

Valves

Adjustable Pressure Relief Valves

Adjustable pressure relief valves allow for variable operating pressures anywhere between 75 – 1740 PSI (5 – 120 bar). In order to prevent overloading of the motor, however, the maximum operating pressure may never exceed the highest allowable operating pressure for the specific pump and motor combination in use.

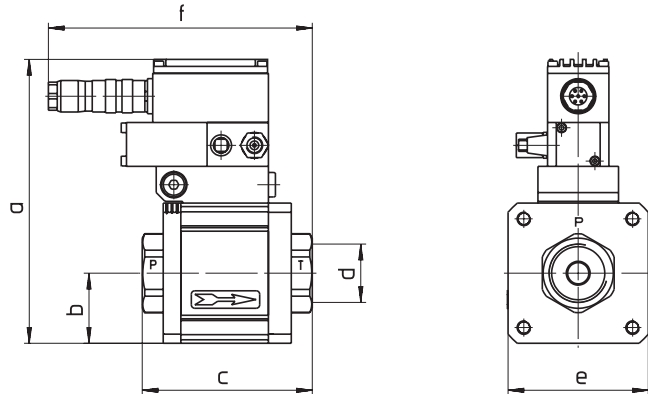
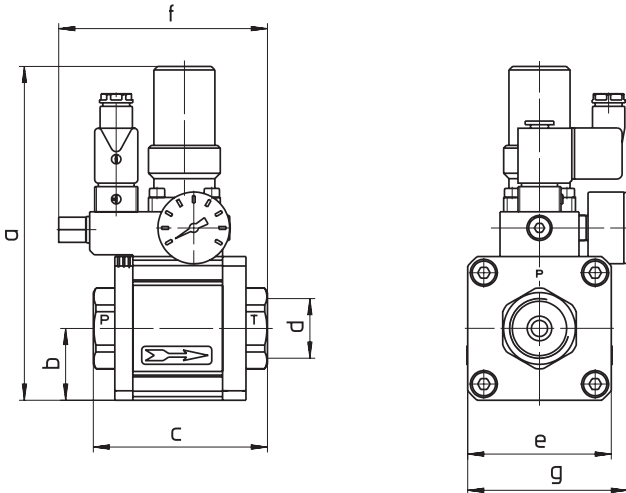
The system user must ensure that the operating pressure never exceeds the highest allowable operating pressure (i.e. by using a second non adjustable pressure relief valve which is set for the highest allowable pressure).

3-HPB Series

The 3-HPB series are manually adjustable pressure relief valves. The valves are pneumatically operated and control the operating pressure with the control pressure in a ratio of 1:10 and 1:18.5. Without power and air supply the valve is fully open and in dump mode.

SPB Series

SPB Series pressure relief valves are electronically adjustable valves. The valve requires an analog signal of 0 – 10 V. The ratio between the control voltage and the operating pressure is 1:10 and 1:18.5. Without power and air supply the valve is fully open and in dump mode.



Type	Pressure p bar / PSI	Flow Qmax GPM / l/min
3-HPB-08	10-200 / 145-2900	4.8 / 18
3-HPB-S 15	5-64 / 72-930	26.5 / 100
3-HPB-H 15	5-120 / 72-1740	26.5 / 100
3-HPB-S 32	5-64 / 72-930	106 / 400
3-HPB-H 32	5-120 / 72-1740	63.5 / 240
3-HPB-S 50	5-64 / 72-930	212 / 800

Type	Pressure p bar / PSI	Flow Qmax GPM / l/min
SPB-08	10-200 / 145-2900	4.8 / 18
SPB-S 15	5-64 / 72-930	26.5 / 100
SPB-H 15	5-120 / 72-1740	26.5 / 100
SPB-S 32	5-64 / 72-930	106 / 400
SPB-H 32	5-120 / 72-1740	63.5 / 240
SPB-S 50	5-64 / 72-930	212 / 800

Type 3-HPB	a Inch	b Inch	c Inch	d Inch	e Inch	f Inch	g Inch
08	7.09	1.46	5.43	G ³ / ₈	∅ 2.91	-	-
S / H 15	7.32	1.57	3.82	G1	∅ 3.15	4.58	3.50
S / H 32	9.10	2.36	6.30	G1 ¹ / ₂	∅ 4.72	4.92	4.29
S 50	9.88	2.76	6.30	G1 ¹ / ₂	∅ 5.51	-	-

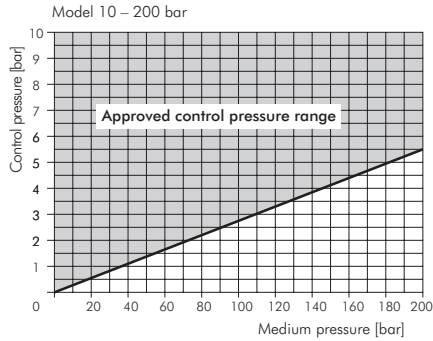
Type SPB	a Inch	b Inch	c Inch	d Inch	e Inch	f Inch
08	5.95	1.46	5.43	G ³ / ₈	∅ 2.91	-
S / H 15	6.38	1.57	3.82	G1	∅ 3.15	5.93
S / H 32	7.58	2.36	6.30	G1 ¹ / ₂	∅ 4.72	6.95
S 50	9.88	2.76	6.30	G1 ¹ / ₂	∅ 5.51	-

Further valves on request.

