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Submersible motor-driven pumps

Type IMM 90-100



Uses

They are suitable for transferring liquids containing impurities up to 4 mm in size.

Their hydraulic components: impeller and feed screw in cast iron, pump body in steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

- machine tools
- glass processing machinery
- surface treatment plants
- filtration systems
- spray booths

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 7-8 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 5-6 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

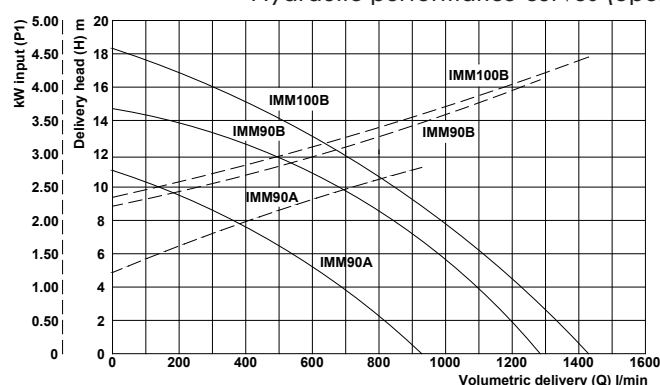
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
IMM 90A	695	350	345	2"	235	240	300	130	270	13 (n.4)	47.5
	795	450									48.1
	945	600									48.8
	1145	800									50.0
IMM 90B	695	350	345	2"	235	240	300	130	270	13 (n.4)	49.0
	795	450									49.6
	945	600									50.0
	1145	800									51.5
IMM 100B	730	350	380	2 1/2"	235	240	300	145	270	13 (n.4)	53.0
	830	450									53.6
	980	600									54.3
	1180	800									55.5

Rating plate data

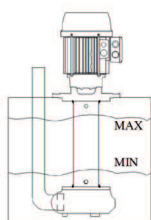
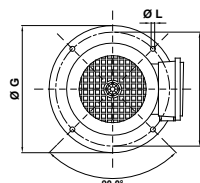
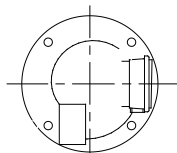
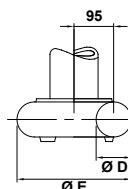
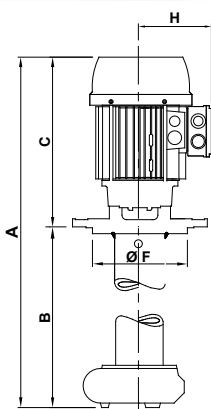
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
IMM 90A	2.70	2.2	8.1/4.7	2870	0.83	119 - 928	10 - 0
IMM 90B	3.58	3	10.6/6.1	2855	0.84	172 - 1284	14 - 0
IMM 100B	4.85	4	14.9/8.6	2875	0.81	50 - 1430	18 - 0

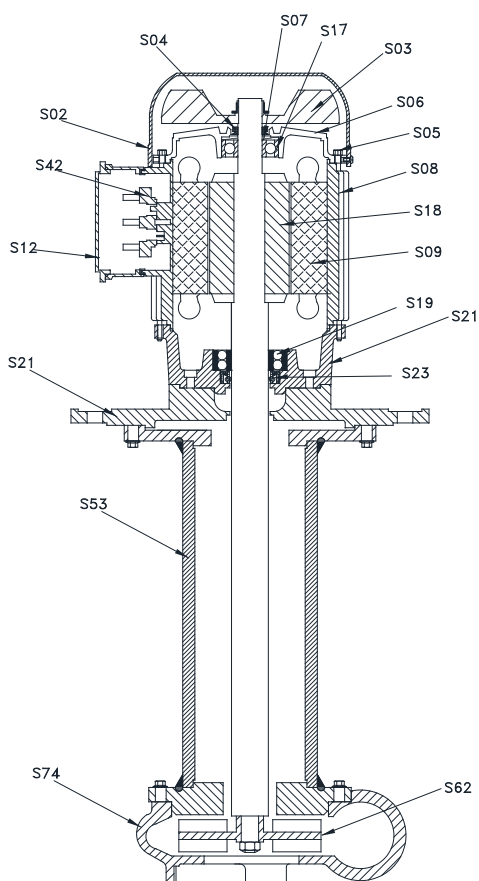
Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m	0	2	4	6	8	10	12	14	16	18	20
Type of pump	Volumetric delivery (Q) l/min ↓										
IMM 90A	928	816	709	551	341	119					
IMM 90B	1284	1186	1083	977	833	682	484	172			
IMM 100B	1430	1335	1230	1115	987	847	710	512	304	50	





Spare parts nomenclature

	Component	IMM 90A	IMM 90B	IMM 100B
		Materials	Materials	Materials
S02.	Fan cover	Nylon*	Nylon*	Nylon*
S03.	Fan	Nylon	Nylon	Nylon
S04.	V-ring	NBR	NBR	NBR
S05.	Stay rod	Steel	Steel	Steel
S06.	Upper shield	Aluminium	Aluminium	Aluminium
S07.	Spring ring	Steel	Steel	Steel
S08.	Housing	Aluminium	Aluminium	Aluminium
S09.	Wound stator	-	-	-
S12.	Terminal box	Nylon	Nylon	Nylon
S17.	Upper bearing	-	-	-
S18.	Axis + rotor	Steel	Steel	Steel
S19.	Lower bearing	-	-	-
S21.	Special shield	Cast Iron G20	Cast Iron G20	Cast Iron G20
S21.	Support flange	Cast Iron G20	Cast Iron G20	Cast Iron G20
S23.	Motor seal ring	NBR	NBR	NBR
S42.	Terminal board	-	-	-
S53.	Pump body	Steel	Steel	Steel
S62.	Impeller	Cast Iron G20	Cast Iron G20	Cast Iron G20
S74.	Impeller-cover	Cast Iron G20	Cast Iron G20	Cast Iron G20

*On demand Sheet metal

*On demand Sheet metal

*On demand Sheet metal

Submersible motor-driven pumps

Type SPV 12-18



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller, feed screw and pump body in PBT allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 70°C.

They are commonly used on:

- **machine tools** (milling and turning machines-drills)
- **glass processing machinery** (TRI version)
- **printing machines**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

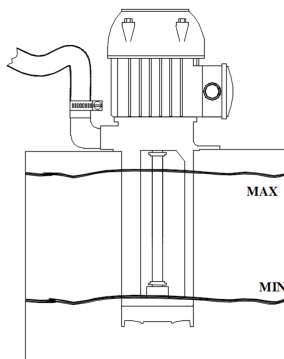
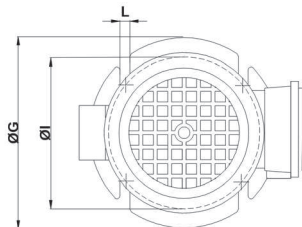
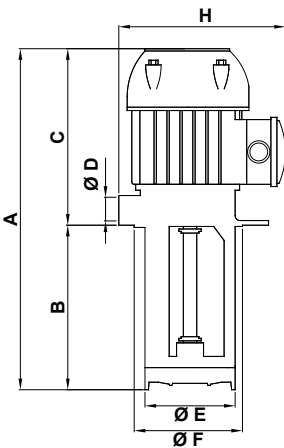
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	L mm	Mass kg
SPV 12	255	90 T	165	3/4"	98	100	130	151	115	7 (n.4)	2.8
	285	120 T									2.9
	335	170 T									3.0
	385	220 T									3.1
	435	270 T									3.3
	515	350									3.3
SPV 18	255	90 T	165	3/4"	98	100	130	151	115	7 (n.4)	2.8
	285	120 T									2.9
	335	170 T									3.0
	385	220 T									3.1
	435	270 T									3.2
	515	350									3.3

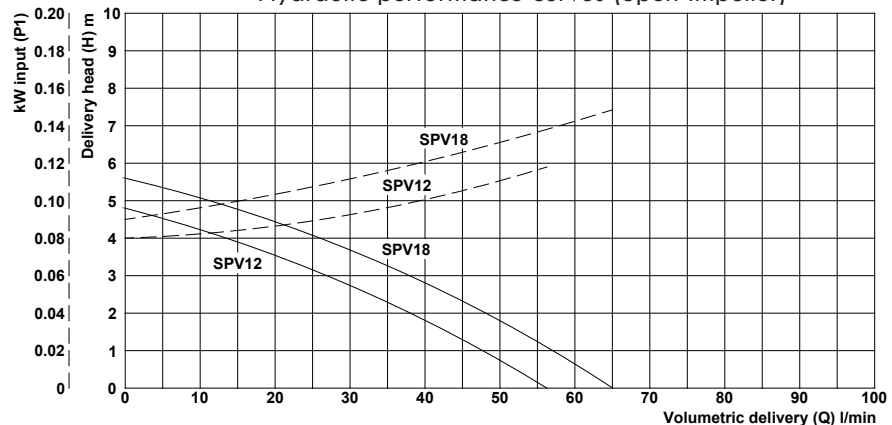
On demand: T= TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SPV 12	0.15	0.07	0.52/0.30	2770	0.71	6 - 56	4.5 - 0
SPV 18	0.17	0.09	0.55/0.32	2730	0.72	2 - 65	5.5 - 0

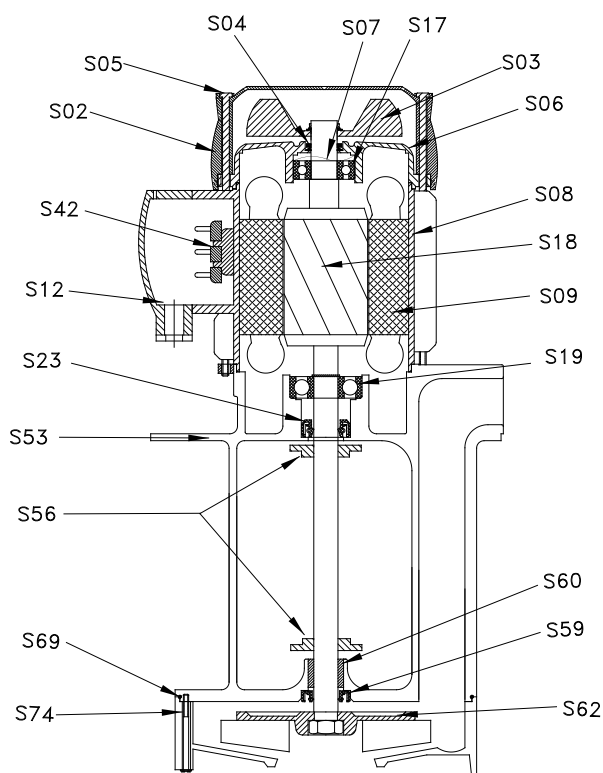


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Type of pump	Volumetric delivery (Q) l/min ↓											
	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5
SPV 12	56	52	48	43	38	33	27	21	13	6		
SPV 18	65	61	57	53	48	43	38	32	26	19	12	2



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SPV 12
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel*
-
NBR
-
PBT
PBT
NBR**
Bronze**
PBT
NBR
PBT

SPV 18
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel*
-
NBR
-
PBT
PBT
NBR**
Bronze**
PBT
NBR
PBT

*On demand. Ax. AISI 316

*On demand. Ax. AISI 316

**Available only on suction pipe 220-270-350 **Available only on suction pipe 220-270-350

Submersible motor-driven pumps

Type SPV 25-33



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller, feed screw and pump body in PBT allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 70°C.

They are commonly used on:

- **machine tools** (milling and turning machines-drills)
- **glass processing machinery** (TRI version)
- **printing machines**
- **air-conditioning systems**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

Size and weights table

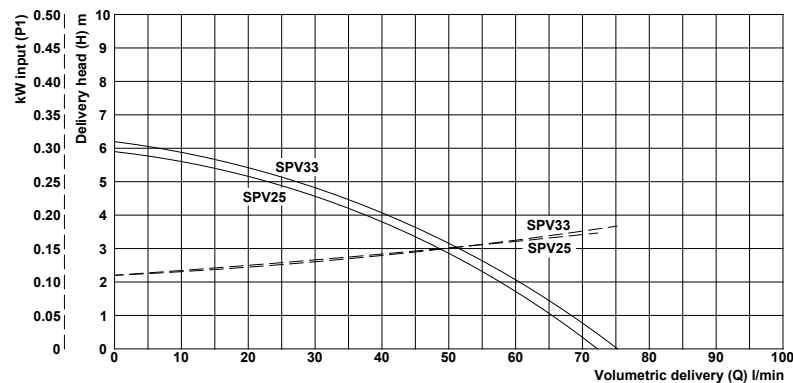
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	L mm	Mass kg
SPV 25	300	90 T	210	3/4"	98	100	130	170	115	7 (n.4)	4.3
	330	120 T									4.4
	380	170 T									4.5
	430	220 T									4.6
	480	270 T									4.7
	560	350									4.8
SPV 33	300	90 T	210	3/4"	98	100	130	170	115	7 (n.4)	4.8
	330	120 T									4.9
	380	170 T									5.0
	430	220 T									5.1
	480	270 T									5.2
	560	350									5.3

On demand: T= TRI mode

Rating plate data

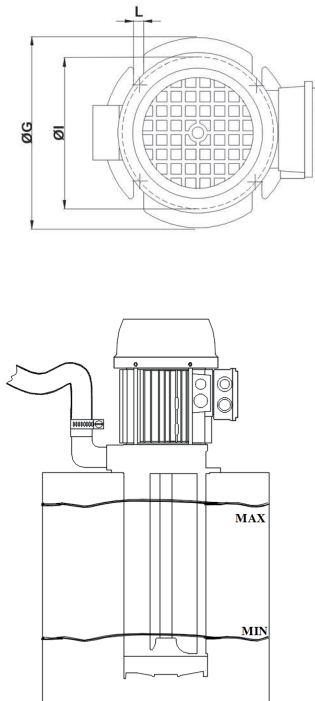
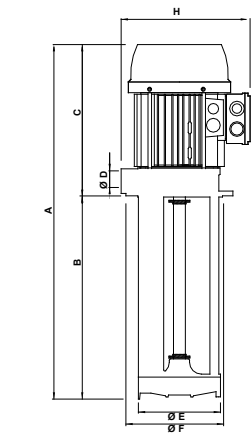
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SPV 25	0.26	0.18	0.85/0.49	2810	0.76	12 - 72	5.5 - 0
SPV 33	0.36	0.25	1.13/0.65	2800	0.78	7 - 75	6.0 - 0

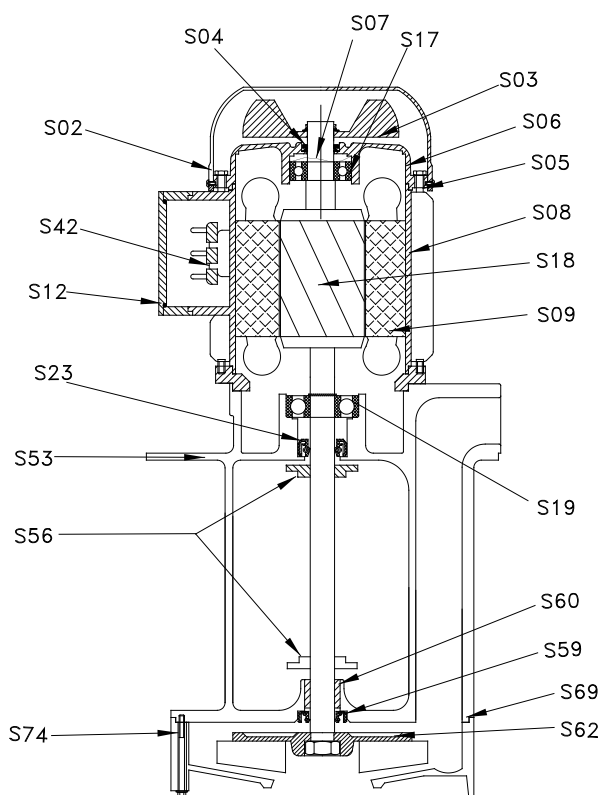
Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Type of pump	Volumetric delivery (Q) l/min ↓														
SPV 25	72	68	65	62	57	53	49	43	37	31	23	12			
SPV 33	75	72	68	65	61	56	52	46	41	35	27	18	7		





Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SPV 25 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
PBT
PBT
NBR***
Bronze***
PBT
NBR
PBT

SPV 33 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
PBT
PBT
NBR***
Bronze***
PBT
NBR
PBT

*On demand Sheet metal

**On demand. Ax. AISI 416

***Available only on suction pipe 350

*On demand Sheet metal

**On demand. Ax. AISI 416

***Available only on suction pipe 350

Submersible motor-driven pumps

Type SPV 50-75



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller, feed screw and pump body in Nylon allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

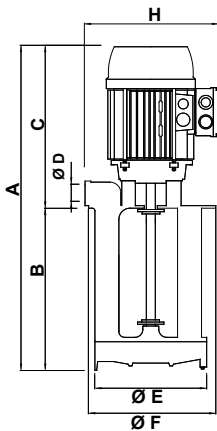
- machine tools (milling and turning machines)
- glass processing machinery (TRI version on suction pipes 200 and 270)
- printing machines
- air-conditioning systems
- spray booths

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



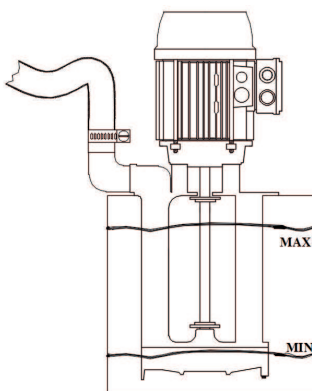
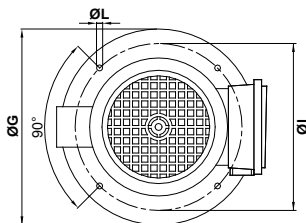
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	L mm	Mass kg
SPV 50	460	200 T	260	1 ¼"	138	140	180	215	160	7 (n.4)	7.7
	530	270 T									8.3
	610	350									8.9
SPV 75	460	200 T	260	1 ¼"	138	140	180	215	160	7 (n.4)	8.7
	530	270 T									9.2
	610	350									9.9

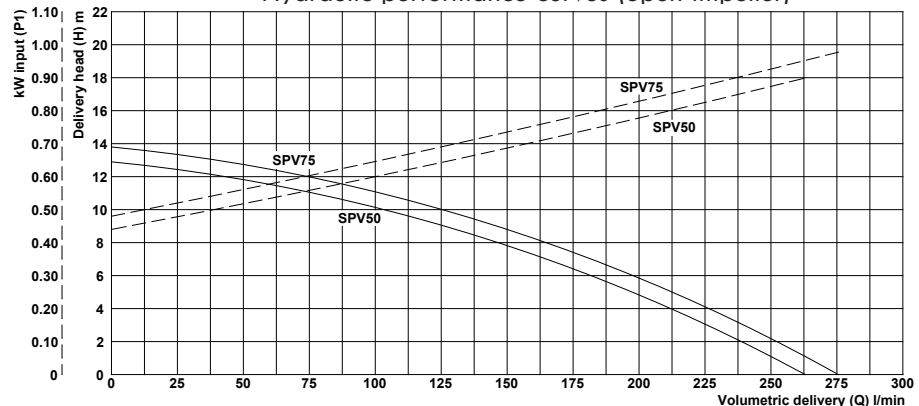
On demand: T = TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SPV 50	1.00	0.75	3.24/1.87	2770	0.77	43 - 263	12 - 0
SPV 75	1.20	0.90	3.83/2.21	2760	0.78	75 - 275	12 - 0

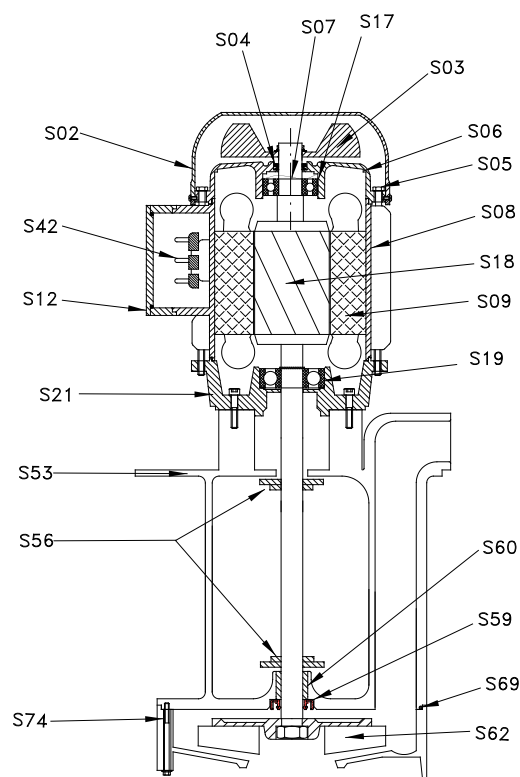


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
SPV 50	263	250	238	226	213	198	182	164	147	127	103	43			
SPV 75	275	264	252	240	226	213	198	182	165	146	125	75			



