SUBMERSIBLE MOTORS

MODEL IDENTIFICATION CODE

DEEPWELL SUBMERSIBLE MOTOR

X X X S - XXXX XX X N M (H)(P)

DEEPWELL SUBMERSIBLE MOTOR
W = Water Filled
R = Resin Filled Encapsulated
L = Non-Toxic Fluid Filled

NOMINAL MOTOR DIAMETER
4 = 4", 6 = 6", 8 = 8", 10=10", 12 = 12"

Type of Materials of Construction
Type = A/B/N/S/T/O

This digit is only applicable for 1-Phase "R" Series motors with Lightning Arrestor

MOTOR POWER (kW)
03 = 0.37, **05** = 0.55, **11** = 1.1, **75** = 7.5, **110** = 11, **185** = 18.5, **A10** = 110, **A85** = 185

(Applicable for Special Models)
P - Motor with PT Sensor
H - High Temperature Motor with XLPE / PA Winding

This Digit will be applicable only when the Motor is supplied with Mechanical Seal

(Applicable only for 525V motors)

R = Reduced diameter motor with EPDM cable

PHASE / CONNECTION / CONTROL BOX / FREQUENCY
N = 1 Ph / PSC / 3 Wire / 50Hz
M = 1 Ph / PSC / 2 Wire / 50Hz
T = 3 Ph / DOL / 50Hz
D = 3 Ph / S.D. / 50Hz
S = 1Ph / CSCR Type with Control Box & without Meter / 50 Hz
R = 1Ph / CSCR Type with Control Box & Meter / 50 Hz

DEEPWELL SUBMERSIBLE PUMP SET (Pump + Motor)

PUMP MODEL	+	MOTOR MODEL
S X X - XXX / XX	+	X X X - XXX X

DEEPWELL SUBMERSIBLE PUMP SET (Pump + Motor)

PUMP MODEL	+	MOTOR MODEL
S6S - 18 / 03	+	W6A - 22 T

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

"W" Series Motors

These motors are eco-friendly, wet, water filled and rewindable type. The stator windings are of water proof synthetic film insulated copper winding wires. It features water lubricated thrust and journal bearings. Motor is pre-filled with clear, cold, pure, fresh water mixed with propylene glycol (anti-freez agent). Before installation, ensure the pre-filled level of water inside the motor. If any loss of volume is noticed, refill with clear, cold, pure, fresh, filtered water, through water filling plugs provided in the upper housing. Dynamically balanced rotors maintains uniform clearance thereby giving better efficiency and increase the life cycle of the water lubricated bush bearings. Specially designed thrust bearings are used to withstand high axial thrust loads and up thrust loads with minimum wear and tear.

Pressure equalizing rubber diaphragm is provided to balance the pressure and volume variations of the water inside the motor. Motor sealing are made by means of 'O' rings, lip seal & Mechanical seal etc. Shaft seals and sand guard prevents ingress of well water, sand and fibre particles into the motor. Care should be taken to ensure that the motor does not run when it is not submerged in the water. To prevent the motor from dry running, install dry run preventer. The motor needs a constant flow of water passed over it's body to keep it at correct operating temperature. Ideally the motors should be set just above the final yield point of bore well and when the level is not as certained, fit a "flow inducer pipe" over the pumpset to ensure adequate cooling. It is mandatory to use C.R.I. Control boxes for all motors with adequate protection & control systems. Mounting dimensions of these motors are in accordance with NEMA standard. Cooling sleeve is mandatory if borewell size is beyond motor size.

Features

- Water cooled Re-windable motor
- Can be easily dismantled and repaired
- High operating efficiency
- Extremely hardwearing and water lubricated bearings
- Specially designed thrust bearing to withstand high axial thrust loads.
- AISI 630 (17.4 PH) motor shaft extension for longer life.

Applications

These submersible motors are suitable to couple with deepwell submersible pumpends used for

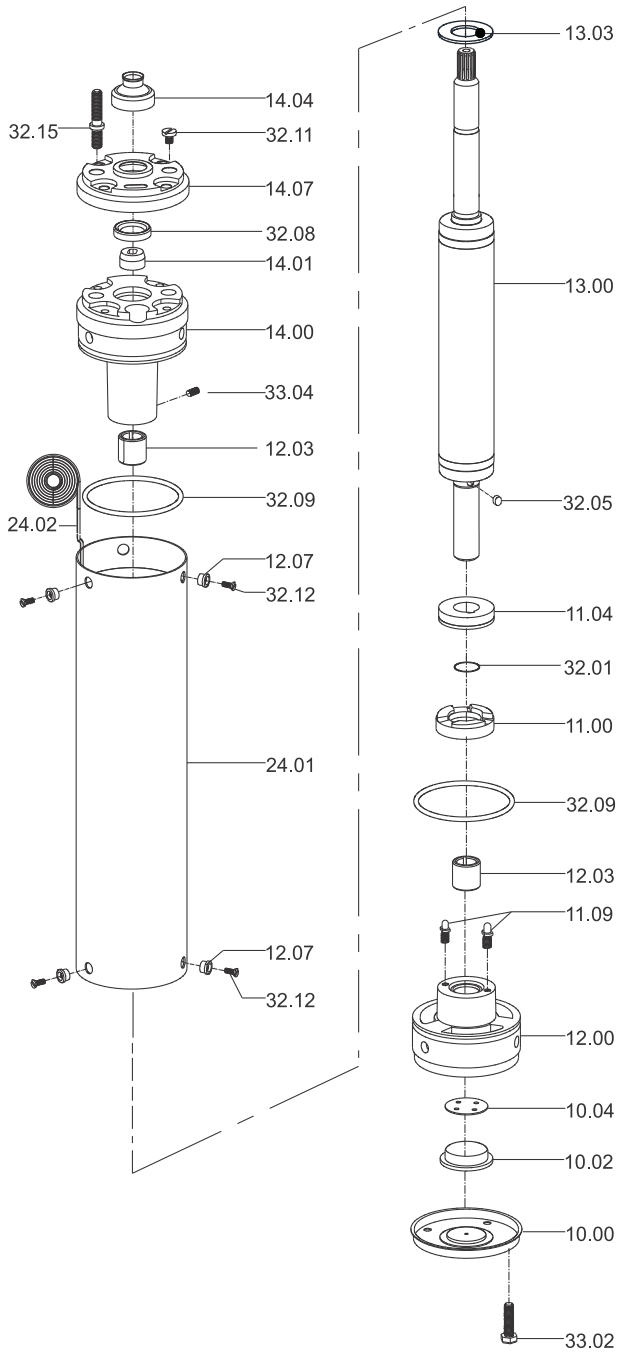
- Residential
- Irrigation
- Fountains
- Industrial water supply
- Pressure boosting units
- Gardens
- Sprinkler systems
- Mining
- Oil & Gas
- De-watering
- CBM (coal bed methane)

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"W" Series
(Upto 1.5 kW)

Exploded view



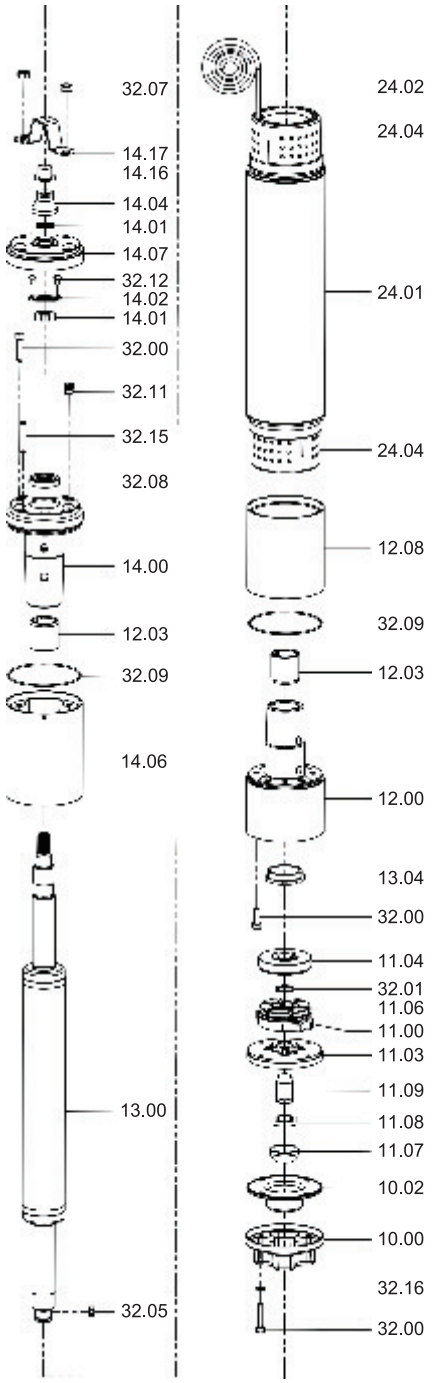
Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.04	Diaphragm guide Plate
11.00	Thrust Base
11.04	Thrust Pad
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush
12.07	Guide Bush
13.00	Rotor
13.03	Upthrust washer
14.00	Upper Housing
14.01	Cable Grommet
14.04	Rubber Sand Guard
14.07	Upper Housing Shell
24.01	Wound Stator
24.02	Lead out cable
32.01	Circlip
32.05	Pad key
32.08	Oil seal
32.09	O - Ring
32.11	Drain plug
32.12	Screw
32.15	Stud
33.02	Bolt
33.04	Earth screw

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"W" Series
(2.2 kW to 7.5kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
11.00	Thrust Base
11.03	Thrust Base Plate
11.04	Thrust Pad
11.06	Thrust Segment
11.07	Rocker Screw Cap
11.08	Rocker Screw Nut
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush
12.08	Lower Pipe
13.00	Rotor
13.04	Counter Thrust Pad
14.00	Upper Housing
14.01	Cable Grommet
14.02	Grommet Clamp
14.04	Rubber Sand Guard
14.06	Upper Pipe
14.07	Upper Housing Shell
14.16	Motor Cap
14.17	Motor Clamp
24.01	Wound Stator
24.02	Lead Out Cable
24.04	Winding Guard
32.00	Bolt
32.01	Circlip
32.05	Key
32.07	Nut
32.08	Oil Seal
32.09	O Ring
32.11	Drain Plug
32.12	Screw
32.15	Stud
32.16	Washer

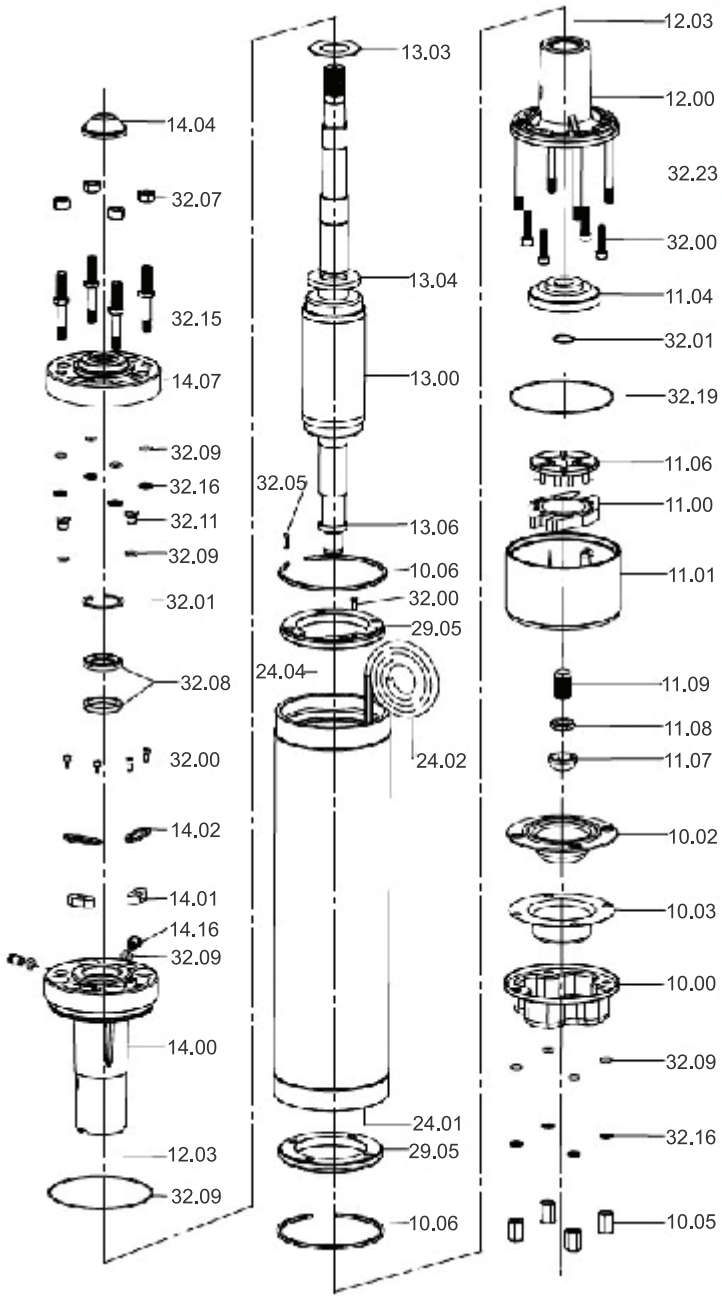
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

Standard Flange type Motor

"W" Series
(2.2 kW to 22kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.03	Diaphragm Bottom Plate
10.05	Doom Nut
10.06	Snap Ring
11.00	Thrust Base
11.01	Thrust Base Housing
11.04	Thrust pad
11.06	Thrust Segment
11.07	Rocker cap
11.08	Rocker Lock Nut
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush-Carbon
13.00	Rotor
13.03	Up Thrust Washer
13.04	Counter Thrust Pad
13.06	Pad Supporting Ring
14.00	Upper Housing
14.01	Cable Grommet
14.02	Cable Grommet Lock Plate
14.04	Sand Guard Rubber
14.07	Upper Housing Shell
14.16	Inlet / Outlet Valve
24.01	Wound Stator
24.02	Cable
24.04	Winding Guard
29.05	Retaining Ring
32.00	Bolt
32.01	Circlip
32.05	Key
32.07	Nut
32.08	Oil Seal
32.09	O-Ring
32.11	Plug
32.15	Stud
32.16	Washer
32.19	Gasket
32.23	Tie Rod

