

Variable displacement Piston pump

(Muutuva tootlikkusega kolbpumbad)

A10V(S)O 31-series



Typical operating characteristics:

Model series	Size	Displ. cm ³ /rev.	Nom. speed r/min.	Max. speed r/min.	Nom pressure bar	Max. pressure bar	max.flow to 1500p L/min.	Power 280bar/1500p kW
A10VSO	18	18	3300	3900	280	350	27	12,6
A10VO	28	28	3000	3600	280	350	42	20
	45	45	2600	3100	280	350	68	32
	71	71	2200	2600	280	350	107	50
	100	100	2000	2400	280	350	150	70
	140	140	1800	2100	280	350	210	98

< Variable displacement axial piston pump A10VO of swashplate design is designed for hydrostatic drives in an open circuit

< The flow is proportional to the drive speed and the displacement

< The flow can steplessly varied by adjustment of the swashplate angle

< 2 case drain ports

< Long service life

HYDROSHOP



Tehnikamehe Kaubamaja

www.hydroshop.ee ESTONIA

Type code for standard program

	A10VS	O	45	DFLR	/	31	R	-	V	P	A	12	N00	
1	2	3	4	5		6	7		8	9	10	11	12	13

Version

		18	28	45	71	100	140	
1	Standard version (without symbol)	■	■	■	■	■	■	
	HFA, HFB, HFC hydraulic fluid (except for Skydrol)	-	-	-	-	-	-	E
	High-speed version	-	-	-	-	-	-	H

Axial piston unit

2	Swashplate design, variable, nominal pressure 4000 psi(280 bar), maximum pressure 5100 psi(350 bar)	A10VS
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Operation mode

3	Pump, open circuit	O
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Size (NG)

4	Geometric displacement	18	28	45	71	100	140
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Control device

5	Two-point control, directly operated II	■	■	■	■	■	■	DG
	Pressure control	■	■	■	■	■	■	DR
	with flow control, hydraulic							
	X-T open	■	■	■	■	■	■	DFR
	X-T closed	■	■	■	■	■	■	DFR1
	with swivel-angle control, electric	-	-	-	-	-	-	FE1 ¹⁾
	pressure and swivel-angle control, electric	-	-	-	-	-	-	DFE1 ¹⁾
	with pressure cut-off, remotely operated							
	hydraulic	■	■	■	■	■	■	DRG
	electrical							
	negative characteristic							
12V	-	-	-	-	-	-	ED71	
24V	-	-	-	-	-	-	ED72	
positive characteristic								
12V	-	-	-	-	-	-	ER71 ²⁾	
24V	-	-	-	-	-	-	ER72 ²⁾	
	Pressure, flow and power control	-	■	■	■	■	■	DFLR

Series

6	Series 3, Index 1	31
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Direction of rotation

7	Viewed on drive shaft	clockwise 	R
		counter clockwise L 	L

Seals

8	FKM (VITON)	V
	NBR	P

HYDROSHOP



Tehnikamehe Kaubamaja

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Type code for standard program

1	A10VS	2	O	3	45	4	DFLR	5	/	6	31	7	R	-	8	V	9	P	10	A	11	12	N00	12	13
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Version

		18	28	45	71	100	140		
9	Splined shaft ANSI B92.1a	standard shaft	■	■	■	■	■	S	
		similar to shaft "S" however for higher input torque reduced diameter, not for through drive	■	■	■	■	-	-	R
	Parallel keyed shaft Not for through drive	Metric DIN 6885	■	■	■	■	■	■	P
		SAE ISO 3019-1	■	■	■	■	■	■	K

Mounting flange 18 28

		18	28	45	71	100	140		
10	ISO 3019-2 (Metric)	2-hole	■	■	■	■	■	-	A
		4-hole	-	-	-	-	-	■	B
	ISO 3019-1 (SAE)	2-hole	■	■	■	■	■	-	C ³⁾
		4-hole	-	-	-	-	-	■	D ³⁾

Service line port

		18	28	45	71	100	140		
11	SAE flange ports on opposite side, metric-fastening thread		■	■	■	-	■	■	12
			-	-	-	■	-	-	42
	SAE flange ports on opposite side, UNC fastening thread		■	■	■	-	■	■	62 ³⁾
			-	-	-	■	-	-	92 ³⁾

Through drive

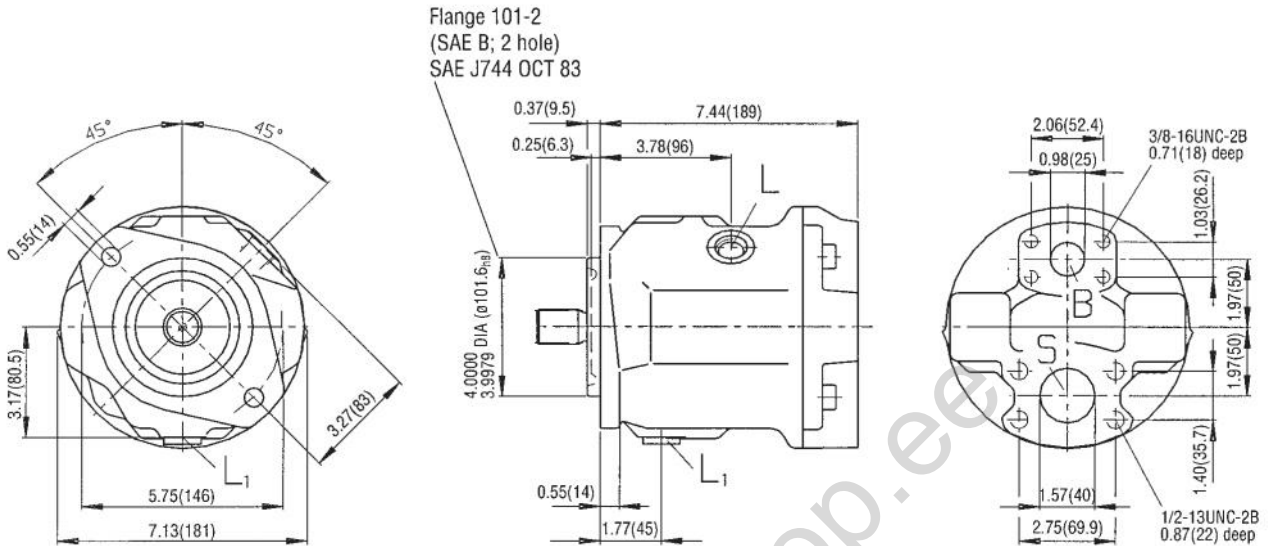
		18	28	45	71	100	140								
without through drive		■	■	■	■	■	■	N00							
12	Flange ISO 3019-1	coupling for splined shaft ¹⁾													
	Diameter	diameter													
	82-2 (A)	5/8 in	9T	16/32DP	■	■	■	■	K01						
		3/4 in	11T	16/32DP	■	■	■	■	K52						
	101-2 (B)	7/8 in	13T	16/32DP	-	■	■	■	K68						
		1 in	15T	16/32DP	-	-	■	■	K04						
	127-2 (C)	1 1/4 in	14T	12/24DP	-	-	■	■	K07						
		1 1/2 in	17T	12/24DP	-	-	-	■	K24						
	152-4 (D)	1 3/4 in	13T	8/16DP	-	-	-	■	K17						
	Ø 63 · Metric 4 hole		key shaft Ø 25						-	■	■	■	■	■	K57
	Flange ISO 3019-2														
	Diameter														
80 · 2-hole	3/4 in	11T	16/32DP	■	■	■	■	■	KB2						
100 · 2-hole	7/8 in	13T	16/32DP	-	■	■	■	■	KB3						
	1 in	15T	16/32DP	-	-	■	■	■	KB4						
125 · 2-hole	1 1/4 in	14T	12/24DP	-	-	-	■	■	KB5						
	1 1/2 in	17T	12/24DP	-	-	-	-	■	KB6						
180 · 4-hole	1 3/4 in	13T	8/16DP	-	-	-	-	■	KB7						

