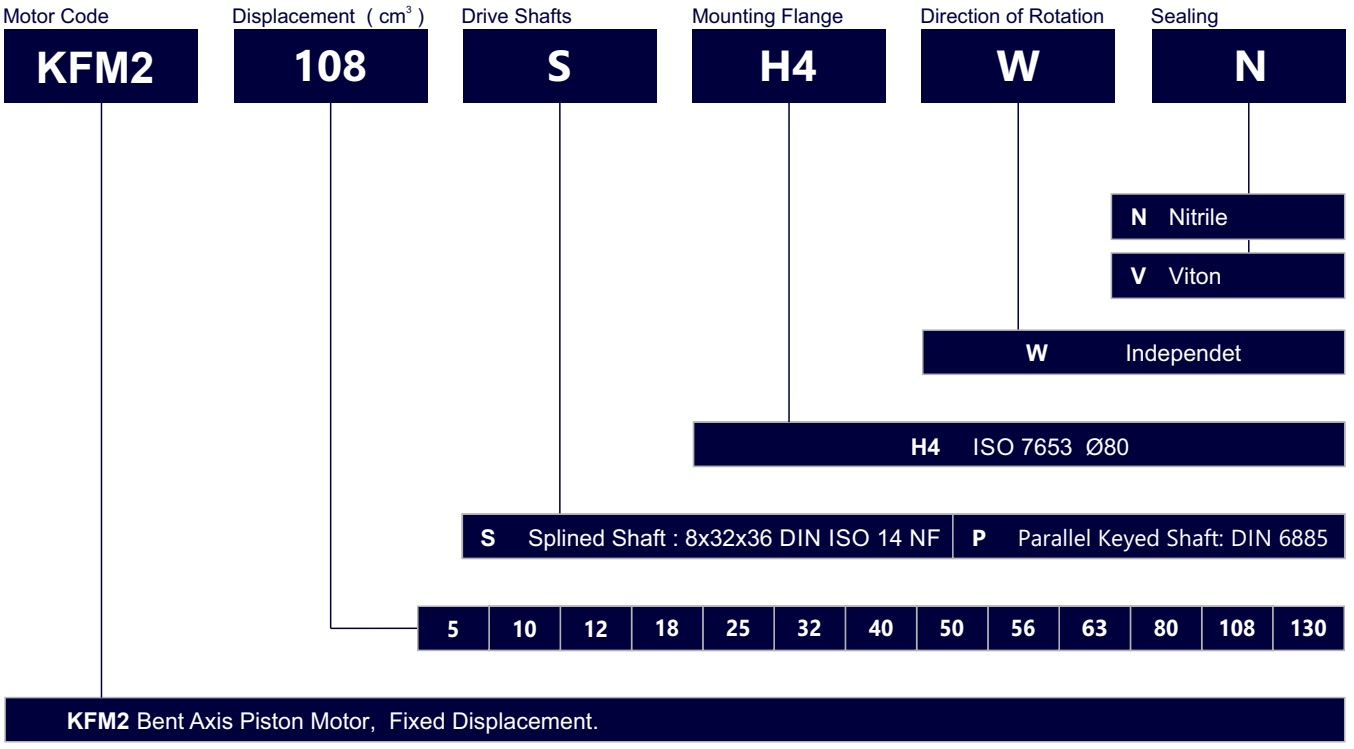
Ordering Code of KFM2 Motors



Formulas			
Pump Output Flow	GPM	GPM = (Speed (rpm) × disp. (cu. in.)) / 231	GPM = (n ×d) / 231
Pump Input Horsepower	HP	HP = GPM × Pressure (psi) / 1714 × Efficiency	HP = (Q ×P) / 1714 × E
Pump Efficiency	E	Overall Efficiency = Output HP / Input HP	Eoverall = HPOut / HPIn X 100
		Overall Efficiency = Volumetric Eff. × Mechanical Eff.	EOverall = EffVol. × EffMech.
Pump Volumetric Efficiency	E	Volumetric Efficiency = Actual Flow Rate Output (GPM) / Theoretical Flow Rate Output (GPM) × 100	EffVol. = QAct. / QTheo. X 100
Pump Mechanical Efficiency	E	Mechanical Efficiency = Theoretical Torque to Drive / Actual Torque to Drive × 100	EffMech = TTheo. / TAct. × 100
Pump Displacement	CIPR	Dsplcmnt (In.3 / rev.) = Flow Rate (GPM) × 231 / Pump RPM	CIPR = GPM × 231 / RPM
Pump Torque	T	Torque = Horsepower × 63025 / RPM	T = 63025 × HP / RPM
		Torque = Pressure (PSIG) × Pump Displacement (CIPR) / 2π	T = P × CIPR / 6.28

Horsepower for driving a pump : For every 1 hp of drive, the equivalent of 1 gpm @ 1500 psi can be produced.

Horsepower for idling a pump : To idle a pump when it is unloaded will require about 5% of it's full rated power

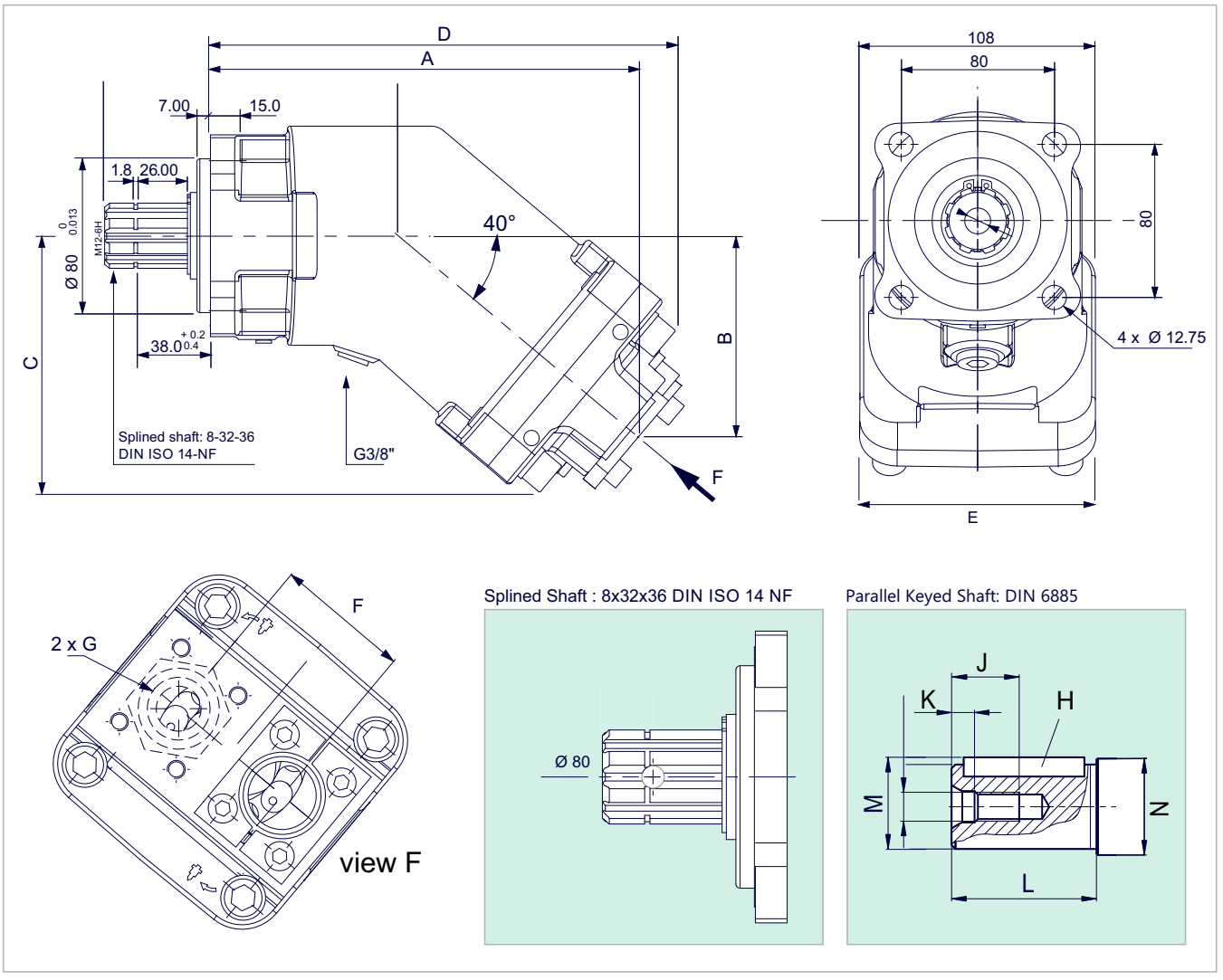
Wattage for heating hydraulic oil : Each watt will raise the temperature of 1 gallon of oil by 1° F. per hour.

Flow velocity in hydraulic lines : Pump suction lines 2 to 4 feet per second, pressure lines up to 500 psi - 10 to 15 ft./sec., pressure lines 500 to 3000 psi - 15 to 20 ft./sec.; all oil lines in air-over-oil systems; 4 ft./sec.

