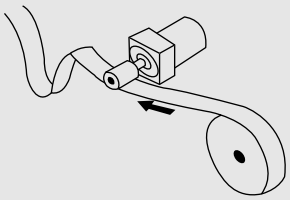
TORQUE MOTOR



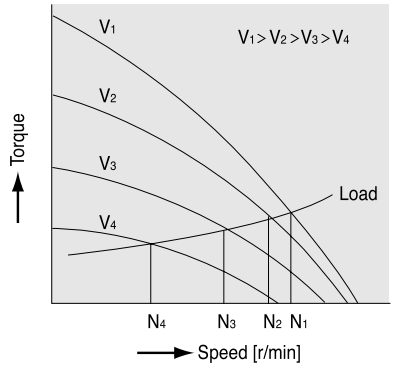
INDEX

■ Features

Torque motors are designed for providing high torque and sloping characteristics (torque is highest at zero speed and decreases steadily as speed increases), and operate stably over a wide speed range.

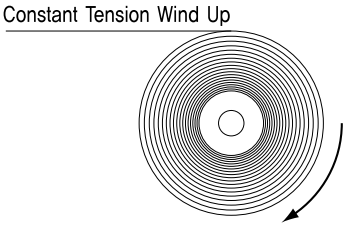
• Various Speed over a wide range

The torque is approximately in proportion to the square of the voltage. Easy speed control is available by changing the voltage of the power supply.



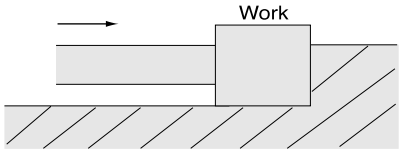
• Suitable for winding application

In an application where an object is released continuously at a constant speed and wound up with constant tension, the torque must be doubled and the speed must be halved if the diameter of winding spool is doubled.



• Locked Operation

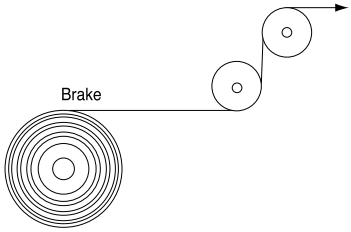
Torque motors are designed to provide stable torque even under stall conditions or at very low speeds (nearly stop). It is available only in torque motors not in induction motor or reversible motors, They are suitable for pushing applications that require static torque, or for loads that are usually under a locked rotor condition and are under stall conditions at the end of processes. At 60 VAC or less the continuous operation is possible but when it is used at voltages above 60 VAC, the motors are rated for limited duty.
The motor has a about 5-minute rating at 115 VAC or 220 VAC.



Note : When using a motor in locked rotor condition, the output torque becomes very large. Do not exceed the permissible torque of the gearhead. Also, ensure that the work does not hit an object and stop, since this can cause damage to the gearhead due to the shock.

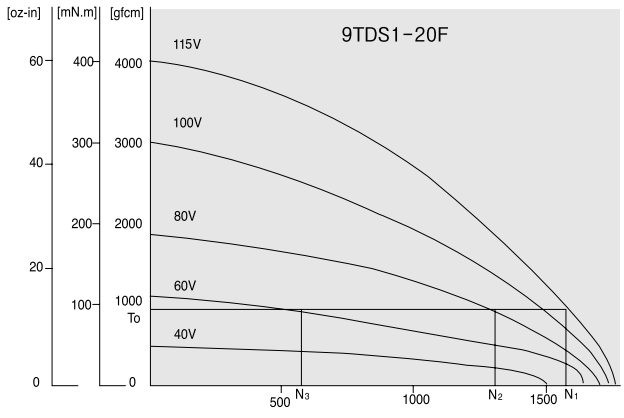
• Use as a brake

By using the motor in the braking region of the speed-torque characteristics, it can be used as a brake.



■ Speed-Torque Characteristics

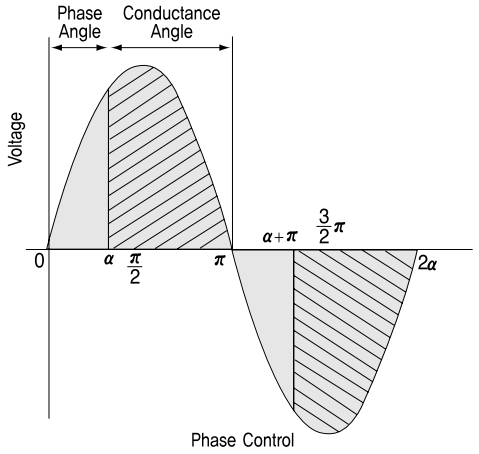
The torque of torque motor is approximately in proportion to the square of the voltage. When the voltage supplied to the motor is changed, speed-torque curves with a sloping characteristics (torque is highest at zero speed and decreases steadily as speed increases) will be corresponding voltage.
If the voltage is changed to 115 VAC, 80 VAC and 60 VAC while the load torque is T0, the motor rotates at the speeds N1, N2 and N3 respectively. That is to say, the speed can be changed easily by varying the voltage.
In choosing a torque motor, first determine the required torque and speed and then select a motor using the speed-torque characteristics curves to determine whether the motors should be operated under continuous duty or limited duty. In using motor under locked rotor conditions, only the torque factor is considered.



Voltage Control of Torque Motors

As shown in the graph, as the phase angle "alpha" at which the triac switches changes, the input voltage is controlled as represented by the phase angle areas of the graph.

* When changing the speed or the torque, an external voltage controller is needed.



