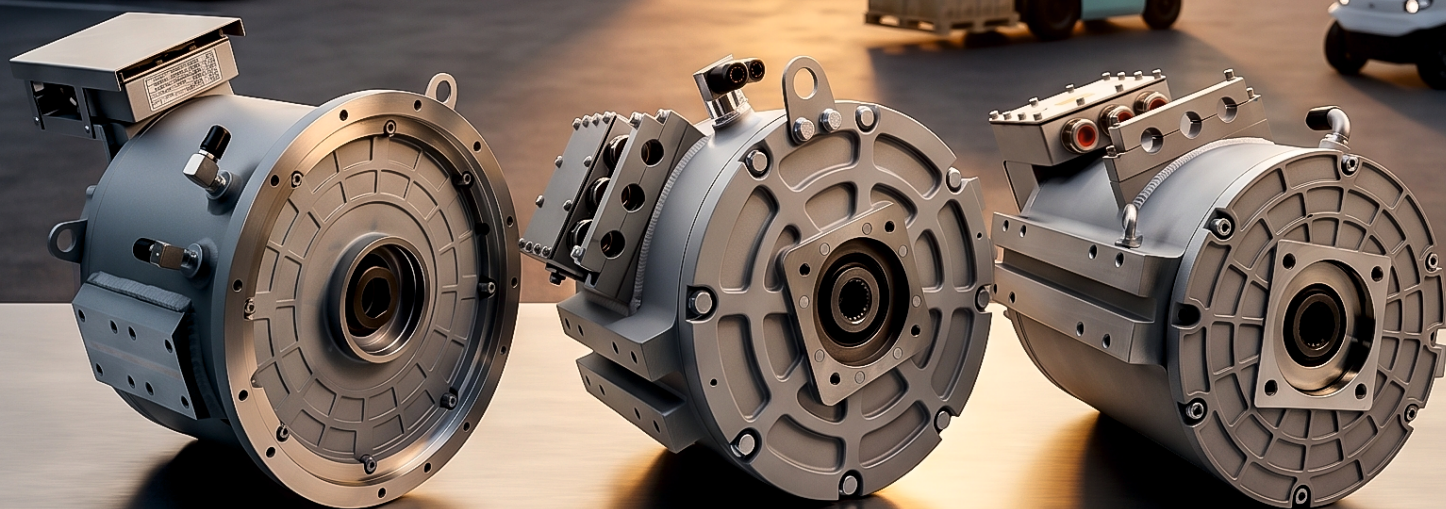




THM
HYDRAULICS

ELECTRIC MOTORS FOR E-VEHICLES

PMSM & AC MOTORS





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Introduction PMSM Motor

The permanent magnet synchronous motor provides excitation, which makes the motor structure simple, reduces the processing and assembly costs, and eliminates the collector ring and brush which are prone to problems, and improves the reliability of the motor operation. And because there is no excitation current and no excitation loss, the efficiency and power density of the motor are improved. Permanent magnet synchronous motor is composed of stator, rotor and end cover. The stator is basically the same as the ordinary induction motor, and adopts the laminated structure to reduce the iron consumption of the motor during operation. The rotor can be made of solid or laminated. The armature winding can adopt the centralized integral winding, but also the distributed short distance winding and the unconventional winding.

Characteristics

- High power efficiency and high power factor
- The cooling system has simple structure, small volume and low noise
- No transmission gear wear, no transmission gear noise, no lubricating oil, no maintenance
- The allowable overload current is large, and the reliability is significantly improved
- Light weight, high power per unit weight
- The permanent magnet material pole is adopted, and the motor is small in size and light in weight
- High acceleration, good dynamic performance, compact structure and reliable operation can be obtained



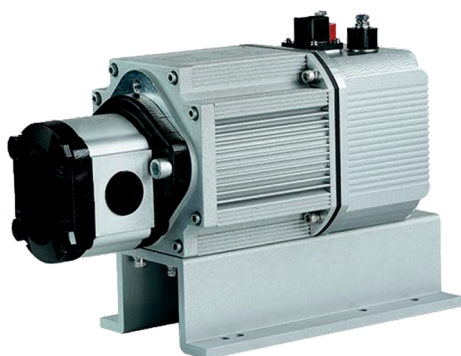


Walking Motor for Scissor forklift - DC Motor



Serial Number	Motor Model	Voltage platform VDC	Rated Power kW	Rated Speed rpm	Rated Torque Nm	Working system
1	TS-150ZD-0.4-24-XB	24	0.4	4300	0.89	S2-60 min
2	TS-124ZD-0.45-24	24	0.45	4000	1.07	S2-60 min
3	TS-ZL142GQ0.7524E13-XB	24	0.8	1444	5.28	S2-60 min

