JTEKT

HPI

HYDRAULIC INNOVATION AT YOUR SERVICE

BASIC CATALOGUE (B 15)

VERY HIGHT PERFORMANCES HYDRAULIC GEAR PUMPS

PUBLISHING 02 / 2007

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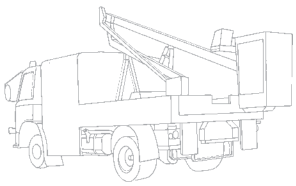
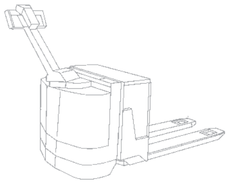
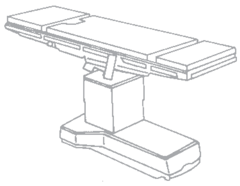
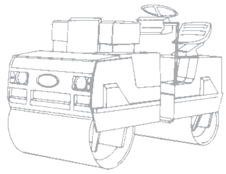
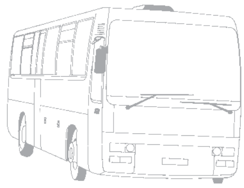
JTEKT-HPI presentation

JTEKT-HPI

ZI - 26, rue Condorcet
BP 87
94432 Chennevières sur Marne CEDEX

Tél: 01 49 62 28 00
Fax: 01 45 76 68 40
sales@jtekt-hpi.com

INDUSTRIAL FABRICATION

Administrative building

Research center

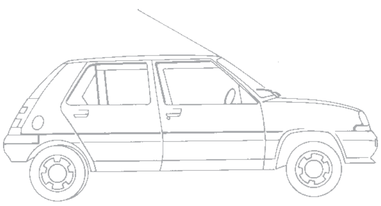
 

Poduction center

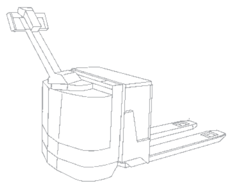
  

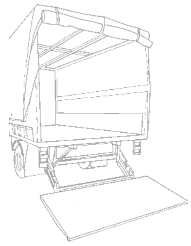
VEHICULE FABRICATION

BLOIS
plant (41)



Applications

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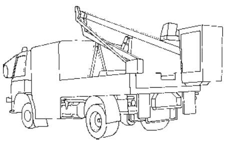
AGRICULTURAL


APPLICATIONS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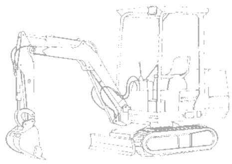
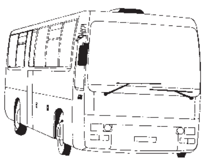
PUBLIC WORKS

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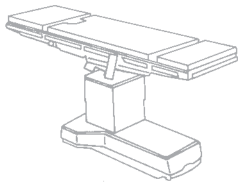
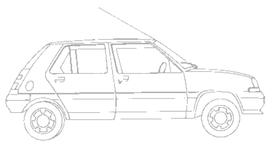
HEALTHCARE





VEHICULE

JTEKT HPI
Tel : (33) 01 49 62 28 00
Fax : (33) 01 45 76 68 40

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JTEKT HPI
ZI - 26, RUE CONDORCET - B.P. 87 - 94432 CHENNEVIERES-SUR-MARNE CEDEX - FRANCE
Tel: 01 - 49 - 62 - 28 - 00 Fax: 01 - 45 - 76 - 68 - 40
www.jtekt-hpi.com

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Basic catalogue contents

BASIC CATALOGUE (B15)

Codifications and Characteristics

RECOMMENDATIONS for INSTALLING and MAINTAINING HPI MOTORS

Our motors were studied and manufactured to bring you complete satisfaction.
They were designed with first quality materials, produced according to modern processes and controlled by strict tests.
However, for the best use, it is absolutely necessary to make some arrangements when mounting and when using.
The major 10 are the following:

1- Mounting

On a rigid support , fixed to the driving motor, make sure of the perfect concentricity of the pump centering with the driving shaft (5/100 maximum, when reading), according to the series.
Motor can be placed in whatever position.

2- Driving

Apart from the driving torque , no radial nor axial effort must be applied on motor shaft to ensure a good efficiency and a good service .
See technical data sheet F.T R 0009 (pump with outrigger bearing excepted) .

In an installation with:
- rapid duty cycle.
- frequent pressure variations.
- high working pressure.
- important variation of the hydraulic pump speed.

it is recommended to examin the motor coupling regulary and to slightly lubricate the shaft and the sleeve coupling to avoid frictional oxidation phenomena (fretting).

When the motor is driven with parallel keyed or splined shaft, it is recommended that the shaft be lubricated with bearing grease containing molybdenum disulphide.

3- Pipes

Selecting the correct pipe is very important . Apart from flexible hoses, use preferably cold drawn stel tubes, free from calamine and oxidation inside.

Alll hoses must be properly burred and cleaned. No trace of stranger bodies nor dust must be left; make sure of this before the mounting.

1) Never hot-bend hoses so as to avoid oxidation disposals.
2) Seal hose or pipe end during storage.
3) During the mounting, do not leave them on the floor.
4) Make sure of their cleanness until the final mounting.

Suction hose : It must be made in such a manner so as to get a maximum oil speed of 2,5 m/s, less if possible, mostly for big flows.

Below are some flow indications according to the dimensions of hoses:

1 / 4 "	8 x 13	=	8 l / min
3 / 8 "	12 x 17	=	17 l / min
1 / 2 "	15 x 21	=	27 l / min
3 / 4 "	21 x 27	=	52 l / min
1 "	26 x 34	=	80 l / min
1 " 1 / 4	33 x 42	=	130 l / min
1 " 1 / 2	40 x 49	=	190 l / min
2 "	50 x 60	=	295 l / min
2 " 1 / 2	66 x 76	=	513 l / min
3 "	80 x 90	=	750 l / min

The hose must be as straight as possible. Avoid elbows and connections. Straight angle elbows are prohibited. Narrowing forbidden.

The suction hose must be as short as possible (inferior to 1,50 m); beyond this length, lower the flow speed and ask our Technical Departments for information.

The level between the suction port and the oil must not exceed 0,75 m when the tank is lower down. It is recommended to place the tank on load, that is to say above the motor.

Do not use soft materials to make hoses, depressure and temperature tending to bring sided closer and reduce the flow surface.

Take care of the good screwing of connections to avoid air inlet.

4- Tanks

Tank capacity must be so that in maximum duty, the oil temperature must stabilize at maximum 50 / 60 °C. The quantity of oil that can be taken to ensure the various cycles must be taken into account.

The purpose of a tank, in addition of being a receiver, is to quickly dissipate the calories stored by the circuit when there is no cooling device beside.

Furthermore, it must allow the oil to clarify from the possible emulsions and consequently to avoid the creation of emulsion.

All hoses leading to tank must dive into the fluid.

The fluid coming back to tank must come back to tank very slowly to avoid disturbances on the suction hose.

Tank must be perfectly clean, realized in teme plate or fitted with an hydrocarbon-resistant inside painting.

It must be designed in order that an inspection flap allows a careful cleaning before mounting and during maintenance.

It must be dustproof.

The shape must be simple, either parallelepipidal or cylindrical.

Level control (tightness of connections)

One of the maintenance factors is watching the tank level .

According to the tank capacity , a continuous hose or connector leakage may lead to significant pump oil loss .

Consequences are always damaging to the pump : possible air suction , increased circuit temperature , oil-aging , etc ....

It is therefore necessary to examine regularly all circuit connections to make sure that there is no leakage .

5- Oil filtration

To ensure the pump a good efficiency and a long life duration , the filtration of the hydraulic fluid is indispensable .

Do not forget that the motor and the various components of the circuit are lubricated by the convoyad fluid .

At suction : Fit the suction hose with a suction strainer submerged in the tank , the filtration efficiency of which shall be 125 µ .
Do not use a suction strainer with a higher efficiency owing to possible underfeeding effects on the motor .
Flow capacity : 1 dm2 for a flow of 10 l / min .

At pressure or at tank return : Filter having a filtration capacity of 10 or 15 µ . A metal filter can be used .

6- Air filtration

Most of the motors are prematurely aging due to abrasion coming from external elements to the tank . It is indispensable to fit the tank with a true air filter and not a simple breather .
The air filter must have a 5 µ filtration efficiency .
All other parts of the tank must be airproof .

7- Pump Protection

All hydraulic installations must have a pressure relief valve to protect the motor , and this for each direction of rotation .
Several kinds can be employed :
- manually operated .
- differential .
- piloted .

Whatever the type , the following is required :
- quick opening .
- low opening range (lower than 20 bar)
- low closing range (lower than 10 bar)
- It must be pulsationfree .
- Make sure of the flow capacity of the pressure relief valve according to the motor

For the motors : The max. acceptable pressure at the draining must not be over 1 bar in all the woirking conditions.

The draining is directly connected to the tank and must plunge under the minimum level of the fluid.

8- Fluid to be employed

A good quality of oil is to be used.

The more important the duty cycle is, the higher the pressure and driving speed are, the more indispensable it is to choose a good quality of fluid.

An oil with viscosity 4 to 5 °E (30 to 40 cSt) to 40 °C must be used.

Take into account the fact that the higher the circuit temperature is, the more necessary it is to choose a high viscosity oil.

In many applications, motor oils can be used; they bring excellent results. For lubrication and life duration, choose class SAE 20 - 40 multigrade oils.

9- Maximum working temperature

Maintaining an hydraulic circuit requires a control , particulary of the oil temperature.

In general, it is recommended not to exceed 50 to 60 °C. If the latter temperature is exceeded, it would be necessary either to increase the tank volume, or to use a cooler.

Also check whether circuit obstructions or abnormal rolling of some distribution or regulation devices are not causing the heating.

In case the working or ambiant temperature conditions require a working temperature higher than 60 °C, it is then necessary to use a higher viscosity oil (for instance , 5 °E at 70 °C instead of 50 °C).

Ambiant temperature - 15 °C to + 60 °C.

Also make sure that no external heat supply disturbs the functioning of the motor. In this case , inform our Technical Department who will give you useful advices, amoung others Viton seals for temperatures between 70 and 130 °C will be recommended (example: hydraulic pump in contact with the carter of a diesel motor that can work under temperatures of 120 °C).

10- Oil aging

The use of an oil that has lost its lubrication properties is a cause for wear and tear of the pump and of the circuit devices.

Temperature variations, rolling in the distribution and regulation valves cause a molecular modification of the fluid in the more or less long-term.

The rapidity of the aging depends on the oil volume in the circuit, on the important temperature variations and on the rolling under pressure.

According to the energy conversion rate of the circuit , it is necessary to provide for changing oil between 500 and 1000 duty hours.

(N.B: analysis in case of a big quantity of oil).

11- Additional information

For any further details, seek advice from our Technical Departments.

TYPE	ISO	CASTROL	ELF	ESSO	FINA
HM	32	HYSPIN AWS 32	ELFOLNA DS 32	NUTO H 32	HYDRAN TS 32
	46	HYSPIN AWS 46	ELFOLNA DS 46	NUTO H 46	HYDRAN TS 46
	68	HYSPIN AWS 68	ELFOLNA DS 68	NUTO H 68	HYDRAN TS 68
HV	32	HYSPIN AWH 32	HYDRELF DS 32	UNIVIS N 32	HYDRAN TSX 32
	46	HYSPIN AWH 46	HYDRELF DS 46	UNIVIS N 46	HYDRAN TSX 46
	68	HYSPIN AWH 68	ELFOLNA DS 68	UNIVIS N 68	HYDRAN TSX 68
HE	32	CARELUBE HTG 32			BIOHYDRAN TMP 32
	46			UNIVIS BIO SHP 46	BIOHYDRAN TMP 46
	68				BIOHYDRAN TMP 68
OILS DIESELS MOTORS			PERFORMANCE XR 15W-40	FARM 4 15W- 40	KAPPA SUPER 10W
		RX SUPER PLUS 15W-40	PERFORMANCE SUPER D 15W-40	ESSOLUBE X 301 10W	KAPPA SUPER 20W20
			PERFORMANCE TROPHY DX 15W-40	ESSOLUBE XT 301 15W-40	KAPPA SUPER 15W40

TYPE	ISO	FUCHS LUBRIFIANTS INDUSTRIE	MOBIL	SHELL	TOTAL
HM	32	RENOLIN EXTRA 32S	MOBIL DTE 24	TELLUS 32	AZOLL ZS 32
	46	RENOLIN EXTRA 46S	MOBIL DTE 25	TELLUS 46	AZOLLA ZS 68
	68	RENOLIN EXTRA 68S	MOBIL DTE 26	TELLUS 68	AZOLLA ZS 68
HV	32	RENOLIN EQUIGRADE 32	MOBIL DTE 13 M	TELLUS T et ST 32	EQUIVIS ZS 32
	46	RENOLIN EQUIGRADE 46	MOBIL DTE 15 M	TELLUS T et ST 46	EQUIVIS ZS 46
	68	RENOLIN EQUIGRADE 68	MOBIL DTE 16 M	TELLUS T et ST 68	EQUIVIS ZS 68
HE	46			NATURELLE HFE	HYDROBIO 46
OILS DIESELS MOTORS		TITAN TRUCK 15W-40			RUBIA S 10W
		TITAN UNIVERSAL HD 15W-40		RIMULAX 15W - 40	
		TITAN UNIVERSAL HD 20W-50			

OILS TYPE HM : Refined mineral oils with anti-rust, anti - oxydation and anti - wear properties.
Application hydraulic systems in general. (Max pressure 2900 PSI, Max speed 2000 RPM)

OILS TYPE HV : Oils type HM with improved viscosity / temperature properties.
Application car industry, marine equipement, high performance hydraulic (high pressures and speds).

OILS TYPE HE : Biodegradable hydraulic oils, synthetic base (esthers).
Can be used in all hydraulic equipments requiring a HV oil.

OILS TYPE HFAE , HFAS , HFB , HFC , HFD : Water emulsion in oil or synthetic fluid, consult our technical departments.
The type of elastomer and the compatibility defoinition must be subject to an agreement between the supplier and the final customer.

OIL RECOMMENDATIONS

Dimension readings and approximative characteristics subject to modifications .

RECOMMENDATION CONCERNING the DRIVE TYPE of HPI HYDRAULIC MOTORS

As the HPI hydraulic motors are designed with shafts on bush bearings , it is necessary to avoid any axial or radial load and , in order to obtain the best performances and a longer life time , to pay some keen attention to the transmission driving type .

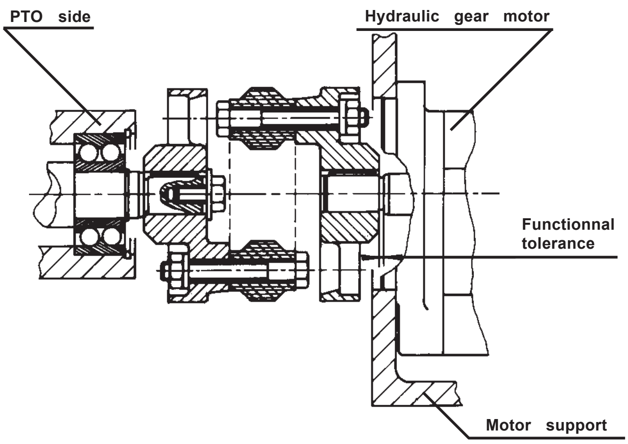
The hereunder sketches show the couplings to realize or to proscribe in order to avoid any kind of damage of the pump .

Recommended couplings :
F.T R 0009 1/3 2/3

Conditionnally recommended couplings :
F.T R 0009 2/3 3/3

Proscribed couplings :
F.T R 0009 3/3

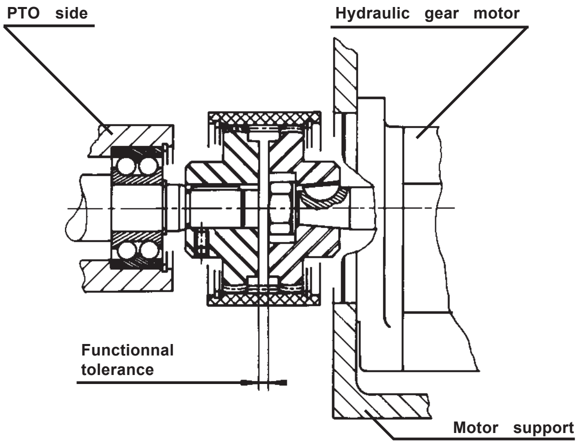
RECOMMENDED COUPLINGS



Mounting with elastic 3 parts coupling .

The motor shafts can be :

- **Straight keyed shafts**
- **Tapered shafts**
- **Splined shafts**



Mounting with 3 parts coupling with bulged gear .

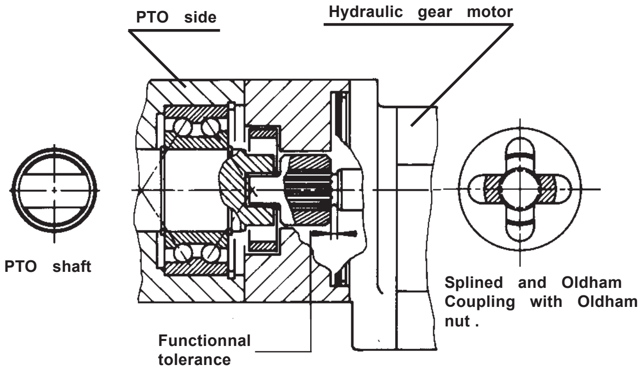
The motor shafts can be :

- **Straight keyed shafts**
- **Tapered shafts**
- **Splined shafts**

Dimension readings and approximative characteristics subject to modifications .

F.T R 0009 1/3

RECOMMENDED COUPLINGS

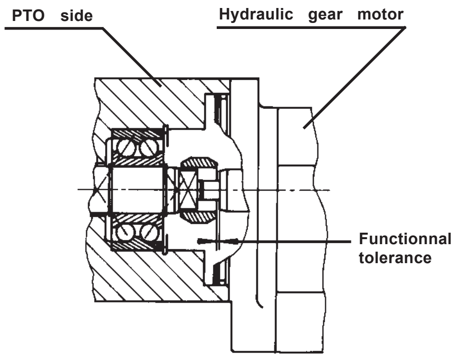


Mounting with coupling and Oldham coupling .

The motor shafts can be :

- **Straight keyed shafts**
- **Tapered shafts**
- **Splined shafts**

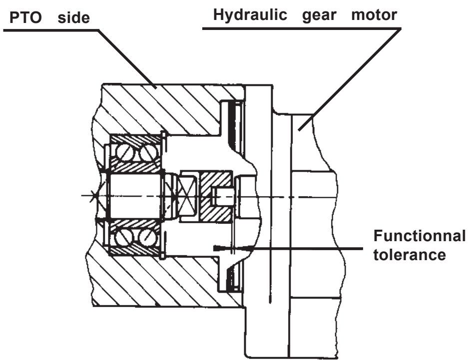
RECOMMENDED LUBRICATION .



Mounting with Oldham coupling .

Tang drive shaft on PTO and motor shaft .

RECOMMENDED LUBRICATION .

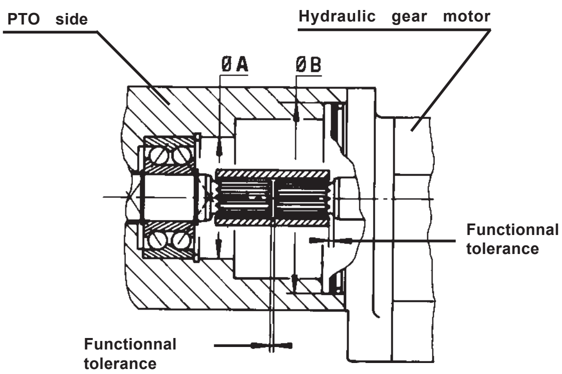


Mounting with Oldham coupling .

Tang drive shaft on PTO and motor shaft .

RECOMMENDED LUBRICATION .

CONDITIONALLY ALLOWED COUPLINGS



Mounting with splined coupling (Spigot on free flank) .

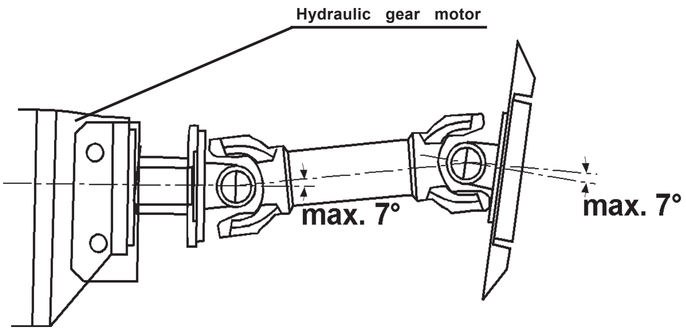
Tolerated coupling provided that there is a perfect concentricity between Ø A and Ø B .

Concentricity ⩽ 0,03 (according to the motor type and capacity) .

Dimension readings and approximative characteristics subject to modifications .

F.T R 0009 2/3

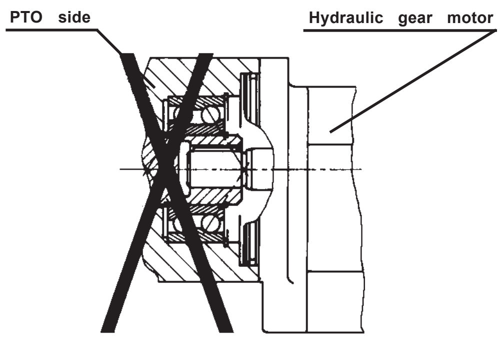
CONDITIONALLY ALLOWED COUPLINGS



Homocinetic coupling

PROSCRIBED COUPLINGS

(Direct drive of the motor shaft on the PTO shaft)

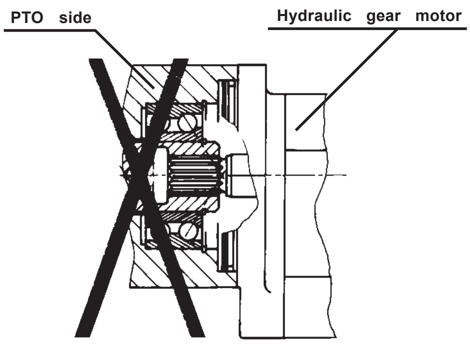


Straight keyed drive .

Hyperstatic mounting .

Impossibility to line up properly the motor shaft and the PTO shaft .

INEVITABLE PUMP SHAFT - CONSTRAINT

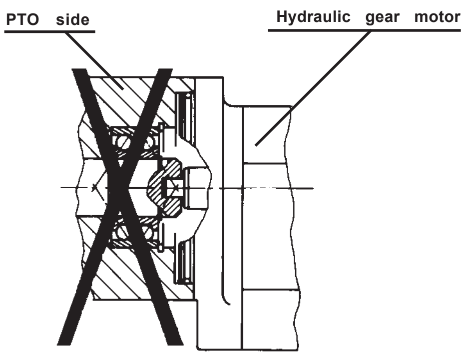


Splined drive .

Hyperstatic mounting .

Impossibility to line up properly the motor shaft and the PTO shaft .

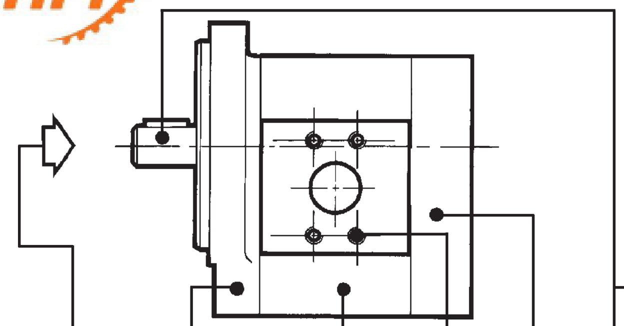
INEVITABLE PUMP SHAFT - CONSTRAINT



Tang drive .

Motor shaft directly into the PTO shaft .

INEVITABLE PUMP SHAFT - CONSTRAINT



1 Direction M1 or M2

2 Direction M3

M	1	AA	N	2	008	H	L	2	0	C 02	N
I Sign	II Sign	III Sign	IV Sign	V	VI Sign	VII Sign	VIII Sign	IX Sign	X Sign	XI Sign	XII Sign

TYPE

Motor **M**

DIRECTION of ROTATION

- Clockwise **1**
- Anti - clockwise **2**
- Bi - directional **3**

FRONT BODY

MOUNTING FLANGE

- 2 and 4 holes (USA - ISO) **A**
- 4 holes (Englisch - Italian) **B**
- 2 and 4 holes (French) **C**
- 2 and 4 holes (German) **D**
- 4 holes **Z**

A , B , C , D , F , U , ...

Execution variation

Flat Front Body

- Without tightness on spigot joint **N**
- with tightness on spigot joint (Only for Series 2 Type DUK) **K**

Thick Front Body with front bearing

Power Series

- Without tightness on spigot joint **P**

TYPE of the SERIES

- Series **0**
- Series **1**
- Series **2**
- Series **3**
- Series **4**
- Series **5**

CAPACITY in the SERIES (cc / rev)

- 0,50 - 0,75 - 1,00 - 1,25 - 1,50 - 2,00
- (00)2 - (00)3 - (00)4 - (00)5 - (00)6
- (00)6 - (00)8 - (0)10 - (0)12 - (0)15 - (0)18 - (0)22 - (0)26 - (0)30
- (0)25 - (0)31 - (0)40 - (0)50 - (0)60 - (0)71 - (0)80 - (0)90 - 100
- 075 - 110 - 150 - 175 - 212 - 250
- (0)43 - (0)52 - (0)62 - (0)72 - (0)83 - (0)93 - 103 - 125 - 140 - 153

(0) - Only to get the conformity of the codification

PORT LOCATION

- **H** Implantation HPI
- **B** Italian Implantation (BAN Series 2 and 3)
- **C** Square Implantation
- **F** Threaded ports

REAR BODY

- **L** Without port on rear body (Standard)

PRIMARY SHAFT

- **1** Tapered
- **2** Straight keyed
- **3** Splined
- **4** Tang

SECONDARY SHAFT

- **0** Without shaft

PRIMARY SHAFT CODE

See data sheets

SHAFT SEAL

- **N** Nitrile
- **V** Viton

Dimension readings and approximative characteristics subject to modifications .

CODIFICATION of HYDRAULIC GEAR MOTORS

MOTORS CHARACTERISTICS

Series (V Sign)	MODEL (VI Sign)	Capacity	Mini Speed	MAXI PRESSURE at MINI SPEED		Maxi Speed	MAXI PRESSURE at MAXI SPEED		NOMINAL FLOW at 1500 rev / min	NOMINAL FLOW at maxi speed	Input power in kW at 1000 RPM and 100 bar	Input torque at 100 bar in m.daN
		cc / rev	RPM	bar	PSI	RPM	bar	PSI	l / min	l / min		
0	050	0,50	500	100	1450	8000	250	3625	0,75	4	0,07	0,06
0	075	0,75	500	100	1450	8000	220	3190	1,12	6	0,10	0,09
0	100	1	500	100	1450	8000	200	2900	1,50	8	0,14	0,13
0	125	1,25	500	100	1450	6000	150	2175	1,87	7,5	0,17	0,16
0	150	1,50	500	100	1450	6000	120	1740	2,25	9	0,22	0,20
0	200	2	500	100	1450	5000	100	1450	3	10	0,30	0,28
1	002	2,05	1000	200	2900	8000	250	3625	3,07	16,40	0,28	0,24
1	003	3,07	1000	200	2900	7000	250	3625	4,60	21,40	0,44	0,37
1	004	4,09	800	175	2537	6000	200	2900	6,13	24,50	0,59	0,53
1	005	5,12	500	150	2175	6000	175	2537	7,68	30,70	0,75	0,71
1	006	6,14	400	150	2175	5000	175	2537	9,21	30,70	0,83	0,85
2	006	6,45	300	150	2175	4000	250	3625	9,67	25,80	0,80	0,85
2	008	8,25	300	150	2175	4000	250	3625	12,37	33	1,14	1,14
2	010	10,12	300	150	2175	4000	250	3625	15,18	40,48	1,45	1,41
2	012	12	250	150	2175	4000	250	3625	18	48	1,79	1,75
2	015	15,52	200	200	2900	3500	225	3260	23,25	54,32	2,20	2,22
2	018	19,12	200	150	2175	3500	175	2537	28,65	66,92	2,71	2,68
2	022	22,87	200	150	2175	3500	150	2175	34,2	80	3,34	3,22
2	026	27,6	200	150	2175	3000	150	2175	41,4	82,80	4,01	3,85
2	030	31,2	200	150	2175	3000	150	2175	46,8	93,60	4,56	4,44

Dimension readings and approximative characteristics subject to modifications .

Following Series

F.T R 0054 1/2

MOTORS CHARACTERISTICS

Series (V Sign)	MODEL (VI Sign)	Capacity cc / rev	MINI SPEED RPM	MAXI PRESSURE at MINI SPEED bar	MAXI PRESSURE at MINI SPEED PSI	MAXI SPEED RPM	MAXI PRESSURE at MAXI SPEED bar	MAXI PRESSURE at MAXI SPEED PSI	NOMINAL FLOW at 1500 rev / min l / min	NOMINAL FLOW at maxi speed l / min	Input power in kW at 1000 RPM and 100 bar	Input torque at 100 bar in m.daN
3	025	25,80	300	200	2900	3500	250	3625	38,70	90,30	3,60	3,62
	031	32,10	300	200	2900	3000	225	3260	48,15	96,30	4,40	4,48
	040	41,50	250	200	2900	3000	225	3260	62,25	124,50	5,80	5,85
	050	51,65	250	200	2900	3000	225	3260	77,47	154,95	7,30	7,32
	060	62,60	200	175	2537	3000	200	2900	93,90	187,80	9,05	8,88
	071	73,55	200	150	2175	2500	200	2900	110,32	183,87	10,60	10,63
	080	82,95	200	125	1812	2500	175	2537	124,42	207,37	12,07	11,98
	090	92,95	200	125	1812	2000	175	2537	139,42	185,90	13,60	13,50
	100	103,9	200	125	1812	2000	175	2537	155,85	207,80	15,08	14,90

Series	MODEL	cc / rev	RPM	bar	PSI	RPM	bar	PSI	l / min	l / min	kW	m.daN
5	052	52,91	250	200	2900	3500	250	3625	79,36	185,18	7,60	7,62
	062	62,75	250	200	2900	3500	250	3625	94,12	219,62	9	9,10
	072	72,59	250	200	2900	3500	250	3625	108,88	254	10,60	10,70
	083	83,67	200	200	2900	3000	250	3625	125,50	251	12,20	12,30
	093	93,51	200	200	2900	3000	225	3260	140,26	280,53	13,80	13,90
	103	103,3	200	200	2900	3000	225	3260	154,95	309,9	15,30	16,40
	125	125,5	200	200	2900	2500	225	3260	188,25	313,75	18,80	19
	140	140,2	200	200	2900	2500	225	3260	210,30	350,5	21	21,20
	153	153	200	175	2537	2000	200	2900	229,50	306	23	23,10

Series	MODEL	cc / rev	RPM	bar	PSI	RPM	bar	PSI	l / min	l / min	kW	m.daN
4	110	110	300	200	2900	2500	200	2900	112	280	15,80	16,50
	150	150	250	200	2900	2500	200	2900	150	375	21,30	22
	175	175	250	175	2537	2500	175	2537	175	437,50	25,20	26
	212	212	200	150	2175	2500	150	2175	212	530	30,90	38
	250	250	200	125	1812	2000	125	1812	250	500	36,80	38

Dimension readings and approximative characteristics subject to modifications .

Preceding Series

F.T R 0054 2/2

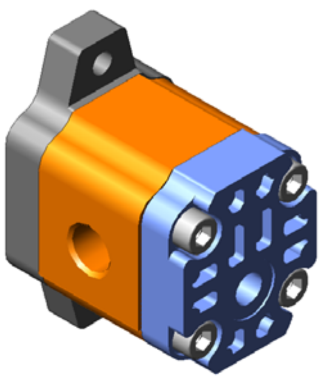
Home - general contents

Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 0

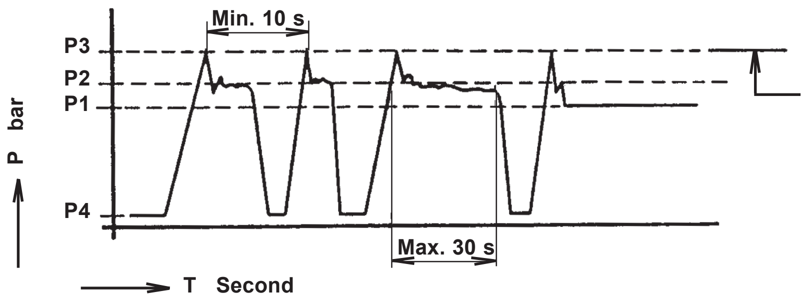


Tel : (33) 1 49 62 28 00 - Fax : (33) 1 45 76 68 40

Max. working conditions MOTORS Series 0 (ECO .T and CIP)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity	MAXIMUM PRESSURE						Maximum pressure at		Minimum speed at RPM			Maxi speed at △ pressure
		P1		P2		P3		P1	P2	100 bar	210 bar	300 bar	≤ 100 bar
	cc / rev	bar	PSI	bar	PSI	bar	PSI	t / min	t / min	*1450 PSI*	*3045 PSI*	*4350 PSI*	*(1450 PSI)*
0050	0,50	200	2900	230	3335	250	3625	5000	6000	800	1200	1500	5000
0075	0,75	175	2537	200	2900	220	3190	5000	6000	800	1200	1500 220 bar	5000
0100	1	160	2320	180	2610	200	2900	5000	6000	800	1200	1500 200 bar	5000
0125	1,25	100	1450	120	1740	150	2175	3500	4500	500	1000 150 bar		3500
0150	1,50	70	1015	90	1305	120	1740	3500	4500	500	1000 150 bar		3500
0200	2	70	1015	85	1232	100	1450	3000	4000	500	1000 150 bar		3000

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

MAXIMUM PRESSURE:

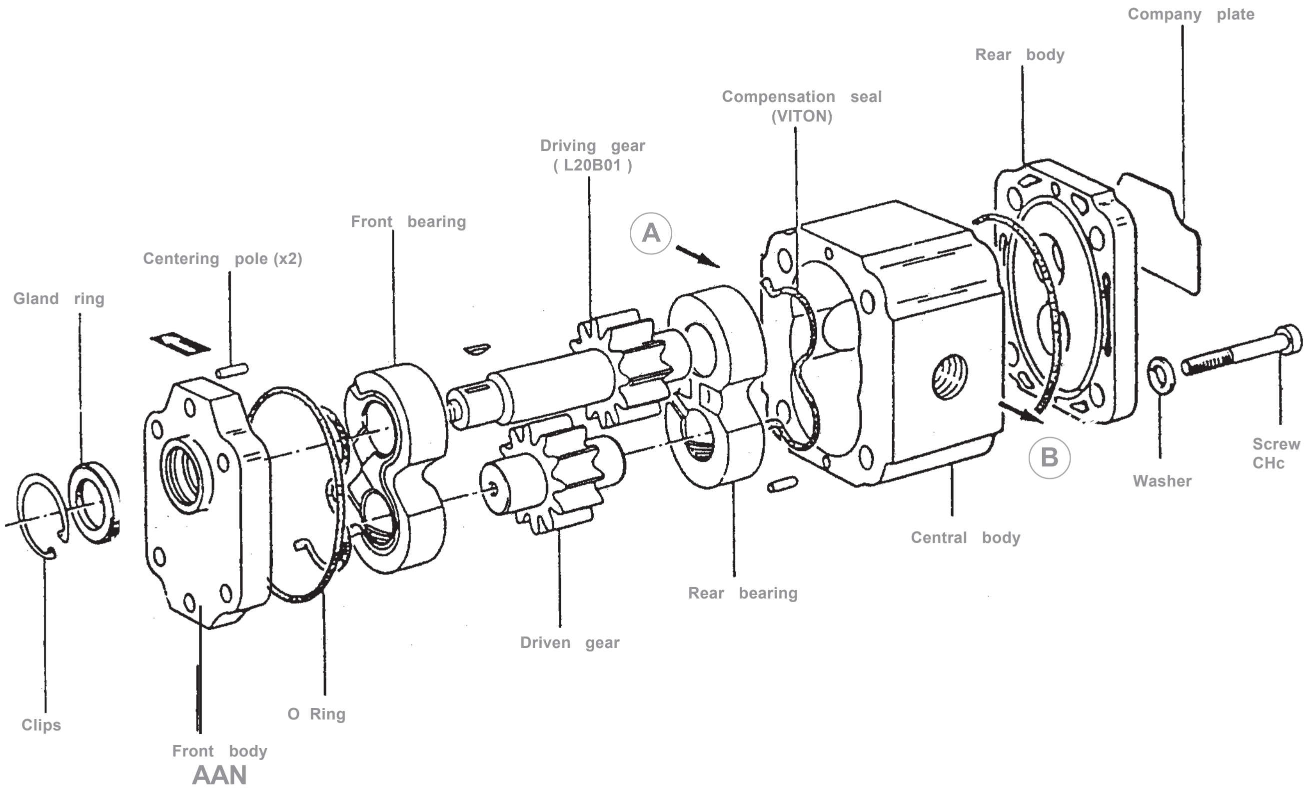
For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

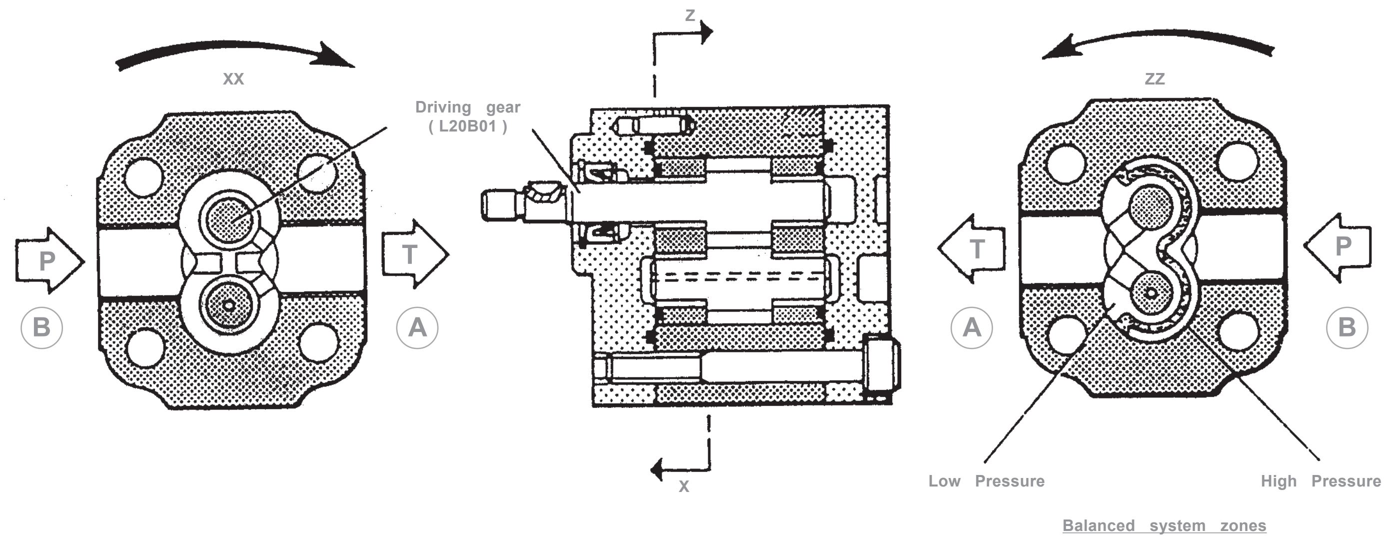
For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

1 WAY ROTATION WITHOUT COUNTER PRESSURE





M2 (M1) ECO.T

HYDRAULIC GEAR MOTORS SERIES 0

V.E 00 924

" BASIC " CATALOGUE
MOUNTING POSSIBILITIES

FRONT BODIES (III - IV Sign)		CENTRAL BODIES (VII Sign)	REAR BODIES (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)			
A	D	F	L	10	20	30	40
AAN					20B01		40C01

No feasible versions in " BASIC "

other possibilities, please refer to
" GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

Dimensions readinds and approximative characteristics subject to modifications.

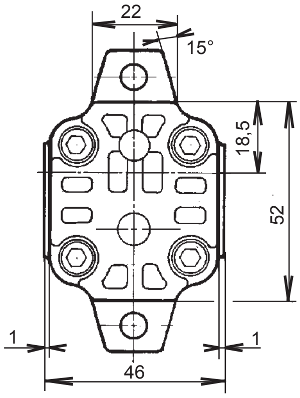
HYDRAULICS GEAR MOTORS

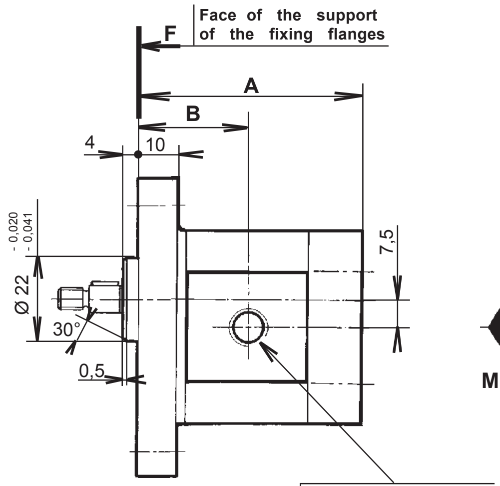
SERIES 0

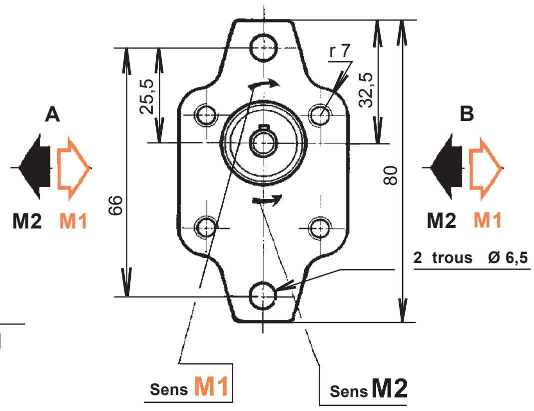
M	1/2	AA	N	0	VI Sign	F	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton



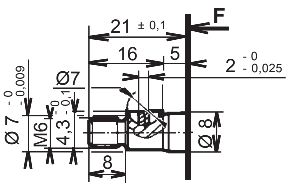




CHOICE of the capacity (VI Sign)	Dimensions A	Dimensions B
050 075	52,6	25,2
100 125 150	59	28,4
200	67,5	32,6

CHOICE of the DRIVING SHAFT

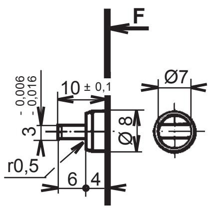
20 (IX - X Sign)
B01 (XI Sign)



Maxi transmissible torque

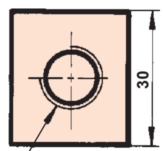
0,5 m.daN

40 (IX - X Sign)
C01 (XI Sign)



Maxi transmissible torque

0,6 m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET Ø C	INLET D	OUTLET Ø C	OUTLET D
F (Threaded)  Ø C effective depth D	050 to 200	M 14 x 150	12	M 14 x 150	12

HYDRAULIC GEAR MOTOR SERIES 0 TYPE AAN

Tel : (33) 1 49 62 28 00 - Fax : (33) 1 45 76 68 40

Home - general contents

Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 1

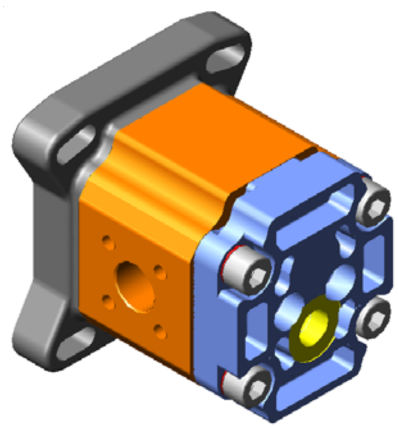
MAX. WORKING CONDITIONS

TECHNOLOGICAL COMPOSITION

PERFORMANCE CURVES

MOUNTING POSSIBILITIES

MOTORS TYPE: BAN
CBN



Publishing 01 / 2003

Tel : (33) 01 49 62 28 00
Fax : (33) 01 45 76 68 40

Max. working conditions MOTORS Series 1

(ECO .T and CIP)

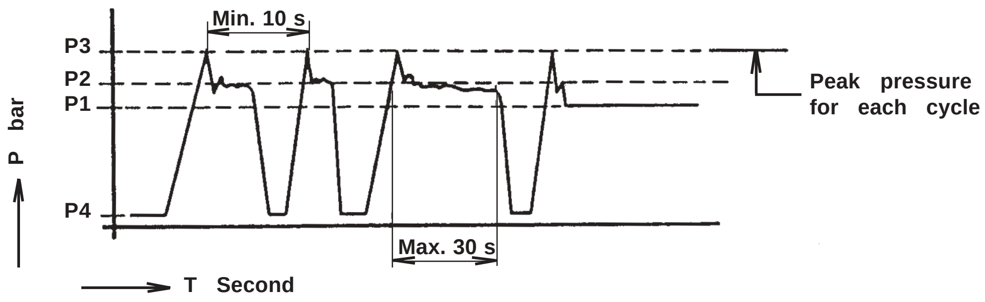
On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty

P2 Maximum pressure in intermittent duty

P3 Max. Allowable peack pressure

P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity cc / rev	MAXIMUM PRESSURE P1 bar	P1 PSI	P2 bar	P2 PSI	P3 bar	P3 PSI	Maximum pressure at P1 t / min	P2 t / min	Minimum speed at RPM 100 bar 1450 PSI	210 bar 3045 PSI	300 bar 4350 PSI	Maxi speed at Δ pressure ≤ 100 bar (1450 PSI)
1002	2,05	200	2900	230	3335	250	3630	5000	6000	1200	1400	1400	8000
1003	3,07	200	2900	230	3335	250	3630	5000	6000	1100	1400	1400	7000
1004	4,09	150	2175	180	2610	200	2900	4000	5000	1000	1200 200 bar	1200 200 bar	6000
1005	5,12	125	1812	150	2175	175	2537	3500	4500	900 175 bar			5000
1006	6,14	125	1812	140	2030	175	2537	3000	4000	900 175 bar			4500

Dimensions readings and approximative characteristics subject to modifications.

