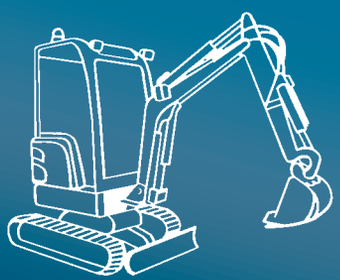
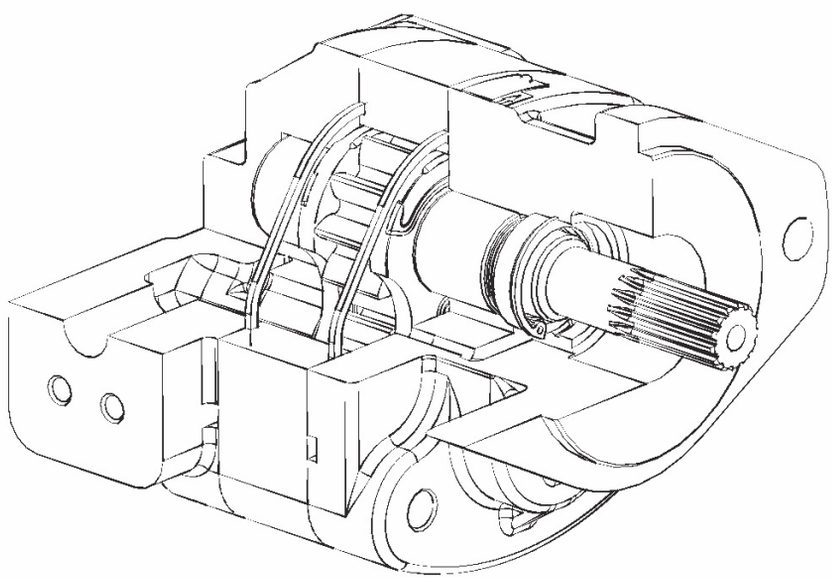
jihostroj
AERO TECHNOLOGY & HYDRAULICS



GEAR PUMPS
GHD1

Displacement	from 17 to 71 ccm
Pressure	up to 300 bar
Speed	from 350 to 3200 RPM

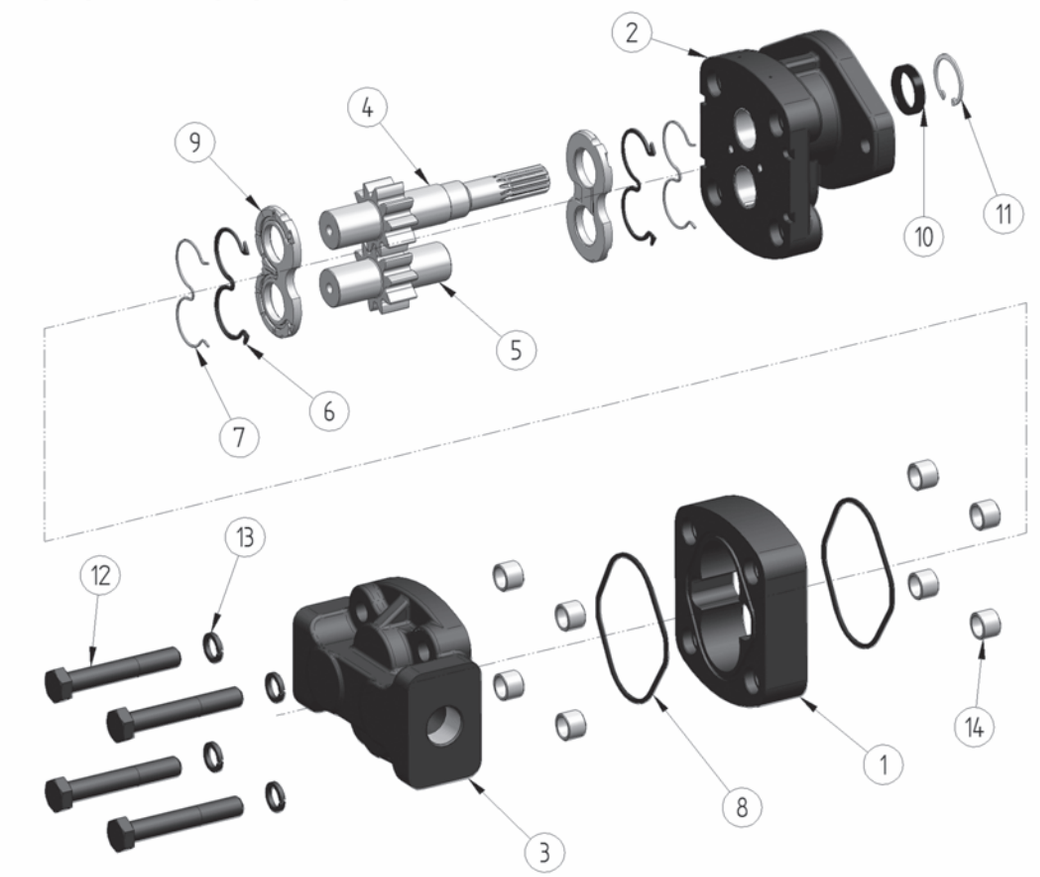
TABLE OF CONTENTS



DESCRIPTION

- GHD1 Series Pumps with external gearing for its massive cast iron construction are designed for the toughest operations in agricultural and construction equipment. The series covers a wide range displacement from 17 to 71 cm^3.
- These pumps are characterized by a three-part, all-cast-iron structure: flange – body – cover. Bushings supporting gear studs are pressed into the flange and the cover. Gear wheels, which are optimised to achieve a low noise level, are made of ultra high-strength steel. Liquid inlet and outlet are located in the cover (thus, the body is not weakened by them and a higher pressure load is possible) from sides or axially in the cover. The axial power balancing is performed using sliding aluminium alloy pressure plates in which a shape sealing of balancing surface is located in grooves. The flange dimensions enable a design with a pre-shaft with bearings for a higher radial or axial load of the drive.
- The GHD1 pumps are produced in various designs of drives, clamping flanges as well as liquid inlets and outlets. These pumps comply with the standards ISO, SAE, UNI and other world-recognised standards, they can be delivered in one-way single-section as well as multiple-section designs. They can also be delivered in a reversible design, with external or internal drainage.

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. Pressure plates
10. Shaft seal
11. Safety ring
12. Connection bolts
13. Spring washer
14. Cantering tube

PARAMETER TABLE

Nominal Size Parameters		Sym.	Unit.	GHD1 17	GHD1 27	GHD1 34	GHD1 43
Actual displacement		V_g	[cm^3]	17.39	27.53	34.05	43.47
Rotation speed	nominal	n_n	[min^{-1}]	1500	1500	1500	1500
	minimum	n_{min}	[min^{-1}]	400	400	400	400
	maximum	n_{max}	[min^{-1}]	3200	3200	3000	2800
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.3	-0.3	-0.3	-0.3
	maximum	p_{1max}	[bar]	0.5	0.5	0.5	0.5
Pressure at outlet**	max. continuous	p_{2n}	[bar]	300	300	300	280
	maximum	p_{2max}	[bar]	320	320	320	300
	peak	p_3	[bar]	330	330	330	310
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[$dm^3.min^{-1}$]	23.5	38.0	48.0	61.3
Maximum flow rate at n_{max} a p_{2max}		Q_{max}	[$dm^3.min^{-1}$]	54.5	86.3	100.1	119.3
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	16.1	24.9	30.2	36.0
Maximum input power at n_{max} a p_{2max}		P_{max}	[kW]	33.6	53.3	61.8	69.0
Weight		m	[kg]	–	–	–	–

Nominal Size Parameters		Sym.	Unit.	GHD1 51	GHD1 56	GHD1 61	GHD1 71
Actual displacement		V_g	[cm^3]	51.44	55.79	61.59	71.01
Rotation speed	nominal	n_n	[min^{-1}]	1500	1500	1500	1500
	minimum	n_{min}	[min^{-1}]	350	350	350	350
	maximum	n_{max}	[min^{-1}]	2600	2400	2200	1800
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.3	-0.3	-0.3	-0.3
	maximum	p_{1max}	[bar]	0.5	0.5	0.5	0.5
Pressure at outlet**	max. continuous	p_{2n}	[bar]	260	250	230	210
	maximum	p_{2max}	[bar]	280	270	250	230
	peak	p_3	[bar]	290	280	260	240
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[$dm^3.min^{-1}$]	72.5	78.7	86.8	100.1
Maximum flow rate at n_{max} a p_{2max}		Q_{max}	[$dm^3.min^{-1}$]	131.1	131.2	132.8	125.3
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	39.5	41.2	41.9	44.1
Maximum input power at n_{max} a p_{2max}		P_{max}	[kW]	70.8	68.3	64.0	55.6
Weight		m	[kg]	–	–	–	–

* 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 ÷ +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)

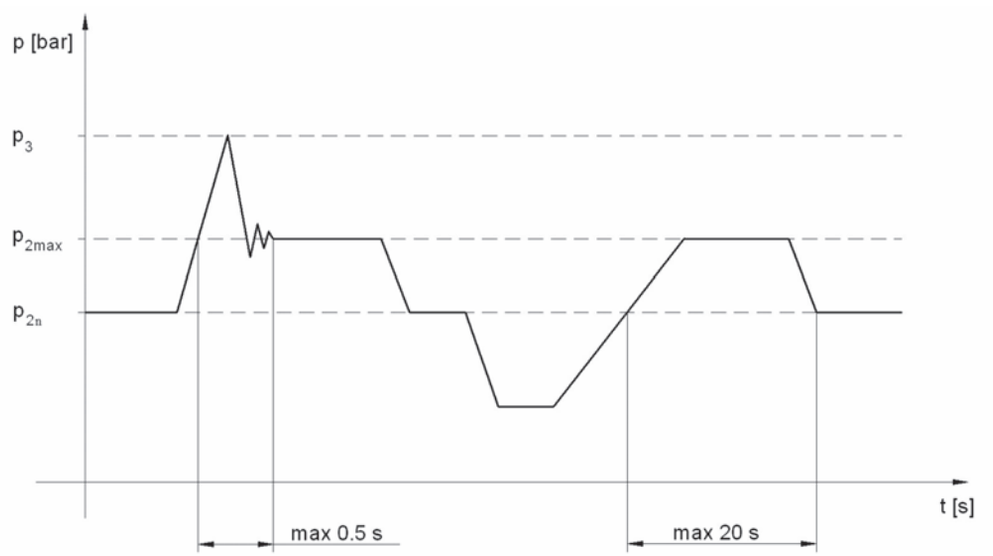
Liquid contamination class according to ISO 4406

