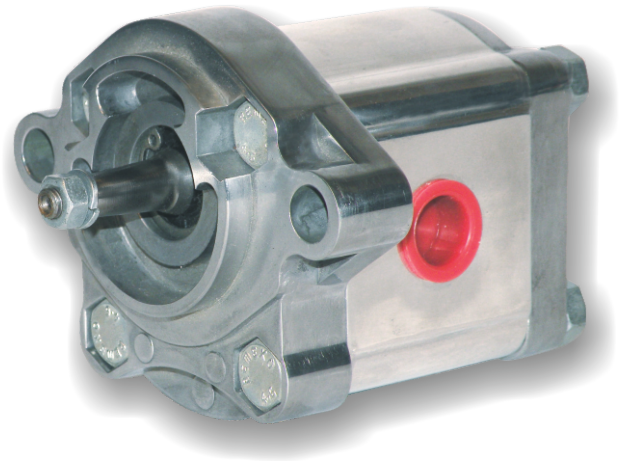
POMPE SIMPLE CU ROŢI DINŢATE HP2
SIMPLE GEAR PUMPS HP2

Descriere şi utilizare

Sunt pompe pentru aplicaţii generale.
Au performanţe funcţionale foarte bune şi nivel de zgomot relativ mic.
Pompele cu roţi dinţate au volum geometric constant şi sunt utilizate în acţionări hidraulice, la maşini agricole, echipamente anexe pentru tractoare, utilaje de ridicat şi transport, utilaje terasiere grele, maşini unelte, s.a.



Description and use

Are pumps for general applications.
It have very good functional parameters and relatively low level of noise.
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.

Codificare – *Codification*

HP 2 – Vg (cm3/rot, *ccm/rev*) – Ax antrenare / *Driving shaft* – Flanşa prindere / *Fastening flange* – Flanşa aspiraţie / *Inlet port* – Flanşa refulare / *Outlet port* – Sens / *Rotation*

Vg
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 (micsorat) *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*	
3 4 8 D E M	Variante PLESSEY *PLESSEY Variants*
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*

Flanşa refulare / *Outlet port*	
3 4 8 D E M	Variante PLESSEY *PLESSEY Variants*
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 2	–	11.3	–	3	3	1	1	-	A

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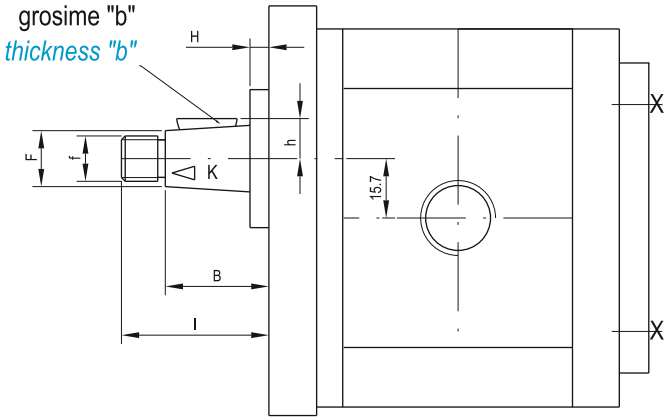
POMPE SIMPLE CU ROŢI DINŢATE HP2 - *SIMPLE GEAR PUMPS HP2*

