In this manual, we have tried as much as possible to describe all the various matters about AC servo motor. However, we can not describe all the matters which must not be done or which can not be done because there are so many possibilities. Therefore, matters which are not especially described in this manual should be regarded as “impossible” or “forbidden”.

PREFACE

Dear user:

It's our honor that you select **GSK SJT** serial AC servo motor (Hereinafter referred to as motor).

For safety of the motor and the product and for the normal and effective running, please read the manual carefully before installing and using the product.

SAFETY PRECAUTIONS

The incorrect connection and operation may cause the accident, so before using and operating the motor, please read the manual carefully!

1. The motor is installed with the photoelectric encoder, and it's not allowed to hit the motor. And the user can't disassemble the photoelectric encoder by himself; otherwise, the relative position (zero position) between the encoder and the motor winding is changed, which causes the motor out of running!

2. In the normal climate, measure the insulation resistance which the motor winding is against with the cabinet, by 500V megameter, and the value should NOT be less than 20 MΩ.

3. The motor and the drive unit should be connected correctly based on the manual to guarantee the protective grounding stable and reliable.

4. The motor can run with load only after the motor is free of noise and vibration during running from zero speed to the maximum speed in the dry run state.

5. During the motor running, it's not allowed to touch the motor shaft and cabinet.

6. Only the qualified person can adjust and maintain the motor.

7. It is forbidden to move the motor by dragging the wire (cable) or the motor shaft.

8. GSK does NOT take any responsibility for any change on the product by the user, and the warranty bill becomes invalid.

All specifications and designs are subject to change without notice.

RESPONSIBILITY

Responsibility of the manufacturer

——**The manufacturer should be in charge of the design and the structure of the motor and its accessories.**

——**The manufacturer should be responsible for the safety of the motor and its accessories.**

——**The manufacturer should be in charge of the provided information and suggestion for the user.**

Responsibility of the end user

——**The user should be very familiar with the safety operation through learning the motor safety operation or participating in the training session.**

——**The user should be responsible for the safety after adding, changing or modifying the original motor and its accessories by himself.**

——**The user should be in charge of the danger resulted from the operation, adjusting, maintenance, installation and storage which are not complied with the manual regulation.**

The manual is kept by **the end user.**

Thank you for your friendly support during using GSK product.

CONTENT

Ⅰ PRODUCT CHARACTERISTICS

SJT series sine shaped AC permanent magnet synchronous servo motor, which is researched, developed and manufactured by GSK, adopts the rare earth permanent magnet material of high performance, with the characteristics of high torque inertia ratio, low speed performance and strong overload capacity, etc, which can widely satisfy the requirements of the machine CNC system.

Ⅱ RUNNING CONDITIONS

2.1 The height above sea level should NOT exceed 1000m. If it's more than 1000m, some performance may get affected due to the air cooling.

2.2 The environment temperature should be in the range of -10℃ ~ +40℃.

2.3 The relative air humidity is ≤90% (without the condensation).

2.4 AC voltage value of steady state is:（**0.85 ~1.1**）**multiplies the rated voltage value.**

Ⅲ MODELS of the MACHINE

Example: **80SJT−MZ032EH（A4Y1X）**

80 SJT - M Z 032 E H（A□ Y□ X）

Dimension for installing the flange:
60
80
110
130
150
175

AC servo motor series
SJT Common
SJTG High precision & speed
SJTR Dedicated for the robot

Feedback unit
M Photoelectric encoder

Safe brake:

None	**None**
Z	**Available**

Remark: When the power supply of the safe brake is DC.（0.9~ 1.1）×24V, the interface is 3-cord socket, the pins 1 and 2 are power supply terminals (without pole), pin 3 is the earth one. When pins 1 and 2 are connected with the power supply, the brake doesn't operate,; when the power supply is OFF, it operates. The safe brake operation time≤0.1s.

Zero-speed torque
Remark: It is represented by three digits, and its value is in three digits $\times 10^{-1}$ and its unit is N·m.
Example: 032×10^{-1}=3.2N·m

Connection mode
None Industrial (aviation) socket type
X Cable direct type

Shaft end or installation config.
None: Standard shaft end
Y□ Special cylinder shaft end
Z□ Special cone shaft end
S□ Stepped motor installation configuration
Remark:The digit code is in "□" , about the number representing the special shaft end, refer to the installation overall figure of the motor.

Encoder type
A or none Incremental 2500p/r
A1
A2 Incremental 5000p/r
A3 Incremental split-type 2500p/r
A4 Absolute 17bit
A4Ⅰ Absolute 17bit, Biss treaty
A4Ⅱ Absolute 17bit, Smart-Abs treaty

Input voltage of the drive unit
None 220V
H 380V

Rated speed
A 1000 r/min
B 1500 r/min
C 2000 r/min
D 2500 r/min
E 3000 r/min
F 3500 r/min
G 4000 r/min

Ⅳ MAIN TECHNICAL PARAMETERS of the MOTOR

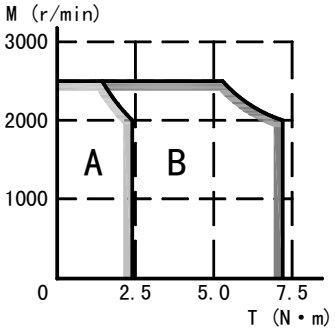
4.1 Refer to list 1 about the main technical parameters of **80SJT** serial motor.

List 1

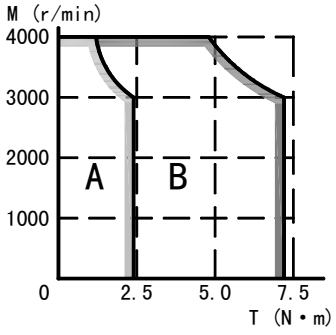
ITEM \ TYPE	80SJT-M024C	80SJT-M024E	80SJT-M032C	80SJT-M032E
Rated power （kW）	0.5	0.75	0.66	1.0
Pole pairs	4			
Drive unit input voltage（V）	AC220, three phase（or single phase）			AC220, three phase
Rated current（A）	3	4.8	5	6.2
Zero-speed torque（N·m）	2.4	2.4	3.2	3.2
Rated torque（N·m）	2.4	2.4	3.2	3.2
Max. torque（N·m）	7.2	7.2	9.6	9.6
Rated speed（r/min）	2000	3000	2000	3000
Max. speed（r/min）	2500	4000	2500	4000
Rotation inertia（kg·m^2）	0.83×10^{-4}	0.83×10^{-4}	1.23×10^{-4}	1.23×10^{-4}
Weight（kg）	3.1	3.2	3.7	3.8
Insulation level	F（GB 755—2008/IEC 60034-1：2004）			
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）			
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）			
Installation type	IMB5（flange installation）（GB/T 997—2008 / IEC 60034-7:2001）			
Working system	S1（Continuous working system）（GB 755—2008）			
Encoder pulses（p/r）	Incremental 2500 (standard configuration)			
Safe brake	DC24V, 3.2N·m, 11.5W, the weight of the corresponding motor is increased by 0.9 kg.			

