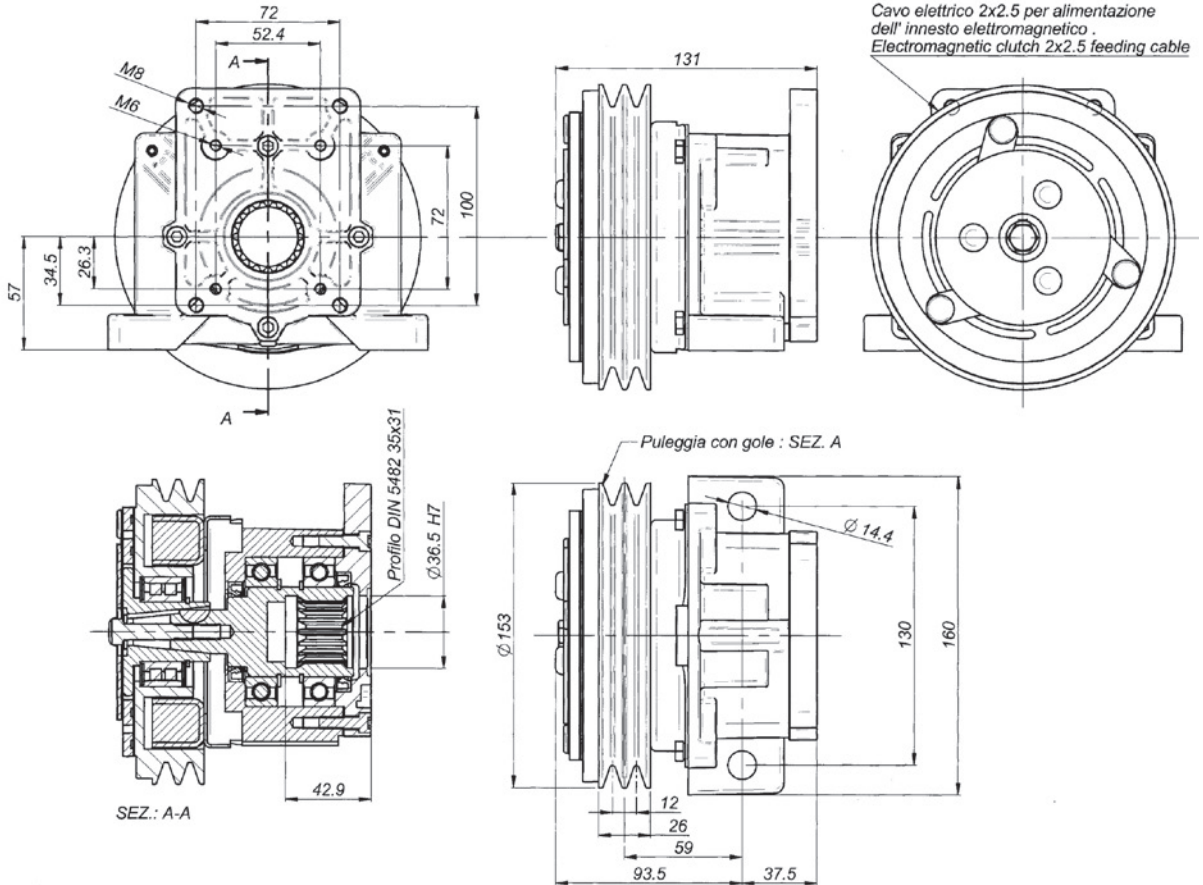


10 daNm ELECTROMAGNETIC CLUTCHES

SERIE: 30901 12 Volt

SERIE: 30903 24 Volt



Nominal torque	7,8 daNm	Connection time	25 m/sec	
Static torque	12,5 daNm	Disconnection time	40 m/sec	
Dynamic torque	8,5 daNm	at 500 rpm	Minimum time between two connection	
	7,0 daNm	at 1000 rpm		
	4,2 daNm	at 1500 rpm		
	3,5 daNm	at 2000 rpm	Max speed	
	2,7 daNm	at 2500 rpm		5000 rpm
	2,5 daNm	at 3000 rpm	Weight	5,5 Kg

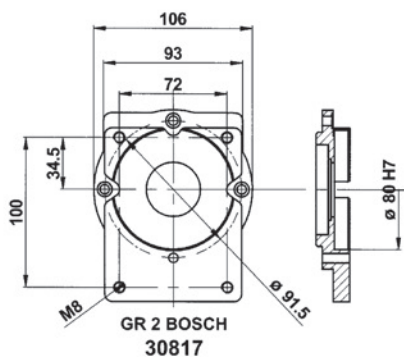
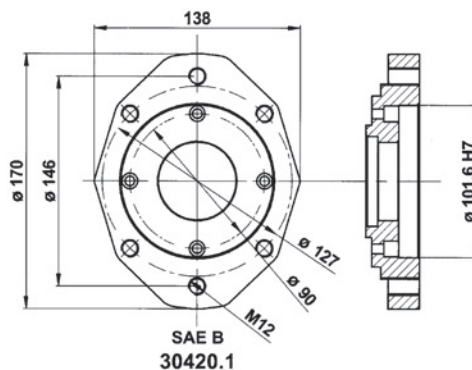
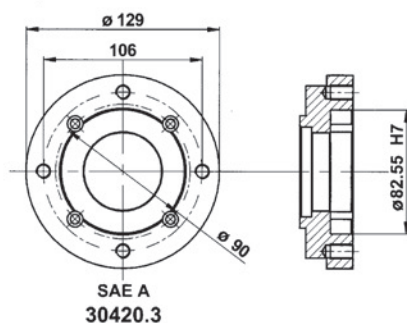
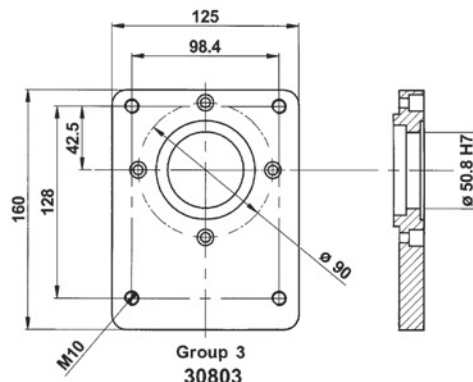
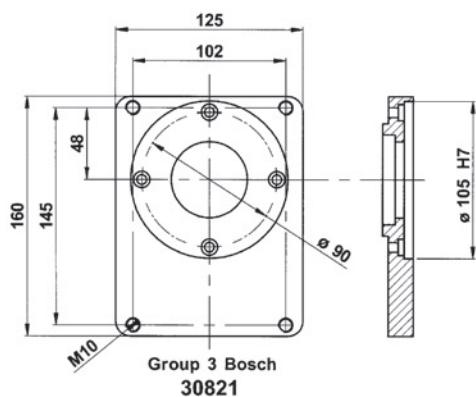
Electric absorption	Resistance (Ω)		Current (A)		Power (W)	
	20° C	120° C	20° C	120° C	20° C	120° C
12 V DC	4,00	5,60	3,33	2,00	40,00	24,00
24 V DC	20,00	28,00	1,26	0,77	30,30	18,18

All technical data are at 20°C / at 120 °C the performance are less 20%
All electromagnetc clutches are reversible.

