GENERAL CATALOGUE (G10)

Characteristics and Codifications of Pumps

Hydraulic gear pumps

GENERAL CATALOGUE (G10)

Characteristics and Codifications

RECOMMENDATIONS for INSTALLING and MAINTAINING HPI PUMPS

Our pumps 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.
Pump can be placed in whatever position.

2- Driving

Apart from the driving torque, no radial nor axial effort must be applied on pump 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 pump coupling regulary and to slightly lubricate the shaft and the sleeve coupling to avoid frictional oxidation phenomena (fretting).

When the pump 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 pump .

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 pump 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 pump .
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 pumps 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 pump , 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 pump flow .

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 pump. 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			

Dimension readings and approximative characteristics subject to modifications .

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

RECOMMENDATION CONCERNING the DRIVE TYPE of HPI HYDRAULIC PUMPS

As the HPI hydraulic pumps 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 .

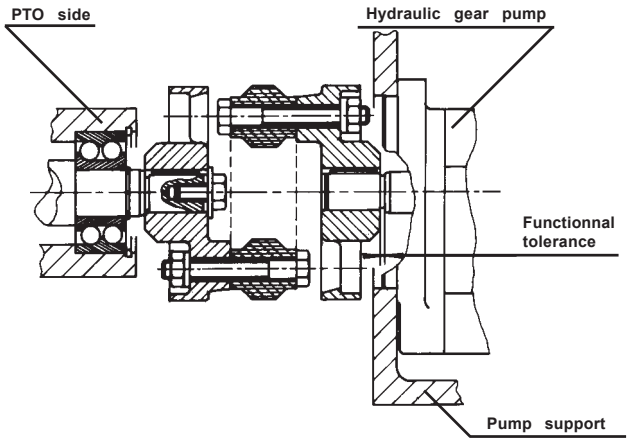
The hereunder sketches show the couplings to realize or to proscribe in order to avoid any kind of damage of the pump .

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

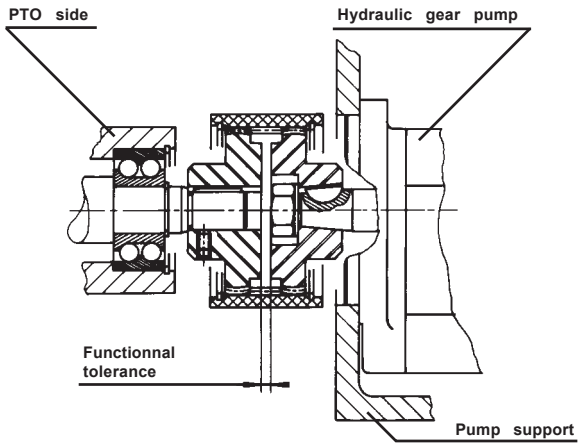
RECOMMENDED COUPLINGS



Mounting with elastic 3 parts coupling .

The pump shafts can be :

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

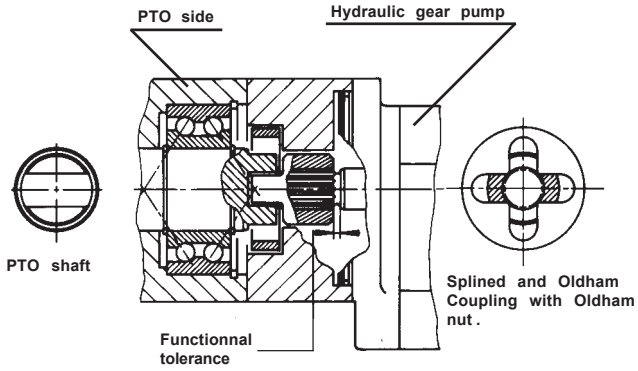


Mounting with 3 parts coupling with bulged gear .

The pump shafts can be :

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

RECOMMENDED COUPLINGS

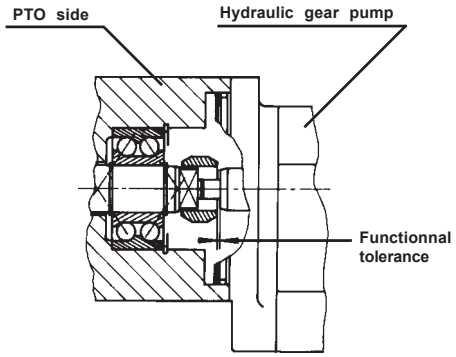


Mounting with coupling and Oldham coupling .

The pump shafts can be :

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

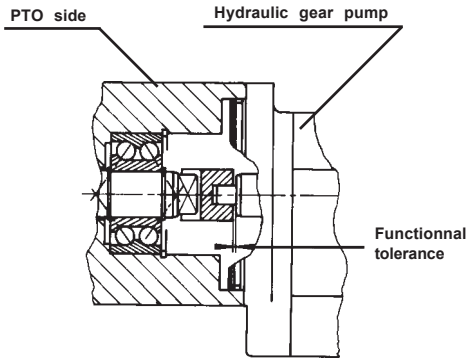
RECOMMENDED LUBRICATION .



Mounting with Oldham coupling .

Tang drive shaft on PTO and pump shaft .

RECOMMENDED LUBRICATION .

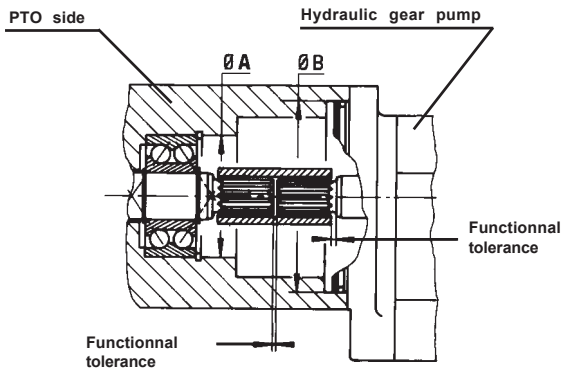


Mounting with Oldham coupling .

Tang drive shaft on PTO and pump shaft .

RECOMMENDED LUBRICATION .

CONDITIONALLY ALLOWED COUPLINGS



Mounting with splined coupling (Spigot on free flank) .

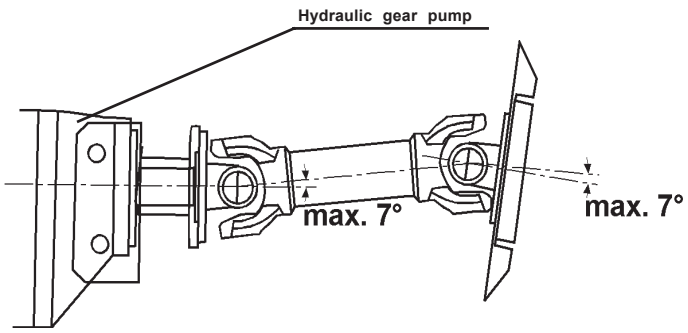
Tolerated coupling provided that there is a perfect concentricity between Ø A and Ø B .

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

Dimension readings and approximative characteristics subject to modifications .

F.T R 0009 2/3

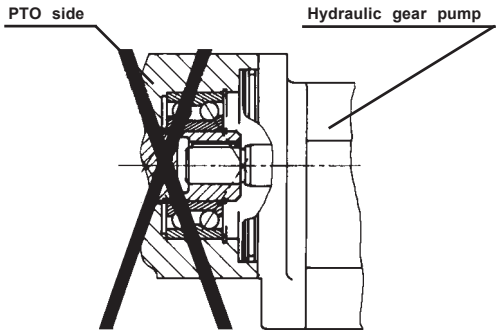
CONDITIONALLY ALLOWED COUPLINGS



Homocinetic coupling

PROSCRIBED COUPLINGS

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

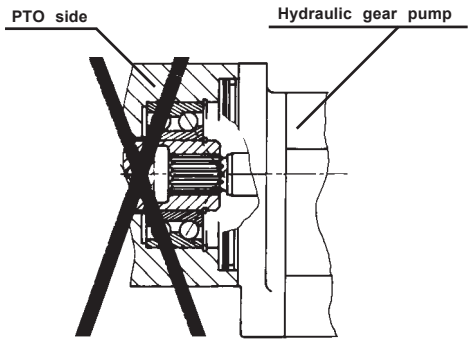


Straight keyed drive .

Hyperstatic mounting .

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

INEVITABLE PUMP SHAFT - CONSTRAINT

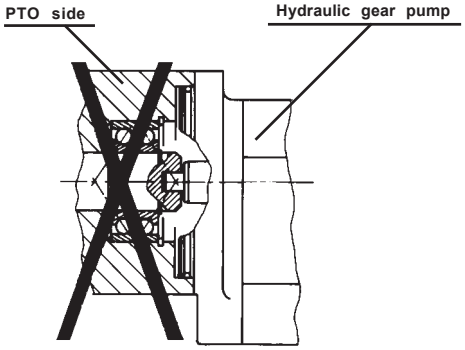


Splined drive .

Hyperstatic mounting .

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

INEVITABLE PUMP SHAFT - CONSTRAINT



Tang drive .

Pump shaft directly into the PTO shaft .

INEVITABLE PUMP SHAFT - CONSTRAINT

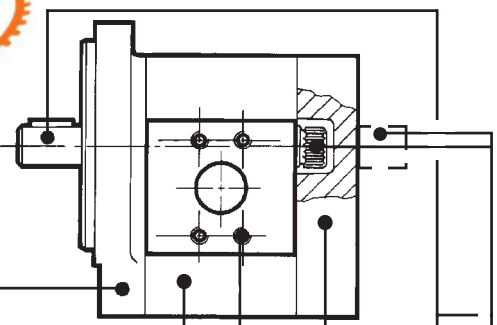
Dimension readings and approximative characteristics subject to modifications .

F.T R 0009 3/3

JTEKT HPI

CAUTION :
The signes XIII and XIV are valid only for the pumps with relief valve.
(see rear bodies technical data sheet according to the series concerned)

NB :
Not all combinations are feasible



Pressure
Rotation speed

P	1	AA	N	2	008	H	L	2	0	C 02	N	100	VXX
I Sign	II Sign	III Sign	IV Sign	V	VI Sign	VII Sign	VIII Sign	IX Sign	X Sign	XI Sign	XII Sign	XIII Sign	XIV Sign

TYPE

Pump P
" Saphir 2G" Pump S *
* Only for Series 2 and 2,5

DIRECTION of ROTATION

Clockwise 1
Anti clockwise 2
2 direction (no preferential direction) 3
2 direction For super charge inlet (Preferential direction 1) 5
2 direction For super charge inlet (Preferential direction 2) 6

FRONT BODY

MOUNTING FLANGE
2 and 4 holes (USA - ISO) A
4 holes (English - Italian) B
2 and 4 holes (French) C
2 and 4 holes (German) D
4 holes Z
A , B , C , D , E , F , J , L , R , W , Z ..... Variations

FLAT FRONT BODY
without tighness on spigot joint N
with tightness on spigot joint K

THICK FRONT BODY WITH FRONT BEARING
Hard Series
without tightness on spigot joint P
with tightness on spigot joint R
Light Series
without tightness on spigot joint X
with tighness on spigot joint Z
Power take-off C
Module flange without tightness (*) N
Module flange with tightness (*) E
(*) Only for Series 2 and 2,5

TYPE of SERIES

Series 0
Series 1
Series 2
Series 2,5
Series 2,6
Series 3
Series 5
Series 4
(0) - only for codification purposes

CAPACITY (cc / rev)

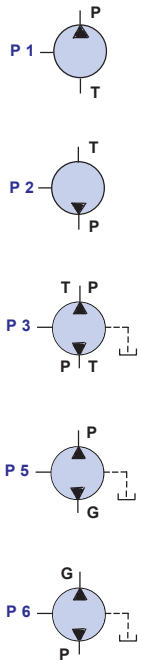
0,25 - 0,50 - 0,75 - 1,00 - 1,25 - 1,50 - 2,00
(00)1 - (00)2 - (00)3 - (00)4 - (00)5 - (00)6
(00)4 - (00)6 - (00)8 - (0)10 - (0)12 - (0)15 - (0)18 - (0)22 - (0)26 - (0)30
12 - 15 - 18 - 22
20 - 25 - 30 - 35 - 40
(0)20 - (0)25 - (0)31 - (0)40 - (0)50 - (0)60 - (0)71 - (0)80 - (0)90 - 100
(0)43 - (0)52 - (0)62 - (0)72 - (0)83 - (0)93 - 103 - 125 - 140 - 153
075 - 110 - 150 - 175 - 212 - 250

REAR BODY

L no port on rear body (Standard)
A External flow control
X high pressure relief valve, internal return
T high pressure relief valve, external return
V low pressure relief valve, internal return
W low pressure relief valve, external return
Q Internal flow control
R with ports on rear bodie
D Flow control valve 3 Ways
Z Double shaft port (on request)
J Pre-arrangement for assembling "Module 3" Series 1 , 2 , 3

PORT LOCATION

H HPI location
C Square location
F Threaded ports
Y ISO location (Norm 6162)
S SAE location (Norm J518c)
B Italian location
U SAE threaded ports (Norm J475)
X without ports (with Rear body Typ A)



P Outlet
T Inlet
G Super charge

TYPE of SHAFT

Front
1 Tapered
2 Straight keyed
3 Splinned
4 Tang

Rear
0 without shaft
3 Pre-arrangement for mounting 2nd stage

PRIMARY SHAFT CODE

Voir Fiches Techniques

SHAFT SEAL

N Nitrile
V Viton
S Saphir " 1G "

Dimensions readings and approximative characteristics subject to modifications.

F.T R 0011

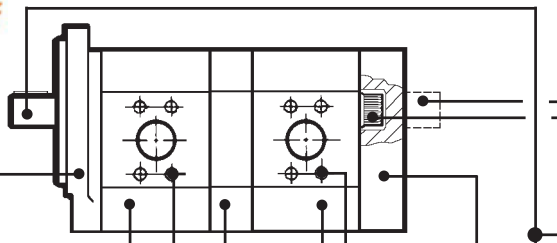
CODIFICATION of " GENERAL " SINGLE PUMPS

PUBLISHING 04 / 12 / 2001
G10 | 014 | 00

JTEKT HPI

CAUTION :
The signes XIII and XIV are valid only for the pumps with relief valve.
(see rear bodies technical data sheet according to the series concerned)

NB :
Not all combinations are feasible .



P	1	AA	N	2	008	H	D	2	008	H	L	2	0	C02	N	100	VXX
I	II	III	IV	V	VI	VII	VIII	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIv

Pressure
Rotation speed

TYPE
Pump P
" Saphir 2G" Pump S *
* Only for Series 2 and 2,5

SHAFT SEAL
N Nitrile
V Viton
S Saphir " 1G "

PRIMARY SHAFT CODE
See technical data sheets

DIRECTION of ROTATION
Clockwise 1
Anti clockwise 2

TYPE of SHAFT
Front
1 Tapered
2 Straight keyed
3 Splined
4 Tang

Rear
0 Secondary shaft
3 Pre - arrangement for mounting 2nd stage

FRONT BODY
MOUNTING FLANGE
2 and 4 holes (USA - ISO) A
4 holes (English - Italian) B
2 and 4 holes (French) C
2 and 4 holes (German) D
4 holes Z
A , B , C , D , E , F , J , L , R , W , Z ..... Variations

Dimensions readings and approximative characteristics subject to modifications.

FLAT FRONT BODY
without tightness on spigot joint N
with tightness on spigot joint K

THICK FRONT BODY WITH FRONT BEARINGS
Hard Series
without tightness on spigot joint P
with tightness on spigot joint R
Light series
without tightness on spigot joint X
with tightness on spigot joint Z
Power take - off C
Module flange without tightness (*) N
Module flange with tightness (*) E
(*) Only for Series 2 and 2,5

REAR BODY
L no port on rear body (Standard)
A with ports on rear bodie
X High pressure relief valve, internal return
T High pressure relief valve, external return
V Low pressure relief valve, internal return
W Low pressure relief valve, external return
Q Internal return flow control
R External return flow control
D Flow control 3 Ways
Z Double shaft bodie (on request)
J Pre - arrangement with mounting "Module 3" Series 1 , 2 , 3

JUNCTION BODY
A Communication between suction ports
D Independant inlet side (Communication of leaks)
E Tightness between ports
X Adjustable relief valve internal return
J in preceding pump Jonction " Module 3 "

TYPE of SERIES — CAPACITY (cc / rev)
Series 1 — (00)1 - (00)2 - (00)3 - (00)4 - (00)5 - (00)6
Series 2 — (00)4 - (00)6 - (00)8 - (0)10 - (0)12 - (0)15 - (0)18 - (0)22 - (0)26 - (0)30
Series 2,5 — 12 - 15 - 18 - 22
Series 2,6 — 20 - 25 - 30 - 35 - 40
Series 3 — (0)20 - (0)25 - (0)31 - (0)40 - (0)50 - (0)60 - (0)71 - (0)80 - (0)90 - 100
Series 5 — (0)43 - (0)52 - (0)62 - (0)72 - (0)83 - (0)93 - 103 - 125 - 140 - 153
Series 4 — 075 - 110 - 150 - 175 - 212 - 250
(0) - Only for Codification purposes

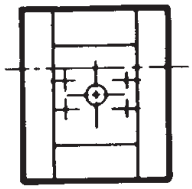
PORT LOCATION
H HPI location
C Square location
F Threaded ports
Y ISO location (Norm 6162)
S SAE location (Norm J518c)
B Italian location
U SAE threaded ports (Norm J475)
X without ports (with Rear body Typ A)

F.T R 0030

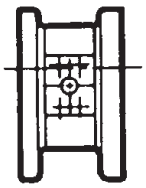
CODIFICATION of " GENERAL " MULTIPLE PUMPS

PUBLISHING 04 / 02 / 2002
G10 | 015 | 00

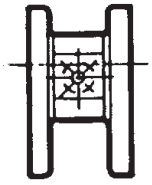
MODULE 3



Series 3

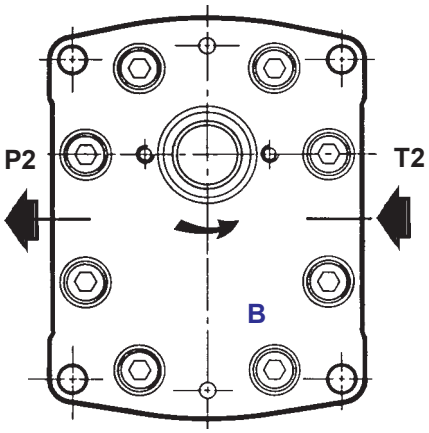


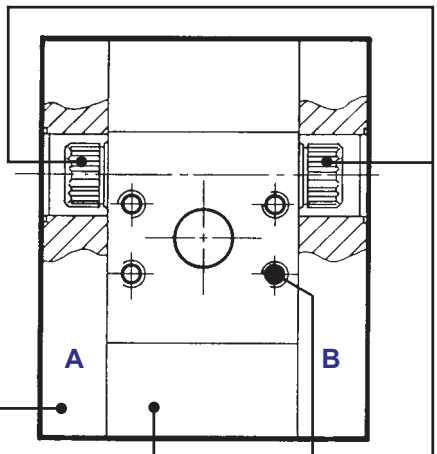
Series 2 - 2,5



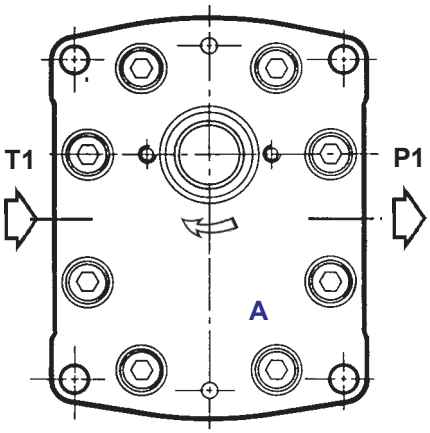
Series 1

Direction of Rotation 2
Drive on Face B





Direction of Rotation 1
Drive on Face A



Dimension readings and approximative characteristics subject to modifications .

P	4	CJN	3	040	H	J	33	C05	N
I Sign	II Sign	III Sign	II Sign	III Sign	II Sign	II Sign	III Sign	III Sign	II Sign

PUMP P

DIRECTION of ROTATION 4
(Explanation see F.T R 0149)

Drive on Face A = Direction 1
Drive on Face B = Direction 2

INTERFACE (Module) CJN

TYPE of the SERIES

- Series 1
- Series 2
- Series 2,5
- Series 2,6
- Series 3

CAPACITY in the SERIES (cc / rev)

- (00)1 - (00)2 - (00)3 - (00)4 - (00)5 - (00)6
- (00)4 - (00)6 - (00)8 - (0)10 - (0)12 - (0)15 - (0)18 - (0)22 - (0)26 - (0)30
- 12 - 15 - 18 - 22
- 20 - 25 - 30 - 35 - 40
- (0)20 - (0)25 - (0)31 - (0)40 - (0)50 - (0)60 - (0)71 - (0)80 - (0)90 - 100

Préfix(es) 0 - only for conformity of the Codification

PORT LOCATION

- H Implantation HPI
- C Square Implantation

J INTERFACE

33 SPLINNED SHAFT

SHAFT CODE

- C24 Series 1
- C05 Series 2 and 2,5
- C25 Series 2,6
- C14 Series 3

SHAFT SEAL

- N Nitrile
- V Viton

F.T R 0146

CODIFICATION of DEFINITION MODULE " 3 " BASE

MODEL	(VIII Sign) Communication between suction ports (Capacity of the pump without suction ≥ half of the capacity of the front section)) Code A	Independant inlet side (communication of leaks) (Oil and tank to be necessarily identical) Code D	Tightness between ports Code E	Adjustable relief valve internal return in preceding pump Code X
0 / 0				
1 / 1				
2 / 1				
2 / 2				
2,5 / 1				
2,5 / 2				
2,5 / 2,5				
2,6 / 2				
2,6 / 2,6				
3 / 1				
3 / 2				
3 / 2,5				
3 / 3				
5 / 2				
5 / 2,5				
5 / 3				
5 / 5				
4 / 4				

ATTENTION : Versions 2 / 1 and 2,5 / 1 are not feasible in DCN - DCK - DUK - DWN - DZK

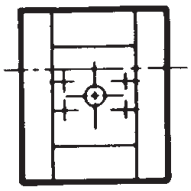
Types not manufactured

For CODIFICATION , see data sheet F.T R 0030

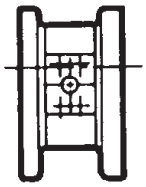
DIFFERENT MOUNTING POSSIBILITIES BETWEEN MULTIPLE PUMPS

F.T R 0029

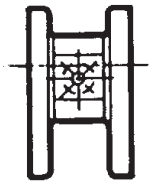
MODULE 3



Série 3



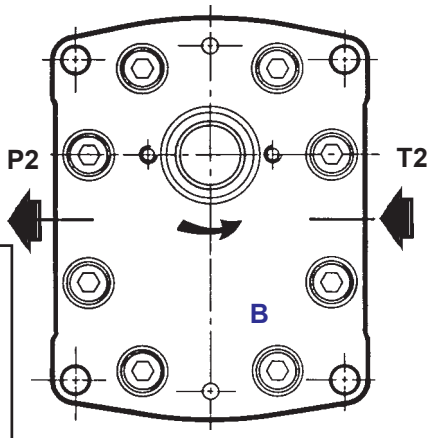
Séries 2 - 2,5

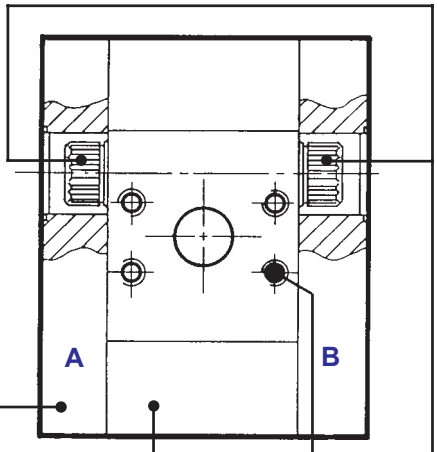


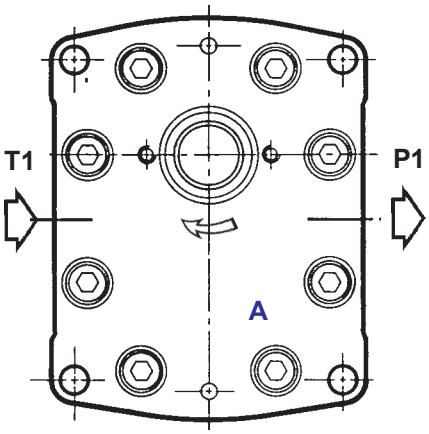
Série 1

Sens de Rotation 2
Entrainement sur Face B

Sens de Rotation 1
Entrainement sur Face A







Cotes dimensionnelles et caractéristiques approximatives sous réserves de modifications

P	4	CJN	3	040	H	J	33	C05	N
I Signe	II Signe	III Signe	II Signe	III Signe	II Signe	II Signe	III Signe	III Signe	II Signe

POMPE P

SENS de ROTATION 4
(Explication voir F.T R 0149)

Entraînement sur Face A = Sens 1

Entraînement sur Face B = Sens 2

INTERFACE (Module) CJN

REFERENCE de la SERIE

- Série 1
- Série 2
- Série 2,5
- Série 2,6
- Série 3

CAPACITE dans la SERIE (cm3 / t)

- (00)1 - (00)2 - (00)3 - (00)4 - (00)5 - (00)6
- (00)4 - (00)6 - (00)8 - (0)10 - (0)12 - (0)15 - (0)18 - (0)22 - (0)26 - (0)30
- 12 - 15 - 18 - 22
- 20 - 25 - 30 - 35 - 40
- (0)20 - (0)25 - (0)31 - (0)40 - (0)50 - (0)60 - (0)71 - (0)80 - (0)90 - 100

Préfixe(s) 0 - Uniquement pour conformité de la Codification

IMPLANTATION des ORIFICES

- H Implantation HPI
- C Implantation carrée

J INTERFACE

33 ARBRE CANNELE

CODE de L'ARBRE

- C24 Série 1
- C05 Séries 2 et 2,5
- C25 Série 2,6
- C14 Série 3

Joints d' étanchéité

- N Nitrile
- V Viton

F.T R 0146

CODIFICATION DE DEFINITION BASE MODULE " 3 "

EDITION 06 / 02 / 2002

PUMPS CHARACTERISTICS

Series (V Sign)	MODEL (VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN
							RPM	at 1500 RPM	at Maxi speed		
		cc / rev	bar	PSI	bar	PSI		l / min	l / min		
0	025	0,25	280	4060	240	4060	8000	0,37	2	0,09	0,09
	050	0,50	280	4060	240	4060	8000	0,75	4	0,16	0,19
	075	0,75	250	3625	210	4060	8000	1,12	6	0,21	0,20
	100	1	250	3625	210	4060	8000	1,50	8	0,27	0,26
	125	1,25	200	2900	170	2900	6000	1,87	7,5	0,29	0,28
	150	1,50	150	2175	130	2900	6000	2,25	9	0,32	0,31
	200	2	125	1812	105	1812	5000	3	10	0,40	0,39
1	001	1,02	300	4350	255	3700	8000	1,53	8,16	0,32	0,30
	002	2,05	300	4350	255	3700	8000	3,07	16,40	0,48	0,46
	003	3,07	300	4350	255	3700	7000	4,60	21,40	0,67	0,64
	004	4,09	250	4350	215	3120	6000	6,13	24,50	0,87	0,83
	005	5,12	200	2900	170	2465	6000	7,68	30,70	1,07	1,02
	006	6,14	150	2175	125	1812	6000	9,21	30,70	1,22	1,16
2	004	4,65	280	4060	240	3480	3500	6,97	16,20	0,92	0,78
	006	6,45	280	4060	240	3480	3500	9,67	22,50	1,27	1,15
	008	8,25	280	4060	240	3480	3500	12,37	28,80	1,62	1,52
	010	10,12	280	4060	240	3480	3500	15,18	35,30	1,95	1,88
	012	12	280	4060	240	3480	3500	18	42	2,31	2,25
	015	15,52	250	3625	210	3045	3500	23,25	52,50	2,94	2,77
	018	19,12	200	2900	170	2465	3500	28,65	66,80	3,63	3,32
	022	22,87	175	2537	150	2175	3500	34,2	79,80	4,30	4,02
	026	27,6	175	2537	150	2175	3000	41,4	82,80	5,16	4,74
	030	31,2	175	2537	150	2175	3000	46,8	93,60	5,77	5,40
2,5	012	12	280	4060	240	3480	3500	18	42	2,31	2,75
	015	15,52	280	4060	240	3480	3500	23,25	52,50	2,94	2,77
	018	19,12	250	3625	210	3045	3500	28,65	66,80	3,63	3,32
	022	22,87	225	225	190	2755	3500	34,20	79,80	4,30	4,02
2,6	020	19,60	330	4785	280	4060	3000	29,40	58,80	3,14	3,00
	025	24,20	330	4785	280	4060	3000	36,30	72,60	3,85	3,68
	030	30,50	330	4785	280	4060	3000	45,75	91,50	4,87	4,65
	035	34,50	290	4205	250	3625	3000	51,75	103,50	5,50	5,25
	040	39,80	250	3625	210	3045	3000	59,70	119,40	6,36	6,36

Dimension readings and approximative characteristics subject to modifications .

Following Series

PUMPS CHARACTERISTICS
" SAPHIR 2G "

Series
(V Sign)
2

MODEL (VI Sign)	Capacity	MAXI PRESSURE (P3)		MAXI CONTINUOUS PRESSURE (P1)		Maxi speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN
							at 1500 RPM	at Maxi speed		
	cc / rev	bar	PSI	bar		rev / min	l / min	l / min		
004	4,65	300	4350	280	4060	3500	6,97	16,27	0,92	0,78
006	6,45	300	4350	280	4060	3500	9,67	22,57	1,27	1,15
008	8,25	300	4350	280	4060	3500	12,37	28,87	1,62	1,52
010	10,12	300	4350	280	4060	3500	15,18	35,42	1,95	1,88
012	12	300	4350	280	4060	3000	18	82,80	2,31	2,25
015	15,52	300	4350	280	4060	3000	23,28	93,60	2,94	2,77
018	19,12	300	4350	280	4060	3500	28,68	42	3,63	3,32
022	22,87	230	3335	200	2900	3500	34,30	54,32	4,30	4,02
026	27,6	230	3335	200	2900	3500	41,40	66,92	5,16	4,74
030	31,2	200	2900	175	2537	3500	46,80	80	5,77	5,40

" SAPHIR 2G " pumps are equipped with bearings fitted with high pressure bushings , and monobloc gear sets (only Codes 10 B02 - 10 C02 - 30 A01 - 30 D01).

Dimension readings and approximative characteristics subject to modifications .

F.T R 0137

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 0

Flat Front Body

Publishing 01 / 2003

G10 | 024 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi Speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi Speed			
	cc / rev	bar	PSI	bar	PSI	RPM	l / min	l / min			Kg
0025	0,25	280	4060	240	3480	8000	0,37	2	0,03	0,04	0,42
0050	0,50	280	4060	240	3480	8000	0,75	4	0,06	0,08	
0075	0,75	250	3625	210	3045	8000	1,12	6	0,10	0,12	
0100	1	250	3625	210	3045	8000	1,50	8	0,14	0,16	0,45
0125	1,25	200	2900	170	2465	6000	1,87	7,5	0,17	0,20	
0150	1,50	150	2175	125	1812	6000	2,25	9	0,22	0,24	
0200	2	125	1812	105	1523	5000	3	10	0,30	0,32	0,45

Performances and Output Curves. (Thanks to contact us)

(Tests effected with Oil SHELL Tellus T 46)

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,8 bar absolute (Maxi depressure 200 millibar with regard to the air pressure) .
- Maximum 1,2 bar absolute or 0,2 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAK 0100 F L 20 B01 Pressure : 200 bar Speed : 1000 RPM

$$\text{Torque} = \frac{1,56 \times 1 \times 200}{1000 \times 0,98} = 0,33 \text{ m.daN}$$

F.T R 0200

PUBLISHING 06 / 02 / 2002

" GENERAL " 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	C	D	F	L	20	40
AAK					20B01	40C01
	CLS					40C15
		DCN			20B01	40C01
		DCK			20B01	40C01

Not feasible versions " GENERAL "

other possibilities : please refer to " BASIC " catalogue G10

Our " GENERAL " catalogue includes versions of our series 0 to 5 pumps according to European and American Standars (SAE) .

Dimension readings and approximative characteristics subject to modifications .

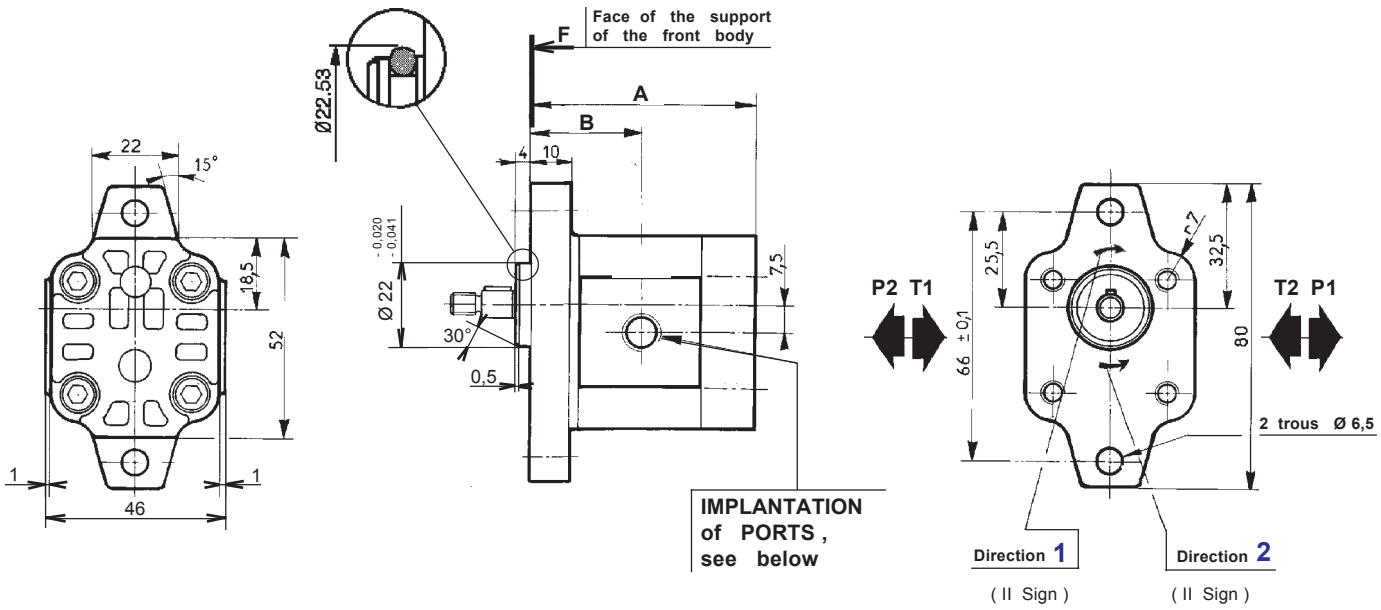
F.T R 0170

HYDRAULIC GEAR PUMPS SERIES 0

P	II Sign	AA	K	0	VI Sign	F	L	IX Sign	IX Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton

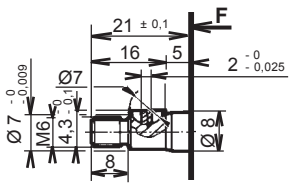


Dimension readings and approximative characteristics subject to modifications .

CHOICE of the Capacity (VI Sign)	Dimensions A	Dimensions B
025 050 075	52,6	25,2
100 125 150	59	28,4
200	67,5	32,6

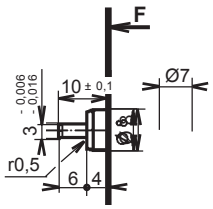
CHOICE of DRIVING SHAFTS

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



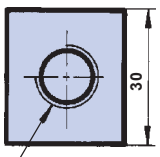
Maxi transmissible torque
0,5 m.daN

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



Maxi transmissible torque
0,6 m.daN

Multiple geared pumps , see data sheet F.T 00 615

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) Ø C	INLET (T) D	OUTLET (P) Ø C	OUTLET (P) D
F (Threaded) Ø C effective depth D 	025 to 200	M 14 x 150	12	M 14 x 150	12

F.T 00 191

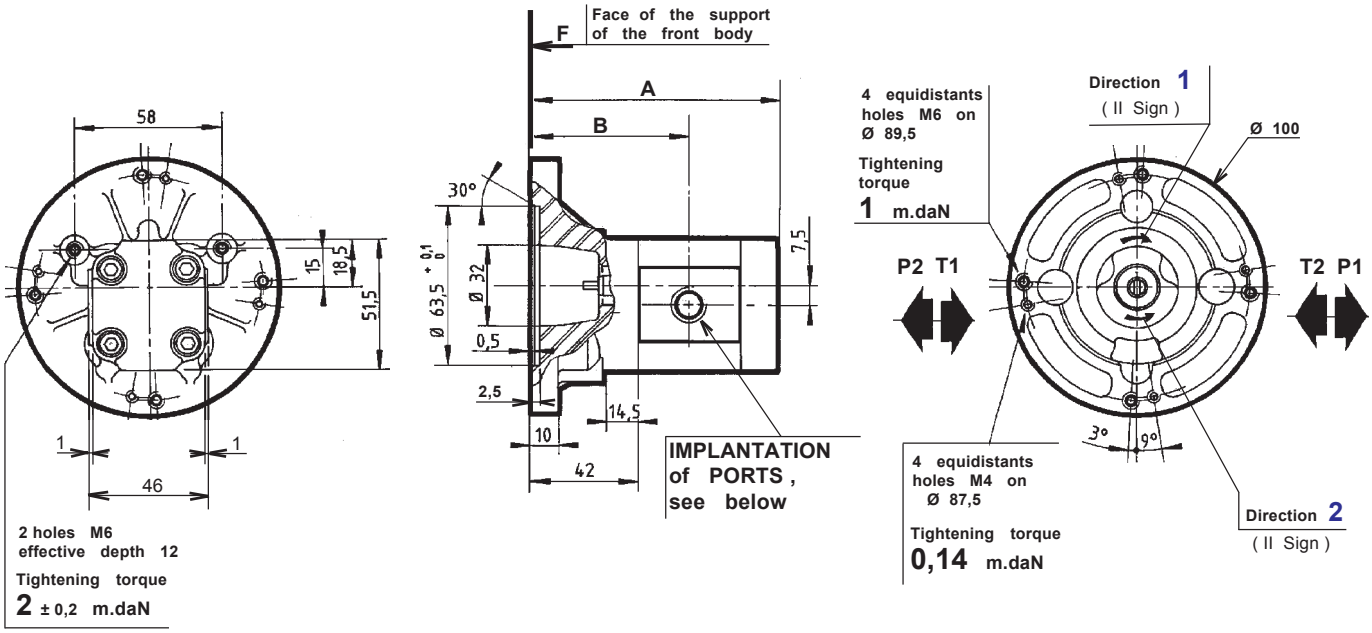
HYDRAULIC GEAR PUMPS SERIES 0 TYPE AAK

PUBLISHING 05 / 07 / 2000

P | II Sign | CL | S | 0 | VI Sign | F | L | 4 | 0 | C15 | XII Sign

For CODIFICATION , see data sheet F.T R 0011

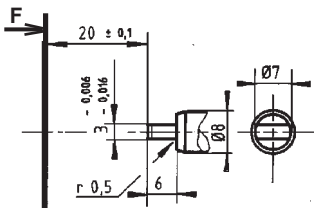
N : Nitrile
V : Viton



CHOICE of the Capacity (VI Sign)	Dimensions A	B
025 050 075	82,6	55,2
100 125 150	89	58,4
200	97,5	62,6

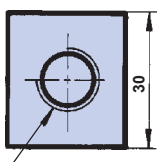
DRIVING SHAFT

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



Max. transmissible torque
0,6 m.daN

Multiple geared pumps , see data sheet F.T 00 615

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) Ø C	INLET (T) D	OUTLET (P) Ø C	OUTLET (P) D
F (Threaded) Ø C effective depth D 	025 to 200	M 14 x 150	12	M 14 x 150	12

Dimension readings and approximative characteristics subject to modifications .

F.T 00 204

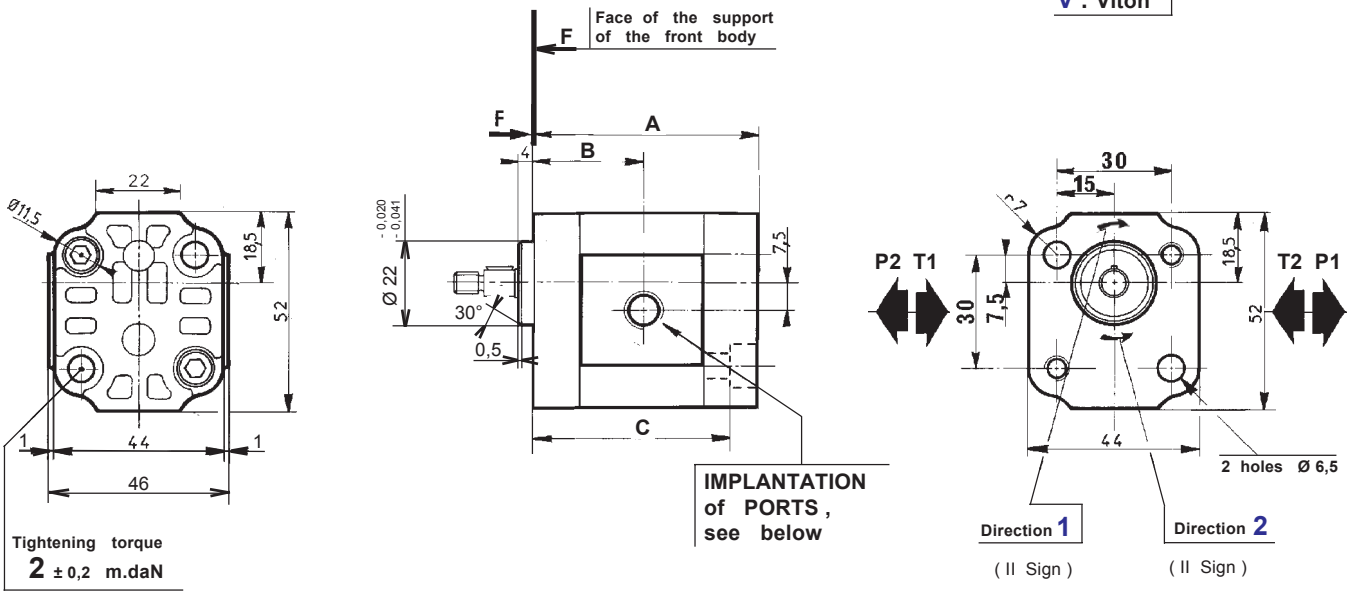
HYDRAULIC GEAR PUMPS SERIES 0 TYPE CLS

PUBLISHING 05 / 07 / 2000

P	II Sign	DC	N	0	VI Sign	F	L	IX Sign	IX Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

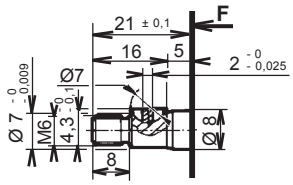
N : Nitrile
V : Viton



CHOICE of the Capacity (VI Sign)	Dimensions A	B	C
025 050 075	52,6	25,2	46
100 125 150	59	28,4	52,5
200	67,5	32,6	70

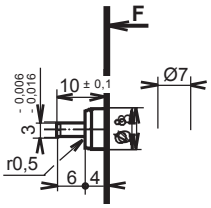
CHOICE of DRIVING SHAFTS

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



Max. transmissible torque
0,5 m.daN

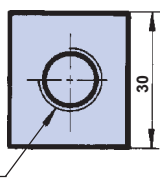
40 (IX - X Sign)
C01 (XI Sign)



Max. transmissible torque
0,6 m.daN

Capacity (VI Sign)	Assembling recommendations Screws Dimensions	Screws References	Washers References
025 to 075	M 10 x 55	108 074	101 911
100 to 150	M 10 x 60	105 496	
200 -	M 10 x 70	101 034	

Multiple geared pumps , see data sheet **F.T 00 615**

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) Ø C	INLET (T) D	OUTLET (P) Ø C	OUTLET (P) D
F (Threaded) Ø C effective depth D 	025 to 200	M 14 x 150	12	M 14 x 150	12

Dimension readings and approximative characteristics subject to modifications .

F.T 00 199

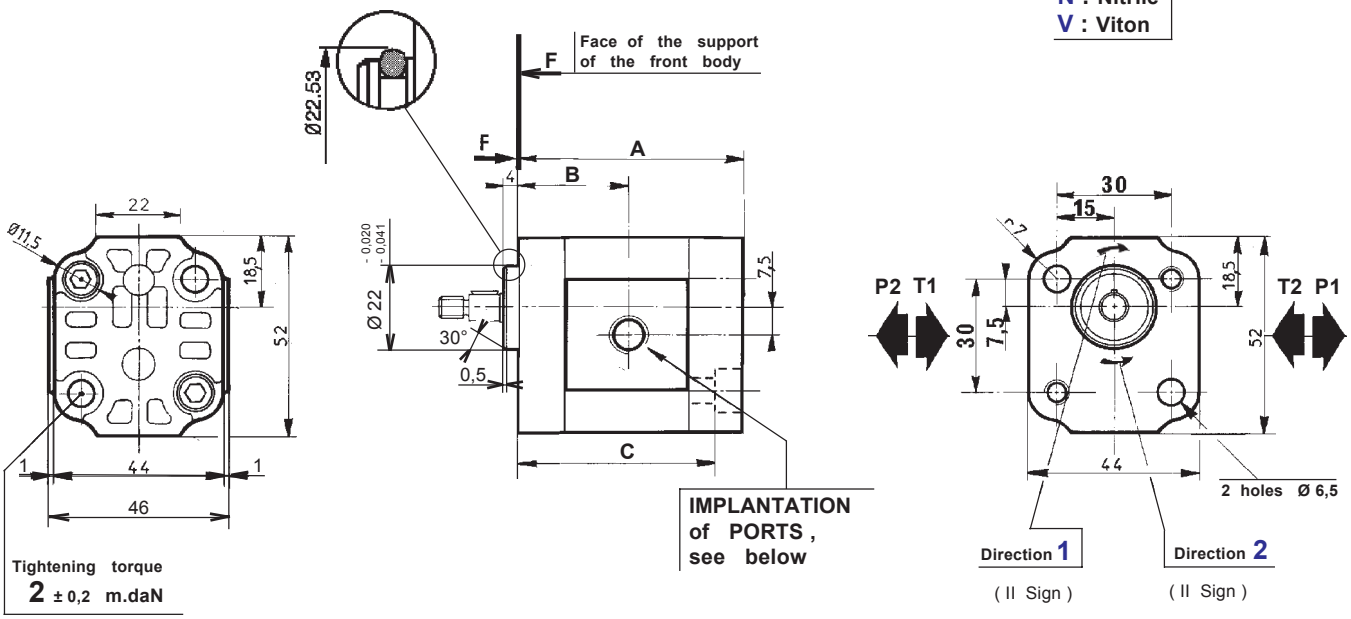
HYDRAULIC GEAR PUMPS SERIES 0 TYPE DCN

PUBLISHING 05 / 07 / 2000

P	II Sign	DC	K	0	VI Sign	F	L	IX Sign	IX Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

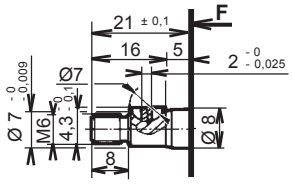
N : Nitrile
V : Viton



CHOICE of the Capacity (VI Sign)	Dimensions A	B	C
025 050 075	52,6	25,2	46
100 125 150	59	28,4	52,5
200	67,5	32,6	70

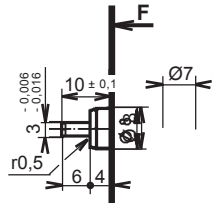
CHOICE of DRIVING SHAFTS

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



Max. transmissible torque
0,5 m.daN

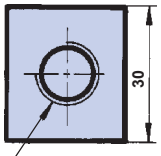
40 (IX - X Sign)
C01 (XI Sign)



Max. transmissible torque
0,6 m.daN

Capacity (VI Sign)	Assembling recommendations Screws Dimensions	Screws References	Washers References
025 to 075	M 10 x 55	108 074	101 911
100 to 150	M 10 x 60	105 496	
200 -	M 10 x 70	101 034	

Multiple geared pumps , see data sheet F.T 00 615

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) Ø C	INLET (T) D	OUTLET (P) Ø C	OUTLET (P) D
F (Threaded) Ø C effective depth D 	025 to 200	M 14 x 150	12	M 14 x 150	12

Dimension readings and approximative characteristics subject to modifications .

