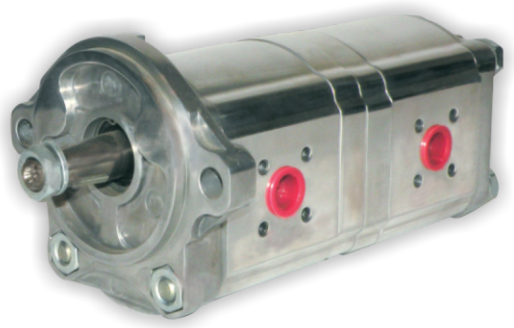
POMPE DUBLE CU ROŢI DINŢATE HP22
DOUBLE GEAR PUMPS HP22



Descriere şi utilizare

Pompele duble HP22 au etanşare intermediară între trepte; (fiecare treaptă poate lucra pe circuite diferite).
Fiecare treaptă păstrează caracterisicile pompei simple.
Se pot realiza şi pompe multiple cu 3 sau 4 trepte, dar se limitează momentul axului de antrenare la valoarea indicată şi cel de la treapta 2 la 65 Nm.

Description and use

The double pumps HP22 have intermediate sealing between the stages; (each stage can work in different circuits).
Each stage keeps the characteristics from the simple pumps.
It is possible to build multiple pumps, with 3 or 4 stages, but the maximal torque on the driving shaft should be not bigger as the indicated value, and the maximal torque at the shaft from the second stage is 65 Nm.

Codificare – *Codification*

HP 22 – Vg (cm3/rot / *ccm/rev*) – configuraţie treapta 1 - *stage 1 configuration* – aspiraţie, refulare treapta 2 *inlet outlet stage 2* – Sens *Rotation*

Vg cm3/rot / *ccm/rev*
4
4.5
5.5
6.3
8.2
11.3
14
16
19
22.5
25
27.9

Ax antrenare *Driving shaft*	
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*
C	Conic 1:5 (majorat) *Conical 1:5 (increased)*
D	Conic 1:5 BOSCH *Conical 1:5 BOSCH*
2	Conic 1:8 (micşorat) *Conical 1:8 (diminished)*
3	Conic 1:8 PLESSEY *Conical 1:8 PLESSEY*
5	Canelat-*involute spline* B 17x14 DIN 5482
A	Canelat-*involute spline* SAE 9T 16/32 Dp
L	Canelat-*involute spline* SAE 9T 16/32 Dp
E	Cilindric Ø15.875 *Cylindrical Ø15.875*
T	Cilindric scurt Ø15.875 *Cilindrical short Ø15.875*
0	Cilindric Ø17.45 *Cylindrical Ø17.45*
B	Cep DEUTZ - scurt *Deutz pin - short*
F	Cep DEUTZ - lung *Deutz pin - long*
G	Cep DEUTZ - scurt cu frezare *DEUTZ pin - short with milling*

Flanşa prindere *Fastening flange*	
1	PLESSEY (4xØ7)
2	DIN (4 xØ9)
3	PLESSEY (4xØ9)
4	GERMAN 2xØ11
4e	GERMAN 2xØ11 cu inel O - *with O-ring*
5	GERMAN 2xØ11
5e	GERMAN 2xØ11 cu inel O - *with O-ring*
6	GERMAN 2xØ11
6e	GERMAN 2xØ11 cu inel O - *with O-ring*
7	Ovala SAE "A" *Oval SAE "A"*
8	GERMAN 2xØ11
8e	GERMAN 2xØ11 cu inel O - *with O-ring*
9	GERMAN 4xØ11

Flanşa aspiraţie *Inlet port* / Flanşa refulare *Outlet port* / Flanşa aspiraţie *Inlet port* / Flanşa refulare *Outlet port*	
3 4 8 D E	Variante PLESSEY *PLESSEY Variants*
M V W	Variante SAE *SAE Variants*
2 5 A B	Variante DIN *DIN Variants*
1 9 F G H J T	Variante filetate BSPP *Threaded Variants BSPP*
7 K N P Q R	Variante filetate ISO (metric) *Threaded Variants ISO (metrical)*
6 C S U Y	Variante filetate UNF *Threaded Variants UNF*
0	Obturată *Closed*

Sens *Rotation*	
A (stânga) *(Anticlockwise)*	↺
C (dreapta) *(Clockwise)*	↻

"0" daca aspiraţia şi refularea nu sunt pe corpul pompei
"0" if inlet or outlet ports are not on the body of the pump.