PART NO.	DESCRIPTION
29 - 30901	Electromagnetic clutch 12V. 10 Kgm. Fl.1/2
29 - 30903	Electromagnetic clutch 24V. 10 Kgm. Fl.1/2
29 - 30903/SA	Electromagnetic clutch 24V. 10 Kgm. Fl. SAE A
29 - 30909	Electromagnetic clutch 12V. 10 Kgm. Fl.3
29 - 30911	Electromagnetic clutch 24V. 10 Kgm. Fl.3
29 - 30917	Electromagnetic clutch 12V. 10 Kgm. Fl. 2 Bosch
29 - 30919	Electromagnetic clutch 24V. 10 Kgm. Fl. 2 Bosch
29 - 30925	Electromagnetic clutch 12V. 10 Kgm. Fl. 3 Bosch
29 - 30927	Electromagnetic clutch 24V. 10 Kgm. Fl. 3 Bosch

If the part number needed is not listed please ask the Flowfit Sales Team

FLANGES FOR 10 daNm ELECTROMAGNETIC CLUTCHES

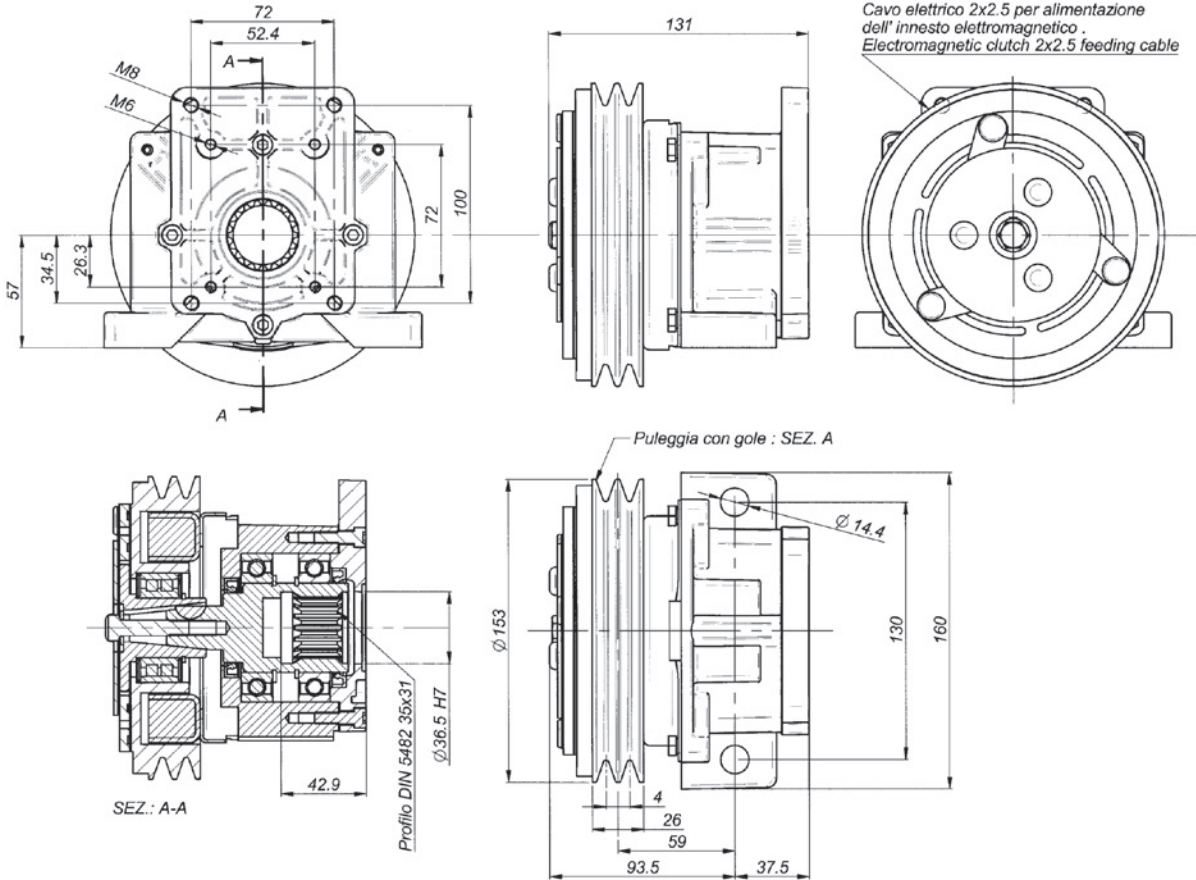


Electric absorption	CLUTCHES COMPLETE WITH ABOVE FLANGES				
	Gr.2 BOSCH	Gr.3	Gr. 3 BOSCH	SAE A	SAE B
12 Volt	30917	30909	30925	30901/SA	30901/SB
24 Volt	30919	30911	30927	30903/SA	30903/SB

