

# POMPE SIMPLE HP1 - SIMPLE GEAR PUMPS HP1

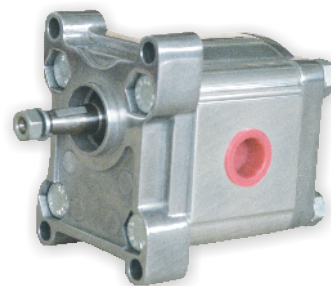
# POMPE DUBLE HP11 - DOUBLE GEAR PUMPS HP11

## Descriere și utilizare

Pompele cu roți dintate, au volum geometric constant și sunt utilizate în acționări hidraulice, la utilaje de ridicat și transport, mașini-unelte etc.

## Description and use

The gear pumps with constant displacement, are used in hydro drive installations for heavy-duty machines, equipment for transport, machine-tools etc.



## A-Pompe cu circulație radială:

- A1-Pompe de uz general HP1; HP11
- A2-Pompe duble cu o singură aspirație HAL11
- A3-Pompe bidirecționale HP1-BA; HP11-BA
- A4-Aplicații speciale HFw; HP1-CO

## A-Pumps with radial circulation:

- A1-Common use pumps HP1; HP11
- A2-Double pumps with a single inlet HAL11
- A3-Bidirectional pumps HP1-BA; HP11-BA
- A4-Special applications HFw; HP1-CO

## B-Pompe cu circulație axială:

- B1-Pompe EHTY; HTY; EHTY-T; HTY-T (sens dreapta)
- B2-Pompe EHTS; HTS; EHTS-T; HTS-T (sens stânga)
- B3-Pompe EHTCK; HTCK; EHTCK-T; HTCK-T (sens dreapta)
- B4-Pompe EHTC; HTC; EHTC-T; HTC-T (sens dreapta)

## B-Pumps with axial circulation:

- B1-Pumps EHTY; HTY; EHTY-T; HTY-T (clockwise rotation)
- B2-Pumps EHTS; HTS; EHTS-T; HTS-T (anticlockwise rotation)
- B3-Pumps EHTCK; HTCK; EHTCK-T; HTCK-T (clockwise rotation)
- B4-Pumps EHTC; HTC; EHTC-T; HTC-T (clockwise rotation)



## A - Pompe cu circulație radială - Pumps with radial circulation:

### A1 - Pompe de uz general HP1; HP11 - Common use pumps HP1; HP11

#### Codificare

#### Codification

HP1	Vg cm <sup>3</sup> /rot ccm/rev	Ax antrenare <i>Driving shaft</i>	Flanșă prindere <i>Fastening flange</i>	Flanșă aspirație <i>Inlet port</i>	Flanșă refulare <i>Outlet port</i>	Sens <i>Rotation</i>
	0,85	1 Conic 1:8 PLESSEY <i>Conical 1:8 PLESSEY</i>	1 PLESSEY (Anglia) <i>PLESSEY (England)</i>	1 4 găuri M6 / Ø 30 <i>4 holes M6 / Ø 30</i>	1 4 găuri M6 / Ø 30 <i>4 holes M6 / Ø 30</i>	A (stanga) <i>(left)</i>
	1	2 Conic 1:8 SAUER <i>Conical 1:8 SAUER</i>	2 SAUER (Germania) <i>SAUER (Germany)</i>	2 4 găuri M6 / Ø 30 <i>4 holes M6 / Ø 30</i>	2 4 găuri M6 / Ø 30 <i>4 holes M6 / Ø 30</i>	C (dreapta) <i>(right)</i>
	1,2	3 Cilindric - Ø 12 SAUER <i>Cylindrical - Ø 12 SAUER</i>	3 Ovală SAE AA <i>Oval SAE AA</i>	3 Filetat M20 x 1,5 <i>Threaded M20 x 1,5</i>	3 Filetat M20 x 1,5 <i>Threaded M20 x 1,5</i>	B <i>(bidirectional)</i>
	1,7	4 Canelat - <i>Involute spline</i> SCAN TO 12x10 (m=0,75; z=15)		4 Filetat M18 x 1,5 <i>Threaded M18 x 1,5</i>	4 Filetat M18 x 1,5 <i>Threaded M18 x 1,5</i>	
	2,2	5 Canelat - <i>Involute spline</i> CEF 12x1		5 Filetat M16 x 1,5 <i>Threaded M16 x 1,5</i>	5 Filetat M16 x 1,5 <i>Threaded M16 x 1,5</i>	
	2,6	6 Canelat - <i>Involute spline</i> SAE 14T 32/64 Dp		6 Filetat M14 x 1,5 <i>Threaded M14 x 1,5</i>	6 Filetat M14 x 1,5 <i>Threaded M14 x 1,5</i>	
	3,2			7 Filetat G 3/4" <i>Threaded G 3/4"</i>	7 Filetat G 3/4" <i>Threaded G 3/4"</i>	
	3,8			8 Filetat G 1/2" <i>Threaded G 1/2"</i>	8 Filetat G 1/2" <i>Threaded G 1/2"</i>	
	4,3			9 Filetat G 3/8" <i>Threaded G 3/8"</i>	9 Filetat G 3/8" <i>Threaded G 3/8"</i>	
	4,7			0 ** Obturat <i>** Closed</i>	0 ** Obturat <i>** Closed</i>	** dacă aspirația sau refularea nu sunt pe corpul pompei <i>** if the inlet or outlet ports are not on the body of the pump</i>
	6					
	7,8					