Exemplu - *Example*

HP 22	–	11.3+4	–	3	3	1	1	–	1	1	–	A

Nota: Dacă este necesar, se poate monta pe treapta 2 un capac cu supapă; la codul pompei se va adauga:
Note: If necesary, it is possible to assembly an end cover with valve on the second stage; in the code will be added:

– 720 – P (supapa cu retur intern; P = presiunea reglată) *(valve with internal return; P = setted pressure)*
– 730 – P (supapa cu retur extern; P = presiunea reglată) *(valve with external return; P = setted pressure)*

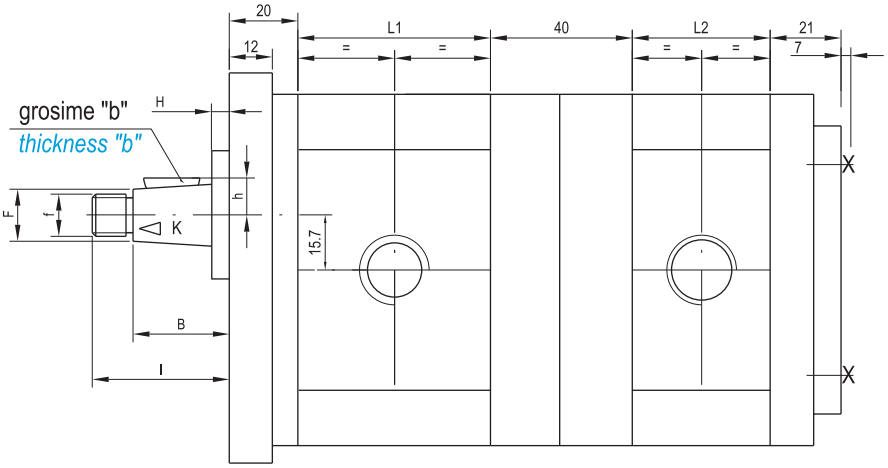
Ediţia: Octombrie 2016
Edition: October 2016

HESPER FONDAT 1871
Str. Dr. C-tin. Istrati nr.1, Sector 4, Cod 040542, BUCUREŞTI
Tel: +4021.336.23.52; +4021.335.10.50; +40722.562.899; Fax +4021.337.24.60;
Email: hesper@hesper.ro; www.hesper.ro

