Single circuit pumps (radial piston pumps), continuation of page 2!

For gear pumps, see section 2.2

Pump				Basic type and size					
				Nom. speed 1450 rpm					
					Version for 3-phase mains			Vers. for 1-ph. mains [2]	
					MP 34 A	MP 44 A	MP 54 A	MPW 34	MPW 44
								Operation condenser C_B (µF)	
								40	60
					Pressure p_{max} (reference value) p_{cold} (bar) / p_{warm} (bar) [3]				
Coding	Piston diameter (mm)	Piston number [1]	Geometric displacement V_g (cm³/rev)	Delivery flow Q_{max} (lpm)					
H 0,3	6	1	0.21	0.3	700/700			700/700	
H 0,6		2	0.43	0.62	700/700	700/700		700/700	700/700
H 0,9		3	0.64	0.92	700/700	700/700	700/700	660/570	700/700
H 1,4		5	1.07	1.53		700/700	700/700		700/600
H 2,1		7	1.50	2.14			700/700		
H 0,41	7	1	0.29	0.41	700/700			700/700	
H 0,83		2	0.58	0.83	700/700	700/700		700/620	700/700
H 1,25		3	0.88	1.2	690/590	700/700	700/700	490/410	700/700
H 2,08		5	1.46	2.0		700/700	700/700		520/440
H 2,9		7	2.05	2.8			700/700		
H 0,5	8	1	0.38	0.54	590/590	700/690		590/590	
H 1,0		2	0.76	1.1	590/590	700/690		560/480	690/690
H 1,5		3	1.15	1.63	530/450	700/690	700/700	370/320	660/560
H 2,6		5	1.91	2.7		700/690	700/700		400/340
H 3,7		7	2.67	3.8			700/700		
H 0,8	10	1	0.60	0.86	380/380	550/450		380/380	
H 1,6		2	1.19	1.68	380/380	550/450		360/300	440/440
H 2,5		3	1.79	2.54	340/290	550/450	580/580	240/200	420/360
H 4,2		5	2.98	4.24		540/450	580/580		250/210
H 5,8		7	4.18	5.9			580/510		
H 1,2	12	1	0.86	1.2	260/260	420/350		260/260	
H 2,4		2	1.72	2.4	260/260	420/350		250/210	310/310
H 3,6		3	2.58	3.66	230/200	420/350	410/410	160/140	290/250
H 6,0		5	4.30	6.1		370/320	410/410		180/150
H 8,4		7	6.02	8.5			410/350		
H 1,45	13	1	1.01	1.45	220/220	360/300		220/220	
H 2,8		2	2.02	2.8	220/220	360/300		210/180	260/260
H 4,3		3	3.03	4.3	200/170	360/300	350/350	140/120	250/210
H 7,0		5	5.04	7.2		315/260	350/350		150/130
H 9,8		7	7.06	10.0			350/300		
H 1,7	14	1	1.17	1.66	190/190	300/250		190/190	
H 3,3		2	2.34	3.3	190/190	300/250		180/150	220/220
H 5,1		3	3.51	5.0	170/150	300/250	300/300	120/100	220/180
H 8,3		5	5.85	8.3		275/260	300/300		130/110
H 11,8		7	8.19	11.6			300/260		
H 1,9	15	1	1.34	1.9	170/170	235/200		170/170	
H 3,8		2	2.69	3.8	170/170	235/200		160/130	200/200
H 5,6		3	4.03	5.7	150/130	235/200	260/260	100/90	190/160
H 9,5		5	6.72	9.5		235/200	260/260		110/95
H 13,3		7	9.40	13.4			260/220		
H 2,2	16	1	1.53	2.2	150/150	190/170		150/150	
H 4,4		2	3.06	4.3	150/150	190/170		140/120	170/170
H 6,5		3	4.58	6.3	130/110	190/170	230/230	90/80	170/140
H 10,9		5	7.64	10.6		190/170	230/230		100/85
H 15,3		7	10.70	14.8			230/200		

1) Indications for versions with two pistons:
Significant pulsation will occur due to the low number of pistons.
Their principal utilization is with gear pumps as dual stage pump (for possible combinations, see section 2.3.1) where a high pressure stage is needed only briefly to achieve a certain pressure level (e.g. at press controls).
For complete two stage units (pump, tank, two stage valve, accessories and valve controls), see D 7200 H.