#### Exemplu - Example

HP1	-	1,7	-	1	-	1	-	1	-	1	-	A
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#### Pompe duble, de uz general HP11 - codificare

#### Common use, double pumps HP11 - codification

HP11	(Vg1 + Vg2) (cm <sup>3</sup> /rot) (ccm/rev)	Ax antrenare <i>Driving shaft</i>	Flanșă prindere <i>Fastening flange</i>	Aspirație 1 <i>Inlet port 1</i>	Refulare 1 <i>Outlet port 1</i>	Aspirație 2 <i>Inlet port 2</i>	Refulare 2 <i>Outlet port 2</i>	Sens <i>Rotation</i>
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#### Exemplu - Example

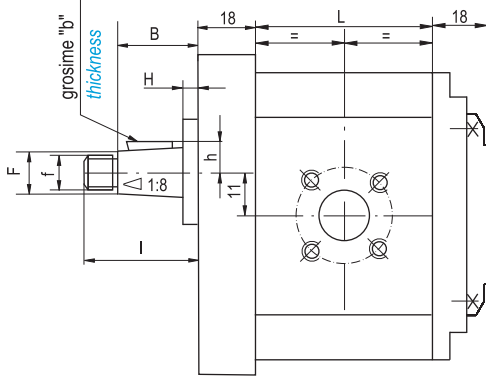
HP11	-	(3,2+1,7)	-	6	-	3	-	1	-	1	-	9	-	9	-	A
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# POMPE SIMPLE HP1 - *SIMPLE GEAR PUMPS HP1*

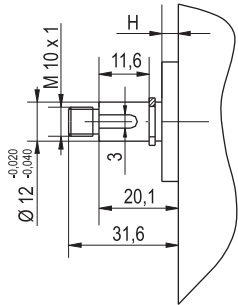
# POMPE DUBLE HP11 - *DOUBLE GEAR PUMPS HP11*

## Axe antrenare - *Driving shafts*

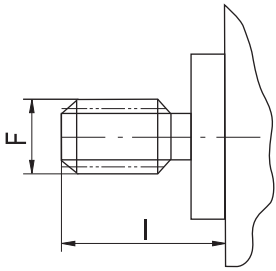
Ax conic tip 1;2  
*Conical shaft type 1;2*



Ax cilindric tip 3  
*Cylindrical shaft type 3*

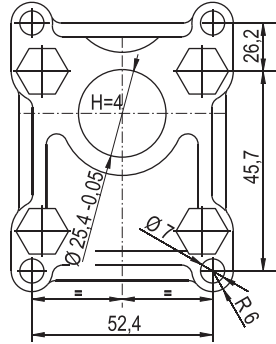


Axe canelate - tip 4; 5; 6  
*Grooved shafts - type 4; 5; 6*

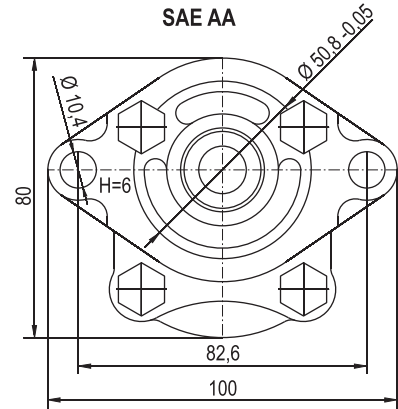


## Flanșe prindere - *Fastening flanges*

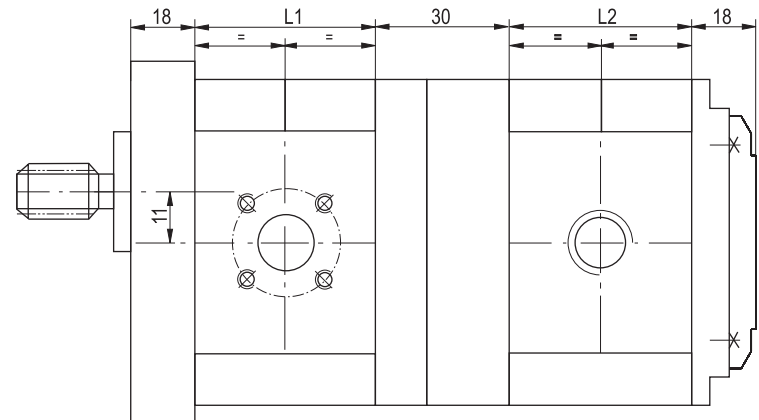
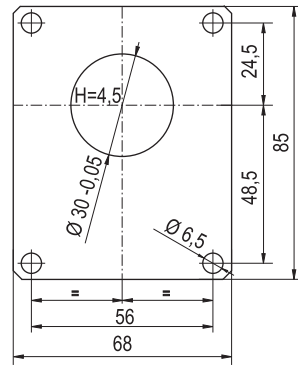
Varianta 1  
*Variant 1*  
PLESSEY



