Masflo

Sewage Pump DAC-SC/Y

www.masflo.fr

MAIN SPECIFICIATIONS :

Masflo DAC-SC/Y and DAS series pumps designed for pumping fluids which contents large solids. They have large range of capacities range and are available with large range of powers. Capacity range is 3 - 800 l/s discharge head range is 2 - 60 m and power range is 3 kW 400 kW.
There are several models and sizes.

FIELDS OF APPLICATION :

- Domestic and industrial raw sewage water pumping
- Waste water handling plants
- In biological cleaning plants for pumping active sludge.
- Pumping of floating solids in settlement pools.
- Pumping waste water to active screens
- Pumping industrial and chemical waste water.
- Draining rain water
- All kinds of drainage and dewatering
- Pumping miscallenous waters in industrial plants

FLUID TYPES :

- Unscreened sewage and other waste water types with high solids concentration Pumps are designed to tolerate large solids (Ø 30 Ø - 200 mm diameter) without clogging.
- Water with sand content. Maximum grain size (20 - 30 mm). Liquid, sand ratio can be maximum % 6. For higher sand concentration preventive provisions must be taken against wear.
- Maximum allowed fluid temperature is 40°C
- Maximum allowed medium density is 1,2 gr/cm^3, maximum allowed medium viscosity is 1,5 x 10-6 m^2/s. Measures must be taken to lower these values.

TECHNICAL DETAILS :

SUBMERSIBLE ELECTRIC MOTOR: Masflo DAC series pumps have submersible electric motors which operate with 3 phase 380 V power supply. Insulation class of motors is F, protection class is IP 68. Upon request H class insulation is available so as different power supply options like different frequency or voltage (60 Hz).

SHAFT SEALING: Between motor and pumped fluid a high quality double mechanical seal is used, which operate in oil chamber. (Up to 11 kW single mechanical seal)

BEARINGS: Rotor is supported by means of two heavy duty ball bearings on upper and lower sides. These bearings are selected to support axial and radial loads. In DAC-Y type the bearings operate in cooling oil as a result they do not overheat . In DAS ad DAC-SC types bearings are grease lubricated.

MOTOR OVER HEAT PROTECTION SYSTEM: Stator windings are protected against over heat by 120 °C thermistors. Two thermistor contacts are connected to cable and and must be connected to the thermistor relay.

WATER LEAKAGE WARNING SYSTEM: An electrode system is used which generates a warning signal in case of water leakage caused by worn out mechanical seal or any other reason. In order to have this system operational it must be connected to the Masflo STR-1 protection relay.

CABLE CONNECTION: H07RN-F type rubber coated cables with flexible cores used. They are durable against corrosiveness of sewage water. Pumps supplied with 10 m cable as standard. Do not transport pump by pulling the cable.

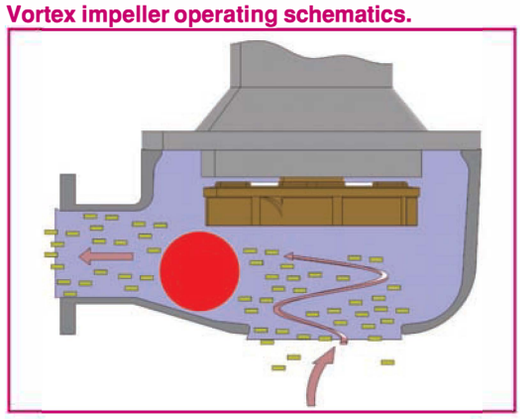
VOLUTE CASING: Volute casings are with concentric discharge and have large crossection. They are designed not to be clogged by the solid that can pass through impeller. In special applications Flush valve can be fitted to the pump. Pumps can be manufactured with different material types if requested by client or it is needed because of liquid properties.

MATERIAL

PUMP COMPONENT		MATERIAL
Motor casing - volute casing		Cast iron GG-25 (EN-JL 1040)
Impeller		Cast iron GG-25 (EN-JL 1040)
Shaft		Stainless steel (1.4021)
Bolts - Nuts		Stainless steel
Mechanical seal		SIC/SIC
Cable		H07RN-f
Coating	Primer	Epoxy primer
	Final coat	Coal tar epoxy paint over
	Inner surfaces	Rapid primer

CAUTION: If the submersible pump will be stored without operation for long time, it must be operated for short of time every 25-30 days.
Submersible pumps manufactured according to CE directive.