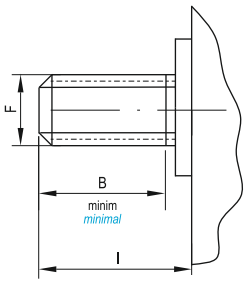
Axe antrenare - *Driving shafts*

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

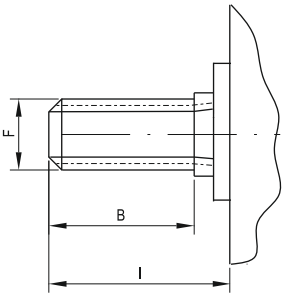


Axe canelate - *Grooved shafts*

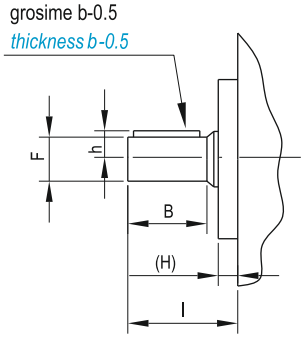
Varianta A; 5
Variant A; 5



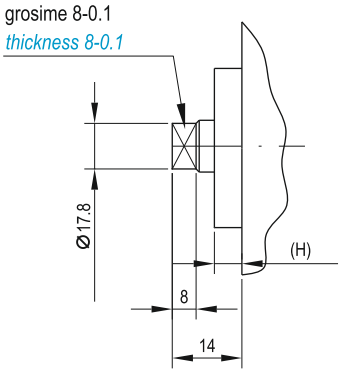
Varianta L
Variant L



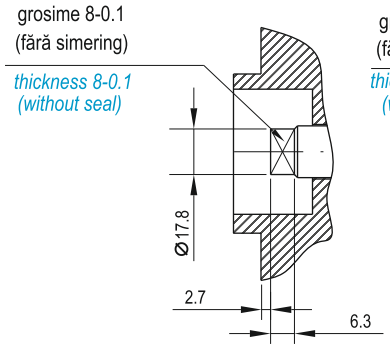
Axe cilindrice
Variantele O;E;T
Cylindrical shafts
Variants O;E;T



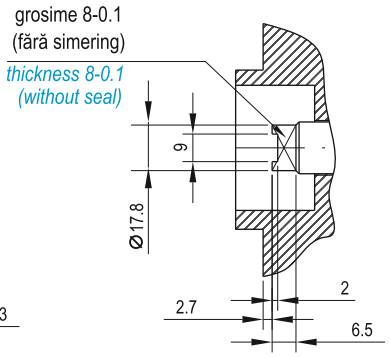
Cep DEUTZ lung
Varianta F
DEUTZ pin - long
Variant F



Cep DEUTZ scurt
Varianta B
DEUTZ pin - short
Variant B



Cep DEUTZ scurt
Varianta G
DEUTZ pin - short
Variant G

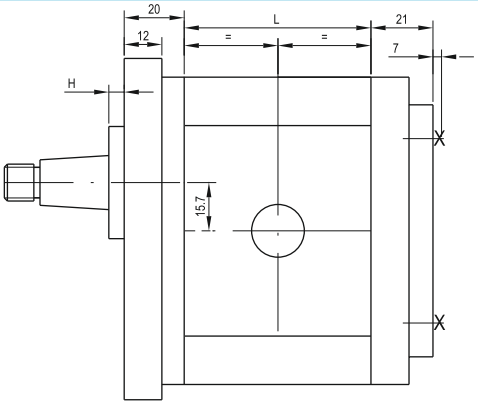


Axe antrenare - *Driving shafts*

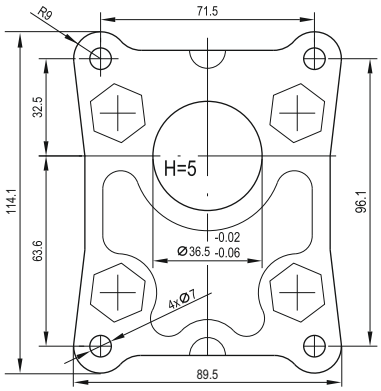
Varianta *Variant*	Tip ax *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k	h (mm)	b (mm)	Mmax (Nm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	38	24.8	13.6	M12x1.25	1:5	9.2	3	150
C	Conic 1:5 (majorat) *Conical 1:5 (increased)*	40	26.6	14	M12x1.25	1:5	9.6	3	160
D	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	40.5	27.3	13.6	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 SIMPLE CU ROŢI DINŢATE HP2 - *SIMPLE GEAR PUMPS HP2*