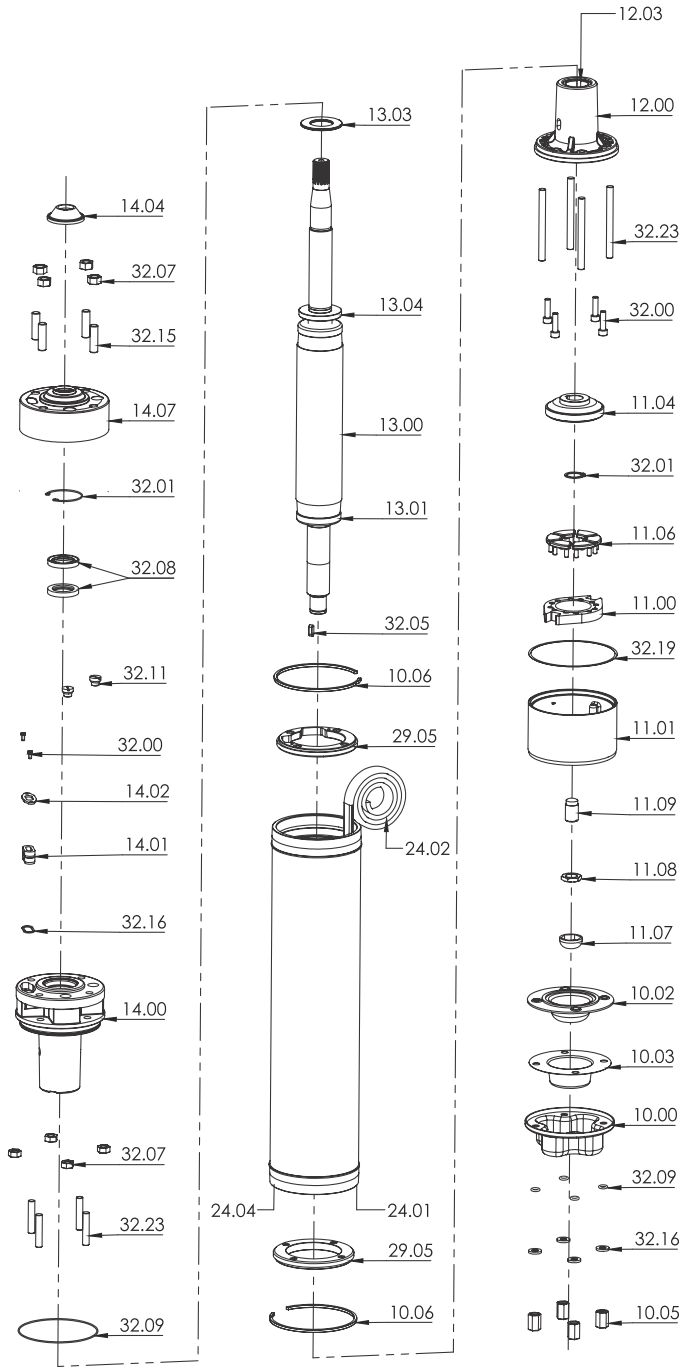
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

Reduced diameter Flange type Motor (OD 139 mm)

"W" Series
(2.2 kW to 18.5kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.03	Diaphragm Bottom Plate
10.05	Doom Nut
10.06	Snap Ring
11.00	Thrust Base
11.01	Thrust Base Housing
11.04	Thrust pad
11.06	Thrust Segment
11.07	Rocker cap
11.08	Rocker Lock Nut
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush-Carbon
13.00	Rotor
13.01	Balancing Ring
13.03	Up Thrust Washer
13.04	Counter Thrust Pad
14.00	Upper Housing
14.01	Cable Grommet
14.02	Cable Grommet Lock Plate
14.04	Sand Guard Rubber
14.07	Upper Housing Shell
24.01	Wound Stator
24.02	Cable
24.04	Winding Guard
29.05	Retaining Ring
32.00	Bolt
32.01	Circlip
32.05	Key
32.07	Nut
32.08	Oil Seal
32.09	O-Ring
32.11	Plug
32.15	Stud
32.16	Washer
32.19	Gasket
32.23	Tie Rod

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Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

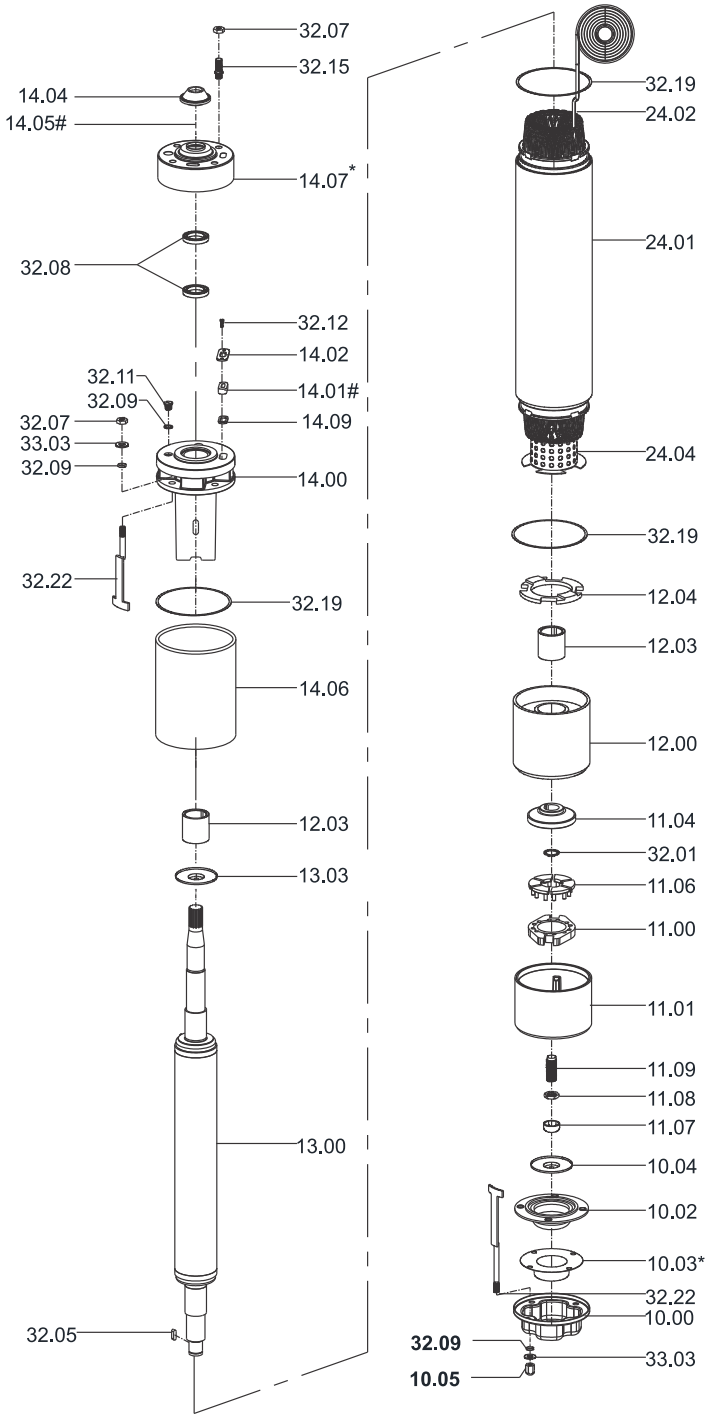
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(4 kW to 45kW)

T-Bolt Motor (Type - A & B)

Exploded view



Part No.	Part Name
10.00	Motor base
10.02	Diaphragm
10.03*	Diaphragm bottom plate
10.04	Diaphragm guide plate
10.05	Doom nut
11.00	Thrust Base
11.01	Thrust base housing
11.04	Thrust Pad
11.06	Thrust segment
11.07	Rocker screw cap
11.08	Rocker screw nut
11.09	Rocker screw
12.00	Lower housing
12.03	Bush
12.04	Supporting ring
13.00	Rotor
13.03	Upthrust washer
14.00	Upper housing
14.01#	Cable grommet
14.02	Grommet locking plate
14.04	Rubber sand guard
14.05#	Sand guard
14.06	Upper housing Pipe
14.07	Upper housing shell
14.09*	Grommet washer
24.01	Wound stator
24.02	lead out cable
24.04	Winding guard
32.01	Circlip
32.05	Pad key
32.07	Nut
32.08	Oil seal
32.09	O - Ring
32.11	Drain plug
32.12	Screw
32.15	Stud
32.16	Washer
32.19	Gasket
32.22	T' bolt
33.03	Bend washer

Applicable only for Type 'B' motors.
*Applicable only for Type 'A' motors.

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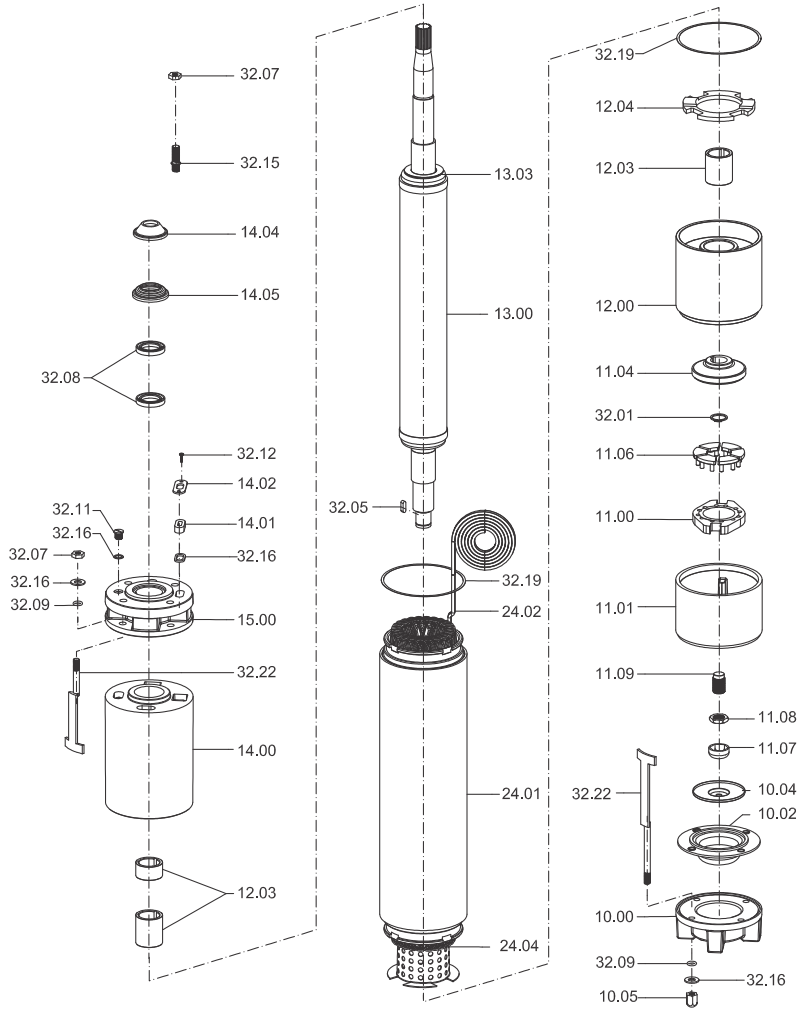
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(5.5 kW to 18.5kW)

T - Bolt Motor (B-Type)

Exploded view



Part No.	Part Name
10.00	Motor base
10.02	Diaphragm
10.04	Diaphragm plate
10.05	Doom nut
11.00	Thrust Base
11.01	Thrust base housing
11.04	Thrust Pad
11.06	Thrust segment
11.07	Rocker cap
11.08	Rocker Lock nut
11.09	Rocker screw
12.00	Lower housing
12.03	Bush - Carbon
12.04	Supporting ring
13.00	Rotor
13.03	Upthrust washer
14.00	Upper housing
14.01	Cable grommet
14.02	Cable Grommet lock plate
14.04	Rubber sand guard
14.05	Sand guard - SS/Bakelite
15.00	Oil seal housing
24.01	Wound stator
24.02	Cable
24.04	Winding guard
32.01	Circlip
32.05	Key
32.07	Nut
32.08	Oil seal
32.09	O - Ring
32.11	Plug
32.12	Screw
32.15	Stud
32.16	Washer
32.19	Gasket
32.22	Tie bolt

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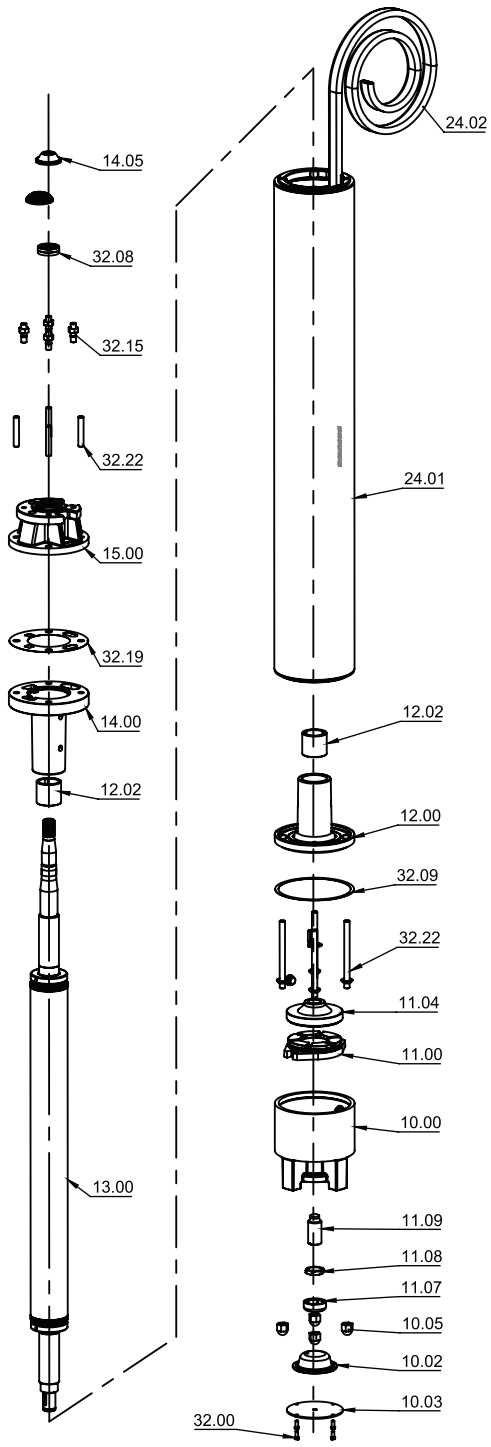
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **7"**

