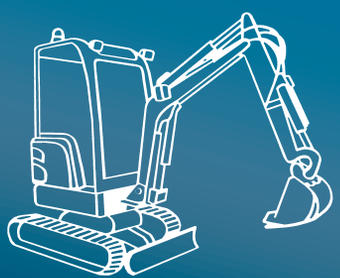
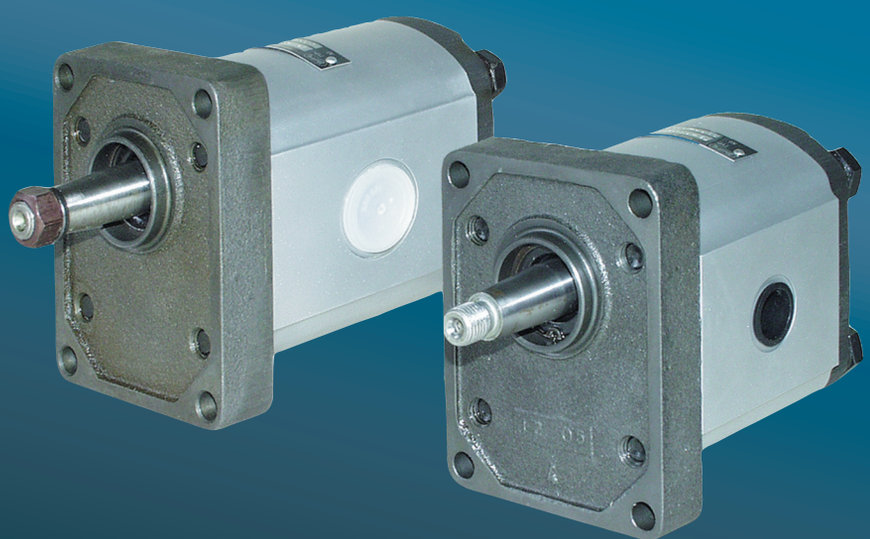
jihostroj
AERO TECHNOLOGY & HYDRAULICS





GEAR PUMPS
T3

Displacement from 4 to 31 ccm
Pressure up to 280 bar
Speed from 500 to 4000 RPM

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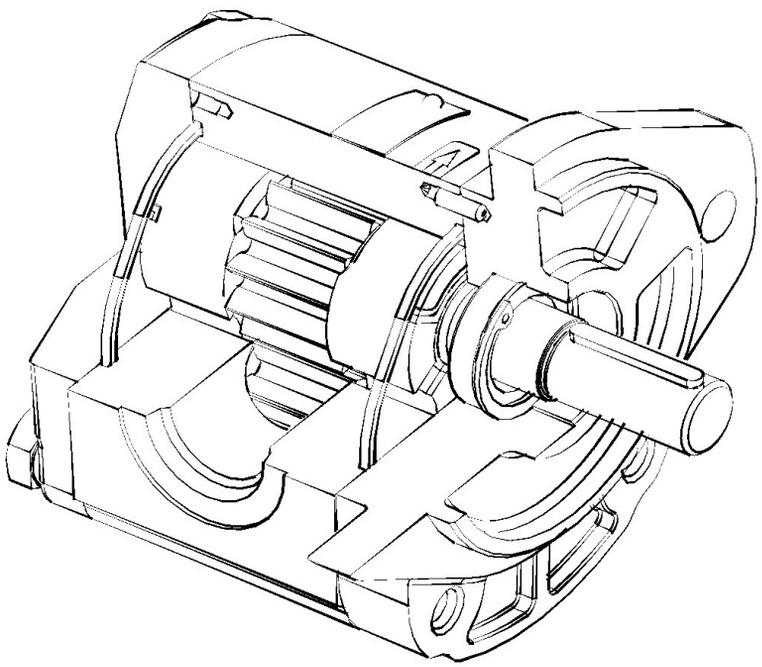
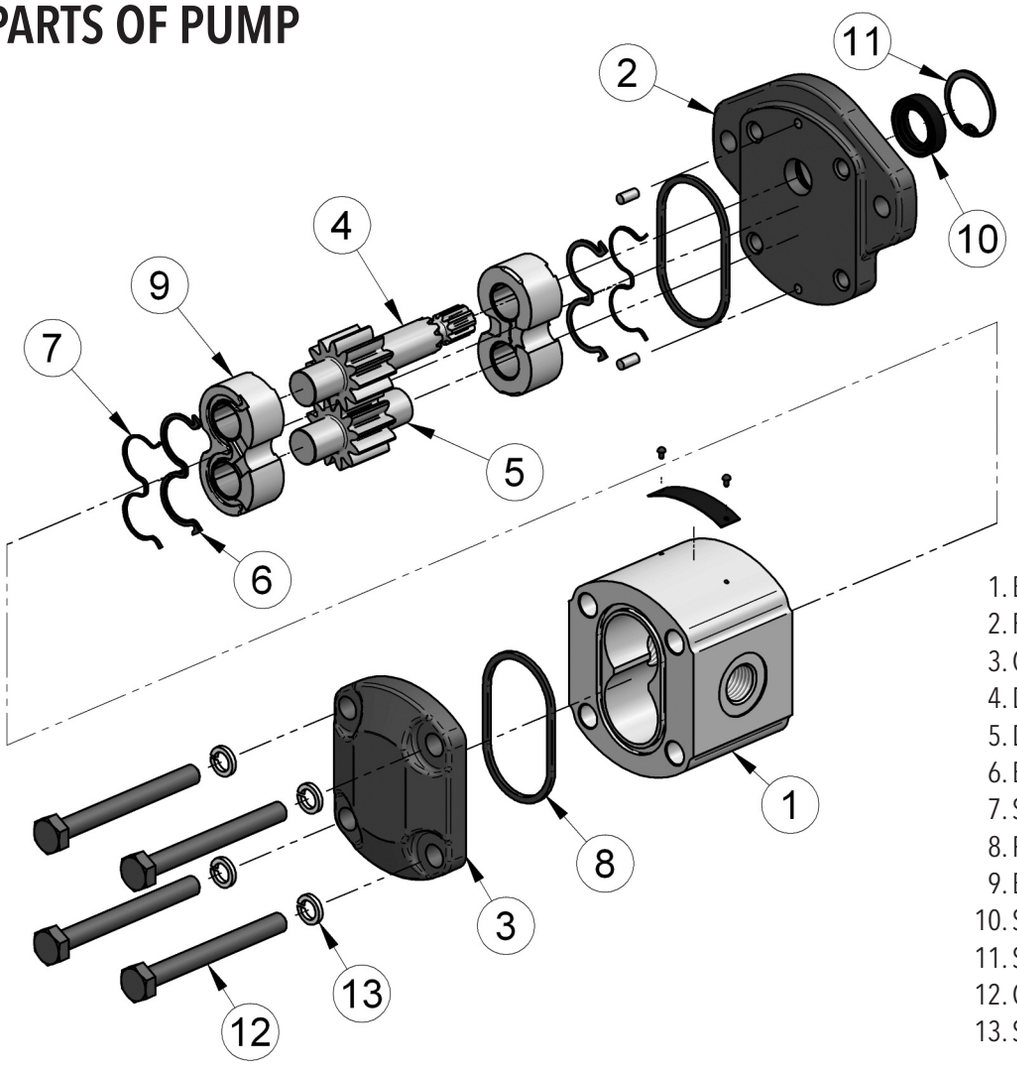


DESCRIPTION

- Pumps of T3 series with external gearing are applicable for its simple design, compact dimension and a wide range of types, in modern hydraulic systems, handling technologies and mobile hydraulics.
- Basic execution is composed from a few parts. The body of pump are produced from heavy duty aluminium alloy. Cover and Flange are from iron grey or aluminium alloy. All flange as well as liquid inlets and outlets (location on side - in body or axial - in cover) comply with all world-recognised standards. Gear wheels with 12 teeth are optimised to achieve a low noise level, are made of ultrahigh-strength steel. Wheel pins with high quality surface are stored in bearings, which are constantly lubricated and cooled with flow working liquid.
- Upon requirement on low weight and small size is appropriate a special shortened version (for use by lower continuous pressure) - designation T3K
- Available is also multiple-version pumps with inlets for each section or one common inlet.

BASIC PARTS OF PUMP



1. Body
2. Flange
3. Cover
4. Driving gear
5. Driven gear
6. Balancing sealing
7. Sealing protective plate
8. Peripheral sealing
9. Bearing sleeves
10. Shaft seal
11. Safety ring
12. Connection bolts
13. Spring washers

PARAMETER TABLE

Nominal Size Parameters		Sym.	Unit.	T3 4	T3 6	T3 8	T3 12	T3 16	T3 20	T3 25	T3 31
Actual displacement		V_g	[cm^3]	4.03	6.02	8.05	12.08	16.10	20.12	25.16	31.21
Rotation speed	nominal	n_n	[min^{-1}]	1500	1500	1500	1500	1500	1500	1500	1500
	minimum	n_{min}	[min^{-1}]	500	500	500	500	500	500	500	500
	maximum	n_{max}	[min^{-1}]	4000	4000	3600	3600	3200	3200	2800	2200
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30	-0.30
	maximum	p_{1max}	[bar]	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Pressure at outlet**	max. continuous	p_{2n}	[bar]	280	280	280	260	260	240	200	150
	maximum	p_{2max}	[bar]	290	290	290	280	280	250	220	170
	peak	p_3	[bar]	310	310	310	300	300	270	240	190
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[$dm^3.min^{-1}$]	5.40	8.10	11.04	16.56	22.56	28.20	35.25	43.71
Maximum flow rate at n_{max} a p_{2max}		Q_{max}	[$dm^3.min^{-1}$]	15.68	23.52	28.22	42.34	50.18	62.72	68.60	66.84
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	3.33	5.00	6.52	9.06	11.82	11.82	13.30	13.74
Maximum input power at n_{max} a p_{2max}		P_{max}	[kW]	8.77	13.15	15.78	22.04	26.12	29.02	26.46	21.91
Weight		m	[kg]	2.60	2.65	2.75	2.95	3.10	3.35	3.50	3.80

* Inlet pressure in the reversible design can be up to **$p_1 = p_{2n}$-70 bar max.** External drainage must be used in case of the reversible design.

** Outlet pressure in the reversible design is **10% lower** than shown in the table (depending on operating conditions – it is necessary to consult with the manufacturer).

FORMULAS USED FOR CALCULATION

Flow rate
Q

$$Q = \frac{V_g \cdot n}{1000} \cdot \eta_v \quad [dm^3 \cdot min^{-1}]$$

V_g [cm^3] pump displacement
n [min^{-1}] rotation speed
η_v [–] volumetric efficiency

Displacement
V_g

$$V_g = \frac{Q \cdot 1000}{n \cdot \eta_v} \quad [cm^3]$$

Torque
M_k

$$M_k = \frac{V_g \cdot p}{20 \cdot \pi \cdot \eta_m} \quad [Nm]$$

p [bar] required pressure at outlet
η_m [–] mechanical efficiency

Input power
P

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

η_t [–] total efficiency

PUMP EFFICIENCIES

Volumetric efficiency
η_v

It determines the amount of flow losses. Its value is $\eta_v = 0{,}92 \div 0{,}98$ (depending on rotation speed, viscosity of working liquid and outlet pressure). It can be expressed as follows:

$$\eta_v = \frac{Q_{act.}}{Q_{theor}} \quad [–]$$

$Q_{act.}$ [$dm^3 \cdot min^{-1}$] actual flow rate
Q_{theor} [$dm^3 \cdot min^{-1}$] theoretical flow rate

Mechanical efficiency
η_m

It determines mechanical losses. Its value is about $\eta_m = 0{,}85$.
It can be expressed as follows:

$$\eta_m = \frac{M_{theor}}{M_{act.}} \quad [–]$$

$M_{act.}$ [Nm] actual torque
M_{theor} [Nm] theoretical torque

Total efficiency
η_t

t is defined as product of η_n and η_m
and determines difference between theoretical and actual required input power:

$$\eta_t = \eta_v \cdot \eta_m = \frac{P_{theor}}{P_{act.}} \quad [–]$$

$P_{act.}$ [kW] actual input power
P_{theor} [kW] theoretical input power

WORKING LIQUID

- Mineral oils for hydraulic drives
- Hydraulic liquids based on plant oils suitable for hydraulic drives

Liquid temperature

- $t = -20 \div +80$ [°C]
  when used with FKM (Viton) seal up to 120 [°C]

Cinematic viscosity

- Recommended (during continuous operation): $\nu = 20 \div 80 \cdot 10^{-6}$ [$m^2 \cdot s^{-1}$]
- Maximum (cold starting, at viscosity >1000, operating pressure <10 bar is permissible, speed <1500·min^{-1}): $\nu = 1200 \cdot 10^{-6}$ [$m^2 \cdot s^{-1}$]
- Minimum (operating mode at $10 \cdot 10^{-6}$ up $20 \cdot 10^{-6}$ should be consulted with manufacturer): $\nu = 10 \cdot 10^{-6}$ [$m^2 \cdot s^{-1}$]

