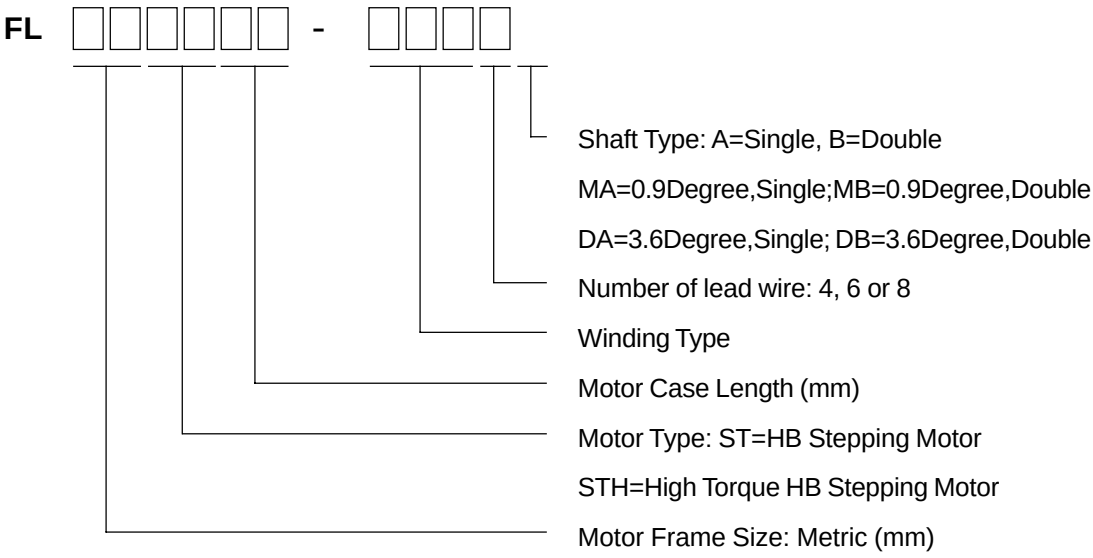
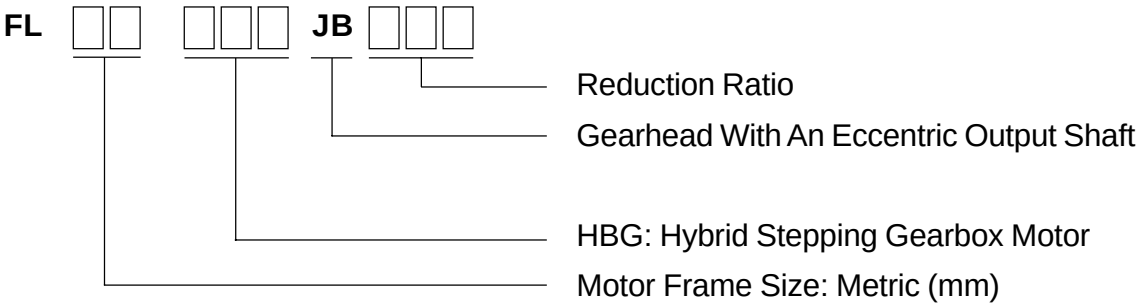
HB Stepping Motor and HB Stepping Gearmotor

Product Number Code For Hybrid Stepping Motor



Product Number Code For Stepping Gear motor



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1.8° Size 28mm High Torque Hybrid Stepping Motor

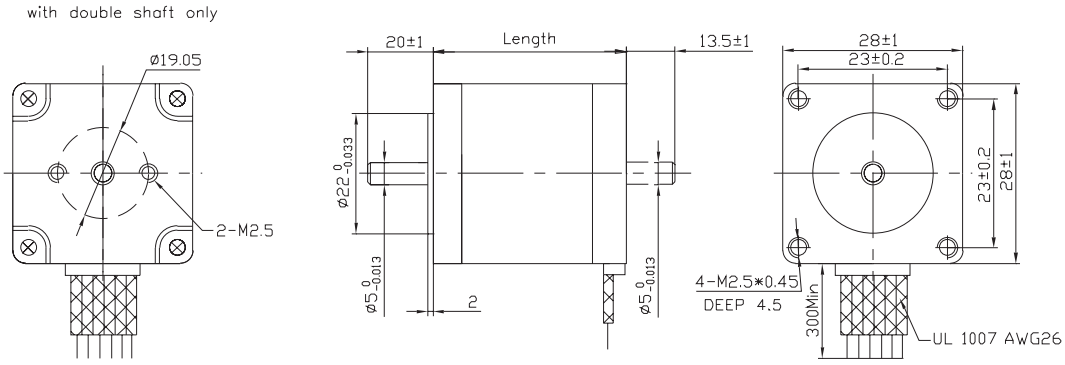
General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

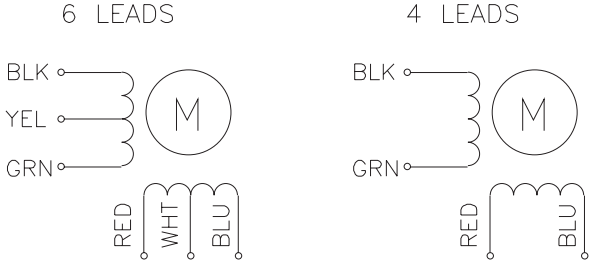
Size 28mm High Torque Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Length
Single Shaft	Double Shaft	V	A	Ω	mH	g. cm		kg-m²	kg	mm
FL28STH32-0956A	FL28STH32-0956B	2.66	0.95	2.8	1	430	6	9x10⁻⁷	0.11	31.5
FL28STH32-0674A	FL28STH32-0674B	3.8	0.67	5.6	4.2	600	4			
FL28STH45-0956A	FL28STH45-0956B	3.4	0.95	3.4	1.2	750	6	12x10⁻⁷	0.14	44.5
FL28STH45-0674A	FL28STH45-0674B	4.56	0.67	6.8	4.9	950	4			
FL28STH51-0956A	FL28STH51-0956B	4.4	0.95	4.6	1.8	900	6	18x10⁻⁷	0.2	50.5
FL28STH51-0674A	FL28STH51-0674B	6.2	0.67	9.2	7.2	1200	4			

Dimension

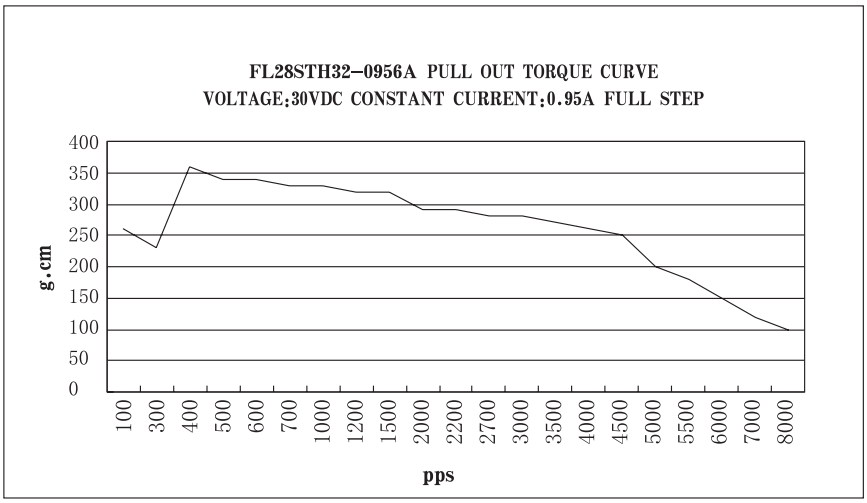


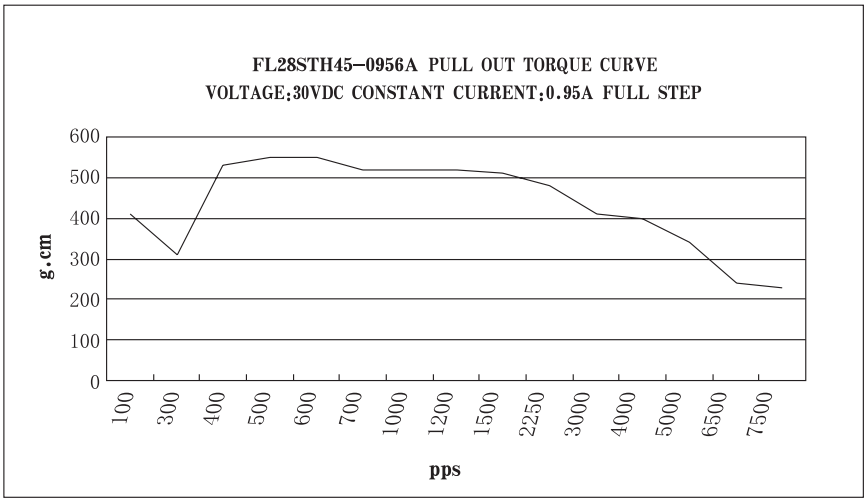
Wiring Diagram:

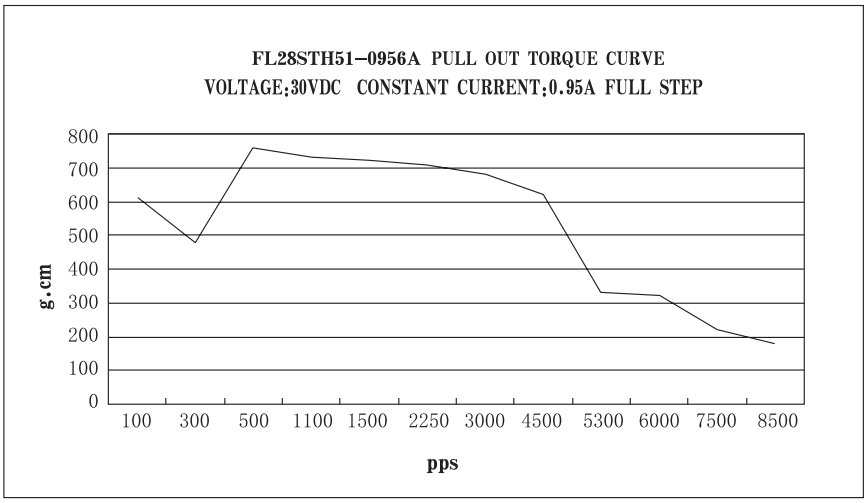


1.8° Size 28mm High Torque Hybrid Stepping Motor

- **Pull out torque:**







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1.8° Size 35mm Hybrid Stepping Motor

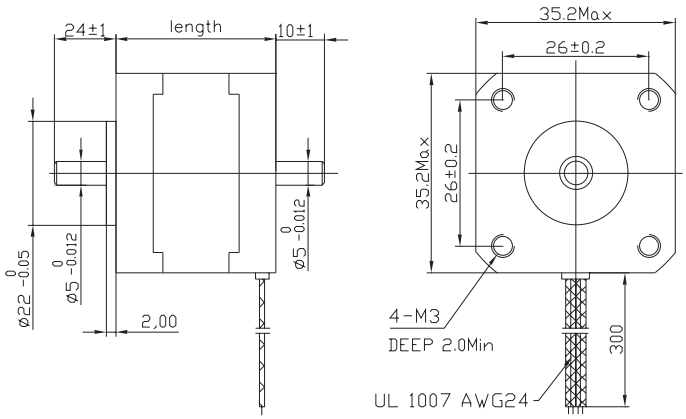
General Specification for Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

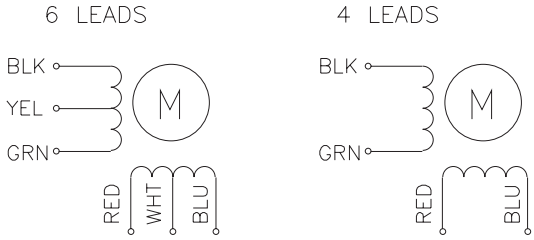
Size 35mm Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single shaft	Double shaft	V	A	Ω	mH	g-cm		g-cm²	kg	g-cm	mm
FL35ST22-0804A	FL35ST22-0804B	3.2	0.8	4	2.3	500	4	8	0.10	60	22
FL35ST26-0284A	FL35ST26-0284B	7.4	0.28	26	19.2	650	4	10	0.13	60	26
FL35ST28-0504A	FL35ST28-0504B	10	0.5	20	13.5	1000	4	10	0.14	80	28
FL35ST28-0406A	FL35ST28-0406B	11.2	0.4	28	10	500	6				
FL35ST36-0704A	FL35ST36-0704B	1.4	0.7	2	2.9	920	4	14	0.18	100	36
FL35ST36-1004A	FL35ST36-1004B	2.7	1.0	2.7	4.3	1400	4				

Dimension



Wiring Diagram



1.8° Size 39mm Hybrid Stepping Motor

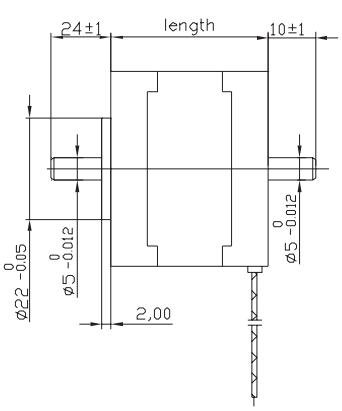
General Specification for Hybrid Stepping Motor

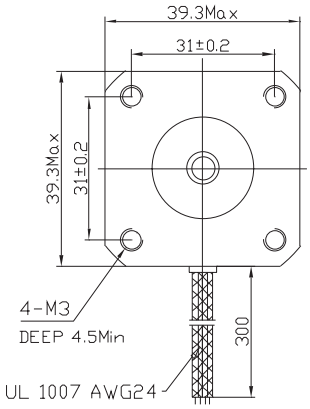
Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