Connectors for solenoids ²⁾

		18	28	45	71	100	140	
13	HIRSCHMANN connector – without suppressor diode	-	-	-	-	-	-	H

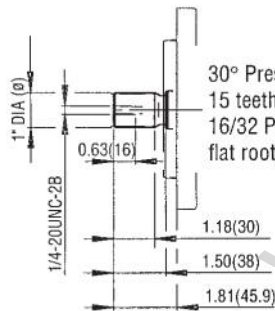
Unit dimensions, size 45

Service ports at rear, no through drive; model **61 N00**
without considering control



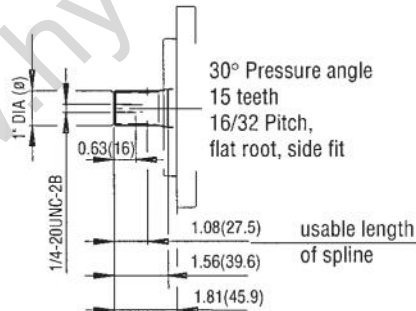
Drive shaft S

25-4; (SAE B-B)
SAE J744 OCT 83



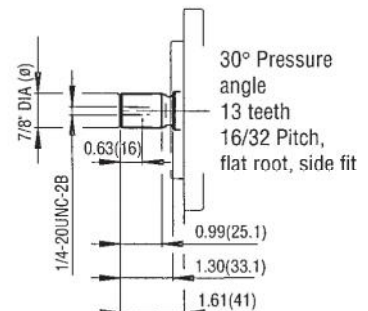
Drive shaft R

25-4; (SAE B-B) Modified
SAE J744 OCT 83



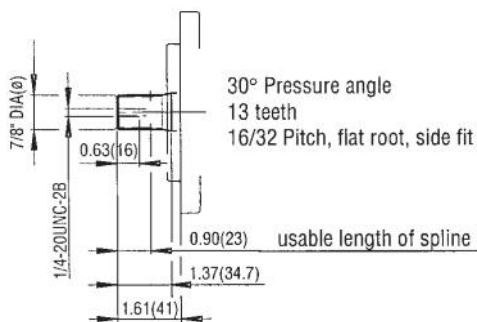
Drive shaft U

22-4; (SAE B)
SAE J744 OCT 83



Drive shaft W

22-4; (SAE B) Modified
SAE J744 OCT 83

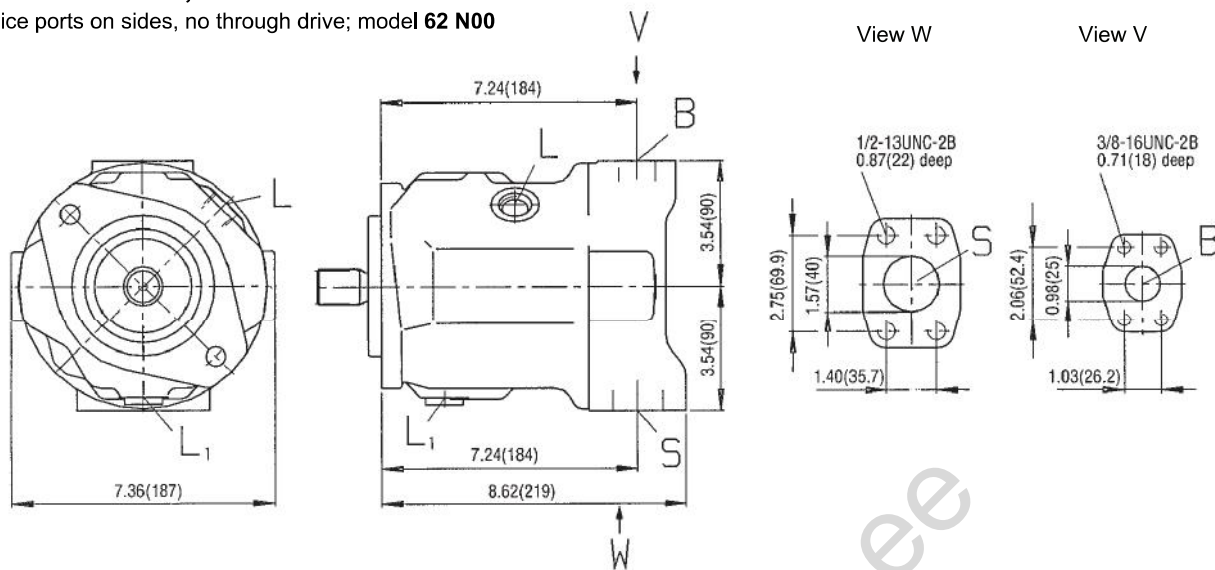


