

External gear pump Series G

RE 10 093/04.14
Replace
RE 10 093/06.13

AZPG-22

Fixed pumps
 $V = 22.5 \dots 100 \text{ cm}^3/\text{rev}$



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Features

- Nominal pressure 280 bar
- Slide bearings for heavy duty applications
- Drive shafts to ISO or SAE
- Combination of several pumps possible
- Line ports: connection flanges
- Consistent high quality thru mass production
- Numerous configuration variants available
- Cast case available on request

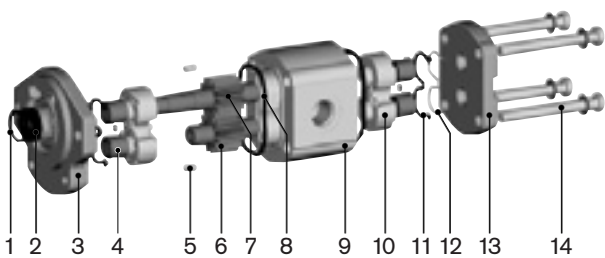
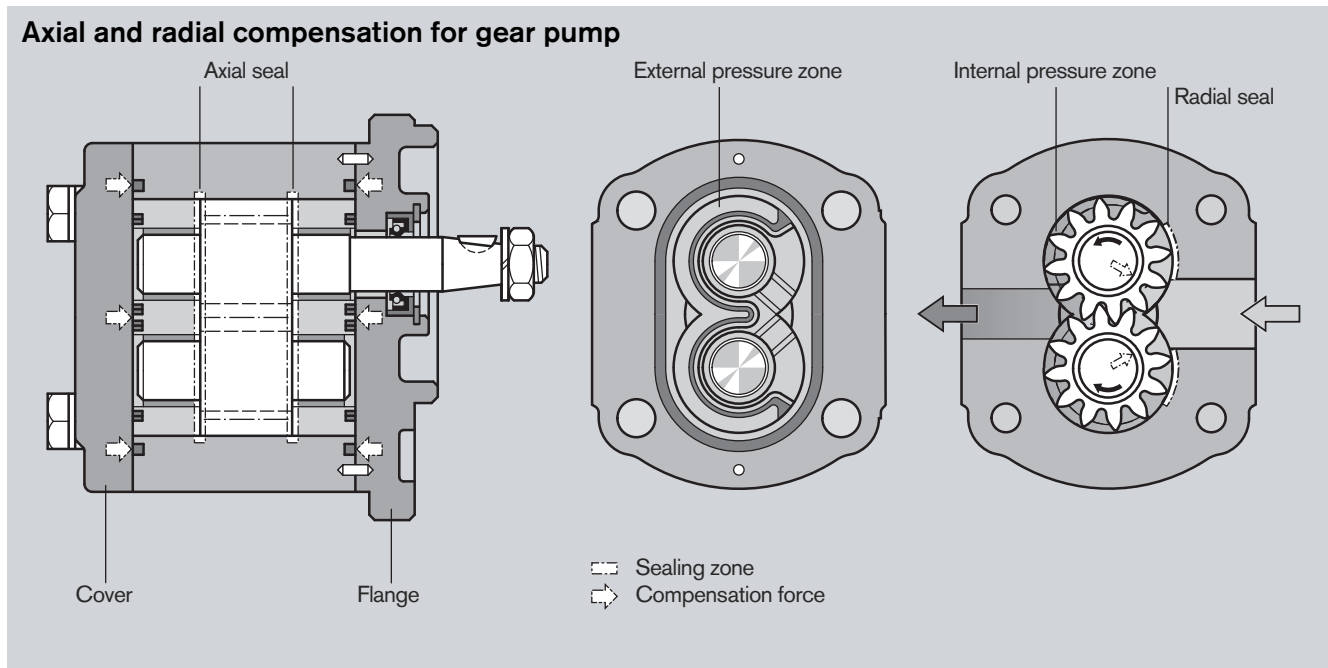
General

Rexroth external gear pumps are available as standard gear pumps in the 4 series of B, F, N and G, as SILENCE gear pumps in the S, T and U series, and as the SILENCE PLUS version in the J series in which the displacements are graded by different gear widths. Further configuration variants are given by different flanges, shafts, valve arrangements and multiple pump combinations.

Construction

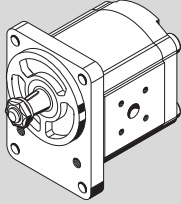
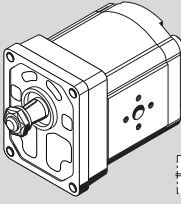
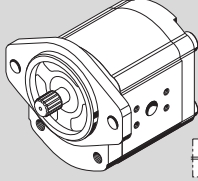
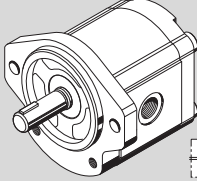
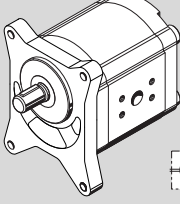
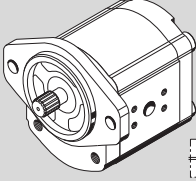
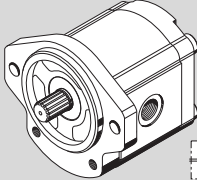
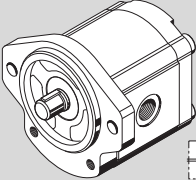
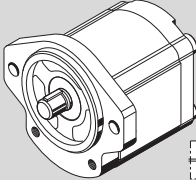
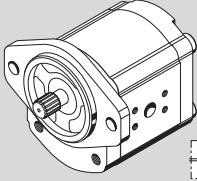
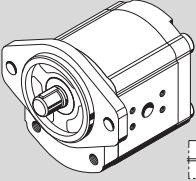
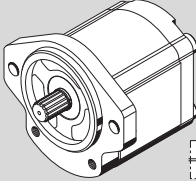
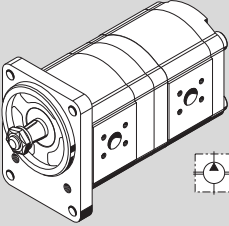
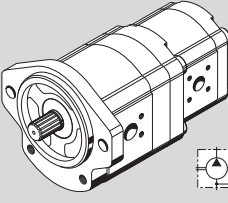
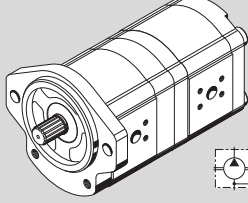
The external gear pump consists essentially of a pair of gears supported in bearing bushings or bearing, dependent on the series, and the case with a front and rear cover. The drive shaft protrudes from the front cover where it is sealed by the shaft seal ring. The bearing forces are absorbed by special slide bearings with sufficient elasticity to produce surface contact instead of line contact. They also ensure excellent resistance to galling – especially at low speed. The gears have 12 teeth. This keeps both flow pulsation and noise emission to a minimum.

The internal sealing is achieved by forces which are proportional to delivery pressure. This ensures optimum efficiency. This ensures optimum efficiency. The sealing zone between the gear teeth and the bearings is controlled by the admission of operating pressure to the rear of the bearing bushings. Special seals form the boundary of the zone. The radial clearance at the tips of the gear teeth is sealed by internal forces pushing them against the case.



- | | |
|---------------------|--------------------|
| 1 Retaining ring | 8 Case seal |
| 2 Shaft seal ring | 9 Pump case |
| 3 Front cover | 10 Bearing |
| 4 Slide bearing | 11 Axial zone seal |
| 5 Centering pin | 12 Support |
| 6 Gear | 13 End cover |
| 7 Gear (frictional) | 14 Fixing screws |

Overview of "Series G" standard program














Version	Page	Version	Page	Version	Page
	18		19		20 21 22
	23 24 25		26 27 28		29 30 31
	32 33 34		35 36 37		38 39
	40 41 42 43 44 45		46 47 48 49 50 51		52 53
	54		55 57		56

Ordering code

External gear units Single pumps Standard

AZ	P	G	-	2	2	-	063	R	C	B	20	M	B	18009	S xxxx																															
<table border="1"> <tr> <td>Function</td> <td rowspan="3">Special design *)</td> </tr> <tr> <td>P = Pump</td> </tr> <tr> <td>Series</td> </tr> <tr> <td>1 = Reinforced bearing</td> <td rowspan="3"> Valve adjustment 200 xx = PRV 200 bar xxx 11 = FCV 11 l/min 18009 = PRV + FCV 180 bar, 9 l/min </td> </tr> <tr> <td>2 = Standard bearing</td> </tr> <tr> <td>3 = in GJS-400 execution</td> </tr> <tr> <td>Version</td> <td rowspan="2"> Rear cover A = with inlet and outlet port B = Standard D = PRV residual flow internal E = FCV residual flow external S = FCV residual flow internal V = PRV + FCV </td> </tr> <tr> <td>2 = corrosion-resistant, pinned</td> </tr> <tr> <td>Size G</td> <td rowspan="7"> Seals M = NBR P = FKM K = NBR, SSR in FKM </td> </tr> <tr> <td>022 = 22.5 cm³/rev</td> </tr> <tr> <td>025 = 25.0 cm³/rev</td> </tr> <tr> <td>028 = 28.0 cm³/rev</td> </tr> <tr> <td>032 = 32.0 cm³/rev</td> </tr> <tr> <td>036 = 36.0 cm³/rev</td> </tr> <tr> <td>040 = 40.0 cm³/rev</td> </tr> <tr> <td>045 = 45.0 cm³/rev</td> </tr> <tr> <td>050 = 50.0 cm³/rev</td> </tr> <tr> <td>056 = 56.0 cm³/rev</td> </tr> <tr> <td>063 = 63.0 cm³/rev</td> </tr> <tr> <td>070 = 70.0 cm³/rev</td> </tr> <tr> <td>080 = 80.0 cm³/rev</td> </tr> <tr> <td>100 = 100.0 cm³/rev</td> </tr> <tr> <td>Direction of rotation</td> <td></td> </tr> <tr> <td>R = Clockwise</td> <td></td> </tr> <tr> <td>L = Counterclockwise</td> <td></td> </tr> </table>															Function	Special design *)	P = Pump	Series	1 = Reinforced bearing	Valve adjustment 200 xx = PRV 200 bar xxx 11 = FCV 11 l/min 18009 = PRV + FCV 180 bar, 9 l/min	2 = Standard bearing	3 = in GJS-400 execution	Version	Rear cover A = with inlet and outlet port B = Standard D = PRV residual flow internal E = FCV residual flow external S = FCV residual flow internal V = PRV + FCV	2 = corrosion-resistant, pinned	Size G	Seals M = NBR P = FKM K = NBR, SSR in FKM	022 = 22.5 cm³/rev	025 = 25.0 cm³/rev	028 = 28.0 cm³/rev	032 = 32.0 cm³/rev	036 = 36.0 cm³/rev	040 = 40.0 cm³/rev	045 = 45.0 cm³/rev	050 = 50.0 cm³/rev	056 = 56.0 cm³/rev	063 = 63.0 cm³/rev	070 = 70.0 cm³/rev	080 = 80.0 cm³/rev	100 = 100.0 cm³/rev	Direction of rotation		R = Clockwise		L = Counterclockwise	
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*) Some of the special designs shown on pages 18–57 are not covered in the illustration of the ordering code.




























Drive shafts			Front cover			Line ports		
Suitable front cover								
C	Tapered key shaft 1 : 5		B	Rectangular flange Centering Ø 105 mm		07	Square flange SAE thread, metric	
H	Tapered key shaft 1 : 8		O	SAE J 744 101-2 B 2-bolt flange Ø 101.6 mm		20	Rectangular Flange	
D	Splined shaft SAE J 744 22-4 13T		O	Rectangular flange Centering Ø 50.78 mm		30	Rectangular Flange	
E	Splined shaft SAE J 744 15T					40	Square flange SAE thread, UNC	
Q	Straight keyed shaft SAE J 744 22-1					12	Thread (UN-2B) SAE seal ring BOSS	

Not all variants can be selected by using ordering code!
 Please select the required pump by using the selection tables (standard types) or after consultation with Bosch Rexroth!
 Special options are possible upon request.

Ordering code

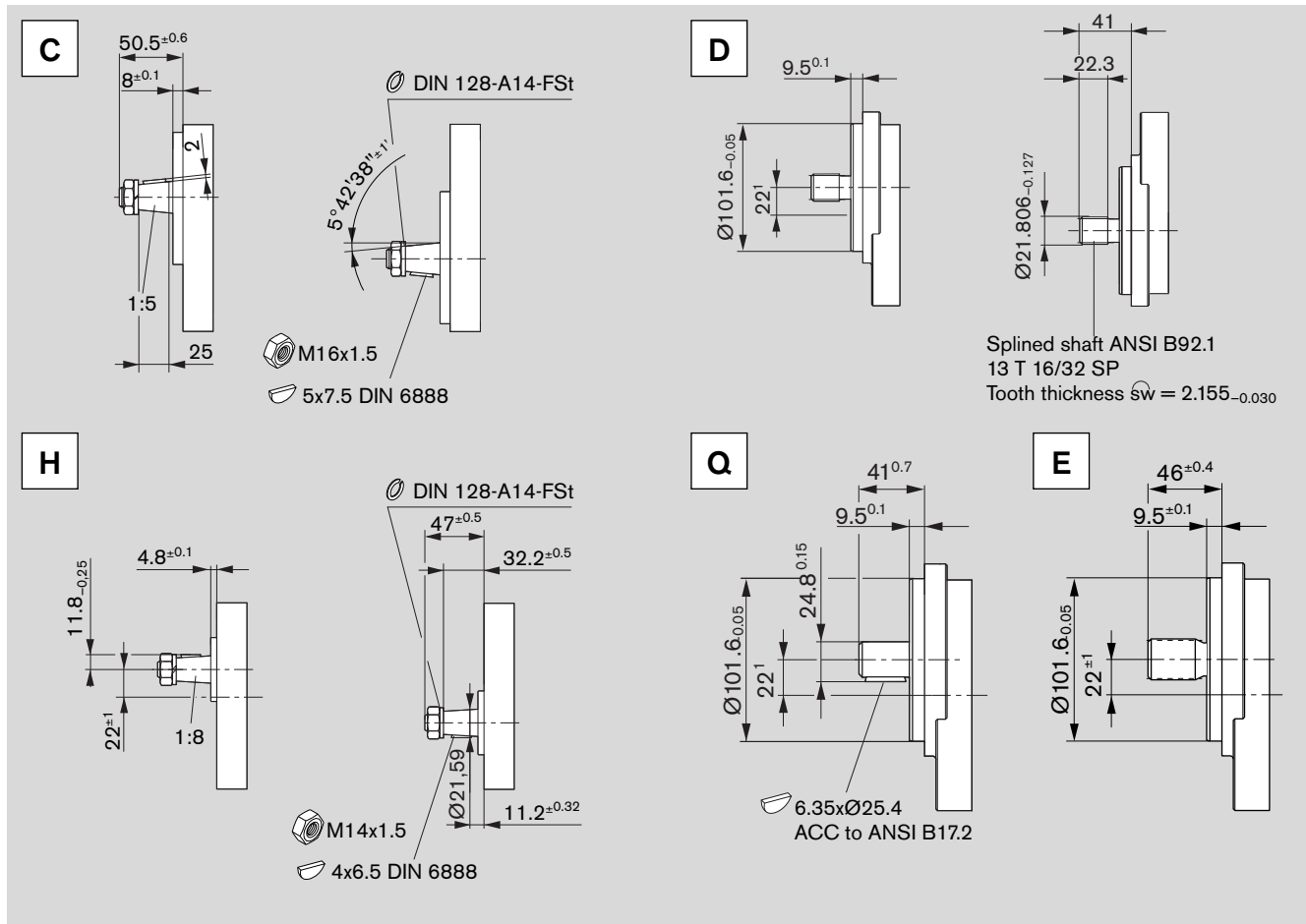
External gear units Multiple pumps

AZ	P	GGSS	-	x	x	-	032/022/016/005	R	C	B	20	20	20	20	K	B
Function														Rear cover relates to last pump section		
P = Pump														B = Standard		
Series														Seals		
B = 1.0...7.1 cm ³ /rev *)							*) Standard							M = NBR		
F = 4.0...28 cm ³ /rev														P = FKM		
N = 20.0...36 cm ³ /rev														K = NBR, SSR in FKM		
G = 22.5...100 cm ³ /rev														Shaft seal relate to pump section 1		
S = 4.0...28 cm ³ /rev **)							**) SILENCE									
T = 20.0...36 cm ³ /rev																
U = 22.5...63 cm ³ /rev																
J = 12.0...16 cm ³ /rev ***)							***) SILENCE PLUS									
Series , relates to pump section 1																
1x = Standard bearing																
2x = Reinforced bearing																
Version , relates to pump section 1																
1 = Phosphatized, pinned																
2 = Chromatized, pinned																
Size																
corresponding to each series																
Direction of rotation																
R = cw, L = ccw																

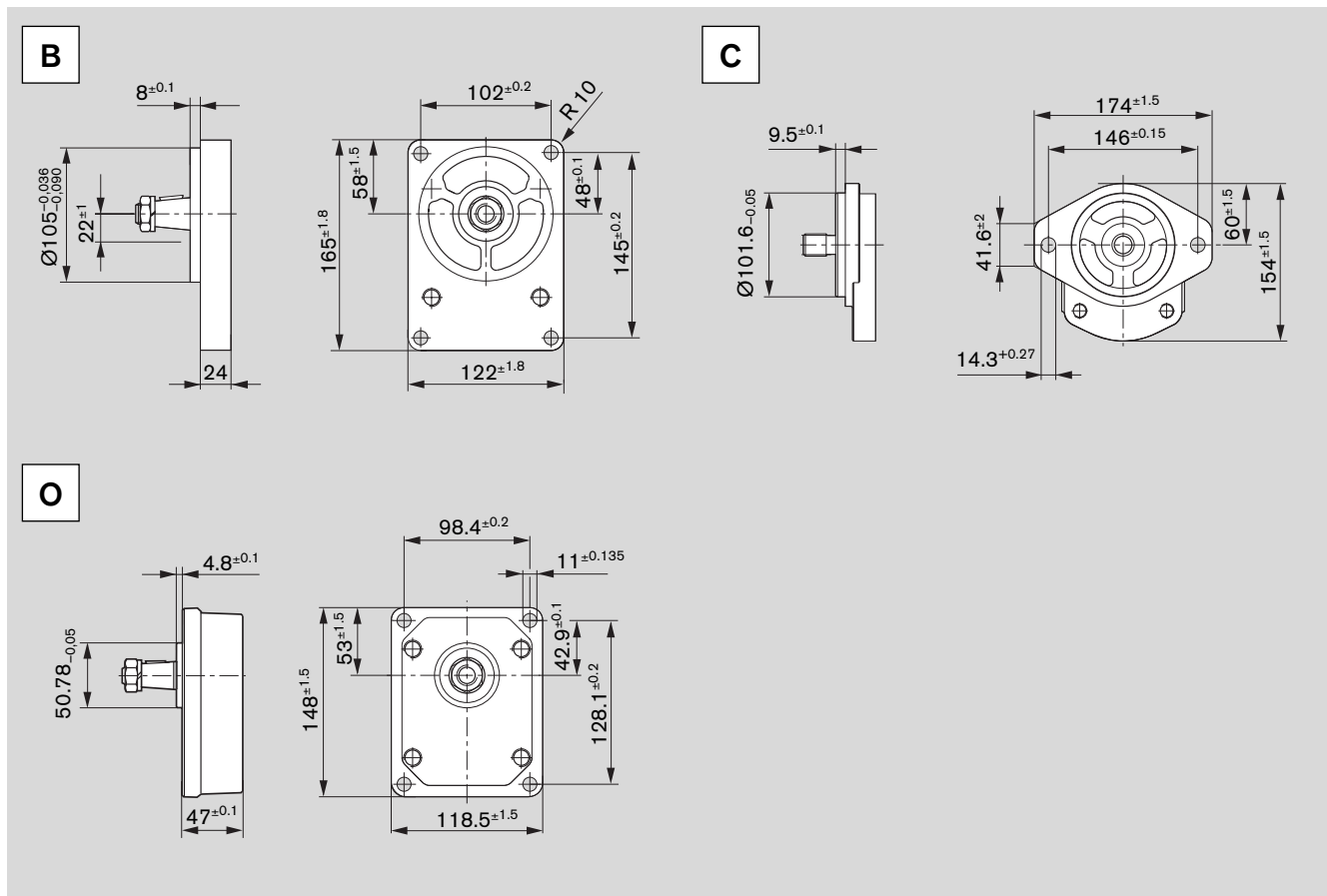
Drive shafts relates to pump part 1				Front cover relates to pump part 1				Line ports every pump parts			
Series B:				Suitable front cover							
H	Tapered key shaft 1 : 8		O	O	Square flange Centering Ø 25.38 mm		02	Thread, metric DIN 3852 T1			
Series F, S, J:											
C	Tapered key shaft 1 : 5		B	B	Square flange Centering Ø 80 mm		20	Rectangular flange			
H	Tapered key shaft 1 : 8		O	O	Square flange Centering Ø 36.47 mm		30	Rectangular flange			
R	Splined shaft SAE J 744 16-4 9T		R	R	SAE J 744 82-2 A Centering Ø 82.55 mm 2-bolt mounting						
Series N, T:											
C	Tapered key shaft 1 : 5		B	B	Square flange Centering Ø 100 mm		07	Square flange SAE Thread, metric			
D	Splined shaft SAE J 744 22-4 13T		C	C	SAE J 744 101-2 B Centering Ø 101.6 mm 2-bolt mounting		20	Rectangular flange			
N	Dihedral claw		M	M	Centering Ø 52 mm with seal ring						
Series G, U:											
C	Tapered key shaft 1 : 5		B	B	Square flange Centering Ø 105 mm		07	Square flange SAE Thread, metric			
D	Splined shaft SAE J 744 22-4 13T		C	C	SAE J 744 101-2 B Centering Ø 101.6 mm 2-bolt mounting		20	Rectangular flange			
H	Tapered key shaft 1 : 8		O	O	Square flange Centering Ø 50.78 mm						

Not all variants can be selected by using ordering code! Please select the required pump by using the selection tables (standard types) or after consultation with Bosch Rexroth! Special options are possible upon request.

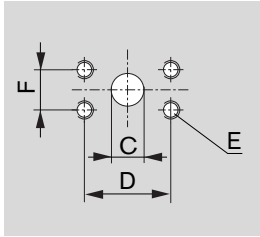
Drive shafts



Front cover

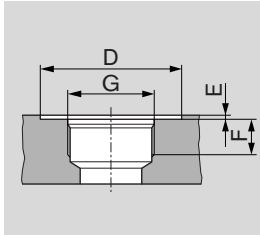


Line port



07 Square flange SAE, thread metric

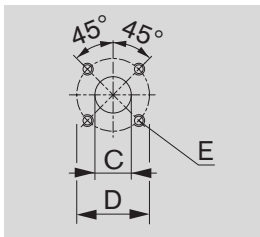
Ordering code	Size	Delivery side				Suction side			
		C	D	E	F	C	D	E	F
07	22.5...28 cm ³	18	47.6	M10 depth 18	22.2	25	52.4	M10 depth 18	26.2
	32.0...50 cm ³	25	52.4		26.2	32	58.7		30.2
	56.0...63 cm ³	32	58.7		30.2	38	69.8	M12 depth 23	35.8



12 Thread (UN-2B, UNF-2B) SAE O Ring BOSS

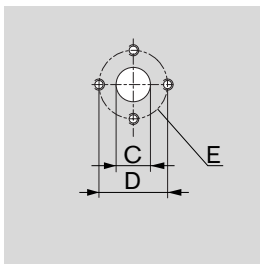
At pressures $p_2 > 210$ bar limited service life

Ordering code	Size	Delivery side			Suction side				
		G	D	E	F	G	D	E	F
07	022...028	11/16"-12 UN-2B	45	0.5	19	15/16"-12 UN-2B	50	0.5	19
	032...045	15/16"-12 UN-2B	50			15/18"-12 UN-2B	58		
	050...063	15/18"-12 UN-2B	58			17/18"-12 UN-2B	68		



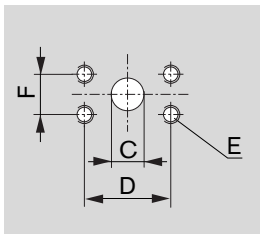
20 Rectangular flange

Ordering code	Size	Delivery side			Suction side		
		C	D	E	C	D	E
20	22.5...63 cm ³	18	55	M8 depth 13	26	55	M8 depth 13



30 Rectangular flange

Ordering code	Size	Delivery side			Suction side		
		C	D	E	C	D	E
30	22.5...56 cm ³	18	39.7	M8 depth 13	26	50.8	M10 depth 13
30	63 cm ³	26	50.8	M10 depth 13	36	62	M10 depth 13

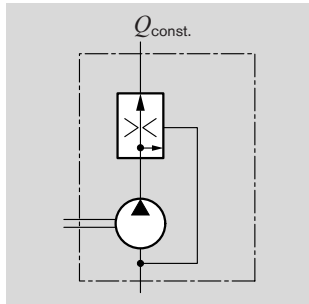
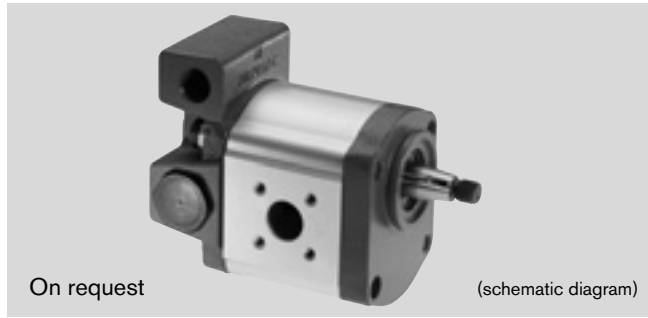


40 Rectangular flange SAE, thread UNC

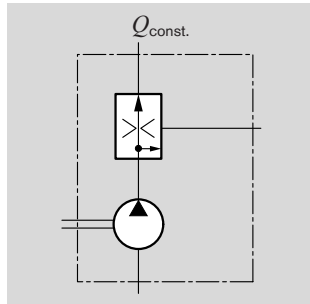
Ordering code	Size	Delivery side				Suction side			
		C	D	E	F	C	D	E	F
40	22.5...36 cm ³	19	47.6	3/8"-16 UNC- 2B depth	22.2	25	52.4	3/8"-16 UNC- 2B depth	26.2
	32.0...50 cm ³	25	52.4		26.2	32	58.7		30.2
	56.0...63 cm ³	32	58.7		30.2	38	69.8		35.8

Gear pumps with integral valves

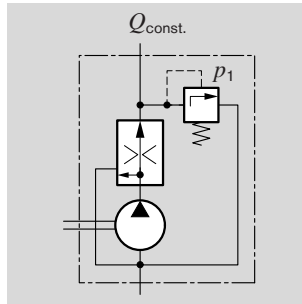
In order to reduce external pipework it is possible to incorporate a flow-control valve or pressure-relief valve in the cover of the gear pump. A typical application of this is in the supply of hydraulic oil in power steering systems. The pump delivers a constant flow irrespective of the speed at which it is driven. The excess flow is either returned internally to the suction port or distributed externally to other items of equipment.



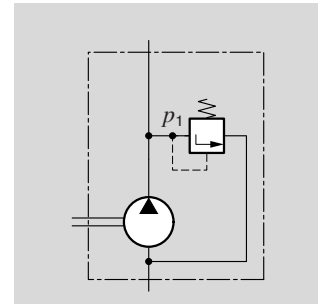
3-way flow-control valve.
Excess flow returned to suction line
 $Q_{const.} = 2...30 \text{ l/min}$



3-way flow-control valve.
Excess flow distributed externally; loadable
 $Q_{const.} = 2...30 \text{ l/min}$



3-way flow-control valve with pressure-relief valve.
Excess flow returned to suction line
 $Q_{const.} = 2...30 \text{ l/min}$
 $p_1 = 100...180 \text{ bar}$



Pressure-relief valve.
Discharge returned to suction line
 $p_1 = 5...250 \text{ bar}$

Ordering code

S	xxx17
---	-------

E	xxx12
---	-------

V	15011
---	-------

D	180xx
---	-------

Design calculations for pumps

The design calculations for pumps are based on the following parameters:

- V [cm^3/rev] Displacement
- Q [l/min] Delivery
- p [bar] Pressure
- M [Nm] Drive torque
- n [rev/min] Drive speed
- P [kW] Drive power

It is also necessary to allow for different efficiencies such as:

- η_v Volumetric efficiency
- η_{hm} Hydraulic-mechanical efficiency
- η_t Overall efficiency

The following formulas describe the various relationships.

They include correction factors for adapting the parameters to the usual units encountered in practice.