F.T 00 203

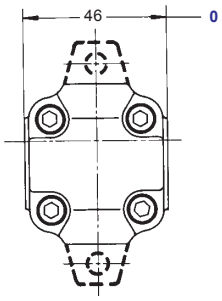
HYDRAULIC GEAR PUMPS SERIES 0 TYPE DCK

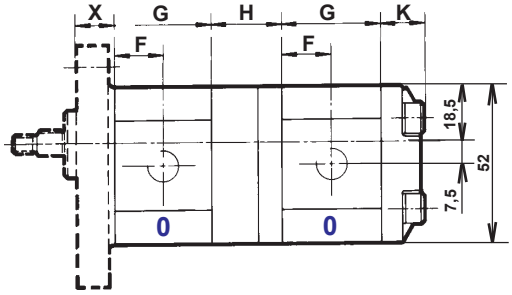
PUBLISHING 05 / 07 / 2000

P	II Sign	III Sign	IV Sign	0	VI Sign	F	D	0	X Sign	F	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet **F.T R 0030**

N : Nitrile
V : Viton





Types Front body (III - IV Sign)	Dimensions X	References data sheets
AAK	12	F.T 00 191
CLS	42	F.T 00 204
DCN	12	F.T 00 199
DCK	12	F.T 00 203

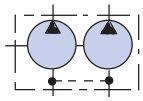
- Hydraulic characteristics ,
- Driving shafts ,
- Supply ports implantation (only for Code F) ,
- Dimensions of " Front body " : see the technical data sheets of the single pumps quoted opposite .

SERIE (V - IX Sign)	Capacity (VI - X Sign)	F	G	H	K
0	025 to 075	13,2	26,4	34	14
	100 to 150	16,4	32,8		
	200	20,6	41,2		

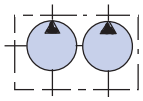
Different mounting possibilities between multiple pumps , see data sheet **F.T R 0029**

JUNCTIONS BODY

Code D (VIII Sign) — Independant inlet side (communication of leaks) (Oil and tank to be necessarily)



Code E (VIII Sign) — Tightness between port



CALCULATION of the TORQUE

Q Capacity in cc / rev
P Pressure in bar
ηm Méchanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{1,56 \times Q \times P}{1000 \times \eta m} = C$ (m.daN)

Example : P 1 DN 0100 F A 0075F L 20 B01 — Pressure : 0100 : 200 bar, 0075 : 100 bar — Speed : 1000 RPM

$\frac{1,56 \times 1 \times 200}{1000 \times 0,98} = 0,32$ m.daN

$\frac{1,56 \times 0,75 \times 100}{1000 \times 0,93} = 0,08$ m.daN

$= \boxed{0,4 \text{ m.daN}} \Rightarrow$ Total torque

MULTIPLE GEARED PUMPS SERIES 0

PUBLISHING 06 / 02 / 2002

Home - General Contents

General Catalogue Contents

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 1

Flat Front Body

Publishing 01 / 2003

G10 | 036 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi Speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi Speed			
	cc / rev	bar	PSI	bar	PSI	RPM	l / min	l / min			Kg
1001	1,02	300	4350	255	3700	8000	1,53	8,16	0,18	0,16	0,9
1002	2,05	300	4350	255	3700	8000	3,07	16,4	0,36	0,32	
1003	3,07	300	4350	255	3700	7000	4,60	21,4	0,55	0,49	
1004	4,09	250	3625	215	3120	6000	6,13	24,5	0,70	0,65	1,1
1005	5,12	200	2900	170	2465	6000	7,68	30,7	0,88	0,81	
1006	6,14	150	2175	125	1812	6000	9,21	30,7	1,03	0,98	

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

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 BAN 1006 C L 10 B01 Pressure : 175 bar Speed : 1500 RPM

Torque = $\frac{1,56 \times 6 \times 175}{1000 \times 0,85}$ = 1,93 m.daN

F.T R 0201

PUBLISHING 06 / 02 / 2002

" GENERAL " 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	C	F	L	X	T	V	W	A	10	20	30	40
AAN												20C01		40C02
AAK												20C01		
	BAN										10B01	20C01	30C01	40C02
		CBN									10B01 10C01	20C01		40C02
		CBK									10C01	20C01		40C02

Not feasible versions " GENERAL "

other possibilities : please refer to " BASIC " catalogue G10

Our " GENERAL " catalogue includes versions of our series 0 to 5 pumps according to European and American Standars (SAE) .

Dimension readings and approximative characteristics subject to modifications .

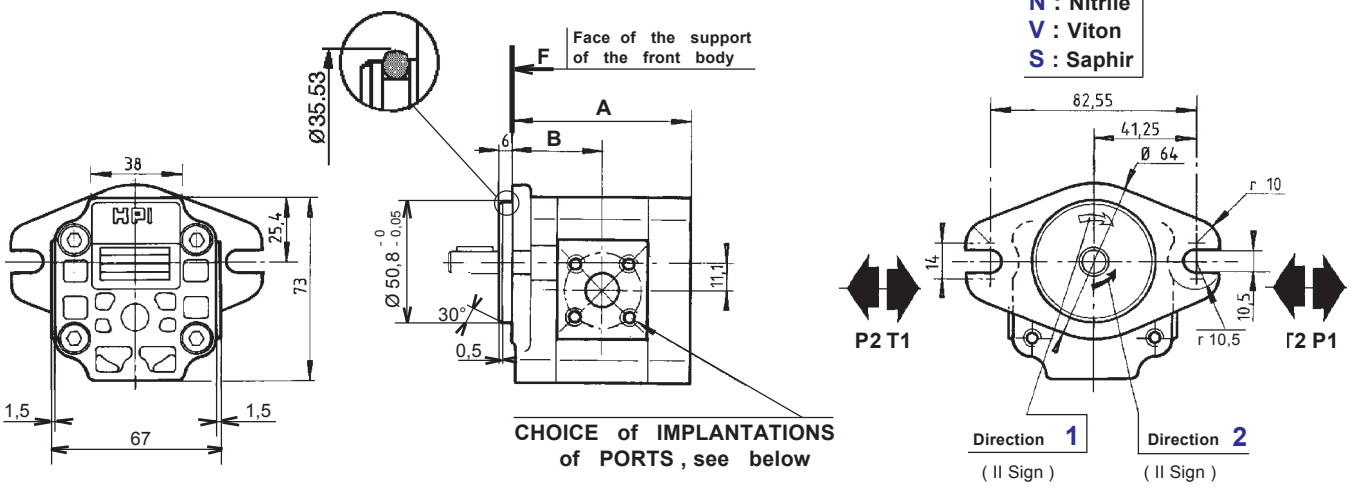
F.T R 0171

HYDRAULIC GEAR PUMPS SERIES 1

P	II Sign	AA	K	1	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

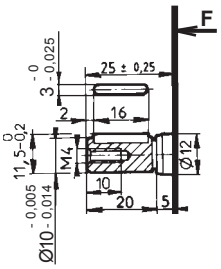


CHOICE of IMPLANTATIONS of PORTS , see below

CHOICE of the Capacity (VI Sign)	Dimensions A	B
001 002 003	71,8	35,9
004 005 006	81,5	40,7

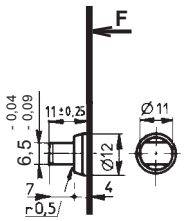
CHOICE of DRIVING SHAFTS

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



Max. transmissible torque **2,5** m.daN

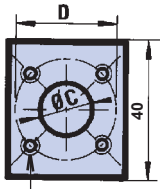
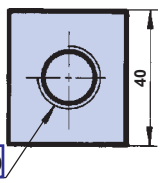
40 (IX - X Sign)
C02 (XI Sign)



Max. transmissible torque **3** m.daN

Multiple geared pumps , see data sheet F.T 10 616
Rear bodies , see data sheet F.T R 0178

Dimension readings and approximative characteristics subject to modifications .

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)	INLET (T)	OUTLET (P)
C (Square)  M6 effective depth 13	001 to 006	14	30		14	30		1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
								1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
F (Threaded)  ØC effective depth D	001 to 003	3/8 " BSP	12		3/8 " BSP	12		1001 to 1003		
	004 to 006	1/2 " BSP	14		3/8 " BSP	12		1004 to 1006		

F.T 10 357

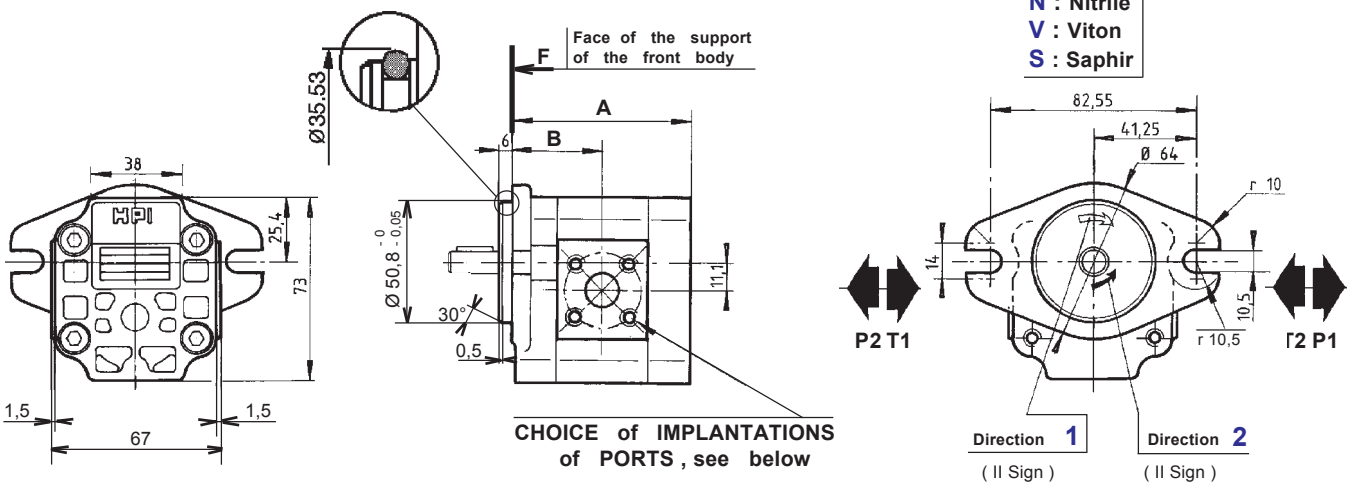
HYDRAULIC GEAR PUMPS SERIES 1 TYPE AAK

PUBLISHING 05 / 07 / 2000

P	II Sign	AA	K	1	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

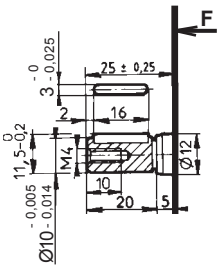


CHOICE of IMPLANTATIONS of PORTS , see below

CHOICE of the Capacity (VI Sign)	Dimensions A	B
001 002 003	71,8	35,9
004 005 006	81,5	40,7

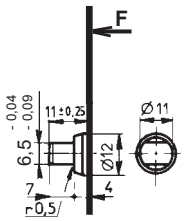
CHOICE of DRIVING SHAFTS

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



Max. transmissible torque **2,5** m.daN

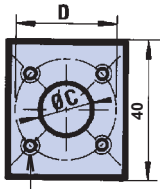
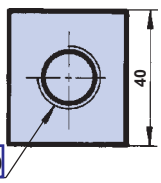
40 (IX - X Sign)
C02 (XI Sign)



Max. transmissible torque **3** m.daN

Multiple geared pumps , see data sheet F.T 10 616
Rear bodies , see data sheet F.T R 0178

Dimension readings and approximative characteristics subject to modifications .

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)	INLET (T)	OUTLET (P)
C (Square)  M6 effective depth 13	001 to 006	14	30		14	30		1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
								1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
F (Threaded)  ØC effective depth D	001 to 003	3/8 " BSP	12		3/8 " BSP	12		1001 to 1003		
	004 to 006	1/2 " BSP	14		3/8 " BSP	12		1004 to 1006		

F.T 10 357

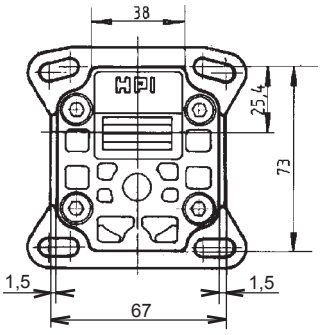
HYDRAULIC GEAR PUMPS SERIES 1 TYPE AAK

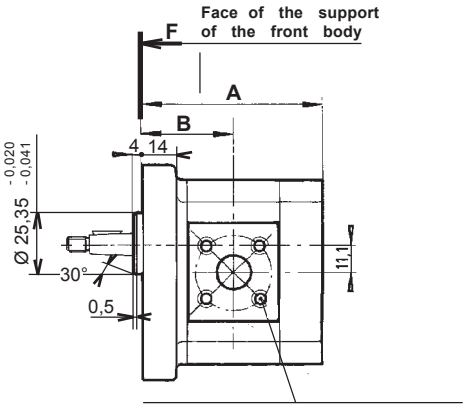
PUBLISHING 05 / 07 / 2000

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

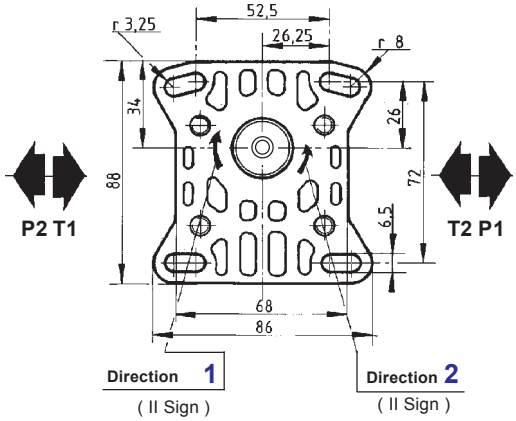
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir





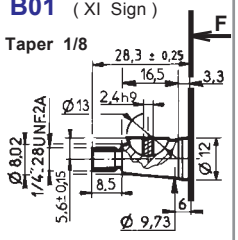
CHOICE of IMPLANTATIONS of PORTS ,see below



CHOICE of the Capacity (VI Sign)	Dimensions A	B
001 002 003	71,8	35,9
004 005 006	81,5	40,7

CHOICE of the DRIVING SHAFTS

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



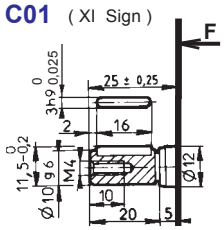
Delivered with Nut

Ref : 101 719

Max. transmissible torque

4 m.daN

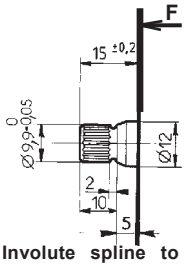
20 (IX - X Sign) **C01** (XI Sign)



Max. transmissible torque

2,5 m.daN

30 (IX - X Sign) **C01** (XI Sign)

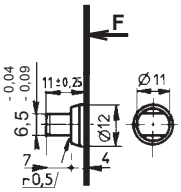


Involute spline to shaft
10 x 18 x 0,5
to norme NF E 22 141 - BNA 455
Spigot on free flanks

Max. transmissible torque

2,5 m.daN

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



Max. transmissible torque

3 m.daN

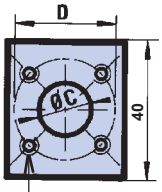
Multiple geared pumps , see data sheet **F.T 10 616**
Rear bodies , see data sheet **F.T R 0178**

Dimension readings and approximative characteristics subject to modifications .

CHOICE of IMPLANTATIONS of PORTS

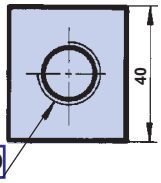
(VII Sign)

C (Square)



M6
effective depth 13

F (Threaded)



ØC
effective depth D

Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E
001 to 006	14	30		14	30	
001 to 003	3/8 " BSP	12		3/8 " BSP	12	
004 to 006	1/2 " BSP	14		3/8 " BSP	12	

CATALOGUE N° 70
Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min)

	INLET (T)	OUTLET (P)
1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
1001 to 1003		
1004 to 1006		

F.T 10 265

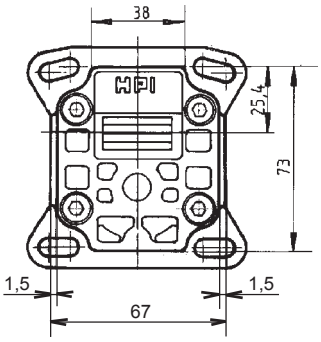
HYDRAULIC GEAR PUMPS SERIES 1 TYPE BAN

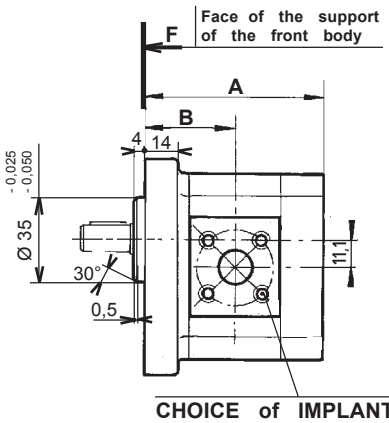
PUBLISHING 05 / 07 / 2000

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

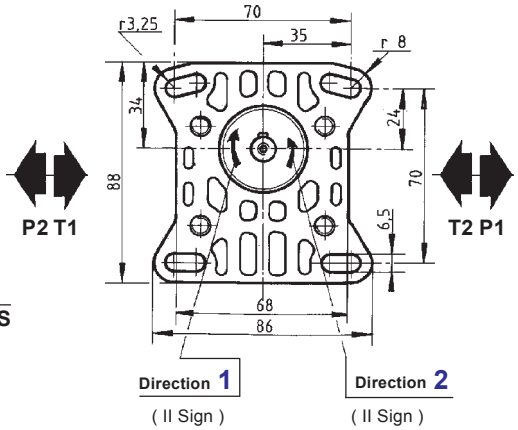
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir





CHOICE of IMPLANTATIONS of PORTS , see below



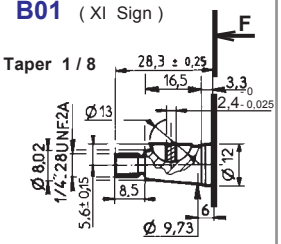
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the Capacity (VI Sign)	Dimensions A	B
001 002 003	71,8	35,9
004 005 006	81,5	40,7

Multiple geared pumps , see data sheet F.T 10 616
Rear bodies , see data sheet F.T R 0178

CHOICE of DRIVING SHAFTS

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



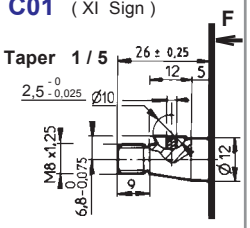
Delivered with nut

Ref : 101 719

Max. transmissible torque

4 m.daN

10 (IX - X Sign) **C01** (XI Sign)



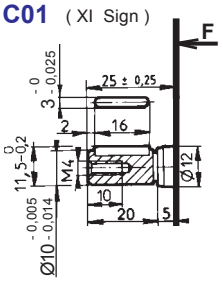
Delivered with nut

Ref : 105 890

Max. transmissible torque

5 m.daN

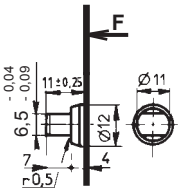
20 (IX - X Sign) **C01** (XI Sign)



Max. transmissible torque

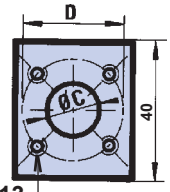
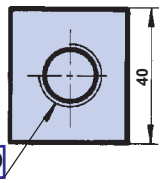
2,5 m.daN

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



Max. transmissible torque

3 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min)	INLET (T)	OUTLET (P)
C (Square)  M6 effective depth 13	001 to 006	14	30		14	30		1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
								1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
F (Threaded)  ØC effective depth D	001 to 003	3/8 " BSP	12		3/8 " BSP	12		1001 to 1003		
	004 to 006	1/2 " BSP	14		3/8 " BSP	12		1004 to 1006		

F.T 10 303

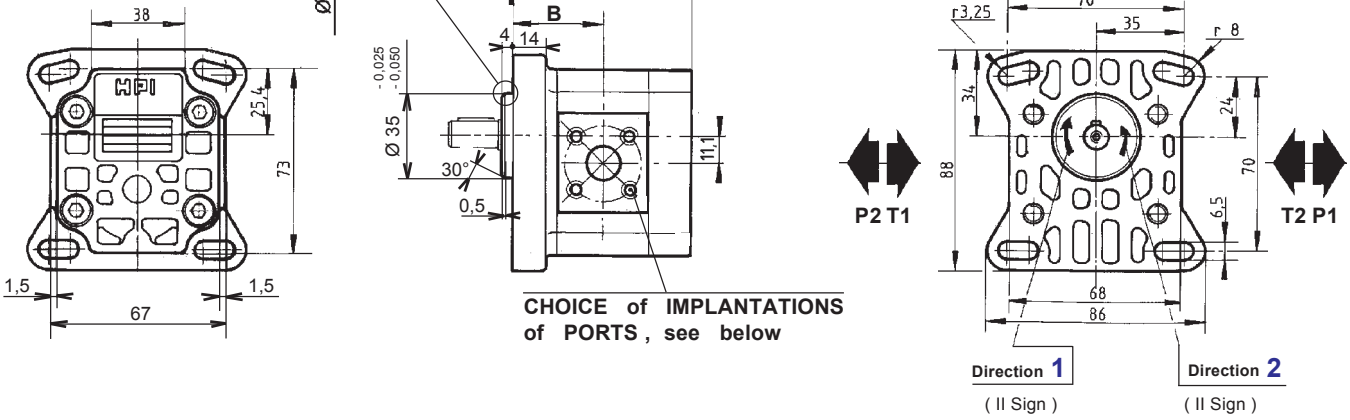
HYDRAULIC GEAR PUMPS SERIES 1 TYPE CBN

PUBLISHING 05 / 07 / 2000

P	II Sign	CB	K	1	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



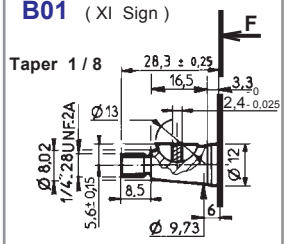
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the Capacity (VI Sign)	Dimensions A	B
001 002 003	71,8	35,9
004 005 006	81,5	40,7

Multiple geared pumps , see data sheet F.T 10 616
Rear bodies , see data sheet F.T R 0178

CHOICE of DRIVING SHAFTS

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



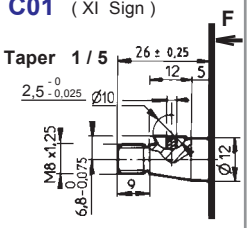
Delivered with nut

Ref : 101 719

Max. transmissible torque

4 m.daN

10 (IX - X Sign) **C01** (XI Sign)



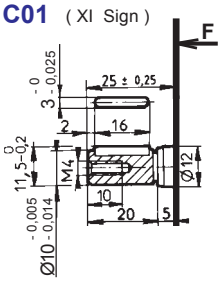
Delivered with nut

Ref : 105 890

Max. transmissible torque

5 m.daN

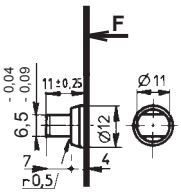
20 (IX - X Sign) **C01** (XI Sign)



Max. transmissible torque

2,5 m.daN

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



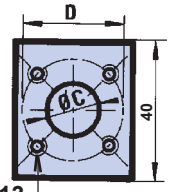
Max. transmissible torque

3 m.daN

CHOICE of IMPLANTATIONS of PORTS

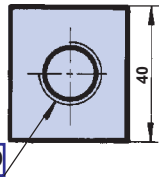
(VII Sign)

C (Square)



M6
effective depth 13

F (Threaded)



ØC
effective depth D

Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E
001 to 006	14	30		14	30	
001 to 003	3/8 " BSP	12		3/8 " BSP	12	
004 to 006	1/2 " BSP	14		3/8 " BSP	12	

CATALOGUE N° 70
Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min)

	INLET (T)	OUTLET (P)
1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
1001 to 1003		
1004 to 1006		

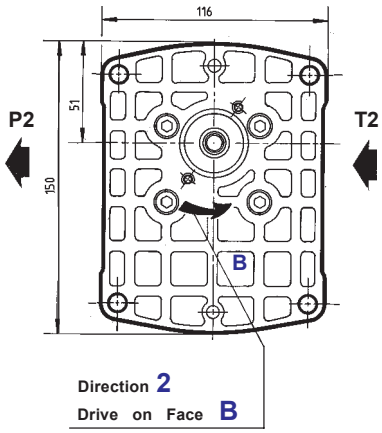
F.T 10 317

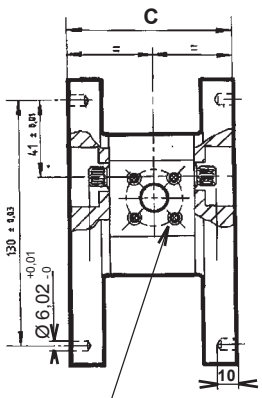
HYDRAULIC GEAR PUMPS SERIES 1 TYPE CBK

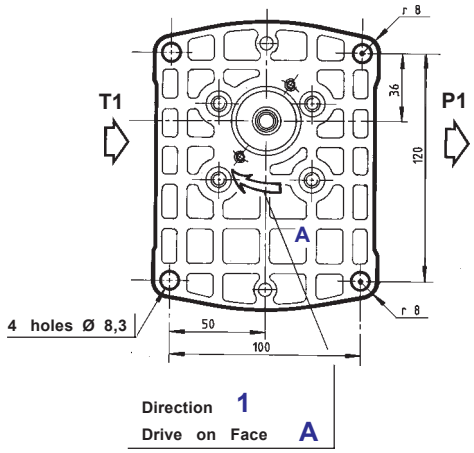
PUBLISHING 05 / 07 / 2000

P	4	CJN	1	VI Sign	VI Sign	J	33	C24	N

For CODIFICATION , see data sheet F.T R 0146



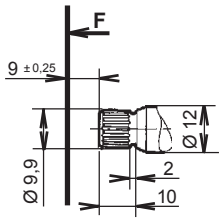




CHOICE of the CAPACITY (VI Sign)	Dimensions C
001 002 003	75,8
004 005 006	85,6

DRIVING SHAFTS

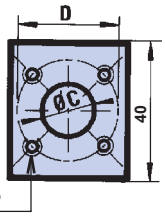
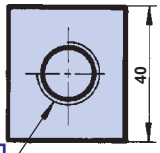
33 (IX - X Sign)
C24 (XI Sign)



involute spline to shaft
10 x 18 x 0,5
to norm NF E 22 141 - BNA 455
Spigot on free flanks

Max. transmissible torque
2,5 m.daN

Dimension readings and approximative characteristics subject to modifications .

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)	INLET (T)	OUTLET (P)
C (Square)  M6 effective depth 13	001 to 006	14	30		14	30		1001 to 1003	1 / 4 " BSP N: 1.500292 V: 1.504770	1 / 4 " BSP N: 1.500292 V: 1.504770
								1004 to 1006	3 / 8 " BSP N: 1.500293 V: 1.505027	1 / 4 " BSP N: 1.500292 V: 1.504770
F (Threaded)  ØC effective depth D	001 to 003	3/8 " BSP	12		3/8 " BSP	12		1001 to 1003		
	004 to 006	1/2 " BSP	14		3/8 " BSP	12		1004 to 1006		

F.T 10 171

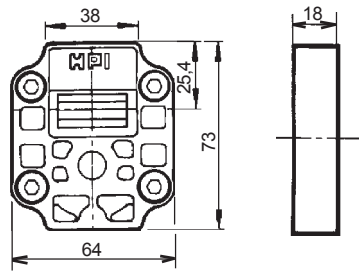
HYDRAULIC GEAR PUMPS MODUL 3 BASE SERIES 1

P	II Sign	III Sign	IV Sign	1	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

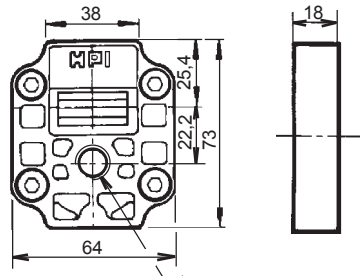
N : Nitrile
V : Viton
S : Saphir

L (VIII Sign) Standard (no ports)



L (VIII Sign) Standard (no ports)

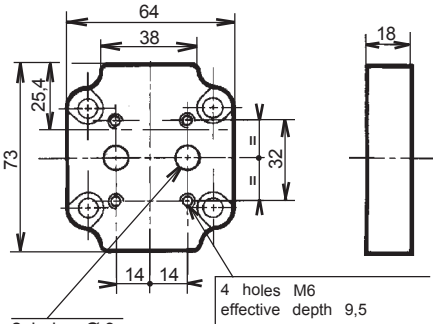
For single pumps
P3 - P5 - P6



Drain port 1/4" BSP
effective depth 13

Max. tightening torque of the connexion :
3,3 $^{+0,2}_{0}$ **Kgm**

A (VIII Sign) With ports

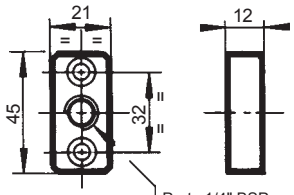


4 holes M6
effective depth 9,5

Max. tightening torque :
1,5 $^{+0,1}_{0}$ **Kgm**

Maxi flow : **12 l / min**

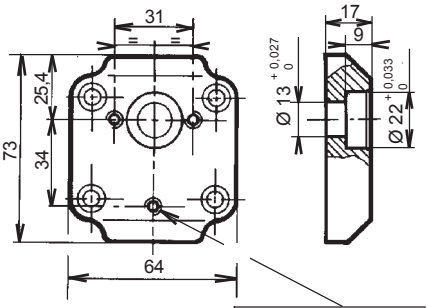
Port connector 1.500828



Port 1/4" BSP
effective depth 10

Max. tightening torque of the connexion :
3,3 $^{+0,2}_{0}$ **Kgm**

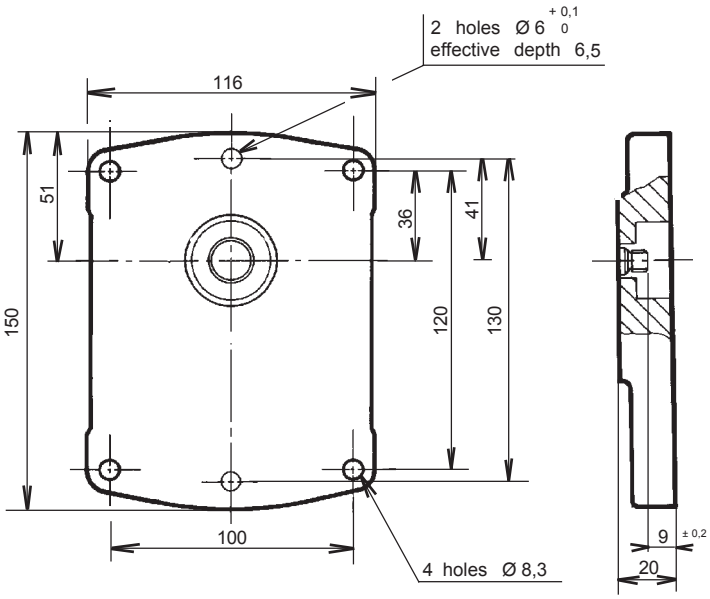
Z (VIII Sign) Double shaft port



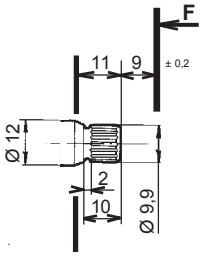
3 holes M6
effective depth 10

Max. tightening torque :
1,5 $^{+0,1}_{0}$ **Kgm**

J (VIII Sign) Pre - arrangement with mounting " Module 3 "



33 (IX - X Sign)
C23 (XI Sign)



involute spline to shaft
10 x 18 x 0,5
to norm NF E 22 141 - BNA 455
Spigot on free flanks

Max. transmissible torque
2,5 **m.daN**

Dimension readings and approximative characteristics subject to modifications .

F.T R 0178 1/3

HYDRAULIC GEAR PUMPS SERIES 1

REAR BODY

Following Page

PUBLISHING 04 / 12 / 2001
G10 | 048 | 00

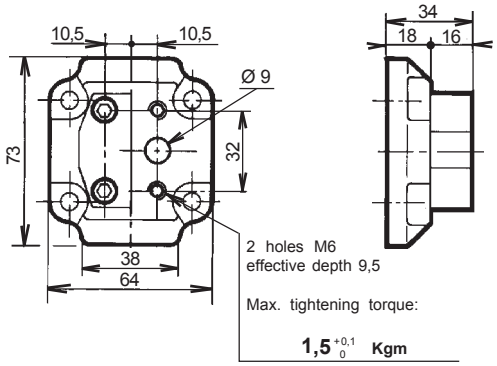
P	II Sign	III Sign	IV Sign	1	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	150	V22

For CODIFICATION , see data sheet **F.T R 0011**

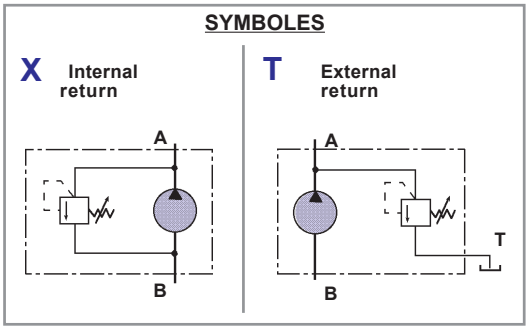
N : Nitril
V : Viton
S : Saphir

X (VIII Sign) **High pressure relief valve (Fixe) Internal return**

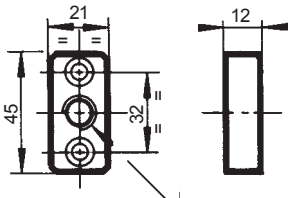
T (VIII Sign) **High pressure relief valve (Fixe) External return**



SYMBOLES

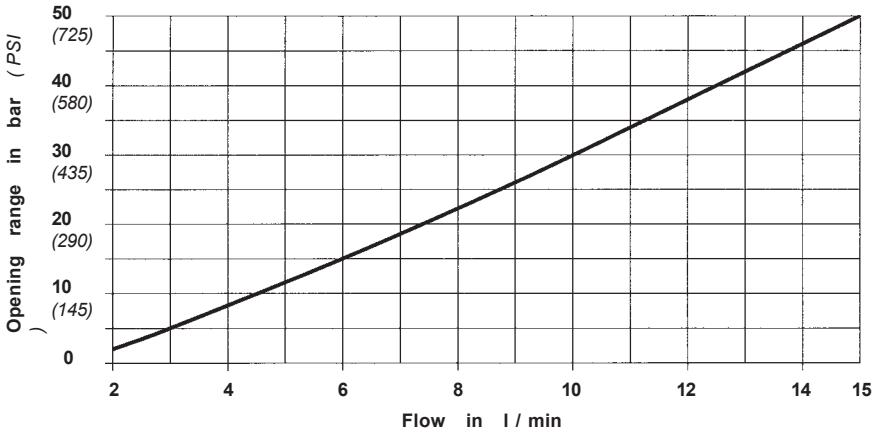


Port connector 1.500828



NB : Port Ø 9 can be used only with external return. (**Code T**)
With internal return, the port is sealed by a flange. (**Code X**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

Pressure at opening begin mini : 45 bar (652,5 PSI)

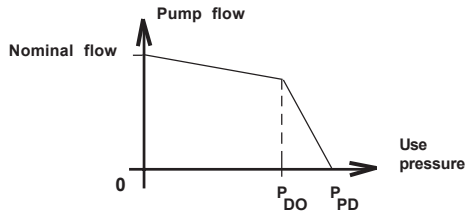
Max. : 165 bar (2392 PSI)

Setting tolerance : ± 5 bar *(72,5 PSI)*

Full flow setting

XIII Sign **150** Example : **Pressure of by-pass**
Full flow ± 5 bar (72,5 PSI) **to 46 cSt**
150 = 150 bar (2175 PSI)

XIV Sign **V22** Example : **V Speed**
22 Speed ⇒ **2200 rev / min**
100



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

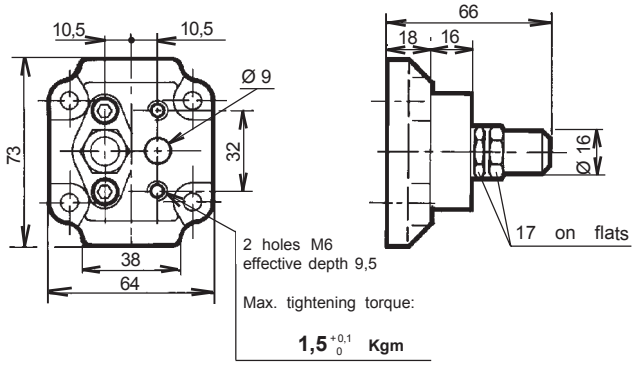
F.T R 0178 2/3

P	II Sign	III Sign	IV Sign	1	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	006	V15

For CODIFICATION , see data sheet **F.T R 0011**

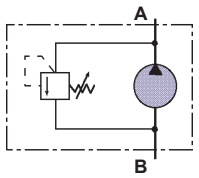
N : Nitril
V : Viton
S : Saphir

V (VIII Sign) **Low pressure relief valve (Adjustable) Internal return**
W (VIII Sign) **Low pressure relief valve (Adjustable) External return**

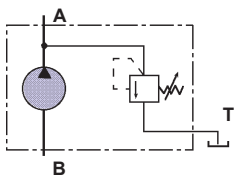


SYMBOLS

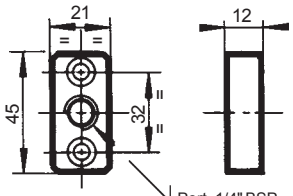
X Internal return



T External return



Port connector 1.500828

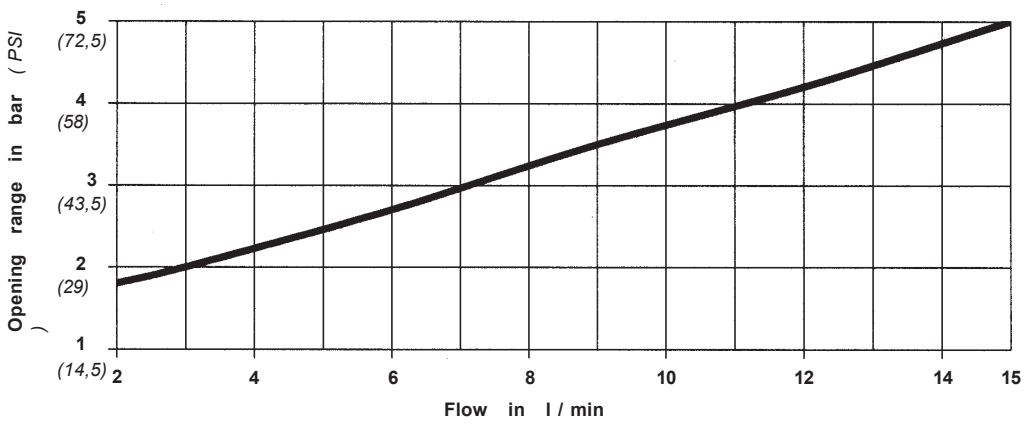


Port 1/4" BSP
effective depth 10

Max. tightening torque of the connexion :
3,3 +0,2 0 Kgm

NB : Port Ø 9 can be used only with external return. (**Code V**)
With internal return, the port is sealed by a flange. (**Code W**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

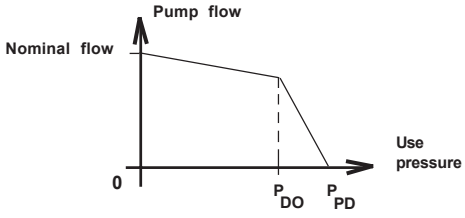
Pressure at opening begin mini : 5 bar (72,5 PSI)
Max. : 15 bar (217,5 PSI)

Setting tolerance : ± 1 bar *(14,5 PSI)*

Full flow setting

XIII Sign **006** Example : **Pressure of by-pass**
Full flow ± 1 bar (14,5 PSI) to 46 cSt
006 = 6 bar (87 PSI)

XIV Sign **V15** Example : **V Speed**
15 Speed / 100 ⇒ **1500 rev / min**



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

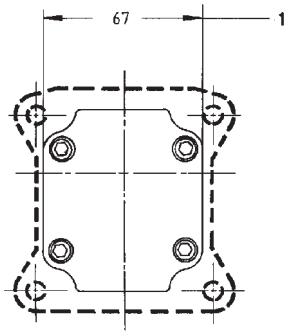
Dimension readings and approximative characteristics subject to modifications .

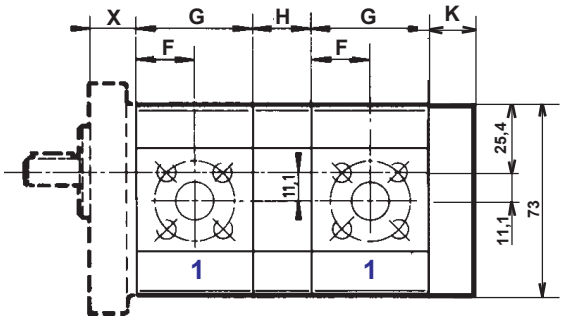
F.T R 0178 3/3

P	II Sign	III Sign	IV Sign	1	VI Sign	VII Sign	D	1	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet **F.T R 0030**

N : Nitrile
V : Viton
S : Saphir





Types Front body (III - IV Sign)	Dimensions X	References data sheets
AAN	18	F.T 10 356
AAK		F.T 10 357
BAN		F.T 10 265
CBN		F.T 10 303
CBK		F.T 10 317

Different mounting possibilities between multiple pumps , see data sheet **F.T R 0029**

- Hydraulic characteristics ,
- Driving shafts ,
- Supply ports implantation
- Dimensions of " front body " : please refer to the technical data sheet of the here after mentioned single pumps .

SERIES (V - IX Sign)	Capacity (VI - X Sign)	F	G	H	K
1	001 to 003	17,9	35,8	23	18
	004 to 006	22,7	45,6		

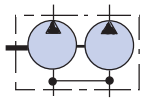
ATTENTION

For common suctions .

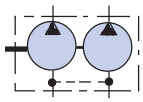
The flow of the pump , or pumps preceding or following the section including the suction must not exceed **12 l / min .**

JUNCTIONS BODY

Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



TORQUE CALCULATION

V Capacity in cc / rev
P Pressure in bar
ηm Mechanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{V \times P}{200\ \pi \times \eta m} = C$ (m.daN)

Example : P 1 AAN 1006 C A 1004 H L 20 C01 Pressure : 1006 : 175 bar 1004 : 150 bar Speed : 1000 RPM

$\frac{6 \times 175}{628 \times 0,87} = 1,9$ m.daN

$\frac{4 \times 150}{628 \times 0,87} = 1,1$ m.daN

= 3 m.daN ⟹ Total torque

MULTIPLE GEARED PUMPS SERIES 1

PUBLISHING 25 / 10 / 2001

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2

Flat Front Body

Publishing 01 / 2003

G10 | 052 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi Speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi Speed			
	cc / rev	bar	PSI	bar	PSI	RPM	l / min	l / min			Kg
2004	4,65	280	4060	240	3480	3500	6,97	16,2	0,77	0,74	1,6
2006	6,45	280	4060	240	3480	3500	9,67	22,5	1,12	1,02	
2008	8,25	280	4060	240	3480	3500	12,37	28,8	1,47	1,31	1,7
2010	10,12	280	4060	240	3480	3500	15,18	35,3	1,80	1,61	
2012	12	280	4060	240	3480	3500	18	42	2,13	1,91	
2015	15,52	250	3625	210	3045	3500	23,25	52,5	2,68	2,47	2,1
2018	19,12	200	2900	170	2465	3500	28,65	66,8	3,17	3,04	2,2
2022	22,87	175	2537	150	2175	3500	34,2	79,8	3,83	3,64	2,3
2026	27,6	175	2537	150	2175	3000	41,4	82,8	4,56	4,39	2,7
2030	31,2	175	2537	150	2175	3000	46,8	93,6	5,25	4,96	2,8

Dimension readings and approximative characteristics subject to modifications .

Performances and Output Curves. (Thanks to contact us)

(Tests effected with Oil SHELL Tellus T 46)

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAN 2015 C L 30 A01 Pressure : 200 bar Speed : 1500 RPM

$$\text{Torque} = \frac{1,56 \times 15 \times 200}{1000 \times 0,87} = 5,38 \text{ m.daN}$$

F.T R 0202

" GENERAL " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)				CENTRAL BODY (VII Sign)							TYPE and SHAFT CODE (IX - X - XI Sign)			
A	B	C	D	H	C	F	Y	S	B	U	10	20	30	40
AAN												20A01 20C02	30A01	40C03
AAK												20A01	30A01	40C03
AFN												20A01	30A01	
			DBN								10C02	20C02	30D01	
			DBK								10C02	20C02	30D01	
			DCK								10C02		30D01	
		CJN											33C05	
		CJE Tightness											33C22	

REAR BODY (VIII Sign)

All mounting types possible : L , X , T , V , W , Q , R , A and Z.

Not feasible versions " GENERAL "

other possibilities : please refer to " BASIC " catalogue B10

Our " BASIC" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

Thick front body , see data sheet F.T R 0173

Dimension readings and approximative characteristics subject to modifications .