Vortex impeller operating schematics.



Masflo submersible waste water pumps manufactured in 3 different design.
1- DAC- SC Series .....Cooling is by cooling jacket.
2- DAC-Y Sereis .....Oil cooling.
3- DAS series : .....Cooled by surrounding medium

1- DAC-SC pumps cooling system:

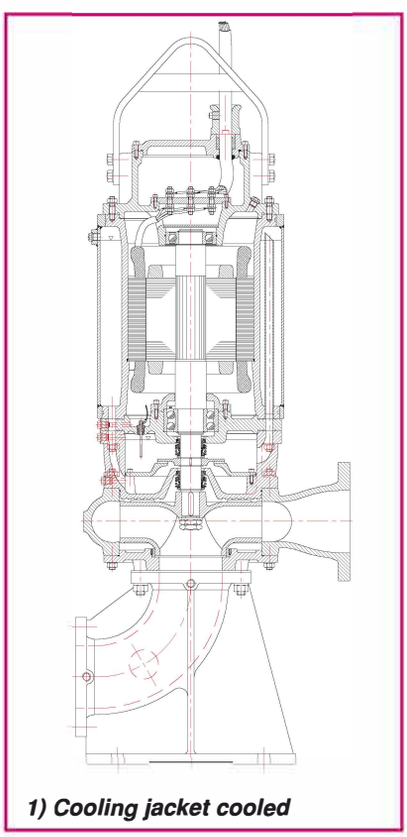
Around the motor of the submersible pump a cooling jacked is fitted. Coolant liquid circulates within this jacket by an impeller inside the oil chamber. Liquid circulating in the jacket dissipates the heat regardsless of installation type and cools the motor. Oil chamber behind the pump impeller cools the coolant fluid.

2- DAC-Y pumps cooling systems:

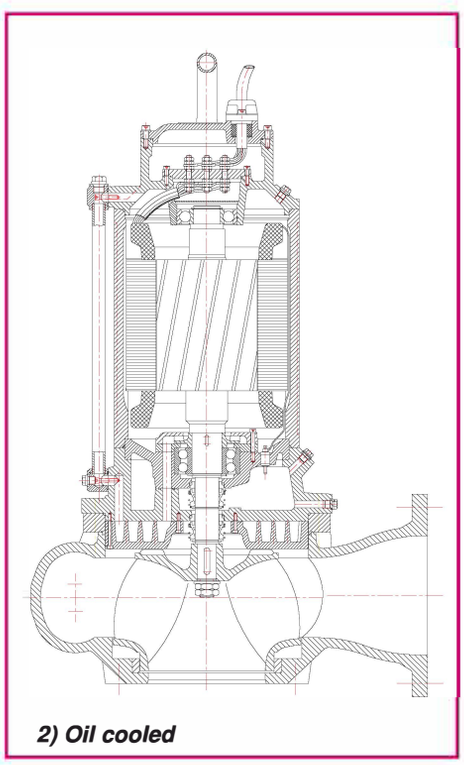
Submersible pumps motor are cooled by oil which fill the motor casing and circulates in motor stator windings. Cooling system has a small pump and heat exchanger. This small pump circulates the cooling oil.

3- DAS pump cooling:

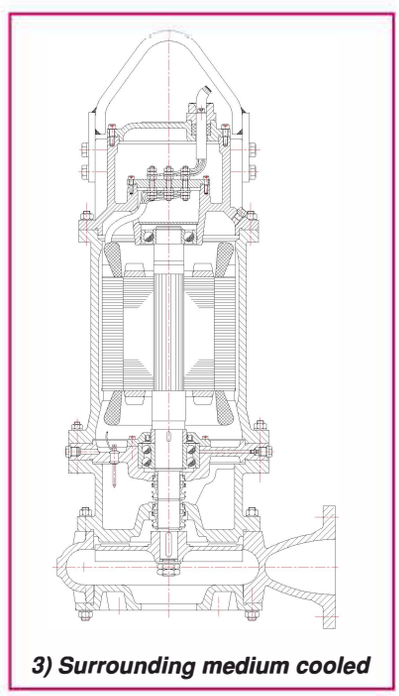
Das type pumps are cooled by surrounding medium in which the pump is submerged. In order to have appropriate cooling, the pump has to be submerged completely. These pumps do not operate in a dry installation.



