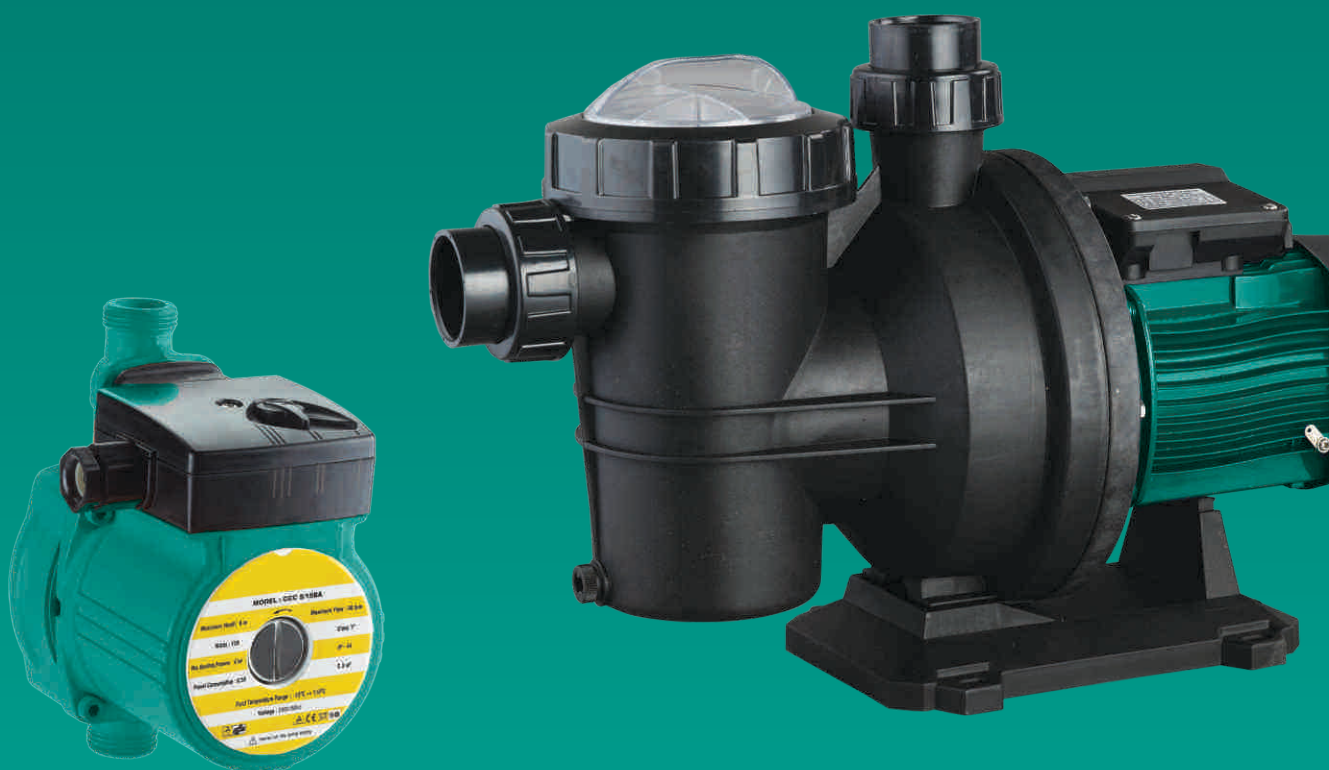




THE SMART WORKING PUMP

The result of superior technology and expertise that has stood the test of time.



TSW, TWC - SERIES

50 Hz

SWIMMING POOL PUMPS > TSW - SERIES

With an unremitting commitment to developing and manufacturing ingenious products since 1960's, Tormac has now introduced a new range of Swimming Pool pumps in addition to the broad spectrum of its existing products used for versatile applications.

Tormac's swimming pool pumps are developed with the combination of immense experience, cutting edge technology and integrated quality control system complying with internationally accepted standards.

Tormac's "TSW" series swimming pool pumps are self-priming type inbuilt with pre filter basket for cleaning the pool water. The mechanical seals are made of graphite and alumina with close tolerance for perfect sealing systems and the dynamically balanced rotary parts ensure vibration and noise free operation. All the parts of both pumps and motors are made of high quality materials to enhance the life span and efficiency. All single phase pumps are equipped with thermal protector to protect the motor from adverse operating conditions.

