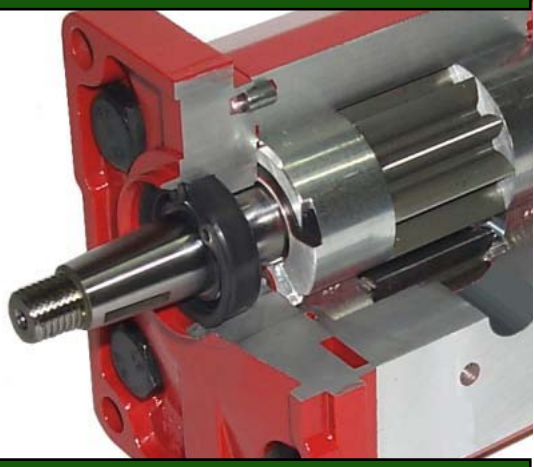
LEHENGOAK, S.A.

VINCKE



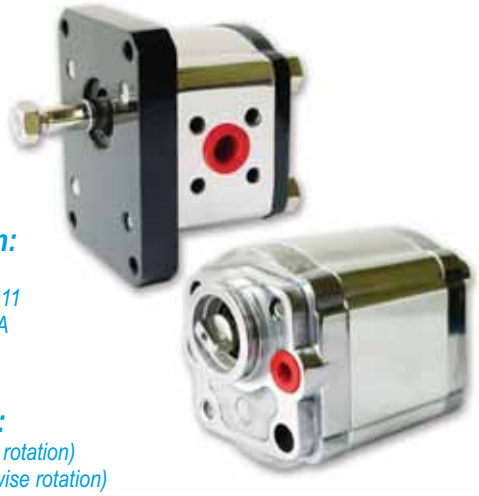
VINCKE GEAR PUMPS

SIMPLE GEAR PUMPS VNK1

DOUBLE GEAR PUMPS VNK11

Description and use

The gear pumps with constant displacement, are used in hydro drive installations for heavy-duty machines, equipment for transport, machine-tools etc.



A-Pumps with radial circulation:

A1-Common use pumps HP1; HP11
A2-Double pumps with a single inlet HAL11
A3-Bidirectional pumps HP1-BA; HP11-BA
A4-Special applications HFw; HP1-CO

B Pumps with axial circulation:

B1-Pumps EHTY; HTY; PHTY (clockwise rotation)
B2-Pumps EHTS; HTS; PHTS (anticlockwise rotation)
B3-Pumps EHTCK; HTCK; PHTCK (clockwise rotation)
B4-Pumps EHTC; HTC; PHTC (clockwise rotation)
B5-Pumps EHTCB; HTCB; PHTCB (clockwise rotation)

Pumps with radial circulation:
Common use pumps HP1; HP11

VNK1 -	cm^3/rev ccm/rev	-	Driving shaft	Fastening flange	Inlet port	Outlet port	-	Rotation
	0,8		1 Conical 1:8 PLESSEY	1 PLESSEY (England)	1 4 holes M6 / Ø 30	1 4 holes M6 / Ø 30		D (left)
	1		2 Conic 1:8 SAUER	2 SAUER (Germany)	2 4 holes M6 / Ø 30	2 4 holes M6 / Ø 30		C (right)
	1,2		3 Ø Cylindrical - ø 12 SAUER	3 Oval SAE AA	3 Threaded M20 x 1,5	3 Threaded M20 x 1,5		B (bidirectional)
	1,7		4 Involute spline SCAN TO 12x10 (m=0,75; z=15)		4 Threaded M18 x 1,5	4 Threaded M18 x 1,5		
	2,2		5 - Involute spline CEF 12x1		5 Threaded M16 x 1,5	5 Threaded M16 x 1,5		
	2,6		6 - Involute spline SAE 14T 32/64 Dp		6 Threaded M14 x 1,5	6 Threaded M14 x 1,5		
	3,2				34 Threaded G 3/4"	34 Threaded G 3/4"		
	3,8				12 Threaded G 1/2"	12 Threaded G 1/2"		
	4,3				38 Threaded G 3/8"	38 Threaded G 3/8"		
	4,7				0 ** Closed	0 ** Closed		
	6							
	7,8							

*** if the inlet or outlet ports are not on the body of the pump*

Example

VNK1	-	1,7	-	1	1	1	1	-	A

Common use, double pumps HP11 - codification

VNK11	-	(ccm/rev)	-	Driving shaft	Fastening flange	Inlet port 1	Outlet port 1	-	Inlet port 2	Outlet port 2	-	Rotation

Example

VNK11	-	(3,2+1,7)	-	3	3	1	1	-	1	1	-	A

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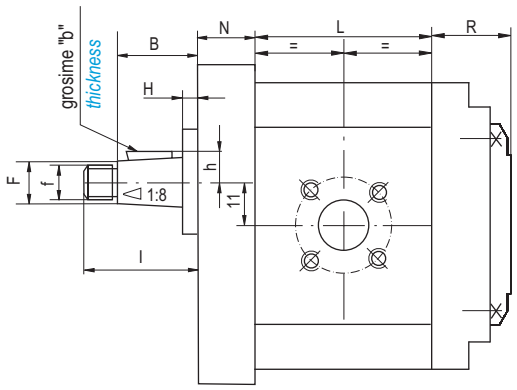
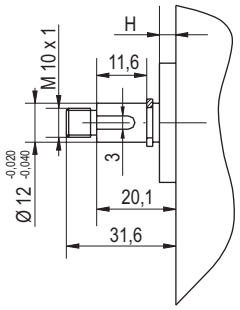
SIMPLE GEAR PUMPS VNK1
DOUBLE GEAR PUMPS VNK11

Driving shafts

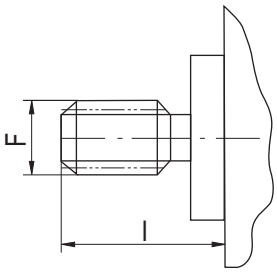
Conical shaft type 1;2



Cylindrical shaft type 3



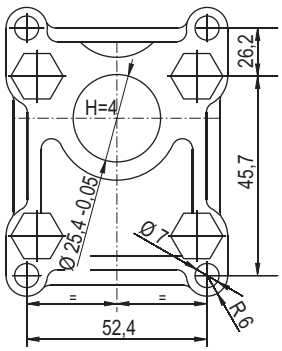
Grooved shafts - type 4; 5; 6



Fastening flanges

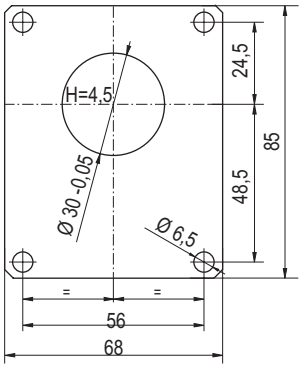
Variant 1

PLESSEY



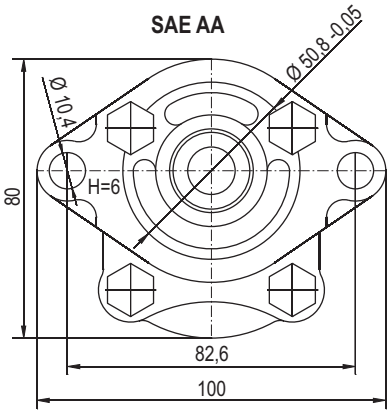
Variant 2

SAUER



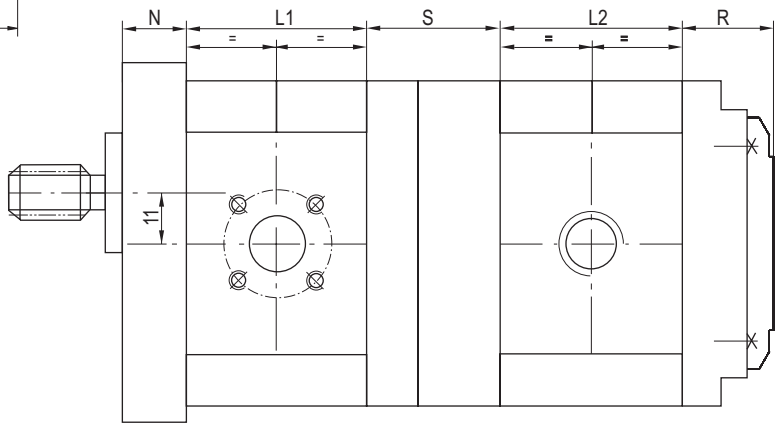
Variant 3

SAE AA



Fastening flanges (dimensions)