Performances and Output Curves (C15). (thanks to contact us)

(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

<u>MAXIMUM PRESSURE:</u>

For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

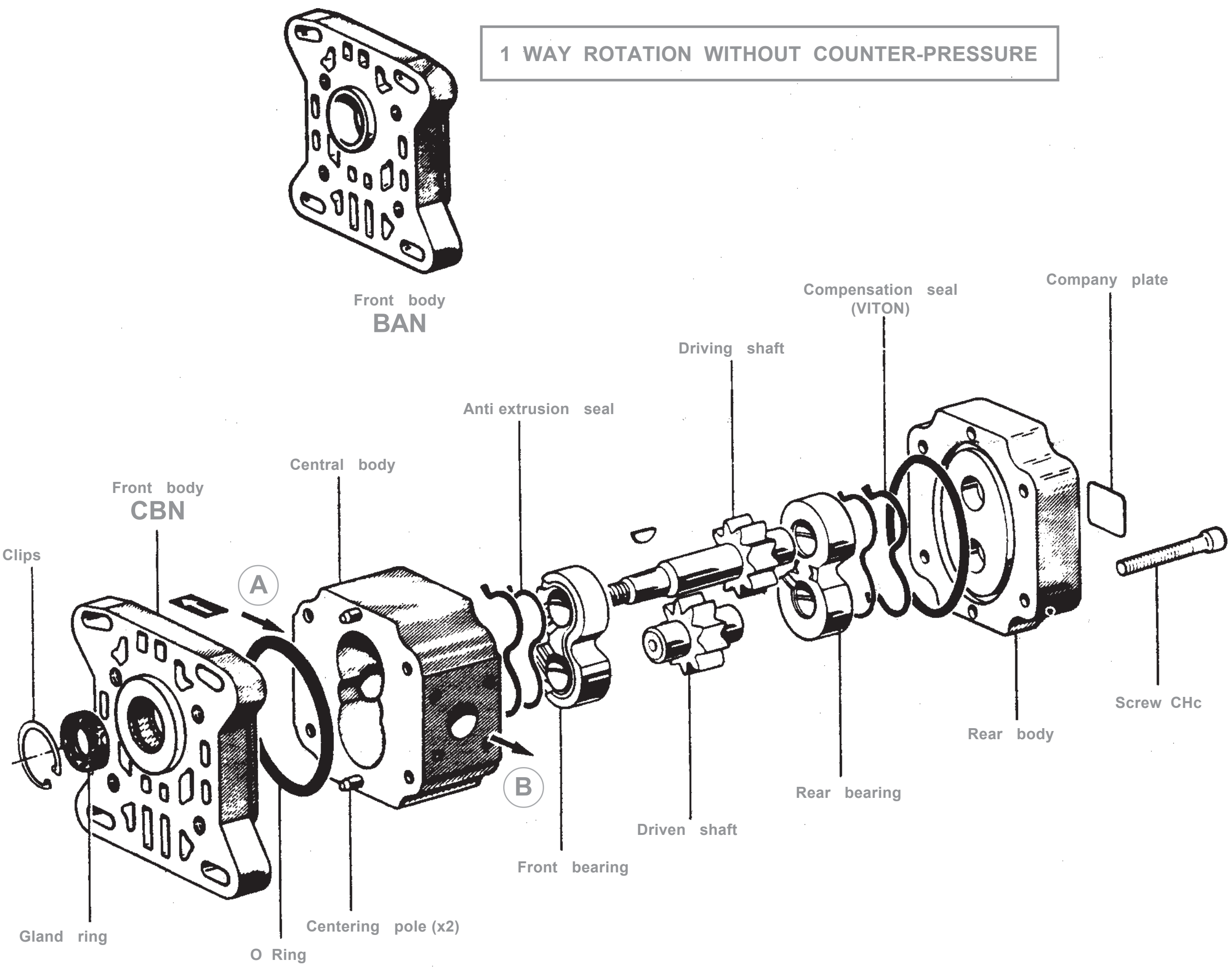
For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

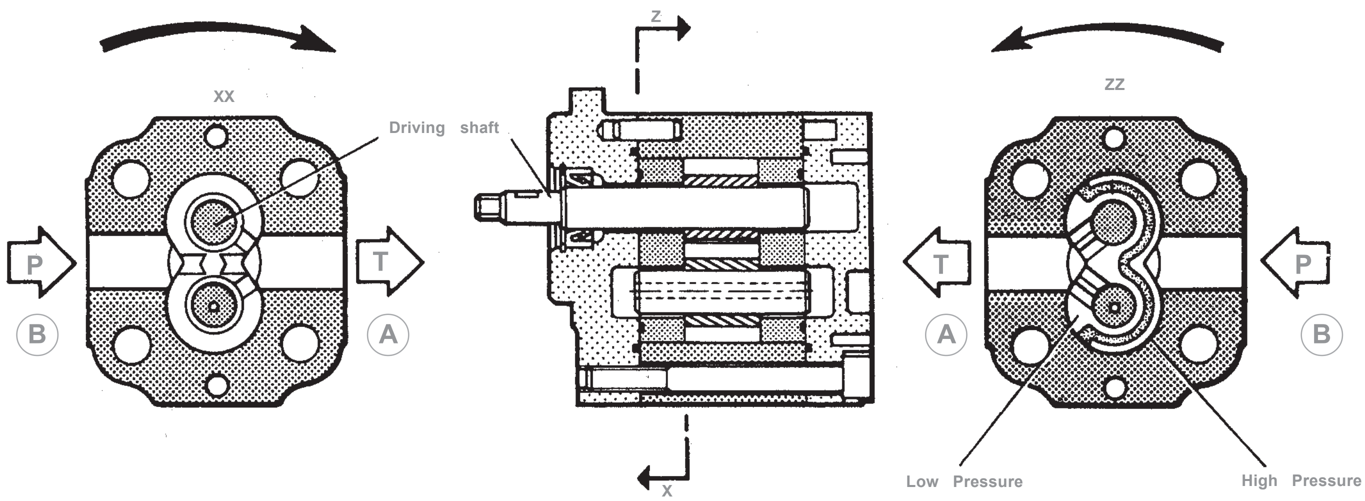
For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

F.T R 0047

1 WAY ROTATION WITHOUT COUNTER-PRESSURE





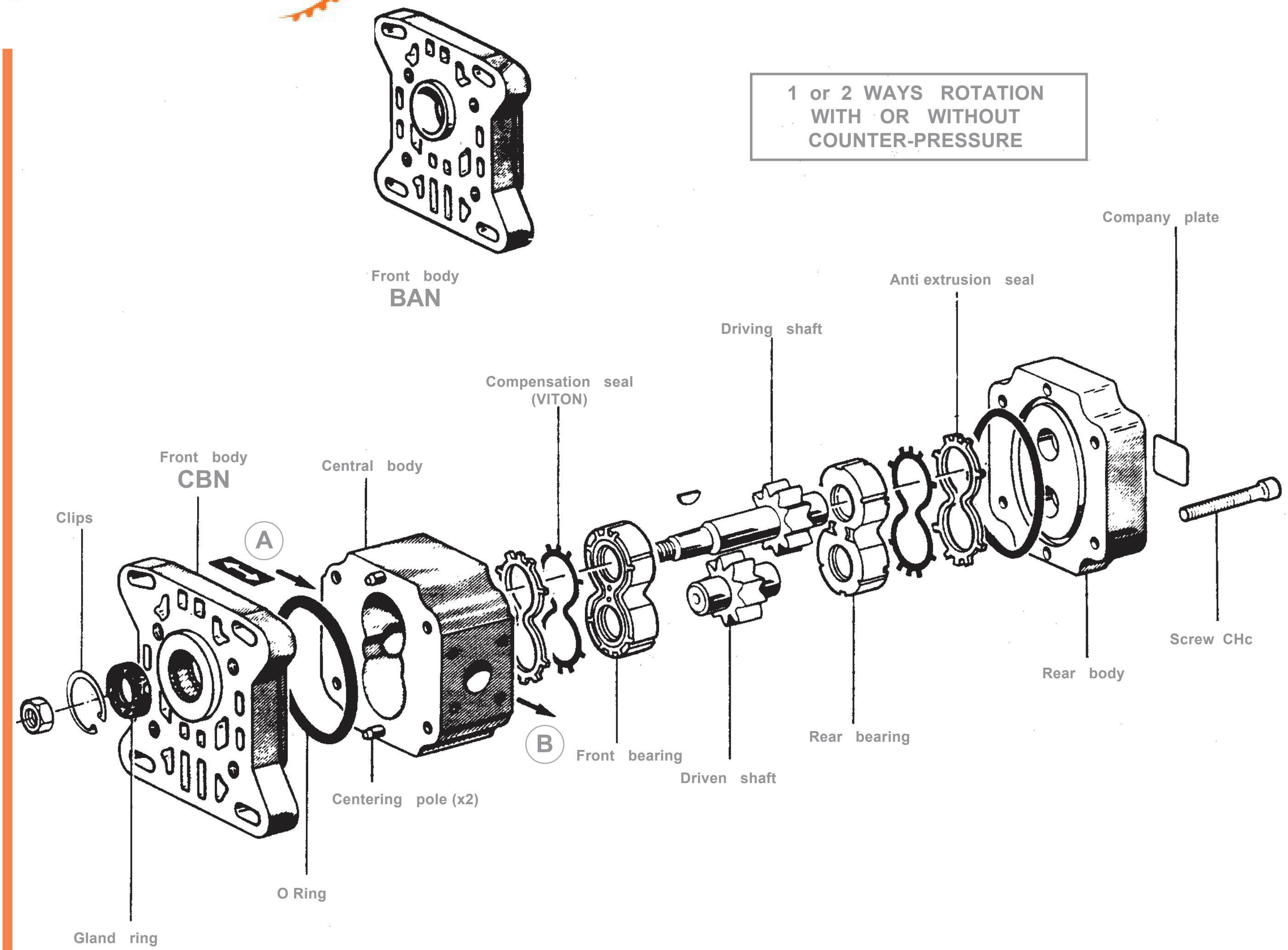
Balanced system zones

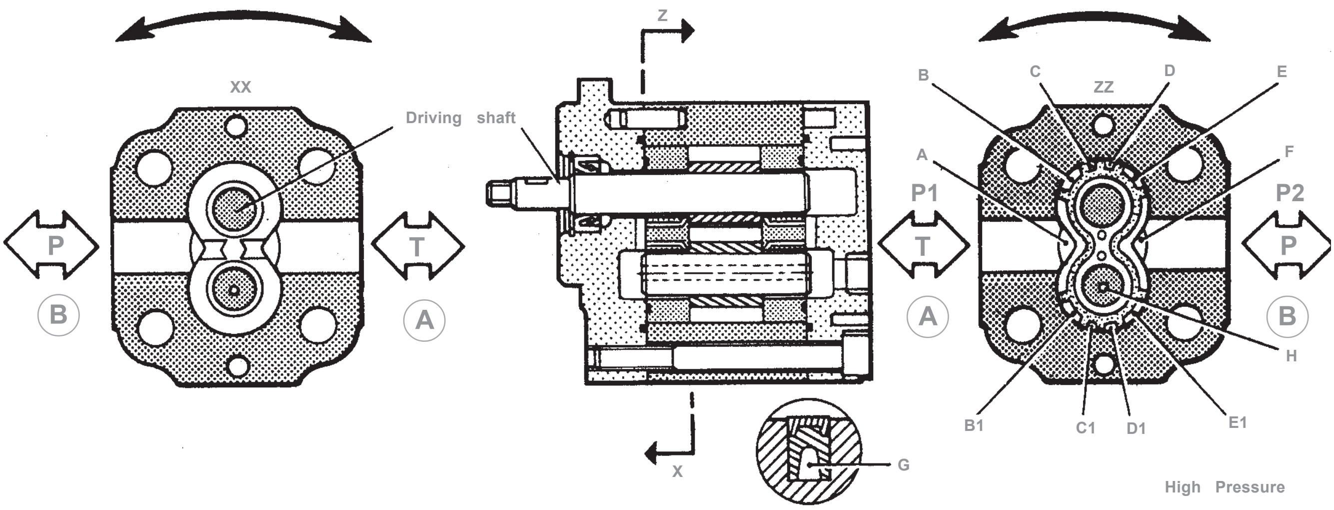
M2 (M1) ECO.T

HYDRAULIC GEAR MOTORS SERIES 1

V.E 10 926

1 or 2 WAYS ROTATION
WITH OR WITHOUT
COUNTER-PRESSURE



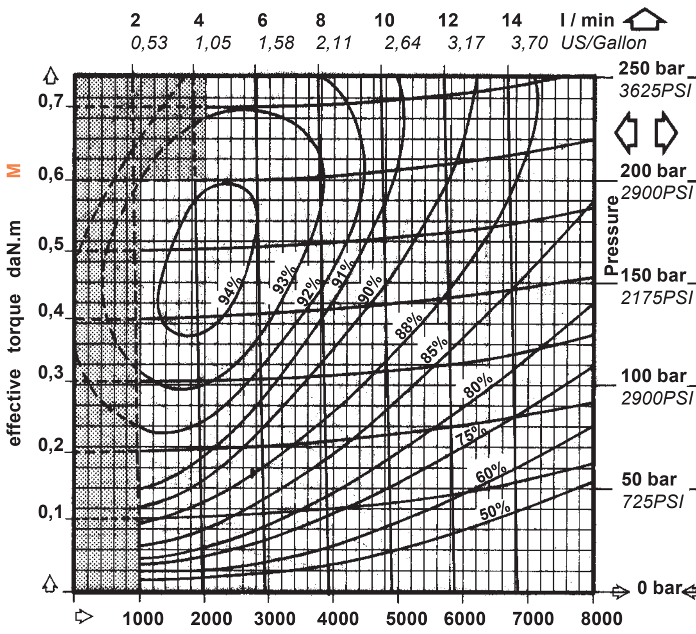


BALANCED SYSTEM ZONES

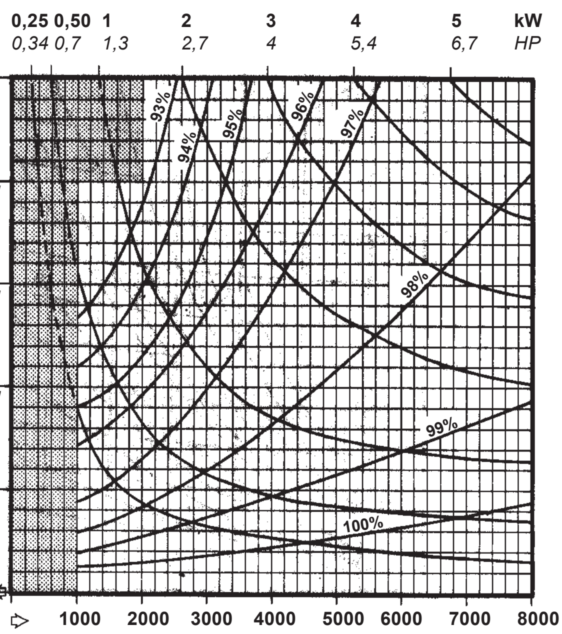
P1 - A - B - B1	High Pressure (primary pressure)
G - C - D - C1 - D1	Median Pressure
E - E1	Average Pressure
P2 - F	Counter Pressure from 0 to P Maxi (Secondary Pressure)
H	Low Pressure (communication with tank)

M3 CIP 3G
HYDRAULIC GEAR MOTORS SERIES 1

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



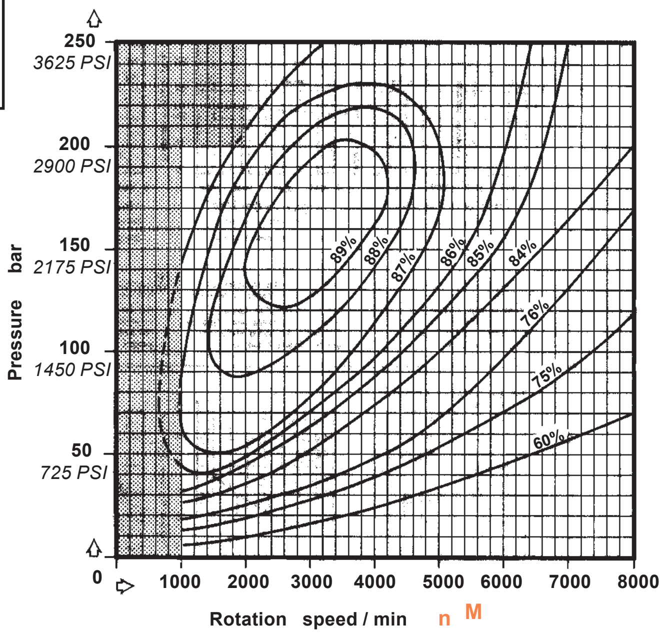
Mechanical efficiency η^M_{hm} ($\eta^M_{hm} = \frac{Mi}{Me} \times 100$)



Volumetric efficiency η^M_{hm} ($n^M_v = \frac{Qe}{Qi} \times 100$)

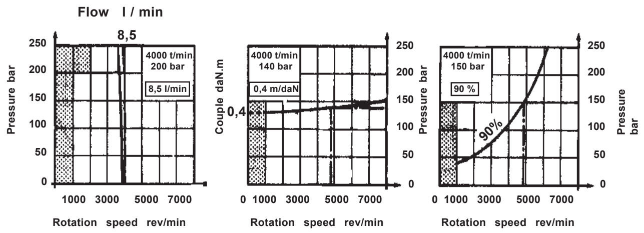
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard

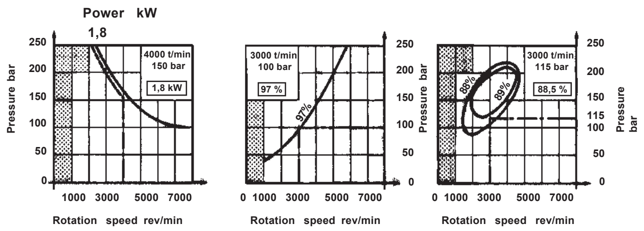


Total efficiency η^M_t ($\eta^M_t = \eta \frac{M}{hm} \times \eta \frac{M}{v}$)

READINGS EXAMPLES



1. Curves of flow according to speeds and pressures.
2. Curves of effective torques according to speeds and pressures.
3. ISO Curves - mechanical efficiency according to speeds and pressures.



4. Effective power in kW according to speeds and pressures.
5. ISO curves - Volumetric efficiency according to speeds and pressures.
6. Courbes ISO - Rendement énergétique (Rendement total) en fonction des Vitesses et Pression.

Dimensions readings and approximative characteristics subject to modifications.

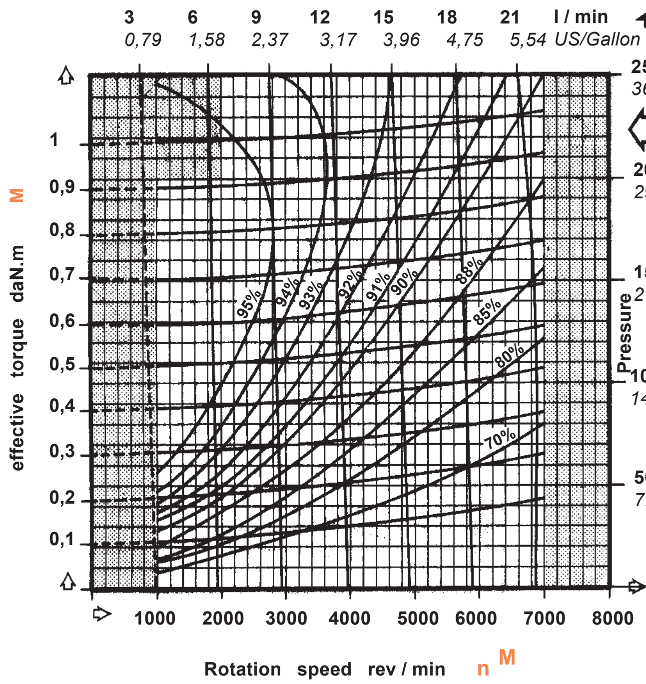
F.T 10 742

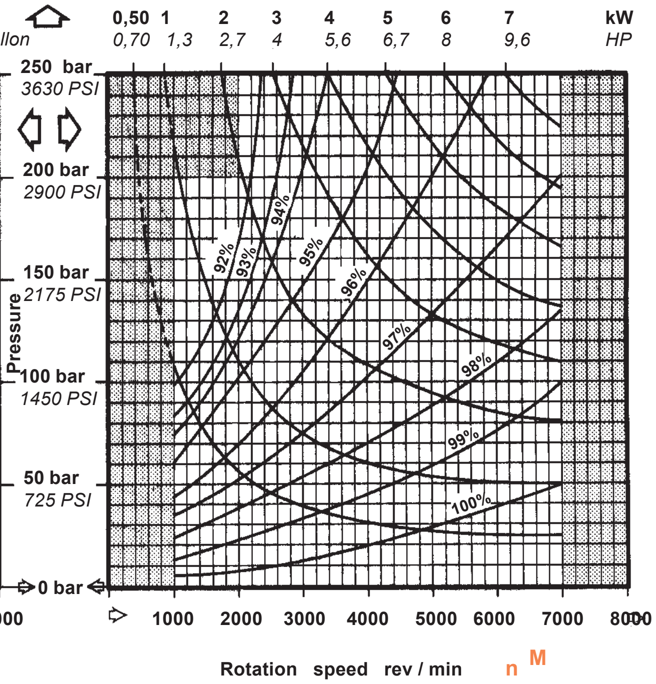
MOTOR SERIES 1 VERSION C.I.P 3G

Type 1002 Exact capacity: qe 0,12 cubic / inch

Dimensions readings and approximatives characteristics subject to modifications.

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



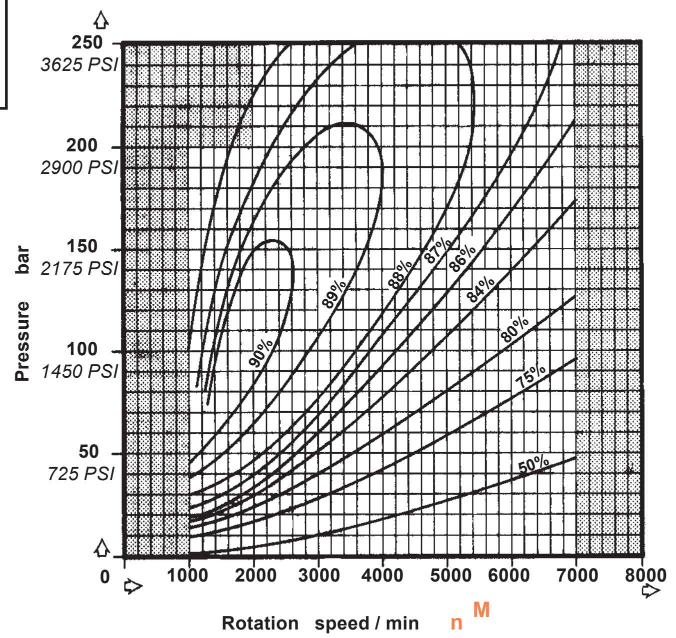


Mechanical efficiency η_{hm}^{M} $\left(\eta_{hm}^{M} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{hm}^{M} $\left(n_{v}^{M} = \frac{Qe}{Qi} \times 100\right)$

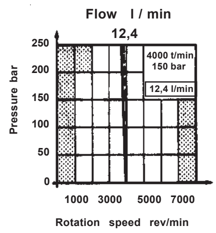
▒ non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard

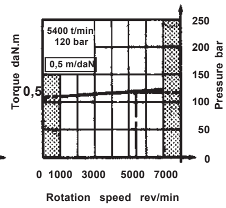


Total efficiency η_{t}^{M} $\left(\eta_{t}^{M} = \eta_{hm}^{M} \times \eta_{v}^{M}\right)$

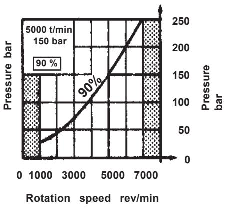
READINGS EXAMPLES



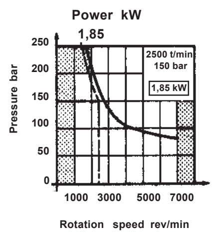
1 Curves of flow according to speeds and pressures.



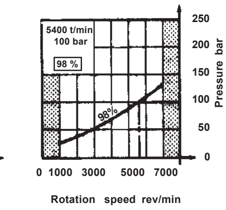
2 Curves of effective torques according to speeds and pressures.



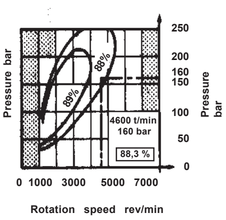
3 ISO Curves - mechanical efficiency according to speeds and pressures.



4 Effective power in kW according to speeds and pressures.



5 ISO curves - Volumetric efficiency according to speeds and pressures.



6 Courbes ISO - Rendement énergétique (Rendement total) en fonction des Vitesses et Pression.

F.T 10 743

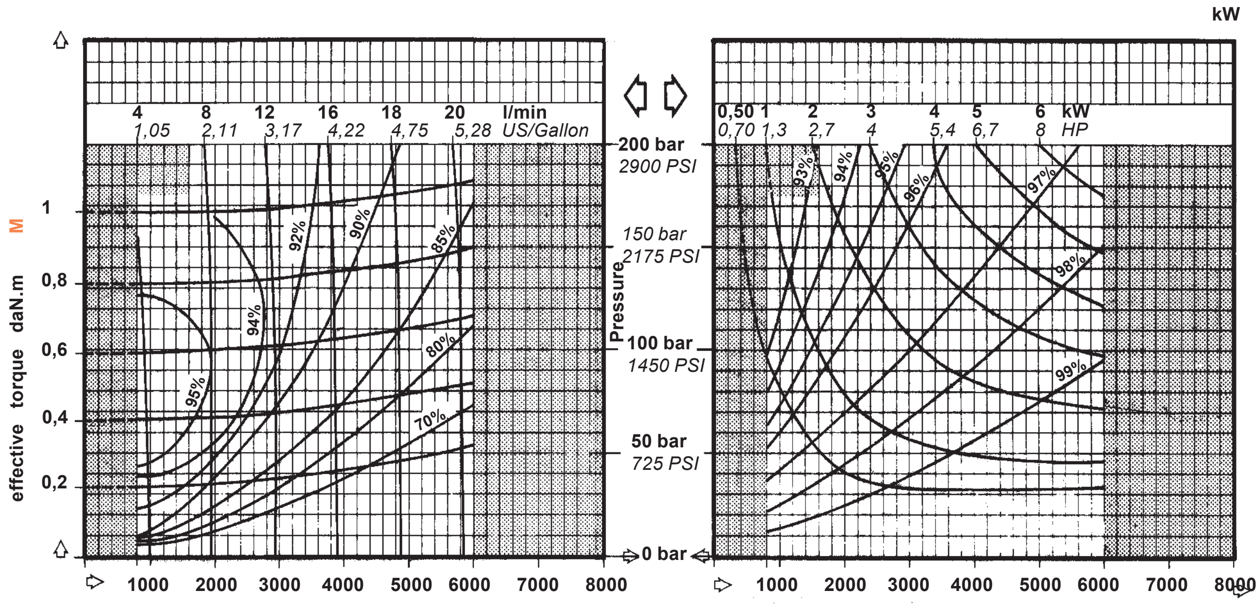
MOTOR SERIES 1 VERSION C.I.P 3G

Type 1003 Exact capacity: qe 0,18 cubic / inch

Test made with the oil SHELL Tellus T46 - Température d'essais 50 °C - Viscosité 35 cSt - Valeurs approximatives

Flow l / min q_{v}^{M}
US / Gallon

effective power kW P_{m}^{M}



Rotation speed rev / min n^{M}

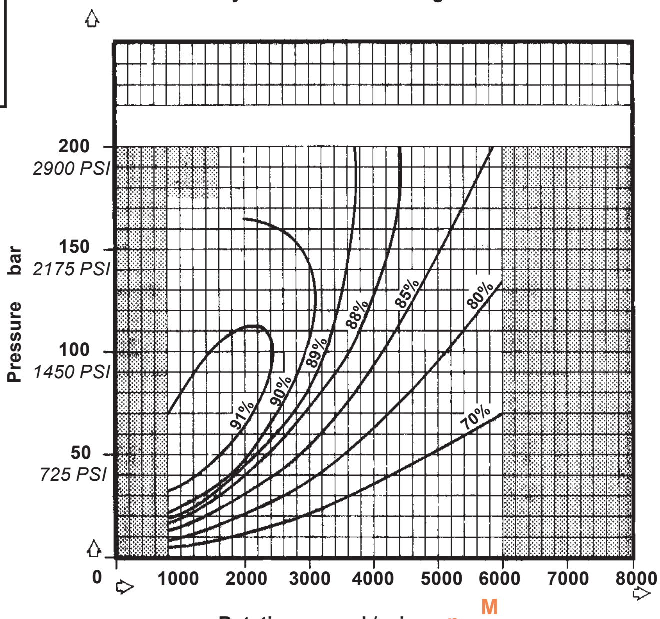
Rotation speed rev / min n^{M}

Mechanical efficiency η_{hm}^{M} $\left(\eta_{hm}^{M} = \frac{Mi}{Me} \times 100 \right)$

Volumetric efficiency η_{hm}^{M} $\left(\eta_{v}^{M} = \frac{Qe}{Qi} \times 100 \right)$

non recommended permanent area of utilisation.

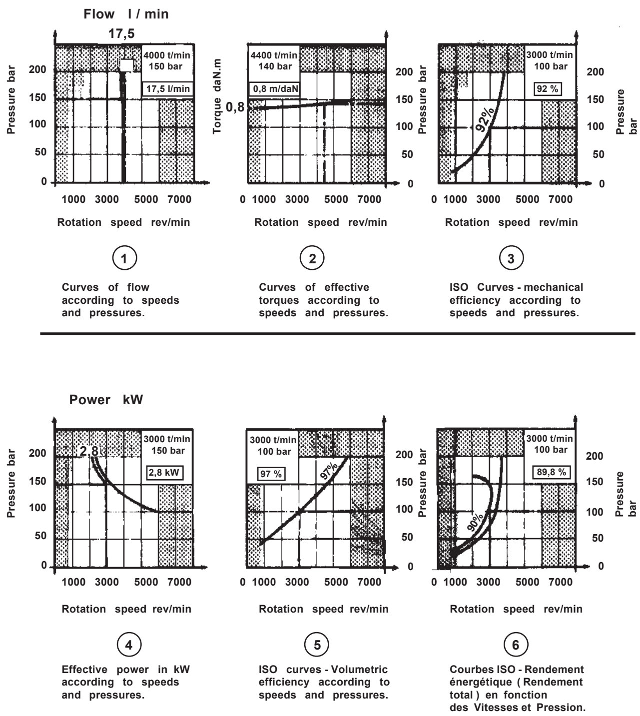
Symbols are according to ISO 4391 standard



Rotation speed / min n^{M}

Total efficiency η_{t}^{M} $\left(\eta_{t}^{M} = \eta_{hm}^{M} \times \eta_{v}^{M} \right)$

READINGS EXAMPLES

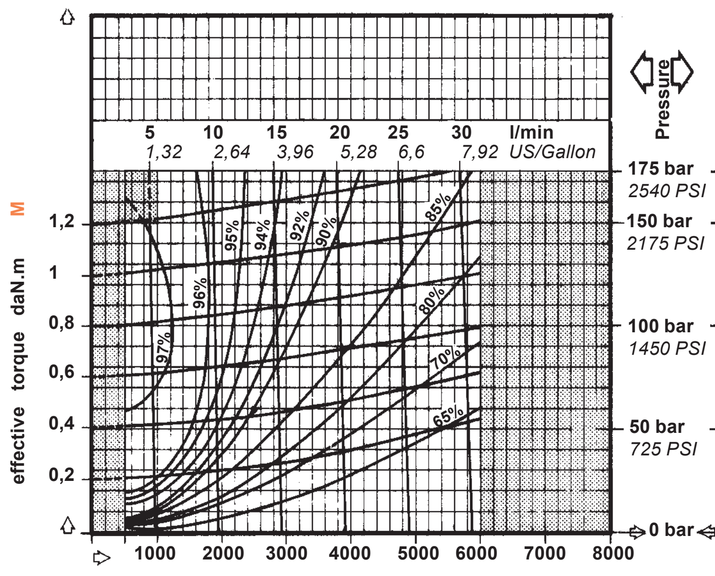


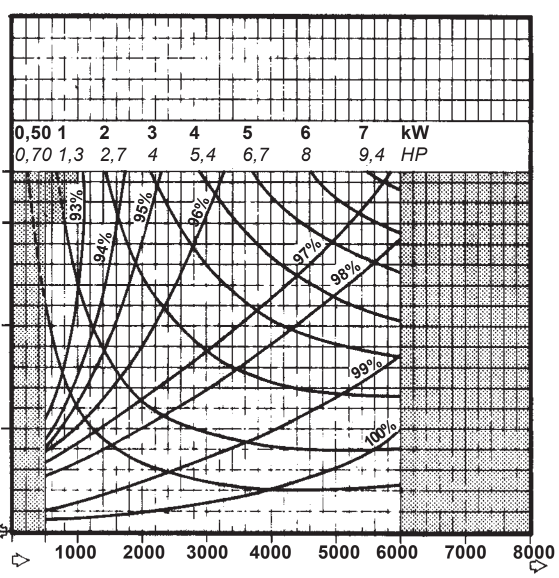
Dimensions readings and approximative characteristics subject to modifications.

MOTOR SERIES 1 VERSION C.I.P 3G

Type 1004 Exact capacity: qe 0,25 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



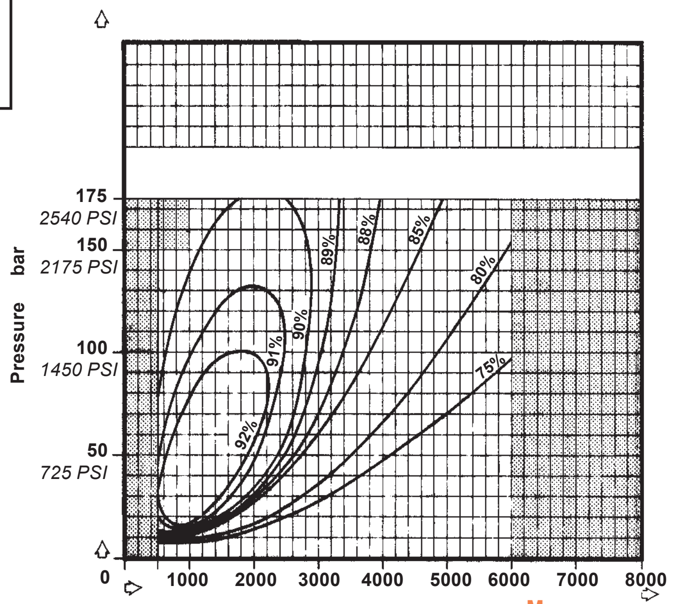


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

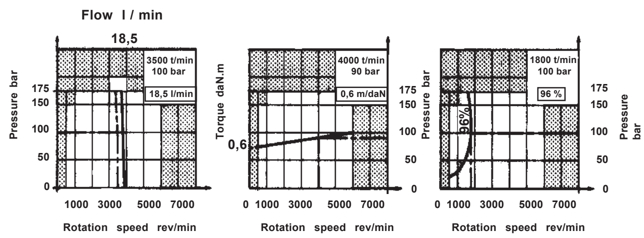
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard

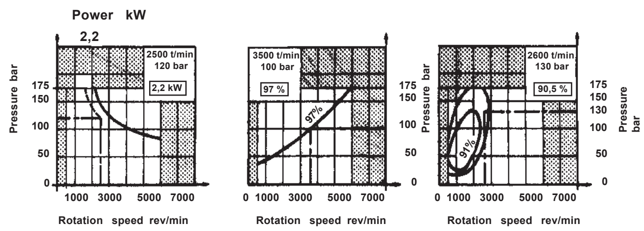


Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta \frac{M}{hm} \times \eta \frac{M}{v}\right)$

READINGS EXAMPLES



1. Curves of flow according to speeds and pressures.
2. Curves of effective torques according to speeds and pressures.
3. ISO Curves - mechanical efficiency according to speeds and pressures.



4. Effective power in kW according to speeds and pressures.
5. ISO curves - Volumetric efficiency according to speeds and pressures.
6. Courbes ISO - Rendement énergétique (Rendement total) en fonction des Vitesses et Pression.

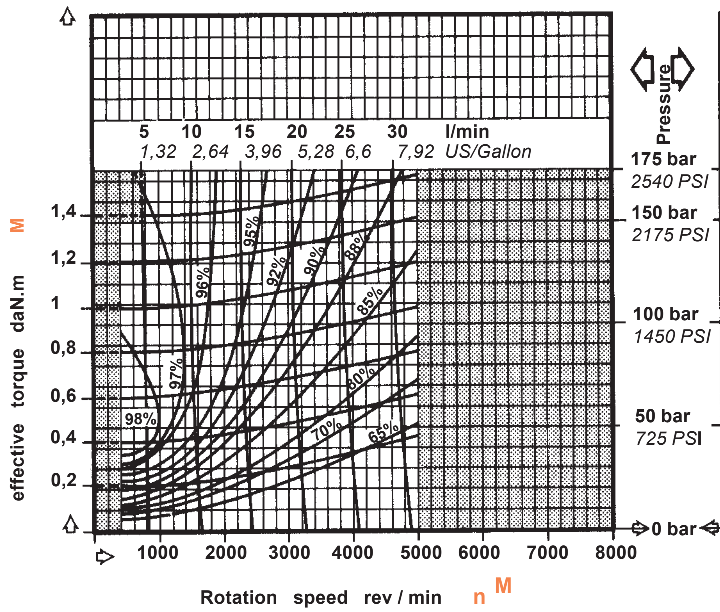
MOTOR SERIES 1 VERSION C.I.P 3G

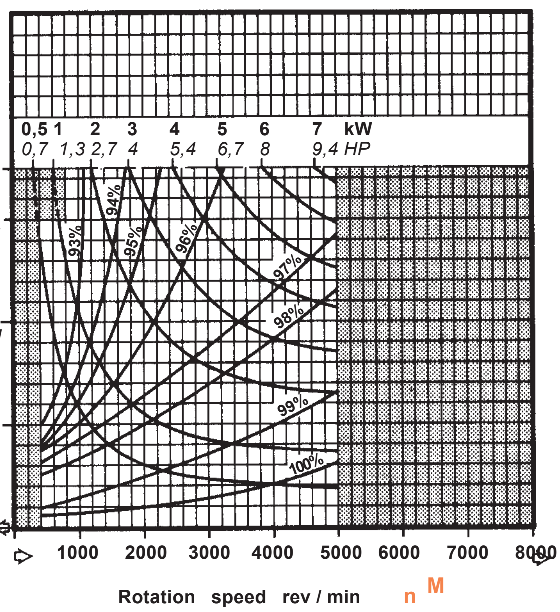
Type 1005 Exact capacity: qe 0,31 cubic / inch

Dimensions readings and approximatives characteristics subject to modifications.

F.T 10 745

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



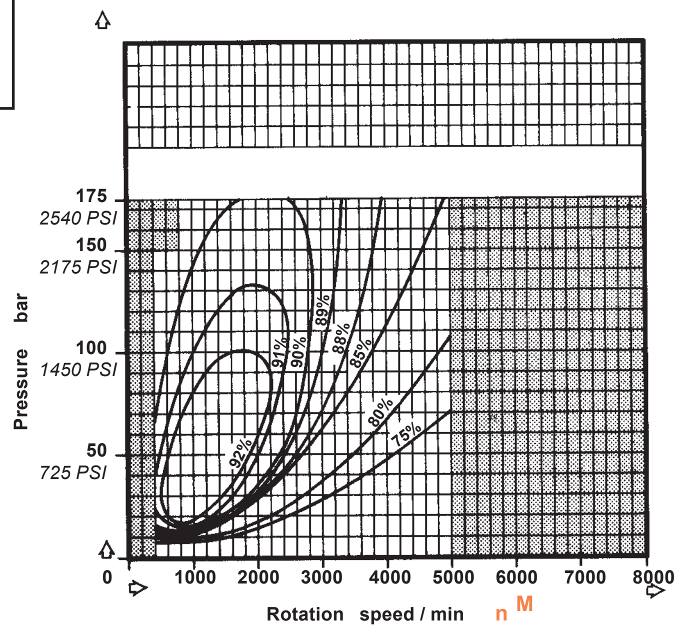


Mechanical efficiency η^M_{hm} $\left(\eta^M_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^M_{v} $\left(\eta^M_{v} = \frac{Qe}{Qi} \times 100\right)$

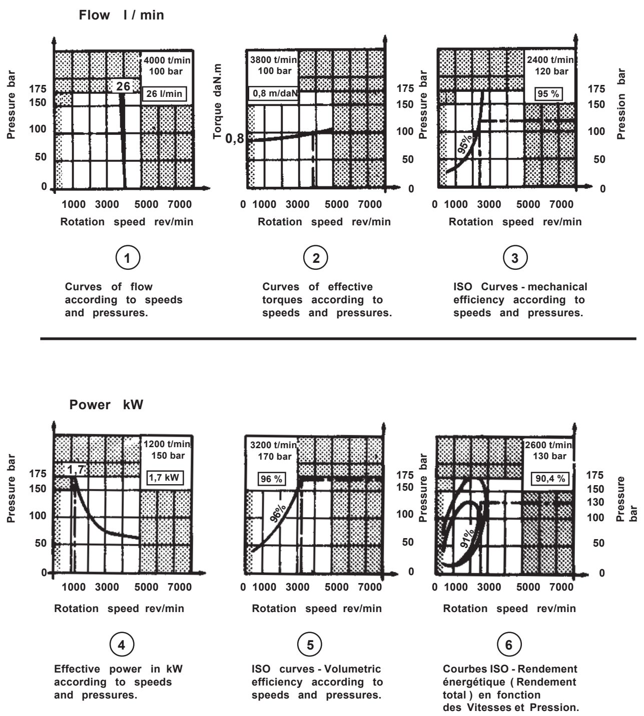
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^M_{t} $\left(\eta^M_{t} = \eta^M_{hm} \times \eta^M_{v}\right)$

READINGS EXAMPLES



MOTOR SERIES 1 VERSION C.I.P 3G

Type 1006 Exact capacity: qe 0,37 cubic / inch

Dimensions readings and approximatives characteristics subject to modifications.

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODIES (III - IV Sign)			CENTRAL BODIES (VII Sign)			REAR BODIES (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)			
A	B	C	H	C	F	L	10	20	30	40
	BAN						10B01			
		CBN					10B01	20C01		40C02

No feasible versions in " BASIC "

other possibilities, please refer to
" GENERAL " catalogue G15

Dimensions readings and approximatives characteristics subject to modifications;

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

HYDRAULIC GEAR MOTORS

SERIES 1

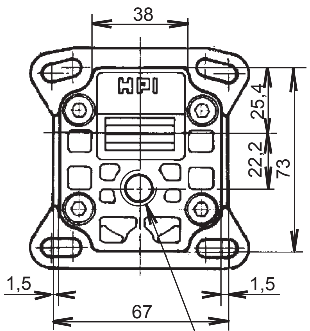
F.T R 0245

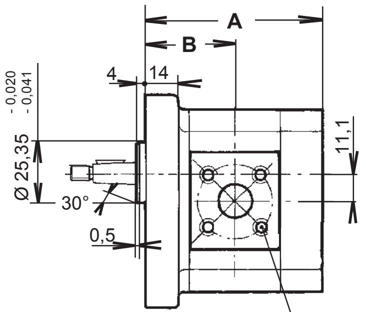
M	II Sign	BA	N	1	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

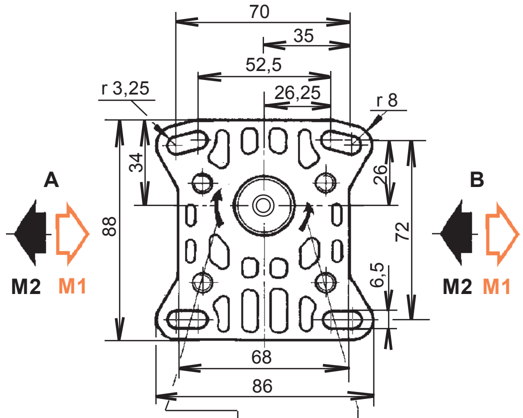
N : Nitrile
V : Viton

PRESSURE at the DRAINING:
MAX. 1bar (14,5 PSI)





CHOICE of IMPLANTATIONS
of PORTS, see below



Direction **M1**
(II Sign)

Direction **M2**
(II Sign)

Drain port 1/4" BSP effective depth 13 for bi-directional or single directional motor but working with a counter pressure in the return port.

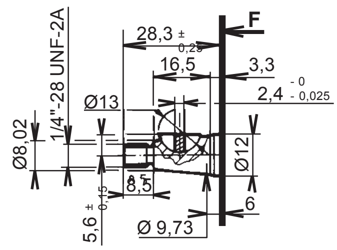
Max. tightening torque of the connection.

3,5 m.daN (**25** lb / ft)

DRIVING SHAFT

10 (IX - X Sign)
B01 (XI Sign)

Taper 1 / 8



Delivered with nut
Ref. : 101 719

Maxi transmissible torque

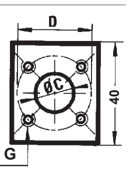
4 m.daN

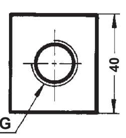
CHOICE of the Capacity (VI Sign)	Dimensions A	Dimensions B
002 003	71,8	35,9
004 005 006	81,5	40,7

■ For motors M3 used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connector , see Catalogue N°70

IMPLANTATION	Capacity	DIMENSIONS INLET PORT Ø C	D	OUTLET PORT Ø C	D	AFFECTATION 1 way rotation without counter pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways with counter pressure ■ M3 Preferential rotation M2 Inlet	Outlet
C (Square) Ø C effective depth G	002 003	14	30	14	30	A	B	B	A	B	A
	004 to 006										
F (Threaded) Ø C effective depth G	002 003	3/8" BSP	12	3/8" BSP	12	A	B	B	A	B	A
	004 to 006	1/2" BSP	14	3/8" BSP	12						





Dimensions readings and approximative characteristics subject to modifications.

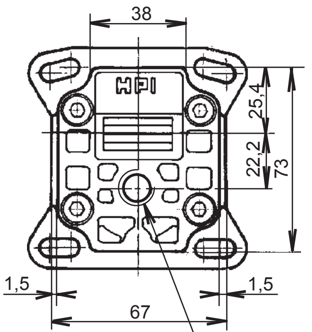
HYDRAULIC GEAR MOTORS SERIES 1 TYPE BAN

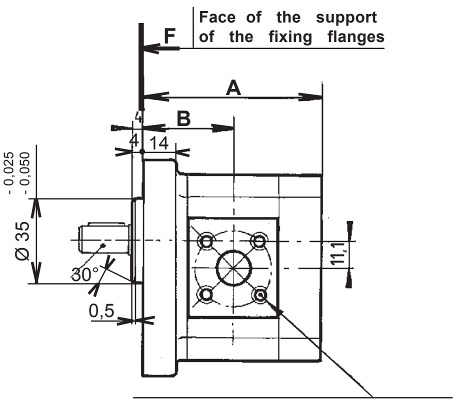
M	II Sign	CB	N	1	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

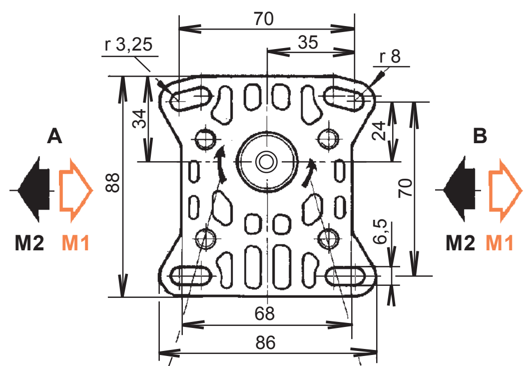
N : Nitrile
V : Viton

PRESSURE at the DRAINING: MAX. 1bar (14,5 PSI)





CHOICE of IMPLANTATIONS of PORTS, see below



Direction M1 (II Sign)

Direction M2 (II Sign)

Drain port 1/4" BSP effective depth 13 for bi-directional or single directional motor but working with a counter pressure in the return port.

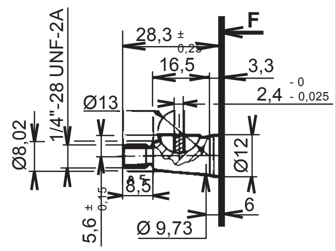
Max. tightening torque of the connection.

3,5 m.daN (**25** lb / ft)

CHOICE of the capacity (VI Sign)	Dimensions A	Dimensions B
002 003	71,8	35,9
004 005 006	81,5	40,7

CHOICE of DRIVING SHAFT

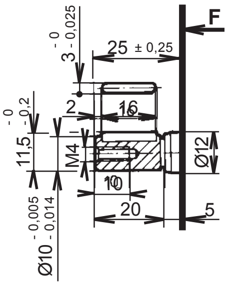
10 (IX - X Sign)
B01 (XI Sign)
Taper 1 / 8



Delivered with nut
Ref. : 101 719

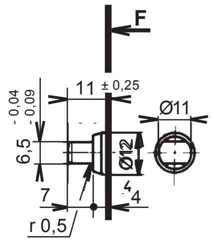
Max. transmissible torque
4 m.daN

20 (IX - X Sign)
C01 (XI Sign)



Max. transmissible torque
2,5 m.daN

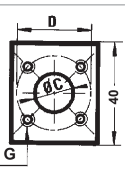
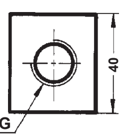
40 (IX - X Sign)
C02 (XI Sign)



Max. transmissible torque
3 m.daN

■ For motors M3 used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connector , see Catalogue N°70

IMPLANTATION		Capacity	DIMENSIONS INLET PORT Ø C	D	DIMENSIONS OUTLET PORT Ø C	D	AFFECTATION 1 way rotation without counter pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways with counter pressure ■ M3 Preferential rotation M2 Inlet	Outlet
C (Square) Ø C effective depth G		002 003	14	30	14	30	A	B	B	A	B	A
		004 to 006										
F (Threaded) Ø C effective depth G		002 003	3/8" BSP	12	3/8" BSP	12	A	B	B	A	B	A
		004 to 006	1/2" BSP	14	3/8" BSP	12						

HYDRAULIC GEAR MOTORS SERIES 1 TYPE CBN

Dimensions readings and approximative characteristics subject to modifications.