Filtration coefficient β_α

$\beta_{25}\ 75 \geq$ (for pressure $p_2 < 200$ bar)
$\beta_{10}\ 75 \geq$ (for pressure $p_2 > 200$ bar)

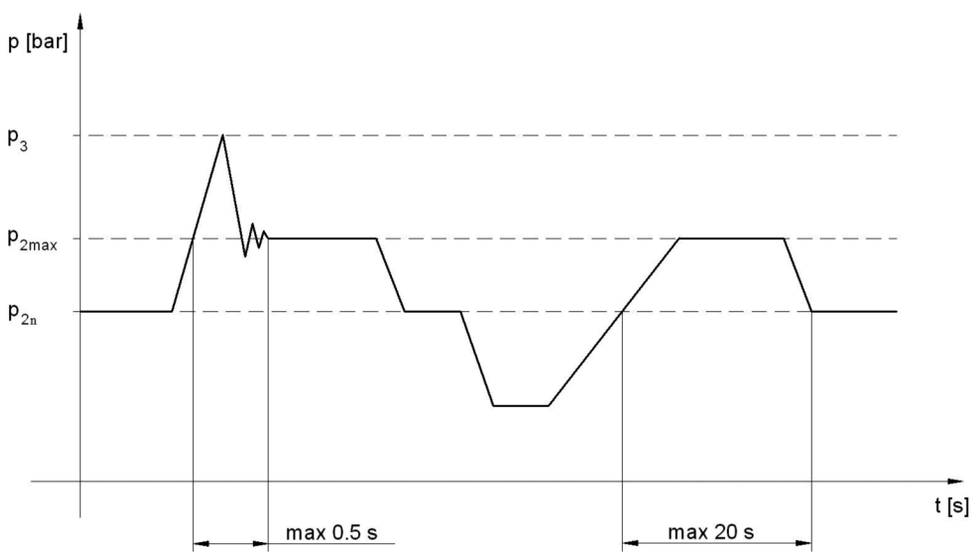
Liquid contamination class according to ISO 4406

21/18/15 (for pressure $p_2 < 200$ bar)
20/17/14 (for pressure $p_2 > 200$ bar)

Liquid contamination class according to NAS 1638

10 (for pressure $p_2 < 200$ bar)
8 (for pressure $p_2 > 200$ bar)

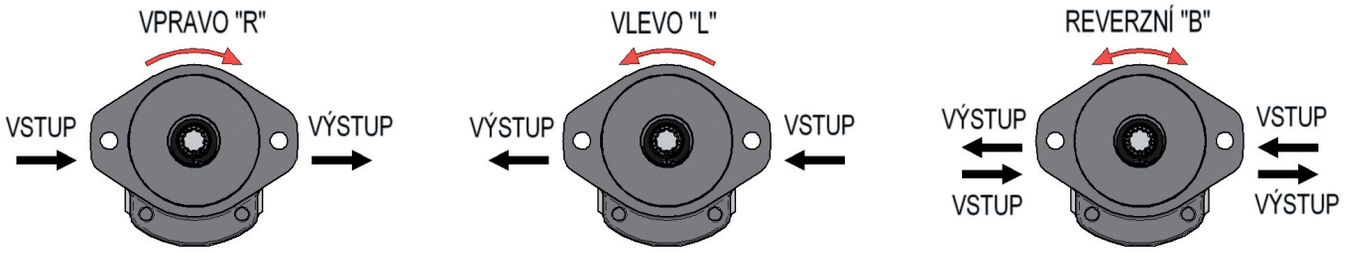
PRESSURE LOAD



p_{2n}	**max. contin. pressure**	Max. working pressure, at which the pump can be operated without time limitation.
p_{2max}	**max. pressure**	Maximum pressure permissible for a short time, max. 20s.
p_3	**peak pressure**	Short-time pressure (fractions of a second) arising in case of a sudden change of the operating mode; any excess of this pressure during operation is impermissible.

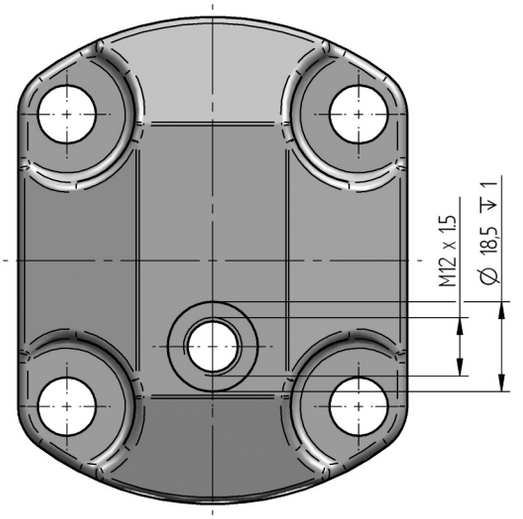
DIRECTION OF ROTATION

- Determine direction of rotation by looking at the drive shaft. The pump can only be used in the specified direction of rotation

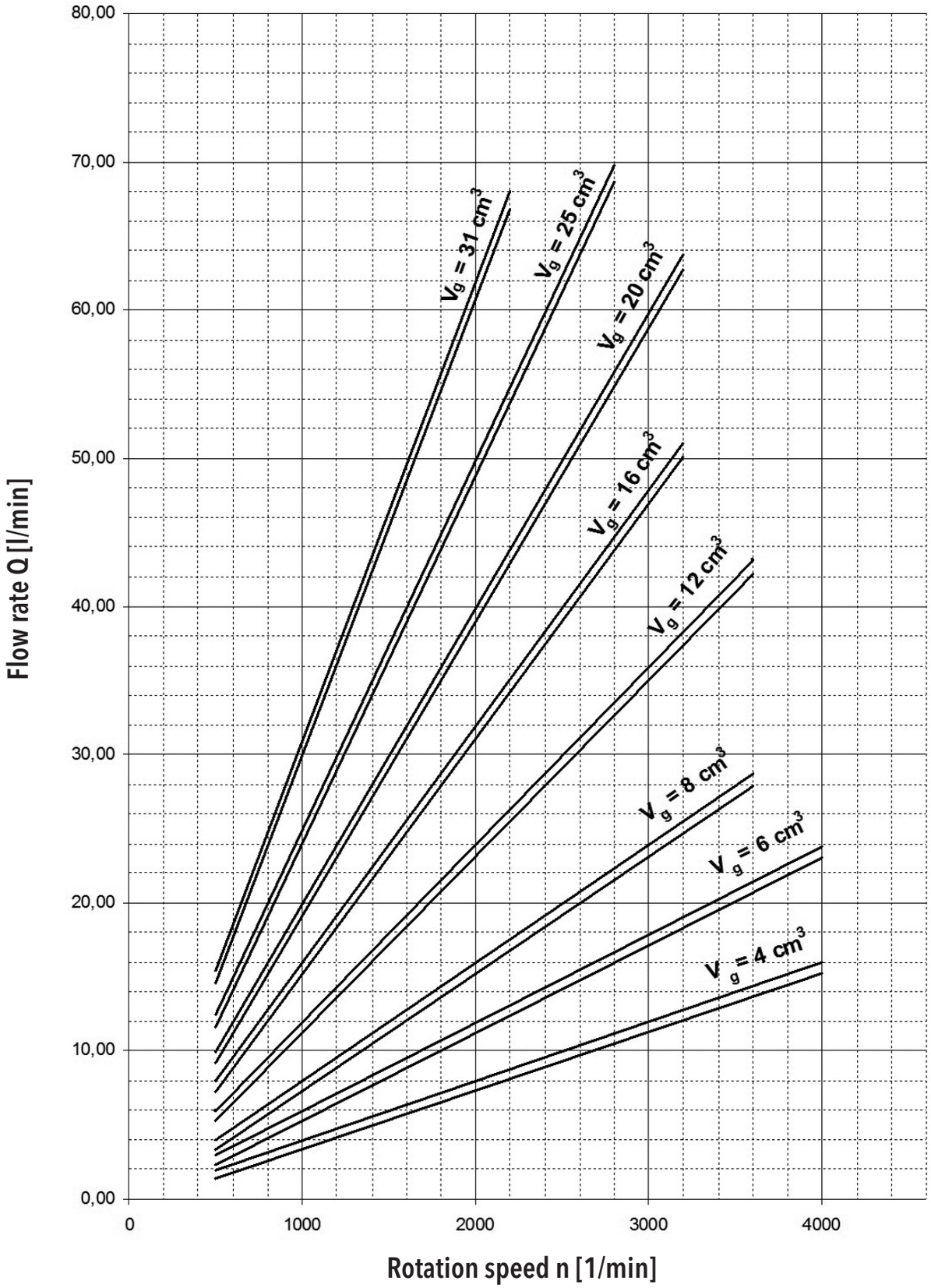


REVERSIBLE DESIGN

- The pumps with the possibility of bidirectional rotation have a different internal arrangement requiring drainage. Two types of drain are used - internal and external. The internal drainage is always interconnected with the outlet by means of valves. The external drainage is solved by an orifice located in the cover opposite the driven gear. (see. picture below). Dimension of hole for external drain are listed in tables in chapter **LIQUID INLET AND OUTLET CONNECTION** on page 16.

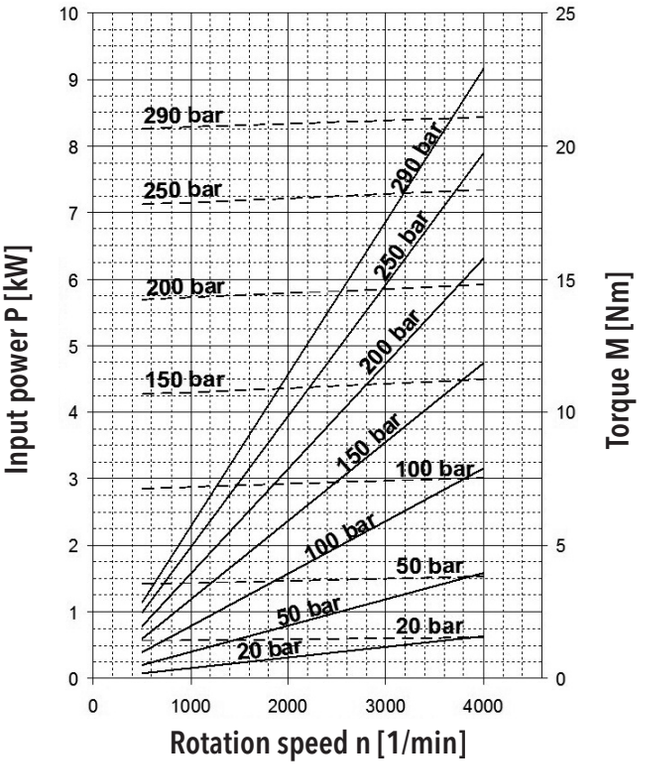


T3 FLOW RATE AND POWER CURVES

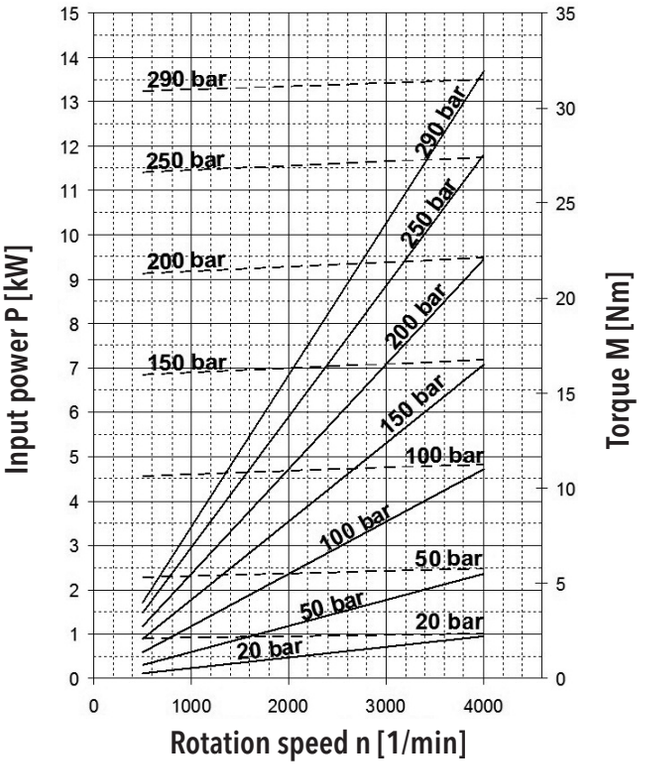


Above curves apply to ISO V_g 46 oil at temperature t = 45°C.