Torque-speed characteristics（A：Continuous working zone；B：Intermittent working zone）

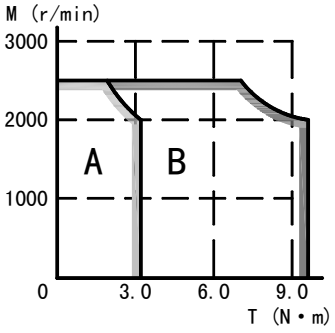
80SJT-M024C



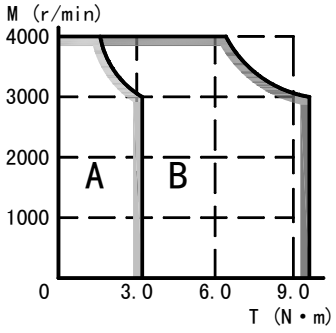
80SJT-M024E



80SJT-M032C



80SJT-M032E

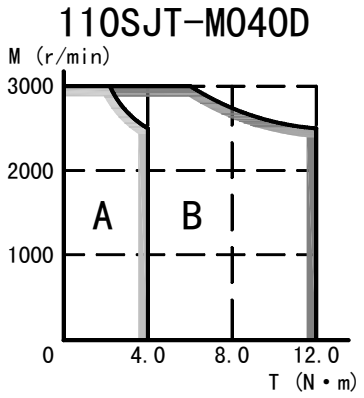


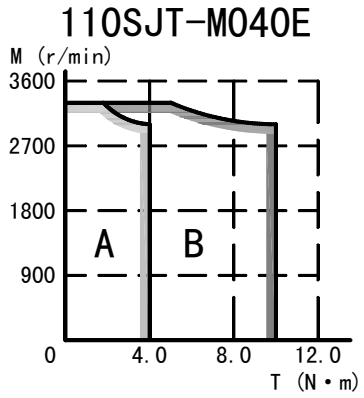
4.2 Refer to list 2 about the main technical parameters of **110SJT** series motor.

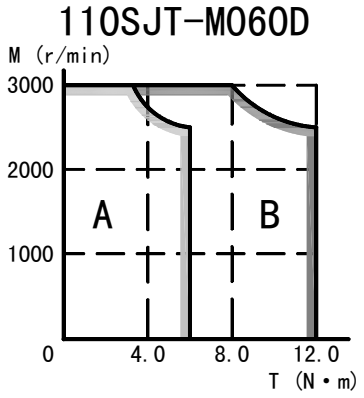
List 2

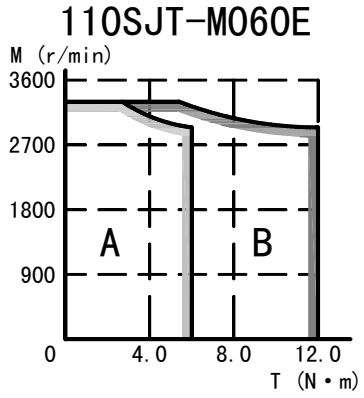
ITEM \ TYPE	110SJT-M040D	110SJT-M040E	110SJT-M060D	110SJT-M060E
Rated power（kW）	1.0	1.2	1.5	1.8
Pole pairs	4			
Drive unit input voltage（V）	AC220 three-phase（or single phase）	AC220，three phase		
Rated current（A）	4.5	5	7	8
Zero-speed torque（N·m）	4	4	6	6
Rated torque（N·m）	4	4	6	6
Max. torque（N·m）	12	10	12	12
Rated speed（r/min）	2500	3000	2500	3000
Max. speed（r/min）	3000	3300	3000	3300
Rotation inertia（kg·m²）	0.68×10^{-3}	0.68×10^{-3}	0.95×10^{-3}	0.95×10^{-3}
Weight（kg）	6.1	6.1	7.9	7.9
Insulation level	B（GB 755—2008/IEC 60034-1：2004）			
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）			
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）			
Installation type	IMB5（flange installation）（GB/T 997—2008 / IEC 60034-7:2001）			
Working system	S1（Continuous working system）（GB 755—2008）			
Encoder pulses (p/r)	Incremental 2500（Standard configuration）			
Safe brake	DC24V, 4N·m, 20W，the weight of the corresponding motor is increased by 1.6kg.			

Torque-speed characteristics（A: Continuous working zone；B：Intermittent working zone）