F.T 10 710

Home - general contents

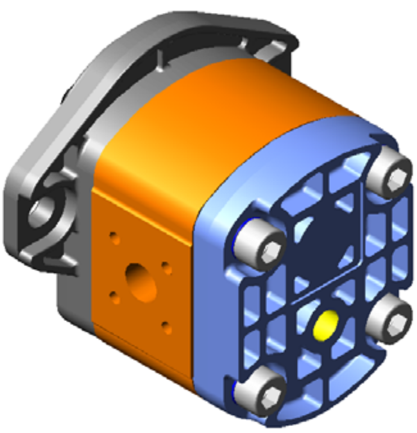
Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 2

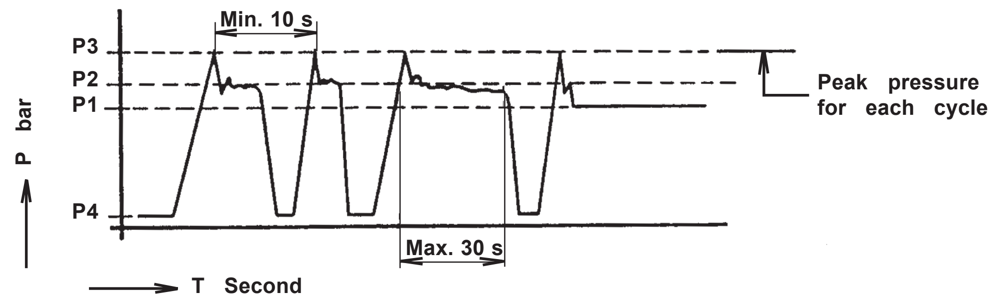
(Flat front body)



Max. working conditions MOTORS Series 2 (ECO .T and CIP)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity	MAXIMUM PRESSURE						Maximum pressure at		Minimum speed at RPM			Maxi speed at Δ pressure
		P1		P2		P3		P1	P2	100 bar	210 bar	300 bar	≤ 100 bar
	cc / rev	bar	PSI	bar	PSI	bar	PSI	t / min	t / min	*1450 PSI*	*3045 PSI*	*4350 PSI*	*(1450 PSI)*
2006	6,45	200	2900	230	3335	250	3625	3000	3200	500	1200	1400	4000
2008	8,25	200	2900	230	3335	250	3625	3000	3200	500	1000	1400	4000
2010	10,12	200	2900	230	3335	250	3625	3000	3200	500	1000	1200	4000
2012	12	200	2900	230	3335	250	3625	3000	3200	500	1000	1200	4000
2015	15,52	185	2682	200	2900	225	3262	3000	3000	500	800	1000 225 bar	
2018	19,12	125	1812	150	2175	175	2537	3000	2800	500	800 175 bar		3500
2022	22,87	100	1450	125	1812	150	2175	3000	2800	500	800 175 bar		3500
2026	27,6	100	1450	125	1812	150	2175	2500	2600	500	800 175 bar		3500
2030	31,2	100	1450	125	1812	150	2175	2200	2300	500	800 175 bar		3500

Dimensions readings and approximative characteristics subject to modifications.

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

<u>MAXIMUM PRESSURE:</u>

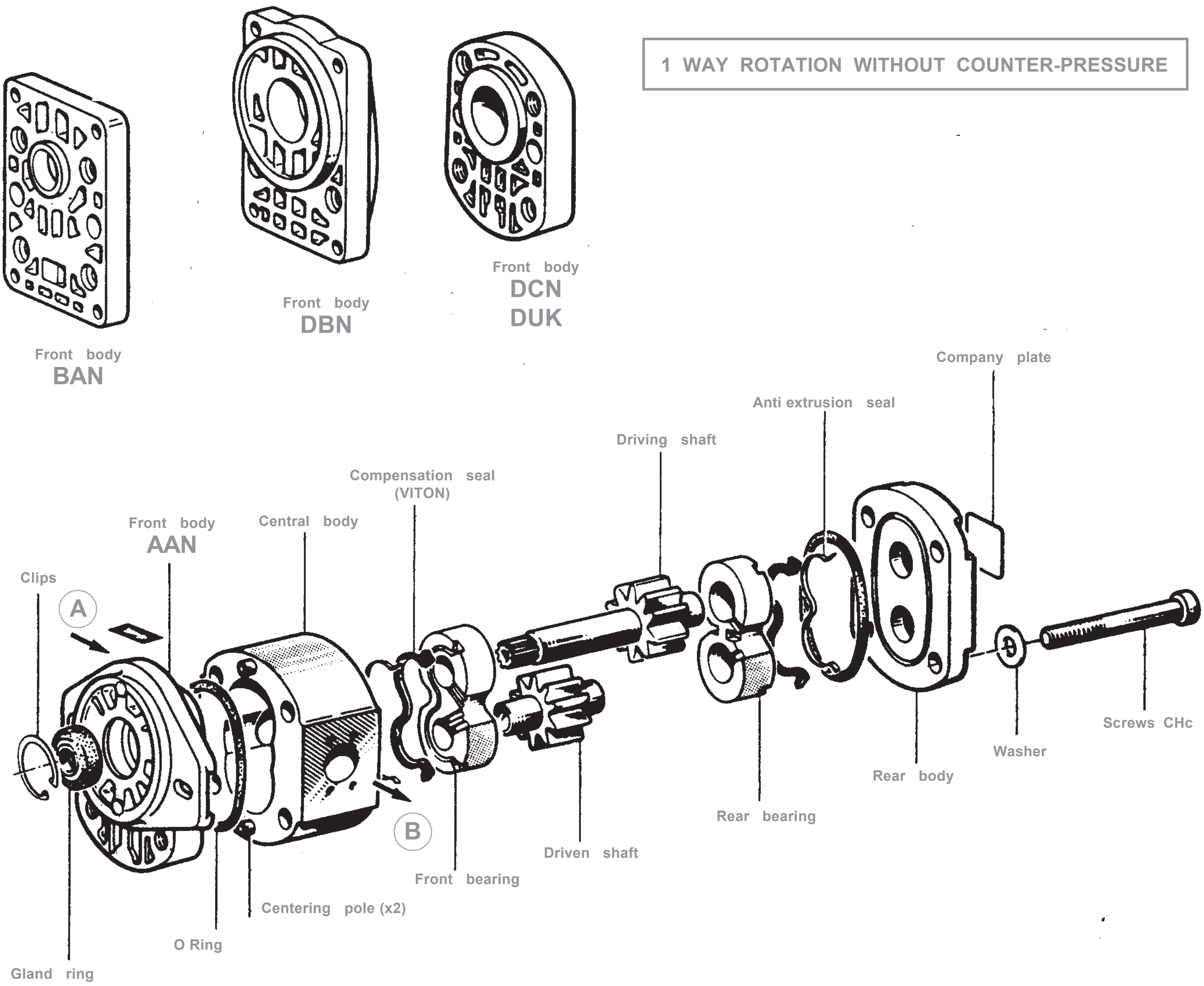
For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

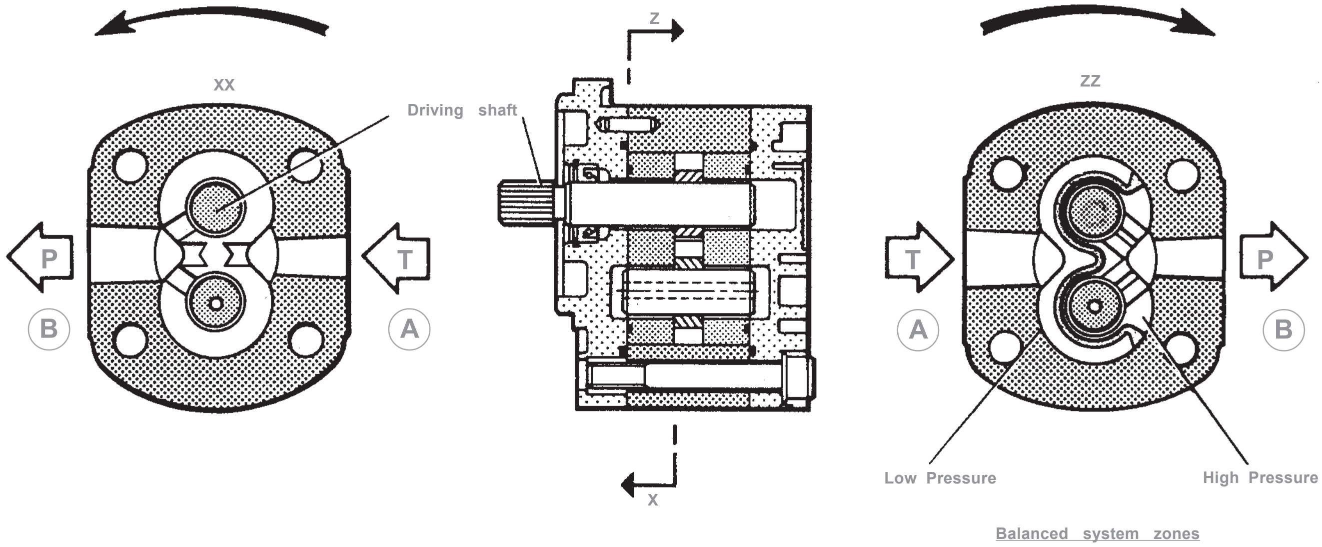
For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

1 WAY ROTATION WITHOUT COUNTER-PRESSURE

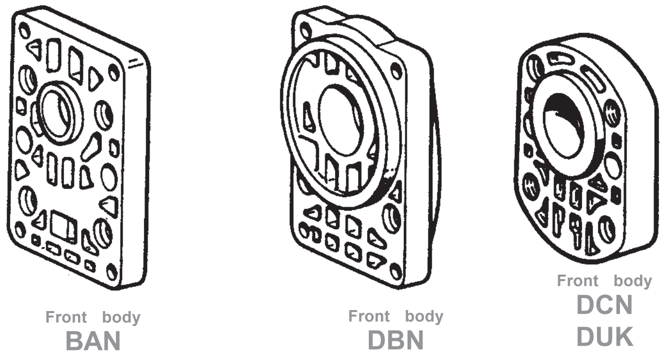




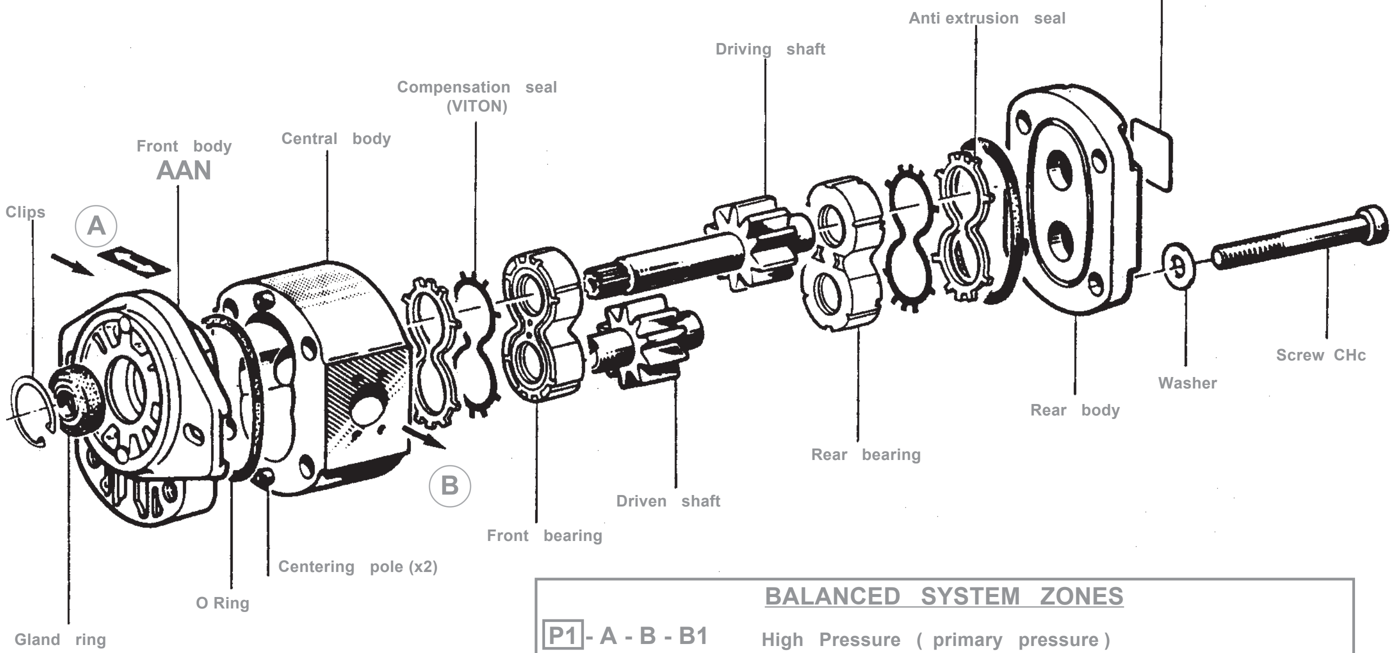
M2 (M1) ECO.T

HYDRAULIC GEAR MOTORS SERIES 2

V.E 20 928

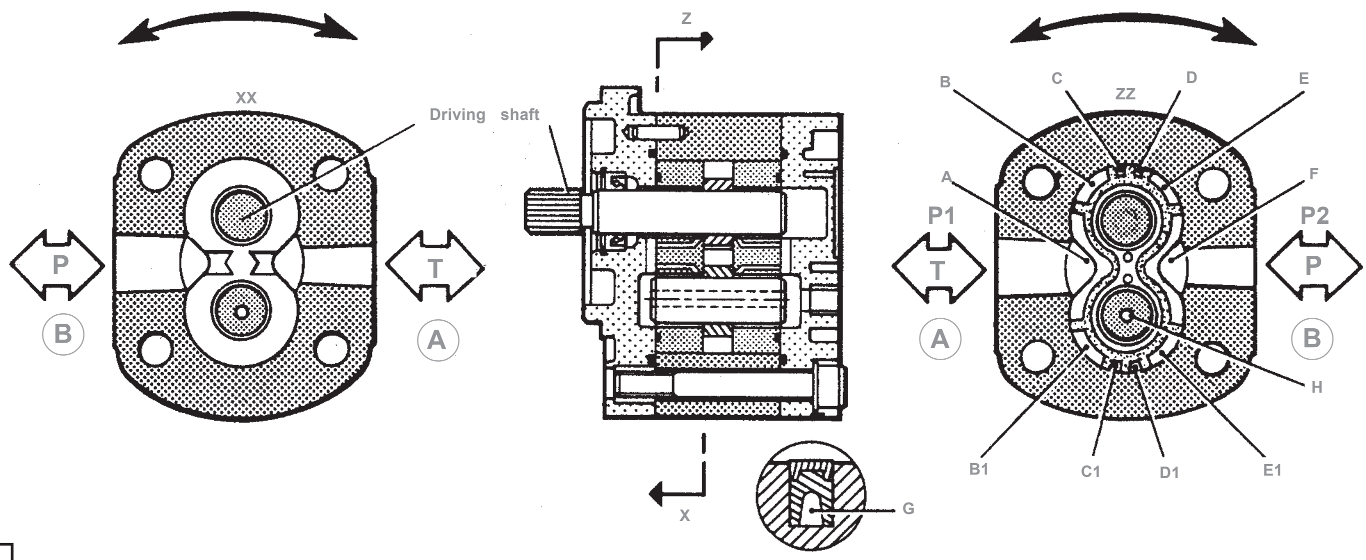


1 or 2 WAYS ROTATION
WITH OR WITHOUT
COUNTER-PRESSURE



BALANCED SYSTEM ZONES

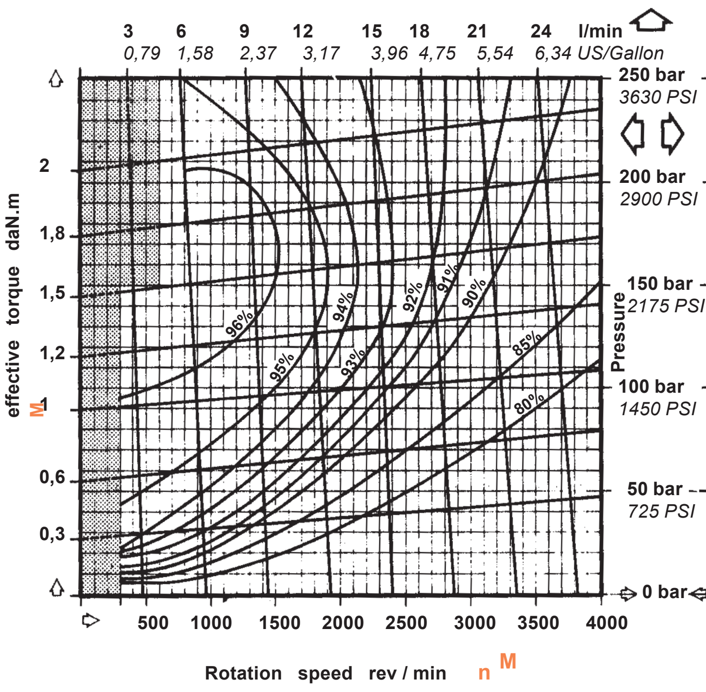
$\boxed{P1}$ - A - B - B1	High Pressure (primary pressure)
G - C - D - C1 - D1	Median Pressure
E - E1	Average Pressure
$\boxed{P2}$ - F	Counter Pressure from 0 to P Maxi (Secondary Pressure)
H	Low Pressure (communication with tank)

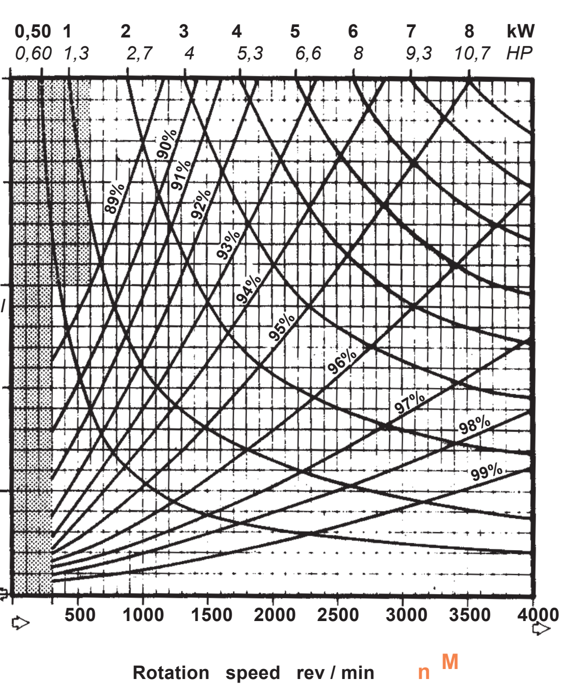


M3 CIP 3G
HYDRAULIC GEAR MOTORS SERIES 2

V.E 20 929

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



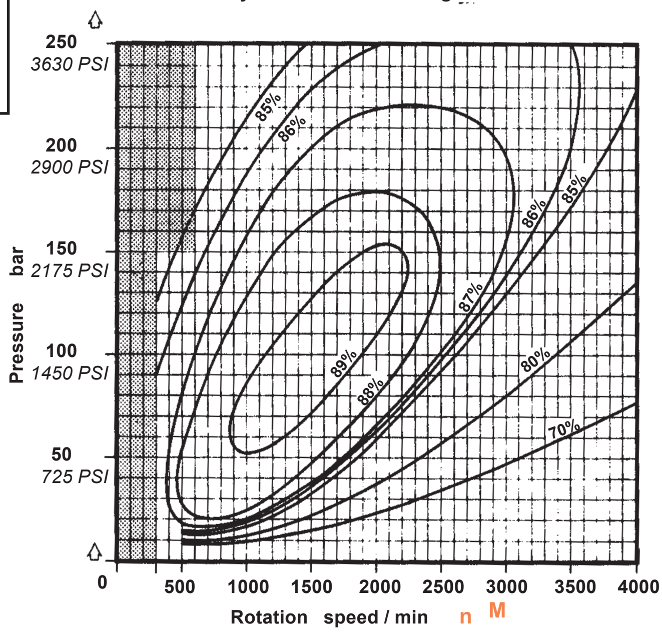


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{v} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

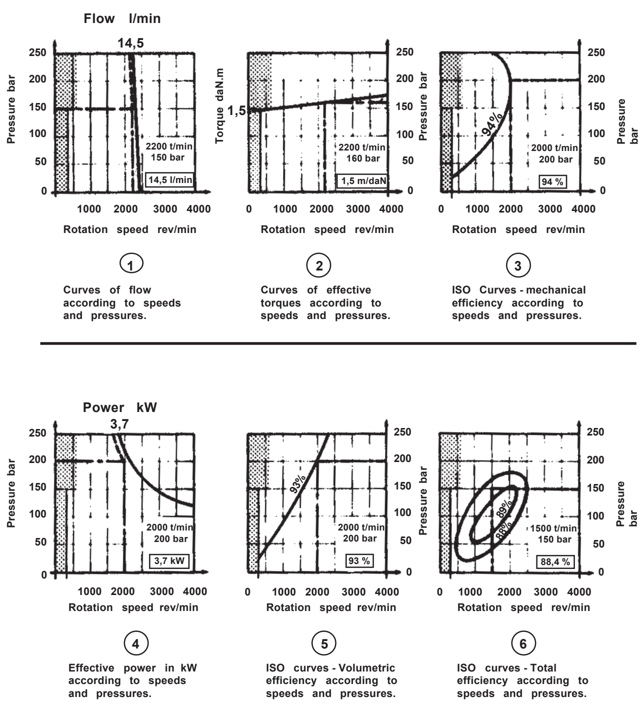
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta^{M}_{hm} \times \eta^{M}_{v}\right)$

READINGS EXAMPLES



MOTOR SERIES 2 VERSION C.I.P 3G

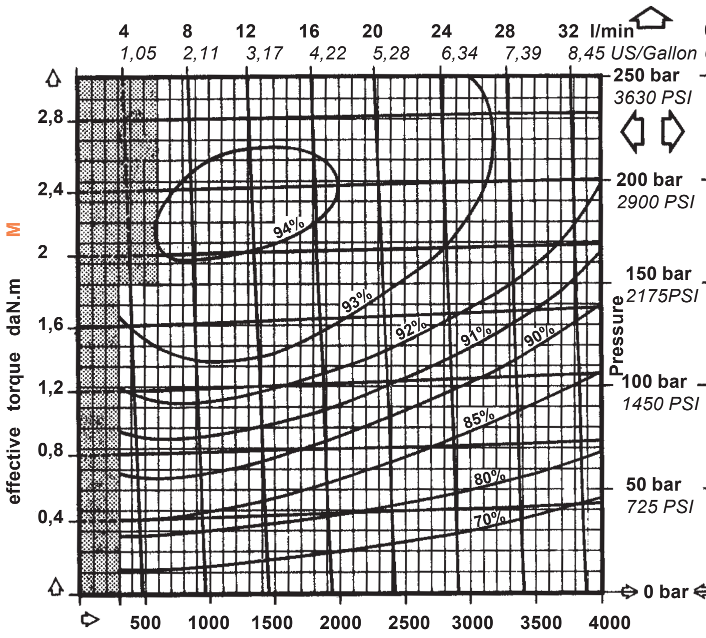
Type 2006 Exact capacity: qe 0,36 cubic / inch

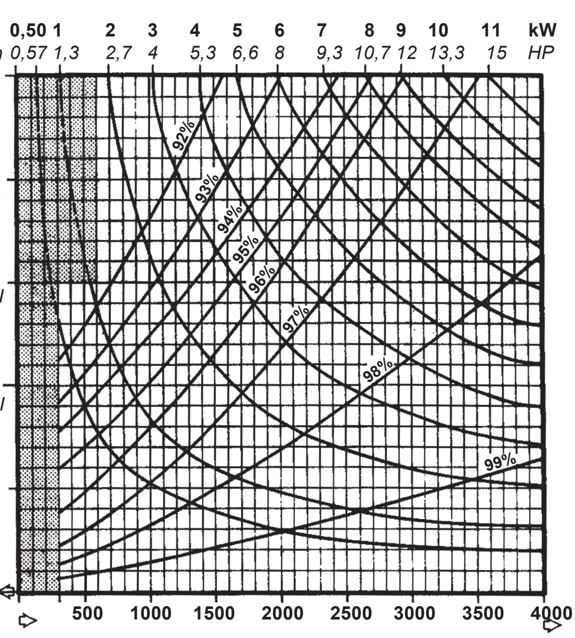
Dimensions readings and approximative characteristics subject to modifications.

F.T 20 748

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**

Flow l / min *US / Gallon* q_v^M effective power kW P_m^M



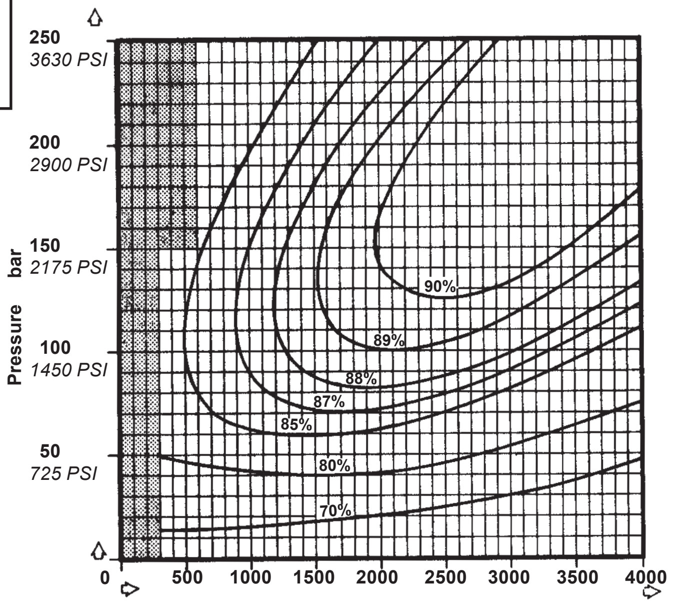


Rotation speed rev / min n^M Rotation speed rev / min n^M

Mechanical efficiency η_{hm}^{M} $\left(\eta_{hm}^{M} = \frac{Mi}{Me} \times 100\right)$ **Volumetric efficiency** η_{hm}^{M} $\left(\eta_{v}^{M} = \frac{Qe}{Qi} \times 100\right)$

non recommended permanent area of utilisation.

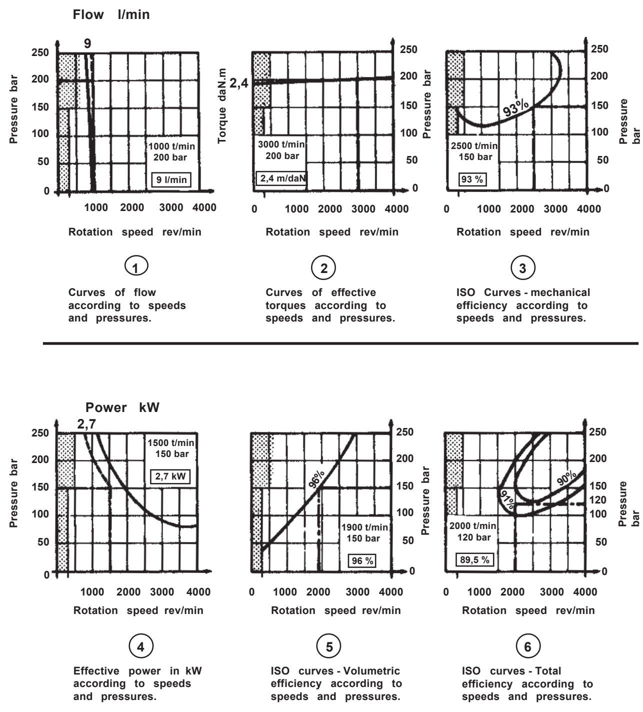
Symbols are according to ISO 4391 standard



Rotation speed / min n^M

Total efficiency η_t^M $\left(\eta_t^M = \eta_{hm}^M \times \eta_v^M\right)$

READINGS EXAMPLES



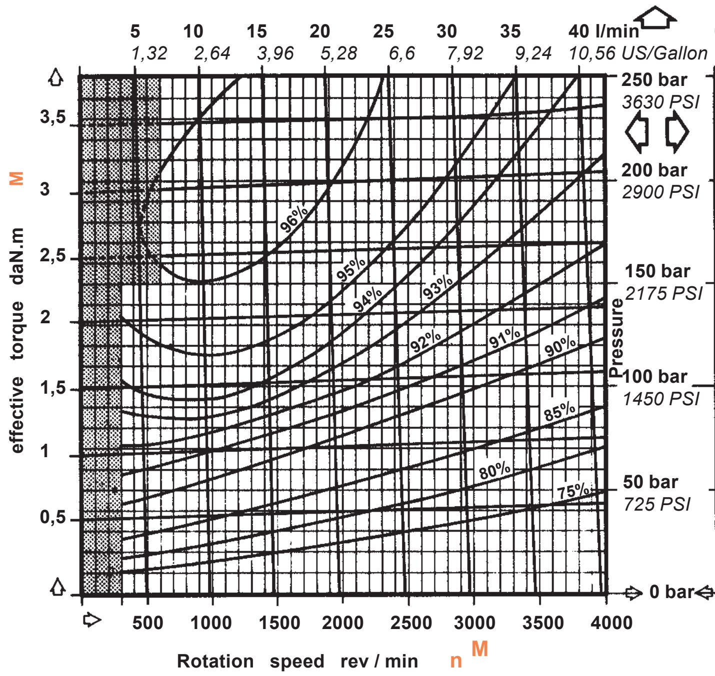
Dimensions readings and approximative characteristics subject to modifications.

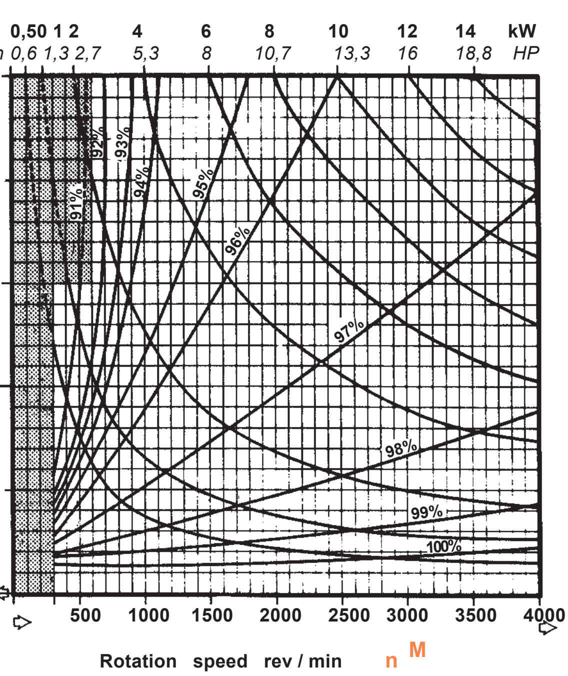
F.T 20 749

MOTOR SERIES 2 VERSION C.I.P 3G

Type 2008 Exact capacity: qe 0,50 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



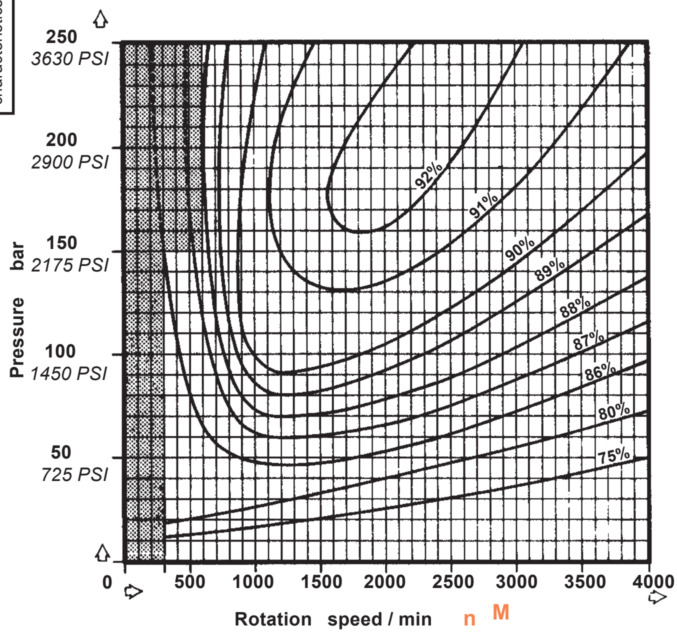


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

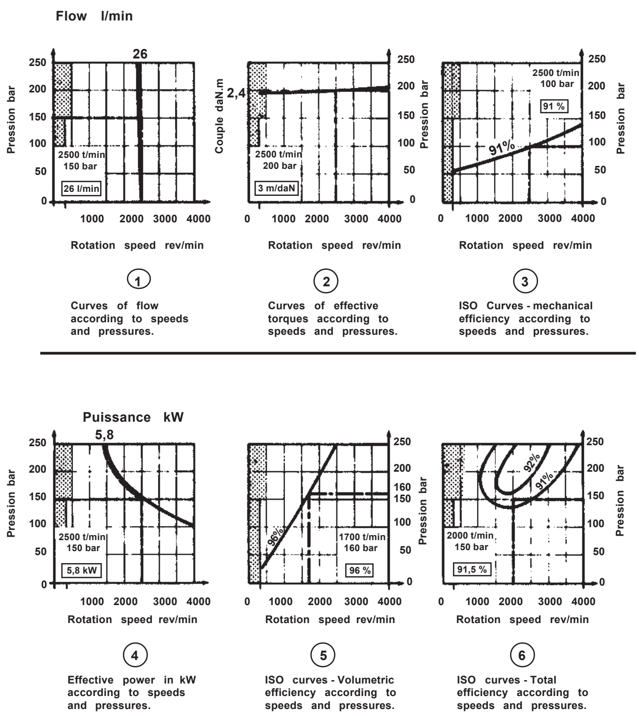
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta^{M}_{hm} \times \eta^{M}_{v}\right)$

READINGS EXAMPLES



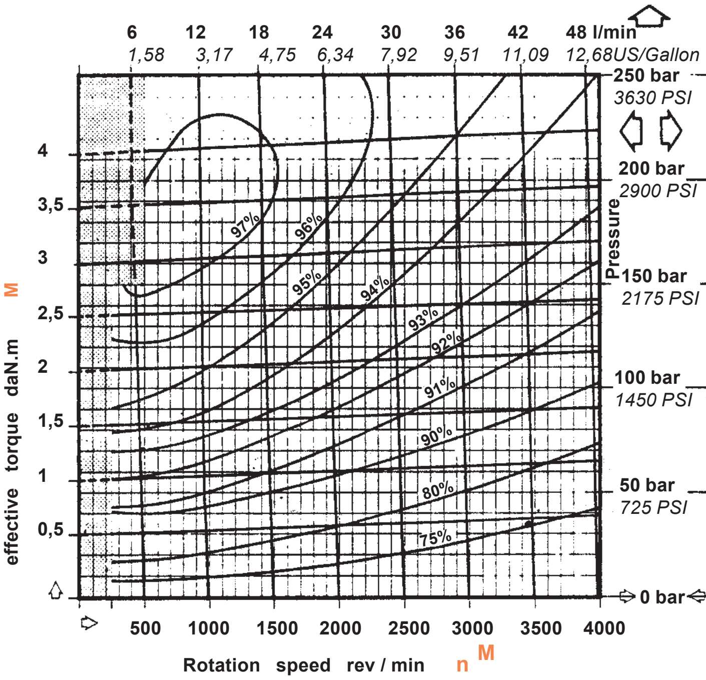
Dimensions readings and approximative characteristics subject to modifications.

F.T 20 750

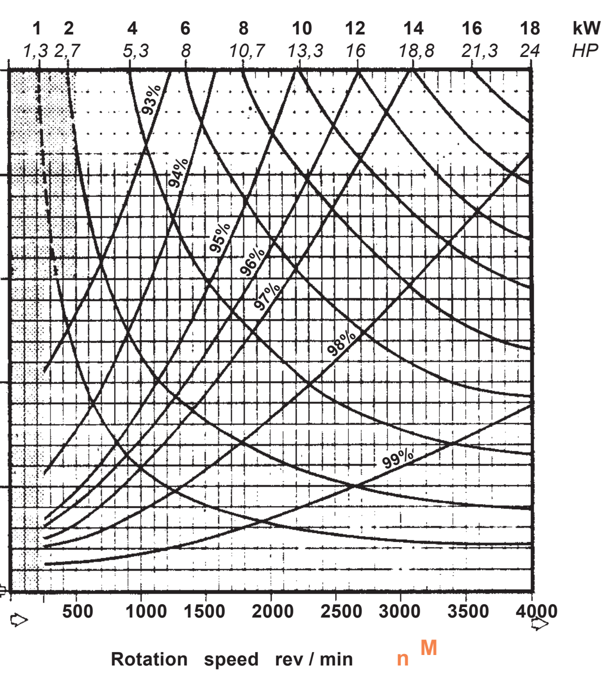
MOTOR SERIES 2 VERSION C.I.P 3G

Type 2010 Exact capacity: qe 0,61 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



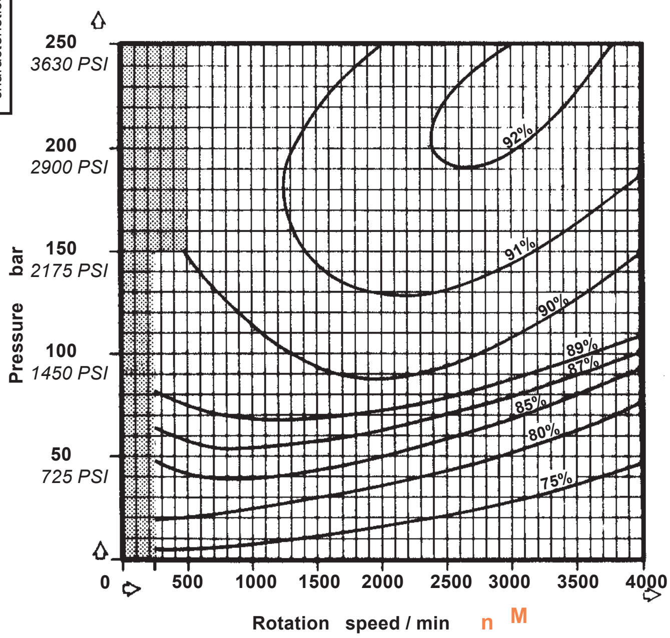
Mechanical efficiency η_{hm}^{M} ($\eta_{hm}^{M} = \frac{Mi}{Me} \times 100$)



Volumetric efficiency η_{v}^{M} ($\eta_{v}^{M} = \frac{Qe}{Qi} \times 100$)

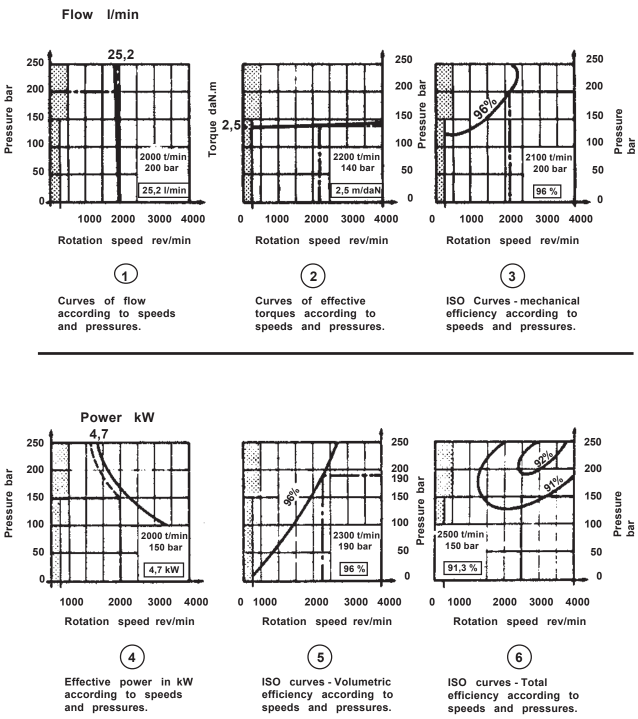
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_{t}^{M} ($\eta_{t}^{M} = \eta_{hm}^{M} \times \eta_{v}^{M}$)

READINGS EXAMPLES



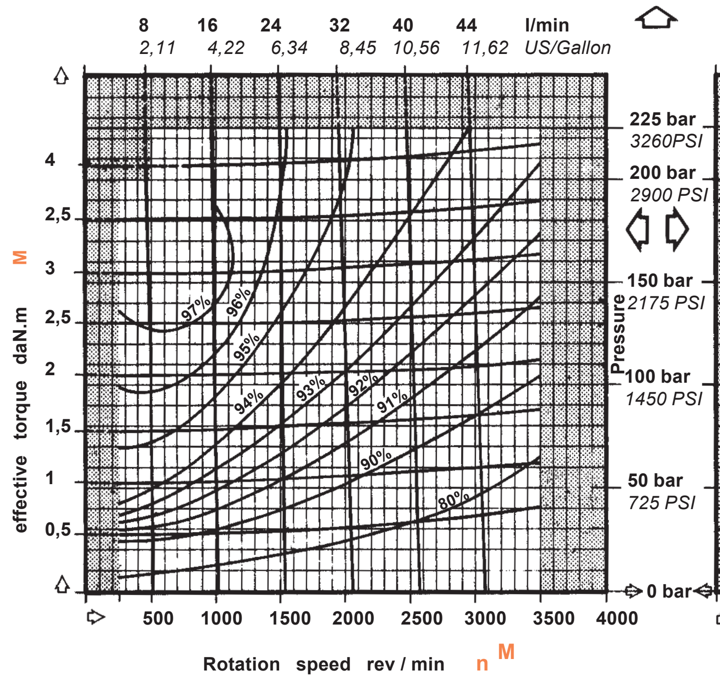
Dimensions readings and approximative characteristics subject to modifications.

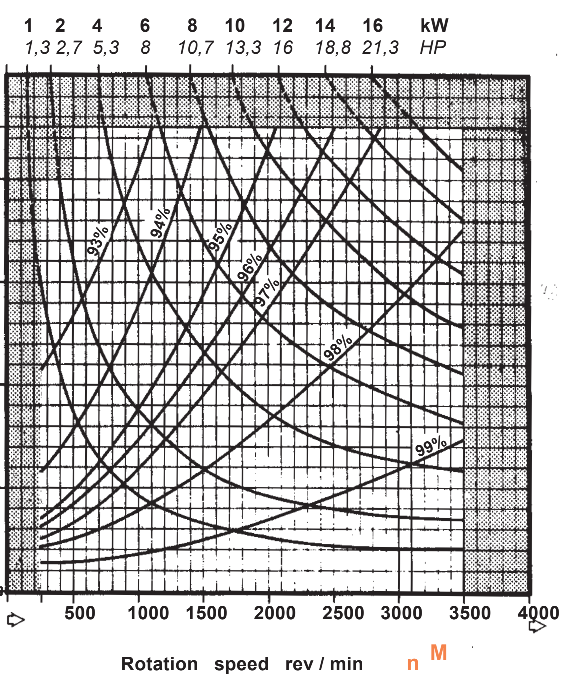
MOTOR SERIES 2 VERSION C.I.P 3G

Type 2012 Exact capacity: qe 0,73 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**

Flow l / min *US / Gallon* q M v — effective power kW P M m



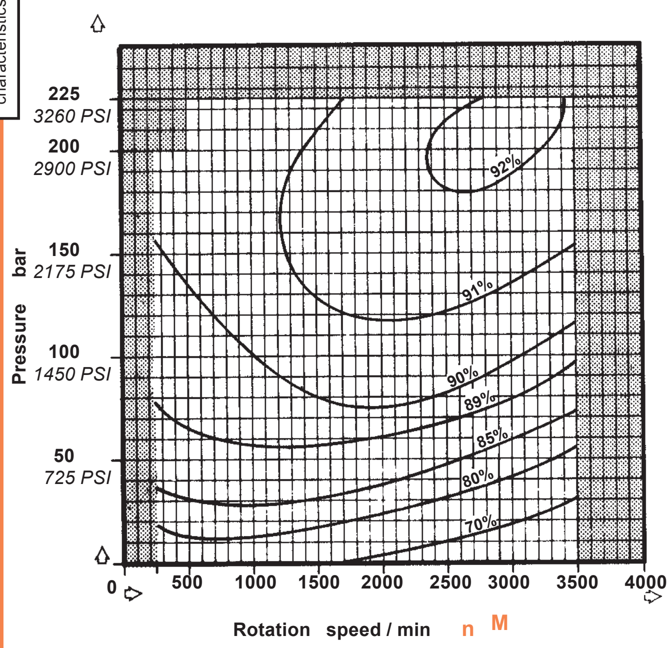


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(n^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

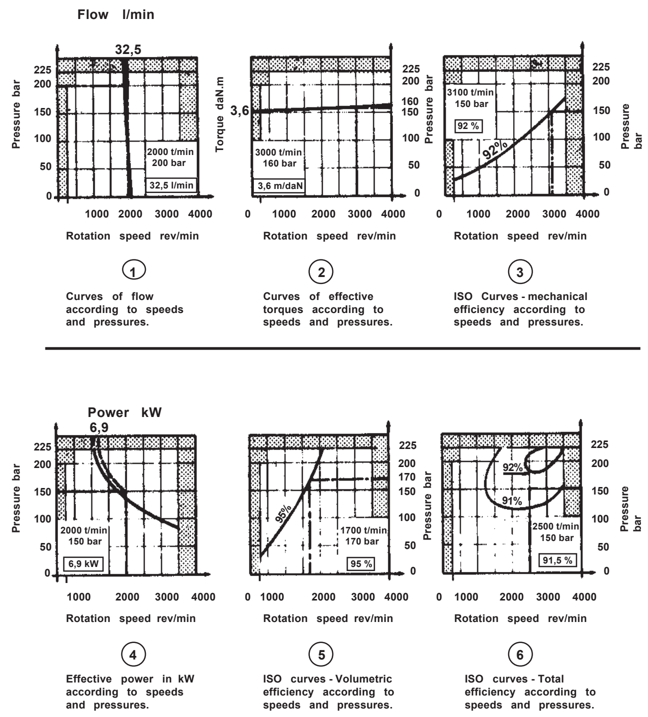
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta^{M}_{hm} \times \eta^{M}_{v}\right)$

READINGS EXAMPLES



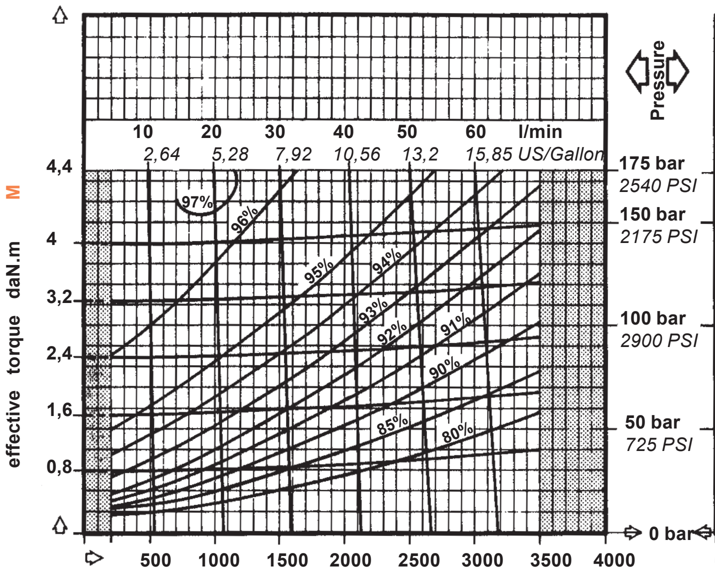
Dimensions readings and approximative characteristics subject to modifications.