14 daNm ELECTROMAGNETIC CLUTCHES

SERIE: 30929 12 Volt

SERIE: 30930 24 Volt

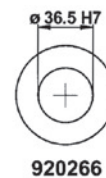
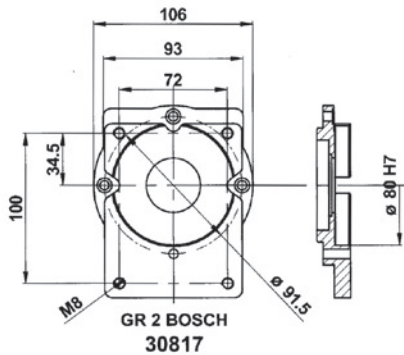
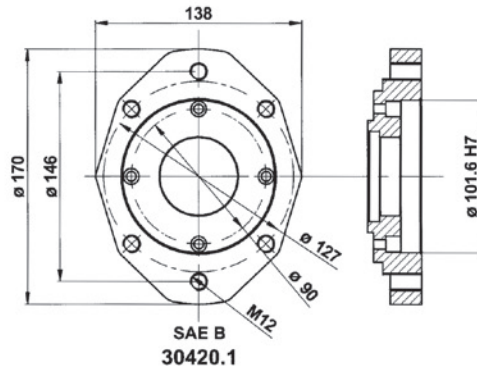
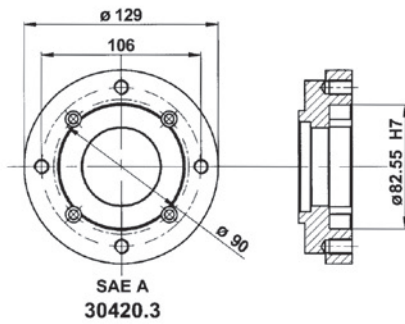
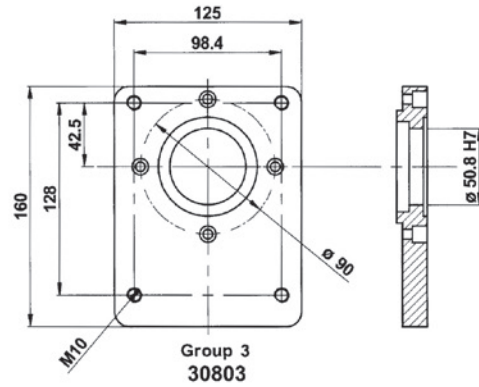
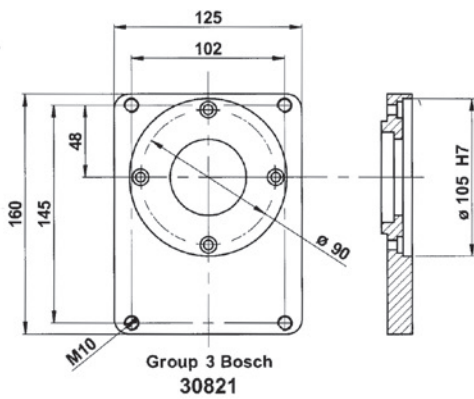


Nominal torque	11,8 daNm		Connection time	25 m/sec		
Static torque	14,0 daNm		Disconnection time	40 m/sec		
Dynamic torque	12,5 daNm	at 500 rpm	Minimum time between two connection	20 sec		
	11,0 daNm	at 1000 rpm				
	8,2 daNm	at 1500 rpm	Max speed	5000 rpm		
	7,5 daNm	at 2000 rpm				
	6,7 daNm	at 2500 rpm				
	6,5 daNm	at 3000 rpm	Weight	5,5 Kg		
Electric absorption	Resistance (Ω)		Current (A)		Power (W)	
	20° C	120° C	20° C	120° C	20° C	120° C
12 V DC	4,00	5,60	3,33	2,00	40,00	24,00
24 V DC	20,00	28,00	1,26	0,77	30,30	18,18
All technical data are at 20°C / at 120 °C the performance are less 20% All electromageteic clutches are reversible.						

PART NO.	DESCRIPTION
29 - 30929	Electromagnetic clutch 12V. 14 Kg. Fl.1/2
29 - 30929/SA	Electromagnetic clutch 12V. 14 Kg. Fl. SAE A
29 - 30929/SB	Electromagnetic clutch 12V. 14 Kg. Fl. SAE B
29 - 30930	Electromagnetic clutch 24V. 14 Kg. Fl.1/2
29 - 30931	Electromagnetic clutch 12V. 14 Kg. Fl.3
29 - 30932	Electromagnetic clutch 24V. 14 Kg. Fl.3

If the part number needed is not listed please ask the Flowfit Sales Team

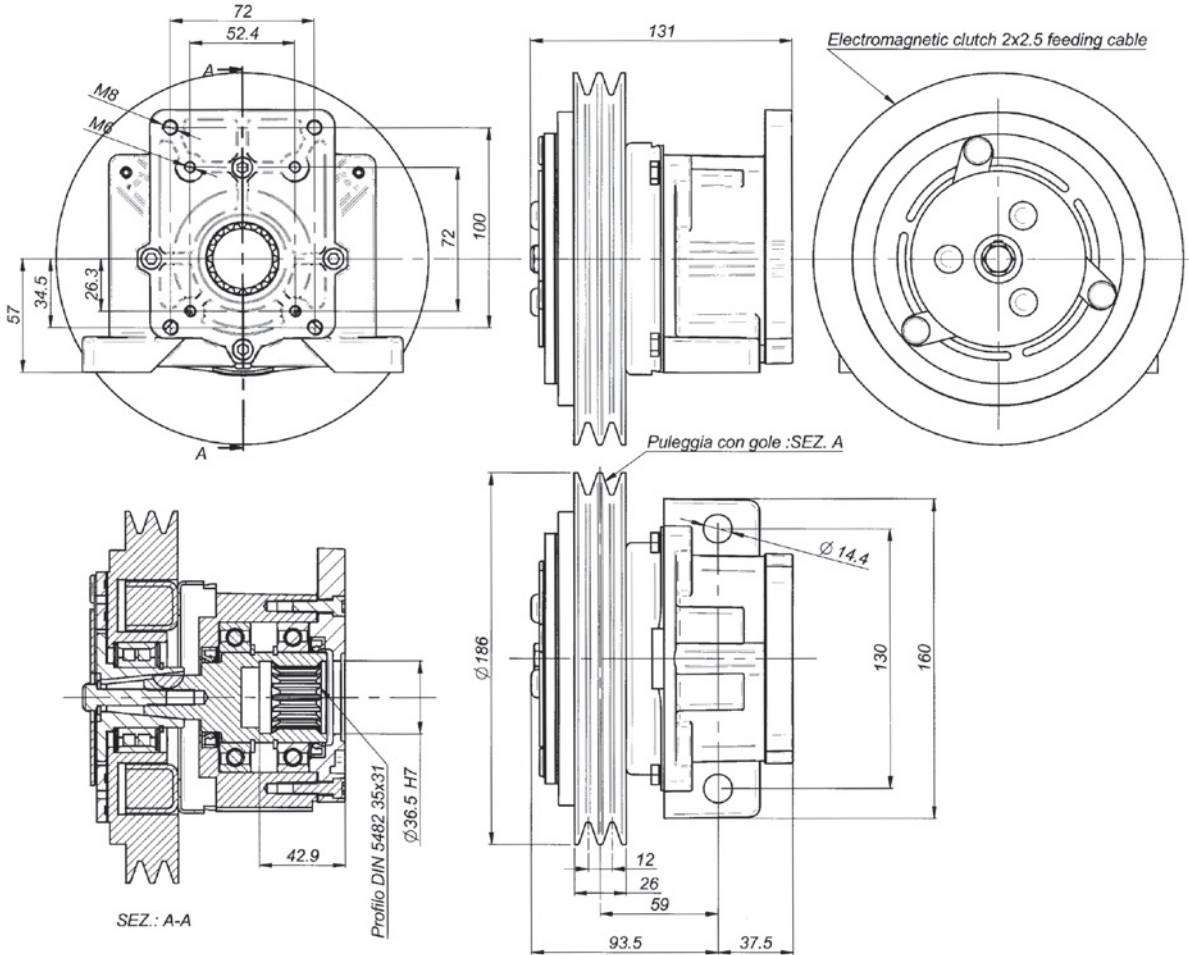
FLANGES FOR 14 daNm ELECTROMAGNETIC CLUTCHES



