



External gear pumps AZPF



Displacement	V	cm ³ /rev	4	5.5	8	11	14	16	19	22.5	25
Suction pressure	p _e	bar	0.7...3 (absolute)								
Max. continuous pressure	p ₁		250	250	250	250	250	250	250	220	195
Max. intermittent pressure	p ₂		280	280	280	280	280	280	280	250	225
Max. peak pressure	p ₃		300	300	300	300	300	300	300	290	265
Min. rotational speed	<100 bar 12 cSt	rpm	600	500	500	500	500	500	500	500	500
	100...180 bar 12 cSt		1200	1200	1000	1000	800	800	800	800	800
	180...p ₂ bar 12 cSt		1400	1400	1400	1200	1000	1000	1000	1000	1000
	p ₂ 25 cSt		700	700	700	600	500	500	500	500	500
Max. rotational speed	p ₂		4000	4000	4000	3500	3000	3000	3000	3000	3000

Type code single pump

01	02	03	04	05	06	07	08	09	10	11
AZP	F	-			-					

External gear unit

01	External gear pump	AZP
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Series

02	High Performance	F
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Unit version

03	Standard bearing	1
	Reinforced bearing	2

Version

04	Phosphated, pinned	1
	Corrosion-protected, pinned	2

Size (NG)

05	Geometric displacement V_g [cm ³]	004	005	008	011	014	016	019	022	025	028
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Direction of rotation

06	Viewed on drive shaft	clockwise	R
		counter-clockwise	L

Drive shaft

Suitable front cover

07	Tapered shaft	1 : 5	B, P, N	C
		1 : 5	A, G	S
		1 : 8	O	H
	Tang drive		M, L, T	N
	Splined shaft	SAE J744 16-4 9T	R, C	R
		SAE J744 19-4 11T	R, C	P
		DIN 5482 B17 × 14	B, P, N, O	F
	Parallel keyed shaft	SAE J744 16-1 A	R	Q
		ISO Ø18 mm	B	A

Front cover

08	Rectangular flange	Ø80 mm		B
		Ø36.47 mm		O
	2-bolt flange	Ø82.55 mm	SAE J744 82-2 A	R
		Ø101.6 mm	SAE J744 101-2 B	C
	2-bolt mounting	Ø52 mm	with seal ring	M
		Ø52 mm	compressor port	L
		Ø50 mm	connection variant N	N
		Ø50 mm	connection variant P	P
	4-bolt mounting	Ø52 mm	with seal ring	T
	Outrigger bearing	Ø80 mm	type 1	A
		type 2	G	

01	02		03	04		05	06	07	08	09	10	11	12	13		14
AZP	F	-			-										-	

Line connection

		004	005	008	011	014	016	019	022	025	028	
09	Pipe thread according to ISO 228-1	•	•	•	•	•	•	•	•	•	•	01
	Metric thread according to ISO 6149, O-ring	•	•	•	•	•	•	•	•	•	•	50
	UN-thread according to ISO 11926-1 / ASME B 1.1, O-ring	•	•	•	•	•	•	•	•	•	•	12
	Square flange	•	•	•	•	•	•	•	•	•	•	20
	Square flange	•	•	•	•	•	•	•	•	•	•	30

Sealing material

10	NBR (nitrile rubber)	M
	FKM (fluoroelastomer)	P
	NBR (nitrile rubber), shaft seal in FKM (fluoroelastomer)	K

Rear cover

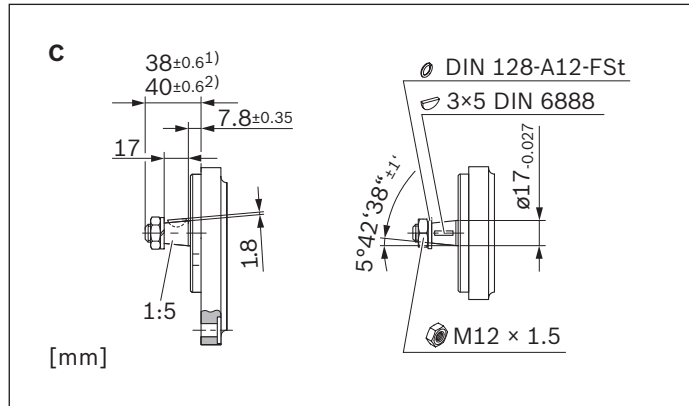
11	Without valve (standard)			B
	With pressure relief valve	Pressure discharge	external	T
			internal	D
	With flow control valve	Residual flow	external	E
			internal	S
	With flow control valve and pressure relief valve			V