Reversible Motor Line-Up

Frame size □mm (in.)	Output W	Type	Power (Voltage)					Page
			Single phase		Three phase			
			100/110/115V	200/220/230V	200/220/230V	380 V	440V	
70(2.76)	6	Lead Wire Terminal box	● -	● -	- -	- -	- -	132
80(3.15)	10	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	134
90(3.54)	20	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	136
	30	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	138
	40	Lead Wire Terminal box	● ●	● ●	- -	- -	- -	140

General Specifications

Item	Specifications
Insulation Resistance	100 ㏁ or more when 500 VDC is applied between the windings and the frame after rated motor opeation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 KV at 50 Hz and 60 Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80℃ (144℉) or less measured by the resistance change method after rated motor operation with connecting a gearhead or equivalent heat radiation plate. [Three-Phase 6W type : 70℃ (126℉)]
Insulation Class	Class B [130℃ (266℉)]
Overheat Protection	Operating temperature, open : 130℃ ± 5℃ (266℃ ±9℉) close : 82℃ ± 15℃ (179.6℉ ± 27℉)
Ambient Temperture Range	-10℃ ~ + 40℃ (14℉ ~ 104℉) (nonfreezing)
Ambient Humidity	85% maximum (noncondensing)

TORQUE MOTOR
6W

□70mm(2.76in.)
LEAD WIRE TYPE

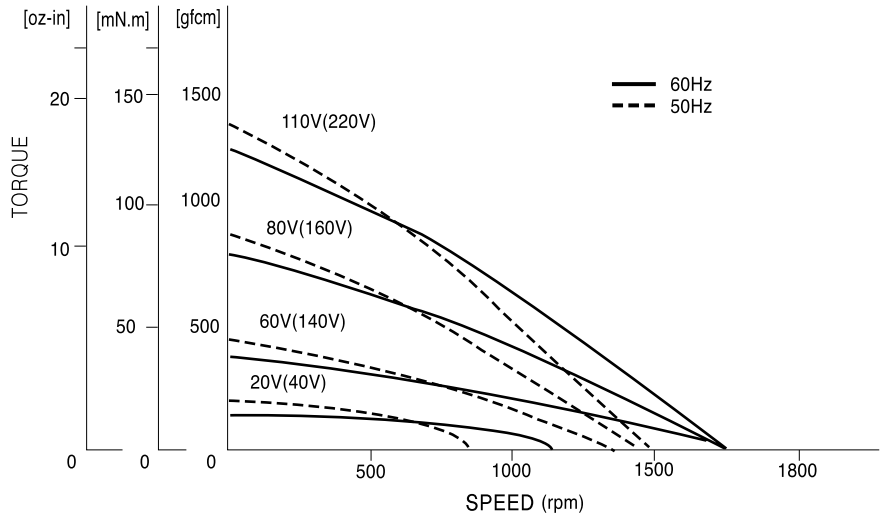
LEAD WIRE TYPE

Motor Specification - 5min. Rating

Model 7TDG□-6G : Pinion Shaft Type 7TDS□-6 : Round Shaft Type		Rating at Locked Rotor	Voltage	Freq.	Starting Torque			Output		At max. ouput power						Capacitor	
										Speed	TORQUE			Current	Input		
Lead Wire Type	Terminal Box Type		VAC	Hz	gfcm	mN.m	oz-in	HP	W		gfcm	mN.m	oz-in	A	W	μF	VAC
(TP) **7TDG(S)A-6G**	-	5minutes Continuous	Single Phase 115 Single Phase 60	60	1200 420	120 42	17 5.95	1/93 1/300	8 2.5	900	700 230	70 23	10 3	0.6 0.21	57 17	10	250
(TP) **7TDG(S)B-6G**	-	5minutes Continuous	Single Phase 220 Single Phase 140	60	1200 420	120 42	17 5.95	1/93 1/300	8 2.5		700 230	70 23	10 3	0.18 0.09	57 17	1.5	400
(TP) **7TDG(S)C-6G**	-	5minutes Continuous	Single Phase 220 Single Phase 140	50	1400 540	140 54	19.8 6.09	1/125 1/300	6 2.3	750	800 300	80 30	11 4	0.18 0.09	55 19	1.5	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.
* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.
(TP) : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

Speed-Torque Characteristics (Ref.)



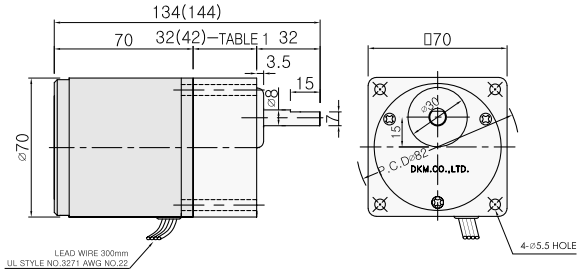
Permissible Torque When using gearhead

Please refer to page 18.

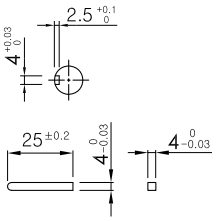
Dimension

◆ GEARED MOTOR

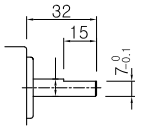
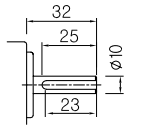
* MOTOR MODEL : 7TDG□-6G (NO FAN)
* HEAD MODEL : 7GB□3BMH - 7GB□180BMH



◆ KEY SPEC

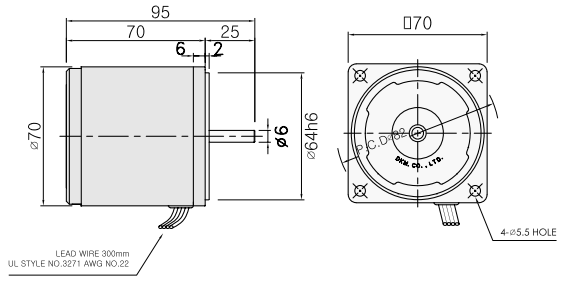


◆ GEARHEAD 출력축 사양

MODEL	출력축 구분
D-CUT TYPE 7GBD3BMH ~7GBD180BMH	
KEY TYPE 7GBK3BMH ~7GBK180BMH	

◆ MOTOR ONLY

* MOTOR MODEL : 7TD□□-6 (NO FAN)



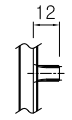
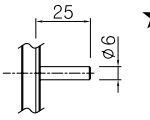
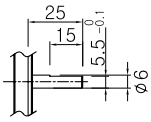
◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.94
GEAR HEAD	7GB□3BMH - 7GB□18BMH	0.36
	7GB□25BMH - 7GB□30BMH	0.44
	7GB□36BMH - 7GB□180BMH	0.5

◆ 32(42)-TABLE1

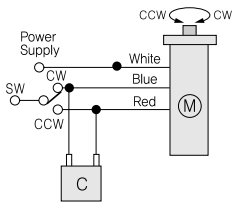
SIZE(mm)	GEAR RATIO
32	7GB□3BMH - 7GB□18BMH
42	7GB□25BMH - 7GB□180BMH

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE 7TDG□-6G	
ROUND TYPE 7TDS□-6	
D-CUT TYPE 7TDD□-6	

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams

Single phase (CW, CCW)	Three phase (CW, CCW)
	Not Available

CW : To rotate the motor in a clockwise(CW) direction, flip switch SW to CW.
CCW : To rotate it in a countercloc kwise (CCW) direction, flip switch SW to CCW.

- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

TORQUE MOTOR
10W

□80mm(3.15in.)

LEAD WIRE TYPE

TERMINAL BOX TYPE

■ Motor Specification - 5min. Rating

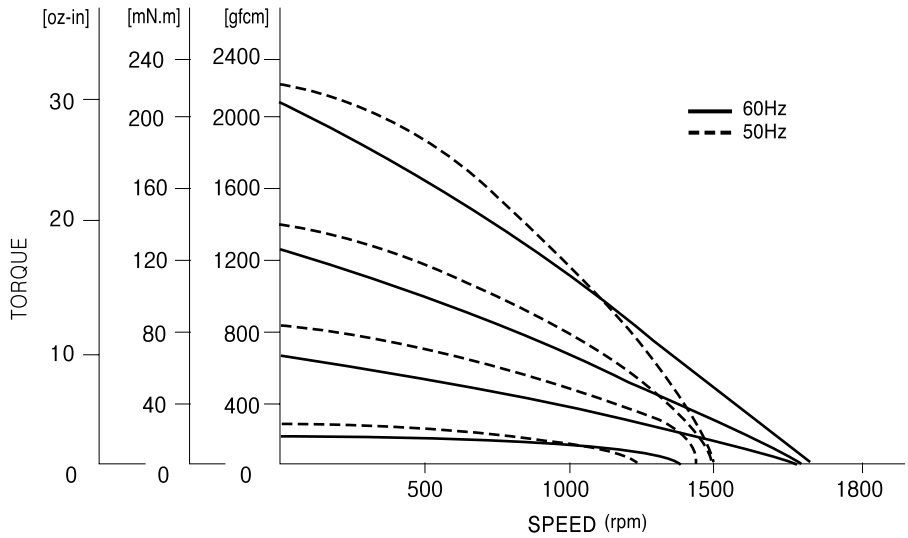
CE

Model 8TDG□-10G : Pinion Shaft Type 8TDS□-10 : Round Shaft Type		Rating at Locked Rotor	Voltage	Freq.	Starting Torque			Output		At max. ouput power						Capacitor	
										Speed	TORQUE			Current	Input		
Lead Wire Type	Terminal Box Type		VAC	Hz	gfcm	mN.m	oz-in	HP	W		gfcm	mN.m	oz-in	A	W	μF	VAC
(TP) **8TDG(S)A-10G**	**8TDG(S)A-10G-T**	5minutes Continuous	Single Phase 115 Single Phase 60	60	2100 700	210 70	29.7 9.9	1/62 1/214	12 3.5	900	1000 380	100 38	14 5	0.8 0.5	67 19	10	250
(TP) **8TDG(S)B-10G**	**8TDG(S)B-10G-T**	5minutes Continuous	Single Phase 220 Single Phase 140	60	2200 750	220 75	31.1 10.6	1/75 1/214	10 3.5		1000 380	100 38	14 5	4.0 0.25	67 19	2.0	400
(TP) **8TDG(S)C-10G**	**8TDG(S)C-10G-T**	5minutes Continuous	Single Phase 220 Single Phase 140	50	2300 750	230 75	32.5 10.6	1/62 1/214	12 3.5	750	1300 460	130 46	18 7	4.0 0.25	63 24	2.0	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.
* 'Pinion Shaft' is for attaching gearhead and 'Round Shaft' is for using motor only.

(TP) : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

■ Speed-Torque Characteristics (Ref.)



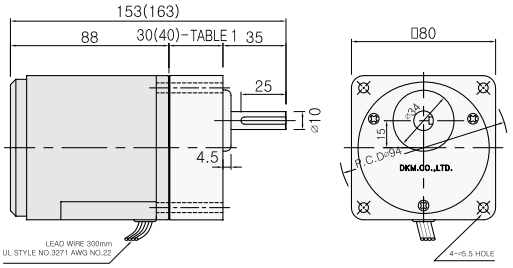
■ Permissible Torque When using gearhead

Please refer to page 22.

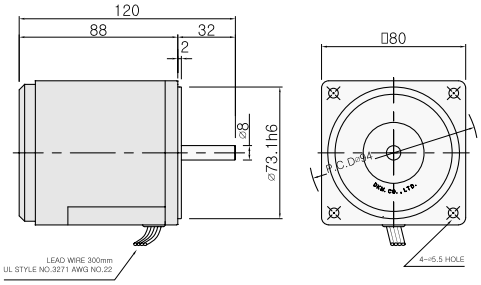
Dimension

LEAD WIRE TYPE

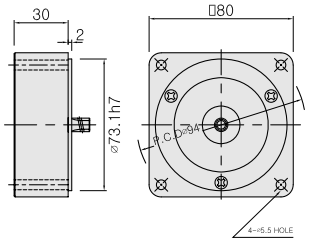
◆ GEARED MOTOR * MOTOR MODEL : 8TDG□-10G (NO FAN)
* HEAD MODEL : 8GB □3BMH - 8GB□360BMH



◆ MOTOR ONLY * MOTOR MODEL : 8TD□□-10 (NO FAN)