"W" Series
(37kW to 75kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.03	Diaphragm Plate
10.05	Doom nut
11.00	Thrust Base
11.04	Thrust Pad
11.07	Rocker Cap
11.08	Rocker Lock nut
11.09	Rocker Screw
12.00	Lower Housing
12.02	Bush-LTB
13.00	Rotor
14.00	Upper Housing
14.05	Sand Guard-SS/Bakelite
15.00	Oil Seal housing
24.01	Wound Stator
24.02	Cable
32.00	Bolt
32.08	Oil Seal
32.09	O-ring
32.15	Stud
32.19	Gasket
32.22	Tie Rod

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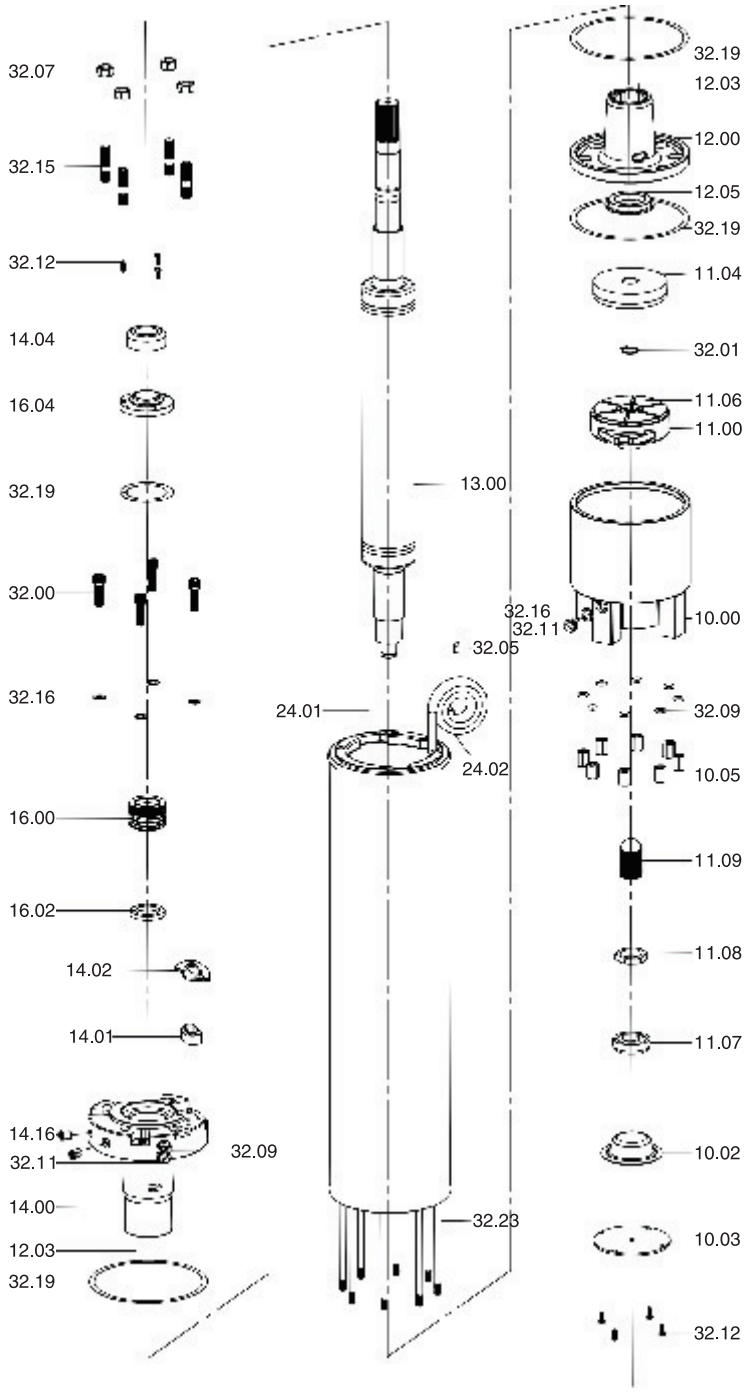
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **8"**

"W" Series
(37 kW to 110 kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.03	Diaphragm Bottom Plate
10.05	Doom nut
11.00	Thrust Base
11.04	Thrust Pad
11.06	Thrust Segment
11.07	Rocker Cap
11.08	Rocker Lock nut
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush-Carbon
12.05	Counter Thrust Ring
13.00	Rotor
14.00	Upper Housing
14.01	Cable Grommet
14.02	Cable Grommet Lock Plate
14.04	Sand Guard-Rubber
14.16	Inlet / Outlet Valve
16.00	Mechanical Seal
16.02	Mechanical Seal Rest Washer
16.04	Mechanical Seal Guide Plate
24.01	Wound Stator
24.02	Cable
32.00	Bolt
32.01	Circlip
32.05	Key
32.07	Nut
32.09	O-ring
32.11	Plug
32.12	Screw
32.15	Stud
32.16	Washer
32.19	Gasket
32.23	Tie Rod

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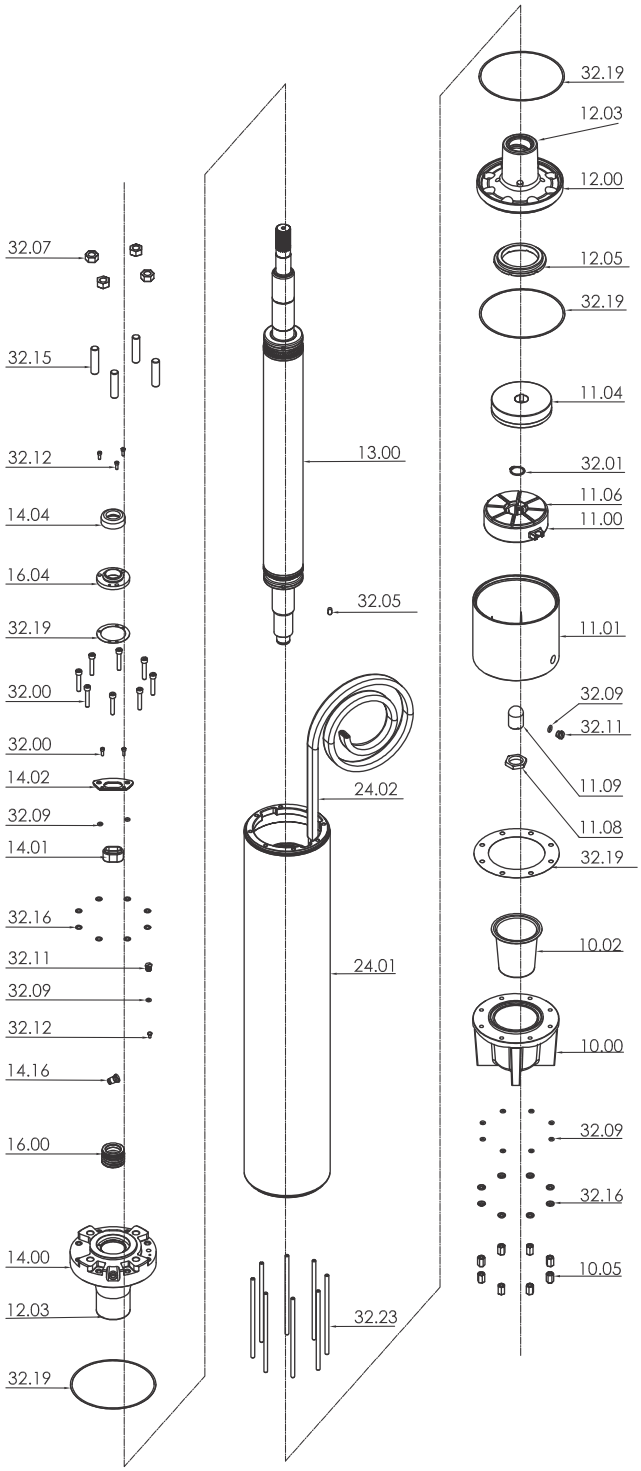
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **10"**

"W" Series
(110 kW to 185kW)

Exploded view



Part No.	Part Name
10.00	Motor Base
10.02	Diaphragm
10.05	Doom Nut
11.00	Thrust Base
11.01	Thrust Base Housing
11.04	Thrust Pad
11.06	Thrust Segment
11.08	Rocker Lock Nut
11.09	Rocker Screw
12.00	Lower Housing
12.03	Bush - Carbon
12.05	Counter Thrust Ring
13.00	Rotor
14.00	Upper Housing
14.01	Cable Grommet
14.02	Cable Grommet Lock Plate
14.04	Sand Guard Rubber
14.16	Inlet / Outlet Valve
16.00	Mechanical Seal
16.04	Mechanical Seal Guide Plate
24.01	Wound Stator
24.02	Cable
32.00	Bolt
32.01	Circlip
32.05	Key
32.07	Nut
32.09	O-Ring
32.11	Plug
32.12	Screw
32.15	Stud
32.16	Washer
32.19	Gasket
32.23	Tie Rod

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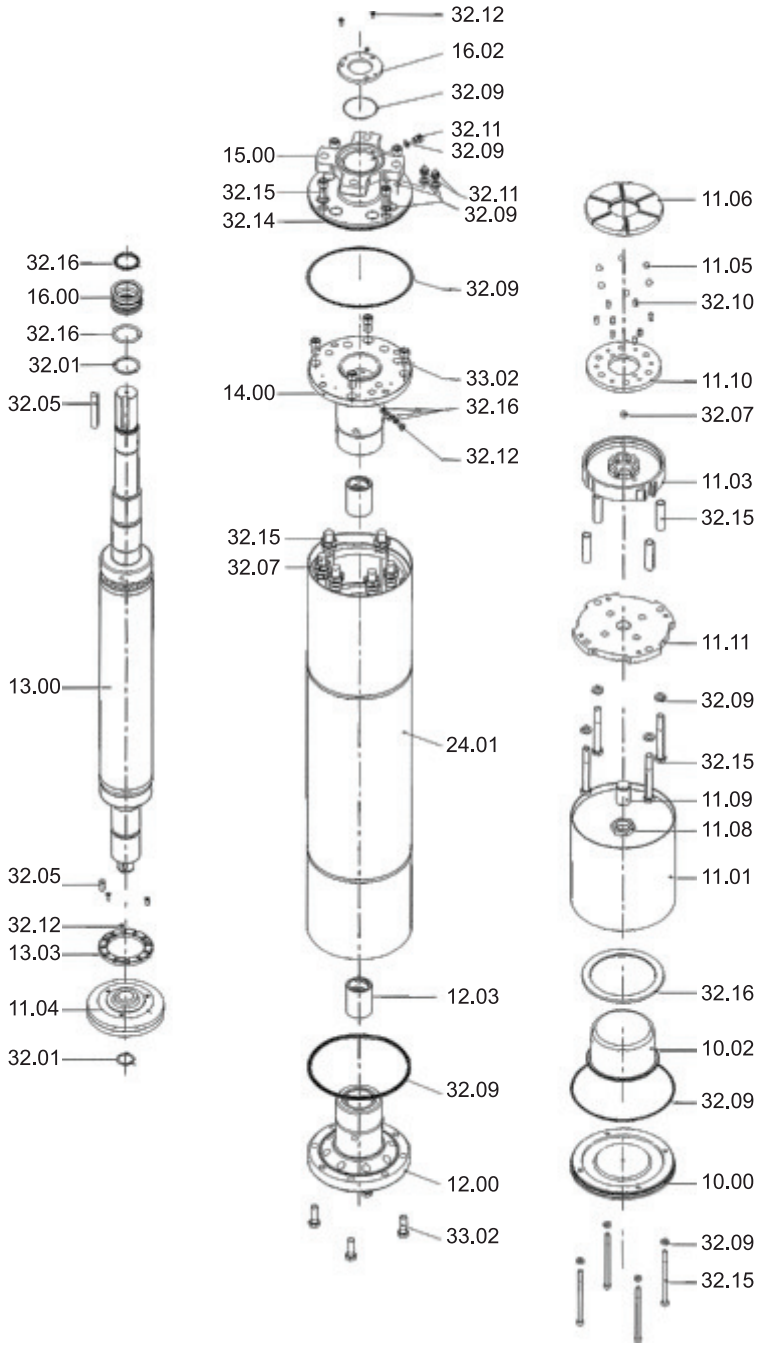
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **12"**

"W" Series
(150 kW to 300kW)

Exploded view



Part No.	Part Name
10.00	Motor base
10.02	Diaphragm
11.01	Thrust base housing
11.03	Thrust bearing bottom
11.04	Thrust Pad
11.05	Ball
11.06	Thrust segment
11.08	Rocker screw nut
11.09	Rocker screw
11.10	Ball guide ring
11.11	Thrust bearing base plate
12.00	Lower housing
12.03	Bush
13.00	Rotor
13.03	Upthrust Washer
14.00	Upper housing
15.00	Seal housing
16.00	Mechanical seal
16.02	Mechanical seal clamp plate
24.01	Wound stator
32.01	Circlip
32.05	Key
32.07	Nut
32.09	O - Ring
32.10	Segment guide pin
32.11	Drain plug
32.12	Screw
32.15	Stud
32.16	Washer
32.23	Tie rod
33.02	Bolt

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WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"W" Series
(0.37 kW to 7.5kW)

