

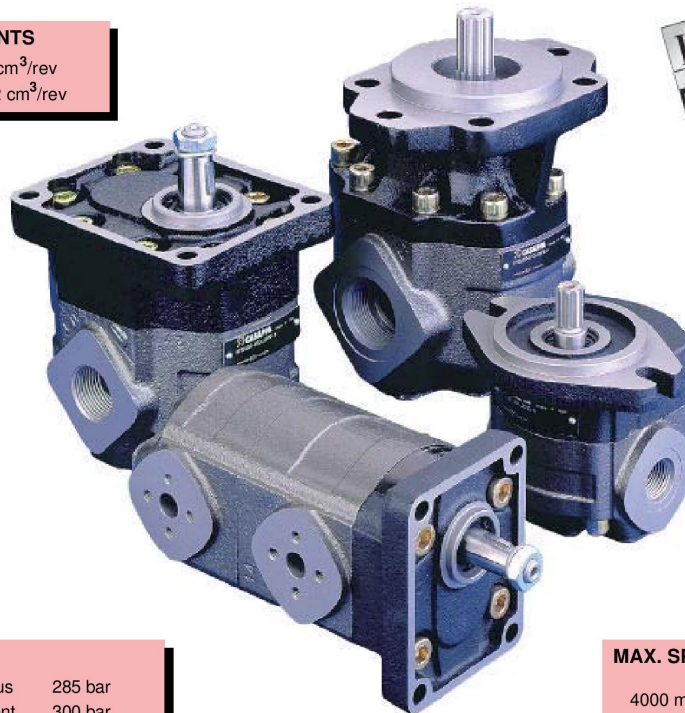
KAPPA

Hydraulic gear pumps two pieces cast iron housing

Replaces: K 01 T E

DISPLACEMENTS

From 4,95 cm³/rev
To 73,82 cm³/rev



PRESSURE

Max. continuous 285 bar
Max. intermittent 300 bar
Max. peak 330 bar

MAX. SPEED

4000 min⁻¹

- High operating pressures
- High efficiency at high temperature
- Exceptional working life expectancy

Edition: 02/09.2002

KAPPA pump and motor units consist essentially of a housing and a mounting flange in cast iron of superior mechanical specifications. KAPPA is available with mounting flanges and side or rear ports according to SAE and European standard. The rigidity of assembly and the compact design of KAPPA pumps and motors ensure reliability and high volumetric efficiency also at high operating pressures. Infinite care and attention is taken over the design and construction of each single component, and with quality monitored unceasingly, the result is a consistent, perfectly balanced assembly that guarantees unbroken service under the most arduous operating conditions. KAPPA series is the right choice wherever noise, contamination, non inflammable fluids and size are critical factors. The wide choice of combinations of mounting flanges, shafts and ports ensure to KAPPA series to be applied in a vast range of application.

 **CASAPPA**
FLUID POWER DESIGN

FEATURES

Construction	External gear type pumps and motors
Mounting	EUROPEAN - SAE - ISO standard flanges
Line connections	Screw and flange
Direction of rotation (looking on drive shaft)	Anti-clock (S) - clockwise (D) - reversible (L, R or B)
Inlet pressure range for pumps	0,7 ÷ 3 bar (abs.)
Max back pressure for single rotation motors	p_1 (continuous) max 5 bar
	p_2 (for 20 s) max 8 bar
	p_3 (for 8 s) max 15 bar
Max drain line pressure on the reversible rotation motors	5 bar
Max back pressure on the series motors	150 bar
Fluid temperature range	See table (1)
Fluid	Mineral oil based hydraulic fluids to ISO/DIN and fire resistant fluids [see table (1)]. For other fluids please consult our technical sales department.
Viscosity range	From 12 to 100 mm ² /s (cSt) recommended
	Up to 750 mm ² /s (cSt) permitted
Filtering requirement	See table (2)

