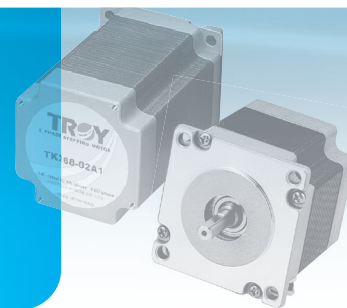


Stepping Motor

2 Phase Stepping Motor Series



► Product number code

■ Motor :

<u>TK</u>	<u>268</u>	<u>□</u>	<u>—</u>	<u>01</u>	<u>A</u>	<u>1</u>
TROY Stepping Motor Series	Model 243/244/245 264/266/268/2610 296/299/2913	— : Round shaft P : Pinion shaft		Phase current 24□type { 09:0.95A/phase 12:1.2A/phase 26□type { 01:1A/phase 29□type { 02:2A/phase	Shaft type A : Single shaft B : Double shaft	No.

■ Gearhead :

6 ↓	H ↓	□ ↓
Frame size	Gearhead	Gear ratio
6:60mm sq.		6H□ Gear ratio
9:90mm sq.		9H□ Gear ratio
		5:1/5 10:1/10 15:1/15 20:1/20 30:1/30 50:1/50 100:1/100 3:1/3 6:1/6 10:1/10 18:1/18 30:1/30 60:1/60 100:1/100 180:1/180 300:1/300 3.6:1/3.6 7.5:1/7.5 12.5:1/12.5 20:1/20 36:1/36 75:1/75 120:1/120 200:1/200 360:1/360 5:1/5 9:1/9 15:1/15 25:1/25 50:1/50 90:1/90 150:1/150 250:1/250

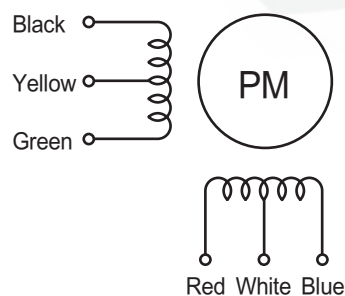
► Specs

Size	Stepping angle deg.	Model		Rated voltage V/phase	Rated current A/phase	Holding torque kg ·cm	Dimension □×L (mm)	Gearhead model	Page No.	
Model 17: □42mm	1.8°	TK243-09A1 TK243-09B1	Single shaft Double shaft	3.7	0.95	1.7	42.3 × 33	—	5	
	1.8°	TK244-12A1 TK244-12B1	Single shaft Double shaft	3.6	1.2	3	42.3 × 38			
	1.8°	TK245-12A1 TK245-12B1	Single shaft Double shaft	4	1.2	3	42.3 × 47			
	Model 23: □57mm	1.8°	TK264-01A1 TK264-01B1	Single shaft Double shaft	5.5	1	4.1	57.15 × 47	—	6
		1.8°	TK264□-02A1 TK264-02B1	Single shaft Double shaft	2.4	2	4.1	57.15 × 47	6H□	

Size	Stepping angle deg.	Model		Rated voltage V/phase	Rated current A/phase	Holding torque kg ·cm	Dimension □×L (mm)	Gearhead model	Page No.
Model 23: □57mm	1.8°	TK266-01A1 TK266-01B1	Single shaft Double shaft	6.6	1	8.5	57.15 × 57	—	6
	1.8°	TK266□-02A1 TK266□-02B1	Single shaft Double shaft	3.2	2	8.5	57.15 × 57	6H□	
	1.8°	TK268-01A1 TK268-01B1	Single shaft Double shaft	10	1	14	57.15 × 82	—	
	1.8°	TK268-02A1 TK268-02B1	Single shaft Double shaft	4.8	2	14	57.15 × 82		
	1.8°	TK2610-01A1 TK2610-02B1	Single shaft Double shaft	11.2	1	20	57.15 × 94	—	
	1.8°	TK2610-02A1 TK2610-02B1	Single shaft Double shaft	6	2	20	57.15 × 94		
Model 34: □86mm	1.8°	TK296□-02A1 TK296-02B1	Single shaft Double shaft	5.2	2	22	85.85 × 70	9H□	9
	1.8°	TK299□-02A1 TK299-02B1	Single shaft Double shaft	8.4	2	44	85.85 × 100	9H□	
	1.8°	TK2913-02A1 TK2913-02B1	Single shaft Double shaft	3.5	2	66	85.85 × 127	—	

※ TK264□ / TK266□ / TK296□ / TK299□ , Enter the P in the box □ indicates Pinion shaft type which will need to attached the gearhead 6H or 9H series, please refer to the P.14. There is no value in the box □ which indicates Round shaft type. When purchased this type, it also can attach with planetary gearhead.