F.T R 0172

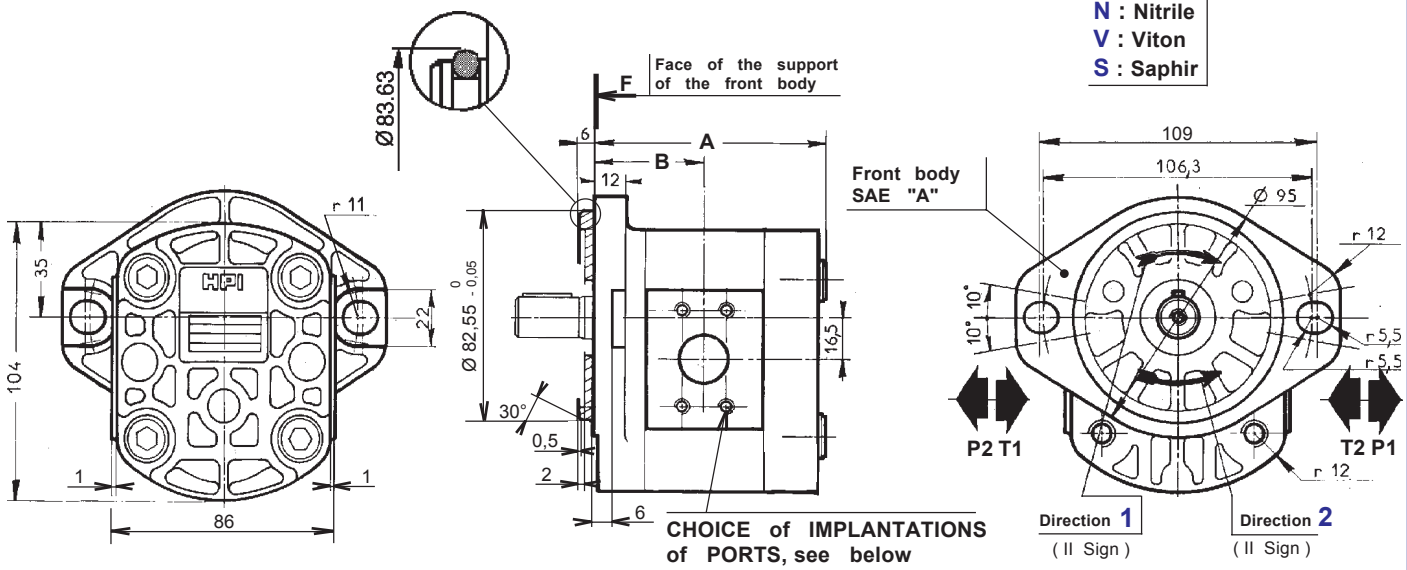
HYDRAULIC GEAR PUMPS

SERIES 2 (FLAT FRONT BODY)

P	II Sign	AA	K	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

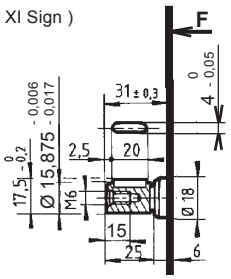
N : Nitrile
V : Viton
S : Saphir



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

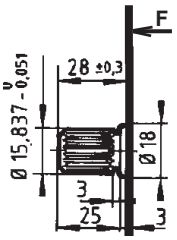
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque **5** m.daN

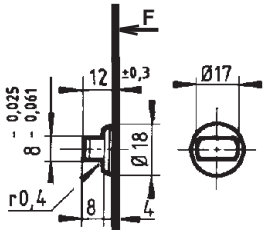
30 (IX - X Sign) **A01** (XI Sign)



Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° pressure angle

Max. transmissible torque **10** m.daN

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



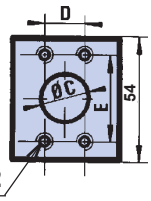
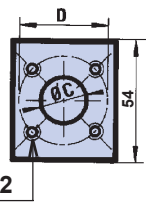
Max. transmissible torque **7** m.daN

Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the IMPLANTATIONS of PORTS

(II Sign)

Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12 								
004 to 012	20	17,4	38	15	17,4	38	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (Square) M6 effective depth 12 								
004 to 012	20	40		15	35		1 / 2 " BSP N: 367141.502	3 / 8 " BSP N: 367141.702
015 to 030							3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

F.T 20 399

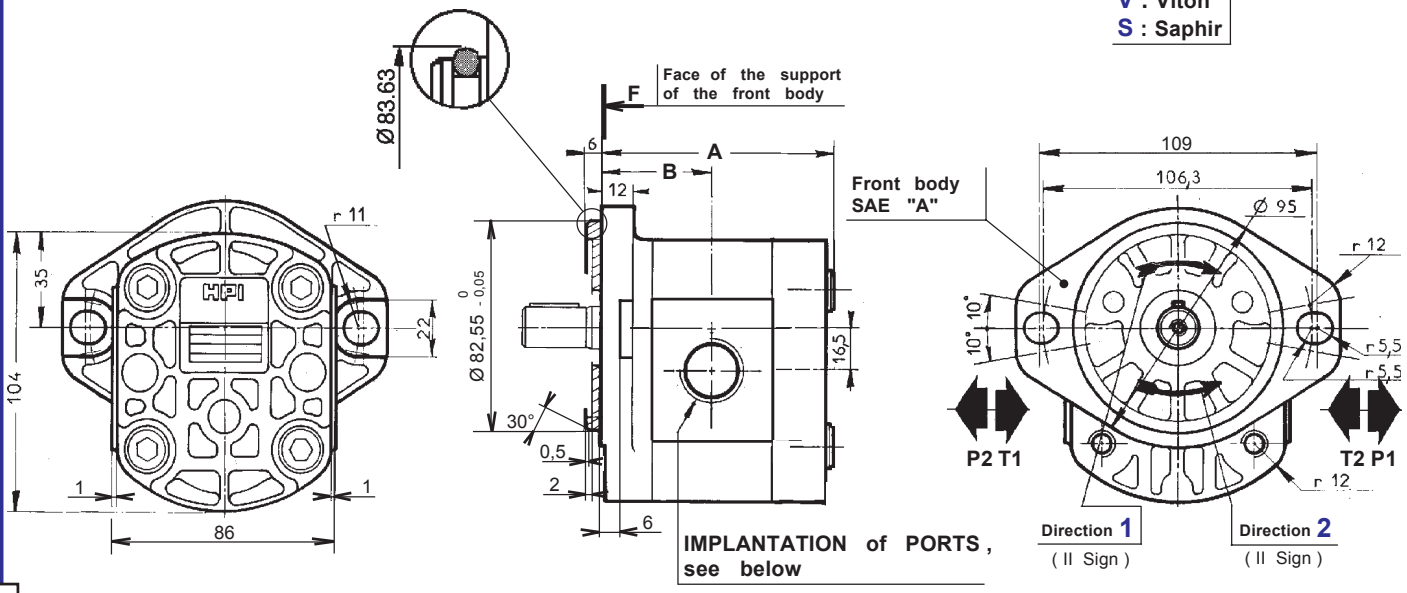
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAK

PUBLISHING 05 / 07 / 2000

P	II Sign	AA	K	2	VI Sign	F	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

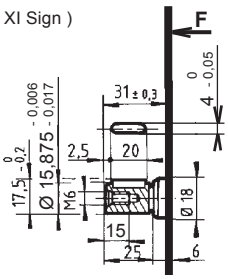


Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

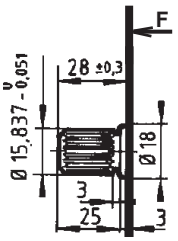
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

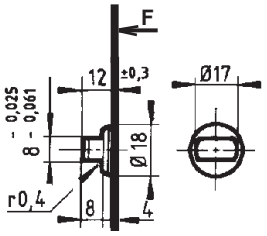
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° pressure angle

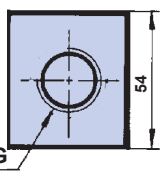
Max. transmissible torque
10 m.daN

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



Max. transmissible torque
7 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
F (Threaded) Ø F effective depth G 	004 to 012				3/4" BSP	16				3/8" BSP	12		
	015 to 022				1" BSP	18				1/2" BSP	14		

F.T 20 653

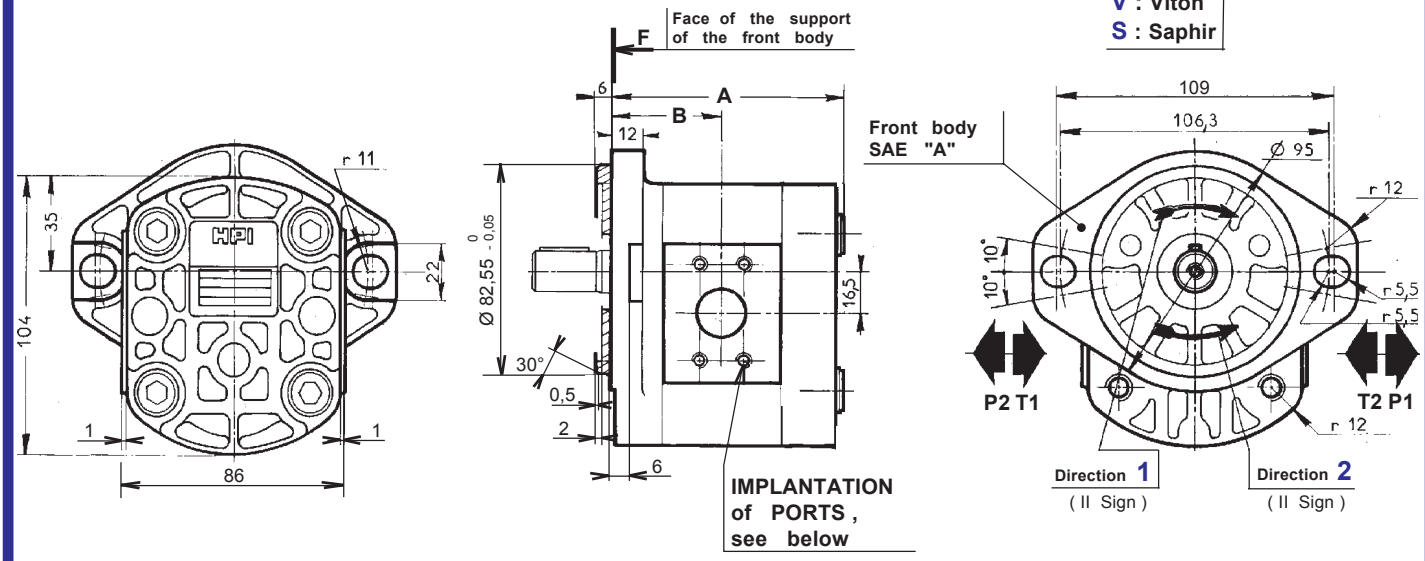
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAK

PUBLISHING 05 / 07 / 2000

P	II Sign	AA	N	2	VI Sign	Y	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

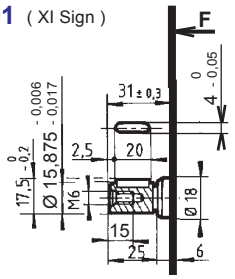
N : Nitrile
V : Viton
S : Saphir



Dimension readings and approximative characteristics subject to modifications .

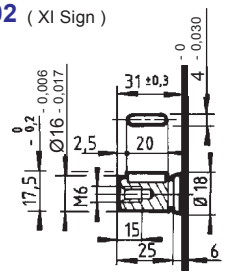
CHOICE of DRIVING SHAFTS

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



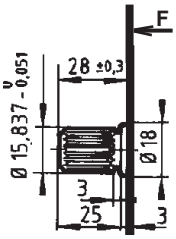
Max. transmissible torque
5 m.daN

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



Max. transmissible torque
5 m.daN

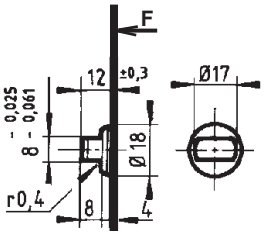
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A" standard - 9 theet - Pitch 16/32 - Flat root 30° pressure angle

Max. transmissible torque
10 m.daN

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



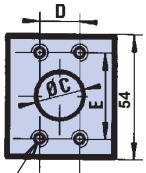
Max. transmissible torque
7 m.daN

CHOICE of the capacity (VI Sign)	Dimensions A	B
004 - 006 - 008 - 010 - 012	92,5	43,5
015 - 018 - 022	107	51
026 - 030	123	59

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)

Y
(ISO 6162)



Ø F
effective depth G

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
004 to 012	15	17,4	38	M8	14	15	17,4	38	M8	14		
015 to 022	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
026 to 030	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 20 361

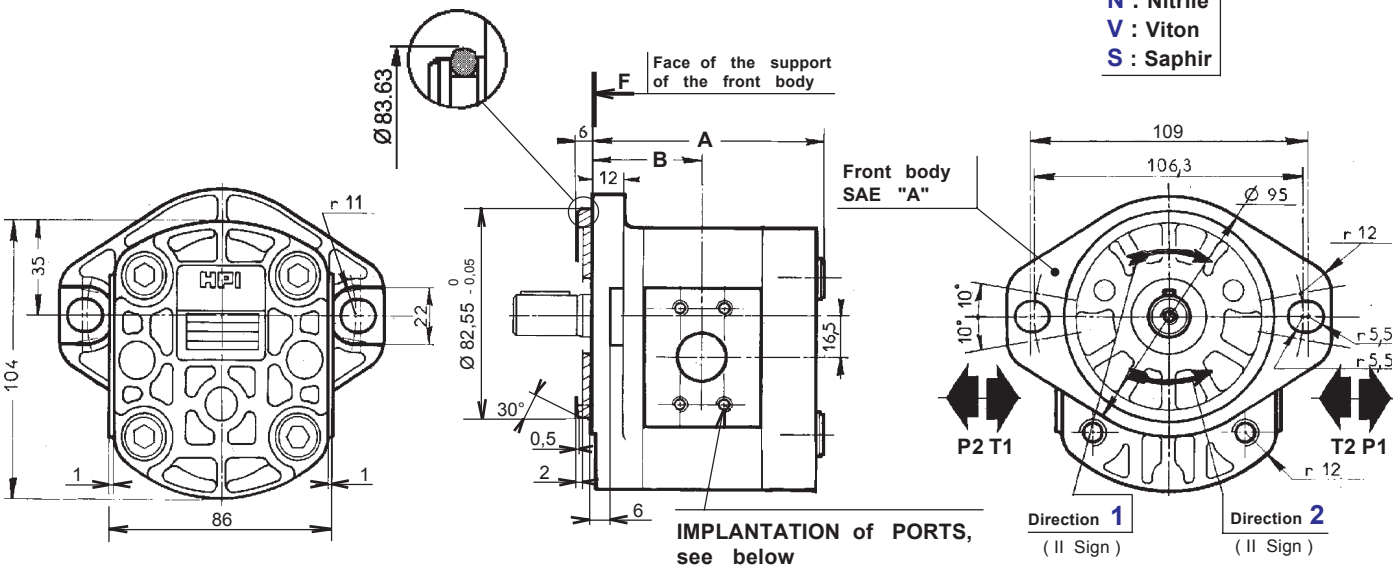
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAN

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	K	2	VI Sign	Y	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

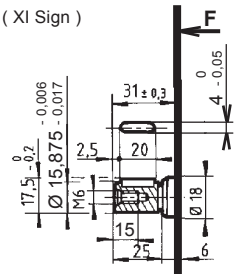


Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

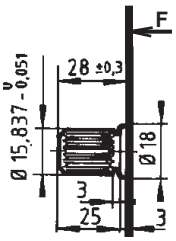
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

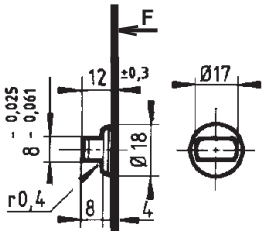
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° pressure angle

Max. transmissible torque
10 m.daN

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



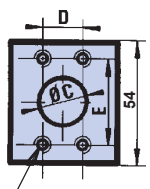
Max. transmissible torque
7 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS

(VII Sign)

Y
(ISO 6162)



Ø F
effective depth G

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
004 to 012	15	17,4	38	M8	14	15	17,4	38	M8	14		
015 to 022	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
026 to 030	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 20 400

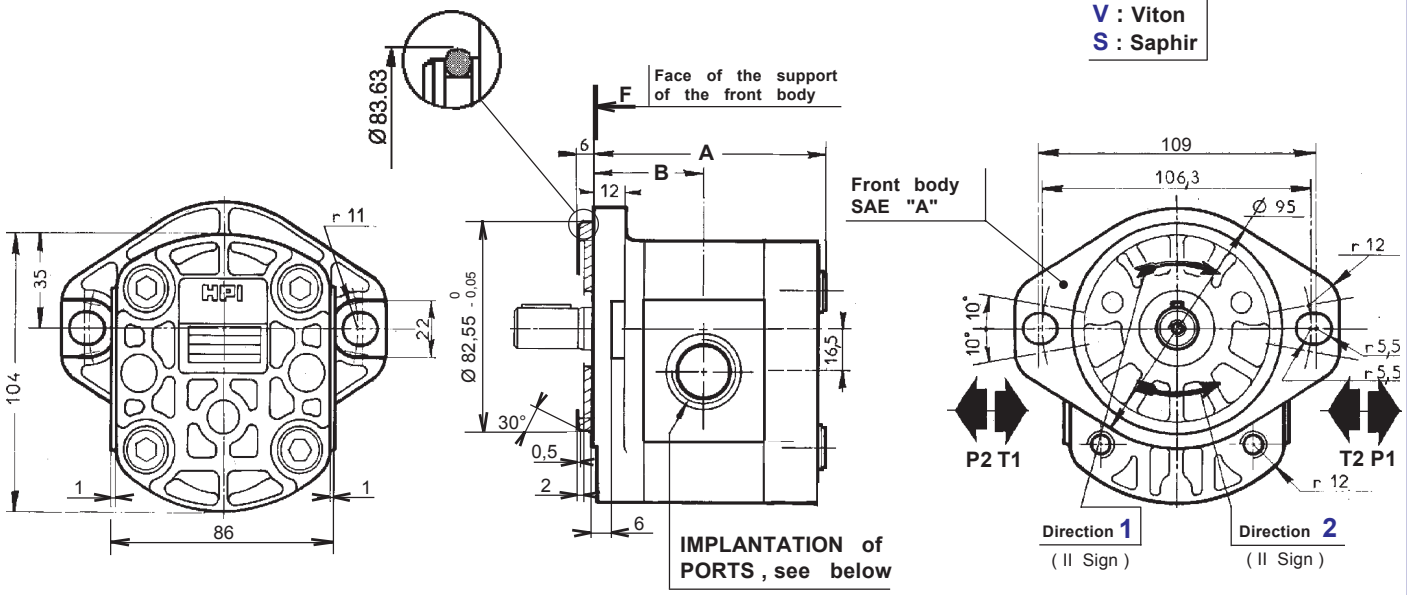
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAK

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	K	2	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir

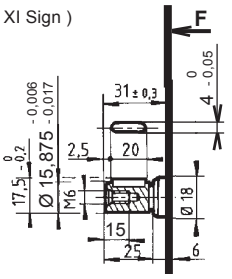


Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

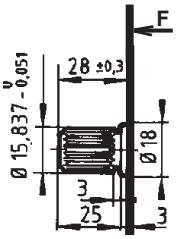
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

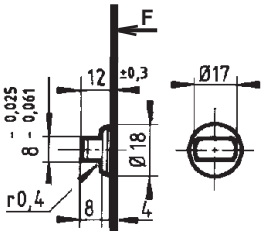
30 (IX - X Sign)
A01 (XI Sign)



Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° pressure angle

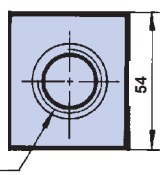
Max. transmissible torque
10 m.daN

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



Max. transmissible torque
7 m.daN

Multiple geared pumps , see data sheet **F.T 20 618**
Rear bodies , see data sheet **F.T R 0189**

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	004 to 012	1" 1/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	015 to 022	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	026 030	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

F.T 20 402

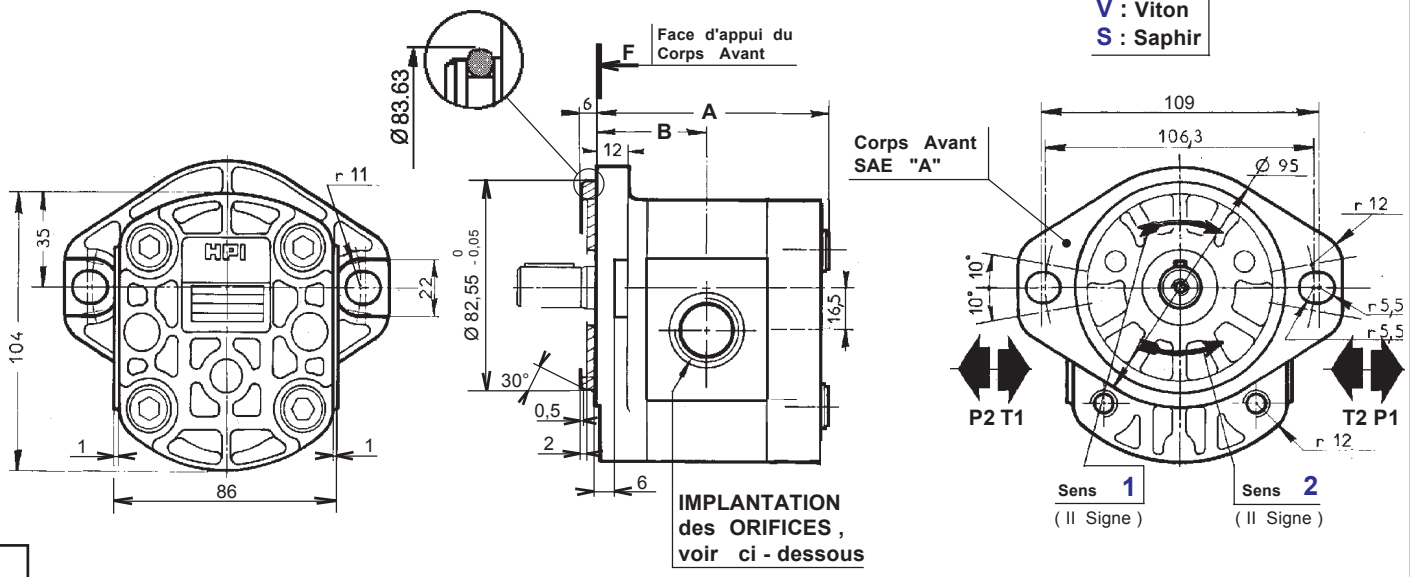
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAK

PUBLISHING 25 / 10 / 2001

P	II Signe	AA	K	2	VI Signe	U	L	IX Signe	X Signe	XI Signe	XII Signe

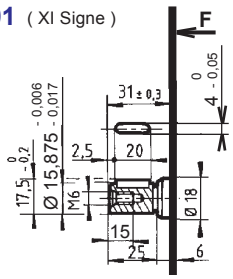
Pour CODIFICATION , voir Fiche Technique **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



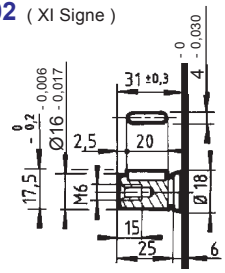
CHOIX des ARBRES d' ENTRAINEMENT

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



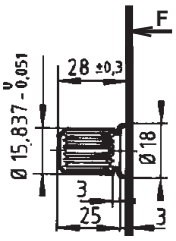
Couple maxi transmissible
5 m.daN

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



Couple maxi transmissible
5 m.daN

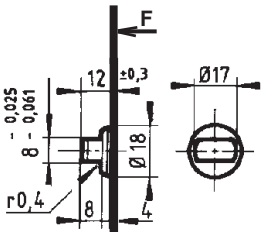
30 (IX - X Signe)
A01 (XI Signe)



Cannelures en développante
SAE "A" 9 Cannelures - Diametral Pitch 16/32
Angle de Pression : 30°

Couple maxi transmissible
10 m.daN

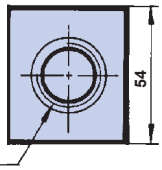
40 (IX - X Signe)
C03 (XI Signe)



Couple maxi transmissible
7 m.daN

CHOIX de la CAPACITE (VI Signe)	Cotes A	Cotes B
004 - 006 - 008 - 010 - 012	92,5	43,5
015 - 018 - 022	107	51
026 - 030	123	59

Pompes Multicorps , voir Fiche Technique **F.T 20 618**
Corps arrière , voir Fiche Technique **F.T R 0189**

IMPLANTATION des ORIFICES (VII Signe)	Capacité (VI Signe)	ASPIRATION (T) ØF	ASPIRATION (T) G	REFOULEMENT (T) ØF	REFOULEMENT (T) G
U (Taraudée SAE J 475) Ø F Prof. utile G 	004 à 012	1" 1/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	015 à 022	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	026 030	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

Cotes dimensionnelles et caractéristiques approximatives sous réserves de modifications

F.T 20 402

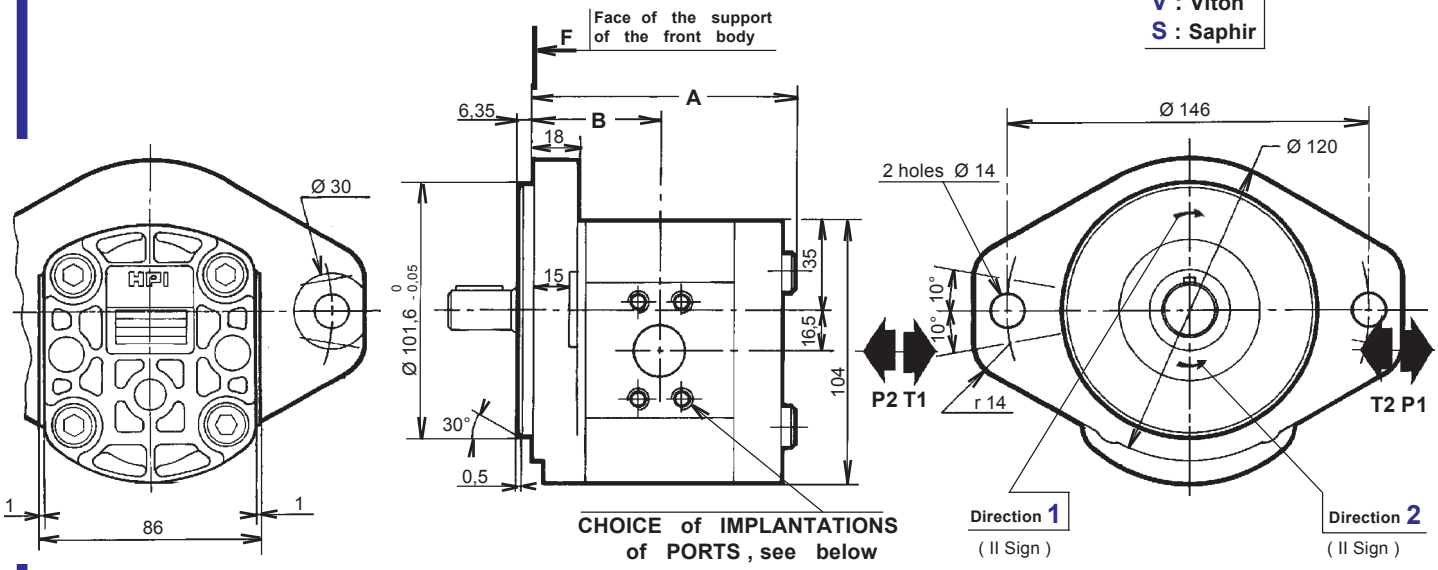
POMPES HYDRAULIQUES A ENGRENAGE SERIE 2 TYPE AAK

EDITION 25 / 10 / 2001

P	II Sign	AF	N	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

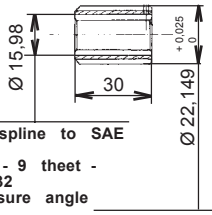
N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS , see below

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 to 012	93,5	44,5
015 to 022	108	52
026 - 030	124	60

DRIVING COUPLING



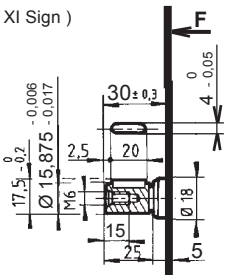
Ref. : E.5041310

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

Involute spline to SAE "B"
Standard - 13 theet - Pitch 16/32
30° Pressure angle

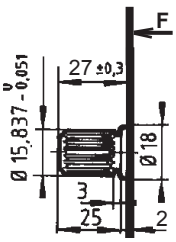
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

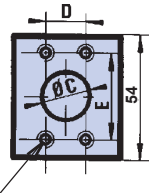
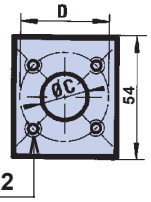
30 (IX - X Sign)
A01 (XI Sign)



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

Max. transmissible torque
10 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the IMPLANTATIONS of PORTS (II Sign)	Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12 	004 to 012	20	17,4	38	15	17,4	38	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
	015 to 030	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (Square) M6 effective depth 12 	004 to 012	20	40		15	35		1 / 2 " BSP N: 367141.502	3 / 8 " BSP N: 367141.702
	015 to 030							3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

Dimension readings and approximative characteristics subject to modifications .

F.T 20 419

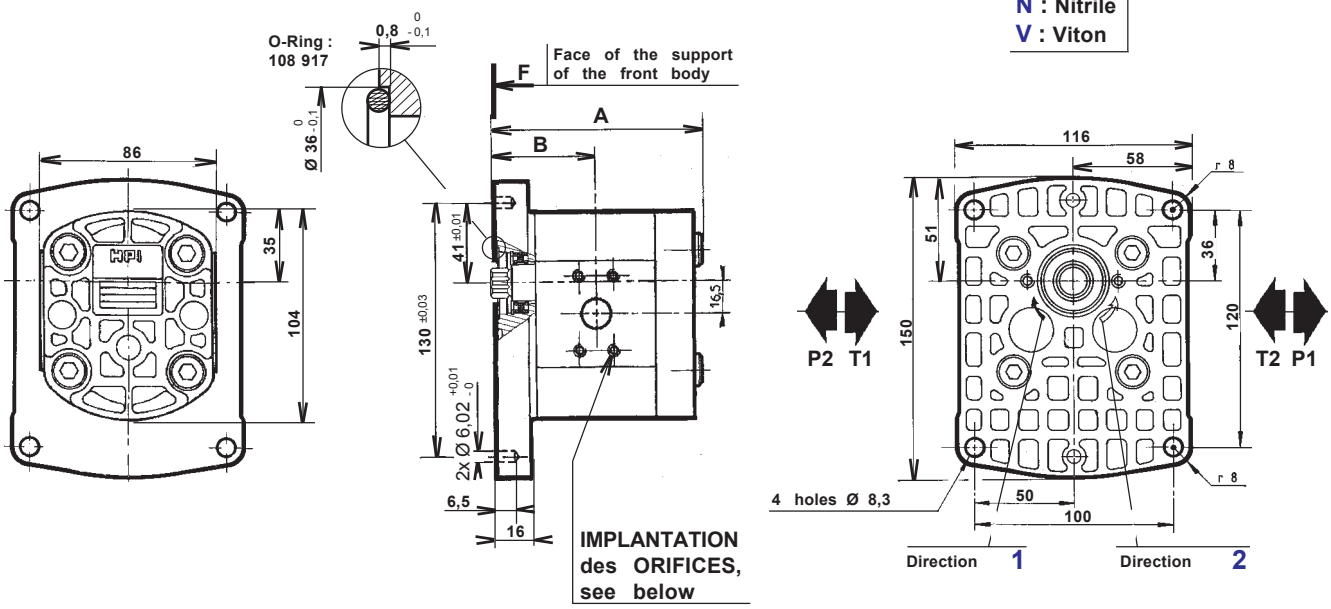
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AFN

PUBLISHING 05 / 07 / 2000

P	II Sign	CJ	E	2	VI Sign	H	L	3	3	C05	XII Sign

For CODIFICATION , see data sheet F.T R 0011

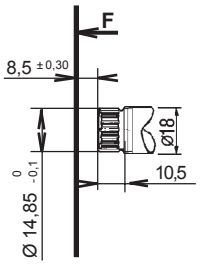
N : Nitrile
V : Viton



CHOICE of the Capacity (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

DRIVING SHAFT

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



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks

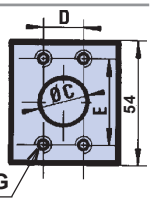
Max. transmissible torque
9,5 m.daN

Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS

(VII Sign)

H
(HPI)



Ø F
effective depth G

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min) INLET (T)	OUTLET (P)
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

Dimension readings and approximative characteristics subject to modifications .

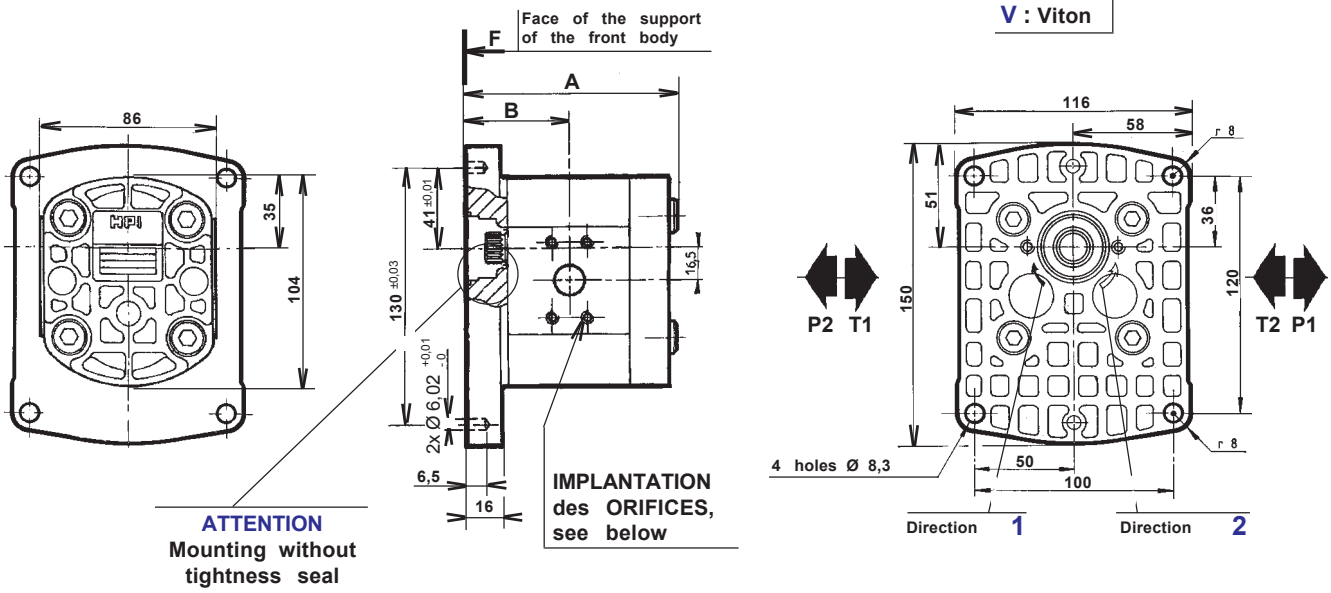
F.T 20 951

HYDRAULIC GEAR PUMPS SERIES 2 TYPE CJE

P	II Sign	CJ	N	2	VI Sign	H	L	3	3	C05	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

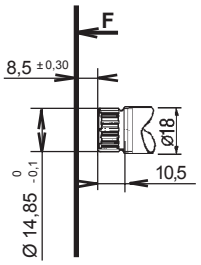
N : Nitrile
V : Viton



CHOICE of the Capacity (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

DRIVING SHAFT

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



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks

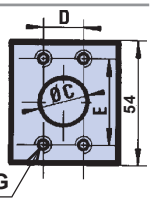
Max. transmissible torque
9,5 m.daN

Rear bodies , see data sheet **F.T R 0189**

IMPLANTATION of PORTS

(VII Sign)

H
(HPI)
Ø F
effective depth G



CATALOGUE **N° 70**
Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min)

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	INLET (T)	OUTLET (P)
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

HYDRAULIC GEAR PUMPS SERIES 2 TYPE CJN

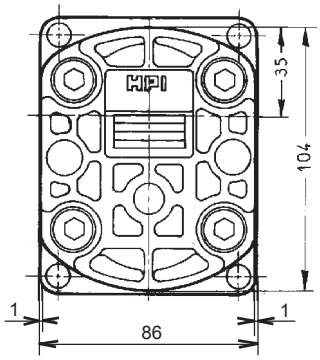
Dimension readings and approximative characteristics subject to modifications .

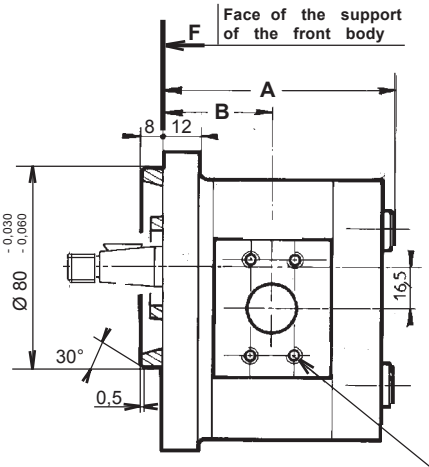
F.T 20 949

P	II Sign	DB	N	2	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

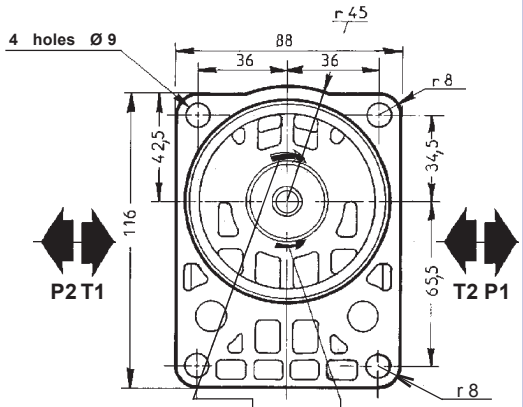
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir





IMPLANTATION of PORTS, see below



Direction 1 (II Sign)
Direction 2 (II Sign)

Dimension readings and approximative characteristics subject to modifications .

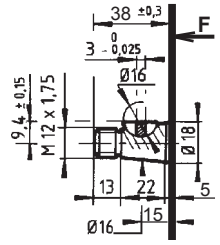
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

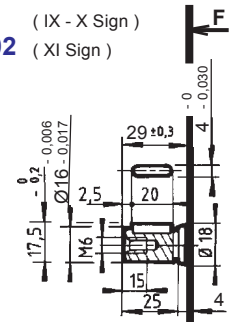
Taper 1 / 5



Delivered with Nut
Ref. : 106 317

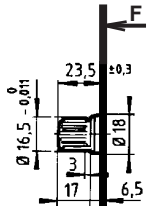
Max. transmissible torque
22 m.daN

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



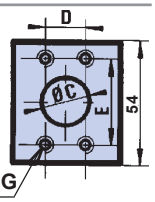
Max. transmissible torque
5 m.daN

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



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

Max. transmissible torque
10 m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G 	004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
	015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

F.T 20 406

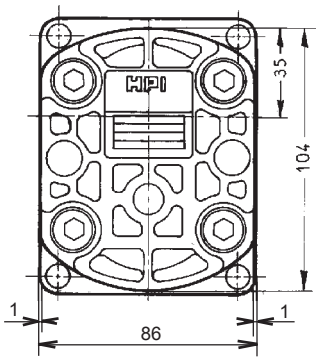
HYDRAULIC GEAR PUMPS SERIES 2 TYPE DBN

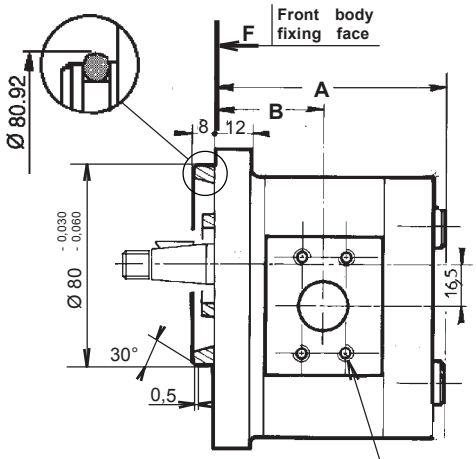
PUBLISHING 25 / 10 / 2001

P	II Sign	DB	K	2	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

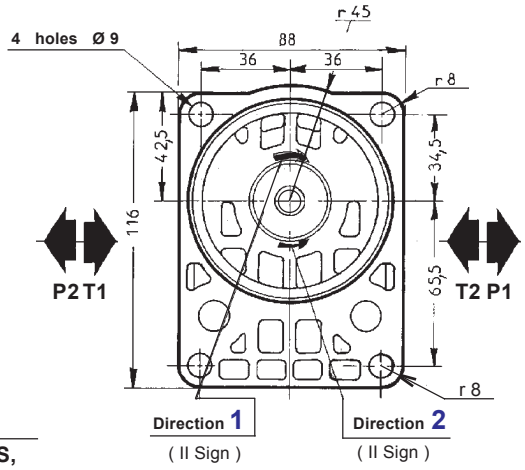
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir





IMPLANTATION of PORTS, see below



Dimension readings and approximative characteristics subject to modifications .

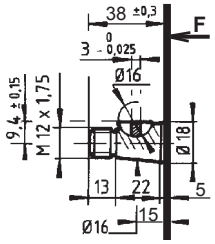
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

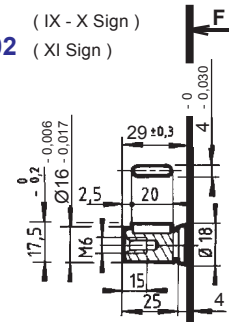


Delivered with Nut

Ref. : 106 317

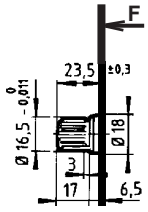
Max. transmissible torque
22 m.daN

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



Max. transmissible torque
5 m.daN

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



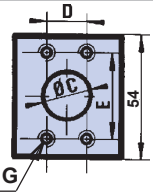
Involute spline shaft
B 17 x 14
to norm DIN 5482
Module 1,6 - 9 theet -
Spigot on free flanks

Max. transmissible torque
10 m.daN

IMPLANTATION of PORTS

(VII Sign)

H
(HPI)



Ø F
effective depth G

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for Speed 1500 rev / min) INLET (T)	OUTLET (P)
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

F.T 20 655

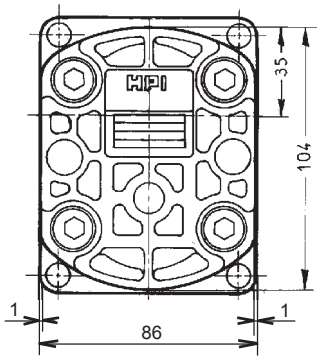
HYDRAULIC GEAR PUMPS SERIES 2 TYPE DBK

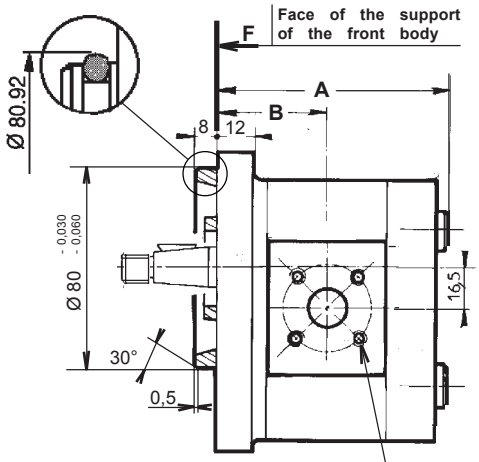
PUBLISHING 25 / 10 / 2001

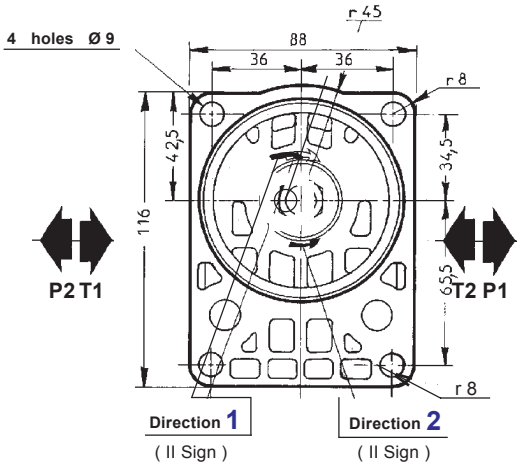
P	II Sign	DB	K	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir







IMPLANTATION of PORTS , see below

Dimension readings and approximative characteristics subject to modifications .

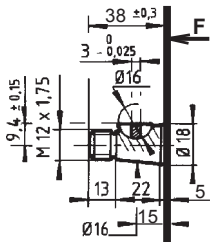
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	92,5	43,5
015 018 022	107	51
026 030	123	59

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

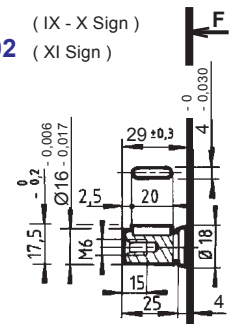
Taper 1 / 5



Delivered with Nut
Ref. : 106 317

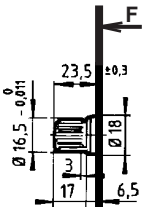
Max. transmissible torque
22 m.daN

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



Max. transmissible torque
5 m.daN

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



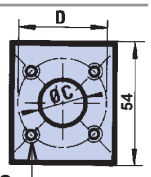
Involute spline shaft
B 17 x 14 to norm DIN 5482
Module 1,6 - 9 theet
Spigot on free flanks

Max. transmissible torque
10 m.daN

IMPLANTATION of PORTS

(VII Sign)

C
(Square)



M6
effective depth 12

Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E
004 to 012	20	40		15	35	
015 to 030						

CATALOGUE N° 70
Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)

INLET (T)	OUTLET (P)
1 / 2 " BSP N: 367141.502	3 / 8 " BSP N: 367141.702
3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

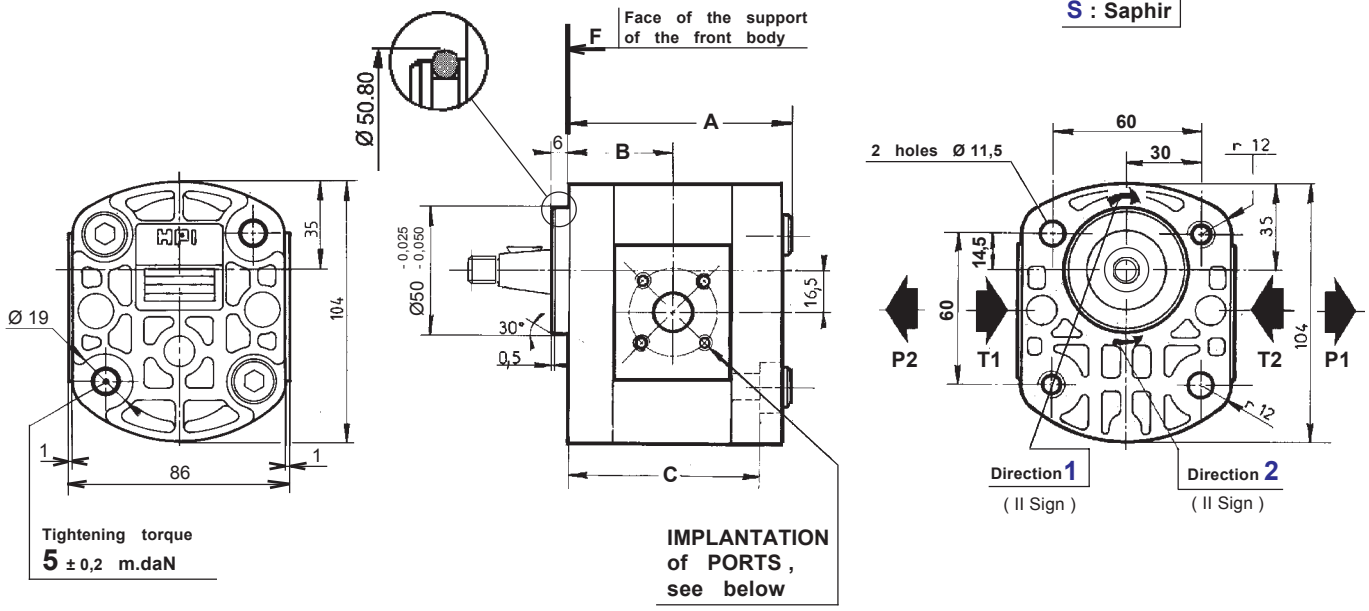
HYDRAULIC GEAR PUMPS SERIES 2 TYPE DBK

PUBLISHING 05 / 07 / 2000

P	II Sign	DC	K	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



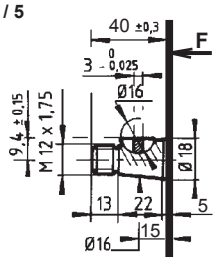
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B	C
004 006 008 010 012	90,5	41,5	79,5
015 018 022	105	49	94
026 030	121	57	110

CHOICE of DRIVING SHAFTS

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

Taper 1 / 5

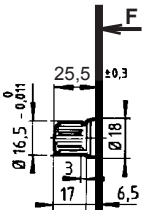


Delivered with Nut

Ref. : 106 317

Max. transmissible torque
22 m.daN

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



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

Max. transmissible torque
10 m.daN

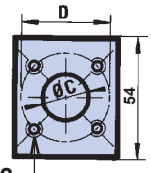
Capacity (VI Sign)	Assembling recommendations Screws Dimensions	References	Washers References
004 to 012	M 10 x 100	109 088	101 904
015 to 022	M 10 x 110	109 421	
026 - 030	M 10 x 130	109 004	

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS

(VII Sign)

C
(Square)



M6
effective depth 12

Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E
004 to 012	20	40		15	35	
015 to 030						

CATALOGUE N° 70
Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)

INLET (T)	OUTLET (P)
1 / 2 " BSP	3 / 8 " BSP
N: 367141.502	N: 367141.702
3 / 4 " BSP	1 / 2 " BSP
N: 367141.503	N: 367141.703

HYDRAULIC GEAR PUMPS SERIES 2 TYPE DCK

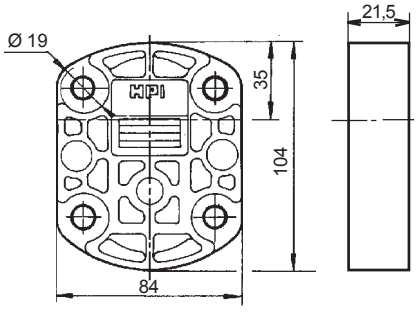
PUBLISHING 05 / 07 / 2000

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign

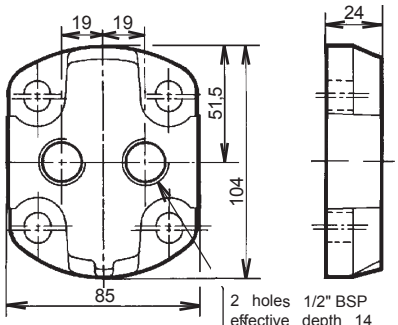
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir

L (VIII Sign) **Standard (no ports)**



A (VIII Sign) **With ports**

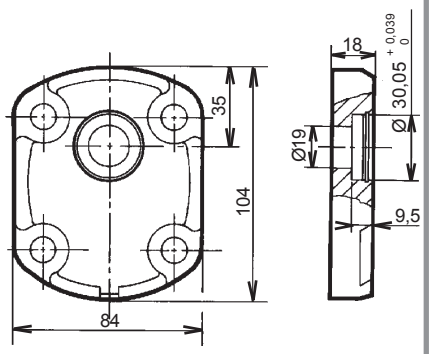


2 holes 1/2" BSP effective depth 14

Max. tightening torque of the connexion : **4** $^{+0,5}_{0}$ **Kgm**

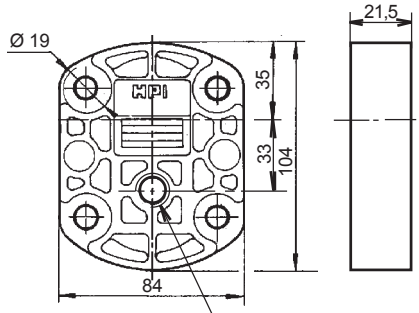
Max. flow : **22 l / min**

Z (VIII Sign) **Double shaft port**



L (VIII Sign) **Standard (no ports)**

For single pumps
P3 - P5 - P6



Drain port 1/4" BSP effective depth 14

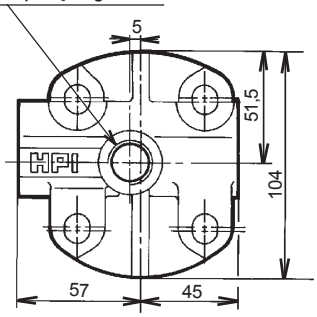
Max. tightening torque of the connexion : **3,3** $^{+0,5}_{0}$ **Kgm**

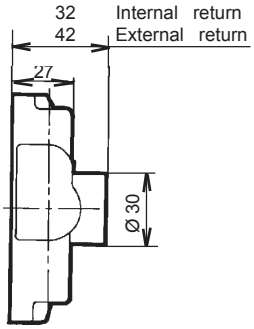
Q (VIII Sign) **Internal return flow control**

R (VIII Sign) **External return flow control**

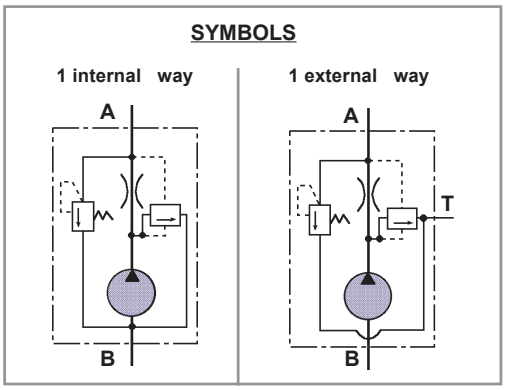
M20 x 150 effective depth 12

Max. tightening torque of the connexion : **3,8** $^{+0,2}_{0}$ **Kgm**





SYMBOLS



NOTA : Port M 20 x 150 only exists on external return version.

