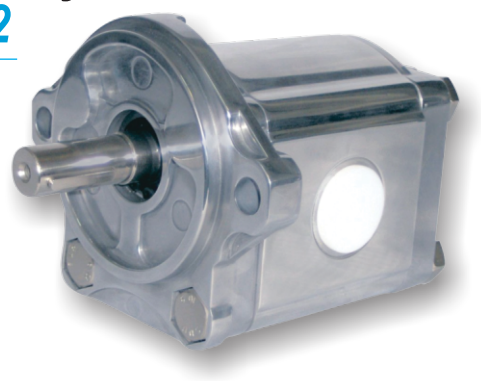
POMPE SIMPLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2



Descriere şi utilizare

Pompele bidirecţionale pot funcţiona în ambele sensuri de rotaţie, au două aspiraţii-refulări alternative (în mod uzual de acelaşi tip) şi un drenaj extern sau intern (în capac).
Pompele cu drenaj extern pot lucra cu presiuni ridicate pe aspiraţia alternativă a pompei.
Pompele cu drenaj intern pot lucra cu o presiune de max. 2 bar pe aspiraţia alternativă a pompei.

Description and use

The bidirectional gear pumps can work with left or right revolution sense have 2 alternative inlets-outlets (usualy the same type) and an external or internal drain in the back cover.
The pumps with external drain can work with high pressure on the alternative inlet of pump.
The pumps with internal drain can work with max. 2 bar pressure on the alternative inlet of the pump.

Codificare – *Codification*

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

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

Sens / *Rotation*	
B bidirecţional (drenaj extern) *(external drain)*	↻
BI bidirecţional (drenaj intern) *(internal drain)*	

"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 2	–	11.3	–	3	3	G	G	-	B

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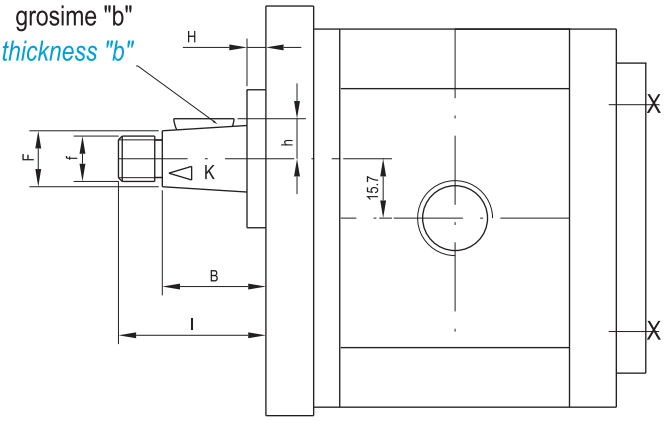
POMPE SIMPLE BIDIRECȚIONALE CU ROȚI DINȚATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2

Axe antrenare - *Driving shafts*

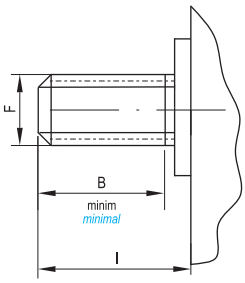
Axe conice - Variantele 1;2;3;C;D
Conical shafts - Variants 1;2;3;C;D

grosime "b"
thickness "b"

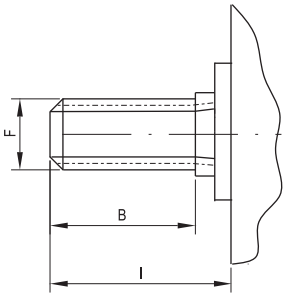


Axe canelate - *Grooved shafts*

Varianta A; 5
Variant A; 5

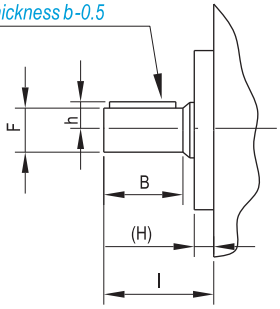


Varianta L
Variant L



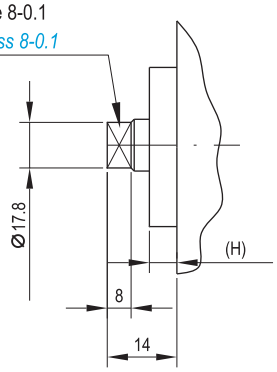
Axe cilindrice
Variantele O;E;T
Cylindrical shafts
Variants O;E;T

