# Submersible Motor

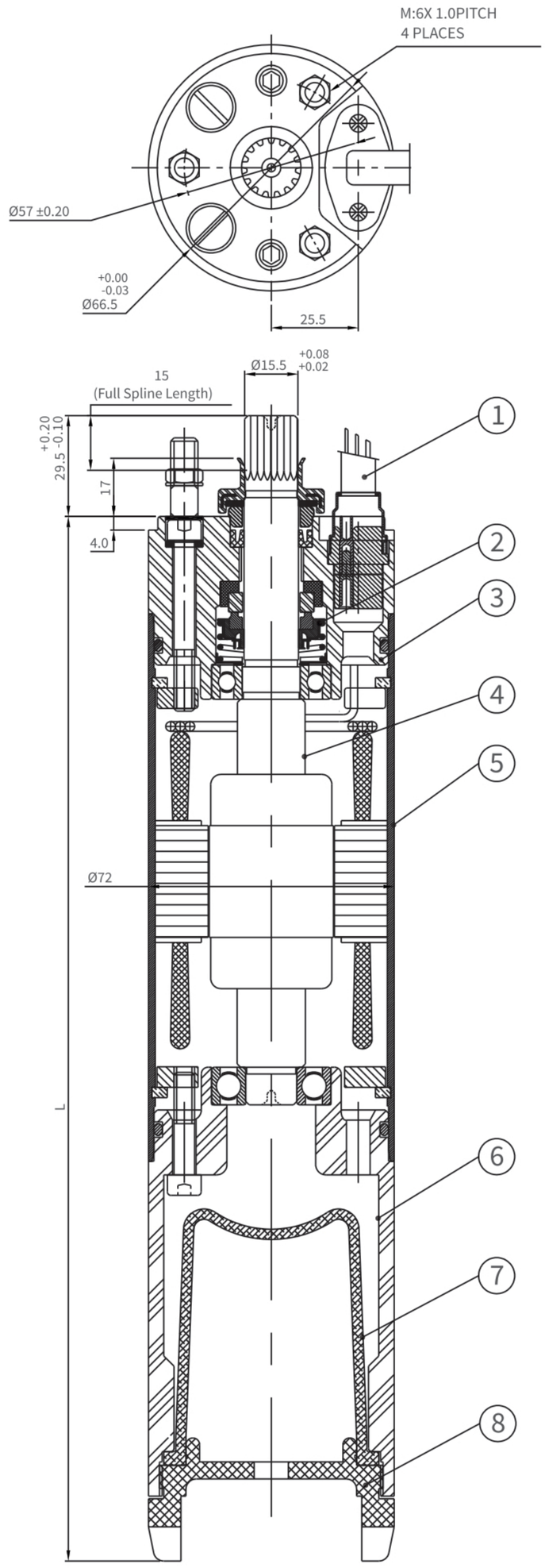
## TECHNICAL SPECIFICATIONS:

- 3" RAINDROP Oil Lubricated Motors are rewindable.
- Winding wires are Enamelled dual coated.
- Insulation class : B.
- Degree of protection : IP58.
- Max oil temperature : 350 C.
- Start per hour : 30 times (Max.).
- Allowable voltage variation : +6% - 10%.
- Motor shaft of Stainless Steel.
- Stator shell of Stainless Steel.
- Max depth immersion : 100M.
- Mounting : Vertical / Horizontal.
- Upper / Lower bracket in Cast Iron with Epoxy Point
- Single Phase Motors are Capacitor start and run.
- Motor Cable length : 3 Meter (3 Core / earth wire separate on demand).
- Coolant : Die electric non - toxic.

## VERSIONS:

Single Phase : 0.37 kW to 1.10 kW, 220-230 Volt / 50 Hz.
Motors with other Voltage and frequency ratings are available on specific demand.

# 3" OIL LUBRICATED SUBMERSIBLE MOTORS (RE-WINDABLE)




| SR NO. | PART'S NAME | MATERIAL |
|---|---|---|
| 01 | CABLE 3 CORE | EPR |
| 02 | MECH.SEAL | CERAMIC/CARBON |
| 03 | UPPER HOUSING | CAST IRON |
| 04 | ROTOR SHAFT | S.S.420 |
| 05 | MOTOR PIPE | STAINLESS STEEL |
| 06 | LOWER HOUSING | CAST IRON |
| 07 | PRESSURE CUP | N.B.R |
| 08 | MOTOR BASE | CAST IRON |
| 09 | ALL HARDWARE | S.S.316 |

| PN | | S.P. L [mm] | Motor Weight [kg] | Motor Weight (incl.pkg)[kg] |
|---|---|---|---|---|
| [kw] | [h.p.] | | | |
| 0.37 | 0.50 | 373 | 7.50 | 8.50 |
| 0.55 | 0.75 | 398 | 8.00 | 9.00 |
| 0.75 | 1.00 | 423 | 8.50 | 9.50 |
| 0.94 | 1.25 | 448 | 9.50 | 10.5 |

| PN | | T.P L [mm] | Motor Weight [kg] | Motor Weight (incl.pkg)[kg] |
|---|---|---|---|---|
| [kw] | [h.p.] | | | |
| 1.10 | 1.5 | 473 | 10.00 | 11.00 |