Varianta / Variant	N [mm]	R [mm]	S [mm]
1	18	30	18
2	11	23	15
3	18	30	18



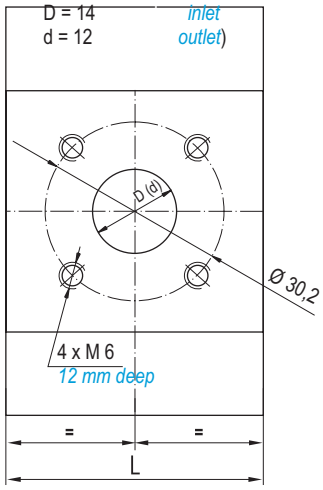
Driving shafts (dimensions)

Varianta / Variant	Tip ax / Shaft type	l [mm]	B [mm]	F [mm]	f [mm]	k [mm]	h [mm]	b [mm]
1	Conic 1:8 (PLESSEY) / *Conical 1:8 (PLESSEY)*	29	20	Ø 8+0,1	M6	1:8	5,6	2,4
2	Conic 1:8 (SAUER) / *Conical 1:8 (SAUER)*	29	19,5	Ø 9-0,1	M8	1:8	6	3
3	Cilindric Ø 12 (SAUER) / *Cylindrical Ø 12 (SAUER)*	-	-	-	-	-	-	-
4	- *Involute spline* SCAN TO 12X10 (m=0,75; z=15)	22	30	11,9	-	-	-	-
5	- *Involute spline* CEF 12x1	22	-	11,9	-	-	-	-
6	- *Involute spline* SAE 14T 32/64 Dp	27	-	11,9	-	-	-	-

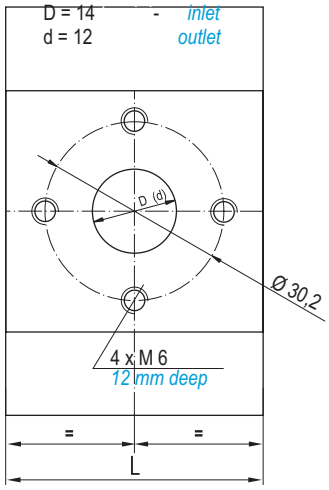
SIMPLE GEAR PUMPS VNK1
DOUBLE GEAR PUMPS VNK11

Inlet and outlet ports

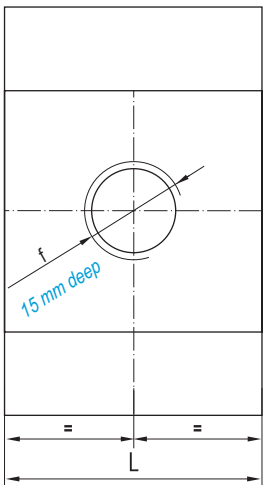
type 1



- type 2



type 3;4;5;6;7;8;9



Tip *Type*	f - filete *threads*
3	M20 x 1,5
4	M18 x 1,5
5	M16 x 1,5
6	M14 x 1,5
7	G 3/4"
8	G 1/2"
9	G 3/8"

TECHNICAL CHARACTERISTICS

Vg *cm³/rot [ccm/rev]*	L L1; L2 mm	Pressure [bar] Pn [bar]	Pressure [bar] Pmax [bar]	Pressure *Inlet pressure* [bar]	η_{vn} %	Speed (rev/min) n_n	Speed (rev/min) n_{min}	Speed (rev/min) n_{max}	*Max. noise* (dB)	Temperature *Temperature* [°C]	*Viscozitate Viscosity* [cSt]	*Filtrare Filtration* [µm]
0,85	41,2	250	280	min. -0,3 max. 1	80	1500	1200	4500	60	-15 ... +80	12 ... 2000	20
1	41,7				84							
1,2	42,5				86							
1,7	44.3				88		1000	3500	61			
2,2	46,2				90							
2,6	47,7				91							
3,2	49,9				92		800	3200	62			
3,8	52,1				93		700	2800	63			
4,3	54				94			2700				
4,7	55,5	240	260		95		600	2400	64			
6	60,3	190	210		97			2000		*recommended* 0 ... +60	*recommended* 25 ... 200	
7,8	67	140	160		98			1800				

Note:

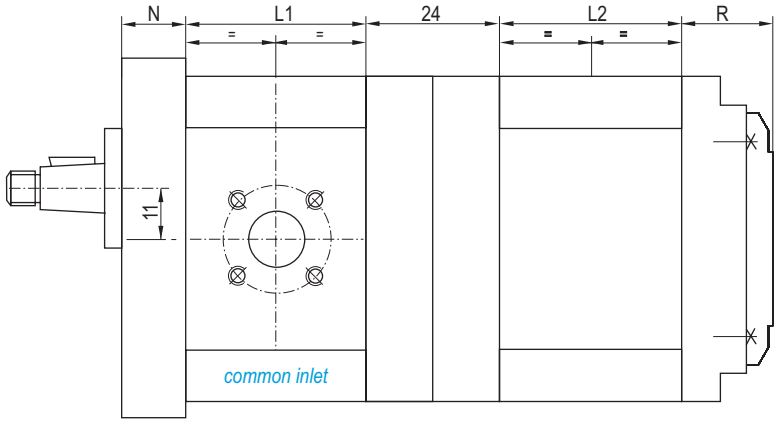
- *Pn: nominal pressure*
- *Pmax: maximum pressure at witch the pumps can intermittently work (max. 20 s); average pressure should be lower than Pn.*
- *Pressure peaks, in comutation can be 20 bar higher as Pmax.*
- *Volumetric efficiency η_{vn} is guaranted in nominal conditions and viscosity 30…40 mm^2/s.*
- *The characteristics mentioned above are valid also for double pumps (for every stage).*
- *At request, can be manufactured pumps with other displacements and configurations*
- *For n>1500 rev/min, P<1500000 / (Vg x η_{ef})*
- *Functioning at high speed, without cavitation, it is possible only with an enough large inlet.*

A2 - Double pumps with a single inlet HAL11

Codification

VNK11	-	(Vg1 + Vg2) (ccm/rev)	-	Axe entraînement *Driving shaft*	Bride fixation *Fastening flange*	Aspiration 1 *Inlet port 1*	Refoulement 1 *Outlet port 1*	-	Aspiration 2 *Inlet port 2*	Refoulement 2 *Outlet port 2*	-	Sens *Rotation*

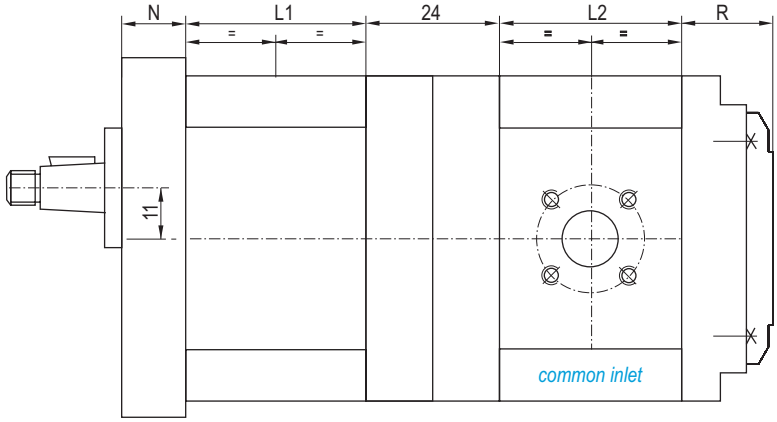
with common inlet on stage 1



Example

VNK11	-	(3,2+1,7)	-	1	1	1	1	-	0	1	-	A

with common inlet on stage 2



Example

VNK11	-	(2,2+3,2)	-	1	1	0	1	-	1	1	-	A

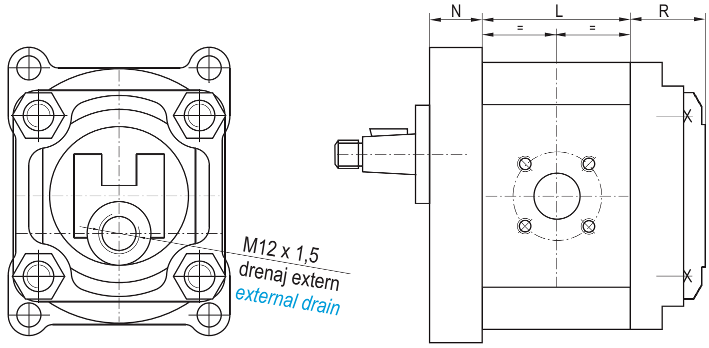
Note:

- *For this pumps it is not recommended the inlet type 2*
- *The common inlet should be large enough for both stages.*
- *It is recommended that the common inlet is on the stage with bigger displacement.*

A3 - Bidirectional pumps HP1-BA; HP11-BA

Codification simple pumps

HP 1	-	ccm/rev	-	Driving shaft	Fastening flange	Inlet port	Outlet port	-	Bidirectional



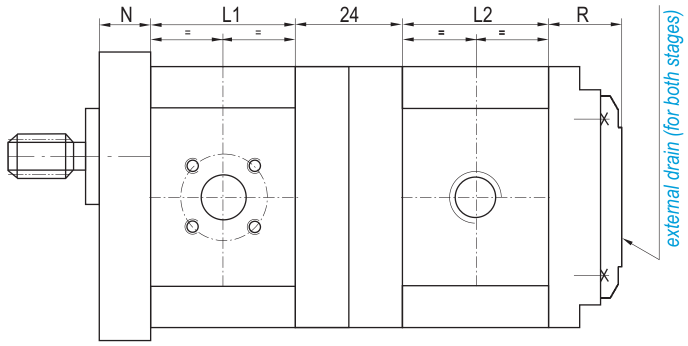
The bidirectional pumps can work clockwise and anticlockwise rotation, alternativ.
The construction of the pumps is similar with normal pumps, but they have 2 alternative inlets and external drain.
Because simetric internal sealing, nominal pressure is limited at 210 bar.

- Example

VNK1	-	1,7	-	1	1	1	1	-	B

Codification double pumps

VNK11	-	(Vg1 + Vg2) (ccm/rev)	-	Driving shaft	Fastening flange	Inlet port 1	Outlet port 1	-	Inlet port 2	Outlet port 2	-	Bidirectional



- Example

	-	(3,2+1,7)	-	6	3	1	1	-	9	9	-	B

TECHNICAL CHARACTERISTICS (bidirectional pumps)

Vg [ccm/rev]	L L1; L2 [mm]	Pressure bar Pn	Pressure bar Pmax	Inlet pressure [bar]	η_{vn} %	Speed (rev/min) n_n	Speed (rev/min) n_{min}	Speed (rev/min) n_{max}	Max. noise (dB)	Temperature [°C]	Viscosity [cSt]	Filtration [µm]
0,85	41,2	210	230	min. -0,3 max. 1	80	1500	1200	4500	60	-15 ... +80; recommended 0 ... +60	12 ... 2000; recommended 25 ... 200	20
1	41,7				84							
1,2	42,5				86							
1,7	44,3				88		1000	3500	61			
2,2	46,2				90							
2,6	47,7				91							
3,2	49,9				92		800	3200	62			
3,8	52,1				93		700	2800	63			
4,3	54				94			2700				
4,7	55,5				95		600	2400	64			
6	60,3	190	210		97			2000				
7,8	67	140	160		98			1800				

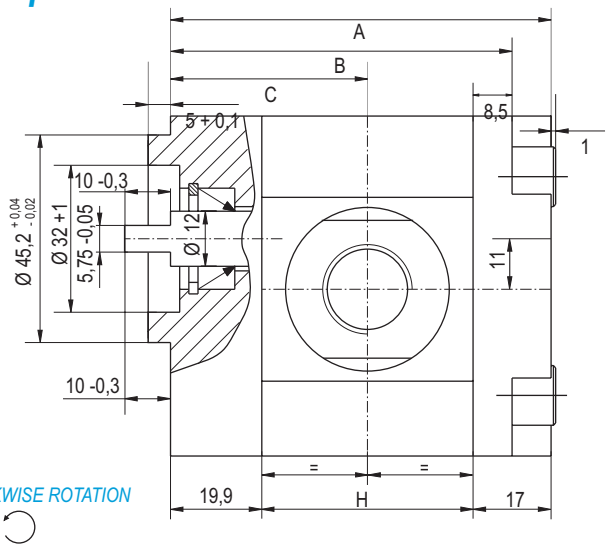
SIMPLE GEAR PUMPS VNK1
DOUBLE GEAR PUMPS VNK11

A4 - Special application HFw and VNK1-CO

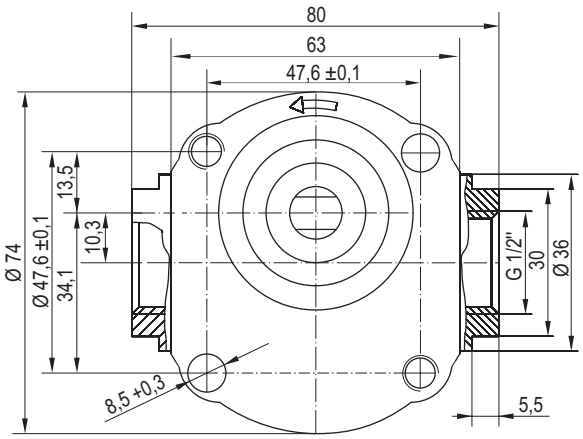
TECHNICAL CHARACTERISTICS

Vg cm³/rot ccm/rev	A (mm)	B (mm)	C (mm)	H (mm)	Pn [bar]	Pmax [bar]	η_{vn} %
0,85	78,1	69,6	40,5	41,2	210	240	80
1	78,6	70,1	40,8	41,7			82
1,2	79,4	70,9	41,1	42,5			84
1,7	81,2	72,7	42	44,3			86
2,2	83,1	74,6	43	46,2			87
2,6	84,6	76,1	43,8	47,7			88
3,2	86,8	78,3	44,9	49,9			89
3,8	89	80,5	46	52,1			91
4,3	90,9	82,4	46,9	54			92
5	93,5	85	48,2	56,6			93