Tab. 1

Type	Fluid composition	Max pressure [bar]	Max speed [min ⁻¹]	Temperature [°C]	Seals (◆)
ISO/DIN	Mineral oil based hydraulic fluid to ISO/DIN	See page 3 - 4	See page 3 - 4	-25 ÷ +80	N
					N-H
				-25 ÷ +110	V
HFA	Oil emulsion in water 5 ÷ 15% of oil	50	1500	2 ÷ 55	N
HFB	Water emulsion in oil 40 % of water	120	1500	2 ÷ 60	
HFC	Water - glycol	100	1500	-20 ÷ +60	N Bz
HFD	Phosphate ester	150	1500	-10 ÷ +80	V Bz

(◆) **N**= Buna N (standard) - **N-H**= Buna N and high back pressure shaft seals - **V**= Viton
N Bz= Buna N and Bronze thrust plates - **V Bz**= Viton and Bronze thrust plates

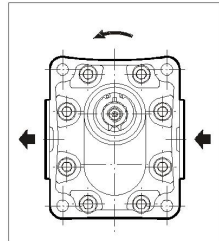
Tab. 2

Working pressure	$\Delta p > 200$ bar	$\Delta p < 200$ bar
Contamination class NAS 1638	8	10
Contamination class ISO 4406	19/17/14	21/19/16
Achieved with filter $\beta_{x=75}$	10 μ m	25 μ m

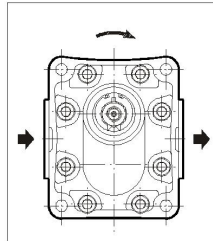
GENERAL NOTES

Available with different inlet and outlet ports. If you use fire resistant fluids specify the type of them at the order. For more information please consult our technical sales department.

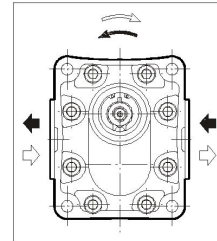
DEFINITION OF ROTATION DIRECTION LOOKING ON THE DRIVE SHAFT



Anti-clock rotation

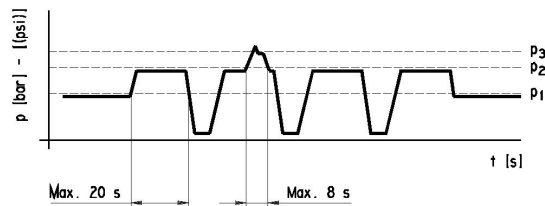


Clockwise rotation



Reversible rotation

PRESSURE DEFINITION



p_1 Max. continuous pressure
 p_2 Max. intermittent pressure
 p_3 Max. peak pressure

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KAPPA 20 GENERAL DATA MOTORS

KM 20

Motor type	Displacement cm ³ /rev	Max. pressure			Max. speed	Min. speed
		p ₁	p ₂	p ₃		
		bar			min ⁻¹	
KM 20-4	4,95	285	300	330	4000	350
KM 20-6,3	6,61	285	300	330	4000	350
KM 20-8	8,26	285	300	330	3500	350
KM 20-11,2	11,23	275	290	320	3500	350
KM 20-14	14,53	265	290	320	3500	350
KM 20-16	16,85	260	290	320	3000	300
KM 20-20	21,14	210	230	250	3000	300
KM 20-25	26,42	180	200	220	2500	300
KM 20-31,5	33,03	140	160	180	2000	300

p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

The values in the table refer to unidirectional motors.
Reversible motor max pressures are 15% lower than those shown in table.
For different working conditions please consult our sales department.

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KAPPA 30 GENERAL DATA MOTORS

KM 30

Motor type	Displacement cm ³ /rev	Max. pressure			Max. speed	Min. speed
		p ₁	p ₂	p ₃		
		bar			min ⁻¹	
KM 30-27	26,7	280	300	310	3000	350
KM 30-34	34,56	260	280	300	3000	350
KM 30-38	39,27	260	280	300	3000	350
KM 30-43	43,98	250	270	290	3000	350
KM 30-51	51,83	230	250	270	2500	350
KM 30-56	56,54	215	235	255	2500	350
KM 30-61	61,26	200	220	240	2500	350
KM 30-73	73,82	180	200	220	2500	350

p₁= Max. continuous pressure p₂= Max. intermittent pressure p₃= Max. peak pressure

The values in the table refer to unidirectional motors.
Reversible motor max pressures are 15% lower than those shown in table.
For different working conditions please consult our sales department.