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



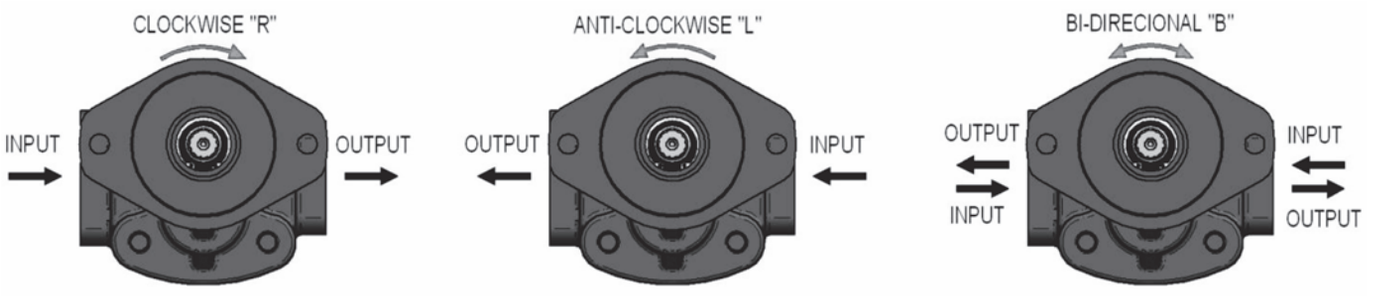
p_{2n}	**max. contin. pressure**	Max. working pressure, at which the pump can be operated without time limitation.
p_{2max}	**max. pressure**	Maximum pressure permissible for a short time, max. 20s.
p_3	**peak pressure**	Short-time pressure (fractions of a second) arising in case of a sudden change of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

OTHER REQUIREMENTS

- A driving device must not generate an axial or a radial load of the pump shaft, unless this is exclusively permitted for the pump with a front-end bearing.
- All the matters affecting technical parameters and properties of the pump are given in respective operating manuals, technical specifications and test specifications of the manufacturer.

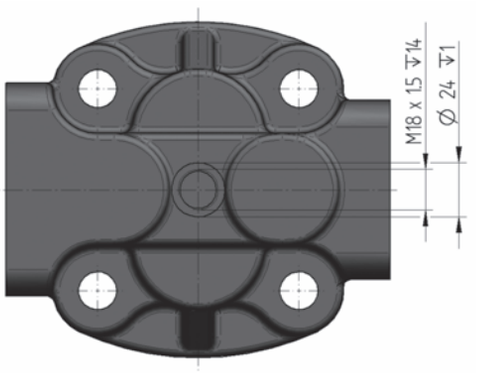
DIRECTION OF ROTATION

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

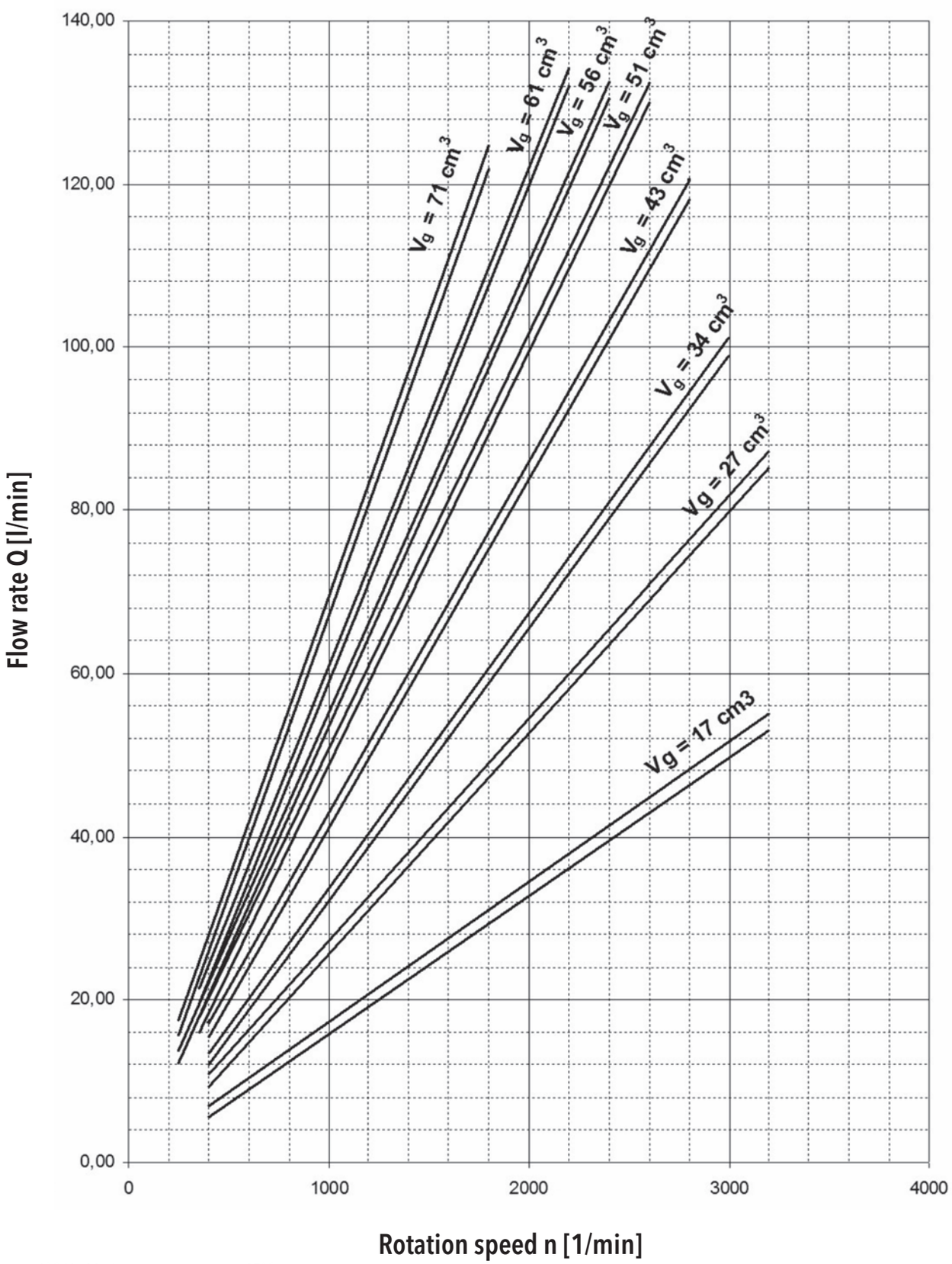


REVERSIBLE DESIGN

- 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.

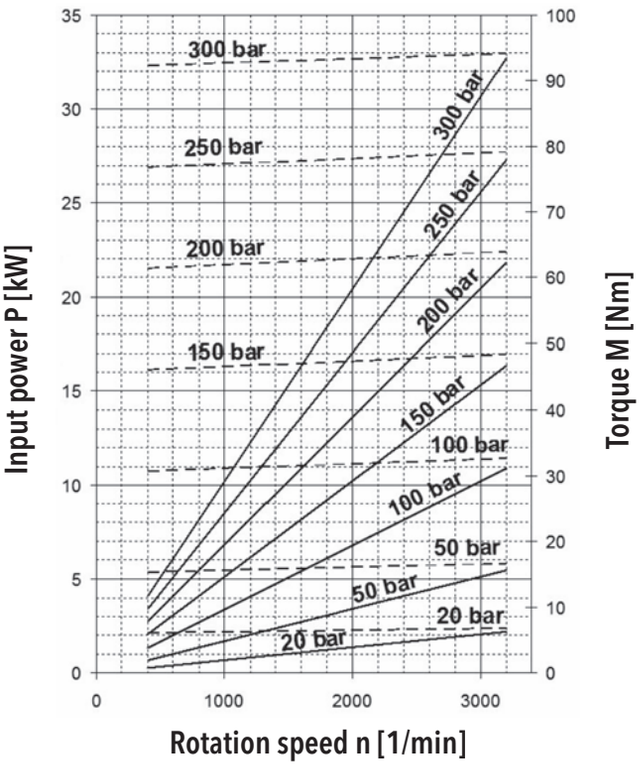


GHD1 FLOW RATE AND POWER CURVES

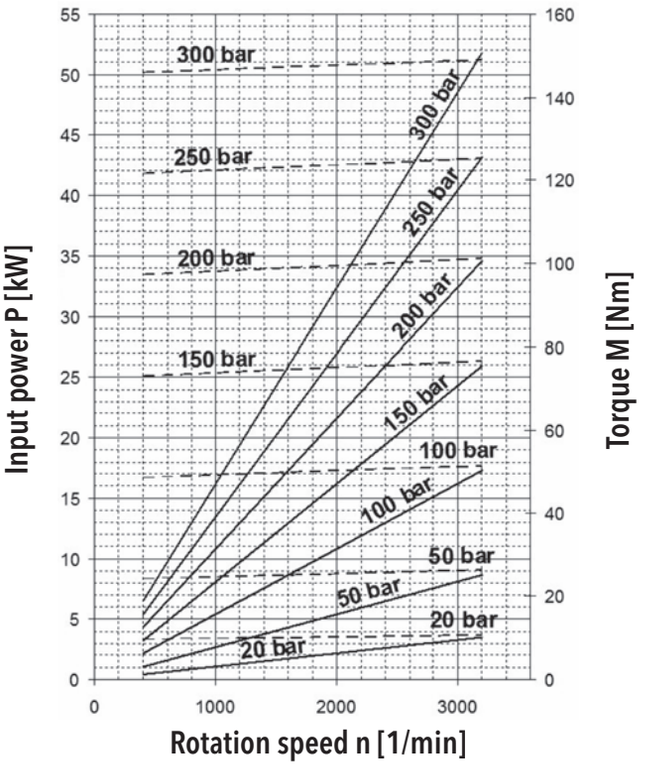


Above curves apply to ISO V_g 46 oil at temperature t = 45°C.