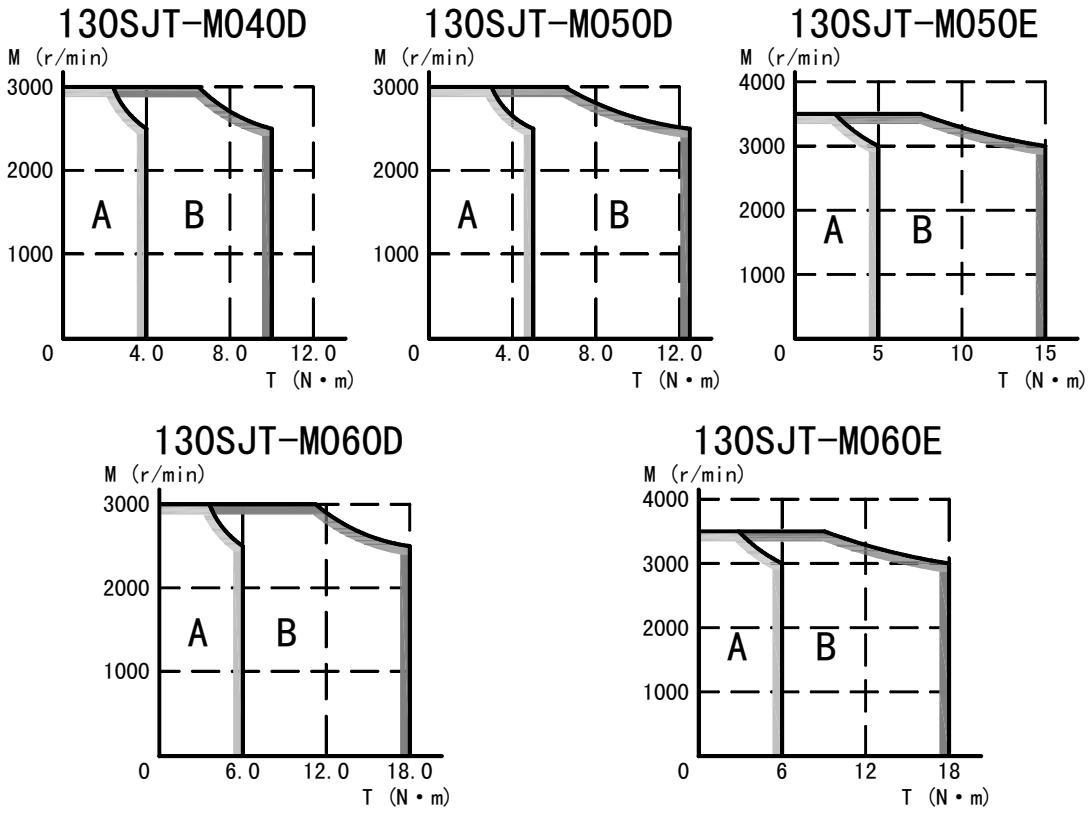


4.3 Refer to list 3 about the main technical parameters of **130SJT** series motor.

List 3

ITEM \ TYPE	130SJT-M 040D	130SJT-M 050D	130SJT-M 050E	130SJT-M 060D	130SJT-M 060E
Rated power（kW）	1.0	1.3	1.57	1.5	1.88
Pole pairs	4				
Drive unit input voltage（V）	AC220， three phase				
Rated current（A）	4	5	7.2	6	7.8
Zero-speed torque（N·m）	4	5	5	6	6
Rated torque （N·m）	4	5	5	6	6
Max. torque（N·m）	10	12.5	15	18	18
Rated speed（r/min）	2500	2500	3000	2500	3000
Max. speed（r/min）	3000	3000	3500	3000	3500
Rotation inertia（$kg·m^2$）	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.33×10^{-3}	1.33×10^{-3}
Weight（kg）	6.5	6.5	6.6	7.2	7.3
Insulation level	B（GB 755—2008/IEC 60034-1：2004）				
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）				
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）				
Installation type	IMB5（Flange installation）（GB/T 997—2008 / IEC 60034-7:2001）				
Working system	S1（Continuous working system）（GB 755—2008）				
Encoder pulses（p/r）	Incremental 2500（Standard configuration）				
Safe brake	DC24V, 12N·m, 28W，the weight of the corresponding motor is increased by 2.9kg.				

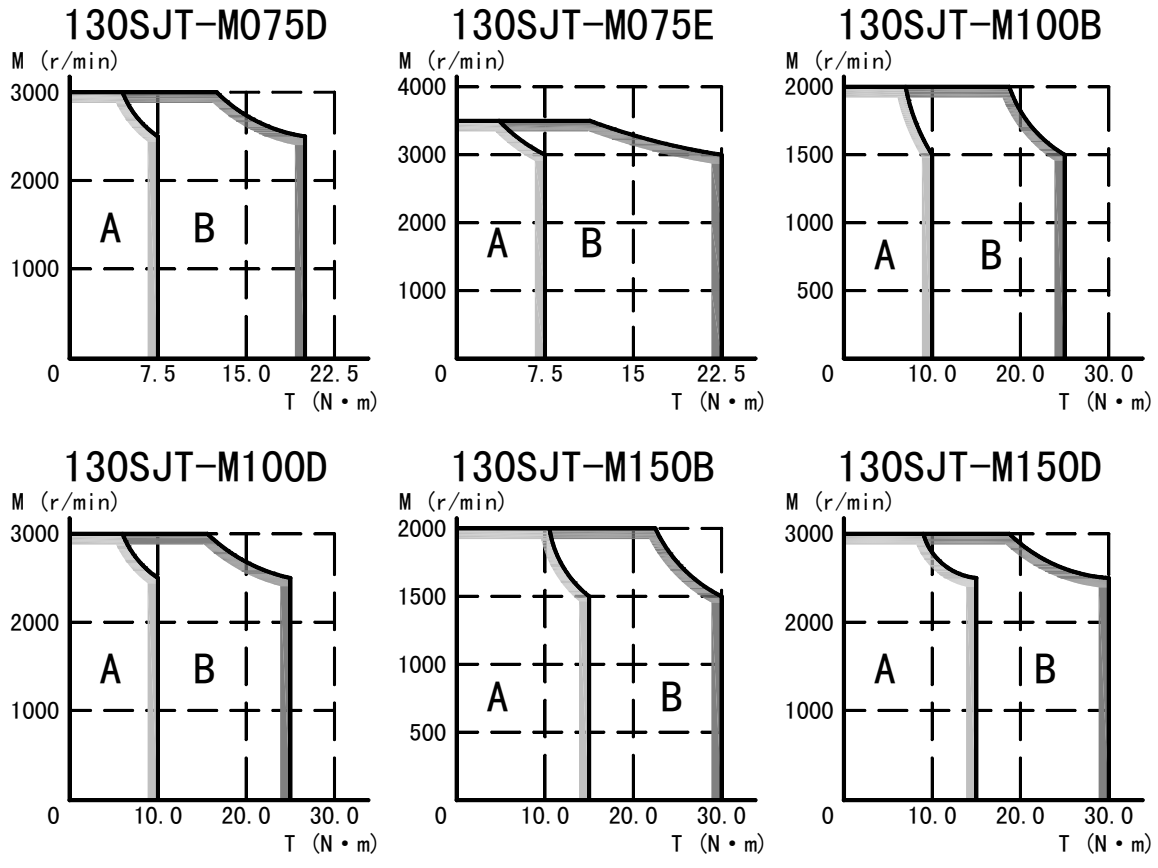
Torque-speed characteristics（A: Continuous working zone；B：Intermittent working zone）



List 3 （Continued）

ITEM \ TYPE	130SJT-M 075D	130SJT-M 075E	130SJT-M 100B	130SJT-M 100D	130SJT-M 150B	130SJT-M 150D
Rated power（kW）	1.88	2.36	1.5	2.5	2.3	3.9
Pole pairs	4					
Drive unit input voltage（V）	AC220， three phase					
Rated current（A）	7.5	9.9	6	10	8.5	14.5
Zero-speed torque （N·m）	7.5	7.5	10	10	15	15
Rated torque（N·m）	7.5	7.5	10	10	15	15
Max. torque（N·m）	20	22.5	25	25	30	30
Rated speed（r/min）	2500	3000	1500	2500	1500	2500
Max. speed（r/min）	3000	3500	2000	3000	2000	3000
Rotation inertia（$kg·m^2$）	1.85×10^{-3}	1.85×10^{-3}	2.42×10^{-3}	2.42×10^{-3}	3.1×10^{-3}	3.6×10^{-3}
Weight（kg）	8.1	8.2	9.6	9.7	11.9	12.7
Insulation level	B（GB 755—2008/IEC 60034-1：2004）					
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）					
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）					
Installation type	IMB5（Flange installation）（GB/T 997—2008 / IEC 60034-7:2001）					
Working system	S1（Continuous working system）（GB 755—2008）					
Encoder pulses（p/r）	Incremental 2500（Standard configuration）					
Safe brake	DC24V, 12N·m, 28W，the weight of the corresponding motor is increased by 2.9kg					

Torque-speed characteristics（A： Continuous working zone；B：Intermittent working zone）