Applications

Swimming pool filtration and recycling.

Materials of construction

Pump body	Glass loaded polypropylene
Diffuser	Glass loaded polypropylene
Pump foot	Glass loaded polypropylene
Impeller	Glass loaded noryl
Motor shaft	S.S. 420
Mechanical seal	Graphite and alumine
Motor body	Aluminium L-2521



Technical Specification - Motor

Power Range	0.37 to 2.2 kW
Version	1Ph, 230V, 50Hz, AC Supply 3Ph, 380-415V, 50Hz, AC Supply
Speed	2900 rpm
Degree of protection	IP55
Insulation Class	Class F
Duty	S1

All Single Phase pumps are inbuilt with TOP (Thermal over load protector).



Performance Tables

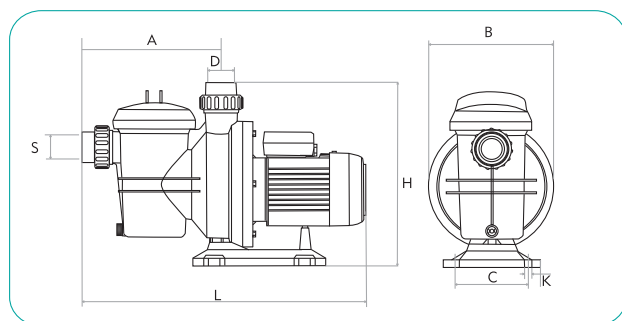
Model	kW	HP	l/s m ³ /h	0	0.83	1.67	2.5	3.33	4.17	5	6.67
				0	3	6	9	12	15	18	24
TSW-9/03 S/T	0.37	0.5	Total Manometric Head in Metres	12.5	12.4	12.1	11.1	8.4	7.5 (12.9m ³ /h)		
TSW-10/05 S/T	0.5	0.75		15.2	15.1	15	14	11.8	8.8	7.8 (15.9m ³ /h)	
TSW-11/07 S/T	0.75	1.0		17	16.8	16.4	15.6	13.7	10.5	7.5 (17.4m ³ /h)	
TSW-18/11 S/T	1.1	1.5		17	17	16.5	15.5	14.2	13	10	9 (19m ³ /h)

Model	kW	HP	l/s m ³ /h	0	1.67	3.33	5	6.67	8.33	10
				0	6	12	18	24	30	36
TSW-18/11 S/T	1.1	1.5	Total Manometric Head in Metres	17.0	16.9	16.1	14.6	11.4	8.8	
TSW-18/15 S/T	1.5	2.0		18.7	18.2	17.9	16.0	13.0	9.0	6.9 (33 m ³ /h)
TSW-22/22 T	2.2	3.0		21.0	20.9	20.5	19.1	17.0	13.7	7.7 (34.2 m ³ /h)

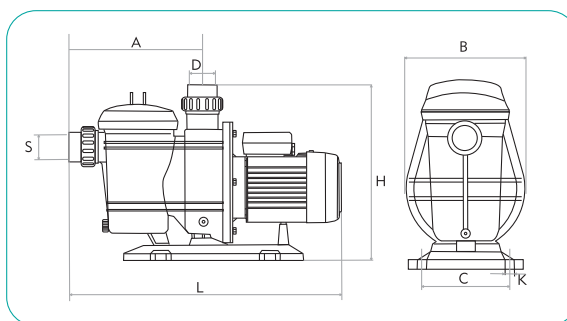
S - Single Phase, T - Three Phase.