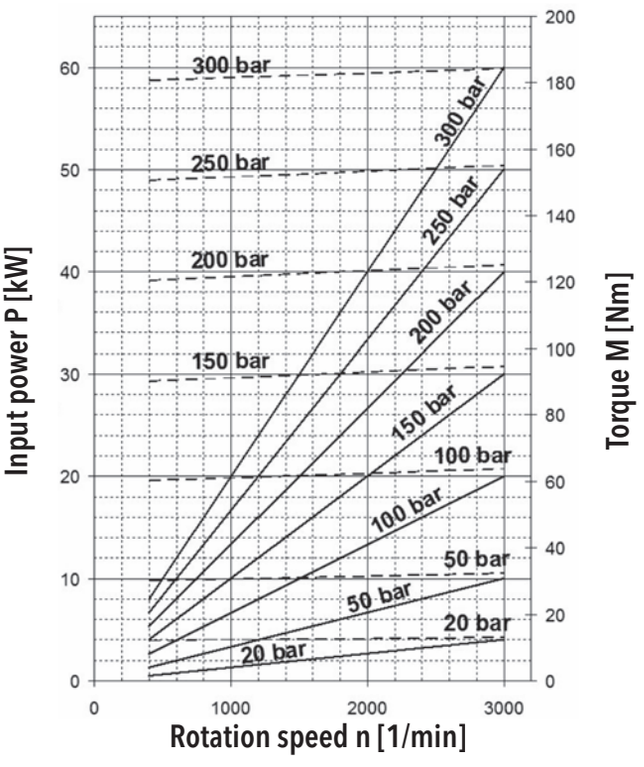
17,00 cm³



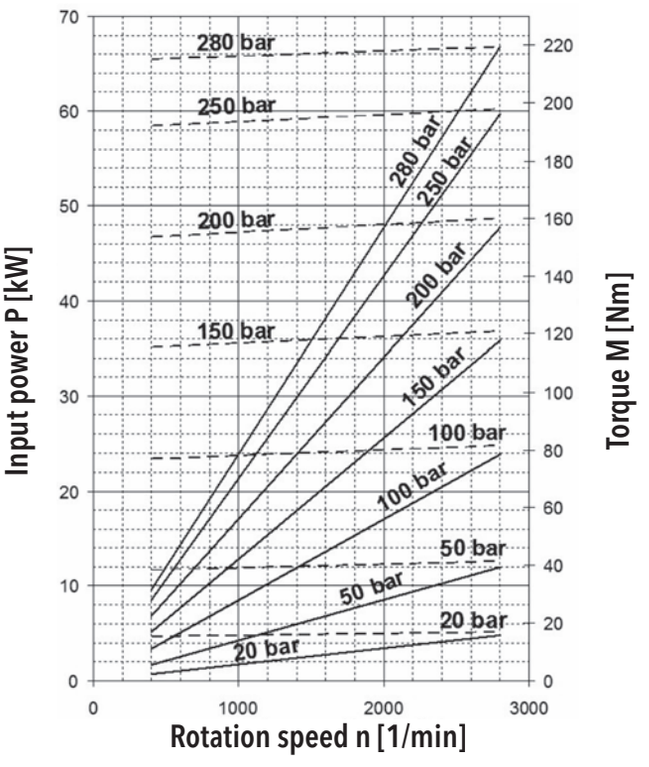
27,00 cm³



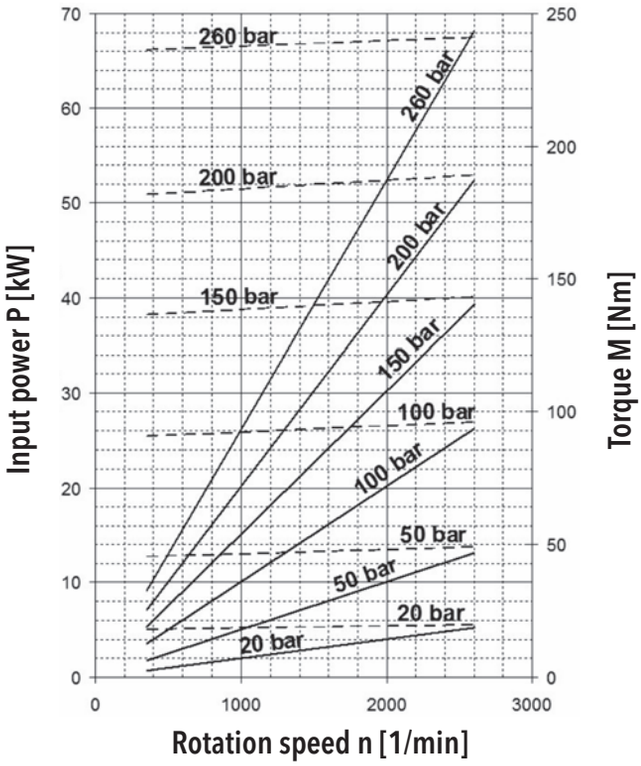
34,00 cm³



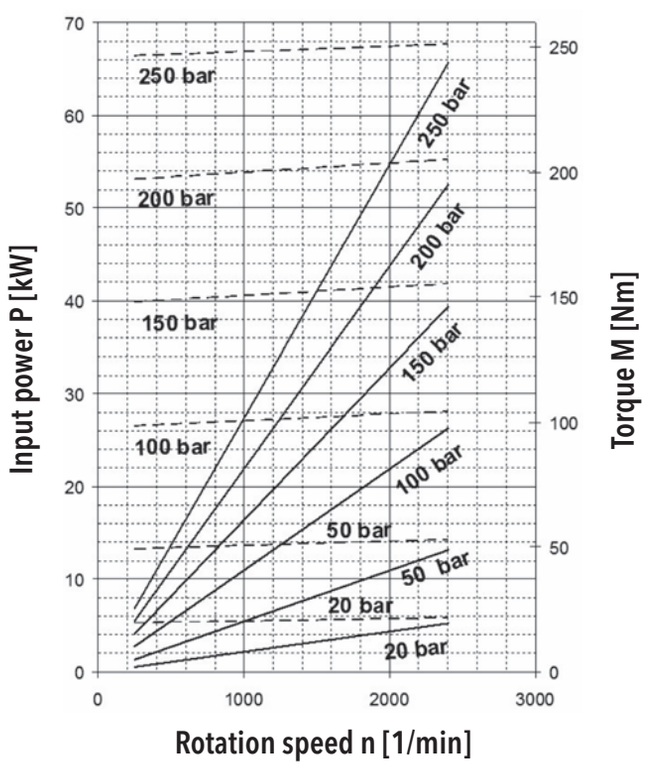
43,00 cm³



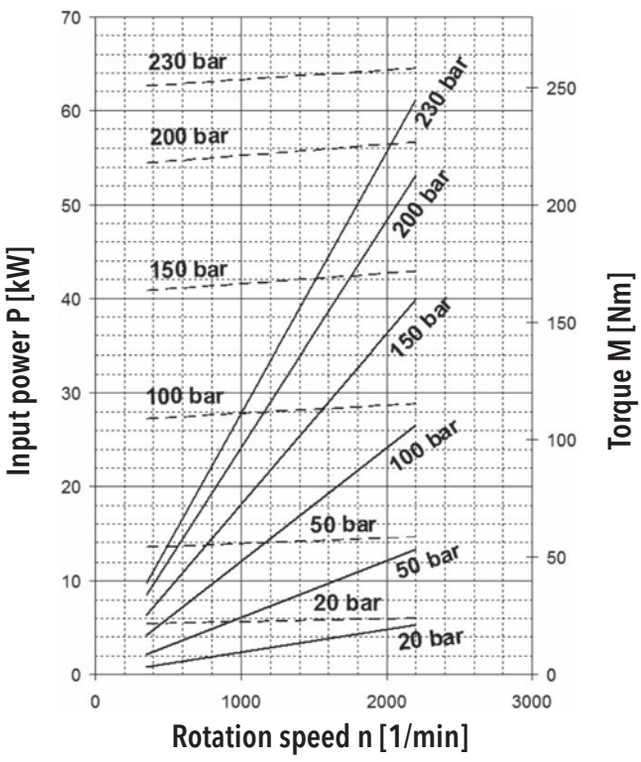
51,00 cm³



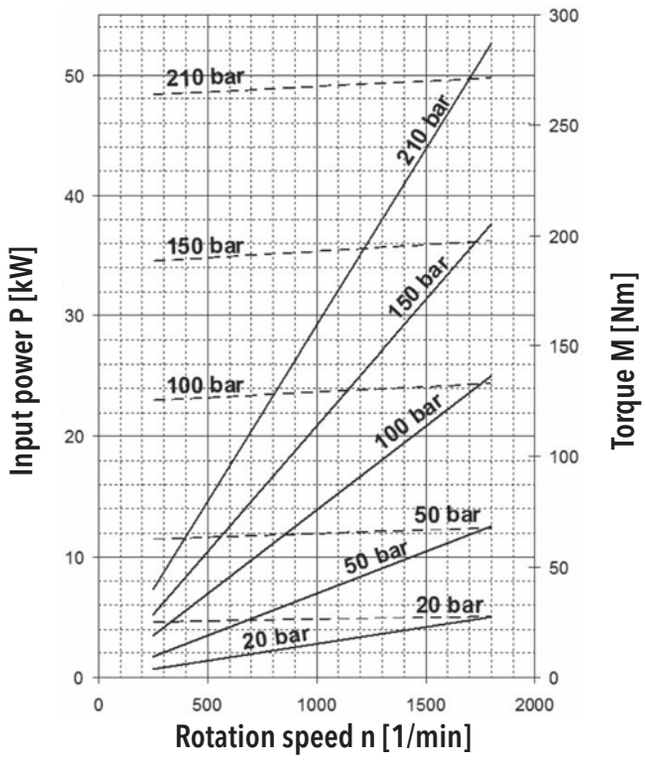
56,00 cm³



61,00 cm³



71,00 cm³



ORDER KEY – SINGLE VERSION

GHD1 - 34 R - S02 D13 - S G05 G04 - N . 001

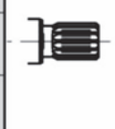
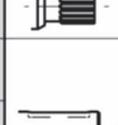
Code		Displacement [cm³]
GHD1	17	17,39
	27	27,53
	34	34,05
	43	43,47
	51	51,44
	71	71,01
GHD2	51	51,81
	56	56,52
	61	61,23
	71	71,83
	82	82,43
	90	90,67
	100	100,09
	110	110,69
	125	125,99
	150	150,72
XX		Other displacements on request

Code	Rotation
R	Clockwise rotation
L	Anti-clockwise rotation
B	Bi-directional rotation

Code	Type
GHD1	GHD1 Series Gear Pump
GHD2	GHD2 Series Gear Pump

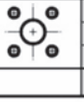
Code	Flange design	
R14		Rectangle flange, center ring Ø 95, spacing screw 140 x 190
R15		Square flange, centre ring Ø 90 spacing screw 155 x 155
S02		SAE A 2 aperture
S03		SAE B 2 aperture
S04		SAE C 2 aperture
S06		SAE C 2 + 4 aperture
I02		ISO, centre ring Ø 50
F03		Square flance, centre ring Ø 125 spacing screw Ø 160
Z		Special design

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

Code	Drive shaft design	
D13		Spline SAE B 13T
D14		Spline SAE C 14T
D15		Spline SAE BB 15T
D18		Spline DIN 5462 A8x32x36x6
D19		Spline ČSN 28x1,5
D25		Spline ČSN 014942 D-6x28x34e9x7
D26		Spline ČSN 38x1,5
D27		Spline DIN 5480 WA 35x2x16x9g
V17		Cylindric SAE B, Ø 22,22 Key 6,4x6,4x25,4
V18		Cylindric SAE BB, Ø 25,4 Key 6,4x6,4x31,8
V19		Cylindric SAE C, Ø 31,7 Key 7,9x7,9x31,8
Z		Special design

Code	Special arrangements
-	No special arrangements
001	With front-end bearing
004	Without shaft seal
012	Rear and side input and output

Code	Sealing material
N	NBR
V	FKM (VITON)
H	HNBR

Code	Liquid inlet and outlet connection shape	
M09		Thread M 27x2
M12		Thread M 33x2
M15		Thread M 48x2
G04		Thread BSP G3/4
G05		Thread BSP G1
G06		Thread BSP G1 1/4
G07		Thread BSP G1 1/2
G09		Thread BSP G2
U05		Thread 1-1/16 - 12 UN
U07		Thread 1-5/16 - 12 UN
U08		Thread 1-5/8 - 12 UN
U09		Thread 1-7/8 - 12 UN
H09		Fitting ∅18; 4xM8 ∅55
H10		Fitting ∅25; 4xM8 ∅55
A02		Fitting SAE (SSS) 3/4´´
A03		Fitting SAE (SSS) 1´´
A04		Fitting SAE (SSS) 1´´ 1/4
A05		Fitting SAE (SSS) 1´´ 1/2
A06		Fitting SAE (SSS) 2´´
E02		Fitting SAE (SSM) 3/4´´
E03		Fitting SAE (SSM) 1´´
E04		Fitting SAE (SSM) 1´´ 1/4
E05		Fitting SAE (SSM) 1´´ 1/2
E06		Fitting SAE (SSM) 2´´
K03		Fitting ∅18; 4xM8/∅40
K04		Fitting ∅26; 4xM10/∅51
K05		Fitting ∅18; 4xM8/∅55
K06		Fitting ∅25; 4xM8/∅55
S04		Fitting ∅46; 4xM12 - 78x78
S05		Fitting ∅22; 4xM10 - 48x48
S06		Fitting ∅30; 4xM10 - 48x48
Z		Special design

An example of designation for the GHD1 anti-clockwise pump with displacement of 27 cm³, SAE B flange, SAE B spline, BSP axial inlet and outlet and standard NBR seal without special arrangements: **GHD1-27L-S03D13-RG05G04-N**