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DESIGN CALCULATIONS FOR MOTORS

Q	[l/min]	Delivery
M	[Nm]	Torque
P	[kW]	Power
V	[cm ³ /rev]	Displacement
n	[min ⁻¹]	Speed
Δp	[bar]	Pressure
$\eta_v = \eta_v(V, \Delta p, n) \quad (\approx 0,96)$		Volumetric efficiency
$\eta_m = \eta_m(V, \Delta p, n) \quad (\approx 0,85)$		Mechanical efficiency
$\eta_t = \eta_v \cdot \eta_m \quad (\approx 0,82)$		Overall efficiency

$$Q = \frac{V \cdot n \cdot 10^{-3}}{\eta_v} \quad [\text{l/min}]$$

$$M = \frac{\Delta p \cdot V \cdot \eta_m}{62,83} \quad [\text{Nm}]$$

$$P = \frac{\Delta p \cdot V \cdot n \cdot \eta_t}{600 \cdot 1000} \quad [\text{kW}]$$

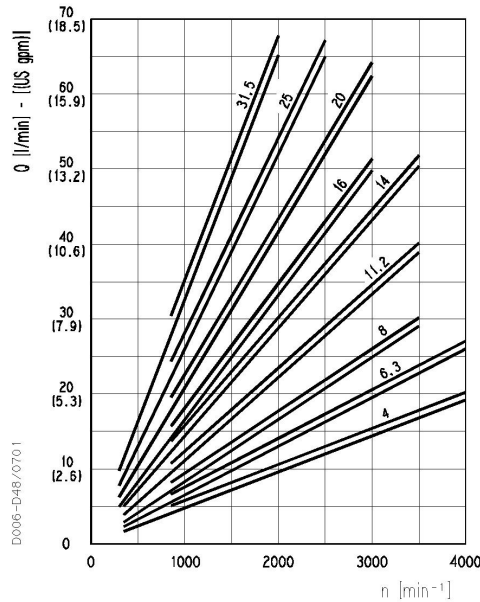
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Note: Diagrams providing approximate selection data will be found on subsequent pages.

KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

KM 20

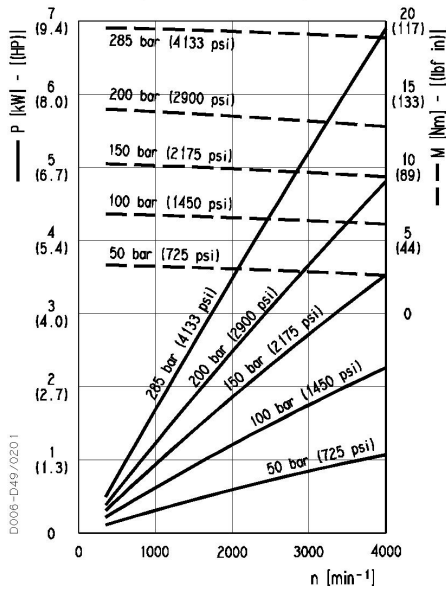
KM 20



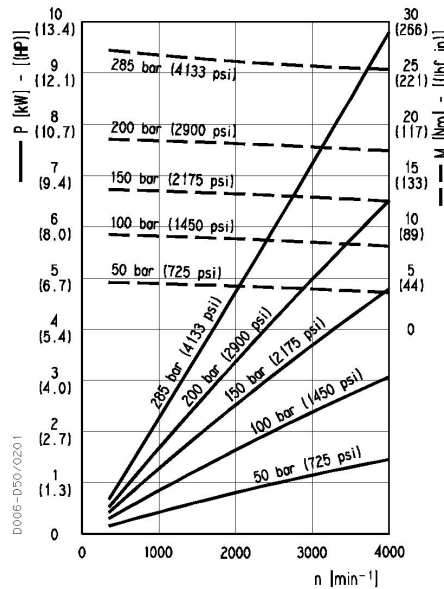
Each curve has been obtained at 50°C, using oil with viscosity 36 mm²/s at 40°C and at these pressures.

