



DC Brushless
Motor

DC Brushless Motor Catalogue

Ver.
2

Company Profile



Quality, Technic, Service of TROY

TROY Enterprise Co., Ltd. was established in August 1996. We specialize in the designing and manufacturing of Motors, Gearhead, Motor Driver and Motor controller series.

From August 1998, ISO9001 and ISO14001 were introduced into the company to establish a customer-oriented service system to fulfill the quality policy "Providing the customers with good products and services". In September 1999, we passed the audit conducted by TÜV Germany and got certificates of ISO9001 and ISO14001. We also got the certificate of ISO9001 of year 2008 version again in 2009.

TROY is a company with creativity and ideal. Based on our capability, we will continue our commitment to innovation and supported you in finding the proper products for your application. With our belief Quality, Technic, and Service, we can always meet your motion control needs and be your best partner.

Certificate



Taiwan patent



China patent





The difference in content between version of 2013.12 and this version

Page	
P.3,7,8,10,11,19,20,26,32,38	9D □ H series to add to the reduction ratio of 120 to 360 Related specifications
P.5,6	UBD Driver are changed to -N series
P.5,6,7,14,61,62,63,68	New adding -PH specification data
P.7	New adding product net weight / gross weight table
P.8	New adding gear technology information
P.10	New adding Planetary Gearhead information
P.11	New Motor and Gearhead combination fixation
P.14	Driver -1N, -2N type changed to SBS, UBS only)
P.17,21,22,29,33,34,41,45,51,55,65	▶ New adding Driver wiring and instructions ▶ New adding system wiring diagram
P.18	30W, 50W gear shaft type, brake pinion shaft type has passed RoHS certificate
P.19,31	9D□ H series to add to the reduction ratio of 120 to 360, speed range, allowable torque, allowable load, inertia
P.24,25,26,36,37,38,47,48,57,58,67,68	Plus cable diameter Ø
P.25	9BM085S-3(M),9BM150S-3(M) Axial size change
P.27,39,49,59	New adding power supply noise filter dimension drawing
P.30	9B120S-2M has passed RoHS certificate
P.42	▶ Correcting the current value ▶ 60W, 90W gear shaft type, brake pinion shaft type has passed CCC certificate ▶ 60W, 90W round shaft brake type has passed RoHS certificate
P.52	▶ Correcting the current value ▶ Driver changed to -N type ▶ 60W, 90W gear shaft type, brake pinion shaft type has passed CCC certificate ▶ 60W, 90W round shaft brake type has passed RoHS certificate
P.55,59	Panel menu, dimensional drawing change to -N type



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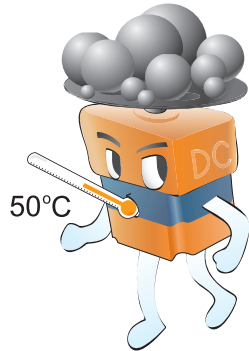
Offer good products and services to customers, assistant customer for better competition is promise from **TROY** !!

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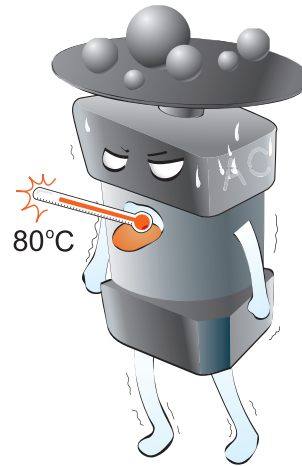
DC Brushless Motor

Features 1 LOW TEMPERATURE·HIGH EFFICIENCY·POWER SAVING



DC brushless Motor

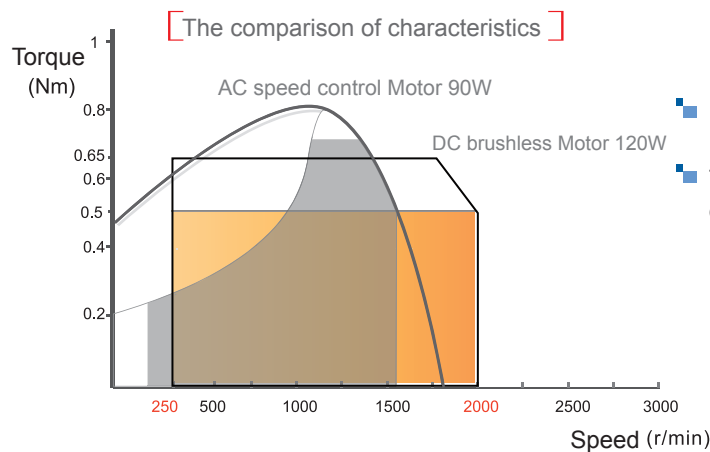
- When full load the highest operating temperature won't be exceed the 50°C. The efficiency can reach to 80%~85%



AC speed control Motor

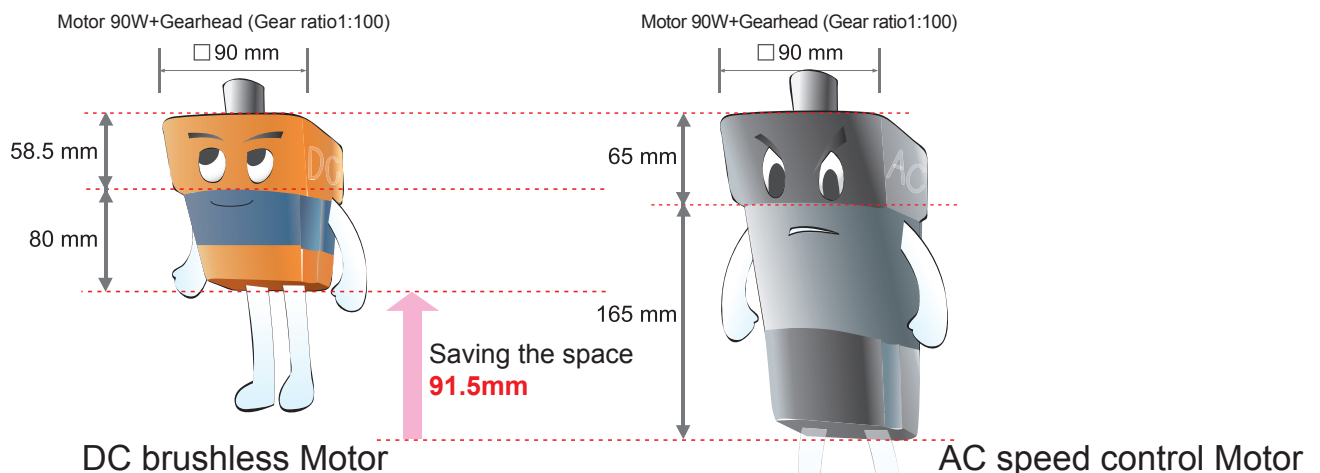
- The operating temperature in usual between 70~80°C. The efficiency probably only 40%~50%

Features 2 POSSESSING THE SAME TORQUE DURING HIGH & LOW SPEED



- DC brushless→Motor flat torque within 250~2000rpm
- The torque of AC speed control Motor will be changed by different speed. The torque of low speed is smaller. It only has 1/3 of high speed

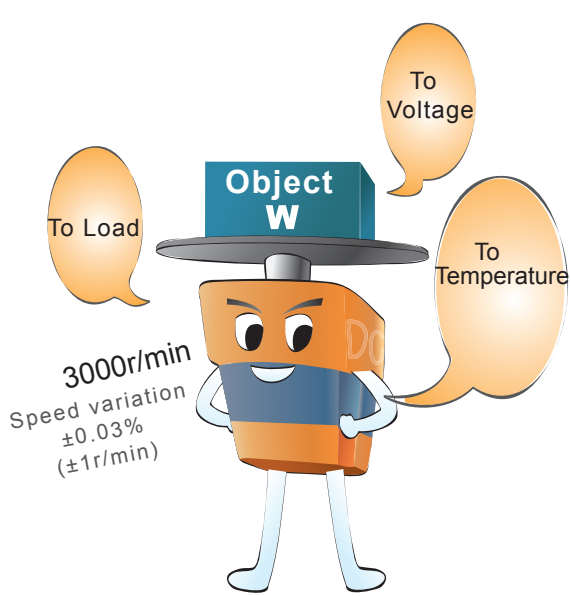
Features 3 SMALL VOLUME·SAVING THE SPACE



- Motor 90W Dimension: □ 90mmx80mm
Gearhead(Gear ratio 1:100):58.5mm
Total length:80mm+58.5mm=138.5mm

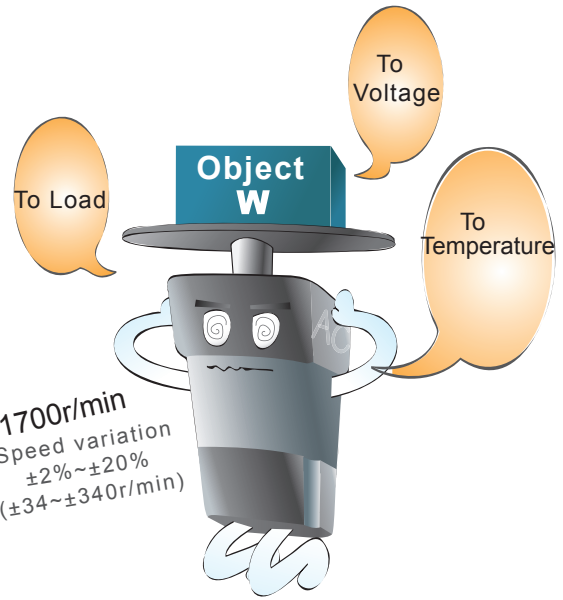
- Motor 90W Dimension: □ 90mmx165mm
Gearhead(Gear ratio 1:100):65mm
Total length:165mm+65mm=230mm

Features 4 LOW SPEED VARIATION·HIGH SPEED STABILITY·POSSESSING THE SPEED TRACING COMPENSATION FUNCTION



DC brushless Motor

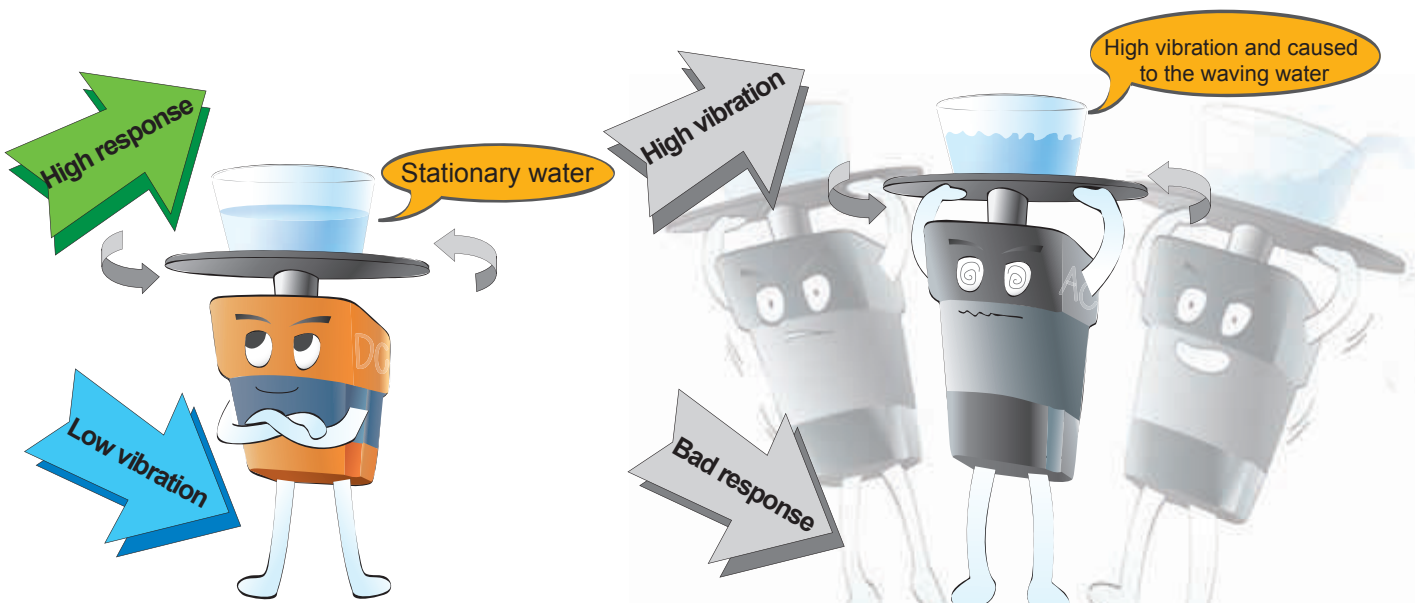
- At 3000r/min rated load, speed variation within $\pm 0.03\%$ (± 1 r/min)



AC speed control Motor

- Speed variation between $\pm 2\% \sim \pm 20\%$ ($\pm 34 \sim \pm 340$ r/min)

Features 5 HIGH RESPONSE·LOW VIBRATION·OPERATING SMOOTHLY



DC brushless Motor

AC speed control Motor

- High response, Low vibration, Operation smoothly
- Bad response, High vibration, Operation unstable

Product Index

Motor/Driver

Product series		Input voltage	Speed control range	Speed variation rate	Application
BMS	Standard	3 phase AC220~230V	30~150W : 250~3000 r/min	<ul style="list-style-type: none"> • Loading±0.05% • Voltage±0.05% • Temperature±0.05% 	Transmission, moving require high speed stability
	E/M brake	3 phase AC220~230V (E/M Brake: DC24V)	200W : 250~2500 r/min		Transmission, moving require high speed stability, move up and down, or with loading function
BS	Standard	Single phase 110~115V Single phase AC220~230V	20~120W : 300~3000 r/min	<ul style="list-style-type: none"> • Loading±0.05% • Voltage±0.05% • Temperature±0.05% 	Transmission, moving require high speed stability
	E/M brake	Single phase 110~115V Single AC220~230V (E/M Brake: DC24V)	200W : 250~2500 r/min		Transmission, moving require high speed stability, move up and down, or with loading function
SBS	Standard	Single phase 110~115V Single AC220~230V	250~2000 r/min	<ul style="list-style-type: none"> • Loading-1% • Voltage±2% • Temperature±2% 	Transmission requires fast response, high transmission action frequency
	E/M brake	Single phase 110~115V Single AC220~230V (E/M Brake: DC24V)			Transmission requires fast response, high transmission action frequency, move up and down, or with loading function
UBS	Standard	Single phase 110~115V Single AC220~230V	250~2000 r/min	<ul style="list-style-type: none"> • Loading-1% • Voltage±2% • Temperature±2% 	Simple operation, easy to control transmission application
	E/M brake	Single phase 110~115V Single AC220~230V (E/M Brake: DC24V)			Simple operation, easy to control transmission application, move up and down, or with loading function
DBS	Standard	DC24V	250~3000 r/min	<ul style="list-style-type: none"> • Loading-2% • Voltage±2% • Temperature±3% 	Transmission with DC power
	E/M brake	DC24V (E/M Brake: DC24V)			Transmission with DC power, move up and down, or with loading function

Gearhead

Product series	Motor	Max. torque	Gear ratio
6D□series	<input type="checkbox"/> 60mm gear shaft Motor (20~50W type)	6.5Nm	3~360 Ratio (26 ratios)
6D□H series	<input type="checkbox"/> 90mm gear shaft Motor (60~150W type)	40Nm	3~360 Ratio (26 ratios)
9D□H series	<input type="checkbox"/> 90mm gear shaft Motor (200 type)	50Nm	3~360 Ratio (26 ratios)

Accessories

Product series	Application	Page no.
D/A speed set	Convert PLC output signal from digital to analog to control Motor turning speed	70
Power supply	It can input AC100 ~ 240V AC voltage into a DC voltage output DC24V 1.25A	70
Extension cable	For longer Motor and Driver connection	71
Tachometer	Display speed of Motor output shaft or with Gearhead (Gearhead output shaft)	71



Installation □60mm				Installation □90mm								Application	Page
20W	30W	40W	50W	60W	75W	85W	90W	100W	120W	150W	200W		
	◆		◆			◆				◆	◆	LCD moving/cleaning, LED testing, wafer/fiber polishing, vacuum coating, stencil/solder paste printing	16
	◆		◆			◆				◆	◆		
◆		◆			◆				◆		◆	LCD moving/cleaning, LED testing, wafer/fiber polishing, vacuum coating, stencil/solder paste printing	28
◆		◆			◆				◆		◆		
◆		◆		◆			◆					PCB board sending, receiving machines, food/cosmetic filling packaging machines, coating machine, shoe machine	40
◆		◆		◆			◆						
◆		◆		◆			◆					PCB clean machines, CD manufacturing equipment, other transmission application	50
◆		◆		◆			◆						
◆		◆		◆				◆				Bio/medical equipment, drilling head research, or equipment with DC power suppliers	60
◆		◆		◆				◆					

Product Type Index

Motor/Driver/Gearhead

Product series		Input voltage	Installation □60mm			
			20W	30W	40W	50W
BMS	Standard	3 phase AC220~230V		6BM030□-3 BMD030-3 (6D□)		6BM050□-3 BMD050-3 (6D□)
	E/M brake	3 phase AC220~230V (E/M Brake: DC24V)		6BM030□-3M BMD030-3 (6D□)		6BM050□-3M BMD050-3 (6D□)
BS	Standard	Single phase 110~115V	6B020□-1 Note 1 DB020-1 (6D□) Note 2		6B040□-1 DB040-1 (6D□)	
		Single phase AC220~230V	6B020□-2 DB020-2 (6D□)		6B040□-2 DB040-2 (6D□)	
	E/M brake	Single phase 110~115V (E/M Brake: DC24V)	6B020□-1M DB020-1 (6D□)		6B040□-1M DB040-1 (6D□)	
		Single AC220~230V (E/M Brake: DC24V)	6B020□-2M DB020-2 (6D□)		6B040□-2M DB040-2 (6D□)	
SBS	Standard	Single phase 110~115V	6B020□-1N SBD020-1N (6D□)		6B040□-1N SBD040-1N (6D□)	
		Single AC220~230V	6B020□-2N SBD020-2N (6D□)		6B040□-2N SBD040-2N (6D□)	
	E/M brake	Single phase 110~115V (E/M Brake: DC24V)	6B020□-1NM SBD020-1N (6D□)		6B040□-1NM SBD040-1N (6D□)	
		Single AC220~230V (E/M Brake: DC24V)	6B020□-2NM SBD020-2N (6D□)		6B040□-2NM SBD040-2N (6D□)	
UBS	Standard	Single phase 110~115V	6B020□-1N UBD020-1N (6D□)		6B040□-1N UBD040-1N (6D□)	
		Single AC220~230V	6B020□-2N UBD020-2N (6D□)		6B040□-2N UBD040-2N (6D□)	
	E/M brake	Single phase 110~115V (E/M Brake: DC24V)	6B020□-1NM UBD020-1N (6D□)		6B040□-1NM UBD040-1N (6D□)	
		Single AC220~230V (E/M Brake: DC24V)	6B020□-2NM UBD020-2N (6D□)		6B040□-2NM UBD040-2N (6D□)	
DBS	Standard	DC24V	6B020□-D DBD020-D (6D□)		6B040□-D DBD040-D (6D□)	
	E/M brake	DC24V (E/M Brake: DC24V)	6B020□-DM DBD020-D (6D□)		6B040□-DM DBD040-D (6D□)	

Note 1: Motor 6B020□-1...etc, please fill shaft type in □. □S: for round shaft type, □PH or □PD or □P: for pinion shaft type.

Note 2: Gearhead 6B020□-1...etc. please fill gear ratio in □.

Installation □90mm								Page
60W	75W	85W	90W	100W	120W	150W	200W	
		9BM085□-3 BMD085-3 (9D□)				9BM150□-3 BMD150-3 (9D□)	9BM200□-3 BMD200-3 (9D□H)	16
		9BM085□-3M BMD085-3 (9D□)				9BM150□-3M BMD150-3 (9D□)	9BM200□-3M BMD200-3 (9D□H)	
	9B075□-1 DB075-1 (9D□)				9B120□-1 DB120-1 (9D□)		9B200□-1 DB200-1 (9D□H)	28
	9B075□-2 DB075-2 (9D□)				9B120□-2 DB120-2 (9D□)		9B200□-2 DB200-2 (9D□H)	
	9B075□-1M DB075-1 (9D□)				9B120□-1M DB120-1 (9D□)		9B200□-1M DB200-1 (9D□H)	
	9B075□-2M DB075-2 (9D□)				9B120□-2M DB120-2 (9D□)		9B200□-2M DB200-2 (9D□H)	
9B060□-1N SBD060-1N (9D□)			9B090□-1N SBD090-1N (9D□)					40
9B060□-2N SBD060-2N (9D□)			9B090□-2N SBD090-2N (9D□)					
9B060□-1NM SBD060-1N (9D□)			9B090□-1NM SBD090-1N (9D□)					
9B060□-2NM SBD060-2N (9D□)			9B090□-2NM SBD090-2N (9D□)					
9B060□-1N UBD060-1N (9D□)			9B090□-1N UBD090-1N (9D□)					50
9B060□-2N UBD060-2N (9D□)			9B090□-2N UBD090-2N (9D□)					
9B060□-1NM UBD060-1N (9D□)			9B090□-1NM UBD090-1N (9D□)					
9B060□-2NM UBD060-2N (9D□)			9B090□-2NM UBD090-2N (9D□)					
9B060□-D DBD060-D (9D□,9D□H)				9B100□-D DBD100-D (9D□,9D□H)				60
9B060□-DM DBD060-D (9D□)				9B100□-DM DBD100-D (9D□)				

Brushless Motor Product weight table

Motor/Driver

	BMS			BS			SBS/UBS			DBS			
	Name	Net weight(g)	Gross weight(g)	Name	Net weight(g)	Gross weight(g)	Name	Net weight(g)	Gross weight(g)	Name	Net weight(g)	Gross weight(g)	
Standard series	Round shaft type	6BM030S-3	685	1035	6B020S-1,-2	655	1005	6B020S-1N,-2N	655	1005	6B020S-D	655	1005
		6BM050S-3	1080	1440	6B040S-1,-2	1050	1410	6B040S-1N,-2N	1050	1410	6B040S-D	1050	1410
		9BM085S-3	1525	1865	9B075S-1,-2	1465	1805	9B060S-1N,-2N	1465	1805	9B060S-D	1525	1865
		9BM150S-3	2530	2600	9B120S-1,-2	2380	2750	9B090S-1N,-2N	2380	2750	9B100S-D	1525	1865
		9BM200S-3	2530	2880	9B200S-1,-2	2530	2880	—	—	—	—	—	—
	Pinion shaft type	6BM030P-3	680	1030	6B020P-1,-2	650	1000	6B020P-1N,-2N	650	1000	6B020P-D	650	1000
		6BM050P-3	1070	1430	6B040P-1,-2	1040	1400	6B040P-1N,-2N	1040	1400	6B040P-D	1040	1400
		9BM085PD-3	1500	1840	9B075PD-1,-2	1440	1780	9B060PD-1N,-2N	1440	1780	9B060PD-D	1500	1840
		9BM150PD-3	2500	2570	9B120PD-1,-2	2350	2720	9B090PD-1N,-2N	2350	2720	9B100PD-D	1500	1840
		9BM200P-3	2500	2850	9B200P-1,-2	2500	2850	—	—	—	—	—	—
Electric magnetic brake	Round shaft type	6BM030S-3M	1085	1435	6B020S-1M,-2M	1055	1405	6B020S-1NM,-2NM	1055	1405	6B020S-DM	1055	1405
		6BM050S-3M	1480	1840	6B040S-1M,-2M	1450	1810	6B040S-1NM,-2NM	1450	1810	6B040S-DM	1450	1810
		9BM085S-3M	2275	2615	9B075S-1M,-2M	2215	2555	9B060S-1NM,-2NM	2215	2555	9B060S-DM	2275	2615
		9BM150S-3M	3280	3350	9B120S-1M,-2M	3130	3500	9B090S-1NM,-2NM	3130	3500	9B100S-DM	2275	2615
		9BM200S-3M	3280	3630	9B200S-1M,-2M	3280	3630	—	—	—	—	—	—
	Pinion shaft type	6BM030P-3M	1080	1430	6B020P-1M,-2M	1050	1400	6B020P-1NM,-2NM	1050	1400	6B020P-DM	1050	1400
		6BM050P-3M	1470	1830	6B040P-1M,-2M	1440	1800	6B040P-1NM,-2NM	1440	1800	6B040P-DM	1440	1800
		9BM085PD-3M	2250	2590	9B075PD-1M,-2M	2190	2530	9B060PD-1NM,-2NM	2190	2530	9B060PD-DM	2250	2590
		9BM150PD-3M	3250	3320	9B120PD-1M,-2M	3100	3440	9B090PD-1NM,-2NM	3100	3440	9B100PD-DM	2250	2590
		9BM200P-3M	3250	3600	9B200P-1M,-2M	3250	3600	—	—	—	—	—	—
Driver	BMD030-3	840	1300	DB020-1,-2	660	950	SBD020-1N,-2N	530	830	DBD020-D	210	470	
	BMD050-3	840	1300	DB040-1,-2	660	960	SBD040-1N,-2N			DBD040-D	210	470	
	BMD085-3	840	1300	DB075-1,-2	670	990	SBD060-1N,-2N			DBD060-D	290	530	
	BMD150-3	840	1560	DB120-1,-2	680	990	SBD090-1N,-2N	520	760	UBD020-1N,-2N	290	530	
	BMD200-3	840	1560	DB200-1,-2	680	1270	UBD040-1N,-2N			UBD060-1N,-2N			
							UBD090-1N,-2N			—			—

※Motor net weight : Motor body+ rubber insulated cables 600mm ; Motor gross weight : Motor body+ rubber insulated cables 600mm+pack

※Driver net weight : Driver body+terminals+foot ;

Driver gross weight : Driver body+terminals+foot+variable resistor+ regenerative resistor (Only BMD150W/200W,BS200W attached) +Noise filter (DBS series no attached this part)+pack

Gearhead

Ratio	6D□		6D□N		9D□		9D□H		9D□N		9D□U	
	Net weight(g)	Gross weight(g)	Net weight(g)	Gross weight(g)	Net weight(g)	Gross weight(g)	Net weight(g)	Gross weight(g)	Net weight(g)	Gross weight(g)	Net weight(g)	Gross weight(g)
3~20	300	400	295	395	860	1170	860	1170	810	1120	835	1145
25~100	325	425	320	420	1125	1490	1125	1490	1075	1440	1100	1465
120~360	365	470	360	460	1265	1630	1265	1630	1215	1580	1240	1605

※Gearhead net weight : Gearhead body ; Gearhead gross weight : Gearhead body+screw package+pack

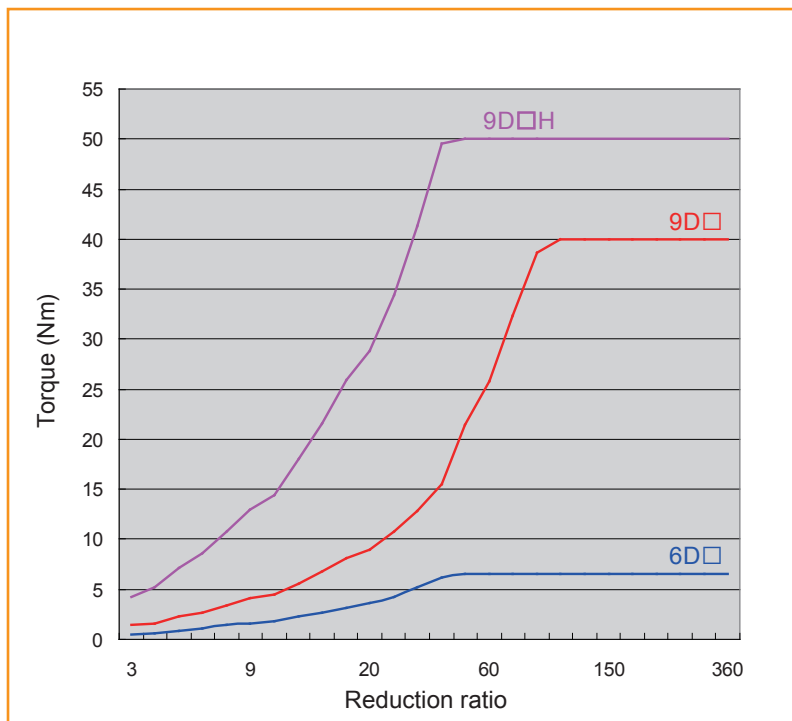
Accessories

D/A switching adaptor			Power supply			Extension cable-standard			Extension cable-flexible			Tachometer		
Name	Net weight(g)	Gross weight(g)	Name	Net weight(g)	Gross weight(g)	Name	Net weight	Gross weight(g)	Name	Net weight	Gross weight(g)	Name	Net weight(g)	Gross weight(g)
TRDAC	180	230	PA30-24-F	121	182	CB-010		110	CB-010F		130	TMR-F	110	170
						CB-020		210	CB-020F		240			
						CB-030		300	CB-030F		350			
						CB-050		500	CB-050F		570			
						CB-070		700	CB-070F		800			
						CB-100		1000	CB-100F		1200			

■ Gearhead transmission efficiency

Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20
6D□ 9D□ 9D□H	Efficiency 90%										
Ratio	25	30	36	50	60	75	90	100			
6D□ 9D□ 9D□H	Efficiency 86%										
Ratio	120	150	180	200	250	300	360				
6D□ 9D□ 9D□H	Efficiency 81%										

■ Gearhead maximum permissible torque



Product series	Maximum permissible torque
6D□ series	6.5Nm
9D□ series	40Nm
9D□H series	50Nm

■ Output torque after linking Gearhead

After connecting Gearhead output torque is calculated as following :

$$T_G = T_M \times i \times \eta$$

T_G : Output torque of Gearhead terminal
 T_M : Motor rated torque

i : Gearhead reduction ratio
 η : Gearhead transmission efficiency

※If the calculated value of T_G (gear side output torque) < Gearhead maximum allowable torque value, at this time, after connecting Gearhead output torque: the value is T_G value.

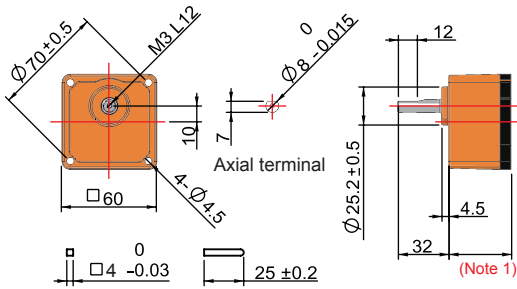
If the calculated value of T_G (gear torque output side) > Gearhead maximum allowable torque value, at this time, after connecting reducer output torque: please refer to the maximum allowable torque value Gearhead prevail.

Brushless Motor Gearhead specification

■ [Parallel shaft-General-type] Dimension size of Ø8、Ø12、Ø15 shaft Gearhead

Ø8 shaft type 6D□N

Unit: mm

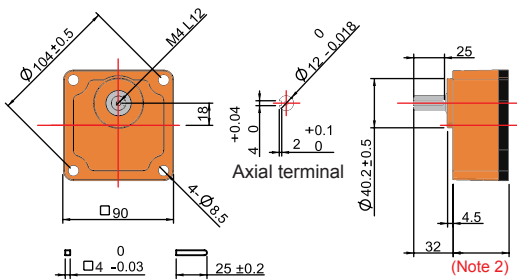


*(Note 1)

6D□N Gearhead Length/Net weight		
Gearhead name	Length(mm)	Net weight(g)
6D3N~6D20N	39.5±0.5	295
6D25N~6D100N	39.5±0.5	320
6D120N~6D360N	43.5±0.5	360

Ø12 shaft type 9D□N

Unit: mm

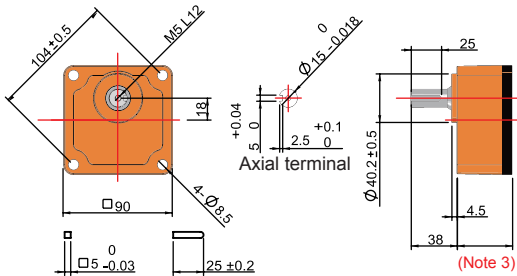


*(Note 2)

9D□N Gearhead Length/Net weight		
Gearhead name	Length(mm)	Net weight(g)
9D3N~9D20N	45.5±0.5	810
9D25N~9D100N	58.5±0.5	1075
9D120N~9D360N	64.5±0.5	1215

Ø15 shaft type 9D□U

Unit: mm



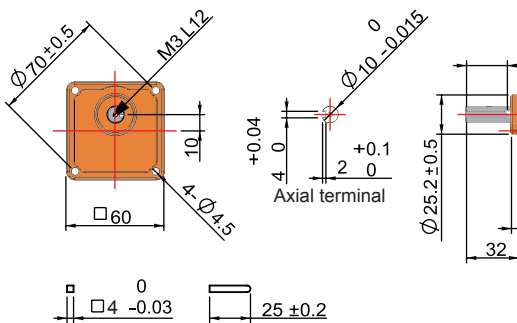
*(Note 3)

9D□U Gearhead Length/Net weight		
Gearhead name	Length(mm)	Net weight(g)
9D3U~9D20U	45.5±0.5	835
9D25U~9D100U	58.5±0.5	1100
9D120U~9D360U	64.5±0.5	1240

■ [Parallel shaft-General-type] Dimension size of Ø10、Ø18 shaft Gearhead

Ø10 shaft type 6D□

Unit: mm

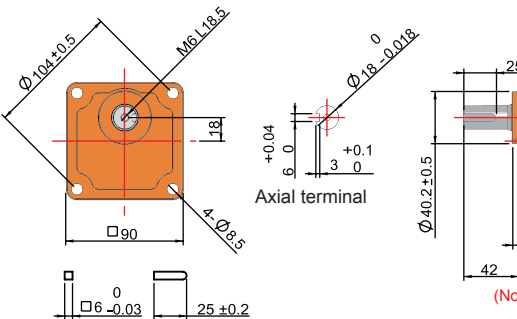


*(Note 1)

6D□ Gearhead Length/Net weight		
Gearhead name	Length(mm)	Net weight(g)
6D3~6D20	39.5	300
6D25~6D100	39.5	325
6D120~6D360	43.5	365

Ø18 shaft type 9D□ 9D□H

Unit: mm



*(Note 2)

9D□ Gearhead Length/Net weight			9D□H Gearhead Length/Net weight		
Gearhead name	Length(mm)	Net weight(g)	Gearhead name	Length(mm)	Net weight(g)
9D3~9D20	45.5	860	9D3H~9D20H	45.5	860
9D25~9D100	58.5	1125	9D25H~9D100H	58.5	1125
9D120~9D360	64.5	1265	9D120H~9D360H	64.5	1265

* Figure above dimensions tolerance values are not shown on normal manufacturing tolerances, the control mode refer to P.12, other marked tolerance values marked mainly by drawing.



