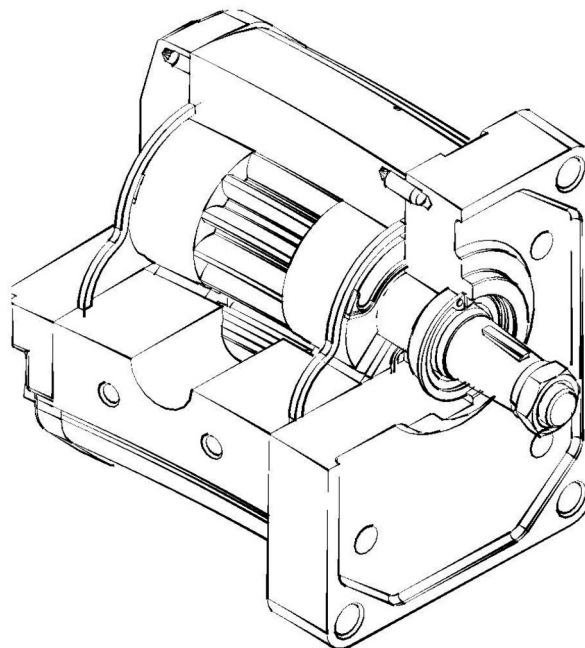


Displacement from 10 to 100 ccm
Pressure up to 290 bar
Speed from 350 to 3200 RPM

GEAR PUMPS
Q2

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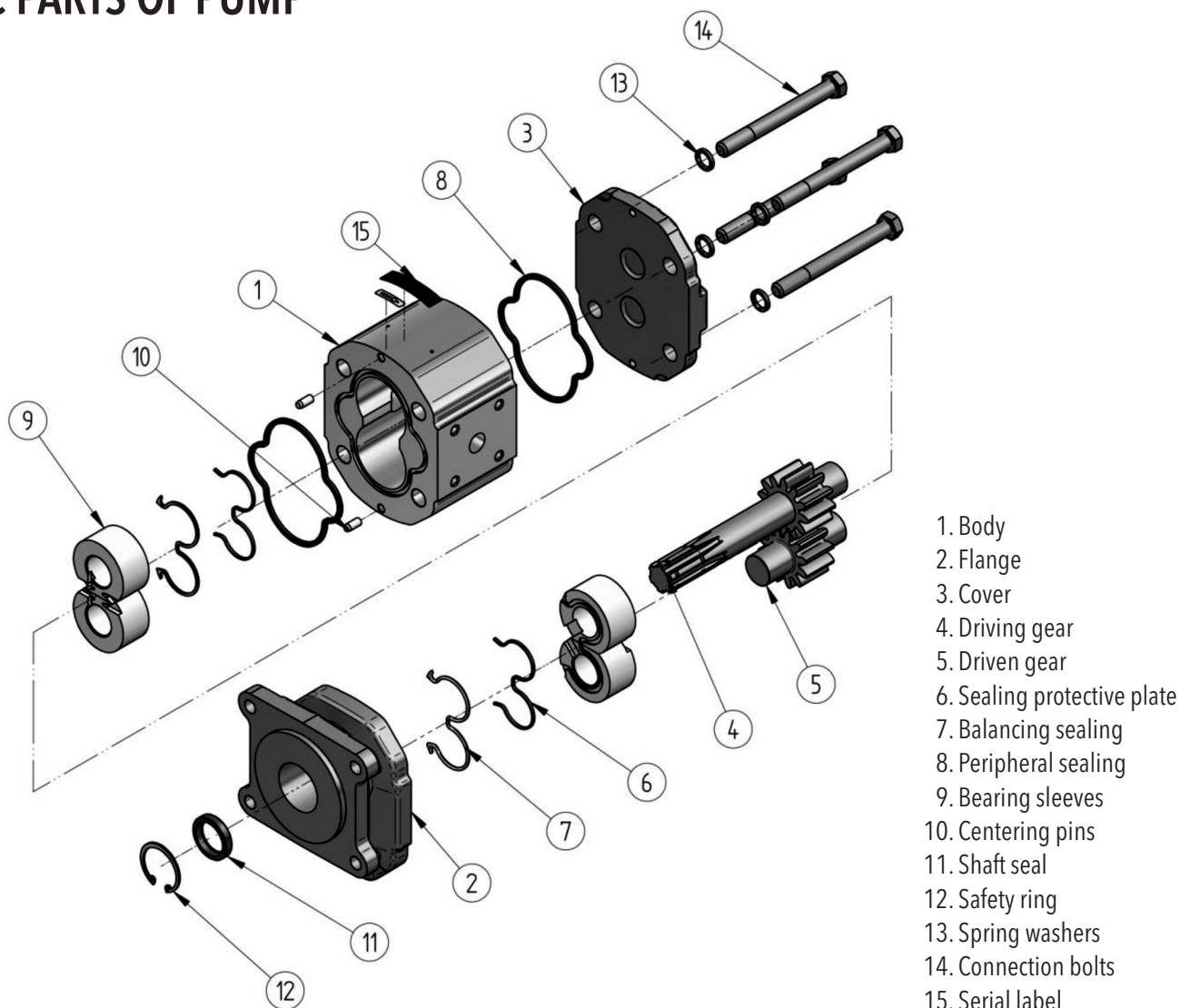
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DESCRIPTION

- Q2 line pumps are particularly designed to be used in mobile hydraulic systems of agricultural and road building machines as well as in advanced hydraulic systems of material handling devices. The geometric volume size range of this line is $V_g = 10$ to $100 \text{ cm}^3/\text{rev}$.
- The pumps are characterized by simple construction with a hydraulic pressure balance, compact dimensions and a wide range of types and connections. The flange and the pump cover are made of grey cast iron, the body of a section bar made of a heavy duty aluminium alloy. The gear wheels with 10 teeth made of heavy duty steel are optimized for low-noise applications. Q2 construction enables the pumps to be used at low revolutions at high pressure.
- Q2 pumps are produced in various designs with diverse drives, connecting flanges, fluid inlets and outlets. They comply with the ISO, SAE, UNI as well as other worldwide standards. They can be delivered in one-way or multiple designs. Furthermore, the pumps are also available in reversible version with internal or external drainage.

BASIC PARTS OF PUMP



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

PARAMETER TABLE

Nominal Size Parameters		Sym.	Unit	Q2 10.0	Q2 13.5	Q2 17.0	Q2 22.5	Q2 27.0	Q2 34.0
Actual displacement		V_g	[cm ³]	10.14	13.76	17.39	22.46	27.53	34.05
Rotation speed	nominal	n_n	[min ⁻¹]	1500	1500	1500	1500	1500	1500
	minimum	n_{min}	[min ⁻¹]	400	400	350	350	350	350
	maximum	n_{max}	[min ⁻¹]	3200	3200	3200	3200	3200	3000
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
	maximum	p_{1max}	[bar]	0.5	0.5	0.5	0.5	0.5	0.5
Pressure at outlet**	max. continuous	p_{2n}	[bar]	270	290	290	290	290	290
	maximum	p_{2max}	[bar]	290	310	310	320	310	310
	peak	p_3	[bar]	300	320	320	320	320	320
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	14.1	19.2	24.2	31.3	38.4	47.5
Maximum flow rate at n_{max} a p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	31.9	43.4	54.8	70.8	86.8	100.6
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	8.0	11.7	14.8	19.2	23.5	29.0
Maximum input power at n_{max} a p_{2max}		P_{max}	[kW]	18.4	26.7	33.8	43.7	53.5	62.1
Weight		m	[kg]	-	-	-	-	-	-

Nominal Size Parameters		Sym.	Unit	Q2 43.0	Q2 51.0	Q2 61.0	Q2 71.0	Q2 82.0	Q2 100.0
Actual displacement		V_g	[cm ³]	43.47	51.44	61.59	71.01	81.87	99.98
Rotation speed	nominal	n_n	[min ⁻¹]	1500	1500	1500	1500	1500	1500
	minimum	n_{min}	[min ⁻¹]	350	350	350	350	350	350
	maximum	n_{max}	[min ⁻¹]	2500	2500	2000	1800	1800	1800
Pressure at inlet*	minimum	p_{1min}	[bar]	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
	maximum	p_{1max}	[bar]	0.5	0.5	0.5	0.5	0.5	0.5
Pressure at outlet**	max. continuous	p_{2n}	[bar]	280	270	250	230	200	180
	maximum	p_{2max}	[bar]	300	290	270	250	220	200
	peak	p_3	[bar]	310	300	280	260	230	210
Nominal flow rate (min.) at n_n and p_{2n}		Q_n	[dm ³ .min ⁻¹]	60.6	71.8	85.9	99.0	114.2	139.5
Maximum flow rate at n_{max} a p_{2max}		Q_{max}	[dm ³ .min ⁻¹]	119.9	131.7	145.6	153.9	161.3	177.3
Nominal input power (max.) at n_n and p_{2n}		P_n	[kW]	35.8	40.8	45.3	48.0	48.2	52.9
Maximum input power at n_{max} a p_{2max}		P_{max}	[kW]	71.6	76.0	78.2	76.6	70.6	70.6
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

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

V_g [cm³] pump displacement
 n [min⁻¹] rotation speed
 η_v [-] volumetric efficiency

Displacement
V_g

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

Torque
M_k

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

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

Input power
P

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

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:

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

$Q_{act.}$ [dm³ · min⁻¹] actual flow rate
 Q_{theor} [dm³ · 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

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

Filtration coefficient β_α

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

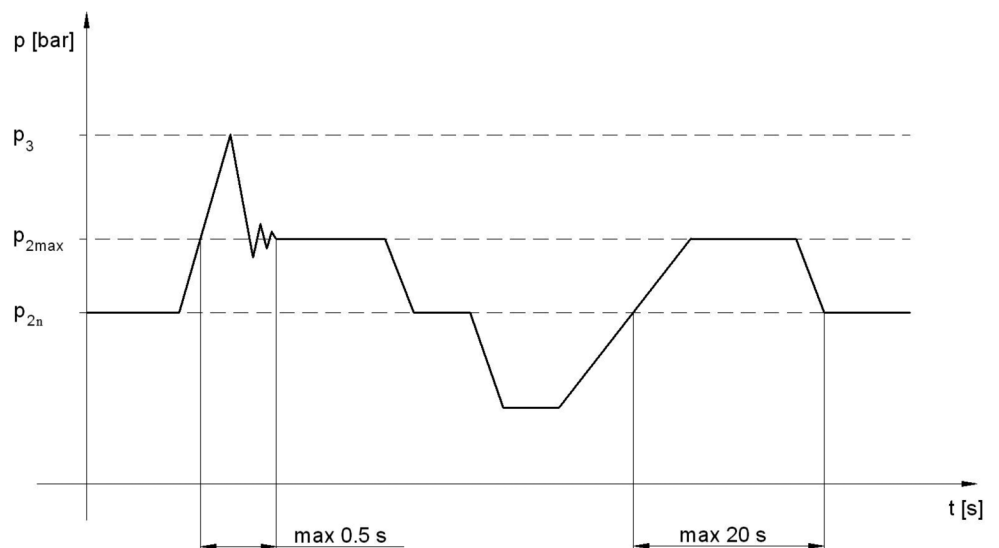
Liquid contamination class according to ISO 4406

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



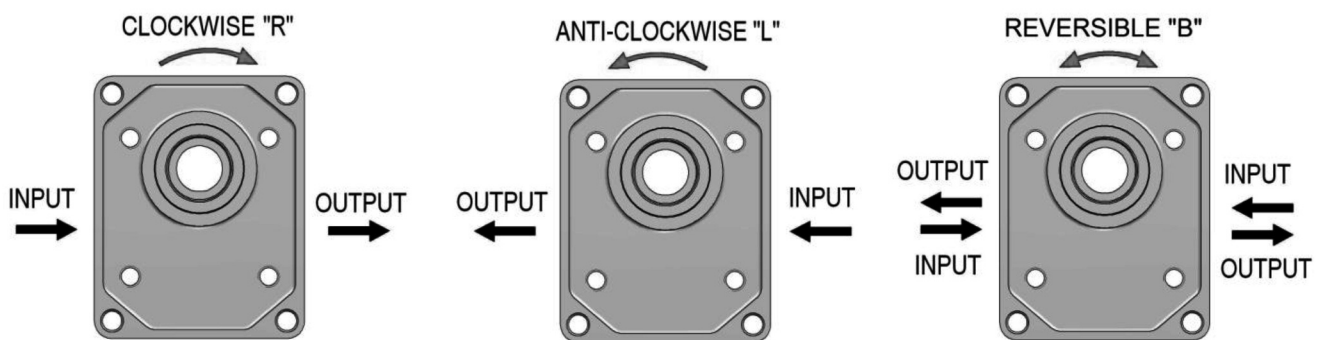
- p_{2n} **max. contin. pressure** Max. working pressure, at which the pump can be operated without time limitation.
- p_{2max} **max. pressure** Maximum pressure permissible for a short time, max. 20s.
- p_3 **peak pressure** Short-time pressure (fractions of a second) arising in case of a sudden change 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.
- The multiple version of gear pumps have same technical requirements like single gear pumps.
 - Maximal torque for multiple version is 340 Nm.
 - Maximal torque for clutch between sections in multiple version is 220 Nm.