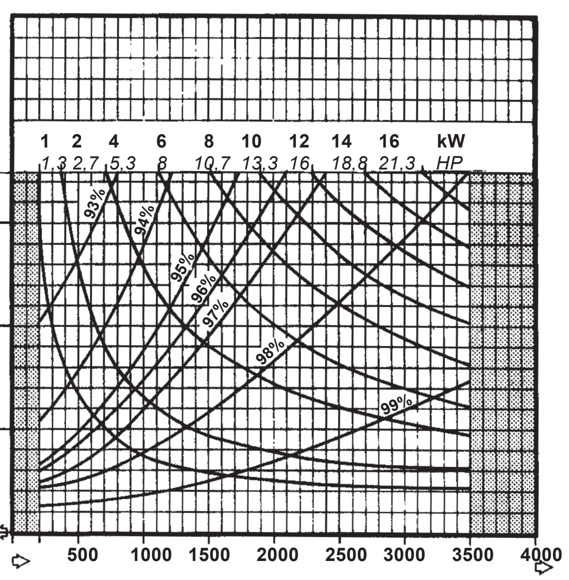
MOTOR SERIES 2 VERSION C.I.P 3G

Type 2015 Exact capacity: qe 0,94 cubic / inch

F.T 20 752

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* - Viscosity 35 cSt (113SUS) - Approximative valeurs



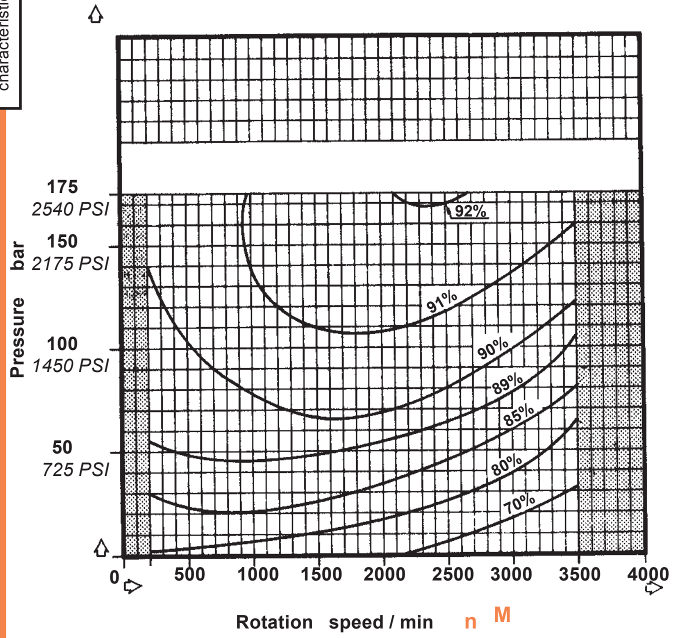


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

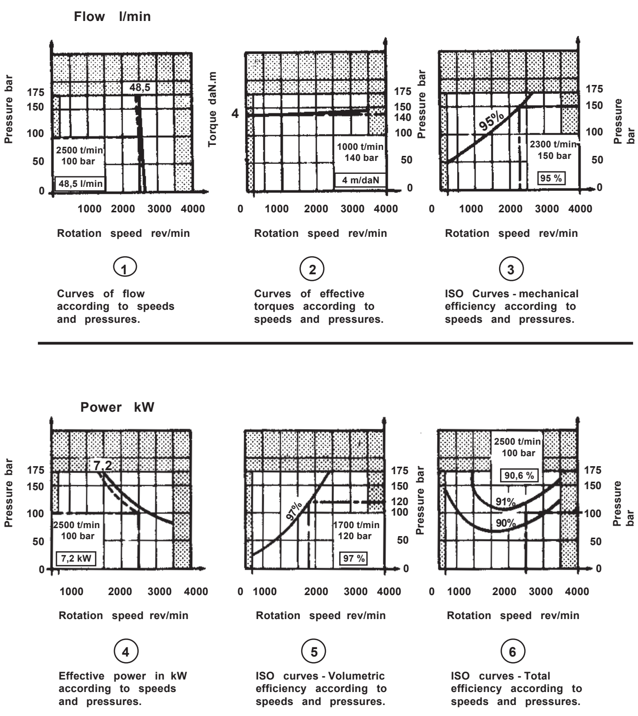
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta \frac{M}{hm} \times \eta \frac{M}{v}\right)$

READINGS EXAMPLES



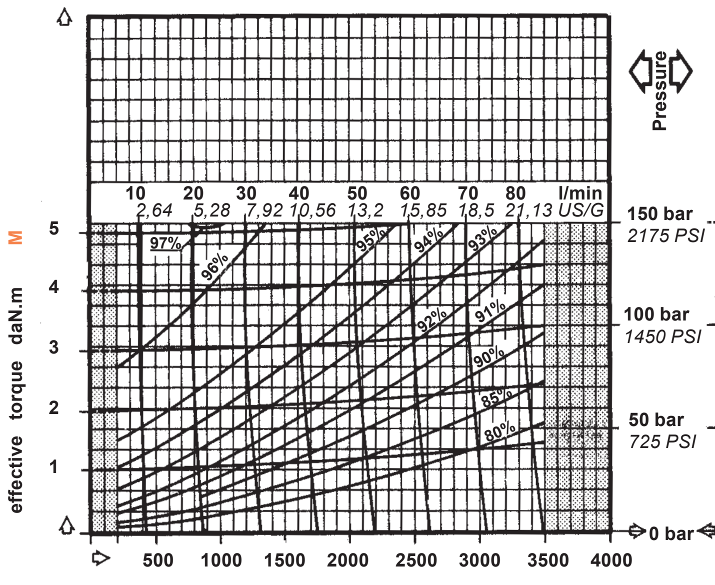
MOTOR SERIES 2 VERSION C.I.P 3G

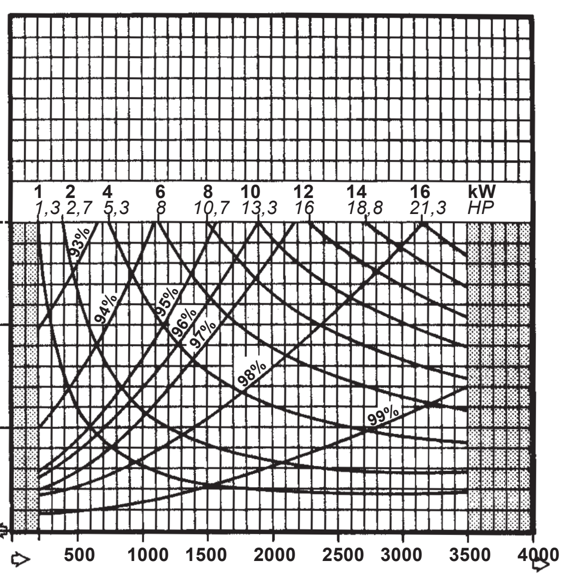
Type 2018 Exact capacity: qe 1,16 cubic / inch

Dimensions readings and approximative characteristics subject to modifications.

F.T 20 753

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



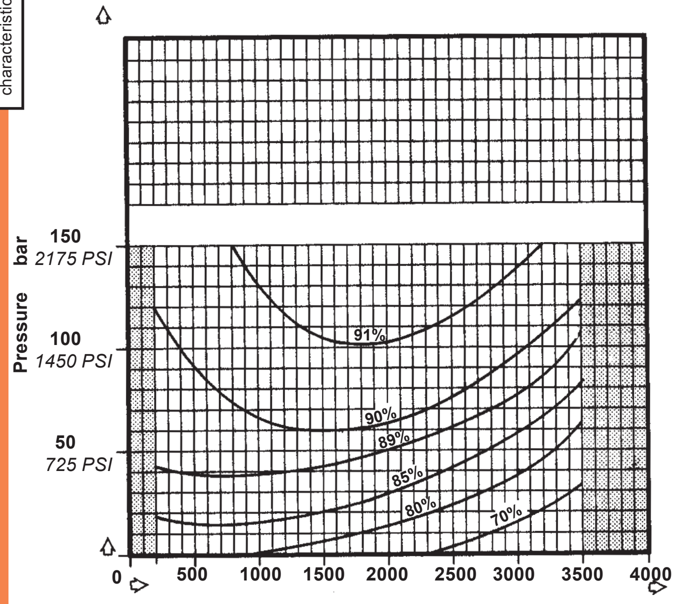


Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

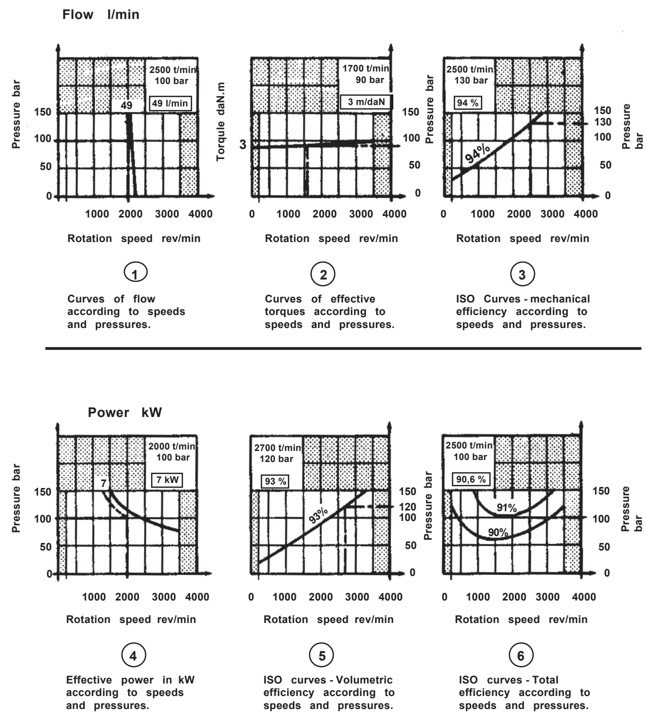
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta^{M}_{hm} \times \eta^{M}_{v}\right)$

READINGS EXAMPLES



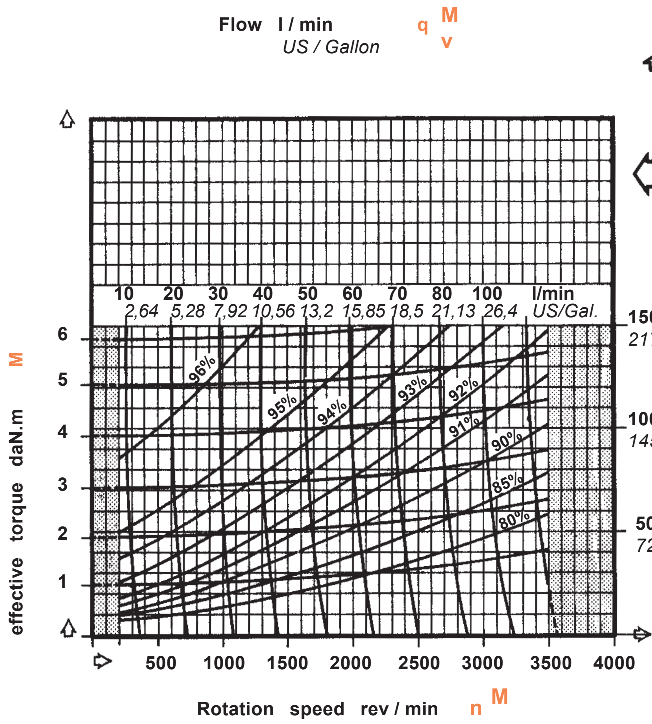
Dimensions readings and approximative characteristics subject to modifications.

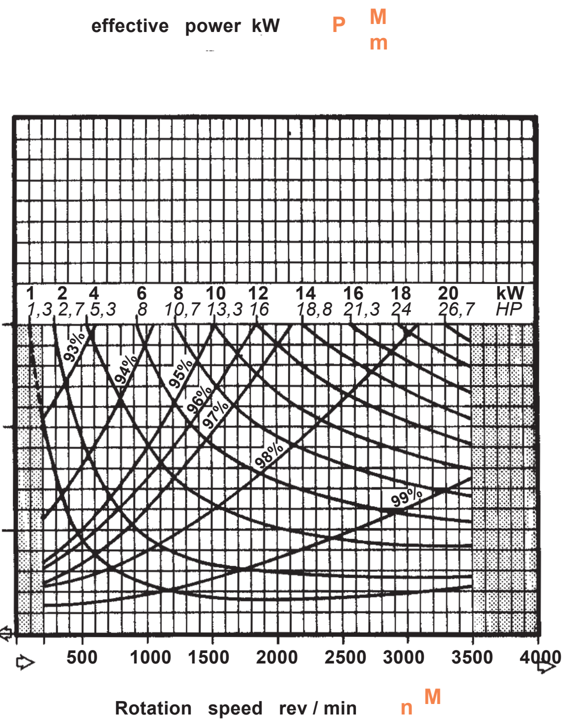
F.T 20 754

MOTOR SERIES 2 VERSION C.I.P 3G

Type 2022 Exact capacity: qe 1,37 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* - Viscosity 35 cSt (113SUS) - Approximative valeurs



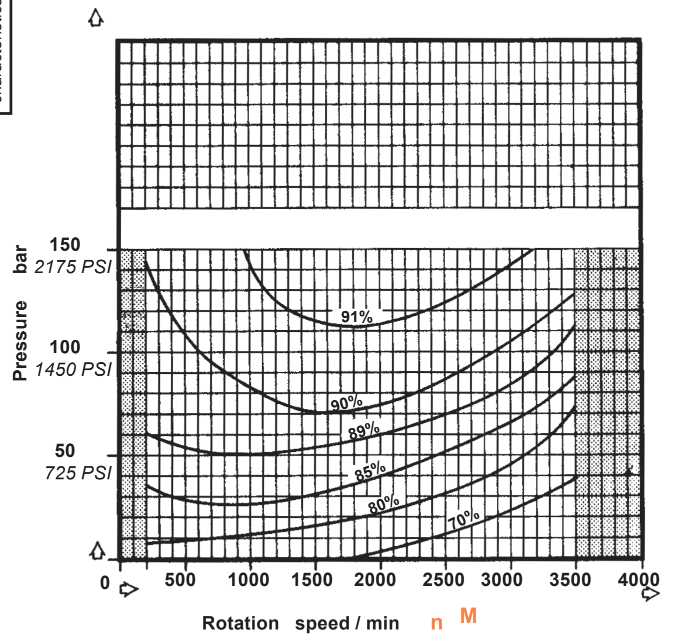


Mechanical efficiency η^{M}_{hm} $(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100)$

Volumetric efficiency η^{M}_{hm} $(n^{M}_{v} = \frac{Qe}{Qi} \times 100)$

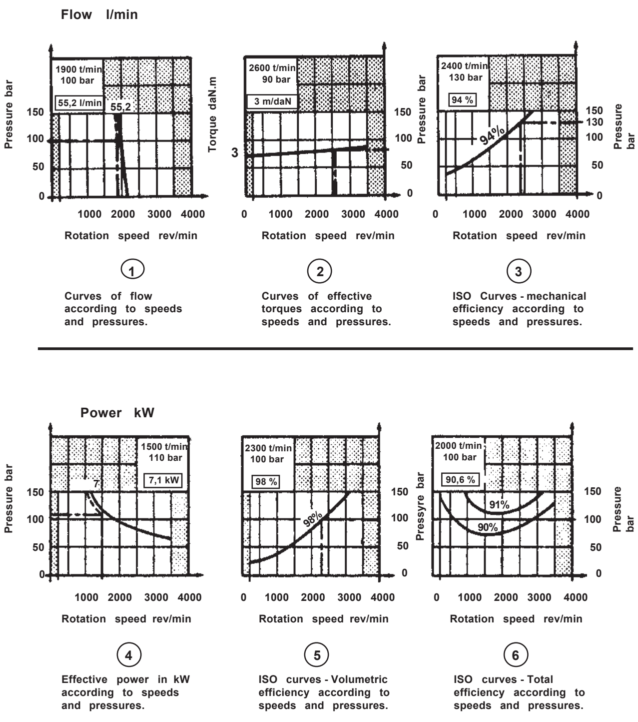
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^{M}_{t} $(\eta^{M}_{t} = \eta^{M}_{hm} \times \eta^{M}_{v})$

READINGS EXAMPLES



MOTOR SERIES 2 VERSION C.I.P 3G

Type 2026 Exact capacity: qe 1,68 cubic / inch

Dimensions readings and approximative characteristics subject to modifications.

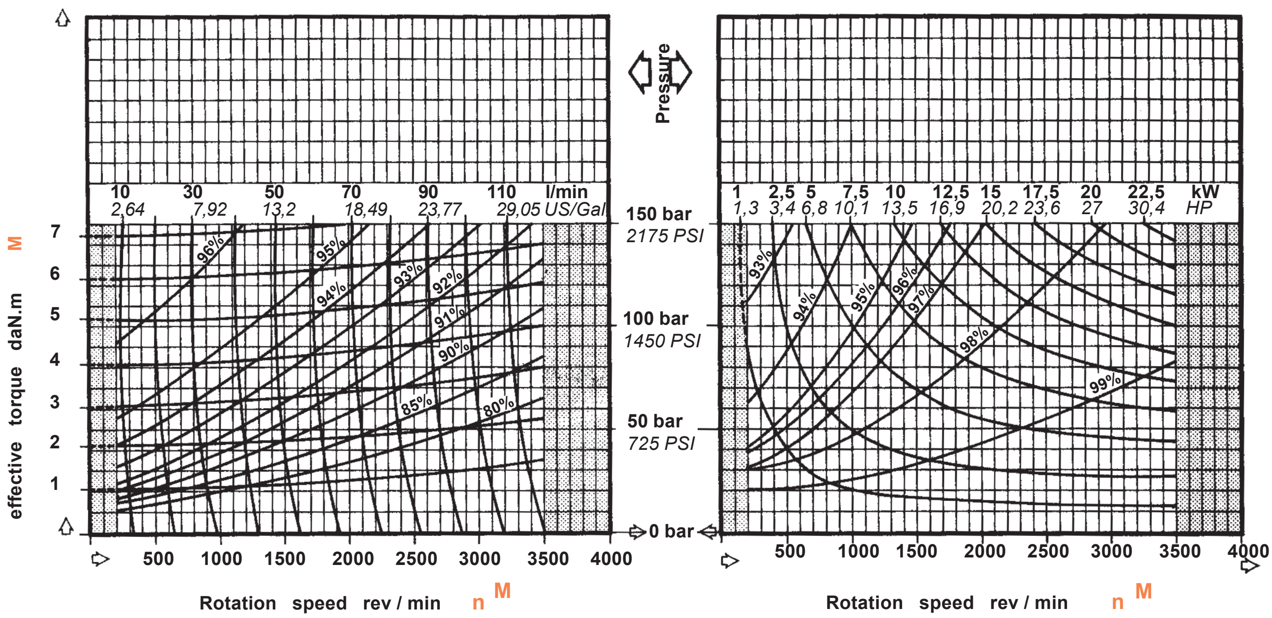
F.T 20 755

Publishing 01 / 2003

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**

Flow l / min *US / Gallon* q M v

effective power kW P M m



Rotation speed rev / min n M

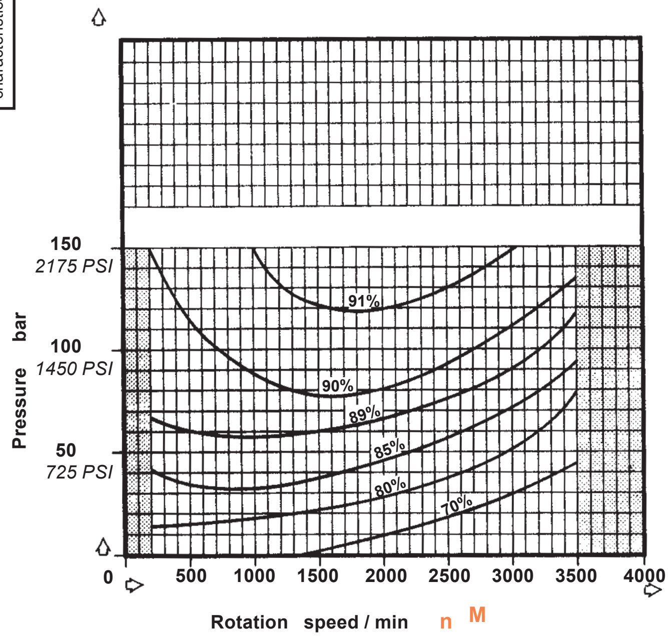
Rotation speed rev / min n M

Mechanical efficiency η^{M}_{hm} $\left(\eta^{M}_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η^{M}_{hm} $\left(\eta^{M}_{v} = \frac{Qe}{Qi} \times 100\right)$

non recommended permanent area of utilisation.

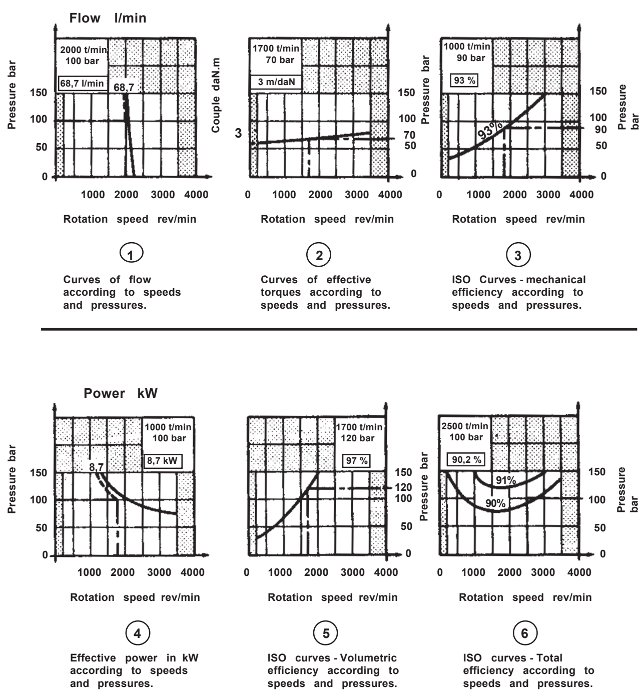
Symbols are according to ISO 4391 standard



Rotation speed / min n M

Total efficiency η^{M}_{t} $\left(\eta^{M}_{t} = \eta \frac{M}{hm} \times \eta \frac{M}{v}\right)$

READINGS EXAMPLES



Dimensions readings and approximative characteristics subject to modifications.

F.T 20 756

MOTOR SERIES 2 VERSION C.I.P 3G

Type 2030 Exact capacity: qe 1,87 cubic / inch

" BASIC " CATALOGUE
MOUNTING POSSIBILITIES

FRONT BODY (III - IV Signe)				CENTRAL BODY (VII Signe)				REAR BODY (VIII Signe)	TYPE and SHAFT CODE (IX - X - XI Signe)			
A	B	C	D	H	C	F	B	L	10	20	30	40
AAN										20A01 20C02	30A01	40C03
	BAN								10B02	20C02 20C18	*	
			DBN						10C02		30D01	
			DCN						10C02		30D01	

* Shaft 20 C18 Capacities 2004 to 2012 only.

Capacities 2004 to 2022 only.

No feasible versions in " BASIC "

other possibilities, please refer to
" GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

Dimensions readings and approximatives characteristics subject to modifications;

F.T R 0246

HYDRAULIC GEAR MOTORS

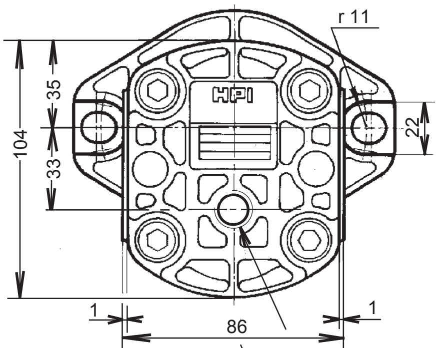
SERIES 2 (Flat front body)

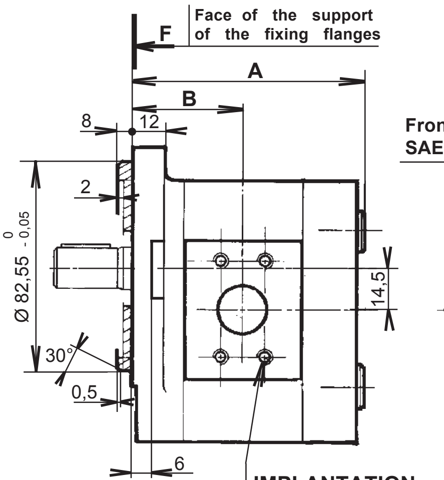
M	II Sign	AA	N	2	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data sheet F.T R 0243

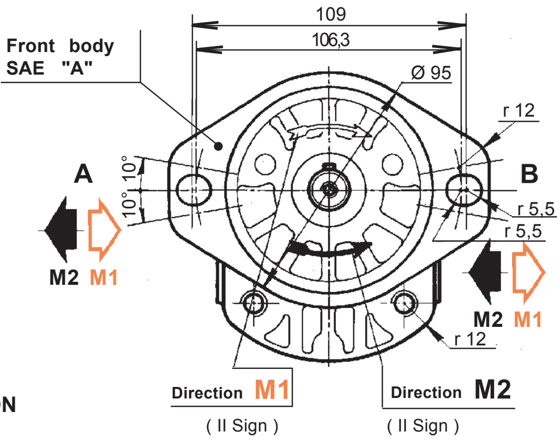
N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*





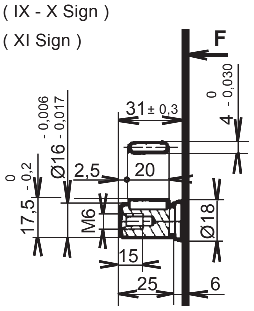
IMPLANTATION of PORTS , see below



Drain port 1/4" BSP effective depth 14 for bi directional or single directional motor but working with a counter pressure in the return port.
Max. tightening torque of the connection **3,5** m.daN (**25** lb /ft)

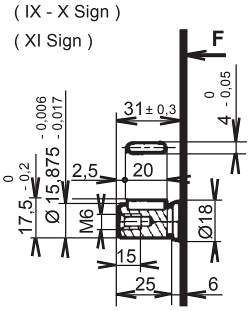
CHOICE of the DRIVING SHAFTS

20 (IX - X Sign)
C02 (XI Sign)



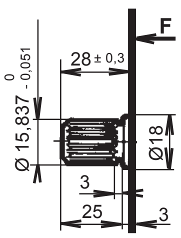
Max. transmissible torque
5 m.daN

20 (IX - X Sign)
A01 (XI Sign)



Max. transmissible torque
5 m.daN

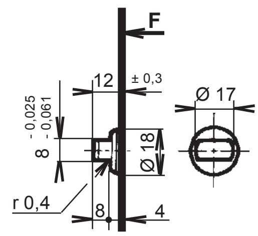
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
9 teeth -
Diametral Pitch 16/32
30° Pressure angle

Max. transmissible torque
10 m.daN

40 (IX - X Sign)
C03 (XI Sign)



Max. transmissible torque
7 m.daN

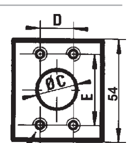
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
006 - 008 - 010 - 012	92,5	43,5
015 - 018 - 022	107	51

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION

H
(HPI)



Ø F effective depth G

Capacity	DIMENSIONS INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure M3 Preferential rotation M2 Inlet	Outlet
006 to 012	15	17,4	38	M6	12	20	17,4	38	M6	12	A	B	B	A	B	A
015 to 030	15	17,4	38	M6	12	26	47,6	22,4	M6	12						

Dimensions readings and approximative characteristics subject to modifications.

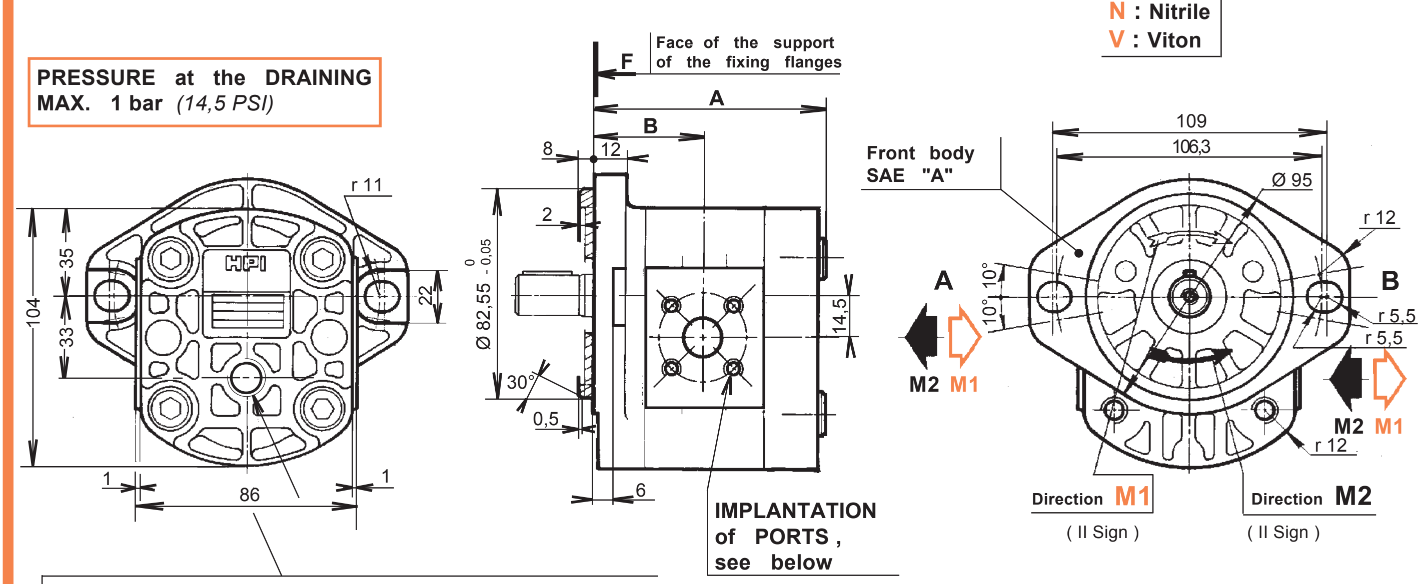
HYDRAULIC GEAR MOTORS SERIES 2 TYPE AAN

M	II Sign	AA	N	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

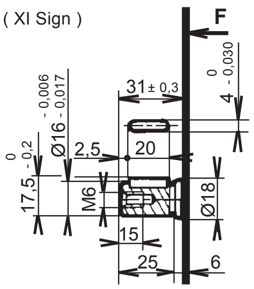
PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*



Drain port 1/4" BSP effective depth 14 for bi directional or single directional motor but working with a counter pressure in the return port.
Max. tightening torque of the connection **3,5** m.daN (**25** lb /ft)

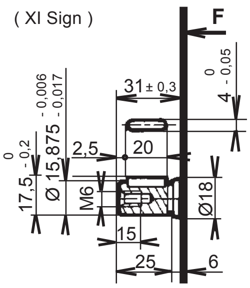
CHOICE of the DRIVING SHAFTS

20 (IX - X Sign)
C02 (XI Sign)



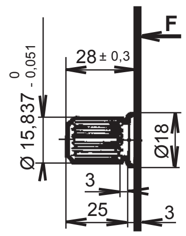
Max. transmissible torque
5 m.daN

20 (IX - X Sign)
A01 (XI Sign)



Max. transmissible torque
5 m.daN

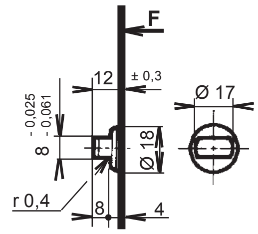
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
9 teeth -
Diametral Pitch 16/32
30° Pressure angle

Max. transmissible torque
10 m.daN

40 (IX - X Sign)
C03 (XI Sign)



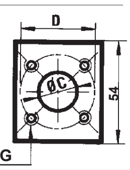
Max. transmissible torque
7 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
006 - 008 - 010 - 012	92,5	43,5
015 - 018 - 022	107	51

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, voir Catalogue N°70

IMPLANTATION	Capacity	DIMENSIONS INLET PORT Ø C	D	E	Ø F	G	DIMENSIONS OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION 1 way rotation without counter pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with counter pressure ■ M3 Preferential rotation M2 Inlet	M3 Outlet
C (Square) Ø F effective depth G	006 to 012	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A
	015 to 022	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A



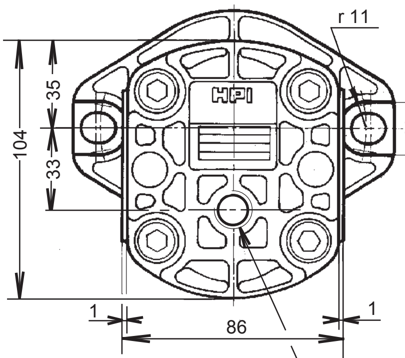
Dimensions readings and approximative characteristics subject to modifications.

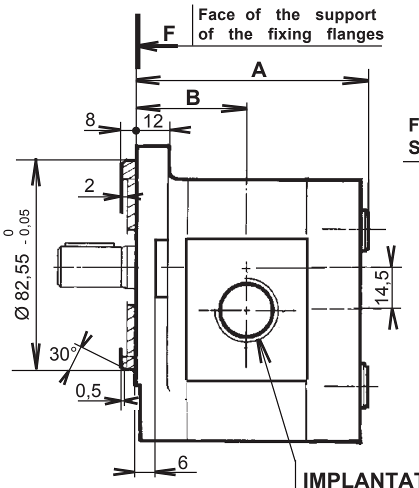
M	II Sign	AA	N	2	VI Sign	F	L	IX Sign	X Sign	XI Sign	XII Signe

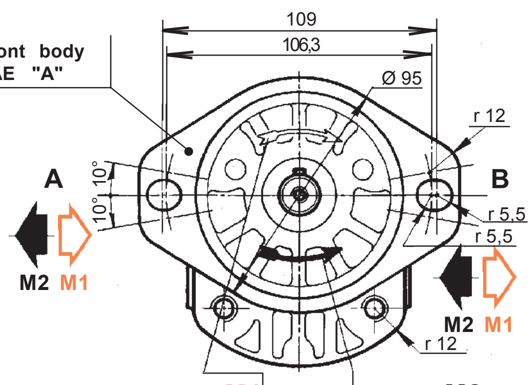
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*



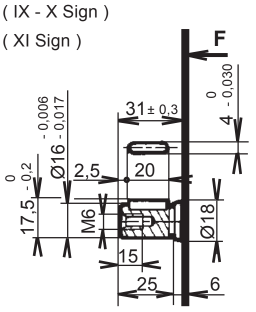




Drain port 1/4" BSP effective depth 14 for bi directional or single directional motor but working with a counter pressure in the return port.
Max. tightening torque of the connection **3,5 m.daN** (**25 lb /ft**)

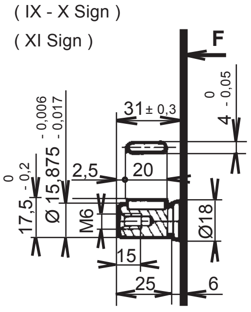
CHOICE of the DRIVING SHAFTS

20 (IX - X Sign)
C02 (XI Sign)



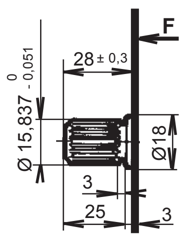
Max. transmissible torque
5 m.daN

20 (IX - X Sign)
A01 (XI Sign)



Max. transmissible torque
5 m.daN

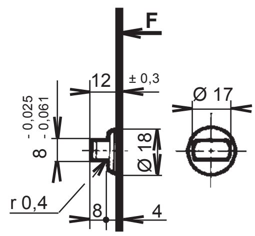
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
9 teeth -
Diametral Pitch 16/32
30° Pressure angle

Max. transmissible torque
10 m.daN

40 (IX - X Sign)
C03 (XI Sign)



Max. transmissible torque
7 m.daN

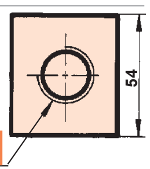
CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
006 - 008 - 010 - 012	92,5	43,5
015 - 018 - 022	107	51

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION

F
(Threaded)
ØC effective depth D



Capacity	DIMENSIONS INLET PORT Ø C	DIMENSIONS INLET PORT D	DIMENSIONS OUTLET PORT Ø C	DIMENSIONS OUTLET PORT D	AFFECTATION 1 Sens de rotation sans Contre - Pression M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 ou 2 Sens de rotation avec Contre - Pression ■ M3 Sens préférentiel M2 Entrée	Sortie
006 to 012	3/8" BSP	12	3/4" BSP	16	A	B	B	A	B	A
015 to 022	1/2" BSP	14	1" BSP	18						

Dimensions readings and approximative characteristics subject to modifications.

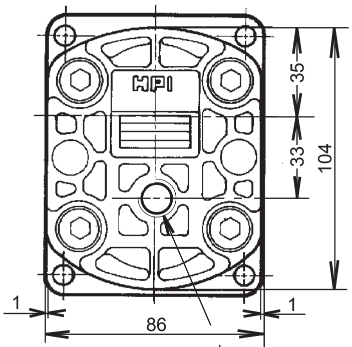
HYDRAULIC GEAR MOTORS SERIES 2 TYPE AAN

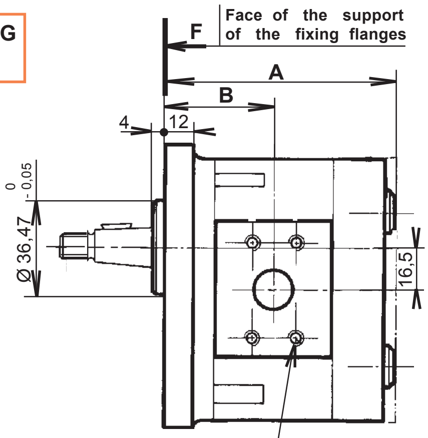
M	II Sign	BA	N	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

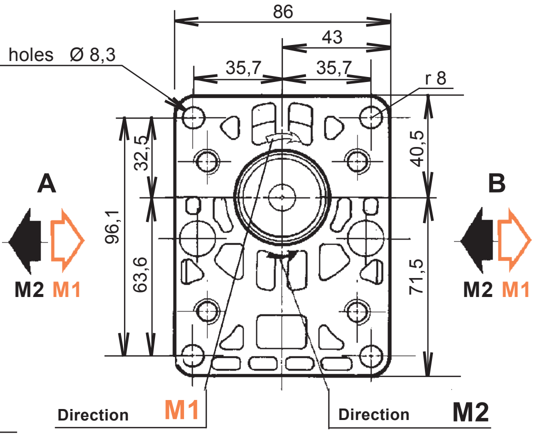
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







Direction **M1** (II Sign)

Direction **M2** (II Sign)

CHOICE of IMPLANTATIONS of PORTS , see below

Drain port 1/4" BSP effective depth 14 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

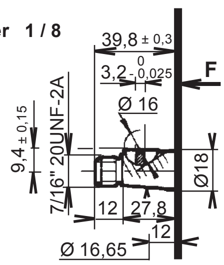
3,5 m.daN (**25** lb / ft)

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

CHOICE of the DRIVING SHAFTS

10 (IX - X Sign)
B02 (XI Sign)

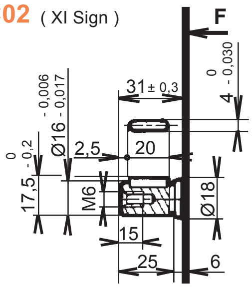
Taper 1 / 8



Delivered with nut : 100 841

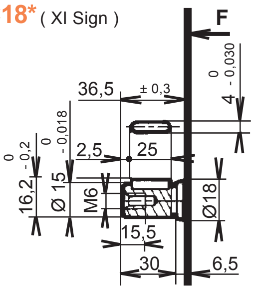
Max. transmissible torque
2,5 m.daN

20 (IX - X Sign)
C02 (XI Sign)



Max. transmissible torque
5 m.daN

20 (IX - X Sign)
C18* (XI Sign)



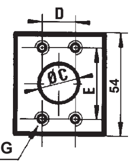
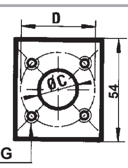
Max. transmissible torque
4 m.daN

* 2006 to 2012 ONLY
2006 at 2008 280 bar Max.
2010 250 bar Max.
2012 210 bar Max.

Dimensions readings ans approximate characteristics subject to modifications.

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preferential direction M2 Inlet	M3 Outlet
H (HPI)  Ø F effective depth G	006 to 012	15	17,4	38	M6	12	20	17,4	38	M6	12	A	B	B	A	B	A
	015 to 030	15	17,4	38	M6	12	26	47,8	22,4	M6	12						
C (Square)  Ø F effective depth G	006 to 012	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A
	015 to 030	15	35		M6	12	20	40		M6	12						

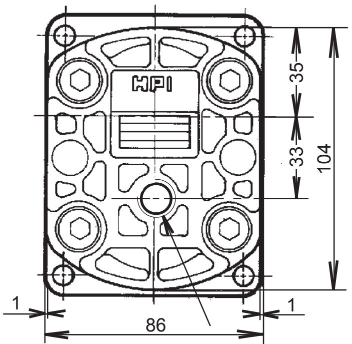
HYDRAULIC GEAR MOTORS SERIES 2 TYPE BAN

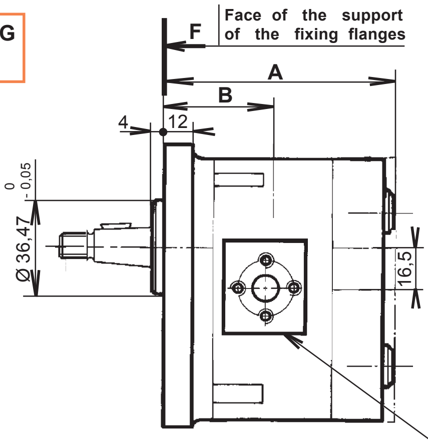
M	II Sign	BA	N	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

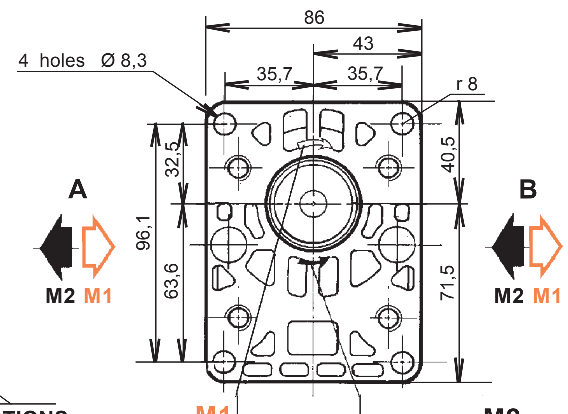
N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*





CHOICE of IMPLANTATIONS of PORTS , see below



Direction M1 (II Sign)

Direction M2 (II Sign)

Drain port 1/4" BSP effective depth 14 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

3,5 m.daN (**25** lb / ft)

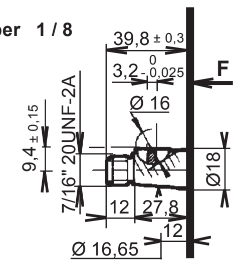
CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
006 008 010 012	92,5	43,5
015 018 022	107	51

Dimensions readings ans approximate characteristics subject to modifications.

CHOICE of the DRIVING SHAFTS

10 (IX - X Sign)
B02 (XI Sign)

Taper 1 / 8

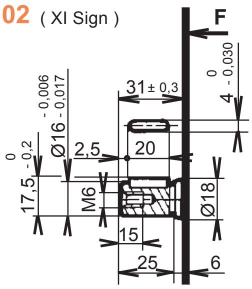


Delivered with nut : 100 841

Max. transmissible torque

2,5 m.daN

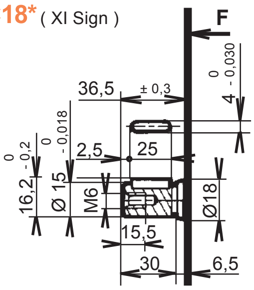
20 (IX - X Sign)
C02 (XI Sign)



Max. transmissible torque

5 m.daN

20 (IX - X Sign)
C18* (XI Sign)



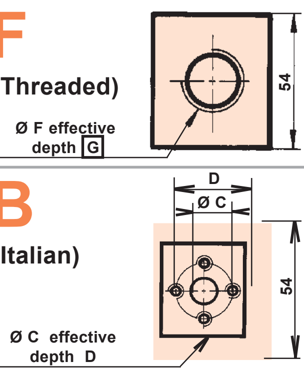
Max. transmissible torque

4 m.daN

* 2006 to 2012 ONLY
2006 at 2008 280 bar Max.
2010 250 bar Max.
2012 210 bar Max.

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, voir Catalogue N°70



IMPLANTATION	Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	1 way rotation without counter pressure: M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with counter presure: ■ M3 Preferential rotation M2 Inlet	Outlet
F (Threaded)	006 to 012	3/8" BSP	12				3/4" BSP	16				A	B	B	A	B	A
	015 to 022	1/2" BSP	14				1" BSP	18									
B (Italian)	006 to 012	15	30		M6	13	15	30		M6	13	A	B	B	A	B	A
	015 to 022	15	30		M6	13	20	40		M6	13						

F.T 20 10147

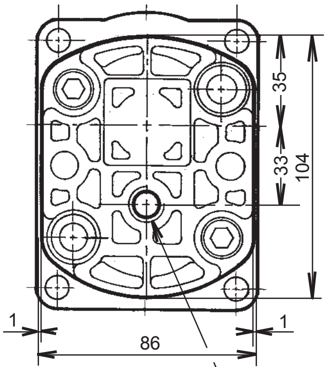
HYDRAULIC GEAR MOTORS SERIES 2 TYPE BAN

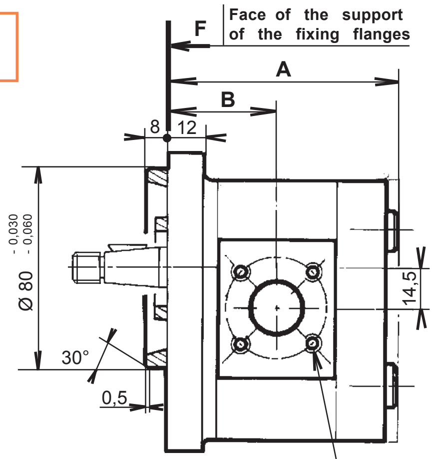
M	II Sign	DB	N	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

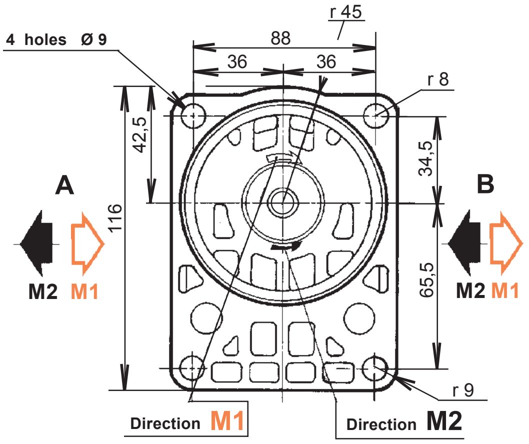
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING:
MAX. 1bar (14,5 PSI)







Drain port 1/4" BSP effective depth 14 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

3,5 m.daN (**25** lb / ft)

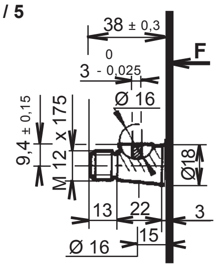
IMPLANTATION of PORTS , see below

Dimensions readings and approximative characteristics subject to modifications.

CHOICE of the DRIVING SHAFT

10 (IX - X Sign)
C02 (XI Sign)

Taper 1 / 5



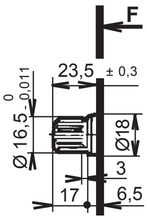
Delivered with nut

Ref. : 106 317

Max. transmissible torque

22 m.daN

30 (IX - X Sign)
D01 (XI Sign)



Involute spline shaft
B 17 x 14 - 9 theet -
to Norm DIN 5482
Module 1,6
Spigot on free flanks

Max. transmissible torque

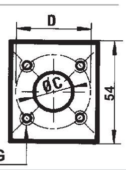
10 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preferential rotation M2 Inlet	Outlet
C (Square)	006 to 012	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A
	015 to 030	15	35		M6	12	20	40		M6	12						



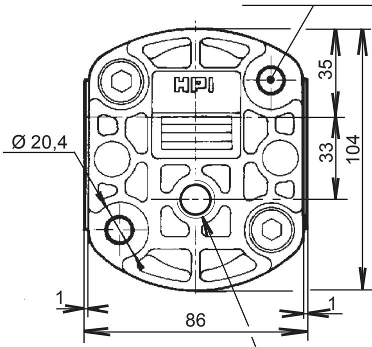
Ø F effective depth G

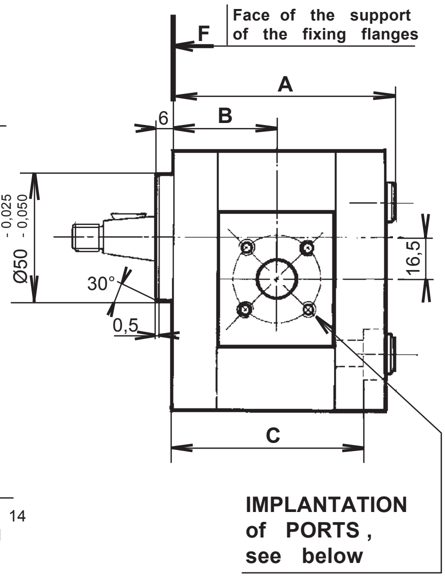
HYDRAULIC GEAR MOTORS SERIES 2 TYPE DBN

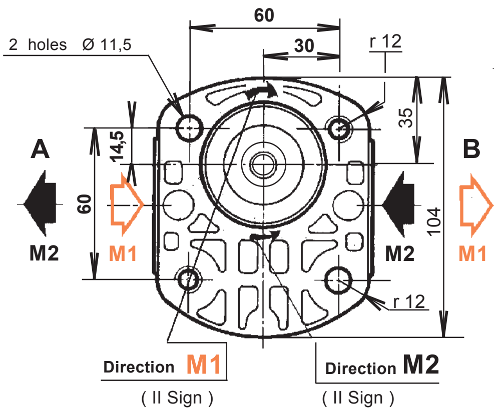
M	II Sign	DC	N	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton







Drain port 1/4" BSP effective depth 14 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

3,5 m.daN (**25** lb / ft)

IMPLANTATION of PORTS , see below

PRESSURE at the DRAINING: MAX. 1bar (14,5 PSI)

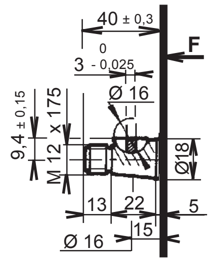
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B	C
006 008 010 012	90,5	41,5	79,5
015 018 022	105	49	94
026 030	121	57	110

Capacity (VI Sign)			Assembling recommendations: Screws Dimensions	Screws References	Washers References
006	to	012	M 10 x 100	109 088	101 904
015	to	022	M 10 x 110	109 421	
026	-	030	M 10 x 130	109 004	

CHOICE of the DRIVING SHAFT

10 (IX - X Sign)
C02 (XI Sign)

Taper 1 / 5



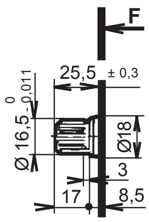
Delivered with nut

Ref. : 106 317

Max. transmissible torque

22 m.daN

30 (IX - X Sign)
D01 (XI Sign)



Involute spline shaft
B 17 x 14 - 9 theet
to Norm DIN 5482
Module 1,6
Spigot on free flanks

Max. transmissible torque

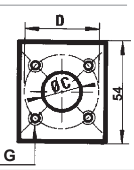
10 m.daN

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION

C (Square)



Ø F effective depth G

Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION 1 way rotation without Counter - Pressure: M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure: ■ M3 Sens préférentiel M2 Inlet	outlet
006 to 012	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A
015 to 030	15	35		M6	12	20	40		M6	12						

Dimensions reading and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS SERIES 2 TYPE DCN

Home - general contents

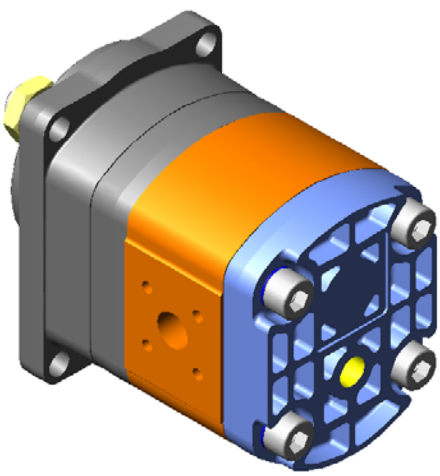
Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 2

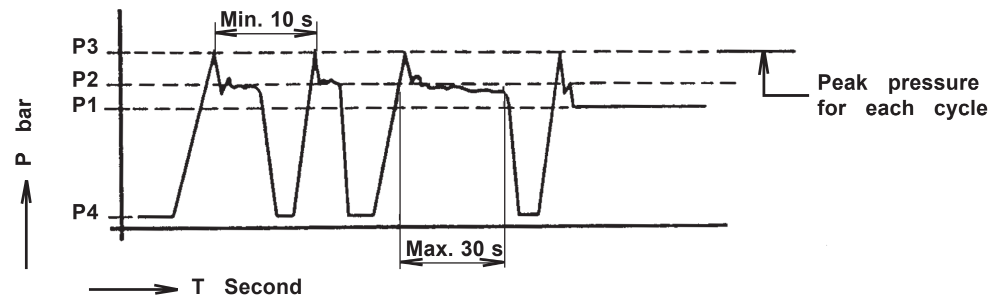
(Thick front body)



Max. working conditions MOTORS Series 2 (ECO .T and CIP)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity cc / rev	MAXIMUM PRESSURE P1 bar	P1 PSI	P2 bar	P2 PSI	P3 bar	P3 PSI	Maximum pressure at P1 t / min	P2 t / min	Minimum speed at RPM 100 bar 1450 PSI	210 bar 3045 PSI	300 bar 4350 PSI	Maxi speed at △ pressure ≤ 100 bar (1450 PSI)
2006	6,45	200	2900	230	3335	250	3625	3000	3200	500	1200	1400	4000
2008	8,25	200	2900	230	3335	250	3625	3000	3200	500	1000	1400	4000
2010	10,12	200	2900	230	3335	250	3625	3000	3200	500	1000	1200	4000
2012	12	200	2900	230	3335	250	3625	3000	3200	500	1000	1200	4000
2015	15,52	185	2682	200	2900	225	3262	3000	3000	500	800	1000 225 bar	3500
2018	19,12	125	1812	150	2175	175	2537	3000	2800	500	800 175 bar		3500
2022	22,87	100	1450	125	1812	150	2175	3000	2800	500	800 175 bar		3500
2026	27,6	100	1450	125	1812	150	2175	2500	2600	500	800 175 bar		3500
2030	31,2	100	1450	125	1812	150	2175	2200	2300	500	800 175 bar		3500

Dimensions readings and approximative characteristics subject to modifications.