■ [Right angle] Gearhead

◆ Specification

Type	Hallow shaft 9VD□(H) / Uniaxial-solid shaft VD□A(H) / Biaxial-solid shaft 9VD□B(H)													
Ratio	7.5	9	12.5	15	18	20	25	30	36	50	60	75	90	100
Transmission efficiency	70%			75%			80%			85%				
Rotation direction	Axial rotation direction opposite to the Motor body													
Allowable load inertia	And parallel shaft gear specifications identical (due to limited Motor shaft strength, please refer to the specification of every series of Motor)													

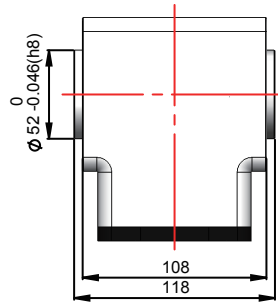
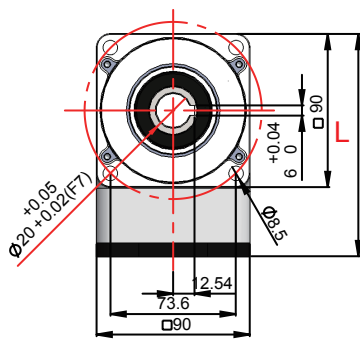
Type	Hallow shaft 9VD□(H) / Uniaxial-solid shaft VD□A(H) / Biaxial-solid shaft 9VD□B(H)						
Ratio	120	150	180	200	250	300	360
Transmission efficiency	90%						
Rotation direction	Axial rotation direction same to the Motor body						
Allowable load inertia	And parallel shaft gear specifications identical (due to limited Motor shaft strength, please refer to the specification of every series of Motor)						

* Gearhead 9VD□(H)/9VD□A(H)/9VD□B(H), Please fill in the number of gear ratio in □

◆ Dimension

Hallow shaft 9VD□(H)

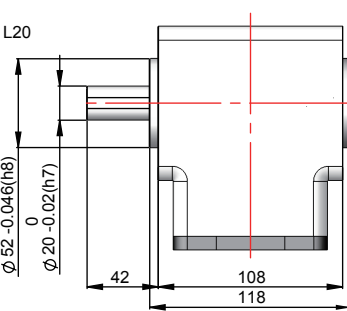
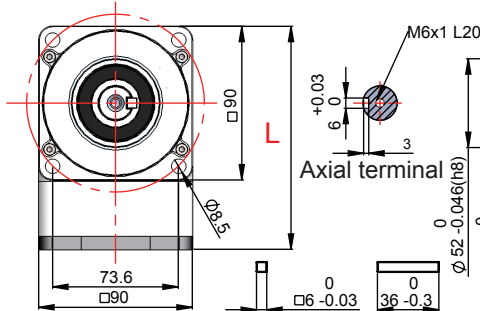
Unit: mm



Ratio	Length L (mm)	Weight (g)
7.5~100	130.6	3000
120~360	143.6	3500

Uniaxial-solid shaft 9VD□A(H)

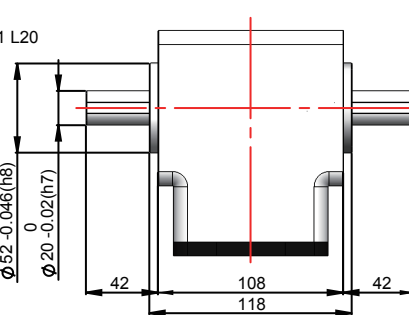
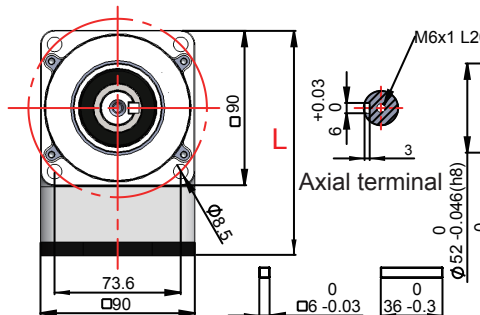
Unit: mm



Ratio	Length L (mm)	Weight (g)
7.5~100	130.6	3370
120~360	143.6	3870

Biaxial-solid shaft 9VD□B(H)

Unit: mm



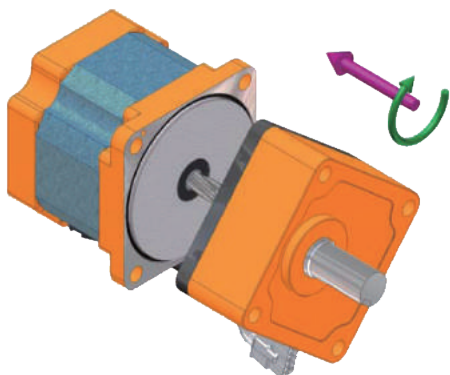
Ratio	Length L (mm)	Weight (g)
7.5~100	130.6	3450
120~360	143.6	3950

*Figure above size is not marked tolerance values are among the general manufacturing tolerances, the control mode, refer to P.12, others have marked tolerance values marked according to the main drawing.

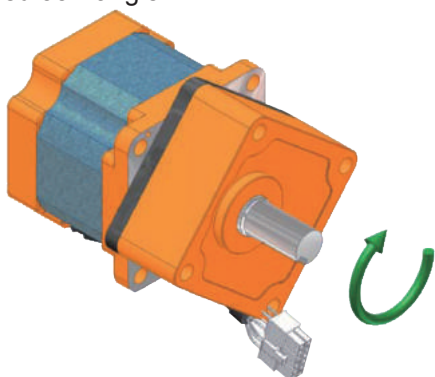
DC Brushless Motor and Gearhead combination fixation

- When the Motor and Gearhead combination, set within the Motor and gear unit opposite edge, to avoid Motor shaft and the gear teeth cut portion of a metal plate or gear collide with each other, and do according to the following sequence diagram combine assembly, in order to avoid causing improper assembly gear bumps.

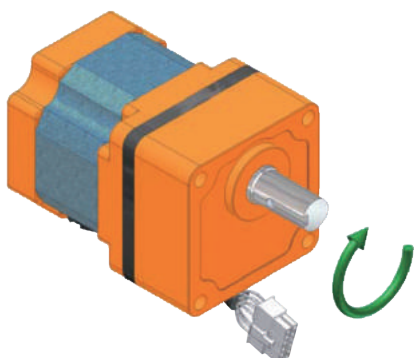
(Step 1.) Motor and Gearhead distance of about 35mm, showed 45° angle.



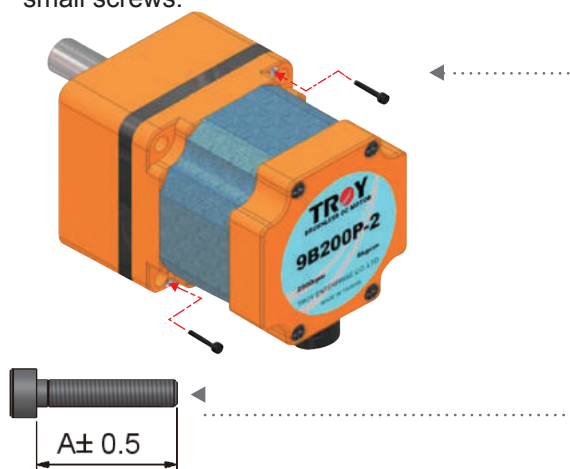
(Step 2.) Gearhead clockwise screwed with the Motor combination, the Motor and Gearhead stick flat, showed 35° angle.



(Step 3.) Motor gear stick flat end surface, and clockwise rotation of ascertaining that the Motor and Gearhead have really engaged.



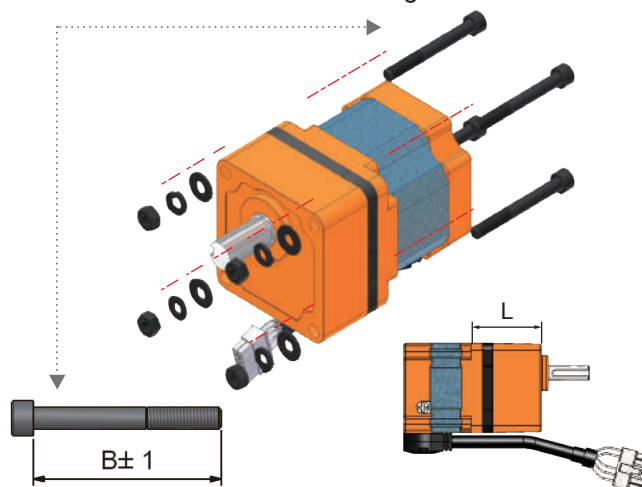
(Step 4.) Lock into the Motor and Gearhead fixing two small screws.



Gearhead Name	Screws specification	Small screw Length (A)mm
6D□	M2P0.4	8
9D□	M3P0.5	12
9D□H	M3P0.5	12

©Fixed with small screws to the Gearhead included product

(Step 5.) 『Panel mounting method』: the lock into the Motor and Gearhead mounting 4 screws.



Gearhead Name	Screws specification	Small screw Length (B)mm	Gearhead + Motor cover (L)mm
6D3(N)~6D100(N)	M4P0.7	60	47.5
6D120(N)~6D360(N)		70	51.5
9D3(N)(U)~9D20(N)(U)	M8P1.25	75	56.5
9D25(N)(U)~9D100(N)(U)		90	69.5
9D120(N)(U)~9D360(N)(U)		95	75.5
9D3H~9D20H	M8P1.25	75	56.5
9D25H~9D100H		90	69.5
9D120H~9D360H		95	75.5

©Mounting screws are included for the Gearhead products



■ Notes on the Motor Installation

1. Ambient temperature 0°C~+40°C, relative humidity below 85%.
2. Avoid environment of direct sunlight, moisture, oil, and dust.
3. Avoid intense shock and vibration to the occasion, as well as environments of gas explosion, corrosive gas.
4. Installation: Motor body may be mounted in a horizontal or vertical direction.
(But the Motor cable extraction direction cannot be changed)
5. Note that when you install and institutions linked to the center position. When the position of if accurate, will produce vibration motor or shorten the service life of gear bearings, mechanical fatigue will lead to more serious damage.
6. When installing couplings, pulleys, gears and other transmission mechanism on the Motor or gearbox axis, the axis is not available on tap directly mounted to the tool, otherwise it will cause the Motor or the Gearhead bearing damage.
7. Combined with the load fixation

Motor shaft: Right angle cut planar manner can be used directly two fixing screws a 90 degree angle, the locking mechanism is fixed to the axis.

Gearhead shaft: Using keyway fixed way, h7 tolerance design, please reserve when installation space agency "parallel button" assembly and mounting screw mechanism is fixed to the axis.

8. No tolerance values marked on the external dimensions are a general machining tolerances, the control mode in the following table:

Standard tolerance level IT14 unit: mm

Size	Tolerance
>0	0.3
>6	0.5
>30	0.7
>80	0.9
>120	1.0
>180	1.2
>250	1.3
>315	1.4
>400	1.6
>1000	2.0

- * Detail axis dimensions, please refer to "Motor overall dimensions."
- * Our company is to promote and improve product performance, product design modifications carried out will not be notified individually, if you need more detailed information, please contact each business unit.

1. **CE** : Europe safety certification



The machine selling to the Europe must accordance with Europe safety standards and mark on the CE or TÜV.

2. **cTUVus** : USA and Canada safety certification



Regconized by cTUVus Rheinland and indicated the product meets American & Canadian safety requirements. The product that can selling to the USA and CANADA .

3. **CCC** : China compulsory certification system certificated



All the products import/export to the China for selling or producing. They must accordance with CCC certificated and marked on CCC.

4. **RoHS** : Restriction of Hazardous Substances



RoHS, the European Union Directive 2002/95/EC, on the restriction of the use of certain hazardous substance apply to any equipment for use or import into an EU member state beginning July 2006. The restricted substance include; Lead(Pb), Mercury(Hg), hexavalent Chromium Cr(VI), Polybrominated biphenyls-PBB, Polybrominated diphenyl ether(PBDE) and Cadmium(Cd). Electrical and electronics equipment must conform to the maximum concentration value.

(Request for the RoHS certification, please contact with the sales representatives.)

5. **IP54** : IP (or "Ingress Protection") ratings are defined as levels of sealing effectiveness of electrical enclosures against intrusion from foreign bodies (tools, dirt etc) and moisture.
- IP5X** First Digit (intrusion protection) Protected against dust under normal condition that may harm equipment.
- IPX4** Second Digit (moisture protection) Protected against water spray from all directions at 10liter/min. for 10 minutes.



(1)



(2)



(3)



(4)



(5)

DC brushless Motors - Model naming

Motor

9 **BM** **200** **P** - **1** **M**

Installation size	Product series	Output power		Shaft style	Input power voltage	Max. speed	E/M Brake
6 □60mm	B BS SBS UBS DBS series	020	20W	S Round shaft	1 Single phase AC110~115V	None 2500r/min (and) above	None Economy
9 □90mm		030	30W	P Gear shaft	2 Single phase AC220~230V	N 2000r/min	M E/M brake
	BM BMS series	040	40W	PD Gear shaft	3 Three phase AC220~230V		
		050	50W	PH Gear shaft	D DC24V		
		060	60W				
		075	75W				
		085	85W				
		090	90W				

Driver

BMD **200** - **1**

Product series	Output power	Input power voltage
BMD BMS series	020 20W	1 Single phase AC110~115V
DB BS series	030 30W	2 Single phase AC220~230V
SBD SBS series	040 40W	1N Single phase AC110~115V (For SBS and UBS)
UBD UBS series	050 50W	
DBD DBS series	060 60W	2N Single phase AC220~230V (For SBS and UBS)
	075 75W	
	085 85W	3 Three phase AC220~230V
	090 90W	D DC24V
	100 100W	
	120 120W	
	150 150W	
	200 200W	

Gearhead

9 **D** **5** **H**

Installation size	Brushless Motor only	Gear ratio		Strength	
6 □60mm		3	1/3	None standard type	
9 □90mm		3.6	1/3.6	H High strength type	
		5	1/5		
		6	1/6		
		7.5	1/7.5		
		9	1/9		
		10	1/10		
		12.5	1/12.5		
		15	1/15		
		18	1/18		
		20	1/20		
		25	1/25		
		30	1/30		
			36	1/36	
			50	1/50	
			60	1/60	
		75	1/75		
		90	1/90		
		100	1/100		
		120	1/120		
		150	1/150		
		180	1/180		
		200	1/200		
		250	1/250		
		300	1/300		
		360	1/360		

DC Brushless Motor Products





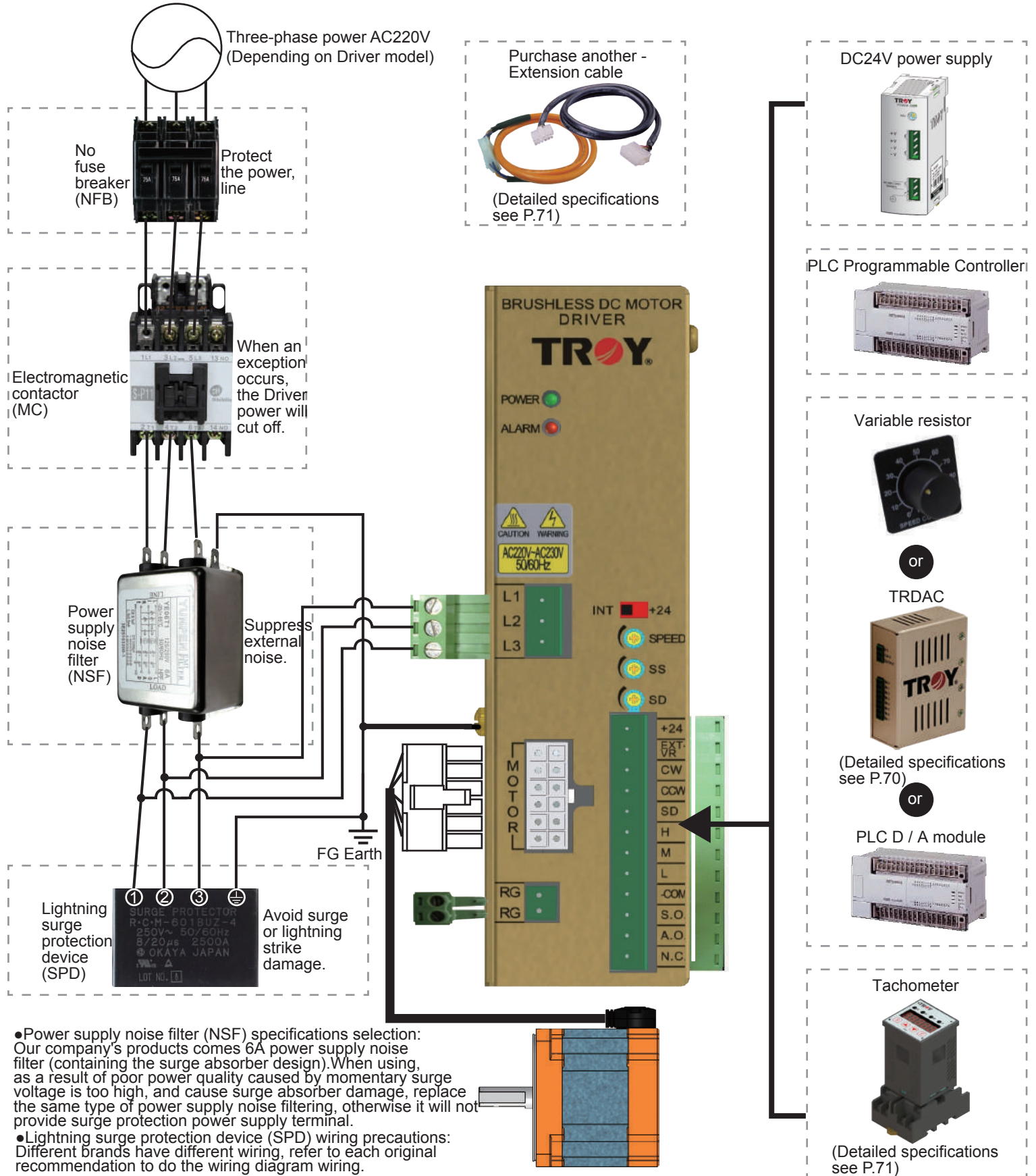
BMS series

-Three phase power supply with stable speed demand

Page	
17	System wiring diagrams
18	Specifications and characteristics of Motor/Driver
19	Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD^2)
20	Motor allowable radial load/axial load
21	Speed - Torque characteristic diagrams
21	Driver panel functions and wiring instructions
23	Motor electromagnetic brake wiring instructions
24	Dimensions - Motor/Gearhead
26	Dimensions - Driver
27	Dimensions - Variable resistor/Regenerative resistance/Power supply noise filter

DC brushless Motor-BMS series

■ System wiring diagrams





■ Specifications and characteristics of Motor/Driver



Motor output power		30W	50W	85W	150W	200W	
Round shaft Motor (M: E/M brake type)		6BM030S-3(M)	6BM050S-3(M)	9BM085S-3(M)	9BM150S-3(M)	9BM200S-3(M)	
Pinion shaft Motor (M: E/M brake type)		6BM030P-3(M)	6BM050P-3(M)	9BM085PD-3(M)	9BM150PD-3(M)	9BM200P-3(M)	
Motor specification certificates							
Driver		BMD030-3	BMD050-3	BMD085-3	BMD150-3	BMD200-3	
Driver specification certificates							
Input power voltage	-3 Type 3 Phase AC220~230V 50/60 HZ	Max. Current (A)	1.2	1.2	1.2	1.3	1.5
		Rated Current (A)	0.3	0.5	0.7	1	1.3
Starting Torque (Nm)		0.13	0.22	0.37	0.64	1	
Rated Torque (Nm)		0.1	0.17	0.28	0.49	0.8	
Allowable load inertia GD ² (Kgcm ²)		7.85	12.8	18.7	31.4	113	
E/M Brake	* Only E/M brake series have E/M brake	Input line voltage(V)	DC24			DC24	DC24
		Consumption power(W)	6.5			7.5	7.5
		Maintenance(Nm)	0.3			0.5	0.5
		Attraction time(ms)	30			33	33
		Release time(ms)	87			95	95
Speed control range(r/min)		250~3000				250~2500	
Speed variation rate	To load	±0.05%Max. at 3000r/min(200W: at 2500r/min), no load~rated load.					
	To voltage	±0.05% Voltage variation ±15%, at 3000r/min(200W: at 2500r/min), no load.					
	To Temperature	±0.05% 0~+40°C at 3000r/min(200W: at 2500r/min), no load.					
Slow start/Slow down time set up		30~150W:0.5~15sec, Motor from 0~3000r/min or from 0~3000r/min 200W:0.8~15sec, Motor from 0~2500r/min or from 0~2500r/min					
Speed control method		<ul style="list-style-type: none"> Control from external variable resistor (resistance 20KΩ) Control from internal variable resistor (also work with external variable resistor for 2 sections speed switch control) Control from external DC voltage (DC0~5V/1 mA above) Work with D/A speed setter TRDAC (Option) 					
Signal input/output methods		<ul style="list-style-type: none"> Photo coupler input interface Transistor Open Collector output interface 					
Function		<ul style="list-style-type: none"> Zero point control, can connect to PLC or Transistor, Relay type I/O module Within speed control range, motor sets Flat Torque output Instant brake stop, Slow up/Slow down Can operate in parallel 150/200W have regenerative resistor connection terminals, can based on customers' load condition to select external resettable resistors to consume regenerated energy (regenerated energy absorption protection : start operation at up down, Coiling or inertial load operation) 					
Protection function		<p>When protection functions activate, Motors stop automatically, Driver alarm signals output</p> <ul style="list-style-type: none"> Overload protection: starts when Motor activate torque for more than 5 sec Over heat protection: starts when Driver internal heat sink over 80°C Over voltage protection: (1) starts when up down, coiling or over inertial load (2) starts when driver input AC voltage appears transient high voltage Transient over current protection: When driver AC input power connects in parallel with large power for Power on, easy activates by large transient current Lack of phase protection: starts when motor power cable has bad connection, broken cable or feedback signal suffers interference 					
Insulation impedance		Applies DC500V high resistance meter test, power, F.G grounding, I/O terminal resistance value is over 100MΩ					
Insulation high voltage		Power and F.G connect to ground, terminals pass with 1.8KV/60Hz high voltage, power and I/O connectors pass with 3KV/60Hz high voltage for 1 minute, no abnormal condition					
Ambient temperature/Humidity range		0~+40°C, under 85% relative humidity (avoid dust and erosion, combustion gas)					

*1 Nm=10.19716 Kgcm

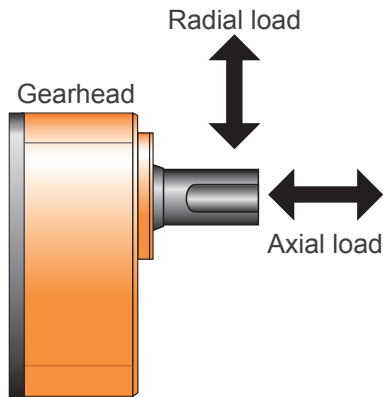
■ Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD²)

Gear ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
Speed range (r/min)	High speed	1000	883	600	500	400	333	300	240	200	166	150	120	100
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4
Allowable torque (Nm)	6BM030P-3(M) + 6D□	0.27	0.32	0.45	0.54	0.68	0.81	0.9	1.1	1.4	1.6	1.8	2.2	2.6
Allowable inertia load GD ² (kgcm ²)		3.53	5.09	9.81	14.1	22.1	31.8	39.3	61.3	88.3	127	157	245	353
Allowable torque (Nm)	6BM050P-3(M) + 6D□	0.45	0.54	0.74	0.89	1.1	1.3	1.5	1.9	2.2	2.7	3	3.5	4.3
Allowable inertia load GD ² (kgcm ²)		5.77	8.31	16.0	23.1	36.1	52.0	64.2	100	144	208	257	401	577
Allowable torque (Nm)	9BM085PD-3(M) + 9D□	0.76	0.91	1.3	1.5	1.9	2.3	2.5	3.2	3.8	4.5	5	6	7.2
Allowable inertia load GD ² (kgcm ²)		30.0	43.2	83.2	120	187	270	333	520	749	1079	1332	2081	2997
Allowable torque (Nm)	9BM150PD-3(M) + 9D□	1.3	1.6	2.2	2.6	3.3	4	4.4	5.5	6.6	7.9	8.8	10.5	12.6
Allowable inertia load GD ² (kgcm ²)		50.2	72.3	139	201	314	452	558	871	1254	1806	2230	3484	5018
Speed range (r/min)	High speed	833	694	500	416	333	277	250	200	166	138	125	100	83
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4
Allowable torque (Nm)	9BM200P-3(M) + 9D□H	2.2	2.6	3.6	4.3	5.4	6.5	7.2	9	10.8	13	14.4	17.2	20.6
Allowable inertia load GD ² (kgcm ²)		181	260	501	722	1128	1624	2006	3134	4512	6498	8022	12534	18050

Gear ratio		36	50	60	75	90	100	120	150	180	200	250	300	360
Speed range (r/min)	High speed	83	60	50	40	33	30	25	20	16	15	12	10	8
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.9	0.7
Allowable torque (Nm)	6BM030P-3(M) + 6D□	3.1	4.3	5.2	6.5				6.5					
Allowable inertia load GD ² (kgcm ²)		509	625				625							
Allowable torque (Nm)	6BM050P-3(M) + 6D□	5.1	6.5				6.5							
Allowable inertia load GD ² (kgcm ²)		625				625								
Allowable torque (Nm)	9BM085PD-3(M) + 9D□	8.7	12	14.4	18.1	21.7	24.1	27.2	34	40				
Allowable inertia load GD ² (kgcm ²)		4320	8320	11000				11000						
Allowable torque (Nm)	9BM150PD-3(M) + 9D□	15.2	21.1	25.3	31.6	37.9	40	40						
Allowable inertia load GD ² (kgcm ²)		7230	11000				11000							
Speed range (r/min)	High speed	69	50	41	33	27	25	20	16	13	12	10	8	6
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.8	0.7
Allowable torque (Nm)	9BM200P-3(M) + 9D□H	24.8	34.4	41.3	50				50					
Allowable inertia load GD ² (kgcm ²)		25991	45000				45000							

- * Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.
- * ■ In above table stands for after installation of Gearhead, the axis rotation direction is reversed with Motor axis direction; without marking stands for the same direction as Motor axis rotation.
- * 1Nm = 10.197Kgcm.
- * The Gearheads of all series have   certificate.
- * Also available orthogonal Gearhead: hollow shaft type 9VD□(H), the solid single shaft type 9VD□A(H), the solid biaxial shaft type 9VD□B(H), and size please refer to P.10.

Motor allowable radial load/axial load



- ① Radial load (hanging load): loading is vertical to gearhead axis power output
- ② Axial load (thrust load): loading is in the direction of gearhead axis power output

◆ Round shaft type

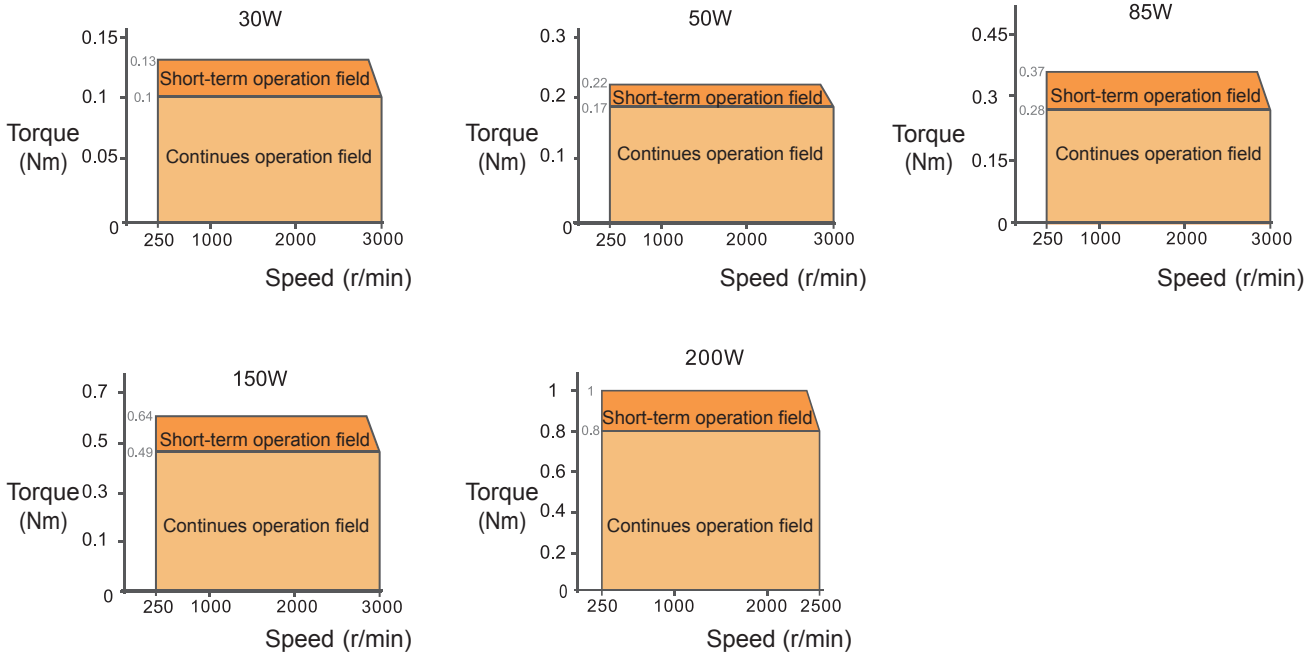
Model	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
	10mm from output shaft front	20mm from output shaft front	
6BM030S-3(M)	8	9	Permissible axial loading, not more than 1/2 of motor weight. But please try to avoid applying force in the horizontal direction (axial) of motor shaft, when exceeds that will reduce motor service life. If axial loading is needed, we recommend applying indirect transmission, such as: couplings, belts, chains, etc...
6BM050S-3(M)	8	9	
9BM085S-3(M)	13	15	
9BM150S-3(M)	16	17	
9BM200S-3(M)	16	17	

◆ Pinion shaft type (Gearhead attached)

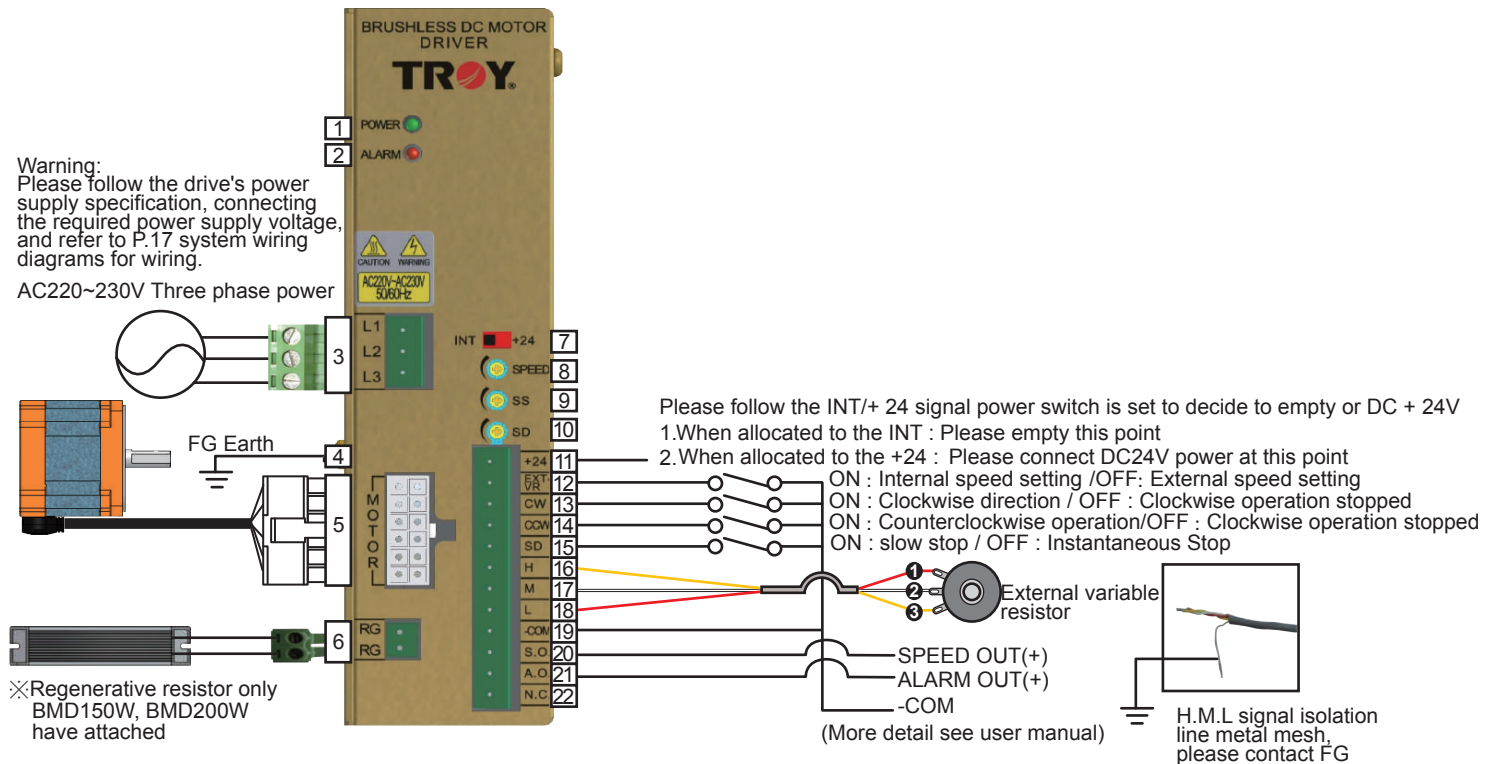
Model	Gear ratio	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
		10mm from output shaft front	20mm from output shaft front	
6BM030P-3(M) + 6D□	3, 3.6, 5	10	15	4
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
6BM050P-3(M) + 6D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	
9BM085PD-3(M) + 9D□	3, 3.6, 5	30	40	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	
9BM150PD-3(M) + 9D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	
9BM200P-3(M) + 9D□H	3, 3.6, 5	30	40	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	

*Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.

