



USA



## High Pressure Pumps



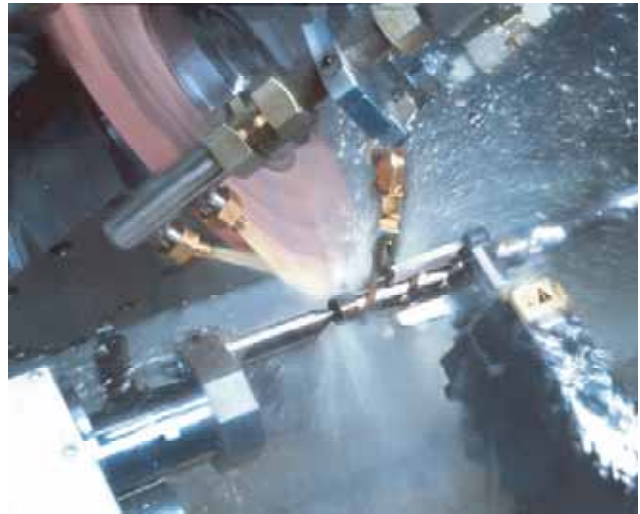
2006

**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX  
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48  
Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)  
[www.motralec.com](http://www.motralec.com)



## Engineering.



The Brinkmann Screw Pump Series has been specifically designed for the machine tool industry, with a clear focus on high wear-resistance, long life expectancy and extremely high pump efficiencies.



Each Brinkmann pump reflects a tremendous amount of R&D work and long term testing, in our own test tank as well as in field applications under the most severe operating conditions.















Our highly sophisticated modular design system allows us to fulfill your individual requirements in a very cost effective way.



We are continuously striving to develop new, market oriented innovations through very close contact with our customers.

Delivering the best possible solution for your specific application – that is our goal!

# Content

		Page	
Technical Information		4 – 6	
Electrical			
Questionnaire		7	
Models and Applications		8 – 9	
High Pressure Pumps	Screw spindles	10 – 11	
BFS1, FFS1 / 60 Hz	<b>High pressure</b>		
BFS2, FFS2 / 60 Hz	1.0 ... 8.0 GPM 145 ... 2175 PSI		
High Pressure Pumps	Screw spindles	12 – 13	
BFS2, FFS2 / 60 Hz	<b>High pressure</b>		
	2.4 ... 15 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	14 – 15	
TFS3, FFS3 / 60 Hz	<b>High pressure</b>		
	4.5 ... 31.0 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	16 – 17	
TFS4, FFS4 / 60 Hz	<b>High pressure</b>		
	9.3 ... 61.5 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	18 – 19	
TFS5, FFS5 / 60 Hz	<b>High pressure</b>		
	26 ... 121 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	20 – 21	
BFS1, FFS1 / 50 Hz	<b>High pressure</b>		
BFS2, FFS2 / 50 Hz	0.4 ... 6.8 GPM 10 ... 2175 PSI		
High Pressure Pumps	Screw spindles	22 – 23	
BFS2, FFS2 / 50 Hz	<b>High pressure</b>		
	1.5 ... 12.5 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	24 – 25	
TFS3, FFS3 / 50 Hz	<b>High pressure</b>		
	2.7 ... 25.5 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	26 – 27	
TFS4, FFS4 / 50 Hz	<b>High pressure</b>		
	5.5 ... 50.5 GPM 145 ... 1740 PSI		
High Pressure Pumps	Screw spindles	28 – 29	
TFS5, FFS5 / 50 Hz	<b>High pressure</b>		
	19.5 ... 100 GPM 145 ... 1740 PSI		
Accessories	145 ... 2175 PSI	30 – 35	
Pressure relief valves			
Pressure gauges, Suction protectors			
Pump systems, fully assembled			
G4 execution, cut-out of mounting hole			
Terms and Conditions			

# Technical Information



## Electrical Features

### CE Motors acc. to EN 60034 (resp. DIN ICE 34)

Grade of protection IP55  
Type of insulation F

#### Brinkmann motors

60 Hz	230 V $\Upsilon$ $\Upsilon$ 460 V $\Upsilon$	440 V – 480 V $\Upsilon$	440 V – 480 V $\Delta$
up to 7.4 HP	Standard	●	●
10 HP – 13.4 HP	Standard	●	●

#### Siemens standard motors

60 Hz	440 V – 480 V $\Upsilon$	440 V – 480 V $\Delta$
up to 7.4 HP	Standard	●
10 HP and higher	●	Standard

#### For 50 Hz applications

50 Hz	220 V – 240 V $\Delta$ 380 V – 420 V $\Upsilon$	380 V – 420 V $\Delta$
up to 7.4 HP	Standard	●
10 HP and higher	●	Standard

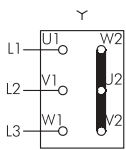
- Upon request

Other voltages upon request.

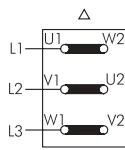
Motors larger than 13.4 HP (50 Hz) and 15.4 HP (60 Hz) are automatically equipped with thermal protectors.

### Circuits

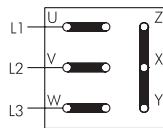
$\Upsilon$  (Star Connection)  $\Delta$  (Delta Connection) Voltage changing 1 : 2  $\Upsilon$   $\Upsilon$  /  $\Upsilon$   
up to 7.4 HP (5.5 kW) 10 HP and higher (7.5 kW and higher)  
e. g. 230 / 460 V, 60 Hz



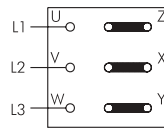
$\Upsilon$  440 V – 480 V  
60 Hz



$\Delta$  440 V – 480 V  
60 Hz



$\Upsilon$   $\Upsilon$   
Low Voltage



$\Upsilon$   
High Voltage

### Installation

#### Brinkmann Screw Pump with Harting Connector

DESINA includes a complete concept for standardization and decentralization of the electronic and fluid technical installation of machine tool OEMs, the automotive industry and its suppliers. The specifications for the required components were defined in cooperation between the machine construction, automotive and supplier industry.

DESINA considers proven solutions such as open bus systems, industrial standards for connectors, etc. By standardizing components, interfaces and connection elements it is possible to realize highly varying field bus systems on a common physical basis.

Motors up to 7.4 HP (5.5 kW) are available with a HAN 10-pin connector.

### Control/Regulation

#### Brinkmann screw pumps with integrated frequency converter

Pumps with integrated frequency converter offer the perfect supplement to the existing product line for your application. Please contact us for additional information.

#### Motors of 10 HP (7.5 kW)

Motor design available for  $\Upsilon$  /  $\Delta$ -start.

Screw pumps must be started without back pressure when utilizing a  $\Upsilon$  /  $\Delta$ -start-up mode.

#### Motor cycle time

Motors less 4.0 HP (3 kW):  
up to 200 times per hour.

Motors from 4.0 HP (3 kW) to 7.4 HP (5.5 kW):

up to 40 times per hour.

Motors from 10 HP (7.5 kW) to 13.4 HP (10 kW):

up to 20 times per hour.

Motors 15 HP (11 kW) and higher:  
up to 15 times per hour.

### UL/CSA Certification

#### Brinkmann motors

Motors up to 13.4 HP (10 kW) and up to max. 600 V are available as special designs with cUL-certification.

Approval testing is carried out by the Underwriters Laboratories Inc. according to the UL 1004 Electric Motors Standard. The motor's name plate bears the identification:



„Recognized Component Mark for Canada and the United States“.

#### Siemens standard motors

Motors are available upon request with UL-certification, with CSA-certification or with UL- and CSA-certification.



„Recognized Component Mark for Canada and the United States“.

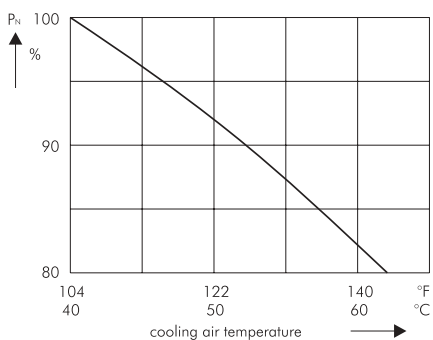
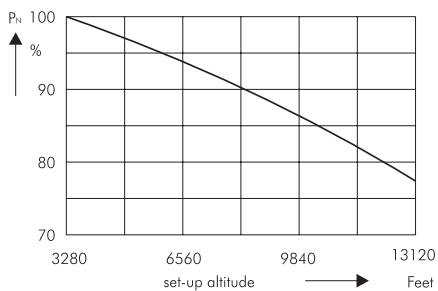
# Technical Information

## Electrical / Hydraulic Features

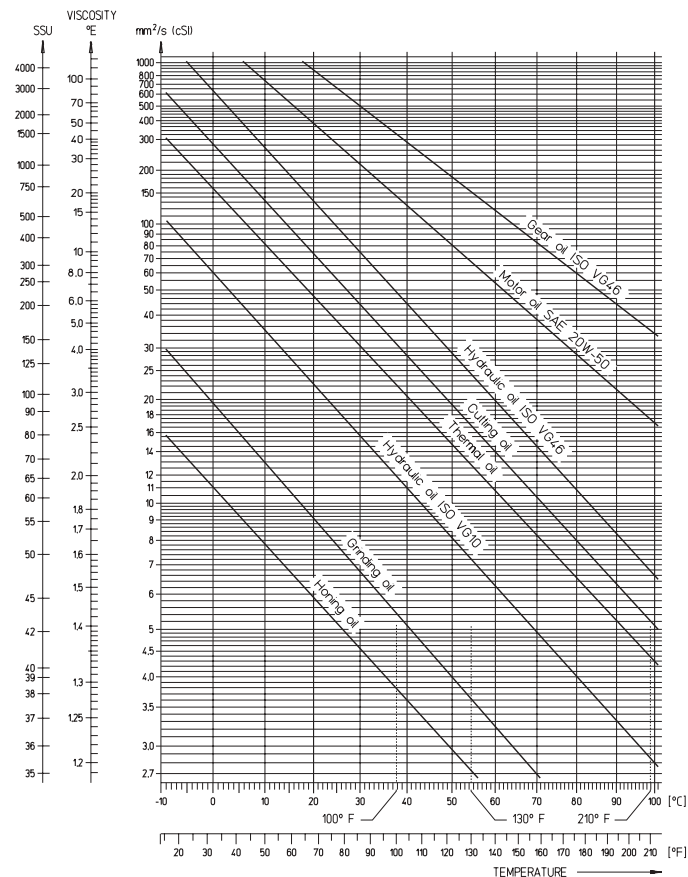
### Set-up altitude and coolant temperature

The specified power ratings ( $P_N$ ) and operating values for the motors apply to operating mode S1 according to EN 60034-1 (continuous operation) at a frequency of 60 Hz, rated voltage, a cooling air temperature (KT) of max. 104 °F (40 °C) and a set-up altitude of up to 3280 ft (1000 m) above sea level. The motors can also be used at a cooling air temperature above 104 °F (40 °C) up to max. 140 °F (60 °C) or set-up altitude above 3280 ft (1000 m) above sea level. In such cases the power rating must be reduced according to the diagrams, or an appropriately larger motor version or higher heat class has to be selected. However, a deviation from the specified data is necessary when the cooling air temperature is reduced according to table simultaneously at set-up altitudes higher than 3280 ft (1000 m) above sea level.

Set-up altitude feet	Maximum cooling air temperatur for heat class F	
	°F	°C
0 up to 3280	104	40
3280 up to 6560	86	30
6560 up to 9840	66	19
9540 up to 13120	48	9



### Viscogram



# Technical Information

## Electrical Features

### Technical motor data

Three-phase induction motor 2 pole, thermal protection class F, grade of protection IP 55

### Brinkmann motors

Power 50 Hz / 60 Hz		Rated current 2 pole 50 Hz Y 380 – 420 V / Δ 380 – 420 V		Noise level max.	Rated current 2 pole 60 Hz 230 V Y Y	Rated current 2 pole 60 Hz Y 460 V	Noise level max.
kW	HP	AMPS		dBA / 50 Hz	AMPS	AMPS	dBA / 60 Hz
B 1.3 / 1.5	B 1.75 / 2.0	3.0	–	63	6.0	3.0	67
B 1.5 / 1.75	B 2.0 / 2.35	3.8	–	63	7.6	3.8	67
B 1.7 / 1.95	B 2.3 / 2.6	4.1	–	63	8.2	4.1	67
B 1.9 / 2.2	B 2.5 / 3.0	4.9	–	63	9.8	4.9	67
B 2.2 / 2.55	B 3.0 / 3.4	5.3	–	63	10.6	5.3	67
B 2.6 / 3.0	B 3.5 / 4.0	6.3	–	63	12.6	6.3	67
B 3.3 / 3.8	B 4.4 / 5.1	8.0	–	71	16.0	8.0	75
B 4.0 / 4.6	B 5.4 / 6.2	9.5	–	71	19.0	9.5	75
B 5.0 / 5.75	B 6.7 / 7.7	12.0	–	71	24.0	12.0	75
B 5.5 / 6.3	B 7.4 / 8.4	12.5	–	71	25.0	12.5	75
B 7.5 / 8.6	B 10.0 / 11.5	–	17.0	74	34.0	17.0	78
B 10.0 / 11.5	B 13.4 / 15.5	–	23.0	74	46.0	23.0	78

### Siemens standard motors

Power 50 Hz / 60 Hz		Rated current 2 pole 50 Hz Y 380–420 V	Noise level	Rated current 2 pole 60 Hz Y 440–480 V	Noise level	Rated current 4 pole 50 Hz Y 380–420 V	Noise level	Rated current 4 pole 60 Hz Y 440–480 V	Noise level
kW	HP	AMPS	dBA / 50 Hz	AMPS	dBA / 60 Hz	AMPS	dBA / 50 Hz	AMPS	dBA / 60 Hz
0.75 / 0.86	1.0 / 1.15	1.73	60	1.7	64	1.86	52	1.8	56
1.1 / 1.3	1.5 / 1.75	2.4	60	2.4	64	2.55	56	2.5	60
1.5 / 1.75	2.2 / 2.35	3.25	66	3.2	70	3.4	56	3.3	60
2.2 / 2.55	3.0 / 3.4	4.55	66	4.5	70	4.75	56	4.6	60
3.0 / 3.45	4.0 / 4.6	6.1	67	5.9	71	6.4	56	6.2	60
4.0 / 4.6	5.4 / 6.2	7.8	67	7.6	71	8.2	59	7.9	63
5.5 / 6.3	7.4 / 8.4	10.3	72	10.1	76	11.4	62	10.9	66
		Rated current 2 pole 50 Hz Δ 380–420 V		Rated current 2 pole 60 Hz Δ 440–480 V		Rated current 4 pole 50 Hz Δ 380–420 V		Rated current 4 pole 60 Hz Δ 440–480 V	
		AMPS		AMPS		AMPS		AMPS	
7.5 / 8.6	10.0 / 11.5	13.8	72	13.5	76	15.2	62	14.7	66
11.0 / 12.6	15.0 / 17.0	20.0	75	19.8	79	21.5	66	21.0	70
15.0 / 17.3	20.0 / 23.0	26.5	75	26.5	79	28.5	66	28.0	70
18.5 / 21.3	25.0 / 28.5	32.5	75	32.0	79	35.0	66	35.0	70
22.0 / 24.5	29.5 / 33.0	39.0	75	39.0	79	41.0	66	41.0	70
30.0 / 33.5	40.0 / 45.0	53.0	75	53.0	79	55.0	67	55.0	71
37.0 / 41.5	50.0 / 56.0	65.0	75	65.0	79	68.0	68	67.0	72
45.0 / 51.0	60.0 / 68.0	78.0	76	77.0	80	81.0	68	80.0	72
55.0 / 62.0	74.0 / 83.0	96.0	#	94.0	#				
75.0 / 84.0	101 / 113	128	#	130	#				
90.0 / 101	121 / 135	154	#	148	#				
110 / 123	147 / 165	190	#	184	#				

Noise level with +3 dBA tolerance for standard motors (Siemens).

For the # L<sub>pFA</sub> + L<sub>WA</sub> values, see Siemens catalog.

# Application Questionnaire



Please forward questionnaire via fax to USA + 248-926-9405  
via E-mail to Contact@BrinkmannPumps.com

Company ..... Date .....  
 Contact .....  
 Address .....  
 Telephone ..... Fax .....  
 E-mail .....

## Application

Type:	grinding	<input type="checkbox"/>	Materials:	cast	<input type="checkbox"/>	Specific abrasion:	CBN	<input type="checkbox"/>
	drilling	<input type="checkbox"/>		brass	<input type="checkbox"/>		diamond	<input type="checkbox"/>
	turning	<input type="checkbox"/>		Al (and Si	<input type="checkbox"/>		silicon carbide	<input type="checkbox"/>
	milling	<input type="checkbox"/>		content)	<input type="checkbox"/>		Aluminum Oxide	<input type="checkbox"/>
	other	.....		steel	<input type="checkbox"/>		other	.....
				other	.....			

## Pump

### Required performance data:

Flow rate gpm (l/min) .....  
 Pressure psi (bar) .....

### Dimensions:

Immersion depth .....

### Medium to be pumped

Coolants   
 Oils   
 Temperature °F (°C) .....  
 Viscosity SSU (mm<sup>2</sup>/s, cSt) .....  
 Specific weight kg/l .....  
 pH value .....  
 Air in medium  yes  no  
 Lubricity in medium  yes  no

### Filtration

Filtration μm .....  
 Filter type .....  
 ppm levels .....  
 percentage of solids by weight .....  
 mg/l (ppm) .....

### Power Supply

<input type="checkbox"/> 3 x 460 V, 60 Hz	<input type="checkbox"/> 3 x 400 V, 50 Hz	<input type="checkbox"/> 3 x 200-220 V, 60 Hz
<input type="checkbox"/> 3 x 230 V, 60 Hz	<input type="checkbox"/> 3 x 420 V, 50 Hz	other:
<input type="checkbox"/> 3 x 380 V, 60 Hz	<input type="checkbox"/> 3 x 380 V, 50 Hz	.....
<input type="checkbox"/> 3 x 400 V, 60 Hz	<input type="checkbox"/> 3 x 200 V, 50 Hz	.....
<input type="checkbox"/> 3 x 208 – 230 V, 60 Hz		.....

### Motor

Protective system IP 55 .....  
 Insulation class F .....  
 Ambient temperature °F (°C) .....  
 Variable frequency drive Hz from ..... to .....  
 On/off cycles per min .....  
 Harting connector  yes

### Other

.....  
 .....  
 .....  
 .....  
 .....

# Models and Applications for High Pressure Screw Pumps



Brinkmann screw pumps reach pressures of up to 2175 psi (150 bar) by utilizing highly wear resistant screw spindles and silicon carbide spindle housings.

Brinkmann high pressure screw pumps are designed for pumping filtered and lubricating fluids such as coolant oils and water-soluble coolants.

High pressure screw pumps are NOT designed for dry-running.

## Applications

Types of fluid  
oils  
cooling/ cutting oils  
coolants

Kinematic viscosity  
4.6...415 SSU ( 1...90 mm<sup>2</sup>/s)  
over 415 SSU (90 mm<sup>2</sup>/s) on request

Pumping temperature  
max. 175 °F (80 °C)

Recommended filtration levels  
General Machining (turning, milling, drilling) 50 µm  
Grinding and machining of aluminum (CBN etc.) 20 µm

Please see page 9 for further information.

## Materials of construction

Pressure and Suction Housing    Cast iron

Spindle Housing    Silicon Carbide, highly wear resistant and precision machined.

Screw spindles    Hardened tool steel; specially treated alloy; highly wear resistant and precision ground.