Port connections

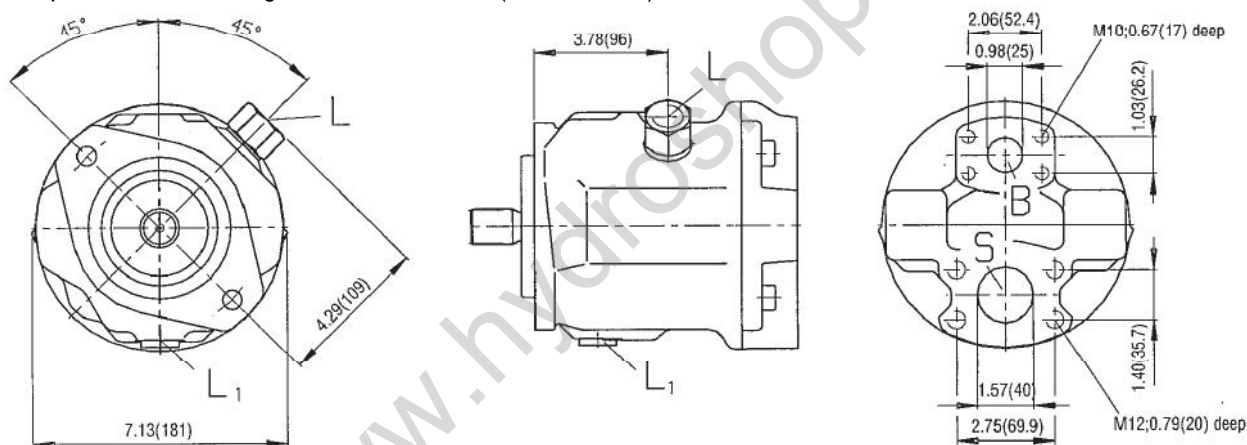
B	Pressure port	1" SAE (standard pressure series, Code 61)
S	Suction port	1 1/2" SAE (standard pressure series, Code 61)
L	Case drain port	7/8-14 UNF-2B
L ₁	Case drain port	7/8-14 UNF-2B (sealed in factory)

Unit dimensions, size 45

Service ports on sides, no through drive; model 62 N00

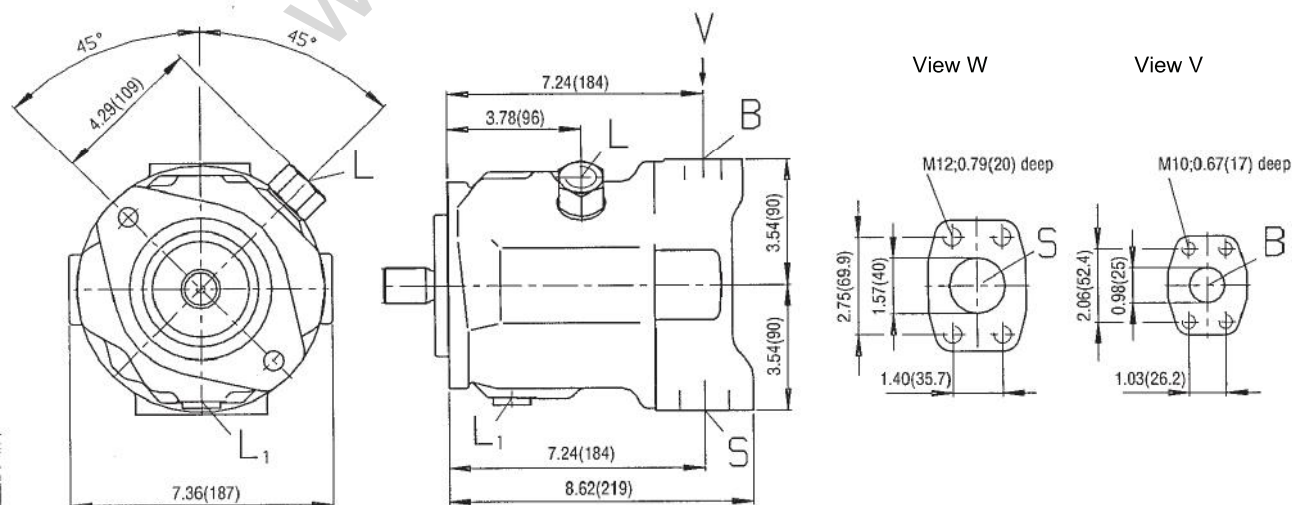


Service ports at rear, no through drive; model 11 N00 (metric threads)

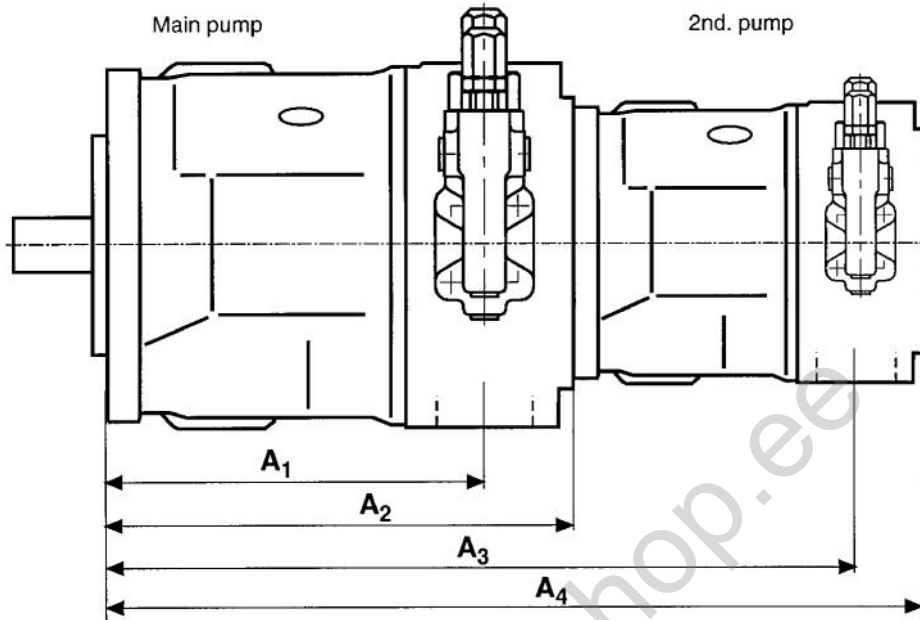


L = Case drain port M22x1.5

Service ports on sides, no through drive; model 12 N00 (metric threads)



