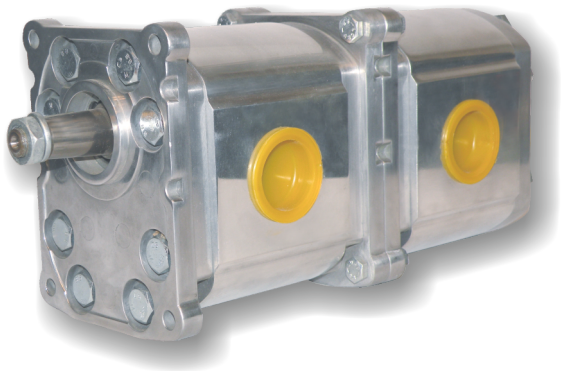
POMPE DUBLE CU ROŢI DINŢATE HP33
DOUBLE GEAR PUMPS HP33



Descriere şi utilizare

Pompele duble HP33, au etanşare intermediară între trepte. (fiecare treaptă poate lucra pe circuite diferite)
Fiecare treaptă păstrează caracteristicile 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 200Nm.

Description and use

The double pumps HP33 have intermediate sealing between the stages; (each stage can work in different circuites).
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 200 Nm.

Codificare *Codification*

HP 33	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* treapta 1- *stage1*
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* treapta 1- *stage1*
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 aspiraţie *Inlet port* treapta 2- *stage 2*
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* treapta 2- *stage 2*
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.

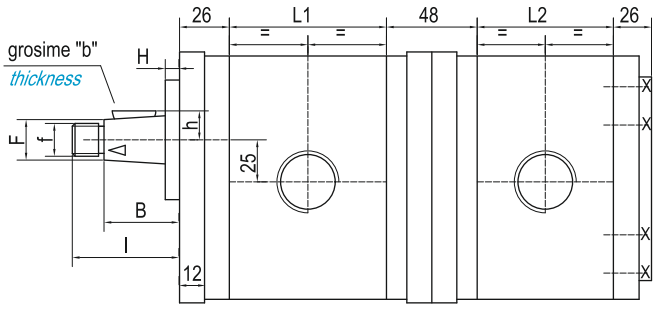
Type "O" closed; if inlet or outlet ports are not on the body of the pump.

Exemplu - *Example*

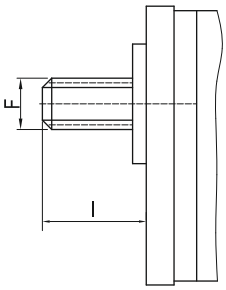
HP 33	-	32,7	-	2	-	1	-	4	-	4	-	A

Axe antrenare - *Driving shafts*

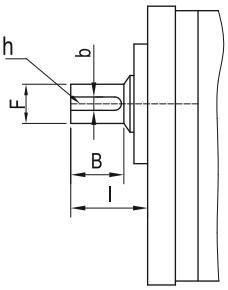
Ax conic - *Conical shafts*
Variantele 1; 2; 3 - *Variants 1; 2; 3*



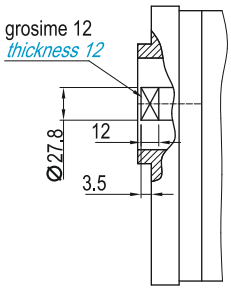
Ax canelat
Grooved shaft
Variantele 5; 6; A; D
Variants 5; 6; A; D



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



Cep DEUTZ
Varianta 8
DEUTZ Pins
Variant 8



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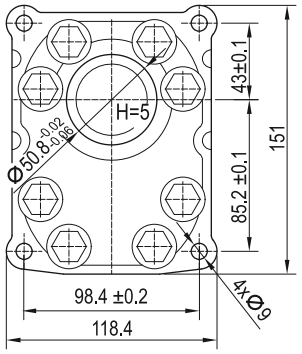
POMPE DUBLE CU ROŢI DINŢATE HP33 - *DOUBLE GEAR PUMPS HP33*