grosime b-0.5
thickness b-0.5



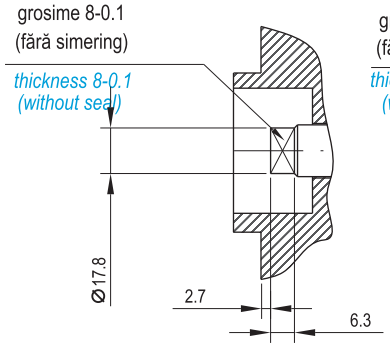
Cep DEUTZ lung
Varianta F
DEUTZ pin - long
Variant F

grosime 8-0.1
thickness 8-0.1



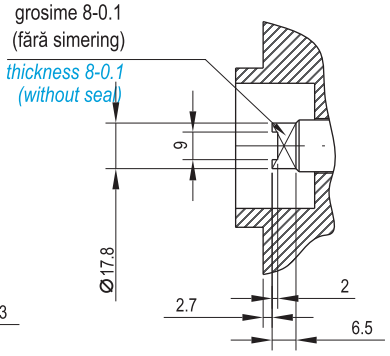
Cep DEUTZ scurt
Varianta B
DEUTZ pin - short
Variant B

grosime 8-0.1
(fără simering)
thickness 8-0.1
(without seal)



Cep DEUTZ scurt
Varianta G
DEUTZ pin - short
Variant G

grosime 8-0.1
(fără simering)
thickness 8-0.1
(without seal)

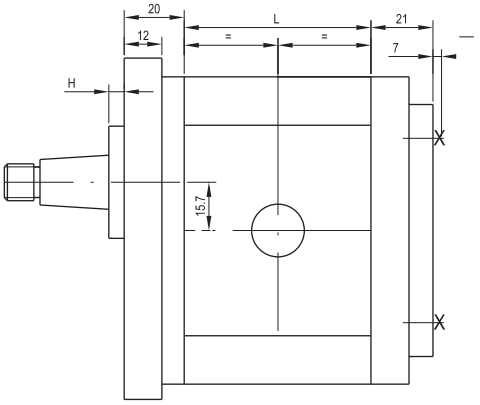


Axe antrenare - *Driving shafts*

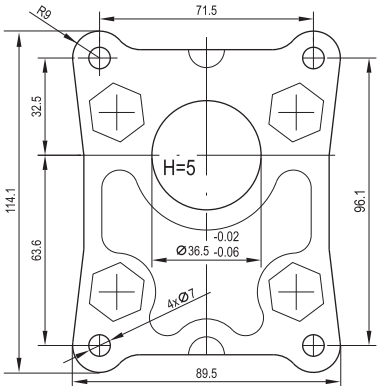
Varianta *Variant*	Tip ax *Shaft type*	l (mm)	B (mm)	F (mm)	f (mm)	k	h (mm)	b (mm)	Mmax (Nm)
1	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	38	24.8	13.6	M12x1.25	1:5	9.2	3	150
C	Conic 1:5 (majorat) *Conical 1:5 (increased)*	40	26.6	14	M12x1.25	1:5	9.6	3	160
D	Conic 1:5 BOSCH *Conical 1:5 BOSCH*	40.5	27.3	13.6	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 BIDIRECŢIONALE CU ROŢI DINŢATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2

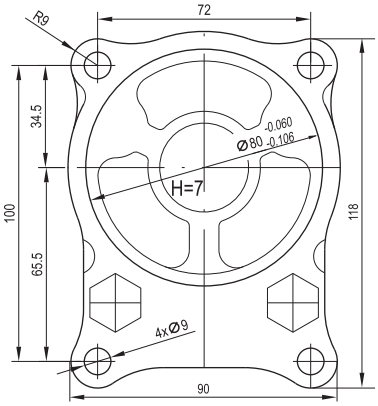
Flanşe de prindere - *Fastening Flanges*