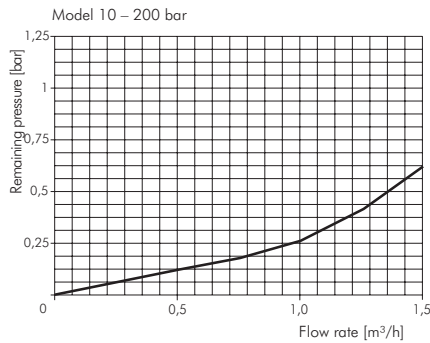
Valves

3-HPB – 08 | SPB – 08

Control pressure diagram

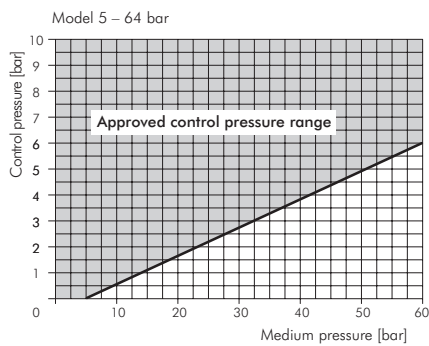


Depressurized recirculation mode

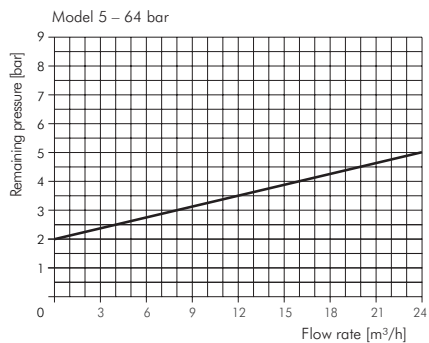


3 – HPB – S 32 | SPB – S 32

Control pressure diagram

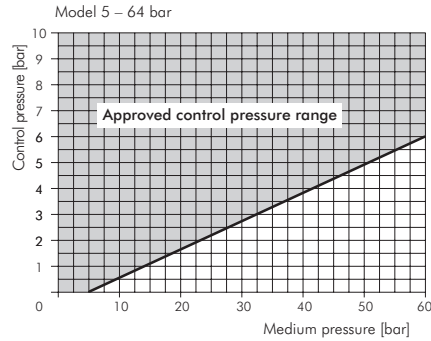


Depressurized recirculation mode

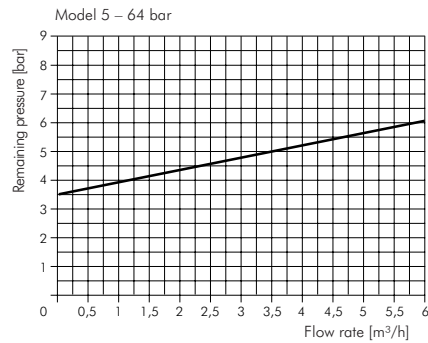


3 – HPB – S 15 | SPB – S 15

Control pressure diagram

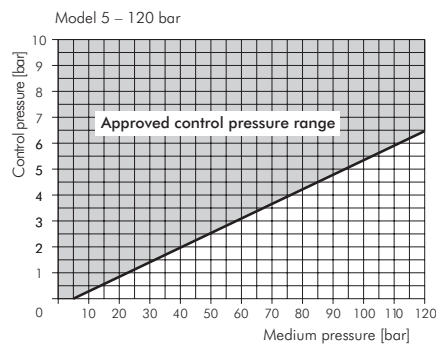


Depressurized recirculation mode

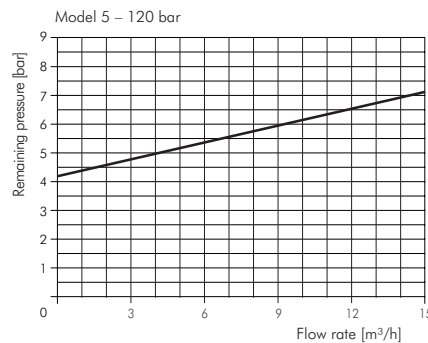


3 – HPB – H 32 | SPB – H 32

Control pressure diagram

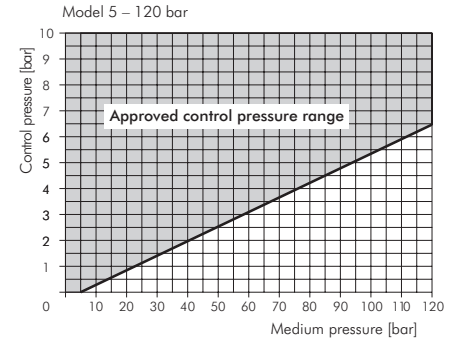


Depressurized recirculation mode

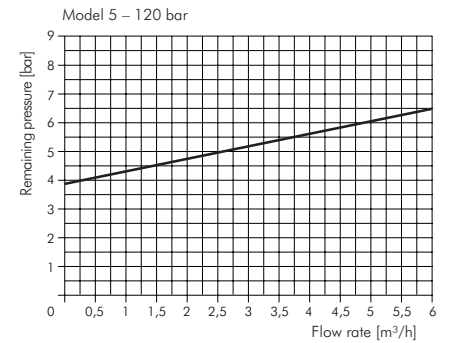


3 – HPB – H 15 | SPB – H 15

Control pressure diagram

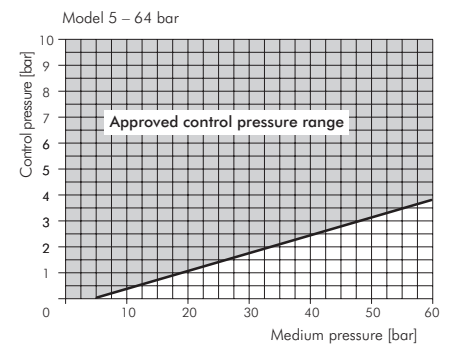


Depressurized recirculation mode

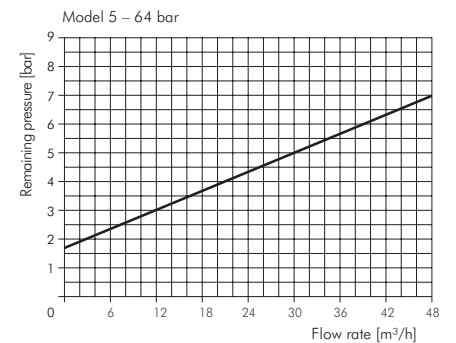


3 – HPB – S 50 | SPB – S 50

Control pressure diagram



Depressurized recirculation mode



Valves

Non-adjustable Pressure Relief Valves

Screw spindle pumps are positive displacement pumps which always require the installation of a pressure relief valve in order to prevent bursting. Pressure relief valves are set for a maximum operating pressure and protect the pump motor from overloading. Once the set maximum pressure is reached, the relief valve opens and the excess flow rate is passed through the valve back into the tank. In order to avoid pressure spikes in