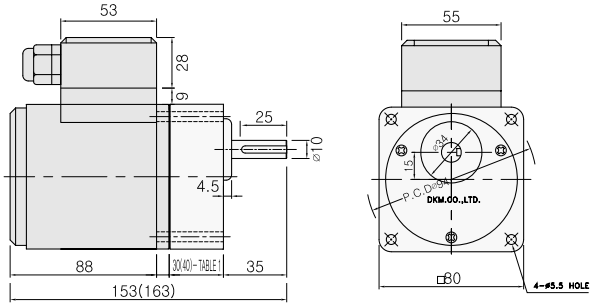


◆ INTER-DECIMAL GEARHEAD
* MODEL : 8XD10M□



TERMINAL BOX TYPE

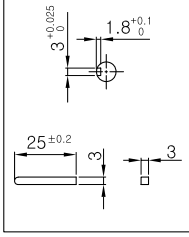
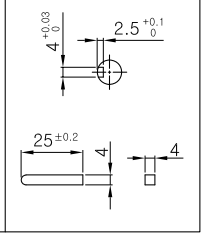
* MOTOR MODEL : 8TDG□-10G-T (NO FAN)



◆ 30(40)-TABLE1

SIZE(mm)	GEAR RATIO
30	8GB□3BMH - 8GB□18BMH
40	8GB□25BMH - 8GB□360BMH

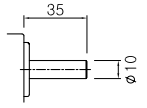
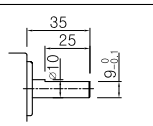
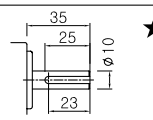
◆ KEY SPEC

MOTOR	GEARHEAD
	

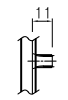
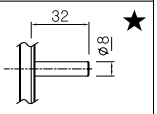
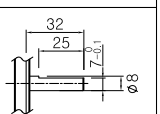
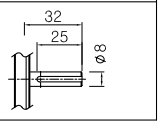
◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.7
DECIMAL GEARHEAD		0.44
GEAR HEAD	8GB□3BMH - 8GB□18BMH	0.48
	8GB□25BMH - 8GB□30BMH	0.61
	8GB□36BMH - 8GB□180BMH	0.67
	8GB□200BMH - 8GB□360BMH	0.63

◆ GEARHEAD OUTPUT

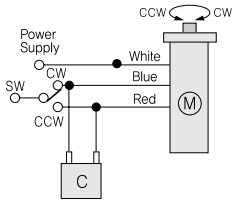
MODEL	SHAFT
ROUND TYPE 8GBS3BMH ~8GBS360BMH	
D-CUT TYPE 8GBD3BMH ~8GBD360BMH	
KEY TYPE 8GBK3BMH ~8GBK360BMH	

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE 8TDG□-10G	
ROUND TYPE 8TDS□-10	
D-CUT TYPE 8TDD□-10	
KEY TYPE 8TDK□-10	

* Note : Above table indicates output shaft dimension made by user' s request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams

Single phase (CW, CCW)	Three phase (CW, CCW)
	Not Available

CW : To rotate the motor in a clockwise(CW) direction, flip switch SW to CW.
CCW : To rotate it in a countercloc kwise (CCW) direction, flip switch SW to CCW.

- The direction of motor rotation is as viewed from the shaft end of the motor.
- CW represents the clockwise direction, while CCW represents the counterclockwise direction.
- Connection diagrams are also valid for the equivalent round shaft type.
- Change the direction of single-phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

TORQUE MOTOR
20W

□90mm(3.54in.)

LEAD WIRE TYPE

TERMINAL BOX TYPE

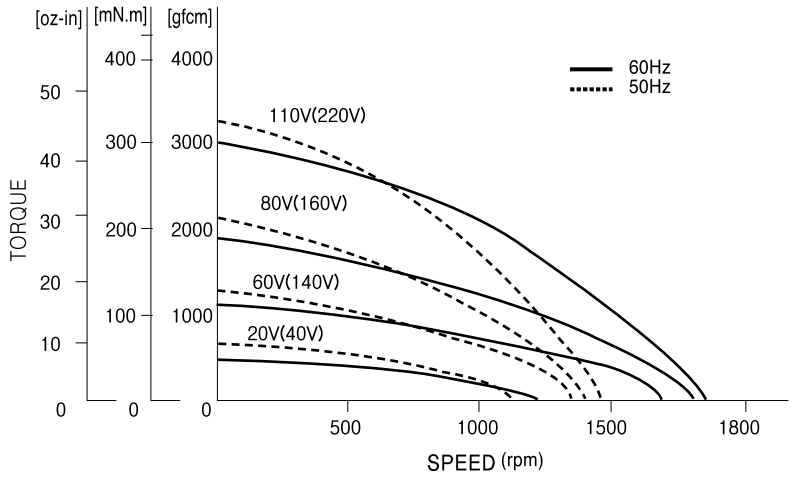
■ Motor Specification - 5min. Rating

Model 9TDG□-20FG : Pinion Shaft Type 9TDD□-20F : D-Cut Shaft Type		Rating at Locked Rotor	Voltage	Freq.	Starting Torque			Output		At max. ouput power						Capacitor	
										Speed	TORQUE			Current	Input		
Lead Wire Type	Terminal Box Type		VAC	Hz	gfcm	mN.m	oz-in	HP	W		gfcm	mN.m	oz-in	A	W	μF	VAC
(TP) **9TDG(D)A-20G**	**9TDG(D)A-20G-T**	5minutes Continuous	Single Phase 115 Single Phase 60	60	3000 900	300 90	42 13	1/38 1/125	20 6.0	900	2200 650	220 65	31 9	1 0.7	110 29	16	250
(TP) **9TDG(D)B-20G**	**9TDG(D)B-20G-T**	5minutes Continuous	Single Phase 220 Single Phase 140	60	3000 900	300 90	42 13	1/38 1/125	20 6.0		2200 650	220 65	31 9	0.6 0.35	110 29	4.0	400
(TP) **9TDG(D)C-20G**	**9TDG(D)C-20G-T**	5minutes Continuous	Single Phase 220 Single Phase 140	50	3200 1000	320 100	45 14	1/38 1/125	20 6.0	750	2200 650	220 65	31 9	0.6 0.35	96 32	4.0	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.
* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

(TP) : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

■ Speed-Torque Characteristics (Ref.)