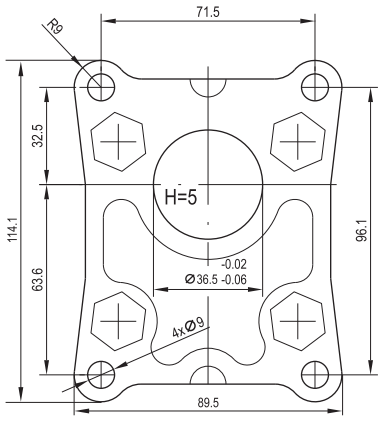
Varianta 1 (Plessey) - *Variant 1 (Plessey)*



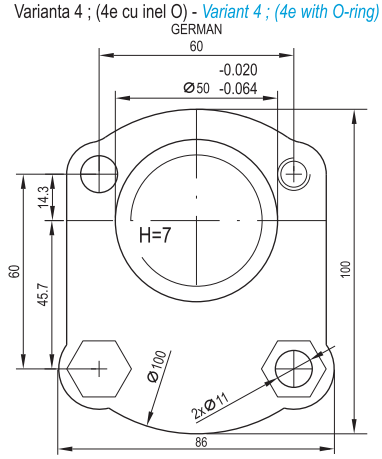
Varianta 2 (DIN) - *Variant 2 (DIN)*



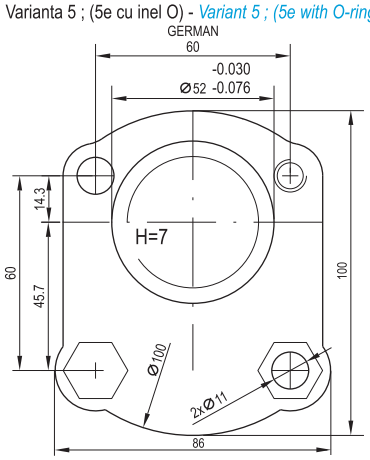
Varianta 3 (Plessey) - *Variant 3 (Plessey)*



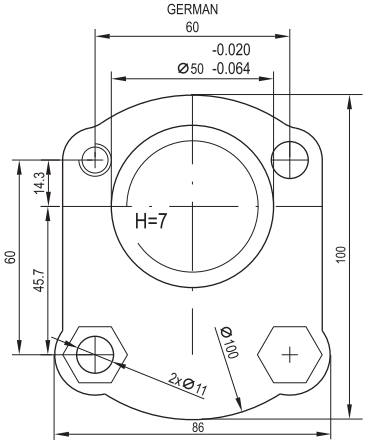
Varianta 4 ; (4e cu inel O) - *Variant 4 ; (4e with O-ring)*



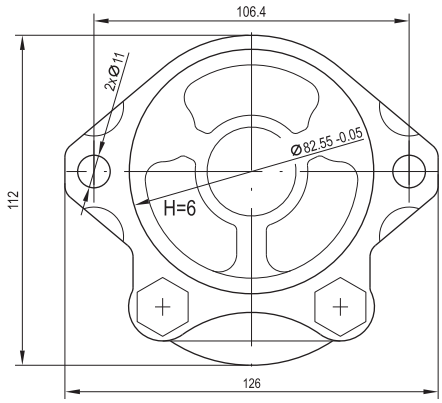
Varianta 5 ; (5e cu inel O) - *Variant 5 ; (5e with O-ring)*



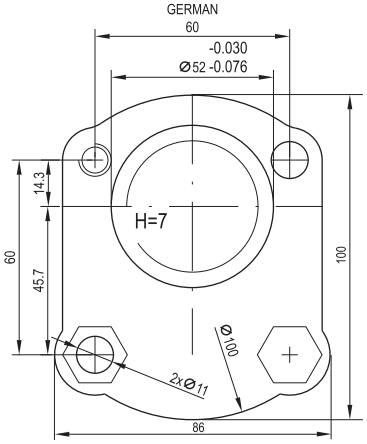
Varianta 6 ; (6e cu inel O) - *Variant 6 ; (6e with O-ring)*