the system a pressure relief valve which dampens against vibration is recommended. BBV / HBV series are such relief valves. They are available in 145 PSI (10 bar) increments and are preset by the factory for the highest allowable operating pressure for the specific pump and motor combination.

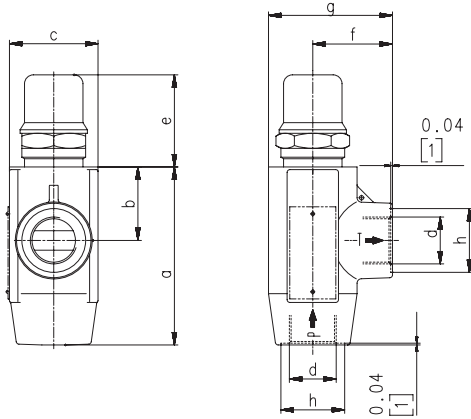
Non-adjustable Pressure Relief Valves BBV / HBV

Non-adjustable Pressure Relief valves of the series BBV and HBV are shock absorbent valves which open at a preset pressure. The relief valve opens at the factory set pressure which is available in 145 PSI (10 bar) increments and the excess flow rate is diverted through a separate bypass line back into the tank.

Type of Pumps	Type of Valves	Pressure (bar / PSI)														
		10/ 145	20/ 290	30/ 435	40/ 580	50/ 725	60/ 870	70/ 1015	80/ 1160	90/ 1305	100/ 1450	110/ 1595	120/ 1740	130/ 1885	140/ 2030	150/ 2175
BFS1, FFS1 BFS232, FFS232	BBV1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
BFS2, FFS2	BBV2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
BFS1-H, BFS2-H	HBV2	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—
TFS3, FFS3	BBV3	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
TFS3-H	HBV3	●	●	●	●	●	●	●	●	●	●	●	●	—	—	—

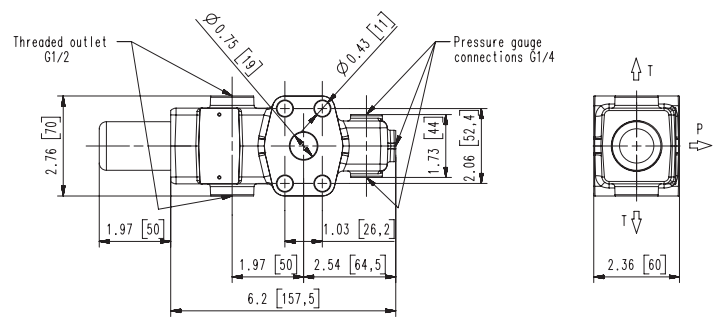
Ordering description: e.g. BBV 3 / 50

BBV

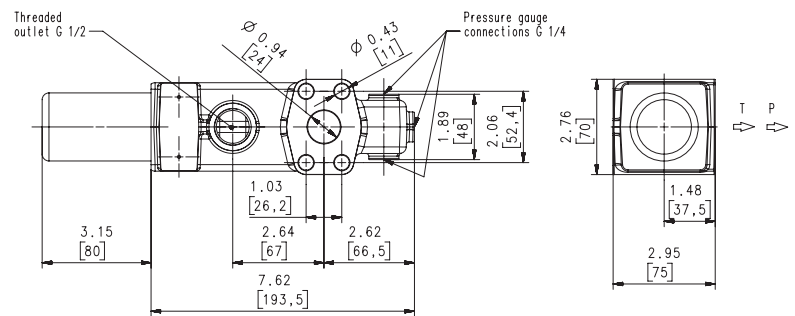


	BBV 1 + 2 Inch	BBV 3 Inch
a	3.96	5.12
b	1.63	2.09
c	1.97	2.56
d	G 3/4	G1
e	2.05	3.19
f	1.77	1.93
g	2.76	3.21
h	1.42	1.65