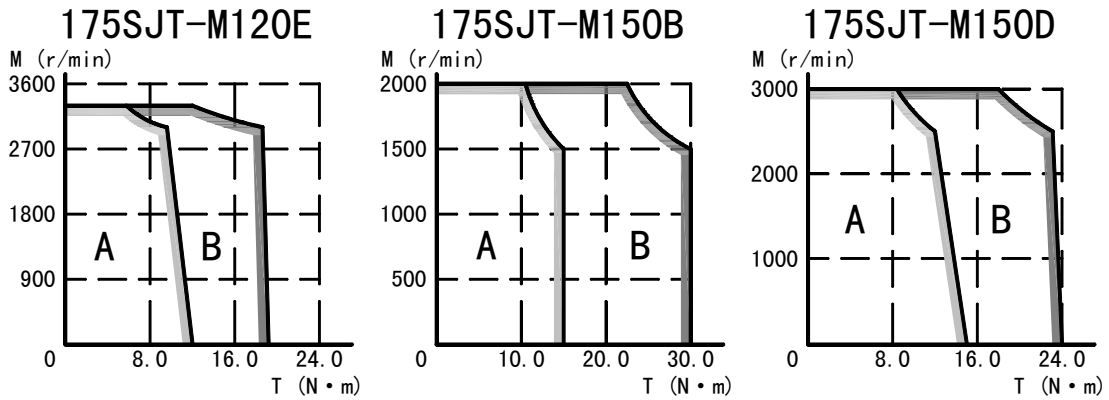


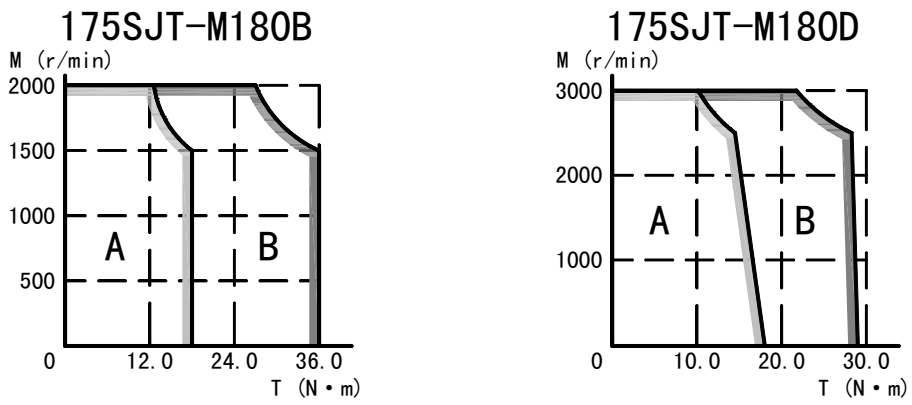
4.4 Refer to list 4 about the main technical parameters of **175SJT** series motor.

List 4

TYPE / ITEM	175SJT-M 120E	175SJT-M 150B	175SJT-M 150D	175SJT-M 180B	175SJT-M 180D
Rated power（kW）	3	2.4	3.1	2.8	3.8
Pole pairs	3				
Drive unit input voltage(V)	AC220， three phase				
Rated current（A）	13	11	14	15	16.5
Zero-speed torque（N·m）	12	15	15	18	18
Rated torque （N·m）	9.6	15	12	18	14.5
Max. torque（N·m）	19.2	30	24	36	29
Rated speed（r/min）	3000	1500	2500	1500	2500
Max. speed（r/min）	3300	2000	3000	2000	3000
Rotation inertia（kg·m^2）	5.1×10^{-3}	5.1×10^{-3}	5.1×10^{-3}	6.5×10^{-3}	6.5×10^{-3}
Weight（kg）	18.9	18.5	19	22.8	22.9
Insulation level	F（GB 755—2008/IEC 60034-1：2004）				
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）				
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）				
Installation type	IMB5（flange installation）（GB/T 997—2008 / IEC 60034-7:2001）				
Working system	S1（Continuous working system）（GB 755—2008）				
Encoder pulses（p/r）	Incremental 2500（Standard configuration）				
Safe brake	DC24V, 23N·m, 30W，the weight of the corresponding motor is increased by 5.6 kg.				

Torque-speed characteristics（A: Continuous working zone；B: Intermittent working zone）

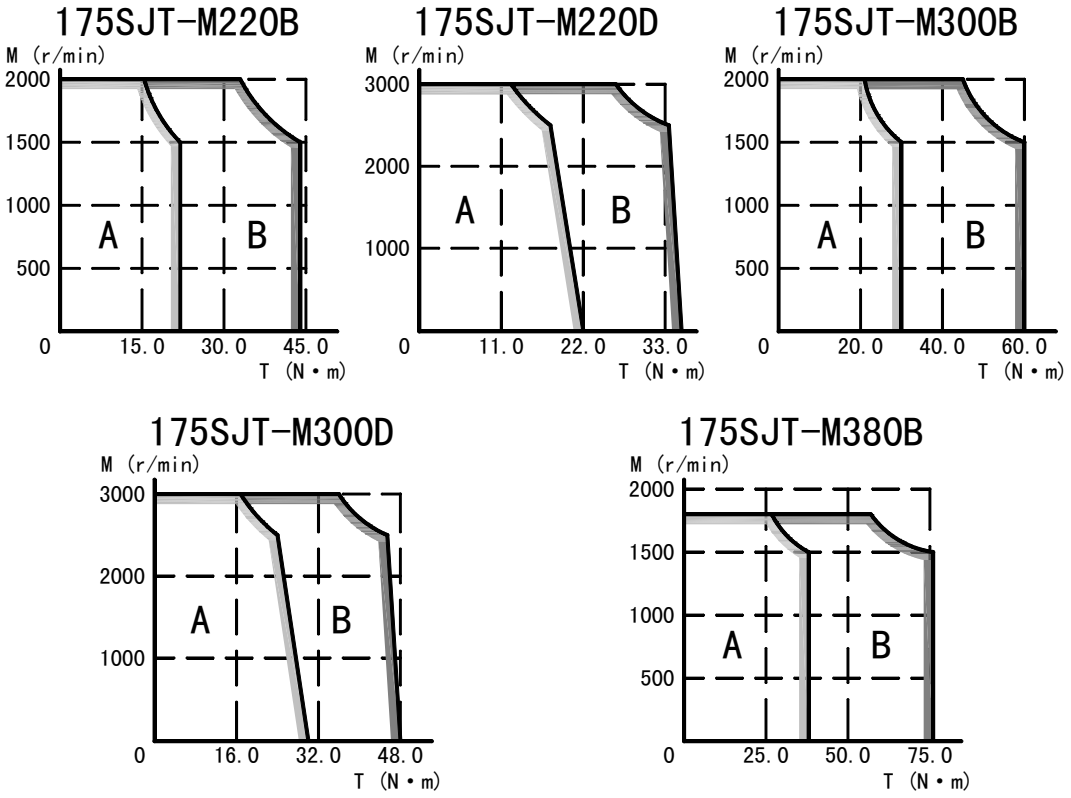




List 4 （Continued 1）

ITEM \ TYPE	175SJT-M 220B	175SJT-M 220D	175SJT-M 300B	175SJT-M 300D	175SJT-M 380B
Rated power（kW）	3.5	4.5	4.7	6	6
Pole pairs	3				
Drive unit input voltage(V)	AC220， three phase				
Rated current（A）	17.5	19	24	27.5	29
Zero-speed torque（N·m）	22	22	30	30	38
Rated torque（N·m）	22	17.6	30	24	38
Max. torque（N·m）	44	35.2	60	48	76
Rated speed（r/min）	1500	2500	1500	2500	1500
Max. speed（r/min）	2000	3000	2000	3000	1800
Rotation inertia（$kg·m^2$）	9.0×10^{-3}	9.0×10^{-3}	11.2×10^{-3}	11.2×10^{-3}	14.8×10^{-3}
Weight（kg）	28.9	29.2	34.3	34.4	42.4
Insulation level	F（GB 755—2008/IEC 60034-1：2004）				
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）				
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）				
Installation type	IMB5（flange installation）（GB/T 997—2008 / IEC 60034-7:2001）				
Working system	S1（Continuous working system）（GB 755—2008）				
Encoder pulses（p/r）	Incremental 2500（standard configuration）				
Safe brake	DC24V, 23N·m, 30W，the weight of the corresponding motor is increased by 5.6 kg.		DC24V,46N·m,40W，the weight of the corresponding motor is increased by 7.7kg.		