POMPE DUBLE CU ROŢI DINŢATE HP22 - *DOUBLE GEAR PUMPS HP22*

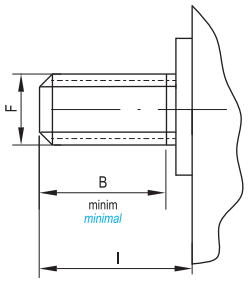
Axe antrenare - *Driving shafts*

Axe conice - Variantele 1;2;3;C;D
Conical shafts - Variants 1;2;3;C;D

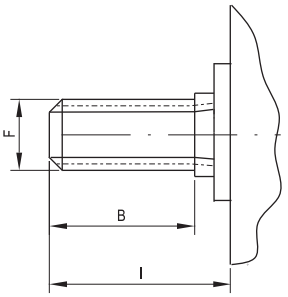


Axe canelate - *Grooved shafts*

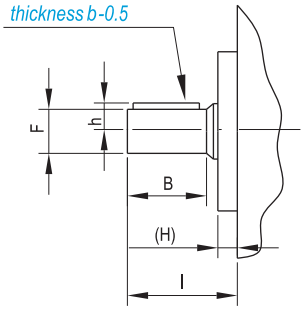
Varianta A; 5
Variant A; 5



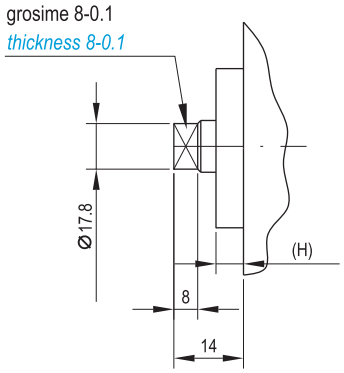
Varianta L
Variant L



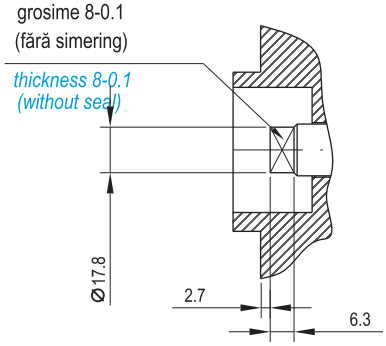
Axe cilindrice
Variantele O;E;T
Cylindrical shafts
Variants O;E;T



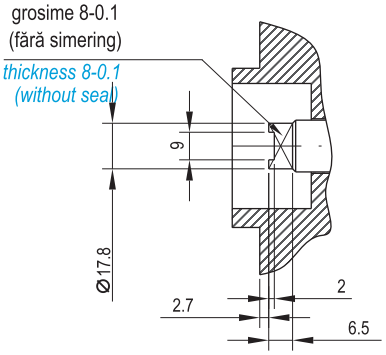
Cep DEUTZ lung
Varianta F
DEUTZ pin - long
Variant F



Cep DEUTZ scurt
Varianta B
DEUTZ pin - short
Variant B



Cep DEUTZ scurt
Varianta G
DEUTZ pin - short
Variant G

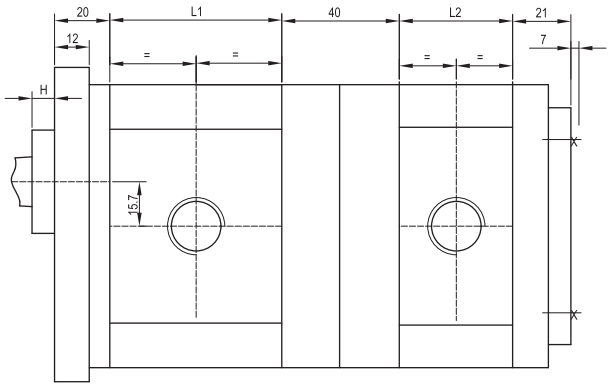


Axe antrenare - *Driving shafts*

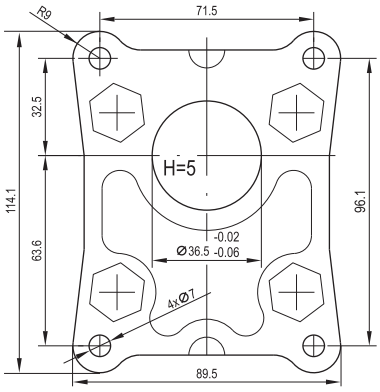
Varianta *Variant*	Tip ax *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k	h (mm)	b (mm)	Mmax (Nm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	38	24.8	13.6	M12x1.25	1:5	9.2	3	150
C	Conic 1:5 (majorat) *Conical 1:5 (increased)*	40	26.6	14	M12x1.25	1:5	9.6	3	160
D	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	40.5	27.3	13.6	M12x1.25	1:5	9.5	3	150
2	Conic 1:8 (redus) *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	Canelat *Grooved* B17x14 DIN 5482	26	19	16.5	-	-	-	-	75
A	Canelat *Grooved* SAE 9T 16/32 Dp	31.5	19	15.5	-	-	-	-	70
L	Canelat *Grooved* SAE 9T 16/32 Dp	32	24	15.5	-	-	-	-	70
0	Cilindric Ø17.45 *Cylindrical Ø17.45*	43	37	17.45 $^{0}_{-0.02}$	-	-	11.1	4.76	70
E	Cilindric Ø15.875 *Cylindrical Ø15.875*	44.5	36.5	15.87 $^{0}_{-0.02}$	-	-	9.7	3.96	65
T	Cilindric Ø15.875 *Cylindrical Ø15.875*	32	25.4	15.87 $^{0}_{-0.02}$	-	-	9.7	3.96	50
F	Cep DEUTZ - lung *DEUTZ pin - long*	-	-	-	-	-	-	-	65
B	Cep DEUTZ - scurt *DEUTZ pin - short*	-	-	-	-	-	-	-	65
G	Cep DEUTZ cu frezare *DEUTZ pin with milling*	-	-	-	-	-	-	-	65

