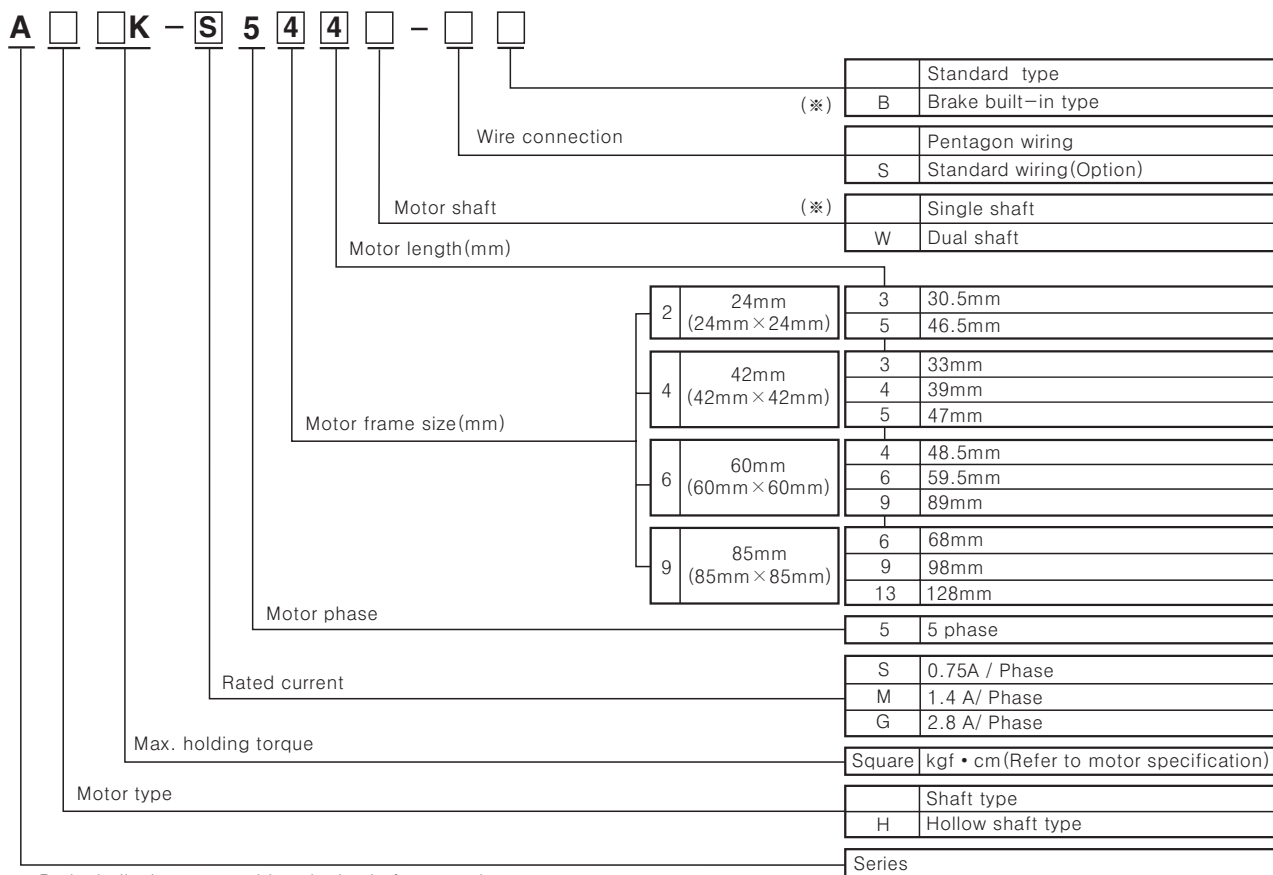


# 5-Phase Stepping Motor

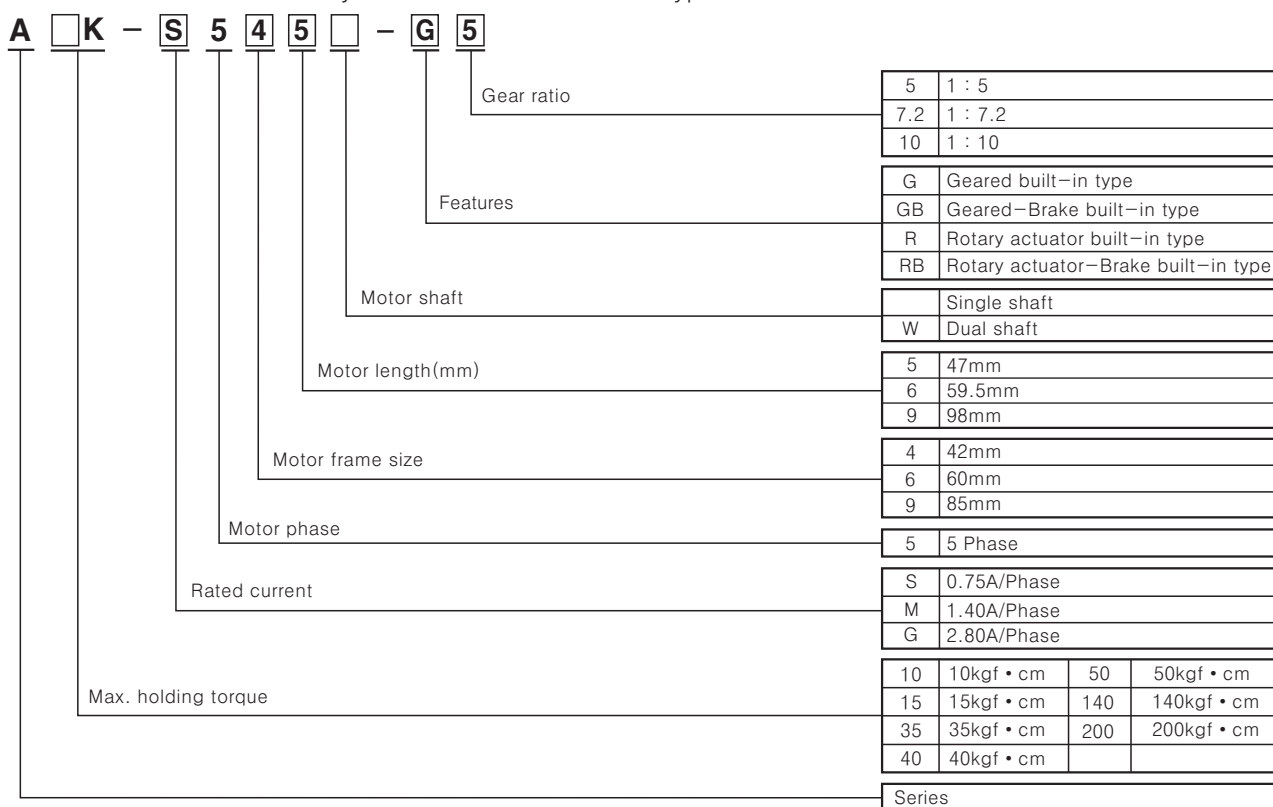
## Ordering information

●Application model : Shaft type, Hollow shaft type, Shaft type+Brake built-in type



\*Brake built-in type provides single shaft type only.

●Application model : Geared built-in type, Geared+Brake built-in type, Rotary actuator, Rotary actuator+Brake built-in type



# 5-Phase Stepping Motor

## Specifications

Type	Model	A/phase (A)	Max. holding torque (kgf • cm)	Max. allowable torque (kgf • cm)	Moment of rotor inertia (g • cm <sup>2</sup> )	Winding resistance(Ω)	Motor length (mm)
<b>24 Square</b>	Shaft type	<b>02K-S523(W)</b>	0.75	0.18	—	4.2	30.5
		<b>04K-S525(W)</b>	0.75	0.28	—	8.2	46.5
<b>42 Square</b>	Shaft type	<b>A1K-S543(W)</b>	0.75	1.3	—	35	33
		<b>A2K-S544(W)</b>	0.75	1.8	—	54	39
		<b>A3K-S545(W)</b>	0.75	2.4	—	68	47
	Hollow shaft type	<b>AH1K-S543</b>	0.75	1.3	—	35	33
		<b>AH2K-S544</b>	0.75	1.8	—	54	39
		<b>AH3K-S545</b>	0.75	2.4	—	68	47
	Shaft type / Geared built-in type	<b>A10K-S545(W)-G5</b>	0.75	—	10	68	47
		<b>A15K-S545(W)-G7.2</b>	0.75	—	15	68	47
		<b>A15K-S545(W)-G10</b>	0.75	—	15	68	47
	<b>60 Square</b>	Shaft type / Shaft type + Brake built-in type	<b>A4K-S564(W)-B</b>	0.75	4.2	—	175
<b>A4K-M564(W)-B</b>			1.4	4.2	—	175	48.5
<b>A8K-S566(W)-B</b>			0.75	8.3	—	280	59.5
<b>A8K-M566(W)-B</b>			1.4	8.3	—	280	59.5
<b>A16K-M569(W)-B</b>			1.4	16.6	—	560	89
<b>A16K-G569(W)-B</b>			2.8	16.6	—	560	89
Hollow shaft type		<b>AH4K-S564(W)</b>	0.75	4.2	—	175	48.5
		<b>AH4K-M564(W)</b>	1.4	4.2	—	175	48.5
		<b>AH8K-S566(W)</b>	0.75	8.3	—	280	59.5
		<b>AH8K-M566(W)</b>	1.4	8.3	—	280	59.5
		<b>AH16K-M569(W)</b>	1.4	16.6	—	560	89
		<b>AH16K-G569(W)</b>	2.8	16.6	—	560	89
