TSURUMI PUMP

Submersible Pumps for Industry and Sewerage

Tsurumi products are distributed worldwide and renowned for their advanced technological design. For professional use.



Latest Technology - Highest Quality

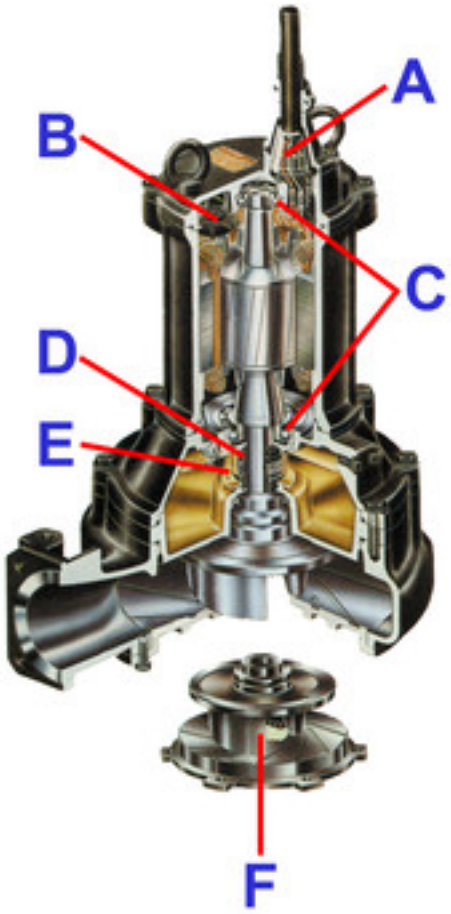
A | Tsurumi Stuffing Box - absolutely watertight



The stuffing box is located at the cable entry section and takes the part of sealing off water. As the cable conductors consist of twisted wires, water may penetrate into the motor by the capillary phenomenon when cable sheath or insulation is damaged or when the end of the cable is submerged. The construction is such that a certain part of the insulation of each conductor is peeled and filled with rubber or epoxy resin for the complete sealing.

B | Built-in motor protection

Located directly above the motor windings, a snap-action self-resetting bi-metal device cuts off voltage from all three phase windings simultaneously if the current is too large in one, two or all three windings, or if the windings get too hot.
Tsurumi enables measurement of winding resistance and insulation from the far end of the cable, without ever removing the cover from the motor in the field.

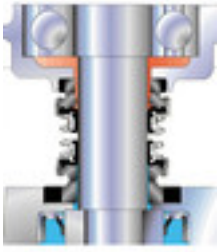


C | Ball bearings of highest quality

Due to the high quality of the shaft and the bear rings all pumps can be run horizontally when entirely submerged.

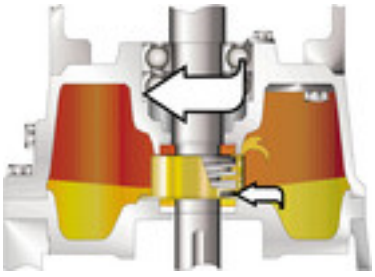
D | Double mechanical SiC seal in oil bath

All Tsurumi pumps dispose of a double mechanical seal for increased durability:
The double inside mechanical seals of all our sewage pumps have sealing rings of Silicon Carbide, no other material has greater hardness. Resistance to temperature fluctuation and corrosion is also the best available.



E | Oil Lifter

A special guide vane is attached inside the oil chamber. With the motor rotation oil is pumped up. Therefore even at low oil level lubrication and cooling of the mechanical seal is secured.



F | Impeller

A variety of types are available, depending on applications, i.e. open type, closed type, non-clog type and vortex type.

Type	Model	Bore mm	Power output kW	Poles	Impeller	Motor protector (built-in)	Level sensor	Guide rail fitting	Page
Sewage	POMA	50	0,15	2	Vortex	●	●		4
	OM	32	0,15	2	Vortex	●	●		5
	PNI	50	0,4 | 0,75	2	Vortex	●	●		6
	PU	50 | 80	0,25 - 1,5	2	Vortex	●	●	●	7
	UT	40 | 50	0,25 - 0,75	2	Vortex	●	●	●	8
	U	40 - 80	0,25 - 3,7	2	Vortex	●	●	●	9
	UZ	50 - 100	1,5 - 11	4	Vortex	●		●	10
	B	50 - 150	0,75 - 15	2 | 4	Canal	●		●	11
	C	50 - 100	0,75 - 11	2 | 4	Canal Cutter mechanism	●		●	12
	BZ	80 | 100	1,5 - 11	4	Canal	●		●	13
Scum Collection	FSP	50	0,4 | 0,75	2	Canal	●			14
Corrosion Resistant	SFQ	50 | 80	0,75 - 11	2	Vortex	●		●	15
	SQ	50	0,4 | 0,75	2	Vortex	●			16
Salt Water	TM	50	0,4 | 0,75	2	Vortex	●	●		17
Aeration	TRN		0,75 - 40	2 | 4	Vortex	●			18
	BER		0,75 - 5,5	2 | 4	Canal	●		●	19



Non-clog impeller

An impeller used in centrifugal pumps. This impeller is characteristic for preventing internal clogging by solids in the pumped liquid.



Non-clog impeller (shrouded type)

An impeller having a wide channel extending from inlet to exit, which prevents internal clogging by solids sucked in via the inlet.



Non-clog impeller (with cutter mechanism)

A "cutter mechanism" is provided by the combined action of a carbide blade integrated into a non-clog impeller and the saw-shaped inner surface of a suction cover.



Non-clog impeller BZ-series

Non-clog impeller allows large diameter of foreign matter with respect to discharge bore.



Vortex impeller (open type)

The semi-open impeller blade rotates about 0,5mm above the wear plate, clearing themselves of possible settled matter.



Vortex impeller

This impeller is used mainly to avoid clogging or wear by large or stringy solids in the water. It accelerates part of the water to great speed, and this speed is used to smoothly move all the water from inlet to outlet.

Vortex impeller

POMA 1-phase 50Hz

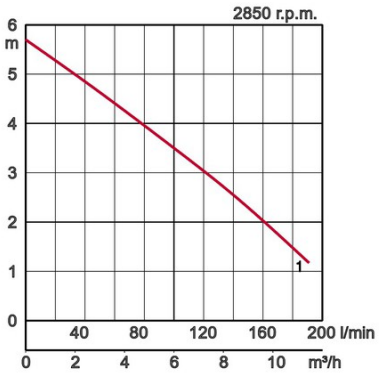
Specifications:

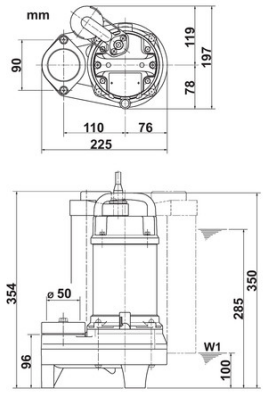
Model	Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm
POMA	1	50	0,15	1	2850	5,7	190	condensor	6,6	35



Pump casing, head cover and impeller made of fibre-reinforced plastic (FRP). 35mm impeller passage.