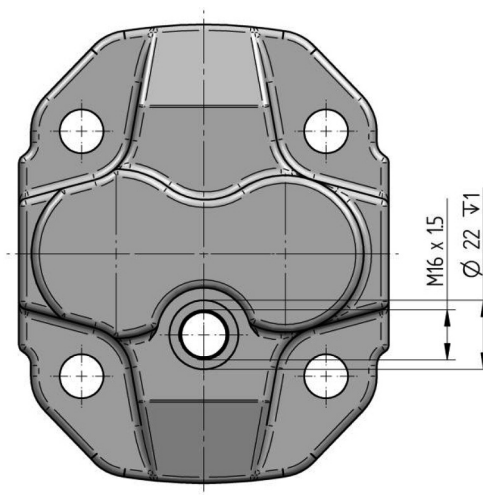
DIRECTION OF ROTATION

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

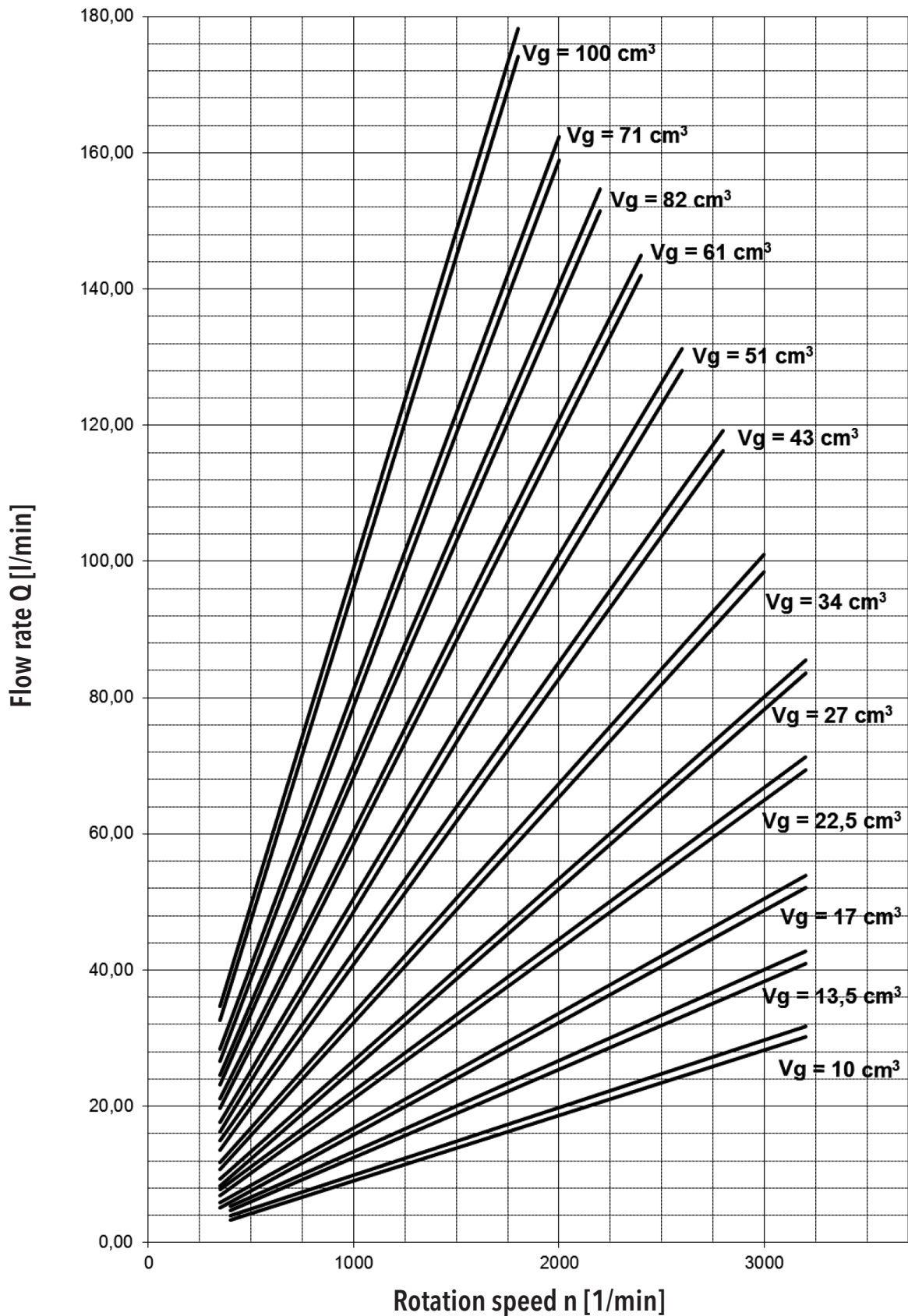


REVERSIBLE DESIGN

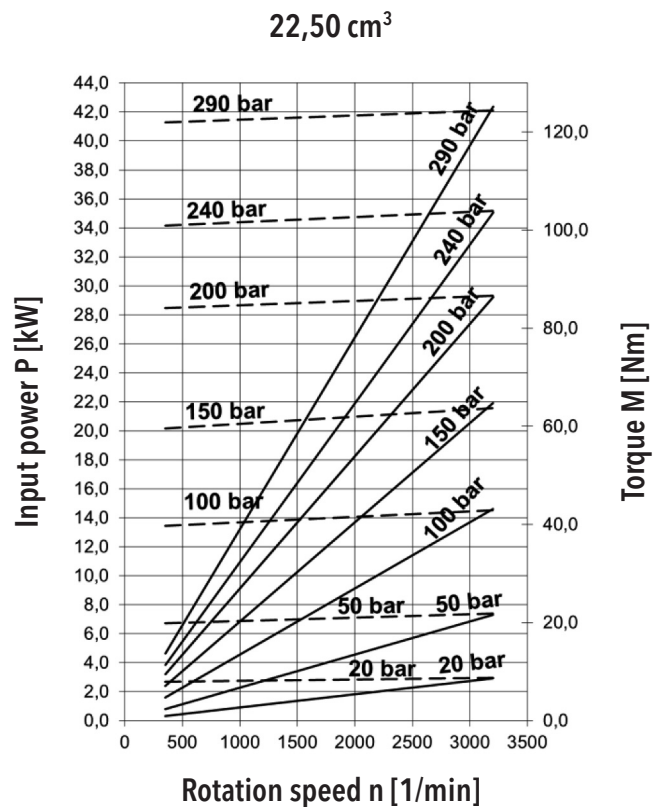
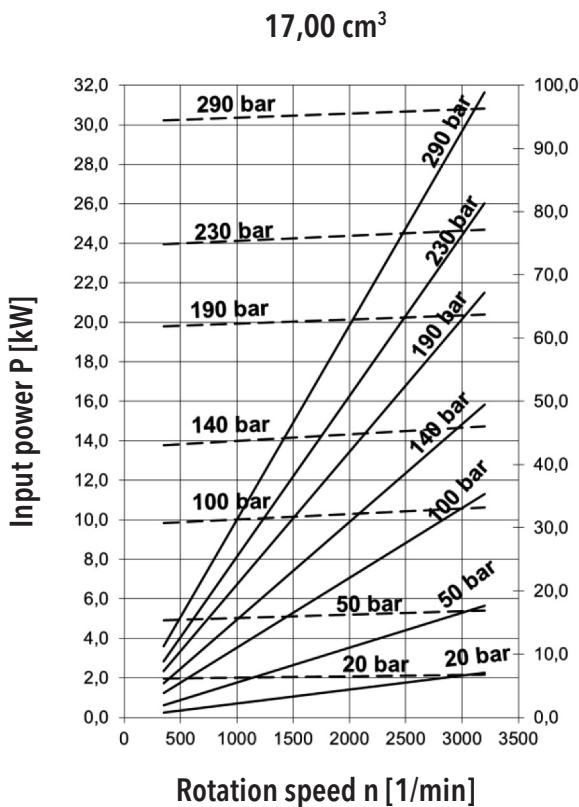
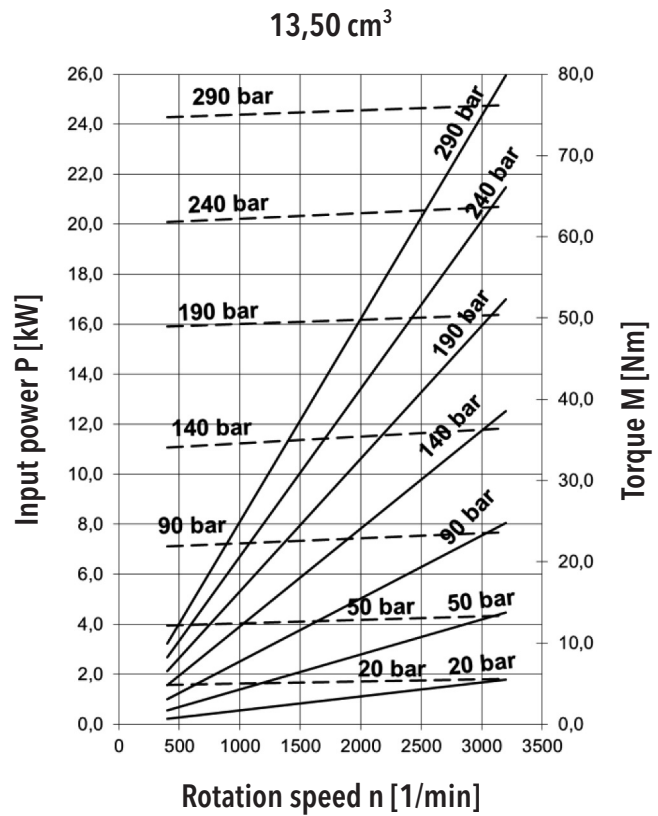
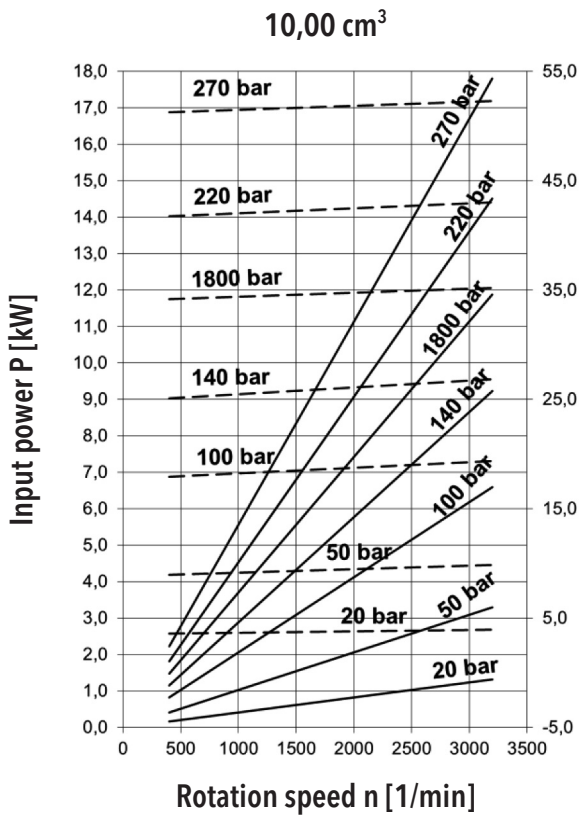
- The pumps with the possibility of bidirectional rotation have a different internal arrangement requiring drainage. Two types are used - internal and external. The internal drainage is always interconnected with the outlet by means of valves. The external drainage is solved by an orifice located in the cover opposite the driven gear.

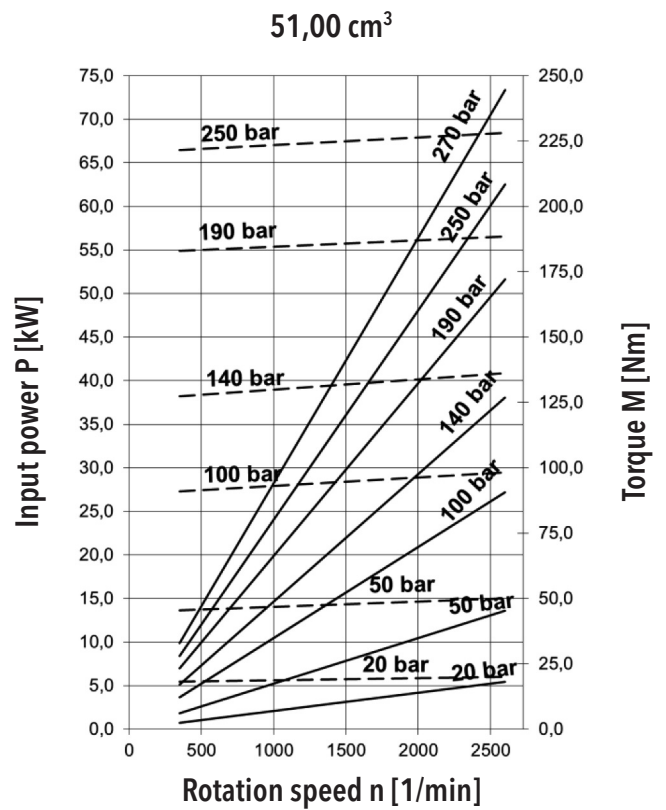
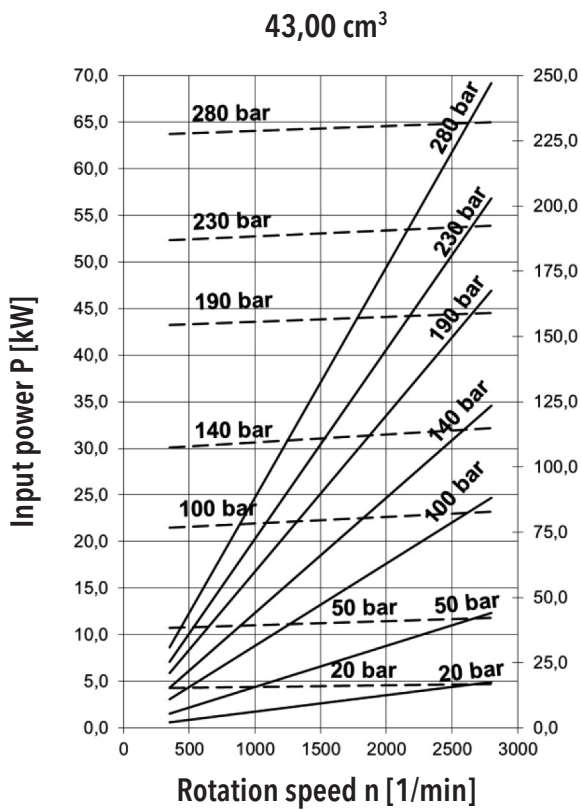
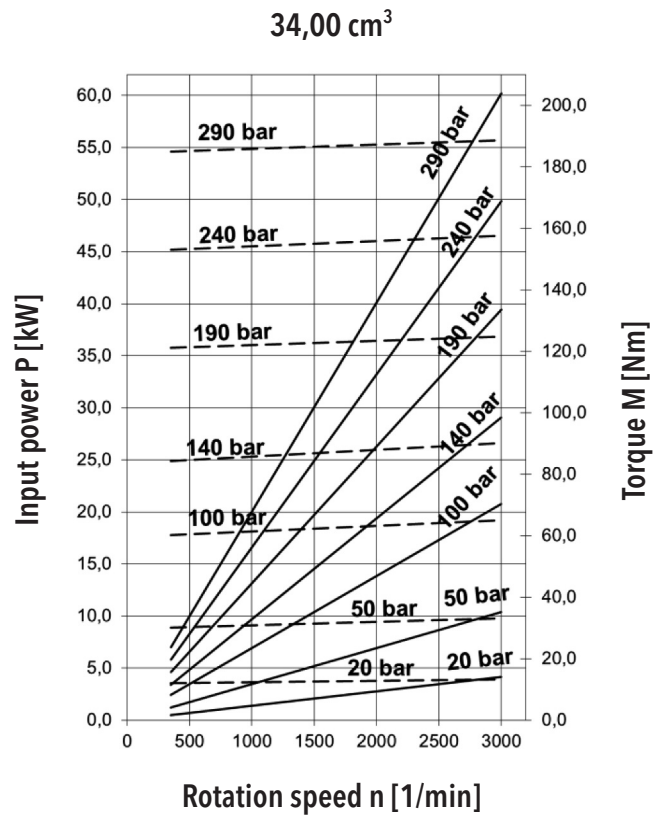
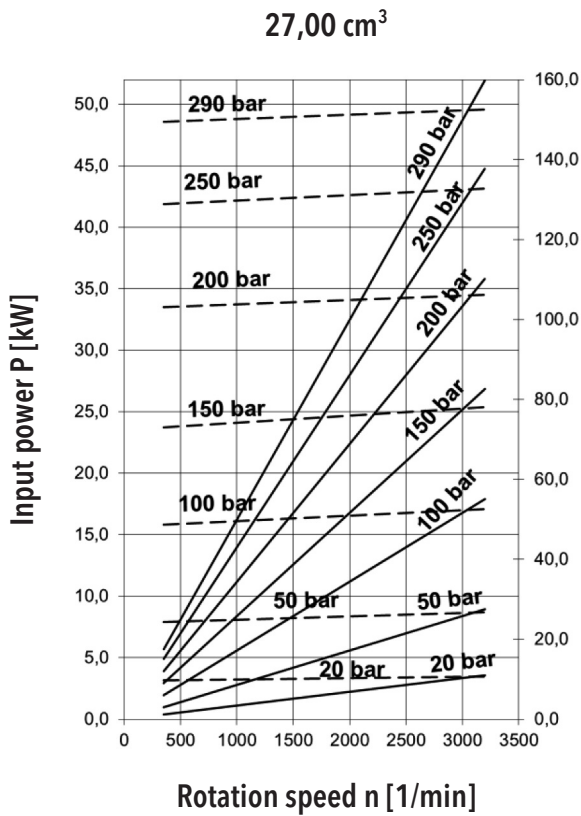


Q2 FLOW RATE AND POWER CURVES

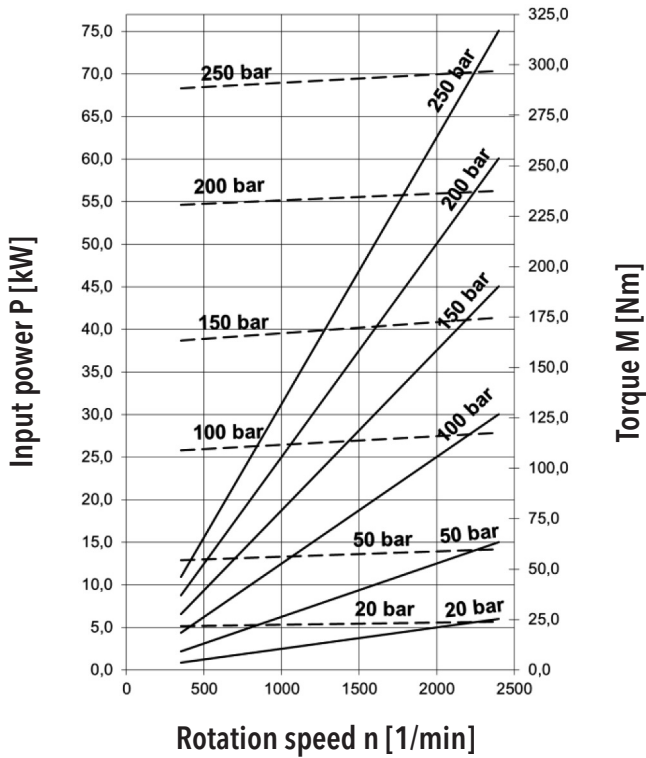


Above curves apply to ISO Vg 46 oil at temperature $t = 45^\circ\text{C}$.