Caution: Diagrams providing approximate selection data will be found on subsequent pages.

$$Q = V \cdot n \cdot \eta_v \cdot 10^{-5}$$

$$p = \frac{M \cdot \eta_{hm}}{1.59 \cdot V}$$

$$P = \frac{p \cdot Q}{6 \cdot \eta_t}$$

$$V = \frac{Q}{n \cdot \eta_v} \cdot 10^5$$

$$V = \frac{M \cdot \eta_{hm}}{159 \cdot p}$$

$$Q = \frac{6 \cdot P \cdot \eta_t}{p}$$

$$n = \frac{Q}{V \cdot \eta_v} \cdot 10^5$$

$$M = \frac{1.59 \cdot V \cdot p}{\eta_{hm}}$$

$$p = \frac{6 \cdot P \cdot \eta_t}{Q}$$

[%]

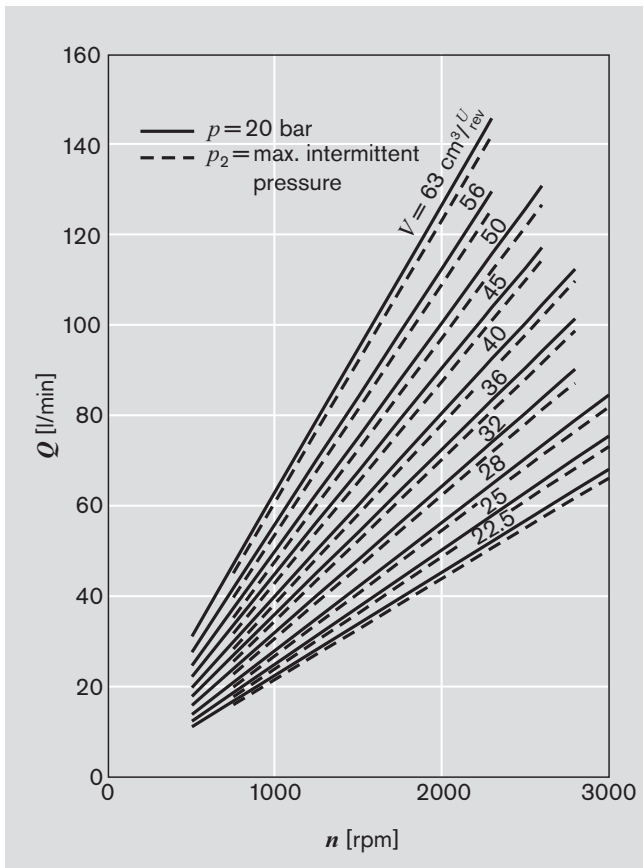
n — η_v — Q V [cm^3/rev] Q [l/min] p [bar]

M — η_{hm} — p

P — η_t — $P \cdot Q$ n [rev/min] P [kW] M [Nm]

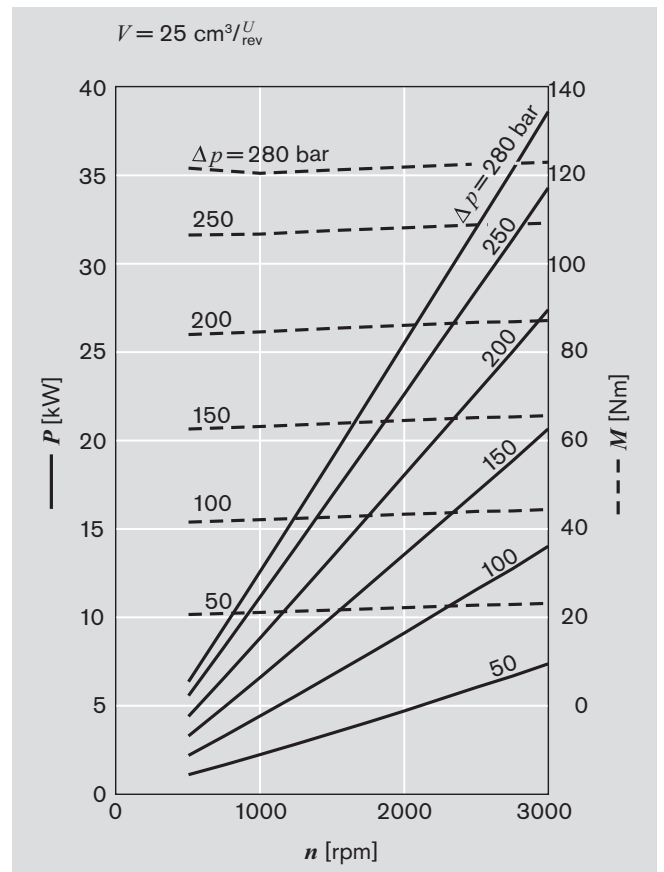
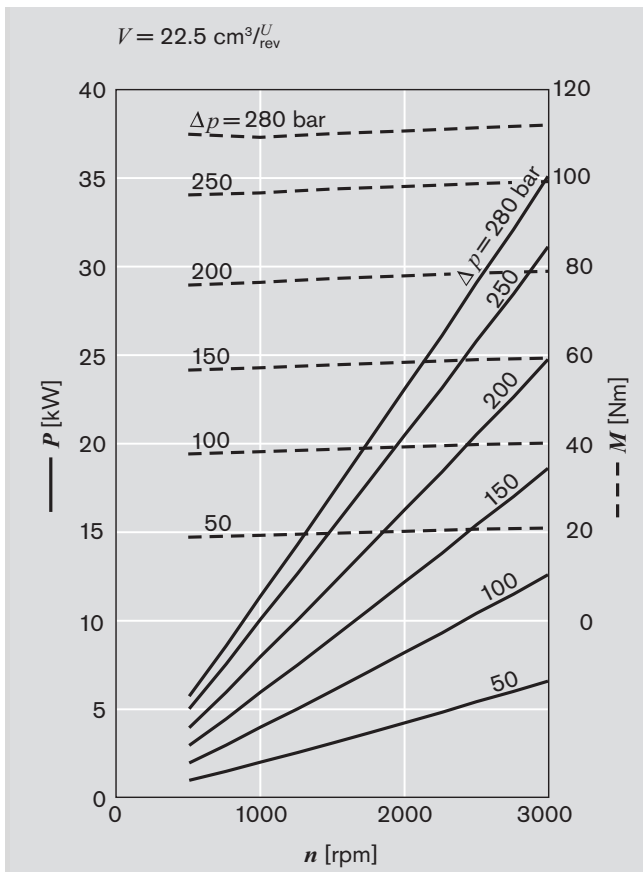
Caution: η [%] e.g. 95 [%]

Performance charts

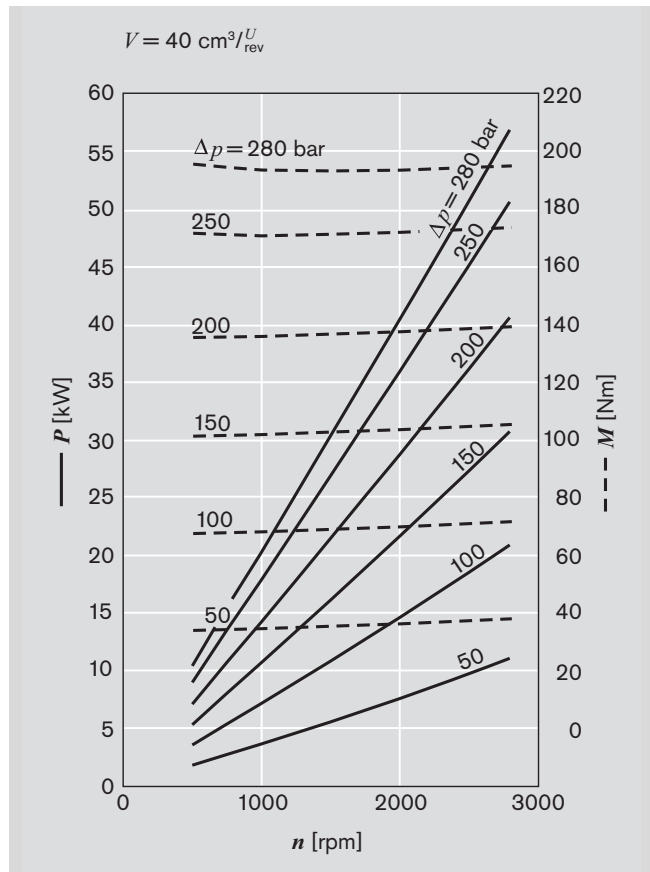
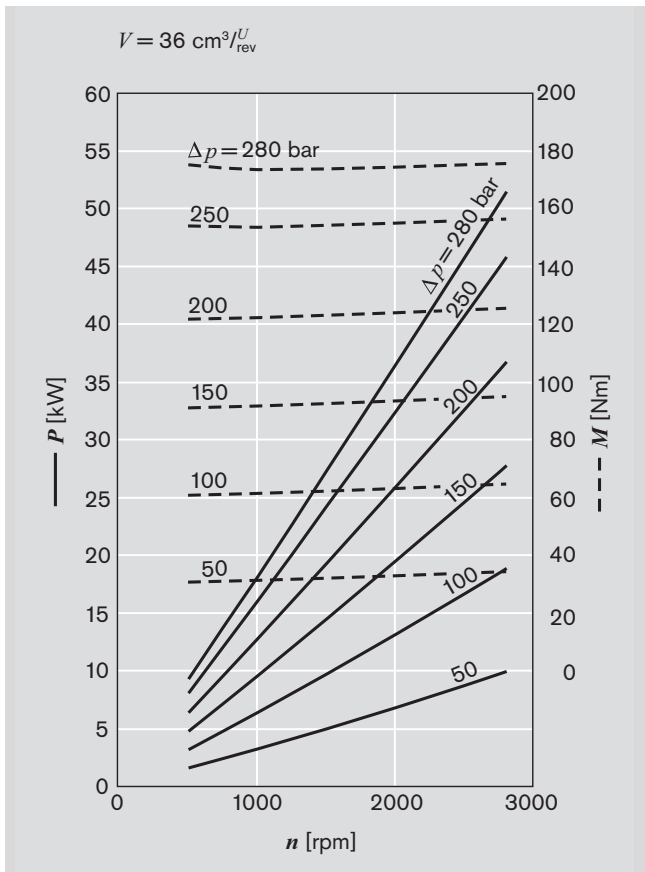
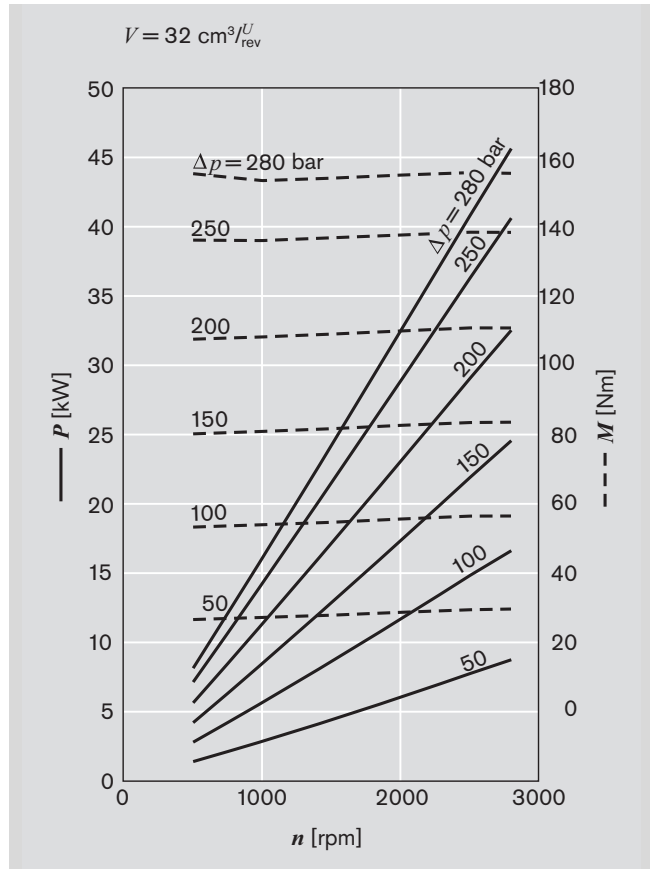
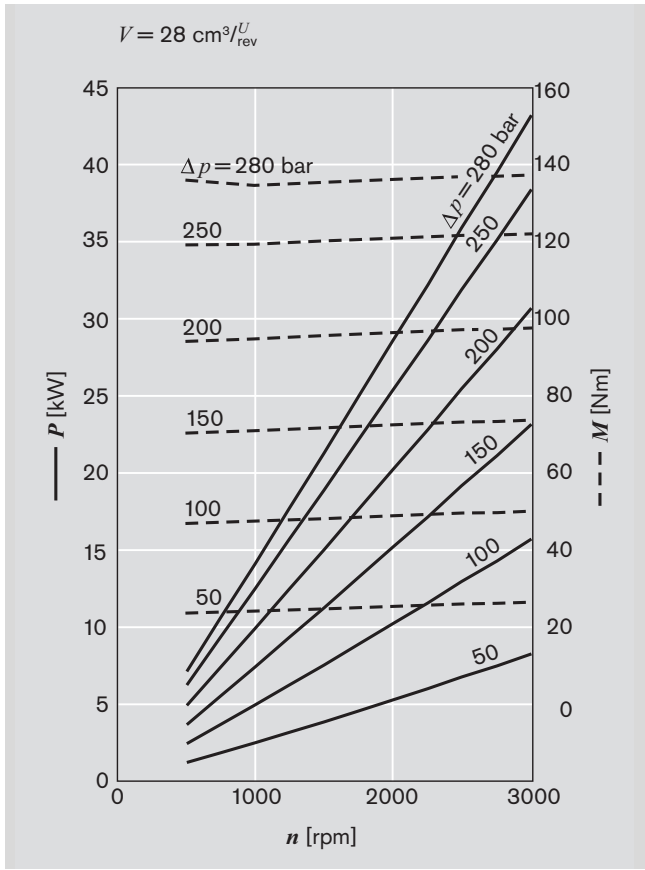


$\nu = 35 \text{ mm}^2/\text{s}, \vartheta = 50^\circ\text{C}$

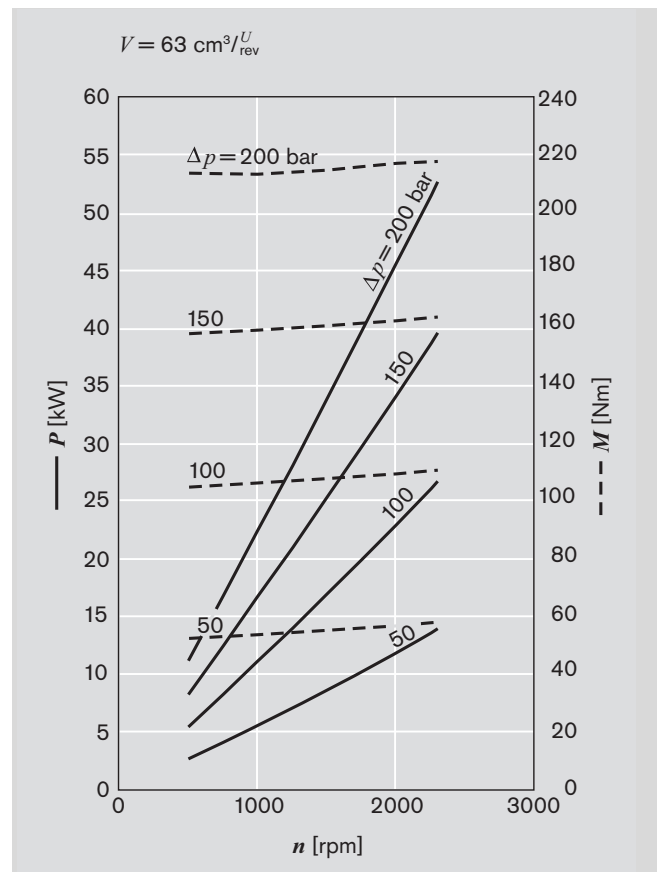
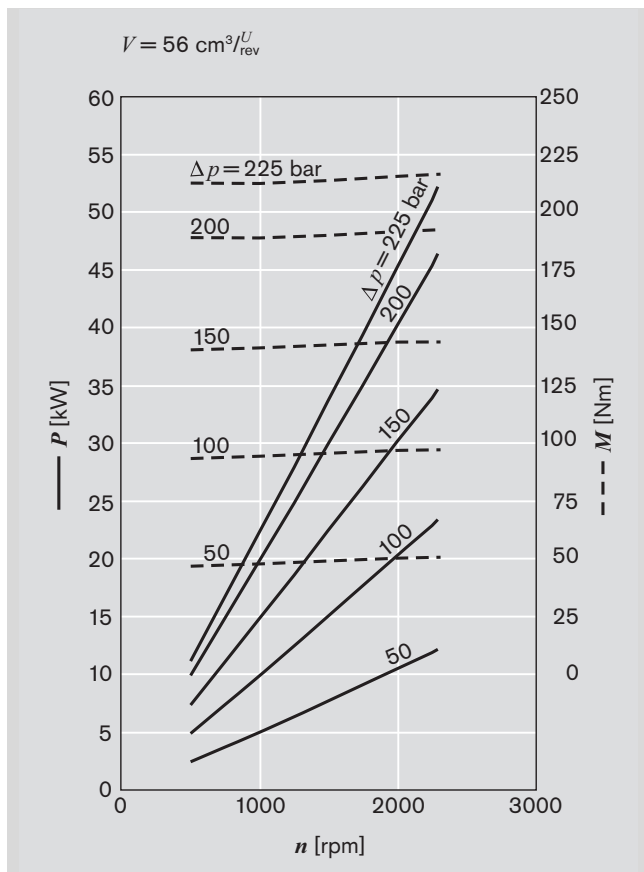
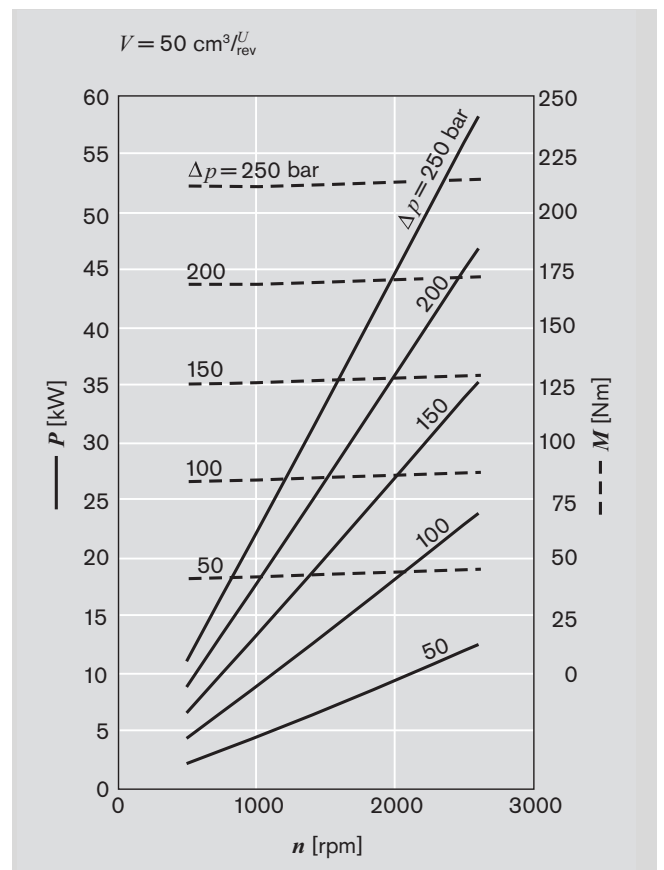
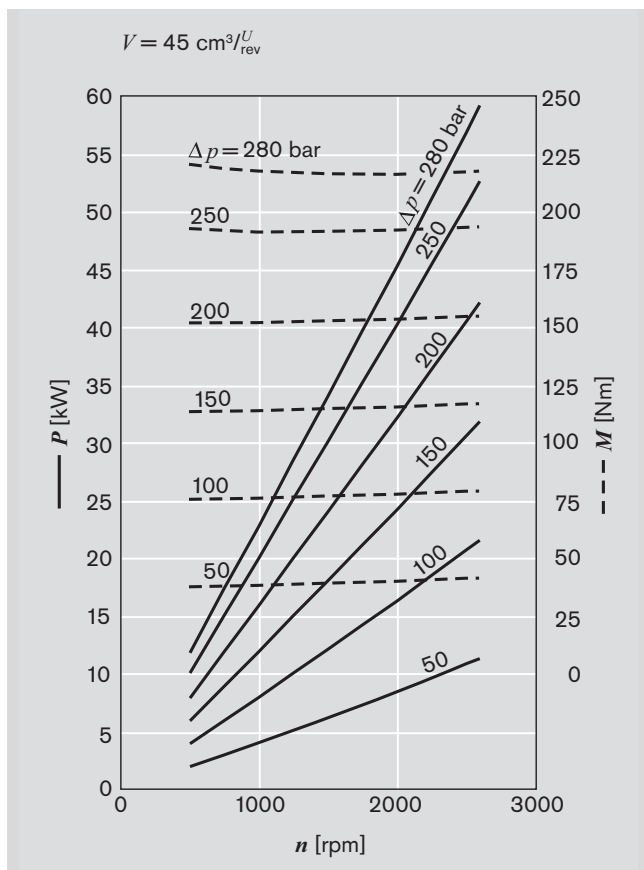
$Q = f(n, V)$ incl. η_v
 $P = f(n, p)$ ——— incl. η_t
 $M = f(n, p)$ - - - incl. η_{hm}



Performance charts (continued)



Performance charts (continued), $V = 70, 80, 100 \text{ cm}^3/\text{rev}$ on request



Noise charts

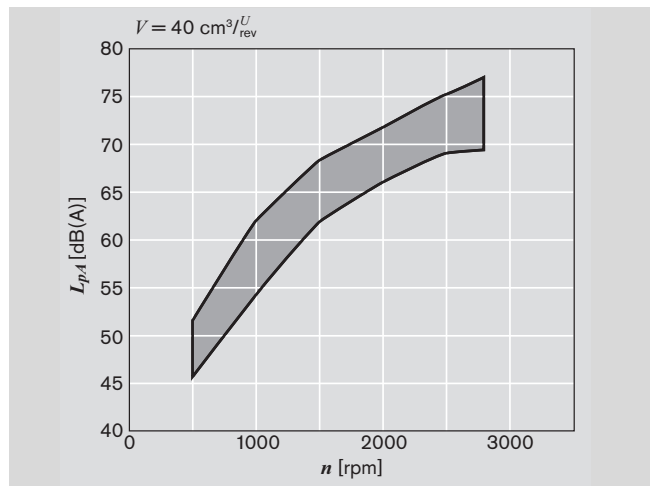
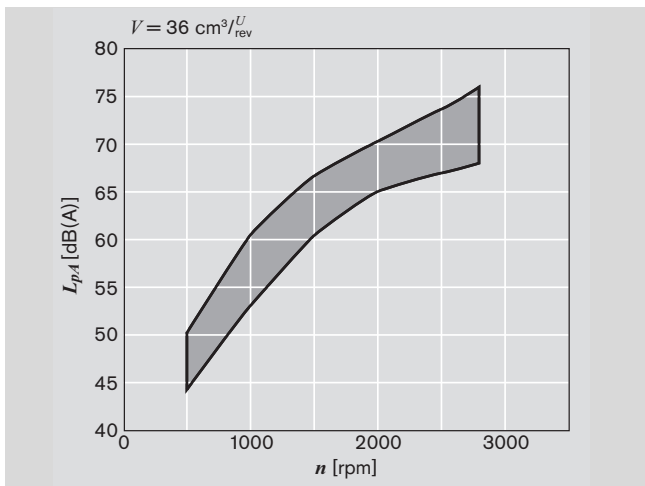
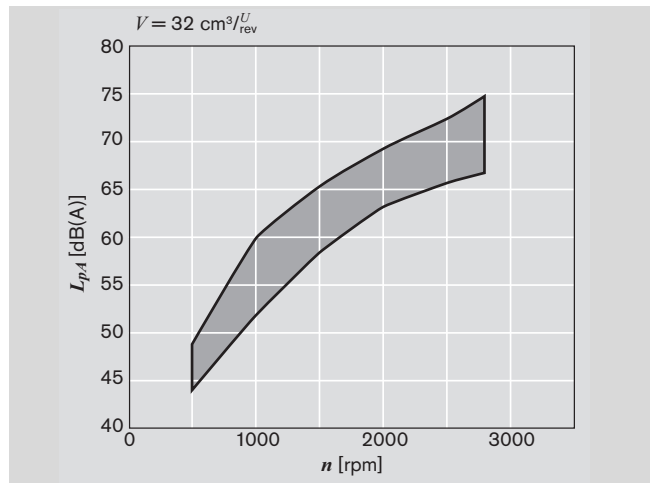
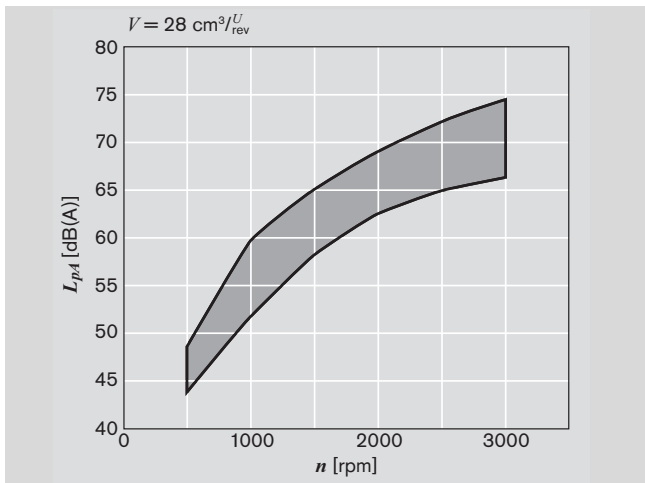
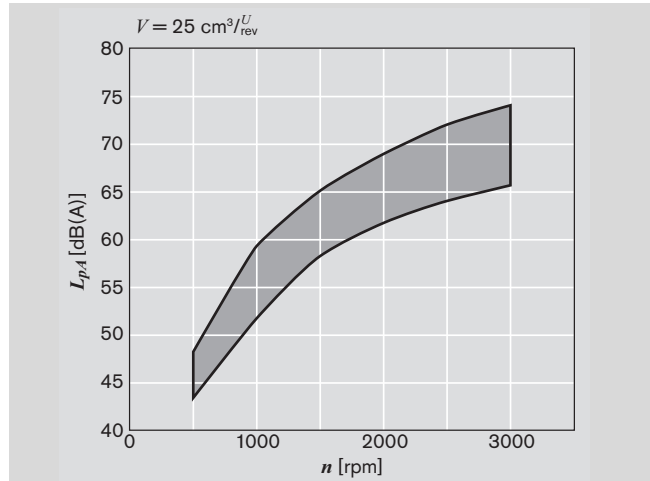
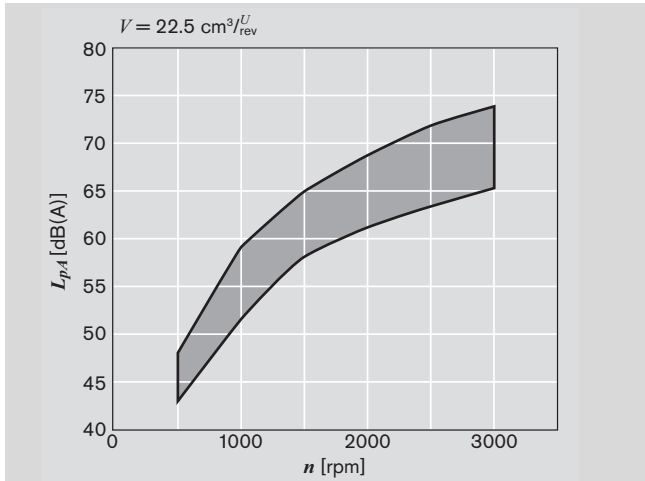
Noise level dependent on rotational speed, pressure range between 10 bar and pressure value p_2 (see page 14 Specifications table).

Oil data: $\nu = 32 \text{ mm}^2/\text{s}$, $\vartheta = 50^\circ\text{C}$.

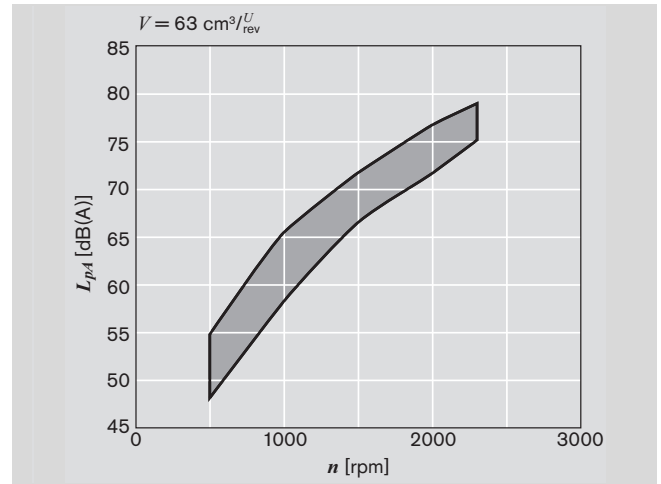
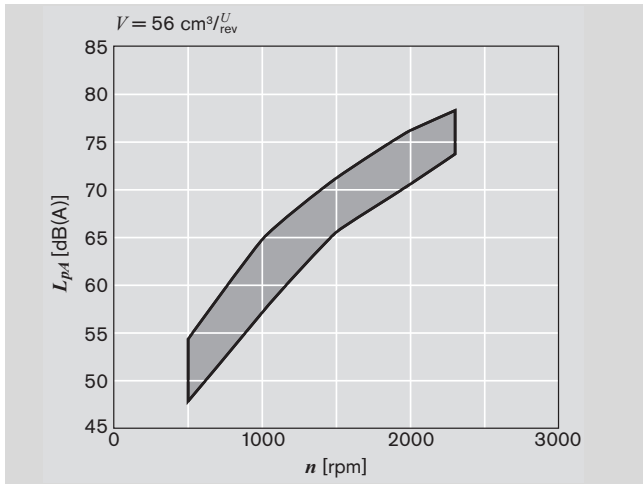
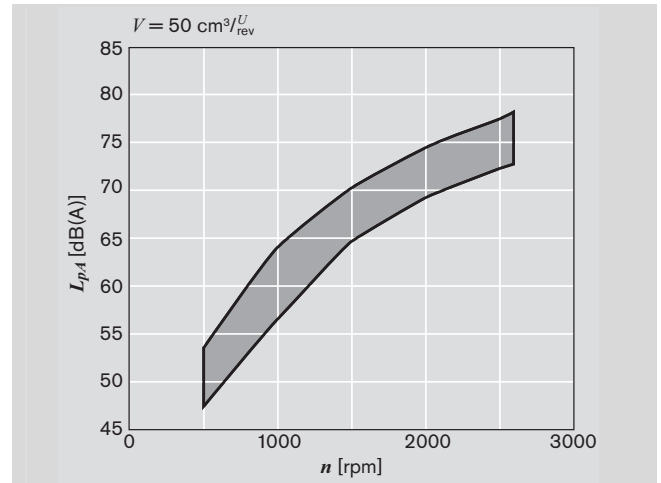
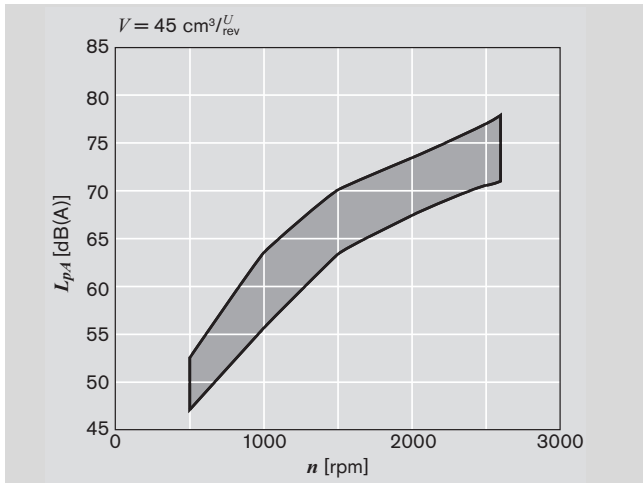
Sound pressure level calculated from noise measurements made in the sound absorbent measuring room compliant with DIN 45 635, Part 26.

Spacing between measuring sensor – pump: 1 m.

These are typical characteristic values for the respective model. They describe the airborne sound emitted solely by the pump. Environmental influences (installation site, piping, further system components) are not taken into consideration. Each value applies for a single pump.



Noise charts (continued), $V = 70, 80, 100 \text{ cm}^3/U_{rev}$ on request



Specification

General	
Construction	External gear pump
Mounting	Flange or through-bolting with spigot
Line ports	Flange
Direction of rotation (looking on shaft)	Clockwise or counter-clockwise, the pump may only be driven in the direction indicated
Installation position	Any
Load on shaft	Radial and axial forces after consulting
Ambient temperature range	-30°C...+80°C with NBR seals or -20°C...+110°C with FKM seals
Hydraulic fluid	- Mineral oil compliant with DIN 51 524, 1-3, however under higher load at least HLP compliant with DIN 51 524 Part 2 recommended. - Comply with RE 90220 - Further operating fluids possible after consultation
Viscosity	12...800 mm ² /s permitted range 20...100 mm ² /s recommended range ...2000 mm ² /s range permitted for starting
Hydraulic fluid temperature range	max. +80°C with NBR seals *) max. +110°C with FKM seals **)
Filtration ***)	At least cleanliness level 20/18/15 compliant with ISO 4406 (1999)

*) NBR = Perbunan®
 **) FKM = Viton®
 ***) On hydraulic systems or devices with critical counter-reaction, such as steering and counterbalance valves, the type of filtration selected must be adapted to the sensitivity of these devices/systems.

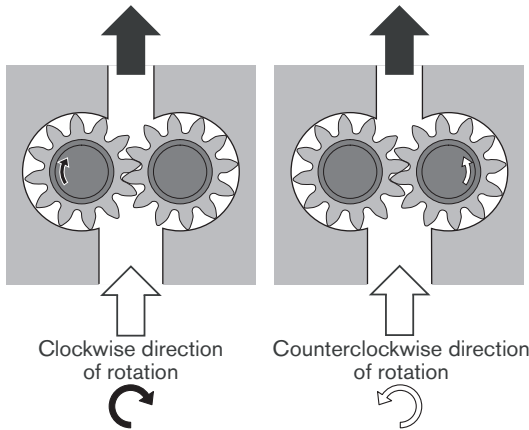
Safety requirements pertaining to the whole systems are to be observed.

In the case of applications with high numbers of load cycles please consulting.

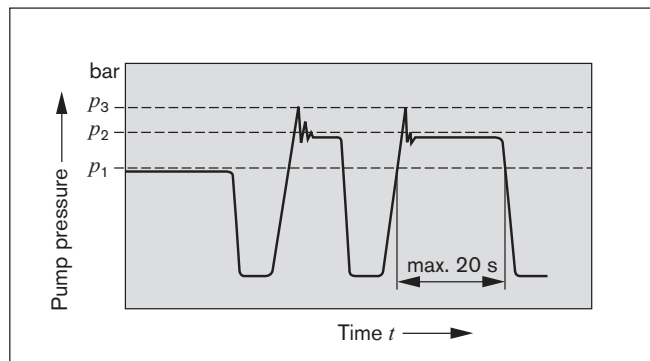
Definition of direction of rotation

Always look on the drive shaft.

Caution: Dimensions drawings always show clockwise-rotation pumps. On counterclockwise-rotation pumps the positions of the drive shaft and the suction and pressure ports are different.



Definitions of pressures



p_1 max. continuous pressure
 p_2 max. intermittent pressure
 p_3 max. peak pressure

Model AZPG

Displacement	V	cm ³ /rev	22.5	25	28	32	36	40	45	50	56	63	70	80	100	
Suction pressure	p_e		0.7...3 (absolute), with tandem pumps: $p_e (p_2) = \max. 0.5 > p_e (p_1)$													
max. continuous pressure	p_1	bar	250								220	195	170	120	90	80
max. intermittent pressure	p_2		280								250	225	200	150	120	100
max. peak pressure	p_3		300								280	250	230	180	150	120
min.	< 100	rpm	500	500	500	500	500	500	500	500	500	500	500	500	500	
rpm at bar	12 mm ² /s		100...180	1200	1200	1000	1000	1000	800	800	800	800	800	800	800	800
			180... p_2	1400	1400	1400	1400	1200	1200	1000	1000	1000	1000	1000	1000	1000
	25 mm ² /s		p_2	600	600	500	500	500	500	500	500	500	500	500	600	800
max. rpm at	p_2		3000	3000	3000	2800	2800	2800	2600	2600	2300	2300	2200	2000	1700	

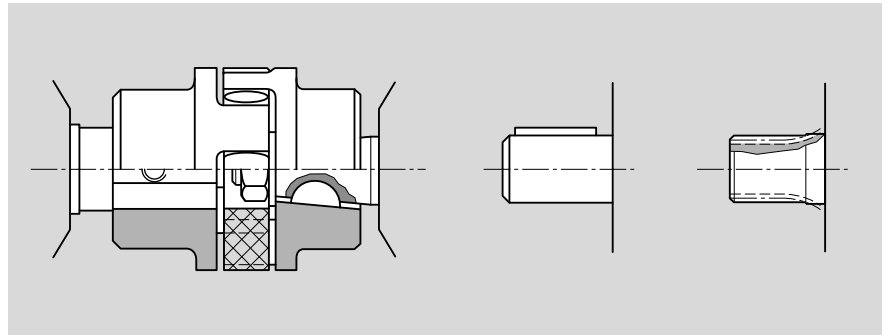
Drive arrangement

1. Flexible couplings

The coupling must not transfer any radial or axial forces to the pump.