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# Submersible Motor

## CSCR Performance Data of Single Phase Motors (220-230 Volt / 50 Hz)

| $P_N$ | | Thrust Load [N] | $U_N$ [V] | $n_N$ [min-1] | $I_N$ [A] | $I_A$ [A] | μ (Eff.) [%] at % load | | | cos φ (PF) at % load | | | $T_N$ [Nm] | $T_A$ [Nm] | Capacitor Running μF (Uc=450V) | Capacitor Starting μF (Uc=270V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [H.P.] | [kW] | | | | | | **50** | **75** | **100** | **50** | **75** | **100** | | | | |
| 0.50 | 0.37 | 1500 | 220 | 2690 | 5.00 | 6.30 | 33 | 34 | 35 | 0.94 | 0.96 | 0.97 | 1.30 | 2.17 | 30 | 100-120 |
| | | | 230 | 2700 | 4.80 | 6.60 | 31 | 32 | 33 | 0.92 | 0.95 | 0.97 | 1.30 | 2.17 | | |
| 0.75 | 0.55 | 1500 | 220 | 2690 | 5.40 | 8.90 | 34 | 36 | 39 | 0.92 | 0.95 | 0.96 | 1.95 | 2.92 | 30 | 100-120 |
| | | | 230 | 2700 | 5.20 | 9.35 | 32 | 34 | 37 | 0.91 | 0.93 | 0.94 | 1.95 | 2.92 | | |
| 1.00 | 0.75 | 1500 | 220 | 2740 | 6.20 | 10.70 | 44 | 48 | 50 | 0.92 | 0.96 | 0.97 | 2.55 | 4.18 | 30 | 100-120 |
| | | | 230 | 2750 | 6.00 | 11.20 | 42 | 46 | 48 | 0.91 | 0.95 | 0.96 | 2.55 | 4.18 | | |
| 1.50 | 1.10 | 1500 | 220 | 2740 | 6.80 | 12.40 | 50 | 51 | 55 | 0.90 | 0.92 | 0.95 | 3.83 | 6.21 | 36 | 100-120 |
| | | | 230 | 2750 | 6.60 | 13.00 | 48 | 49 | 53 | 0.88 | 0.90 | 0.93 | 3.83 | 6.21 | | |

## CSR Performance Data of Single Phase Motors (220-230 Volt / 50 Hz)

| $P_N$ | | Thrust Load [N] | $U_N$ [V] | $n_N$ [min-1] | $I_N$ [A] | $I_A$ [A] | μ(Eff.) [%] at % load | | | cos φ (PF) at % load | | | $T_N$ [Nm] | $T_A$ [Nm] | Capacitor Running μF (Uc=450V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [H.P.] | [kW] | | | | | | **50** | **75** | **100** | **50** | **75** | **100** | | | |
| 0.50 | 0.37 | 1500 | 220 | 2690 | 5.00 | 6.30 | 33 | 34 | 35 | 0.94 | 0.96 | 0.97 | 1.30 | 0.99 | 30 |
| | | | 230 | 2700 | 4.80 | 6.60 | 31 | 32 | 33 | 0.92 | 0.95 | 0.97 | 1.30 | 1.01 | |
| 0.75 | 0.55 | 1500 | 220 | 2690 | 5.40 | 8.90 | 34 | 36 | 39 | 0.92 | 0.95 | 0.96 | 1.95 | 1.35 | 30 |
| | | | 230 | 2700 | 5.20 | 9.35 | 32 | 34 | 37 | 0.91 | 0.93 | 0.94 | 1.95 | 1.48 | |
| 1.00 | 0.75 | 1500 | 220 | 2740 | 6.20 | 10.70 | 44 | 48 | 50 | 0.92 | 0.96 | 0.97 | 2.55 | 2.07 | 30 |
| | | | 230 | 2750 | 6.00 | 11.20 | 42 | 46 | 48 | 0.91 | 0.95 | 0.96 | 2.55 | 2.27 | |
| 1.50 | 1.10 | 1500 | 220 | 2740 | 6.80 | 12.40 | 50 | 51 | 55 | 0.90 | 0.92 | 0.95 | 3.83 | 2.91 | 30 |
| | | | 230 | 2750 | 6.60 | 13.00 | 48 | 49 | 53 | 0.88 | 0.90 | 0.93 | 3.83 | 3.22 | |