Varianta 3  
*Variant 3*  
SAE AA



Varianta 2  
*Variant 2*  
SAUER



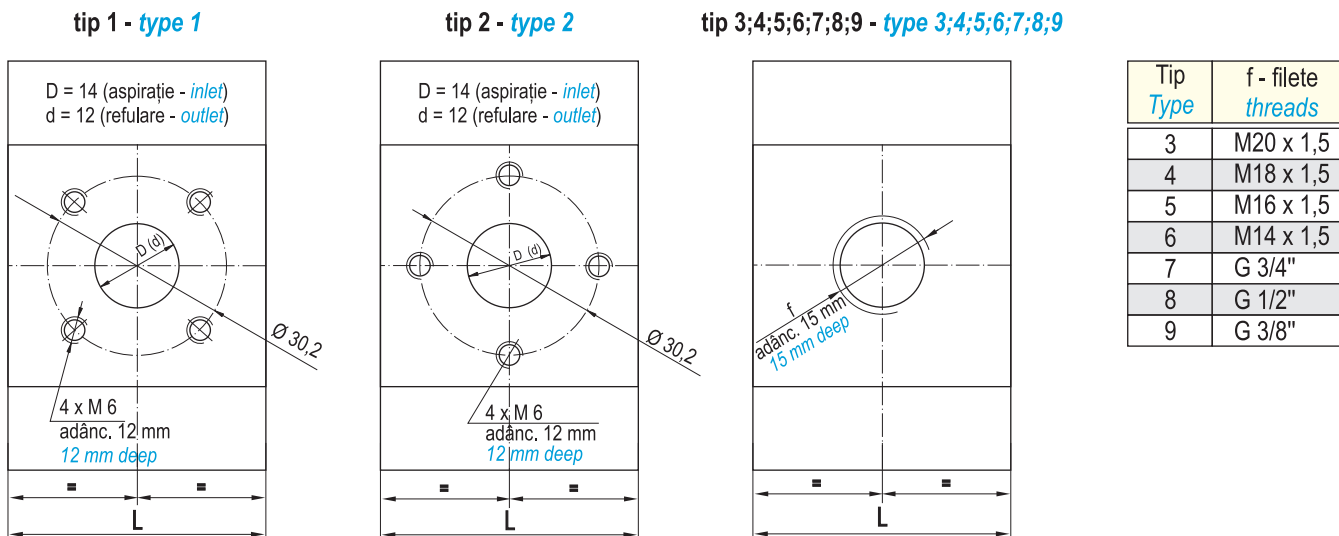
Axe de antrenare (dimensiuni)  
*Driving shafts (dimensions)*

Varianta <i>Variant</i>	Tip ax <i>Shaft type</i>	l [mm]	B [mm]	F [mm]	f [mm]	k [mm]	h [mm]	b [mm]
1	Conic 1:8 (PLESSEY) <i>Conical 1:8 (PLESSEY)</i>	29	20	Ø 8+0,1	M6	1:8	5,6	2,4
2	Conic 1:8 (SAUER) <i>Conical 1:8 (SAUER)</i>	29	19,5	Ø 9-0,1	M8	1:8	6	3
3	Cilindric Ø 12 (SAUER) <i>Cylindrical Ø 12 (SAUER)</i>	-	-	-	-	-	-	-
4	Canelat - <i>Involute spline</i> SCAN TO 12X10 (m=0,75; z=15)	22	30	11,9	-	-	-	-
5	Canelat - <i>Involute spline</i> CEF 12x1	22	-	11,9	-	-	-	-
6	Canelat - <i>Involute spline</i> SAE 14T 32/64 Dp	27	-	11,9	-	-	-	-