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

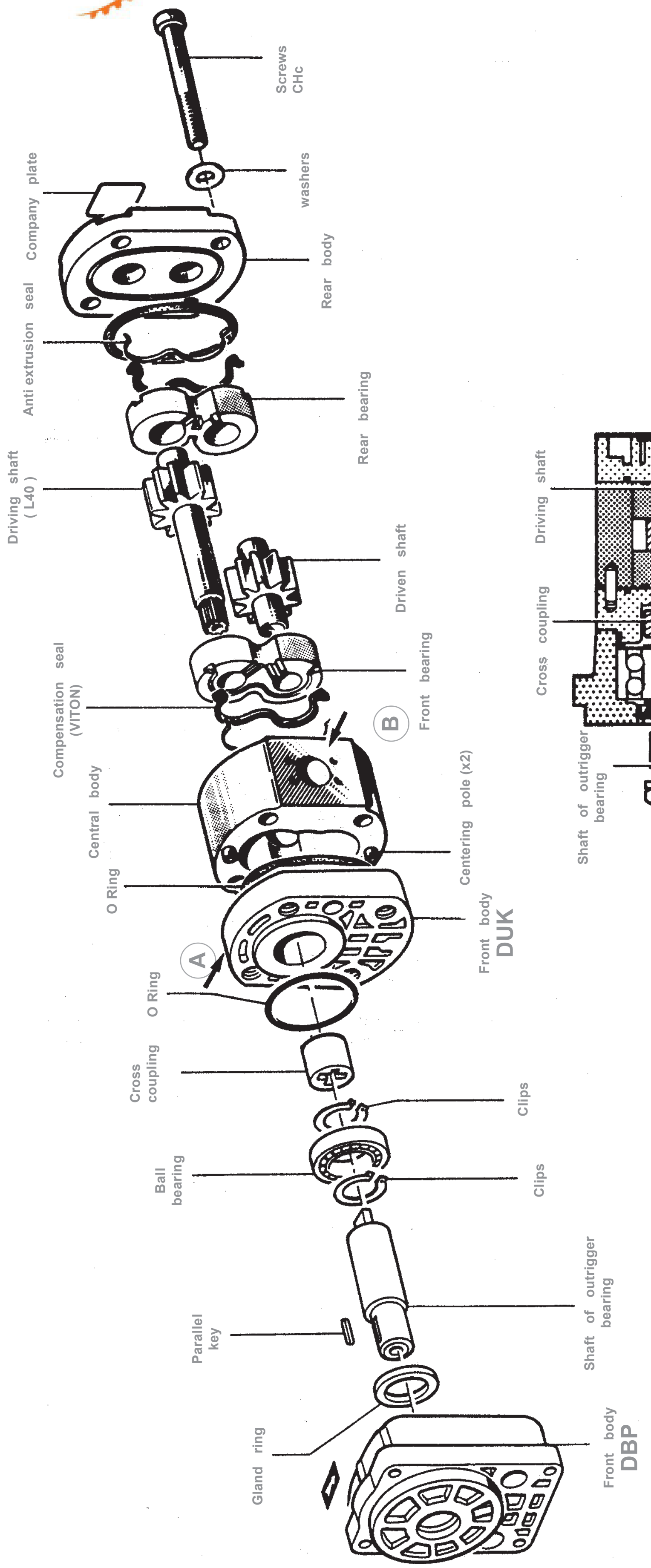
MAXIMUM PRESSURE:

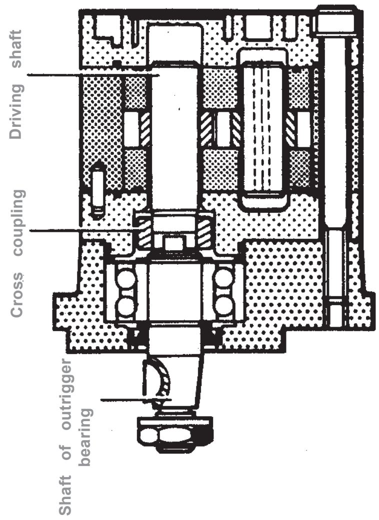
For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.





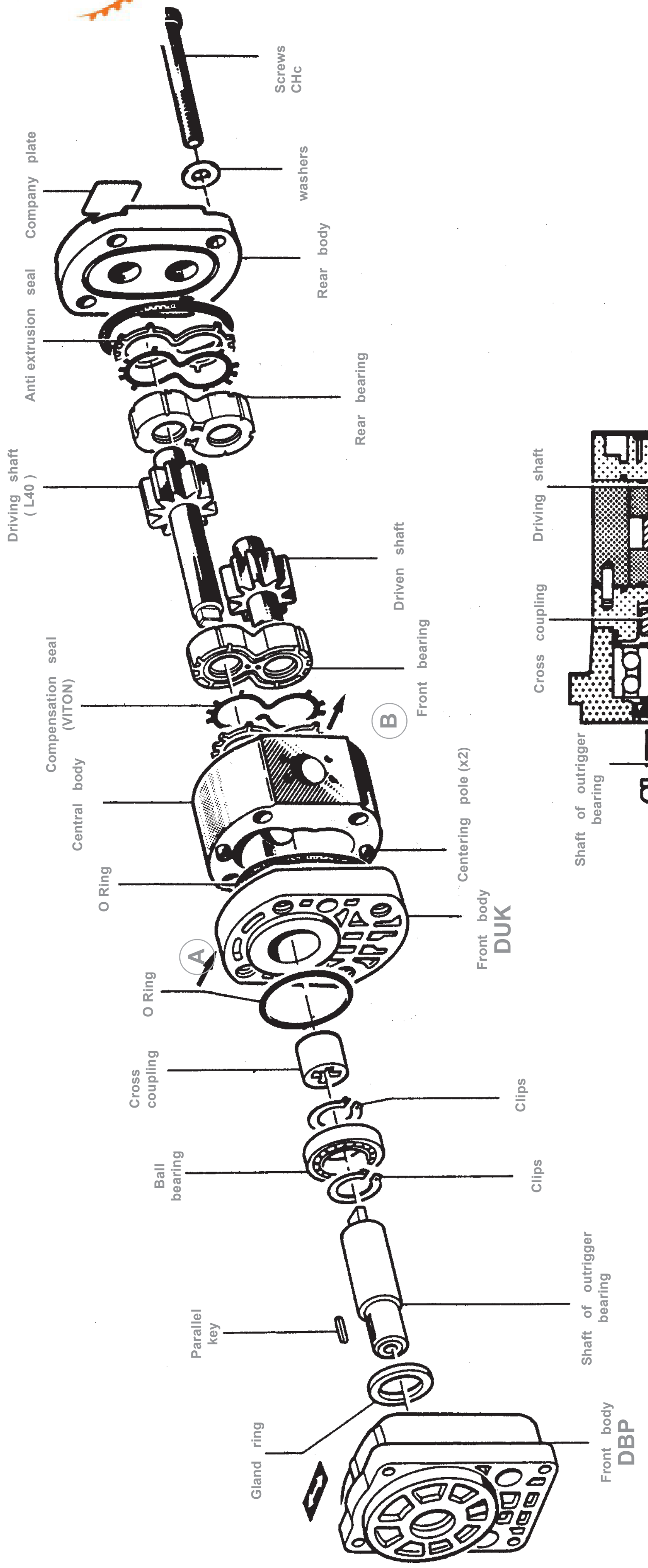
1 WAY ROTATION
WITHOUT
COUNTER-PRESSURE

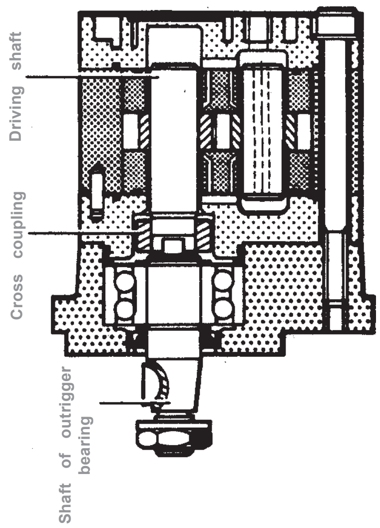
V.E 20 026

M1 (M2) ECO T

HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 2





1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER-PRESSURE

V.E 20 930

M3 CIP 3G

HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 2

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)			CENTRAL BODY (VII Sign)		REAR BODY (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)	
A	D	Z	H	C	L	10	20
	DBP					10C07	20C15

No feasible versions in " BASIC "

other possibilities, please refer to " GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

HYDRAULIC GEAR MOTORS

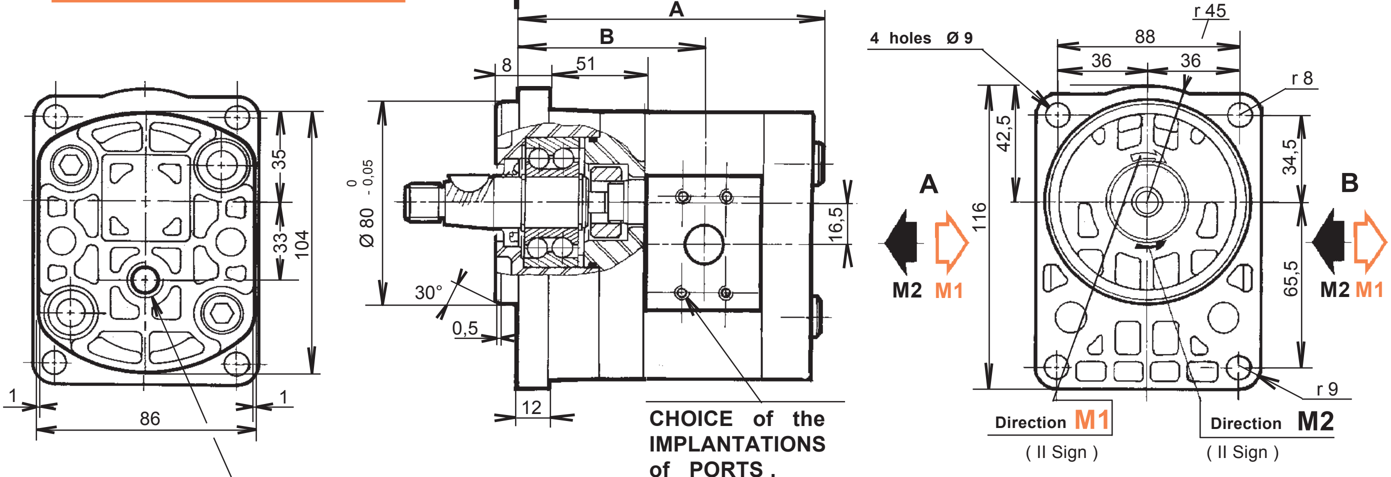
SERIES 2 (Thick front body)

M	II Sign	DB	P	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING MAX. 1 bar *(14,5 PSI)*



CHOICE of the IMPLANTATIONS of PORTS , see below

Drain port 1/4" BSP effective depth 14 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

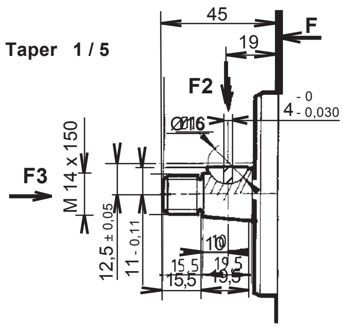
3,5 m.daN (**25** lb / ft)

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
006 008 010 012	123,5	74,5
014 015 018 022	138	82
026 030	154	90

CHOICE of the DRIVING SHAFTS

10 (IX - X Sign)
C07 (XI Sign)

Taper 1 / 5



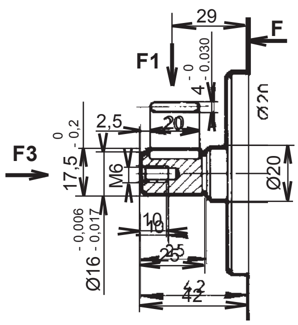
Delivered with nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque

7 m.daN

20 (IX - X Sign)
C15 (XI Sign)



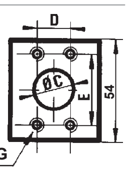
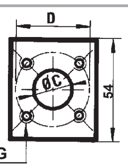
F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque

5 m.daN

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preferential rotation M2 Inlet	Outlet
H (HPI)  Ø F effective depth G	006 to 012	15	17,4	38	M6	12	20	17,4	38	M6	12	A	B	B	A	B	A
	015 to 030	15	17,4	38	M6	12	26	47,8	22,4	M6	12						
C (Square)  Ø F effective depth G	006 to 012	15	35		M6	12	20	40		M6	12	A	B	B	A	B	A
	015 to 030	15	35		M6	12	20	40		M6	12						

Dimensions readings and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS SERIES 2 TYPE DBP

Home - general contents

Basic catalogue contents

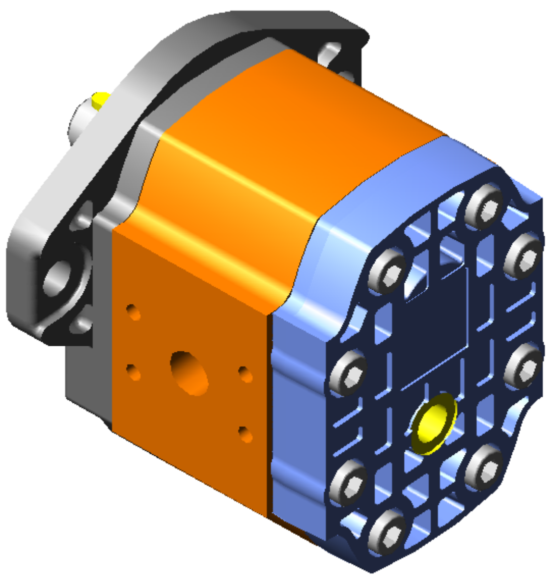
BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 3

(Flat front body)

MOTORS TYPE: AAN
BAN
CBN

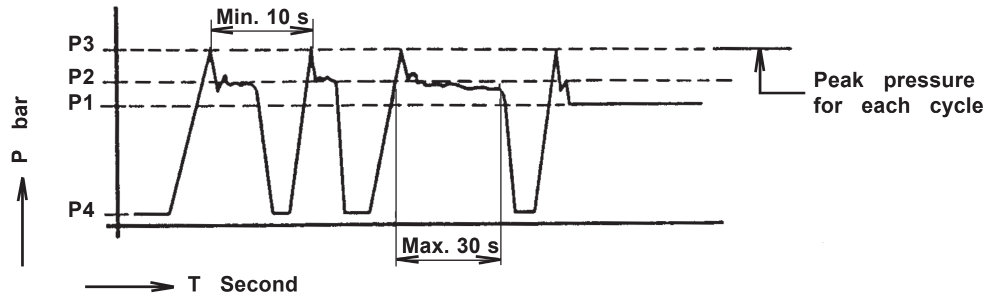


Publishing
01 / 2003

Max. working conditions MOTORS Series 3
(ECO .T and CIP)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity cc / rev	MAXIMUM PRESSURE P1 bar	P1 PSI	P2 bar	P2 PSI	P3 bar	P3 PSI	Maximum pressure at P1 t / min	P2 t / min	Minimum speed at RPM 100 bar 1450 PSI	210 bar 3045 PSI	300 bar 4350 PSI	Maxi speed at △ pressure ≤ 100 bar (1450 PSI)
3025	25,80	200	2900	225	3262	250	3625	2500	2800	800	1000	1300	3500
3031	32,10	180	2610	225	3262	225	3262	2300	2600	500	800	1000 225 bar	3000
3040	41,50	180	2610	210	3045	225	3262	2300	2600	500	800	1000 225 bar	3000
3050	51,65	175	2537	205	2972	225	3262	2200	2500	500	800	1000 225 bar	3000
3060	62,60	160	2320	185	2682	200	2900	2000	2300	500	800	1000 200 bar	3000
3071	73,55	150	2175	175	2537	200	2900	2000	2300	500	800		2500
3080	82,95	120	1740	150	2175	175	2537	1700	2000	500	800 175 bar		2500
3090	92,95	100	1450	130	1885	175	2537	1500	1800	400	800 150 bar		2000
3100	103,9	100	1450	125	1812	175	2537	1500	1800	400	800 150 bar		2000

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

<u>MAXIMUM PRESSURE:</u>

For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

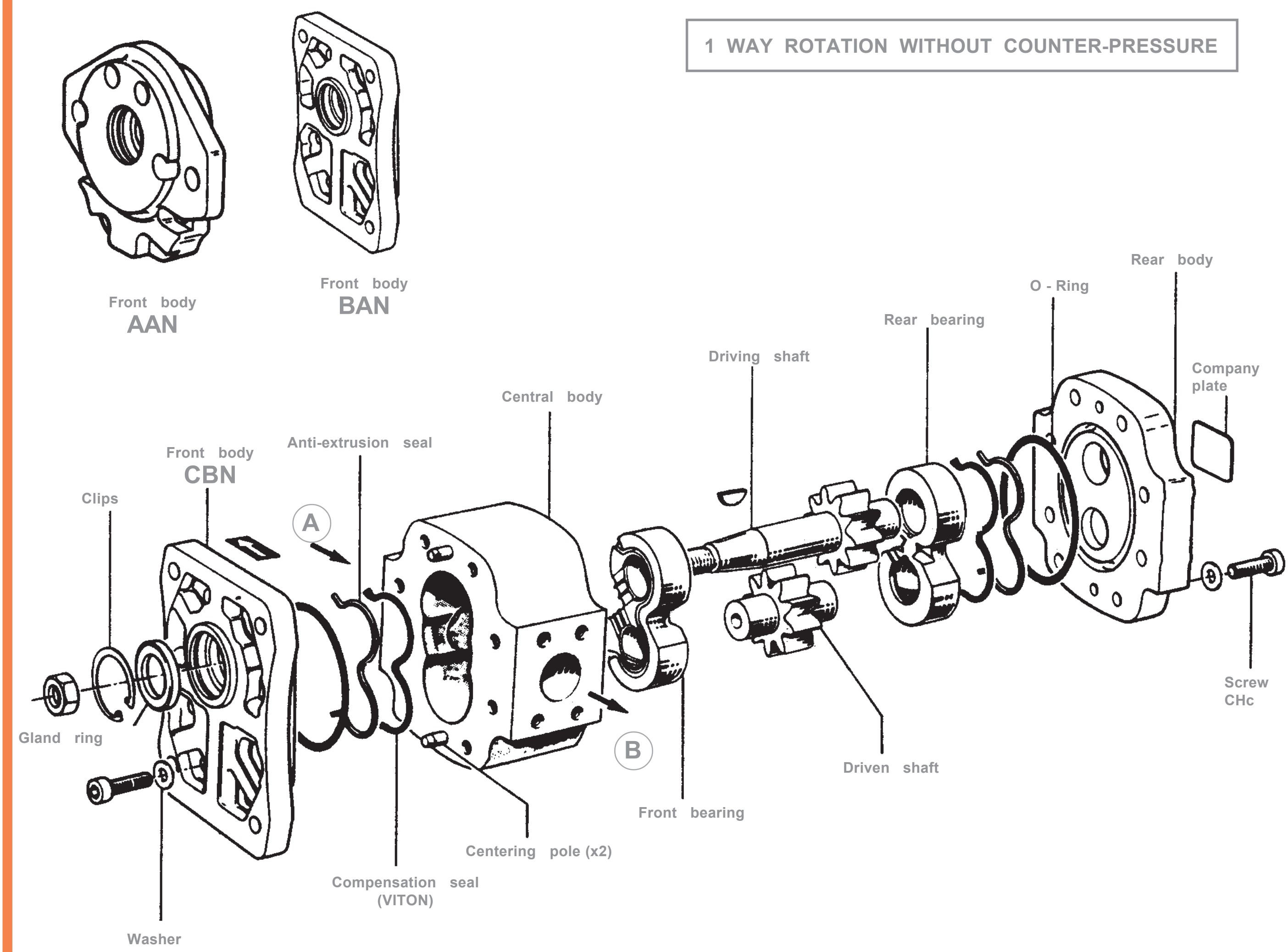
For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

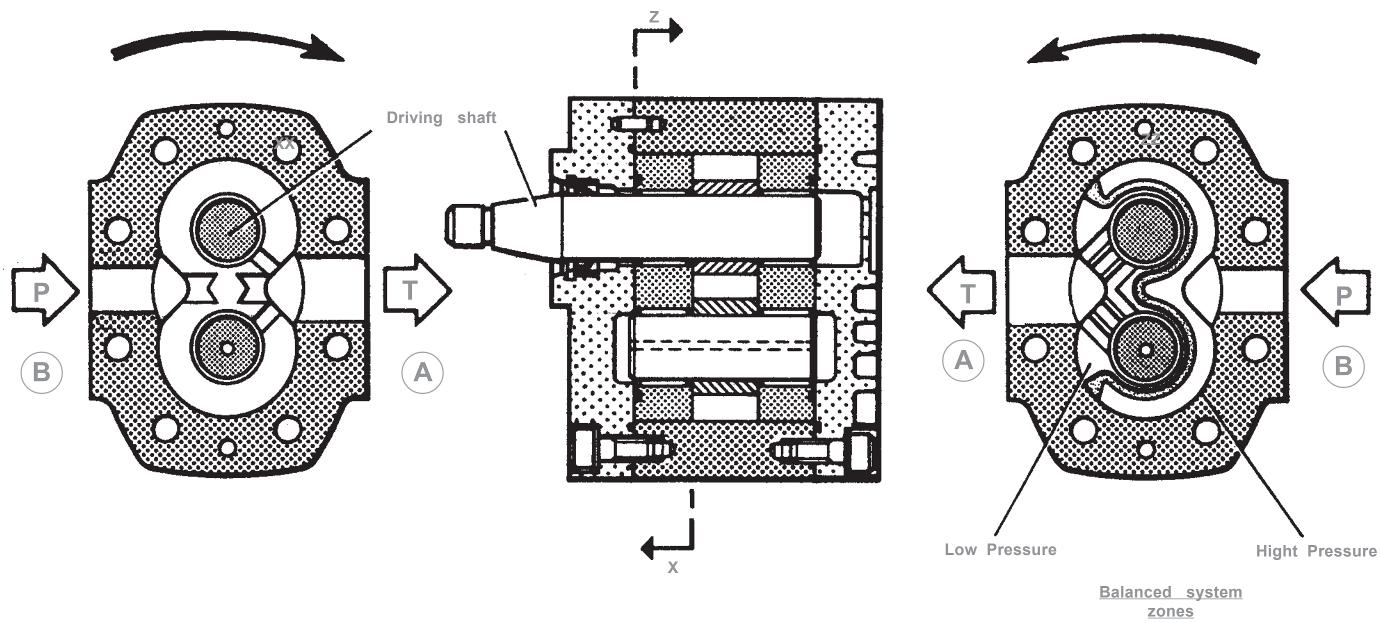
The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

Dimensions readings and approximative characteristics subject to modifications.

F.T R 0049

1 WAY ROTATION WITHOUT COUNTER-PRESSURE





M2 (M1) ECO.T

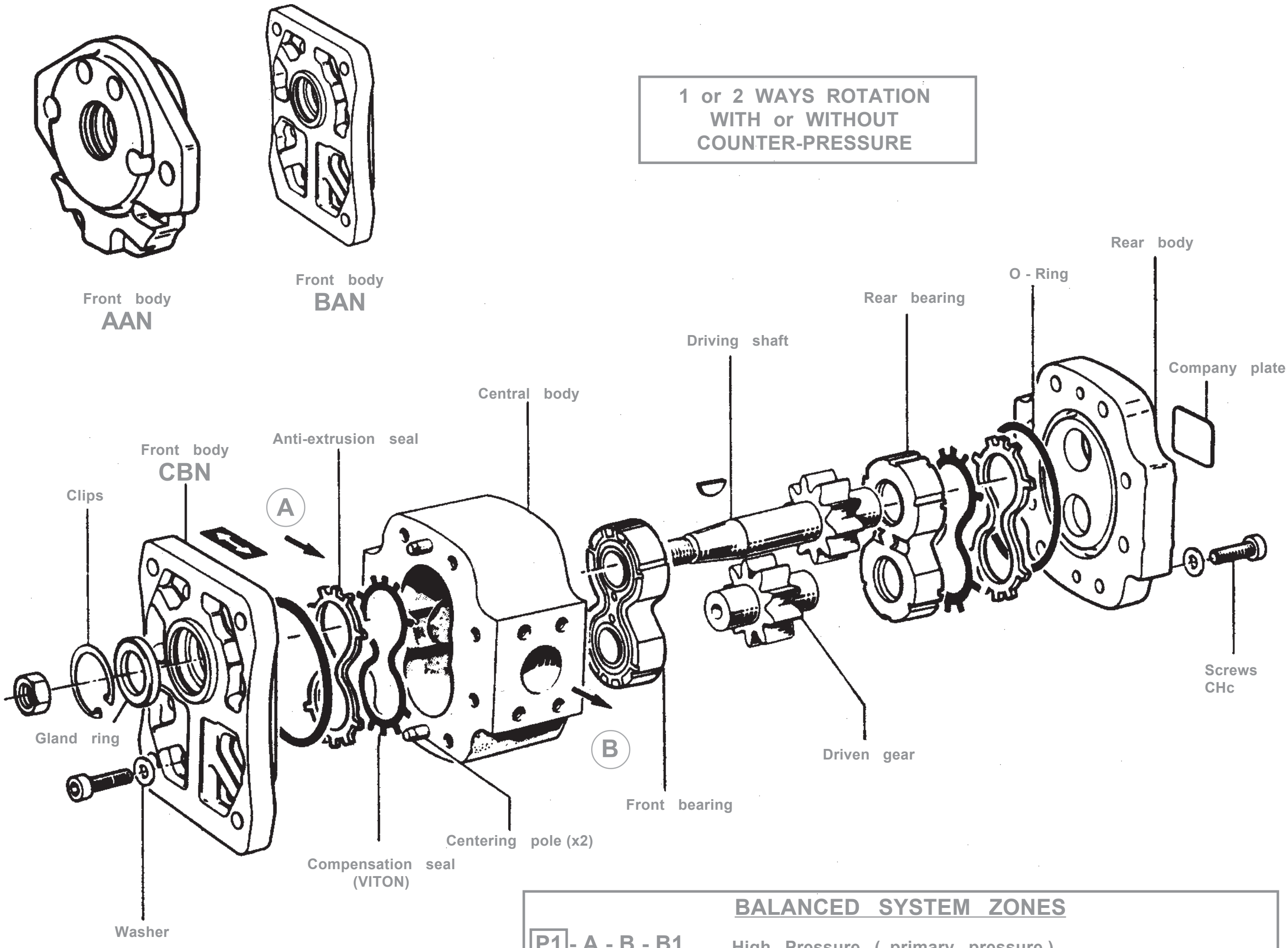
HYDRAULIC GEAR MOTORS SERIES 3

V.E 30 966

JTEKT HPI

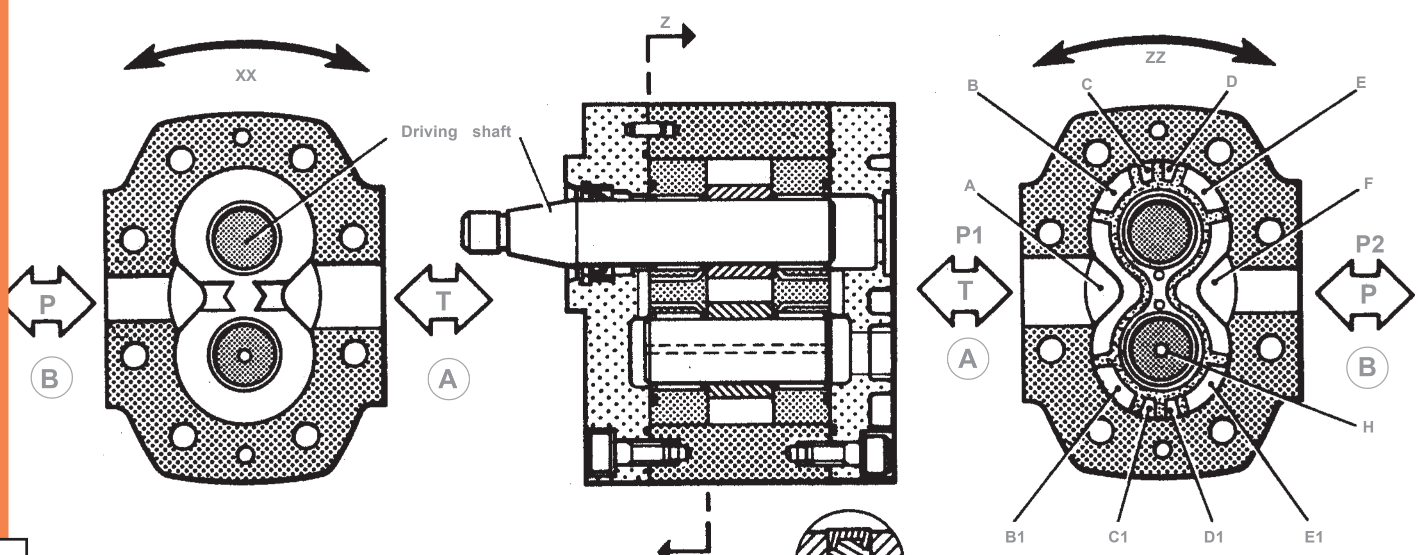
Tel : (33) 1 49 62 28 00 - Fax : (33) 1 45 76 68 40

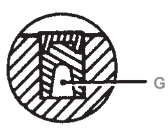
1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER-PRESSURE



BALANCED SYSTEM ZONES

$\boxed{P1}$ - A - B - B1	High Pressure (primary pressure)
G - C - D - C1 - D1	Median Pressure
E - E1	Average Pressure
$\boxed{P2}$ - F	Counter Pressure from 0 to P Maxi (Secondary Pressure)
H	Low Pressure (communication with tank)



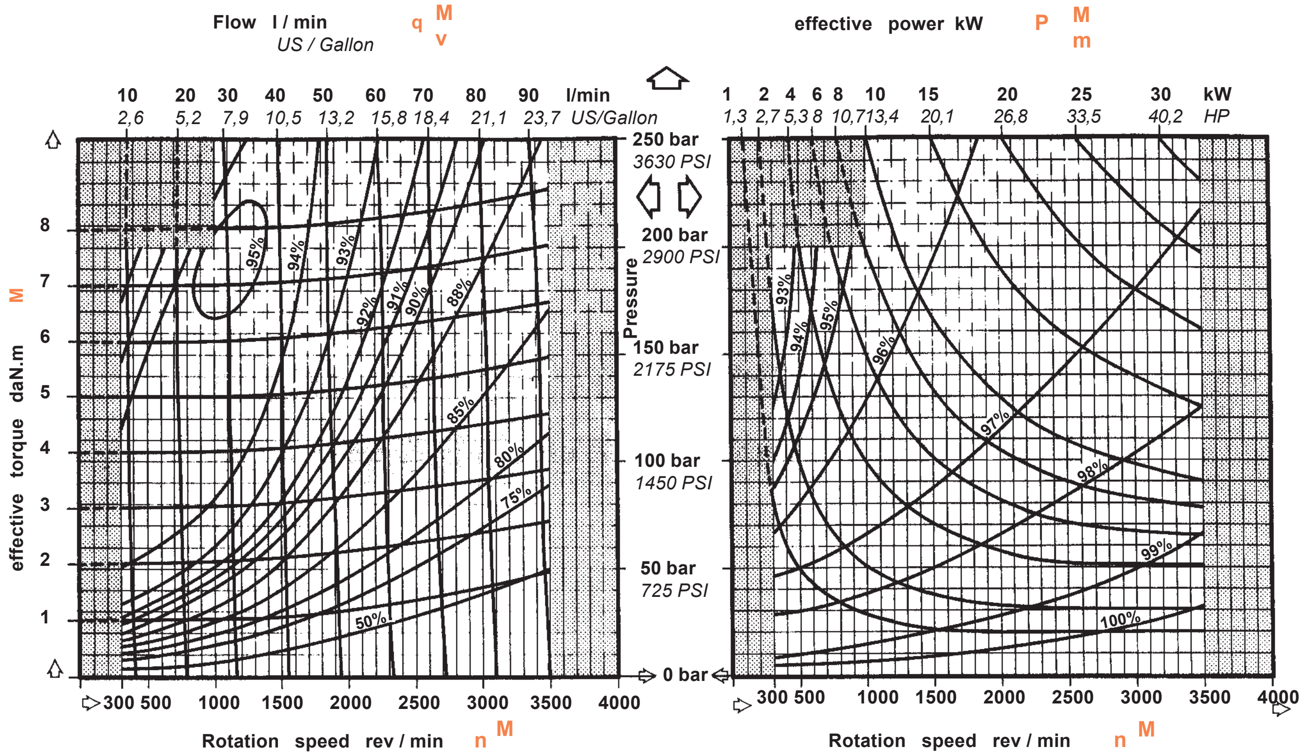


M3 CIP 3G

HYDRAULIC GEAR MOTORS SERIES 3

V.E 30 931

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* - Viscosity 35 cSt (113SUS) - Approximative valeurs

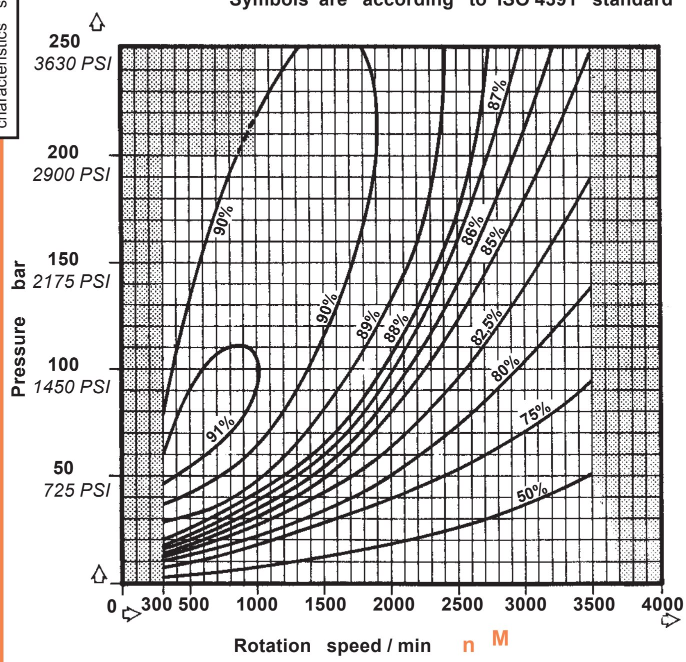


Mechanical efficiency η^M_{hm} ($\eta^M_{hm} = \frac{Mi}{Me} \times 100$)

Volumetric efficiency η^M_{hm} ($n^M_v = \frac{Qe}{Qi} \times 100$)

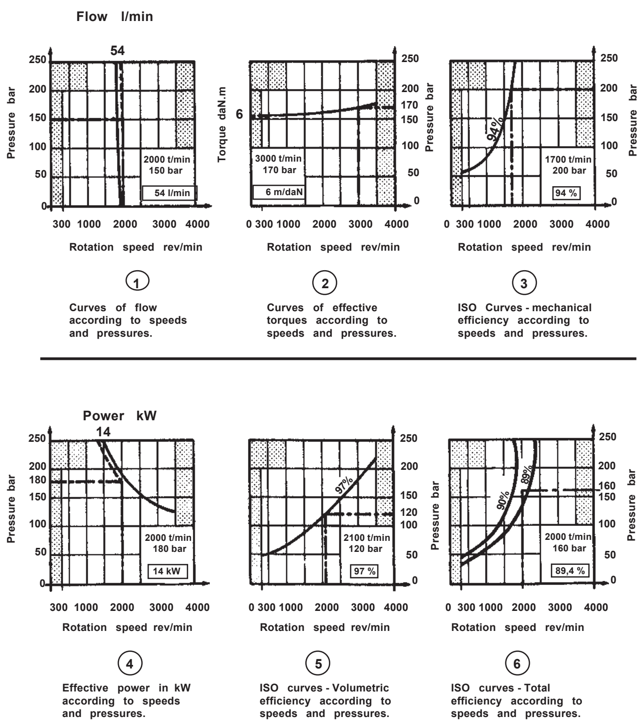
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η^M_t ($\eta^M_t = \eta^M_{hm} \times \eta^M_v$)

READINGS EXAMPLES



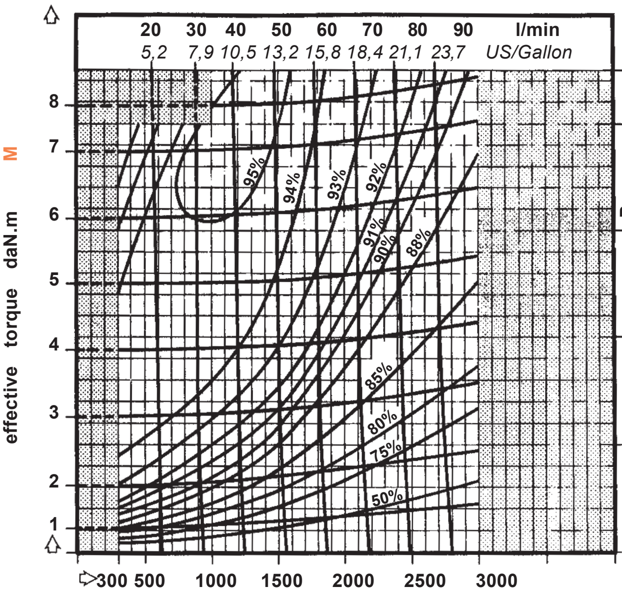
Dimensions readings and approximative characteristics subject to modifications.

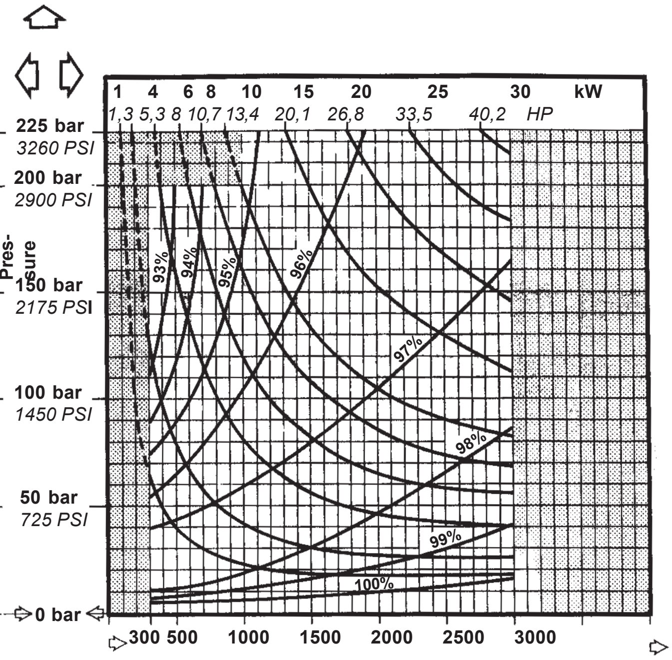
F.T 30 762

MOTOR SERIES 3 VERSION C.I.P 3G

Type 3025 Exact capacity: qe 1,57 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



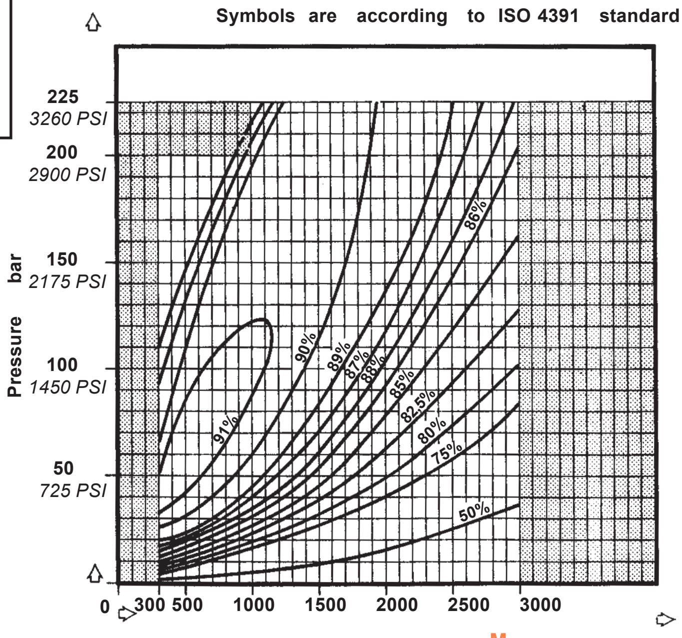


Mechanical efficiency η_{hm} $\left(\eta_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{v} $\left(\eta_{v} = \frac{Qe}{Qi} \times 100\right)$

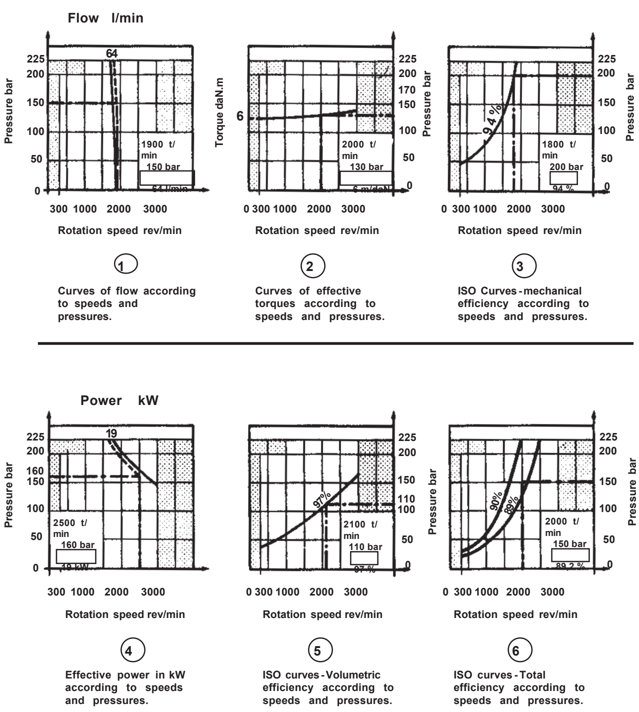
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_t $\left(\eta_t = \eta_{hm} \times \eta_v\right)$

READINGS EXAMPLES



MOTOR SERIES 3 VERSION C.I.P 3G

Type 3031 Exact capacity: qe 1,95 cubic / inch

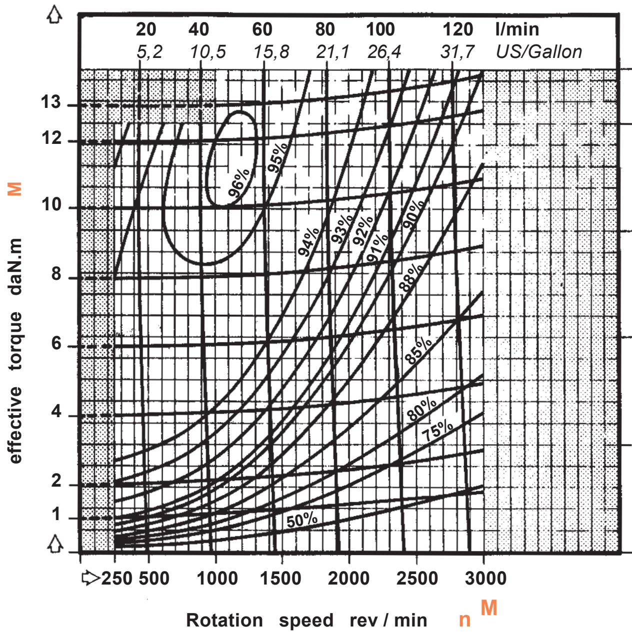
Dimensions and approximative readings and characteristics subject to modifications.