Spare parts nomenclature

Component	
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + rotor
S19.	Lower bearing
S21.	Flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SPV 50
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
(AX.AISI 416)**
-
Aluminium
NBR
-
Nylon
PBT
Engineering plastic
Nylon
NBR
Nylon

SPV 75
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
(AX.AISI 416)**
-
Aluminium
NBR
-
Nylon
PBT
Engineering plastic
Nylon
NBR
Nylon

*On demand Sheet metal
**On demand covered in PBT on suction pipe 200-270-350

*On demand Sheet metal
**On demand covered in PBT on suction pipe 200-270-350

Submersible motor-driven pumps

Type SPV 100-150



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller, feed screw and pump body in Nylon allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

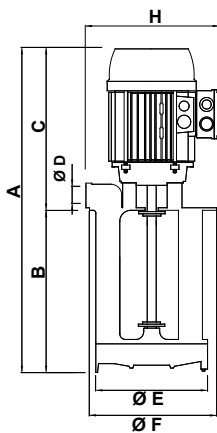
- **machine tools** (milling and turning machines)
- **glass processing machinery** (TRI version when possible)
- **printing machines**
- **air-conditioning systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



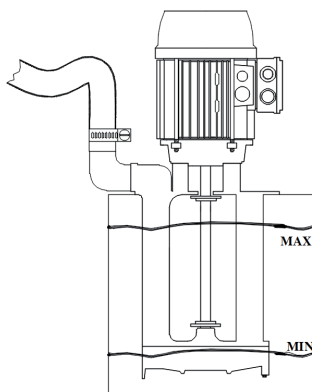
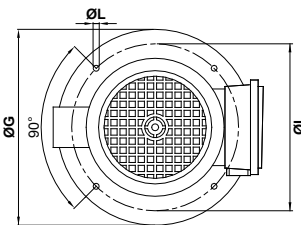
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
SPV 100	500	200 T	300	1 ¼"	138	140	180	230	160	9 (n.4)	10.5
	570	270 T									11.0
	650	350									11.7
SPV 150	500	200 T	300	1 ¼"	138	140	180	230	160	9 (n.4)	11.8
	570	270 T									12.3
	650	350									13.0

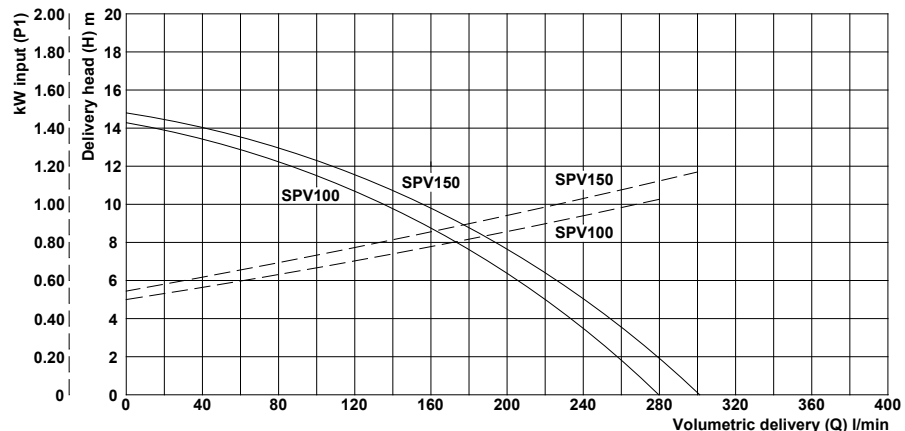
On demand: T= TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SPV 100	1.01	0.75	3.1/1.8	2800	0.80	15 - 280	14 - 0
SPV 150	1.41	1.1	4.3/2.5	2825	0.81	36 - 300	14 - 0

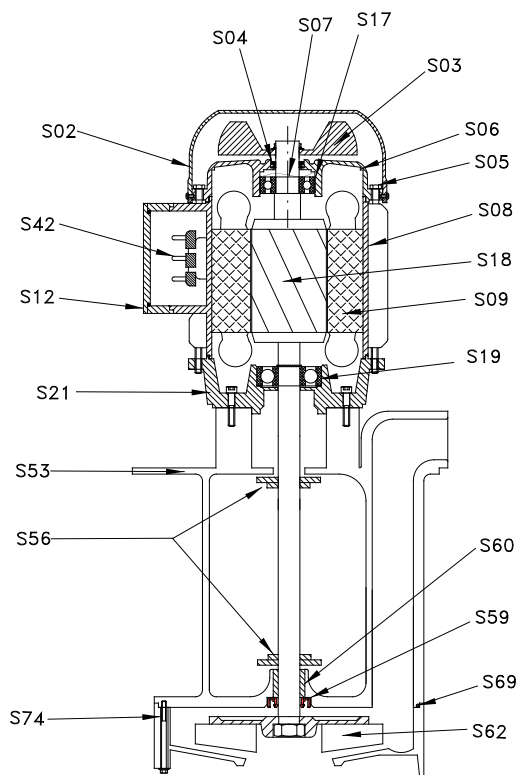


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
SPV 100	280	269	258	246	233	220	206	192	176	159	139	89	15		
SPV 150	300	290	279	267	253	238	225	210	195	179	160	112	36		



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + rotor
S19.	Lower bearing
S21.	Flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SPV 100 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
(AX.AISI 416)
-
Aluminium
NBR
-
Nylon
PBT
Bronze
Nylon
NBR
Nylon

SPV 150 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
(AX.AISI 416)
-
Aluminium
NBR
-
Nylon
PBT
Bronze
Nylon
NBR
Nylon

*On demand Sheet metal

*On demand Sheet metal

Submersible motor-driven pumps

Type SP 12-18

Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller and feed screw in PBT, pump body in cast iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

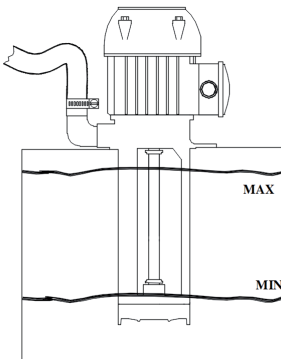
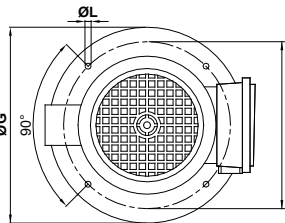
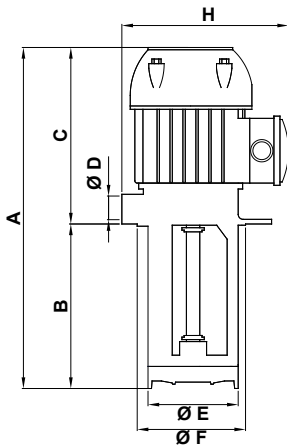
- **machine tools** (milling and turning machines)
- **glass processing machinery** (TRI version)
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



Size and weights table

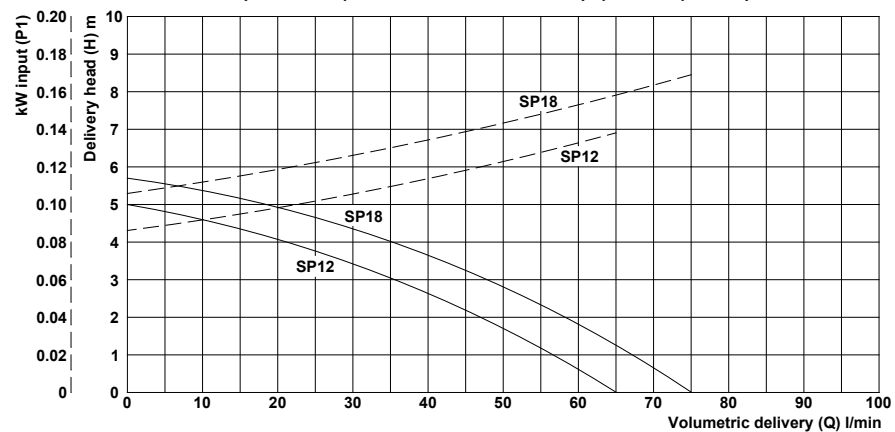
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
SP 12	265	90 T	165	3/4"	98	100	130	151	115	7 (n.4)	5.0
	285	120 T									5.3
	335	170 T									5.5
	385	220 T									5.7
	435	270 T									6.0
	515	350									6.5
SP 18	265	90 T	165	3/4"	98	100	130	151	115	7 (n.4)	5.1
	285	120 T									5.4
	335	170 T									5.6
	385	220 T									5.7
	435	270 T									6.0
	515	350									6.6

On demand: T= TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SP 12	0.15	0.07	0.52/0.30	2770	0.71	12 - 65	4.5 - 0
SP 18	0.17	0.09	0.55/0.32	2730	0.72	6 - 75	5.5 - 0

Hydraulic performance curves (open impeller)

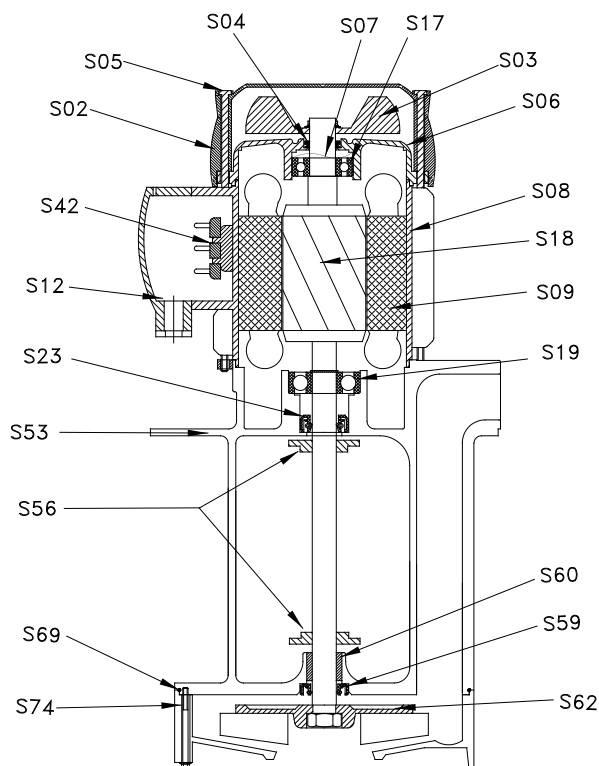


Hydraulic performance table (open impeller)

Delivery head (H) _m →	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Type of pump	Volumetric delivery (Q) l/min ↓												
SP 12	65	61	57	52	47	41	35	29	21	12			
SP 18	75	71	67	63	58	53	48	42	35	28	18	6	

Submersible motor-driven pumps

Type SP 12-18



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SP 12
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel*
-
NBR
-
Cast Iron G20
PBT
NBR***
Bronze***
PBT**
NBR
PBT**

SP 18
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel*
-
NBR
-
Cast Iron G20
PBT
NBR***
Bronze***
PBT**
NBR
PBT**

*On demand. Ax. AISI 416

**On demand Cast Iron G20

***Available only on suction pipe 350

*On demand. Ax. AISI 416

**On demand Cast Iron G20

***Available only on suction pipe 350

Submersible motor-driven pumps

Type SP 25-33

Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller and feed screw in PTB, pump body in cast iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 70°C.

They are commonly used on:

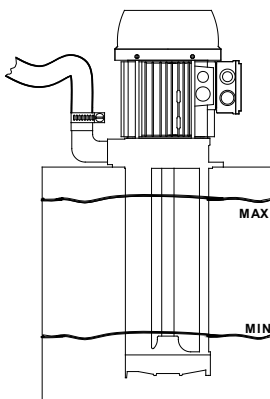
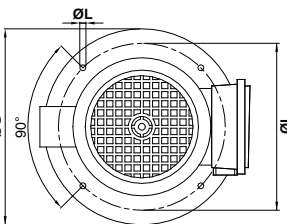
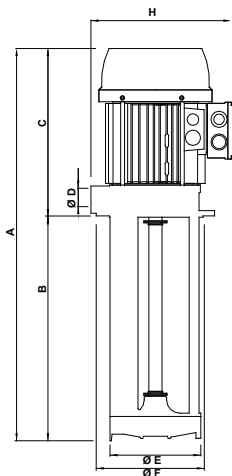
- **machine tools** (milling and turning machines)
- **glass processing machinery** (TRI version)
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



Size and weights table

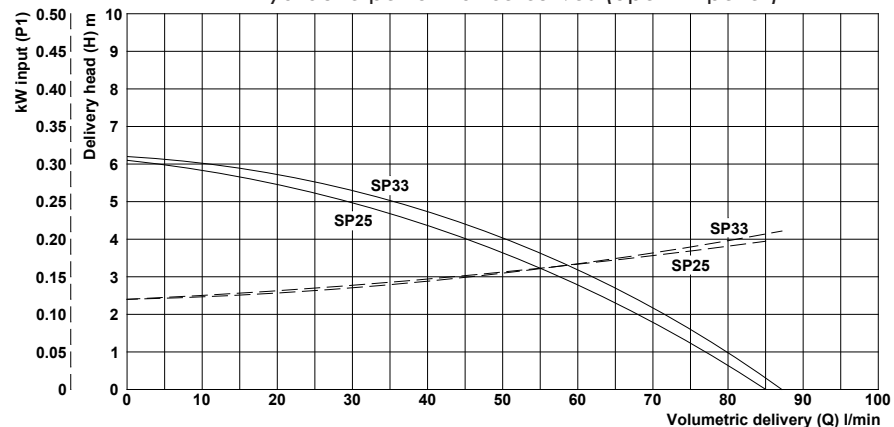
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
SP 25	305	90 T	215	3/4"	98	100	130	170	115	7 (n.4)	6.5
	335	120 T									6.8
	385	170 T									7.1
	435	220 T									7.2
	485	270 T									7.5
	565	350									8.1
SP 33	305	90 T	215	3/4"	98	100	130	170	115	7 (n.4)	7.1
	335	120 T									7.3
	385	170 T									7.6
	435	220 T									7.7
	485	270 T									8.0
	565	350									8.6

On demand: T= TRI mode

Rating plate data

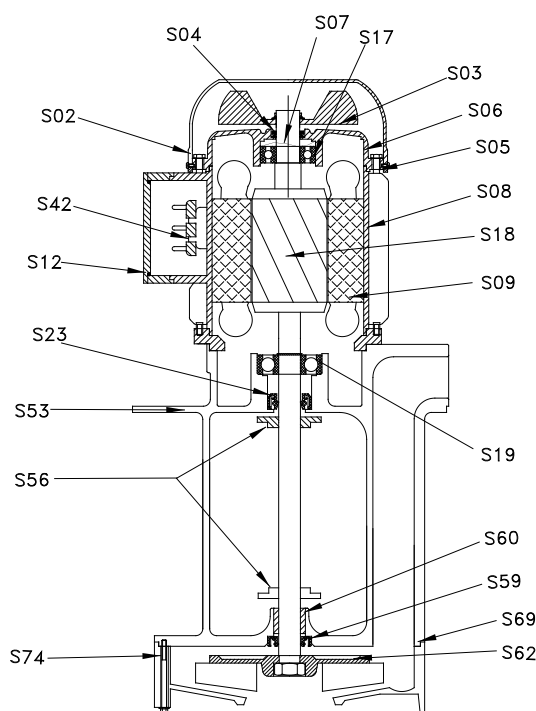
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SP 25	0.26	0.18	0.85/0.49	2810	0.76	5 - 85	6 - 0
SP 33	0.36	0.25	1.13/0.65	2800	0.78	11 - 87	6 - 0

Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6	6.5	7
Type of pump	Volumetric delivery (Q) l/min ↓														
SP 25	85	81	77	72	68	63	58	52	46	38	30	19	5		
SP 33	87	84	80	76	71	67	62	56	50	44	36	26	11		



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S56.	TRI washer
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SP 25	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel**
	-
	Aluminium
	NBR
	-
	Cast Iron G20
	PBT
	NBR****
	Bronze****
	PBT***
	NBR
	PBT***

SP 33	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel**
	-
	Aluminium
	NBR
	-
	Cast Iron G20
	PBT
	NBR****
	Bronze****
	PBT***
	NBR
	PBT***

*On demand Sheet metal

**On demand. Ax. AISI 416

***On demand Cast Iron G20

****Available only on suction pipe 350

*On demand Sheet metal

**On demand. Ax. AISI 416

***On demand Cast Iron G20

****Available only on suction pipe 350

Submersible motor-driven pumps

Type SP 50-75



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller and feed screw in PTB, pump body in cast iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel).

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

They are commonly used on:

- **machine tools** (milling and turning machines)
- **glass processing machinery** (TRI version)
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

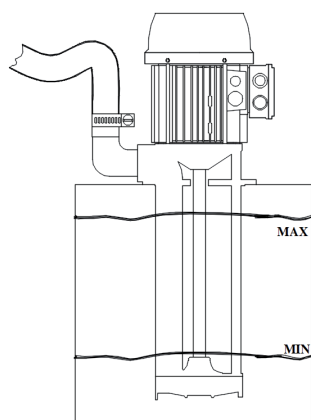
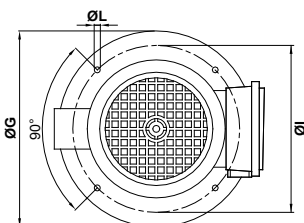
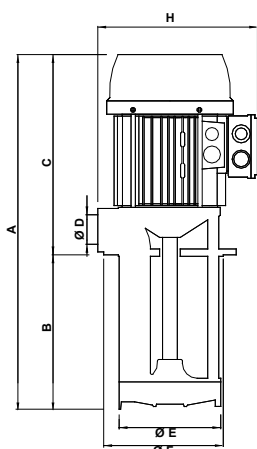
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
SP 50	450	200 T	250	1 1/4"	138	140	180	215	160	9 (n.4)	13.5
	520	270 T									14.2
	600	350									15.0
	690	440									15.9
	800	550									17.0
SP 75	450	200 T	250	1 1/4"	138	140	180	215	160	9 (n.4)	14.5
	520	270 T									15.2
	600	350									16.0
	690	440									16.9
	800	550									18.0

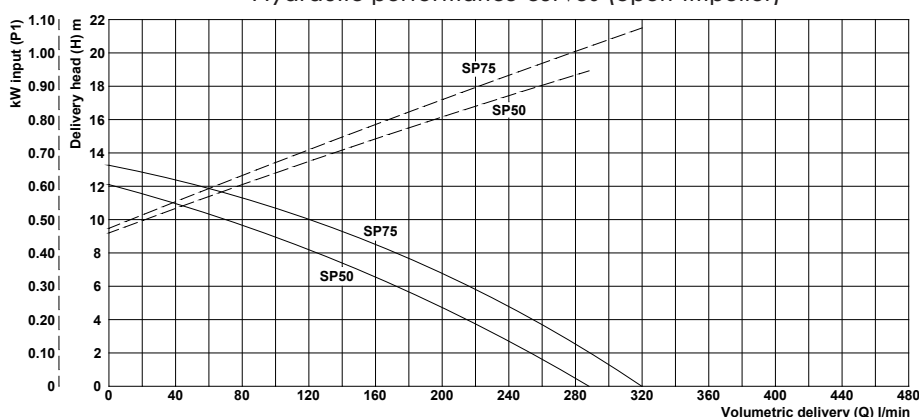
On demand: T= TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SP 50	1.00	0.75	3.24/1.87	2770	0.77	70 - 288	10 - 0
SP 75	1.20	0.90	3.83/2.21	2760	0.78	55 - 320	12 - 0

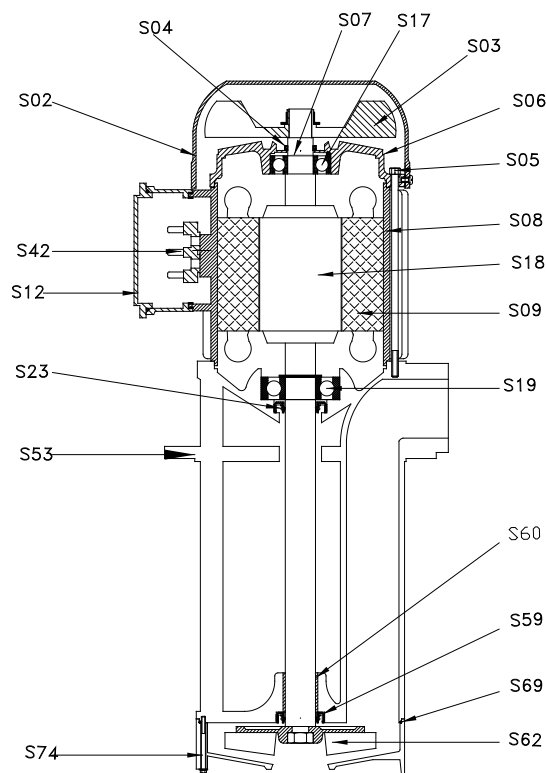


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
SP 50	288	271	251	234	215	194	172	150	125	100	70				
SP 75	320	304	289	272	254	236	216	195	172	147	120	55			