ORDER KEY – MULTIPLE VERSION

GHD1 - 34 / 17 / 17 R – S02 D13 - S G05 G04 / G05 G04 / G05 G04 - N . 001

Code		Displacement [cm³]
GHD1	17	17,39
	27	27,53
	34	34,05
	43	43,47
	51	51,44
	71	71,01
GHD2	51	51,81
	56	56,52
	61	61,23
	71	71,83
	82	82,43
	90	90,67
	100	100,09
	110	110,69
	125	125,99
	150	150,72
XX		Other displacements on request

Code	Special arrangements
-	No special arrangements
001	With front-end bearing
004	Without shaft seal
012	Rear and side input and output

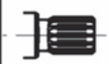
Code	Sealing material
N	NBR
V	FKM (VITON)
H	HNBR

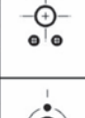
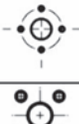
Code	Rotation
R	Clockwise rotation
L	Anti-clockwise rotation
B	Bi-directional rotation

Code	Location of inlets and outlets	
S		Side
C		Combination

Code	Type
GHD1	GHD1 Series Gear Pump
GHD2	GHD2 Series Gear Pump

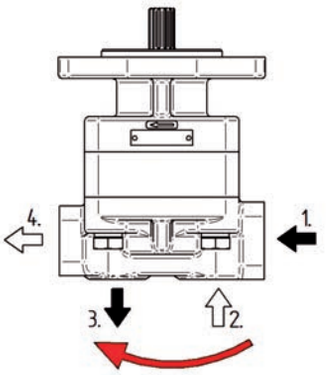
Code	Flange design	
R14		Rectangle flange, center ring Ø 95, spacing screw 140 x 190
R15		Square flange, centre ring Ø 90 spacing screw 155 x 155
S02		SAE A 2 aperture
S03		SAE B 2 aperture
S04		SAE C 2 aperture
S06		SAE C 2 + 4 aperture
I02		ISO, centre ring Ø 50
F03		Square flance, centre ring Ø 125 spacing screw Ø 160
Z		Special design

Code	Drive shaft design	
D13		Spline SAE B 13T
D14		Spline SAE C 14T
D15		Spline SAE BB 15T
D18		Spline DIN 5462 A8x32x36x6
D19		Spline ČSN 28x1,5
D25		Spline ČSN 014942 D-6x28x34e9x7
D26		Spline ČSN 38x1,5
D27		Spline DIN 5480 WA 35x2x16x9g
V17		Cylindric SAE B, Ø 22,22 Key 6,4x6,4x25,4
V18		Cylindric SAE BB, Ø 25,4 Key 6,4x6,4x31,8
V19		Cylindric SAE C, Ø 31,7 Key 7,9x7,9x31,8
Z		Special design

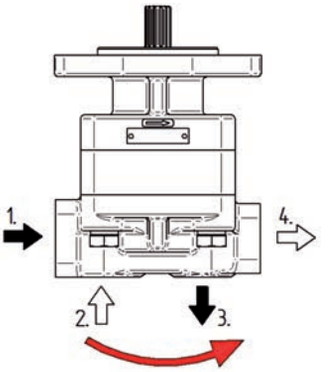
Code	Design of inlets and outlets connection shape	
M09		Thread M 27x2
M12		Thread M 33x2
M15		Thread M 48x2
G04		Thread BSP G3/4
G05		Thread BSP G1
G06		Thread BSP G1 1/4
G07		Thread BSP G1 1/2
G09		Thread BSP G2
U05		Thread 1-1/16 - 12 UN
U07		Thread 1-5/16 - 12 UN
U08		Thread 1-5/8 - 12 UN
U09		Thread 1-7/8 - 12 UN
H09		Fitting ∅18; 4xM8 ∅55
H10		Fitting ∅25; 4xM8 ∅55
A02		Fitting SAE (SSS) 3/4´´
A03		Fitting SAE (SSS) 1´´
A04		Fitting SAE (SSS) 1´´ 1/4
A05		Fitting SAE (SSS) 1´´ 1/2
A06		Fitting SAE (SSS) 2´´
E02		Fitting SAE (SSM) 3/4´´
E03		Fitting SAE (SSM) 1´´
E04		Fitting SAE (SSM) 1´´ 1/4
E05		Fitting SAE (SSM) 1´´ 1/2
E06		Fitting SAE (SSM) 2´´
K03		Fitting ∅18; 4xM8/∅40
K04		Fitting ∅26; 4xM10/∅51
K05		Fitting ∅18; 4xM8/∅55
K06		Fitting ∅25; 4xM8/∅55
S04		Fitting ∅46; 4xM12 - 78x78
S05		Fitting ∅22; 4xM10 - 48x48
S06		Fitting ∅30; 4xM10 - 48x48
N		Without inlet/outlet
Z		Special design

An example of designation for the GHD1 three-section clockwise pump with displacements of 34, 27 and 17 cm³, SAE B flange, SAE BB spline, BSP thread one common inlet and three outlets and FKM seal without special arrangements: **GHD1-34/27/17R-S03D15-SNG04/G06G04/NG04-V**

