

OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : **4"**

"L" Series

Deepstar

Description

These oil filled motors are one among the proven & successful products from the house of C.R.I. These motors are developed with due diligence complying with all safety standards and giving importance to the customers' need. All the components that are in contact with water are made of AISI 304 stainless steel and the motor is pre-filled with edible grade oil, which acts as coolant media as well as lubricant. The freezing point of the oil used is -10°C.

Ball bearings are used to withstand the high axial load and the lower ball bearings are of angular contact type.

High quality carbon/ceramic mechanical seal and oil seal made of Nitrile rubber are used to ensure better sealing system. Pressure equalizing rubber diaphragm is provided to balance the pressure and volume variations due to thermal expansion of the oil inside the motor. Motor sealing are made by means of 'O' rings. Shaft seals and sand guard prevents ingress of well water, sand and fiber 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 water level monitor / dry run prevent. 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 ascertained, 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.

Features

- High operating efficiency and lesser power consumption
- Extremely hardwearing ball & angular contact bearings
- Corrosive resistance stainless steel body
- Filled with non-toxic oil
- Can be easily dismantled and repaired

Applications

These prime mover submersible motors are suitable to couple with deepwell submersible pump ends used for

- Residential
- Industrial water supply
- Ponds
- Irrigation
- Sprinkler systems
- Mining
- Fountains
- Pressure boosting units
- CBM (coal bed methane)
- Gardens

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Specifications

Nominal Dia	4" (100mm)
Maximum Outer Diameter	3.74"
Power Range	0.5 HP to 3 HP - Single Phase
	0.5 HP to 10 HP - Three Phase
Speed	3450 rpm
Version	Single Phase - 110 V & 220 V, 60 Hz, A.C Supply
	Three Phase - 220 V, 380 V & 460 V, 60 Hz, A.C Supply
Class of Insulation	F
Degree of Protection	IP 68
Direction of Rotation	CCW - Single Phase
	Electrically Reversible - Three Phase
Type of Duty	S1 (Continuous)
Down Thrust Load	0.5 HP to 1 HP - 337 lbs
	1.5 HP to 4 HP - 562 lbs
	5 HP to 10 HP - 1011 lbs
Minimum Cooling Flow Along the Motor	0.5 ft/sec
Maximum Liquid Temperature	91.4°F
Maximum Immersion Depth	150 m
Starts per Hour	30 Times
Shaft Type	Splined as per NEMA Standard
Mounting Standard	NEMA Standard
Method of Starting	Single Phase - Permanent Split Capacitor (PSC)
	Three Phase - Direct On Line (DOL)
Cable Lead out	3 Wire Permanent Type TPE/EPDM Rubber Flat Cable



Type - A

Materials of Construction

Part Name	Type - A
Outer Shell	SS - 304
Motor Base	SS - 304
Shaft Extension	SS - 420
'O' Ring	High Nitrile Rubber
Mechanical Seal	Carbon / Ceramic
Diaphragm	High Nitrile Rubber
Cable	TPE / EPDM