■ Permissible Torque When using gearhead

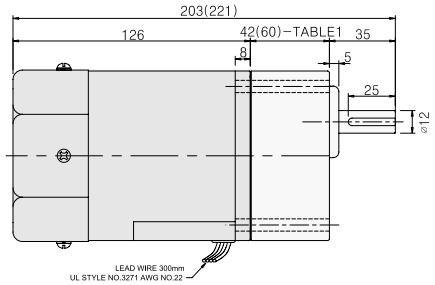
Please refer to page 26.

Dimension

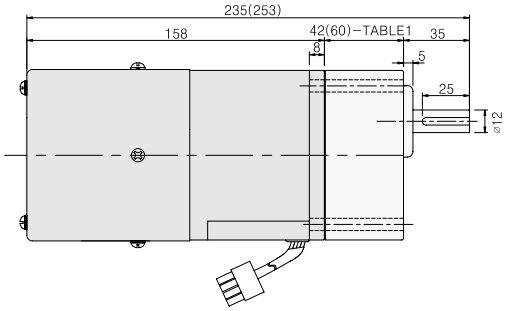
LEAD WIRE TYPE

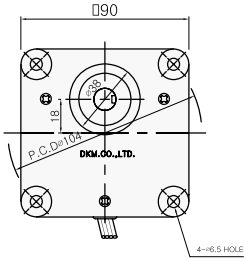
◆ GEARED MOTOR

* MOTOR MODEL : 9TDG□-20FG (GENERAL FAN)
* GEARHEAD MODEL : 9GB□3MH - 9GB□180MH

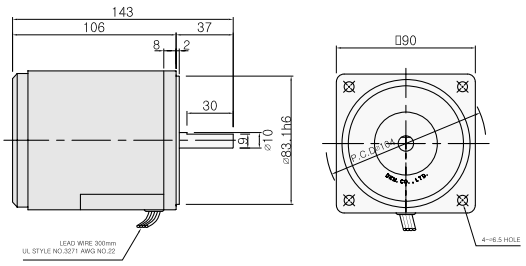


* MOTOR MODEL : 9TDG□-20F2G (POWERFUL FAN)
* GEARHEAD MODEL : 9GB□3MH - 9GB□180MH



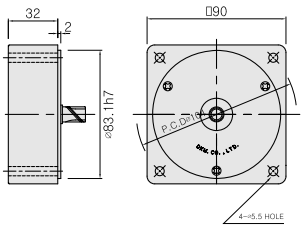


◆ MOTOR ONLY * MOTOR MODEL : 9TD□□-20 (NO FAN)



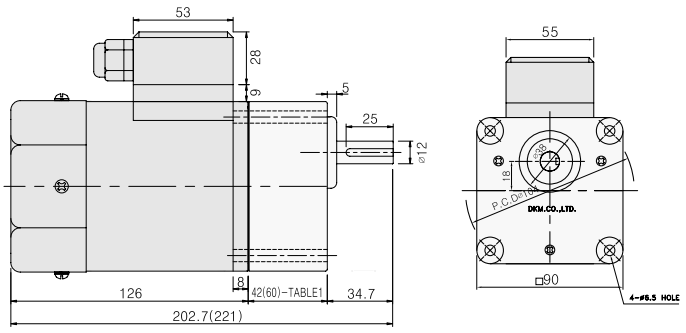
◆ INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M □



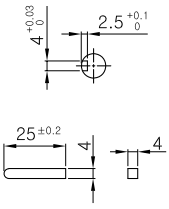
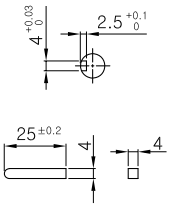
TERMINAL BOX TYPE

* MOTOR MODEL : 9TDG □ -20FG-T (GENERAL FAN)



* Note : There are 3 kinds of fan type (No Fan / General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

◆ KEY SPEC

MOTOR	GEARHEAD
	

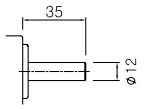
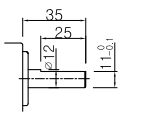
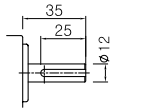
◆ 42(60)-TABLE1

SIZE(mm)	GEAR RATIO
42	9GB□3MH - 9GB□15MH
60	9GB□18MH - 9GB □180MH

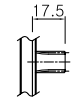
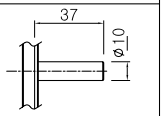
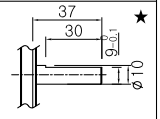
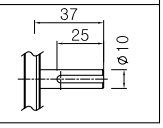
◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.4
DECIMAL GEARHEAD		0.5
GEAR HEAD	9GB□3MH - 9GB□15MH	0.67
	9GB□18MH - 9GB□30MH	0.96
	9GB□36MH - 9GB□180MH	1.07

◆ GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE 9GBS3MH ~9GBS180MH	
D-CUT TYPE 9GBD3MH ~9GBD180MH	
KEY TYPE 9GBK3MH ~9GBK180MH	

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE 9TDG□-20G	
ROUND TYPE 9TDS□-20	
D-CUT TYPE 9TDD□-20	
KEY TYPE 9TDK□-20	

* Note : Above table indicates output shaft dimension made by user' s request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 135.

TORQUE MOTOR
30W

□90mm(3.54in.)