POMPE DUBLE CU ROŢI DINŢATE HP22 - *DOUBLE GEAR PUMPS HP22*

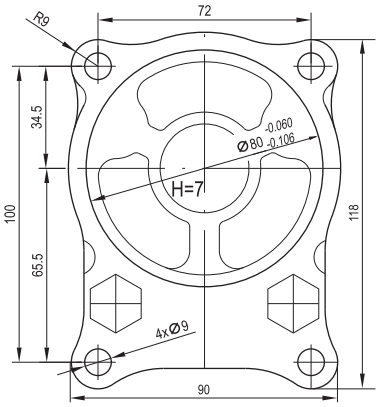
Flanşe de prindere - *Fastening Flanges*



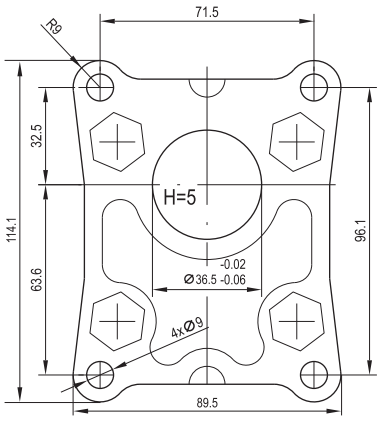
Varianta 1 (Plessey) - *Variant 1 (Plessey)*



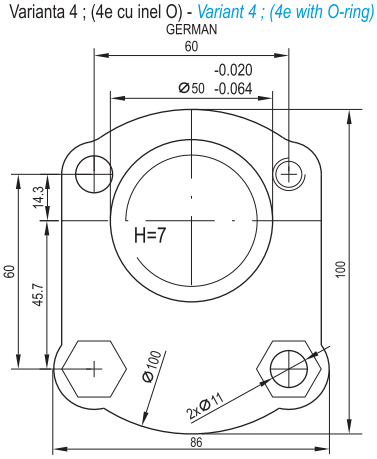
Varianta 2 (DIN) - *Variant 2 (DIN)*



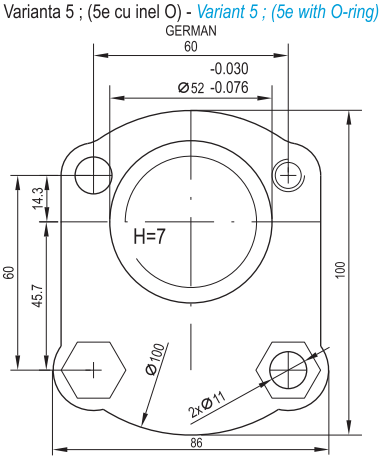
Varianta 3 (Plessey) - *Variant 3 (Plessey)*



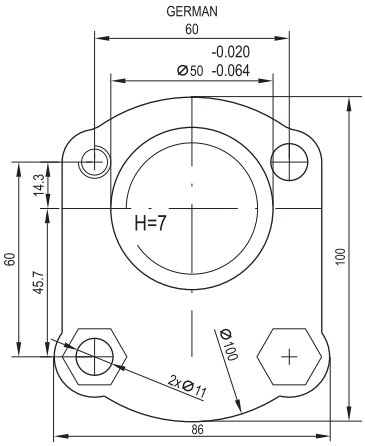
Varianta 4 ; (4e cu inel O) - *Variant 4 ; (4e with O-ring)*



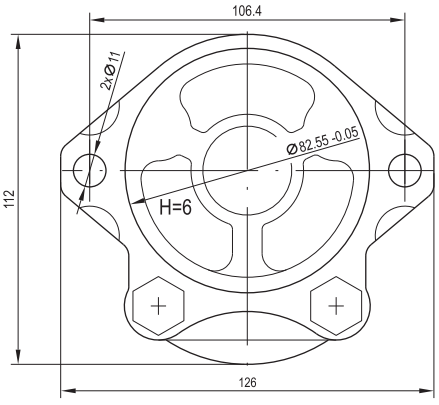
Varianta 5 ; (5e cu inel O) - *Variant 5 ; (5e with O-ring)*



