

## 60W

INDUCTION MOTOR, REVERSIBLE MOTOR

□ 90mm TERMINAL BOX TYPE

### INDUCTION MOTOR - CONTINUOUS RATING

SIZE mm sq.	Type	Poles	Output (W)	Voltage (V)	Frequency (Hz)	Duty	Rated Load				Starting Torque		Capacitor (uF)
							Current (A)	Speed (rpm)	Torque (kg-cm) (N-m)		(kg-cm)	(N-m)	
90	S9160GA( )-T S9160GA( )-T1	4	60	1 ∅ 110	60	Cont.	1.35	1600	3.80	0.380	4.80	0.480	15.0
	S9160GB( )-T S9160GB( )-T1	4	60	1 ∅ 220	60	Cont.	0.68	1600	3.90	0.390	4.80	0.480	4.0
	S9160GC( )-T S9160GC( )-T1	4	60	1 ∅ 100	50	Cont.	1.26	1300	4.60	0.460	3.40	0.340	15.0
					60		1.37	1550	3.90	0.390			
	S9160GD( )-T S9160GD( )-T1	4	60	1 ∅ 200	50	Cont.	0.65	1300	4.70	0.470	3.85	0.385	4.0
					60		0.70	1550	4.00	0.400			
	S9160GX( )-T S9160GX( )-T1 S9160GX( )-TCE S9160GX( )-T1CE	4	60	1 ∅ 220	50	Cont.	0.47	1300	4.60	0.460	3.20	0.320	3.5
				1 ∅ 240					4.90	0.490	3.90	0.390	
	S9160GU( )-T S9160GU( )-T1 S9160GU( )-TCE S9160GU( )-T1CE	4	60	3 ∅ 200	50	Cont.	0.60	1300	4.60	0.460	9.30	0.930	—
					60		0.50	1550	3.90	0.390	8.00	0.800	
	S9160GT( )-T S9160GT( )-T1 S9160GT( )-TCE S9160GT( )-T1CE	4	60	3 ∅ 220	50	Cont.	0.80	1350	4.40	0.440	11.35	1.135	—
					60		0.57	1600	3.90	0.390	9.30	0.930	
	S9160GS( )-T S9160GS( )-T1 S9160GS( )-TCE S9160GS( )-T1CE	4	60	3 ∅ 380	50	Cont.	0.27	1300	4.60	0.460	8.25	0.825	—
					60		0.24	1550	3.90	0.390	6.50	0.650	
3 ∅ 400				50	Cont.	0.29	1300	4.70	0.470	9.30	0.930		
				60		0.25	1550	4.00	0.400	7.35	0.735		
3 ∅ 415				50	Cont.	0.27	1350	4.60	0.460	9.95	0.995		
				60		0.23	1600	3.80	0.380	7.50	0.750		
3 ∅ 440	50	Cont.	0.31	1350	4.70	0.470	10.75	1.075					
	60		0.25	1600	3.90	0.390	8.40	0.840					

❖ CE marked at the end of the model name indicates that it is thermally protected type which has received CE with built-in TP.

❖ TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted.

S9140GX, S9140GX-T, S9140GS-T is thermally protected type with TP mounted.

❖ ( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.

❖ For a three-phase 380V~440V motor, be cautious when using the inverter. When inverter is used, the insulation of winding becomes hot and may cause damage to motor.