- $P_N$ - Rated Output
- F[N] - Axial Thrust Load
- $U_N$ - Rated Voltage
- $n_N$ - RPM
- $I_N$ - Full Load Current
- $I_A$ - Starting Current
- μ - Motor Efficiency
- cosφ - Power Factor
- $T_N$ - Full Load Torque
- $T_A$ - Starting Torque

## Performance Data of 3" Rewindable Single Phase (O/L) Motors / 60 Hz (CSR)

| $P_N$ | | Thrust Load [N] | $U_N$ [V] | $n_N$ [min-1] | $I_N$ [A] | $I_A$ [A] | μ (Eff.) [%] at % load | | | cos φ (PF) at % load | | | $T_N$ [Nm] | $T_A$ [Nm] | Capacitor Running μF (Uc=450V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [H.P.] | [kW] | | | | | | **50** | **75** | **100** | **50** | **75** | **100** | | | |
| 0.5 | 0.37 | 1500 | 230 | 3430 | 4.6 | 12.2 | 38 | 40 | 42 | 0.80 | 0.82 | 0.84 | 1.02 | 0.84 | 30 |
| 0.75 | 0.55 | 1500 | 230 | 3430 | 6.3 | 17.3 | 45 | 47 | 49 | 0.86 | 0.88 | 0.91 | 1.54 | 1.26 | 30 |
| 1.0 | 0.75 | 1500 | 230 | 3440 | 8.7 | 23 | 48 | 50 | 51 | 0.88 | 0.90 | 0.92 | 2.04 | 1.82 | 30 |
| 1.5 | 1.1 | 1500 | 230 | 3440 | 12 | 34 | 49 | 51 | 53 | 0.87 | 0.88 | 0.90 | 3.06 | 2.6 | 36 |

- $P_N$ - Rated Output
- F[N] - Axial Thrust Load
- $U_N$ - Rated Voltage
- $n_N$ - RPM
- $I_N$ - Full Load Current
- $I_A$ - Starting Current
- μ - Motor Efficiency
- cosφ - Power Factor
- $T_N$ - Full Load Torque
- $T_A$ - Starting Torque

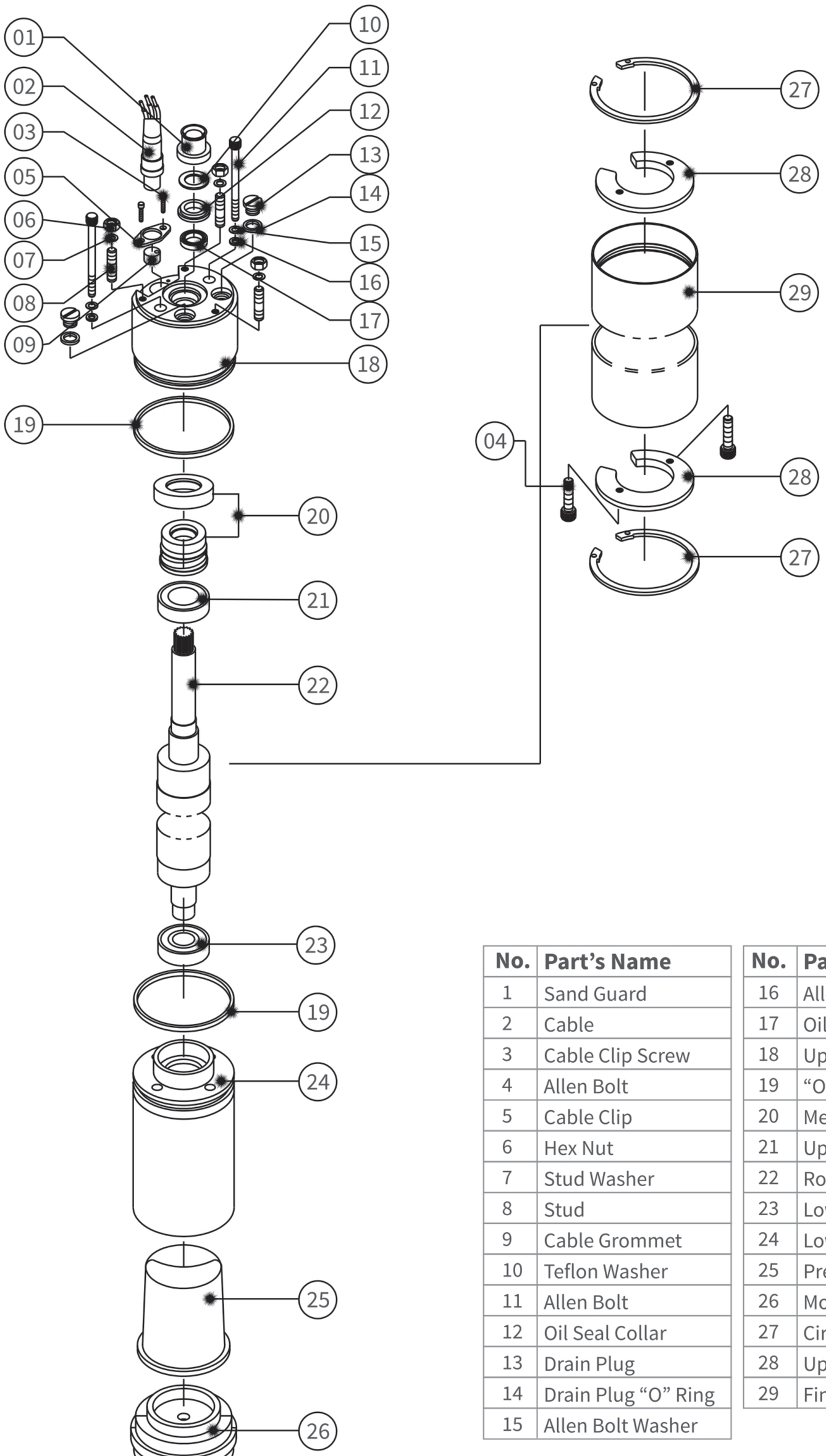
## Performance Data of 3" Rewindable Single Phase (O/L) Motors / 60 Hz (CSCR)