HBV 1+2



HBV 3



Dimensions in Inches / mm

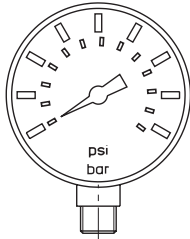
Additional relief valve characteristics upon request. The actual opening pressure may deviate from the nominal pressure setting of the valve because of the tension of the loaded spring rate.

Above mentioned pressure relief valves BBV are available upon request in a adjustable version.

The system user must ensure that the operating pressure never exceeds the highest allowable operating pressure (i.e. by using a second non adjustable pressure relief valve which is set for the highest allowable pressure).

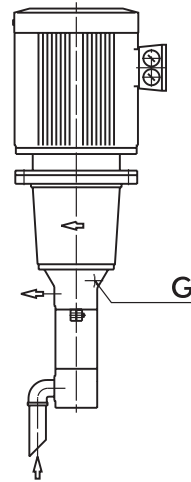
Pressure gauge / Suction protection G4 Version

Pressure gauge



Type	Pressure p bar / PSI
M 60	0 – 60 / 0 – 870
M 100	0 – 100 / 0 – 1450
M 160	0 – 160 / 0 – 2320

G4 Version

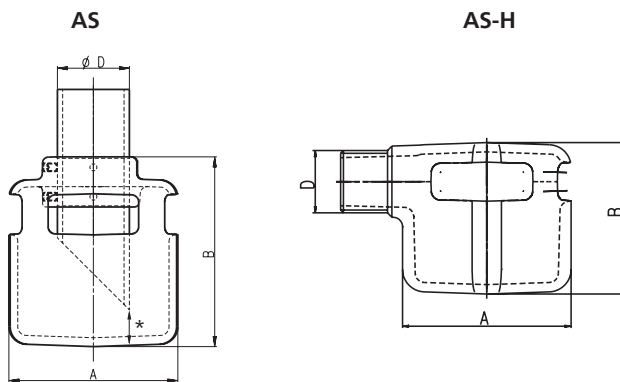


G1/8 BFS/FFS 1, 2
G1/4 TFS/FFS 3, 4, 5

Depressurized leakage return to tank

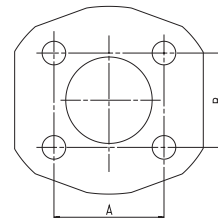
Suction protection

The patented suction protection prevents large particles (and foreign objects) from entering the screw pump's suction.



* Minimum distance $\frac{1}{3} D$

SAE flange

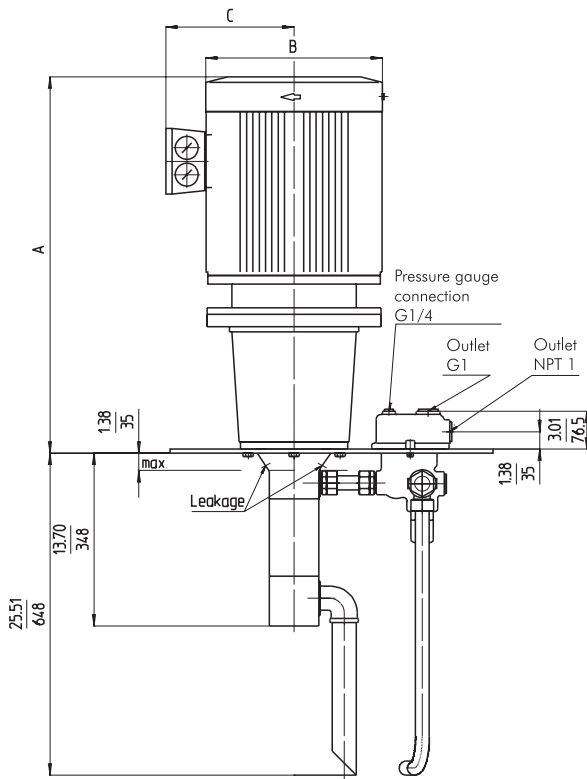


Type	Type of Pumps	A Inch	B Inch	Ø D
AS1-2	BFS1, BFS2	3.54	3.70	1"
AS3	TFS3	4.53	5.08	1½"
AS4	TFS4	5.91	6.89	2"
AS5	TFS5	7.68	7.48	2½"
AS1-2-H	BFS1, BFS2	3.54	3.15	1"
AS3H	TFS3	4.53	4.53	G1½
AS4H	TFS4	6.02	6.89	G2
AS5H	TFS5	7.64	7.48	G2½