2) The motors of the version for 1-phase mains have main and help winding (condenser motors). **The condenser is not scope of delivery and has to be customer furnished.**
Attention: The versions for 1-phase (AC) may only start against a very low pressure. Therefore the control must enable a pressureless start e.g. by means of an idle circulation solenoid valve, which is held open during start for a period of approx. 0.5 to 1s (e.g. by means of a delay relays).

3) Upper value p_{cold}
= Permissible pressure for cold motor and short time operation S 2

Lower value p_{warm}
= Permissible pressure for operation warm motor (max. fluid temperature 80°C) on/off service S 3 and no-load operation S 6

3.3. Elektric data

		Version with 3-phase motor								
Coding		MP 14 A	MP 12 A	MP 24 A	MP 22 A	MP 34 A	MP 32 A	MP 44 A	MP 42 A	MP 54 A
Nominal power	P_N (kW)	0.25	0.37	0.55	0.75	1.1	1.5	2.2	3	4
Nominal speed	n_N (min^{-1})	1320	2810	1390	2830	1380	2820	1400	2860	1430
Nom. voltage [1]		3 ~ 230/400V △Y 50 Hz (3 ~ 265/460V △Y 60 Hz) for MP 1. A to MP 5. A 3 ~ 400/690V △Y 50 Hz (3 ~ 460V △ 60 Hz) for MP 54 3 ~ Y 500V 50 Hz [2]								
Permissible voltage ranges [3]		Mains 50 Hz: ±10% U_N (conforming IEC 38) Mains 60 Hz: ±5% U_N								
Nom. current [4] I_N (A)	400V	0.89	1.0	1.6	2.0	2.6	3.4	6.1	7.0	10.5
	230V	1.55	1.73	2.8	3.5	4.5	5.9	10.1	12.1	18,2
	500V [5]	0.65	0.80	1.22	1.48	2.2	2.66	4.26	5.1	8.35
Start current ratio	I_A/I_N	2.8	5.7	4.0	5.0	3.7	5.9	4.5	6.3	6.5
Power factor	cos. φ	0.70	0.80	0.78	0.82	0.82	0.85	0.71	0.77	0.83

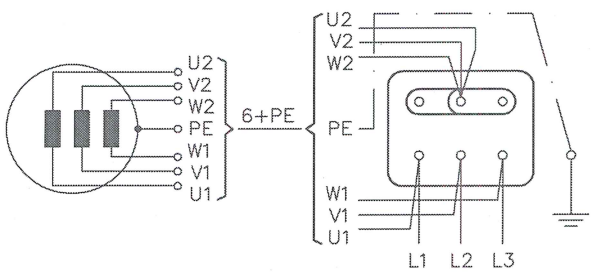
		Version with AC-motor 1 ~ 230V 50 Hz [1]						
Coding		MPW 14	MPW 24	MPW 34	MPW 44	MPW 12	MPW 22	MPW 32
Nominal power	P_N (kW)	0.18	0.37	0.75	1.5	0.25	0.55	1.1
Nominal speed	n_N (min^{-1})	1390	1380	1350	1370	2700	2720	2750
Nom. current [4]	I_N (A)	1.85	3.0	7.0	9.9	2.2	4.1	7.6
Operation condenser	C_B (µF)	8	16	40	60	12	16	30
Power factor	cos. φ	0.86	0.95	0.99	0.97	0.95	0.96	0.96
Start current ratio	I_A/I_N	2.6	2.5	2.5	3.3	2.5	2.8	3.4

Connection cable 2m 1.5mm²	7-leeds (optional 7 m, specify in uncoded text)
Isolation class	F (winding), IEC (VDE 0301 T1)
Comparison protection class	Pump complete with motor IP 00; IP 54 (Hydraulic power pack D 7200 H) DIN VDE 0470 / EN 60529 / IEC 529

Attention: Do not connect radial piston pumps with 2-pole motors (MP 12 A - H.., MP 22 A - H..) to mains 60 Hz. The resulting high speed (approx. 3400 rpm) may cause increased running noise in general and uneven delivery flow at small piston diameters.