Dimensions

Drive shafts

Tapered shaft 1:5

(for front cover B, P, N)

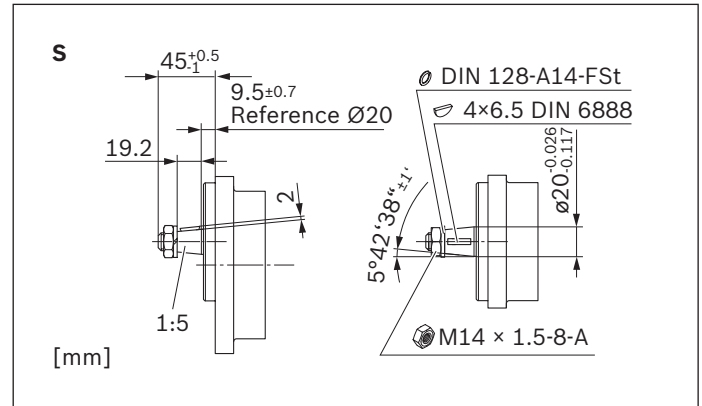


1) In combination with front cover B

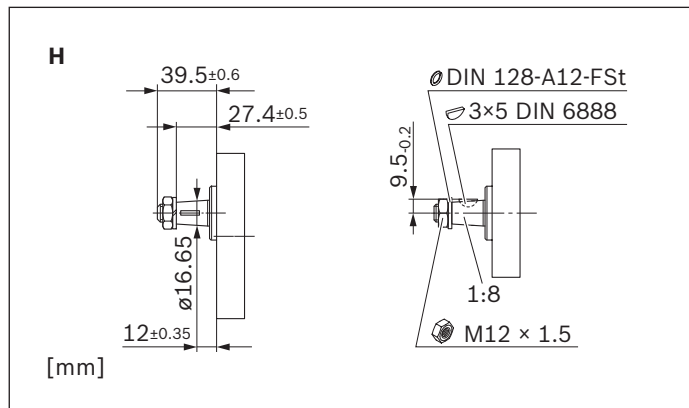
2) In combination with front cover P and front cover N

Tapered shaft 1:5

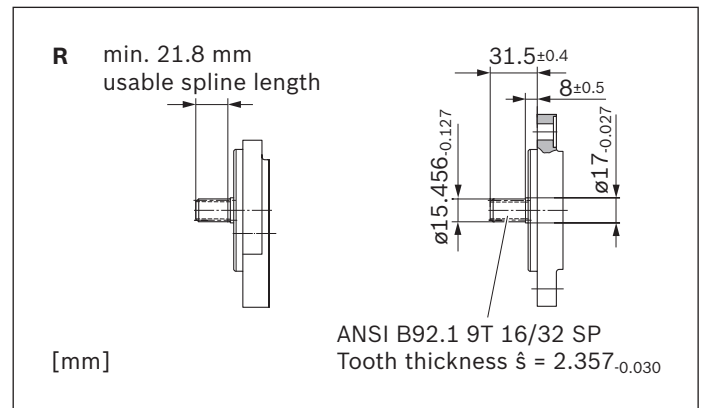
(for outrigger bearing A, G)