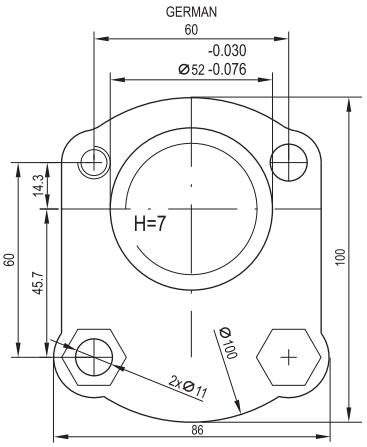
Varianta 6 ; (6e cu inel O) - *Variant 6 ; (6e with O-ring)*



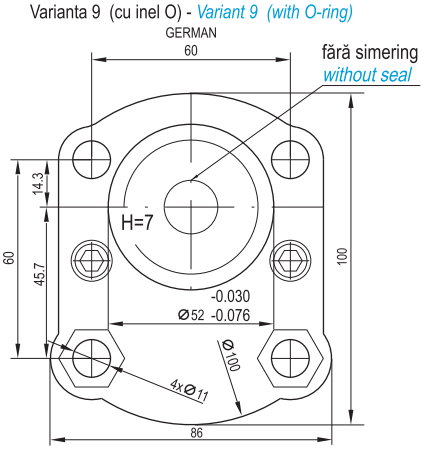
Varianta 7 (SAE "A") - *Variant 7 (SAE "A")*



Varianta 8 ; (8e cu inel O) - *Variant 8 ; (8e with O-ring)*



Varianta 9 (cu inel O) - *Variant 9 (with O-ring)*

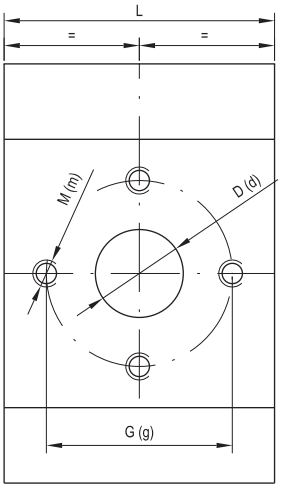


Producătorul îşi rezervă dreptul să modifice datele din prezenta documentaţie, pentru îmbunătăţirea produsului.
The producer reserves its right to make changes in the present documentation, to increase the quality of the product.

POMPE DUBLE CU ROŢI DINŢATE HP22 - *DOUBLE GEAR PUMPS HP22*

Flanşe aspiraţie-refulare - *Inlet-outlet ports*

Variante PLESSEY - *PLESSEY variants*



Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

tip 3 - *type 3*					
inlet			*outlet*		
D	G	M	d	g	m
13.1	30.2	M6	13.1	30.2	M6
19	39.7	M8	14.2	30.2	M6
22	39.7	M8	16	39.7	M8

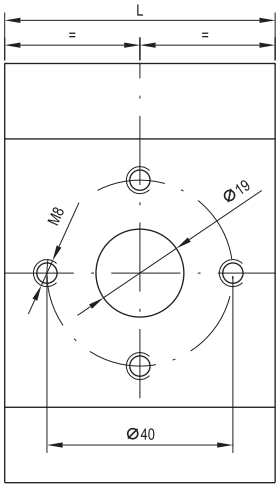
tip 8 - *type 8*					
inlet			*outlet*		
D	G	M	d	g	m
13	30.2	M6			
19	39.7	M8	13	30.2	M6
22	39.7	M8			

tip M - *type M*					
inlet			*outlet*		
D	G	M	d	g	m
13	30	M6		30	M6
			13		
19	40	M8		40	M8
			19		

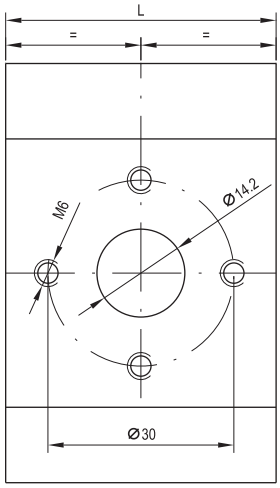
tip 4 - *type 4*					
inlet			*outlet*		
D	G	M	d	g	m
15	30.2	M6			
			15	30.2	M6
20	39.7	M8			