Dimensional Drawing

VISTA



NOVA



Dimensional Data

Motor Model	L	B	H	S	A	Weight (kg)
TSW-9/03 S/T	520	238	308	Ø 40	225	9.7
TSW-10/05 S/T	520	238	308	Ø 40	225	10.5
TSW-11/07 S/T	520	238	308	Ø 40	225	10.9
TSW-18/11 S/T	520	238	308	Ø 40	225	11.5

Motor Model	L	B	H	S	D	Weight (kg)
TSW-18/11 S/T	593	240	272	Ø 50	264	15.5
TSW-18/15 S/T	593	240	272	Ø 50	264	17.5
TSW-22/22 T	609	240	272	Ø 50	264	20

TORMAC WATER CIRCULATORY PUMPS > TWC - SERIES

Technological competence and immense experience of Tormac pumps always inspire its Engineers in an optimistic manner to come out with successful and innovative products. These single head circulatory pumps are yet another quality products from the house of Tormac which can meet the demanding technological challenges, and stand as testimony to Tormac's quality & consistent performance for years.

Tormac Water Circulatory pumps are used to circulate hot / cold water with adequate pressure in HVAC systems. All parts & components have been uncompromisingly tested to ensure trouble free performance and safety operation. The motor is of 2 pole asynchronous and squirrel cage type and consists of canned rotor portion. All the rotating parts are in touch with pumped liquid and thus it acts as lubricant to rotor, shaft & thrust bearings. An air vent plug is provided in the rear-end.

The centrifugal impeller is of radial & closed type with corrosion resistant curved blades. Impeller, shaft with rotor, thrust bearing pad and the intermediate rings are assembled as a single unit to avoid the misalignment of the bearings. The thrust bearing is designed to withstand high axial thrust load.

The particular model of pumps are equipped with a rotary switch in the terminal box that can be used to control the speed in 3 different levels based on the requirement. For trouble free operation the temperature of the pumped liquid should not exceed the specified level, the minimum inlet pressure should be maintained (to avoid cavitations) and dry run must totally be avoided. As the motor is impedance protected and consequently short-circuit proof, no additional motor protection is required. The pump is provided with standard length of cable lead out with plug.

These circulatory pumps are generally used in tandem with heating systems.

Applications

- Domestic heating systems.
- Air conditioning.
- Cooling system.
- Industrial hot water circulatory systems.

Pumped Liquid

- Clean, thin, non aggressive, non-explosive, clear cold or hot water without abrasives, solid particles & fibers.
- Water with specified chemical additives.
- Water mixed with glycol in 1:1 ratio.
- The pump is not strictly recommended for inflammable liquids such as Diesel, Petrol, Oil, Chemicals etc.,



Special Features

- Tried and trusted.
- Highly efficient.
- Corrosion free parts for hygiene.
- Low wear and tear.
- Easy for installation & service.
- Multi speed control (3 Levels).
- Perfectly and aesthetically designed.
- Silent operation & reduced electrical energy consumption.

Technical data

Ambient Temperature	40°C
Maximum humidity	95%
Liquid temp. range	-5°C to +110°C
Max. Operating Pressure	10bar
Voltage	Single phase 230V
Frequency	50 Hz
Degree of Protection	IP 44
Insulation Class	F
Mounting position	Horizontal
Connection type	Screw / Flange
Head	Single

Minimum Inlet Pressure

To avoid cavitation noise and to ensure long life operation, a pressure of minimum 2.0m head / 0.2 bar is required at the pump suction port during operation.

Warning

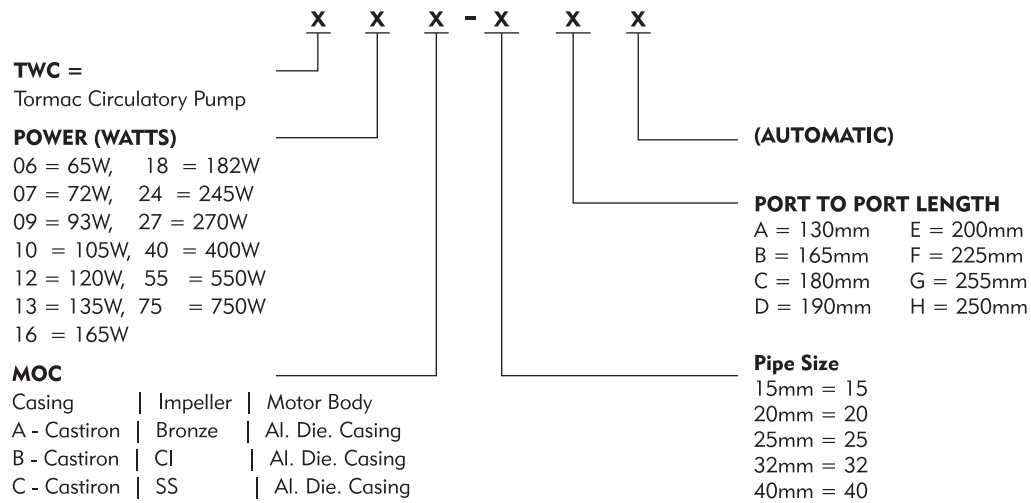
To prevent fatal or serious electric shock, disconnect main power supply before working on or around the water system. Only technically qualified personnel must perform the work complying with local electrical rules and regulations. To reduce the risk of electrical shock during operation of the pumpset, an appropriate earthing is mandatory. Do not run the pump in closed valve condition.

