



SACEMI®

ELETTROPOMPE

ELECTRIC-PUMPS



SACEMI - GAMAR s.r.l.

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SACEMI - GAMAR s.r.l.

General catalogue Electric pumps



SACEMI®

Revision 1/2012

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The descriptions and illustrations reported in this catalogue are not binding.

The manufacturer reserves the right, to make, at any time, without being committed to updating this catalogue immediately, all the changes to the product that it considers useful for its improvement.

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DECLARATION OF CONFORMITY
In accordance with allied II A of the Machine Directive 89/392/CEE and following amendments

The undersigned manufacturer:

SACEMI-GAMAR S.R.L.
Via Pacinotti, 2 - 30020 NOVENTA DI PIAVE (VE) ITALY

declares under his own responsibility that:

electrical pumps brand  **Sacemi®**

type: AP-AU-EPC- IMM-MP-MPC-PPI-SP – SPV – SQ – TR
suitable for pumping liquids not aggressive and not flammable.
are conform to the exigencies of the following:

A) Community Directive:

- Machine Directive (MSD) 89/392/CEE and following amendments:
91/368/CEE – 93/44/CEE – 93/68/CEE – 98/37/CEE
(transposed on the Italian National Legislative System with D.P.R. N° 459/96)
- Low Tension Directive (LVD) 73/23/CEE and following amendment: 93/68/CEE
(transposed on the Italian National Legislative System with the D.Lgs. N° 626/96)
- Electromagnetic Compatibility Directive (EMC) 89/336/CEE and following amendments:
92/31/CEE – 93/68/CEE – 93/97/CEE
(transposed on the Italian National Legislative System with D.Lgs. N° 615/96)

B) Harmonized standards:

- EN – 292 – 1 (Safety of the machinery – Terminology, base methodological)
- EN – 292 – 2 (Safety of the machinery – Technical principles specifications)
- EN – 294 (Safety of the machinery – Safety distances to prevent thereaching of dangerous zone)
- EN – 60204 – 1 (Safety of the machinery – Electrical equipment of the machine – General rules)
- EN – 563 (Safety of the machinery – Temperature of the contact surface)
- EN – 60034 – 1 (Electrical Rotating Machine – Nominal characteristics and working)
- EN – 60034 – 5 (Classification of the protection degree of the covering of the elctrical rotating machines)
- EN – 5081 – 1 (Electromagnetic compatibility – emission) – Electrical pumps with three phase motor
- EN – 5081 – 2 (Electromagnetic compatibility – emission) – Electrical pumps with single phase motor

C) Technical standards and rules:

- CNR – UNI 10011 – 88 (Stainless steel construction – Instruction for the calculation, execution and maintenance)

Declares also that:

in accordance with allied III of the Machine Directive 89/392/CEE and following amendments
- Marking “CE” is put on the electrical pump.

SACEMI-GAMAR s.r.l.
Board director
Augusto Gardiman

Noventa Di Piave, 3rd July 2012

DECLARATION OF CONFORMITY In accordance with European Directive RoHS
2002/95/CE del 27-01-2003.

The undersigned manufacturer:

SACEMI – GAMAR S.R.L.
Via Pacinotti, 2 - 30020 NOVENTA DI PIAVE (VE) ITALY

declares under his own responsibility

that all the components concerning the electrical pumps type:
AP – AU – EPC - IMM – MP-MPC-PPI-SP – SPV – SQ – TR
are conform to the exigencies of the Community Directive 2002/95/CE of the European Parliament and of
the Council of 27 January 2003.

SACEMI-GAMAR s.r.l.
Board director
Augusto Gardiman

Noventa di Piave, 3rd July 2012



The production program of **SACEMI-GAMAR** includes a vast range of low and medium pressure electric plunger pumps in many different models, with steel, cast iron, aluminium, brass or plastic plunger designed for industrial applications and mainly for use in cooling, lubrication, washing and air-conditioning plants and anywhere where efficient water-oil emulsions and pure cutting oils are needed, with flow rates reaching 1,200 litres/min. and head of up to 100 metres.

In particular, plunger pumps are designed from the point of view of reliability, reasonable running costs, user safety and total elimination of risks of the pumped liquids overflowing or leaking.

The electric pumps are fitted with 2-pole electric motors, with cage rotor, closed construction, with structure in pressure-cast aluminium alloy, with a vertical axis, cooled by external ventilation with class F (class H on request) winding and level IP 55 protection in compliance with IEC 34-5 standards.

The electric pumps can be supplied with motor both in the three-phase and mono-phase version and on request, with special voltages and frequencies and thermal protection for heavy duty.

The terminal board cover, fitted with cable clamps in compliance with international provisions, can be orientated over 360° and, on request, can be supplied in pressure-cast aluminium alloy or with incorporated switch.

Rigid radial, double screen, pre-lubricated ball bearings are used, produced by the main European manufacturers.

The pump body can be made in steel, pressure-cast aluminium, cast-iron, brass or plastic.

The pump impeller is keyed onto the prolonged motor shaft.

Electric motors IE2 efficiency, available upon request and by previous agreement with our technical office.



*Upon request, available pumps types SP-SPV,
approved for United States of America and Canada market*

CHOOSE TABLE

Type	Application	Delivery pressure	Pollution	Type of fluid	Body pump - construction features				Pages
					Depth of immersion mm.	Body pump	House impeller	Impeller	
IMM 40 A	Sawing- drilling	0 - 0,2 bar	***	Oil - emulsions	80 - 120 - 150 180	PBT	PBT	open Nylon	10-11
IMM 50 A	Sawing-drilling-milling cooling	0 - 0,2 bar	***	Oil - emulsions	80 - 120 - 150 180	PBT	PBT	open Nylon	
IMM 63 A	Turning- filtration - milling grinding - glass working	0 - 0,6 bar	***	Oil - emulsions	150 - 200 - 250 300	Aluminium	Nylon	open Nylon	12-13
IMM 63 B	Turning- filtration - milling grinding - glass working	0 - 0,8 bar	***	Oil - emulsions alkaline solution	150 - 200 - 250 300	Aluminium	Nylon	open Nylon	
IMM 71 A	Turning- filtration - milling grinding - glass working	0 - 1,2 bar	***	Oil - emulsions alkaline solution	200 - 250 - 325 440	Aluminium	Aluminium	open OT 58	14-15
IMM 71 B	Turning- filtration - milling grinding - glass working	0 - 1,4 bar	***	Oil - emulsions alkaline solution	200 - 250 - 325 440	Aluminium	Aluminium	open OT 58	
IMM 80 A	Turning- filtration - milling grinding - glass working	0 - 1,4 bar	***	Oil - emulsions alkaline solution	200 - 250 - 300 350 - 530	Aluminium	Aluminium	open OT 58	16-17
IMM 80 B	Turning- filtration - milling grinding - glass working	0 - 1,6 bar	***	Oil - emulsions alkaline solution	200 - 250 - 300 350 - 530	Aluminium	Aluminium	open OT 58	
IMM 90 A	Turning- filtration - milling painting tools	0 - 1 bar	****	Oil - emulsions waste paint water	350 - 450 - 600 800	carbon steel	cast iron G20	open cast iron G20	18-19
IMM 90 B	Turning- filtration - milling painting tools	0 - 1,4 bar	****	Oil - emulsions waste paint water	350 - 450 - 600 800	carbon steel	cast iron G20	open cast iron G20	
IMM 100 B	Turning- filtration - milling painting tools	0 - 1,8 bar	****	Oil - emulsions waste paint water	350 - 450 - 600 800	carbon steel	cast iron G20	open cast iron G20	
SPV 12	Turning- filtration - milling cooling - glass working	0 - 0,4 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	PBT	PBT	open PBT	20-21
SPV 18	Turning- filtration - milling cooling - glass working	0 - 0,5 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	PBT	PBT	open PBT	
SPV 25	Turning- filtration - milling printing - glass working	0 - 0,5 bar	***	Oil - emulsions glycol	90 - 120 - 170 220 - 270 - 350	PBT	PBT	open PBT	22-23
SPV 33	Turning- filtration - milling printing - glass working	0 - 0,6 bar	***	Oil - emulsions glycol	90 - 120 - 170 220 - 270 - 350	PBT	PBT	open PBT	
SPV 50	Turning- filtration - milling printing - glass working	0 - 1,2 bar	***	Oil - emulsions glycol	200 - 270 - 350 440 - 550	PP	PP	open PBT	24-25
SPV 75	Turning- filtration - milling printing - glass working	0 - 1,4 bar	***	Oil - emulsions glycol	200 - 270 - 350 440 - 550	PP	PP	open PBT	
SPV 100	Turning- filtration - milling printing - glass working	0 - 1,4 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	PP	PP	open PBT	26-27
SPV 150	Turning- filtration - milling printing - glass working	0 - 1,5 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	PP	PP	open PBT	
SP 12	Milling - turning - drilling	0 - 0,4 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	cast iron G20	PBT	open PBT	28-29
SP 18	Milling - turning - drilling	0 - 0,5 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	cast iron G20	PBT	open PBT	
SP 25	Milling - turning - drilling grinding-filtration	0 - 0,5 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	cast iron G20	PBT	open PBT	30-31
SP 33	Milling - turning - drilling grinding-filtration	0 - 0,6 bar	***	Oil - emulsions	90 - 120 - 170 220 - 270 - 350	cast iron G20	PBT	open PBT	
SP 50	Milling - turning - drilling grinding-filtration	0 - 1,2 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	cast iron G20	PBT	open PBT°	32-33
SP 75	Milling - turning - drilling grinding-filtration	0 - 1,2 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	cast iron G20	PBT	open PBT°	
SP 100	Milling - turning - drilling grinding-filtration	0 - 1,2 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	cast iron G20	PBT	open PBT°	34-35
SP 150	Milling - turning - drilling grinding-filtration	0 - 1,5 bar	***	Oil - emulsions alkaline solution	200 - 270 - 350 440 - 550	cast iron G20	PBT	open PBT°	
AU 56	Recycling - sucking	0 - 1 bar	★	Oil - emulsions	_____	Aluminium	cast iron G20	OT 58	38-39
AU 63	Recycling - sucking	0 - 1 bar	★	Oil - emulsions	_____	Aluminium	cast iron G20	OT 58	
TR 71 A	Recycling- trasfering	0 - 1 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	40-41
TR 71 B	Recycling- trasfering	0 - 1,3 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	
TR 80 A	Recycling- trasfering	0 - 1,6 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	
TR 80 B	Recycling- trasfering	0 - 1,6 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	

★ max 0,03 mm ★★ max 1-2 mm *** max 2-3 mm **** max 3-4 mm

(\$ Upon inquiry: open impeller

CHOOSE TABLE

Type	Application	Delivery pressure	Pollution	Type of fluid	Body pump - construction features				Pages
					Depth of immersion mm.	Body pump	House impeller	Impeller	
SQ 56	Milling- turning - drilling surface treatment	0 - 0,3 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open Nylon	36-37
SQ 63	Milling- turning - drilling surface treatment	0 - 0,4 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open Nylon	
SQ 71 A	Milling- turning - drilling surface treatment	0 - 1,2 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	
SQ 71 B	Milling- turning - drilling surface treatment	0 - 1,3 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	
SQ 80 A	Milling- turning - drilling surface treatment	0 - 1,6 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	
SQ 80 B	Milling- turning - drilling surface treatment	0 - 1,8 bar	***	Oil - emulsions alkaline solution	_____	_____	cast iron G20	open OT 58	

AP 80 B	Turning- filtration grinding - surface treatment	1 - 2,2 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	42-44
AP 90 A	Turning- filtration grinding - surface treatment	1 - 3 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	
AP 90 B	Turning- filtration grinding - surface treatment	1 - 3 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	
AP 100 A	Turning- filtration grinding - surface treatment	1 - 3,6 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	43-44
AP 112 A	Turning- filtration grinding - surface treatment	1 - 3,4 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	
AP 112 B	Turning- filtration grinding - surface treatment	1 - 3,4 bar	**	Oil - emulsions alkaline solution	320 450-610-860	cast iron G20 carbon steel	cast iron G20	closed (\$) cast iron G20	

MP 63 C	Turning- filtration grinding	0 - 1,6 bar	***	Oil - emulsions	180 - 230 - 280 330	Aluminium	Aluminium	open OT 58	45-46
MP 71 A	Turning- filtration grinding	0 - 1,9 bar	***	Oil - emulsions	180 - 230 - 280 330	Aluminium	Aluminium	open OT 58	
MP 71 B	Turning- filtration grinding	0 - 2,3 bar	***	Oil - emulsions	210 - 260 - 310 360	Aluminium	Aluminium	open OT 58	
MP 80 C	Turning- filtration grinding	0 - 3,1 bar	***	Oil - emulsions	230 - 280 - 355 470	Aluminium	Aluminium	open OT 58	47-48
MP 90 B	Turning- filtration grinding	0 - 4,9 bar	***	Oil - emulsions	265 - 315 - 390 505	Aluminium	Aluminium	open OT 58	
MP 100 B	Turning- filtration grinding	0 - 6 bar	***	Oil - emulsions	265 - 315 - 365 415 - 595	Aluminium	Aluminium	open cast iron G20	

MPC 80 B	Turning- filtration grinding	0 - 2,5 bar	**	Oil - emulsions	210 - 260 335 - 450	Aluminium	Aluminium	closed OT 58	49-50
MPC 80 C	Turning- filtration grinding	0 - 4,5 bar	**	Oil - emulsions	240 - 290 365 - 480	Aluminium	Aluminium	closed OT 58	
MPC 90 B	Turning- filtration grinding	0 - 6,2 bar	**	Oil - emulsions	260 - 310 385 - 500	Aluminium	Aluminium	closed OT 58	
MPC 90 C	Turning- filtration grinding	0 - 8,3 bar	**	Oil - emulsions	290 - 340 415 - 530	Aluminium	Aluminium	closed OT 58	
MPC 100 B	Turning- filtration grinding	0 - 9,8 bar	**	Oil - emulsions	280 - 330 - 380 430 - 610	Aluminium	Aluminium	closed OT 58	

EPC 63 C	Boring - drilling cooling	0 - 3 bar	*	Oil - emulsions glycol	100 - 130 - 180 230 - 280 - 360	cast iron G20	cast iron G20	peripheral OT 58	51-52
EPC 71 B	Boring - drilling cooling	0 - 4 bar	*	Oil - emulsions glycol	100 - 130 - 180 230 - 280 - 360	cast iron G20	cast iron G20	peripheral OT 58	
EPC 80 B	Boring - drilling cooling	0 - 6 bar	*	Oil - emulsions glycol	100 - 130 - 180 230 - 280 - 360	cast iron G20	cast iron G20	peripheral OT 58	53-54
EPC 80 C	Boring - drilling cooling	0 - 9 bar	*	Oil - emulsions glycol	115 - 145 - 195 245 - 295 - 375	cast iron G20	cast iron G20	peripheral OT 58	
EPC 90 B	Boring - drilling cooling	0 - 13 bar	*	Oil - emulsions glycol	140 - 170 - 220 270 - 320 - 400	cast iron G20	cast iron G20	peripheral OT 58	

PPI 63 C	Heat regulation	0 - 3 bar	*	Diathermic oil	195	OT 58	OT 58	peripheral OT 58	55-56
PPI 71 B	Heat regulation	0 - 4 bar	*	Diathermic oil	200	OT 58	OT 58	peripheral OT 58	

* max 0,03 mm ** max 1-2 mm *** max 2-3 mm **** max 3-4 mm

(\$) Upon inquiry: open impeller

Table hydraulic features - standard execution - 2.800 1/min. - hz. 50 or hz. 60

PAGES	TYPE	H = Delivery head / mt.			0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.														
10-11	IMM 40 A	0,08	0,03	open	13	10	5												
	IMM 50 A	0,11	0,06	open	22	16	8												
12-13	IMM 63 A	0,30	0,18	open	98	83	66	56	42	22	2								
	IMM 63 B	0,40	0,25	open	105	95	86	77	68	57	42	27	6						
14-15	IMM 71 A	0,53	0,37	open	198	187	176	167	157	144	133	118	106	90	70	37			
	IMM 71 B	0,78	0,55	open	215	204	198	187	178	170	159	148	136	122	109	77	39		
16-17	IMM 80 A	1,15	0,75	open	283	270	255	244	227	213	198	179	161	144	124	77	29		
	IMM 80 B	1,47	1,10	open	388	383	368	357	345	332	318	304	289	273	254	224	180	127	53
18-19	IMM 90 A	1,85	1,50	open	624	602	565	530	503	471	419	358	265	111	18				
	IMM 90 B	2,80	2,20	open	846	830	793	758	724	683	645	606	567	524	476	387	82		
	IMM 100 B	4,80	4,00	open	1.200	1.160	1.120	1.080	1.050	1.020	975	935	896	850	802	708	625	418	184

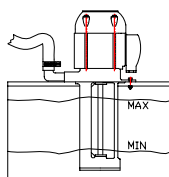
PAGES	TYPE	H = Delivery head / mt.			0	1	2	3	4	5	6	7	8	9	10	12	14	16
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.													
20-21	SPV 12	0,15	0,09	open	56	45	33	20	6									
	SPV 18	0,16	0,12	open	65	56	46	34	21	4								
22-23	SPV 25	0,30	0,18	open	72	66	57	45	32	20								
	SPV 33	0,40	0,25	open	80	70	61	50	41	26	5							
24-25	SPV 50	0,53	0,37	open	215	210	200	183	165	149	129	106	89	67	42	2		
	SPV 75	0,78	0,55	open	240	230	217	201	182	163	147	128	108	89	63	30		
26-27	SPV 100	1,15	0,75	open	265	250	239	224	210	194	176	157	141	119	97	62	36	
	SPV 150	1,47	1,10	open	285	273	257	243	227	211	195	176	157	139	111	90	58	23
28-29	SP 12	0,15	0,09	open	56	45	33	20	6									
	SP 18	0,16	0,12	open	65	56	46	34	21	4								
30-31	SP 25	0,30	0,18	open	72	66	57	45	32	20								
	SP 33	0,40	0,25	open	80	70	61	50	41	26	5							
32-33	SP 50	0,53	0,37	open	265	250	234	212	190	166	148	128	101	77	45			
	SP 75	0,78	0,55	open	290	275	259	244	219	199	179	151	127	100	56			
34-35	SP 100	1,15	0,75	open	315	300	281	259	243	219	196	169	147	117	90	23		
	SP 150	1,47	1,10	open	350	336	316	301	279	260	241	216	194	161	131	52		

		H = Delibvery head / mt.			0	1	2	3	4	5	6	7	8	9	10
PAGES	TYPE	kw. In. P 1	kW nom. P 2	impeller	Q = Volumetric delivery lt./min.										
38-39	AU 56	0,16	0,12	periph.	10	8	7	6	5	4	3	2	1		
	AU 63	0,30	0,18	periph.	13	11	10	9	8	7	6	5	4	3	2

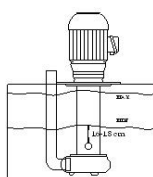
PAGES	TYPE	H = Delivery head / mt.			0	1	2	3	4	5	6	7	8	9	10	12	14
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.												
40-41	TR 71 A	0,53	0,37	open	190	180	169	158	149	139	127	114	97	81	57		
	TR 71 B	0,78	0,55	open	220	191	183	171	163	152	142	131	118	105	89	41	
	TR 80 A	1,15	0,75	open	240	220	211	193	180	167	156	141	127	116	105	62	
	TR 80 B	1,47	1,10	open	260	242	224	208	189	174	165	156	146	138	124	96	59

PAGES	TYPE	H = Delivery head / mt.			0	1	2	3	4	5	6	7	8	9	10	12	14
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.												
36-37	SQ 56	0,16	0,12	open	60	48	35	27	11								
	SQ 63	0,30	0,18	open	80	69	54	41	27								
	SQ 71 A	0,53	0,37	open	260	251	241	229	218	207	185	158	134	99	52		
	SQ 71 B	0,78	0,55	open	300	289	277	264	251	235	213	190	167	141	113		
	SQ 80 A	1,15	0,75	open	340	326	310	293	274	255	238	218	195	171	150	85	
	SQ 80 B	1,47	1,10	open	380	368	354	340	326	307	293	274	257	241	218	163	108

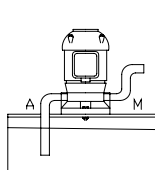
TYPE IMM - SP - SPV



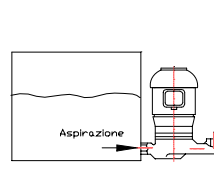
TYPE IMM 90 - 100



TYPE AU



TYPE TR



TYPE SQ

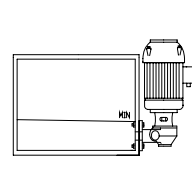


Table hydraulic features - standard execution - 2.800 1/min. - hz. 50 or hz. 60

		H = Delivery head / mt.			0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
PAGES	TYPE	kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.																	
42-44	AP 80 B	2,19	1,50	closed							220	195	180	160	130	98	50					
	AP 90 A	2,70	1,85	closed							399	375	355	330	305	282	225	190	165	100	25	
	AP 90 B	3,60	2,60	closed							460	440	420	400	375	346	310	263	212	160	98	
43-44	AP 100 A	4,80	4,00	closed							507	492	478	460	438	416	390	362	340	285	190	80
	AP 112 A	5,50	4,00	closed							601	585	571	560	543	512	460	422	380	340	290	100
	AP 112 B	6,00	5,50	closed							759	736	710	681	652	616	571	508	460	408	337	130
42-44	AP 80 B	2,19	1,50	open							222	195	175	155	130	83	30					
	AP 90 A	2,70	1,85	open							286	255	225	190	157	111	65					
	AP 90 B	3,60	2,60	open							404	378	353	330	300	266	238	200	150	80		
43-44	AP 100 A	4,80	4,00	open							409	385	355	322	290	249	210	170	125	70		
	AP 112 A	5,50	4,00	open							496	475	455	432	405	370	340	300	242	170	70	
	AP 112 B	6,00	5,50	open							801	770	735	690	650	598	540	480	410	340	268	133

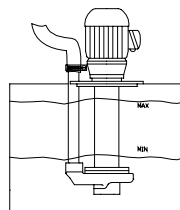
		H = Delivery head / mt.			0	4	8	12	16	20	24	28	32	36	40	44	50	55
PAGES	TYPE	kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.													
45-46	MP 63 C	0,54	0,37	open	95	81	65	47	24									
	MP 71 A	0,70	0,55	open	116	98	78	56	26									
	MP 71 B	0,95	0,75	open	120	115	94	73	56	39	20							
47-48	MP 80 C	2,20	1,50	open	250	226	200	170	140	106	67	5						
	MP 90 B	3,60	2,60	open	290	279	262	248	230	210	190	166	140	115	89	50		
	MP 100 B	5,70	4,00	open	343	330	318	305	289	268	250	225	195	165	141	101	46	13

		H = Delivery head / mt.			0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
PAGES	TYPE	kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.																				
49-50	MPC 80 B	1,50	1,10	closed	116	98	83	65	46	3															
	MPC 80 C	2,00	1,50	closed	145	139	134	127	118	105	90	69	49	2											
	MPC 90 B	3,10	2,20	closed	150	148	145	140	135	127	120	110	99	80	71	53	36	5							
	MPC 90 C	3,70	2,50	closed	162	154	152	150	149	146	144	137	131	123	116	106	96	87	74	56	38	3			
	MPC 100 B	5,60	4,00	closed	162	160	158	156	154	152	149	145	139	135	127	123	117	112	101	91	79	50	38	26	2

		H = Delivery head / mt.			0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	80	90	100	110	120	130
PAGES	TYPE	kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.																				
51-52	EPC 63 C	0,54	0,37	periph.	40	35	29	23	18	12	6														
	EPC 71 B	1,10	0,75	periph.	55	50	43	37	32	25	19	13	7												
53-54	EPC 80 B	1,70	1,20	periph.	70	65	59	54	49	43	38	33	27	22	17	12	6								
	EPC 80 C	2,60	1,80	periph.	70	67	63	60	56	53	49	46	43	38	35	32	28	24	21	14	7				
	EPC 90 B	3,00	2,20	periph.	80	75	71	68	65	62	59	56	54	51	48	45	43	40	38	32	27	21	15	9	2

		H = Delivery head / mt.			0	5	10	15	20	25	30	35	40
PAGES	TYPE	kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery lt./min.								
55-56	PPI 63 C	0,54	0,37	periph.	40	35	29	23	18	12	6		
	PPI 71 B	1,10	0,75	periph.	55	50	43	37	32	25	19	13	7

TYPE AP



TYPE EPC - MP - MPC - PPI

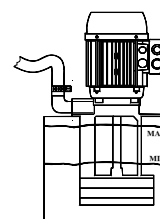


Table hydraulic features - standard execution - 2.800 l/min. - hz. 50 or hz. 60

PAGES	TYPE	PSI - pressure		0,0	1,4	2,9	4,3	5,8	7,2	8,7	10,1	11,6	13,0	14,5	17,4	20,3	23,2	26,1
		H = Delivery head-feet		0,0	3,3	6,6	9,8	13,1	16,4	19,7	23,0	26,2	29,5	32,8	39,4	45,9	52,5	59,0
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery US gallon/min.													
10-11	IMM 40 A	0,08	0,03	open	3,4	2,6	1,3											
	IMM 50 A	0,11	0,06	open	5,8	4,2	2,1											
12-13	IMM 63 A	0,30	0,18	open	25,9	21,9	17,4	14,8	11,1	5,8	0,5							
	IMM 63 B	0,40	0,25	open	27,7	25,1	22,7	20,3	18,0	15,1	11,1	7,1	1,6					
14-15	IMM 71 A	0,53	0,37	open	52,3	49,4	46,5	44,1	41,5	38,0	35,1	31,2	28,0	23,8	18,5	9,8		
	IMM 71 B	0,78	0,55	open	56,8	53,9	52,3	49,4	47,0	44,9	42,0	39,1	35,9	32,2	28,8	20,3	10,3	
16-17	IMM 80 A	1,15	0,75	open	74,8	71,3	67,4	64,5	60,0	56,3	52,3	47,3	42,5	38,0	32,8	20,3	7,7	
	IMM 80 B	1,47	1,10	open	102,5	101,2	97,2	94,3	91,1	87,7	84,0	80,3	76,4	72,1	67,1	59,2	47,6	33,6
18-19	IMM 90 A	1,85	1,50	open	164,9	159,0	149,3	140,0	132,9	124,4	110,7	94,6	70,0	29,3	4,8	0,0		
	IMM 90 B	2,80	2,20	open	223,5	219,3	209,5	200,3	191,3	180,4	170,4	160,1	149,8	138,4	125,8	102,2	21,7	
	IMM 100 B	4,80	4,00	open	317,0	306,5	295,9	285,3	277,4	269,5	257,6	247,0	236,7	224,6	211,9	187,1	165,1	110,4

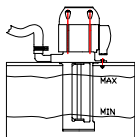
PAGES	TYPE	PSI - pressure		0,0	1,4	2,9	4,3	5,8	7,2	8,7	10,1	11,6	13,0	14,5	17,4	20,3	23,2
		H = Delivery head-feet		0,0	3,3	6,6	9,8	13,1	16,4	19,7	23,0	26,2	29,5	32,8	39,4	45,9	52,5
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery US gallon/min.												
20-21	SPV 12	0,15	0,09	open	14,8	11,9	8,7	5,3	1,6								
	SPV 18	0,16	0,12	open	17,2	14,8	12,2	9,0	5,5	1,1							
22-23	SPV 25	0,30	0,18	open	19,0	17,4	15,1	11,9	8,5	5,3							
	SPV 33	0,40	0,25	open	21,1	18,5	16,1	13,2	10,8	6,9	1,3						
24-25	SPV 50	0,53	0,37	open	56,8	55,5	52,8	48,3	43,6	39,4	34,1	28,0	23,5	17,7	11,1	0,5	
	SPV 75	0,78	0,55	open	63,4	60,8	57,3	53,1	48,1	43,1	38,8	33,8	28,5	23,5	16,6	7,9	
26-27	SPV 100	1,15	0,75	open	70,0	66,1	63,1	59,2	55,5	51,3	46,5	41,5	37,3	31,4	25,6	16,4	9,5
	SPV 150	1,47	1,10	open	75,3	72,1	67,9	64,2	60,0	55,7	51,5	46,5	41,5	36,7	29,3	23,8	15,3
28-29	SP 12	0,15	0,09	open	14,8	11,9	8,7	5,3	1,6								
	SP 18	0,16	0,12	open	17,2	14,8	12,2	9,0	5,5	1,1							
30-31	SP 25	0,30	0,18	open	19,0	17,4	15,1	11,9	8,5	5,3							
	SP 33	0,40	0,25	open	21,1	18,5	16,1	13,2	10,8	6,9	1,3						
32-33	SP 50	0,53	0,37	open	70,0	66,1	61,8	56,0	50,2	43,9	39,1	33,8	26,7	20,3	11,9		
	SP 75	0,78	0,55	open	76,6	72,7	68,4	64,5	57,9	52,6	47,3	39,9	33,6	26,4	14,8		
34-35	SP 100	1,15	0,75	open	83,2	79,3	74,2	68,4	64,2	57,9	51,8	44,6	38,8	30,9	23,8	6,1	
	SP 150	1,47	1,10	open	92,5	88,8	83,5	79,5	73,7	68,7	63,7	57,1	51,3	42,5	34,6	13,7	

PAGES	TYPE	PSI - pressure		0,0	1,4	2,9	4,3	5,8	7,2	8,7	10,1	11,6	13,0	14,5
		H = Delivery head-feet		0,0	3,3	6,6	9,8	13,1	16,4	19,7	23,0	26,2	29,5	32,8
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery US gallon/min.									
38-39	AU 56	0,16	0,12	periph.	2,6	2,1	1,8	1,6	1,3	1,1	0,8	0,5	0,3	
	AU 63	0,30	0,18	periph.	3,4	2,9	2,6	2,4	2,1	1,8	1,6	1,3	1,1	0,8

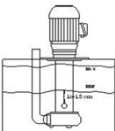
PAGES	TYPE	PSI - pressure		0,0	1,4	2,9	4,3	5,8	7,2	8,7	10,1	11,6	13,0	14,5	17,4	20,3
		H = Delivery head-feet		0,0	3,3	6,6	9,8	13,1	16,4	19,7	23,0	26,2	29,5	32,8	39,4	45,9
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery US gallon/min.											
40-41	TR 71 A	0,53	0,37	open	50,2	47,6	44,6	41,7	39,4	36,7	33,6	30,1	25,6	21,4	15,1	
	TR 71 B	0,78	0,55	open	58,1	50,5	48,3	45,2	43,1	40,2	37,5	34,6	31,2	27,7	23,5	10,8
	TR 80 A	1,15	0,75	open	63,4	58,1	55,7	51,0	47,6	44,1	41,2	37,3	33,6	30,6	27,7	16,4
	TR 80 B	1,47	1,10	open	68,7	63,9	59,2	55,0	49,9	46,0	43,6	41,2	38,6	36,5	32,8	25,4

PAGES	TYPE	PSI - pressure		0,0	1,4	2,9	4,3	5,8	7,2	8,7	10,1	11,6	13,0	14,5	17,4	20,3
		H = Delivery head-feet		0,0	3,3	6,6	9,8	13,1	16,4	19,7	23,0	26,2	29,5	32,8	39,4	45,9
		kw. In. P 1	kw nom. P 2	impeller	Q = Volumetric delivery US gallon/min.											
36-37	SQ 56	0,16	0,12	open	15,9	12,7	9,2	7,1	2,9							
	SQ 63	0,30	0,18	open	21,1	18,2	14,3	10,8	7,1							
	SQ 71 A	0,53	0,37	open	68,7	66,3	63,7	60,5	57,6	54,7	48,9	41,7	35,4	26,2	13,7	
	SQ 71 B	0,78	0,55	open	79,3	76,4	73,2	69,7	66,3	62,1	56,3	50,2	44,1	37,3	29,9	
	SQ 80 A	1,15	0,75	open	89,8	86,1	81,9	77,4	72,4	67,4	62,9	57,6	51,5	45,2	39,6	22,5
	SQ 80 B	1,47	1,10	open	100,4	97,2	93,5	89,8	86,1	81,1	77,4	72,4	67,9	63,7	57,6	43,1

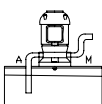
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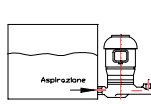
TYPE IMM 90 - 100