Electric absorption	CLUTCHES COMPLETE WITH ABOVE FLANGES				
	Gr.2 BOSCH	Gr.3	Gr. 3 BOSCH	SAE A	SAE B
12 Volt	30929/2B	30931	30931/3B	30929/SA	30929/SB
24 Volt	30930/2B	30932	30932/3B	30930/SA	30930/SB

21 daNm ELECTROMAGNETIC CLUTCHES

SERIES: 30990 12 Volt SERIES: 30991 24 Volt

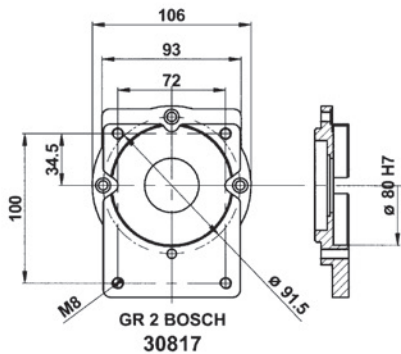
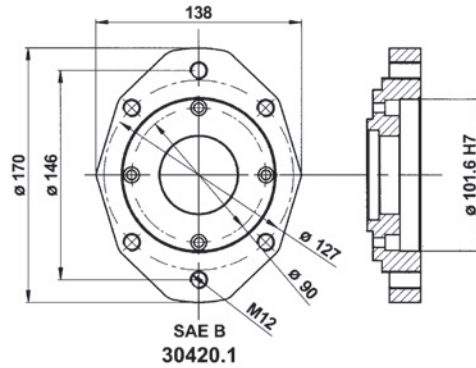
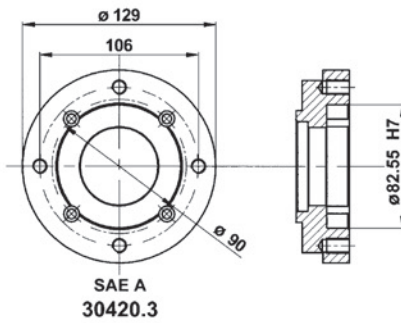
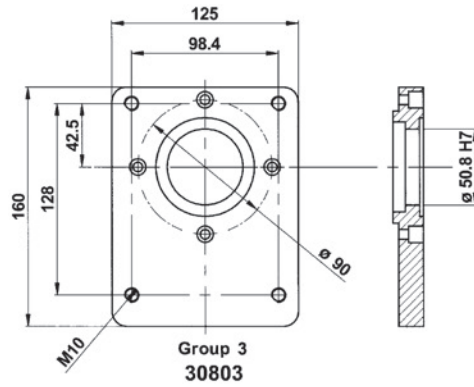
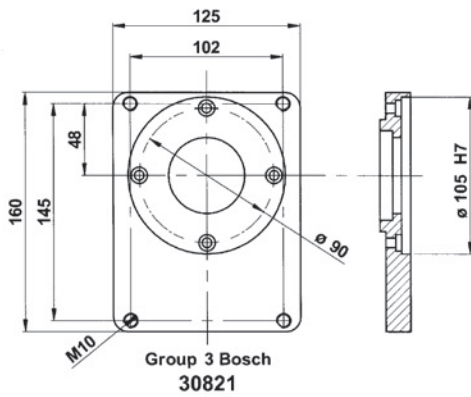


Nominal torque	16,0 daNm		Connection time		25 m/sec	
Static torque	21,0 daNm		Disconnection time		40 m/sec	
Dynamic torque	14,5 daNm	at 500 rpm	Minimum time between two connection		20 sec	
	12,0 daNm	at 1000 rpm				
	9,5 daNm	at 1500 rpm				
	8,8 daNm	at 2000 rpm	Max speed		5000 rpm	
	8,0 daNm	at 2500 rpm	Weight		8 Kg	
7,8 daNm	at 3000 rpm					
Electric absorption	Resistance (Ω)		Current (A)		Power (W)	
	20° C	120° C	20° C	120° C	20° C	120° C
12 V DC	2,96	3,97	4,05	2,71	48,70	32,50
24 V DC	12,30	16,60	1,95	1,31	47,00	30,70
All technical data are at 20°C / at 120 °C the performance are less 20% All electromegetic clutches are reversible.						

PART NO.	DESCRIPTION
29 - 30990	Electromagnetic clutch 12V. 21 Kg. Fl.2
29 - 30991	Electromagnetic clutch 24V. 21 Kg. Fl.2
29 - 30991/SB	Electromagnetic clutch 24V. 21 Kg. Fl. SAE B
29 - 30992	Electromagnetic clutch 12V. 21 Kg. Fl.3
29 - 30993	Electromagnetic clutch 24V. 21 Kg. Fl.3

If the part number needed is not listed please ask the Flowfit Sales Team

FLANGES FOR 21 daNm ELECTROMAGNETIC CLUTCHES



Electric absorption	CLUTCHES COMPLETE WITH ABOVE FLANGES				
	Gr.2 BOSCH	Gr.3	Gr. 3 BOSCH	SAE A	SAE B
12 Volt	30990/2B	30992	30992/3B	30990/SA	30990/SB
24 Volt	30991/2B	30993	30993/3B	30991/SA	30991/SB

Hydraulic fluids

It is advisable to use hydraulic oils of mineral origin with anti-foaming, anti-oxidant and anti-corrosion characteristics and a high viscosity index;

- Recommended viscosity $15 \div 92 \text{ mm}^2/\text{s}$ (cSt)
- Start-up viscosity limit $3000 \text{ mm}^2/\text{s}$ (cSt)

During normal operation, the temperature of the oil must be between 20°C and 65°C and limit values between -15°C and 80°C .

Suction pressure

The allowed working pressure supplied must be in the range 0.7 - 3 bar (absolute).