Technical Specifications

Nominal Dia	**4" (100mm)**
Maximum Outer Diameter	98 mm
Power Range	0.37 kW to 2.2 kW - Single Phase (Incorporated with Thermal Overload Protector)
	0.37 kW to 7.5 kW - Three Phase
Speed	2900 rpm
Version	Single Phase - 230 V, 50 Hz, A.C Supply
	Three Phase - 380 V - 415 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 58
Direction of Rotation	CCW - When viewed from driving end - Single Phase
	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	0.37 kW to 1.5 kW - 3000 N
	2.2 kW to 7.5 kW - 6500 N
Minimum Cooling Flow Along the Motor	0.15 m/sec
Maximum Liquid Temperature	33°C
Max. Starts per Hour	Single phase - 4 Times
	Three phase - 12 Times
Shaft End	Splines
Mounting Standard	NEMA
Method of Starting	Single Phase - Capacitor Start Capacitor Run (CSCR)
	Three Phase - Direct On Line (DOL)
Cable Lead out	Permanently connected and sealed 3 core EPDM Rubber flat cable

Material of Construction

Part Name	Type - A	Type - N
Shaft Seal	Nitrile Rubber (NBR)	Nitrile Rubber (NBR)
Housing Shell	SS - 304	SS - 316
Stator Shell	SS - 304 / 441	SS - 316
Thrust Pad	Carbon Graphite	Carbon Graphite
Thrust Bearing	SS - 420	SS - 420
Diaphragm	High Nitrile Rubber	High Nitrile Rubber
Motor Base	SS - 304	SS - 316
Bush	LTB	LTB
Shaft	EN-8D	EN-8D
Shaft Extension	17-4 PH	17-4 Ph

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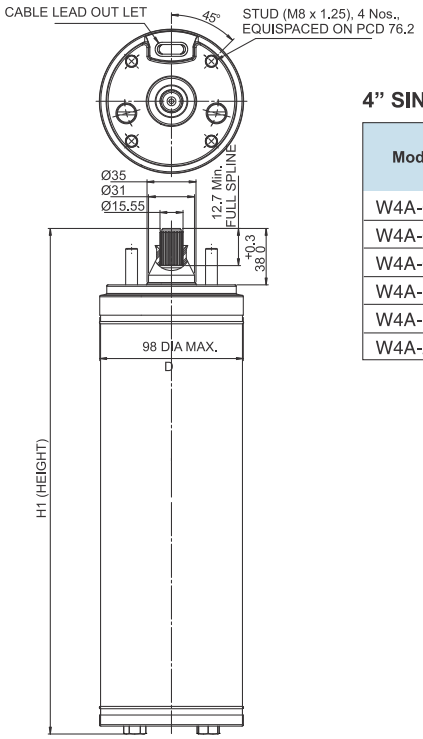
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

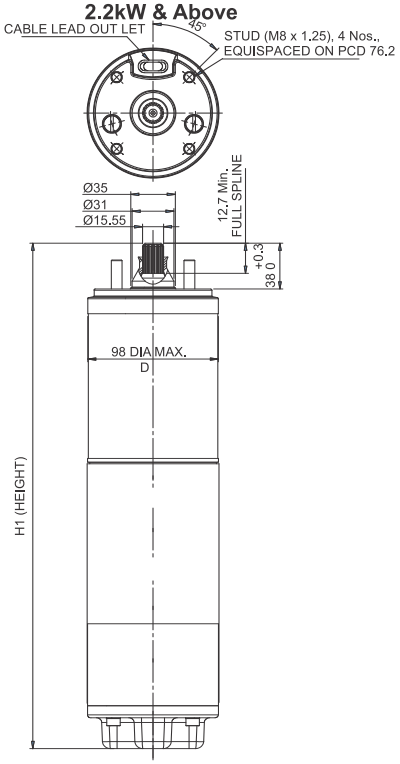
"W" Series

Technical Data

Upto 1.5kW



2.2kW & Above



4" SINGLE PHASE 230V 3 WIRE MOTORS

Model	Motor Power		Full Load Max.(A)	Starting Current (A)	Capacitor MFD		Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
	kW	HP			Starting	Running	Eff.%	Power Factor			
W4A-03S	0.37	0.5	5	16	60/80	30	40	0.89	3000	2	1.2
W4A-05S	0.55	0.75	6	21	80/100	40	52	0.9	3000	2.9	1.8
W4A-07S	0.75	1	7.5	26	100/120	25+30	54	0.9	3000	4.1	2.5
W4A-11S	1.1	1.5	9	40	120/150	36+40	57	0.95	3000	6.1	3.7
W4A-15S	1.5	2	12	48	200/250	40+45	60	0.95	3000	8.3	4.9
W4A-22S	2.2	3	15	66	200/250	50+50	62	0.95	6500	13.3	7.4

4" THREE PHASE 380-415V D.O.L MOTORS

Model	Motor Power		Full Load Max.(A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
	kW	HP			Eff. %	Power Factor			
W4A-03T	0.37	0.5	1.9	5	48	0.74	3000	2.2	1.2
W4A-05T	0.55	0.75	2.4	7	57	0.72	3000	3.4	1.9
W4A-07T	0.75	1	2.8	9	64	0.66	3000	4.5	2.5
W4A-11T	1.1	1.5	3.9	15	67	0.67	3000	6.7	3.7
W4A-15T	1.5	2	4.7	19	68	0.78	3000	9	5
W4A-22T	2.2	3	7.1	32	70	0.77	6500	14.1	7.5
W4A-30T	3	4	9.1	42	72	0.76	6500	19	10
W4A-37T	3.7	5	10.1	50	71	0.78	6500	22	12.4
W4A-40T	4	5.5	10.3	52	69	0.78	6500	23	12.4
W4A-55T	5.5	7.5	14.2	71	71	0.70	6500	33.7	18.7
W4A-75T	7.5	10	18.2	93	72	0.80	6500	45.2	25.1

DIMENSIONS AND WEIGHT

Model	Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (kg) (approx.)	Cable leadouts	
	kW	HP		D	H1		Cable Size (Sq.mm)	Cable Length (m)
W4A-03S	0.37	0.5	S	98	410	11.6	1.5	1.5
W4A-05S	0.55	0.75	S	98	430	12.6	1.5	1.5
W4A-07S	0.75	1	S	98	455	13.8	1.5	1.5
W4A-11S	1.1	1.5	S	98	495	15.7	2.5	1.5
W4A-15S	1.5	2	S	98	545	17.7	2.5	1.5
W4A-22S	2.2	3	S	98	845	33.4	2.5	2
W4A-03T	0.37	0.5	T	98	410	11.7	1.5	1.5
W4A-05T	0.55	0.75	T	98	455	13.3	1.5	1.5
W4A-07T	0.75	1	T	98	475	15.2	1.5	1.5
W4A-11T	1.1	1.5	T	98	525	16.6	1.5	1.5
W4A-15T	1.5	2	T	98	545	17.1	1.5	1.5
W4A-22T	2.2	3	T	98	725	27.6	1.5	2
W4A-30T	3	4	T	98	750	29.5	1.5	2
W4A-37T	3.7	5	T	98	840	32.9	2.5	2
W4A-40T	4	5.5	T	98	865	32.9	2.5	2
W4A-55T	5.5	7.5	T	98	900	38.3	2.5	3
W4A-75T	7.5	10	T	98	1085	44.8	2.5	3

* **METHOD OF STARTING** : **S -** 1P / CSCR / 3 Wire / 50Hz **T -** 3P / D.O.L. / 50Hz

ALL DIMENSIONS ARE IN mm

SPLINED SHAFT : 14 TEETH - MODULE 1.5875
PRESSURE ANGLE 30°, A.N.S.I. B-92-1-1970 COUPLING CLASS 5

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series

Technical Specifications

Nominal Dia	**6" (150mm)**
Maximum Outer Diameter	145 mm
Power Range	2.2 kW to 45 kW - Three Phase
Speed	2900 rpm
Version	Three Phase - 380 - 415 V & 525 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 68
Direction of Rotation	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	2.2 kW to 22 kW - 15500 N
	26 kW to 45 kW - 27500 N
Minimum Cooling Flow Along the Motor	0.15 m/sec
Maximum Liquid Temperature	Standard 30°C, High Temp. - 50°C, Beyond 50°C can also be supplied with derated motors
Max. Starts per Hour	4 Times
Shaft End	Splines
Mounting Standard	NEMA
Method of Starting	2.2 kW to 45 kW - Direct On Line (DOL)
	5.5 kW to 45 kW - Star Delta (SD)
Cable Lead out	Permanently Connected and Sealed 3/4/6 Core EPDM Rubber Flat Cable
Thermal Protection	Optional - PT Sensor

Material of Construction

Part Name	Type - A	Type - N	Type - B	Type - S	Type - T	Type - O
Shaft Seal / Mechanical Seal	Nitrile Rubber (NBR) / Ceramic - Carbon	Nitrile Rubber (NBR) / Ceramic - Carbon	Nitrile Rubber (NBR) / Ceramic - Carbon	Nitrile Rubber (NBR) / Ceramic - Carbon	Nitrile Rubber (NBR) / Ceramic - Carbon	Nitrile Rubber (NBR) / Sic-Sic
Upper & Lower Housings	Cast Iron	Cast Iron	Cast Iron	Casted SS - 304	Casted SS - 316	904 L
Stator Shell	SS - 304	SS - 316	SS - 304	SS - 304	SS - 316	NA
Thrust Pad	Carbon Graphite	Carbon Graphite	Carbon Graphite	Carbon Graphite	Carbon Graphite	Carbon Graphite
Thrust Bearing	SS - 420	SS - 420	SS - 420	SS - 420	SS - 420	SS - 420
Diaphragm	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber
Motor Base	SS - 304	SS - 316	Cast Iron	SS - 304	SS - 316	904 L
Upper Housing Shell	SS - 304	SS - 316	Nil	Nil	Nil	Nil
Shaft	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW : EN8	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW : EN8	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW : EN8	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW : EN8	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to EN8 45kW : EN8	Upto 25 HP-18.5kW:SS-431 30 to 60HP - 22 to 45 kW : EN8
Shaft Extension	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW: 17.4 ph	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW: 17.4 ph	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW: 17.4 ph	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW: 17.4 ph	Upto 25 HP-18.5kW : SS-431 30 to 60HP - 22 to 45kW: 17.4 ph	904 L
Sleeves	Upto 25 HP-18.5kW : NA 30 to 60HP - 22 to 45kW : SS-431	Upto 25 HP-18.5kW : NA 30 to 60HP - 22 to 45kW : SS-431	Upto 25 HP-18.5kW : NA 30 to 60HP - 22 to 45kW : SS-431	Upto 25 HP-18.5kW : NA 30 to 60HP - 22 to 45kW : SS-431	Upto 25 HP-18.5kW : NA 30 to 60HP - 18.5 to 45kW : SS-431	SS 431

*AISI 904L on request

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series

Technical Data

6" THREE PHASE 380V, D.O.L. & S.D MOTORS

Models		Motor Power		Full Load Max (A)	Starting Current (A)	Full Load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W6A-40T	-	4	5.5	11	41	76	0.72	15500	20	14
W6A-45T	-	4.5	6	12.5	46	76	0.77	15500	21	15
W6A-55T	W6A-55D	5.5	7.5	13.7	50	78	0.78	15500	24	18
W6A-75T	W6A-75D	7.5	10	19	67	82	0.76	15500	27	25
W6A-93T	W6A-93D	9.3	12.5	22	81	82	0.8	15500	35	31
W6A-110T	W6A-110D	11	15	26	99	82	0.81	15500	43	37
W6A-130T	W6A-130D	13	17.5	30	115	83	0.81	15500	51	43
W6A-150T	W6A-150D	15	20	34	145	83	0.82	15500	62	49
W6A-185T	W6A-185D	18.5	25	43	185	83	0.82	15500	98	61
W6A-220T	W6A-220D	22	30	50	222	83	0.82	15500	115	73
W6A-260T	W6A-260D	26	35	57	267	83	0.83	27500	130	85
W6A-300T	W6A-300D	30	40	68	352	83	0.83	27500	190	97
W6A-370T	W6A-370D	37	50	84	416	82	0.82	27500	240	122
W6A-450T	W6A-450D	45	60	95	461	82	0.82	27500	390	150

6" THREE PHASE 50Hz, 400V, D.O.L. & S.D MOTORS

Models		Motor Power		Full Load Max (A)	Starting Current (A)	Full Load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W6A-40T	-	4	5.5	10.8	42	76	0.72	15500	19	13
W6A-45T	-	4.5	6	12.2	47	77	0.77	15500	20	14
W6A-55T	W6A-55D	5.5	7.5	13.5	51	78	0.78	15500	23	17
W6A-75T	W6A-75D	7.5	10	18.5	68	83	0.76	15500	26	24
W6A-93T	W6A-93D	9.3	12.5	21.5	82	83	0.8	15500	34	30
W6A-110T	W6A-110D	11	15	25	100	82	0.81	15500	42	36
W6A-130T	W6A-130D	13	17.5	29.5	116	83	0.81	15500	50	42
W6A-150T	W6A-150D	15	20	33.5	146	83	0.82	15500	61	48
W6A-185T	W6A-185D	18.5	25	42.5	186	83	0.82	15500	97	60
W6A-220T	W6A-220D	22	30	49.5	223	83	0.82	15500	115	73
W6A-260T	W6A-260D	26	35	56.5	268	83	0.83	27500	135	85
W6A-300T	W6A-300D	30	40	67.5	353	83	0.83	27500	190	97
W6A-370T	W6A-370D	37	50	83	418	83	0.82	27500	240	122
W6A-450T	W6A-450D	45	60	94	463	83	0.82	27500	390	150

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series

Technical Data

6" THREE PHASE 415V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W6A-40T	-	4	5.5	10.8	43	76	0.70	15500	20	14
W6A-45T	-	4.5	6	12	48	76	0.75	15500	21	15
W6A-55T	W6A-55D	5.5	7.5	13.5	52	78	0.77	15500	24	18
W6A-75T	W6A-75D	7.5	10	18.5	70	82	0.75	15500	27	25
W6A-93T	W6A-93D	9.3	12.5	21	84	82	0.79	15500	35	31
W6A-110T	W6A-110D	11	15	25	102	82	0.80	15500	43	37
W6A-130T	W6A-130D	13	17.5	29.5	118	83	0.80	15500	51	43
W6A-150T	W6A-150D	15	20	33	148	83	0.81	15500	62	49
W6A-185T	W6A-185D	18.5	25	42.5	188	83	0.81	15500	98	61
W6A-220T	W6A-220D	22	30	49.2	225	83	0.81	15500	118	74
W6A-260T	W6A-260D	26	35	56.5	270	83	0.82	27500	138	86
W6A-300T	W6A-300D	30	40	67.2	355	83	0.82	27500	196	98
W6A-370T	W6A-370D	37	50	83	420	82	0.82	27500	245	123
W6A-450T	W6A-450D	45	60	93	465	82	0.83	27500	396	151