Torque-speed characteristics（A： Continuous working zone；B：Intermittent working zone）

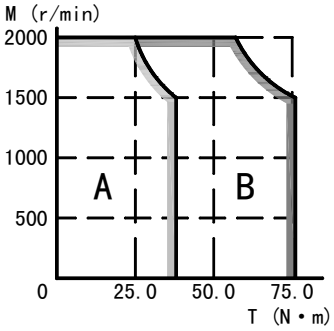


List 4 （Continued 2）

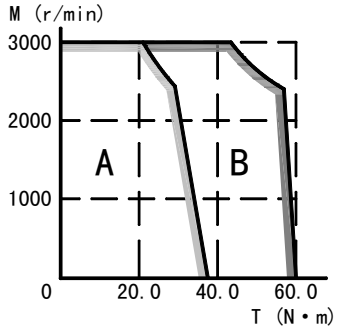
ITEM \ TYPE	175SJT-M 380BH	175SJT-M 380DH	175SJT-M 500BH	175SJT-M 500DH
Rated power（kW）	6	7.9	7.8	10.5
Pole pairs	3			
Drive unit input voltage（V）	AC 380，three phase			
Rated current（A）	15	26	20	33
Zero-speed torque（N·m）	38	38	50	50
Rated torque（N·m）	38	30	50	40
Max. torque（N·m）	76	60	100	80
Rated torque （r/min）	1500	2500	1500	2500
Max. speed（r/min）	2000	3000	2000	3000
Rotation inertia（kg·m^2）	14.8×10^{-3}	14.8×10^{-3}	14.8×10^{-3}	14.8×10^{-3}
Weight（kg）	42.2	42.4	48.7	48.9
Absolute level	F（GB 755—2008/IEC 60034-1：2004）			
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）			
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）			
Installation type	IMB5（Flange installation）（GB/T 997—2008 / IEC 60034-7:2001）			
Working system	S1（Continuous working system）（GB 755—2008）			
Encoder pulses （p/r）	Incremental 2500（Standard configuration）			
Safe brake	DC24V, 46N·m, 40W，the weight of the corresponding is increased by 7.7kg.		Not available temporarily	
Cooling fan	Not available		AC380 three phase, 50Hz（terminal 1 earth connection，terminals 2,3 and 4 connected with the power supply），30W，IP54	

Torque-speed characteristics （A:Continuous working zone； B:Intermittent working zone）

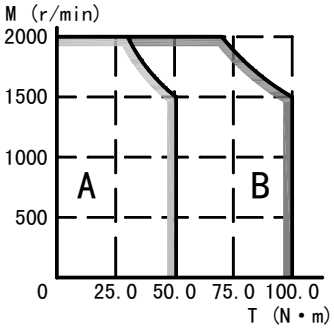
175SJT-M380BH



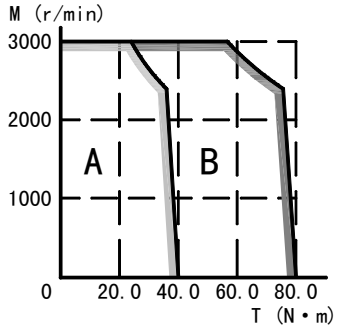
175SJT-M380DH



175SJT-M500BH



175SJT-M500DH



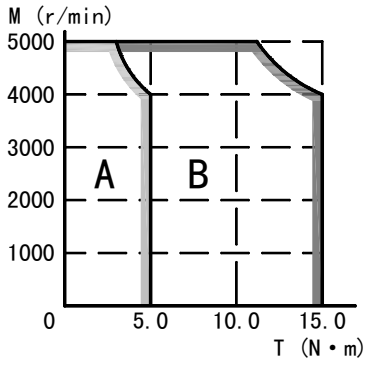
4.5 Refer to list 5 about the main technical parameters of **130SJTG** series motor.

List 5

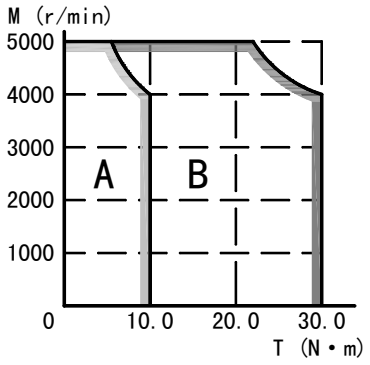
ITEM \ TYPE	130SJTG-M050GH	130SJTG-M100GH
Rated power（kW）	2.1	4.2
Pole pairs	4	
Drive unit input voltage（V）	AC 380, three phase	
Rated current（A）	5	10
Zero-speed torque（N·m）	5	10
Rated torque（N·m）	5	10
Max.torque（N·m）	15	30
Rated speed（r/min）	4000	4000
Max. speed（r/min）	5000	5000
Rotation inertia（kg·m^2）	1.2×10^{-3}	2.5×10^{-3}
Weight（kg）	7.8	11.8
Insulation level	F（GB 755—2008/IEC 60034-1：2004）	
Vibration level	A（GB 10068—2008/IEC 60034-14：2007）	
Protection level	IP65（GB 4208—2008/IEC 60529：2001，GB/T 4942.1—2006）	
Installation type	IMB5（Flange installation）（GB/T 997—2008 / IEC 60034-7:2001）	
Working system	S1（Continuous working system）（GB 755—2008）	
Encoder pulses （p/r）	Absolute 17bit（Standard configuration）	
Safe brake	DC24V, 12N·m, 28W，the weight of the corresponding motor is increased by 2.9kg.	