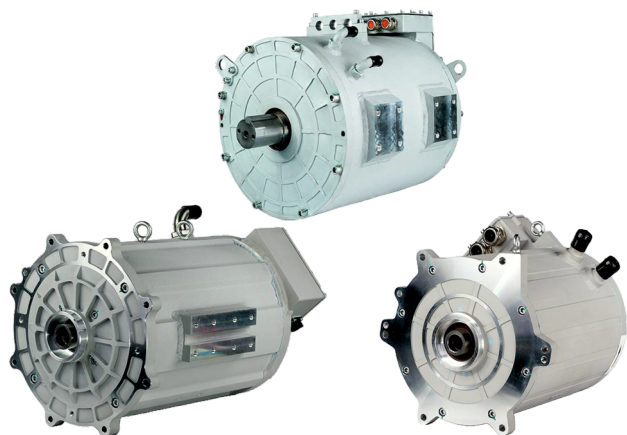
Lifting Motor for Scissor forklift - PMSM



Motor Model	TS-TZ130CGD3.524N9	Type of motor	PMSM
Rated Power (kW)	3.5	Maximum Power (kW)	4
Rated Torque (Nm)	12.9	Maximum Torque (Nm)	22
Rated Speed (rpm)	2600	Maximum Speed (rpm)	3500
Rated Current (A)	115.0	Maximum Current (A)	220
Maximum Efficiency	94%	Rated Voltage	24
Working System	S2-5min	Number of poles	8

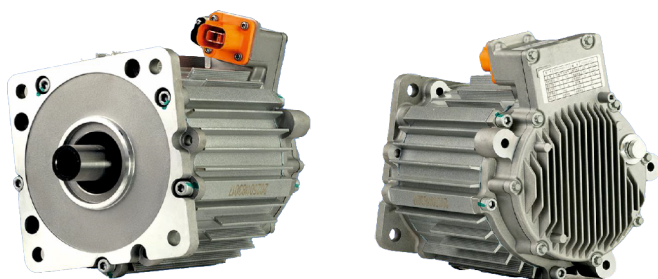


Suitable for Loaders - PMSM



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Working system	Vehicle model Loader
1	TS-TZ230XS80618N19-YZJ	618	80	160	7500	10000	102	240	144	305	S9	Lifting
2	TS-TZ260XS80618N22-YZJ	618	90	160	2700	11000	318	680	209	450	S9	Walking
3	TS-TZ400XSWQ100618N27	618	100	180	1061	3600	900	1950	192	450	S9	Walking
4	TS-TZ338XSWD105580N17	580	105	150	1800	2500	560	1000	185	340	S9	Lifting
5	TS-TZ290XSWD80618N17-XG	618	80	150	2000	2500	382	850	137	300	S9	Lifting
6	TS-TZ400XSWQ100600P20-XG	600	100	180	795	3500	1201	2800	260	600	S9	Walking

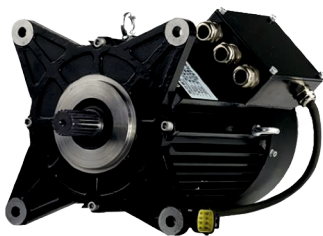
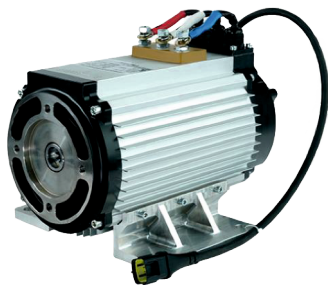
Automatic Driving Car - PMSM



Motor Model	TS-TZ155C3700H2-JY-1	Type of motor	Permanent Magnet Synchronous Motor Electric Control Two in One
Rated Power (kW)	3	Battery voltage range (VDC)	300-700
Rated Torque (Nm)	11.5	Working system	S9
Rated Speed (rpm)	2500	Maximum Speed (rpm)	3800
Maximum Current (A)	15		



