BUCHER hydraulics

D - 36

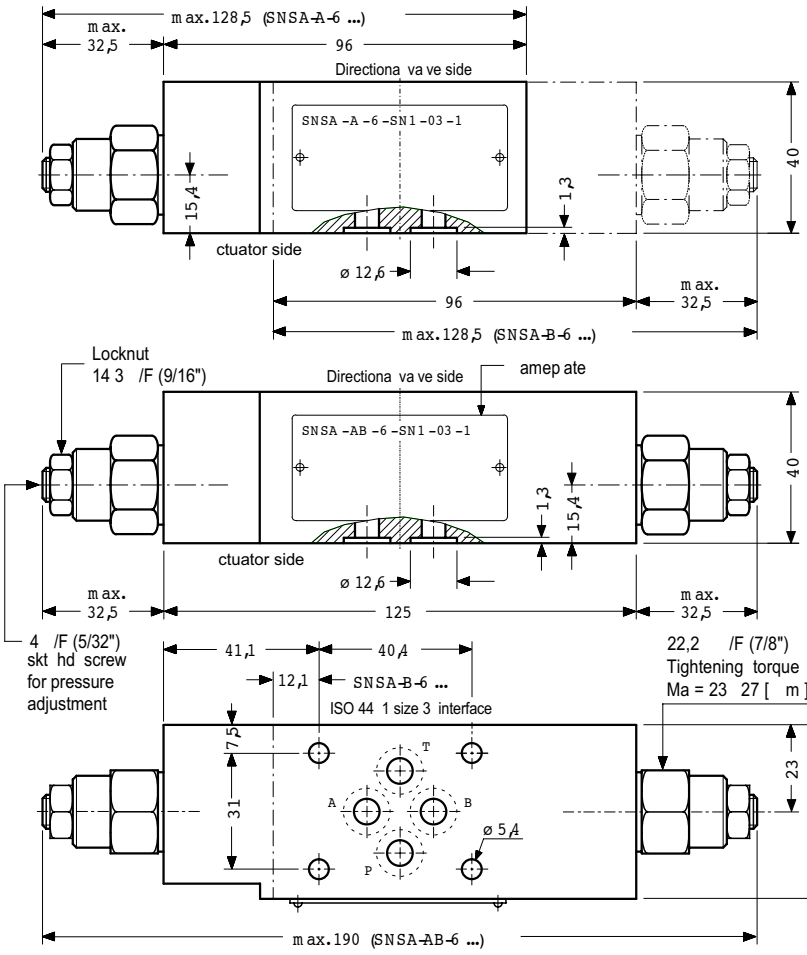
S k- un ing Counterbalance V lve Pil Assisted, Poppet Design

Series S S

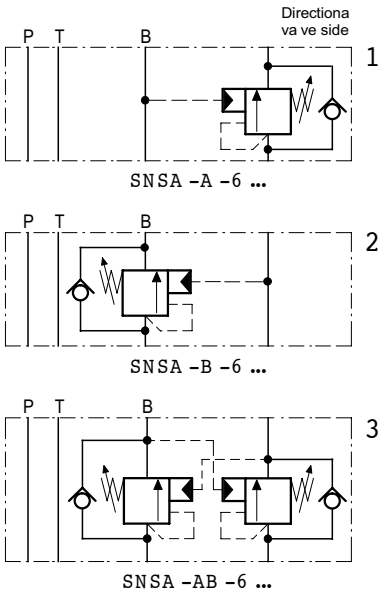
6 /min 35 bar

- ontro ed movement of negative oads
- ontro s the oi eaving the actuator (counterba ance function)
- Load ho ding via eak-free poppet va ve
- Secondary re ief protection for the actuator
- Interface to ISO 44 1 / ETOP R35H, size 3 / FP D 3 / DI 24 34 6

DIME SIO S



SYMBOLS



DES RIPTION

ounterba ance va ves prevent actuator "runaway" in the event of negative oads

The f ow eaving the actuator (the ine in the examp e) is pi oted and contro ed by the f ow entering the actuator (the B ine), ensuring a cavitation-free owering of the oad, as ong as the va ve pressure setting is not exceeded (see app ication examp e, page 2).

counterba ance va ve must be capab e of ho ding the oad without eakage The design of this va ve is based on a pi ot assisted pressure re ief va ve:

See PRESSURE SETTI GS, page 2

The pressure in the actuator in et ine causes the re ief va ve in the actuator out et ine to open The eve of pi ot pressure which is required is determined by the va ve's pi ot area ratio and by the pressure generated by the oad itse fs:

See PRESSURE SETTI GS, page 2

To ensure a re iab e secondary re ief function (e g for ther-ma expansion) the re ated directiona va ve must have a centre condition in which ports and B are connected to Tank (e g HTF spoo type G)

PRESSURE SETTINGS

LOAD PRESSURE: to hold the maximum load without leakage, we recommend that the SNSA..-6 is set as follows:

$p_E = p_L \cdot 1.3$

p_E = valve pressure setting
p_L = maximum load-induced pressure

Example: Load pressure p_L = max. 200 [bar]
pressure setting p_E = 200 [bar] 1,3 = **260 [bar]**

PILOT PRESSURE: the required pilot pressure is calculated as follows:

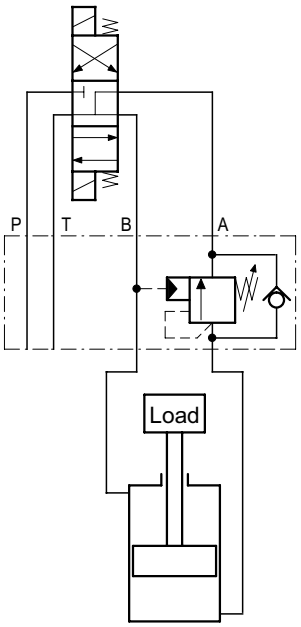
$$p_X = \frac{p_E - p_L}{i}$$

p_X = pilot pressure
p_E = valve pressure setting
p_L = effective load-induced pressure
i = pilot ratio (see PRINCIPAL CHARACTERISTICS)

Example: Pressure setting pE = 260 [bar]
Load pressure pL = eff. 180 [bar]
Pilot ratio i = 4.5

$$p_X = \frac{260 \text{ [bar]} - 180 \text{ [bar]}}{4{,}5} = \text{approx. } \mathbf{18 \text{ [bar]}}$$

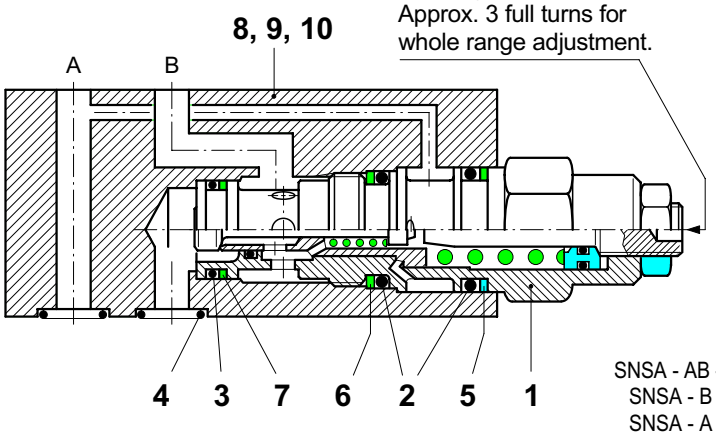
Application example



SCHEMATIC SECTION

showing the relevant ports

Clockwise rotation reduces the pressure setting and leads to lowering of the load. Approx. 3 full turns for whole range adjustment.



SNSA - AB - 6
SNSA - B - 6
SNSA - A - 6

COMPONENTS AND SERVICE PARTS

*) = included in Seal Kit No. DS-241
◢ = available as Service Part

It.	Qty.			Description	
1	2	1	1	Cartridge 350 bar type CBCG LCN	
				Cartridge 175 bar type CBCG LDN	
◢	1	1	1	Seal Kit No. DS-241, comprising *):	
2	4*)	2	2	O-Ring No. 017 ø 17,17 x 1,78	N90
3	2*)	1	1	O-Ring No. 015 ø 14,00 x 1,78	N90
4	4*)	4	4	O-Ring No. 012 ø 9,25 x 1,78	N90
5	2*)	1	1	Backup ring 017	
6	2*)	1	1	Backup ring 016	
7	2*)	1	1	Backup ring 015	
8	-	-	1	Stacking body 40 x 46 x 96 Typ KA-6	
9	-	1	-	Stacking body 40 x 46 x 96 Typ KB-6	
10	1	-	-	Stacking body 40 x 46 x 125 Typ KC-6	
11					

TO ORDER SERVICE PARTS, STATE:
- complete unit model code from the namplate, including Design Number.
- spare part description per above list.
- spare part item number per above list.
- data sheet number, including issue date
- quantity required

INSTALLATION AND SEVICING

ALL INSTALLATION AND SERVICING MUST BE CARRIED OUT WITH CARE, AND BY QUALIFIED PERSONNEL ONLY

At installation, be sure to mount the valve the correct way up. Do not confuse the flat surface (directional valve side) and the surface with O-ring couterbores (the actuator side).
When renewing seals, the new seals should be thoroughly oiled or greased before fitting them to the valve.
Observe the correct tightening torque when installing the cartridge.