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SP 50
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
Cast Iron G20
NBR
Bronze
PBT***
NBR
PBT***

SP 75
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
Cast Iron G20
NBR
Bronze
PBT***
NBR
PBT***

*On demand Sheet metal
**On demand. Ax. AISI 416
***On demand Cast Iron G20

*On demand Sheet metal
**On demand. Ax. AISI 416
***On demand Cast Iron G20

Submersible motor-driven pumps

Type SP 100-150



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller and feed screw in PTB, pump body in cast iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

- **machine tools** (milling and turning machines)
- **glass processing machinery** (TRI version)
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

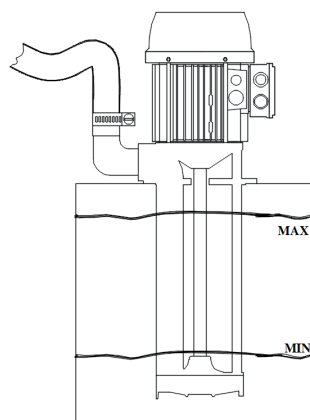
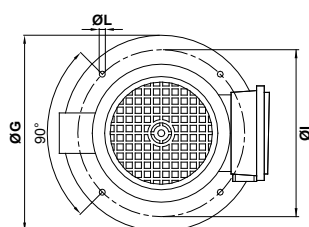
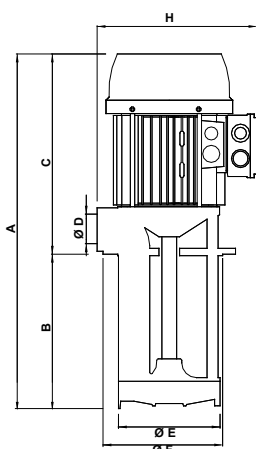
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
SP 100	500	200 T	300	1 1/4"	138	140	180	230	160	9 (n.4)	16.3
	570	270 T									17.1
	650	350									18.1
	740	440									19.1
	850	550									20.3
SP 150	500	200 T	300	1 1/4"	138	140	180	230	160	9 (n.4)	17.6
	570	270 T									18.4
	650	350									19.3
	740	440									20.1
	850	550									21.9

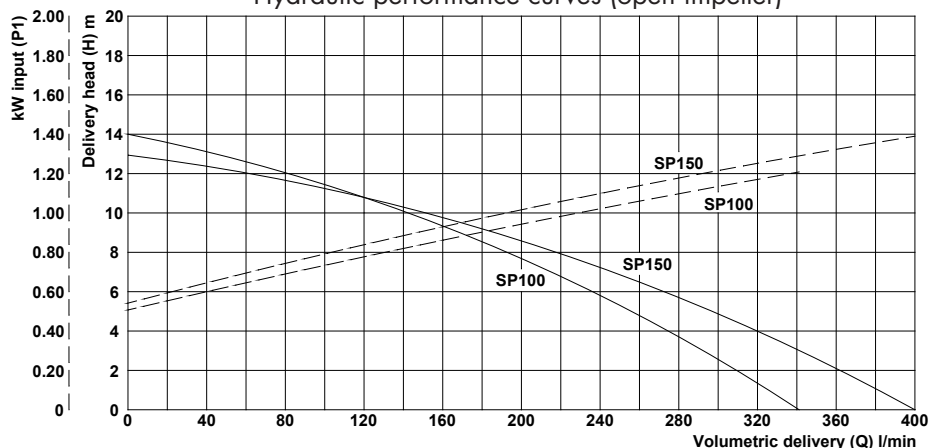
On demand: T= TRI mode

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SP 100	1.41	1.1	4.3/2.5	2825	0.81	40 - 340	13 - 0
SP 150	1.86	1.5	5.7/3.3	2845	0.83	18 - 400	13 - 0



Hydraulic performance curves (open impeller)

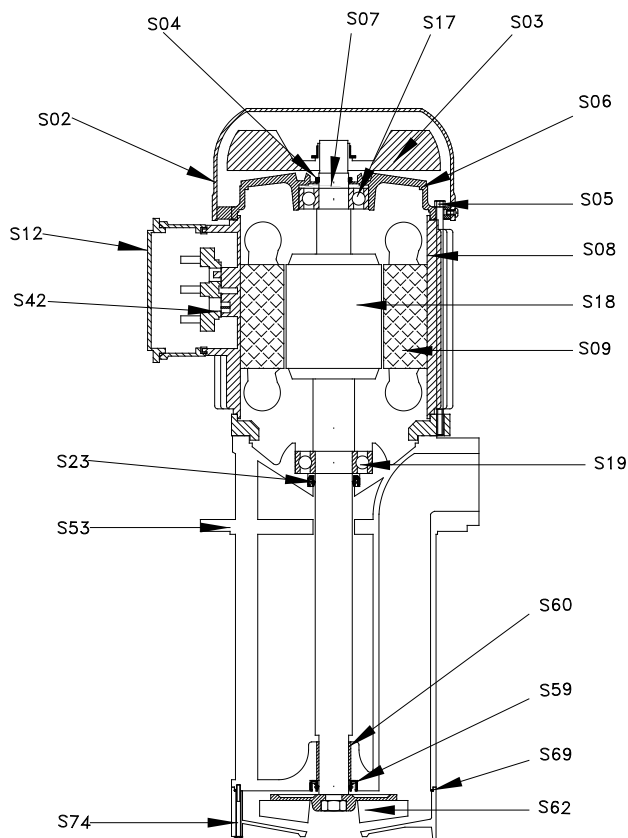


Hydraulic performance table (open impeller)

Type of pump	Volumetric delivery (Q) l/min ↓														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SP 100	340	326	310	292	275	255	236	216	195	171	144	114	79	40	
SP 150	400	380	358	337	317	296	273	246	219	188	148	107	62	18	

Submersible motor-driven pumps

Type SP 100-150



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S74.	Impeller-cover

SP 100	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel**
	-
	NBR
	-
	Cast Iron G20
	NBR
	Bronze
	PBT***
	NBR
	PBT***

SP 150	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel**
	-
	NBR
	-
	Cast Iron G20
	NBR
	Bronze
	PBT***
	NBR
	PBT***

*On demand Sheet metal

**On demand. Ax. AISI 416

***On demand Cast Iron G20

*On demand Sheet metal

**On demand. Ax. AISI 416

***On demand Cast Iron G20

Electro pumps for decanting - lateral assembly

Type SQ



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller in nylon and feed screw in cast-iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

- **machine tools** (milling and turning machines)

- **surface treatment plants** (oil separators)

They must be installed laterally on the tank to allow the liquid to enter directly into the suction point (see figure). Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

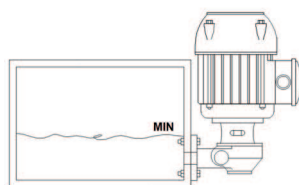
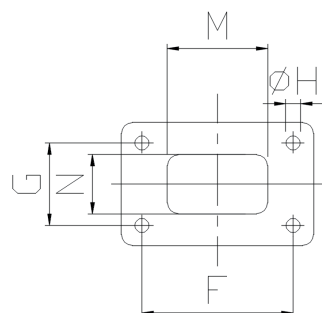
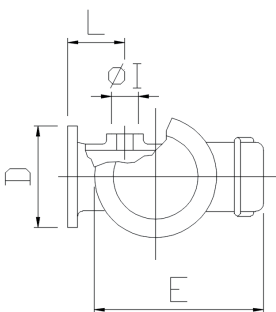
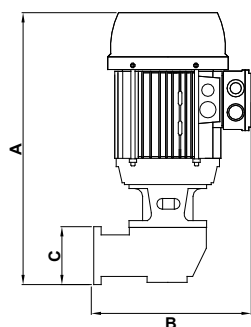
For different uses, please consult our Technical Office.

Size and weights table

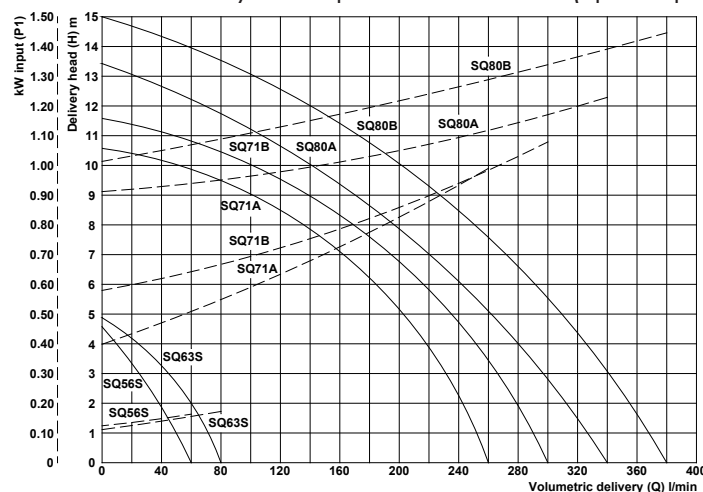
Type of pump	A mm	B mm	C mm	D mm	E mm	F mm	G mm	ØH mm	ØI mm	L mm	Mass kg
SQ 56/S	265	170	60	95	140	75	45	7	3/8"	51	3.9
SQ 63/S	300	180	60	95	158	75	45	7	1/2"	51	4.9
SQ 71A	330	245	60	145	175	115	60	9	1"	62	14.5
SQ 71B	330	245	80	145	175	115	60	9	1"	62	15.2
SQ 80A	335	250	80	145	210	115	60	9	1 1/4"	62	16.3
SQ 80B	335	250	80	145	210	115	60	9	1 1/4"	62	17.3

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
SQ 56/S	0.17	0.09	0.55/0.32	2730	0.72	11 - 60	4 - 0
SQ 63/S	0.26	0.18	0.85/0.49	2810	0.76	27 - 80	4 - 0
SQ 71A	1.00	0.75	3.24/1.87	2770	0.77	52 - 260	10 - 0
SQ 71B	1.20	0.90	3.83/2.21	2760	0.78	98 - 300	10 - 0
SQ 80A	1.41	1.1	4.3/2.5	2825	0.81	72 - 340	12 - 0
SQ 80B	1.41	1.1	4.3/2.5	2825	0.81	62 - 380	14 - 0

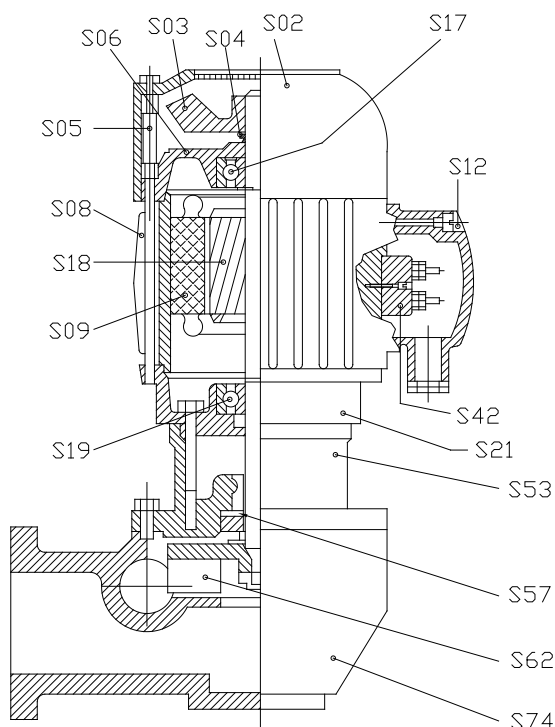


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
SQ 56/S	60	48	35	27	11										
SQ 63/S	80	69	54	41	27										
SQ 71A	260	251	241	229	218	207	185	158	134	99	52				
SQ 71B	300	289	277	264	251	235	213	190	167	141	98				
SQ 80A	340	326	310	293	274	255	238	218	195	171	130	72			
SQ 80B	380	368	354	340	326	307	293	274	257	222	208	143	62		



Spare parts nomenclature

	Component	SQ 56	SQ 63	SQ 71A-B	SQ 80A-B
		Materials	Materials	Materials	Materials
S02.	Fan cover	Nylon*	Nylon*	Nylon*	Nylon*
S03.	Fan	Nylon	Nylon	Nylon	Nylon
S04.	V-ring	NBR	NBR	NBR	NBR
S05.	Stay rod	Steel	Steel	Steel	Steel
S06.	Upper shield	Aluminium	Aluminium	Aluminium	Aluminium
S07.	Spring ring	Steel	Steel	Steel	Steel
S08.	Housing	Aluminium	Aluminium	Aluminium	Aluminium
S09.	Wound stator	-	-	-	-
S12.	Terminal box	Nylon	Nylon	Nylon	Nylon
S17.	Upper bearing	-	-	-	-
S18.	Axis + Rotor	Steel**	Steel**	Steel**	Steel**
S19.	Lower bearing	-	-	-	-
S21.	Flange	Aluminium	Aluminium	Aluminium	Aluminium
S42.	Terminal board	-	-	-	-
S53.	Cone	PBT***	PBT***	Not available	Not available
S56.	TRI washer	PBT	PBT	PBT	PBT
S57.	Mechanical seal	-	-	-	-
S59.	Seal	NBR	NBR	NBR	NBR
S62.	Impeller	Nylon***	Nylon***	Brass 58***	Brass 58***
S69.	O-ring	NBR	NBR	Not available	Not available
S71.	Adaptor coupling	Not available!	Not available!	Cast Iron G20	Cast Iron G20
S74.	Impeller-cover	Cast Iron G20	Cast Iron G20	Cast Iron G20	Cast Iron G20

*On demand Sheet metal

*On demand Sheet metal

*On demand Sheet metal

*On demand Sheet metal

**On demand.Ax.AISI 316

**On demand.Ax.AISI 416

**On demand.Ax.AISI 416

**On demand.Ax.AISI 416

***On demand Cast Iron G20 ***On demand Cast Iron G20 ***On demand Cast Iron G20 ***On demand Cast Iron G20

Suction electro pumps

Type AU



Uses

They are suitable for transferring clean liquids containing impurities up to 0.03 mm in size. Their hydraulic components: impeller in brass, bottom in cast iron and pump body in aluminium allow them to be used with emulsions, oily substances and liquids in general provided they are not oxidative for the construction materials.

Viscosity must not exceed 21 cST (3° Engel).

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

Should the pump suck air due to a lack of liquid, the priming operation must be repeated.

To ensure proper life to the pump, do not let it run dry, as the mechanical seal is not lubricated.

It is advisable, where possible, to install a suction filter.

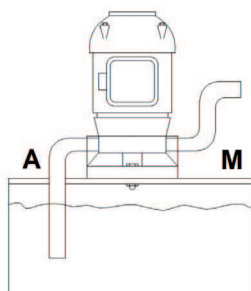
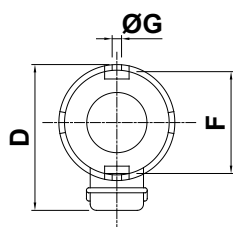
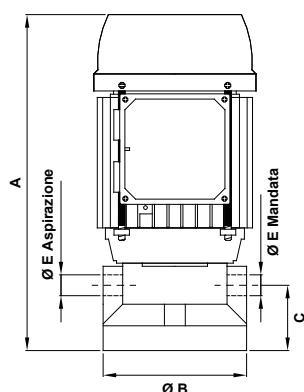
For different uses, please consult our Technical Office.

Size and weights table

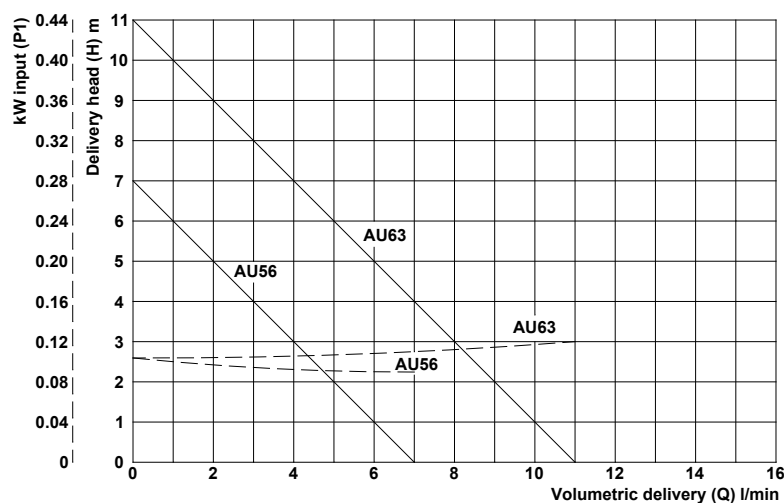
Type of pump	A mm	ØB mm	C mm	D mm	ØE mm	ØF mm	ØG mm	Mass kg
AU 56	215	115	48	144	3/8"	95	7	4.3
AU 63	270	115	48	165	1/2"	95	7	5.0

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
AU 56	0.17	0.09	0.55/0.32	2730	0.72	1 - 7	6 - 0
AU 63	0.26	0.18	0.85/0.49	2810	0.76	2 - 13	10 - 0

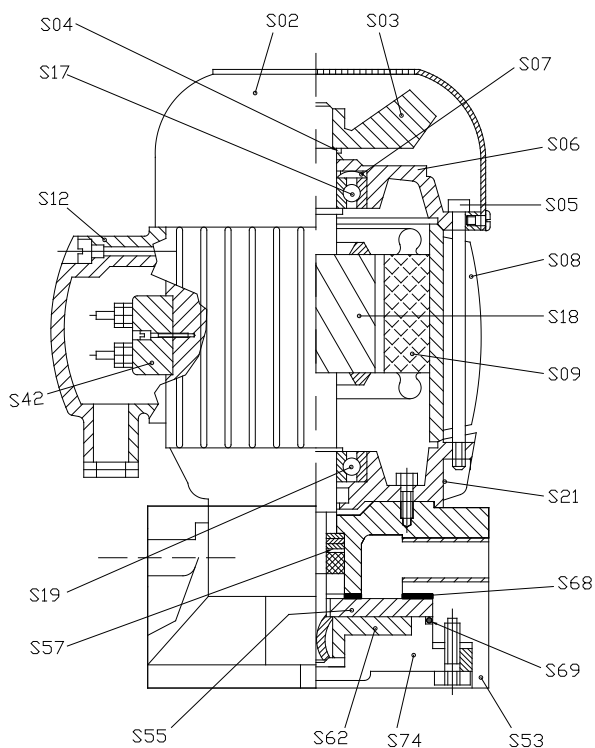


Hydraulic performance curves (peripheral impeller)



Hydraulic performance table (peripheral impeller)

Delivery head (H) m →	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
AU 56	7	6	5	4	3	2	1								
AU 63	11	10	9	8	7	6	5	4	3	2	1				



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Flange
S42.	Terminal board
S53.	Pump body
S55.	Diffuser
S57.	Mechanical seal
S62.	Impeller
S68.	Gasket
S69.	O-ring
S74.	Impeller-cover

AU 56
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel
-
Aluminium
-
Aluminium
Cast Iron G20
NBR
Brass 58
Guarnital
Viton
Cast Iron G20

AU 63
Materials
Nylon
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel
-
Aluminium
-
Aluminium
Cast Iron G20
NBR
Brass 58
Guarnital
Viton
Cast Iron G20

Electro pumps for decanting

Type TR

Uses

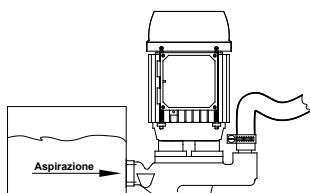
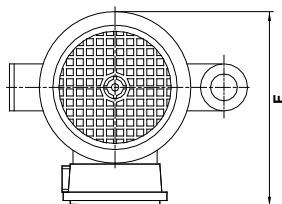
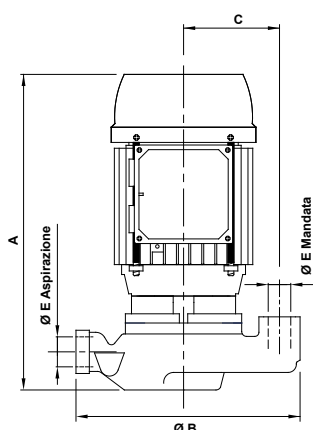
They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller in brass and feed screw in cast-iron allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel). The temperature of the liquid must not exceed 90°C.