TYPE AU



TYPE TR



TYPE SQ

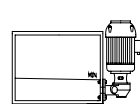


Table hydraulic features - standard execution - 2.800 l/min. - hz. 50 or hz. 60

					PSI - pressure				0,0	2,9	5,8	8,7	11,6	14,5	17,4	20,3	23,2	26,1	29,0	31,9	34,8	37,6	40,5	43,4	46,3	49,2	
					H = Delivery head-feet				0,0	6,6	13,1	19,7	26,2	32,8	39,4	45,9	52,5	59,0	65,6	72,2	78,7	85,3	91,8	98,4	105,0	111,5	
PAGES	TYPE	kw. in. P 1	kW nom. P 2	impeller	Q = Volumetric delivery US gallon/min.																						
42-44	AP 80 B	2,19	1,50	closed										58,1	51,5	47,6	42,3	34,3	25,9	13,2							
	AP 90 A	2,70	1,85	closed										105,4	99,1	93,8	87,2	80,6	74,5	59,4	50,2	43,6	26,4	6,6			
	AP 90 B	3,60	2,60	closed										121,5	116,2	111,0	105,7	99,1	91,4	81,9	69,5	56,0	42,3	25,9			
43-44	AP 100 A	4,80	4,00	closed										133,9	130,0	126,3	121,5	115,7	109,9	103,0	95,6	89,8	75,3	50,2	21,1		26,4
	AP 112 A	5,50	4,00	closed										158,8	154,6	150,9	148,0	143,5	135,3	121,5	111,5	100,4	89,8	76,6	60,8		26,4
	AP 112 B	6,00	5,50	closed										200,5	194,5	187,6	179,9	172,3	162,7	150,9	134,2	121,5	107,8	89,0	68,7		34,3
42-44	AP 80 B	2,19	1,50	open										58,7	51,5	46,2	41,0	34,3	21,9	7,9							
	AP 90 A	2,70	1,85	open										75,6	67,4	59,4	50,2	41,5	29,3	17,2							
	AP 90 B	3,60	2,60	open										106,7	99,9	93,3	87,2	79,3	70,3	62,9	52,8	39,6	21,1				
43-44	AP 100 A	4,80	4,00	open										108,1	101,7	93,8	85,1	76,6	65,8	55,5	44,9	33,0	18,5				
	AP 112 A	5,50	4,00	open										131,0	125,5	120,2	114,1	107,0	97,8	89,8	79,3	63,9	44,9	18,5			
	AP 112 B	6,00	5,50	open										211,6	203,4	194,2	182,3	171,7	158,0	142,7	126,8	108,3	89,8	70,8	35,1		

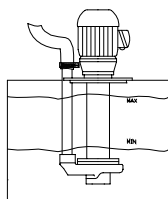
PAGES	TYPE	kw. In. P 1	kW nom. P 2	impeller	Q = Volumetric delivery US gallon/min.																
					0,0	5,8	11,6	17,4	23,2	29,0	34,8	40,5	46,3	52,1	57,9	63,7	72,4	79,6			
					H = Delivery head-feet																
					0,0	13,1	26,2	39,4	52,5	65,6	78,7	91,8	105,0	118,1	131,2	144,3	164,0	180,4			
45-46	MP 63 C	0,54	0,37	open	25,1	21,4	17,2	12,4	6,3												
	MP 71 A	0,70	0,55	open	30,6	25,9	20,6	14,8	6,9												
	MP 71 B	0,95	0,75	open	31,7	30,4	24,8	19,3	14,8	10,3	5,3										
47-48	MP 80 C	2,20	1,50	open	66,1	59,7	52,8	44,9	37,0	28,0	17,7	1,3									
	MP 90 B	3,60	2,60	open	76,6	73,7	69,2	65,5	60,8	55,5	50,2	43,9	37,0	30,4	23,5	13,2					
	MP 100 B	5,70	4,00	open	90,6	87,2	84,0	80,6	76,4	70,8	66,1	59,4	51,5	43,6	37,3	26,7	12,2	3,4			

PAGES					PSI - pressure																															
					0,0	7,2	14,5	21,7	29,0	36,2	43,4	50,7	57,9	65,2	72,4	79,6	86,9	94,1	101,4	108,6	115,8	123,1	130,3	137,6	144,8											
					H = Delivery head-feet																															
TYPE				kw. In. P 1	kW nom. P 2	impeller	Q = Volumetric delivery US gallon/min.																													
49-50	MPC 80 B				1,50	1,10	closed	30,6	25,9	21,9	17,2	12,2	0,8																							
	MPC 80 C				2,00	1,50	closed	38,3	36,7	35,4	33,6	31,2	27,7	23,8	18,2	12,9	0,5																			
	MPC 90 B				3,10	2,20	closed	39,6	39,1	38,3	37,0	35,7	33,6	31,7	29,1	26,2	21,1	18,8	14,0	9,5	1,3															
	MPC 90 C				3,70	2,50	closed	42,8	40,7	40,2	39,6	39,4	38,6	38,0	36,2	34,6	32,5	30,6	28,0	25,4	23,0	19,6	14,8	10,0	0,8											
	MPC 100 B				5,60	4,00	closed	42,8	42,3	41,7	41,2	40,7	40,2	39,4	38,3	36,7	35,7	33,6	32,5	30,9	29,6	26,7	24,0	20,9	13,2	10,0	6,9	0,5								

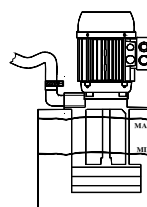
					PSI - pressure			0,0	7,2	14,5	21,7	29,0	36,2	43,4	50,7	57,9	65,2	72,4	79,6	86,9	94,1	101,4	115,8	130,3	144,8	159,3	173,8	188,2
					H = Delivery head-feet			0,0	16,4	32,8	49,2	65,6	82,0	98,4	114,8	131,2	147,6	164,0	180,4	196,8	213,2	229,6	262,4	295,2	328,0	360,8	393,6	426,4
PAGES	TYPE	kw. In. P 1	kW nom. P 2	impeller	Q = Volumetric delivery US gallon/min.																							
51-52	EPC 63 C	0.54	0.37	periph.	10,6	9,2	7,7	6,1	4,8	3,2	1,6																	
	EPC 71 B	1.10	0.75	periph.	14,5	13,2	11,4	9,8	8,5	6,6	5,0	3,4	1,8															
53-54	EPC 80 B	1.70	1.20	periph.	18,5	17,2	15,6	14,3	12,9	11,4	10,0	8,7	7,1	5,8	4,5	3,2	1,6											
	EPC 80 C	2.60	1.80	periph.	18,5	17,7	16,6	15,9	14,8	14,0	12,9	12,2	11,4	10,0	9,2	8,5	7,4	6,3	5,5	3,7	1,8							
	EPC 90 B	3.00	2.20	periph.	21,1	19,8	18,8	18,0	17,2	16,4	15,6	14,8	14,3	13,5	12,7	11,9	11,4	10,6	10,0	8,5	7,1	5,5	4,0	2,4	0,5			

		PSI - pressure			0,0	7,2	14,5	21,7	29,0	36,2	43,4	50,7	57,9
		H = Delivery head-feet			0,0	16,4	32,8	49,2	65,6	82,0	98,4	114,8	131,2
PAGES	TYPE	kw. in. P 1	kW nom. P 2	impeller	Q = Volumetric delivery US gallon/min.								
55-56	PPI 63 C	0,54	0,37	periph.	10,6	9,2	7,7	6,1	4,8	3,2	1,6		
	PPI 71 B	1,10	0,75	periph.	14,5	13,2	11,4	9,8	8,5	6,6	5,0	3,4	1,8

TYPE AP

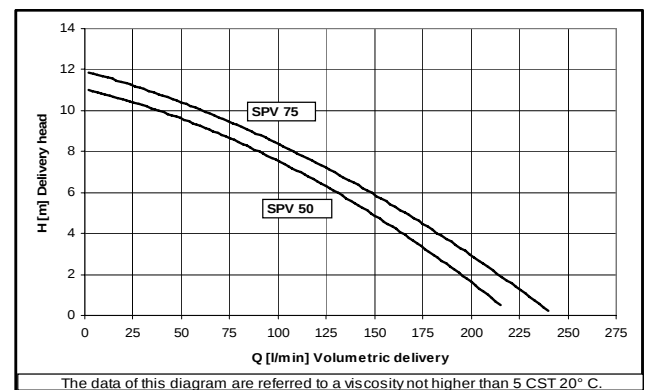
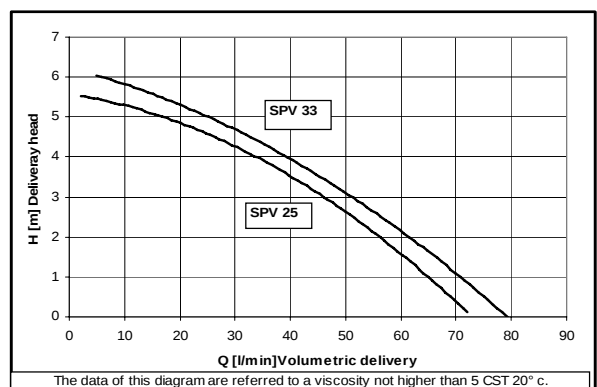
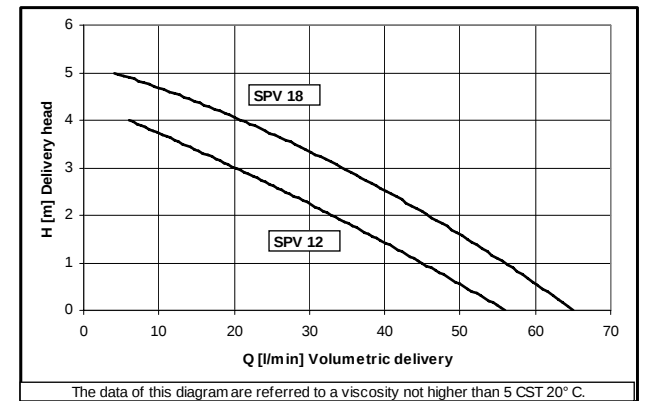
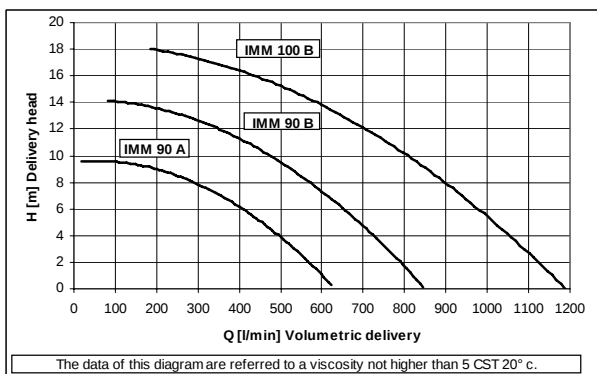
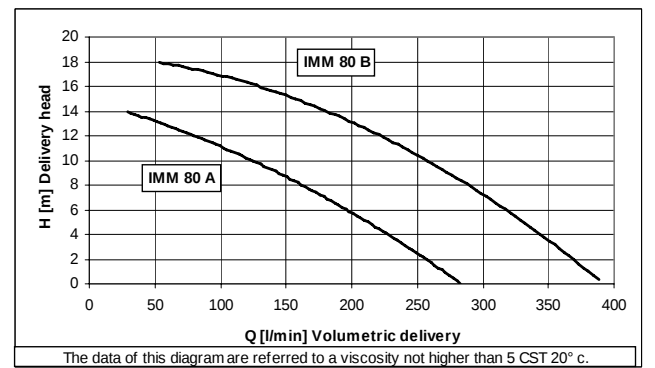
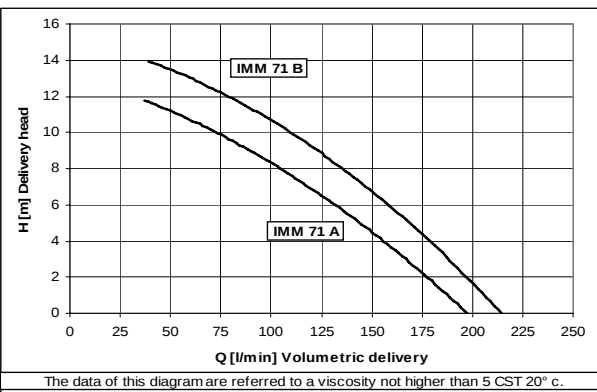
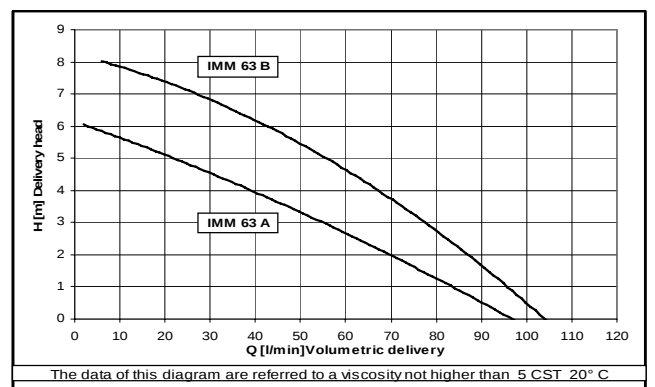
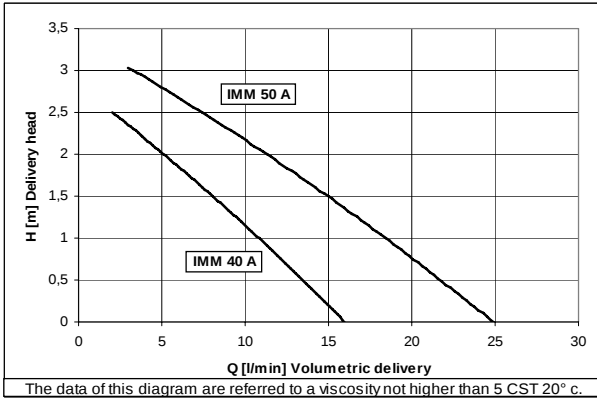


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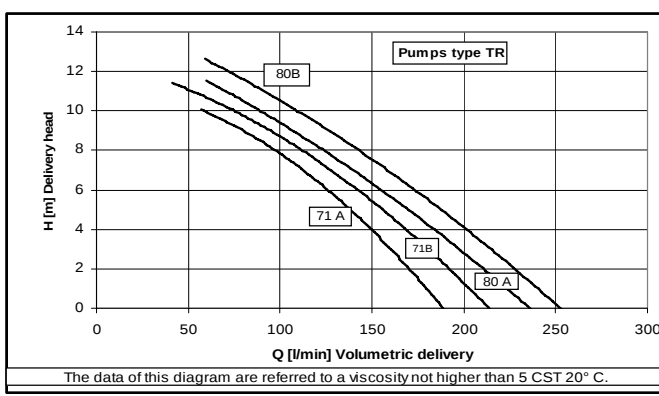
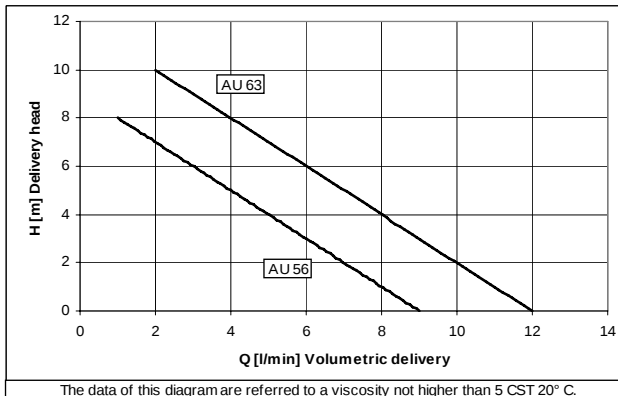
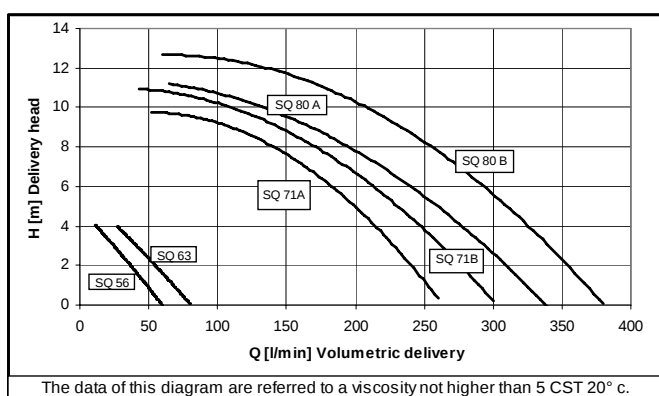
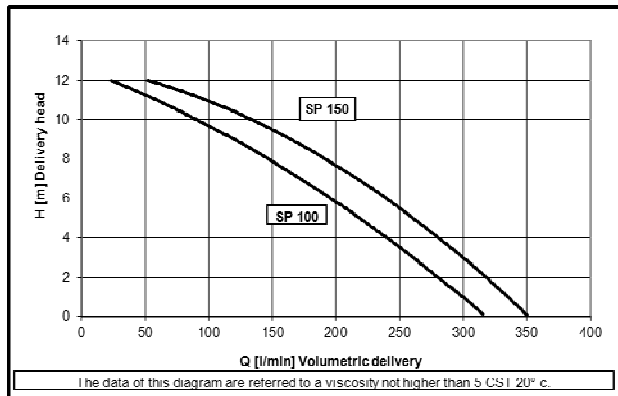
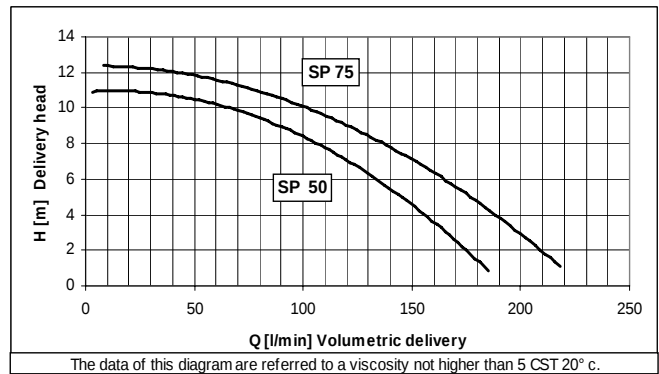
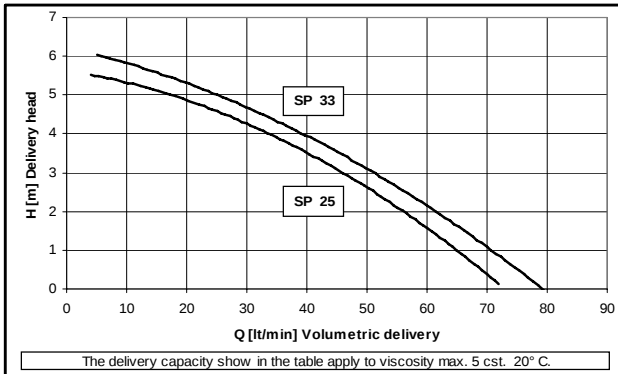
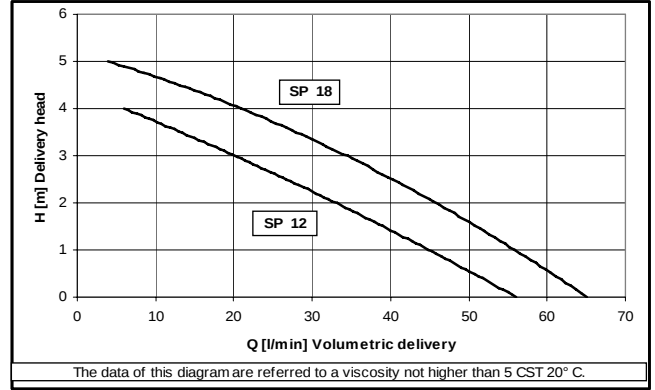
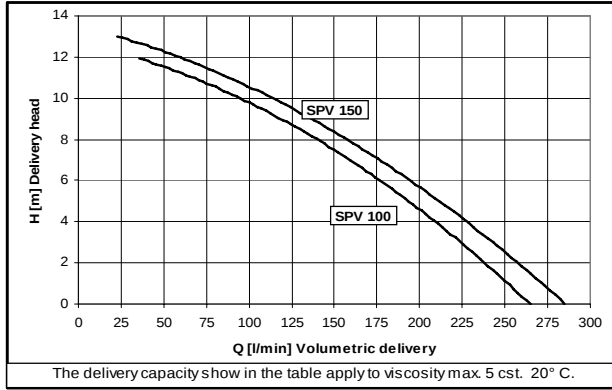
Pumps – performances curves

Standard execution = 2.800 1/min.



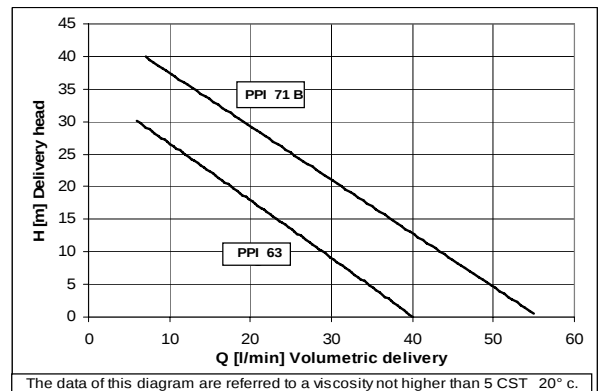
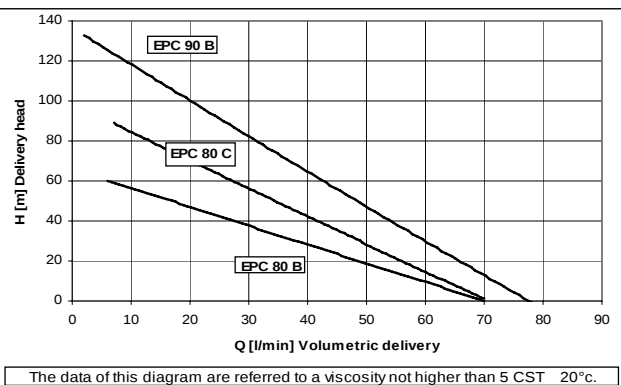
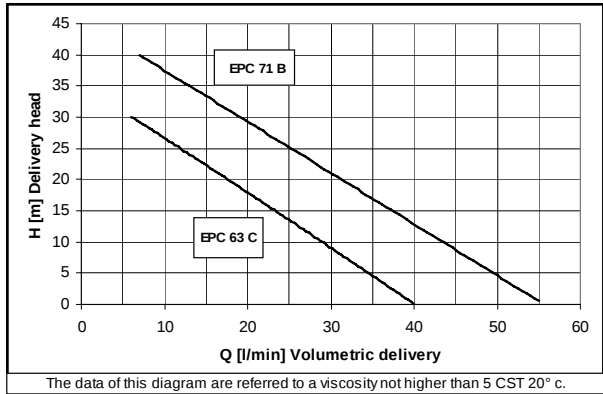
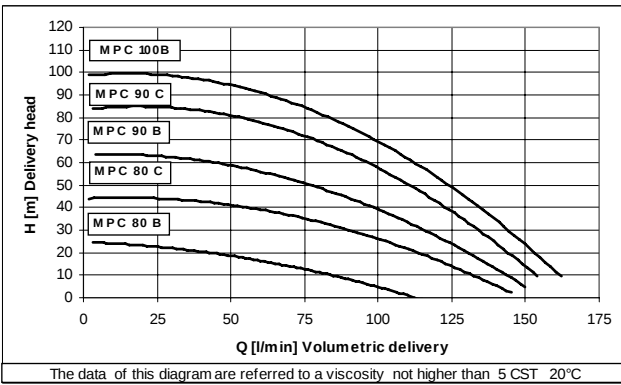
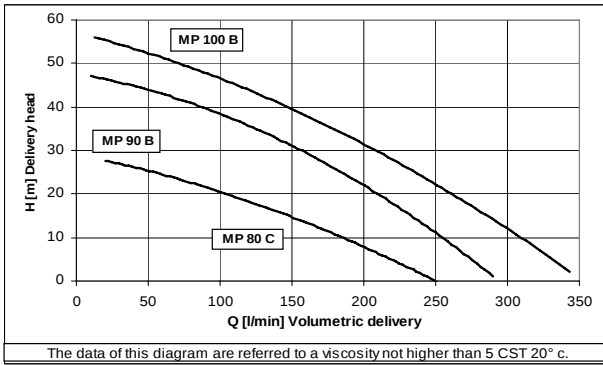
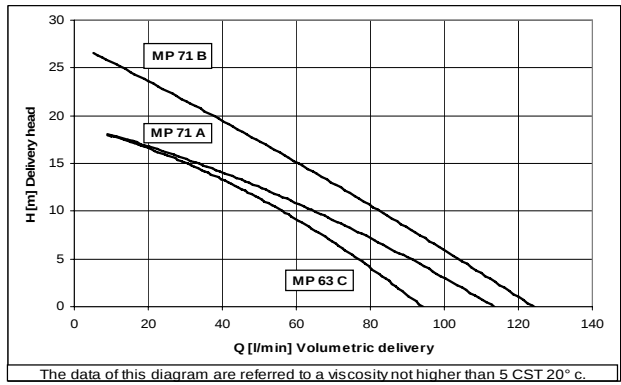
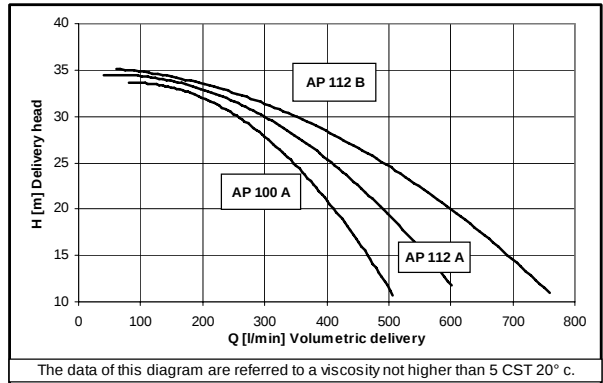
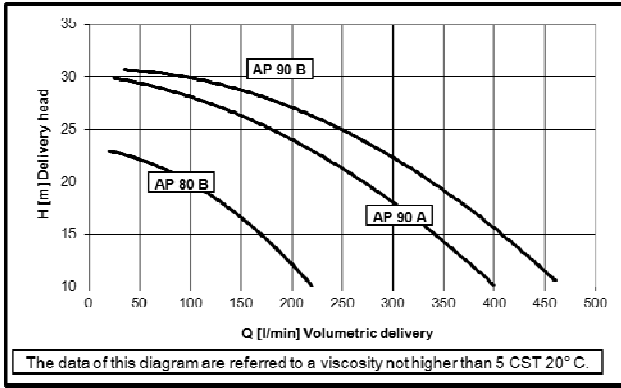
Pumps – performances curves

Standard execution = 2.800 l/min.



Pumps – performances curves

Standard execution = 2.800 1/min.



Immersion pumps

Type **IMM 40-50**



Usages:

These pumps are suitable for transferring clean liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller, scroll and pump body in PBT, allow the pumps to be used with water, emulsions and oily substances with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 70° C.

They are usually used on:

Machine tools (milling machines – lathes –drills)

Glass-processing machines (TRI version)

Air-conditioning systems.

They should usually be installed at on a tank, with a capacity in proportion to the flow rate, at about 2 – 3 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office

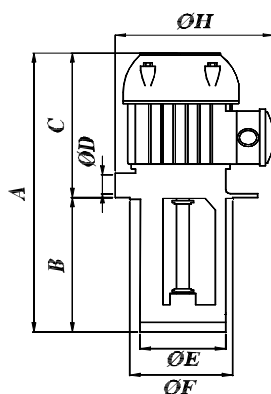
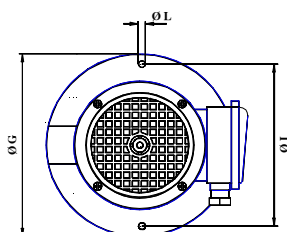


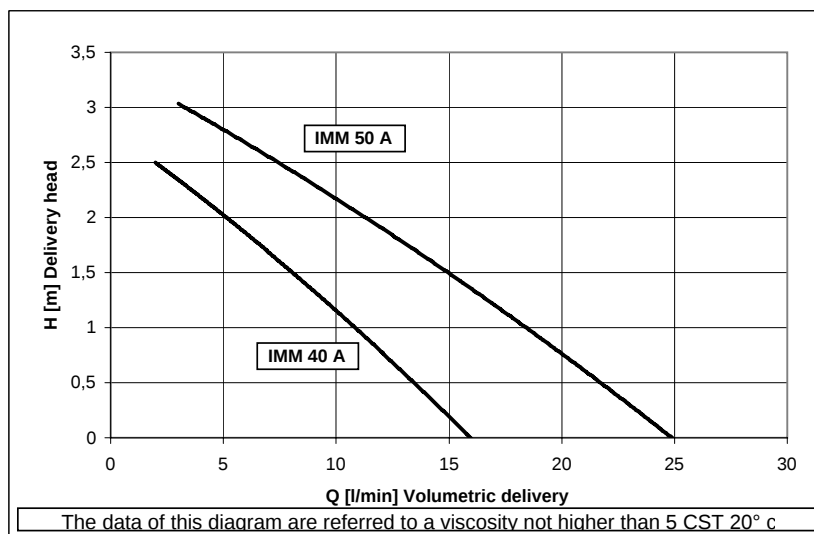
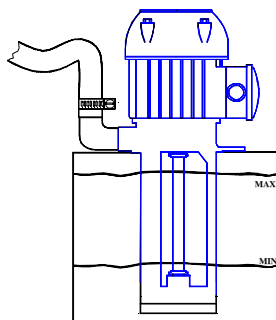
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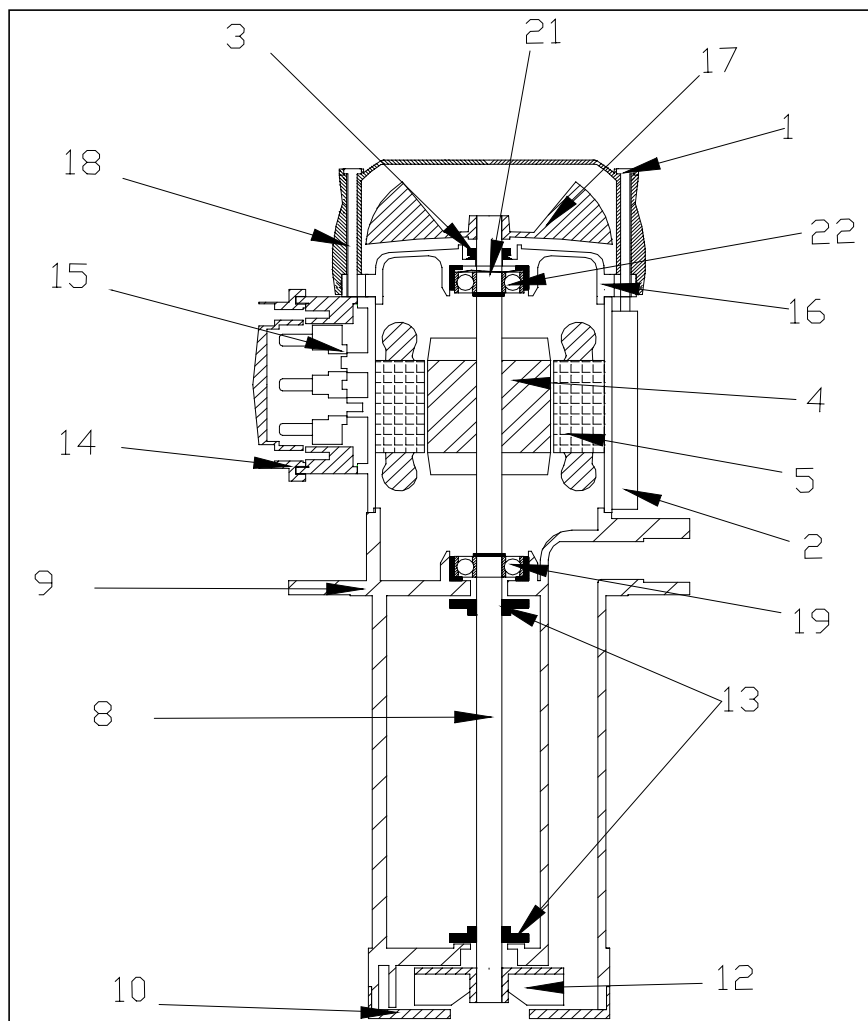
TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
IMM 40	224	80	144	3/8"	78	90	130	140	114	7 N. 2	1,8
	264	120									1,83
	294	150									1,85
	324	180									1,88
IMM 50	224	80	144	3/8"	78	90	130	140	114	7 N. 2	1,8
	264	120									1,83
	294	150									1,85
	324	180									1,88



Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60		
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480
IMM 40	0,08	0,4/0,23	0,35/0,21	0,48/0,28	0,43/0,25	0,4/0,23
IMM 50	0,11	0,52/0,3	0,4/0,23	0,6/0,35	0,56/0,32	0,52/0,3





Type	IMM 40 A	IMM 50 A
Components	Materials	Materials
1 Rod	Steel	Steel
2 Frame	Aluminium	Aluminium
3 V-Ring Ø 8	NBR	NBR
4 Rotor		
5 Stator		
8 Shaft	Steel C 40**	Steel C 40**
9 Pump body	PBT	PBT
10 House impeller	PBT	PBT
12 Impeller	Nylon	Nylon
13 Rubber washer	PBT	PBT
14 Terminal box	Nylon	Nylon
15 Terminal block	mm. 40x25 6P	mm. 40x25 6P
16 Non-drive end shield	Nylon	Nylon
17 Fan	Nylon	Nylon
18 Fan cover	Nylon	Nylon
19 Drive end shield	608 2RS	608 2RS
21 Spring ring	Ø 22	Ø 22
22 Bearing	608 2RS	608 2RS

On request

**

Aisi 303



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the nylon impeller and scroll and the aluminium pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

Machine tools (milling machines – lathes - drills)

Glass processing machines (TRI version)

Surface treatment systems (version in cast iron)*

Filtration systems

Air-conditioning systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4 – 5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