6" THREE PHASE 525V, D.O.L. & S.D. MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W6A-55TN	W6A-55DN	5.5	7.5	11	45	79.3	0.72	15500	24	18.4
W6A-75TN	W6A-75DN	7.5	10	15	60	75	0.81	15500	28	24.5
W6A-93TN	W6A-93DN	9.3	12.5	19.5	85	78.3	0.8	15500	35	30.6
W6A-110TN	W6A-110DN	11	15	20	95	82.5	0.8	15500	43.2	36.7
W6A-130TN	W6A-130DN	13	17.5	22.5	112	83	0.82	15500	51	43
W6A-150TN	W6A-150DN	15	20	27	135	82.5	0.82	15500	61.8	49
W6A-185TN	W6A-185DN	18.5	25	32	152	86	0.82	15500	98.1	61.3
W6A-220TN	W6A-220DN	22	30	38	180	83	0.8	15500	118	73.5
W6A-260TN	W6A-260DN	26	35	44	200	83.5	0.83	27500	138.3	85.8
W6A-300TN	W6A-300DN	30	40	51	235	84	0.83	27500	196.1	98.1
W6A-370TN	W6A-370DN	37	50	65	285	85	0.85	27500	245	122.6
W6A-450TN	W6A-450DN	45	60	75	340	85.5	0.85	27500	396	150

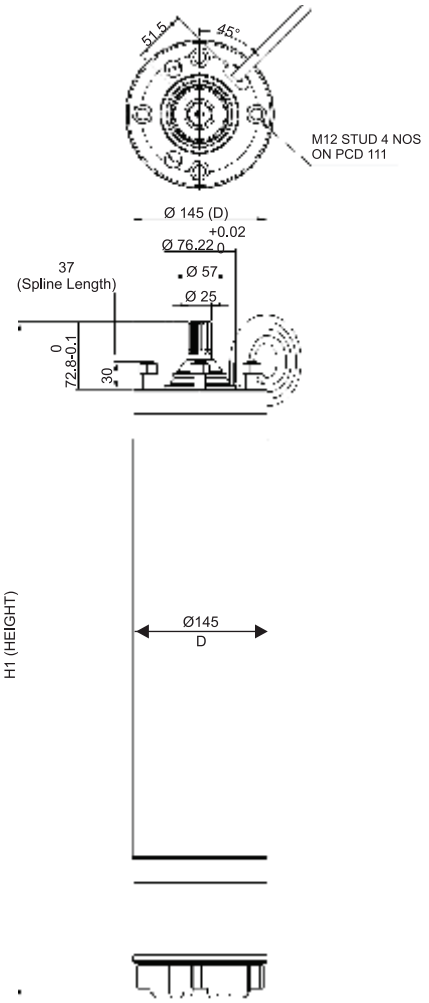
In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(2.2 kW to 22 kW)

Standard Flange Type Motor



All Dimensions are in mm
Splined Shaft : 15 teeth - Module 1.5875
Pressure Angle 30°
A.N.S.I.B-92-1-1970
Tolerance Class 5

DIMENSIONS AND WEIGHT

Model		Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable leadouts		
								Cable Size (Sq.mm)		Cable Length (m)
D.O.L	S.D	kW	HP		D	H1		D.O.L	S.D	
W6A-22T	-	2.2	3	T	145	724	41	2.5	-	3
W6A-40T	-	4	5.5	T	145	734	42	2.5	-	3
W6A-45T	-	4.5	6	T	145	754	44	2.5	-	3
W6A-55T	W6A-55D	5.5	7.5	T / D	145	804	50	4	2.5	3
W6A-75T	W6A-75D	7.5	10	T / D	145	854	55	4	2.5	3
W6A-93T	W6A-93D	9.3	12.5	T / D	145	884	58	6	2.5	3
W6A-110T	W6A-110D	11	15	T / D	145	924	63	6	4	3
W6A-130T	W6A-130D	13	17.5	T / D	145	964	67	6	4	3
W6A-150T	W6A-150D	15	20	T / D	145	1004	71	10	4	3
W6A-185T	W6A-185D	18.5	25	T / D	145	1084	80	10	4	3.5
W6A-220T	W6A-220D	22	30	T / D	145	1154	86	10	4	3.5

*** METHOD OF STARTING : T -** 3P / DOL / 50Hz **D -** 3P / SD / 50Hz

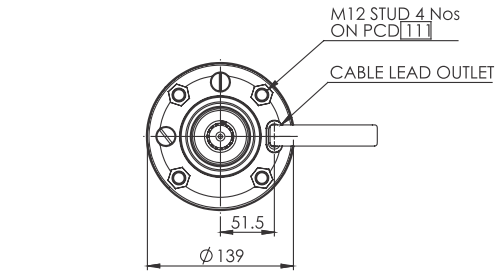
In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

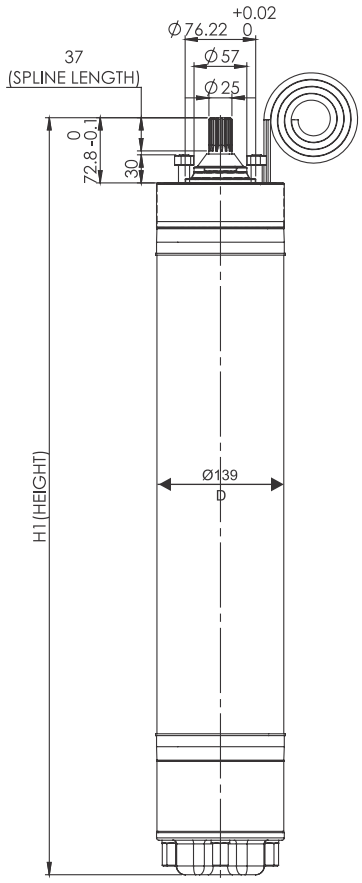
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(2.2 kW to 18.5kW)

Reduced Diameter Flange Type Motor (OD 139 mm)





All Dimensions are in mm
Splined Shaft : 15 teeth - Module 1.5875
Pressure Angle 30°
A.N.S.I.B-92-1-1970
Tolerance Class 5

DIMENSIONS AND WEIGHT

Model		Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable leadouts		
								Cable Size (Sq.mm)		Cable Length (m)
D.O.L	S.D	kW	HP		D	H1		D.O.L	S.D	
W6A-22T	W6A-22D	2.2	3	T	139	690	44	2.5	-	3
W6A-30T	W6A-30D	3	4	T	139	700	47	2.5	-	3
W6A-37T	W6A-37D	3.7	5	T	139	730	48	2.5	-	3
W6A-45T	W6A-45D	4.5	6	T	139	770	52	2.5	-	3
W6A-55T	W6A-55D	5.5	7.5	T / D	139	820	56	4	2.5	3
W6A-75T	W6A-75D	7.5	10	T / D	139	865	60	4	2.5	3
W6A-93T	W6A-93D	9.3	12.5	T / D	139	895	63	6	2.5	3
W6A-110T	W6A-110D	11	15	T / D	139	930	67	6	4	3
W6A-130T	W6A-130D	13	17.5	T / D	139	970	72	6	4	3
W6A-150T	W6A-150D	15	20	T / D	139	1020	77	10	4	3
W6A-185T	W6A-185D	18.5	25	T / D	139	1070	84	10	4	3.5

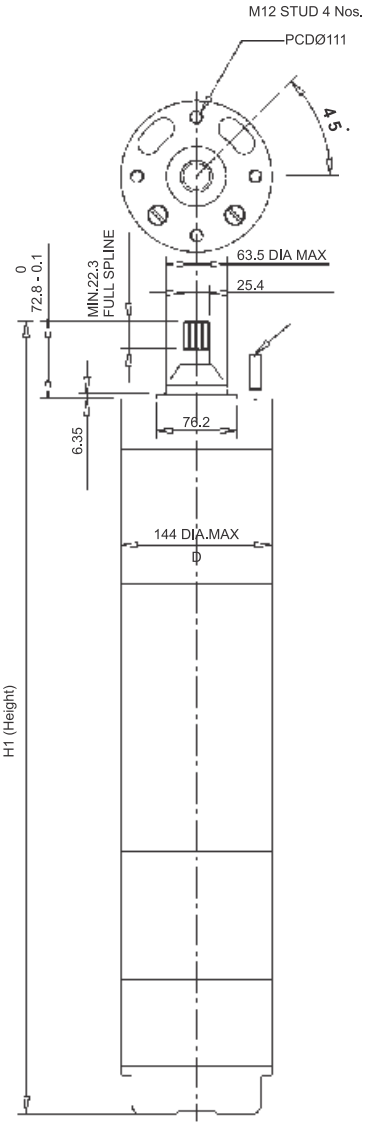
In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(4 kW to 45kW)

T-Bolt Motor (A - Type)



All Dimensions are in mm
Splined Shaft : 15 Teeth - Module 1.5875
Pressure Angle 30°
A.N.S.I.B - 92 - 1 - 1970
Tolerance Class 5

DIMENSIONS AND WEIGHT

Model		Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable leadouts		
								Cable Size (Sq.mm)		Cable Length (m)
D.O.L	S.D	kW	HP		D	H1		D.O.L	S.D	
W6A-40T	-	4	5.5	T	144	727	49	2.5	-	3
W6A-45T	-	4.5	6	T	144	742	50	2.5	-	3
W6A-55T	W6A-55D	5.5	7.5	T / D	144	797	56	4.0	2.5	3
W6A-75T	W6A-75D	7.5	10	T / D	144	837	60	4.0	2.5	3
W6A-93T	W6A-93D	9.3	12.5	T / D	144	867	64	6.0	2.5	3
W6A-110T	W6A-110D	11	15	T / D	144	897	67	6.0	4.0	3
W6A-130T	W6A-130D	13	17.5	T / D	144	937	70	6.0	4.0	3
W6A-150T	W6A-150D	15	20	T / D	144	982	77	10.0	4.0	3
W6A-185T	W6A-185D	18.5	25	T / D	144	1047	85	10.0	4.0	3.5
W6A-220T	W6A-220D	22	30	T / D	144	1152	93	10.0	4.0	3.5
W6A-260T	W6A-260D	26	35	T / D	144	1192	98	10.0	6.0	4.25
W6A-300T	W6A-300D	30	40	T / D	144	1227	103	10.0	6.0	4.25
W6A-370T	W6A-370D	37	50	T / D	144	1302	111	16.0	6.0	5.25
W6A-450T	W6A-450D	45	60	T / D	144	1377	121	16.0	10	5.25

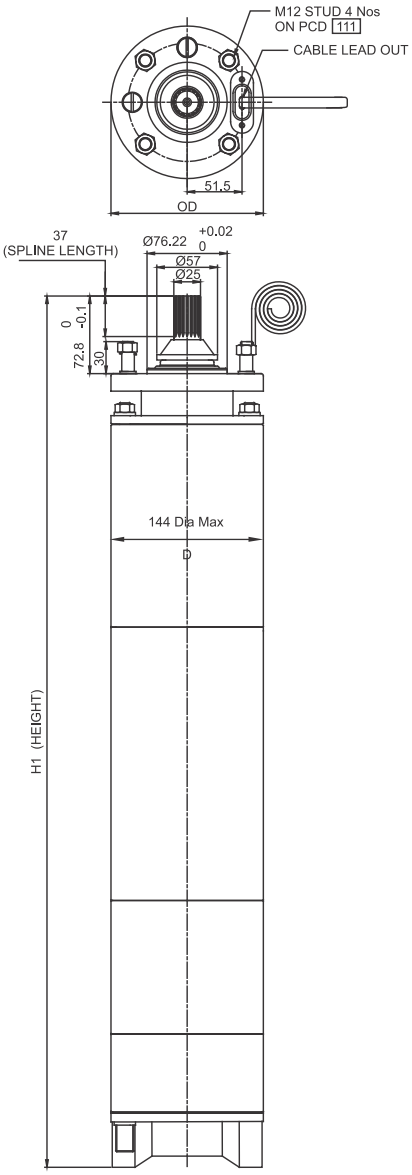
In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **6"**

"W" Series
(5.5 kW to 18.5kW)

T-Bolt Motor (B-Type)



All Dimensions are in mm
Splined Shaft : 15 Teeth - Module 1.5875
Pressure Angle 30°
A.N.S.I.B - 92 - 1 - 1970
Tolerance Class 5

DIMENSIONS AND WEIGHT

Model		Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable leadouts		
								Cable Size (Sq.mm)		Cable Length (m)
D.O.L	S.D	kW	HP		D	H1		D.O.L	S.D	
W6B-55T	W6B-55D	5.5	7.5	T / D	144	793	57	4	2.5	3
W6B-75T	W6B-75D	7.5	10	T / D	144	843	62	4	2.5	3
W6B-93T	W6B-93D	9.3	12.5	T / D	144	873	65	6	2.5	3
W6B-110T	W6B-110D	11	15	T / D	144	913	67	6	4	3
W6B-130T	W6B-130D	13	17.5	T / D	144	953	72	6	4	3
W6B-150T	W6B-150D	15	20	T / D	144	993	77	10	4	3
W6B-185T	W6B-185D	18.5	25	T / D	144	1073	85	10	4	3.5

