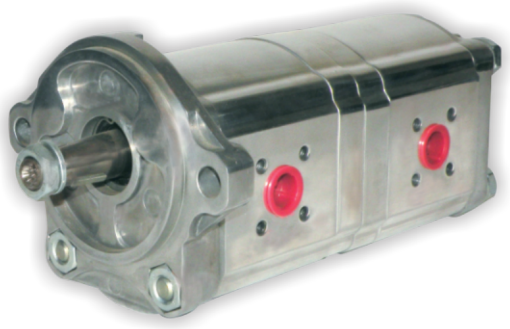
POMPE DUBLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

Descriere şi utilizare

Sunt pompe duble bidirecţionale cu un drenaj extern comun.
Din cauza drenajului extern comun, aceste pompe nu au etanşare intermediară între trepte.
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

Are double bidirectional pumps with a common external drain.
Because the common external drain, these pumps have not intermediate sealing between the stages.
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*

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

D	Variante PLESSEY
E	*PLESSEY Variants*
V	Variante SAE
W	*SAE Variants*
A	Variante DIN
B	*DIN Variants*
F	Variante filetate BSPP
G	*Threaded Variants BSPP*
J	
K	Variante filetate ISO (metric)
N	*Threaded Variants ISO (metrical)*
P	
Q	
R	
S	Variante filetate UNF
U	*Threaded Variants UNF*
Y	
0	Obturată *Closed*

Flanşa aspiraţie *Inlet port* / **Flanşa refulare** *Outlet port* (treapta 2)

D	Variante PLESSEY
E	*PLESSEY Variants*
V	Variante SAE
W	*SAE Variants*
A	Variante DIN
B	*DIN Variants*
F	Variante filetate BSPP
G	*Threaded Variants BSPP*
J	
K	Variante filetate ISO (metric)
N	*Threaded Variants ISO (metrical)*
P	
Q	
R	
S	Variante filetate UNF
U	*Threaded Variants UNF*
Y	
0	Obturată *Closed*

Sens *Rotation*

B bidirecţional

"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*

BHP 22	–	11.3+4	–	3	3	G	G	–	G	G	–	B

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)*

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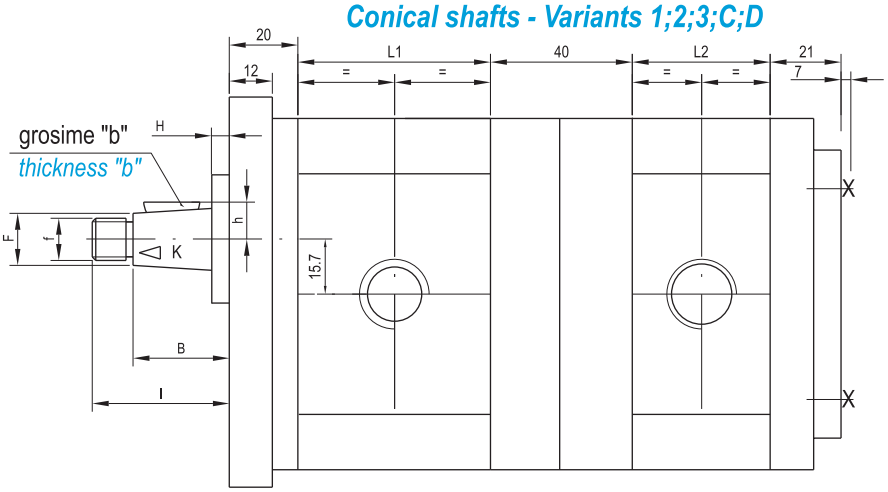
POMPE DUBLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