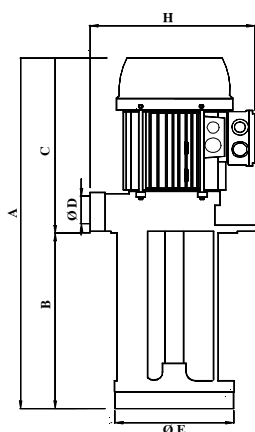


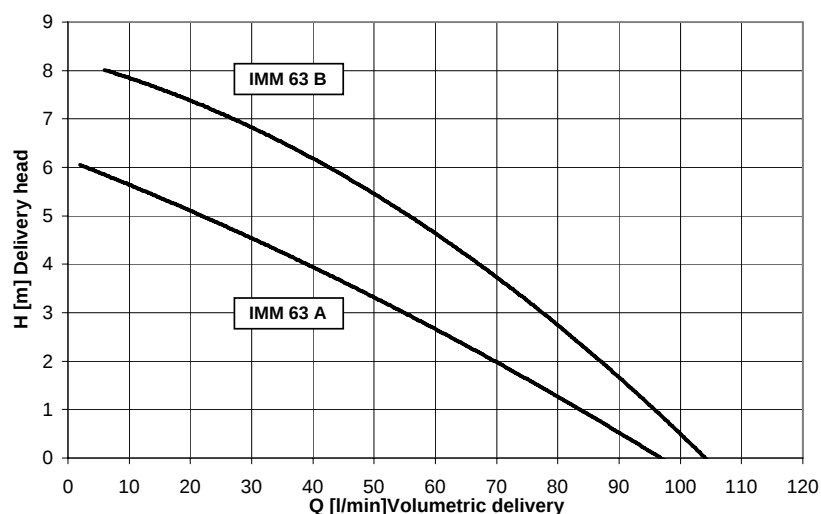
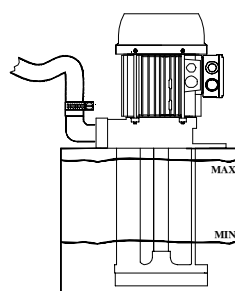
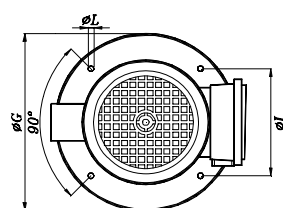
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
IMM 63 A	355	150 T	205	3/4"	128	—	180	190	150	9 N. 4	5,00
	405	200 T									5,15
	455	250 T									5,30
	505	300* T									5,45
IMM 63 B	355	150 T	205	3/4"	128	—	180	190	150	9 N. 4	5,50
	405	200 T									5,70
	455	250 T									5,90
	505	300* T									6,05

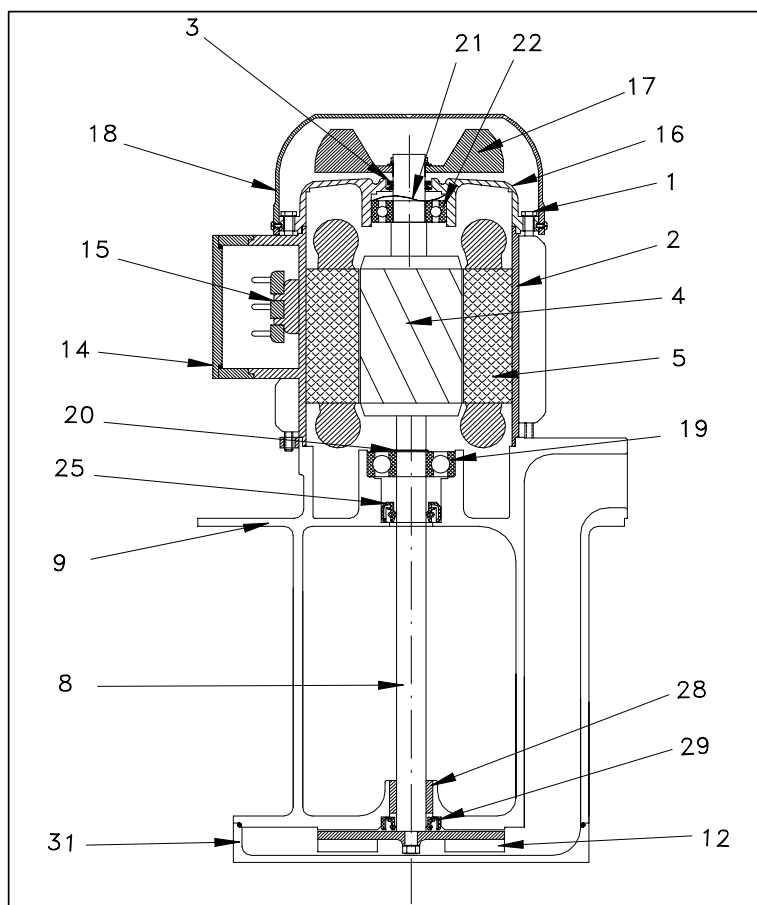
On request: T = execution TRI *= cast iron pump body

Electrical features

Type	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
IMM 63 A	0,30	1,0/0,58	0,76/0,44	1,2/0,7	1,1/0,6	1,0/0,58	0,8/0,45
IMM 63 B	0,40	1,6/0,9	1,2/0,7	1,9/1,1	1,73/1,0	1,6/0,9	1,2/0,7



The data of this diagram are referred to a viscosity not higher than 5 CST 20° c



Type	IMM 63A	Type	IMM 63B
Components	Materials	Components	Materials
1 Rod	Steel	1 Rod	Steel
2 Frame	Aluminium	2 Frame	Aluminium
3 V-Ring Ø 16	NBR	3 V-Ring Ø 16	NBR
4 Rotor		4 Rotor	
5 Stator		5 Stator	
8 Shaft	Steel C 40**	8 Shaft	Steel C 40**
9 Pump body	Aluminium*	9 Pump body	Aluminium *
12 Impeller	Nylon	12 Impeller	Nylon
14 Terminal box	Nylon	14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P	15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium	16 Non-drive end shield	Aluminium
17 Fan	Nylon	17 Fan	Nylon
18 Fan cover	Nylon***	18 Fan cover	Nylon***
19 Bearing	6203 ZZ	19 Bearing	6203 ZZ
20 Retaining ring	Ø 17	20 Retaining ring	Ø 17
21 Spring ring	Ø 35	21 Spring ring	Ø 35
22 Bearing	6202 ZZ	22 Bearing	6202 ZZ
25 Sealing ring	NBR 17X30X7	25 Sealing ring	NBR 17X30X7
28 Bronze bearing	19X17X15	28 Bronze bearing	19X17X15
29 Sealing ring	NBR 17X25X4	29 Sealing ring	NBR 17X25X4
31 House impeller	Nylon	31 House impeller	Nylon

On request

*	Cast iron G20 - only length mm. 300
**	Aisi 420
***	Sheet



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the brass impeller, the scroll and the aluminium pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

Machine tools (milling machines – lathes - drills)

Glass processing machines (TRI version)

Surface treatment systems (version in cast iron)*

Filtration systems

Air-conditioning systems.

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4 – 5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

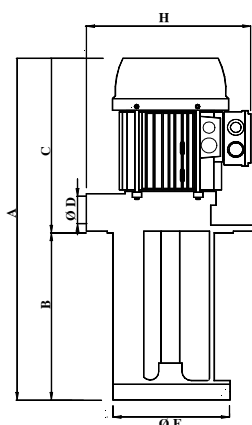


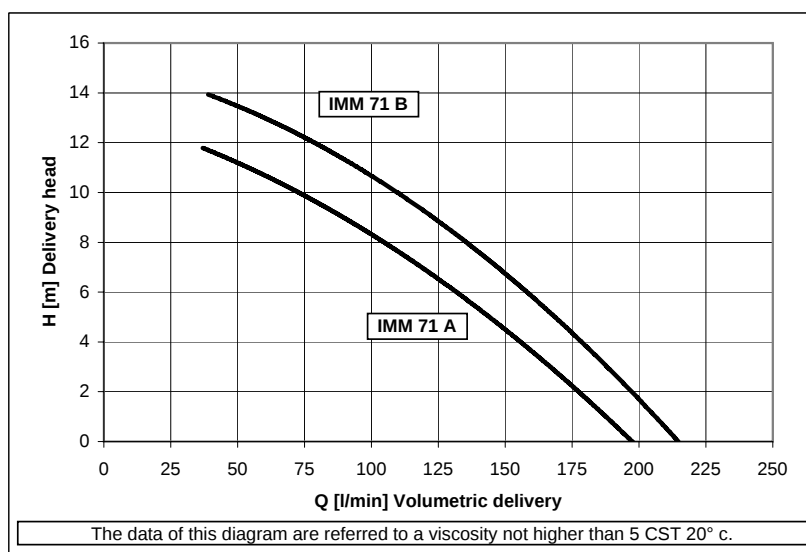
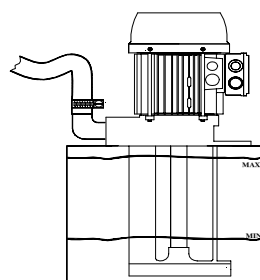
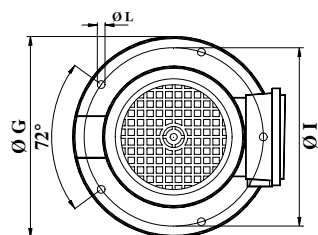
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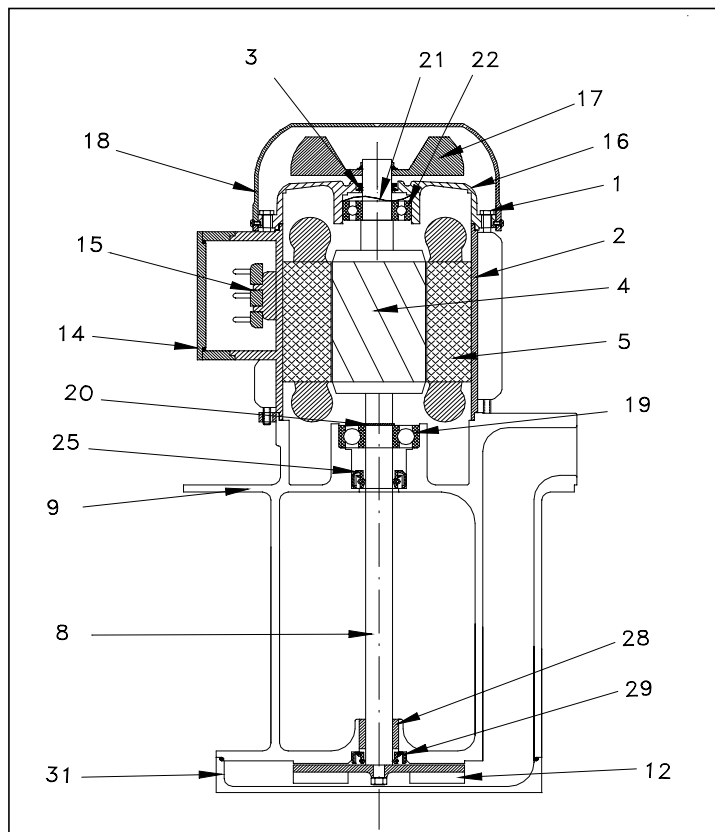
TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
IMM 71 A	440	200 T	240	1 "	190	—	230	225	204	9 N. 5	9,35
	490	250 T									9,75
	565	325* T									10,05
	680	440									11,30
IMM 71 B	440	200 T	240	1 "	190	—	230	225	204	9 N. 5	10,25
	490	250 T									10,60
	565	325* T									10,90
	680	440									12,20

On request: T = execution TRI * = cast iron pump body

Electrical features

Type	KW. Input	Hz. 50		Hz. 60		
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480
IMM 71 A	0,53	2,7/1,6	2,1/1,2	3,2/1,8	3,1/1,8	2,7/1,6
IMM 71 B	0,78	3,3/1,9	2,6/1,5	4,0/2,3	3,6/2,1	3,3/1,9




Type IMM 71 A

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 16	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium*
12 Impeller	Brass 58*
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6204 ZZ
21 Spring ring	$\varnothing$ 40
22 Bearing	6203 ZZ
25 Sealing ring	NBR 20X35X7
28 Bronze bearing	23X20X20
29 Sealing ring	NBR 20X32X5
31 House impeller	Aluminium*
41 O-Ring	NBR 180X2

Type IMM 71 B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 16	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium*
12 Impeller	Brass 58*
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6204 ZZ
21 Spring ring	$\varnothing$ 40
22 Bearing	6203 ZZ
25 Sealing ring	NBR 20X35X7
28 Bronze bearing	23X20X20
29 Sealing ring	NBR 20X32X5
31 House impeller	Aluminium*
41 O-Ring	NBR 180X2

On request

*	Cast iron G20 - only length mm. 325
**	Aisi 420
***	Sheet

Immersion pumps

Type IMM 80



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm.

The hydraulic components, namely the brass impeller, the scroll and the aluminium pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

- Machine tools (milling machines – lathes - drills)
- Glass processing machines (TRI version)
- Surface treatment systems (version in cast iron)*
- Filtration systems
- Air-conditioning systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4 – 5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

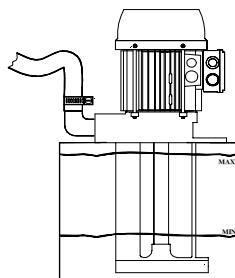
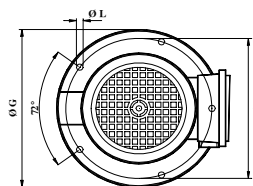
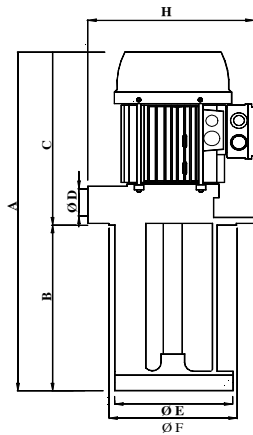


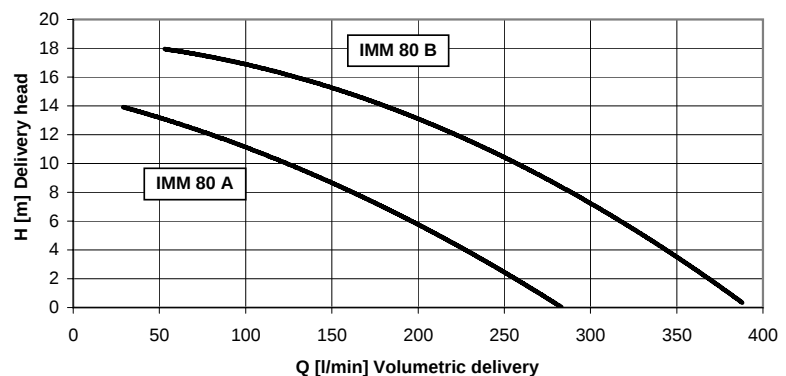
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
IMM 80 A	485	200* T	285	1 1/4"	202	220	250	260	235	9 N. 5	10,95
	535	250* T									12,75
	585	300* T									14,55
	635	350* T									16,35
	815	530									18,00
IMM 80 B	485	200* T	285	1 1/4"	202	220	250	260	235	9 N. 5	14,15
	535	250* T									14,55
	585	300* T									14,95
	635	350* T									15,35
	815	530									18,25

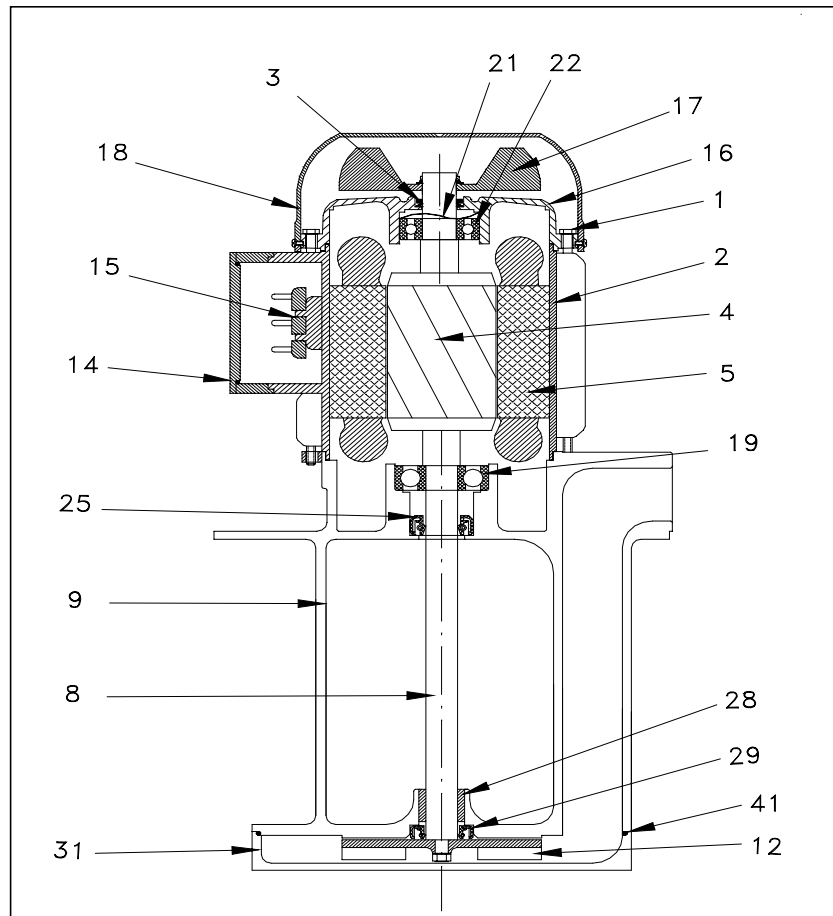
On request: T = execution TRI * = cast iron pump body

Electrical features

Type	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
IMM 80 A	1,15	3,3/1,9	2,6/1,5	4,0/2,3	3,6/2,1	3,3/1,9	2,8/1,6
IMM 80 B	1,47	4,8/2,8	3,8/2,2	5,8/3,4	5,2/3,0	4,8/2,8	4,0/2,3



The data of this diagram are referred to a viscosity not higher than 5 CST 20° c.


Type IMM 80A

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 20	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium*
12 Impeller	Brass 58*
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	$\varnothing$ 47
22 Bearing	6204 ZZ
25 Sealing ring	NBR 25X40X5
28 Bronze bearing	23X20X20
29 Sealing ring	NBR 20X32X5
31 House impeller	Aluminium*
41 OR ring	NBR 180X2

Type IMM 80B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 20	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium*
12 Impeller	Brass 58*
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	$\varnothing$ 47
22 Bearing	6204 ZZ
25 Sealing ring	NBR 25X40X5
28 Bronze bearing	23X20X20
29 Sealing ring	NBR 20X32X5
31 House impeller	Aluminium*
41 OR ring	NBR 180X2

On request

*	Cast iron G20 - only length mm. 250-300-350
**	Aisi 420
***	Sheet



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 3-4 mm. The hydraulic components, namely the cast iron impeller and scroll and the steel pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST). The temperature of the liquid must not exceed 90 °C.

They are usually used with:

- Machine tools
- Glass processing machines
- Surface treatment systems
- Filtration systems
- Painting cabins

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 7-8 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 5 - 6 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

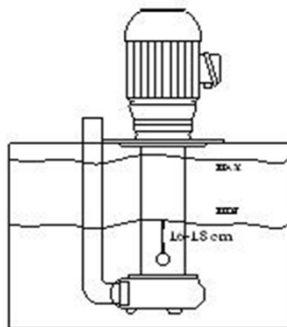
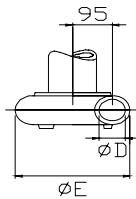
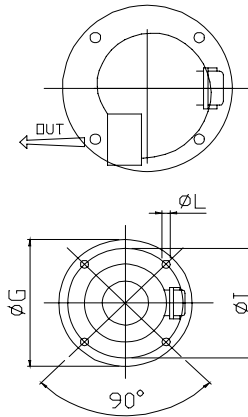
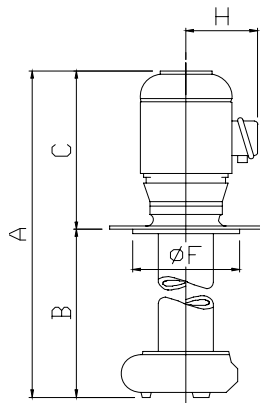
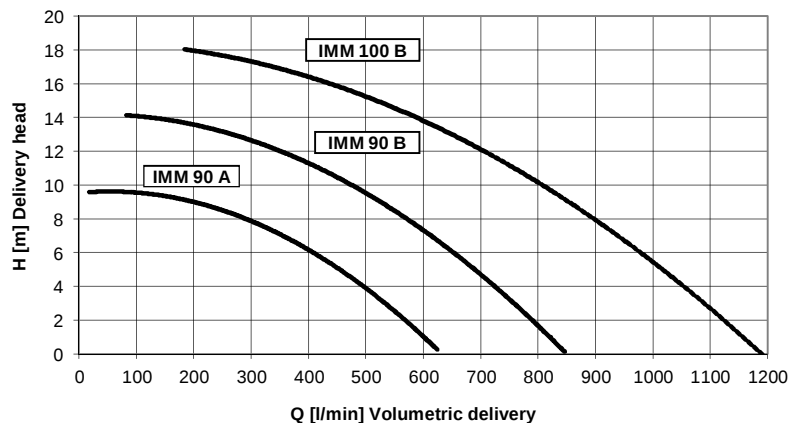


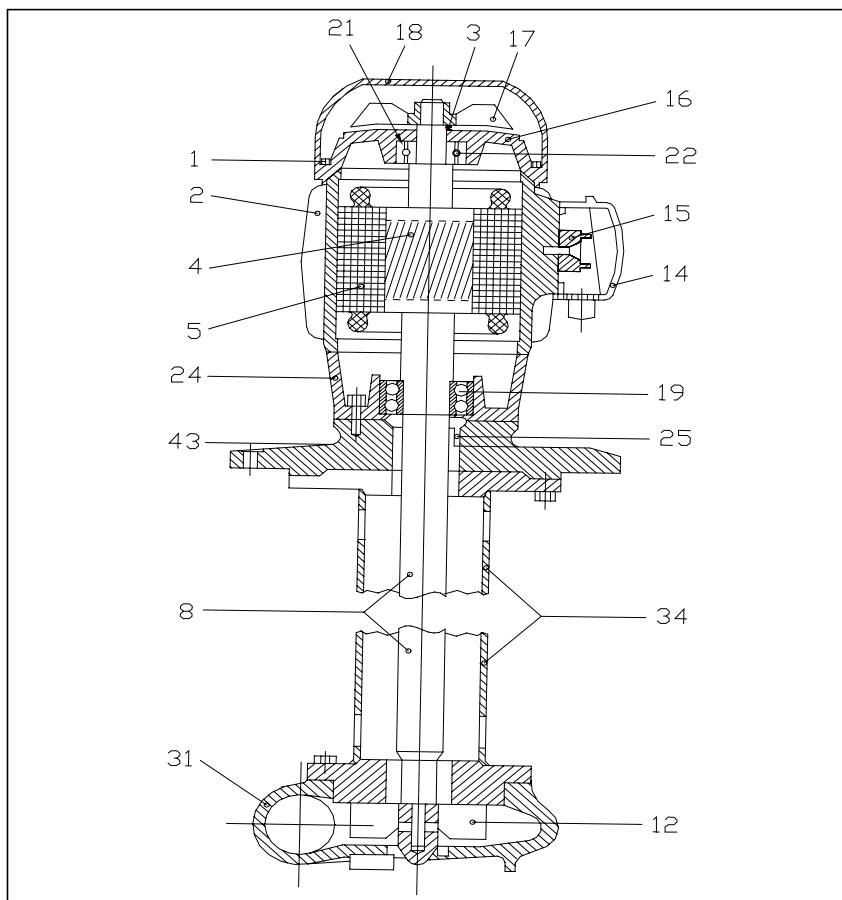
Table of dimensions and weights						
TYPE	A mm	B mm	Kg.	C mm	345	
IMM 90 A	695	350	42,00	ØD	2 "	
	795	450	48,10	ØE	mm 235	
	945	600	48,80	ØF	mm 240	
	1145	800	50,00	ØG	mm 300	
IMM 90 B	695	350	49,00	H	mm 130	
	795	450	49,60	ØI	mm 270	
	945	600	50,00	ØL	mm 13 - N. 4	
	1145	800	51,50			
IMM 100 B	730	350	53,00	C	mm 380	
	830	450	53,60	ØD	2- 1/2 "	
	980	600	54,30	H	mm 145	
	1180	800	55,50	Ø E-F-G-I-L= IMM 90		

Electrical features

Type	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
IMM 90 A	1,85	8,6/5,0	6,5/3,7	10,2/6,0	9,0/5,2	8,6/5	6,8/3,9
IMM 90 B	2,80	10,8/6,2	8,3/4,8	13,0/7,5	11/6,4	10,8/6,2	8,5/4,9
IMM 100 B	4,80	14,9/8,6	11,5/6,6	17,6/10,1	15,2/8,8	14/9/8,6	11,8/6,8



The data of this diagram are referred to a viscosity not higher than 5 CST 20 °C.


Materials
Components

1	Rod
2	Frame
3	V-Ring
4	Rotor
5	Stator
8	Shaft
12	Impeller
14	Terminal box
15	Terminal clock
16	Non-drive end shield
17	Fan
18	Fan cover
19	Bearing
21	Spring ring
22	Bearing
24	Drive end shield
25	Sealing ring
31	House impeller
34	Tube
43	Support flange

IMM 90 A

Steel
Aluminium
NBR Ø 25
Steel
Cast iron G20
Nylon
mm. 50x32 6P
Aluminium
Nylon
Nylon***
3207 ATN9 2RS
Ø 52
6205 ZZ
Cast iron G20
NBR 35X62X10
Cast iron G20
Steel
Cast iron G20

IMM 90 B

Steel
Aluminium
NBR Ø 25
Steel
Cast iron G20
Nylon
mm. 50x32 6P
Aluminium
Nylon
Nylon***
3207 ATN9 2RS
Ø 52
6205 ZZ
Cast iron G20
NBR 35X62X10
Cast iron G20
Steel
Cast iron G20

IMM 100 B

Steel
Aluminium
NBR Ø 30
Steel
Cast iron G20
Nylon
mm. 50x32 6P
Aluminium
Nylon
Nylon***
3207 ATN9 2RS
Ø 62
6206 ZZ
Cast iron G20
NBR 35X62X10
Cast iron G20
Steel
Cast iron G20

On request

Sheet

Immersion pumps

Type SPV 12- 18



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller, scroll and pump body in PBT allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST). The temperature of the liquid must not exceed 70 °C.

They are usually used on:-

Machine tools

Glass processing machines

Printing machines

(milling machines – lathes - drills)

(TRI version)

(axis in AISI 420-316

– PBT on depth of immersion 270 mm.)

Air-conditioning systems

Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3– 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office

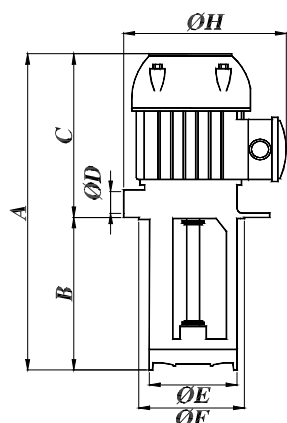


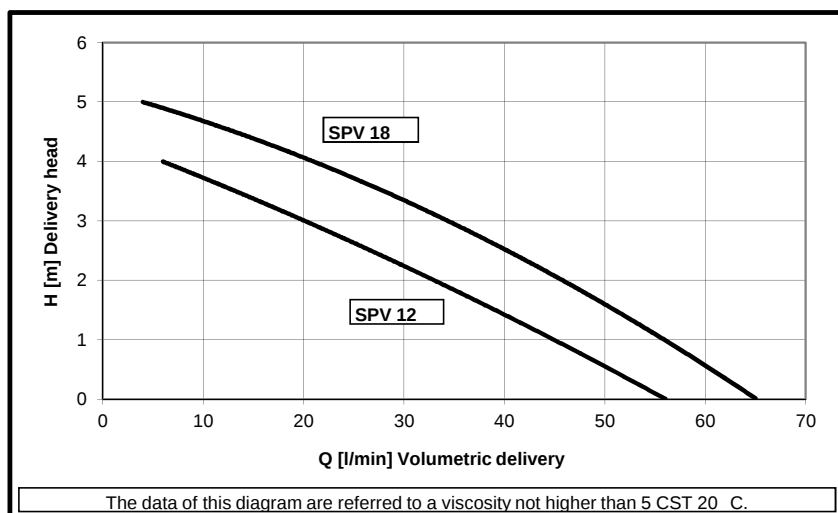
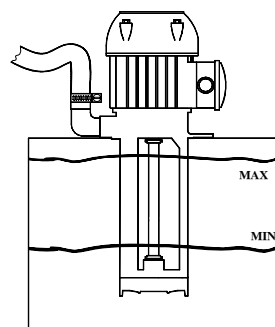
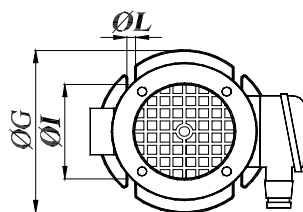
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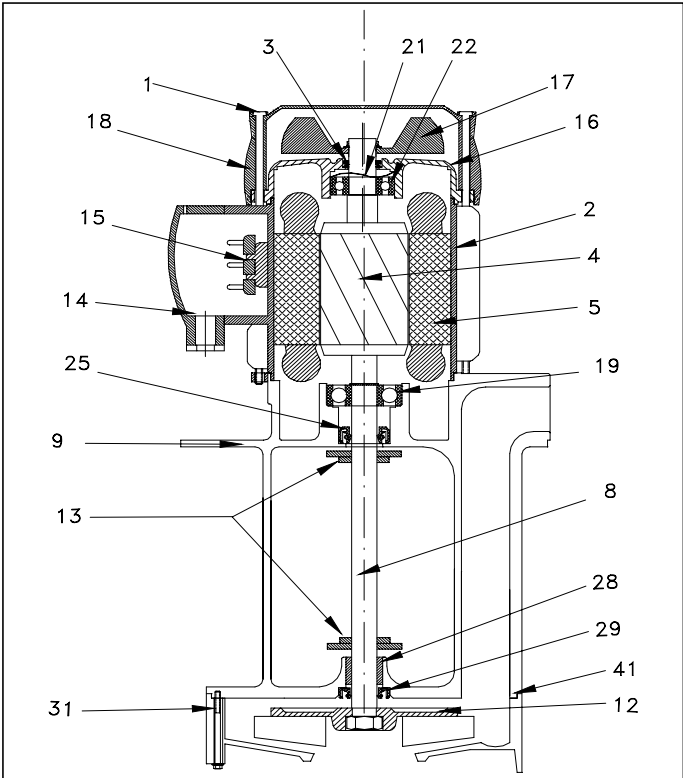
TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØI mm	Kg.
SPV 12	255	90 T	165	3/4"	98	100	130	151	115	7 N. 4	2,80
	285	120 T									2,87
	335	170 T									2,95
	385	220 T									3,05
	435	270 T									3,15
	515	350									3,30
SPV 18	255	90 T	165	3/4"	98	100	130	151	115	7 N. 4	2,85
	285	120 T									2,92
	335	170 T									3,00
	385	220 T									3,10
	435	270 T									3,20
	515	350									3,35

On request: T = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SPV 12	0,15	0,55/0,32	0,53/0,30	0,84/0,50	0,57/0,33	0,55/0,32	0,55/0,32
SPV 18	0,16	0,9/0,55	0,7/0,4	1,1/0,64	0,98/0,57	0,9/0,55	0,74/0,42





Type		SPV 12
	Components	Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 12	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon
19	Bearing	6201 2 RS
21	Spring ring	ø 32
22	Bearing	6201 ZZ
25	Sealing ring	NBR 12X22X5
28	Bronze bearing	14X12X10
29	Sealing ring	NBR 12X22X5
31	House impeller	PBT
41	OR 82,27X1,78	NBR

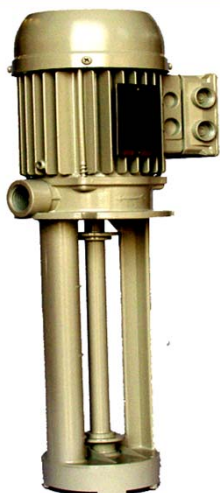
Type		SPV 18
	Components	Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 12	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon
19	Bearing	6201 2 RS
21	Spring ring	ø 32
22	Bearing	6201 ZZ
25	Sealing ring	NBR 12X22X5
28	Bronze bearing	14X12X10
29	Sealing ring	NBR 12X22X5
31	House impeller	PBT
41	OR 82,27X1,78	NBR

Details 28-29 only on length mm. 220-270-350

On request

**

Aisi 420 - Aisi 316



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller, scroll and pump body in PBT allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST). The temperature of the liquid must not exceed 70 °C.

They are usually used on:

Machine tools (milling machines – lathes - drills)
Glass processing machines (TRI version)
Printing machines (axis in AISI 420
– PBT on depth of immersion 270 mm.)