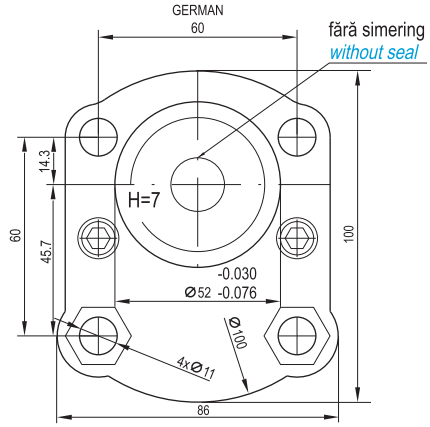
Varianta 7 (SAE "A") - *Variant 7 (SAE "A")*



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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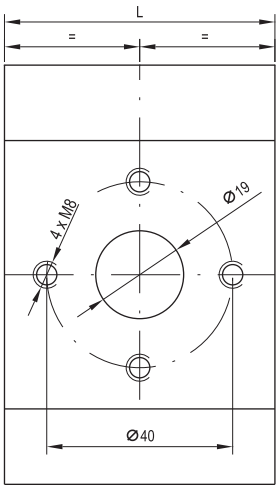
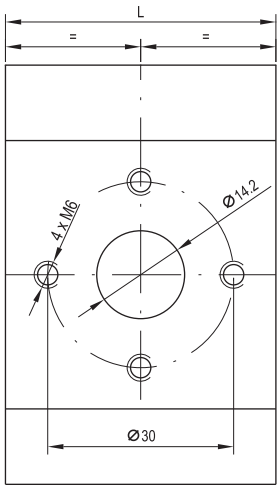
POMPE SIMPLE BIDIRECŢIONALE CU ROŢI DINŢATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2

Variante PLESSEY - *PLESSEY variants*

tip D - *type D*



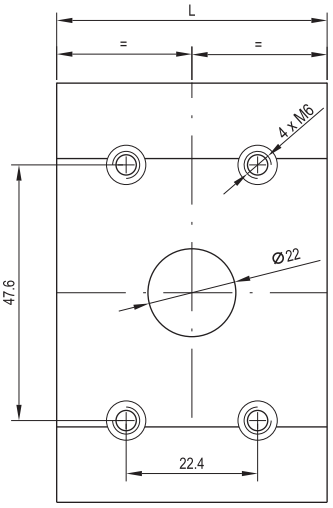
tip E - *type E*



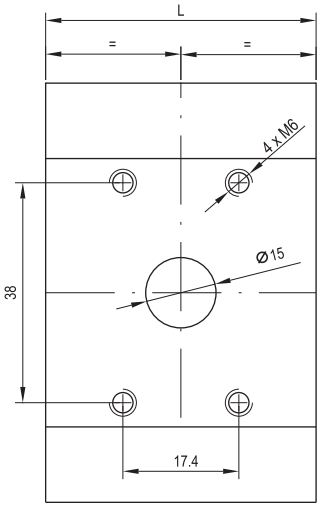
Vg cm3/rev	L mm
4	44.7
4.5	45.6
5.5	47.2
6.3	48.6
8.2	51.7
11.3	56.8
14	61.3
16	64.7
19	69.7
22.5	75.1
25	79.2
27.9	84