Technical Data I

		5	10	12	18	25	32	40	50	56	63	80	108	130
Displacement	***cc***	5,00	10,00	12,00	18,00	25,00	32,00	40,20	50,00	56,40	63,00	80,00	108,4	130,0
Theoretical oil flow l/min at pump speed	***1000 rpm***	5,00	10,00	12,00	18,00	25,00	32,00	40,20	50,00	56,40	63,00	80,00	108,4	130,0
	1500 rpm	7,50	15,00	18,00	27,00	37,50	48,00	60,30	75,00	84,60	94,50	120,0	162,6	195,0
Maximum Speed														
- Continuous	***rpm***	8800	8000	8000	8000	6250	6250	5600	5000	5000	5000	4400	4000	3400
- Intermittent	***rpm***	9400	8800	8800	8800	6800	6800	6300	5500	5500	5500	4900	4400	4400
Max. Continuous Pressure	***bar***	400	400	400	400	400	400	400	400	400	400	400	400	400
Max. Peak Pressure	***bar***	450	450	450	450	450	450	450	450	450	450	450	450	450
Torque bar	***m.N/bar***	0.17	0.17	0.18	0.28	0.40	0.51	0.65	0.80	0.92	1.00	1.28	1.69	2.10
Torque at 350 bar	***m.N***	62	64	66	98	140	174	228	280	320	350	440	600	710
Weight														
- Without accessories	***kg***	9,00	9,00	9,00	10,00	10,00	11,00	11,00	11,00	12,00	12,00	15,00	16,00	16,50
- With accessories	***kg***	9,50	9,50	9,50	10,50	10,50	11,50	11,50	11,50	12,50	12,50	15,50	16,50	17,00
Motor Temperature														
- Minimum	***°C***	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25	-25
- Maximum	***°C***	110	110	110	110	110	110	110	110	110	110	110	110	110

Technical Data II

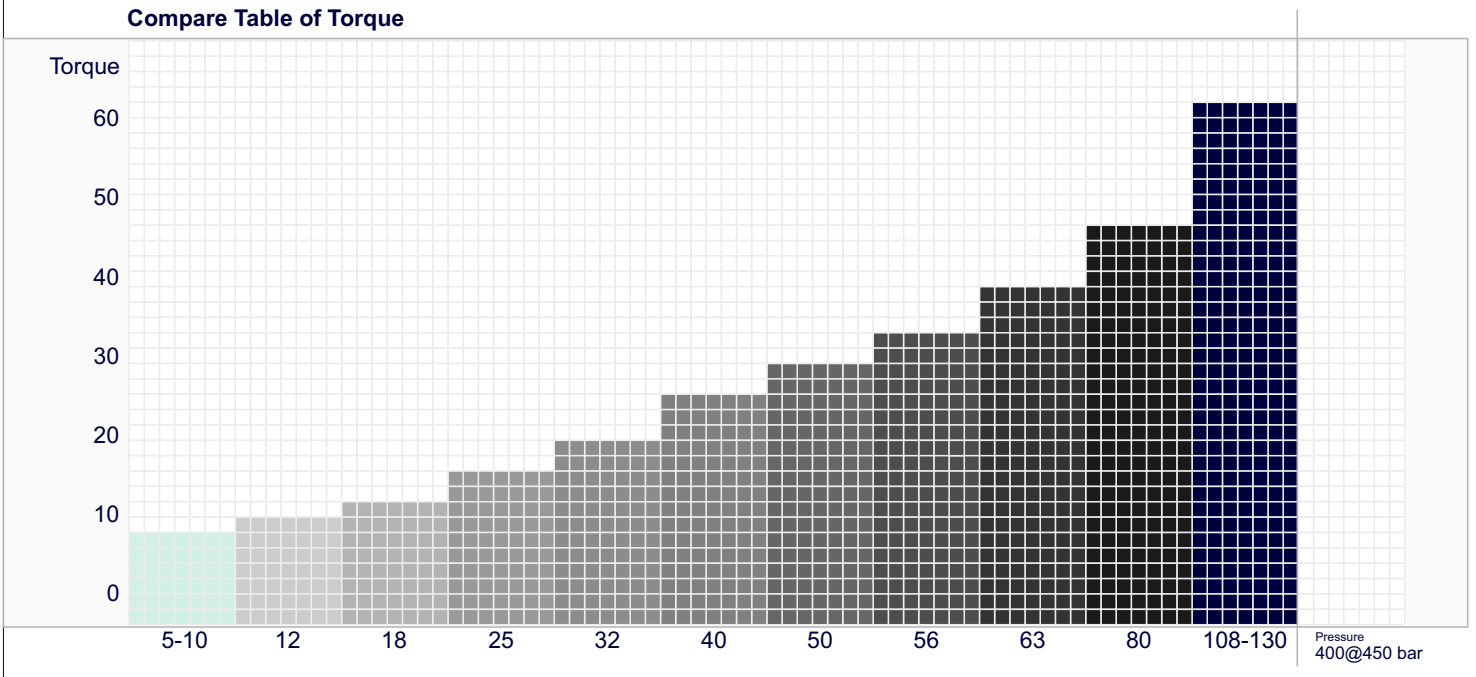


	5	10	12	18	25	32	40	50	56	63	80	108	130
cc	5,00	10,00	12,00	18,00	25,00	32,00	40,20	50,00	56,40	63,00	80,00	108,4	130,0
A	170,0	170,0	170,0	170,0	170,0	177,0	177,0	188,0	188,0	188,0	215,0	215,0	215,0
B	71,0	71,0	71,0	71,0	71,0	76,0	76,0	86,0	86,0	86,0	98,0	98,0	98,0
C	103,0	103,0	103,0	103,0	103,0	108,0	108,0	118,0	118,0	118,0	132,0	132,0	132,0
D	197,0	197,0	197,0	197,0	197,0	202,0	202,0	214,0	214,0	214,0	240,0	240,0	240,0
E	107,5	107,5	107,5	107,5	107,5	107,5	107,5	107,5	107,5	107,5	122,5	122,5	122,5
F	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	60,0	60,0	60,0
G	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 3/4"	G 1"	G 1"	G 1"

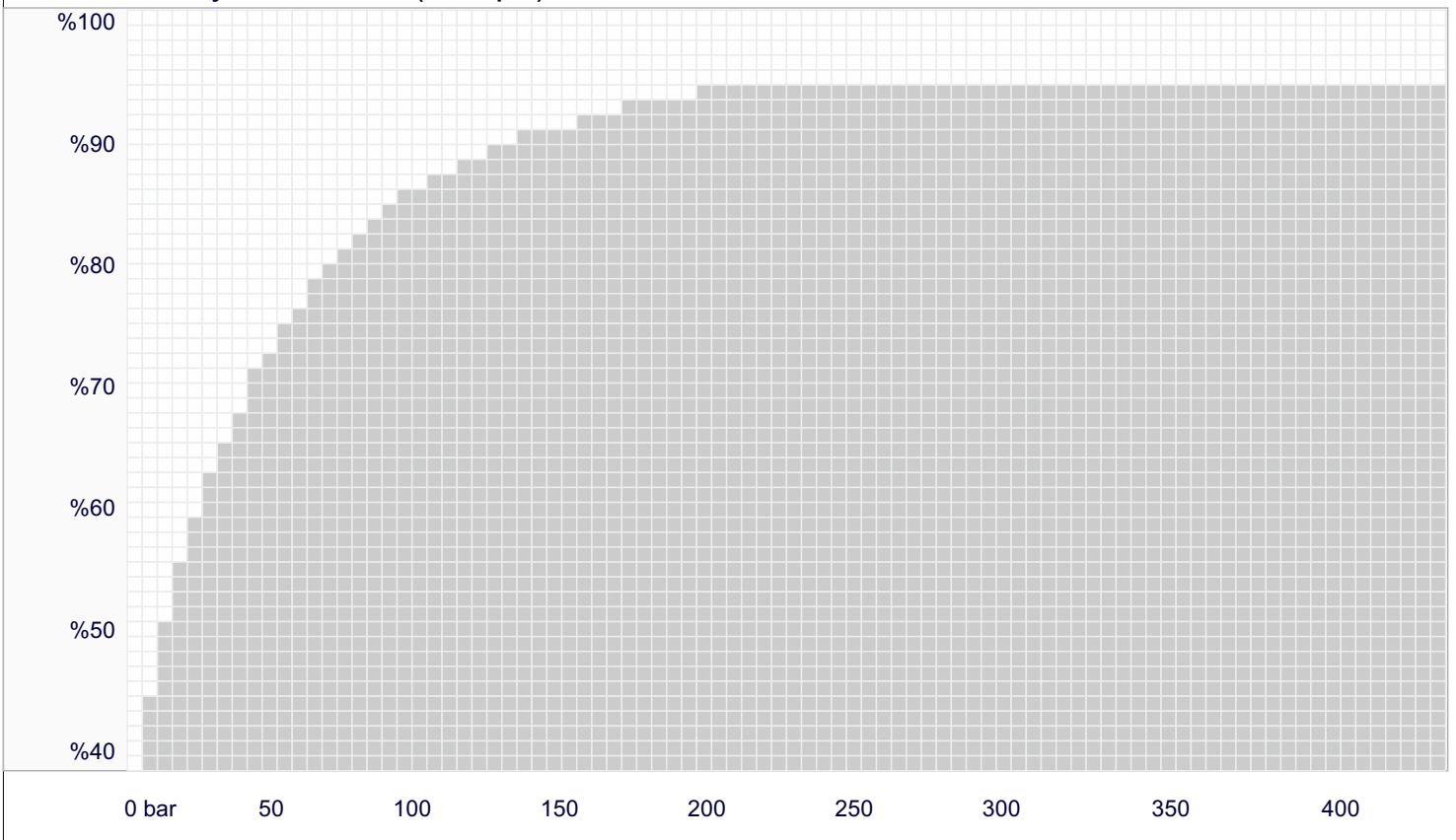
H	6	6	6	8	8	10	10	10	10	10	12	12	12
J	16	16	16	22	22	28	28	28	28	28	28	28	28
K	5	5	5	7,5	7,5	9,5	9,5	9,5	9,5	9,5	9,5	9,5	9,5
L	40	40	40	50	50	60	60	60	60	60	70	80	70
M	22,5	22,5	22,5	33	33	38	38	38	38	38	38	43	38
N	Ø 28	Ø 28	Ø 28	Ø 35	Ø 35	Ø 35	Ø 35	Ø 40	Ø 40	Ø 40	Ø 45	Ø 50	Ø 45