Seal    Viton®

Version	Model Index	Immersion Version					Inline Version for inline installation – horizontal or vertical with mechanical seal; positive suction pressure of up to 100 psi				
		BFS1	BFS2	TFS3	TFS4	TFS5	FFS1	FFS2	FFS3	FFS4	FFS5
Highly wear resistant SIC-bushing around labyrinth seal and coated driving male spindle	-KBT5	'	'	'	'	'	'	'	'	'	'
Specially coated outer female spindles	-N	'	'	'	'	'	'	'	'	'	'
Axial thrust compensation through radial slide bushing inside the suction cover	-A	'	'	'	'	'	'	'	'	'	'
Inline installation – vertical Mechanical seal and internal leakage return; positive suction pressure of up to 100 psi	-G	'	'	'	'	'	'	'	'	'	'
Positive suction pressure of 100 - 300 psi (With leakage port, see page 35)	-G4	'	'	'	'	'	'	'	'	'	'
Viscosity > 415 SSU (90 mm <sup>2</sup> /s)		'	'	'	'	'	'	'	'	'	'
4-pole motor	-4	'	'	'	'	'	'	'	'	'	'

- ' Optional
- ' Standard

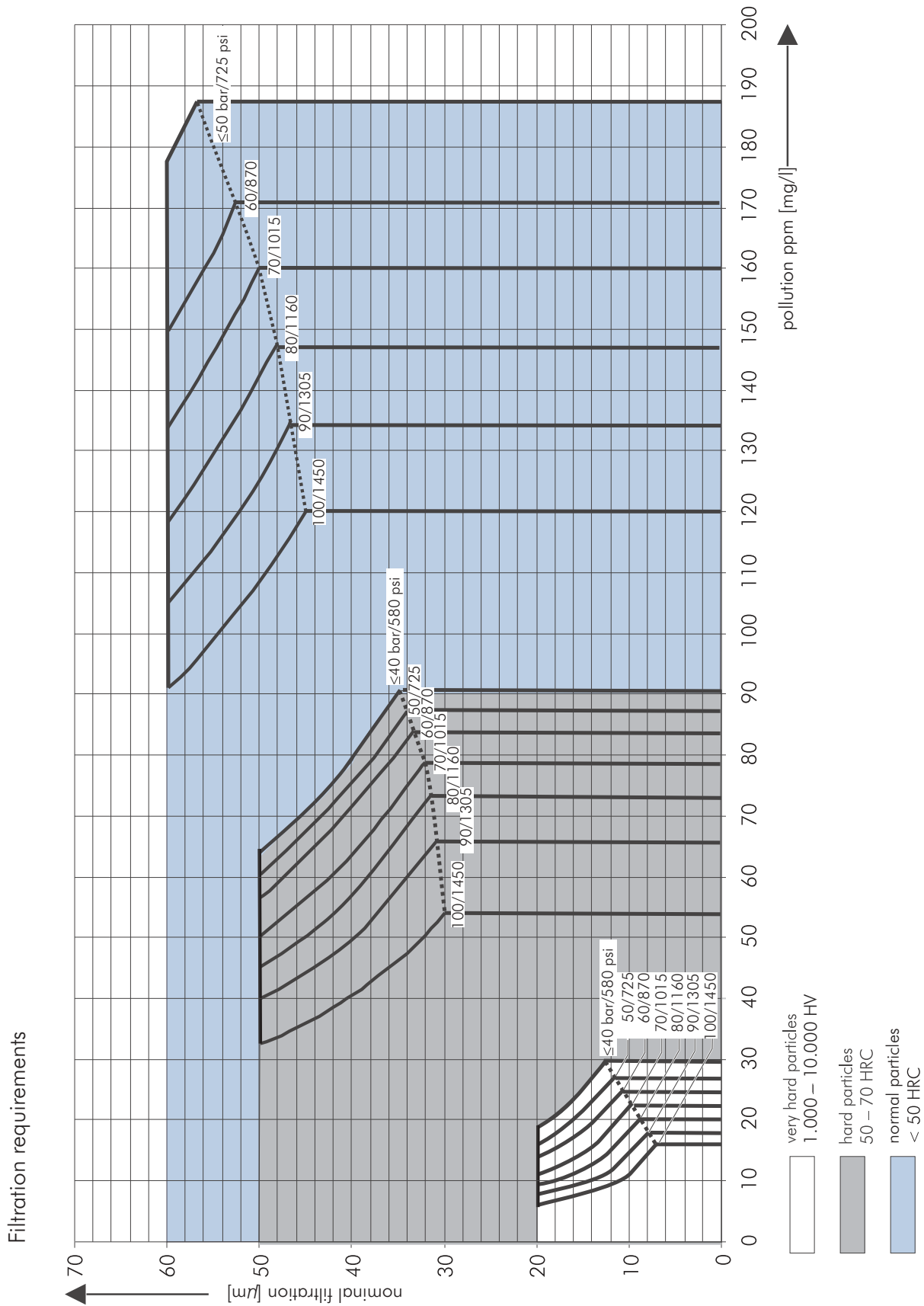
Ordertext  
e.g. **TFS364/ 50 – NPT NA**  
**BFS238S,40 – NPT KBT5**

Size  
Pressure  
Outlet thread  
Model index

Viton® is a registered trademark of DU Pont.



# Models and Applications for High Pressure Screw Pumps



# High Pressure Pumps

## BFS1, FFS1 / BFS2, FFS2

Screw spindles



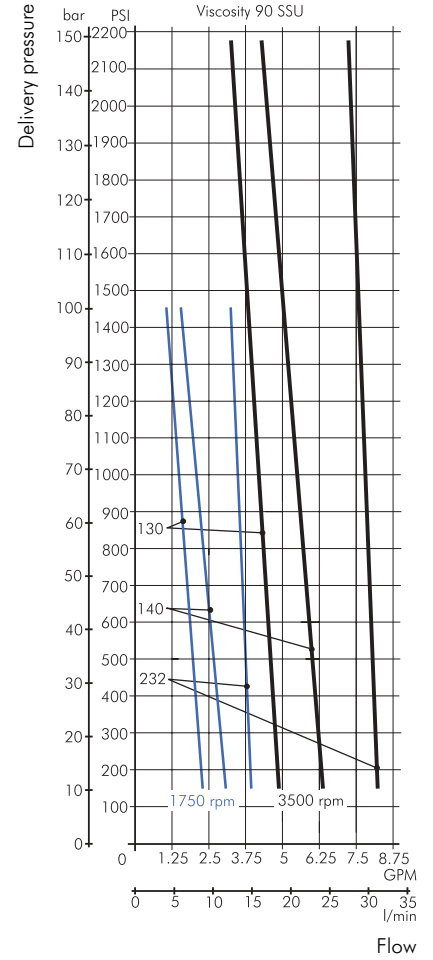
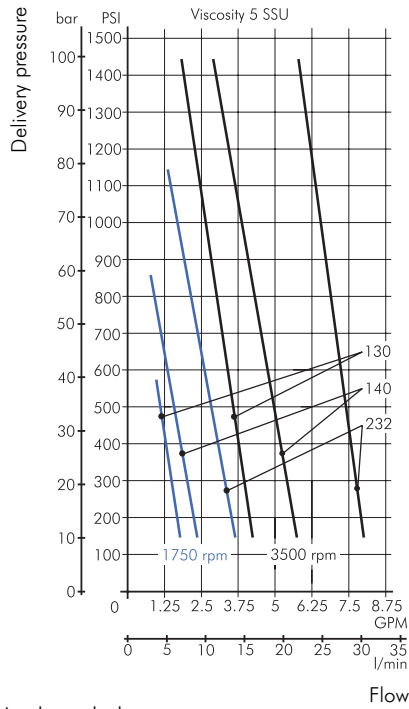
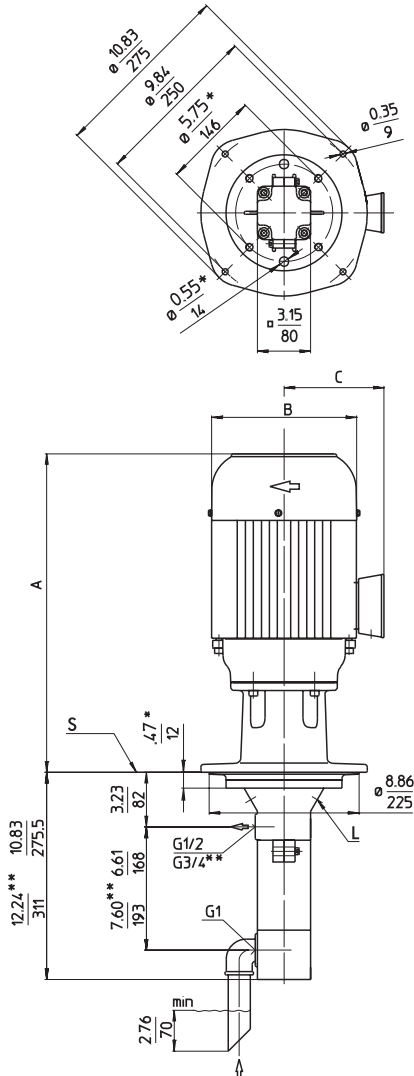
2-pole motor rotation speed 3500 RPM								4-pole motor rotation speed 1750 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor Brinkmann immersion version	Motor foot mounted version	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM					90 SSU GPM	5 SSU GPM			
<b>BFS 130S</b>			$Q_{Th}^{1)}$ 5.0	–	–	–	–	$Q_{Th}^{1)}$ 2.51	–	–	–	–
10	145	4.2	4.9	0.67	B 2.0	1.15	84	1.8	2.4	0.4	1.15	82
20	290	4.0	4.8	1.2	B 2.0	1.75	84	1.5	2.3	0.5	1.15	82
30	435	3.7	4.7	1.6	B 2.0	1.75	84	1.3	2.1	0.8	1.15	82
40	580	3.4	4.5	2.0	B 2.35	2.35	84	1.0	2.0	1.1	1.15	82
50	725	3.2	4.4	2.6	B 2.6	3.4	90	–	1.9	1.3	1.75	88
60	870	2.9	4.3	3.0	B 3.0	3.4	90	–	1.7	1.5	1.75	88
70	1015	2.6	4.2	3.4	B 3.4	3.4	90	–	1.6	1.7	1.75	88
80	1160	2.4	4.1	3.9	B 4.0	4.6	104	–	1.5	2.0	2.35	95
90	1305	2.1	4.0	4.3	B 5.1	4.6	112	–	1.3	2.1	2.35	95
100	1450	1.9	3.9	4.7	B 5.1	6.2	112	–	1.2	2.4	3.4	110
110	1595	–	3.8	5.2	B 6.2	6.2	128	–	–	–	–	–
120	1740	–	3.7	5.6	B 6.2	6.2	128	–	–	–	–	–
130	1885	–	3.5	6.0	B 6.2	6.2	128	–	–	–	–	–
140	2030	–	3.4	6.6	B 7.7	8.4	146	–	–	–	–	–
150	2175	–	3.3	7.0	B 7.7	8.4	146	–	–	–	–	–
<b>BFS 140S</b>			$Q_{Th}^{1)}$ 6.66	–	–	–	–	$Q_{Th}^{1)}$ 3.33	–	–	–	–
10	145	5.7	6.3	0.95	B 2.0	1.15	84	2.4	3.1	0.55	1.15	82
20	290	5.4	6.2	1.6	B 2.0	1.75	84	2.1	3.0	0.8	1.15	82
30	435	5.1	6.1	2.1	B 2.35	2.35	84	1.8	2.8	1.1	1.15	82
40	580	4.8	5.9	2.7	B 3.0	3.4	90	1.5	2.6	1.35	1.75	88
50	725	4.4	5.8	3.4	B 3.4	3.4	90	1.15	2.5	1.6	1.75	88
60	870	4.2	5.6	3.9	B 4.0	4.6	104	0.85	2.3	2.0	2.35	95
70	1015	3.8	5.5	4.4	B 5.1	4.6	112	–	2.2	2.3	2.35	95
80	1160	3.5	5.3	5.1	B 5.1	6.2	112	–	2.0	2.6	3.4	110
90	1305	3.2	5.2	5.6	B 6.2	6.2	128	–	1.8	2.8	3.4	110
100	1450	2.9	5.1	6.3	B 7.7	8.4	146	–	1.7	3.1	3.4	110
110	1595	–	4.9	6.8	B 7.7	8.4	146	–	–	–	–	–
120	1740	–	4.8	7.4	B 7.7	8.4	146	–	–	–	–	–
130	1885	–	4.6	8.0	B 8.4	8.4	146	–	–	–	–	–
140	2030	–	4.5	8.6	B 11.5	11.5	174	–	–	–	–	–
150	2175	–	4.3	9.3	B 11.5	11.5	174	–	–	–	–	–
<b>BFS 232S</b>			$Q_{Th}^{1)}$ 8.3	–	–	–	–	$Q_{Th}^{1)}$ 4.15	–	–	–	–
10	145	7.9	8.2	1.2	B 2.0	1.75	84	3.6	4.0	0.7	1.15	82
20	290	7.7	8.1	1.9	B 2.0	2.35	84	3.4	3.9	1.0	1.15	82
30	435	7.4	8.0	2.7	B 3.0	3.4	90	3.1	3.8	1.34	1.75	88
40	580	7.2	7.93	3.35	B 3.4	4.6	90	2.9	3.75	1.75	1.75	88
50	725	7.0	7.87	4.2	B 5.1	4.6	112	2.6	3.7	2.0	2.35	95
60	870	6.7	7.8	4.8	B 5.1	6.2	112	2.4	3.6	2.4	3.4	110
70	1015	6.5	7.7	5.6	B 6.2	6.2	128	2.2	3.5	2.8	3.4	110
80	1160	6.2	7.66	6.3	B 7.7	8.4	146	–	3.45	3.1	3.4	110
90	1305	6.0	7.6	7.1	B 7.7	8.4	146	–	3.4	3.5	4.6	121
100	1450	5.7	7.5	7.8	B 8.4	8.4	146	–	3.3	3.9	4.6	121
110	1595	–	7.45	8.6	B 11.5	11.5	174	–	–	–	–	–
120	1740	–	7.4	9.3	B 11.5	11.5	174	–	–	–	–	–
130	1885	–	7.3	10.1	B 11.5	11.5	174	–	–	–	–	–
140	2030	–	7.2	10.7	B 11.5	11.5	174	–	–	–	–	–
150	2175	–	7.1	11.5	B 11.5	17.0	174	–	–	–	–	–

<sup>1)</sup>  $Q_{Th}$ : Theoretical flow rate

Higher pressure for water soluble coolants (up to 2175 psi / 150 bar) upon request.

# Characteristics and dimensions BFS1, FFS1 / BFS2, FFS2

60 Hz



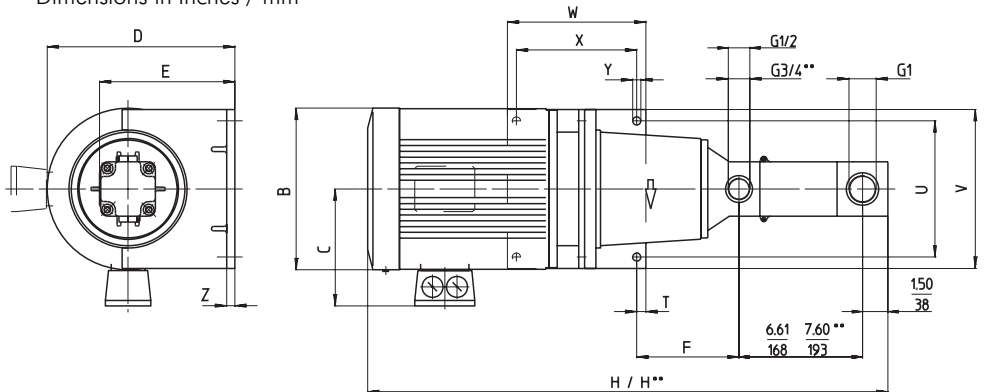
L = Leakage hole  
S = Mounting plate, please find the cut-out of mounting hole on page 35.  
Dimensions in Inches / mm

\*) Dimensions for 4-pole standard motor upon request

\*\*) Dimensions BFS 2

Motor 2 pole HP	A	B	C
	Inch	Inch	Inch
B 2.35	15.31	6.93	5.12
B 2.0 / 2.35	15.31	6.93	5.12
B 3.0 / 3.4	15.31	6.93	5.12
B 4.0	16.30	6.93	5.12
B 5.1 / 6.2	18.82	8.58	5.91
B 7.7 / 8.4	18.82	8.58	5.91
B 11.5	20.24	10.16	7.48

H\*\* = H + 1  
or see page 13



Motor 2 pole HP	Motor 4 pole HP	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
1.15 / 1.75	1.15	6.38	4.72	8.35	6.1	5.43	25.85	0.59	7.09	8.27	3.54	2.36	0.43	0.47
2.35 / 3.4	1.75 / 2.35	7.13	6.30	8.35	6.1	5.43	27.74	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.6	3.4 / 4.6	7.99	6.30	11.02	7.8	6.57	29.98	0.89	8.46	9.84	9.06	7.28	0.55	0.59
6.2	6.2	8.98	6.73	11.02	7.8	6.57	30.89	0.89	8.46	9.84	9.06	7.28	0.55	0.59
8.4 / 11.5	8.4	10.51	7.68	13.19	8.98	6.73	33.21	0.89	10.43	11.81	10.63	8.86	0.55	0.71

# High Pressure Pumps

## BFS2, FFS2

Screw spindles



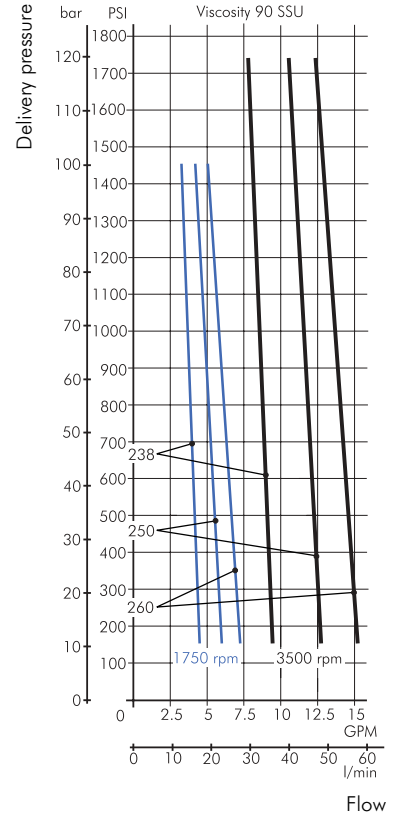
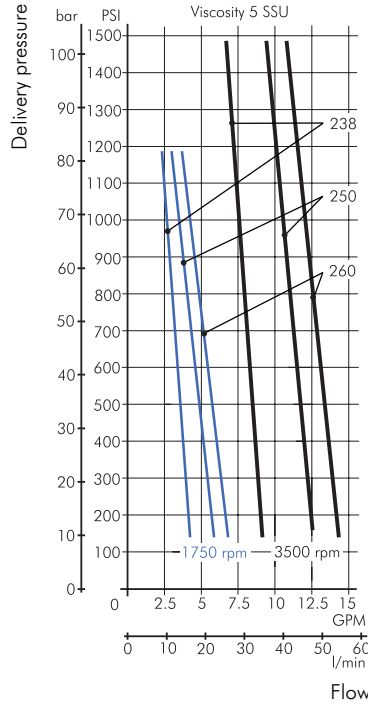
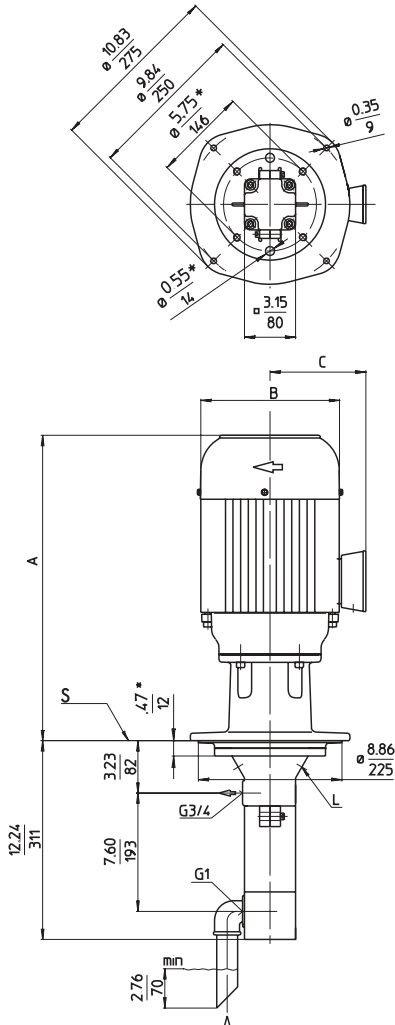
2-pole motor rotation speed 3500 RPM								4-pole motor rotation speed 1750 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor Brinkmann immersion version	Motor foot mounted version	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM					90 SSU GPM	5 SSU GPM			
<b>BFS 238S</b>			$Q_{Th}^{1)}$ 9.9	–	–	–	–	$Q_{Th}^{1)}$ 4.95	–	–	–	–
10	145	9.0	9.5	1.21	B 2.0	1.75	84	4.2	4.8	0.54	1.15	82
20	290	8.7	9.4	2.15	B 2.35	2.35	84	4.0	4.5	1.08	1.15	82
30	435	8.5	9.3	3.0	B 3.4	3.4	90	3.6	4.4	1.5	1.75	88
40	580	8.2	9.1	3.9	B 4.0	4.6	104	4.4	4.2	1.88	2.35	95
50	725	7.9	9.0	4.7	B 5.1	6.2	112	3.2	4.1	2.4	3.4	110
60	870	7.7	8.9	5.6	B 6.2	6.2	128	2.9	3.9	2.8	3.4	110
70	1015	7.4	8.9	6.4	B 7.7	8.4	146	2.6	3.8	3.2	3.4	110
80	1160	7.1	8.7	7.4	B 7.7	8.4	146	2.4	3.7	3.6	4.6	121
90	1305	6.9	8.5	8.2	B 8.4	8.4	146	–	3.7	4.2	4.6	121
100	1450	6.6	8.2	9.1	B 11.5	11.5	174	–	3.6	4.56	4.6	121
110	1595	–	8.1	9.9	B 11.5	11.5	174	–	–	–	–	–
120	1740	–	7.9	11.0	B 11.5	11.5	174	–	–	–	–	–
<b>BFS 250S</b>			$Q_{Th}^{1)}$ 13.0	–	–	–	–	$Q_{Th}^{1)}$ 6.5	–	–	–	–
10	145	12.2	12.7	1.6	B 2.35	2.35	84	5.8	6.2	0.8	1.15	82
20	290	11.8	12.4	2.7	B 3.0	3.4	90	5.3	6.1	1.34	1.75	88
30	435	11.4	12.4	3.9	B 4.0	4.6	104	4.9	5.9	1.88	2.35	95
40	580	11.1	12.2	5.1	B 5.1	6.2	112	4.6	5.8	2.5	3.4	110
50	725	10.8	12.2	6.2	B 7.7	8.4	146	4.2	5.7	3.1	3.4	110
60	870	10.6	12.0	7.4	B 7.7	8.4	146	3.8	5.5	3.6	4.6	121
70	1015	10.3	11.9	8.4	B 11.5	11.5	174	3.6	5.4	4.3	4.6	121
80	1160	9.9	11.6	9.7	B 11.5	11.5	174	3.2	5.3	4.8	6.2	137
90	1305	9.5	11.5	11.0	B 11.5	11.5	174	–	5.0	5.4	6.2	137
100	1450	9.3	11.5	12.0	B 15.5	17.0	212	–	4.8	6.0	6.2	137
110	1595	–	11.4	13.1	B 15.5	17.0	212	–	–	–	–	–
120	1740	–	11.2	14.1	B 15.5	17.0	212	–	–	–	–	–
<b>BFS 260S</b>			$Q_{Th}^{1)}$ 15.6	–	–	–	–	$Q_{Th}^{1)}$ 7.8	–	–	–	–
10	145	14.0	15.1	2.0	B 3.0	3.4	90	6.7	7.4	0.95	1.15	82
20	290	13.7	14.5	3.35	B 4.0	4.6	104	6.1	7.1	1.75	1.75	88
30	435	13.2	14.5	4.8	B 5.1	6.2	112	5.5	6.9	2.4	3.4	110
40	580	12.7	14.3	6.2	B 6.2	8.4	128	5.0	6.6	3.1	3.4	110
50	725	12.4	14.3	7.6	B 7.7	8.4	146	4.6	6.3	3.9	4.6	121
60	870	11.9	14.0	9.0	B 11.5	11.5	174	4.4	6.1	4.56	4.6	121
70	1015	11.4	13.7	10.5	B 11.5	11.5	174	4.0	5.8	5.2	6.2	137
80	1160	11.9	13.5	11.8	B 15.5	17.0	212	3.7	5.7	5.9	6.2	137
90	1305	10.8	13.2	13.3	B 15.5	17.0	212	–	5.5	6.7	8.4	154
100	1450	10.6	13.0	15.0	B 15.5	17.0	212	–	5.3	7.4	8.4	154
110	1595	–	12.7	16.2	–	17.0	212	–	–	–	–	–
120	1740	–	12.4	17.6	–	23.0	269	–	–	–	–	–