Variante SAE - *SAE variants*

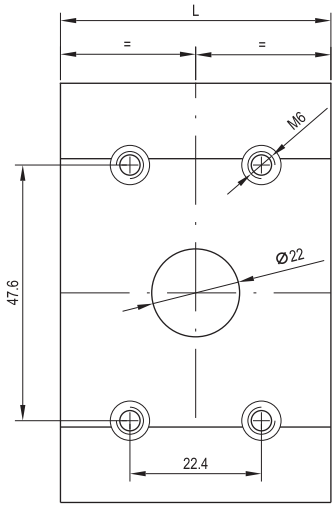
tip D - *type D*



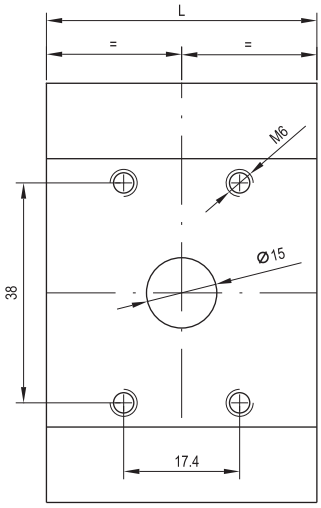
tip E - *type E*



tip V - *type V*

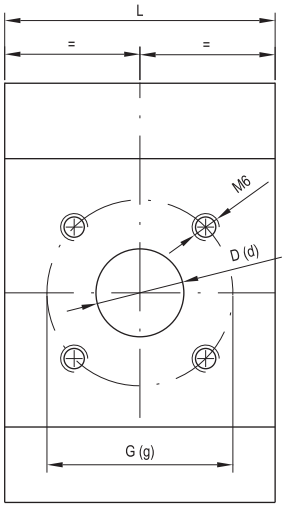


tip W - *type W*



Numai pentru Vg = 11,3 – 27,9 cm^3/rot.
Only for Vg = 11,3– 27,9 cmc/rev.

tip 2 - *type 2*

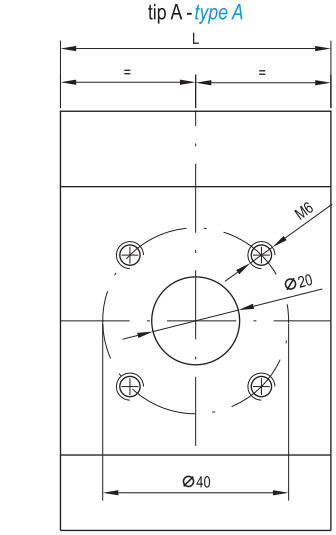


Variante DIN - *DIN variants*

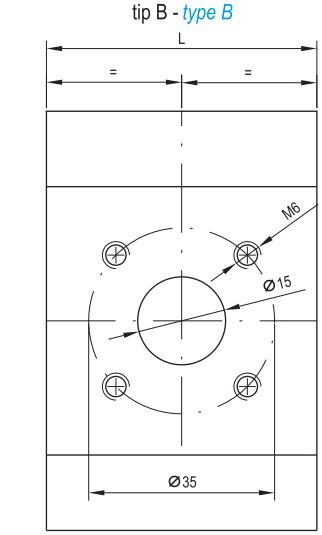
Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

tip 2 - *type 2*			
inlet		*outlet*	
D	G	d	g
15	40	12	35
20		15	

tip A - *type A*



tip B - *type B*



Notă: Aspiraţia trebuie să fie suficient de mare în conformitate cu Vg şi turaţia.
Note: Inlet should be large enough, in confomity with Vg and speed.

