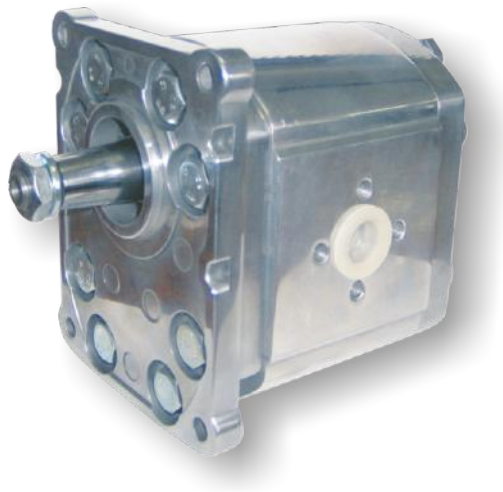
POMPE SIMPLE CU ROŢI DINŢATE HP3
SIMPLE GEAR PUMPS HP3



Descriere şi utilizare

Pompele cu roţi dinţate HP3, cu volum geometric constant, sunt utilizate în acţionări hidraulice, la maşini agricole, echipamente anexe pentru tractoare, utilaje de ridicat şi transport, utilaje terasiere grele, maşini unelte, ş.a.

Description and use

The gear pumps HP3, with constant displacement, are used in hydrodrive installations, for agricultural mobile equipment, heavy equipment for transport and earth moving, machine-tools.

Codificare
Codification

HP 3	Vg (cm^3/rot *ccm/rev*)
	19,5
	22,5
	24,5
	28
	32,7
	38
	42,6
	45
	50
	56
	60
	63

Ax antrenare *Driving shaft*	
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*
2	Conic 1:8 PLESSEY *Conical 1:8 PLESSEY*
3	Conic 1:8 HEE (Franţa) *Conical 1:8 HEE (France)*
5	Canelat B28x25 DIN 5482 *Involute spline B28x25 DIN 5482*
6	Canelat SAE 13T 16/32 Dp *Involute spline SAE 13T 16/32 Dp*
8	Cep DEUTZ Scurt *Short DEUTZ Pin*
A	Canelat 6x21x25 STAS 1769-68 *P.t.o. shaft 6x21x25 STAS 1769-68*
B	Cilindric ϕ22,2 *Cylindrical ϕ22.2*
C	Cilindric ϕ19,05 *Cylindrical ϕ19.05*
D	Canelat SAE 15T 16/32 Dp *Involute spline SAE 15T 16/32 Dp*

Flanşă prindere *Fastening flange*	
1	PLESSEY (Anglia) *PLESSEY (England)*
2	DIN (BOSCH) *DIN (BOSCH)*
3	Ovală SAE "B" *Oval SAE "B"*
4	PLESSEY (4xϕ11) *PLESSEY (4xϕ11)*
6	Pătrată SAE "C" *Square SAE "C"*
7	Dreptunghiulară *Rectangular*

Notă:

Flanşa de prindere tip 6, SAE "C" este utilizată numai pentru varianta HPR3

Note:

Fastening flange type 6, SAE "C" are used only for the HPR3 variant

Flanşă aspiraţie *Inlet port*	
1	Filetată BSPP *Threaded BSPP*
2	DIN (BOSCH) *DIN (BOSCH)*
3	SAE *SAE*
4	PLESSEY; HEE *PLESSEY; HEE*
5	HEE - rotită *HEE - rotated*
6	SAE *SAE*
7	Variantă specială *Special variant*
0	Obturată *** *Closed ****

Flanşă refulare *Outlet port*	
1	Filetată BSPP *Threaded BSPP*
2	DIN (BOSCH) *DIN (BOSCH)*
3	SAE *SAE*
4	PLESSEY; HEE *PLESSEY; HEE*
5	HEE - rotită *HEE - rotated*
6	SAE *SAE*
7	Variantă specială *Special variant*
0	Obturată *** *Closed ****

Sens rotaţie *Rotation direction*	
A	(stânga) *(left)*
C	(dreapta) *(right)*

Tip "0" obturată; dacă aspiraţia sau refularea nu sunt pe corpul pompei.

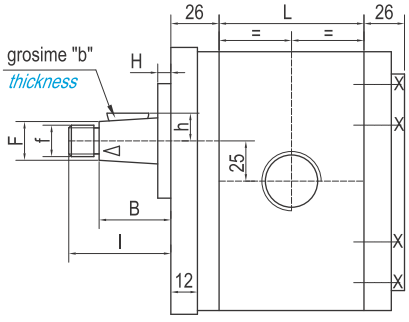
Type "O" closed; if inlet or outlet ports are not on the body of the pump.