Variante SAE - *SAE variants*

tip V - *type V*

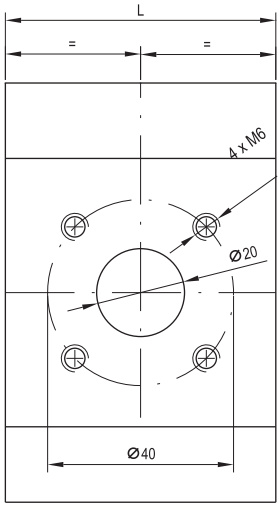


tip W - *type W*

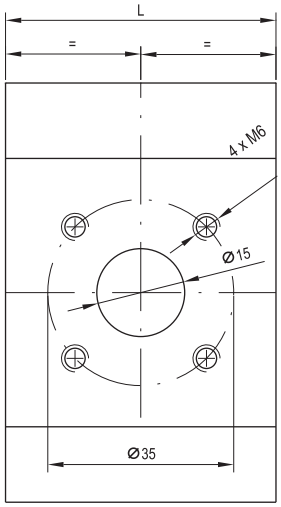


Numai pentru Vg = 11,3 – 27,9 cm^3/rot.
Only for Vg = 11,3– 27,9 cmc/rev.

tip A - *type A*

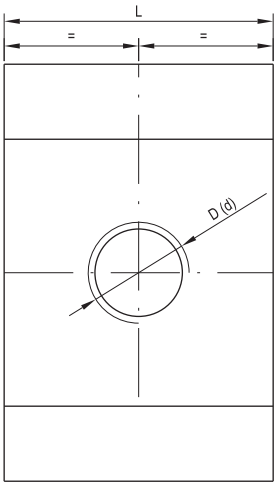


tip B - *type B*



Variante filetate BSPP - *BSPP threaded variants*

Vg cm3/rev	L mm	tip F - *type F*		tip G - *type G*		tip J - *type J*	
		inlet	*outlet*	*inlet*	*outlet*	*inlet*	*outlet*
		D	d	D	d	D	d
4	44.7	G3/4"	G3/4"	G1/2"	G1/2"	G3/8"	G3/8"
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						



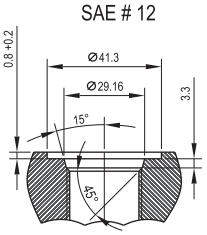
Variante filetate ISO 6149 (metric) - *ISO 6149 threaded variants (metrical)*

Vg cm3/rev	L 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										

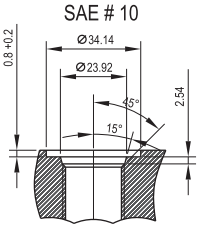
Variante filetate UNF - *UNF threaded variants*

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 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

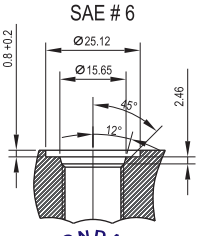
1 1/16" - 12 UNF
SAE # 12



7/8" - 14 UNF
SAE # 10



9/16" - 18 UNF
SAE # 6



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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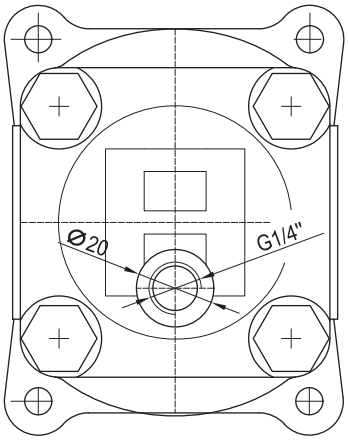
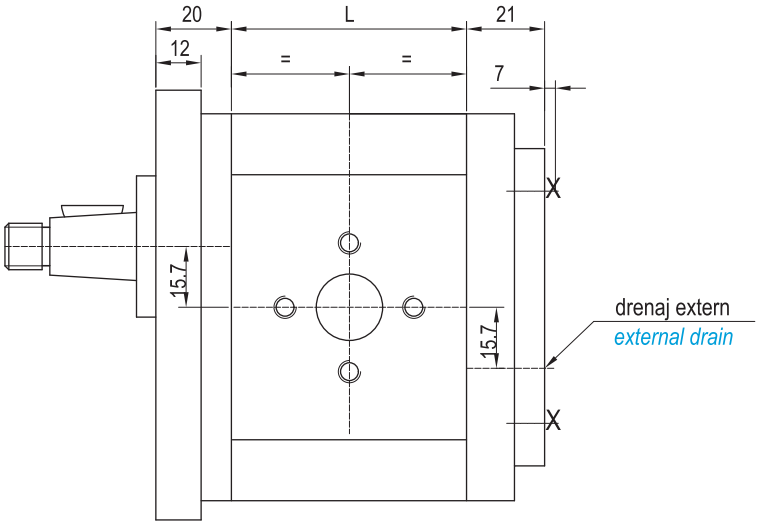
POMPE SIMPLE BIDIRECȚIONALE CU ROȚI DINȚATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2