L = Case drain port M22x1.5

Unit dimensions of combination pumps
A10VO + A10VO


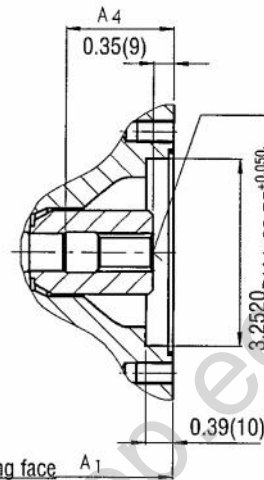
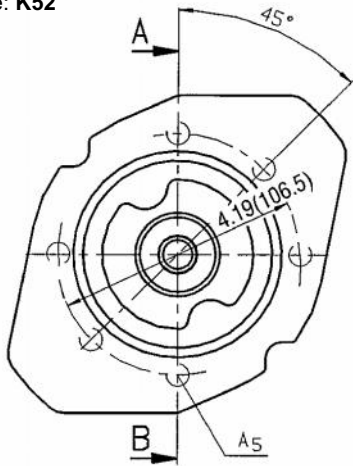
Main pump 2nd. pump	A10VO 28				A10VO 45				A10VO 71				A10VO 100				A10VO 140			
	A ₁	A ₂	A ₃	A ₄	A ₁	A ₂	A ₃	A ₄	A ₁	A ₂	A ₃	A ₄	A ₁	A ₂	A ₃	A ₄	A ₁	A ₂	A ₃	A ₄
A10VSO 18	6.50 (165)	8.03 (204)	13.74 (349)	15.71 (399)	7.24 (184)	9.02 (229)	14.72 (374)	16.69 (424)	8.54 (217)	10.51 (267)	16.22 (412)	18.19 (462)	10.83 (275)	13.31 (338)	19.02 (483)	20.98 (533)	10.83 (275)	13.78 (350)	19.49 (495)	21.46 (545)
A10VO 28	6.50 (165)	8.03 (204)	14.53 (369)	15.67 (398)	7.24 (184)	9.02 (229)	15.51 (394)	16.65 (423)	8.54 (217)	10.51 (267)	17.01 (432)	18.15 (461)	10.83 (275)	13.31 (338)	19.80 (503)	20.94 (532)	10.83 (275)	13.78 (350)	20.28 (515)	21.42 (544)
A10VO 45	-	-	-	-	7.24 (184)	9.02 (229)	16.30 (413)	17.64 (448)	8.54 (217)	10.51 (267)	17.76 (451)	19.36 (486)	10.83 (275)	13.31 (338)	20.55 (522)	21.93 (557)	10.83 (275)	13.78 (350)	21.02 (534)	22.40 (569)
A10VO 71	-	-	-	-	-	-	-	-	8.54 (217)	10.51 (267)	19.06 (484)	20.63 (524)	10.83 (275)	13.31 (338)	21.85 (555)	23.43 (595)	10.83 (275)	13.78 (350)	22.32 (567)	23.90 (607)
A10VO 100	-	-	-	-	-	-	-	-	-	-	-	-	10.83 (275)	14.02 (356)	24.84 (631)	26.50 (673)	10.83 (275)	14.49 (368)	25.31 (643)	26.97 (685)
A10VO 140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10.83 (275)	14.49 (368)	25.31 (643)	26.97 (685)

Dimensions of through drives

Flange SAE 82-2 (SAE A, 2-hole) for mounting of gear pump G2 (see RA 10 030) or for mounting of internal gear pump 1 PF2GC2/3-1X/XXXXR07MU2 (see RA 10 215)
Ordering code: **K01**

Flange SAE 82-2 (SAE A, 2-hole) for mounting of axial piston pump A10VSO 18 - drive shaft "S" (see RA 92 712)
Ordering code: **K52**

Section A – B

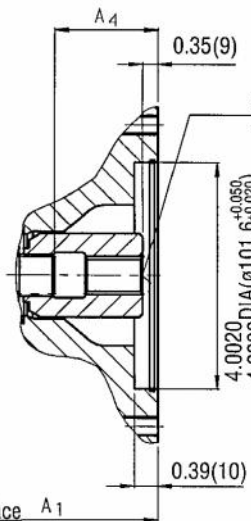
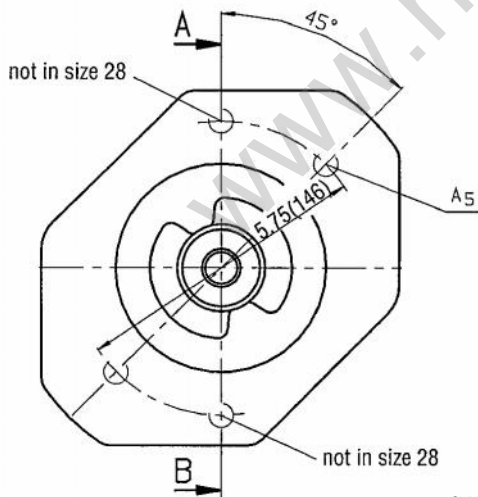


Splined sleeve 5/8";
16/32 DP; 9T at **K01**
Splined sleeve 3/4";
16/32 DP; 11T at **K52**

Size	A ₁	A ₄	A ₅ (metric thread)
28	8.03(204)	1.85(47)	M 10; 0.63(16) deep
45	9.02(229)	2.09(53)	M 10; 0.63(16) deep
71	10.51(267)	2.40(61)	M 10; 0.79(20) deep
100	13.31(338)	2.56(65)	M 10; 0.79(20) deep
140	13.78(350)	3.03(77)	M 10; 0.79(20) deep

Flange SAE 101-2 (SAE B, 2-hole) for mounting of gear pump G3 (see RA 10 039) or for mounting of axial piston pump A10VO 28 - drive shaft "S"
Ordering code: **K02**