- KM 20•4 20-285 bar
- KM 20•6,3 20-285 bar
- KM 20•8 20-285 bar
- KM 20•11,2 20-275 bar
- KM 20•14 20-265 bar
- KM 20•16 20-260 bar
- KM 20•20 20-210 bar
- KM 20•25 20-180 bar
- KM 20•31,5 20-140 bar

KM 20•4



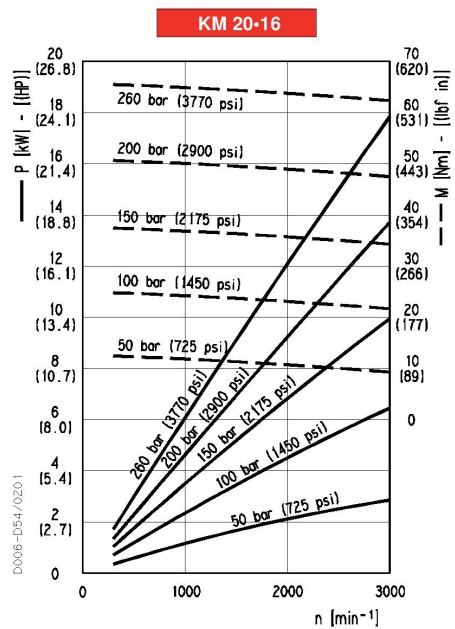
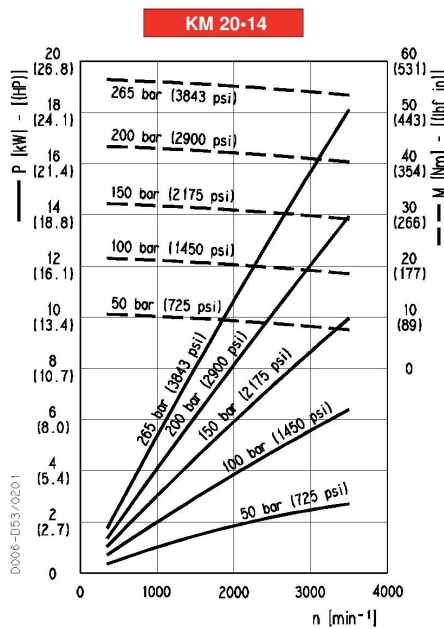
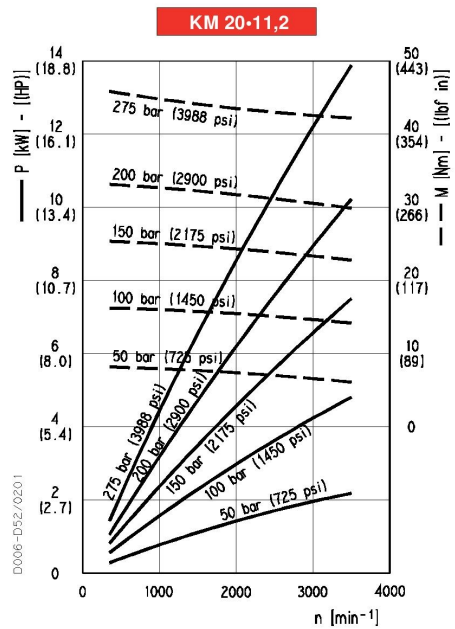
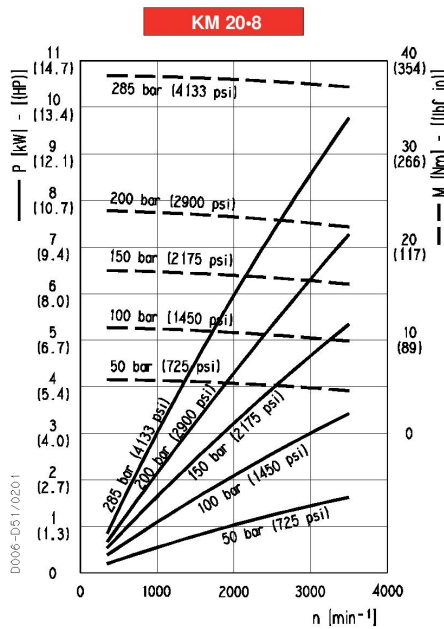
KM 20•6,3