They are normally used when there is no space on the top of the tank.

They must be installed laterally on the tank to allow the liquid to enter directly into the suction point (see figure). Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

To ensure proper life to the pump, do not let it run dry, as the mechanical seal is not lubricated.

For different uses, please consult our Technical Office.



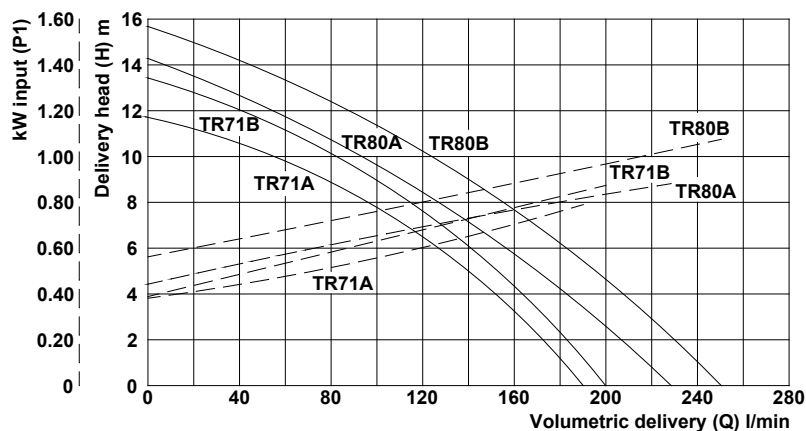
Size and weights table

Type of pump	A mm	B mm	C mm	ØD "	E mm	F mm	Mass kg
TR 71A	320	290	130	1"	40	220	12.1
TR 71B	320	290	130	1"	40	220	13.0
TR 80A	370	290	130	1"	40	220	13.9
TR 80B	370	290	130	1"	40	220	14.7

Rating plate data

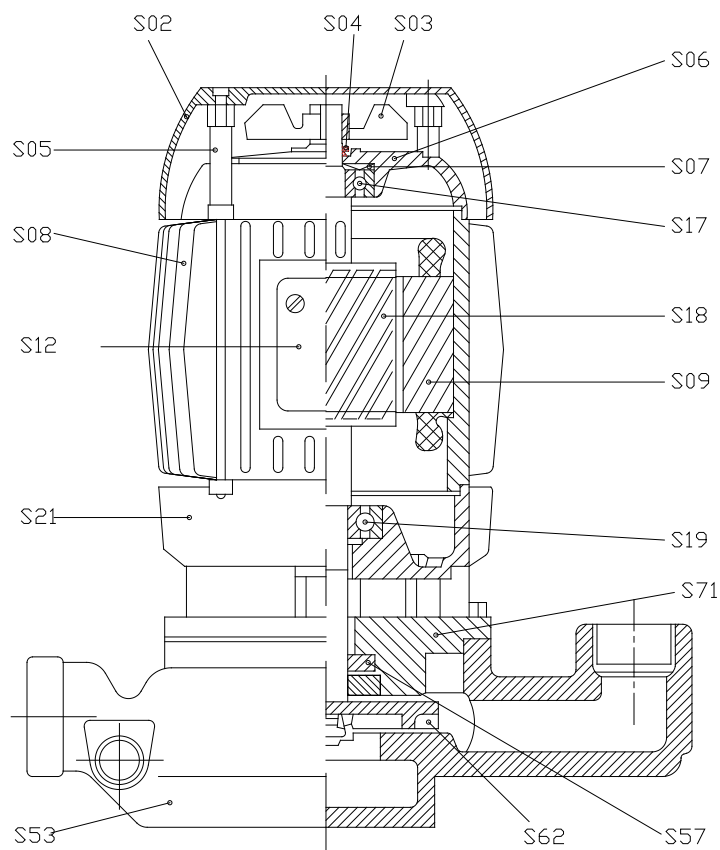
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
TR 71A	1.00	0.75	3.24/1.87	2770	0.77	55 - 190	10 - 0
TR 71B	1.20	0.90	3.83/2.21	2760	0.78	41 - 200	12 - 0
TR 80A	1.01	0.75	3.1/1.8	2800	0.80	55 - 230	12 - 0
TR 80B	1.41	1.1	4.3/2.5	2825	0.81	45 - 250	14 - 0

Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Type of pump	Volumetric delivery (Q) l/min ↓														
TR 71A	190	182	172	162	152	140	127	113	96	78	55				
TR 71B	200	192	183	174	164	153	141	128	115	100	82	41			
TR 80A	230	218	207	195	183	170	156	142	127	111	94	55			
TR 80B	250	240	230	220	208	196	183	169	155	140	124	88	45		



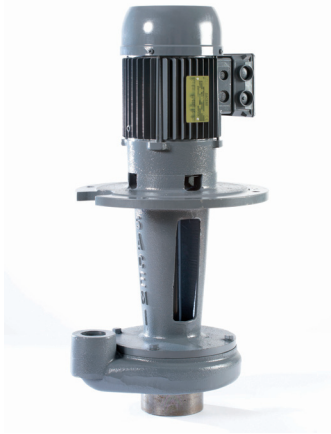
Spare parts nomenclature

	Component	TR 71A	TR 71B	TR 80A	TR 80B
		Materials	Materials	Materials	Materials
S02.	Fan cover	Nylon*	Nylon*	Nylon*	Nylon*
S03.	Fan	Nylon	Nylon	Nylon	Nylon
S04.	V-ring	NBR	NBR	NBR	NBR
S05.	Stay rod	Steel	Steel	Steel	Steel
S06.	Upper shield	Aluminium	Aluminium	Aluminium	Aluminium
S07.	Spring ring	Steel	Steel	Steel	Steel
S08.	Housing	Aluminium	Aluminium	Aluminium	Aluminium
S09.	Wound stator	-	-	-	-
S12.	Terminal box	Nylon	Nylon	Nylon	Nylon
S17.	Upper bearing	-	-	-	-
S18.	Axis + Rotor	Steel**	Steel**	Steel**	Steel**
S19.	Lower bearing	-	-	-	-
S21.	Flange	Aluminium	Aluminium	Aluminium	Aluminium
S42.	Terminal board	-	-	-	-
S53.	Pump body	Cast Iron G20	Cast Iron G20	Cast Iron G20	Cast Iron G20
S57.	Mechanical seal	Viton	Viton	Viton	Viton
S62.	Impeller	Brass 58	Brass 58	Brass 58	Brass 58
S71.	Adaptor coupling	Cast Iron G20	Cast Iron G20	Cast Iron G20	Cast Iron G20

*On demand Sheet metal *On demand Sheet metal *On demand Sheet metal *On demand Sheet metal

**On demand.Ax.AISI 416 **On demand.Ax.AISI 416 **On demand.Ax.AISI 416 **On demand.Ax.AISI 416

Submersible motor-driven pumps Type AP 80-90 closed impeller



Uses

They are suitable for transferring liquids containing impurities up to 2 mm in size.

Their hydraulic components: impeller and feed screw in cast iron, pump body in cast iron/steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

- **machine tools** (milling and turning machines-machining centres)
- **glass processing machinery**
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 6-7 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

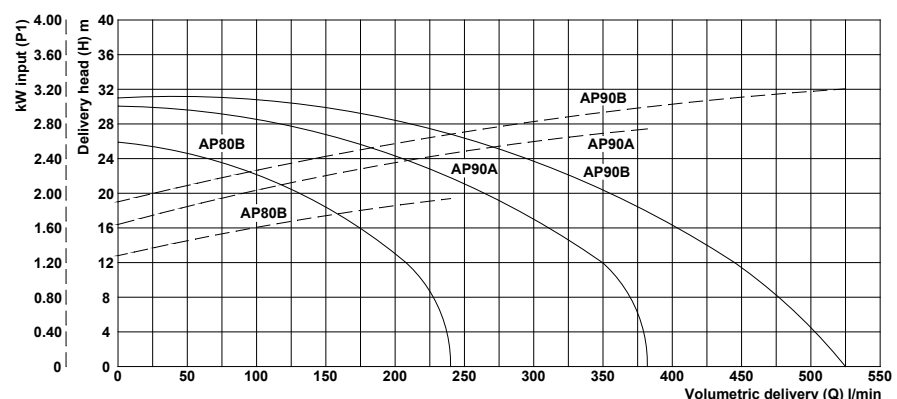
Size and weights table

Type of pump	A mm	B mm	C mm	D mm	ØE mm	ØF mm	ØG mm	ØH mm	ØI mm	ØL mm	M mm	N mm	Mass kg
AP 80B	620	320	300	280	240	1 ½"	2 ½"	300	270	13 (n.4)	170	136	37.0
	750	450											43.0
	910	610											46.0
	1160	860											48.0
AP 90A	675	320	355	280	240	1 ½"	2 ½"	300	270	13 (n.4)	170	136	41.0
	805	450											47.0
	965	610											49.0
	1215	860											51.0
AP 90B	675	320	355	280	240	1 ½"	2 ½"	300	270	13 (n.4)	170	136	43.0
	805	450											49.0
	965	610											51.0
	1215	860											53.0

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
AP 80B	1.86	1.5	5.7/3.3	2845	0.83	65 - 240	25 - 0
AP 90A	2.70	2.2	8.1/4.7	2870	0.83	14 - 382	30 - 0
AP 90B	3.58	3.0	10.6/6.1	2855	0.84	119 - 525	30 - 0

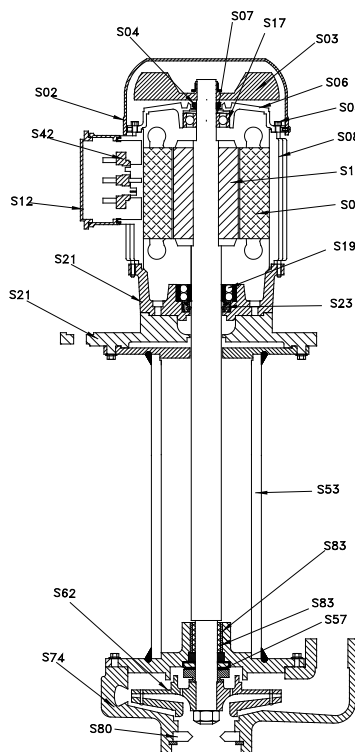
Hydraulic performance curves (closed impeller)



Hydraulic performance table (closed impeller)

Delivery head (H) m →	0	10	12	14	16	18	20	22	24	26	28	30
Type of pump	Volumetric delivery (Q) l/min ↓											
AP 80B	240	222	207	191	173	152	129	106	65			
AP 90A	382	367	350	331	311	289	266	241	211	173	99	14
AP 90B	525	468	449	423	400	374	346	315	276	237	192	119

Submersible motor-driven pumps Type AP 80-90 closed impeller



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S21.	Support flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S57.	Mechanical seal
S62.	Impeller
S74.	Impeller-cover
S80.	Suction reduction
S83.	IR rings
S83.	Bushing

AP 80	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel
	-
	Cast Iron G20
	Cast Iron G20
	NBR
	-
	Cast Iron G20/Steel
	-
	Cast Iron G20
	Cast Iron G20
	Nylon
	Steel**
	Bronze**

AP 90	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel
	-
	Cast Iron G20
	Cast Iron G20
	NBR
	-
	Cast Iron G20/Steel
	-
	Cast Iron G20
	Cast Iron G20
	Nylon***
	Steel**
	Bronze**

*On demand Sheet metal

**Available only on suction pipe 860

*On demand Sheet metal

**Available only on suction pipe 860

***Available only for AP90A

Submersible motor-driven pumps Type AP 100-112 closed impeller



Uses

They are suitable for transferring liquids containing impurities up to 2 mm in size.

Their hydraulic components: impeller and feed screw in cast iron, pump body in cast iron/steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engell).

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

They are commonly used on:

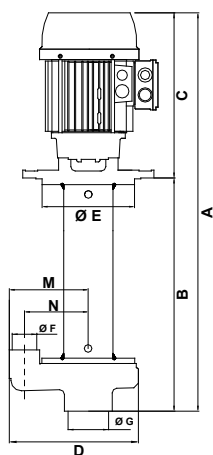
- **machine tools** (milling and turning machines-machining centres)
- **glass processing machinery**
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 6-7 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

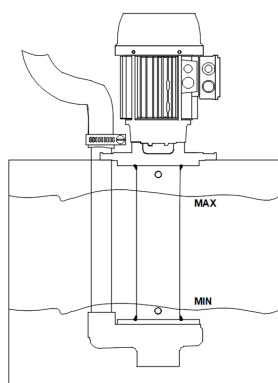
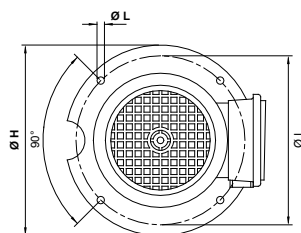


Size and weights table

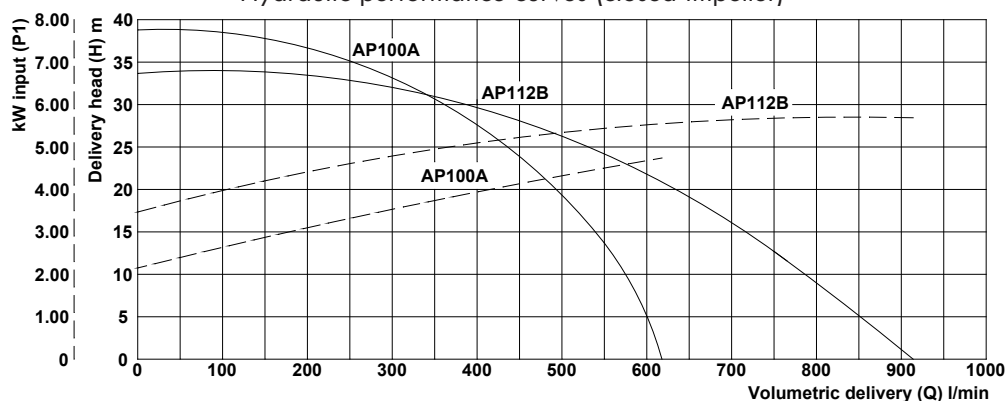
Type of pump	A mm	B mm	C mm	D mm	ØE mm	ØF	ØG	ØH mm	ØI mm	ØL mm	M mm	N mm	Mass kg
AP 100A	700	320	380	280	240	1 ½"	2 ½"	300	270	13 (n.4)	170	136	37.0
	830	450											43.0
	990	610											46.0
	1240	860											48.0
AP 112B	730	320	410	320	240	2 ½"	2 ½"	300	270	13 (n.4)	190	145	43.0
	860	450											49.0
	1020	610											51.0
	1270	860											53.0

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
AP 100A	4.85	4	14.9/8.6	2875	0.81	138 - 612	38 - 0
AP 112B	6.57	5.5	18.7/10.8	2900	0.88	73 - 914	34 - 0



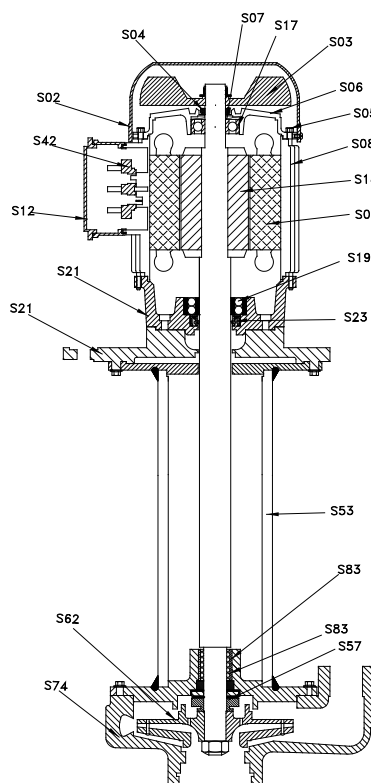
Hydraulic performance curves (closed impeller)



Hydraulic performance table (closed impeller)

Delivery head (H) m	0	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Type of pump	Volumetric delivery (Q) l/min ↓															
AP 100A	612	577	561	545	528	511	492	471	450	426	394	360	323	286	234	138
AP 112B	914	786	772	752	731	706	677	635	580	507	432	346	239	73		

Submersible motor-driven pumps Type AP 100-112 closed impeller



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S21.	Support flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S57.	Mechanical seal
S62.	Impeller
S74.	Impeller-cover
S83.	IR rings
S83.	Bushing

AP 100	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel
	-
	Cast Iron G20
	Cast Iron G20
	NBR
	-
	Cast Iron G20/Steel
	-
	Cast Iron G20
	Cast Iron G20
	Steel**
	Bronze**

AP 112	Materials
	Nylon*
	Nylon
	NBR
	Steel
	Aluminium
	Steel
	Aluminium
	-
	Nylon
	-
	Steel
	-
	Cast Iron G20
	Cast Iron G20
	NBR
	-
	Cast Iron G20/Steel
	-
	Cast Iron G20
	Cast Iron G20
	Steel**
	Bronze**

*On demand Sheet metal

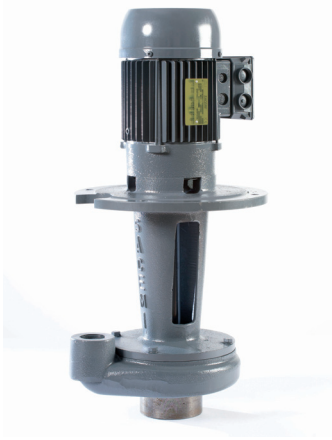
**Available only on suction pipe 860

*On demand Sheet metal

**Available only on suction pipe 860

Submersible motor-driven pumps

Type AP 90 open impeller



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller and feed screw in cast iron, pump body in cast iron/steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

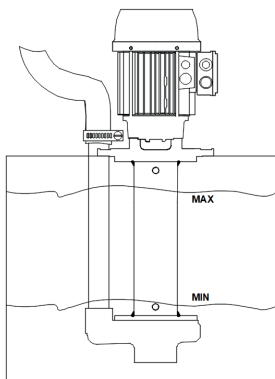
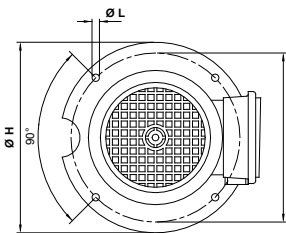
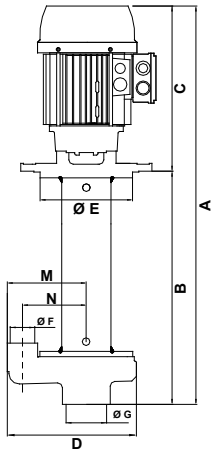
- **machine tools** (milling and turning machines-machining centres)
- **glass processing machinery**
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 6-7 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



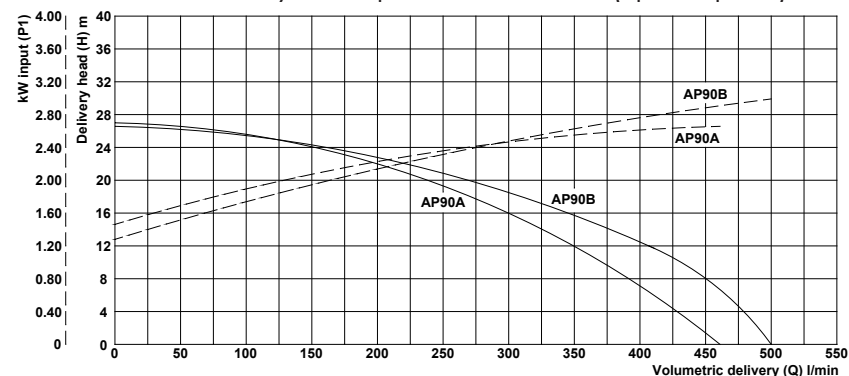
Size and weights table

Type of pump	A mm	B mm	C mm	D mm	ØE mm	ØF	ØG	ØH mm	ØI mm	ØL mm	M mm	N mm	Mass kg
AP 90A	675	320	355	280	240	1 1/2"	2 1/2"	300	270	13 (n.4)	170	136	41.0
	805	450											47.0
	965	610											49.0
	1215	860											51.0
AP 90B	675	320	355	280	240	1 1/2"	2 1/2"	300	270	13 (n.4)	170	136	43.0
	805	450											49.0
	965	610											51.0
	1215	860											53.0