Section A – B

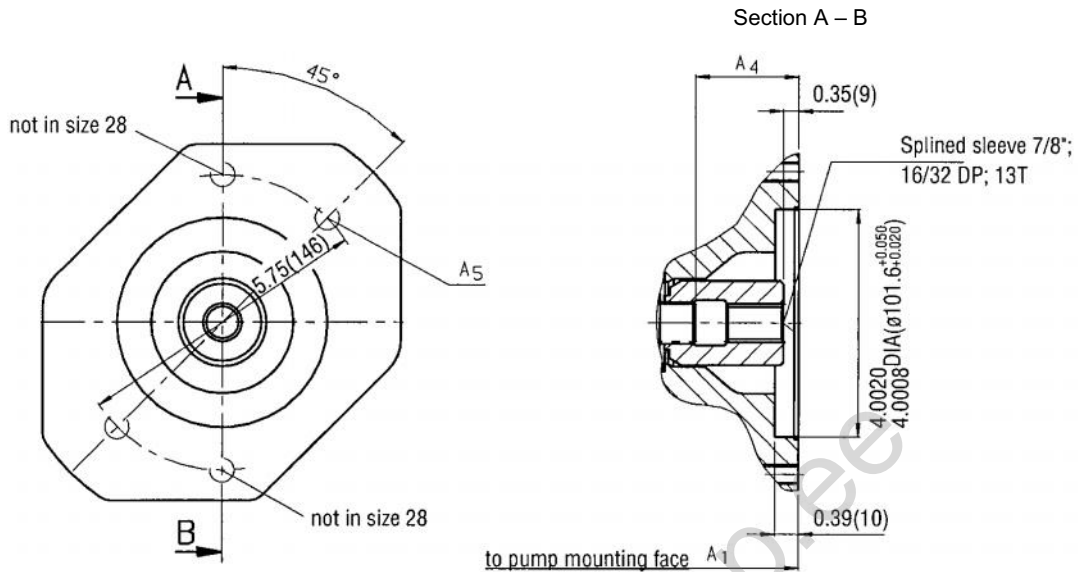


Splined sleeve 7/8";
16/32 DP; 13T

Size	A ₁	A ₄	A ₅ (metric thread)
28	8.03(204)	1.85(47)	M 12; 0.59(15) deep
45	9.02(229)	2.09(53)	M 12; 0.71(18) deep
71	10.51(267)	2.40(61)	M 12; 0.79(20) deep
100	13.31(338)	2.56(65)	M 12; 0.79(20) deep
140	13.78(350)	3.03(77)	M 12; 0.79(20) deep

At size 28, the gear pump G3 only mounted 45° turned

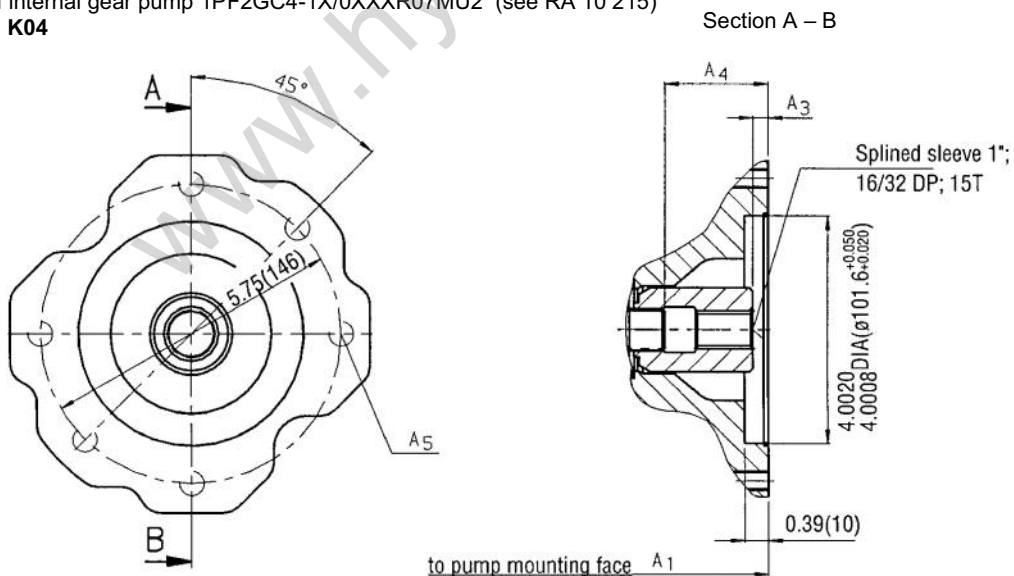
Flange SAE 101-2 (SAE B, 2-hole) for mounting of gear pump G4 (see RA 10 042)
Ordering code: **K68**



Size	A ₁	A ₄	A ₅ (metric thread)
28	8.03(204)	1.85(47)	M 12; 0.59(15) deep
45	9.02(229)	2.09(53)	M 12; 0.71(18) deep
71	10.51(267)	2.40(61)	M 12; 0.79(20) deep
100	13.31(338)	2.56(65)	M 12; 0.79(20) deep
140	13.78(350)	3.03(77)	M 12; 0.79(20) deep

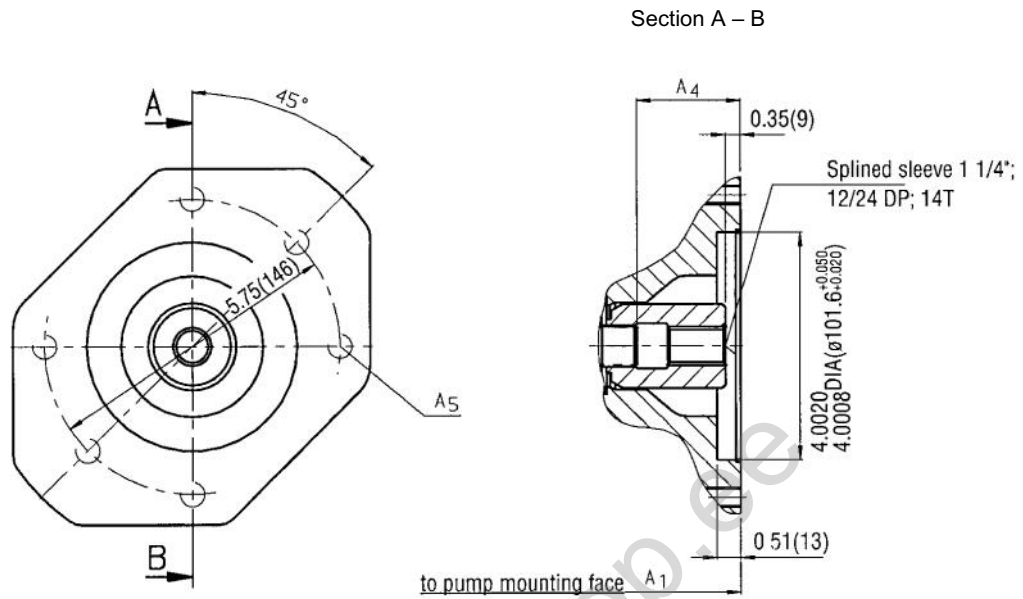
At size 28, the gear pump G4 only mounted 45° turned

