



# Tsurumi PU(A)

230V  
400V  
50Hz

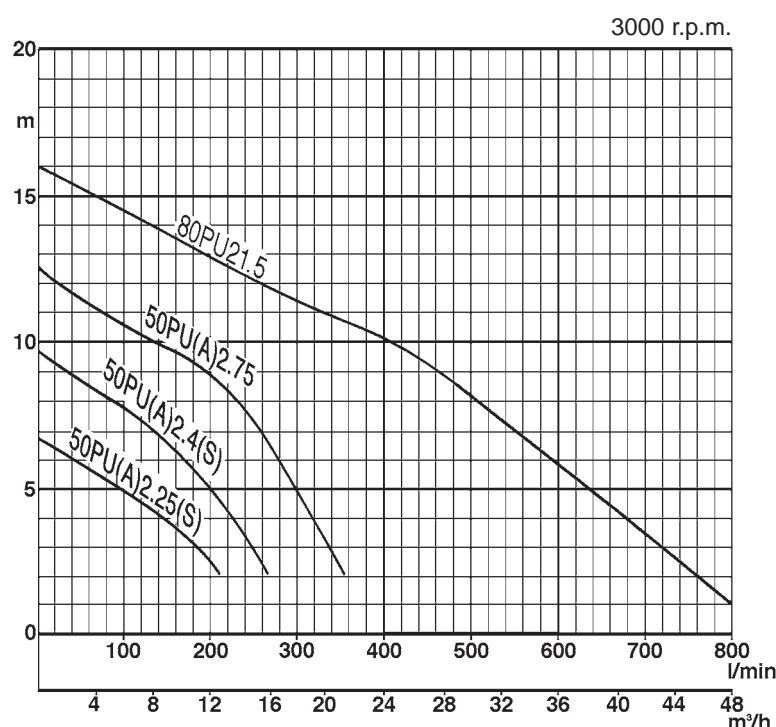
## Multi-purpose Pump with Vortex Impeller



**The PU is a multi-purpose pump with a vortex impeller. Use of advanced materials achieves a light and solid construction.**

**Automatic versions are available in all sizes**

**PU** multi-purpose pumps have adopted stainless steel where metal must be used, while other strategic components are molded in or armoured with high tech resins. Durable, stable in operation and compact, **PU** pumps are ideal for sewage disposal and many other demanding underwater pumping jobs.



### Standard Accessories:

- Cable
- Special screwed-in mating flange
- Aboveground nameplate

### Special Accessories:

TOK3-type guide rail fitting for small pumps

- Duck foot bend
- Guide support
- Guide hook
- Pump lift chain (4m, with shackle)

## 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. Development is enabling Tsurumi to design ever more pump models to this valuable principle.

Discharge bore mm			50	80	PU(A)
Pumping Fluid	Type of Fluid		Sewage, muck, miscellaneous waste water, liquids containing foreign matter		
	Liquid Temperature		0 - 40°C		
Pump	Components	Impeller	Vortex		
		Shaft Seal	Double mechanical seal		
		Bearing	Sealed ball bearing		
	Material	Impeller	Resin (with glass fibres)		
		Upper Casing	Resin (with glass fibres)		
		Lower Casing	Resin		
		Shaft Seal (mechanical Seal)	Silicon carbide in oil bath		
Motor	Type, Poles		Dry-type submersible induction motor, 2 poles, IP68		
	Insulation		Insulation class E		
	Phase / Voltage		Single-phase / 230V Three-phase / 400V		
	Motor Protector (built-in)		Circle thermal protector		
	Lubricant		Turbine oil (ISO VG32)		
	Material	Frame	Stainless Steel EN-X5CrNi18-10		
		Shaft	Stainless Steel EN-X5CrNi18-10		
Cable		Rubber, H07RN-F			
Discharge Connection			Special flange		

## Lightweight

The idea that pumps must be made through casting is already a thing of the past. PU pumps are the brain child of Tsurumi's efforts to get rid of full-cast pumps through material innovation. This has reduced the average weight of PU pumps to less than half of that of conventional equivalents. Also, installation and maintenance work for these new pumps have become far easier than ever before.