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



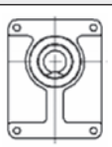
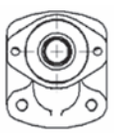
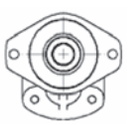
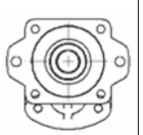
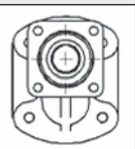
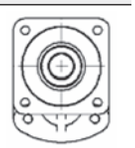
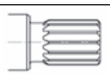
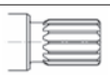
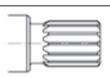
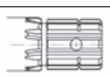
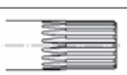
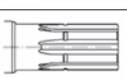
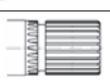
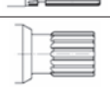
For clockwise and reverse gear pump,
in direction clockwise



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

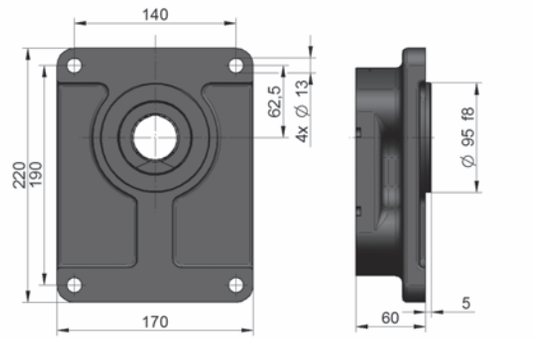
For. ex...: GHD1-43B-S03D13-C<u>G05</u> <u>G05</u> <u>G04</u> <u>G04</u> -N
1. 2. 3. 4.

COMBINATIONS OF FLANGES AND SHAFTS

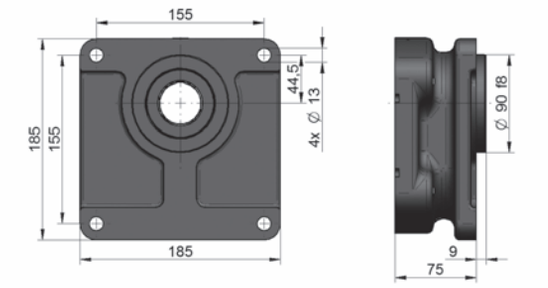
			FLANGE DESIGN							
			R14	R15	S02	S03	S04	S06	I02	F03
										
DRIVE SHAFT	D13				●	●				
	D14						●	●		
	D15				○	●	○	○		
	D18								●	
	D19		●							
	D25			●						
	D26		●							
	D27									●
	V17				●	●				
	V18				○	●	○	○		
	V19						●	●		

FLANGES DESIGN

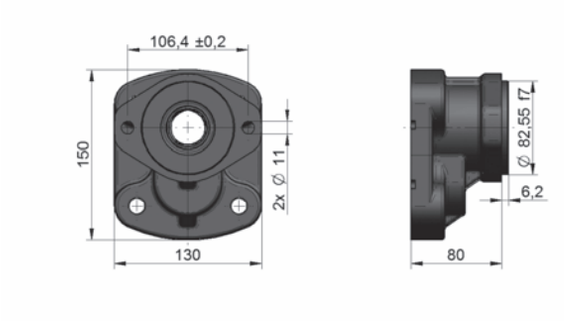
R14:



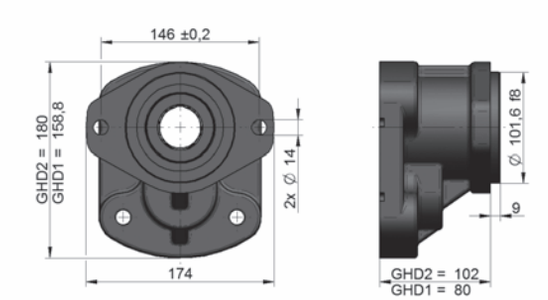
R15:



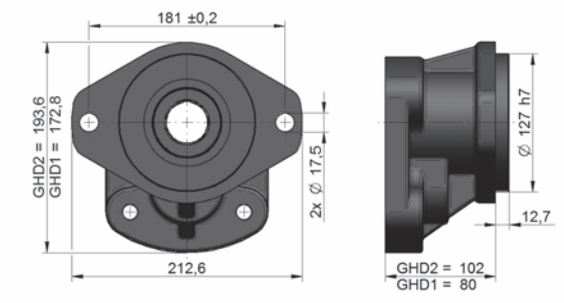
S02:



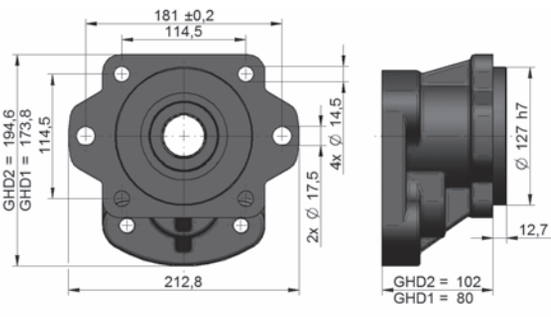
S03:



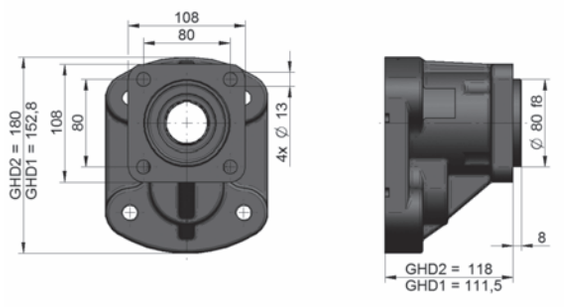
S04:



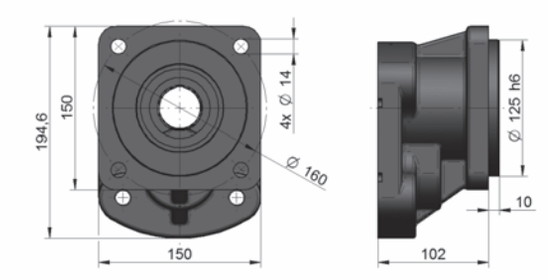
S06:



I01:

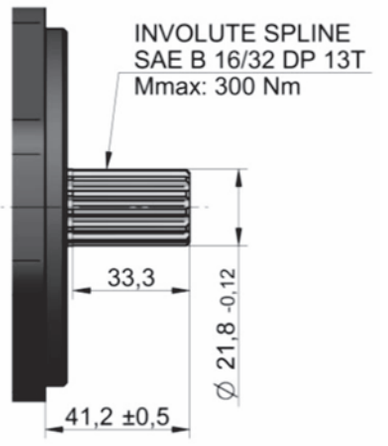


F03:

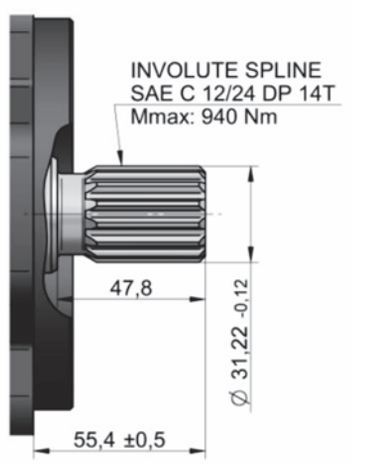


DRIVE SHAFTS

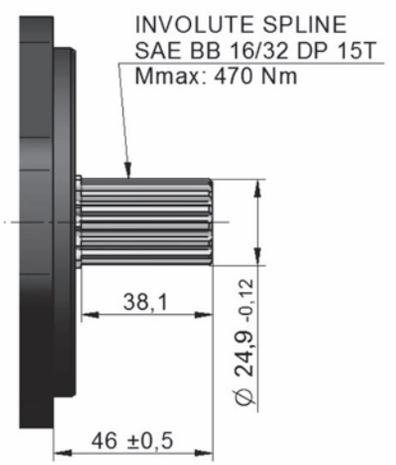
D13:



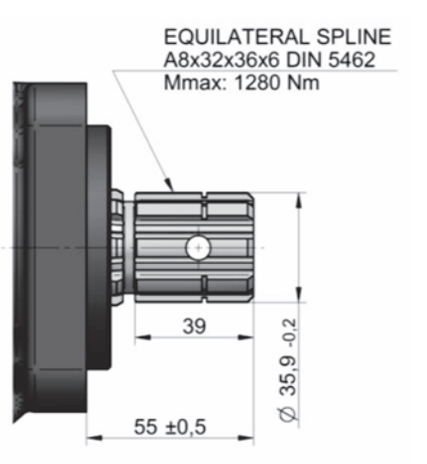
D14:



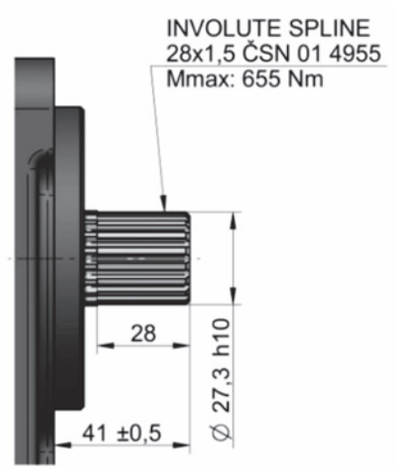
D15:



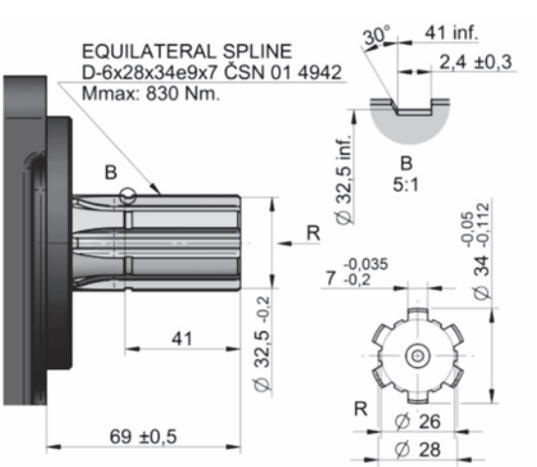
D18:



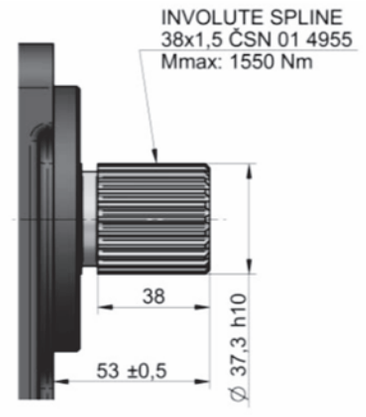
D19:



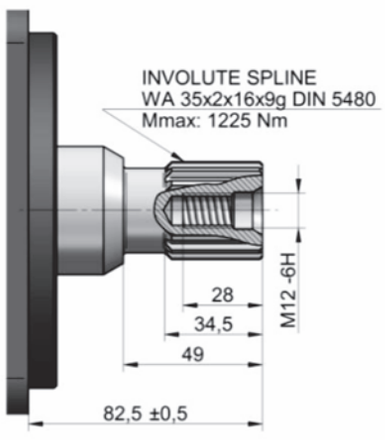
D25:



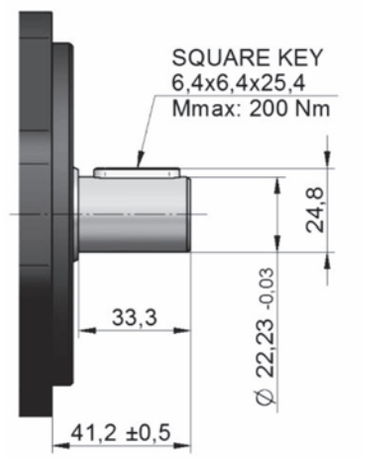
D26:



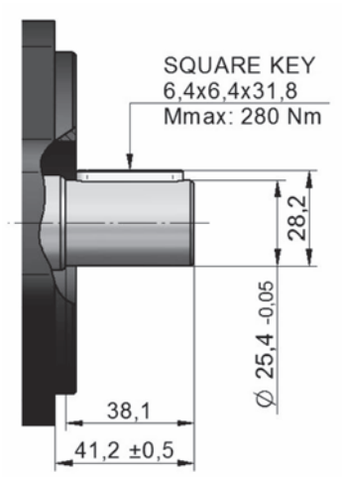
D27:



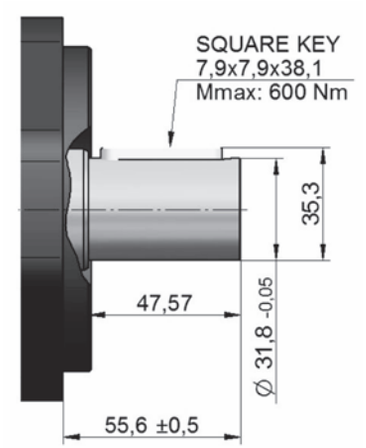
V17:



V18:

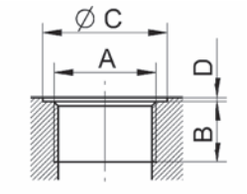


V19:



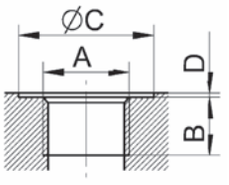
LIQUID INLET AND OUTLET CONNECTION

Metric thread according to ISO 6149



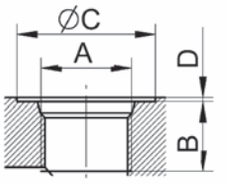
Displacement [cm³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
GHD1 17-51	M12	M 33x2	18	40	1	M09	M 27x2	16	33	1
GHD2 51-150	M15	M 48x2	22	56	1	M12	M 33x2	18	40	1

BSPP pipe thread according to ISO 228-1



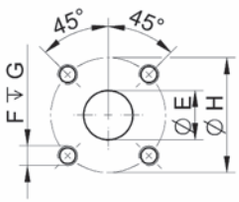
Displacement [cm³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
GHD1 17-34	G05	G 1"	18	45	1	G04	G 3/4"	16	39	1
GHD1 34-71	G06	G 1 1/4"	24	58	1	G05	G 1"	18	45	1
GHD2 51-71	G06	G 1 1/4"	24	58	1	G05	G 1"	18	45	1
GHD2 71-100	G07	G 1 1/2"	26	64	1	G06	G 1 1/4"	24	58	1
GHD2 100-150	G09	G 2"	32	78	1	G07	G 1 1/2"	26	64	1

UNF thread according to SAE



Displacement [cm³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
GHD1 17-34	U07	1-5/16-12UN	19	49	1	U05	1-1/16-12UN	19	41	1
GHD1 34-71	U08	1-5/8-12UN	19	58	1	U07	1-5/16-12UN	19	49	1
GHD2 51-80	U08	1-5/8-12UN	19	58	1	U07	1-5/16-12UN	19	49	1
GHD2 80-150	U09	1-7/8-12UN	19	65	1	U08	1-5/8-12UN	19	58	1

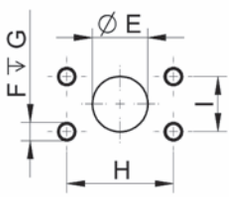
Flanged fittings according to DIN 8901/8902



Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
GHD1 17-51	H10	25	M8	16	55	H09	18	M8	16	55

Note: Usable only as side inputs

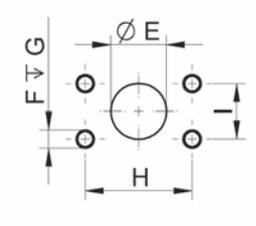
Flanged fittings according to SAE, metric thread



Displacement [cm³]	Code	Inlet					Code	Outlet				
		E	F	G	H	I		E	F	G	H	I
GHD1 17-34	E03	25.4	M10	22	52.4	26.2	E02	19.0	M10	22	47.6	22.2
GHD1 34-51	E04	30.5	M10	22	58.7	30.2	E03	25.4	M10	22	52.4	26.2
GHD2 51-71	E05	39.3	M12	27	69.8	35.7	E04	30.5	M10	22	58.7	30.2
GHD2 51-82	E05	39.3	M12	27	69.8	35.7	E04	30.5	M10	22	58.7	30.2
GHD2 82-150	E06	51.0	M12	27	77.8	42.9	E05	39.3	M12	27	69.8	35.7

Note: Usable only as side inputs

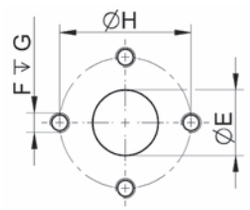
Flanged fittings according to SAE, UNC thread



Displacement [cm³]	Code	Inlet					Code	Outlet				
		E	F	G	H	I		E	F	G	H	I
GHD1 17-34	A03	25.4	3/8-16 UNC-2B	22.0	52.4	26.2	A02	19.0	3/8-16 UNC-2B	22.0	47.6	22.2
GHD1 34-71	A04	30.5	7/16-14 UNC-2B	28.5	58.7	30.2	A03	25.4	3/8-16 UNC-2B	22.0	52.4	26.2
GHD2 51-71	A05	39.3	1/2-13 UNC-2B	27.0	69.8	35.7	A04	30.5	7/16-14 UNC-2B	29.0	58.7	30.2
GHD2 51-82	A05	39.3	1/2-13 UNC-2B	27.0	69.8	35.7	A04	30.5	7/16-14 UNC-2B	29.0	58.7	30.2
GHD2 82-150	A06	51.0	1/2-13 UNC-2B	27.0	77.8	42.9	A05	39.3	1/2-13 UNC-2B	27.0	69.8	35.7

Note: Usable only as side inputs

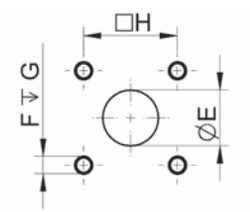
Flanged fittings – „cross"



Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
GHD1 17-51	K04	26	M10	18	51	K03	18	M8	18	40
GHD1 17-51	K06	25	M8	16	55	K05	18	M8	16	55

Note: Usable only as side inputs

Flanged fittings – „square"