Air-conditioning systems

Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3– 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

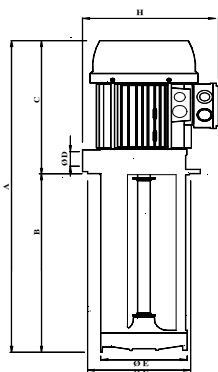


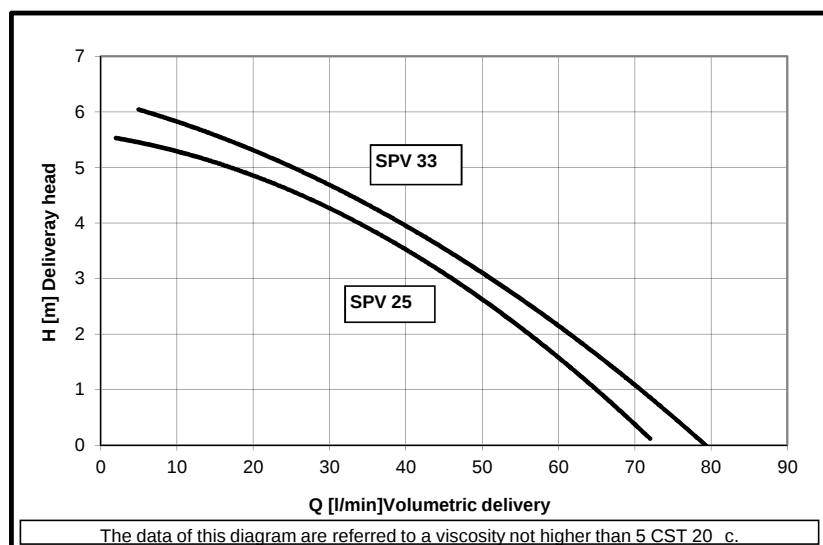
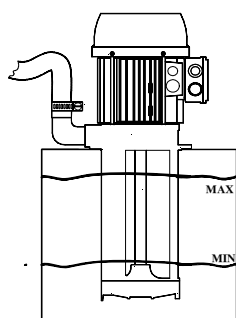
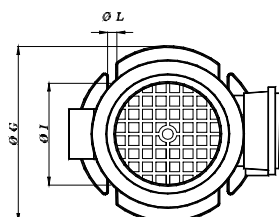
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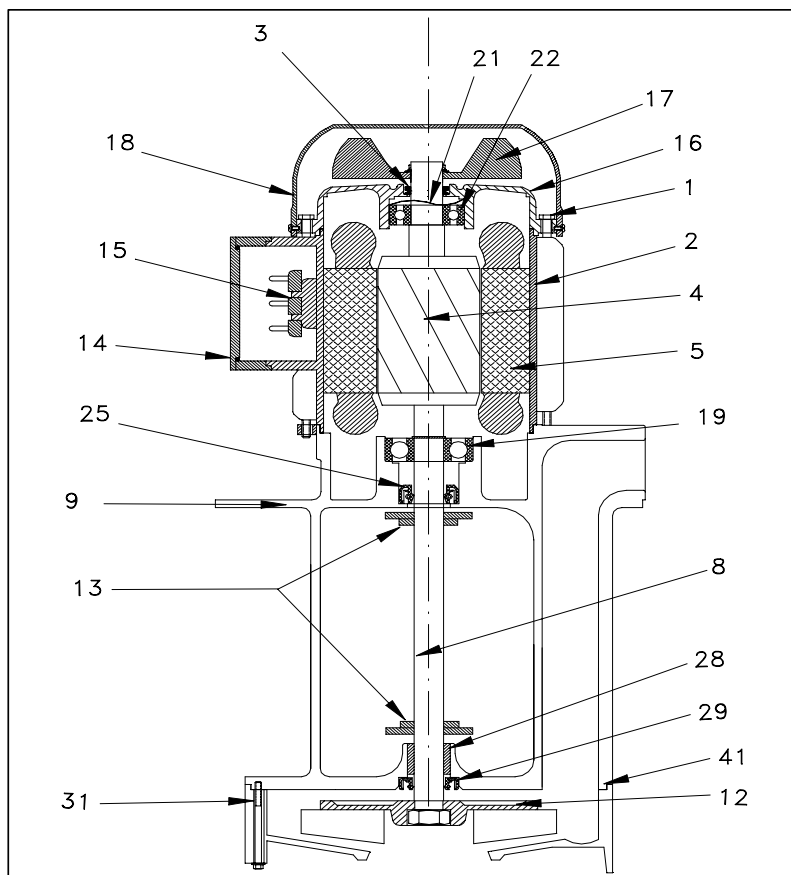
TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØJ mm	Kg.
SPV 25	300	90 T	210	3/4"	98	100	130	170	115	7 N. 4	4,34
	330	120 T									4,40
	380	170 T									4,50
	430	220 T									4,60
	480	270 T									4,70
	560	350									4,85
SPV 33	300	90 T	210	3/4"	98	100	130	170	115	7 N. 4	4,84
	330	120 T									4,90
	380	170 T									5,00
	430	220 T									5,10
	480	270 T									5,20
	560	350									5,35

On request: T = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SPV 25	0,30	1,0/0,58	0,76/0,44	1,2/0,7	1,1/0,6	1,0/0,58	0,8/0,45
SPV 33	0,40	1,6/0,9	1,2/0,7	1,9/1,1	1,73/1,0	1,6/0,9	1,2/0,7





Type

SPV 25

Type

SPV 33

Components Materials

1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	Valox PBT
12	Impeller	Valox PBT
13	Rubber washer	Valox PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6003 ZZ
21	Spring ring	ø 35
22	Bearing	6202 ZZ
25	Sealing ring	NBR 17X25X4
28	Bronze bearing	19X17X15
29	Sealing ring	NBR 17X25X4
31	House impeller	Valox PBT
41	OR 82,27X1,78	NBR

Details 28-29 only on length mm. 350

On request

**	Aisi 420
***	Sheet

Components Materials

1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	Valox PBT
12	Impeller	Valox PBT
13	Rubber washer	Valox PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6003 ZZ
21	Spring ring	ø 35
22	Bearing	6202 ZZ
25	Sealing ring	NBR 17X25X4
28	Bronze bearing	19X17X15
29	Sealing ring	NBR 17X25X4
31	House impeller	Valox PBT
41	OR 82,27X1,78	NBR

Details 28-29 only on length mm. 350

On request

**	Aisi 420
***	Sheet

Immersion pumps

Type SPV 50 - 75



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller, scroll and pump body in PBT allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST).

The temperature of the liquid must not exceed 70 °C.

They are usually used on:

Machine tools

Glass processing machines

Printing machines

(milling machines – lathes - drills)

(TRI version on depth of immersion 200-270 mm.)

(axis in AISI 420

– PBT on depth of immersion 200- 270-350 mm.)

Air-conditioning systems

Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3– 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

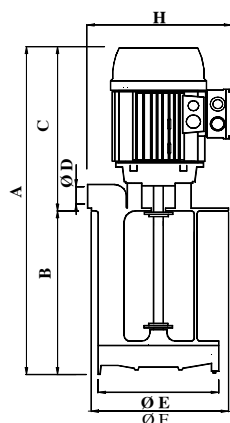


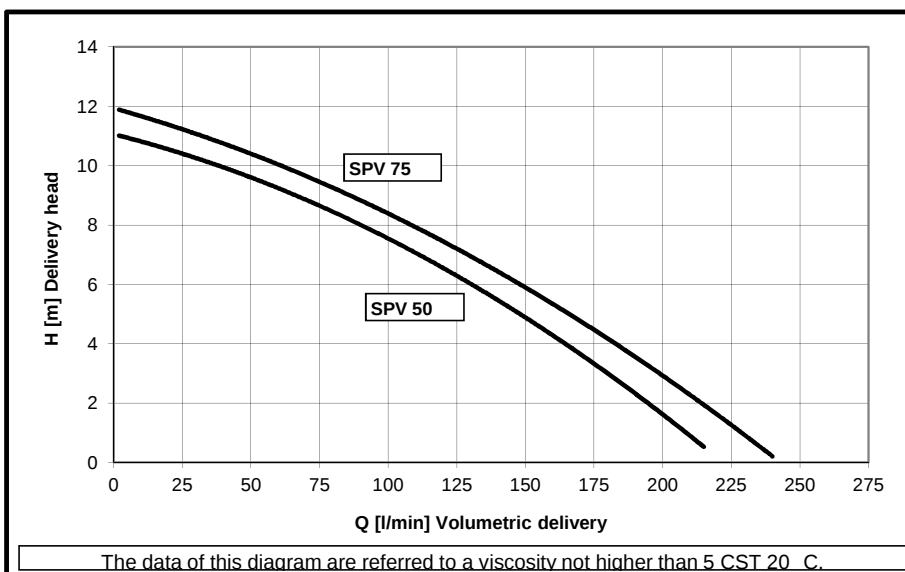
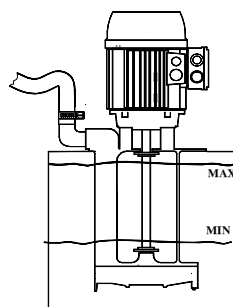
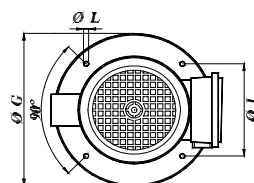
Table of dimensions and weights

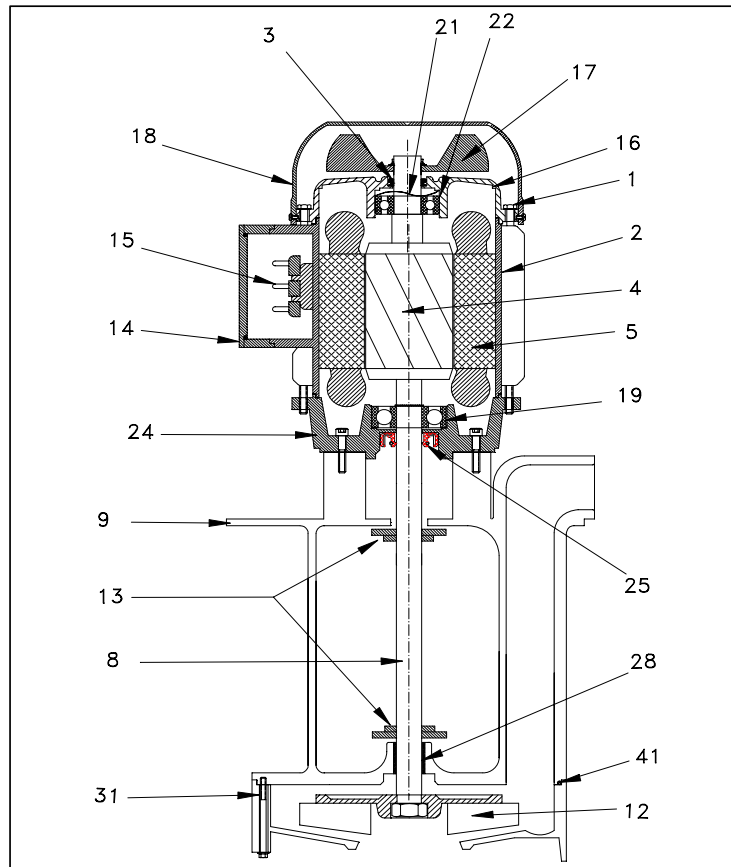
TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØI mm	Kg.
SPV 50	460	200 T	260	1 1/4"	138	140	180	215	160	9 N. 4	7,75
	530	270 T									8,30
	610	350									8,95
	700	440									9,65
	810	550									10,50
SPV 75	460	200 T	260	1 1/4"	138	140	180	215	160	9 N. 4	8,70
	530	270 T									9,25
	610	350									9,90
	700	440									10,60
	810	550									11,45

On request: T = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SPV 50	0,53	2,4/1,4	1,94/1,12	3,0/1,68	2,6/1,5	2,4/1,4	2,0/1,17
SPV 75	0,78	3,3/1,9	2,5/1,4	4,0/2,3	3,6/2,1	3,3/1,9	2,8/1,6





Type

SPV 50

	Components	Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel aisi 420**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6304 ZZ
21	Spring ring	Ø 40
22	Bearing	6203 ZZ
24	Flange	Aluminium
25	Sealing ring	NBR 25x40x7
28	Bush	20x23x20 Plastic
31	House impeller	PBT
41	OR 101,34 x 1,78	NBR

Type

SPV 75

	Components	Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel aisi 420**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6304 ZZ
21	Spring ring	Ø 40
22	Bearing	6203 ZZ
24	Flange	Aluminium
25	Sealing ring	NBR 25x40x7
28	Bush	20x23x20 Plastic
31	House impeller	PBT
41	OR 101,34 x 1,78	NBR

On request

**

On shaft length mm. 200-270-350 PBT covered

Sheet

Immersion pumps

Type SPV 100 - 150



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller, scroll and pump body in PBT allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST). The temperature of the liquid must not exceed 70 °C.

They are usually used on:-

Machine tools

Glass processing machines

Printing machines

(milling machines – lathes - drills)

(TRI version)

(axis in AISI 420

– PBT on depth of immersion 200- 270-350 mm.)

Air-conditioning systems

Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3– 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

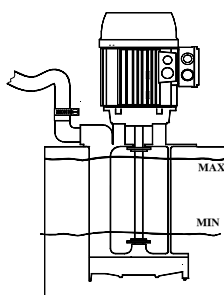
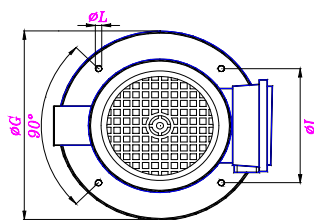
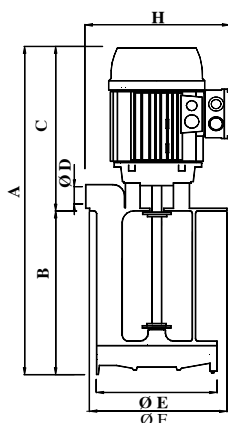


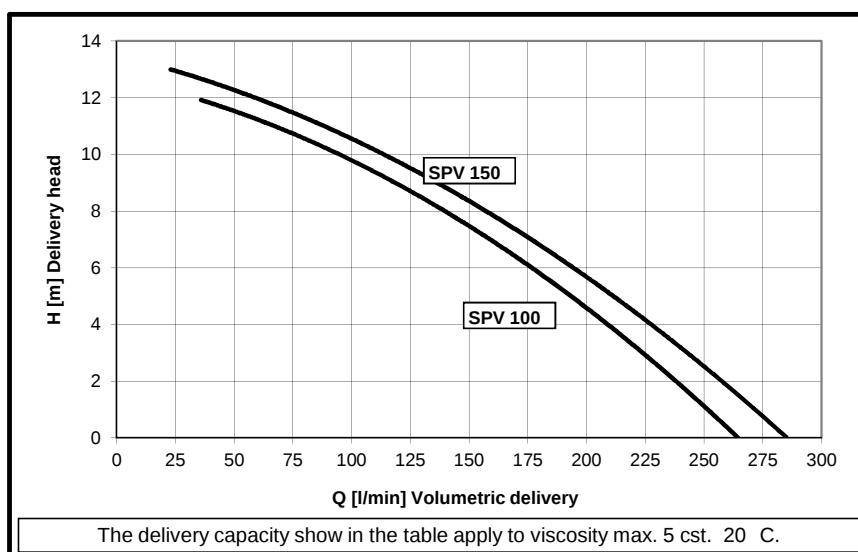
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØI mm	Kg.
SPV 100	500	200 T	300	1 1/4"	138	140	180	230	160	9 N. 4	10,50
	570	270 T									11,05
	650	350									11,70
	740	440									12,40
	850	550									13,25
SPV 150	500	200 T	300	1 1/4"	138	140	180	230	160	9 N. 4	11,80
	570	270 T									12,35
	650	350									13,00
	740	440									13,70
	850	550									14,55

On request: T = execution TRI

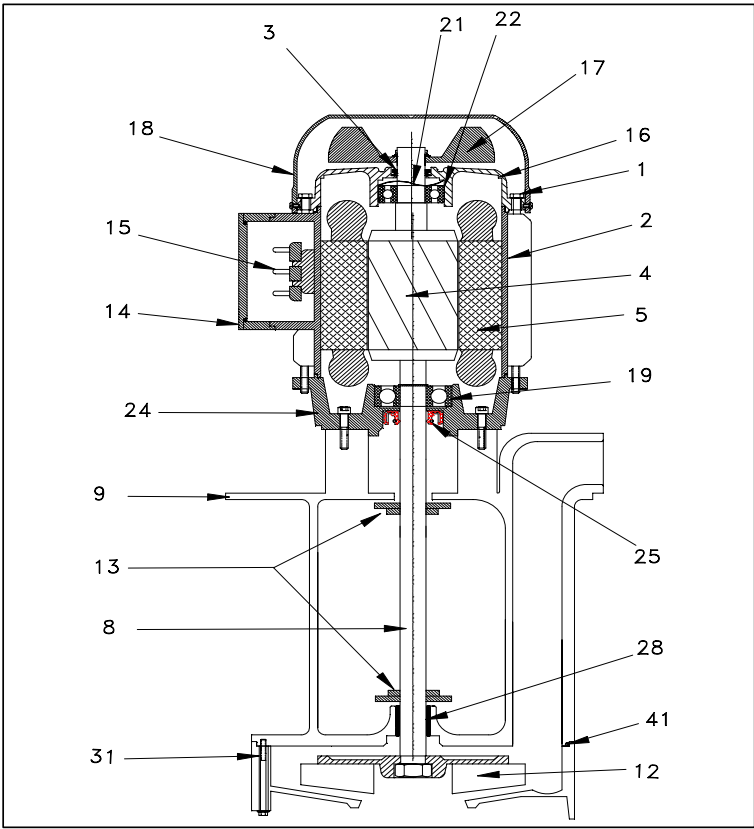
Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SPV 100	1,15	3,3/1,9	2,6/1,5	4,0/2,3	3,6/2,1	3,3/1,9	2,8/1,6
SPV 150	1,47	4,8/2,8	3,8/2,2	5,8/3,4	5,2/3,0	4,8/2,8	4,0/2,3



Immersion pumps

Type SPV 100 - 150



Type	SPV 100	
Components		Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 20	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel aisi 420**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 50x32 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6205 ZZ
21	Spring ring	Ø 47
22	Bearing	6204 ZZ
24	Flange	Aluminium
25	Sealing ring	NBR 25x40x7
28	Bush	20x23x20 Plastic
31	House impeller	PBT
41	OR 101,34 x 1,78	NBR

Type	SPV 150	
Components		Materials
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring Ø 20	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel aisi 420**
9	Pump body	PBT
12	Impeller	PBT
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 50x32 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6205 ZZ
21	Spring ring	Ø 47
22	Bearing	6204 ZZ
24	Flange	Aluminium
25	Sealing ring	NBR 25x40x7
28	Bush	20x23x20 Plastic
31	House impeller	PBT
41	OR 101,34 x 1,78	NBR

On request

**	Shaft length mm. 200-270-350 PBT covered
***	Sheet



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm.

The hydraulic components, namely the impeller and scroll in PBT and the cast iron pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 70° C.

They are usually used on:

- Machine tools (milling machines – lathes - drills)
- Surface treatment systems
- Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office

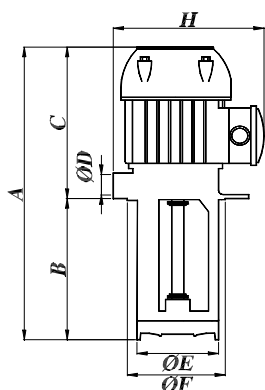


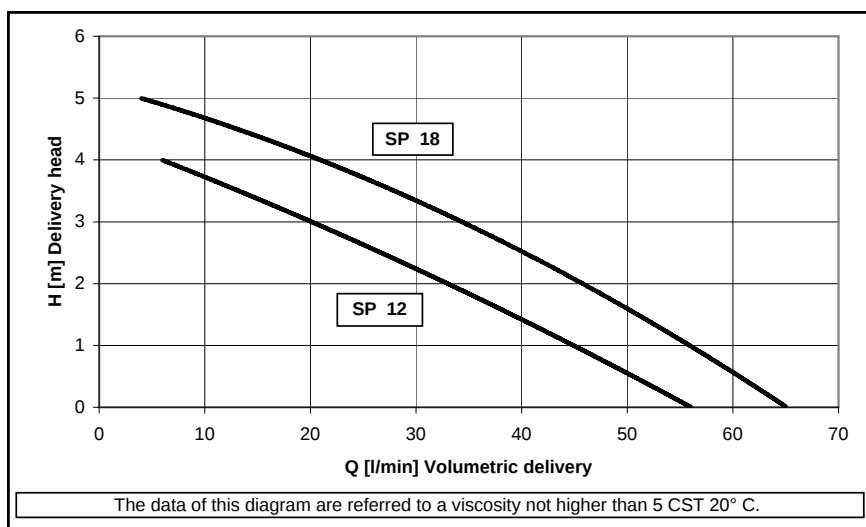
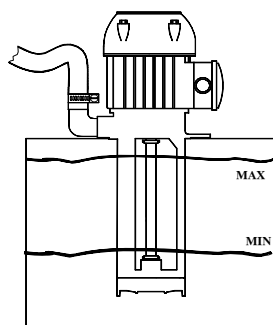
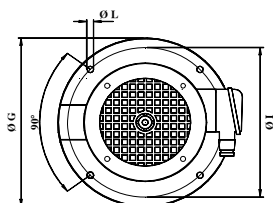
Table of dimensions and weights

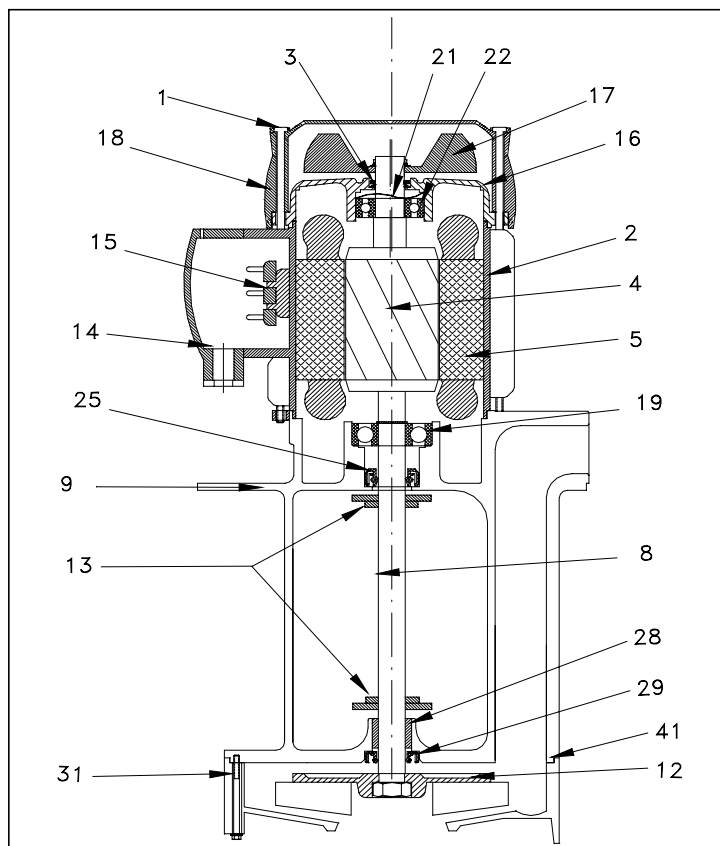
TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
SP 12	255	90 T	165	3/4"	98	100	130	151	115	7 N. 4	5,02
	285	120 T									5,31
	335	170 T									5,51
	385	220 T									5,69
	435	270 T									5,97
	515	350									6,53
SP 18	255	90 T	165	3/4"	98	100	130	151	115	7 N. 4	5,07
	285	120 T									5,36
	335	170 T									5,56
	385	220 T									5,74
	435	270 T									6,02
	515	350									6,58

On request: T = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SP 12	0,15	0,55/0,32	0,53/0,30	0,84/0,50	0,57/0,33	0,55/0,32	0,55/0,32
SP 18	0,16	0,9/0,55	0,7/0,4	1,1/0,64	0,98/0,57	0,9/0,55	0,74/0,42





Type SP12

	Components	Materials
1	Rod	Steel C 40
2	Frame	Aluminium
3	V-Ring Ø 12	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	Cast iron G 20
12	Impeller	PBT*
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Drive end shield	6003 2 RS
21	Spring ring	Ø 32
22	Bearing	6201 ZZ
25	Sealing ring	NBR 17X25X4
28	Bronze bearing	19x17x15
29	Sealing ring	NBR 17X25X4
31	House impeller	PBT
41	OR 82,27X1,78	NBR

Type SP18

	Components	Materials
1	Rod	Steel C 40
2	Frame	Aluminium
3	V-Ring Ø 12	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40**
9	Pump body	Cast iron G 20
12	Impeller	PBT*
13	Rubber washer	PBT
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Drive end shield	6003 2 RS
21	Spring ring	Ø 32
22	Bearing	6201 ZZ
25	Sealing ring	NBR 17X25X4
28	Bronze bearing	19x17x15
29	Sealing ring	NBR 17X25X4
31	House impeller	PBT
41	OR 82,27X1,78	NBR

Details 28 - 29 only on length mm. 350

	On request
*	Cast iron G 20
**	Aisi 420
***	Sheet

Immersion pumps

Type SP 25 - 33



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller and scroll in PBT and the cast iron pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST). The temperature of the liquid must not exceed 70° C.

They are usually used on:

- Machine tools (milling machines – lathes - drills)
- Surface treatment systems
- Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office

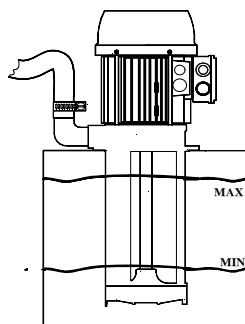
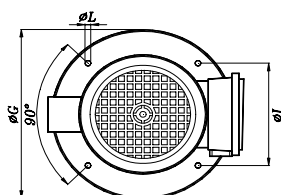
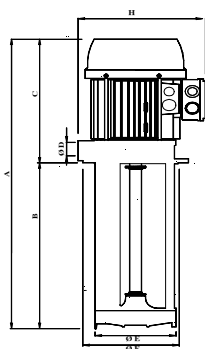


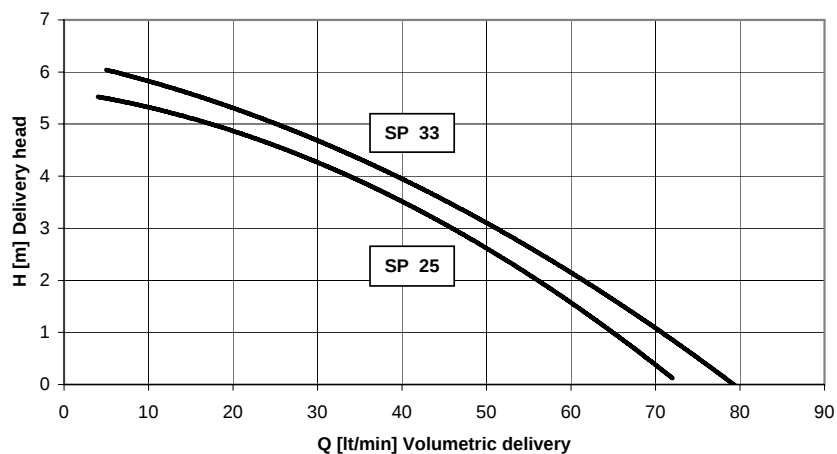
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
SP 25	305	90 T	215	3/4"	98	100	130	170	115	7 N. 4	6,54
	335	120 T									6,84
	385	170 T									7,06
	435	220 T									7,24
	485	270 T									7,52
	565	350									8,08
SP 33	305	90 T	215	3/4"	98	100	130	170	115	7 N. 4	7,06
	335	120 T									7,34
	385	170 T									7,56
	435	220 T									7,74
	485	270 T									8,02
	565	350									8,58

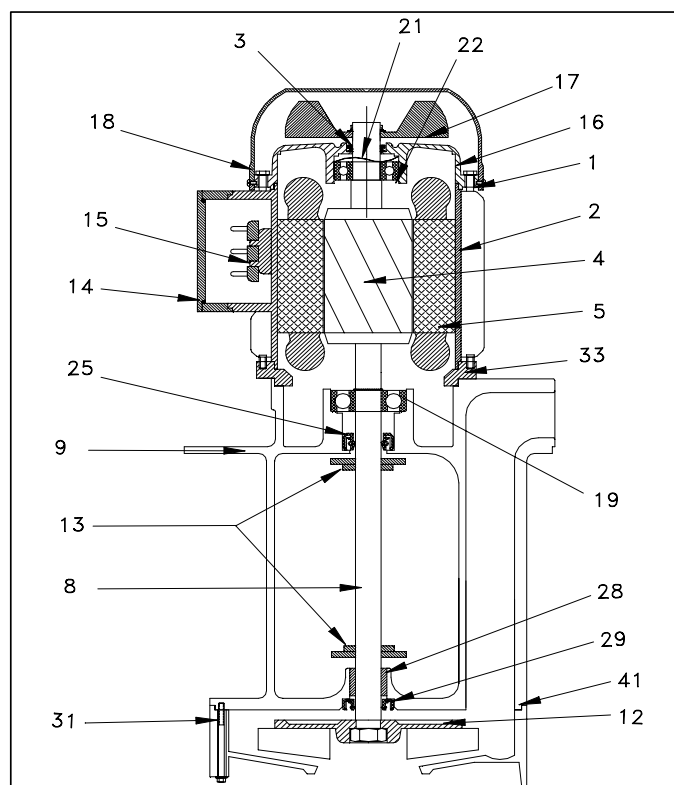
On request: T = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SP 25	0,30	1,0/0,58	0,76/0,44	1,2/0,7	1,1/0,6	1,0/0,58	0,8/0,45
SP 33	0,40	1,6/0,9	1,2/0,7	1,9/1,1	1,73/1,0	1,6/0,9	1,2/0,7



The delivery capacity show in the table apply to viscosity max. 5 cst. 20° C.



Type	SP 25
Components	Materials
1	Rod
2	Frame
3	V-Ring $\varnothing$ 16
4	Rotor
5	Stator
8	Shaft
9	Pump body
12	Impeller
13	Rubber washer
14	Terminal box
15	Terminal block
16	Non-drive end shield
17	Fan
18	Fan cover
19	Bearing
21	Spring ring
22	Bearing
25	Sealing ring
28	Bronze bearing
29	Sealing ring
31	House impeller
33	Flange
41	OR ring

Details 28 - 29 only non body pump length mm. 350

On request
* Cast iron G 20
** Aisi 420
*** Sheet

Type	SP 33
Components	Materials
1	Rod
2	Frame
3	V-Ring $\varnothing$ 16
4	Rotor
5	Stator
8	Shaft
9	Pump body
12	Impeller
13	Rubber washer
14	Terminal box
15	Terminal block
16	Non-drive end shield
17	Fan
18	Fan cover
19	Bearing
21	Spring ring
22	Bearing
25	Sealing ring
28	Bronze bearing
29	Sealing ring
31	House impeller
33	Flange
41	OR ring

Details 28 - 29 only non body pump length mm. 350

On request
* Cast iron G 20
** Aisi 420
*** Sheet

Immersion pumps

Type SP 50 - 75



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller and scroll in PBT and the cast iron pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST). The temperature of the liquid must not exceed 70° C.