ø Discharge bore mm			50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Domestic sewage
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Glass fibre reinforced plastic
		Upper casing	Glass fibre reinforced plastic
		Lower casing	Plastic
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 110V / 50Hz
	Material	Casing	Stainless steel EN-X5CrNi18-10
		Shaft	Stainless steel EN-X6Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, flange





W1: lowest running water level

Vortex impeller

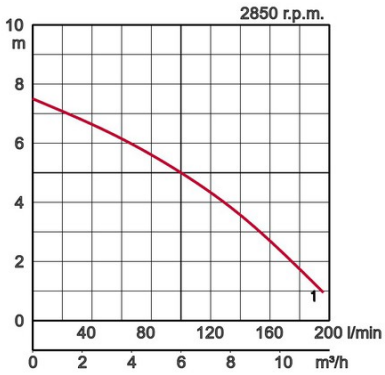
OM 1-phase 50Hz

Specifications:

Model	Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm	Cable m
OM	1	32	0,15	1	2850	7,5	195	condensor	5,9	10	10
OMA		32	0,15	1	2850	7,5	195	condensor	5,9	10	10

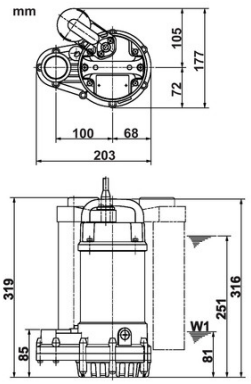


Pump casing, head cover and impeller made of fibre-reinforced plastic (FRP).
Model OMA with level control.

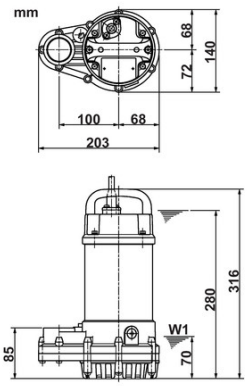


ø Discharge bore mm			32mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Domestic sewage
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Glass fibre reinforced plastic
		Upper casing	Glass fibre reinforced plastic
		Lower casing	Glass fibre reinforced plastic
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 110V / 50Hz
	Material	Casing	Stainless steel EN-X5CrNi18-10
		Shaft	Stainless steel EN-X6Cr13
		Cable	Rubber, 10m H07RN-F, Rubber, H07RN-F
Discharge Connection			Inside thread, flange

OMA



OM



W1: lowest running water level

Vortex impeller

PNI 1-phase 50Hz

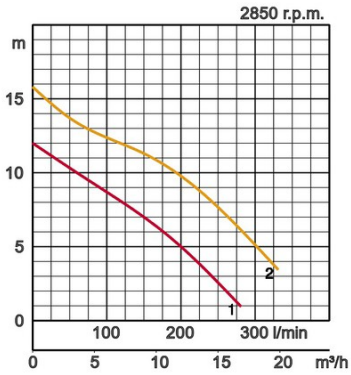
Specifications:

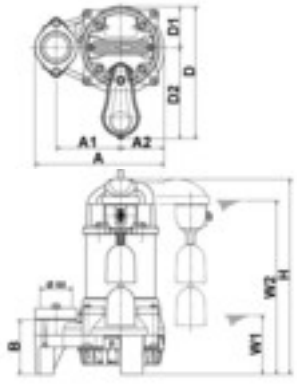
Model	Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm
50PNI2.4S	1	50	0,4	1	2850	12,0	280	condensor	7,4	10
50PNI2.75S	2	50	0,75	1	2850	15,8	330	condensor	9,5	10



Multi-purpose pump with vortex impeller.
Adjustable Float Switch - start and stop level can be adjusted, built-in auto-Manual selector Switch.

ø Discharge bore mm			50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, water with solids
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Glass fibre reinforced plastic
		Upper casing	Glass fibre reinforced plastic
		Lower casing	Plastic
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Miniature protector, Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 50Hz
	Material	Casing	Stainless steel EN-X5CrNi18-10
		Shaft	Stainless steel EN-X6Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, flange
Optional Accessories			Guide rail fitting "TOK" for small pumps





W1: lowest running water level

Model	A	A1	A2	B	D	D1	D2	H	W1	W2
50PNI2.4S	241	120	81	102	246	76	170	360	110	325
50PNI2.75S	241	120	81	102	246	76	170	380	110	345

Vortex impeller

PU 1-phase 3-phase 50Hz

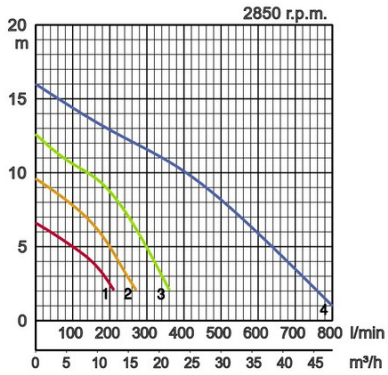
Specifications:

	Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
	free standing	with guide rail fitting									free standing	with guide rail fitting	
manual	50PU2.25	optional	1	50	0,25	3	2850	6,6	210	direct	6,1	-	35
	50PU2.4	optional	2	50	0,4	3	2850	9,6	270	direct	7,0	-	35
	50PU2.4S	optional		50	0,4	1	2850	9,6	270	condensor	7,1	-	35
	50PU2.75	optional	3	50	0,75	3	2850	12,5	360	direct	8,3	-	35
	50PU2.75S	optional		50	0,75	1	2850	12,5	360	condensor	8,9	-	35
	80PU21.5	optional	4	80	1,5	3	2850	16,0	800	direct	15,8	-	46
autom.	50PUA2.4	optional		50	0,4	3	2850	9,6	270	direct	7,5	-	35
	50PUA2.4S	optional		50	0,4	1	2850	9,6	270	condensor	7,7	-	35
	50PUA2.75	optional		50	0,75	3	2850	12,5	360	direct	8,9	-	35
	50PUA2.75S	optional		50	0,75	1	2850	12,5	360	condensor	9,5	-	35



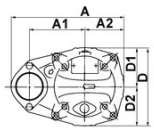
Light and solid - Guide rail fitting available for all models.