# POMPE SIMPLE HP1 - SIMPLE GEAR PUMPS HP1

# POMPE DUBLE HP11 - DOUBLE GEAR PUMPS HP11

## Aspirații și refulări - Inlet and outlet ports



## CARACTERISTICI TEHNICE - TECHNICAL CHARACTERISTICS

Vg [cm <sup>3</sup> /rot] [ccm/rev]	L L1; L2 mm	Presiune - Pressure [bar]		Presiune aspirație Inlet pressure [bar]	$\eta_{Vn}$ %	Turație (rot/min) Speed (rev/min)			Zgomot max. Max. noise (dB)	Temperatura Temperature [°C]	Vâscozitate Viscosity [cSt]	Filtrare Filtration [μm]
		Pn [bar]	Pmax [bar]			n <sub>n</sub>	n <sub>min</sub>	n <sub>max</sub>				
0,85	41,2	250	280	min. -0,3 max. 1	80	1500	1200	4500	60	-15 ... +80	12 ... 2000	20
1	41,7				84							
1,2	42,5				86							
1,7	44,3				88							
2,2	46,2				90							
2,6	47,7				91							
3,2	49,9				92							
3,8	52,1				93							
4,3	54				94							
4,7	55,5				95							
6	60,3				97							
7,8	67				98							
		240	260									
		190	210									
		140	160									

Nota:

- Pn: presiunea nominala
- Pmax: presiunea maxima la care poate lucra pompa intermitent (max. 20 s); presiunea medie nu va depasi presiunea nominala.
- Varfurile de presiune, de comutare, pot depasi presiunea maxima cu 20 bar.
- Randamentele volumice  $\eta_{Vn}$  se garanteaza in conditii nominale si la o vâscozitate a uleiului de 30...40 mm<sup>2</sup>/s.
- Caracteristicile de mai sus sunt valabile si pentru pompele duble (la fiecare treapta in parte).
- La cerere se pot construi pompe cu alte volume geometrice sau cu alte configuratii.
- Pentru n>1500 rot/min, P<1500000 / (Vg x Nef)
- Functionarea pompelor la turatii ridicate, fara cavitate, este posibila numai cu o aspiratie suficient de larga.

Note:

- Pn: nominal pressure
- Pmax: maximum pressure at witch the pumps can intermittently work (max. 20 s); average pressure should be lower than Pn.
- Pressure peaks, in comutation can be 20 bar higher as Pmax.
- Volumetric efficiency  $\eta_{Vn}$  is guaranteed in nominal conditions and viscosity 30...40 mm<sup>2</sup>/s.
- The characteristics mentioned above are valid also for double pumps (for every stage).
- At request, can be manufactured pumps with other displacements and configurations
- For n>1500 rev/min, P<1500000 / (Vg x Nef)
- Functioning at high speed, without cavitation, it is possible only with an enough large inlet.

# POMPE SIMPLE HP1 - *SIMPLE GEAR PUMPS HP1*

# POMPE DUBLE HP11 - *DOUBLE GEAR PUMPS HP11*

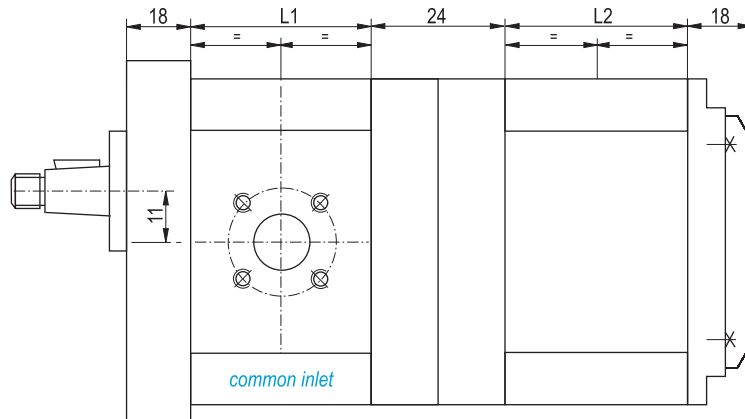
## A2 - Pompe duble cu o singură aspirație HAL11

### *A2 - Double pumps with a single inlet HAL11*

#### Codificare - *Codification*

HAL11	-	(Vg1 + Vg2) (cm <sup>3</sup> /rot) (ccm/rev)	-	Ax antrenare <i>Driving shaft</i>	Flanșă prindere <i>Fastening flange</i>	Aspirație 1 <i>Inlet port 1</i>	Refulare 1 <i>Outlet port 1</i>	-	Aspirație 2 <i>Inlet port 2</i>	Refulare 2 <i>Outlet port 2</i>	-	Sens <i>Rotation</i>
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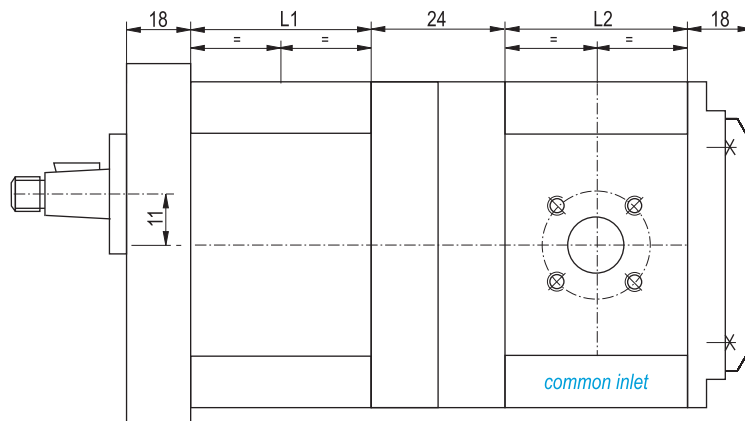
cu aspirație comună pe treapta 1  
*with common inlet on stage 1*