1) Cooling jacket cooled



2) Oil cooled

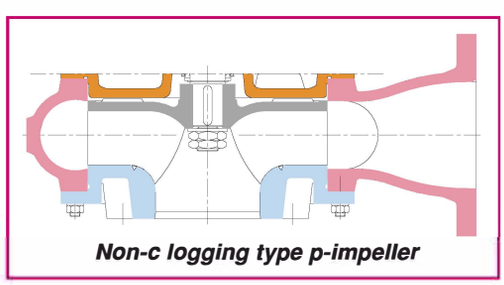


3) Surrounding medium cooled

DAC – SC and DAC-Y type pumps designed to operate both submerged and dry installation

Single vane double angled non clogging impeller: These impellers have large solid passages, high efficiencies and they do not strain motor power at low discharge head values.

Double vane impeller: In general they are used in large sized pumps. Rotational symmetry lets them operate without vibration and stable. They are with high efficiency and they do not strain motor with excessive load in case of low discharge head. Large channels between vanes allows pumping of solids.



Non-c logging type p-impeller

Vortex type impeller: This type of impellers do not have closed channels. Impeller located deep inside the volute casing. Pumping action is generated by vortex created within the fluid by rotation of the impeller. With this geometry they can tolerate large solids than other impeller types more specifically they tolerate fibrous materials in the pumped liquid. Disadvantage of this impeller type is lower efficiencies
Pump impellers statically and dynamically balanced according to ISO 1940 class 6.3

P-Impeller: Open type non-c logging impeller operates with in close proxinity suction piece.

1) AUTOMATIC COUPLING (DUCK FOOT BEND)

It is an economic and practical installation form for stationary systems.. The automatic coupling system consists of duck foot bend fixed on sump floor, guide rail (2 galvanised pipes fixed together) and fixing flange which is fitted to the pump. The automatic coupling set components and discharge piping have to be installed before sump get filled with the medium.

Operating principle: The fixing flange which is fitted to to the pump slides through the guide rails and the pump is lowered to the sump by means of a chain. To take the pump out of the sump by pulling pump by chain is enough, no dismantling or bolt removal is required.

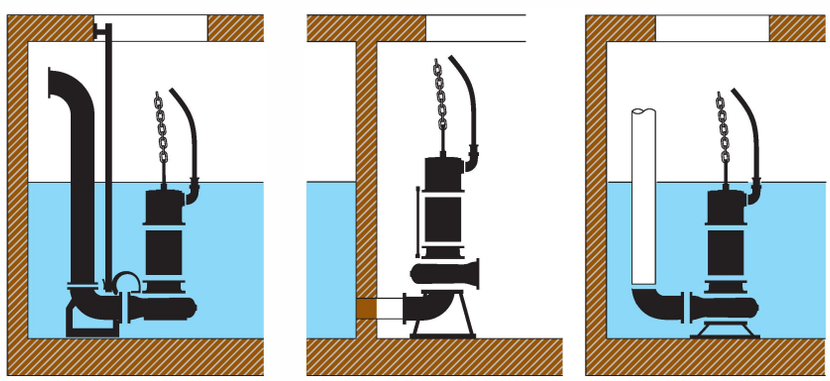
2) Dry Installation:

This installation form is for DAC-SC type pumps with cooling jacket and DAC-Y type oil cooled pumps. Since these pumps can cool themselves they can operate out of water continuously. These pumps have advantages of dry operation which are maintenance and operational advantages and advantages of submerged operation which are less sace requirement and handling tough operation conditions. Sump and pump are separated by a wall in dry installation. The pump room's floor is dry and maintenance and repair work can be done easily in pump room. Since pumps are fixed on concrete basement firmly operation is vibration free, and station is more reliable. Pumps have suction bends. On the suction side of the pump there is one non return valve and 1 dismantling piece. A small drainage pump must be installed in the pump room for leakage water.