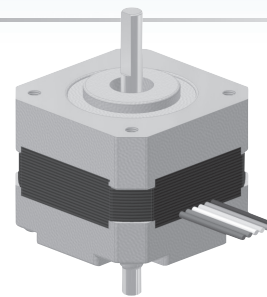
► Wiring diagrams



2 Phase Stepping Motor Series

2 Phase Stepping Motor

Model 17 □42mm 1.8°HB type



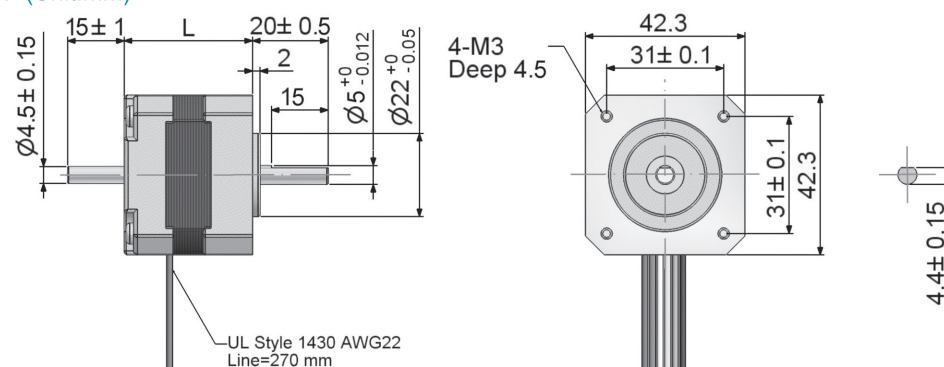
Specs

Model		Rated voltage	Rated current	Impedance	Inductance	Holding	Motor	Inertia	Weight
Single shaft	Double shaft	V / phase	A/phase	Ω / phase	mh / phase	torque kg·cm	length(L) mm	g·cm ²	g
TK243-09A1	TK243-09B1	3.7	0.95	3.9	2.5	1.7	33±1	35	200
TK244-12A1	TK244-12B1	3.6	1.2	3	3	3	38±1	54	300
TK245-12A1	TK245-12B1	4	1.2	3.3	2.8	3	47±1	68	370