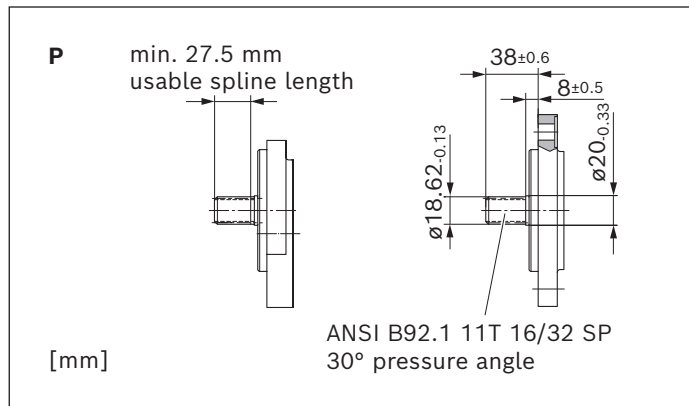
Tapered shaft 1:8



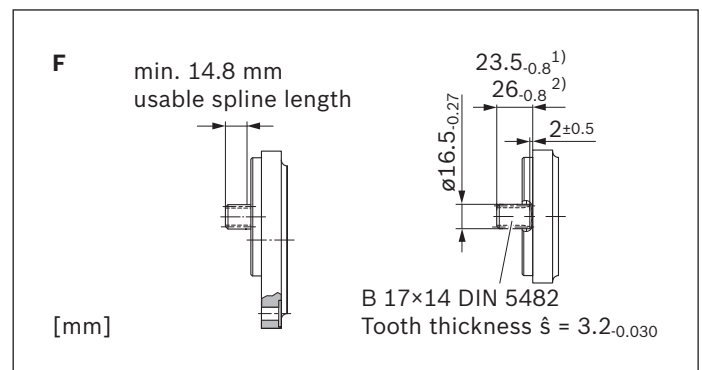
Splined shaft (SAE J744 16-4 9T)



Splined shaft (SAE J744 19-4 11T)



Splined shaft (DIN 5482 B17 x 14)



1) In combination with front cover B

2) In combination with front cover P and front cover N

Front cover

Technical drawing of a 100 mm diameter cast iron flange. The drawing includes a side view and a top view with detailed dimensions.

Side View Dimensions:

- Outer diameter: $\varnothing 100$
- Central bore diameter: $\varnothing 36.47_{-0.05}^{+0.05}$
- Flange thickness: 4.8 ± 0.1
- Distance from central bore to mounting hole center: 15.7 ± 1
- Distance from flange face to mounting hole center: 19 ± 0.1

Top View Dimensions:

- Outer diameter: $\varnothing 100$
- Central bore diameter: $\varnothing 36.47_{-0.05}^{+0.05}$
- Distance between mounting holes (center-to-center): $87^{+1.5}_{-1}$
- Distance from central bore to mounting hole center: 32.5 ± 0.1
- Distance from flange face to mounting hole center: 40.5 ± 1.5
- Distance from flange face to mounting hole center (total): $112^{+1.5}_{-1}$
- Distance from flange face to mounting hole center (total): 96.1 ± 0.2
- Distance from flange face to mounting hole center (total): 71.4 ± 0.2
- Distance from flange face to mounting hole center (total): 8.5 ± 0.11
- Radius: $R8$

[mm]

R

Technical drawing of a 5-hole flange (R) showing side and front views with dimensions in mm.

Side View Dimensions:

- Overall height: $82.55_{-0.05}^{+0.05}$
- Distance from base to first hole: $15.7_{\pm 1}$
- Distance from base to second hole: $6.2_{\pm 0.1}$
- Distance between holes: $12.5_{-0.5}^{+0.5}$
- Inner diameter: $\varnothing 21$

Front View Dimensions:

- Distance from center to first hole: $11_{+0.27}^{+0.27}$
- Angle between holes: $10^\circ 10'$
- Inner diameter: $\varnothing 106.4_{\pm 0.15}$
- Outer diameter: $127_{\pm 1.5}$
- Radius of outer edge: $R47_{\pm 1}$
- Radius of inner edge: $R12_{\pm 1}$
- Material: SAE-A

[mm]

c

Technical drawing of a mechanical part, showing a side view and a top view.

Side View Dimensions:

- Overall length: 14.5 ± 0.5
- Step height: 15.7 ± 1
- Shaft diameter: $\varnothing 101.6 \pm 0.05$
- Step diameter: $\varnothing 41$
- Flange thickness: 9.5 ± 0.1
- Maximum flange thickness: $\text{max } 3$
- Flange outer diameter: $\varnothing 26$

Top View Dimensions:

- Overall diameter: 172 ± 1.3
- Inner diameter: 146 ± 0.15
- Flange thickness: 14.3 ± 0.27
- Central hole diameter: $R13 \pm 1$
- Flange thickness: $R58 \pm 1$
- Flange thickness: 25 ± 0.2

SAE-B

[mm]

Technical drawing of the pump assembly showing side and front views with dimensions in mm.