Exemplu - *Example*

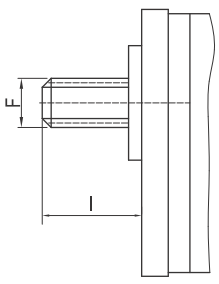
HP 3	-	32,7	-	2	-	1	-	4	-	4	-	A

Axe antrenare - *Driving shafts*

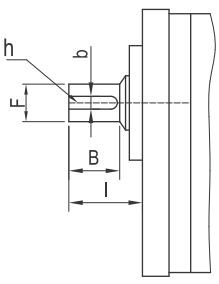
Ax conic - *Conical shaft*
Variantele 1; 2; 3 - *Variants 1; 2; 3*



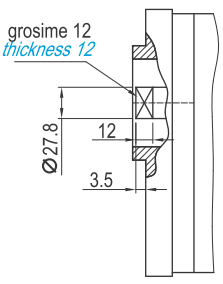
Ax canelat
Grooved shaft
Variantele 5; 6; A; D
Variants 5; 6; A; D



Ax cilindric
Cylindrical shaft
Varianta B, C
Variant B, C



Cep DEUTZ
Varianta 8
DEUTZ Pins
Variant 8



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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

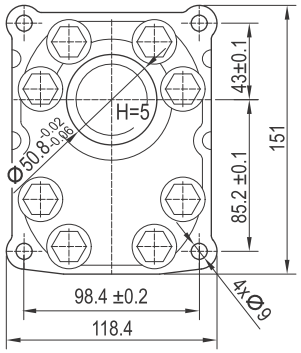
POMPE SIMPLE CU ROŢI DINŢATE HP3 - *SIMPLE GEAR PUMPS HP3*

Axe de antrenare - *Driving shafts*

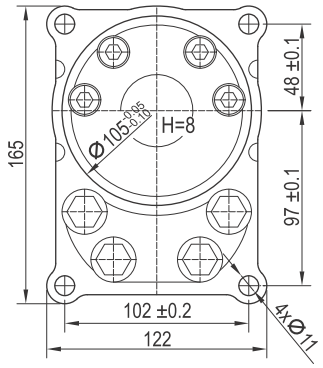
Variantă *Variant*	Tip ax - *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k (mm)	h (mm)	b (mm)	Mmax (Nxm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	48	36	20	M 16x1,5	1:5	13,6	5	540
2	Conic 1:8 PLESSEY *Conical 1:8 PLESSEY*	47	32,5	19	M 14x1,5	1:8	12,2	4	420
3	Conic 1:8 HEE *Conical 1:8 HEE*	47	21,3	20,3	M 14x1,5	1:8	12,2	4	420
5	Canelat *Involute spline* B 28x25 DIN 5482	40	—	27,6	—	—	—	—	370
6	Canelat SAE *Involute spline* SAE 13T 16/32 Dp 5482	41,2	30	21,8	—	—	—	—	250
A	Canelat P.t.o. shaft 6x21x25 STAS 1769-68	49	36	25	—	—	—	—	300
B	Cilindric ϕ22,2 *Cyllindrical ϕ22.2*	41	34	$22,2^{\pm 0.01}$	—	—	13,6	6,35	250
C	Cilindric ϕ19,05 *Cylindrical ϕ19.05*	39,7	30,2	$19,05^{-0.02}$	—	—	11,6	4,75	200
D	Canelat SAE 15T 16/32 Dp *Involute spline SAE 15T 16/32 Dp*	42,2	30	25,4			—	—	300

Flanse prindere - *Fastening Flanges*

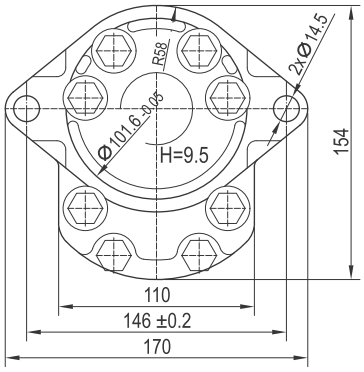
Varianta 1 - *Variant 1*
PLESSEY (4xØ9)



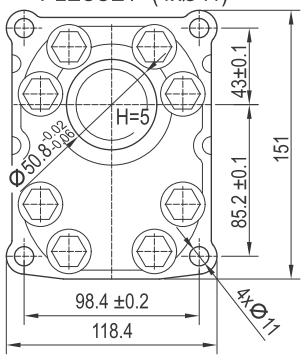
Varianta 2 - *Variant 2*
DIN



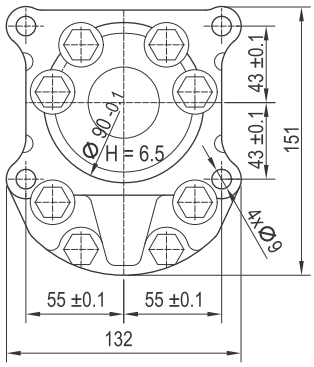
Varianta 3 - *Variant 3*
SAE B



Varianta 4 - *Variant 4*
PLESSEY (4xØ11)