Speed - Torque characteristic diagrams



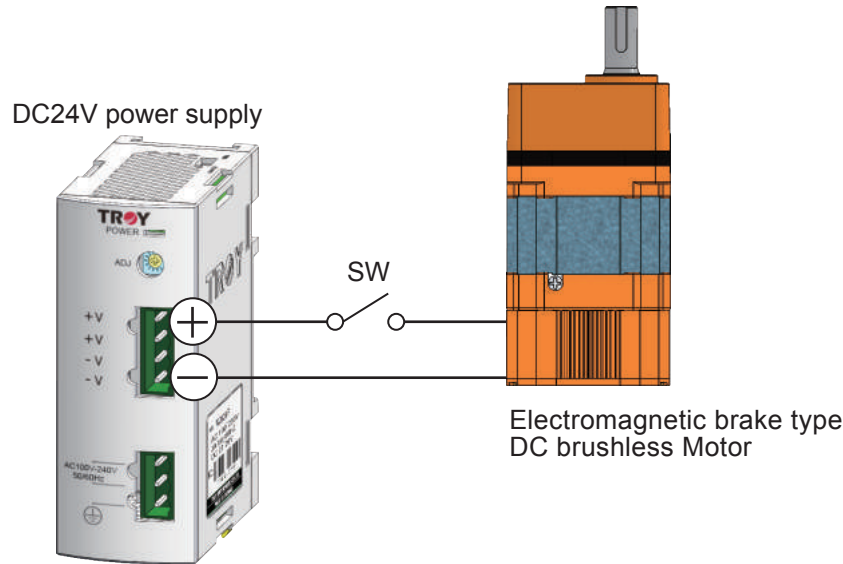
Driver panel functions and wiring instructions





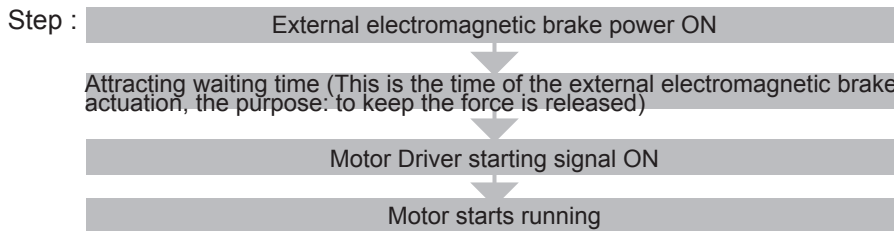
Number	Panel marked	Function	Explanation
1	POWER	Power indicator	When input power LED (green) lights
2	ALARM	Unusual indicator	Overload, overheating, overvoltage, instantaneous overcurrent, under equal any protective function will activate LED (red) lights
3	L1	Power voltage input terminal	AC power voltage input connecting L1, L2, L3 : three-phase power type
	L2		
	L3		
4	FG	Power ground terminal	Power ground connecting
5	MOTOR	Motor wiring connector	Motor and Driver connecting
6	RG	No connecting	30/50/85W: do not make any link (no effect)
		Regenerative resistor connection terminal	150/200W : According to customer load conditions selected external regenerative resistance, regenerative energy consumption
7	INT/+24	Signal power switch	INT : When Driver is controlled using the internal power supply DC24V (for relays, switches and control applications) +24: When using an external power supply DC24V control (PLC control applicable to the case)
8	SPEED	Internal speed setting button	30~150W speed control range : 250~3000r/min 200W speed control range : 250~2500r/min
9	SS	Slow start time setting button	30~150W : 0.5~15sec 200W : 0.8~15sec
10	SD	Slow stop time setting button	30~150W : 0.5~15sec 200W : 0.8~15sec
11	+24	Signal input power DC24V	When an external DC24V power control, external DC24V power connects to the terminal
12	EXT-VR	Speed setting switch to select the input mode	External/Internal speed setting mode switch selection
13	CW	Clockwise operation input	Clockwise operation/stop switch input
14	CCW	Counterclockwise operation input	Counterclockwise operation/stop switch input
15	SD	Stop mode switch to select the input	Slow (depending on SD button to set the time for the slow stopped)/instantaneous stop mode select switch
16	H	External speed setting input	An external connection terminal variable resistor or external DC voltage (0 ~ 5V) control of 30~150W speed control range : 250~3000r/min 200W speed control range : 250~2500r/min
17	M		
18	L		
19	-COM	Control signal grounding	GND contact inputs and outputs a control signal common ground line, and the external power DC24V
20	S.O.	Speed signal output	Detecting Motor speed using : 30 ~ 200W digital signal output 24 pulse/rev
21	A.O.	Abnormal warning signal output	Overload, overheating, overvoltage, overcurrent moment, when any one of the less equal protection function is activated, Motor will stop naturally, and outputs an abnormality warning signal
22	N.C.	No connection	Do not make any connection

Motor electromagnetic brake wiring instructions

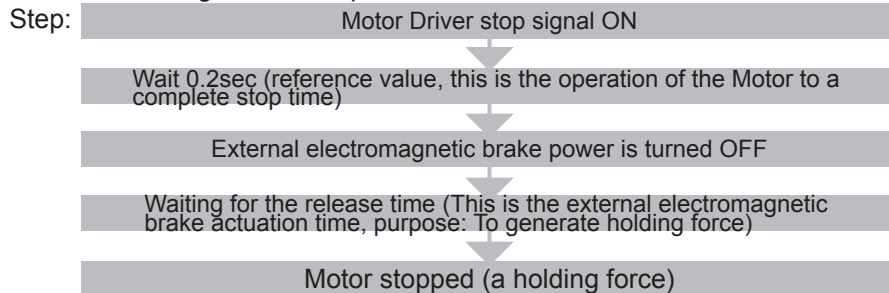


◆ Operation instruction

Motor start/Motor stop with external electromagnetic brake operating procedures:
 Motor start: Must energize external electromagnetic brake before the Motor starts



Motor Stop : The Motor is stopped before the operation do not yet fully external electromagnetic brake power.



◆ Precautions

- 1.This series of external electromagnetic brake using the brake power is part of the hold-type.
- 2.External electromagnetic brake is designed to allow the Motor stops when the holding force has to be used as a safety brake, electromagnetic brake, do not use this as a Motor positioning or emergency brake applications.
- 3.Always to pull the Motor before starting the external electromagnetic brake energized (means no brakes);Motor stopped before the operation do not yet fully external electromagnetic brake power (expressed brakes).
- 4.External electromagnetic brake suction time and release time value refer to the product specification.
- 5.Motor brakes to stop for about 0.2sec (test conditions in the Motor no-load speed 3000r / min, the electromagnetic brake is energized, the brake actuator signal ON time of the Driver, this time as a reference base, but the actual length of time will stop according to the inertia load or frictional load ... different load patterns and has fluctuated.

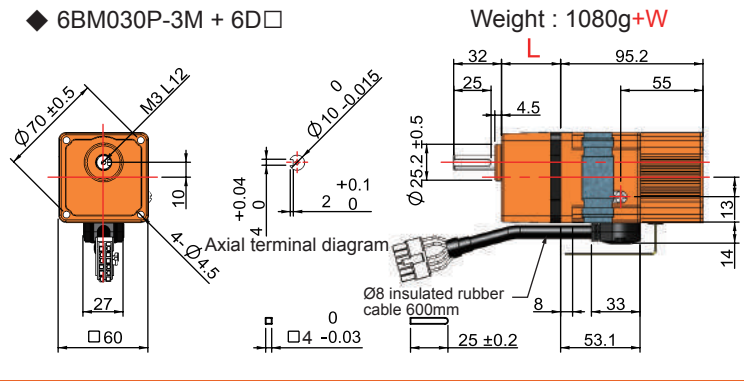
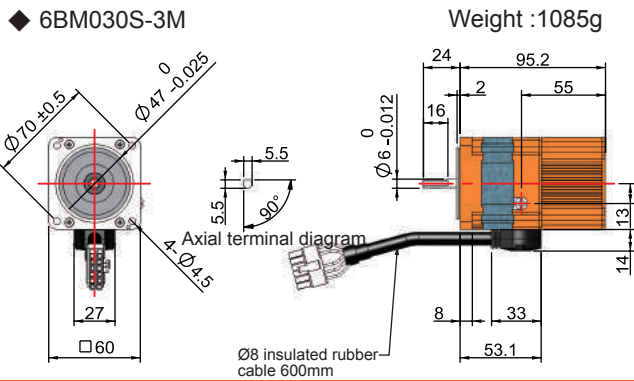
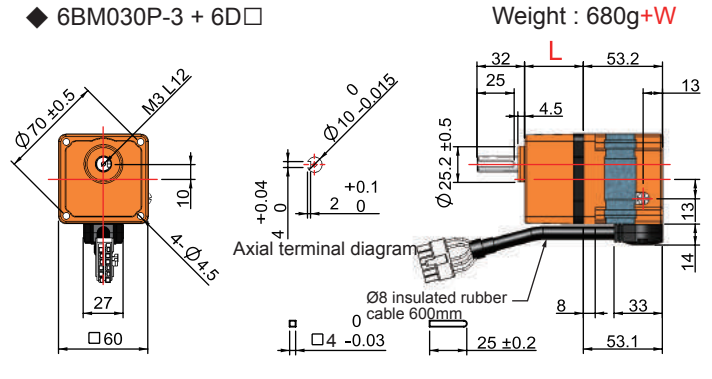
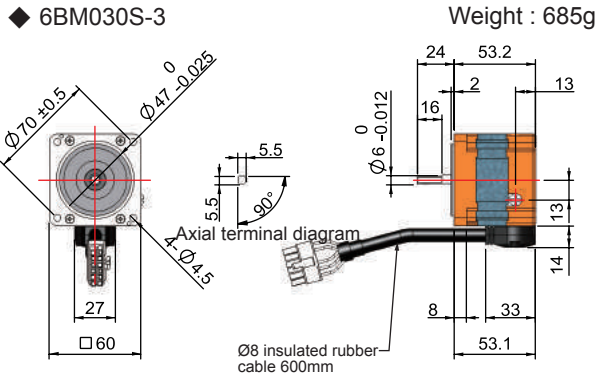
■ Dimensions - Motor/Gearhead

Unit : mm

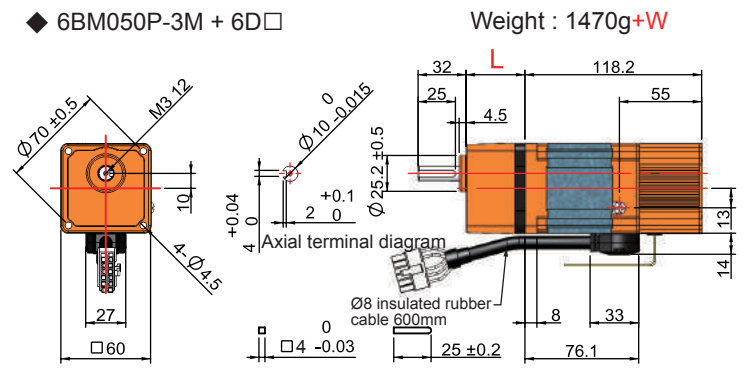
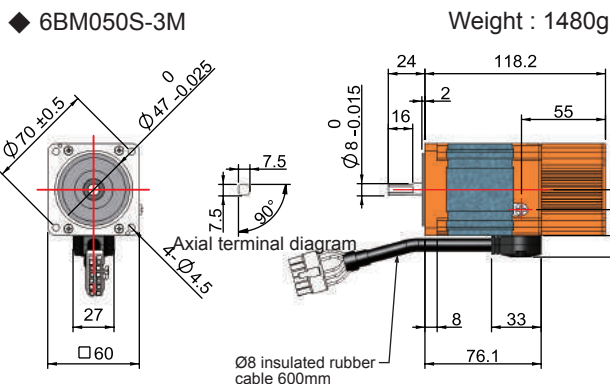
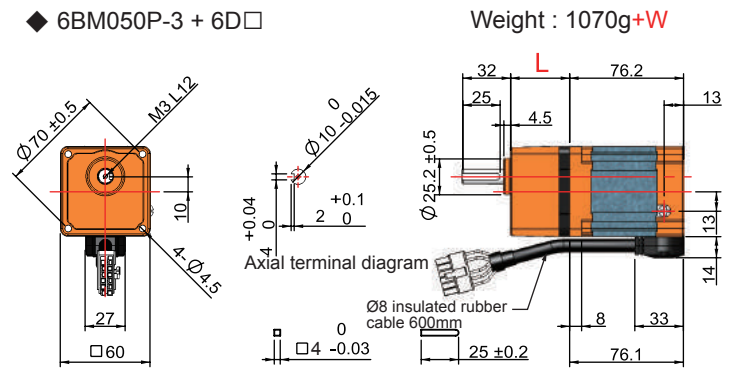
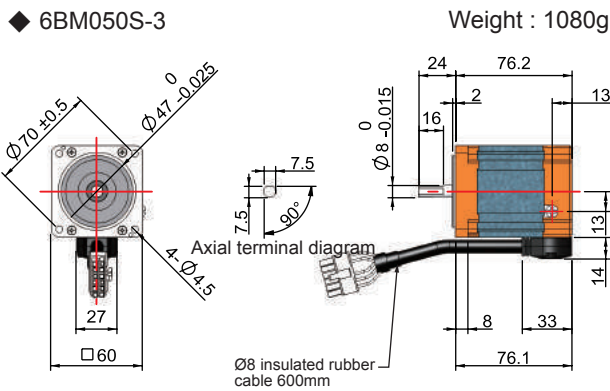
Round shaft type

Pinion shaft type

30W/□60mm



50W/□60mm



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

* 6BM pinion shaft type 6D3-6D360, Gearhead length L and weight W specification as following:

Model	6D3~6D20	6D25~6D100	6D120~6D360
Gearhead Length L (mm)	39.5	39.5	43.5
Weight W (g)	300	325	365

Technical Information
 Model naming
 Accessories
 Motor selection
 Certificates
 Installation
 Gearhead
 Product weight
 Product names
 Product index
 Product of Motor

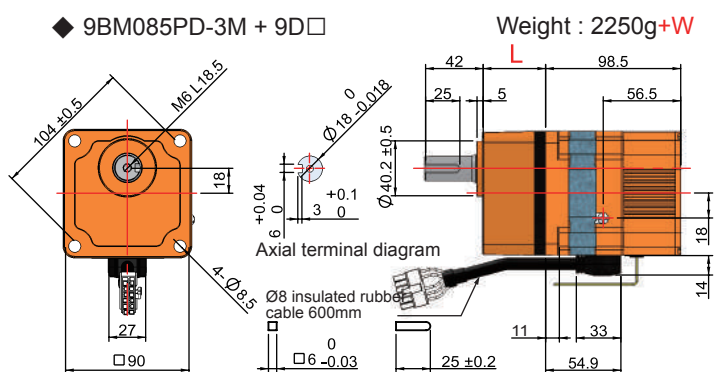
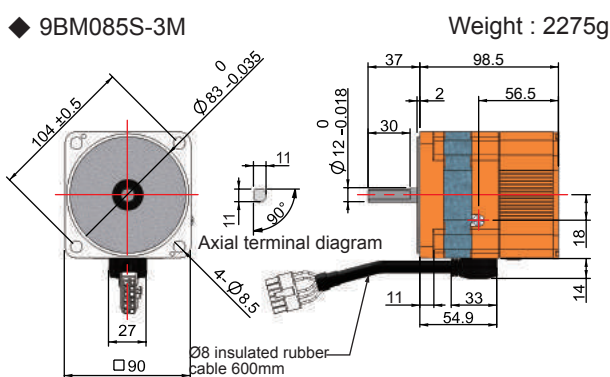
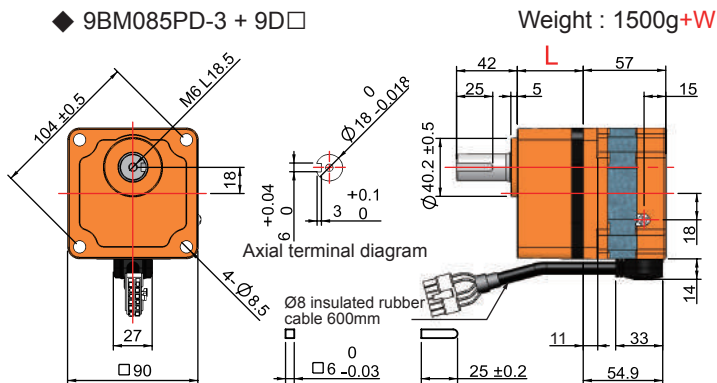
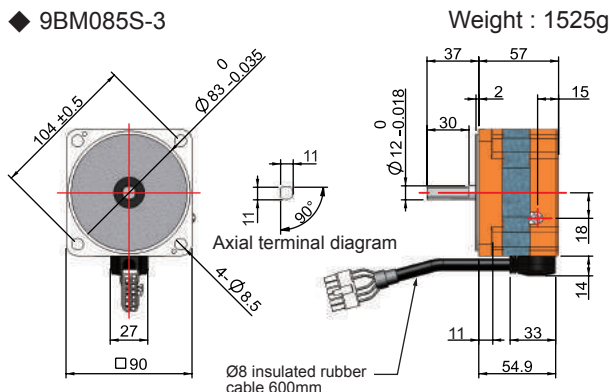
■ Dimensions - Motor/Gearhead

Unit : mm

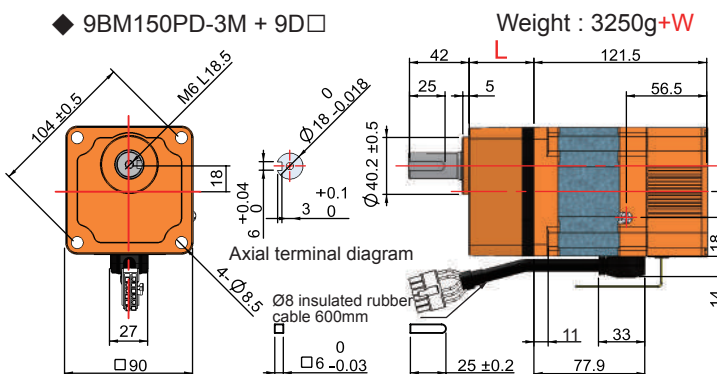
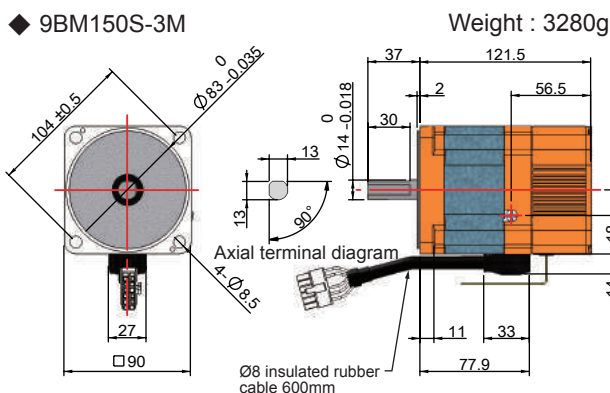
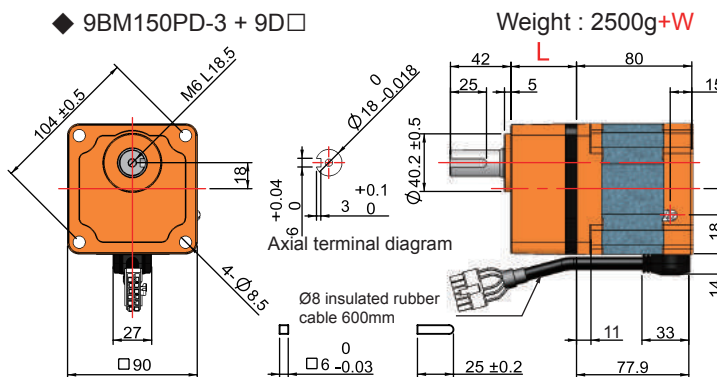
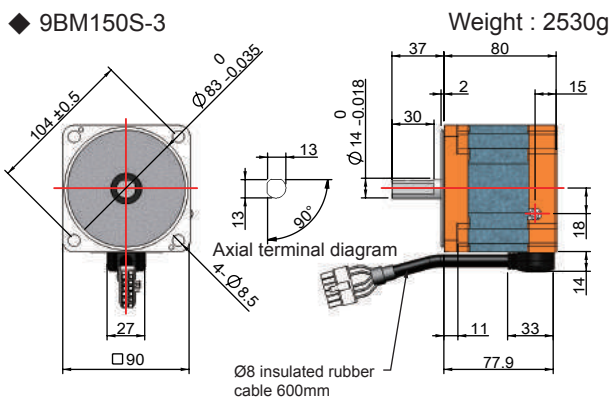
Round shaft type

Pinion shaft type

85W/□90mm



150W/□90mm



*9BM pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

	Model	9D3~9D20	9D25~9D100	9D120~9D360
Gearhead	Length L (mm)	45.5	58.5	64.5
	Weight W (g)	860	1125	1265

* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Motor/Gearhead

Unit : mm

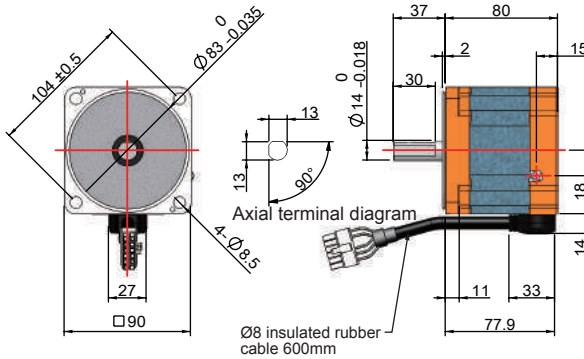
Round shaft type

Pinion shaft type

200W/□90mm

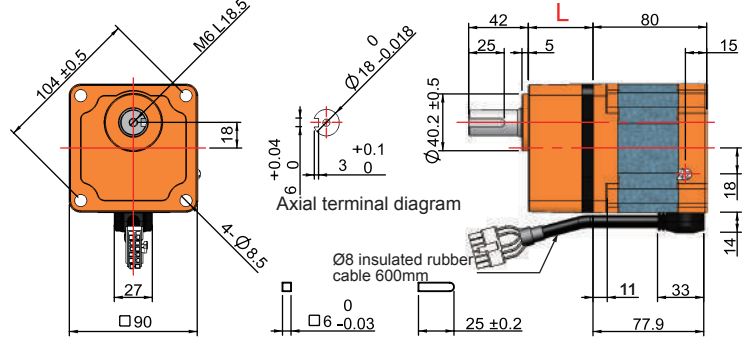
◆ 9BM200S-3

Weight : 2530g



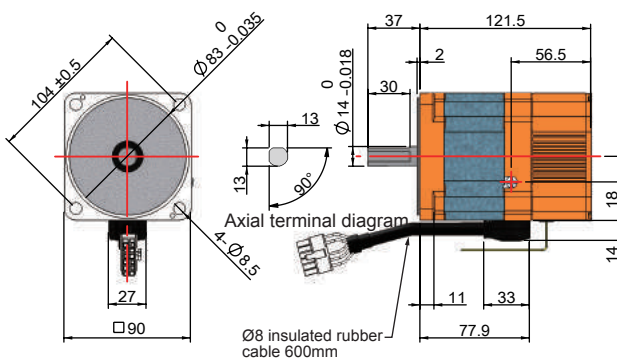
◆ 9BM200P-3 + 9D□H

Weight : 2500g+W



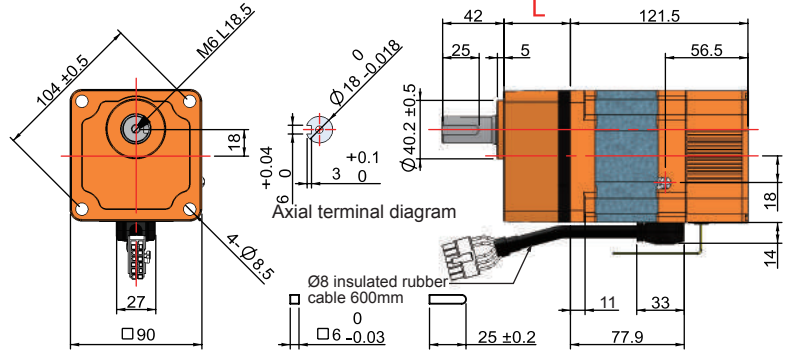
◆ 9BM200S-3M

Weight : 3280g



◆ 9BM200P-3M + 9D□H

Weight : 3250g+W



* 9BM pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

	Model	9D3H~9D20H	9D25H~9D100H	9D120H~9D360H
Gearhead	Length L (mm)	45.5	58.5	64.5
	Weight W (g)	860	1125	1265

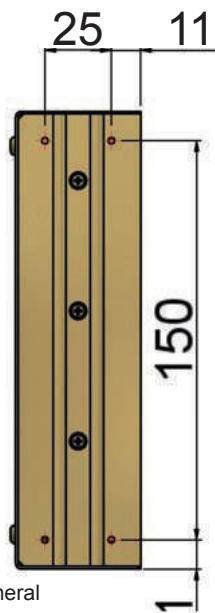
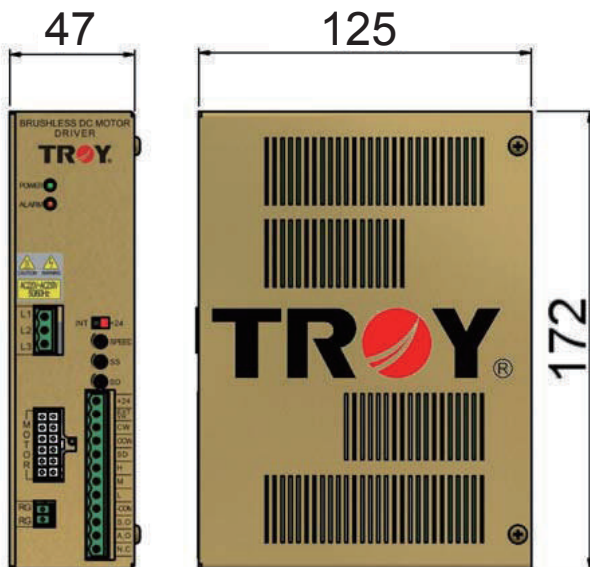
■ Dimensions - Driver

Names : BMD030-3 / BMD050-3

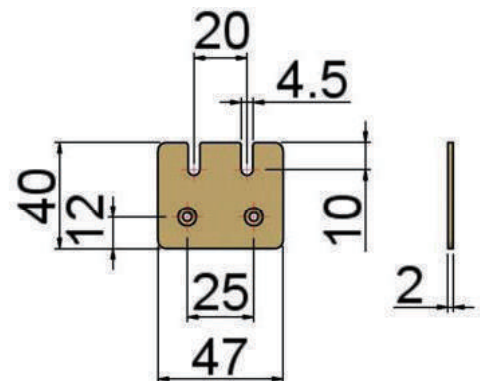
Weight : 840g

BMD085-3 / BMD150-3 / BMD200-3

Dimensions are common



Mounting sheet

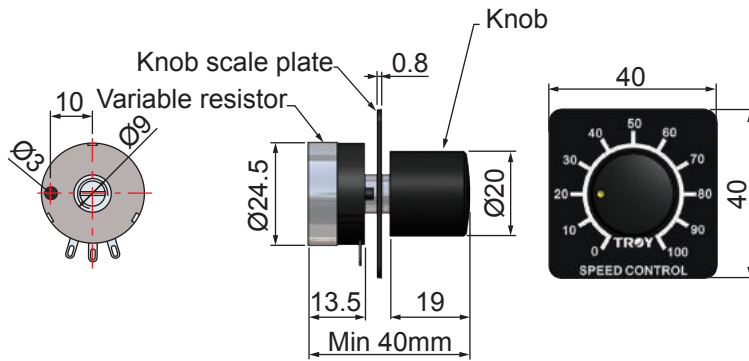


* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Variable resistor

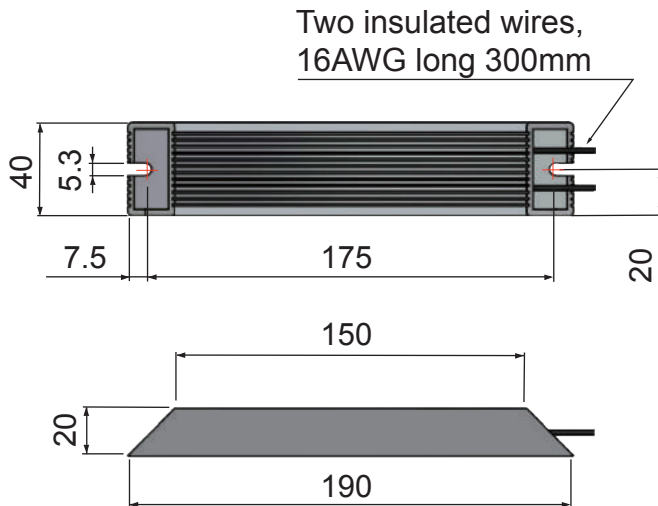
Unit : mm

Weight : 30g



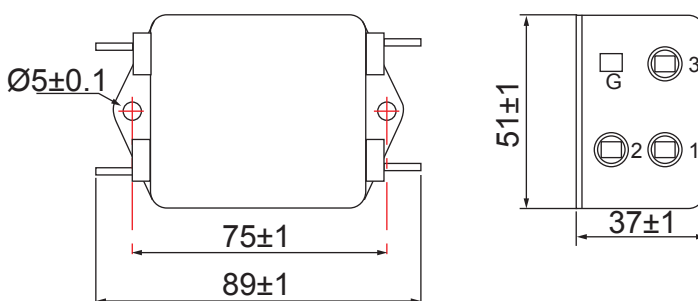
■ Dimensions - Regenerative resistance dimensions (Only 150 / 200W attached)

Weight : 260g



■ Dimensions - Power supply noise filter

Weight : 170g



* Figure above dimensions tolerance values are not label on general machining tolerances, the control mode refer to P.12, others have marked tolerance values according to the drawing labeled based.



BS series

-For high stable speed demand

Page	
29	System wiring diagrams
30	Specifications and characteristics of Motor/Driver
31	Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD^2)
32	Motor allowable radial load/axial load
33	Speed - Torque characteristic diagrams
33	Driver panel functions and wiring instructions
35	Motor electromagnetic brake wiring instructions
36	Dimensions - Motor/Gearhead
38	Dimensions - Driver
39	Dimensions - Variable resistor/Regenerative resistance/Power supply noise filter

DC Brushless Motor

DC brushless Motor- BS series

System wiring diagrams

Single phase AC110V/220V
(Depending on Driver model)

No fuse breaker (NFB)

Protect the power line

Purchase another - Extension cable



(Detailed specification see P.71)

DC24V Power supply



PLC Programmable Controller



Variable resistor



or

TRDAC



(Detailed specification see P.70)

or

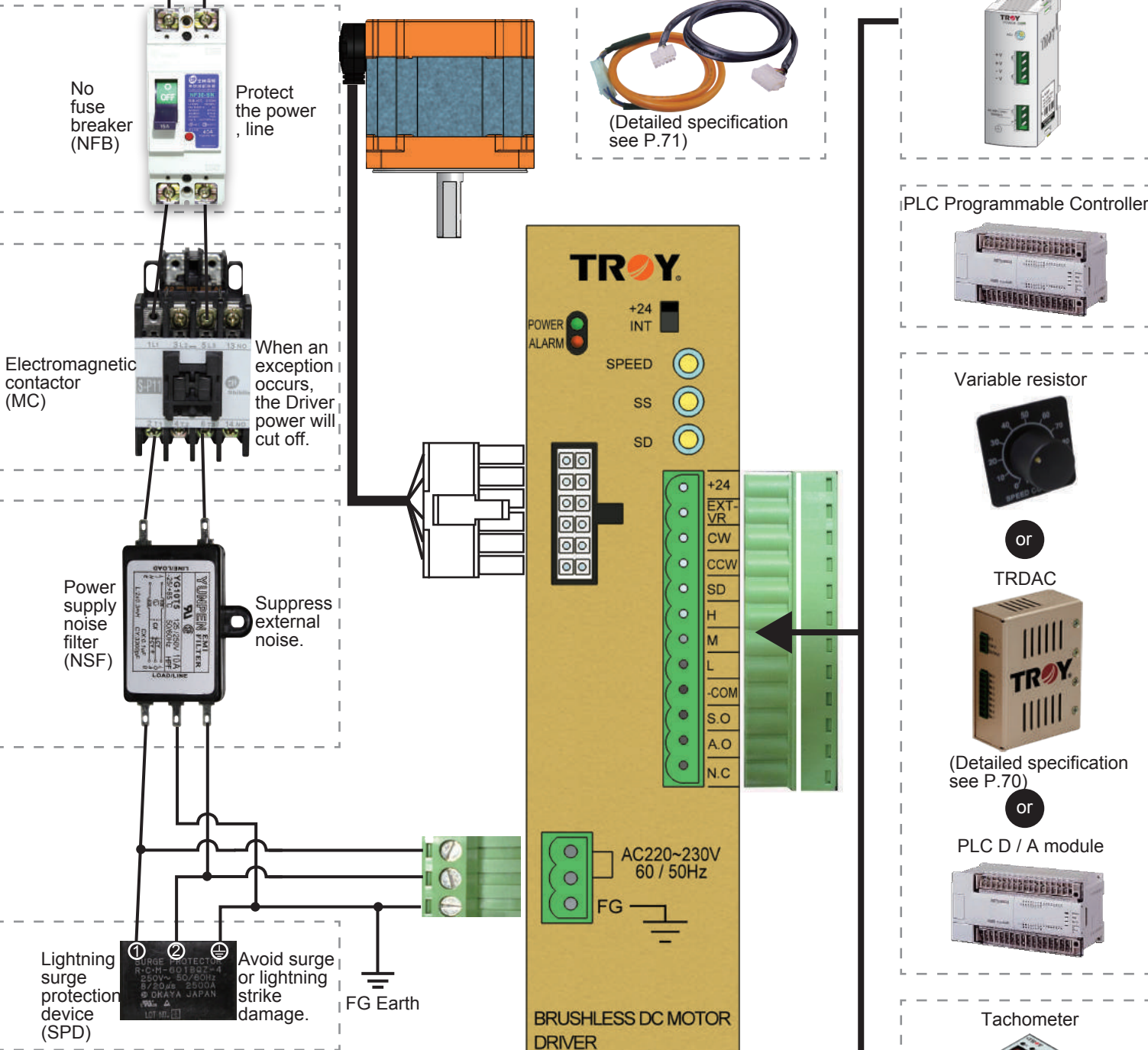
PLC D / A module



Tachometer



(Detailed specification see P.71)



●Power supply noise filter (NSF) specifications selection:
Our company's products comes 6A power supply noise filter (containing the surge absorber design).When using, as a result of poor power quality caused by momentary surge voltage is too high, and cause surge absorber damage, replace the same type of power supply noise filtering, otherwise it will not provide surge protection power supply terminal.

●Lightning surge protection device (SPD) wiring precautions:
Different brands have different wiring, refer to each original recommendation to do the wiring diagram wiring.