Speed Settings

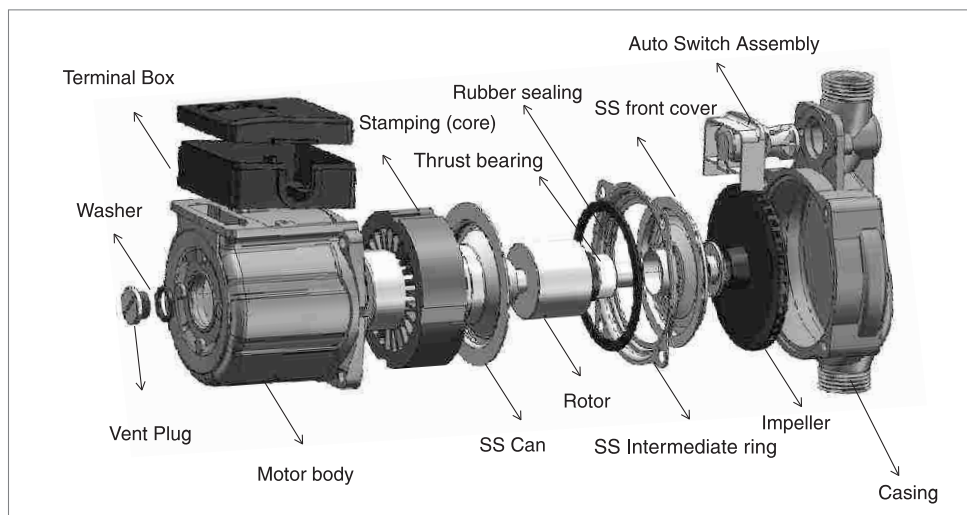
The rotary switch provided in the terminal box can be turned to three different positions to adjust / control the speed based on the requirement, as mentioned in the table. Changing the speed to the lower level not only helps to save energy but also to reduce the noise considerably. The pressure level also can be increased or decreased by changing the pump speed, subject to the available inlet pressure.