For higher values (up to 30 bar), versions with a K seal must be used.

Suction and delivery pipes

Particular attention must be given to the sizing of pipes (rigid or flexible), avoiding disproportionate lengths, sudden variations in cross section or small curvature radius, in any case selecting pipe cross-sections that guarantee an oil speed between 0.6 and 12 m/s.

Filtration

In order to eliminate any impurities present in the oil and to guarantee a longer duration of the pump, the system must be equipped with effective filtration which must be periodically checked to ensure that it is operating correctly.

The following are the recommended filtration levels:

- 26/23 ISO DIS 4406 up to 150 bar
- 23/20 ISO DIS 4406 for higher pressures.

Installation notes

- Make sure that the coupling used for pulling compensates for any axial misalignments that could compromise the integrity of the pump.
- If there are radial and/or axial/ loads on the pump shaft (as is the case, for example, when pulling is carried out using pulleys and belts) the versions available with a support must be chosen.
- The connection coupling between spline shafts must be appropriately lubricated, free to move axially and of an adequate length to cover the entire extension of the two shafts (motor and pump).
- If the pump is painted, protect the shaft seal and also make sure that the contact zone between the shaft seal and the shaft is free of dust or abrasive sediments.

Rotation direction

The rotation direction is defined as S (left/anticlockwise) or D (right/clockwise) by observing the shaft from the front.

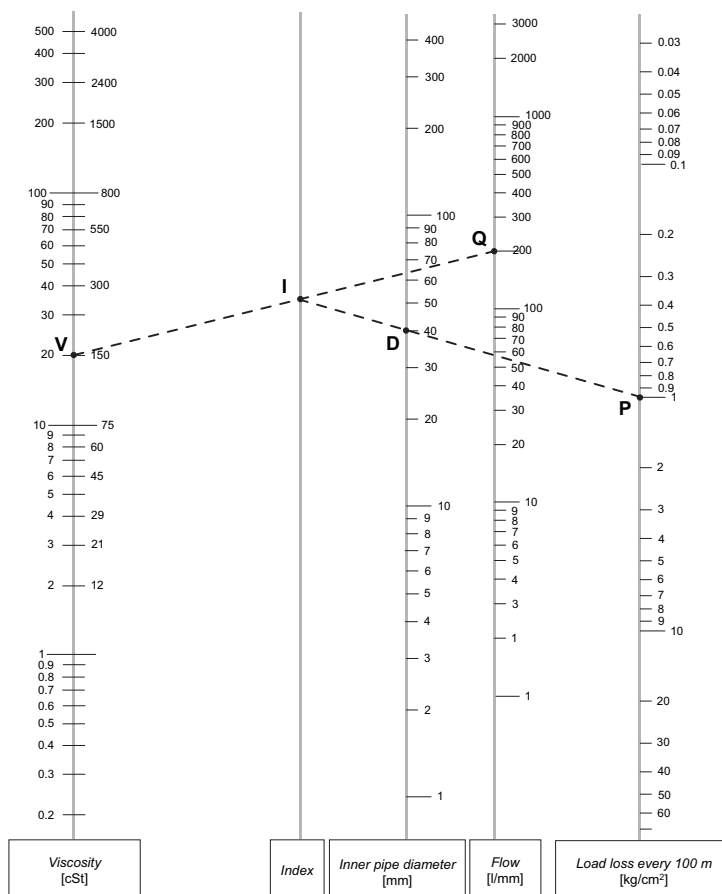
The pumps are monodirectional and therefore when ordering the required rotation direction must be specified; alternatively it is possible to modify the internal set-up as illustrated below (inversion of the rotation direction).

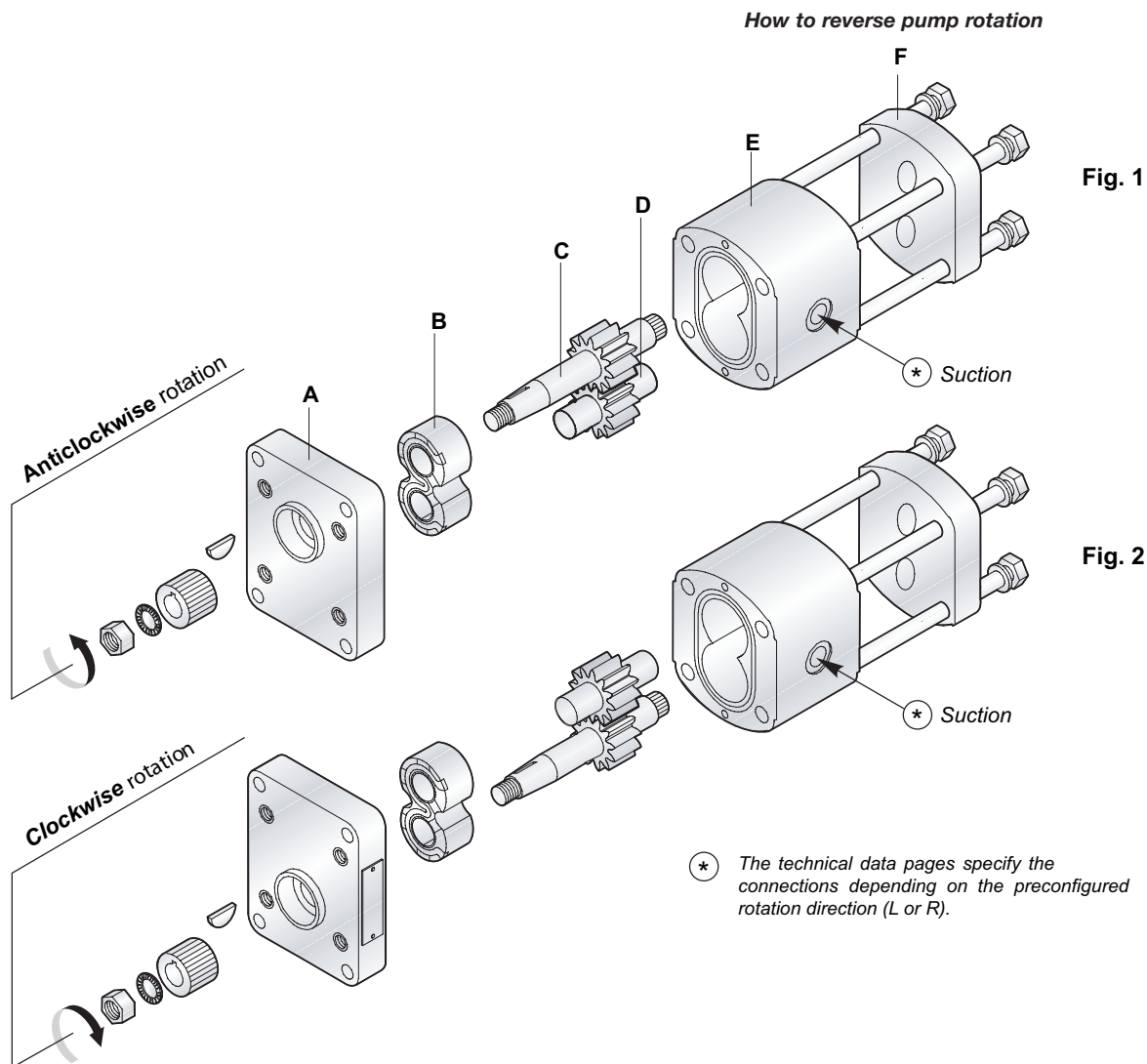
The pages regarding the pump characteristics highlight the directions of the delivery and suction flows for each version and rotation direction.