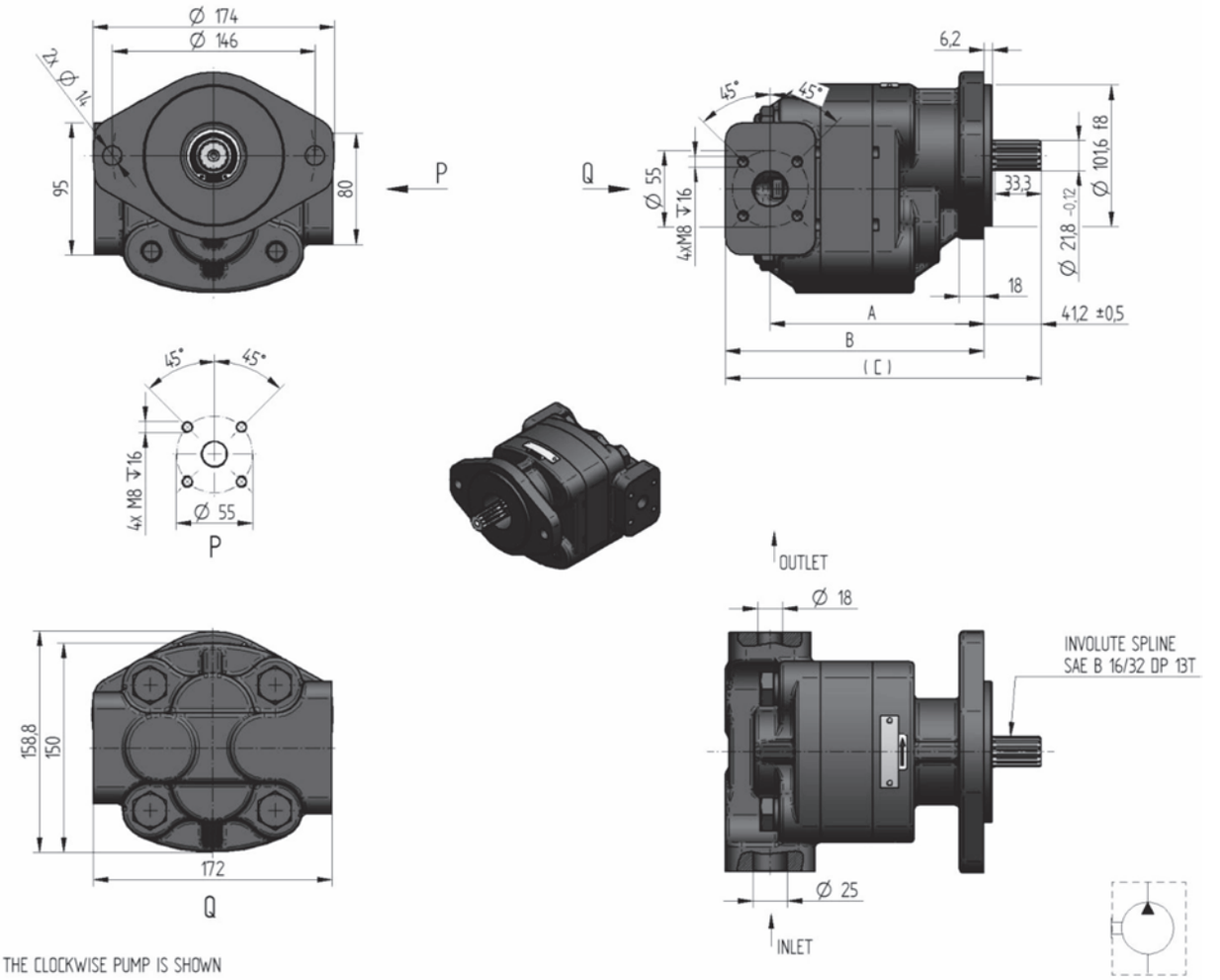
Displacement [cm³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
GHD1 17-51	S06	30	M10	22	48	S05	22	M10	22	48
GHD2 51-150	S04	46	M12	24	78	S04	46	M12	24	78

Note: S04 – usable only as side inputs
S05, S06 – usable as axial and side input at GHD2 series

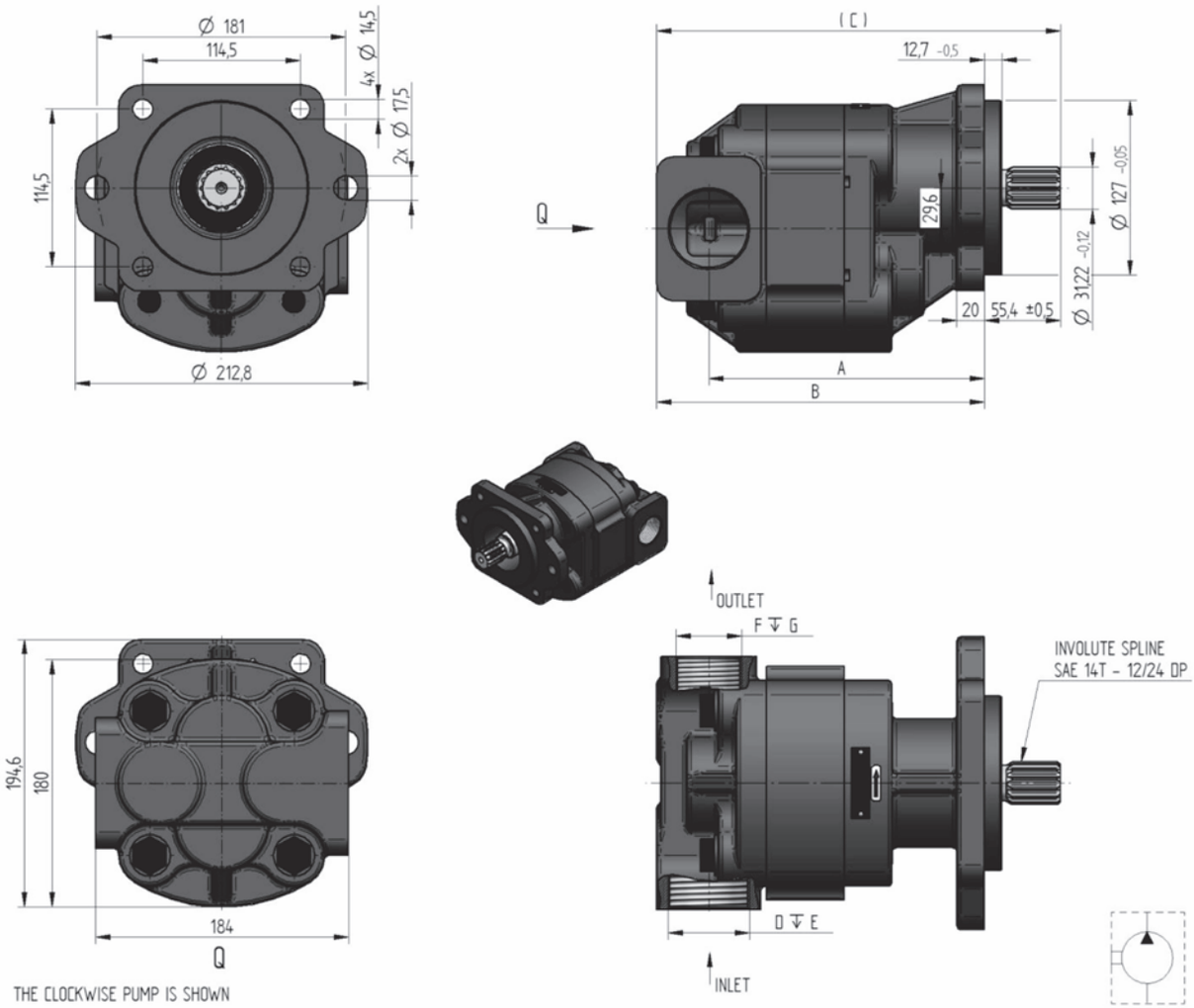
Drains:

Displacement [cm³]	Code	Outlet			
		A	B	C	D
all	M05	M 18 x 1.5	14	24	1
all	G03	G 1/2"	14	33	1