They are usually used on:

- **Machine tools** (milling machines – lathes - drills)
- **Surface treatment systems**
- **Filtration systems**

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

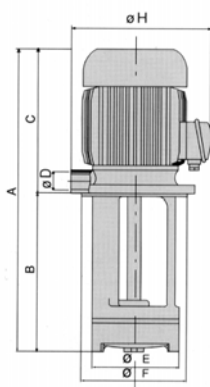
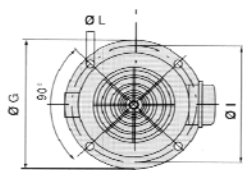


Table of dimensions and weights

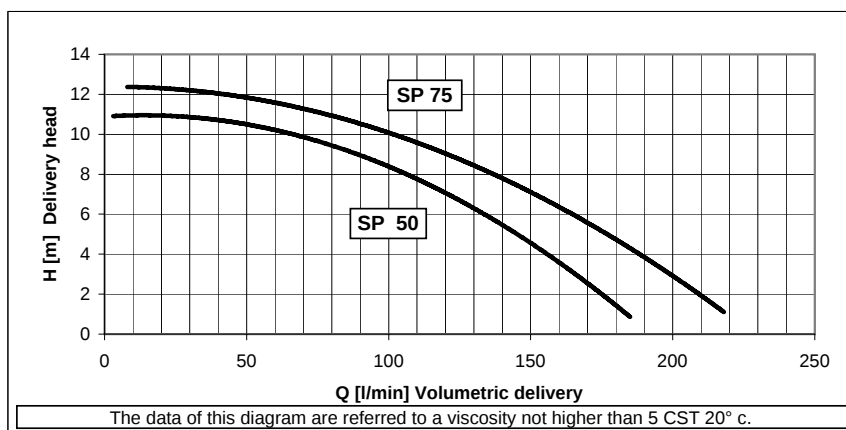
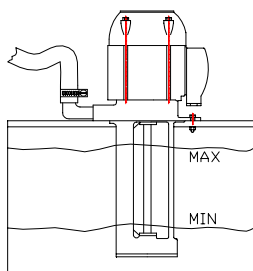
TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
SP 50	450	200 T	250	1 1/4"	138	140	180	215	160	9 N. 4	13,55
	520	270 T									14,25
	600	350									15,05
	690	440									15,95
	800	550									17,05
SP 75	450	200 T	250	1 1/4"	138	140	180	215	160	9 N. 4	14,50
	520	270 T									15,20
	600	350									16,00
	690	440									16,90
	800	550									18,00

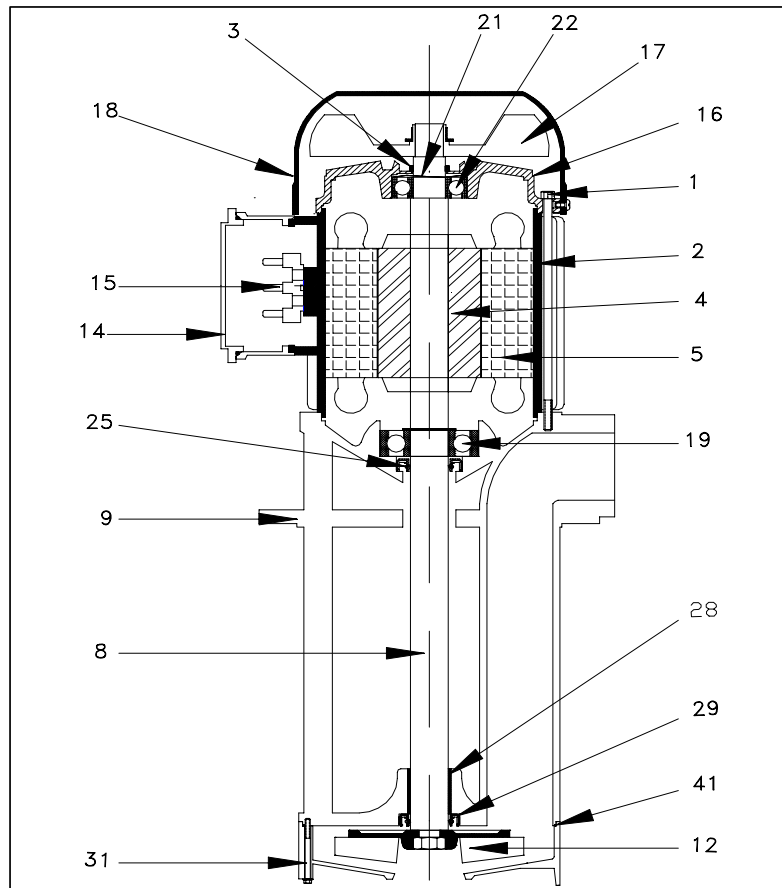
T on request = execution TRI



Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SP 50	0,53	2,40/1,40	1,94/1,12	3,00/1,68	2,60/1,50	2,40/1,40	2,00/1,17
SP 75	0,78	3,30/1,90	2,50/1,40	4,00/2,30	3,60/2,10	3,30/1,90	2,80/1,60





Type	SP 50	
Components	Materials	
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring $\varnothing$ 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40*
9	Pump body	Cast iron G 20
12	Impeller	PBT *
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6304 ZZ
21	Spring ring	$\varnothing$ 40
22	Bearing	6203 ZZ
25	Sealing ring	NBR 20X35X7
28	Bronze bearing	23x20x20
29	Sealing ring	NBR 20x32x7
31	House impeller	PBT*
41	OR ring	NBR 101,34 X1,78

On request

*	Cast iron G 20
**	Aisi 420
***	Sheet

Type	SP 75	
Components	Materials	
1	Rod	Steel
2	Frame	Aluminium
3	V-Ring $\varnothing$ 16	NBR
4	Rotor	
5	Stator	
8	Shaft	Steel C 40*
9	Pump body	Cast iron G 20
12	Impeller	PBT *
14	Terminal box	Nylon
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Nylon***
19	Bearing	6304 ZZ
21	Spring ring	$\varnothing$ 40
22	Bearing	6203 ZZ
25	Sealing ring	NBR 20X35X7
28	Bronze bearing	23x20x20
29	Sealing ring	NBR 20x32x7
31	House impeller	PBT*
41	OR ring	NBR 101,34 X1,78

On request

*	Cast iron G 20
**	Aisi 420
***	Sheet



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm.

The hydraulic components, namely the impeller and scroll in PBT and the cast iron pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 70° C.

They are usually used on:

- Machine tools (milling machines – lathes - drills)
- Surface treatment systems
- Filtration systems

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3 – 4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

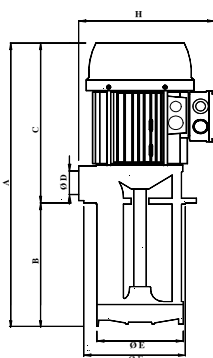


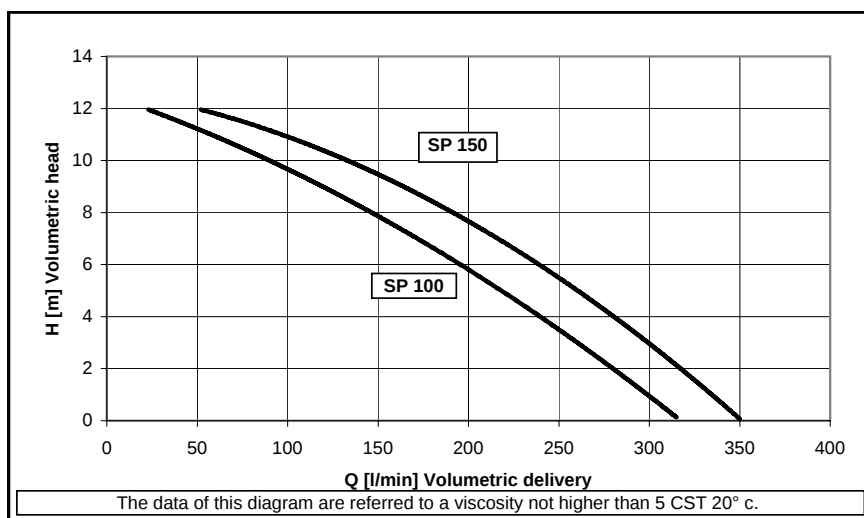
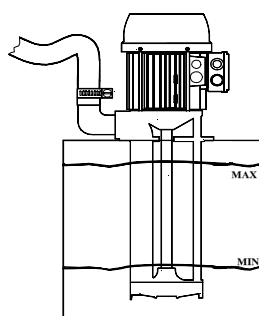
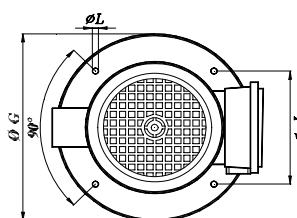
Table of dimensions and weights

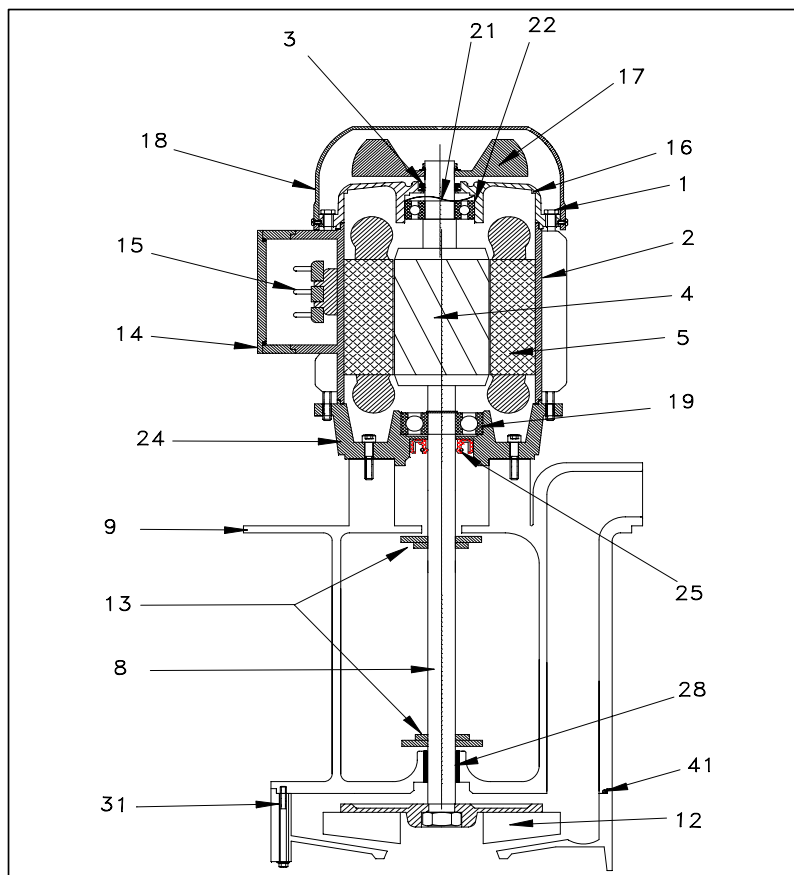
TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
SP 100	500	200 T	300	1 1/4"	138	140	180	230	160	9 N. 4	16,30
	570	270 T									17,10
	650	350									18,06
	740	440									19,10
	850	550									20,35
SP 150	500	200 T	300	1 1/4"	138	140	180	230	160	9 N. 4	17,60
	570	270 T									18,40
	650	350									19,30
	740	440									20,07
	850	550									21,90

T on request = execution TRI

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60		
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480
SP 100	1,15	3,3/1,9	2,6/1,5	4,0/2,3	3,6/2,1	3,3/1,9
SP 150	1,47	4,8/2,8	3,7/2,2	5,8/3,4	5,2/3,0	4,8/2,8





Type	SP 100
Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 20	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	PBT *
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	$\varnothing$ 47
22 Bearing	6204 ZZ
25 Sealing ring	NBR 25X35X7
28 Bronze bearing	23x20x20
29 Sealing ring	NBR 20x32x7
31 House impeller	PBT*
41 OR ring	NBR 101,34 X1,78

On request

*	Cast iron G 20
**	Aisi 420
***	Sheet

Type	SP 150
Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-Ring $\varnothing$ 20	NBR
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	PBT *
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	$\varnothing$ 47
22 Bearing	6204 ZZ
25 Sealing ring	NBR 25X35X7
28 Bronze bearing	23x20x20
29 Sealing ring	NBR 20x32x7
31 House impeller	PBT*
41 OR ring	NBR 101,34 X1,78

On request

*	Cast iron G 20
**	Aisi 420
***	Sheet

Centrifugal pumps - side mounted

Type **SQ**



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the impeller in nylon and the scroll in cast iron allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST) and a maximum temperature of 70° c.

They are usually used on:

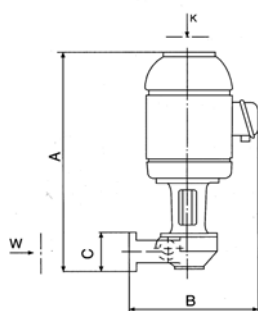
Machine tools (milling machines – lathes)

Surface treatment systems (de-oilers)

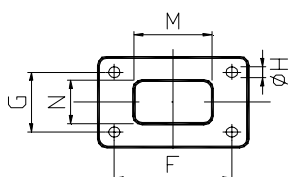
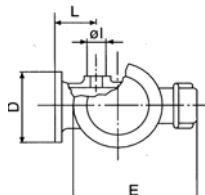
They should be installed on the side of the tank to allow the liquid to enter straight into the suction mouth (see Figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office



Vista secondo K



	M	N
SQ 56 - 63	50	30
SQ 71 - 80	80	40

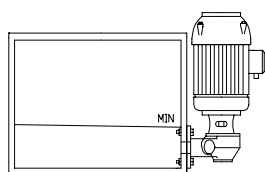
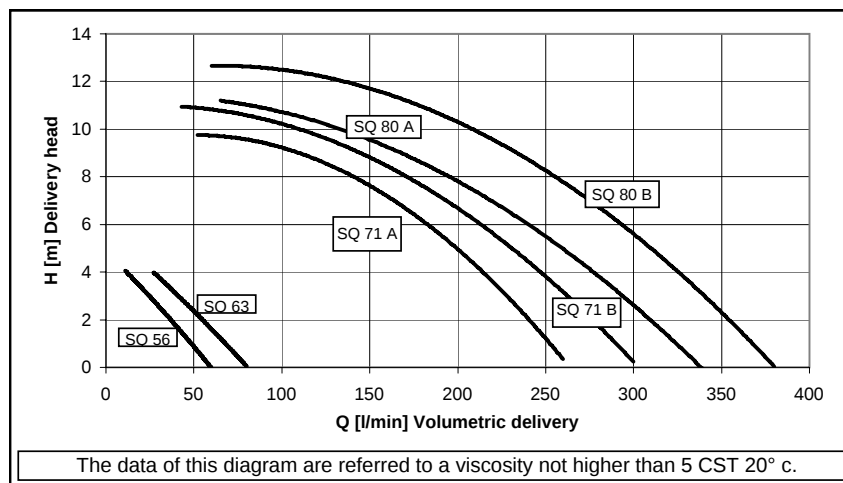


Table of dimensions and weights

TYPE	A mm	B mm	C mm	D mm	E mm	F mm	G mm	ØH mm	ØI mm	L mm	Kg.
SQ 56/S	265	170	60	95	140	75	45	7	3/8"	51	3,87
SQ 63/S	300	180	60	95	158	75	45	7	1/2"	51	4,95
SQ 71A	330	245	80	145	175	115	60	9	1"	62	14,50
SQ 71B	330	245	80	145	175	115	60	9	1"	62	15,20
SQ 80A	335	250	80	145	210	115	60	9	1 1/4"	62	16,30
SQ 80B	335	250	80	145	210	115	60	9	1 1/4"	62	17,30

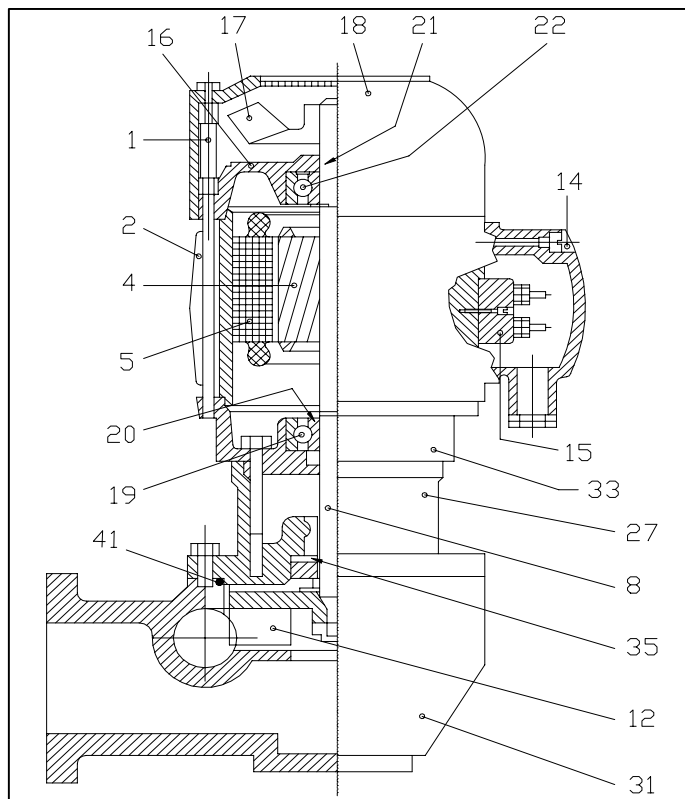
Electrical features

TYPE	Kw Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
SQ 56/S	0,16	0,90/0,55	0,70/0,40	1,10/0,64	0,98/0,57	0,90/0,55	0,74/0,42
SQ 63/S	0,30	1,00/0,58	0,76/0,44	1,20/0,70	1,10/0,60	1,00/0,58	0,80/0,45
SQ 71A	0,53	2,40/1,40	1,94/1,12	3,00/1,68	2,60/1,50	2,40/1,40	2,00/1,17
SQ 71B	0,78	3,30/1,90	2,60/1,50	4,00/2,30	3,60/2,10	3,30/1,90	2,80/1,60
SQ 80A	1,15	3,30/1,90	2,60/1,50	4,00/2,30	3,60/2,10	3,30/1,90	2,80/1,60
SQ 80B	1,47	4,80/2,80	3,70/2,20	5,80/3,40	5,20/3,00	4,80/2,80	4,00/2,30



Centrifugal pumps - side mounted

Type **SQ**



Type	SQ 56	SQ 63	SQ 71A-B	SQ 80A-B
Components	Materials	Materials	Materials	Materials
1 Rod	Steel	Steel	Steel	Steel
2 Frame	Aluminium	Aluminium	Aluminium	Aluminium
3 V-Ring	NBR ø 12	NBR ø 14	NBR ø 16	NBR ø 20
4 Rotor				
5 Stator				
8 Shaft	Steel C 40**	Steel C 40**	Steel C 40**	Steel C 40**
12 Impeller	Nylon*	Nylon*	Brass 58*	Brass 58*
14 Terminal box	Nylon	Nylon	Nylon	Nylon
15 Terminal block	mm. 40x25 6P	mm. 40x25 6P	mm. 40x25 6P	mm. 50X32 6P
16 Non-drive end shield	Aluminium	Aluminium	Aluminium	Aluminium
17 Fan	Nylon	Nylon	Nylon	Nylon
18 Fan cover	Nylon***	Nylon***	Nylon***	Nylon***
19 Bearing	6201 ZZ	6003 ZZ	6204 ZZ	6304 ZZ
21 Spring ring	ø 32	ø 35	ø 40	ø 47
22 Bearing	6201 ZZ	6202 ZZ	6203 ZZ	6204 ZZ
24 Flange	Aluminium	Aluminium	Aluminium	Aluminium
27 Cone	PBT	PBT	No	No
27 Coupling	No	No	Cast iron G20	Cast iron G20
31 House impeller	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
35 Mechanical seal	ø 12	ø 12	ø 19	ø 19
41 OR ring	NBR 56,87X1,78	NBR 56,87X1,78	No	No

On request

**	Aisi 420
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Self-priming pumps

Type AU 56 - 63

Usages:

These pumps are suitable for transferring liquids containing impurities measuring up to 30 micron.

The hydraulic components, namely the brass scroll, the bottom in cast iron and the aluminium pump body, allow the pumps to be used with emulsions, oily substances and liquids in general as long as they are not oxidative for construction materials. Viscosity must not exceed 3° Engler (21 CST).

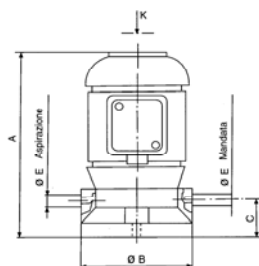
They must be installed at the top of the tank and must be primed before use.

If the pump sucks in air due to lack of liquid, priming must be repeated.

To ensure a long life for the pump, never let it turn when it is dry since the mechanical seal is not self-lubricated.

Where possible, the installation of a suction filter is recommended.

For other usages you are advised to consult our technical office.

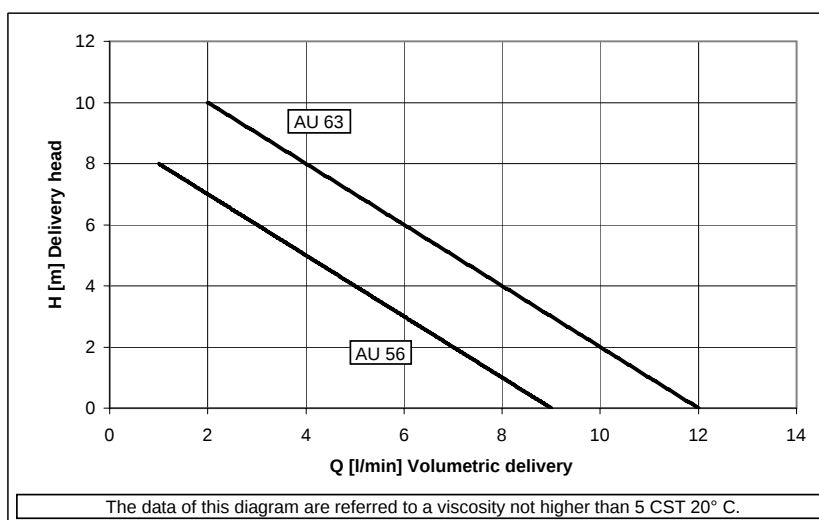
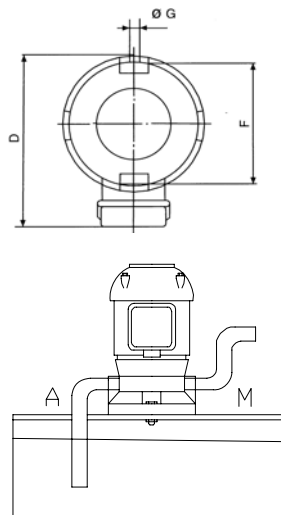


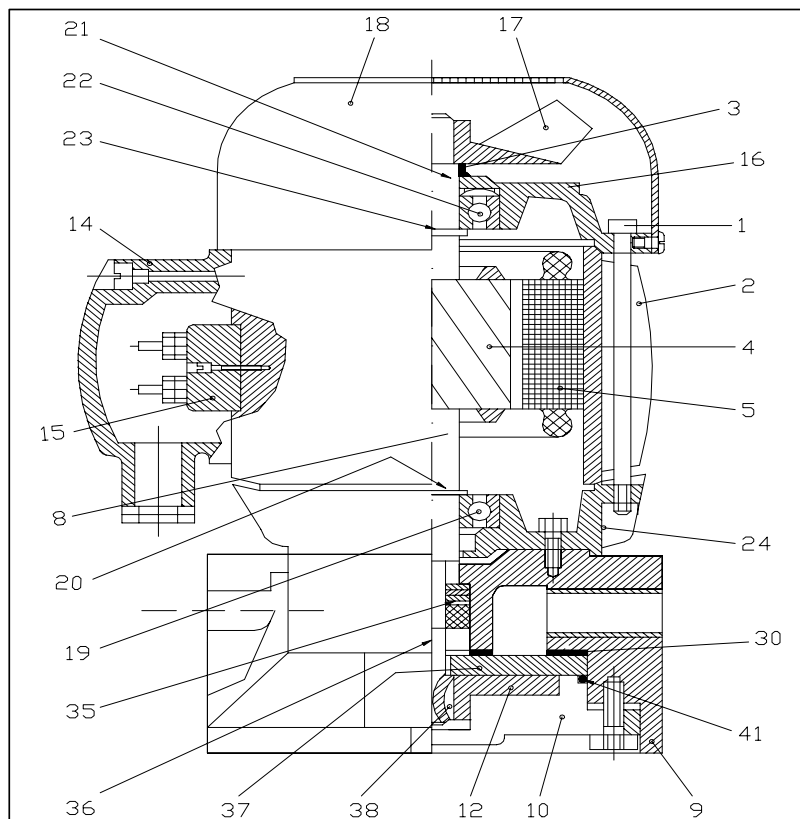
Dimensions and weights

TYPE	A mm	ØB mm	C mm	D mm	ØE mm	ØF mm	ØG mm	Kg.
AU 56	215	115	48	144	3/8" 1/2"	95	7	4,33
AU 63	270	115	48	165	1/2"	95	7	5,05

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
AU 56	0,16	0,9/0,55	0,7/0,4	1,1/0,64	0,98/0,57	0,9/0,55	0,74/0,42
AU 63	0,30	1,0/0,58	0,76/0,44	1,2/0,7	1,1/0,6	1,0/0,58	0,8/0,45





Type	AU 56
------	-------

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR ø 12
4 Rotor	
5 Stator	
8 Shaft	Steel C 40
9 Pump body	Aluminium
10 House impeller	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon
19 Bearing	6201 ZZ
20 Retaining ring	Seeger ø 12
21 Spring ring	ø 32
22 Bearing	6201 ZZ
23 Retaining ring	Seeger ø 12
24 Drive end shield	Aluminium
30 Gasket	Guarnital
35 Mecanical seal	ø 8
36 Retaining ring	Seeger ø 8
37 Diffuser	Cast iron G 20
38 Spline	3x5x13
41 Or ring	Viton 2,62x71,12

Type	AU 63
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Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR ø 16
4 Rotor	
5 Stator	
8 Shaft	Steel C 40
9 Pump body	Aluminium
10 House impeller	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon
19 Bearing	6202 ZZ
20 Retaining ring	Seeger ø 17
21 Spring ring	ø 35
22 Bearing	6003 ZZ
23 Retaining ring	=
24 Drive end shield	Aluminium
30 Gasket	Guarnital
35 Mecanical seal	ø 8
36 Retaining ring	Seeger ø 8
37 Diffuser	Cast iron G 20
38 Spline	3x5x13
41 Or ring	Viton 2,62x71,12

Centrifugal transfer pumps

Type **TR**



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm.

The hydraulic components, namely the impeller in brass and the scroll in cast iron allow the pumps to be used with water, emulsions, oily substances and liquids in general with a maximum viscosity of 3° Engler (21 CST) and a maximum temperature of 90° C.

They are usually used in cases where there is no space at the top of the tank.

They should be installed on the side of the tank to allow the liquid to enter straight into the suction mouth (see Figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

To ensure a long life for the pump, never let it turn when it is dry since the mechanical seal is not self-lubricated.

For other usages you are advised to consult our technical office.

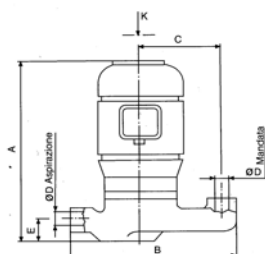
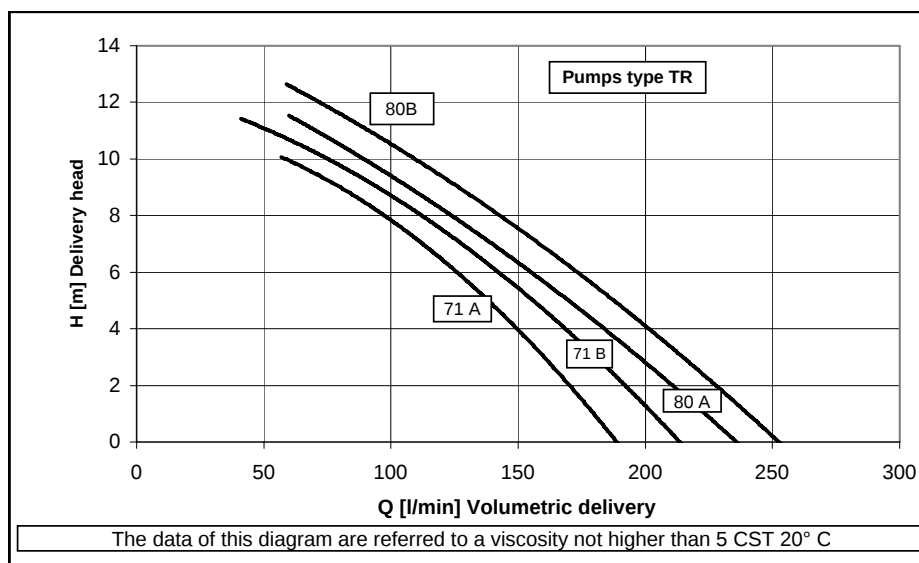
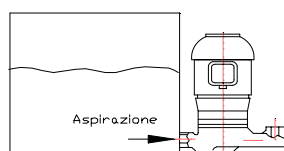
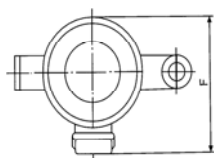


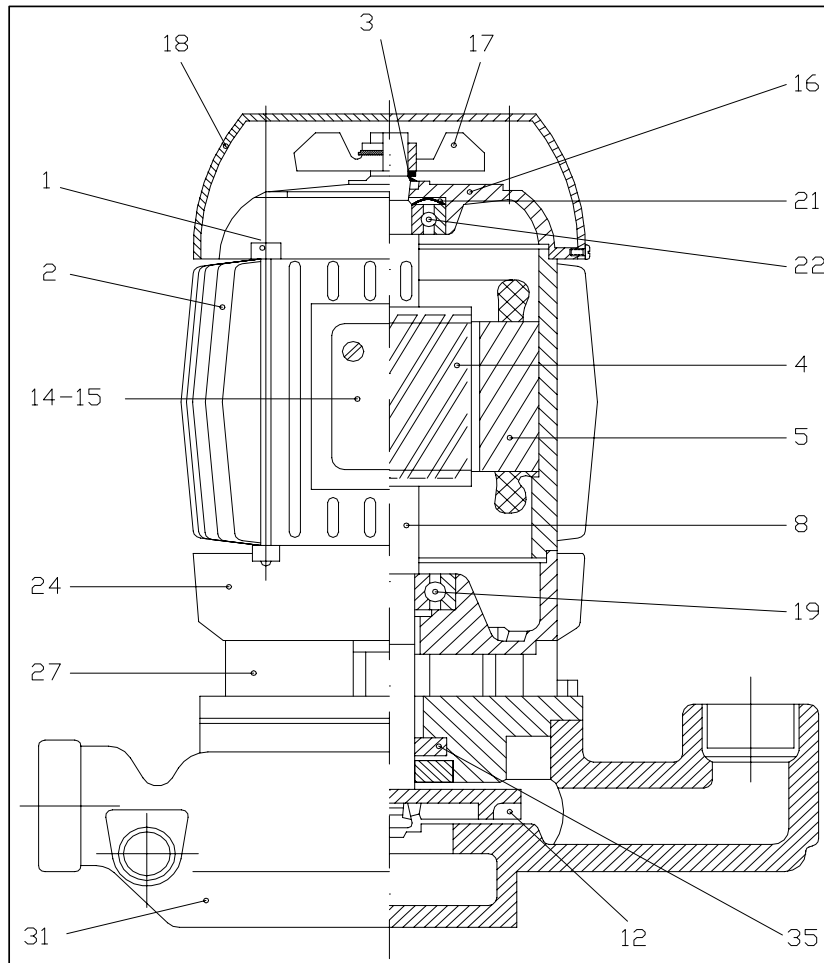
Table of dimensions and weights

TYPE	A mm	B mm	C mm	Ø D Gas	E mm	F mm	Kg.
TR 71 A	320	290	130	1"	40	220	12,10
TR 71 B	320	290	130	1"	40	220	13,00
TR 80 A	370	290	130	1"	40	220	13,90
TR 80 B	370	290	130	1"	40	220	14,70

Electrical features

TYPE	Kw Input	Hz. 50		Hz. 60		Hz. 60	
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
TR 71 A	0,53	2,40/1,40	1,94/1,12	3,00/1,68	2,6/1,50	2,40/1,40	2,00/1,17
TR 71 B	0,78	3,30/1,90	2,60/1,50	4,00/2,30	3,60/2,10	3,30/1,90	2,80/1,60
TR 80 A	1,15	3,30/1,90	2,60/1,50	4,00/2,30	3,60/2,10	3,30/1,90	2,80/1,60
TR 80 B	1,47	4,80/2,80	3,70/2,20	5,80/3,40	5,20/3,00	4,80/2,80	4,00/2,30





Type	TR 71 A	TR 71 B	TR 80 A	TR 80 B
Components	Materials	Materials	Materials	Materials
1 Rod	Steel	Steel	Steel	Steel
2 Frame	Aluminium	Aluminium	Aluminium	Aluminium
3 V-Ring	NBR ø 16	NBR ø 16	NBR ø 20	NBR ø 20
4 Rotor				
5 Stator				
8 Shaft	Steel C 40	Steel C 40	Steel C 40	Steel C 40
12 Impeller	Brass	Brass	Brass	Brass
14 Terminal box	Nylon	Nylon	Nylon	Nylon
15 Terminal block	mm. 40x25 6P	mm. 40x25 6P	mm. 50X32 6P	mm. 50X32 6P
16 Non-drive end shield	Aluminium	Aluminium	Aluminium	Aluminium
17 Fan	Nylon	Nylon	Nylon	Nylon
18 Fan cover	Nylon***	Nylon***	Nylon***	Nylon***
19 Bearing	6204 ZZ	6204 ZZ	6304 ZZ	6304 ZZ
21 Spring ring	ø 40	ø 40	ø 47	ø 47
22 Bearing	6203 ZZ	6203 ZZ	6204 ZZ	6204 ZZ
24 Flange	Aluminium	Aluminium	Aluminium	Aluminium
27 Bridle dap joint	Cast iron G20	Cast iron G20	Cast iron G20	Cas iron G20
31 House impeller	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
35 Mechanical seal	ø 19 Viton	ø 19 Viton	ø 19 Viton	ø 19 Viton

On request

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Usages:

These pumps are suitable for transferring liquids containing impurities measuring up to 2 mm.