Suitable for Forklift - PMSM



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Working system	Vehicle model
1	TS-TZ210XXQ1580E18-TN	80	15	25	3500	4000	40.9	220	185	450	S2-60min	Walking
2	TS-TZ210XXD2280N10-TN	80	22	30	2400	3500	87.5	160	255	450	S3-15%	Lifting
3	TS-TZ210XXQ15153E18-YSH	153	15	20	2200	5000	65	160	95	200	S2-60min	Walking
4	TS-TZ210XXD16.5153N10-YSH	153	16.5	18	2400	3200	65.6	80	105	125	S3-15%	Lifting
5	TS-TZ155XFXQ1080E20	80	10	25	2700	5200	35.4	130	125	350	S2-60min	Walking
6	TS-TZ155XFXD1680N10	80	16	25	2600	3600	58.8	120	198	350	S3-15%	Lifting
7	TS-TZ210HXQ1480E20	80	14	22	3000	5000	44.5	145	165	350	S2-60min	Walking
8	TS-TZ210XXQ6.580E20	80	6.5	13	4500	4600	13.8	92	80	350	S2-60min	Walking
9	TS-TZ210XXD580N4	80	5	10	1600	3000	29.8	65	86	350	S3-15%	Lifting
10	TS-TZ210XXQ980E20	80	9	18	4800	5000	17.9	105	125	350	S2-60min	Lifting
11	TS-TZ210XXD780N4	80	7	14	1800	3000	37.1	70	80	350	S3-15%	Lifting
12	TS-TZ260XXQ23153E18	153	23	42	2600	5300	85	245	147	350	S2-60min	Walking
13	TS-TZ210XXD126153N13	153	26	29	2400	3200	103	120	172	200	S3-15%	Lifting



Suitable for Aerial Work - PMSM



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Working system	Vehicle model
1	TS-TZ130C0.824E13	24	0.8	1	2547	3600	3	10.5	34	120	S2-60min	Walking
2	TS-TZ130C1.124E13	24	1.1	1.5	1423	2830	4.7	22	48	150	S2-60min	Walking
3	TS-TZ130XGD1.524N9	24	1.5	2.8	2500	4000	5.7	15	74	200	S3-15%	Lifting
4	TS-TZ130CGD2.272E13-ZZG	72	2.2	4.5	2659	2894	7.9	32	32	150	S2-60min	Walking
5	TS-TZ130XGD3.524N9	24	3.5	4	2600	3500	12.9	22	130	250	S3-15%	Lifting
6	TS-TZ155C4.572E18-ZZG-SG	72	4.5	9	2261	3800	19	70	65	250	S2-60min	Walking
7	TS-TZ155C5.248N13	48	5.2	10.5	2800	3800	18	70	120	250	S2-60min	Walking
8	TS-TZ155XGD1048N9-JB	48	10	15	1852	3500	51.5	90	215	350	S3-15%	Lifting
9	TS-TZ155C1072P8-ZZG-SG	48	10	20	3820	4000	25	50	118	250	S2-60min	Walking
10	TS-TZ155X10243P3-ZZG	243	10	20	4340	6258	22	40	40	80	S1	Walking
11	TS-TZ155C12144E13-ZZG	144	12	18	3888	4800	29	61	80.5	150	S2-60min	Walking
12	TS-TZ210XXD1580N10	80	15	20	2200	3000	65.1	160	146	350	S3-20%	Lifting