3) VERTICAL FREE STANDING HOSE CONNECTION

This installation form is suitable for pumps with smooth and flat floors. The pump must stay on the floor freely. The pump can be removed from the sump by pulling out by chain. Can be used for small pumps.

• In all installation forms discharge lines must be fitted with, valve, non return valve, dismantling piece and expansion joint.



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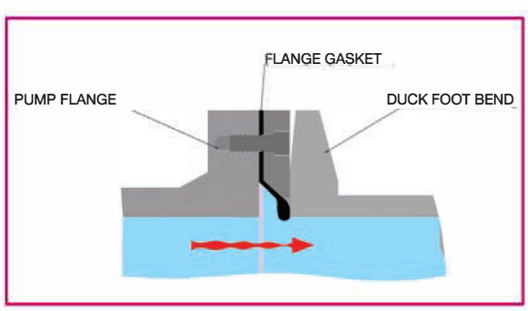
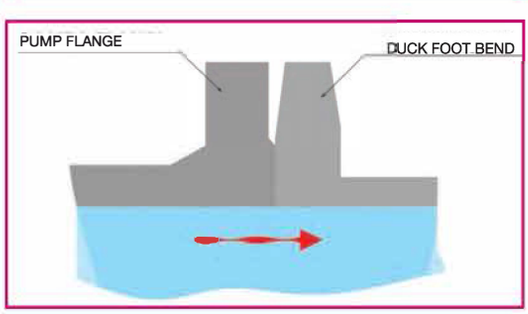




Sealing in Automatic coupling

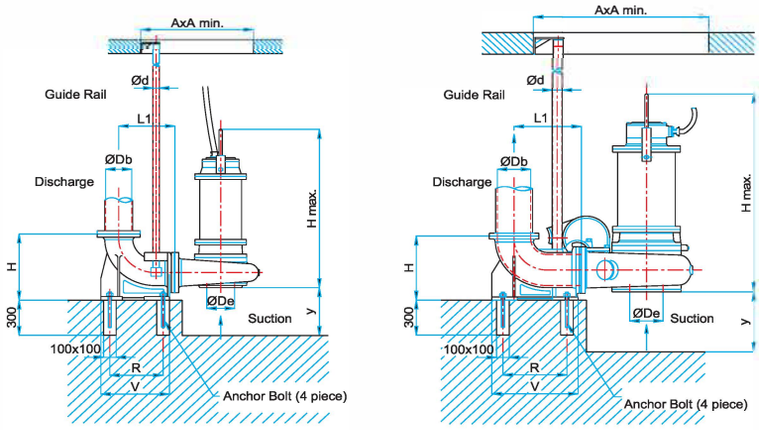
a) Sealing with gasket :

A gasket with special design is fitted between guide flange and pump flange. When the pump operates, pressure on discharge of the pump forces the gasket to expand on guide flange. 100 % sealing achieved with gasket. This is the sealing used by Masflo as standard.

b) Metal on Metal sealing

The sealing between pump discharge flange and duck foot bend flange achieved by a very smoothly machined pump flange surface. and duck foot bend flange surface. This sealing used in special applications.