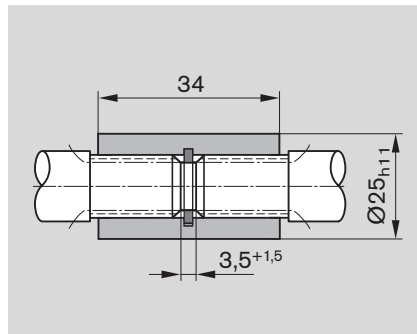
The maximum radial runout of shaft spigot is 0.2 mm.

Refer to the fitting instructions provided by the coupling manufacturer for details of the maximum permitted shaft misalignment.



2. Coupling sleeve

Used on shafts with DIN or SAE splining. Caution: There must be no radial or axial forces exerted on the pump shaft or coupling sleeve. The coupling sleeve must be free to move axially. The distance between the pump shaft and drive shaft must be $3.5^{+1.5}$. Oil-bath or oil-mist lubrications is necessary.



Splined shaft	M_{max} [Nm]	V [cm ³ /rev]
SAE-B 13 teeth	300	12.5...100
SAE-C 15 teeth	450	

3. Drive shaft with tang

For the close-coupling of the pumps to electric motor or internal-combustion engine, gear, etc. The pump shaft has a special tang and driver ③ (not included in supply). There is no shaft sealing.

The recommended arrangements and dimensions for the drive end and sealing are as follows.

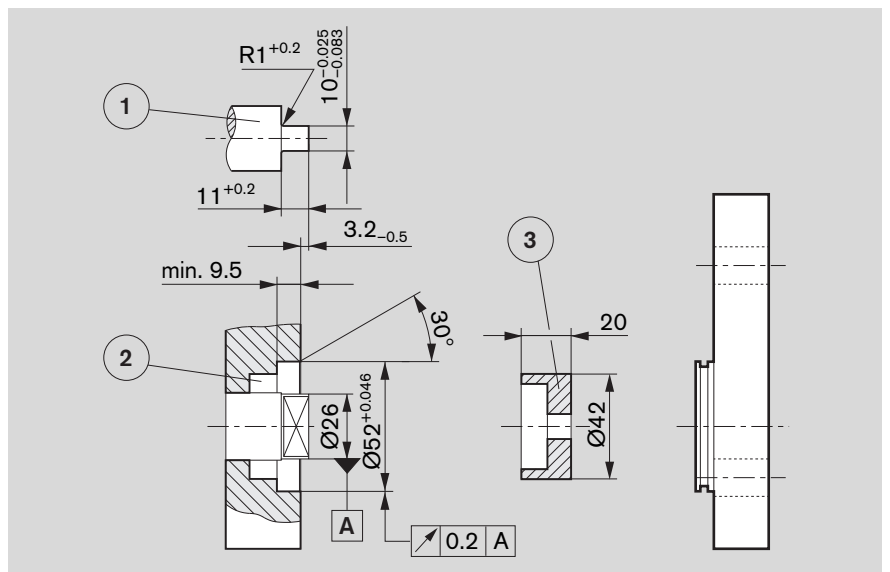
① Drive shaft

Case-hardening steel DIN 17 210
e.g. 20 MnCrS 5
case-hardened 1.0 deep; HRA 83 \pm 2
Surface for sealing ring
ground without rifling $R_t \leq 4\mu\text{m}$

② Radial shaft seal

with rubber covered seal
(see DIN 3760, Type AS, or double-lipped ring).

Cut 15° chamfer or fit shaft seal ring with protection sleeve.



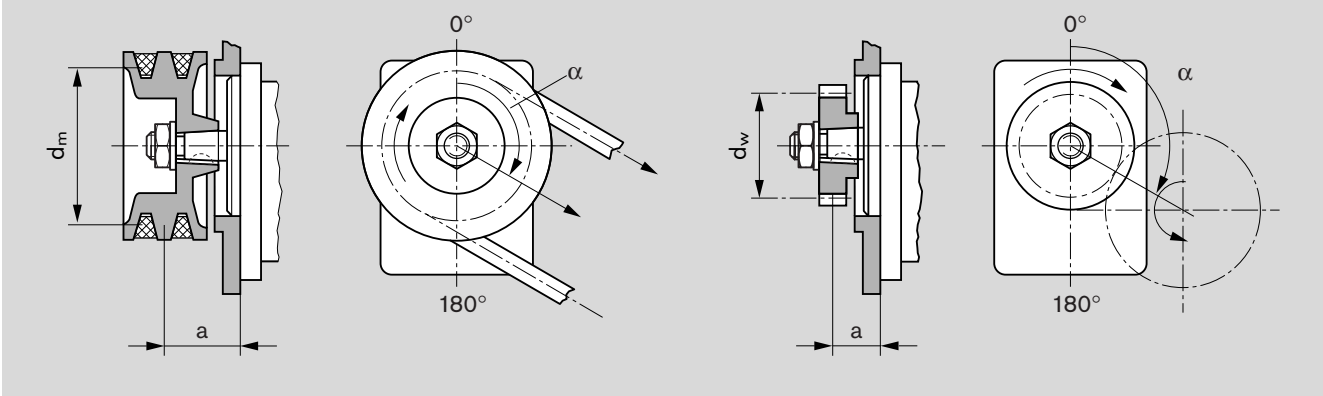
Drive with special tang

M_{max} [Nm]	V [cm ³ /rev]	p_{max} [bar]
130	28	270
	36	210
	40	190
	45	160
	50	150
	56	135
	63	120
	70	110
	80	95
	100	75

For drive shaft with tang

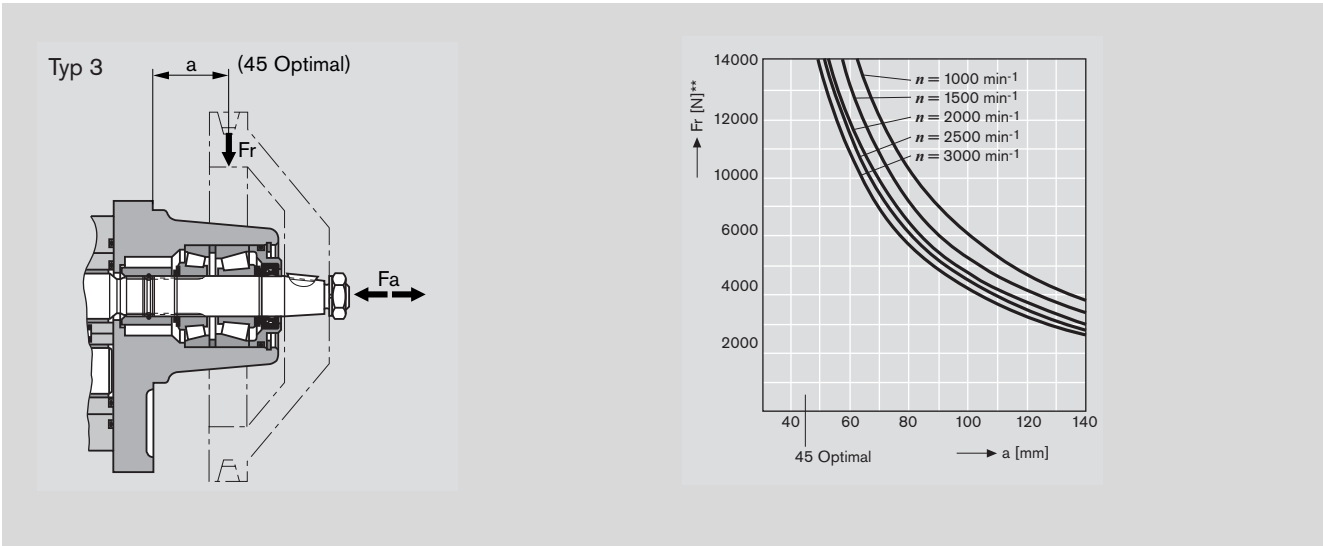
4. V-belts and straight gearwheels or helical toothed gear drives without outboard bearing

When proposing to use V-belt or gear drive, please submit details of the application for our comments (especially dimensions a , d_m , d_w and angle α). For helical toothed gear drives, details of the helix angle β are also required.



5. Outboard bearing

Outboard bearing eliminate possible problems when the pumps are driven by V-belts or gearwheels. The diagrams below show the maximum radial and axial loads that can be tolerated based on a bearing life of $L_H = 1000$ h.



Multiple gear pumps

Gear pumps are well-suited to tandem combinations of pumps in which the drive shaft of the first pump is extended to drive a second pump and sometimes a third pump in the same manner. A coupling is fitted between each pair of pumps. In most cases each pump is isolated from its neighbor, i.e. the suction ports are separate from one another. A common suction port is also possible as an option.

Caution: Basically, the specifications for the single pumps apply, but with certain restrictions:

Max. speed: This is determined by the highest rated pump speed in use.

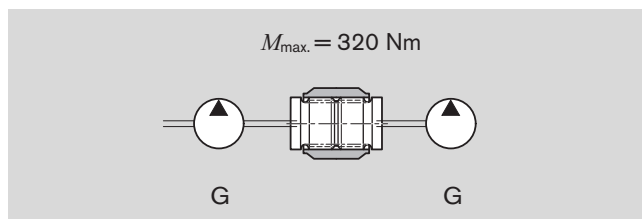
Pressures: These are restricted by the strength of the drive shaft, the through drives and the drivers. Appropriate data is given in the dimensional drawings.

Pressure restrictions during standard through drive

In the case of series G, the driver for the second pumping stage can carry a load of up to $M_{max.} = 130 \text{ Nm}$, i.e. there is a pressure restriction for the second stage and any further stages.

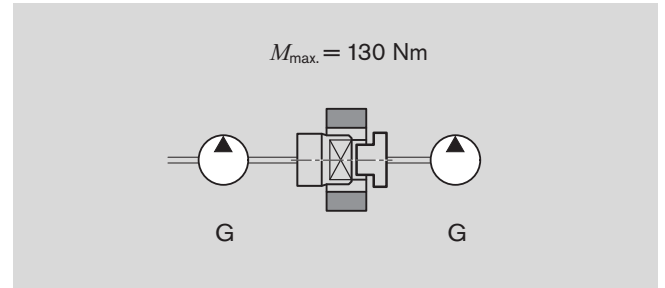
$M_{max.}$ [Nm]	V [cm ³ /rev]	p_{max} [bar]
65 Series F, S	16	230
	19	190
	22.5	160
	25	140
130 Series G, U	22.5	280
	25	280
	28	260
	32	230
	36	200
	40	180
	45	160
	50	150
	56	130
	63	110
	70	100
80	90	
100	70	

Reinforced through drive



If the first stage is driven through a tang (driver) or outboard bearing type 1, pressure restrictions apply as indicated in the formula below.

Reinforced through drives are available for applications with higher transfer torques and/or rotational vibrations. Customized designs available on request.



Combinations

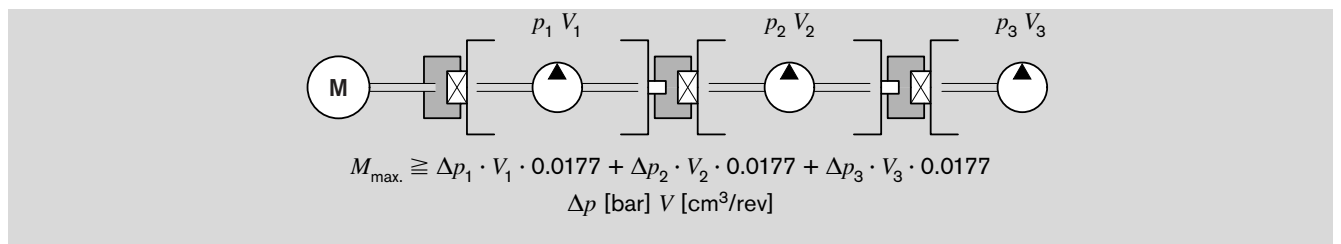
Series pump 1	$M_{max.}$ [Nm]	Series pump 2
G	130	G, U
G	65	F
G	65	S

For configuration of multiple pumps we recommend the pump is positioned with the largest displacement on the drive side.

Max. transferrable drive torque

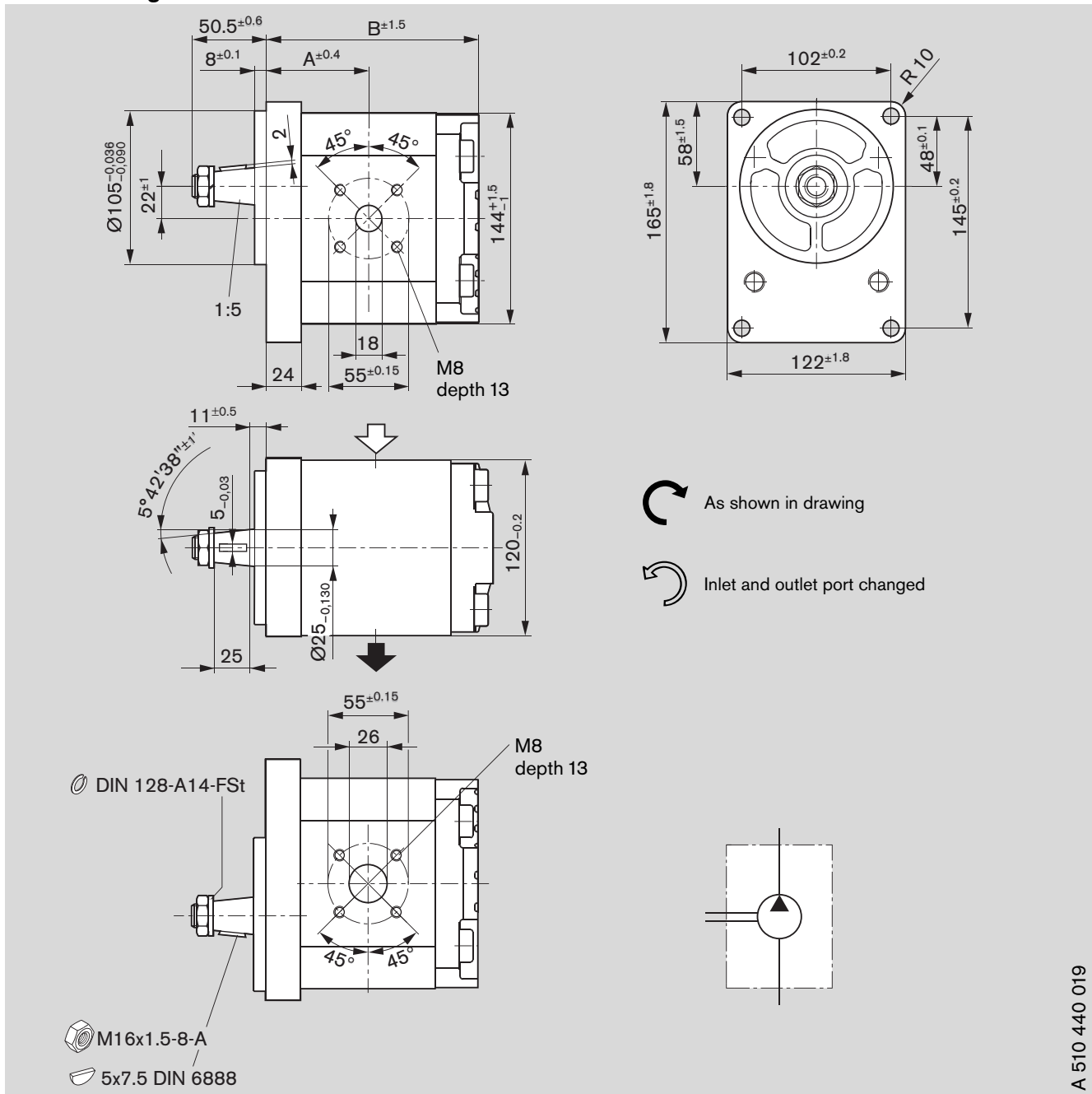
Function	Code letter	Designation	Max. transferrable drive torque* [Nm]
Splined shafts	D	SAE J744 22-4 (13T 16/32 DL)	300
	E	SAE J744 22-4 (15T 16/32 DL)	450
Tapered key shaft	C	1:5	290
	H	1:8	240

* These figures are valid providing the conditions defined on pages 15 and 16 are observed. Bosch Rexroth is to be consulted if the stated values are exceeded.



Dimensions

Standard range



A 510 440 019

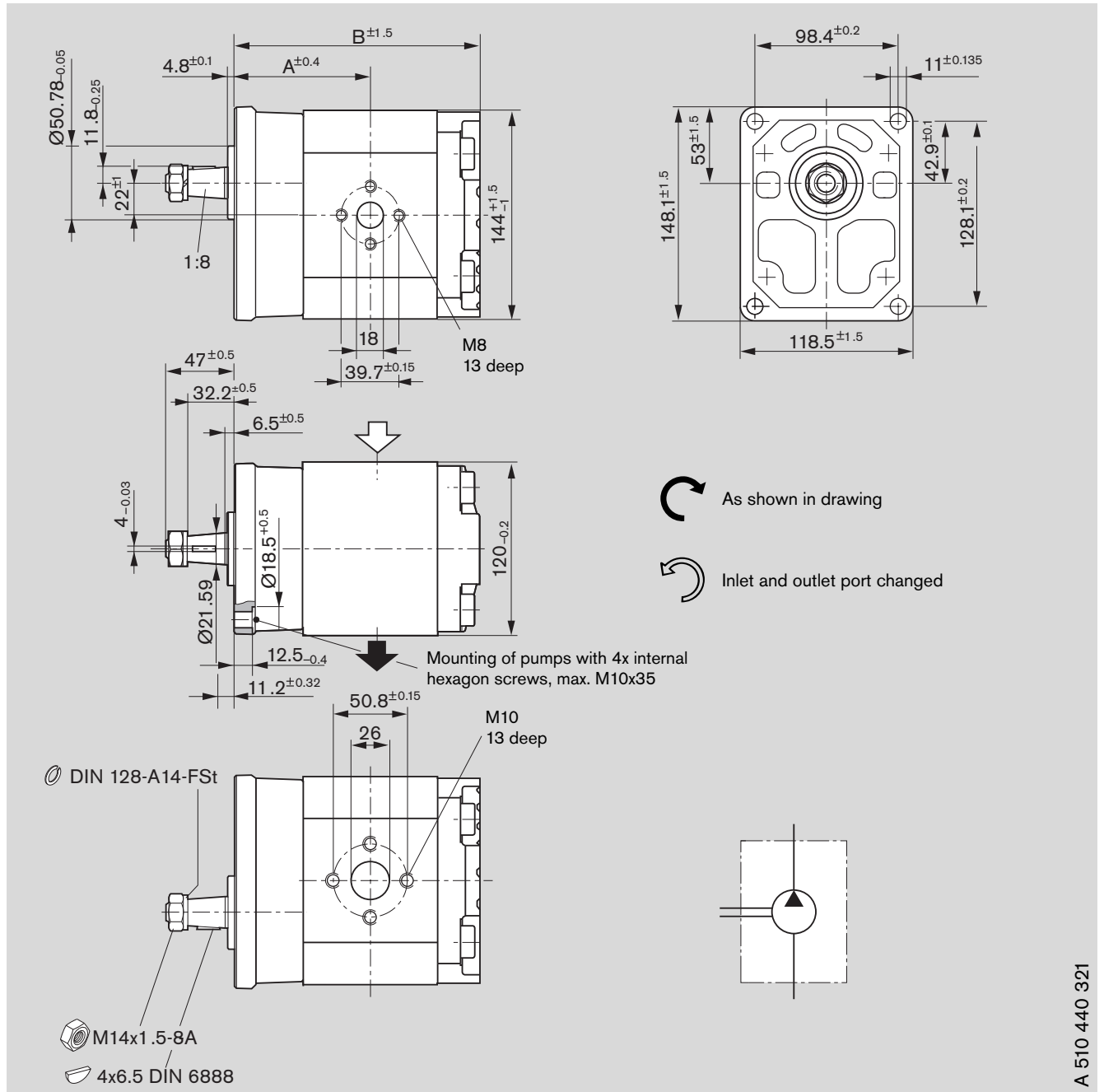
Ordering code:

AZPG - 22 - **C B 20 M B**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	kg	Dimension [mm]	
	L	R				A	B
22.5	0 510 725 441	0 510 725 164	280	3000	10.3	60.9	124.6
25	0 510 725 442	0 510 725 165	280	3000	10.4	61.9	126.6
28	0 510 725 443	0 510 725 166	280	3000	10.5	63.2	129.1
32	0 510 725 444	0 510 725 167	280	2800	10.7	64.8	132.4
36	0 510 725 445	0 510 725 168	280	2800	10.9	66.4	135.7
40	0 510 725 446	0 510 725 169	280	2800	11.0	68.1	139.0
45	0 510 725 447	0 510 725 170	280	2600	11.2	70.1	143.1
50	0 510 825 324	0 510 825 024	250	2600	11.4	72.2	147.2
56	0 510 825 325	0 510 825 025	225	2300	11.7	74.7	152.2
63	0 510 825 326	0 510 825 026	200	2300	12.0	77.6	158.0

Dimensions



Standard range



A 510 440 321

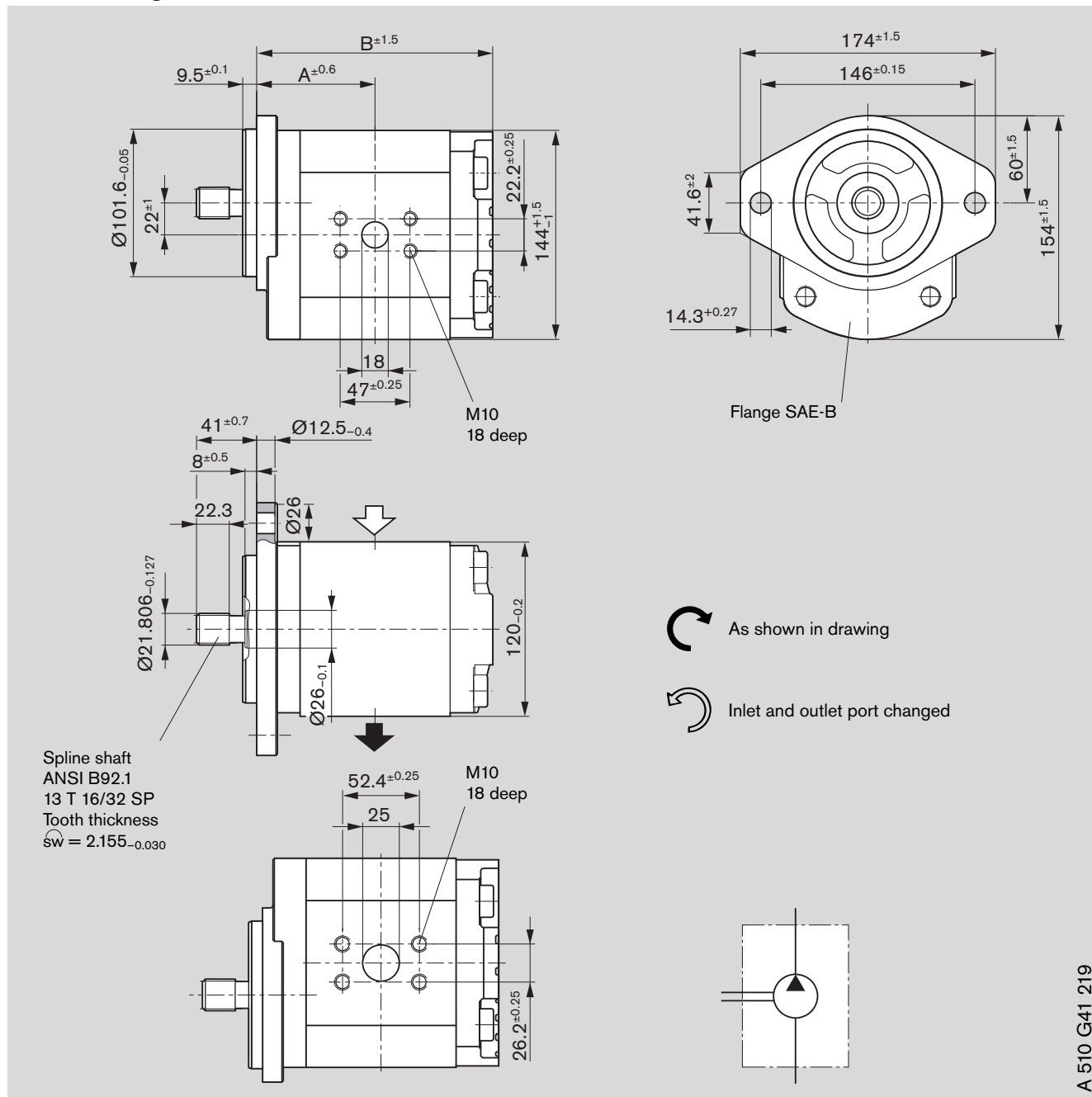
Ordering code:

AZPG - 22 - H O 30 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	kg	Dimension [mm]	
	 L	 R				A	B
22.5	0 510 725 448	0 510 725 171	280	3000	9.6	63.9	147.8
25	0 510 725 449	0 510 725 172	280	3000	9.7	84.9	149.8
28	0 510 725 450	0 510 725 173	280	3000	9.8	86.2	152.3
32	0 510 725 451	0 510 725 174	280	2800	10.0	87.8	155.6
36	0 510 725 452	0 510 725 175	280	2800	10.1	89.4	158.9
40	0 510 725 453	0 510 725 176	280	2800	10.3	91.1	162.3
45	0 510 725 454	0 510 725 177	280	2600	10.5	93.1	166.3
50	0 510 825 327	0 510 825 027	250	2600	10.7	95.2	170.5
56	0 510 825 328	0 510 825 028	225	2300	11.0	97.7	175.4
63	0 510 825 329	0 510 825 029	200	1800	11.2	100.6	181.3

Dimensions

Standard range



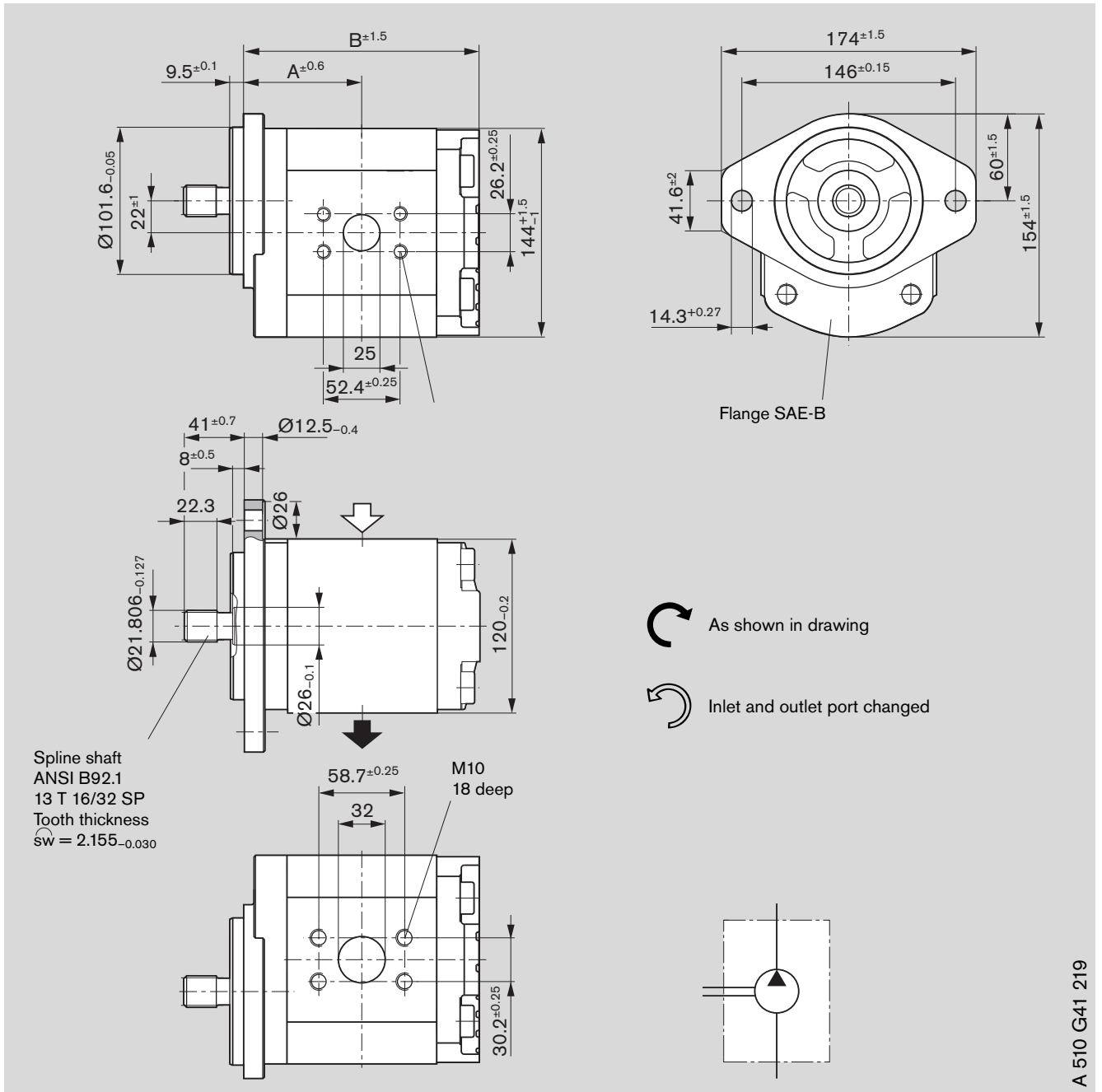
Ordering code:

AZPG - 22 - DC 07 KB

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	kg	Dimension [mm]	
	L	R				A	B
22.5	0 510 725 434	0 510 725 157	280	3000	9.6	66.4	130.1
25	0 510 725 435	0 510 725 158	280	3000	9.7	67.4	132.1
28	0 510 725 436	0 510 725 159	280	3000	9.8	68.7	134.6

Dimensions

Standard range



A 510 G41 219

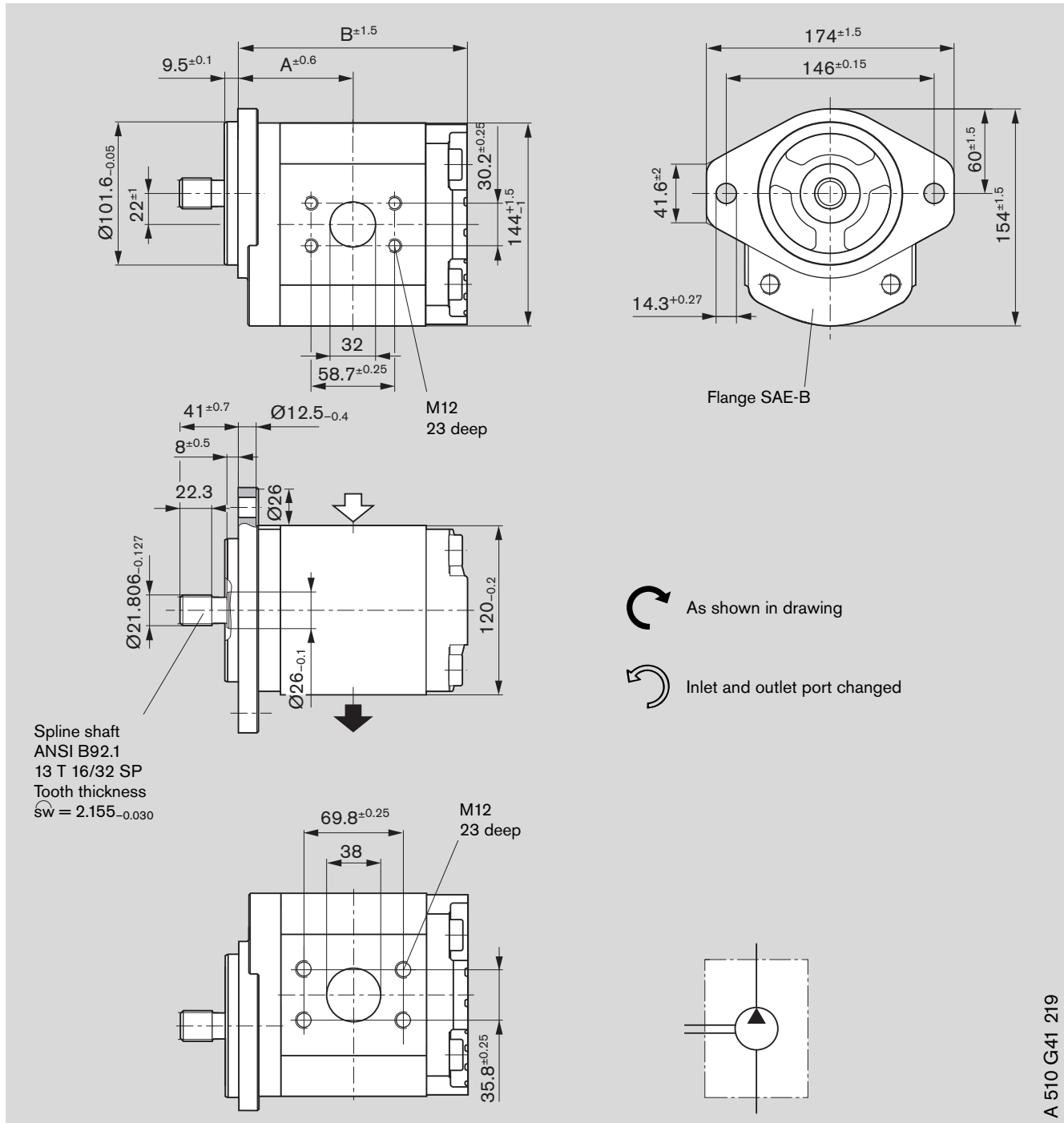
Ordering code:

AZPG - 22 - D C 07 K B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	kg	Dimension [mm]	
	L	R				A	B
32	0 510 725 437	0 510 725 160	280	2800	10.0	70.3	137.9
36	0 510 725 438	0 510 725 161	280	2800	10.1	71.9	141.2
40	0 510 725 439	0 510 725 162	280	2800	10.3	73.6	144.5
45	0 510 725 440	0 510 725 163	280	2600	10.5	75.6	148.6
50	0 510 825 321	0 510 825 021	250	2600	10.7	77.7	152.7

Dimensions

Standard range



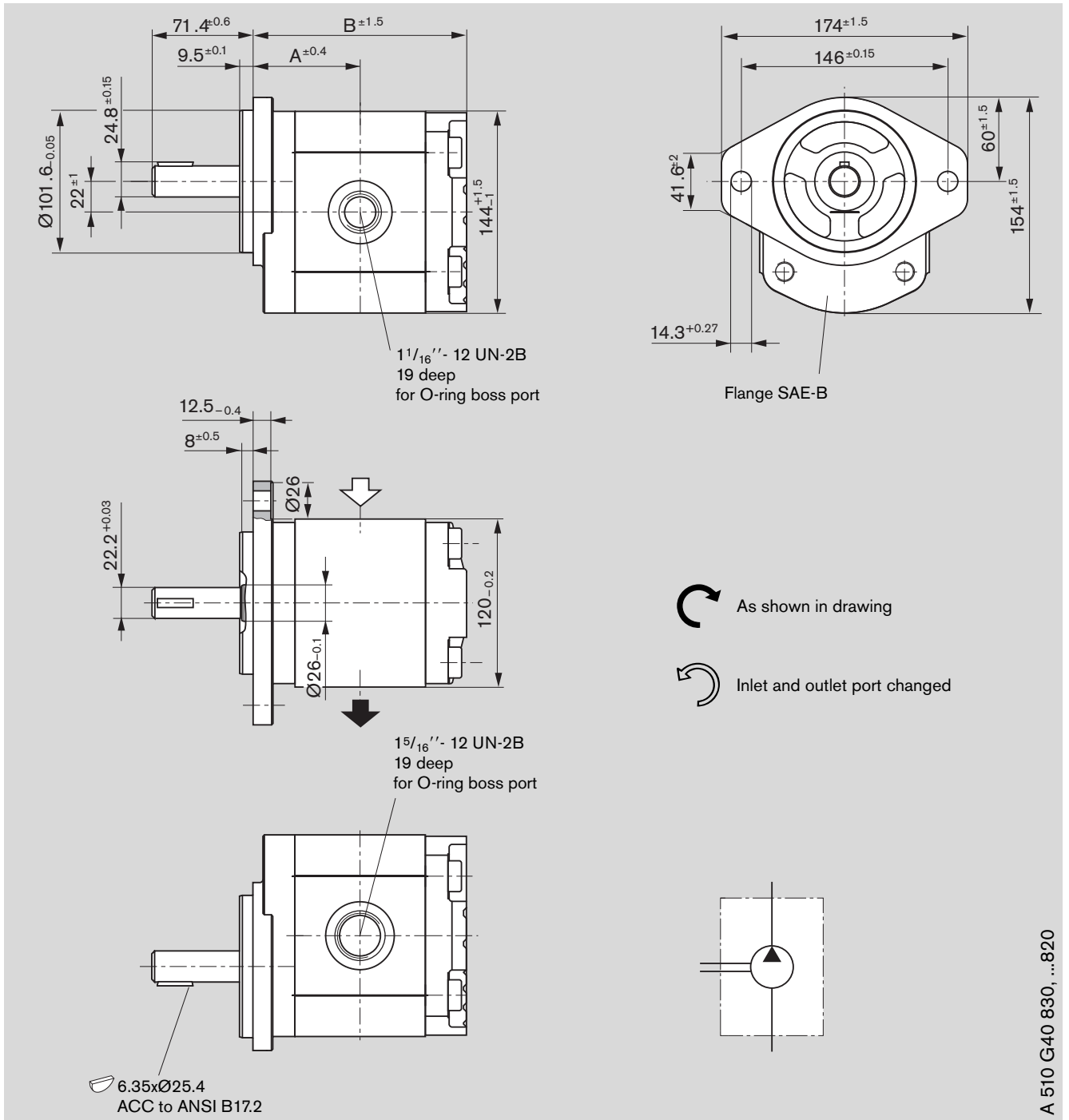
Ordering code:

AZPG - 22 - DC 07 KB

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	kg	Dimension [mm]	
	L	R				A	B
56	0 510 825 322	0 510 825 022	225	2300	11.0	80.2	157.7
63	0 510 825 323	0 510 825 023	200	2300	11.3	83.1	163.5

Dimensions

Standard range



A 510 G40 830, ... 820

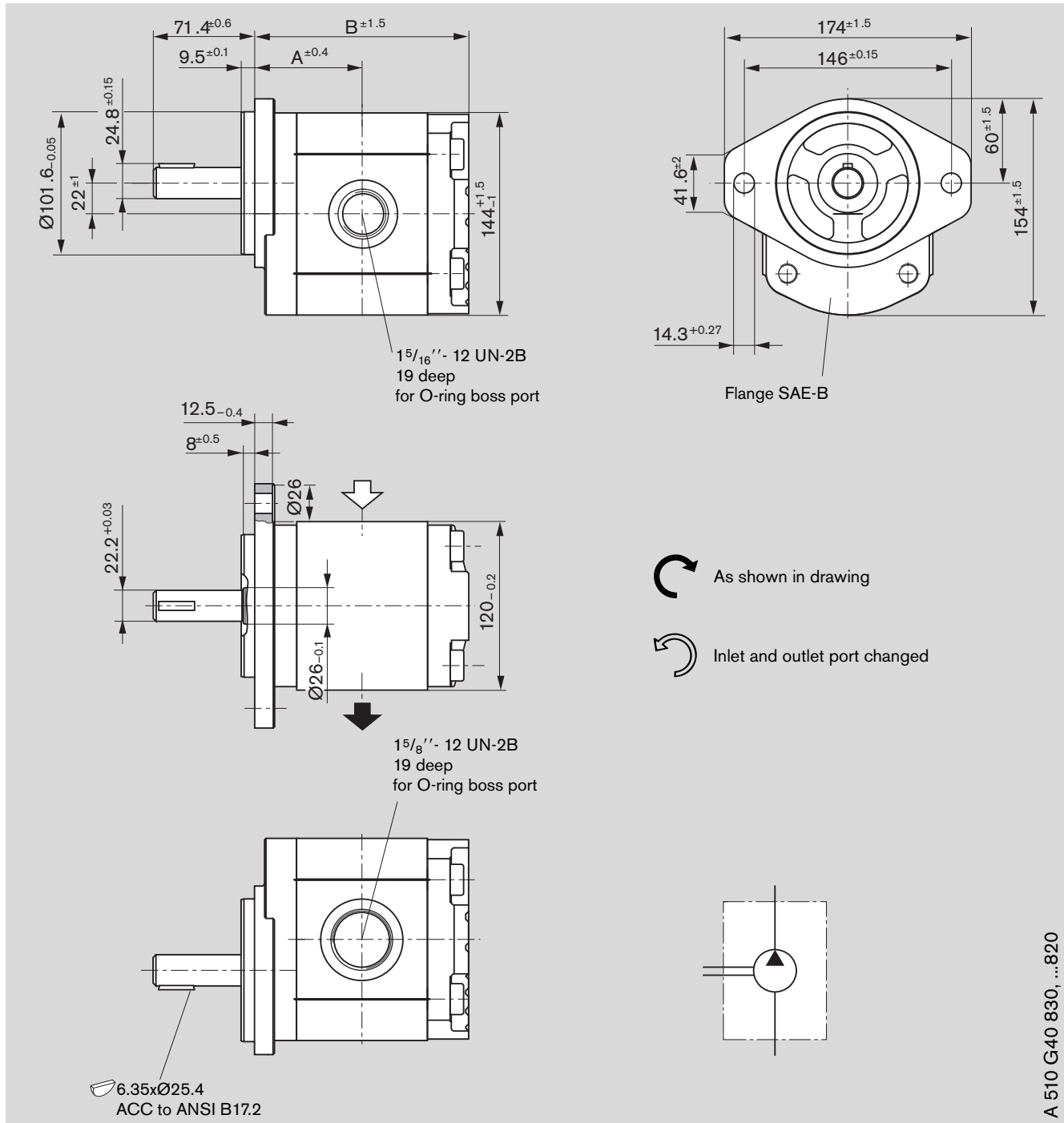
Ordering code:

AZPG - 22 - Q C 12 M B - S 0662

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
22.5	9 510 490 132	9 510 490 122	250	3000	66.4	130.3	S1	P1
25	9 510 490 133	9 510 490 123	250	3000	67.4	132.3	S1	P1
28	9 510 490 134	9 510 490 124	250	3000	68.7	134.8	S1	P1

Dimensions

Standard range



A 510 G40 830, ...820

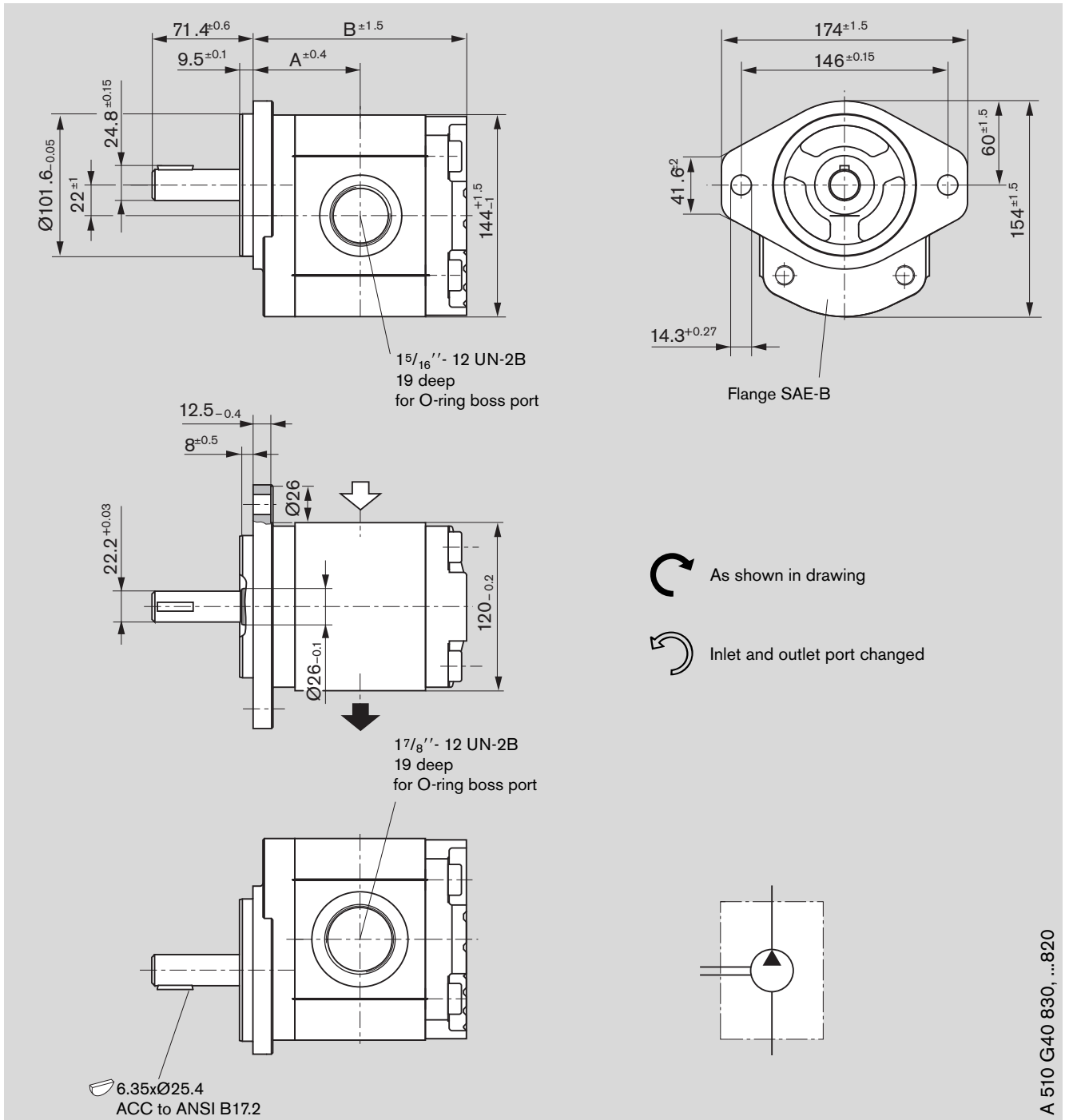
Ordering code:

AZPG - 22 - Q C 12 M B - S 0662

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
32	9 510 490 135	9 510 490 125	250	2800	70.3	138.1	S2	P2
36	9 510 490 136	9 510 490 126	250	2800	71.9	141.5	S2	P2
40	9 510 490 137	9 510 490 127	250	2800	73.6	144.8	S2	P2
45	9 510 490 138	9 510 490 128	250	2600	75.6	148.8	S2	P2

Dimensions



Standard range



A 510 G40 830, ...820

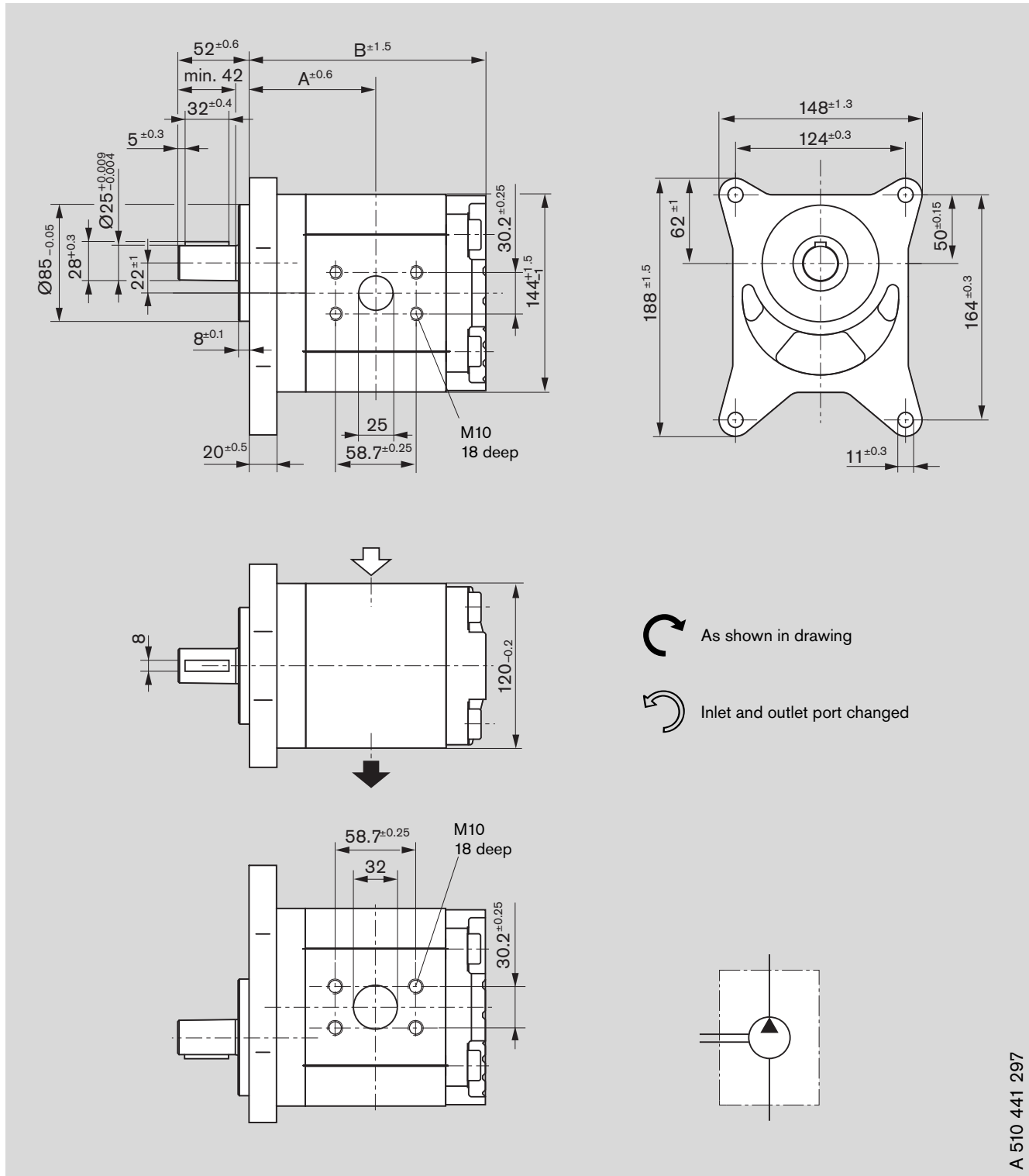
Ordering code:

AZPG - 22 - **Q C 12 M B - S 0662**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
50	9 510 490 139	9 510 490 129	220	2600	77.7	153.0	S3	P3
56	9 510 490 140	9 510 490 130	195	2300	80.2	157.9	S3	P3
63	9 510 490 141	9 510 490 131	170	2300	83.1	163.8	S3	P3

Dimensions

Standard range



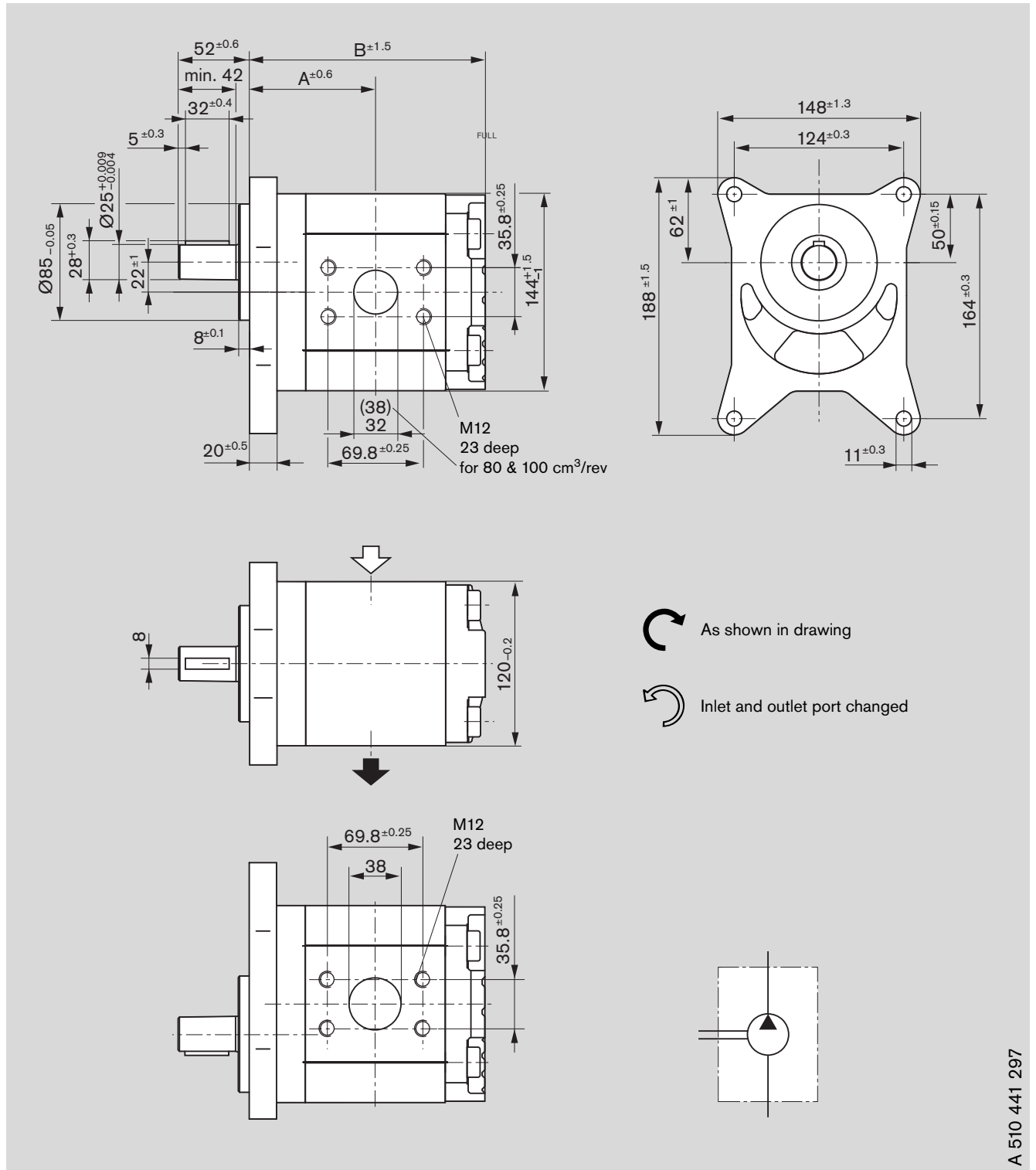
Ordering code:

AZPG - 22 - A X 07 K B - S 0303

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
40	0 510 725 432	0 510 725 147	280	2800	85.1	157.7	S1	P1
50	0 510 825 314	0 510 825 015	250	2600	89.2	165.9	S1	P1

Dimensions



Standard range



A 510 441 297

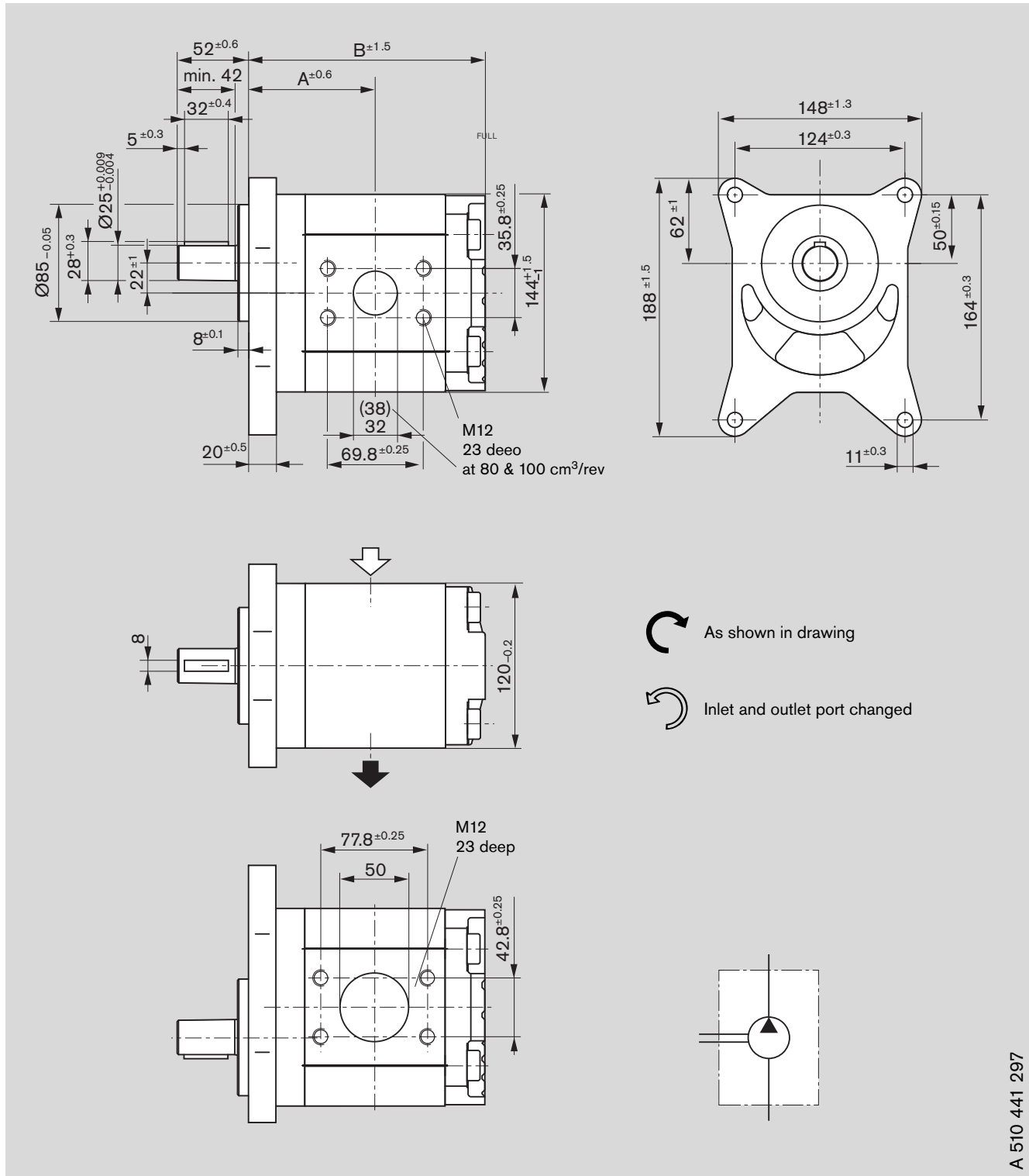
Ordering code:

AZPG - 22 - **A X 07 K B - S 0303**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
63	0 510 825 315	0 510 825 016	200	2300	94.6	176.7	S2	P2
70	0 510 825 316	0 510 825 017	150	2200	97.5	182.5	S2	P2

Dimensions



Standard range



A 510 441 297

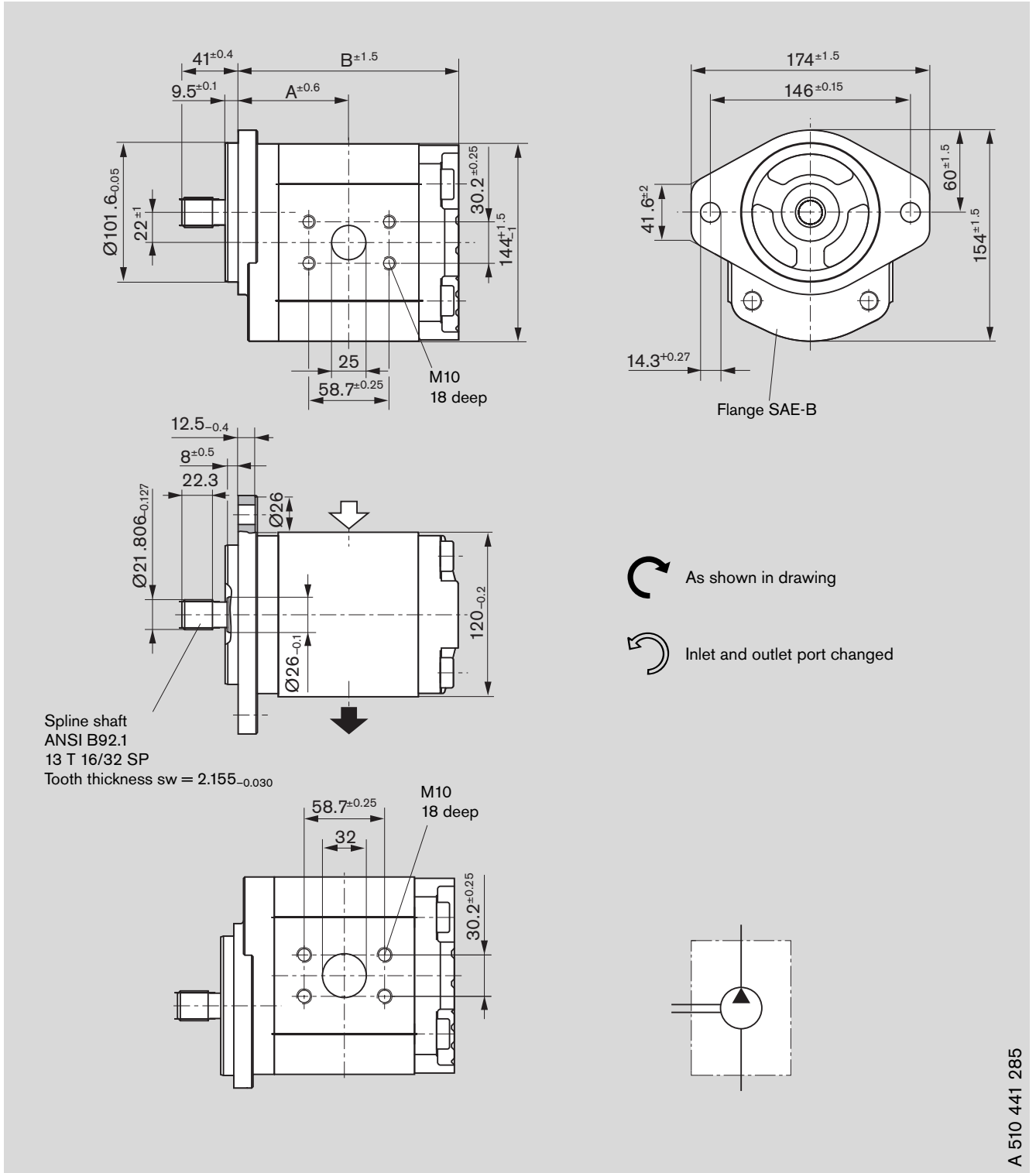
Ordering code:

AZPG - 22 - A X 07 K B - S 0303

Displacement [cm³/rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
80	0 510 825 317	0 510 825 018	120	2200	100.6	190.7	S3	P2
100	0 510 825 318	0 510 825 019	100	1700	109.8	207.2	S3	P2