Pressure drops

The following nomogram allows you to calculate the pressure drops for each 100 m of piping when the viscosity of the oil, the delivery capacity of the pump and the diameter of the piping are known.

The viscosity (V), flow capacity (Q) and diameter (D) values are fixed on the respective scales; a line is drawn joining the points V and Q; the point where this intersects the index line is defined as point I. If the line joining point I to point D is extended, the load pressure drops value can then be read at the intersection with the last scale.





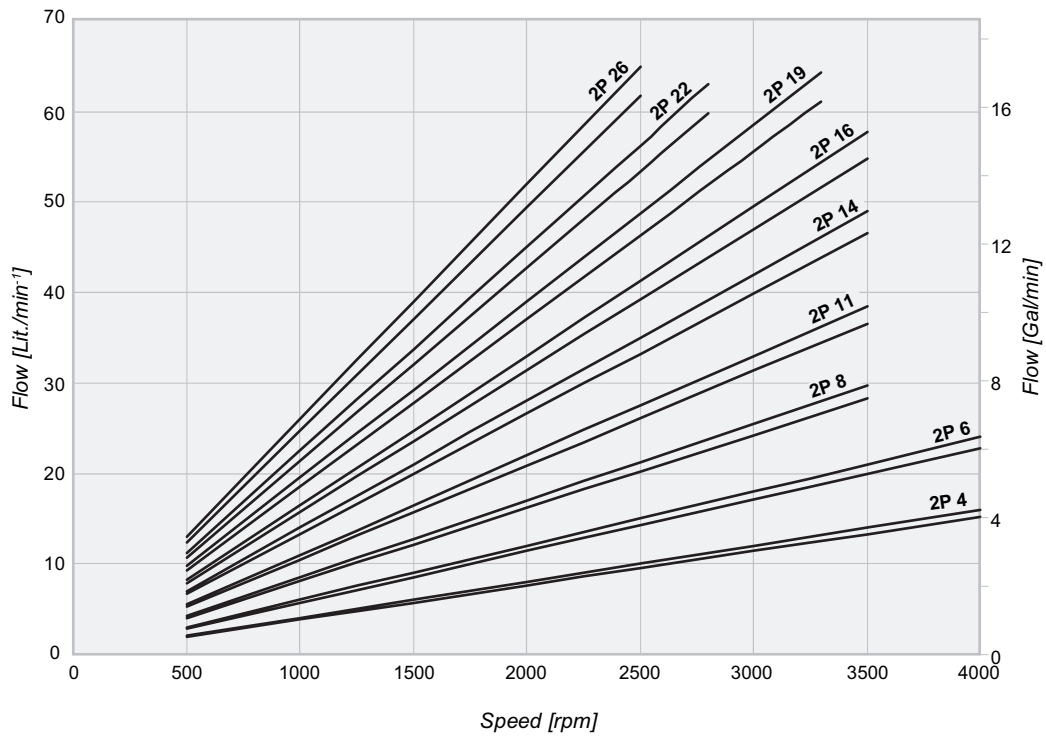
The gear pumps direction of rotation is indicated by an arrow on the label.

How to reverse the pumps rotation:

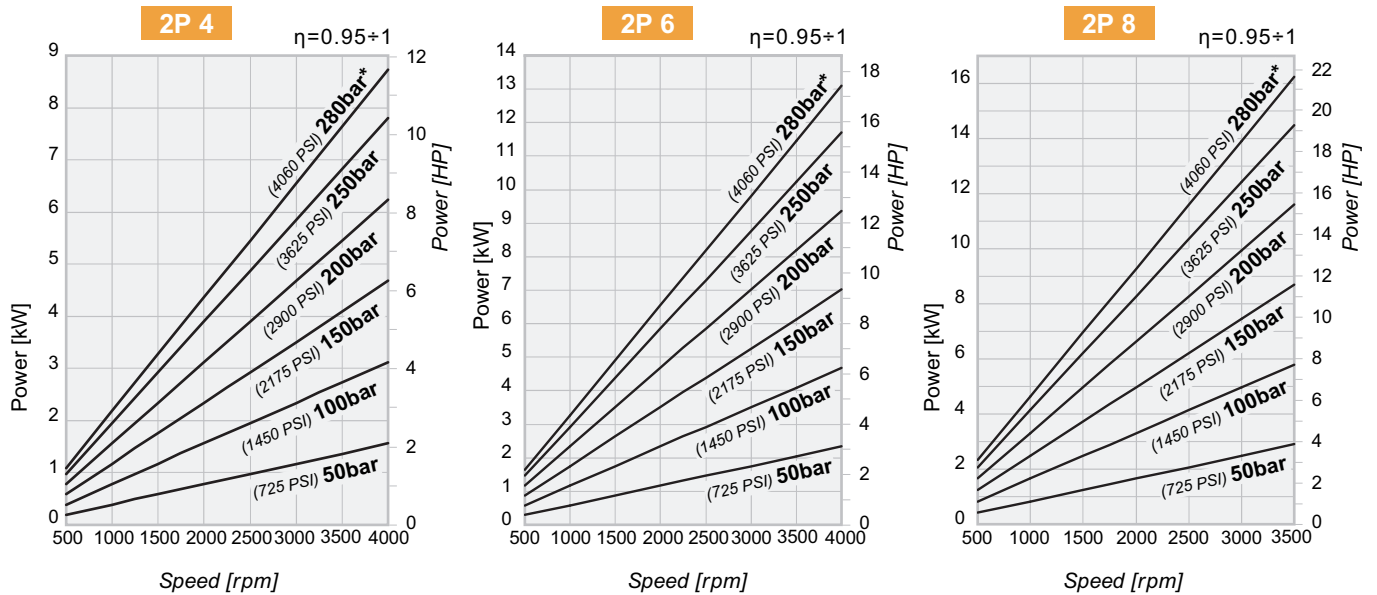
- Disassemble pump as shown in figure 1.
- Pull off gears C - D and reassemble according to figure 2.
- Reassemble bushing B as before.
- Reverse the flange A and reassemble the pump tightening the screws by using a torque wrench.
- For the pumps GR3 - GR4, disassemble only front flange.