Performance

Compare Table of Torque

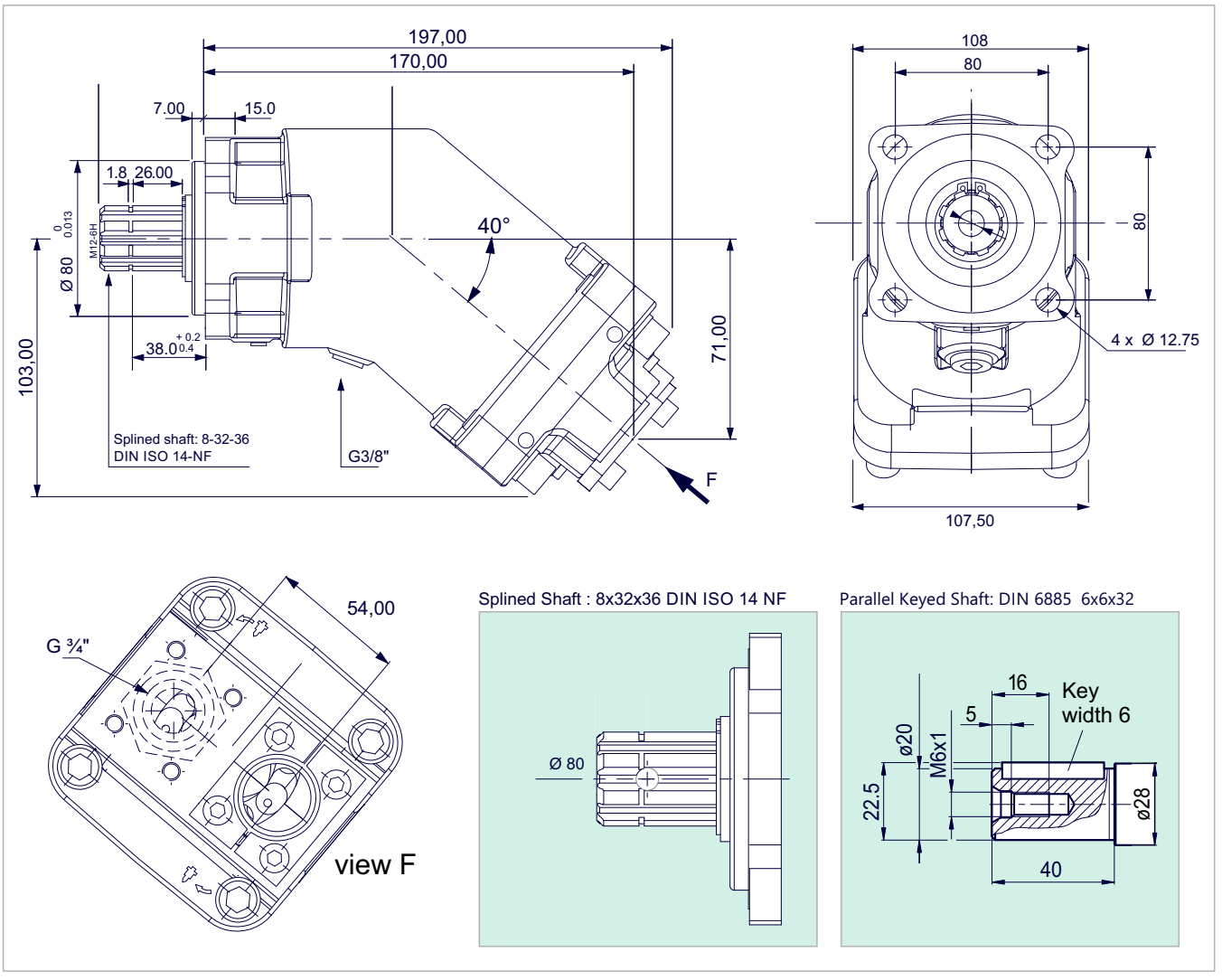


Efficency of KFM2 Motors (1000 rpm)



Dimensions Size;

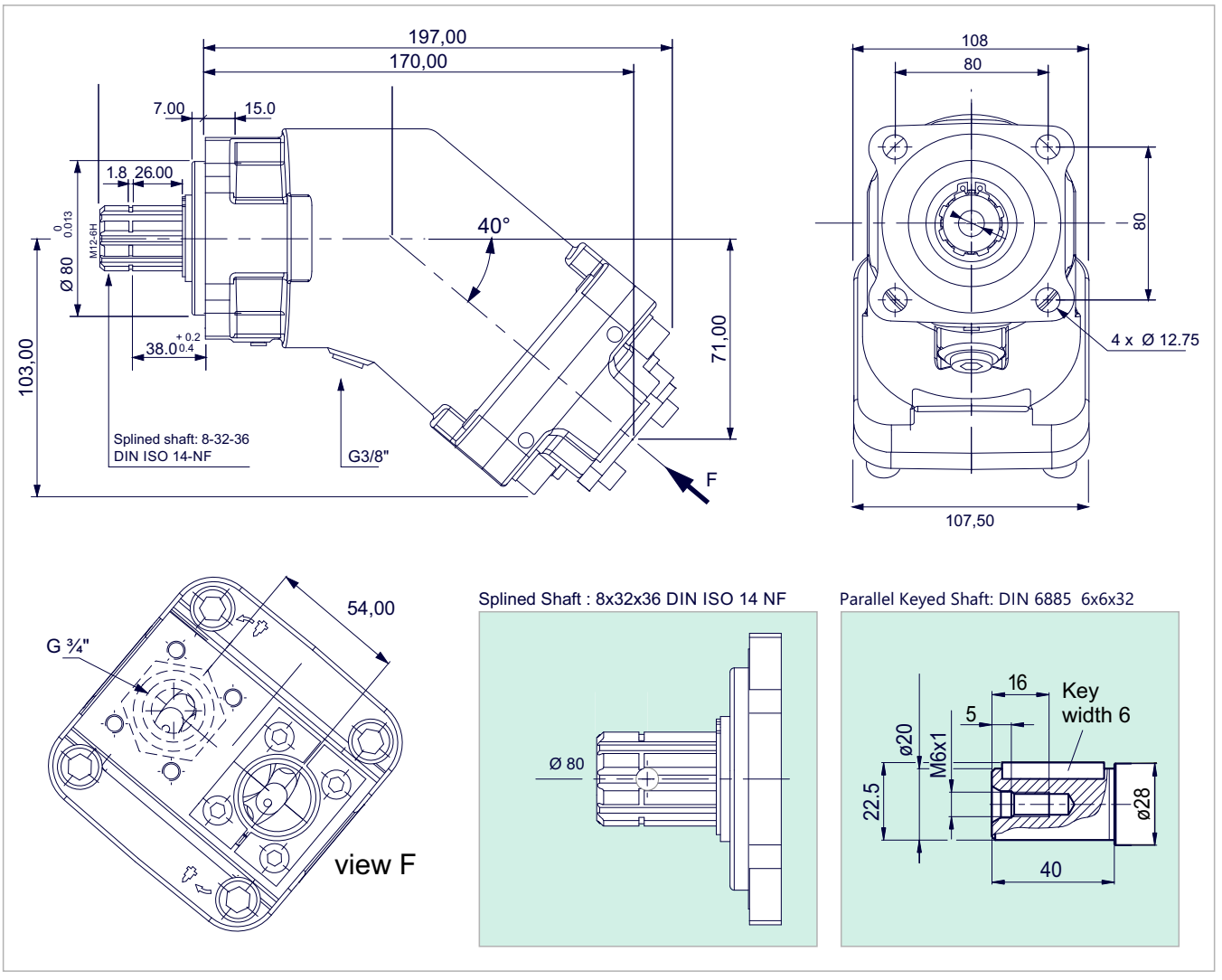
KFM2 5



x 1000 rpm	5,00 cc
x 1500 rpm	7,50 cc
Max. Continuous Pump Speed	8800 rpm
Max. Intermittent Pump Speed	9400 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.17 m.N/bar
Torque at 350 bar	62 m.N
Weight without accessories	9,00 kg
Weight with accessories	9,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

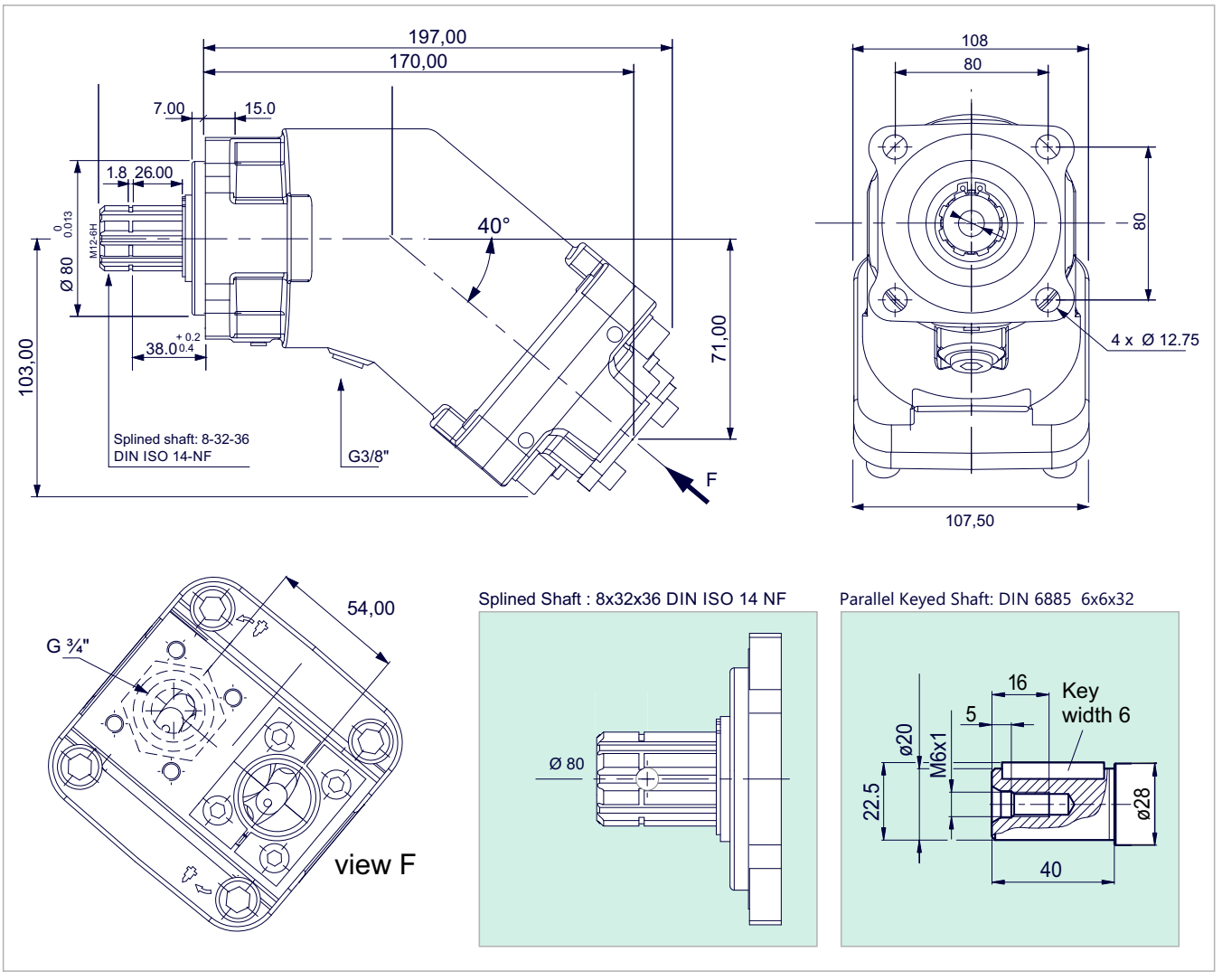
KFM2 10



x 1000 rpm	10,00 cc
x 1500 rpm	15,00 cc
Max. Continuous Pump Speed	8000 rpm
Max. Intermittent Pump Speed	8800 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.17 m.N/bar
Torque at 350 bar	64 m.N
Weight without accessories	9,00 kg
Weight with accessories	9,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