Axe de antrenare - *Driving shafts*

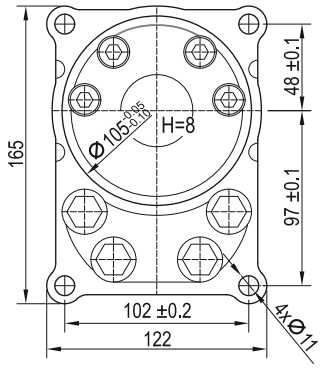
Variantă *Variant*	Tip ax - *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k (mm)	h (mm)	b (mm)	Mmax (Nxm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	48	36	20	M 16x1,5	1:5	13,6	5	540
2	Conic 1:8 PLESSEY *Conical 1:8 PLESSEY*	47	32,5	19	M 14x1,5	1:8	12,2	4	420
3	Conic 1:8 HEE *Conical 1:8 HEE*	47	21,3	20,3	M 14x1,5	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*

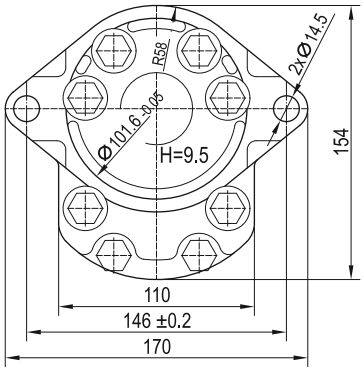
Varianta 1 - *Variant 1*
PLESSEY (4xØ9)



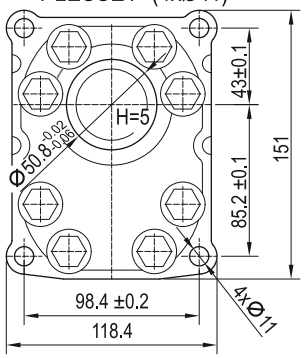
Varianta 2 - *Variant 2*
DIN



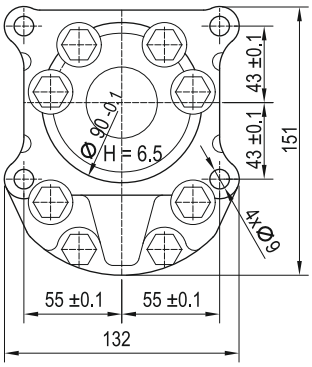
Varianta 3 - *Variant 3*
SAE B



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

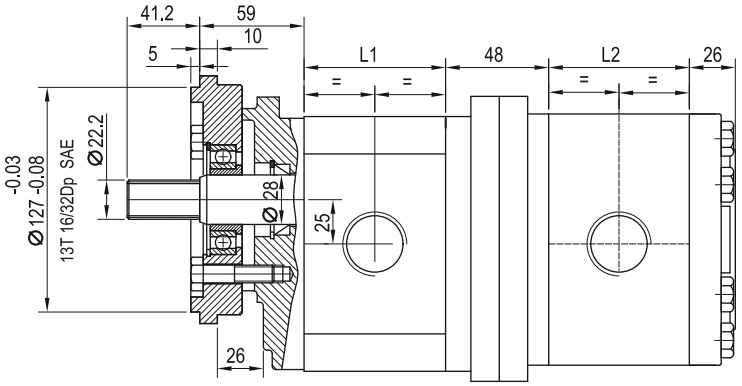


Varianta 7 - *Variant 7*

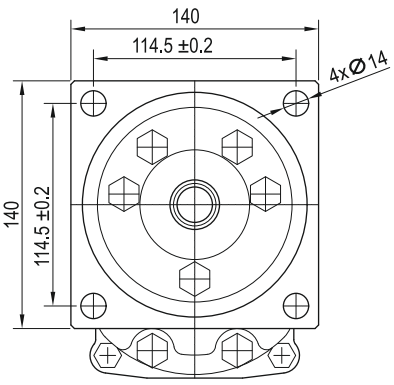


Varianta HPR3
cu rulment frontal

Variant HPR3
with front bearing

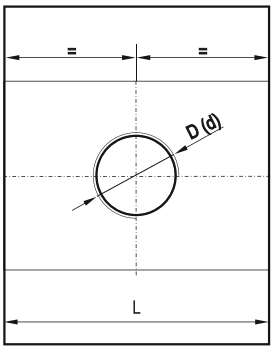


Varianta 6 - *Variant 6*
SAE C



POMPE DUBLE CU ROŢI DINŢATE HP33 - DOUBLE GEAR PUMPS HP33

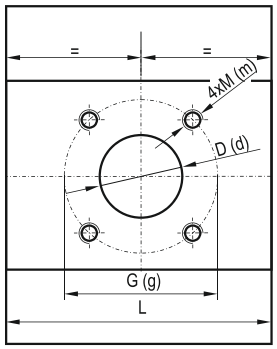
Flanşe aspiraţie - refulare / *Inlet-outlet ports*