■ Specifications and characteristics of Motor/Driver


Motor output power		20W	40W	75W	120W	200W	
Round shaft Motor (M: E/M brake type)		6B020S-□(M)	6B040S-□(M)	9B075S-□(M)	9B120S-□(M)	9B200S-□(M)	
Pinion shaft Motor (M: E/M brake type)		6B020P-□(M) <small>(Note 1)</small>	6B040P-□(M)	9B075PD-□(M)	9B120PD-□(M)	9B200P-□(M)	
Motor specification certificates	-1 Type						
	-2 Type						
Driver		DB020-□	DB040-□	DB075-□	DB120-□	DB200-□	
Driver specification certificates							
Input power voltage	-1 Type Single Phase AC110~115V 50/60 HZ	Max. Current (A)	2.8	2.8	2.8	3.3	4.9
		Rated Current (A)	0.65	1.2	1.95	2.7	4
	-2 Type Single Phase AC220~230V 50/60 HZ	Max. Current (A)	1.6	1.6	1.6	1.75	2.8
		Rated Current (A)	0.35	0.65	1.05	1.45	2.3
Starting Torque (Nm)		0.08	0.16	0.33	0.5	1	
Rated Torque (Nm)		0.065	0.14	0.25	0.4	0.8	
Allowable load inertia GD ² (Kgcm ²)		4.78	9.55	17.45	23.99	112.81	
E/M Brake * Only E/M brake series have E/M	Input line voltage(V)		DC24		DC24		
	Consumption power(W)		6.5		7.5		
	Maintenance(Nm)		0.3		0.5		
	Attraction time(ms)		30		33		
	Release time(ms)		87		95		
Speed control range(r/min)		300~3000				250~2500	
Speed variation rate	To load	±0.05%Max. at 3000r/min(200/400W: at 2500r/min), no load~rated load.					
	To voltage	±0.05%	Voltage variation ±15%, at 3000r/min(200/400W: at 2500r/min), no load.				
	To Temperature	±0.05%	0~+40°C at 3000r/min(200/400W: at 2500r/min), no load.				
Slow start/Slow down time set up		20~120W:0.5~15sec, Motor from 0~3000r/min or from 0~3000r/min 200W:0.8~15sec, Motor from 0~2500r/min or from 0~2500r/min					
Speed control method		<ul style="list-style-type: none"> Control from external variable resistor (resistance 20KΩ) Control from internal variable resistor (also work with external variable resistor for 2 sections speed switch control) 			<ul style="list-style-type: none"> Control from external DC voltage (DC0~5V/1 mA above) Work with D/A speed setter TRDAC (Option) 		
Signal input/output methods		<ul style="list-style-type: none"> Photo coupler input interface Transistor Open Collector output interface 					
Function		<ul style="list-style-type: none"> Zero point control, can connect to PLC or Transistor, Relay type I/O module Within speed control range, Motor sets Flat Torque output Instant brake stop, Slow up/Slow down Can operate in parallel 120W/200W have regenerative resistor connection terminals, can based on customers' load condition to select external resettable resistors to consume regenerated energy (regenerated energy absorption protection : start operation at up down, Coiling or inertial load operation) 					
Protection function		<p>When protection functions activate, Motors stop automatically, Driver alarm signals output</p> <ul style="list-style-type: none"> Overload protection: starts when Motor activate torque for more than 5 sec Over heat protection: starts when Driver internal heat sink over 80°C Over voltage protection: (1) starts when up down, coiling or over inertial load (2) starts when Driver input AC voltage appears transient high voltage Transient over current protection: When driver AC input power connects in parallel with large power for Power on, easy activates by large transient current Lack of phase protection: starts when Motor power cable has bad connection, broken cable or feedback signal suffers interference 					
Insulation impedance		Applies DC500V high resistance meter test, power, F.G grounding, I/O terminal resistance value is over 100MΩ					
Insulation high voltage		Power and F.G connect to ground, terminals pass with 1.8KV/60Hz high voltage, power and I/O connectors pass with 3KV/60Hz high voltage for 1 minute, no abnormal condition					
Ambient temperature/Humidity range		0~+40°C, under 85% relative humidity (avoid dust and erosion, combustion gas)					

Note1 : Please fill the power in the box-□, □ indicates AC110V~115V , □ indicates AC220V~230V. ※ 1 Nm=10.19716Kgcm

TRDY - Characteristics of Motor | Product index | Product names | Product weight | Gearhead | Installation | Technical Information | Certificates | Model naming | BMS | SSS | UBS | DBS | Accessories | Motor selection

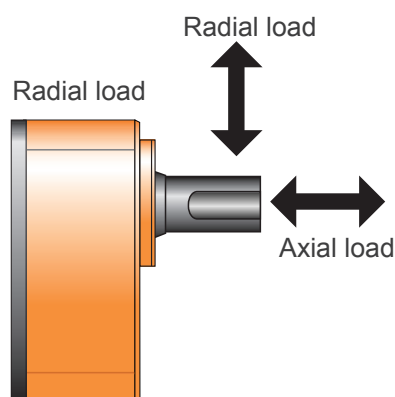
■ Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD²)

Gear ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	
Speed range (r/min)	High speed	1000	883	600	500	400	333	300	240	200	166	150	120	100	
	Low speed	100	83.4	60	50	40	33.4	30	24	20	16.7	15	12	10	
Allowable torque (Nm)	6B020P-□(M) +6D□	0.18	0.21	0.29	0.35	0.44	0.53	0.59	0.73	0.88	1.1	1.2	1.4	1.7	
Allowable inertia load GD ² (kgcm ²)		2.25	3.24	6.25	9.00	14.1	20.3	25.0	39.1	56.3	81.0	100	156	225	
Allowable torque (Nm)	6B040P-□(M) +6D□	0.35	0.42	0.59	0.7	0.88	1.1	1.2	1.5	1.8	2.1	2.3	2.8	3.4	
Allowable inertia load GD ² (kgcm ²)		4.50	6.48	12.5	18.0	28.1	40.5	50.0	78.1	113	162	200	313	450	
Allowable torque (Nm)	9B075PD-□(M) +9D□	0.68	0.81	1.1	1.4	1.7	2	2.3	2.8	3.4	4.1	4.5	5.4	6.5	
Allowable inertia load GD ² (kgcm ²)		27.9	40.2	77.6	112	175	251	310	485	698	1005	1241	1939	2792	
Allowable torque (Nm)	9B120PD-□(M) +9D□	1.1	1.3	1.8	2.2	2.7	3.2	3.6	4.5	5.4	6.5	7.2	8.6	10.3	
Allowable inertia load GD ² (kgcm ²)		38.4	55.3	107	154	240	345	426	666	960	1382	1706	2666	3838	
Speed range (r/min)	High speed	833	694	500	416	333	277	250	200	166	138	125	100	83	
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4	
Allowable torque (Nm)	9B200P-□(M) +9D□H	2.2	2.6	3.6	4.3	5.4	6.5	7.2	9	10.8	13	14.4	17.2	20.6	
Allowable inertia load GD ² (kgcm ²)		181	260	501	722	1128	1624	2006	3134	4512	6498	8022	12534	18050	
Gear ratio		36	50	60	75	90	100	120	150	180	200	250	300	360	
Speed range (r/min)	High speed	83	60	50	40	33	30	25	20	16	15	12	10	8	
	Low speed	8.4	6	5	4	3.4	3	2.5	2	1.7	1.5	1.2	1	0.9	
Allowable torque (Nm)	6B020P-□(M) +6D□	2	2.8	3.4	4.2	5	5.6	6.3	6.5						
Allowable inertia load GD ² (kgcm ²)		324	625					625							
Allowable torque (Nm)	6B040P-□(M) +6D□	4	5.6	6.5					6.5						
Allowable inertia load GD ² (kgcm ²)		625					625								
Allowable torque (Nm)	9B075PD-□(M) +9D□	7.7	10.8	12.9	16.1	19.4	21.5	24.3	30.4	36.5	40				
Allowable inertia load GD ² (kgcm ²)		4020	7756	11000					11000						
Allowable torque (Nm)	9B120PD-□(M) +9D□	12.4	17.2	20.6	25.8	31	34.4	38.9	40						
Allowable inertia load GD ² (kgcm ²)		5527	10662	11000					11000						
Speed range (r/min)	High speed	69	50	41	33	27	25	20	16	13	12	10	8	6	
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.8	0.7	
Allowable torque (Nm)	9B200P-□(M) +9D□H	24.8	34.4	41.3	50					50					
Allowable inertia load GD ² (kgcm ²)		25991	45000					45000							

- * Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.
- * ■ In above table stands for after installation of Gearhead, the axis rotation direction is reversed with Motor axis direction; without marking stands for the same direction as Motor axis rotation.
- * 1Nm = 10.197Kgcm.
- * The Gearheads of all series have  certificate.
- * Also available orthogonal Gearhead: hollow shaft type 9VD□(H), the solid single shaft type 9VD□A(H), the solid biaxial shaft type 9VD□B(H), and size please refer to P.10.



■ Motor allowable radial load/axial load



- ① Radial load (hanging load): loading is vertical to Gearhead axis power output
- ② Axial load (thrust load): loading is in the direction of Gearhead axis power output

◆ Round shaft type

Model	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
	10mm from output shaft front	20mm from output shaft front	
6B020S-□(M)	8	9	Permissible axial loading, not more than 1/2 of motor weight. But please try to avoid applying force in the horizontal direction (axial) of motor shaft, when exceeds that will reduce motor service life. If axial loading is needed, we recommend applying indirect transmission, such as: couplings, belts, chains, etc...
6B040S-□(M)	8	9	
9B075S-□(M)	13	15	
9B120S-□(M)	16	17	
9B200S-□(M)	16	17	

◆ Pinion shaft type (Gearhead attached)

Model	Gear ratio	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
		10mm from output shaft front	20mm from output shaft front	
6B020P-□(M) + 6D□	3, 3.6, 5	10	15	4
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
6B040P-□(M) + 6D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	
9B075PD-□(M) + 9D□	3, 3.6, 5	30	40	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	
9B120PD-□(M) + 9D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	
9B200P-□(M) + 9D□H	3, 3.6, 5	30	40	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	

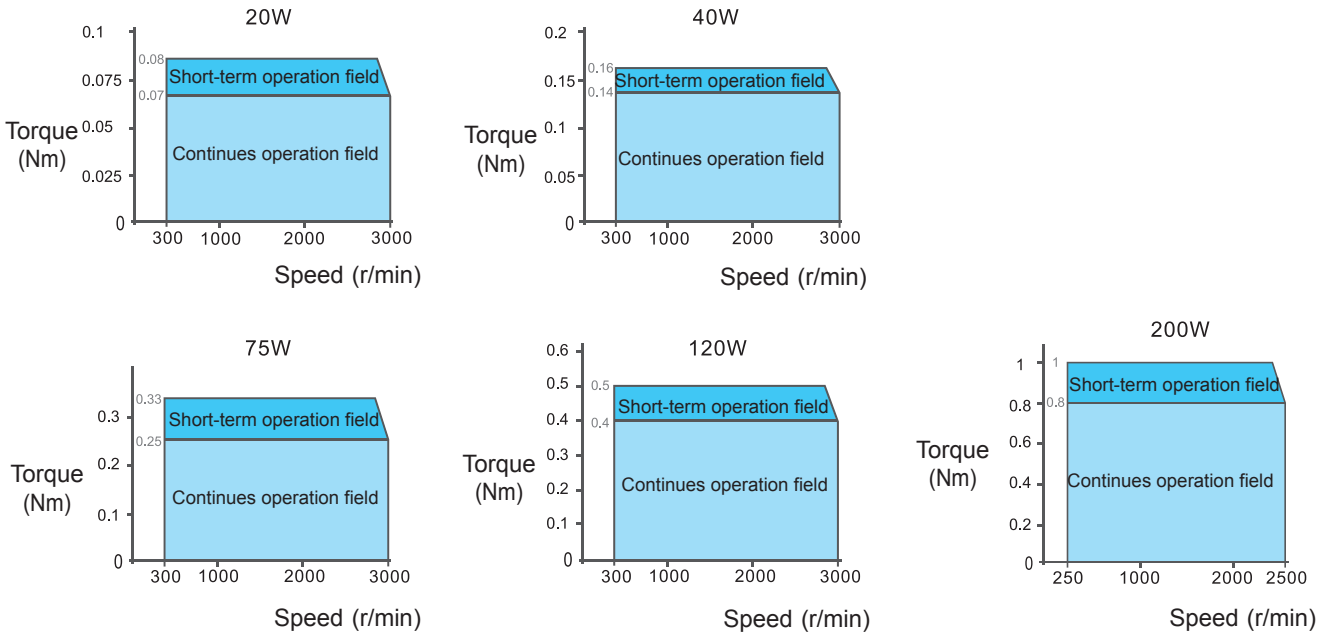
* Motor 6B020S-□(M)...etc, please fill in □ with line power voltage. ①: stand for single phase AC110~115V, ②: stand for single phase AC220~230V.
 * Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.

DC Brushless Motor

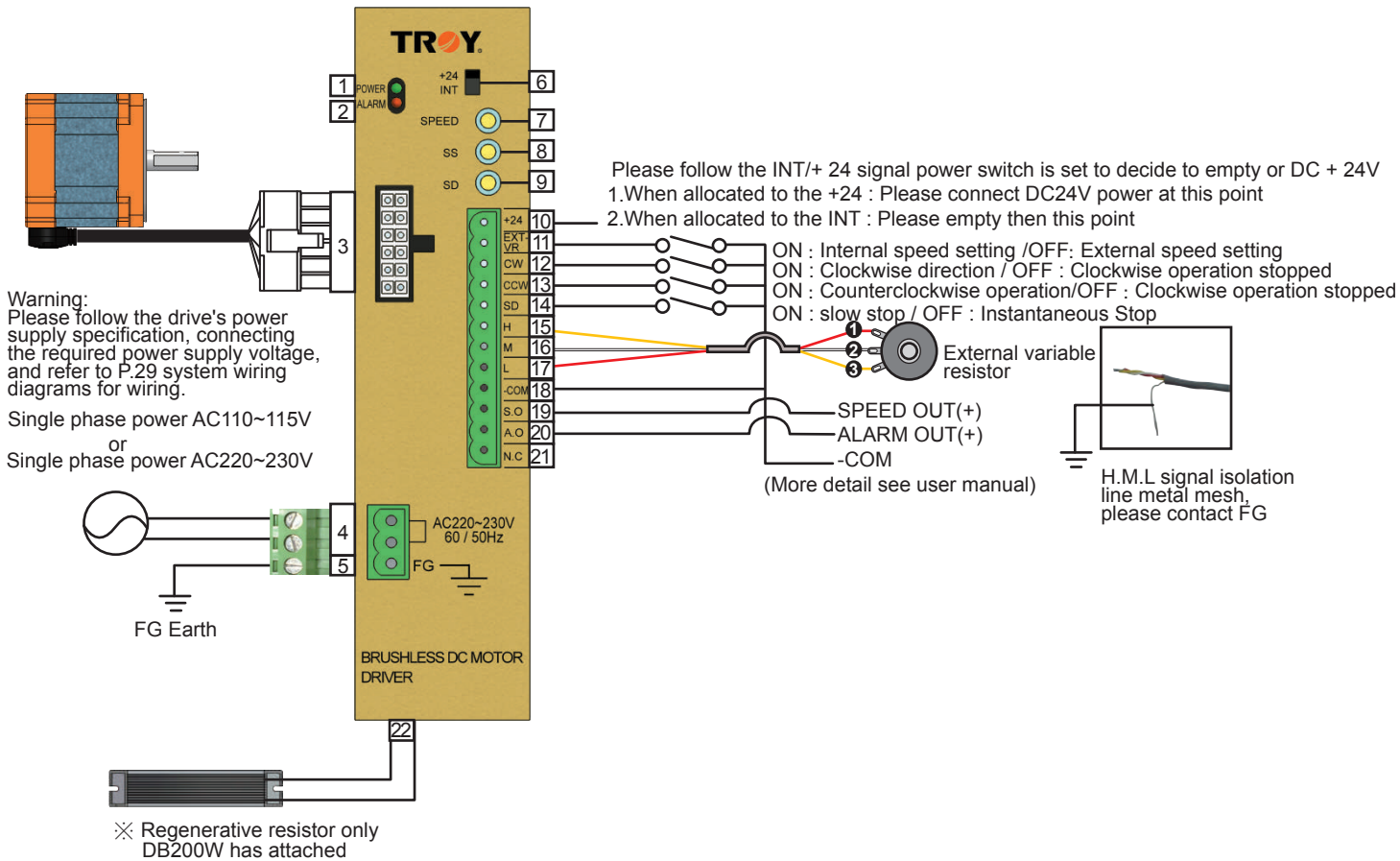
BS series



Speed - Torque characteristic diagrams

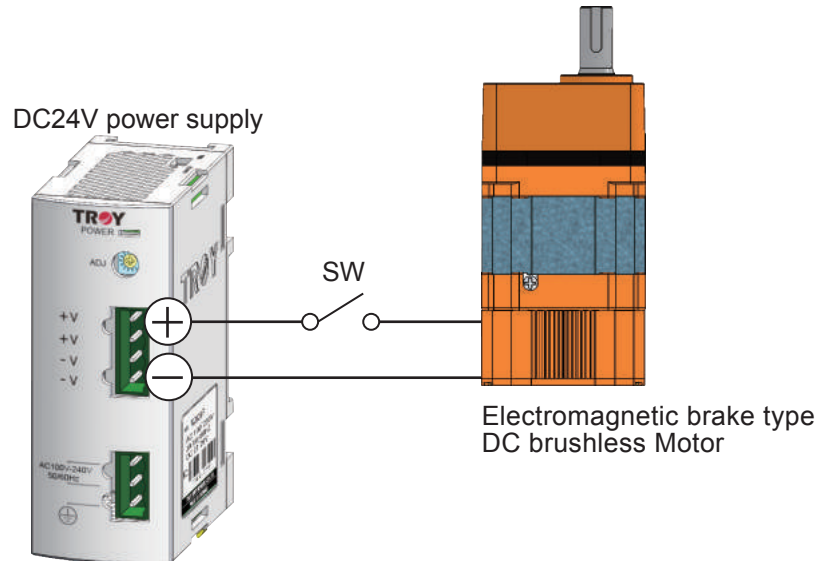


Driver panel functions and wiring instructions



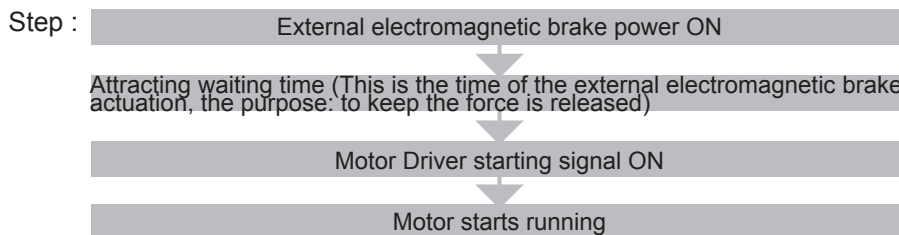
Number	Panel marked	Function	Explanation
1	POWER	Power indicator	When input power LED (green) lights
2	ALARM	Unusual indicator	Overload, overheating, overvoltage, instantaneous overcurrent, under equal any protective function will activate LED (red) lights
3	MOTOR	Motor wiring connector	Motor and Driver connection
4	AC110~115V or 220~230V 60/50Hz	Power voltage input terminal	AC power voltage input connection
5	FG	Power ground terminal	Power ground connecting
6	+24/INT	Signal power switch	+24 : When using an external power DC24V control (PLC control applicable to the case) INT : Using Driver internal DC24V power control (for relays, switches and control applications)
7	SPEED	Internal speed setting button	20~120W speed control range : 300~3000r/min 200W speed control range : 250~2500r/min
8	SS	Slow start time setting button	20~120W : 0.5~15sec 200W : 0.8~15sec
9	SD	Slow stop time setting button	20~120W : 0.5~15sec 200W : 0.8~15sec
10	+24	Signal input power DC24V	When an external DC24V power control, external DC24V power connects to the terminal
11	EXT-VR	Speed setting switch to select the input mode	External/Internal speed setting mode switch selection
12	CW	Clockwise operation input	Clockwise operation/stop switch input
13	CCW	Counterclockwise operation input	Counterclockwise operation/stop switch input
14	SD	Slow stop time setting button	Slow (depending on SD button to set the time for the slow stopped)/instantaneous stop mode select switch
15	H	External speed setting input	An external connection terminal variable resistor or external DC voltage (0 ~ 5V) control of 20~120W speed control range : 300~3000r/min 200W speed control range : 250~2500r/min
16	M		
17	L		
18	-COM	Control signal grounding	GND contact inputs and outputs a control signal common ground line, and the external power DC24V
19	S.O.	Speed signal output	Detecting Motor speed using : 20 ~ 120W digital signal output 12 Pulse/rev 200W digital signal output 24 Pulse/rev
20	A.O.	Abnormal warning signal output	Overload, overheating, overvoltage, overcurrent moment, when any one of the less equal protection function is activated, Motor will stop naturally, and outputs an abnormality warning signal
21	N.C.	No connection	Do not make any connection
22	RG	None	20/40/75W : No this connection terminal
		Regenerative resistor connection terminal	120/200W : According to customer load conditions selected external regenerative resistance, regenerative energy consumption

Motor electromagnetic brake wiring instructions

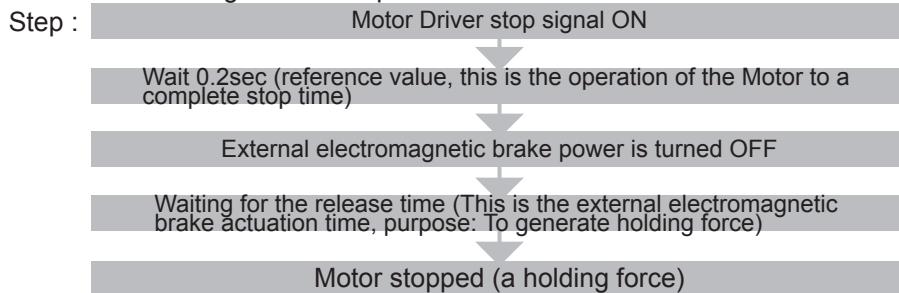


◆ Operation instruction

Motor start/Motor stop with external electromagnetic brake operating procedures:
 Motor start: Must energize external electromagnetic brake before the Motor starts



Motor Stop : The Motor is stopped before the operation do not yet fully external electromagnetic brake power.



◆ Precautions

- 1.This series of external electromagnetic brake using the brake power is part of the hold-type.
- 2.External electromagnetic brake is designed to allow the Motor stops when the holding force has to be used as a safety brake, electromagnetic brake, do not use this as a Motor positioning or emergency brake applications.
- 3.Always to pull the Motor before starting the external electromagnetic brake energized (means no brakes); Motor stopped before the operation do not yet fully external electromagnetic brake power (expressed brakes).
- 4.External electromagnetic brake suction time and release time value refer to the product specification.
- 5.Motor brakes to stop for about 0.2sec (test conditions in the Motor no-load speed 3000r / min, the electromagnetic brake is energized, the brake actuator signal ON time of the Driver, this time as a reference base, but the actual length of time will stop according to the inertia load or frictional load ... different load patterns and has fluctuated.
- 6.We recommend to do the actual measuring device operating time at the time of commissioning.

■ Dimensions - Motor/Gearhead

Unit : mm

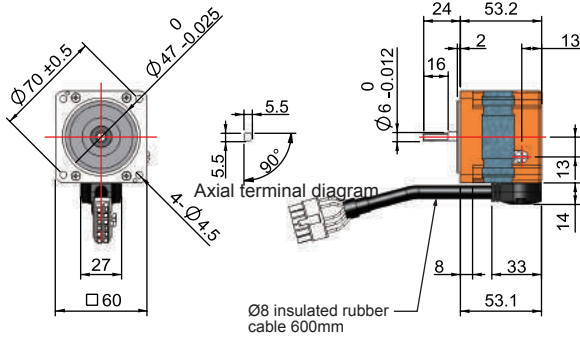
Round shaft type

Pinion shaft type

20W/□60mm

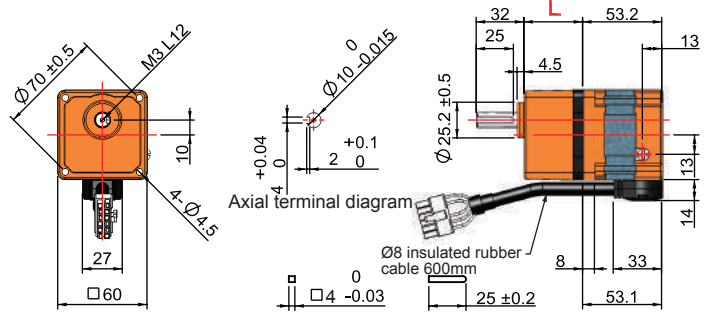
◆ 6B020S-□

Weight : 655g



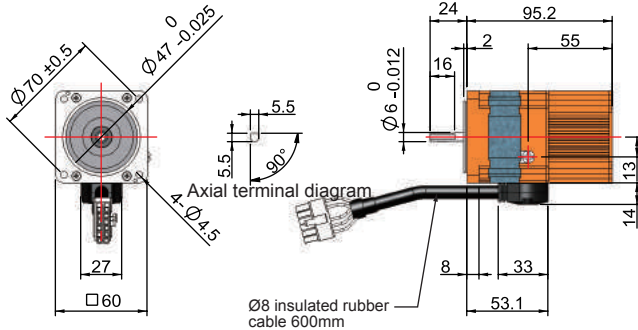
◆ 6B020P-□ + 6D□

Weight : 650g+W



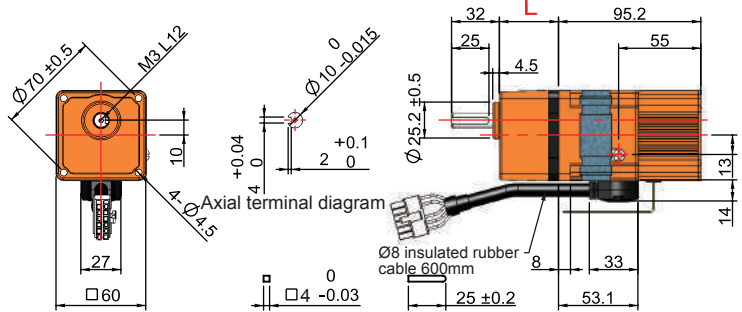
◆ 6B020S-□M

Weight : 1055g



◆ 6B020P-□M + 6D□

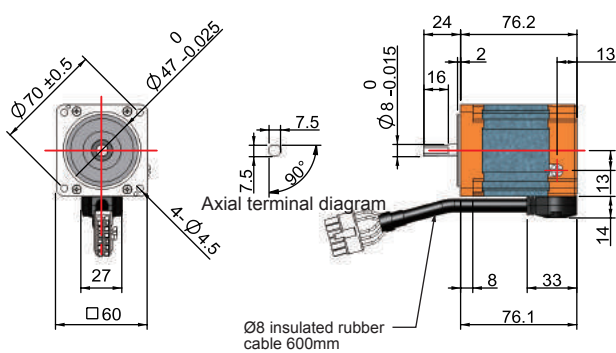
Weight : 1050g+W



40W/□60mm

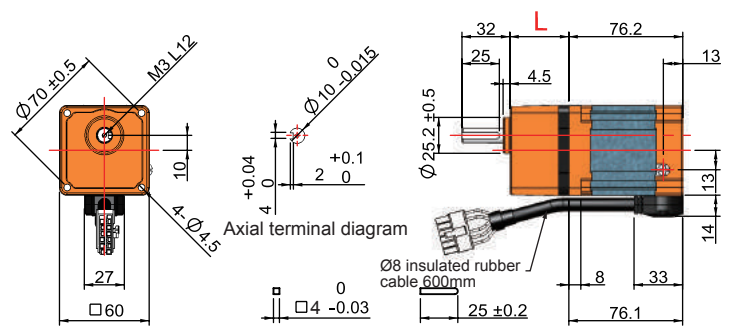
◆ 6B040S-□

Weight : 1050g



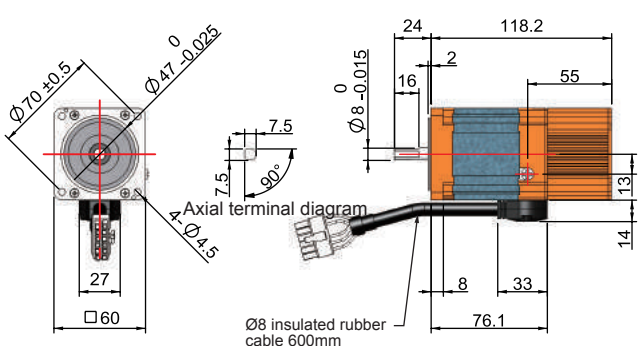
◆ 6B040P-□ + 6D□

Weight : 1040g+W



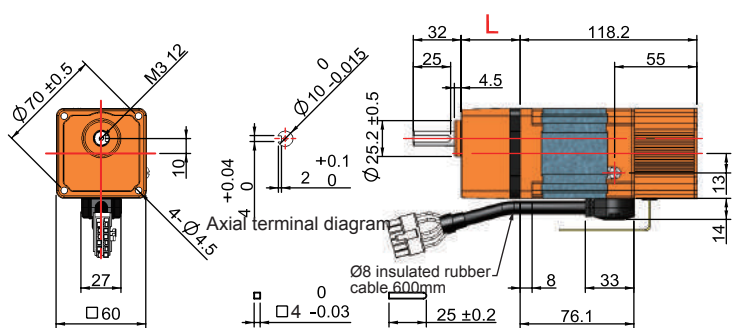
◆ 6B040S-□M

Weight : 1450g



◆ 6B040P-□M + 6D□

Weight : 1440g+W



* 6B pinion shaft type 6D3-6D360, Gearhead length L and weight W specification as following:

Model	6D3~6D20	6D25~6D100	6D120~6D360
Gearhead Length L (mm)	39.5	39.5	43.5
Weight W (g)	300	325	365

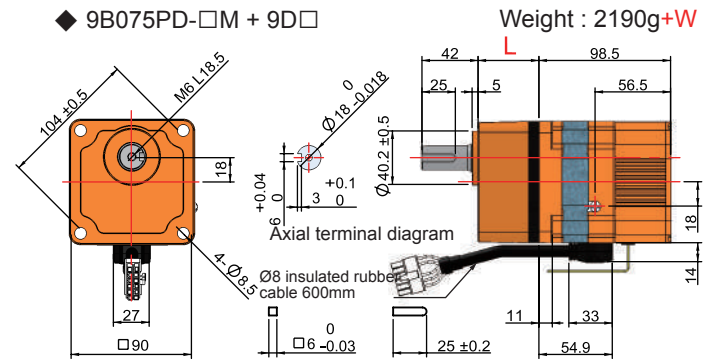
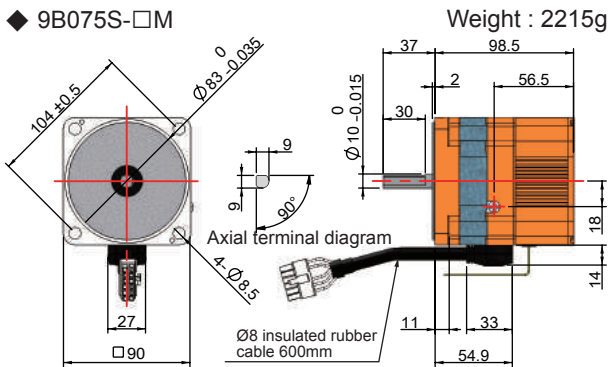
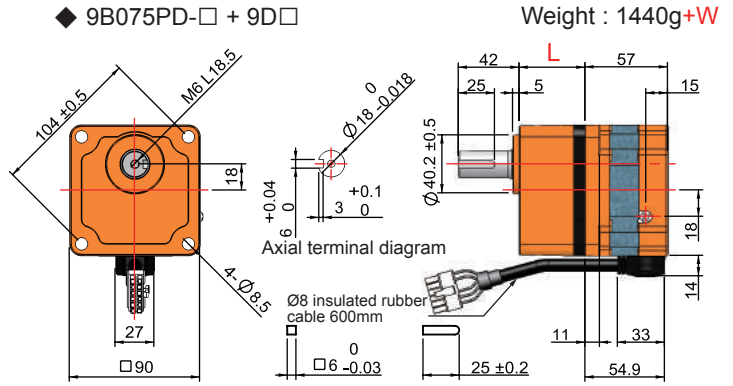
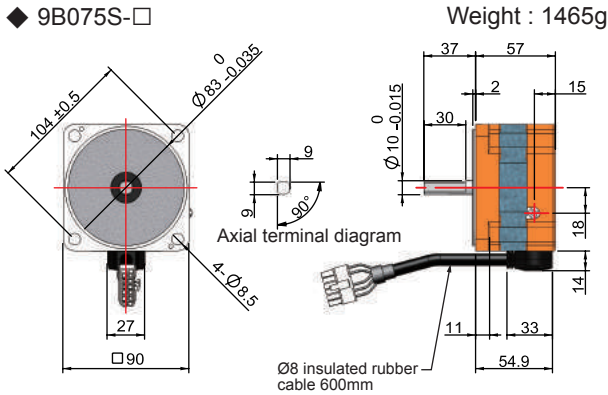
* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

TRV-
Characteristics of Motor
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Product names
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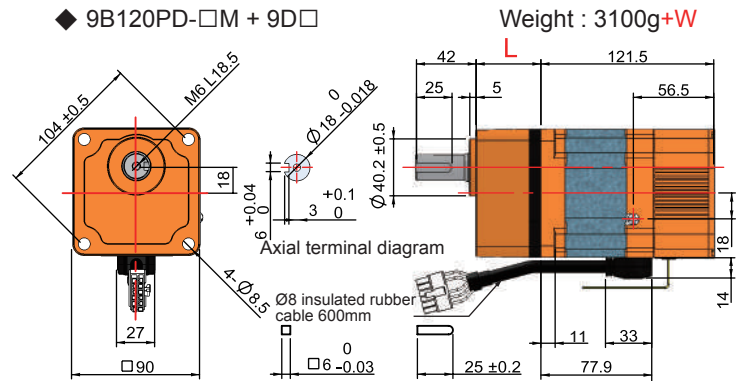
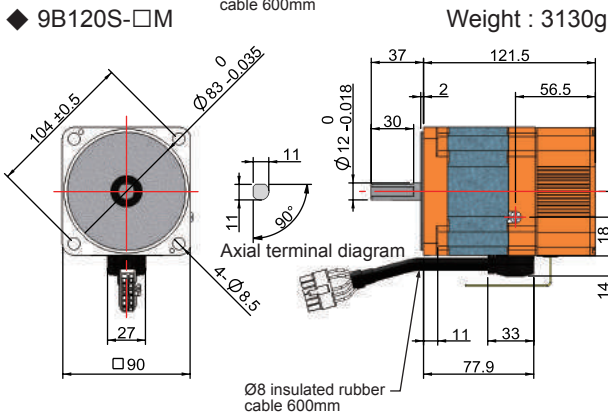
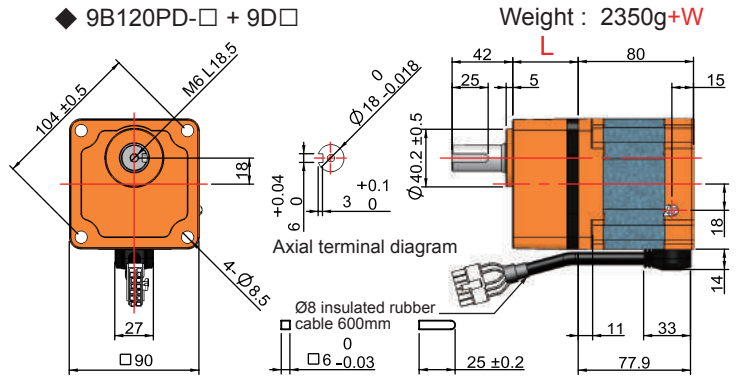
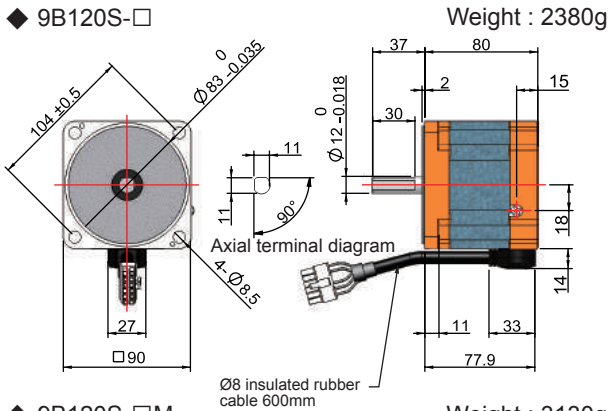
Round shaft type

Pinion shaft type

75W/□90mm



120W/□90mm



* 9B pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

Model	9D3~9D20	9D25~9D100	9D120~9D360
Gearhead Length L (mm)	45.5	58.5	64.5
Weight W (g)	860	1125	1265

* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Motor/Gearhead

Unit : mm

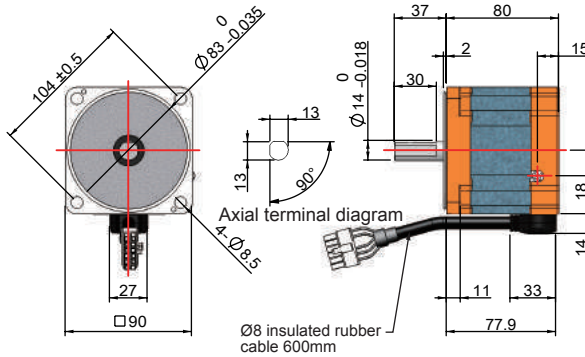
Round shaft type

Pinion shaft type

200W/□90mm

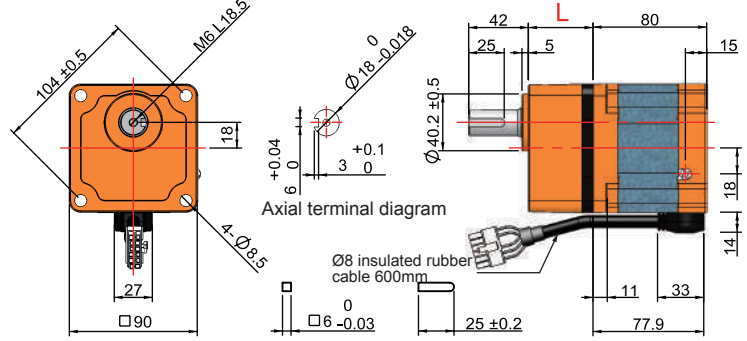
◆ 9B200S-□

Weight : 2530g



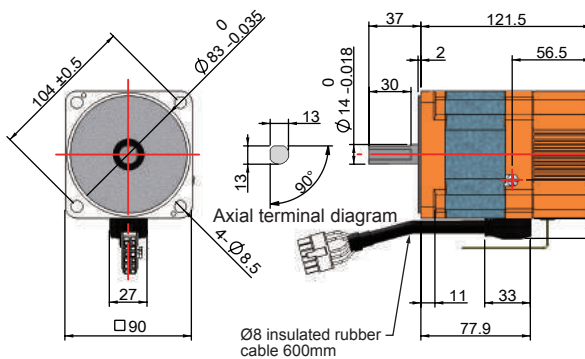
◆ 9B200P-□ + 9D□H

Weight : 2500g+W



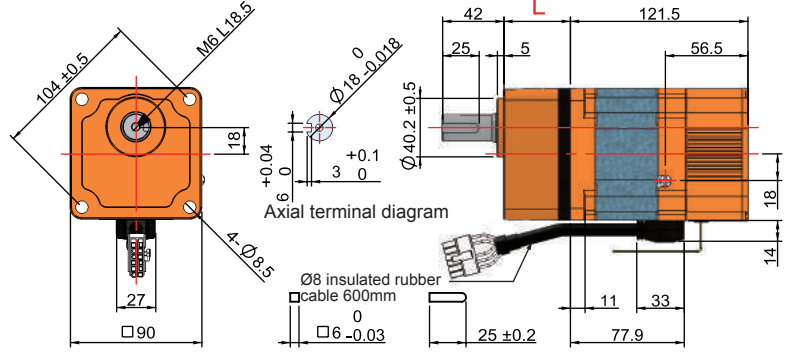
◆ 9B200S-□M

Weight : 3280g



◆ 9B200P-□M + 9D□H

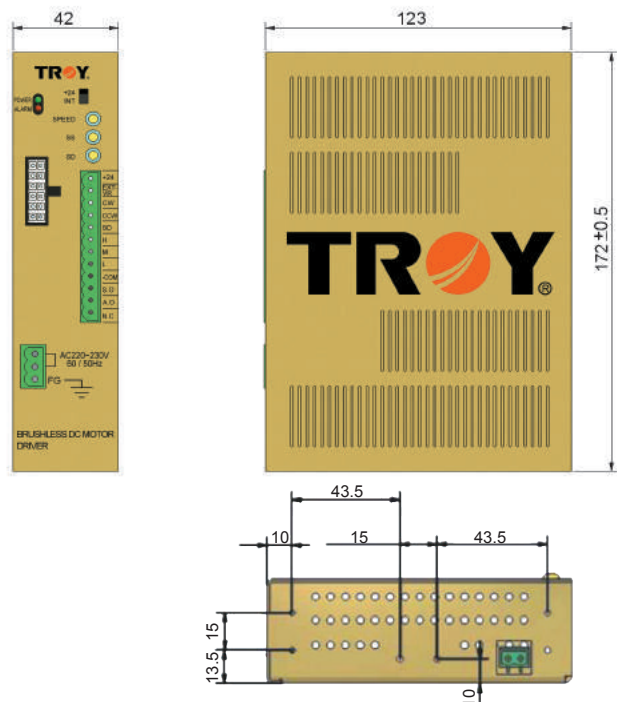
Weight : 3250g+W



* 9B pinion shaft type 9D3H~9D360H, Gearhead length L and weight W specification as following:

	Model	9D3H~9D20H	9D25H~9D100H	9D120H~9D360H
Gearhead	Length L (mm)	45.5	58.5	64.5
	Weight W (g)	860	1125	1265

■ Dimensions - Driver



Model : DB020-□ / DB040-□

Weight : 660g

DB075-□

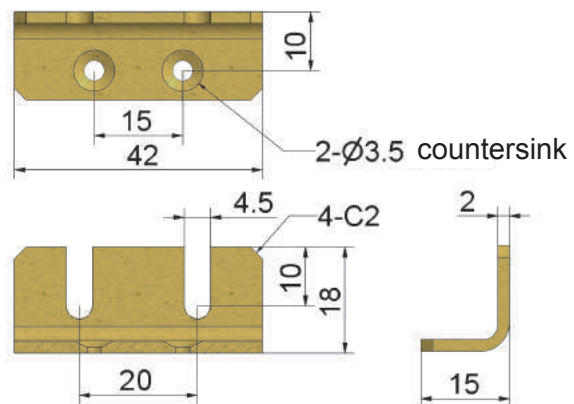
Weight : 670g

DB120-□ / DB200-□

Weight : 680g

Dimensions are common

Mounting sheet

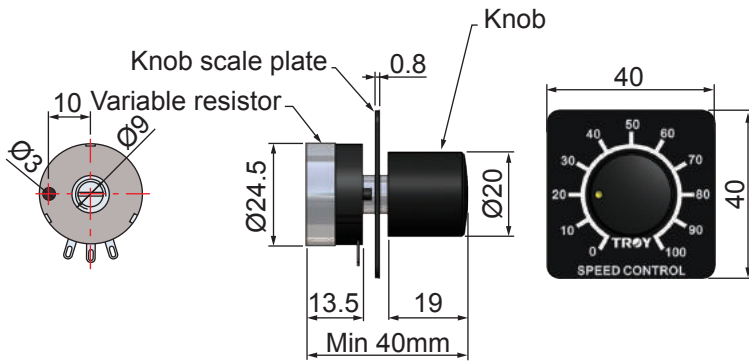


* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Variable resistor

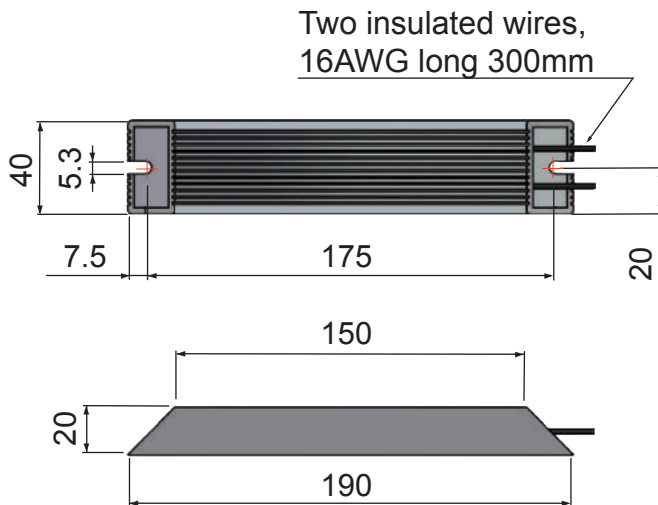
Unit : mm

Weight : 30g



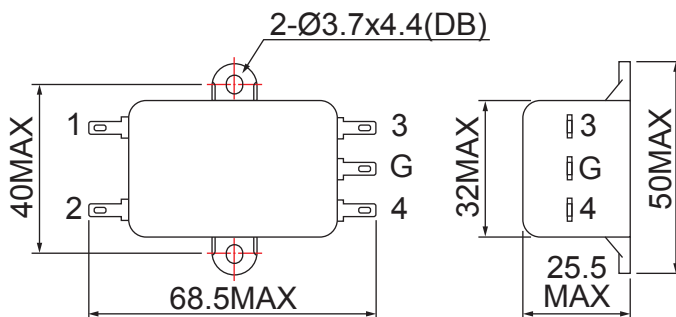
■ Dimensions - Regenerative resistance dimensions (Only 150 / 200W attached)

Weight : 260g



■ Dimensions - Power supply noise filter

Weight : 50g



* Figure above dimensions tolerance values are not label on general machining tolerances, the control mode refer to P.12, others have marked tolerance values according to the drawing labeled based.



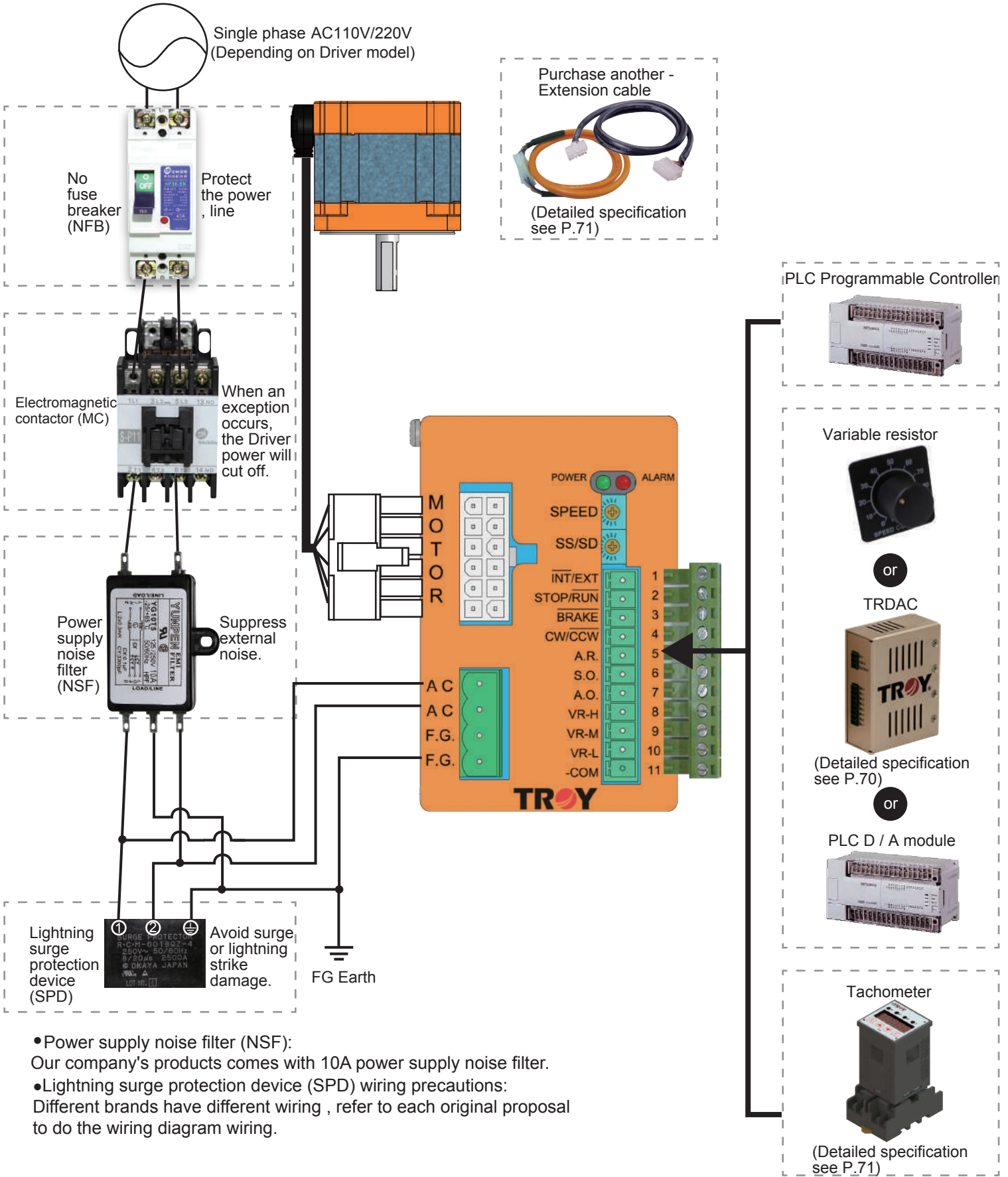
SBS series

-For fast response speed, high operation frequency demand

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| 43 | Motor allowable radial load/axial load |
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System wiring diagrams



- Power supply noise filter (NSF): Our company's products comes with 10A power supply noise filter.
- Lightning surge protection device (SPD) wiring precautions: Different brands have different wiring , refer to each original proposal to do the wiring diagram wiring.



■ Specifications and characteristics of Motor/Driver

Motor output power		20W	40W	60W	90W	
Round shaft Motor (M: E/M brake type)		6B020S-□N(M) <small>(Note 1)</small>	6B040S-□N(M)	9B060S-□N(M)	9B090S-□N(M)	
Pinion shaft Motor (M: E/M brake type)		6B020P-□N(M)	6B040P-□N(M)	9B060PD-□N(M)	9B090PD-□N(M)	
Motor specification certificates	-1 Type					
	-2 Type			(Note 2)		
Driver		SBD020-□N	SBD040-□N	SBD060-□N	SBD090-□N	
Driver specification certificates						
Input power voltage	-1 Type Single Phase AC110~115V 50/60 HZ	Max. Current (A)	2.4	2.4	2.5	2.9
		Rated Current (A)	0.59	0.99	1.48	1.93
	-2 Type Single Phase AC220~230V 50/60 HZ	Max. Current (A)	1.7	1.7	1.7	1.7
		Rated Current (A)	0.33	0.56	0.82	1.05
Starting Torque (Nm)		0.15	0.25	0.45	0.65	
Rated Torque (Nm)		0.10	0.20	0.30	0.50	
Allowable load inertia GD ² (Kgcm ²)		14.01	23.23	39.42	54.23	
E/M Brake * Only E/M brake series have E/M	Input line voltage(V)	DC24		DC24		
	Consumption power(W)	6.5		7.5		
	Maintenance(Nm)	0.3		0.5		
	Attraction time(ms)	30		33		
	Release time(ms)	87		95		
Speed control range(r/min)		250~2000				
Speed variation rate	To load	-1%Max.	at 2000r/min, no load~rated load.			
	To voltage	±2%	Voltage variation ±15%, at 2000r/min, no load.			
	To Temperature	±2%	0~+40°C at 2000r/min, no load.			
Slow start/Slow down time set up		Slow start 0.5~8sec, Motor from 0~2000r/min when no load Slow stop 0.5~7sec, Motor from 2000~0r/min when no load				
Speed control method		<ul style="list-style-type: none"> Control from external variable resistor (resistance 20KΩ) Control from internal variable resistor (also work with external variable resistor for 2 sections speed switch control) 		<ul style="list-style-type: none"> Control from external DC voltage (DC0~5V/1 mA above) Work with D/A speed setter TRDAC (Option) 		
Signal input/output methods		<ul style="list-style-type: none"> Photo coupler input interface Transistor Open Collector output interface 				
Function		<ul style="list-style-type: none"> Zero point control, can connect to PLC or Transistor, Relay type I/O module Within speed control range, Motor sets Flat Torque output Instant brake stop, Slow up/Slow down When brake stop all electric types of holding role Can parallel operation 				
Protection function		When protection functions activate, Motors stop automatically, Driver alarm signals output <ul style="list-style-type: none"> Overload protection: starts when Motor activate torque for more than 7 sec Over heat protection: starts when Driver internal heat sink over 80°C Over voltage protection: (1) starts when up down, coiling or over inertial load (2) When Driver voltage of the AC power input over about 35%, starts operation Low voltage protection: Driver input AC power voltage is lower than about 20%, starts operation Offline protection: When Motor cable disconnected, starts operation 				
Insulation impedance		Applies DC500V high resistance meter test, power, F.G grounding, I/O terminal resistance value is over 100MΩ				
Insulation high voltage		Power and F.G connect to ground, terminals pass with 1.8KV/60Hz high voltage, power and I/O connectors pass with 3KV/60Hz high voltage for 1 minute, no abnormal condition				
Ambient temperature/Humidity range		0~+40°C, under 85% relative humidity (avoid dust and erosion, combustion gas)				

Note1 : -□, Please fill power voltage in □. □ indicates single phase AC110~115V · □ indicates single phase AC220~230V * 1 Nm=10.19716 Kgcm
 Note2 : 9B060PD-2N、9B090PD-2N have passed IP54 certificate.

TRDY - Characteristics of Motor Product index Product names Product weight Gearhead Installation Certificates Model naming BMS BS SS CS DS Accessories Motor selection

■ Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD²)

Gear ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
Speed range (r/min)	High speed	666	555	400	333	266	222	200	160	133	111	100	80	66
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4
Allowable torque (Nm)	6B020P-□N(M) + 6D□	0.27	0.32	0.45	0.54	0.68	0.81	0.9	1.1	1.4	1.6	1.8	2.2	2.6
Allowable inertia load GD ² (kgcm ²)		6.30	9.08	17.5	25.2	39.4	56.7	70.1	109	158	227	280	438	625
Allowable torque (Nm)	6B040P-□N(M) + 6D□	0.54	0.65	0.9	1.1	1.4	1.6	1.8	2.3	2.7	3.2	3.6	4.3	5.2
Allowable inertia load GD ² (kgcm ²)		10.5	15.1	29.0	41.8	65.3	94.1	116	181	261	376	465	625	
Allowable torque (Nm)	9B060PD-□N(M) + 9D□	0.81	0.97	1.4	1.6	2	2.4	2.7	3.4	4.1	4.9	5.4	6.5	7.7
Allowable inertia load GD ² (kgcm ²)		63.1	90.8	175	252	394	568	701	1095	1577	2271	2803	4380	6307
Allowable torque (Nm)	9B090PD-□N(M) + 9D□	1.4	1.6	2.3	2.7	3.4	4.1	4.5	5.6	6.8	8.1	9	10.8	12.9
Allowable inertia load GD ² (kgcm ²)		86.8	125	241	347	542	781	964	1506	2169	3124	3856	6026	8677

Gear ratio		36	50	60	75	90	100	120	150	180	200	250	300	360	
Speed range (r/min)	High speed	55	40	33	26	22	20	16	13	11	10	8	6	5	
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.9	0.7	
Allowable torque (Nm)	6B020P-□N(M) + 6D□	3.1	4.3	5.2	6.5			6.5							
Allowable inertia load GD ² (kgcm ²)		625						625							
Allowable torque (Nm)	6B040P-□N(M) + 6D□	6.2	6.5					6.5							
Allowable inertia load GD ² (kgcm ²)		625						625							
Allowable torque (Nm)	9B060PD-□N(M) + 9D□	9.3	12.9	15.5	19.4	23.2	25.8	29.2	36.5	40					
Allowable inertia load GD ² (kgcm ²)		9082	11000				11000								
Allowable torque (Nm)	9B090PD-□N(M) + 9D□	15.5	21.5	25.8	32.3	38.7	40	40							
Allowable inertia load GD ² (kgcm ²)		11000						11000							

* Motor 6B020P-□(M)...etc, please fill in □ with line power voltage. ① : stand for single phase AC110~115V, ②: stand for single phase AC220~230V.

* Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.

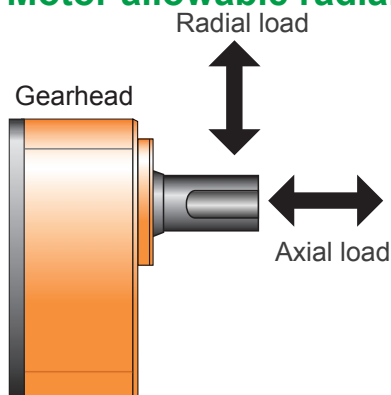
* In above table stands for after installation of Gearhead, the axis rotation direction is reversed with Motor axis direction; without marking stands for the same direction as Motor axis rotation.

* 1Nm = 10.197Kgcm.

* The Gearheads of all series have  certificate.

* Also available orthogonal Gearhead: hollow shaft type 9VD□(H), the solid single shaft type 9VD□A(H), the solid biaxial shaft type 9VD□B(H), and size please refer to P.10.

■ Motor allowable radial load/axial load



① Radial load (hanging load): loading is vertical to Gearhead axis power output

② Axial load (thrust load): loading is in the direction of Gearhead axis power output



◆ Round shaft type

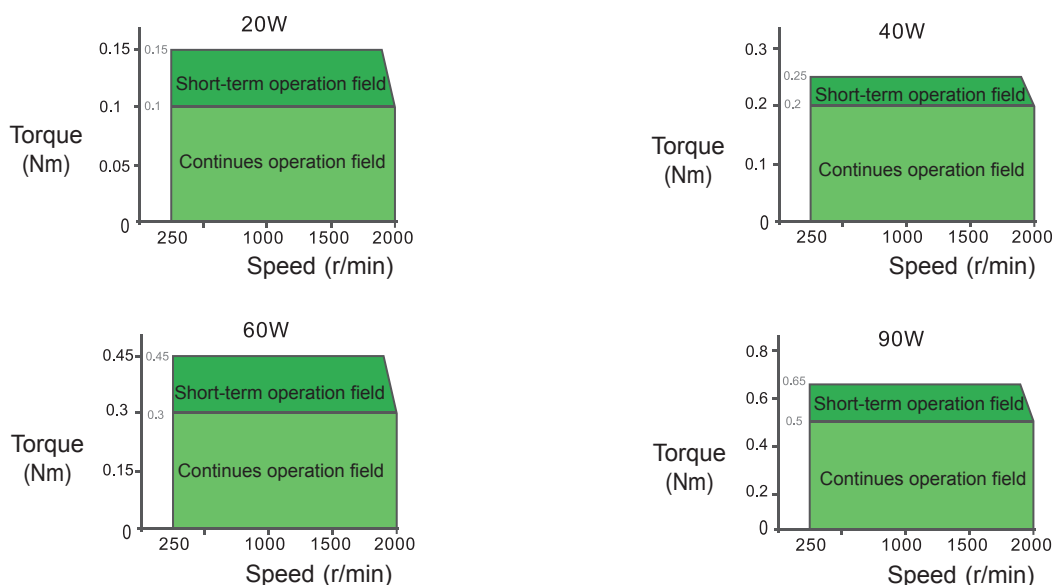
Model	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
	10mm from output shaft front	20mm from output shaft front	
6B020S-□N(M)	8	9	Permissible axial loading, not more than 1/2 of motor weight. But please try to avoid applying force in the horizontal direction (axial) of motor shaft, when exceeds that will reduce motor service life. If axial loading is needed, we recommend applying indirect transmission, such as: couplings, belts, chains, etc...
6B040S-□N(M)	8	9	
9B060S-□N(M)	13	15	
9B090S-□N(M)	16	17	

◆ Pinion shaft type (Gearhead attached)

Model	Gear ratio	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
		10mm from output shaft front	20mm from output shaft front	
6B020P-□N(M) + 6D□	3, 3.6, 5	10	15	4
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
6B040P-□N(M) + 6D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	15
	3, 3.6, 5	30	40	
9B060PD-□N(M) + 9D□	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	15
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	

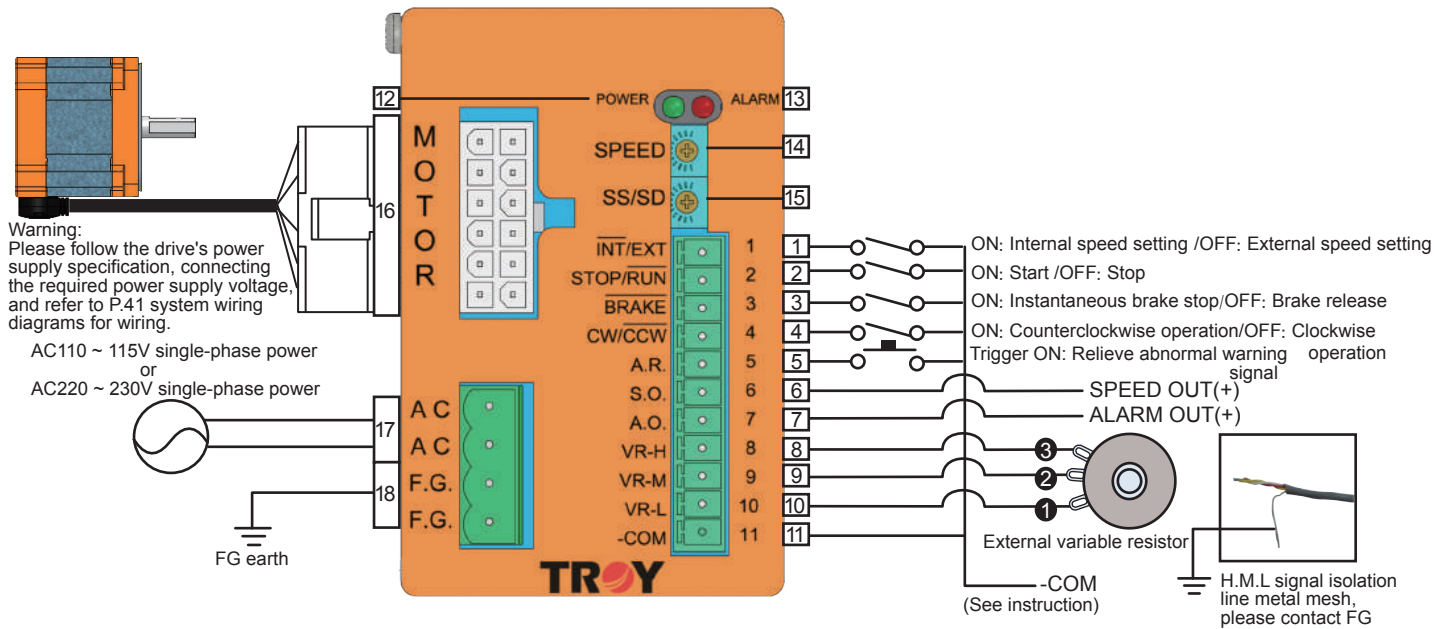
- * Motor 6B020S-□N(M)... etc., please fill power voltage in □. □ : indicate single phase AC110V~115V, □ : indicate single phase AC220~230V
- * Gearhead 6D□/9D□, please fill Gearhead in □.

■ Speed - Torque characteristic diagrams



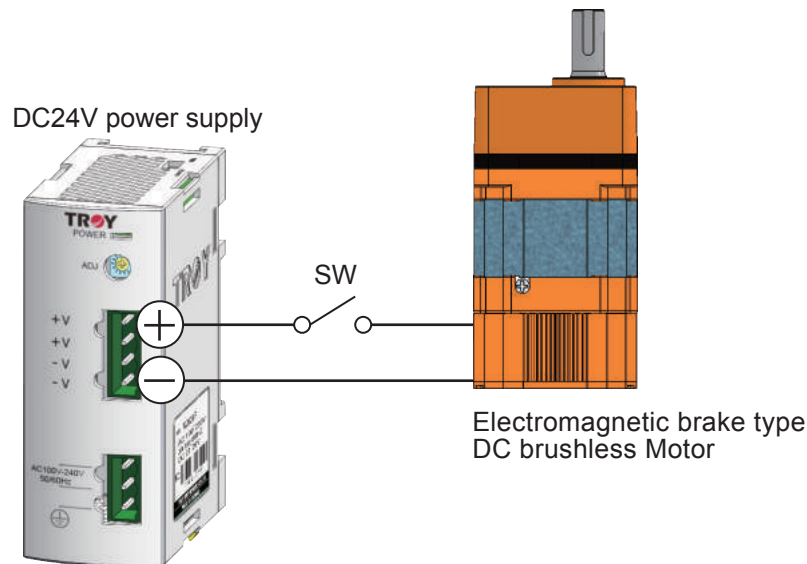


■ Driver panel functions and wiring instructions



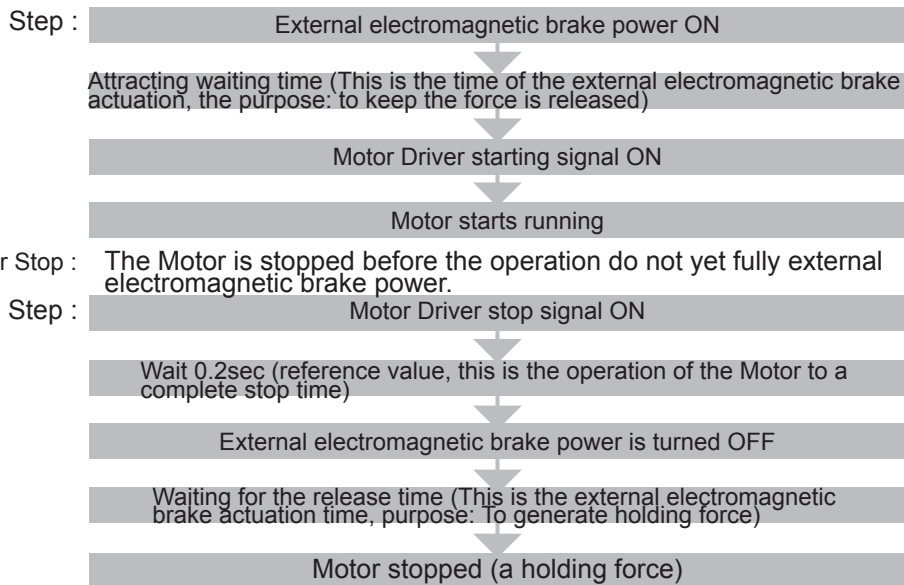
Number	Panel marked	Function	Explanation
1	INT/EXT	Speed setting mode switch to select the input	Internal / external speed setting mode switching selection
2	STOP/RUN	Stop/Start signal input	Stop / start signal switching input
3	BRAKE	Instantaneous brake stop signal input	Executive instantaneous brake stop / brake release signal switch input
4	CW/CCW	The direction of rotation switch to select the input	Clockwise/counterclockwise operation switch selection
5	A.R.	Warning signs release abnormal input	AR trigger input contacts (continuous "L" state 10ms) to release the error warning signal
6	S.O.	Speed signal output	When Motor speed is detected using, digital signal output 12 Pulse / rev
7	A.O.	Abnormal warning signal output	Overload, overheating, over voltage, low voltage, disconnection of any of a protective function is activated, Motor stops naturally, and outputs an abnormality warning signal
8	VR-H	External speed setting input	An external connection terminal variable resistor or external DC voltage (0 ~ 5V) Speed control range: 250 ~ 2000r / min
9	VR-M		
10	VR-L		
11	-COM	Control signal grounding	GND contact input and output a control signal common ground wire, and the external DC power
12	POWER	Power Indicator	Input power LED (green) lights
13	ALARM	Abnormal indicator	Overload, overheating, over voltage, low voltage, disconnection of any of a protective function is activated LED (red) lights
14	SPEED	Internal speed setting key	20 ~ 90W speed control range: 250 ~ 2000r / min
15	SS/SD	Slow start, stop time setting key	Slow start 0.5 ~ 8 sec; slow stop 0.5 ~ 7sec
16	MOTOR	Motor wiring connector	Motor and Driver connection
17	AC	Power, voltage input terminal	AC power voltage input connection
18	FG	Power ground terminal	Power ground connection

■ Motor electromagnetic brake wiring instructions



◆ Operation instruction

Motor start/Motor stop with external electromagnetic brake operating procedures:
 Motor start: Must energize external electromagnetic brake before the Motor starts



◆ Precautions

- 1.This series of external electromagnetic brake using the brake power is part of the hold-type.
- 2.External electromagnetic brake is designed to allow the Motor stops when the holding force has to be used as a safety brake, electromagnetic brake, do not use this as a Motor positioning or emergency brake applications.
- 3.Always to pull the Motor before starting the external electromagnetic brake energized (means no brakes); Motor stopped before the operation do not yet fully external electromagnetic brake power (expressed brakes).
- 4.External electromagnetic brake suction time and release time value refer to the product specification.
- 5.Motor brakes to stop for about 0.2sec (test conditions in the Motor no-load speed 3000r / min, the electromagnetic brake is energized, the brake actuator signal ON time of the Driver, this time as a reference base, but the actual length of time will stop according to the inertia load or frictional load ... different load patterns and has fluctuated.
- 6.We recommend to do the actual measuring device operating time at the time of commissioning.