Side View Dimensions:

- Overall width: 7.2 ± 0.1
- Distance from center to right edge: 9.9 ± 0.2
- Shaft diameter: $\varnothing 32^{+0.16}$
- Distance from center to left edge: $\varnothing 47.8^{+0.2}_{-0.076}$
- Distance from center to bottom edge: 15.7 ± 1
- Distance from center to bottom edge (lower part): 2 ± 0.2
- Distance from center to bottom edge (lower part): 3.2 ± 0.2

Front View Dimensions:

- Overall width: 60 ± 0.2
- Distance from center to right edge: 30 ± 0.1
- Distance from center to bottom edge: 14.3 ± 0.1
- Distance from center to bottom edge: 34.3 ± 1.5
- Distance from center to bottom edge: 60 ± 0.2
- Distance from center to bottom edge: $\min 10.6$

Assembly Notes:

- Pump without shaft seal
- $2 \times M10-10.9$

L

Side view dimensions:

- Total width: 7.2 ± 0.1
- Max. thickness: max. 4.9
- Bore diameter: $\varnothing 17_{-0.027}^{+0.025}$
- Inner hole diameter: $\varnothing 8_{-0.063}^{+0.025}$
- Outer diameter: $\varnothing 52_{-0.076}^{+0.030}$
- Flange thickness: 15.7 ± 1
- Distance from bore center to outer edge: $11.9_{\pm 0.5}$
- Distance from inner hole center to outer edge: 6.5 ± 0.2

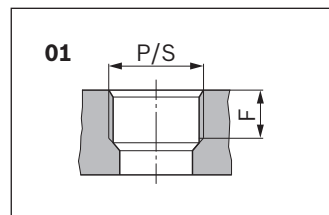
Front view dimensions:

- Overall diameter: 104 ± 0.2
- Distance between mounting holes: 41
- Mounting hole diameter: 11 ± 0.135
- Distance from bore center to mounting hole center: 34.5 ± 1.5
- Radius: $R12_{\pm 0.1}$

[mm]

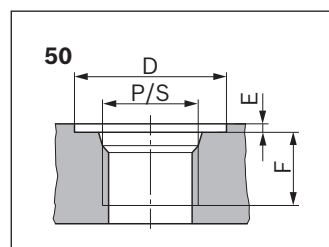
Line connections

Pipe thread according to ISO 228-1



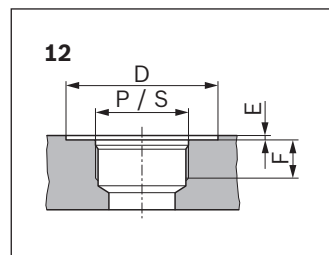
NG	Pressure side		Suction side	
	P	F	S	F
	mm		mm	
4 ... 16	G 1/2	16	G 3/4	16
19 ... 28	G 3/4		G 1	19

Metric threads according to ISO 6149, O-ring



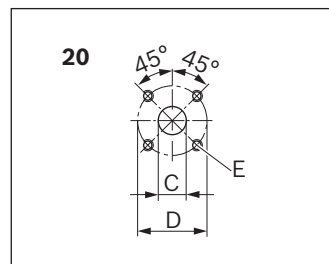
NG	Pressure side				Suction side			
	P	D	E	F	S	D	E	F
	mm				mm			
4 ... 5	M18 × 1.5	29	0,5	16	M18 × 1.5	29	0,5	16
8 ... 16	M22 × 1.5	34		18	M27 × 2	40		19
19 ... 28				M33 × 2	46	22		

UN-thread according to ISO 11926-1 / ASME B 1.1, O-ring



NG	Pressure side				Suction side			
	P	D	E	F	S	D	E	F
	mm				mm			
4 ... 5	3/4-16 UNF-2B	30,2	0,5	14	7/8-14 UNF-2B	35	0,5	17
8 ... 14	7/8-14 UNF-2B	35		17	1 1/16-12 UN-2B	45		19
16 ... 28					1 5/16-12 UN-2B	50		20

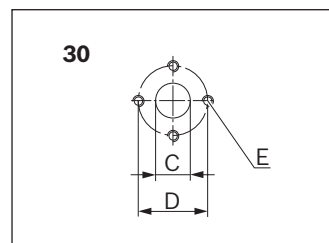
Square flange



NG	Pressure side			Suction side		
	C	D	E	C	D	E
	mm	mm		mm	mm	
4 ... 5	15	35	M6; 13 mm deep	15	40	M6; 13 mm deep
8 ... 22				20		
19 ... 28 ¹⁾				26		M8; 13 mm deep