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 1/4

HYDRAULIC GEAR PUMPS SERIES 2-2,5

REAR BODY

Following Page

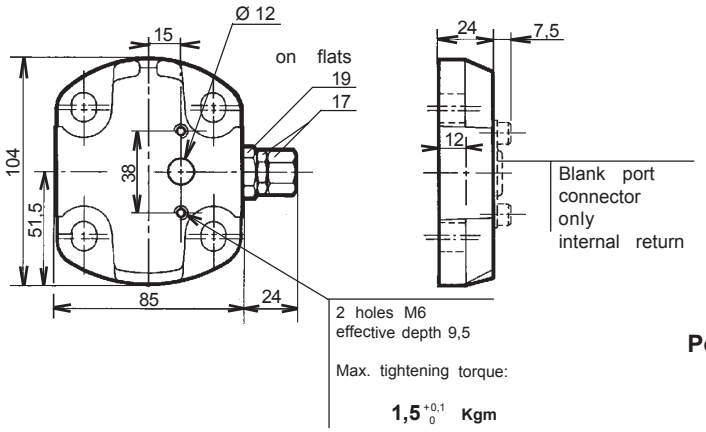
PUBLISHING 04 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	140	V22

For CODIFICATION , see data sheet **F.T R 0011**

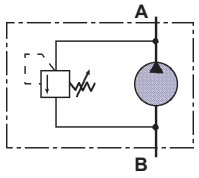
N : Nitril
V : Viton
S : Saphir

X (VIII Sign) **High pressure relief valve (Adjustable) Internal return**
T (VIII Sign) **High pressure relief valve (Adjustable) External return**

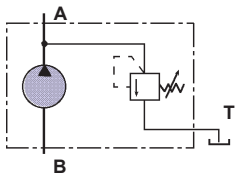


SYMBOLS

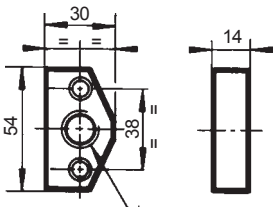
X Internal return



T External return

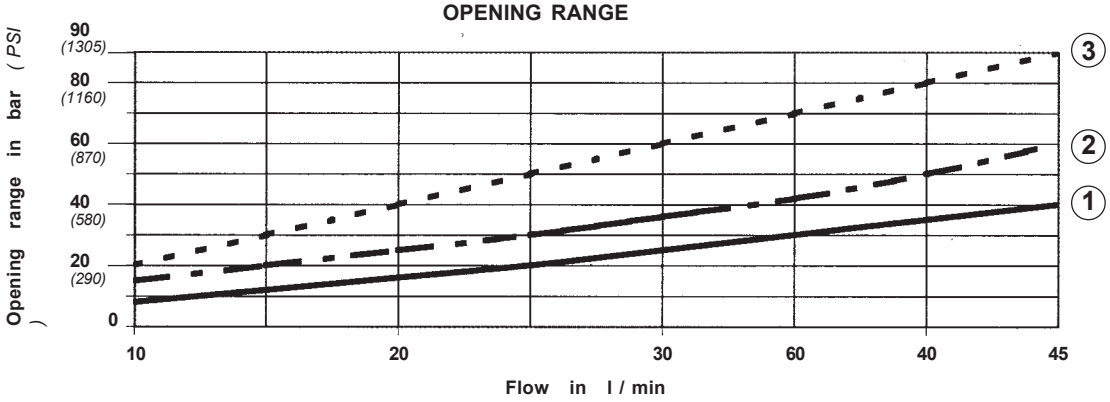


Port connector 2.504111



NB : Port Ø 12 can be used only with external return. (**Code T**)
With internal return, the port is sealed by a flange. (**Code X**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

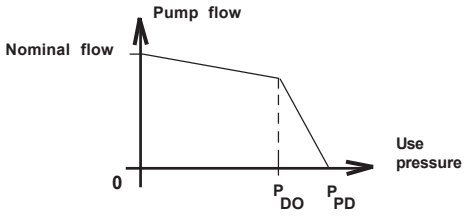
Setting :	①	②	③
Pressure at opening begin mini :	**20 bar** 290 PSI	**100 bar** 1450 PSI	**150 bar** 2175 PSI
Max. :	**100 bar** 1450 PSI	**150 bar** 2175 PSI	**200 bar** 2900 PSI

Setting tolerance : ± 5 bar (72,5 PSI)

Full flow setting

XIII Sign **140** Example : Pressure of by-pass Full flow ± 5 bar (72,5 PSI) to 46 cSt
140 = 140 bar (2030 PSI)

XIV Sign **V22** Example : V Speed
22 Speeed / 100 ⇒ 2200 rev / min



P_{DO} Pressure at opening begin (depending on setting)

P_{PD} Full flow pressure (depending on setting and flow)

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

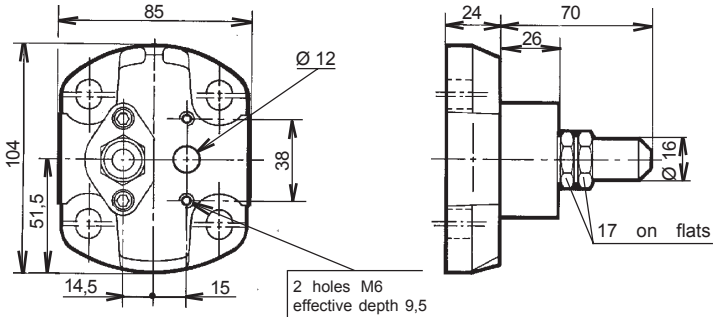
F.T R 0189 2/4

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	010	V15

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

V (VIII Sign) **Low pressure relief valve (Adjustable) Internal return**
W (VIII Sign) **Low pressure relief valve (Adjustable) External return**

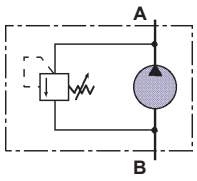


2 holes M6
effective depth 9,5

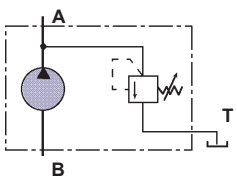
Max. tightening torque:
1,5 $^{+0,1}_{0}$ **Kgm**

SYMBOLS

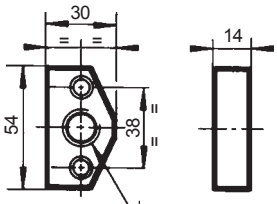
V Internal return



W External return



Port connector 2.504111

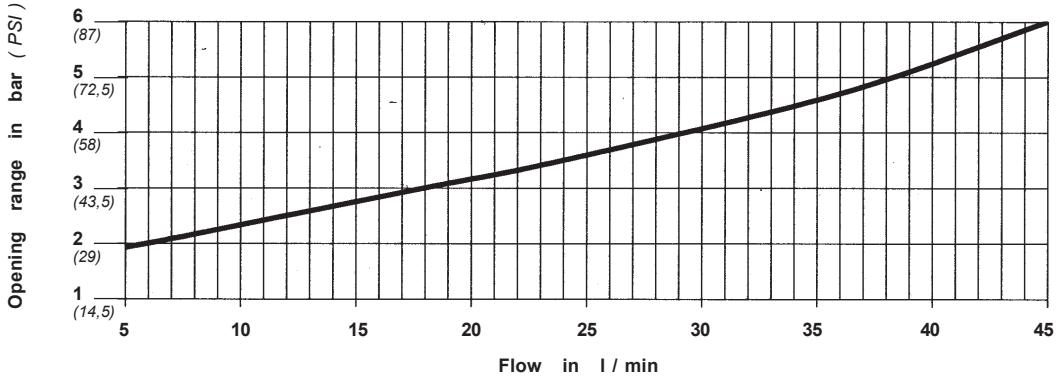


Port 3/8" BSP
effective depth 12

Max. tightening torque of the connexion :
3,3 $^{+0,5}_{0}$ **Kgm**

NB : Port Ø 12 can be used only with external return. (**Code W**)
With internal return, the port is sealed by a flange. (**Code V**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40 °C

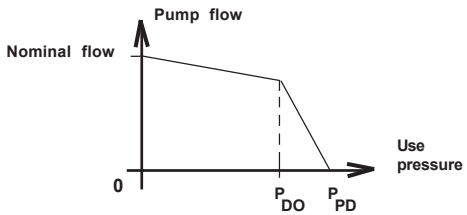
Pressure at opening begin mini : 5 bar (72,5 PSI)
Max. : 15 bar (217,5 PSI)

Setting tolerance : ± 1 bar *(14,5 PSI)*

Full flow setting

XIII Sign **010** Example : **Pressure of by-pass Full flow ± 1 bar (14,5 PSI) to 46 cSt**
010 = 10 bar (145 PSI)

XIV Sign **V15** Example : **V Speed**
15 Speed / 100 ⇒ 1500 rev / min



P_{DO} Pressure at opening begin (depending on setting)

P_{PD} Full flow pressure (depending on setting and flow)

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 3/4

Preceding Page
Following Page

HYDRAULIC GEAR PUMPS SERIES **2-2,5**
REAR BODY

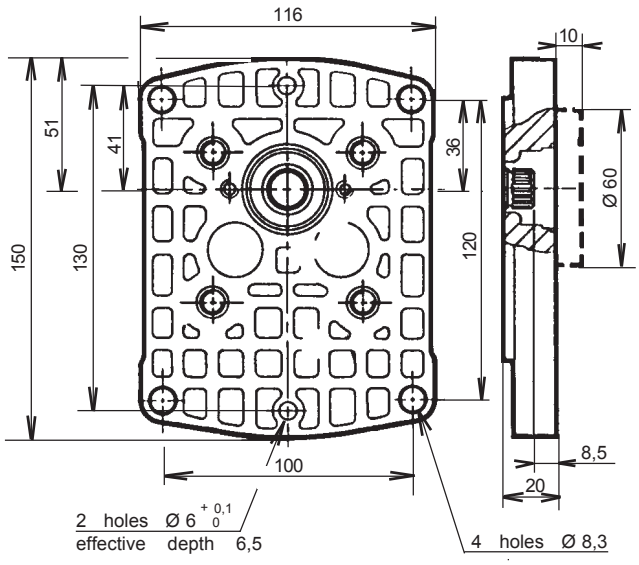
PUBLISHING 12 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	J	IX Sign	IX Sign	XI Sign	XII Sign

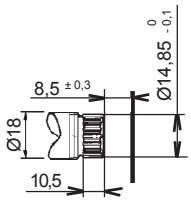
For CODIFICATION , see data sheet F.T R 0011

N : Nitril
V : Viton
S : Saphir

J (VIII Sign) Pre - arrangement with mounting " Module 3 "



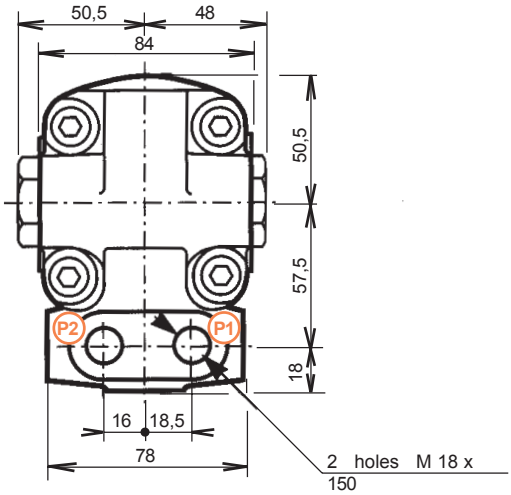
33 (IX - X Sign)
C05 (XI Sign)



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks
Max. transmissible torque

9,5 m.daN

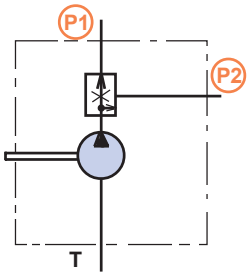
D (VIII Sign) Flow control valve 3 Ways



P1 **Constant flow (+ 15% - 10%)**

P2 **Residual flow**

SYMBOL



Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 4/4

Preceding Page
Following Page

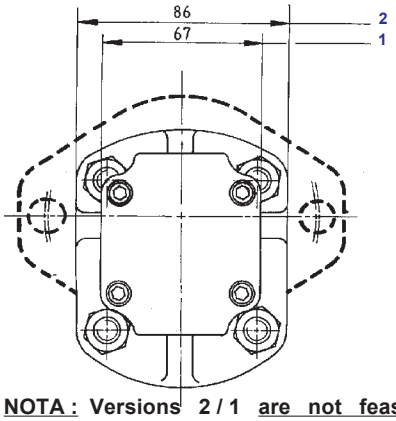
HYDRAULIC GEAR PUMPS SERIES 2-2,5

REAR BODY

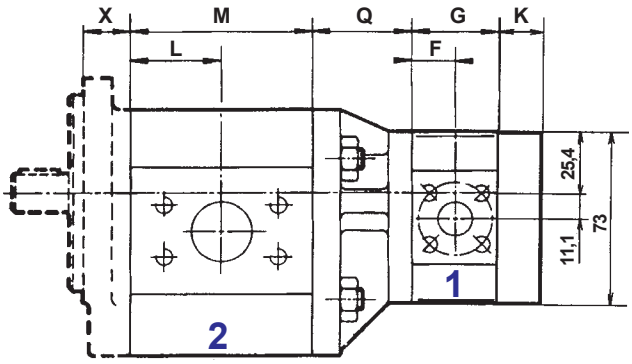
P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Signe	XV Sign	XVI Sign

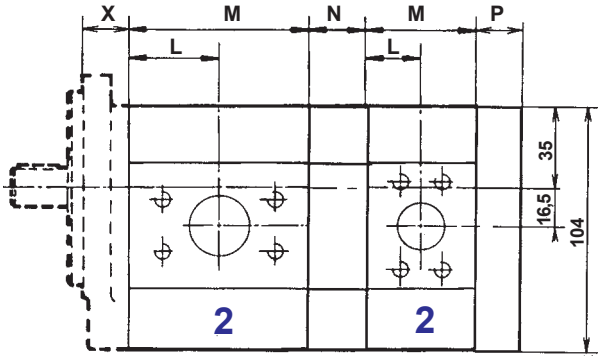
For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir



NOTA : Versions 2 / 1 are not feasible in DCN and DUK.





ATTENTION

For common suctions .

The flow of the pump , or pump preceding or following the section including the suction must not exceed **22 l / min .**

Dimension readings and approximative characteristics subject to modifications .

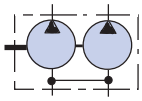
- Hydraulic characteristics ,
- Driving shafts ,
- Supply ports implantation
- Dimensions of " Front body " : see the technical data sheets of the single pumps quoted opposite .

Different mounting possibilities between multiple pumps , see data sheet F.T R 0029

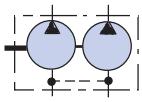
Dimensions **X** , see following page

JUNCTIONS BODY

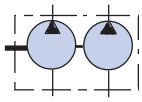
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



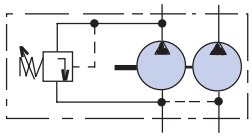
Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



Code X (VIII Sign) — **Adjustable relief valve internal return in preceding pump**



SERIES (V - IX Sign)	Capacity (VI - X Sign)	L	M	N	P	Q	F	G	K
2	004 to 012	23,5	47,0	24	25,5				
	015 to 022	31,0	61,6						
	026 030	38,8	77,7						
1	001 to 003					42	17,9	35,8	18
	004 to 006						22,7	45,6	

NOTA : Versions 2 / 1 - 2,5 / 1 only Codes A - D and E .

Following Page

MULTIPLE GEARED PUMPS

SERIES 2 (FLAT FRONT BODY)

PUBLISHING 06 / 02 / 2002

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir

Fixing kit for doubles Pumps Type DCN and DUK .

Primary Pump Capacity (VI Sign)	Secondary Pump Capacity (X Sign)	Fixing Kit references
2004 to 2012	2004 to 2012	K5070323
2015 to 2022	2004 to 2012	K5070324
2015 to 2022	2015 to 2022	K5073127
2026-2030	2004 to 2012	K5070326
2026-2030	2015 to 2022	K5070327
2026-2030	2026-2030	K5070328

Fixing kit for Tripes Pumps Type DCN and DUK .

Primary Pump Capacity (VI Sign)	Secondary Pump Capacity (X Sign)	Tertiary Pump capacity (XIV Sign)	Fixing Kit references
2004 to 2012	2004 to 2012	2004 to 2012	K5070329
2015 to 2022	2004 to 2012	2004 to 2012	K5080330
2015 to 2022	2015 to 2022	2004 to 2012	K5070331
2015 to 2022	2015 to 2022	2015 to 2022	K5070332
2026-2030	2004 to 2012	2004 to 2012	K5070331
2026-2030	2015 to 2022	2004 to 2012	K5070332
2026-2030	2015 to 2022	2015 to 2022	K5070335
2026-2030	2026-2030	2004 to 2012	K5070335
2026-2030	2026-2030	2015 to 2022	K5070337
2026-2030	2026-2030	2026-2030	K5070338

Front body sheets Types (III - IV - VII Sign)	Dimensions X	Data references
AAN (Y)	20	F.T 20 361
AAN (U)	20	F.T 20 398
AAK (H-C)	20	F.T 20 399
AAK (F)	20	F.T 20 653
AAK (Y)	20	F.T 20 400
AAK (U)	20	F.T 20 402
AFN (H-C)	21	F.T 20 419

Front body sheets Types (III - IV - VII Sign)	Dimensions X	Data references
DBN (H)	20	F.T 20 406
DBK (H)	20	F.T 20 655
DBK (C)	20	F.T 20 408
DCK (C)	20	F.T 20 409

Dimension readings and approximative characteristics subject to modifications .

TORQUE CALCULATION

Q Capacity in cc / rev
P Pressure in bar
η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAK 2015 H A 2008 H L 30 A01 Pressure : 2015 200 bar 2008 150 bar Speed : 1500 RPM

$\frac{1,56 \times 15 \times 200}{1000 \times 0,87} = 5,38$ m.daN

$\frac{1,56 \times 8 \times 150}{1000 \times 0,87} = 2,15$ m.daN

$= \boxed{7,53 \text{ m.daN}} \Rightarrow$ Total torque

Preceding Page

MULTIPLE GEARED PUMPS

SERIES 2 (FLAT FRONT BODY)

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2

Thick Front Body

Publishing 01 / 2003

G10 | 088 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi Speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi Speed			
	cc / rev	bar	PSI	bar	PSI	RPM	l / min	l / min			Kg
2004	4,65	280	4060	240	3480	3500	6,97	16,2	0,77	0,74	2,7
2006	6,45	280	4060	240	3480	3500	9,67	22,5	1,12	1,02	
2008	8,25	280	4060	240	3480	3500	12,37	28,8	1,47	1,31	2,8
2010	10,12	280	4060	240	3480	3500	15,18	35,3	1,80	1,61	
2012	12	280	4060	240	3480	3500	18	42	2,13	1,91	
2015	15,52	250	3625	210	3045	3500	23,25	52,5	2,68	2,47	3,1
2018	19,12	200	2900	170	2465	3500	28,65	66,8	3,17	3,04	3,3
2022	22,87	175	2537	150	2175	3500	34,2	79,8	3,83	3,64	3,4
2026	27,6	175	2537	150	2175	3000	41,4	82,8	4,56	4,39	3,8
2030	31,2	175	2537	150	2175	3000	46,8	93,6	5,25	4,96	3,9

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

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAP 2015 H L 10 C03 Pressure : 200 bar Speed : 1500 RPM

Torque = $\frac{1,56 \times 15 \times 200}{1000 \times 0,87}$ = 5,38 m.daN

" GENERAL " 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	Y	U	L	X	T	V	W	Q	R	A	Z	10	20	30
AAP																10C03	20C03	
AAR																10C03	20C03	
ARP																10C05		
	DBR															10C07	20C15	
		ZFC																30D04

Not feasible versions " GENERAL "

other possibilities : please refer to " BASIC " catalogue B10

Our " BASIC" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

Flat front body , see Data sheet F.T R 0172

Dimension readings and approximative characteristics subject to modifications .

F.T R 0173

HYDRAULIC GEAR PUMPS

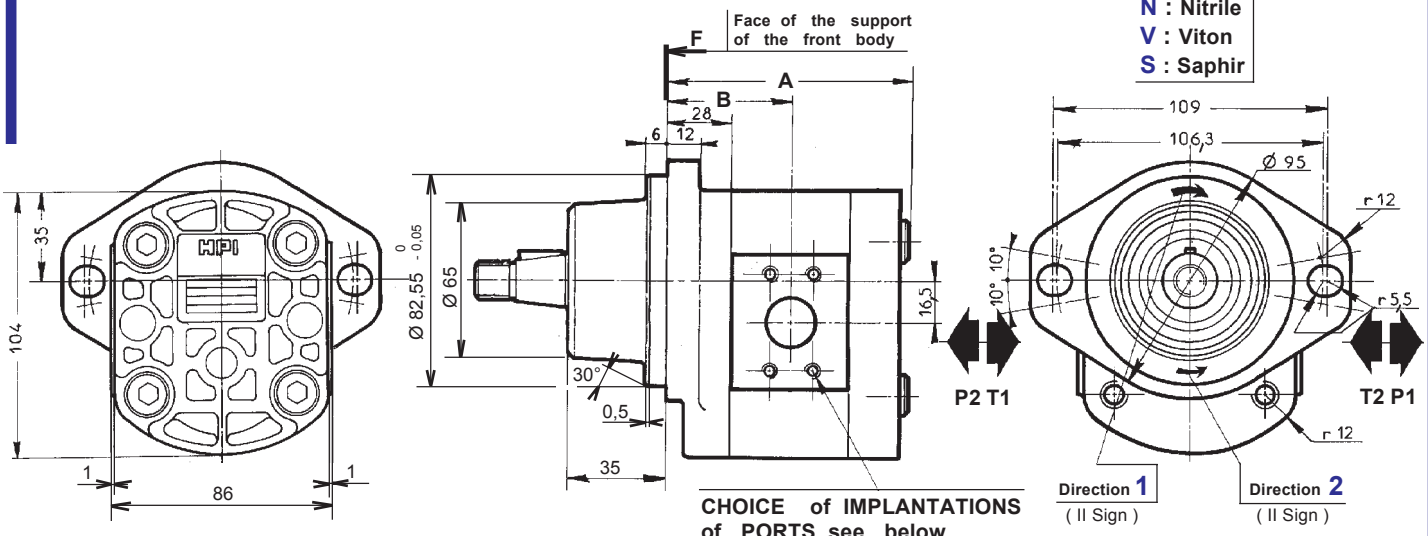
SERIES 2 (THICK FRONT BODY)

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	P	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS, see below

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	100,5	51,5
015 018 022	115	59
026 030	131	67

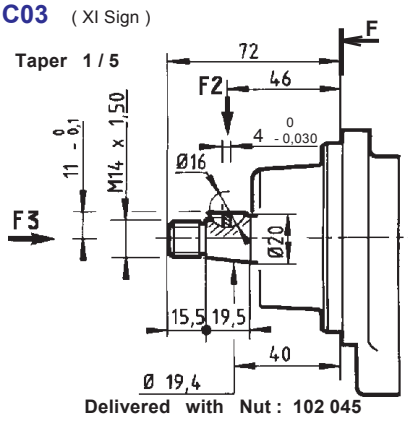
Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

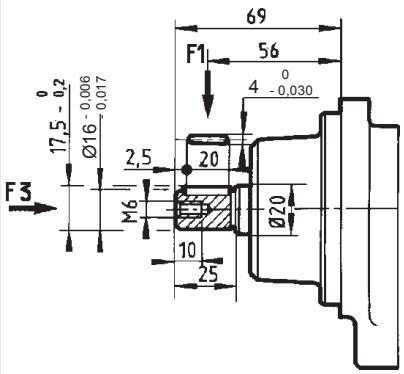
Taper 1 / 5



Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN
Max. transmissible torque
7 m.daN

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

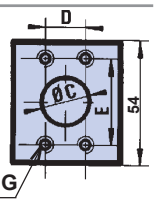


F1 Maxi : 100 daN
F3 Maxi : 50 daN
Max. transmissible torque
5 m.daN

CHOICE of IMPLANTATIONS of PORTS

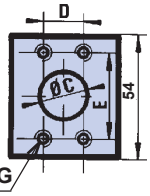
(VII Sign)

H (HPI)



Ø F
effective depth G

Y (ISO 6162)



Ø F
effective depth G

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI)												
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162)												
004 to 012	15	17,4	38	M8	14	15	17,4	38	M8	14		
015 to 022	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
026 to 030	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 20 415

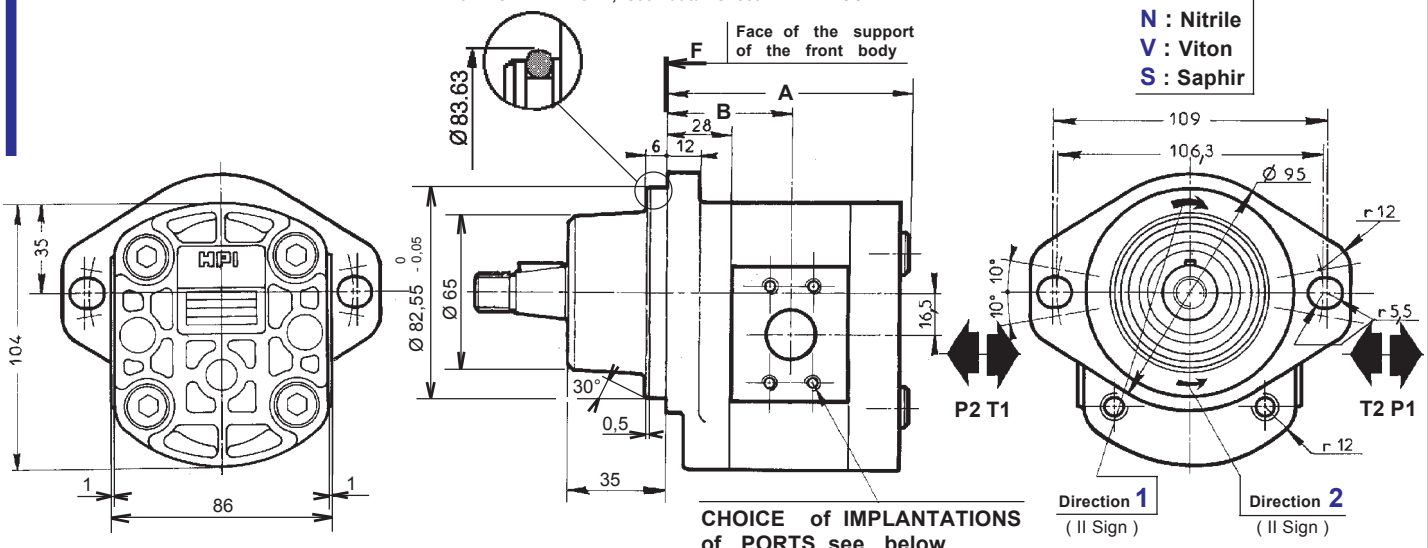
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAP

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	R	2	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS, see below

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	100,5	51,5
015 018 022	115	59
026 030	131	67

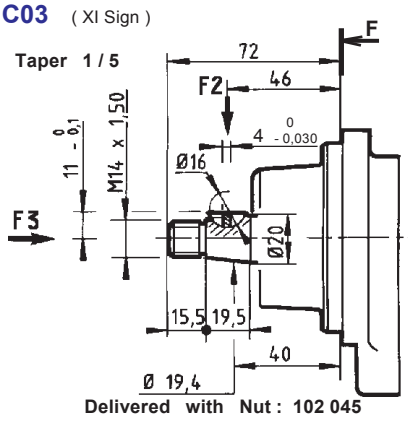
Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet **F.T 20 883**
Rear bodies , see data sheet **F.T R 0189**

CHOICE of the DRIVING SHAFTS

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

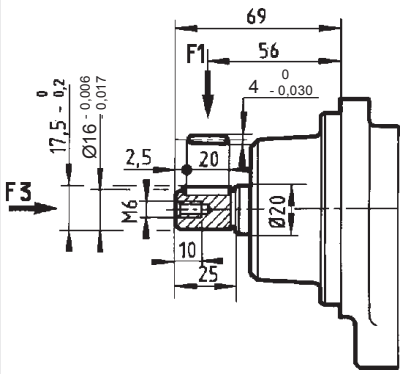
Taper 1 / 5



Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN
Max. transmissible torque
7 m.daN

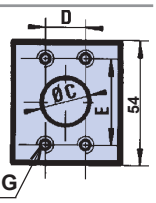
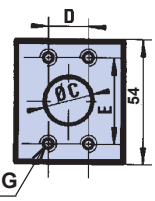
20 (IX - X Sign)
C03 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN
Max. transmissible torque
5 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)

CATALOGUE **N° 70**
Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)

Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G 												
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162) Ø F effective depth G 												
004 to 012	15	17,4	38	M8	14	15	17,4	38	M8	14		
015 to 022	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
026 to 030	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 20 416

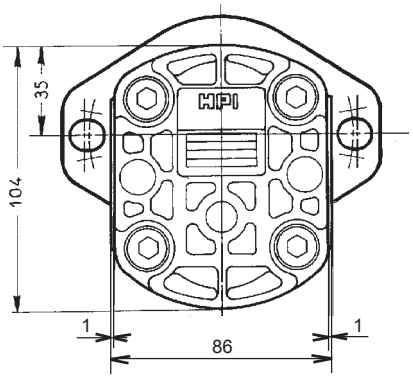
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAR

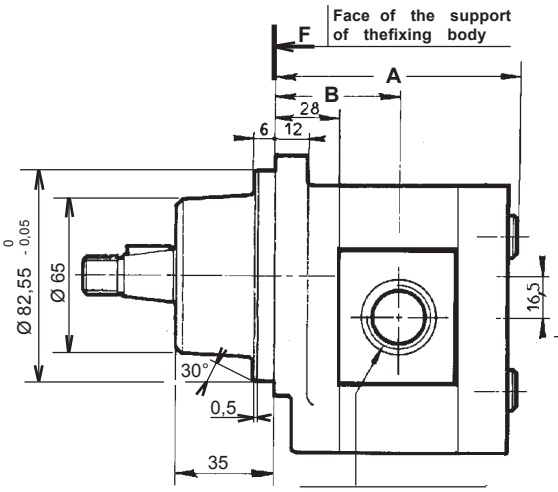
PUBLISHING 25 / 10 / 2001

P	II Sign	AA	P	2	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Sign

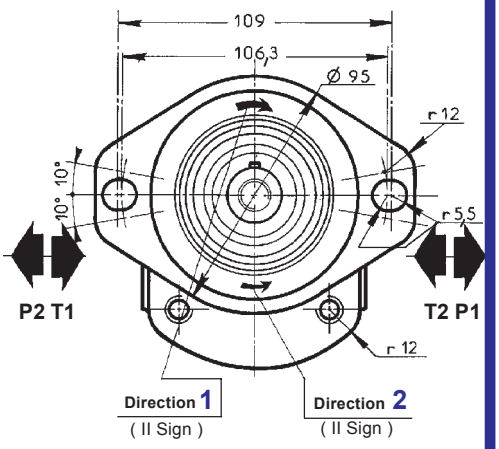
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir





IMPLANTATION of PORTS , see below



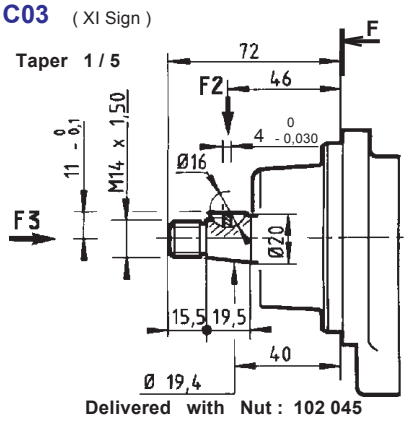
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	100,5	51,5
015 018 022	115	59
026 030	131	67

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

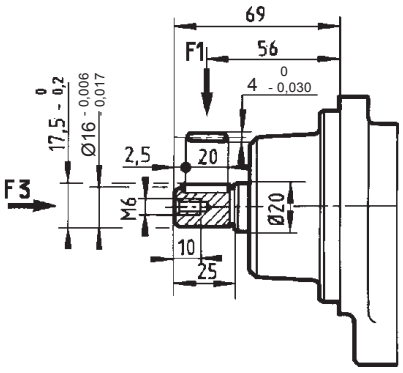


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Maxi transmissible torque
7 m.daN

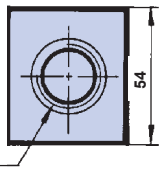
20 (IX - X Sign)
C03 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Maxi transmissible torque
5 m.daN

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	004 to 012	1" 1/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	015 to 022	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	026 030	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

F.T 20 922

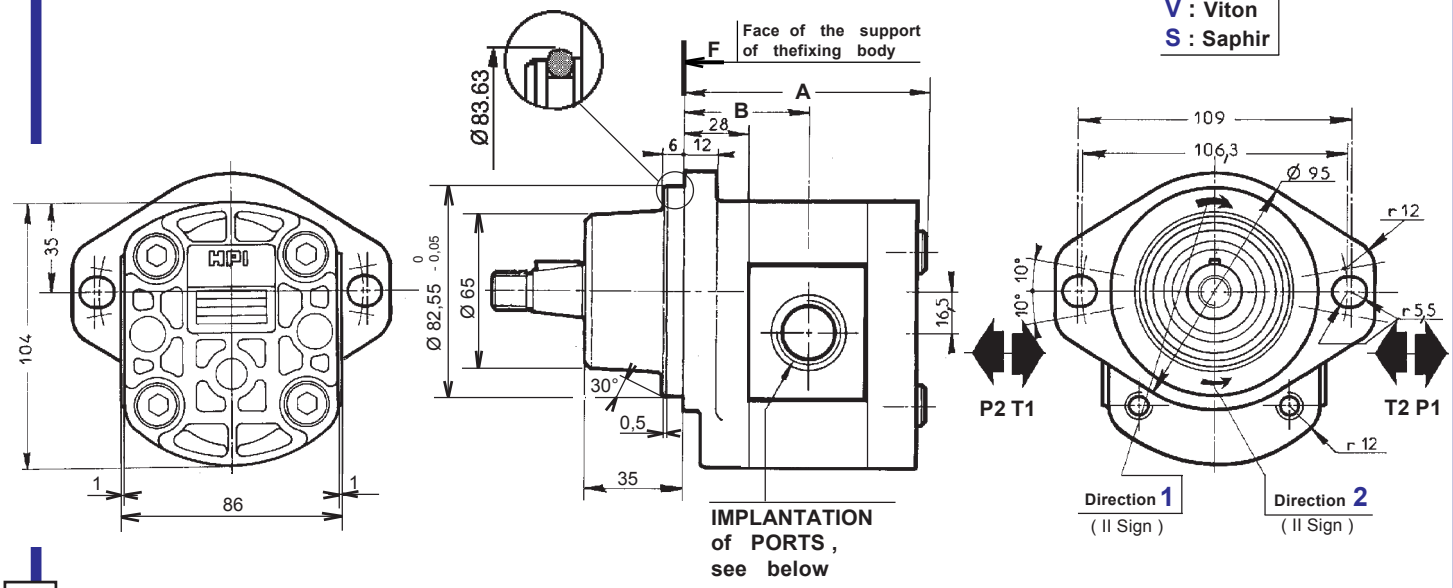
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAP

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	R	2	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



IMPLANTATION of PORTS , see below

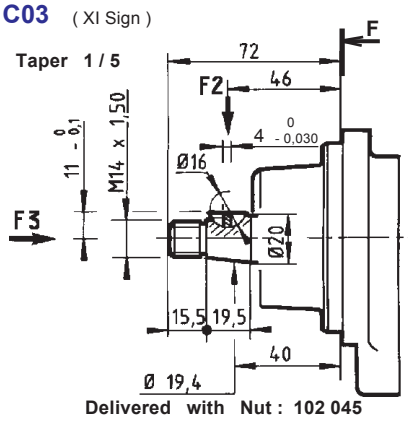
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	100,5	51,5
015 018 022	115	59
026 030	131	67

CHOICE of the DRIVING SHAFTS

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

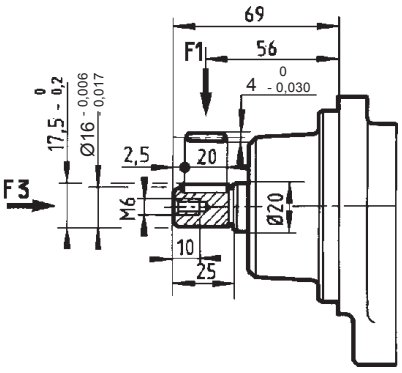
Taper 1 / 5



Delivered with Nut : 102 045

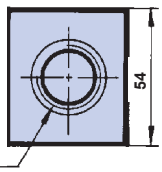
F2 Maxi : 120 daN
F3 Maxi : 50 daN
Maxi transmissible torque
7 m.daN

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



F1 Maxi : 100 daN
F3 Maxi : 50 daN
Maxi transmissible torque
5 m.daN

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	004 to 012	1" 1/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	015 to 022	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	026 030	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

F.T 20 956

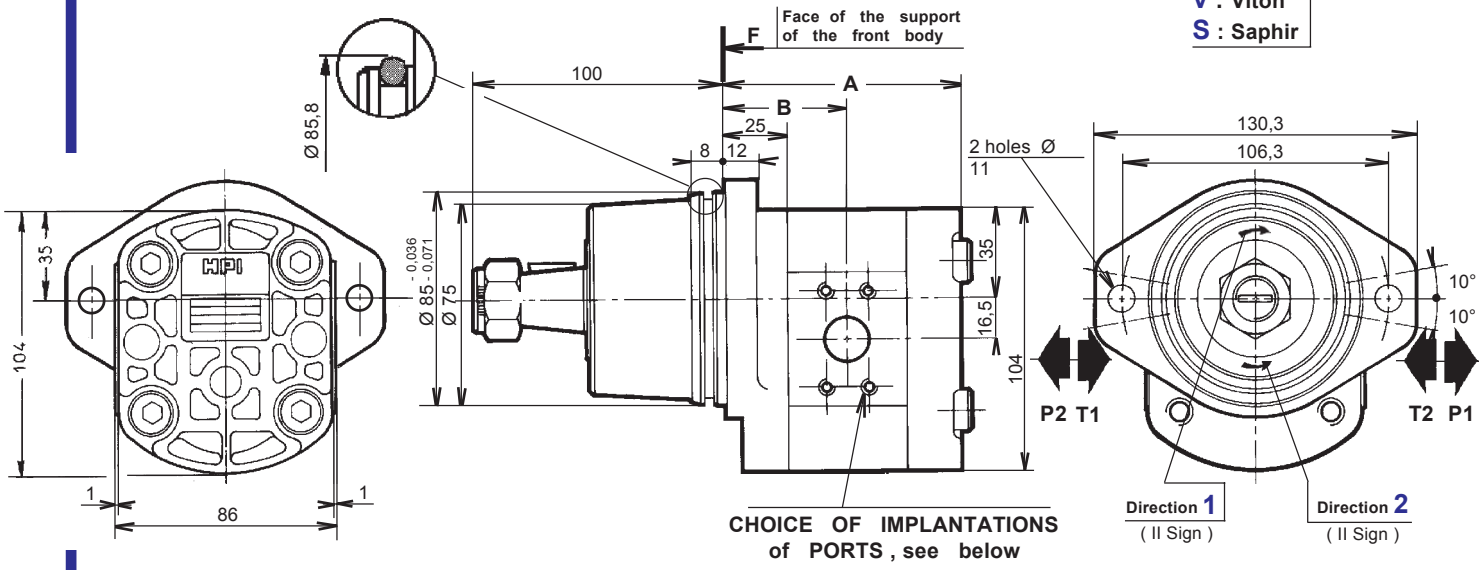
HYDRAULIC GEAR PUMPS SERIES 2 TYPE AAR

PUBLISHING 25 / 10 / 2001

P	II Sign	AR	P	2	VI Sign	VII Sign	L	1	0	C05	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



CHOICE OF IMPLANTATIONS of PORTS , see below

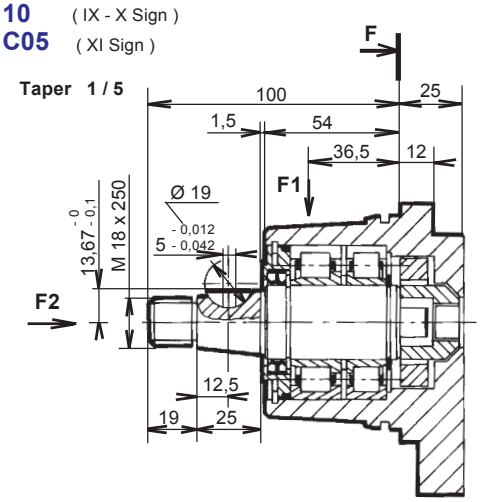
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	97,5	49,5
015 018 022	112	56
026 030	128	64

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFT

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

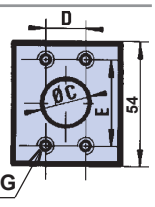


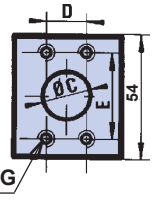
Delivered whit Nut : 106 295

F1 Maxi : 350 daN
F2 Maxi : 50 daN

Max. transmissible torque
7 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G	004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
	015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162) Ø F effective depth G	004 to 012	15	17,4	38	M8	14	15	17,4	38	M8	14		
	015 to 022	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
	015 to 022	26	52,4	26,2	M10	14	15	17,4	38	M8	14		





F.T 20 547

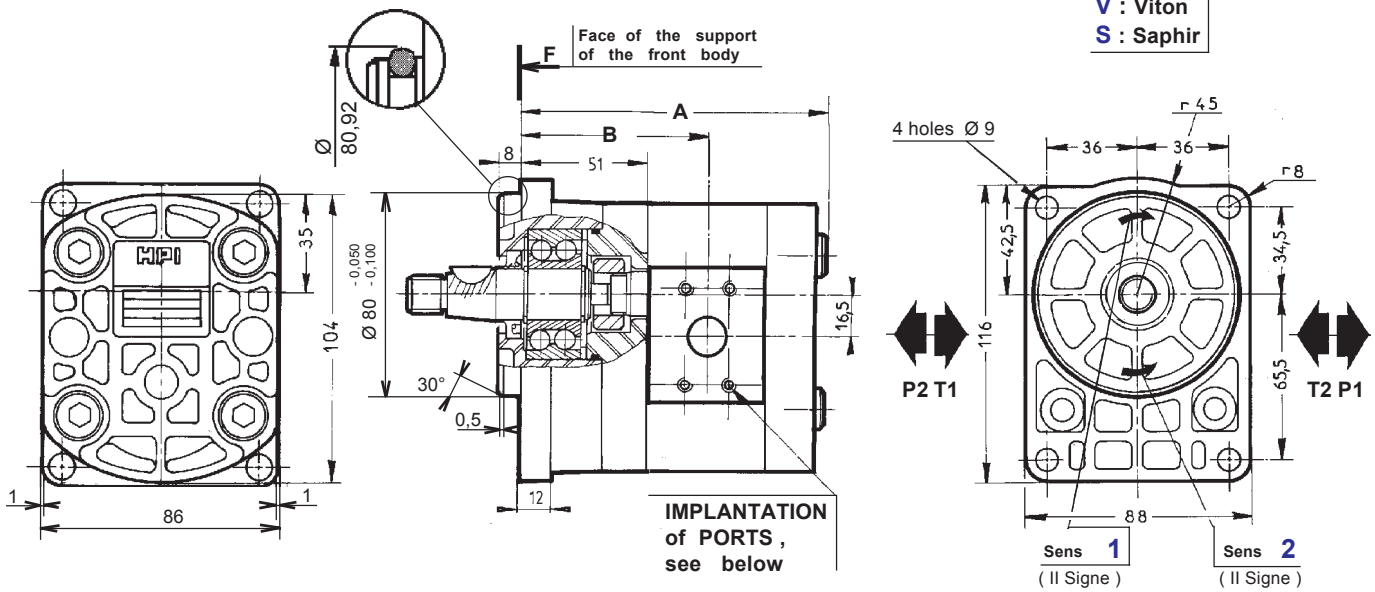
HYDRAULIC GEAR PUMPS SERIES 2 TYPE ARP

PUBLISHING 25 / 10 / 2001

P	II Sign	DB	R	2	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



Dimension readings and approximative characteristics subject to modifications .

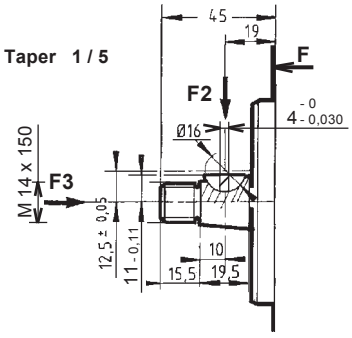
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	123,5	74,5
015 018 022	138	82
026 030	154	90

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

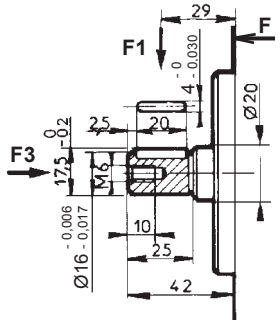


Delivered with Nut : 102 045

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

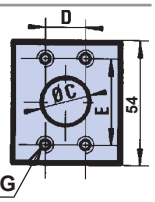
Max. transmissible torque
5 m.daN

IMPLANTATION of PORTS

(VII Sign)

H
(HPI)

Ø F
effective depth G



Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

F.T 20 414

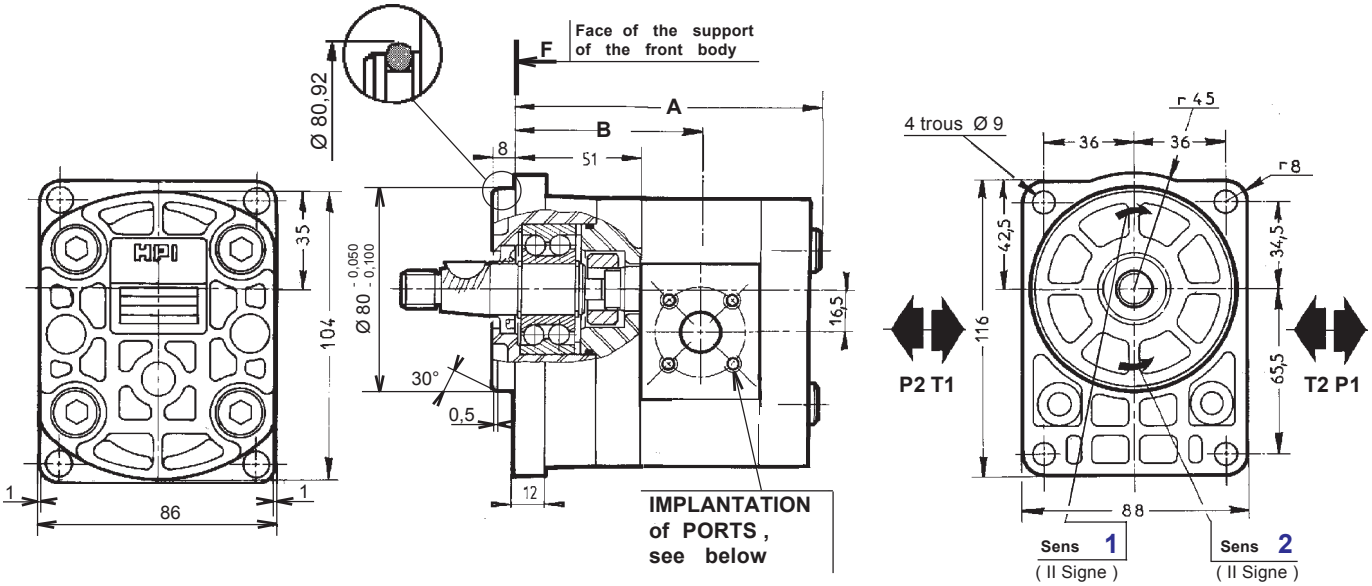
HYDRAULIC GEAR PUMPS SERIES 2 TYPE DBR

PUBLISHING 25 / 10 / 2001

P	II Sign	DB	R	2	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

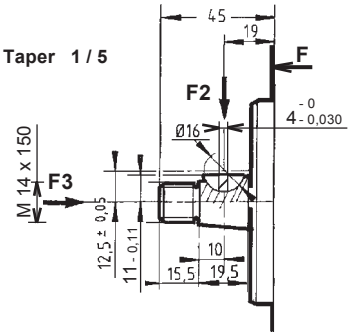


CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
004 006 008 010 012	123,5	74,5
015 018 022	138	82
026 030	154	90

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

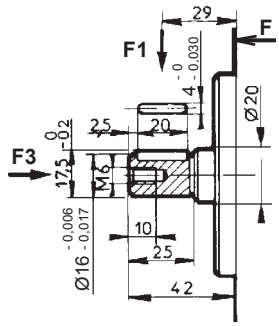


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque
7 m.daN

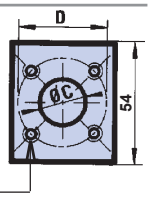
20 (IX - X Sign)
C15 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque
5 m.daN

Multiple geared pumps , see data sheet F.T 20 883
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
C (Square) M6 effective depth 12 	004 to 012	20	40		15	35		1 / 2 " BSP N: 367141.502	3 / 8 " BSP N: 367141.702
	015 to 030							3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

HYDRAULIC GEAR PUMPS SERIES 2 TYPE DBR

PUBLISHING 05 / 07 / 2000

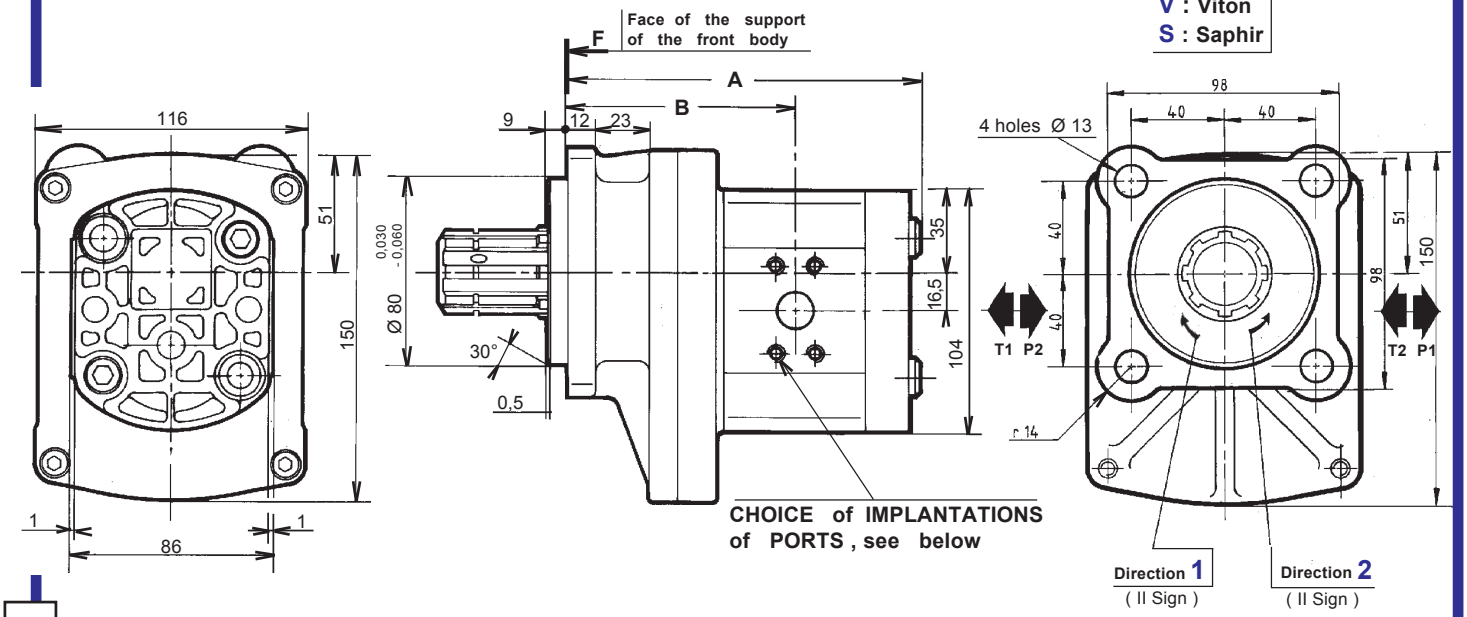
Dimension readings and approximative characteristics subject to modifications .