Rating plate data

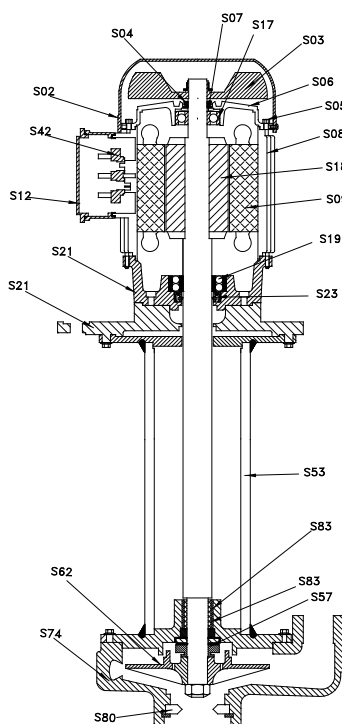
Type of pump	kW		V 230/400 - Hz 50			Q - Q _{max} litres/min	H _{max} - H metres
	Input (P1)	Nom. (P2)	I _n Amp.	n min ⁻¹	cos φ		
AP 90A	2.70	2.2	8.1/4.7	2870	0.83	85 - 461	26 - 0
AP 90B	3.58	3	10.6/6.10	2850	0.86	66 - 500	26 - 0

Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m	0	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Type of pump	Volumetric delivery (Q) l/min ↓														
AP 90A	461	374	351	326	300	270	235	198	154	85					
AP 90B	500	436	403	369	338	309	273	233	178	66					



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S21.	Support flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S57.	Mechanical seal
S62.	Impeller
S74.	Impeller-cover
S80.	Suction reduction
S83.	IR rings
S83.	Bushing

AP 90
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel
-
Cast Iron G20
Cast Iron G20
NBR
-
Cast Iron G20/Steel
-
Cast Iron G20
Cast Iron G20
Nylon***
Steel**
Bronze**

*On demand Sheet metal

** Available only on suction pipe 860

*** Available only for AP90A

Submersible motor-driven pumps Type AP 100-112 open impeller



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller and feed screw in cast iron, pump body in cast iron/steel allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Eng). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

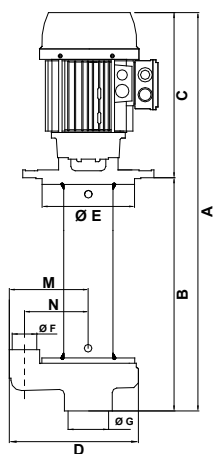
- **machine tools** (milling and turning machines-machining centres)
- **glass processing machinery**
- **surface treatment plants**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 6-7 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

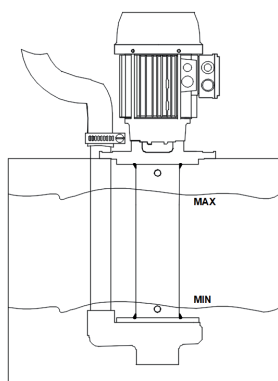
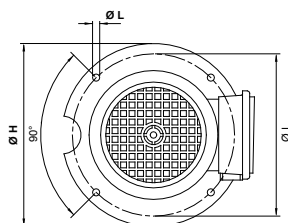


Size and weights table

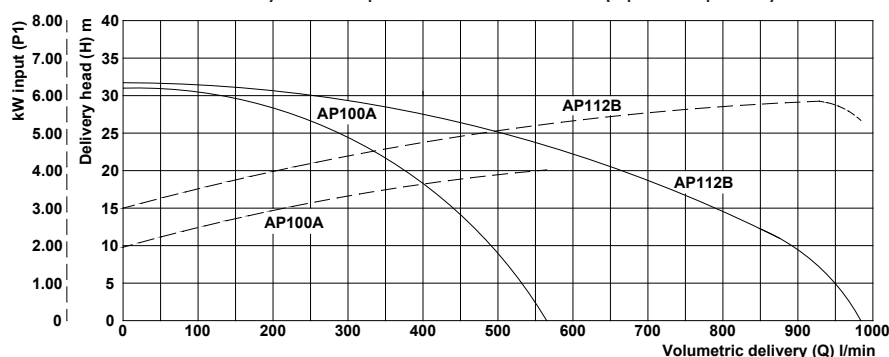
Type of pump	A mm	B mm	C mm	D mm	ØE mm	ØF	ØG	ØH mm	ØI mm	ØL mm	M mm	N mm	Mass kg
AP 100A	700	320	380	280	240	1 ½"	2 ½"	300	270	13 (n.4)	170	136	37.0
	830	450											43.0
	990	610											46.0
	1240	860											48.0
AP 112B	730	320	410	320	240	2 ½"	2 ½"	300	270	13 (n.4)	170	136	43.0
	860	450											49.0
	1020	610											51.0
	1270	860											53.0

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
AP 100A	4.85	4	14.9/8.6	2875	0.81	156 - 565	30 - 0
AP 112B	6.57	5.5	18.7/10.8	2900	0.88	48 - 984	32 - 0



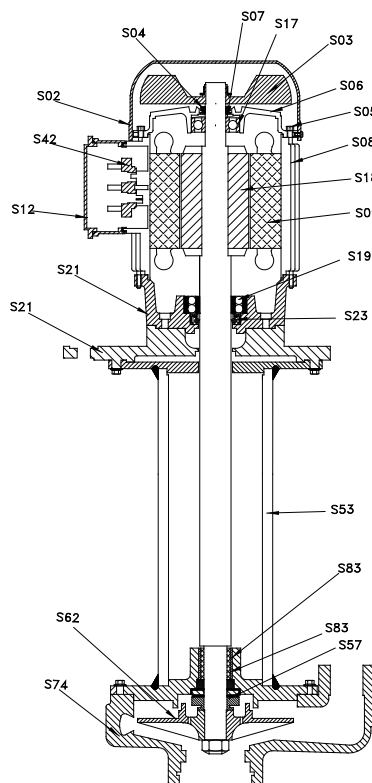
Hydraulic performance curves (open impeller)



Hydraulic performance table

Delivery head (H) m →	<10	10	12	14	16	18	20	22	24	26	28	30	32	34	36
Type of pump	Volumetric delivery (Q) l/min ↓														
AP 100A	565	495	475	454	431	406	375	342	306	270	224	156			
AP 112B	984	893	865	814	765	712	655	596	528	461	372	257	48		

Submersible motor-driven pumps Type AP 100-112 open impeller



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S21.	Support flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S57.	Mechanical seal
S62.	Impeller
S74.	Impeller-cover
S83.	IR rings
S83.	Bushing

AP 100 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel
-
Cast Iron G20
Cast Iron G20
NBR
-
Cast Iron G20/Steel
-
Cast Iron G20
Cast Iron G20
Steel**
Bronze**

AP 112 Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel
-
Cast Iron G20
Cast Iron G20
Cast Iron G20
NBR
-
Cast Iron G20/Steel
-
Cast Iron G20
Cast Iron G20
Steel**
Bronze**

*On demand Sheet metal

** Available only on suction pipe 860

*On demand Sheet metal

** Available only on suction pipe 860

Submersible motor-driven pumps

Type MP 63-71

Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size.

Their hydraulic components: impeller in brass, feed screw and pump body in aluminium allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle).

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

They are commonly used on:

- **machine tools** (milling and turning machines-machining centres)
- **glass processing machinery**
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

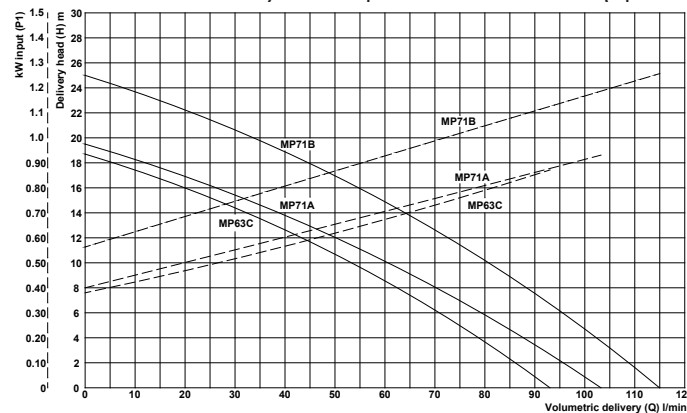
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
MP 63C	385	180	205	3/4"	128	130	180	190	150	9 (n.4)	6.8
	435	230									6.9
	485	280									7.0
	535	330									7.1
MP 71A	410	180	230	3/4"	128	130	180	190	150	9 (n.4)	8.8
	460	230									9.0
	510	280									9.1
	560	330									9.3
MP 71B	440	210	230	3/4"	128	130	180	190	150	9 (n.4)	10.4
	490	260									10.6
	540	310									10.7
	590	360									10.9

Rating plate data

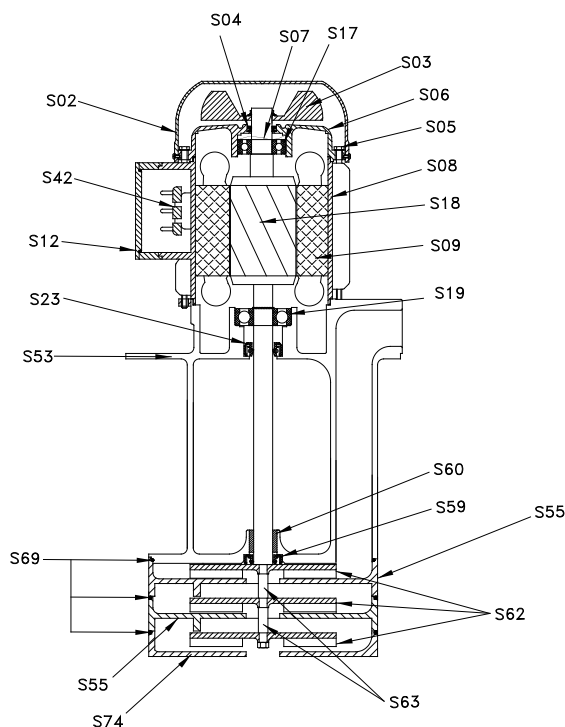
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
MP 63C	0.74	0.55	2.30/1.33	2755	0.81	6 - 93	18 - 0
MP 71A	1.00	0.75	3.24/1.87	2770	0.77	12 - 103	18 - 0
MP 71B	1.20	0.90	3.83/2.21	2760	0.78	8 - 115	24 - 0

Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28
Type of pump	Volumetric delivery (Q) l/min ↓														
MP 63C	93	86	79	71	63	53	43	32	20	6					
MP 71A	103	96	88	79	70	61	50	38	26	12					
MP 71B	115	109	102	96	88	81	73	64	55	45	34	22	8		



Spare parts nomenclature

		MP 63C
Component		Materials
S02.	Fan cover	Nylon*
S03.	Fan	Nylon
S04.	V-ring	NBR
S05.	Stay rod	Steel
S06.	Upper shield	Aluminium
S07.	Spring ring	Steel
S08.	Housing	Aluminium
S09.	Wound stator	-
S12.	Terminal box	Nylon
S17.	Upper bearing	-
S18.	Axis + Rotor	Steel**
S19.	Lower bearing	-
S23.	Motor seal ring	NBR
S42.	Terminal board	-
S53.	Pump body	Aluminium
S55.	Diffuser	Aluminium (n° 1)
S59.	Seal	NBR
S60.	Bushing	Bronze
S62.	Impeller	Brass 58
S63.	Spacer ring	Steel
S69.	O-ring	NBR
S74.	Impeller-cover	Aluminium

*On demand Sheet metal
 **On demand.Ax.AISI 416

		MP 71A	MP 71B
Materials		Materials	Materials
Nylon*		Nylon*	Nylon*
Nylon		Nylon	Nylon
NBR		NBR	NBR
Steel		Steel	Steel
Aluminium		Aluminium	Aluminium
Steel		Steel	Steel
Aluminium		Aluminium	Aluminium
-		-	-
Nylon		Nylon	Nylon
-		-	-
Steel**		Steel**	Steel**
-		-	-
NBR		NBR	NBR
-		-	-
Aluminium		Aluminium	Aluminium
Aluminium (n° 1)		Aluminium (n° 2)	Aluminium (n° 2)
NBR		NBR	NBR
Bronze		Bronze	Bronze
Brass 58		Brass 58	Brass 58
Steel		Steel	Steel
NBR		NBR	NBR
Aluminium		Aluminium	Aluminium

*On demand Sheet metal *On demand Sheet metal
 **On demand.Ax.AISI 416 **On demand.Ax.AISI 416

Submersible motor-driven pumps

Type MP 80-90-100

Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller in brass, feed screw and pump body in aluminium allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

- **machine tools** (milling and turning machines-machining centres)

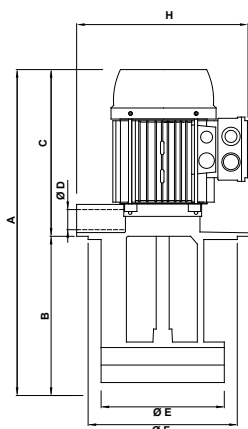
- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.



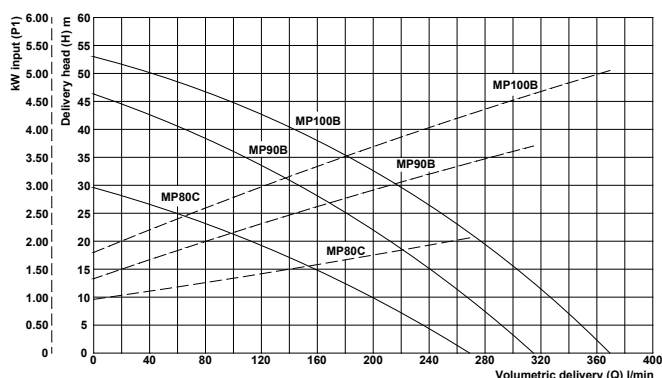
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
MP 80C	517	230	287	1"	190	-	230	245	204	9 (n.5)	16.5
	567	280									17.0
	642	355									17.5
	757	470									18.0
MP 90B	590	265	325	1"	190	-	230	255	204	9 (n.5)	22.0
	640	315									22.5
	715	390									23.0
	830	505									23.5
MP 100B	625	265	360	1 1/4"	202	220	250	275	235	9 (n.5)	32.0
	675	315									32.5
	725	365									33.0
	775	415									33.5
	955	595									35.5

Rating plate data

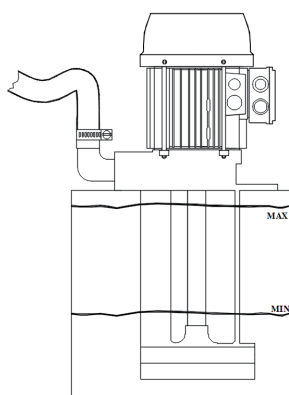
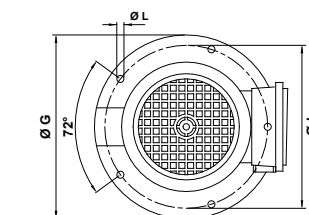
Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
MP 80C	1.86	1.5	5.7/3.3	2845	0.83	22 - 269	28 - 0
MP 90B	3.58	3	10.6/6.10	2850	0.86	17 - 315	45 - 0
MP 100B	4.85	4	14.9/8.6	2875	0.81	37 - 368	50 - 0

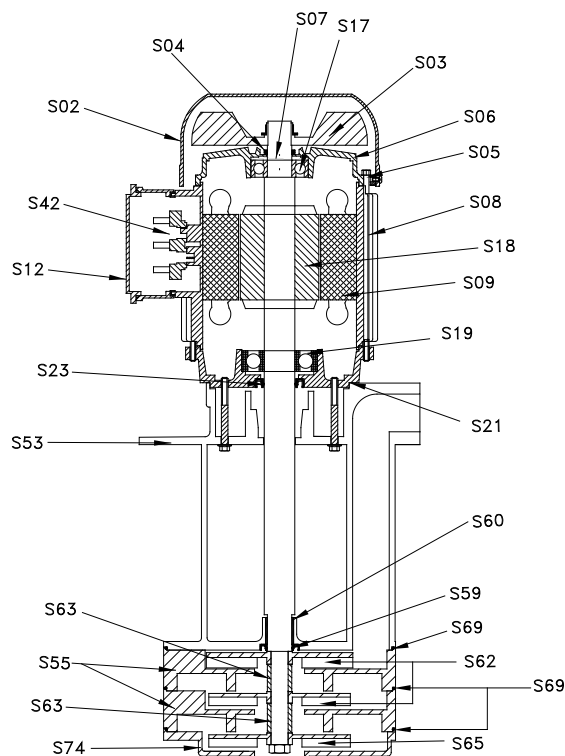
Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m →	0	4	8	12	16	20	24	28	32	36	40	45	50	55	60
Type of pump	Volumetric delivery (Q) l/min ↓														
MP 80C	269	244	215	184	148	106	68	22							
MP 90B	307	293	276	257	236	213	187	159	130	97	63	17			
MP 100B	360	349	333	316	297	280	256	233	207	178	141	94	37		





Spare parts nomenclature

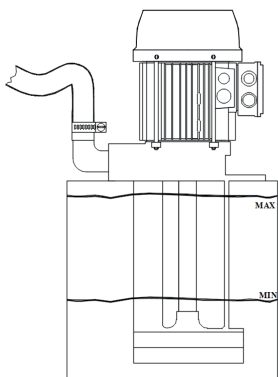
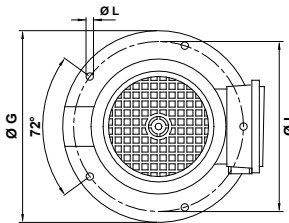
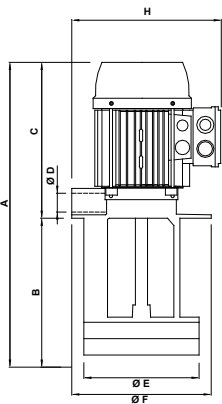
	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S55.	Diffuser
S59.	Seal
S60.	Bushing
S62.	High impeller
S63.	Upper spacer ring
S63.	Lower spacer ring
S65.	Low impeller
S69.	O-ring
S74.	Impeller-cover

MP 80C	MP 90B	MP 100B
Materials	Materials	Materials
Nylon*	Nylon*	Nylon*
Nylon	Nylon	Nylon
NBR	NBR	NBR
Steel	Steel	Steel
Aluminium	Aluminium	Aluminium
Steel	Steel	Steel
Aluminium	Aluminium	Aluminium
-	-	-
Nylon	Nylon	Nylon
-	-	-
Steel	Steel	Steel
-	-	-
NBR	NBR	NBR
-	-	-
Aluminium	Aluminium	Aluminium
Aluminium (no 1)	Aluminium (no 2)	Aluminium (no 2)
NBR	NBR	NBR
Bronze	Bronze	Bronze
Brass 58	Brass 58	Cast Iron G20
Steel	Steel	Steel
Not available	Steel	Steel
Brass 58	Brass 58	Cast Iron G20
NBR	NBR	NBR
Aluminium	Aluminium	Aluminium

*On demand Sheet metal *On demand Sheet metal *On demand Sheet metal

Submersible motor-driven pumps

Type MPC



Uses

They are suitable for transferring liquids containing impurities up to 2 mm in size.

Their hydraulic components: impeller in brass, feed screw and pump body in aluminium allow them to be used with water, emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engel).