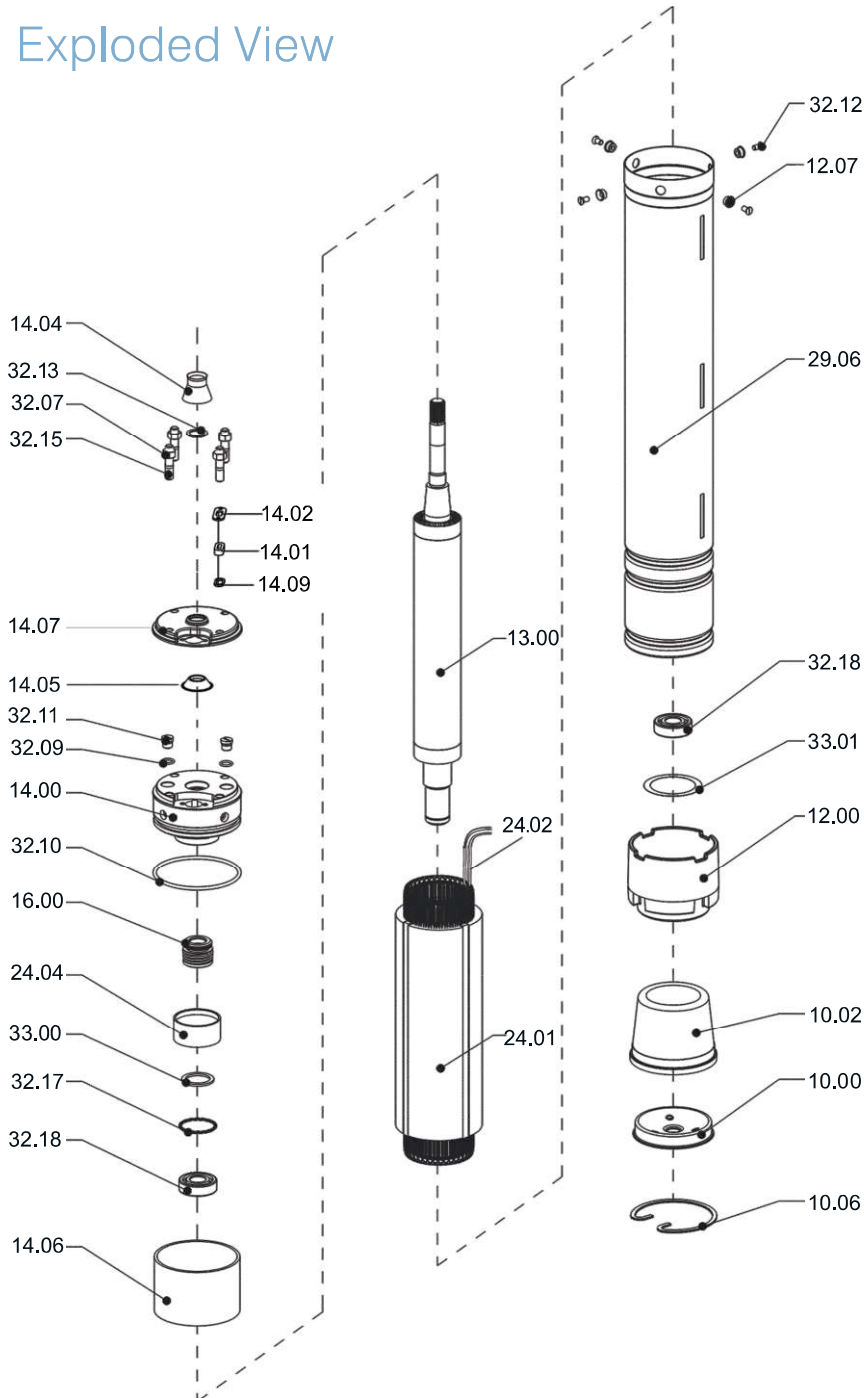
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Exploded View



Part No.	Part Name
10.00	Motor base
10.02	Diaphragm
10.06	Snap ring
12.00	Lower housing
12.07	Guide bush
13.00	Rotor
14.00	Upper Housing
14.01	Cable Grommet
14.02	Grommet locking plate
14.04	Rubber sand guard
14.05	Sand guard
14.06	Insulation paper
14.07	Upper housing shell
14.09	Grommet washer
16.00	Mechanical seal
24.01	Wound stator
24.02	Lead out cable
24.04	Winding guard
29.06	Outer shell
10.02	Outer shell
32.07	Nut
32.09	O-Ring
32.10	O-Ring (Upper housing)
32.11	Drain plug
32.12	Screw
32.13	Sand guard washer
32.15	Stud
32.16	Washer
32.17	Wave washer
32.18	Bearing
33.00	Seal washer
33.01	Adjustment washer

In view of continuous developments, the information / descriptions / specifications / illustrations are subject to change without notice.