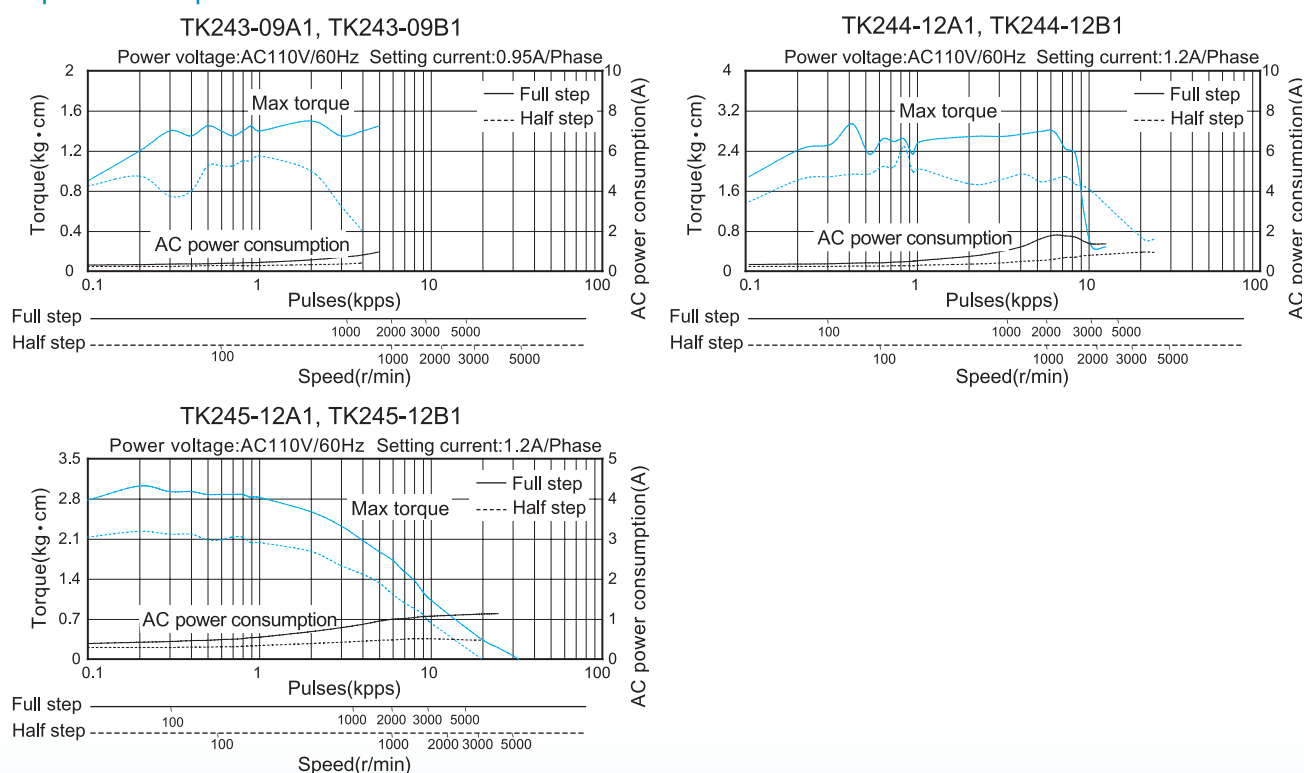
- Ambient temperature -20°C~+50°C
- Insulation resistance100M Ω Min. (at DC500V)
- Insulation voltage AC500V (1min.)
- Overhung vibration 0.075mm Max.
- Thrust vibration 0.025mm Max.
- Permissible temperature range Max 80 deg (Tested by resistivity)

Notes:Be sure to keep the temperature of the motor case under 90°C

Dimension (Unit:mm)



Speed—Torque Characteristics (Attached with driver TR22-1)

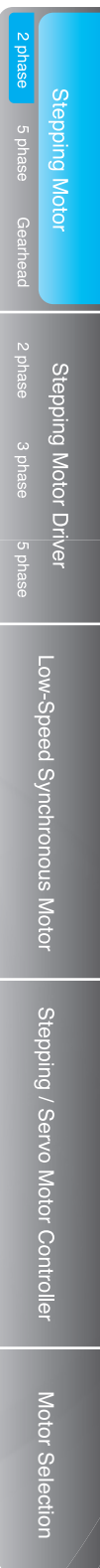


► Specs

※TK264□-02A1、TK266□-02A1，Enter the P in the box □ which indicates Pinion type will need to attached the gearhead 6H series, please refer to the P.14. There is no value in the box □ which indicates Round shaft type. When purchased this type, it also can collocate with planetary gearhead.

- Notes: Be sure to keep the temperature of the motor case under 90°C

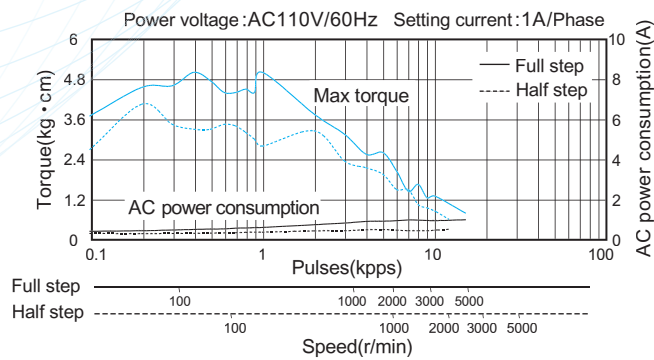
► Dimensions (Unit:mm)



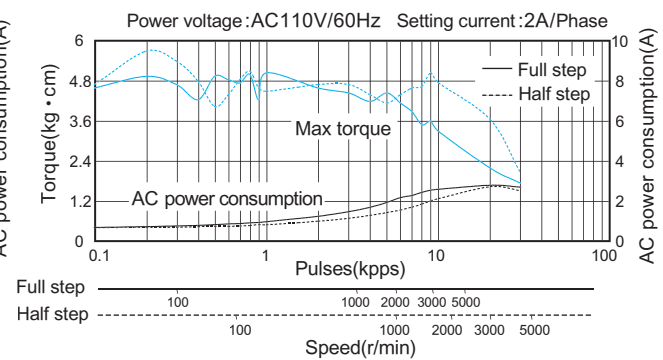
2 Phase Stepping Motor Series

► Speed-Torque Characteristics (Attached with driver TR22-1)