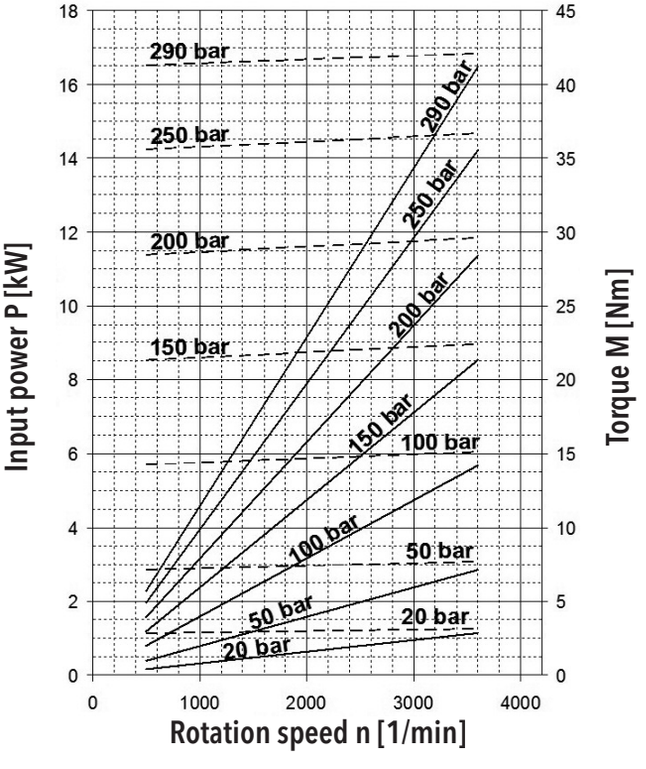
4,00 cm³



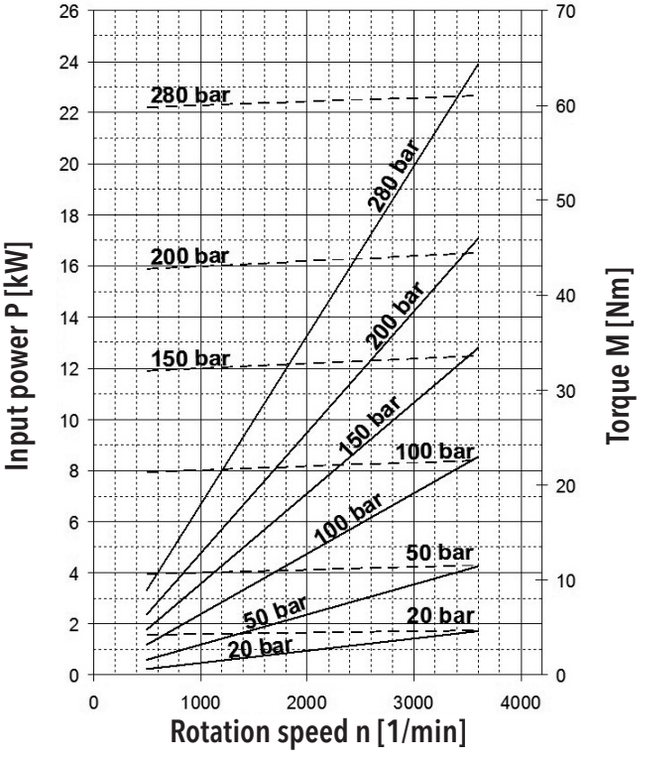
6,00 cm³



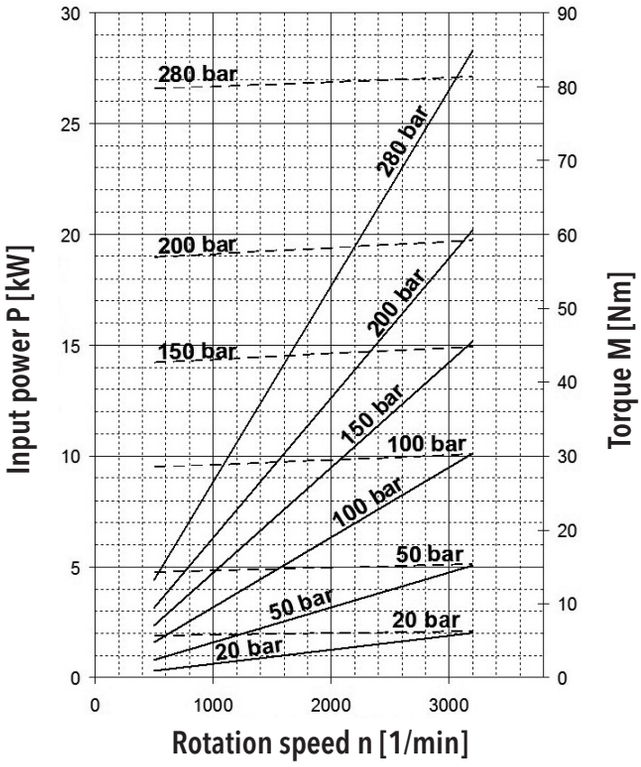
8,00 cm³



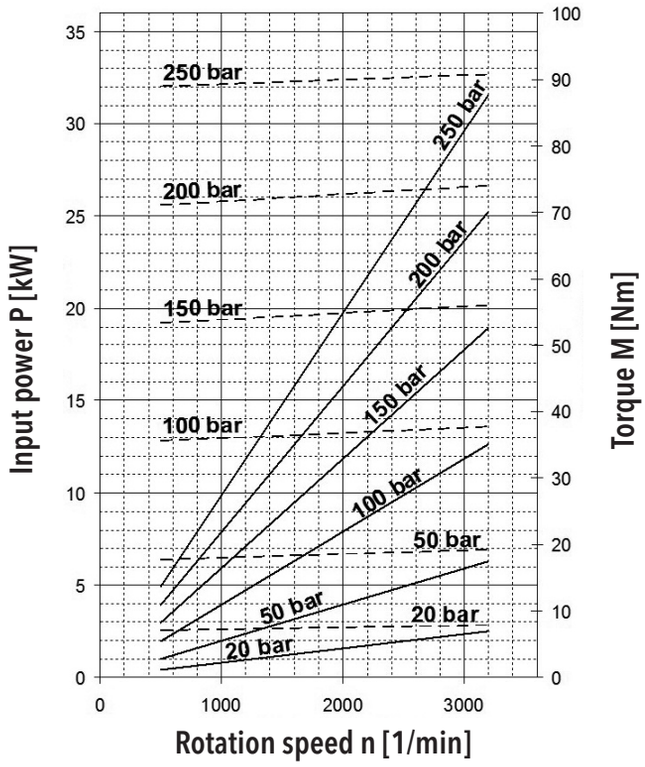
12,00 cm³



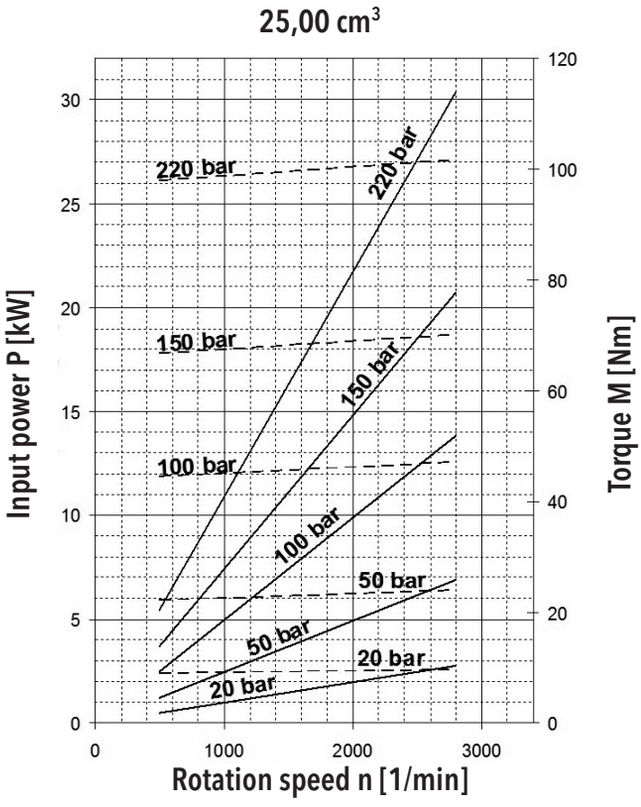
16,00 cm³



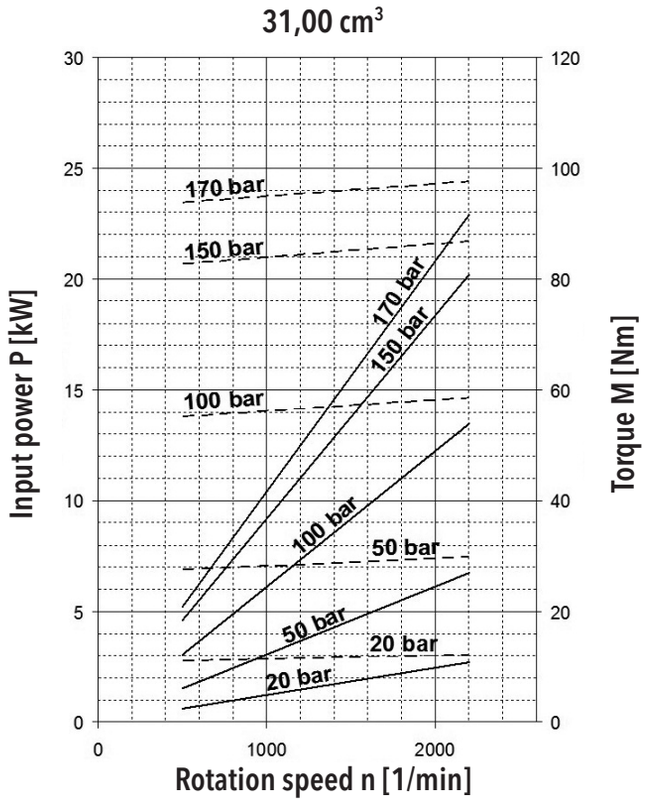
20,00 cm³



25,00 cm³



31,00 cm³



ORDER KEY – SINGLE VERSION

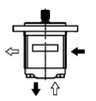
T3 – 16 R – S02 D04 – S G04 G03 – V . 001

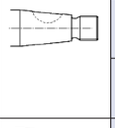
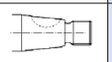
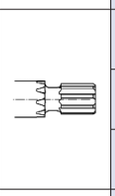
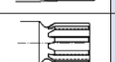
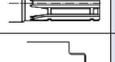
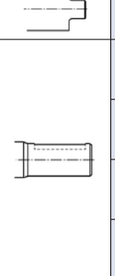
Code	Type
T3	T3 Series Gear Pump
T3K	T3 Series Gear Pump short version

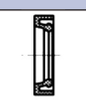
Code	Displacement [cm³]
4	4,03
6	6,02
8	8,05
12	12,08
16	16,10
20	20,12
25	25,16
31	31,21
XX	Other displacements on request

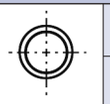
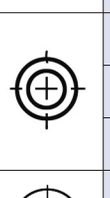
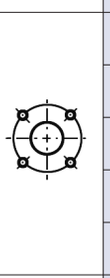
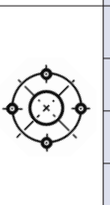
Code	Direction of rotation
R	Clockwise
L	Anti-clockwise
B	Bi–directional

Code	Flange design	
F02		Square flange, centre ring ∅80
R05		Rectangular flange, centre ring ∅36,5
R06		Rectangular flange, centre ring ∅80
R07		Rectangular flange, centre ring ∅60
S02		SAE A
S03		SAE B
A07		Flange with trough-bolts, centre ring ∅50
A08		Flange with trough-bolts, centre ring ∅50
A09		Flange with trough-bolts, centre ring ∅52, with O-ring
A10		Flange with trough-bolts, centre ring ∅52, with O-ring
Z		Special desing

Code	Location of inlets and outlets	
S		Side (in the body)
R		Axial (in the cover)
C		Combination
S		Special desing

Code	Drive shaft desing	
C07		Taper 1:8 Key width 3
C08		Taper 1:8 Key width 3,2
C09		Taper 1:8 Key width 4
C10		Taper 1:5 Key width 3
D04		Spline SAE 9T 16/32 DP
D06		Spline SAE 11T l=32, 16/32 DP
D07		Spline SAE 11T l=38, 16/32 DP
D08		Spline ČSN 17x1,25
D09		Spline DIN 5482 B17x14
D10		Spline GOST 6033-80
D11		Spline 16x13x3,5
K07		Cross coupling
V09		Cylindric ∅5/8" Key 4x4
V11		Cylindric ∅15 Key 4x4
V12		Cylindric ∅3/4" Key 4,8x4,8
V13		Cylindric ∅20 Key 6x6
Z		Special desing