The hydraulic components, namely the cast-iron impeller and scroll and the steel pump body, allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

- Machine tools (milling machines-lathes-work centres)
- Glass processing machines
- Surface treatment systems
- Filtration systems

They should usually be installed at about 6 – 7 cm. from the base of a tank, with a capacity in proportion to the flow rate. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

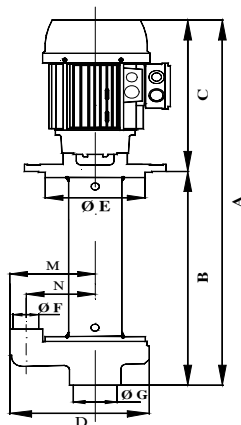
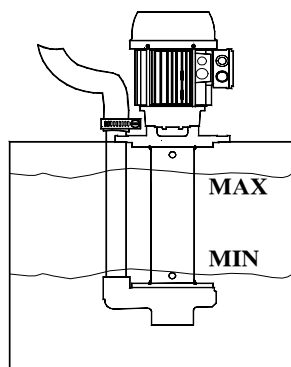
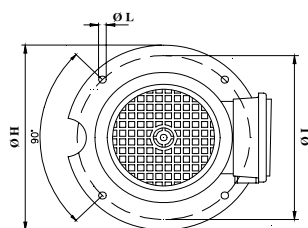


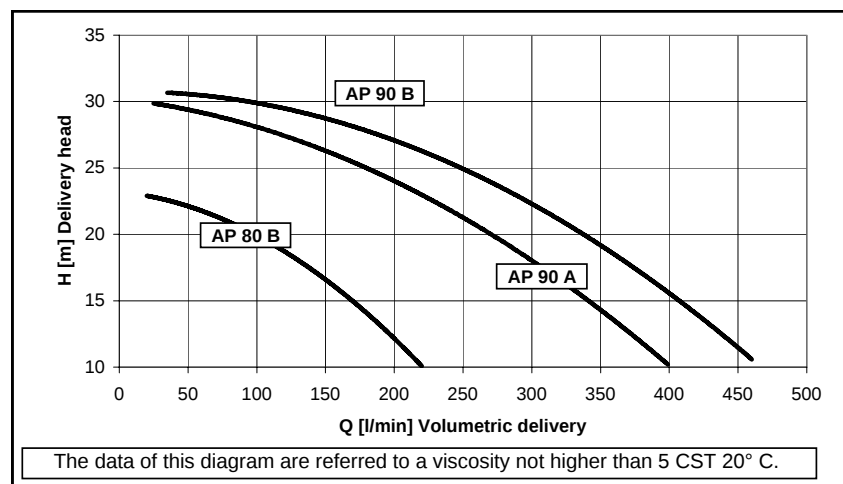
Table of dimensions and weights

TYPE	A mm	B mm	C mm	D mm	ØE mm	ØF mm	ØG mm	ØH mm	ØI mm	ØL mm	M mm	N mm	Kg.
AP 80B	620	320	300	280	240	1"¼	2" ½	300	270	13 N. 4	170	136	37
	750	450											43
	910	610											46
	1160	860											48
AP 90A	675	320	355	280	240	1"½	2" ½	300	270	13 N. 4	170	136	41
	805	450											47
	965	610											49
	1215	860											51
AP 90B	675	320	355	280	240	1"½	2" ½	300	270	13 N. 4	170	136	43
	805	450											49
	965	610											51
	1215	860											53



Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
AP 80 B	2,19	5,5/3,2	4,2/2,4	6,6/3,8	5,7/3,3	5,5/3,2	4,3/2,5
AP 90 A	2,70	9,3/5,4	7,0/4,0	11,1/6,4	9,7/5,6	9,3/5,4	7,4/4,3
AP 90 B	3,60	10,8/6,2	8,3/4,8	13,0/7,5	10,9/6,3	10,8/6,2	8,5/4,9



Immersion pumps

Type AP 100A - 112A-B



Usages:

These pumps are suitable for transferring liquids containing impurities measuring up to 2 mm. The hydraulic components, namely the cast-iron impeller and scroll and the steel pump body, allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

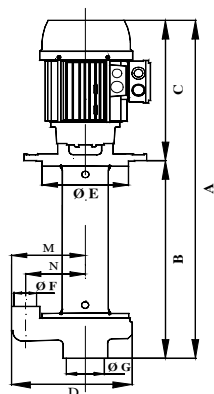
- Machine tools (milling machines-lathes-work centres)
- Glass processing machines
- Surface treatment systems
- Filtration systems

They should usually be installed at about 6 – 7 cm. from the base of a tank, with a capacity in proportion to the flow rate. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

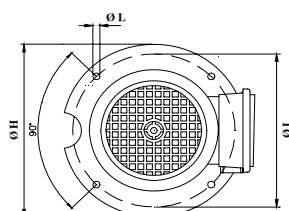
In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

Table of dimensions and weights

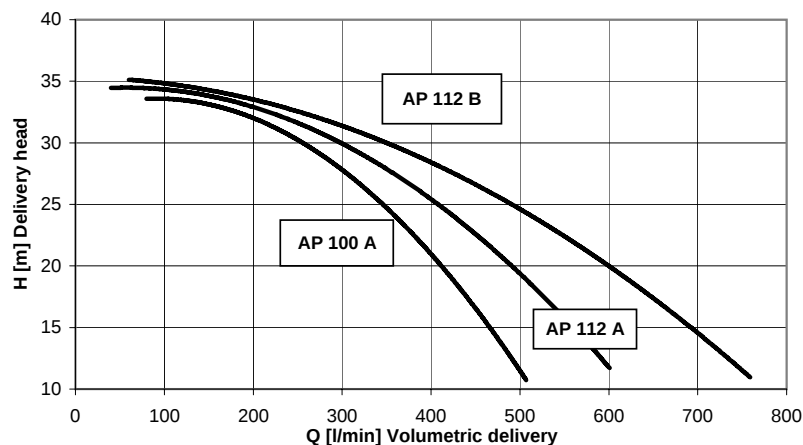
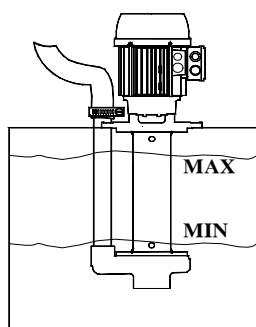


TYPE	A mm	B mm	C mm	D mm	ØE mm	ØF mm	ØG mm	ØH mm	ØI mm	ØL mm	M mm	N mm	Kg.
AP 100A	700	320	380	280	240	1-1/2"	2-1/2"	300	270	13 N. 4	170	136	48
	830	450											54
	990	610											56
	1240	860											58
AP 112A	730	320	410	280	240	1-1/2"	2-1/2"	300	270	13 N. 4	170	136	59
	860	450											65
	1020	610											67
	1270	860											69
AP 112B	730	320	410	320	240	2"	2-1/2"	300	270	13 N. 4	190	145	61
	860	450											67
	1020	610											69
	1270	860											71

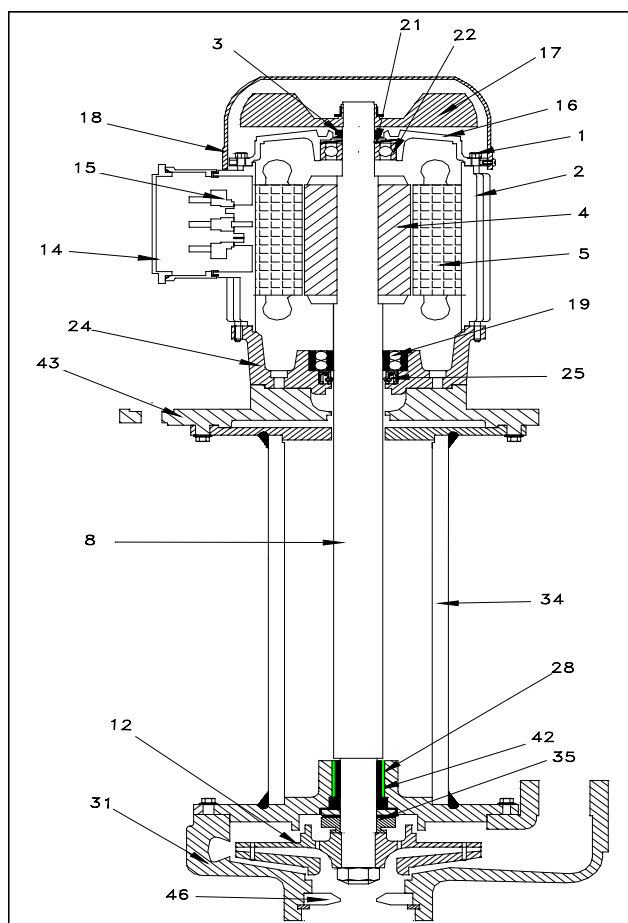


Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
AP 100 A	4,80	14,5/8,4	11,0/6,3	17,3/10	14,8/8,6	14,5/8,4	11,4/6,0
AP 112 A	5,50	19,2/11	14,5/8,4	23,8/13,8	19,4/11,2	19,2/11	15,2/8,7
AP 112 B	6,00	21,0/12,2	16,0/9,2	25,2/14,5	21,4/12,4	21,0/12,2	16,6/9,6



The data of this diagram are referred to a viscosity not higher than 5 CST 20° c.



Type	AP 80 B	AP 90 A-B	AP 100 A	AP 112 A-B
Components	materials	materials	materials	materials
1 Rod	Steel	Steel	Steel	Steel
2 Frame	Aluminium	Aluminium	Aluminium	Aluminium
3 V-ring	NBR ø 20	NBR ø 25	NBR ø 30	NBR ø 30
4 Rotor				
5 Stator				
8 Shaft	Steel	Steel	Steel	Steel
12 Impeller	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
14 Terminal box	Nylon	Nylon	Nylon	Nylon
15 Terminal block	mm. 50x32 6P	mm. 50x32 6P	mm. 50x32 6P	mm. 56x36 6P
16 Non-drive end shield	Aluminium	Aluminium	Aluminium	Aluminium
17 Fan	Nylon	Nylon	Nylon	Nylon
18 Fan cover	Nylon	Nylon	Nylon	Nylon
19 Bearing	62206 2RS (*)	62207 2RS	62207 2RS	62207 2RS
21 Spring ring	ø 47	ø 52	ø 62	ø 62
22 Bearing	6204 ZZ	6205 ZZ	62206 2RS	62206 2RS
24 Drive end shield	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
28 Bronze bearing (*)	28x30x30	28x30x30	28x30x30	28x30x30
31 House impeller	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
34 Tube on length 450-610-800	Steel	Steel	Steel	Steel
34 Cone on length 320mm	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
35 Mechanical seal	ø 22 - ø 45	ø 22 - ø 45	ø 22 - ø 45	ø 22 - ø 45
42 Ring IR (*)	22x28x30	22x28x30	22x28x30	22x28x30
43 Support flange	Cast iron G20	Cast iron G20	Cast iron G20	Cast iron G20
46 Suction reduction	Nylon	Nylon only AP 90A	No	No

19 (*) On body pump length mm. 450-610-860 = 63007 2RS

28-42 (*) Only on body pump length mm. 860

Immersion pumps

Type MP 63 - 71



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the brass impeller and the aluminium scroll and pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

Machine tools

(milling machines – lathes - drills)

Glass processing machines

Filtration systems.

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4 – 5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

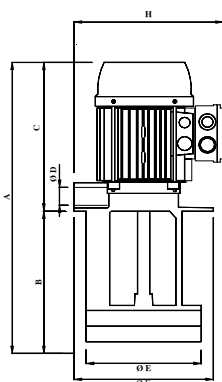
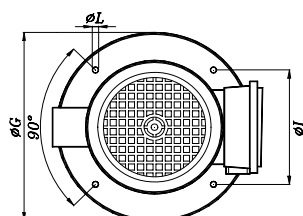


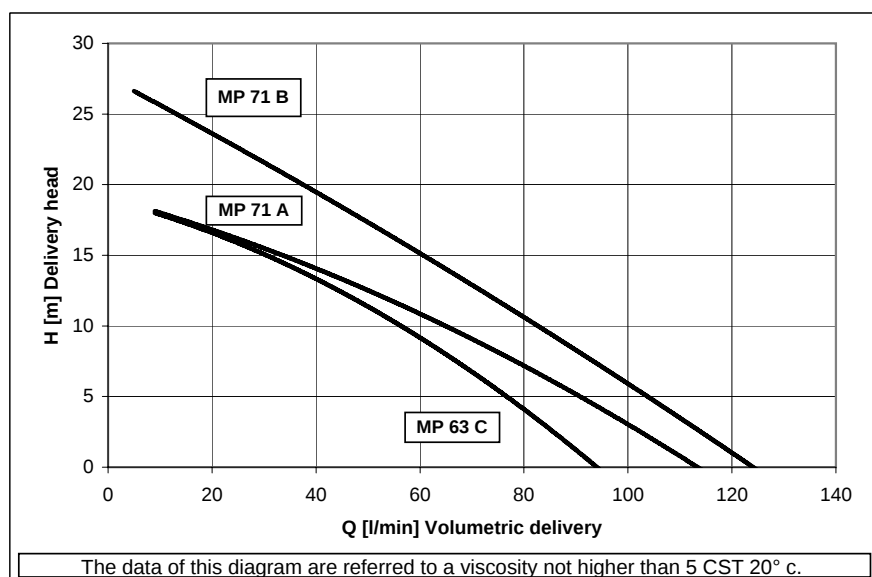
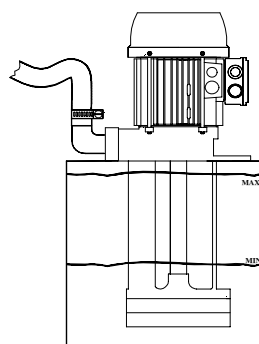
Table of dimensions and weights

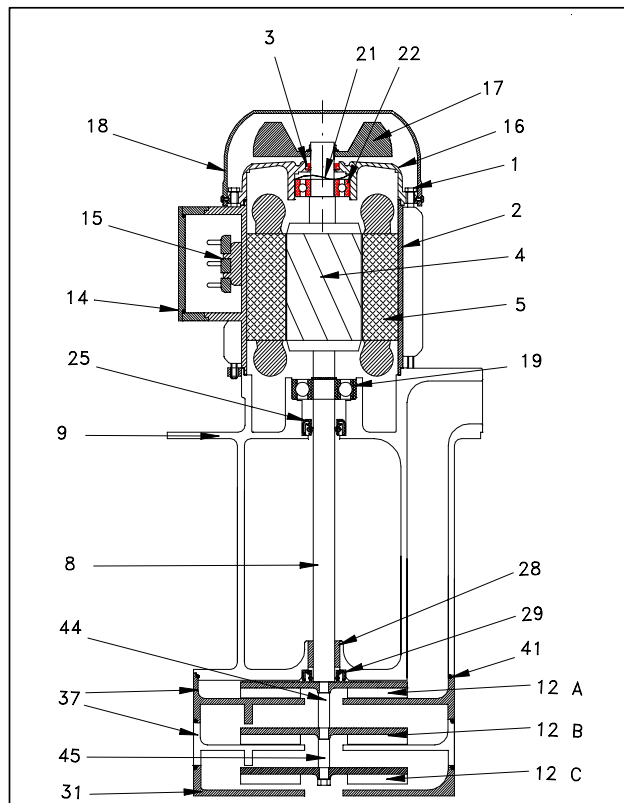
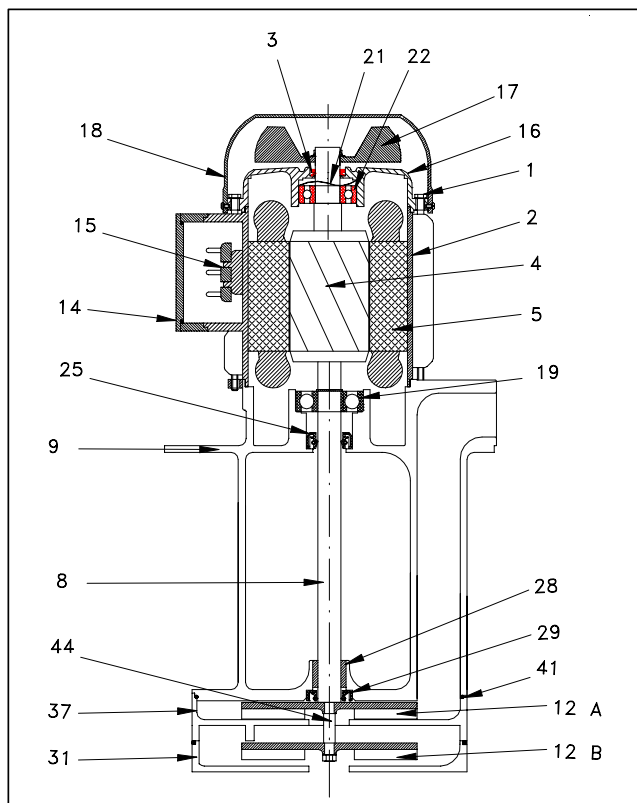
TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
MP 63C	385	180	205	3/4"	128	130	180	190	150	9 N. 4	6,84
	435	230									6,92
	485	280									7,00
	535	330									7,08
MP 71A	410	180	230	3/4"	128	130	180	200	150	9 N. 4	8,83
	460	230									8,99
	510	280									9,15
	560	330									9,31
MP 71B	440	210	230	3/4"	128	130	180	200	150	9 N. 4	10,40
	490	260									10,56
	540	310									10,72
	590	360									10,89



Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
MP 63C	0,54	1,9/1,1	1,52/0,88	2,3/1,32	2,2/1,3	1,9/1,1	1,6/0,92
MP 71A	0,70	2,4/1,4	1,94/1,12	2,9/1,68	2,7/1,6	2,4/1,4	2,0/1,17
MP 71B	0,95	3,3/1,9	2,6/1,5	4,0/2,3	3,6/2,1	3,3/1,9	2,8/1,6





Type MP 63 C

Type MP 71 A

Type MP 71 B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-ring	NBR ø 14
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6203 ZZ
21 Spring ring	ø 35
22 Bearing	6202 ZZ
25 Sealing ring	NBR 17x30x7
28 Bronze bearing	19X17X15
29 Sealing ring	NBR 17x25x4
31 House impeller	Aluminium
37 Diffuser	Aluminium
41 OR ring	NBR 101,34X1,78
44 Spacer	Steel 17x12x17

Materials
Steel
Aluminium
NBR ø 16
Steel C 40**
Aluminium
Brass 58
Nylon
mm. 40x25 6P
Aluminium
Nylon
Nylon***
6004 ZZ
ø 40
6203 ZZ
NBR 20x32x5
19X17X15
NBR 17x25x4
Aluminium
Aluminium
NBR 101,34X1,78
Steel 17x12x17

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V-ring	NBR ø 16
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Aluminium
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6004 ZZ
21 Spring ring	ø 40
22 Bearing	6203 ZZ
25 Sealing ring	NBR 20x32x7
28 Bronze bearing	19X17X15
29 Sealing ring	NBR 17x25x4
31 House impeller	Aluminium
37 Diffuser	Aluminium
41 OR ring	NBR 101,34X1,78
44 Spacer	Steel 17x12x17
45 Spacer	Steel 17x12x17

On request

**	Aisi 420
***	Sheet



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2-3 mm. The hydraulic components, namely the brass impeller and the aluminium scroll and pump body allow the pumps to be used with water, emulsions and oily substances in general with a maximum viscosity of 3 Engler (21 CST).

The temperature of the liquid must not exceed 90 °C.

They are usually used on:

Machine tools

(milling machines – lathes - drills)

Glass processing machines

Filtration systems.

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4 – 5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

For other usages you are advised to consult our technical office.

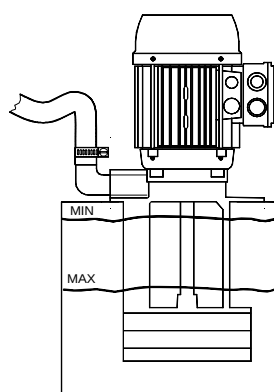
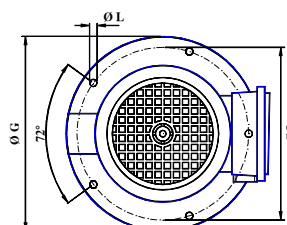
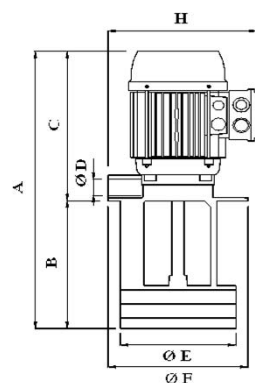
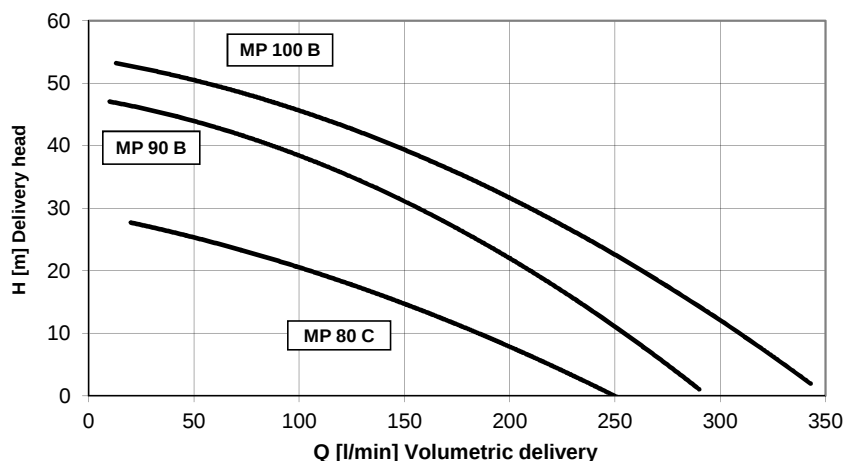


Table of dimensions and weights

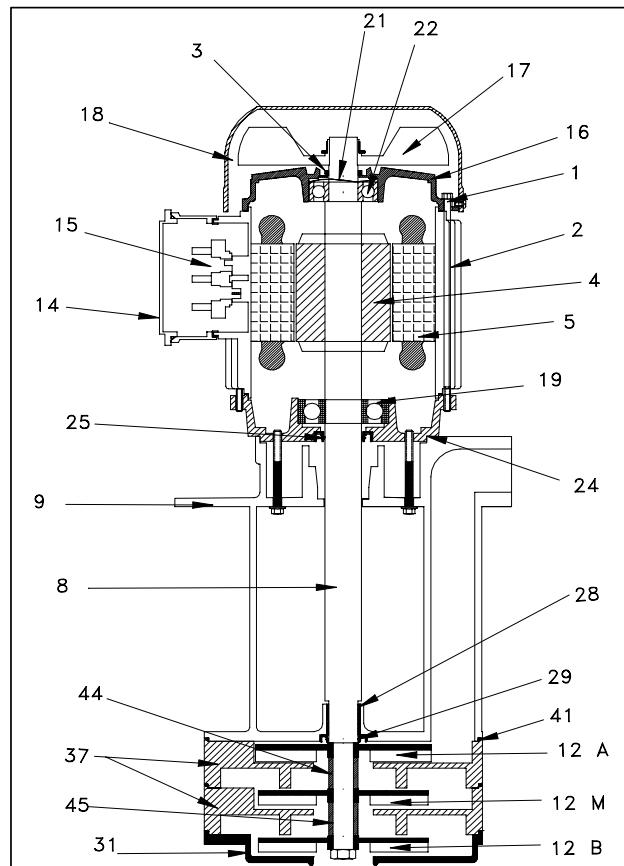
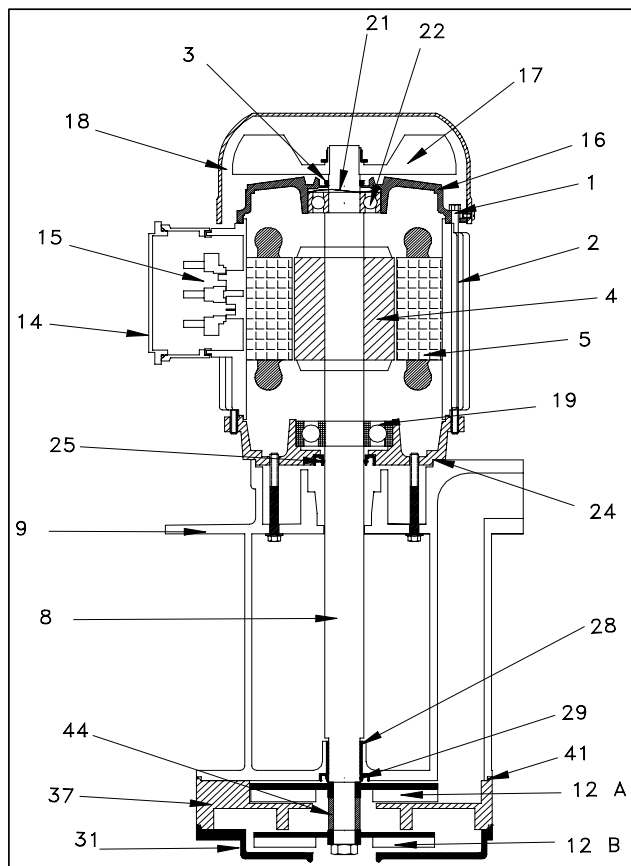
TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
MP 80C	517	230	287	1"	190	190	230	245	204	9 N. 5	16,50
	567	280									17,00
	642	355									17,50
	757	470									18,00
MP 90B	590	265	325	1"	190	190	230	255	204	9 N. 5	22,00
	640	315									22,50
	715	390									23,00
	830	505									23,50
MP 100B	625	265	360	1-1/4"	202	220	250	275	235	9 N. 5	32,00
	675	315									32,50
	725	365									33,00
	775	415									33,50
	955	595									35,50

Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
MP 80C	2,20	6,2/3,6	4,8/2,8	7,4/4,3	6,5/3,8	6,2/3,6	5,2/3,0
MP 90B	3,60	9,4/5,4	7,4/4,3	11,2/6,4	9,5/5,5	9,4/5,4	7,8/4,5
MP 100B	5,70	17,3/10	13,8/8,0	20,7/12	17,6/10,2	17,3/10	14,4/8,3



The data of this diagram are referred to a viscosity not higher than 5 CST 20 °C.



Type MP 80 C

Type MP 90 B

Type MP 100 B

Components	
1	Rod
2	Frame
3	V-ring Ø 20
4	Rotor
5	Stator
8	Shaft
9	Pump body
12	Impeller
14	Terminal box
15	Terminal block
16	Non-drive end shield
17	Fan cover
18	Bearing
19	Spring ring
21	Bearing
22	Drive end shield
24	Sealing ring
25	Bronze bearing
28	Sealing ring
29	House impeller
31	Diffuser
37	OR ring
41	Spacer
44	Spacer
45	Spacer

Materials	
1	Steel
2	Aluminium
3	NBR Ø 20
4	
5	
8	Steel C 40
9	Aluminium
12	Brass 58
14	Nylon
15	mm. 50x32 6P
16	Aluminium
17	Nylon***
18	6305 ZZ
19	Ø 47
21	6204 ZZ
22	Aluminium
24	NBR 25x40x7
25	23x20x20
28	NBR 20x32x5
29	Aluminium
31	N. 1 Aluminium
37	NBR 180X2
41	Steel. 20X14X23,5
44	No
45	No

Materials	
1	Steel
2	Aluminium
3	NBR Ø 25
4	
5	
8	Steel C 40
9	Aluminium
12	Brass 58
14	Nylon
15	mm. 50x32 6P
16	Aluminium
17	Nylon
18	Nylon***
19	6305 ZZ
21	Ø 52
22	6205 ZZ
24	Aluminium
25	NBR 25X47X7
28	23x20x20
29	NBR 20x32x5
31	Aluminium
37	N. 2 Aluminium
41	NBR 180X2
44	Steel 20X14X23
45	Steel 20X14X22

Materials	
1	Steel
2	Aluminium
3	NBR Ø 30
4	
5	
8	Steel C 40
9	Aluminium
12	Cast iron G20
14	Nylon
15	mm. 50x32 6P
16	Aluminium
17	Nylon
18	Nylon***
19	62207 2RS
21	Ø 62
22	6206 ZZ
24	Aluminium
25	NBR 35X47X7
28	23x20x20
29	NBR 20X32X5
31	Aluminium
37	N. 2 Aluminium
41	NBR 180X2
44	Steel 20X14X21
45	Steel 20X14X21

On request

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Immersion pumps

Type MPC 80 - 90 - 100



Usages:

The pumps are suitable to transfer liquids containing impurities measuring up to 2 mm. The hydraulic components, namely the brass impeller and the aluminium scroll and pump body, allow the pumps to be used with water, emulsions and oily substances in general, with a maximum viscosity of 3 Engler (21 CST).

The temperature of the liquid must not exceed 90 °C.

They are usually used on:

Machine tools

Filtration systems.

(milling machines – lathes - drills)

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 4–5 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

In cases where the liquid is particularly dirty, the user is recommended to construct the tank in compartments to allow the dirt to deposit before it is stirred up by the pump.

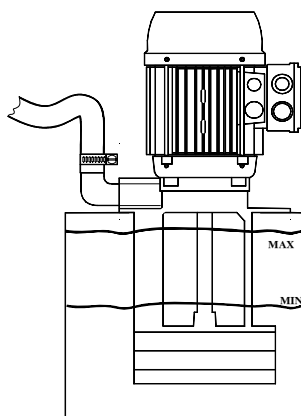
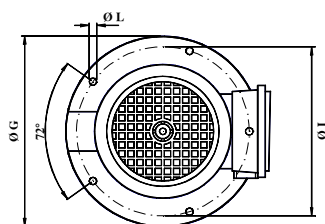
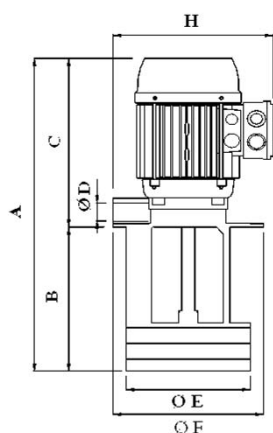
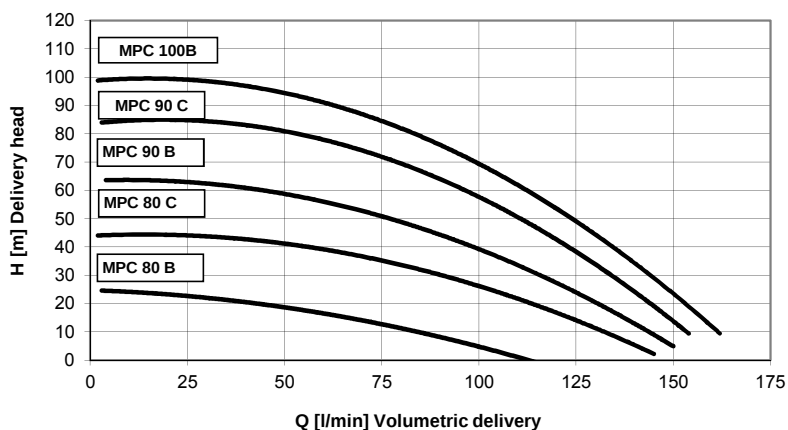


Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD mm	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
MPC 80B	490	210	280	1"	190	—	230	245	204	9 N. 5	15,96
	540	260									16,10
	615	335									16,25
	730	450									18,00
MPC 80C	520	240	280	1"	190	—	230	245	204	9 N. 5	17,86
	570	290									18,00
	645	365									18,15
	760	480									19,00
MPC 90B	583	260	323	1"	190	—	230	255	204	9 N. 5	25,46
	633	310									25,60
	708	385									25,75
	823	500									27,50
MPC 90C	613	290	323	1"	190	—	230	255	204	9 N. 5	26,36
	663	340									26,50
	738	415									26,65
	853	530									28,50
MPC 100 B	650	280	370	1 1/4"	202	220	250	275	235	9 N. 5	38,50
	700	330									39,00
	750	380									39,50
	800	430									40,00
	980	610									42,20

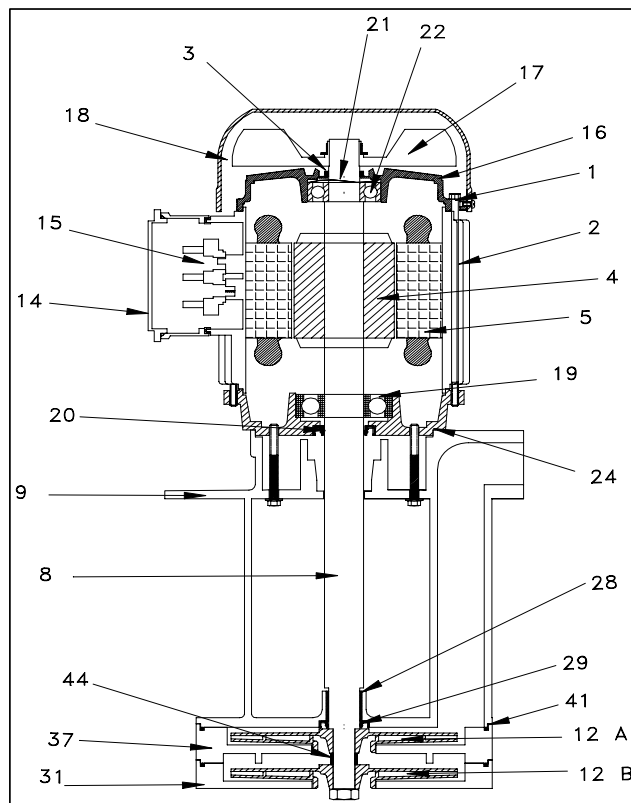
Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
MPC 80B	1,50	4,3/2,5	3,6/2,1	5,2/3	4,6/2,7	4,3/2,5	3,8/2,2
MPC 80C	2,00	6/3,5	5/2,9	7,2/4,2	6,4/3,7	6/3,5	5,2/3
MPC 90B	3,10	9,3/5,4	7,8/4,5	11,2/6,5	10/5,8	9,3/5,4	8,1/4,7
MPC 90C	3,90	11,4/6,6	9,5/5,5	13,8/8	12,1/7	11,4/6,6	10/5,8
MPC 100 B	5,60	16,2/9,4	14,7/8,5	19,5/11,3	17,6/10,2	16,2/9,4	13,5/7,8

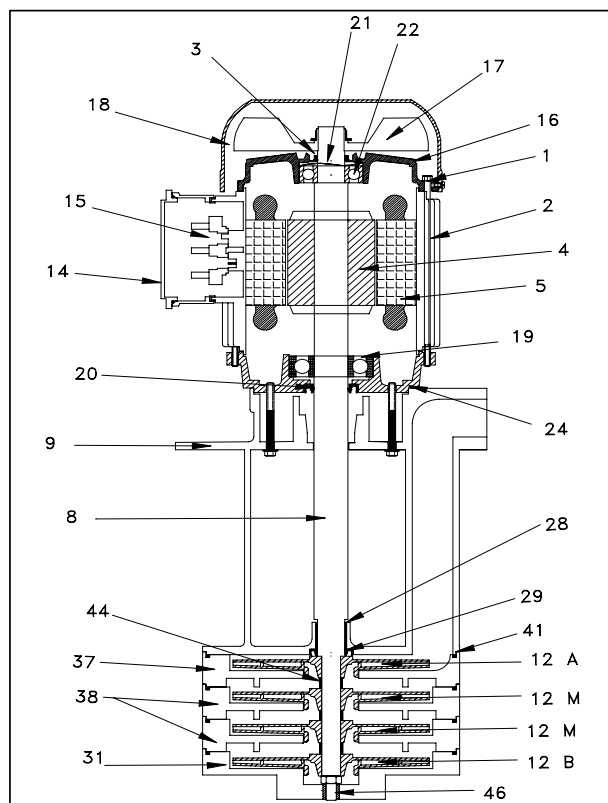


The data of this diagram are referred to a viscosity not higher than 5 CST 20 °C.