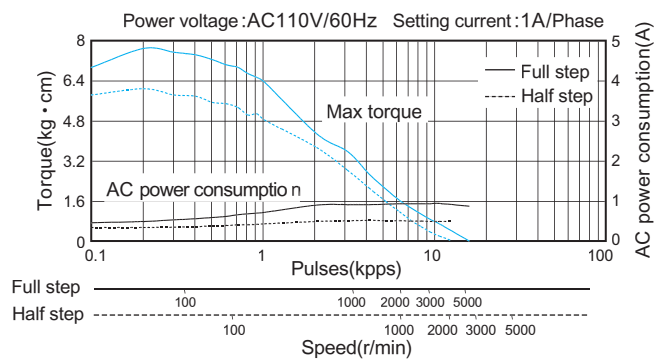
TK264-01A1, TK264-01B1



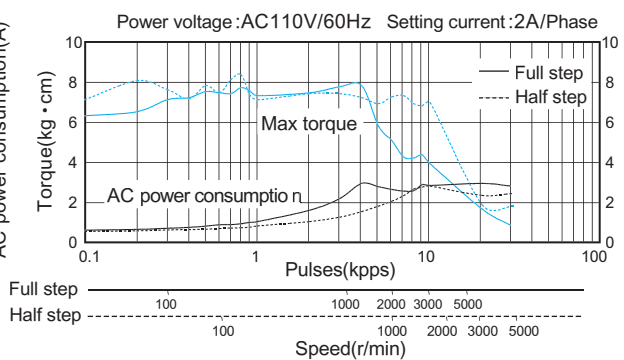
TK264-02A1, TK264-02B1



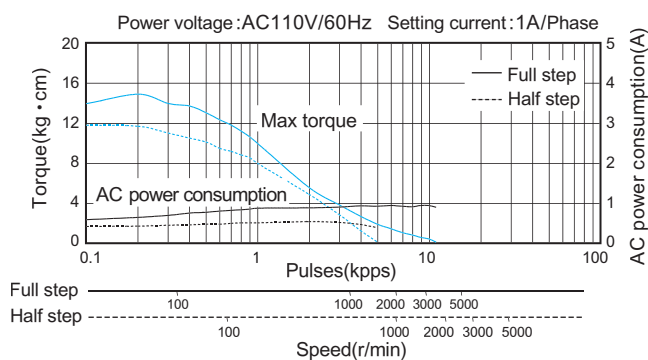
TK266-01A1, TK266-01B1



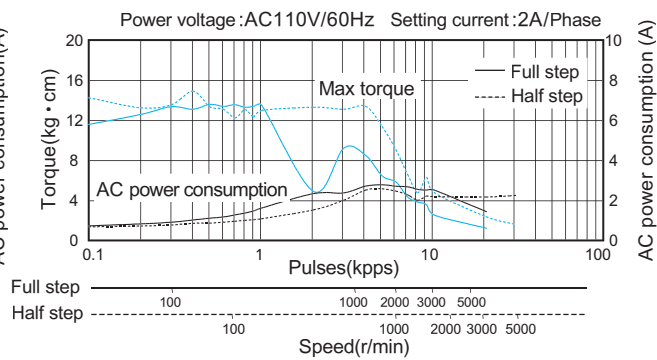
TK266-02A1, TK266-02B1



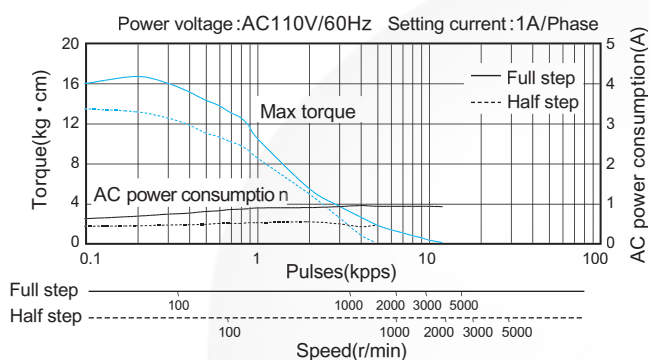
TK268-01A1, TK268-01B1



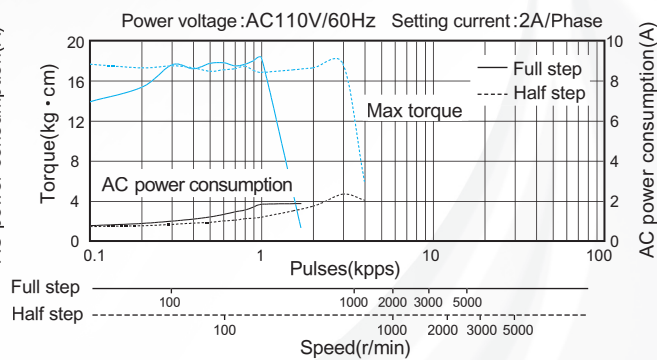
TK268-02A1, TK268-02B1



TK2610-01A1, TK2610-01B1



TK2610-02A1, TK2610-02B1



2 phase

5 phase

Gearhead

Stepping Motor

2 phase

3 phase

5 phase

Stepping Motor Driver

Low-Speed Synchronous Motor

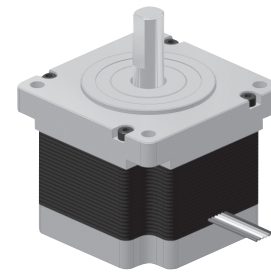
Stepping / Servo Motor Controller

Motor Selection

2 Phase Stepping Motor Series

2 Phase Stepping Motor