Shft type/ Geared + Brake built-in type		<b>A35K-M566(W)-G5</b>	1.4	—	35	280	59.5
		<b>A40K-M566(W)-G7.2</b>	1.4	—	40	280	59.5
		<b>A50K-M566(W)-G10</b>	1.4	—	50	280	59.5
Geared + Brake built-in type		<b>A35K-M566-GB5</b>	1.4	—	35	280	59.5
		<b>A40K-M566-GB7.2</b>	1.4	—	40	280	59.5
		<b>A50K-M566-GB10</b>	1.4	—	50	280	59.5
Rotary actuator type		<b>A35K-M566(W)-R5</b>	1.4	—	35	280	59.5
		<b>A40K-M566(W)-R7.2</b>	1.4	—	40	280	59.5
		<b>A50K-M566(W)-R10</b>	1.4	—	50	280	59.5
Rotary actuator + Brake built-in type		<b>A35K-M566-RB5</b>	1.4	—	35	280	59.5
		<b>A40K-M566-RB7.2</b>	1.4	—	40	280	59.5
		<b>A50K-M566-RB10</b>	1.4	—	50	280	59.5
<b>85 Square</b>	Shaft type / Shaft type + Brake built-in type	<b>A21K-M596(W)-B</b>	1.4	21	—	1400	68
		<b>A21K-G596(W)-B</b>	2.8	21	—	1400	68
		<b>A41K-M599(W)-B</b>	1.4	41	—	2700	98
		<b>A41K-G599(W)-B</b>	2.8	41	—	2700	98
		<b>A63K-M5913(W)-B</b>	1.4	63	—	4000	128
		<b>A63K-G5913(W)-B</b>	2.8	63	—	4000	128
	Hollow shaft type	<b>AH21K-M596(W)</b>	1.4	21	—	1400	68
		<b>AH21K-G596(W)</b>	2.8	21	—	1400	68
		<b>AH41K-M599(W)</b>	1.4	41	—	2700	98
		<b>AH41K-G599(W)</b>	2.8	41	—	2700	98
		<b>AH63K-M5913(W)</b>	1.4	63	—	4000	128
		<b>AH63K-G5913(W)</b>	2.8	63	—	4000	128
	Shaft type + Geared built-in type	<b>A140K-M599(W)-G5</b>	1.4	—	140	2700	98
		<b>A140K-G599(W)-G5</b>	2.8	—	140	2700	98
		<b>A200K-M599(W)-G7.2</b>	1.4	—	200	2700	98
		<b>A200K-G599(W)-G7.2</b>	2.8	—	200	2700	98
		<b>A200K-M599(W)-G10</b>	1.4	—	200	2700	98
		<b>A200K-G599(W)-G10</b>	2.8	—	200	2700	98
	Geared + Brake built-in type	<b>A140K-M599-GB5</b>	1.4	—	140	2700	98
		<b>A140K-G599-GB5</b>	2.8	—	140	2700	98
		<b>A200K-M599-GB7.2</b>	1.4	—	200	2700	98
		<b>A200K-G599-GB7.2</b>	2.8	—	200	2700	98
		<b>A200K-M599-GB10</b>	1.4	—	200	2700	98
		<b>A200K-G599-GB10</b>	2.8	—	200	2700	98