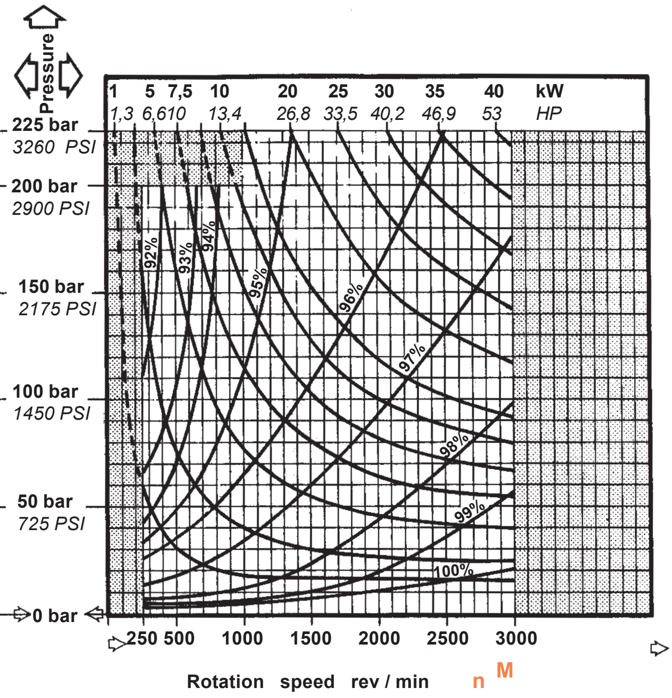
F.T 30 763

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* - Viscosity 35 cSt (113SUS) - Approximative valeurs

Flow l / min *US / Gallon* q_v^M

effective power kW P_m^M



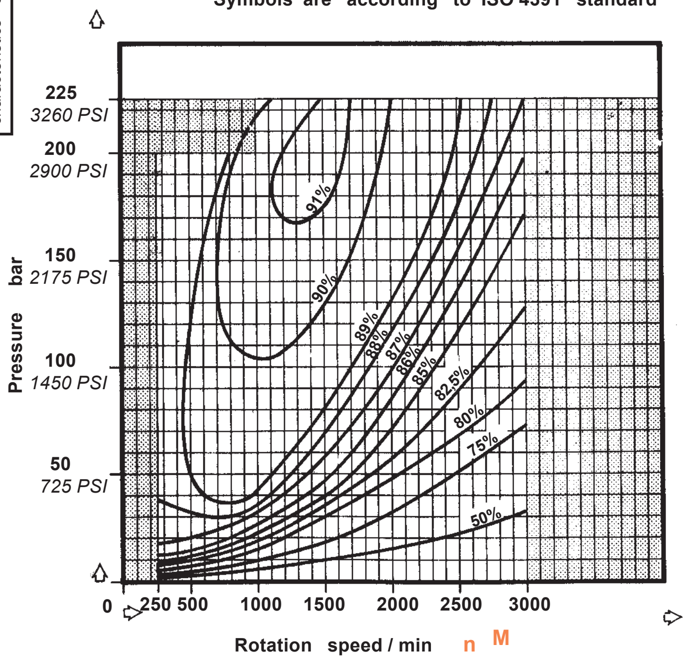


Mechanical efficiency η_{hm}^M $\left(\eta_{hm}^M = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{hm}^M $\left(n_v^M = \frac{Qe}{Qi} \times 100\right)$

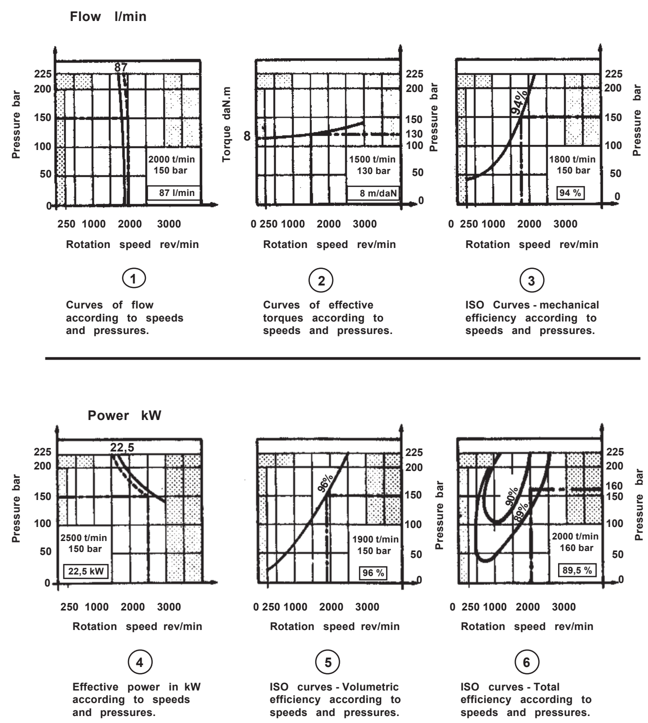
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_t^M $\left(\eta_t^M = \eta_{hm}^M \times \eta_v^M\right)$

READINGS EXAMPLES



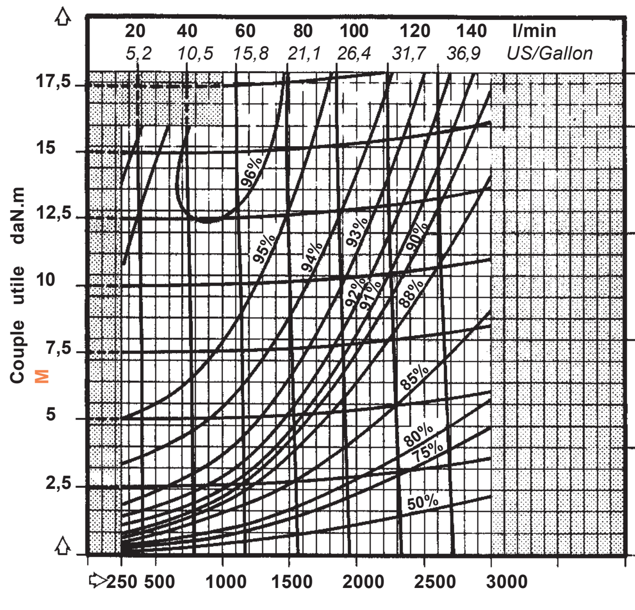
Dimensions readings and approximative characteristics subject to modifications.

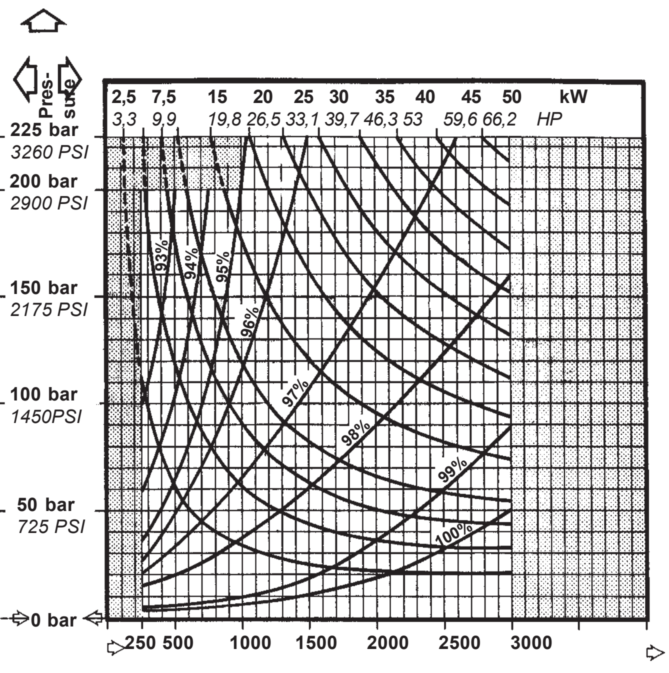
F.T 30 764

MOTOR SERIES 3 VERSION C.I.P 3G

Type 3040 Exact capacity: qe 2,53 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



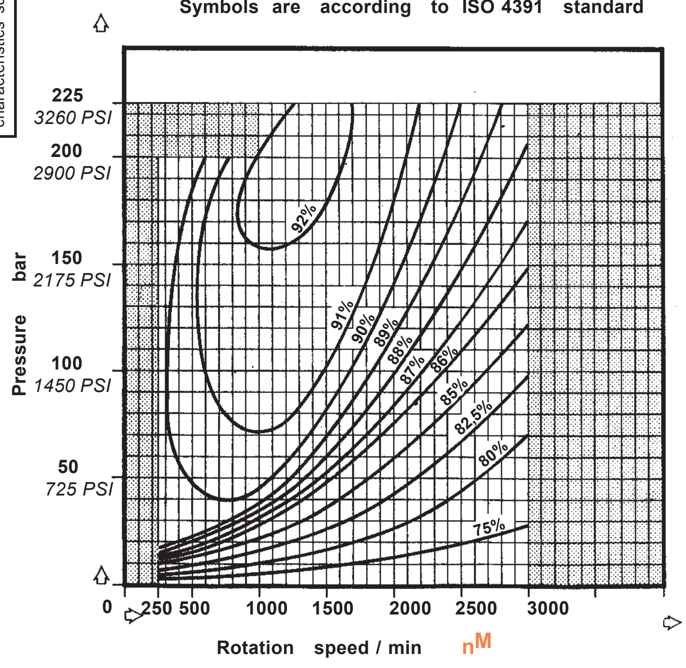


Mechanical efficiency η_{hm}^{M} $\left(\eta_{hm}^{M} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{v}^{M} $\left(\eta_{v}^{M} = \frac{Qe}{Qi} \times 100\right)$

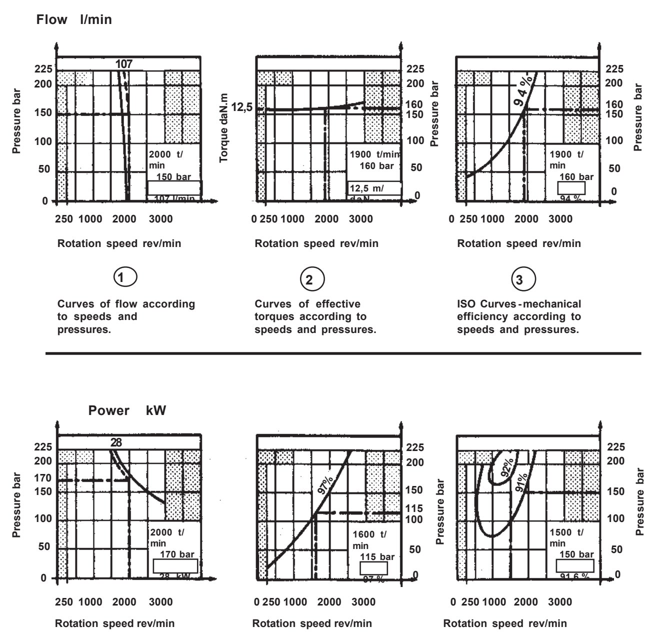
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_{t}^{M} $\left(\eta_{t}^{M} = \eta_{hm}^{M} \times \eta_{v}^{M}\right)$

READINGS EXAMPLES



1. Curves of flow according to speeds and pressures.
2. Curves of effective torques according to speeds and pressures.
3. ISO Curves-mechanical efficiency according to speeds and pressures.
4. Effective power in kW according to speeds and pressures.
5. ISO curves-Volumetric efficiency according to speeds and pressures.
6. ISO curves-Total efficiency according to speeds and pressures.

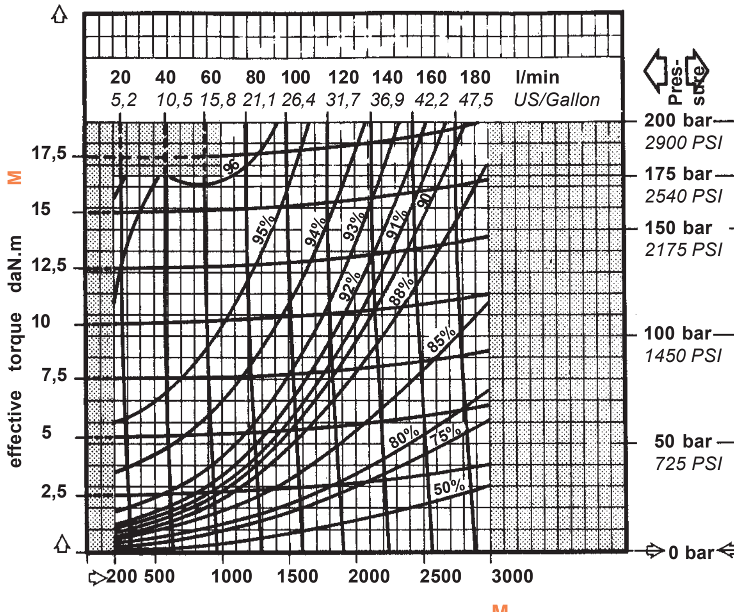
Dimensions readings and approximative characteristics subject to modifications.

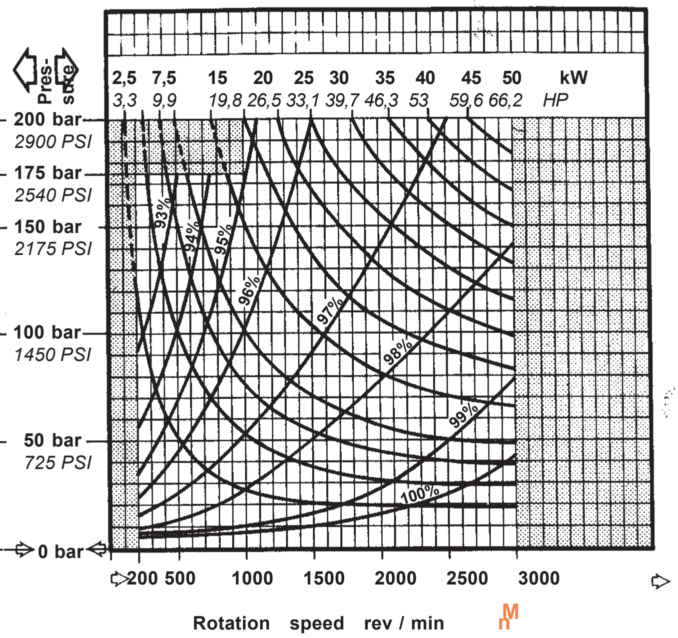
F.T 30 765

MOTOR SERIES 3 VERSION C.I.P 3G

Type 3050 Exact capacity: qe 3,15 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



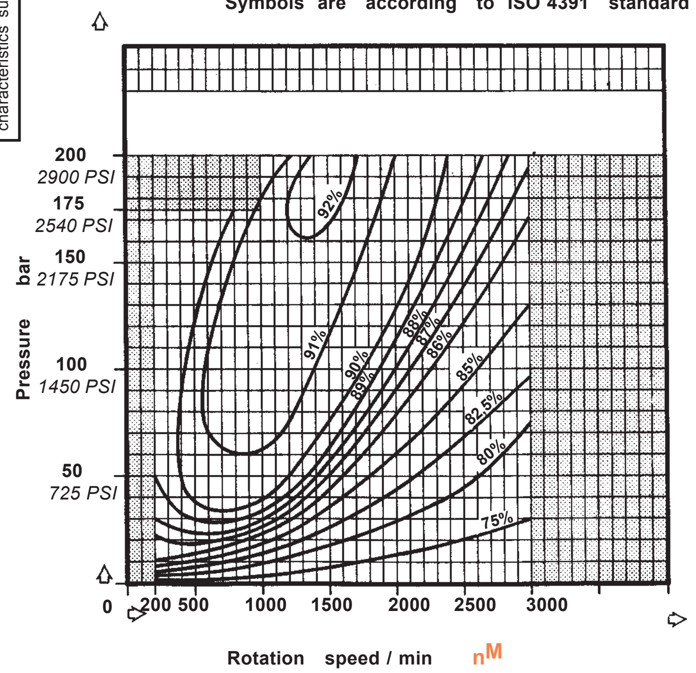


Mechanical efficiency η_{hm} $\left(\eta_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_v $\left(\eta_v = \frac{Qe}{Qi} \times 100\right)$

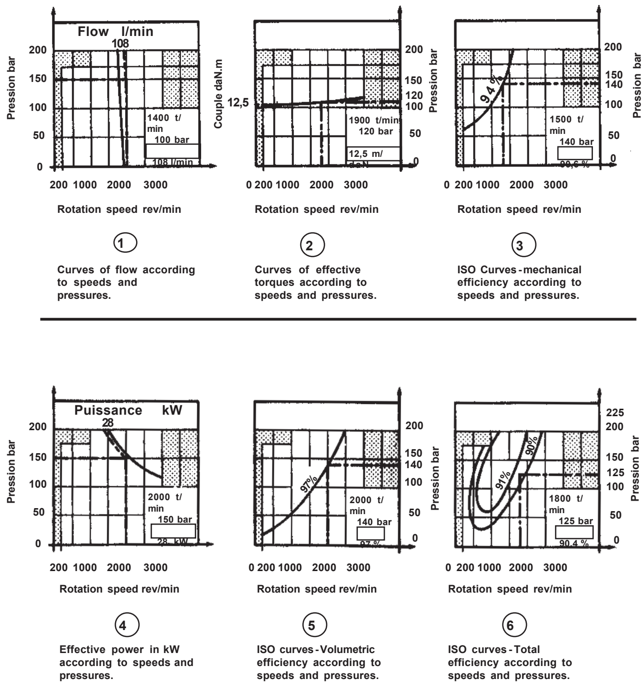
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_t $(\eta_t = \eta_{hm} \times \eta_v)$

READINGS EXAMPLES



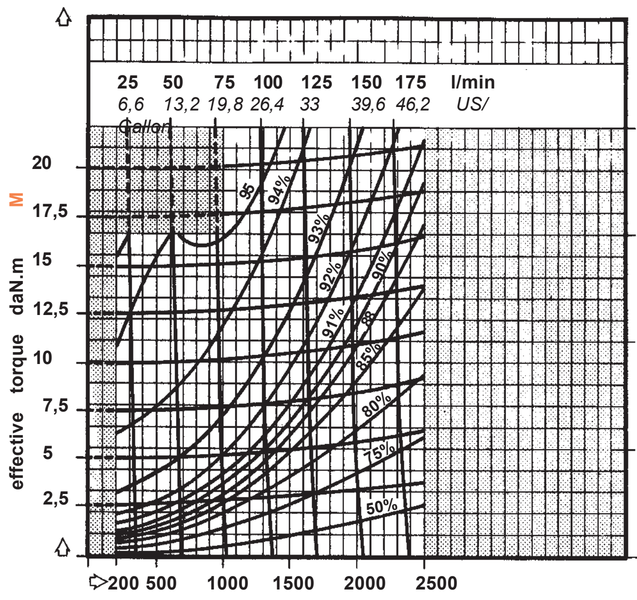
MOTOR SERIES 3 VERSION C.I.P 3G

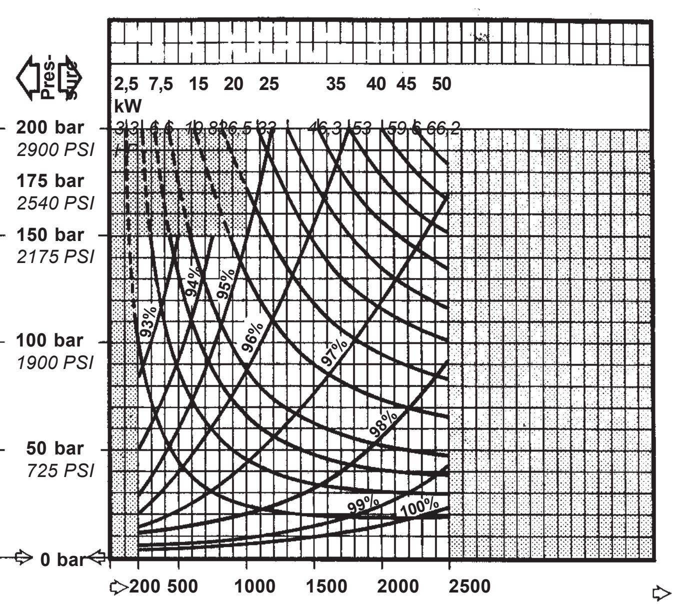
Type 3060 Exact capacity: qe 3,81 cubic / inch

Dimensions readings and approximative characteristics subject to modifications.

F.T 30 766

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



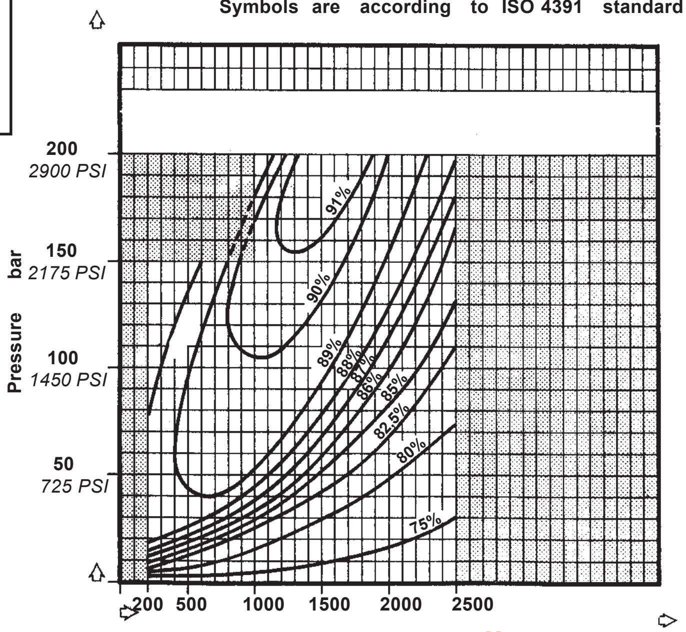


Mechanical efficiency η_{hm} $\left(\eta_{hm} = \frac{Mi \times 100}{Me}\right)$

Volumetric efficiency η_{v} $\left(\eta_{v} = \frac{Qe \times 100}{Qi}\right)$

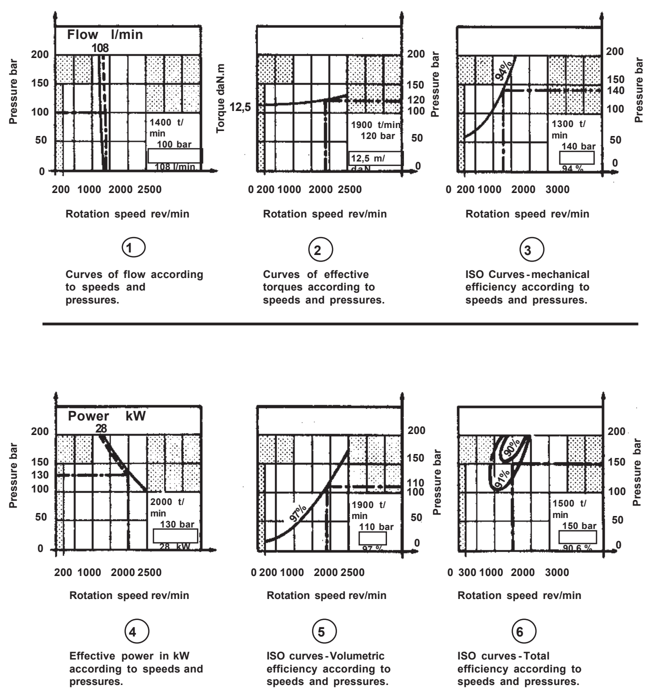
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_{t} $\left(\eta_{t} = \eta_{hm} \times \eta_{v}\right)$

READINGS EXAMPLES



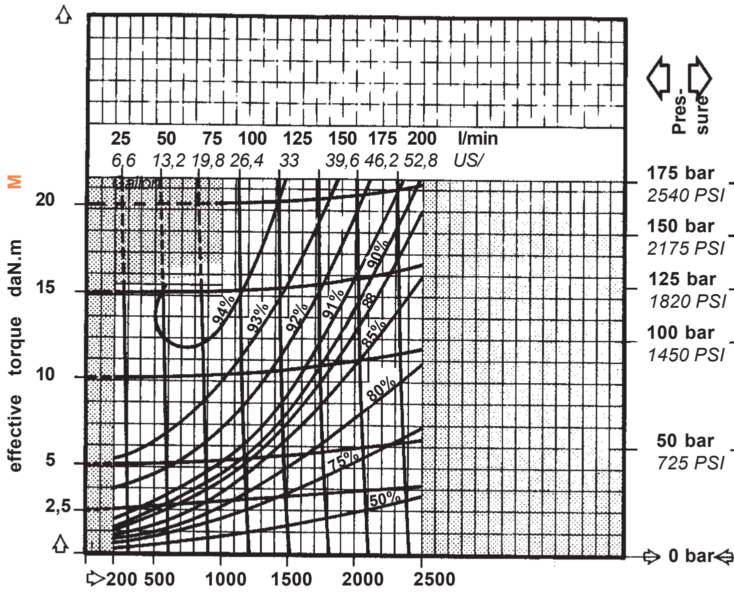
MOTOR SERIES 3 VERSION C.I.P 3G

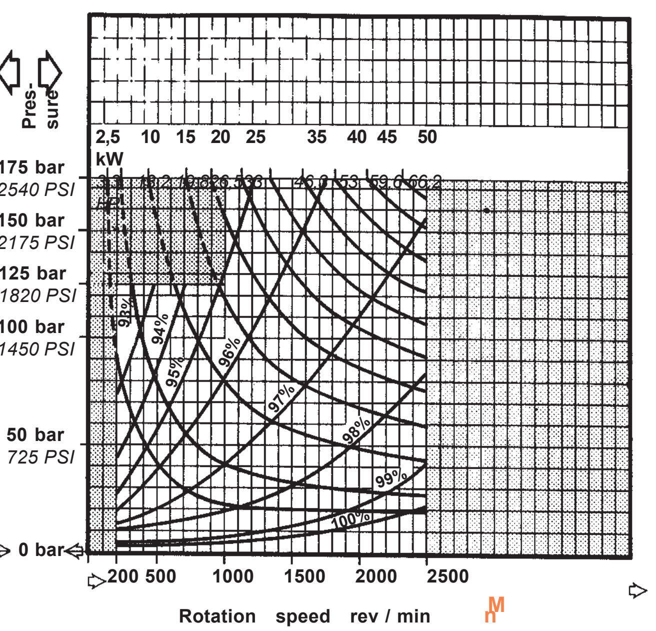
Type 3071 Exact capacity: qe 4,48 cubic / inch

Dimensions readings and approximative characteristics subject to modifications.

F.T 30 767

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



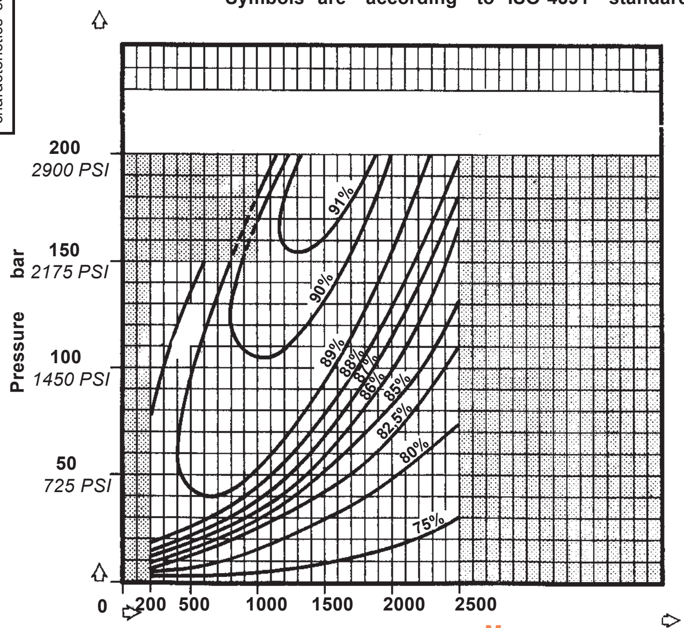


Mechanical efficiency η_{hm} $\left(\eta_{hm} = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{v} $\left(\eta_{v} = \frac{Qe}{Qi} \times 100\right)$

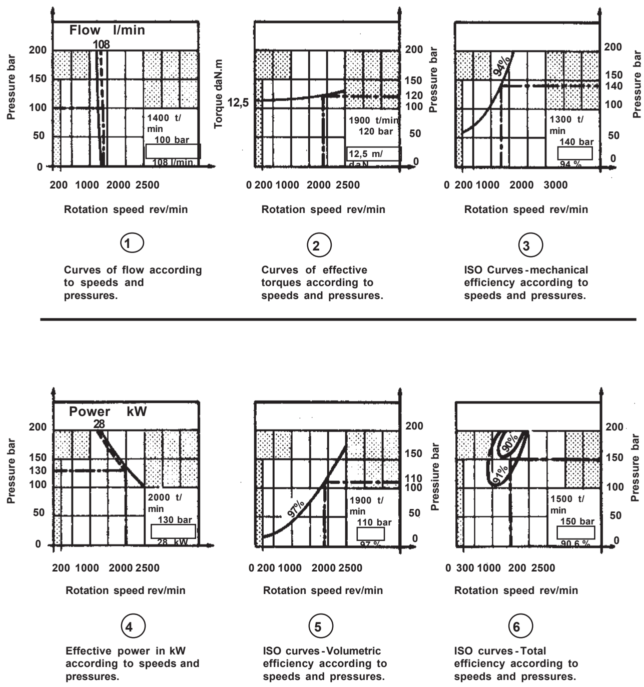
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_{t} $\left(\eta_{t} = \eta_{hm} \times \eta_{v}\right)$

READINGS EXAMPLES



Dimensions readings and approximative characteristics subject to modifications.

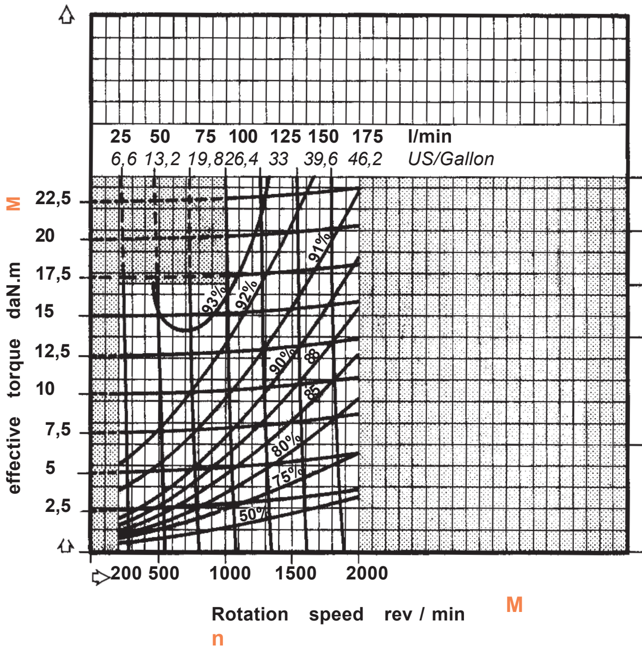
MOTOR SERIES 3 VERSION C.I.P 3G

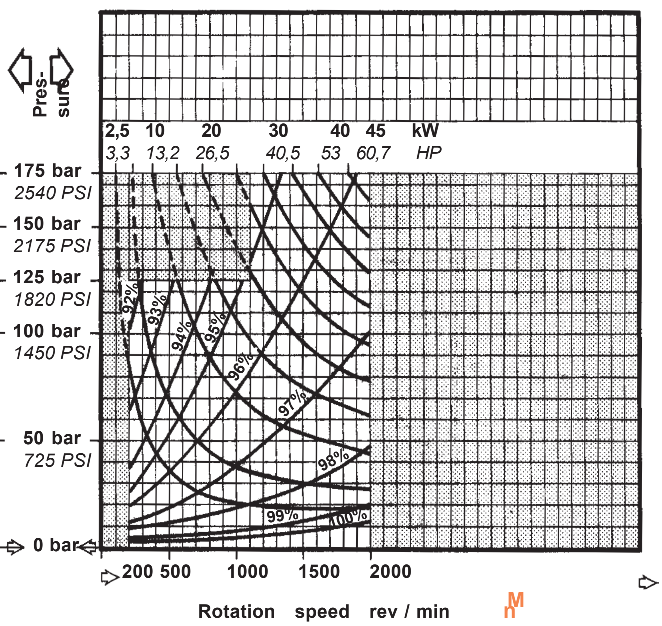
Type 3080 Exact capacity: qe 5,05 cubic / inch

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**

Flow l / min *US / Gallon* q_v^M

effective power kW P_m^M



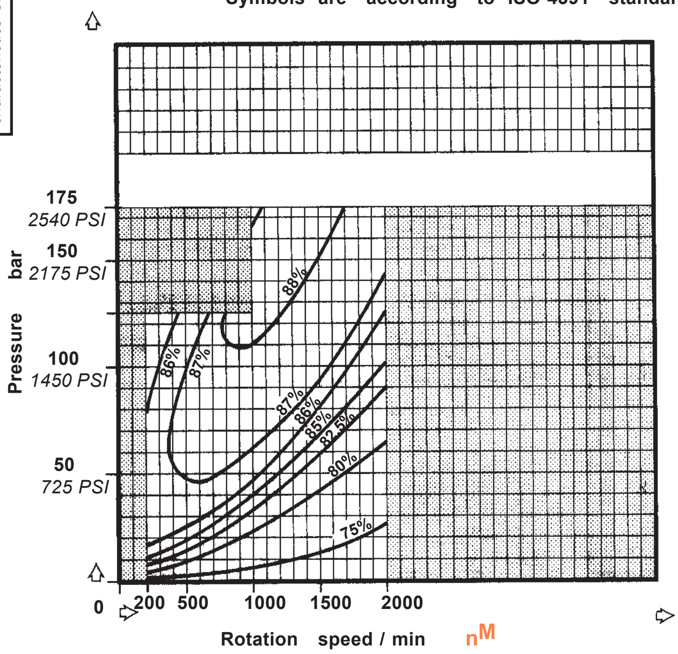


Mechanical efficiency η_{hm}^M $\left(\eta_{hm}^M = \frac{Mi}{Me} \times 100\right)$

Volumetric efficiency η_{v}^M $\left(\eta_v^M = \frac{Qe}{Qi} \times 100\right)$

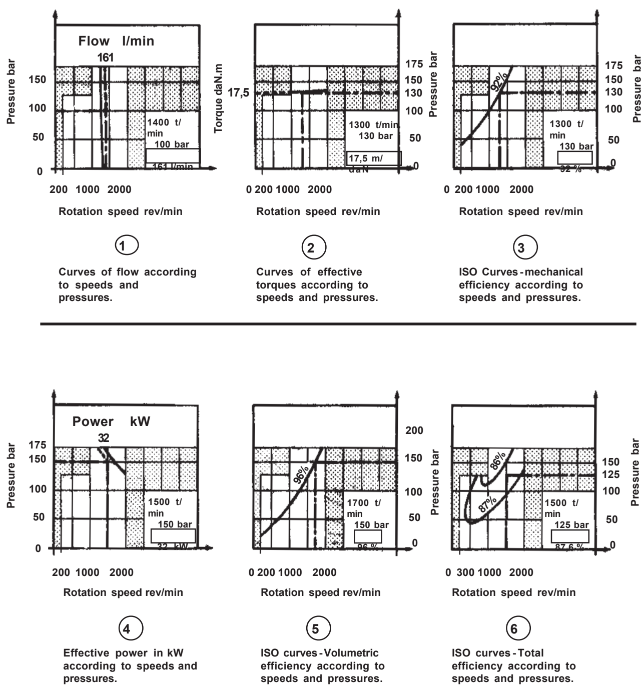
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_t^M $\left(\eta_t^M = \eta_{hm}^M \times \eta_v^M\right)$

READINGS EXAMPLES



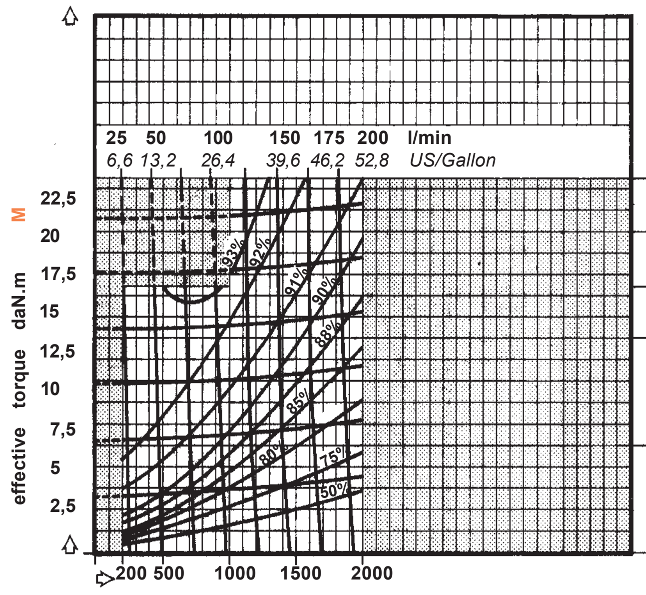
Dimensions readings and approximative characteristics subject to modifications.

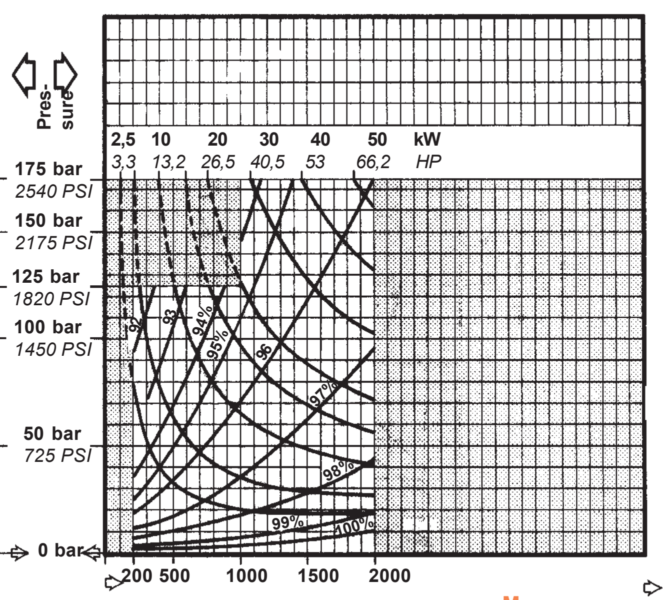
MOTOR SERIES 3 VERSION C.I.P 3G

Type 3090 Exact capacity: qe 5,66 cubic / inch

F.T 30 769

Test made with the oil SHELL Tellus T46 - Test Temperature 50 °C *(122 °F)* **- Viscosity 35 cSt (113SUS) - Approximative valeurs**



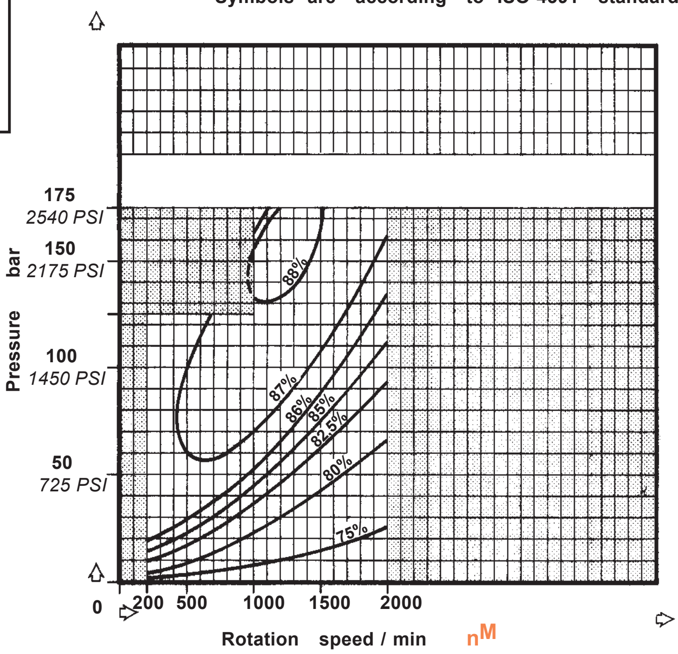


Mechanical efficiency η_{hm} (η_{hm} = $\frac{Mi}{Me}$ x 100)

Volumetric efficiency η_v (η_v = $\frac{Qe}{Qi}$ x 100)

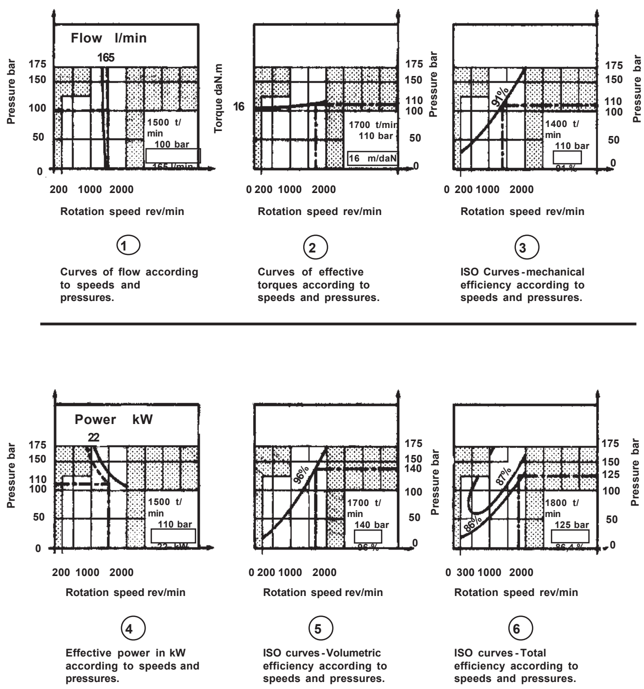
non recommended permanent area of utilisation.

Symbols are according to ISO 4391 standard



Total efficiency η_t (η_t = η_{hm} x η_v)

READINGS EXAMPLES



Dimensions readings and approximative characteristics subject to modifications.

MOTOR SERIES 3 VERSION C.I.P 3G

Type 3100 Exact capacity: qe 6,33 cubic / inch

F.T 30 770

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)				CENTRAL BODY (VII Sign)		REAR BODY (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)			
A	B	C	D	H	B	L	10	20	30	40
AAN								20A02	30A02	
	BAN						10B03			
		CBN						20C04		40C04

No feasible versions in " BASIC "

Other possibilities, please refer to " GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

HYDRAULIC GEAR MOTORS

SERIES 3 (Flat front body)

Dimensions readings and approximative characteristics subject to modifications.

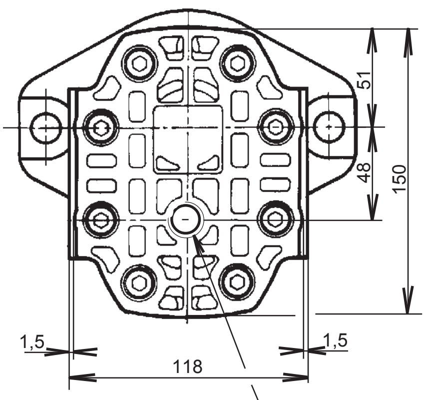
F.T R 0248

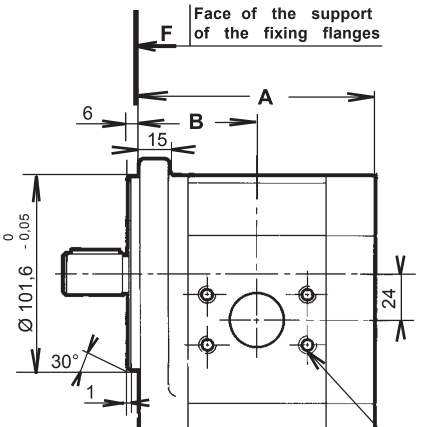
M	II Sign	AA	N	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

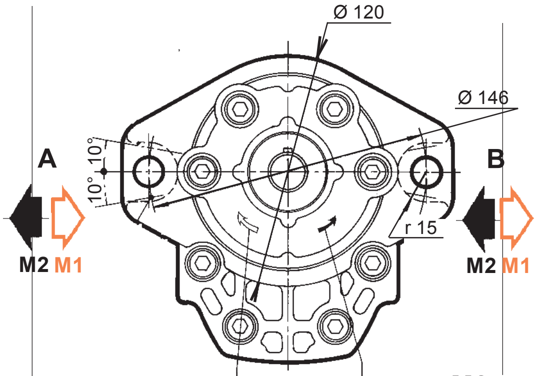
For CODIFICATION , see data sheets F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







Direction **M1**
(II Sign)

Direction **M2**
(II Sign)

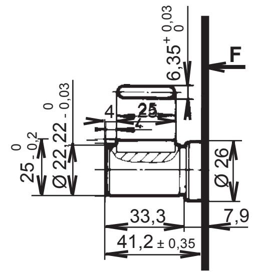
IMPLANTATION of PORTS , see below

Drain port 3/8" BSP effective depth 18 for bi directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection
5 m.daN (**36** lb / ft)

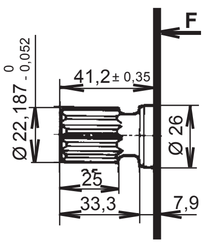
CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
A02 (XI Sign)



Max. transmissible torque
29 m.daN

30 (IX - X Sign)
A02 (XI Sign)

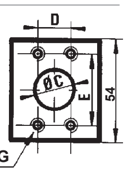


Involute spline to SAE
13 TEETH - 7/8" SAE
Pitch 16/32
30° Pressure angle

Max. transmissible torque
31 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	122,7	61,3
050 060	149,2	74,5
071 080 090 100	169,2	84,2

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	DIMENSIONS INLET PORT Ø C	D	E	Ø F	G	DIMENSIONS OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure M3 Preferential direction M2 Inlet	Outlet
H (HPI)  Ø F effective depth G	3025 to 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	A	B	B	A	B	A
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17						
	3071 to 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17						

Dimensions readings and approximative characteristics subject to modifications.

F.T 30 712

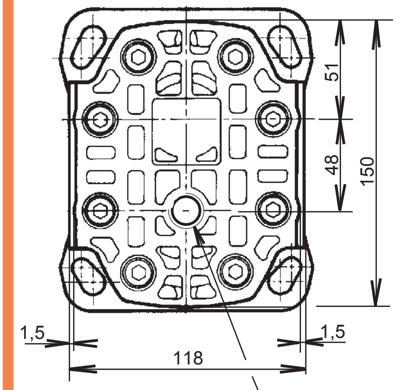
HYDRAULIC GEAR MOTORS SERIES 3 TYPE AAN

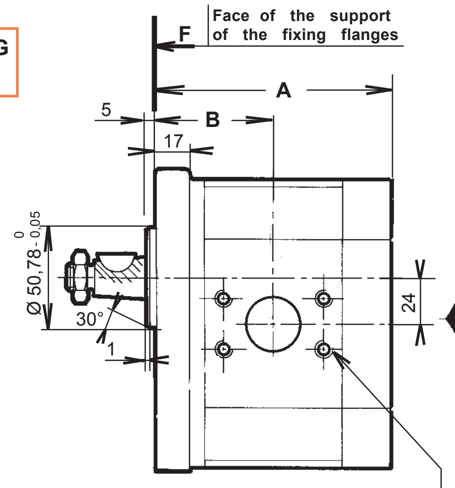
M	II Sign	BA	N	3	VI Sign	H	L	1	0	B03	XII Sign

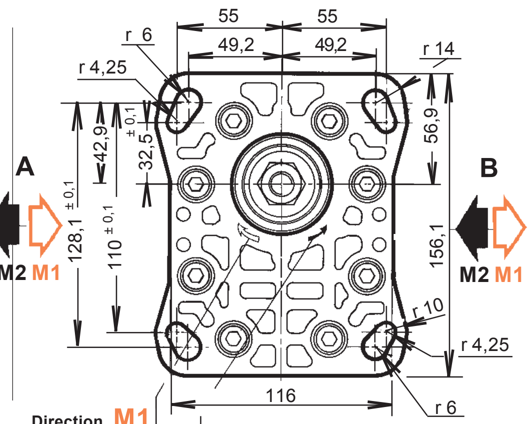
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







IMPLANTATION of PORTS , see below

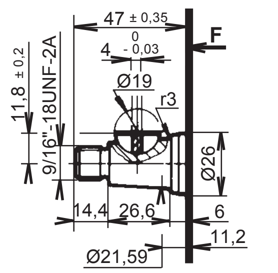
Drain port 3/8" BSP effective depth 18 for bi directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection
5 m.daN (**36** lb / ft)

DRIVING SHAFT

10 (IX - X Sign)
B03 (XI Sign)

Taper 1 / 8



Delivered with nut Réf. : 100 734
and Wascher Réf. : 103 945

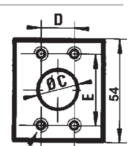
Max. transmissible torque
53 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	122,7	61,3
050 060	149,2	74,5
071 080 090 100	169,2	84,2

Dimensions readings and approximative characteristics subject to modifications.

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION: 1 way rotation without Counter - Pressure, M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure, M3 Preferential direction M2 Inlet	Outlet
H (HPI)	3025 à 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	A	B	B	A	B	A
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17						
Ø F profondeur utile G	3071 à 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17						



F.T 30 713

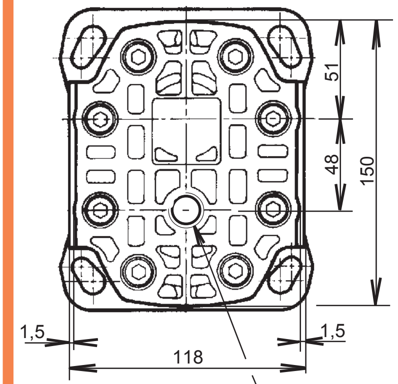
HYDRAULIC GEAR MOTORS SERIES 3 TYPE BAN

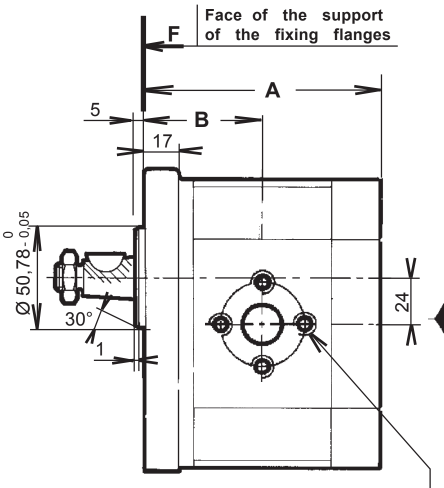
M | II Sign | BA | N | 3 | VI Sign | B | L | 1 | 0 | B03 | XII Sign

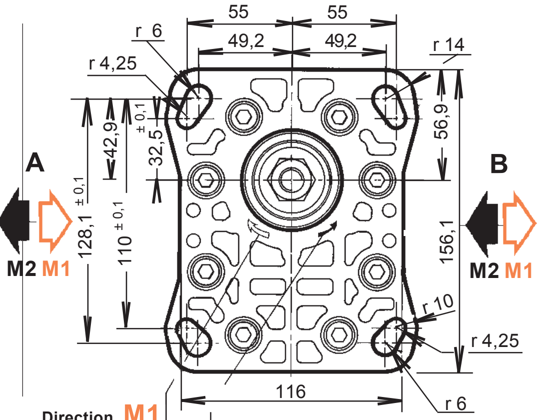
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







Direction **M1** (II Sign)

Direction **M2** (II Sign)

Drain port 3/8" BSP effective depth 18 for bi directional or single directional motor but working with a counter pressure in the return port.