Flange SAE 101-2 (SAE B, 2-hole) for mounting of axial piston pump A10VO 45 - drive shaft "S" or for mounting of internal gear pump 1PF2GC4-1X/0XXXR07MU2 (see RA 10 215)
Ordering code: **K04**



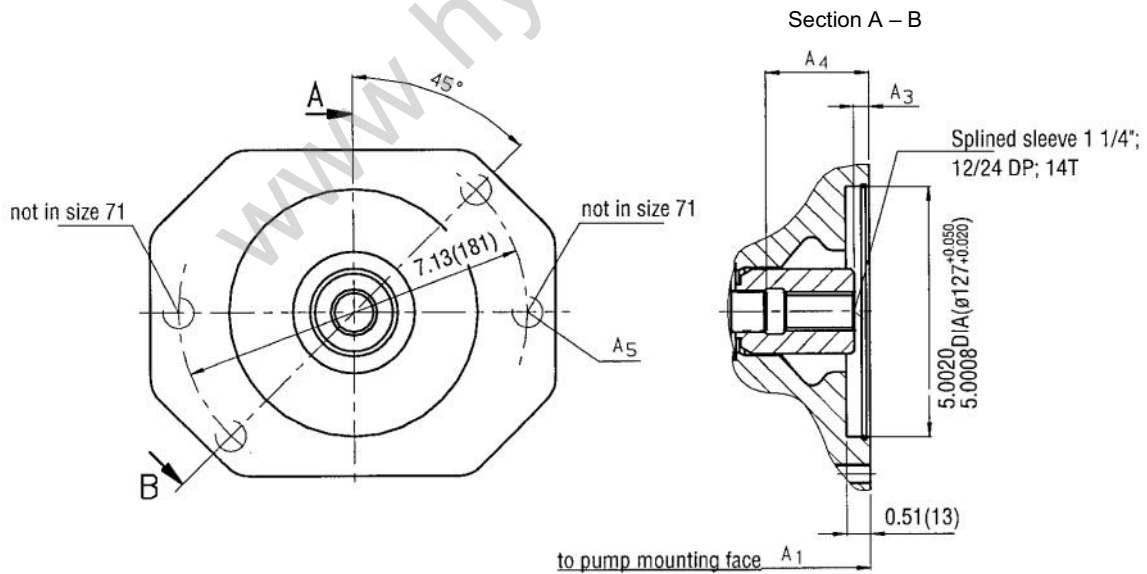
Size	A ₁	A ₃	A ₄	A ₅ (metric thread)
45	9.02(229)	0.35(9)	2.09(53)	M 12; 0.71(18) deep
71	10.51(267)	0.31(8)	2.40(61)	M 12; 0.79(20) deep
100	13.31(338)	0.39(10)	2.56(65)	M 12; 0.79(20) deep

Flange SAE 101-2 (SAE B, 2-hole) for mounting of internal gear pump
1PF2GC5-1X/0XXXR07MU2 (see RA 10 215)
Ordering code: **K06**



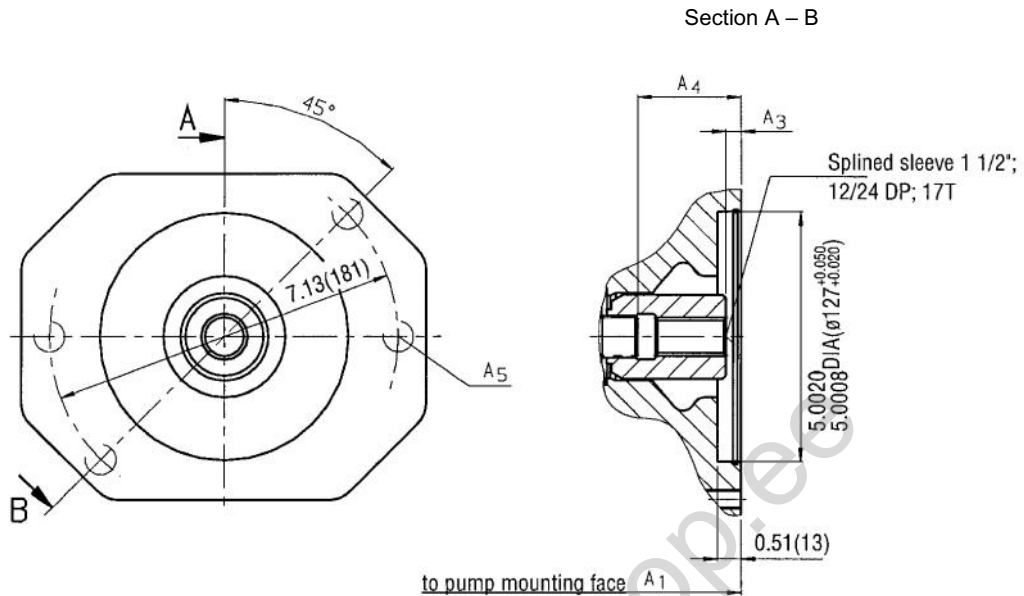
Size	A ₁	A ₄	A ₅ (metric thread)
45	9.61(244)	2.09(53)	M 12;
71	10.51(267)	2.40(61)	M 12; 0.79(20) deep or through
100	13.31(338)	2.56(65)	M 12; 0.79(20) deep

Flange SAE 127-2 (SAE C, 2-hole) for mounting of axial piston pump A10VO 71 - drive shaft "S"
Ordering code: **K07**