Size 39mm Hybrid Stepping Motor Specifications

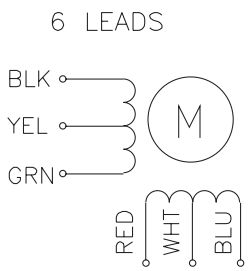
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single shaft	Double shaft	V	A	Ω	mH	g-cm		g-cm²	kg	g-cm	mm
FL39ST20-0404A	FL39ST20-0404B	2.64	0.4	6.6	7.5	650	4	11	0.12	50	20
FL39ST20-0506A	FL39ST20-0506B	6.5	0.5	13	7.5	800	6	20	0.18	120	34
FL39ST34-0654A	FL39ST34-0654B	4.55	0.65	7.0	9.3	1800	4				
FL39ST34-0404A	FL39ST34-0404B	12	0.4	30	32	2100	4				
FL39ST34-0604A	FL39ST34-0604B	9	0.6	15	16	2200	4				
FL39ST34-0306A	FL39ST34-0306B	12	0.3	40	20	1300	6				
FL39ST34-0166A	FL39ST34-0166B	12	0.16	75	50	1100	6				
FL39ST38-0504A	FL39ST38-0504B	12	0.5	24	45	2900	4	24	0.2	180	38
FL39ST38-0806A	FL39ST38-0806B	6	0.8	7.5	6	2000	6				
FL39ST44-0304A	FL39ST44-0304B	12	0.3	40	100	2800	4	40	0.25	250	44

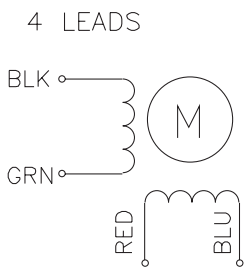
Dimension





Wiring Diagram





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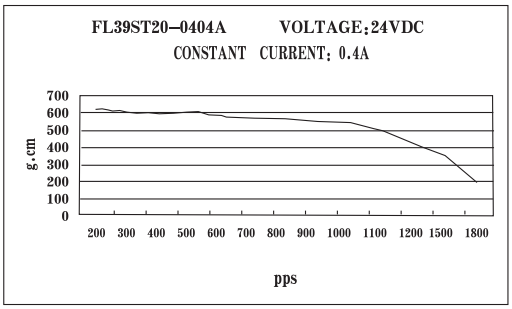
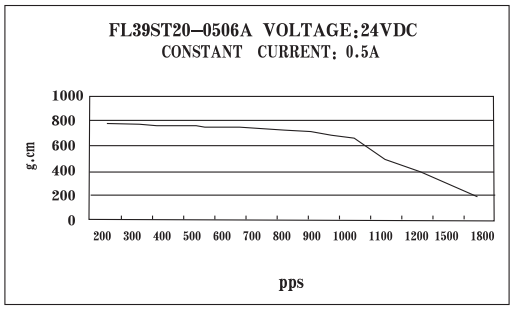
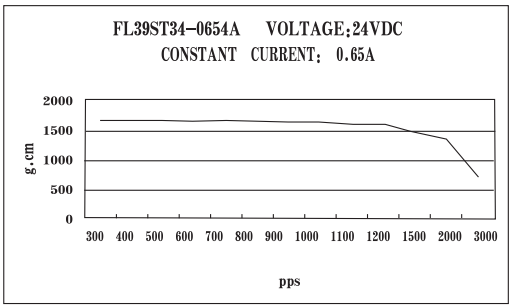
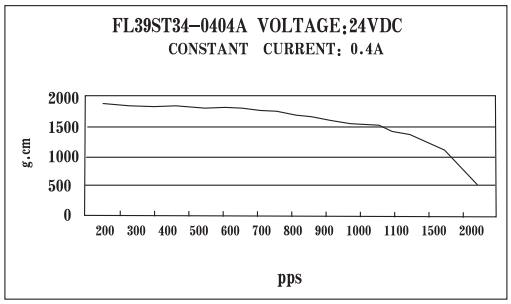
1.8° Size 39mm Hybrid Stepping Motor

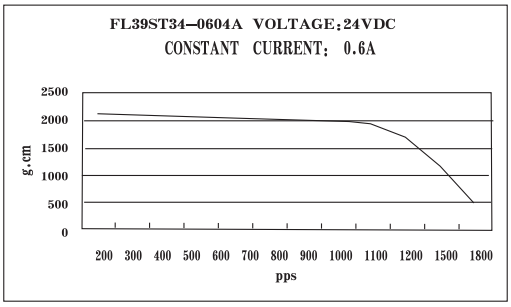
● Pull out Torque Curve

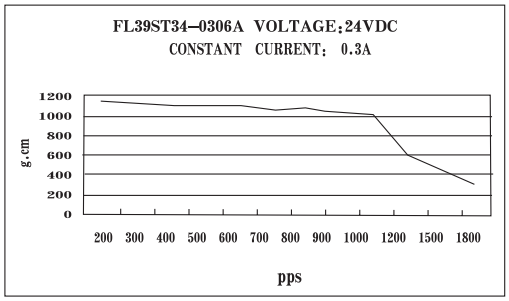




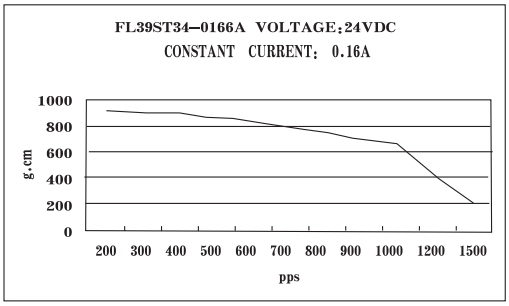


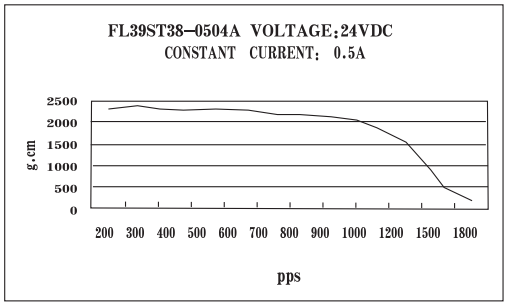


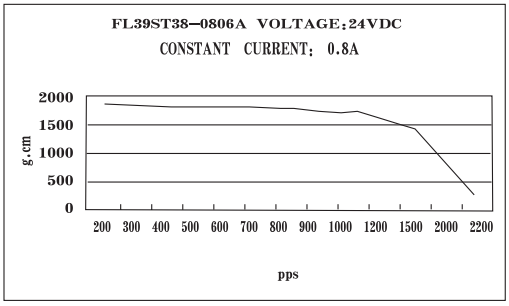


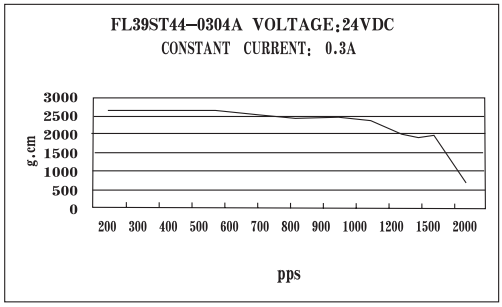


● Pull out Torque Curve









0.9° Size 42mm High Torque Hybrid Stepping Motor

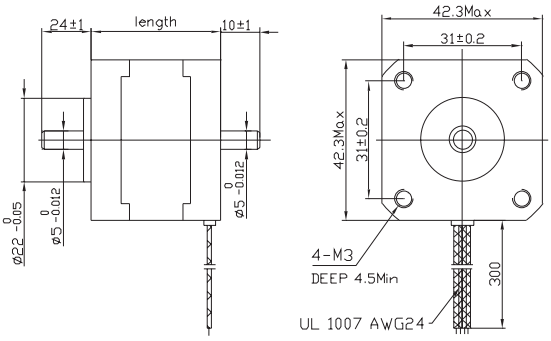
● General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	0.9°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

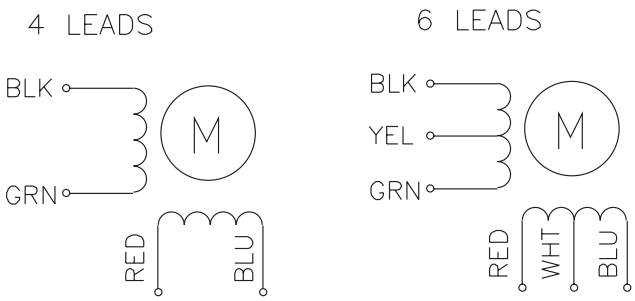
● Size 42mm High Torque Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Operating Curve	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg-cm		g-cm²	kg	g-cm		mm
FL42STH33-0956MA	FL42STH33-0956MB	4	0.95	4.2	4	1.58	6	35	0.22	200	a	33
FL42STH33-0606MA	FL42STH33-0606MB	6	0.6	10	9.5						b	
FL42STH33-0316MA	FL42STH33-0316MB	12	0.31	38.5	33						c	
FL42STH33-1334MA	FL42STH33-1334MB	2.8	1.33	2.1	4.2	2.2	4				d	
FL42STH38-1206MA	FL42STH38-1206MB	4	1.2	3.3	3.2	2.59	6	54	0.28	220	e	38
FL42STH38-0806MA	FL42STH38-0806MB	6	0.8	7.5	6.7						f	
FL42STH38-0404MA	FL42STH38-0404MB	12	0.4	30	30						g	
FL42STH38-1684MA	FL42STH38-1684MB	2.8	1.68	1.65	3.2	3.6	4				h	
FL42STH47-1206MA	FL42STH47-1206MB	4	1.2	3.3	4	3.17	6	68	0.35	250	i	47
FL42STH47-0806MA	FL42STH47-0806MB	6	0.8	7.5	6.3						j	
FL42STH47-0406MA	FL42STH47-0406MB	12	0.4	30	38						k	
FL42STH47-1684MA	FL42STH47-1684MB	2.8	1.68	1.65	4.1	4.4	4				l	

● Dimension



Wiring Diagram



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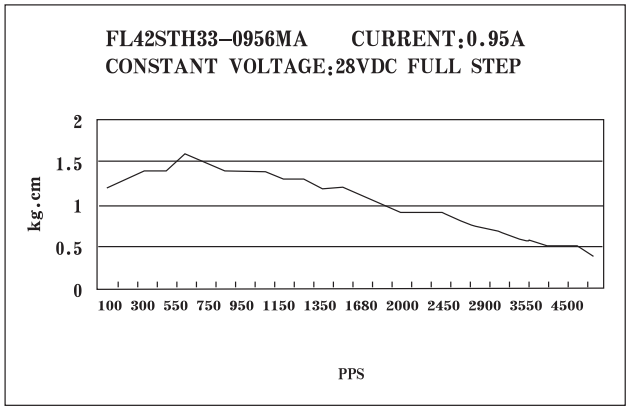
0.9° Size 42mm High Torque Hybrid Stepping Motor

- **Pull out Torque Curve**



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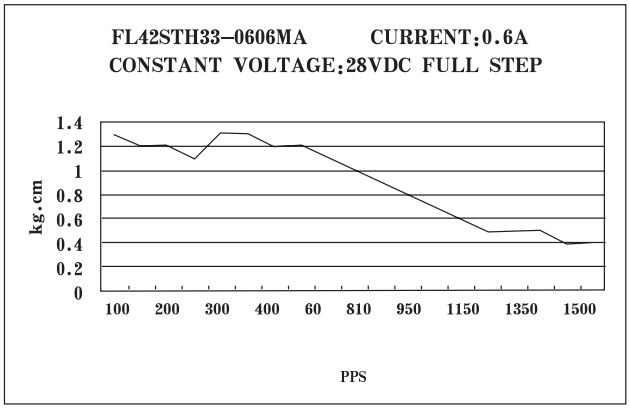

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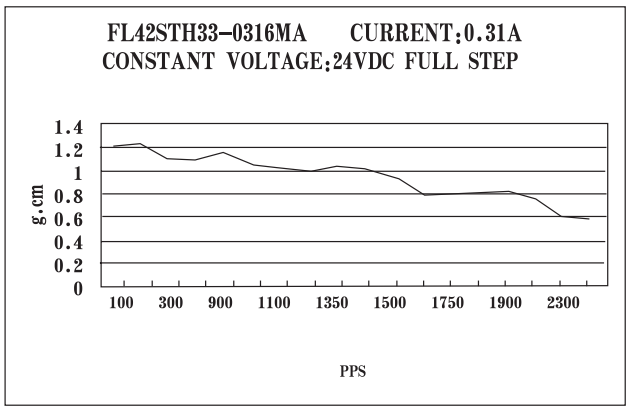

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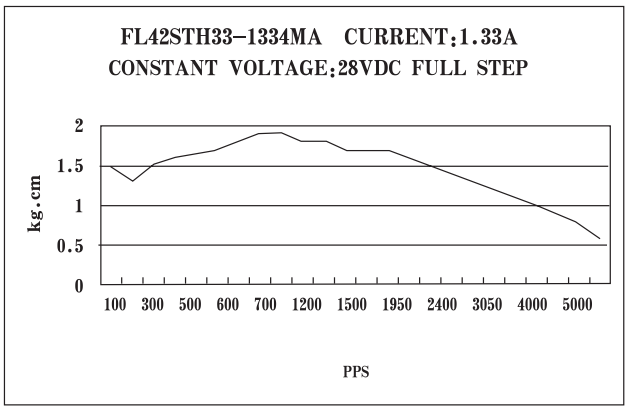