Dimensions



Standard range



A 510 441 285

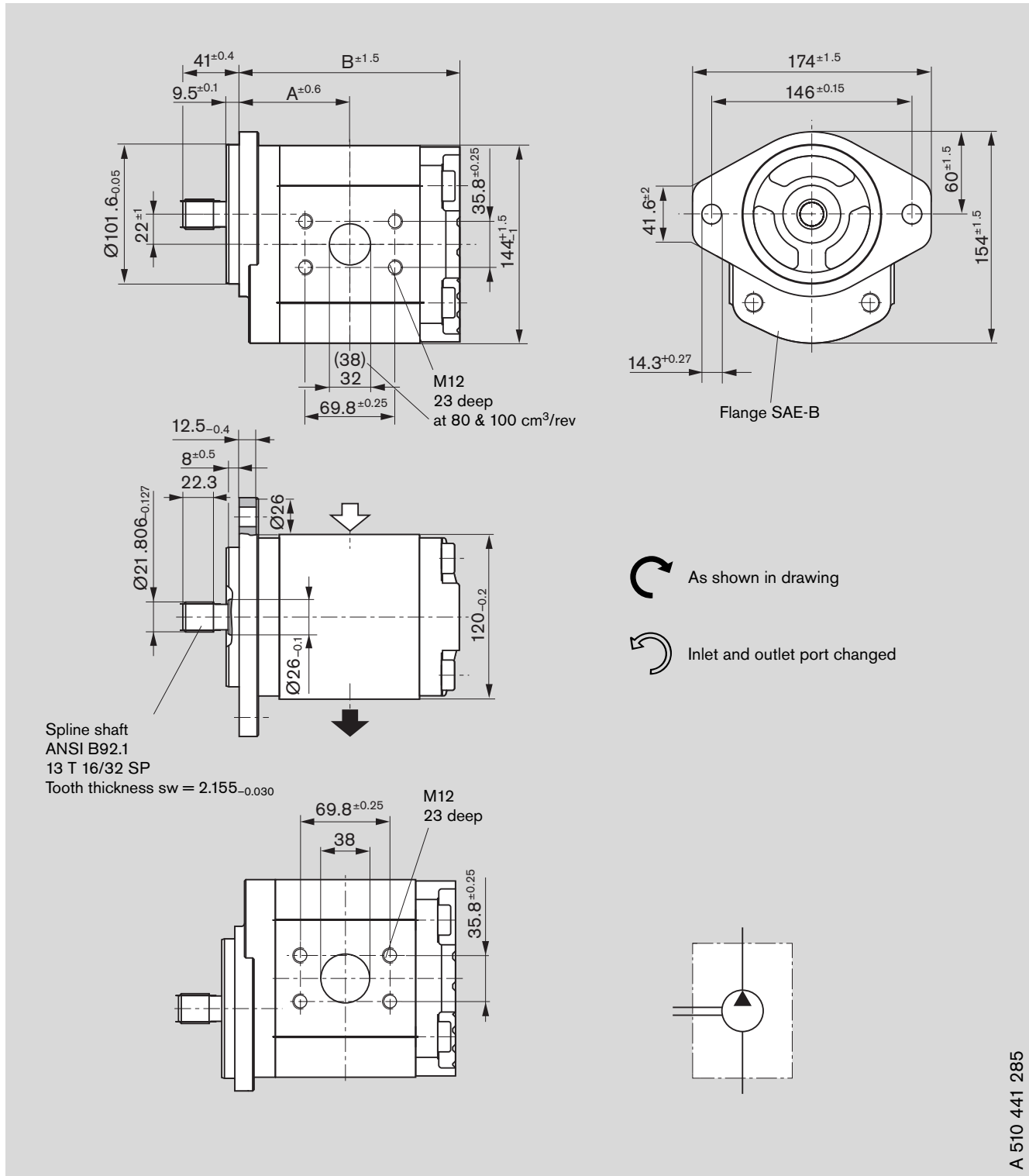
Ordering code:

AZPG - 22 - D C 07 K B - S 0039

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
40	0 510 725 421	0 510 725 136	280	2800	73.6	144.8	S1	P1
50	0 510 725 420	0 510 725 135	250	2600	77.7	153.0	S1	P1

Dimensions

Standard range



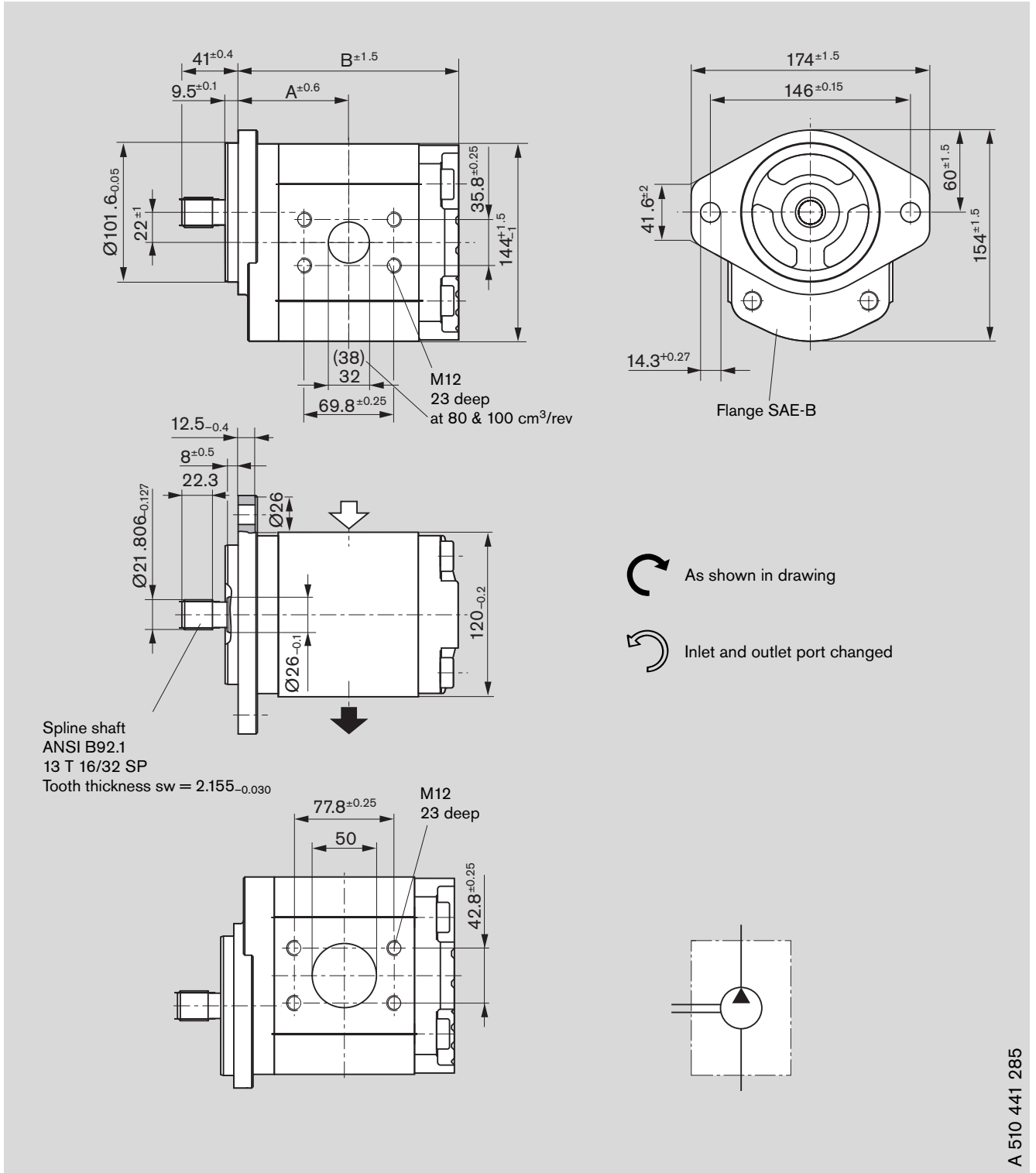
Ordering code:

AZPG - 22 - D C 07 K B - S 0039

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
63	0 510 825 313	0 510 825 011	200	2300	83.1	163.8	S2	P2
70	0 510 825 312	0 510 825 014	150	2200	86.0	169.5	S2	P2

Dimensions

Standard range



A 510 441 285

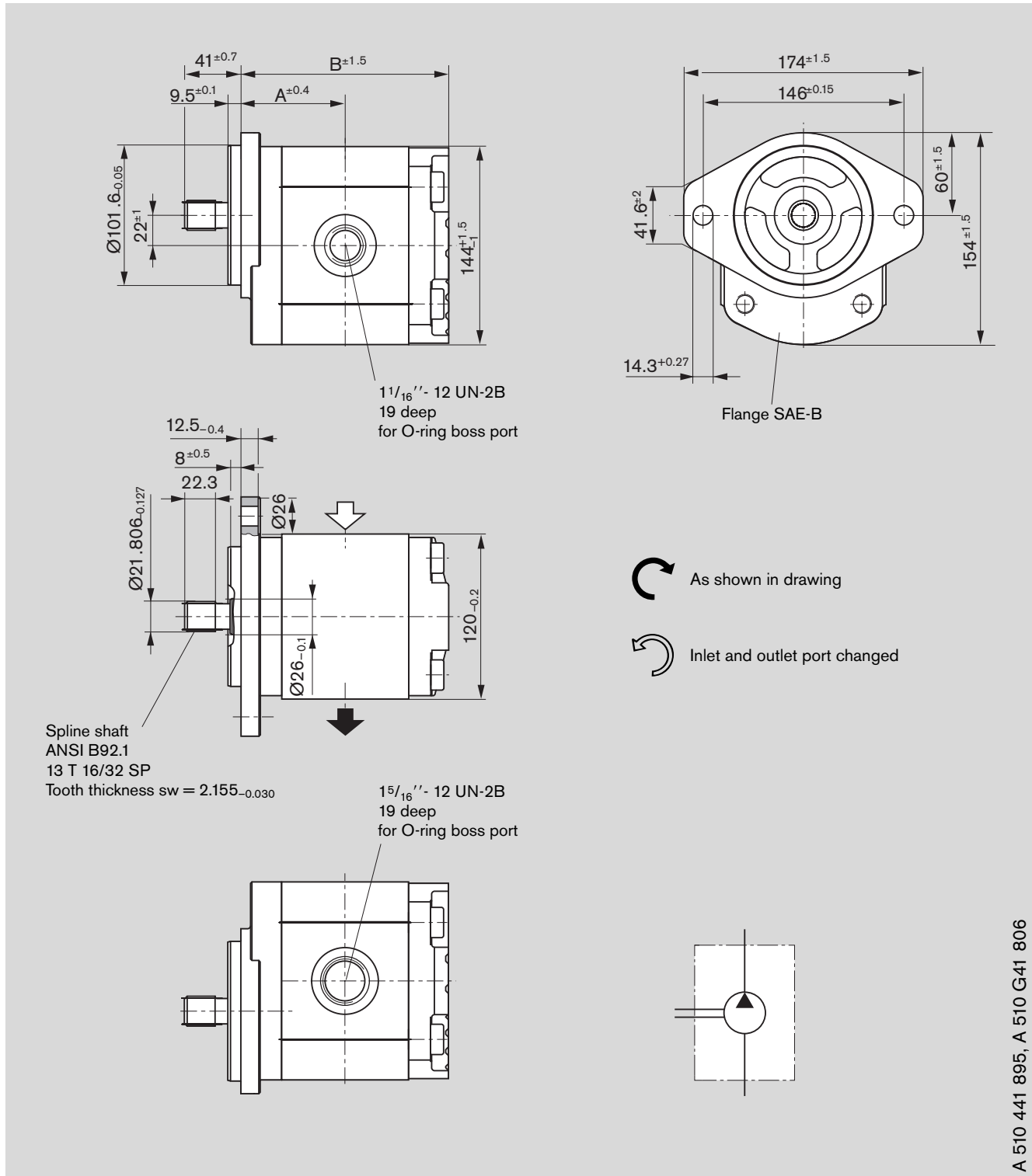
Ordering code:

AZPG - 22 - **D C 07 K B - S 0039**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
80	0 510 825 311	0 510 825 012	120	2200	90.1	177.8	S3	P2
100	0 510 825 310	0 510 825 013	100	1700	98.3	194.3	S3	P2

Dimensions



Standard range



A 510 441 895, A 510 G41 806

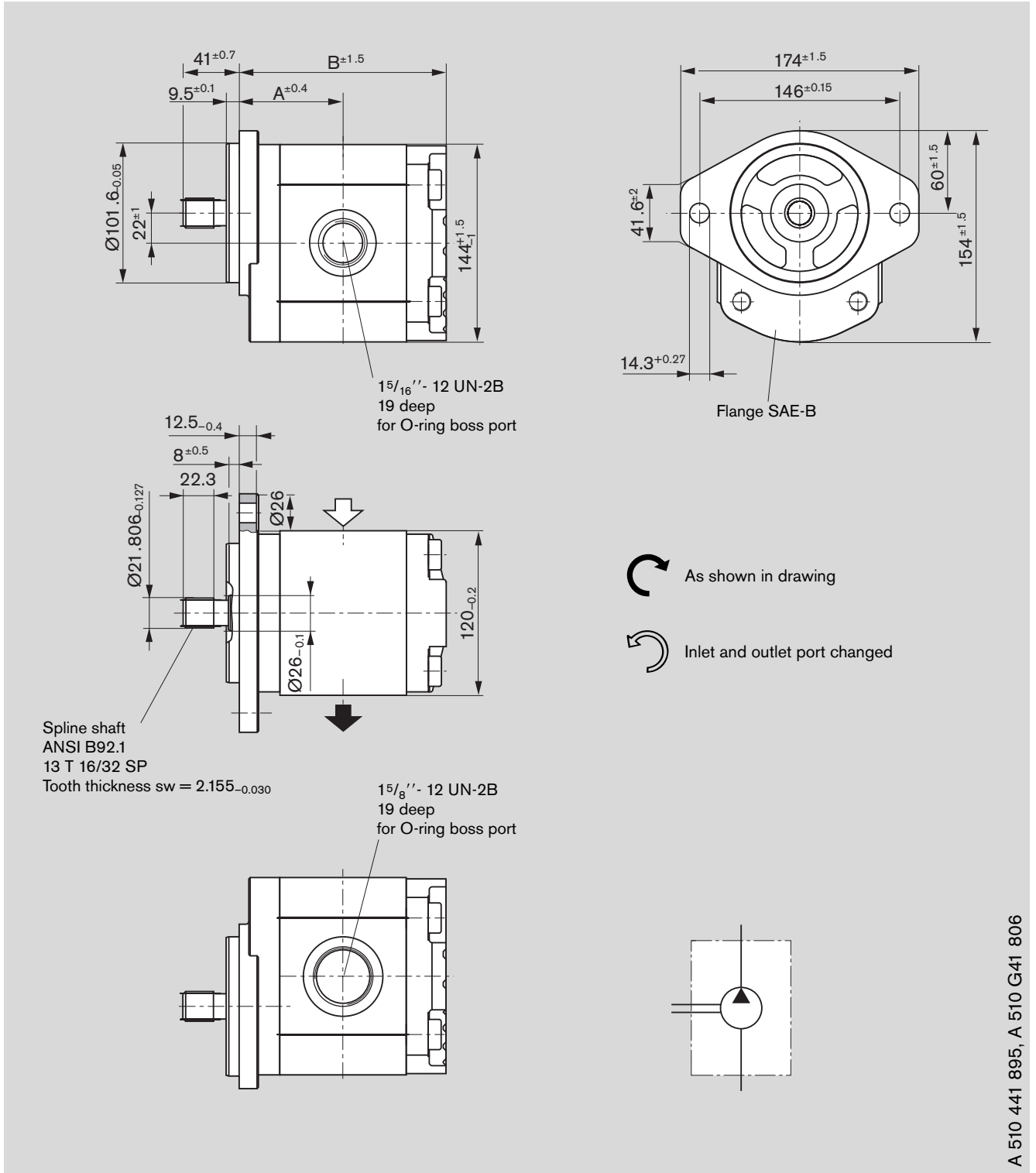
Ordering code:

AZPG - 22 - D C 12 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
22.5	9 510 490 011	9 510 490 001	250	3000	66.4	130.3	S1	P1
25	9 510 490 012	9 510 490 002	250	3000	67.4	132.3	S1	P1
28	9 510 490 013	9 510 490 003	250	3000	68.7	134.8	S1	P1

Dimensions



Standard range



A 510 441 895, A 510 G41 806

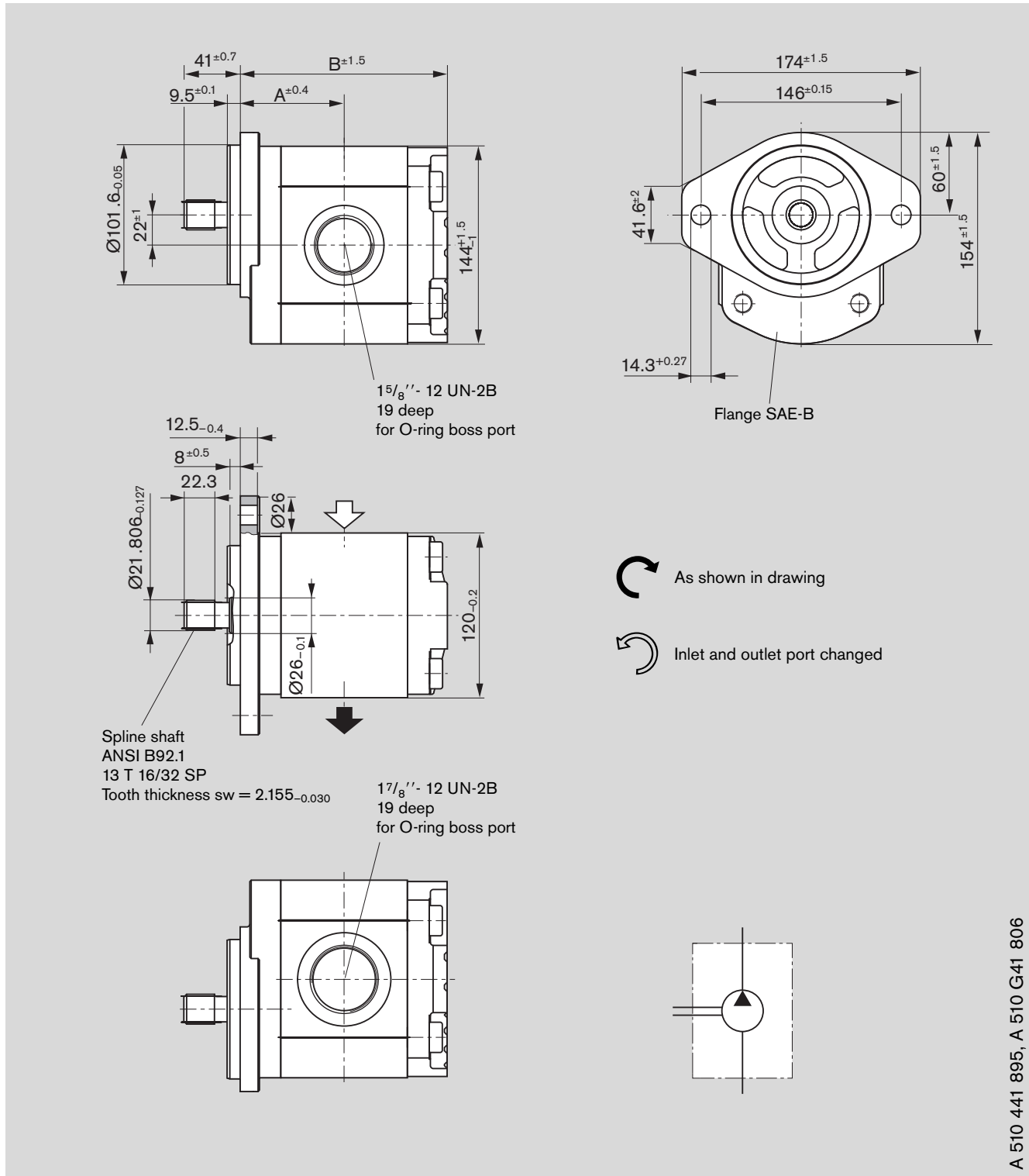
Ordering code:

AZPG - 22 - **D C 12 M B**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
32	9 510 490 014	9 510 490 004	250	2800	70.3	138.1	S2	P2
36	9 510 490 015	9 510 490 005	250	2800	71.9	141.5	S2	P2
40	9 510 490 016	9 510 490 006	250	2800	73.6	144.8	S2	P2
45	9 510 490 017	9 510 490 007	250	2600	75.6	148.8	S2	P2

Dimensions



Standard range



A 510 441 895, A 510 G41 806

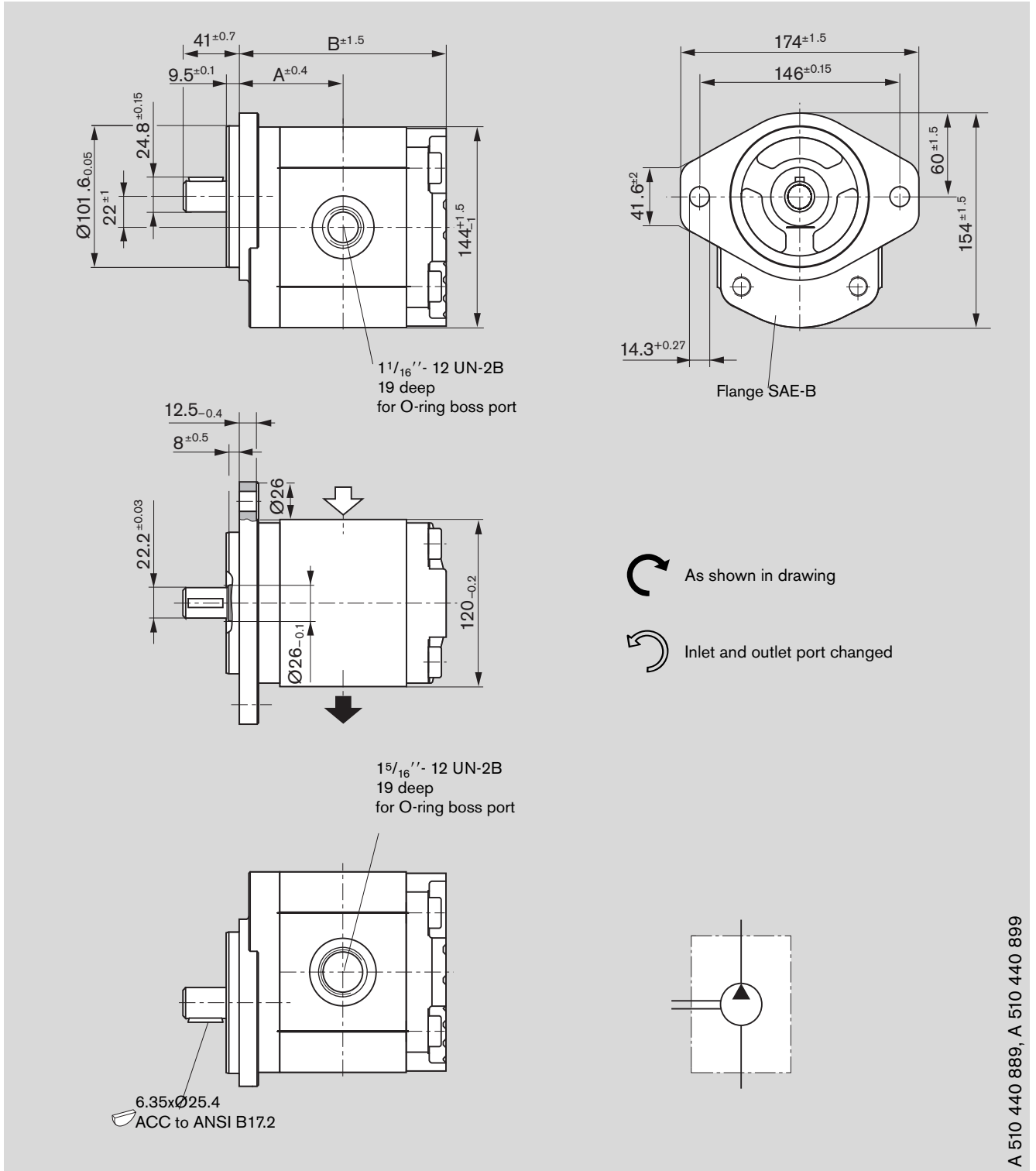
Ordering code:

AZPG - 22 - D C 12 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
50	9 510 490 018	9 510 490 008	220	2600	77.7	153.0	S3	P3
56	9 510 490 019	9 510 490 009	195	2300	80.2	157.9	S3	P3
63	9 510 490 020	9 510 490 010	170	2300	63.1	163.8	S3	P3

Dimensions

Standard range



A 510 440 889, A 510 440 899

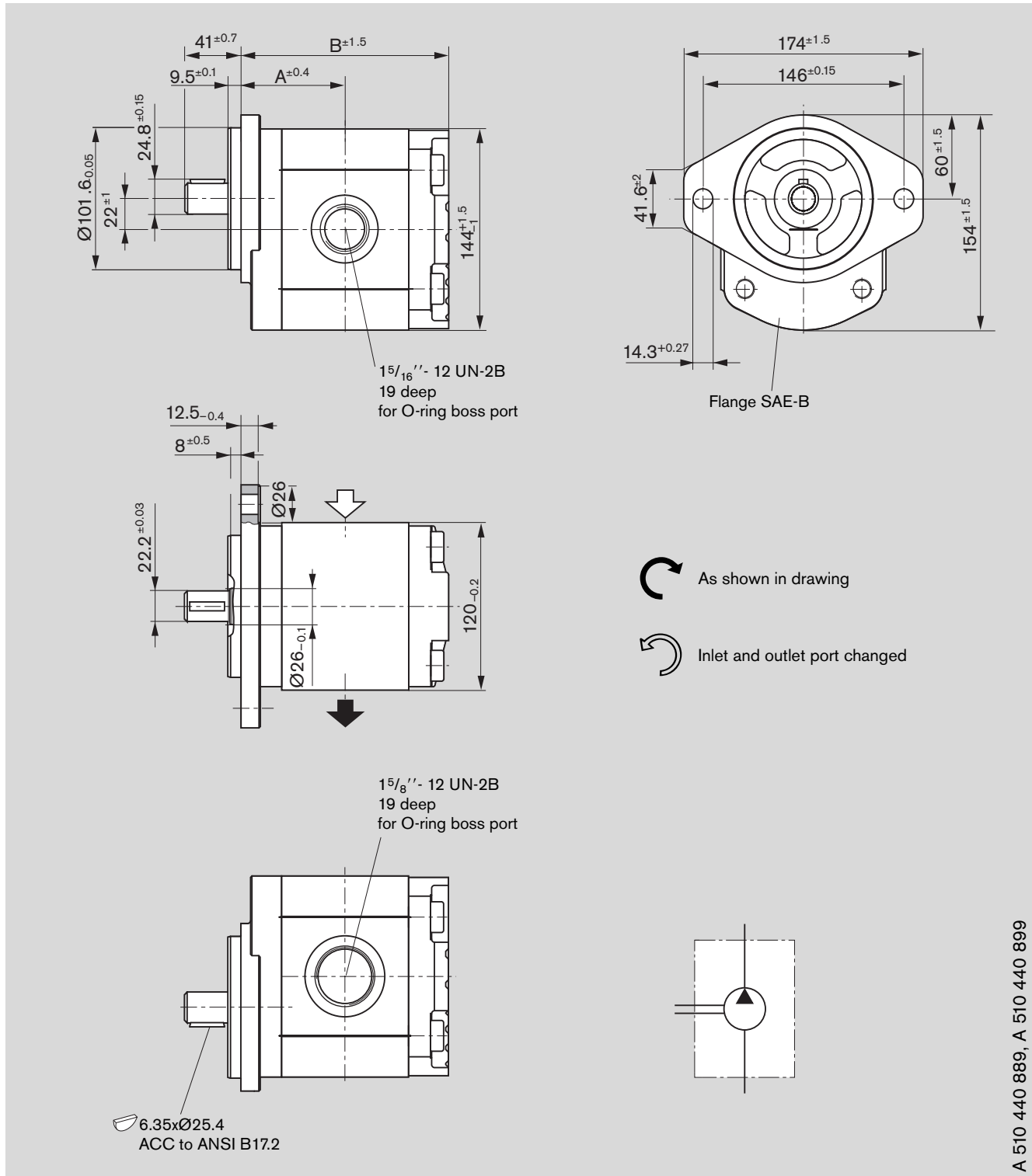
Ordering code:

AZPG - 22 - **Q C 12 M B**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	L	R			A	B	Suction port	Pressure port
22.5	<input type="checkbox"/>	9 510 490 021	250	3000	66.4	130.3	S1	P1
25	<input type="checkbox"/>	9 510 490 022	250	3000	67.4	132.3	S1	P1
28	<input type="checkbox"/>	9 510 490 023	250	3000	68.7	134.8	S1	P1

Dimensions



Standard range



A 510 440 889, A 510 440 899

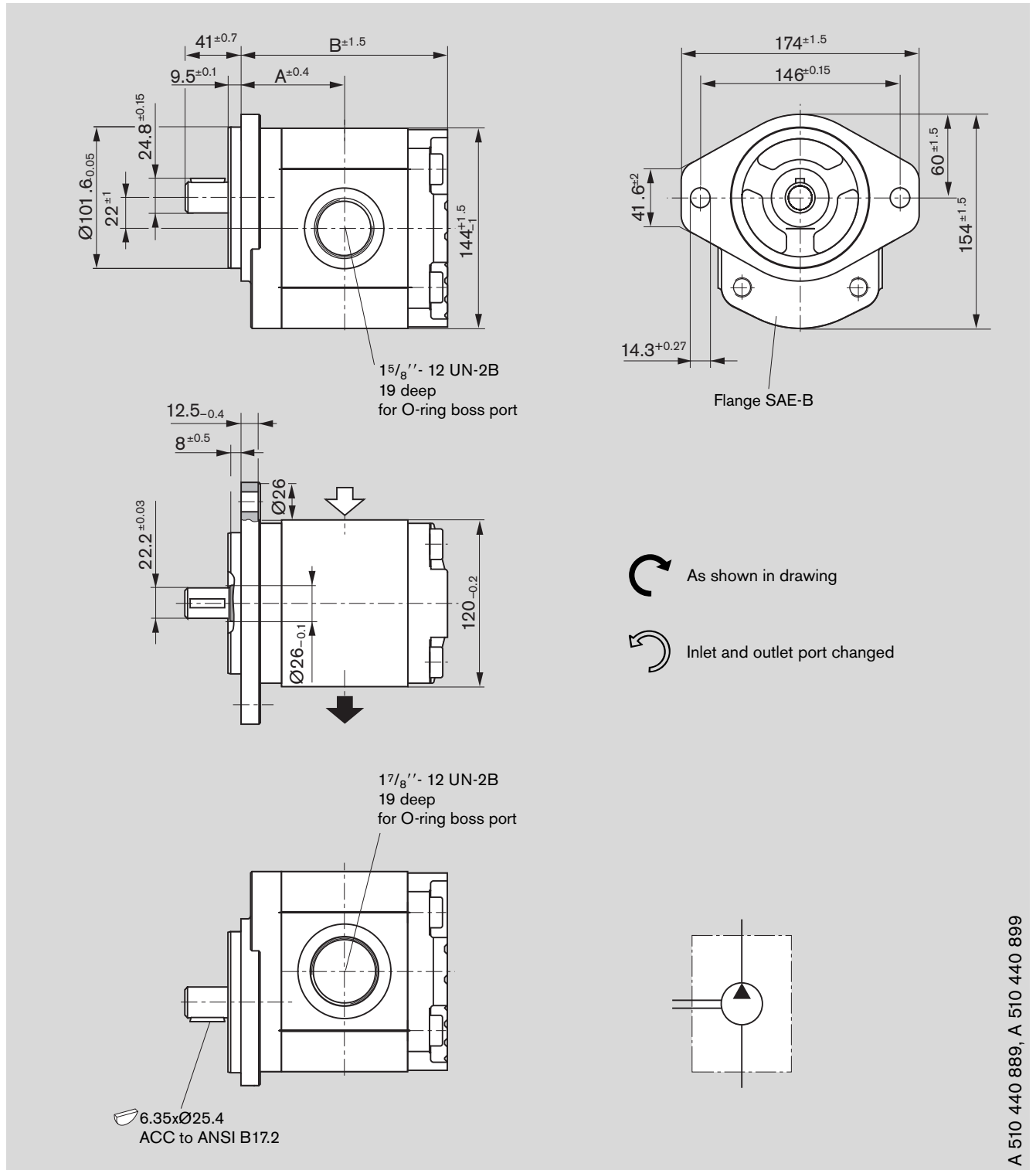
Ordering code:

AZPG - 22 - Q C 12 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
32	9 510 490 034	9 510 490 024	250	2800	70.3	138.1	S2	P2
36	9 510 490 035	9 510 490 025	250	2800	71.9	141.5	S2	P2
40		9 510 490 026	250	2800	73.6	144.8	S2	P2
45	9 510 490 037	9 510 490 027	250	2600	75.6	148.8	S2	P2