## REVERSIBLE MOTOR - 30MINUTES RATING

SIZE mm sq.	Type	Poles	Output (W)	Voltage (V)	Frequency (Hz)	Duty	Rated Load				Starting Torque		Capacitor (uF)
							Current (A)	Speed (rpm)	Torque (kg-cm) (N-m)		(kg-cm)	(N-m)	
90	S9R60GA( )-T S9R60GA( )-T1 S9R60GA( )-T1(TP) S9R60GA( )-T1(TP) S9R60GA( )-TCE S9R60GA( )-T1CE	4	60	1 ∅ 110	60	30min.	1.60	1600	3.80	0.380	7.00	0.700	25.0
	S9R60GB( )-T S9R60GB( )-T1 S9R60GB( )-T1(TP) S9R60GB( )-T1(TP) S9R60GB( )-TCE S9R60GB( )-T1CE	4	60	1 ∅ 220	60	30min.	0.75	1600	3.80	0.380	7.00	0.700	6.0
	S9R60GC( )-T S9R60GC( )-T1 S9R60GC( )-T1(TP) S9R60GC( )-T1(TP) S9R60GC( )-TCE S9R60GC( )-T1CE	4	60	1 ∅ 100	50	30min.	1.40	1250	4.80	0.480	6.00	0.600	25.0
	60				1.60		1550	3.90	0.390				
	S9R60GD( )-T S9R60GD( )-T1 S9R60GD( )-T1(TP) S9R60GD( )-T1(TP) S9R60GD( )-TCE S9R60GD( )-T1CE	4	60	1 ∅ 200	50	30min.	0.70	1250	4.80	0.480	5.50	0.550	6.0
	60				0.76		1550	3.90	0.390				
	S9R60GE( )-T S9R60GE( )-T1 S9R60GE( )-TCE S9R60GE( )-T1CE	4	60	1 ∅ 100	50	30min.	1.40	1250	4.80	0.480	5.90	0.590	25.0
	60				1.60		1550	3.90	0.390				
	S9R60GE( )-T S9R60GE( )-T1 S9R60GE( )-TCE S9R60GE( )-T1CE	4	60	1 ∅ 115	60	30min.	1.30	1600	3.90	0.390	6.00	0.600	20.0
	S9R60GX( )-T S9R60GX( )-T1 S9R60GX( )-TCE S9R60GX( )-T1CE				4		60	1 ∅ 220	30min.	0.63	1250	4.80	0.480
	1 ∅ 240	0.67	5.00	0.500		6.30		0.630					

- ❖ Appropriate capacitors shall be used according to the voltage for S9R60GE-T type since the size of the capacitor differs by different voltages. Malfunction may occur when not used properly. Capacitor for 115V will be delivered otherwise the required voltage is informed.
- ❖ CE marked at the end of the model name indicates that it is thermally protected type which has received CE. S9R60GE-TCE is available only for 115V specification.
- ❖ TP marked at the end of the model name indicates that it is standard motor with Thermal Protector mounted. S9R60GE-T, S9R60GX-T is thermally protected type with TP mounted.
- ❖ Above data is measured with friction brake mounted.
- ❖ ( ) is for marking 'L' type or 'H'. 'L' should be used with gearhead 'L' and 'H' should be used with gearhead 'H'.

## 50Hz

GEAR RATIO	3 3.6 5 6 7.5 9 10 12.5 15 18 20 25 30 36 40 50 60 75 90 100 120 150 180 200																							
	MODEL	rpm	kg-cm																					
S9KC□B( )	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	200	200	200	200	200	200
S9KC□B( )-S	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	19.60	19.60	19.60	19.60	19.60	19.60

## 60Hz

GEAR RATIO	3 3.6 5 6 7.5 9 10 12.5 15 18 20 25 30 36 40 50 60 75 90 100 120 150 180 200																							
	MODEL	rpm	kg-cm																					
S9KC□B( )	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	200	200	200	200	200
S9KC□B( )-S	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	19.60	19.60	19.60	19.60	19.60