<sup>1)</sup>  $Q_{Th}$ : Theoretical flow rate

# Characteristics and dimensions

## BFS2, FFS2

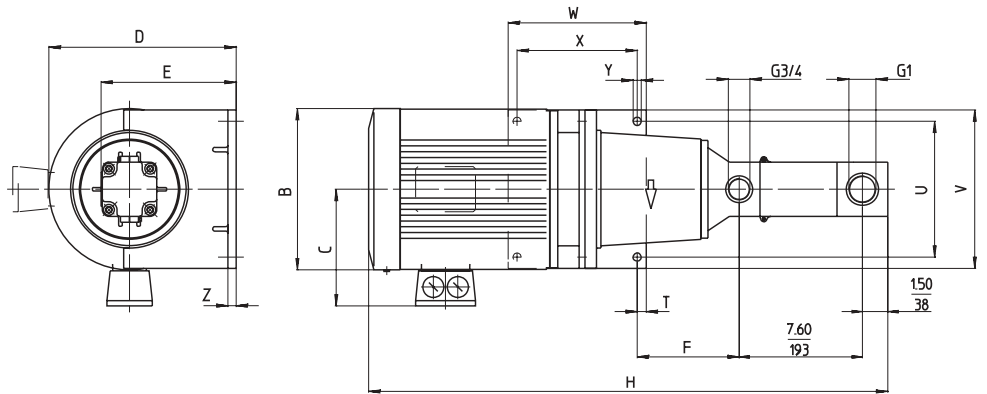
60 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

\*) Dimensions for 4-pole standard motor upon request

Motor 2 pole HP	A Inch	B Inch	C Inch
B 2.0 / 2.35	15.31	6.93	5.12
B 3.0 / 3.4	15.31	6.93	5.12
B 4.0	16.30	6.93	5.12
B 5.1 / 6.2	18.82	8.58	5.91
B 7.7 / 8.4	18.82	8.58	5.91
B 11.5	20.24	10.16	7.48
B 15.5	21.73	10.16	7.48



Motor 2 pole HP	Motor 4 pole HP	B Inch	C Inch	D Inch	E Inch	F Inch	H Inch	T Inch	U Inch	V Inch	W Inch	X Inch	Y Inch	Z Inch
1.15 / 1.75	1.15	6.38	4.72	8.35	6.1	5.43	26.85	0.59	7.09	8.27	3.54	2.36	0.43	0.47
2.35 / 3.4	1.75 / 2.35	7.13	6.30	8.35	6.1	5.43	28.74	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.6	3.4 / 4.6	7.99	6.30	11.02	7.8	6.57	30.98	0.89	8.46	9.84	9.06	7.28	0.55	0.59
6.2	6.2	8.98	6.73	11.02	7.8	6.57	31.89	0.89	8.46	9.84	9.06	7.28	0.55	0.59
8.4 / 11.5	8.4	10.51	7.68	13.19	8.98	6.73	34.21	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	11.5	10.51	7.68	13.19	8.98	6.73	35.71	0.89	10.43	11.81	10.63	8.86	0.55	0.71
17.0 / 23.0	17.0 / 23.0	12.6	9.17	16.14	10.94	7.20	39.61	0.79	11.81	13.78	12.01	10.43	0.71	0.71

# High Pressure Pumps

## TFS3, FFS3

Screw spindles



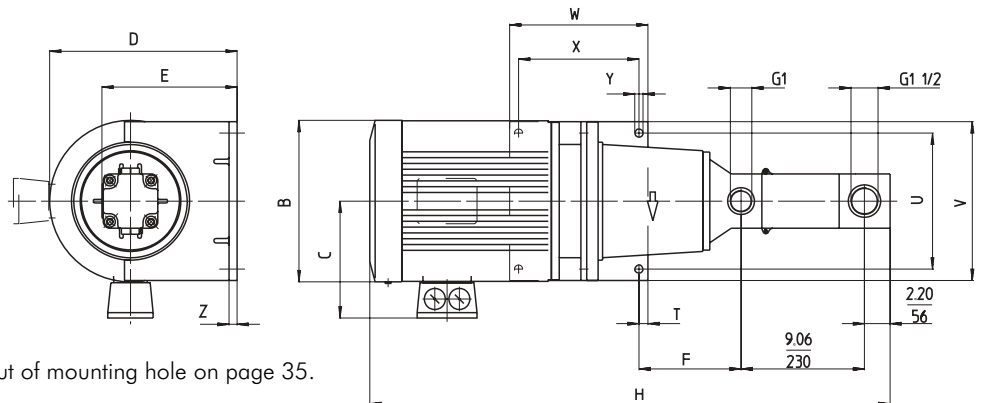
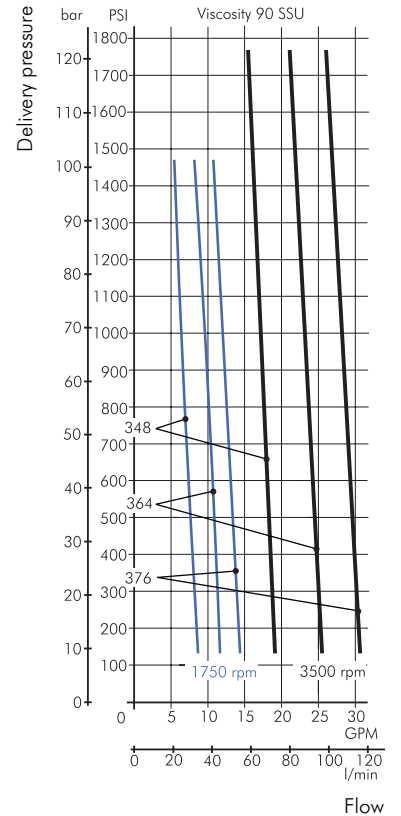
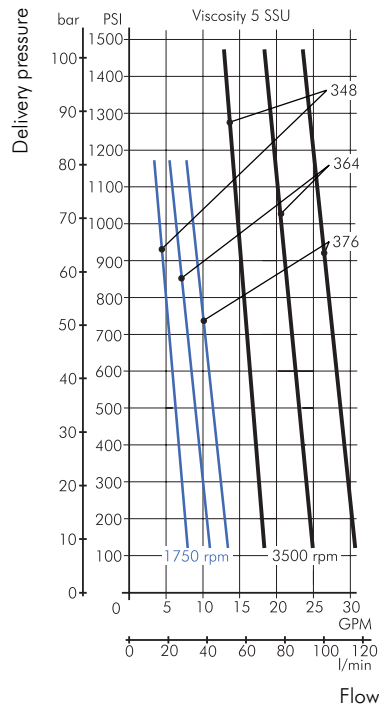
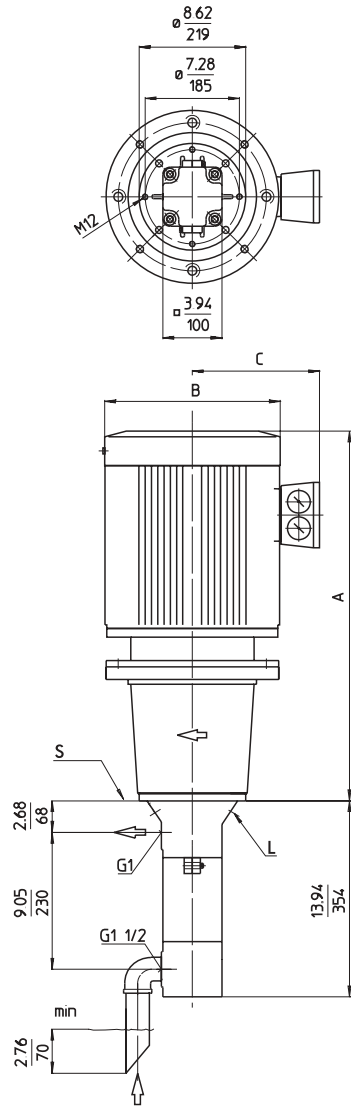
2-pole motor rotation speed 3500 RPM							4-pole motor rotation speed 1750 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	5 SSU GPM	90 SSU GPM				5 SSU GPM	90 SSU GPM			
<b>TFS 348/</b>	$Q_{Th}^{1)}$ 20.4	–	–	–	–	–	$Q_{Th}^{1)}$ 10.2	–	–	–	–
10	145	18.5	19.8	2.5	4.6	117	8.5	9.5	1.07	1.15	97
20	290	17.7	19.3	4.4	6.2	141	7.7	9.3	2.0	1.35	104
30	435	17.2	19.0	6.2	8.4	159	6.9	8.7	3.0	3.4	119
40	580	16.4	18.6	8.0	11.5	187	6.3	8.2	3.9	4.6	130
50	725	15.3	18.2	9.8	11.5	187	5.8	7.9	4.8	6.2	146
60	870	15.1	17.8	11.5	17.0	225	5.0	7.7	5.8	6.2	146
70	1015	14.5	17.4	13.4	17.0	225	4.8	7.4	6.7	8.4	163
80	1160	14.0	17.3	15.1	17.0	225	4.5	7.1	7.6	8.4	163
90	1305	13.7	17.2	17.0	23.0	245	4.2	6.9	8.6	11.5	196
100	1450	13.2	16.8	18.8	23.0	245	–	6.3	9.5	11.5	196
110	1595	–	16.4	20.5	23.0	245	–	–	–	–	–
120	1740	–	16.1	22.4	23.0	245	–	–	–	–	–
<b>TFS 364/</b>	$Q_{Th}^{1)}$ 27.3	–	–	–	–	–	$Q_{Th}^{1)}$ 13.6	–	–	–	–
10	145	24.8	25.9	3.5	6.2	141	11.4	12.4	1.5	1.75	97
20	290	23.8	25.4	5.8	8.4	159	10.3	11.6	2.7	3.4	119
30	435	22.7	24.6	8.2	11.5	187	9.5	11.4	3.9	4.6	130
40	580	22.2	24.3	10.6	17.0	225	8.7	11.1	5.1	6.2	146
50	725	21.7	24.0	13.0	17.0	225	7.9	10.6	6.3	8.4	163
60	870	20.6	23.5	15.3	17.0	225	7.1	10.3	7.5	8.4	163
70	1015	20.1	23.2	17.7	23.0	245	6.6	10.0	8.7	11.5	196
80	1160	19.6	23.0	20.0	23.0	245	6.1	9.6	9.9	11.5	196
90	1305	19.0	22.7	22.4	23.0	245	5.3	9.3	11.1	11.5	196
100	1450	18.5	22.5	24.8	28.5	289	–	9.0	12.3	17.0	243
110	1595	–	22.2	27.2	28.5	289	–	–	–	–	–
120	1740	–	21.9	29.5	33.0	353	–	–	–	–	–
<b>TFS 376/</b>	$Q_{Th}^{1)}$ 32.4	–	–	–	–	–	$Q_{Th}^{1)}$ 16.2	–	–	–	–
10	145	29.9	30.9	4.2	8.4	159	13.7	15.1	1.75	1.75	97
20	290	29.1	30.4	7.0	11.5	187	12.7	14.5	3.2	3.4	117
30	435	28.0	29.9	9.8	17.0	225	11.9	14.0	4.7	6.2	146
40	580	27.2	29.3	12.6	17.0	225	11.1	13.5	6.2	6.2	146
50	725	26.4	29.1	15.5	23.0	245	10.4	13.2	7.6	8.4	163
60	870	25.6	28.8	18.4	23.0	245	9.8	13.0	9.0	11.5	196
70	1015	25.1	28.5	21.2	23.0	245	9.3	12.7	10.5	11.5	196
80	1160	24.6	28.3	24.0	28.5	289	8.7	12.4	11.9	17.0	243
90	1305	24.0	28.0	26.8	28.5	289	8.2	12.2	13.4	17.0	243
100	1450	23.5	27.7	29.6	33.0	353	–	11.9	14.9	17.0	243
110	1595	–	27.5	32.4	33.0	353	–	–	–	–	–
120	1740	–	27.2	35.2	45.0	474	–	–	–	–	–

<sup>1)</sup>  $Q_{Th}$ : Theoretical flow rate

# Characteristics and dimensions

## TFS3, FFS3

60 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

Motor 2 pole HP	Motor 4 pole HP	A Inch	B Inch	C Inch	D Inch	E Inch	F Inch	H Inch	T Inch	U Inch	V Inch	W Inch	X Inch	Y Inch	Z Inch
3.4	1.75 / 2.35	17.48	7.13	6.30	8.35	6.50	5.43	31.50	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.6	3.4 / 4.6	19.72	7.99	6.30	11.02	8.19	7.05	33.74	0.89	8.46	9.84	9.06	7.28	0.55	0.59
6.2	6.2	20.63	8.98	6.73	11.02	8.19	7.05	34.65	0.89	8.46	9.84	9.06	7.28	0.55	0.59
8.4 / 11.5	8.4	22.95	10.51	7.68	13.19	9.37	7.20	36.97	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	11.5	31.57	10.51	7.68	13.19	9.37	7.20	38.46	0.89	10.43	11.81	10.63	8.86	0.55	0.71
17.0 / 23.0	17.0	29.45	12.6	9.17	16.14	11.34	8.78	43.46	0.79	11.81	13.78	12.01	10.43	0.71	0.71
28.5	23.0	31.02	12.6	9.17	16.14	11.34	8.78	45.04	0.79	11.81	13.78	12.01	10.43	0.71	0.71
33.0	28.5 / 33.0	34.33	14.09	10.20	16.14	11.34	8.78	48.35	0.79	11.81	13.78	12.01	10.43	0.71	0.71
45.0	45.0	36.61	15.67	12.05	15.75	9.96	18.62	50.63	0.98	12.52	15.67	13.98	12.01	0.98	1.34

# High Pressure Pumps

## TFS4, FFS4

Screw spindles



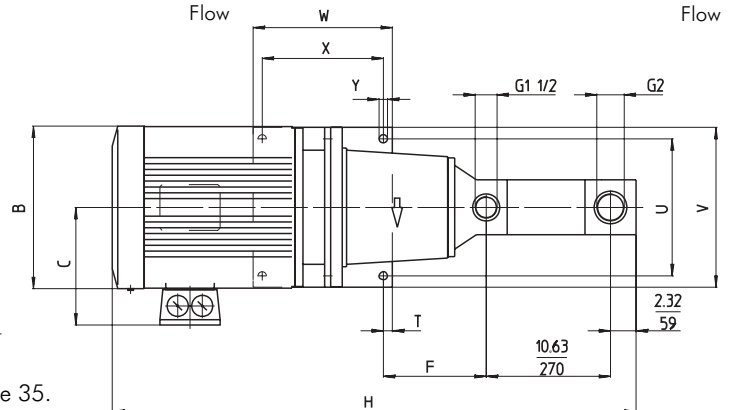
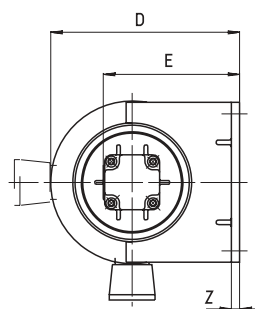
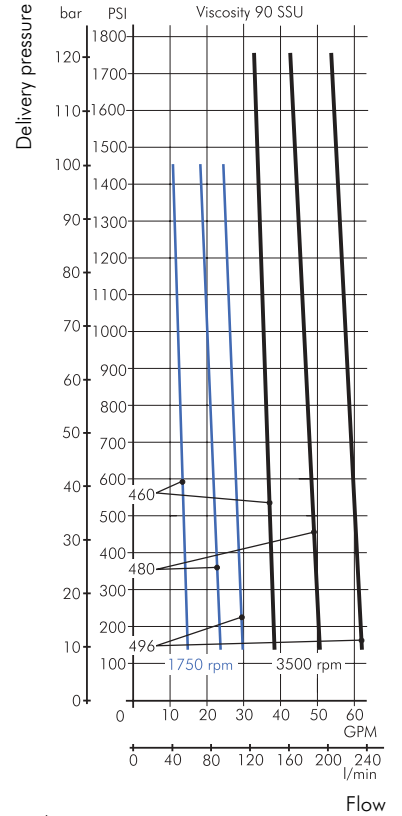
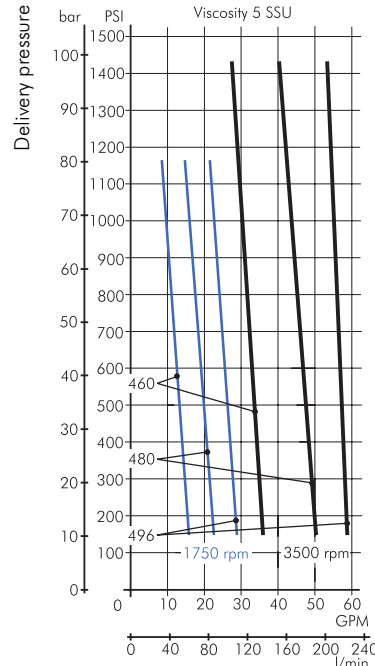
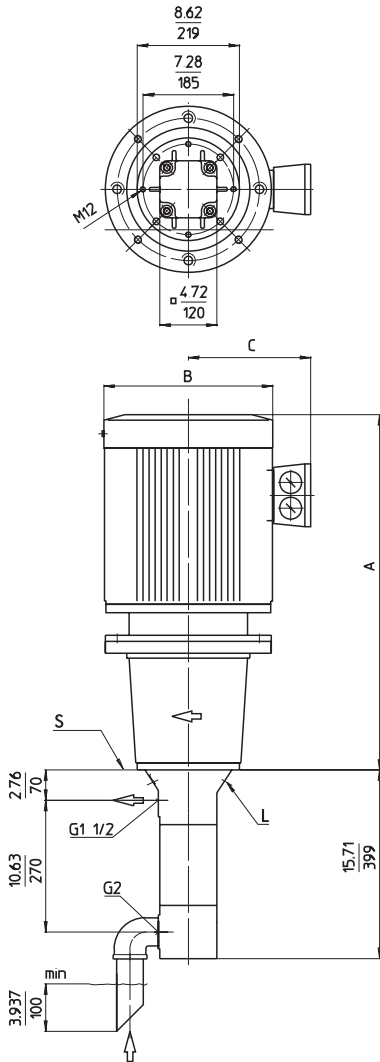
2-pole motor rotation speed 3500 RPM							4-pole motor rotation speed 1750 RPM				
Type / bar	Pressure max. <i>PSI</i>	Flow at viscosity		Power consumption  HP	Motor  HP	Weight  Lbs	Flow at viscosity		Power consumption  HP	Motor  HP	Weight  Lbs
		5 SSU GPM	90 SSU GPM				5 SSU GPM	90 SSU GPM			
<b>TFS 460/</b>		<b>Q<sub>Th</sub><sup>1)</sup> 40.0</b>		–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 20.0</b>		–	–	–
10	145	36.0	39.1	5.3	6.2	168	16.4	19.0	2.15	2.35	130
20	290	34.4	38.6	8.7	11.5	214	14.8	18.5	3.9	4.6	157
30	435	33.0	38.1	12.4	17.0	251	14.0	18.0	5.8	6.2	172
40	580	32.2	37.5	15.8	17.0	251	12.7	17.7	7.5	8.4	190
50	725	31.7	37.3	19.5	23.0	271	12.2	17.4	9.4	11.5	223
60	870	31.0	36.7	22.9	23.0	271	11.1	16.9	11.3	11.5	223
70	1015	30.1	36.5	26.5	28.5	315	10.0	16.6	13.0	17.0	269
80	1160	29.1	36.0	30.0	33.0	379	9.3	16.4	14.9	17.0	269
90	1305	28.5	35.7	33.6	45.0	505	–	16.1	16.6	17.0	269
100	1450	27.8	35.2	37.0	45.0	505	–	15.6	18.5	23.0	326
110	1595	–	34.9	41.0	45.0	505	–	–	–	–	–
120	1740	–	34.6	44.5	45.0	505	–	–	–	–	–
<b>TFS 480/</b>		<b>Q<sub>Th</sub><sup>1)</sup> 53.3</b>		–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 26.7</b>		–	–	–
10	145	49.4	50.5	7.2	8.4	185	23.0	25.1	2.8	3.4	146
20	290	47.8	49.4	12.0	17.0	251	21.1	24.0	5.2	6.2	172
30	435	46.2	48.6	16.8	17.0	251	19.8	23.3	7.7	8.4	190
40	580	45.2	47.6	21.5	23.0	271	18.8	22.5	10.0	11.5	223
50	725	44.1	46.8	26.5	28.5	315	17.7	21.7	12.5	17.0	269
60	870	43.3	46.0	31.0	33.0	379	16.9	20.9	14.9	17.0	269
70	1015	42.3	45.2	35.8	45.0	505	16.1	20.3	17.3	23.0	326
80	1160	41.5	44.4	40.5	45.0	505	15.3	19.6	19.7	23.0	326
90	1305	40.7	43.6	45.3	56.0	569	–	19.0	22.1	23.0	326
100	1450	40.2	42.8	50.0	56.0	569	–	18.5	24.5	28.5	364
110	1595	–	42.0	54.7	56.0	569	–	–	–	–	–
120	1740	–	41.5	59.5	68.0	626	–	–	–	–	–
<b>TFS 496/</b>		<b>Q<sub>Th</sub><sup>1)</sup> 64.0</b>		–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 32.0</b>		–	–	–
10	145	58.1	61.6	9.0	11.5	214	29.1	29.9	3.6	4.6	157
20	290	57.1	60.5	14.6	17.0	251	27.5	28.8	6.4	8.4	190
30	435	56.3	59.2	20.3	23.0	271	26.4	27.8	9.4	11.5	223
40	580	56.0	58.1	25.9	28.5	315	25.6	27.0	12.2	17.0	269
50	725	55.5	57.3	31.2	33.0	379	24.6	26.4	15.2	17.0	269
60	870	54.7	56.5	37.1	45.0	505	23.5	25.6	18.1	23.0	326
70	1015	54.2	55.8	42.8	45.0	505	22.7	25.1	21.0	23.0	326
80	1160	53.4	55.0	48.4	56.0	569	21.9	24.6	24.0	28.5	364
90	1305	52.8	54.7	54.0	56.0	569	–	24.3	27.0	28.5	364
100	1450	–	54.2	60.0	68.0	626	–	23.8	30.0	33.0	408
110	1595	–	53.6	65.3	68.0	626	–	–	–	–	–
120	1740	–	53.1	71.0	83.0	941	–	–	–	–	–