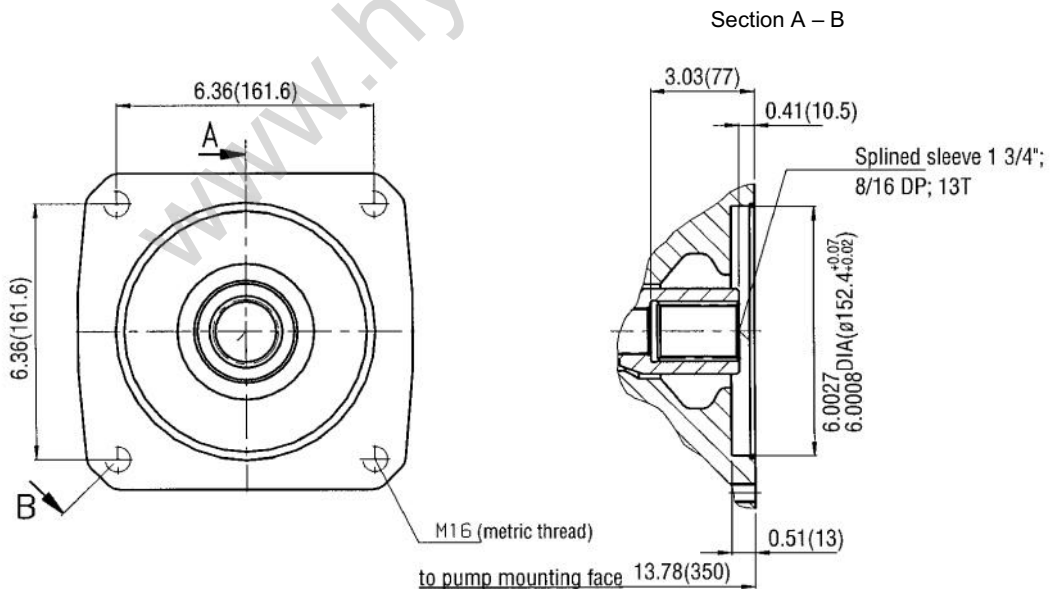
Size	A ₁	A ₃	A ₄	A ₅ (metric thread)
71	10.51(267)	0.39(10)	2.40(61)	M 16; 0.71(18) deep
100	13.31(338)	0.31(8)	2.56(65)	M 16; 0.98(25) deep
140	13.78(350)	0.35(9)	3.03(77)	M 16; 1.26(32) deep

Flange SAE 127-2 (SAE C, 2-hole) for mounting of axial piston pump A10VO 100 - drive shaft "S"
or for mounting of internal gear pump 1PF2GC6-1X/XXXXR07MU2 (see RA 10 215)
Ordering code: **K24**

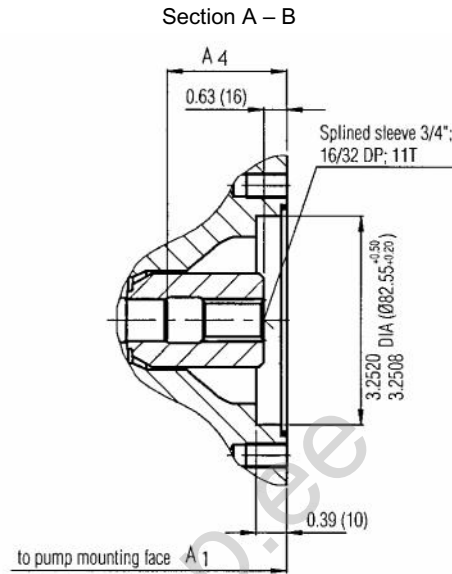
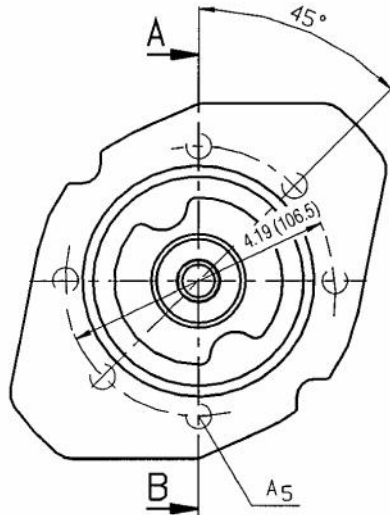


Size	A ₁	A ₃	A ₄	A ₅ (metric thread)
100	13.31(338)	0.31(8)	2.56(65)	M 16; 0.98(25) deep
140	13.78(350)	0.39(10)	3.03(77)	M 16; 0.98(25) deep

Flange SAE 152-4 (SAE D, 4-hole) for mounting of axial piston pump A10VO 140 - drive shaft "S"
Ordering code: **K17**

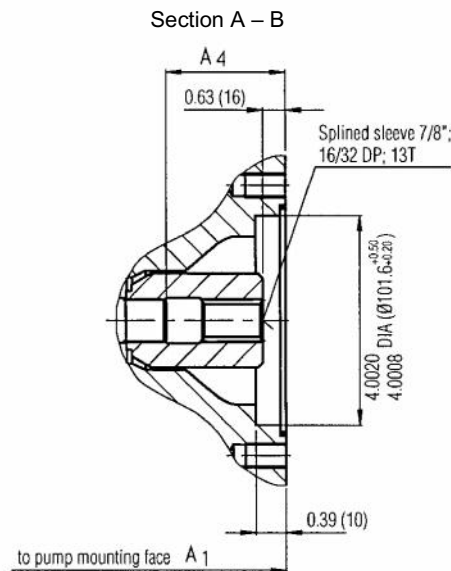
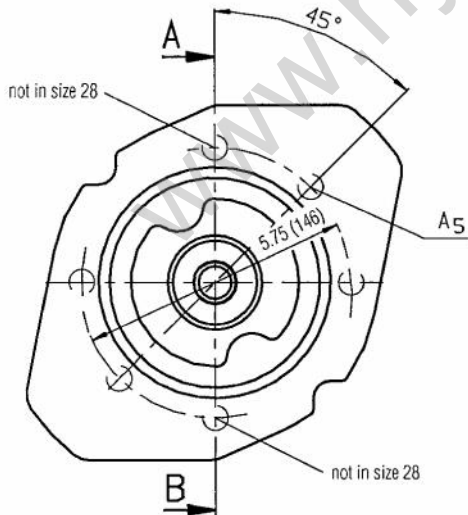