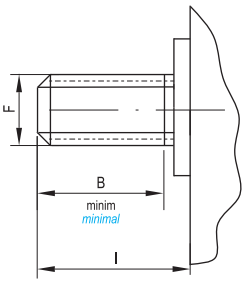
Axe antrenare - *Driving shafts*

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

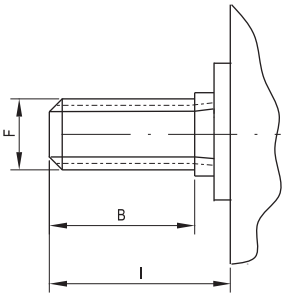


Axe canelate - *Grooved shafts*

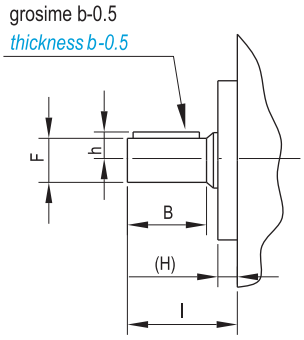
Varianta A; 5
Variant A; 5



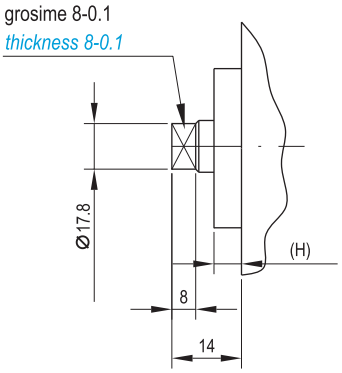
Varianta L
Variant L



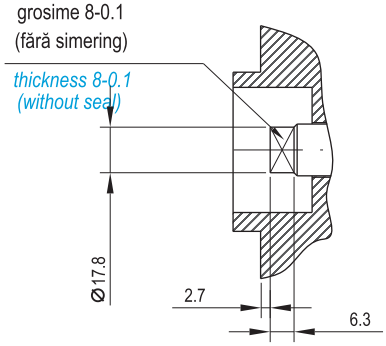
Axe cilindrice
Variantele O;E;T
Cylindrical shafts
Variants O;E;T



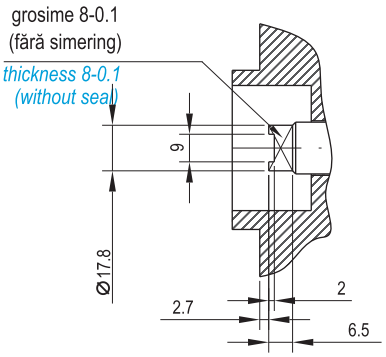
Cep DEUTZ lung
Varianta F
DEUTZ pin - long
Variant F



Cep DEUTZ scurt
Varianta B
DEUTZ pin - short
Variant B



Cep DEUTZ scurt
Varianta G
DEUTZ pin - short
Variant G

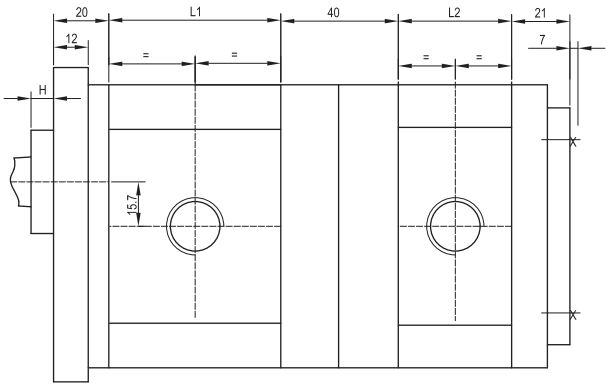


Axe antrenare - *Driving shafts*

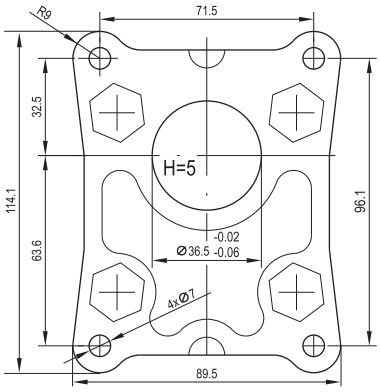
Varianta *Variant*	Tip ax *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k	h (mm)	b (mm)	Mmax (Nm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	38	24.8	13.6	M12x1.25	1:5	9.2	3	150
C	Conic 1:5 (majorat) *Conical 1:5 (increased)*	40	26.6	14	M12x1.25	1:5	9.6	3	160
D	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	40.5	27.3	13.6	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 BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

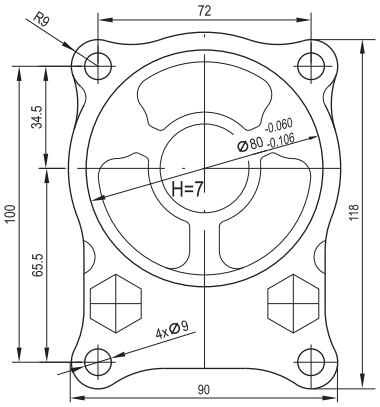
Flanşe de prindere - *Fastening Flanges*