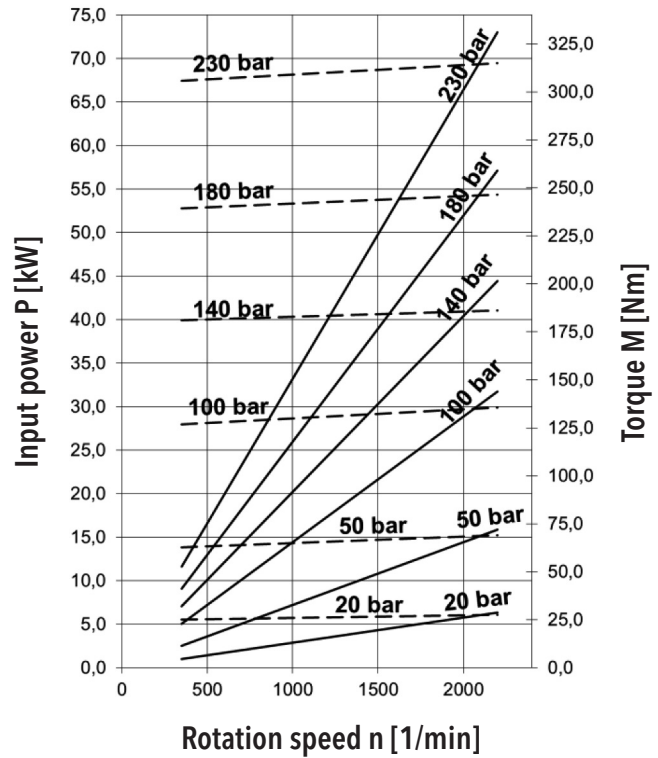




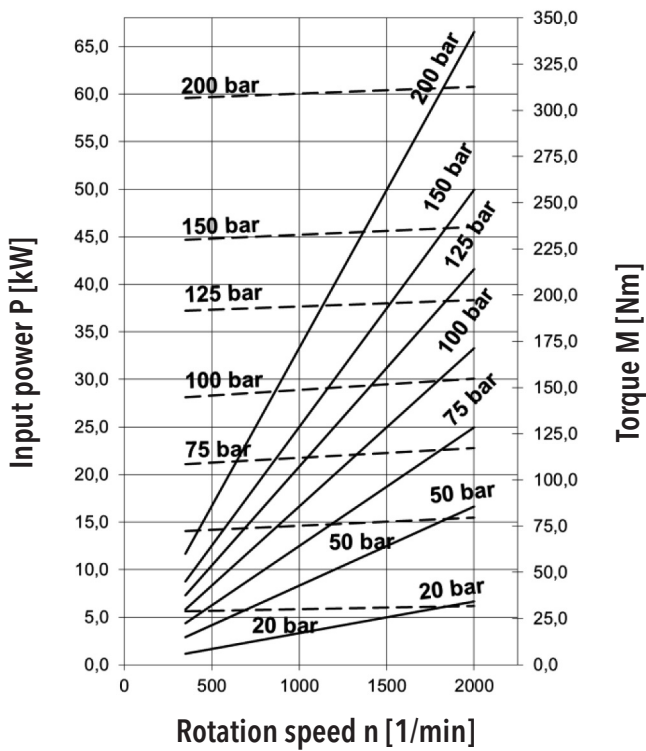
61,00 cm³



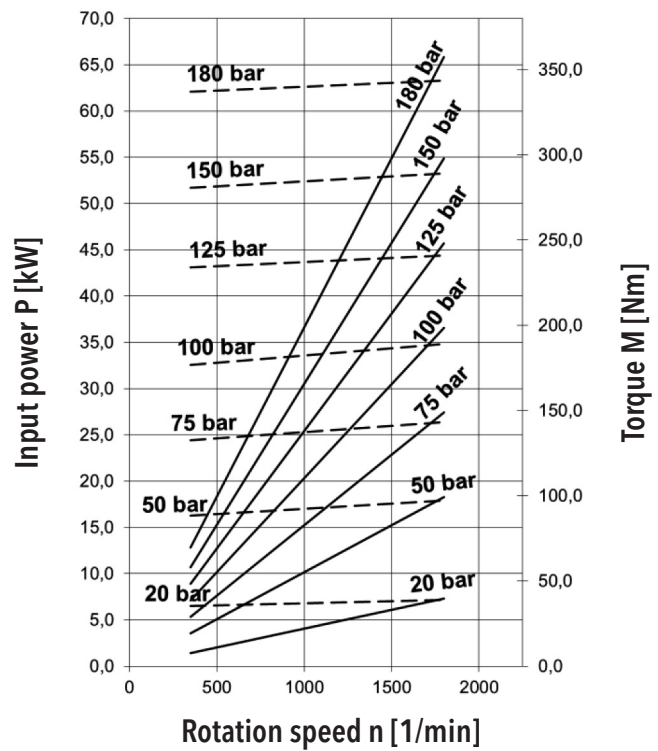
71,00 cm³



82,00 cm³



100,00 cm³



ORDER KEY - SINGLE VERSION

Q2 - 51 R - R11 C11 - S G05 G04 - N . 001

Code	Type
Q2	Q2 Series Gear Pump

Code	Displacement [cm ³]
10	10,14
13,5	13,76
17	17,39
22,5	22,46
27	27,53
34	34,05
43	43,47
51	51,44
61	61,59
71	71,01
82	81,87
100	99,98
XX	Other displacements on request

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

Code	Flange design
R11	Rectangular flange, centre ring $\varnothing 50,8$ Spacing screw 98,5 x 128
R12	Rectangular flange, UN II
R13	Rectangular flange, centre ring $\varnothing 105$ Spacing screw 102,5 x 145
S03	SAE B - 2 apertures
S05	SAE B - 4 apertures
I01	ISO, centre ring $\varnothing 80$, front end bearing
I02	ISO, centre ring $\varnothing 80$
U01	UNI
A11	trough - bolts
A12	trough - bolts
B01	Flange 4 apertures centre ring $\varnothing 90$ spacing 110 x 86
K02	Circular flange, centre ring $\varnothing 85$ 6 bolts, $\varnothing 105$
Z	Special desing

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

Code	Drive shaft desing
C11	Cone 1:8
C12	Cone 1:5
D13	Spline SEA 13T
D15	Spline SEA 15T
D16	Spline 25x1,5 CSN 014950
D17	Spline UNI 221
D18	Equilateral spline A8x32x36x6 DIN 5462
D19	Equilateral spline 6 grooves, $\varnothing 20$
D22	Involute spline ZV 25x1,5x16
K09	Cross coupling
V14	Cylindric SEA $\varnothing 22,225$
V15	Cylindric $\varnothing 20h7$
V16	Cylindric $\varnothing 25$
Z	Special desing

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

Code	Liquid inlet and outlet connection shape
M08	Thread M 27x1,5
M09	Thread M 27x2
M11	Thread M 33x1,5
M12	Thread M 33x2
M15	Thread M 48x2
G03	Thread BSP G1/2
G04	Thread BSP G3/4
G05	Thread BSP G1"
G06	Thread BSP G1 1/4
U04	Thread 7/8-14 UNF
U05	Thread 1-1/16-12 UN
U07	Thread 1-5/16-12 UN
U08	Thread 1-5/8-12 UN
H08	Flanged fitting 4xM8 / $\varnothing 40$
H09	Flanged fitting 4xM8/ $\varnothing 55$; $\varnothing 18$
H10	Flanged fitting 4xM8/ $\varnothing 55$; $\varnothing 25$
H11	Flanged fitting 4xM10 / $\varnothing 51$
A02	Flanged fitting SAE 3/4
A03	Flanged fitting SAE 1"
A04	Flanged fitting SAE 1 1/4
A05	Flanged fitting SAE 1 1/2
E02	Flanged fitting 3/4
E03	Flanged fitting 1"
E04	Flanged fitting 1 1/4
E05	Flanged fitting 1 1/2
K03	Flanged fitting 4xM8 / $\varnothing 40$; $\varnothing 18$
K04	Flanged fitting 4xM10/ $\varnothing 51$; $\varnothing 26$
K05	Flanged fitting 4xM8 / $\varnothing 55$; $\varnothing 18$
K06	Flanged fitting 4xM8 / $\varnothing 55$; $\varnothing 25$
S08	Flanged fitting 4xM10/22x54
S09	Flanged fitting 4xM10/22x54
S10	Flanged fitting 4xM8/22x46
S11	Flanged fitting 4xM8/22x46
Z	Special desing

Code	zvláštní úpravy
-	No special arrangements
001	Double lip shaft seal
004	Without shaft seal
006	Axial inlet, radial outlet
007	Rotated out of flange thread
008	With front-end bearing light design
013	Internal drain
014	Axial drain M18x1,5
015	Axial drain M16x1,5
050	Built-in relief valve
061	Radial inlet, radial+axial outlet

An example of designation for the Q2 clockwise pump with displacement of 51 cm³, rectangular flange, centre ring $\varnothing 50.8$ and spacing 98.5x128, cone 1:8 drive shaft, BSP side inlets and standard NBR seal without special arrangements: **Q2 - 51 R - R11C11 - SG05G04 - N**

ORDER KEY - MULTIPLE VERSION

Q2 - 43 / 43 R - R11 C11 - S G05 G04 / G05 G04 - N . 001

Code	typ
Q2	Q2 Series Gear Pump

Code	Displacement [cm ³]
10	10,14
13,5	13,76
17	17,39
22,5	22,46
27	27,53
34	34,05
43	43,47
51	51,44
61	61,59
71	71,01
82	81,87
100	99,98
XX	Other displacements on request

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

Code	Flange design	
R11		Rectangular flange, centre ring $\varnothing 50,8$ Spacing screw 98,5 x 128
R12		Rectangular flange, UN II
R13		Rectangular flange, centre ring $\varnothing 105$ Spacing screw 102,5 x 145
S03		SAE B - 2 apertures
S05		SAE B - 4 apertures
I01		ISO, centre ring $\varnothing 80$, front end bearing
I02		ISO, centre ring $\varnothing 80$
U01		UNI
A11		trough - bolts
A12		trough - bolts
B01		Flange 4 apertures centre ring $\varnothing 90$ spacing 110 x 86
K02		Circular flange centre ring $\varnothing 85$ 6 bolts, $\varnothing 105$
Z		Special desing

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

Code	Drive shaft desing	
C11		Cone 1:8
C12		Cone 1:5
D13		Spline SEA 13T
D15		Spline SEA 15T
D16		Spline 25x1,5 ČSN 014950
D17		Spline UNI 221
D18		Equilateral spline A8x32x36x6 DIN 5462
D19		Equilateral spline 6 grooves, $\varnothing 20$
D22		Involute spline ZV 25x1,5x16
K09		Cross coupling
V14		Cylindric SEA $\varnothing 22,225$
V15		Cylindric $\varnothing 20h7$
V16		Cylindric $\varnothing 25$
Z		Special desing

Code	zvláštní úpravy
-	No special arrangements
001	Double lip shaft seal
004	Without shaft seal
006	Axial inlet, radial outlet
007	Rotated out of flange thread
008	With front-end bearing light design
013	Internal drain
014	Axial drain M18x1,5
015	Axial drain M16x1,5
050	Built-in relief valve
061	Radial inlet, radial+axial outlet

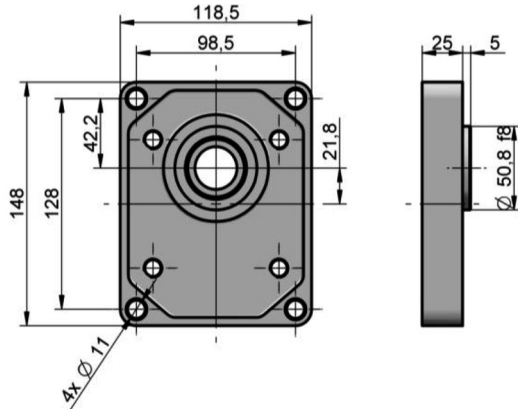
Code	Seal material	
N		NBR
V		FKM (VITON)
H		HNBR

Code	Liquid inlet and outlet connection shape	
M08		Thread M 27x1,5
M09		Thread M 27x2
M11		Thread M 33x1,5
M12		Thread M 33x2
M15		Thread M 48x2
G03		Thread BSP G1/2
G04		Thread BSP G3/4
G05		Thread BSP G1
G06		Thread BSP G1 1/4
U04		Thread 7/8-14 UNF
U05		Thread 1-1/16-12 UN
U07		Thread 1-5/16-12 UN
U08		Thread 1-5/8-12 UN
H08		Flanged fitting 4xM8 / $\varnothing 40$
H09		Flanged fitting 4xM8 / $\varnothing 55; \varnothing 18$
H10		Flanged fitting 4xM8 / $\varnothing 55; \varnothing 25$
H11		Flanged fitting 4xM10 / $\varnothing 51$
A02		Flanged fitting SAE 3/4
A03		Flanged fitting SAE 1"
A04		Flanged fitting SAE 1 1/4
A05		Flanged fitting SAE 1 1/2
E02		Flanged fitting 3/4
E03		Flanged fitting 1"
E04		Flanged fitting 1 1/4
E05		Flanged fitting 1 1/2
K03		Flanged fitting 4xM8 / $\varnothing 40; \varnothing 18$
K04		Flanged fitting 4xM10 / $\varnothing 51; \varnothing 26$
K05		Flanged fitting 4xM8 / $\varnothing 55; \varnothing 18$
K06		Flanged fitting 4xM8 / $\varnothing 55; \varnothing 25$
S08		Flanged fitting 4xM10 / 22x54
S09		Flanged fitting 4xM10 / 22x54
S10		Flanged fitting 4xM8 / 22x46
S11		Flanged fitting 4xM8 / 22x46
Z		Special desing

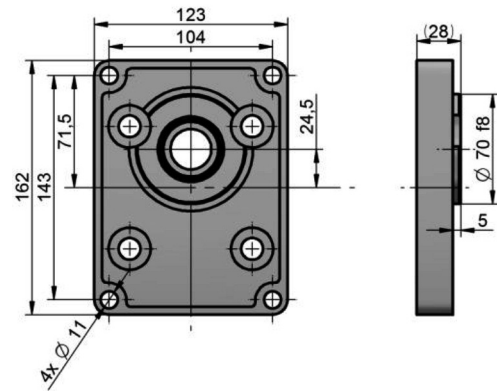
"An example of designation for the Q2 two-section clockwise pump with displacements of 43 and 43 cm³, rectangular flange, centre ring $\varnothing 50.8$ and spacing 98.5x128, cone 1:8 drive shaft, BSP side inlets and standard NBR seal without special arrangements: **Q2 - 43/43 R - R11C11 - SG05G04/G05G04 - N**

FLANGES DESIGN

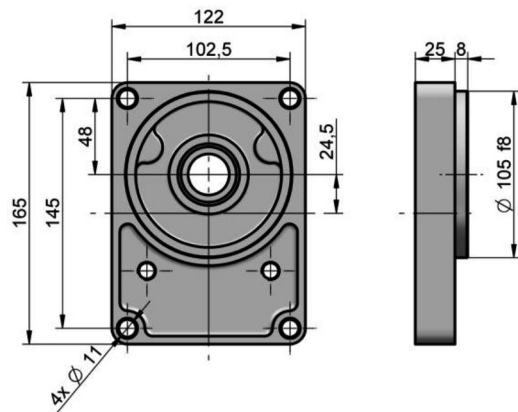
R11:



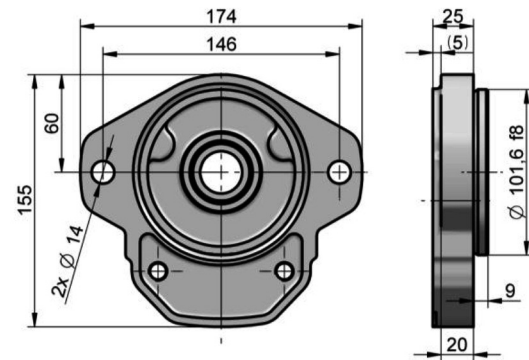
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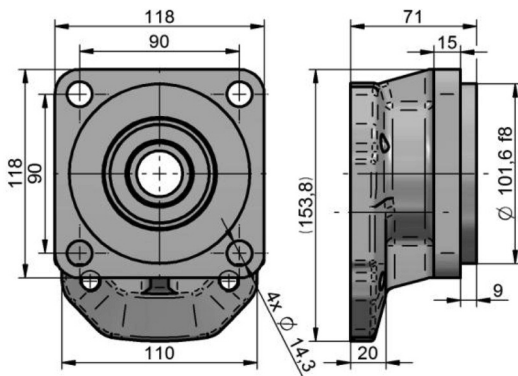
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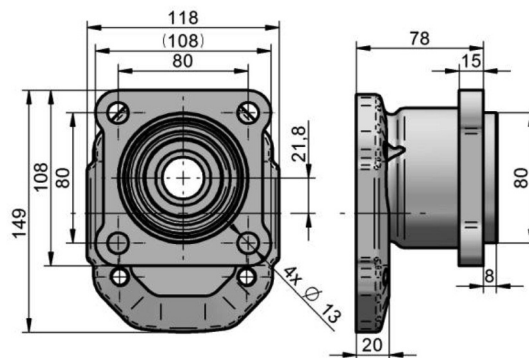
S03:



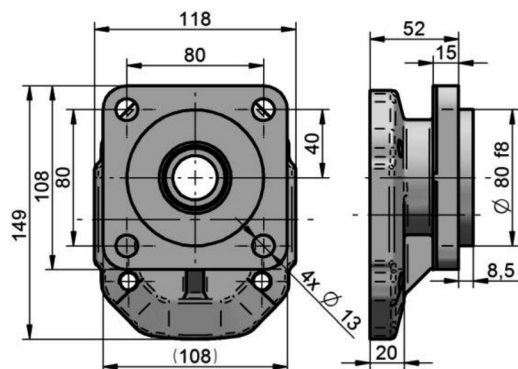
S05:



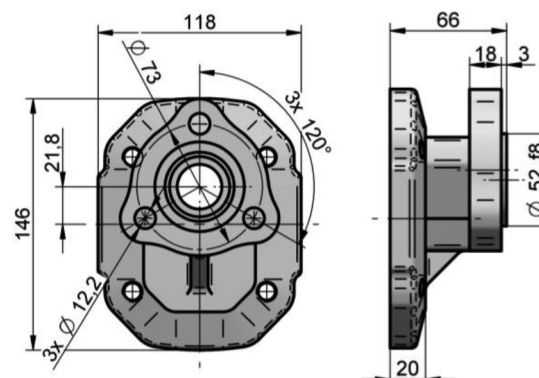
I01:



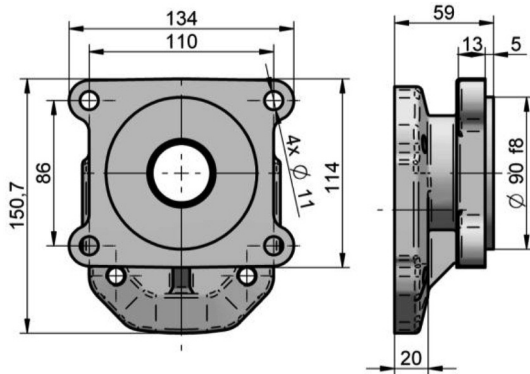
I02:



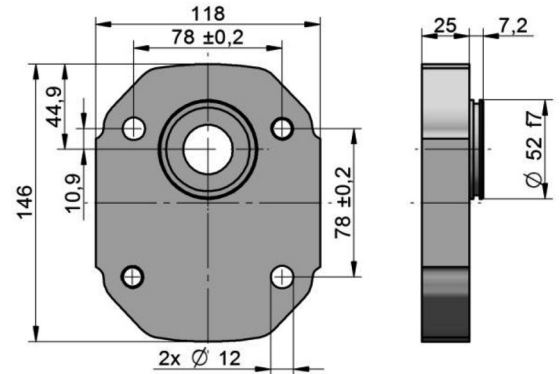
U01:



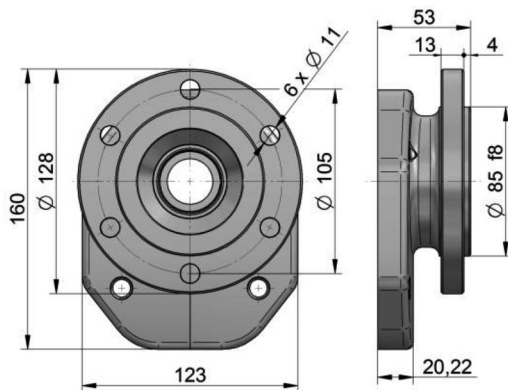
B01:



A11:

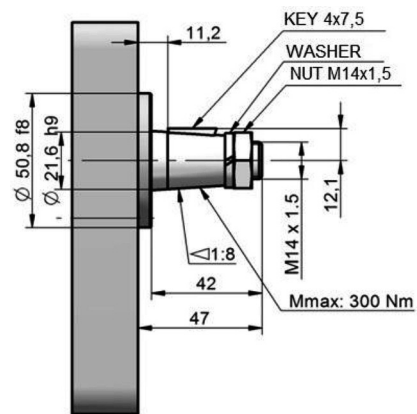


K02:

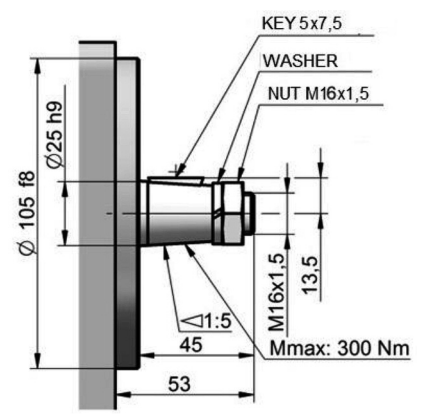


DRIVE SHAFTS

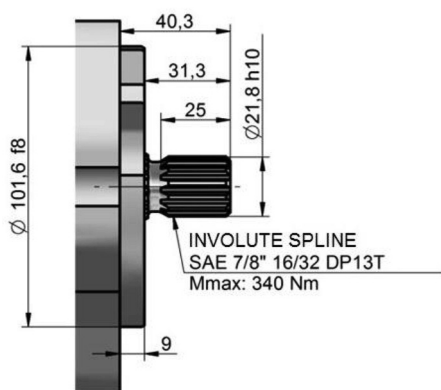
C11:



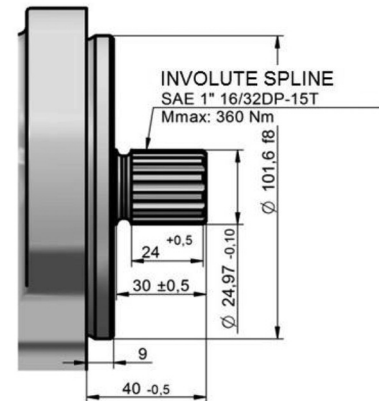
C12:



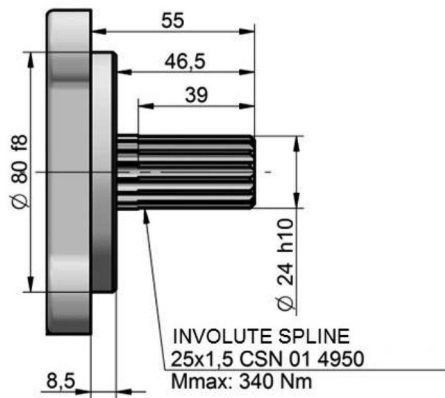
D13:



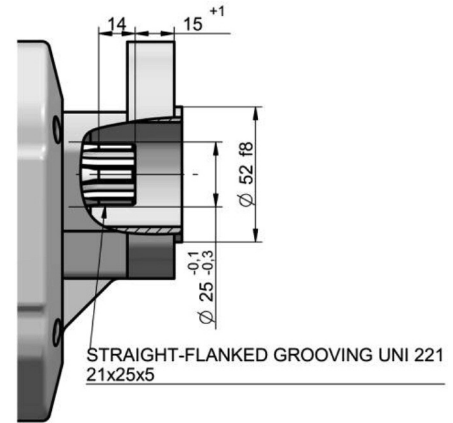
D15:



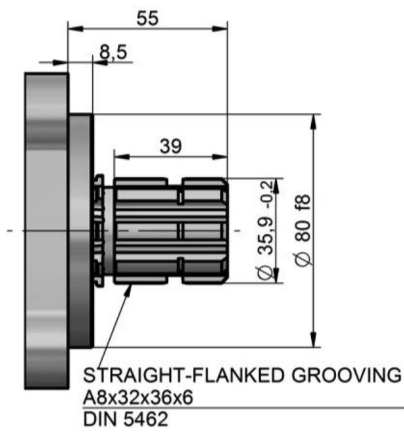
D16:



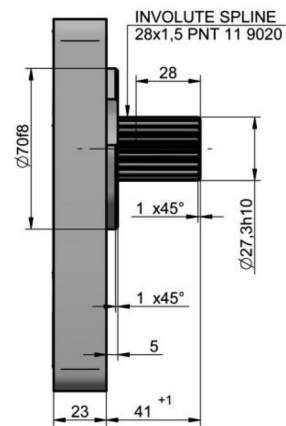
D17:



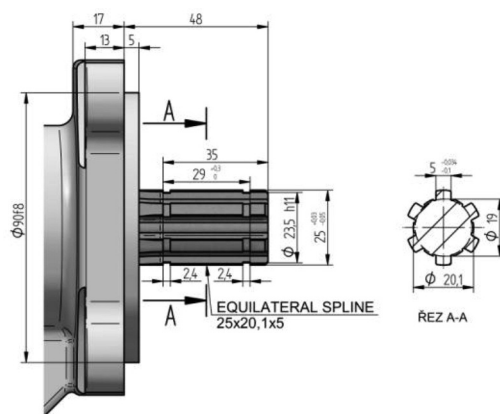
D18:



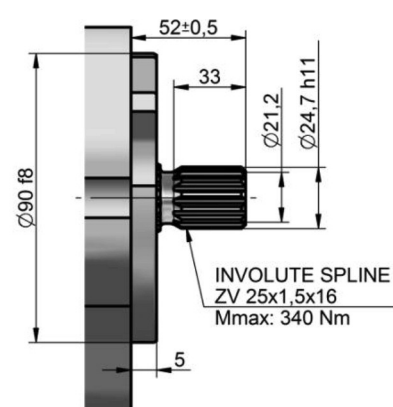
D19:



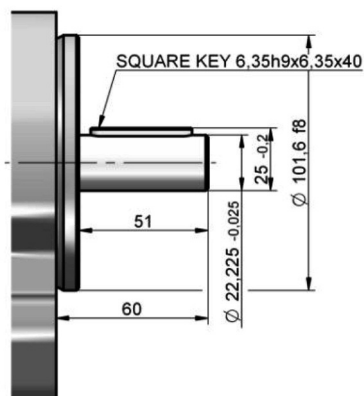
D20:



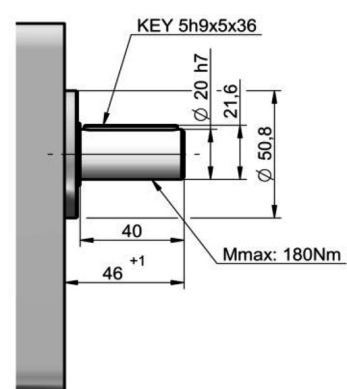
D22:



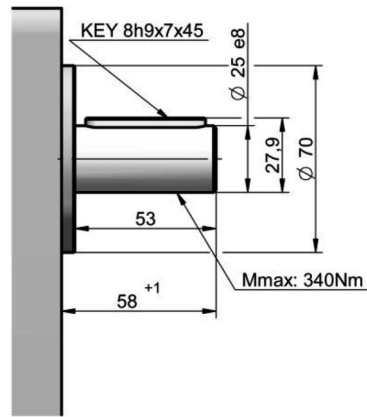
V14:



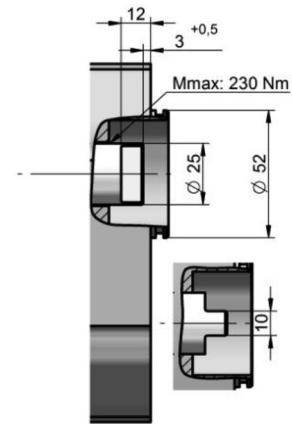
V15:



V16:

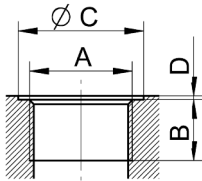


K09:



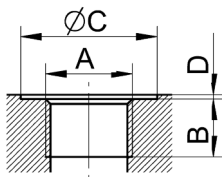
COMBINATIONS OF LIQUID INLETS AND OUTLETS

Metric thread according to ISO 6149



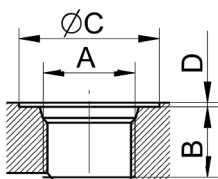
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 51 including	M12	M 33x2	18,0	40,0	1,0	M09	M 27x2	16,0	33,0	1,0
above 51	M15	M 48x2	18,0	56,0	1,0	M12	M 33x2	18,0	40,0	1,0
drain	M04	M 16x1,5	14,0	22,0	1,0					
drain	M05	M 18x1,5	14,0	24,0	1,0					

BSPP pipe thread according to ISO 228-1



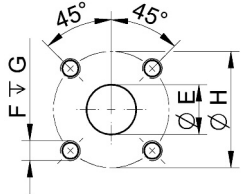
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 17 including	G03	G 1/2	14,0	33,0	1,0	G03	G 1/2	14,0	33,0	1,0
17-34 including	G04	G 3/4	16,0	39,0	1,0	G04	G 3/4	16,0	39,0	1,0
34-51 including	G05	G 1	18,0	45,0	1,0	G04	G 3/4	16,0	39,0	1,0
above 51	G06	G 1 1/4	18,0	57,0	1,0	G05	G 1	18,0	45,0	1,0

UNF thread according to SEA



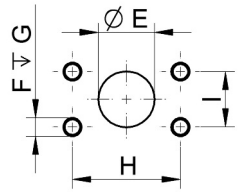
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		A	B	C	D		A	B	C	D
to 17 including	U05	1-1/16-12UNF	19,0	41,0	1,0	U04	7/8-14UNF	17,0	34,0	1,0
17-27 including	U07	1-5/16-12UNF	23,0	49,0	1,0	U05	1-1/16-12UNF	19,0	41,0	1,0
27-39 including	U07	1-5/16-12UNF	23,0	49,0	1,0	U07	1-5/16-12UNF	23,0	49,0	1,0
above 39	U08	1-5/8-12UN 2B	23,0	58,0	1,0	U07	1-5/16-12UNF	23,0	49,0	1,0

Flanged fittings according to DIN 8901/8902



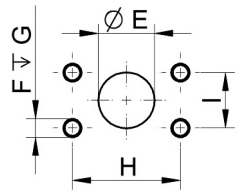
Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	H11	26,0	M 10	16,0	51,0	H08	18,0	M 8	16,0	40,0
	H10	25,0	M 8	16,0	55,0	H09	18,0	M 8	16,0	55,0

Flanged fittings according to SAE, metric thread



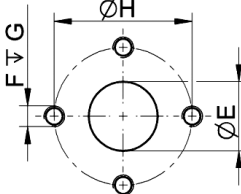
Displacement [cm ³]	Code	Inlet					Code	Outlet				
		E	F	G	H	I		E	F	G	H	I
to 61 including	E03	25,4	M 10	22,0	52,4	26,2	E02	19,0	M 10	22,0	47,6	22,2
above 61	E04	30,5	M 10	22,0	58,7	30,2	E03	25,4	M 10	22,0	52,4	26,2
above 61	E05	39,3	M 12	27,0	69,8	35,7	E04	30,5	M 10	22,0	58,7	30,2

Flanged fittings according to SAE, UNC thread



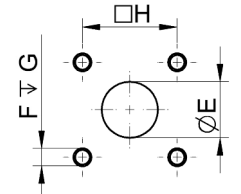
Displacement [cm ³]	Code	Inlet					Code	Outlet				
		E	F	G	H	I		E	F	G	H	I
to 61 including	A03	25,4	3/8-16-UMC	22,0	52,4	26,2	A02	19,0	3/8-16-UMC	22,0	47,6	22,2
above 61	A04	30,5	7/16-14-UMC	29,0	58,7	30,2	A03	25,4	3/8-16-UMC	22,0	52,4	26,2
above 61	A05	39,3	1/2-13-UMC	27,0	69,8	35,7	A04	30,5	7/16-14-UMC	29,0	58,7	30,2

Flanged fittings - „cross“



Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
all	K04	26,0	M 10	16,0	51,0	K03	18,0	M 8	16,0	40,0
	K06	25,0	M 8	16,0	55,0	K05	18,0	M 8	16,0	55,0