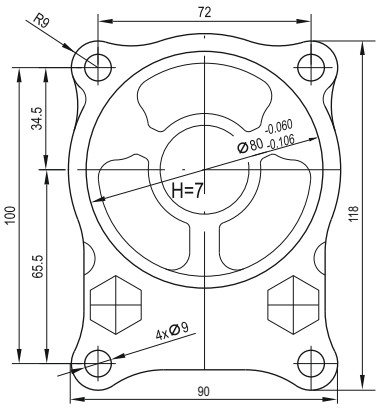
Flanşe de prindere - *Fastening Flanges*



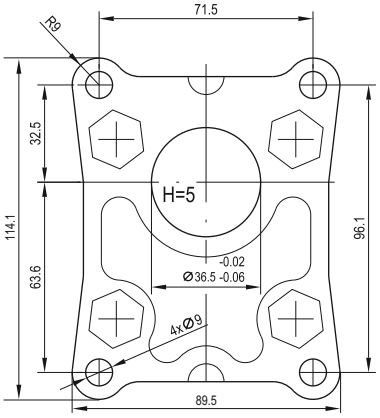
Varianta 1 (Plessey) - *Variant 1 (Plessey)*



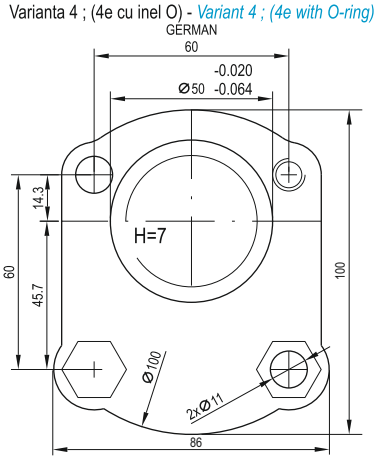
Varianta 2 (DIN) - *Variant 2 (DIN)*



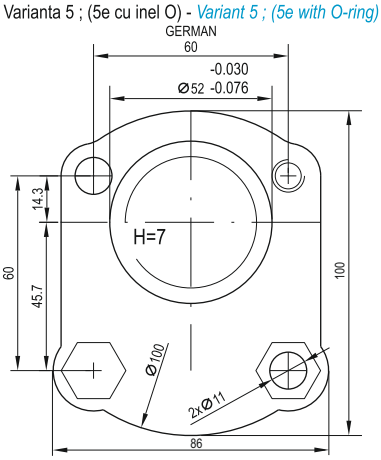
Varianta 3 (Plessey) - *Variant 3 (Plessey)*



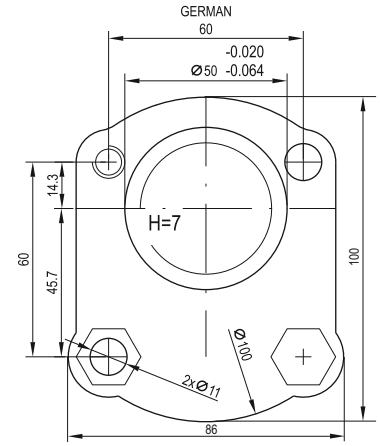
Varianta 4 ; (4e cu inel O) - *Variant 4 ; (4e with O-ring)*



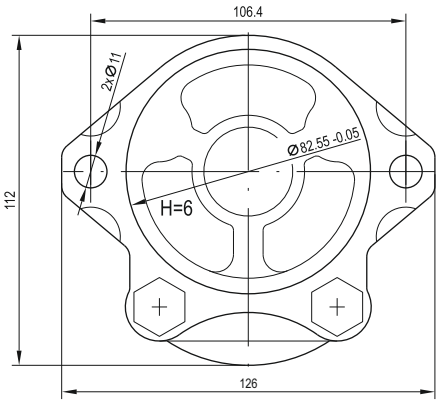
Varianta 5 ; (5e cu inel O) - *Variant 5 ; (5e with O-ring)*