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

They are commonly used on:

- **machine tools** (milling and turning machines-machining centres)

- **filtration systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

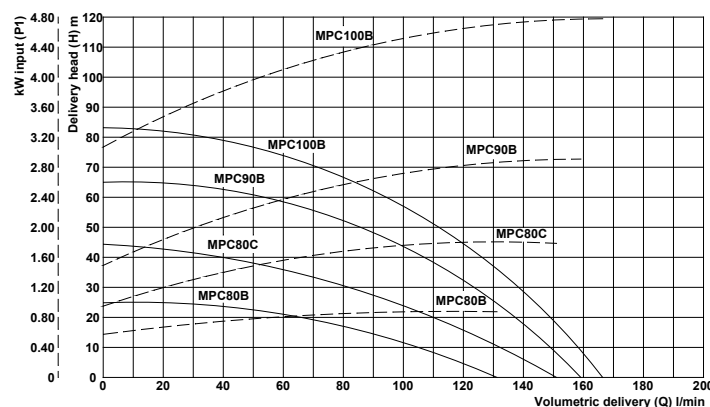
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
MPC 80B	490	210	280	1"	190	-	230	245	204	9 (n.5)	16.0
	540	260									16.1
	615	335									16.2
	730	450									18.0
MPC 80C	520	240	280	1"	190	-	230	245	204	9 (n.5)	17.9
	570	290									18.0
	645	365									18.1
	760	480									19.0
MPC 90B	583	260	323	1"	190	-	230	255	204	9 (n.5)	25.5
	633	310									25.6
	708	385									25.7
	823	500									27.5
MPC 100B	650	280	370	1 1/4"	202	220	250	275	235	9 (n.5)	38.5
	700	330									39.0
	750	380									39.5
	800	430									40.0
	980	610									42.2

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - maxQ litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
MPC 80B	1.41	1.1	4.3/2.5	2825	0.81	5 - 131	25 - 0
MPC 80C	1.86	1.5	5.7/3.3	2845	0.83	40 - 151	40 - 0
MPC 90B	2.70	2.2	8.1/4.7	2870	0.83	40 - 154	60 - 0
MPC 100B	4.85	4	14.9/8.6	2875	0.81	27 - 160	80 - 0

Hydraulic performance curves (closed impeller)

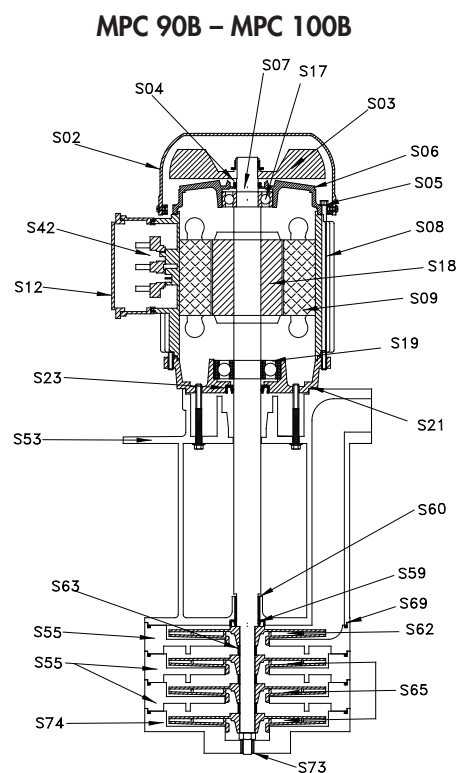
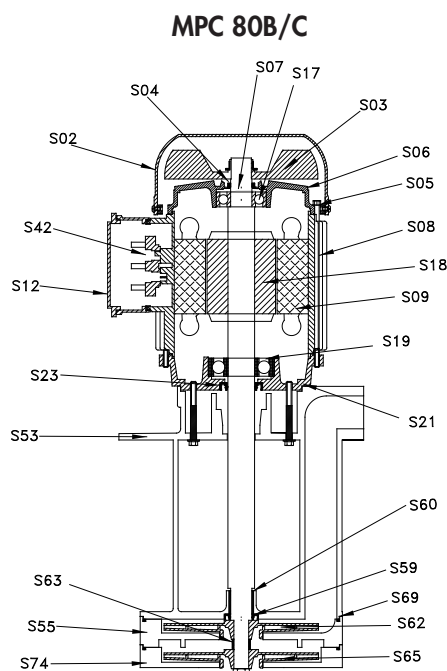


Hydraulic performance table (closed impeller)

Delivery head (H) m	0	5	10	15	20	25	30	35	40	45	50	60	70	80	90	100
Type of pump	Volumetric delivery (Q) l/min ↓															
MPC 80B	131	119	109	88	58	5										
MPC 80C	151	142	134	124	118	102	93	71	40							
MPC 90B	150	152	149	145	140	135	126	118	107	94	78	40				
MPC 100B	160	156	154	152	149	146	142	135	128	121	113	93	60	27		

Submersible motor-driven pumps

Type MPC



Spare parts nomenclature

		MPC 80B/C	MPC 90B	MPC 100B
Component		Materials	Materials	Materials
S02.	Fan cover	Nylon*	Nylon*	Nylon*
S03.	Fan	Nylon	Nylon	Nylon
S04.	V-ring	NBR	NBR	NBR
S05.	Stay rod	Steel	Steel	Steel
S06.	Upper shield	Aluminium	Aluminium	Aluminium
S07.	Spring ring	Steel	Steel	Steel
S08.	Housing	Aluminium	Aluminium	Aluminium
S09.	Wound stator	-	-	-
S12.	Terminal box	Nylon	Nylon	Nylon
S17.	Upper bearing	-	-	-
S18.	Axis + Rotor	Steel	Steel	Steel
S19.	Lower bearing	-	-	-
S21.	Flange	Aluminium	Aluminium	Aluminium
S23.	Motor seal ring	NBR	NBR	NBR
S42.	Terminal board	-	-	-
S53.	Pump body	Aluminium	Aluminium	Aluminium
S55.	Upper diffuser	Aluminium (80C)	Aluminium	Aluminium
S55.	Intermediate diffuser	Not available	Not available	Aluminium
S59.	Seal	NBR	NBR	NBR
S60.	Bushing	Bronze	Bronze	Bronze
S62.	High impeller	Brass 58	Brass 58	Brass 58
S63.	Spacer ring	Steel (80C)	Steel	Steel
S65.	Low impeller	Brass 58	Brass 58	Brass 58
S69.	O-ring	NBR	NBR	NBR
S73.	Lower bushing	Not available	Not available	Bronze
S74.	Impeller-cover	Aluminium	Aluminium	Aluminium

*On demand Sheet metal

*On demand Sheet metal

*On demand Sheet metal

Submersible motor-driven pumps

Type MSPV



Uses

They are suitable for transferring liquids containing impurities up to 3 mm in size. Their hydraulic components: impeller, feed screw and pump body in PBT allow them to be used with emulsions and oily substances in general, with a viscosity not exceeding 21 cSt (3° Engle). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

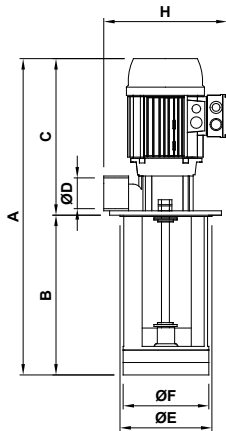
- machine tools (milling and turning machines-machining centres)
- glass processing machinery
- printing machines
- filtration systems
- air-conditioning systems

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 4-5 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

Should the liquid be particularly dirty, it is advisable to build a compartment tank in order to allow the sludge to deposit before it is sucked by the pump.

For different uses, please consult our Technical Office.

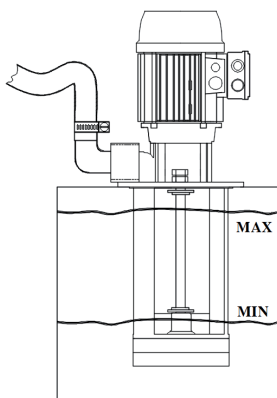
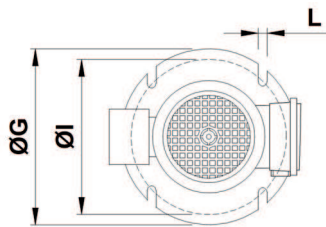


Size and weights table

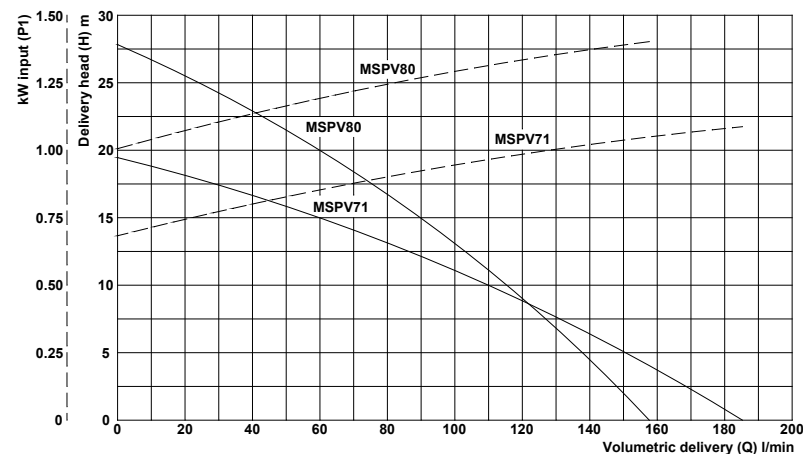
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
MSPV 71	500	230	270	1 ¼"	139	138	178	215	160	9 (n.4)	9.7
	570	300									9.8
	650	380									9.9
MSPV 80	560	260	300	1 ¼"	139	138	178	230	160	9 (n.4)	13.7
	630	330									13.9
	710	410									14.0

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - Qmax litres/min	maxH - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
MSPV 71	1.34	1.00	4.24/2.45	2760	0.79	22 - 185	18 - 0
MSPV 80	1.86	1.5	5.7/3.3	2845	0.83	16 - 158	26 - 0

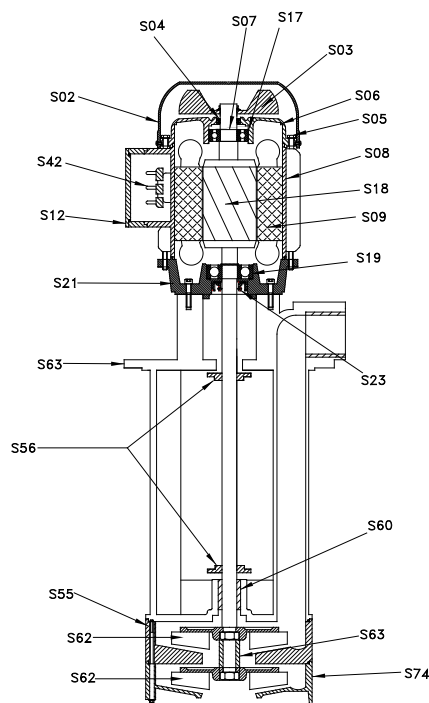


Hydraulic performance curves (open impeller)



Hydraulic performance table (open impeller)

Delivery head (H) m	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28
Type of pump	Volumetric delivery (Q) l/min ↓														
MSPV 71	185	172	161	147	129	112	88	65	45	22					
MSPV 80	158	150	143	134	125	116	106	95	83	71	59	45	32	16	



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S21.	Support flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S55.	Diffuser
S56.	TRI washer
S60.	Bushing
S62.	Impeller
S63.	Spacer ring
S74.	Impeller-cover

MSPV 71
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
AISI 416
-
Cast Iron G20
Cast Iron G20
NBR
-
Nylon
Nylon
PBT
Engineering plastic
PBT
AISI 416
PBT

MSPV 80
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
AISI 416
-
Cast Iron G20
Cast Iron G20
NBR
-
Nylon
Nylon
PBT
Engineering plastic
PBT
AISI 416
PBT

*On demand Sheet metal

*On demand Sheet metal

Submersible motor-driven pumps

Type EPC 63-71



Uses

They are suitable for transferring clean liquids containing impurities up to 0.03 mm in size.

Their hydraulic components: impeller in brass, feed screw and pump body in cast-iron allow them to be used with emulsions and oily substances, glycol and liquids in general provided they are not oxidative for the construction materials.

Viscosity must not exceed 21 cST (3° Engel).

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

They are commonly used on:

- **drilling centres**

- **cooling units**

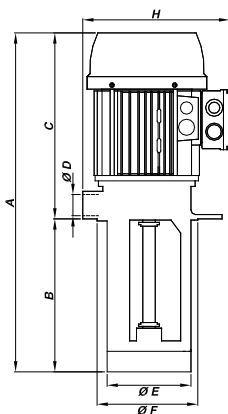
They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

For different uses, please consult our Technical Office.

Size and weights table

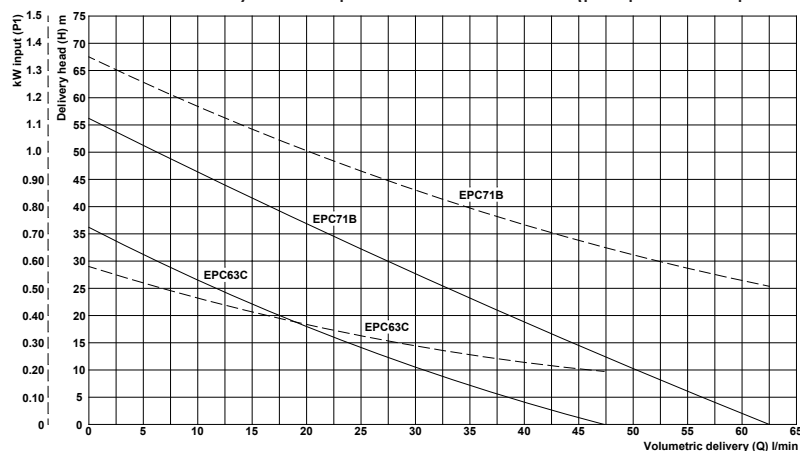
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
EPC 63C	310	100	210	3/4"	98	100	130	185	115	7 (n.4)	8.9
	340	130									9.2
	390	180									9.4
	440	230									9.6
	490	280									9.8
	570	360									10.3
EPC 71B	360	100	260	3/4"	98	100	130	193	115	7 (n.4)	11.6
	390	130									11.9
	440	180									12.1
	490	230									12.3
	540	280									12.5
	620	360									13.0



Rating plate data

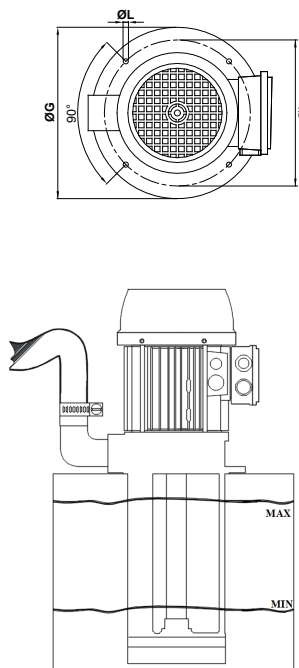
Type of pump	kW		V 230/400 - Hz 50			Q - Q _{max} litres/min	H _{max} - H metres
	Input (P1)	Nom. (P2)	I _n Amp.	n min ⁻¹	cos φ		
EPC 63C	0.50	0.37	1.60/0.92	2825	0.79	1 - 47	35 - 0
EPC 71B	1.20	0.90	3.83/2.21	2760	0.78	1 - 62	55 - 0

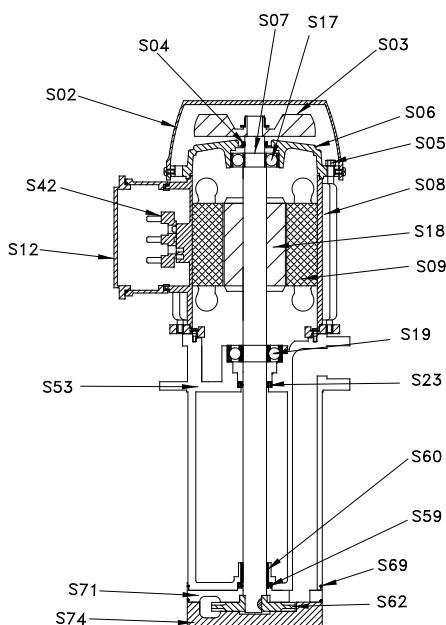
Hydraulic performance curves (peripheral impeller)



Hydraulic performance table (peripheral impeller)

Type of pump	Volumetric delivery (Q) l/min ↓														
	47	37	31	23	18	12	6	1							
EPC 63C	47	37	31	23	18	12	6	1							
EPC 71B	62	56	50	44	38	33	27	22	17	12	6	1			





Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S59.	Seal
S60.	Bushing
S62.	Impeller
S69.	O-ring
S71.	Adaptor coupling
S74.	Impeller-cover

EPC 63C
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
Cast Iron G20
NBR
Bronze
Brass 58
NBR
Cast Iron G20
Cast Iron G20

EPC 71B
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Nylon
-
Steel**
-
NBR
-
Cast Iron G20
NBR
Bronze
Brass 58
NBR
Cast Iron G20
Cast Iron G20

*On demand Sheet metal
 **On demand. Ax. AISI 416

*On demand Sheet metal
 **On demand. Ax. AISI 416

Submersible motor-driven pumps

Type EPC 80-90

Uses

They are suitable for transferring clean liquids containing impurities up to 0.03 mm in size.

Their hydraulic components: impeller in brass, feed screw and pump body in cast-iron allow them to be used with emulsions and oily substances, glycol and liquids in general provided they are not oxidative for the construction materials. Viscosity must not exceed 21 cST (3° Engle). The temperature of the liquid must not exceed 90°C.

They are commonly used on:

- drilling centres
- cooling units

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

For different uses, please consult our Technical Office.

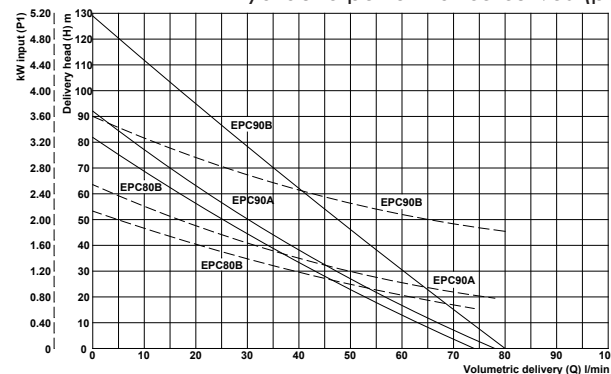
Size and weights table

Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
EPC 80B	381	100									15.3
	411	130									15.6
	461	180	281	3/4"	98	100	130	200	115	7 (n.4)	15.8
	511	230									16.0
	561	280									16.2
	641	360									16.8
EPC 90A	435	115									17.2
	465	145									17.5
	515	195	320	3/4"	98	100	130	220	115	7 (n.4)	17.7
	565	245									17.9
	615	295									18.1
	695	375									18.6
EPC 90B	460	140									30.3
	490	170									30.6
	540	220	320	3/4"	98	100	130	220	115	7 (n.4)	30.8
	590	270									31.0
	640	320									31.2
	720	400									31.8

Rating plate data

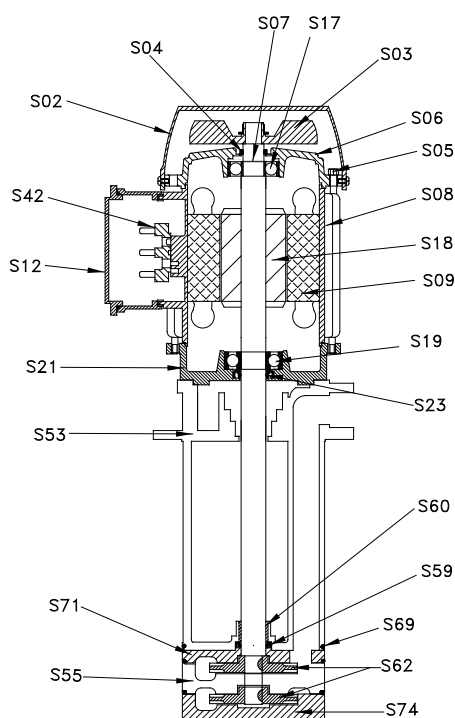
Type of pump	kW		V 230/400 - Hz 50			Q - Q _{max} litres/min	H _{max} - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
EPC 80B	1.86	1.5	5.7/3.3	2845	0.83	9 - 74	70 - 0
EPC 90A	2.28	1.8	7.3/4.2	2850	0.78	8 - 78	80 - 0
EPC 90B	3.58	3	10.6/6.1	2855	0.84	5 - 80	120 - 0

Hydraulic performance curves (peripheral impeller)



Hydraulic performance table (peripheral impeller)

Delivery head (H) m ↓	0	5	10	15	20	30	40	50	60	70	80	90	100	110	120
Type of pump	Volumetric delivery (Q) l/min ↓														
EPC 80B	74	68	63	57	53	43	34	25	17	9					
EPC 90A	78	72	67	62	57	47	38	30	23	15	8				
EPC 90B	80	76	73	70	67	60	54	48	41	35	29	23	17	11	5



Spare parts nomenclature

	Component	EPC 80B	EPC 90A	EPC 90B
		Materials	Materials	Materials
S02.	Fan cover	Nylon*	Nylon*	Nylon*
S03.	Fan	Nylon	Nylon	Nylon
S04.	V-ring	NBR	NBR	NBR
S05.	Stay rod	Steel	Steel	Steel
S06.	Upper shield	Aluminium	Aluminium	Aluminium
S07.	Spring ring	Steel	Steel	Steel
S08.	Housing	Aluminium	Aluminium	Aluminium
S09.	Wound stator	-	-	-
S12.	Terminal box	Nylon	Nylon	Nylon
S17.	Upper bearing	-	-	-
S18.	Axis + Rotor	Steel**	Steel**	Steel**
S19.	Lower bearing	-	-	-
S21.	Flange	Aluminium	Aluminium	Aluminium
S23.	Motor seal ring	NBR	NBR	NBR
S42.	Terminal board	-	-	-
S53.	Pump body	Cast Iron G20	Cast Iron G20	Cast Iron G20
S55.	Diffuser	Not available	Cast Iron G20 (n° 1)	Cast Iron G20 (n° 1)
S59.	Seal	NBR	NBR	NBR
S60.	Bushing	Bronze	Bronze	Bronze
S62.	Impeller	Brass 58 (no 1)	Brass 58 (no 2)	Brass 58 (no 3)
S69.	Feed screw O-ring	NBR (no 2)	NBR (no 3)	NBR (no 4)
S71.	Adaptor coupling	Cast Iron G20	Cast Iron G20	Cast Iron G20
S74.	Impeller-cover	Cast Iron G20	Cast Iron G20	Cast Iron G20

*On demand Sheet metal

**On demand Ax.AISI 416

*On demand Sheet metal

**On demand Ax.AISI 416

*On demand Sheet metal

**On demand Ax.AISI 416

Submersible motor-driven pumps

Type PPI



Uses

They are suitable for transferring liquids containing impurities up to 0.03 mm in size. Their hydraulic components: impeller, feed screw and pump body in brass allow them to be used with emulsions and oily substances, glycol and liquids in general provided they are not oxidative for the construction materials. Viscosity must not exceed 21 cST (3° Engel).