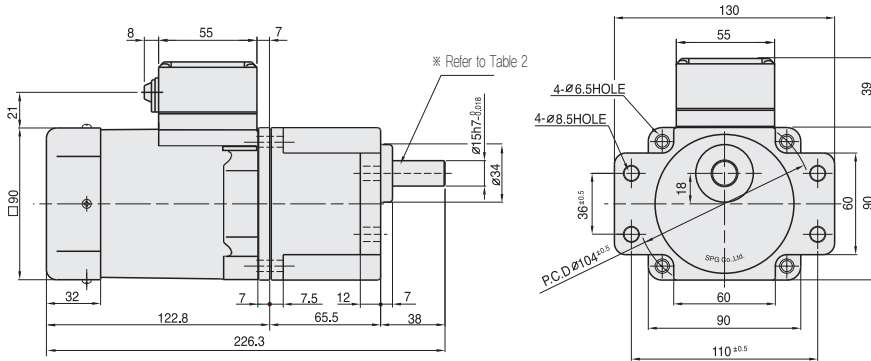
- ❖ The code in □ of gearhead model is for gear ratio.
- ❖ It is the permissible torque of the assembled motor and gearhead.
- ❖ The permissible torque of the motor and inter-decimal gearhead is 200 kg-cm.
- ❖ ■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.
- ❖ Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.
- ❖ ( ) is for marking 'L' type or 'H'. 'L' should be used with motor 'L' and 'H' should be used with motor 'H'.



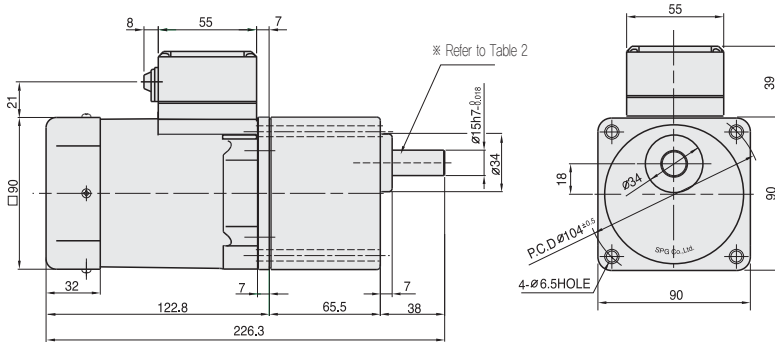
# DIMENSIONS

## + GEARED MOTOR

- ※ MOTOR MODEL : S9(I,R)60G□□-T1
- ※ HEAD MODEL : S9□C3B□-S-S9□C200B□-S

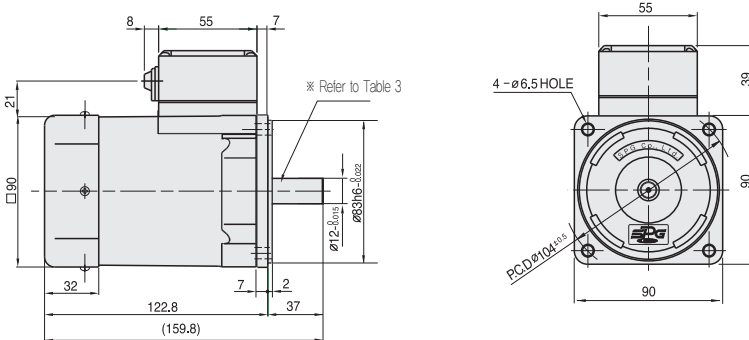


- ※ HEAD MODEL □ : S9□C3B□-S9□C200B□



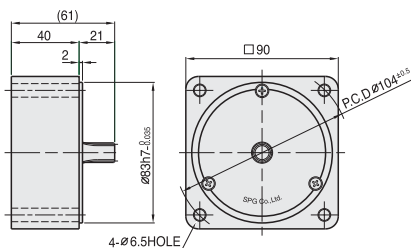
## + MOTOR

- ※ MOTOR MODEL : S9(I,R)60□□□-T1



## + INTER-DECIMAL GEAR HEAD

- ※ MODEL : S9GX10B(H,L)-S



## + WEIGHT - (Table1)

PART	WEIGHT(kg)	
MOTOR	2.55	
REVERSIBLE MOTOR	2.60	
DECIMAL GEAR HEAD	0.65	
GEAR HEAD	S9□C3B□ ~S9□C10B□	1.21
	S9□C12.5B□ ~S9□C20B□	1.30
	S9□C25B□ ~S9□C60B□	1.40
	S9□C75B□ ~S9□C200B□	1.45