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **7"**

"W" Series

Technical Specifications

Nominal Dia	**7" (175mm)**
Maximum Outer Diameter	180 mm
Power Range	37 kW to 75 kW - Three Phase
Speed	2900 rpm
Version	Three Phase - 380 V - 415 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 68
Direction of Rotation	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Trust Load	37 to 75 kW - 45500 N
Minimum Cooling Flow Along the Motor	0.16 m/sec
Maximum Liquid Temperature	Standard - 30°C, High Temp - 50°C, Beyond 50°C can also be supplied with derated motor
Max. Starts per Hour	4 Times
Shaft End	Splines
Mounting Standard	NEMA
Method of Starting	Direct On Line (DOL)
	Star Delta (SD)
Cable Lead out	Permanently Connected and Sealed 3/6 Core EPDM Rubber Insulated Flat Cable
Thermal Protection	Optional - PT Sensor

Material of Construction

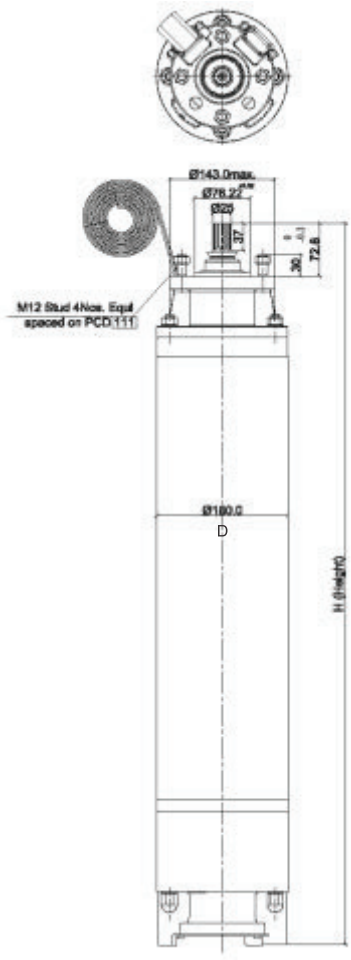
Part Name	Type - B
Shaft Seal Housing	Cast Iron
Shaft Seal (Oil Seal)	Nitrile Rubber (NBR)
Upper & Lower Housings	Cast Iron
Stator Shell	SS - 304
Thrust Pad	Carbon Graphite
Thrust Bearing	SS - 420
Diaphragm	High Nitrile Rubber
Motor Base	Cast Iron
Shaft	EN-8
Shaft Extension	17 - 4 ph
Sleeves	SS - 431

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **7"**

"W" Series

Technical Data



All Dimensions are in mm
Splined Shaft : 15 Teeth - Module 1.5875
Pressure Angle 30°
A.N.S.I.B - 92 - 1 - 1970
Tolerance Class 5

7" THREE PHASE 380V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W7B-370T	W7B-370D	37	50	69	256	83.6	0.82	45500	160	122
W7B-450T	W7B-450D	45	60	94.5	288	84	0.88	45500	225	148
W7B-550T	W7B-550D	55	75	116	375	84.5	0.88	45500	310	182
W7B-630T	W7B-630D	63	85	130	467	85	0.85	45500	350	208
W7B-750T	W7B-750D	75	100	156	542	85	0.84	45500	420	248

7" THREE PHASE 400V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W7B-370T	W7B-370D	37	50	75	270	84.5	0.81	45500	180	122
W7B-450T	W7B-450D	45	60	90	303	85	0.87	45500	250	148
W7B-550T	W7B-550D	55	75	114	395	85.8	0.87	45500	348	181
W7B-630T	W7B-630D	63	85	127	491	86	0.84	45500	380	207
W7B-750T	W7B-750D	75	100	148	570	85	0.86	45500	480	247

7" THREE PHASE 415V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W7B-370T	W7B-370D	37	50	80	280	86	0.80	45500	200	122
W7B-450T	W7B-450D	45	60	92	315	85	0.85	45500	268	149
W7B-550T	W7B-550D	55	75	112	410	87	0.85	45500	370	180
W7B-630T	W7B-630D	63	85	126	510	88	0.84	45500	410	206
W7B-750T	W7B-750D	75	100	151	592	89	0.84	45500	520	246

DIMENSIONS AND WEIGHT

Model	Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable Leadouts		
	kW	HP		D	H1		Cable Size (Sq.mm)		Cable Length (m)
							D.O.L	S.D	
W7B-370	37	50	T / D	180	1181	153	16	10	4
W7B-450	45	60	T / D	180	1411	179	16	10	4
W7B-550	55	75	T / D	180	1531	199	25	16	5
W7B-630	63	85	T / D	180	1591	201	35	16	5
W7B-750	75	100	T / D	180	1641	220	35	25	5

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **8"**

"W" Series

Technical Specifications

Nominal Dia	**8" (200mm)**
Maximum Outer Diameter	197 mm
Power Range	37 kW to 110 kW - Three Phase
Speed	2900 rpm
Version	Three Phase - 380 V - 415 V & 525 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 68
Direction of Rotation	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	45500 N
Minimum Cooling Flow Along the Motor	0.16 m/sec
Maximum Liquid Temperature	Standard - 30°C, High Temp - 50°C, Beyond 50°C can also be supplied with derated motor
Max. Starts per Hour	4 Times
Shaft End	Splines
Mounting Standard	NEMA
Method of Starting	Direct On Line (DOL)
	Star Delta (SD)
Cable Lead out	Permanently Connected and Sealed 3/6 Core EPDM Rubber Insulated Flat Cable
Thermal Protection	Optional - PT Sensor

Material of Construction

Part Name	Type - B	Type - S	Type - T	Type - O
Shaft Seal Housing	Cast Iron	SS - 304 Casted	SS - 316 Casted	904 L
Shaft Seal / Mechanical Seal	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / SiC - SiC
Upper & Lower Housings	Cast Iron	SS - 304 Casted	SiC - SiC	904 L
Stator Shell	SS - 304	SS - 304	SS - 316	NA
Thrust Pad	Carbon Graphite	Carbon Graphite	Carbon Graphite	Carbon Graphite
Thrust Bearing	SS - 420	SS - 420	SS - 420	SS - 420
Diaphragm	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber	High Nitrile Rubber
Motor Base	Cast Iron	SS - 304 Casted	SS - 316 casted	904 L
Shaft	EN-8	EN-8	EN-8	EN 8
Shaft Extension	17-4 ph	17-4 ph	17-4 ph	904 L
Sleeves	SS - 431	SS - 431	SS 431	SS 431

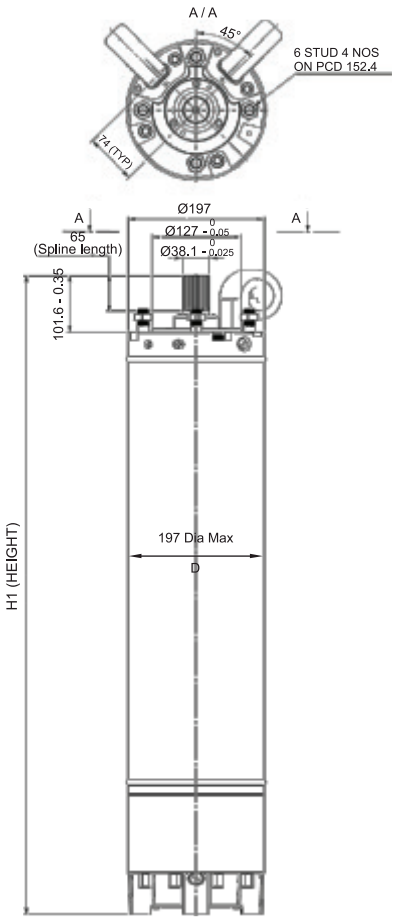
S/T/O MOC types are supplied on request.

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **8"**

"W" Series

Technical Data



All Dimensions are in mm
Splined Shaft : 23 teeth -
Module 1.5875 Pressure Angle 30°
A.N.S.I.B92-1 Tolerance Class 5

8" THREE PHASE 380V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W8B-370T	W8B-370D	37	50	69	256	83.6	0.82	45500	160	122
W8B-450T	W8B-450D	45	60	94.5	288	84	0.88	45500	225	148
W8B-550T	W8B-550D	55	75	116	375	84.5	0.88	45500	310	182
W8B-630T	W8B-630D	63	85	130	467	85	0.85	45500	350	208
W8B-750T	W8B-750D	75	100	156	542	85	0.84	45500	420	248
W8B-930T	W8B-930D	93	125	186	582	87	0.84	45500	570	308
-	W8B-A10D	110	150	230	718	87	0.86	45500	741	363

8" THREE PHASE 400V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W8B-370T	W8B-370D	37	50	75	270	84.5	0.81	45500	180	122
W8B-450T	W8B-450D	45	60	90	303	85	0.87	45500	250	148
W8B-550T	W8B-550D	55	75	114	395	85.8	0.87	45500	348	181
W8B-630T	W8B-630D	63	85	127	491	86	0.84	45500	380	207
W8B-750T	W8B-750D	75	100	148	570	85	0.86	45500	480	247
W8B-930T	W8B-930D	93	125	188	613	87	0.85	45500	660	307
-	W8B-A10D	110	150	227	750	87	0.83	45500	858	362

8" THREE PHASE 415V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W8B-370T	W8B-370D	37	50	80	280	86	0.80	45500	200	122
W8B-450T	W8B-450D	45	60	92	315	85	0.85	45500	268	149
W8B-550T	W8B-550D	55	75	112	410	87	0.85	45500	370	180
W8B-630T	W8B-630D	63	85	126	510	86	0.84	45500	410	206
W8B-750T	W8B-750D	75	100	151	592	89	0.84	45500	520	246
W8B-930T	W8B-930D	93	125	188	636	87	0.83	45500	680	306
-	W8B-A10D	110	150	225	785	87	0.81	45500	884	361

8" THREE PHASE 525V, D.O.L. & S.D MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Starting Torque (Nm)	Torque (Nm)
DOL	SD	kW	HP			Eff.%	Power Factor			
W8B-370TN	W8B-370DN	37	50	60	240	85	0.82	45500	290	123
W8B-450TN	W8B-450DN	45	60	75	360	85	0.82	45500	320	154
W8B-550TN	W8B-550DN	55	75	92	370	85	0.84	45500	450	185
W8B-630TN	W8B-630DN	63	85	103	415	86	0.88	45500	500	211
W8B-750TN	W8B-750DN	75	100	118	472	87	0.9	45500	620	251
W8B-930TN	W8B-930DN	93	125	145	580	87	0.88	45500	685	311

DIMENSIONS AND WEIGHT

Model	Motor Power		*Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable Leadouts				Cable Length(m)
							415 Cable Size (Sq.mm)		525 Cable Size (Sq.mm)		
	kW	HP		D	H1		D.O.L	S.D	D.O.L	S.D	
W8B-370	37	50	T / D	197	1181	153	16	10	16	10	4
W8B-450	45	60	T / D	197	1231	164	16	10	16	10	4
W8B-550	55	75	T / D	197	1281	180	25	16	25	16	5
W8B-630	63	85	T / D	197	1351	193	25	16	35	16	5
W8B-750	75	100	T / D	197	1466	215	25	25	35	25	5
W8B-930	93	125	T / D	197	1556	235	25	35	35	35	5
W8B-A10	110	150	T / D	197	1656	256	25	35	-	35	5

*** METHOD OF STARTING : T -** 3P / DOL / 50Hz **D -** 3P / SD / 50Hz

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **10"**

"W" Series

Technical Specifications

Nominal Dia	**10" (250mm)**
Maximum Outer Diameter	232 mm
Power Range	81 kW to 185 kW - Three Phase
Speed	2900 rpm
Version	Three Phase - 380 V - 415 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 68
Direction of Rotation	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	60000 N
Minimum Cooling Flow Along the Motor	0.16 m/sec
Maximum Liquid Temperature	Standard - 30°C, High Temp - 50°C (Beyond 50°C can also be supplied with derated motor)
Max. Starts per Hour	4 Times
Shaft End	Splines / Keyway
Mounting Standard	NEMA / International
Method of Starting	Direct On Line (DOL)
	Star Delta (SD)
Cable Lead out	Permanently Connected and Sealed 6 Core EPDM insulated Flat Cable for SD & 2 + 2 core individual cable for DOL
Thermal Protection	Optional - PT Sensor

Material of Construction

Part Name	Type - B	Type - S	Type - T	Type - O
Shaft Seal Housing	Cast Iron	SS - 304 casted	SS - 316 casted	904 L
Shaft Seal / Mechanical Seal	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / Ceramic - Carbon, SiC - SiC	Nitrile Rubber (NBR) / - SiC - SiC
Upper & Lower Housings	Cast Iron	SS 304 Casted	SS - 316 Casted	904 L
Stator Shell	SS - 304	SS 304	SS - 316	NA
Thrust Pad	Carbon Graphite	Carbon Graphite	Carbon Graphite	Carbon Graphite
Thrust Bearing	SS - 420	SS - 420	SS - 420	SS - 420
Diaphragm	Nitrile Rubber (NBR)	Nitrile Rubber (NBR)	Nitrile Rubber (NBR)	Nitrile Rubber (NBR)
Motor Base	Cast Iron	SS 304 - casted	SS - 316 casted	904 L
Shaft	EN 8	EN 8	EN 8	EN 8
Shaft extension	17-4 ph	17-4 ph	17-7 ph	904 L
Sleeve	SS 431	SS 431	SS 431	SS 431

*S/T/O MOC types are supplied on request.