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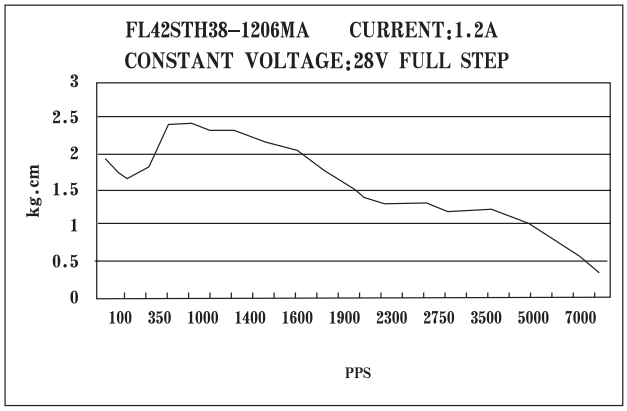

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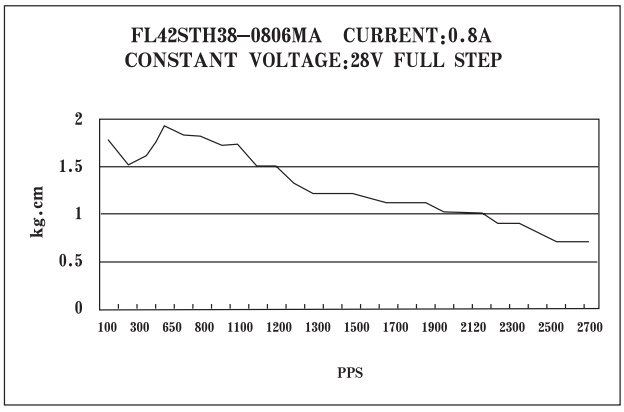

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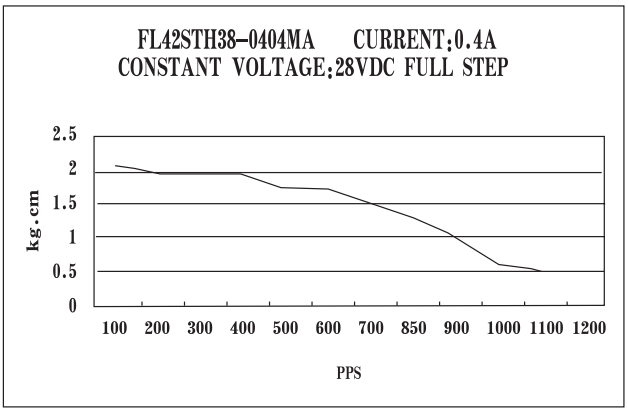

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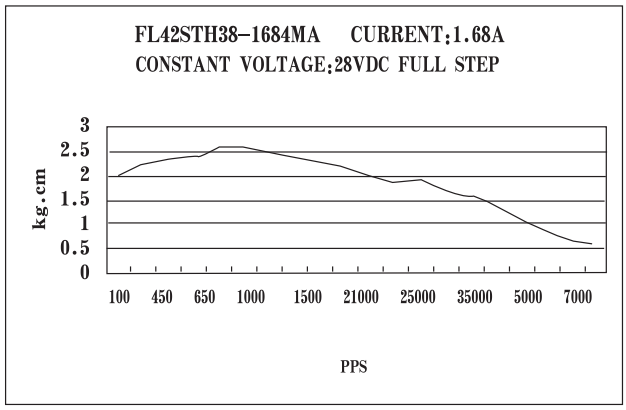
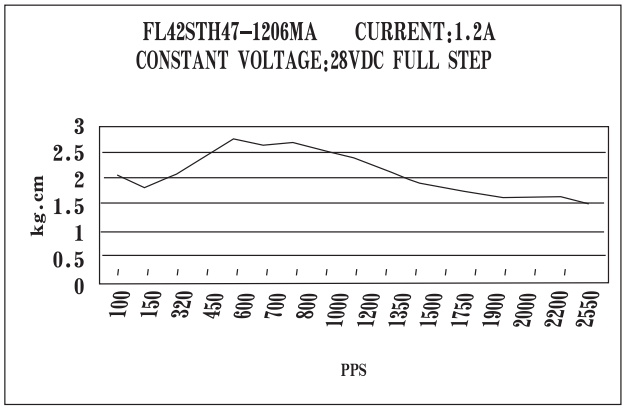


h

- **Pull out Torque Curve**



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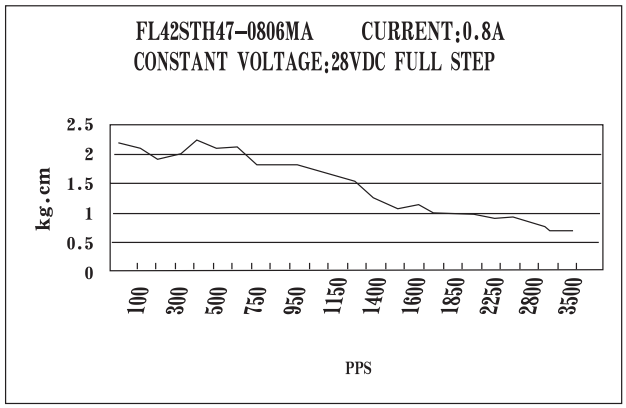

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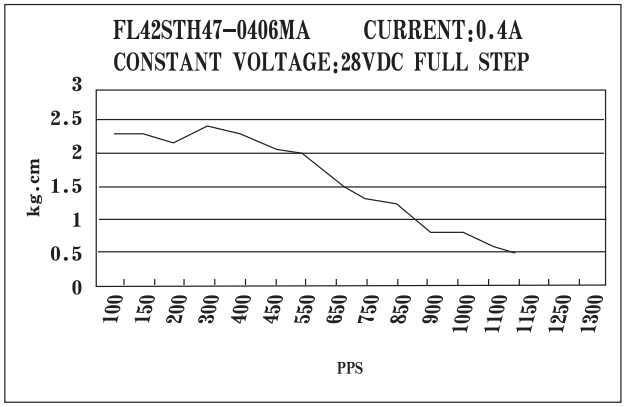

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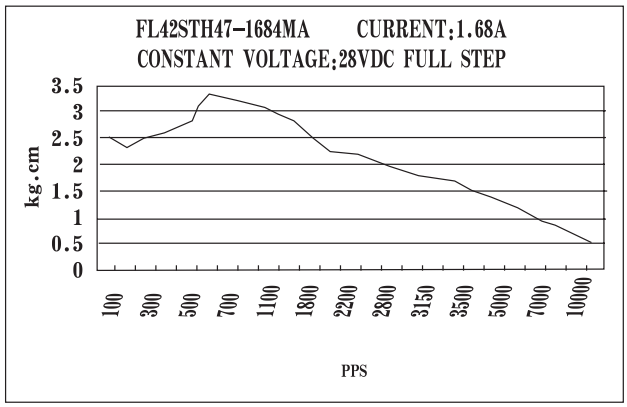

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1.8° Size 42mm High Torque Hybrid Stepping Motor

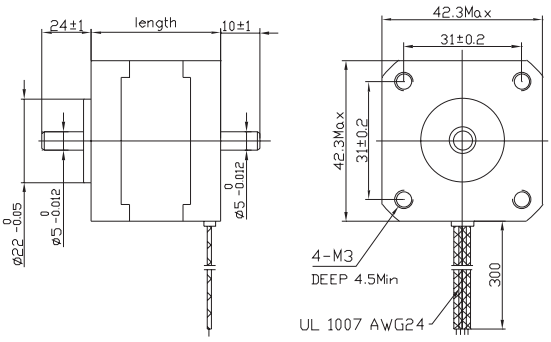
General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

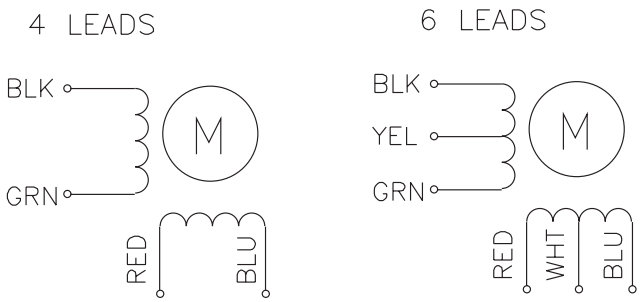
Size 42mm High Torque Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg-cm		g-cm²	kg	g-cm	mm
FL42STH25-0404A	FL42STH25-0404B	9.6	0.4	24	36	1.7	4	20	0.15	200	25
FL42STH33-0404A	FL42STH34-0404B	12	0.4	30	37	2.5	4	38	0.2	120	34
FL42STH33-0956A	FL42STH34-0956B	3.99	0.95	4.2	2.8	1.6	6				
FL42STH33-0476A	FL42STH34-0476B	6.392	0.47	13.6	9.8						
FL42STH38-0406A	FL42STH38-0406B	12	0.4	30	24	2.5	6	57	0.24	150	40
FL42STH38-0804A	FL42STH38-0804B	8	0.8	10	17	3.2	4				
FL42STH38-1206A	FL42STH38-1206B	3.96	1.2	3.3	2.4	2.4	6				
FL42STH38-0806A	FL42STH38-0806B	6.0	0.8	7.5	7.0	2.8					
FL42STH47-1006A	FL42STH48-1006B	4.6	1.0	4.6	4.0	3.4	6	82	0.34	200	48
FL42STH47-0406A	FL42STH48-0406B	12	0.4	30	28	3.8					
FL42STH47-1204A	FL42STH48-1204B	3.84	1.2	3.2	6.0	4.5	4				
FL42STH47-0854A	FL42STH48-0854B	5.61	0.85	6.6	11						

Dimension



Wiring Diagram



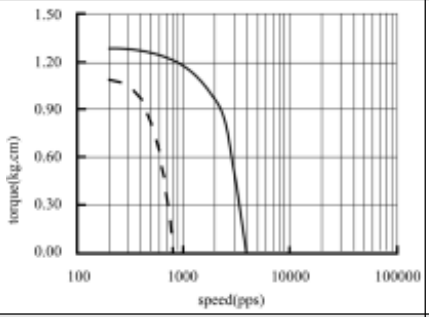
MOTION
CONTROL PRODUCTS LTD

1.8° Size 42mm High Torque Hybrid Stepping Motor

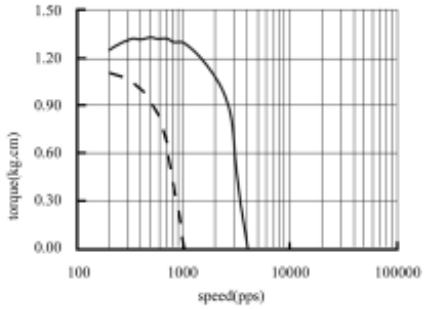
- **Pull out Torque Curve 42sth**

SERIES MOTOR DYNAMIC CHARACTERISTICS

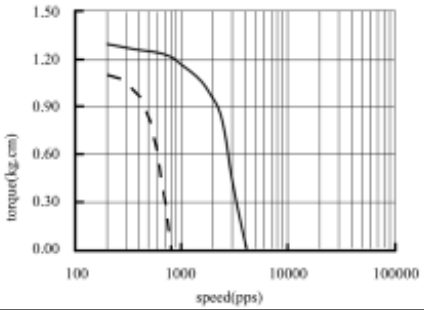
MODEL:FL42STH33-0404A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.4A



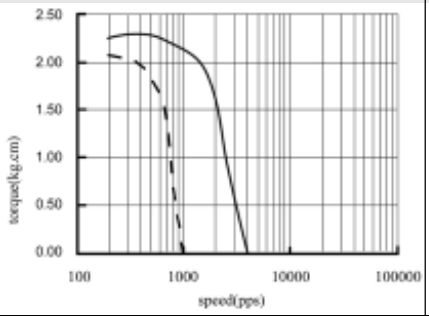
MODEL:FL42STH33-0956A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.95A



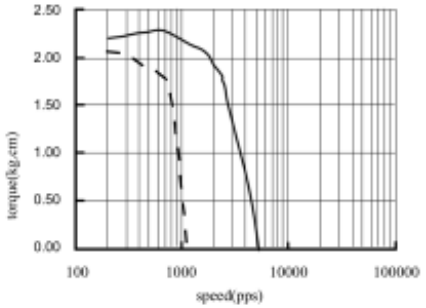
MODEL:FL42STH33-0476A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.47A



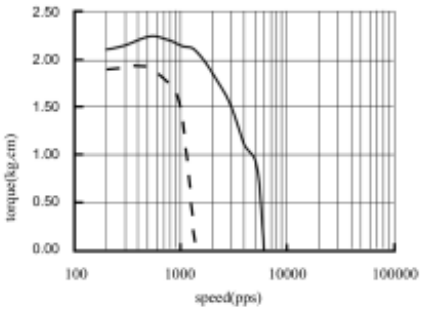
MODEL:FL42STH38-0406A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.4A



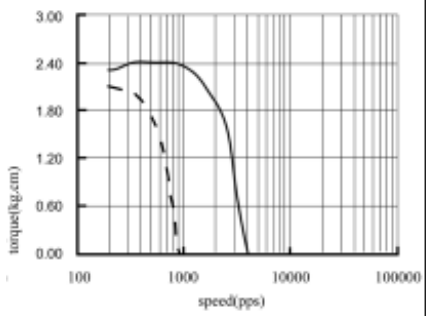
MODEL:FL42STH38-0804A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.8A



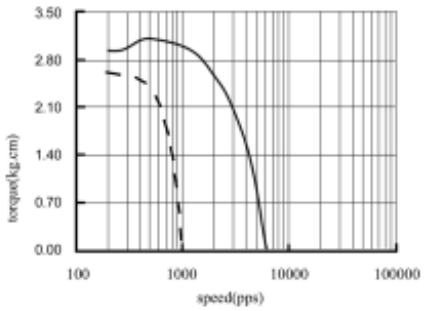
MODEL:FL42STH38-1206A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:1.2A