ø Discharge bore mm			50mm, 80mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, water with solids
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Glass fibre reinforced plastic
		Upper casing	Glass fibre reinforced plastic
		Lower casing	Plastic
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., Single phase 230V / 50Hz
	Material	Casing	Stainless steel EN-X5CrNi18-10
		Shaft	Stainless steel EN-X5CrNi18-10
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, flange
Optional Accessories			Guide rail fitting "TOK" for small pumps

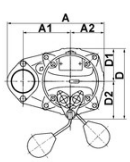




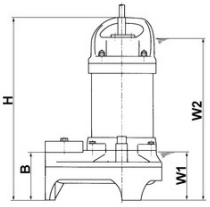
Model	A	A1	A2	B	D	D1	D2	FL1	FL2	H	W1	W2
50PU2.25	236	115	81	102	162	76	86	-	-	349	110	310
50PU2.4	236	115	81	102	162	76	86	-	-	360	110	325
50PU2.4S	236	115	81	102	162	76	86	-	-	360	110	325
50PU2.75	236	115	81	102	162	76	86	-	-	374	110	335
50PU2.75S	236	115	81	102	162	76	86	-	-	374	110	335
80PU21.5	295	145	99	130	196	92	104	-	-	475	150	427
50PUA2.4	236	115	81	102	173	76	97	115	607	374	-	-
50PUA2.4S	236	115	81	102	173	76	97	115	607	374	-	-
50PUA2.75	236	115	81	102	173	76	97	115	621	388	-	-
50PUA2.75S	236	115	81	102	173	76	97	115	621	388	-	-

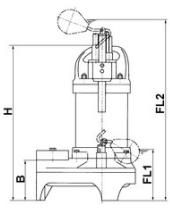


50PU2.25
50PU2.4S
50PU2.4
50PU2.75
80PU21.5
50PU2.75S



50PUA2.4S
50PUA2.4
50PUA2.75
50PUA2.75S





W1: lowest running water level

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Vortex impeller

UT 1-phase 3-phase 50Hz

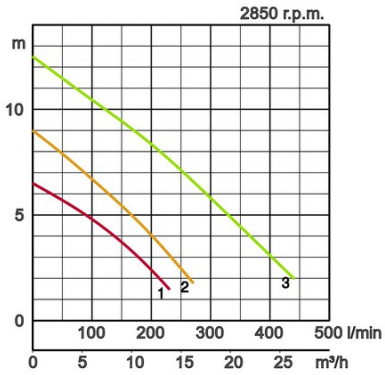
Specifications:

Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting									free standing	with guide rail fitting	
40UT2.25	optional	1	40	0,25	3	2850	6,5	230	direct	13,5	-	35
40UT2.25S	optional		40	0,25	1	2850	6,5	230	direct	14,0	-	35
50UT2.4	optional	2	50	0,4	3	2850	9,0	270	direct	13,5	-	35
50UT2.4S	optional		50	0,4	1	2850	9,0	270	direct	14,0	-	35
50UT2.75	optional	3	50	0,75	3	2850	12,5	440	direct	16,0	-	35
50UT2.75S	optional		50	0,75	1	2850	12,5	440	direct	17,0	-	35

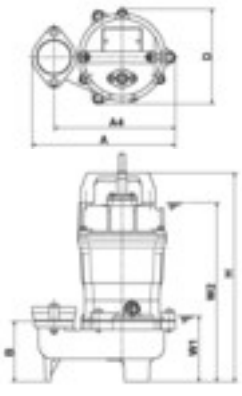


Vortex impeller with wide pump casing, preventing clogging by solids and fibrous matter.

ø Discharge bore mm			40mm, 50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, water with solids
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Plastic
		Casing	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 50Hz, 3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Grey iron casting EN-GJL-150
		Shaft	Stainless steel EN-X6Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOK" for small pumps



Model	A	A4	B	D	FL1	FL2	H	W1	W2
40UT2.25	239	205	101	161	-	-	350	110	300
40UT2.25S	239	205	101	161	-	-	350	110	300
50UT2.4	242	205	101	161	-	-	350	110	300
50UT2.4S	242	205	101	161	-	-	350	110	300
50UT2.75	242	205	101	161	-	-	406	110	350
50UT2.75S	242	205	101	161	-	-	406	110	350



W1: lowest running water level

Vortex impeller

U 3-phase 50Hz

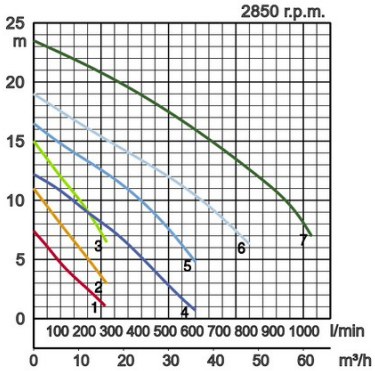
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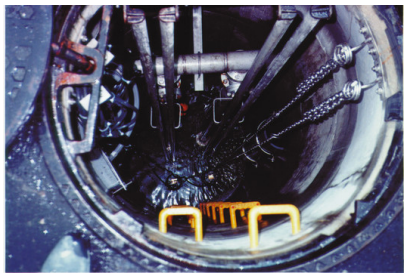
	Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
	free standing	with guide rail fitting									free standing	with guide rail fitting	
autom.	40UA2.25	optional	1	40	0,25	3	2850	7,4	264	direct	14,5	-	35
	50UA2.4	optional	2	50	0,4	3	2850	11,0	270	direct	20,0	-	35
	50UA2.75	optional	3	50	0,75	3	2850	15,0	270	direct	24,0	-	35
manual	80U2.75	TOS80U2.75	4	80	0,75	3	2850	12,2	450	direct	29,0	24,0	46
	80U21.5	TOS80U21.5	5	80	1,5	3	2850	16,5	600	direct	40,0	36,0	46
	80U22.2	TOS80U22.2	6	80	2,2	3	2850	19,0	800	direct	55,0	51,0	56
	80U23.7	TOS80U23.7	7	80	3,7	3	2850	23,5	1030	direct	62,0	58,0	56



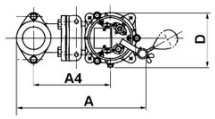
Vortex impeller with wide pump casing, preventing clogging by solids and fibrous matter.

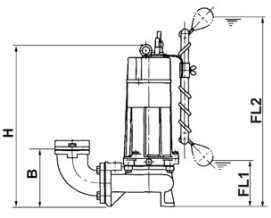
ø Discharge bore mm			50mm, 80mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, water with solids
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Casing	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E, Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Grey iron casting EN-GJL-150
		Shaft	Stainless steel EN-X6Cr13, Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOK" for small pumps, Guide rail fitting "TOS" (guide support, duck foot bend, lifting chain) / Bend and stand set for free standing types



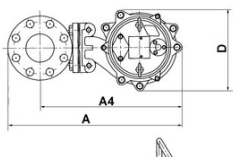


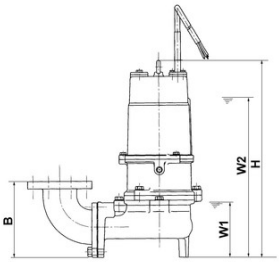
40UA2.25
50UA2.4
50UA2.75





80U2.75
80U21.5
80U22.2
80U23.7





Model	A	A4	B	D	FL1	FL2	H	W1	W2
40UA2.25	241	207	107	194	100	585	433	-	-
50UA2.4	236	199	102	187	105	590	450	-	-
50UA2.75	383	246	102	172	105	590	475	-	-
80U2.75	383	329	173	172	-	-	421	130	385
80U21.5	420	366	173	200	-	-	501	135	430
80U22.2	502	410	225	240	-	-	562	160	490
80U23.7	502	410	226	234	-	-	565	160	520