Dimensions



Standard range



A 510 440 889, A 510 440 899

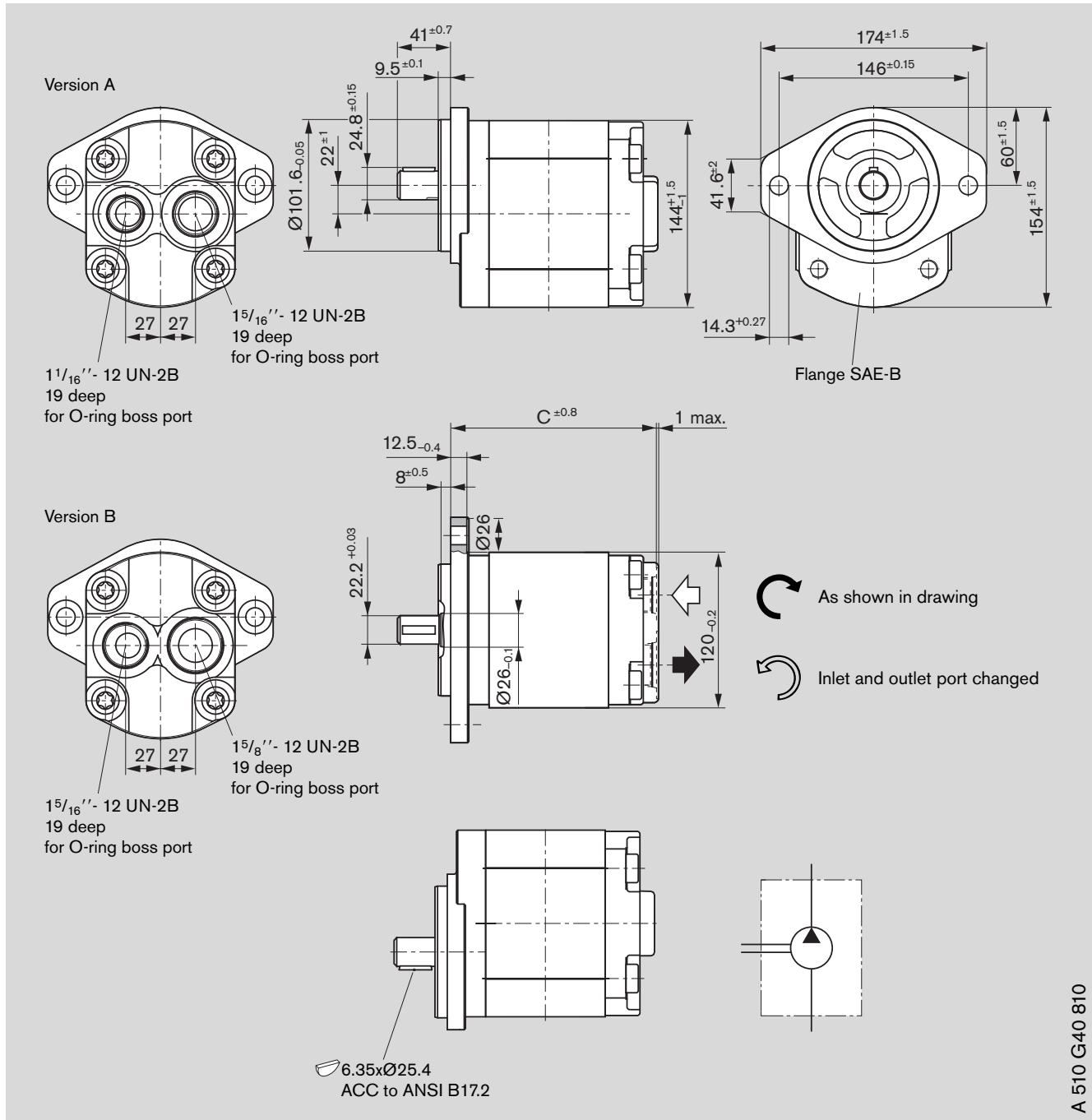
Ordering code:

AZPG - 22 - **Q C 12 M B**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]		Execution	
	 L	 R			A	B	Suction port	Pressure port
50	9 510 490 038	9 510 490 028	220	2600	77.7	153.0	S3	P3
56	9 510 490 039	9 510 490 029	195	2300	80.2	157.9	S3	P3
63	9 510 490 040	9 510 490 030	170	2300	63.1	163.8	S3	P3

Dimensions

Standard range



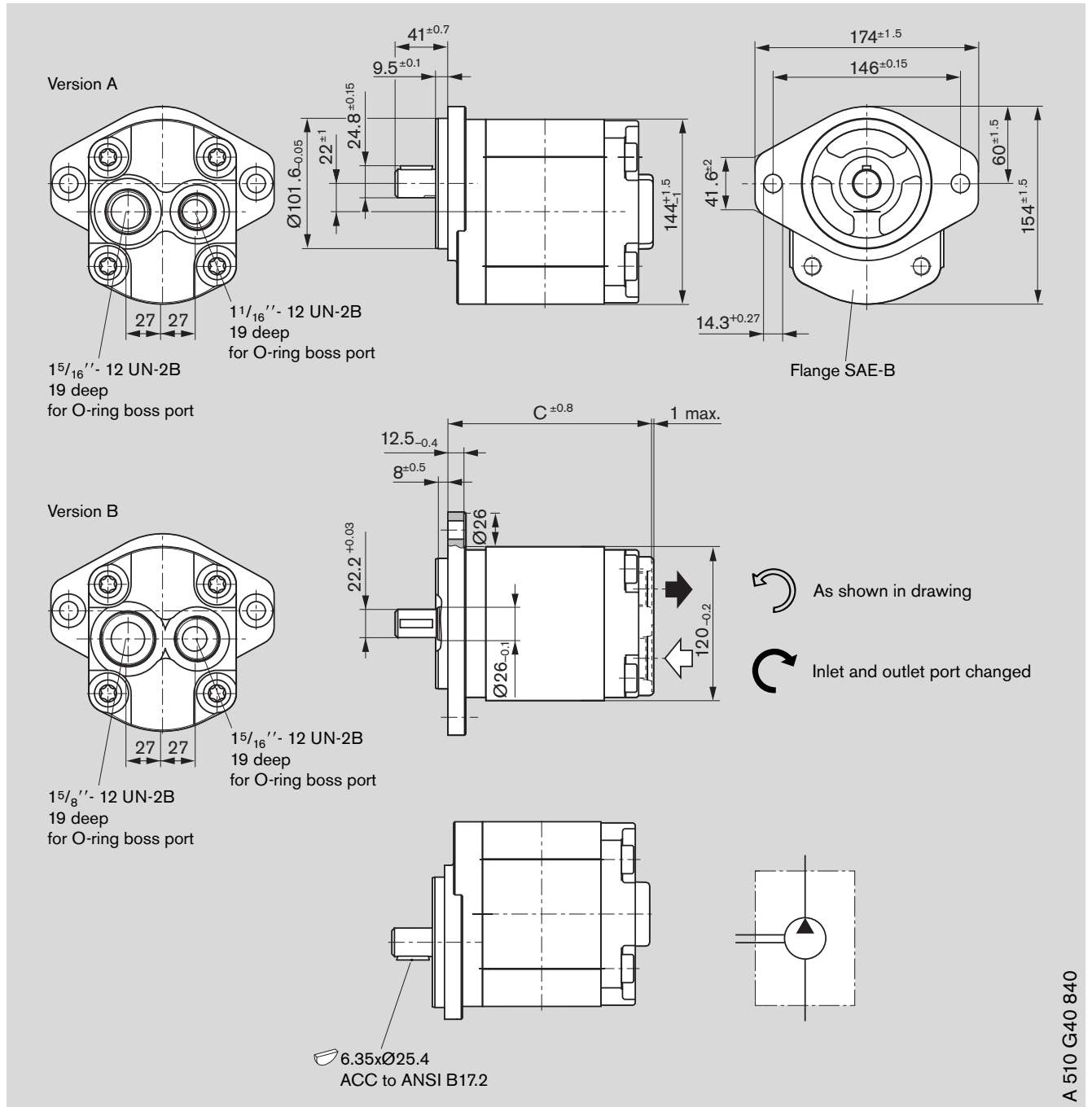
Ordering code:

AZPG - 22 - □ □ □ R Q C 12 M A

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm] C	Version
22.5		9 510 490 101	250	3000	141.2	A
25		9 510 490 102	250	3000	143.2	A
28		9 510 490 103	250	3000	145.7	A
32		9 510 490 104	250	2800	149.0	B
36		9 510 490 105	250	2800	152.4	B
40		9 510 490 106	250	2800	155.7	B
45		9 510 490 107	250	2600	159.7	B
50		9 510 490 108	220	2600	163.9	B
56		9 510 490 109	195	2300	169.8	B
63		9 510 490 110	170	2300	174.7	B

Dimensions



Standard range



A 510 G40 840

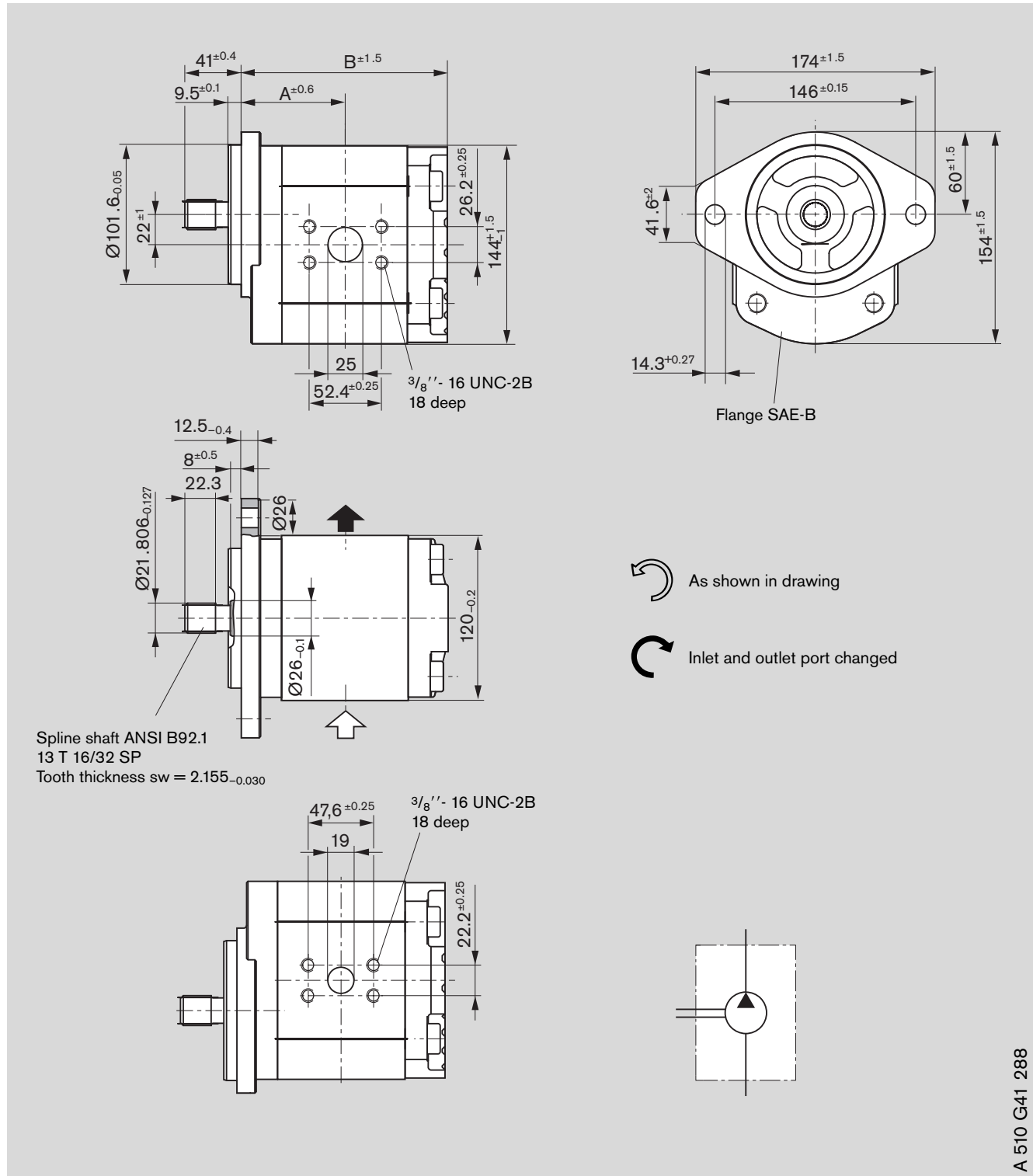
Ordering code:

AZPG - 22 - **L Q C 12 M A**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm] C	Version
	 L	 R				
22.5	9 510 490 111		250	3000	141.2	A
25	9 510 490 112		250	3000	143.2	A
28	9 510 490 113		250	3000	145.7	A
32	9 510 490 114		250	2800	149.0	B
36	9 510 490 115		250	2800	152.4	B
40	9 510 490 116		250	2800	155.7	B
45	9 510 490 117		250	2600	159.7	B
50	9 510 490 118		220	2600	163.9	B
56	9 510 490 119		195	2300	169.8	B
63	9 510 490 120		170	2300	174.7	B

Dimensions



Standard range



A 510 G41 288

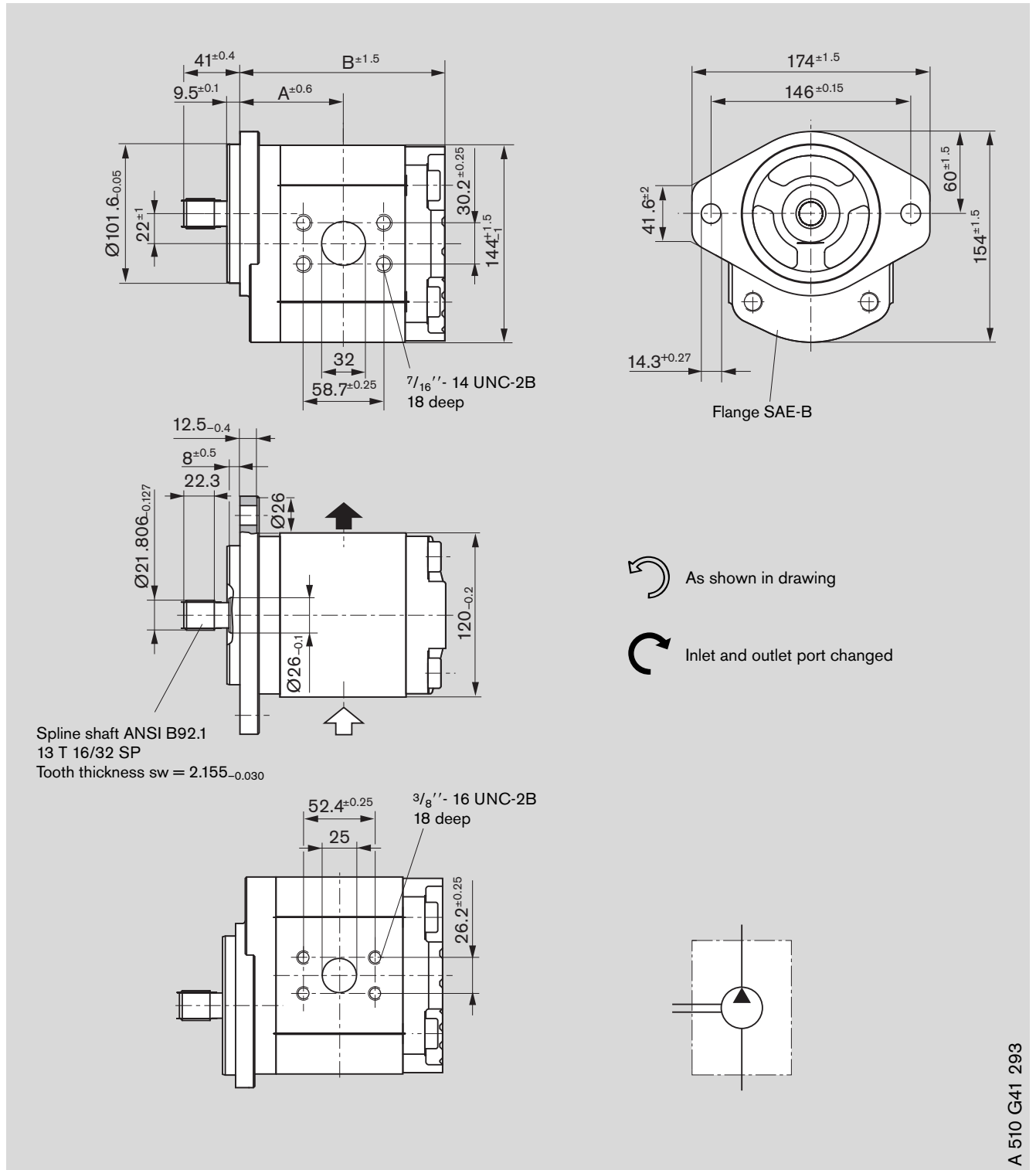
Ordering code:

AZPG - 22 - L D C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
22.5	9 510 490 051		250	3000	66.4	130.3
25	9 510 490 052		250	3000	67.4	132.3
28	9 510 490 053		250	3000	68.7	134.8
32	9 510 490 054		250	2800	70.3	138.1
36	9 510 490 055		250	2800	71.9	141.5



Dimensions

Standard range



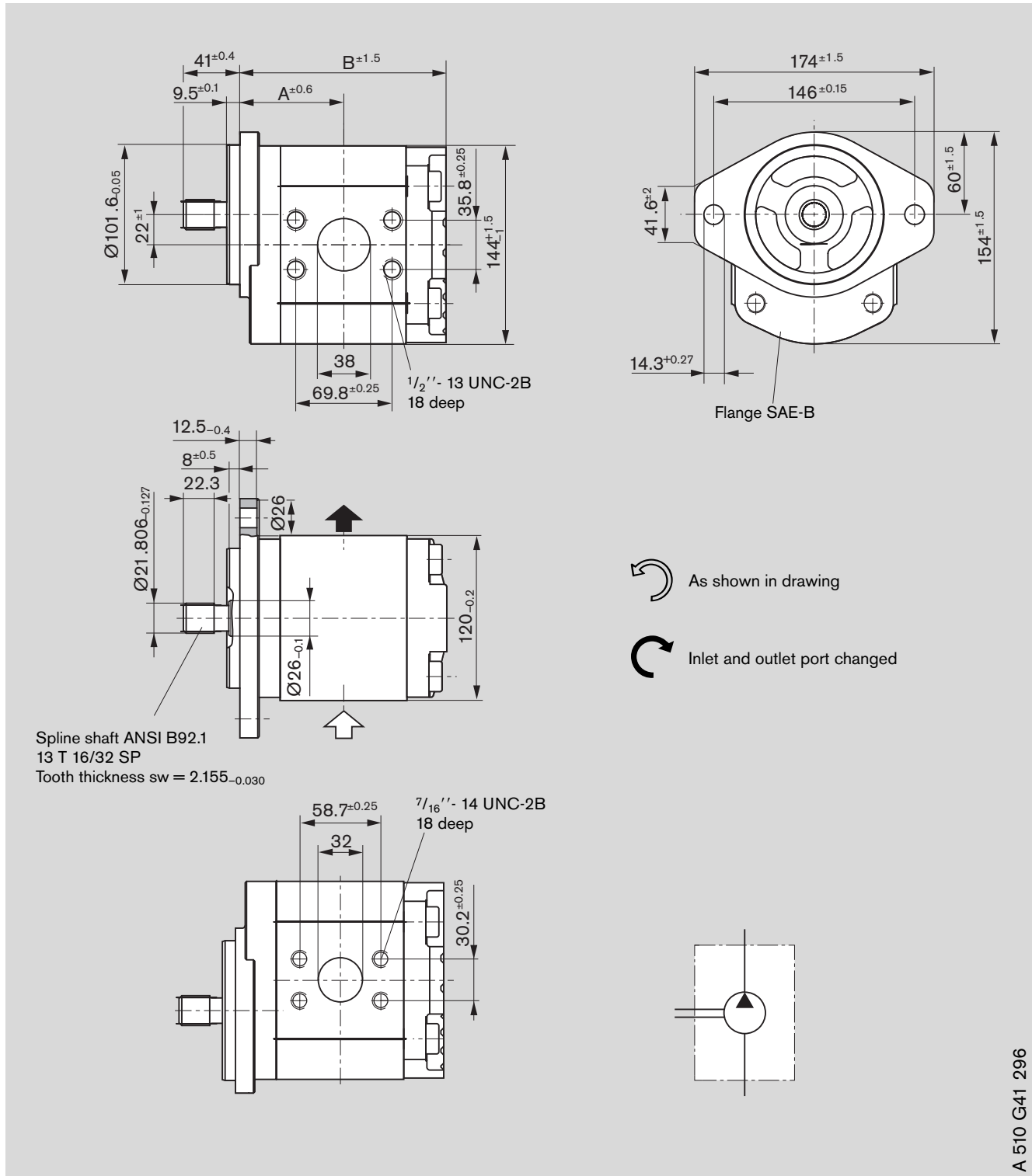
Ordering code:

AZPG - 22 - **L D C 40 M B**

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
40	9 510 490 056		250	2800	73.6	144.8
45	9 510 490 057		250	2600	75.6	148.8
50	9 510 490 058		220	2600	77.7	153.0

Dimensions

Standard range



A 510 G41 296

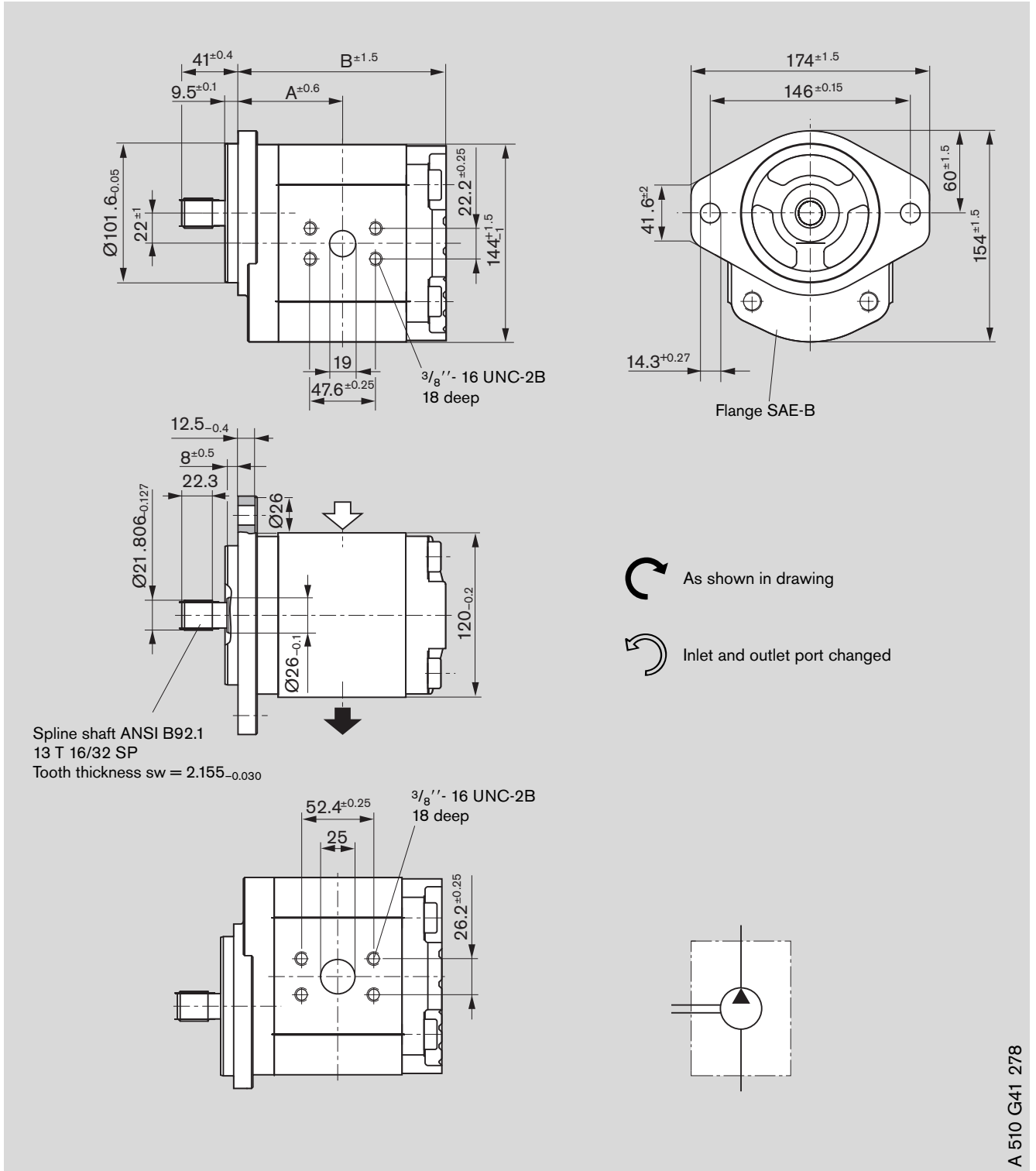
Ordering code:

AZPG - 22 - L D C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	L	R			A	B
56	9 510 490 059		195	2300	80.2	157.9
63	9 510 490 060		170	2300	83.1	163.8

Dimensions



Standard range



A 510 G41 278

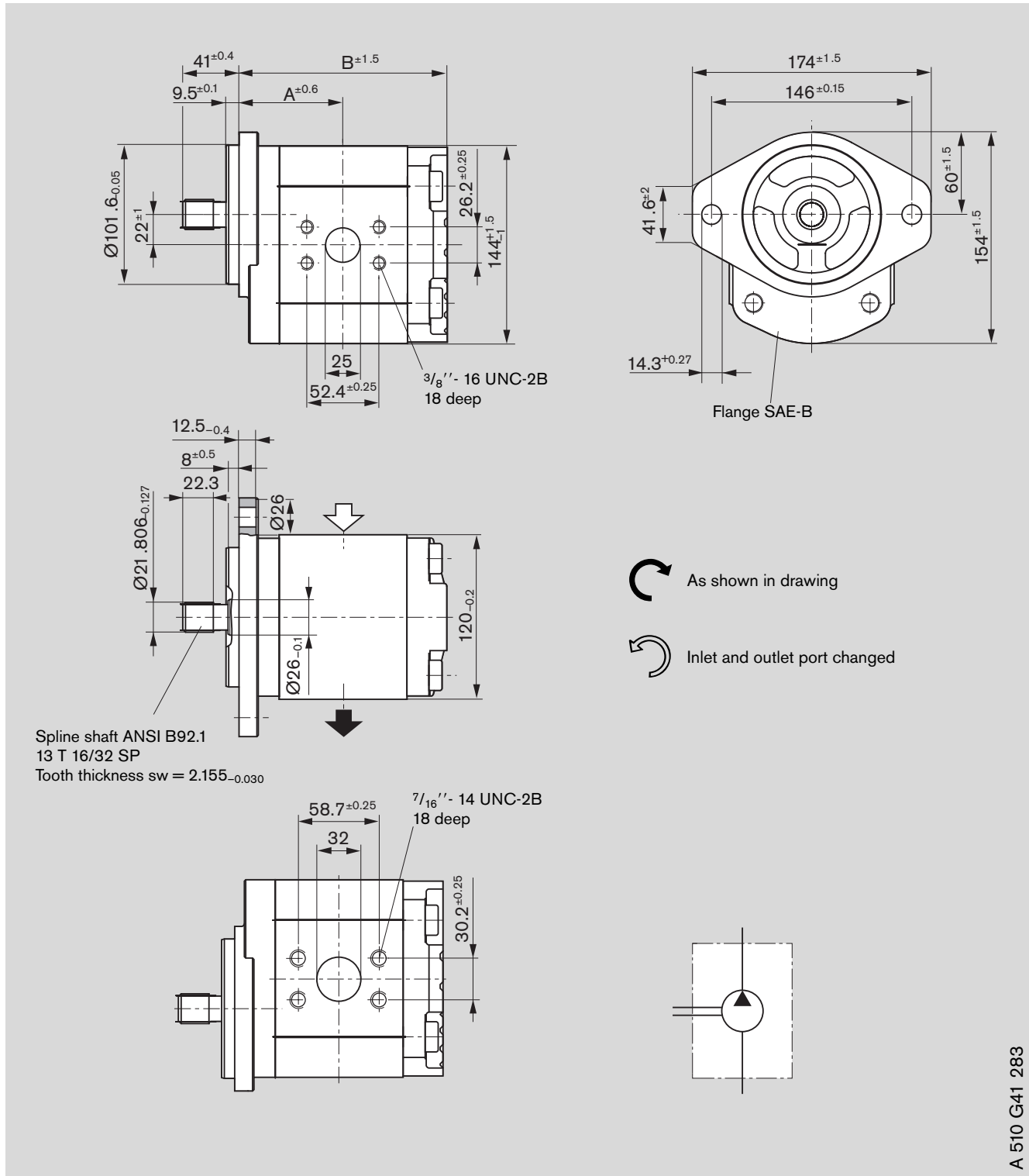
Ordering code:

AZPG - 22 - R D C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
22.5		9 510 490 041	250	3000	66.4	130.3
25		9 510 490 042	250	3000	67.4	132.3
28		9 510 490 043	250	3000	68.7	134.8
32		9 510 490 044	250	2800	70.3	138.1
36		9 510 490 045	250	2800	71.9	141.5

Dimensions



Standard range



A 510 G41 283

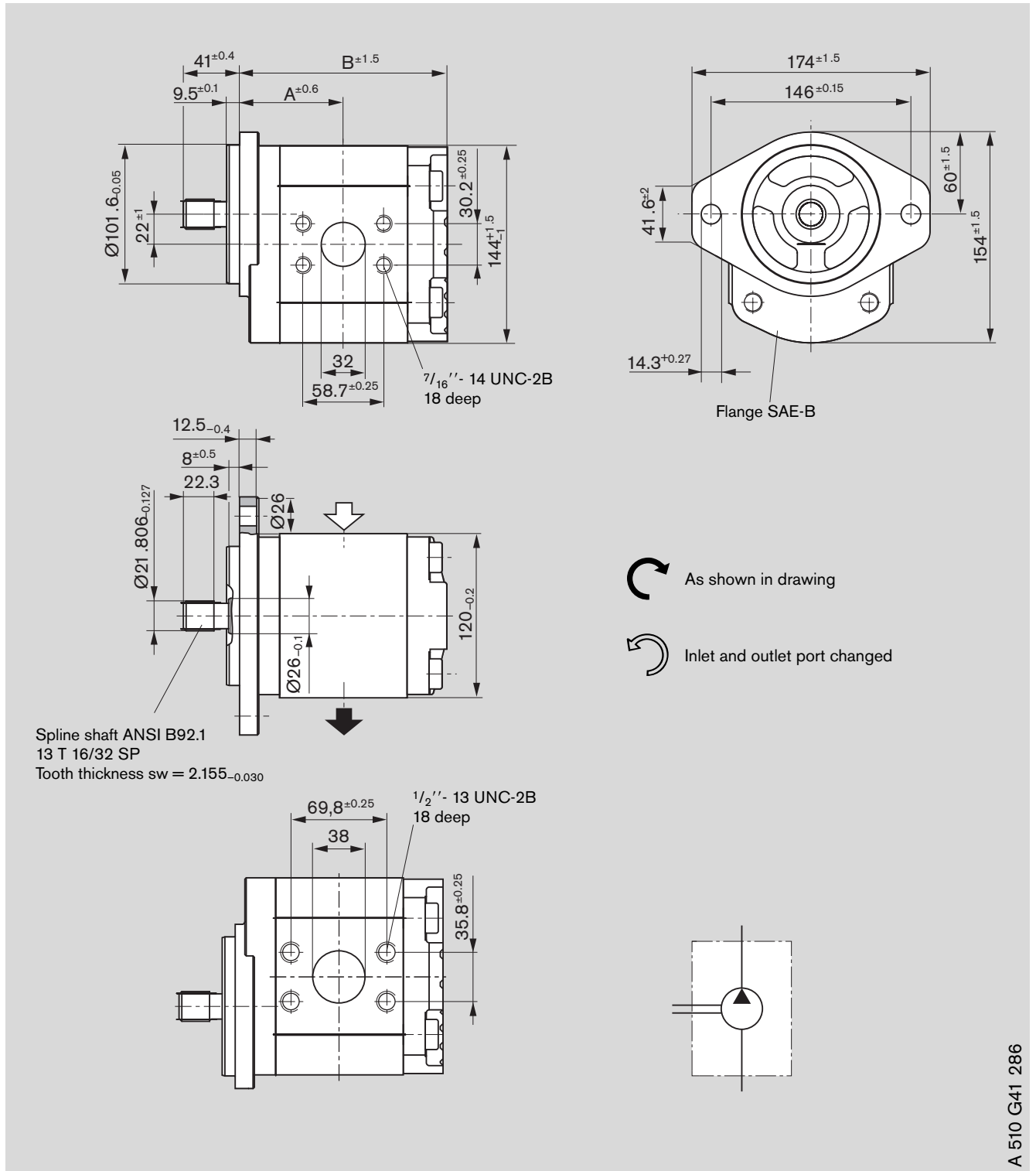
Ordering code:

AZPG - 22 - R D C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
40		9 510 490 046	250	2800	73.6	144.8
45		9 510 490 047	250	2600	75.6	148.8
50		9 510 490 048	220	2600	77.7	153.0