OIL FILLED SUBMERSIBLE MOTORS

Nominal Diameter : 4"

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110V, SINGLE PHASE

ELECTRICAL & DIMENSIONAL DATA

Models	kW	HP	S.F.	PF Cosφ	EFF.%	Capacitor MFD		Amps		Max Down Thrust load (lbs)	Height H1		Nett Weight		Cable Size (sq.mm)
						Starting	Running	F.L	Starting		mm	Inches	kg	lbs	
L4A-10-3A	0.75	1	1.5	0.98	65	-	60	12.9	46	337	381	15	8	17.6	1.5
L4A-15-3A	1.1	1.5	1.4	0.98	67	-	80	14.9	58	337	399	15.7	9	19.8	1.5

220V, SINGLE PHASE

ELECTRICAL & DIMENSIONAL DATA

Models	kW	HP	S.F.	PF Cosφ	EFF.%	Capacitor MFD		Amps		Max Down Thrust load (lbs)	Height H1		Nett Weight		Cable Size (sq.mm)
						Starting	Running	F.L	Starting		mm	Inches	kg	lbs	
L4A-05-3D	0.37	0.5	1.6	0.90	48	80-100	15	5.5	22.5	337	361	14.2	7.3	16.1	1.5
L4A-07-3D	0.55	0.75	1.5	0.94	53	80-100	20	6.3	28	337	381	15	8.1	17.9	1.5
L4A-10-3D	0.75	1	1.4	0.93	54	80-100	25	7.6	36	337	399	15.7	9.2	20.3	1.5
L4A-15-3D	1.1	1.5	1.3	0.96	58	100-120	35	9.4	46	562	429	16.9	10.4	22.9	1.5
L4A-20-3D	1.5	2	1.25	0.97	63	120-150	45	12	59	562	480	18.9	12.2	26.9	2
L4A-30-3D	2.2	3	1.15	0.98	69	200-250	50	15.6	90	562	521	20.5	14.4	31.8	2.3

220V, THREE PHASE

ELECTRICAL & DIMENSIONAL DATA

Model	kW	HP	S.F.	Current (Amps)		Eff. (%)	PF Cosφ	Max Down Thrust Load	Height H1		Nett Weight		Cable size (Sq.mm)
				F. L	Starting				mm	Inches	kg	lbs	
L4A-05-4D	0.37	0.5	1.6	2	10	62	0.7	337	409	16.1	7.8	17.2	1.5
L4A-07-4D	0.55	0.75	1.5	3.2	16	65	0.71	337	409	16.1	7.8	17.2	1.5
L4A-10-4D	0.75	1	1.4	4.4	20.0	70	0.72	337	429	16.9	8.8	19.4	1.5
L4A-15-4D	1.1	1.5	1.3	6.5	28.0	71	0.7	562	450	17.7	9.6	21.2	1.5
L4A-20-4D	1.5	2	1.25	7.6	34	72	0.7	562	480	18.9	11.4	25.1	1.5
L4A-30-4D	2.2	3	1.15	10.5	45	75	0.72	562	541	21.3	13.8	30.4	1.5
L4A-40-4D	3	4	1.15	14.2	63	76	0.76	562	602	23.7	18.1	39.9	1.5
L4A-50-4D	3.7	5	1.15	16.2	71	77	0.76	1011	650	25.6	20.1	44.3	2
L4A-55-4D	4	5.5	1.15	18	82	78	0.76	1011	650	25.6	20.1	44.3	2
L4A-75-4D	5.5	7.5	1.15	23.5	104	78	0.78	1011	762	30	26.2	57.8	2.3
L4A-100-4D	7.5	10	1.15	31.5	140	80	0.86	1011	879	34.6	32.6	71.8	2.3