Type of pump	GR1	GR2	GR3	GR4
Numbers of screws	4	4	16	16
Type of threads	M8	M10	M10	M14
Tightening torque of screws	30 Nm (266 in-lbs)	50 Nm (443 in-lbs)	60 Nm (531 in-lbs)	140 Nm (1239 in-lbs)
Type of coupling	1IS 12M	2IS 14M 2IS 15M	3IS 18M	4IS 23M
Tightening torque at nut coupling	9 ÷ 10 Nm (80 ÷ 89 in-lbs)	22 ÷ 25 Nm (195 ÷ 221 in-lbs) 32 ÷ 35 Nm (283 ÷ 310 in-lbs)	50 ÷ 55 Nm (443 ÷ 487 in-lbs)	100 ÷ 120 Nm (885 ÷ 1062 in-lbs)

Flow - Speed chart



Pumps Group 2 Power and Speed Diagrams

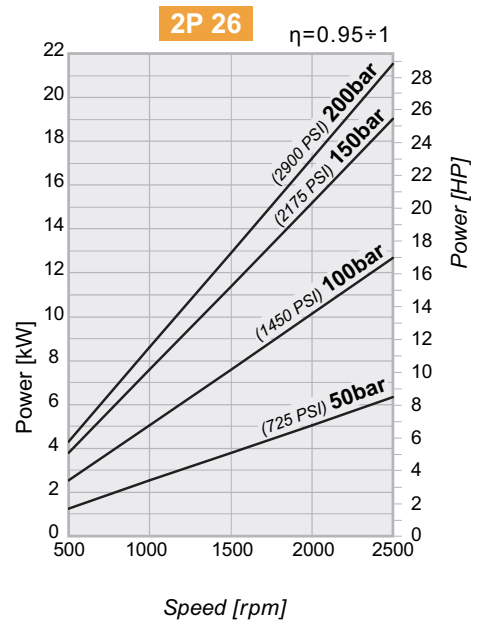
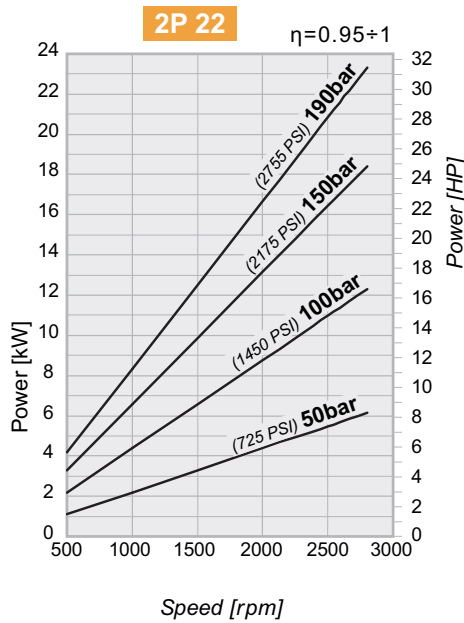
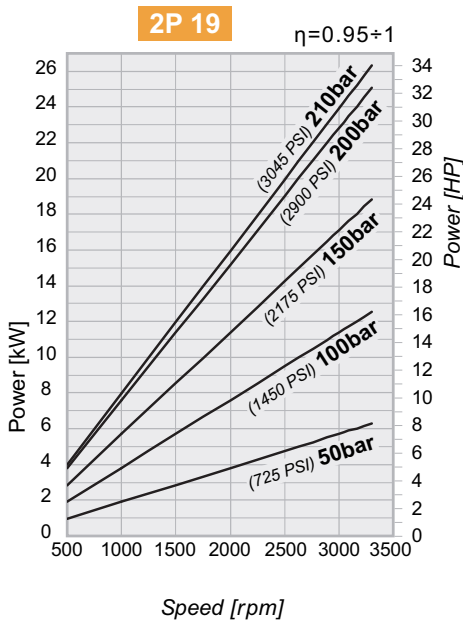
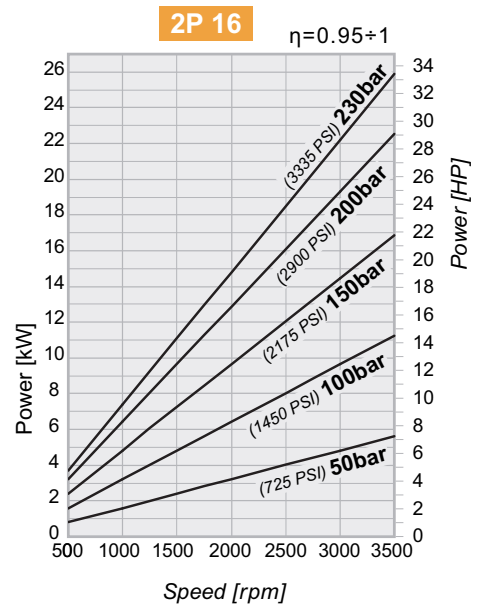
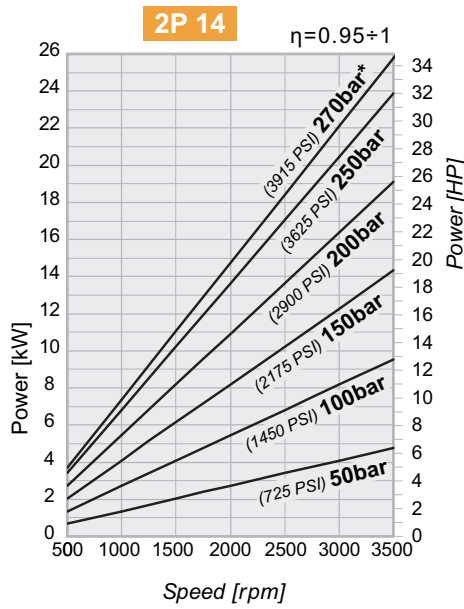
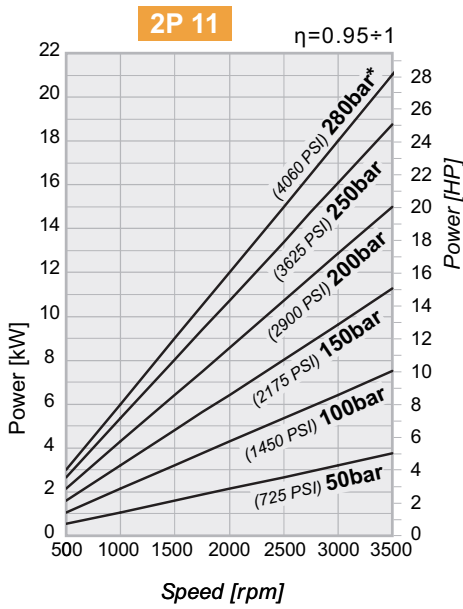