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KAPPA 20 GEAR MOTORS PERFORMANCE CURVES

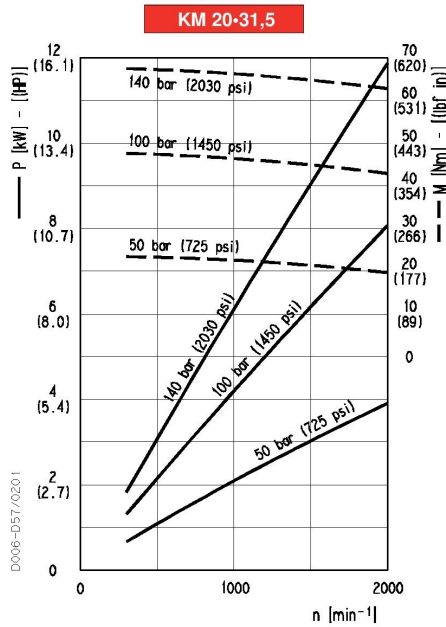
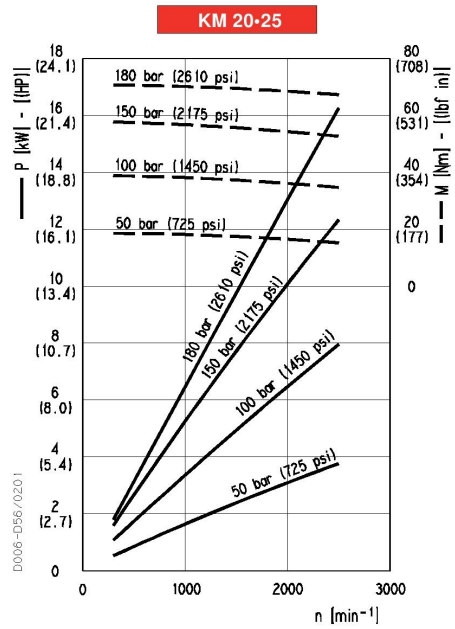
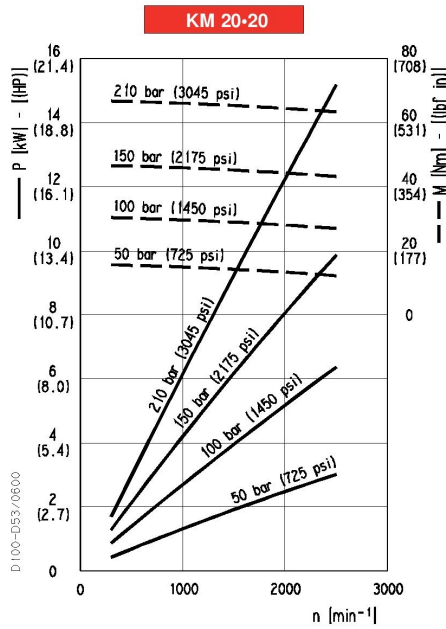
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