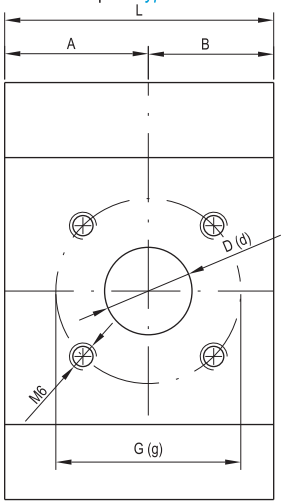
HESPER FONDAT 1871

Str. Dr. C-tin. Istrati nr.1, Sector 4, Cod 040542, BUCUREŞTI
Tel: +4021.336.23.52; +4021.335.10.50; +40722.562.899; Fax +4021.337.24.60;
Email: hesper@hesper.ro; www.hesper.ro

POMPE DUBLE CU ROŢI DINŢATE HP22 - *DOUBLE GEAR PUMPS HP22*

Variante asimetrice - *Asimetrical variants*

tip 5 - *type 5*

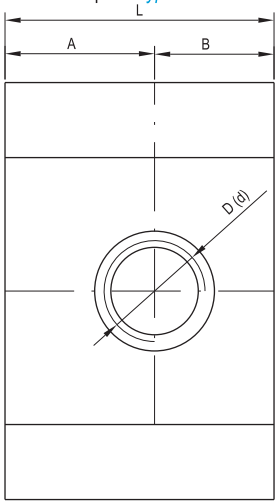


Vg cm3/rev	L mm	tip 5 - type 5 inlet D	inlet G	outlet d	outlet g	A mm	B mm
4	44.7	15	40	12	35	24.7	20
4.5	45.6					25.6	
5.5	47.2					27.2	
6.3	48.6					28.6	
8.2	51.7					30.1	21.6
11.3	56.8	20		15		34.5	22.3
14	61.3						26.8
16	64.7						30.2
19	69.7						35.2
22.5	75.1						33.1
25	79.2					42	37.2
27.9	84						42

Dimensiunea "A" este spre flanşă

Dimension "A" is to the fastening flange side.

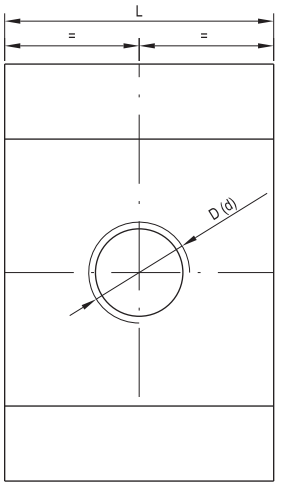
tip C - *type C*



Vg cm3/rev	L mm	tip C - type C inlet D	outlet d	A mm	B mm
4	44.7	SAE # 12 1"1/16 - 12 UNF	SAE # 10 7/8" - 14 UNF		
4.5	45.6				
5.5	47.2				
6.3	48.6				
8.2	51.7				
11.3	56.8				
14	61.3				
16	64.7				
19	69.7				
22.5	75.1			36.1	39
25	79.2				
27.9	84				

Dimensiunea "A" este spre flanşă

Dimension "A" is to the fastening flange side.



Variante filetate BSPP - *BSPP threaded variants*

Vg cm3/rev	L mm	tip 1 - type 1 inlet D	outlet d	tip 9 - type 9 inlet D	outlet d	tip H - type H inlet D	outlet d	tip F - type F inlet D	outlet d	tip G - type G inlet D	outlet d	tip J - type J inlet D	outlet d	tip T - type T inlet D	outlet d
4	44.7	G1/2"	G1/2"	G3/4"	G1/2"	G3/4"	G1/2"	G3/4"	G3/4"	G1/2"	G1/2"	G3/8"	G3/8"	Rc1/2"	Rc1/2"
4.5	45.6														
5.5	47.2														
6.3	48.6														
8.2	51.7														
11.3	56.8														
14	61.3														
16	64.7	G3/4"		G1"	G3/4"									Rc3/4"	Rc1/2"
19	69.7														
22.5	75.1														
25	79.2	G1"	G3/4"												
27.9	84														

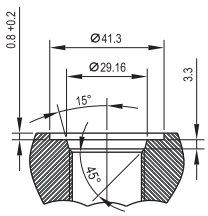
Variante filetate ISO 6149 (metric) - *ISO 6149 threaded variants (metrical)*