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

When using diathermic oil, the fluid temperature can reach 150°C.

They are commonly used on:

- **temperature regulation systems**

They are normally installed on a tank with a capacity which is proportional to their flow rate, about 3-4 cm from the bottom.

It is important to make sure that the maximum liquid level in the tank is always 3-4 cm lower than the support flange (see figure).

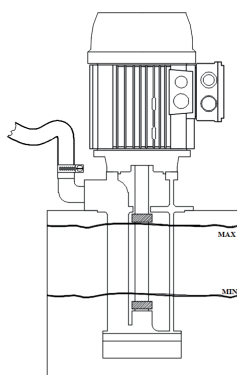
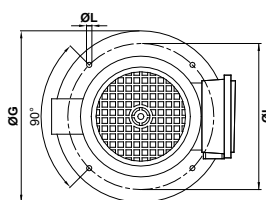
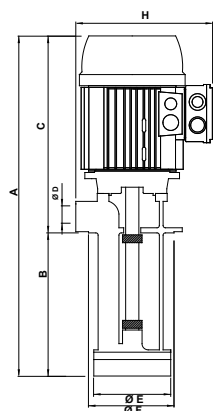
For different uses, please consult our Technical Office.

Size and weights table

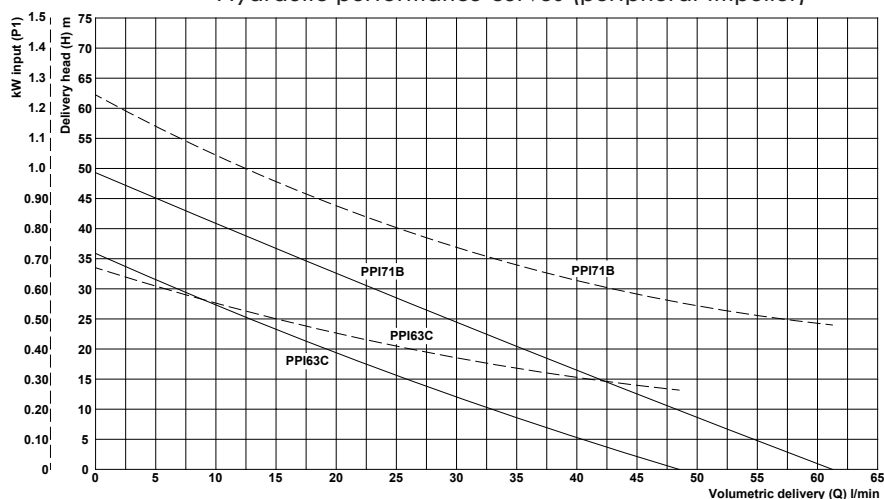
Type of pump	A mm	B mm	C mm	ØD	ØE mm	ØF mm	ØG mm	H mm	ØI mm	ØL mm	Mass kg
PPI 63C	437	195	242	3/4"	98	100	130	185	115	7 (n.4)	9.1
PPI 71B	466	200	266	3/4"	98	100	130	193	115	7 (n.4)	11.4

Rating plate data

Type of pump	kW		V 230/400 - Hz 50			Q - Q _{max} litres/min	H _{max} - H metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ		
PPI 63C	0.74	0.55	2.30/1.33	2755	0.81	1 - 48	35 - 0
PPI 71B	1.20	0.90	3.83/2.21	2760	0.78	5 - 61	45 - 0

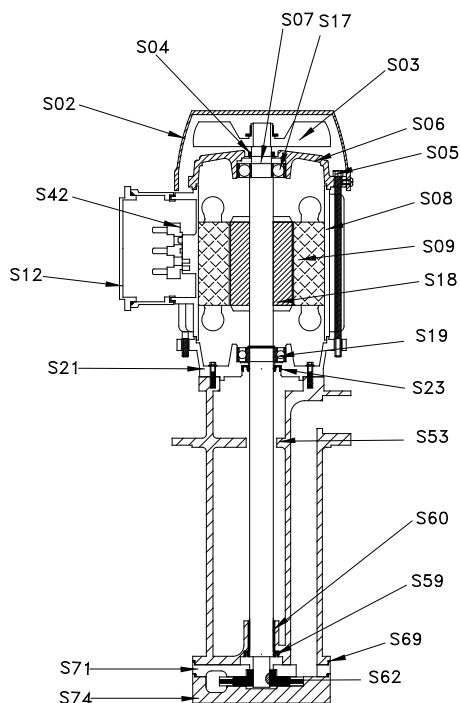


Hydraulic performance curves (peripheral impeller)



Hydraulic performance table (peripheral impeller)

Delivery head (H) m →	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70
Type of pump	Volumetric delivery (Q) l/min ↓														
PPI 63C	48	41	33	26	19	13	7	1							
PPI 71B	61	55	48	42	36	29	23	17	11	5					



Spare parts nomenclature

	Component
S02.	Fan cover
S03.	Fan
S04.	V-ring
S05.	Stay rod
S06.	Upper shield
S07.	Spring ring
S08.	Housing
S09.	Wound stator
S12.	Terminal box
S17.	Upper bearing
S18.	Axis + Rotor
S19.	Lower bearing
S21.	Motor flange
S23.	Motor seal ring
S42.	Terminal board
S53.	Pump body
S59.	Seal
S62.	Impeller
S60.	Self-lubricating bush
S69.	O-ring
S71.	Adaptor coupling
S74.	Impeller-cover

PPI 63C
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Aluminium
-
(Ax.AISI 416)
-
Aluminium
NBR
-
Brass 58
NBR
Brass 58
AISI 304
NBR
Brass 58
Brass 58

PPI 71B
Materials
Nylon*
Nylon
NBR
Steel
Aluminium
Steel
Aluminium
-
Aluminium
-
(Ax.AISI 416)
-
Aluminium
NBR
-
Brass 58
NBR
Brass 58
AISI 304
NBR
Brass 58
Brass 58

*On demand Sheet metal

*On demand Sheet metal

Vertical multistage pumps

Type HPP 80



Main applications

The pump is designed for pumping clean and non-explosive liquids without abrasive and filamentous suspended parts and with a viscosity not exceeding 20mm²/s.

The pump is designed for industrial applications:

- Machine tools (grinding, lathes, drilling centres)
- Glass processing machinery
- Filtration systems
- Cooling systems
- Washing machines

Operating conditions

Liquid temperature from -15 °C to + 90 °C - Maximum room temperature + 40 °C.

Electric motor:

The pump is equipped with a closed construction engine, with external ventilation, built in accordance with IEC 60034-30-1 in efficiency class IE3 (Premium Efficiency).

Degree of protection IP 55

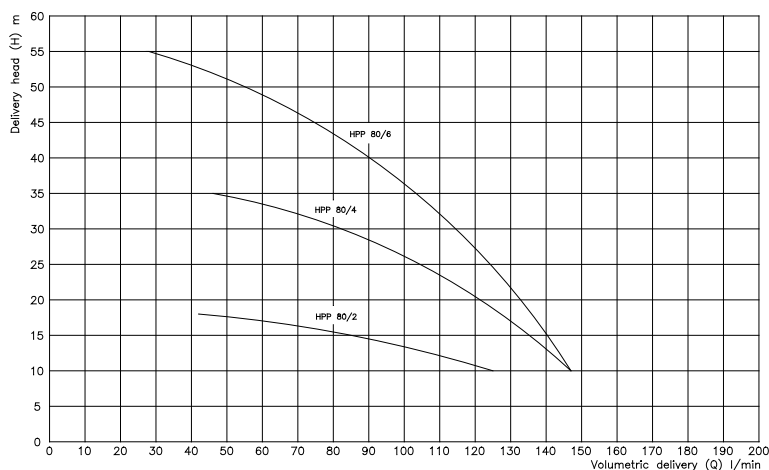
Size and weights table

Type of pump	A mm	B mm	C mm	D mm	E mm	F mm	Mass kg
HPP 80/2	535	192	343	123	99	80.5	15.5
HPP 80/4	589	246	343	123	99	80.5	18.0
HPP 80/6	643	300	343	123	99	80.5	20.5

Rating plate data

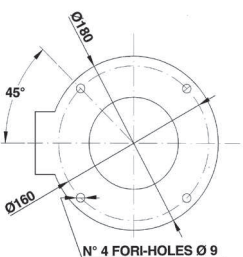
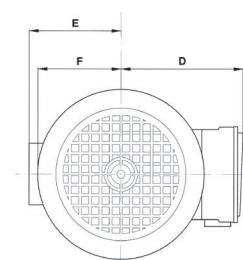
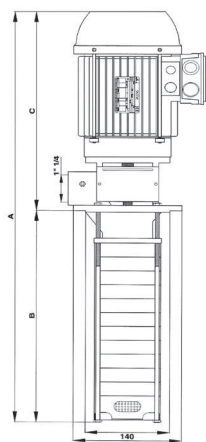
Type of pump	kW		V 230/400 - Hz 50						Q _{max} - Q litres/min	H - H _{max} metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ	50%	IE3 η 75%	100%		
HPP 80/2	0.91	0.75	2.84/1.64	2845	0.80	81.9	83.2	82.5	109 - 73	12 - 16
HPP 80/4	0.91	0.75	2.84/1.64	2845	0.80	81.9	83.2	82.5	125 - 82	14 - 30
HPP 80/6	1.30	1.1	4.09/2.36	2865	0.80	83.9	85.3	84.8	138 - 49	16 - 50

Hydraulic performance curves



Hydraulic performance table

Delivery head (H) m →	10	12	14	16	18	20	25	30	35	40	45	50	55	60
Type of pump	Volumetric delivery (Q) l/min ↓													
HPP 80/2	125	109	98	73	42									
HPP 80/4	147	141	138	133	127	123	106	82	46					
HPP 80/6	147	144	141	138	136	133	124	115	104	89	75	49	28	



Vertical multistage pumps

Type HPP 90



Main applications

The pump is designed for pumping clean and non-explosive liquids without abrasive and filamentous suspended parts and with a viscosity not exceeding 20mm²/s.

The pump is designed for industrial applications:

- Machine tools (grinding, lathes, drilling centres)
- Glass processing machinery
- Filtration systems
- Cooling systems
- Washing machines

Operating conditions

Liquid temperature from -15 °C to + 90 °C - Maximum room temperature + 40 °C.

Electric motor:

The pump is equipped with a closed construction engine, with external ventilation, built in accordance with IEC 60034-30-1 in efficiency class IE3 (Premium Efficiency).

Degree of protection IP 55

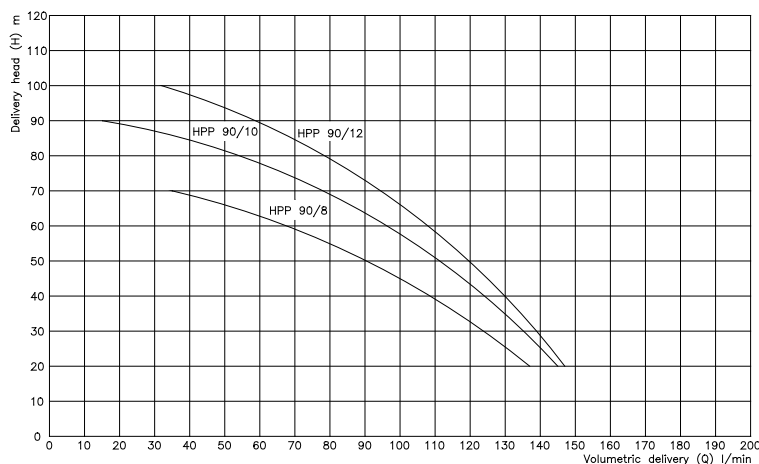
Size and weights table

Type of pump	A mm	B mm	C mm	D mm	E mm	F mm	Mass kg
HPP 90/8	740	354	386	129	99	89.5	25.5
HPP 90/10	794	408	386	129	99	89.5	29.0
HPP 90/12	848	462	386	129	99	89.5	30.0

Rating plate data

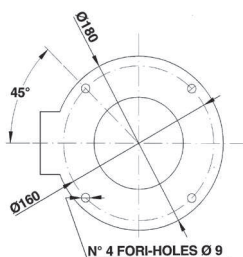
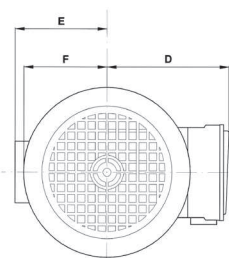
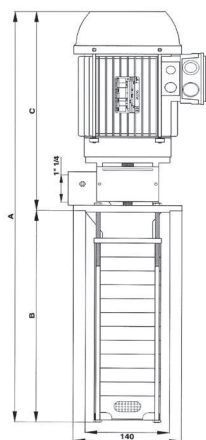
Type of pump	kW		V 230/400 - Hz 50						Q _{max} - Q litres/min	H - H _{max} metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ	50%	IE3 75%	100%		
HPP 90/8	1.76	1.5	5.5/3.1	2900	0.82	82.3	84.7	84.8	137 - 66	20 - 60
HPP 90/10	2.61	2.2	7.8/4.5	2890	0.84	85.7	86.8	86.2	135 - 54	30 - 80
HPP 90/12	2.61	2.2	7.8/4.5	2890	0.84	85.7	86.8	86.2	130 - 32	40 - 100

Hydraulic performance curves



Hydraulic performance table

Delivery head (H) m →	20	30	40	50	60	70	80	90	100	110	120
Type of pump	Volumetric delivery (Q) l/min ↓										
HPP 90/8	137	123	108	90	66	35					
HPP 90/10	145	135	125	111	98	78	54	15			
HPP 90/12	147	140	130	116	112	95	79	57	32		



Vertical multistage pumps

Type HPP 100



Main applications

The pump is designed for pumping clean and non-explosive liquids without abrasive and filamentous suspended parts and with a viscosity not exceeding 20mm²/s.

The pump is designed for industrial applications:

- Machine tools (grinding, lathes, drilling centres)
- Glass processing machinery
- Filtration systems
- Cooling systems
- Washing machines

Operating conditions

Liquid temperature from -15 ° C to + 90 ° C - Maximum room temperature + 40 ° C.

Electric motor:

The pump is equipped with a closed construction engine, with external ventilation, built in accordance with IEC 60034-30-1 in efficiency class IE3 (Premium Efficiency).

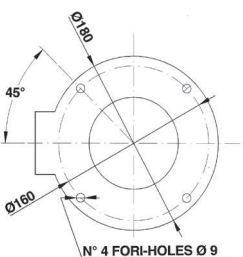
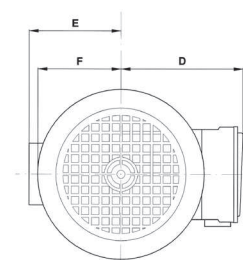
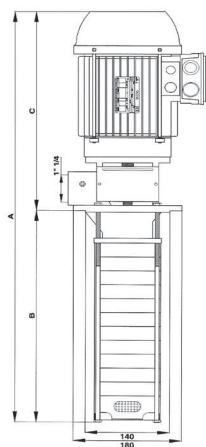
Degree of protection IP 55

Size and weights table

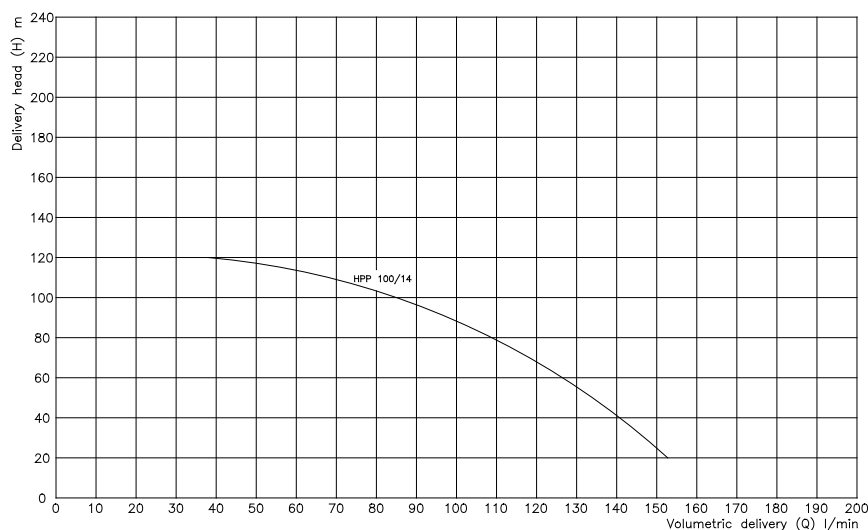
Type of pump	A mm	B mm	C mm	D mm	E mm	F mm	Mass kg
HPP 100/14	934	516	418	144	99	97.5	34.5

Rating plate data

Type of pump	kW		V 230/400 - Hz 50						Q _{max} -Q litres/min	H-H _{max} metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ	IE3 η				
						50%	75%	100%		
HPP 100/14	3.41	3	9.8/5.7	2900	0.87	88.8	89.2	88.3	134 - 38	50 - 120



Hydraulic performance curves



Hydraulic performance table

Delivery head (H) m →	20	30	40	50	60	70	80	90	100	110	120	130	140
Type of pump	Volumetric delivery (Q) l/min ↓												
HPP 100/14	152	147	141	134	126	118	109	98	84	68	38		

Vertical multistage pumps

Type HPP 112



Main applications

The pump is designed for pumping clean and non-explosive liquids without abrasive and filamentous suspended parts and with a viscosity not exceeding 20mm²/s.

The pump is designed for industrial applications:

- Machine tools (grinding, lathes, drilling centres)
- Glass processing machinery
- Filtration systems
- cooling systems
- Washing machines

Operating conditions

Liquid temperature from -15 ° C to + 90 ° C - Maximum room temperature + 40 ° C.

Electric motor:

The pump is equipped with a closed construction engine, with external ventilation, built in accordance with IEC 60034-30-1 in efficiency class IE3 (Premium Efficiency).