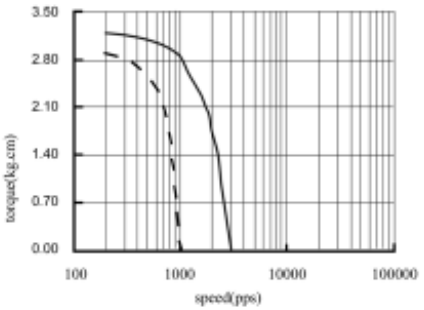
MODEL:FL42STH38-0806A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.8A



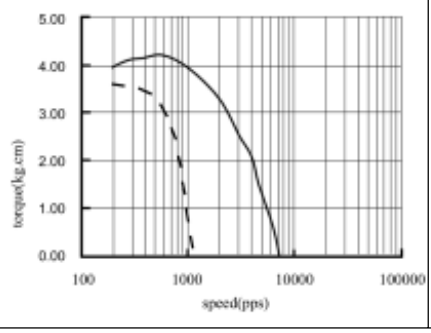
MODEL:FL42STH47-1006A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:1.0A



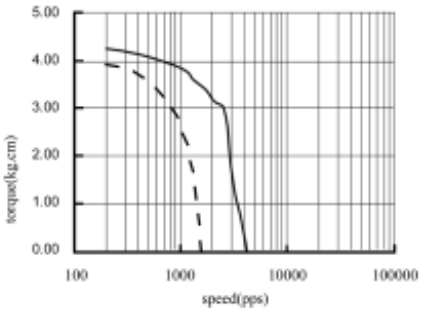
MODEL:FL42STH47-0406A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:1.0A



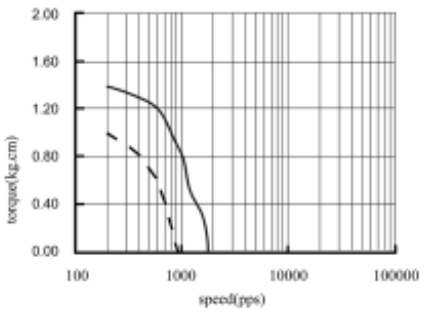
MODEL:FL42STH47-1204A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:1.2A



MODEL:FL42STH47-0854A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.85A



MODEL:FL42STH25-0404A TORQUE.SPEED CURVE
DRIVER:CHOPPER SUPPLY VOLTAGE:24V
CURRENT:0.4A



— — — PULL IN TORQUE
——— PULL OUT TORQUE

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1.8° Size 42mm High Torque Hybrid Stepping Motor With Thread Shaft

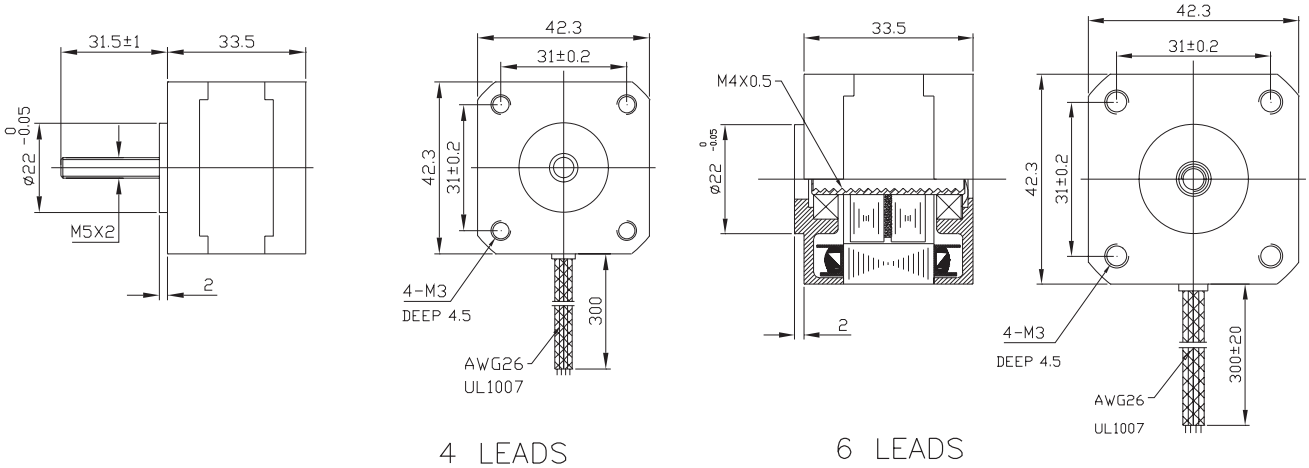
● General Specification for High Torque Hybrid Stepping Motor With Thread

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

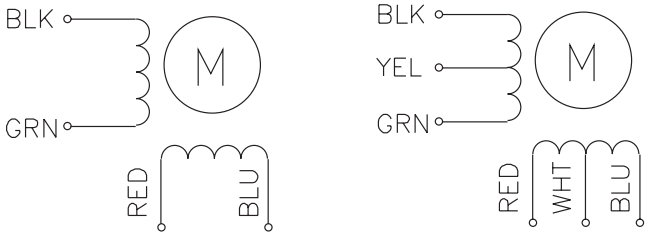
● Size 42mm High Torque Hybrid Stepping Motor Specifications With Thread

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	V	A	Ω	mH	g-cm		g-cm²	kg	g-cm	mm
FL42STH33T-0554A	1.8	0.55	3.2	4.5	900	4	35	0.2	120	34
FL42STH33S-0956A	4.0	0.95	4.2	2.5	1580	6	35	0.2	120	34

● Dimension



● Wiring Diagram



3.6° Size 42mm Hybrid Stepping Motor

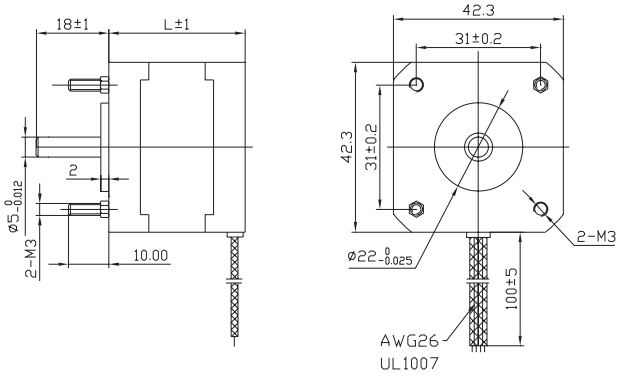
General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	3.6°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°CMax.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	28N (20mm from the flange)
Max. axial force	10N
Rotation	CW(See from Front Flange)

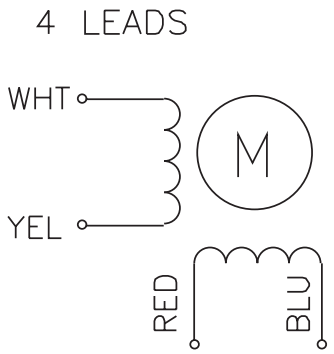
Size 42mm Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	g-cm		g-cm²	kg	g-cm	mm
FL42ST34-0954DA	FL42ST34-0954DB	9.31	0.095	98	200	530	4	20	0.20	150	34
FL42ST38-0954DA	FL42ST38-0954DB	9.98	0.095	105	330	700	4	23	0.23	150	38

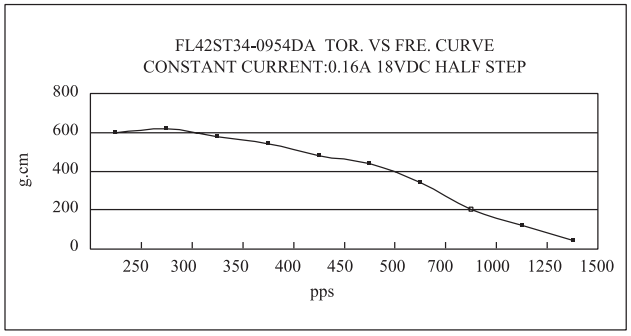
Dimension

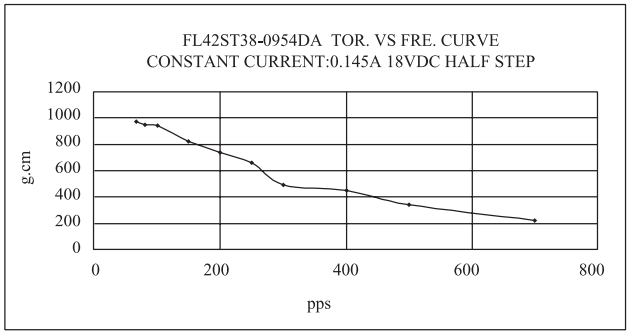


Wiring Diagram:



Pull out Torque Curve:





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0.9° Size 57mm High torque Hybrid Stepping Motors

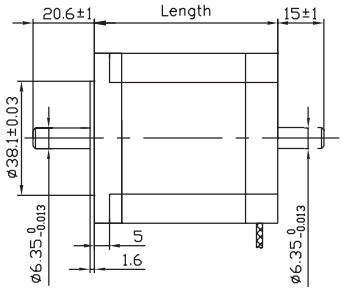
● General Specification for High Torque Hybrid Stepping Motor

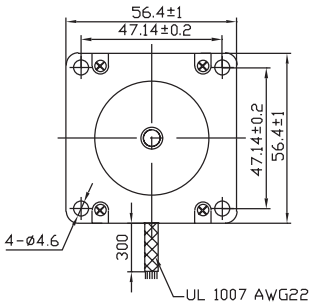
Item	Specifications
Step Angle	0.9°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW(See from Front Flange)

● Size 57mm High Torque Hybrid Stepping Motor Specifications

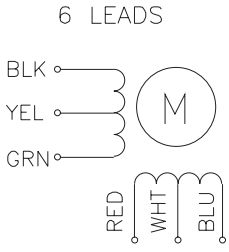
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Operating Curve	Length
Single Shaft	**Double Shaft**	V	A	Ω	mH	kg-cm		g-cm²	kg	kg-cm		mm
FL57STH39-1006MA	FL57STH39-1006MB	5.7	1	5.7	5.4	3.9	6	120	0.45	0.21	a	39
FL57STH39-2006MA	FL57STH39-2006MB	2.8	2	1.4	1.4						b	
FL57STH39-3006MA	FL57STH39-3006MB	1.9	3	0.63	0.6						c	
FL57STH39-2804MA	FL57STH39-2804MB	2	2.8	0.7	1.4	5.5	4				d	
FL57STH56-1006MA	FL57STH56-1006MB	7.4	1	7.4	10	9.0	6	300	0.7	0.4	e	56
FL57STH56-2006MA	FL57STH56-2006MB	3.6	2	1.8	2.5						f	
FL57STH56-3006MA	FL57STH56-3006MB	2.3	3	0.75	1.1						g	
FL57STH56-2804MA	FL57STH56-2804MB	2.5	2.8	0.9	2.5	12.6	4				h	
FL57STH76-1006MA	FL57STH76-1006MB	8.6	1	8.6	14	13.5	6	480	1	0.68	i	76
FL57STH76-2006MA	FL57STH76-2006MB	4.5	2	2.25	3.6						j	
FL57STH76-3006MA	FL57STH76-3006MB	3	3	1	1.6						k	
FL57STH76-2804MA	FL57STH76-2804MB	3.2	2.8	1.13	3.6	18.9	4				l	

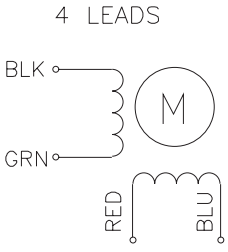
● Dimension





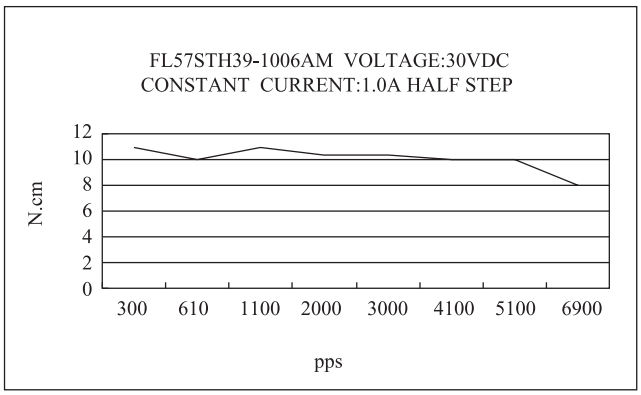
Wiring Diagram





0.9° Size 57mm High torque Hybrid Stepping Motors

- **Pull out Torque Curve**



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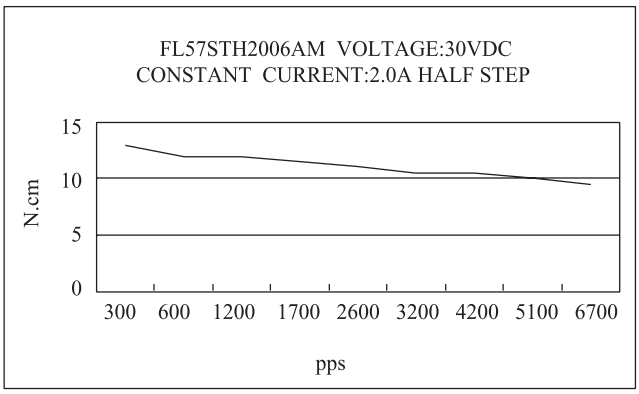

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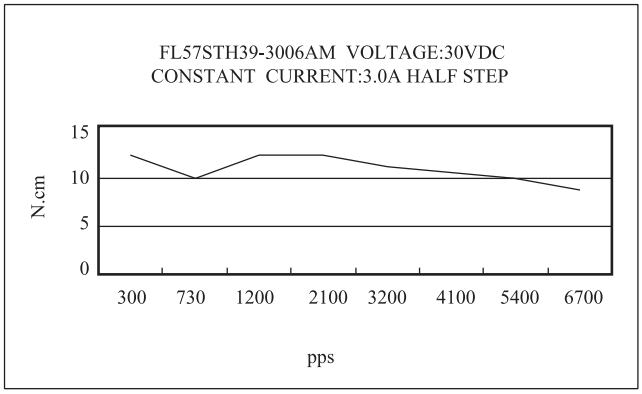