W1: lowest running water level

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Vortex impeller

UZ 3-phase 50Hz

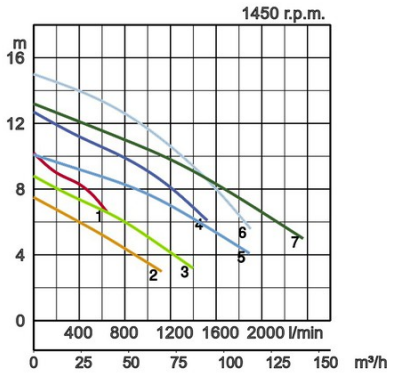
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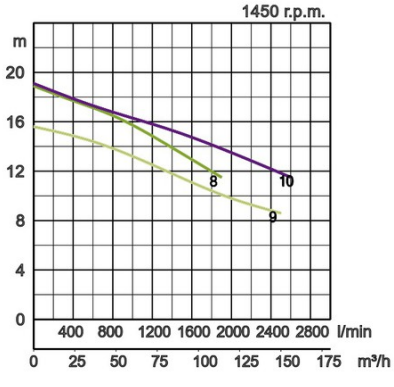
Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting									free standing	with guide rail fitting	
50UZ41.5	TOS50UZ41.5	1	50	1,5	3	1450	10,2	644	direct	52,0	50,0	50
80UZ41.5	TOS80UZ41.5	2	80	1,5	3	1450	7,5	1120	direct	66,0	56,0	80
80UZ42.2	TOS80UZ42.2	3	80	2,2	3	1450	8,8	1395	direct	66,0	57,0	80
80UZ43.7	TOS80UZ43.7	4	80	3,7	3	1450	12,7	1520	direct	72,0	63,0	80
100UZ43.7	TOS100UZ43.7	5	100	3,7	3	1450	10,1	1890	direct	79,0	70,0	100
80UZ45.5	TOS80UZ45.5	6	80	5,5	3	1450	15,0	1900	direct	129,0	125,0	80
100UZ45.5	TOS100UZ45.5	7	100	5,5	3	1450	13,2	2360	direct	145,0	134,0	100
80UZ47.5	TOS80UZ47.5	8	80	7,5	3	1450	19,0	1900	direct	142,0	137,0	80
100UZ47.5	TOS100UZ47.5	9	100	7,5	3	1450	15,6	2500	direct	158,0	147,0	100
100UZ411	TOS100UZ411	10	100	11	3	1450	19,0	2600	star/delta	191,0	180,0	100



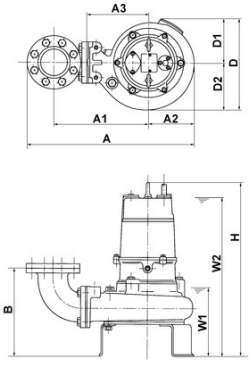
Vortex impeller with wide pump casing, 4-pole motor, no clogging.

ø Discharge bore mm			50mm, 80mm,100mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, water with solids
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Casing	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E, Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Grey iron casting EN-GJL-150, Grey iron casting EN-GJL-200
		Shaft	Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOS" (guide support, duck foot bend, lifting chain) / Bend and stand set for free standing types





Model	A	A1	A2	A3	B	D	D1	D2	H	W1	W2
50UZ41.5	405	228	123	142	179	250	110	140	566	170	525
80UZ41.5	531	312	126	200	285	261	128	133	637	240	595
80UZ42.2	531	312	126	200	285	261	128	133	637	240	595
80UZ43.7	557	312	153	200	285	291	141	150	688	240	645
100UZ43.7	628	368	155	240	330	314	149	165	737	290	695
80UZ45.5	595	342	160	230	290	358	179	179	899	280	770
100UZ45.5	652	387	160	260	335	358	179	179	939	320	810
80UZ47.5	595	342	160	230	290	358	179	179	920	280	790
100UZ47.5	652	387	160	260	335	358	179	179	960	320	830
100UZ411	660	387	168	230	337	358	179	179	1021	335	865



W1: lowest running water level

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Canal impeller

B 3-phase 50Hz

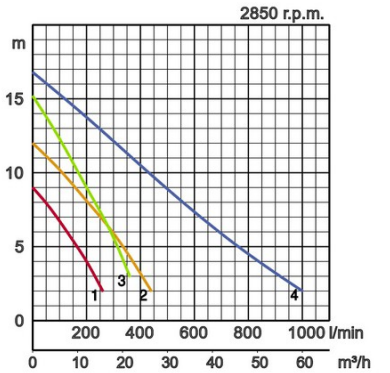
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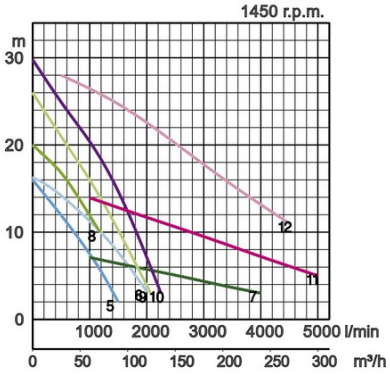
Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting									free standing	with guide rail fitting	
50B2.4	TOS50B2.4	1	50	0,4	3	2850	9,0	260	direct	23,0	22,0	19
50B2.75	TOS50B2.75	2	50	0,75	3	2850	12,0	435	direct	25,0	24,0	20
50B2.75H	TOS50B2.75H	3	50	0,75	3	2850	15,2	360	direct	24,0	23,0	20
80B21.5	TOS80B21.5	4	80	1,5	3	2850	16,8	1000	direct	36,0	34,0	40
100B42.2	TOS100B42.2	5	100	2,2	3	1450	16,0	1500	direct	70,0	64,0	45
100B43.7	TOS100B43.7	6	100	3,7	3	1450	16,4	2000	direct	86,0	80.0	53
150B43.7	TOS150B43.7	7	150	3,7	3	1450	7,1	4000	direct	145,0	80.0	53
100B43.7H	TOS100B43.7H	8	100	3,7	3	1450	20,0	1180	direct	84,0	78,0	35
100B45.5	TOS100B45.5	9	100	5,5	3	1450	26,0	2080	direct	147,0	140,0	40
100B47.5	TOS100B47.5	10	100	7,5	3	1450	29,7	2260	direct	169,0	150,0	40
150B47.5L	TOS150B47.5L	11	150	7,5	3	1450	13,95	5000	direct	200,0	175,0	60
150B415	TOS150B415	12	150	15	3	1450	28,0	4500	star/delta	270,0	240,0	75



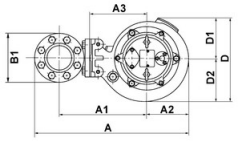
Sewage pump with non-clogging impeller

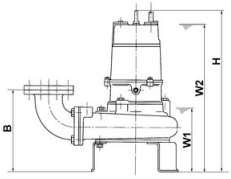
ø Discharge bore mm			50mm, 80mm,100mm, 150mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage
Pump	Compo-nents	Impeller	Non-clog impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Casing	Grey iron casting EN-GJL-200
		Suction Plate	Ductile iron casting EN-GJS-450-10, Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68, Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E, Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Grey iron casting EN-GJL-150, Grey iron casting EN-GJL-200
		Shaft	Stainless steel EN-X6Cr13, Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOS" (guide support, duck foot bend, lifting chain) / Bend and stand set for free standing types