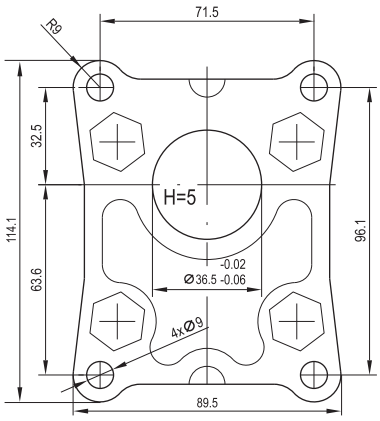
Varianta 1 (Plessey) - *Variant 1 (Plessey)*



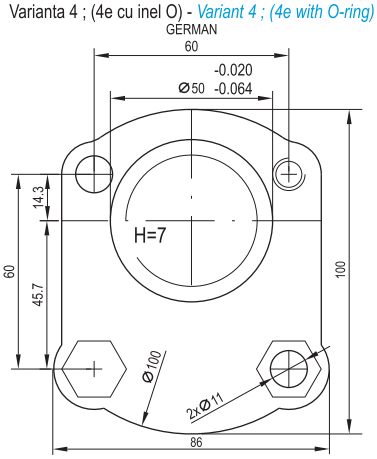
Varianta 2 (DIN) - *Variant 2 (DIN)*



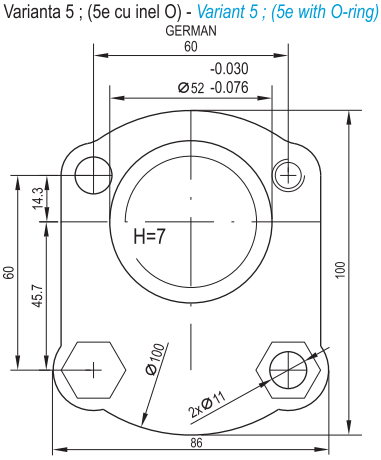
Varianta 3 (Plessey) - *Variant 3 (Plessey)*



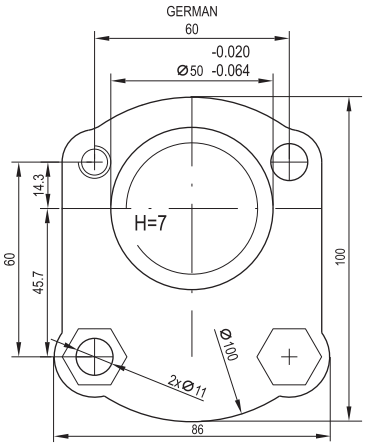
Varianta 4 ; (4e cu inel O) - *Variant 4 ; (4e with O-ring)*



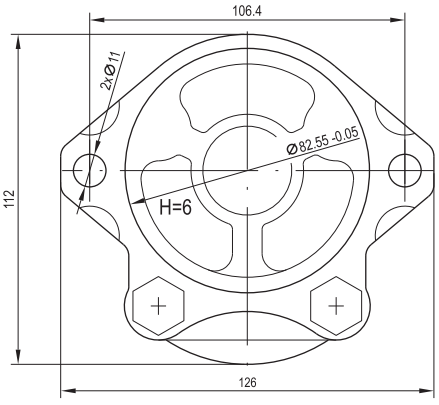
Varianta 5 ; (5e cu inel O) - *Variant 5 ; (5e with O-ring)*



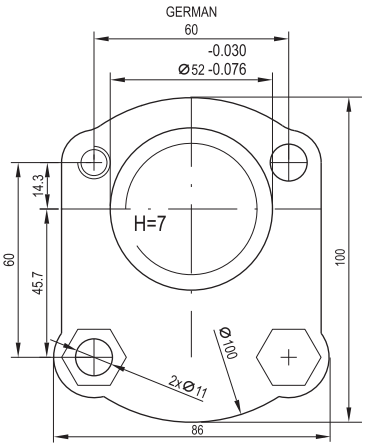
Varianta 6 ; (6e cu inel O) - *Variant 6 ; (6e with O-ring)*