Torque-speed characteristics（A:Continuous working zone；B:Intermittent working zone）

130SJTG-M050GH



130SJTG-M100GH



Ⅴ MOTOR OVERALL and INSTALLATION DIMENSION

5.1 Refer to figure 1 and list 6 about **80SJT** serial motor overall installation dimension and connection mode.

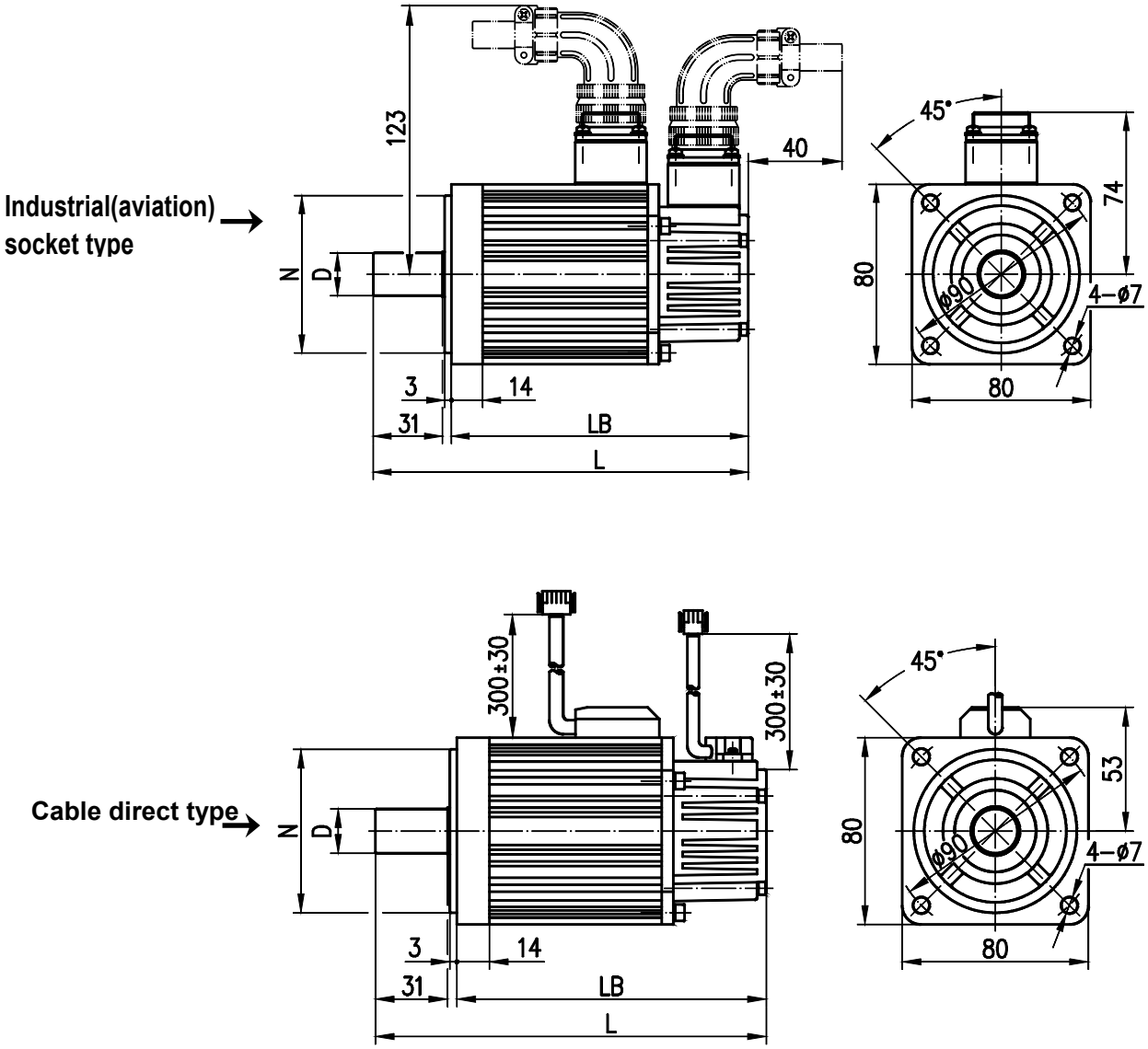


Fig. 1

List 6

TYPE	D(mm)	N(mm)	LB(mm)	L(mm)
80SJT–M024C	$\varphi 19^{0}_{-0.013}$	$\varphi 70^{0}_{-0.03}$	171(213)	206(248)
80SJT–M024E	$\varphi 19^{0}_{-0.013}$	$\varphi 70^{0}_{-0.03}$	171(213)	206(248)
80SJT–M032C	$\varphi 19^{0}_{-0.013}$	$\varphi 70^{0}_{-0.03}$	189(231)	224(266)
80SJT–M032E	$\varphi 19^{0}_{-0.013}$	$\varphi 70^{0}_{-0.03}$	189(231)	224(266)
Remark: The values of the bracketed LB and L are the length values of the motors of the corresponding specification, which are with the safe brakes.				

5.2 Refer to figure 2 and list 7 about **110SJT** series motor overall installation dimension.

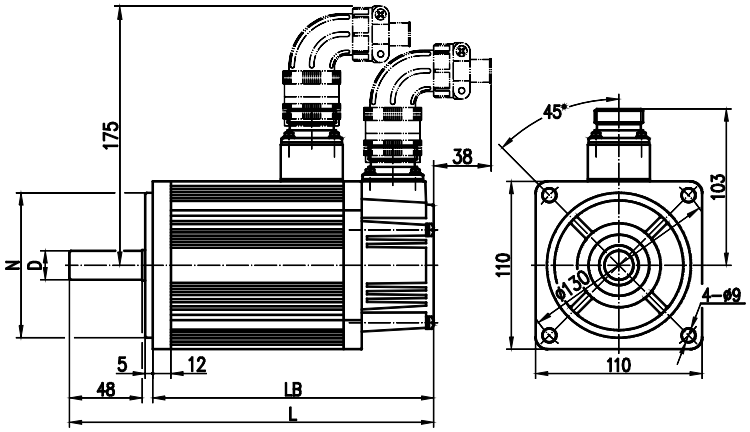


Fig. 2

List 7

TYPE	D(mm)	N(mm)	LB(mm)	L(mm)
110SJT—M040D	$\varphi 19^{0}_{-0.013}$	$\varphi 95^{0}_{-0.035}$	186 (237)	241 (292)
110SJT—M040E	$\varphi 19^{0}_{-0.013}$	$\varphi 95^{0}_{-0.035}$	186 (237)	241 (292)
110SJT—M060D	$\varphi 19^{0}_{-0.013}$	$\varphi 95^{0}_{-0.035}$	212 (263)	267 (318)
110SJT—M060E	$\varphi 19^{0}_{-0.013}$	$\varphi 95^{0}_{-0.035}$	212 (263)	267 (318)
Remark: The values of the bracketed LB and L are the length values of the motors of the corresponding specification, which are with the safe brakes.				