Model	A	A1	A2	A3	B	B1	D	D1	D2	H	W1	W2
50B2.4	347	208	85	120	181	155	224	112	112	443	140	340
50B2.75	405	226	125	138	199	155	250	125	125	439	170	410
50B2.75H	405	226	125	138	199	155	250	125	125	415	145	385
80B21.5	446	267	125	165	234	185	250	125	125	536	190	465
100B42.2	569	322	154	210	303	210	331	164	167	616	225	570
100B43.7	575	322	160	210	308	210	339	164	175	690	235	645
150B43.7	871	503	228	320	515	280	486	232	254	875	450	830
100B43.7H	569	322	154	210	303	210	331	164	167	666	225	620
100B45.5	687	388	194	260	372	210	400	197	203	824	335	700
100B47.5	687	388	194	260	372	210	400	197	203	814	335	720
150B47.5L	871	503	228	320	515	280	486	232	254	1085	450	955
150B415	895	513	242	330	506	280	490	245	245	1168	405	1045





W1: lowest running water level

Canal impeller with cutter mechanism



C 3-phase 50Hz

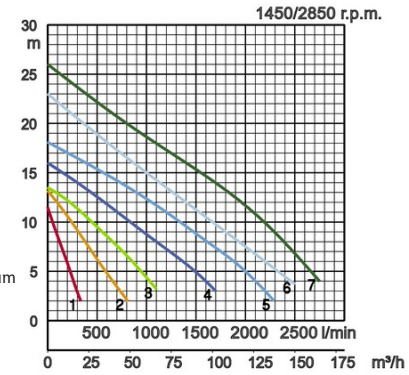
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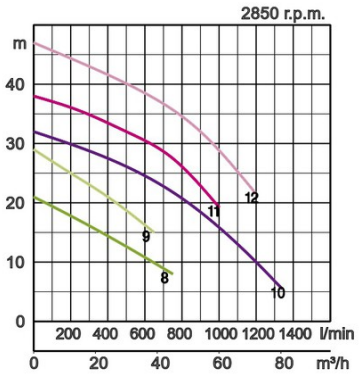
Model		Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting									free standing	with guide rail fitting	
50C2.75	TOS50C2.75	1	50	0,75	3	2850	11,5	335	direct	24,0	23,0	21
80C21.5	TOS80C21.5	2	80	1,5	3	2850	13,2	810	direct	36,0	34,0	37
100C42.2	TOS100C42.2	3	100	2,2	3	1450	13,5	1100	direct	70,0	64,0	44
100C43.7	TOS100C43.7	4	100	3,7	3	1450	16,0	1700	direct	86,0	80,0	60
100C45.5	TOS100C45.5	5	100	5,5	3	1450	18,1	2290	direct	140,0	133,0	40
100C47.5	TOS100C47.5	6	100	7,5	3	1450	23,0	2500	direct	159,0	152,0	40
100C411	TOS100C411	7	100	11	3	1450	26,0	2750	star/delta	184,0	177,0	50
80C22.2-CR	TOS80C22.2-CR	8	80	2,2	3	2850	21,0	750	direct	70,0	64,0	20x31
80C23.7-CR	TOS80C23.7-CR	9	80	3,7	3	2850	29,0	650	direct	70,0	64,0	22x31
80C25.5-CR	TOS80C25.5-CR	10	80	5,5	3	2850	32,0	1340	direct	125,0	117,0	29x23
80C27.5-CR	TOS80C27.5-CR	11	80	7,5	3	2850	38,0	1000	direct	130,0	122,0	26x23
80C211-CR	TOS80C211-CR	12	80	11	3	2850	47,0	1200	star/delta	160,0	152,0	26x25,5



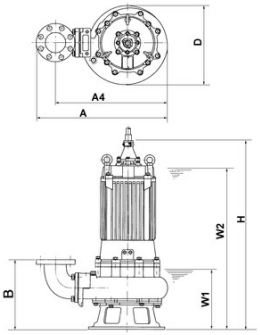
Carbide blades in an impeller-integrated structure cut up fibrous matter.

ø Discharge bore mm			50mm, 80mm,100mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Wastewater and liquid carrying waste and foreign matters
Pump	Compo-nents	Impeller	Non-clog impeller with cutter mechanism
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200 with sintered tungsten carbide alloy tip, Chromium iron casting with sintered tungsten carbide alloy tip
		Casing	Grey iron casting EN-GJL-200
		Suction Plate	Ductile iron casting EN-GJS-700-2, Chromium iron casting
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68, Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E, Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Grey iron casting EN-GJL-150, Grey iron casting EN-GJL-200
		Shaft	Stainless steel EN-X6Cr13, Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOS" (guide support, duck foot bend, lifting chain) / Bend and stand set for free standing types





Model	A	A4	B	D	H	W1	W2
50C2.75	405	351	196	250	415	145	385
80C21.5	446	392	234	250	536	190	465
100C42.2	594	489	328	324	616	225	570
100C43.7	602	497	333	331	680	235	635
100C45.5	687	582	372	400	824	335	700
100C47.5	687	582	372	400	814	335	720
100C411	710	605	372	431	1000	300	840
80C22.2-CR	519	427	289	260	611	180	565
80C23.7-CR	519	427	291	260	613	180	565
80C25.5-CR	615	522	320	345	879	225	745
80C27.5-CR	615	522	320	345	879	225	745
80C211-CR	615	522	320	345	927	225	770



W1: lowest running water level

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Canal impeller - free passage 80mm

BZ 3-phase 50Hz

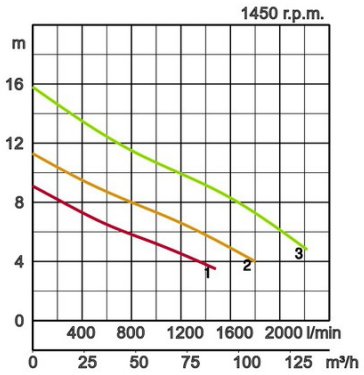
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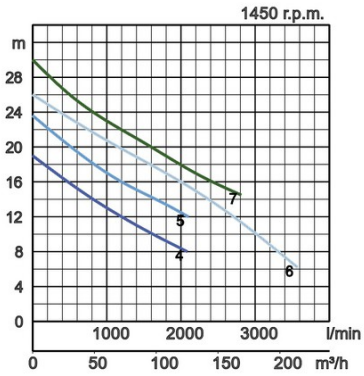
Model		Colour code curve		Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting										free standing	with guide rail fitting	
80BZ41.5	TOS80BZ41.5	●	1	80	1,5	3	1450	8,5	1400	direct	78,0	74,0	80
100BZ42.2	TOS100BZ42.2	●	2	100	2,2	3	1450	11,3	1800	direct	80.0	74,0	80
100BZ43.7	TOS100BZ43.7	●	3	100	3,7	3	1450	14,7	2100	direct	100,0	94,0	80
100BZ45.5	TOS100BZ45.5	●	4	100	5,5	3	1450	19,0	2085	direct	175,0	168,0	80
100BZ47.5	TOS100BZ47.5	●	5	100	7,5	3	1450	23,6	2100	direct	194,0	187,0	80
100BZ411	TOS100BZ411	●	6	100	11	3	1450	26,0	3575	star/delta	219,0	212,0	80
100BZ411H	TOS100BZ411H	●	7	100	11	3	1450	30,0	2810	star/delta	219,0	212,0	80

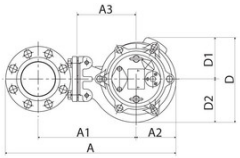


Non-clog impeller allows large diameter of foreign matter with respect to discharge bore. This ensures that waste water and sewage are efficiently transferred.