Vg cm3/rev	L mm	tip 7 - type 7 inlet D	outlet d	tip P - type P inlet D	outlet d	tip K - type K inlet D	outlet d	tip N - type N inlet D	outlet d	tip Q - type Q inlet D	outlet d	tip R - type R inlet D	outlet d
4	44.7	M20 x 1.5	M16 x 1.5	M20 x 1.5	M20 x 1.5	M27 x 1.5	M27 x 1.5	M22 x 1.5	M22 x 1.5	M18 x 1.5	M18 x 1.5	M16 x 1.5	M16 x 1.5
4.5	45.6												
5.5	47.2												
6.3	48.6												
8.2	51.7												
11.3	56.8												
14	61.3												
16	64.7												
19	69.7												
22.5	75.1	M22 x 1.5	M20 x 1.5										
25	79.2												
27.9	84												

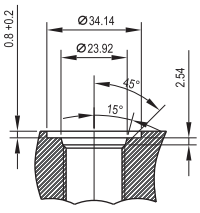
Variante filetate UNF - *UNF threaded variants*

tip 6 - type 6 inlet D	outlet d	tip S - type S inlet D	outlet d	tip U - type U inlet D	outlet d	tip Y - type Y inlet D	outlet d
1 1/16" - 12 UNF	7/8" - 14 UNF	1 1/16" - 12 UNF SAE # 12	1 1/16" - 12 UNF SAE # 12	7/8" - 14 UNF SAE # 10	7/8" - 14 UNF SAE # 10	9/16" - 18 UNF SAE # 6	9/16" - 18 UNF SAE # 6

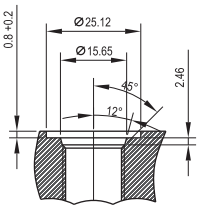
1 1/16" - 12 UNF
SAE # 12



7/8" - 14 UNF
SAE # 10



9/16" - 18 UNF
SAE # 6



POMPE DUBLE CU ROŢI DINŢATE HP22 - *DOUBLE GEAR PUMPS HP22*

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg cm^3/rot *ccm/rev*	L1; L2 mm	η_v %	η_m %	Presiune - *Pressure* (bar) Pn	Pmax	Presiune aspirație *Inlet pressure* (bar)	Turație (rot/min) *Speed (rev/min)* nominal	min.	max.	Temperatura *Temperature* (°C)	Vâscozitate *Viscosity* (cSt)	Filtrare *Filtration* (µm)
4	44,7	88	86	250	280	min. - 0,3 max. 2	1500	1000	4500	-15...+ 80 recomandat *recommended* 0...+ 60	12...2000 recomandat *recommended* 25...200	max. 25 recomandat *recommended* 16
4,5	45,6	89										
5,5	47,2	90	87					900	4000			
6,3	48,6	91										
8,2	51,7	92	88					800	3500			
11,3	56,8	93										
14	61,3	94	89					600	3000			
16	64,7	95		235	250			500				
19	69,7	95	90	200	220				2500			
22,5	75,1	96		160	180							
25	79,2	97		150	170							
27,9	84	98		140	160				2000			

Notă:

- Pn: presiunea nominală la care se garantează fucționarea continuă, durabilitatea şi randamentul volumic.
- Randamentele volumice η_v se garantează în condiții nominale şi la o vâscozitate a uleiului de 30….40 mm^2/s.
- Caracteristicile de mai sus sunt valabile şi pentru pompele duble (la fiecare treaptă în parte).

- Funcționarea pompelor la turații ridicate, fără cavitație, este posibilă numai cu o aspirație suficient de largă.
- Presiunea de aspirație nu va scade sub 0,7 bar abs.
- Este interzisă încărcarea axului de antrenare al pompei cu sarcini radiale sau axiale în timpul utilizării.

Note:

- *Pn: nominal pressure for which, continuous running, life time and volumetric efficiency are guaranteed.*
- *Volumetric efficiency η_v is guaranteed in nominal conditions and viscosity 30…40 mm^2/s.*
- *The characteristics mentioned above are valid also for double pumps (for every stage).*

- *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.*
- *It is forbidden radial or axial loads on the pump shaft during the use.*

Notă: În cazul în care configuraţia produsului solicitat de dumneavoastră nu se regăseşte în catalogul HESPER, vă rugăm să ne contactaţi la:
Note : If the configuration of the product demanded by you is not in HESPER catalogue, please contact us at:
Tel: +4021.336.23.52; +4021.335.10.50; +40722.562.899; Fax +4021.337.24.60; Email: hesper@hesper.ro; www.hesper.ro