Flanged fittings - „square“

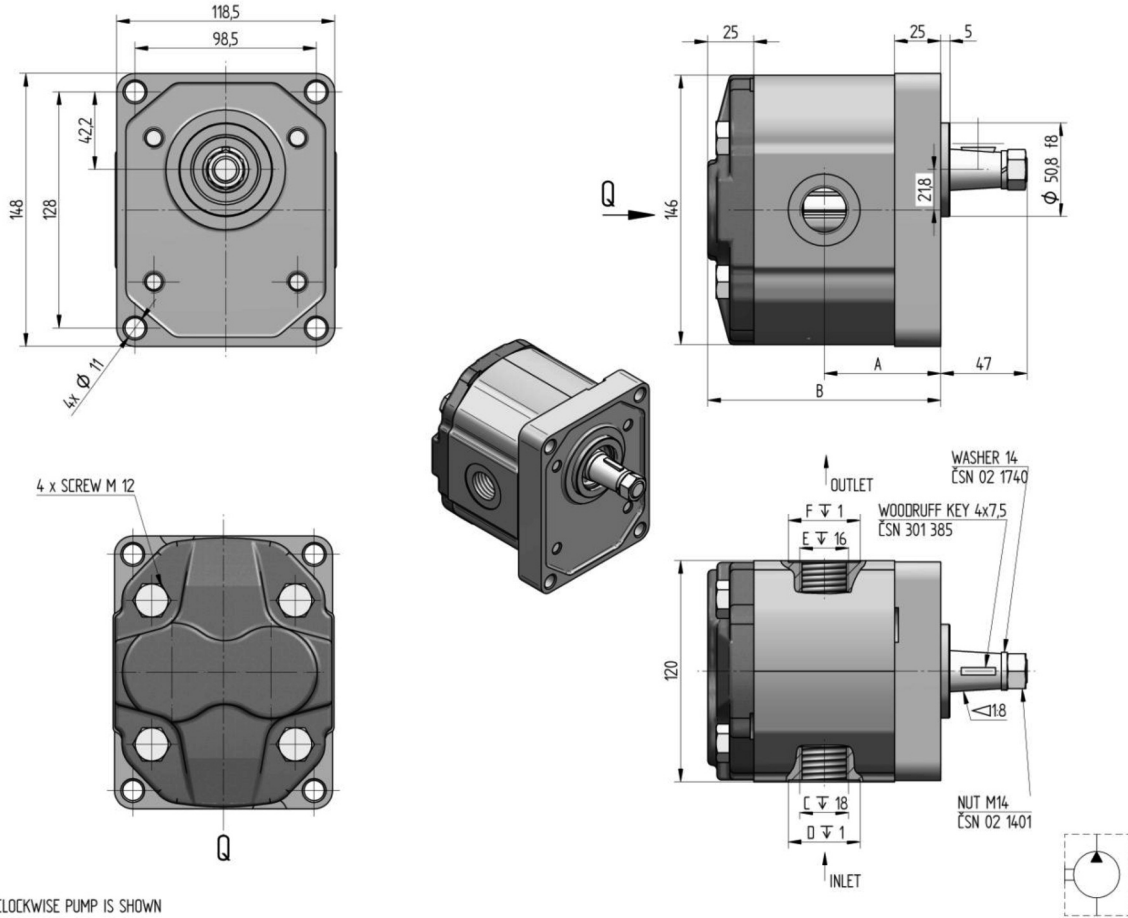


Displacement [cm ³]	Code	Inlet				Code	Outlet			
		E	F	G	H		E	F	G	H
to 43 including	S11	23,0	M 8	22,0	46,0	S10	16,0	M 8	22,0	46,0
above 43	S09	27,0	M 10	22,0	54,0	S08	19,0	M 10	22,0	54,0

Drain

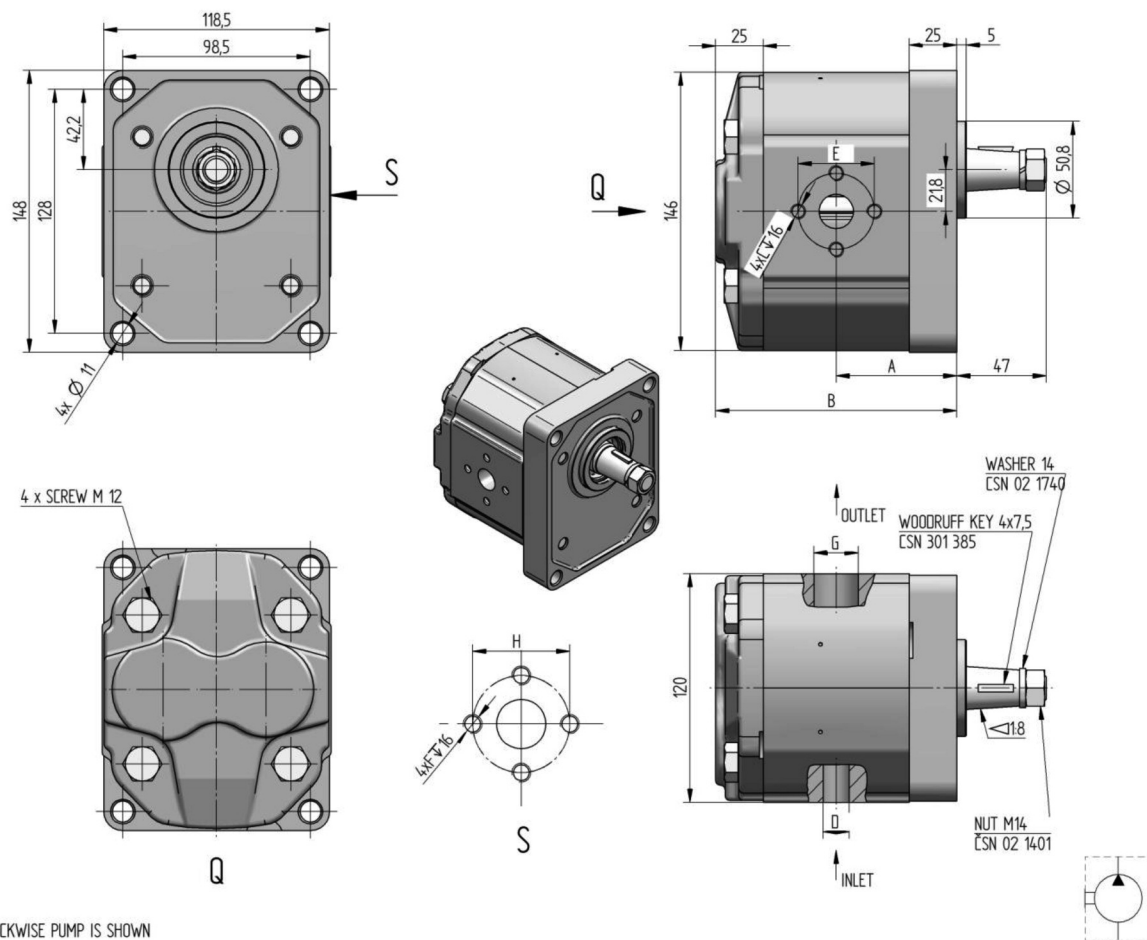
Displacement [cm ³]	Code	Outlet			
		A	B	C	D
all	M04	M 16x1,5	14,0	22,0	1,0
	M05	M 18x1,5	14,0	24,0	1,0

CATALOGUE SHETS OF Q2 SERIES BASIC DESIGNS



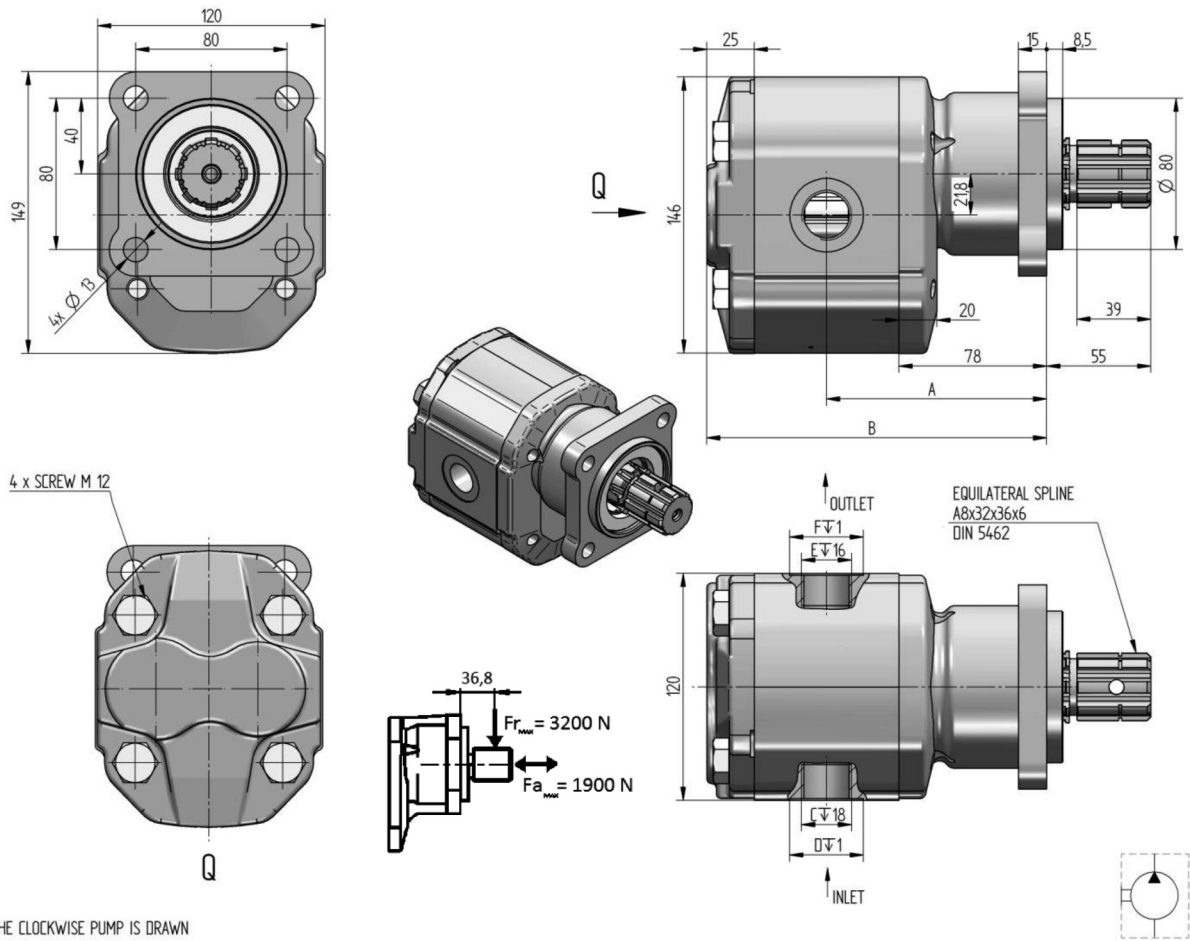
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]
Q2-100-R11C11-SG06G05-N		R	100	180	350	1800	86.25	172.5	G 1 1/4"	Ø 57	G 1"	Ø 45
Q2-100L-R11C11-SG06G05-N		L										
Q2-82R-R11C11-SG06G05-N		R	82	200	350	1800	80.00	160.0	G 1 1/4"	Ø 57	G 1"	Ø 45
Q2-82L-R11C11-SG06G05-N		L										
Q2-71R-R11C11-SG06G05-N		R	71	230	350	1800	76.25	152.5	G 1 1/4"	Ø 57	G 1"	Ø 45
Q2-71L-R11C11-SG06G05-N		L										
Q2-61R-R11C11-SG06G05-N		R	61	250	350	2000	73.00	146.0	G 1 1/4"	Ø 57	G 1"	Ø 45
Q2-61L-R11C11-SG06G05-N		L										
Q2-51R-R11C11-SG05G04-N		R	51	270	350	2500	69.50	139.0	G 1"	Ø 45	G 3/4"	Ø 39
Q2-51L-R11C11-SG05G04-N		L										
Q2-43R-R11C11-SG05G04-N		R	43	280	350	2500	66.75	133.5	G 1"	Ø 45	G 3/4"	Ø 39
Q2-43L-R11C11-SG05G04-N		L										
Q2-34R-R11C11-SG04G04-N		R	34	290	350	3000	63.50	127.0	G 3/4"	Ø 39	G 3/4"	Ø 39
Q2-34L-R11C11-SG04G04-N		L										
Q2-27R-R11C11-SG04G04-N		R	27	290	350	3200	61.25	122.5	G 3/4"	Ø 39	G 3/4"	Ø 39
Q2-27L-R11C11-SG04G04-N		L										
Q2-22.5R-R11C11-SG04G04-N		R	22.5	290	350	3200	59.50	119.0	G 3/4"	Ø 39	G 3/4"	Ø 39
Q2-22.5L-R11C11-SG04G04-N		L										
Q2-17R-R11C11-SG03G03-N		R	17	290	350	3200	57.75	115.5	G 1/2"	Ø 33	G 1/2"	Ø 33
Q2-17L-R11C11-SG03G03-N		L										
Q2-13.5R-R11C11-SG03G03-N		R	13.5	290	400	3200	56.50	113.0	G 1/2"	Ø 33	G 1/2"	Ø 33
Q2-13.5L-R11C11-SG03G03-N		L										
Q2-10R-R11C11-SG03G03-N		R	10	270	400	3200	55.25	110.5	G 1/2"	Ø 33	G 1/2"	Ø 33
Q2-10L-R11C11-SG03G03-N		L										



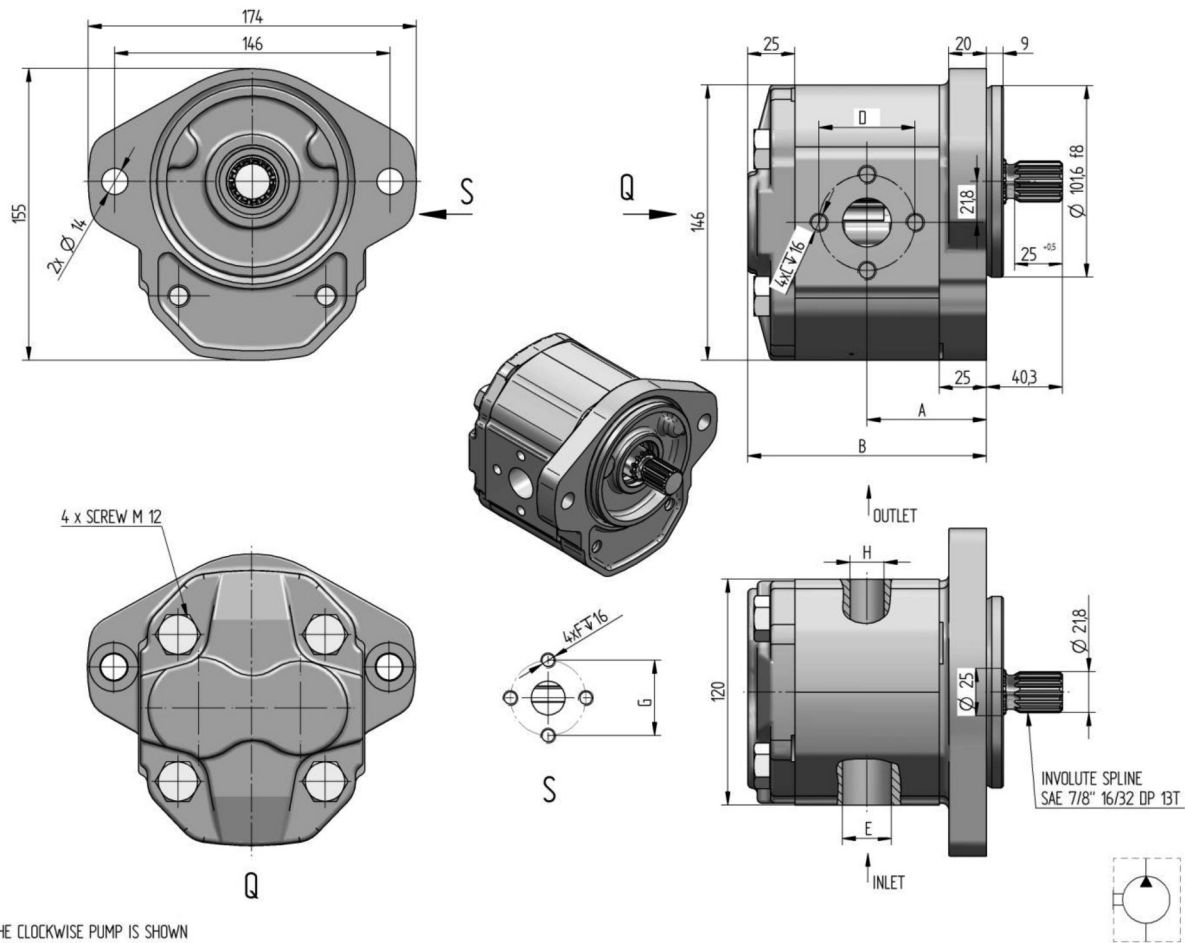
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]	H [mm]
Q2-100R-R11C11-SK04K03-N		R	100	180	350	1800	86.25	172.5	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-100L-R11C11-SK04K03-N		L												
Q2-82R-R11C11-SK04K03-N		R	82	200	350	1800	80.00	160.0	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-82L-R11C11-SK04K03-N		L												
Q2-71R-R11C11-SK04K03-N		R	71	230	350	1800	76.25	152.5	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-71L-R11C11-SK04K03-N		L												
Q2-61R-R11C11-SK04K03-N		R	61	250	350	2000	73.00	146.0	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-61L-R11C11-SK04K03-N		L												
Q2-51R-R11C11-SK04K03-N		R	51	270	350	2500	69.50	139.0	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-51L-R11C11-SK04K03-N		L												
Q2-43R-R11C11-SK04K03-N		R	43	280	350	2500	66.75	133.5	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-43L-R11C11-SK04K03-N		L												
Q2-34R-R11C11-SK04K03-N		R	34	290	350	3000	63.50	127.0	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-34L-R11C11-SK04K03-N		L												
Q2-27R-R11C11-SK04K03-N		R	27	290	350	3200	61.25	122.5	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-27L-R11C11-SK04K03-N		L												
Q2-22.5R-R11C11-SK04K03-N		R	22.5	290	350	3200	59.50	119.0	M10	Ø 26	Ø 51	M 8	Ø 18	Ø 40
Q2-22.5L-R11C11-SK04K03-N		L												