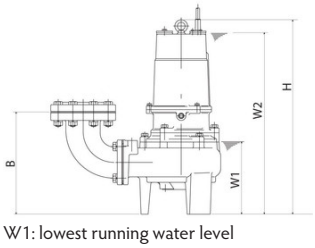
ø Discharge bore mm			80mm,100mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage
Pump	Compo-nents	Impeller	Non-clog impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Casing	Grey iron casting EN-GJL-200
		Suction Plate	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out, Miniature protector
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Grey iron casting EN-GJL-150
		Shaft	Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange
Optional Accessories			Guide rail fitting "TOS" (guide support, duck foot bend, lifting chain) / Bend and stand set for free standing types







Model	A	A1	A2	A3	B	D	D1	D2	H	W1	W2
80BZ41.5	523	302	129	190	303	273	133	140	631	235	590
100BZ42.2	551	317	129	190	328	273	133	140	631	235	590
100BZ43.7	584	327	153	200	328	289	139	150	681	235	640
100BZ45.5	716	407	204	280	380	421	205	216	925	305	790
100BZ47.5	716	407	204	280	380	421	205	216	946	305	820
100BZ411	727	407	215	280	377	431	205	226	1023	330	865
100BZ411H	727	407	215	280	377	431	205	226	1023	330	865



W1: lowest running water level

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Canal impeller

FSP 3-phase 50Hz

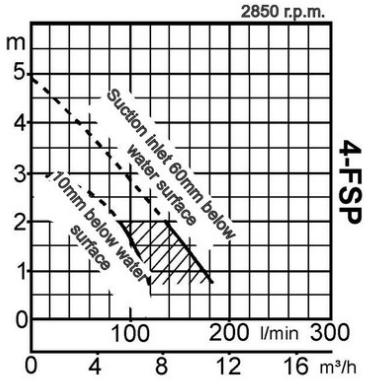
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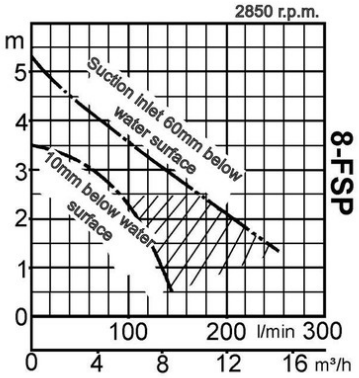
Model	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm
4-FSP	50	0,4	3	2850	4,9	180	direct	36,0	16
8-FSP	50	0,75	3	2850	5,3	255	direct	38,0	22

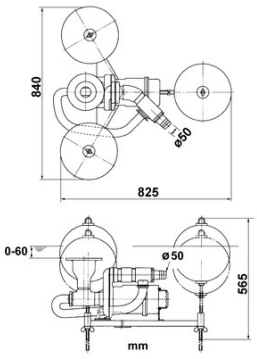


Decanting pump - The special construction of the pump ensures that only supernatant water is discharged without any entrapment of sediments.

ø Discharge bore mm			50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Treated sewage
Pump	Compo-nents	Impeller	Non-clog impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Upper casing	Grey iron casting EN-GJL-200
		Lower casing	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
		Float	Plastic
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Grey iron casting EN-GJL-150
		Shaft	Stainless steel EN-X6Cr13
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Hose coupling







Vortex impeller

SFQ 3-phase 50Hz

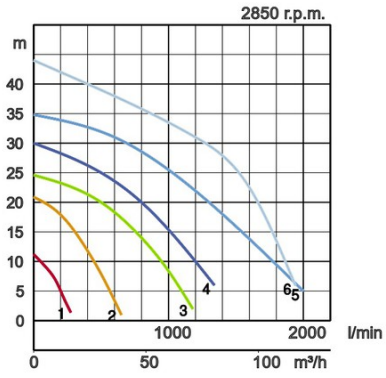
Specifications:

Model		Colour code curve		Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable		Impeller passage mm
free standing	with guide rail fitting										free standing	with guide rail fitting	
80SFQ21.5	-		1	80	1,5	3	2850	20,9	645	direct	36,0	-	6
80SFQ23.7	-		2	80	3,7	3	2850	24,6	1180	direct	52,0	-	15
80SFQ27.5	TOS80SFQ27.5		3	80	7,5	3	2850	34,8	2000	direct	123,0	112,0	30
80SFQ211	TOS80SFQ211		4	80	11	3	2850	44,0	1940	star/delta	143,0	132,0	30

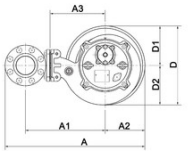


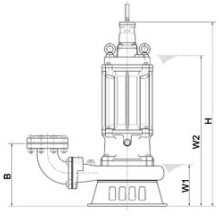
The submersible scum skimmer FSP incorporates a jet injector (suction mechanism) for collecting scum efficiently.

ø Discharge bore mm			80mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Aggressive sewage
Pump	Compo-nents	Impeller	Open type impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Stainless steel casting DIN GX5CrNiMo19-11-2
		Casing	Stainless steel casting DIN GX5CrNiMo19-11-2
		Suction Plate	Stainless steel casting DIN GX5CrNiMo19-11-2
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Stainless steel casting DIN GX5CrNiMo19-11-2
		Shaft	Stainless steel EN-X5CrNiMo17-12-2
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, JIS10K flange









W1: lowest running water level

Model	A	A1	A2	A3	B	D	D1	D2	H	W1	W2
80SFQ21.5	329	165	110	-	109	221	110	111	484	95	415
80SFQ23.7	359	180	125	-	154	257	125	132	552	130	500
80SFQ27.5	635	362	180	250	287	360	180	180	844	190	690
80SFQ211	635	362	180	250	287	360	180	180	892	190	710

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

Vortex impeller

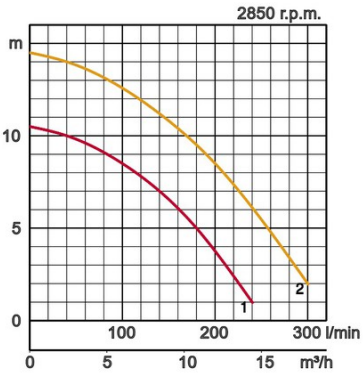
SQ 1-phase 3-phase 50Hz

Specifications:

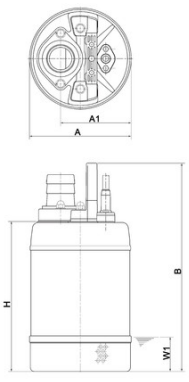
Model	Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm
50SQ2.4	1	50	0,4	3	2850	10,5	240	direct	12,0	6
50SQ2.4S		50	0,4	1	2850	10,5	240	condensor	12,5	6
50SQ2.75	2	50	0,75	3	2850	14,5	300	direct	14,0	6



Stainless steel pump - The SFQ pump has been developed exclusively for corrosive liquids. Applying austenitic steel in all wetted parts, the SFQ pump is a highly specialised pump in terms of design and materials.