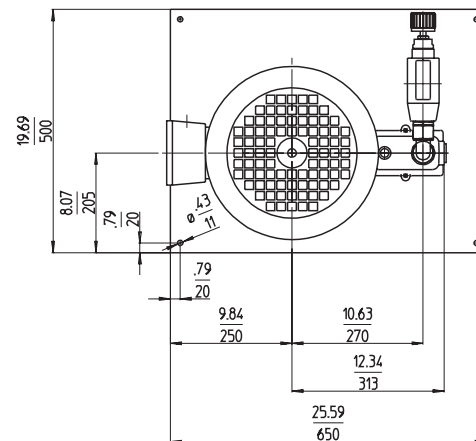
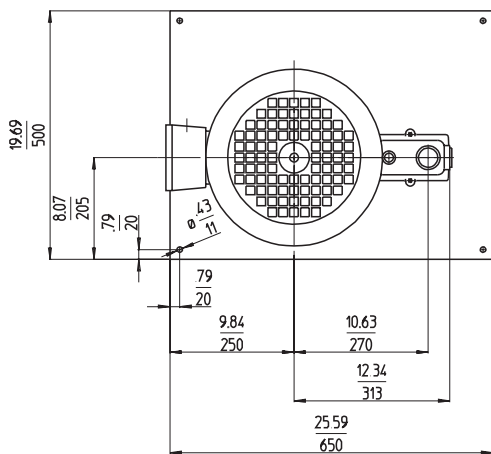
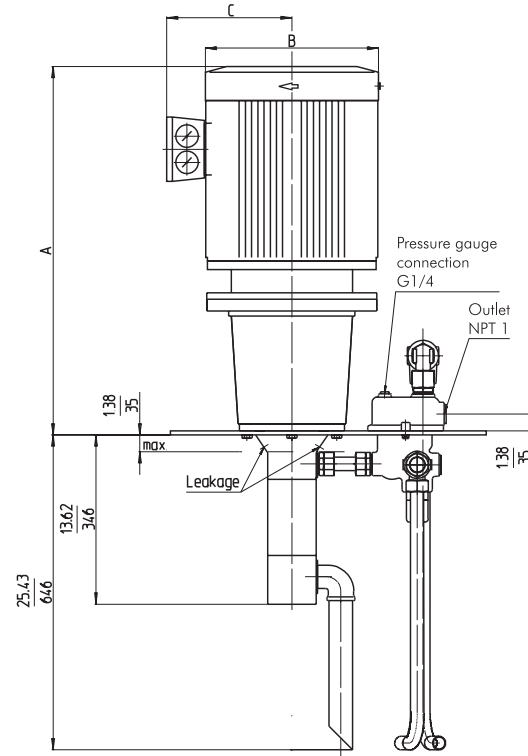
Type	Type of Pumps	A Inch	B Inch
SAE 2 ½	TFSS, FFS5	3.50	2.00
SAE 3	TFS6, FFS6	4.75	2.75

Pump system, fully assembled

3. Series TFS3, non adjustable pressure relief valve:
Screw pump with mounting plate, integrated connection block and piping fully assembled.
The non-adjustable pressure relief valve is integrated into the connection block.



4. Series TFS3, adjustable pressure relief valve:
Screw pump with mounting plate, integrated connection block and piping fully assembled.
The non-adjustable pressure relief valve is integrated into the connection block. The adjustable pressure relief valve is mounted above the plate.