MPC 80



MPC 90 - 100



MPC 80 B - 80C

MPC 90 B

MPC 90 C

MPC 100B

Components	Materials	Materials	Materials	Materials
1 Rod	Steel	Steel	Steel	Steel
2 Frame	Aluminium	Aluminium	Aluminium	Aluminium
3 V-Ring	NBR ø 20	NBR ø 25	NBR ø 25	NBR ø 30
4 Rotor				
5 Stator				
8 Shaft	Steel C 40	Steel C 40	Steel C 40	Steel C 40
9 Pump body	Aluminium	Aluminium	Aluminium	Aluminium
12 Impeller	Brass 58	Brass 58	Brass 58	Brass 58
14 Terminal box	Nylon	Nylon	Nylon	Nylon
15 Terminal block	mm. 50X32 6P	mm. 50X32 6P	mm. 50X32 6P	mm. 50X32 6P
16 Non-drive end shield	Aluminium	Aluminium	Aluminium	Aluminium
17 Fan	Nylon	Nylon	Nylon	Nylon
18 Fan cover	Nylon***	Nylon***	Nylon***	Nylon***
19 Drive bearing	6305 ZZ	6305 ZZ	6305 ZZ	62207 2RS
20 Sealing ring	NBR 25X40X7	NBR 25X47X7	NBR 25X47X7	NBR 35X47X7
21 Spring ring	ø 47	ø 52	ø 52	ø 62
22 Non-drive bearing	6204 ZZ	6205 ZZ	6205 ZZ	6206 ZZ
24 Drive end shield	Aluminium	Aluminium	Aluminium	Aluminium
28 Main bronze bearing	23x20x20	23x20x20	23x20x20	23x20x20
29 Sealing ring	NBR 20X32X5	NBR 20X32X5	NBR 20X32X5	NBR 20X32X5
31 House impeller	Aluminium	Aluminium	Aluminium	Aluminium
37 Diffuser - upper	Aluminium (on 80C)	Aluminium	Aluminium	Aluminium
38 Diffuser - middle	=====	Aluminium	Aluminium	Aluminium
41 OR ring	NBR	NBR	NBR	NBR
44 Spacer	Steel (on 80C)	Steel	Steel	Steel
46 Bottom bronze bearing	=====	=====	Bronze	Bronze

On request

Sheet

Immersion pumps

Type EPC 63 - 71



Usages:

These pumps are suitable for transferring clean liquids containing impurities measuring up to 30 micron.

The hydraulic components, namely the brass impeller, scroll and cast iron pump body, allow the pumps to be used with emulsions and oily substances, glycols and liquids in general, as long as they are not oxidative for the construction materials.

Viscosity must not exceed 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

- Boring centres
- Cooling exchanges

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3-4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

For other usages you are advised to consult our technical office.

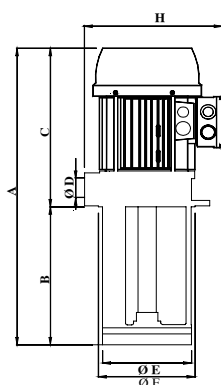
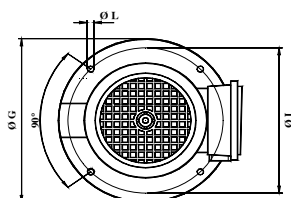


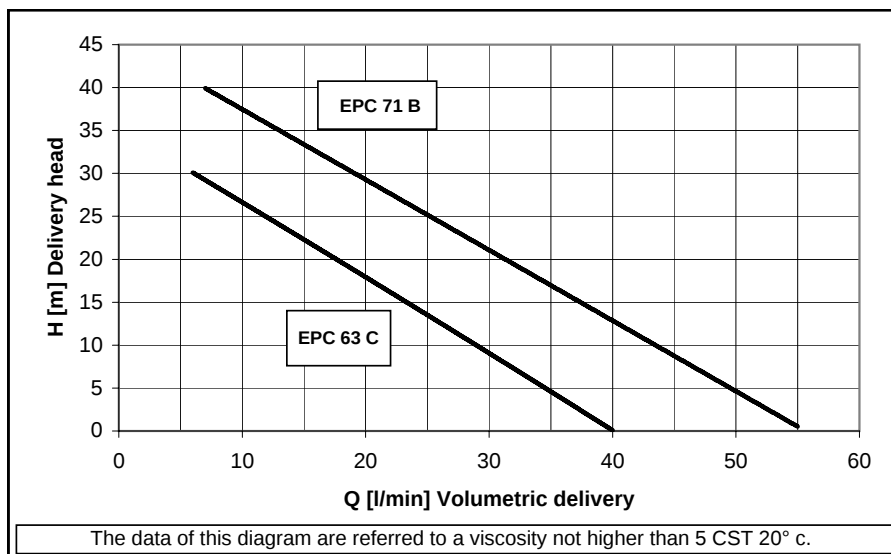
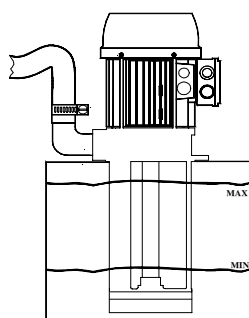
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
EPC 63 C	310	100	210	3/4"	98	100	130	185	115	7 N. 4	8,900
	340	130									9,210
	390	180									9,410
	440	230									9,610
	490	280									9,780
	570	360									10,340
EPC 71 B	360	100	260	3/4"	98	100	130	193	115	7 N. 4	11,580
	390	130									11,890
	440	180									12,090
	490	230									12,290
	540	280									12,460
	620	360									13,020



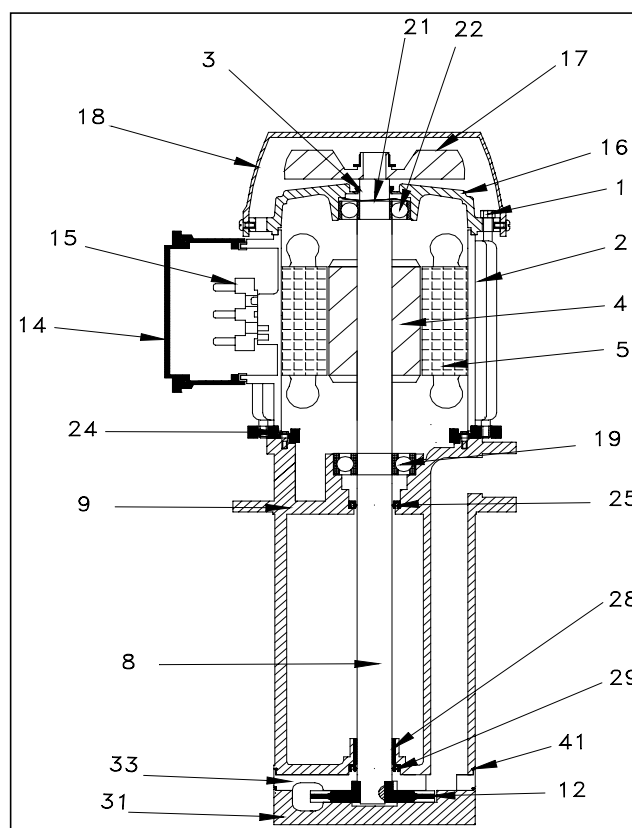
Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
EPC 63C	0,54	1,9/1,1	1,52/0,88	2,3/1,32	2,2/1,3	1,9/1,1	1,6/0,92
EPC 71B	1,10	3,3/1,9	2,6/1,5	4,00/2,3	3,6/2,1	3,3/1,9	2,8/1,6



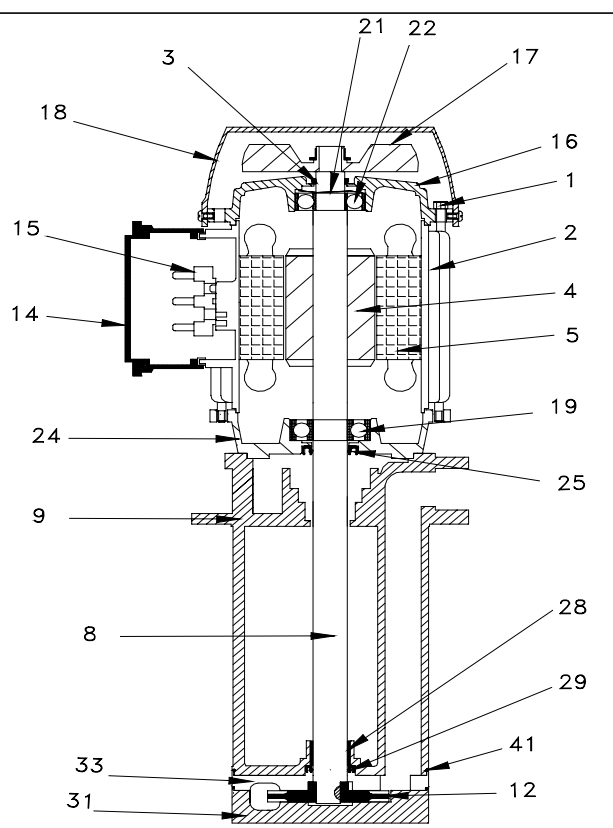
Immersion pumps

Type EPC 63 - 71



Type EPC 63C

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR ø 16
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6203 ZZ
21 Spring ring	ø 35
22 Bearing	6202 ZZ
24 Spacer	Aluminium
25 Sealing ring	NBR 17x25x4
28 Bronze bearing	19X17X15
29 Sealing ring	NBR 17x25x4
31 House impeller	Cast iron G 20
33 Adapter flange	Cast iron G 20
41 O-Ring	NBR 82,27x1,78



Type EPC 71B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR ø 16
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 40x25 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6304 ZZ
21 Spring ring	ø 40
22 Bearing	6203 ZZ
24 Drive end shield	Aluminium
25 Sealing ring	NBR 20X32X7
28 Bronze bearing	19X17X15
29 Sealing ring	NBR 17x25x4
31 House impeller	Cast iron G 20
33 Adapter flange	Cast iron G 20
41 O-Ring	NBR 82,27x1,78

On request

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Immersion pumps

Type EPC 80B - 80C - 90 B



Usages:

These pumps are suitable for transferring clean liquids containing impurities measuring up to 30 micron.

The hydraulic components, namely the brass impeller, scroll and cast iron pump body, allow the pumps to be used with emulsions and oily substances, glycols and liquids in general, as long as they are not oxidative for the construction materials. Viscosity must not exceed 3° Engler (21 CST).

The temperature of the liquid must not exceed 90° C.

They are usually used on:

- Boring centres
- Cooling exchanges

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3-4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

For other usages you are advised to consult our technical office.

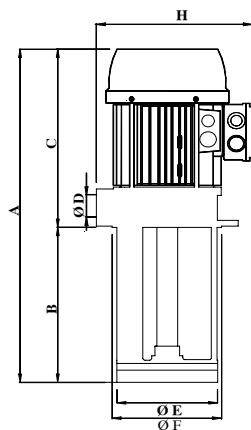
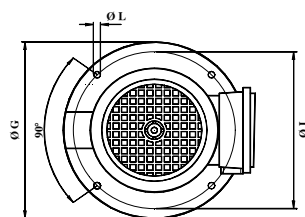


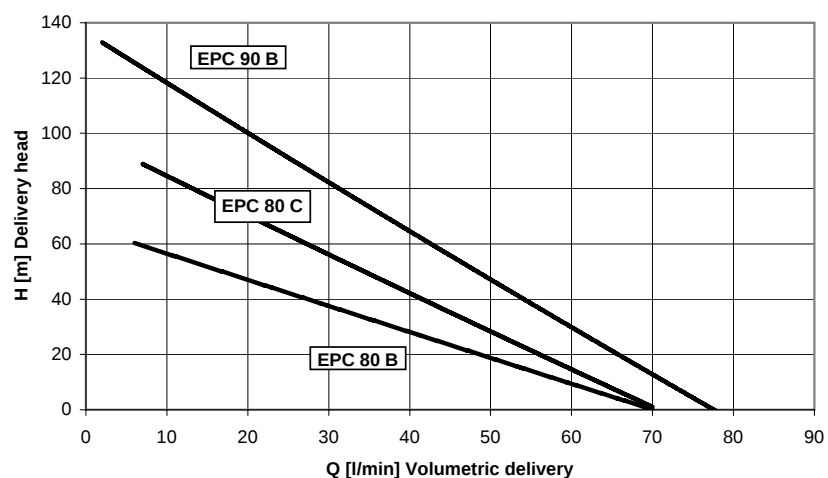
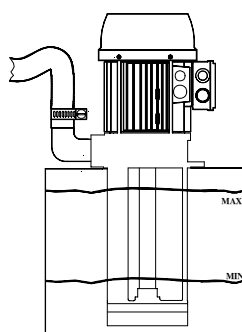
Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
EPC 80B	381	100	281	3/4"	98	100	130	200	115	7 N. 4	13,950
	411	130									14,250
	461	180									14,450
	511	230									14,650
	561	280									14,820
	641	360									15,380
EPC 80C	396	115	281	3/4"	98	100	130	200	115	7 N. 4	16,220
	426	145									16,520
	476	195									16,720
	526	245									16,920
	576	295									17,090
	656	375									17,650
EPC 90B	460	140	320	3/4"	98	100	130	220	115	7 N. 4	30,300
	490	170									30,600
	540	220									30,800
	590	270									31,000
	640	320									31,200
	720	400									31,800



Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
EPC 80B	1,70	5,0/2,9	4,0/2,32	6,0/3,48	5,3/3,1	5,0/2,9	4,2/2,42
EPC 80C	2,60	6,9/4,0	5,5/3,2	8,3/4,8	7,3/4,2	6,9/4,0	5,7/3,34
EPC 90B	3,00	9,3/5,4	7,8/4,5	11,2/6,48	9,7/5,6	9,3/5,4	8,13/4,7

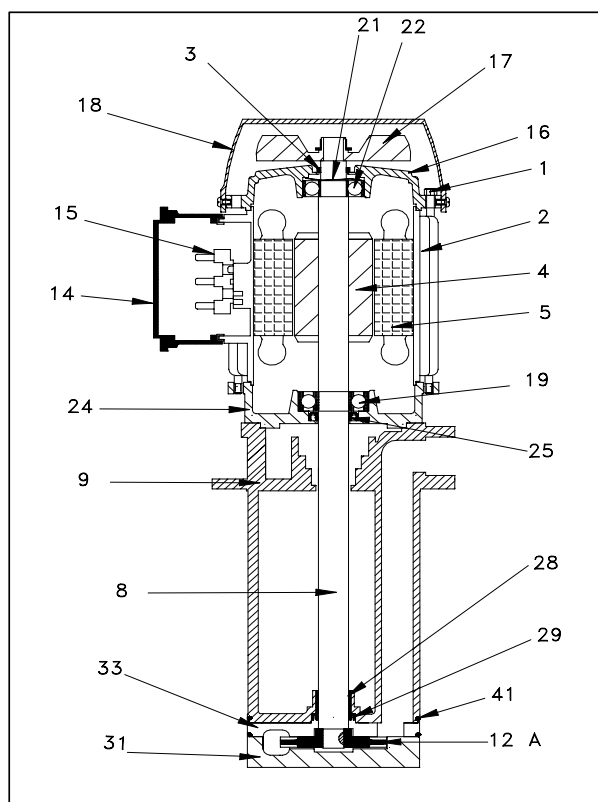


The data of this diagram are referred to a viscosity not higher than 5 CST 20°c.

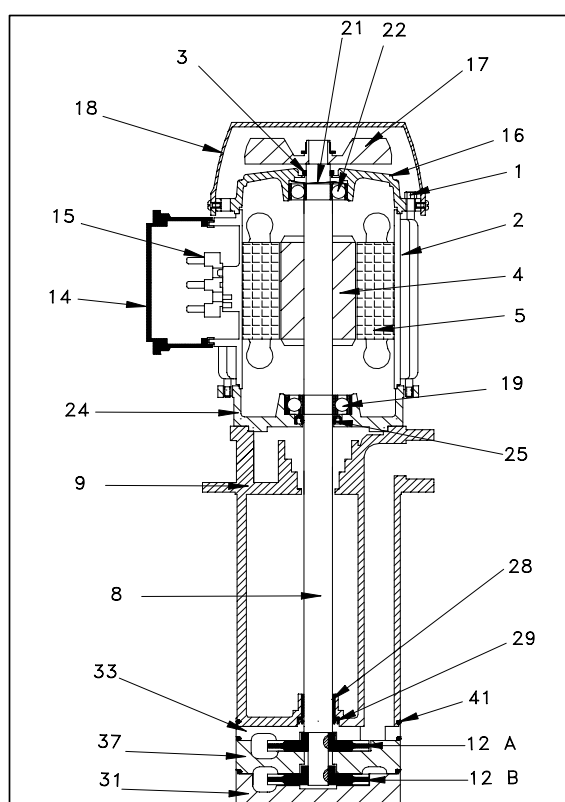
Immersion pumps

Type EPC 80B - 80C - 90 B

EPC 80 B



EPC 80 C - 90 B



EPC 80B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR Ø 20
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	Ø 47
22 Bearing	6204 ZZ
24 Reduction flange	Aluminium
25 Sealing ring	NBR 25X40X7
28 Bronze bearing	19x17x15
29 Sealing ring	NBR 17x25x4
31 House impeller	Cast iron G 20
33 Reduction flange	Cast iron G 20
41 OR ring (N. 2)	NBR 82,27x1,78

EPC 80C

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR Ø 20
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6205 ZZ
21 Spring ring	Ø 47
22 Bearing	6204 ZZ
24 Reduction flange	Aluminium
25 Sealing ring	NBR 25X40X7
28 Bronze bearing	19x17x15
29 Sealing ring	NBR 17x25x4
31 House impeller	Cast iron G 20
33 Reduction flange	Cast iron G 20
37 Diffuser	Cast iron G 20
41 OR ring (N. 3)	NBR 82,27x1,78

EPC 90B

Components	Materials
1 Rod	Steel
2 Frame	Aluminium
3 V ring	NBR Ø 25
4 Rotor	
5 Stator	
8 Shaft	Steel C 40**
9 Pump body	Cast iron G 20
12 Impeller	Brass 58
14 Terminal box	Nylon
15 Terminal block	mm. 50x32 6P
16 Non-drive end shield	Aluminium
17 Fan	Nylon
18 Fan cover	Nylon***
19 Bearing	6206 ZZ
21 Spring ring	Ø 52
22 Bearing	6205 ZZ
24 Reduction flange	Aluminium
25 Sealing ring	NBR 25X40X7
28 Bronze bearing	19x17x15
29 Sealing ring	NBR 17x25x4
31 House impeller	Cast iron G 20
33 Reduction flange	Cast iron G 20
37 Diffuser	Cast iron G 20
41 OR ring (N. 3)	NBR 82,27x1,78

On request

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Immersion pumps

Type PPI 63C - 71B



Usages:

These pumps are suitable for transferring clean liquids containing impurities measuring up to 30 micron.

The hydraulic components, namely impeller, scroll and brass pump body, allow the pumps to be used with emulsions and oily substances, glycols and liquids in general, as long as they are not oxidative for the construction materials.

Viscosity must not exceed 3° Engler (21 CST) and the temperature of the liquid must not exceed 90° C.

The employment of diathermic oils, enable to reach fluid temperature 150° C. max.

They are usually used on:

Water/oil temperature controllers.

They should usually be installed on a tank, with a capacity in proportion to the flow rate, at about 3-4 cm. from the bottom. It is important to check that the maximum level of the liquid in the tank always remains 3 – 4 cm. lower than the flange (see figure).

For other usages you are advised to consult our technical office.

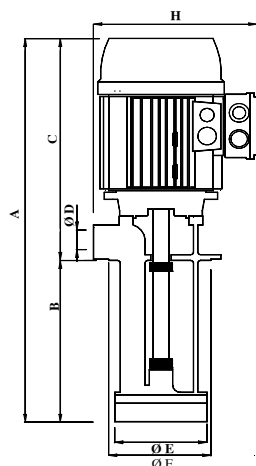
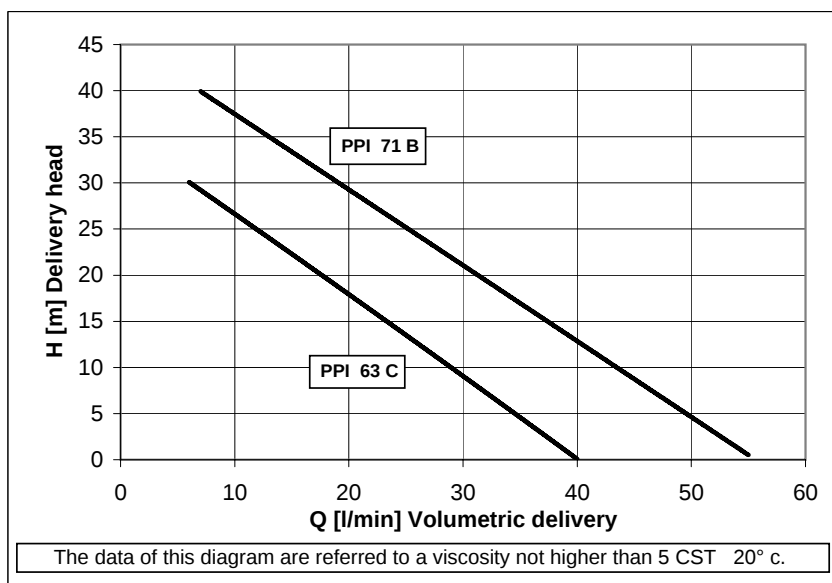
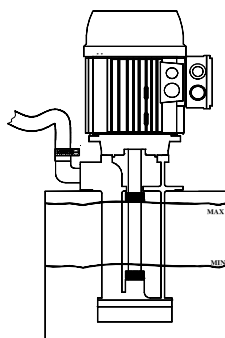
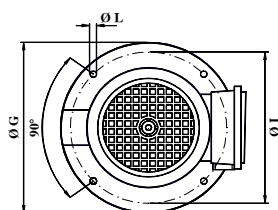


Table of dimensions and weights

TYPE	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Kg.
PPI 63 C	437	195	242	3/4"	98	100	130	185	115	7 N.4	9,120
PPI 71 B	466	200	266	3/4"	98	100	130	193	115	7 N.4	11,410

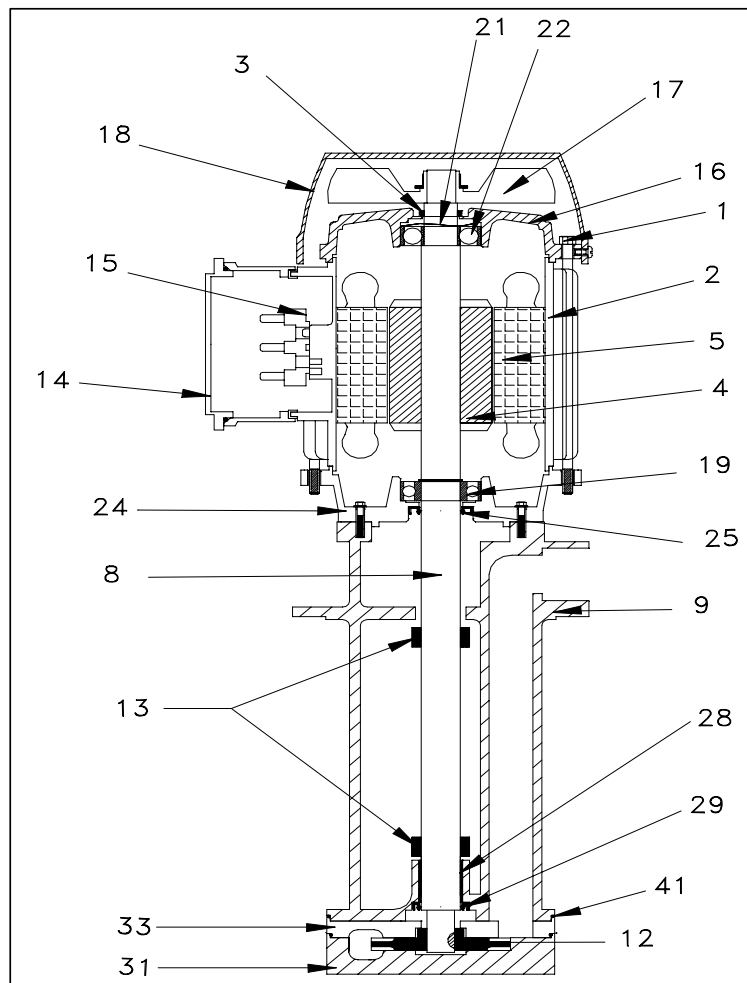
Electrical features

TYPE	KW. Input	Hz. 50		Hz. 60			
		230/400	254-290/440-500	230/400	208-230/440-460	254-277/440-480	318-346/550-600
PPI 63C	0,54	1,9/1,1	1,52/0,88	2,3/1,32	2,2/1,3	1,9/1,1	1,6/0,92
PPI 71B	1,10	3,3/1,9	2,6/1,5	4,00/2,3	3,6/2,1	3,3/1,9	2,8/1,6



Immersion pumps

Type PPI 63C - 71B



Components PPI 63C		
1	Rod	Steel
2	Frame	Aluminium
3	V ring	NBR Ø 16
4	Rotor	
5	Stator	
8	Shaft	Stainless steel 420
9	Pump body	Brass 58
12	Impeller	Brass 58
13	Rubber washer	Brass 58
14	Terminal box	Aluminium
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Sheet
19	Drive bearing	6203 ZZ
21	Spring ring	Ø 35
22	Bearing	6202 ZZ
24	Drive end shield	Aluminium
25	Sealing ring	NBR 17X25X4
28	Bronze bearing	19X17X15
29	Sealing ring	NBR 17x25x4
31	House impeller	Brass 58
33	Adapter flange	Brass 58
41	O-Ring	NBR 82,27x1,78

Components PPI 71B		
1	Rod	Steel
2	Frame	Aluminium
3	V ring	NBR Ø 16
4	Rotor	
5	Stator	
8	Shaft	Stainless steel 420
9	Pump body	Brass 58
12	Impeller	Brass 58
13	Rubber washer	Brass 58
14	Terminal box	Aluminium
15	Terminal block	mm. 40x25 6P
16	Non-drive end shield	Aluminium
17	Fan	Nylon
18	Fan cover	Sheet
19	Drive bearing	6304 ZZ
21	Spring ring	Ø 40
22	Bearing	6203 ZZ
24	Drive end shield	Aluminium
25	Sealing ring	NBR 20X32X5
28	Bronze bearing	19X17X15
29	Sealing ring	NBR 17x25x4
31	House impeller	Brass 58
33	Adapter flange	Brass 58
41	O-Ring	NBR 82,27x1,78

MANUALE D'USO E MANUTENZIONE - ELETTROPOMPE SACEMI® - Rev. 2/2012**GENERALITA':**

Il presente manuale è stato realizzato per fornire una conoscenza generale della macchina e le istruzioni ritenute necessarie per una corretta installazione e il buon funzionamento della stessa. Il manuale è parte integrante della macchina, deve essere letto attentamente prima di movimentare, installare e rendere operativa la macchina e conservato per futuri riferimenti.

Ogni inosservanza, uso improprio, interventi di manutenzione non effettuati da personale specializzato, la rimozione di etichette di ogni tipo, la rimozione o la manomissione di protezioni e delle sicurezze e comunque ogni altra azione non espressamente prevista che riduca le sicurezze attive e passive della macchina, può causare gravi danni alle persone ed alle cose e fa decadere ogni responsabilità del costruttore. Interventi sulla macchina da parte di personale non autorizzato, farà automaticamente decadere la garanzia sul prodotto.

Sulla targhetta che equipaggia l'elettropompa è stampigliato un codice per rintracciare la data ed il lotto di produzione.

Per situazioni non contemplate nel presente manuale o altre informazioni, fare riferimento a quanto riportato nel nostro catalogo generale, alla documentazione disponibile sul sito web www.sacemi.com ed eventualmente contattare il nostro servizio commerciale.

DICHIARAZIONE DI CONFORMITA':

Le elettropompe **Sacemi** tipo AP-AU-EPC-HPP-IMM-MP-MPC-PPI-SP-SPV-SQ-TR sono conformi a quanto prescritto dalle direttive 89/392, 91/368, 93/44, 93/68 CEE e successivi emendamenti - 73/23, 93/68, 89/336/CEE - 89/336, 92/31, 93/68, 93/97 CEE e successivi emendamenti - 2002/95 CEE e riportano in targa il contrassegno 

DESCRIZIONE DEL PRODOTTO:

Le elettropompe centrifughe **Sacemi**® sono progettate per la circolazione di liquidi in genere e di miscele refrigeranti. Le giranti sono fissate direttamente sull'albero motore prolungato.

La pompa è equipaggiata con un motore elettrico a 2 poli, progettato per servizio continuo ed alimentazione in c.a., costruito secondo le norme IEC60034, raffreddato con ventilazione esterna, avvolgimento in classe F e grado di protezione IP 55.

**CONSERVAZIONE DELLA MACCHINA:**

Lo stoccaggio deve essere eseguito in un ambiente che difenda la macchina dall'entrata di corpi estranei e dall'azione degli agenti atmosferici (pioggia, neve, ecc.) che possono causare deterioramenti alla parte elettrica. La temperatura dell'ambiente di stoccaggio deve essere compresa tra i -20 °C e i +50 °C.

**MOVIMENTAZIONE:**

Le elettropompe, anche se imballate, vanno movimentate con la massima attenzione e con mezzi adeguati al loro peso ed ingombro. Nella movimentazione e nel trasporto, bisogna fare attenzione a non danneggiare le parti delicate.

**IMPIEGO:**

Le elettropompe **Sacemi**® trovano particolare l'impiego in campo industriale su macchine utensili per la lavorazione di metallo, plastica, vetro, pietre (taglio, foratura, fresatura, rettificazione, tornitura) ed applicazioni industriali per filtrazione, termoregolazione di fluidi, cabine di verniciatura, trattamento di superfici, macchine da stampa.

**LIMITI DI IMPIEGO:**

Le elettropompe non devono essere utilizzate in ambienti esplosivi e/o potenzialmente esplosivi, con liquidi infiammabili, liquidi aggressivi (es. acidi, soluzioni alcaline) e liquidi che producono gas nocivi e/o esplosivi.

Le pompe non possono essere impiegate per prevalenze inferiori al punto più basso della curva caratteristica riportata in catalogo. L'impiego dell'elettropompa per prevalenze inferiori a quelle suddette, comporta il sovraccarico del motore. Le elettropompe non possono essere impiegate in serbatoi sotto pressione. Il liquido pompato non deve superare una viscosità di 21 cSt (3° E) ed una temperatura di 70 °C. Le dimensioni delle parti solide ammesse nel liquido pompato variano per ogni tipo di pompa. (**tabella n. 1**)

La elettropompa è costruita per essere installata all'interno o in zone protette dalle intemperie e può lavorare in servizio continuo, purché siano rispettati i dati elettrici indicati in targa.

**INSTALLAZIONE:**

Per evitare perdite di carico e garantire la portata massima, si raccomanda di impiegare tubazioni con diametri uguali al foro di mandata della pompa. La macchina deve essere adeguatamente protetta dall'azione degli agenti atmosferici. Non introdurre mai le dita nel condotto di aspirazione poiché sussiste il rischio di danno per il contatto con la girante. Per sollevare la pompa, utilizzare apposita attrezzatura e adottare tutti gli accorgimenti necessari in relazione al peso ed alle dimensioni della macchina. Accertarsi del perfetto adescamento della elettropompa al suo avviamento. Accertarsi che non ci siano ostacoli che impediscano il normale flusso dell'aria di raffreddamento verso la ventola del motore. Le elettropompe vanno fissate per evitare vibrazioni o movimenti che potrebbero danneggiare le tubazioni.

Si consiglia di non usare accoppiamenti rigidi tra la mandata della pompa e l'impianto.

Pompe tipo AU:

La pompa va installata sulla parte superiore del serbatoio e fissata con adeguate viti. Per il corretto funzionamento della pompa e garantire la funzionalità della tenuta, la pompa va adescata prima dell'uso; l'operazione di adescamento va ripetuta ogni qualvolta la pompa aspiri aria per mancanza di liquido.

La pompa non può girare in mancanza di liquido. (tabella n. 2)

Pompe tipo SQ:

La pompa tipo SQ va installata su una parete laterale del serbatoio.

La pompa va fissata al serbatoio con viti adeguate, inserendo una guarnizione tra la superficie del serbatoio e la bocca di aspirazione della pompa.

La pompa non può girare in mancanza di liquido.

Per il corretto funzionamento della pompa e garantire la funzionalità della tenuta, è indispensabile rispettare il livello minimo del liquido nel serbatoio. (**tabella n. 2**)

Pompe tipo TR:

Per ridurre il problema dell'instabilità della pompa del tipo TR, si devono utilizzare dei condotti di aspirazione e di mandata rigidi.

La pompa non può girare in mancanza di liquido.