<sup>1)</sup> Q<sub>Th</sub>: Theoretical flow rate



# Characteristics and dimensions

## TFS4, FFS4



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

Motor 2 pole HP	Motor 4 pole HP	A	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
2.35 / 3.4	1.75 / 2.35	17.48	7.13	6.30	8.35	6.89	5.43	33.27	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.6	3.4 / 4.6	19.72	7.99	6.30	11.02	8.58	7.05	35.51	0.89	8.46	9.84	9.06	7.28	0.55	0.59
6.2	6.2	20.63	8.98	6.73	11.02	8.58	7.05	36.42	0.89	8.46	9.84	9.06	7.28	0.55	0.59
8.4 / 11.5	8.4	22.95	10.51	7.68	13.19	9.76	7.28	38.74	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	11.5	24.45	10.51	7.68	13.19	9.76	7.28	40.24	0.89	10.43	11.81	10.63	8.86	0.55	0.71
17.0 / 23.0	17.0	29.45	12.6	9.17	16.14	11.73	8.86	45.24	0.79	11.81	13.78	12.01	10.43	0.71	0.71
28.5	23.0	31.02	12.6	9.17	16.14	11.73	8.86	46.81	0.79	11.81	13.78	12.01	10.43	0.71	0.71
33.0	28.5	34.33	14.09	10.20	16.14	11.73	8.86	50.12	0.79	11.81	13.78	12.01	10.43	0.71	0.71
45.0 / 56.0	45.0	36.61	15.67	12.05	15.75	10.35	18.62	52.40	0.98	12.52	15.67	13.98	12.01	0.98	1.34
68.0	-	39.13	18.50	13.19	17.72	11.34	20.91	58.07	1.46	14.02	17.17	14.21	11.26	0.98	1.34
83.0	-	43.27	20.47	16.93	20.67	12.32	22.05	62.20	1.18	15.98	19.92	16.10	13.74	1.18	1.65

# High Pressure Pumps

## TFS5, FFS5

Screw spindles



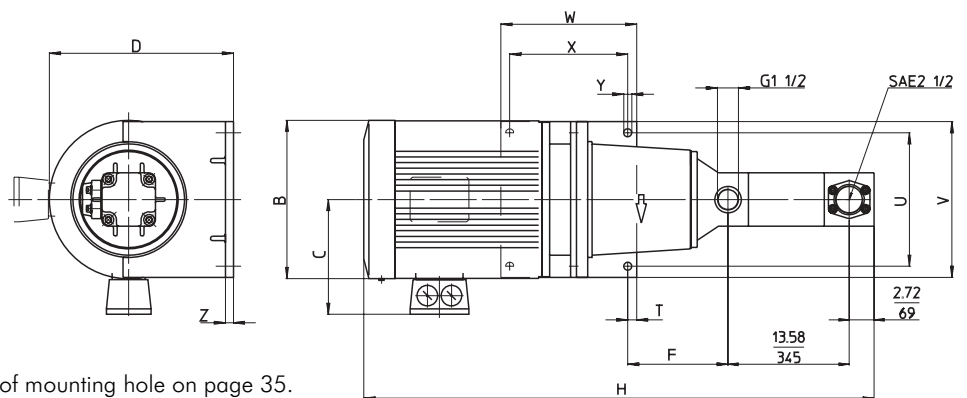
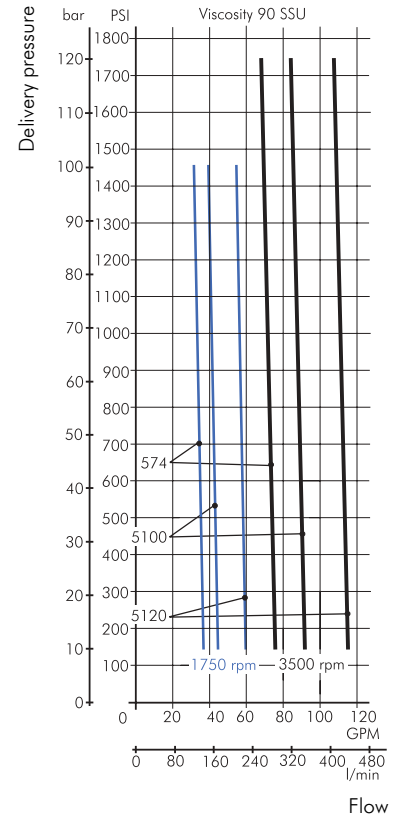
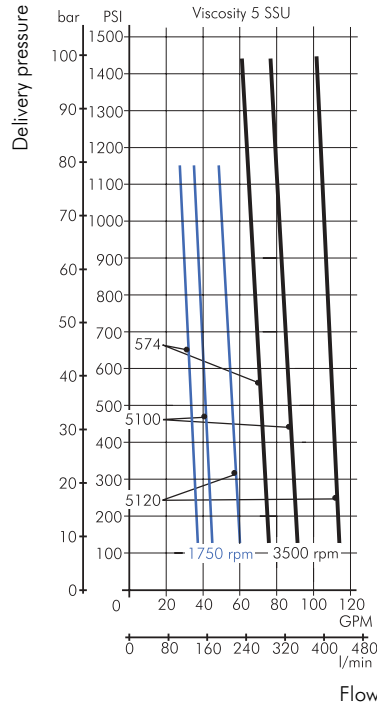
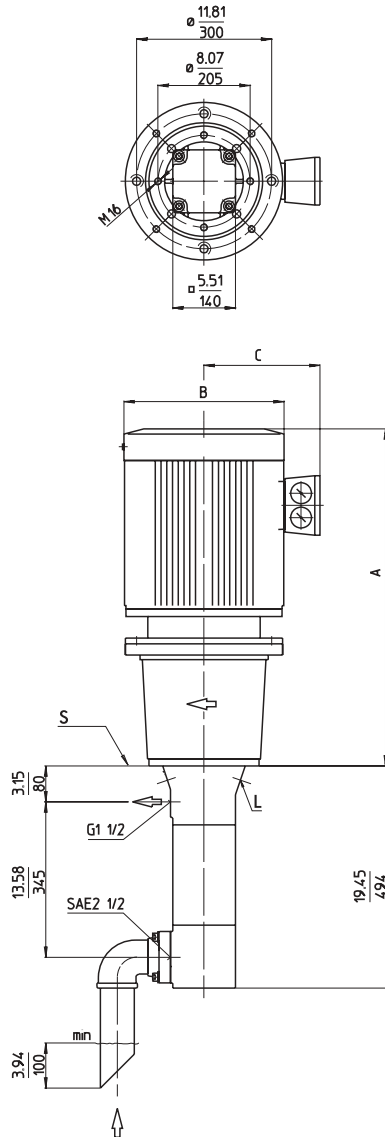
2-pole motor rotation speed 3500 RPM							4-pole motor rotation speed 1750 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM				90 SSU GPM	5 SSU GPM			
<b>TFS 574/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 77.0</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 38.5</b>	–	–	–	–
10	145	73.5	75.5	10.9	11.5	276	35.7	37.0	5.0	6.2	234
20	290	71.5	74.0	17.6	23.0	333	33.6	36.0	8.4	8.4	251
30	435	70.0	73.0	24.3	28.5	377	32.0	35.0	11.8	17.0	331
40	580	68.0	72.0	31.0	33.0	441	30.4	34.3	15.1	17.0	331
50	725	66.5	71.5	37.7	45.0	567	29.0	33.8	18.6	23.0	388
60	870	65.0	70.5	44.2	45.0	567	28.0	33.0	22.0	23.0	388
70	1015	64.0	70.0	51.0	56.0	631	27.0	32.5	25.3	28.5	426
80	1160	62.5	69.0	57.6	68.0	677	26.2	32.2	28.7	33.0	470
90	1305	61.0	68.0	64.3	68.0	677	–	31.7	32.2	33.0	470
100	1450	60.0	67.5	71.0	83.0	1001	–	31.4	35.5	45.0	494
110	1595	–	67.0	77.7	83.0	1001	–	–	–	–	–
120	1740	–	66.5	84.3	113	1276	–	–	–	–	–
<b>TFS 5100/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 104.0</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 52.0</b>	–	–	–	–
10	145	99.5	101	14.7	17.0	313	48.0	49.7	6.8	8.4	251
20	290	97.0	99.5	23.7	28.5	377	45.7	48.5	11.4	11.5	285
30	435	95.0	98.0	32.8	33.0	441	43.5	47.0	16.0	17.0	331
40	580	92.5	97.0	42.0	45.0	567	41.7	46.0	20.5	23.0	388
50	725	91.0	95.5	51.0	56.0	631	40.0	45.0	25.0	28.5	425
60	870	89.0	94.0	60.0	68.0	677	39.0	44.5	29.6	33.0	470
70	1015	87.0	93.0	69.0	83.0	1001	38.0	44.0	34.2	45.0	494
80	1160	86.0	92.0	78.0	83.0	1001	37.5	43.3	39.0	45.0	494
90	1305	84.5	91.0	87.0	113	1276	–	43.0	43.5	45.0	494
100	1450	83.5	90.0	96.0	113	1276	–	42.8	48.0	56.0	604
110	1595	–	89.5	105	113	1276	–	–	–	–	–
120	1740	–	89.0	114	135	1365	–	–	–	–	–
<b>TFS 5120/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 125.0</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 62.5</b>	–	–	–	–
10	145	119	121	17.7	23.0	333	58.0	59.7	8.2	8.4	251
20	290	117	120	28.5	28.5	377	55.5	58.5	13.7	17.0	331
30	435	114.5	118	39.3	45.0	567	53.5	57.0	19.2	23.0	388
40	580	112	117	50.0	56.0	631	51.5	56.0	24.7	28.5	426
50	725	110	115.5	61.0	68.0	677	49.5	55.0	30.2	33.0	470
60	870	108	114	72.0	83.0	1001	47.5	54.0	35.6	45.0	494
70	1015	106	113	83.0	83.0	1001	45.7	53.5	41.0	45.0	494
80	1160	104	111	93.5	113	1276	44.0	52.6	46.6	56.0	604
90	1305	101.5	110	104	113	1276	–	52.3	52.0	56.0	604
100	1450	99.5	108.5	115	135	1365	–	51.8	57.5	68.0	660
110	1595	–	107.5	126	135	1365	–	–	–	–	–
120	1740	–	106	137	165	1764	–	–	–	–	–

<sup>1)</sup> Q<sub>Th</sub>: Theoretical flow rate

# Characteristics and dimensions

## TFS5, FFS5

60 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

Motor 2 pole HP	Motor 4 pole HP	A	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
-	6.2	20.63	8.98	6.73	11.02	8.58	7.05	37.48	0.89	8.46	9.84	9.06	7.28	0.55	0.59
8.4 / 11.5	8.4	22.95	10.51	7.68	13.19	9.76	7.28	42.36	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	11.5	24.45	10.51	7.68	13.19	9.76	7.28	43.86	0.89	10.43	11.81	10.63	8.86	0.55	0.71
17.0 / 23.0	17.0	29.45	12.6	9.17	16.14	11.73	8.86	48.98	0.79	11.81	13.78	12.01	10.43	0.71	0.71
28.5	23.0	31.02	12.6	9.17	16.14	11.73	8.86	50.55	0.79	11.81	13.78	12.01	10.43	0.71	0.71
33.0	28.5	34.33	14.09	10.20	16.14	11.73	8.86	53.86	0.79	11.81	13.78	12.01	10.43	0.71	0.71
45.0 / 56.0	45.0	36.61	15.67	12.05	15.75	10.35	18.62	56.14	0.98	12.52	15.67	13.98	12.01	0.98	1.34
68.0	56.0	39.13	18.50	13.19	17.72	11.34	20.91	58.66	1.46	14.02	17.17	14.21	11.26	0.98	1.34
83.0	68.0	43.27	20.47	16.93	20.67	12.32	22.05	62.80	1.18	15.98	19.92	16.10	13.74	1.18	1.65
113 / 135	-	47.01	22.64	17.91	21.85	11.02	23.90	66.61	1.18	17.99	21.93	18.86	16.50	1.18	1.65
165	-	52.24	25.39	20.28	25.39	14.88	26.02	71.85	1.38	20.0	24.72	20.75	17.99	1.38	2.05

# High Pressure Pumps

## BFS1, FFS1 / BFS2, FFS2



Screw spindles

50 Hz

2-pole motor rotation speed 2900 RPM								4-pole motor rotation speed 1450 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor Brinkmann immersion version	Motor foot mounted version	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM					90 SSU GPM	5 SSU GPM			
<b>BFS 130/</b>			$Q_{Th}^{1)}$ 4.1	–	–	–	–	$Q_{Th}^{1)}$ 2.1	–	–	–	–
10	145	3.4	4.0	0.67	B 1.75	1.0	84	1.3	2.0	0.27	1.0	77
20	290	3.1	3.8	1.1	B 1.75	1.5	84	1.0	1.8	0.54	1.0	77
30	435	2.8	3.7	1.34	B 1.75	1.5	84	0.6	1.6	0.67	1.0	77
40	580	2.4	3.6	1.75	B 1.75	2.0	84	0.4	1.5	0.94	1.0	77
50	725	2.2	3.4	2.15	B 2.3	3.0	90	–	1.3	1.1	1.5	84
60	870	1.9	3.3	2.55	B 2.5	3.0	90	–	1.2	1.21	1.5	84
70	1015	1.6	3.2	2.8	B 3.0	3.0	90	–	1.0	1.47	1.5	84
80	1160	1.4	3.1	3.2	B 3.5	4.0	104	–	0.9	1.6	2.0	90
90	1305	1.2	3.0	3.6	B 4.4	4.0	112	–	0.8	1.74	2.0	90
100	1450	1.0	2.9	3.9	B 4.4	4.0	112	–	0.7	2.0	2.0	90
110	1595	–	2.7	4.3	B 4.4	5.4	112	–	–	–	–	–
120	1740	–	2.6	4.7	B 5.4	5.4	128	–	–	–	–	–
130	1885	–	2.55	5.1	B 5.4	5.4	128	–	–	–	–	–
140	2030	–	2.5	5.4	B 5.4	5.4	128	–	–	–	–	–
150	2175	–	2.4	5.8	B 6.7	7.4	146	–	–	–	–	–
<b>BFS 140/</b>			$Q_{Th}^{1)}$ 5.5	–	–	–	–	$Q_{Th}^{1)}$ 2.75	–	–	–	–
10	145	4.5	5.2	0.94	B 1.75	1.0	84	2.0	2.5	0.4	1.0	77
20	290	4.2	5.0	1.34	B 1.75	1.5	84	1.5	2.3	0.67	1.0	77
30	435	3.9	4.9	1.9	B 2.0	2.0	90	1.1	2.1	1.21	1.5	84
40	580	3.6	4.7	2.3	B 2.5	3.0	90	0.74	1.9	1.21	1.5	84
50	725	3.3	4.6	2.8	B 3.0	3.0	90	0.5	1.8	1.47	1.5	84
60	870	3.0	4.4	3.35	B 3.5	4.0	90	–	1.6	1.74	2.0	90
70	1015	2.7	4.3	3.75	B 4.4	4.0	112	–	1.5	1.9	2.0	90
80	1160	2.4	4.1	4.3	B 4.4	5.4	112	–	1.3	2.1	3.0	106
90	1305	2.1	4.0	4.7	B 5.4	5.4	128	–	1.2	2.4	3.0	106
100	1450	1.8	3.9	5.2	B 5.4	5.4	128	–	1.1	2.7	3.0	106
110	1595	–	3.7	5.8	B 6.7	7.4	146	–	–	–	–	–
120	1740	–	3.6	6.2	B 6.7	7.4	146	–	–	–	–	–
130	1885	–	3.4	6.7	B 6.7	7.4	146	–	–	–	–	–
140	2030	–	3.3	7.1	B 7.4	7.4	146	–	–	–	–	–
150	2175	–	3.1	7.7	B 10.0	10.0	174	–	–	–	–	–
<b>BFS 232/</b>			$Q_{Th}^{1)}$ 6.9	–	–	–	–	$Q_{Th}^{1)}$ 3.4	–	–	–	–
10	145	6.5	6.7	1.1	B 1.75	1.5	84	3.0	3.25	0.67	1.0	77
20	290	6.2	6.6	1.75	B 1.75	2.0	84	2.7	3.1	0.94	1.0	77
30	435	6.0	6.5	2.3	B 2.5	3.0	90	2.4	3.0	1.21	1.5	84
40	580	5.7	6.4	3.0	B 3.5	4.0	104	2.1	2.95	1.61	2.0	90
50	725	5.5	6.35	3.6	B 4.4	4.0	112	1.9	2.85	1.9	2.0	90
60	870	5.2	6.25	4.2	B 4.4	5.4	112	1.6	2.8	2.1	3.0	106
70	1015	4.8	6.2	4.8	B 5.4	5.4	128	1.4	2.7	2.55	3.0	106
80	1160	4.5	6.1	5.4	B 5.4	5.4	128	1.2	2.6	2.8	3.0	106
90	1305	4.3	6.0	6.0	B 6.7	7.4	146	–	2.5	3.1	4.0	117
100	1450	4.1	5.9	6.6	B 6.7	7.4	146	–	2.45	3.35	4.0	117
110	1595	–	5.8	7.3	B 7.4	7.4	146	–	–	–	–	–
120	1740	–	5.7	7.8	B 10.0	10.0	174	–	–	–	–	–
130	1885	–	5.6	8.5	B 10.0	10.0	174	–	–	–	–	–
140	2030	–	5.5	9.0	B 10.0	10.0	174	–	–	–	–	–
150	2175	–	5.4	9.7	B 10.0	10.0	174	–	–	–	–	–