Dimensions in Inches / mm

Dimensions in Inches / mm

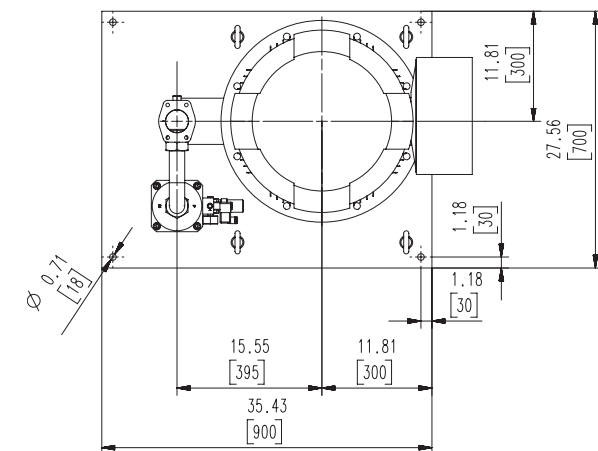
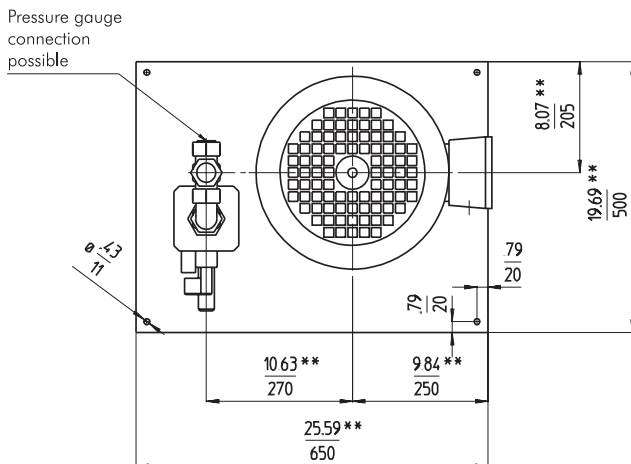
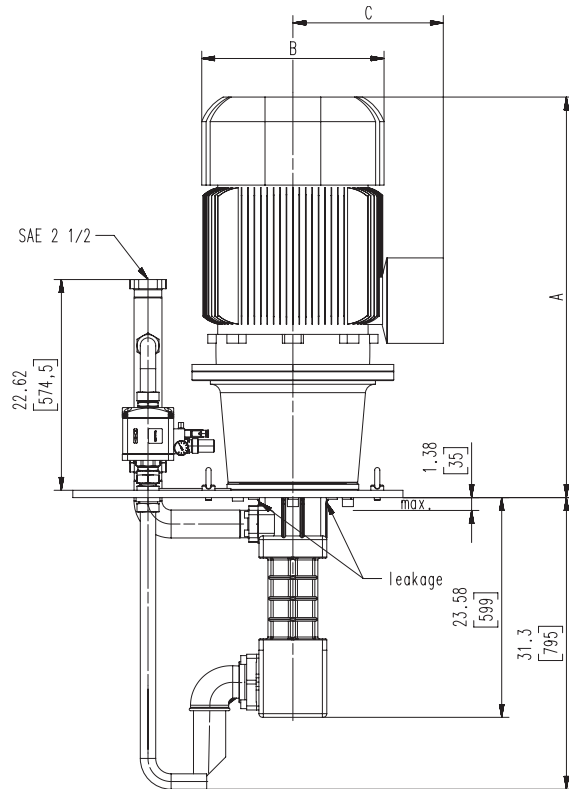
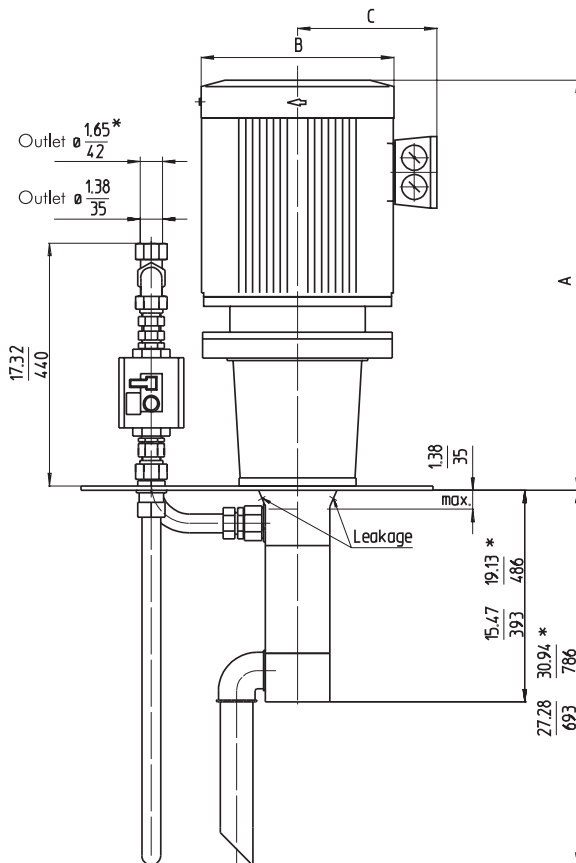
Dimensions A + 0.31 Inch (8 mm) mounting plate

Dimensions A + 0.31 Inch (8 mm) mounting plate

Pump system, fully assembled

5. Series TFS4 and TFS5, adjustable pressure relief valve (pneumatically operated):
Screw pump with mounting plate, adjustable pressure relief valve (pneumatically operated) and piping fully assembled. The adjustable pressure relief valve is mounted above the plate.

6. Series TFS6, adjustable pressure relief valve:
Screw pump with mounting plate, adjustable pressure relief valve (pneumatically operated) and piping fully assembled. The adjustable pressure relief valve is mounted above the plate.