## + KEY SPEC

GEAR HEAD	MOTOR

## + SPEC for output shaft of gearhead - (Table2)

MODEL	TYPES OF OUTPUT SHAFT
STRAIGHT TYPE	
S9SC3B□ ~S9SC200B□	
D-CUT TYPE	
S9DC3B□ ~S9DC200B□	
KEY TYPE	
S9KC3B□ ~S9KC200B□	

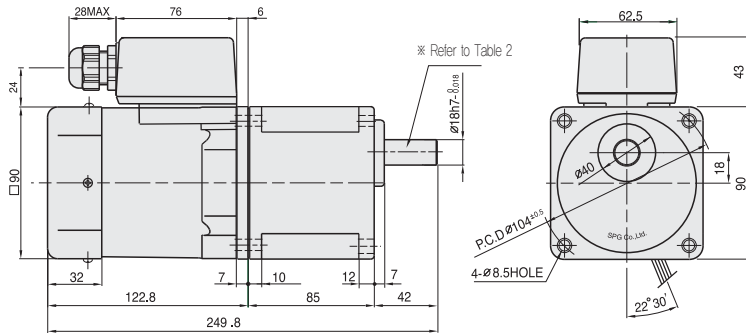
## + SPEC for output shaft of motor - (Table3)

MODEL	TYPES OF OUTPUT SHAFT
GEAR TYPE	
S9(I,R)60G□□-T S9(I,R)60G□□-T1	
STRAIGHT TYPE	
S9(I,R)60S□-T S9(I,R)60S□-T1	
D-CUT TYPE	
S9(I,R)60D□-T S9(I,R)60D□-T1	
KEY TYPE	
S9(I,R)60K□-T S9(I,R)60K□-T1	

## DIMENSIONS

### + GEARED MOTOR

- ※ MOTOR MODEL : S9(I,R)60G□H-T
- ※ HEAD MODEL : S9□D3B~S9□D200B



### + WEIGHT - (Table2)

PART		WEIGHT(kg)
MOTOR		2.60
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

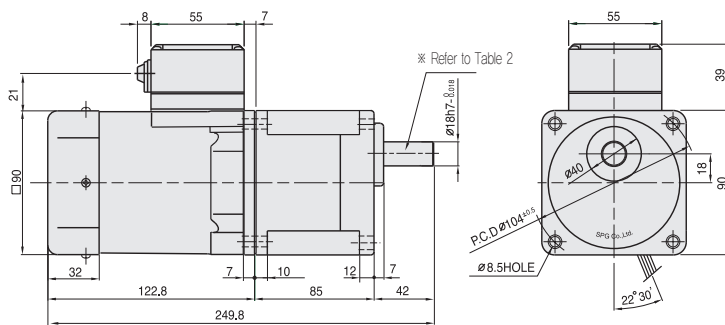
### + KEY SPEC

GEAR HEAD

## DIMENSIONS

### + GEARED MOTOR

- ※ MOTOR MODEL : S9(I,R)60G□H-T1
- ※ HEAD MODEL : S9□D3B~S9□D200B



### + WEIGHT - (Table1)

PART		WEIGHT(kg)
MOTOR		2.55
GEAR HEAD	S9□D3B ~S9□D10B	1.65
	S9□D12.5B ~S9□D20B	1.80
	S9□D25B ~S9□D60B	1.90
	S9□D75B ~S9□D200B	1.95