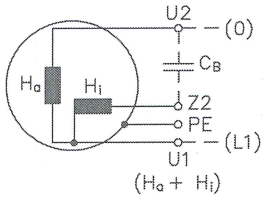
Circuitries and cable connection

3-phase motor



AC-motor

1 ~ 230V 50 Hz



1) Motors for other mains voltages and/or mains frequency 60 Hz on enquiry

2) Max. permanent load 500V +15%, acc. to the supplier of the wire leads.

3) The motors may be connected to mains voltage below these limits but reduced voltage will cause a performance drop (& reduced $p_{max.}$).

$$p_{max} \approx \frac{U_{act}}{1{,}1\,U_N} \cdot p_c(p_w)$$

Example: Motor nom. voltage 230/400V 50Hz (265/460V 60Hz)

Actual mains voltage 400V 60Hz

Selected pump MP 24 A - H 0,81 p_{max} = 570 bar

$$p_{max} \approx \frac{400V}{1{,}1 \cdot 460V} \cdot 570\,bar$$

$$p_{max} \approx 450\,bar$$

4) For actual current consumption, see section 5.4

5) 4-wire cable (W1, V1, U1, PE) is used for 500 V internal circuitry: MP1.. to MP3.. Y, MP4.. to MP5.. △

Pumps type MP

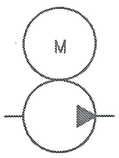
Motor pump combination for mounting into tanks for on/off service

CE

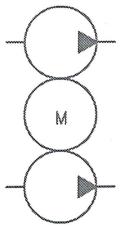
For hydraulic power packs with tank suited for direct mounting of the valves, see D 7200 H

Delivery flow	max. 14.8 lpm (radial piston pump) max. 135 lpm (gear pump)
Pressure p_{max}	max. 700 bar (radial piston pump) max. 200 bar (gear pump)

Single circuit pump



Dual circuit pump (double pump)



1.1

1. General information

The pumps type MP are intended to be installed in tanks. Special feature is the arangement of pump and motor being oil immersed. This arrangement yields a number of advantages when compared with power packs of conventional style:

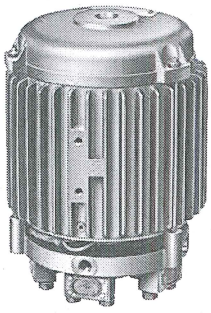
- Higher permissible exploitation of the motor output due to the intensive cooling effect of the surrounding oil
- Lower operating noise by the absence of dire ctly emitted operation noise from fan and motor as well as by the muffling effect of the hydraulic fluid
- Low space requirements due to compact design: Pump and motor are mounted on and into one another.

The pumps should be used preferable for short time and on/off service S2 and S3. No-load operation S6 is possible, de-pending on pump size and load.
The operating modes (VDE 0530):

- S 2 = Short time operation
  S 3 = Intermittent service (on/off service) ⟵ Main operating modes for the use of these pumps
  S 6 = Permanent operation with intermittent load (no-load operation). Permissible only at sufficiently large tank. Hydraulic power packs type HK acc. to D 7600-2 (-3, -4) or pumps type R acc. to D 6010, type Z acc. to D 6820 or type RZ acc. to D 6910 should be utilized for such cases.
- The load duration per operating cycle shouldn't exceed 2 min. , see section 5.5
- The relative duty cycle varies depending on operating mode and size of the tank, see section 5.5.
  The nom. voltage must be specified with your order, see section 3.3.

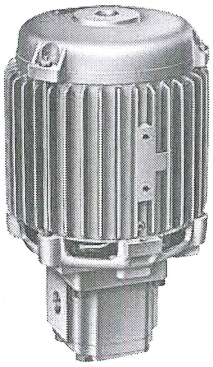
Single circuit pumps

Radial piston pumps for high pressure systems up to 700 bar



Type MP ... - H ...

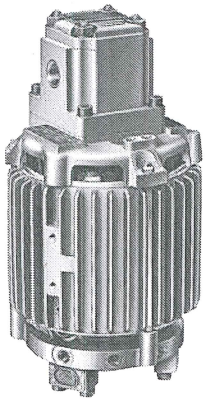
Gear pumps for mid-pressure systems up to 200 bar



Type MP ... - Z ...