DAS TYPE SUBMERSIBLE PUMP AND AUTOMATIC COUPLING INSTALLATION DIMENSIONS



Ø80, Ø100, Ø125, Ø150, Ø200 Automatic Coupling

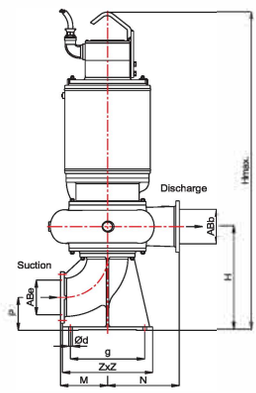
Ø250, Ø300, Ø400 Automatic Coupling

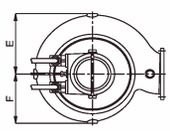
PUMP TYPE	DIMENSIONS																				
	Ød	Suction Øde	Discharge ØDb PN10	C	B	E	F	S	L1	P	R	M1	f	Anchor Bold	V	M	H	H max	y	AxA min.	FORM
DAS 80/250	2"	80	80	280	475	175	150	514	234	64	220	140	23	M20x250	290	210	250	980	100	725x725	A
DAS 80/250V																					
* DAS-EFF 80/260		125		280	490	220	190	514									348	1040	150		
DAS 80/270 / V		80		315	540	218	200	549									250	1010	100		
DAS 80/315 / V				340	585	255	235	574										1080			
* DAS-EFF 80/320		125		300	545	245	220	593							352	250	348	1140	150		
DAS 100/200		100	100	246	440	173	158	516	270	80	240	150			320	220	280	1060	125		
DAS 100/250 / V				300	500	220	180	570										1060		775x775	
* DAS-EFF 100/260		150		300	540	260	210	696										1140	200		
DAS 100/270 / V		100		315	515	198	197	585										1040	125		
DAS 100/315 / V				340	575	248	220	610										1090		850x850	
* DAS-EFF 100/320		150			590	265	225											1130			
DAS 100/400		100			625	300	270											1300			
DAS 125/315 / V		125	125	315	570	267	235	608	293		270	180	25	M22x250	352	250	348		150		
DAS 125/400				370	670	315	280	663										1495			
DAS-EFF 125/500		150	150 (125)	450	790	385	335	846	396	96	360	240	28	M24X250	480	330	450	1555		1000x1000	B
DAS 150/315		150	150	380	635	280	240	776										1280			A
DAS-EFF 150/315				400	650	280	220	796										1350	200		
DAS 150/400				400	700	325	300	796										1315			
DAS-EFF 150/500		200	200	500	840	365	305	942	442	112	420	300			540	400	560	1385	250		
DAS 200/315 N				370	670	335	275	812										1300	250		
DAS 200/315 F																		1335			
* DAS-EFF 200/320		250		500	860	395	290	942										1390		1200x1200	
DAS 200/400 F		200		530	895	375	355	972										1715			
DAS-EFF 200/410		250		500	845	385	305	942										1910	300		
DAS-EFF 200/500				560	960	425	355	1002										2700			
DAS 250/315 F	3"	200	250	440	760	355	290	982	542	107	532	375			682	500	665	1750			B
DAS 250/400 N				480	836	387	336	1022										2030	250		
DAS 250/400 M		250																2050	300		
DAS 250/400 F		300																2080	350		
* DAS-EFF 250/420		250		600	1000	445	330	1142										2100			
DAS 250/600		300		650	1176	555	485	1192										2210			
DAS 250/700				750	1330	620	540	1292										2830		1400x1400	
DAS-EFF 300/400		350	300	600	1030	475	325	1204	604	129	575	425	36	M33x300	775	565	618	2100	400		
DAS 300/500 F		300		585	1060	525	430	1289										2170	350		
DAS-EFF 350/420		350	350	800	1310	560	400	1675	875	180	825	550			925	700	1245	2300	400	1500x1500	
* DAS-EFF 350/520		350	400		1380	640	475											2370	450		
* DAS-EFF 350/630		350			1385		490											2400			
DAS 400/400 F		400			1090	620	476											2350			
* DAS-EFF 400/500					1355	630	430											2840	550		
DAS 400/600 F		500		700	1215	570	471	1545										2950	550		
DAS 400/700				1000	1625	685	576	1845										-	550		

NOTE:

1) Dimensions "mm". Masflo reserve s right to make any changes in dimensions without giving prior notice.
2) Flanges conforming to DIN 2501 and TS EN 1092-2
3) For pump weight information in accordance with motor power please consult to Masflo
4) (*) Masflo reserves the right to make any changes in dimensions without giving prior notice.