| $P_N$ | | Thrust Load [N] | $U_N$ [V] | $n_N$ [min-1] | $I_N$ [A] | $I_A$ [A] | μ (Eff.) [%] at % load | | | cos φ (PF) at % load | | | $T_N$ [Nm] | $T_A$ [Nm] | Capacitor Running μF (Uc=450V) | Capacitor Starting μF (Uc=270V) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [H.P.] | [kW] | | | | | | **50** | **75** | **100** | **50** | **75** | **100** | | | | |
| 0.5 | 0.37 | 1500 | 230 | 3430 | 4.6 | 12.2 | 38 | 40 | 42 | 0.80 | 0.82 | 0.84 | 1.02 | 1.70 | 30 | 100-120 |
| 0.75 | 0.55 | 1500 | 230 | 3430 | 6.3 | 17.3 | 45 | 47 | 49 | 0.86 | 0.88 | 0.91 | 1.54 | 2.31 | 30 | 100-120 |
| 1.0 | 0.75 | 1500 | 230 | 3440 | 8.7 | 23 | 48 | 50 | 51 | 0.88 | 0.90 | 0.92 | 2.04 | 3.35 | 30 | 100-120 |
| 1.5 | 1.1 | 1500 | 230 | 3440 | 12 | 34 | 49 | 51 | 53 | 0.87 | 0.88 | 0.90 | 3.06 | 4.96 | 36 | 100-120 |

- $P_N$ - Rated Output
- F[N] - Axial Thrust Load
- $U_N$ - Rated Voltage
- $n_N$ - RPM
- $I_N$ - Full Load Current
- $I_A$ - Starting Current
- μ - Motor Efficiency
- cosφ - Power Factor
- $T_N$ - Full Load Torque
- $T_A$ - Starting Torque

# Submersible Motor

## Exploded View of Spare Parts of Motors




| No. | Part's Name |
|---|---|
| 1 | Sand Guard |
| 2 | Cable |
| 3 | Cable Clip Screw |
| 4 | Allen Bolt |
| 5 | Cable Clip |
| 6 | Hex Nut |
| 7 | Stud Washer |
| 8 | Stud |
| 9 | Cable Grommet |
| 10 | Teflon Washer |
| 11 | Allen Bolt |
| 12 | Oil Seal Collar |
| 13 | Drain Plug |
| 14 | Drain Plug "O" Ring |
| 15 | Allen Bolt Washer |

| No. | Part's Name |
|---|---|
| 16 | Allen Bolt "O" Ring |
| 17 | Oil Seal |
| 18 | Upper Housing |
| 19 | "O" Ring |
| 20 | Mechanical Seal |
| 21 | Upper Bearing |
| 22 | Rotor Shaft |
| 23 | Lower Bearing |
| 24 | Lower Housing |
| 25 | Pressure Cup |
| 26 | Motor Base |
| 27 | Circlip (Internal) |
| 28 | Upper & Lower Flange |
| 29 | Finish Stator Body |