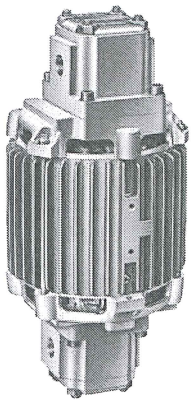
Dual circuit pumps (double pumps)

Radial piston pump + gear pump

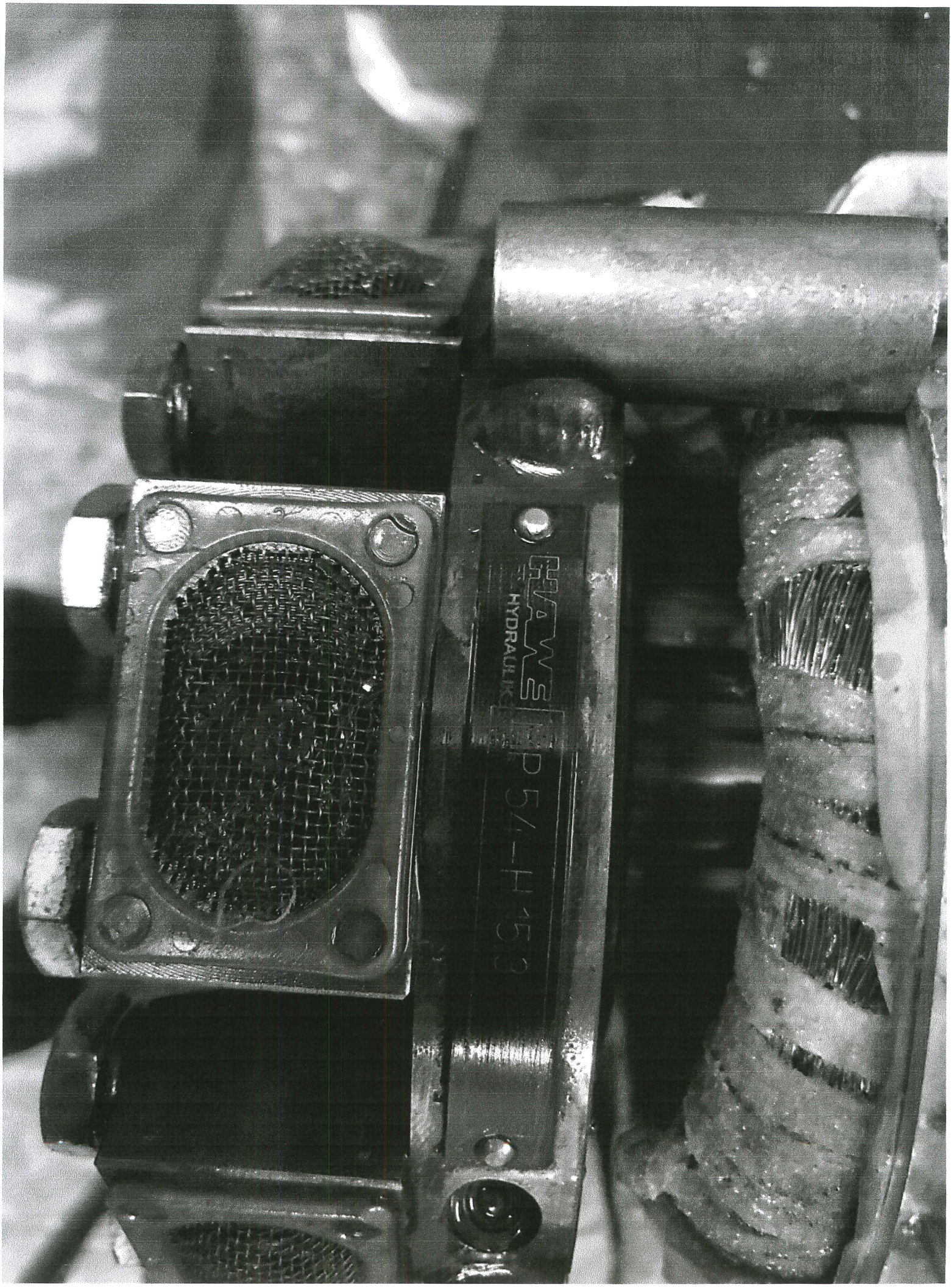


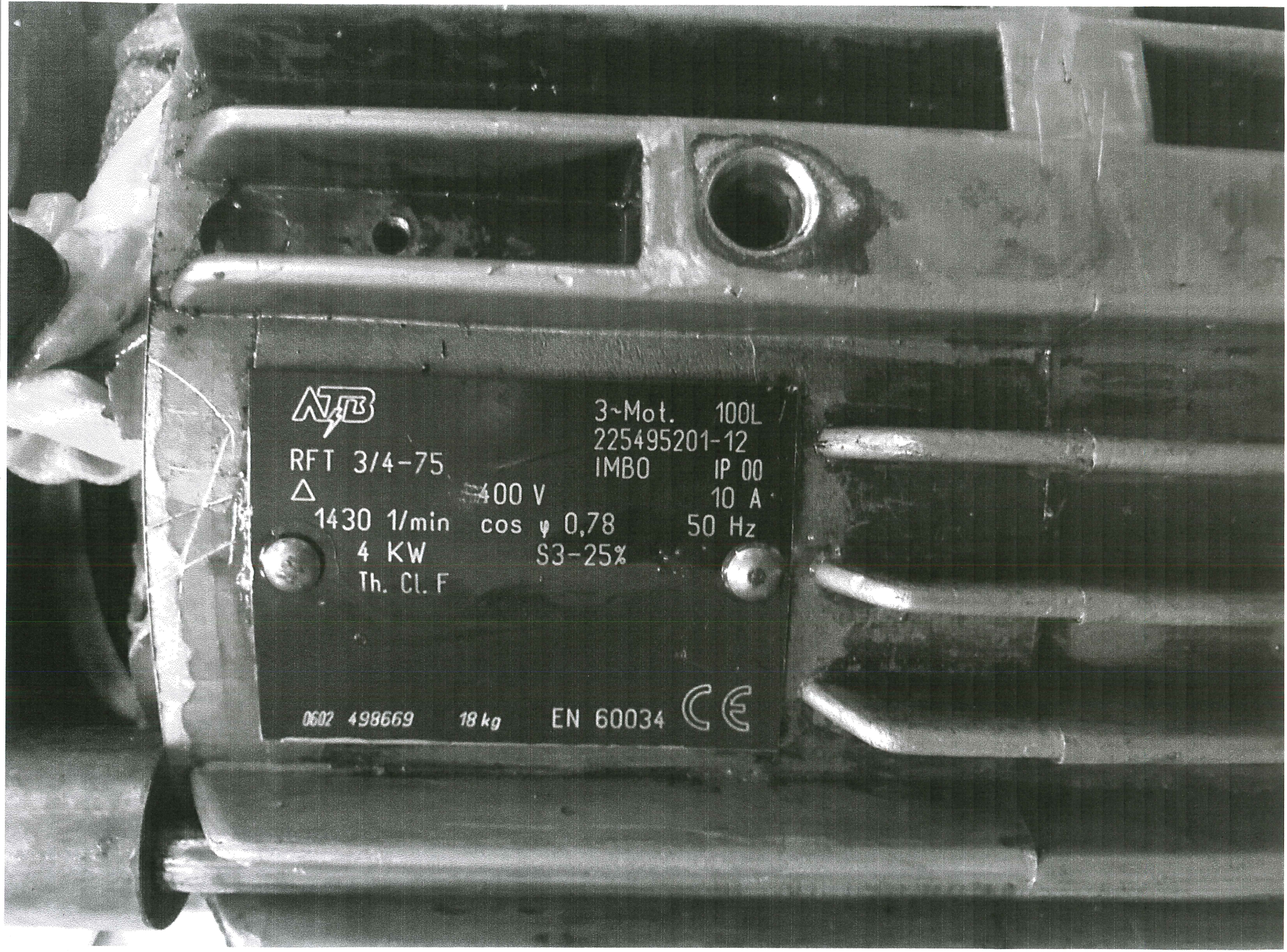
Type MP ... - H ... - Z ...

Gear pump + gear pump



Type MP ... - Z ... - Z ...


HYDRAULIK
P 54 H 163


ATB
3~Mot. 100L
225495201-12
RFT 3/4-75
IMBO IP 00
Δ 400 V 10 A
1430 1/min cos φ 0,78 50 Hz
4 KW S3-25%
Th. Cl. F
0602 498669 18 kg EN 60034
CE