HFw pumps



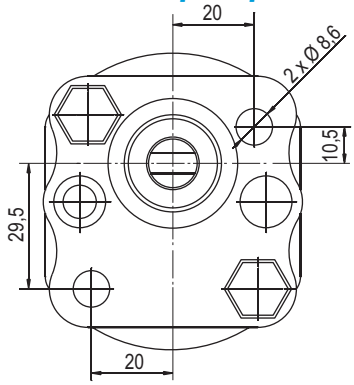
ANTICLOCKWISE ROTATION



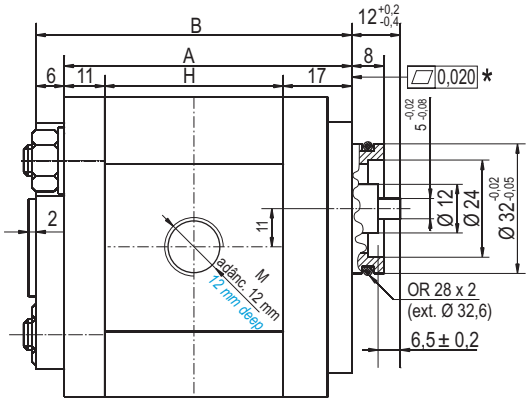
- Codification

HF-Vg-A

VNK1-CO pumps

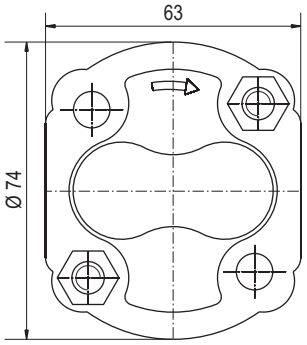


ANTICLOCKWISE ROTATION



0,020

* The fixation plate should have 0,020



- Codification

HP1-CO-Vg-A

outlet
M18x1,5
inlet

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M

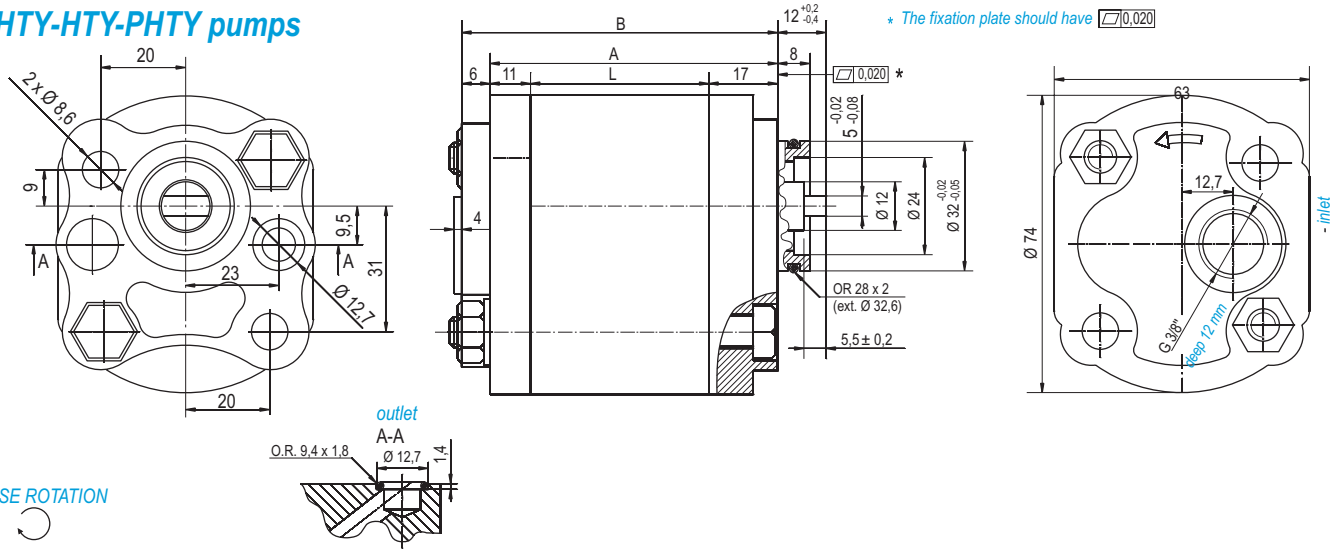
SIMPLE GEAR PUMPS VNK1
DOUBLE GEAR PUMPS VNK11

B - Pumps with axial circulation:

ORDERING CODES					Vg	Pn	Pmax	η_v	Sound	L	A	B
EHTY HTY PHTY	EHTS HTS PHTS	EHTCK HTCK PHTCK	EHTC HTC PHTC	EHTCB HTCB PHTCB	ccm/rev	(bar)	(bar)	(%)	Max. noise (dB)	(mm)	(mm)	(mm)
EHTY-0,85-C	EHTS-0,85-A	EHTCK-0,85-C	EHTC-0,85-C	EHTCB-0,85-C	0,85	250	280	80	60	33,2	61,2	67,2
EHTY-1-C	EHTS-1-A	EHTCK-1-C	EHTC-1-C	EHTCB-1-C	1			84		33,7	61,7	67,7
EHTY-1,2-C	EHTS-1,2-A	EHTCK-1,2-C	EHTC-1,2-C	EHTCB-1,2-C	1,2			86		34,5	62,5	68,5
EHTY-1,7-C	EHTS-1,7-A	EHTCK-1,7-C	EHTC-1,7-C	EHTCB-1,7-C	1,7			88	61	36,3	64,3	70,3
EHTY-2,2-C	EHTS-2,2-A	EHTCK-2,2-C	EHTC-2,2-C	EHTCB-2,2-C	2,2			90		38,2	66,2	72,2
EHTY-2,6-C	EHTS-2,6-A	EHTCK-2,6-C	EHTC-2,6-C	EHTCB-2,6-C	2,6			91		39,7	67,7	73,7
EHTY-3,2-C	EHTS-3,2-A	EHTCK-3,2-C	EHTC-3,2-C	EHTCB-3,2-C	3,2			92	62	41,9	69,9	75,9
EHTY-3,8-C	EHTS-3,8-A	EHTCK-3,8-C	EHTC-3,8-C	EHTCB-3,8-C	3,8	220	240	94	63	44,1	72,1	78,1
HTY-3,8-C	HTS-3,8-A	HTCK-3,8-C	HTC-3,8-C	HTCB-3,8-C		250	280	94		52,1	80,1	86,1
EHTY-4,3-C	EHTS-4,3-A	EHTCK-4,3-C	EHTC-4,3-C	EHTCB-4,3-C	4,3	200	220	95		46	74	80
HTY-4,3-C	HTS-4,3-A	HTCK-4,3-C	HTC-4,3-C	HTCB-4,3-C		250	280	95		54	82	88
EHTY-4,7-C	EHTS-4,7-A	EHTCK-4,7-C	EHTC-4,7-C	EHTCB-4,7-C	4,7	180	200	96	64	47,5	75,5	81,5
HTY-4,7-C	HTS-4,7-A	HTCK-4,7-C	HTC-4,7-C	HTCB-4,7-C		240	260	96		55,5	83,5	89,5
PHTY-4,7-C	PHTS-4,7-A	PHTCK-4,7-C	PHTC-4,7-C	PHTCB-4,7-C		250	280	96		61,5	89,5	95,5
HTY-6-C	HTS-6-A	HTCK-6-C	HTC-6-C	HTCB-6-C	6	190	210	97		60,3	88,3	94,3
PHTY-6-C	PHTS-6-A	PHTCK-6-C	PHTC-6-C	PHTCB-6-C		210	230	97		66,3	94,3	100,3
HTY-7,8-C	HTS-7,8-A	HTCK-7,8-C	HTC-7,8-C	HTCB-7,8-C	7,8	140	160	98		67	95	101
PHTY-7,8-C	PHTS-7,8-A	PHTCK-7,8-C	PHTC-7,8-C	PHTCB-7,8-C		160	180	98		73	101	107