Dimensions



Standard range



A 510 G41 286

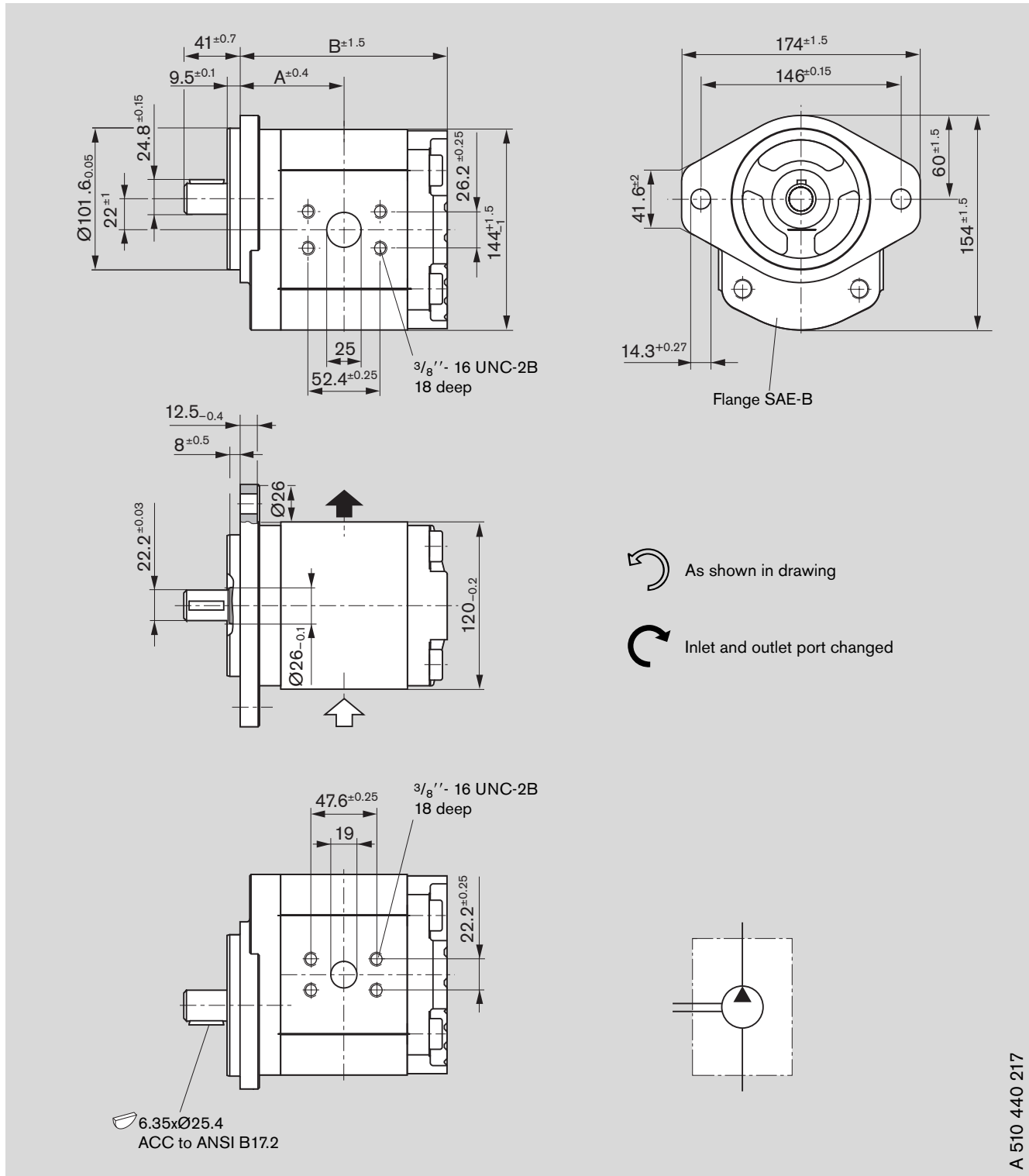
Ordering code:

AZPG - 22 - D C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
56		9 510 490 049	195	2300	80.2	157.9
63		9 510 490 050	170	2300	83.1	163.8

Dimensions

Standard range



A 510 440 217

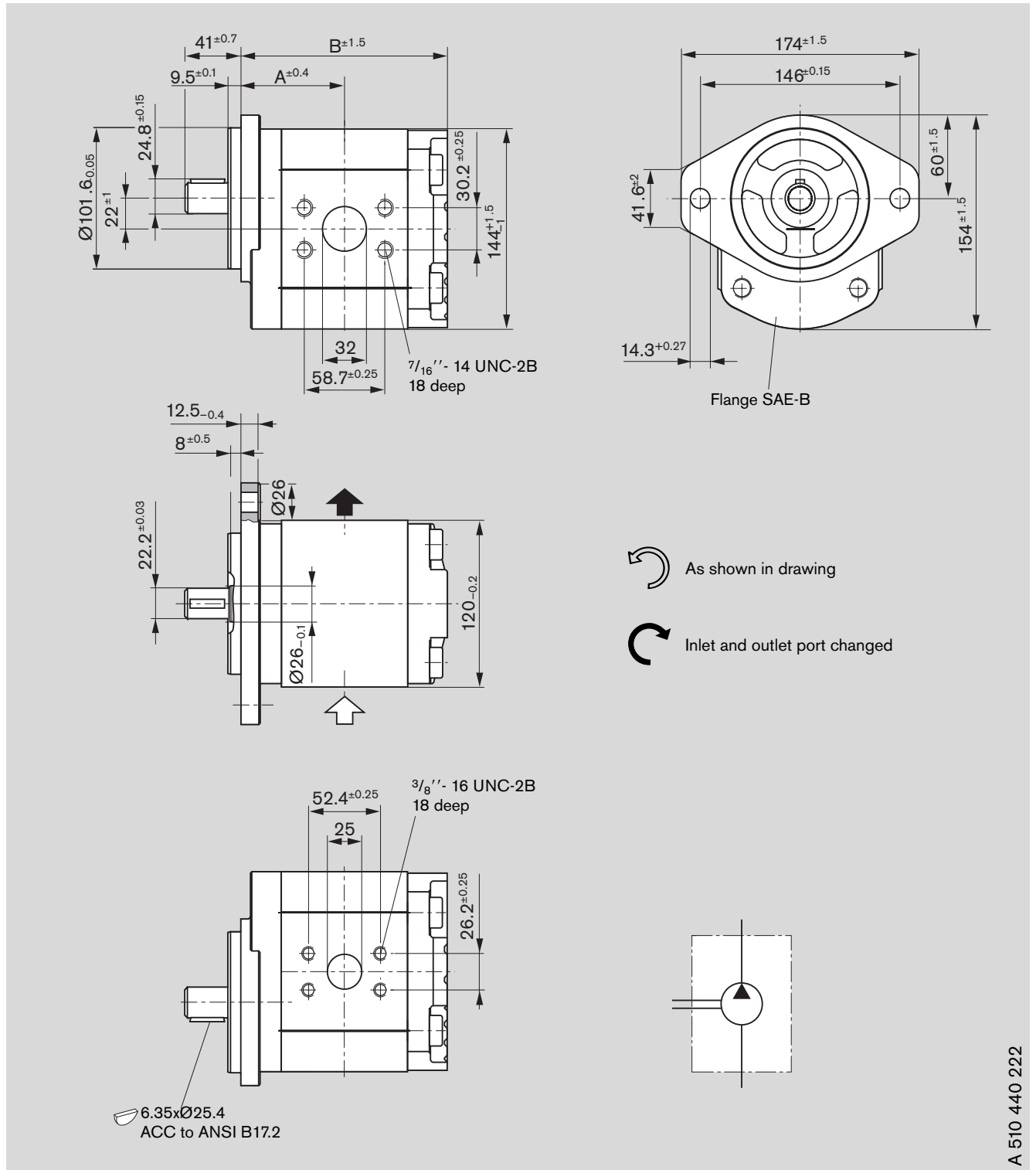
Ordering code:

AZPG - 22 - L Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	L	R			A	B
22.5	9 510 490 091		250	3000	66.4	130.3
25	9 510 490 092		250	3000	67.4	132.3
28	9 510 490 093		250	3000	68.7	134.8
32	9 510 490 094		250	2800	70.3	138.1
36	9 510 490 095		250	2800	71.9	141.5

Dimensions

Standard range



A 510 440 222

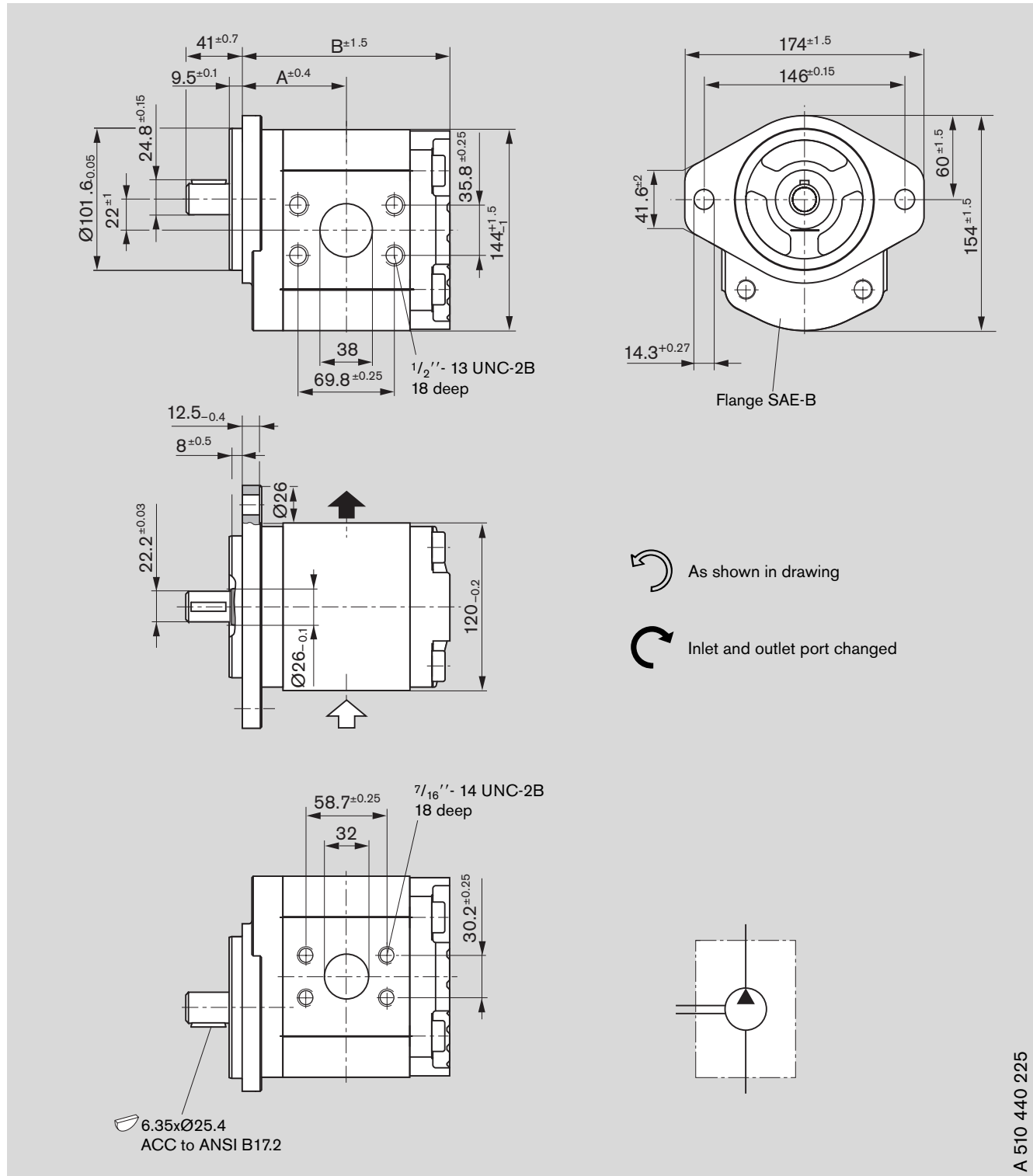
Ordering code:

AZPG - 22 - L Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	L	R			A	B
40	9 510 490 096		250	2800	73.6	144.8
45	9 510 490 097		250	2600	75.6	148.8
50	9 510 490 098		220	2600	77.7	153.0

Dimensions

Standard range



A 510 440 225

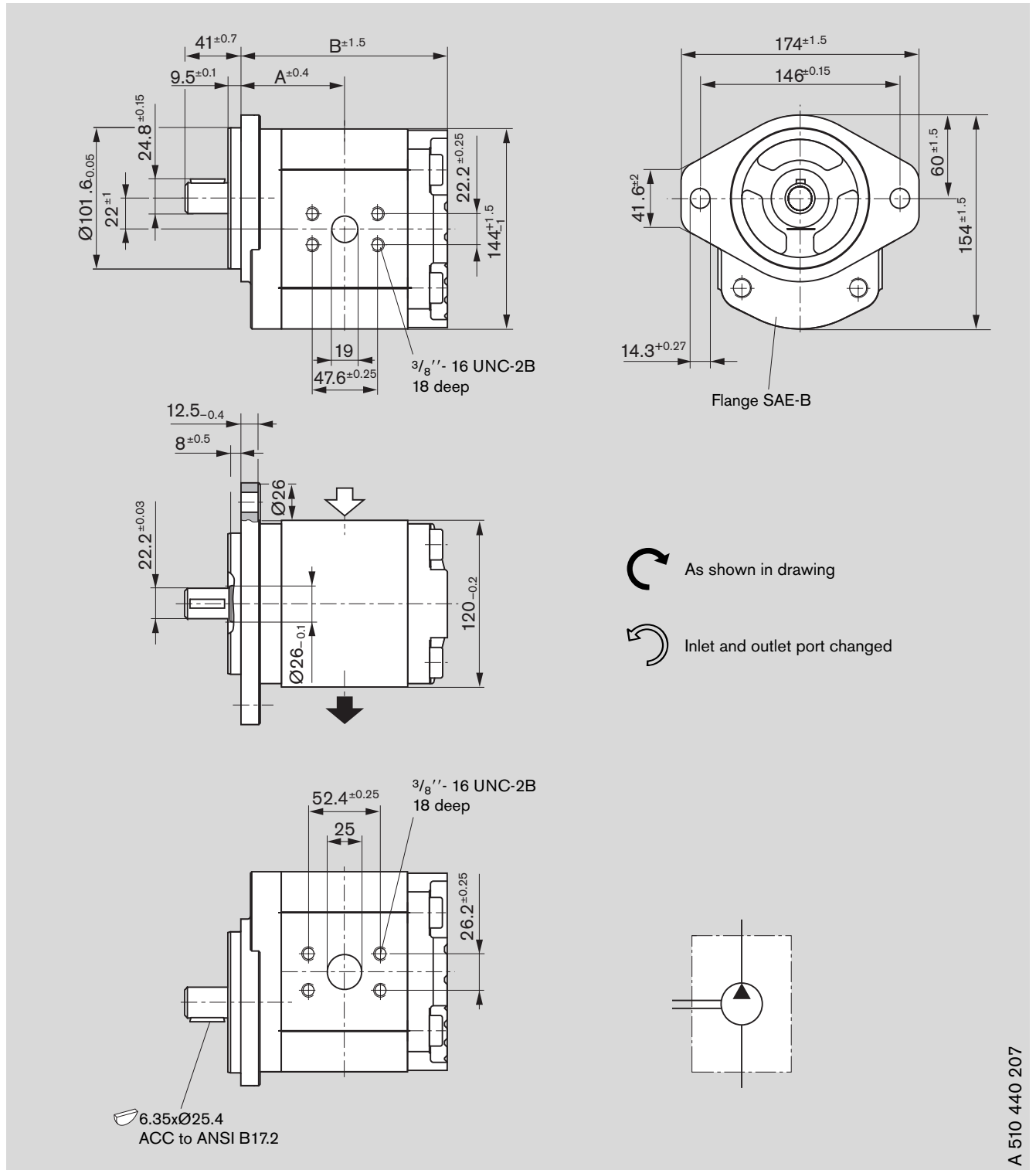
Ordering code:

AZPG - 22 - L Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	L	R			A	B
56	9 510 490 099		195	2300	80.2	157.9
63	9 510 490 100		170	2300	83.1	163.8

Dimensions



Standard range



A 510 440 207

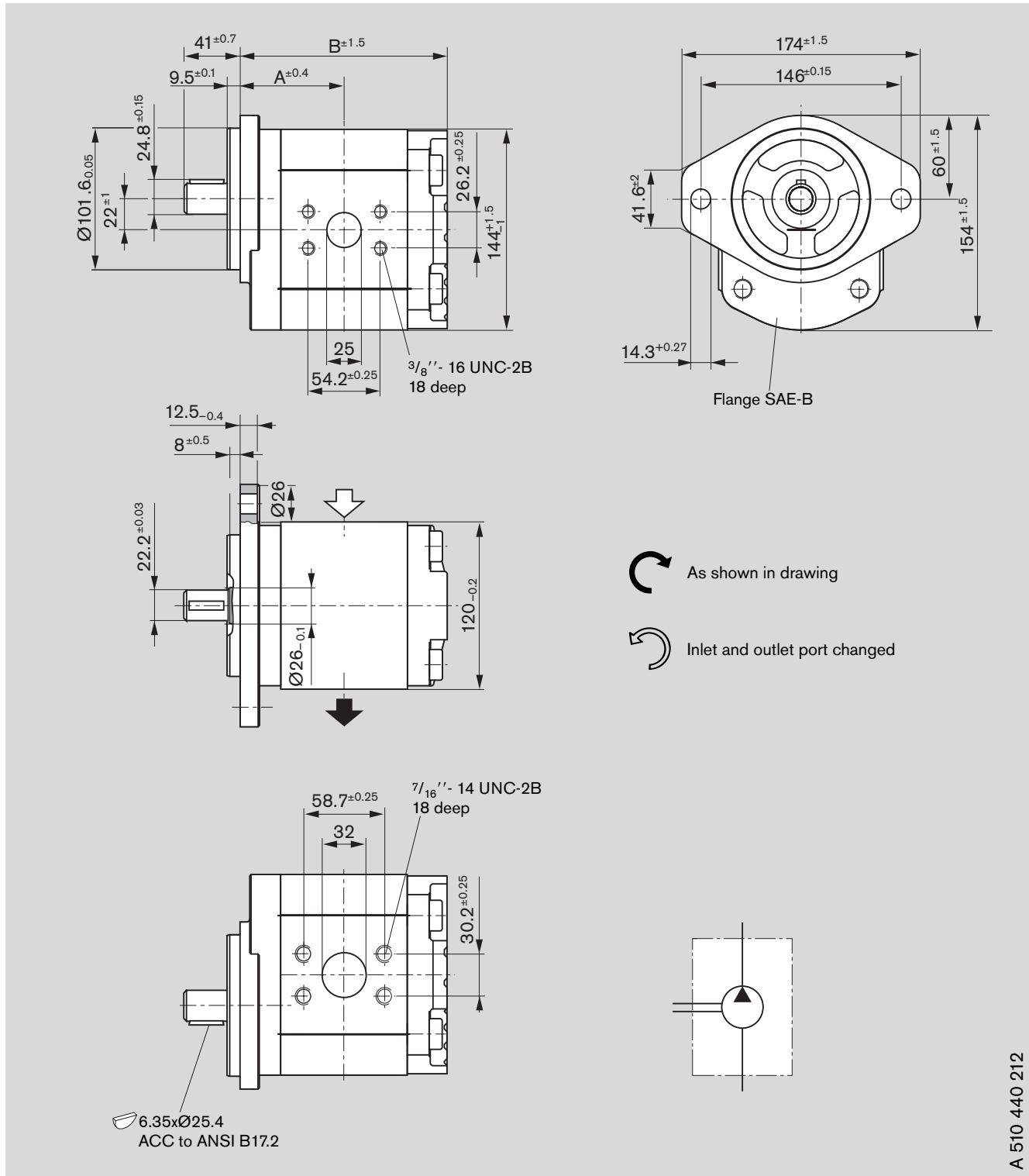
Ordering code:

AZPG - 22 - R Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
22.5		9 510 490 081	250	3000	66.4	130.3
25		9 510 490 082	250	3000	67.4	132.3
28		9 510 490 083	250	3000	68.7	134.8
32		9 510 490 084	250	2800	70.3	138.1
36		9 510 490 085	250	2800	71.9	141.5

Dimensions



Standard range



A 510 440 212

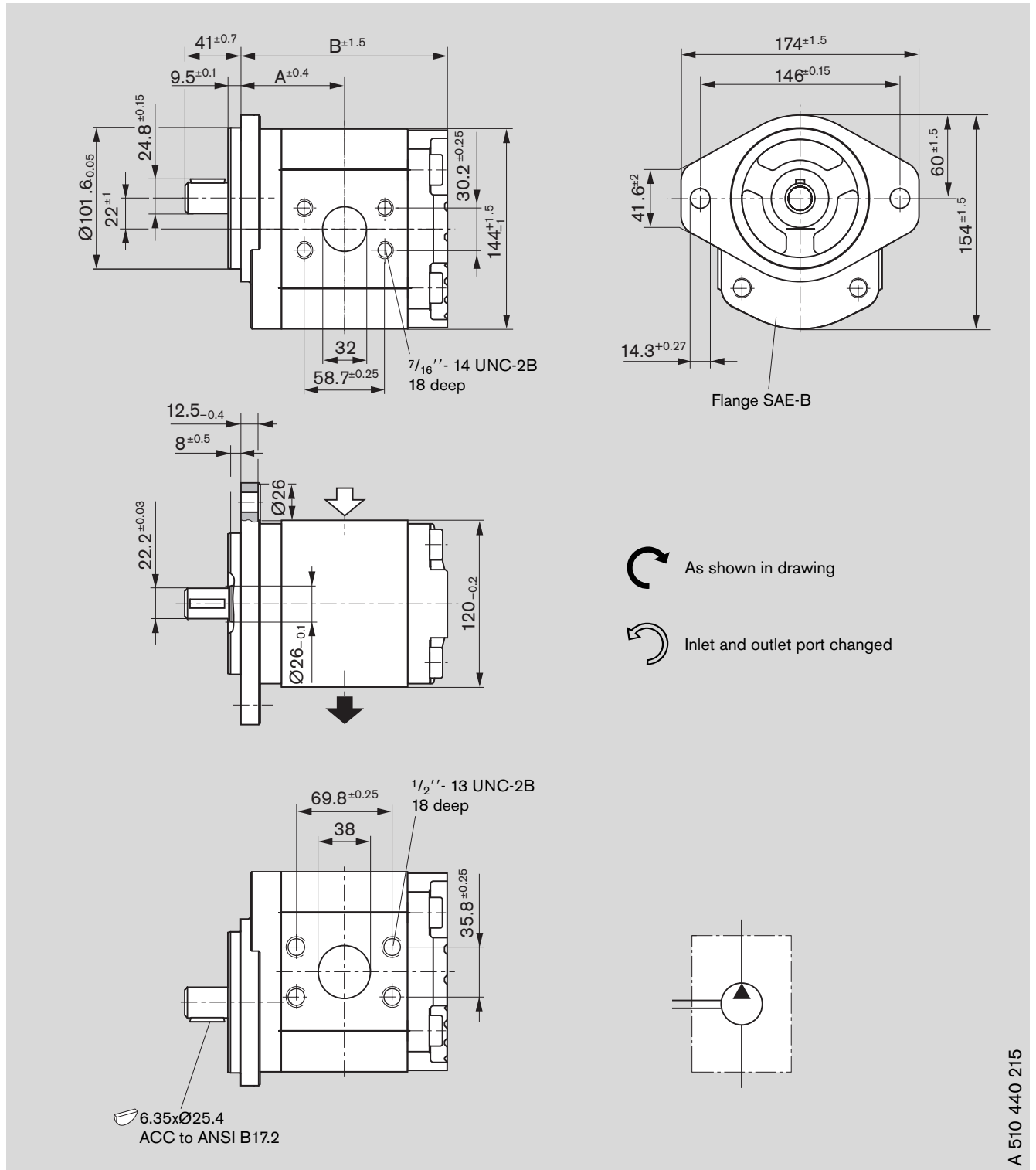
Ordering code:

AZPG - 22 - R Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
40		9 510 490 086	250	2800	73.6	144.8
45		9 510 490 087	250	2600	75.6	148.8
50		9 510 490 088	220	2600	77.7	153.0

Dimensions



Standard range



A 510 440 215

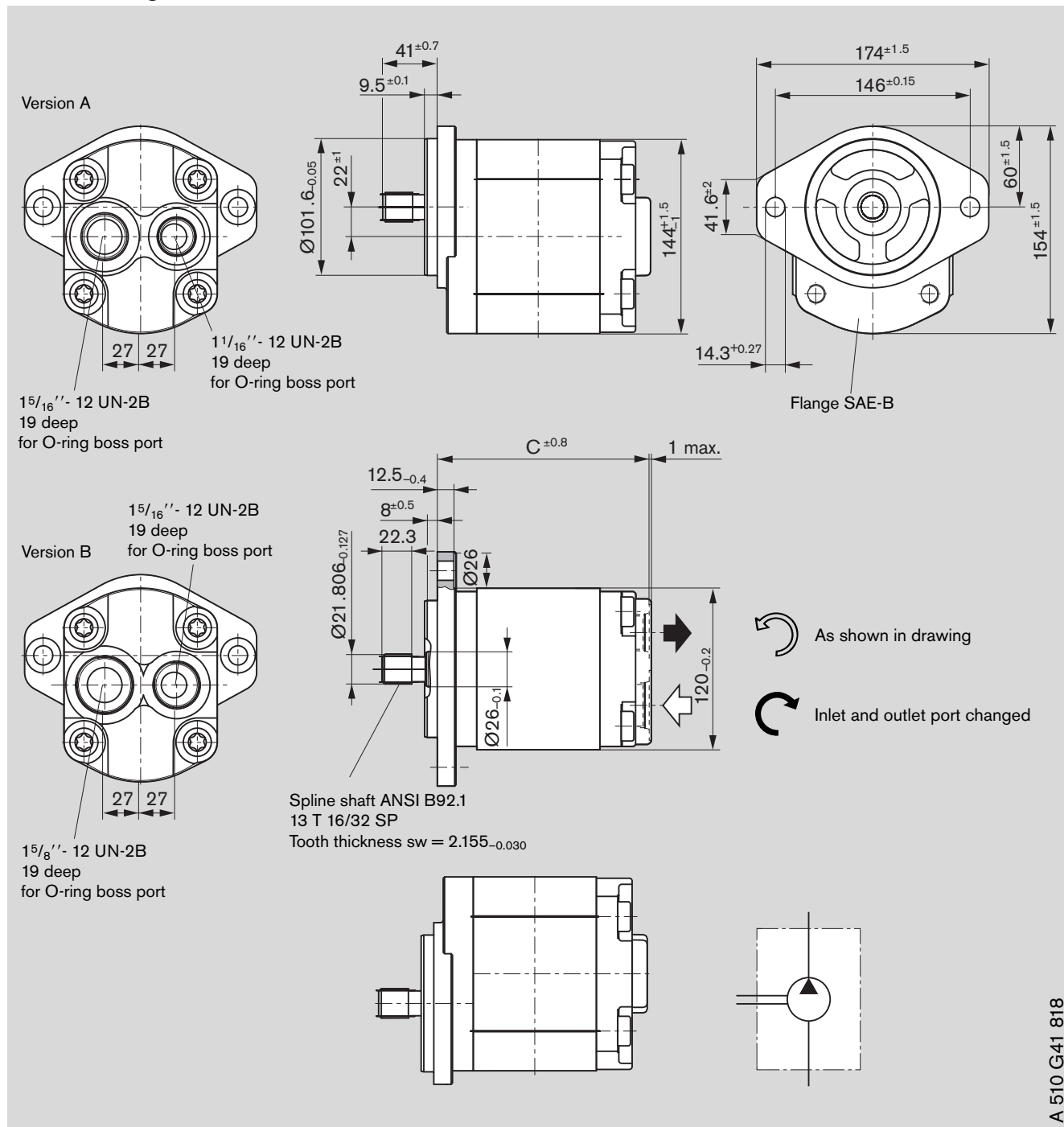
Ordering code:

AZPG - 22 - R Q C 40 M B

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm]	
	 L	 R			A	B
56		9 510 490 089	195	2300	80.2	157.9
63		9 510 490 090	170	2300	83.1	163.8



Dimensions

Standard range



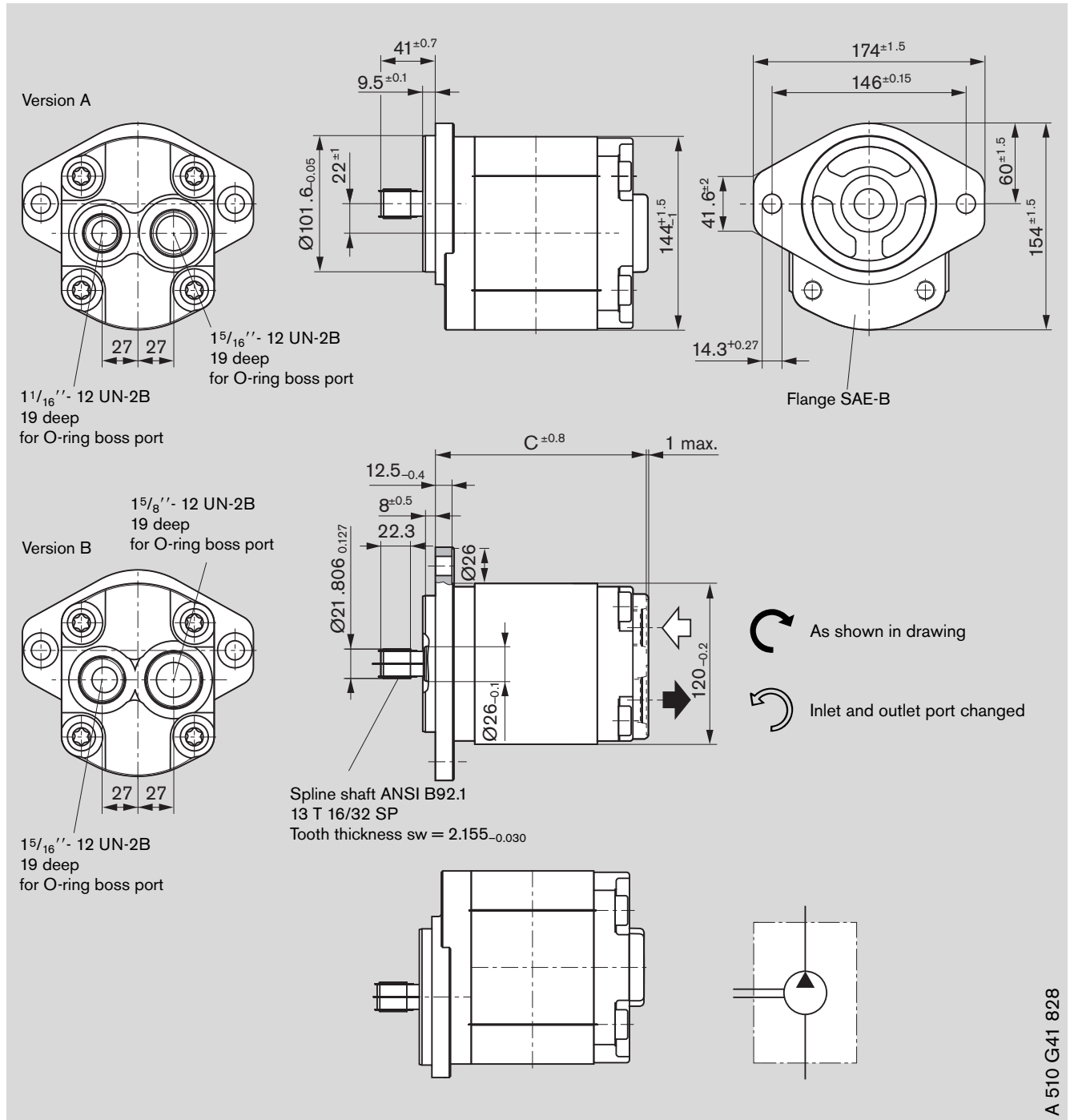
Ordering code:

AZPG - 22 - □ □ □ L D C 12 M A

Displacement [cm ³ /rev]	Ordering-No.  	Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm] C	Version
22.5	9 510 490 071	250	3000	141.2	A
25	9 510 490 072	250	3000	143.2	A
28	9 510 490 073	250	3000	145.7	A
32	9 510 490 074	250	2800	149.0	B
36	9 510 490 075	250	2800	152.4	B
40	9 510 490 076	250	2800	155.6	B
45	9 510 490 077	250	2600	159.7	B
50	9 510 490 078	220	2600	163.9	B
56	9 510 490 079	195	2300	169.8	B
63	9 510 490 080	170	2300	174.6	B