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor &amp; Driver &amp; Controller

(O) Graphic panel

(P) Production stoppage models &amp; replacement

※ ( ) Stands for dual shaft of motor. The brake built-in type provides single shaft type only.

※ Motor length was measured without shaft.

※ Hollow shaft type with standard wiring is customizable. (Except for 24mm)

# 5-Phase Stepping Motor

## ■ Specifications

### ●24 square

Model	02K-S523(W)	04K-S525(W)
Max. holding torque	0.18 kgf · cm (0.018N · m)	0.28kgf · cm (0.028 N · m)
Moment of rotor inertia	4.2 g · cm <sup>2</sup> (4.2×10 <sup>-7</sup> kg · m <sup>2</sup> )	8.2 g · cm <sup>2</sup> (8.2×10 <sup>-7</sup> kgf · m <sup>2</sup> )
Rated current	0.75A/Phase	
Basic step angle	0.72° / 0.36° (Full step/Half step)	
Insulation class	CLASS B type(130℃)	
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case	
Dielectric strength	1Min. at 0.5kVAC 50/60Hz between Motor coil-case	
Ambient temperature	-10℃ ~ +50℃, Storage condition : -25℃ ~ +85℃	
Ambient humidity	35 ~ 85%RH	
Protection	IP30(IEC34-5 standard)	
Unit weight	Approx. 0.07kg	Approx. 0.12kg

### ●42 square

Model	Shaft type	A1K-S543(W)	A2K-S544(W)	A3K-S545(W)	—	—	—
	Hollow shaft type	AH1K-S543	AH2K-S544	AH3K-S545	—	—	—
	Shaft type+ Geared buit-in type	—	—	—	A10K-S545(W)-G5	A15K-S545(W)-G7.2	A15K-S545(W)-G10
	Geared type+ Brake buit-in type	—	—	—	—	—	—
Max. allowable torque	—	—	—	10kgf · cm (1.0 N · m)	15kgf · cm (1.5 N · m)	15kgf · cm (1.5 N · m)	—
Max. holding torque	1.3kgf · cm (0.13 N · m)	1.8kgf · cm (0.18 N · m)	2.4kgf · cm (0.24 N · m)	—	—	—	—
Moment of rotor inertia	35 g · cm <sup>2</sup> (35×10 <sup>-7</sup> kg · m <sup>2</sup> )	54 g · cm <sup>2</sup> (54×10 <sup>-7</sup> kg · m <sup>2</sup> )	68 g · cm <sup>2</sup> (68×10 <sup>-7</sup> kg · m <sup>2</sup> )	68 g · cm <sup>2</sup> (68×10 <sup>-7</sup> kg · m <sup>2</sup> )			—
Rated current	0.75A/Phase						
Basic step angle	0.72° / 0.36(Full / Half step)			0.144° / 0.072° (Full / Half step)	0.1° / 0.05° (Full / Half step)	0.072° / 0.036° (Full / Half step)	
Gear ratio	—			1 : 5	1 : 7.2	1 : 10	
Allowable speed range	—			0 ~ 360rpm	0 ~ 250rpm	0 ~ 180rpm	
Backlash[min]	—			±35' (0.58° )			
Insulation class	CLASS B type(130℃)						
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case						
Dielectric strength	1Min. at 1kVAC(0.5kVAC for 0.75A/Phase) 50/60Hz between Motor coil-case						
Ambient temperature	-10℃ ~ +50℃, Storage condition : -25℃ ~ +85℃						
Ambient humidity	35 ~ 85%RH						
Protection	IP30(IEC34-5 standard)						
Unit weight	Approx. 0.25kg	Approx. 0.3kg	Approx. 0.4kg	Approx. 5.8kg			