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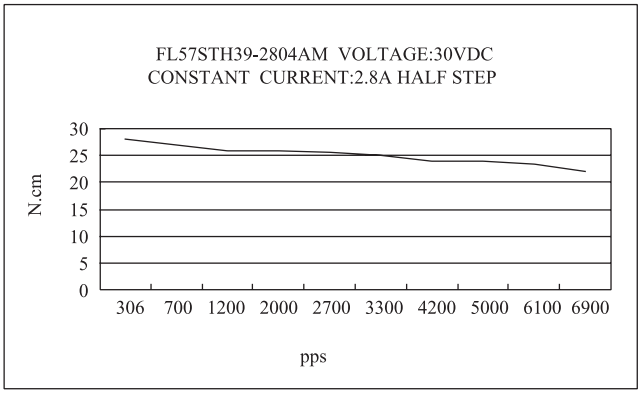

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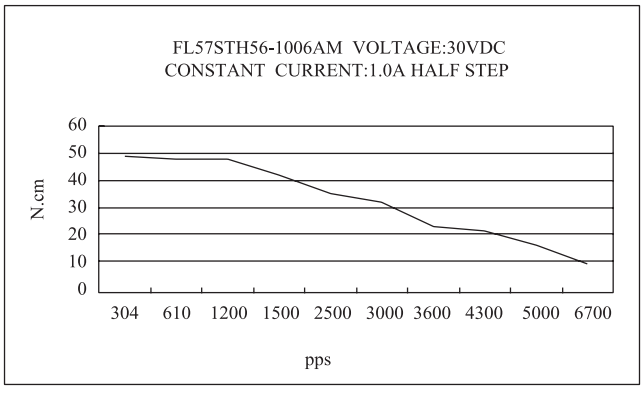

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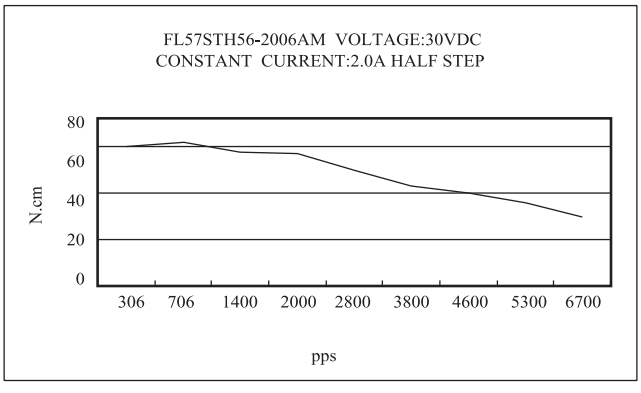

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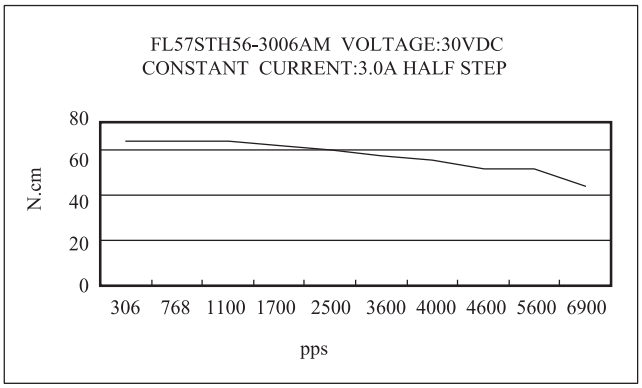

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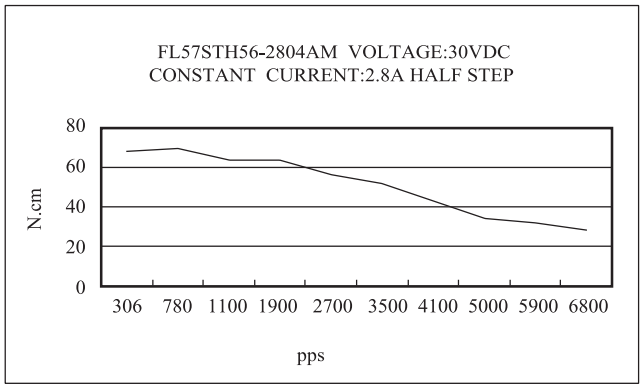
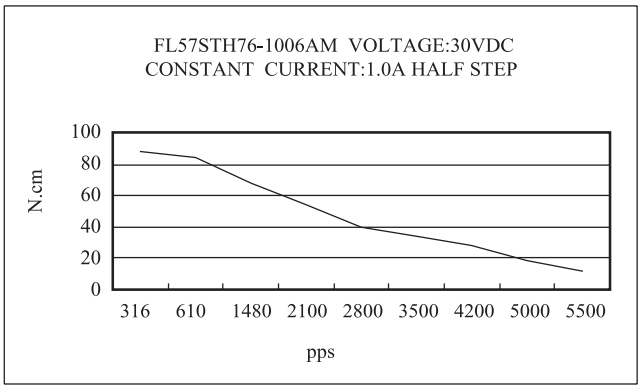


h

● Pull out Torque Curve



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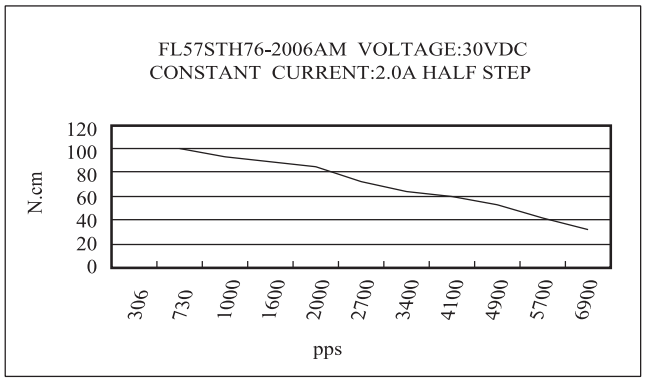

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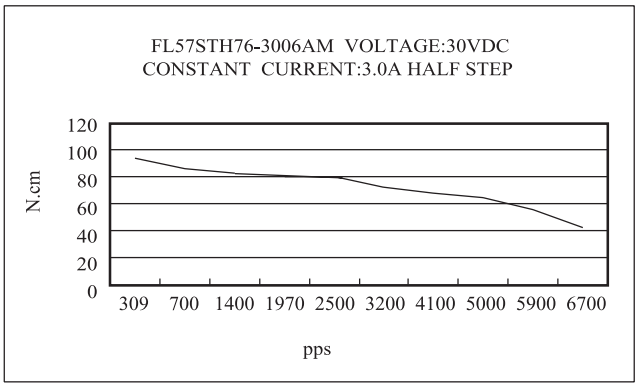

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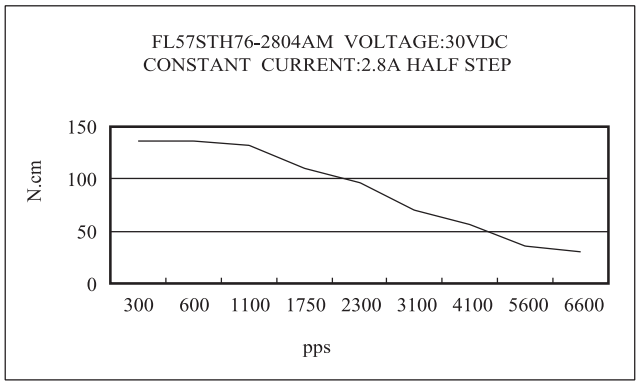


l

1.8° Size 57mm Hybrid Stepping Motor

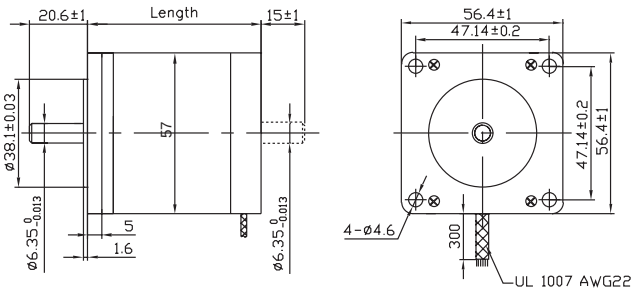
● General Specification for Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW(See from Front Flange)

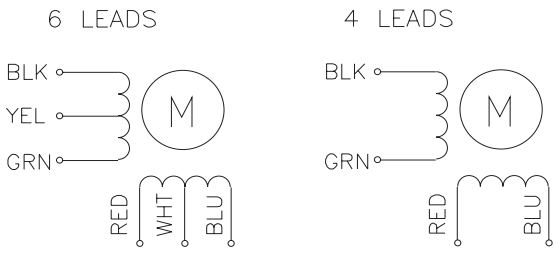
● Size 57mm Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	kg-cm		g-cm²	kg	kg-cm	mm
FL57ST41-1106A	FL57ST41-1106B	4	1.1	3.6	3.6	2.88	6	57	0.54	0.18	41
FL57ST41-0406A	FL57ST41-0406B	12	0.4	30	30						
FL57ST41-1564A	FL57ST41-1564B	2.8	1.56	1.8	3.6	4.0	4				
FL57ST51-0856A	FL57ST51-0856B	6	0.85	7.1	9	4.97	6	110	0.60	0.35	51
FL57ST51-0426A	FL57ST51-0426B	12	0.42	29	36						
FL57ST51-2804A	FL57ST51-2804B	1.8	2.8	0.65	1.6	6.9	4				
FL57ST56-1206A	FL57ST56-1206B	6	1.2	5	8	6.05	6	135	0.65	0.42	56
FL57ST56-0606A	FL57ST56-0606B	12	0.6	20	32						
FL57ST56-2554A	FL57ST56-2554B	2.8	2.55	1.1	3.6	8.4	4				
FL57ST76-1506A	FL57ST76-1506B	5.4	1.5	3.6	6	9	6	200	0.95	0.72	76
FL57ST76-0686A	FL57ST76-0686B	12	0.68	17.7	30						
FL57ST76-3304A	FL57ST76-3304B	2.7	3.3	0.85	3	2.5	4				

● Dimension



Wiring Diagram



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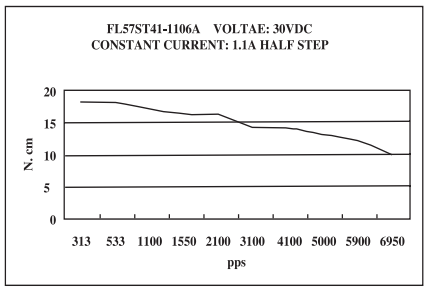
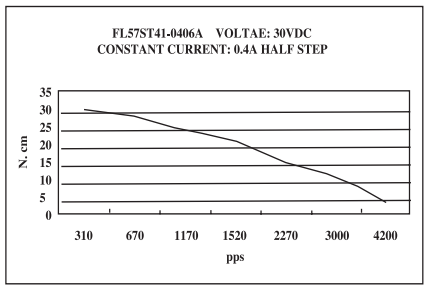
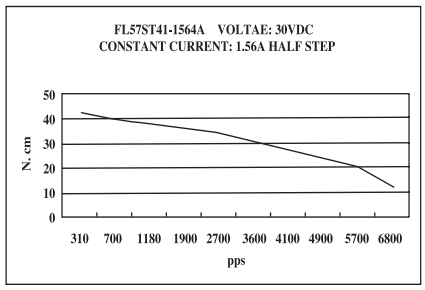
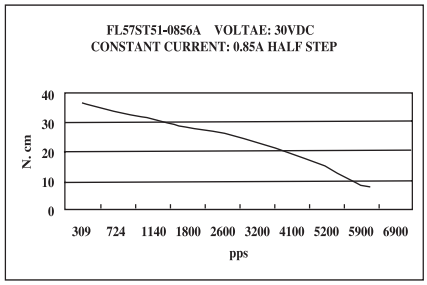
1.8° Size 57mm Hybrid Stepping Motor