tip 1 - *type 1*

BSPP

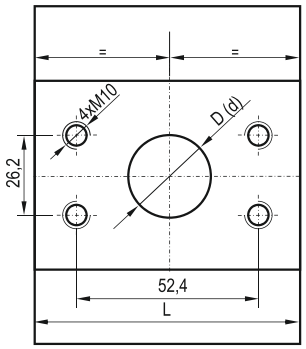
Vg cm³/rot *ccm/rev*	L1 ; L2 mm	D mm	d mm
19,5	73,3	G3/4"	G3/4"
22,5	75,4		
24,5	76,7	G1"	
28	79		
32,7	82,3		
38	86		
42,6	89,1		
45	90,7	G1 1/4"	
50	94		
56	98,2	G1 1/2"	G1"
60	101		
63	103		



tip 2 - *type 2*

DIN

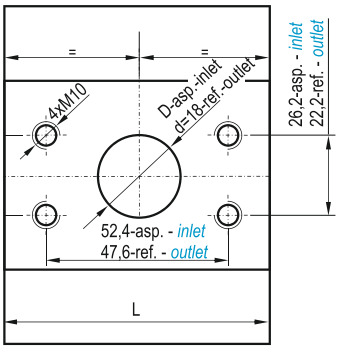
Vg cm³/rot *ccm/rev*	L1 ; L2 mm	Aspiraţie - *Inlet*			Refulare - *Outlet*		
		D mm	G mm	M mm	d mm	g mm	m mm
19,5	73,3	26	55	M8	18	55	M8
22,5	75,4						
24,5	76,7						
28	79						
32,7	82,3						
38	86						
42,6	89,1						
45	90,7						
50	94						
56	98,2						
60	101	32	63,5	M10	20		
63	103						



tip 3 - *type 3*

SAE

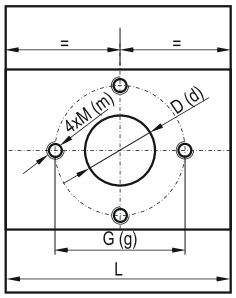
Vg cm³/rot *ccm/rev*	L1 ; L2 mm	D mm	d mm
19,5	73,3	20	16
22,5	75,4		
24,5	76,7	27	20
28	79	28	
32,7	82,3	29	
38	86	30	
42,6	89,1	30	
45	90,7	31	
50	94	32	
56	98,2	33	
60	101	34	
63	103	34	



tip 6 - *type 6*

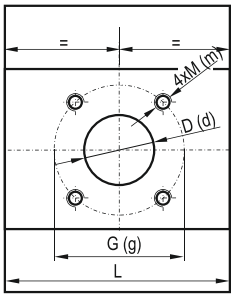
SAE

Vg cm³/rot *ccm/rev*	L1 ; L2 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		

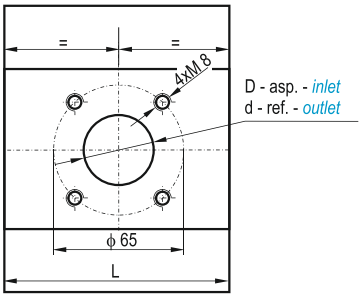


tip 4 - *type 4*

PLESSEY; HEE



tip 5 - *type 5*



tip 7 - *type 7*

Vg cm³/rot *ccm/rev*	L1 ; L2 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*	L1 ; L2 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*	L1 ; L2 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		

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POMPE DUBLE CU ROŢI DINŢATE HP33 - *DOUBLE GEAR PUMPS HP33*

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg (cm^3/rot *ccm/rev)*	L1 ; L2 (mm)	η_v %	**Presiune - *Pressure***		**Turație - *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	20 concentrație *concentration* max. 0.05 %
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 nominala la care se garantează funcționarea 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).
- La cerere se pot construi pompe cu:
  a. supapa cu retur extern (la bazin);
  b. supapa cu retur intern (la aspirația pompei);
  c. regulator de debit cu supapă, cu debit excedentar returnat în exterior;
  d. regulator de debit cu supapă, cu debit excedentar returnat în aspirație.
- Funcționarea pompelor la turații ridicate, fără cavitație, este posibilă numai cu o aspirație suficient de largă.
- Presiunea de aspirație nu va scădea sub 0.7 bar abs.

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).*
- *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.*

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