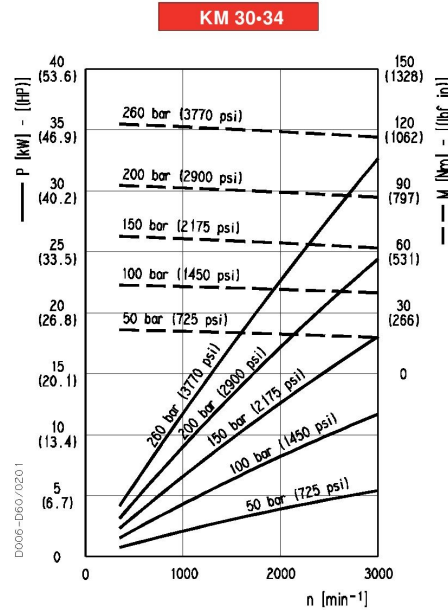
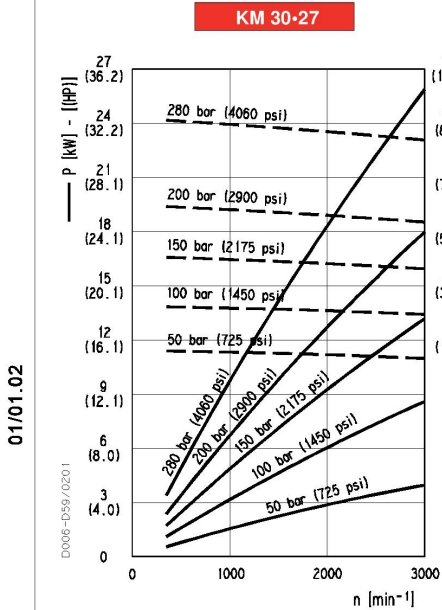
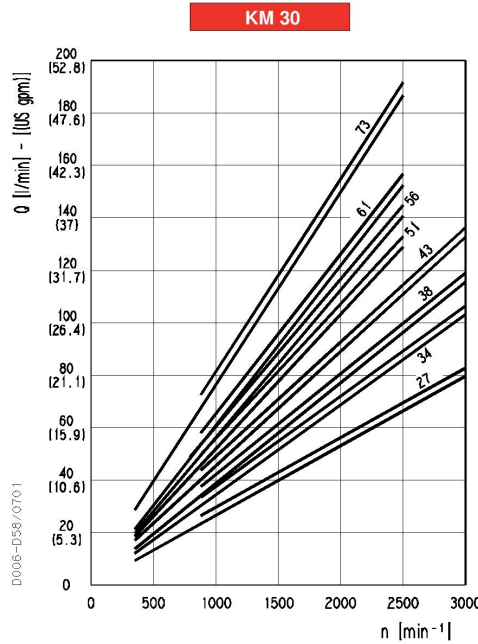
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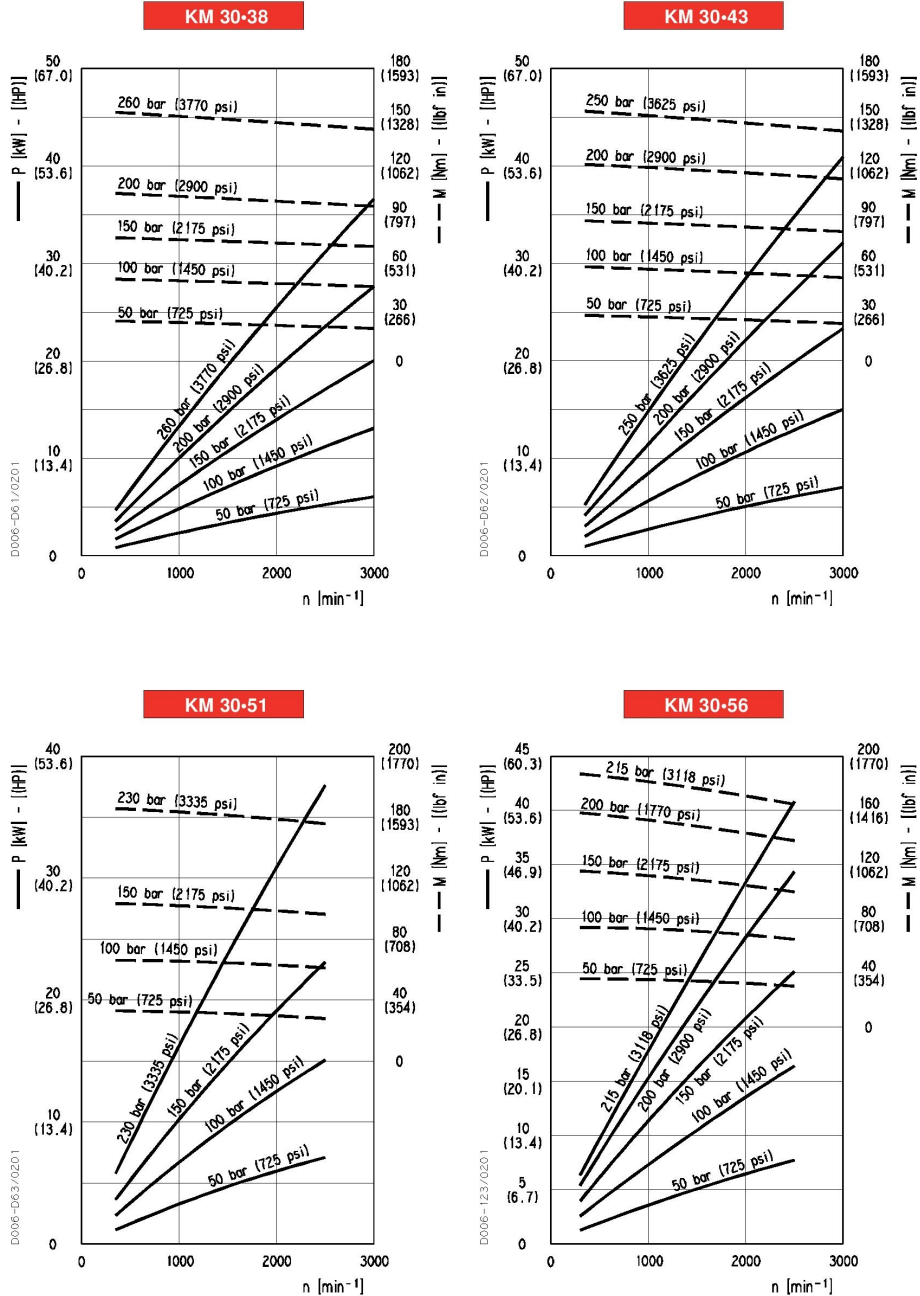
KAPPA 30 GEAR MOTORS PERFORMANCE CURVES