Dimensions in Inches / mm

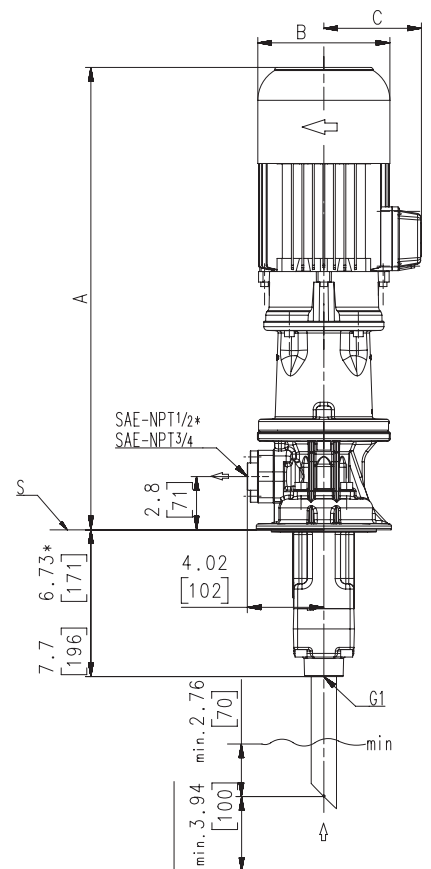
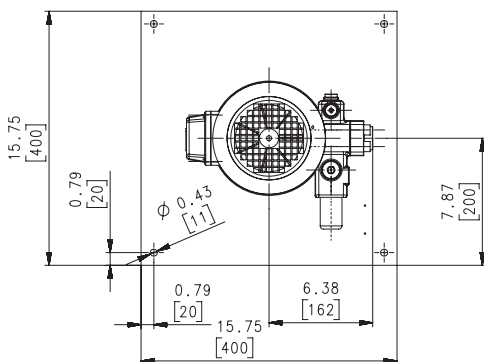
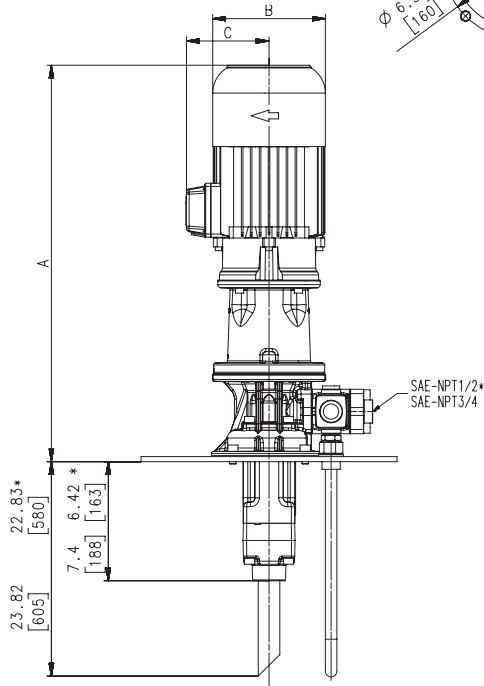
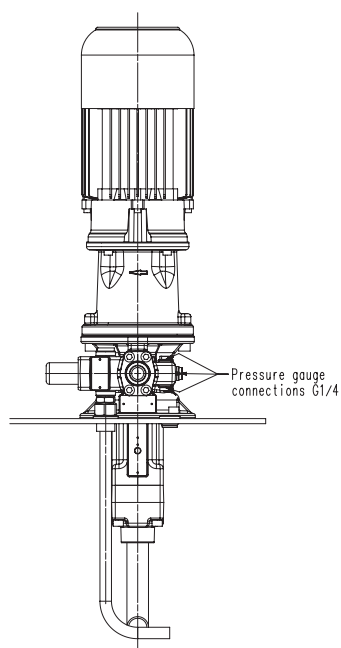
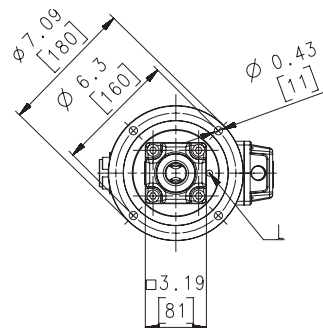
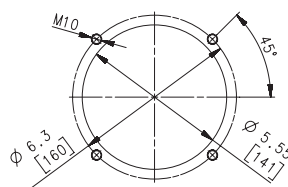
Dimensions in Inches / mm

*) Dimensions for TFS5
**) Dimensions for motors larger than 50 HP (37 kW) upon request
Dimensions A + 10.47 Inch (12 mm) mounting plate

Pump system, fully assembled

7. Series **BFS1-H / BFS2-H**, non-adjustable pressure relief valve: Screw pump with integrated connection block, fully assembled.
The non-adjustable pressure relief valve is integrated into the connection block.

Mounting hole patterns



* = BFS1-H
L = Leakage hole
S = Mounting plate, please refer to the cut-out of mounting hole