Suitable for Automatic Driving Car and ATV/UTV - PMSM



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Cooling type	working system
1	TS-TZ120X1.548N24-SFL	48	1.5	4	3000	6800	4.78	30	40	260	nature cooling	S9
2	TS-TZ155XF272N18-ZS	72	2	5	3000	5000	6.37	50	32	200	forced-air cooling	S9
3	TS-TZ155XF372N18-ZS	72	3	9	3000	5000	9.55	70	48	250	forced-air cooling	S9
4	TS-TZ155X2.560H12	60	2.5	5	3000	6000	7.96	40	48	200	nature cooling	S9
5	TS-TZ155X3.572H2-SH	72	3.5	8	3000	5000	11.1	65	54	240	nature cooling	S9
6	TS-TZ155C472H2-DW	72	4	8	3000	6500	12.7	65	58	275	nature cooling	S9
7	TS-TZ155X572H2-JM	72	5	10	3000	6500	15.9	75	62	300	nature cooling	S9
8	TS-TZ155X796H2-HC	96	7	14	4500	8500	14.9	80	73	350	nature cooling	S9
9	TS-TZ160X7.572H9-HR-JM11	72	7.5	18	3000	7500	23.9	80	119	350	nature cooling	S9
10	TS-TZ160X5240P8-HNZY	240	5	10	3000	7500	15.9	70	23.5	85	nature cooling	S9
11	TS-TZ180X10230H61-HCH	230	10	20	2800	3600	34.1	110	40	90	nature cooling	S2-60min
12	TS-TZ160X8.572H61-XG	72	8.5	17	3500	6000	23.2	105	120	450	nature cooling	S9
13	TS-TZ160X1096H9-JC	96	10	20	3000	5500	32	100	115	350	nature cooling	S9
14	TS-TZ155X1296H12-HZ	96	12	20	4500	7500	25.47	85	120	350	nature cooling	S9
15	TS-TZ160X15115H9-YJ	115	15	29	4775	7500	30	110	119	450	nature cooling	S9
16	TS-TZQ180-18-144-V01-X	144	18	42	4500	7000	38.2	180	130	500	nature cooling	S9
17	TS-TZQ210-33-144S-E01-X	144	33	45	2900	4500	108.7	175	210	350	nature cooling	S9
18	TS-TZ180XS30336H61-V01	336	30	70	3182	9000	90	230	110	300	nature cooling	S9



Suitable for Commercial Car - PMSM



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	working system	Vehicle model
1	TS-TZ230XS60380N19-AMT02	380	60	120	4775	10000	120	320	180	420	S9	Light truck/sightseeing car
2	TS-TZ230XS80618N19-QT	618	80	160	4494	12000	170	420	165	400	S9	Light truck
3	TS-TZ230XS80540N19-AMT01	540	80	160	5457	12000	140	350	158	393	S9	Sanitation vehicles
4	TS-TZ230XS120540N19-A01	540	120	200	5730	12000	200	500	168	420	S9	Sanitation vehicles/heavy truck
5	TS-TZ260XS130618N22-AMT	618	130	200	3103	12000	400	1200	225	630	S9	Mining Card
6	TS-TZ270XS240618N22-AMT	618	240	300	4775	12000	480	1000	360	690	S9	Sanitation vehicles/heavy truck
7	TS-TZ270XS310618N22-AMT04	618	310	450	4230	12000	700	1300	500	900	S9	Mining Card

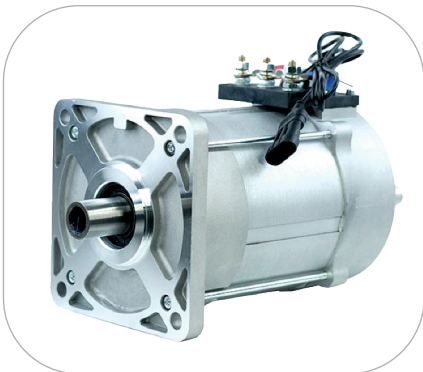


Introduction AC Motor

AC asynchronous motor is a kind of electric drive device which converts electrical energy into mechanical energy. It is mainly composed of the stator, the rotor and the air gap between them. After the stator winding is connected to the three-phase AC power supply, the rotating magnetic field is generated and the rotor is cut to obtain the torque. Three-phase AC asynchronous motor has the advantages of simple structure, reliable operation, cheap price, strong overload capacity, convenient use, installation and maintenance, and is widely used in various fields.