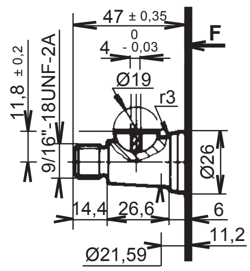
Max. tightening torque of the connection
5 m.daN (**36** lb / ft)

IMPLANTATION of PORTS , see below

DRIVING SHAFT

10 (IX - X Sign)
B03 (XI Sign)

Taper 1 / 8



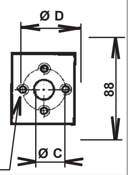
Delivered with nut Ref. : 100 734
et écrou frein Ref. : 103 945

Max. transmissible torque
53 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	122,7	61,3
050 060	149,2	74,5
071 080 090 100	169,2	84,2

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70



IMPLANTATION	Capacity	DIMENSIONS INLET PORT Ø C	Ø D	Ø F	G	DIMENSIONS OUTLET PORT Ø C	Ø D	Ø F	G	AFFECTATION 1 way rotation without Counter - pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preférential direction M2 Inlet	M2 Outlet
B (Italienne)	3025 to 3040	18	40	M8	16	27	51	M10	16	A	B	B	A	B	A
	3050														
	3060														
	3071 to 3100														

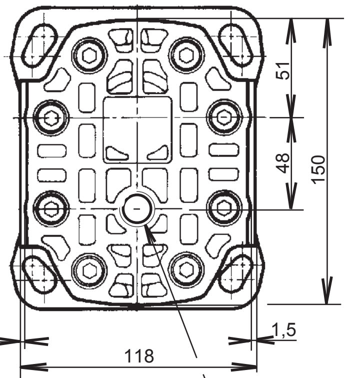
HYDRAULIC GEAR MOTORS SERIES 3 TYPE BAN

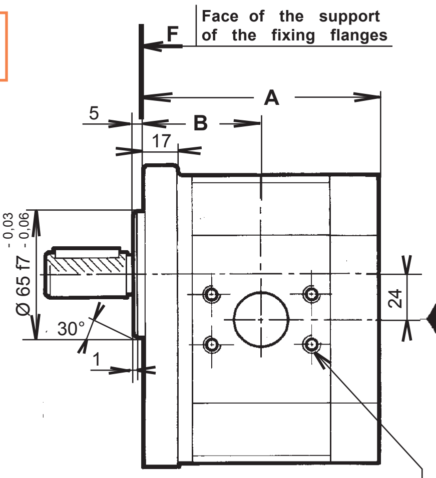
M	II Sign	CB	N	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

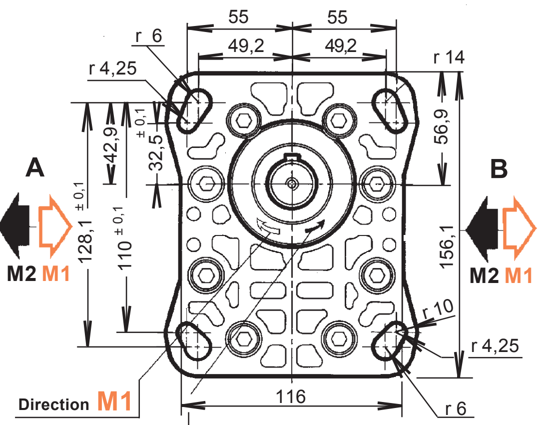
For CODIFICATION , see data sheet **F.T R 0243**

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







Direction **M1**
(II Sign)

Direction **M2**
(II Sign)

Drain port 3/8" BSP effective depth 18 for bi directional or single directional motor but working with a counter pressure in the return port.
Max. tightening torque of the connection
5 m.daN (**36** lb / ft)

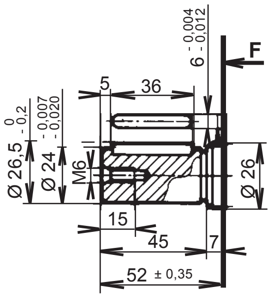
IMPLANTATION of PORTS , see below

Dimensions readings and approximative characteristics subject to modifications.

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	122,7	61,3
050 060	149,2	74,5
071 080 090 100	169,2	84,2

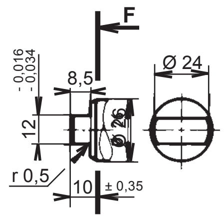
CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
C04 (XI Sign)



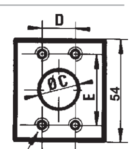
Max. transmissible torque
32 m.daN

40 (IX - X Sign)
C04 (XI Sign)



Max. transmissible torque
28 m.daN

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure M3 Preferential rotation M2 Inlet	Outlet
H (HPI)  Ø F effective depth G	3025 to 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17						
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17	A	B	B	A	B	A
	3071 to 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17						

HYDRAULIC GEAR MOTORS SERIES 3 TYPE CBN

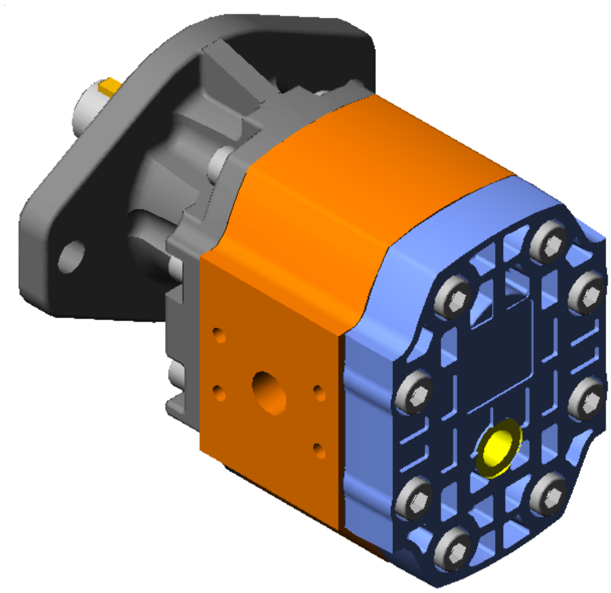
Home - general contents

Basic catalogue contents

JTEKT HPI

BASIC CATALOGUE (B15)

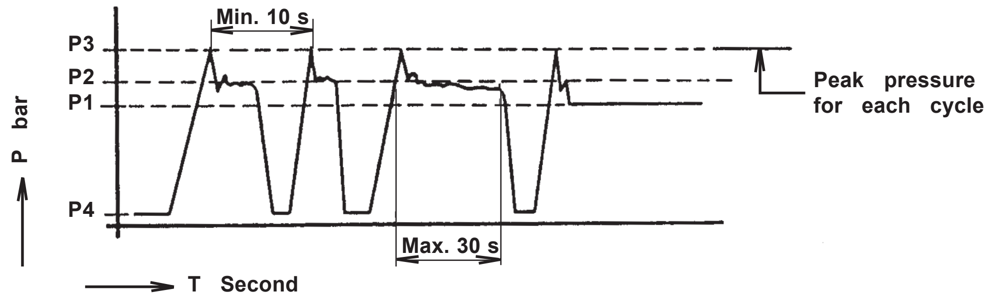
Hydraulics gear motors Series 3 (Thick front body)



Max. working conditions MOTORS Series 3
(ECO .T and CIP)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity cc / rev	MAXIMUM PRESSURE P1 bar	P1 PSI	P2 bar	P2 PSI	P3 bar	P3 PSI	Maximum pressure at P1 t / min	P2 t / min	Minimum speed at RPM 100 bar 1450 PSI	210 bar 3045 PSI	300 bar 4350 PSI	Maxi speed at △ pressure ≤ 100 bar (1450 PSI)
3025	25,80	200	2900	225	3262	250	3625	2500	2800	800	1000	1300	3500
3031	32,10	180	2610	225	3262	225	3262	2300	2600	500	800	1000 225 bar	3000
3040	41,50	180	2610	210	3045	225	3262	2300	2600	500	800	1000 225 bar	3000
3050	51,65	175	2537	205	2972	225	3262	2200	2500	500	800	1000 225 bar	3000
3060	62,60	160	2320	185	2682	200	2900	2000	2300	500	800	1000 200 bar	3000
3071	73,55	150	2175	175	2537	200	2900	2000	2300	500	800		2500
3080	82,95	120	1740	150	2175	175	2537	1700	2000	500	800 175 bar		2500
3090	92,95	100	1450	130	1885	175	2537	1500	1800	400	800 150 bar		2000
3100	103,9	100	1450	125	1812	175	2537	1500	1800	400	800 150 bar		2000

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

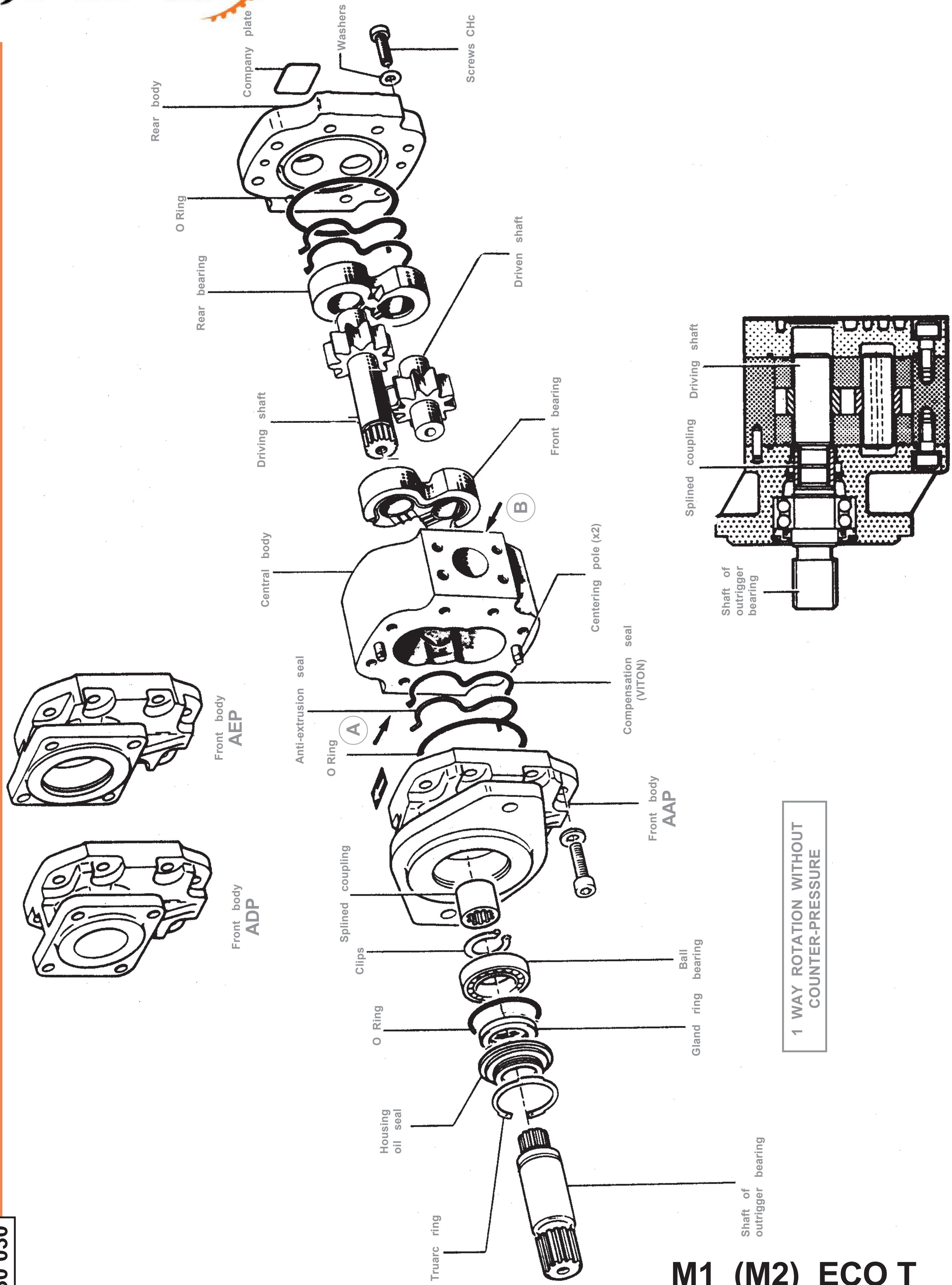
MAXIMUM PRESSURE:

For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.



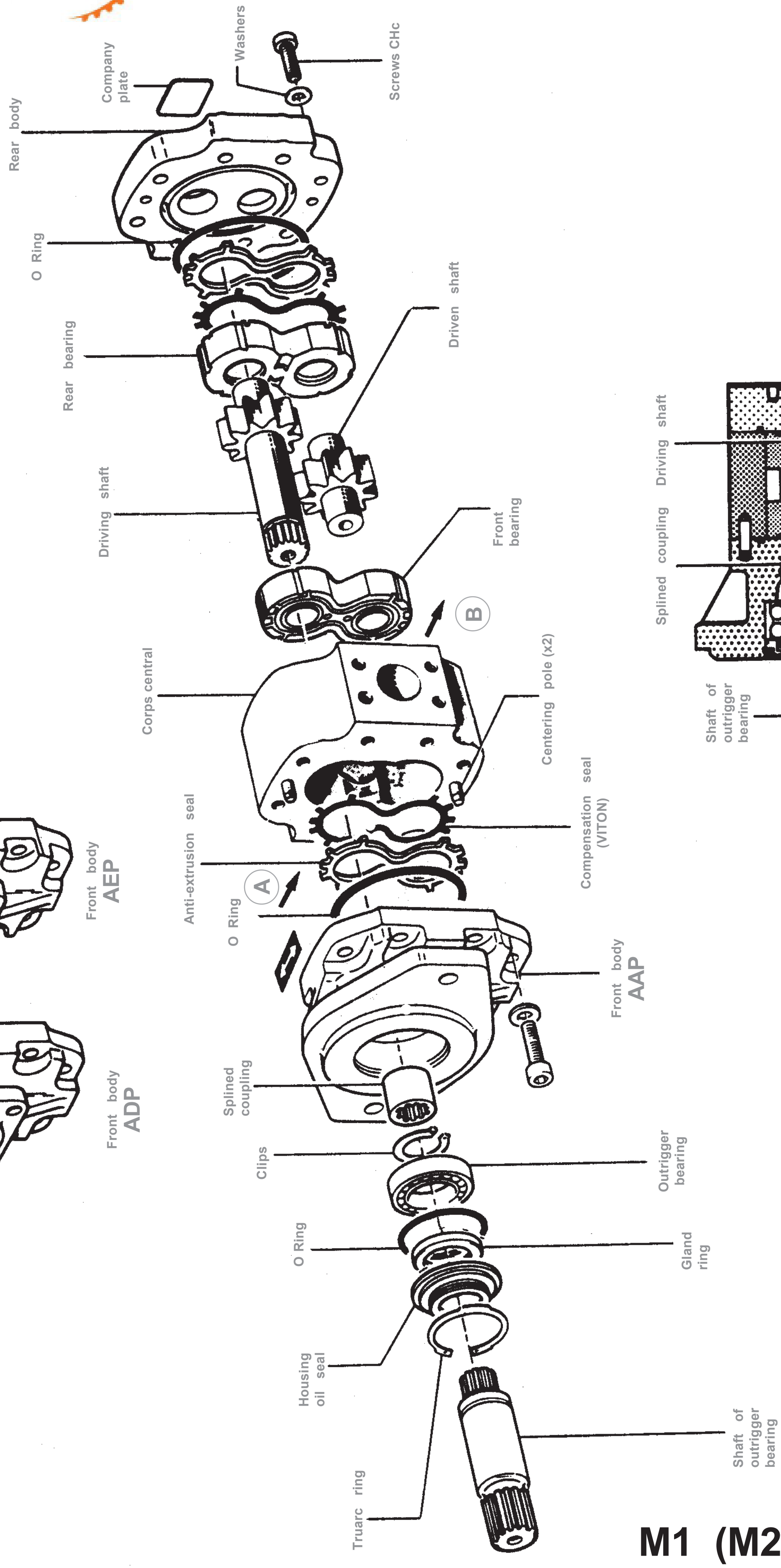
1 WAY ROTATION WITHOUT COUNTER-PRESSURE

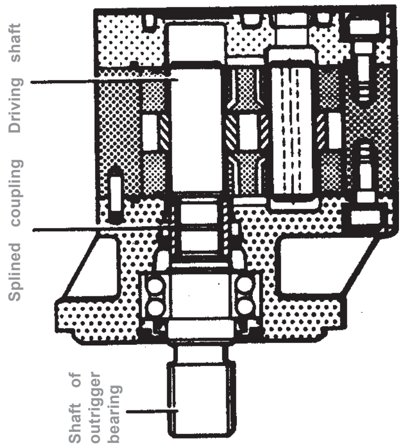
V.E 30 030

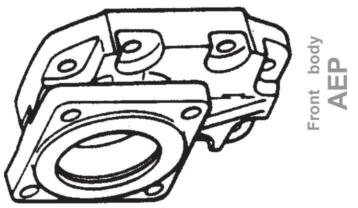
M1 (M2) ECO T

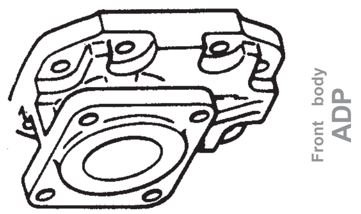
HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 3









1 or 2 WAYS ROTATION WITH or WITHOUT COUNTER-PRESSURE

V.E 30 933

M1 (M2) ECO T

HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 3

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

	FRONT BODY (III - IV Sign)		CENTRAL BODY (VII Sign)	REAR BODY (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)	
	A	Z	H	L	20	30
●	AAP AEP				20A07	30A19
*	AAP				20A07	30A19
	ADP				20A05	30A04
	ADF Streng-thens				20A05	

* Only in version M3

● Only in version M1 - M2

no feasible versions in " BASIC "

Other possibilities, please refer to " GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

Dimensions readings and approximaztive characteristics subject to modifications.

F.T R 0249

HYDRAULIC GEAR MOTORS

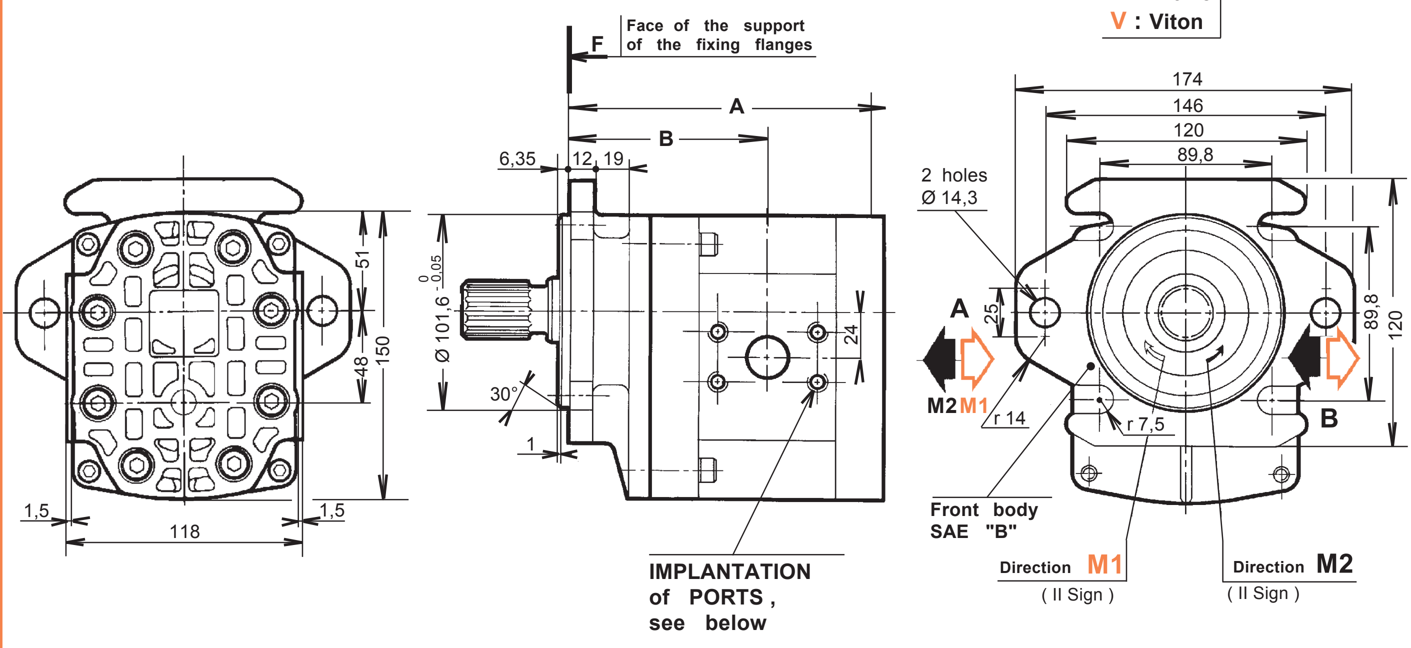
SERIES 3 (Thick front body)

M	1/2	A *	P	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

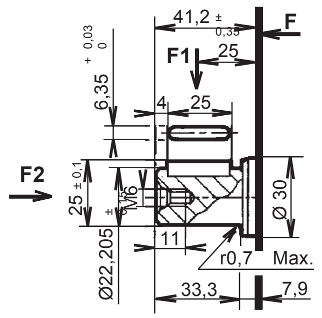
N : Nitrile
V : Viton

Tel : (33) 01 49 62 28 00
Fax : (33) 01 45 76 68 40



CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
A07 (XI Sign)

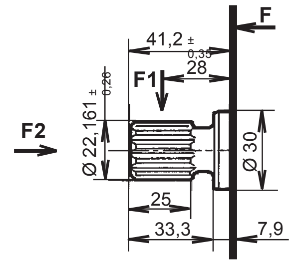


F1 Maxi : 140 daN
F2 Maxi : 50 daN

Max. transmissible torque

29 m.daN

30 (IX - X Sign)
A19 (XI Sign)



Involute spline to SAE
13 teeth - 7 / 8 " SAE
Pitch 16/32
30° Pressure angle

F1 Maxi : 120 daN
F2 Maxi : 50 daN

Max. transmissible torque

31 m.daN

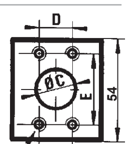
Dimensions readings and approximative characteritics subject to modifications.

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	165,7	104,3
050 060	192,2	117,5
071 080 090 100	212,2	127,2

Port connectors, see Catalogue N°70

IMPLANTATION

H (HPI)



Ø F effective depth G

Capacity	DIMENSIONS INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet
025 to 040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	A	B	B	A
050 060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17				
071 to 100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17				

F.T 30 724

HYDRAULIC GEAR MOTORS SERIES 3 TYPE AAP-AEP

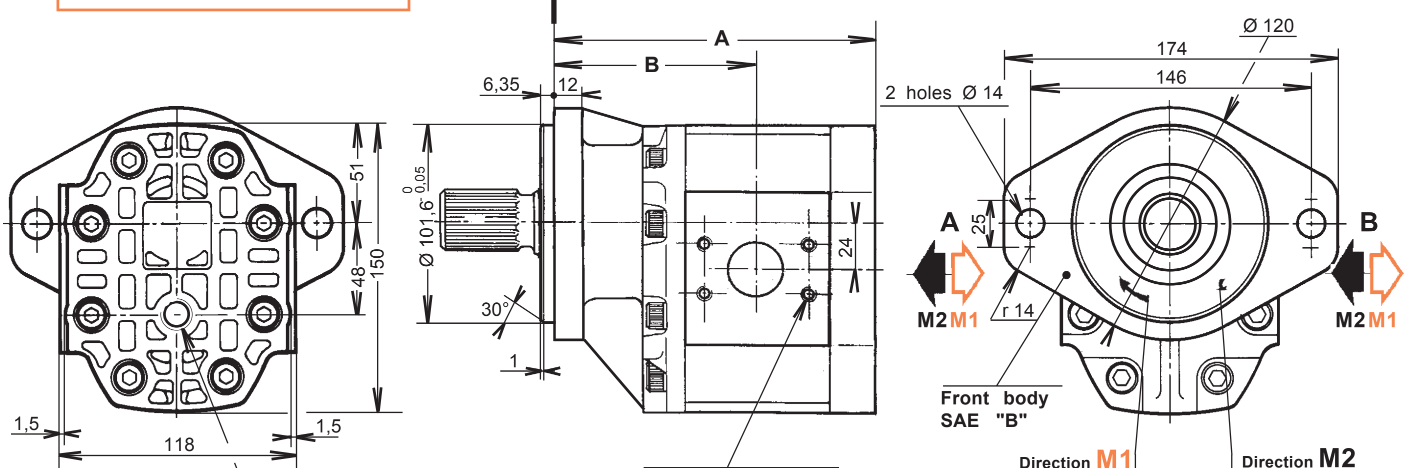
M	3	AA	P	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*

F Face of th support of the fixing flanges



IMPLANTATION of PORTS , see below

Drain port 3/8" BSP effective depth 18 for bi-directional or single directional motor but working with a counter pressure in the return port.

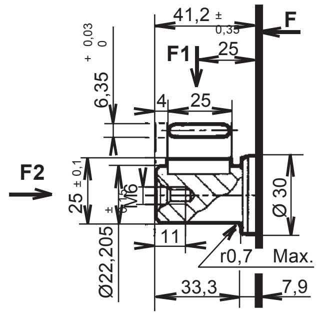
Max. tightening torque of the connection.

5 m.daN (**36** lb / ft)

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	165,7	104,3
050 060	192,2	117,5
071 080 090 100	212,2	127,2

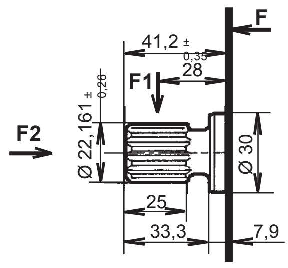
CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
A07 (XI Sign)



F1 Maxi : 140 daN
F2 Maxi : 50 daN
Max. transmissible torque
29 m.daN

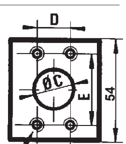
30 (IX - X Sign)
A19 (XI Sign)



Involute spline to SAE
13 teeth - 7 / 8 " SAE
Pitch 16/32
30° Pressure angle

F1 Maxi : 120 daN
F2 Maxi : 50 daN
Max. transmissible torque
31 m.daN

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	1 or 2 ways rotation with Counter - Pressure M3 Inlet	Outlet
H (HPI)  Ø F effective depth G	3025 to 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	B	A
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17		
	3071 to 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17		

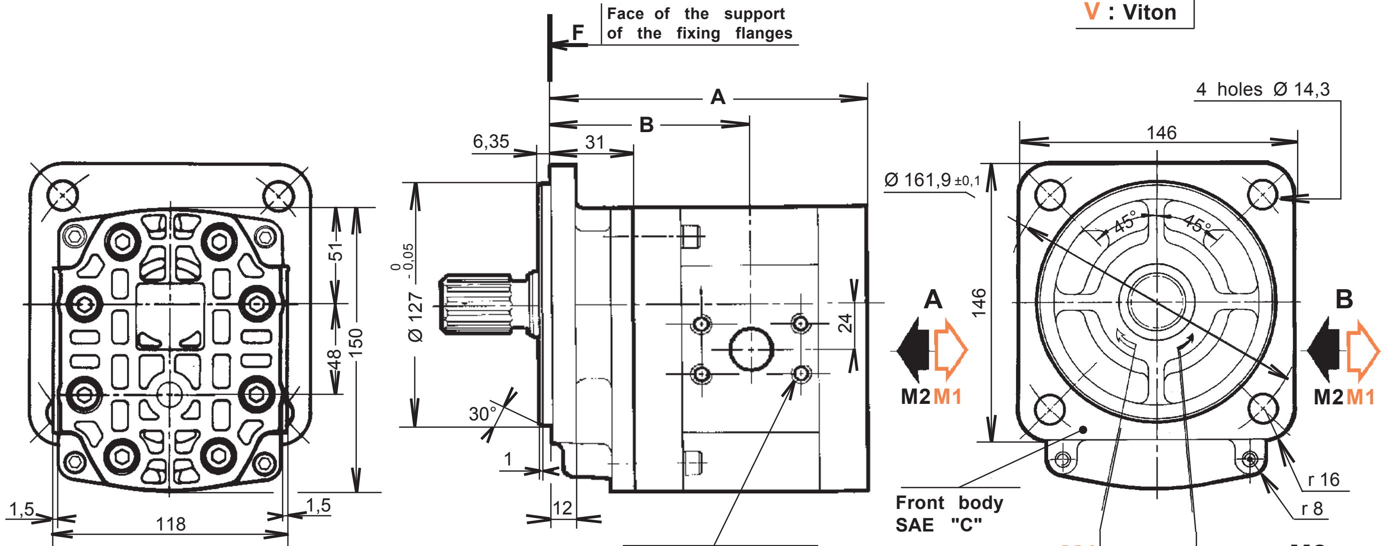
Dimensions readings and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS SERIES **3** TYPE **AAP**

M	1/2	AD	P	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

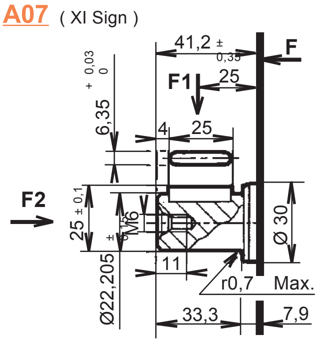
Pour CODIFICATION , voir Fiche Technique F.T R 0243

N : Nitrile
V : Viton



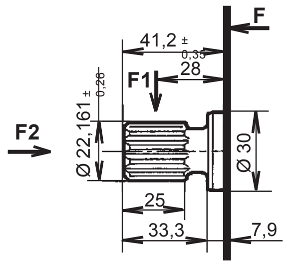
CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
A07 (XI Sign)



F1 Maxi : 140 daN
F2 Maxi : 50 daN
Max. transmissible torque
29 m.daN

30 (IX - X Sign)
A19 (XI Sign)



Involute spline to SAE
13 teeth - 7 / 8 " SAE
Pitch 16/32
30° pressure angle

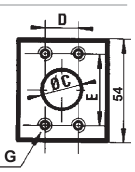
F1 Maxi : 120 daN
F2 Maxi : 50 daN
Max. transmissible torque
31 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	165,7	104,3
050 060	192,2	117,5
071 080 090 100	212,2	127,2

Dimensions reading and approximative characteristics subject to modifications.

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet
H (HPI)	025 to 040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	A	B	B	A
	050 060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17				
	071 to 100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17				



Ø F effective depth G

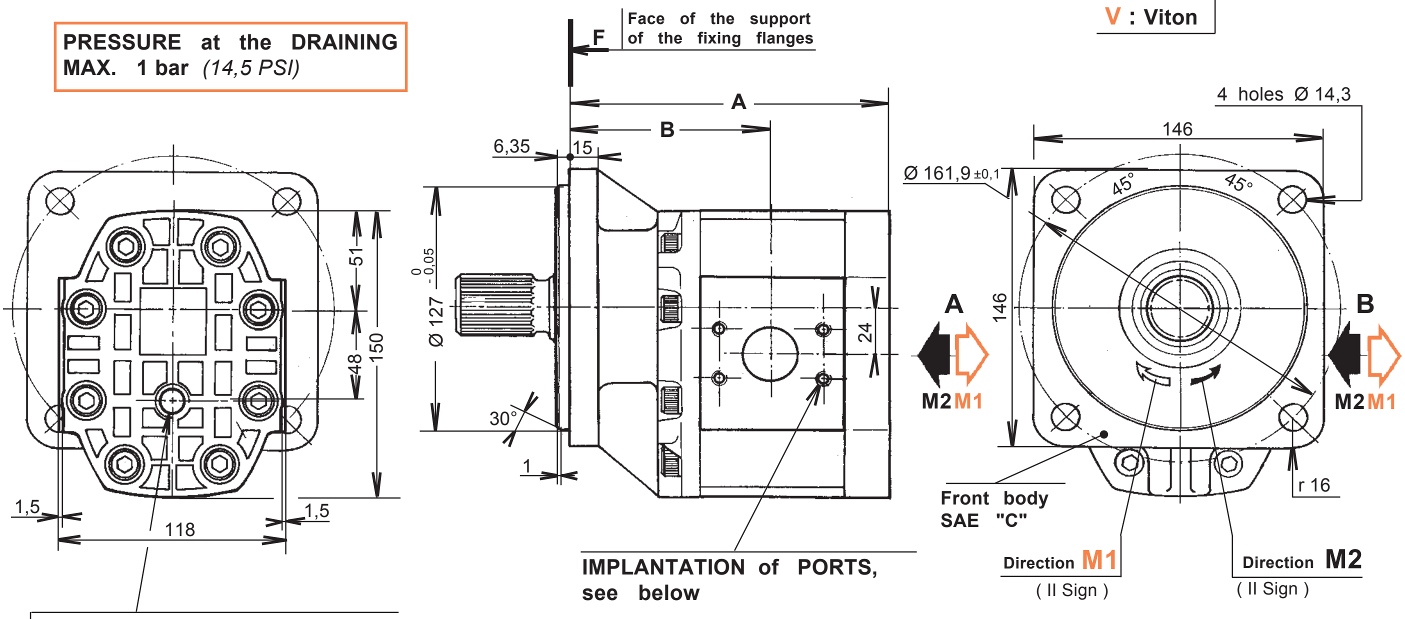
HYDRAULIC GEAR MOTORS SERIES 3 TYPE ADP

M	3	AD	P	3	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*



Drain port 3/8" BSP effective depth 18 for bi-directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection.

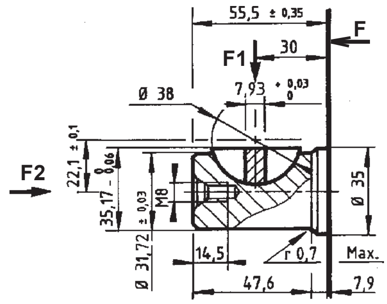
5 m.daN (**36** lb / ft)

Dimensions readings and approximative characteristics subject to modifications.

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	165,7	104,3
050 060	192,2	117,5
071 080 090 100	212,2	127,2

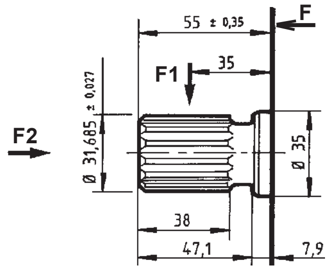
CHOICE of DRIVING SHAFTS

20 (IX - X Sign)
A05 (XI Sign)



F1 Maxi : 120 daN
F2 Maxi : 50 daN
Maxi transmissible torque
43 m.daN

30 (IX - X Sign)
A04 (XI Sign)

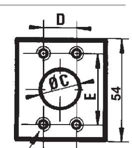


Involute spline to SAE Standard - 14 theet - 1" 1/4 SAE Pitch 12/24
30° Pressure angle

F1 Maxi : 120 daN
F2 Maxi : 50 daN
Maxi transmissible torque
50 m.daN

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT Ø C	D	E	Ø F	G	OUTLET PORT Ø C	D	E	Ø F	G	1 or 2 ways rotation with Counter - Pressure M3 Inlet	Outlet
H (HPI) Ø F effective depth G	3025 to 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	B	A
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17		
	3071 to 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17		



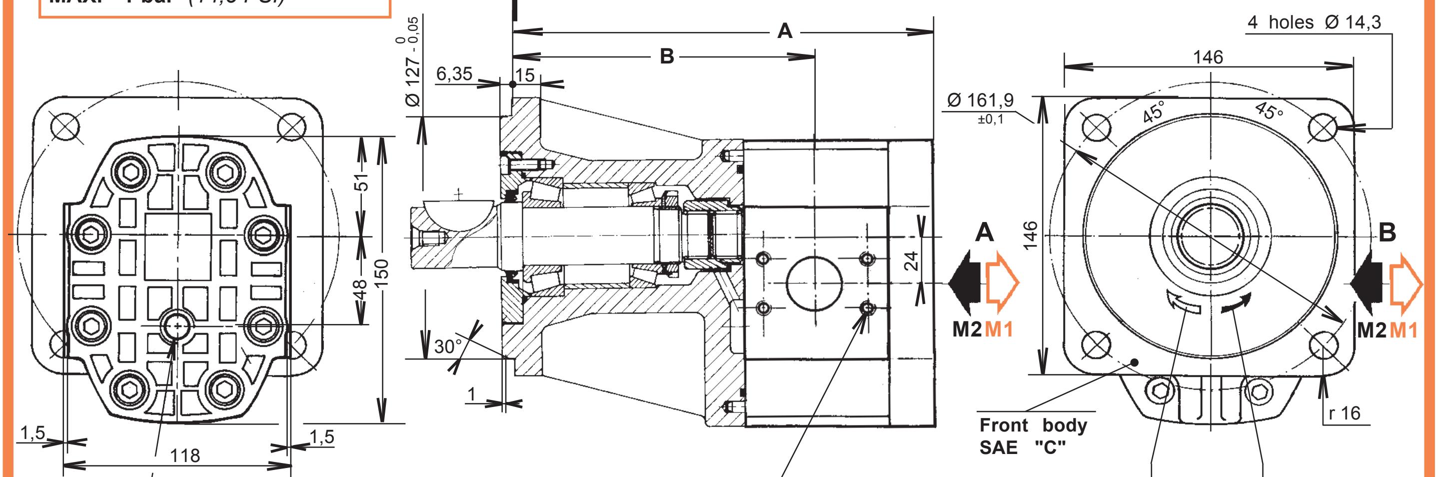
HYDRAULIC GEAR MOTORS SERIES 3 TYPE ADP

M 3 AD F 3 VI Sign H L 2 0 A05 XII Sign

For CODIFICATION , see data sheets F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*



Drain port 3/8" BSP effective depth 18 for bi-directional or single directional motor but working with a counter pressure in the return port.

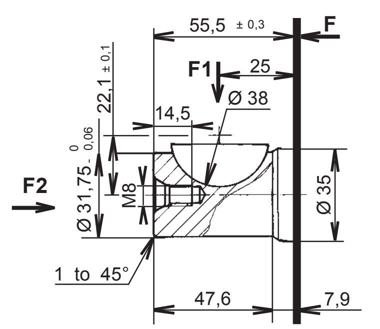
Max. tightening torque of the connection.

5 m.daN (**36** lb / ft)

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
025 031 040	217,7	156,3
050 060	244,2	169,5
071 080 090 100	264,2	179,2

DRIVING SHAFT

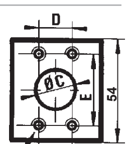
20 (IX - X Sign)
A05 (XI Sign)



F1 Maxi : 320 daN
F2 Maxi : 160 daN

Max. transmissible torque
43 m.daN

Port connectors, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	1 or 2 ways rotation with Counter - Pressure M3 Inlet	Outlet
H (HPI)  Ø F effective depth G	3025 to 3040	18	52,4	26,2	M8	17	18	52,4	26,2	M8	17	B	A
	3050 3060	22	52,4	26,2	M8	17	22	52,4	26,2	M8	17		
	3071 to 3100	34	35,6	69,8	M8	17	34	35,6	69,8	M8	17		

Dimensions readings and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS SERIES 3 TYPE ADF STRENGTHENS

Home - general contents

Basic catalogue contents

BASIC CATALOGUE (B15)

MAX. WORKING CONDITIONS

TECHNOLOGICAL COMPOSITION

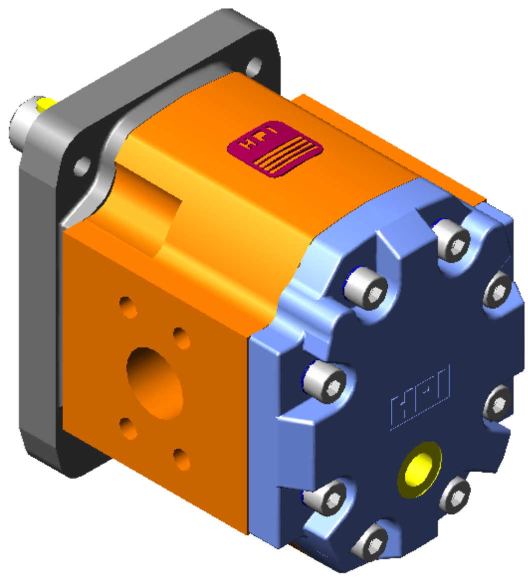
MOUNTING POSSIBILITIES

MOTORS TYPE: BAN

Hydraulics gear motors

Series 5

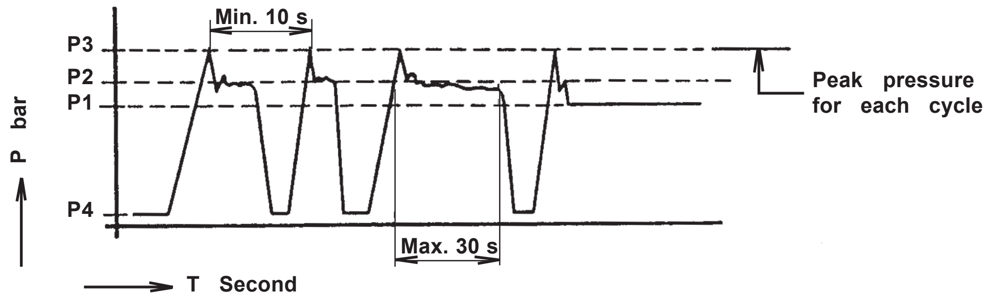
(Flat front body)



Max. working conditions MOTORS Series 5 (ECO and ECO 8)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity	MAXIMUM PRESSURE						Maximum pressure at		Minimum speed at RPM			Maxi speed at △ pressure
		P1		P2		P3		P1	P2	100 bar	210 bar	300 bar	≤ 100 bar
	cc / rev	bar	PSI	bar	PSI	bar	PSI	t / min	t / min	1450 PSI	3045 PSI	4350 PSI	(1450 PSI)
5052	52,91	200	2900	225	3262	250	3625	2500	2800	500	1000	1400	3500
5062	62,75	200	2900	225	3262	250	3625	2300	2600	500	900	1300	3500
5072	72,59	200	2900	225	3045	250	3625	2300	2600	500	800	1200	3500
5083	83,67	185	2682	215	3117	250	3625	2100	2400	500	800	1200	3000
5093	93,51	175	2537	200	2900	225	3045	2000	2200	400	700	1100	3000
5103	103,3	175	2537	200	2900	225	3045	2000	2200	400	700	1100 225 bar	3000
5125	125,5												
5140	140,2												
5153	153												

Dimensions readings and approximative characteristics subject to modifications.

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

MAXIMUM PRESSURE:

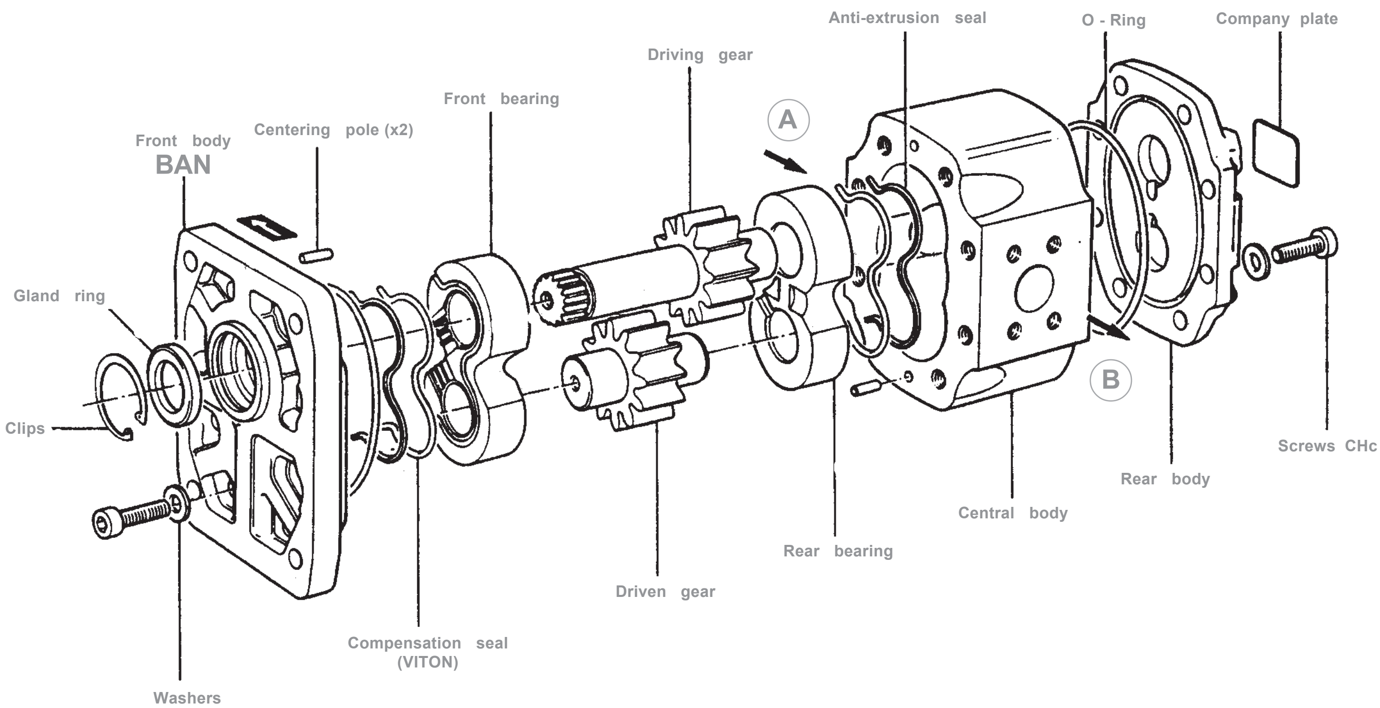
For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

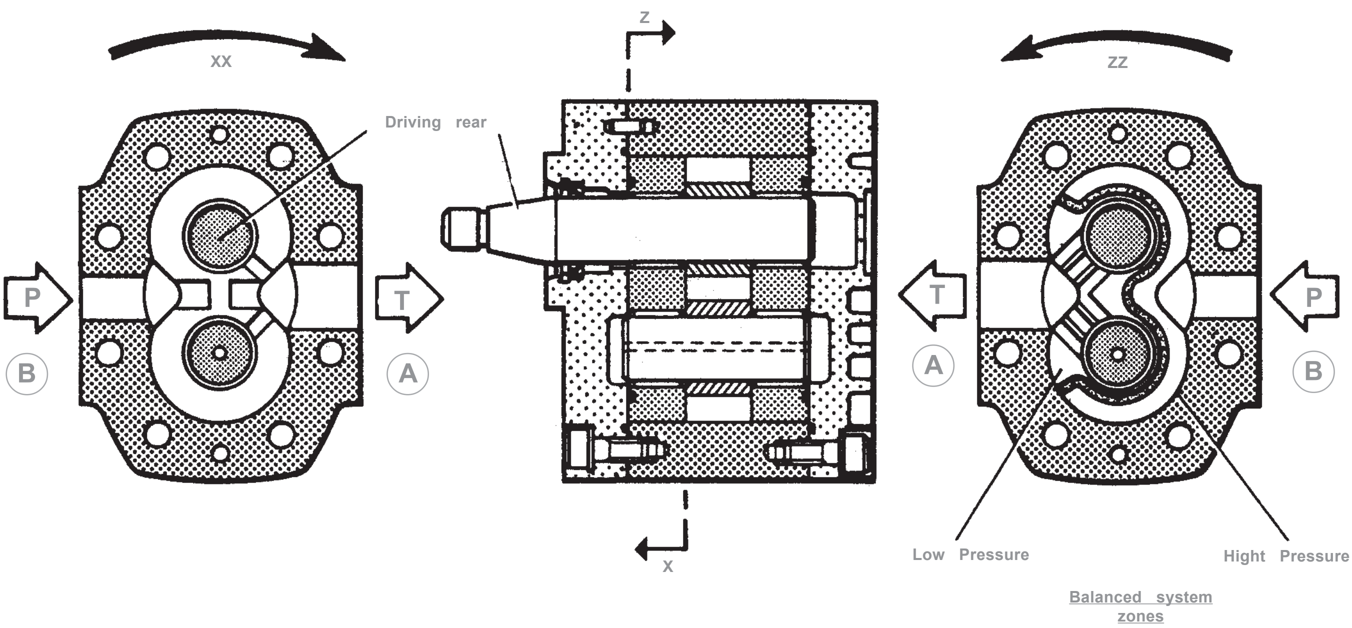
For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

1 WAY ROTATION WITHOUT COUNTER - PRESSURE



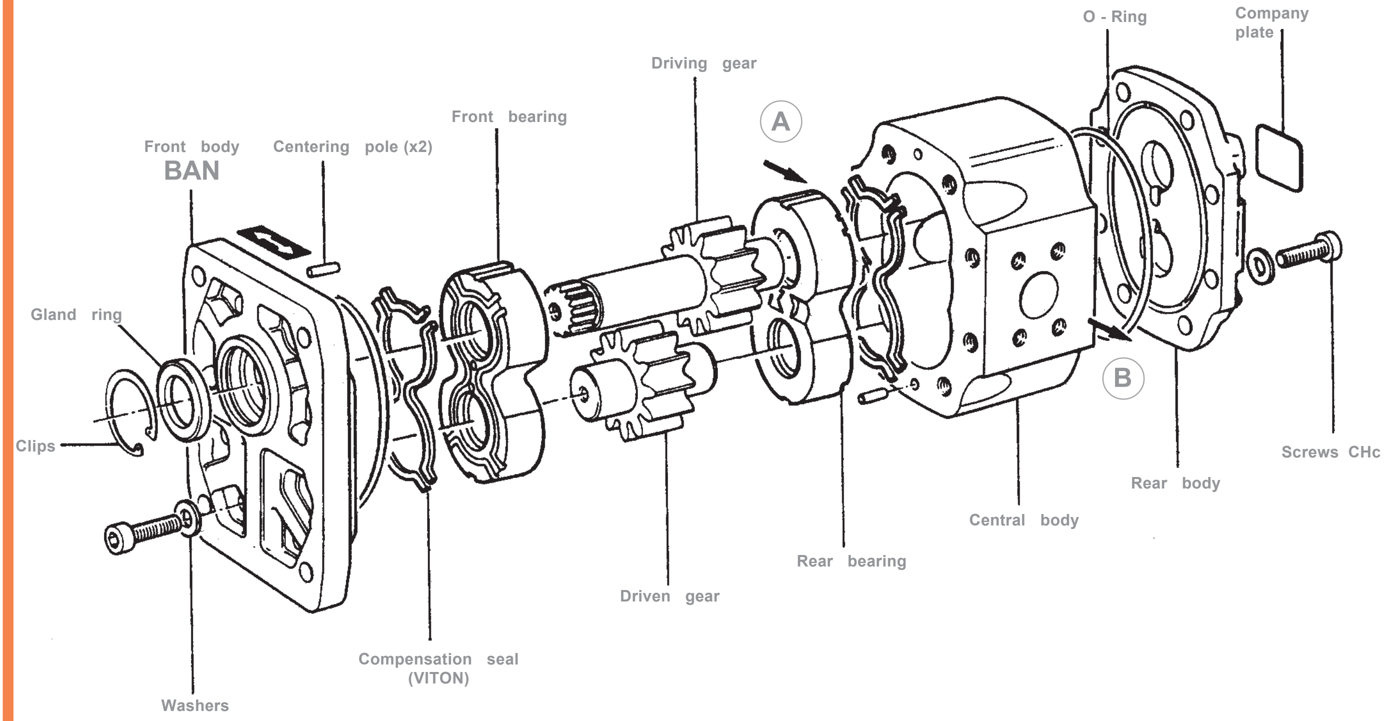


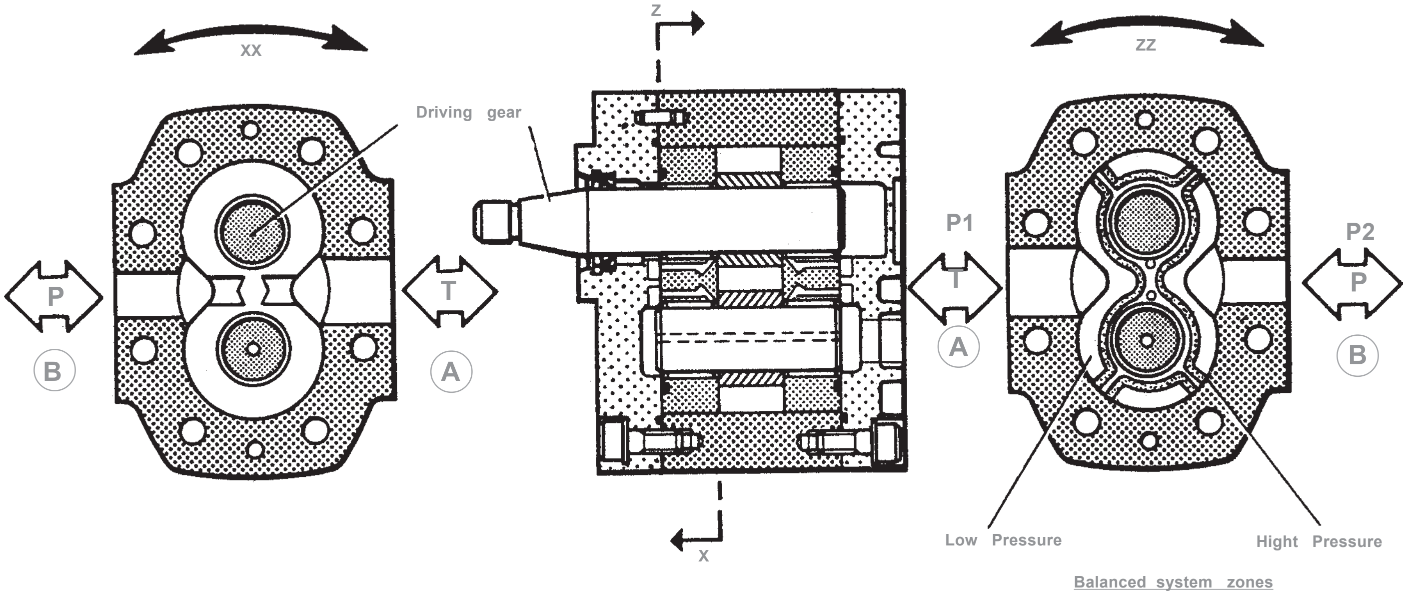
M2 (M1) ECO

HYDRAULIC GEAR MOTORS SERIES 5

V.E 35 934

1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER-PRESSURE





M3 ECO 8

HYDRAULIC GEAR MOTORS SERIES 5

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)	CENTRAL BODY (VII Sign)	REAR BODY (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Signe)	
B	H	L	10	20
BAN			10B05	20C05

other possibilities, please refer to
" GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

Dimensions readings and approximative characteristics subject to modifications.