ø Discharge bore mm			50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Aggressive fluids, food industry
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	SCS13 (DIN GX5CrNi19-10)
		Casing	SCS13 (DIN GX5CrNi19-10)
		Suction Plate	Stainless steel EN-X5CrNi18-10
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG15)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 50Hz, 3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Stainless steel EN-X5CrNi18-10
		Shaft	Stainless steel EN-X5CrNi18-10
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Hose coupling



Model	A	A1	B	H	W1
50SQ2.4	180	125	364	262	60
50SQ2.4S	180	125	364	262	60
50SQ2.75	180	125	384	282	60

W1: lowest running water level

Vortex impeller

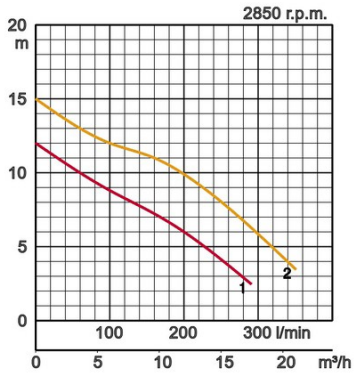
TM 1-phase 3-phase 50Hz

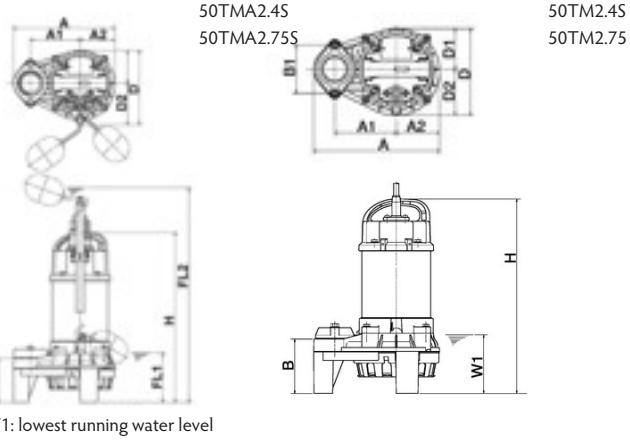
Specifications:

Model	Colour code curve	Bore mm	Power output kW	Phases	r.p.m.	Head max. m	Capacity max. l/min	Starting method	Dry weight kg without cable	Impeller passage mm
50TM2.4S	1	50	0,4	1	2850	12,0	290	condensor	6,7	10
50TMA2.4S		50	0,4	1	2850	12,0	290	condensor	7,2	10
50TM2.75	2	50	0,75	3	2850	15,0	350	direct	7,8	10
50TMA2.75S		50	0,75	1	2850	15,0	350	condensor	8,3	10



ø Discharge bore mm			50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Saltwater, Seawater
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Glass fibre reinforced plastic
		Upper casing	Glass fibre reinforced plastic
		Lower casing	Glass fibre reinforced plastic
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68
	Lubrication		Turbine oil (ISO VG15)
	Insulation		Insulation class E
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		Single phase 230V / 50Hz, 3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Titanium
		Shaft	Titanium
		Cable	Rubber, 10m H07RN-F
Discharge Connection			Inside thread, flange





Model	A	A1	A2	B	B1	D	D1	D2	FL1	FL2	H	W1
50TM2.4S	236	115	81	102	90	162	86	76	-	-	360	110
50TMA2.4S	236	115	81	102	-	173	76	97	115	607	374	-
50TM2.75	236	115	81	102	90	162	86	76	-	-	374	110
50TMA2.75S	236	115	81	102	-	173	76	97	115	627	394	-

W1: lowest running water level

TRN 3-phase 50Hz

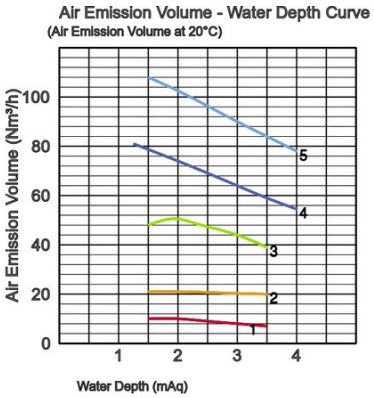
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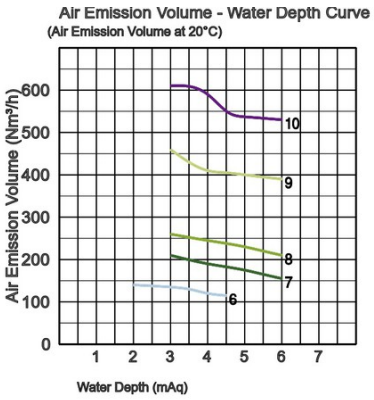
Diameter air pipe mm	Model	Colour code curve	Power output kW	Phases	r.p.m.	Starting method	Dry weight kg without cable	Cable m
32	32TRN2.75	1	0,75	3	2850	direct	55,0	10
32	32TRN21.5	2	1,5	3	2850	direct	55,0	10
50	50TRN42.2	3	2,2	3	1450	direct	140,0	10
50	50TRN43.7	4	3,7	3	1450	direct	150,0	10
50	50TRN45.5	5	5,5	3	1450	direct	170,0	10
80	80TRN47.5	6	7,5	3	1450	direct	190,0	10
80	80TRN412	7	12	3	1450	star/delta	200,0	10
80	80TRN417	8	17	3	1450	star/delta	220,0	20
100	100TRN424	9	24	3	1450	star/delta	460,0	20
150	150TRN440	10	40	3	1450	star/delta	635,0	20



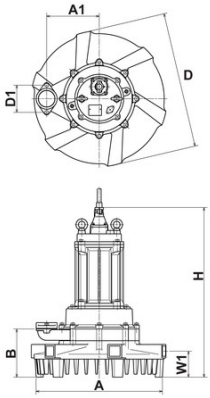
Submersible Aerators - self priming - low maintenance - easy installation