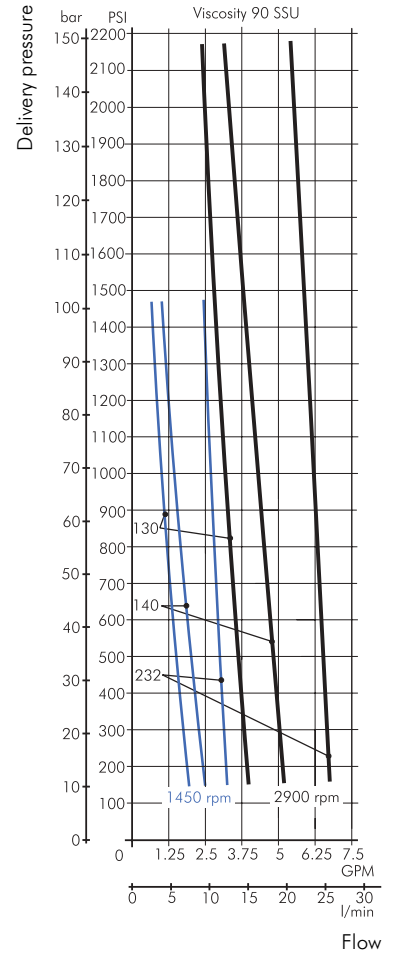
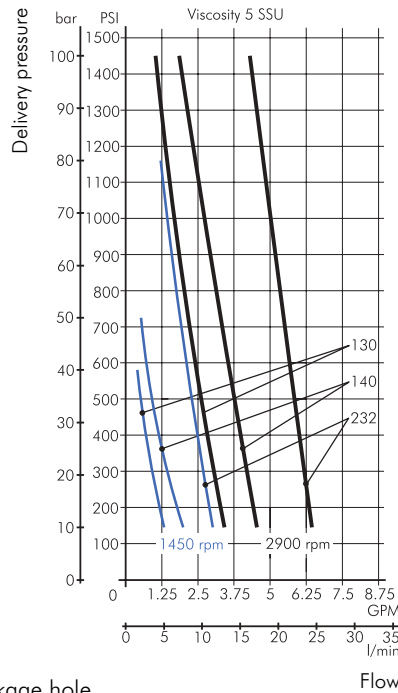
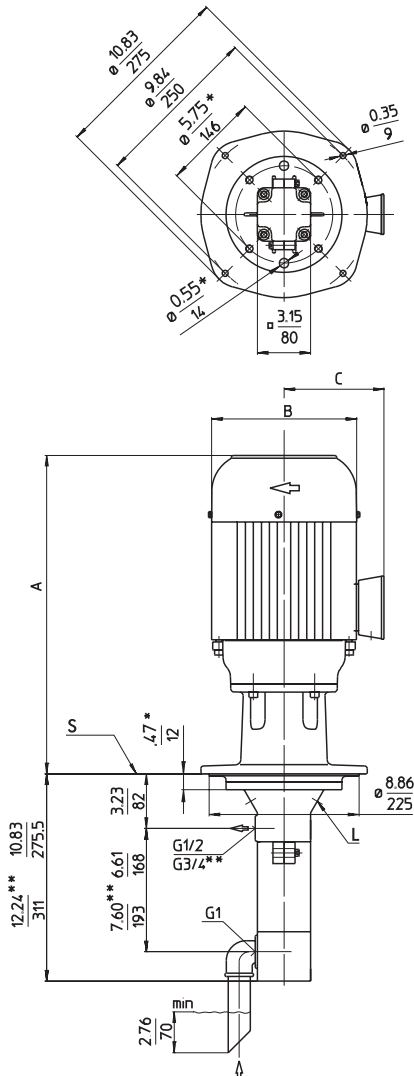
<sup>1)</sup>  $Q_{Th}$ : Theoretical flow rate

Higher pressure for water soluble coolants (up to 2175 psi / 150 bar) upon request.

# Characteristics and dimensions

## BFS1, FFS1 / BFS2, FFS2

50 Hz

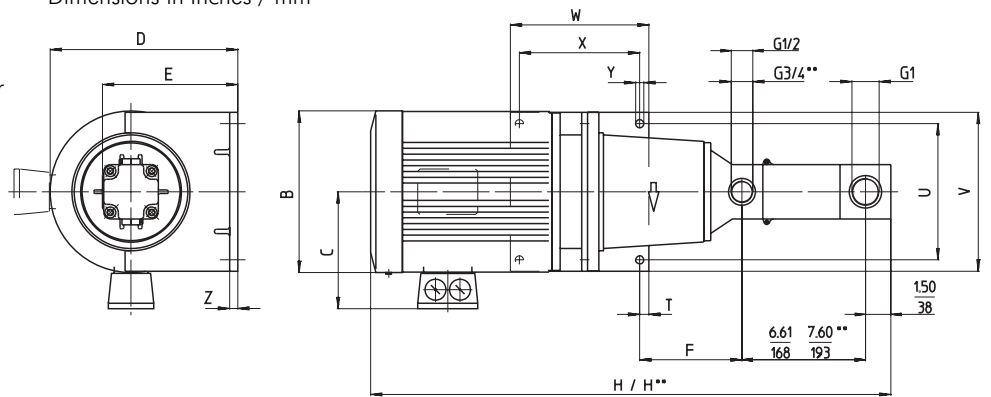


L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

\*) Dimensions for 4-pole standard motor upon request  
 \*\*) Dimensions for BFS2

Motor HP	A	B	C
	Inch	Inch	Inch
B 1.75 / 2.3	15.31	6.93	5.12
B 2.5 / 3.0	15.31	6.93	5.12
B 3.5	16.30	6.93	5.12
B 4.4 / 5.4	18.82	8.58	5.91
B 6.7 / 7.4	18.82	8.58	5.91
B 10.0	20.24	10.16	7.48

H\*\* = H + 1  
 or see page 23



Motor HP	Motor HP	B	C	D	E	F	H	T	U	V	W	X	Y	Z
2 pole	4 pole	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
1.0 / 1.5	1.0	6.38	4.72	8.35	6.1	5.43	25.85	0.59	7.09	8.27	3.54	2.36	0.43	0.47
2.0 / 3.0	1.5 / 2.0	7.13	6.30	8.35	6.1	5.43	27.74	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.0	3.0 / 4.0	7.99	6.30	11.02	7.8	6.57	29.98	0.89	8.46	9.84	9.06	7.28	0.55	0.59
5.4	5.4	8.98	6.73	11.02	7.8	6.57	30.89	0.89	8.46	9.84	9.06	7.28	0.55	0.59
7.4 / 10.0	7.4	10.51	7.68	13.19	8.98	6.73	33.21	0.89	10.43	11.81	10.63	8.86	0.55	0.71

# High Pressure Pumps

## BFS2, FFS2



Screw spindles

50 Hz

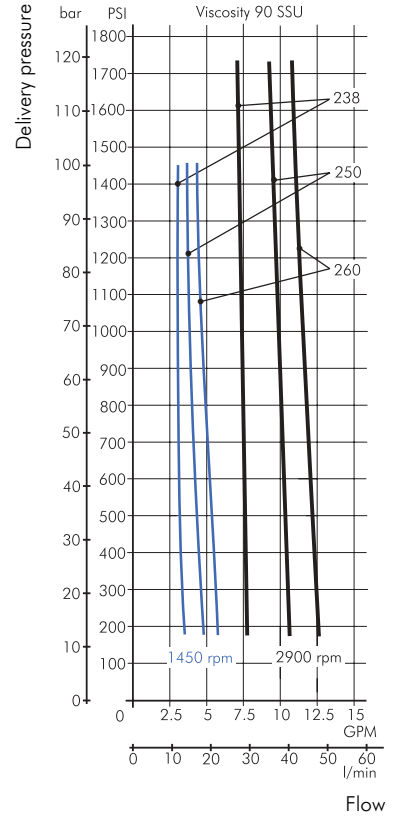
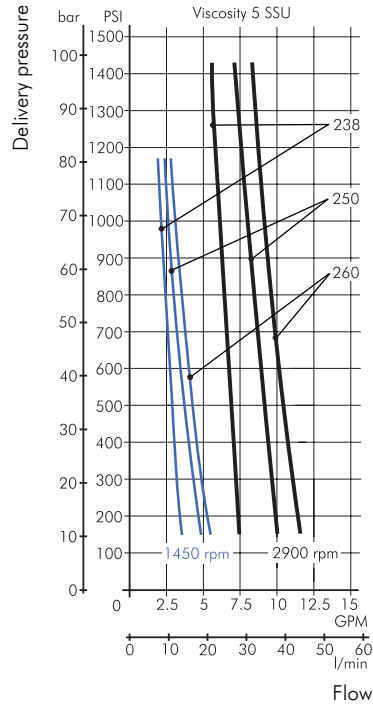
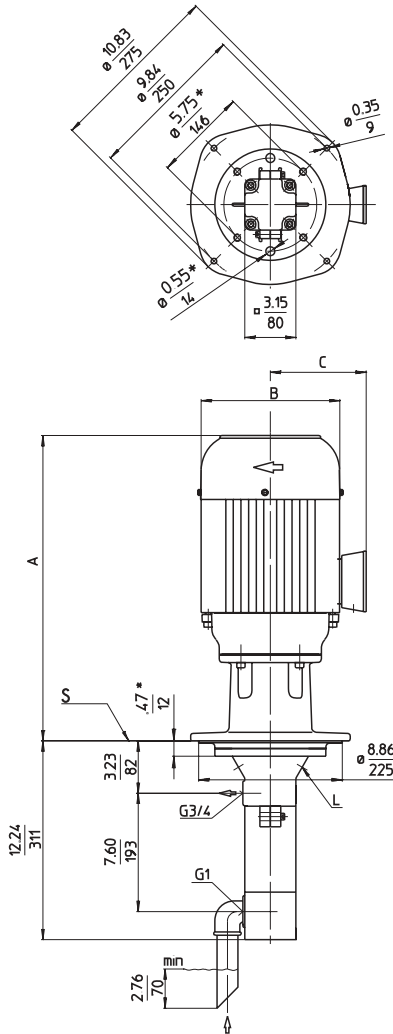
2-pole motor rotation speed 2900 RPM								4-pole motor rotation speed 1450 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor Brinkmann immersion version	Motor foot mounted version	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM					90 SSU GPM	5 SSU GPM			
<b>BFS 238/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 8.2</b>	–	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 4.1</b>	–	–	–	–
10	145	7.4	8.0	0.95	B 1.75	1.0	84	3.4	4.0	0.54	1.0	77
20	290	7.1	7.8	1.25	B 1.75	2.0	84	3.0	3.7	0.8	1.0	77
30	435	6.9	7.7	2.4	B 2.5	3.0	90	2.8	3.5	1.21	1.5	84
40	580	6.6	7.5	3.2	B 3.5	4.0	104	2.5	3.3	1.61	2.0	90
50	725	6.3	7.4	3.9	B 4.4	4.0	112	2.3	3.2	2.0	2.0	90
60	870	6.1	7.3	4.7	B 5.4	5.4	128	2.0	3.1	2.4	3.0	106
70	1015	5.8	7.1	5.4	B 5.4	5.4	128	1.7	3.0	2.7	3.0	106
80	1160	5.6	6.9	6.0	B 6.7	7.4	146	1.5	2.9	3.1	4.0	117
90	1305	5.3	6.7	6.8	B 7.4	7.4	146	–	2.8	3.5	4.0	117
100	1450	5.2	6.6	7.5	B 10.0	10.0	174	–	2.8	3.9	4.0	117
110	1595	–	6.5	8.3	B 10.0	10.0	174	–	–	–	–	–
120	1740	–	6.3	9.1	B 10.0	10.0	174	–	–	–	–	–
<b>BFS 250/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 10.8</b>	–	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 5.4</b>	–	–	–	–
10	145	10.0	10.6	1.2	B 1.75	1.5	88	4.8	5.2	0.67	1.0	77
20	290	9.6	10.3	2.1	B 2.3	3.0	90	4.3	4.9	1.07	1.5	84
30	435	9.3	10.2	3.1	B 3.5	4.0	104	3.7	4.6	1.6	2.0	90
40	580	8.9	9.9	4.2	B 4.4	5.4	128	3.3	4.4	2.15	3.0	106
50	725	8.5	9.8	5.1	B 5.4	5.4	128	2.9	4.1	2.5	3.0	106
60	870	8.1	9.5	6.0	B 6.7	7.4	146	2.5	3.8	3.1	4.0	117
70	1015	7.7	9.3	7.0	B 7.4	7.4	146	2.2	3.7	3.5	4.0	117
80	1160	7.4	9.1	7.9	B 10.0	10.0	174	2.0	3.6	4.0	4.0	117
90	1305	7.0	9.0	8.8	B 10.0	10.0	174	–	3.4	4.4	5.4	132
100	1450	6.7	8.7	9.9	B 10.0	10.0	174	–	3.3	4.95	5.4	132
110	1595	–	8.5	10.9	B 13.4	15.0	212	–	–	–	–	–
120	1740	–	8.2	11.8	B 13.4	15.0	212	–	–	–	–	–
<b>BFS 260/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 12.9</b>	–	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 6.5</b>	–	–	–	–
10	145	11.6	12.4	1.5	B 2.0	2.0	84	5.4	6.1	0.8	1.0	77
20	290	11.1	12.2	2.7	B 3.0	4.0	90	4.8	5.8	1.34	1.5	84
30	435	10.6	11.9	3.9	B 4.4	4.0	104	4.2	5.6	1.9	2.0	90
40	580	10.1	11.6	5.1	B 5.4	5.4	128	3.8	5.3	2.5	3.0	106
50	725	9.6	11.4	6.2	B 6.7	7.4	146	3.4	5.0	3.1	4.0	117
60	870	9.3	11.1	7.4	B 10.0	10.0	174	3.0	4.8	3.8	4.0	117
70	1015	8.9	10.8	8.6	B 10.0	10.0	174	2.6	4.5	4.3	5.4	132
80	1160	8.5	10.6	9.8	B 10.0	15.0	174	2.4	4.2	5.0	5.4	132
90	1305	8.2	10.3	10.9	B 13.4	15.0	212	–	4.1	5.5	7.4	150
100	1450	7.9	10.2	12.1	B 13.4	15.0	212	–	4.0	6.0	7.4	150
110	1595	–	9.9	13.3	B 13.4	15.0	212	–	–	–	–	–
120	1740	–	9.8	14.5	–	15.0	212	–	–	–	–	–

<sup>1)</sup> Q<sub>Th</sub>: Theoretical flow rate

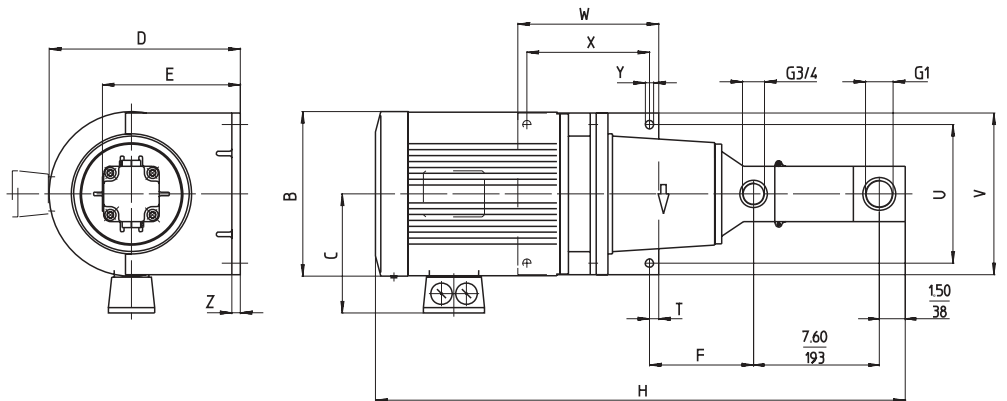
# Characteristics and dimensions

## BFS2, FFS2

### 50 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm



\*) Dimensions for 4-pole standard motor upon request

Motor 2 pole HP	A Inch	B Inch	C Inch
B 1.75 / 2.3	15.31	6.93	5.12
B 2.5 / 3.0	15.31	6.93	5.12
B 3.5	16.30	6.93	5.12
B 4.4 / 5.4	18.82	8.58	5.91
B 6.7 / 7.4	18.82	8.58	5.91
B 10.0	20.24	10.16	7.48
B 13.4	21.73	10.16	7.48

Motor 2 pole HP	Motor 4 pole HP	B Inch	C Inch	D Inch	E Inch	F Inch	H Inch	T Inch	U Inch	V Inch	W Inch	X Inch	Y Inch	Z Inch
1.0 / 1.5	1.0	6.38	4.72	8.35	6.1	5.43	26.85	0.59	7.09	8.27	3.54	2.36	0.43	0.47
2.0 / 3.0	1.5 / 2.0	7.13	6.30	8.35	6.1	5.43	28.74	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.0	3.0 / 4.0	7.99	6.30	11.02	7.8	6.57	30.98	0.89	8.46	9.84	9.06	7.28	0.55	0.59
5.4	5.4	8.98	6.73	11.02	7.8	6.57	31.89	0.89	8.46	9.84	9.06	7.28	0.55	0.59
7.4 / 10.0	7.4	10.51	7.68	13.19	8.98	6.73	34.21	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	10.0	10.51	7.68	13.19	8.98	6.73	35.71	0.89	10.43	11.81	10.63	8.86	0.55	0.71
15.0	15.0	12.6	9.17	16.14	10.94	7.20	39.61	0.79	11.81	13.78	12.01	10.43	0.71	0.71

# High Pressure Pumps

## TFS3, FFS3



Screw spindles

50 Hz

2-pole motor rotation speed 2900 RPM							4-pole motor rotation speed 1450 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	5 SSU GPM	90 SSU GPM				5 SSU GPM	90 SSU GPM			
<b>TFS 348/</b>	$Q_{Th}^{1)}$ 16.9	–	–	–	–	–	$Q_{Th}^{1)}$ 8.5	–	–	–	–
10	145	14.5	16.1	2.15	3.0	104	6.6	7.9	1.1	1.5	97
20	290	13.9	15.7	3.75	5.4	141	5.8	7.4	1.75	2.0	104
30	435	13.2	15.3	5.2	5.4	141	5.0	7.0	2.6	3.0	119
40	580	12.7	14.9	6.8	7.4	159	4.5	6.6	3.2	4.0	130
50	725	12.2	14.5	8.3	10.0	187	4.0	6.3	4.0	4.0	130
60	870	11.6	14.3	9.8	15.0	225	3.4	6.1	4.7	5.0	146
70	1015	11.1	14.0	11.4	15.0	225	3.0	5.8	5.5	7.4	163
80	1160	10.6	13.7	12.9	15.0	225	2.6	5.6	6.3	7.4	163
90	1305	10.0	13.5	14.3	20.0	245	–	5.3	7.0	7.4	163
100	1450	9.5	13.2	15.8	20.0	245	–	5.0	7.8	10.0	196
110	1595	–	13.0	17.4	20.0	245	–	–	–	–	–
120	1740	–	12.7	19.0	20.0	245	–	–	–	–	–
<b>TFS 364/</b>	$Q_{Th}^{1)}$ 22.6	–	–	–	–	–	$Q_{Th}^{1)}$ 11.3	–	–	–	–
10	145	20.1	21.2	3.0	5.4	141	9.0	10.0	1.2	1.5	97
20	290	19.3	20.8	4.8	7.4	159	7.9	9.5	2.3	3.0	119
30	435	18.5	20.5	6.8	7.4	159	7.2	9.0	3.2	4.0	130
40	580	17.7	20.1	8.9	10.0	187	6.4	8.5	4.3	5.0	146
50	725	16.9	19.7	10.9	15.0	225	5.7	8.2	5.2	5.0	146
60	870	16.1	19.3	12.9	15.0	225	5.0	7.9	6.3	7.4	163
70	1015	15.3	18.9	14.9	20.0	245	4.4	7.7	7.3	7.4	163
80	1160	14.8	18.5	16.9	20.0	245	3.7	7.1	8.2	10.0	196
90	1305	14.3	18.0	18.8	20.0	245	–	6.9	9.3	10.0	196
100	1450	13.7	17.6	20.8	25.0	289	–	6.6	10.2	15.0	243
110	1595	–	17.1	22.8	25.0	289	–	–	–	–	–
120	1740	–	16.5	24.7	29.5	353	–	–	–	–	–
<b>TFS 376/</b>	$Q_{Th}^{1)}$ 26.8	–	–	–	–	–	$Q_{Th}^{1)}$ 13.4	–	–	–	–
10	145	24.3	25.6	3.6	7.4	159	11.8	12.4	1.6	2.0	104
20	290	23.4	24.8	6.0	10.0	187	10.7	12.0	2.8	3.0	119
30	435	22.5	24.3	8.5	10.0	187	9.8	11.5	4.0	4.0	130
40	580	21.7	24.0	10.9	15.0	225	8.9	11.1	5.2	5.4	146
50	725	20.9	23.8	13.3	15.0	225	8.1	10.7	6.4	7.4	163
60	870	20.1	23.5	15.7	20.0	245	7.3	10.3	7.6	10.0	196
70	1015	19.6	23.3	18.1	20.0	245	6.6	9.9	8.8	10.0	196
80	1160	18.8	22.9	20.5	25.0	289	6.1	9.5	9.9	10.0	196
90	1305	18.0	22.5	23.0	25.0	289	–	9.1	11.3	15.0	243
100	1450	17.5	22.1	25.2	29.5	353	–	8.7	12.3	15.0	243
110	1595	–	21.7	27.6	29.5	353	–	–	–	–	–
120	1740	–	21.1	30.0	40.0	474	–	–	–	–	–