Model 34 □86mm 1.8° HB type



► Specs

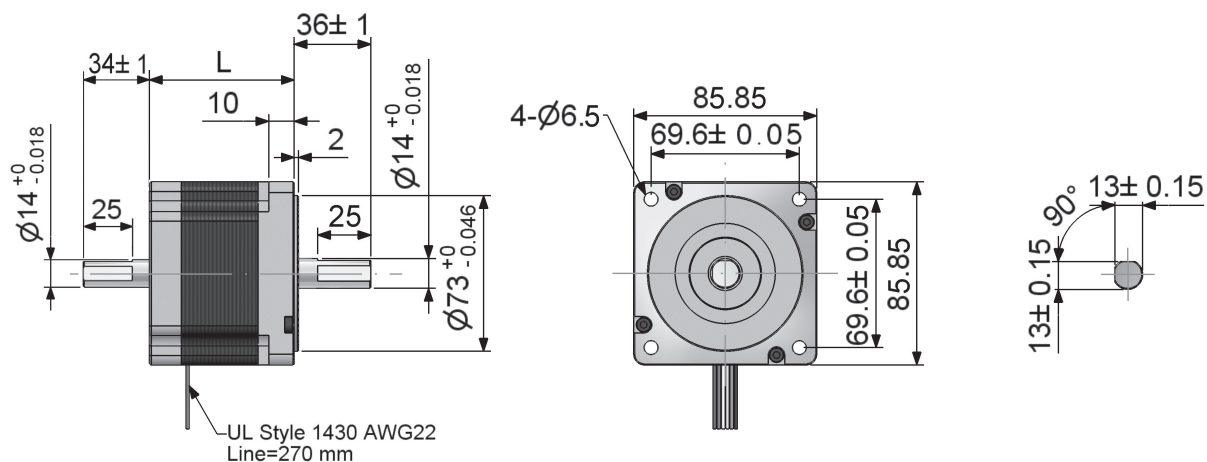
Model		Rated voltage	Rated current	Impedance	Inductance	Holding	Motor	Inertia	Weight
Single shaft	Double shaft	V / phase	A/phase	Ω / phase	mh / phase	torque kg · cm	length(L) mm	g · cm ²	g
TK296□-02A1	TK296-02B1	5.2	2	2.6	9.5	22	70±1	1330	1900
TK299□-02A1	TK299-02B1	8.4	2	4.2	20	44	100±1	2680	2500
TK2913-02A1	TK2913-02B1	3.5	2	5	28	66	127±1	4000	4700

※ TK296□-02A1、TK299□-02A1、TK299-02B1，Enter the P in the box □ which indicates Pinion type will need to attached the gearhead 9H series, please refer to the P.14. There is no value in the box □ which indicates Round shaft type. When purchased this type, it also can collocate with planetary gearhead.