Switch Positions	Approx max Speed in %
I	60%
II	80%
III	100%

Model Identification Code



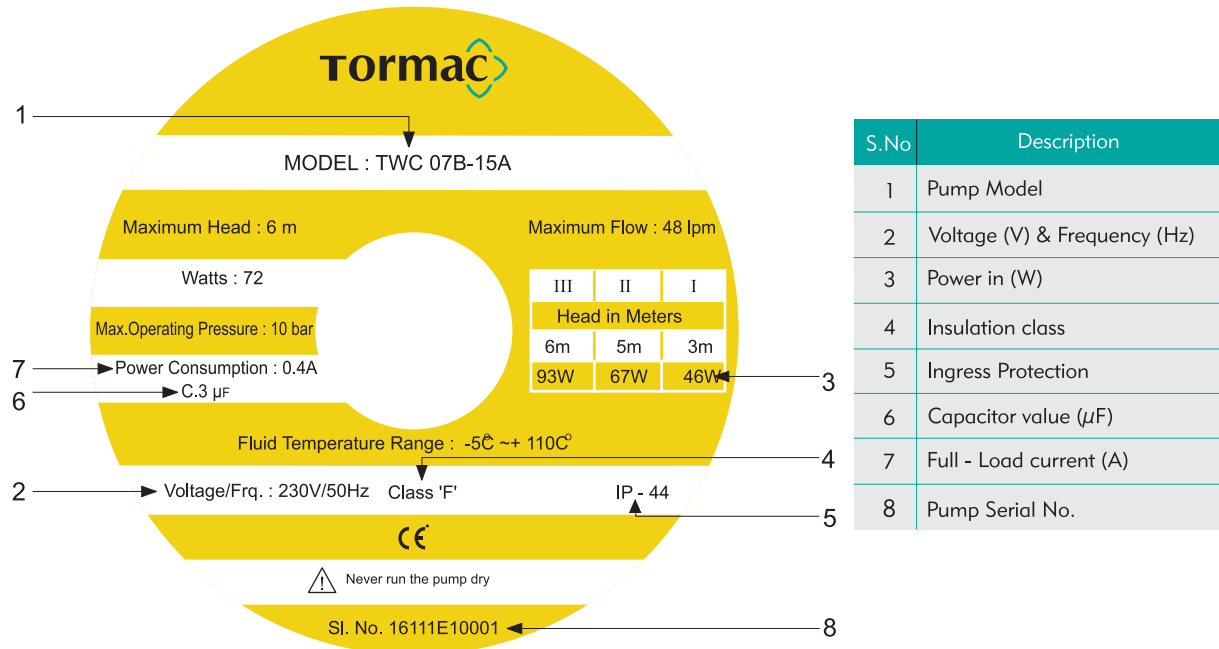
Exploded View



Materials of Construction


Description	Materials
Casing	Cast Iron
Impeller	Composite PP
Shaft	Ceramic
Motor Body	Al. Die Casting
Thrust Bearing	Graphite Carbon & Ceramic
Terminal Box / Cover	Composite PPE / PS
'O' ring	EPDM Rubber
Vent Plug	Brass
Bearing Plate	Stainless Steel
Intermediate ring	Stainless Steel

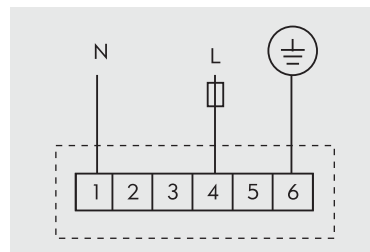
Name Plate Data



Electrical Connections

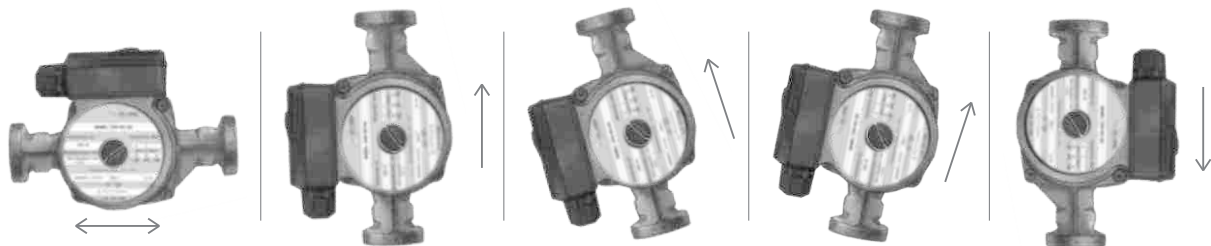
Single Phase

Terminal L - Phase
 N - Neutral
 - Earth



Mounting Positions

This circulatory pump can be installed depending upon suitable field. But the Pump Shaft must be in Horizontal position.



Filling & Venting of the System

Ensure the system is filled with the liquid pumped, through discharge valve and vented through the vent plug before starting. Before venting ensure the discharge valve is closed. Slacken & remove the vent plug carefully such that the escaping liquid doesn't cause any damage / injury. If it is hot then tighten the vent plug firmly.