Code	Seal material	
N		NBR
V		FKM
H		HNBR

Code	Liquid inlet and outlet connection shape	
M05		Thread M 18x1,5
M09		Thread M 27x2
G03		Thread BSP G1/2
G04		Thread BSP G3/4
G05		Thread BSP G1"
U04		Thread 7/8-14 UNF-2B
U05		Thread 1-1/16-12 UN-2B
H05		Flanged fitting ∅15; Square 4xM6 ∅35
H06		Flanged fitting ∅20; Square 4xM6 ∅40
H07		Flanged fitting ∅13,5; Square 4xM6 ∅30
H08		Flanged fitting ∅20; Square 4xM8 ∅40
H10		Flanged fitting ∅26; Square 4xM8 ∅55
K01		Flanged fitting ∅13,5; Cross 4xM6 ∅30
K02		Flanged fitting ∅20; Cross 4xM8 ∅40
K07		Flanged fitting ∅14; Cross 4xM8 ∅38
K08		Flanged fitting ∅19; Cross 4xM8 ∅38
Z		Special desing

Special arrangements	
–	No special arrangements
001	With front-end bearing type 1
002	With front-end bearing type 2
003	Sealed section for multiple version
004	Without shaft seal
005	Inlet in body, outlet in cover
006	Inlet in cover, outlet in body
007	Inlet in body, outlet in flange
008	Inlet in flange, outlet in body
009	Drain M12x1,5 in cover
010	With from-end bearing type 3
011	Drain G 1/4 in cover
012	Internal drain
013	Variseal
014	Shaft seal – double lip

An example of designation for the T3 anti-clockwise pump with displacement of 8 cm³, SAE A flange, SAE 9T spline, BSP inlets in cover and standard NBR seal without special arrangements: **T3-8L-S02D04-RG03G03-N**

ORDER KEY – MULTIPLE VERSION

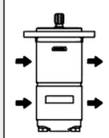
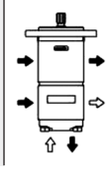
T3 – 16 / 8 / 8 R – S02 D04 – S G04 G03 / G03 G03 / G03 G03 – V . 001

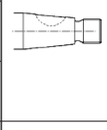
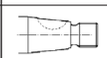
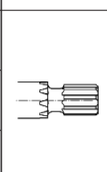
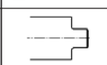
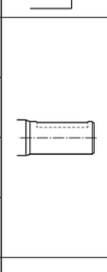
Code	Type
T3	T3 Series Gear Pump
T3K	T3 Series Gear Pump short version

kód	Displacement [cm³]
4	4,03
6	6,02
8	8,05
12	12,08
16	16,10
20	20,12
25	25,16
31	31,21
XX	Other displacements on request

Code	Direction of rotation
R	Clockwise
L	Anti-clockwise
B	Bi–directional

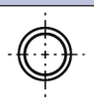
Code	Flange design	
F02		Square flange, centre ring ∅80
R05		Rectangular flange, centre ring ∅36,5
R06		Rectangular flange, centre ring ∅80
R07		Rectangular flange, centre ring ∅60
S02		SAE A
S03		SAE B
A07		Flange with trough-bolts, centre ring ∅50
A08		Flange with trough-bolts, centre ring ∅50
A09		Flange with trough-bolts, centre ring ∅52, with O-ring
A10		Flange with trough-bolts, centre ring ∅52, with O-ring
Z		Special desing

Code	Location of inlets and outlets	
S		Side (in the body)
C		Combination

Code	Drive shaft desing	
C07		Taper 1:8 Key width 3
C08		Taper 1:8 Key width 3,2
C09		Taper 1:8 Key width 4
C10		Taper 1:5 Key width 3
D04		Spline SAE 9T 16/32 DP
D06		Spline SAE 11T l=32, 16/32 DP
D07		Spline SAE 11T l=38, 16/32 DP
D08		Spline ČSN 17x1,25
D09		Spline DIN 5482 B17x14
D10		Spline GOST 6033-80
D11		Spline 16x13x3,5
K07		Cross coupling
V09		Cylindric ∅5/8" Key 4x4
V11		Cylindric ∅15 Key 4x4
V12		Cylindric ∅3/4" Key 4,8x4,8
V13		Cylindric ∅20 Key 6x6
Z		Special desing

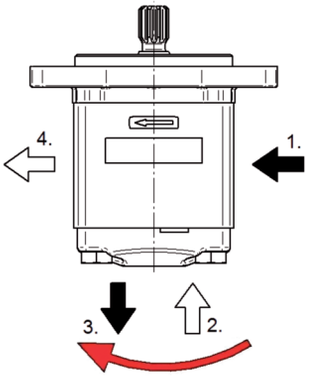
Code	Special arrangements
–	No special arrangements
001	With front-end bearing type 1
002	With front-end bearing type 2
003	Sealed section for multiple version
004	Without shaft seal
005	Inlet in body, outlet in cover
006	Inlet in cover, outlet in body
007	Inlet in body, outlet in flange
008	Inlet in flange, outlet in body
009	Drain M12x1,5 in cover
010	With from-end bearing type 3
011	Drain G 1/4 in cover
012	Internal drain
013	Variseal
014	Shaft seal – double lip

Code	Seal material	
N		NBR
V		FKM
H		HNBR

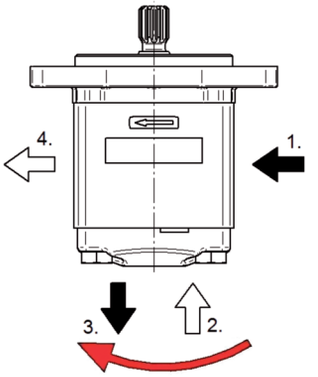
Code	Liquid inlet and outlet connection shape	
M05		Thread M 18x1,5
M09		Thread M 27x2
G03		Thread BSP G1/2
G04		Thread BSP G3/4
G05		Thread BSP G1"
U04		Thread 7/8-14 UNF-2B
U05		Thread 1-1/16-12 UN-2B
H05		Flanged fitting ∅15; Square 4xM6 ∅35
H06		Flanged fitting ∅20; Square 4xM6 ∅40
H07		Flanged fitting ∅13,5; Square 4xM6 ∅30
H08		Flanged fitting ∅20; Square 4xM8 ∅40
H10		Flanged fitting ∅26; Square 4xM8 ∅55
K01		Flanged fitting ∅13,5; Cross 4xM6 ∅30
K02		Flanged fitting ∅20; Cross 4xM8 ∅40
K07		Flanged fitting ∅14; Cross 4xM8 ∅38
K08		Flanged fitting ∅19; Cross 4xM8 ∅38
Z		Special desing

An example of designation for the T3 three-section clockwise pump with displacements of 12, 8 and 6 cm³, rectangular flange, centre ring ∅ 36.5, cone 1:8, one metric common inlet and three outlets and FKM seal without special arrangements: **T3-12/8/6R-R05C07-SNM05/M09M05/NM05-V**

Note: In case of combination inlets, with the code „C" is respected following sequence of inlets and outlets:



For clockwise and reverse gear pump,
in direction clockwise



For anti-clockwise gear pump,
in direction anti-clockwise

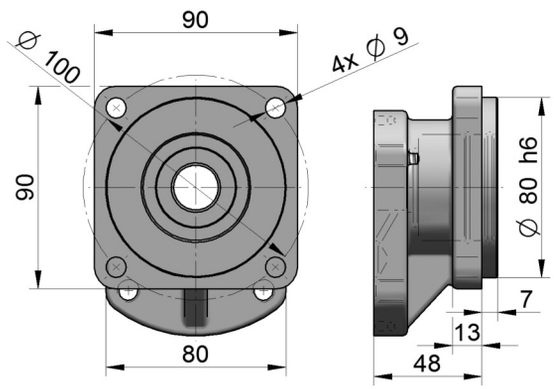
For. ex...: T3-12R-S02D04-C<u>G04</u> <u>G04</u> <u>G03</u> <u>G03</u> -N
1. 2. 3. 4.

COMBINATIONS OF FLANGES AND SHAFTS

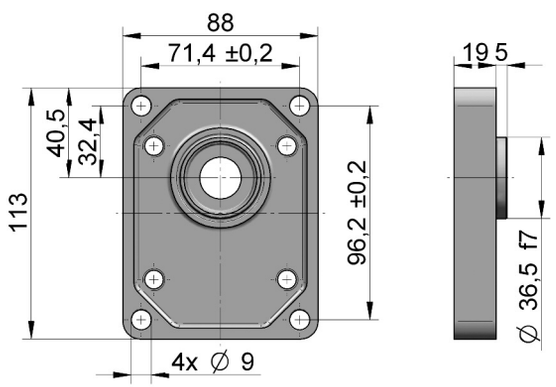
			FLANGE DESIGN									
			F02	R05	R06	R07	S02	S03	A07	A08	A09	A10
DRIVE SHAFT	C07			●								
	C08			●								
	C09			●								
	C10				●				●	●		
	D04						●	●				
	D06						●	●				
	D07						●	●				
	D08			●								
	D09				●				●	●		
	D10		●									
	D11					●						
	K05										●	●
	V09						●	●				
	V11			●								
	V12						●	●				
	V13		●									

FLANGES DESIGN

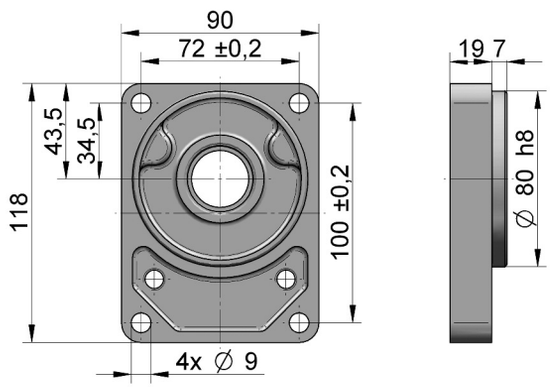
F02:



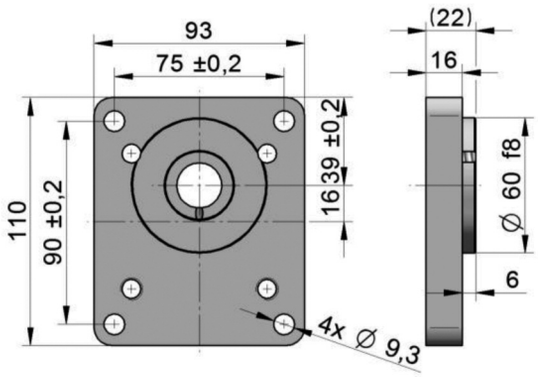
R05:



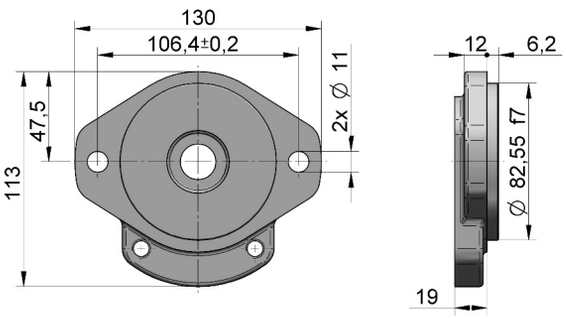
R06:



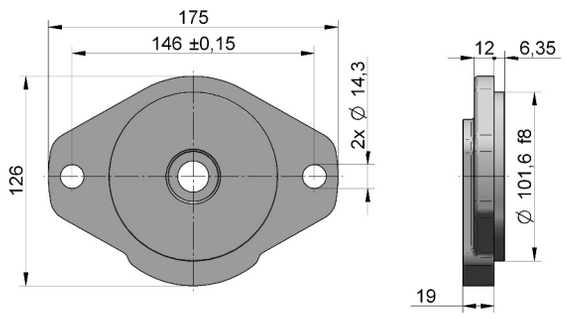
R07:



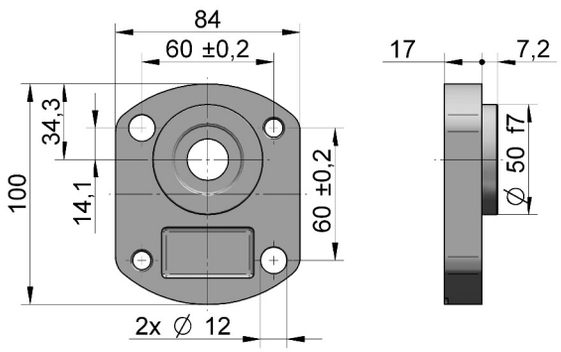
S02:



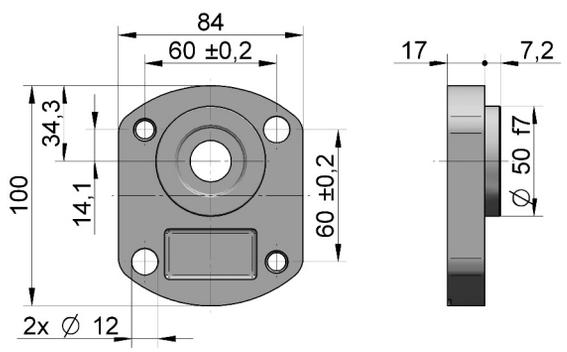
S03:



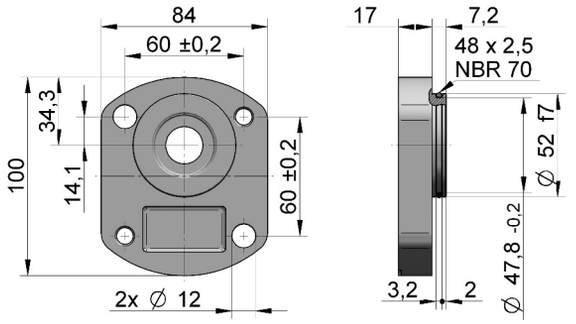
A07:



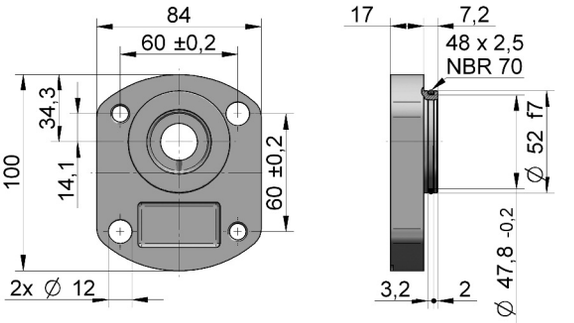
A08:



A09:



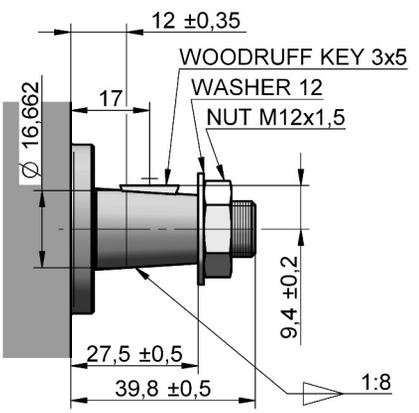
A10:



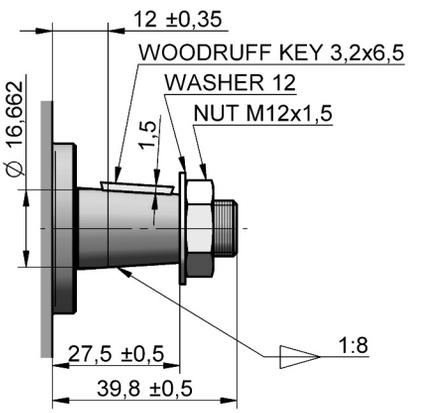
DRIVE SHAFT

Note: Maximum allowed torque on a drive shaft is 100 Nm.
To use V13 shaft, overpriced shaft is needed.

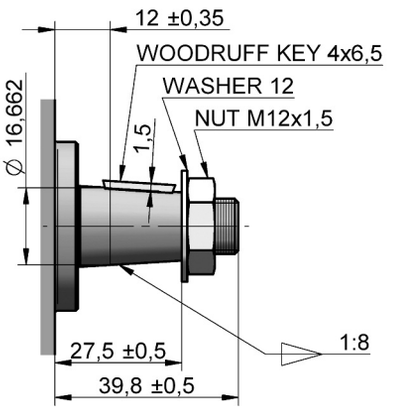
C07:



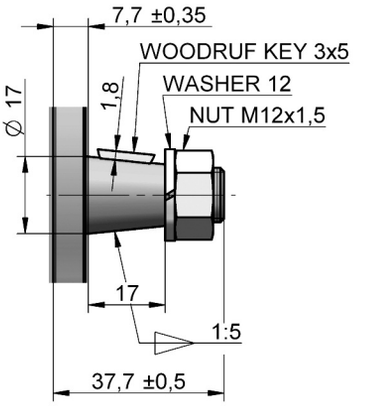
C08:



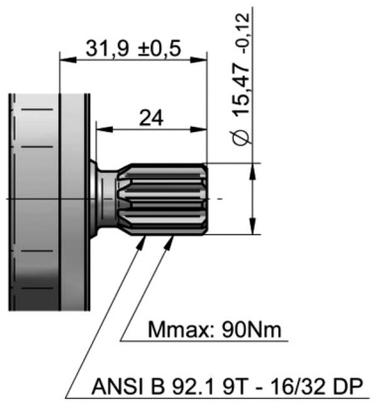
C09:



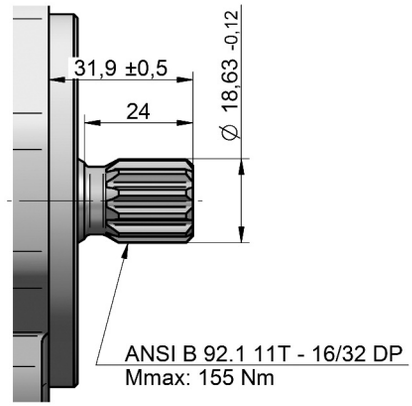
C10:



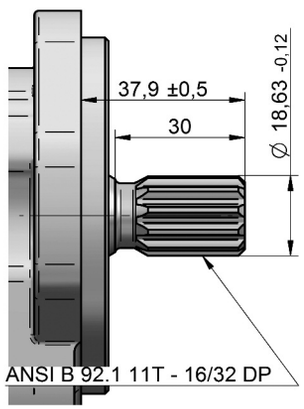
D04:



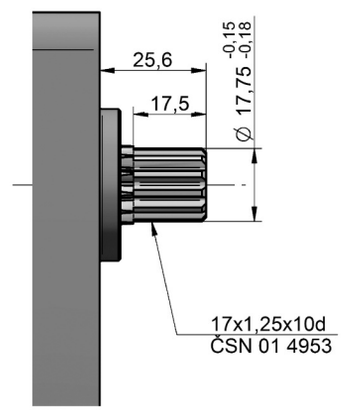
D06:



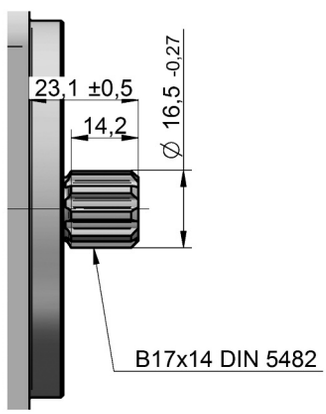
D07:



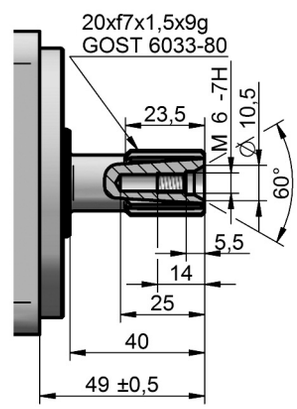
D08:



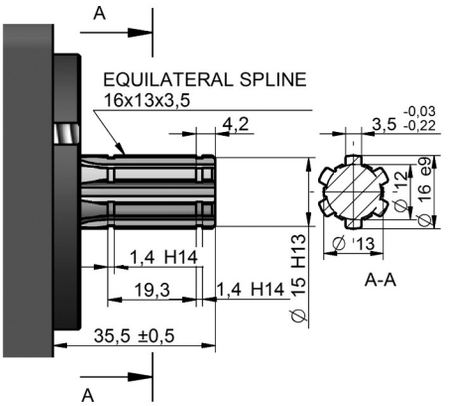
D09:



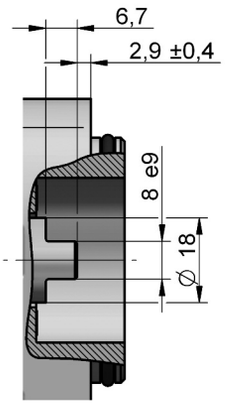
D10:



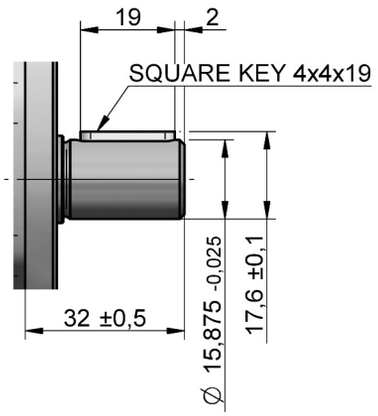
D11:



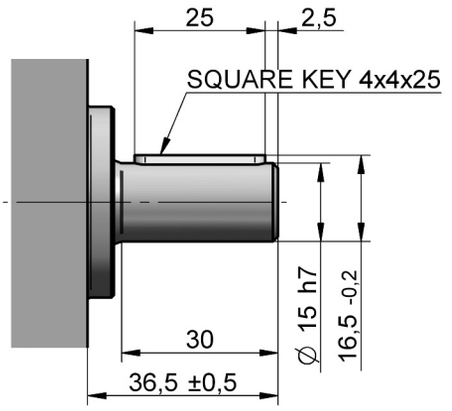
K07:



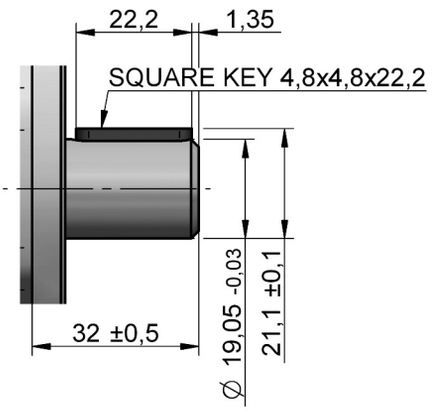
V09:



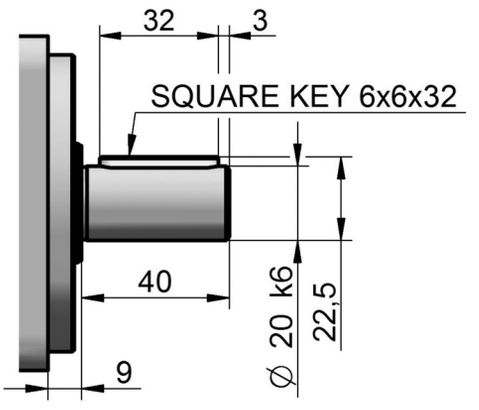
V11:



V12:

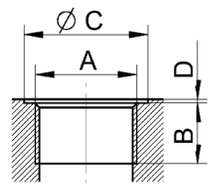


V13:



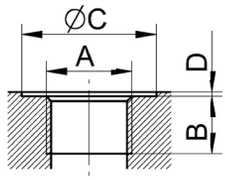
LIQUID INLET AND OUTLET CONNECTION

Metric thread according to ISO 6149



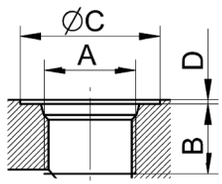
Displacement [cm³]	kód	Inlet				kód	Outlet			
		A	B	C	D		A	B	C	D
all	M09	M 27x2	16	33	1	M05	M 18x1,5	14	24	1

BSPP pipe thread according to ISO 228 - 1



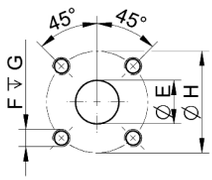
Displacement [cm³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 10	G03	G 1/2"	14	33	1	G03	G 1/2"	14	33	1
10 - 25	G04	G 3/4"	16	39	1	G03	G 1/2"	14	33	1
above 25	G05	G 1"	18	45	1	G04	G 3/4"	16	39	1

UNF thread according to SAE



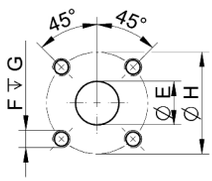
Displacement [cm³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 10	U04	7/8-14 UNF-2B	17	34	1	U04	7/8-14 UNF-2B	17	34	1
11 - 31	U05	1-1/16-12 UNF-2B	19	41	1	U04	7/8-14 UNF-2B	17	34	1

Flanged fittings according to DIN 8901/8902



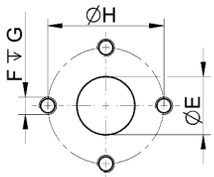
Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	H06	20	M6	13	40	H05	15	M6	13	35
all	H10	25	M8	13	55	H05	15	M6	13	35

Flanged fittings - „square"



Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	H08	20	M8	13	40	H07	13.5	M6	13	30

Flanged fittings - „cross"

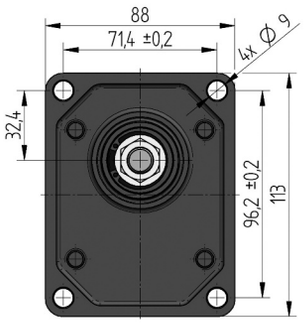


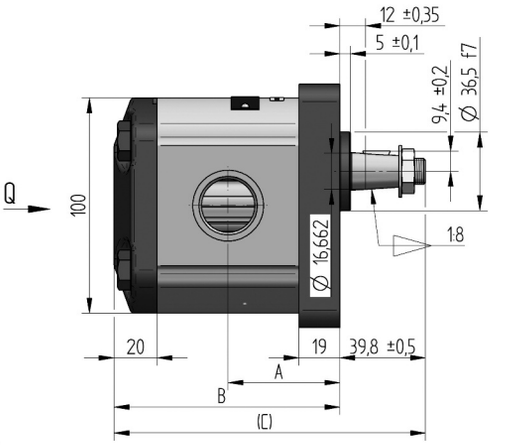
Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	K02	20	M8	13	40	K01	13.5	M6	13	30
to 10	K07	14	M8	13	38	K07	14.0	M8	13	38
above 10	K08	19	M8	13	38	K07	14.0	M8	13	38