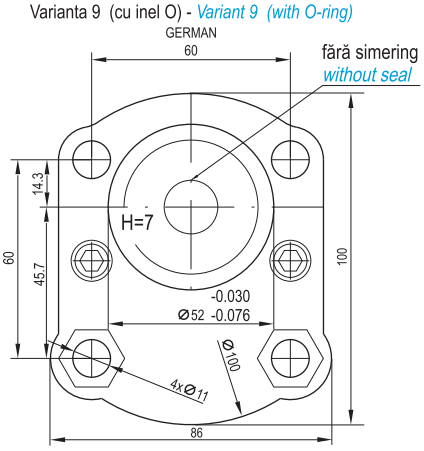
Varianta 7 (SAE "A") - *Variant 7 (SAE "A")*



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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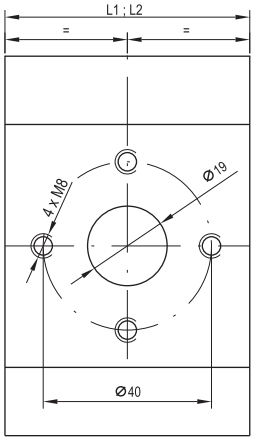
POMPE DUBLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

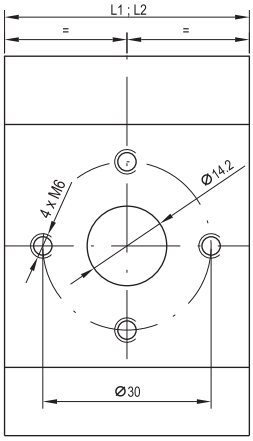
Flanşe de aspiraţie-refulare - *Inlet-outlet ports*

Variante PLESSEY - *PLESSEY variants*

tip D - *type D*



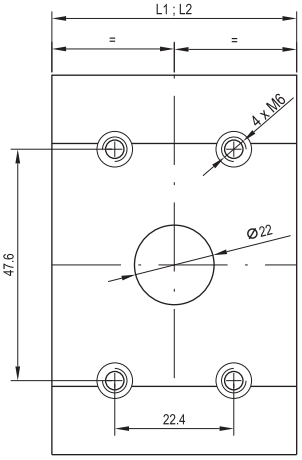
tip E - *type E*



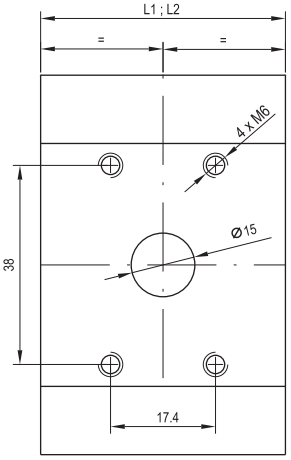
Vg cm3/rev	L1 ; L2 mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

Variante SAE - *SAE variants*

tip V - *type V*



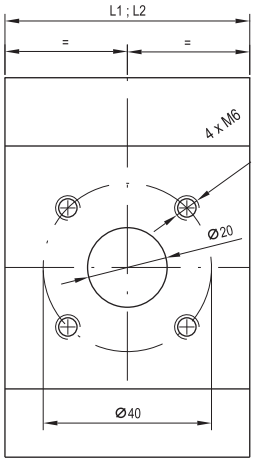
tip W - *type W*



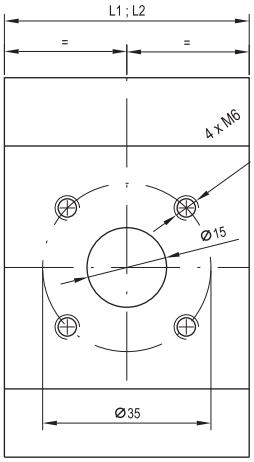
Numai pentru Vg = 11,3 – 27,9 cm^3/rot.
Only for Vg = 11,3– 27,9 cmc/rev.