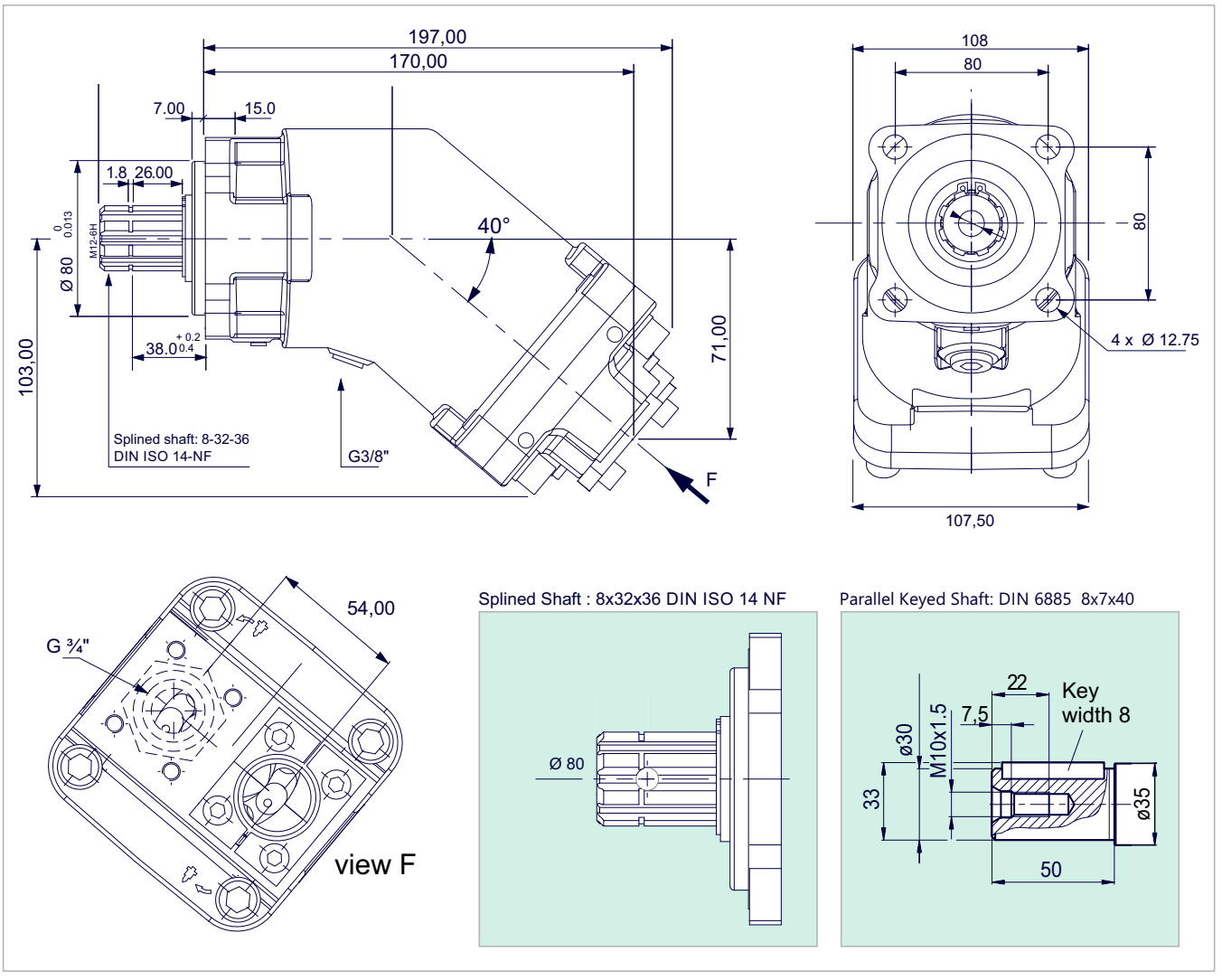
KFM2 12



x 1000 rpm	12,00 cc
x 1500 rpm	18,00 cc
Max. Continuous Pump Speed	8000 rpm
Max. Intermittent Pump Speed	8800 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.18 m.N/bar
Torque at 350 bar	66 m.N
Weight without accessories	9,00 kg
Weight with accessories	9,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

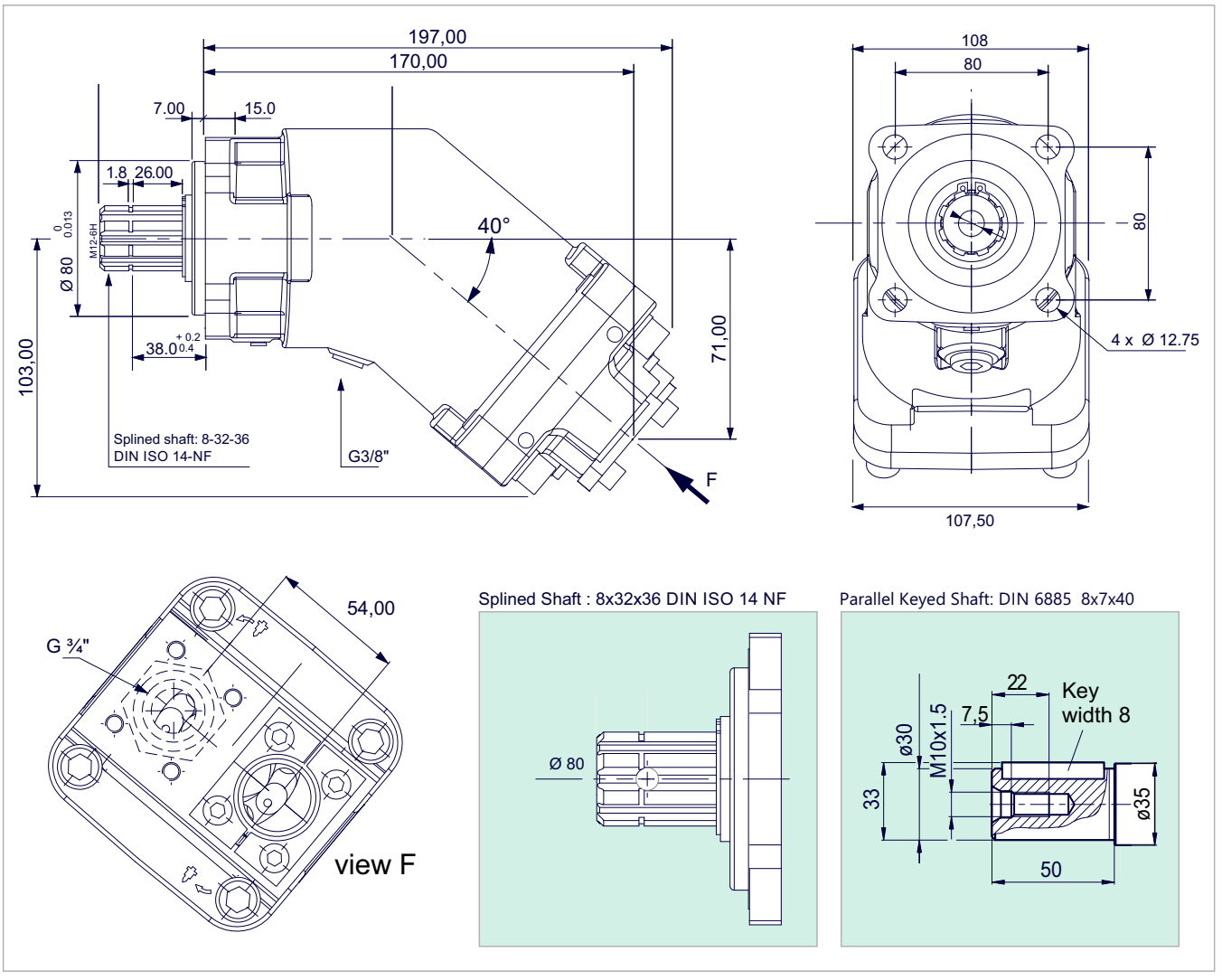
KFM2 18



x 1000 rpm	18,00 cc
x 1500 rpm	27,00 cc
Max. Continuous Pump Speed	8000 rpm
Max. Intermittent Pump Speed	8800 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.28 m.N/bar
Torque at 350 bar	98 m.N
Weight without accessories	10,00 kg
Weight with accessories	10,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