DAS-SC TYPE SUBMERSIBLE PUMP DIMENSIONS





PUMP TYPE	Suction Øde	Discharge ØDb PN10	E	F	H	H max.	M	N	P	z x z	g x g	Ød	Anchor Bolt
DAS-SC 80/250	80	80	175	150	408	980	190	280	150	350X350	250X250	23	M20x200
DAS-SC 80/250V						980							
* DAS-SC EFF 80/260	125		220	190	528	1040	215		185	440X440	345X345		
DAS-SC 80/270 / V	80		218	200	410	1010	190	315	150	350X350	250X250		
DAS-SC 80/315 / V			255	235	418	1080		340					
* DAS-SC EFF 80/320	125		245	220	528	1140	215	300	185	440X440	345X345		
DAS-SC 100/200	100	100	173	158	429	1080	195	246	190	390X390	295x295		
DAS-SC 100/250 / V			220	180	429	1060		300					
* DAS-SC EFF 100/260	150		260	210	613	1140	275	300	210	500X500	350X350	28	M24x250
DAS-SC 100/270 / V	100		198	197	448	1040	195	315	190	390X390	295x295	23	M20x200
DAS-SC 100/315 / V			248	220	468	1090							
* DAS-SC EFF 100/320	150		265	225	603	1130	275	340	210	500X500	350X350	28	M24x250
DAS-SC 100/400	100		300	270	474	1300	195		190	390X390	295x295	23	M20x200
DAS-SC 125/315 / V	125	125	267	235	512	1300	215	315	185	440X440	345X345		
DAS-SC 125/400			315	280		1495		370					
DAS-SC EFF 125/500	150	150 (125)	385	335	623	1555	275	450	210	500X500	350X350	28	M24x250
DAS-SC 150/315		150	280	240	581	1280		380					
DAS-SC EFF 150/315			280	220	643	1350		400					
DAS-SC 150/400			325	300	574	1315							
DAS-SC EFF 150/500	200	200	365	305	733	1385	325	500	225	600X600	500x500	30	M27x300
DAS-SC 200/315 N			335	275	680	1300		370					
DAS-SC 200/315 F					702	1335							
* DAS-SC EFF 200/320	250		395	290	804	1390	350	500	250	650X650			
DAS-SC 200/400 F	200		375	355	724	1715	325	530	225	600X600			
DAS-SC EFF 200/410	250		385	305	784	1910	350	500	250	650X650			
DAS-SC EFF 200/500			425	355	804	2700		560					
DAS-SC 250/315 F		250	355	290	784	1750		440					
DAS-SC 250/400 N	200		387	336	694	2030	325	480	225	600X600			
DAS-SC 250/400 M	250				764	2050	350		250	650X650			
DAS-SC 250/400 F	300				857	2080	380		285	730X730	600X600		
* DAS-SC EFF 250/420	250		445	330	814	2100	350	600	250	650X650	500x500		
DAS-SC 250/600N			555	485	767	2210		650		650X650			
DAS-SC 250/700	300		620	540	990	2830	380	750	285	730X730	600X600		
DAS-SC EFF 300/400	350	300	475	325	959	2100	445	600	330	850X850	700X700		
DAS-SC 300/500 F	300		525	430	900	2170	380	585	285	730X730	600X600		
DAS-SC EFF 350/420	350	350	560	400	979	2300	445		330	850X850	700X700		
* DAS-SC EFF 350/520	400	400	640	475	1154	3255	510	800	380	1000X1000	800X800	36	M33X300
* DAS-SC EFF 350/630				490	1189	3285							
DAS-SC 400/400 F			620	476	1132	3235							
* DAS-SC EFF 400/500	500		630	430	1404	3940	635		470	1200X1200	1000X1000		
DAS-SC 400/600 F			570	471	1536	4050		700					
DAS-SC 400/700			685	576	1454	-		1000					
DAS-SC 500/600		500	747	600		3900							
DAS-SC 500/630B	600	500	785		1850		960			1850X1850	1650X1650		

NOTE:

1) Dimensions (mm) subject to change without prior notice!

2) For pump weight information in accordance with motor power please consult to Masflo.

3) For flange dimensions refer to flange standards.

4) (*) Masflo reserves the right to make any changes in dimensions without giving prior notice.



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