KM 30



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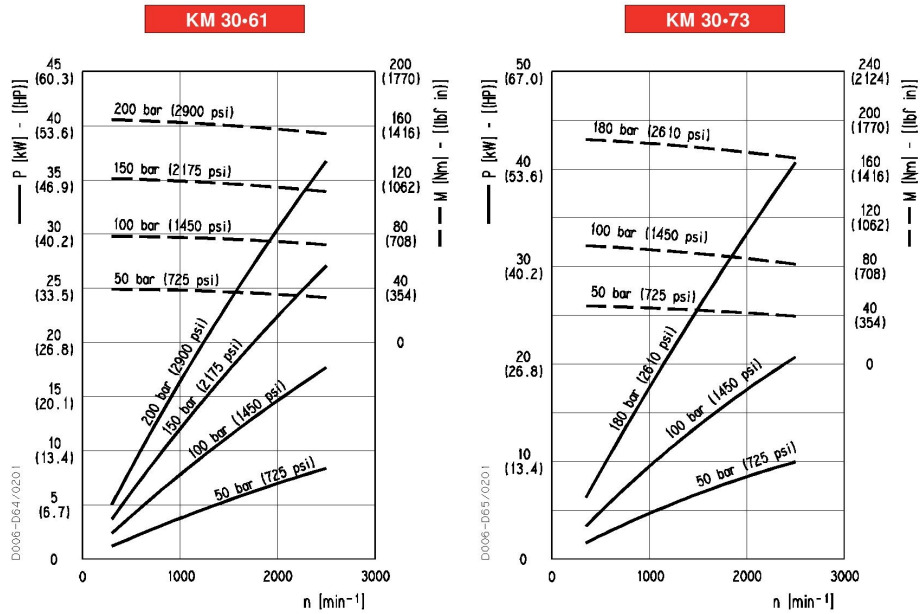
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