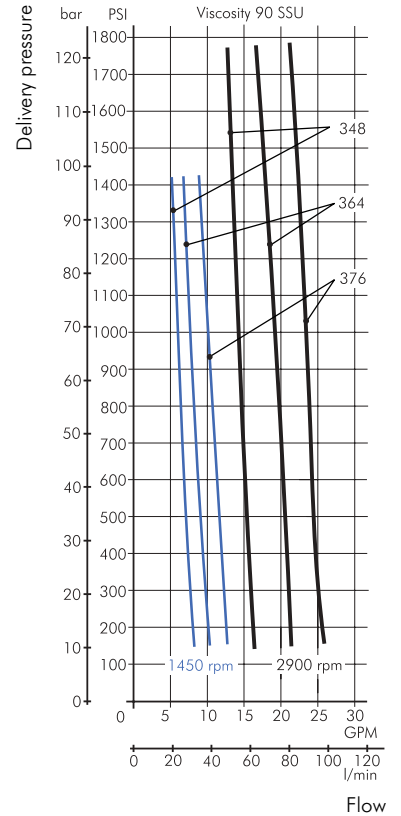
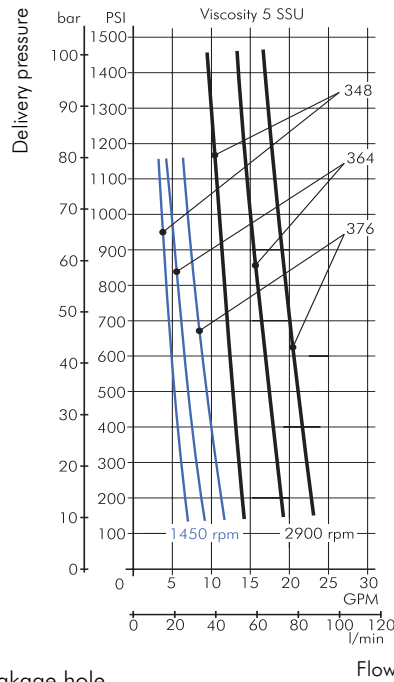
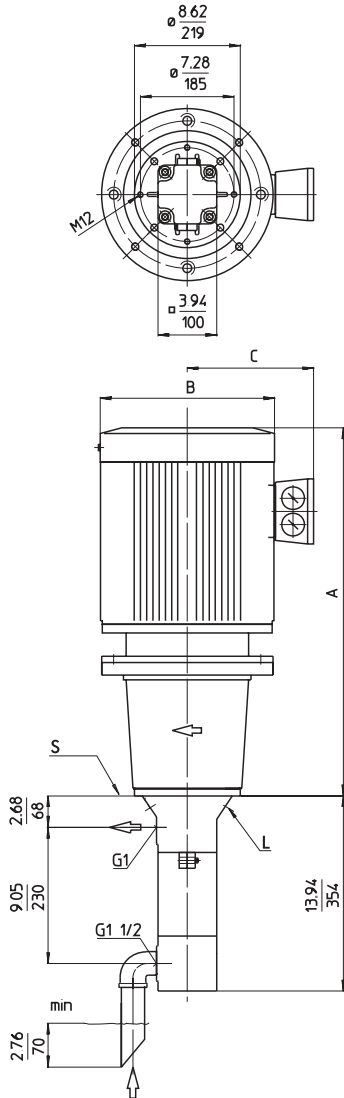
<sup>1)</sup>  $Q_{Th}$ : Theoretical flow rate



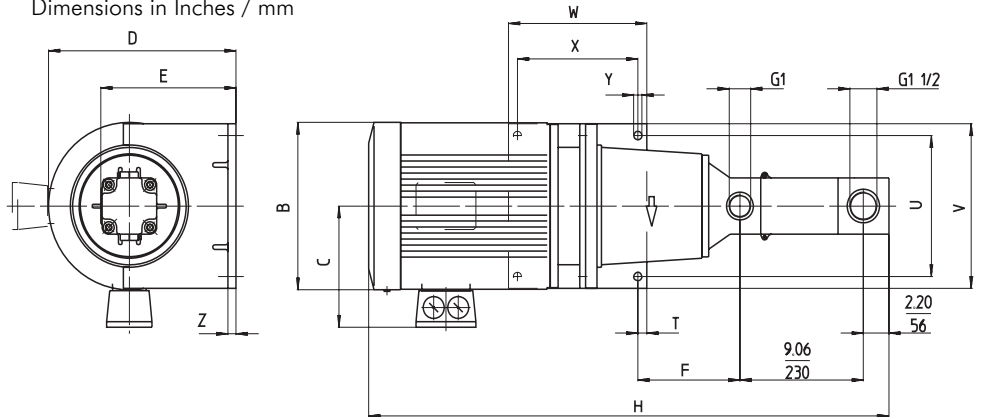
# Characteristics and dimensions

## TFS3, FFS3

50 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm



Motor 2 pole HP	Motor 4 pole HP	A	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
3.0	1.5 / 2.0	17.48	7.13	6.30	8.35	6.50	5.43	31.50	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.0	3.0 / 4.0	19.72	7.99	6.30	11.02	8.19	7.05	33.74	0.89	8.46	9.84	9.06	7.28	0.55	0.59
5.4	5.4	20.63	8.98	6.73	11.02	8.19	7.05	34.65	0.89	8.46	9.84	9.06	7.28	0.55	0.59
7.4 / 10.0	7.4	22.95	10.51	8.68	13.19	9.37	7.20	36.97	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	10.0	24.45	10.51	8.68	13.19	9.37	7.20	38.46	0.89	10.43	11.81	10.63	8.86	0.55	0.71
15.0 / 20.0	15.0	29.45	12.6	9.17	16.14	11.34	8.78	43.46	0.79	11.81	13.78	12.01	10.43	0.71	0.71
25.0	20.0	31.02	12.6	9.17	16.14	11.34	8.78	45.04	0.79	11.81	13.78	12.01	10.43	0.71	0.71
29.5	25.0 / 29.5	34.33	14.09	10.20	16.14	11.34	8.78	48.35	0.79	11.81	13.78	12.01	10.43	0.71	0.71
40.0	40.0	36.61	15.67	12.05	15.75	9.96	18.62	50.63	0.98	12.52	15.67	13.98	12.01	0.98	1.34

# High Pressure Pumps

## TFS4, FFS4



Screw spindles

50 Hz

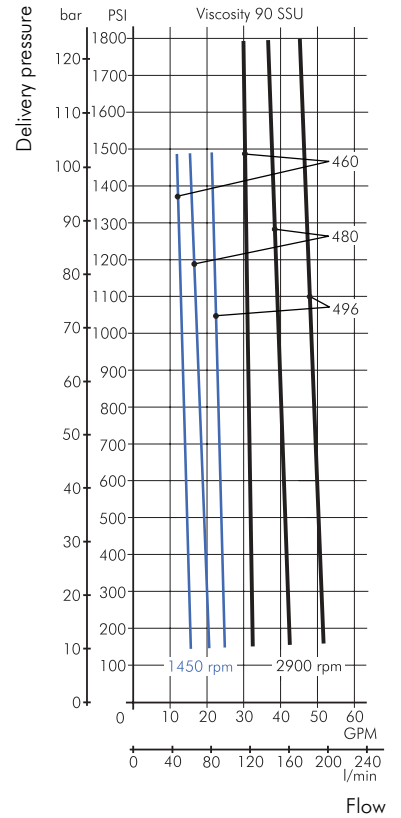
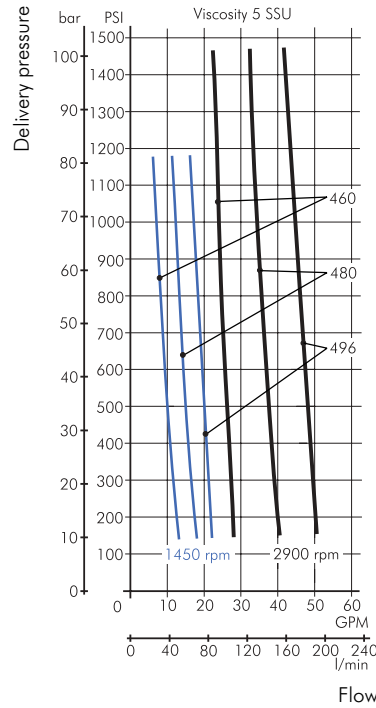
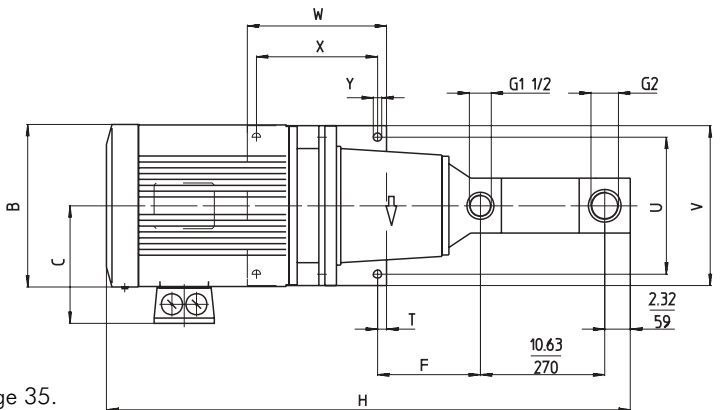
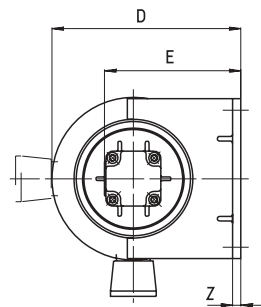
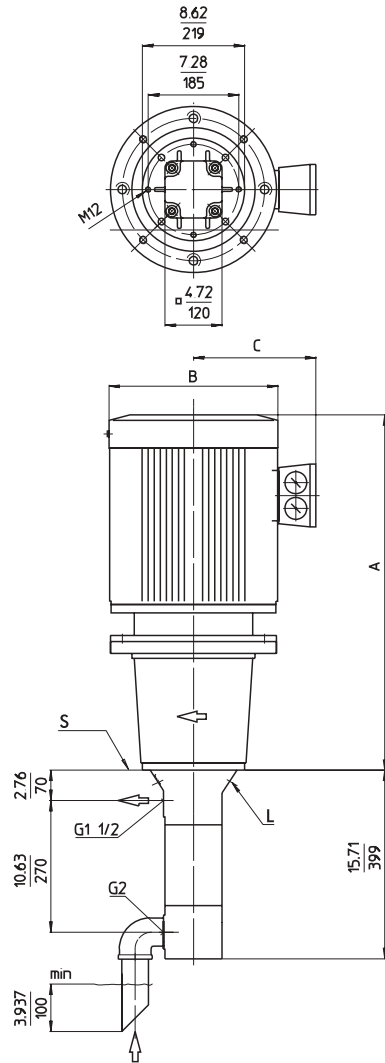
2-pole motor rotation speed 2900 RPM							4-pole motor rotation speed 1450 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM				90 SSU GPM	5 SSU GPM			
<b>TFS 460/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 33.0</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 16.5</b>	–	–	–	–
10	145	28.0	31.7	3.6	4.0	143	13.5	15.6	1.75	2.0	130
20	290	27.2	31.2	6.6	7.4	185	11.9	15.1	3.2	4.0	157
30	435	26.3	30.9	9.5	10.0	214	10.6	14.5	4.7	5.4	172
40	580	25.4	30.7	12.5	15.0	251	9.5	14.3	6.3	7.4	190
50	725	24.4	30.1	15.3	20.0	271	8.3	13.9	7.8	10.0	223
60	870	23.8	30.0	18.4	20.0	271	7.4	13.5	9.3	10.0	223
70	1015	23.1	29.6	21.4	25.0	315	6.5	13.2	10.7	15.0	269
80	1160	22.5	29.3	24.4	25.0	315	5.6	13.0	12.2	15.0	269
90	1305	21.8	28.9	27.3	29.0	379	–	12.7	13.8	15.0	269
100	1450	21.1	28.5	30.4	40.0	505	–	12.4	15.2	20.0	326
110	1595	–	28.2	33.4	40.0	505	–	–	–	–	–
120	1740	–	27.5	36.3	40.0	505	–	–	–	–	–
<b>TFS 480/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 44.2</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 22.1</b>	–	–	–	–
10	145	40.2	42.0	5.0	5.4	168	18.2	20.4	2.4	3.0	146
20	290	38.6	40.7	8.9	10.0	214	16.7	19.3	4.3	5.4	172
30	435	37.5	39.4	12.7	15.0	251	15.3	18.5	6.3	7.4	190
40	580	36.2	38.3	16.5	20.0	271	14.3	17.4	8.2	10.0	223
50	725	35.1	37.5	20.5	25.0	315	13.3	16.9	10.2	15.0	269
60	870	34.1	36.7	24.3	25.0	315	12.4	16.4	12.3	15.0	269
70	1015	33.0	36.2	28.2	29.5	379	11.6	15.9	14.2	15.0	269
80	1160	32.2	35.4	32.0	40.0	505	10.6	15.1	16.2	20.0	326
90	1305	31.4	34.9	35.8	40.0	505	–	14.5	18.2	20.0	326
100	1450	30.9	34.4	39.0	40.0	505	–	14.0	20.0	20.0	326
110	1595	–	33.8	43.6	50.0	569	–	–	–	–	–
120	1740	–	33.3	47.5	50.0	569	–	–	–	–	–
<b>TFS 496/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 53.0</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 26.5</b>	–	–	–	–
10	145	50.0	50.5	6.5	7.4	185	22.2	24.6	2.8	4.0	157
20	290	48.6	49.5	11.1	15.0	251	21.1	23.0	5.2	7.4	190
30	435	47.6	48.4	15.8	20.0	271	20.1	22.2	7.6	10.0	223
40	580	46.5	47.6	20.6	25.0	315	19.2	21.4	10.0	10.0	223
50	725	45.5	47.0	25.4	29.5	379	18.2	20.6	12.5	15.0	269
60	870	44.4	46.8	30.0	40.0	505	17.3	20.1	14.9	20.0	326
70	1015	43.1	46.5	34.7	40.0	505	16.3	19.6	17.3	20.0	326
80	1160	42.0	46.0	39.5	40.0	505	15.3	19.0	19.8	20.0	326
90	1305	41.0	45.5	44.2	50.0	569	–	18.5	22.3	25.0	364
100	1450	39.9	44.9	49.0	50.0	569	–	18.0	24.7	25.0	364
110	1595	–	44.4	53.7	60.0	626	–	–	–	–	–
120	1740	–	43.9	58.3	60.0	626	–	–	–	–	–

<sup>1)</sup> Q<sub>Th</sub>: Theoretical flow rate

# Characteristics and dimensions

## TFS4, FFS4

### 50 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches /mm

Motor 2 pole HP	Motor 4 pole HP	A	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
3.0	2.0	17.48	7.13	6.30	8.35	6.89	5.43	33.27	0.59	7.09	8.27	3.54	2.36	0.43	0.47
4.0	3.0 / 4.0	19.72	7.99	6.30	11.02	8.58	7.05	35.51	0.89	8.46	9.84	9.06	7.28	0.55	0.59
5.4	5.4	20.63	8.98	6.73	11.02	8.58	7.05	36.42	0.89	8.46	9.84	9.06	7.28	0.55	0.59
7.4 / 10.0	7.4	22.95	10.51	7.68	13.19	9.76	7.28	38.74	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	10.0	24.45	10.51	7.68	13.19	9.76	7.28	40.24	0.89	10.43	11.81	10.63	8.86	0.55	0.71
15.0 / 20.0	15.0	29.45	12.6	9.17	16.14	11.73	8.86	45.24	0.79	11.81	13.78	12.01	10.43	0.71	0.71
25.0	20.0	31.02	12.6	9.17	16.14	11.73	8.86	46.81	0.79	11.81	13.78	12.01	10.43	0.71	0.71
29.5	25.0	34.33	14.09	10.20	16.14	11.73	8.86	50.12	0.79	11.81	13.78	12.01	10.43	0.71	0.71
40.0 / 50.0	40.0	36.61	15.67	12.05	15.75	10.35	18.62	52.40	0.98	12.52	15.67	13.98	12.01	0.98	1.34
60.0	-	39.13	18.50	13.19	17.72	11.34	20.91	54.92	1.46	14.02	17.28	14.21	11.26	0.98	1.34

# High Pressure Pumps

## TFS5, FFS5



Screw spindles

50 Hz

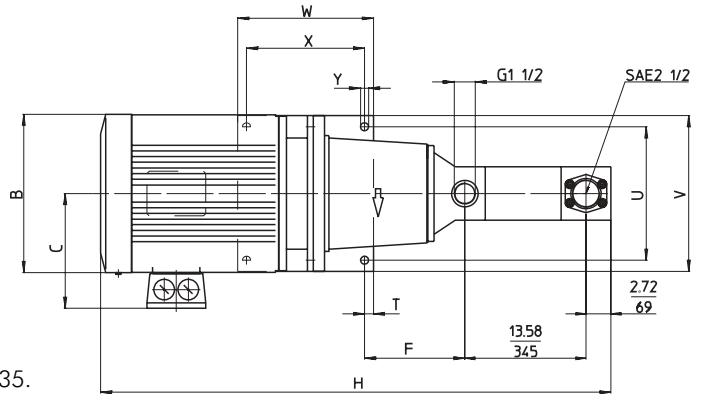
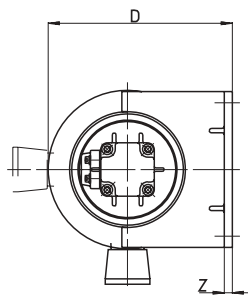
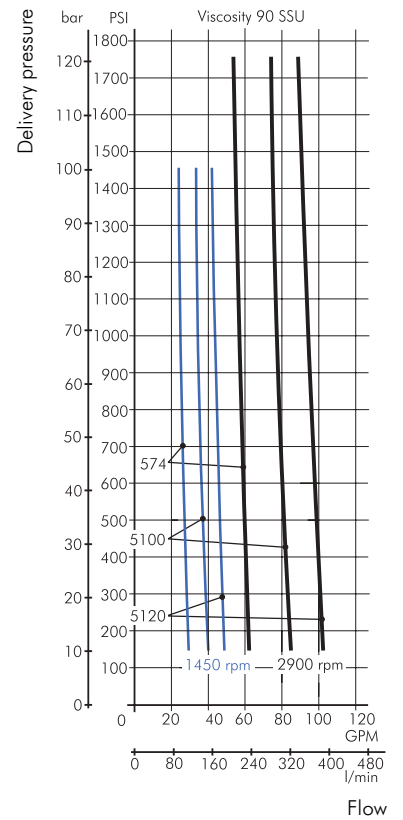
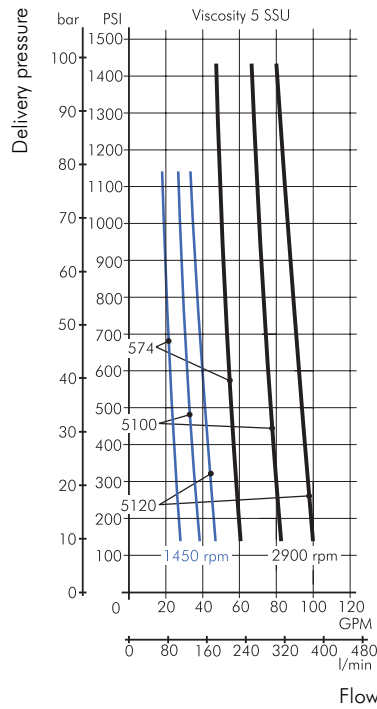
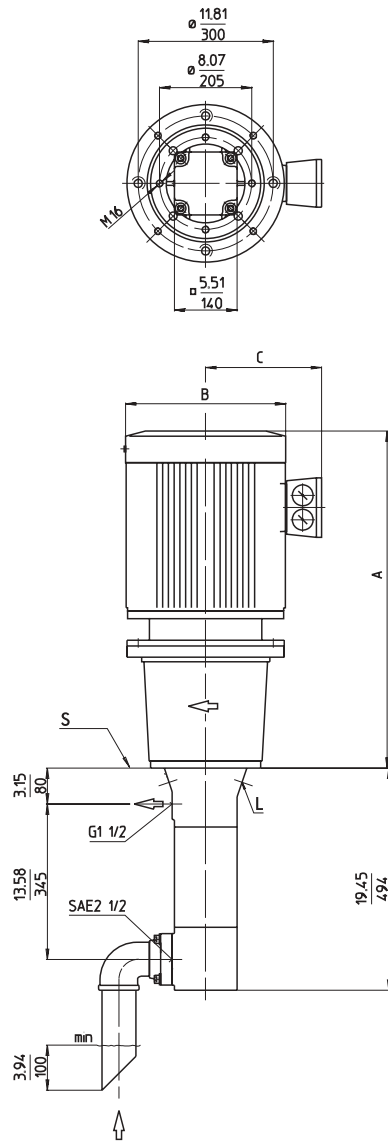
2-pole motor rotation speed 2900 RPM							4-pole motor rotation speed 1450 RPM				
Pressure max.	Flow at viscosity			Power consumption	Motor	Weight	Flow at viscosity		Power consumption	Motor	Weight
	Type / bar	PSI	5 SSU GPM				90 SSU GPM	5 SSU GPM			
<b>TFS 574/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 63.8</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 31.9</b>	–	–	–	–
10	145	60.5	62.1	8.3	10.0	276	29.1	30.4	4.2	5.4	234
20	290	58.4	61.3	13.9	15.0	313	27.2	29.6	7.0	7.4	251
30	435	56.5	60.2	19.6	20.0	333	25.6	28.8	9.8	10.0	284
40	580	55.0	59.4	25.2	29.5	441	24.0	28.0	12.6	15.0	331
50	725	53.4	58.4	30.8	40.0	567	22.7	27.2	15.4	20.0	388
60	870	52.0	57.6	36.3	40.0	567	21.4	26.7	18.2	20.0	388
70	1015	50.7	56.8	42.0	50.0	631	20.3	26.2	21.0	25.0	426
80	1160	49.7	56.3	47.6	50.0	631	19.6	25.9	23.9	25.0	426
90	1305	48.6	55.5	53.2	60.0	677	–	25.6	26.7	29.5	470
100	1450	47.8	55.0	58.8	60.0	677	–	25.4	29.4	29.5	470
110	1595	–	54.4	64.5	74.0	1001	–	–	–	–	–
120	1740	–	53.9	70.1	74.0	1001	–	–	–	–	–
<b>TFS 5100/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 86.3</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 43.1</b>	–	–	–	–
10	145	81.6	83.8	11.3	15.0	313	39.1	40.7	5.6	7.4	251
20	290	79.5	82.2	18.8	20.0	333	37.0	39.4	9.4	10.0	284
30	435	77.4	80.6	26.4	29.5	441	34.9	38.3	13.1	15.0	331
40	580	75.3	79.3	34.0	40.0	567	33.0	37.5	17.0	20.0	388
50	725	73.4	78.2	41.5	50.0	631	31.4	36.5	20.8	25.0	426
60	870	71.9	77.1	49.2	50.0	631	30.1	35.9	24.5	25.0	426
70	1015	70.3	76.1	56.7	60.0	677	28.8	35.4	28.4	29.5	470
80	1160	68.7	75.3	64.3	74.0	1001	28.0	34.9	32.2	40.0	494
90	1305	67.4	74.8	71.8	74.0	1001	–	34.6	35.9	40.0	494
100	1450	66.3	74.0	79.5	101	1276	–	34.4	39.8	40.0	494
110	1595	–	73.7	87.1	101	1276	–	–	–	–	–
120	1740	–	73.4	94.6	101	1276	–	–	–	–	–
<b>TFS 5120/</b>			<b>Q<sub>Th</sub><sup>1)</sup> 103.5</b>	–	–	–	<b>Q<sub>Th</sub><sup>1)</sup> 51.8</b>	–	–	–	–
10	145	98.3	100.4	13.5	15.0	313	47.6	49.1	6.7	7.4	251
20	290	95.9	98.8	22.5	25.0	377	45.2	48.1	11.3	15.0	331
30	435	93.5	97.5	31.6	40.0	567	43.1	47.3	15.8	20.0	388
40	580	91.4	96.2	40.7	50.0	631	41.0	46.2	20.4	25.0	426
50	725	89.3	94.8	49.9	60.0	677	39.1	45.4	24.9	29.5	470
60	870	87.2	93.5	59.0	60.0	677	37.5	44.7	29.5	29.5	470
70	1015	85.1	92.5	68.1	74.0	1001	35.7	44.1	34.0	40.0	494
80	1160	83.2	91.2	77.2	101	1276	34.3	43.6	38.6	40.0	494
90	1305	81.1	90.1	86.3	101	1276	–	43.1	43.2	50.0	604
100	1450	79.3	89.3	95.4	101	1276	–	42.5	47.7	50.0	604
110	1595	–	88.2	104.5	121	1365	–	–	–	–	–
120	1740	–	87.5	113.6	121	1365	–	–	–	–	–