## Solid and durable

Resins used to make or house the major components of PU pumps were put through various harsh tests prior to adoption. Consisting of 20 items in all, such tests included those examining resistivity to solutions, continuous operability in high-temperature liquids, and strength to withstand low or freezing temperatures, weathering, and drop impact. In these tests, the resins have proved as strong as, or even stronger than, cast materials in both strength and abrasion resistance. Moreover, these resins are used in such a manner that each may best fit any particular component.

## Rust-free

PU pumps are immune to the insanitary rust. Made overall of stainless steel and high-quality resin, these pumps are completely free from the conventional rust troubles.

## Easy disassembly for maintenance convenience

For maintenance services, just remove the bolts between the oil casing and the upper pump casing; the pump section with impeller and the motor section are now separated from each other. The pump section can be disassembled and reassembled easily with a large Phillips driver (No. 3).



## Automatic operations (Automatic type)

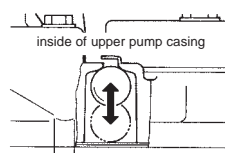
Plug the pump in and it is ready for automatic operation. PU pumps use a teardrop float for water level detection. This prevents operation errors caused by waves or muck and eliminates chattering.

## Various safeguards

A shaft seal, a limited load mechanism that prevents overloads and ensures stable and safe operation., cable conductors devised to prevent water from leaking in, and many other ideas and devices nurtured for years by Tsurumi's expertise ensure PU pumps the most reliable operations.

## Air vent valve

For air lock prevention, the ball valve and the pump casing are molded integrally - another PU innovation.



## Secure hanging

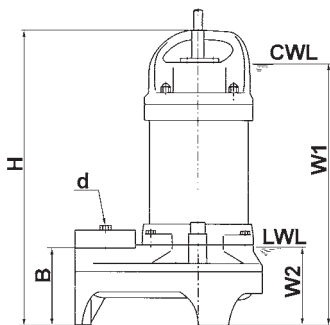
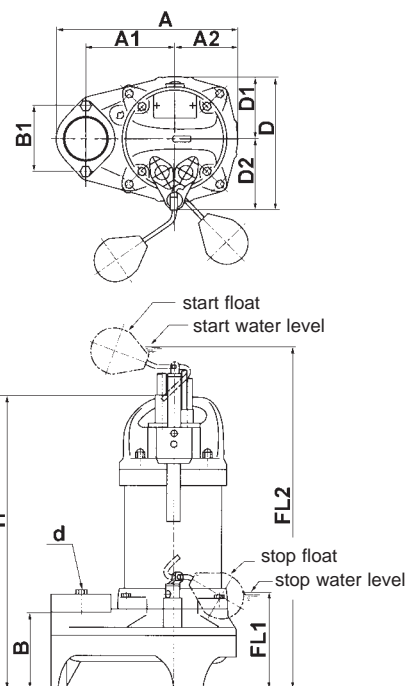
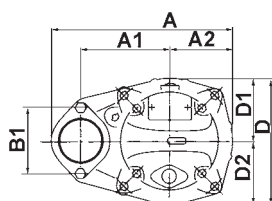
Pumps are readily and securely lifted by means of a chain attached to the handle, thanks to the handle's strength achieved by sophisticated resin molding technology



## Specifications:

	Bore mm	Model	Output kW	Phase	Total Head max.m	Capacity max. l/min	Starting method	Dry Weight kg	Impeller passage dia. mm	Cable m
Non-Automatic	50	50PU2.25S	0,25	Single	6,6	210	Condenser	7,1	35	10
	50	50PU2.25	0,25	Three	6,6	210	D.O.L.	6,1	35	10
	50	50PU2.4S	0,4	Single	9,6	270	Condenser	7,1	35	10
	50	50PU2.4	0,4	Three	9,6	270	D.O.L.	7,0	35	10
	50	50PU2.75	0,75	Three	12,5	360	D.O.L.	8,3	35	10
Automatic	80	80PU21.5	1,5	Three	16,0	800	D.O.L.	15,8	46	10
	50	50PUA2.25S	0,25	Single	6,6	210	Condenser	7,6	35	10
	50	50PUA2.25	0,25	Three	6,6	210	D.O.L.	6,6	35	10
	50	50PUA2.4S	0,4	Single	9,6	270	Condenser	7,6	35	10
	50	50PUA2.4	0,4	Three	9,6	270	D.O.L.	7,5	35	10
	50	50PUA2.75	0,75	Three	12,5	360	D.O.L.	8,8	35	10