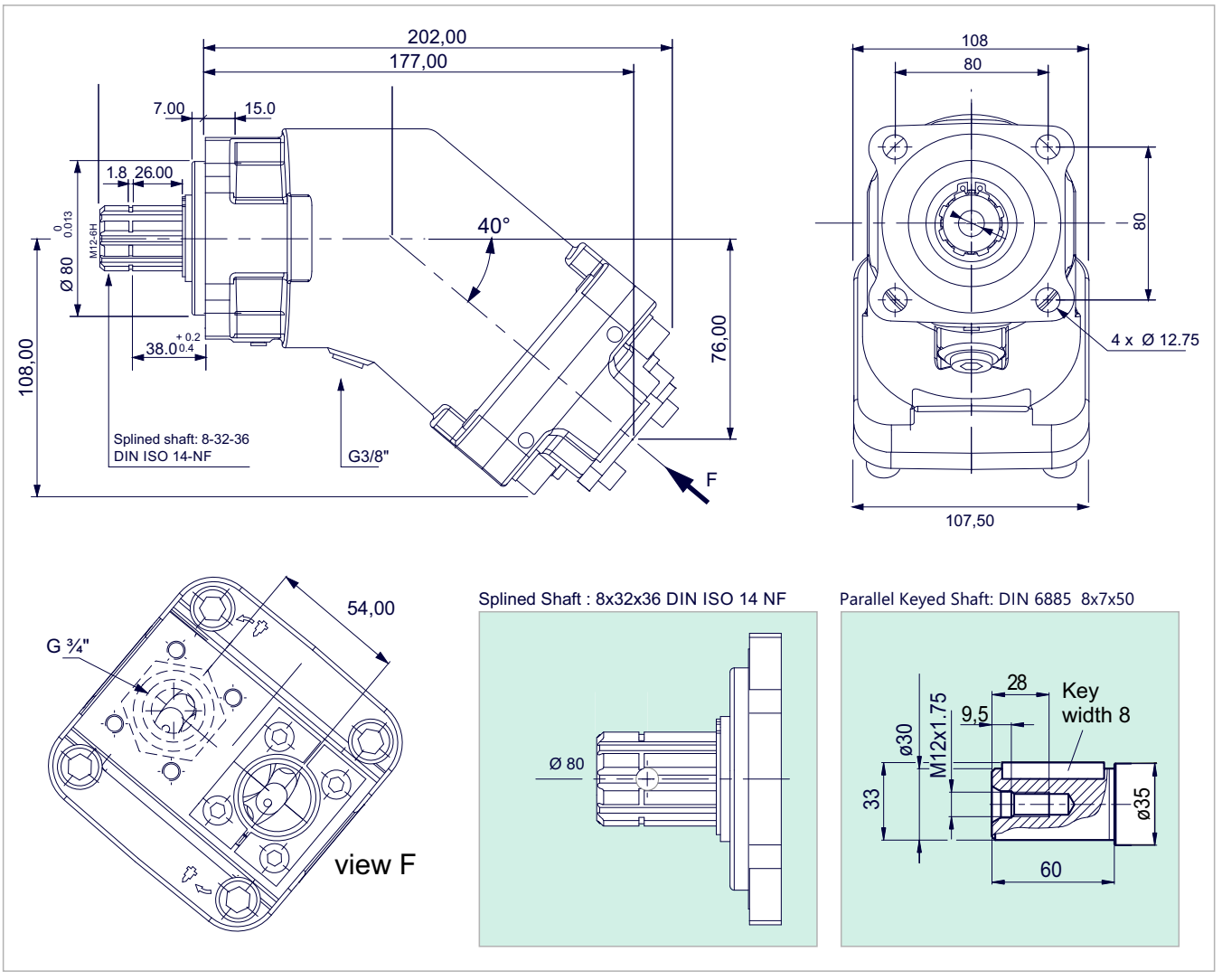
KFM2 25



x 1000 rpm	25,00 cc
x 1500 rpm	37,50 cc
Max. Continuous Pump Speed	6250 rpm
Max. Intermittent Pump Speed	6800 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.40 m.N/bar
Torque at 350 bar	140 m.N
Weight without accessories	10,00 kg
Weight with accessories	10,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

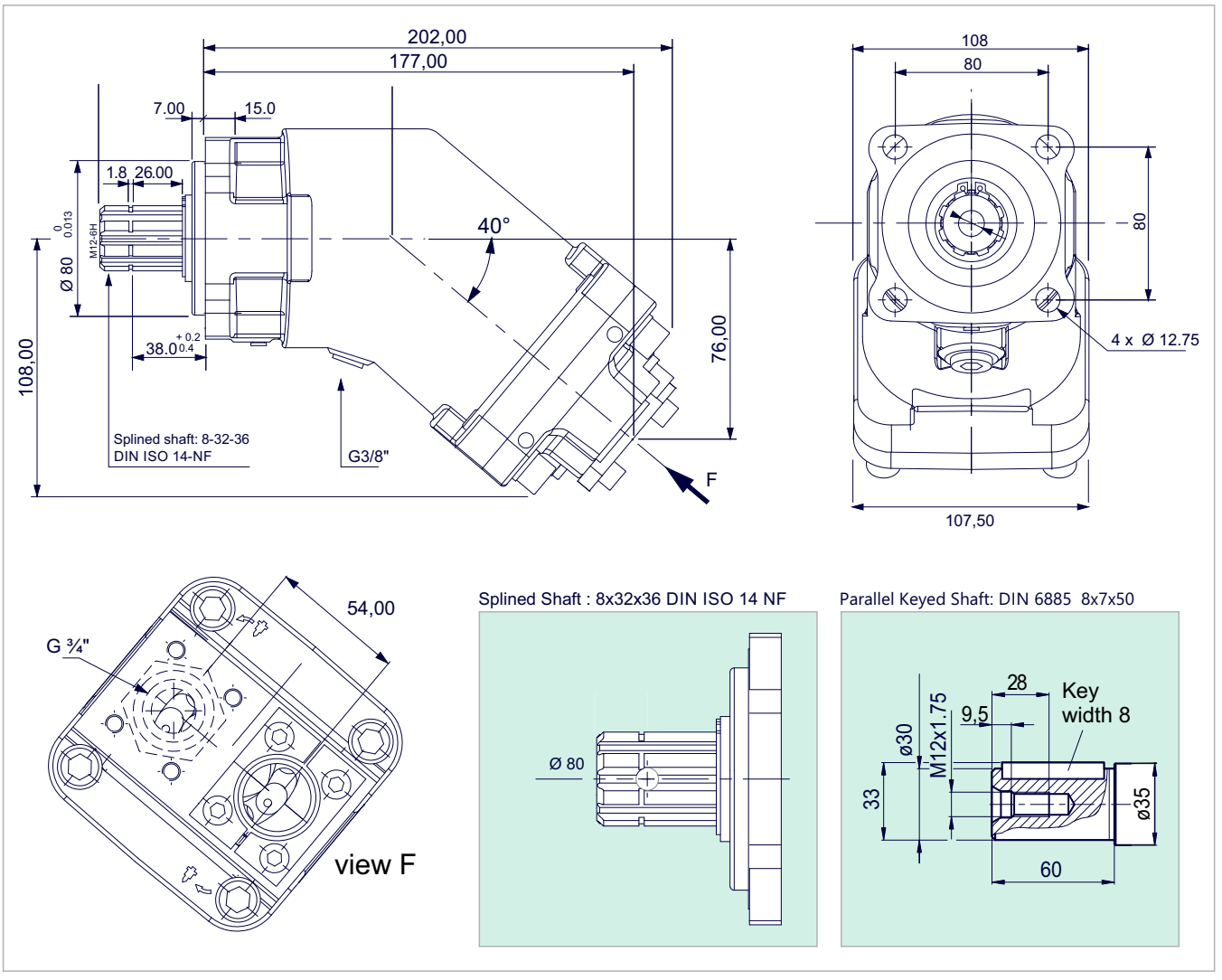
KFM2 32



x 1000 rpm	32,00 cc
x 1500 rpm	48,00 cc
Max. Continuous Pump Speed	6250 rpm
Max. Intermittent Pump Speed	6800 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.51 m.N/bar
Torque at 350 bar	174 m.N
Weight without accessories	11,00 kg
Weight with accessories	11,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

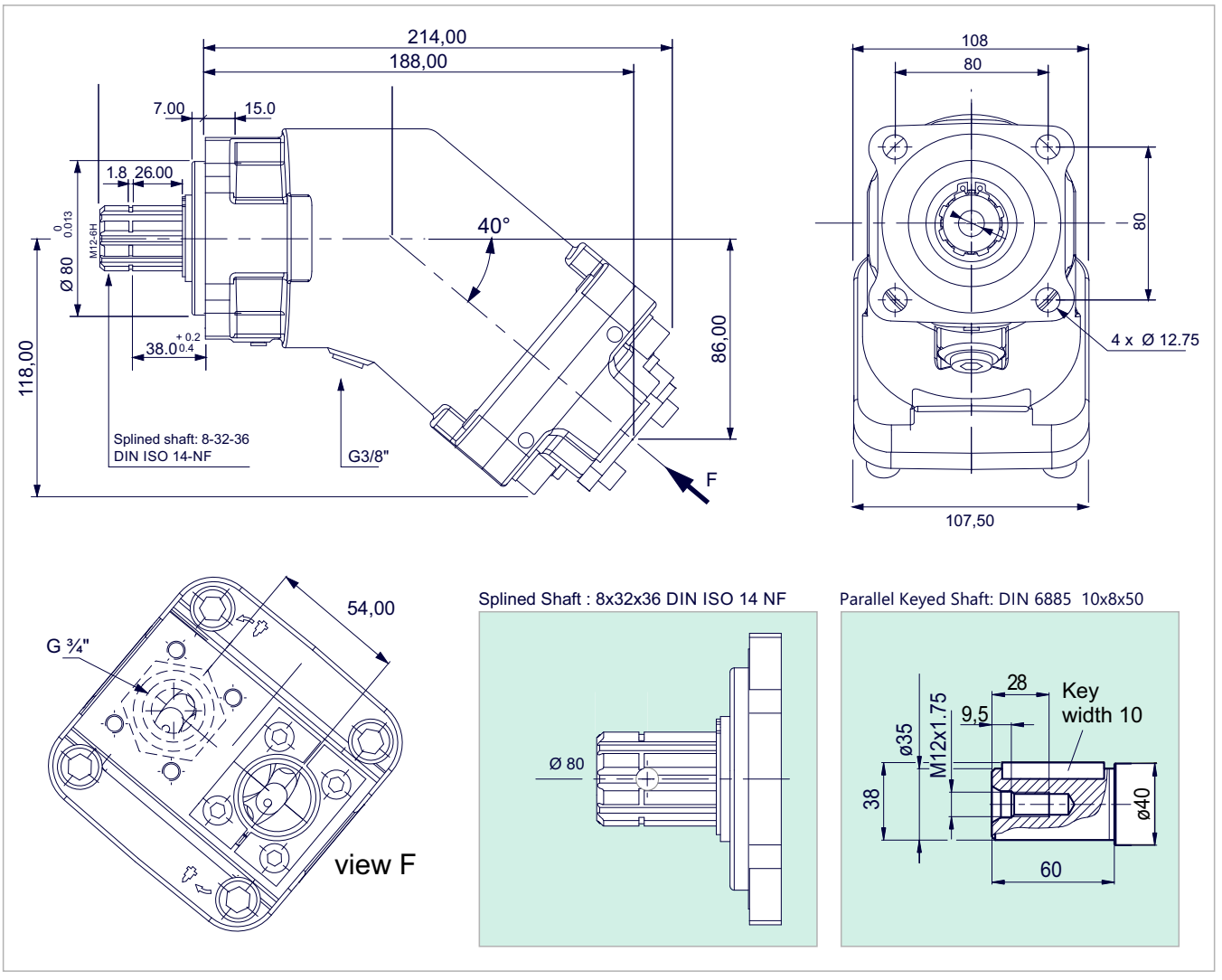
KFM2 40



x 1000 rpm	40,20 cc
x 1500 rpm	60,30 cc
Max. Continuous Pump Speed	5600 rpm
Max. Intermittent Pump Speed	6300 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.65 m.N/bar
Torque at 350 bar	228 m.N
Weight without accessories	11,00 kg
Weight with accessories	11,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