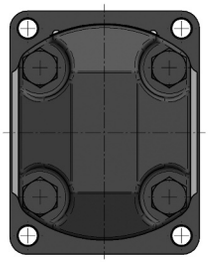
Drain

Displacement [cm³]	Code	Outlet			
		A	B	C	D
all	M02	M 12x1,5	12	20	1
	G01	G 1/4	12	45	1
	U01	7/16-20 UNF-2B	13	21	1
	U02	9/16-18 UNF-2B	14	25	1

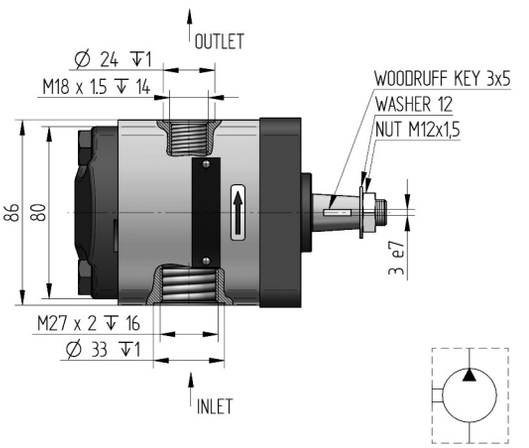
CATALOGUE SHETS OF T3 SERIES BASIC DESIGNS



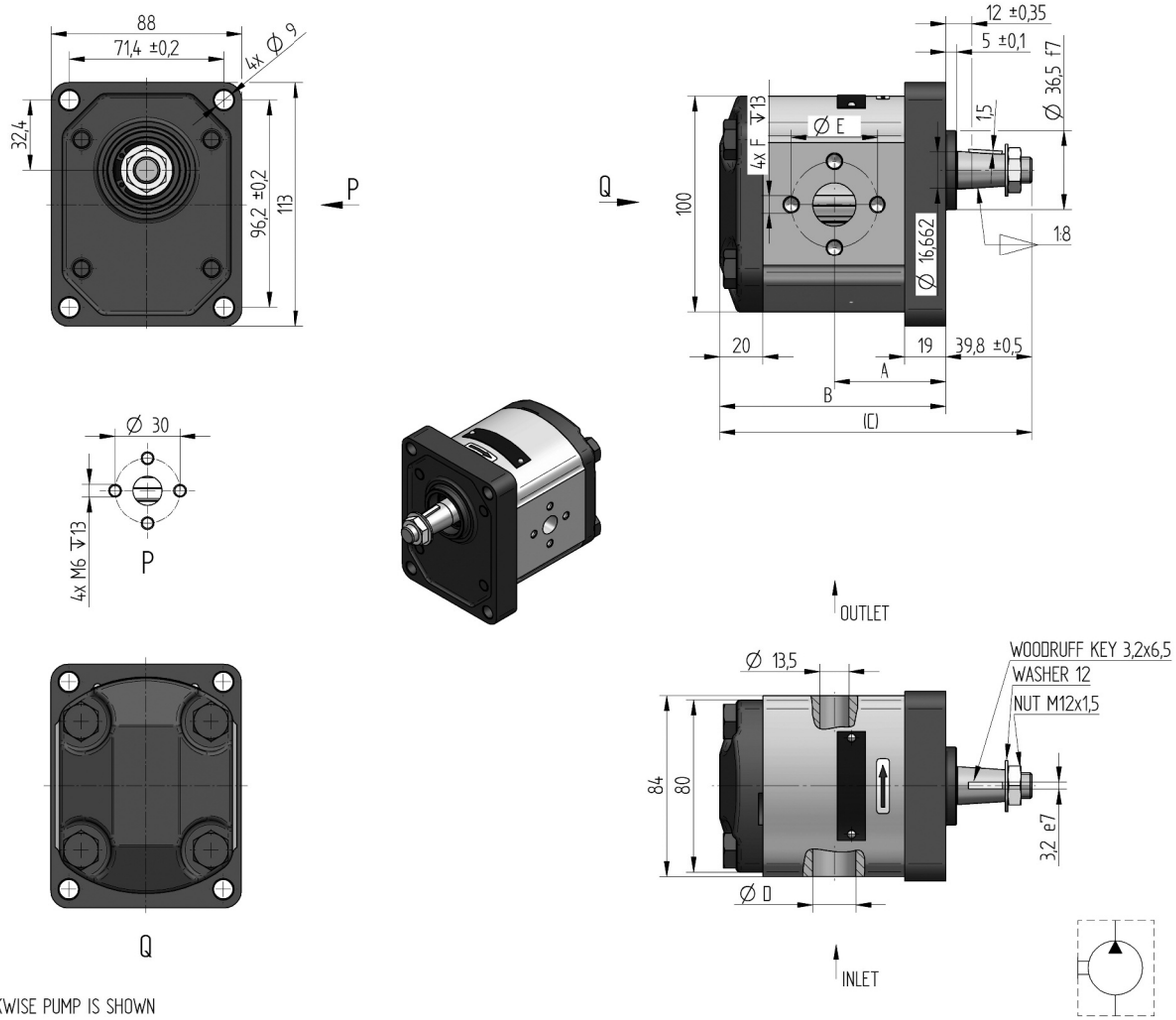




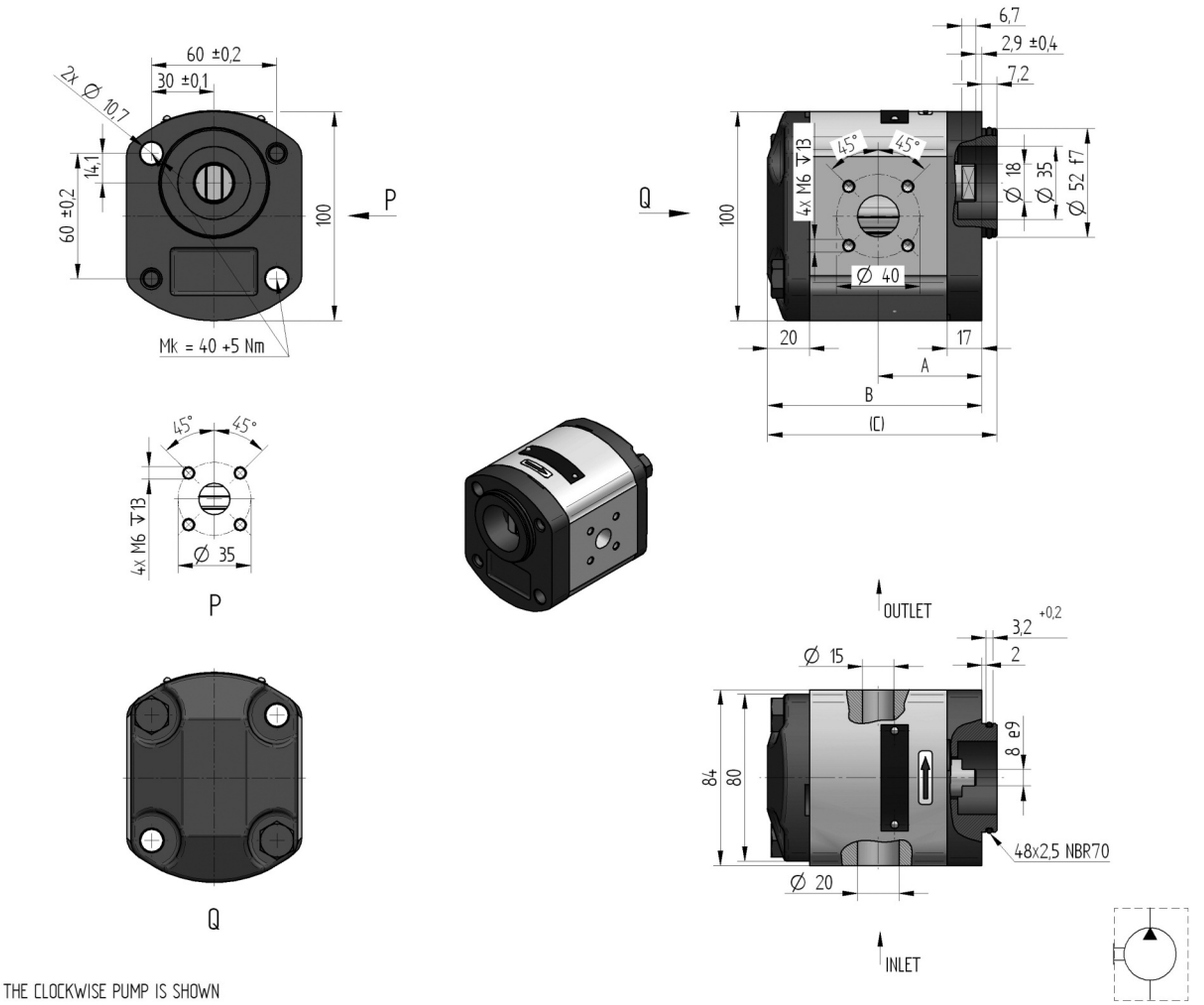
THE CLOCKWISE PUMP IS SHOWN



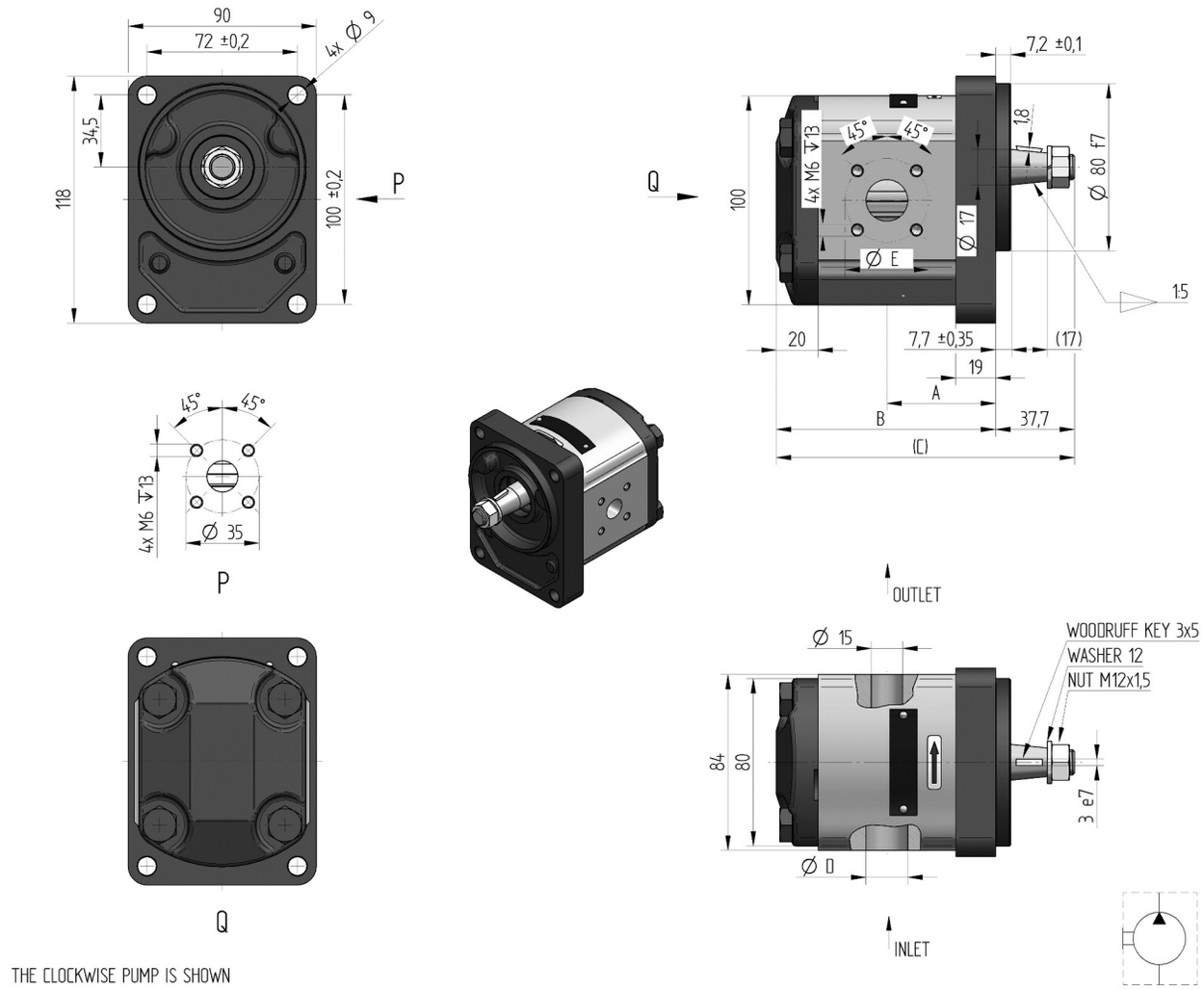
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	dimension B [mm]	dimension C [mm]
T3-31R- R05C07-SM09M05-N	184 9257	R	31	150	500	2 200	63.7	128.5	168.3
T3-31L- R05C07-SM09M05-N		L							
T3-25R- R05C07-SM09M05-N	184 9256	R	25	200	500	2 800	59.0	119.1	158.9
T3-25L- R05C07-SM09M05-N		L							
T3-20R- R05C07-SM09M05-N	184 9255	R	20	240	500	3 200	55.0	111.2	151.0
T3-20L- R05C07-SM09M05-N		L							
T3-16R- R05C07-SM09M05-N	184 9254	R	16	260	500	3 200	51.9	104.9	144.7
T3-16L- R05C07-SM09M05-N		L							
T3-12R- R05C07-SM09M05-N	184 9253	R	12	260	500	3 600	48.8	98.6	138.4
T3-12L- R05C07-SM09M05-N		L							
T3-8R- R05C07-SM09M05-N	184 9252	R	8	280	500	3 600	45.6	92.3	132.1
T3-8L- R05C07-SM09M05-N		L							
T3-6R- R05C07-SM09M05-N	184 9251	R	6	280	500	4 000	44.0	89.2	129.0
T3-6L- R05C07-SM09M05-N		L							
T3-4R- R05C07-SM09M05-N	184 9250	R	4	280	500	4 000	42.5	86.0	125.8
T3-4L- R05C07-SM09M05-N		L							