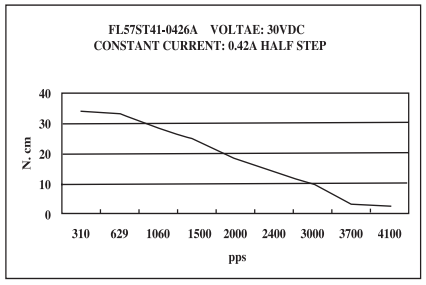
- **Pull out Torque Curve**

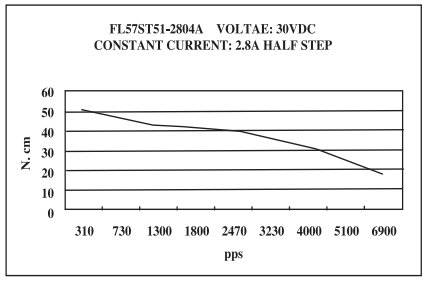


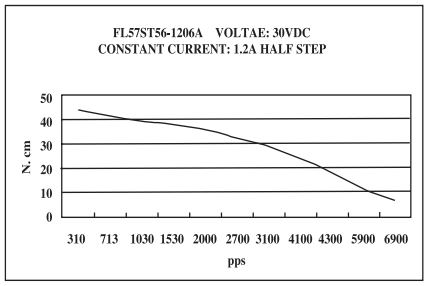


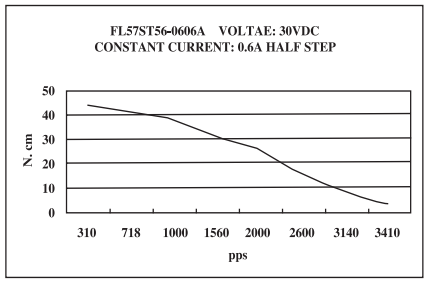


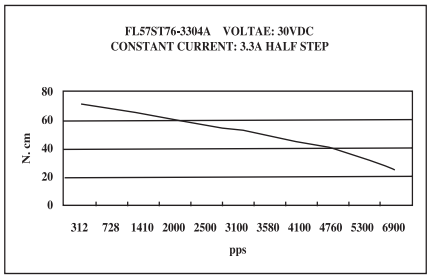


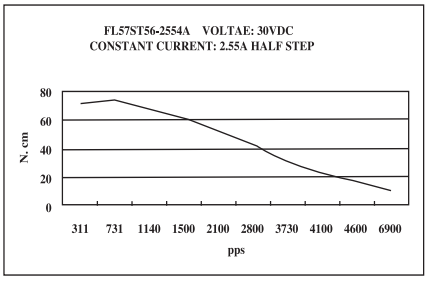


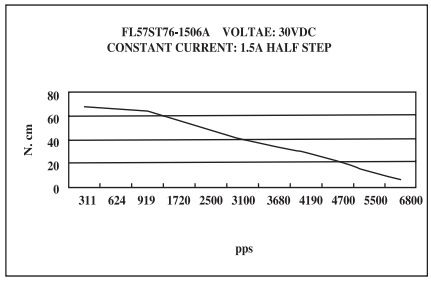


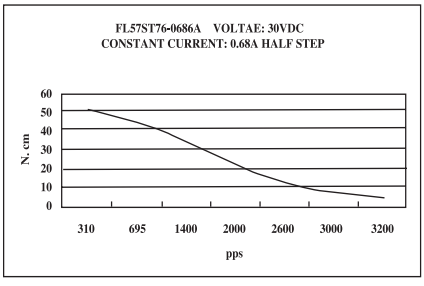












1.8° Size 57mm High Torque Hybrid Stepping Motor

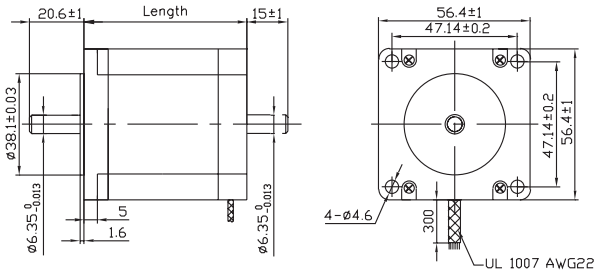
General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°CMax.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	75N (20mm from the flange)
Max. axial force	15N
Rotation	CW(See from Front Flange)

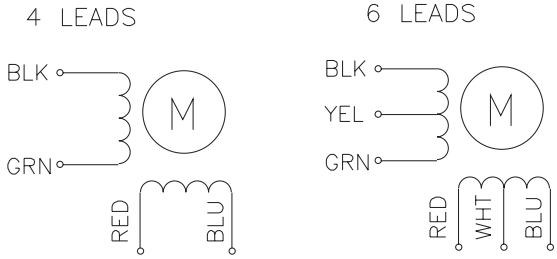
Size 57mm High Torque Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	**Double Shaft**	V	A	Ω	mH	kg-cm		g-cm²	kg	kg-cm	mm
FL57STH41-1006A	FL57STH41-1006B	5.7	1	5.7	5.4	3.9	6	120	0.45	0.21	41
FL57STH41-2006A	FL57STH41-2006B	2.8	2	1.4	1.4						
FL57STH41-3006A	FL57STH41-3006B	1.9	3	0.63	0.6						
FL57STH41-2804A	FL57STH41-2804B	2	2.8	0.7	1.4	5.5	4				
FL57STH51-1006A	FL57STH51-1006B	6.6	1	6.6	8.2	7.2	6	275	0.65	0.36	51
FL57STH51-2006A	FL57STH51-2006B	3.3	2	1.65	2.2						
FL57STH51-3006A	FL57STH51-3006B	2.2	3	0.74	0.9						
FL57STH51-2804A	FL57STH51-2804B	2.3	2.8	0.83	2.2	10.1	4				
FL57STH56-1006A	FL57STH56-1006B	7.4	1	7.4	10	9.0	6	300	0.7	0.4	56
FL57STH56-2006A	FL57STH56-2006B	3.6	2	1.8	2.5						
FL57STH56-3006A	FL57STH56-3006B	2.3	3	0.75	1.1						
FL57STH56-2804A	FL57STH56-2804B	2.5	2.8	0.9	2.5	12.6	4				
FL57STH76-1006A	FL57STH76-1006B	8.6	1	8.6	14	13.5	6	480	1	0.68	76
FL57STH76-2006A	FL57STH76-2006B	4.5	2	2.25	3.6						
FL57STH76-3006A	FL57STH76-3006B	3	3	1	1.6						
FL57STH76-2804A	FL57STH76-2804B	3.2	2.8	1.13	3.6	18.9	4				

Dimension



Wiring Diagram



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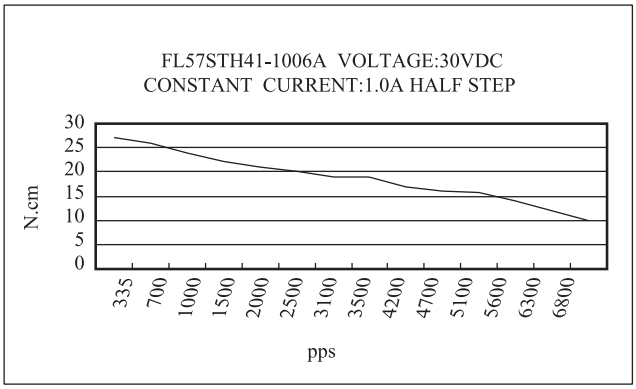
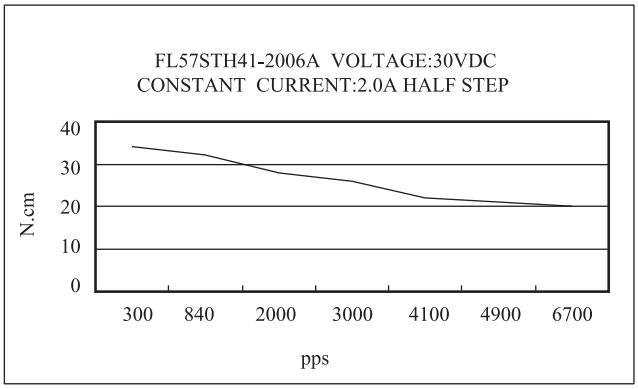
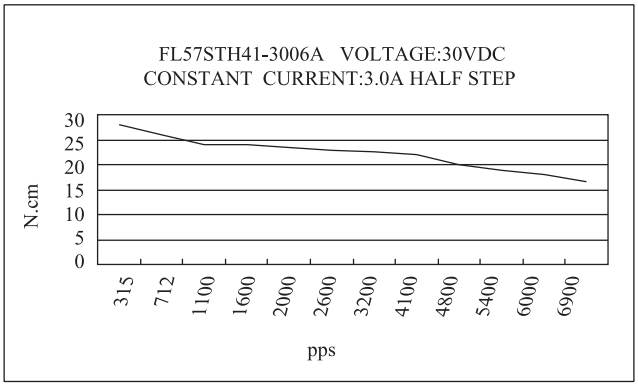
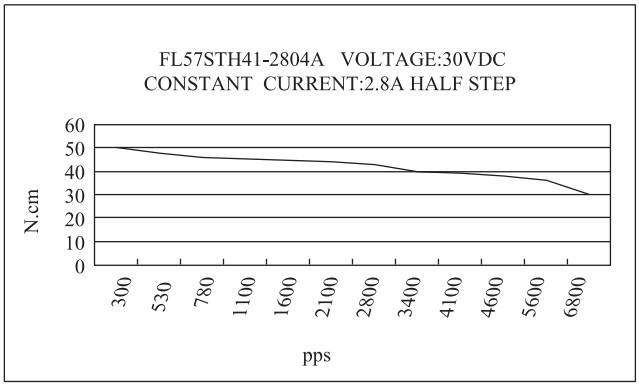
1.8° Size 57mm High Torque Hybrid Stepping Motor