Dimensions for standard motor upon request

Dimensions in Inches / mm

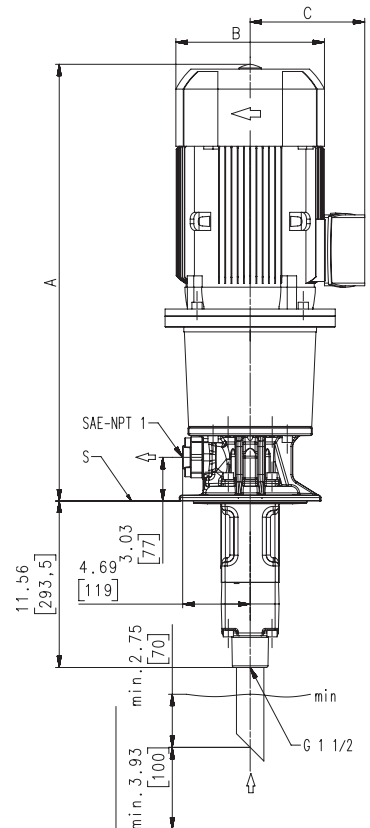
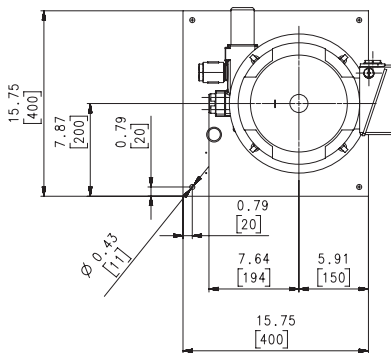
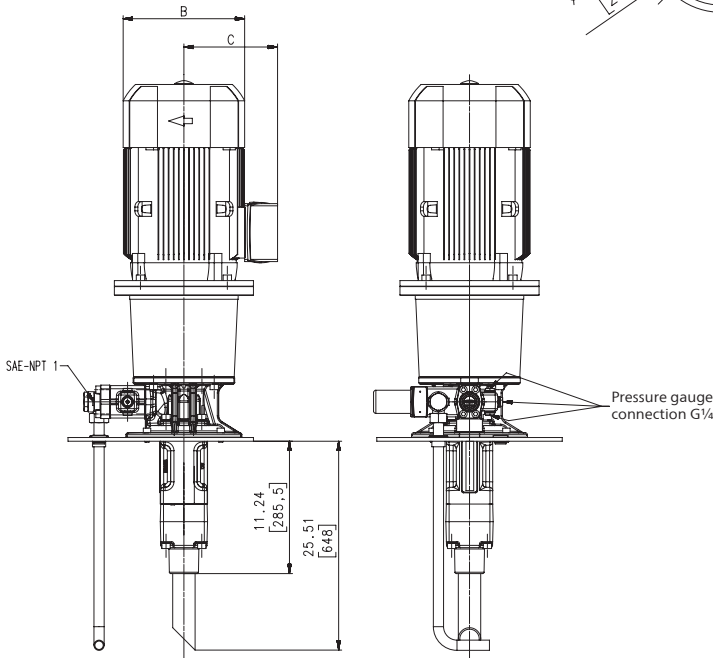
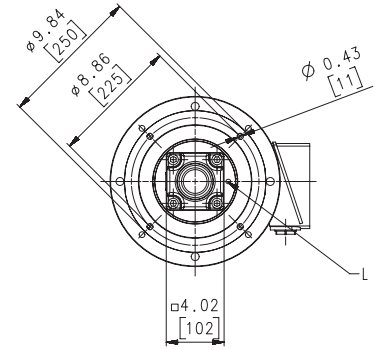
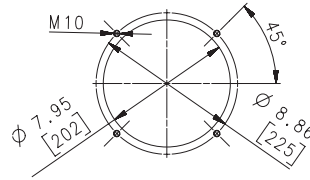
Power Supply 60 Hz 2-poles HP	BFS1-H			BFS2-H		
	A Inch	B Inch	C Inch	A Inch	B Inch	C Inch
B 2.0 / 2.3	21.97	6.93	5.12	21.97	6.93	5.12
B 2.9 / 3.4 / 3.9	24.29	6.93	5.12	24.29	6.93	5.12
B 4.6 / 5.1 / 6.1	25.83	8.58	5.91	25.83	8.58	5.91
B 7.7 / 8.4	27.01	8.58	5.91	27.01	8.58	5.91
B 11.5	30.12	10.16	7.60	30.12	10.16	7.60
B 13.8				30.12	10.16	7.60
B 16.9 / 20.1				30.43	12.20	9.45

Power Supply 50 Hz 2-poles HP	BFS1-H			BFS2-H		
	A Inch	B Inch	C Inch	A Inch	B Inch	C Inch
B 1.7 / 2.0	21.97	6.93	5.12	21.97	6.93	5.12
B 2.3	22.99	6.93	5.12	22.99	6.93	5.12
B 2.5 / 2.9 / 3.5	24.29	6.93	5.12	24.29	6.93	5.12
B 4.4 / 5.4	25.83	8.58	5.91	25.83	8.58	5.91
B 6.7 / 7.4	27.01	8.58	5.91	27.01	8.58	5.91
B 10.1	30.12	10.16	7.60	30.12	10.16	7.60
B 12.1				30.12	10.16	7.60
B 14.7 / 17.4				30.43	12.20	9.45

Pump system, fully assembled

8. Series TFS3-H, non-adjustable pressure relief valve:
Screw pump with integrated connection block,
fully assembled.
The non-adjustable pressure relief valve is integrated into
the connection block.

Mounting hole patterns



L = Leakage hole
S = Mounting plate, please refer to
the cut-out of mounting hole

Dimensions in Inches / mm

Power 60 Hz 2-poles HP	TFS3-H		
	A Inch	B Inch	C Inch
4	27.52	7.80	6.54
5	26.85	8.74	6.97
7.5	28.59	10.31	7.95
10	30.55	10.31	7.95
15 / 20	35.24	12.36	9.33
25	37.60	12.36	9.33
30	37.60	14.02	11.26
40	39.84	15.59	12.40
50	40.83	15.59	12.40

Power 50 Hz 2-poles HP	TFS3-H		
	A Inch	B Inch	C Inch
3	25.47	7.01	4.96
4	27.52	7.80	6.54
5.4	26.85	8.74	6.97
7.5	28.59	10.31	7.95
10	30.55	10.31	7.95
15 / 20	35.24	12.36	9.33
25	37.60	12.36	9.33
30	37.60	14.02	11.26
40	39.84	15.59	12.40