# 5-Phase Stepping Motor

## Specifications

### ●60 square

Model	Shaft type	A4K-S564(W)	A4K-M564(W)	A8K-S566(W)	A8K-M566(W)	A16K-S569(W)	A16K-M569(W)	A16K-G569(W)
	Hollow shaft type	AH4K-S564(W)	AH4K-M564(W)	AH8K-S566(W)	AH8K-M566(W)	AH16K-S569(W)	AH16K-M569(W)	AH16K-G569(W)
	Shaft type+ Brake built-in type	A4K-S564-B	A4K-M564-B	A8K-S566-B	A8K-M566-B	A16K-S569-B	A16K-M569-B	A16K-G569-B
Max. holding torque	4.2kgf • cm (0.42N • m)			8.3kgf • cm (0.83N • m)		16.6kgf • cm (1.66N • m)		
Moment of rotor inertia	175g • cm <sup>2</sup> (175 × 10 <sup>-7</sup> kg • m <sup>2</sup> )			280g • cm <sup>2</sup> (280 × 10 <sup>-7</sup> kg • m <sup>2</sup> )		560g • cm <sup>2</sup> (560 × 10 <sup>-7</sup> kg • m <sup>2</sup> )		
Rated current	0.75A/Phase	1.4A/Phase	0.75A/Phase	1.4A/Phase	0.75A/Phase	1.4A/Phase	2.8A/Phase	
Basic step angle	0.72° / 0.36(Full/Half step)							
Electro magnetic brake	Rated excitation voltage	24VDC (non-polarity)						
	Rated excitation current	0.33A						
	Static friction torque	4kgf • cm						
	Rotation part inertia	2.5 × 10 <sup>-6</sup> kgf • cm <sup>2</sup>						
	Operating time	Max. 22ms						
Releasing time	Max. 37ms							
Insulation class	CLASS B type (130°C)							
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case							
Dielectric strength	1Min. at 1kVAC (0.5kVAC for 0.75A/Phase) 50/60Hz between Motor coil-case							
Ambient temperature	-10 ~ +50°C, Storage condition : -25 ~ +85°C							
Ambient humidity	35 ~ 85%RH							
Protection	IP30 (IEC34-5 standard)							
Unit weight	Standard type : 0.6kg, Brake built-in type : 0.9kg		Standard type : 0.8kg, Brake built-in type : 1.1kg		Standard type : 1.3kg, Brake built-in type : 1.6kg			

### ●60 square

Model	Shaft type+ Geared built-in type	A35K-M566(W)-G5	A40K-M566(W)-G7.2	A50K-M566(W)-G10
	Geared type+ Brake built-in type	A35K-M566-GB5	A40K-M566-GB7.2	A50K-M566-GB10
	Rotary actuator type	A35K-M566(W)-R5	A40K-M566(W)-R7.2	A50K-M566(W)-R10
	Rotary actuator type+ Brake built-in type	A35K-M566-RB5	A40K-M566-RB7.2	A50K-M566-RB10
Max. holding torque	35kgf • cm (3.5N • m)		40kgf • cm (4.0 N • m)	50kgf • cm (5.0 N • m)
Moment of rotor inertia	280 g • cm <sup>2</sup> (280 × 10 <sup>-7</sup> kg • m <sup>2</sup> )			
Rated current	1.4A/Phase			
Basic step angle	0.144° / 0.072° (Full/Half step)		0.1° / 0.05° (Full/Half step)	0.072° / 0.036° (Full/Half step)
Gear ratio	1 : 5		1 : 7.2	1 : 10
Allowable speed range	0 ~ 360rpm		0 ~ 250rpm	0 ~ 180rpm
Backlash [min]	±20' (0.33°)			
Electro magnetic brake	Rated excitation voltage	24VDC (non-polarity)		
	Rated excitation current	0.33A		
	Static friction torque	4kgf • cm		
	Rotation part inertia	2.5 × 10 <sup>-6</sup> kgf • cm <sup>2</sup>		
	Operating time	Max. 22ms		
Releasing time	Max. 37ms			
Absolute position error (★1)	±20 minute (0.33°)			
Lost motion (★1)	±20 minute (0.33°)			
Insulation class	CLASS B type (130°C)			
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case			
Dielectric strength	1Min. at 1kVAC 50/60Hz between Motor coil-case			
Ambient temperature	-10°C ~ +50°C, Storage condition : -25°C ~ +85°C			
Ambient humidity	35 ~ 85%RH			
Protection	IP30 (IEC34-5 standard)			
Unit weight	Geared type:1.3kg, Geared+Brake type:1.4kg, Rotary actuator type:1.5kg, Rotary actuator+Brake type:1.8kg			

※ (★1) It is only available for rotary actuator type.

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement

# 5-Phase Stepping Motor

## Specifications

### ●85 square

Model	Shaft type	A21K-M596(W)-□	A21K-G596(W)-□	A41K-M599(W)-□	A41K-G596(W)-□	A63K-M5913(W)-□	A63K-G5913(W)-□
	Hollow shaft type	AH21K-M596(W)	AH21K-G596(W)	AH41K-M599(W)	AH41K-G599(W)	AH63K-M5913(W)	AH63K-G5913(W)
	Shaft type+ Brake built-in type	A21K-M596-□B	A21K-G596-□B	A41K-M599-□B	A41K-G599-□B	A63K-M5913-□B	A63K-G5913-□B
Max. holding torque	21kgf·cm(2.1 N·m)		41kgf·cm(4.1 N·m)		63kgf·cm(6.3 N·m)		
Moment of rotor inertia	1400 g·cm <sup>2</sup> (1400×10 <sup>-7</sup> kg·m <sup>2</sup> )		2700 g·cm <sup>2</sup> (2700×10 <sup>-7</sup> kg·m <sup>2</sup> )		4000 g·cm <sup>2</sup> (4000×10 <sup>-7</sup> kg·m <sup>2</sup> )		
Rated current	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	
Basic step angle	0.72° / 0.36° (Full/Half step)						
Electro magnetic brake	Rated excitation voltage	24VDC(non-polarity)					
	Rated excitation current	0.62A					
	Static friction torque	40kgf·cm					
	Rotation part inertia	42.5×10 <sup>-6</sup> kgf·cm <sup>2</sup>					
	Operating time	Max. 80ms					
	Releasing time	Max. 70ms					
Insulation class	CLASS B type(130℃)						
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case						
Dielectric strength	1Min. at 1kVAC 50/60Hz between Motor coil-case						
Ambient temperature	-10℃ ~ +50℃, Storage condition : -25℃ ~ +85℃						
Ambient humidity	35 ~ 85%RH						
Protection	IP30(IEC34-5 standard)						
Unit weight	Standard type : 1.7kg, Brake built-in type : 2.9kg		Standard type : 2.8kg, Brake built-in type : 4.0kg		Standard type : 3.8kg, Brake built-in type : 5.0kg		