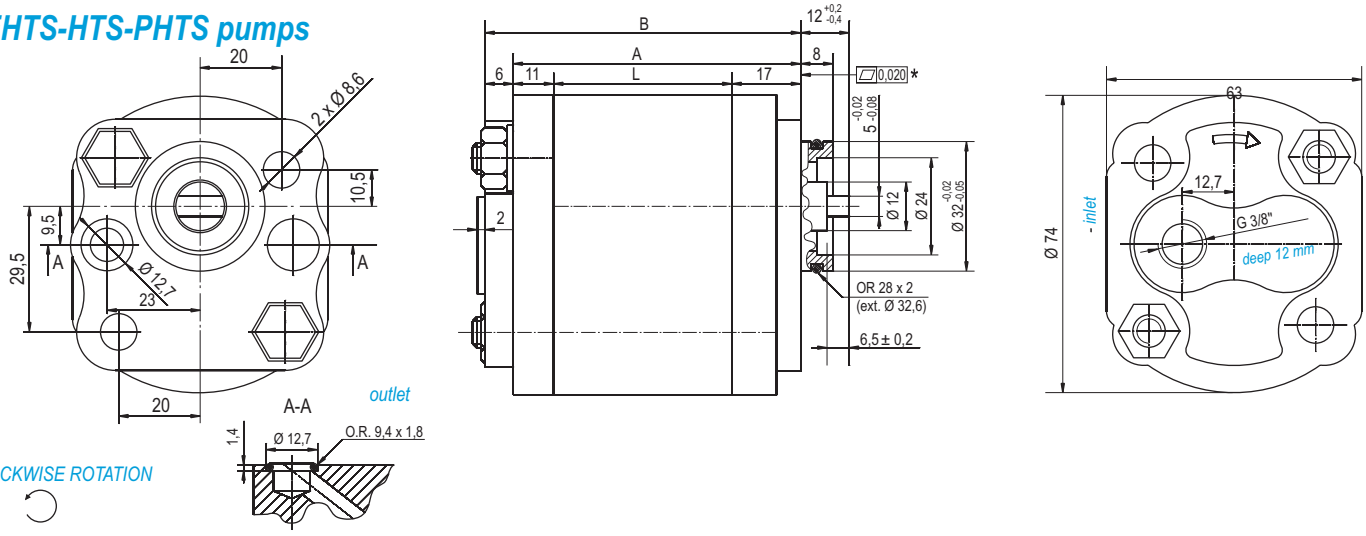
Y

B1 - EHTY-HTY-PHTY pumps



* The fixation plate should have 0,020

B2 - EHTS-HTS-PHTS pumps



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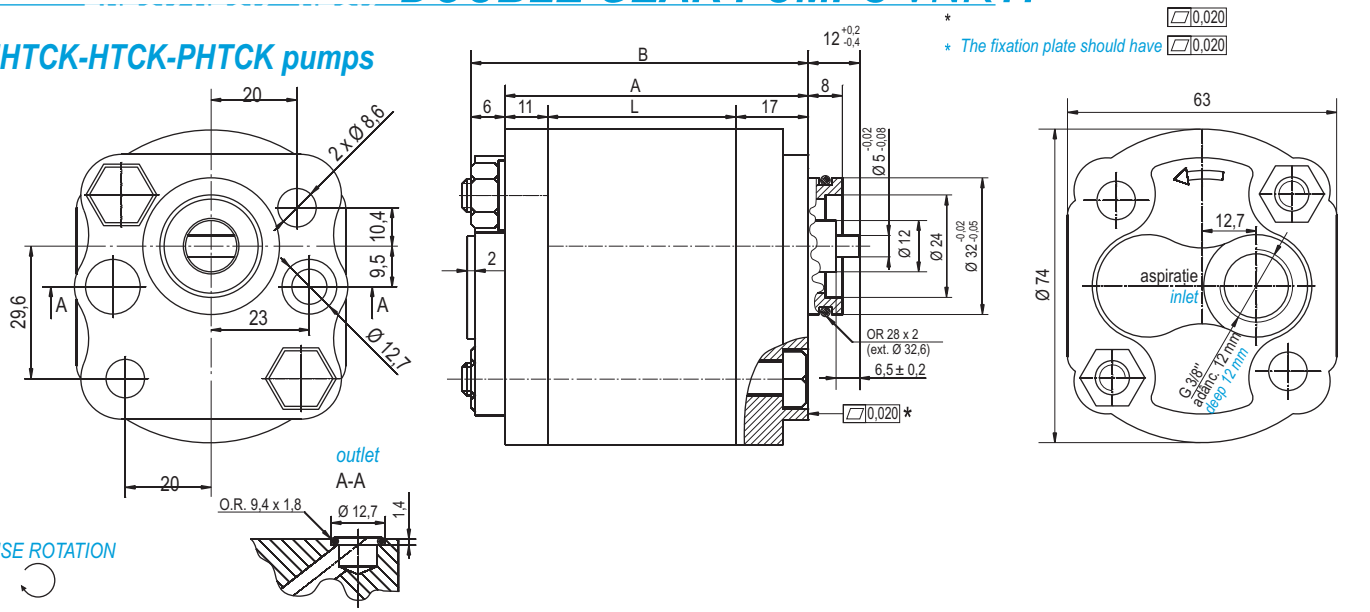
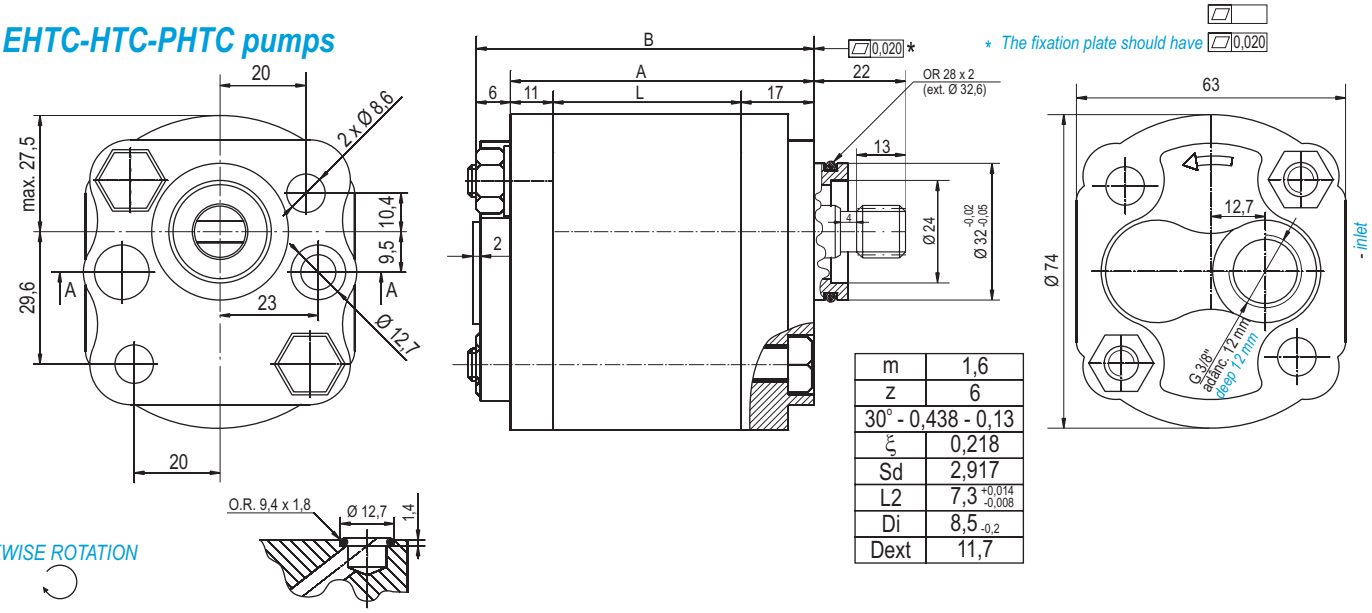
SIMPLE GEAR PUMPS VNK1
DOUBLE GEAR PUMPS VNK11

B3 - EHTCK-HTCK-PHTCK pumps



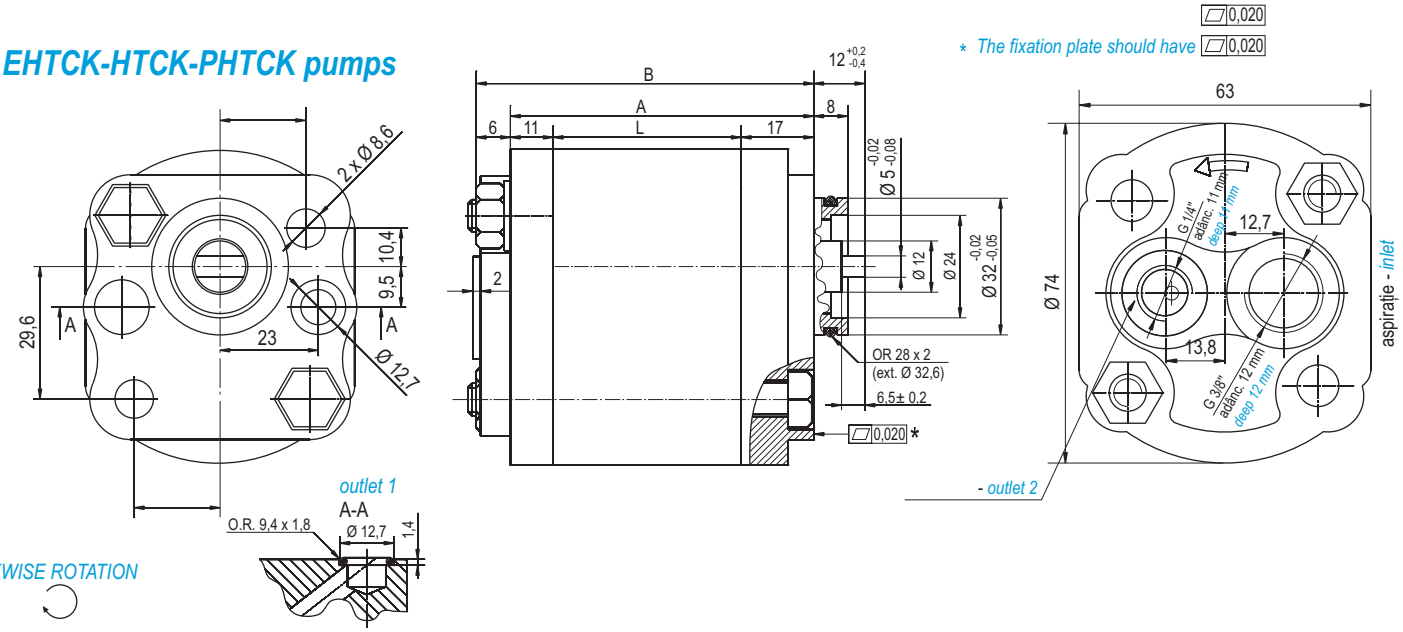
P

B4 - EHTC-HTC-PHTC pumps



m	1,6
z	6
30° - 0,438 - 0,13	
ξ	0,218
Sd	2,917
L2	7,3 +0,014 -0,008
Di	8,5 -0,2
Dext	11,7