#### Exemplu - *Example*

HAL11	-	(3,2+1,7)	-	1	1	1	1	-	0	1	-	A
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cu aspirație comună pe treapta 2  
*with common inlet on stage 2*



#### Exemplu - *Example*

HAL11	-	(2,2+3,2)	-	1	1	0	1	-	1	1	-	A
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Nota:

- Pentru acest tip de pompe nu se recomanda utilizarea aspiratiei tip 2.
- Aspiratia comuna trebuie sa fie suficient de mare pentru ambele trepte.
- Recomandam amplasarea aspiratiei comune pe treapta cu volum geometric mai mare

Note:

- For this pumps it is not recommended the inlet type 2
- The common inlet should be large enough for both stages.
- It is recommended that the common inlet is on the stage with bigger displacement.

# POMPE SIMPLE HP1 - SIMPLE GEAR PUMPS HP1

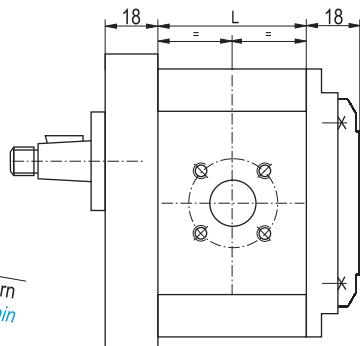
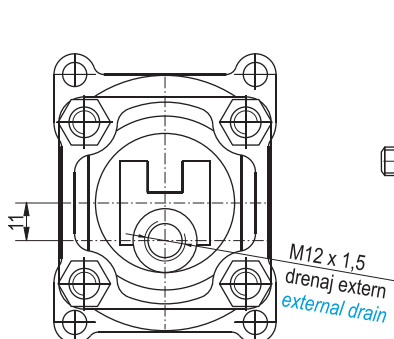
# POMPE DUBLE HP11 - DOUBLE GEAR PUMPS HP11

## A3 - Pompe bidirecționale HP1-BA; HP11-BA

### A3 - Bidirectional pumps HP1-BA; HP11-BA

#### Codificare pompe simple - Codification simple pumps

HP 1	$V_g$ [cm <sup>3</sup> /rot] [ccm/rev]	Ax antrenare Driving shaft	Flanșă prindere Fastening flange	Flanșă aspirație Inlet port	Flanșă refulare Outlet port	Bidirecțional Bidirectional
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Pompele bidirecționale, pot lucra cu sens de rotație stanga sau dreapta, alternativ.  
Constructiv sunt similare cu pompele normale, dar au 2 aspirații alternative și un drenaj extern.  
Datorită etanșării interioare, simetrice, presiunea nominală este limitată la 210 bar.

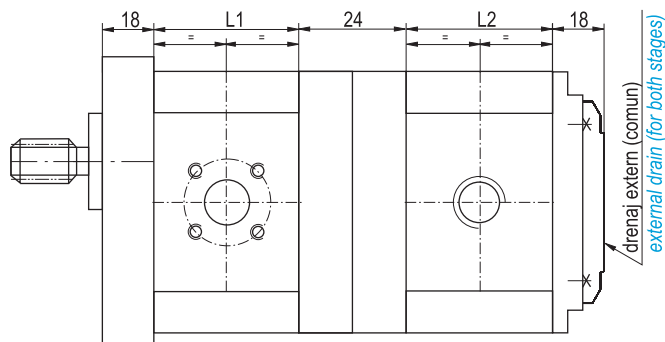
*The bidirectional pumps can work clockwise and anticlockwise rotation, alternativ.  
The construction of the pumps is similar with normal pumps, but they have 2 alternative inlets and external drain.  
Because simetric internal sealing, nominal pressure is limited at 210 bar.*

#### Exemplu - Example

HP 1	1,7	1	1	1	1	B
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#### Codificare pompe duble - Codification double pumps

HP11	$(V_{g1} + V_{g2})$ [cm <sup>3</sup> /rot] [ccm/rev]	Ax antrenare Driving shaft	Flanșă prindere Fastening flange	Aspirație 1 Inlet port 1	Refulare 1 Outlet port 1	Aspirație 2 Inlet port 2	Refulare 2 Outlet port 2	Bidirecțional Bidirectional
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#### Exemplu - Example

HP11	(3,2+1,7)	6	3	1	1	9	9	B
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## CARACTERISTICI TEHNICE (pompe bidirecționale) - TECHNICAL CHARACTERISTICS (bidirectional pumps)