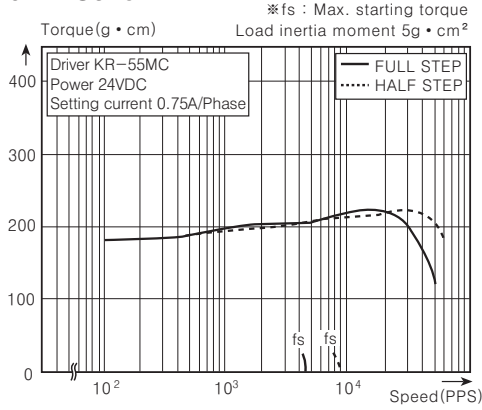
### ●85 square

Model	Shaft type+ Geared built-in type	A140K-M599(W)-G5	A140K-G599(W)-G5	A200K-M599(W)-G7.2	A200K-G599(W)-G7.2	A200K-M599(W)-G10	A200K-G599(W)-G10
	Geared type+ Brake built-in type	A140K-M599-GB5	A140K-G599-GB5	A200K-M599-GB7.2	A200K-G599-GB7.2	A200K-M599-GB10	A200K-G599-GB10
Max. holding torque	140kgf·cm(14 N·m)		200kgf·cm(20 N·m)		200kgf·cm(20 N·m)		
Moment of rotor inertia	2700 g·cm <sup>2</sup> (270×10 <sup>-7</sup> kg·m <sup>2</sup> )						
Rated current	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	1.4A/Phase	2.8A/Phase	
Basic step angle	0.144° / 0.072° (Full/Half step)		0.1° / 0.05° (Full/Half step)		0.072° / 0.036° (Full/Half step)		
Gear ratio	1 : 5		1 : 7.2		1 : 10		
Allowable speed range	0 ~ 360rpm		0 ~ 250rpm		0 ~ 180rpm		
Backlash[min]	±15' (0.25°)						
Electro magnetic brake	Rated excitation voltage	24VDC(non-polarity)					
	Rated excitation current	0.62A					
	Static friction torque	40kgf·cm					
	Rotation part inertia	42.5×10 <sup>-6</sup> kgf·cm <sup>2</sup>					
	Operating time	Max. 80ms					
	Releasing time	Max. 70ms					
Insulation class	CLASS B type(130℃)						
Insulation resistance	Min. 100MΩ (Standard 500VDC mega) between Motor coil-case						
Dielectric strength	1Min. at 1kVAC 50/60Hz between Motor coil-case						
Ambient temperature	-10℃ ~ +50℃, Storage condition : -25℃ ~ +85℃						
Ambient humidity	35 ~ 85%RH						
Protection	IP30(IEC34-5 standard)						
Unit weight	Geared type : 4.4kg, Geared+Brake type : 5.6kg						