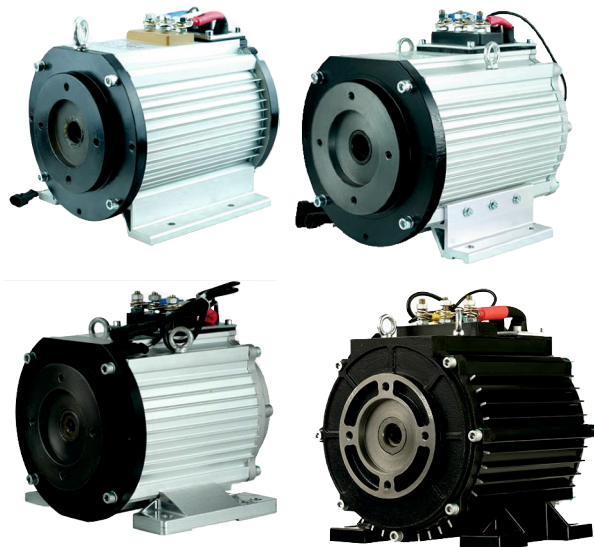
Characteristics

- The hardware is advanced and reliable
- The software function is perfect and flexible
- Comprehensive and accurate control functions
- I/O and communication interfaces are abundant and complete
- High motor power and long life
- Can be directly from the mains or inverter power supply
- High versatility, can provide a variety of cooling type, protection level and various models
- Outstanding motor efficiency, best cooling method
- Ensure lower operating costs
- The safe and reliable operation of the whole motor system is ensured





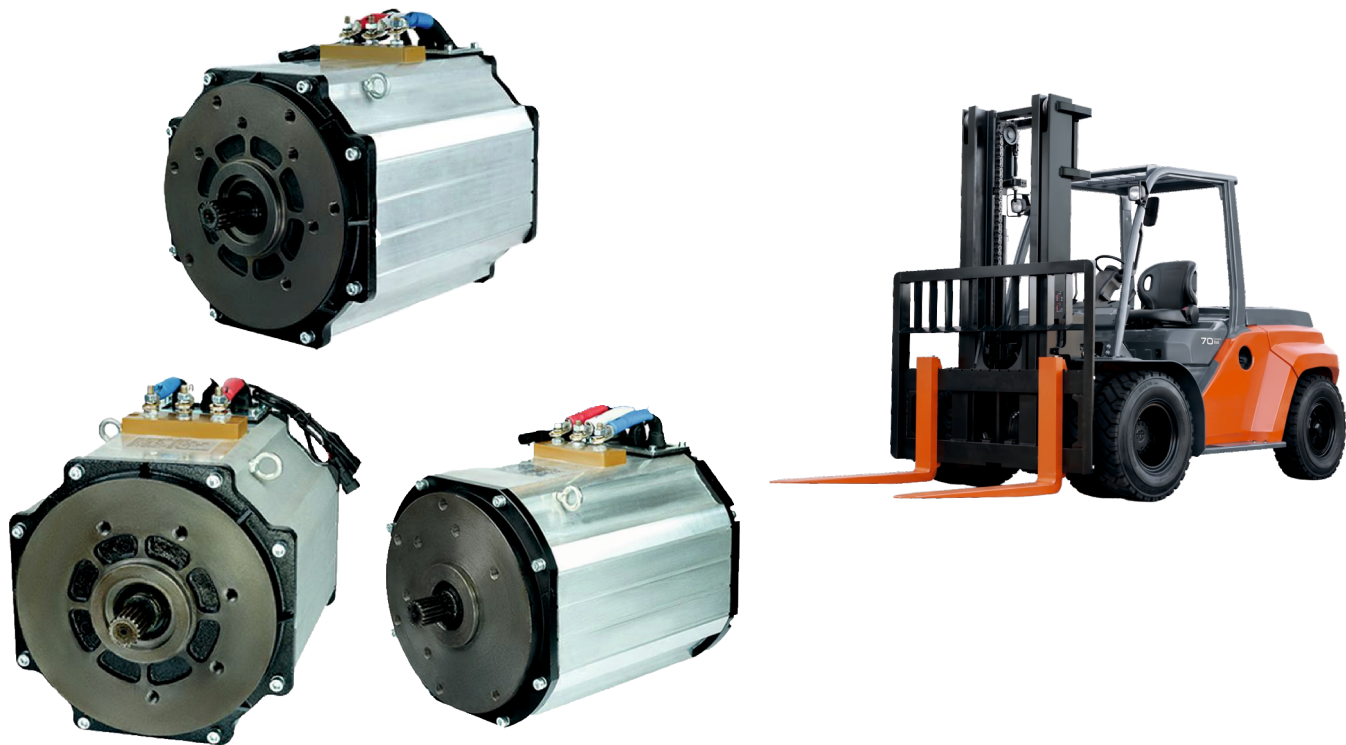
Lifting motor for Forklift - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	working system
1	TS-YS175HXD4.524N4-BYD	24	4	5.5	1460	2000	26.2	38	204	350	S3-15%
2	TS-YS155HXD548N10-LDY	48	5	7.5	2310	6000	20.7	64	126	350	S3-15%
3	TS-YS155HXD560N10-LDY	60	5	7.5	2310	5000	20.7	89	97	350	S3-15%
4	TS-YS175HXD660N10-LDY	60	6	11	2330	5000	20.5	85	114	350	S3-15%
5	TS-YS175HXD860N10-NJ	60	8	17	2330	5500	32.8	105	160	450	S3-15%
6	TS-YS175HXD880N10-QY	80	8	20	2330	5500	32.8	145	116	450	S3-15%
7	TS-YS210HXD880N10-YZ	80	8	22	2345	5500	32.6	170	119	500	S3-15%
8	TS-YS175HXD1048N10-WK	48	10	16	2155	4500	44.3	100	252	500	S3-15%
9	TS-YS175HXD1060N10-NJ	60	10	18	2330	5500	41	100	197	450	S3-15%
10	TS-YS175HXD1080N10-YL	80	10	22	2310	5000	41.3	150	146	450	S3-15%
11	TS-YS210HXD1080N10-YX	80	10	22	2481	6000	38.5	150	152	500	S3-15%
12	TS-YS210HXD10.648N4-RY	48	10.6	13	2200	4400	46	120	262	400	S3-15%
13	TS-YS175HXD1148N4-RY	48	11	17	1780	3600	59	93	252	500	S3-15%
14	TS-YS175HXD1248N10-WK	48	12	16	2127	4500	53.9	110	239	500	S3-15%
15	TS-YS175HXD1280N10-WK	80	12	24	2155	4400	53.2	180	175	500	S3-15%
16	TS-YS210HXD13.580N10-WK	80	13.5	27	1765	4500	73	175	225	500	S3-15%
17	TS-YS210HXD13.580N10-ZC	80	13.5	29	1765	4500	73	150	250	500	S3-15%
18	TS-YS210HXD1580N10-LYZ	80	15	26	1660	3200	86.3	170	227	420	S3-15%
19	TS-YS210HXD1580N10-LG	80	15	27	2339	5500	61.2	160	218	500	S3-15%
20	TS-YS210HXD1680N10-YX	80	16	27	2000	5500	76.4	160	254	500	S3-15%