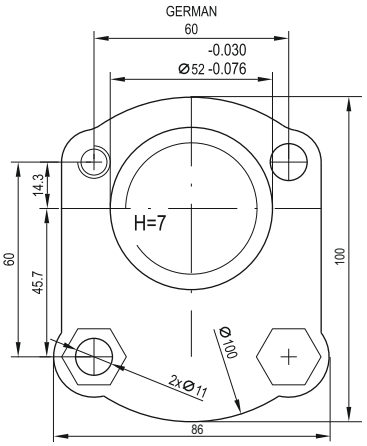
Varianta 6 ; (6e cu inel O) - *Variant 6 ; (6e with O-ring)*



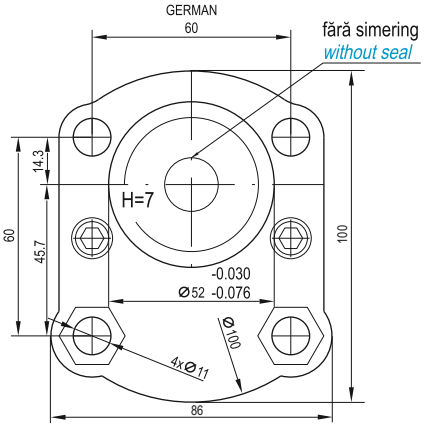
Varianta 7 (SAE "A") - *Variant 7 (SAE "A")*



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



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



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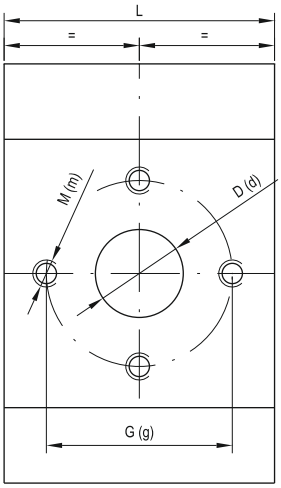
POMPE SIMPLE CU ROŢI DINŢATE HP2 - *SIMPLE GEAR PUMPS HP2*

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

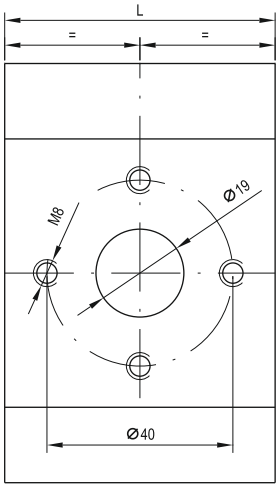
tip 8 - *type 8*					
inlet			*outlet*		
D	G	M	d	g	m
13	30.2	M6			
19	39.7	M8	13	30.2	M6
22	39.7	M8			

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

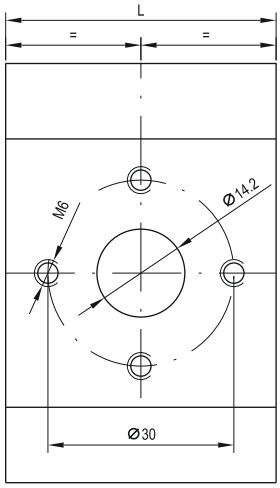
tip 4 - *type 4*					
inlet			*outlet*		
D	G	M	d	g	m
15	30.2	M6	15	30.2	M6
20	39.7	M8			