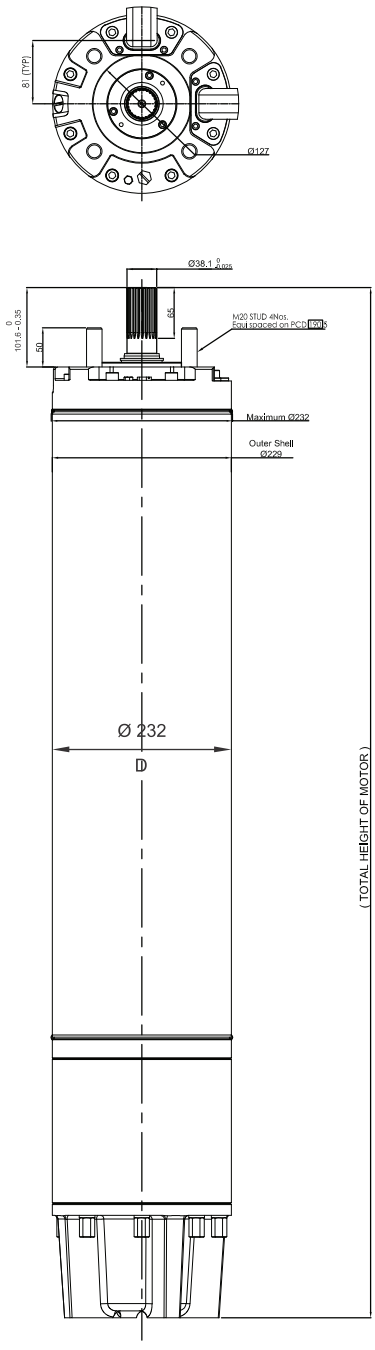
WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **10"**

"W" Series

Technical Data

SPLINES TYPE



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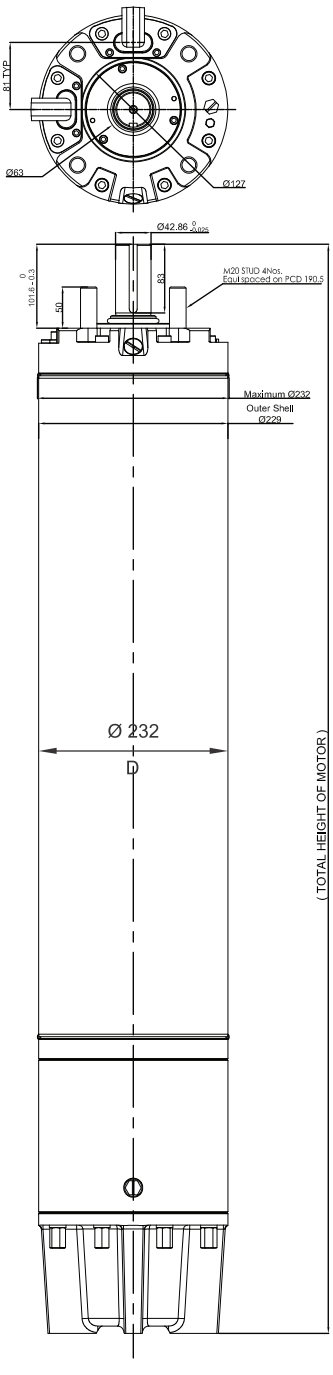


In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **10"**

"W" Series

Technical Data

10" THREE PHASE - 380 V - 415 V DOL & SD MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full Load		Max. Down Thrust Load (N)
DOL	SD	kW	HP			Eff.%	Power Factor	
W10B-810T	W10B-810D	81	110	166	824	86	0.87	75000N
W10B-930T	W10B-930D	93	125	181	1102	87	0.89	75000N
W10B-A10T	W10B-A10D	110	150	220	1326	87	0.89	75000N
W10B-A30T	W10B-A30D	130	175	255	1628	87	0.89	75000N
W10B-A50T	W10B-A50D	150	200	290	1813	88	0.89	75000N
W10B-A65T	W10B-A65D	165	225	315	2043	88	0.88	75000N
W10B-A85T	W10B-A85D	185	250	330	2343	89	0.88	75000N

DIMENSIONS AND WEIGHT

Model		Motor Power		Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable Leadouts		
								Cable Size(Sq.mm)		Cable Length (m)
DOL	SD	kW	HP		D	H1		D.O.L	S.D	
W10B-810T	W10B-810D	81	110	T/D	232	1481	290	35	16	5.45
W10B-930T	W10B-930D	93	125	T/D	232	1551	298	35	16	5.45
W10B-A10T	W10B-A10D	110	150	T/D	232	1631	319	50	16	5.45
W10B-A30T	W10B-A30D	130	175	T/D	232	1741	340	50	25	5.45
W10B-A50T	W10B-A50D	150	200	T/D	232	1811	360	70	35	5.45
W10B-A65T	W10B-A65D	165	225	T/D	232	1891	387	95	35	5.45
W10B-A85T	W10B-A85D	185	250	T/D	232	1981	414	95	35	5.45

* **METHOD OF STARTING : T -** 3P / DOL / 50Hz **D -** 3P / SD / 50Hz

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **12"**

"W" Series

Technical Specifications

Nominal Dia	**12" (300mm)**
Maximum Outer Diameter	273 mm
Power Range	150 kW to 300 kW - Three Phase
Speed	2850 rpm
Version	Three Phase - 380 V, 400 V & 415 V, 50 Hz, A.C Supply
Class of Insulation	Y
Degree of Protection	IP 68
Direction of Rotation	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	60000 N
Minimum Cooling Flow Along the Motor	0.5 m/sec (30°C), 2 m/sec (50°C)
Maximum Liquid Temperature	Standard - 33°C, High Temp - 50°C (Beyond 50°C can also be supplied with derated motor)
Starts per Hour	4 Times
Shaft Type	Key Way Type
Mounting Standard	International Standard
Method of Starting	Direct On Line (DOL)
	Star Delta (SD)
Cable Lead out	Permanently Connected and Sealed individual leads
Thermal Protection	Optional - PT Sensor

Material of Construction

Part Name	Type - A	Type - N
Seal Housing	SS - 304	SS - 316
Mechanical Seal	Carbon / Ceramic SiC - SiC*	SiC - SiC
Upper & Lower Housings	SS - 304	SS - 316
Stator Shell	SS - 304	SS - 316
Thrust Pad	SS / Carbon	SS / Carbon
Thrust Bearing	SS / Carbon	SS / Carbon
Diaphragm	NBR	NBR
Motor Base	SS - 304	SS - 316
Shaft	SS - 304	Duplex Steel

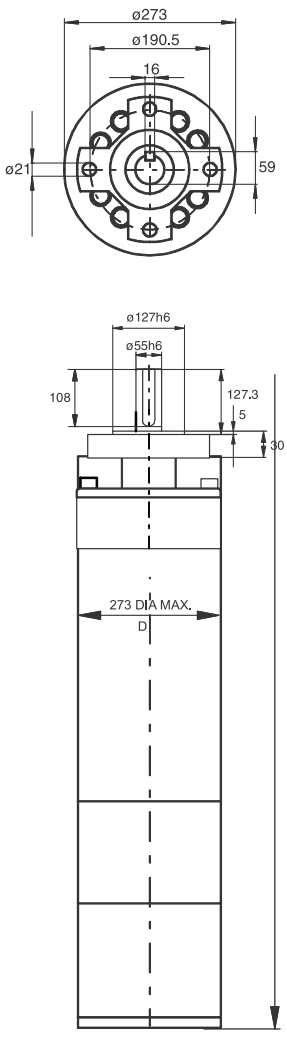
* Optional

WATER FILLED REWINDABLE SUBMERSIBLE MOTORS

Nominal Diameter : **12"**

"W" Series

Technical Data



ALL DIMENSIONS ARE IN mm.

12" THREE PHASE - 380 V DOL & SD MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Torque Ratio Ma/Mn	Torque Ratio Mk/Mn
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W12A-A50T	-	150	200	308	1571	87	0.85	60000	1.0	2.5
W12A-A85T	-	185	250	380	1862	87	0.85	60000	1.0	2.5
W12A-B25T	-	225	300	462	2217	87	0.85	60000	1.0	2.6
W12A-B60T	W12A-B60D	260	350	540	2700	86	0.85	60000	1.1	2.5
W12A-C00T	W12A-C00D	300	400	624	2995	86	0.85	60000	1.0	2.6

12" THREE PHASE - 400 V DOL & SD MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Torque Ratio Ma/Mn	Torque Ratio Mk/Mn
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W12A-A50T	-	150	200	295	1505	87	0.85	60000	1.0	2.5
W12A-A85T	-	185	250	365	1789	87	0.85	60000	1.0	2.5
W12A-B25T	-	225	300	440	2112	87	0.85	60000	1.0	2.6
W12A-B60T	W12A-B60D	260	350	515	2575	86	0.85	60000	1.1	2.5
W12A-C00T	W12A-C00D	300	400	595	2856	86	0.85	60000	1.0	2.6

12" THREE PHASE - 415 V DOL & SD MOTORS

Model		Motor Power		Full Load Max (A)	Starting Current (A)	Full load		Max. Down Thrust Load (N)	Torque Ratio Ma/Mn	Torque Ratio Mk/Mn
D.O.L	S.D	kW	HP			Eff.%	Power Factor			
W12A-A50T	-	150	200	282	1438	87	0.85	60000	1.0	2.5
W12A-A85T	-	185	250	348	1705	87	0.85	60000	1.0	2.5
W12A-B25T	-	225	300	423	2030	87	0.85	60000	1.0	2.6
W12A-B60T	W12A-B60D	260	350	495	2475	86	0.85	60000	1.1	2.5
W12A-C00T	W12A-C00D	300	400	571	2741	86	0.85	60000	1.0	2.6

* **Ma / Mn -** Starting Torque / Rated Torque, **Mk / Mn -** Breakdown Torque / Rated Torque

DIMENSIONS AND WEIGHT

Model		Motor Power		Method of Starting	Dimension (mm)		Nett Weight (Kg) (Approx.)	Cable Leadouts			
								Cable Size(Sq.mm)			Cable Length (m)
D.O.L	S.D	kW	HP		D	H1		D.O.L	# of Leadouts	S.D	
W12A-A50T	-	150	200	T	273	1699	414	70	3	-	7
W12A-A85T	-	185	250	T	273	1769	449	95	3	-	7
W12A-B25T	-	225	300	T	273	1859	495	120	3	-	7
W12A-B60T	W12A-B60D	260	350	T/D	273	1934	534	70	6	70	7
W12A-C00T	W12A-C00D	300	400	T/D	273	2034	585	70	6	95	7

* **METHOD OF STARTING : T -** 3P / DOL / 50Hz **D -** 3P / SD / 50Hz

Motors are supplied with individual leads.

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

CABLE SELECTION TABLE

FOR SINGLE PHASE 3 WIRE (D.O.L) MOTOR MAXIMUM LENGTH OF COPPER CABLE

Motor Rating			Cable Size in Square Millimetres						
VOLTS	kW	HP	1.5	2.5	4	6	10	16	
230 VOLT 50Hz	0.37	0.5	120	200	320	480	810		MAXIMUM LENGTH IN METRES
	0.55	0.75	80	130	220	320	550		
	0.75	1	60	100	170	250	430		
	1.1	1.5	40	70	120	180	300		
	1.5	2	30	60	90	130	230	360	
	2.2	3		40	60	90	150	230	

FOR THREE PHASE 6WIRE (S/D) MOTOR MAXIMUM LENGTH OF COPPER CABLE

Voltage drop - 3%

Motor Rating			Cable Size in Square Millimetres																		
VOLTS	kW	HP	1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500	630	
380-415 VOLT 50Hz	5.5	7.5	91	143	234	351	572	896	1377	1884												MAXIMUM LENGTH IN METRES
	7.5	10	65	104	169	260	403	650	974	1338												
	9.3	12.5		91	143	221	364	572	870	1182	1624											
	11	15		78	130	182	299	481	714	974	1377	1832										
	13	17.5			104	143	260	403	611	844	1156	1533										
	15	20			91	130	221	351	533	740	1026	1364	1741									
	18.5	25				104	182	273	429	585	799	1065	1364	1624								
	22	30					156	234	364	494	688	922	1169	1403	1650							
	26	35					130	195	299	403	572	792	1000	1221	1429	1650						
	30	40					117	169	273	364	520	675	870	1013	1208	1390	1624					
	37	50						143	221	299	416	546	701	831	974	1117	1312	1494				
	45	60							182	247	338	468	598	727	870	1013	1208	1377				
	55	75								208	286	377	494	611	714	831	987	1137				
	63	85								188	260	299	442	546	637	740	870	1000				
	75	100									208	286	377	455	533	611	727	831	974			
	93	125										234	299	364	429	494	585	662	779			
	110	150											260	312	377	429	520	598	701	786		
	130	175											221	266	325	377	442	520	598	688	760	
	150	200												234	279	325	390	455	539	604	669	
	166	225													234	286	338	390	455	520	578	
	185	250														260	312	364	429	481	539	
	220	300															247	286	331	372	410	
	260	350																247	286	325	357	
	300	400																214	247	273	312	

These are maximum length of cable in METRES from POWER SOURCE to MOTOR. Exceeding these length will void warranty.

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

CABLE SELECTION TABLE

FOR THREE PHASE 3 WIRE (D.O.L.) MOTOR MAXIMUM LENGHT OF COPPER CABLE

Voltage drop - 3%

Motor Rating			Cable Size in Square Millimetres																		
VOLTS	kW	HP	1.5	2.5	4	6	10	16	25	35	50	70	95	120	150	185	240	300	400	500	630
380-415 VOLT 50Hz	0.37	0.5	473	788	1260																
	0.55	0.75	398	660	1050																
	0.75	1	311	518	825																
	1.1	1.5	203	338	533	795															
	1.5	2	161	270	428	638															
	2.2	3	113	188	300	450	731														
	3	4	86	143	233	345	566	885													
	3.7	5	71	120	188	285	465	735													
	4	5.5	67	113	176	263	435	683	1043												
	4.5	6	64	105	169	255	420	653	998	1358											
	5.5	7.5	53	83	135	203	330	518	795	1088											
	7.5	10	38	60	98	150	233	375	563	773											
	9.3	12.5		53	83	128	210	330	503	683	938										
	11	15		45	75	105	173	278	413	563	795	1058									
	13	17.5			60	83	150	233	353	488	668	885									
	15	20			53	75	128	203	308	428	593	788	1005								
	18.5	25				60	105	158	248	338	461	615	788	938							
	22	30					90	135	210	285	398	533	675	810	953						
	26	35					75	113	173	233	330	458	578	705	825	953					
	30	40					68	98	158	210	300	390	503	585	698	803	938				
	37	50						83	128	173	240	315	405	480	563	645	758	863			
	45	60							105	143	195	270	345	420	503	585	698	795			
	55	75								120	165	218	285	353	413	480	570	656			
	63	85								109	150	173	255	315	368	428	503	578			
	75	100									120	165	218	263	308	353	420	480	563		
	93	125										135	173	210	248	285	338	383	450		
	110	150											150	180	218	248	300	345	405	454	
	130	175											128	154	188	218	255	300	345	398	439
	150	200												135	161	188	225	263	311	349	386
	166	225													135	165	195	225	263	300	334
	185	250														150	180	210	248	278	311
	220	300															143	165	191	215	237
	260	350																143	165	188	206
	300	400																124	143	158	180

MAXIMUM LENGTH IN METRES

These are maximum length of cable in METRES from POWER SOURCE to MOTOR. Exceeding these length will void warranty.