Variante DIN - *DIN variants*

tip A - *type A*



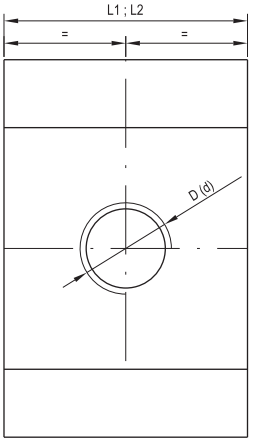
tip B - *type B*



Variante filetate BSPP
BSPP threaded variants

Vg cm3/rev	L1 ; L2 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 F - *type F*		tip G - *type G*		tip J - *type J*	
inlet	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*
D	d	D	d	D	d
G3/4"	G3/4"	G1/2"	G1/2"	G3/8"	G3/8"



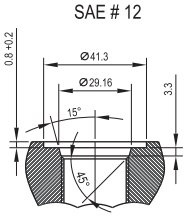
Variante filetate ISO 6149 (metric) - *ISO 6149 threaded variants (metrical)*

Vg cm3/rev	L1 ; L2 mm	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*
		D	d	D	d	D	d	D	d	D	d
4	44.7	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										
25	79.2										
27.9	84										

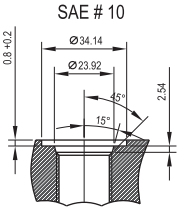
Variante filetate UNF - *UNF threaded variants*

tip S - *type S*		tip U - *type U*		tip Y - *type Y*	
inlet	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*
D	d	D	d	D	d
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

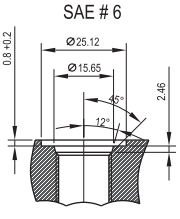
1 1/16" - 12 UNF
SAE # 12



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 de lucru;
- varianta blocată; dacă aspiraţia sau refularea nu sunt pe corpul pompei;

Note:
- inlet should be large enough, in conformity with Vg and the working speed;
- closed variant; if inlet or outlet ports are not on the body of the pump.

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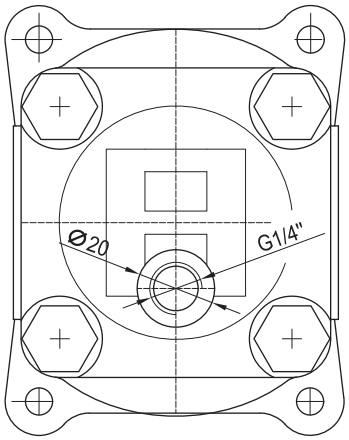
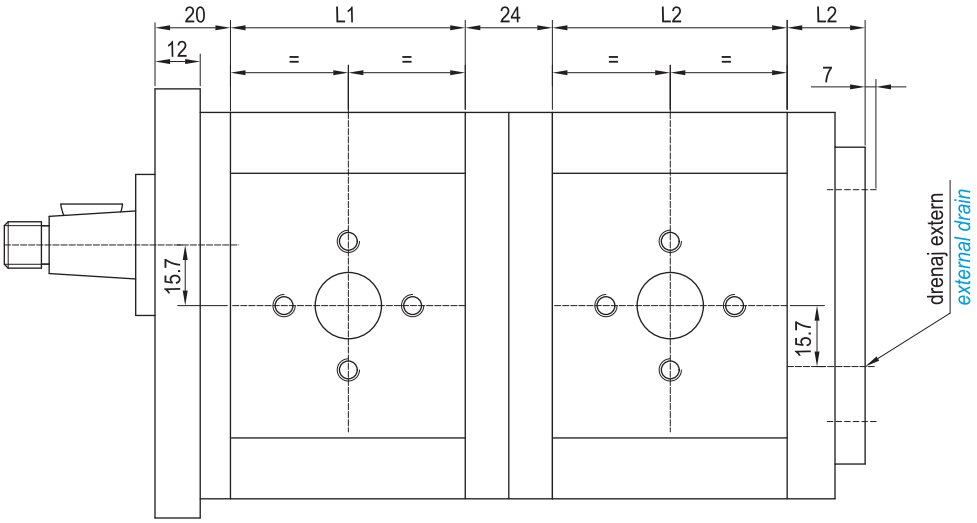
POMPE DUBLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

Pompe bidirecţionale BHP22 (cu drenaj extern)
Bidirectional pumps BHP22 (with external drain)





Presiunea maximă la drenajul extern 2 bar.
Pompa cu drenaj extern poate lucra cu presiune ridicată la aspiraţia alternativă.

Maximal pressure at the external drain 2 bar.
The pump with external drain can work with high pressure at the alternative inlet.

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg cm^3/rot *ccm/rev*	L1; L2 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			

POMPE DUBLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP22
BIDIRECTIONAL DOUBLE GEAR PUMPS BHP22

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 scădea sub 0,7 bar abs.
- Este interzisă încărcarea axului de antrenare al pompei cu sarcini radiale sau axiale în timpul utilizării.

Notă:

- *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.*