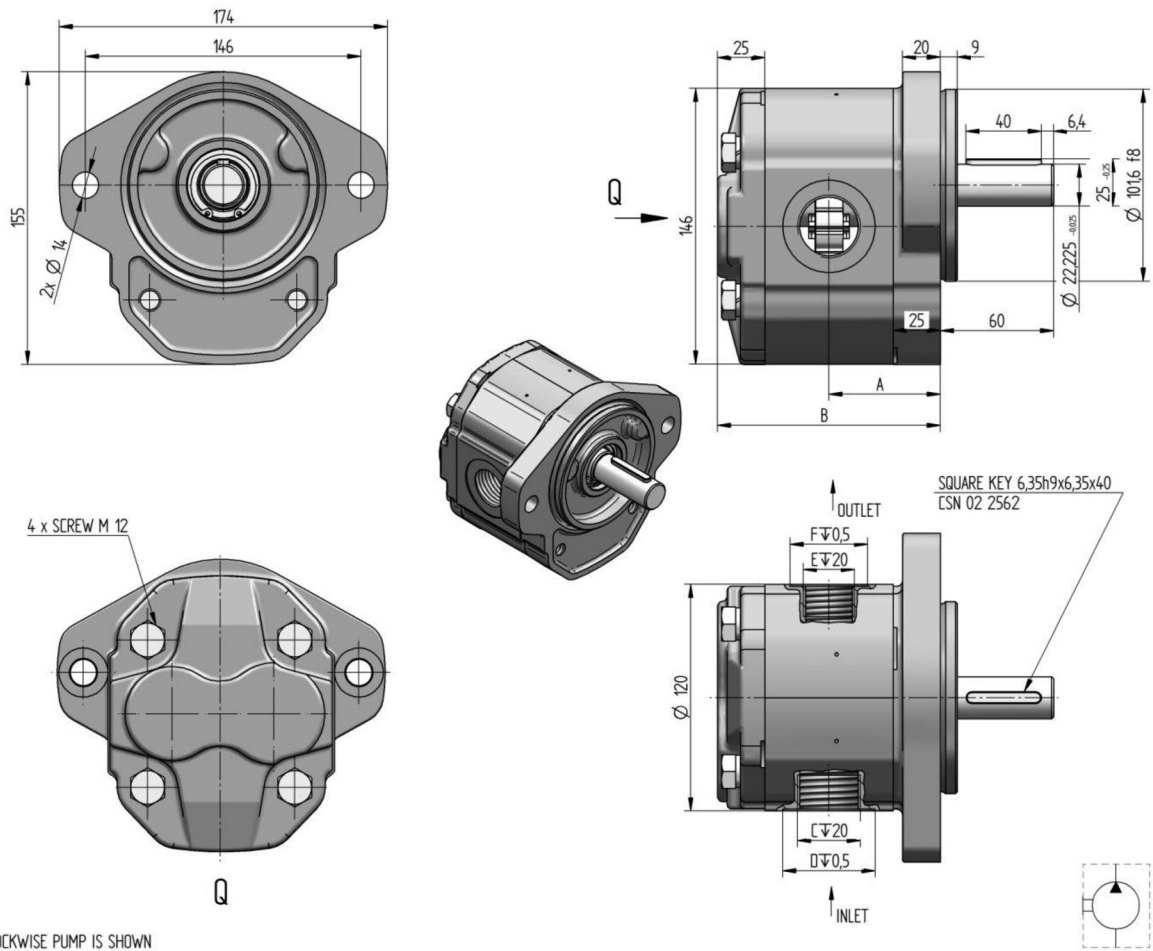
THE CLOCKWISE PUMP IS DRAWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]
Q2-100R-I01D18-SG06G05-N		R	100	180	350	1800	139.25	225.5	G 1 1/4	Ø 57	G 1"	Ø 45
Q2-100L-I01D18-SG06G05-N		L										
Q2-82R-I01D18-SG06G05-N		R	82	200	350	1800	133.00	213.0	G 1 1/4	Ø 57	G 1"	Ø 45
Q2-82L-I01D18-SG06G05-N		L										
Q2-71R-I01D18-SG06G05-N		R	71	230	350	1800	129.00	205.5	G 1 1/4	Ø 57	G 1"	Ø 45
Q2-71L-I01D18-SG06G05-N		L										
Q2-61R-I01D18-SG06G05-N		R	61	250	350	2000	126.00	199.0	G 1 1/4	Ø 57	G 1"	Ø 45
Q2-61L-I01D18-SG06G05-N		L										
Q2-51R-I01D18-SG05G04-N		R	51	270	350	2500	122.50	192.0	G 1"	Ø 45	G 3/4	Ø 39
Q2-51L-I01D18-SG05G04-N		L										
Q2-43R-I01D18-SG05G04-N		R	43	280	350	2500	119.75	186.5	G 1"	Ø 45	G 3/4	Ø 39
Q2-43L-I01D18-SG05G04-N		L										
Q2-34R-I01D18-SG04G04-N		R	34	290	350	3000	116.50	180.0	G 3/4	Ø 39	G 3/4	Ø 39
Q2-34L-I01D18-SG04G04-N		L										
Q2-27R-I01D18-SG04G04-N		R	27	290	350	3200	114.25	175.5	G 3/4	Ø 39	G 3/4	Ø 39
Q2-27L-I01D18-SG04G04-N		L										
Q2-17R-I01D18-SG03G03-N		R	17	290	350	3200	110.75	168.5	G 1/2	Ø 33	G 1/2	Ø 33
Q2-17L-I01D18-SG03G03-N		L										



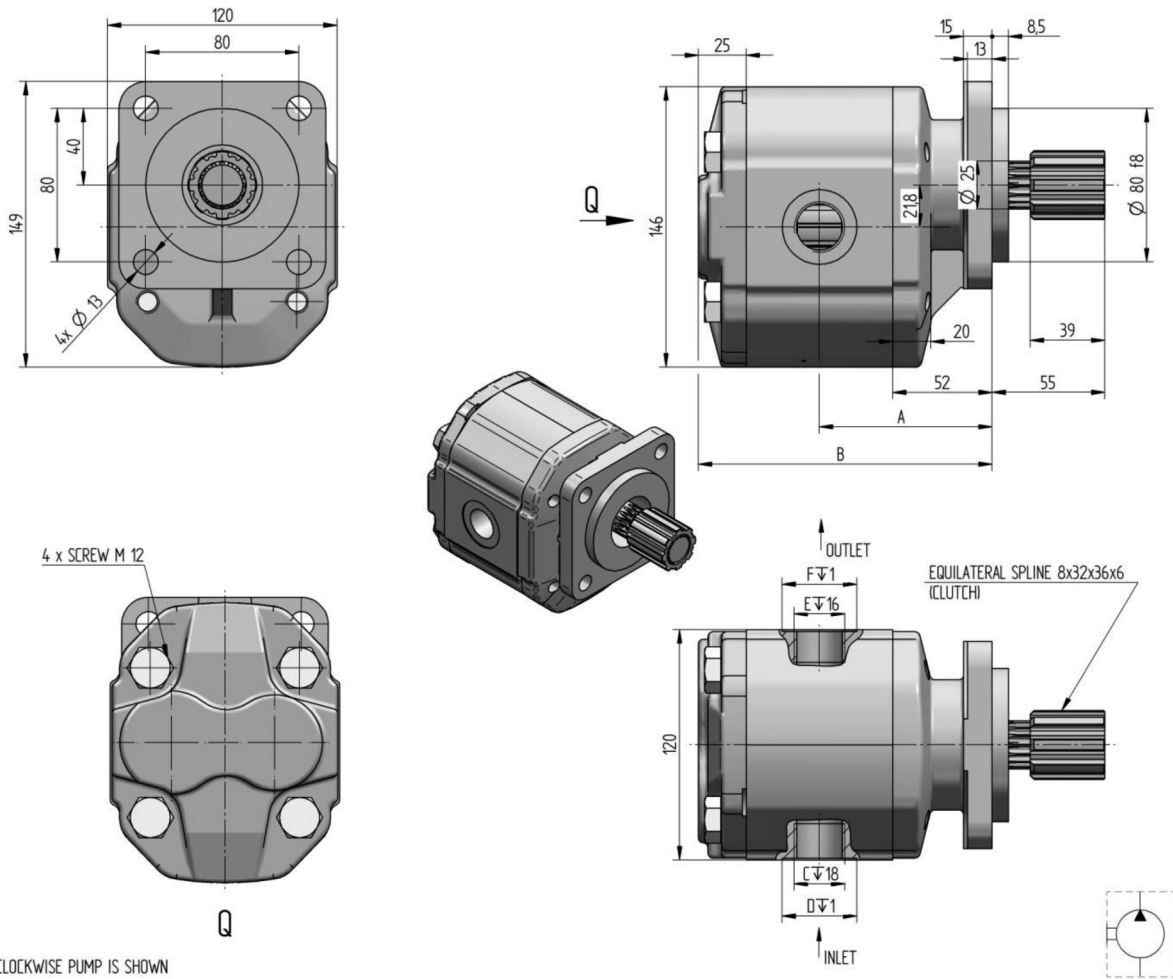
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]
Q2-100R-S03D13-SE03E02-N		R	100	180	350	1800	86.25	172.5	M10	Ø 25.4	M10	Ø 19.1
Q2-100L-S03D13-SE03E02-N		L										
Q2-82R-S03D13-SE03E02-N		R	82	200	350	1800	80.00	160.0	M10	Ø 25.4	M10	Ø 19.1
Q2-82L-S03D13-SE03E02-N		L										
Q2-71R-S03D13-SE03E02-N		R	71	230	350	1800	76.25	152.5	M10	Ø 25.4	M10	Ø 19.1
Q2-71L-S03D13-SE03E02-N		L										
Q2-61R-S03D13-SE03E02-N		R	61	250	350	2000	73.00	146.0	M10	Ø 25.4	M10	Ø 19.1
Q2-61L-S03D13-SE03E02-N		L										
Q2-51R-S03D13-SE03E02-N		R	51	270	350	2500	69.50	139.0	M10	Ø 25.4	M10	Ø 19.1
Q2-51L-S03D13-SE03E02-N		L										
Q2-43R-S03D13-SE03E02-N		R	43	280	350	2500	66.75	133.5	M10	Ø 25.4	M10	Ø 19.1
Q2-43L-S03D13-SE03E02-N		L										
Q2-34R-S03D13-SE03E02-N		R	34	290	350	3000	63.50	127.0	M10	Ø 25.4	M10	Ø 19.1
Q2-34L-S03D13-SE03E02-N		L										
Q2-27R-S03D13-SE03E02-N		R	27	290	350	3200	61.25	122.5	M10	Ø 25.4	M10	Ø 19.1
Q2-27L-S03D13-SE03E02-N		L										
Q2-22.5R-S03D13-SE03E02-N		R	22.5	290	350	3200	59.50	119.0	M10	Ø 25.4	M10	Ø 19.1
Q2-22.5L-S03D13-SE03E02-N		L										
Q2-17R-S03D13-SE03E02-N		R	17	290	350	3200	57.75	115.5	M10	Ø 25.4	M10	Ø 19.1
Q2-17L-S03D13-SE03E02-N		L										
Q2-13.5R-S03D13-SE03E02-N		R	13.5	290	350	3200	56.50	113.0	M10	Ø 25.4	M10	Ø 19.1
Q2-13.5L-S03D13-SE03E02-N		L										
Q2-10R-S03D13-SE03E02-N		R	10	290	400	3200	55.25	110.5	M10	Ø 25.4	M10	Ø 19.1
Q2-10L-S03D13-SE03E02-N		L										



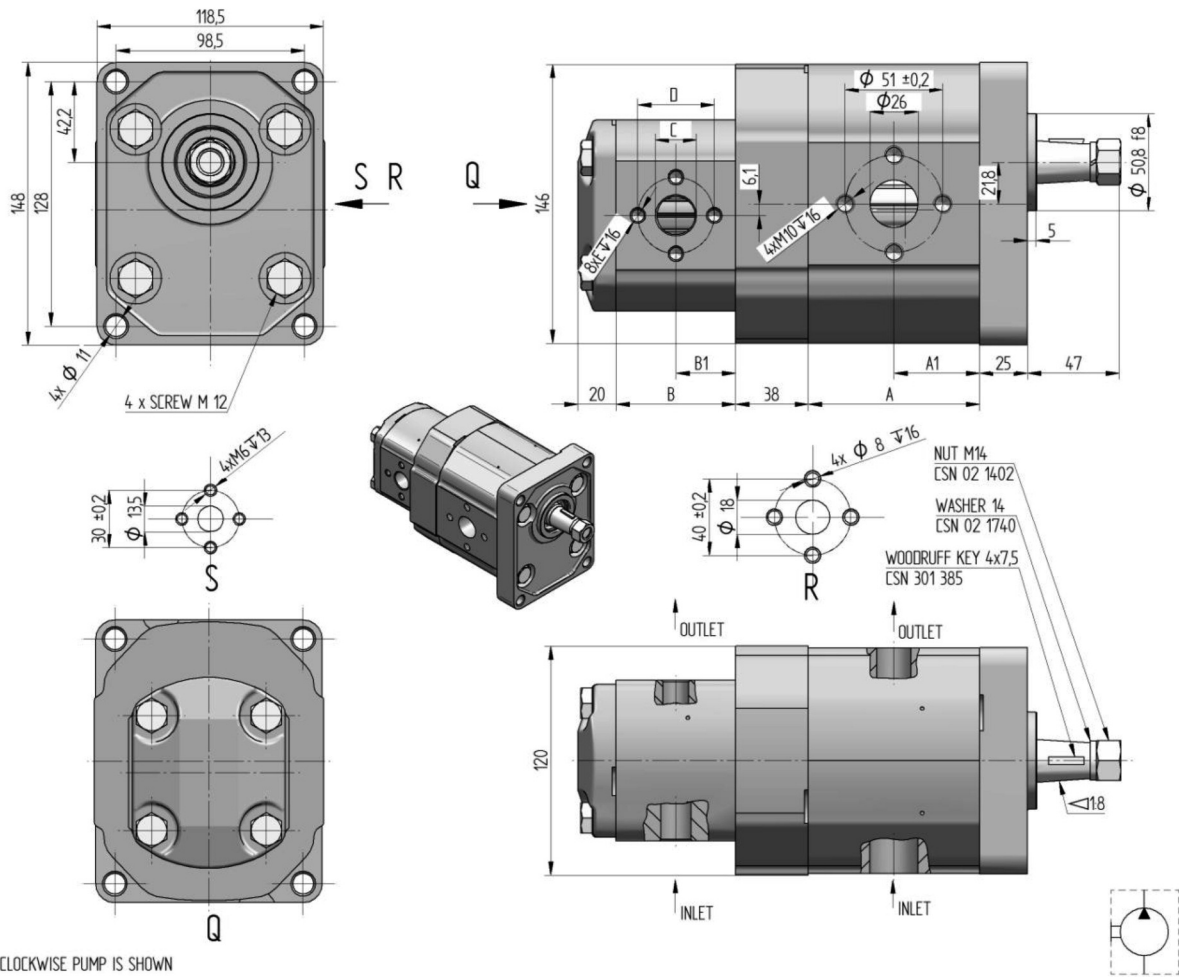
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]
Q2-71R-S03V14-SU08U07-N		R	71	230	350	1800	76.25	152.5	1-5/8-12 UN	Ø 58	1-5/16-12 UN	Ø 49
Q2-71L-S03V14-SU08U07-N		L										
Q2-61R-S03V14-SU08U07-N		R	61	250	350	2000	73.00	146.0	1-5/8-12 UN	Ø 58	1-5/16-12 UN	Ø 49
Q2-61L-S03V14-SU08U07-N		L										
Q2-51R-S03V14-SU08U07-N		R	51	270	350	2500	69.50	139.0	1-5/8-12 UN	Ø 58	1-5/16-12 UN	Ø 49
Q2-51L-S03V14-SU08U07-N		L										
Q2-43R-S03V14-SU08U07-N		R	43	280	350	2500	66.75	133.5	1-5/8-12 UN	Ø 58	1-5/16-12 UN	Ø 49
Q2-43L-S03V14-SU08U07-N		L										
Q2-34R-S03V14-SU07U07-N		R	34	290	350	3000	63.50	127.0	1-5/16-12 UN	Ø 49	1-5/16-12 UN	Ø 49
Q2-34L-S03V14-SU07U07-N		L										
Q2-27R-S03V14-SU07U05-N		R	27	290	350	3200	61.25	122.5	1-5/16-12 UN	Ø 49	1-1/16-12 UN	Ø 41.2
Q2-27L-S03V14-SU07U05-N		L										
Q2-17R-S03V14-SU05U04-N		R	17	290	350	3200	57.70	115.5	1-1/16-12 UNF	Ø 41	7/8-14 UNF	Ø 34
Q2-17L-S03V14-SU05U04-N		L										
Q2-10R-S03V14-SU05U04-N		R	10	270	400	3200	55.25	110.5	1-1/16-12 UNF	Ø 41	7/8-14 UNF	Ø 34
Q2-10L-S03V14-SU05U04-N		L										