PIPE FRICTION LOSS TABLE

FRICTION LOSS IN METERS FOR 10 METERS LONG NEW STEEL GALVANIZED PIPE (C = 140)

Volume rate of flow lps \ Nominal Pipe Outer dia In mm / inches	25/ 1"	32/ 1¼"	40/ 1½"	50/ 2"	65/ 2½"	80/ 3"	100/ 4"	125/ 5"	150/ 6"
0.50	0.364								
1.00	1. 315	0.341							
1.25	1.988	0.516	0.246						
1.60	3.140	0.814	0.388						
2.00		1.231	0.587						
2.50		1.861	0.888	0.282					
3.2		2.940	1.402	0.446	0.126				
4.0			2.120	0.674	0.190				
5.0			3.205	1.019	0.288				
8.0				2.433	0.887	0.313			
10.0				3.678	1.038	0.474	0.131		
12.5					1.570	0.716	0.198		
16					2.479	1.131	0.312	0.111	
20					3.747	1.710	0.472	0.167	
25						2.585	0.713	0.253	0.106
32						4.033	1.127	0.400	0.157
40							1.704	0.605	0.252
50							2.576	0.914	0.351
60								1.281	0.534
80								0.182	0.910
100								3.299	1.376
125									0.051

FRICTION LOSS IN METERS FOR 10 METERS LONG NEW RPVC PIPE (C = 150)

Volume rate of flow lps \ Nominal Pipe Outer dia In mm / inches	40/ 1½"	50/ 2"	63/ 2½"	75/ 3"	90/ 3½"	110/ 4¼"	125/ 5"	140/ 5½"	160/ 6¼"
0.50	0.074								
1.00	0.268								
1.25	0.405	0.131							
1.60	0.640	0.211							
2.00	0.967	0.310							
2.50	1.462	0.483	0.150						
3.20	2.309	0.762	0.250	0.106					
4.0	3.491	1.153	0.377	0.160					
5.0		1.742	0.571	0.242					
8.0		4.161	1.363	0.577	0.237				
10.0			2.060	0.873	0.358	0.133			
12.5			3.114	1.319	0.542	0.201			
16			4.919	2.084	0.856	0.317	0.172		
20				3.151	1.293	0.479	0.260		
25					1.955	0.725	0.392	0.225	0.117
32					3.089	1.145	0.020	0.355	0.184
40						1.731	0.937	0.537	0.279
50						2.617	1.416	0.812	0.421
60						3.008	1.985	1.138	0.590
80							3.382	1.939	1.006
100								2.931	1.521
125									2.299

In view of continuous developments, the informations / descriptions / specifications / illustrations are subject to change without notice.
Refer general information for performance curve conditions and for other details. Curve tolerance according to ISO : 9906, Grade 3B

PIPE FRICTION LOSS TABLE

PERMISSIBLE RANGE OF VOLUME RATES OF FLOW IN I/S THROUGH GALVANIZED STEEL PIPE TO LIMIT FRICTION LOSSES TO 10 PERCENT OF THE PIPE LENGTH

Grade →	Light	Medium	Heavy
Nominal pipe dia in mm ↓	Rate of flow in lps	Rate of flow in lps	Rate of flow in lps
40	1.90 - 2.74	1.79 - 2.67	1.59 - 2.41
50	2.74 - 5.24	2.67 - 4.95	2.41 - 4.54
65	5.24 - 9.97	4.95 - 9.80	4.54 - 9.17
80	9.97 - 15.54	9.80 - 14.97	9.17 - 14.20
100	15.54 - 30.84	14.97 - 30.0	14.20 - 28.67
125	-	30.0 - 52.50	28.67 - 51.37
150	-	52.50 - 84.18	51.37 - 82.63

PERMISSIBLE RANGE OF VOLUME RATES OF FLOW IN I/S THROUGH RPVC PIPE TO LIMIT FRICTION LOSSES TO 10 PERCENT OF THE PIPE LENGTH

Grade →	Class (0.25Mpa)	Class (0.4Mpa)	Class (0.6Mpa)
Nominal pipe dia in mm ↓	Rate of flow in lps	Rate of flow in lps	Rate of flow in lps
40	-	-	Up to 2.04
50	-	-	2.04 - 3.70
63	-	3.80 - 7.24	3.70 - 6.77
75	-	7.24 - 11.47	6.77 - 10.76
90	11.50 - 19.58	11.47 - 18.50	10.76 - 17.41
110	19.58 - 33.25	18.59 - 31.71	17.41 - 29.75
125	33.25 - 46.63	31.71 - 44.33	29.75 - 41.44
140	46.63 - 62.92	44.33 - 59.79	41.44 - 55.97
160	62.92 - 89.28	59.79 - 84.95	55.97 - 79.76

CONVERSION TABLE

FLOW RATE

litre per second l/s	litre per minute l/min	cubic meter per hour m^3/h	cubic foot per hour ft^3/h	cubic foot per minute ft^3/min	Imp.gallon per minute Imp.gal./min	US gallon per minute Us gal./min	Us barrel per day Is barrel/d (Petroleum)
1	60	3.6	127.133	2.1189	13.2	15.85	543.439
0.017	1	0.06	2.1189	0.0353	0.22	0.264	9.057
0.278	16.667	1	35.3147	0.5886	3.666	4.403	150.955
0.008	0.472	0.0283	1	0.0167	0.104	0.125	4.275
0.472	28.317	1.6990	60	1	6.229	7.480	256.475
0.076	4.546	0.2728	9.6326	0.1605	1	1.201	41.175
0.063	3.785	0.2271	8.0209	0.1337	0.833	1	34.286
0.002	0.110	0.0066	0.2339	0.0039	0.024	0.029	1

LIQUID

Cubic meter m^3	litre l	Milli litre ml	Imp. gallon Imp. Gal	US gallon US gal	cubic foot ft^3
1	1000	1×10^6	220	264.2	35.3147
0.001	1	1000	0.22	0.2642	0.0353
1×10^{-6}	0.001	1	2.2×10^{-4}	2.642×10^{-4}	3.53×10^{-5}
0.00455	4.546	4546	1	1.201	0.1605
0.00378	3.785	3785	0.8327	1	0.1337
0.0283	28.317	28317	6.2288	7.4805	1

LIQUID HEAD AND PRESSURE

newton per square meter N/m^2 (Pa)	kilo pascal kPa	bar bar	kilogram force per square centimeter Kgf/cm2	pound force per square inch psi	foot for water ft H_20	meter of water m H_20	millimeter of mercury mm Hg	inch of mercury in Hg
1	0.001	1×10^{-5}	1.02×10^{-5}	1.45×10^{-4}	3.35×10^{-4}	1.02×10^{-4}	0.0075	2.95×10^{-4}
1000	1	0.01	0.0102	0.145	0.335	0.102	7.5	0.295
1×10^{-5}	100	1	1.02	14.5	33.52	10.2	750.1	29.53
98,067	98.07	0.981	1	14.22	32.81	10	735.6	28.96
6895	6.895	0.069	0.0703	1	2.31	0.703	51.72	2.036
2984	2.984	0.03	0.0305	0.433	1	0.305	22.42	0.882
9789	9.789	0.098	0.1	1.42	3.28	1	73.42	2.891
133.3	0.133	0.0013	0.0014	0.019	0.045	0.014	1	0.039
3386	3.386	0.0338	0.0345	0.491	1.133	0.0345	25.4	1

LENGTH

millimeter mm	centimeter cm	meter m	inch in	foot ft	yard yd
1	0.1	0.001	0.0394	0.0033	0.0011
10	1	0.01	0.3937	0.0328	0.0109
1000	100	1	39.3701	3.2808	1.0936
25.4	2.54	0.0254	1	0.0833	0.0278
304.8	30.48	0.3048	12	1	0.3333
914.4	91.44	0.9144	36	3	1

1 Kilometer = 1000 metres = 0.62137 miles 1 mile = 1609.37 metres =- 1.60934 kilometers

MASS

kilogram kg	pound lb	hundred weight (cwt)	tonne t	ton long tn	short ton sh tn
1	2.205	0.0197	0.001	9.84×10^{-4}	0.0011
0.454	1	0.0089	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}
50.802	112	1	0.0508	0.05	0.056
1000	2204.6	19.684	1	0.9842	1.1023
1016	2240	20	1.0161	1	1.102
907.2	2000	17.857	0.9072	0.8929	1

TEMPERATURE

To Convert From	To	Use Formula
Temperature Celsius, tc	Temperature Kelvin, tk	K = tc + 273.15
Temperature Fahrenheit, tf	Temperature Kelvin, tk	K = (tF + 459.67 / 1.8)
Temperature Celsius, tc	Temperature Fahrenheit, tf	F = 1.8 tc + 32
Temperature Fahrenheit, tf	Temperature Celsius, tc	C = (tF - 32) / 1.8
Temperature Kelvin, tk	Temperature Celsius, tc	C = tk - 273.15
Temperature Kelvin, tk	Temperature Fahrenheit, tf	F = 1.8tk - 459.67

CONVERSION TABLE

FLOW RATE

litre per second l/s	litre per minute l/min	cubic meter per hour m^3/h	cubic foot per hour ft^3/h	cubic foot per minute ft^3/min	Imp.gallon per minute Imp.gal./min	US gallon per minute Us gal./min	Us barrel per day Is barrel/d (Petroleum)
1	60	3.6	127.133	2.1189	13.2	15.85	543.439
0.017	1	0.06	2.1189	0.0353	0.22	0.264	9.057
0.278	16.667	1	35.3147	0.5886	3.666	4.403	150.955
0.008	0.472	0.0283	1	0.0167	0.104	0.125	4.275
0.472	28.317	1.6990	60	1	6.229	7.480	256.475
0.076	4.546	0.2728	9.6326	0.1605	1	1.201	41.175
0.063	3.785	0.2271	8.0209	0.1337	0.833	1	34.286
0.002	0.110	0.0066	0.2339	0.0039	0.024	0.029	1

LIQUID

Cubic meter m^3	litre l	Milli litre ml	Imp. gallon Imp. Gal	US gallon US gal	cubic foot ft^3
1	1000	1×10^6	220	264.2	35.3147
0.001	1	1000	0.22	0.2642	0.0353
1×10^{-6}	0.001	1	2.2×10^{-4}	2.642×10^{-4}	3.53×10^{-5}
0.00455	4.546	4546	1	1.201	0.1605
0.00378	3.785	3785	0.8327	1	0.1337
0.0283	28.317	28317	6.2288	7.4805	1

LIQUID HEAD AND PRESSURE

newton per square meter N/m^2 (Pa)	kilo pascal kPa	bar bar	kilogram force per square centimeter Kgf/cm2	pound force per square inch psi	foot for water ft H_20	meter of water m H_20	millimeter of mercury mm Hg	inch of mercury in Hg
1	0.001	1×10^{-5}	1.02×10^{-5}	1.45×10^{-4}	3.35×10^{-4}	1.02×10^{-4}	0.0075	2.95×10^{-4}
1000	1	0.01	0.0102	0.145	0.335	0.102	7.5	0.295
1×10^{-5}	100	1	1.02	14.5	33.52	10.2	750.1	29.53
98,067	98.07	0.981	1	14.22	32.81	10	735.6	28.96
6895	6.895	0.069	0.0703	1	2.31	0.703	51.72	2.036
2984	2.984	0.03	0.0305	0.433	1	0.305	22.42	0.882
9789	9.789	0.098	0.1	1.42	3.28	1	73.42	2.891
133.3	0.133	0.0013	0.0014	0.019	0.045	0.014	1	0.039
3386	3.386	0.0338	0.0345	0.491	1.133	0.0345	25.4	1

LENGTH

millimeter mm	centimeter cm	meter m	inch in	foot ft	yard yd
1	0.1	0.001	0.0394	0.0033	0.0011
10	1	0.01	0.3937	0.0328	0.0109
1000	100	1	39.3701	3.2808	1.0936
25.4	2.54	0.0254	1	0.0833	0.0278
304.8	30.48	0.3048	12	1	0.3333
914.4	91.44	0.9144	36	3	1

1 Kilometer = 1000 metres = 0.62137 miles 1 mile = 1609.37 metres =- 1.60934 kilometers

MASS

kilogram kg	pound lb	hundred weight (cwt)	tonne t	ton long tn	short ton sh tn
1	2.205	0.0197	0.001	9.84×10^{-4}	0.0011
0.454	1	0.0089	4.54×10^{-4}	4.46×10^{-4}	5.0×10^{-4}
50.802	112	1	0.0508	0.05	0.056
1000	2204.6	19.684	1	0.9842	1.1023
1016	2240	20	1.0161	1	1.102
907.2	2000	17.857	0.9072	0.8929	1

TEMPERATURE

To Convert From	To	Use Formula
Temperature Celsius, tc	Temperature Kelvin, tk	K = tc + 273.15
Temperature Fahrenheit, tf	Temperature Kelvin, tk	K = (tF + 459.67 / 1.8)
Temperature Celsius, tc	Temperature Fahrenheit, tf	F = 1.8 tc + 32
Temperature Fahrenheit, tf	Temperature Celsius, tc	C = (tF - 32) / 1.8
Temperature Kelvin, tk	Temperature Celsius, tc	C = tk - 273.15
Temperature Kelvin, tk	Temperature Fahrenheit, tf	F = 1.8tk - 459.67

NOTES

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NOTES

W I N N I N G W A Y S

When you have a good thing going it is quite in the fitting of things that recognitions come our way. Several prestigious awards, which decorate our shelf, say it all. These rewards not only acknowledge our position as a leader in the water pump industry but also serve as reminders about what the customer expects from a winner. And we, as ever, have our ears perfectly tuned to customer expectations.

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