F.T 20 672

P	II Sign	ZF	C	2	VI Sign	VII Sign	L	3	0	D04	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



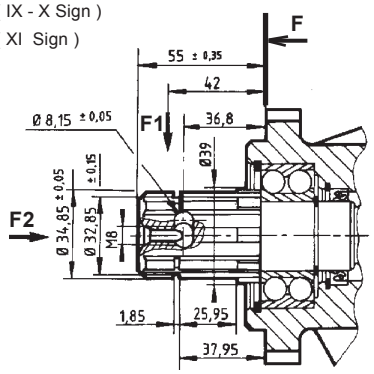
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	dimensions A	B
004 006 008 010 012	139,5	90,5
015 018 022	154	98
026 030	170	106

Multiple geared pumps , see data sheet **F.T 20 883**
Rear bodies , see data sheet **F.T R 0189**

DRIVING SHAFT

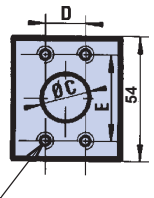
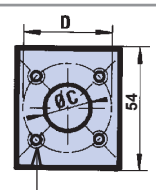
30 (IX - X Sign)
D04 (XI Sign)



F1 Maxi : 140 daN
F2 Maxi : 50 daN

Parallel spline side
8 x 32 x 36 to norm NF E 22 131
Pushing Minor diameter

Max. transmissible torque
48 m.daN

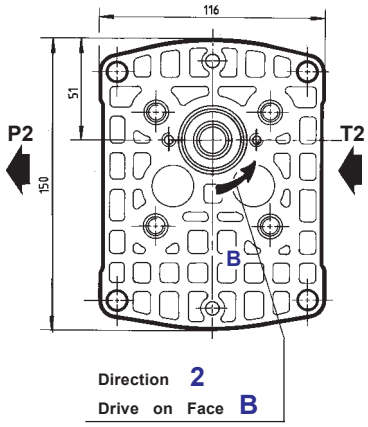
CHOICE of the IMPLANTATIONS of PORTS (II Signe)	Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12 	004 to 012	20	17,4	38	15	17,4	38	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
	015 to 030	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (square) M6 effective depth 12 	004 to 012	20	40		15	35		1 / 2 " BSP N: 367141.502	3 / 8 " BSP N: 367141.702
	015 to 030							3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

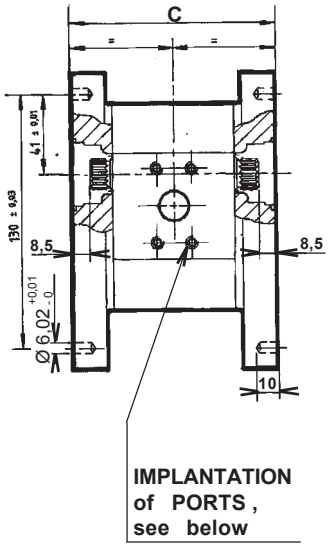
HYDRAULIC GEAR PUMPS SERIES 2 TYPE ZFC

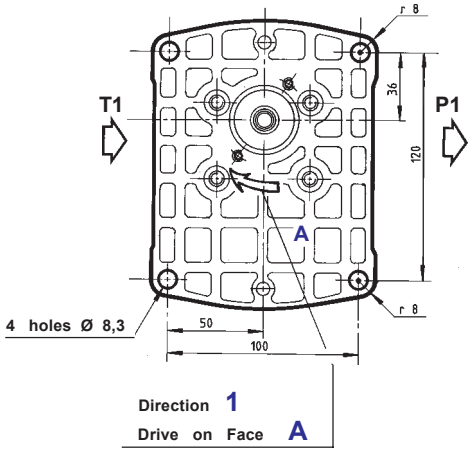
PUBLISHING 05 / 07 / 2000

P 4 CJN 2 VI Sign H J 33 C05 N

For CODIFICATION , see data sheet F.T R 0146



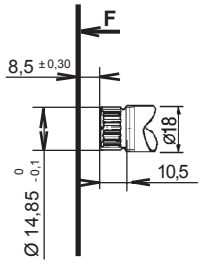




CHOICE of the CAPACITY (VI Sign)	Dimensions C
004 006 008 010 012	87
015 018 022	101,6
026 030	117,7

DRIVING SHAFT

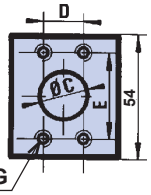
33 (IX - X Sign)
C05 (XI Sign)



involute spline to shaft
15 x 18 x 0,75
to norm NF E 22 141 - BNA 455
Spigot on free flank

Max. transmissible torque
9,5 m.daN

Dimension readings and approximative characteristics subject to modifications .

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T)					OUTLET (P)					CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)	
		ØC	D	E	ØF	G	ØC	D	E	ØF	G	INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G 	004 to 012	20	17,4	38	M6	12	15	17,4	38	M6	12	1 / 2 " BSP N: 2.500055 V: 2.504126	3 / 8 " BSP N: 2.500054 V: 2.504994
	015 to 030	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

HYDRAULIC GEAR PUMPS MODUL 3 BASE SERIES 2

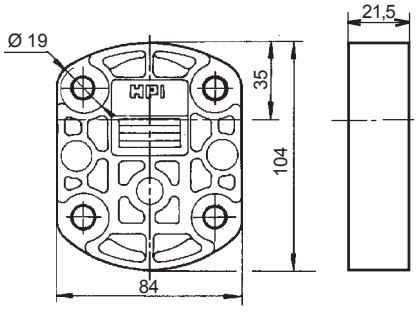
PUBLISHING 06 / 02 / 2002

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign

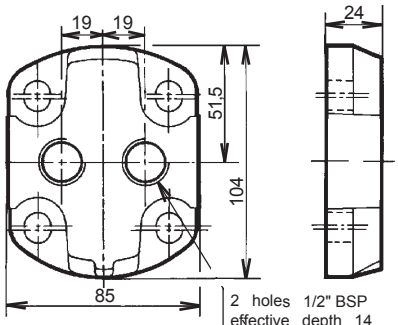
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir

L (VIII Sign) Standard (no ports)



A (VIII Sign) With ports

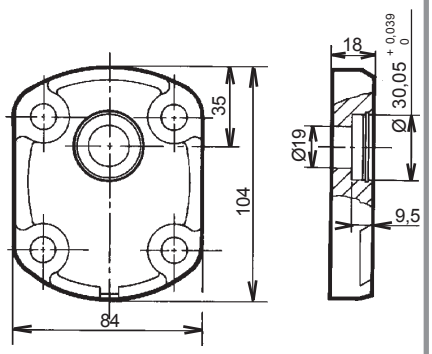


2 holes 1/2" BSP effective depth 14

Max. tightening torque of the connexion : **4** $^{+0,5}_{0}$ **Kgm**

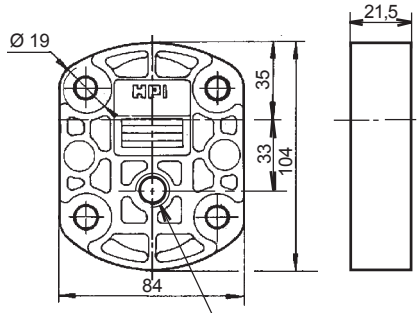
Max. flow : **22 l / min**

Z (VIII Sign) Double shaft port



L (VIII Sign) Standard (no ports)

For single pumps
P3 - P5 - P6



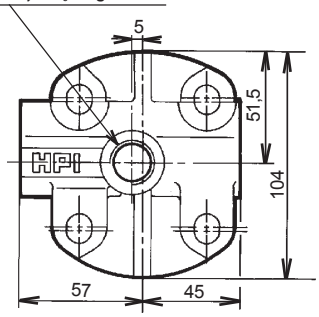
Drain port 1/4" BSP effective depth 14

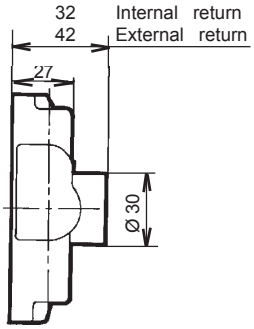
Max. tightening torque of the connexion : **3,3** $^{+0,5}_{0}$ **Kgm**

Q (VIII Sign) Internal return flow control
R (VIII Sign) External return flow control

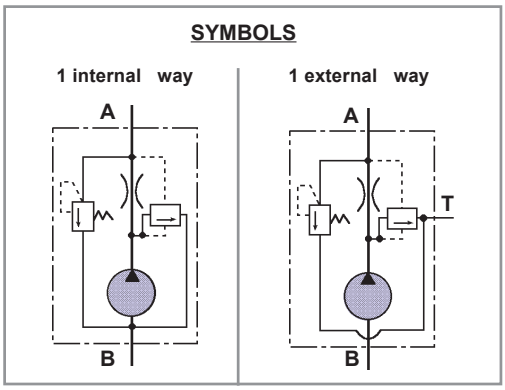
M20 x 150 effective depth 12

Max. tightening torque of the connexion : **3,8** $^{+0,2}_{0}$ **Kgm**





SYMBOLS



NOTA : Port M 20 x 150 only exists on external return version.

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 1/4

HYDRAULIC GEAR PUMPS SERIES **2-2,5**

REAR BODY

Following Page

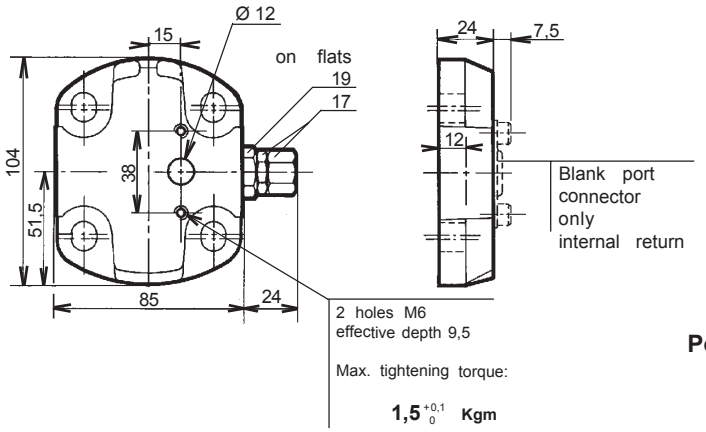
PUBLISHING 04 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	140	V22

For CODIFICATION , see data sheet **F.T R 0011**

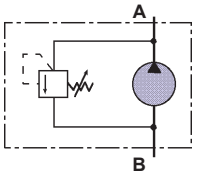
N : Nitril
V : Viton
S : Saphir

X (VIII Sign) **High pressure relief valve (Adjustable) Internal return**
T (VIII Sign) **High pressure relief valve (Adjustable) External return**

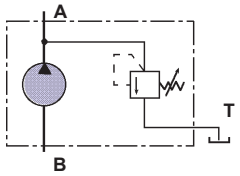


SYMBOLS

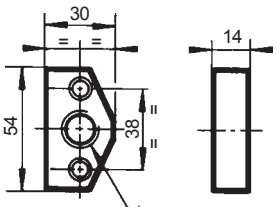
X Internal return



T External return

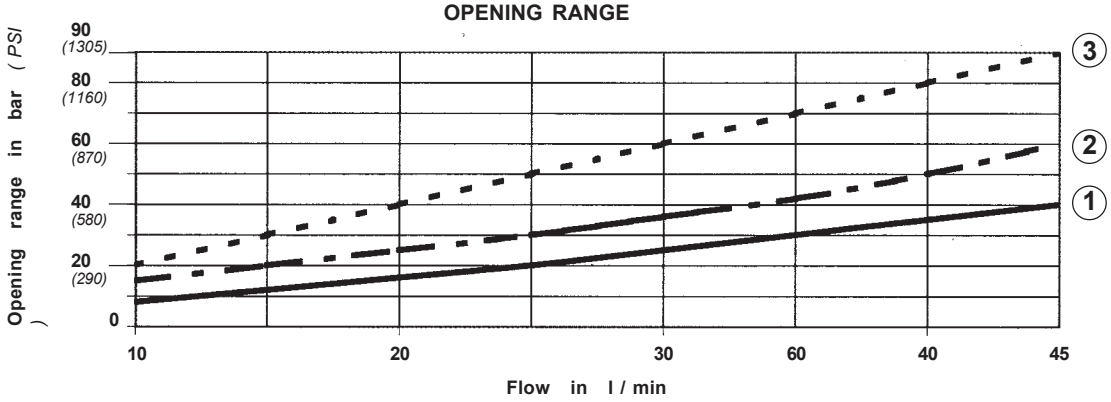


Port connector 2.504111



NB : Port Ø 12 can be used only with external return. (**Code T**)
With internal return, the port is sealed by a flange. (**Code X**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

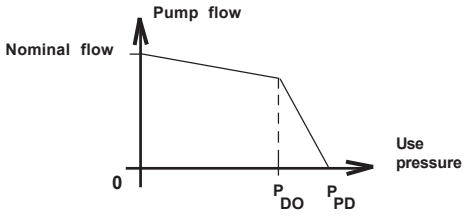
Setting :	①	②	③
Pressure at opening begin mini :	**20 bar** 290 PSI	**100 bar** 1450 PSI	**150 bar** 2175 PSI
Max. :	**100 bar** 1450 PSI	**150 bar** 2175 PSI	**200 bar** 2900 PSI

Setting tolerance : ± 5 bar (72,5 PSI)

Full flow setting

XIII Sign **140** Example : **Pressure of by-pass** Full flow ± 5 bar (72,5 PSI) to 46 cSt **140 = 140 bar** (2030 PSI)

XIV Sign **V22** Example : **V Speed** **22 Speeed** ⇒ **2200 rev / min** (100)



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

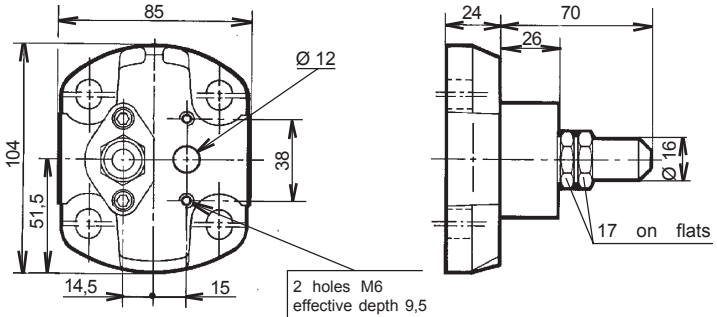
F.T R 0189 2/4

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	010	V15

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

V (VIII Sign) **Low pressure relief valve (Adjustable) Internal return**
W (VIII Sign) **Low pressure relief valve (Adjustable) External return**

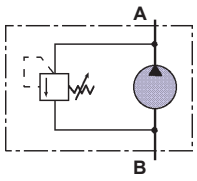


2 holes M6
effective depth 9,5

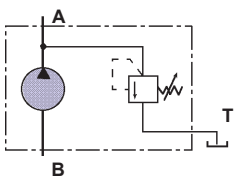
Max. tightening torque:
1,5 $^{+0,1}_{0}$ **Kgm**

SYMBOLS

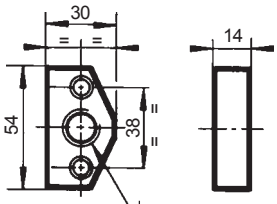
V Internal return



W External return



Port connector 2.504111

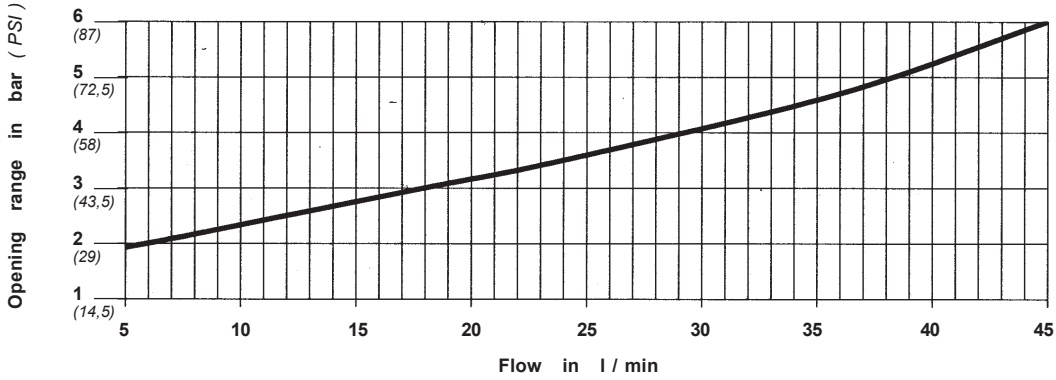


Port 3/8" BSP
effective depth 12

Max. tightening torque of the connexion :
3,3 $^{+0,5}_{0}$ **Kgm**

NB : Port Ø 12 can be used only with external return. (**Code W**)
With internal return, the port is sealed by a flange. (**Code V**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40 °C

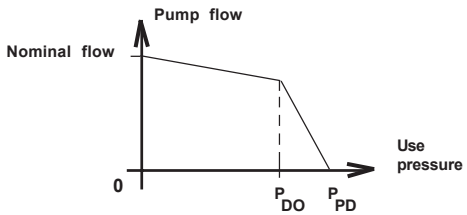
Pressure at opening begin mini : 5 bar (72,5 PSI)
Max. : 15 bar (217,5 PSI)

Setting tolerance : ± 1 bar *(14,5 PSI)*

Full flow setting

XIII Sign **010** Example : **Pressure of by-pass**
Full flow ± 1 bar (14,5 PSI) to 46 cSt
010 = 10 bar (145 PSI)

XIV Sign **V15** Example : **V Speed**
15 Speed / 100 ⇒ 1500 rev / min



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 3/4

Preceding Page
Following Page

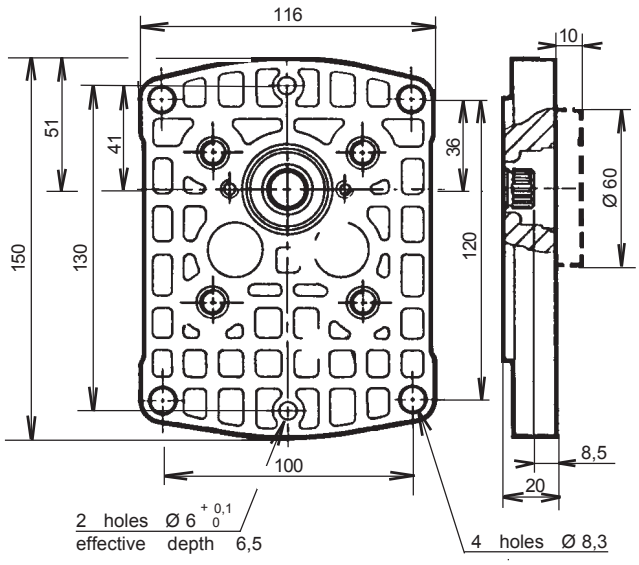
HYDRAULIC GEAR PUMPS **SERIES 2-2,5**
REAR BODY

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	J	IX Sign	IX Sign	XI Sign	XII Sign

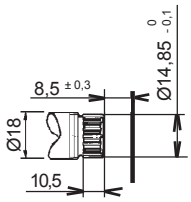
For CODIFICATION , see data sheet F.T R 0011

N : Nitril
V : Viton
S : Saphir

J (VIII Sign) Pre - arrangement with mounting " Module 3 "



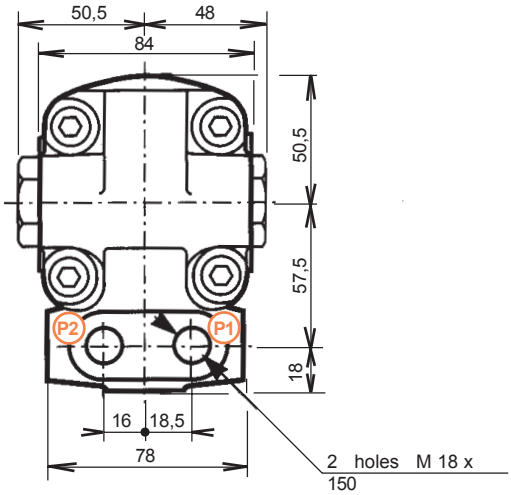
33 (IX - X Sign)
C05 (XI Sign)



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks
Max. transmissible torque

9,5 m.daN

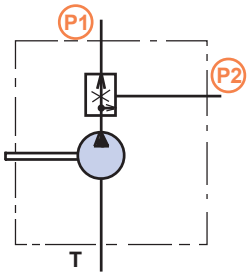
D (VIII Sign) Flow control valve 3 Ways



P1 **Constant flow (+ 15% - 10%)**

P2 **Residual flow**

SYMBOL



Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 4/4

Preceding Page
Following Page

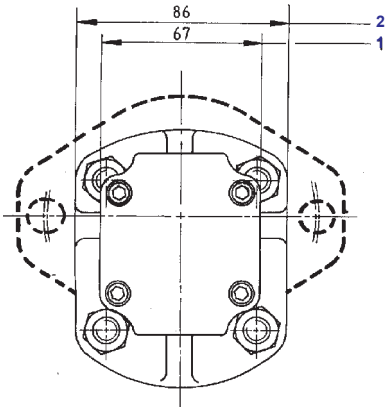
HYDRAULIC GEAR PUMPS SERIES 2-2,5

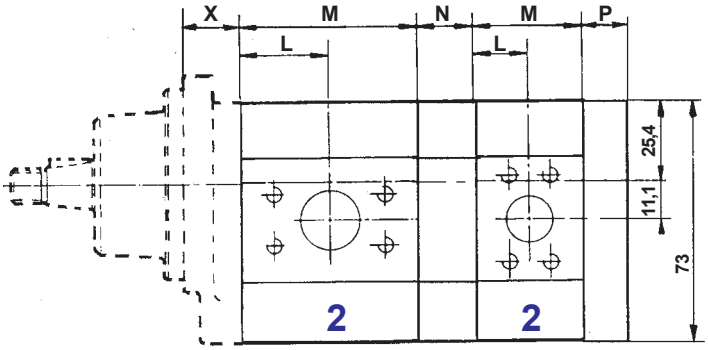
REAR BODY

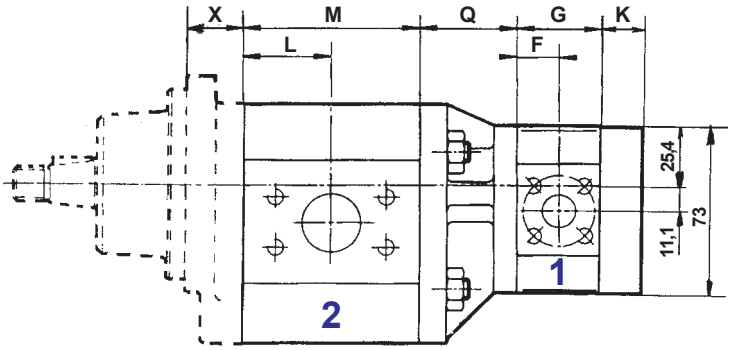
P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Signe	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir

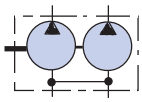




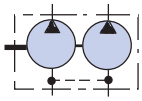


JUNCTIONS BODY

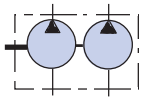
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



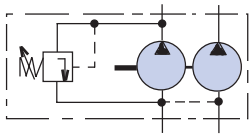
Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



Code X (VIII Sign) — **Adjustable relief valve internal return in preceding pump**



ATTENTION

For common suctions .

The flow of the pump , or pump preceding or following the section including the suction must not exceed **22 l / min .**

- **Hydraulic characteristics ,**
- **Driving shafts ,**
- **Supply ports implantation**
- **Dimensions of " Front body " : see the technical data sheets of the single pumps quoted overleaf .**

Different mounting possibilities between multiple pumps , see data sheet F.T R 0029

SERIES (V - IX Sign)	Capacity (VI - X Sign)	L	M	N	P	Q	F	G	K
2	004 to 012	23,5	47,0	24	25,5				
	015 to 022	31,0	61,6						
	026 030	38,8	77,7						
1	001 to 003					42	17,9	35,8	18
	004 to 006						22,7	45,6	

NOTA : Versions 2 / 1 - 2,5 / 1 only Codes A - D and E .

Following Page

MULTIPLE GEARED PUMPS

SERIES 2 (THICK FRONT BODY)

PUBLISHING 06 / 02 / 2002

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir

Front body Types (III - IV - VII Signe)	Dimensions X	Data sheets references
AAP (H-Y)	28	F.T 20 415
AAP (U)	28	F.T 20 922
AAR (H-Y)	28	F.T 20 416
AAR (U)	28	F.T 20 956
ARP (H-Y)	25	F.T 20 547
DBR (H)	51	F.T 20 414
DBR (C)	51	F.T 20 672
ZFC (H-C)	67	F.T 20 418

Dimension readings and approximative characteristics subject to modifications .

TORQUE CALCULATION

Q Capacity in cc / rev
P Pressure in bar
Rm Mechanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{1,56 \times Q \times P}{1000 \times Rm} = C$ (m.daN)

Example : P 1 AAK 2015 H A 2008 H L 30 A01 Pressure : 2015 200 bar 2008 150 bar Speed : 1500 RPM

$\frac{1,56 \times 15 \times 200}{1000 \times 0,87} = 5,38$ m.daN

$\frac{1,56 \times 8 \times 150}{1000 \times 0,87} = 2,15$ m.daN

= 7,53 m.daN ⟹ Total torque

Preceding Page

MULTIPLE GEARED PUMPS

SERIES 2 (THICK FRONT BODY)

Home - General Contents

General Catalogue Contents

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2,5

Flat Front Body

Publishing 01 / 2003

G10 | 110 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi speed			
	cc / rev	bar	PSI	bar	PSI	rev/min	l / min	l / min			Kg
2512	12	300	4350	255	3700	3500	18	42	2,31	2,75	2,2
2515	15,52	280	4060	240	3480	3500	23,25	52,5	2,94	2,77	2,6
2518	19,12	250	3625	210	3045	3500	28,65	66,8	3,63	3,32	2,7
2522	22,87	225	3262	190	2780	3500	34,2	79,8	4,30	4,02	2,8

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

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAN 2515 Y L 30 A01 Pressure : 200 bar Speed : 1500 RPM

Torque = $\frac{1,56 \times 15 \times 200}{1000 \times 0,87}$ = 5,38 m.daN

F.T R 204

" GENERAL " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)				CENTRAL BODY (VII Sign)							TYPE and SHAFT CODE (IX - X - XI Sign)			
A	B	C	D	H	C	F	Y	S	B	U	10	20	30	40
AAN												20A01 20C02	30A01	40C03
AAK												20A01	30A01	40C03
AFN												20A01	30A01	
	BAN										10B02	20C02		
			DBN								10C02	20C02	30D01	
			DBK								10C02	20C02	30D01	
			DCK								10C02		30D01	
		CJN											33C05	
		CJE Tightness											33C22	

REAR BODY (VIII Sign)

All mounting types possible : L , X , T , V , W , Q , R , A and Z.

Not feasible versions

Our " BASIC" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

Thick front body ,
see data sheet F.T R 0211

Dimension readings and approximative characteristics subject to modifications .

F.T R 210

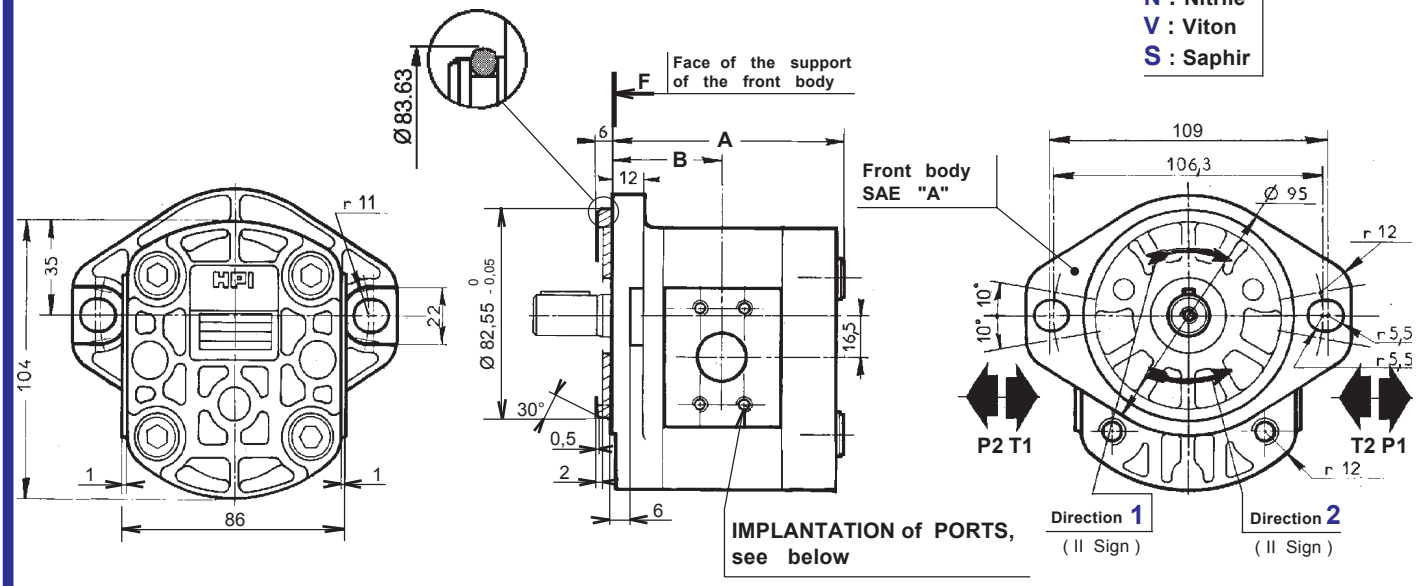
HYDRAULIC GEAR PUMPS

SERIES 2,5 (FLAT FRONT BODY)

P	II Sign	AA	K	2	5	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



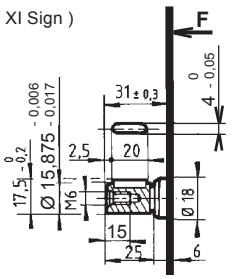
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet F.T 25 870
Rear body , see data sheet F.T R 0189

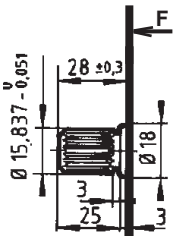
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

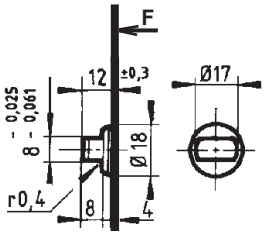
30 (IX - X Sign)
A01 (XI Sign)



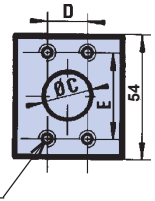
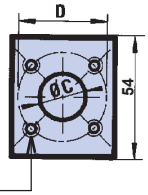
Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° Pressure angle

Max. transmissible torque
10 m.daN

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



Max. transmissible torque
7 m.daN

CHOICE of the IMPLANTATIONS of PORTS (II Sign)	Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12 	12 to 22	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (Square) M6 effective depth 12 	12 to 22	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

F.T 25 610

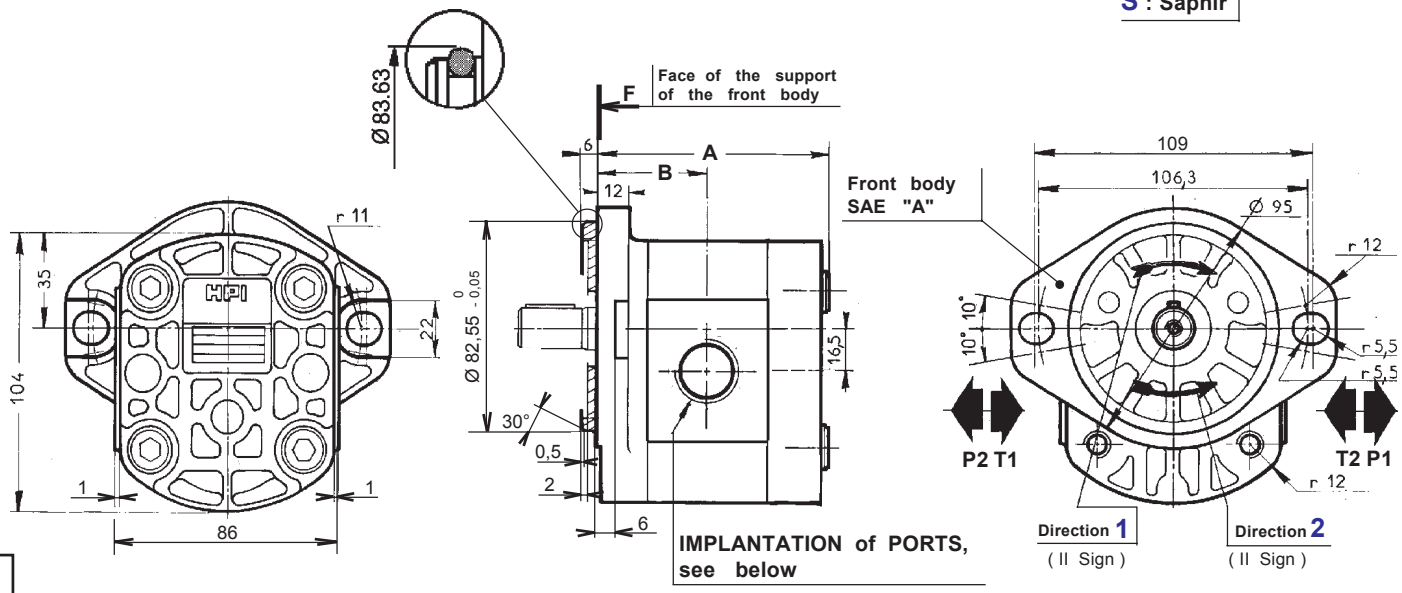
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAK

PUBLISHING 05 / 07 / 2000

P	II Sign	AA	K	2	5	VI Sign	F	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



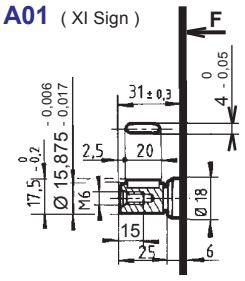
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Multiple geared pumps , see data sheet F.T 25 870
Rear bodies , see data sheet F.T R 0189

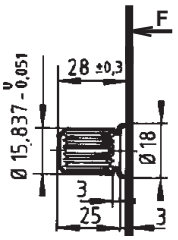
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

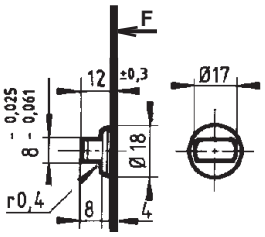
30 (IX - X Sign)
A01 (XI Sign)



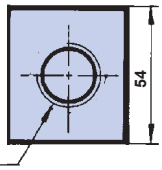
Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32 - Flat root
30° pressure angle

Max. transmissible torque
10 m.daN

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



Max. transmissible torque
7 m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMANDÉD FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
F (Threaded) Ø F effective depth G 	12				1" BSP	18				1/2" BSP	14		

F.T 25 652

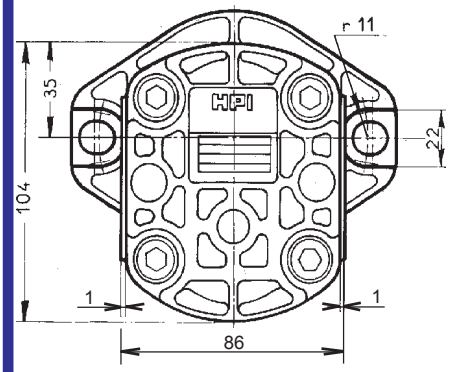
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAK

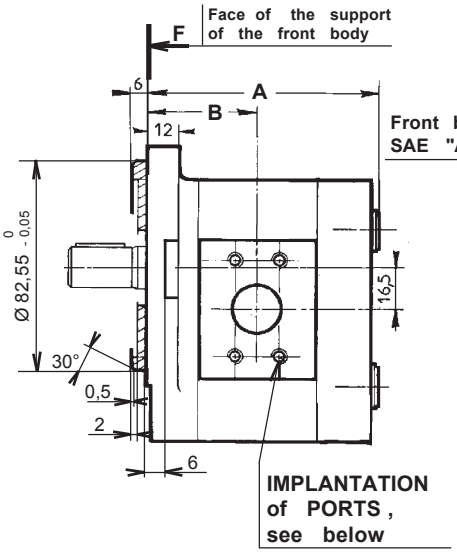
PUBLISHING 05 / 07 / 2000

P	II Sign	AA	N	2	5	VI Sign	Y	L	IX Sign	X Sign	XI Sign	XII Sign

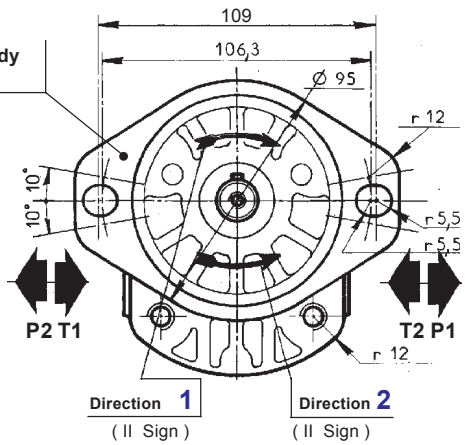
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



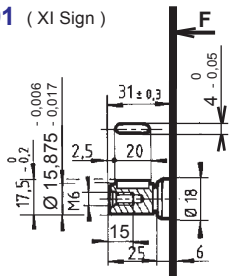


Front body SAE "A"



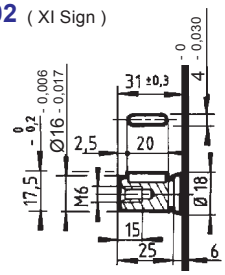
CHOICE of the DRIVING SHAFTS

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



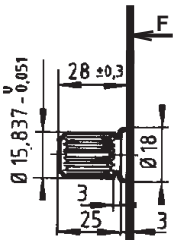
Max. transmissible torque
5 m.daN

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



Max. transmissible torque
5 m.daN

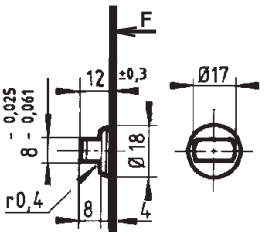
30 (IX - X Sign)
A01 (XI Sign)



Involute spline shaft to SAE "A" - Standard - 9 theet - 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

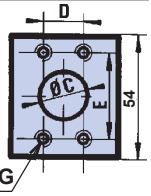
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Multiple geared pumps , see data sheet F.T 25 870
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)

Y
(ISO 6162)
Ø F
effective depth G



Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
12	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
15 to 22	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 25 455

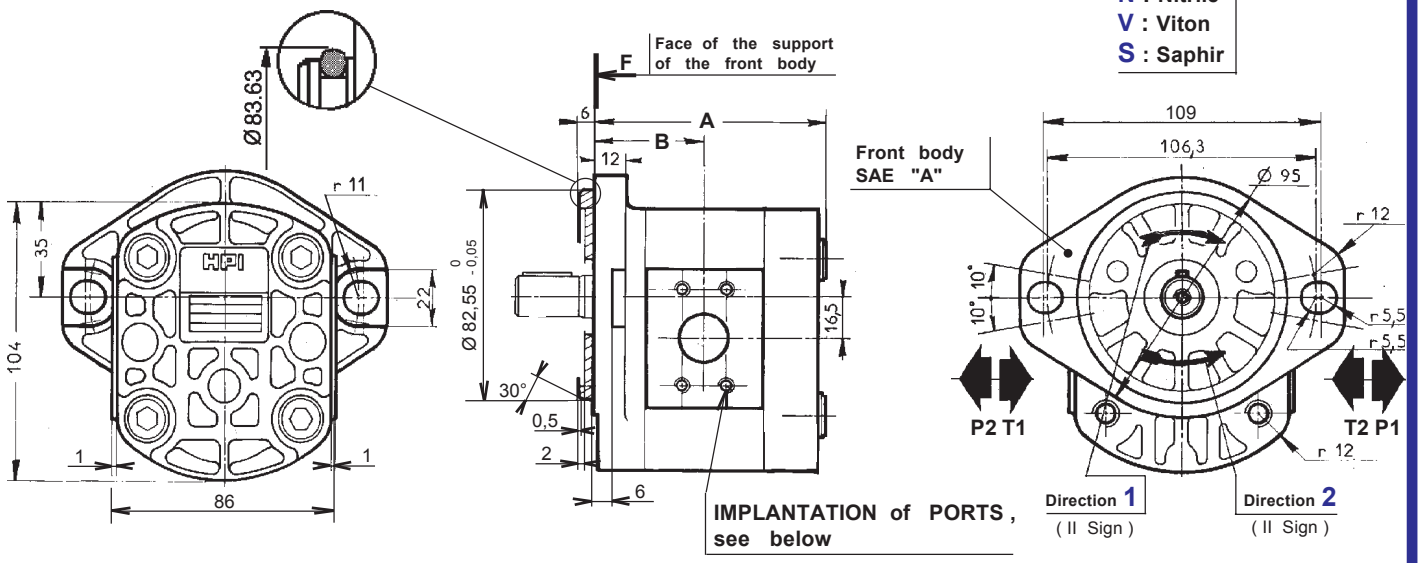
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAN

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	K	2	5	VI Sign	Y	L	IX Sign	X Sign	XI Sign	XII Sign

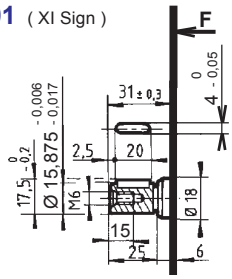
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



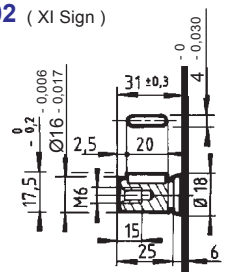
CHOICE of the DRIVING SHAFTS

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



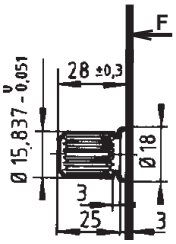
Max. transmissible torque
5 m.daN

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



Max. transmissible torque
5 m.daN

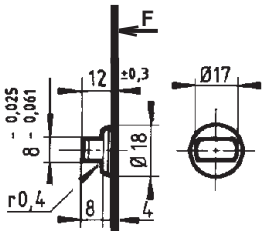
30 (IX - X Sign)
A01 (XI Sign)



Involute spline shaft to SAE "A" - Standard - 9 theet - 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

Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Multiple geared pumps , see data sheet F.T 25 870
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
Y (ISO 6162) Ø F effective depth G	12	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
	15 to 22	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 25 630

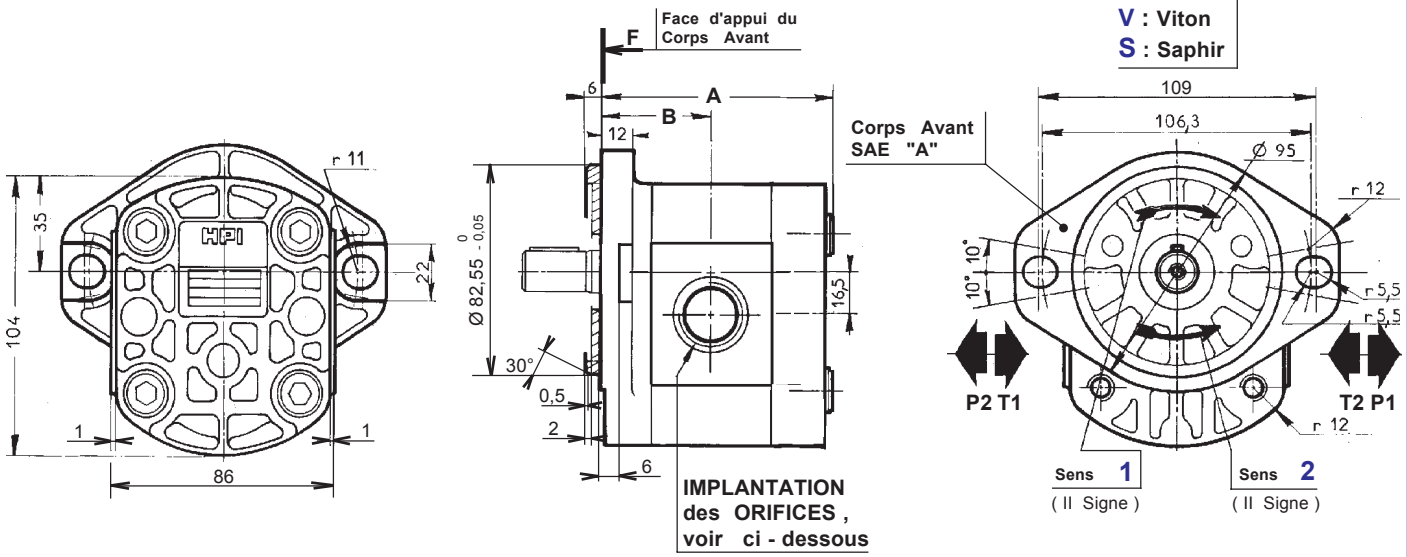
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAK

PUBLISHING 25 / 10 / 2001

P	II Signe	AA	N	2 5	VI Signe	U	L	IX Signe	X Signe	XI Signe	XII Signe

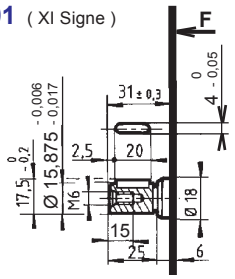
Pour CODIFICATION , voir Fiche Technique **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



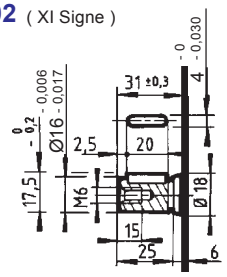
CHOIX des ARBRES d' ENTRAINEMENT

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



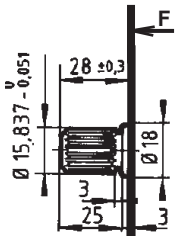
Couple maxi transmissible
5 m.daN

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



Couple maxi transmissible
5 m.daN

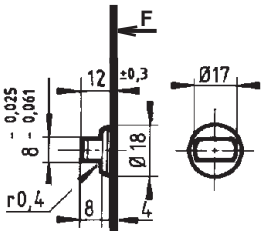
30 (IX - X Signe)
A01 (XI Signe)



Cannelures en développante
SAE "A" 9 Cannelures - Diametral Pitch 16/32
Angle de Pression : 30°

Couple maxi transmissible
10 m.daN

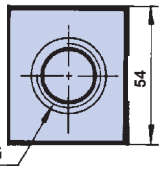
40 (IX - X Signe)
C03 (XI Signe)



Couple maxi transmissible
7 m.daN

CHOIX de la CAPACITE (VI Signe)	Cotes A	Cotes B
12	107	51
15 18 22	123	59

Pompes Multicorps , voir Fiche Technique **F.T 25 870**
Corps arrière , voir Fiche Technique **F.T R 0189**

IMPLANTATION des ORIFICES (VII Signe)	Capacité (VI Signe)	ASPIRATION (T) ØF	ASPIRATION (T) G	REFOULEMENT (T) ØF	REFOULEMENT (T) G
U (Taraudée SAE J 475) Ø F Prof. utile G 	12	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	15 à 22	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

Dimension readings and approximative characteristics subject to modifications .