F.T R 0250

MOTEURS HYDRAULIQUES A ENGRENAGE

SERIE 5 (CORPS AVANT PLATS)

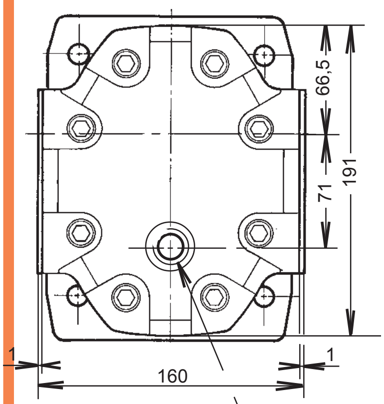
JTEKT HPI

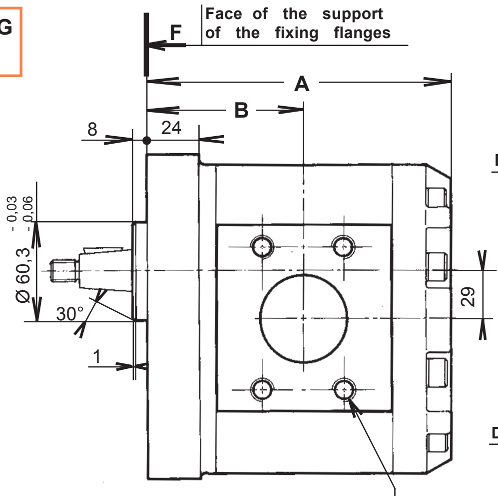
M	II Signe	BA	N	5	VI Signe	H	L	IX Signe	X Signe	XI Signe	XII Signe

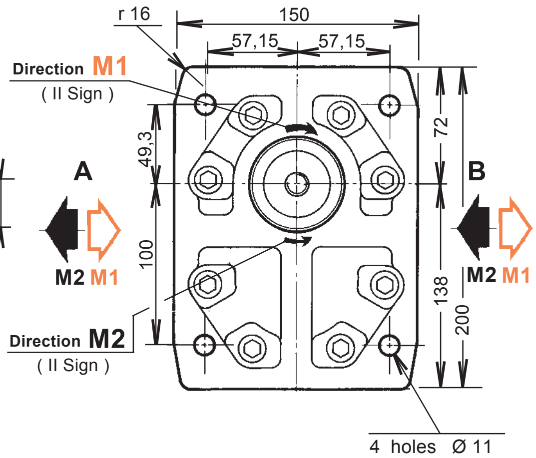
Pour CODIFICATION , voir Fiche Technique F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







IMPLANTATION of PORTS , see below

Drain port 1/2" BSP effective depth 16 for bi directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection

6 m.daN (**43** lb / ft)

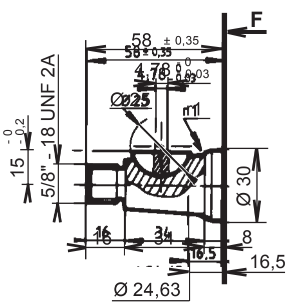
Dimensions readings and approximative characteristics subject to modifications.

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
052 062 072	179	88,7
083 093 103	191	95
125 140 153	212,2	105,5

CHOICE of the DRIVING SHAFT

10 (IX - X Sign)
B05 (XI Sign)

Taper 1 / 8

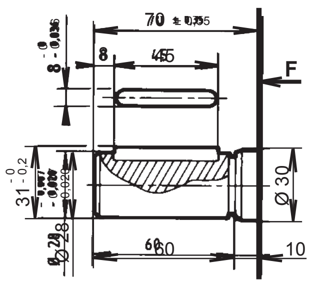


Delivered with nut Ref. : 101 877

Max. transmissible torque

80 m.daN

20 (IX - X Sign)
C05 (XI Sign)



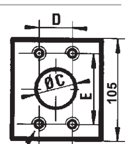
Max. transmissible torque

40 m.daN

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	INLET PORT ØC	D	E	ØF	G	OUTLET PORT ØC	D	E	ØF	G	AFFECTATION: 1 way rotation without Counter - Pressure, M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure, ■ M3 Preferential rotation M2 Inlet	Outlet
H (HPI)	052 to 072	38	35,6	69,8	M14	25	55	50,8	89	M14	25	A	B	B	A	B	A
	082 to 153	38	35,6	69,8	M14	25	65	50,8	89	M14	25						



Ø F effective depth G

HYDRAULIC GEAR MOTORS SERIES 5 TYPE BAN

Home - general contents

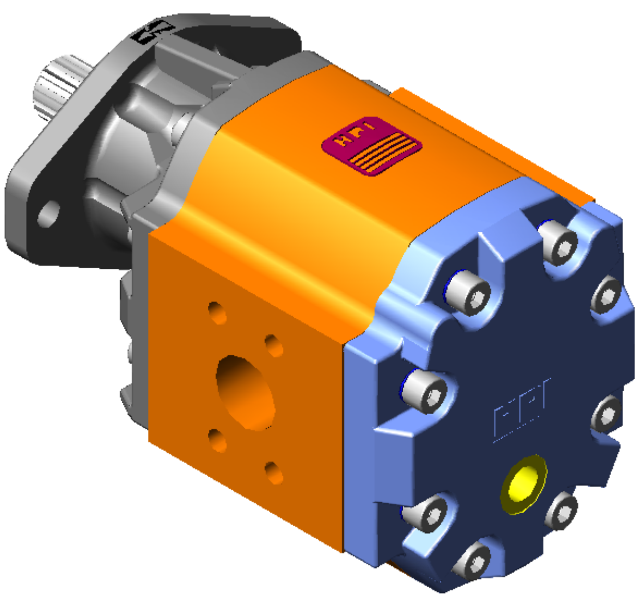
Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 5

(Thick front body)

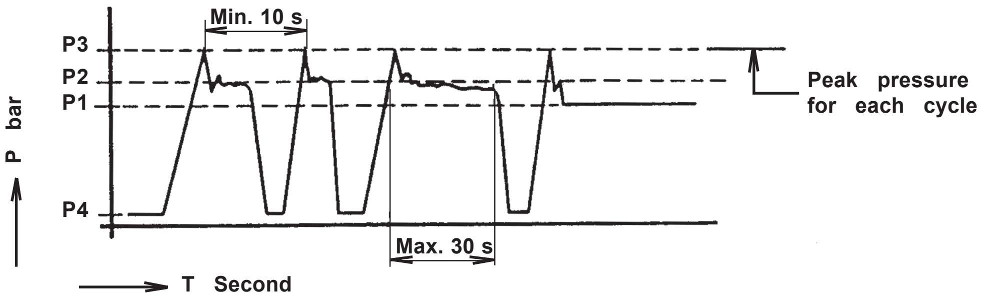


Max. working conditions MOTORS Series 5

(ECO and ECO 8)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P3 Max. Allowable peack pressure
P2 Maximum pressure in intermittent duty
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity	MAXIMUM PRESSURE						Maximum pressure at		Minimum speed at RPM			Maxi speed at Δ pressure
		P1		P2		P3		P1	P2	100 bar	210 bar	300 bar	≤ 100 bar
	cc / rev	bar	PSI	bar	PSI	bar	PSI	t / min	t / min	1450 PSI	3045 PSI	4350 PSI	(1450 PSI)
5052	52,91	200	2900	225	3262	250	3625	2500	2800	500	1000	1400	3500
5062	62,75	200	2900	225	3262	250	3625	2300	2600	500	900	1300	3500
5072	72,59	200	2900	225	3045	250	3625	2300	2600	500	800	1200	3500
5083	83,67	185	2682	215	3117	250	3625	2100	2400	500	800	1200	3000
5093	93,51	175	2537	200	2900	225	3045	2000	2200	400	700	1100	3000
5103	103,3	175	2537	200	2900	225	3045	2000	2200	400	700	1100 225 bar	3000
5125	125,5												
5140	140,2												
5153	153												

Dimensions readings and approximative characteristics subject to modifications.

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

MAXIMUM PRESSURE:

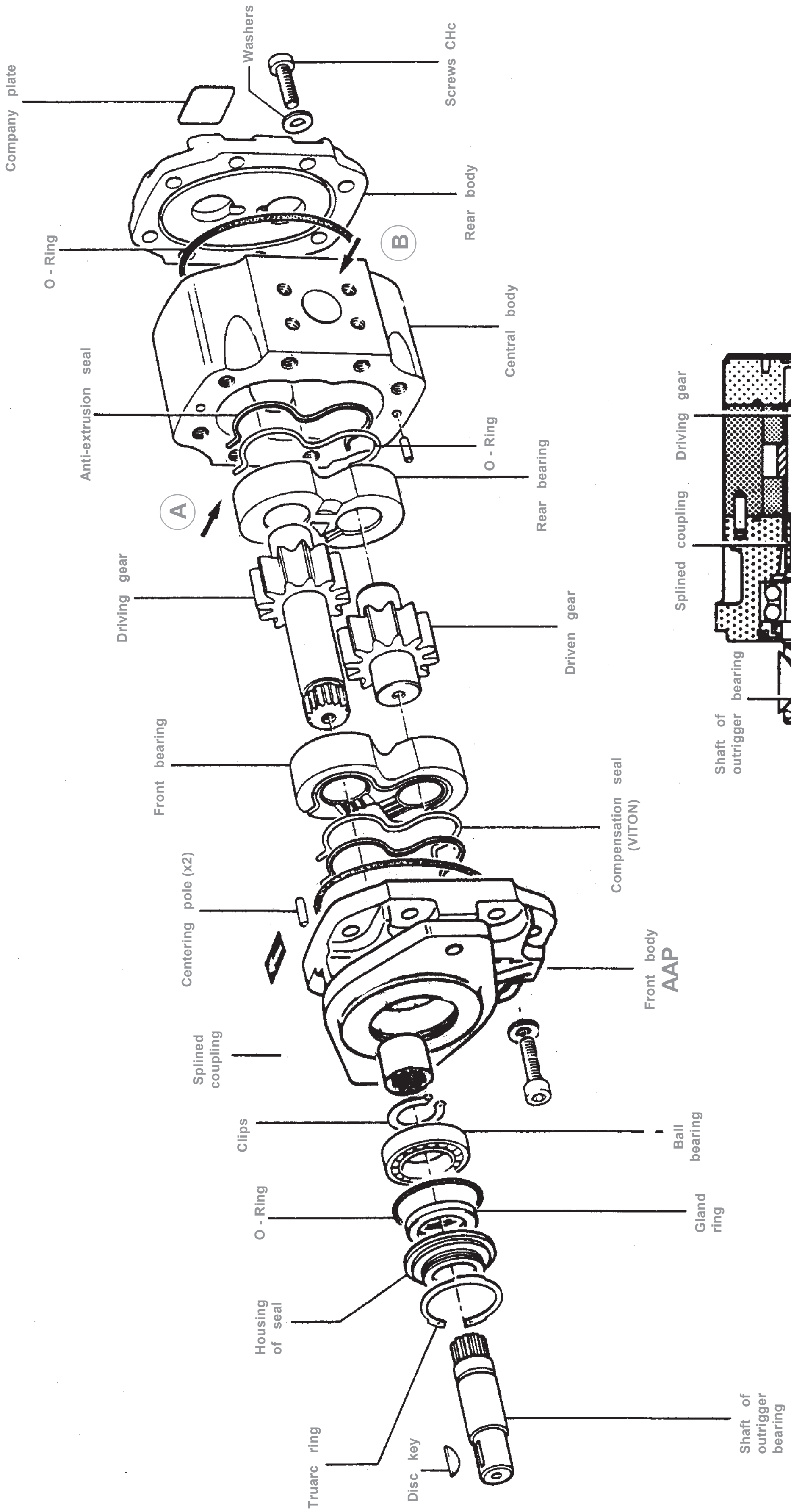
For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

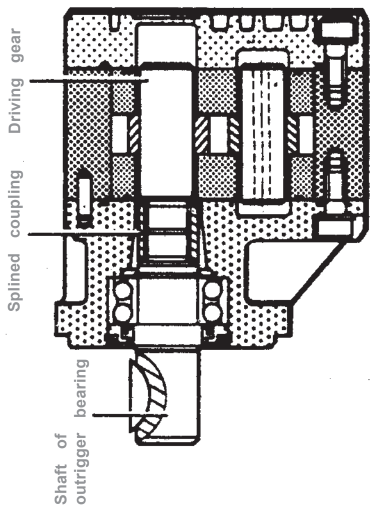
For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

F.T R 0050





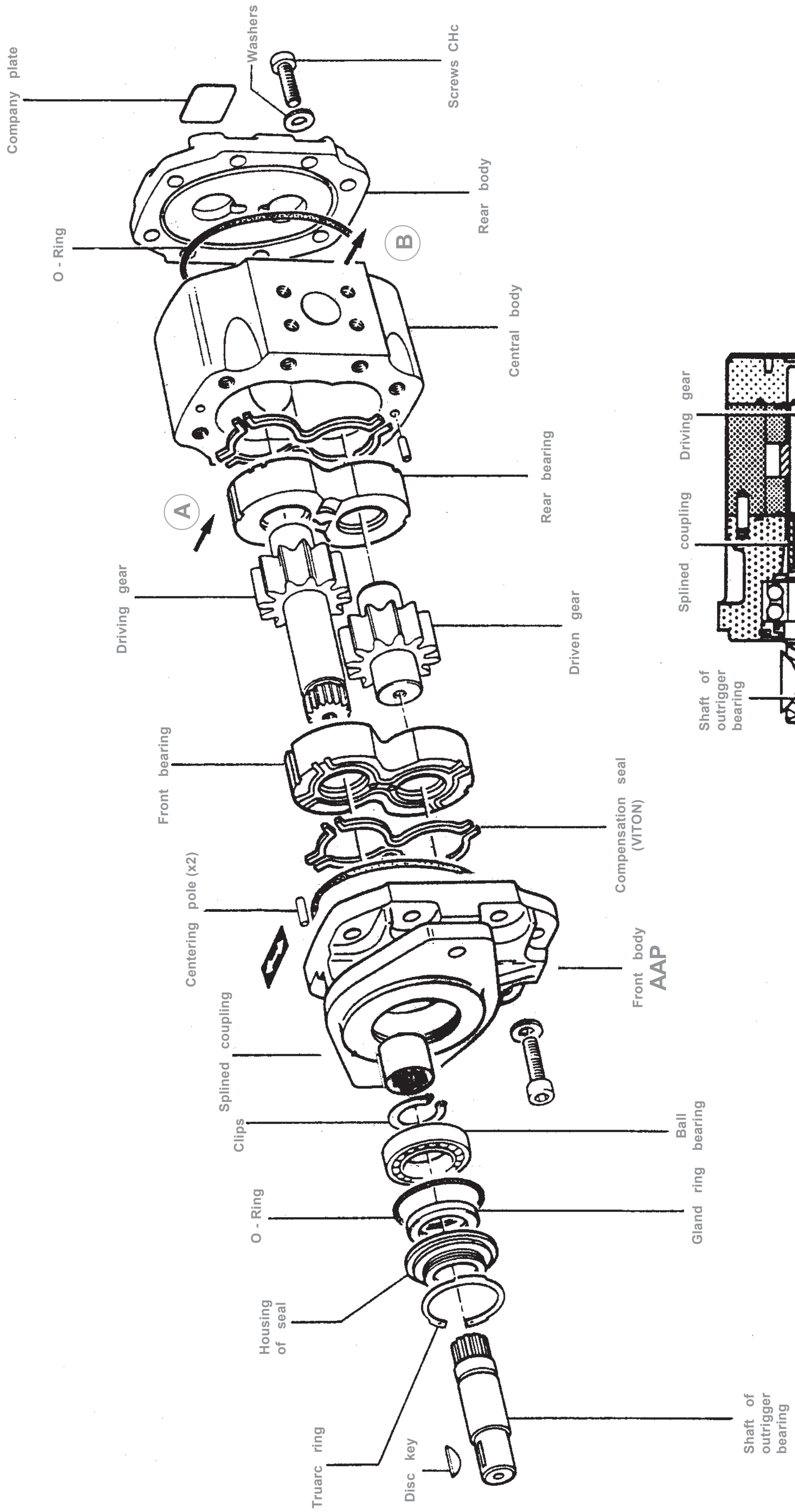
1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER - PRESSURE

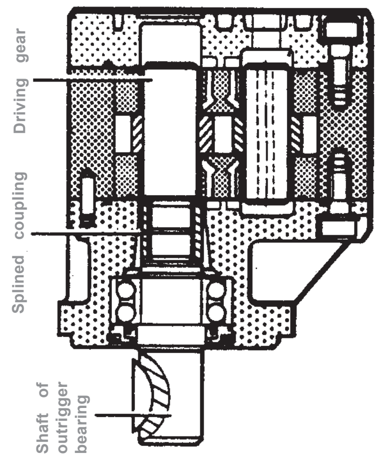
V.E 35 032

M1 (M2) ECO

HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 5





1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER-PRESSURE

V.E 35 937

M3 ECO 8

HYDRAULIC GEAR MOTORS

WITH OUTRIGGER BEARING SERIES 5

" BASIC " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign) A	CENTRAL BODY (VII Sign) H	REAR BODY (VIII Sign) L	TYPE AND SHAFT CODE (IX - X - XI Sign) 20	30
AAP			20A05	30A04

other possibilities, please refer to
" GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

Dimensions readings and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS

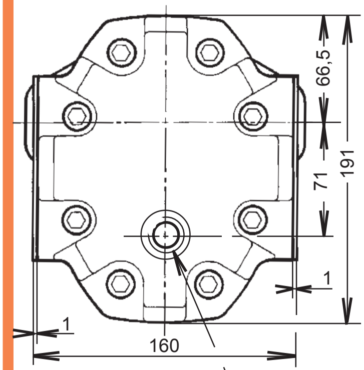
SERIES 5 (Thick front body)

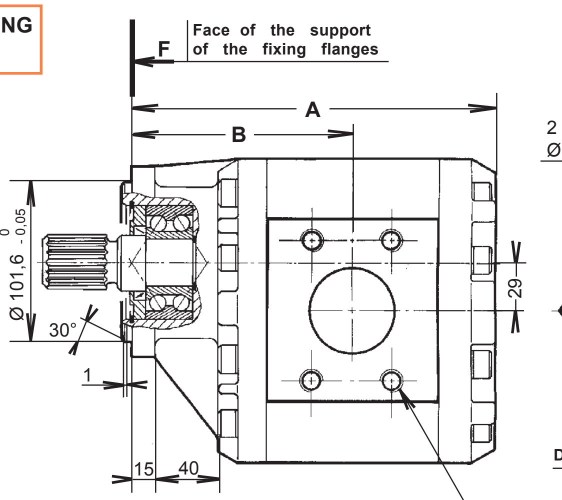
M	II Sign	AA	P	5	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

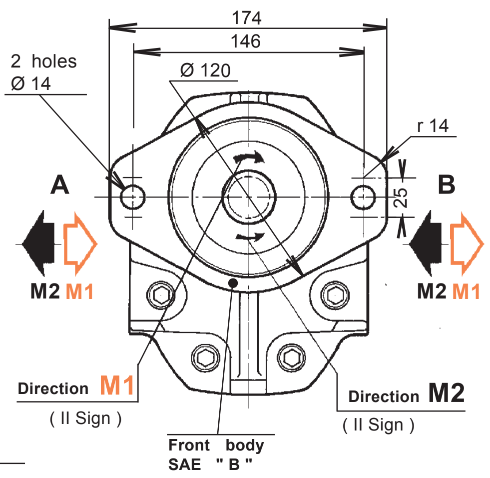
For CODIFICATION , see data sheet F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*







IMPLANTATION of PORTS, see below

Drain port 1/2" BSP effective depth 16 for bi directional or single directional motor but working with a counter pressure in the return port.

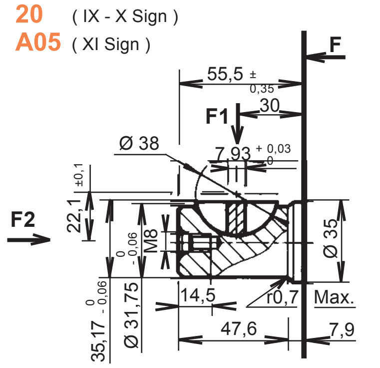
Max. tightening torque of the connection
6 m.daN (**43** lb / ft)

Dimensions readings and approximative characteristics subject to modifications.

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
052 062 072	230	139,7
083 093 103	242	146
125 140 153	263,2	156,5

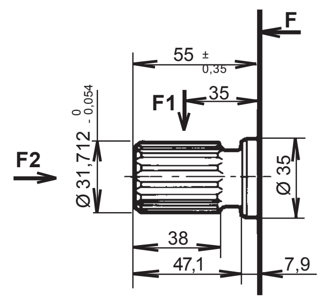
CHOICE of the DRIVING SHAFT

20 (IX - X Sign)
A05 (XI Sign)



F1 Maxi : 150 daN
F2 Maxi : 50 daN
Max. transmissible torque
43 m.daN

30 (IX - X Sign)
A04 (XI Sign)

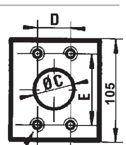


Involute spline to SAE
14 teeth - 1" 1 / 4 SAE
Pitch 12/24
30° Pressure angle

F1 Maxi : 150 daN
F2 Maxi : 50 daN
Max. transmissible torque
69 m.daN

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	DIMENSIONS INLET PORT ØC	D	E	ØF	G	DIMENSIONS OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Presure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preferential rotation M2 Inlet	Outlet
H (HPI)  Ø F effective depth G	052 to 072	38	35,6	69,8	M14	25	55	50,8	89	M14	25	A	B	B	A	B	A
	082 to 153	38	35,6	69,8	M14	25	65	50,8	89	M14	25						

HYDRAULIC GEAR MOTORS SERIES 5 TYPE AAP

Tel : (33) 1 49 62 28 00 - Fax : (33) 1 45 76 68 40

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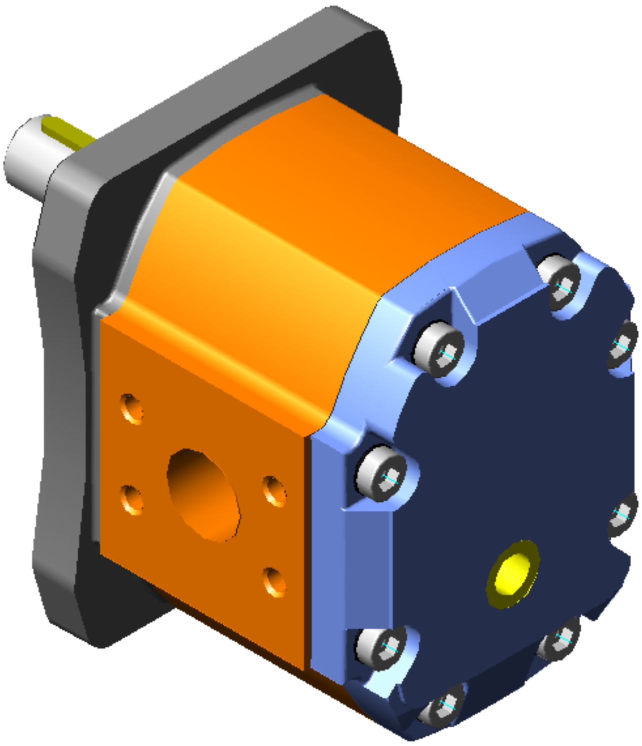
Basic catalogue contents

BASIC CATALOGUE (B15)

Hydraulics gear motors

Series 4

(Flat front body)

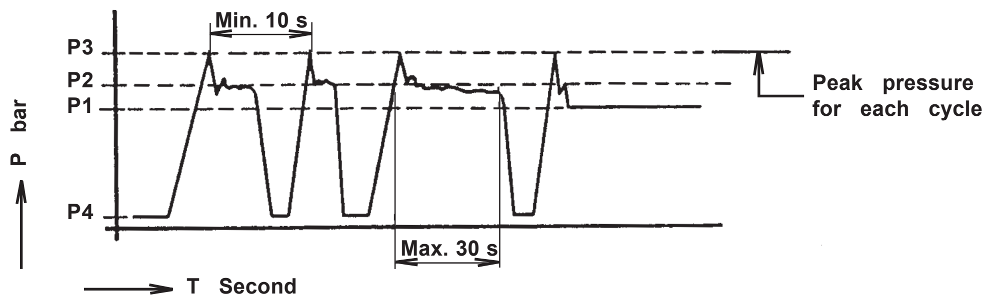


Publishing 01 / 2003

Max. working conditions MOTORS Series 4 (ECO and STANDARD)

On the hrereunder indicated diagram, the maximum duty pressure are the following.

P1 Maximum pressure in continuous duty
P2 Maximum pressure in intermittent duty
P3 Max. Allowable peack pressure
P4 Pressure at Motor outlet ≤ P (Uniquement en M3)



TYPE (VI Sign)	Capacity	MAXIMUM PRESSURE						Maximum pressure at		Minimum speed at RPM			Maxi speed at △ pressure
		P1		P2		P3		P1	P2	100 bar	210 bar	300 bar	≤ 100 bar
	cc / rev	bar	PSI	bar	PSI	bar	PSI	t / min	t / min	*1450 PSI*	*3045 PSI*	*4350 PSI*	*(1450 PSI)*
4075	75	150	2175	175	2537	250	3625	2000	2200	500	1000	1300	2500
4110	110	150	2175	175	2537	250	3625	2000	2200	500	1000	1300	2500
4150	150	150	2175	175	2537	200	2900	2000	2200	500	1000	1300	2500
4175	175	125	1812	150	2175	175	2537	2000	2200	400	1000	1200 175 bar	2500
4212	212	100	1450	125	1812	150	2175	2500	2200	400	800	1100 150 bar	2500
4250	250	100	1450	110	1595	125	1812	1500	1750	400	700		2000

Performances and Output Curves (C15). (thanks to contact us)
(Tests effected with Oil SHELL Tellus T 46)

The working cycles mentioned above are possible with hydraulic mineral oil for between 12 and 150Cst - 65,2 and 700 SUS..

The minimum viscosity of 12 Cst / 65,2 SUS is available for a maximum temperature in the hydraulic circuit.

Working temperatures : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C / 284 °F with Viton shaft seal).

Full flow filtration from to 10 to 15 micron at the motor inlet or the return circuit.

<u>MAXIMUM PRESSURE:</u>

For the motors with one direction of rotation (M1 / M2), the outlet pressure must not exceed 2 bar.

For the motors with two directions of rotation (M3), the pressure in the drain line must not exceed 1 bar.

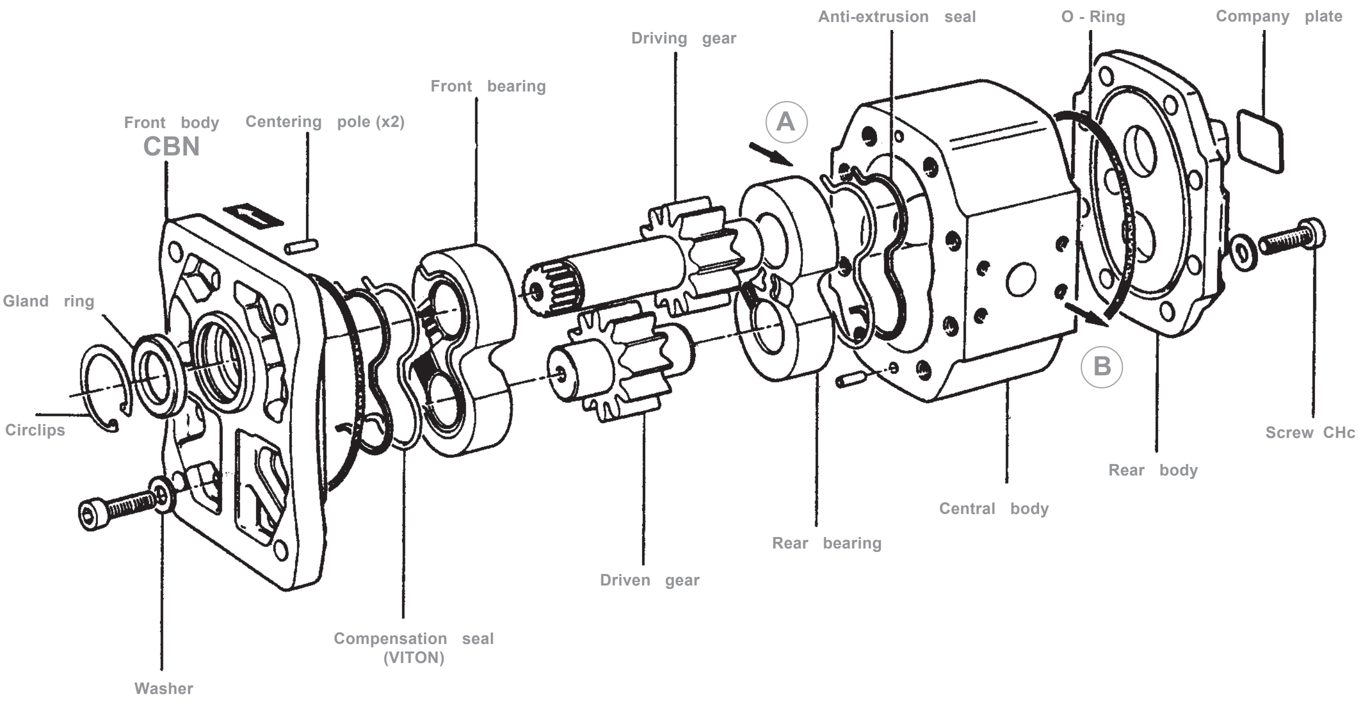
For the working conditions exceeding the above mentioned cycles or in case of torque transmission by driving belt, chain or toothed wheel, please contact our sales department.
(The tests are effected with the oil SHELL Tellus T 46)

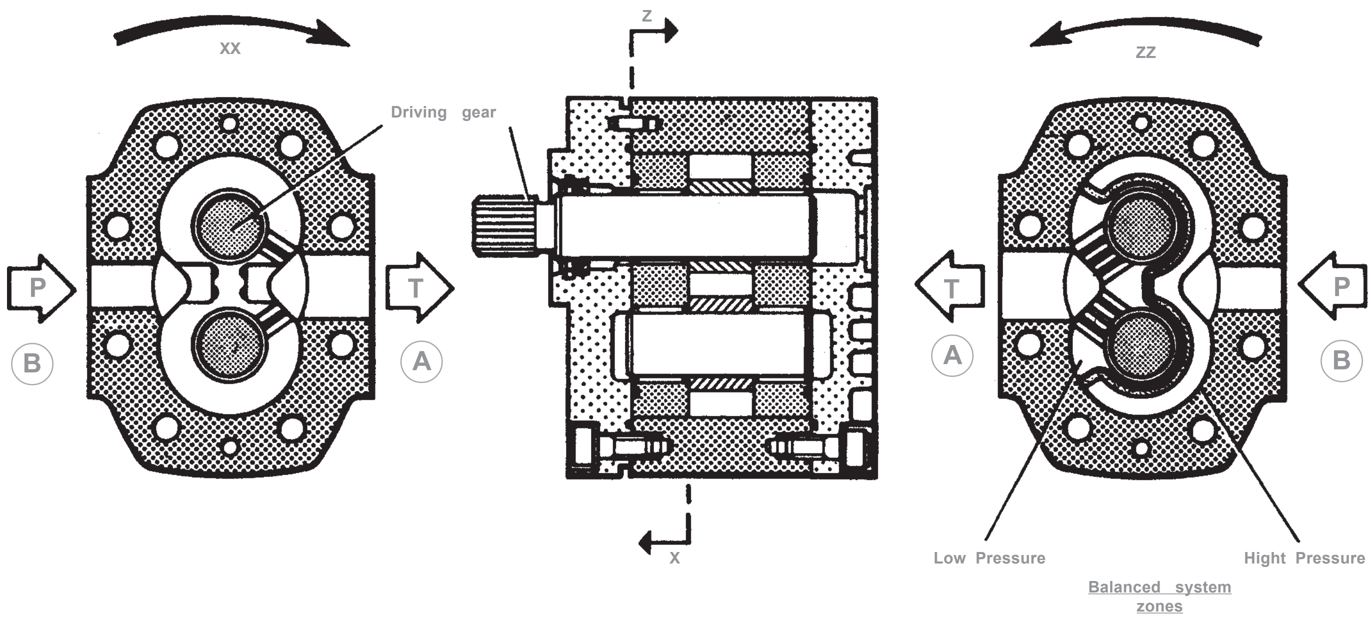
The above technical data are valid fo r motor transmitting the torque by an elastic coupling, perfectly aligned, without any outside radial and axial forces.

Dimensions readings and approximative characteristics subject to modifications.

F.T R 0051

1 WAY ROTATION WITHOUT COUNTER-PRESSURE



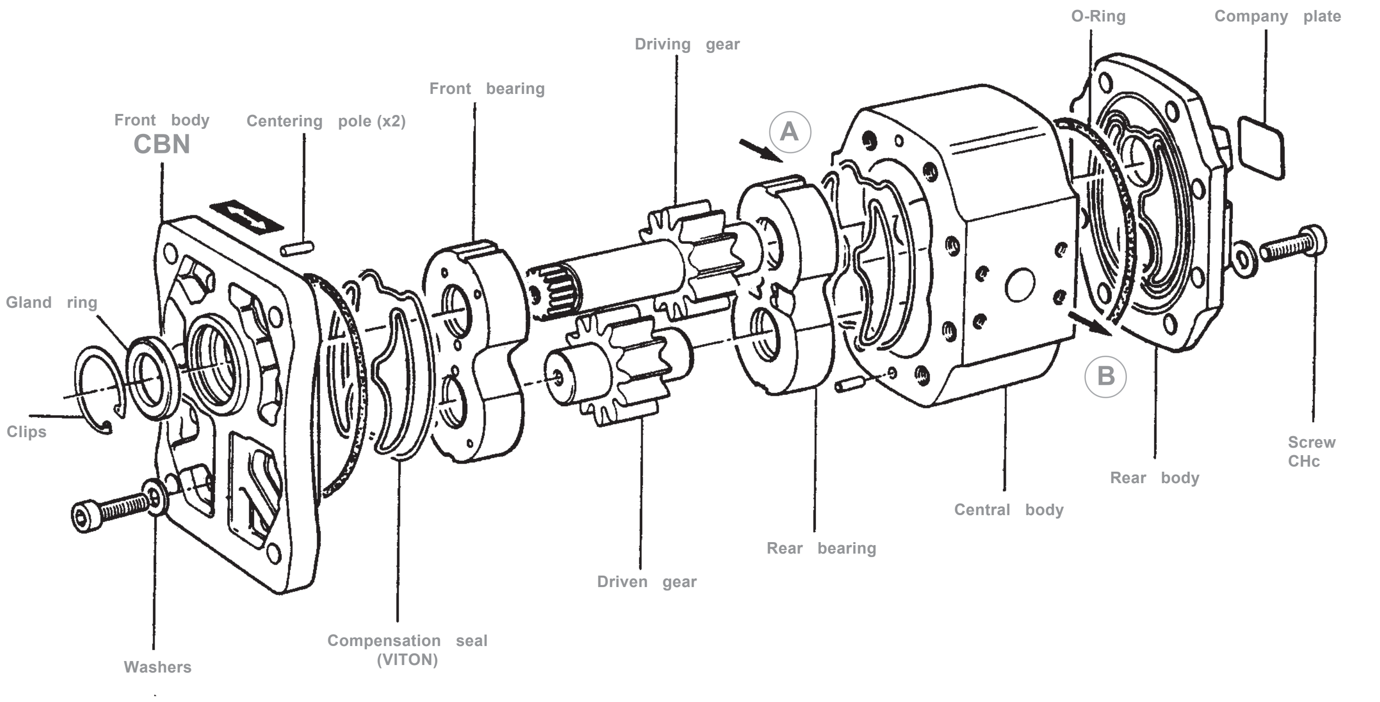


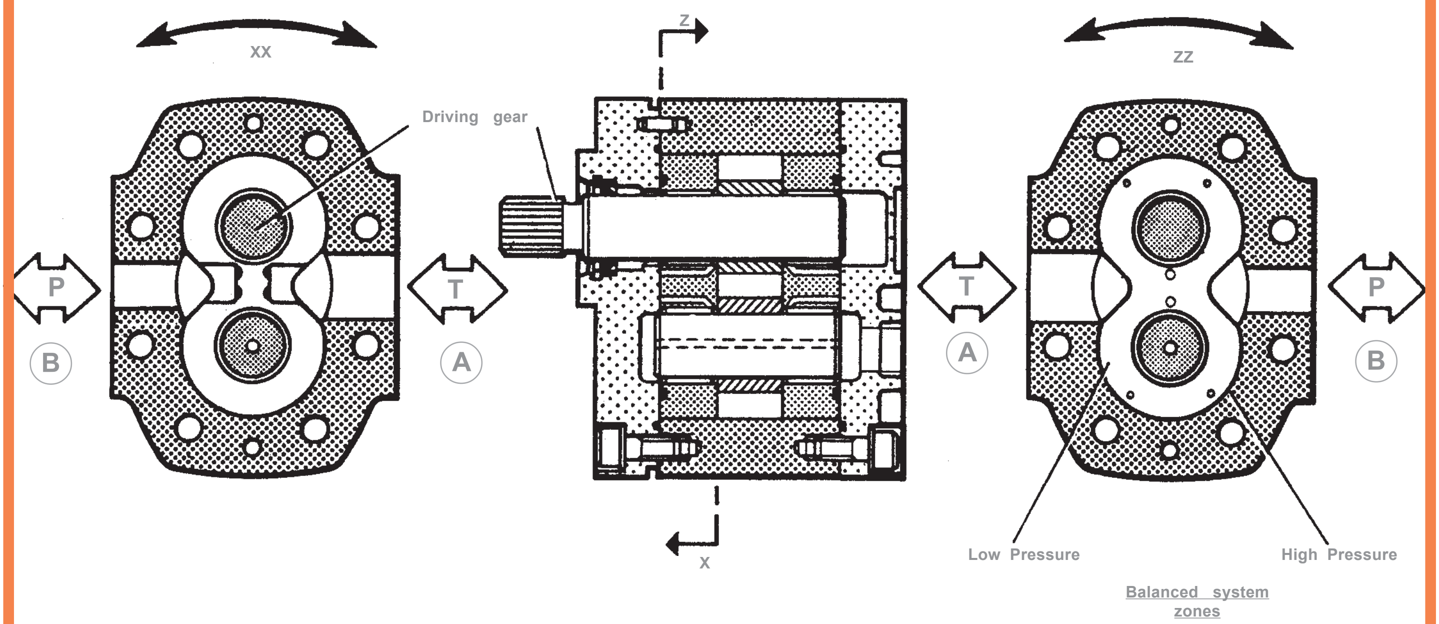
M2 (M1) ECO

HYDRAULIC GEAR MOTORS SERIES 5

V.E 40 938

1 or 2 WAYS ROTATION
WITH or WITHOUT
COUNTER-PRESSURE





M3 Standard

HYDRAULIC GEAR MOTORS SERIES 4

V.E 40 939

" BASIC " CATALOGUE
MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign) C	CENTRAL BODY (VII Sign) H	REAR BODY (VIII Sign) L	TYPE and SHAFT CODE (IX - X - XI Sign) 20
CBN			20C06

other possibilities, please refer to
" GENERAL " catalogue G15

Our " BASIC " catalogue includes versions of our series 0 to 5 motors according to european and american standards (SAE).

HYDRAULIC GEAR MOTORS

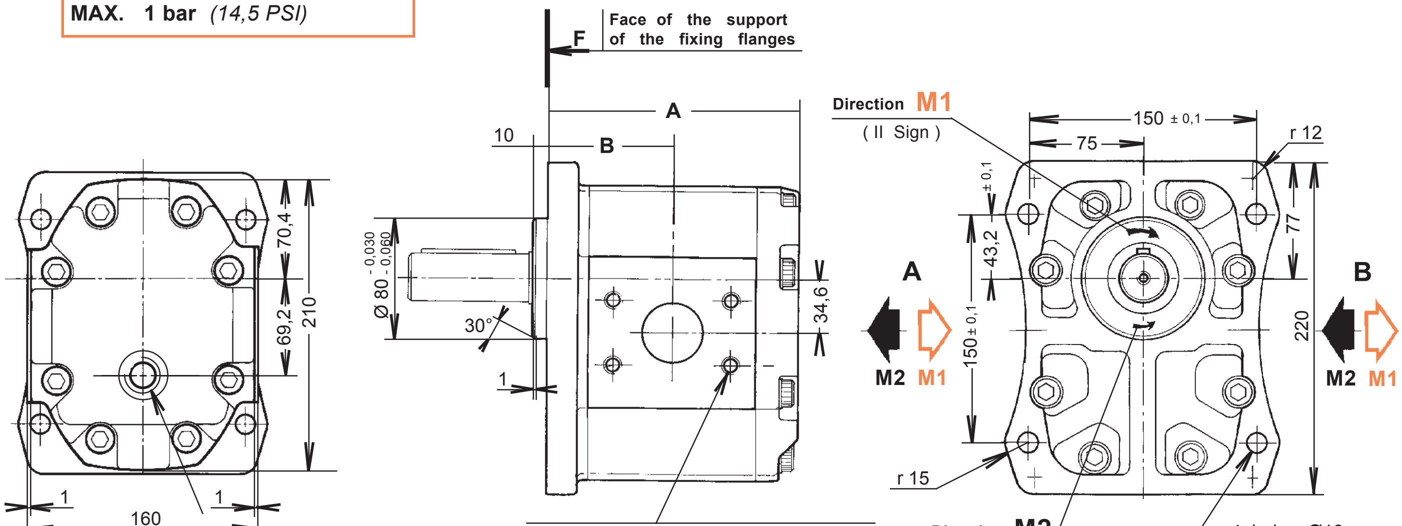
SERIES 4 (Flat front body)

M	II Sign	CB	N	4	VI Sign	H	L	2	0	C06	XII Sign

For CODIFICATION , see data F.T R 0243

N : Nitrile
V : Viton

PRESSURE at the DRAINING
MAX. 1 bar *(14,5 PSI)*



IMPLANTATION of PORTS, see below

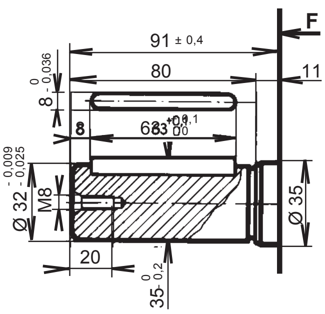
Drain port 1/2" BSP effective depth 22 for bi directional or single directional motor but working with a counter pressure in the return port.

Max. tightening torque of the connection

6 m.daN (**43** lb / ft)

DRIVING SHAFT

20 (IX - X Sign)
C06 (XI Sign)



Max. transmissible torque

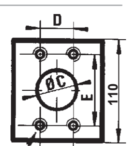
70 m.daN

CHOICE of the CAPACITY (VI Sign)	Dimensions A	Dimensions B
110 150	175	85,5
175 212 250	203	99,5

■ For M3 motors used in M1 and M2, (2 ways rotation) the ports are placed as a M2.

Ports connections, see Catalogue N°70

IMPLANTATION	Capacity	DIMENSIONS INLET PORT ØC	D	E	ØF	G	DIMENSIONS OUTLET PORT ØC	D	E	ØF	G	AFFECTATION 1 way rotation without Counter - Pressure M1 Inlet	M1 Outlet	M2 Inlet	M2 Outlet	1 or 2 ways rotation with Counter - Pressure ■ M3 Preferential rotation M2 Inlet	Outlet
H (HPI)	110 150	40	77,8	42,9	M12	22	60	77,8	42,9	M12	22	A	B	B	A	B	A
	175 to 250	45	77,8	42,9	M12	22	70	89	50,8	M12	22						



Ø F effective depth G

Dimensions readings and approximative characteristics subject to modifications.

HYDRAULIC GEAR MOTORS SERIES 4 TYPE CBN