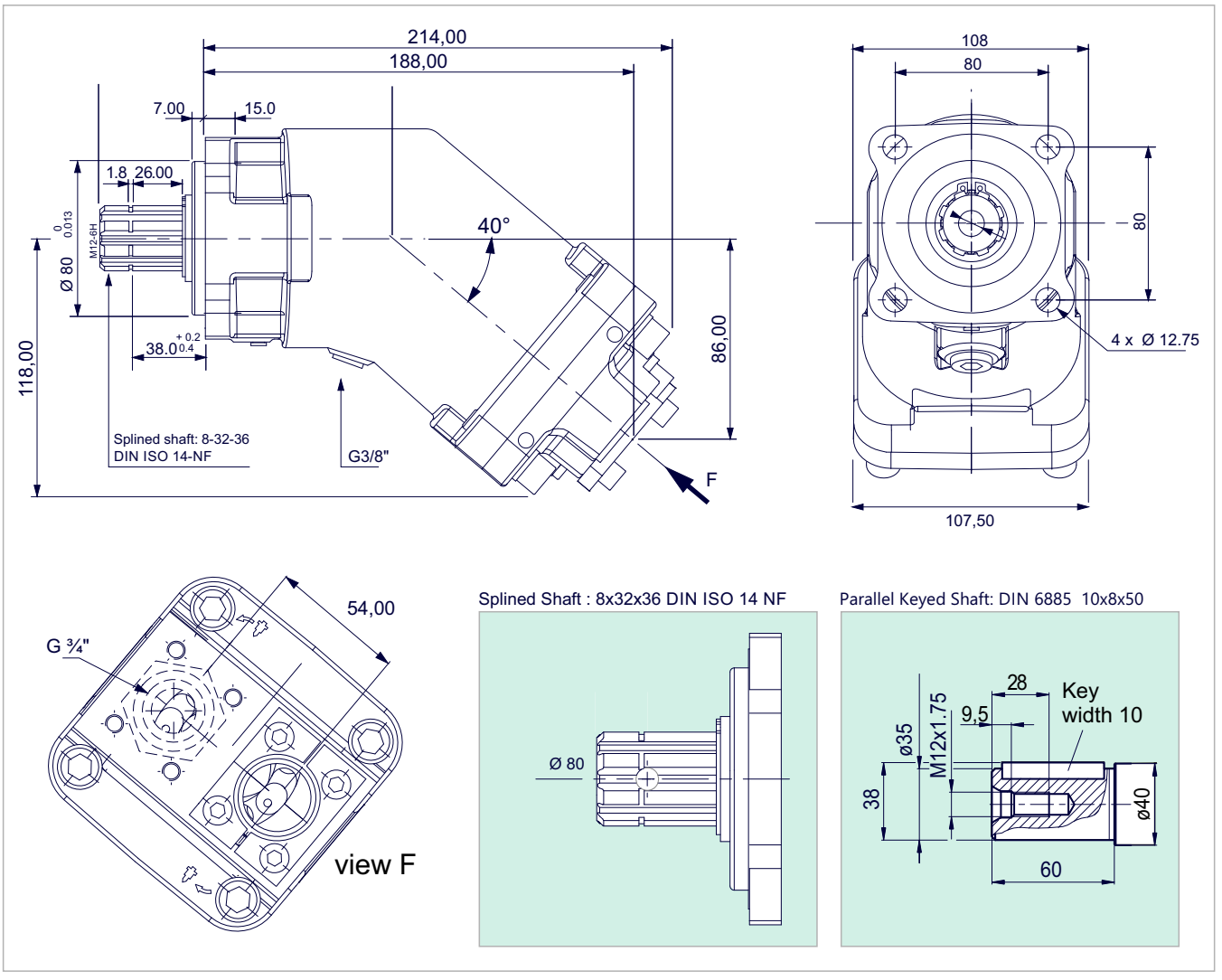
KFM2 50



x 1000 rpm	50,00 cc
x 1500 rpm	75,00 cc
Max. Continuous Pump Speed	5000 rpm
Max. Intermittent Pump Speed	5500 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.80 m.N/bar
Torque at 350 bar	280 m.N
Weight without accessories	11,00 kg
Weight with accessories	11,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

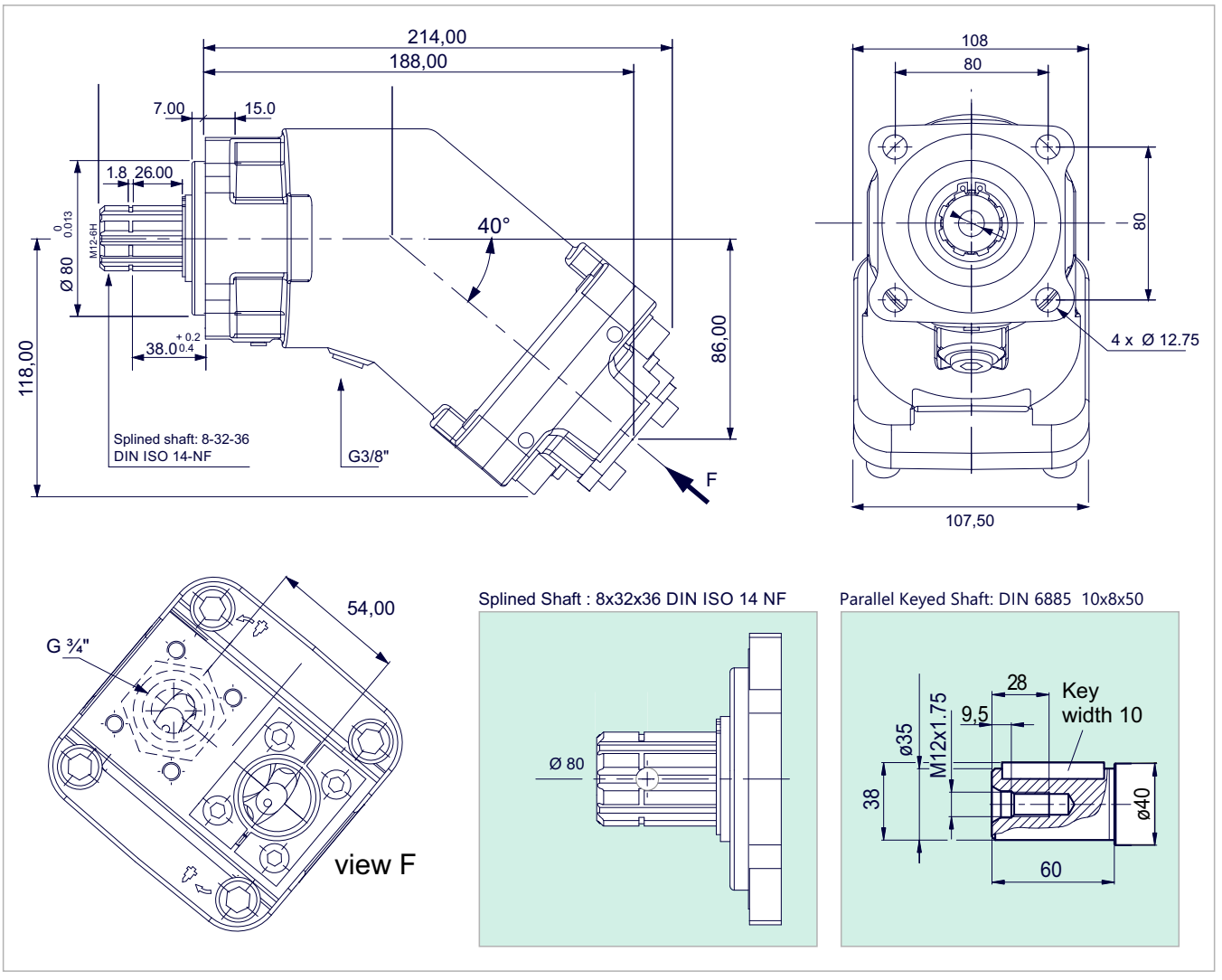
KFM2 56



x 1000 rpm	56,40 cc
x 1500 rpm	84,60 cc
Max. Continuous Pump Speed	5000 rpm
Max. Intermittent Pump Speed	5500 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	0.92 m.N/bar
Torque at 350 bar	320 m.N
Weight without accessories	12,00 kg
Weight with accessories	12,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