F.T 25 562

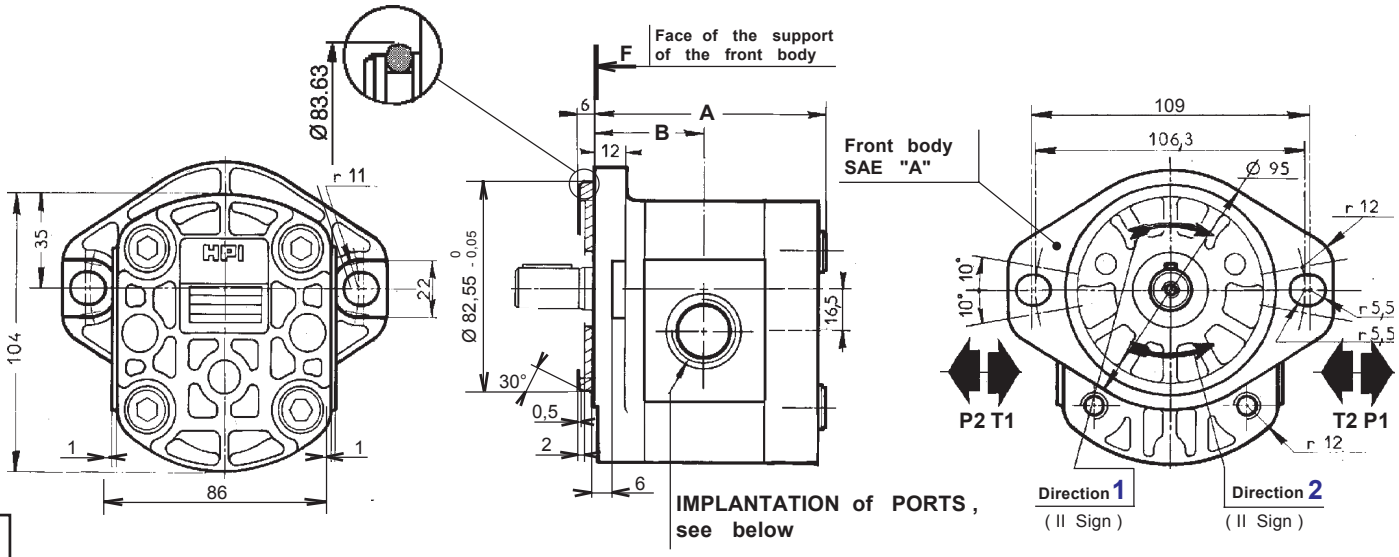
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAN

EDITION 25 / 10 / 2001

P	II Sign	AA	K	2 5	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



IMPLANTATION of PORTS , see below

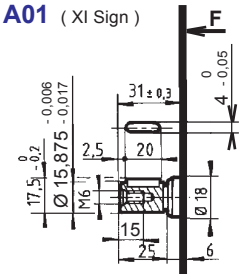
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Multiple geared pumps , see data sheet **F.T 25 870**
Rear bodies , see data sheet **F.T R 0189**

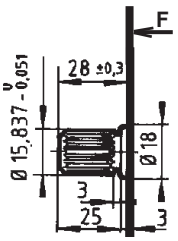
CHOICE of the DRIVING SHAFTS

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



Max. transmissible torque
5 m.daN

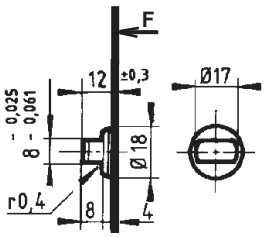
30 (IX - X Sign)
A01 (XI Sign)



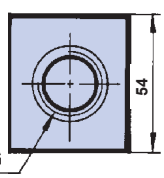
Involute spline shaft to SAE "A"- Standard - 9 theet Pitch 16/32 - Flat root 30° Pressure angle

Max. transmissible torque
10 m.daN

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



Max. transmissible torque
7 m.daN

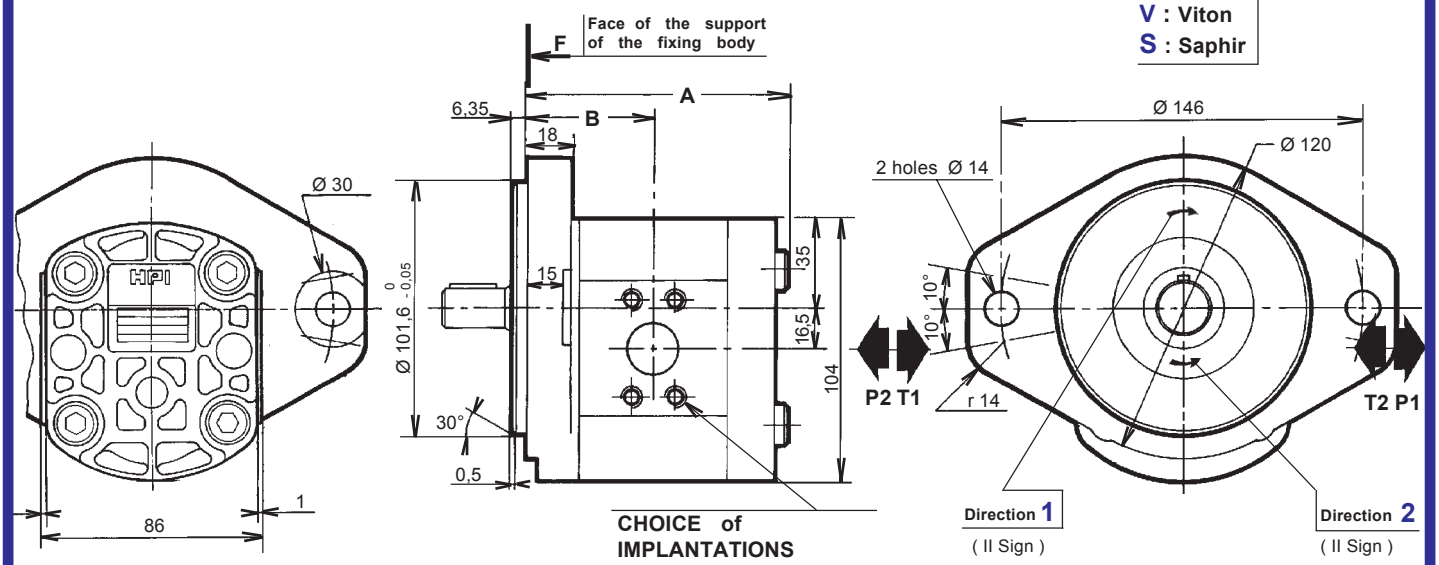
IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	12	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	15 to 22	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAK

P	II Sign	AF	N	2	5	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

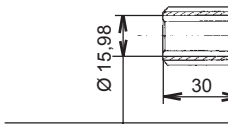
N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS , see below

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	108	52
15 18 22	124	60

Manchon d' Accouplement



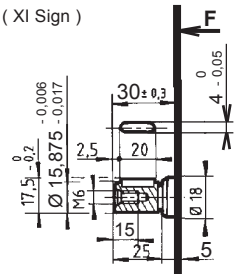
Involute spline to SAE "A"
Standard - 9 theet -
Pitch 16/32
30° Pressure angle

Ref. : E.5041310

Involute spline to SAE "B"
Standard - 13 theet -
Pitch 16/32
30° Pressure angle

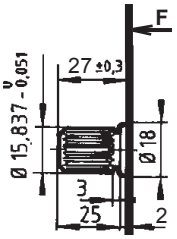
CHOICE of the DRIVING SHAFTS

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



Maxi transmissible torque
5 m.daN

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



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

Maxi transmissible torque
10 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of IMPLANTATIONS of PORTS (II Sign)	Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for Speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12	12 à 22	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (Square) M6 effective depth 12	12 à 22	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

Dimension readings and approximative characteristics subject to modifications .

F.T 25 649

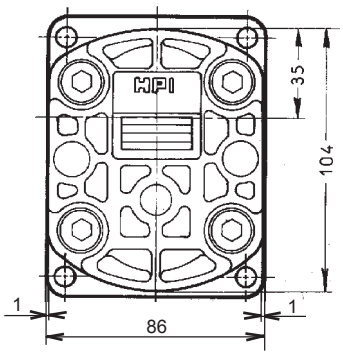
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AFN

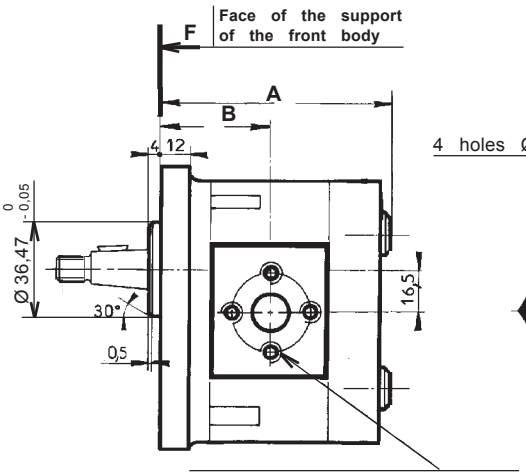
PUBLISHING 05 / 07 / 2000

P	II Sign	BA	N	2	5	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Signe

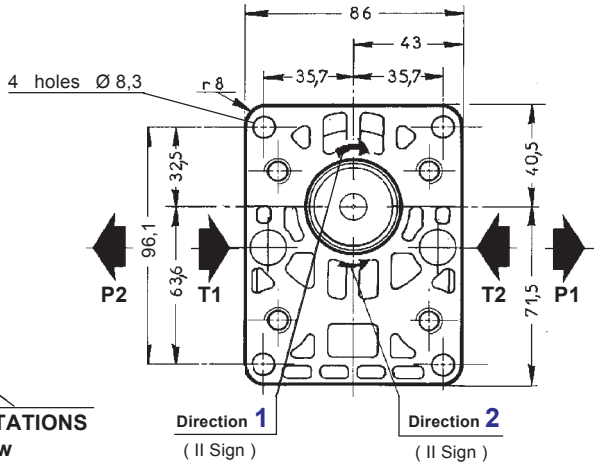
For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir





CHOICE of IMPLANTATIONS of PORTS, see below



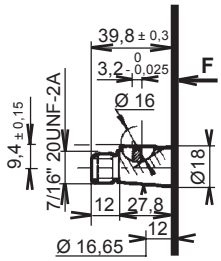
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

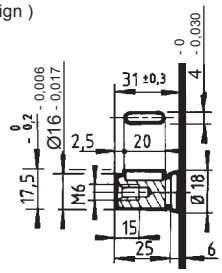
Taper 1 / 8



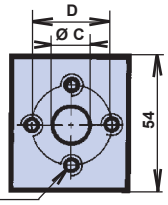
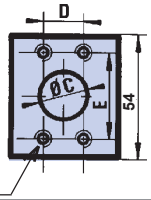
Delivered with Nut : 100 841

Max. transmissible torque **25** m.daN

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



Max. transmissible torque **5** m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMANDED FLANGES (for Speed 1500 rev / min) INLET (T)	OUTLET (P)
B (Italian)  Ø F effective depth G	12 to 22	20	40		M8	13	15	30		M6	13	1 / 2 " BSP N: X.367508.101 3 / 4 " BSP N: X.367508.102	3 / 8 " BSP N: X.367508.201 1 / 2 " BSP N: X.367508.202
H (HPI)  Ø F effective depth G	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

Dimension readings and approximative characteristics subject to modifications .

F.T 25 633

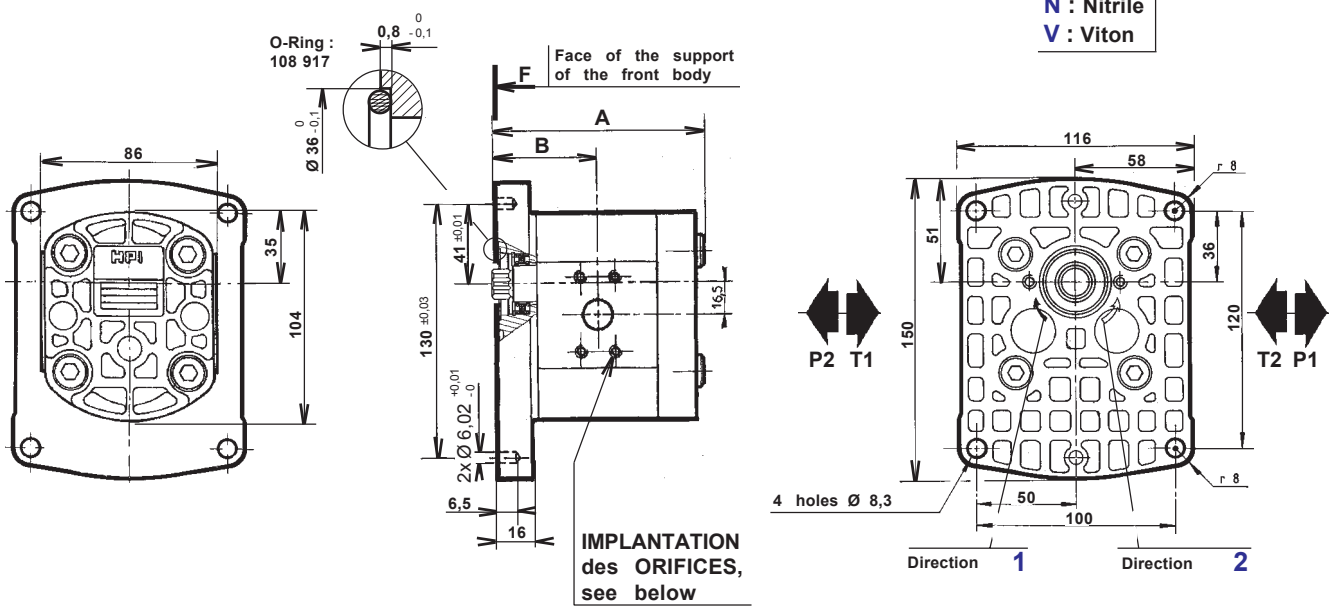
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE BAN

PUBLISHING 25 / 02 / 2002

P	II Sign	CJ	E	2 5	VI Sign	H	L	3	3	C05	XII Sign

For CODIFICATION , see data sheet F.T R 0011

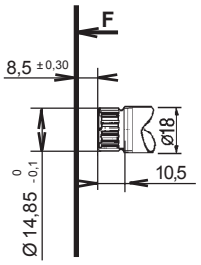
N : Nitrile
V : Viton



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

DRIVING SHAFT

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



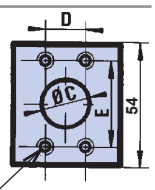
Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks

Max. transmissible torque
9,5 m.daN

Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)

H
(HPI)
Ø F
effective depth G



Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G
012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12

CATALOGUE N° 70
Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)

INLET (T)	OUTLET (P)
1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

Dimension readings and approximative characteristics subject to modifications .

F.T 25 952

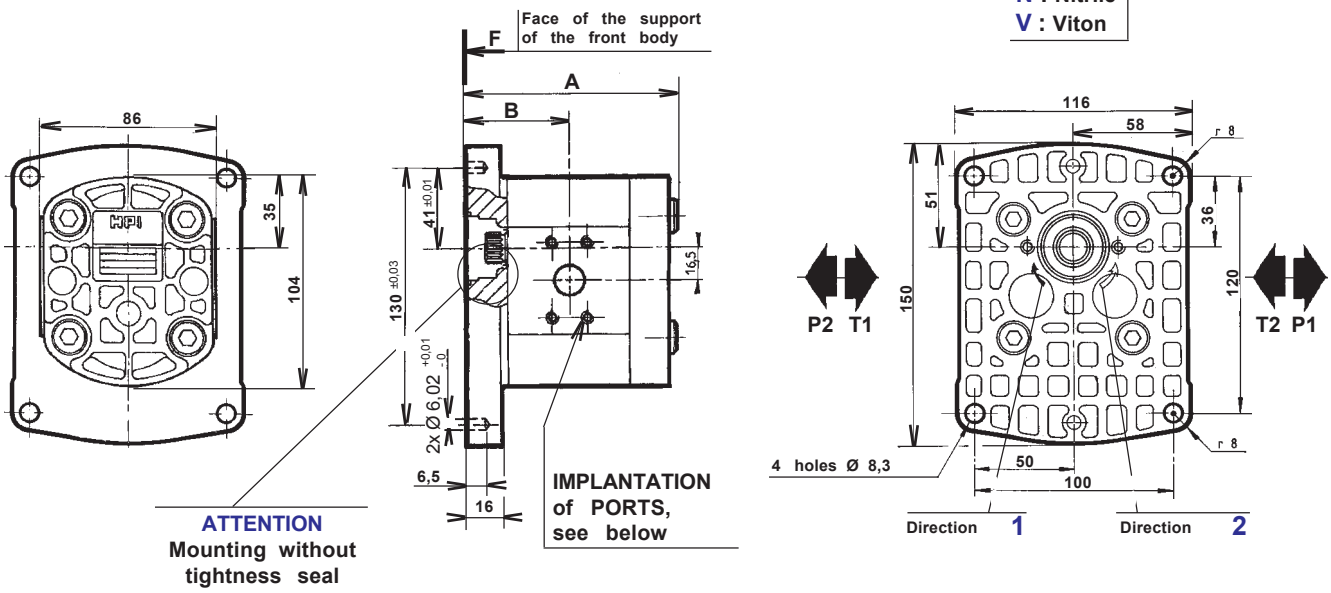
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE CJE

PUBLISHING 05 / 07 / 2000

P	II Sign	CJ	N	2 5	VI Sign	H	L	3	3	C05	XII Sign

For CODIFICATION , see data sheet F.T R 0011

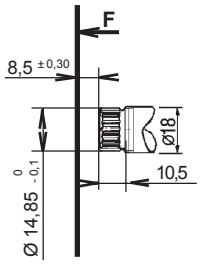
N : Nitrile
V : Viton



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFT

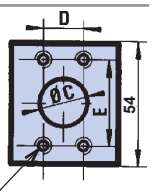
33 (IX - X Sign)
C05 (XI Sign)



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks

Max. transmissible torque
9,5 m.daN

Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI)  Ø F effective depth G	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

Dimension readings and approximative characteristics subject to modifications .

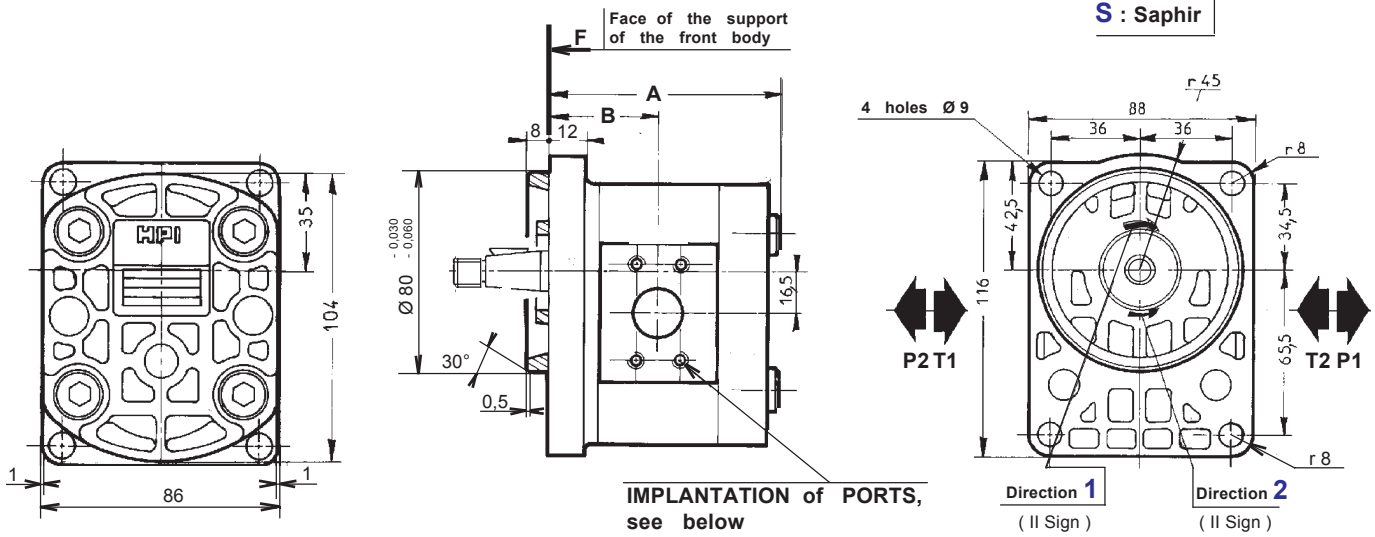
F.T 25 950

HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE CJN

P | II Sign | DB | N | 2 | 5 | VI Sign | H | L | IX Sign | X Sign | XI Sign | XII Signe

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



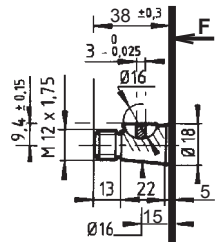
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

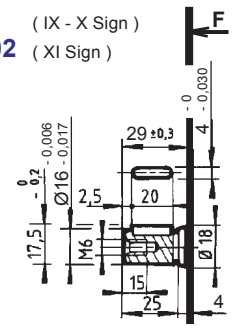


Delivered with Nut

Ref. : 106 317

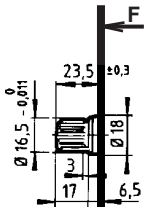
Max. transmissible torque
22 m.daN

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



Max. transmissible torque
5 m.daN

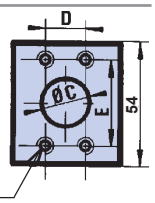
30 (IX - X Sign)
D01 (XI Sign)



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

Max. transmissible torque
10 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI)  Ø F effective depth G	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

F.T 25 637

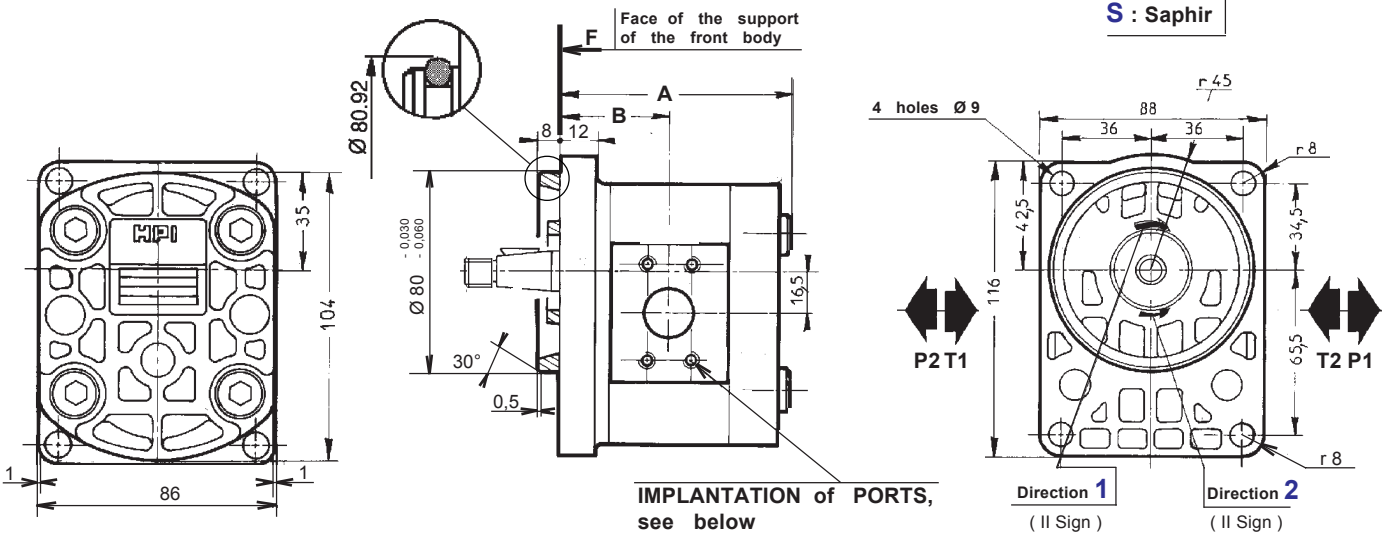
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DBN

PUBLISHING 25 / 10 / 2001

P | II Sign | DB | K | 2 | 5 | VI Sign | H | L | IX Sign | X Sign | XI Sign | XII Signe

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



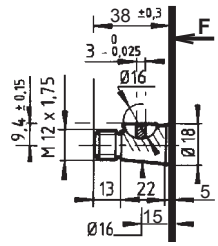
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

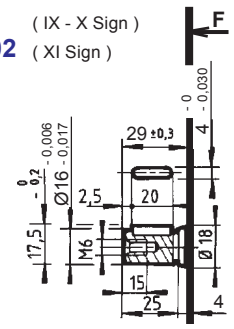


Delivered with Nut

Ref. : 106 317

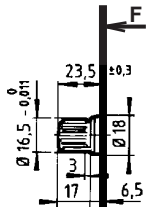
Max. transmissible torque
22 m.daN

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



Max. transmissible torque
5 m.daN

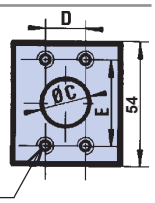
30 (IX - X Sign)
D01 (XI Sign)



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

Max. transmissible torque
10 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI)  Ø F effective depth G	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

F.T 25 639

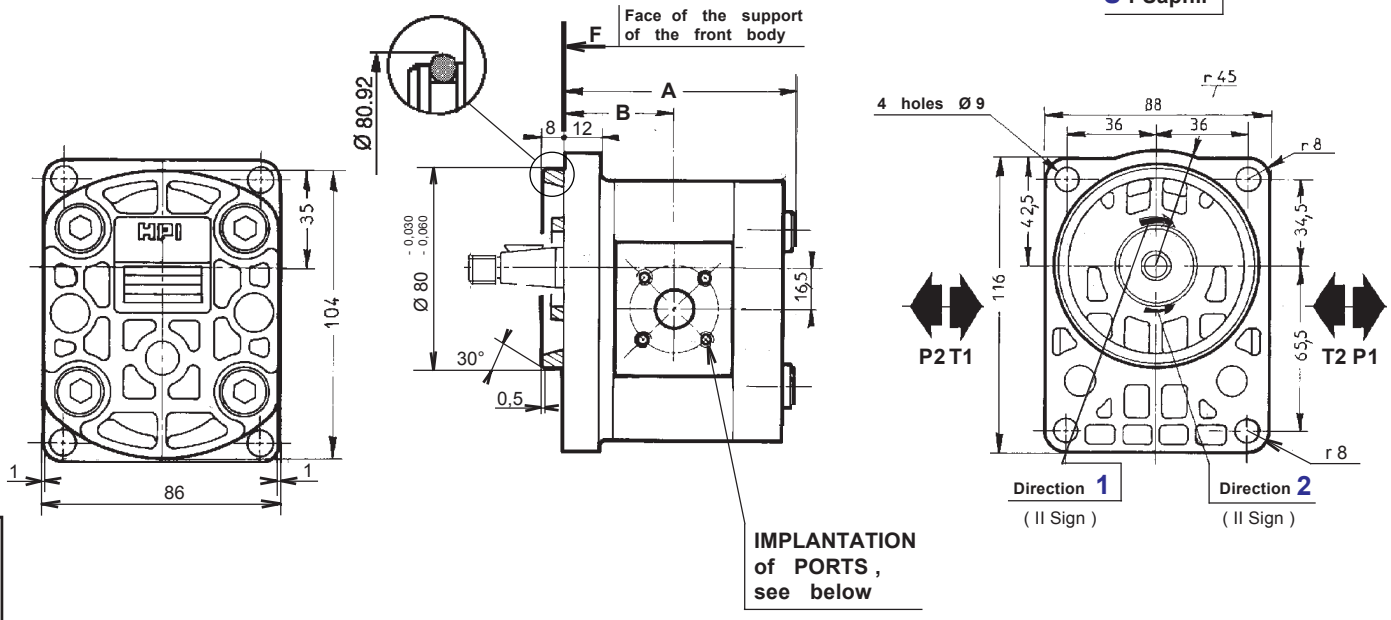
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DBK

PUBLISHING 25 / 10 / 2001

P	II Sign	DB	K	2 5	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



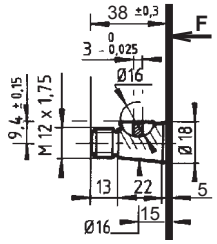
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

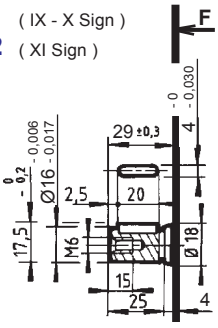


Delivered with Nut

Ref. : 106 317

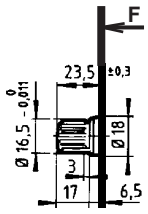
Max. transmissible torque
22 m.daN

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



Max. transmissible torque
5 m.daN

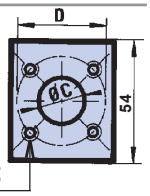
30 (IX - X Sign)
D01 (XI Sign)



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

Max. transmissible torque
10 m.daN

Multiple geared pumps , see data sheet **F.T 25 870**
Rear bodies , see data sheet **F.T R 0189**

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
C (Square) M6 effective depth 12 	12 to 22	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

F.T 25 671

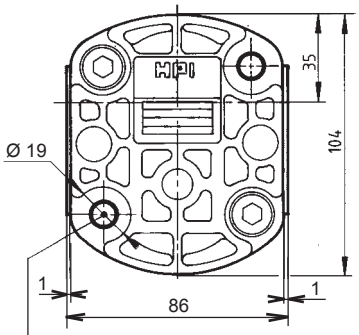
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DBK

PUBLISHING 05 / 07 / 2000

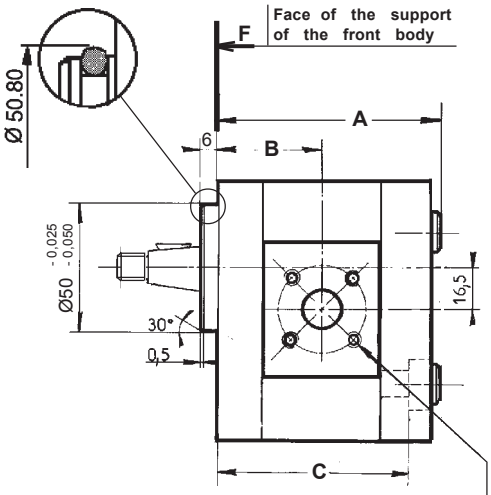
P	II Sign	DC	K	2	5	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

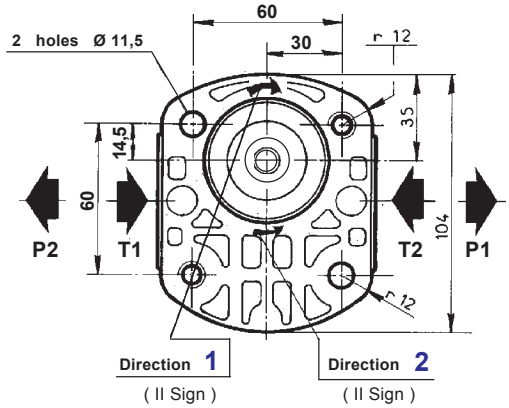
N : Nitrile
V : Viton
S : Saphir



Tightening torque
5 ± 0,2 m.daN



IMPLANTATION of PORTS , see below



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B	C
12	105	49	94
15 18 22	121	57	110

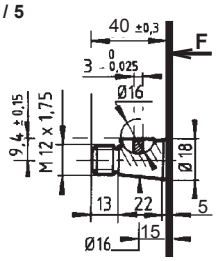
Capacity (VI Sign)	Assembling recommendations Screws Dimensions	Screws References	Washers References
12	M 10 x 110	109 421	101 904
15 à 22	M 10 x 130	109 004	

Multiple geared pumps , see data sheet F.T 25 870
Rear bodies , see data sheet F.T R 0189

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

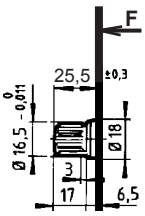


Delivered with Nut

Ref. : 106 317

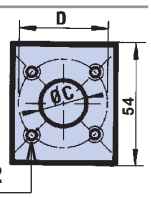
Max. transmissible torque
22 m.daN

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



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

Couple maxi transmissible
10 m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
C (Square) M6 effective depth 12 	12 to 22	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DCK

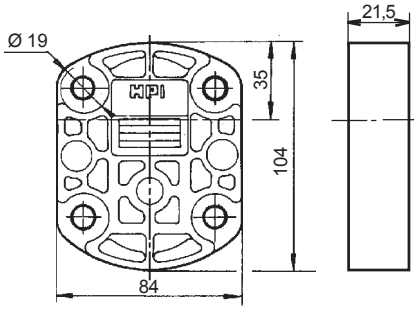
PUBLISHING 05 / 07 / 2000

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign

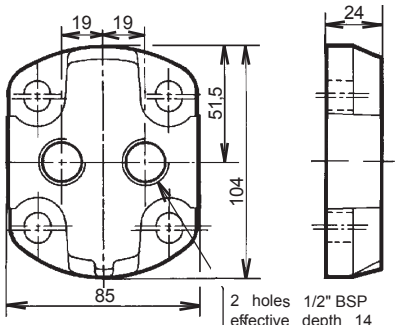
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir

L (VIII Sign) **Standard (no ports)**



A (VIII Sign) **With ports**

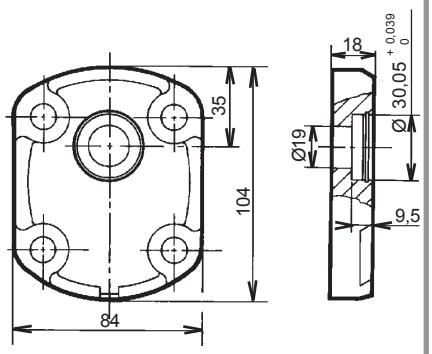


2 holes 1/2" BSP effective depth 14

Max. tightening torque of the connexion : **4** $^{+0,5}_{0}$ **Kgm**

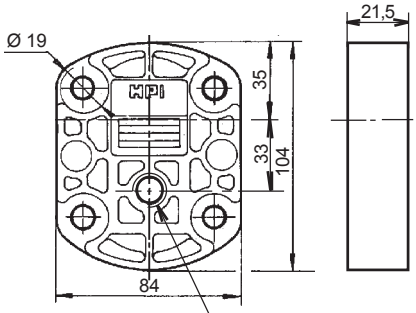
Max. flow : **22 l / min**

Z (VIII Sign) **Double shaft port**



L (VIII Sign) **Standard (no ports)**

For single pumps
P3 - P5 - P6



Drain port 1/4" BSP effective depth 14

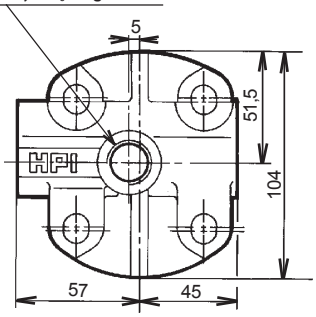
Max. tightening torque of the connexion : **3,3** $^{+0,5}_{0}$ **Kgm**

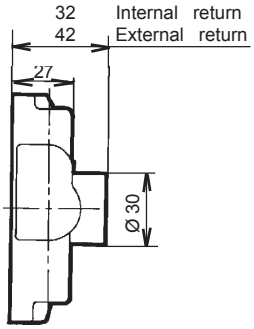
Q (VIII Sign) **Internal return flow control**

R (VIII Sign) **External return flow control**

M20 x 150 effective depth 12

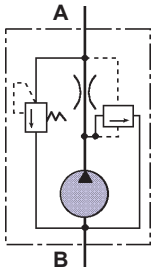
Max. tightening torque of the connexion : **3,8** $^{+0,2}_{0}$ **Kgm**



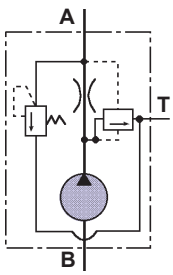


SYMBOLS

1 internal way



1 external way



NOTA : Port M 20 x 150 only exists on external return version.

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 1/4

HYDRAULIC GEAR PUMPS SERIES 2-2,5

REAR BODY

Following Page

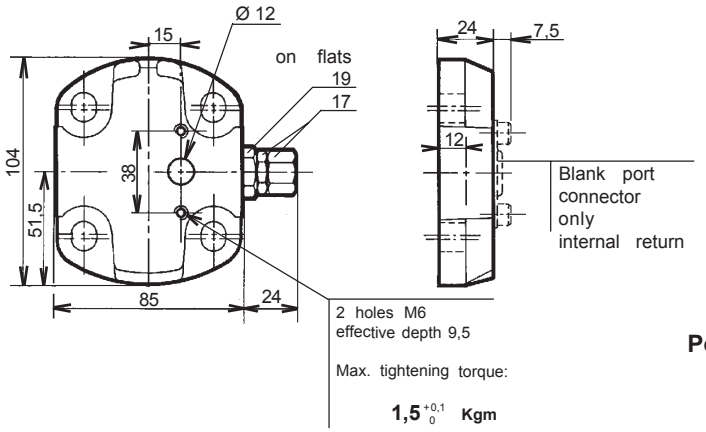
PUBLISHING 04 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	140	V22

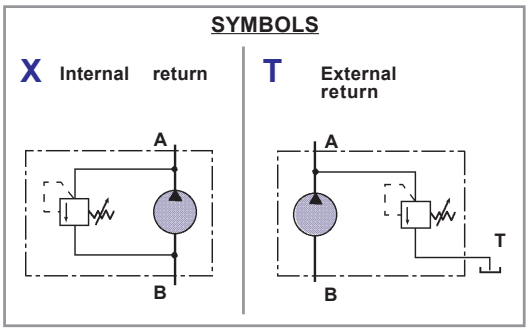
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

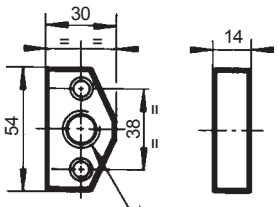
X (VIII Sign) **High pressure relief valve (Adjustable) Internal return**
T (VIII Sign) **High pressure relief valve (Adjustable) External return**



SYMBOLS

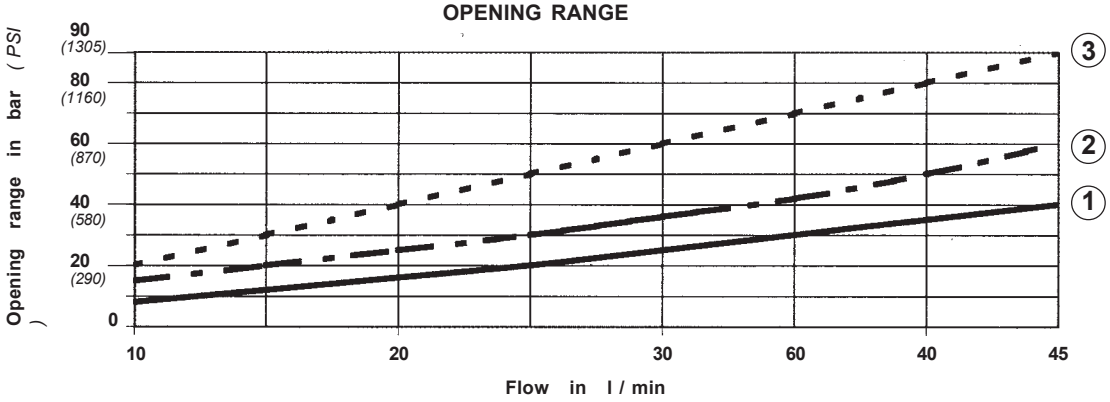


Port connector 2.504111



NB : Port Ø 12 can be used only with external return. (**Code T**)
With internal return, the port is sealed by a flange. (**Code X**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

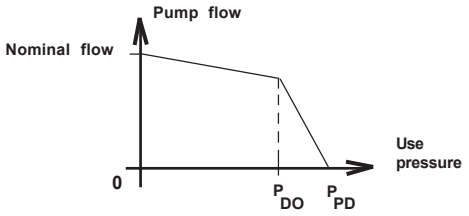
Setting :	①	②	③
Pressure at opening begin mini :	**20 bar** 290 PSI	**100 bar** 1450 PSI	**150 bar** 2175 PSI
Max. :	**100 bar** 1450 PSI	**150 bar** 2175 PSI	**200 bar** 2900 PSI

Setting tolerance : ± 5 bar (72,5 PSI)

Full flow setting

XIII Sign **140** Example : **Pressure of by-pass** Full flow ± 5 bar (72,5 PSI) to 46 cSt **140 = 140 bar** (2030 PSI)

XIV Sign **V22** Example : **V Speed** **22 Speeed** ⇒ **2200 rev / min** (100)



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

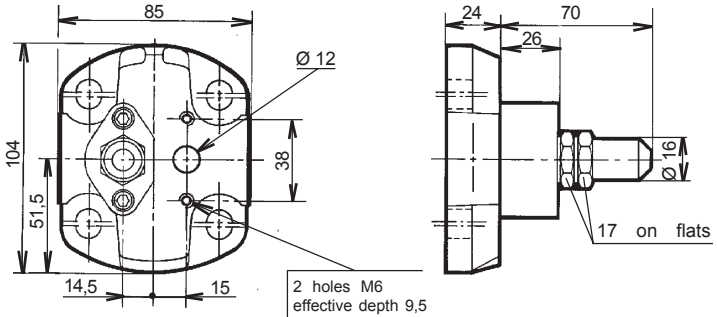
F.T R 0189 2/4

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	010	V15

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

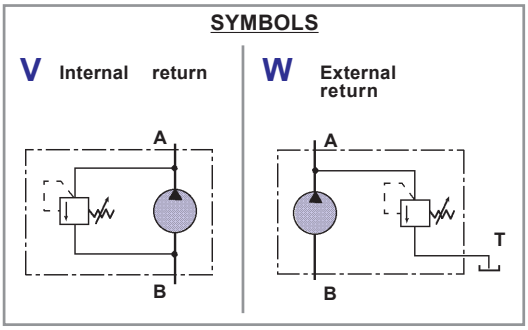
V (VIII Sign) **Low pressure relief valve (Adjustable) Internal return**
W (VIII Sign) **Low pressure relief valve (Adjustable) External return**



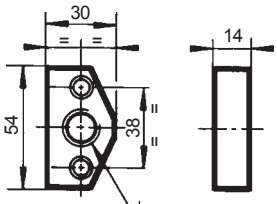
2 holes M6
effective depth 9,5

Max. tightening torque:
1,5 $^{+0,1}_{0}$ **Kgm**

SYMBOLS



Port connector 2.504111



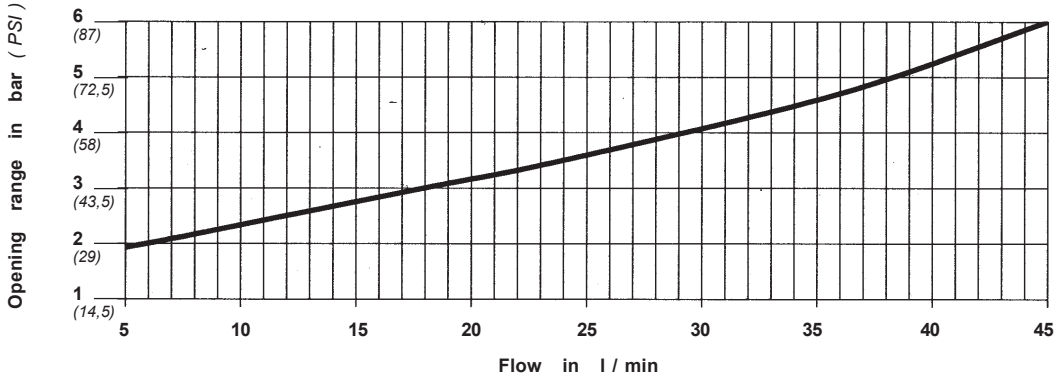
Port 3/8" BSP
effective depth 12

Max. tightening torque of the connexion :
3,3 $^{+0,5}_{0}$ **Kgm**

NB : Port Ø 12 can be used only with external return. (**Code W**)
With internal return, the port is sealed by a flange. (**Code V**)

Dimension readings and approximative characteristics subject to modifications .

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40 °C

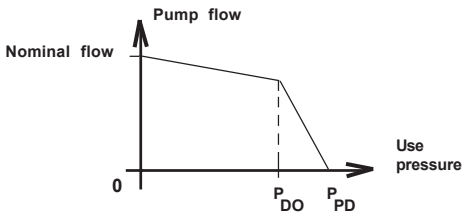
Pressure at opening begin mini : 5 bar (72,5 PSI)
Max. : 15 bar (217,5 PSI)

Setting tolerance : ± 1 bar *(14,5 PSI)*

Full flow setting

XIII Sign **010** Example : **Pressure of by-pass**
Full flow ± 1 bar (14,5 PSI) to 46 cSt
010 = 10 bar (145 PSI)

XIV Sign **V15** Example : **V Speed**
15 Speed ⇒ **1500 rev / min**
100



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

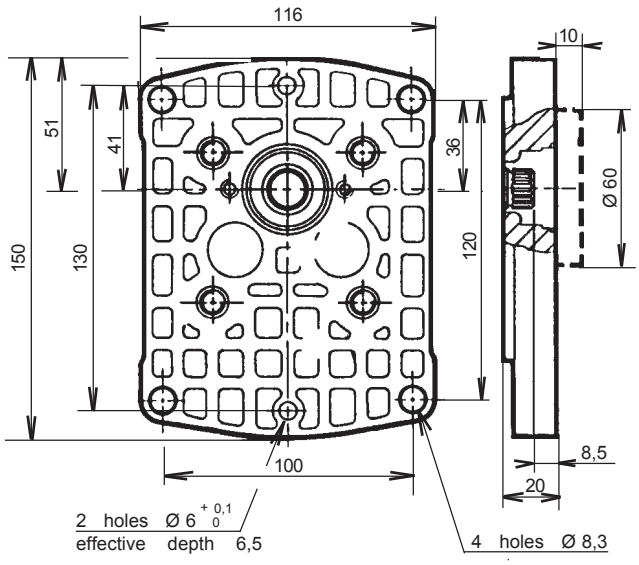
F.T R 0189 3/4

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	J	IX Sign	IX Sign	XI Sign	XII Sign

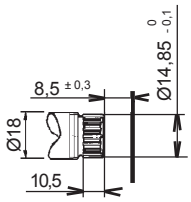
For CODIFICATION , see data sheet F.T R 0011

N : Nitril
V : Viton
S : Saphir

J (VIII Sign) Pre - arrangement with mounting " Module 3 "



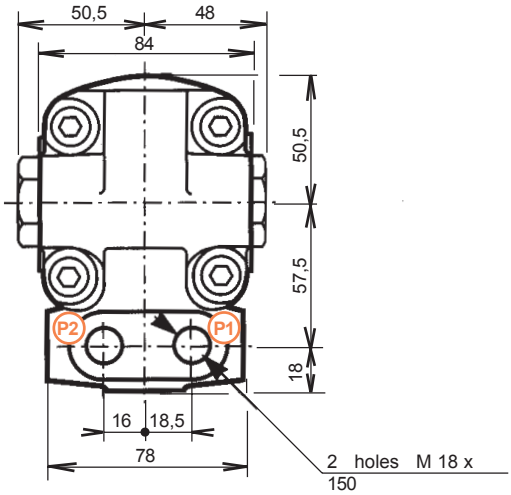
33 (IX - X Sign)
C05 (XI Sign)



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks
Max. transmissible torque

9,5 m.daN

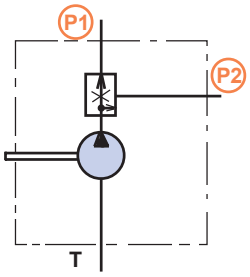
D (VIII Sign) Flow control valve 3 Ways



P1 **Constant flow (+ 15% - 10%)**

P2 **Residual flow**

SYMBOL



Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 4/4

Preceding Page
Following Page

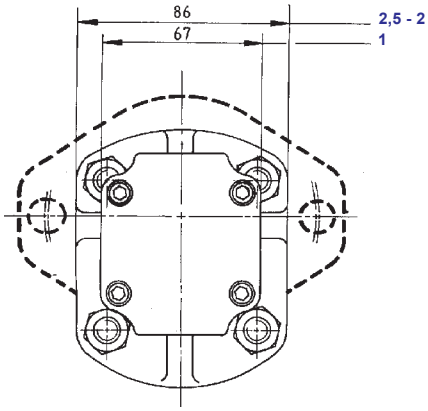
HYDRAULIC GEAR PUMPS SERIES 2-2,5

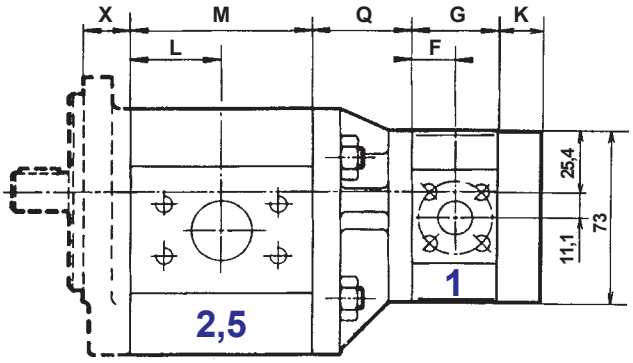
REAR BODY

P	II Sign	III Sign	IV Sign	2 5	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

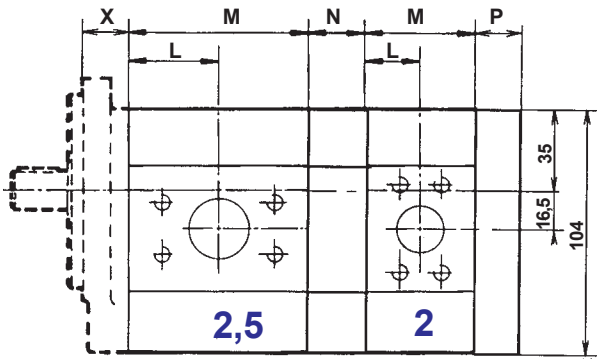
For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir





NOTA : Versions 2,5 / 1 and 2 / 1 are not feasible in DCN et DUK.