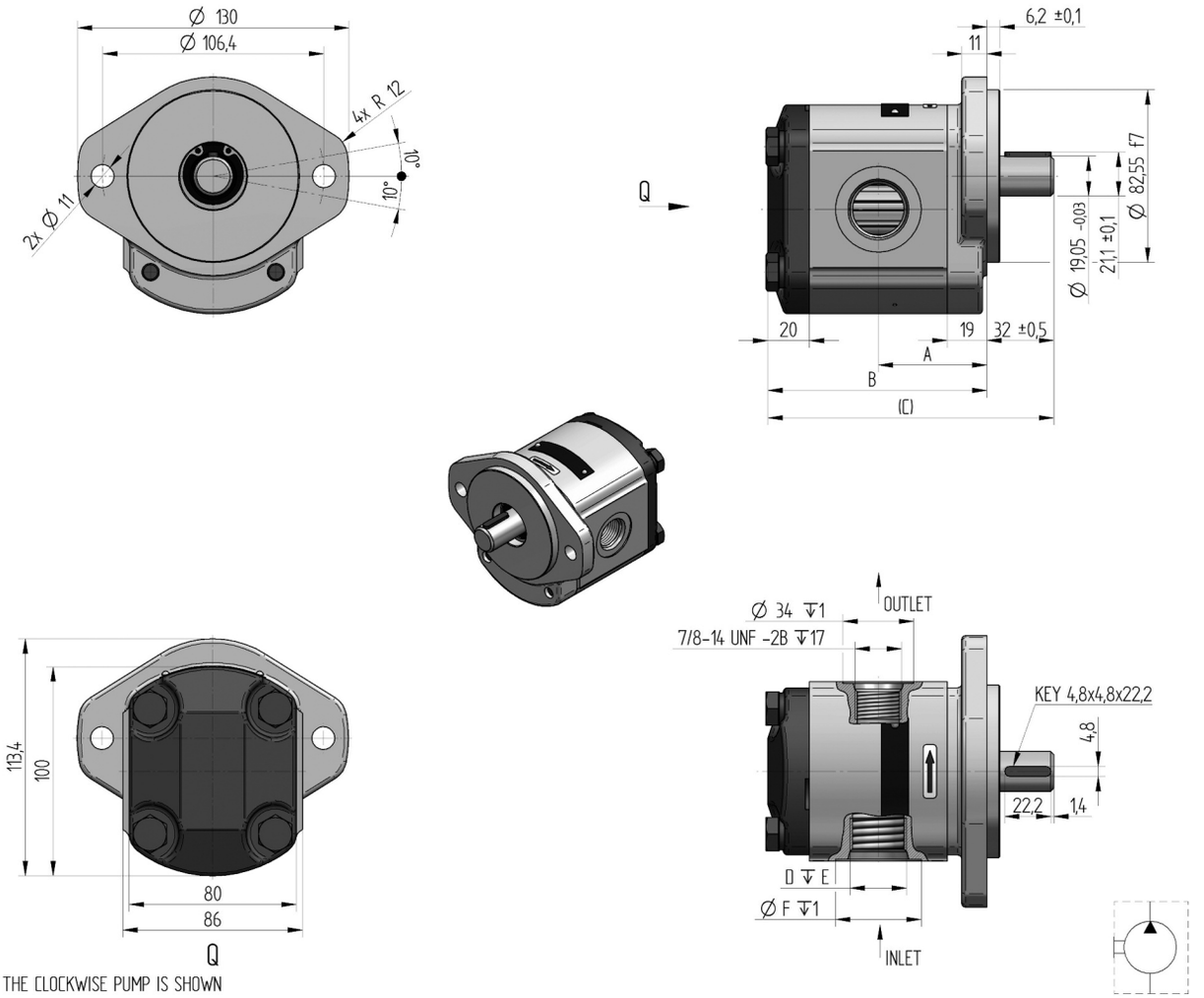
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- R05C08-SK02K01-N	184 9265	R	31	150	500	2 200	63.7	128.5	168.3	∅ 20	∅ 40	M8
T3-31L- R05C08-SK02K01-N		L										
T3-25R- R05C08-SK02K01-N	180 9264	R	25	200	500	2 800	59.0	119.1	158.9	∅ 20	∅ 40	M8
T3-25L- R05C08-SK02K01-N		L										
T3-20R- R05C08-SK02K01-N	184 9263	R	20	240	500	3 200	55.0	111.2	151.0	∅ 20	∅ 40	M8
T3-20L- R05C08-SK02K01-N		L										
T3-16R- R05C08-SK02K01-N	184 9262	R	16	260	500	3 200	51.9	104.9	144.7	∅ 20	∅ 40	M8
T3-16L- R05C08-SK02K01-N		L										
T3-12R- R05C08-SK02K01-N	184 9261	R	12	260	500	3 600	48.8	98.6	138.4	∅ 20	∅ 40	M8
T3-12L- R05C08-SK02K01-N		L										
T3-8R- R05C08-SK01K01-N	184 9260	R	8	280	500	3 600	45.6	92.3	132.1	∅ 13.5	∅ 30	M6
T3-8L- R05C08-SK01K01-N		L										
T3-6R- R05C08-SK01K01-N	184 9259	R	6	280	500	4 000	44.0	89.2	129.0	∅ 13.5	∅ 30	M6
T3-6L- R05C08-SK01K01-N		L										
T3-4R- R05C08-SK01K01-N	184 9258	R	4	280	500	4 000	42.5	86.0	125.8	∅ 13.5	∅ 30	M6
T3-4L- R05C08-SK01K01-N		L										



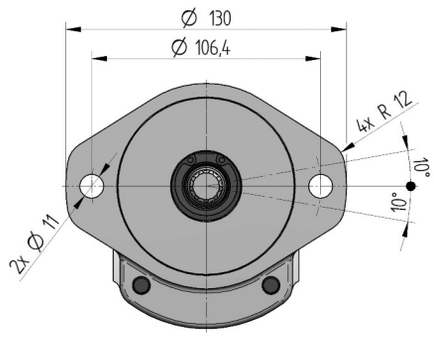
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	dimension B [mm]	dimension C [mm]
T3-31R- A09K07-SH06H05-N.004		R	31	150	500	2 200	61.7	126.5	133.7
T3-31L- A09K07-SH06H05-N.004		L							
T3-25R- A09K07-SH06H05-N.004		R	25	200	500	2 800	57.0	117.1	124.3
T3-25L- A09K07-SH06H05-N.004		L							
T3-20R- A09K07-SH06H05-N.004		R	20	240	500	3 200	53.0	109.2	116.4
T3-20L- A09K07-SH06H05-N.004		L							
T3-16R- A09K07-SH06H05-N.004		R	16	260	500	3 200	49.9	102.9	110.1
T3-16L- A09K07-SH06H05-N.004		L							
T3-12R- A09K07-SH06H05-N.004		R	12	260	500	3 600	46.8	96.6	103.8
T3-12L- A09K07-SH06H05-N.004		L							
T3-8R- A09K07-SH06H05-N.004		R	8	280	500	3 600	43.6	90.3	97.5
T3-8L- A09K07-SH06H05-N.004		L							
T3-6R- A09K07-SH06H05-N.004		R	6	280	500	4 000	42.0	87.2	94.4
T3-6L- A09K07-SH06H05-N.004		L							
T3-4R- A09K07-SH06H05-N.004	184 9955	R	4	280	500	4 000	40.5	84.0	91.2
T3-4L- A09K07-SH06H05-N.004		L							

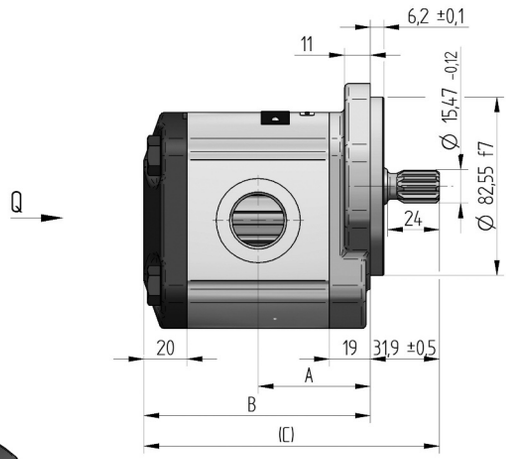


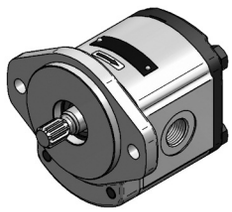
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	B [mm]	C [mm]	D [mm]	E [mm]
T3-31R- R06C10-SH06H05-N		R	31	150	500	2 200	63.7	128.5	168.3	20	40
T3-31L- R06C10-SH06H05-N		L									
T3-25R- R06C10-SH06H05-N		R	25	200	500	2 800	59.0	119.1	158.9	20	40
T3-25L- R06C10-SH06H05-N		L									
T3-20R- R06C10-SH06H05-N		R	20	240	500	3 200	55.0	111.2	151.0	20	40
T3-20L- R06C10-SH06H05-N		L									
T3-16R- R06C10-SH06H05-N	184 9868	R	16	260	500	3 200	51.9	104.9	144.7	20	40
T3-16L- R06C10-SH06H05-N		L									
T3-12R- R06C10-SH06H05-N	184 9483	R	12	260	500	3 600	48.8	98.6	138.4	20	40
T3-12L- R06C10-SH06H05-N		L									
T3-8R- R06C10-SH06H05-N	184 9268	R	8	280	500	3 600	45.6	92.3	132.1	20	40
T3-8L- R06C10-SH06H05-N		L									
T3-6R- R06C10-SH05H05-N	184 9339	R	6	280	500	4 000	44.0	89.2	129.0	15	35
T3-6L- R06C10-SH05H05-N		L									
T3-4R- R06C10-SH05H05-N	184 9338	R	4	280	500	4 000	42.5	86.0	125.8	15	35
T3-4L- R06C10-SH05H05-N		L									

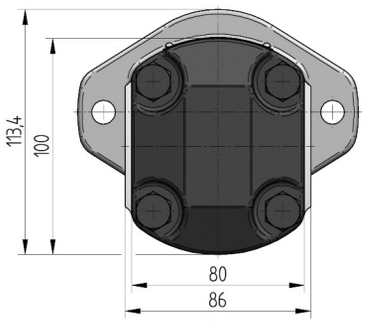


Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- S02V12-SU05U04-N		R	31	150	500	2 200	63.7	128.5	160.5	1-1/16-12 UN-2B	19	41
T3-31L- S02V12-SU05U04-N		L										
T3-25R- S02V12-SU05U04-N		R	25	200	500	2 800	59.0	119.1	151.1	1-1/16-12 UN-2B	19	41
T3-25L- S02V12-SU05U04-N		L										
T3-20R- S02V12-SU05U04-N		R	20	240	500	3 200	55.0	111.2	143.2	1-1/16-12 UN-2B	19	41
T3-20L- S02V12-SU05U04-N		L										
T3-16R- S02V12-SU05U04-N	184 9201	R	16	260	500	3 200	51.9	104.9	136.9	1-1/16-12 UN-2B	19	41
T3-16L- S02V12-SU05U04-N		L										
T3-12R- S02V12-SU05U04-N		R	12	260	500	3 600	48.8	98.6	130.6	1-1/16-12 UN-2B	19	41
T3-12L- S02V12-SU05U04-N		L										
T3-8R- S02V12-SU04U04-N		R	8	280	500	3 600	45.6	92.3	124.3	7/8-14 UNF-2B	17	34
T3-8L- S02V12-SU04U04-N		L										
T3-6R- S02V12-SU04U04-N		R	6	280	500	4 000	44.0	89.2	121.2	7/8-14 UNF-2B	17	34
T3-6L- S02V12-SU04U04-N		L										
T3-4R- S02V12-SU04U04-N		R	4	280	500	4 000	42.5	86.0	118.0	7/8-14 UNF-2B	17	34
T3-4L- S02V12-SU04U04-N		L										