Walking motor for Forklift - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	working system
1	TS-YS120H1.224-RY	24	1.2	2.2	2300	3366	4.98	26	69	200	S2-60min
2	TS-YS130H1.524N19	24	1.5	3	4308	6000	3.3	21	77	200	S2-60min
3	TS-YS145HZD224-CL	24	2	2.5	2165	4000	8.8	28	101	260	S2-60min
4	TS-YS155HXQ224H2-BYD	24	3.5	4	3000	3600	11.1	32	195	250	S2-60min
5	TS-YS188HXQ4.7548E16-RY	48	4.75	8.9	1975	4000	22.9	91	115	350	S2-60min
6	TS-YS175HXD560N10-HQ	60	5	11	3000	6000	15.9	92	96	350	S2-60min
7	TS-YS175HXQ680H2-YZ	80	6	15	3000	6000	19.1	105	82	350	S2-60min
8	TS-YS210HXQ7.580E18-YZ	80	7.5	22	3000	6000	23.9	100	115	400	S2-60min
9	TS-YS210HXQ880E18-YX	80	8	22	2495	6000	30.6	195	106	500	S2-60min
10	TS-YS260HXQ848E18-RY	48	8	13	2010	4000	38	16	195	420	S2-60min
11	TS-YS260HXQ8.572E18-CC	72	8.5	17	1800	3000	67.6	230	138	400	S2-60min
12	TS-YS260HXQ8.580E6-BYD	80	8.5	21	2000	3600	40.6	205	122	400	S2-60min
13	TS-YS175HXQ1072H2-YH	72	10	23	3000	7000	31.8	120	147	450	S2-60min
14	TS-YS210H1080E18-DLF	80	10	25	3000	6000	31.8	160	139	500	S2-60min
15	TS-YS260HXQ1080E18-YX	80	10	23	2700	5000	35.4	145	146	450	S2-60min