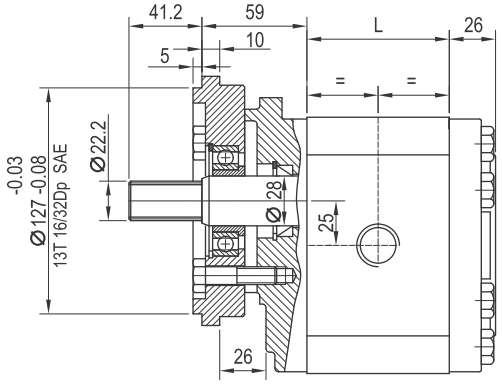


Varianta 7 - *Variant 7*

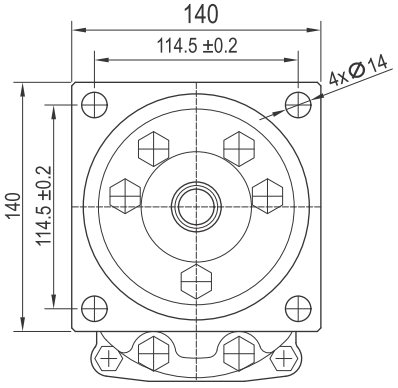


Varianta HPR3
cu rulment frontal

Variant HPR3
with front bearing

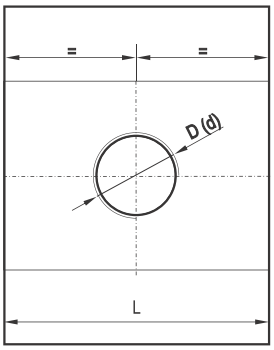


Varianta 6 - *Variant 6*
SAE C
140



POMPE SIMPLE CU ROŢI DINŢATE HP3 - *SIMPLE GEAR PUMPS HP3*

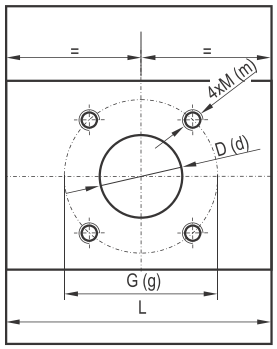
Flanşe aspiraţie - refulare / *Inlet-outlet ports*



tip 1 - *type 1*

BSPP

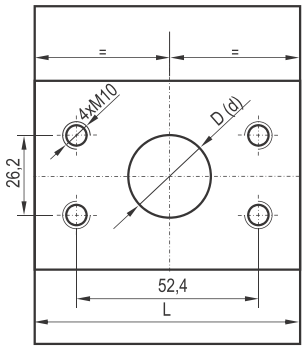
Vg cm³/rot *ccm/rev*	L mm	D mm	d mm
19,5	73,3	G3/4"	G3/4"
22,5	75,4		
24,5	76,7	G1"	
28	79		
32,7	82,3		
38	86		
42,6	89,1		
45	90,7	G1 1/4"	
50	94		
56	98,2	G1 1/2"	G1"
60	101		
63	103		



tip 2 - *type 2*

DIN

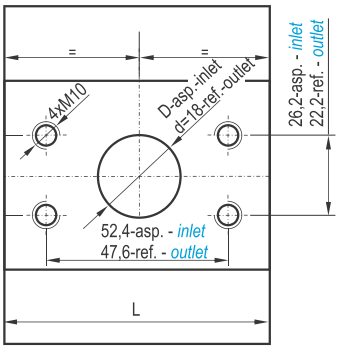
Vg cm³/rot *ccm/rev*	L mm	Aspiraţie - *Inlet*			Refulare - *Outlet*		
		D mm	G mm	M mm	d mm	g mm	m mm
19,5	73,3	26	55	M8	18	55	M8
22,5	75,4						
24,5	76,7						
28	79						
32,7	82,3						
38	86						
42,6	89,1						
45	90,7						
50	94						
56	98,2						
60	101	32	63,5	M10	20		
63	103						