380V, THREE PHASE

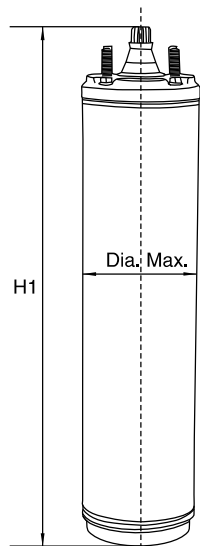
ELECTRICAL & DIMENSIONAL DATA

Model	kW	HP	S.F.	Current (Amps)		Eff. (%)	PF Cosφ	Max Down Thrust Load	Height H1		Nett Weight		Cable size (Sq.mm)
				F. L	Starting				mm	Inches	kg	lbs	
L4A-05-4I	0.37	0.5	1.6	1.3	6.5	62	0.7	337	409	16.1	7.8	17.2	1.5
L4A-07-4I	0.55	0.75	1.5	2	11	65	0.71	337	409	16.1	7.8	17.2	1.5
L4A-10-4I	0.75	1	1.4	2.6	14	70	0.72	337	429	16.9	8.8	19.4	1.5
L4A-15-4I	1.1	1.5	1.3	3.6	20	71	0.7	562	450	17.7	9.6	21.2	1.5
L4A-20-4I	1.5	2	1.25	4.9	25	72	0.7	562	480	18.9	11.4	25.1	1.5
L4A-30-4I	2.2	3	1.15	6	30	75	0.72	562	541	21.3	13.8	30.4	1.5
L4A-40-4I	3	4	1.15	8.2	37	76	0.76	562	602	23.7	18.1	39.9	2
L4A-50-4I	3.7	5	1.15	9.3	42	77	0.76	1011	650	25.6	20.1	44.3	2
L4A-55-4I	4	5.5	1.15	10.4	47	78	0.76	1011	650	25.6	20.1	44.3	2
L4A-75-4I	5.5	7.5	1.15	13.7	65	78	0.78	1011	762	30	26.2	57.8	2.3
L4A-100-4I	7.5	10	1.15	18.2	102	80	0.86	1011	879	34.6	32.6	71.8	2.3

460V, THREE PHASE

ELECTRICAL & DIMENSIONAL DATA

Model	kW	HP	S.F.	Current (Amps)		Eff. (%)	PF Cosφ	Max Down Thrust Load	Height H1		Nett Weight		Cable size (Sq.mm)
				F. L	Starting				mm	Inches	kg	lbs	
L4A-05-4M	0.37	0.5	1.6	1.1	5.5	62	0.76	337	409	16.1	7.8	17.2	1.5
L4A-07-4M	0.55	0.75	1.5	1.6	8	66	0.75	337	409	16.1	7.8	17.2	1.5
L4A-10-4M	0.75	1	1.4	2	10	70	0.75	337	429	16.9	8.8	19.4	1.5
L4A-15-4M	1.1	1.5	1.3	2.8	14	72	0.74	562	450	17.7	9.6	21.2	1.5
L4A-20-4M	1.5	2	1.25	3.8	19	74	0.73	562	480	18.9	11.4	25.1	2
L4A-30-4M	2.2	3	1.15	5.5	26	74	0.74	562	541	21.3	13.8	30.4	2.3
L4A-40-4M	3	4	1.15	6.9	34	76	0.74	562	602	23.7	18.1	39.9	2.3
L4A-50-4M	3.7	5	1.15	8.7	43	75	0.77	1011	650	25.6	20.1	44.3	2.3
L4A-55-4M	4	5.5	1.15	10	50	76	0.78	1011	650	25.6	20.1	44.3	2.3
L4A-75-4M	5.5	7.5	1.15	12.8	65	78	0.78	1011	762	30	26.2	57.8	2.3



Splined shaft 14 Teeth - module
1.5875 Pressure angle 30°
A.N.S.I.B - 92 - 1 - 1970
Coupling Class 5