Lifting motor for Aerial - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Working system	Vehicle model
1	TS-YS135HGD3.524N9	24	3.5	4	3000	3500	11.1	18	168	200	S2-5min	Scissor forklift
2	TS-YS175HGD748N9-JB	48	7	12	3333	6000	20.1	60	165	400	S3-15%	Arm Car
3	TS-YS175HGD1048N9	48	10	12	1855	4800	51.5	87	245	400	S3-15%	Arm Car
4	TS-YS175HGD1248N9-JB	48	12	16	1860	4000	61.6	105	303	500	S3-15%	Arm Car
5	TS-YS210HGD1548N13-XB	48	15	16	2120	4000	67.6	100	348	500	S3-15%	Arm Car
6	TS-YS210HGD1580N13-XB-1	80	15	25	2629	5000	54.5	135	230	500	S3-20%	Arm Car
7	TS-YS210HGD2180N13-JB	21	21	27	2583	5500	77.6	160	295	500	S3-15%	Arm Car
8	TS-YS210HGD3080N13-JB	80	30	36	3000	3500	95.5	136	407	450	S3-15%	Arm Car
9	TS-YS210HGD1248N9-TJJD	48	12	16	1864	3600	61.5	108	290	450	S2-60min	Arm Car



Walking motor for Aerial - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	Working system	Vehicle model
1	TS-YS135HGQ0.524E13-XB	24	0.5	1	2900	4000	1.64	10	27	150	S2-60min	Scissor forklift
2	TS-YS135HGQ0.924E13-JFH	24	0.9	1.3	1423	2800	6	33	48	200	S2-60min	Scissor forklift
3	TS-YS135HGQ0.724E13-V01	24	0.75	1.2	1530	2800	4.37	28	45	150	S2-60min	Scissor forklift
4	TS-YS175HGQ1.548E13-XB	48	1.5	5.5	2963	6000	4.83	95	40	350	S2-60min	Arm Car
5	TS-YS175HGQ1.580E13-XB	80	1.5	9.1	2959	6000	4.84	140	67	350	S2-60min	Arm Car
6	TS-YS168HGQ2.548E13-JWZN	48	2.5	5	1940	3500	12.3	60	64	340	S2-60min	Arm Car
7	TS-YS200HGQ380E13-XB	80	3	9	2000	5500	14.33	115	44	220	S2-60min	Arm Car
8	TS-YS168HGQ3.348E13	48	3.3	6.5	1920	5000	16.4	85	85	350	S2-60min	Arm Car
9	TS-YS175HGQ448P8	48	4	5	1245	3000	30.7	80	115	270	S2-60min	Arm Car
10	TS-YS168HGQ4.280E13-ZZG	80	4.2	14	4145	6000	9.68	88	65	350	S2-60min	Arm Car
11	TS-YS168HGQ5.280E13-ZZG	80	5.2	19	3836	7400	12.9	87	74	350	S2-60min	Arm Car
12	TS-YS188HGQ3.5648E13	48	3.56	8	3400	6000	10	77	125	300	S2-60min	Arm Car
13	TS-YS200HGQ948E18-LX	48	9	18	3505	6000	24.5	85	204	450	S2-60min	Arm Car