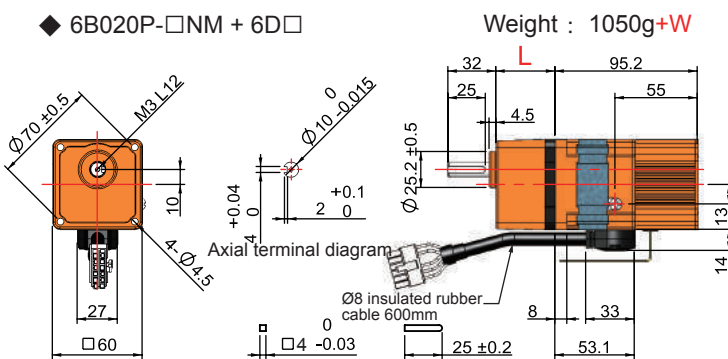
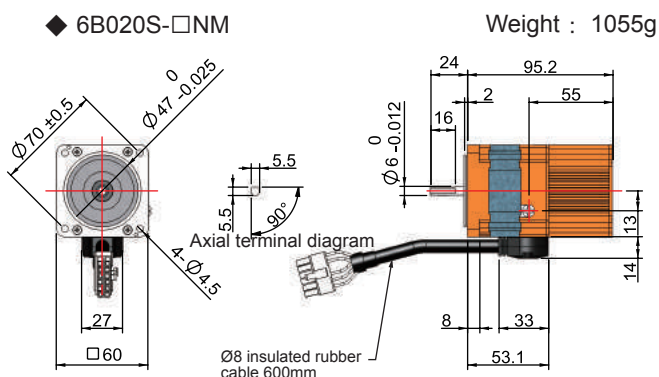
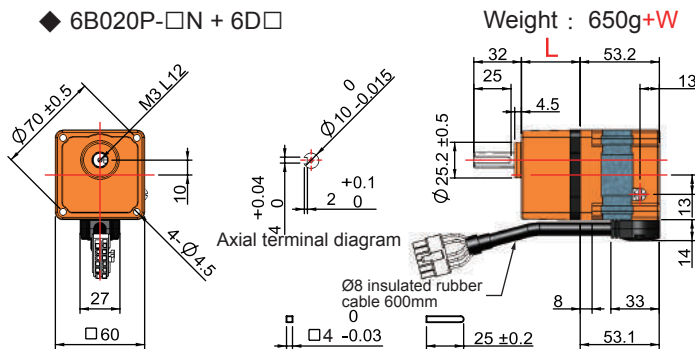
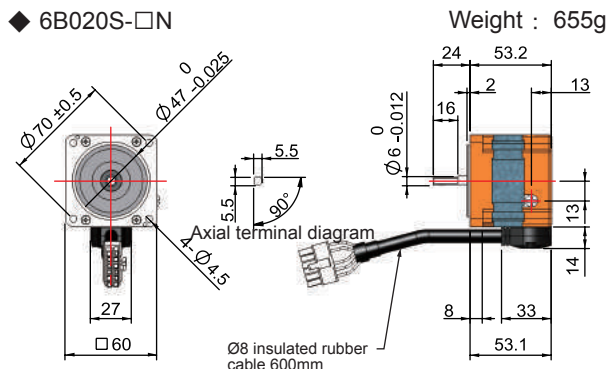
■ Dimensions - Motor/Gearhead

Unit : mm

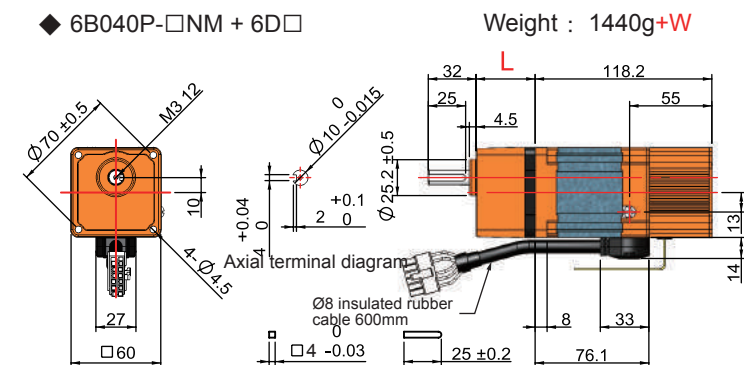
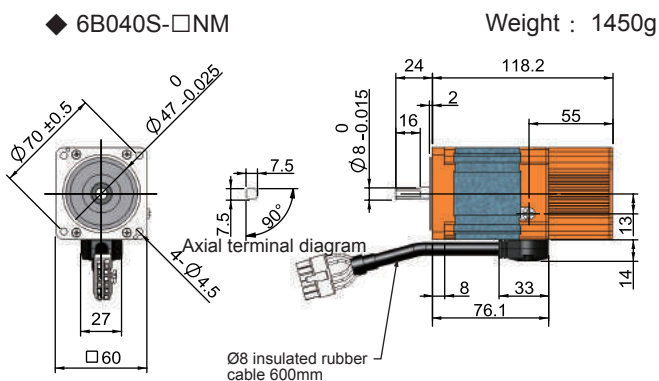
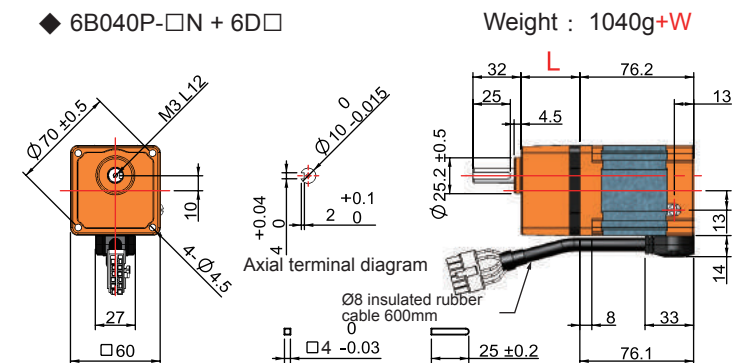
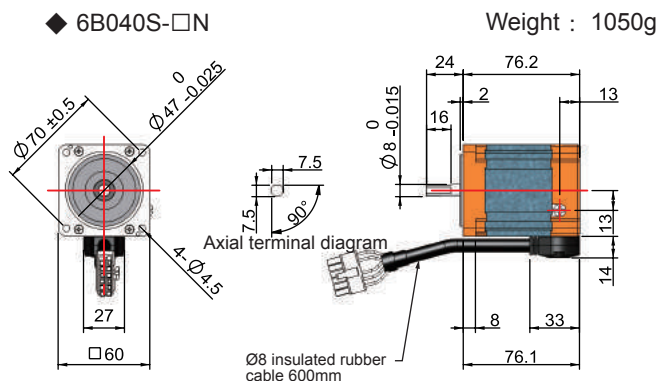
Round shaft type

Gear shaft type

20W/□60mm



40W/□60mm



* 6B pinion shaft type 6D3-6D360, Gearhead length L and weight W specification as following:

Model	6D3~6D20	6D25~6D100	6D120~6D360
Gearhead Length L (mm)	39.5	39.5	43.5
Weight W (g)	300	325	365

* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Motor/Gearhead

Unit : mm

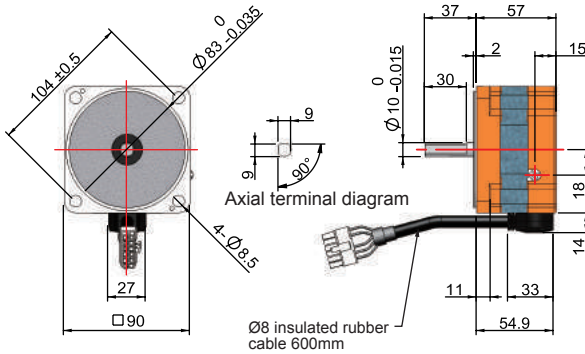
Round shaft type

Gear shaft type

60W/□90mm

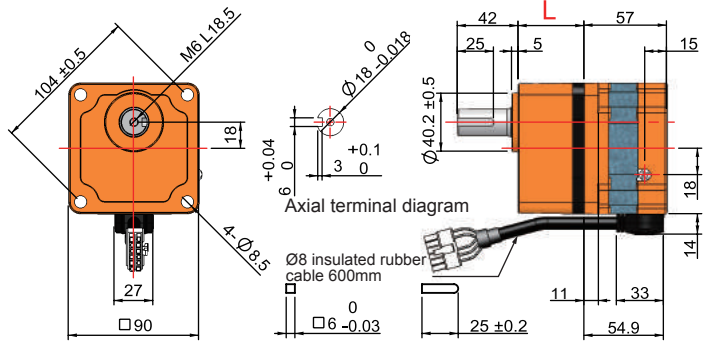
◆ 9B060S-□N

Weight : 1465g



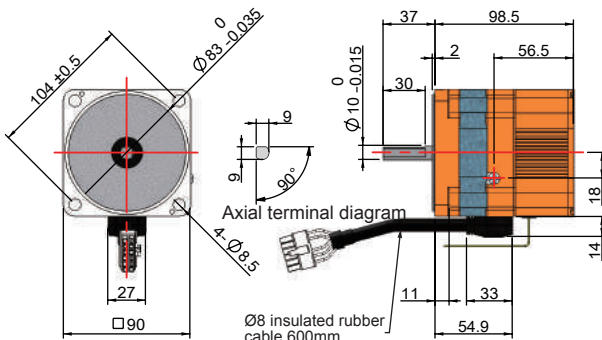
◆ 9B060PD-□N + 9D□

Weight : 1440g+W



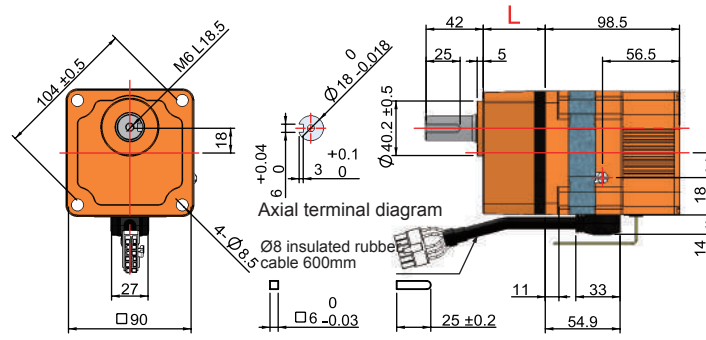
◆ 9B060S-□NM

Weight : 2215g



◆ 9B060PD-□NM + 9D□

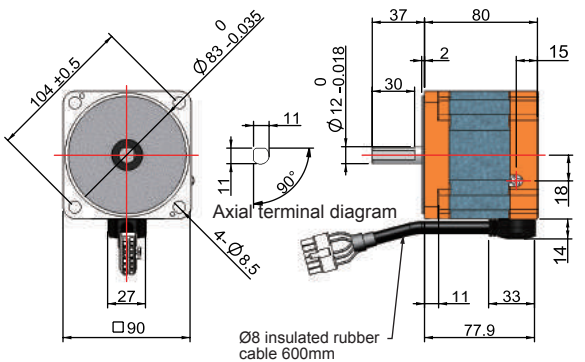
Weight : 2190g+W



90W/□90mm

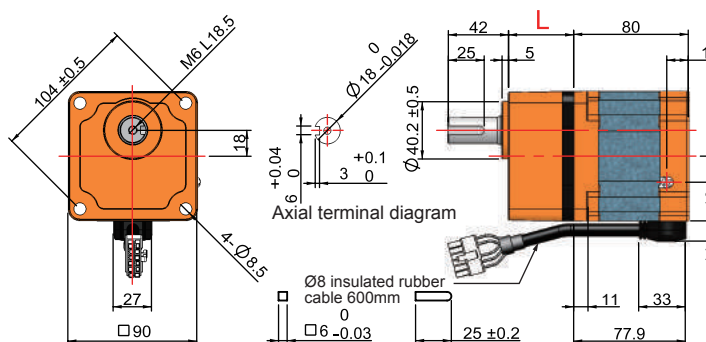
◆ 9B090S-□N

Weight : 2380g



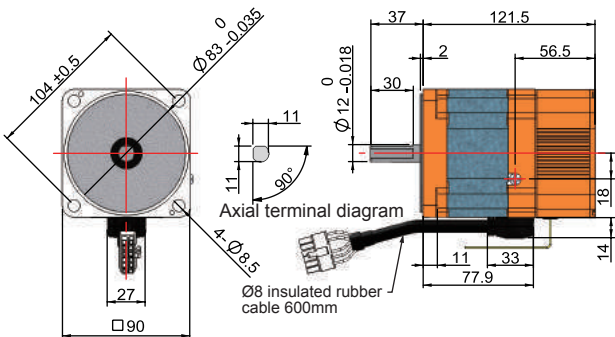
◆ 9B090PD-□N + 9D□

Weight : 2350g+W



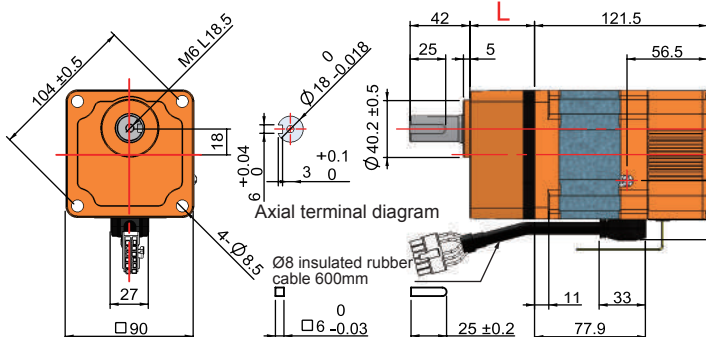
◆ 9B090S-□NM

Weight : 3130g



◆ 9B090PD-□NM + 9D□

Weight : 3100g+W



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

* 9B pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

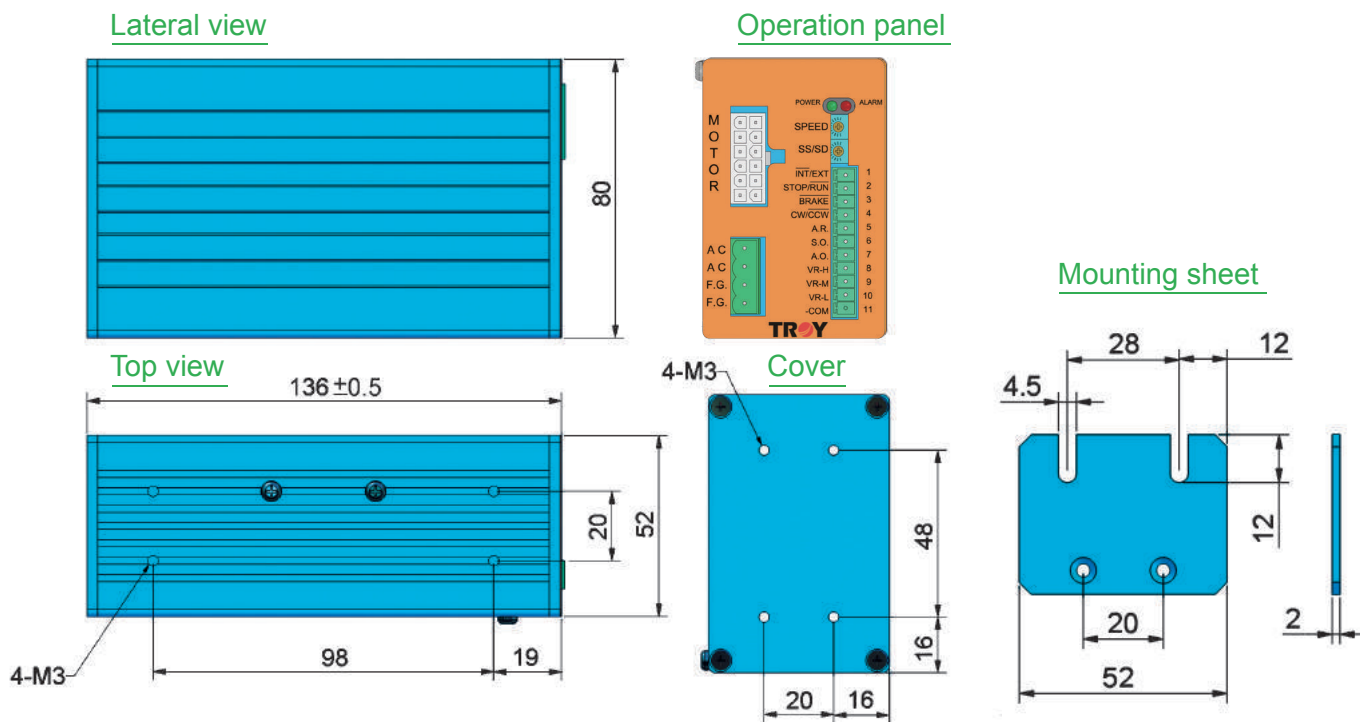
Model	9D3~9D20	9D25~9D100	9D120~9D360
Gearhead Length L (mm)	45.5	58.5	64.5
Weight W (g)	860	1125	1265

■ Dimensions - Driver

Model : SBD020-□N/SBD040-□N
SBD060-□N/SBD090-□N
Weight : 530g

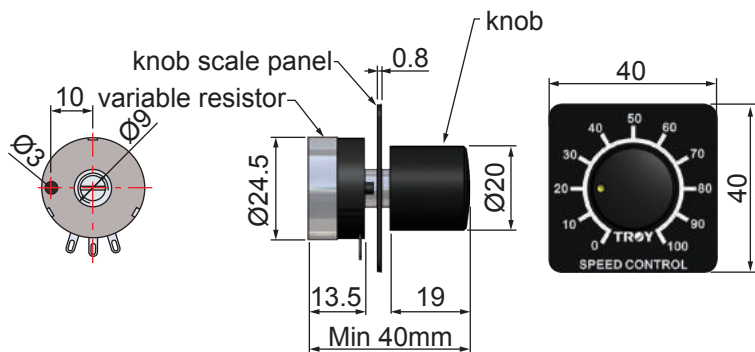
Unit : mm

Dimensions are common



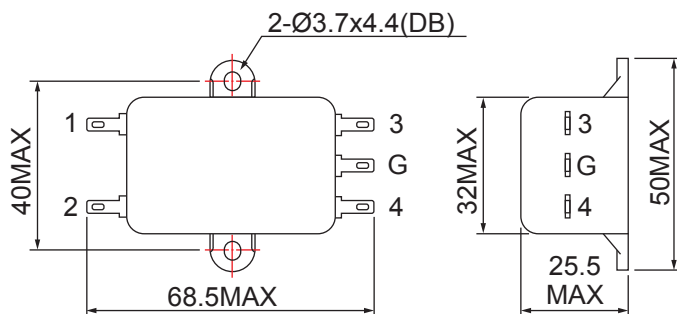
■ Dimensions - Variable resistor

Weight : 30g



■ Dimensions - Power supply noise filter

Weight : 50g



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.



UBS series

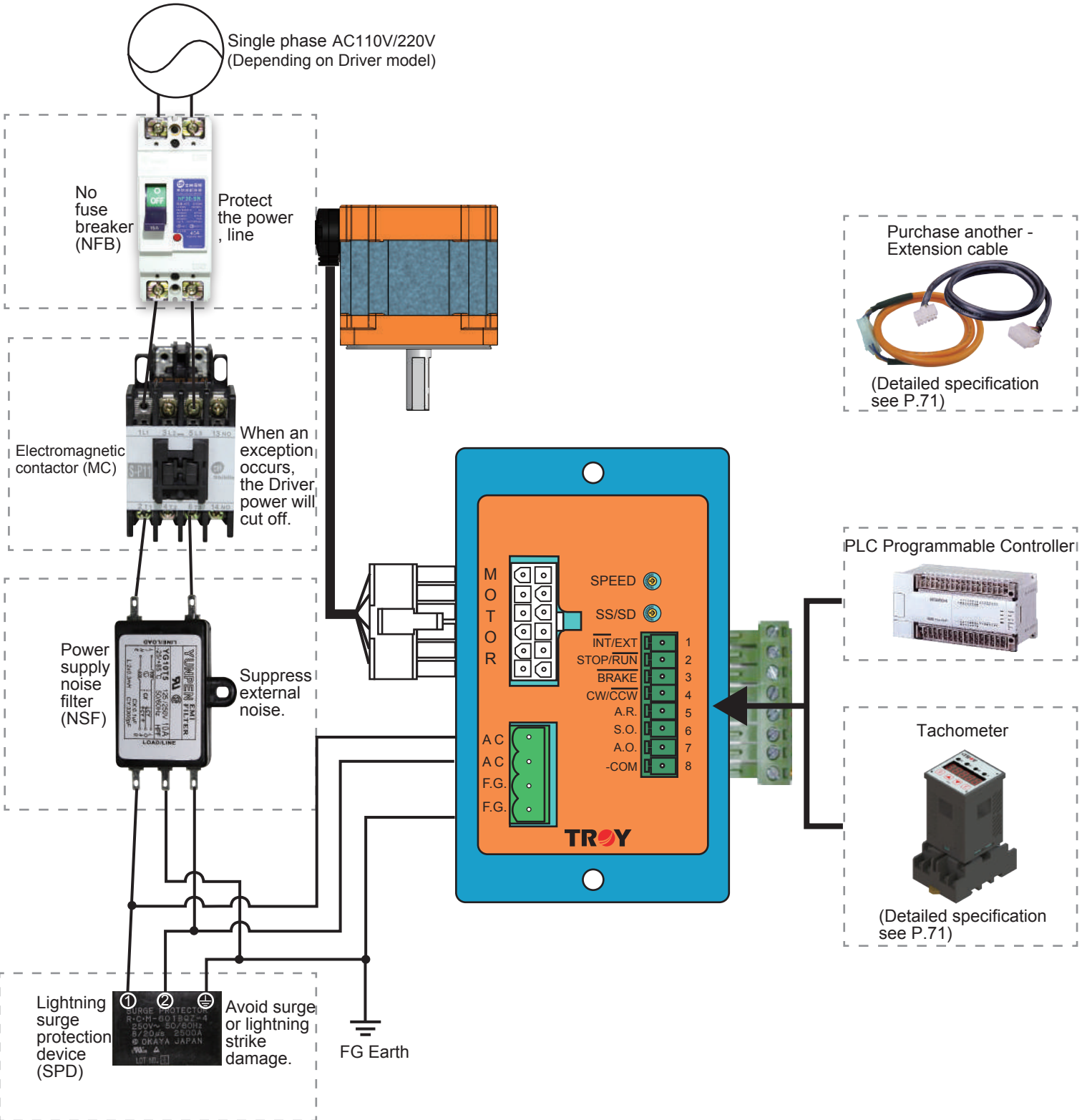
-The situation of simple operation and easy control

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- 51 System wiring diagrams
- 52 Specifications and characteristics of Motor/Driver
- 53 Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD^2)
- 53 Motor allowable radial load/axial load
- 54 Speed - Torque characteristic diagrams
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- 56 Motor electromagnetic brake wiring instructions
- 57 Dimensions - Motor/Gearhead
- 59 Dimensions - Driver
- 59 Dimensions - Power supply noise filter

DC brushless Motor- UBS series

System wiring diagrams



- Power supply noise filter (NSF): Our company's products comes with 10A power supply noise filter.
- Lightning surge protection device (SPD) wiring precautions: Different brands have different wiring , refer to each original proposal to do the wiring diagram wiring.



■ Specifications and characteristics of Motor/Driver

Motor output power		20W	40W	60W	90W	
Round shaft Motor (M: E/M brake type)		6B020S-□N(M) (Note 1)	6B040S-□N(M)	9B060S-□N(M)	9B090S-□N(M)	
Pinion shaft Motor (M: E/M brake type)		6B020P-□N(M)	6B040P-□N(M)	9B060PD-□N(M)	9B090PD-□N(M)	
Motor specification certificates	-1 Type					
	-2 Type			(Note 2)		
Driver		UBD020-□N	UBD040-□N	UBD060-□N	UBD090-□N	
Driver specification certificates						
Input power voltage	-1 Type Single Phase AC110~115V 50/60 HZ	Max. Current (A)	2.4	2.4	2.5	2.9
		Rated Current (A)	0.59	0.99	1.48	1.93
	-2 Type Single Phase AC220~230V 50/60 HZ	Max. Current (A)	1.7	1.7	1.7	1.7
		Rated Current (A)	0.33	0.56	0.82	1.05
Starting Torque (Nm)		0.15	0.25	0.45	0.65	
Rated Torque (Nm)		0.10	0.20	0.30	0.50	
Allowable load inertia GD ² (Kgcm ²)		14.01	23.23	39.42	54.23	
E/M Brake ※ Only E/M brake series have E/M	Input line voltage(V)		DC24		DC24	
	Consumption power(W)		6.5		7.5	
	Maintenance(Nm)		0.3		0.5	
	Attraction time(ms)		30		33	
	Release time(ms)		87		95	
Speed control range(r/min)		250~2000				
Speed variation rate	To load	-1%Max.	at 2000r/min, no load~rated load.			
	To voltage	±2%	Voltage variation ±15%, at 2000r/min, no load.			
	To Temperature	±2%	0~+40°C at 2000r/min, no load.			
Slow start/Slow down time set up		Slow start 0.5~8sec, Motor from 0~2000r/min when no load Slow stop 0.5~7sec, Motor from 2000~0r/min when no load				
Speed control method		<ul style="list-style-type: none"> Controlled by front panel knob for speed Controlled by back panel knob for speed 				
Signal input/output methods		<ul style="list-style-type: none"> Photo coupler input interface Transistor Open Collector output interface 				
Function		<ul style="list-style-type: none"> Directly switch to control the Motor start /stop from the front panel "RUN / STOP" Motor constant torque output (FLAT TORQUE) within the speed control range Instantaneous brake to stop, slow start / slow stop (SLOW START / SLOW DOWN) When brake to stop all electric type holding role 				
Protection function		When protective function is activated, Motor will coast to a stop drive ALARM contact signal output <ul style="list-style-type: none"> Overload Protection : When exceeding the rated torque of Motor running at least 7 seconds, it starts operation Overheat Protection : When Driver is internal heat sink temperature exceeds 80 ° C, starts operation Overvoltage Protection : (1)Up and down, winding or exceeds the allowable load inertia during operation, starts operation (2)When Driver voltage of the AC power input more than about 35%, starts operation Lowvoltage Protection : Driver input AC power voltage is lower than about 20%, starts operation Offline Protection : When Motor cable disconnect, starts operation 				
Insulation impedance		Applies DC500V high resistance meter test, power, F.G grounding, I/O terminal resistance value is over 100MΩ				
Insulation high voltage		Power and F.G connect to ground, terminals pass with 1.8KV/60Hz high voltage, power and I/O connectors pass with 3KV/60Hz high voltage for 1 minute, no abnormal condition				
Ambient temperature/Humidity range		0~+40°C, under 85% relative humidity (avoid dust and erosion, combustion gas)				

Note1 : -□, Please fill power voltage in □. □ indicates single phase AC110~115V · □: indicates single phase AC220~230V * 1 Nm=10.19716 Kgcm
 Note2 : 9B060PD-2N、9B090PD-2N have passed IP54 certificate.

■ Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD²)

Gear ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
Speed range (r/min)	High speed	666	555	400	333	266	222	200	160	133	111	100	80	66
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4
Allowable torque (Nm)	6B020P-□N(M) + 6D□	0.27	0.32	0.45	0.54	0.68	0.81	0.9	1.1	1.4	1.6	1.8	2.2	2.6
Allowable inertia load GD ² (kgcm ²)		6.30	9.08	17.5	25.2	39.4	56.7	70.1	109	158	227	280	438	625
Allowable torque (Nm)	6B040P-□N(M) + 6D□	0.54	0.65	0.9	1.1	1.4	1.6	1.8	2.3	2.7	3.2	3.6	4.3	5.2
Allowable inertia load GD ² (kgcm ²)		10.5	15.1	29.0	41.8	65.3	94.1	116	181	261	376	465	625	
Allowable torque (Nm)	9B060PD-□N(M) + 9D□	0.81	0.97	1.4	1.6	2	2.4	2.7	3.4	4.1	4.9	5.4	6.5	7.7
Allowable inertia load GD ² (kgcm ²)		63.1	90.8	175	252	394	568	701	1095	1577	2271	2803	4380	6307
Allowable torque (Nm)	9B090PD-□N(M) + 9D□	1.4	1.6	2.3	2.7	3.4	4.1	4.5	5.6	6.8	8.1	9	10.8	12.9
Allowable inertia load GD ² (kgcm ²)		86.8	125	241	347	542	781	964	1506	2169	3124	3856	6026	8677

Gear ratio		36	50	60	75	90	100	120	150	180	200	250	300	360	
Speed range (r/min)	High speed	55	40	33	26	22	20	16	13	11	10	8	6	5	
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.9	0.7	
Allowable torque (Nm)	6B020P-□N(M) + 6D□	3.1	4.3	5.2	6.5				6.5						
Allowable inertia load GD ² (kgcm ²)		625						625							
Allowable torque (Nm)	6B040P-□N(M) + 6D□	6.2	6.5				6.5								
Allowable inertia load GD ² (kgcm ²)		625						625							
Allowable torque (Nm)	9B060PD-□N(M) + 9D□	9.3	12.9	15.5	19.4	23.2	25.8	29.2	36.5	40					
Allowable inertia load GD ² (kgcm ²)		9082	11000				11000								
Allowable torque (Nm)	9B090PD-□N(M) + 9D□	15.5	21.5	25.8	32.3	38.7	40	40							
Allowable inertia load GD ² (kgcm ²)		11000						11000							

* Motor 6B020P-□(M)...etc, please fill in □ with line power voltage. ① : stand for single phase AC110~115V, ② : stand for single phase AC220~230V.

* Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.

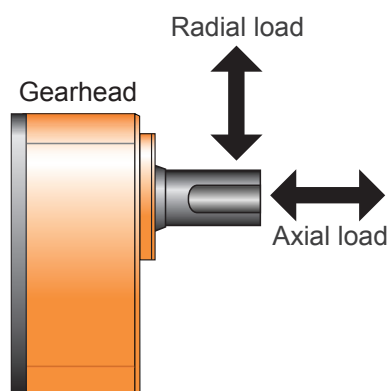
In above table stands for after installation of Gearhead, the axis rotation direction is reversed with Motor axis direction; without marking stands for the same direction as Motor axis rotation.

* 1Nm = 10.197Kgcm.

* The Gearheads of all series have  certificate.

* Also available orthogonal Gearhead: hollow shaft type 9VD□(H), the solid single shaft type 9VD□A(H), the solid biaxial shaft type 9VD□B(H), and size please refer to P.10.

■ Motor allowable radial load/axial load



- ① Radial load (hanging load): loading is vertical to Gearhead axis power output
- ② Axial load (thrust load): loading is in the direction of Gearhead axis power output

◆ Round shaft type

Model	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
	10mm from output shaft front	20mm from output shaft front	
6B020S-□N(M)	8	9	Permissible axial loading, not more than 1/2 of motor weight. But please try to avoid applying force in the horizontal direction (axial) of motor shaft, when exceeds that will reduce motor service life. If axial loading is needed, we recommend applying indirect transmission, such as: couplings, belts, chains, etc...
6B040S-□N(M)	8	9	
9B060S-□N(M)	13	15	
9B090S-□N(M)	16	17	

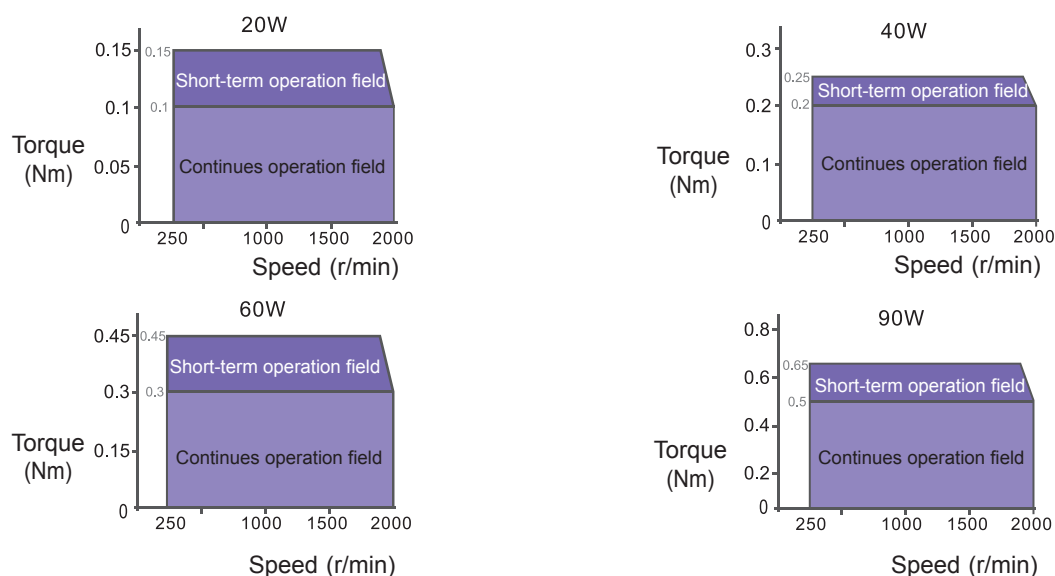
◆ Pinion shaft type (Gearhead attached)

Model	Gear ratio	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
		10mm from output shaft front	20mm from output shaft front	
6B020P-□N(M) + 6D□	3, 3.6, 5	10	15	4
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
6B040P-□N(M) + 6D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	
	9B060PD-□N(M) + 9D□	3, 3.6, 5	30	40
6, 7.5, 9, 10, 12.5, 15, 18, 20		40	50	
9B090PD-□N(M) + 9D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	

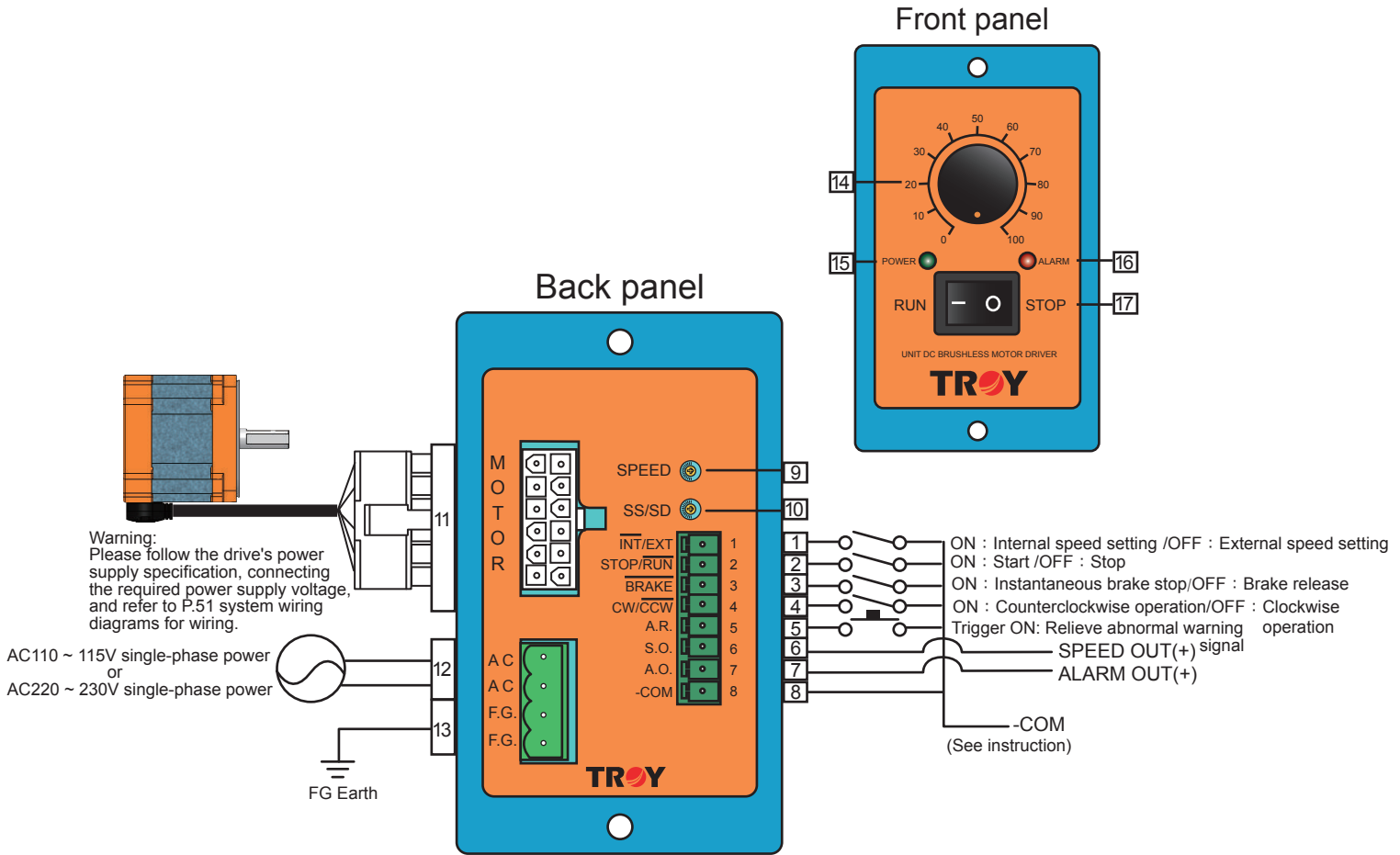
* Motor 6B020S-□N(M)... etc., please fill power voltage in □. □ : indicate single phase AC110V~115V, □ : indicate single phase AC220~230V

* Gearhead 6D□/9D□, please fill Gearhead in □.