Performance Tables

Multi Speed (3 Level) Models



TWC 07B-15A
Capacitor : 2.5 μ f
Inlet Outlet : 1"



TWC 07B-25A
Capacitor : 2.5 μ f
Inlet Outlet : 1½"



TWC 07B-25C
Capacitor : 2.5 μ f
Inlet Outlet : 1½"



TWC 07B-32C
Capacitor : 2.5 μ f
Inlet Outlet : 2"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 07B-15A	H	72	0.33	4.5	2.5	15mm	130mm
	M	53	0.24	4	2.1		
	L	38	0.17	3	1.4		
TWC 07B-25A	H	72	0.33	4.5	2.9	25mm	130mm
	M	53	0.24	4	2.2		
	L	38	0.17	3	1.1		
TWC 07B-25C	H	72	0.33	4.5	2.9	25mm	180mm
	M	53	0.24	4	2.2		
	L	38	0.17	3	1.1		
TWC 07B-32C	H	72	0.33	4.5	2.9	32mm	180mm
	M	53	0.24	4	2.2		
	L	38	0.17	3	1.1		



TWC 09B-15A
Capacitor : 3 μ f
Inlet Outlet : 1"



TWC 09B-20A
Capacitor : 3 μ f
Inlet Outlet : 1¼"



TWC 09B-25B*
Capacitor : 3 μ f
Inlet Outlet : 1½"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 09B-15A	H	93	0.42	6	2.9	15mm	130mm
	M	67	0.3	5	2.1		
	L	46	0.21	3	1.2		
TWC 09B-20A	H	93	0.42	6	3.3	20mm	130mm
	M	67	0.3	5	2.3		
	L	46	0.21	3	1.3		
TWC 09B-25B*	H	93	0.42	6	3.3	25mm	165mm
	M	67	0.3	5	2.3		
	L	46	0.21	3	1.3		

* Flange type connection.

Performance Tables

Multi Speed (3 Level) Models



TWC 09B-25A
Capacitor : 3 μ f
Inlet Outlet : 1 1/2"



TWC 09B-25C
Capacitor : 3 μ f
Inlet Outlet : 1 1/2"



TWC 09B-32C
Capacitor : 3 μ f
Inlet Outlet : 2"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 09B-25A	H	93	0.42	6	3.3	25mm	130mm
	M	67	0.3	5	2.3		
	L	46	0.21	3	1.3		
TWC 09B-25C	H	93	0.42	6	3.3	25mm	180mm
	M	67	0.3	5	2.3		
	L	46	0.21	3	1.3		
TWC 09B-32C	H	93	0.42	6	3.3	32mm	180mm
	M	67	0.3	5	2.3		
	L	46	0.21	3	1.3		



TWC 13B-25C
Capacitor : 4 μ f
Inlet Outlet : 1 1/2"



TWC 13B-32C
Capacitor : 4 μ f
Inlet Outlet : 2"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 13B-25C	H	135	0.61	7	3.9	25mm	180mm
	M	93	0.42	6.5	2.6		
	L	67	0.3	4.5	1.3		
TWC 13B-32C	H	135	0.61	7	3.9	32mm	180mm
	M	93	0.42	6.5	2.6		
	L	67	0.3	4.5	1.3		

Performance Tables

Multi Speed (3 Level) Models



TWC 16B-15C
Capacitor : 4 μ f
Inlet Outlet : 1"



TWC 16B-25C
Capacitor : 4 μ f
Inlet Outlet : 1½"



TWC 16B-20C
Capacitor : 4 μ f
Inlet Outlet : 1"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 16B-15C	H	165	0.75	8	3.9	15mm	180mm
	M	115	0.52	7	2.5		
	L	75	0.34	5	1.3		
TWC 16B-25C	H	165	0.61	8	4.8	25mm	180mm
	M	115	0.42	7	2.9		
	L	75	0.3	5	1.5		
TWC 16B-20C	H	165	0.75	11	2.1	20mm	180mm
	M	115	0.52	7	1.2		
	L	75	0.34	3.4	0.6		



TWC 18B-25C
Capacitor : 6 μ f
Inlet Outlet : 1½"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 18B-25C	H	182	0.83	8	6.9	25mm	180mm
	M	170	0.77	7.5	5.7		
	L	145	0.66	7	2.7		

Performance Tables

Multi Speed (3 Level) Models



TWC 24B-20C
Capacitor : 6 μ f
Inlet Outlet : 1"