Variante SAE - *SAE variants*

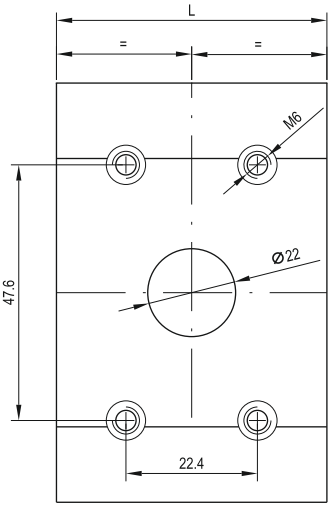
tip D - *type D*



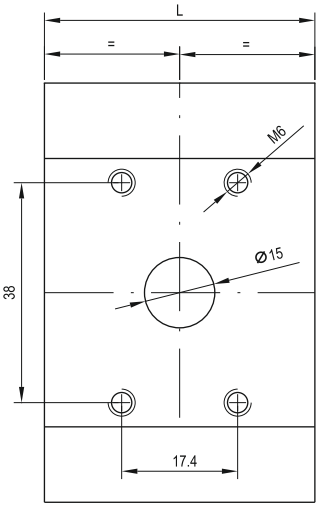
tip E - *type E*



tip V - *type V*

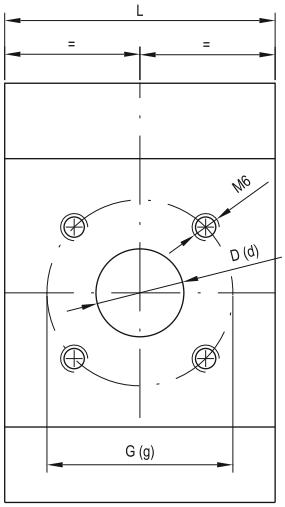


tip W - *type W*



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

tip 2 - *type 2*

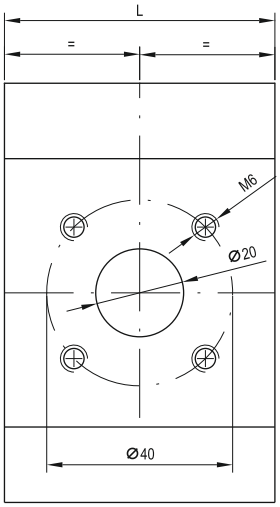


Variante DIN - *DIN variants*

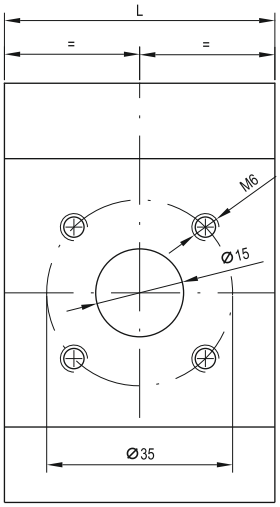
Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

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 conformity with Vg and speed.

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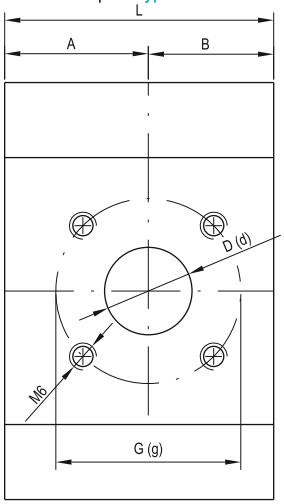
POMPE SIMPLE CU ROŢI DINŢATE HP2 - *SIMPLE GEAR PUMPS HP2*

Flanşe aspiraţie-refulare - *Inlet-outlet ports*

Variante asimetrice - *Asimetrical variants*

tip 5 - *type 5*

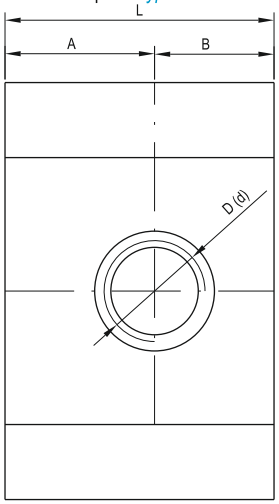


Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

tip 5 - *type 5*				A mm	B mm
inlet		*outlet*			
D	G	d	g		
15	40	12	35	24.7	20
				25.6	
				27.2	
				28.6	
				30.1	21.6
20		15		34.5	22.3
					26.8
					30.2
					35.2
					33.1
				42	37.2
					42