■ Speed - Torque characteristic diagrams

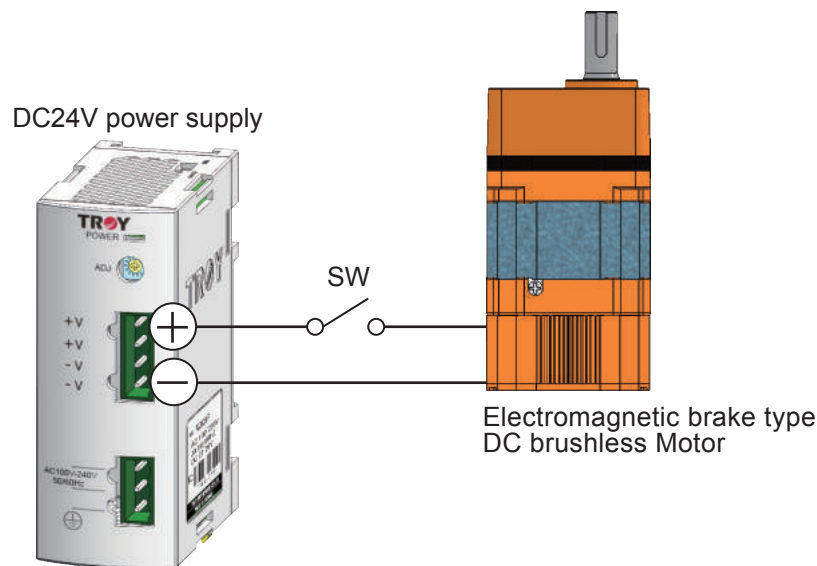


■ Driver panel functions and wiring instructions



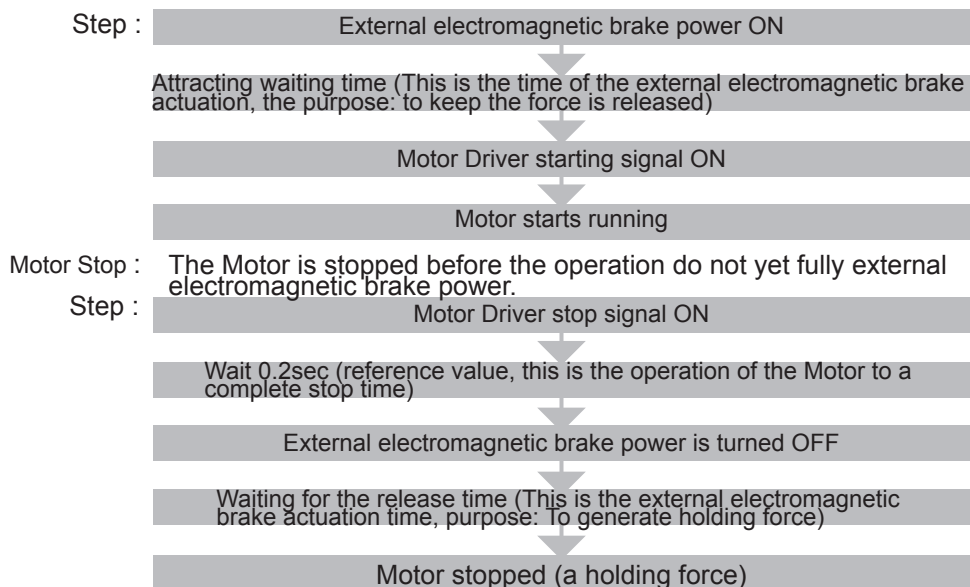
Number	Panel marked	Function	Explanation
1	INT/EXT	Speed setting mode switch to select the input	Internal / external speed setting mode switching selection
2	STOP/RUN	Stop/Start signal input	Stop / start signal switching input
3	BRAKE	Instantaneous brake stop signal input	Executive instantaneous brake stop / brake release signal switch input
4	CW/CCW	The direction of rotation switch to select the input	Clockwise/counterclockwise operation switch selection
5	A.R.	Warning signs release abnormal input	AR trigger input contacts (continuous "L" state 10ms) to release the error warning signal
6	S.O.	Speed signal output	When Motor speed is detected using, digital signal output 12 Pulse / rev
7	A.O.	Abnormal warning signal output	Overload, overheating, over voltage, low voltage, disconnection of any of a protective function is activated, Motor stops naturally, and outputs an abnormality warning signal
8	-COM	Controlling signal grounding	GND contact inputs and outputs a control signal common ground wire, and the external DC power
9	SPEED	Speed setting button	20~90W speed control range : 250~2000r/min
10	SS/SD	Slow start, stop time setting button	Slow start 0.5~8sec; slow stop 0.5~7sec
11	MOTOR	Motor wiring connector	Motor and Driver connection
12	AC	Power voltage input terminal	AC power voltage input connection
13	FG	Power ground terminal	Power ground connection
14	Scale button	Speed setting button	Rotating the knob clockwise to adjust the Motor speed from slow to fast speed range: 250 ~ 2000r/ min
15	POWER	Power indicator	Input Power LED (green) lights
16	ALARM	Unusual indicator	Overload, overheating, over-voltage, low voltage, disconnection of any of a protective function is activated LED (red) lights
17	RUN/STOP	Start / stop switch	Start / stop switch

■ Motor electromagnetic brake wiring instructions



◆ Operation instruction

Motor start/Motor stop with external electromagnetic brake operating procedures:
 Motor start: Must energize external electromagnetic brake before the Motor starts



◆ Precautions

- 1.This series of external electromagnetic brake using the brake power is part of the hold-type.
- 2.External electromagnetic brake is designed to allow the Motor stops when the holding force has to be used as a safety brake, electromagnetic brake, do not use this as a Motor positioning or emergency brake applications.
- 3.Always to pull the Motor before starting the external electromagnetic brake energized (means no brakes); Motor stopped before the operation do not yet fully external electromagnetic brake power (expressed brakes).
- 4.External electromagnetic brake suction time and release time value refer to the product specification.
- 5.Motor brakes to stop for about 0.2sec (test conditions in the Motor no-load speed 3000r / min, the electromagnetic brake is energized, the brake actuator signal ON time of the Driver, this time as a reference base, but the actual length of time will stop according to the inertia load or frictional load ... different load patterns and has fluctuated.
- 6.We recommend to do the actual measuring device operating time at the time of commissioning.

■ Dimensions - Motor/Gearhead

Unit : mm

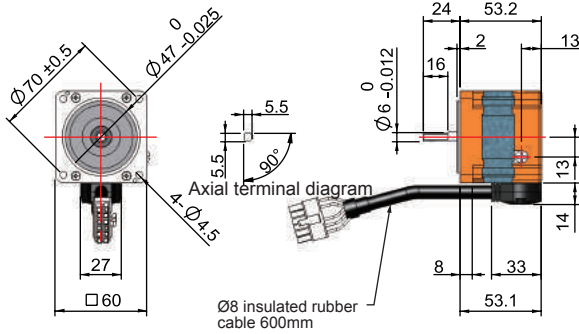
Round shaft type

Gear shaft type

20W/□60mm

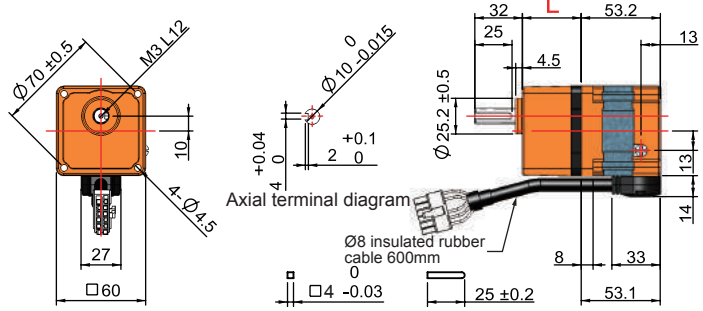
◆ 6B020S-□N

Weight : 655g



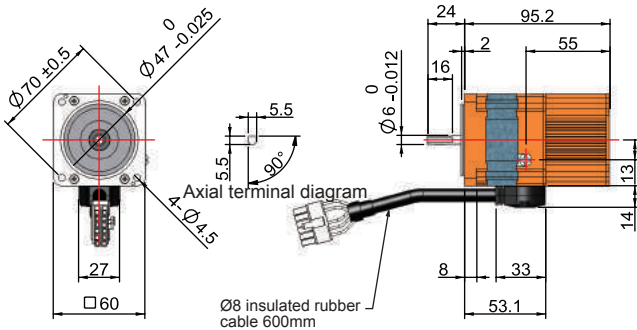
◆ 6B020P-□N + 6D□

Weight : 650g+W



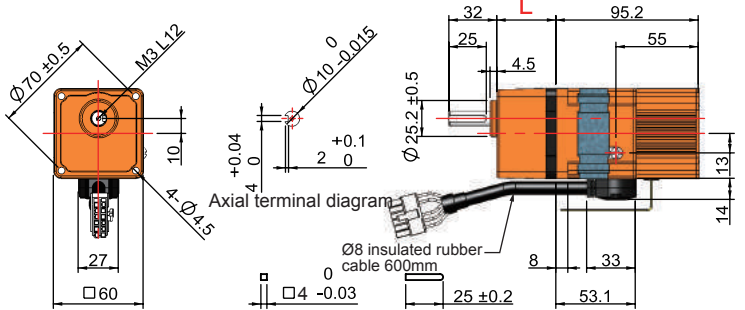
◆ 6B020S-□NM

Weight : 1055g



◆ 6B020P-□NM + 6D□

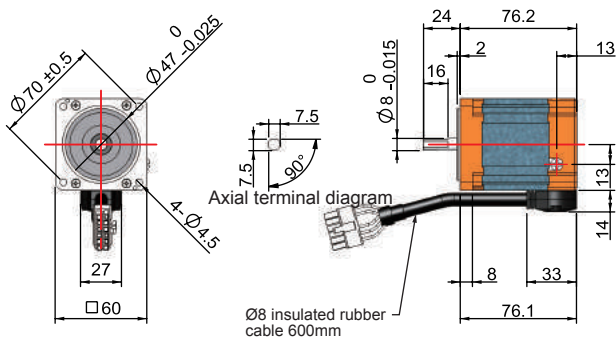
Weight : 1050g+W



40W/□60mm

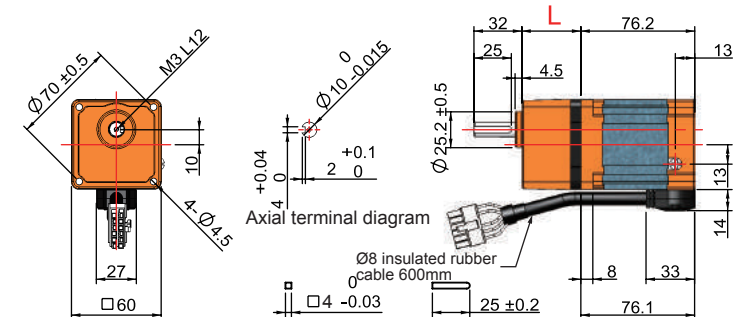
◆ 6B040S-□N

Weight : 1050g



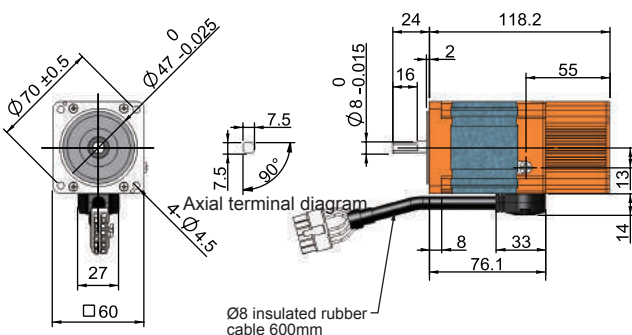
◆ 6B040P-□N + 6D□

Weight : 1040g+W



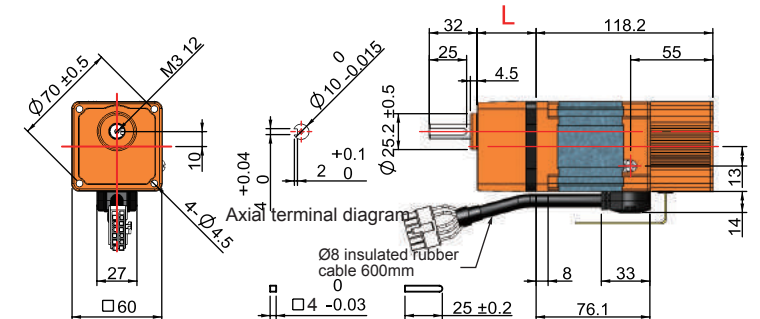
◆ 6B040S-□NM

Weight : 1450g



◆ 6B040P-□NM + 6D□

Weight : 1440g+W



* 6B pinion shaft type 6D3-6D360, Gearhead length L and weight W specification as following:

Model	6D3~6D20	6D25~6D100	6D120~6D360
Gearhead Length L (mm)	39.5	39.5	43.5
Weight W (g)	300	325	365

* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

Dimensions - Motor/Gearhead

Unit : mm

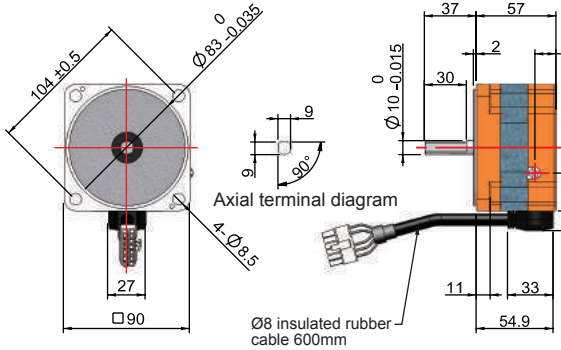
Round shaft type

Gear shaft type

60W/□90mm

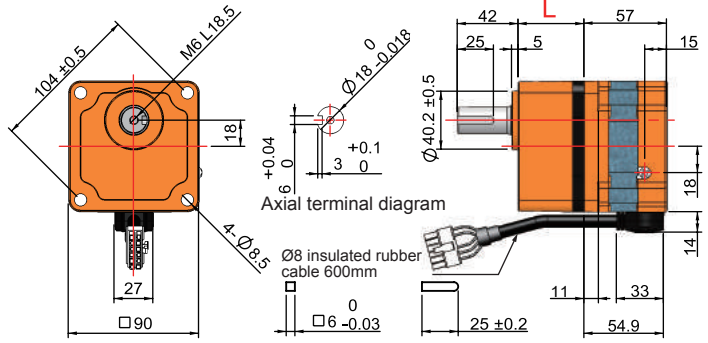
◆ 9B060S-□N

Weight : 1465g



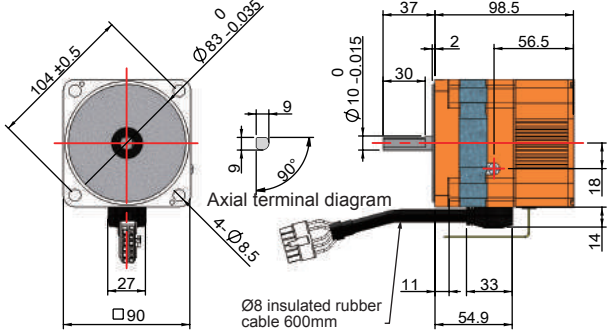
◆ 9B060PD-□N + 9D□

Weight : 1440g+W



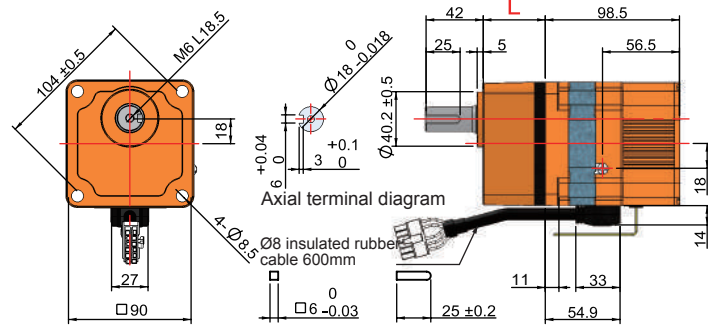
◆ 9B060S-□NM

Weight : 2215g



◆ 9B060PD-□NM + 9D□

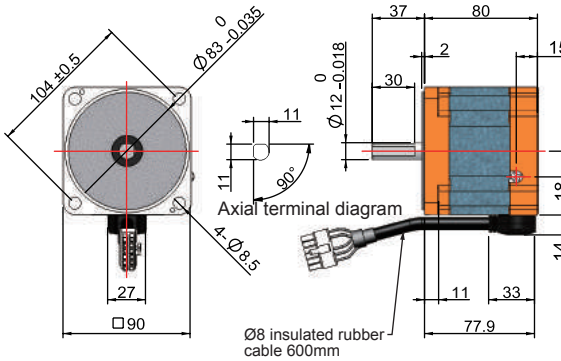
Weight : 2190g+W



90W/□90mm

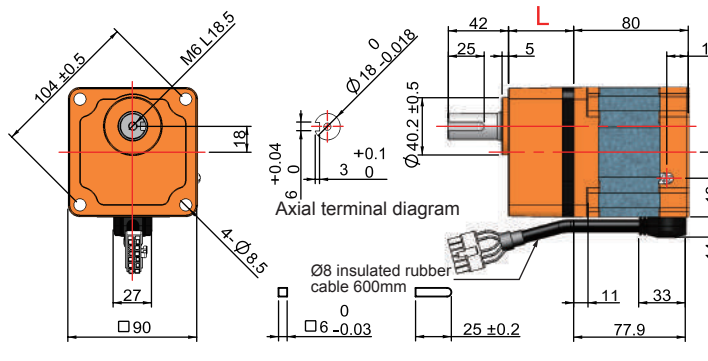
◆ 9B090S-□N

Weight : 2380g



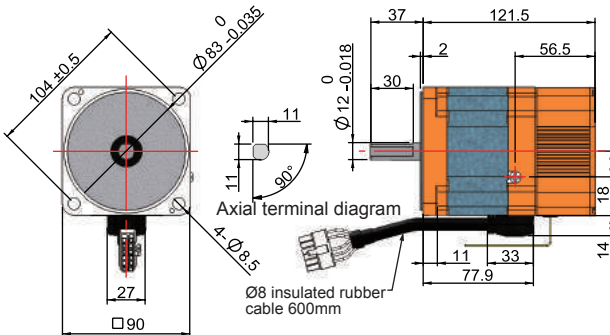
◆ 9B090PD-□N + 9D□

Weight : 2350g+W



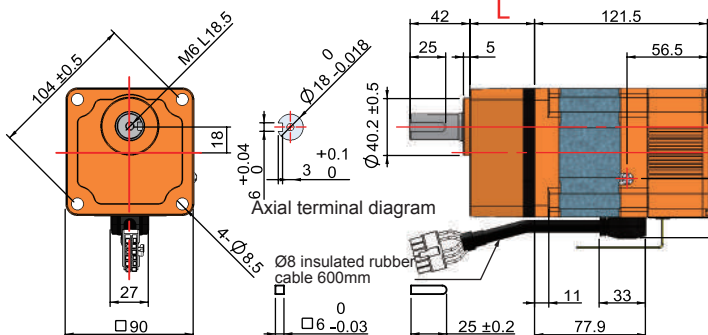
◆ 9B090S-□NM

Weight : 3130g



◆ 9B090PD-□NM + 9D□

Weight : 3100g+W



* 9B pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

Model	9D3~9D20	9D25~9D100	9D120~9D360
Gearhead Length L (mm)	45.5	58.5	64.5
Weight W (g)	860	1125	1265

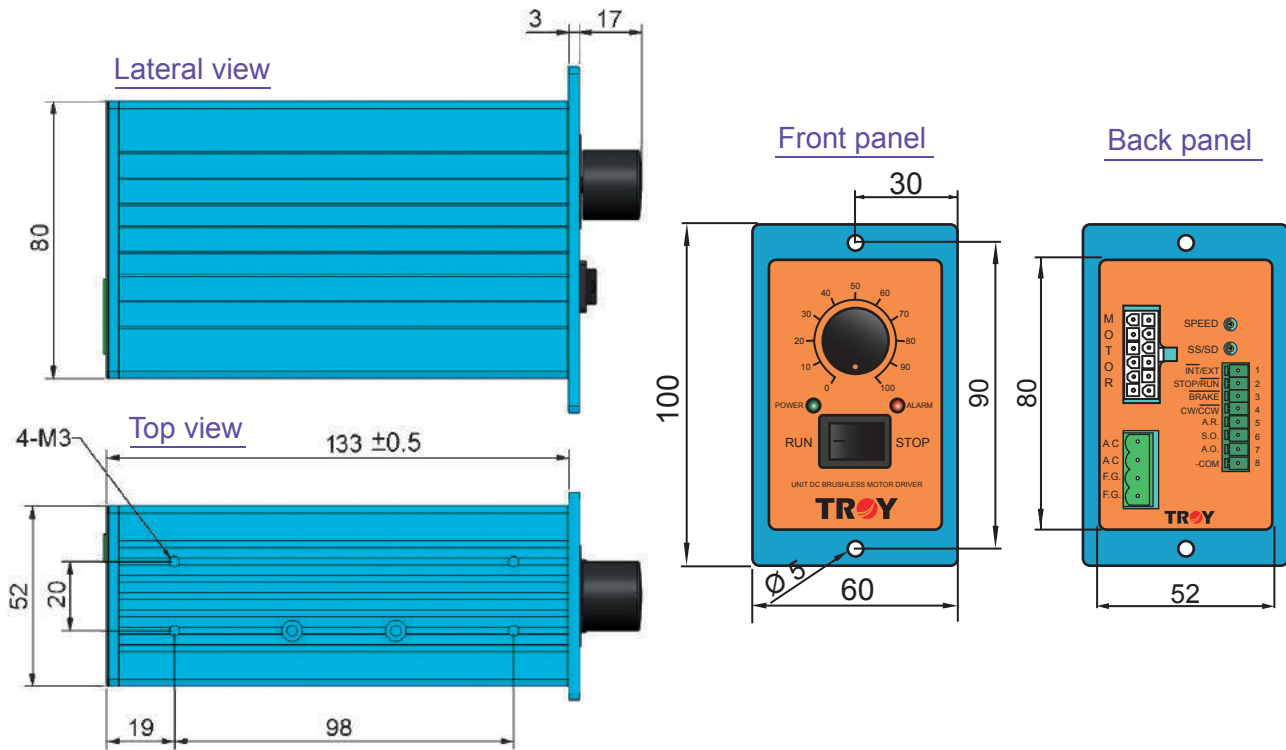
* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

TRV - Characteristics of Motor Product index Product names Product weight Technical Information Gearhead Installation Certificates Model naming BMS SSS CDS DBS Accessories Motor selection

■ Dimensions - Driver

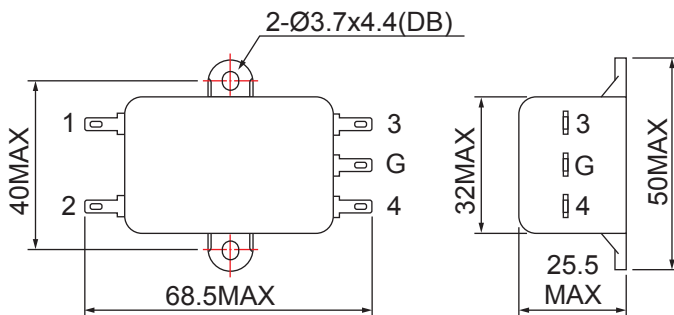
Model : UBD020-□N/UBD040-□N UBD060-□N/UBD090-□N Dimensions are common Unit : mm

Weight : 520g



■ Dimensions - Power supply noise filter

Weight : 50g



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.





DBS series

-The situation needs DC power control

Page

61	Specifications and characteristics of Motor/Driver
62	Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD^2)
63	Motor allowable radial load/axial load
64	Speed - Torque characteristic diagrams
65	Driver panel functions and wiring instructions
66	Motor electromagnetic brake wiring instructions
67	Dimensions - Motor/Gearhead
69	Dimensions - Driver
69	Dimensions - Variable resistor

■ Specifications and characteristics of Motor/Driver

Motor output power		20W	40W	60W	100W	
Round shaft Motor (M: E/M brake type)		6B020S-D(M)	6B040S-D(M)	9B060S-D(M)	9B100S-D(M)	
Pinion shaft Motor (M: E/M brake type)		6B020P-D(M)	6B040P-D(M)	9B060PD-D(M) 9B060PH-D	9B100PD-D(M) 9B100PH-D	
Motor specification certificate		 ※9B060PH-D、9B100PH-D no RoHS certificate				
Driver		DBD020-D	DBD040-D	DBD060-D	DBD100-D	
Driver specification certificate						
Input Power Voltage	DC23~26V	Current Min.(A)	2	4	6	10
		Rated current(A)	1.48	3.65	4.37	6.73
Starting Torque (Nm)		0.08	0.16	0.25	0.4	
Rated Torque (Nm)		0.07	0.14	0.2	0.33	
Allowable load inertia GD ² (Kgcm ²)		4.78	9.55	11.3	20.8	
E/M Brake	※ Only E/M brake series have E/M	Input power voltage(V)	DC24		DC24	
		Consumption power(W)	6.5		7.5	
		Maintenance(Nm)	0.3		0.5	
		Attraction time(ms)	30		33	
		Release time(ms)	87		95	
Speed control range(r/min)		250~3000				
To load		-2%Max.	In 3000r / min, no-load ~rated load			
Speed variation rate To voltage		±2%	Power voltage variation DC24V ± 10%, while in 3000r / min with no load			
To Temperature		±3%	When 0 ~ + 40 ° C, at 3000r / min, while no load			
Slow start/Slow down time set up		When slow start 0.5 ~ 10 sec, Motor from the 0 ~ 3000r / min, while no load When slow stop 0.5 ~ 5 sec, Motor from the 3000 ~ 0r / min, while no load				
Speed control method		<ul style="list-style-type: none"> •Controlled by an external variable resistor (resistance value 20KΩ) •Controlling by internal variable resistor (1mA or more) •By an external DC voltage control (DC0 ~ 5V) •Can be used with D / A speed setter TRAC (optional) 				
Signal input/output method		<ul style="list-style-type: none"> •Photo coupler(PHOTO COUPLER) •Open collector transistor circuit(OPEN COLLECTOR) output interface 				
Function		<ul style="list-style-type: none"> •Contactless control (ZERO POINT), direct PLC or transistor type, relay-style I / O modules •Within speed control range, Motor constant torque output (FLAT TORQUE) •Instantaneous brake stop, slow start/slow stop (SLOW START/SLOW DOWN) •When brake stop all electrical type cage effect 				
Protection function		Protection function will be the following two kinds of situation: ○Motor will naturally stop, Driver ALARM contact signal output <ul style="list-style-type: none"> •Overload Protection: Exceeding the rated torque of Motor running more than 7 seconds, it operates •Low voltage Protection: Driver input AC power voltage less than about 20%, it operates •Offline Protection: When Motor cable disconnected, it operates •Internal automatic disconnection from multiple fuse, and disconnect power supply of internal controller, POWER light goes out •Over voltage protection: When Driver input DC power voltage exceeds about 25%, it operates •Reverse power protection: DC power voltage polarity is reversed, it operates polarity 				
Insulation impedance	Motor	When using DC500V megger test, the impedance between coil and housing is more than 100MΩ				
	Driver	When using DC500V megger test between power input terminal and cabinet impedance value is above 100MΩ				
Insulation pressure	Motor	Between coil and casing, through to AC 1.8KV / 60Hz high pressure, sustained 1sec, no abnormal condition				
	Driver	Between power input terminal and cabinet, through to AC 0.5KV / 60Hz high pressure, for 1 minute, no abnormal condition				
Ambient temperature/Humidity range		Motor 0 ~ + 50 ° C, Driver 0 ~ + 40 ° C, 85% RH or less (to avoid dust and corrosive, flammable gas)				

*1 Nm=10.19716 Kgcm



■ Gearhead specifications & allowable speed range/allowable torque/allowable inertia load (GD²)

Gear ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
Speed range (r/min)	High speed	1000	883	600	500	400	333	300	240	200	166	150	120	100
	Low speed	83.4	69.5	50	41.7	33.4	27.8	25	20	16.7	13.9	12.5	10	8.4
Allowable torque (Nm)	6B020P-D(M) + 6D□	0.18	0.21	0.29	0.35	0.44	0.53	0.59	0.73	0.88	1.1	1.2	1.4	1.7
Allowable inertia load GD ² (kgcm ²)		2.25	3.24	6.25	9.00	14.1	20.3	25.0	39.1	56.3	81.0	100	156	225
Allowable torque (Nm)	6B040P-D(M) + 6D□	0.35	0.42	0.59	0.7	0.88	1.1	1.2	1.5	1.8	2.1	2.3	2.8	3.4
Allowable inertia load GD ² (kgcm ²)		4.50	6.48	12.5	18.0	28.1	40.5	50.0	78.1	113	162	200	313	450
Allowable torque (Nm)	9B060PD-D(M) + 9D□	0.54	0.65	0.9	1.1	1.4	1.6	1.8	2.3	2.7	3.2	3.6	4.3	5.2
Allowable inertia load GD ² (kgcm ²)		18.0	25.9	50.0	72.1	113	162	200	313	450	649	801	1251	1802
Allowable torque (Nm)	9B060PH-D + 9D□H	0.54	0.65	0.9	1.1	1.4	1.6	1.8	2.3	2.7	3.2	3.6	4.3	5.2
Allowable inertia load GD ² (kgcm ²)		181	260	501	722	1128	1624	2006	3134	4512	6498	8022	12534	18050
Allowable torque (Nm)	9B100PD-D(M) + 9D□	0.89	1.1	1.5	1.8	2.2	2.7	3.0	3.7	4.5	5.3	5.9	7.1	8.5
Allowable inertia load GD ² (kgcm ²)		33.3	48.0	92.5	133	208	300	370	578	832	1199	1480	2312	3330
Allowable torque (Nm)	9B100PH-D + 9D□H	2.2	2.6	3.6	4.3	5.4	6.5	7.2	9	10.8	13	14.4	17.2	20.6
Allowable inertia load GD ² (kgcm ²)		181	260	501	722	1128	1624	2006	3134	4512	6498	8022	12534	18050

Gear ratio		36	50	60	75	90	100	120	150	180	200	250	300	360	
Speed range (r/min)	High speed	83	60	50	40	33	30	25	20	16	15	12	10	8	
	Low speed	7	5	4.2	3.4	2.8	2.5	2.1	1.7	1.4	1.3	1	0.9	0.7	
Allowable torque (Nm)	6B020P-D(M) + 6D□	2	2.8	3.4	4.2	5	5.6	6.3	6.5						
Allowable inertia load GD ² (kgcm ²)		324	625						625						
Allowable torque (Nm)	6B040P-D(M) + 6D□	4	5.6	6.5						6.5					
Allowable inertia load GD ² (kgcm ²)		625						625							
Allowable torque (Nm)	9B060PD-D(M) + 9D□	6.2	8.6	10.3	12.9	15.5	17.2	19.4	24.3	29.2	32.4	40			
Allowable inertia load GD ² (kgcm ²)		2594	5004	7206	11000			11000							
Allowable torque (Nm)	9B060PH-D + 9D□H	6.2	8.6	10.3	12.9	15.5	17.2	19.4	24.3	29.2	32.4	40			
Allowable inertia load GD ² (kgcm ²)		25991	45000						45000						
Allowable torque (Nm)	9B100PD-D(M) + 9D□	10.2	14.2	17	21.3	25.5	28.4	32.1	40						
Allowable inertia load GD ² (kgcm ²)		4795	9249	11000				11000							
Allowable torque (Nm)	9B100PH-D + 9D□H	24.8	34.4	41.3	50			50							
Allowable inertia load GD ² (kgcm ²)		25991	45000						45000						

* Gearhead 6D□/9D□/9D□H, please fill gear ratio in □.

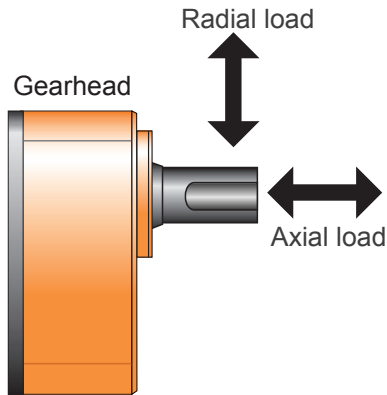
* ■ In above table stands for after installation of Gearhead, the axis rotation is reversed with Motor axis direction; without marking stands for the same direction as Motor axis rotation.

* 1 Nm=10.19716 Kgcm

* In addition to Gearhead 9D□H120~360 without certificate, other series of Gearhead have certificate

* Also available orthogonal Gearhead: hollow shaft type 9VD□(H), the solid single shaft type 9VD□A(H), the solid biaxial shaft type 9VD□B(H), and size please refer to P.10.