B5 - EHTCK-HTCK-PHTCK pumps



SIMPLE GEAR PUMPS
DOUBLE GEAR PUMPS

Description and use
The gear pumps with constant displacement, are used in the hydro drive installation, for agricultural equipment, mobiles, heavy-duty equipment for transport and earth moving machines-tools.

A - Common use pumps HP2; HP22
B - Double pumps with a single inlet HAL22
C - Bidirectional pumps HBA2; HBA22

A - Common use pumps

Codification

HP2	Vg cm³/rot ccm/rev	Ax antrenare / Driving shaft	Flanșă prindere / Fastening flange	Flanșă aspirație / Inlet port	Flanșă refulare / Outlet port	Sens / Rotation
	4	1 1:5 BOSCH *Conical 1:5 BOSCH*	1 PLESSEY (4 x Ø 7)	1 Gaz BSPP	1 Gaz BSPP	A (left)
	4,5	2 *Conical 1:8 (diminished)*	2 DIN (4 x Ø 9)	2 DIN	2 DIN	C (dreapta) (right)
	5,5	3 *Conical 1:8 PLESSEY*	3 PLESSEY (4 x Ø 8.5)	3 PLESSEY	3 PLESSEY	B (bidirectional)
	6,3	5 *Involute spline shaft* B 17x14 DIN 5482	4 BOSCH 2 x Ø 11	4 PLESSEY	4 PLESSEY	
	8,2	6 *Involute spline shaft* SAE 16T 24/48 Dp	6 BOSCH 2 x Ø 11	6 1 1/16" - 12 UNF	6 7/8" - 14 UNF	
	14	0 Ø 17,45 *Cilindrical Ø 17,45*	7 *Oval SAE "A"*	7 ISO 6149	7 ISO 6149	
	15	A - *Involute spline shaft* SAE 9T 16/32 Dp		8 PLESSEY	8 PLESSEY	
	16	C 1:5 (majorat) *Conical 1:5 (increased)*		9 Gaz BSPP	9 Gaz BSPP	
	19	E Ø 15,875 *Cilindrical Ø 15,875*		H G 3/4"	H G 1/2"	
	22,5			M PLESSEY	M PLESSEY	
	25			O *Closed* ***	O *Closed* ***	
	27,9					

*** If inlet or outlet ports are not on the body of the pump

Example

VNK2 - 14 - 3 | 3 | 1 | 1 - A

Common use, double pumps (without accessories) - codification

VNK22- (Vg1 + Vg2) - Ax antrenare / *Driving shaft* | Flanșă prindere / *Fastening flange* | Aspirație / *Inlet port 1* | Refulare / *Outlet port 1* - Aspirație / *Inlet port 2* | Refulare / *Outlet port 2* - Sens / *Rotation*

Example

VNK22 - (16 + 6,3) - 3 | 3 | 3 | 3 - 1 | 1 - C

Accessories codification (attached at the pump code)

710 / Pd / Qr	Flow and pressure control valve (internal return) / Valve opening pressure / Regulated flow
760 / Pd	Adjustable valve (internal return) / Valve opening pressure

Example VNK2-11,3-3344-C-710/125/7

Example VNK22-(11,3+4)-3344-11-A- 760/150

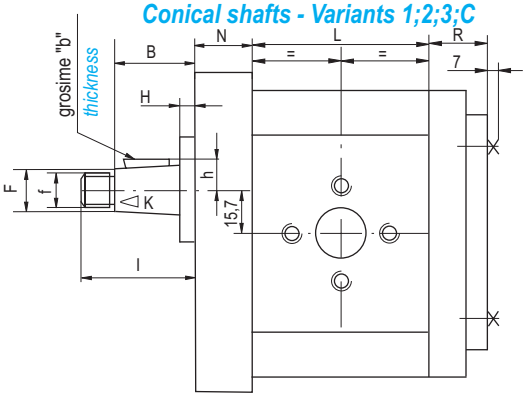
LEHENGOAK, S.A.

SIMPLE GEAR PUMPS VNK2

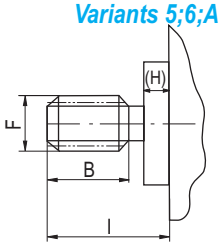
DOUBLE GEAR PUMPS VNK22

Driving shafts

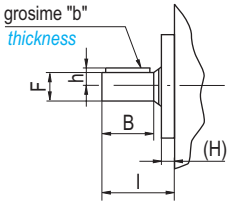
Conical shafts - Variants 1;2;3;C

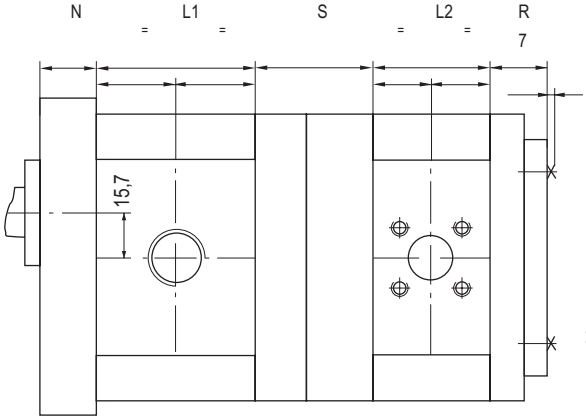


Grooved shafts Variants 5;6;A



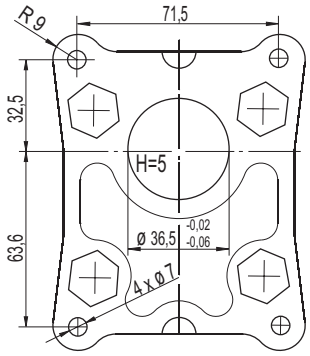
Cylindrical shafts Variants 0;E



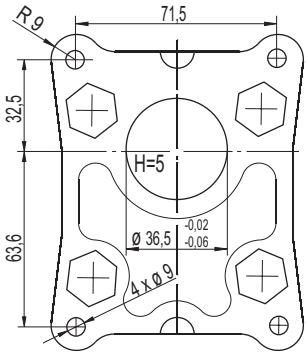


Fastening flanges

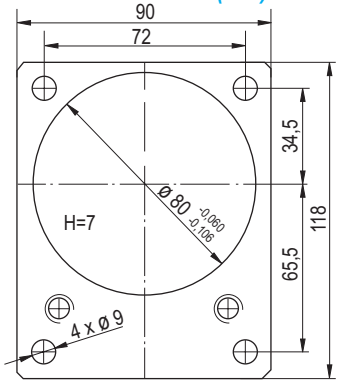
Variant 1 (Plessey)



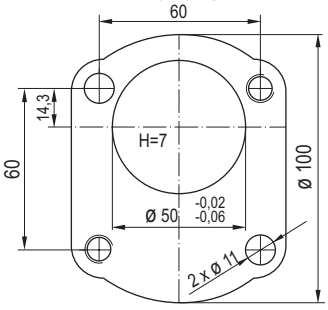
Variant 3 (Plessey)