Dimensions

Standard range



A 510 G41 828

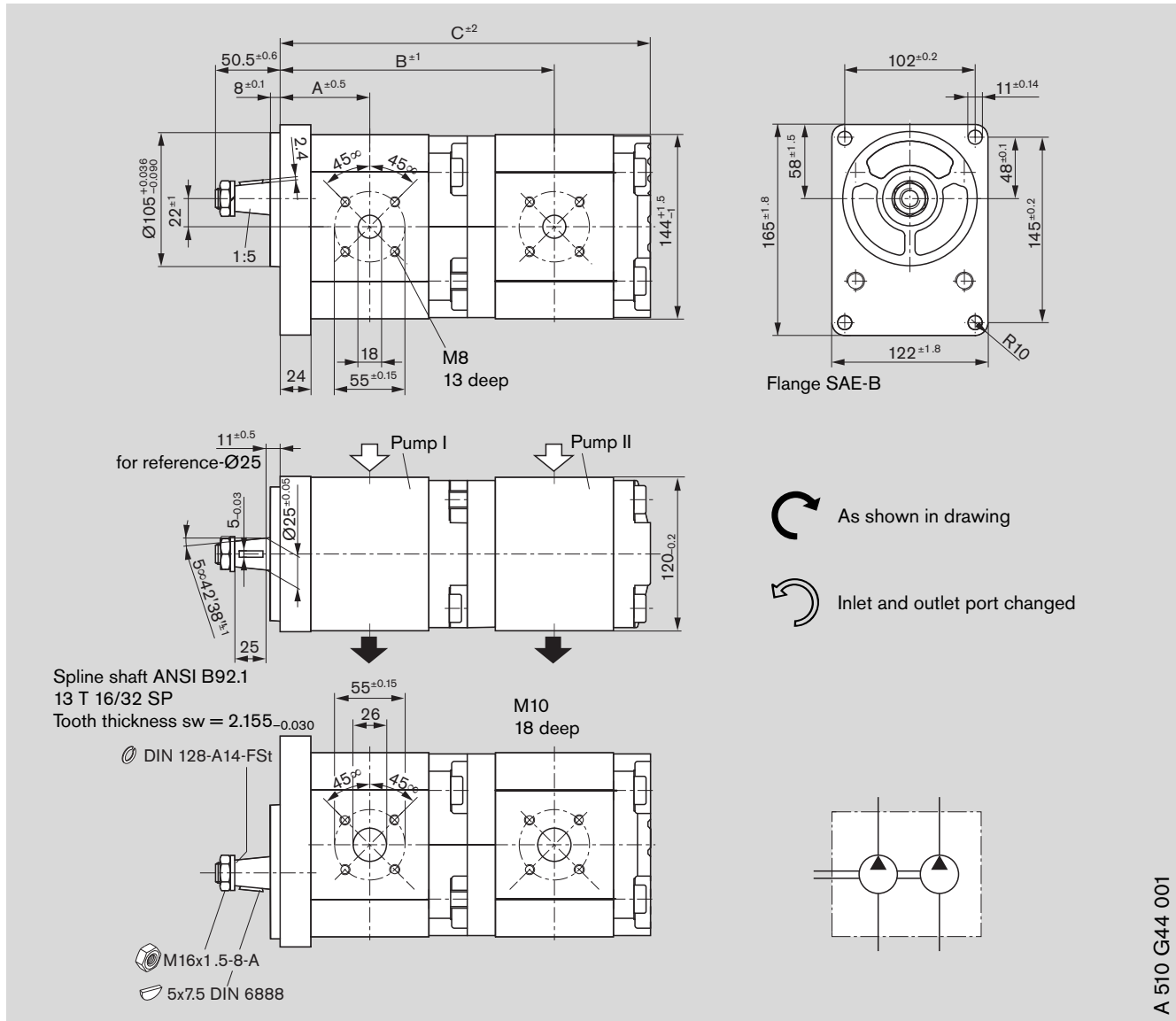
Ordering code:

AZPG - 22 - R D C 12 M A

Displacement [cm ³ /rev]	Ordering-No.		Max. operating pressure [bar]	Max. rotation speed [rpm]	Dimension [mm] C	Version
22.5		9 510 490 061	250	3000	141.2	A
25		9 510 490 062	250	3000	143.2	A
28		9 510 490 063	250	3000	145.7	A
32		9 510 490 064	250	2800	149.0	B
36		9 510 490 065	250	2800	152.4	B
40		9 510 490 066	250	2800	155.6	B
45		9 510 490 067	250	2600	159.7	B
50		9 510 490 068	220	2600	163.9	B
56		9 510 490 069	195	2300	169.8	B
63		9 510 490 070	170	2300	174.6	B

Dimensions

Standard range



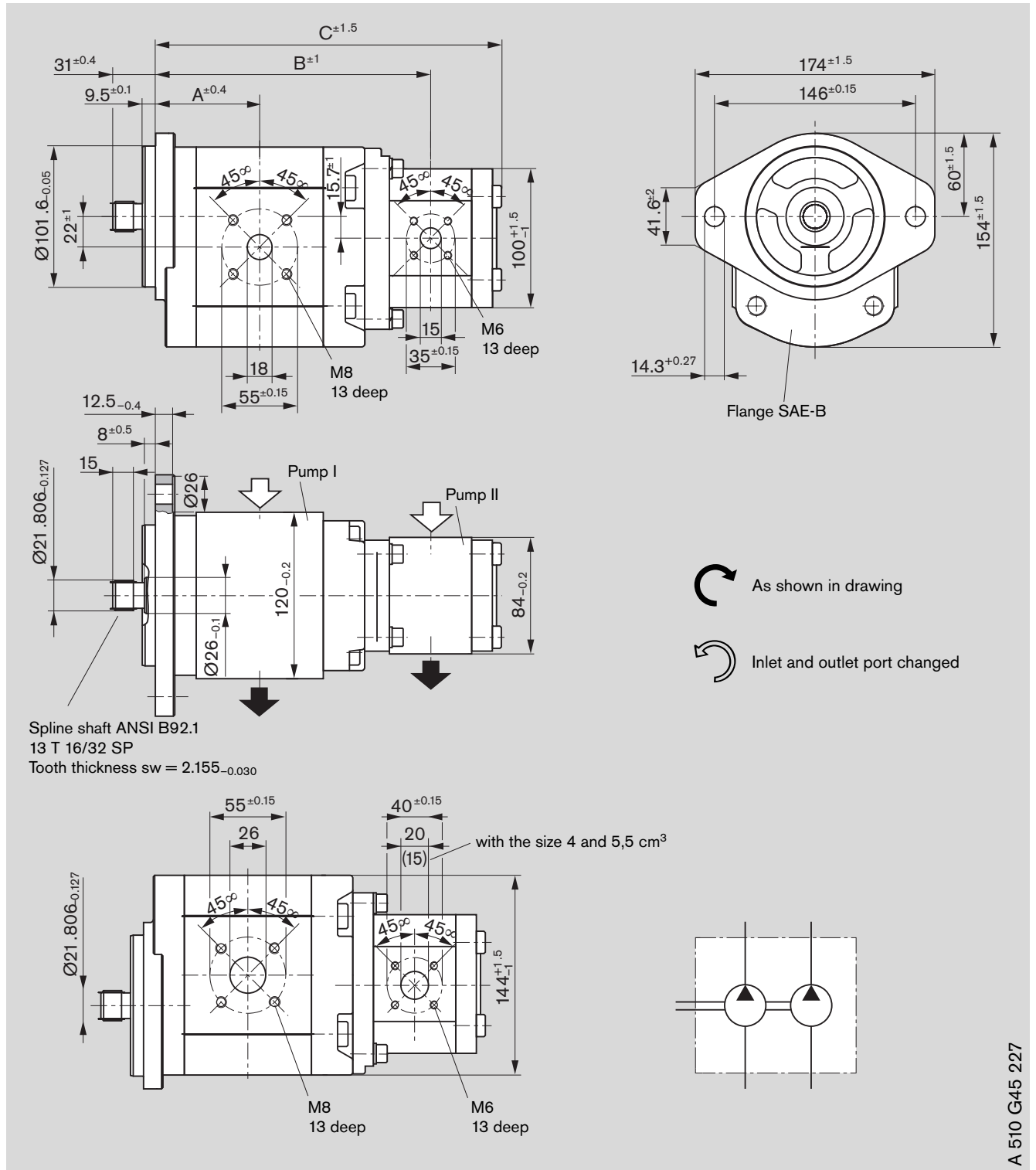
Ordering code:

AZPGG - 22 - □□□ / □□□ □ C B 20 20 M B

Displacement [cm ³ /rev]		Ordering-No.		Max. operating pressure [bar]		Max. rotation speed [rpm]	Dimension [mm]		
P _I	P _{II}	L	R	P _I	P _{II}		A	B	C
22.5	22.5		0 510 765 115	280	280	3000	60.9	186.4	250.4
22.5	22.5	0 510 765 430		280	280	3000	60.9	186.4	250.4
32	22.5		0 510 767 079	280	280	2800	64.8	194.2	258.2
32	22.5	0 510 767 337		280	280	2800	64.8	194.2	258.2
32	32		0 510 767 078	280	230	2800	64.8	198.1	266.0
32	32	0 510 767 336		280	230	2800	64.8	198.1	266.0
40	22.5		0 510 768 051	260	280	2800	68.1	200.9	264.8
40	22.5	0 510 768 332		260	280	2800	68.1	200.9	264.8
40	32		0 510 768 050	230	230	2800	68.1	204.8	272.6
40	32	0 510 768 331		230	230	2800	68.1	204.8	272.6
40	40		0 510 768 049	230	180	2800	68.1	208.1	279.3
40	40	0 510 768 330		230	180	2800	68.1	208.1	279.3
45	22.5		0 510 769 033	230	280	2600	70.1	204.9	268.9
45	32		0 510 769 032	200	230	2600	70.1	208.9	276.7
45	45	0 510 769 325		200	160	2600	70.1	214.2	287.4
45	45		0 510 769 030	200	160	2600	70.1	214.2	287.4
45	40		0 510 769 031	200	180	2600	70.1	212.2	283.3
56	40		0 510 865 013	170	180	2300	74.7	221.3	292.4

Dimensions

Standard range



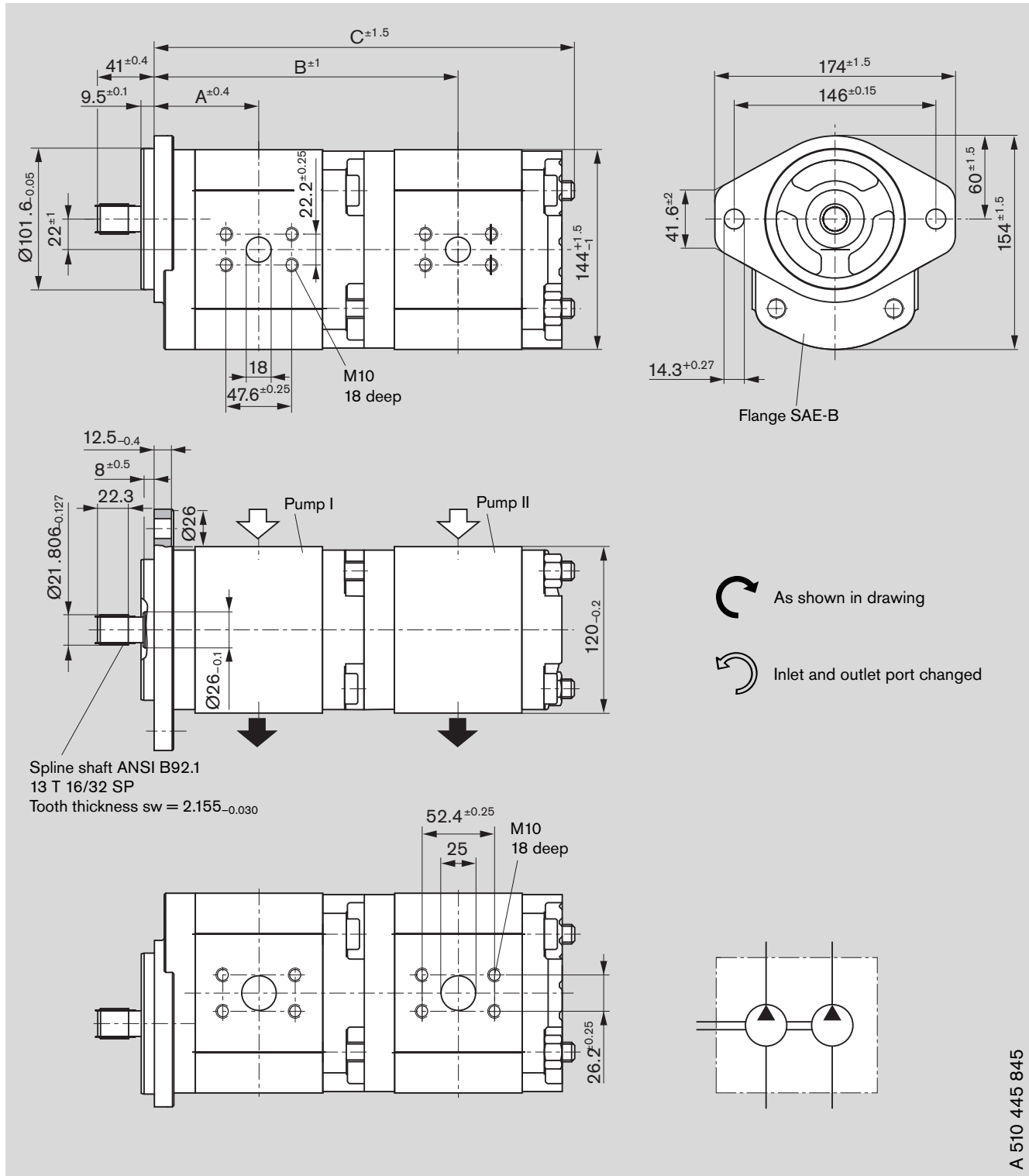
Ordering code:

AZPGF - 22 - □ □ □ / □ □ □ □ □ D C 20 20 M B

Displacement [cm ³ /rev]		Ordering-No.		Max. operating pressure [bar]		Max. rotation speed [rpm]	Dimension [mm]		
P _I	P _{II}	L	R	P _I	P _{II}		A	B	C
22.5	16		0 510 765 118	250	230	3000	66.4	181.2	236.2
32	16		0 510 767 067	250	230	2800	70.3	189.0	244.0
56	16	0 510 665 320		200	230	2300	80.2	208.8	263.8
56	19	0 510 865 319		200	190	2300	80.2	208.8	268.8
56	22.5		0 510 865 016	200	160	2300	80.2	216.4	274.2

Dimensions

Standard range



A 510 445 845

Ordering code:

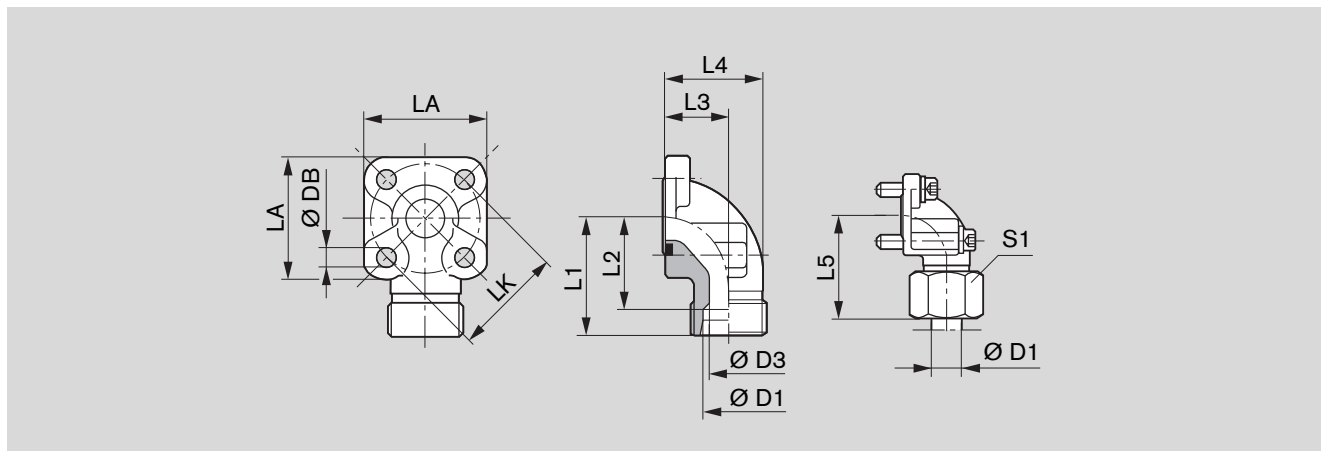
AZPGG - 22 - D C 07 07 M B

Displacement [cm ³ /rev]		Ordering-No.		Max. operating pressure [bar]		Max. rotation speed	Dimension [mm]		
PT 1	PT 2	L	R	PT 1	PT 2	[rpm]	A	B	C
28	28			260	260	2500	68.7	198.7	269.2

Fittings

Fittings can be used for rectangular flange **20** see page 7

Gear pump flange, 90° angle



LK	D1	D3	L1	L2	L3	L4	L5	LA	S1	DB	Screws 2x	2x	Seal ring	Mass kg	Part number	<i>p</i> (bar)
55	20S	17	45	34.5	24.0	40.0	56.0	58	36	8.4	M8x25	M8x50	33x2.5	0.44	1 515 702 004	250
55	30S	26	49	35.5	32.0	50.0	62.0	58	50	8.4	M8x25	M8x50	33x2.5	0.50	1 545 719 006	250
55	35L	31	49	38.5	32.0	51.5	62.0	58	50	8.4	M8x25	M8x60	32x2.5	0.47	1 515 702 005	100
55	42L	38	49	38.0	40.0	64.5	61.0	58	60	8.4	M8x25	M8x70	32x2.5	0.60	1 515 702 019	100

Complete fittings with seal ring, metric screw set, nuts and olive.

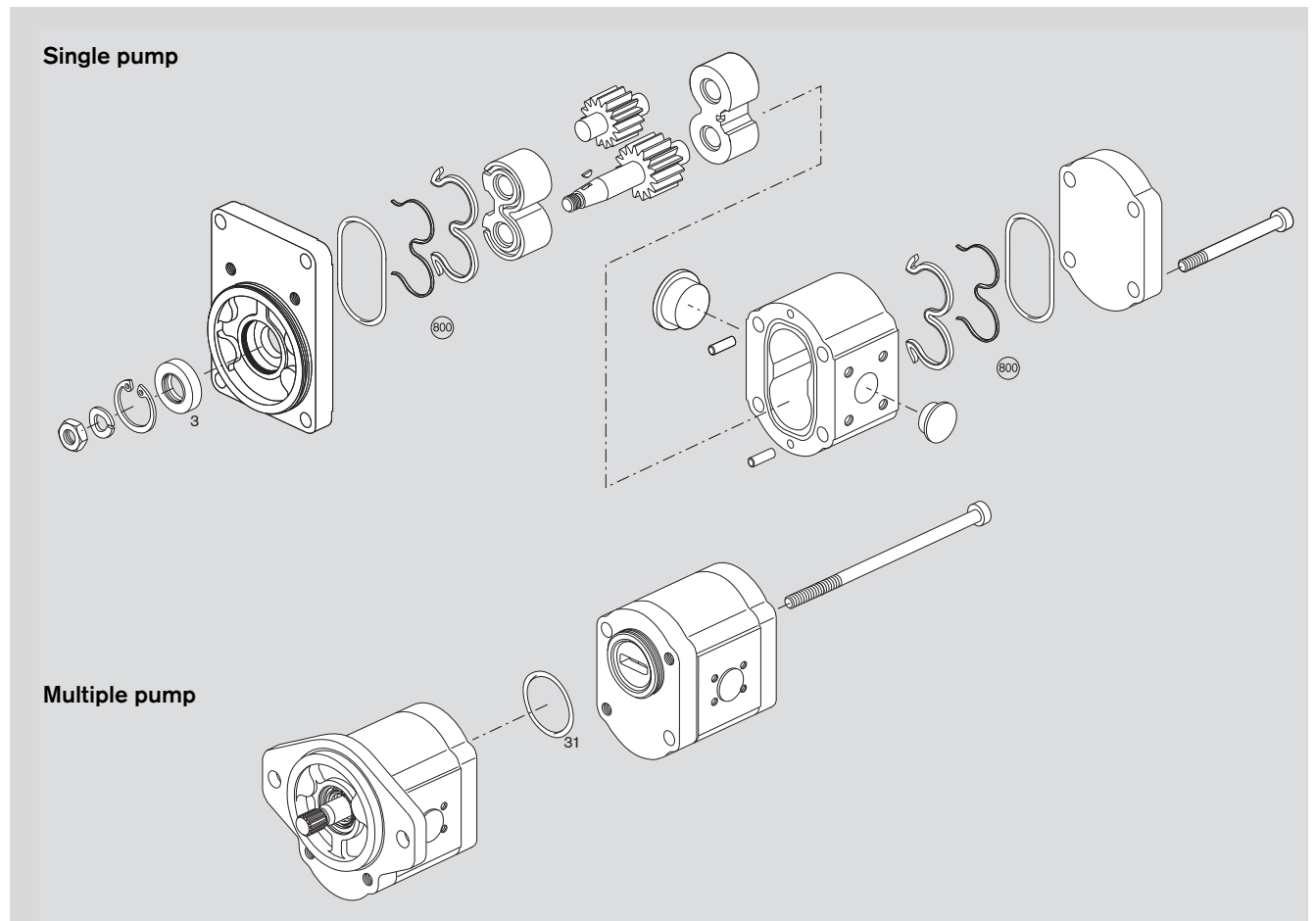
Note

The permissible tightening torques can be found in our publication:

“General operating instructions for external gear units”

RE 07 012-B1.

Spare parts



Page	Ordering code	Seal kit „G“ NBR	Shaft seal ring Pos. 3	Qty.	Dimension	Material
18	AZPG – 22 – □□□□ □ C B 20 M B	1517010231	1510283072	1	42x26x7	NBR
19	AZPG – 22 – □□□□ □ H O 30 M B	1517010231	1510283072	1	42x26x7	NBR
20, 21, 22	AZPG – 22 – □□□□ □ D C 07 K B	1517010231	1510283069	1	42x26x7	FKM
23, 24, 25	AZPG – 22 – □□□□ □ Q C 12 M B – S 06 62	1517010231	1510283072	1	42x26x7	NBR
26, 27, 28	AZPG – 22 – □□□□ □ X 07 K B – S 03 03	1517010231	1510283069	1	42x26x7	FKM
29, 30, 31	AZPG – 22 – □□□□ □ D C 07 K B – S 00 39	1517010231	1510283069	1	42x26x7	FKM
32, 33, 34, 35, 36, 37	AZPG – 22 – □□□□ □ D C 12 M B	1517010231	1510283072	1	42x26x7	NBR
38, 39	AZPG – 22 – □□□□ □ Q C 12 M A	1517010234	1510283072	1	42x26x7	NBR
40, 41, 42, 43, 44, 45	AZPG – 22 – □□□□ □ D C 40 M B	1517010231	1510283072	1	42x26x7	NBR
46, 47, 48, 49, 50, 51						
52, 53	AZPG – 22 – □□□□ □ D C 12 M A	1517010234	1510283072		42x26x7	NBR
54	AZPG – 22 – □□□□ / □□□□ □ C B 20 20 M B					
	Pump section 1	1517010231	1510283072	1	42x26x7	NBR
			1510283075	1	42x26x7	FKM
	Pump section 2	1517010208				
55	AZPG – 22 – □□□□ / □□□□ □ D C 20 20 K B					
	Pump section 1	1517010231	1510283069	2	42x26x7	FKM
	Pump section 2	1517010208				
56	AZPG – 22 – □□□□ / □□□□ □ D C 07 07 M B					
	Pump section 1	1517010231	1510283072	1	42x26x7	NBR
			1510283075	1	42x26x7	FKM
	Pump section 2	1517010231				
57	AZPG – 22 – □□□□ / □□□□ □ D C 20 20 M B					
	Pump section 1	1517010231	1510283069	2	42x26x7	FKM
	Pump section 2	1517010208				

NBR = Perbunan®

FKM = Viton®

For multiple pumps

Seal ring Item 31 NBR	1 900 210 145
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Notes for commissioning

Filter recommendation

The major share of premature failures in external gear pumps is caused by contaminated hydraulic fluid.

As a warranty cannot be issued for dirt-specific wear, we recommend filtration compliant with cleanliness level 20/18/15 ISO 4406, which reduces the degree of contamination to a permissible dimension in terms of the size and concentration of dirt particles:

Operating pressure [bar]	>160	<160
Contamination class ISO 4406	18/15	19/16
To be reached with $\beta_x = 75$	20	25

We recommend that a full-flow filter always be used. Basic contamination of the hydraulic fluid used may not exceed class 20/18/15 according to ISO 4406. Experience has shown that new fluid quite often lies above this value. In such instances a filling device with special filter should be used.

General

- The pumps supplied by us have been checked for function and performance. No modifications of any kind may be made to the pumps; any such changes will render the warranty null and void!
- Pump may only be operated in compliance with permitted data (see pages 14 – 17).

Project planning notes

Comprehensive notes and suggestions are available in Hydraulics Trainer, Volume 3 RE 00 281, "Project planning notes and design of hydraulic systems". Where external gear pumps are used we recommend that the following note be adhered to.

Technical data

All stated technical data is dependent on production tolerances and is valid for specific marginal conditions.

Note that, as a consequence, scattering is possible, and at certain marginal conditions (e.g. viscosity) **the technical data may change.**

Characteristics

When designing the external gear pump, note the maximum possible service data based on the characteristics displayed on pages 9 – 11.

Additional information on the proper handling of hydraulic products from Bosch Rexroth is available in our document: "General product information for hydraulic products" RE 07 008.

Contained in delivery

The components with characteristics as described under ordering code and device measurements, pages 18 – 57, are contained in delivery.

You can find further information in our publication: "General Operating Instructions for External Gear Units" RE 07 012-B1.

Ordering-No.

Ordering-No.	Page	Ordering-No.	Page	Ordering-No.	Page
0 510 665 320	55	0 510 767 066	57	0 510 825 321	21
0 510 725 135	29	0 510 767 067	55	0 510 825 322	22
0 510 725 136	29	0 510 767 078	54	0 510 825 323	22
0 510 725 147	26	0 510 767 079	54	0 510 825 324	18
0 510 725 157	20	0 510 767 324	57	0 510 825 325	18
0 510 725 158	20	0 510 767 328	57	0 510 825 326	18
0 510 725 159	20	0 510 767 330	57	0 510 825 327	19
0 510 725 160	21	0 510 767 336	54	0 510 825 328	19
0 510 725 161	21	0 510 767 337	54	0 510 825 329	19
0 510 725 162	21	0 510 768 043	57	0 510 865 013	54
0 510 725 163	21	0 510 768 049	54	0 510 865 016	55
0 510 725 164	18	0 510 768 050	54	0 510 865 319	55
0 510 725 165	18	0 510 768 051	54	9 510 490 001	32
0 510 725 166	18	0 510 768 330	54	9 510 490 002	32
0 510 725 167	18	0 510 768 331	54	9 510 490 003	32
0 510 725 168	18	0 510 768 332	54	9 510 490 004	33
0 510 725 169	18	0 510 769 022	57	9 510 490 005	33
0 510 725 170	18	0 510 769 023	57	9 510 490 006	33
0 510 725 171	19	0 510 769 030	54	9 510 490 007	33
0 510 725 172	19	0 510 769 031	54	9 510 490 008	34
0 510 725 173	19	0 510 769 032	54	9 510 490 009	34
0 510 725 174	19	0 510 769 033	54	9 510 490 010	34
0 510 725 175	19	0 510 769 318	57	9 510 490 011	32
0 510 725 176	19	0 510 769 319	57	9 510 490 012	32
0 510 725 177	19	0 510 769 321	57	9 510 490 013	32
0 510 725 420	29	0 510 769 325	54	9 510 490 014	33
0 510 725 421	29	0 510 825 011	30	9 510 490 015	33
0 510 725 432	26	0 510 825 012	31	9 510 490 016	33
0 510 725 434	20	0 510 825 013	31	9 510 490 017	33
0 510 725 435	20	0 510 825 014	30	9 510 490 018	34
0 510 725 436	20	0 510 825 015	26	9 510 490 019	34
0 510 725 437	21	0 510 825 016	27	9 510 490 020	34
0 510 725 439	21	0 510 825 017	27	9 510 490 021	35
0 510 725 440	21	0 510 825 018	28	9 510 490 022	35
0 510 725 441	18	0 510 825 019	28	9 510 490 023	35
0 510 725 442	18	0 510 825 021	21	9 510 490 024	36
0 510 725 443	18	0 510 825 022	22	9 510 490 025	36
0 510 725 444	18	0 510 825 023	22	9 510 490 026	36
0 510 725 445	18	0 510 825 024	18	9 510 490 027	36
0 510 725 446	18	0 510 825 025	18	9 510 490 028	37
0 510 725 447	18	0 510 825 026	18	9 510 490 029	37
0 510 725 448	19	0 510 825 027	19	9 510 490 030	37
0 510 725 449	19	0 510 825 028	19	9 510 490 034	36
0 510 725 450	19	0 510 825 029	19	9 510 490 035	36
0 510 725 451	19	0 510 825 310	31	9 510 490 037	36
0 510 725 452	19	0 510 825 311	31	9 510 490 038	37
0 510 725 453	19	0 510 825 312	30	9 510 490 039	37
0 510 725 454	19	0 510 825 313	30	9 510 490 040	37
0 510 765 115	54	0 510 825 314	26	9 510 490 041	43
0 510 765 118	55	0 510 825 315	27	9 510 490 042	43
0 510 765 430	54	0 510 825 316	27	9 510 490 043	43
0 510 766 016	56	0 510 825 317	28	9 510 490 044	43
0 510 767 064	57	0 510 825 318	28	9 510 490 045	43

Ordering-No.

Ordering-No.	Page	Ordering-No.	Page	Ordering-No.	Page
9 510 490 046	44	9 510 490 078	52	9 510 490 110	38
9 510 490 047	44	9 510 490 079	52	9 510 490 111	39
9 510 490 048	44	9 510 490 080	52	9 510 490 112	39
9 510 490 049	45	9 510 490 081	49	9 510 490 113	39
9 510 490 050	45	9 510 490 082	49	9 510 490 114	39
9 510 490 051	40	9 510 490 083	49	9 510 490 115	39
9 510 490 052	40	9 510 490 084	49	9 510 490 116	39
9 510 490 053	40	9 510 490 085	49	9 510 490 117	39
9 510 490 054	40	9 510 490 086	50	9 510 490 118	39
9 510 490 055	40	9 510 490 087	50	9 510 490 119	39
9 510 490 056	41	9 510 490 088	50	9 510 490 120	39
9 510 490 057	41	9 510 490 089	51	9 510 490 122	23
9 510 490 058	41	9 510 490 090	51	9 510 490 123	23
9 510 490 059	42	9 510 490 091	46	9 510 490 124	23
9 510 490 060	42	9 510 490 092	46	9 510 490 125	24
9 510 490 061	53	9 510 490 093	46	9 510 490 126	24
9 510 490 062	53	9 510 490 094	46	9 510 490 127	24
9 510 490 063	53	9 510 490 095	46	9 510 490 128	24
9 510 490 064	53	9 510 490 096	47	9 510 490 129	25
9 510 490 065	53	9 510 490 097	47	9 510 490 130	25
9 510 490 066	53	9 510 490 098	47	9 510 490 131	25
9 510 490 067	53	9 510 490 099	48	9 510 490 132	23
9 510 490 068	53	9 510 490 100	48	9 510 490 133	23
9 510 490 069	53	9 510 490 101	38	9 510 490 134	23
9 510 490 070	53	9 510 490 102	38	9 510 490 135	24
9 510 490 071	52	9 510 490 103	38	9 510 490 136	24
9 510 490 072	52	9 510 490 104	38	9 510 490 137	24
9 510 490 073	52	9 510 490 105	38	9 510 490 138	24
9 510 490 074	52	9 510 490 106	38	9 510 490 139	25
9 510 490 075	52	9 510 490 107	38	9 510 490 140	25
9 510 490 076	52	9 510 490 108	38	9 510 490 141	25
9 510 490 077	52	9 510 490 109	38		

The AZ configurator at www.boschrexroth.com/azconfigurator

The AZ configurator assists you to configure your individual external gear unit easily and user-friendly. You only need to specify your requirements: From the displacement, direction of rotation, drive shaft, connection flange right up to the required rear cover. You immediately receive a project drawing (PDF format) if a configuration already exists. You receive the price of the configured external gear unit upon request.



The AZ configurator assists you to configure your individual external gear unit easily and user-friendly – all data needed for project planning are acquired thru menu guidance.



Selection is made either on an ordering code or your technical requirements. This means that you can search for external gear units that have already been configured, or you specify the configuration variant of the external gear unit based upon the operating parameters you require.



If the external gear unit you selected has been released you will receive the part number, ordering code and a detailed installation drawing. If your special configuration is not available please send your specification to Rexroth. One of our employees will then contact you.

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