TWC 24B-25C
Capacitor : 6 μ f
Inlet Outlet : 1½"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 24B-20C	H	245	1.11	12	3.1	20mm	180mm
	M	220	1.0	11	1.9		
	L	145	0.66	7	1.3		
TWC 24B-25C	H	245	1.11	12	3.1	25mm	180mm
	M	220	1.0	11	1.9		
	L	145	0.66	7	1.8		



TWC 27B-25C
Capacitor : 8 μ f
Inlet Outlet : 1½"



TWC 27B-32D
Capacitor : 8 μ f
Inlet Outlet : 2"



TWC 27B-40E*
Capacitor : 8 μ f
Inlet Outlet : 2"

Pump Model	Speed	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m³/h)	Pipe Size	Port to Port
TWC 27B-25C	H	270	1.23	14	4.1	25mm	180mm
	M	210	0.95	13	2.8		
	L	150	0.68	10	1.7		
TWC 27B-32D	H	270	1.23	8	9.6	32mm	190mm
	M	210	0.95	7.5	6.2		
	L	150	0.68	6.5	2.6		
TWC 27B-40E*	H	270	1.23	8	9.6	40mm	200mm
	M	220	0.95	7.5	6.2		
	L	150	0.68	6.5	2.6		

* Flange type connection.

Performance Tables

Single Speed Model



TWC 40B-32FA
Capacitor : 8 μ f
Inlet Outlet : 2"

Pump Model	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 40B-32FA	400	1.81	11	7.6	32mm	225mm



TWC 55B-40FA*
Capacitor : 12 μ f
Inlet Outlet : 2"

Pump Model	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 55B-40FA*	550	2.5	12	12	40mm	225mm



TWC 75B-40GA*
Capacitor : 15 μ f
Inlet Outlet : 2"

Pump Model	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 75B-40GA*	750	3.4	17	18.6	40mm	250mm

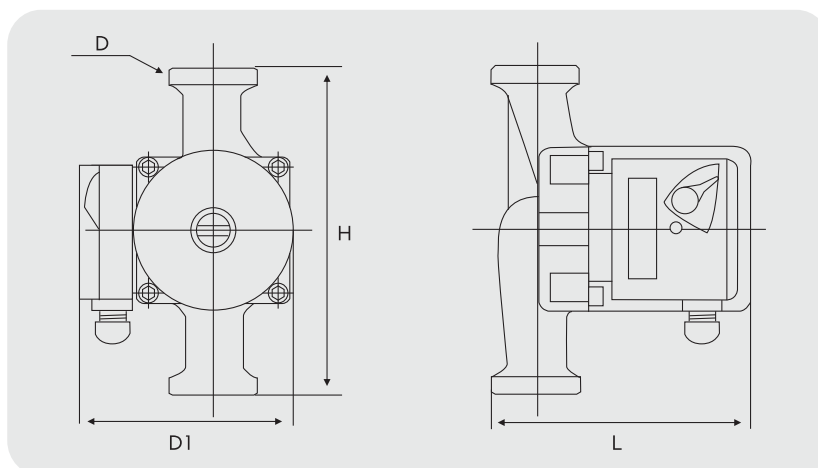


TWC 110B-40GA*
Capacitor : 22 μ f
Inlet Outlet : 2"

Pump Model	Power (W)	Amps (A)	Max. Head (m)	Max. Flow (m ³ /h)	Pipe Size	Port to Port
TWC 110B-40GA*	1100	5	20	23.1	40mm	250mm

* Flange type connection.