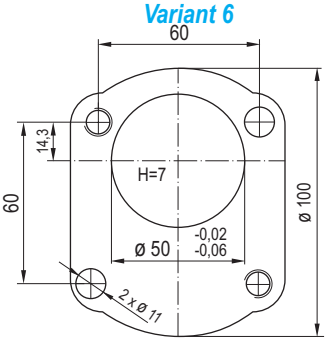
Variant 2 (DIN)



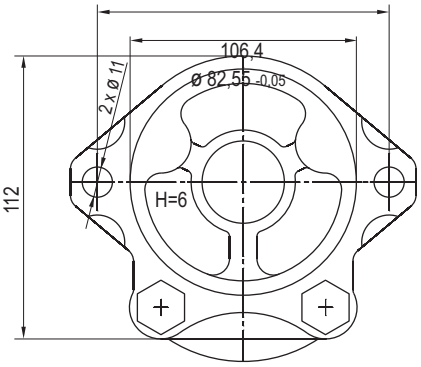
Variant 4



Variant 6



Variant 7 (SAE "A")



Driving shafts (dimensions for HP2 pumps)

Variant	- Shaft type	l [mm]	B [mm]	F [mm]	f [mm]	k	h [mm]	b [mm]	Mmax [Nm]
1	Conical 1:5 BOSCH	38	24,8	13,6	M12x1,25	1:5	9,2	3	150
C	Conic 1:5 Conical 1:5 (increased)	40	26,6	14	M12x1,25	1:5	9,6	3	160
2	Conical 1:8 (diminished)	39	30	14	M12x1,25	1:8	9,4	3,2	170
3	Conic 1:8 PLESSEY Conical 1:8 PLESSEY	39	27,4	14,8	M12x1,25	1:8	9,4	3,2	180
5	- Involute spline B 17x14 DIN 5482	26	14	16,5	—	—	—	—	75
6	- Involute spline SAE 16T 24/48 Dp	26	14	17,9	—	—	—	—	80
A	- Involute spline SAE 9T 16/32 Dp	31.5	19	15,5	—	—	—	—	70
0	Cilindric 1 Cylindrical ø 17,45	43	37	17,45 $^{0}_{-0,02}$	—	—	11,1	4,76	70
E	Cylindrical ø 15,875	44.5	36,5	15,87 $^{0}_{-0,02}$	—	—	9,7	3,96	65

Fastening flanges (dimensions for the HP2 pumps)

Varianta Variant	N [mm]	R [mm]	S [mm]
1	20	21	40
3			
4			
6			
7			
2	13	13	34.5

LEHENGOAK, S.A.

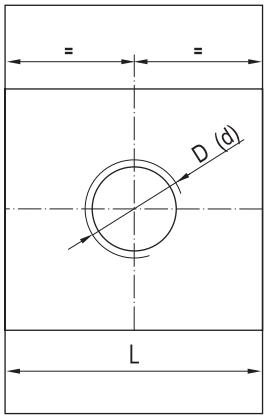
SIMPLE GEAR PUMPS VNK2

DOUBLE GEAR PUMPS VNK22

Inlet-outlet ports

Threaded variants

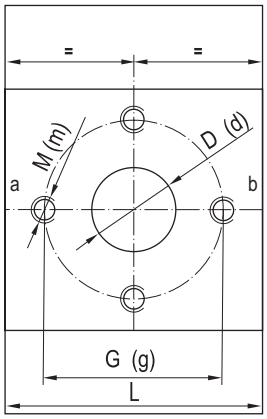
type 1;6;7;9;H



ccm/rev	L mm	type 1 BSPP Inlet D	type 1 BSPP Outlet d	type 6 UNF Inlet D	type 6 UNF Outlet d	type 7 ISO 6149 (metric) Inlet D	type 7 ISO 6149 (metric) Outlet d	type 9 BSPP Inlet D	type 9 BSPP Outlet d	type H BSPP Inlet D	type H BSPP Outlet d
4	44,7	G1/2"	G1/2"	1 1/16" - 12 UNF	7 / 8" - 14 UNF	M20 X 1,5	M16 X 1,5	G3/4"	G1/2"	G3/4"	G1/2"
4,5	45,6										
5,5	47,2										
6,3	48,6										
8,2	51,7										
11,3	56,8										
14	61,3	G3/4"						G1"	G3/4"		
15	63										
16	64,7										
19	69,7										
22,5	75,1										
25	79,2	G1"	G3/4"			M22X1,5	M20 X 1,5				
27,9	84										

PLESSEY variants

type 3;4;8;M

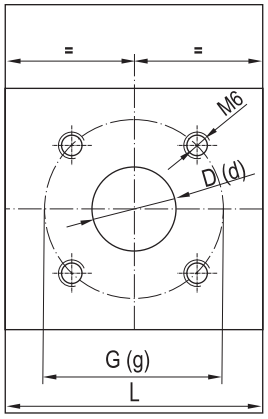


ccm/rev	L mm	type 3 Inlet D mm	type 3 Inlet G mm	type 3 Inlet M	type 3 Outlet d mm	type 3 Outlet g mm	type 3 Outlet m	type 4 Inlet D mm	type 4 Inlet G mm	type 4 Inlet M	type 4 Outlet d mm	type 4 Outlet g mm	type 4 Outlet m	type 8 Inlet D mm	type 8 Inlet G mm	type 8 Inlet M	type 8 Outlet d mm	type 8 Outlet g mm	type 8 Outlet m	type M Inlet D mm	type M Inlet G mm	type M Inlet M	type M Outlet d mm	type M Outlet g mm	type M Outlet m
4	44,7	13,1	30,2	M6	13,1	30,2	M6	15	30,2	M6 **	15	30,2	M6 **	13	30,2	M6	13	30,2	M6	13	30	M6	13	30	M6
4,5	45,6																								
5,5	47,2																								
6,3	48,6																								
8,2	51,7																								
11,3	56,8																								
14	61,3																								
15	63	19	39,7	M8	14,2	30,2	M6	20	39,7	M8				19	39,7	M8	13	30,2	M6	19	40	M8	19	40	M8
16	64,7																								
19	69,7																								
22,5	75,1																								
25	79,2	22	39,7	M8	16	39,7	M8							22	39,7	M8							19		
27,9	84																								

DIN variant

**Displacements Vg = 4...8,2 are without holes "a" and "b"

type 2



type 2

ccm/rev	L mm	Inlet D mm	Inlet G mm	Outlet d mm	Outlet g mm
4	44,7	15	40	12	35
4,5	45,6				
5,5	47,2				
6,3	48,6				
8,2	51,7				
11,3	56,8				
14	61,3				
15	63				
16	64,7	20	40	15	35
19	69,7				
22,5	75,1				
25	79,2				
27,9	84				

SIMPLE GEAR PUMPS VNK2

DOUBLE GEAR PUMPS VNK22

TECHNICAL CHARACTERISTICS

Vg cm³/rot ccm/rev	L L1; L2 mm	η_{vn} %	Presiune - Pressure [bar]		Presiune aspirație Inlet pressure [bar]	Turație (rot/min) Speed (rev/min)			Temperatura Temperature [°C]	Vâscozitate Viscosity [cSt]	Filtrare Filtration [mm]
			Pn	Pmax		nominal	min.	max.			
4	44,7	88	250	280	min. - 0,3 max. 1,5	1500	1000	4500	-15...+ 80 recommended 0...+ 60	12...2000 recommended 25...200	25 concentration max. 0,05%
4,5	45,6	89					900	4000			
5,5	47,2	90					800	3500			
6,3	48,6	91					600	3000			
8,2	51,7	92					500				
11,3	56,8	93						2500			
14	61,3	93,6						2000			
15	63	94									
16	64,7	94,5	235	250							
19	69,7	95	200	220							
22,5	75,1	95,5	160	180							
25	79,2	96	150	170							
27,9	84	97	140	160							

Note:

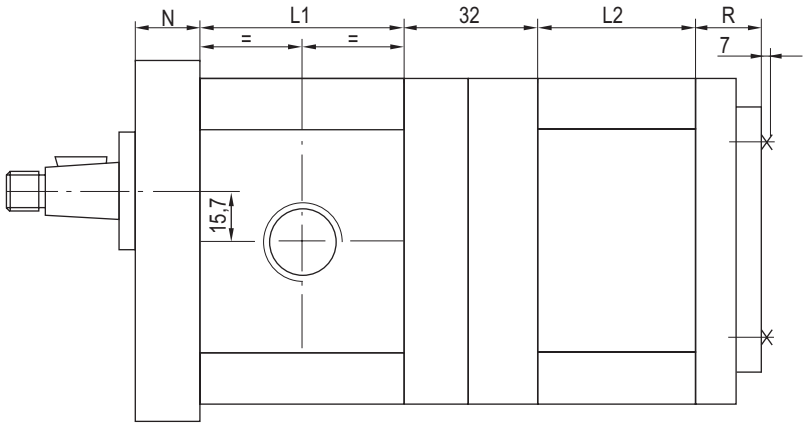
- *Pn: nominal pressure for which, continuous running, life time and volumetric efficiency are garanted.*
- *Pmax: maximum pressure at witch the pumps can intermittently work (max. 20s); average pressure should be lower than Pn*
- *Pressure peaks, in comutations can be 20 bar higher as Pmax.*
- *Volumetric efficiency η_{vn} is guaranted in nominal conditions and viscosity 30…40 mm^2/s.*
- *The characteristics mentioned above are valid also for double pumps (for every stage).*
- *At request, can be manufactured:*
  - *pumps with other displacements.*
  - *pumps with:*
    - *a. valve with external return (to the tank)*
    - *b. valve with internal return (to the inlet part)*
    - *c. flow control valve with external return*
    - *d. flow control valve with internal return*
- *For n>1500 rev/min, P<6 000 000 / (Vg x nef)*
- *Functioning at high speed, without cavitation, it is possible only with an enough large inlet.*
- *The inlet pressure should not decrease under 0.7 bar absolute.*

At request, can be manufactured:
- *double gear pumps HP21 with second stage from group 1 (with Vg = 0.85….7.8 cm^3/rev)*
- *pumps with other displacements.*
- *pumps with accessories:*
  - *a.valve with external return*
  - *b.valve with internal return*
  - *c.flow control valve with external return*
  - *d.flow control valve with internal return.*

B - Double pumps with a single inlet HAL22

Codification

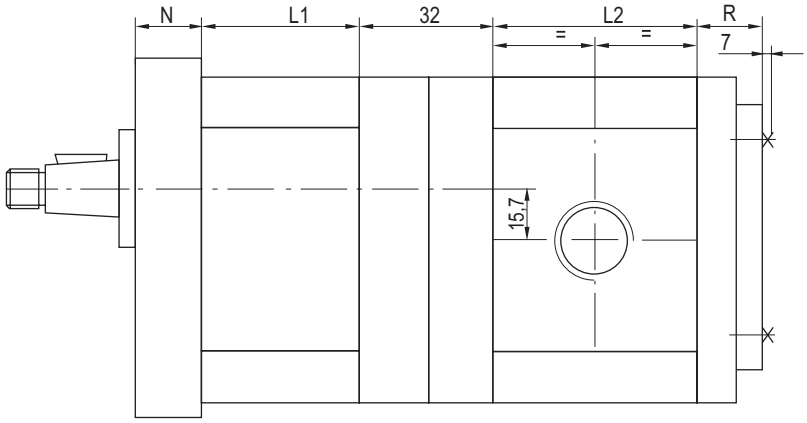
VNK22	-	Vg1 + Vg2)	-	Ax antrenare *Driving shaft*	Flansa prindere *Fastening flange*	Aspiratie 1 *Inlet port 1*	Refulare 1 *Outlet port 1*	-	Aspiratie 2 *Inlet port 2*	Refulare 2 *Outlet port 2*	-	Sens *Rotation*



Double pump with common inlet on first stage

Example

VNK22	-	(16+6,3)	-	3	3	1	1	-	0	1	-	C



Double pump with common inlet on second stage

Example

VNK22	-	(11,3+16)	-	3	3	0	1	-	1	1	-	C

NOTE:

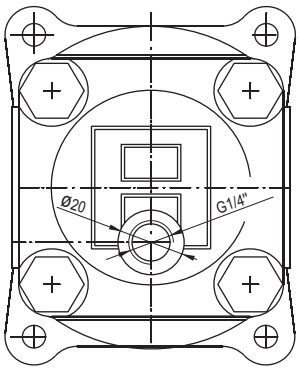
- The common inlet should be large enough, for both stages.
- It is recommended, that inlet is on stage with bigger displacement.
- For this pumps is not recommended inlets type 3; 4; 8; M

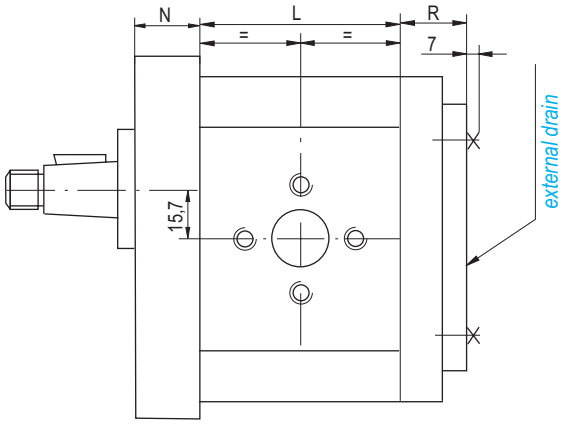
C - Bidirectional pumps HBA2; HBA22

The bidirectional pumps can work clockwise and anticlockwise rotation. Construction of the pumps is similar with normal pumps, but they have 2 alternative inlets and an external drain. Because of the simetric internal sealings, nominal pressure is limited at 210 bar.

Codification

HBA 2	-	ccm/rev	-	Ax antrenare Driving shaft	Flansă prindere Fastening flange	Flansă aspirație Inlet port	Flansă refulare Outlet port	-	Bidirectional Bidirectional





TECHNICAL CHARACTERISTICS

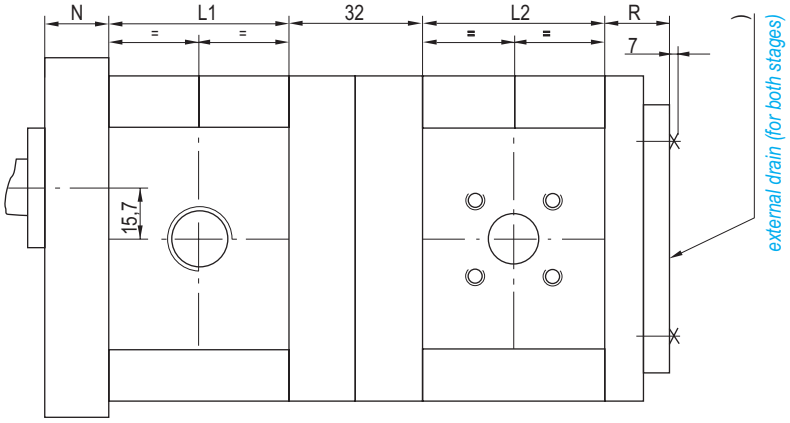
Vg c ccm/rot	L L1;L2 mm	η_{vn} %	Pressure - Pressure [bar] Pn	Pmax
4	44,7	88	210	230
4,5	45,6	89		
5,5	47,2	90		
6,3	48,6	91		
8,2	51,7	92		
11,3	56,8	93		
14	61,3	93,6		
15	63	94		
16	64,7	94,5		
19	69,7	95	200	220
22,5	75,1	95,5	160	180
25	79,2	96	150	170
27,9	84	97	140	160

Example

HBA 2	-	11,3	-	3	3	3	3	-	B

Codification

HBA 22	-	(Vg1 + Vg2)	-	Ax antrenare Driving shaft	Flansă prindere Fastening flange	Aspirație 1 Inlet port 1	Refulare 1 Outlet port 1	-	Aspirație 2 Inlet port 2	Refulare 2 Outlet port 2	-	Bidirectional Bidirectional



Example

HBA 22	-	(16+6,3)	-	3	3	1	1	-	2	2	-	B