Dry weight of the pump excluding cable



CWL: continuous operation water level  
LWL: lowest operation water level

## Dimensions:

Unit mm

Model	d	A	A1	A2	B	B1	D	D1	D2	H	FL1	FL2	W1	W2
50PU2.25S	50	236	115	81	102	90	162	76	86	360	--	--	325	110
50PU2.25	50	236	115	81	102	90	162	76	86	349	--	--	310	110
50PU2.4S	50	236	115	81	102	90	162	76	86	360	--	--	325	110
50PU2.4	50	236	115	81	102	90	162	76	86	360	--	--	325	110
50PU2.75	50	236	115	81	102	90	162	76	86	374	--	--	335	110
80PU21.5	80	295	145	99	130	--	196	92	104	475	--	--	427	150
50PUA2.25S	50	236	115	81	102	90	173	76	97	374	115	607	--	--
50PUA2.25	50	236	115	81	102	90	173	76	97	363	115	596	--	--
50PUA2.4S	50	236	115	81	102	90	173	76	97	374	115	607	--	--
50PUA2.4	50	236	115	81	102	90	173	76	97	374	115	607	--	--
50PUA2.75	50	236	115	81	102	90	173	76	97	388	115	621	--	--

Use **TOK3** guide rail fitting for all types:



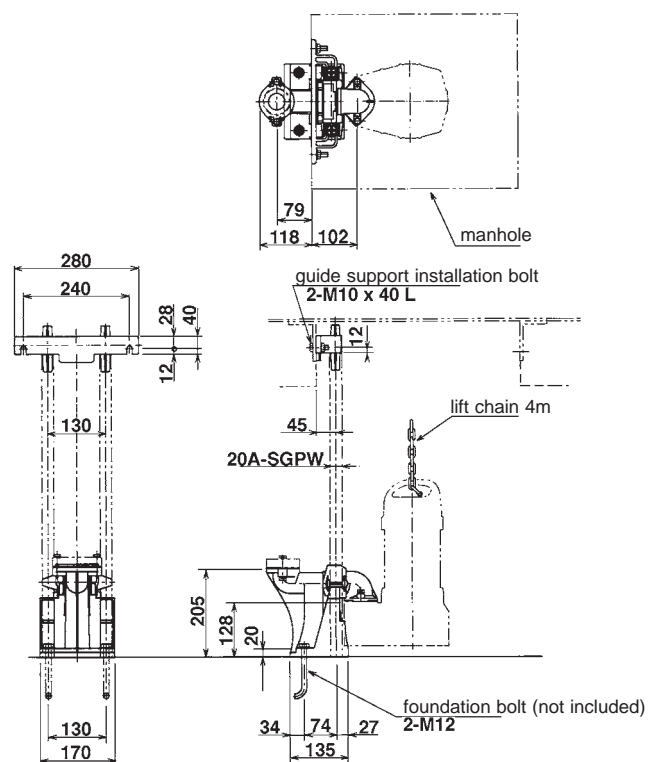
Guide support



Guide hook



Duck foot bend




Lightweight, rugged, and rust-free all-round pumps mark another technological milestone.

The secret of PU material innovation is in elaborately combined compound materials and advanced processing and molding technologies. For each component, we have chosen the most suitable material resins and blended them in the optimal percentage. Material names are stamped on major resin components so that the resins can be restored and recycled after use for the efficient use of natural resources and for environmental protection.

Chemical name	Major virtues
Polyphenylene Sulfide	• heat- and chemicals-resistant and autolytic
Abbreviation	• highly rigid with small losses in mechanical characteristics under high temperatures
PPS	

Head cover




Stamped material symbol  
PPS - GF40

Made of an alloy with PPS (polyphenylene sulfide) with increased chemicals resistivity and rigidity.

Blended with glass fibers to increase dimensional stability

Oil casing



Stamped material symbol  
PPS-(GF+MD)50

Blended with glass fibers to increase dimensional stability

Chemical name	Major virtues
Acrylonitrile Butadiene Styrene Copolymer	• well-balanced between impact resistivity and rigidity.
Abbreviation	
ABS	

Casing-upper half



Stamped material symbol ABS+G20

Impeller



Stamped material symbol ABS+G20

Casing-lower half



Stamped material symbol ABS

Impact resistivity greatly increased with no glass fibers contained.

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 end-user 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.

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