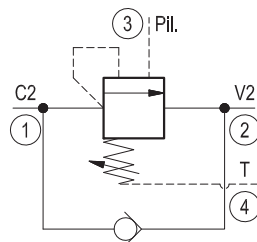
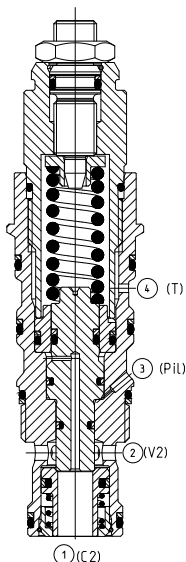
Edition: 07.2023

Replaces: 01.2021



## Description

When pressure at 2 rises above the spring bias pressure, the check seat is pushed away from the piston and flow is allowed from 2 to 1. When load pressure at 1 rises above the pressure setting (turn counterclockwise to increase setting - turn clockwise to decrease setting), the direct-acting, relief function is activated and flow is relieved from 1 to 2. With pilot pressure at 3, the pressure setting is reduced in proportion to the stated ratio of the valve, until fully open with free-flow from 1 to 2. The spring chamber is vented to 4, allowing operation of all functions independent of back-pressure at 2. Any back-pressure at 4 is additive to the pressure setting in all functions. Valve design prevents spring going solid and complete unscrewing during adjusting.



## Technical data

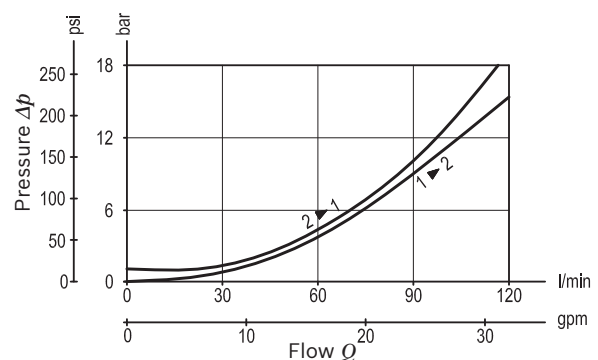
Max. operating pressure	350 bar (5000 psi)
Max. flow	120 l/min (32 gpm)
Max. internal leakage <sup>1)</sup>	15 drops/min.
Fluid temperature range	-30 to 100 °C (-22 to 212 °F)
Installation torque	60 - 70 Nm (44 - 52 ft-lbs)
Weight	0.37 kg (0.82 lbs)
MTTFD	150 years see RE 18350-51
Cavity	SUN T-22A
Adjustment	according to ISO 4413 with sealed adjustment screw to prevent oil leakage during adjustment
Salt spray test	500h according to DIN EN ISO 9227:2017-07
MTTFD	150 years see RE 18350-51
Lines bodies and standard assemblies	Please refer to section "Hydraulic integrated circuit" or consult factory
Seal kit <sup>2)</sup>	Code: RG12U4020110100 material no: R930001204
Fluids	Mineral-based or synthetics with lubricating properties at viscosities of 10 to 500 mm <sup>2</sup> /s (cSt)
Recommended degree of fluid contamination	Nominal value max. 10µm (NAS 8) / ISO 4406 19/17/14
Installation position	No restrictions
Other Technical Data	See data sheet 18350-50

Pressure setting: at least 1.3 times the load induced pressure and maximum 1.5 times catalogue max nominal setting.

1) At 70% of pressure setting

2) Only external seals for 10 valves

## Characteristic curve



Ordering code

04.59.33

X

86

Z

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Counterbalance, 4 port vented  
poppet type external drain,  
counterclockwise adjustment

Pilot ratio

03 4:1

86 SUN cavity interchange, T-22A

Series M to Z  
unchanged performances and dimensions

00 Standard (Buna)  
V0 Viton (FKM)

SPRINGS			
	Adj. press. range bar (psi)	Pressure increase bar/turn (psi/turn)	Std. setting bar (psi) cracking pressure
20	70-210 (1000-3000)	39 (566)	200 (2900)
35	140-350 (2000-5000)	123 (1784)	350 (5000)

Note: Special settings available with optional tamperproof cap.  
Contact factory authorized representative for ordering code.

Preferred types

Type	Material number	Type	Material number
04593303862000M	R930081343		
04593303863500M	R930081344		

Dimensions

Technical drawing of the VBSY-12U-RS counterbalance valve. The drawing shows a vertical assembly with various adjustment points and dimensions. Key dimensions include: overall height 86.5 (3.40) max, main body height 65.6 (2.58) max, and a 35 (1.38) section. Adjustment points are labeled: Hex 5 (0.2), Hex 16 (0.63) with 15 Nm (11 ft-lb), and Hex 28.5 (1.12). Threaded sections are labeled: Ø28.14 (1.11), Ø27.38 (1.08), 1-14 UNS-2A, and Ø22.22 (0.88).

Turn adjustment clockwise to decrease setting and release load

OPTION  
Protection cap orange  
Mat. no. R900168151

Tamper proof cap black  
Mat. no. R930092782