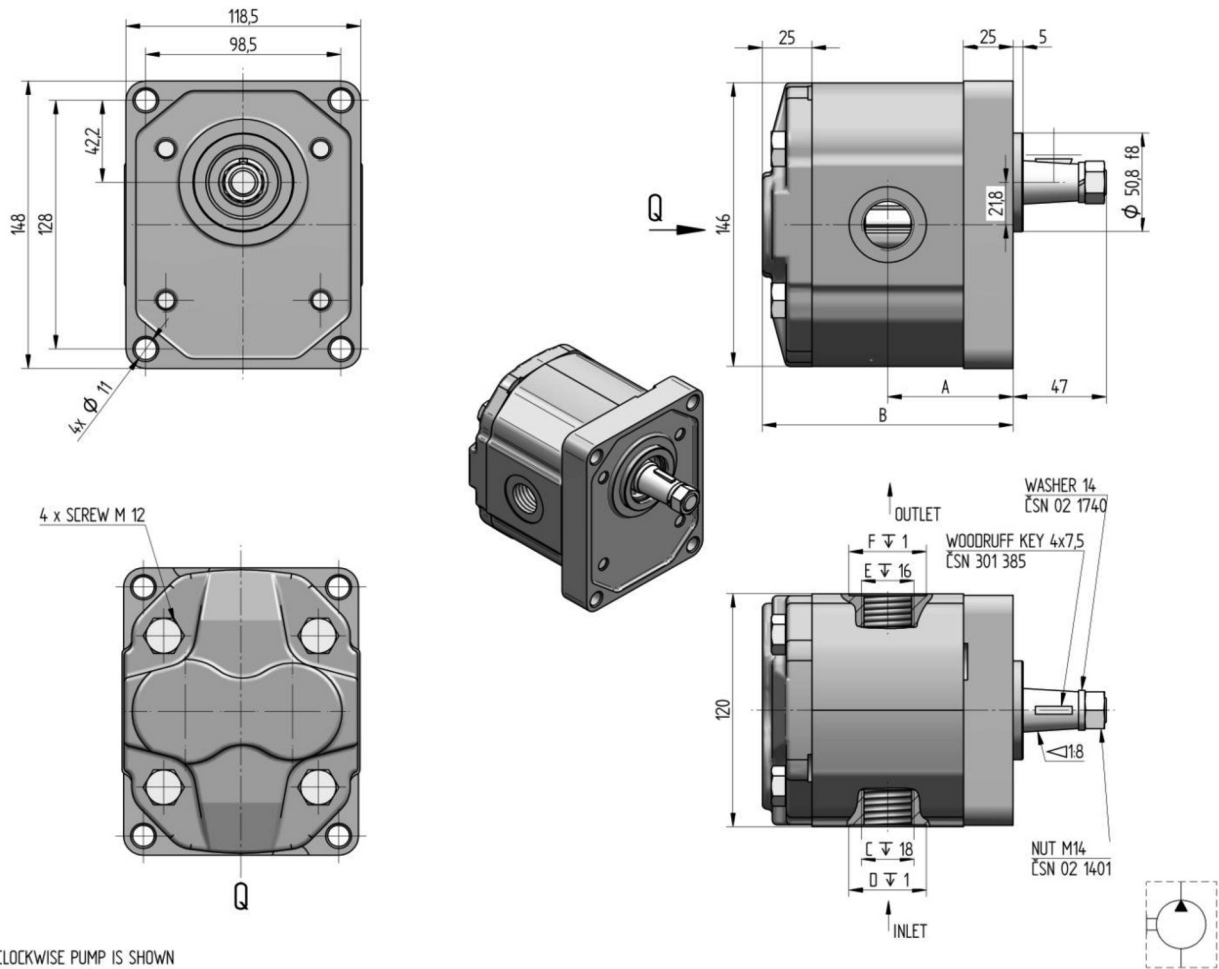
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /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]
Q2-100R-I02D18-SG06G05-N		R	100	180	350	1800	113.25	199.5	G1 1/4"	Ø 57	G1"	Ø 45
Q2-100L-I02D18-SG06G05-N		L										
Q2-82R-I02D18-SG06G05-N		R	82	200	350	1800	107.00	187.0	G1 1/4"	Ø 57	G1"	Ø 45
Q2-82L-I02D18-SG06G05-N		L										
Q2-71R-I02D18-SG06G05-N		R	71	230	350	1800	103.25	179.5	G1 1/4"	Ø 57	G1"	Ø 45
Q2-71L-I02D18-SG06G05-N		L										
Q2-61R-I02D18-SG06G05-N		R	61	250	350	2000	100.00	173.0	G1 1/4"	Ø 57	G1"	Ø 45
Q2-61L-I02D18-SG06G05-N		L										
Q2-51R-I02D18-SG05G04-N		R	51	270	350	2500	96.50	166.0	G1"	Ø 45	G3/4"	Ø 39
Q2-51L-I02D18-SG05G04-N		L										
Q2-43R-I02D18-SG05G04-N		R	43	280	350	2500	93.75	160.5	G1"	Ø 45	G3/4"	Ø 39
Q2-43L-I02D18-SG05G04-N		L										
Q2-34R-I02D18-SG04G04-N		R	34	290	350	3000	90.50	154.0	G3/4"	Ø 39	G3/4"	Ø 39
Q2-34L-I02D18-SG04G04-N		L										
Q2-27R-I02D18-SG04G04-N		R	27	290	350	3200	88.25	149.5	G3/4"	Ø 39	G3/4"	Ø 39
Q2-27L-I02D18-SG04G04-N	185 9203	L										
Q2-17R-I02D18-SG03G03-N		R	17	290	350	3200	84.75	142.5	G1/2"	Ø 33	G1/2"	Ø 33
Q2-17L-I02D18-SG03G03-N		L										
Q2-10R-I02D18-SG03G03-N		R	10	270	400	3200	82.25	137.5	G1/2"	Ø 33	G1/2"	Ø 33
Q2-10L-I02D18-SG03G03-N		L										



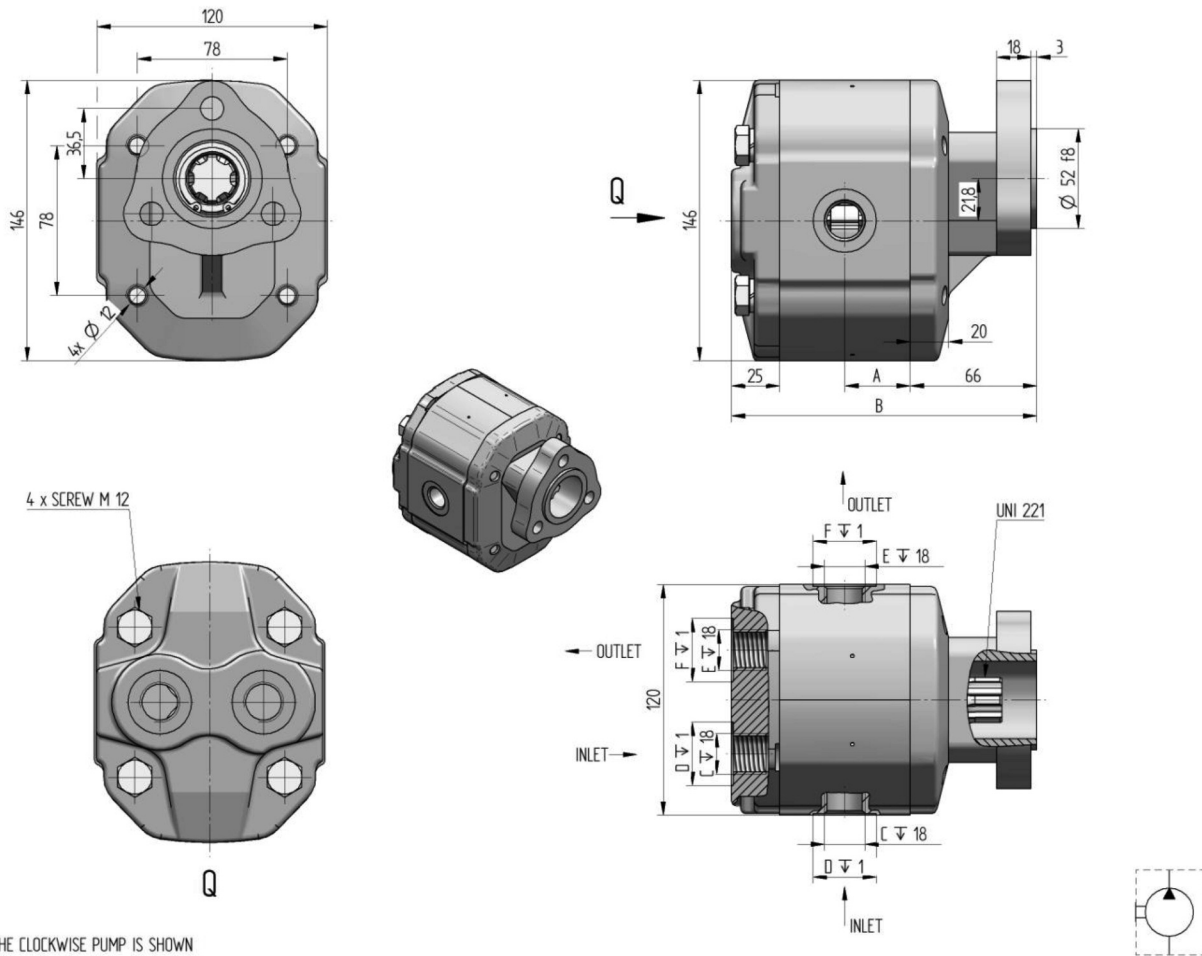
THE CLOCKWISE PUMP IS SHOWN

Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension						
							A [mm]	A1 [mm]	B [mm]	B1 [mm]	C [mm]	D [mm]	E [mm]
Q2-51/T2-8R-R11C11-SK04K03/K01K01-N		R	51/8	270	350	2500	89	44.5	57.0	28.50	$\phi 13.5$	$\phi 30$	M6
Q2-51/T2-8L-R11C11-SK04K03/K01K01-N		L											
Q2-34/T2-11R-R11C11-SK04K03/K02K01-N		R	34/11	290	350	3000	77	38.5	62.5	31.25	$\phi 20$	$\phi 40$	M8
Q2-34/T2-11L-R11C11-SK04K03/K02K01-N		L											
Q2-51/T2-11R-R11C11-SK04K03/K02K01-N		R	51/11	270	350	2500	89	44.5	62.5	31.25	$\phi 20$	$\phi 40$	M8
Q2-51/T2-11L-R11C11-SK04K03/K02K01-N		L											