<sup>1)</sup> Q<sub>Th</sub>: Theoretical flow rate

# Characteristics and dimensions

## TFS5, FFS5

### 50 Hz



L = Leakage hole  
 S = Mounting plate, please find the cut-out of mounting hole on page 35.  
 Dimensions in Inches / mm

Motor 2 pole HP	Motor 4 pole HP	A	B	C	D	E	F	H	T	U	V	W	X	Y	Z
		Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch	Inch
-	5.4	20.63	8.98	6.73	11.02	8.58	7.05	37.48	0.89	8.46	9.84	9.06	7.28	0.55	0.59
7.4 / 10.0	7.4	22.95	10.51	7.68	13.19	9.76	7.28	42.36	0.89	10.43	11.81	10.63	8.86	0.55	0.71
-	10.0	24.45	10.51	7.68	13.19	9.76	7.28	43.86	0.89	10.43	11.81	10.63	8.86	0.55	0.71
15.0 / 20.0	15.0	29.45	12.6	9.17	16.14	11.73	8.86	48.98	0.79	11.81	13.78	12.01	10.43	0.71	0.71
25.0	20.0	31.02	12.6	9.17	16.14	11.73	8.86	50.55	0.79	11.81	13.78	12.01	10.43	0.71	0.71
29.5	25.0	34.33	14.09	10.20	16.14	11.73	8.86	53.86	0.79	11.81	13.78	12.01	10.43	0.71	0.71
40.0 / 50.0	40.0 / 50.0	36.61	15.67	12.05	15.75	10.35	18.62	56.14	0.98	12.52	15.67	13.98	12.01	0.98	1.34
60.0	-	39.13	18.50	13.19	17.72	11.34	20.91	58.66	1.46	14.02	17.28	14.21	11.26	0.98	1.34
74.0	-	43.27	20.47	16.93	20.67	12.32	22.05	62.80	1.18	15.98	19.92	16.10	13.74	1.18	1.65
101 / 121	-	47.01	22.64	17.91	21.85	11.02	23.90	66.61	1.18	17.99	21.93	18.86	16.50	1.18	1.65

## 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 cushions against vibration is recommended.

BBV 1 – 3 series are such relief valves. They are available in 10 bar (145 psi) increments and are preset by the factory for the highest allowable operating pressure for the specific pump and motor combination.

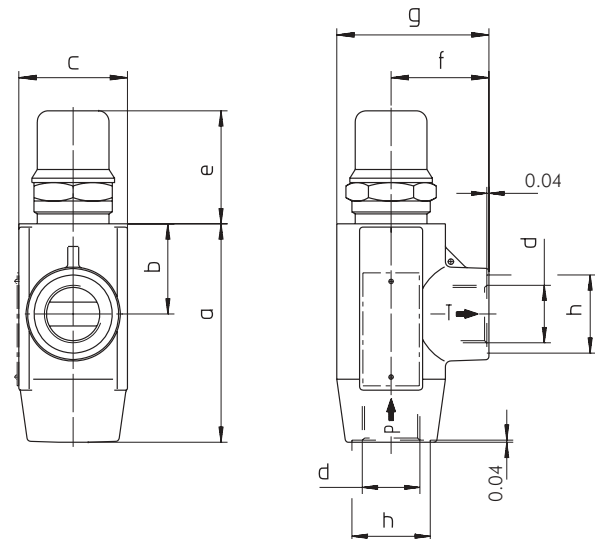
### Non-adjustable Pressure Relief Valves BBV

Non-adjustable Pressure Relief valves of the series BBV are shock absorbent valves which open at a preset pressure. The relief valve opens at the factory set pressure which is available in 10 bar (145 psi) 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	BBV 1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
BFS2, FFS2	BBV 2	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
TFS3, FFS3	BBV 3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

Ordering description: e.g. BBV 3 / 50

	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



Dimensions in Inches

Additional relief valve characteristics upon request.

Above mentioned pressure relief valves 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).

## Adjustable Pressure Relief Valves

Adjustable pressure relief valves allow for variable operating pressures anywhere between 75 – 1750 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).

### 1. 3-HPB Series

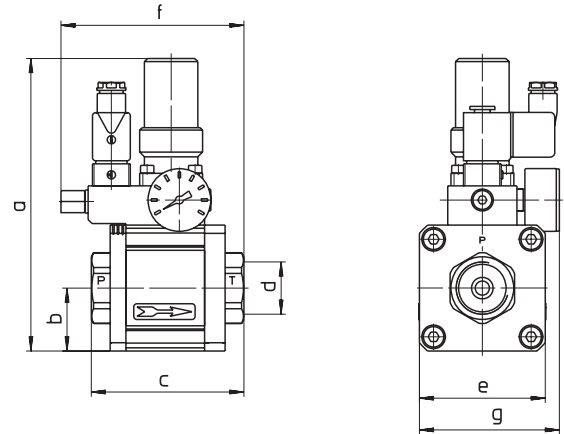
The 3-HPB series are manually adjustable pressure relief valves. The valves are pneumatically operated and control the operating pressure with the control pressure in a ratio of 1:10 and 1:18.5. The valves are equipped with a pilot valve for additional pump protection. The standard control voltage is 24 VDC (1 x 110 V; 60 Hz is available upon request).

Type	Pressure p bar / <i>PSI</i>	Flow Q <sub>max</sub> GPM / l/min
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

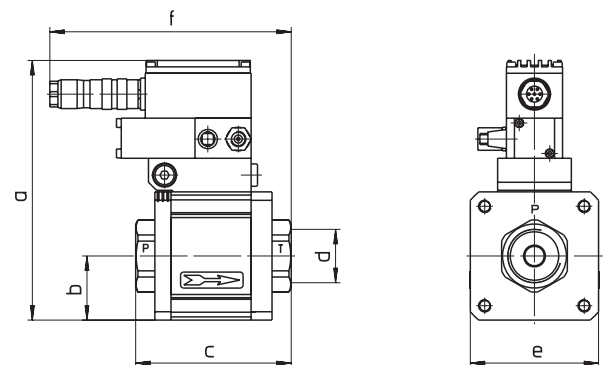
### 2. SPB Series

SPB Series pressure relief valves are electronically adjustable valves, which convert a digital signal from the control panel into an analog control voltage (0 - 10 V). The ratio between the control voltage and the operating pressure is 1:10 and 1:18.5. The valves are equipped with a pilot valve for additional pump protection.

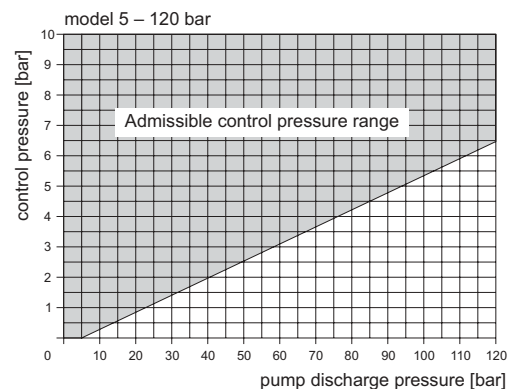
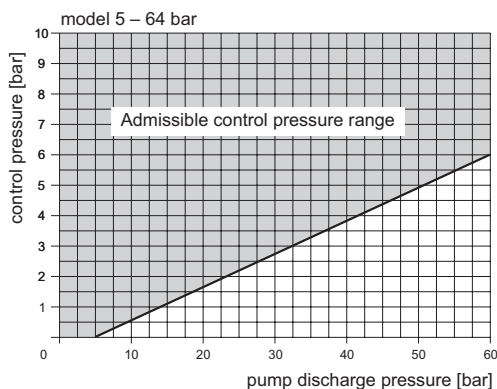
Type	Pressure p bar / <i>PSI</i>	Flow Q <sub>max</sub> GPM / l/min
SPB – S 15	5 – 64 / 72 – 930	26.5 / 100
SPB – H 15	5 – 120 / 72 – 1740	26.5 / 100
SPB – S 32	5 – 64 / 72 – 930	106 / 400
SPB – H 32	5 – 120 / 72 – 1740	63.5 / 240



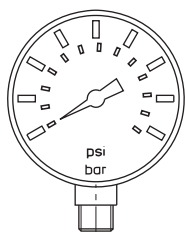
Type	a	b	c	d	e	f	g
3-HPB	Inch	Inch	Inch	Inch	Inch	Inch	Inch
S / H 15	7.32	1.57	3.82	NPT1	□ 3.15	4.58	3.50
S / H 32	9.10	2.36	6.30	NPT1½	□ 4.72	4.92	4.29



Type	a	b	c	d	e	f
SPB	Inch	Inch	Inch	Inch	Inch	Inch
S / H 15	6.38	1.57	3.82	NPT1	□ 3.15	5.93
S / H 32	7.58	2.36	6.30	NPT1½	□ 4.72	6.95



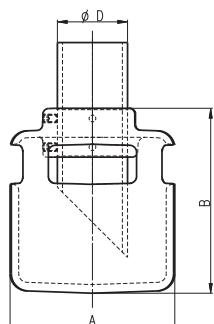
## Pressure gauge



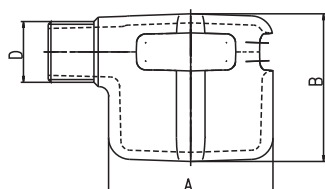
Type	Pressure p bar / PSI
M 60	0 – 60 / 0 – 870
M 100	0 – 100 / 0 – 1450
M 160	0 – 160 / 0 – 2320

## Suction protection

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



AS

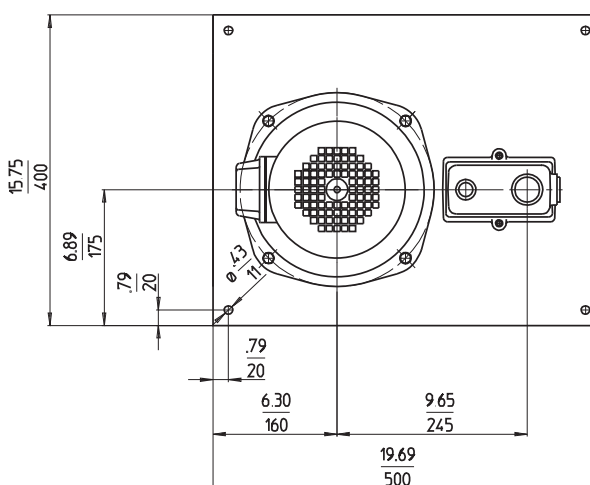
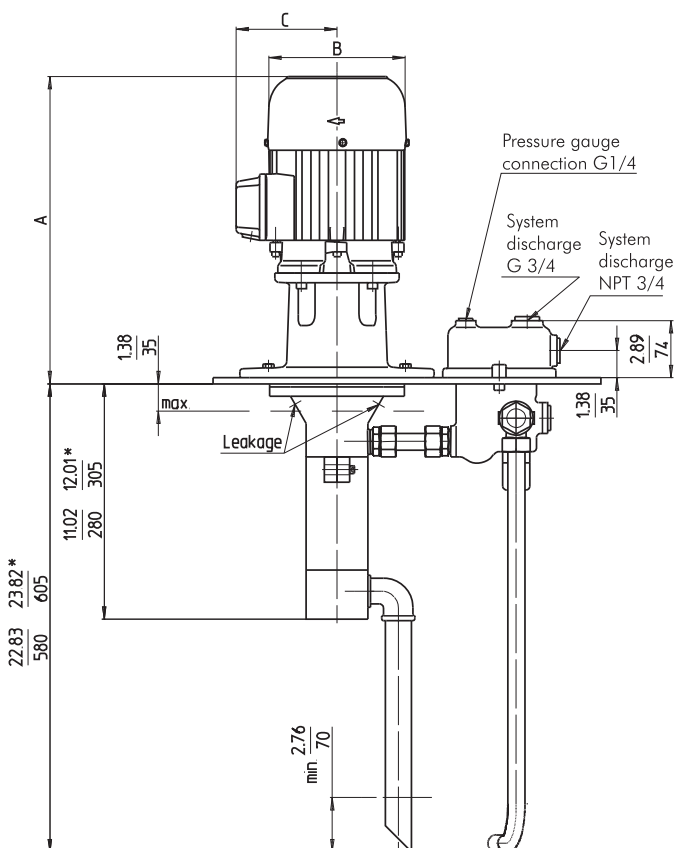


AS-H

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	2.36	1"

## Pump system, fully assembled

- Series BFS1 and BFS2, with 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.



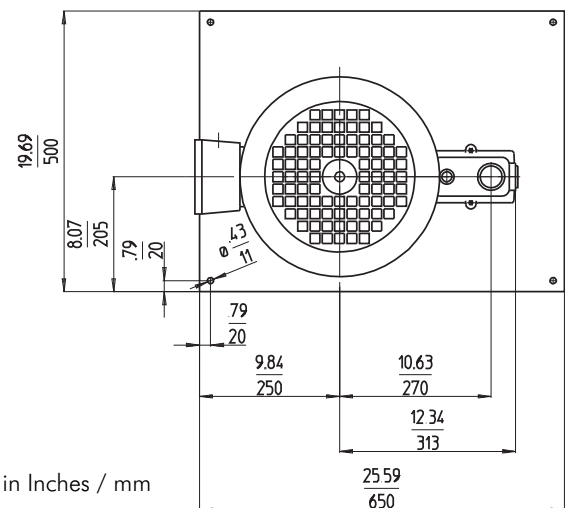
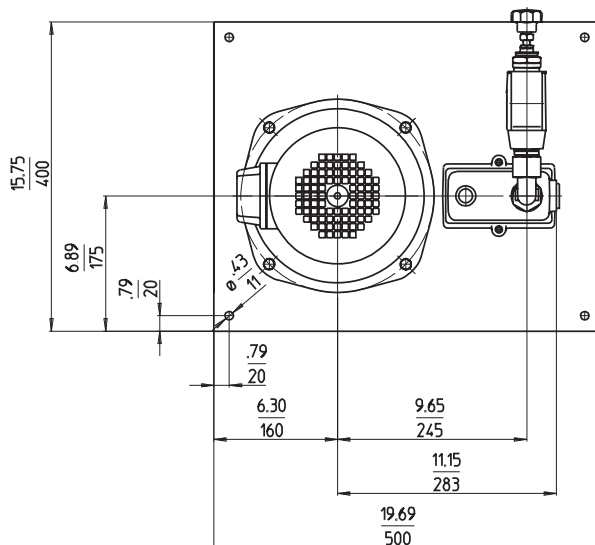
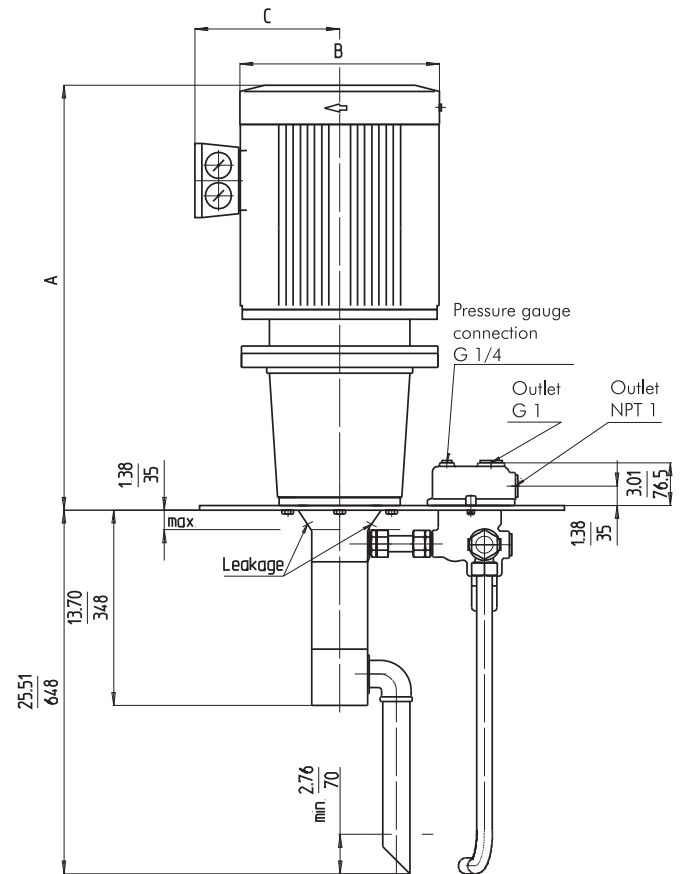
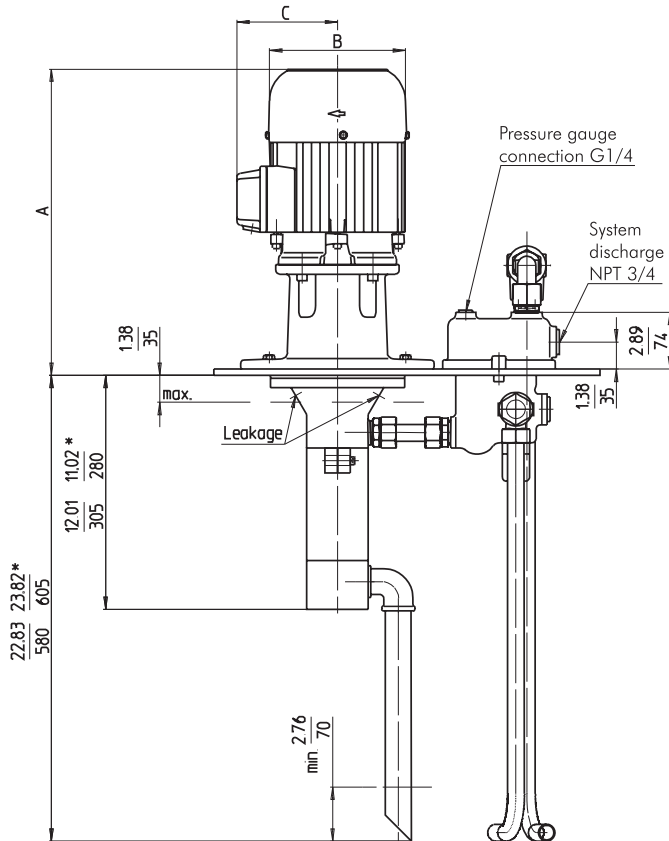
Dimensions in Inches / mm

\*) Dimensions for BFS2  
Dimensions A + 0.31 Inch (8 mm) mounting plate



## Pump system, fully assembled

- Series BFS1 and BFS2, with 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.
- Series TFS3, with 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.