ø Air inlet			32mm, 50mm, 80mm,100mm, 150mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, sewage of food industry
Pump	Compo-nents	Impeller	Vortex impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Stainless steel DIN-GX12Cr14
		Suction Plate	Stainless steel DIN-GX12Cr14
		Guide vane	Grey iron casting EN-GJL-200
		Air inlet	Grey iron casting EN-GJL-200
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68, Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l., 3-phase / 400V / 50Hz / s.d.
	Material	Casing	Grey iron casting EN-GJL-150, Grey iron casting EN-GJL-200
		Shaft	Stainless steel EN-X30Cr13, Stainless steel EN-X20Cr13
		Cable	Rubber, H07RN-F, Rubber, NSSHÖU
Air pipe connection			Inside thread, flange





Model	A	A1	B	D	D1	H	SA	SB	SC	SD	W1
32TRN2.75	371	184	146	420	90	473	180	116	175	-	81
32TRN21.5	371	184	146	420	90	473	180	116	275	-	81
50TRN42.2	660	271	226	700	140	689	230	154	370	-	123
50TRN43.7	660	271	226	700	140	694	230	154	370	-	123
50TRN45.5	660	271	226	700	140	835	230	154	370	-	123
80TRN47.5	660	271	246	700	140	868	245	180	-	585	133
80TRN412	660	271	246	700	140	898	245	180	-	585	133
80TRN417	660	271	246	700	140	958	245	180	-	585	133
100TRN424	980	385	417	1000	230	1254	345	256	-	760	272
150TRN440	980	410	452	1050	280	1459	448	370	740	863	269





BER 3-phase 50Hz

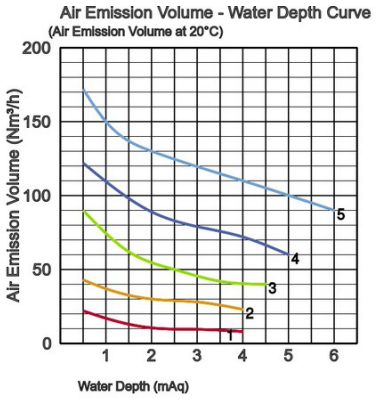
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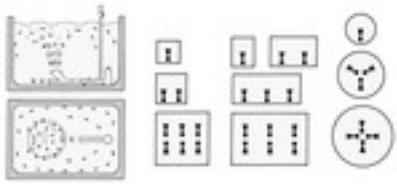
Diameter air pipe mm	Model		Colour code curve		Power output kW	Phases	r.p.m.	Starting method	tank dimensions			Dry weight kg without cable	
	free standing	with guide rail fitting							length max. m	breadth max. m	depth max. m	free standing	with guide rail fitting
25	8-BER	TOS-8BER		1	0,75	3	2850	direct	3,0	2,0	4,0	28,0	23,0
32	15-BER	TOS-15BER		2	1,5	3	2850	direct	4,0	3,5	4,0	43,0	34,0
50	22-BER	TOS-22BER		3	2,2	3	1450	direct	5,0	5,0	4,5	75,0	61,0
50	37-BER	TOS-37BER		4	3,7	3	1450	direct	6,0	6,0	5,0	91,0	77,0
50	55-BER	TOS-55BER		5	5,5	3	1450	direct	7,0	7,0	6,0	149,0	132,0

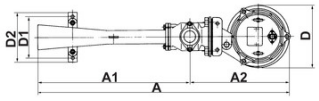


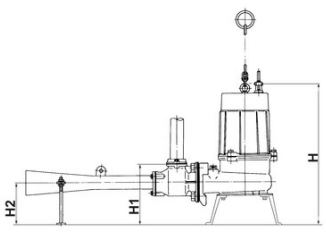
This sumbersible aerator is composed of a B-type pump and an ejector (suction mechanism) so that both agitation and aeration can be carried out simultaneously. The BER aerator features extremely high oxygen dissolution efficiency and a non clog shaver mechanism.

ø Air inlet			25mm, 32mm, 50mm
Pumping Fluid	Temperature		0-40°C
	Type of Fluid		Municipal sewage, sewage of food industry
Pump	Compo-nents	Impeller	Non-clog impeller
		Shaft Seal	Double mechanical seal
		Bearings	Shielded ball bearings
	Material	Impeller	Grey iron casting EN-GJL-200
		Casing	Grey iron casting EN-GJL-200
		Suction Plate	Grey iron casting EN-GJL-200
		Diffuser	Construction steel DIN1.0040 nylon coated
		Shaft Seal	Silicon carbide in oil bath
Motor	Type, Poles		Induction motor, 2 poles, IP68, Induction motor, 4 poles, IP68
	Lubrication		Turbine oil (ISO VG32)
	Insulation		Insulation class E, Insulation class F
	Motor Protector (built-in)		Circle thermal cut-out
	Phase / Voltage		3-phase / 400V / 50Hz / d.o.l.
	Material	Casing	Grey iron casting EN-GJL-150
		Shaft	Stainless steel EN-X6Cr13, Stainless steel EN-X30Cr13
		Cable	Rubber, 10m H07RN-F
Air pipe connection			Inside thread, flange









Model	A	A1	A2	D	D1	D2	H	H1	H2
8-BER	674	377	297	194	150	180	464	195	150
15-BER	895	537	358	222	150	180	562	224	159
22-BER	1158	687	471	317	220	260	679	312	232
37-BER	1158	687	471	317	220	260	753	312	232
55-BER	1415	861	554	391	220	260	942	341	256

Please mind: discharge bend, duck foot bend and stand set are accessories and must be ordered separately

TSURUMI PUMP

Contributing to World-wide Prosperity and Understanding through Worker- and Environment-friendly Production.

Designed for increased productivity through fully integrated streamlined production systems, Tsurumi ´s factory in Kyoto (Japan) features a production capacity of a full 1 million pumps per year. Large-scale modern R&D facilities offer optimum conditions for experimenting and testing of even super-large pumps and for developing new products to expand the possibilites and applications of pumps. To provide optimum conditions for our main asset, our workers, as well as for the environment, special emphasis is placed on optimized working conditions with airconditioning, minimized dust and exhaust gas emission, comprehensive recycling and waste recovery.



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We reserve the right to change specifications and designs herein for improvement without prior notice. Our pumps are for professional use only. In the event that Tsurumi (Europe) GmbH have, in exceptional cases taken over, a manufacturer's warranty, this entitles the enduser to assert remedy free of charge against Tsurumi (Europe) GmbH due to any defect to the product occurring during the guarantee period (see below), also then when the warranty claims against the seller do not or no longer exist. In the event of malfunction, which is attributable to the improper handling by the enduser, no guarantee claim shall arise. Further claims shall not result from the warranty, unless if something to the contrary has explicitly been determined. The decision as to whether remedy is effected by way of replacement or repair shall be at the choice of Tsurumi (Europe) GmbH. The claims shall be time barred after a period of three months after expiry of the guarantee period, however, not before expiry of the warranty period which is valid towards the seller. In the event of doubt, the warranty period shall correspond with the warranty period which is valid between the end-user and his seller.

15EW-EN