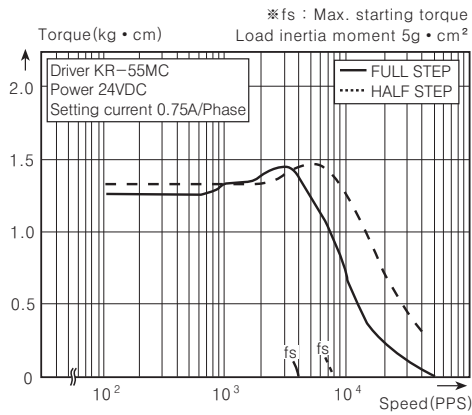
# 5-Phase Stepping Motor

## Characteristic

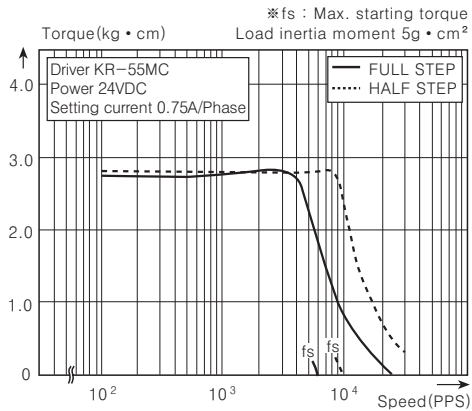
### ●02K-S523



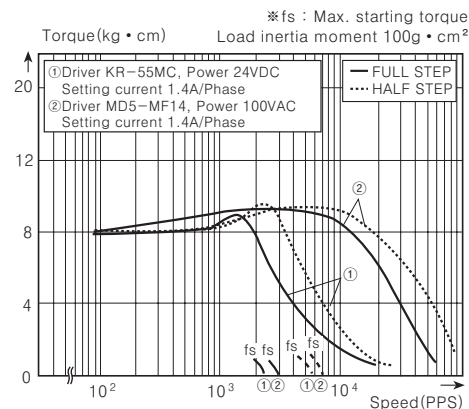
### ●A1K-S543



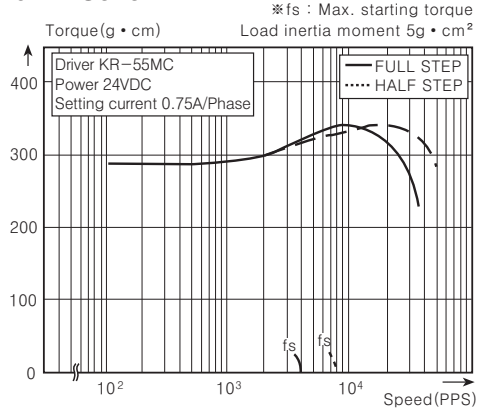
### ●A3K-S545



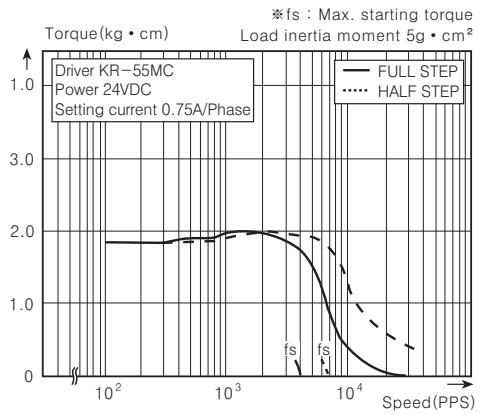
### ●A8K-M566 / A8K-M566-B



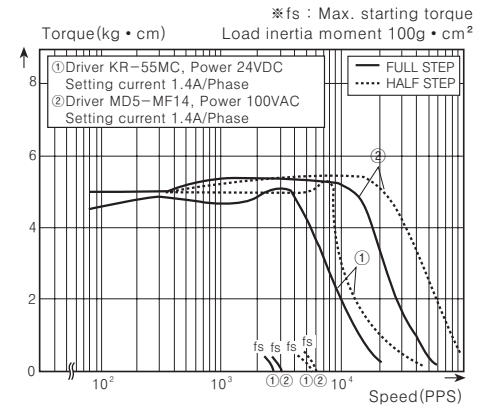
### ●04K-S525



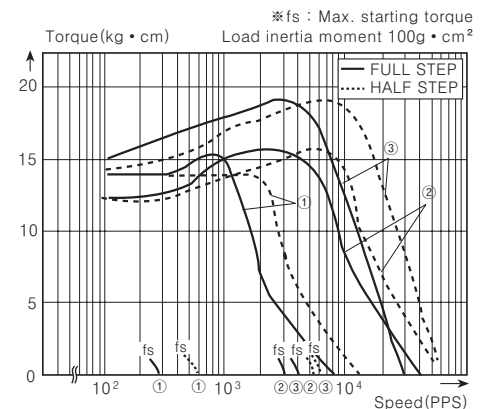
### ●A2K-S544



### ●A4K-M564 / A4K-M564-B



### ●A16K-□569 / A16K-□569-B



① Driver KR-55MC, Power 24VDC, Setting current 1.4A/Phase  
② Driver MD5-MF14, Power 100VAC, Setting current 1.4A/Phase  
③ Driver KR-505G, Power 100VAC, Setting current 2.8A/Phase