tip 3 - *type 3*

SAE

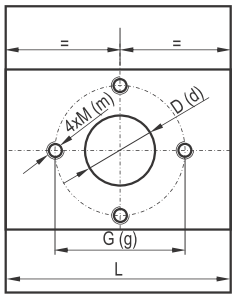
Vg cm³/rot *ccm/rev*	L mm	D mm	d mm
19,5	73,3	20	16
22,5	75,4		
24,5	76,7	27	20
28	79	28	
32,7	82,3	29	
38	86	30	
42,6	89,1	30	
45	90,7	31	
50	94	32	
56	98,2	33	
60	101	34	
63	103	34	



tip 6 - *type 6*

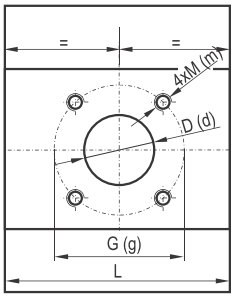
SAE

Vg cm³/rot *ccm/rev*	L mm	D mm	d mm
19,5	73,3	26	18
22,5	75,4		
24,5	76,7		
28	79		
32,7	82,3		
38	86		
42,6	89,1		
45	90,7		
50	94		
56	98,2		
60	101	32	
63	103		

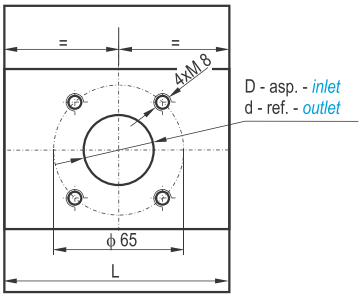


tip 4 - *type 4*

PLESSEY; HEE



tip 5 - *type 5*



tip 7 - *type 7*

Vg cm³/rot *ccm/rev*	L mm	Aspiraţie - *Inlet*			Refulare - *Outlet*		
		D mm	G mm	M mm	d mm	g mm	m mm
19,5	73,3	19	39,7	M8	19	39,7	M8
22,5	75,4						
24,5	76,7						
28	79	27	50,8	M10			
32,7	82,3						
38	86						
42,6	89,1						
45	90,7						
50	94						
56	98,2						
60	101	34	63,5				
63	103						

Vg cm³/rot *ccm/rev*	L mm	Aspiraţie - *Inlet*			Refulare - *Outlet*		
		D mm	G mm	M mm	d mm	g mm	m mm
19,5	73,3	19	39,7	M8	19	39,7	M8
22,5	75,4						
24,5	76,7						
28	79	27	50,8	M10			
32,7	82,3						
38	86						
42,6	89,1						
45	90,7						
50	94						
56	98,2						
60	101	32	63,5				
63	103						

Vg cm³/rot *ccm/rev*	L mm	D mm	d mm
19,5	73,3	22	19
22,5	75,4		
24,5	76,7		
28	79		
32,7	82,3		
38	86	26	22
42,6	89,1		
45	90,7		
50	94		
56	98,2	32	25
60	101		
63	103		

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 SIMPLE CU ROŢI DINŢATE HP3 - *SIMPLE GEAR PUMPS HP3*

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg (cm^3/rot *ccm/rev)*	L (mm)	η_v %	Presiune - *Pressure*		Turaţie - *Speed*			Temperatură *Temperature* (°C)	Vâscozitate *Viscosity* (cSt)	Finețe filtrare *Filtration* (μm)
			Pn (bar)	Pmax (bar)	n_n (rot/min *rev/min)*	n_{min} (rot/min rev/min)	n_{max} (rot/min rev/min)			
19,5	73,3	90	210	230	1500	750	2800	-15...+80 recomandat *recommended* 0...60	12...2000 recomandat *recommended* 25...200	max. 25 recomandat *recommended* 16
22,5	75,4	91								
24,5	76,7	92								
28	79	93								
32,7	82,3	94								
38	86	95				500	2400			
42,6	89,1	95								
45	90,7	96	200	220						
50	94	96	180	200						
56	98,2	97	160	180						
60	101	97	150	170						
63	103	98	140	160						

Notă:
- Pn: presiunea nominală la care se garantează funcţionarea 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).
- La cerere se pot construi pompe cu:
  a. supapa cu retur extern (la bazin);
  b. supapa cu retur intern (la aspiraţia pompei);
  c. regulator de debit cu supapă, cu debit excedentar returnat în exterior;
  d. regulator de debit cu supapă, cu debit excedentar returnat în aspiraţie.
- Funcţionarea pompelor la turaţii ridicate, fără cavitaţie, este posibilă numai cu o aspiraţie suficient de largă.
- Presiunea de aspiraţie nu va scădea 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 guaranted.*
- *Volumetric efficiency η_v 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:*
  a. valve with external return (to the tank);
  b. valve with internal return (to the inlet port);
  c. flow control valve with external return;
  d. flow control valve with internal return.
- *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.*

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The producer reserves its right to make changes in the present documentation, to increase the quality of the product.