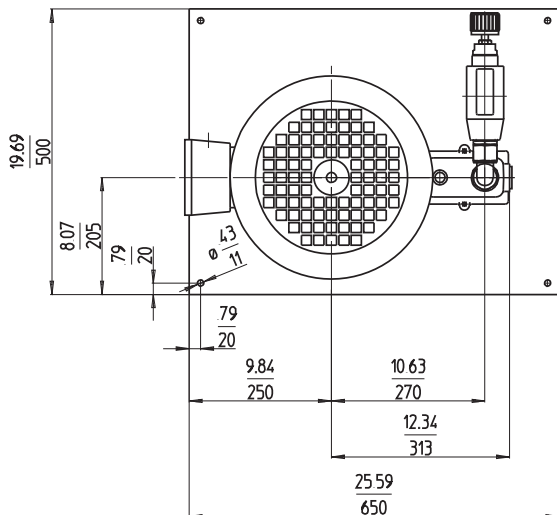
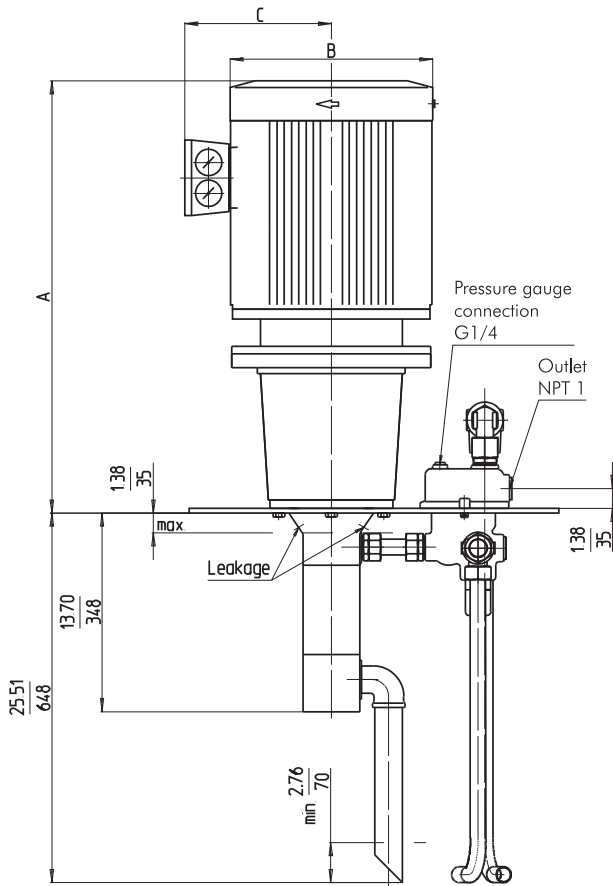
Dimensions in Inches / mm

\*) Dimensions for BFS2  
Dimensions A + 0.31 Inch (8 mm) mounting plate

Dimensions A + 0.31 Inch (8 mm) mounting plate

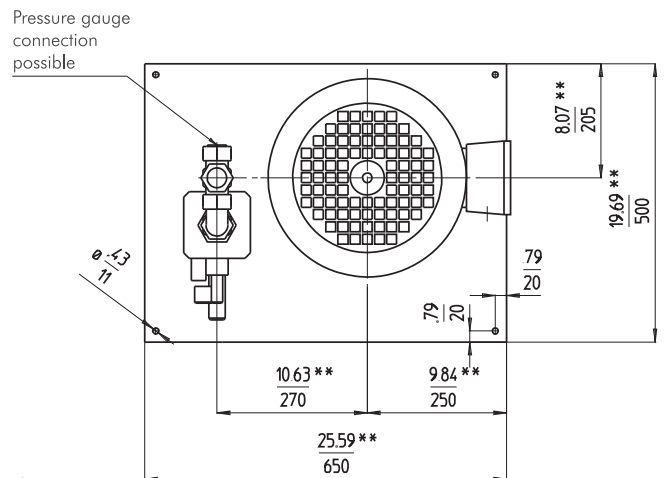
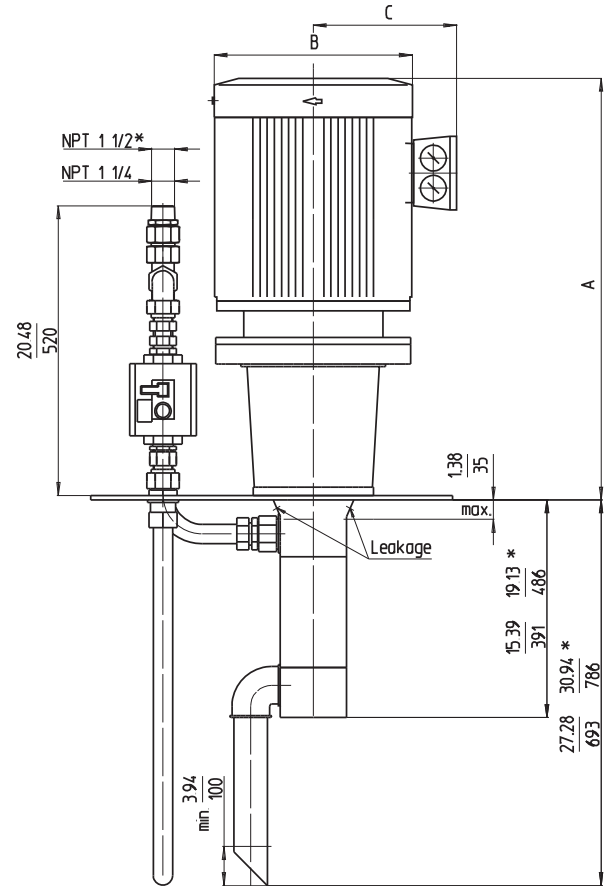
## Pump system, fully assembled

4. Series TFS3, with 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 A + 0.31 Inch (8 mm) mounting plate

5. Series TFS4 and TFS5, with 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.



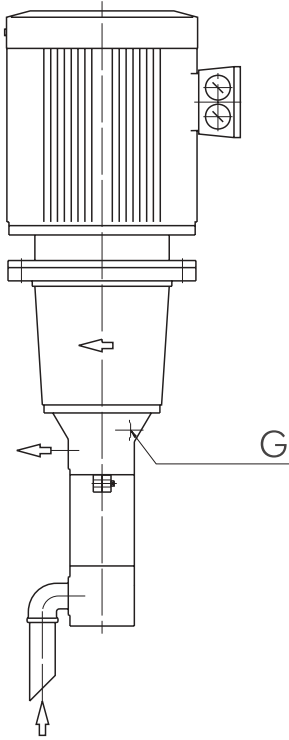
Dimensions in Inches / mm

- \*) Dimensions for TFS5
  - \*\*\*) Dimensions for motor larger than 50 HP (37kW) upon request
- Dimensions A + 0.47 Inch (12 mm) mounting plate

# Technical Information Terms and Conditions



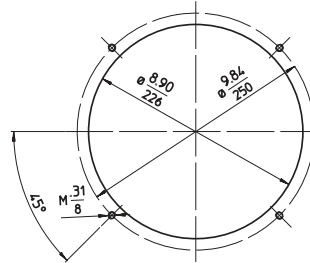
## Execution G4



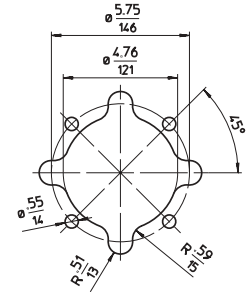
G1/8" BFS/FFS 1, 2  
G1/4" BFS/FFS 3, 4, 5  
Pressureless drainage return into the tank

## Cut-out of mounting hole

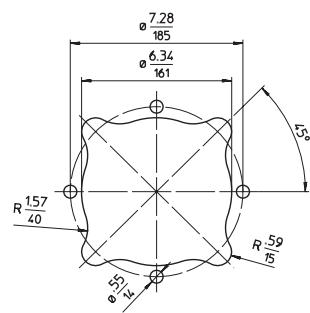
BFS1 / BFS2



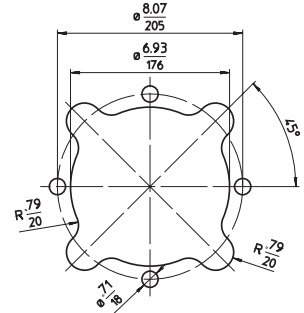
TFS1 / TFS2



TFS3 / TFS4



TFS5



All edges deburred!  
General tolerances ISO 2768-m

## Terms and Conditions

The following terms and conditions govern all quotations made by Brinkmann Pumps Inc. ("Brinkmann") and any orders based upon these quotations. No contract term or condition shall be amended, deleted or added without the express written consent of Brinkmann, and Brinkmann hereby rejects any terms set forth in any other writing which are in addition to or different from the terms in this quotation.

These items and conditions and any other terms and conditions delivered in writing by an authorized agent of Brinkmann contemporaneously herewith constitute the complete agreement between Brinkmann and the buyer and supersede all prior oral, written or printed statements of any kind (including any terms and conditions submitted by the buyer and performance or production data from any source whatsoever, including references to accuracy, capacity, and capability of products, all of which are estimates only) made by Brinkmann or the buyer or their respective representatives. No statement, recommendation or assistance given by Brinkmann or its represen-

tatives to buyer or its representatives, in connection with the use of any products by buyer, shall constitute a waiver by Brinkmann of any of the provisions hereof or affect Brinkmann's liability, as defined herein. All transactions covered hereby and all terms and conditions of sale shall be governed by the laws of the state of Michigan.

### Prices

The products offered in this proposal and the prices quoted are based on our understanding of buyer's requirements; any change in requirements will necessitate a revision in prices quoted. Prices are F.O.B. our dock, Wixom, Michigan, or other location as specified on proposal. Brinkmann's prices do not include sales, use, excise, or similar tax, applicable to the sale or use of the equipment proposed. These taxes shall be paid by the buyer, or in lieu thereof, the buyer shall provide Brinkmann with a tax exemption certificate acceptable to the taxing authorities.

### Delays or failure to deliver

Brinkmann shall not be responsible for delay or failure to deliver due to acts of God, or to gov-

ernment action (civil or military), or to prior orders, or to fire, embargo, strike or other labor problems, wrecks, delays in transportation, unusually severe weather or inability to obtain necessary labor or materials from the usual source of supply, or any other circumstances beyond Brinkmann's

control. Brinkmann shall have the right to furnish suitable substitutes for materials which cannot be obtained because of such force majeure.

### Installation

Buyer shall install at its own expense, all products covered hereby in accordance with the operating instructions to be furnished to buyer upon request. Unless otherwise stated, no installation services are included in the price indicated.

### Limited warranty

Brinkmann warrants to the buyer (but not to any others) for a period of one year from date of shipment that all new parts are free from defects in material and workmanship. Brinkmann's said warranty shall exist only if buyer gives written no-

# Brinkmann Pumps Inc.

## Terms and Conditions



tice to Brinkmann within ten days after the first determination that the part is defective and within the aforesaid one year period from the date of shipment and includes in said notice consent to Brinkmann to inspect, at any reasonable time, said part and the machine in which it may be embodied, and if, and only if, Brinkmann determines to its reasonable satisfaction upon said inspection that said part and the machine in which it may be embodied are, and have been, used in accordance with all Brinkmann's instructions as to maintenance and operation set forth in the operating instructions relating to the machine. Brinkmann's warranty is limited to shipping to buyer replacement of any part which is so proven to be defective and in any event shall have **no liability whatsoever for incidental or consequential damage or loss of profit**, including damages resulting from personal injury or death, or damage to, or loss of use of, any property. Brinkmann is not responsible for shipping costs or labor, extends no warranty of any kind for gasket, seals and wear and tear materials. Notwithstanding any provisions of these terms and conditions, **this warranty is the only warranty extended by Brinkmann in connection with any sales of products and is in lieu of all other warranties, express or implied, including warranties of merchantability or fitness for purpose.** No agent, employee or representative of Brinkmann has any authority to bind Brinkmann to any affirmation, representation, or warranty concerning the products that are the subject of this quotation beyond that specifically included in the written quotation. Brinkmann shall have no obligation to install or provide improvements or changes in design adapted by Brinkmann for similar equipment subsequent to acceptance of buyer's order. **Warranties have been discussed and understood by both parties.**

### Buyer's use and O.S.H.A.

Buyer shall use and require all persons operating the equipment to use all proper and safe operating procedures set forth in operating instructions relating to the equipment and observe all occupational safety health and standards act (O.S.H.A.), American National Standard Institute (ANSI), and state regulations as required and all available, feasible and practical point of operation safety devices consistent with buyer's use of the equipment. Buyer shall not remove or modify, any device, warning sign, operating instructions or work handling tools installed on or attached to the equipment. Buyer shall notify Brinkmann promptly, in writing, and in all events within ten (10) days after its occurrence, of any accident or malfunction involving any equipment which results in injury to or death of persons or damage to property, or the loss of use thereof

and buyer shall cooperate fully with Brinkmann in investigation and determining the cause of any such occurrence of malfunction. At Brinkmann's request made at any time, buyer will either at its or Brinkmann's place of business, permit to redesign, remodel or revise the equipment and buyer waives any claims against Brinkmann for buyer's inability to use the equipment during the time that same is out of service for such revision, modification or redesign.

Brinkmann shall not be responsible for any failure to comply which results from the location, operation, design, use or maintenance of the equipment from alternation of the equipment by persons or firms other than Brinkmann, or from an option or accessory to the equipment by persons or firms other than Brinkmann, which was available to the buyer but omitted at the buyer's direction, or from design or instructions furnished by the buyer or its agents. In view of the above, Brinkmann does not make any warranties with respect to O.S.H.A. requirements, including noise; and will not be responsible for fines, penalties, or consequential damages.

### Payment terms

Net payment in full of all invoices is due thirty (30) days net, unless stated otherwise in quotation. Any unpaid balance thereafter shall be subject to a service charge of 1.75 % per month or, if illegal, at the highest rate allowed by law. There shall be no extension or change in the time for payment due to delay in installation and/or delays in operation of the equipment caused by damage, warranty service or warranty replacement of parts. If after Brinkmann's acceptance of buyer's purchase order, buyer requests Brinkmann to delay shipment of the equipment, the purchase price shall become due and owing thirty (30) days after the equipment is ready for shipment.

If buyer fails to pay the purchase price as provided herein and Brinkmann institutes a lawsuit for the collection of said price, buyer agrees to pay Brinkmann's reasonable attorney fees incurred in connection therewith.

### Acceptance of orders

Quotations are offered for written acceptance within thirty (30) days from date (unless otherwise stated) but are subject to change without notice at any time before acceptance. If any order contains printed, stamped or other provisions inconsistent or in conflict with the terms and conditions hereof, the terms and conditions hereof shall control, unless otherwise specifically stated by Brinkmann in writing. All clerical errors are subject to correction in favor of either party upon notice of either party. All orders are subject to the credit approval of Brinkmann. An order containing subject matter not within the contemplation

of the proposal shall be subject to a further quotation as to price or delivery or both. Modifications, changes, deferred shipments, cancellations or additions will be effective only if accepted by Brinkmann in writing and then only upon terms that will indemnify Brinkmann against all costs and losses.

### Title and security agreement

Delivery to carrier shall constitute transfer to the buyer, and all risk of loss or damage in transit shall be borne by the buyer.

By execution of a purchase order, buyer hereby grants to Brinkmann a security interest in the equipment covered by the proposal, and its products and/or proceeds in order to secure the payment of the purchase price thereof and buyer authorizes to file financing statements reflecting this security interest without buyer's signature. Buyer will cooperate with Brinkmann in preparing documents necessary to perfect this security interest.

### Proprietary and other materials

This quotation and all drawings, specifications, materials, patterns, and special purpose manufacturing aids which are supplied to buyer by Brinkmann shall be kept in confidence and shall be listed and maintained in suitable condition at the expense of buyer and are to be considered the property of Brinkmann held on consignment by buyer and to be insured while in buyer's possession. Such articles and all copies thereof from any source shall be returned to Brinkmann at any time upon request and shall not be used for or by any third parties without the express written permission of Brinkmann.

### Electrical equipment

Motors, electrical equipment and wiring on the equipment quoted will be supplied in accordance with the manufacturer's standards. Unless specifically quoted they are not guaranteed to meet ordinances of any local governing body and the responsibility of conforming to any local ordinance is assumed by the buyer.

### Inspection and testing, production estimates and performance

All working drawings or other materials provided by Brinkmann are for general information purposes only and may or may not relate to buyer's order or other equipment. Any specifications contained therein are not binding on Brinkmann except as expressly so stated. Brinkmann reserves the right to make, at any time, such changes in detail of design or construction as shall in the sole judgment of Brinkmann constitute an improvement over former practice. Production data, where given, are based on Brinkmann's careful analysis and understanding of the limits of accuracy, machinability of materials,

amount of material to be removed, handling facilities provided, and location points but are nonetheless an estimate only and not guaranteed or warranted. In no event shall Brinkmann be responsible for performance figures supplied by other parties. If by written agreement the equipment is to be subject to acceptance tests before shipment, rejection under this clause must take place prior to shipment.










### Returned equipment

In no case is equipment to be returned without first obtaining written permission from Brinkmann. Unless otherwise expressly agreed an order for equivalent value must accompany returned equipment and all such returned

equipment will be accepted for credit only after inspection. Equipment returned without good cause and for which no credit is given shall be

subject to a restocking charge. Buyer returning equipment must pay transportation charges and bear risks of loss or damage to goods while in transit. Acceptance of returned products by Brinkmann's receiving department shall not bind Brinkmann nor have any force or effect unless acceptance is made by Brinkmann in writing.

## Please ask for the main catalog.

Immersion Pumps TB16 ... STA2500	Semi-open impellers <b>Standard coolant pumps</b> 6 ... 660 GPM 6 ... 300 feet	
Quick Suctioning Immersion Pumps with BRINKMANN's Suction De-aeration System TAL200 ... SAL2500	Axial/semi-open impellers <b>Inflated fluids / slurping</b> 6 ... 660 GPM 6 ... 300 feet	
Quick Suctioning Immersion Pumps with BRINKMANN's Suction De-aeration System SGL801 ... 2200	Axial/semi-open impellers <b>Inflated grinding oils / slurping</b> 12 ... 640 GPM 15 ... 290 feet	
Quick Suctioning Immersion Pumps with BRINKMANN's Suction De-aeration System SFL650 ... 2350	Axial/semi-open impellers <b>Inflated coolants / slurping heavy chip loads</b> 12 ... 680 GPM 6 ... 150 feet	
Cutter Pumps with cutting units SFC850 ... 1850	Axial - radial impellers <b>Large chips</b> 12 ... 460 GPM 6 ... 115 feet	
Suction Immersion Pumps TAS301 ... 601 STS1001	Axial/semi-open impellers <b>Vacuum filter</b> 12 ... 250 GPM 6 ... 75 feet	
Free-flow Immersion Pumps/Vortex Pumps FT35 ... FTA140 SFT450 ... 1554-C	Semi-open impellers <b>Large chips</b> 25 ... 250 GPM 6 ... 55 feet	
Immersion Pumps TS12 ... TS24	Peripheral impellers <b>High pressure in compact units</b> 2.5 ... 40 GPM 15 ... 290 feet	
Immersion Pumps TC40 ... TH360	Closed impellers <b>High pressure / no long chips</b> 2.5 ... 155 GPM 30 ... 810 feet	
Immersion Pumps in Plastics KTF61 ... KTF63	Semi-open impellers <b>Coldwater circuits</b> 2.5 ... 20 GPM 6 ... 90 m	
Miniature Centrifugal Pumps Suction Pumps KC60 ... SB60	Open/peripheral impellers <b>Suctioning / circulating</b> 2.5 ... 16 GPM 6 ... 165 feet	



The demands imposed on coolant pumps are constantly changing.

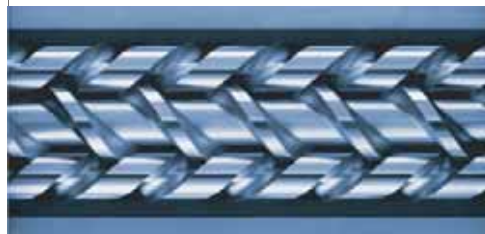
Coolants are used for cooling, lubricating, rinsing, maintaining temperatures. Pumps have to continuously handle new and different combinations of additives in emulsions, oil or water. These fluids are seldom clean, but most often heavily contaminated and they may also contain entrapped air.

With almost five decades of experience, innovative response and continuous exchange of ideas with our customers, we have learned to handle all of these challenges.

It is our goal to provide you with a customized solution, which perfectly meets your specific requirements.

(US)

Coolant Pumps, that's us!



**motralec**

4 rue Lavoisier . ZA Lavoisier . 95223 HERBLAY CEDEX  
Tel. : 01.39.97.65.10 / Fax. : 01.39.97.68.48  
Demande de prix / e-mail : [service-commercial@motralec.com](mailto:service-commercial@motralec.com)

[www.motralec.com](http://www.motralec.com)