Dimensiunea "A" este spre flanşă
Dimension "A" is to the fastening flange side.

tip C - *type C*

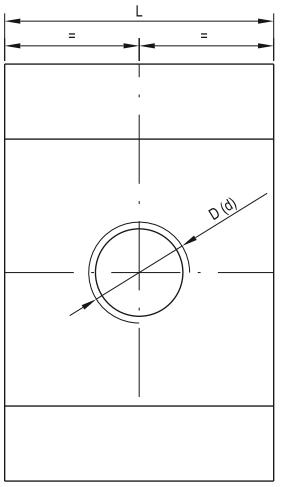


Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

tip C - *type C*		A mm	B mm
inlet	*outlet*		
D	d		
SAE # 12 1/16 " - 12 UNF	SAE # 10 7/8" - 14 UNF		
		36.1	39

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*		tip 9 - *type 9*		tip H - *type H*		tip F - *type F*		tip G - *type G*		tip J - *type J*		tip T - *type T*	
		inlet	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*
		D	d	D	d	D	d	D	d	D	d	D	d	D	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	G3/4"		G1"	G3/4"									Rc3/4"	Rc1/2"
14	61.3														
16	64.7														
19	69.7														
22.5	75.1														
25	79.2	G1"	G3/4"												
27.9	84														

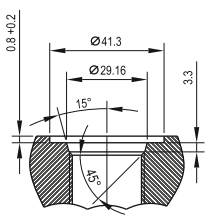
Variante filetate ISO 6149 (metric) - *ISO 6149 threaded variants (metrical)*

Vg cm3/rev	L mm	tip 7 - *type 7*		tip P - *type P*		tip K - *type K*		tip N - *type N*		tip Q - *type Q*		tip R - *type R*	
		inlet	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*
		D	d	D	d	D	d	D	d	D	d	D	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												

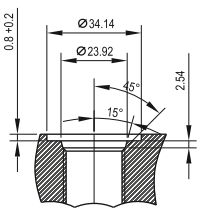
Variante filetate UNF - *UNF threaded variants*

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

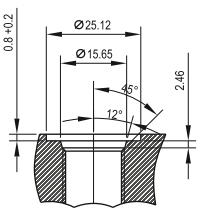
1 1/16" - 12 UNF
SAE # 12



7/8" - 14 UNF
SAE # 10



9/16" - 18 UNF
SAE # 6



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

POMPE SIMPLE CU ROŢI DINŢATE HP2 - *SIMPLE GEAR PUMPS HP2*

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg cm^3/rot *ccm/rev*	L mm	η_v %	η_m %	Presiune - *Pressure* (bar) Pn	Pmax	Presiune aspiraţie *Inlet pressure* (bar)	Turaţie (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	12...2000	max. 25
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	recomandat *recommended* 0...+ 60	recomandat *recommended* 25...200	recomandat *recommended* 16
16	64,7	95		235	250			500				
19	69,7	95	90	200	220							
22,5	75,1	96		160	180				2500			
25	79,2	97		150	170							
27,9	84	98		140	160				2000			

Notă:

- Pn: presiunea nominală la care se garantează fucţionarea continuă, durabilitatea şi randamentul volumic.
- Randamentele volumice η_v se garantează în condiţii 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).
- Funcţionarea pompelor la turaţii ridicate, fără cavitaţie, este posibilă numai cu o aspiraţie suficient de largă.
- Presiunea de aspiraţie nu va scade sub 0,7 bar abs.
- Este interzisă încărcarea axului de antrenare al pompei cu sarcini radiale sau axiale în timpul utilizării.
- Vă rugăm să contactaţi HESPER în cazul în care chiar şi una dintre limitele parametrilor de funcţionare indicate în tabel (temperatură, presiune, turaţie) sunt depăşite.

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.*
- *Please contact HESPER if even one of the operating limits indicated in the table (temperature, pressure, speed) are exceeded.*