(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor & Driver & Controller

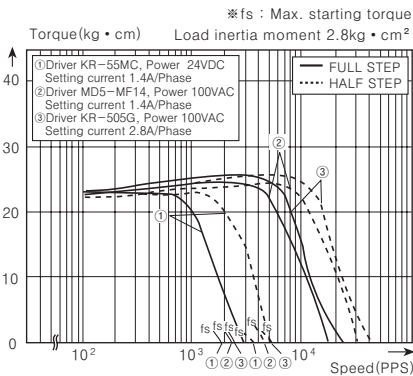
(O) Graphic panel

(P) Production stoppage models & replacement

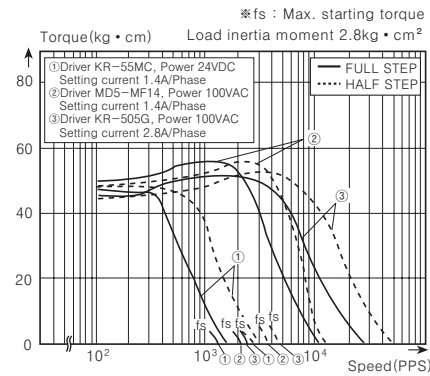
# 5-Phase Stepping Motor

## Characteristic

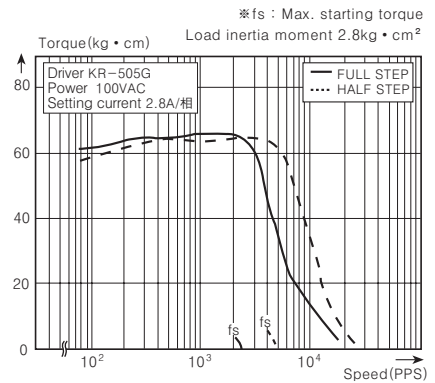
### ●A21K-□596 / A21K-□596-B



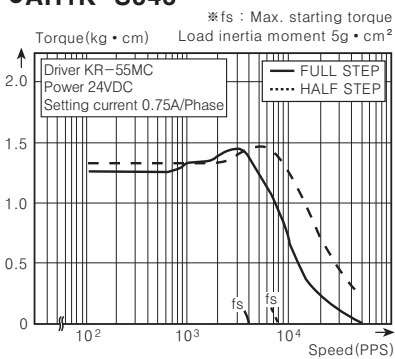
### ●A41K-□599 / A41K-□599-B



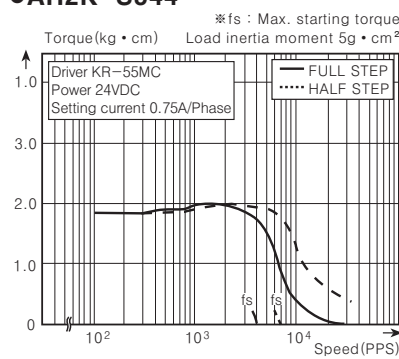
### ●A63K-G5913 / A63K-G5913-B



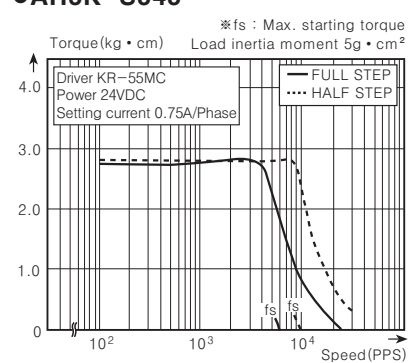
### ●AH1K-S543



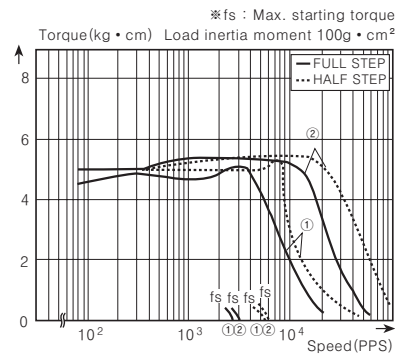
### ●AH2K-S544



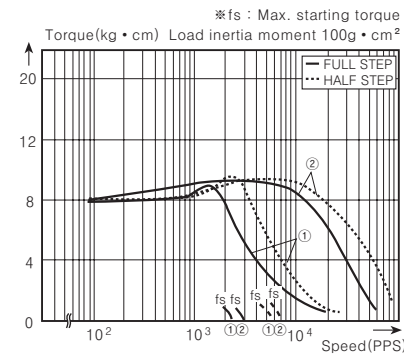
### ●AH3K-S545



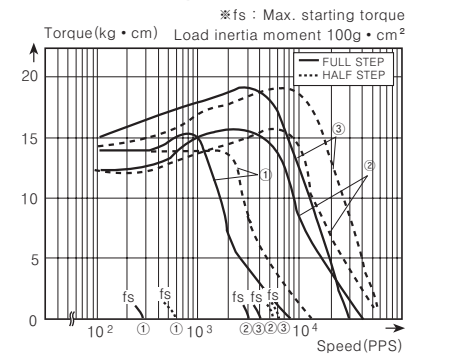
### ●AH4K-M564



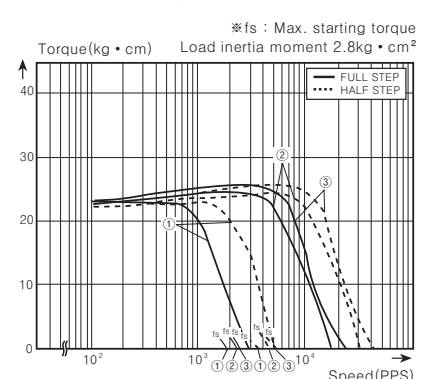
### ●AH8K-M566



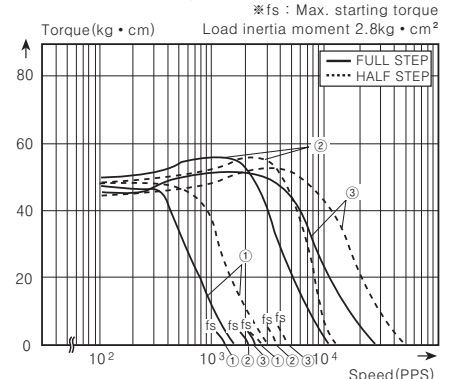
### ●AH16K-M(G)569



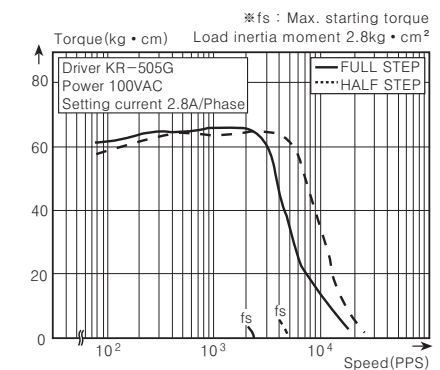
### ●AH21K-M(G)596



### ●AH41K-M(G)599



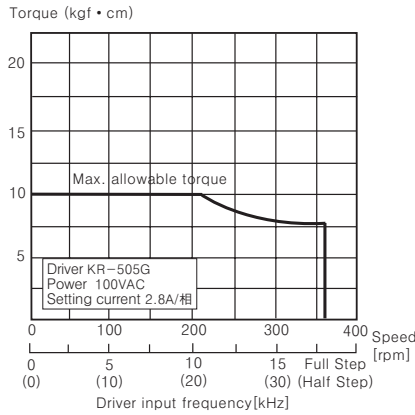
### ●AH63K-G5913



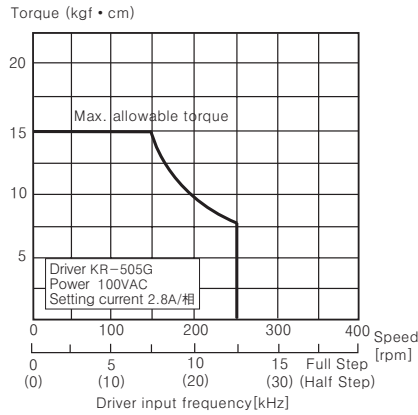
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## Characteristic