Pompe bidirecţionale BHP2 cu drenaj extern
Bidirectional pumps BHP2 with external drain

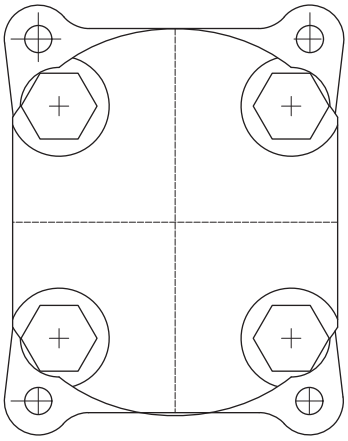


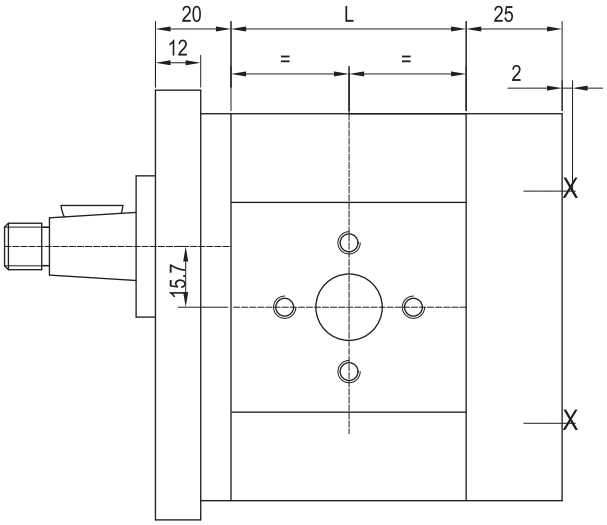


Presiunea maximă la drenajul extern 2 bar.
Pompa cu drenaj extern poate lucra cu presiune ridicată la aspiraţia alternativă.

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

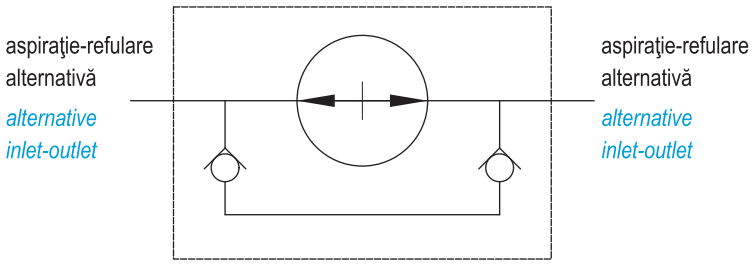
Pompe bidirecţionale BHP2 cu drenaj intern
Bidirectional pumps BHP2 with internal drain





Pompa cu drenaj intern poate lucra cu presiune max. 2 bar aspiraţia alternativă.

The pump with internal drain can work with max. 2 bar pressure at the alternative inlet.



POMPE SIMPLE BIDIRECȚIONALE CU ROȚI DINȚATE BHP2
SIMPLE BIDIRECTIONAL GEAR PUMPS BHP2

CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg cm^3/rot *ccm/rev*	L mm	η_v %	η_m %	Presiune - *Pressure* (bar)		Presiune aspirație *Inlet pressure* (bar)	Turație (rot/min) *Speed (rev/min)*			Temperatura *Temperature* (°C)	Vâscozitate *Viscosity* (cSt)	Filtrare *Filtration* (µm)
				Pn	Pmax		nominal	min.	max.			
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.*