### + KEY SPEC

GEAR HEAD

### + SPEC for output shaft of gearhead - (Table2)

MODEL	TYPES OF OUTPUT SHAF	MODEL	TYPES OF OUTPUT SHAF	MODEL	TYPES OF OUTPUT SHAF
S9SD3B ~S9SD200B		D-CUT TYPE		KEY TYPE	

## 50Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	500	416	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8	7.5
S9KD□B	kg-cm	12.2	14.6	20.3	24.3	30.4	36.5	40.5	45.6	54.8	65.7	73.0	82.5	99.0	119	132	165	198	221	266	295	300	300	300	300
	N·m	1.196	1.431	1.989	2.381	2.989	3.577	3.969	4.469	5.370	6.439	7.154	8.085	9.702	11.66	12.94	16.17	19.40	21.67	26.09	28.93	29.42	29.42	29.42	29.42

## 60Hz

MODEL	GEAR RATIO	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
	rpm	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
S9KD□B	kg-cm	9.72	11.7	16.2	19.4	24.3	29.2	32.4	36.5	43.8	52.6	58.4	66.0	79.2	95.0	106	132	158	177	212	236	283	300	300	300
	N·m	0.953	1.147	1.588	1.901	2.381	2.862	3.175	3.577	4.292	5.155	5.723	6.468	7.762	9.310	10.39	12.94	15.48	17.35	20.79	23.14	27.75	29.42	29.42	29.42

- ❖ The code in □ of gearhead model is for gear ratio.
- ❖ It is the permissible torque of the assembled motor and gearhead.
- ❖ The permissible torque of the motor and inter-decimal gearhead is 300 kg-cm.
- ❖ ■ color indicates that the output shaft of the geared motor rotates in the same direction as the output shaft of the motor. Others indicate rotation in the opposite direction.
- ❖ Rpm is based on synchronous speed (50Hz: 1500rpm, 60Hz: 1800rpm) divided by gear ratio. The actual rotation speed can be 2~20% less than displayed value depending on the load.
- ❖ Only "H" type is applicable. Please use "H" type motor.

## SCHEMATIC DIAGRAMS

The direction of motor rotation is as viewed from the front shaft end of the motor. Circled number is the terminal number inside terminal box.

### ■ INDUCTION MOTOR

S9160GA( )-T S9160GB( )-T S9160GC( )-T S9160GD( )-T S9160GA( )-T1 S9160GB( )-T1 S9160GC( )-T1 S9160GD( )-T1		S9160GX( )-T S9160GX( )-TCE S9160GX( )-T1 S9160GX( )-T1CE		S9160GU( )-T S9160GT( )-T S9160GU( )-T1 S9160GT( )-T1		S9160GU( )-TCE S9160GU( )-T1CE		S9160GT( )-TCE S9160GT( )-T1CE	
CW	CCW	CW,CCW	CW	CCW	CW	CCW	CW	CCW	

### ■ REVERSIBLE MOTOR

S9160GS( )-TCE S9160GS( )-T S9160GS( )-T1CE S9160GS( )-T1		S9R60GA( )-T, S9R60GB( )-T S9R60GA( )-T1, S9R60GB( )-T1 S9R60GC( )-T, S9R60GD( )-T S9R60GC( )-T1, S9R60GD( )-T1		S9R60GX( )-T, S9R60GX( )-TCE S9R60GX( )-T1, S9R60GX( )-T1CE		S9R60GA( )-T(TP), S9R60GB( )-T(TP), S9R60GC( )-T(TP), S9R60GD( )-T(TP), S9R60GA( )-T1(TP), S9R60GB( )-T1(TP), S9R60GC( )-T1(TP), S9R60GD( )-T1(TP), S9R60GA( )-TCE, S9R60GB( )-TCE, S9R60GC( )-TCE S9R60GD( )-TCE, S9R60GE( )-T, S9R60GE( )-TCE S9R60GA( )-T1CE, S9R60GB( )-T1CE, S9R60GC( )-T1CE S9R60GD( )-T1CE, S9R60GE( )-T1, S9R60GE( )-T1CE	
CW	CCW	CW,CCW	CW,CCW	CW,CCW	CW,CCW		

Change the direction of motor rotation only after the motor stops completely. If an attempt is made to change the direction of rotation while the motor is running, the motor may ignore the reversing command or change its direction of rotation after some delay.