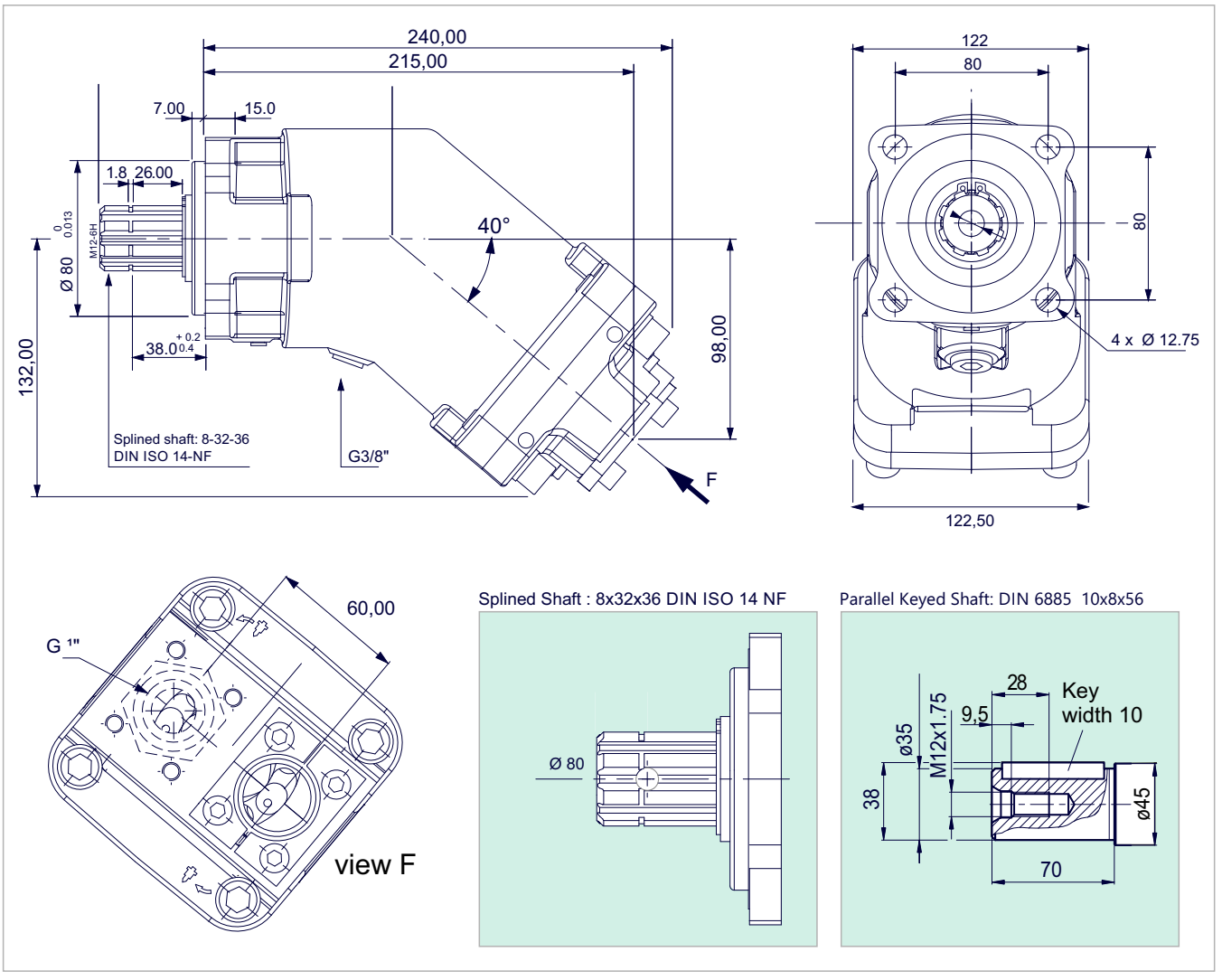
KFM2 63



x 1000 rpm	63,00 cc
x 1500 rpm	94,50 cc
Max. Continuous Pump Speed	5000 rpm
Max. Intermittent Pump Speed	5500 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	1.00 m.N/bar
Torque at 350 bar	350 m.N
Weight without accessories	12,00 kg
Weight with accessories	12,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

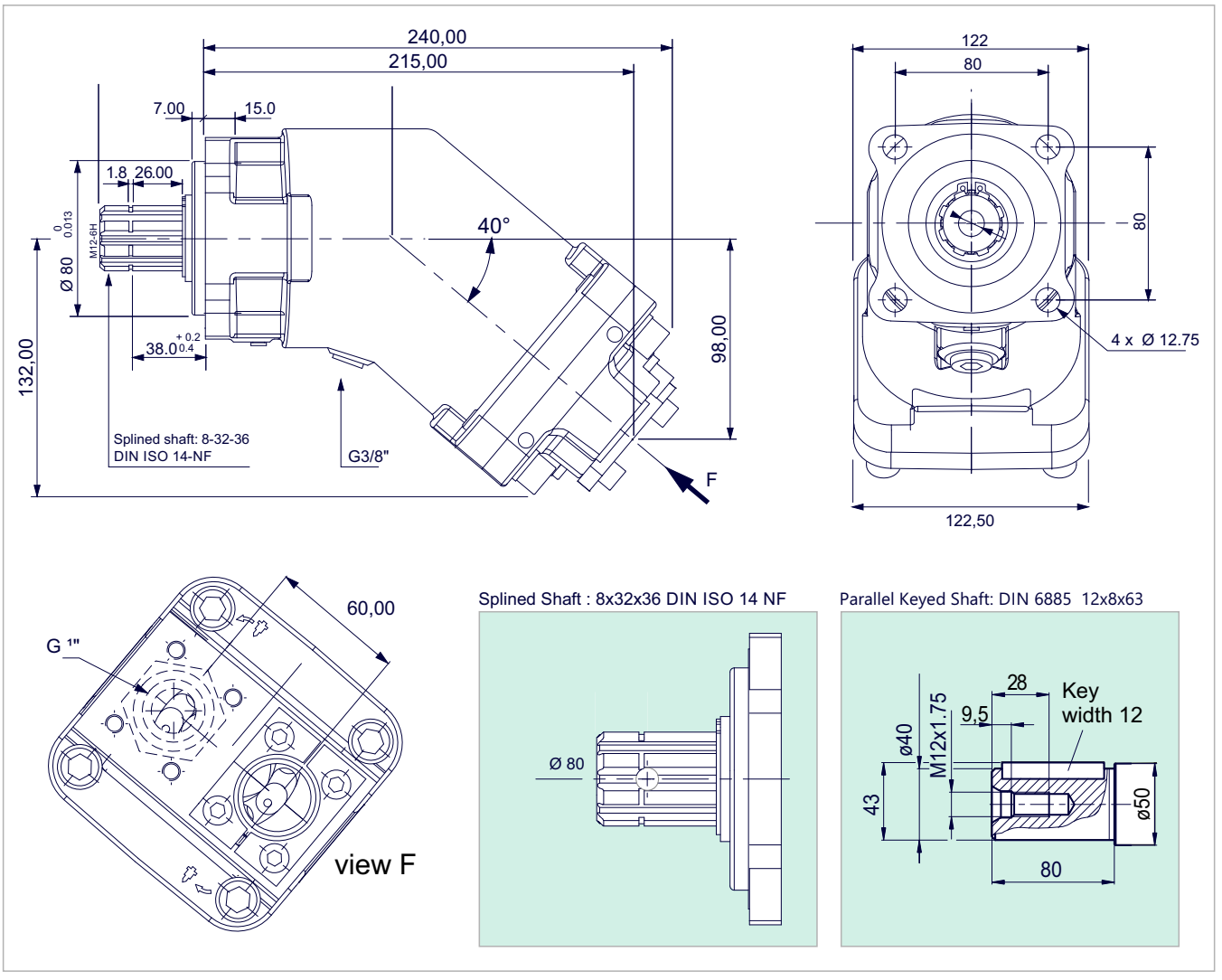
KFM2 80



x 1000 rpm	80,00 cc
x 1500 rpm	120,00 cc
Max. Continuous Pump Speed	4400 rpm
Max. Intermittent Pump Speed	4900 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	1.28 m.N/bar
Torque at 350 bar	440 m.N
Weight without accessories	15,00 kg
Weight with accessories	15,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Dimensions Size;

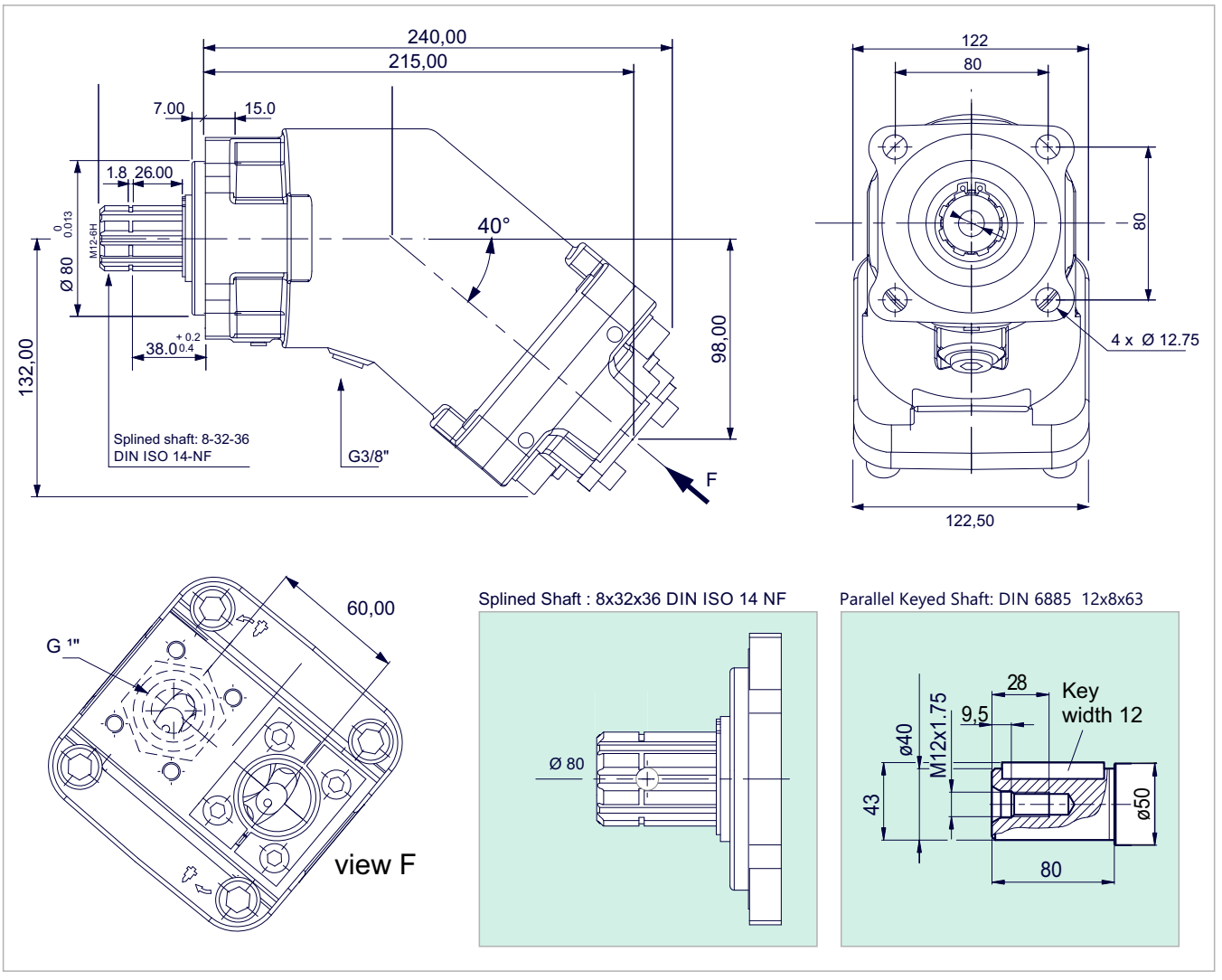
KFM2 108



x 1000 rpm	108,40 cc
x 1500 rpm	162,60 cc
Max. Continuous Pump Speed	4000 rpm
Max. Intermittent Pump Speed	4400 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	1.69 m.N/bar
Torque at 350 bar	600 m.N
Weight without accessories	16,00 kg
Weight with accessories	16,50 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