¹⁾ Serie 2x

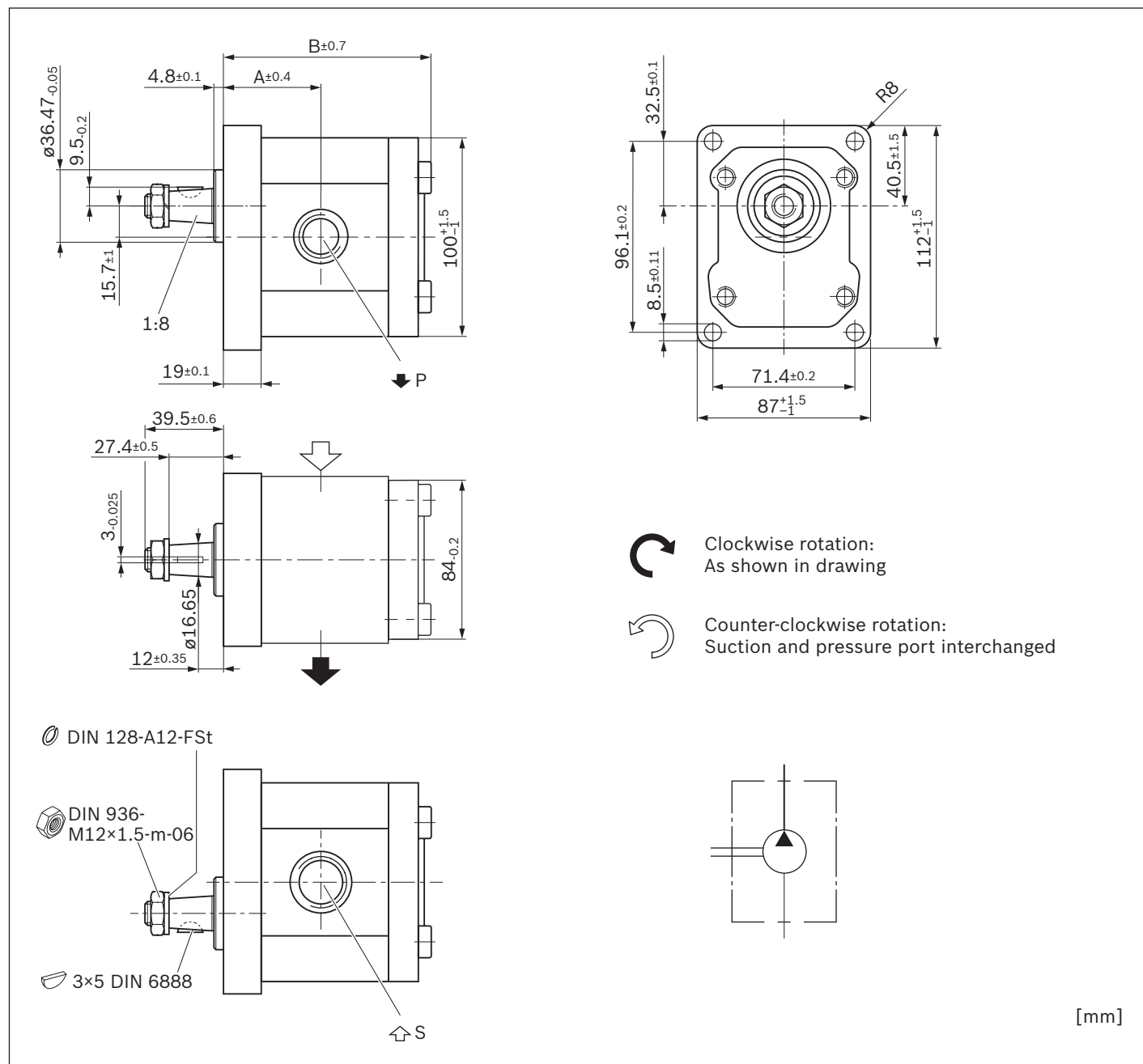
Square flange



NG	Pressure side			Suction side		
	C	D	E	C	D	E
	mm	mm		mm	mm	
4 ... 8	13,5	30,2	M6; 13 mm deep	13,5	30,2	M6; 13 mm deep
11 ... 28				20	39,7	M8; 13 mm deep

Tapered shaft 1:8 with rectangular flange Ø36.47 mm

AZPF – ... **HO01MB**



NG	Weight	Dimensions		S	P
	m	A	B		
	kg	mm	mm		
5	3.1	42.6	89	G 3/4; 16 mm deep	G 1/2; 16 mm deep
8	3.15	44.7	93.1		
11	3.3	48.5	98.1		
14	3.4	49	103.1		
16	3.58	49	106.5		
19	3.6	49	111.5		
22	3.8	56.6	116.4		