ATTENTION

For common suctions .

The flow of the pump , or pump preceding or following the section including the suction must not exceed **22 l / min .**

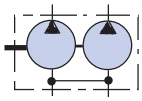
- Hydraulic characteristics ,
- Driving shafts ,
- Supply ports implantation
- Dimensions of " Front body " : see the technical data sheets of the single pumps quoted overleaf .

Different mounting possibilities between multiple pumps , see data sheet F.T R 0029

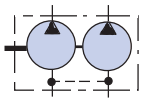
Dimensions X , see following page

JUNCTIONS BODY

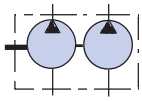
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



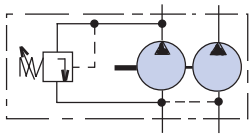
Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



Code X (VIII Sign) — **Adjustable relief valve internal return in preceding pump**



SERIES (V - IX Sign)	Capacity (VI - X Sign)	L	M	N	P	Q	F	G	K
2,5	12	31,0	61,6	24	25,5				
	15 to 22	38,8	77,7						
2	004 to 012	23,5	47,0	24	25,5				
	015 to 022	31,0	61,6						
	026 030	38,8	77,7						
1	001 to 003					42	17,9	35,8	18
	004 to 006						22,7	45,6	

NOTA : Versions 2,5 / 1 - 2 / 1 only Codes A - D and E .

Following Page

MULTIPLE GEARED PUMPS

SERIES 2,5 (FLAT FRONT BODY)

PUBLISHING 06 / 02 / 2002

P	II Sign	III Sign	IV Sign	2 5	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir

Fixing kit for Pumps doubles Type DCN and DUK -

Primary Pump Capacity (VI Sign)	Secondary pump Capacity (X Sign)	Fixing KIT references
2512 2015 to 2022	2004 to 2012	K5070324
2512 2015 to 2022	2512 2015 to 2022	K5073127
2515 to 2522 2026-2030	2004 to 2012	K5070326
2515 to 2522 2026-2030	2512 2015 to 2022	K5070327
2515 to 2522 2026-2030	2515to2522 2026-2030	K5070328

Fixing kit for Pumps Triples Type DCN and DUK -

Primary Pump Capacity (VI Sign)	Secondary Pump Capacity (X Sign)	Tertiary Pump Capacity (XIV Sign)	Fixing KIT references
2512 - 2015 to 2022	2004 to 2012	2004 to 2012	K5070330
2512 - 2015 to 2022	2512 2015 to 2022	2004 to 2012	K5070331
2512 - 2015 to 2022	2512 2015 to 2022	2512 2015 à 2022	K5070332
2515 to 2522 2026-2030	2004 to 2012	2004 to 2012	K5070331
2515 to 2522 2026-2030	2512 2015 to 2022	2004 to 2012	K5070332
2515 to 2522 2026-2030	2512 2015 to 2022	2512 2015 to 2022	K5070335
2515 to 2522 2026-2030	2515 to 2522 2026-2030	2004 to 2012	K5070335
2515 to 2522 2026-2030	2515 to 2522 2026-2030	2512 2015 to 2022	K5070337
2515 to 2522 2026-2030	2515 to 2522 2026-2030	2026-2030 2515 to2522	K5070337

Dimension readings and approximative characteristics subject to modifications .

Front body Types (III - IV - VII Sign)	Dimensions X	Data sheets references
AAN (Y)	20	F.T 25 455
AAN (U)	20	F.T 25 562
AAK (H-C)	20	F.T 25 610
AAK (F)	20	F.T 25 652
AAK (Y)	20	F.T 25 630
AAK (U)	20	F.T 25 632
AFN (H-C)	21	F.T 25 649
BAN (B)	20	F.T 25 633

Front body Types (III - IV - VII Sign)	Dimensions X	Data sheets references
DBN (H)	20	F.T 25 637
DBK (H)	20	F.T 25 639
DBK (C)	20	F.T 25 671
DCK (C)	18	F.T 25 641

TORQUE CALCULATION

Q Capacity in cc / rev
P Pressure in bar
η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAK 2512 H A 2008 H L 30 A01 Pressure : 2512 200 bar 2008 150 bar Speed : 1500 RPM

$\frac{1,56 \times 12 \times 200}{1000 \times 0,87} = 4,3$ m.daN

$\frac{1,56 \times 8 \times 150}{1000 \times 0,87} = 2,15$ m.daN

= 6,45 m.daN ⟹ Total torque

Preceding Page

MULTIPLE GEARED PUMPS

SERIES 2,5 (FLAT FRONT BODY)

Home - General Contents

General Catalogue Contents

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2,5

Thick Front Body

Publishing 01 / 2003

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PEAK PRESSURE		MAX. WORKING PRESSURE		Maxi speed	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar and m.daN	Approximate weight
							at 1500 RPM	at Maxi speed			
	cc / rev	bar	PSI	bar	PSI	rev/min	l / min	l / min			Kg
2512	12	300	4350	255	3700	3500	18	42	2,31	2,75	2,8
2515	15,52	280	4060	240	3480	3500	23,25	52,5	2,94	2,77	3,3
2518	19,12	250	3625	210	3045	3500	28,65	66,8	3,63	3,32	3,4
2522	22,87	225	3262	190	2780	3500	34,2	79,8	4,30	4,02	3,4

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

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAP 2515 Y L 10 C03 Pressure : 200 bar Speed : 1500 RPM

Torque = $\frac{1,56 \times 15 \times 200}{1000 \times 0,87}$ = 5,49 m.daN

F.T R 0205

" GENERAL " CATALOGUE MOUTING 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	Y	U	L	X	T	V	W	Q	R	A	Z	10	20	30
AAP																10C03	20C03	
AAR																10C03	20C03	
ARP																10C05		
	DBR															10C07	20C15	
		ZFC																30D04

Not feasible versions

Our " BASIC" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

Flat front body ,
see data sheet F.T R 0210

HYDRAULIC GEAR PUMPS

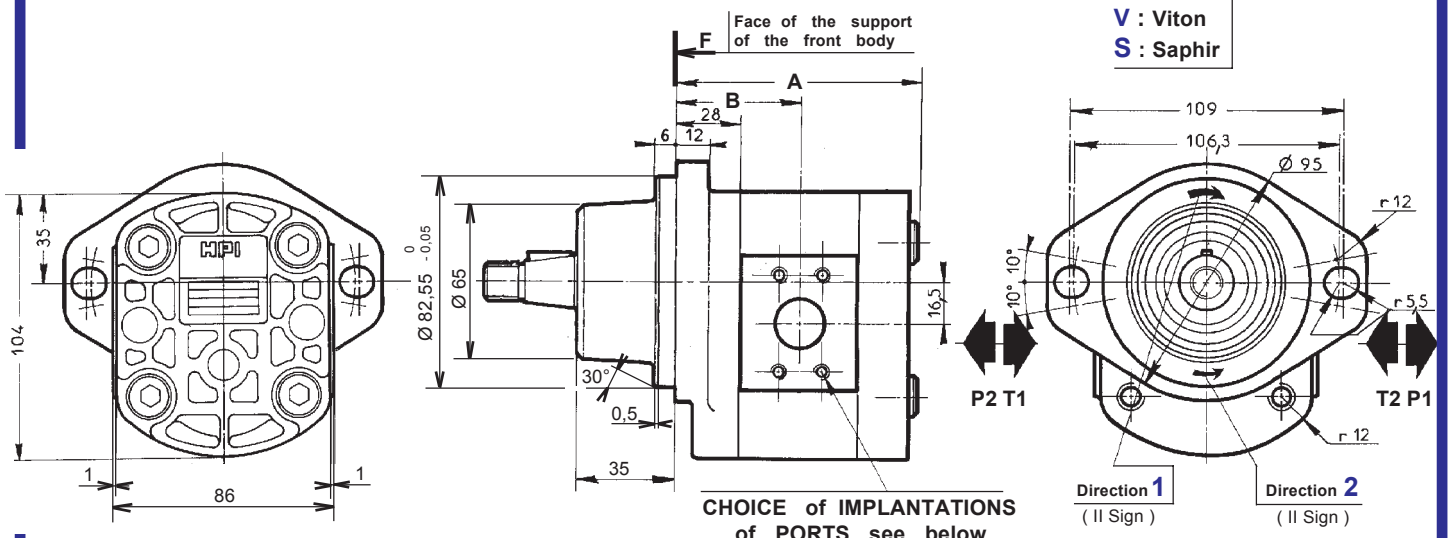
SERIES 2,5 (THICK FRONT BODY)

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	P	2	5	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

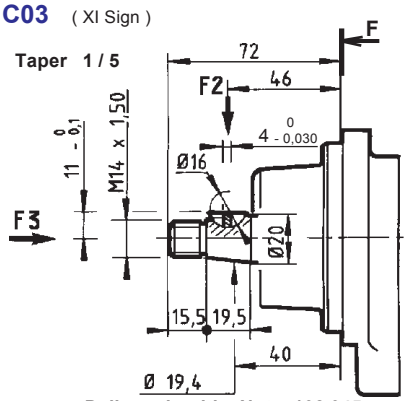


CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

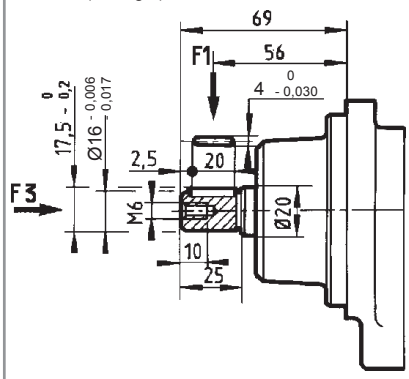
Taper 1 / 5



Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN
Max. transmissible torque
7 m.daN

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



F1 Maxi : 100 daN
F3 Maxi : 50 daN
Max. transmissible torque
5 m.daN

Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet F.T 25 884
Rear bodies , see data sheet F.T R 0189

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G	12 to 22	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162) Ø F effective depth G	12	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
	15 to 22	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 25 646

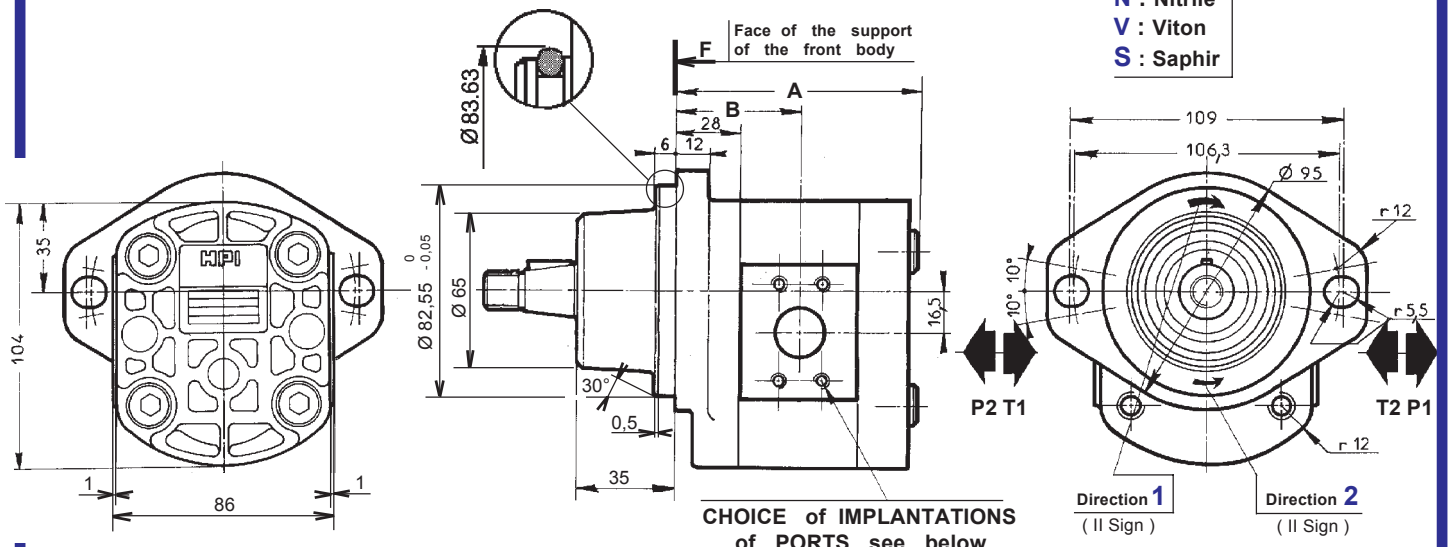
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAP

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	R	2	5	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS , see below

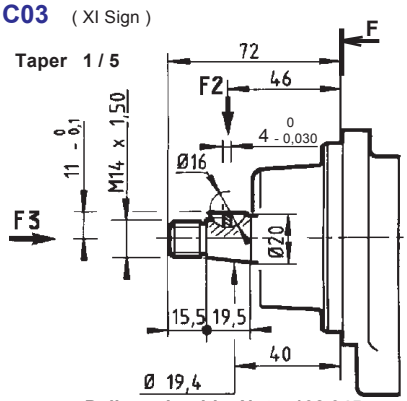
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

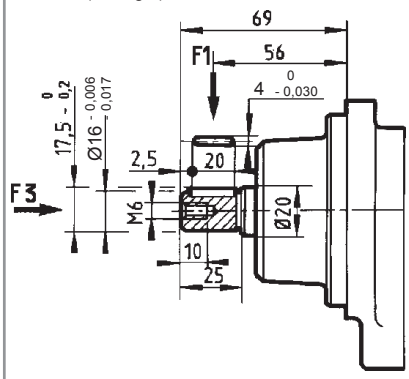
Taper 1 / 5



Delivered with Nut : 102 045

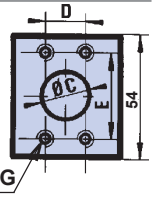
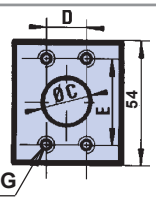
F2 Maxi : 120 daN
F3 Maxi : 50 daN
Max. transmissible torque
7 m.daN

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



F1 Maxi : 100 daN
F3 Maxi : 50 daN
Max. transmissible torque
5 m.daN

Multiple geared pumps , see data sheet **F.T 25 884**
Rear bodies , see data sheet **F.T R 0189**

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G 	12 to 22	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162) Ø F effective depth G 	12	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
	15 to 22	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 25 647

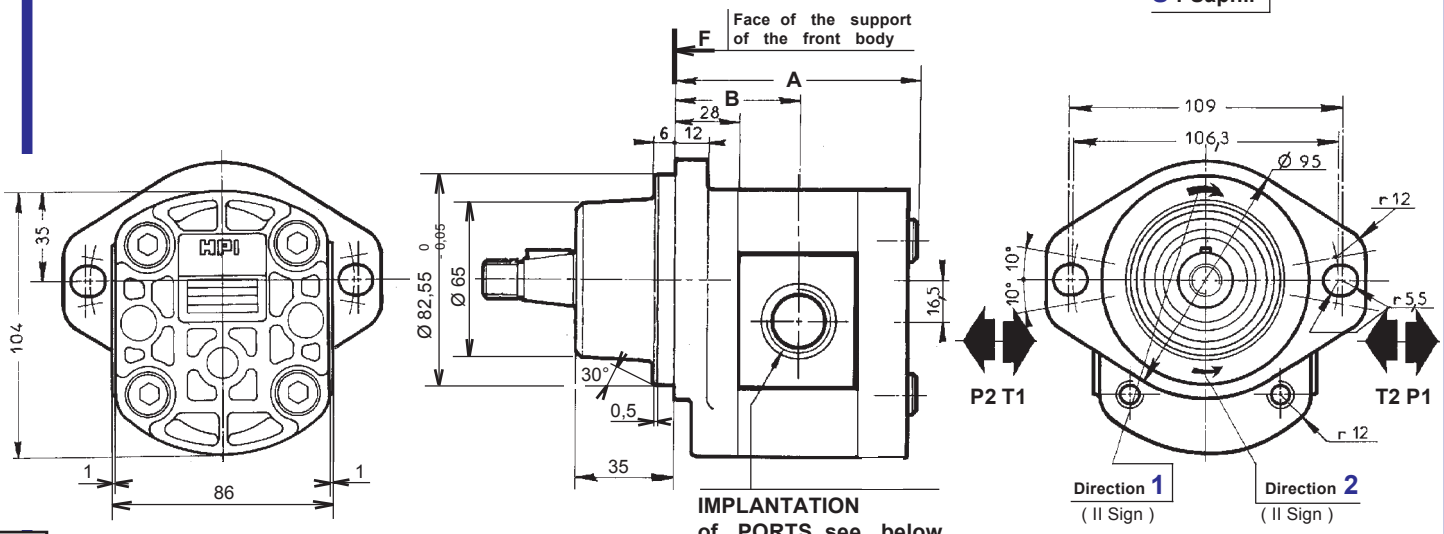
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAR

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	P	2	5	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



IMPLANTATION of PORTS ,see below

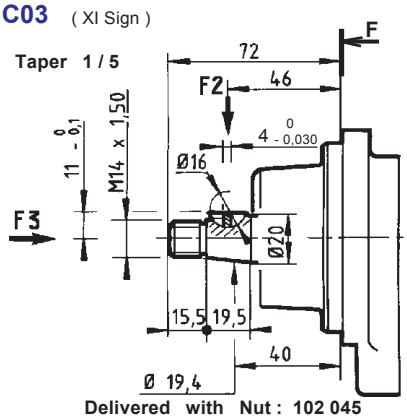
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

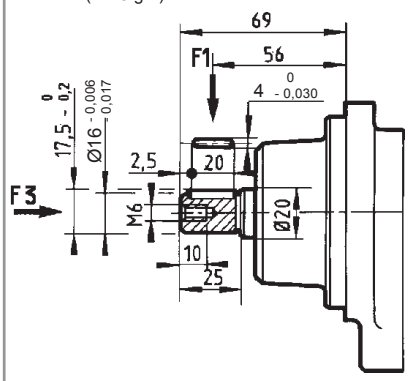


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque **7** m.daN

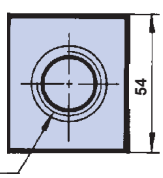
20 (IX - X Sign)
C03 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque **5** m.daN

Multiple geared pumps , see data sheet F.T 25 884
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	12	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	15 to 22	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

F.T 25 923

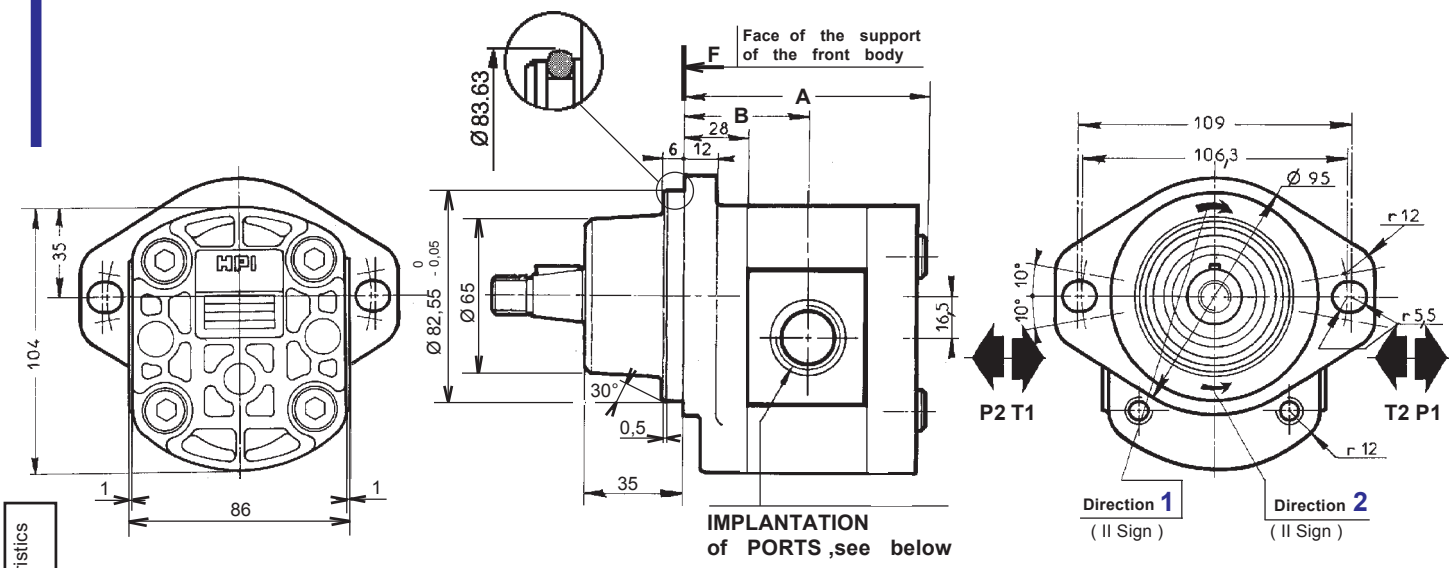
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAP

PUBLISHING 25 / 10 / 2001

P	II Sign	AA	R	2 5	VI Sign	U	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir

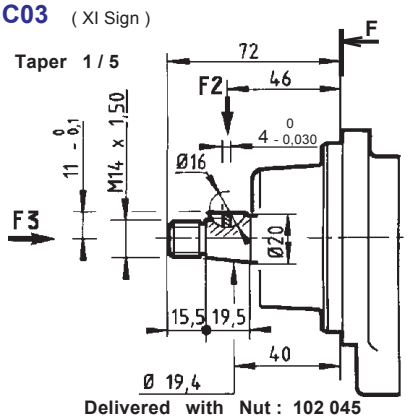


Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

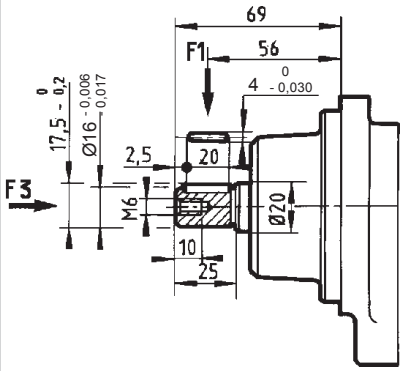


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque
7 m.daN

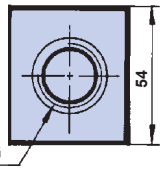
20 (IX - X Sign)
C03 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque
5 m.daN

Multiple geared pumps , see data sheet F.T 25 884
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØF	INLET (T) G	OUTLET (T) ØF	OUTLET (T) G
U (Threaded SAE J 475) Ø F effective depth G 	12	1" 5/16 12 UNF - 2B	20	7/8" 14 UNF - 2B	17
	15 to 22	1" 5/16 12 UNF - 2B	20	1" 1/16 14 UNF - 2B	17

HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE AAR

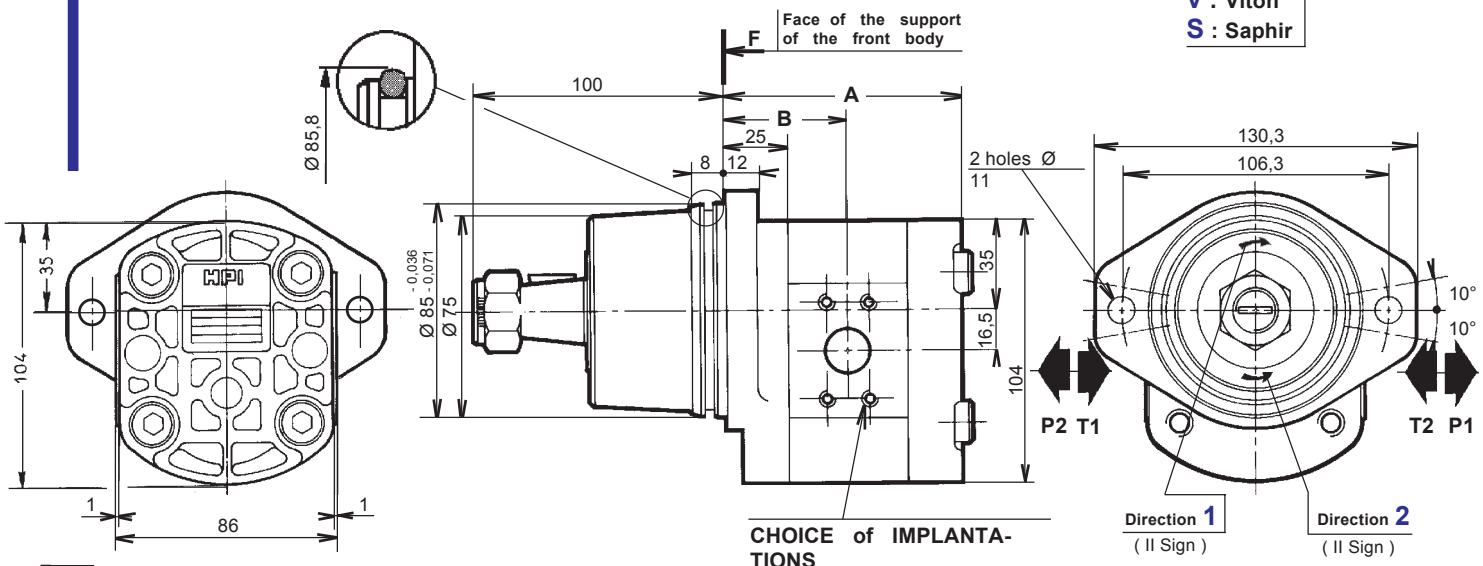
PUBLISHING 25 / 10 / 2001

F.T 25 957

P	II Sign	AR	P	2 5	VI Sign	VII Sign	L	1	0	C05	XII Signe

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



CHOICE of IMPLANTATIONS of PORTS , see below

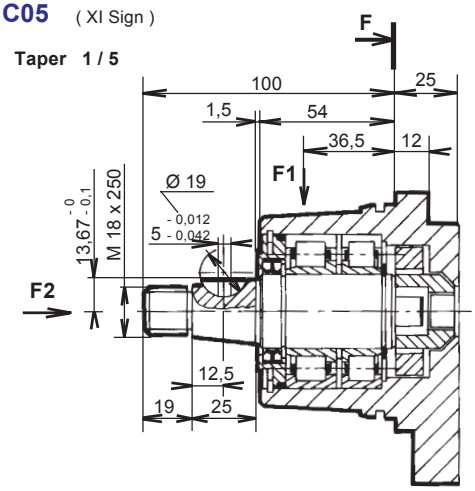
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

DRIVING SHAFT

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

Taper 1 / 5



Delivered with Nut : 106 295

F1 Maxi : 350 daN
F2 Maxi : 50 daN

Max. transmissible torque
7 m.daN

Multiple geared pumps , see data sheet F.T 25 884
Rear bodies , see data sheet F.T R 0189

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G	12 to 22	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
Y (ISO 6162) Ø F effective depth G	12	20	47,6	22,4	M10	14	15	17,4	38	M8	14		
	15 to 22	26	52,4	26,2	M10	14	15	17,4	38	M8	14		

F.T 25 612

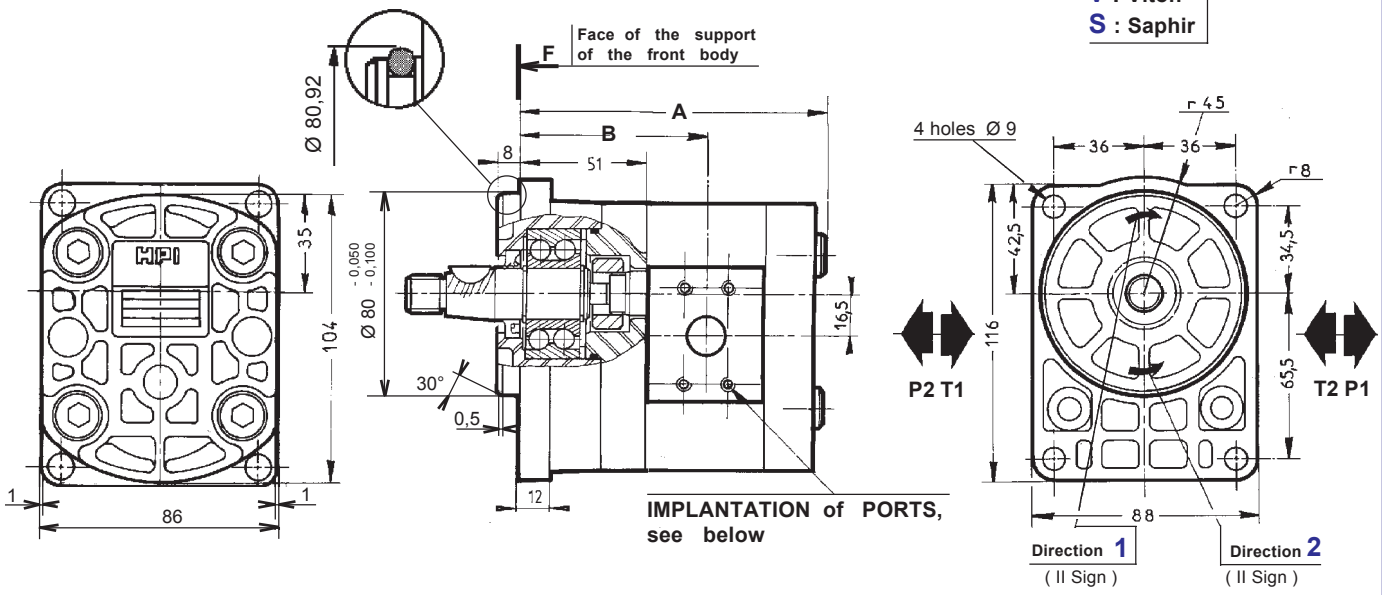
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE ARP

PUBLISHING 05 / 07 / 2000

P	II Sign	DB	R	2	5	VI Sign	H	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir



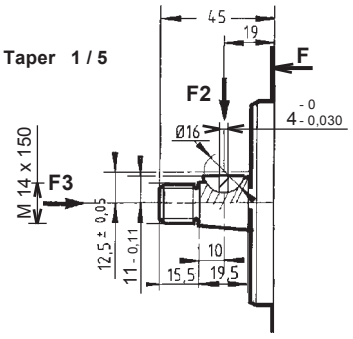
IMPLANTATION of PORTS, see below

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

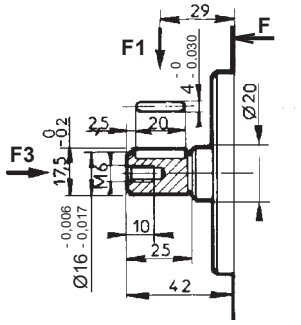


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque
7 m.daN

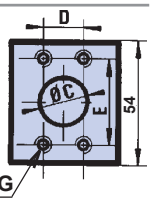
20 (IX - X Sign)
C15 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque
5 m.daN

Multiple geared pumps , see data sheet **F.T 25 884**
Rear bodies , see data sheet **F.T R 0189**

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	ØF	G	OUTLET (P) ØC	D	E	ØF	G	CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G 	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

Dimension readings and approximative characteristics subject to modifications .

F.T 25 645

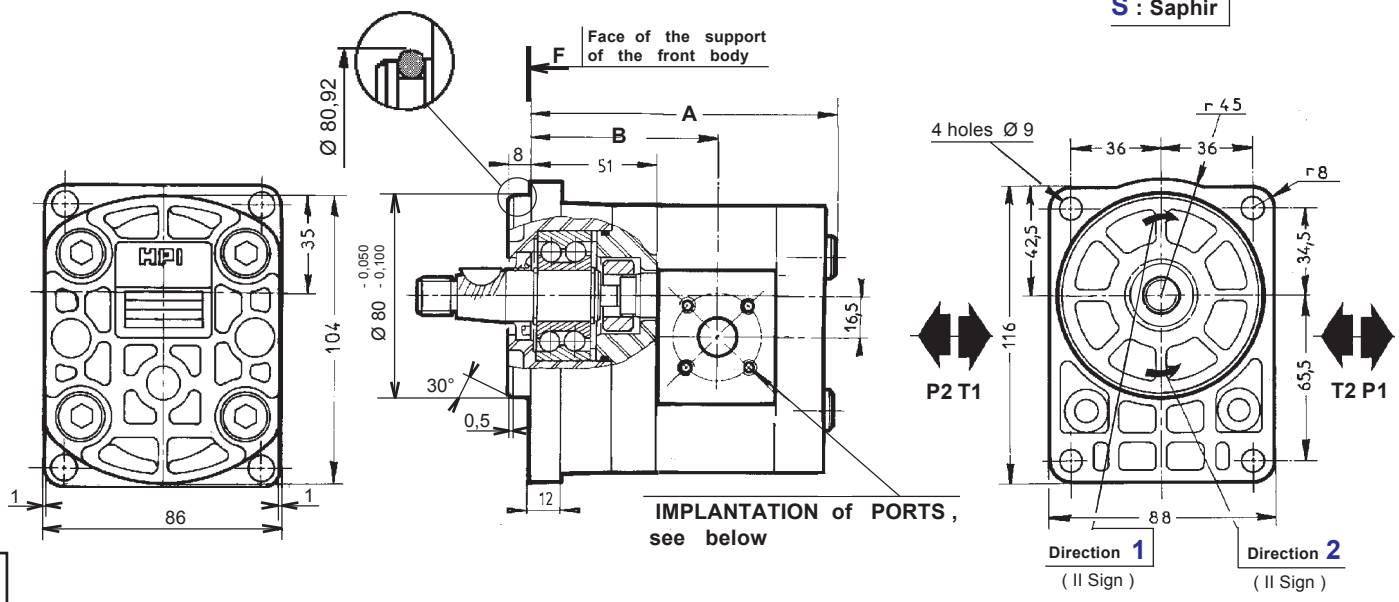
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DBR

PUBLISHING 25 / 10 / 2001

P	II Sign	DB	R	2	5	VI Sign	C	L	IX Sign	X Sign	XI Sign	XII Signe

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton
S : Saphir



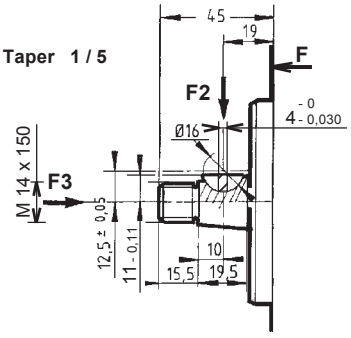
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	107	51
15 18 22	123	59

CHOICE of the DRIVING SHAFTS

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

Taper 1 / 5

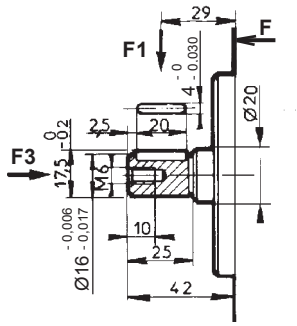


Delivered with Nut : 102 045

F2 Maxi : 120 daN
F3 Maxi : 50 daN

Max. transmissible torque
7 m.daN

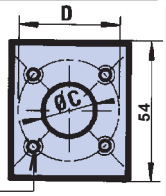
20 (IX - X Sign)
C15 (XI Sign)



F1 Maxi : 100 daN
F3 Maxi : 50 daN

Max. transmissible torque
5 m.daN

Multiple geared pumps , see data sheet F.T 20 618
Rear bodies , see data sheet F.T R 0189

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
C (Square) M6 effective depth 12 	004 to 030	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

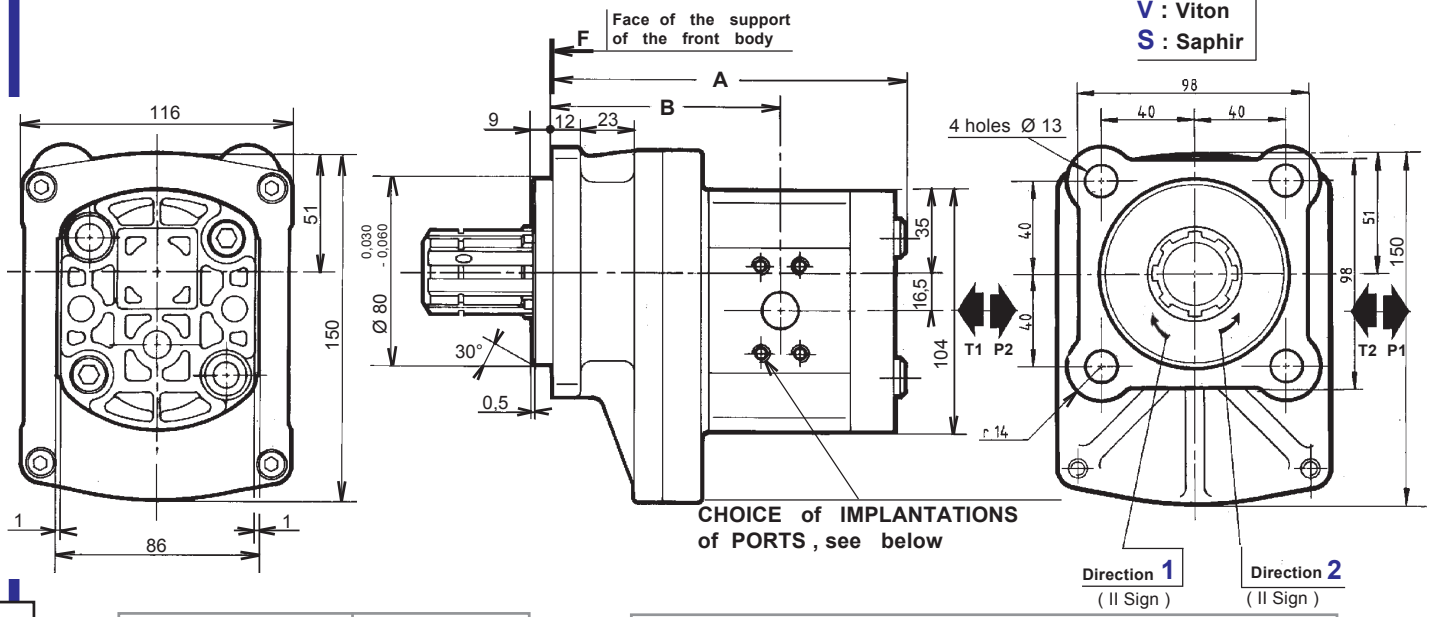
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE DBR

PUBLISHING 05 / 07 / 2000

P	II Sign	ZF	C	2	5	VI Sign	VII Sign	L	3	0	D04	XII Sign

For CODIFICATION , see data sheet F.T R 0011

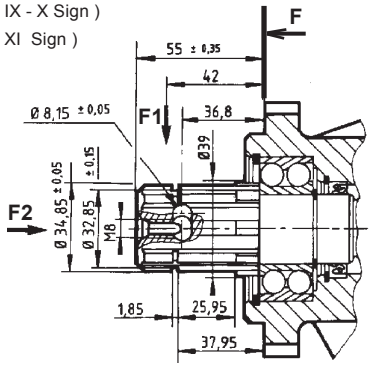
N : Nitrile
V : Viton
S : Saphir



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
12	154	98
15 18 22	170	106

DRIVING SHAFT

30 (IX - X Sign)
D04 (XI Sign)



F1 Maxi : 140 daN
F2 Maxi : 50 daN

Parallel spline side
8 x 32 x 36 - to norme NF E 22 131
Pushing Minor diameter

Max. transmissible torque
48 m.daN

Multiple geared pumps , see data sheet F.T 25 884
Rear bodies , see data sheet F.T R 0189

CHOICE of IMPLANTATIONS of PORTS (II Sign)	Capacity (VII Sign)	INLET (T) ØC	D	E	OUTLET (P) ØC	D	E	CATALOGUE N° 70 Ref. RECOMMENDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
H (HPI) M6 effective depth 12	12 to 22	26	47,6	22,4	15	17,4	38	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126
C (Square) M6 effective depth 12	12 to 22	20	40		15	35		3 / 4 " BSP N: 367141.503	1 / 2 " BSP N: 367141.703

Dimension readings and approximative characteristics subject to modifications .

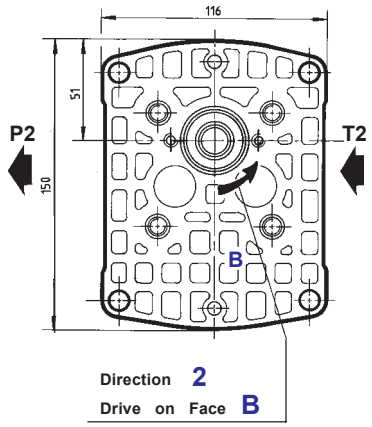
F.T 25 648

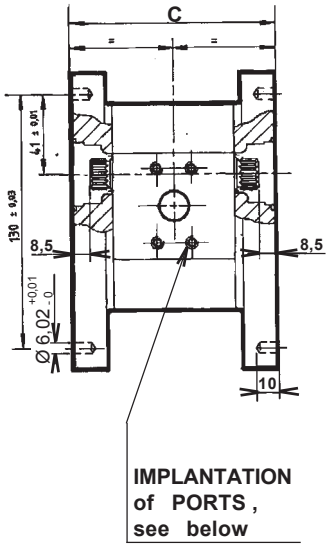
HYDRAULIC GEAR PUMPS SERIES 2,5 TYPE ZFC

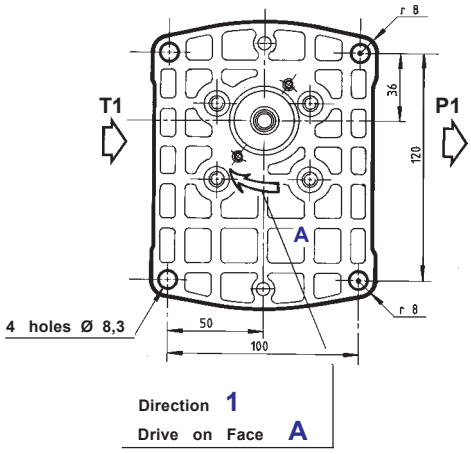
PUBLISHING 05 / 07 / 2000

P 4 CJN 2 5 VI Sign H J 33 C05 N

For CODIFICATION , see data sheet F.T R 0146



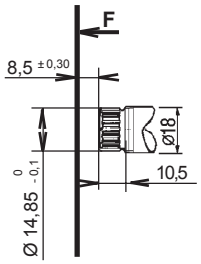




CHOICE of the CAPACITY (VI Sign)	Dimensions C
12	101,6
15 18 22	117,7

DRIVING SHAFT

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



involute spline to shaft
15 x 18 x 0,75
to norm NF E 22 141 - BNA 455
Spigot on free flank

Max. transmissible torque
9,5 m.daN

IMPLANTATION of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T)					OUTLET (P)					CATALOGUE N° 70 Ref. of RECOMMENDED FLANGES (for speed 1500 rev / min)	
		ØC	D	E	ØF	G	ØC	D	E	ØF	G	INLET (T)	OUTLET (P)
H (HPI) Ø F effective depth G	012 to 022	26	47,6	22,4	M6	12	15	17,4	38	M6	12	1 " BSP N: 2.500496 V: 2.504117	1 / 2 " BSP N: 2.500055 V: 2.504126

HYDRAULIC GEAR PUMPS MODUL 3 BASE SERIES 2,5

Dimension readings and approximative characteristics subject to modifications .

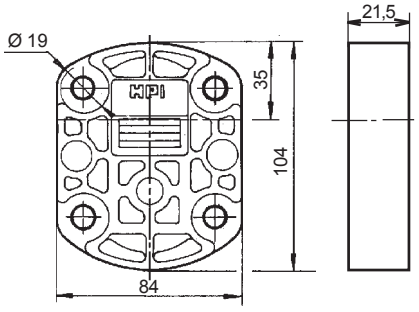
F.T 25 162

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign

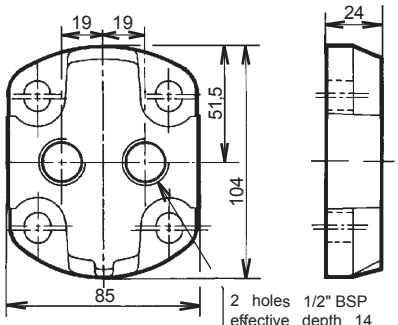
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitrile
V : Viton
S : Saphir

L (VIII Sign) Standard (no ports)



A (VIII Sign) With ports

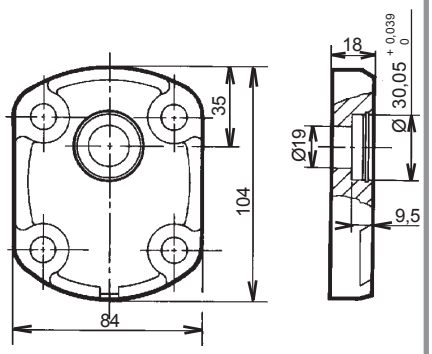


2 holes 1/2" BSP effective depth 14

Max. tightening torque of the connexion : **4** $^{+0,5}_{0}$ **Kgm**

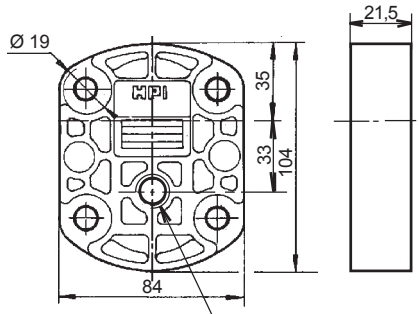
Max. flow : **22 l / min**

Z (VIII Sign) Double shaft port



L (VIII Sign) Standard (no ports)

For single pumps
P3 - P5 - P6



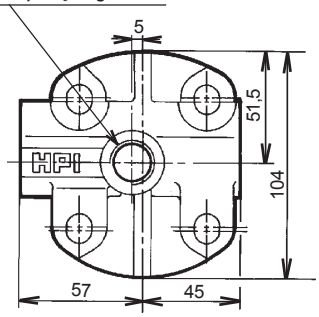
Drain port 1/4" BSP effective depth 14

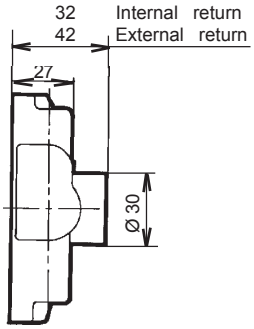
Max. tightening torque of the connexion : **3,3** $^{+0,5}_{0}$ **Kgm**

Q (VIII Sign) Internal return flow control
R (VIII Sign) External return flow control

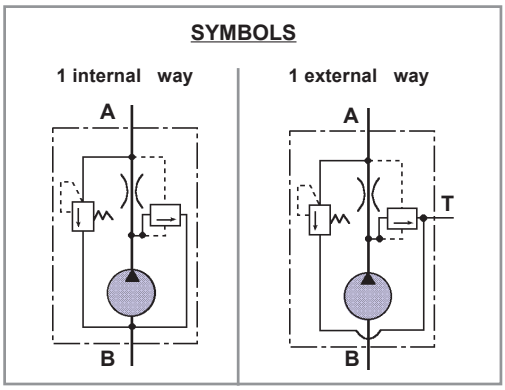
M20 x 150 effective depth 12

Max. tightening torque of the connexion : **3,8** $^{+0,2}_{0}$ **Kgm**





SYMBOLS



NOTA : Port M 20 x 150 only exists on external return version.