Flange SAE 82-2 (SAE A, 2-hole) for mounting of axial piston pump A10VSO 18 - drive shaft "R" (see RA 92 712)
Ordering code: **KA1**



Size	A ₁	A ₄	A ₅ (metric thread)
28	8.03(204)	1.85(47)	M 10; 0.63(16) deep
45	9.02(229)	2.09(53)	M 10; 0.63(16) deep
71	10.51(267)	2.40(61)	M 10; 0.79(20) deep
100	13.31(338)	2.56(65)	M 10; 0.79(20) deep
140	13.78(350)	3.03(77)	M 10; 0.79(20) deep

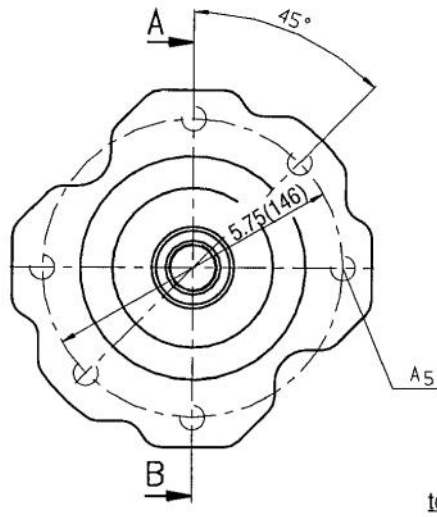
Flange SAE 101-2 (SAE B, 2-hole) for mounting of fixed vane pump PVV1 or 2 with drive shaft "J" (see RA 10 335) or for mounting of axial piston pump A10VO 28 - drive shaft "R"
Ordering code: **KA3**



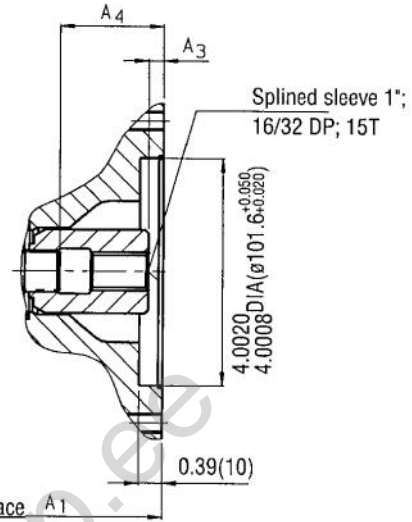
Size	A ₁	A ₄	A ₅ (metric thread)
28	8.03(204)	1.85(47)	M 12; 0.59(15) deep
45	9.02(229)	2.09(53)	M 12; 0.71(18) deep
71	10.51(267)	2.40(61)	M 12; 0.79(20) deep
100	13.31(338)	2.56(65)	M 12; 0.79(20) deep
140	13.78(350)	3.03(77)	M 12; 0.79(20) deep

For size 28, only the fixed vane pump PVV is mounted 45° turned.

Flange SAE 101-2 (SAE B, 2-hole) for mounting of axial piston pump A10VO 45 - drive shaft "R" or PVV4 or 5 with drive shaft "J" (see RA 10 335) *)
Ordering code: **KA4**



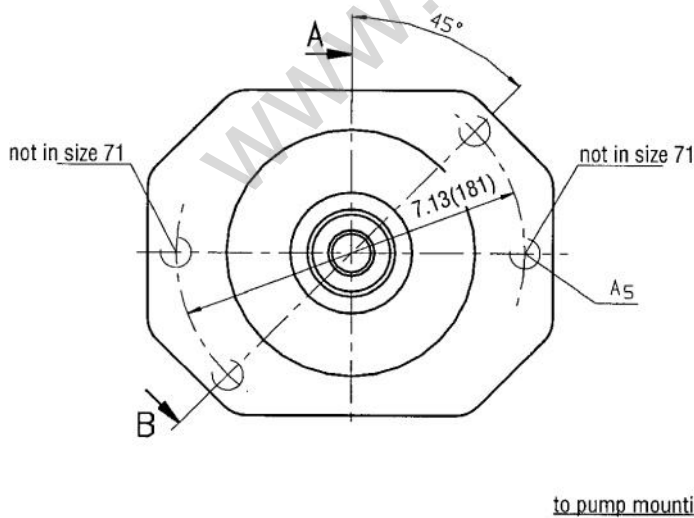
Section A – B



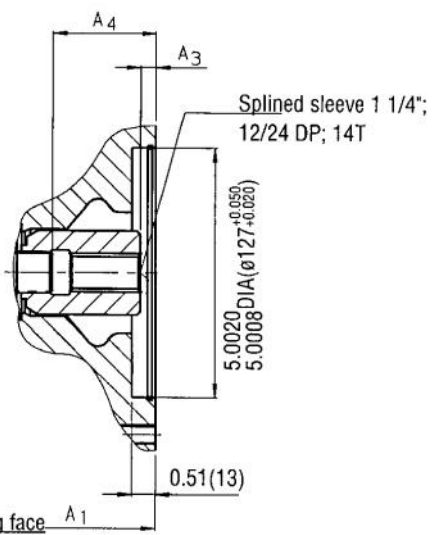
Size	A ₁	A ₃	A ₄	A ₅ (metric thread)
45	9.02(229)	0.63(16)	2.09(53)	M 12; 0.71(18) deep
71	10.51(267)	0.59(15)	2.40(61)	M 12; 0.79(20) deep
100	13.31(338)	0.67(17)	2.56(65)	M 12; 0.79(20) deep

*) **CAUTION!**
A 1.5 mm (1/16") spacer plate is required between vane pump mounting face for size A10VO71.

Flange SAE 127-2 (SAE C, 2-hole) for mounting of axial piston pump A10VO 71 - drive shaft "R"
Ordering code: **KA5**



Section A – B



Size	A ₁	A ₃	A ₄	A ₅ (metric thread)
71	10.51(267)	0.67(17)	2.40(61)	M 16; 0.71(18) deep
100	13.31(338)	0.59(15)	2.56(65)	M 16; 0.98(25) deep
140	13.78(350)	0.63(16)	3.03(77)	M 16; 1.26(32) deep