Degree of protection IP 55

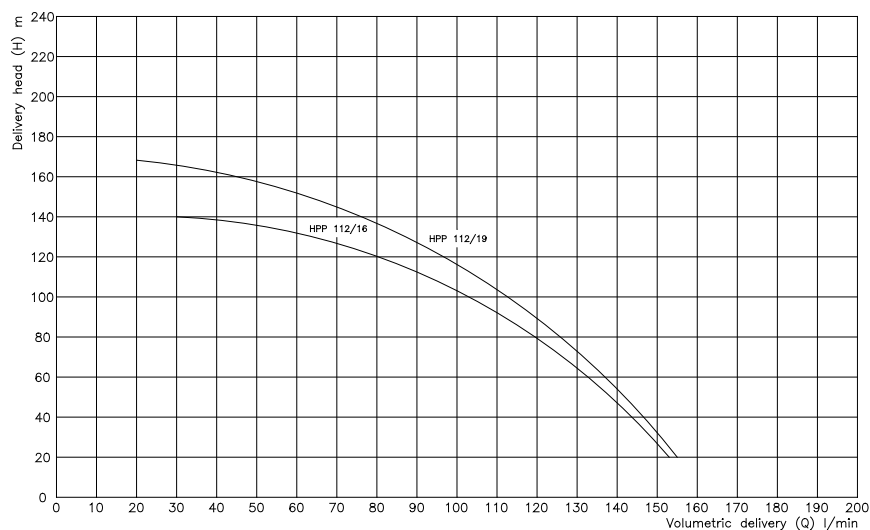
Size and weights table

Type of pump	A mm	B mm	C mm	D mm	E mm	F mm	Mass kg
HPP 112/16	1010	570	440	163	99	115	44.0
HPP 112/19	1091	651	440	163	99	115	45.4

Rating plate data

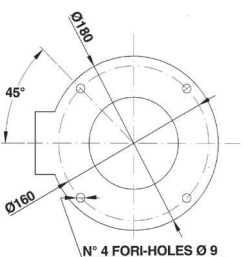
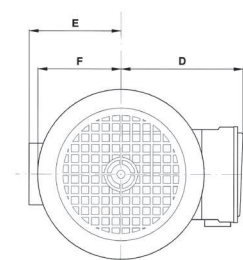
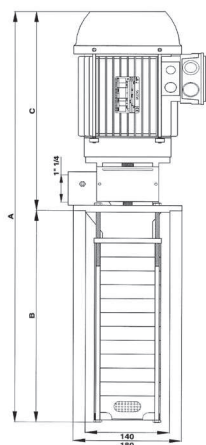
Type of pump	kW		V 230/400 - Hz 50						Q _{max} -Q litres/min	H-H _{max} metres
	Input (P1)	Nom. (P2)	In Amp.	n min ⁻¹	cos φ	IE3 η				
						50%	75%	100%		
HPP 112/16	4.43	4	12.6/7.3	2920	0.88	86.6	88.4	88.6	134 - 30	60 - 140
HPP 112/19	4.43	4	12.6/7.3	2920	0.88	86.6	88.4	88.6	130 - 25	70 - 160

Hydraulic performance curves



Hydraulic performance table

Delivery head (H) m →	30	40	50	60	70	80	90	100	120	140	160	180
Type of pump	Volumetric delivery (Q) l/min ↓											
HPP 112/16	149	145	140	134	126	120	110	103	80	30		
HPP 112/19	151	148	142	136	132	125	119	113	99	78	43	



Use and maintenance

OPERATION AND MAINTENANCE MANUAL (ORIGINAL INSTRUCTIONS) - MOTOR-DRIVEN PUMPS **SACEMI**

GENERAL INFORMATION

This manual is designed to provide a general understanding of the machine and the instructions necessary for its proper installation and operation.

The manual is an integral part of the machine and must be read carefully before handling, installing and operating the machine and it must be kept for future reference.

Non-observance of the instructions in this manual, any improper use, any maintenance not carried out by specialised personnel, removal of labels and warnings of any kind, removal or tampering of protective guards and/or safety devices and any other action not expressly envisaged which may modify the solutions adopted by the Manufacturer concerning the safety of the machine or of its parts, can cause serious injury to persons and property and will relieve the Manufacturer of any responsibility. Any intervention on the machine by unauthorised personnel will result in the automatic termination of the product warranty.

The product identification number (Type) and its characteristics and a code for traceability of the date and batch of production are stamped on the nameplate of the motor-driven pump: the model information and warnings contained in this manual refer to the identifiable marks written on the nameplate.

As regards any situations not covered by this manual or any further information, please refer to our general catalogue and to the documentation available on www.sacemi.com and if required contact our commercial service

DECLARATION OF CONFORMITY:

The motor-driven pumps  **SACEMI** type AP-AU-EPC-HPP-IMM-MP-MPC-MSPV-PPI-SP-SPV-SQ-TR comply with the requirements of Directives 2006/42/EC (Machinery) - 2006/95/EC (Low Voltage) - and - 2004/108/EC (CEM). They bear the conformity marking on the plate . Some catalogue versions and products meet the requirements laid down in EN 12157 Coolant pump units for machine tools - Nominal flow rate, dimensions (see tables at the end of the manual)

PRODUCT DESCRIPTION:

Motor-driven centrifugal pumps  **SACEMI** are designed for the circulation of liquids in general and of cooling mixtures, according to the specific uses indicated in the tables that end this manual. The impellers are fastened directly to the extended crankshaft

The pump is equipped with a 2-pole electric motor, designed for continuous service and power supply, built according to IEC60034, cooled with external ventilation, class F winding and IP 55 protection rating.

WARNING MAINTENANCE / STORAGE OF THE MACHINE:

Temporary storage of the machine must be carried out inside its original packing, carefully placing the package in a stable position, in a clean and weather-protected environment which can protect the pump from foreign bodies accessing and from weathering (rain, snow, etc.) that may cause damage to its electrical parts.


The storage environment temperature must be between -20 ° C and +50 ° C.



HANDLING:

Motor-driven pumps must be handled with the utmost care and with means appropriate to their size and weight (**which can be detected from the plate on the machine or from the table at the end of the manual**). **In particular, packed pumps must be moved in accordance with the instructions on the package**, in particular avoiding standing elongated containers on their smaller side in order to avoid any roll-over of the package. During handling and transport, be careful not to damage the delicate parts. When handling non-packed pumps listed in the catalogue *other than AU-TR-SQ*, only harness or pick up the machinery at its gripping points using suitable hooks or ropes. While handling the pumps there is a risk of injury; therefore, it is necessary to use suitable lifting devices appropriate to the weight and size of the pump together with personal protection equipment. The handling of the pump by lifting means must always take place slowly, with no uncontrolled oscillations in order to avoid unbalance and slippage. **DO NOT** pick up or harness the pump near the shaft: it could be damaged. **DO NOT** place the pump on the ground by leaning it on the impeller's base as it may overturn. When resting it on the ground temporarily, the pump must be placed horizontally, ensuring that thickening elements are placed under its ends to prevent it from tilting against the flange support or from rolling thereby damaging the housing of the electrical wiring terminal boards. Models AU-TR-SQ must be lifted by using a harness around the narrow neck-shaped groove between the motor body and the pump and their temporary resting on the ground must be positioned: AU pumps on their supporting tapered ring, TR-SQ ones with their motor axis horizontal, ensuring thickening elements are placed under the ends to prevent it from tilting against the flange support or from rolling thereby damaging the housing of the electrical wiring terminal boards. **DO NOT** place the pump temporarily on the ground at its engine crank rear end. When handling, every care must be taken to prevent foreign bodies from entering through the engine ventilation grilles, the suction holes and the pump delivery holes.

WARNING USE:

Motor-driven pumps  **SACEMI** are particularly used in the industrial field on machine tools for machining metal, plastic, glass, stones (cutting, drilling, milling, grinding, turning) and industrial applications for filtration, fluid temperature control, spray booths, surface treatment, printing machines.

The expected application for each model is specified in **table no 3**.



WARNING LIMITATIONS OF USE:

Motor-driven pumps must NOT be used in explosive and / or potentially explosive environments and must NOT be used with flammable liquids or which produce harmful and/or explosive gases. For possible uses with aggressive liquids (e.g. acids, alkali solutions) please refer to the indications given for each type of pump in our Catalogue or on our website www.sacemi.com

Pumps **must NOT** be used for heads below the lowest point of the characteristic curve shown in the catalogue as the use of the pump for heads lower than these may overload the motor. Motor-driven pumps **must NOT** be used in tanks under pressure and the installer is therefore responsible for providing the necessary technical arrangements to prevent the tank from being, even temporarily, pressurised. The pumped liquid **must NOT** exceed a viscosity of 21 cSt (3 °E) and a temperature of 70 °C. CSA / UL certified pumps are approved for liquid at a temperature of 30 °C / 60 °C for UL and CSA respectively. The maximum permissible sizes of the solid parts allowed in the pumped fluid vary for each type of pump as indicated in the tables at the end of the manual.

The motor-driven pump is built to be installed in an indoor environment or in areas protected from the weather.

The electrical data indicated on the plate must be observed for continuous service work.



WARNING INSTALLATION:

To lift the pump, use equipment and accessories as indicated in the "Handling" section.

To avoid leakage and ensure the maximum flow, please use pipes with diameters equal to the pump delivery hole.

DO NOT use rigid couplings between pump delivery and plant (except for the envisaged types).

Ensure the pump is perfectly primed before turning it on.

Ensure there are no obstructions preventing the normal cooling air flow to the engine fan.

Motor-driven pumps must be secured to avoid vibrations or movements which could damage the piping.

DO NOT insert your fingers in the intake duct for any reason as there is a risk of injury by touching the impeller.

The installer is responsible for making sure that all technical and plant precautions are put into place and maintained in the specific installation in order to ensure that the mechanical and hydraulic requirements listed below for each type are complied with.

AU Type Pumps:

The pump must be installed on the top of the tank and secured with appropriate bolts / screws. For proper operation of the pump and to ensure its correct sealing, the pump must be primed before use; the priming operation must be repeated whenever the pump sucks air due to a lack of liquid.

The pump must NOT run in the absence of liquid.

SQ Type Pumps:

The SQ type pump must be installed on a side wall of the tank.

The pump must be secured to the tank with appropriate screws, placing a seal between the tank surface and the suction inlet of the pump.

The pump must NOT run in the absence of liquid.

For proper operation of the pump and to ensure its correct sealing, it is essential to comply with the minimum level of liquid in the tank. **(table no 2)**

TR Type Pumps:

To ensure greater stability to the TR type pump, use rigid suction and delivery pipes.

The pump must NOT run in the absence of liquid.

For proper operation of the pump and to ensure its correct sealing, it is essential that the machinery is positioned under a constant head. **(table no 2)**

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

The pump must be installed by fixing the coupling flange to the top of the tank and the pump body immersed in the liquid.

Use the appropriate screws to anchor the flange to the tank.

The maximum liquid level in the tank must always be 3-4 cm below the support flange, while the minimum level must always be above the suction chamber. The suction hole is located on the bottom of the pump body. The minimum distance between the intake hole and the bottom of the tank must be calculated in order to avoid cavitation and to prevent impurities from leaking into the fluid flow.

When installing pumps with a plastic body, please:

- Do NOT use rigid fittings and / or conical threaded connections;
- only use liquid or very thin sealants (film);
- be careful when screwing the coupling to the pump delivery, not to force it beyond the stop positioned inside the pipe coupling and, in any case, not to apply a clamping force above 40 kgm (390 Nm)

Failure to observe these warnings can irreparably damage the pump delivery hole.



WIRING:

The motor-driven pump is designed for a permanent electrical connection other than a plug.

The wiring must be carried out by qualified personnel, in accordance with the regulations in force in the country of use and must always provide for the grounding of the machine.

The motor voltage and frequency must comply with those indicated on the rating plate.

The arrangement of the connecting bridges "Y or Δ" must correspond to the wiring diagram inside the terminal board cover.

Check that the direction of rotation of the pump is the one indicated by the arrow on the pump body. Should the rotation direction be incorrect, stop the motor, disconnect the power line and reverse two phases of the power supply. Always check that the current absorbed by the pump during operation is never higher than the rating indicated on the plate.

We recommend the use of cables and plugs with the appropriate section for the currents absorbed by the electric motor that equips the machine; please remember that the absorbed current when turning the pump on can be much higher than those indicated on the plate.

As the standard construction of the motor-driven pump does not include any overload protection, the installer must provide a separate and adequate protection.

Make sure that fuses, circuit breakers and thermal relays are properly dimensioned.

Direction of rotation of the motor:

As regards AP-AU-EPC-IMM-MP-MPC-MSPV-PPI-SP-SPV-SQ-TR pumps, if you look at the motor's fan cover from above, the cooling fan must turn to the right (clockwise).

As regards HPP pumps, if you look at the motor's fan cover from above, the cooling fan must turn to the left (anticlockwise).



WARNING

INSTRUCTIONS FOR USE:

The machine must always be positioned with the motor axis in a vertical position in order to work correctly. The working environment temperature must be between -20 °C and +40 °C.

Although the pumps are designed to tolerate the presence of impurities contained in liquids (with the quantities indicated in **table no 1**), it is still recommended to prepare appropriate decanting zones (e.g. dividing the tank into compartments), in compliance with the installation rules. As regards self-priming pumps, an initial trigger must be provided by filling the suction or delivery pipe.

Should there be a leakage of liquid from the inlet of the axle into the suction / discharge chamber in pumps equipped with a mechanical seal, stop the machine and check the damaged part. In the event of electrical failure on a machine equipped with a single-phase motor, the operator must pay attention to possible electrostatic phenomena due to the capacitor.

The outer casing of the motor can reach 70°C; thus, it is advisable, for prolonged operations on this surface, to use appropriate protections (gloves).

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

WARNING

MAINTENANCE:

The pump does not require any special scheduled maintenance work in addition to the necessary periodic cleaning of the impeller and of the feed screw from the impurities present in the liquid.

To replace bearings, mechanical seals and/or components of the electric motor, refer to the technical data sheets in our general catalogue and to the documentation available on the website www.sacemi.com or contact our commercial service.

All maintenance operations must be carried out by qualified personnel, with the machine not running and disconnected from the mains.



DECOMMISSIONING OF THE MACHINE AND WASTE DISPOSAL:

The decommissioning of the motor-driven pump must be carried out by competent personnel who must safely remove the electrical, hydraulic and mechanical connections in that order, making the installation completely inoperative and secure (e.g. protect/close the lights in the empty tank). Finally, dismantling must be carried out in appropriate structures, in full compliance with the applicable laws of the user's country concerning waste disposal and separate collection, bearing in mind the materials forming the pump as detailed in **table no 1**.

Symbols used / terminology




 WARNING	Warning	 General danger	 Electrical shock hazard
It warns that failure to comply with the prescriptions involves a risk of damage to the machine		It warns that non-observance entails a risk of harming people and/or things	It warns of the presence of high voltage with the risk of electric shock

Table no 1	Technical features
------------	--------------------

Type of pump	Main components	Impurities allowed mm	Weight kg		Lp (db)
			Range		
AP 80B	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤2	37	48	<70
AP 90A	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤2	41	51	73
AP 90B	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤2	43	53	75
AP 100A	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤2	48	58	78
AP 112B	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤2	59	71	76
AU	Steel - Aluminium - Cast Iron - Plastics - Brass - Copper - Paints	≤ 0.03	4	6	<70
EPC 63-71-80	Steel - Aluminium - Cast Iron - Plastics - Brass - Copper - Paints	≤ 0.03	8	18	<70
EPC 90	Steel - Aluminium - Cast Iron - Plastics - Brass - Copper - Paints	≤ 0.03	30	32	<70
PPI 63-71	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 0.03	9	12	<70
HPP 80	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 1	15	21	<70
HPP 90	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 1	25	30	<70
HPP 100-112	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 1	34	46	78
IMM 40-50	Steel - Aluminium - Plastics - Copper - Paints	≤ 3	1	2	<70
IMM 63	Steel - Aluminium - Plastics - Copper - Paints	≤ 3	5	6	<70
IMM 71	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 3	9	12	<70
IMM 80	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 3	14	19	<70
IMM 90A	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 4	47	50	73
IMM 90 B	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 4	49	52	75
IMM 100	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 4	53	56	78
MP 63-71	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 3	6	11	<70
MP 80-90	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 3	16	24	<70
MP 100	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤ 3	32	36	<70
MPC 80	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤2	15	19	<70
MPC 90	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤2	25	29	<70
MPC 100	Steel - Aluminium - Plastics - Brass - Copper - Paints	≤2	38	43	<70
MSPV 71-80	Steel - Aluminium - Plastics - Copper - Paints	≤ 3	9	14	<70
SP 12-18-25-33	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 3	5	9	<70
SP 50-75-100-150	Steel - Aluminium - Cast Iron - Plastics - Copper - Paints	≤ 3	13	22	<70
SPV 12-18-25-33	Steel - Aluminium - Plastics - Copper - Paints	≤ 3	2	6	<70
SPV 50-75-100-150	Steel - Aluminium - Plastics - Copper - Paints	≤ 3	7	15	<70
SQ	Steel - Aluminium - Plastics - Cast Iron - Brass - Copper - Paints	≤ 3	3	18	<70
TR	Steel - Aluminium - Plastics - Cast Iron - Brass - Copper - Paints	≤ 3	12	15	<70
HPP 80	Steel - Aluminium - Plastics - Cast Iron - Copper - Paints	0	15	21	<70
HPP 90	Steel - Aluminium - Plastics - Cast Iron - Copper - Paints	0	25	30	<70
HPP 100	Steel - Aluminium - Plastics - Cast Iron - Copper - Paints	0	30		<70
HPP 112	Steel - Aluminium - Plastics - Cast Iron - Copper - Paints	0	44	46	<70

Table no 2	Motor wiring
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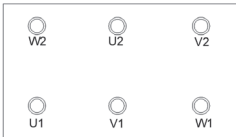
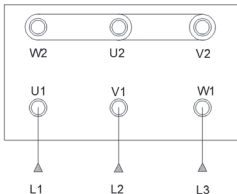
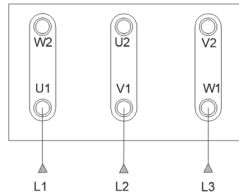
Terminals of the terminal board	Connection λ	Connection Λ
		

Table no 3	Table showing possible uses	
Type	Uses	Type of fluid
IMM 40	Cutting - drilling	Oil-oily emulsions
IMM 50 A	Cutting - drilling - milling - conditioning	Oil-oily emulsions
IMM 63-71-80	Turning - filtration - milling - grinding - glass processing	Oil-oily emulsions
IMM 90-100	Turning - filtration - grinding - spray booths	Oil - oily emulsions - paint water
SPV 12-18	Cutting - drilling - milling - conditioning - glass processing	Oil-oily emulsions
SPV 25-33-50-75-100-150	Cutting - drilling - milling - printing - glass processing	Oil-oily emulsions - glycol
SP 12-18	Milling - turning - drilling	Oil-oily emulsions
SP 25-33-50-75-100-150	Milling - turning - drilling - grinding - filtration	Oil-oily emulsions
AU 56-63	Recirculation- suction	Oil-oily emulsions
71 - 80	Recirculation- transfer	Oil - oily emulsions - alkaline solutions
SQ 56-63-71-80	Milling - turning - drilling - surface treatment	Oil - oily emulsions - alkaline solutions
AP 80-90-100-112	Turning - filtration - grinding - surface treatment	Oil - oily emulsions - alkaline solutions
MP 63-71-80-90-100	Turning - filtration - grinding	Oil-oily emulsions
MPC 80-90-100	Turning - filtration - grinding	Oil-oily emulsions
MSPV 71-80	Cutting - drilling - milling - printing - glass processing	Oil-oily emulsions - glycol
EPC 63-71-80-90	Deep-hole-drilling-cooling	Oil-oily emulsions - glycol
PPI 63 - 71	Thermoregulation	Diathermic oil

TROUBLESHOOTING GUIDELINES

Flaw detected	Possible causes	Possible solution
The engine does not start - No noise	<ul style="list-style-type: none"> - flaw in motor terminal box connections - flaw in the power supply wiring 	<ul style="list-style-type: none"> - Check the motor terminal board connections - Check the power line - Check all switches, fuses and thermal protectors
The engine does not start - Humming perception	<ul style="list-style-type: none"> - motor failure due to no winding - power line flaw due to phase failure - blocked impeller - blocked bearing - blocked bushing - blocked seal 	<ul style="list-style-type: none"> - Check the motor terminal board connections - Check motor winding - Check the power line - Replace the impeller - Replace bearing - Replace bushing - Replace seal
The motor runs, but there is no liquid flowing	<ul style="list-style-type: none"> - the liquid level in the tank is below the minimum required - the impeller is damaged and/or occluded - suction hole occluded - delivery pipe is closed 	<ul style="list-style-type: none"> - Top up the minimum level of liquid in the tank - Clean the impeller and replace it if damaged - Clean suction hole - Clean the suction and pumping chamber - Clean the delivery pipe
Insufficient pressure and flow	<ul style="list-style-type: none"> - wrong motor rotation direction - impeller, suction chamber, delivery pipe clogged with impurities - the impeller is damaged - suction chamber, pumping chamber are damaged 	<ul style="list-style-type: none"> - Restore the correct rotation direction of the motor - Clean the impeller, the suction chamber and delivery pipe - Replace the impeller - Replace the delivery pipe, the suction and pumping chambers
Motor power absorption is too high	<ul style="list-style-type: none"> - too many impurities - friction between moving parts - liquid density beyond the limits of use 	<ul style="list-style-type: none"> - Remove impurities other than those allowed - Identify and replace defective components - Restore liquid density within the limits of use



CUL/US ADDITIONAL INFORMATION

WARNINGS:

- The installer must provide motor protection against overloads.
- The installer must protect the pump to avoid it being used with no liquid.
- **Electric shock hazard** – This pump has not been evaluated for use in swimming pools and / or equivalent environments.
- Motors designed for dual voltage operation indicate the electrical data for which they have been factory-set.

CAUTION:

- These pumps have been evaluated only to be used with water.

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