LEAD WIRE TYPE MOTOR
+ PB TYPE GEARHEAD

LEAD WIRE TYPE MOTOR
+ PF TYPE GEARHEAD

TERMINAL BOX TYPE MOTOR
+ PF TYPE GEARHEAD

■ Motor Specification - 5min. Rating

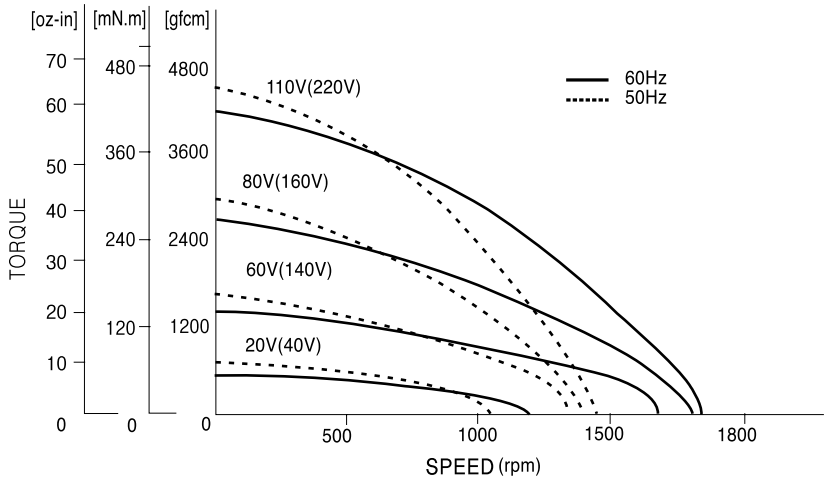
CE

Model 9TDG□-30FG : Pinion Shaft Type 9TDD□-30F : D-Cut Shaft Type		Rating at Locked Rotor	Voltage	Freq.	Starting Torque			Output		At max. ouput power						Capacitor	
										Speed	TORQUE			Current	Input		
Lead Wire Type	Terminal Box Type		VAC	Hz	gfcm	mN.m	oz-in	HP	W		gfcm	mN.m	oz-in	A	W	μF	VAC
(TP) **9TDG(D)A-30FP**	**9TDG(D)A-30FP-T**	5minutes Continuous	Single Phase 115 Single Phase 60	60	4500 1500	450 150	64 21	1/25 1/63	30 12	900	3300 1300	330 130	47 18	1.6 0.9	150 60	20	250
(TP) **9TDG(D)B-30FP**	**9TDG(D)B-30FP-T**	5minutes Continuous	Single Phase 220 Single Phase 140	60	4500 1500	450 150	64 21	1/25 1/63	30 12		3300 1300	330 130	47 18	0.9 0.5	140 50	5.0	400
(TP) **9TDG(D)C-30FP**	**9TDG(D)C-30FP-T**	5minutes Continuous	Single Phase 220 Single Phase 140	50	4600 1600	450 150	65 23	1/25 1/63	30 12	750	3300 1300	330 130	47 18	0.9 0.5	140 50	5.0	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.
* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

(TP) : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

■ Speed-Torque Characteristics (Ref.)



■ Permissible Torque When using gearhead

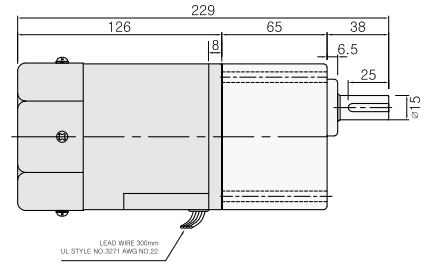
Please refer to page 28.

Dimension

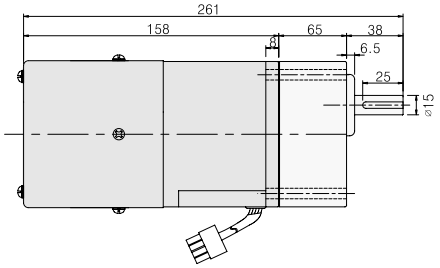
LEAD WIRE TYPE

◆ GEARED MOTOR

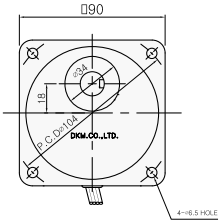
* MOTOR MODEL : 9TDG□-30FP (GENERAL FAN)



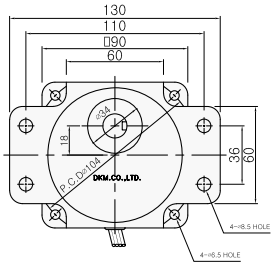
* MOTOR MODEL : 9TDG□-30F2P (POWERFUL FAN)



* GEARHEAD MODEL :
9PB□3BH - 9PB□180BH

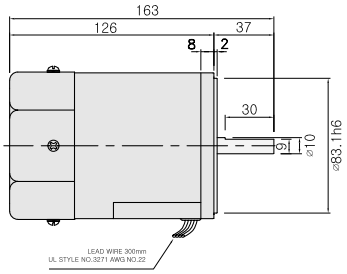


* GEARHEAD MODEL :
9PF□3BH - 9PF□180BH

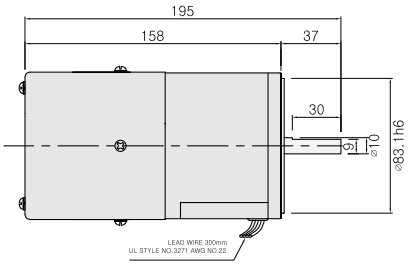


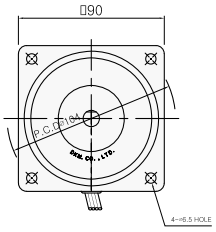
◆ MOTOR ONLY

* MOTOR MODEL : 9TD□□-30F (GENERAL FAN)



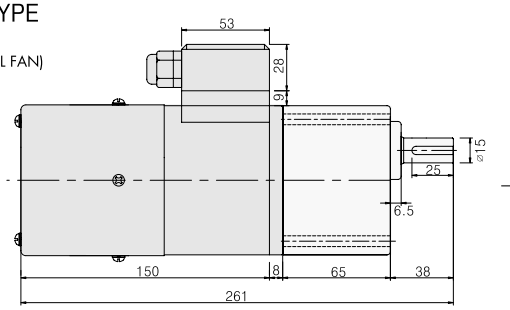
* MOTOR MODEL : 9TD□□-30F2 (POWERFUL FAN)

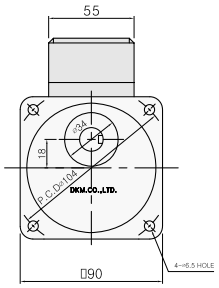




TERMINAL BOX TYPE

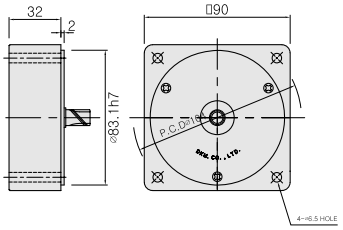
* MOTOR MODEL :
9TDG□-30F2P-T (POWERFUL FAN)





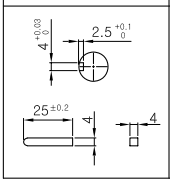
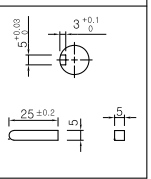
◆ INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



* Note : There are 2 kinds of fan type (General Fan / Powerful Fan).
Customer can choose fan type according to wanted rating time.