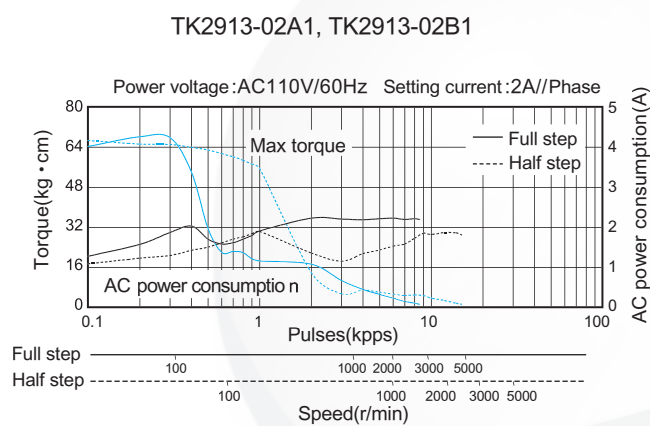
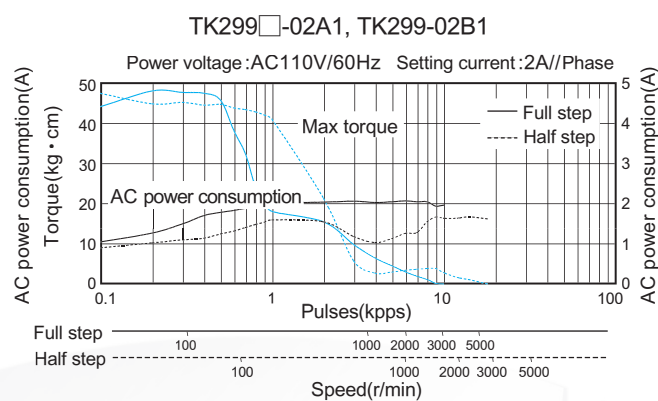
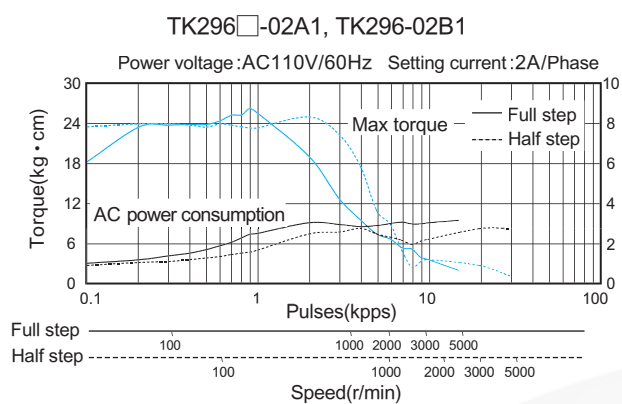
- Ambient temperature -20°C~+50°C
- Overhung vibration 0.075mm Max.
- Insulation resistance 100M Ω Min. (at DC500V)
- Thrust vibration 0.025mm Max.
- Insulation voltage AC500V (1min.)
- Permissible temperature range Max 80 deg (Tested by resistivity)

Notes: Be sure to keep the temperature of the motor case under 90°C

► Dimensions (Unit:mm)



► Speed-Torque Characteristics (Attached with driver TR22-1)



Stepping Motor

Stepping Motor Driver

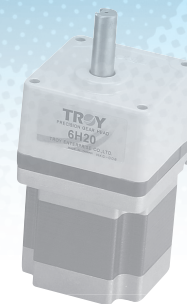
Low-Speed Synchronous Motor

Stepping / Servo Motor Controller

Motor Selection

Gearhead

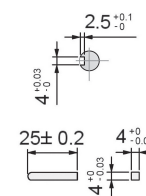
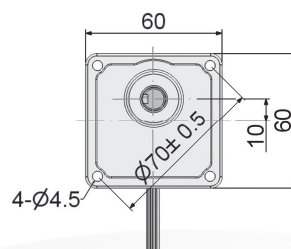
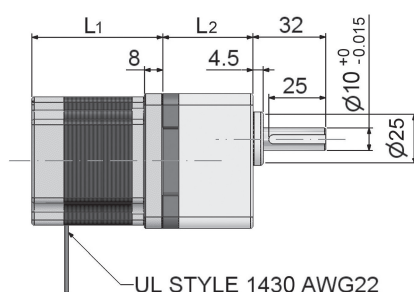
(For TROY Stepping Motors)