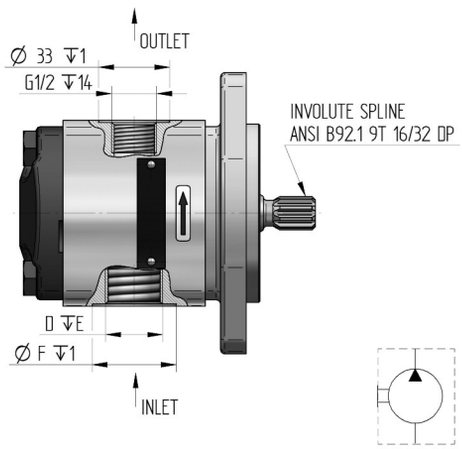




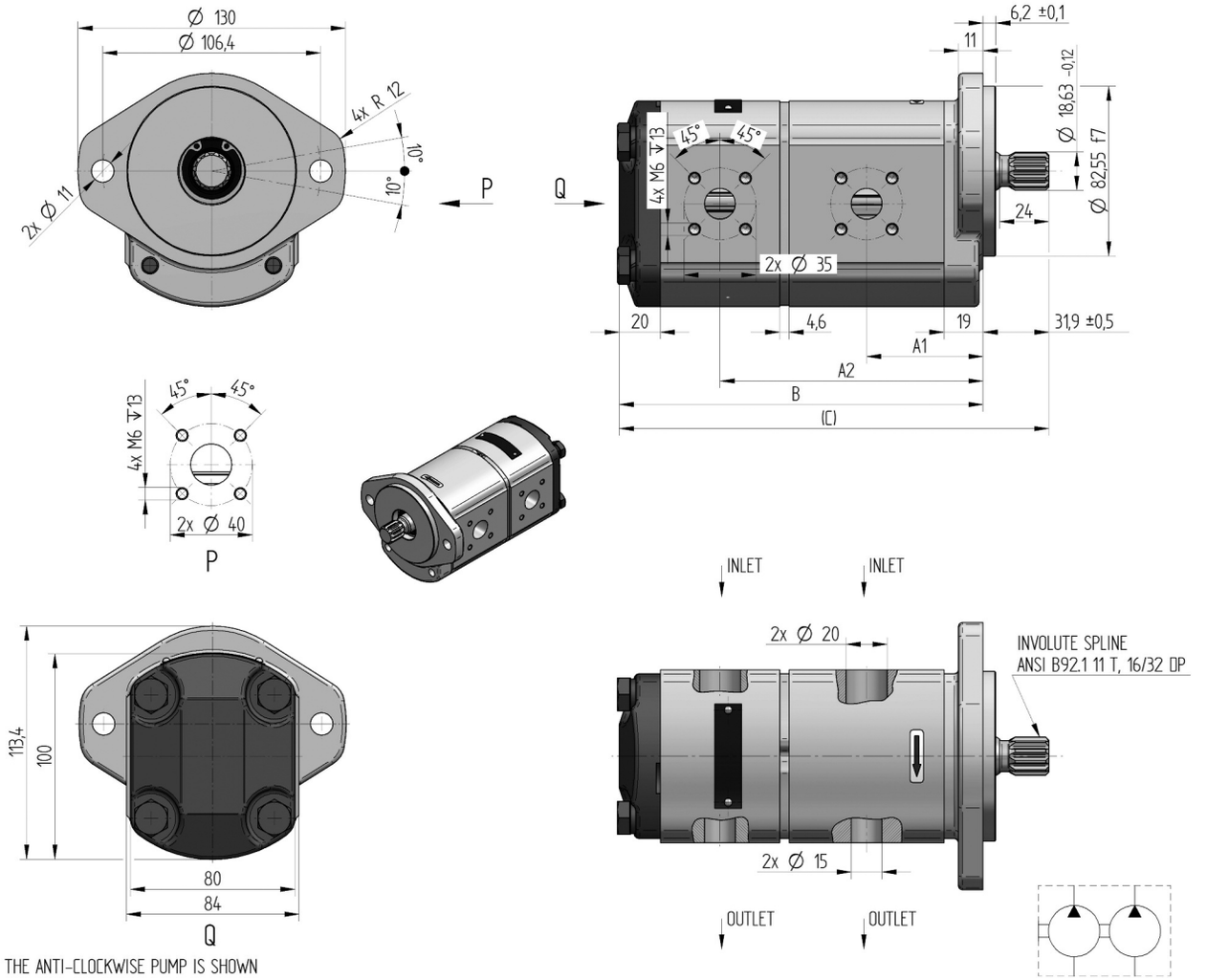




THE CLOCKWISE PUMP IS SHOWN



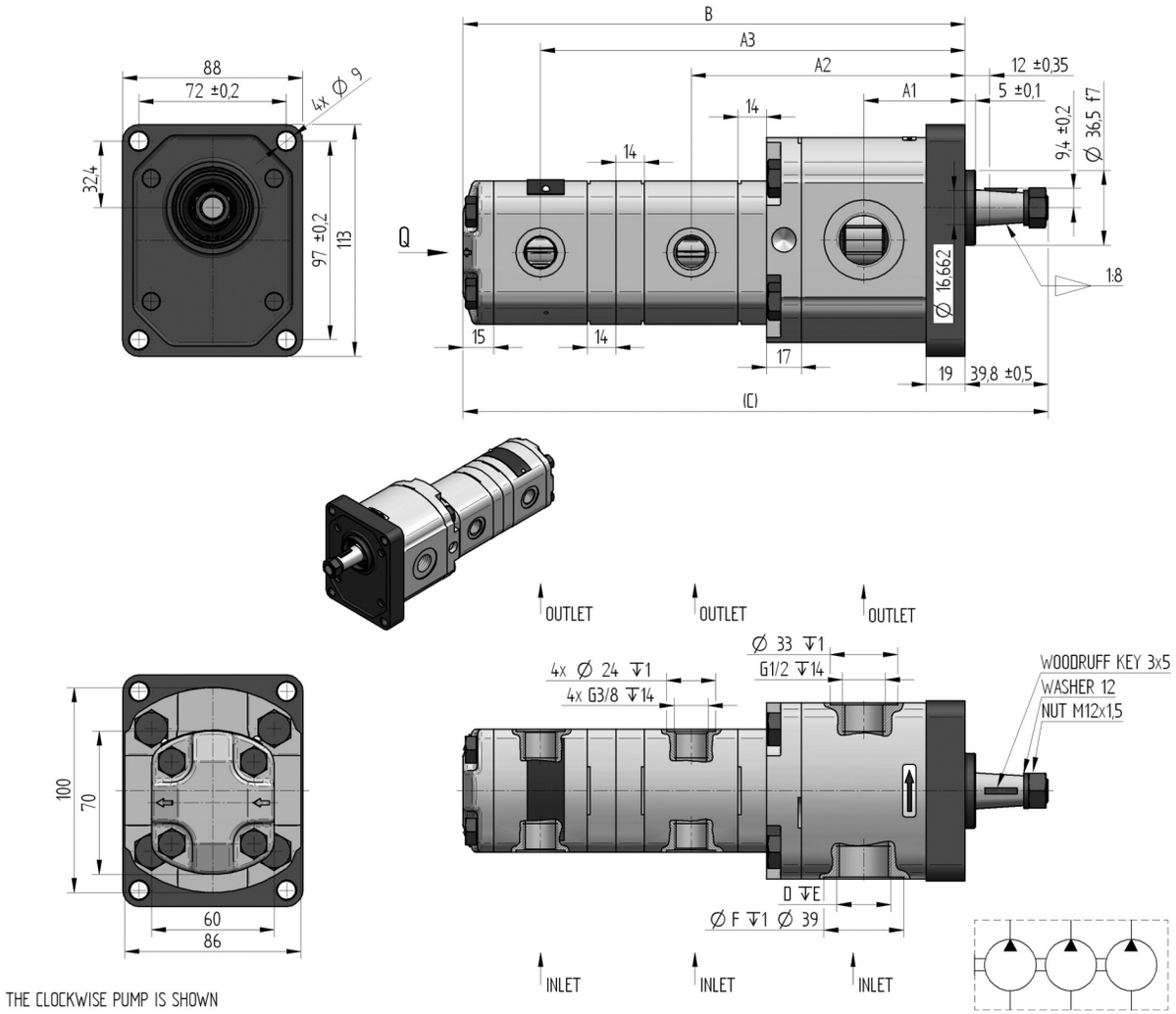
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-31R- S02D04-SG04G03-N	184 9289	R	31	150	500	2 200	63.7	128.5	160.6	G 3/4	16	39
T3-31L- S02D04-SG04G03-N		L										
T3-25R- S02D04-SG04G03-N	184 9288	R	25	200	500	2 800	59.0	119.1	151.2	G 3/4	16	39
T3-25L- S02D04-SG04G03-N		L										
T3-20R- S02D04-SG04G03-N	184 9287	R	20	240	500	3 200	55.0	111.2	143.3	G 3/4	16	39
T3-20L- S02D04-SG04G03-N		L										
T3-16R- S02D04-SG04G03-N	184 9286	R	16	260	500	3 200	51.9	104.9	137.0	G 3/4	16	39
T3-16L- S02D04-SG04G03-N		L										
T3-12R- S02D04-SG04G03-N	184 9285	R	12	260	500	3 600	48.8	98.6	130.7	G 3/4	16	39
T3-12L- S02D04-SG04G03-N		L										
T3-8R- S02D04-SG03G03-N	184 9284	R	8	280	500	3 600	45.6	92.3	124.4	G 1/2	14	33
T3-8L- S02D04-SG03G03-N		L										
T3-6R- S02D04-SG03G03-N	1849283	R	6	280	500	4 000	44.0	89.2	121.3	G 1/2	14	33
T3-6L- S02D04-SG03G03-N		L										
T3-4R- S02D04-SG03G03-N	184 9282	R	4	280	500	4 000	42.5	86.0	118.1	G 1/2	14	33
T3-4L- S02D04-SG03G03-N		L										



THE ANTI-CLOCKWISE PUMP IS SHOWN

Other combinations are available after consultation.

Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A1 [mm]	A2 [mm]	B [mm]	C [mm]
T3-20/6R-S02D06-SH06H05/H06H05-N		R	20/6	240/280	500	3 200	55.0	120.8	165.9	197.8
T3-20/6L-S02D06-SH06H05/H06H05-N		L								
T3-16/4R-S02D06-SH06H05/H06H05-N		R	16/4	260/280	500	3 200	51.9	113.0	156.5	188.4
T3-16/4L-S02D06-SH06H05/H06H05-N		L								
T3-12/6R-S02D06-SH06H05/H06H05-N		R	12/6	260/280	500	3 600	48.8	108.2	153.3	185.2
T3-12/6L-S02D06-SH06H05/H06H05-N		L								
T3-8/8R-S02D06-SH06H05/H06H05-N		R	8/8	280	500	4 000	45.6	103.5	150.2	182.1
T3-8/8L-S02D06-SH06H05/H06H05-N		L								
T3-6/6R-S02D06-SH06H05/H06H05-N		R	6/6	280	500	4 000	44.0	98.8	143.9	175.8
T3-6/6L-S02D06-SH06H05/H06H05-N		L								



More information about pumps of P23 series in relevant catalogue.

Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A1 [mm]	A2 [mm]	A3 [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
T3-16/P23-2.5/2.5R- R05C07-SG04G03/G02G02/G02G02-N		R	16/2.5/2.5	280	500	3 200	51.9	136.6	206.1	241.9	281.7	G 3/4	16	39
T3-16/P23-2.5/2.5L- R05C07-SG04G03/G02G02/G02G02-N		L												
T3-12/P23-2.5/2.5R- R05C07-SG04G03/G02G02/G02G02-N	184 9290	R	12/2.5/2.5	280	500	3 600	48.8	130.3	199.8	235.6	275.4	G 3/4	16	39
T3-12/P23-2.5/2.5L- R05C07-SG04G03/G02G02/G02G02-N		L												

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AERO TECHNOLOGY & HYDRAULICS

JIHOSTROJ a.s.
Budějovická 148
CZ 382 32 Velešín
Czech Republic
tel.: +420 380 340 511
fax: +420 380 340 612
e-mail: mailbox@jihostroj.cz
http: //**www.jihostroj.com**
GPS 48°49'51.748" N 14°27'40.770" E