Dimensional Drawing

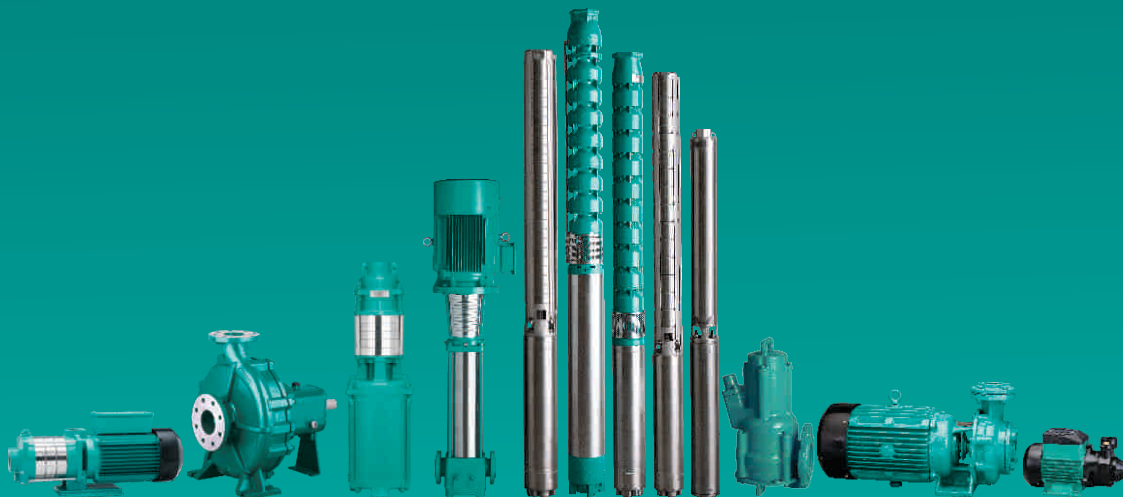


Dimensional Data

Pump Model	Height H (mm)	Connection Size (DN)	L (mm)	D	L (mm)	Wt. (kg)
TWC 07B-15A	130	15	132	1"	122	2.2
TWC 07B-25A	130	25	129	1½"	123	2.4
TWC 07B-25C	180	25	129	1½"	123	2.4
TWC 07B-32C	180	32	129	2"	123	2.4
TWC 09B-15A	130	15	132	1"	122	2.2
TWC 09B-20A	130	20	129	1¼"	123	2.3
TWC 09B-25B*	166	25	160	1½"	120	2.6
TWC 09B-25A	130	25	129	1½"	123	2.4
TWC 09B-25C	180	25	129	1½"	123	2.4
TWC 09B-32C	180	32	129	2"	123	2.5
TWC 13B-25C	180	25	145	1½"	126	2.5
TWC 13B-32C	180	32	145	2"	126	2.8
TWC 16B-15C	180	15	159	1"	135	3.3
TWC 16B-25C	180	25	159	1½"	135	3.4
TWC 16B-20C	180	25	153	1½"	138	3.8
TWC 18B-25C	180	20	147	1"	141	3.8
TWC 24B-20C	180	20	147	1"	147	4.2
TWC 24B-25C	180	25	147	1½"	147	4.5
TWC 27B-25C	180	25	150	1½"	140	4.9
TWC 27B-32D	190	32	166	2"	147	5
TWC 27B-40E*	200	40	166	2"	147	5.9
TWC 40B-32FA	225	32	210	2"	180	7
TWC 55B-40FA*	225	40	300	2"	200	17
TWC 75B-40GA*	250	40	300	2"	200	17
TWC 110B-40GA*	250	40	300	2"	200	19

* Flange type connection.

Note : Pump models with last digit 'S' are of single (Standard) speed operation.



T H E P O W E R B E H I N D T H E F O R C E

Naargo Industries Private Limited, one of the leading manufacturers of latest state of art, large range of pumps and motors, is managed by veterans who are in the pump industry for almost half a century. The products are employed in various applications like irrigation, domestic, civil construction, de-watering etc; The Company has a strong distribution network in India for sales & service and a strong global presence.

Quality is the key factor in Naargo's products. The expansive infrastructure and environment accredited with ISO 9001 quality certification, latest engineering softwares, high-tech machinery, futuristic pumping technology and high caliber workforce facilitate the production of flawless and efficient products on par with international standards under the brand name of "Tormac". The well equipped R & D wing stays alive to the changing global trends and comes out with viable solutions for innovative product development and upgradation.

The Products currently available include Stainless Steel Submersible Pumps, 4" Thermoplastic Submersible Pumps, 6" & 8" Cast Iron Submersible Pumps, Submersible Motors, Submersible cables, uPVC pipes, and control panels, Centrifugal Pumps, Inline Booster Pumps, Jet Self-priming Pumps Sewage pumps, Induction Pumps and Peripheral Pumps.

The power, performance and endurance of the products backed by the uncompromising teamwork and value systems will certainly propel the company's growth towards new horizons in the pump industry.

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Tormac
P U M P S