5.3 Refer to figure 3 and list 8 about **130SJT** series motor overall installation dimension.

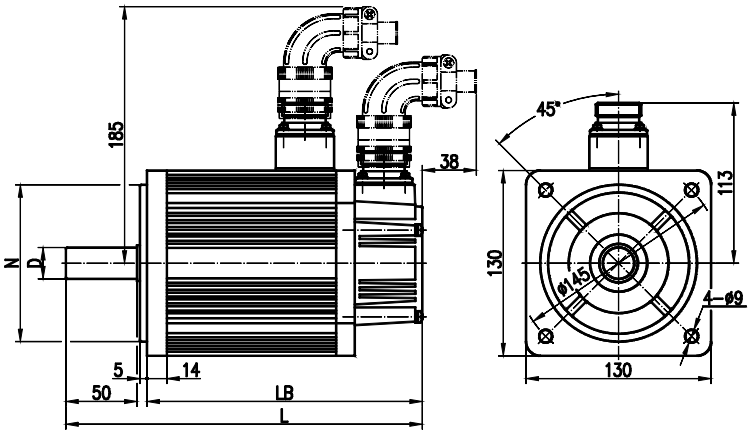


Fig. 3

List 8

TYPE	D(mm)	N(mm)	LB(mm)	L(mm)
130SJT–M040D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	168 (227)	225 (284)
130SJT–M050D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	168 (227)	225 (284)
130SJT–M050E	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	168 (227)	225 (284)
130SJT–M060D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	176 (235)	233 (292)
130SJT–M060E	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	176 (235)	233 (292)
130SJT–M075D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	188 (247)	245 (304)
130SJT–M075E	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	188 (247)	245 (304)
130SJT–M100B	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	208 (267)	265 (324)
130SJT–M100D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	208 (267)	265 (324)
130SJT–M150B	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	238 (297)	295 (354)
130SJT–M150D	$\varphi 22^{0}_{-0.013}$	$\varphi 110^{0}_{-0.035}$	248 (307)	305 (364)
Remark: The values of the bracketed LB and L are the length values of the motors of the corresponding specification, which are with the safe brakes.				

5.4 Refer to figure 4 and list 9 about **175SJT** series motor overall installation dimension.

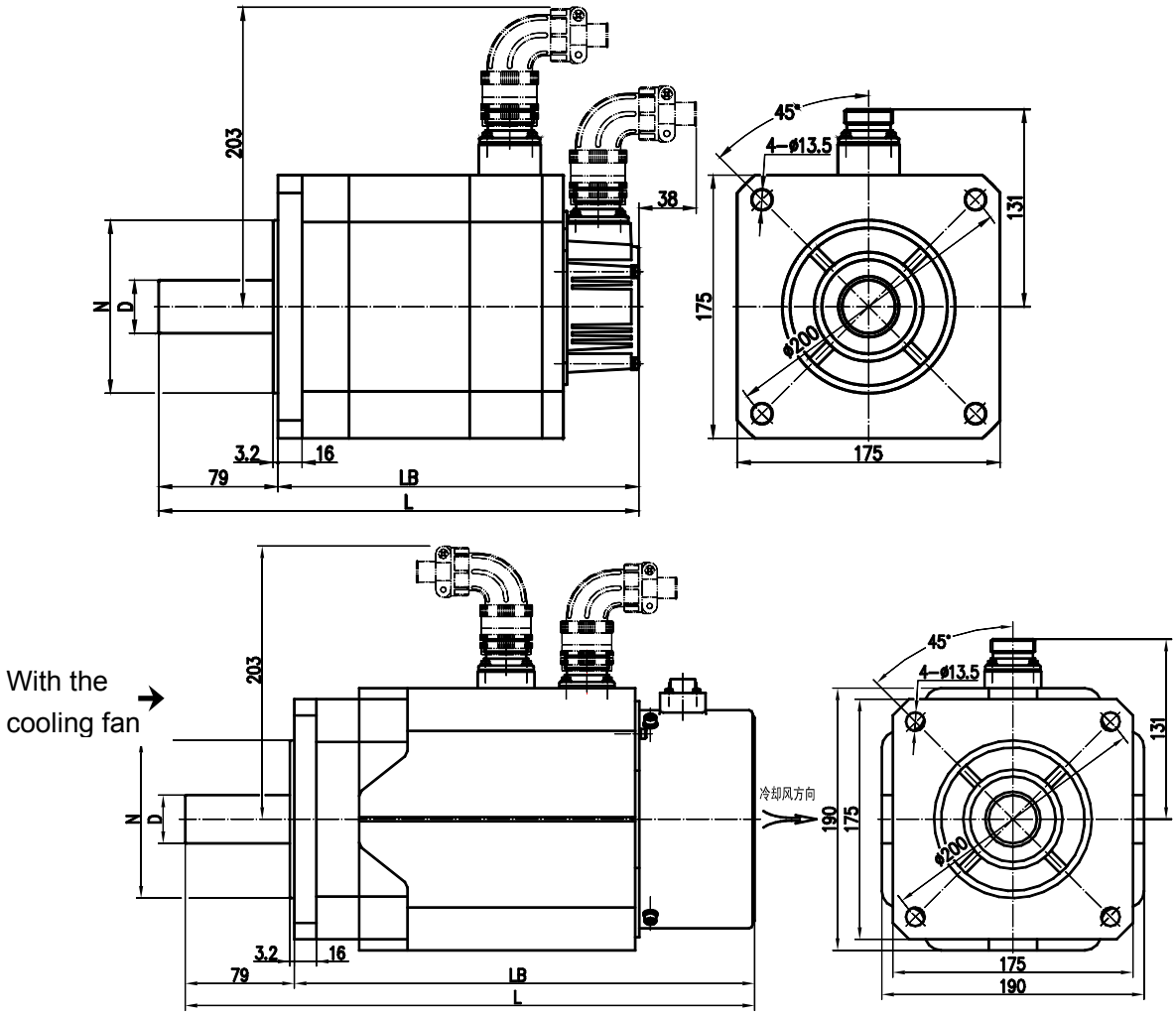


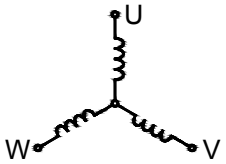
Fig. 4

List 9

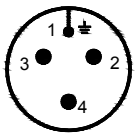
TYPE	D(mm)	N(mm)	LB(mm)	L(mm)
175SJT—M120E	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	224 (291)	303 (370)
175SJT—M150B	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	224 (291)	303 (370)
175SJT—M150D	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	224 (291)	303 (370)
175SJT—M180B	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	244 (311)	323 (390)
175SJT—M180D	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	244 (311)	323 (390)
175SJT—M220B	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	279 (346)	358 (425)
175SJT—M220D	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	279 (346)	358 (425)
175SJT—M300B	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	309 (382)	388 (461)
175SJT—M300D	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	309 (382)	388 (461)
175SJT—M380B	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	359 (432)	438 (511)
175SJT—M380BH	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	359 (432)	438 (511)
175SJT—M380DH	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	359 (432)	438 (511)
175SJT—M500BH	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	454	533
175SJT—M500DH	$\varphi 35_{0}^{+0.01}$	$\varphi 114.3_{-0.025}^{0}$	454	533
Remark: The values of the bracketed LB and L are the length values of the motors of the corresponding specification, which are with the safe brakes.				

Ⅵ CONNECTION between the MOTOR and DRIVE UNIT

6.1 The three phase winding U,V and W of the motor and the cabinet (grounding) are led out by one 4-core connector pin; about the corresponding relation, refer to list 10. U,V,W and the cabinet (grounding) are respectively connected with the main return circuit U, V, W and PE terminals of the drive unit.