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 1/4

HYDRAULIC GEAR PUMPS SERIES 2-2,5

REAR BODY

Following Page

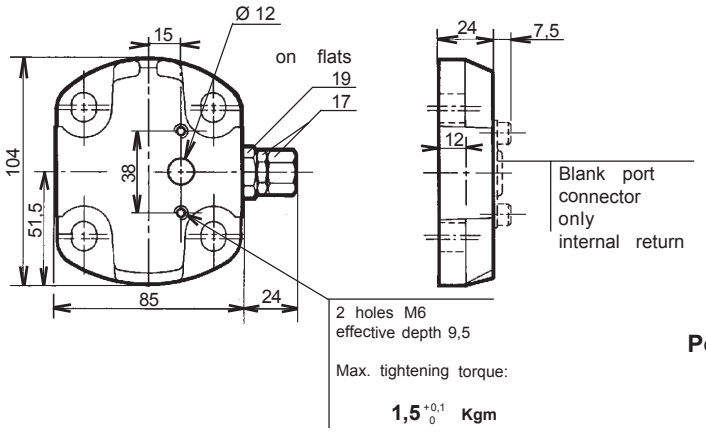
PUBLISHING 04 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	140	V22

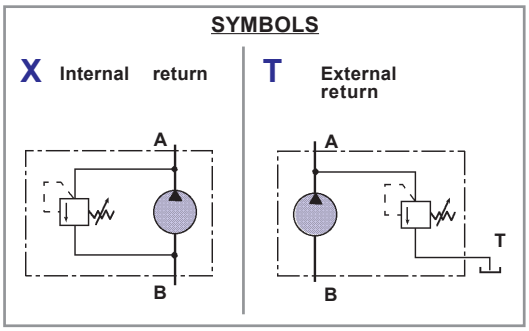
For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

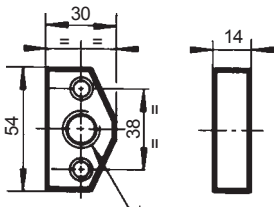
X (VIII Sign) **High pressure relief valve (Adjustable) Internal return**
T (VIII Sign) **High pressure relief valve (Adjustable) External return**



SYMBOLS

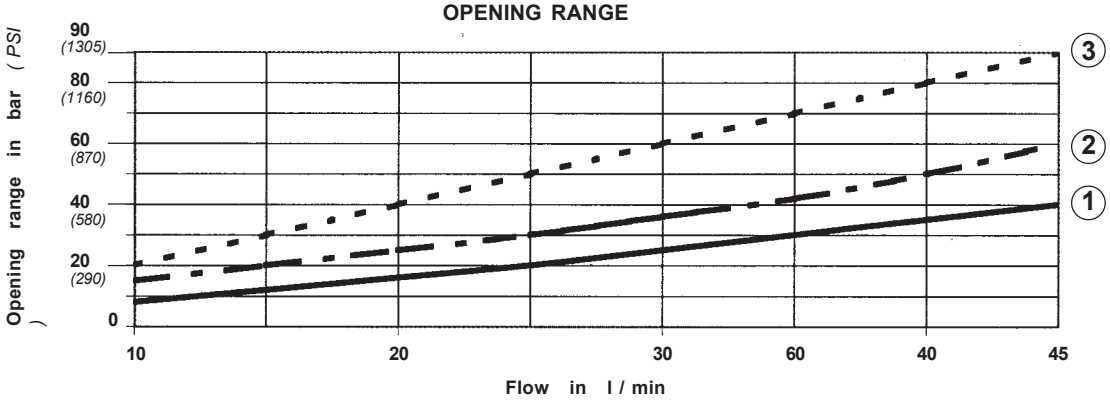


Port connector 2.504111



NB : Port Ø 12 can be used only with external return. (**Code T**)
With internal return, the port is sealed by a flange. (**Code X**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40° C

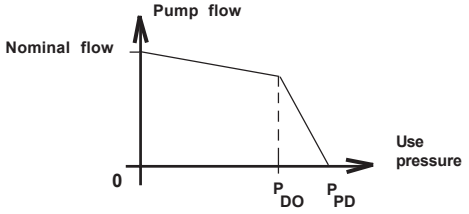
Setting :	①	②	③
Pressure at opening begin mini :	**20 bar** 290 PSI	**100 bar** 1450 PSI	**150 bar** 2175 PSI
Max. :	**100 bar** 1450 PSI	**150 bar** 2175 PSI	**200 bar** 2900 PSI

Setting tolerance : ± 5 bar (72,5 PSI)

Full flow setting

XIII Sign **140** Example : **Pressure of by-pass** Full flow ± 5 bar (72,5 PSI) to 46 cSt **140 = 140 bar** (2030 PSI)

XIV Sign **V22** Example : **V Speed** **22 Speeed / 100 ⇒ 2200 rev / min**



P_{DO} **Pressure at opening begin (depending on setting)**

P_{PD} **Full flow pressure (depending on setting and flow)**

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

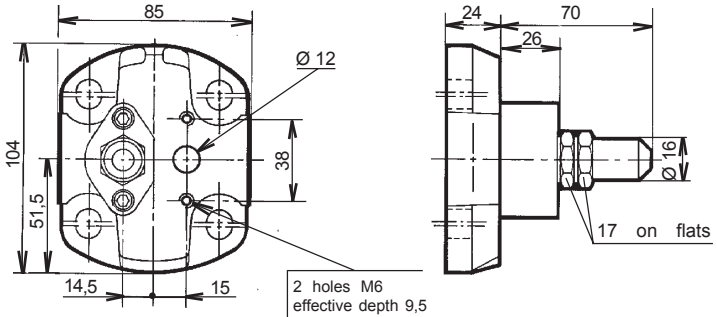
F.T R 0189 2/4

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	VIII Sign	IX Sign	IX Sign	XI Sign	XII Sign	010	V15

For CODIFICATION , see data sheet **F.T R 0011**

N : Nitril
V : Viton
S : Saphir

V (VIII Sign) **Low pressure relief valve (Adjustable) Internal return**
W (VIII Sign) **Low pressure relief valve (Adjustable) External return**

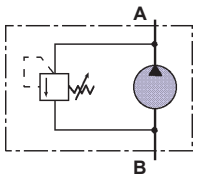


2 holes M6
effective depth 9,5

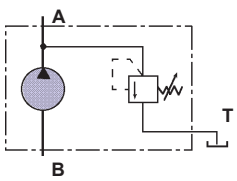
Max. tightening torque:
1,5 $^{+0,1}_{0}$ **Kgm**

SYMBOLS

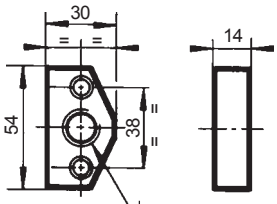
V Internal return



W External return



Port connector 2.504111

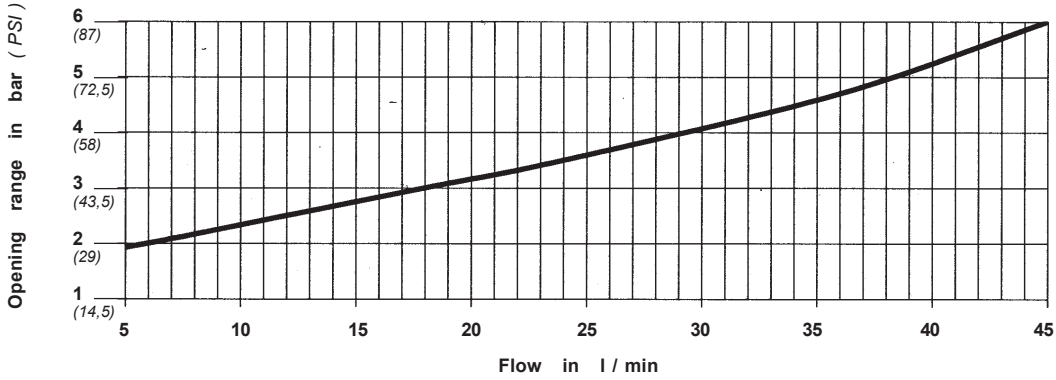


Port 3/8" BSP
effective depth 12

Max. tightening torque of the connexion :
3,3 $^{+0,5}_{0}$ **Kgm**

NB : Port Ø 12 can be used only with external return. (**Code W**)
With internal return, the port is sealed by a flange. (**Code V**)

OPENING RANGE



Curves made with the oil SHELL Tellus T46 (46 cSt) to 40 °C

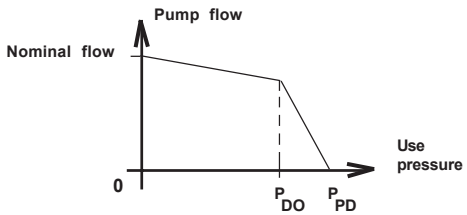
Pressure at opening begin mini : 5 bar (72,5 PSI)
Max. : 15 bar (217,5 PSI)

Setting tolerance : ± 1 bar *(14,5 PSI)*

Full flow setting

XIII Sign **010** Example : **Pressure of by-pass Full flow ± 1 bar (14,5 PSI) to 46 cSt**
010 = 10 bar (145 PSI)

XIV Sign **V15** Example : **V Speed**
15 Speed / 100 ⇒ 1500 rev / min



P_{DO} Pressure at opening begin (depending on setting)

P_{PD} Full flow pressure (depending on setting and flow)

Opening range = $P_{PD} - P_{DO}$

Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 3/4

Preceding Page
Following Page

HYDRAULIC GEAR PUMPS SERIES **2-2,5**
REAR BODY

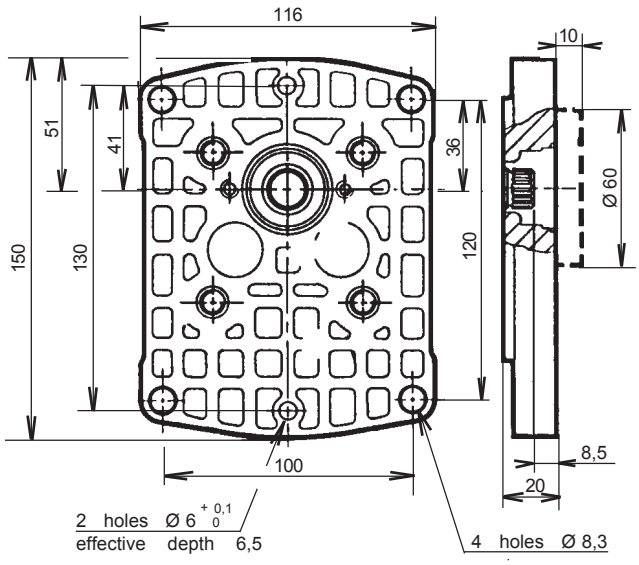
PUBLISHING 12 / 12 / 2001

P	II Sign	III Sign	IV Sign	2	VI Sign	VII Sign	J	IX Sign	IX Sign	XI Sign	XII Sign

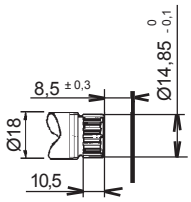
For CODIFICATION , see data sheet F.T R 0011

N : Nitril
V : Viton
S : Saphir

J (VIII Sign) Pre - arrangement with mounting " Module 3 "



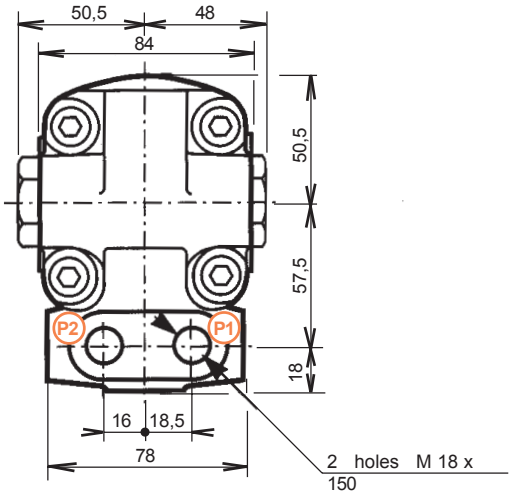
33 (IX - X Sign)
C05 (XI Sign)



Involute spline to shaft
15 x 18 x 0,75
to norme NF E 22 141 - BNA 455
Spigot on free flanks
Max. transmissible torque

9,5 m.daN

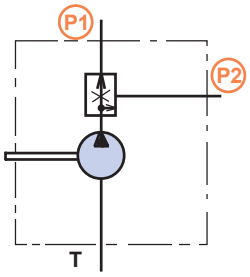
D (VIII Sign) Flow control valve 3 Ways



P1 **Constant flow (+ 15% - 10%)**

P2 **Residual flow**

SYMBOL



Dimension readings and approximative characteristics subject to modifications .

F.T R 0189 4/4

Preceding Page
Following Page

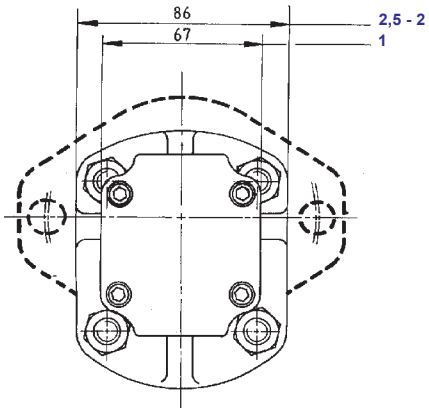
HYDRAULIC GEAR PUMPS SERIES 2-2,5

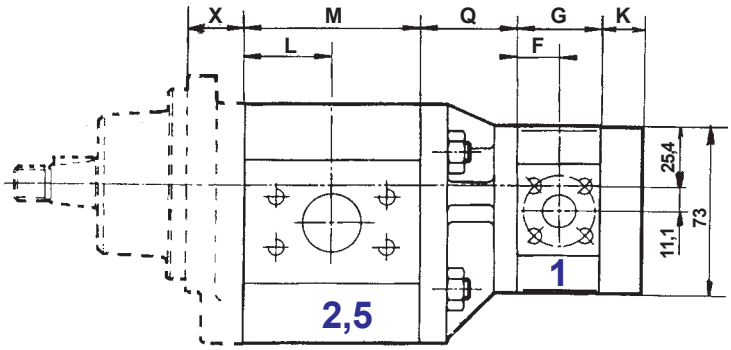
REAR BODY

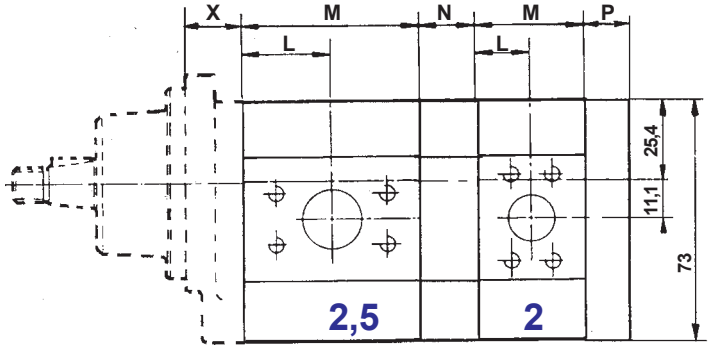
P	II Sign	III Sign	IV Sign	2 5	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir







ATTENTION

For common suctions .

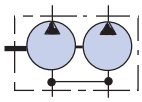
The flow of the pump , or pump preceding or following the section including the suction must not exceed **22 l / min .**

- **Hydraulic characteristics ,**
- **Driving shafts ,**
- **Supply ports implantation**
- **Dimensions of " Front body " : see the technical data sheets of the single pumps quoted overleaf .**

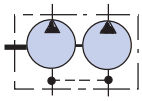
Different mounting possibilities between multiple pumps , see data sheet F.T R 0029

JUNCTIONS BODY

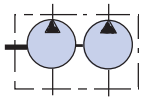
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



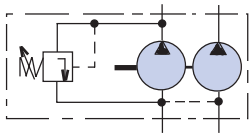
Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



Code X (VIII Sign) — **Adjustable relief valve internal return in preceding pump**



SERIES (V - IX Sign)	Capacity (VI - X Sign)	L	M	N	P	Q	F	G	K
2,5	12	31,0	61,6	24	25,5				
	15 to 22	38,8	77,7						
2	004 to 012	23,5	47,0	24	25,5				
	015 to 022	31,0	61,6						
	026 030	38,8	77,7						
1	001 to 003					42	17,9	35,8	18
	004 to 006						22,7	45,6	

NOTA : Versions 2,5 / 1 - 2 / 1 only Codes A - D and E .

Following Page

MULTIPLE GEARED PUMPS

SERIES 2,5 (FLAT FRONT BODY)

PUBLISHING 06 / 02 / 2002

P	II Sign	III Sign	IV Sign	2 5	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir

Front body Types (III - IV - VII Sign)	Dimensions X	Data sheets references
AAP (H-Y)	28	F.T 25 646
AAP (U)	28	F.T 25 923
AAR (H-Y)	28	F.T 25 647
AAR (U)	28	F.T 25 957
ARP (H-Y)	25	F.T 25 612
DBR (H)	51	F.T 25 645
DBR (C)	51	F.T 25 688
ZFC (H-C)	67	F.T 25 648

Dimension readings and approximative characteristics subject to modifications .

TORQUE CALCULATION

Q Capacity in cc / rev
P Pressure in bar
η_m Mechanical efficiency (see catalogue C10)

Calculation of the torque for one pump body : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 AAP 2512 H A 2008 H L 10 C03 Pressure : 2512 200 bar 2008 150 bar Speed : 1500 RPM

$\frac{1,56 \times 12 \times 200}{1000 \times 0,87} = 4,3$ m.daN

$\frac{1,56 \times 8 \times 150}{1000 \times 0,87} = 2,15$ m.daN

= 6,45 m.daN ⟹ Total torque

Preceding Page

MULTIPLE GEARED PUMPS

SERIES 2,5 (FLAT FRONT BODY)

PUBLISHING 06 / 02 / 2002

Home - General Contents

General Catalogue Contents

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2,6

Flat Front Body

HIGH PRESSURE

Publishing 01 / 2003

G10 | 168 | 00

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PRESSURE (P3)		PRESSURE in continuous (P1)		Maxi Speed RPM	NOMINAL FLOW at 1500 RPM	NOMINAL FLOW at Maxi Speed	Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar (m.daN)	Appro - ximate weight Kg
	cc / rev	bar	PSI	bar	PSI		l / min	l / min			
2620	19,60	330	4785	300	4350	3000	29,40	58,80	3,70	3,50	8
2625	24,20	330	4785	300	4350	3000	36,30	72,60	4,50	4,30	
2630	30,50	330	4785	300	4350	3000	45,75	91,50	5,70	5,40	
2635	34,50	290	4205	270	3915	3000	51,75	103,50	6,40	6,10	
2640	39,80	250	3625	230	3335	3000	59,70	119,40	7,50	7,10	

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1AAN 2635 Y L 30 A24 Pressure : 200 bar Speed : 1500 RPM

Torque = $\frac{1,56 \times 35 \times 200}{1000 \times 0,90}$ = 12,13 m.daN

F.T R 0212

" GENERAL " 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	Y	F	L	10	30
AAN					10B09	30A24
	BAN				10B09 10C09	

Not feasible versions

Our " BASIC" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

HYDRAULIC GEAR PUMPS SERIES 2,6

HIGH PRESSURE

(FLAT FRONT BODY)

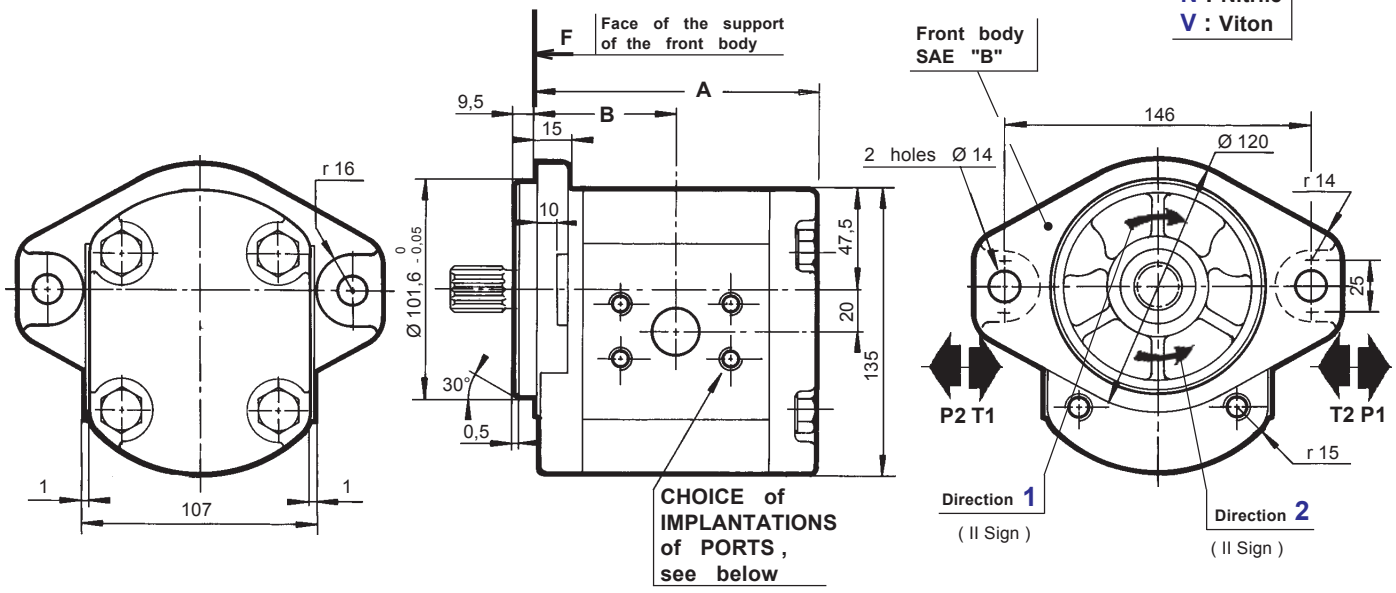
F.T R 0213

PUBLISHING 08 / 10 / 2000

P	II Sign	AA	N	2 6	VI Sign	VII Sign	L	IX Sign	X Sign	XI Sign	XII Sign

For CODIFICATION , see data sheet **F.T R 0011**

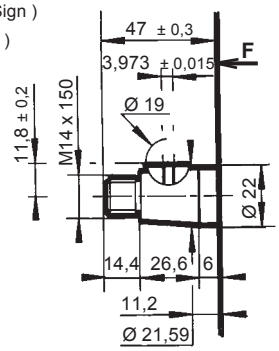
N : Nitrile
V : Viton



CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
20	127,3	59
25	131,8	61,3
30	138,3	64,5
35	142,3	66,5
40	147,8	69,3

CHOICE of the DRIVING SHAFTS

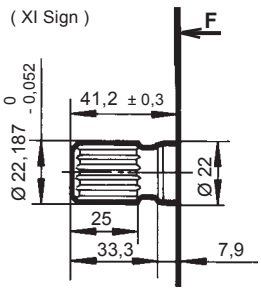
10 (IX - X Sign)
B09 (XI Sign)
Taper 1/8



Delivered with Nut Ref. : 102 045
and Washer Ref. : 102 100

Max. transmissible torque
53 m.daN

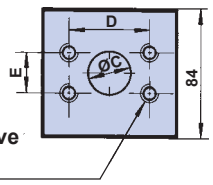
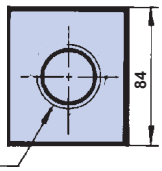
30 (IX - X Sign)
A24 (XI Sign)



Involute spline shaft to SAE "B" Standard - 13 teeth - Diametral Pitch 16/32 30° Pressure angle

Max. transmissible torque
31 m.daN

Multiple geared pumps , see data sheet **F.T 26 942**

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	G	OUTLET (P) ØC	D	E	G	CATALOGUE N° 70 Ref. RECOMMANDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
Y (ISO)  M10 effective depth 14	20 25	25	52,4	26,2		22	52,4	26,2		1" BSP N: 368557.002	1 " BSP N: 368557.002
	30 35	30	58,7	30,2						1 " 1/4 BSP N: 368557.003	
	40	32									
F (Threaded)  Ø C effective depth G	20 25 30 35	1" BSP			19	3/4" BSP			16		
	40	1" 1/4 BSP			21						

Dimension readings and approximative characteristics subject to modifications .

F.T 26 879

HYDRAULIC GEAR PUMPS
HIGH PRESSURE

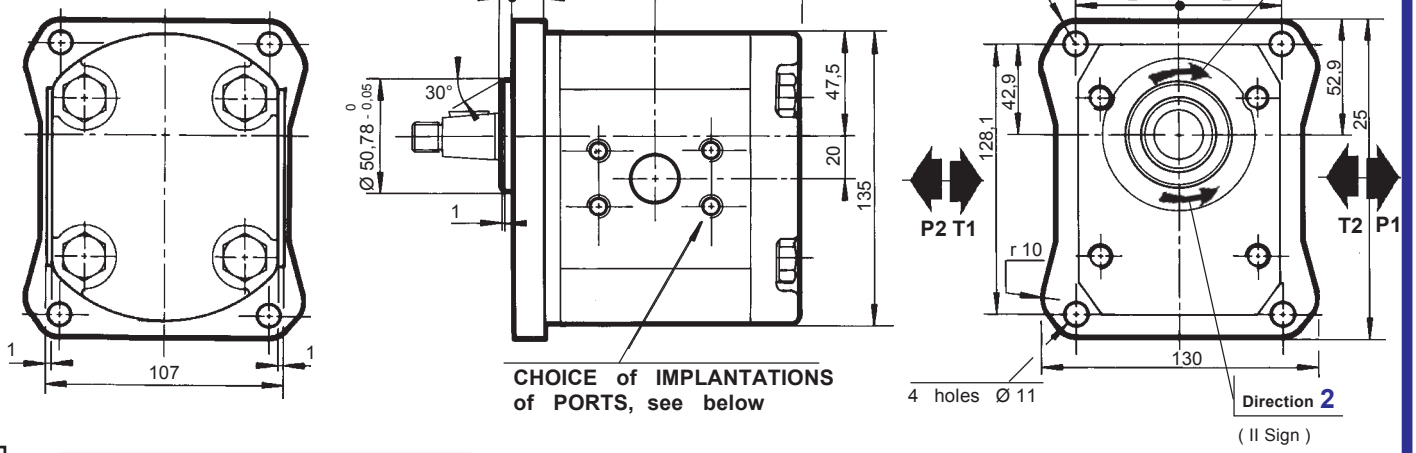
SERIES **2,6** TYPE **AAN**

PUBLISHING 06 / 02 / 2002

P	II Sign	BA	N	2 6	VI Sign	VII Sign	L	1	0	XI Sign	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton



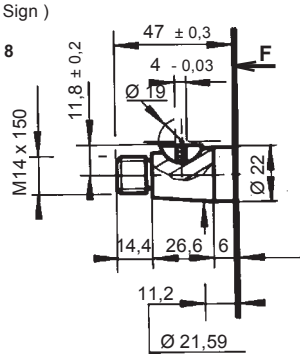
CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
20	127,3	59
25	131,8	61,3
30	138,3	64,5
35	142,3	66,5
40	147,8	69,3

Dimension readings and approximative characteristics subject to modifications .

Multiple geared pumps , see data sheet F.T 26 942

CHOICE of DRIVING SHAFTS

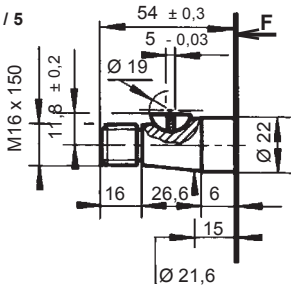
10 (IX - X Sign)
B09 (XI Sign)
Taper 1 / 8



Delivered with Nut and Washer Ref. : 102 045 Ref. : 102 100

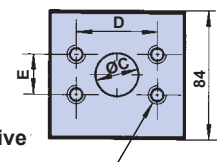
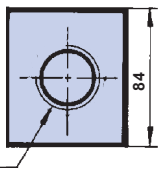
Max. transmissible torque
53 m.daN

10 (IX - X Sign)
C09 (XI Sign)
Taper 1 / 5



Delivered with Nut and Washer Ref. : 106 924 Ref. : 102 101

Max. transmissible torque
55 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	G	OUTLET (P) ØC	D	E	G	CATALOGUE N° 70 Ref. RECOMMANDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
Y (ISO)  M10 effective depth 14	20 25	25	52,4	26,2		22	52,4	26,2		1" BSP N: 368557.002	1 " BSP N: 368557.002
	30 35	30	58,7	30,2						1 " 1/4 BSP N: 368557.003	
	40	32									
F (Threaded)  Ø C effective depth G	20 25 30 35	1" BSP			19	3/4" BSP			16		
	40	1" 1/4 BSP			21						

F.T 26 847

HYDRAULIC GEAR PUMPS HIGH PRESSURE

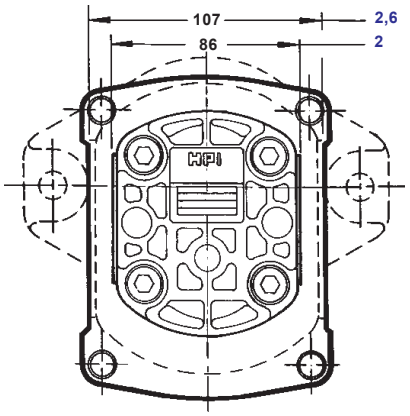
SERIES **2,6** TYPE **BAN**

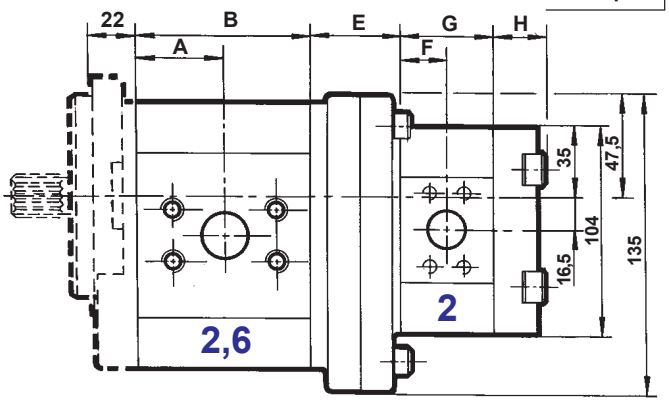
PUBLISHING 06 / 02 / 2002

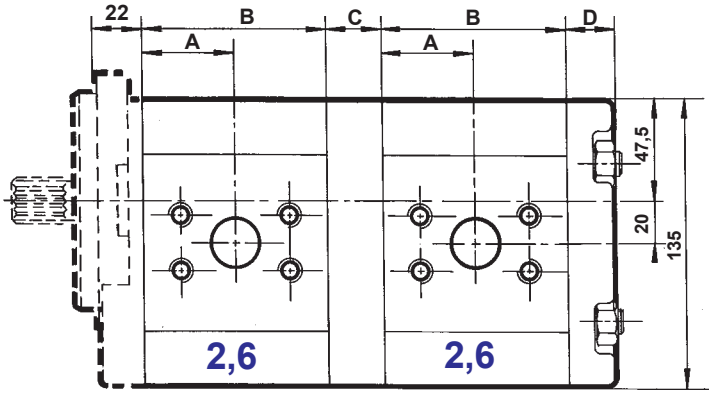
P	II Sign	III Sign	IV Sign	2	6	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet **F.T R 0030**

N : Nitrile
V : Viton
S : Saphir







ATTENTION

For common suctions .

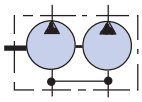
Max. tolerated, to be discussed with us .

- **Hydraulic characteristics ,**
- **Driving shafts ,**
- **Supply ports implantation**
- **Dimensions of " Front body " : see the technical data sheets of the single pumps quoted below .**

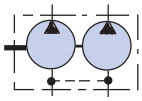
Types Front body (III - IV - VII Sign)	References data sheets
AAN (Y)	F.T 26 879
BAN (Y)	F.T 26 847

JUNCTIONS BODY

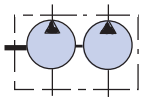
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



SERIES (V - IX Sign)	Capacity (VI - X Sign)	A	B	C	D	E	F	G	H
2,6	20	37,0	74,1	27	31,2				
	25	39,3	78,6						
	30	42,5	85,1						
	35	44,5	89,1						
	40	47,3	94,6						
2	004 to 012					45	23,5	47,0	18
	015 to 022						31,0	61,6	
	026 030						38,8	77,7	

NOTA :

Version 2,6 / 2,6 only Code E

MULTIPLES GEARED PUMPS HIGH PRESSURE

SERIES 2,6 (FLAT FRONT BODY)

Dimension readings and approximative characteristics subject to modifications .

F.T 26 942

PUBLISHING 06 / 02 / 2002

Home - General Contents

General Catalogue Contents

GENERAL CATALOGUE (G10)

Hydraulic gear pumps

Series 2,6

Thick Front Body

HIGH PRESSURE

PUMPS CHARACTERISTICS

MOUNTING POSSIBILITIES

PUMPS TYPE: **ZFC**
MODUL "3" BASE

MULTIPLE GEARED PUMPS

Publishing 01 / 2003

PUMPS CHARACTERISTICS

MODEL (V-VI Sign)	Capacity	PRESSURE (P3)		PRESSURE in continuous (P1)		Maxi Speed RPM	NOMINAL FLOW		Input power (kW) at 1000 RPM and 100 bar	Input torque at 100 bar (m.daN)	Appro - ximate weight Kg
							at 1500 RPM	at Maxi Speed			
	cc / rev	bar	PSI	bar	PSI		l / min	l / min			
2620	19,60	330	4785	300	4350	3000	29,40	58,80	3,70	3,50	12
2625	24,20	330	4785	300	4350	3000	36,30	72,60	4,50	4,30	
2630	30,50	330	4785	300	4350	3000	45,75	91,50	5,70	5,40	
2635	34,50	290	4205	270	3915	3000	51,75	103,50	6,40	6,10	
2640	39,80	250	3625	230	3335	3000	59,70	119,40	7,50	7,10	

Dimension readings and approximative characteristics subject to modifications .

The pump can only run in one way rotation (Precise the direction of rotation on order) .

The working cycles hereunder are possible with hydraulic mineral oil for viscosities between 12 and 150 cSt (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 temperature : - 20 °C (4 °F) to + 80 °C (176 °F) (140 °C (284 °F) with Viton shaft seal) .

Full flow filtration : 10 to 15 microns at the pressure port of the pump or on the return circuit .
Filtration on the suction side : 125 microns .

Pressure at the inlet of the pump :
- Minimum 0,7 bar absolute (Maxi depressure 300 millibar with regard to the air pressure) .
- Maximum 2 bar absolute or 1 bar over the air pressure .

The hereabove characteristics concern the pumps driven by elastic couplings perfectly aligned without any external radial or axial force .

For any other coupling , see technical data sheet F.T R 0009 .

For use at maximum working conditions and/or intensive cycles, thanks to consult our technical sales service for validation.

TORQUE CALCULATION

Q Capacity in cc / rev

P Pressure in bar

η_m Mechanical efficiency

Calculation of the torque : $\frac{1,56 \times Q \times P}{1000 \times \eta_m} = C$ (m.daN)

Example : P 1 ZFC 2635 Y L 30 A24 Pressure : 200 bar Speed : 1500 RPM

$$\text{Torque} = \frac{1,56 \times 35 \times 200}{1000 \times 0,90} = 12,13 \text{ m.daN}$$

F.T R 0214

" GENERAL " CATALOGUE MOUNTING POSSIBILITIES

FRONT BODY (III - IV Sign)	CENTRAL BODY (VII Sign)		REAR BODY (VIII Sign)	TYPE and SHAFT CODE (IX - X - XI Sign)
Z	Y	F	L	30
ZFC				30D04

Our " GENERAL" catalogue includes versions of our series 0 to 5 pumps according to European and American Standards (SAE) .

HYDRAULIC GEAR PUMPS SERIES 2,6

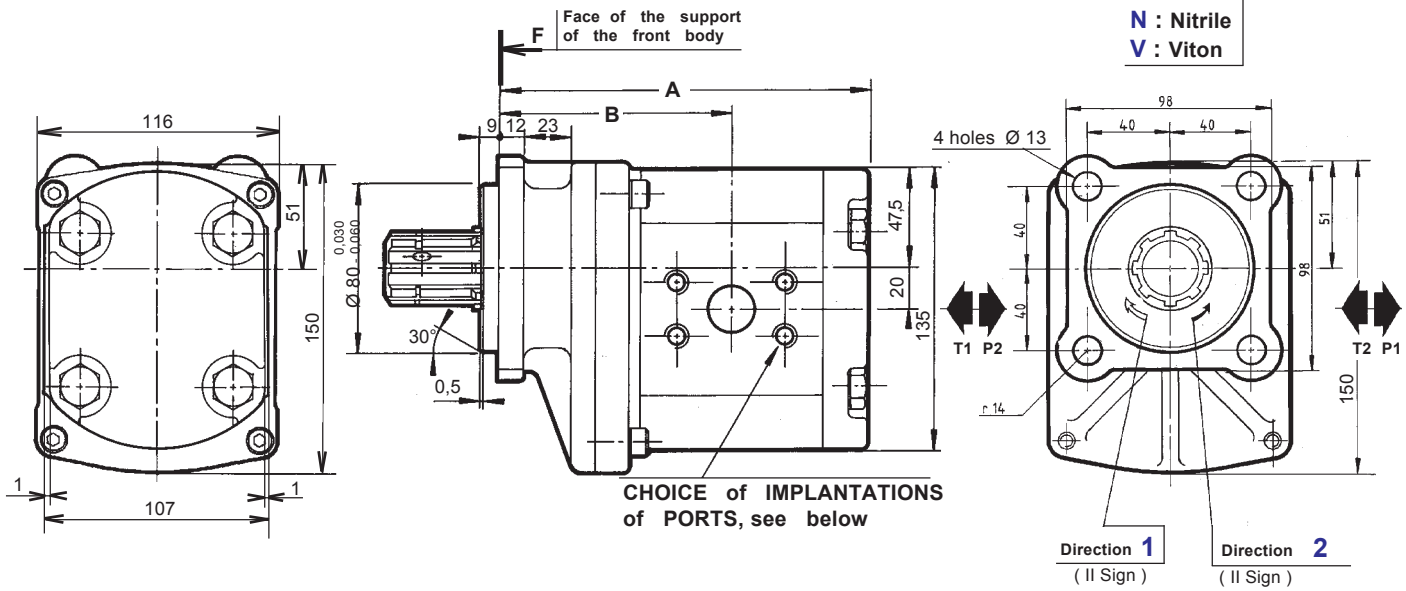
HIGH PRESSURE

(THICK FRONT BODY)

P	II Sign	ZF	C	2 6	VI Sign	VII Sign	L	3	0	D04	XII Sign

For CODIFICATION , see data sheet F.T R 0011

N : Nitrile
V : Viton



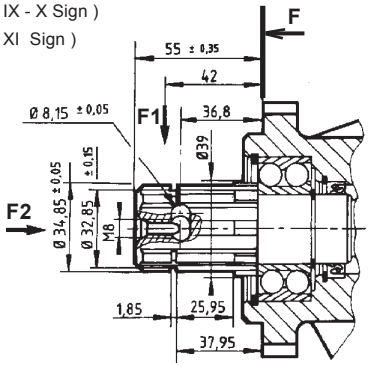
Dimension readings and approximative characteristics subject to modifications .

CHOICE of the CAPACITY (VI Sign)	Dimensions A	B
20	174,3	106
25	178,8	108,3
30	185,3	111,5
35	189,3	113,5
40	191,8	116,3

Multiple geared pumps , see data sheet F.T 26 948

DRIVING SHAFT

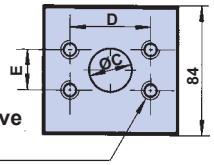
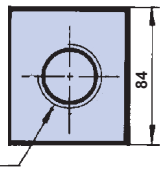
30 (IX - X Sign)
D04 (XI Sign)



F1 Maxi : 140 daN
F2 Maxi : 50 daN

Parallèl spline side
8 x 32 x 36 to Norm NF E 22 131
Pushing Minor diameter

Max. transmissible torque
48 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	G	OUTLET (P) ØC	D	E	G	CATALOGUE N° 70 Ref. RECOMMANDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
Y (ISO)  M10 effective depth 14	20 25	25	52,4	26,2		22	52,4	26,2		1" BSP N: 368557.002	1 " BSP N: 368557.002
	30 35	30	58,7	30,2						1 " 1/4 BSP N: 368557.003	
	40	32									
F (Threaded)  Ø C effective depth G	20 25 30 35	1" BSP			19	3/4" BSP			16		
	40	1" 1/4 BSP			21						

F.T 26 945

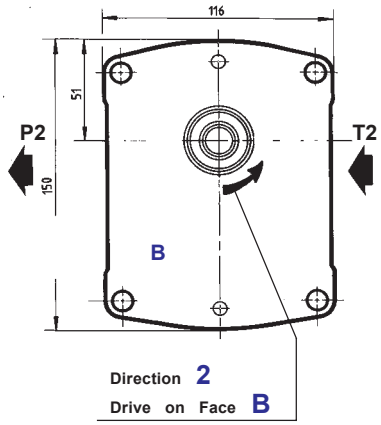
HYDRAULIC GEAR PUMPS
HIGH PRESSURE

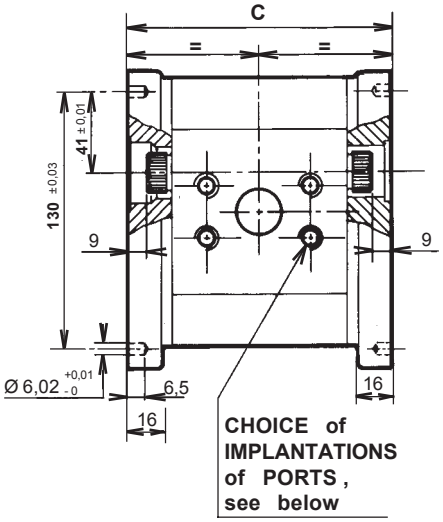
SERIES 2,6 TYPE ZFC

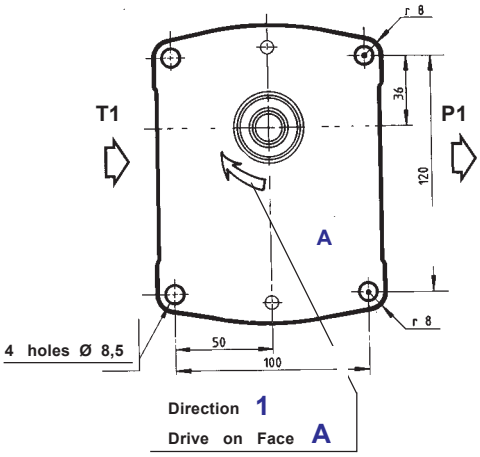
PUBLISHING 06 / 02 / 2002

P 4 CJN 2 6 (VI Sign) (VII Sign) J 33 C25 N

For CODIFICATION , see Data sheet F.T R 0146



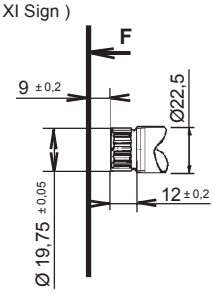




CHOICE of the CAPACITY (VI Sign)	Cotes C
20	118,2
25	122,7
30	129,2
35	133,2
40	138,7

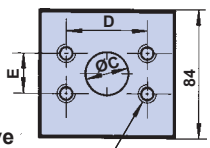
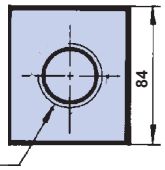
DRIVING SHAFT

33 (IX - X Sign)
C25 (XI Sign)



Involute spline shaft
20 x 18 x 1
Norm NF E 22 141
Spigot on free flank

Max. transmissible torque
25 m.daN

CHOICE of IMPLANTATIONS of PORTS (VII Sign)	Capacity (VI Sign)	INLET (T) ØC	D	E	G	OUTLET (P) ØC	D	E	G	CATALOGUE N° 70 Ref. RECOMMANDED FLANGES (for speed 1500 rev / min) INLET (T)	OUTLET (P)
Y (ISO)  M10 effective depth 14	20 25	25	52,4	26,2		22	52,4	26,2		1" BSP N: 368557.002	1 " BSP N: 368557.002
	30 35	30	58,7	30,2						1 " 1/4 BSP N: 368557.003	
	40	32									
F (Threaded)  Ø C effective depth G	20 25 30 35	1" BSP			19	3/4" BSP			16		
	40	1" 1/4 BSP			21						

Dimension readings and approximative characteristics subject to modifications .

F.T 26 946

HYDRAULIC GEAR PUMPS HIGH PRESSURE

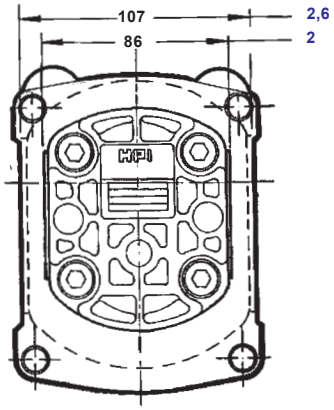
MODUL **3** BASE SERIES **2,6**

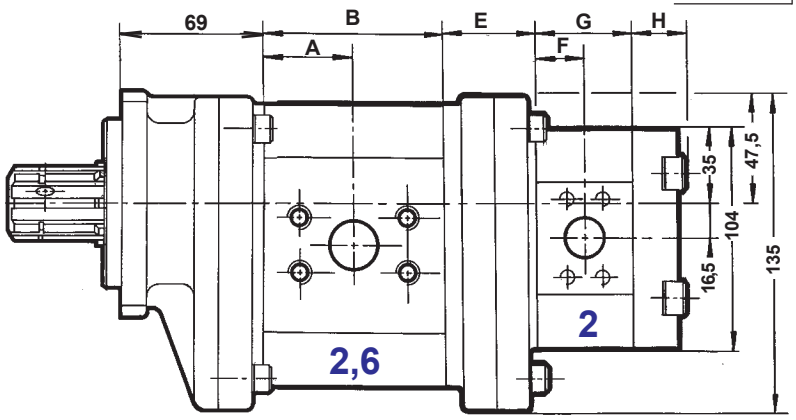
PUBLISHING 06 / 02 / 2002

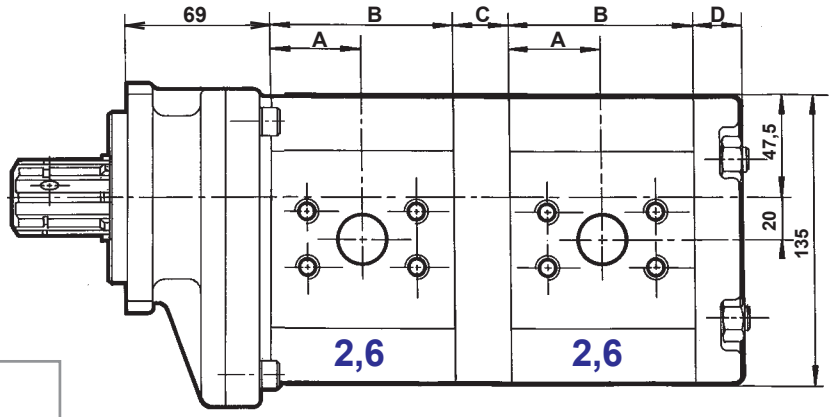
P	II Sign	ZF	C	2 6	VI Sign	VII Sign	A	2	X Sign	XI Sign	L	XIII Sign	XIV Sign	XV Sign	XVI Sign

For CODIFICATION , see data sheet F.T R 0030

N : Nitrile
V : Viton
S : Saphir







ATTENTION

For common suctions .

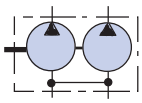
Max. tolerated, to be discussed with us .

- Hydraulic characteristics ,
- Driving shafts ,
- Supply ports implantation
- Dimensions of " Front body " : see the technical data sheets of the single pumps quoted below .

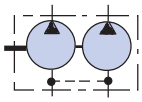
Types Front body (III - IV - VII Sign)	References data sheets
ZFC (Y)	F.T 26 945

JUNCTIONS BODY

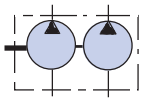
Code A (VIII Sign) — **Communication between suction ports** (Capacity of the pump without suction ≥ half of the capacity of the front section)



Code D (VIII Sign) — **Independant inlet side (communication of leaks)** (Oil and tank to be necessarily)



Code E (VIII Sign) — **Tightness between ports**



SERIES (V - IX Sign)	Capacity (VI - X Sign)	A	B	C	D	E	F	G	H
2,6	20	37,0	74,1	27	31,2				
	25	39,3	78,6						
	30	42,5	85,1						
	35	44,5	89,1						
	40	47,3	94,6						
2	004 to 012					45	23,5	47,0	18
	015 to 022						31,0	61,6	
	026 030						38,8	77,7	

NOTA :

Version 2,6 / 2,6 only Code E

MULTIPLES GEARED PUMPS HIGH PRESSURE

SERIES 2,6 (THICK FRONT BODY)

Dimension readings and approximative characteristics subject to modifications .

F.T 26 948

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