► Specs/ Dimensions (Unit:mm)

■ 6H Series:

Model	6H5	6H10	6H15	6H20	6H30	6H50	6H100
Gear ratio	1:5	1:10	1:15	1:20	1:30	1:50	1:100
Length L ₂	39.5mm						

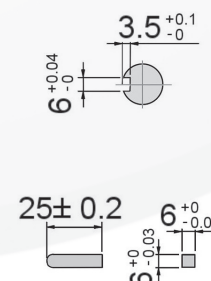
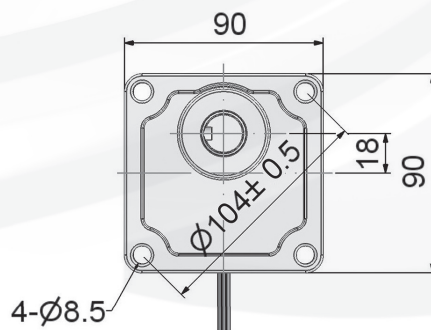
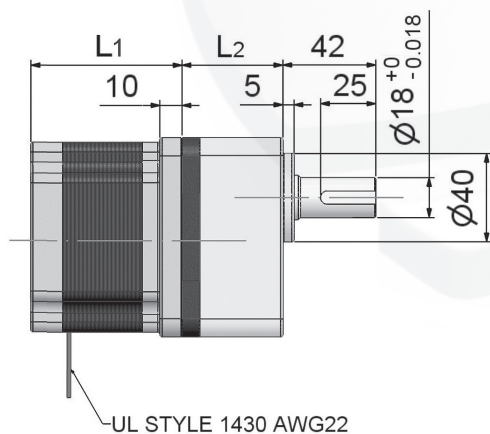


Stepping motor pinion shaft type

Model	L ₁
TK264P-02A1	48±1
TK266P-02A1	58±1

■ 9H Series:

Model	9H3	9H3.6	9H5	9H6	9H7.5	9H9	9H10	9H12.5	9H15	9H18	9H20
Gear ratio	1:3	1:3.6	1:5	1:6	1:7.5	1:9	1:10	1:12.5	1:15	1:18	1:20
Length L ₂	45.5mm										
Model	9H25	9H30	9H36	9H50	9H60	9H75	9H90	9H100			
Gear ratio	1:25	1:30	1:36	1:50	1:60	1:75	1:90	1:100			
Length L ₂	58.5mm										
Model	9H120	9H150	9H180	9H200	9H250	9H300	9H360				
Gear ratio	1:120	1:150	1:180	1:200	1:250	1:300	1:360				
Length L ₂	64.5mm										



Stepping motor pinion shaft type

Model	L ₁
TK296P-02A1	71±1
TK299P-02A1	101±1
TK596P-A1	71±1
TK599P-A1	101±1

Gearhead (For TROY Stepping Motors)

► Transmission efficiency/Rotation direction

■ 6H□ Series:

Model	6H5	6H10	6H15	6H20	6H30	6H50	6H100
Efficiency (%)	90%				86%		

■ 9H□ Series:

Model	9H3	9H3.6	9H5	9H6	9H7.5	9H9	9H10	9H12.5	9H15	9H18	9H20
Efficiency (%)	90%										
Model	9H25	9H30	9H36	9H50	9H60	9H75	9H90	9H100			
Efficiency (%)	86%										
Model	9H120	9H150	9H180	9H200	9H250	9H300	9H360				
Efficiency (%)	81%										

※A colored background indicates gear shaft rotation in the opposite direction as the motor shaft, otherwise indicates rotation in the same direction.

► Output torque when gearhead attached

Output torque when gearhead is calculated according to the following formula :

$$\text{Output torque} \rightarrow T_G = T_M \times i \times \eta$$

T_G : Output torque at gearhead shaft

T_M : Motor holding torque

i : Gear ratio of gearhead

η : Gearhead efficiency

► Max permissible torque of gearhead

Model	Max permissible torque of gearhead
6H□	80kg · cm
9H□	400kg · cm

Note : The T_G value > Max permissible torque of gearhead , please take the max permissible torque value of gear head as standard

The T_G value < Max permissible torque of gearhead , please take the T_G value as standard