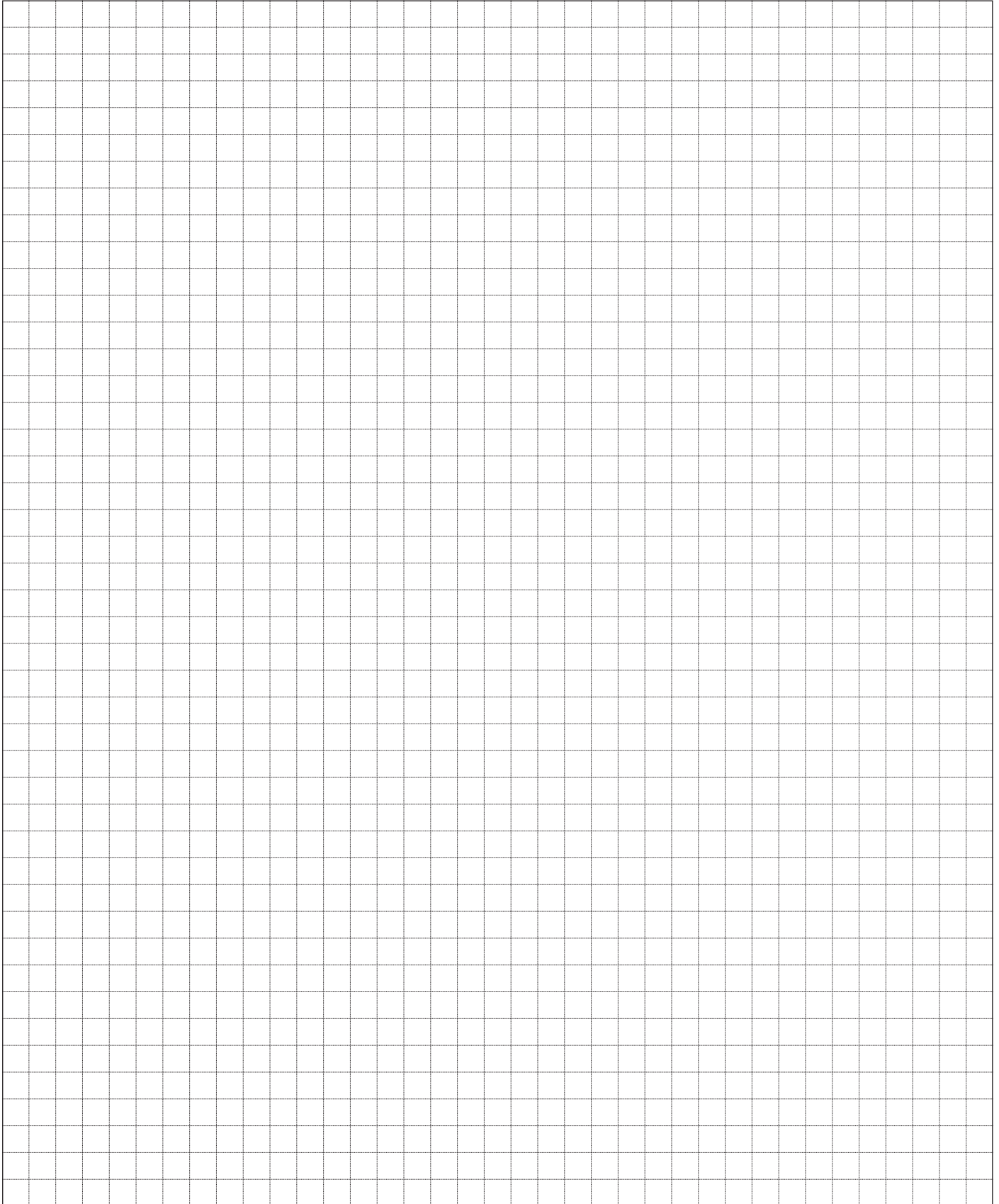
THE CLOCKWISE PUMP IS SHOWN

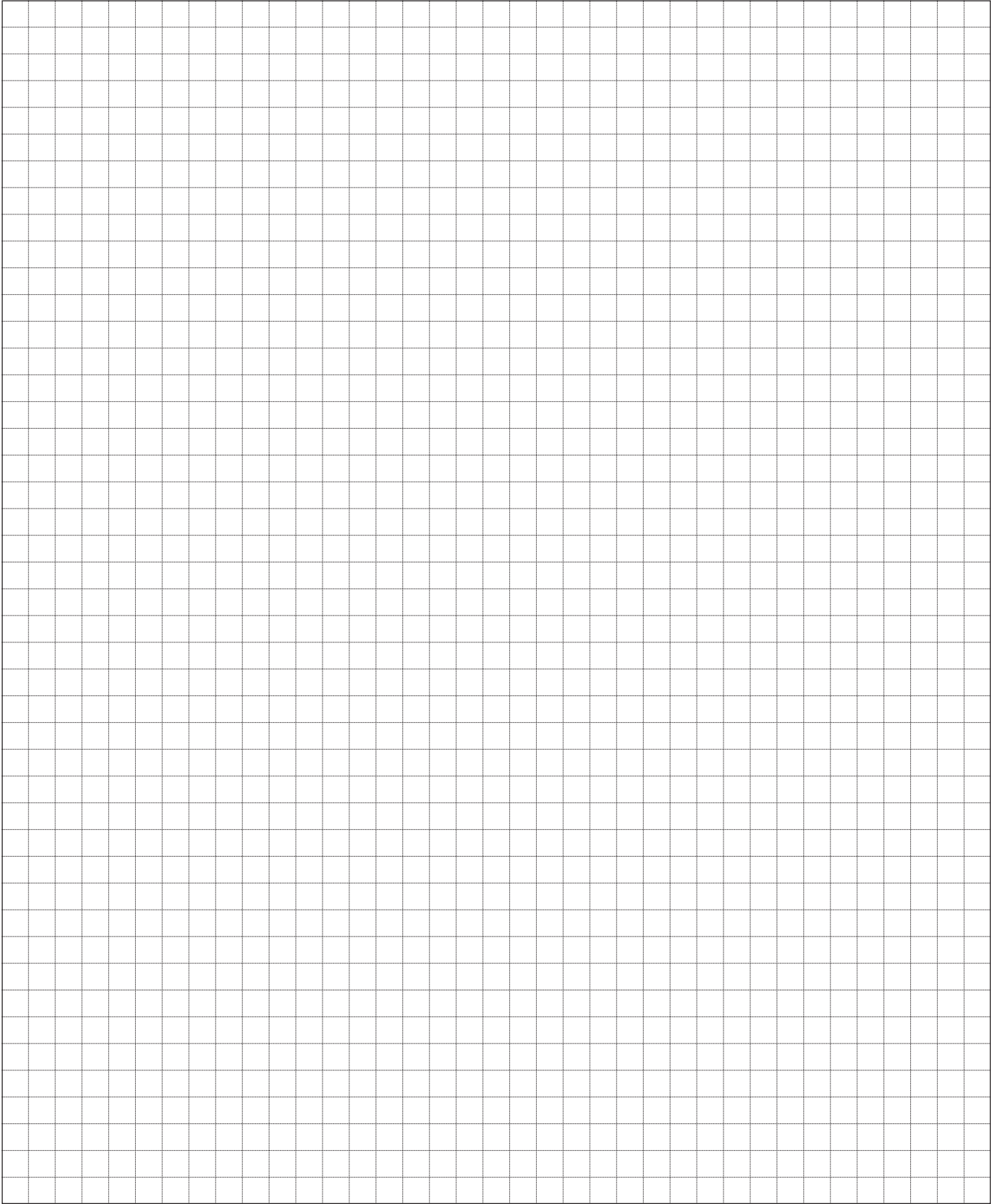
Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension					
							A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
Q2-100R-R11C11-SM15M12-N		R	100	180	350	1800	86.25	172.5	M 48x2	Ø 46	M 33x2	Ø 40
Q2-100L-R11C11-SM15M12-N		L										
Q2-82R-R11C11-SM15M12-N		R	82	200	350	1800	80.00	160.0	M 48x2	Ø 46	M 33x2	Ø 40
Q2-82L-R11C11-SM15M12-N		L										
Q2-71R-R11C11-SM15M12-N		R	71	230	350	1800	76.25	152.5	M 48x2	Ø 46	M 33x2	Ø 40
Q2-71L-R11C11-SM15M12-N		L										
Q2-61R-R11C11-SM15M12-N		R	61	250	350	2000	73.00	146.0	M 48x2	Ø 46	M 33x2	Ø 40
Q2-61L-R11C11-SM15M12-N		L										
Q2-51R-R11C11-SM12M09-N		R	51	270	350	2500	69.50	139.0	M 33x2	Ø 40	M 27x2	Ø 33
Q2-51L-R11C11-SM12M09-N		L										
Q2-43R-R11C11-SM12M09-N		R	43	280	350	2500	66.75	133.5	M 33x2	Ø 40	M 27x2	Ø 33
Q2-43L-R11C11-SM12M09-N		L										
Q2-34R-R11C11-SM12M09-N		R	34	290	350	3000	63.50	127.0	M 33x2	Ø 40	M 27x2	Ø 33
Q2-34L-R11C11-SM12M09-N		L										
Q2-27R-R11C11-SM12M09-N		R	27	290	350	3200	61.25	122.5	M 33x2	Ø 40	M 27x2	Ø 33
Q2-27L-R11C11-SM12M09-N		L										
Q2-17R-R11C11-SM12M09-N		R	17	290	350	3200	57.75	115.5	M 33x2	Ø 40	M 27x2	Ø 33
Q2-17L-R11C11-SM12M09-N		L										

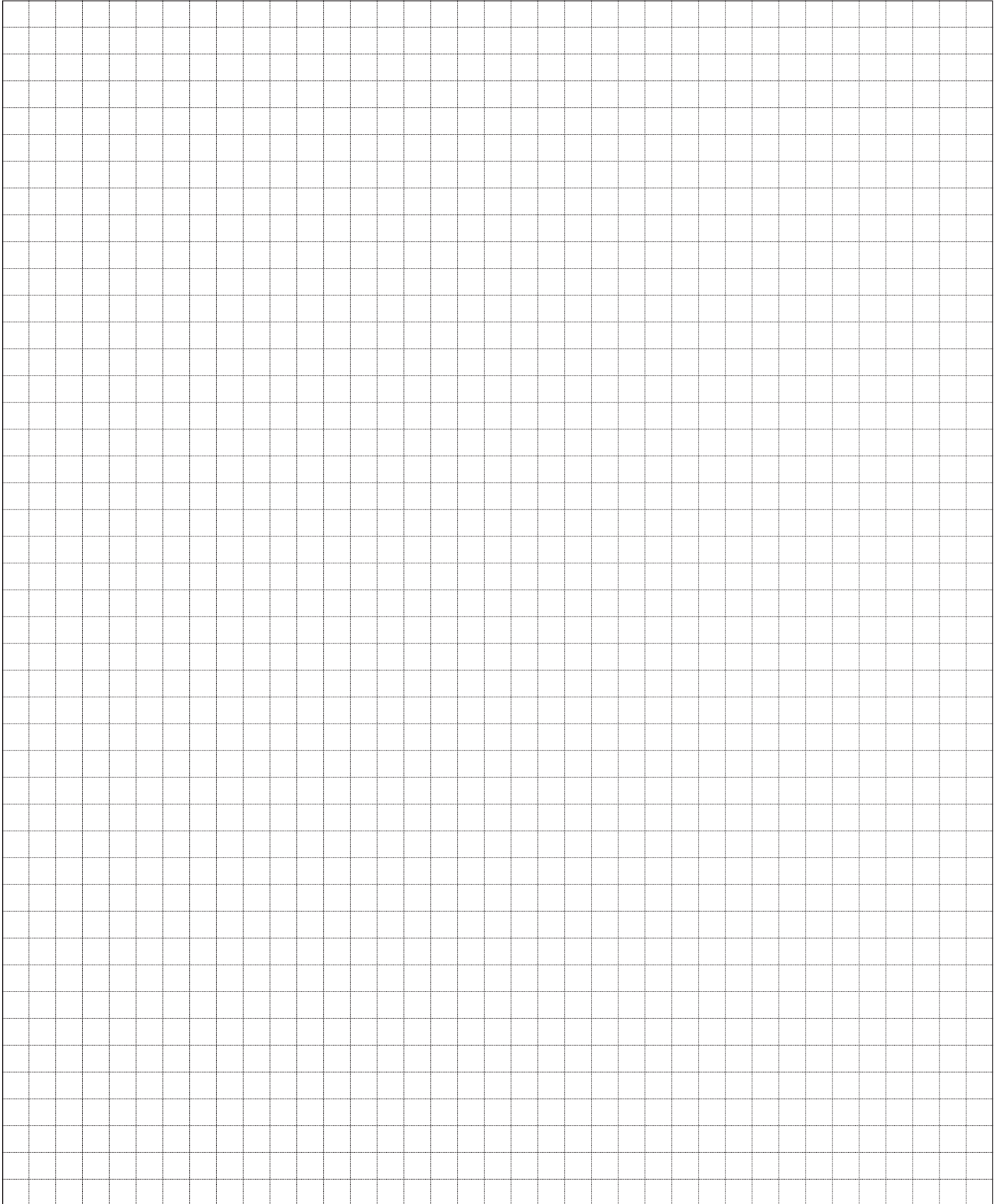


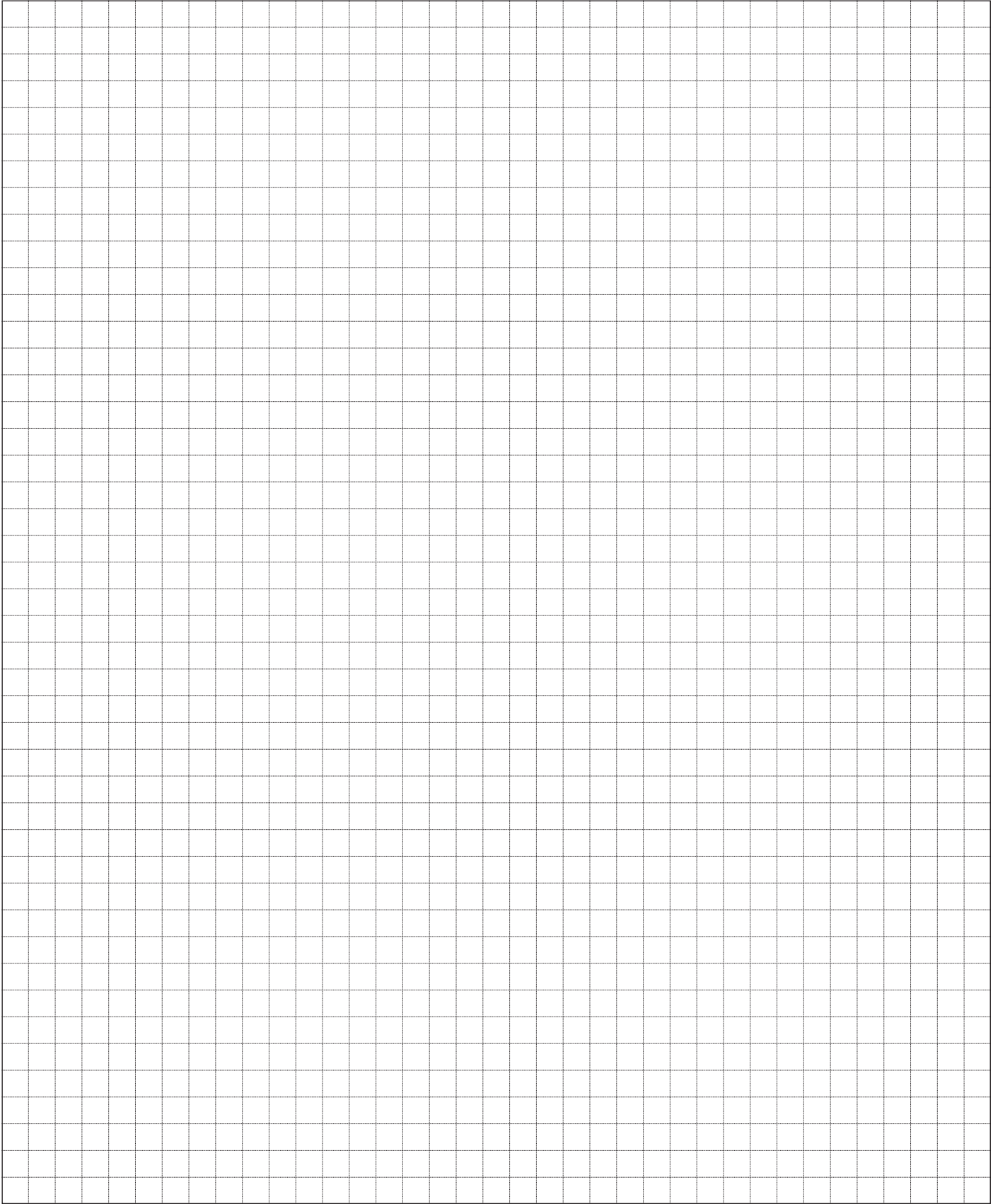
THE CLOCKWISE PUMP IS SHOWN

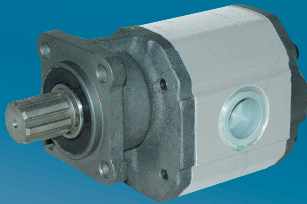
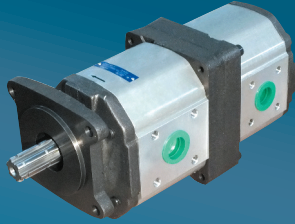
Order key	purch. code	direct. of rot.	displacement [cm ³ /1]	nom. press. [bar]	speed MIN. [min ⁻¹]	speed MAX. [min ⁻¹]	dimension					
							A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	F [mm]
Q2-100R-U01D17-CG06G05-N.012		R	100	180	350	1800	127.25	213.5	G 1 1/4"	Ø 51	G 1"	Ø 45
Q2-100L-U01D17-CG06G05-N.012		L										
Q2-82R-U01D17-CG06G05-N.012		R	82	200	350	1800	121.00	201.0	G 1 1/4"	Ø 51	G 1"	Ø 45
Q2-82L-U01D17-CG06G05-N.012		L										
Q2-71R-U01D17-CG06G05-N.012		R	71	230	350	1800	117.25	193.5	G 1 1/4"	Ø 51	G 1"	Ø 45
Q2-71L-U01D17-CG06G05-N.012		L										
Q2-61R-U01D17-CG06G05-N.012		R	61	250	350	2000	114.00	187.0	G 1 1/4"	Ø 51	G 1"	Ø 45
Q2-61L-U01D17-CG06G05-N.012		L										
Q2-51R-U01D17-CG05G04-N.012		R	51	270	350	2500	110.50	180.0	G 1"	Ø 45	G 3/4"	Ø 39
Q2-51L-U01D17-CG05G04-N.012		L										
Q2-43R-U01D17-CG05G04-N.012		R	43	280	350	2500	107.75	174.5	G 1"	Ø 45	G 3/4"	Ø 39
Q2-43L-U01D17-CG05G04-N.012		L										
Q2-34R-U01D17-CG04G04-N.012		R	34	290	350	3000	104.50	168.0	G 3/4"	Ø 39	G 3/4"	Ø 39
Q2-34L-U01D17-CG04G04-N.012		L										
Q2-27R-U01D17-CG04G04-N.012		R	27	290	350	3200	102.25	163.5	G 3/4"	Ø 39	G 3/4"	Ø 39
Q2-27L-U01D17-CG04G04-N.012		L										
Q2-17R-U01D17-CG03G03-N.012		R	17	290	350	3200	98.75	165.5	G 1/2"	Ø 33	G 1/2"	Ø 33
Q2-17L-U01D17-CG03G03-N.012		L										











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