$V_g$ [cm <sup>3</sup> /rot] [ccm/rev]	L L1; L2 [mm]	Presiune - Pressure [bar]		Presiune aspirație Inlet pressure [bar]	$\eta_{vn}$ %	Turație (rot/min) Speed (rev/min)			Zgomot max. Max. noise (dB)	Temperatura Temperature [°C]	Vâscozitate Viscosity [cSt]	Filtrare Filtration [μm]		
		Pn	Pmax			$n_n$	$n_{min}$	$n_{max}$						
0,85	41,2	210	230	min. -0,3 max. 1	80	1500	1200	4500	60	-15 ... +80	12 ... 2000	20		
1	41,7													
1,2	42,5													
1,7	44,3													
2,2	46,2													
2,6	47,7													
3,2	49,9													
3,8	52,1													
4,3	54													
4,7	55,5													
6	60,3												190	210
7,8	67												140	160



# POMPE SIMPLE HP1 - *SIMPLE GEAR PUMPS HP1*

# POMPE DUBLE HP11 - *DOUBLE GEAR PUMPS HP11*

## A4 - Aplicații speciale HFw și HP1-CO

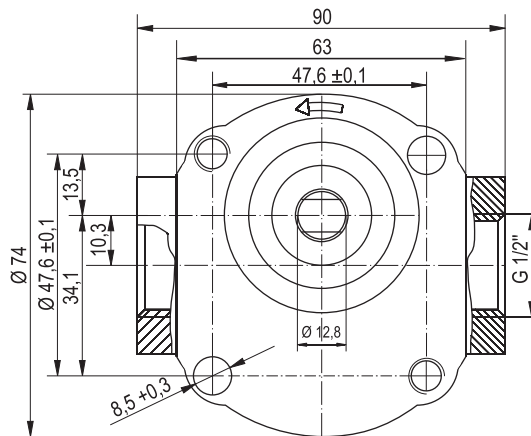
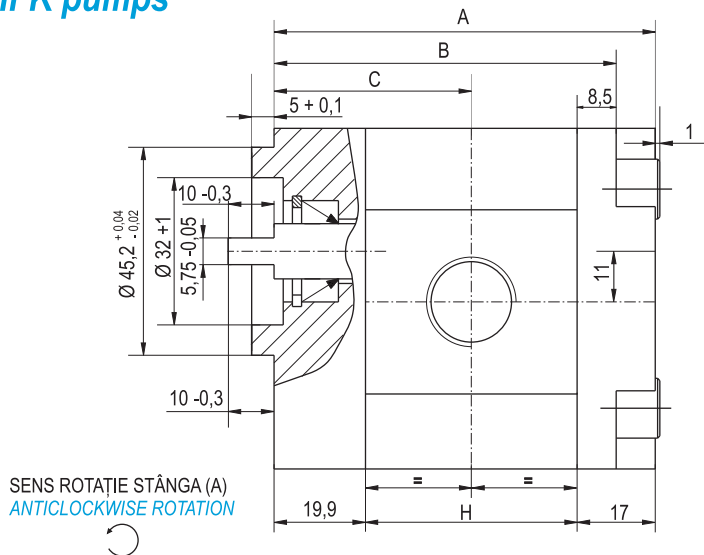
## A4 - Special application HFw and HP1-CO

### CARACTERISTICI TEHNICE - *TECHNICAL CHARACTERISTICS*

Vg cm <sup>3</sup> /rot <i>ccm/rev</i>	A (mm)	B (mm)	C (mm)	H (mm)	Pn [bar]	Pmax [bar]	$\eta_{vn}$ %
0,85	78,1	69,6	40,5	41,2	250	280	80
1	78,6	70,1	40,8	41,7			84
1,2	79,4	70,9	41,1	42,5			86
1,7	81,2	72,7	42	44,3			88
2,2	83,1	74,6	43	46,2			90
2,6	84,6	76,1	43,8	47,7			91
3,2	86,8	78,3	44,9	49,9			92
3,8	89	80,5	46	52,1			94
4,3	90,9	82,4	46,9	54			95
5	93,5	85	48,2	56,6			240

### Pompe HFk

### *HFk pumps*



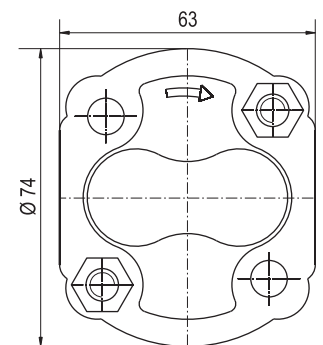
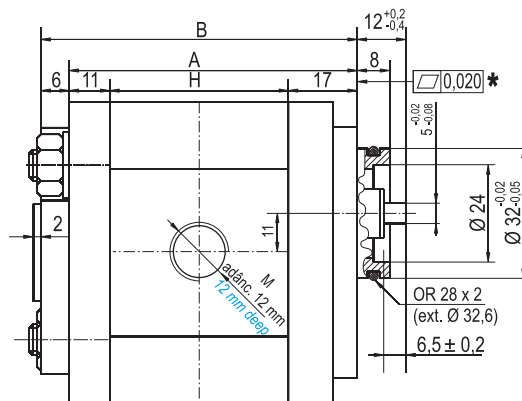
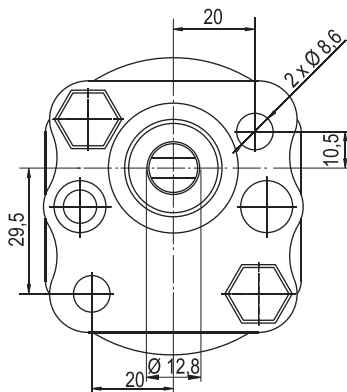
Codificare - *Codification*