* Only for cast iron pumps

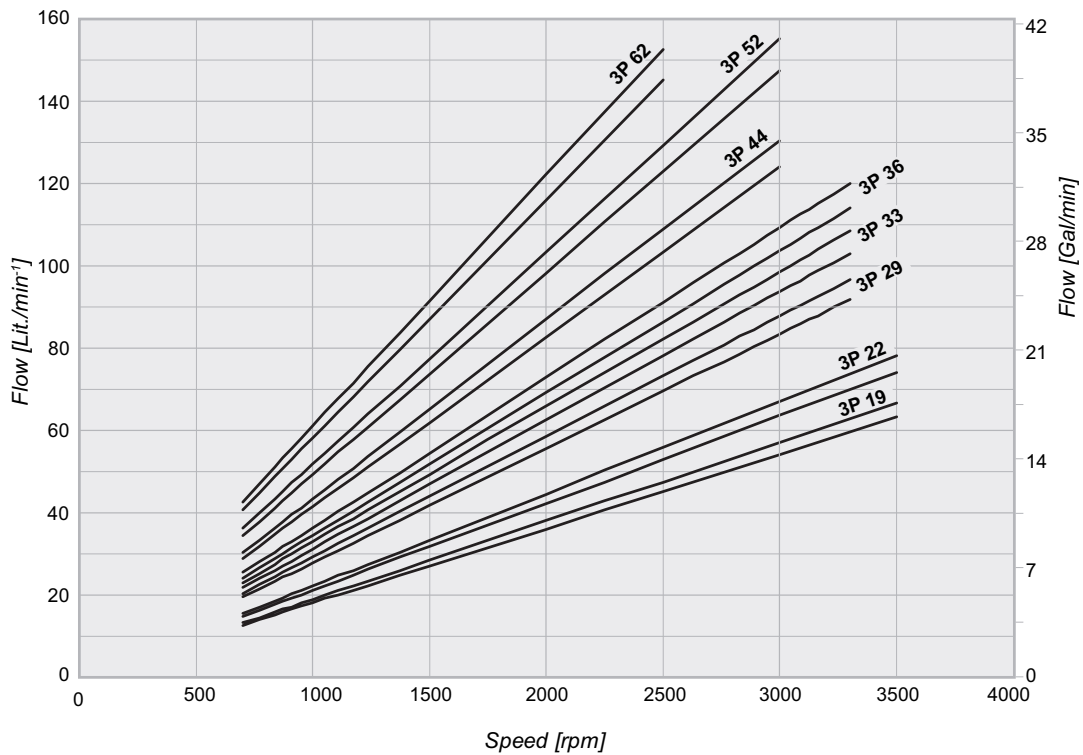
PUMPS GROUP 2 • PERFORMANCE



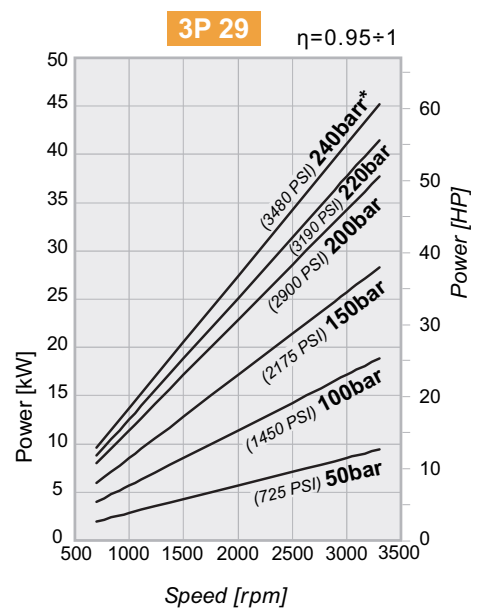
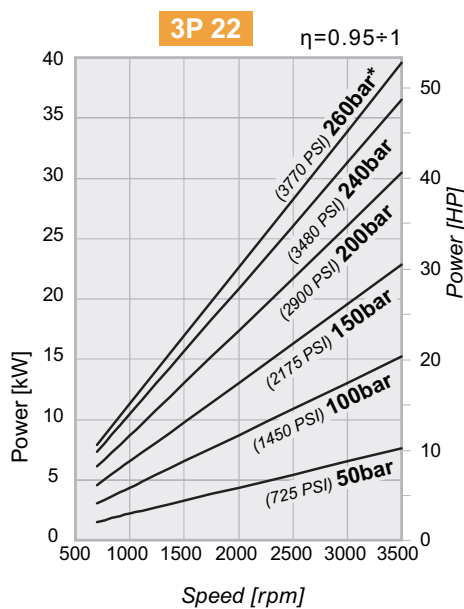
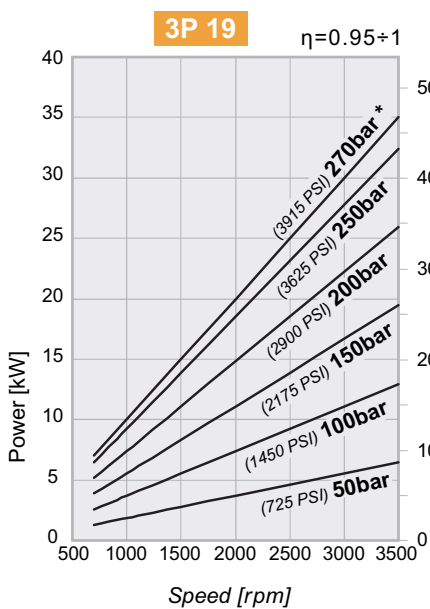
Pumps Group 2 Power and Speed Diagrams



Flow - Speed chart



Pumps Group 3 Power and Speed Diagrams



* Only for cast iron pumps

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Pumps Group 3 Power and Speed Diagrams