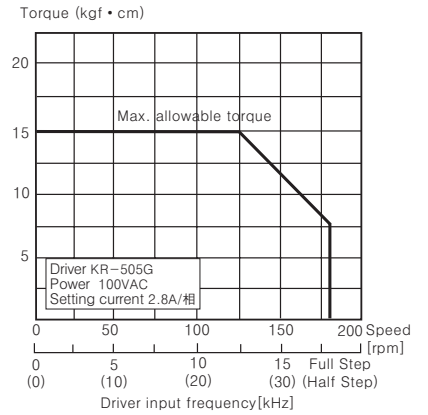
### ●A10K-S545(W)-G5



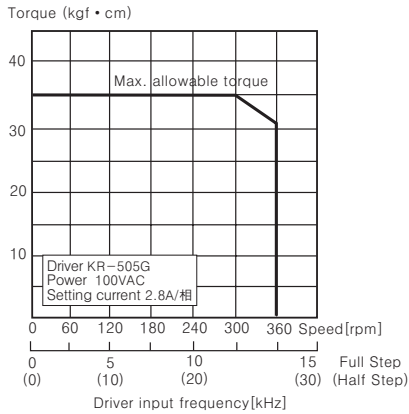
### ●A15K-S545(W)-G7.2



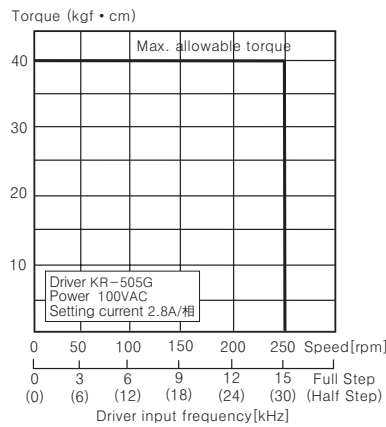
### ●A15K-S545(W)-G10



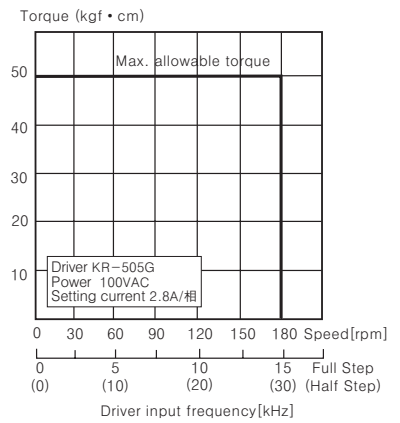
### ●A35K-M566(W)-□5 A35K-M566-□B5



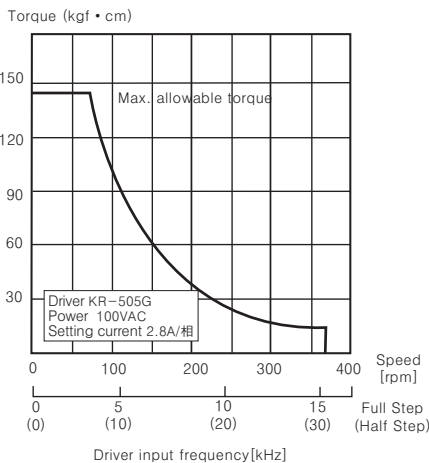
### ●A40K-M566(W)-□7.2 A40K-M566-□B7.2



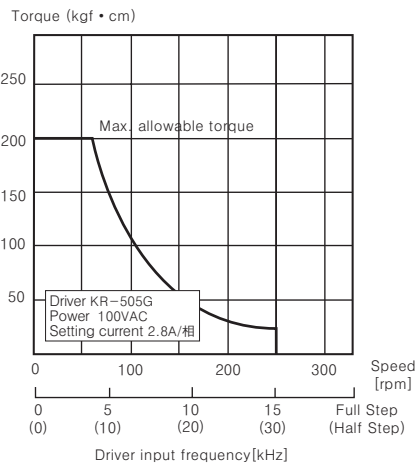
### ●A50K-M566(W)-□10 A50K-M566-□B10



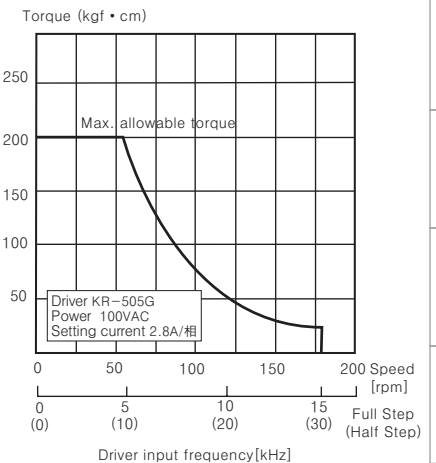
### ●A140K-□599(W)-G5 A140K-□599-GB5



### ●A200K-□599(W)-G7.2 A200K-□599-GB7.2



### ●A200K-□599(W)-G10 A200K-□599-GB10



(A) Counter

(B) Timer

(C) Temp. controller

(D) Power controller

(E) Panel meter

(F) Tacho/Speed/Pulse meter

(G) Display unit

(H) Sensor controller

(I) Switching power supply

(J) Proximity sensor

(K) Photo electric sensor

(L) Pressure sensor

(M) Rotary encoder

(N) Stepping motor & Driver & Controller

(O) Graphic panel

(P) Production stoppage models & replacement