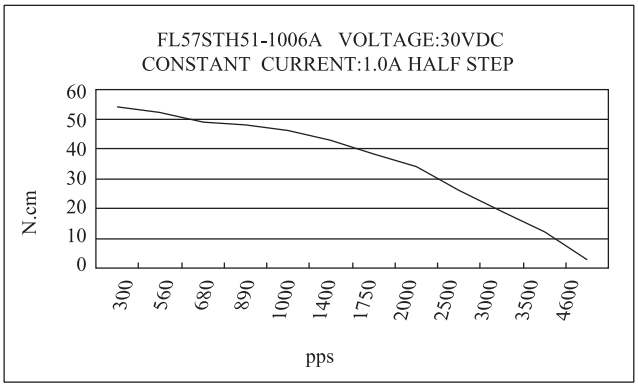
- **Pull out Torque Curve**

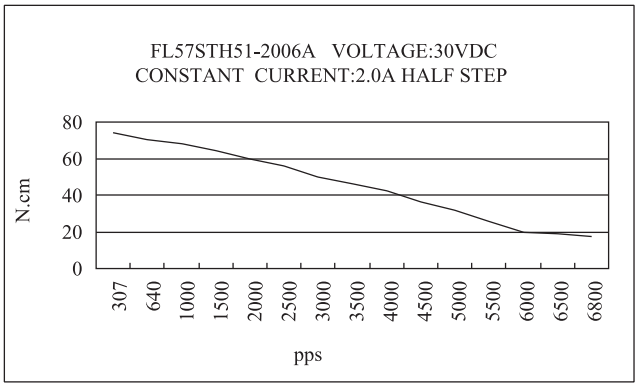


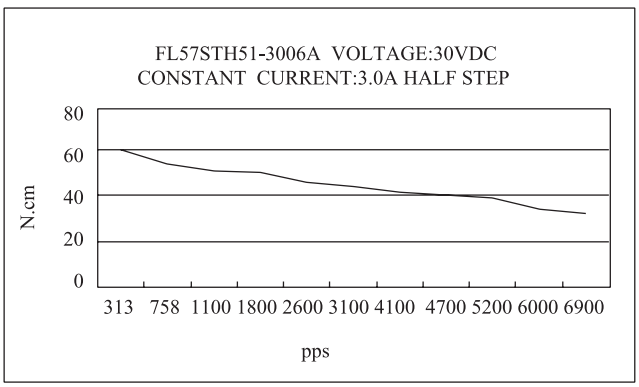


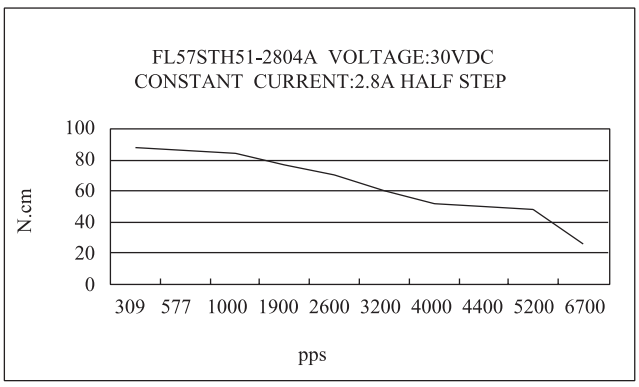




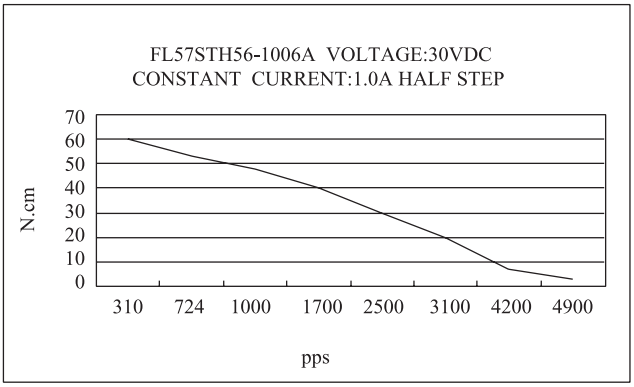


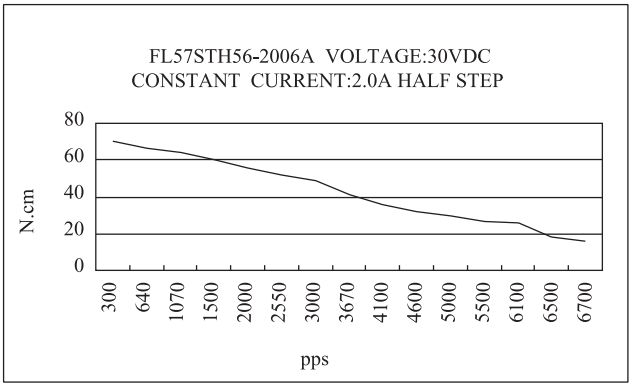


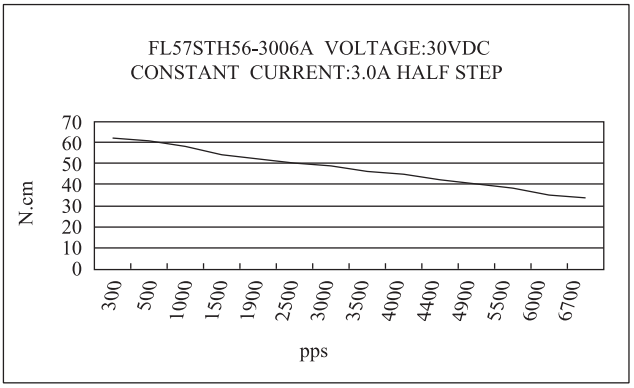


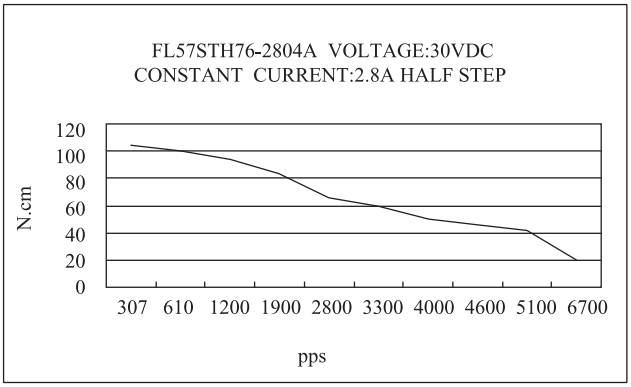


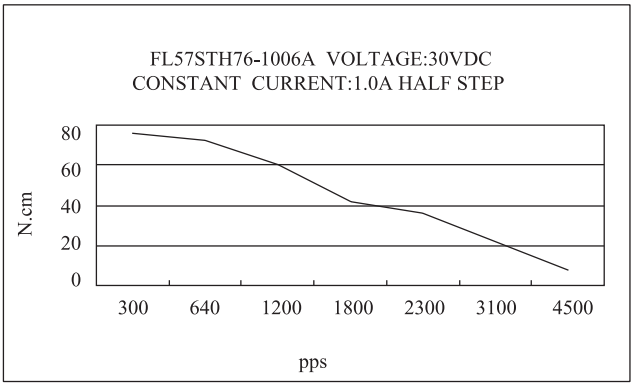
Pull out Torque Curve

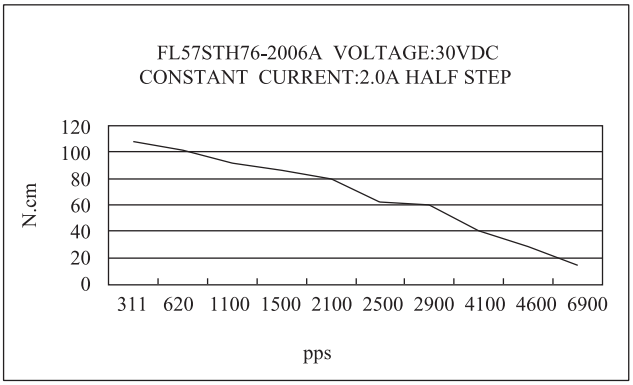


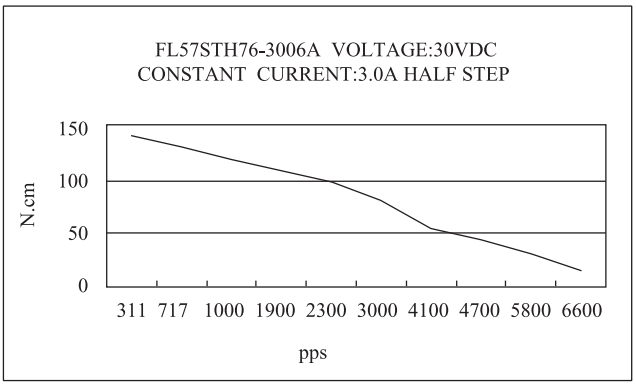


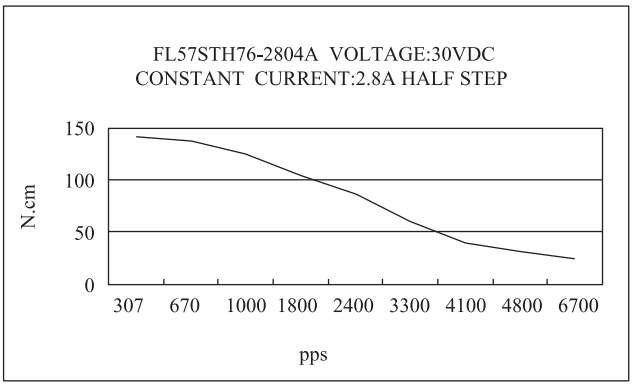












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1.8° Size 86mm Hybrid Stepping Motor

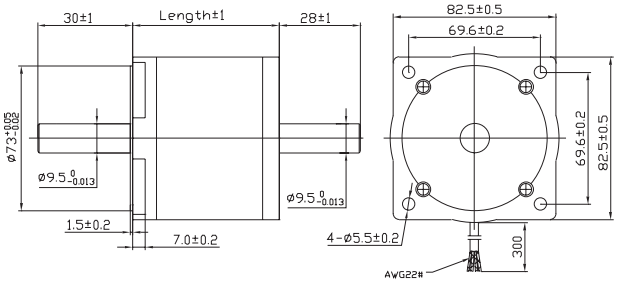
General Specification for Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW(See from Front Flange)

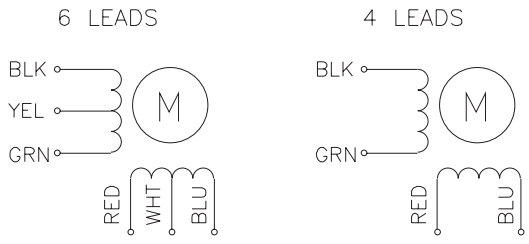
Size 86mm High Torque Hybrid Stepping Motor Specifications

Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg.cm		g-cm²	kg	kg-cm	mm
FL86ST62-4506A	FL86ST62-4506B	1.8	4.5	0.4	1.4	13	6	560	1.5	0.8	62
FL86ST62-1256A	FL86ST62-1256B	5.5	1.25	4.4	14	13	6				
FL86ST62-1406A	FL86ST62-1406B	0.7	14	20	60	13	6				
FL86ST62-5904A	FL86ST62-5904B	1.33	5.9	0.23	1.5	18	4				
FL86ST94-4006A	FL86ST94-4006B	3.0	4.0	0.75	4.5	26	6	1100	2.6	2.4	94
FL86ST94-2006A	FL86ST94-2006B	6.0	2.0	3.0	18	26	6				
FL86ST94-1006A	FL86ST94-1006B	12	1	12	72	26	6				
FL86ST94-5606A	FL86ST94-5606B	2.1	5.6	0.38	3.9	35	4				
FL86ST134-6706A	FL86ST134-6706B	3.0	6.7	0.45	2	36	6	1800	3.6	3.6	134
FL86ST134-4006A	FL86ST134-4006B	5.0	4.0	1.25	6.6	36	6				
FL86ST134-1806A	FL86ST134-1806B	12	1.8	6.5	41	36	6				
FL86ST134-5606A	FL86ST134-5606B	3.5	5.6	0.63	6.6	50	4				

Dimension

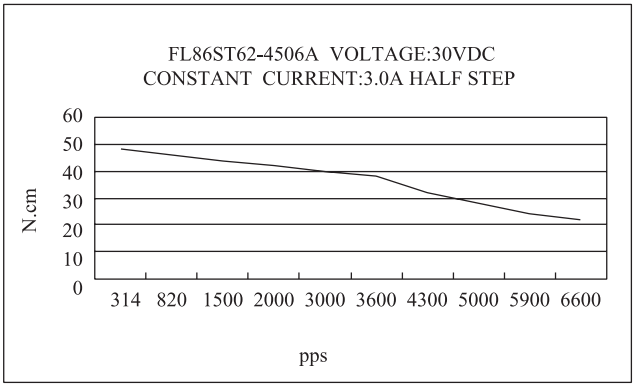


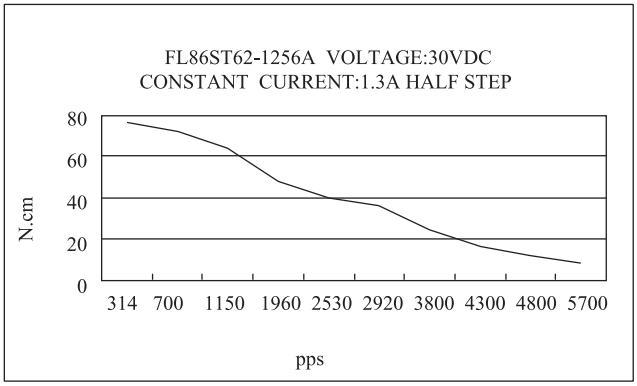
Wiring Diagram

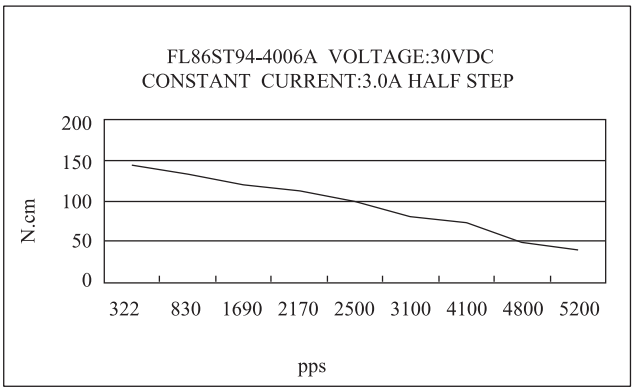


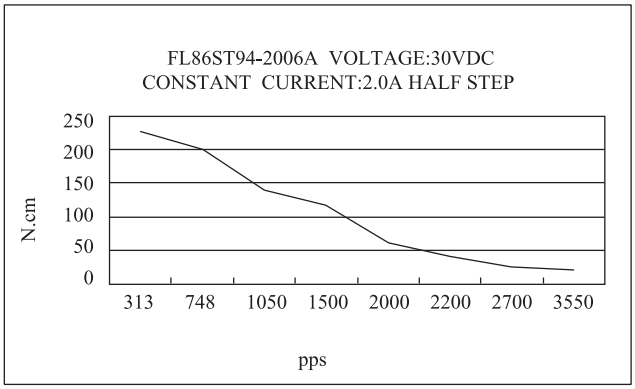
1.8° Size 86mm Hybrid Stepping Motor

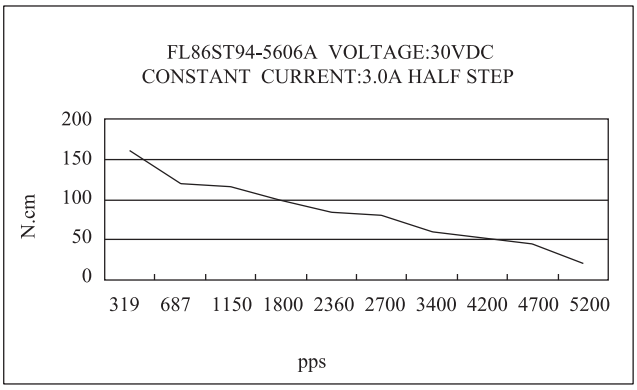
- **Pull out Torque Curve**

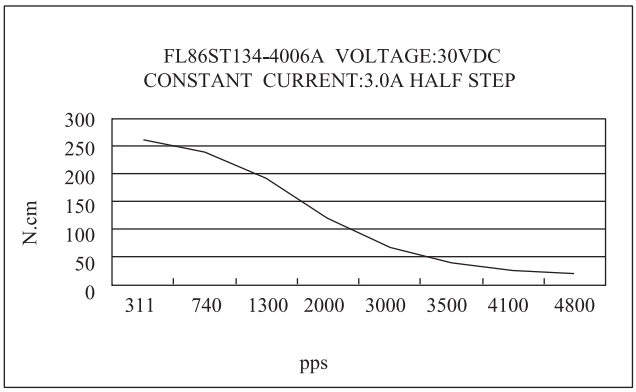












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1.8° Size 86mm High Torque Hybrid Stepping Motor

● General Specification for High Torque Hybrid Stepping Motor

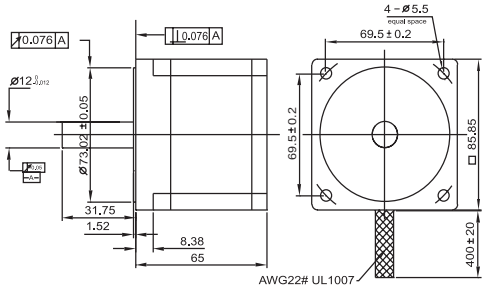
Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°CMax.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW(See from Front Flange)

● Size 86mm High Torque Hybrid Stepping Motor Specifications

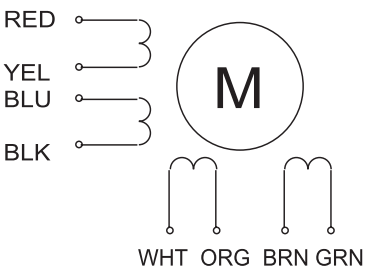
Model No.		Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single Shaft	Double Shaft	V	A	Ω	mH	Kg.cm		g-cm²	kg	kg-cm	mm
FL86STH65-5904A	FL86STH65-5904B	1.652	5.9	0.28	1.7	34	4 parallel	1000	1.7	0.8	65
FL86STH65-3004A	FL86STH65-3004B	4.2	3	1.14	6.8	34	4 series				
FL86STH65-4206A	FL86STH65-4206B	2.394	4.2	0.57	1.7	26	6 unipolar				
FL86STH80-5504A	FL86STH80-5504B	2.3	5.5	0.42	3.5	46	4	1400	2.3	1.2	80
FL86STH118-6004A	FL86STH118-6004B	2.7	6	0.45	5.1	87	4	2700	3.8	2.4	118
FL86STH156-6204A	FL86STH156-6204B	3.5	6.2	0.56	6.4	128	4	4000	5.4	3.6	156
FL86STH195-8504A	FL86STH195-8504B	2.8	8.5	0.33	4.7	153	4	5300	6.9	4	195