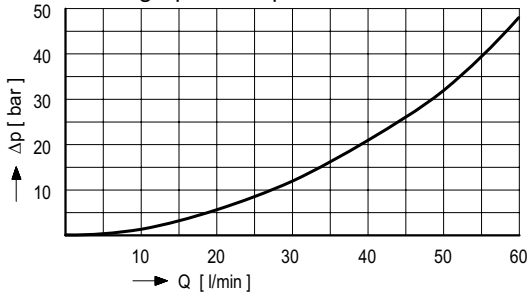
BUCHER hydraulics

PRINCIPAL CHARACTERISTICS

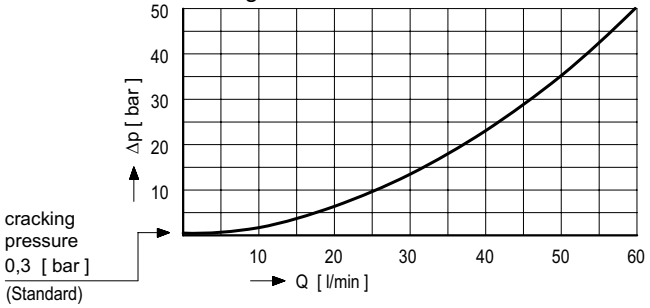
Type	'sandwich' counterbalance valve
Design	pilot assisted, poppet type
Mounting method	stack mounting
Size	ISO 4401 size 3 interface
Mass	SNSA - A../B.. - 6... = 1,25 [kg] SNSA - AB.. - 6... = 1.50 [kg]
Mounting attitude	unrestricted
Flow direction	see symbols
Operating pressure	max. 350 [bar]
Adjustment range	pressure range **N1** = 140 ... 350 [bar] (pilot ratio 4.5 : 1) pressure range **N2** = 70 ... 280 [bar] (pilot ratio 3 : 1)
Adjustment range	pressure range **M1**= 70 ... 175 [bar] (pilot ratio 4,5 : 1) pressure range **M2** = 30 ... 105 [bar] (pilot ratio 3 : 1)
C.V. cracking pressure	approx. 0,3 [bar] **(Standard)** approx. 1,8 [bar] (contact HTF)
Fluids	Hydraulic oils HL and HLP to DIN 51 524 other fluids - contact HTF
Minimum fluid cleanliness	18/14 to ISO 4406 / Cetop RP70H 8 ... 9 to NAS 1638
Fluid temp. range	- 20° ... +60° [C]
Viscosity range	10 ... 300 [cSt]
Flow rate, Q max.	60 [l/min] see perform. curves

PERFORMANCE CHARACTERISTICS (Oil viscosity 33cSt)

Δp - Q characteristics A ⇨ A / B ⇨ B
cartridge piloted open



Δp - Q characteristics A ⇨ A / B ⇨ B
through check valve



MODEL CODE KEY

Ex. S N S A - AB - 6 - S N1 - 03 - _

S = stack mounting
N = counterbalance valve
S = poppet type
A ... Q = **Standard** model per current data sheet
Z ... R = special features by arrangement (contact HTF)
A = function in A
B = function in B
AB = function in A und B
6 = ISO 4401 size 3 interface
S = screw adjustment
N1 = pressure range 140 ... 350 bar (Normal, **standard** design)
pilot ratio 4,5 : 1
N2 = pressure range 70 ... 280 bar (contact HTF)
pilot ratio 3 : 1
M1 = pressure range 70 ... 175 bar (Medium, **standard** design)
pilot ratio 4,5 : 1
M2 = pressure range 30 ... 105 bar (contact HTF)
pilot ratio 3 : 1
Valves are shipped with pressure set at the maximum for the specified pressure range e.g. if N1, then 350 bar.
03 = check valve cracking pressure 0,3 bar (**standard**)
18 = check valve cracking pressure 1.8 bar (contact HTF)
(Blank) = Nitrile seals (**standard**)
V = Viton seals
special seals by arrangement (contact HTF)

RELATED DATA SHEETS

i - 31 DIN 24340 size A6 interface

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