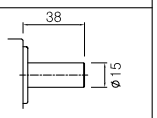
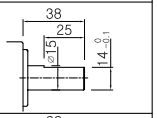
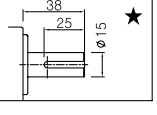
◆ KEY SPEC

MOTOR	GEARHEAD
	

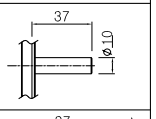
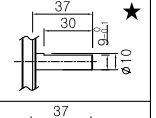
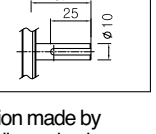
◆ WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.7
DECIMAL GEARHEAD		0.5
GEAR HEAD	9P□□3BH - 9P□□9BH	1.3
	9P□□12.5BH - 9P□□18BH	1.3
	9P□□25BH - 9P□□60BH	1.4
	9P□□90BH - 9P□□180BH	1.4

◆ GEARHEAD OUTPUT

MODEL	SHAFT
ROUND TYPE	
9P□S3BH ~9P□S180BH	
D-CUT TYPE	
9P□D3BH ~9P□D180BH	
KEY TYPE	
9P□K3BH ~9P□K180BH	

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE	
9TDG□-30□ P	
ROUND TYPE	
9TDS□-30□	
D-CUT TYPE	
9TDD□-30□	
KEY TYPE	
9TDK□-30□	

* Note : Above table indicates output shaft dimension made by user's request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 135.

TORQUE MOTOR
40W

□90mm(3.54in.)

LEAD WIRE TYPE MOTOR
+ PB TYPE GEARHEAD

LEAD WIRE TYPE MOTOR
+ PF TYPE GEARHEAD

단자 BOX TYPE MOTOR
+ PF TYPE GEARHEAD

TERMINAL BOX TYPE MOTOR
+ H TYPE GEARHEAD

Motor Specification

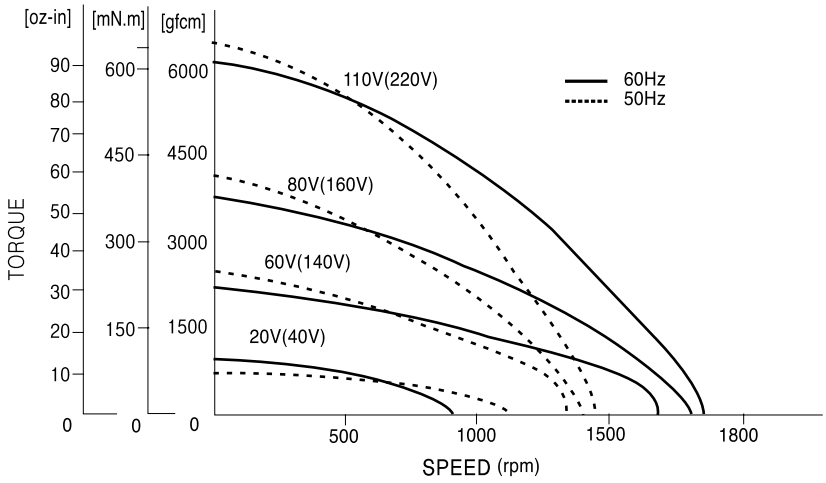
CE

Model 9TDG□-40FG : Pinion Shaft Type 9TDD□-40F : D-Cut Shaft Type		Rating at Locked Rotor	Voltage	Freq.	Starting Torque			Output		At max. ouput power						Capacitor	
										Speed	TORQUE			Current	Input		
Lead Wire Type	Terminal Box Type		VAC	Hz	gfcm	mN.m	oz-in	HP	W		gfcm	mN.m	oz-in	A	W	μF	VAC
(TP) **9TDG(D)1-40FP**	**9TDG(D)1-40FP-T**	5minutes Continuous	Single Phase 110 Single Phase 60	60	6000 2000	600 200	85 28	1/19 1/44	40 17	900	4500 1800	450 180	64 25	2.4 1.6	200 120	25	250
(TP) **9TDG(D)2-40FP**	**9TDG(D)2-40FP-T**	5minutes Continuous	Single Phase 220 Single Phase 140	60	6000 2000	600 200	85 28	1/19 1/44	40 17		4500 1800	450 180	64 25	1.2 0.8	200 120	6.5	400
(TP) **9TDG(D)C-40FP**	**9TDG(D)C-40FP-T**	5minutes Continuous	Single Phase 220 Single Phase 140	50	6100 2100	610 210	86 30	1/19 1/44	40 17	750	4500 1800	450 180	64 25	1.2 0.8	200 120	6.5	400

* Enter the 'Phase & Voltage' code in the box(□) within the motor model name.
* 'Pinion Shaft' is for attaching gearhead and 'D-Cut Shaft' is for using motor only.

(TP) : Contains a built-in thermal protector. If a motor overheats for any reason the thermal protector opened and the motor stops. When the motor temperature Drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting. By attaching F2 FAN additionally, temperature reducing of over 10℃ could be available.

Speed-Torque Characteristics (Ref.)



Permissible Torque When using gearhead

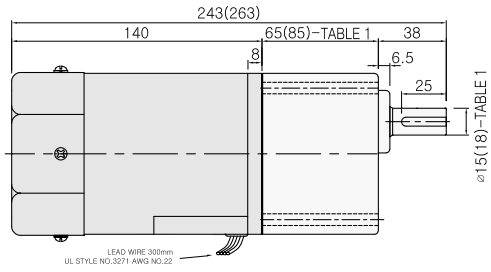
Please refer to page 30.