Motor winding drawing



Socket (welding side) sketch map

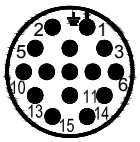
List 10

Motor lead	U	V	W	Cabinet (grounding)
Socket NO.	2	3	4	1

6.2 The photoelectric encoder lead is led out by a 15-core connector pin. About the corresponding relation of the incremental encoder signals, refer to list 11; about the corresponding relation of the absolute encoder “A4 type” signals, refer to list 12; “A4 Ⅰ type” signals, refer to list 13; “A4 Ⅱ type” signals, refer to list 14. The lead is connected with the drive unit feedback signal CN2 plug based on the drive unit requirement.

List 11

Encoder lead	PE（GND）		V_{CC}	GND	A+	A-	B+	B-
Socket NO.	1		2	3	4	7	5	8
Encoder lead	Z+	Z-	U+	U-	V+	V-	W+	W-
Socket NO.	6	9	10	13	11	14	12	15



Socket (welding side) sketch map

List 12

Encoder lead	PE（GND）+CASE GND	SD-	GND	V_{CC}	SD+	VB	–
Socket NO.	1	2	3	5	6	13	Others

List 13

Encoder lead	PE（GND）		Up	0V	A+	B-	Up_{Sensor}	A-
Socket NO.	1		2	3	4	5	6	7
Encoder lead	B+	$0V_{Sensor}$	Data-	–	Clock-	Data+	–	Clock+
Socket NO.	8	9	10	11	12	13	14	15

List 14

Encoder lead	PE（GND）	V_{CC}	GND	VB	GND	SD-	SD+	–
Socket NO.	1	2	3	6	9	10	13	Others

Ⅶ STORAGE of the MOTOR

The motor should be stored in the room of which temperature should be among -40℃~+55℃, and the relative air humidity of the storeroom should NOT be more than 95%; Moreover, the storeroom should be clean, ventilated and free of the corrosive gas.

Ⅷ TRANSPORTATION of the MOTOR

The motor should be put carefully and avoided hitting and impacting during transportation. And the corrosion substance, such as the sour and alkali, etc should not be put with the motor. Moreover, the motor should not be transported in the open, and pay attention to the waterproof and dustproof, and avoid the rain, snow and the mechanical damage.

Ⅸ PROTECTION of the MOTOR

9.1 The motor structure is protected based on GB 4208—2008/IEC 60529: 2001 *Cabinet Protection Grade (IP Code)*, and IP65 grade of GB/T 4942.1—2006 *Protection Grade (IP Code) of Rotation Motor Overall Structure*. It prevents the human body from touching the dangerous parts in the motor and interference from the external substance to guarantee the motor working normally. However, most of the liquid, such as the cutting fluid and lubricant, etc is with the strong seepage force, and if the motor touches such liquid for a long time, it may cause the motor can't work normally or shorten the service life. Therefore, the proper protection measure should be taken during the motor installation and try to avoid contacting the above liquid and soaking the motor in the liquid, which is shown as figure 5.

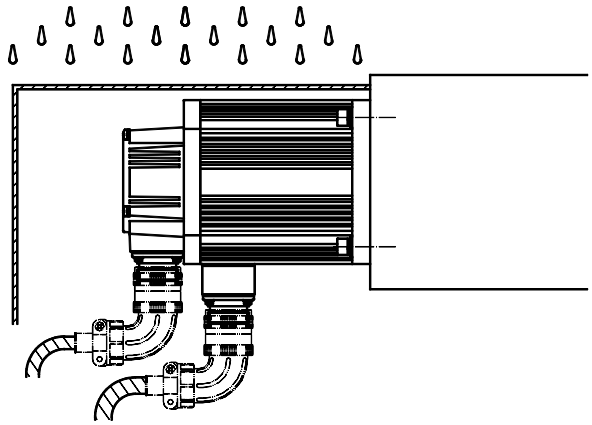


Fig. 5

9.2 When the motor cables are arranged improperly, it may result the liquid, such as the cutting fluid, gets together at the connector along the cable lead-in, further the motor malfunction. Therefore, the motor connector side should try to get down or along the horizontal direction during installation, which is shown as figure 5.

9.3 When the motor connector side gets along the horizontal direction, the cable should be bent as the semi-circle of drop shape before connecting the connector, which is shown as figure 6.

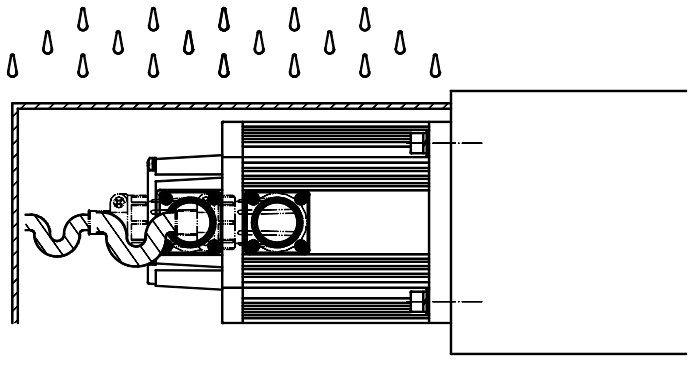


Fig. 6

9.4 Because of the motor structure, when the connector should be put upside, the protection measure should be taken, which is shown as figure 7.

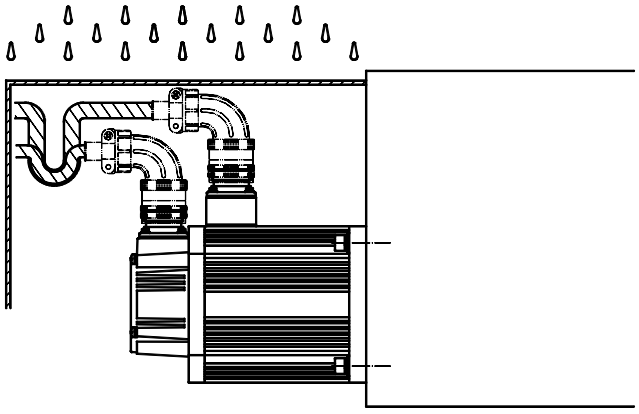


Fig. 7

X WARRANTY

On condition that the motor is transported, stored, installed, debugged and repaired based on the operation regulations, GSK is responsible for the motor repair freely in one year from the dispatch date (on the basis of the dispatch voucher) if the motor is damaged or can't be used normally due to the quality.

XI ORDER

- The listed motor modals in the manual are recommended by GSK, which can be used in many situations. If the user has the other requirements, we can provide the motor of the other specifications based on your requirements.

- The basic shaft end of the motor manufactured by GSK is the cylinder shape without keyway type, but we can provide the motor with different shaft end types based on your requirements (remark during order): The cylinder shape with the keyway shaft end (refer to GB/ T 756—1990), and the shaft end of the cone shape (refer to GB/ T 757—1993).

Moreover, GSK has already designed and manufactured the motors of shaft end in cylinder shape and in cone shape based on some users' requirements. If you have relative requirements, please require GSK sales department about the relative technical data for better choice.