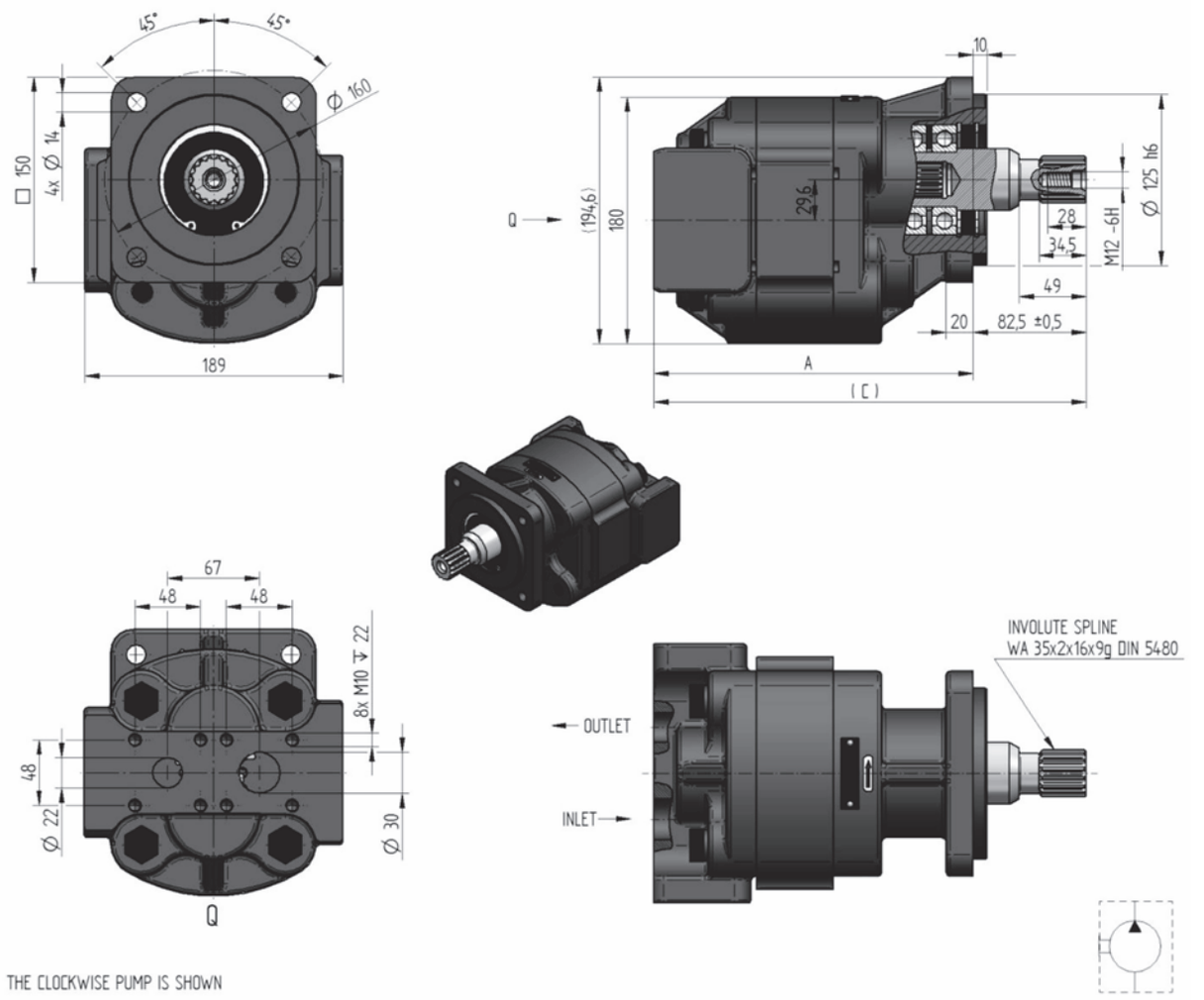
CATALOGUE SHETS OF GHD1 SERIES BASIC DESIGNS



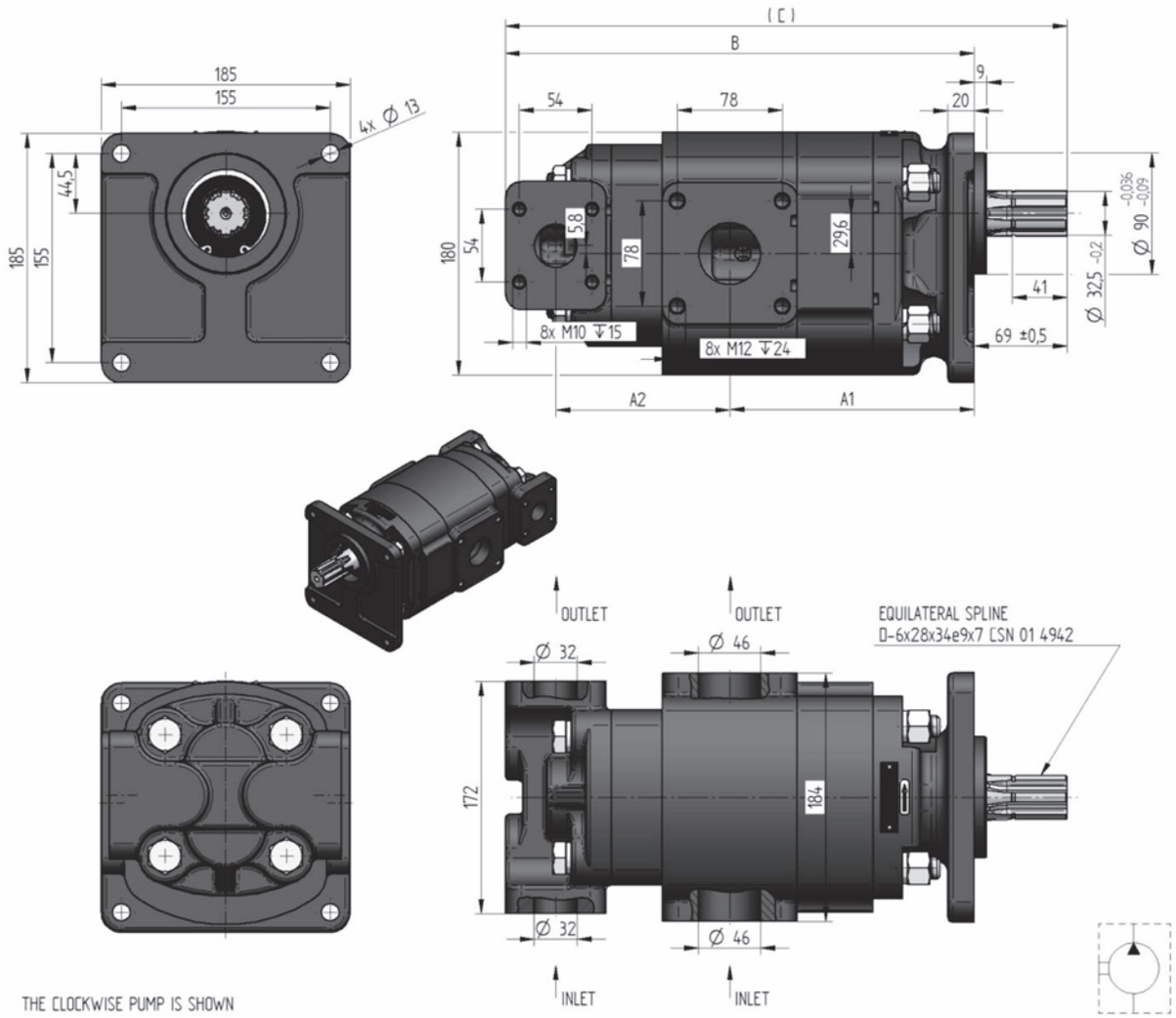
Order key	purch. code	direct. of rot.	displa-cement [cm³/1]	nom. press. [bar]	speed MIN. [min⁻¹]	speed MAX. [min⁻¹]	dimension A [mm]	dimension B [mm]	dimension C [mm]
GHD1-71R-S03D13-SH10H09-N		R	71	210	250	1 800	63.7	128.5	168.3
GHD1-71L-S03D13-SH10H09-N		L							
GHD1-51R-S03D13-SH10H09-N		R	51	260	350	2 600	59.0	119.1	158.9
GHD1-51L-S03D13-SH10H09-N		L							
GHD1-43R-S03D13-SH10H09-N		R	43	280	400	2 800	48.8	98.6	138.4
GHD1-43L-S03D13-SH10H09-N		L							
GHD1-34R-S03D13-SH10H09-N		R	34	300	400	3 000	45.6	92.3	132.1
GHD1-34L-S03D13-SH10H09-N		L							
GHD1-27R-S03D13-SH10H09-N		R	27	300	400	3 200	44.0	89.2	129.0
GHD1-27L-S03D13-SH10H09-N		L							
GHD1-17R-S03D13-SH10H09-N		R	17	300	400	3 200	42.5	86.0	125.8
GHD1-17L-S03D13-SH10H09-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]	G [mm]
GHD2-150R-S06D14-SG09G07-N		R	150	170	250	2000	222.0	260.0	315.4	G 2″	32	G 1 1/2″	26
GHD2-150L-S06D14-SG09G07-N		L											
GHD2-125R-S06D14-SG09G07-N		R	125	190	250	2400	211.5	249.5	304.9	G 2″	32	G 1 1/2″	26
GHD2-125L-S06D14-SG09G07-N		L											
GHD2-110R-S06D14-SG09G07-N		R	110	210	350	2600	205.0	243.0	298.4	G 2″	32	G 1 1/2″	26
GHD2-110L-S06D14-SG09G07-N		L											
GHD2-100R-S06D14-SG07G06-N		R	100	230	350	2700	200.5	238.5	293.9	G 1 1/2″	26	G 1 1/4″	24
GHD2-100L-S06D14-SG07G06-N		L											
GHD2-90R-S06D14-SG07G06-N		R	90	240	400	2800	196.5	234.5	289.9	G 1 1/2″	26	G 1 1/4″	24
GHD2-90L-S06D14-SG07G06-N		L											
GHD2-82R-S06D14-SG07G06-N		R	82	260	400	3000	193.0	231.0	286.4	G 1 1/2″	26	G 1 1/4″	24
GHD2-82L-S06D14-SG07G06-N		L											
GHD2-71R-S06D14-SG06G05-N		R	71	260	400	3200	188.5	226.5	281.9	G 1 1/4″	24	G 1″	18
GHD2-71L-S06D14-SG06G05-N		L											
GHD2-61R-S06D14-SG06G05-N		R	61	270	400	3200	184.0	222.0	277.4	G 1 1/4″	24	G 1″	18
GHD2-61L-S06D14-SG06G05-N		L											
GHD2-56R-S06D14-SG06G05-N		R	56	280	400	3200	182.0	220.0	275.4	G 1 1/4″	24	G 1″	18
GHD2-56L-S06D14-SG06G05-N		L											
GHD2-51R-S06D14-SG06G05-N		R	51	280	400	3200	180.0	218.0	273.4	G 1 1/4″	24	G 1″	18
GHD2-51L-S06D14-SG06G05-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 C [mm]
GHD2-150R-F03D27-RS06S05-N.001		R	150	170	250	2000	255.0	337.5
GHD2-150L-F03D27-RS06S05-N.001		L						
GHD2-125R-F03D27-RS06S05-N.001		R	125	190	250	2400	244.5	327.0
GHD2-125L-F03D27-RS06S05-N.001		L						
GHD2-110R-F03D27-RS06S05-N.001		R	110	210	350	2600	238.0	320.5
GHD2-110L-F03D27-RS06S05-N.001		L						
GHD2-100R-F03D27-RS06S05-N.001		R	100	230	350	2700	233.5	316.0
GHD2-100L-F03D27-RS06S05-N.001		L						
GHD2-90R-F03D27-RS06S05-N.001		R	90	240	400	2800	229.5	312.0
GHD2-90L-F03D27-RS06S05-N.001		L						
GHD2-82R-F03D27-RS06S05-N.001		R	82	260	400	3000	226.0	308.5
GHD2-82L-F03D27-RS06S05-N.001		L						
GHD2-71R-F03D27-RS06S05-N.001		R	71	260	400	3200	221.5	304.0
GHD2-71L-F03D27-RS06S05-N.001		L						
GHD2-61R-F03D27-RS06S05-N.001		R	61	270	400	3200	217.0	299.5
GHD2-61L-F03D27-RS06S05-N.001		L						
GHD2-56R-F03D27-RS06S05-N.001		R	56	280	400	3200	215.0	297.5
GHD2-56L-F03D27-RS06S05-N.001		L						
GHD2-51R-F03D27-RS06S05-N.001		R	51	280	400	3200	213.0	295.5
GHD2-51L-F03D27-RS06S05-N.001		L						



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]
GHD2-100/GHD1-51R-R15D25-SS04S04/S07S07-N		R	100/51	230/260	350	2 600	181.5	141.0	360.0	429.0
GHD2-100/GHD1-51L-R15D25-SS04S04/S07S07-N		L								

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