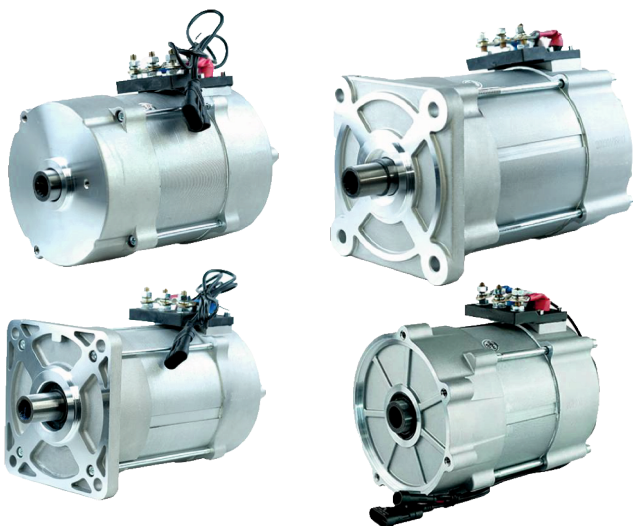
Suitable for Golf Cart - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	working system
1	TS-YS155H2.224N19-LD	24	2.2	3	3000	6000	7	15	113	200	S2-60min
2	TS-YS175H2.524N19-LD	24	2.5	3	3000	6000	7.96	17	122	200	S2-60min
3	TS-YS155H348N19-LD	48	3	6	3000	6000	9.6	53	78	275	S2-60min
4	TS-YS175H448KN19-JLY-Z	48	4	7.5	2500	6000	15.3	84	103	350	S2-60min
5	TS-YS175H548N19-ZY	48	5	9	3000	6000	15.9	77	80	350	S2-60min
6	TS-YS175H572N19-ZY	72	5	14	3000	6000	15.9	85	90	350	S2-60min
7	TS-YS155H6.348N19	48	6.3	8.5	3000	6000	20.5	53	157	350	S2-60min
8	TS-YS175H6.348N19-HK	48	6.3	8.5	3000	6000	15.9	60	153	350	S2-60min
9	TS-YS175H7.560KH2-YK	60	7.5	11	3000	6000	23.9	105	140	400	S2-60min
10	TS-YS210H1072H61-ZY	72	10	21	3000	6000	31.8	145	152	500	S2-60min
11	TS-YS210H1172H61-ZT	72	11	21	3000	6000	35	135	165	500	S2-60min
12	TS-YS210H1596H61-LU	96	15	25	3000	6000	47.8	140	173	500	S2-60min
13	TS-YS210H15144H61-LT	144	15	28	4000	7500	35.8	163	120	450	S2-60min
14	TS-YS210H2096E21-LJZ	96	20	36	3300	7000	57.9	200	226	680	S2-60min
15	TS-YS210H20144H61-LT	144	20	45	3300	7500	57.9	200	152	480	S2-60min



Suitable for Mini Car - AC Motor



SN	Motor Model	Voltage platform VDC	Rated power kW	Max. Power kW	Rated Speed rpm	Max. Speed rpm	Rated Torque Nm	Max. Torque Nm	Rated Current A	Max. Current A	working system
1	TS-XQY2.5-60-H12	60	2.5	5	3000	6000	8	55	53	275	S2-60min
2	TS-XQY2.5-72-H12	72	2.5	6.5	3000	6000	8	65	43	275	S2-60min
3	TS-XQY3-60-H12	60	3	6.5	3000	6000	9.55	68	61.5	275	S2-60min
4	TS-XQY3-72-H12	72	3	7.2	3000	6000	9.55	68	49	275	S2-60min
5	TS-XQY4-60-H2	60	4	7.5	3000	6000	12.7	76	83	275	S2-60min
6	TS-XQY4-72-H2-M	72	4	9	3000	6000	12.7	72	68	275	S2-60min
7	TS-XQY5-48-H2-M	48	5	8.5	3000	6000	15.9	60	130	350	S2-60min
8	TS-XQY5-60-H2-DJ	60	5	10.5	3000	6000	15.9	89	90	350	S2-60min
9	TS-XQY5-72-H2-M	72	5	11	3000	6000	15.9	104	81	350	S2-60min
10	TS-XQY7.5-72-H2-ZX	72	7.5	18	3000	6000	23.9	104	119	350	S2-60min
11	TS-YS175H7.560KH2-YK	60	7.5	11	3000	6000	23.9	105	140	400	S2-60min
12	TS-YS210H7.572H61-SLG	72	7.5	17	3000	6000	23.9	100	120	400	S2-60min
13	TS-YS210H1072H61-ZY	72	10	21	3000	6000	31.8	145	152	500	S2-60min
14	TS-YS210H1596H61-LU	96	15	25	3000	6000	47.8	140	173	500	S2-60min
15	TS-YS210H15144H61-LT	144	15	28	4000	7500	35.8	163	120	450	S2-60min
16	TS-YS210H20144H61-LJZ	144	20	38	3300	7500	57.9	190	152	470	S2-60min