Motor allowable radial load/axial load



- ① Radial load (hanging load): loading is vertical to Gearhead axis power output
- ② Axial load (thrust load): loading is in the direction of Gearhead axis power output

◆ Round shaft type

Model	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
	10mm from output shaft front	20mm from output shaft front	
6B020S-D(M)	8	9	Permissible axial loading, not more than 1/2 of Motor weight. But please try to avoid applying force in the horizontal direction (axial) of motor shaft, when exceeds that will reduce Motor service life. If axial loading is needed, we recommend applying indirect transmission, such as: couplings, belts, chains, etc...
6B040S-D(M)	8	9	
9B060S-D(M)	16	17	
9B100S-D(M)	16	17	

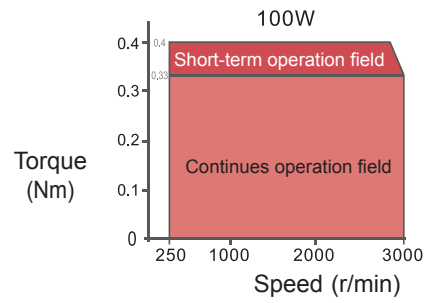
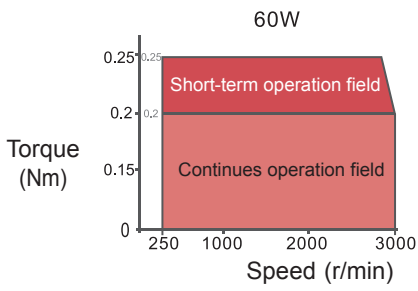
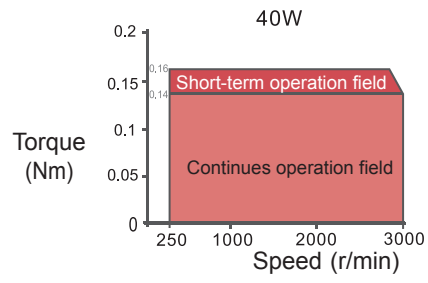
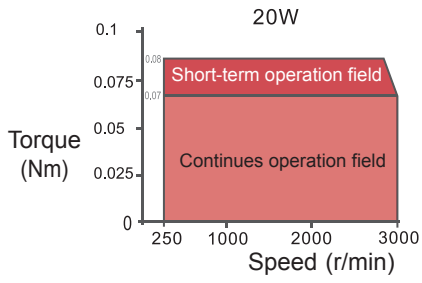
◆ Pinion shaft type (Gearhead attached)

Model	Gear ratio	Permissible overhung load (Unit: Kg f)		Permissible thrust load (Unit: Kg f)
		10mm from output shaft front	20mm from output shaft front	
6B020P-D(M) + 6D□	3, 3.6, 5	10	15	4
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
6B040P-D(M) + 6D□	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	
9B060PD-D(M)+9D□ 9B060PH-D+9D□H 9B100PD-D(M)+9D□ 9B100PH-D+9D□H	3, 3.6, 5	30	40	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	40	50	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	50	65	

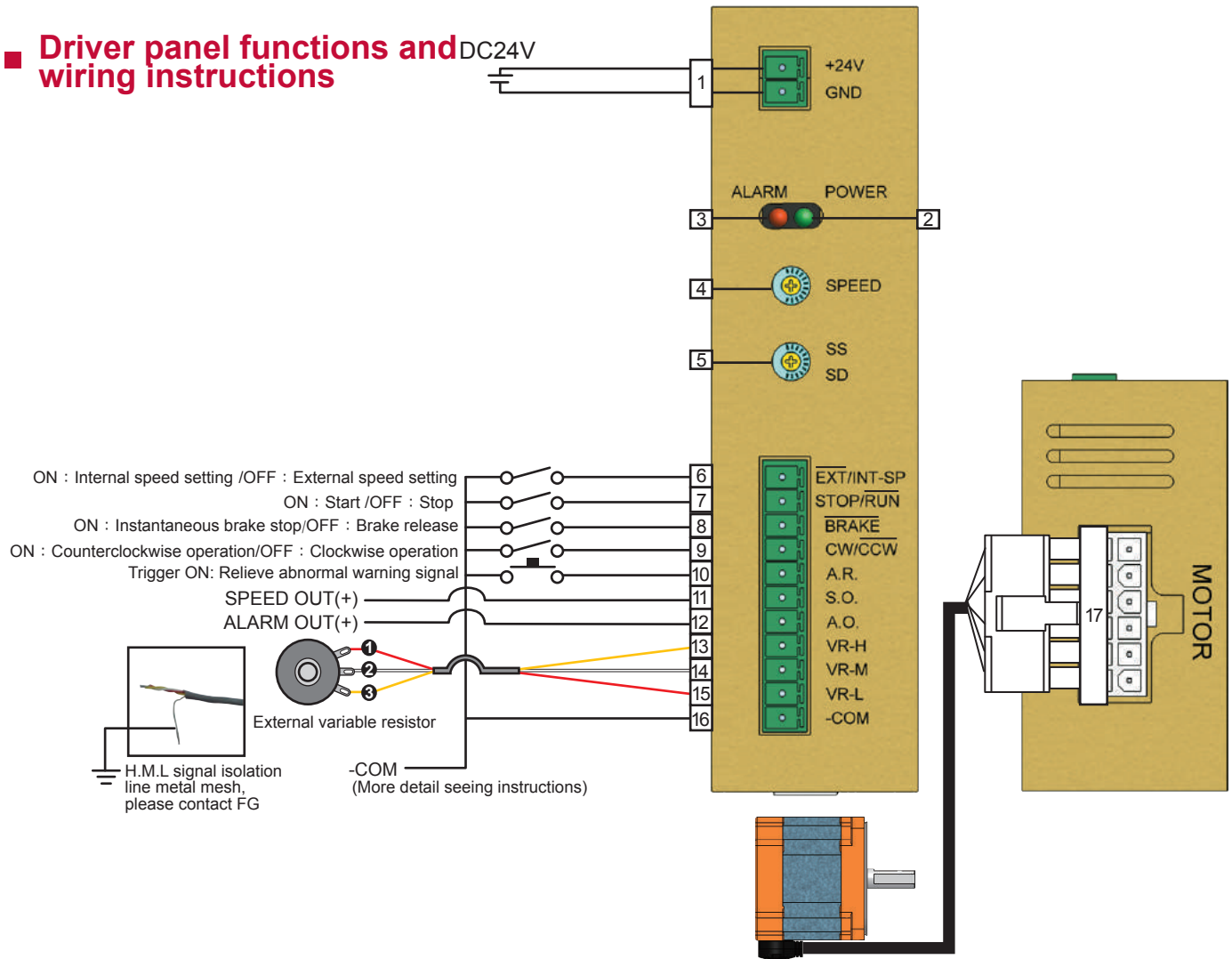
* Gearhead 6D□/9D□/9D□H, please fill gear ratio in□



■ Speed - Torque characteristic diagrams



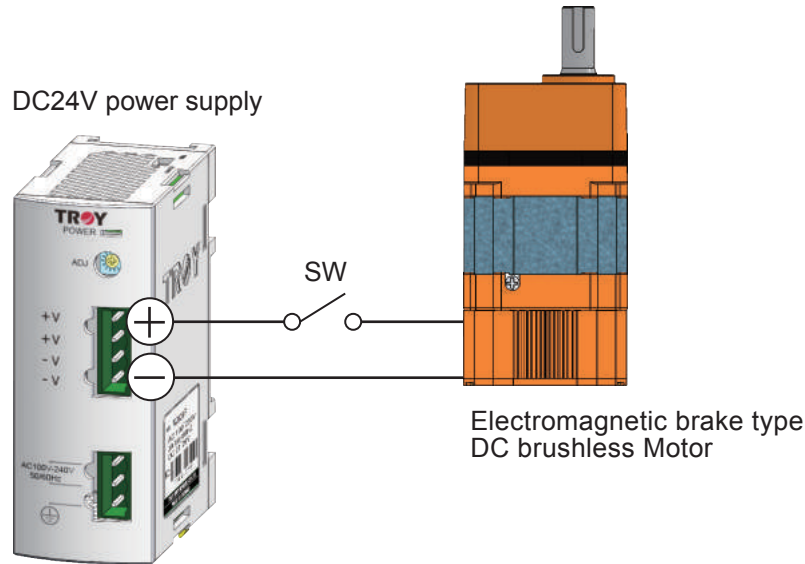
Driver panel functions and wiring instructions



Number	Panel marked	Function	Explanation
1	+24V \ GND	DC power voltage input terminal	DC power voltage input connection
2	POWER	Power indicator	LED (green) lights when input power
3	ALARM	Unusual indicator	Overload, low voltage, disconnection any protective function is activated LED (red) lights
4	SPEED	Internal speed setting button	20 ~ 100W speed control range: 250 ~ 3000r/min
5	SS/SD	Slow start, stop time setting button	Slow start 0.5 ~ 10 sec; slow stop 0.5 ~ 5 sec
6	EXT/INT-SP	Speed setting switch to select the input mode	External/internal speed setting mode switch selection
7	STOP/RUN	Stop/start signal input	Stop/start signal switch input
8	BRAKE	Instantaneous brake stop signal input	Executive instantaneous brake stop / brake release signal switch input
9	CW/CCW	The direction of rotation switch to select input	CW/CCW operation switch selection
10	A.R.	Abnormal warning signal release input	A.R. trigger input contacts (Length "L" state 10ms) to release the error of warning signal
11	S.O.	Speed signal output	Using while monitoring Motor speed, digital signal output 12Pulse/rev
12	A.O.	Abnormal warning signal output	Overload, low voltage, disconnection any protective function is activated, Motor stops naturally, and outputs an abnormality warning signal.
13	VR-H	Motor wiring connector	An external connection terminal variable resistor or external DC voltage (0 ~ 5V) control of speed control range: 250 ~ 3000r / min
14	VR-M		
15	VR-L		
16	-COM	Control signal grounding	GND contact inputs and outputs a control signal common ground wire, and the external DC power contact
17	MOTOR	Motor wiring connector	Motor and Driver connection



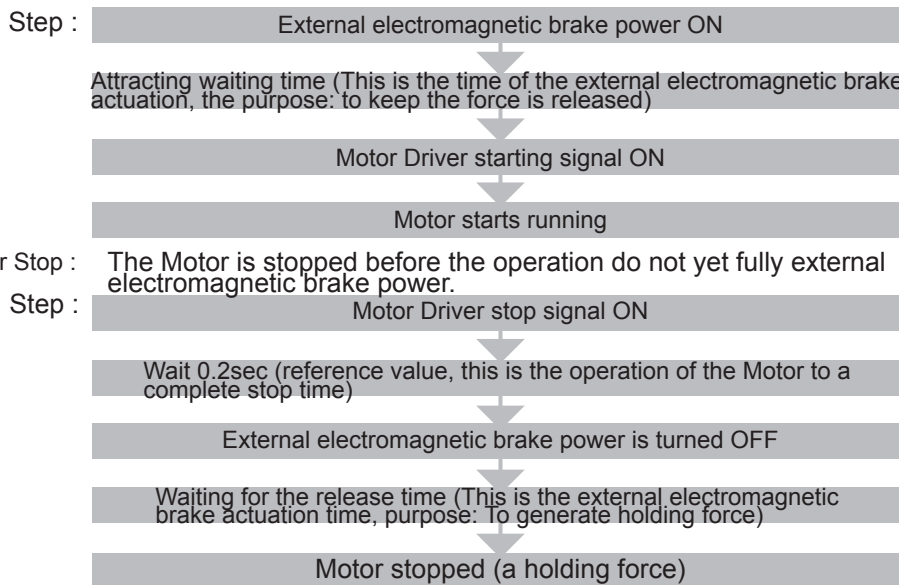
■ Electromagnetic brake wiring instructions



◆ Operation instruction

Motor start/Motor stop with external electromagnetic brake operating procedures:

Motor start: Must energize external electromagnetic brake before the Motor starts



◆ Precautions

- 1.This series of external electromagnetic brake using the brake power is part of the hold-type.
- 2.External electromagnetic brake is designed to allow the Motor stops when the holding force has to be used as a safety brake, electromagnetic brake, do not use this as a Motor positioning or emergency brake applications.
- 3.Always to pull the Motor before starting the external electromagnetic brake energized (means no brakes); Motor stopped before the operation do not yet fully external electromagnetic brake power (expressed brakes).
- 4.External electromagnetic brake suction time and release time value refer to the product specification.
- 5.Motor brakes to stop for about 0.2sec (test conditions in the Motor no-load speed 3000r / min, the electromagnetic brake is energized, the brake actuator signal ON time of the Driver, this time as a reference base, but the actual length of time will stop according to the inertia load or frictional load ... different load patterns and has fluctuated.
- 6.We recommend to do the actual measuring device operating time at the time of commissioning.

■ Dimensions - Motor/Gearhead

Unit : mm

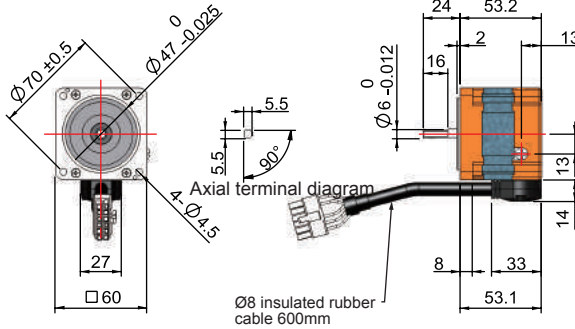
Round shaft type

Gear shaft type

20W/□60mm

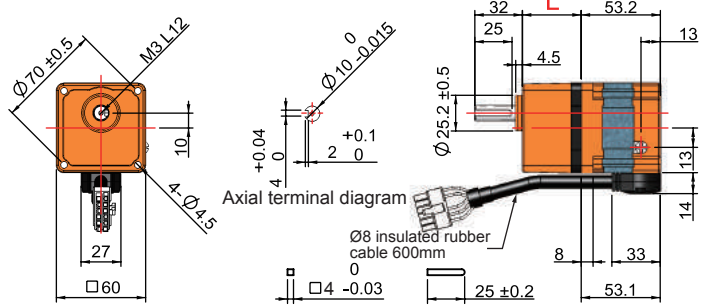
◆ 6B020S-D

Weight : 655g



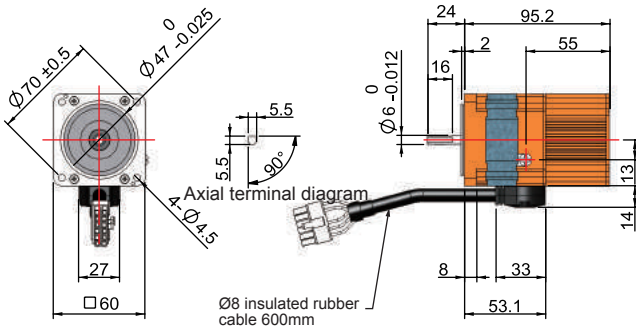
◆ 6B020P-D + 6D□

Weight : 650g+W



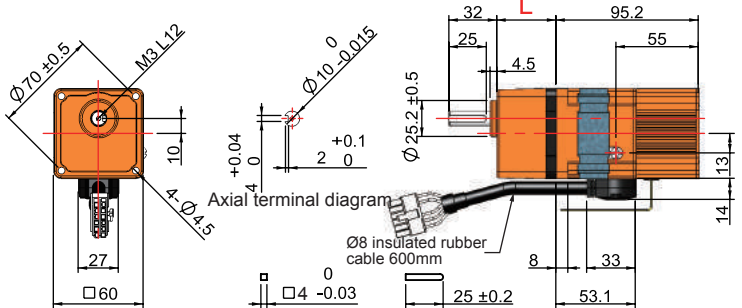
◆ 6B020S-DM

Weight : 1055g



◆ 6B020P-DM + 6D□

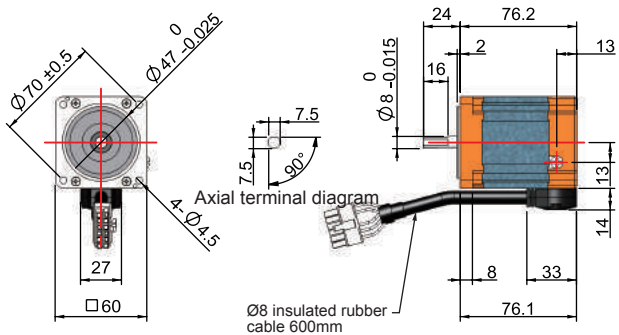
Weight : 1050g+W



40W/□60mm

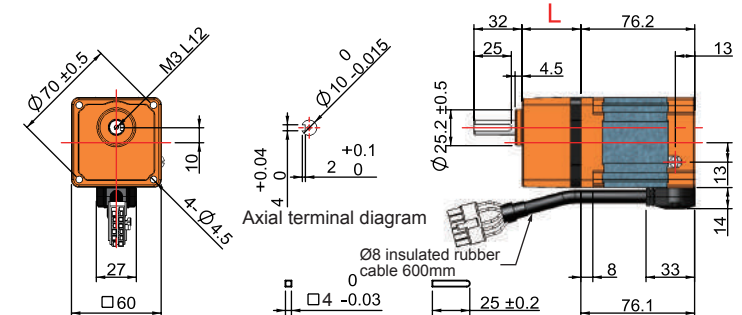
◆ 6B040S-D

Weight : 1050g



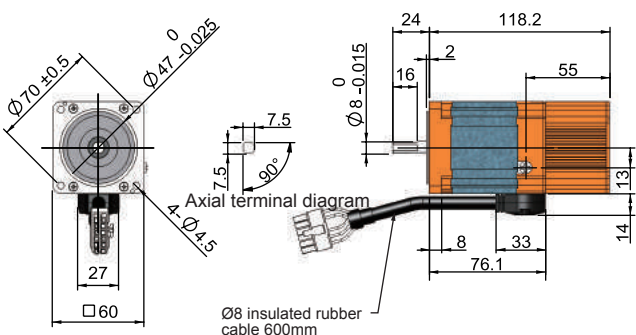
◆ 6B040P-D + 6D□

Weight : 1040g+W



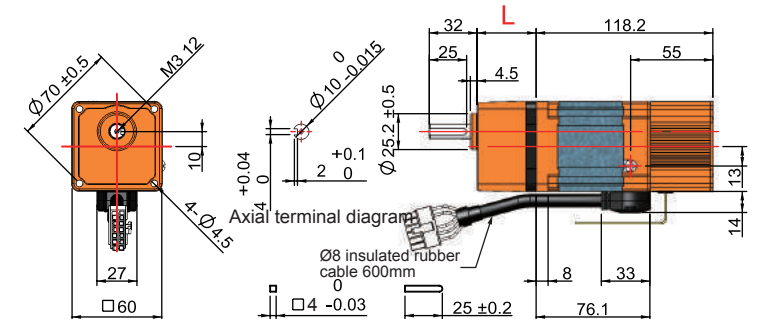
◆ 6B040S-DM

Weight : 1450g



◆ 6B040P-DM + 6D□

Weight : 1440g+W



* 6B pinion shaft type 6D3-6D360, Gearhead length L and weight W specification as following:

Model	6D3~6D20	6D25~6D100	6D120~6D360
Gearhead Length L (mm)	39.5	39.5	43.5
Weight W (g)	300	325	365

*Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

■ Dimensions - Motor/Gearhead

Unit : mm

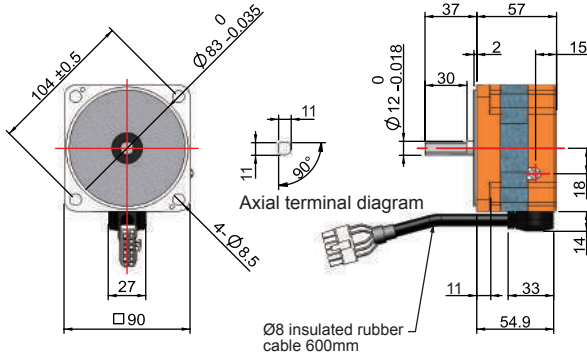
Round shaft type

Gear shaft type

60W/□90mm

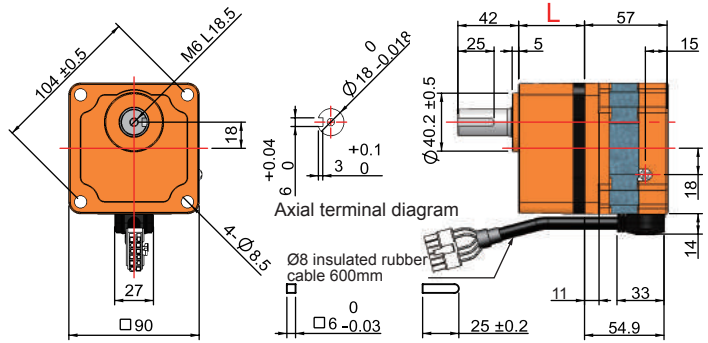
◆ 9B060S-D

Weight : 655g



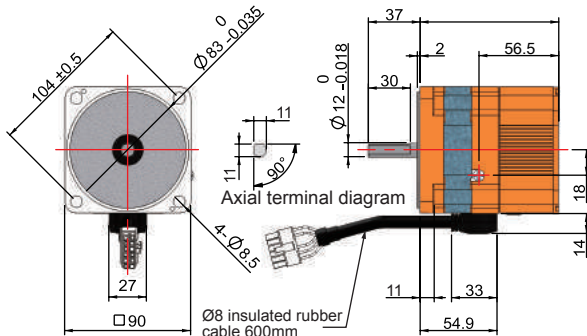
◆ 9B060PD-D + 9D□

Weight : 1500g+W



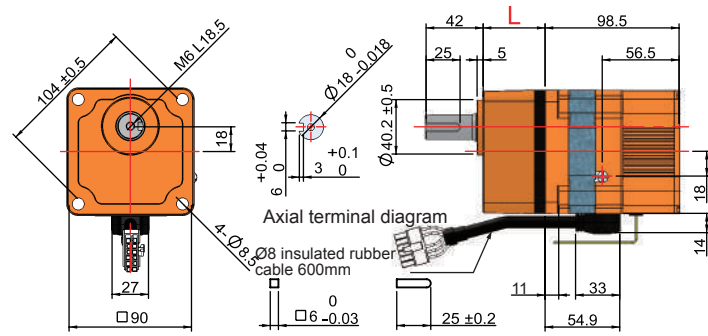
◆ 9B060S-DM

Weight : 2275g



◆ 9B060PD-DM + 9D□

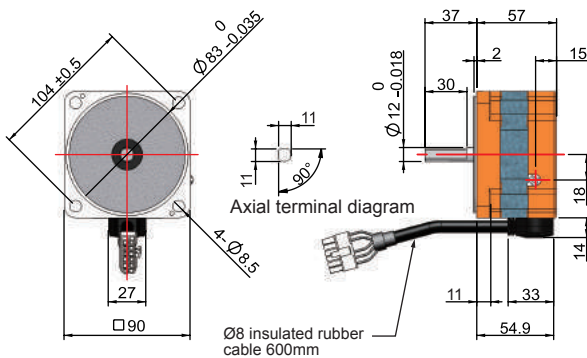
Weight : 2250g+W



100W/□90mm

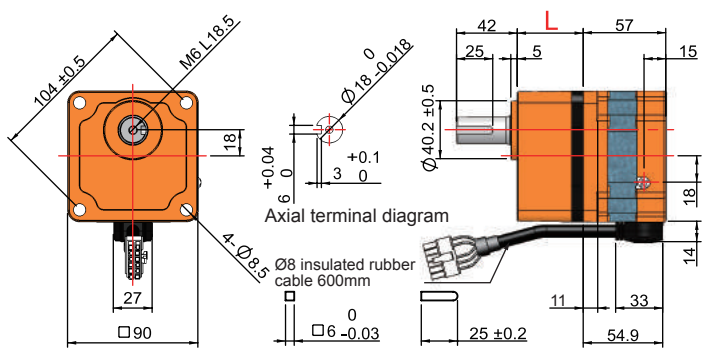
◆ 9B100S-D

Weight : 1525g



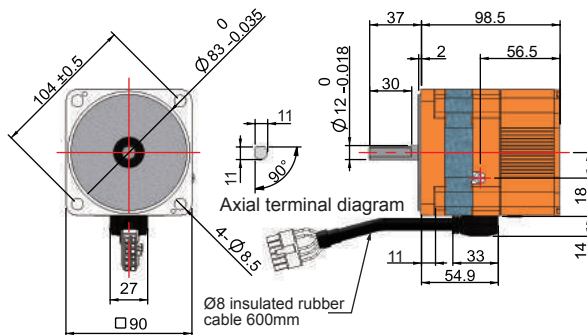
◆ 9B100PD-D + 9D□

Weight : 1500g+W



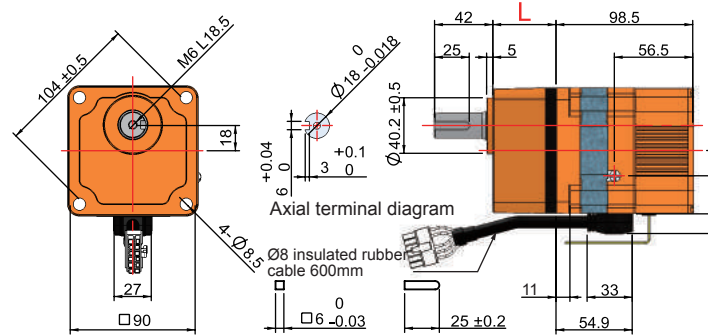
◆ 9B100S-DM

Weight : 2275g



◆ 9B100PD-DM + 9D□

Weight : 2250g+W



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

* 9B pinion shaft type 9D3-9D360, Gearhead length L and weight W specification as following:

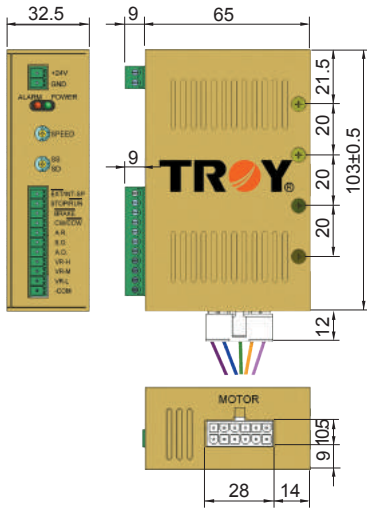
Model	9D3~9D20	9D25~9D100	9D120~9D360
Gearhead Length L (mm)	45.5	58.5	64.5
Weight W (g)	860	1125	1265

TRV-
Characteristics of Motor
Product index
Product names
Product weight
Technical Information
Gearhead
Installation
Certificates
Model naming
B M S
B S
S B S
C B S
□ B S
Accessories
Motor selection

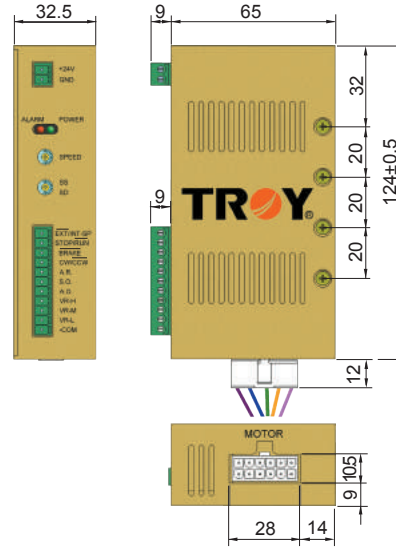
■ Dimensions - Driver

Unit : mm

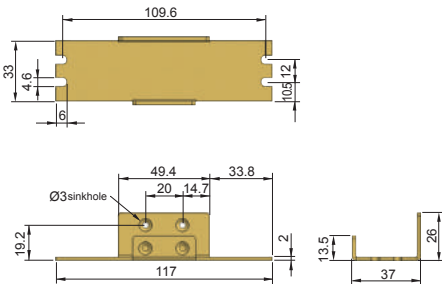
Model : DBD020-D / DBD040-D
Weight : 210g
Dimensions are common



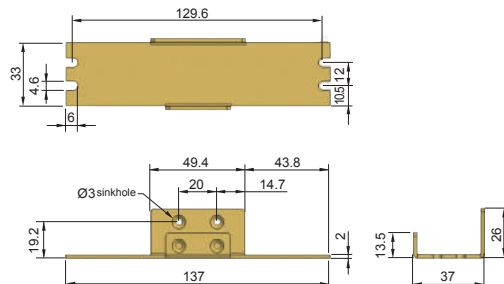
Model : DBD060-D / DBD100-D
Weight : 290g
Dimensions are common



Mounting sheet

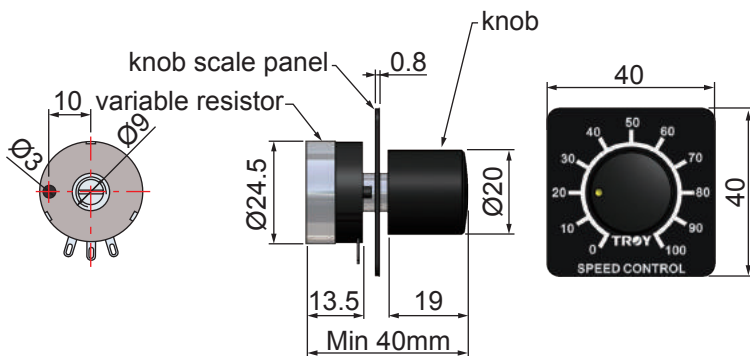


Mounting sheet



■ Dimensions - Variable resistor

Weight : 30g



* Figure above dimensions tolerance values are not labeled a general machining tolerances, the control mode, refer to P.12, others have marked tolerance values according to the drawing labeled based.

Motor selection sheet

■ Mechanism: [Operating of large index table]

Date dd / mm / yy

Company name: _____ Contact person: _____ Department/Title: _____

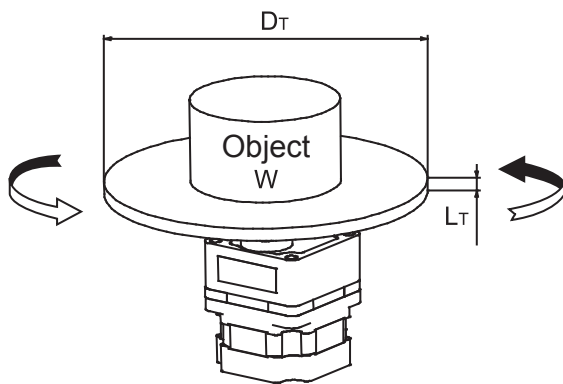
TEL: _____ FAX: _____ Application: _____ Use area: _____

Power input: Single -phase AC: ___ V Three -phase AC: ___ V DC: ___ V Frequency: Hz

Activated mode: Single direction operating continuously → Rated speed
 Regulated speed (Range: ___ rpm ~ ___ rpm)
 Single direction run 、 stop 、 run 、 stop → (Activated time: ___ Second/Sequence, stop time: ___ Second/Sequence; Run, stop total ___ Sequence /Minutes)
 Clockwise/counter clockwise repeated → (CW: ___ Second/Sequence 、 Stop: ___ Second/Sequence 、 CCW: ___ Second/Sequence 、 Stop: ___ Sequence/Minute)

Required motor: AC induction motor: Induction Reversible Speed control Magnetic brake Torque
 DC brushless motor: BMS Series BS Series SBS Series UBS Series DBS Series
 Stepping motor: 2 phase 3 phase 5 phase

【Mechanism reference】



【Please sketch your actual transmission part of mechanism】

【Drive mechanism and operating data】

Object mass	W = _____ kg
Index table diameter	D _T = _____ cm
Width	L _T = _____ cm
Material	ρ = _____
Positioning angle *(note)	θ = _____ deg
Positioning time *(note)	T ₀ = _____ sec
Stopping accuracy	± _____ mm

*(note)Please enter the max speed

Recommendation products (Selected specs) :

After complete above information, please fax it to nearby regional business office, we will select applicable product for you as soon as possible

Motor selection sheet

■ Mechanism: 【Lead screw】

Date dd / mm / yy

Company name: _____ Contact person: _____ Department/Title: _____

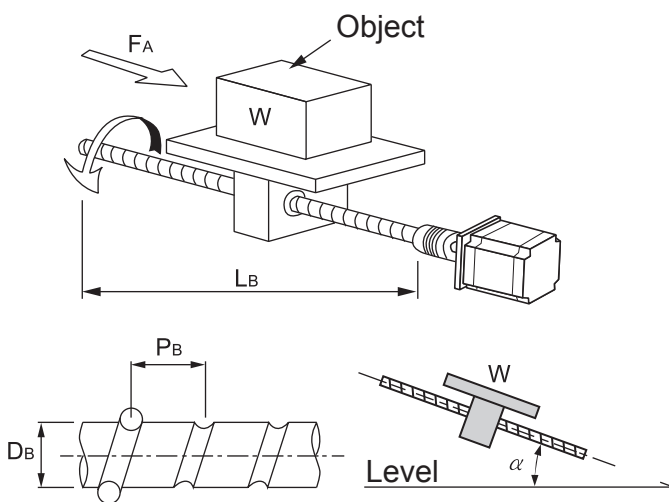
TEL: _____ FAX: _____ Application: _____ Use area: _____

Power input: Single -phase AC: ___V Three -phase AC: ___V DC: ___V Frequency: Hz

Activated mode: Single direction operating continuously → Rated speed
 Regulated speed (Range: ___ rpm ~ ___ rpm)
 Single direction run、stop、run、stop → (Activated time: ___ Second/Sequence, stop time: ___ Second/Sequence; Run, stop total ___ Sequence /Minutes)
 Clockwise/counter clockwise repeated → (CW: ___ Second/Sequence、Stop: ___ Second/Sequence、CCW: ___ Second/Sequence、Stop: ___ Sequence/Minute)

Required motor: AC induction motor: Induction Reversible Speed control Magnetic brake
 Torque
 DC brushless motor: BMS Series BS Series SBS Series UBS Series
 DBS Series
 Stepping motor: 2 phase 3 phase 5 phase

【Mechanism reference】



【Please sketch your actual transmission part of mechanism】

【Drive mechanism and operating data】

Work+Table mass	W = _____ kg	frictional coefficient of sliding surfaces	$\mu =$ _____
Screw angle	$\alpha =$ _____ deg	Positioning distance	L = _____ cm
Screw shaft diameter	$D_B =$ _____ cm	Positioning time	$T_O =$ _____ sec
Screw Length	$L_B =$ _____ cm	Push / Pull force	$F_A =$ _____ kg
Screw pitch	$P_B =$ _____ cm	Stopping accuracy	\pm _____ mm
Material	$\rho =$ _____		
Screw efficiency	$\eta =$ _____		
Internal frictional coefficient of pilot pressure nut	$\mu_0 =$ _____		

*(note)Please enter the max speed

Recommendation products (Selected specs) :

* After complete above information, please fax it to nearby regional business office, we will select applicable product for you as soon as possible

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Motor selection sheet

■ Mechanism: **[Belt and pulley]**

Date dd / mm / yy

Company name: _____ Contact person: _____ Department/Title: _____

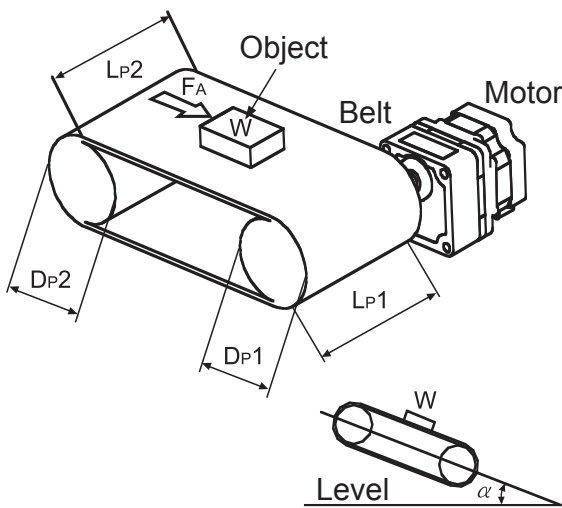
TEL: _____ FAX: _____ Application: _____ Use area: _____

Power input: Single -phase AC: V Three -phase AC: V DC: V Frequency: Hz

Activated mode: Single direction operating continuously → Rated speed
 Regulated speed (Range: rpm ~ rpm)
 Single direction run、stop、run、stop → (Activated time: Second/Sequence, stop time: Second/Sequence; Run, stop total Sequence /Minutes)
 Clockwise/counter clockwise repeated → (CW: Second/Sequence、Stop: Second/Sequence、CCW: Second/Sequence、Stop: Sequence/Minute)

Required motor: AC induction motor: Induction Reversible Speed control Magnetic brake Torque
 DC brushless motor: BMS Series BS Series SBS Series UBS Series DBS Series
 Stepping motor: 2 phase 3 phase 5 phase

【 Mechanism reference 】



【 Please sketch your actual transmission part of mechanism 】

【 Drive mechanism and operating data 】

Work + Table + Pulley	W = _____ kg	Belt、pulley efficiency	η = _____
Screw angle	α = _____ deg	frictional coefficient of sliding surfaces	μ = _____
Pulley diameter	Dp1 = _____ cm	Positioning distance *(note)	L = _____ cm
Width	Lp1 = _____ cm	Positioning time *(note)	To = _____ sec
Material	ρ 1 = _____	Push / Pull force	FA = _____ kg
Pulley diameter	Dp2 = _____ cm	Stopping accuracy	\pm _____ mm
Width	Lp2 = _____ cm		
Material	ρ 2 = _____	*(note)Please enter the max speed	

Recommendation products (Selected specs) :

※ After complete above information, please fax it to nearby regional business office, we will select applicable product for you as soon as possible

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 Characteristics of Motor
 Product index
 Product names
 Product weight
 Technical Information
 Gearhead
 Installation
 Certificates
 Model naming
 BMS
 BS
 SBS
 CBS
 DBS
 Accessories
 Motor selection

Motor selection sheet

■ Mechanism: [Others]

Date dd / mm / yy

Company name: _____ Contact person: _____ Department/Title: _____

FAX: _____ Application: _____ Use area: _____

Power input: Single -phase AC: ___V Three -phase AC: ___V DC: ___V Frequency: Hz


Activated mode: Single direction operating continuously → Rated speed
 Regulated speed (Range: ___ rpm ~ ___ rpm)
 Single direction run、stop、run、stop → (Activated time: ___ Second/Sequence, stop time: ___ Second/Sequence; Run, stop total ___ Sequence /Minutes)
 Clockwise/counter clockwise repeated → (CW: ___ Second/Sequence、Stop: ___ Second/Sequence、CCW: ___ Second/Sequence、Stop: ___ Sequence/Minute)

Required motor: AC induction motor: Induction Reversible Speed control Magnetic brake Torque
 DC brushless motor: BMS Series BS Series SBS Series UBS Series DBS Series
 Stepping motor: 2 phase 3 phase 5 phase

【Drive mechanism and operating data】 : Use the space below to draw the outline of your drive mechanism and fill in the operating conditions required

Recommendation products (Selected specs) :

※ After complete above information, please fax it to nearby regional business office, we will select applicable product for you as soon as possible



TROY

TROY

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