HFk-Vg-A

### Pompe HP1-CO

### *HP1-CO pumps*

- \* Placa de fixare trebuie să aibă  $\square 0,020$
- \* The fixation plate should have  $\square 0,020$



Codificare - *Codification*

HP1-CO-Vg-A

refulare M14 x 1,5  
*outlet*  
aspirație M18 x 1,5  
*inlet*



# POMPE SIMPLE HP1 - SIMPLE GEAR PUMPS HP1

# POMPE DUBLE HP11 - DOUBLE GEAR PUMPS HP11

B - Pompe cu circulație axială:

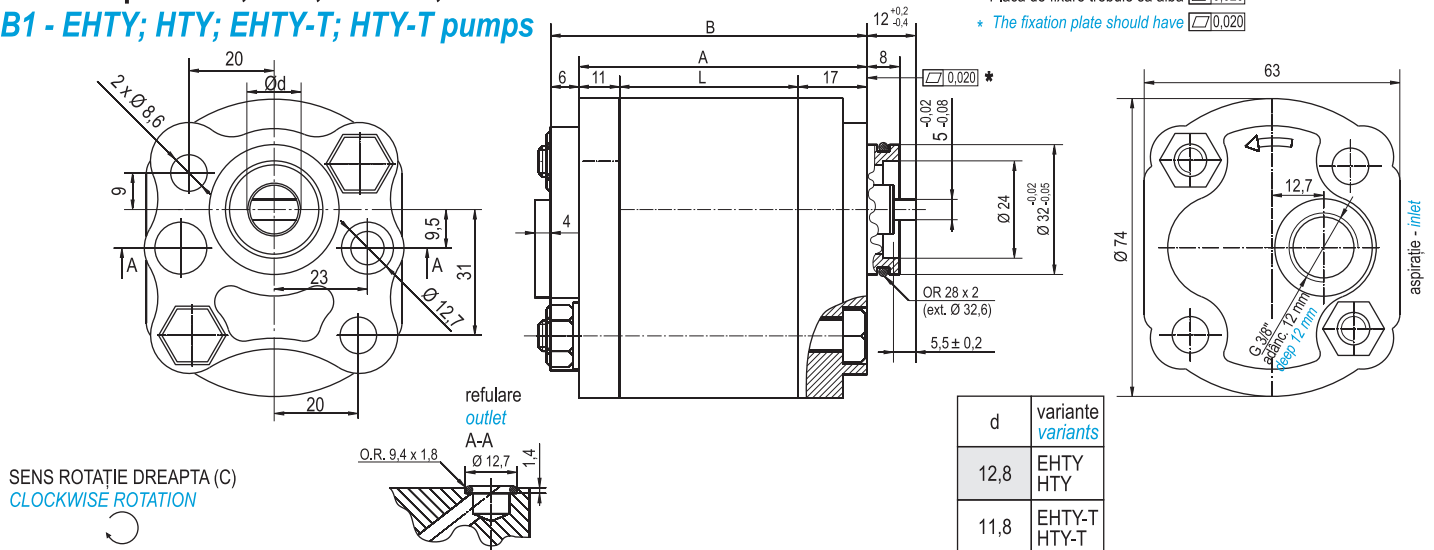
B - Pumps with axial circulation:

CODURI COMANDĂ - ORDERING CODES			
EHTY EHTY-T HTY HTY-T	EHTS EHTS-T HTS HTS-T	EHTCK EHTCK-T HTCK HTCK-T	EHTC EHTC-T HTC HTC-T
EHTY-0,85-C	EHTS-0,85-A	EHTCK-0,85-C	EHTC-0,85-C
EHTY-T-0,85-C	EHTS-T-0,85-A	EHTCK-T-0,85-C	EHTC-T-0,85-C
EHTY-1-C	EHTS-1-A	EHTCK-1-C	EHTC-1-C
EHTY-T-1-C	EHTS-T-1-A	EHTCK-T-1-C	EHTC-T-1-C
EHTY-1,2-C	EHTS-1,2-A	EHTCK-1,2-C	EHTC-1,2-C
EHTY-T-1,2-C	EHTS-T-1,2-A	EHTCK-T-1,2-C	EHTC-T-1,2-C
EHTY-1,7-C	EHTS-1,7-A	EHTCK-1,7-C	EHTC-1,7-C
EHTY-T-1,7-C	EHTS-T-1,7-A	EHTCK-T-1,7-C	EHTC-T-1,7-C
EHTY-2,2-C	EHTS-2,2-A	EHTCK-2,2-C	EHTC-2,2-C
EHTY-T-2,2-C	EHTS-T-2,2-A	EHTCK-T-2,2-C	EHTC-T-2,2-C
EHTY-2,6-C	EHTS-2,6-A	EHTCK-2,6-C	EHTC-2,6-C
EHTY-T-2,6-C	EHTS-T-2,6-A	EHTCK-T-2,6-C	EHTC-T-2,6-C
EHTY-3,2-C	EHTS-3,2-A	EHTCK-3,2-C	EHTC-3,2-C
EHTY-T-3,2-C	EHTS-T-3,2-A	EHTCK-T-3,2-C	EHTC-T-3,2-C
EHTY-3,8-C	EHTS-3,8-A	EHTCK-3,8-C	EHTC-3,8-C
EHTY-T-3,8-C	EHTS-T-3,8-A	EHTCK-T-3,8-C	EHTC-T-3,8-C
HTY-3,8-C	HTS-3,8-A	HTCK-3,8-C	HTC-3,8-C
HTY-T-3,8-C	HTS-T-3,8-A	HTCK-T-3,8-C	HTC-T-3,8-C
EHTY-4,3-C	EHTS-4,3-A	EHTCK-4,3-C	EHTC-4,3-C
EHTY-T-4,3-C	EHTS-T-4,3-A	EHTCK-T-4,3-C	EHTC-T-4,3-C
HTY-4,3-C	HTS-4,3-A	HTCK-4,3-C	HTC-4,3-C
HTY-T-4,3-C	HTS-T-4,3-A	HTCK-T-4,3-C	HTC-T-4,3-C
EHTY-4,7-C	EHTS-4,7-A	EHTCK-4,7-C	EHTC-4,7-C
EHTY-T-4,7-C	EHTS-T-4,7-A	EHTCK-T-4,7-C	EHTC-T-4,7-C
HTY-4,7-C	HTS-4,7-A	HTCK-4,7-C	HTC-4,7-C
HTY-T-4,7-C	HTS-T-4,7-A	HTCK-T-4,7-C	HTC-T-4,7-C
EHTY-6-C	EHTS-6-A	EHTCK-6-C	EHTC-6-C
EHTY-T-6-C	EHTS-T-6-A	EHTCK-T-6-C	EHTC-T-6-C
HTY-6-C	HTS-6-A	HTCK-6-C	HTC-6-C
HTY-T-6-C	HTS-T-6-A	HTCK-T-6-C	HTC-T-6-C
EHTY-7,8-C	EHTS-7,8-A	EHTCK-7,8-C	EHTC-7,8-C
EHTY-T-7,8-C	EHTS-T-7,8-A	EHTCK-T-7,8-C	EHTC-T-7,8-C
HTY-7,8-C	HTS-7,8-A	HTCK-7,8-C	HTC-7,8-C
HTY-T-7,8-C	HTS-T-7,8-A	HTCK-T-7,8-C	HTC-T-7,8-C

Vg cm <sup>3</sup> /rot ccm/rev	Pn (bar)	Pmax (bar)	η <sub>v</sub> (%)	Zgomot max. Max. noise (dB)	L (mm)	A (mm)	B (mm)	
0,85	250	280	80	56	33,2	61,2	67,2	
1			84		33,7	61,7	67,7	
1,2			86	57	34,5	62,5	68,5	
1,7			88		36,3	64,3	70,3	
2,2			90	58	38,2	66,2	72,2	
2,6			91		39,7	67,7	73,7	
3,2			92	59	41,9	69,9	75,9	
3,8			220		240	94	44,1	72,1
			240	260	52,1		80,1	86,1
4,3			200	220	95	46	74	80
			210	230		54	82	88
4,7			250	280	96	60	47,5	75,5
	180	200	55,5	83,5			89,5	
6	190	210	97	61	52,3	80,3	86,3	
	240	260			60,3	88,3	94,3	
7,8	250	280	98	62	59	88	93	
	140	150			67	96	101	
	150	170						
	190	210						
	210	230						
	110	120						
	120	130						
	140	160						
	160	180						

B1 - Pompe EHTY; HTY; EHTY-T; HTY-T

B1 - EHTY; HTY; EHTY-T; HTY-T pumps



Str. Dr. C-tin. Istrati nr.1, Sector 4, Cod 040542, BUCUREȘTI  
 Tel.: 021.336.23.52; 021.335.10.50; 0730.024.213; Fax: 021.337.24.60  
 E-mail: hesper@hesper.ro; www.hesper.ro