Per il corretto funzionamento della pompa e garantire la funzionalità della tenuta, è indispensabile che il posizionamento della macchina avvenga assolutamente sotto battente. (**tabella n. 2**)

Pompe tipo AP- EPC-HPP- IMM- MP- MPC- PPI-SP-SPV:

La pompa va installata fissando la flangia di accoppiamento sulla parte superiore del serbatoio e con il corpo immerso nel liquido.

Per il fissaggio della flangia al serbatoio usare viti adeguate.

Il livello massimo del liquido nel serbatoio deve rimanere sempre 3-4 cm. al di sotto della flangia di appoggio, mentre il livello minimo deve sempre risultare al di sopra della camera di aspirazione (**tabella n. 2**). Il foro di aspirazione è collocato sulla parte inferiore del corpo pompa. La distanza minima tra il foro di aspirazione ed il fondo del serbatoio deve essere calcolata in modo da evitare fenomeni di cavitazione e prevenire che eventuali depositi di impurità impediscano il necessario flusso di fluido.

Nell'installazione delle pompe di tipo SPV, si invita a:

- non utilizzare raccordi rigidi e/o raccordi con filettatura conica;
- utilizzare esclusivamente sigillanti liquidi o di spessore molto piccolo (film);
- prestare attenzione nell'avvitare il raccordo sulla mandata della pompa a non forzare oltre la battuta d'arresto posta all'interno del bocchettone.

L'inosservanza delle suddette avvertenze, potrebbe irrimediabilmente danneggiare il foro di mandata della pompa.

**COLLEGAMENTO ELETTRICO:**

L'elettropompa è costruita per un collegamento elettrico permanente diverso dalla spina.

Il collegamento elettrico va effettuato da personale qualificato, nel rispetto delle norme in vigore nel paese dell'utilizzatore e deve sempre prevedere la messa a terra della macchina.

La tensione e la frequenza di alimentazione del motore devono corrispondere a quelli indicati in targa.

La disposizione dei ponti di collegamento "A o Δ" deve corrispondere allo schema elettrico riportato all'interno della copri morsettieria. (**tabella n. 3**)

Verificare che il senso di rotazione della pompa sia quello indicato dalla freccia posta sul corpo della pompa. Se il senso di rotazione non è corretto, fermare il motore, disinserire la linea di alimentazione e scambiare due fasi dell'alimentazione. Controllare sempre che la corrente assorbita dalla elettropompa durante il funzionamento non sia mai superiore a quella indicata in targa.

Si raccomanda l'impiego di cavi e spine di sezione appropriate alle correnti assorbite dal motore elettrico che equipaggia la macchina. ricordando che la corrente assorbita allo spunto per l'avviamento diretto può essere molto maggiore di quelle indicate.

Poiché la costruzione standard della elettropompa non comprende una protezione contro il sovraccarico, l'installatore dovrà provvedere ad una separata ed adeguata protezione.

Accertarsi che i fusibili, gli interruttori automatici ed i relè termici siano correttamente dimensionati.



ISTRUZIONI PER L'USO:

La macchina, per funzionare correttamente, deve essere posizionata sempre con l'asse motore in verticale. La temperatura dell'ambiente di lavoro deve essere compresa tra -20 °C e +40 °C. Sebbene le elettropompe siano state progettate per tollerare impurità contenute nei liquidi (**tabella n. 1**), si raccomanda ugualmente di predisporre adeguate zone di decantazione (es. dividere il serbatoio in scomparti), attenendosi alle norme di installazione. Per le pompe autoadescenti si dovrà provvedere ad un innescio iniziale riempiendo il tubo aspirante o di mandata. Nelle pompe equipaggiate con tenuta meccanica, qualora si verifici una fuoriuscita di liquido dall'entrata dell'asse nella camera di aspirazione/mandata, arrestare la macchina e verificare la parte deteriorata. In caso di guasto elettrico su macchina equipaggiata con motore monofase, l'operatore dovrà prestare attenzione a possibili fenomeni elettrostatici dovuti alla presenza del condensatore. La carcassa esterna del motore può raggiungere la temperatura di 70 °C; è consigliato, per interventi prolungati su questa superficie, l'uso di opportune protezioni (guanti). Per il livello di pressione acustica Lp vedere **tabella n. 1**.



MANUTENZIONE: Non si prevedono particolari interventi di manutenzione, oltre alla pulizia periodica della girante e della chiocciola dalle impurità presenti nel liquido.

Per l'eventuale sostituzione di cuscinetti, tenute meccaniche e/o parti componenti il motore elettrico, fare riferimento alle schede tecniche riportate sul nostro catalogo generale, alla documentazione disponibile sul sito web www.sacemi.com o contattare il nostro servizio commerciale. Tutte le operazioni di manutenzione devono essere eseguite da personale qualificato, a macchina ferma e scollegata dalla rete elettrica.



SMALTIMENTO RIFIUTI:

la messa fuori servizio della elettropompa ed il suo smantellamento devono rispettare le leggi vigenti del paese dell'utilizzatore per quanto riguarda lo smaltimento dei rifiuti e quindi la loro raccolta differenziata nelle apposite strutture.

MANUEL D'UTILISATION ET D'ENTRETIEN ELECTROPOMPES SACEMI® Rév. 1/2011	USAGE AND MAINTENANCE MANUAL ELECTRIC PUMPS SACEMI® Rev. 1/2011
GÉNÉRALITÉ : Le présent manuel a été réalisé pour donner des connaissances générales sur la machine et les instructions estimées nécessaires pour son installation correcte et son bon fonctionnement. Ce manuel fait partie intégrante de la machine, doit être lu attentivement avant de manutentionner, installer et mettre la machine en service et conservé pour toute consultation future. Le non-respect des consignes d'utilisation, l'utilisation incorrecte, les interventions d'entretien non effectuées par des techniciens spécialisés, le retrait des étiquettes, la dépose ou la manipulation de protections et de dispositifs de sécurité ainsi que toute autre action n'étant expressément prévue ayant pour effet de réduire les dispositifs de sécurité actifs et passifs de la machine, peuvent causer des dommages importants aux personnes et aux choses et exonèrent le constructeur de toute responsabilité. Les interventions sur la machine par du personnel non autorisé annulent automatiquement la garantie du produit. Un code estampé sur la plaque signalétique de l'électropompe permet d'identifier la date et le lot de fabrication. Pour toute situation n'étant pas prévue dans le présent manuel ou d'autres informations, se reporter à notre catalogue général, à la documentation disponible sur le site web www.sacemi.com et contacter éventuellement notre service commercial.	GENERAL INFORMATION: This manual has been written to provide general knowledge about the machine and the instructions considered necessary for its correct installation and running. The manual is an integral part of the machine. It must be read carefully before moving, installing and commissioning the machine and it must be kept for future reference. Any non-observance, improper use or maintenance work not carried out by specialised personnel, the removal of labels of any type, the removal of or tampering with guards and safety devices and, in any case, any other, not explicitly prescribed action that reduces the machine's active and passive safety devices, may cause serious damage to individuals and things and shall exonerate the manufacturer from any liability. Interventions on the machine by unauthorised personnel shall automatically cancel the product's guarantee. A code for tracing the production date and batch is stamped on the plate that accompanies the electric pump. For situations not covered by this manual or other information, reference should be made to that reported in our general catalogue, in the documentation available on the web site www.sacemi.com , and if necessary, contact our commercial service.
DECLARATION DE CONFORMITE : Les électropompes Sacemi® de type AP-AU-EPC-HPP-IMM-MP-MPC-PPI-SP-SPV-SQ-TR sont conformes aux prescriptions des directives 89/392, 91/368, 93/44, 93/68 CEE et amendements suivants - 73/23, 93/68, 89/336/CEE - 89/336, 92/31, 93/68, 93/97 CEE et amendements suivants - 2002/95 CEE, et portent sur leur plaque signalétique le marquage 	DECLARATION OF CONFORMITY: Sacemi® electric pumps type AP-AU-EPC-HPP-IMM-MP-MPC-PPI-SP-SPV-SQ-TR comply with the prescriptions of directives 89/392, 91/368, 93/44, 93/68 EEC and subsequent amendments - 73/23, 93/68, 89/336/EEC - 89/336, 92/31, 93/68, 93/97 EEC and subsequent amendments - 2002/95 EEC and carry the  mark on their rating plate.
DESCRIPTION DU PRODUIT : Les électropompes centrifuges Sacemi® sont conçues pour la circulation de liquides en général et de mélanges réfrigérants. Les rotors sont fixés directement sur l'arbre moteur prolongé. La pompe est équipée d'un moteur électrique à 2 pôles, conçu pour un fonctionnement continu et une alimentation en c.a., construit conformément aux normes IEC60034, refroidi par ventilation externe, enroulement de classe F et degré de protection IP 55.	PRODUCT'S DESCRIPTION: Sacemi® electric centrifugal pumps are designed to circulate liquids in general and coolant mixtures. The impellers are attached directly onto the extended motor shaft. The pump is fitted with a 2-pole electric motor, designed for constant service and AC power supply, manufactured in compliance with IEC60034 standards, cooled with external ventilation, class F winding and protection level IP 55.
 CONSERVATION DE LA MACHINE : Le stockage doit avoir lieu dans un endroit protégeant la machine contre la pénétration de corps étrangers et l'action des agents atmosphériques (pluie, neige, etc.), qui sont susceptibles de détériorer la partie électrique. La température du lieu de stockage doit être comprise entre - 20 °C et +50 °C.	 MACHINE PRESERVATION: The machine must be stored in an area where it is protected from foreign bodies and atmospheric agents (rain, snow, etc.) that may cause deterioration of the electric part. The temperature of the storage area must be between -20 °C and +50 °C.
 MANUTENTION : Même si emballées, les électropompes doivent être manutentionnées avec la plus grande attention et avec des dispositifs adaptés à leur poids et à leurs dimensions. Pendant les opérations de manutention et de transport, veiller à ne pas endommager les pièces délicates.	 HANDLING: Even if packed, electric pumps must be handled with the utmost care using means suited to their weight and size. During handling and transport, care must be taken not to damage the delicate parts.
 UTILISATION : Les électropompes Sacemi® trouvent application dans le secteur industriel sur des machines-outils pour l'usinage du métal, le travail du plastique, du verre, des pierres (découpe, perçage, fraisage, rectification, tournage) et les applications industrielles pour la filtration, la thermorégulation de fluides, les cabines de peinture, le traitement de surfaces, les machines à imprimer.	 USAGE: Sacemi® electric pumps are particularly suitable for use in the industrial field on machine tools for processing metal, plastic, glass, stones (cutting, perforating, milling, grinding, and turning) and industrial applications for filtering, thermal regulation of fluids, varnishing cabins, surface treatments and pressing machines.
  RESTRICTIONS D'UTILISATION : Les électropompes ne doivent pas être utilisées dans des milieux explosifs et/ou potentiellement explosifs, avec des liquides inflammables, des liquides agressifs (par exemple, acides, solutions alcalines) et des liquides émanant des gaz nocifs et/ou explosifs. Les pompes ne peuvent pas être utilisées pour des hauteurs inférieures au point le plus bas de la courbe caractéristique indiquée dans le catalogue. L'utilisation de l'électropompe pour des hauteurs inférieures à celles susmentionnées entraîne une surcharge du moteur. Les électropompes ne peuvent pas être utilisées dans des réservoirs sous pression. Le liquide pompé doit avoir une viscosité inférieure à 21 cSt (3° E) et une température inférieure à 70°C. Les dimensions des particules solides admises dans le liquide pompé varient pour chaque type de pompe. (tableau n. 1) L'électropompe est construite pour être installée à l'intérieur ou dans des zones protégées contre les intempéries et peut travailler en continu, à condition que les données électriques indiquées sur la plaque signalétique soient respectées.	  USAGE LIMITS: Electric pumps must not be used in explosive and/or potentially explosive environments, with inflammable or aggressive liquids (e.g. acids, alkaline solutions) and liquids that produce harmful and/or explosive gases. The pumps cannot be used for heads lower than the lowest point of the characteristic curve reported in the catalogue. The use of electric pumps for heads lower than the above-mentioned ones result in overloading the motor. Electric pumps cannot be used in tanks under pressure. The pumped liquid must not exceed a viscosity of 21 cSt (3° E) and a temperature of + 70 °C. The dimensions of the solid parts allowed in the pumped liquid vary for every type of pump. (table no. 1) The electric pump is built to be installed in-doors or in areas protected from bad weather conditions and can work in constant service as long as the electrical data indicated on the plate are observed.



INSTALLATION:

Pour éviter des pertes de charge et garantir un débit maximal, il est recommandé d'utiliser des conduites d'un diamètre égal à l'orifice de refoulement de la pompe. La machine doit être protégée correctement contre l'action des agents atmosphériques. Ne jamais introduire les doigts dans la conduite d'aspiration, car un risque subsiste au contact avec le rotor.

Pour soulever la pompe, utiliser un équipement adapté et prendre toutes les précautions nécessaires en fonction du poids et des dimensions de la machine. Vérifier que l'électropompe s'amorce parfaitement au démarrage. Vérifier qu'il n'y ait pas d'obstacles susceptibles d'empêcher le flux normal de l'air de refroidissement vers le ventilateur du moteur. Les électropompes doivent être fixées pour éviter des vibrations ou des mouvements qui pourraient endommager les conduites.

Il est conseillé de ne pas utiliser d'accouplements rigides entre le refoulement de la pompe et l'installation.

Pompes de type AU :

La pompe doit être installée sur la partie supérieure du réservoir et fixée avec des vis adéquates. Pour le bon fonctionnement de la pompe et garantir l'étanchéité, la pompe doit être amorcée avant de l'utiliser ; l'opération d'amorçage doit être répétée chaque fois que la pompe aspire de l'air par manque de liquide.

La pompe ne peut pas tourner sans liquide. (tableau N° 2)

Pompes de type SQ :

La pompe type SQ doit être installée sur une paroi latérale du réservoir et fixée au réservoir avec des vis adaptées, en intercalant un joint entre la surface du réservoir et la bouche d'aspiration de la pompe.

La pompe ne peut pas tourner sans liquide.

Pour le bon fonctionnement de la pompe et garantir l'étanchéité, il est indispensable de respecter le niveau minimum du liquide dans le réservoir. **(tableau N° 2)**

Pompes de type TR :

Pour réduire le problème d'instabilité de la pompe de type TR, il faut utiliser des conduites d'aspiration et de refoulement rigides.

La pompe ne peut pas tourner sans liquide.

Pour le bon fonctionnement de la pompe et garantir l'étanchéité, il est indispensable de positionner la machine sous charge. **(tableau N° 2)**

Pompes de type AP- EPC-HPP- IMM- MP- MPC- PPI-SP-SPV :

La pompe doit être installée en fixant la bride d'accouplement sur la partie supérieure du réservoir et avec le corps plongé dans le liquide. Pour la fixation de la bride au réservoir, utiliser des vis adaptées. Le niveau maximum de liquide dans le réservoir doit toujours rester 3-4 cm au-dessous de la bride d'appui tandis que le niveau minimum doit toujours être au-dessus de la chambre d'aspiration. **(tableau N° 2)**

L'orifice d'aspiration se trouve sur la partie inférieure du corps de pompe. La distance minimum entre l'orifice d'aspiration et le fond du réservoir doit être calculée de façon à éviter des phénomènes de cavitation et prévenir que d'éventuelles impuretés ne se déposent et empêchent au fluide de s'écouler normalement.

Lors de l'installation de pompes de type SPV, veiller à :

- ne pas utiliser de raccords rigides et/ou de raccords à filetage conique.
- utiliser exclusivement des produits d'étanchéité liquides ou d'une épaisseur très fine (film).
- en vissant le raccord sur le refoulement de la pompe, ne pas forcer au-delà de la butée d'arrêt située à l'intérieur de la goulotte.

Le non-respect de ces consignes est susceptible d'endommager irrémédiablement l'orifice de refoulement de la pompe.



INSTALLATION:

To avoid load losses and to guarantee maximum capacity, you are advised to use pipes with the same diameters as the pump's delivery hole. The machine must be adequately protected from the action of atmospheric agents. Never put your fingers into the suction duct as there is a risk of damage from contact with the impeller. When lifting the pump, use special equipment and take all the necessary precautions regarding the weight and dimensions of the machine. Make sure that the electric pump is primed perfectly when it is started. Make sure that there are no obstacles preventing the normal flow of the cooling air towards the motor fan. The electric pumps must be secured to avoid vibrations or movements that could damage the pipes.

You are advised not to use rigid couplings between the pump delivery and the plant.

Type AU pumps:

The pump must be installed on the top of the tank and fixed with adequate screws. In order for the pump to function and guarantee that the seal functions, the pump must be primed for use; the priming operation must be repeated every time the pump sucks in air when there is no liquid.

The pump cannot turn without liquid. (table no. 2)

Type SQ pumps:

The type SQ pump must be installed on one of the tank's side walls.

The pump must be securely attached to the tank with suitable screws, inserting a seal between the tank surface and the suction mouth of the pump.

The pump cannot turn without liquid.

In order for the pump to function correctly and to guarantee that the seal functions, it is indispensable to respect the minimum level of the liquid in the tank. **(table no. 2)**

Pumps type TR:

To reduce the problem of the instability of type TR pumps, rigid suction and delivery ducts must be used.

The pump cannot turn without liquid.

In order for the pump to function correctly and to guarantee that the seal functions, it is absolutely indispensable that the machine is positioned under head. **(table no. 2)**

Pumps type AP- EPC-HPP- IMM- MP-MPC-PPI-SP-SPV:

The pump must be installed by fixing the coupling flange onto the top of the tank and with the body submerged in the liquid. Use suitable screws for attaching the flange to the tank. The maximum level of the liquid in the tank must always remain 3-4 cm. below the support flange, while the minimum level must always remain above the suction chamber **(table no. 2)**

The suction hole is located on the bottom of the pump body. The minimum distance between the suction hole and the bottom of the tank must be calculated so as to avoid situation of cavitation and to stop any deposits of impurities from obstructing the necessary flow of fluid.

When installing SPV-type pumps, you are invited:

- not to use rigid pipe fittings and/or pipe fittings with conical thread;
- to use liquid sealants only or very thin films;
- to take care when screwing the pipe fitting onto the pump delivery so as not to force it beyond the stop beat located inside the output pipe.

Failure to observe the above-mentioned warnings could irreparably damage the delivery hole on the pump.



BRANCHEMENT ELECTRIQUE :

L'électropompe est conçue pour un branchement électrique permanent différent d'une prise.

Le branchement électrique doit être effectué par des techniciens spécialisés, conformément aux normes en vigueur dans le pays de destination et doit toujours prévoir une mise à la terre de la machine.

La tension et la fréquence d'alimentation du moteur doivent correspondre à celles indiquées sur la plaque signalétique.

La disposition des ponts de connexion en "Λ ο Δ" doit correspondre au schéma électrique se trouvant à l'intérieur du cache-bornier. **(tableau N° 3)**

Vérifier que le sens de rotation de la pompe est celui indiqué par la flèche située sur le corps de la pompe. Si le sens de rotation n'est pas correct, arrêter le moteur, couper l'alimentation et intervenir deux phases de l'alimentation. Toujours contrôler que le courant absorbé par l'électropompe pendant le fonctionnement ne dépasse jamais celui indiqué sur la plaque signalétique. Il est recommandé d'utiliser des câbles et des prises d'une section adaptée aux courants absorbés par le moteur électrique de la machine, en se rappelant que le courant initial de démarrage direct peut être bien supérieur à celui indiqué.

La construction standard de l'électropompe ne prévoit pas de protection contre la surcharge. L'installateur devra prévoir une protection séparée adéquate.

Veiller à ce que les fusibles, les interrupteurs automatiques et les relais thermiques soient dimensionnés correctement.



ELECTRIC CONNECTION:

The electric pump is built for a permanent electric connection different from the plug.

Electric connection must be carried out by qualified personnel in observance of the regulations in force in the user's country. The machine must always be earthed.

The power supply voltage and frequency of the motor must correspond to those indicated on the rating plate.

The layout of the connection bridges "Λ ο Δ" must comply with the electric circuit diagram shown inside the terminal cover. **(table no. 3)**

Check that the pump turns in the direction indicated by the arrow on the pump body.

If the direction is not correct, stop the motor, disconnect the power line and exchange two power supply phases. Always check that the current absorbed by the electric pump when it is running is never over to that indicated on the rating plate. We recommend using cables and plugs of a section that is appropriate for the currents absorbed by the electric motor with which the machine is fitted, remembering that the current absorbed at direct start-off can be much higher than those indicated.

Since the standard construction of the electric pump does not include a protection against over-load, the installer must provide a separate, adequate protection.

Make sure that the fuses, the automatic switches and thermal relays are of the correct size.)



MODE D'EMPLOI :

Pour fonctionner correctement, la machine doit être positionnée toujours avec l'essieu moteur à la verticale. La température du lieu de travail doit être comprise entre - 20°C et +40°C. Même si les électropompes ont été conçues pour tolérer les impuretés présentes dans les liquides **(tableau N° 1)**, il est toujours recommandé de prévoir des zones de décantation adaptées (par exemple, diviser le réservoir en compartiments) en respectant les normes d'installation.

Pour les pompes auto-amorçantes, il faudra effectuer un amorçage initial en remplissant le tuyau aspirant ou de refoulement. Sur les pompes avec joint mécanique, en cas de fuite de liquide provenant de l'entrée de l'essieu dans la chambre d'aspiration/refoulement, arrêter la machine et examiner la partie détériorée.

En cas de panne électrique sur une machine équipée d'un moteur monophasé, l'opérateur devra faire attention à d'éventuels phénomènes électrostatiques dus à la présence du condensateur. La carcase extérieure du moteur peut atteindre une température de 70°C ; pour des interventions prolongées sur cette surface, il est conseillé d'utiliser des protections adéquates (gants).

Pour le niveau de pression acoustique Lp voir **tableau N° 1**



USE INSTRUCTIONS:

In order for the machine to function correctly, it must always be positioned with the motor axis in a vertical position. The temperature of the working environment must be between -20 °C and +40 °C. Although the electric pumps have been designed to tolerate impurities contained in the liquids **(table no. 1)**, we still recommend reserving suitable decantation areas (i.e. divide the tank into compartments), following installation regulations.

For self-priming pumps, an initial primer must be provided by filling the suction or delivery pipe. In pipes fitted with mechanical seal, if liquid leaks from the point where the axis enters the suction/delivery chamber, stop the machine and check the damaged part.

If an electrical fault should occur on the machine equipped with single-phase motor, the operator must look out for possible electrostatic situation due to the presence of the capacitor. The external structure of the motor may reach a temperature of 70 °C; for prolonged operations on this surface, the use of appropriate means of protection (gloves) is recommended.

For the acoustic pressure Lp level see **table no. 1**



ENTRETIEN :

aucun entretien particulier n'est prévu en dehors de l'élimination périodique des impuretés en suspension dans le liquide du rotor et de la volute. Pour l'éventuel remplacement des roulements, de joints mécaniques et/ou d'organes du moteur électrique, consulter les fiches techniques publiées dans notre catalogue général, la documentation disponible sur le site web www.sacemi.com ou contacter notre service commercial.

Toutes les opérations d'entretien doivent être effectuées par du personnel qualifié, avec la machine à l'arrêt et hors tension.



MAINTENANCE:

No special maintenance operations are required other than periodic cleaning of the impeller and screw to remove impurities present in the liquid. When replacing bearings, mechanical seals and/or component parts of the electric motor, refer to the technical reports given in our general catalogue, to the documentation available on the web site www.sacemi.com or contact our commercial service.

All maintenance operations must be carried out by qualified personnel with the machine at a standstill and disconnected from the electricity mains.

**ELIMINAZIONE DEI DECHETS :**

la mise hors service de l'électropompe et son démantèlement doivent respecter les réglementations en vigueur dans le pays de destination en matière d'élimination des déchets et donc leur tri dans des structures prévues à cet effet.

**WASTE DISPOSAL:**

when decommissioning the electric pump and disposing of it, the laws in force in the user's country must be observed with respect to disposing of waste and therefore differential collection in special structures.

Simboli utilizzati / terminologia - Symbols used / terminology - Symboles utilisés / terminologie

	Avvertenza Warning - Avertissement		Pericolo generico General hazard - Danger générique		Pericolo scossa elettrica Electric shock hazard - Danger d'électrocution
	Avverte che la inosservanza delle prescrizioni comporta un rischio di danno alla macchina		Avverte che la inosservanza comporta un rischio di danno per le persone e le cose		Avverte la presenza di alta tensione con rischio di scosse elettriche
	Warns that failure to observe prescriptions entails a risk of damage to the machine		Warns that failure to observe prescriptions entails a risk of damage for people or things		Warns of the presence of high voltage with the risk of electric shocks
	Avertit que le non-respect des consignes risque d'endommager la machine		Avertit que le non-respect des consignes risque de causer des lésions corporelles et des dommages matériels		Avertit de la présence de haute tension avec risque de décharges électriques

Tabella n. 1
Table no. 1 - Tableau n. 1

Caratteristiche tecniche
Technical characteristics - Caractéristiques techniques

Tipo pompa Pump type Type pompe	Impurità ammessa Allowed impurity Impureté admise mm.	Lp (db)
AP 80B	1-2	<70
AP 90A	1-2	73
AP 90B	1-2	75
AP 100A	1-2	78
AP 112A-AP112B	1-2	76
AU - EPC - PPI	0,03	<70
HPP 80 - 90	1	<70
HPP 100-112	1	78
IMM 40-50-63-71-80	2-3	<70
IMM 90A	3-4	73
IMM 90 B	3-4	75
IMM 100	3-4	78
MP 63-71-80-90	2-3	<70
MP 100	2	<70
MPC	2	<70
SP - SPV	2-3	<70
SQ - TR	2-3	<70

Tabella n. 2
Table no. 2 - Tableau n. 2

Installazione e livelli del liquido - Installation and liquid level - Installation et niveau de liquide

Tipi-types IMM-SP-SPV	Tipi-types EPC-HPP- MP- MPC- PPI	Tipi -types IMM 90-100	Tipo-type AP	Tipo - type TR	Tipo - type SQ	Tipo - type AU

Tabella n. 3
Table no. 3 - Tableau n. 3

Collegamento elettrico motore - Electric Motor connection - Branchement électrique du moteur

Terminali morsetteria Board terminals - Plaque à bornes	Collegamento connection - connexion Λ	Collegamento Connection - connexion Δ

GUIDA PER LA SOLUZIONE DI ALCUNI PROBLEMI
GUIDE FOR SOLVING TROUBLES - GUIDE POUR LA RESOLUTION DE CERTAINS PROBLEMES

Difetto riscontrato Fault found - Défaüt constaté	Possibile causa Possible causes - Cause possible	Possibile rimedio Possible remedy - Remède possible
Il motore non parte nessun rumore	-Difetto nei collegamenti in morsettiera del motore -Difetto nei collegamenti della linea elettrica di alimentazione	-Verificare i collegamenti morsettiera del motore -Verificare linea di alimentazione -Verificare interruttori, fusibili e protettori termici
The motor does not start No noise	-Fault in connections in the motor terminal board -Fault in the mains electricity line connections	-Check the motor terminal board connections -Check the supply line -Check switches, fuses and thermal protectors
Le moteur ne démarre pas Aucun bruit	- Défaüt au niveau des connexions dans le bornier du moteur - Défaüt au niveau des connexions de la ligne d'alimentation électrique	- Vérifier les connexions du bornier du moteur - - Vérifier la ligne d'alimentation - Vérifier les interrupteurs, les fusibles et les protections thermiques
Il motore non parte- percezione di ronzio	-Difetto del motore per mancanza di fase sull'avvolgimento -difetto linea di alimentazione per mancanza di fase -girante bloccata -cuscinetto bloccato -bronzina bloccata -tenuta bloccata	-Verificare i collegamenti morsettiera del motore -Verificare avvolgimento del motore -Verificare linea di alimentazione -Sostituire la girante -Sostituire cuscinetto -Sostituire bronzina -Sostituire tenuta
The motor does not start Buzzing noise	-Motor fault due to lack of phase on the winding -fault on the supply line due to lack of phase -blocked impeller -blocked bearing -blocked bushing -blocked seal	-Check connections on the motor terminal board -Check motor winding -Check supply line -Replace impeller -Replace bearing -Replace bushing -Replace seal
Le moteur ne démarre pas - Perception d'un ronflement	-Défaüt du moteur dû à un manque de phase sur l'enroulement -défaüt de la ligne d'alimentation pour manque de phase -rotor bloqué -roulement bloqué -palier bloqué -joint d'étanchéité bloqué	- Vérifier les connexions du bornier du moteur - Vérifier l'enroulement du moteur - Vérifier la ligne d'alimentation - Remplacer le rotor - Remplacer le roulement - Remplacer le palier - Remplacer le joint d'étanchéité
Il motore gira, ma non c'è presenza di liquido in mandata	-livello liquido nel serbatoio sotto il minimo previsto -girante danneggiata e/o occlusa -foro di aspirazione occluso -tubo di mandata occluso	-Ripristinare il livello minimo di liquido nel serbatoio -Pulire la girante e se danneggiata, sostituirla -Pulire il foro di aspirazione -Pulire la camera di aspirazione e pompaggio -Pulire il tubo di mandata
The motor turns, but there is no liquid in delivery	-liquid level in the tank below prescribed minimum -damaged and/or blocked impeller -blocked suction hole -blocked delivery pipe	-Top up minimum liquid level in the tank -Clean the impeller and if damaged, replace it -Clean the suction hole -Clean the suction and pumping chamber -Clean the delivery pipe
Le moteur tourne mais il n'y a pas de liquide en refoulement	-niveau de liquide dans le réservoir sous le minimum prévu -rotor endommagé et/ou bouché -orifice d'aspiration bouché -tuyau de refoulement bouché	- Rétablir le niveau minimum de liquide dans le réservoir - Nettoyer le rotor et le remplacer si endommagé - Nettoyer l'orifice d'aspiration - Nettoyer la chambre d'aspiration et le pompage - Nettoyer le tuyau de refoulement
Insufficiente pressione e portata	-senso di rotazione del motore errato -girante, camera di aspirazione, tubo di mandata intasato da impurità -girante danneggiata -camera di aspirazione, camera di pompaggio danneggiate	-Ripristinare corretto senso di rotazione del motore -Pulire la girante, la camera di aspirazione ed il tubo di mandata -Sostituire la girante -Sostituire mandata, camera di aspirazione e camera di pompaggio
Insufficient Pressure and delivery	-motor turning in the wrong direction -impeller, suction chamber and delivery pipe blocked with impurities -damaged impeller -damaged suction chamber, pumping chamber	-Reinstate correct rotation direction of motor -Clean the impeller, suction chamber and the delivery pipe -Replace the impeller -Replace the delivery, suction chamber and pumping chamber
Pression et débit insuffisants	-sens de rotation du moteur erroné -rotor, chambre d'aspiration, tuyau de refoulement bouché par des impuretés -rotor endommagé -chambre d'aspiration, chambre de pompage endommagées	-Rétablir le bon sens de rotation du moteur -Nettoyer le rotor, la chambre d'aspiration et le tuyau de refoulement -Remplacer le rotor -Remplacer le refoulement, la chambre d'aspiration et la chambre de pompage
Assorbimento motore troppo elevato	-presenza impurità non ammesse -frizioni tra parti in movimento - densità liquido oltre limiti di impiego	-Rimuovere presenza di impurità difforni da a quelle ammesse -Identificare e sostituire i componenti difettosi -riportare densità liquido entro i limiti di impiego
Motor absorption too high	-presence of banned impurities -friction among moving parts -liquid viscosity over usage limits	-Remove unauthorised impurities -Identify and replace faulty components -bring back liquid viscosity within usage limits
Absorption du moteur trop élevée	-présence d'impuretés non admises -frottements entre les pièces en mouvement -densité du liquide sur les limites d'utilisation	-Éliminer les impuretés différentes de celles admises -Identifier et remplacer les pièces défectueuses -apporter la densité du liquide entre les limites d'utilisation



INFORMAZIONI AGGIUNTIVE CUL/US
USEFUL ADDITIONAL INFORMATION CUL/US - INFORMATIONS SUPPLEMENTAIRES CUL/US

AVVERTENZE:

- l'installatore deve provvedere alla protezione del motore dai sovraccarichi;
- l'installatore deve provvedere a proteggere la pompa per evitarne l'uso in assenza di liquido;
- **Rischio di scossa elettrica** – questa pompa non è stata valutata per essere impiegata su piscine e/o ambienti equivalenti;
- I motori predisposti per il funzionamento con doppia tensione riportano in targa i dati elettrici per cui sono stati predisposti in fabbrica.

WARNING:

- motor overload protection must be provided by the installer;
- motor protection against dry operations must be provided by the installer;
- **Risk of electric shock** – This pump has not been investigated for use in swimming pool area;
- dual or multi voltage motors are marked with the particular voltage for which it has been set at the factory, located adjacent to wiring diagram.

AVERTISSEMENTS :

- L'installateur doit protéger le moteur contre les surcharges ;
- L'installateur doit protéger la pompe pour éviter qu'elle ne soit utilisée sans liquide ;
- **Risque de décharge électrique** – cette pompe n'a pas été conçue pour être utilisée sur des piscines et/ou des milieux similaires ;
- Les moteurs conçus pour un fonctionnement à double tension reportent sur leur plaque signalétique les caractéristiques électriques paramétrées en usine.

CAUTELA:

- Queste pompe sono state valutate solo per impiego con acqua.

CAUTION:

- This pump has been evaluated for use with water only.

PRECAUTION :

- Ces pompes ont été conçues uniquement pour être utilisées avec de l'eau.

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