Dimension

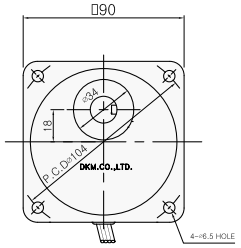
LEAD WIRE TYPE

◆ GEARED MOTOR

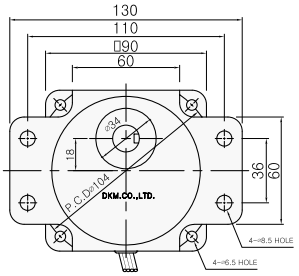
* MOTOR MODEL : 9TDG□-40FP(H) (GENERAL FAN)



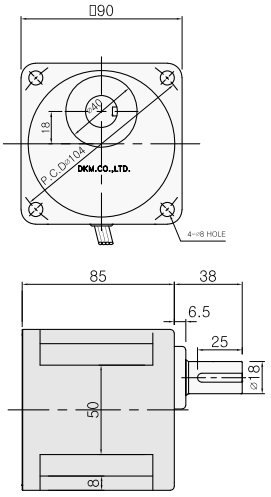
* GEARHEAD MODEL : 9PB□3BH - 9PB□180BH



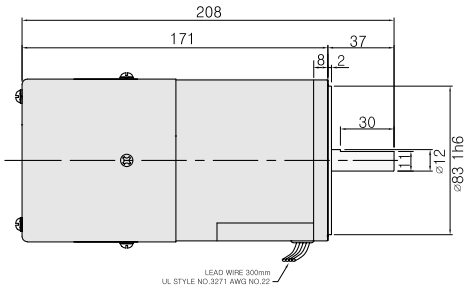
* GEARHEAD MODEL : 9PF□3BH - 9PF□180BH

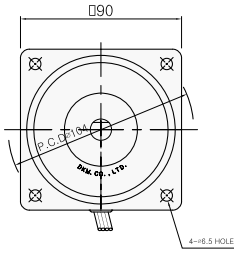


* GEARHEAD MODEL : 9HB□3BH - 9HB□180BH



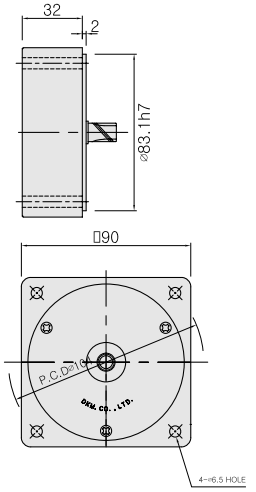
◆ MOTOR ONLY * MOTOR MODEL : 9TD□□-40F2 (POWERFUL FAN)





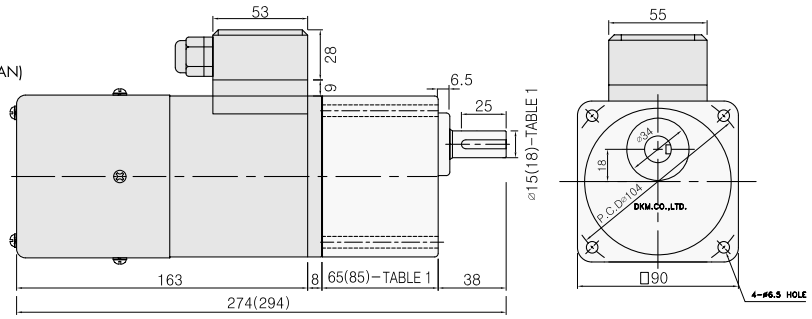
◆ INTER-DECIMAL GEARHEAD

* MODEL : 9XD10M□



TERMINAL BOX TYPE

* MOTOR MODEL : 9TDG□-40F2P(H)-T (POWERFUL FAN)

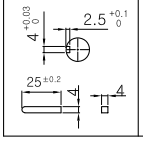
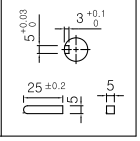


* Note : There are 2 kinds of fan type (General Fan / Powerful Fan). Customer can choose fan type according to wanted rating time.

◆ 65(85)-TABLE1

SIZE(mm)	GEARHEAD TYPE
65 ~ ø15	P TYPE GEARHEAD
85 ~ ø18	H TYPE GEARHEAD

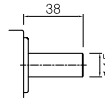
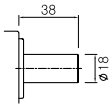
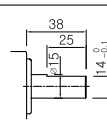
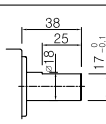
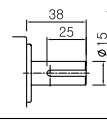
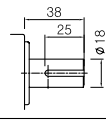
◆ KEY SPEC

MOTOR	GEARHEAD
	

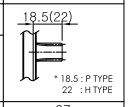
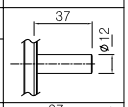
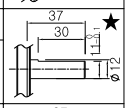
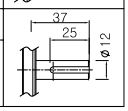
◆ WEIGHT

PART		WEIGHT(Kg)	
MOTOR		3.1	
DECIMAL GEARHEAD		0.5	
GEAR HEAD	GEARHEAD TYPE	P TYPE	H TYPE
	9P(H)□□ 3BH - 9P(H)□□9BH	1.3	1.45
	9P(H)□□ 12.5BH - 9P(H)□□18BH	1.3	1.5
	9P(H)□□ 25BH - 9P(H)□□60BH	1.4	1.7
	9P(H)□□ 90BH - 9P(H)□□180BH	1.4	1.8

◆ GEARHEAD OUTPUT

MODEL	P TYPE	H TYPE
ROUND TYPE 9P(H)□S3BH ~9P(H)□S180BH		
D-CUT TYPE 9P(H)□D3BH ~9P(H)□D180BH		
KEY TYPE 9P(H)□K3BH ~9P(H)□K180BH		

◆ MOTOR OUTPUT

MODEL	SHAFT
GEAR TYPE 9TDG□-40□ P(H)	
ROUND TYPE 9TDS□-40□	
D-CUT TYPE 9TDD□-40□	
KEY TYPE 9TDK□-40□	

* Note : Above table indicates output shaft dimension made by user' s request and ★ indicates the basic dimension in factory shipping.

Connection Diagrams Please refer to page 135.