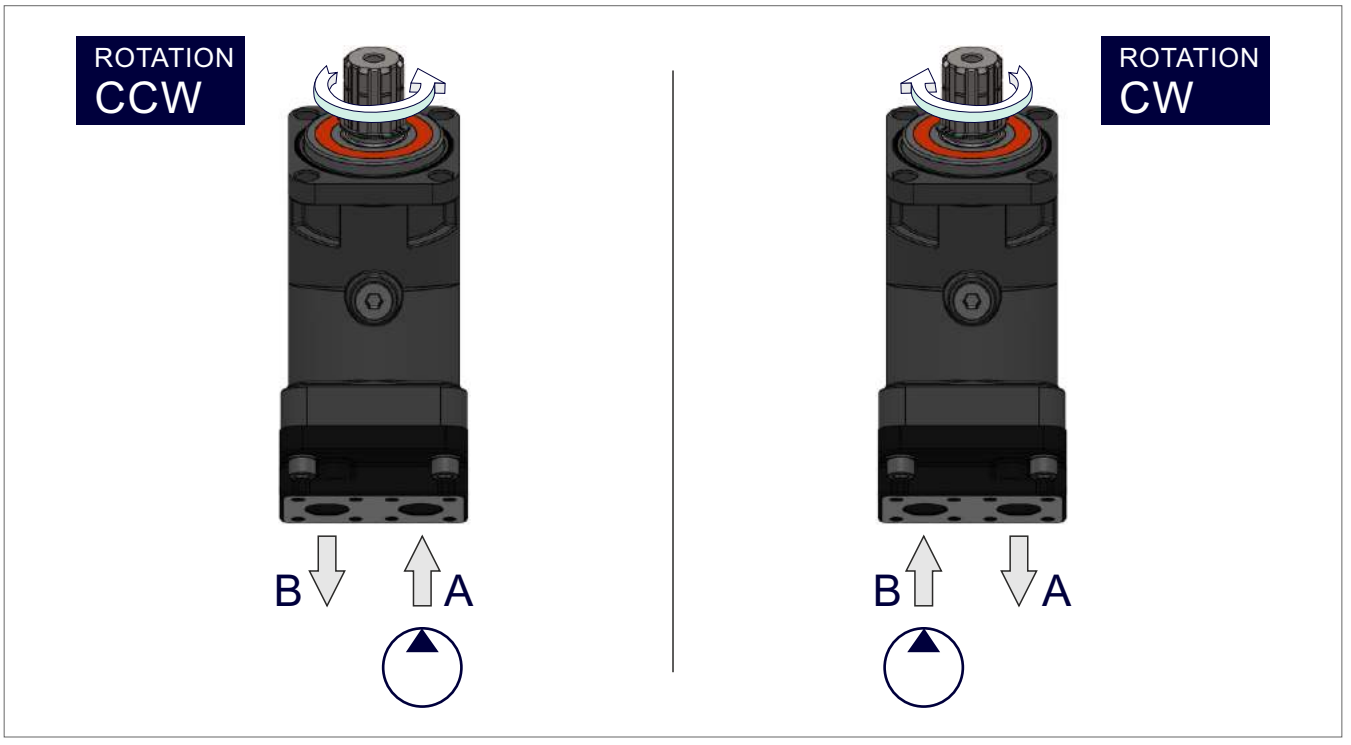
Dimensions Size;

KFM2 130



x 1000 rpm	130,00 cc
x 1500 rpm	195,00 cc
Max. Continuous Pump Speed	3400 rpm
Max. Intermittent Pump Speed	4400 rpm
Max. Continuous Pressure	400 bar
Max. Peak Pressure	450 bar
Torque bar	2.10 m.N/bar
Torque at 350 bar	710 m.N
Weight without accessories	16,50 kg
Weight with accessories	17,00 kg
Max. Motor Temperature	-25°
Min. Motor Temperature	110°

Direction of Rotation



Quick Calculation

Flow rate	Torque	Power	Speed
$Q = \frac{V_S \cdot n}{1000 \eta_v}$ (lpm)	$M = \frac{V_S \cdot \Delta p \cdot \eta_{mh}}{63}$ (Nm)	$P = \frac{2\pi \cdot M \cdot n}{60000} = \frac{M \cdot n}{9549} = \frac{Q \cdot \Delta p \cdot \eta_t}{600}$ (kw)	$n = \frac{1000 \cdot Q \cdot \eta_v}{V_S}$ (lpm)

V_S = Displacement (ccm/rev.)
|p = Diff. pressure (bar)
n = Speed (rpm)
Q = Flow (lpm)
η_v = Volumetric efficiency
η_{mh} = Mechanical-hydraulic efficiency
η_t = Total efficiency ($\eta_t = \eta_v \times \eta_{mh}$)

Address all questions regarding spare parts to your responsible Our Service Partner or the technical service department of the manufacture's plant / factory for the Bent Axis Motors.

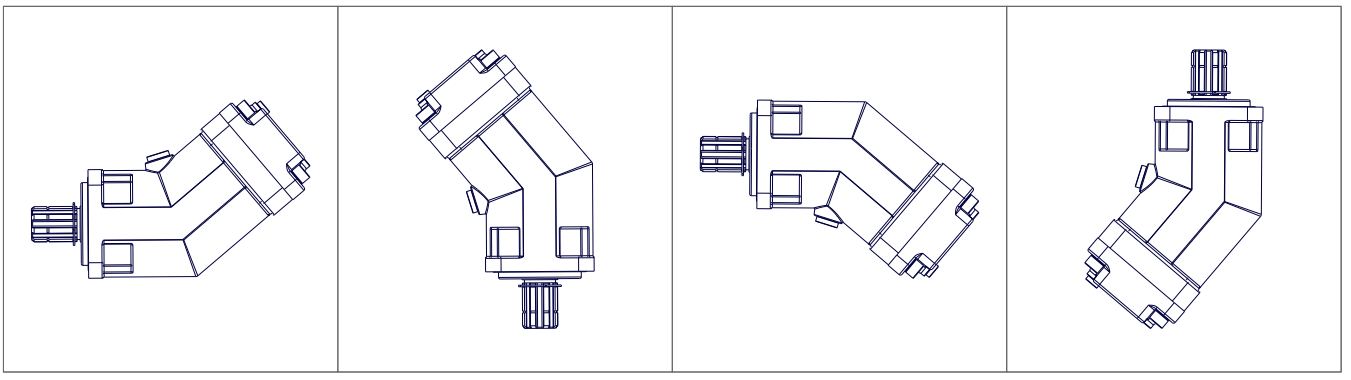
Installation

POSITION
KFM2 Motors can be operate any position.

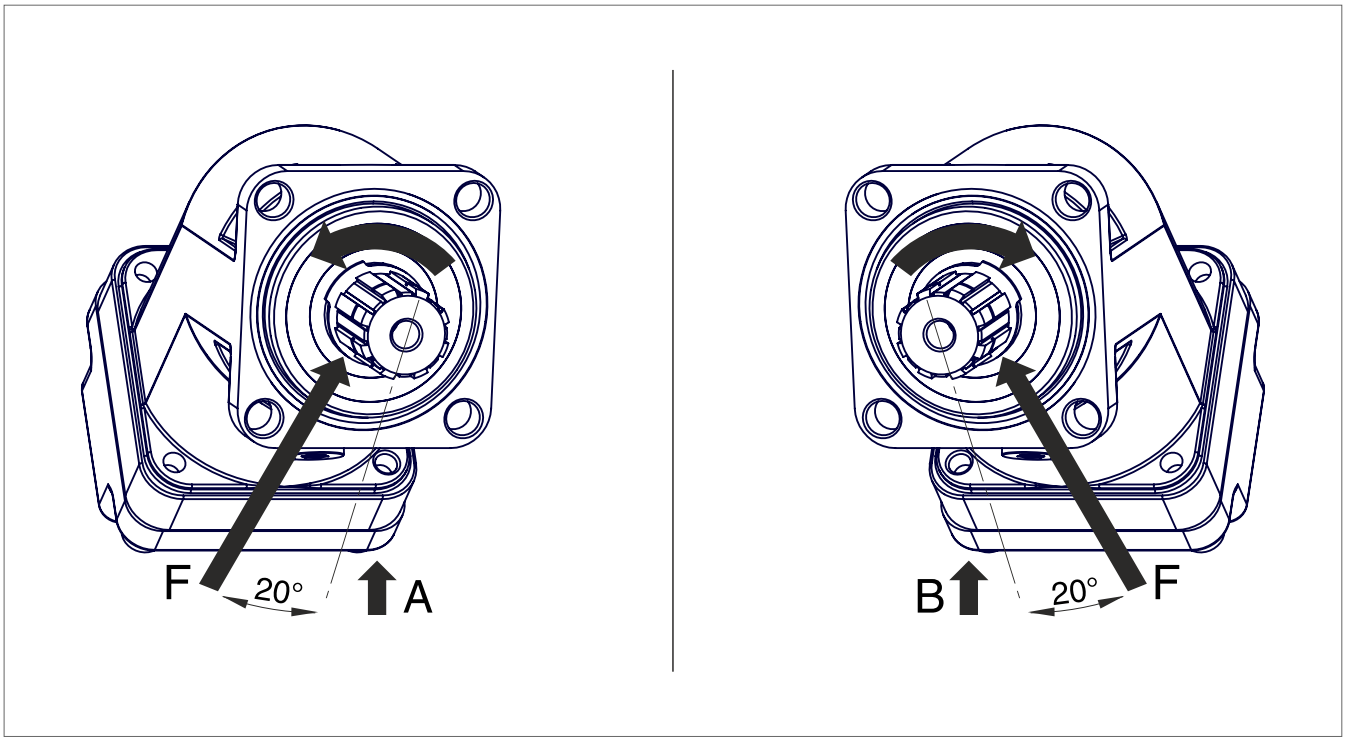
DIRECTION OF ROTATION
KFM2 Motors can be operate in both directions of rotation.

Before of Installation operation, the motor must be filled with hydraulic fluid and air bled.

INSTALLATION POSITION
See following examples.



HYDRAULIC FLUID
Recommended ;
Generally : between 15 and 200 cSt.
Maximum : between 5 and 1600 cSt.



FOR USE;
Available via e-mail on request or each motor is supplied via Starting datasheet.

For detailed information about KFM2 Bent Axis Motors, please contact with Technical Department !!!