● Dimension

FL86STH65-5904, FL86STH65-3004, FL86STH65-4206



Wiring Diagram



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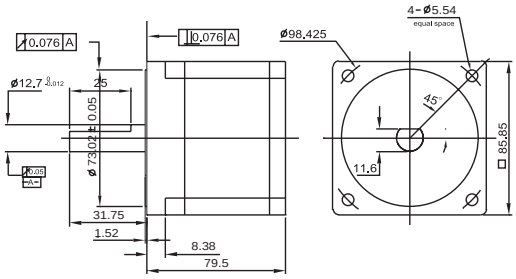
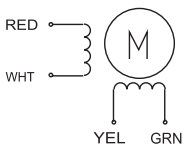
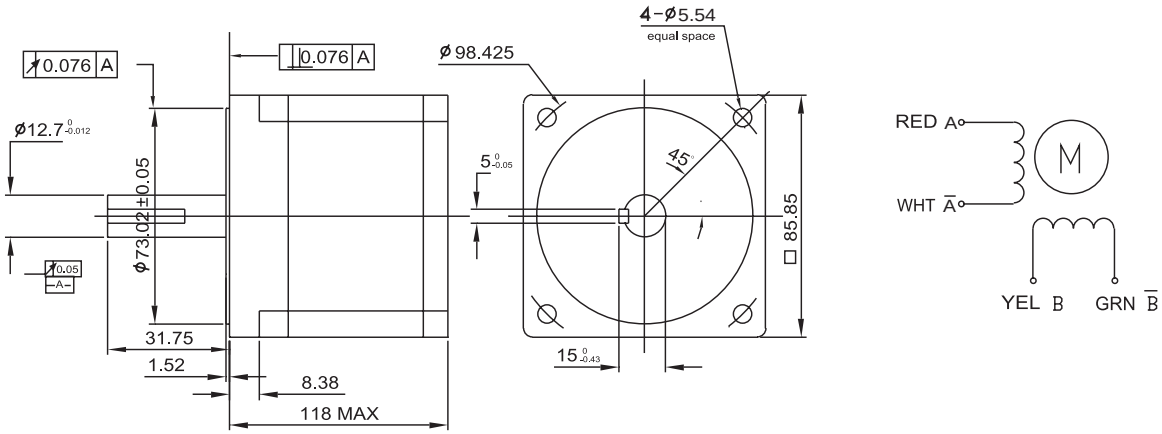


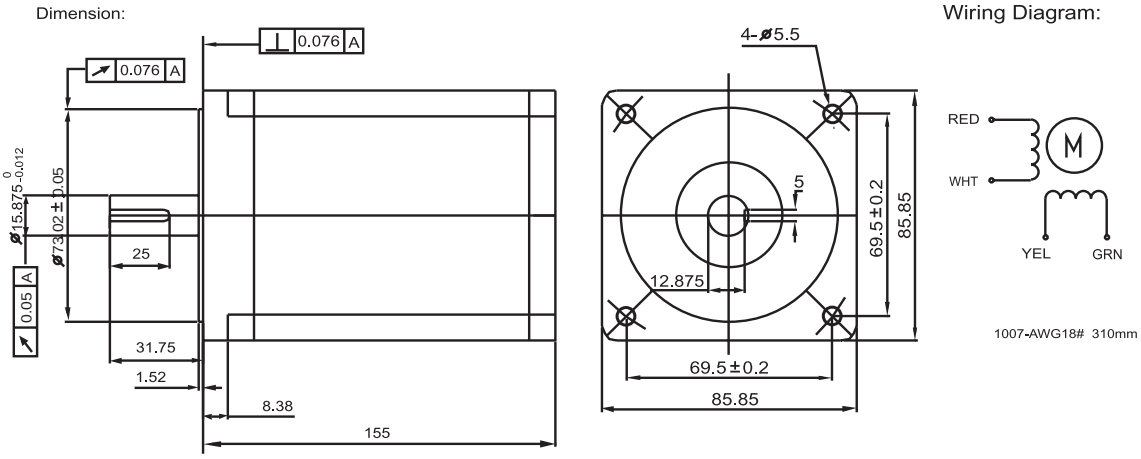


1.8° Size 86mm High Torque Hybrid Stepping Motor

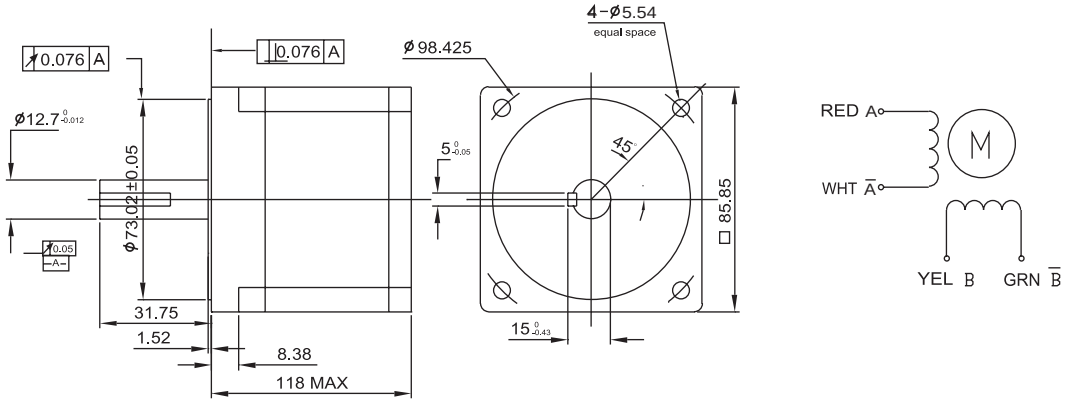
FL86STH118-6004A



FL86STH156-6204A



FL86STH195-8504A



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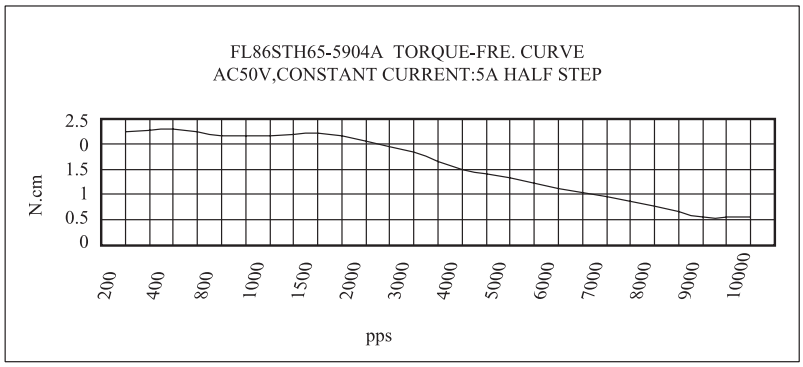
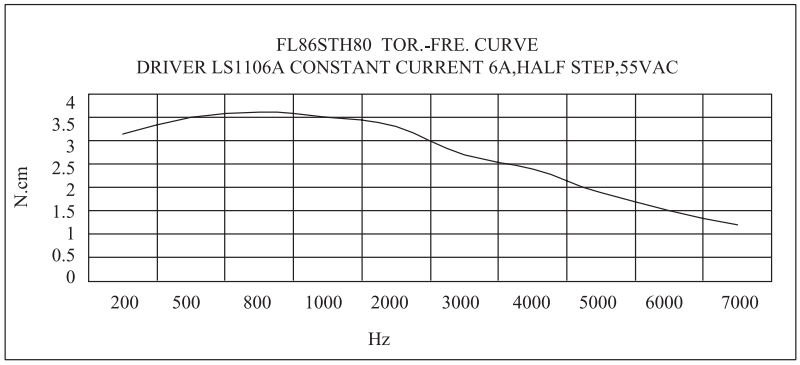
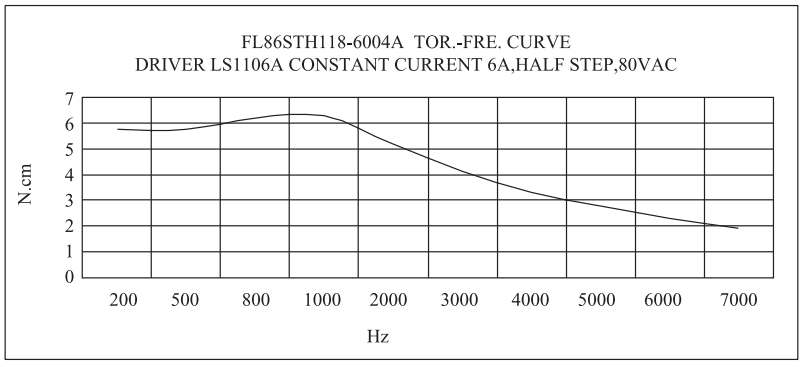
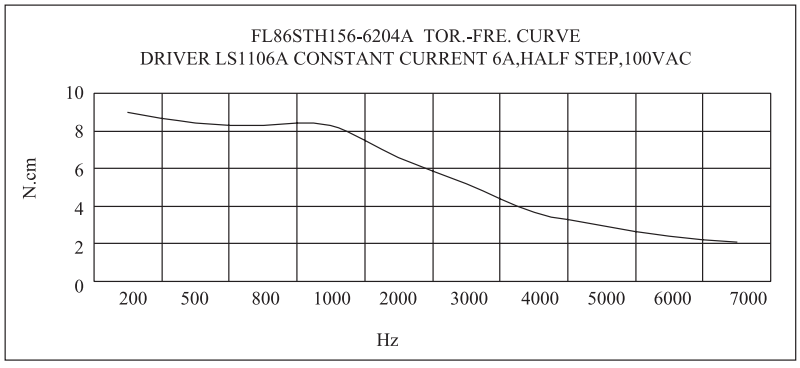
1.8° Size 86mm High Torque Hybrid Stepping Motor

- **Pull out Torque Curve**









3-Phase Size 86mm Hybrid Stepping Motor

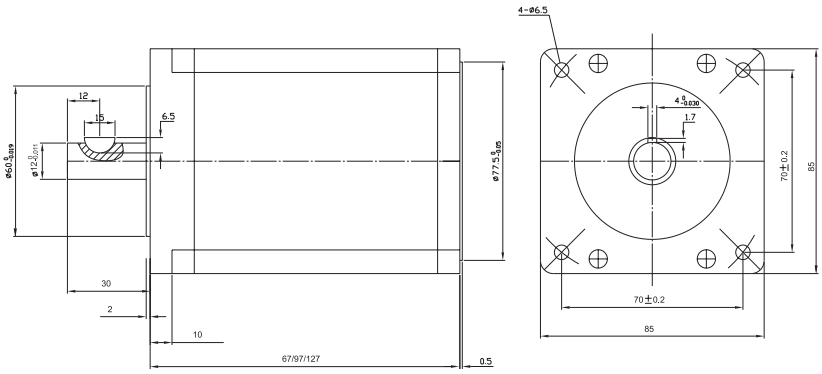
- **General Specification for High Torque Hybrid Stepping Motor**

Item	Specifications
Step Angle	1.8°, 0.9°, 0.72°, 0.36°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	125°CMax.
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	2200VAC for one second
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N

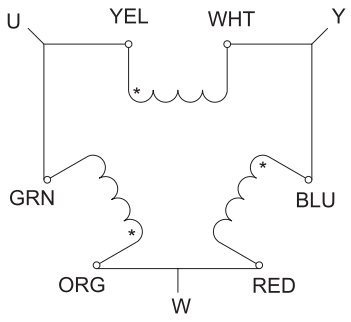
- **Specification**

Model No. Single shaft	Voltage/ Phase	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight
	VAC	A	Ω	mH	N.m		g-cm²	kg
FL863P67-01	325	1.75	4.25	12.3	2.26	6	1100	1.65
FL863P97-01		2	5.4	23	4.52		2200	2.7
FL863P127-01		2.25	9	41	6.78		3300	3.8

- **Dimension**



- **Wiring Diagram**



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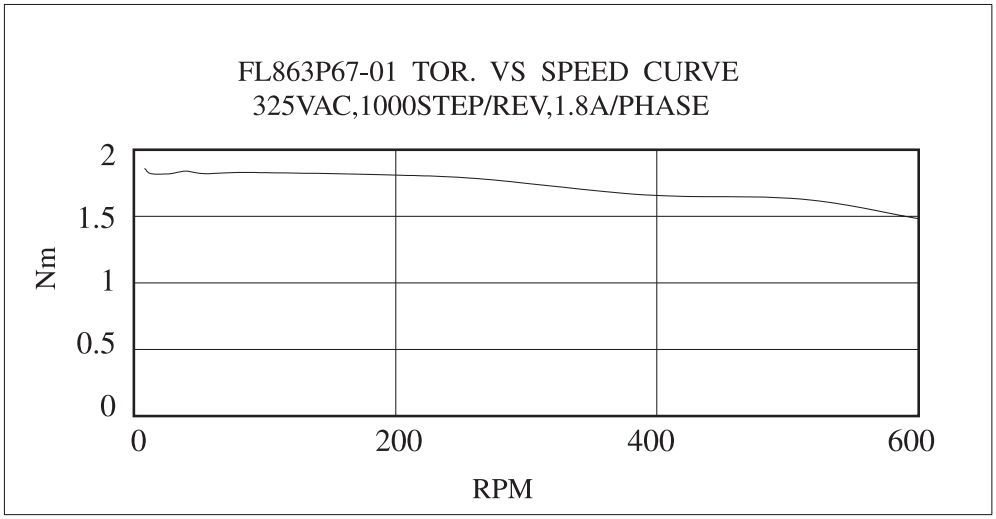
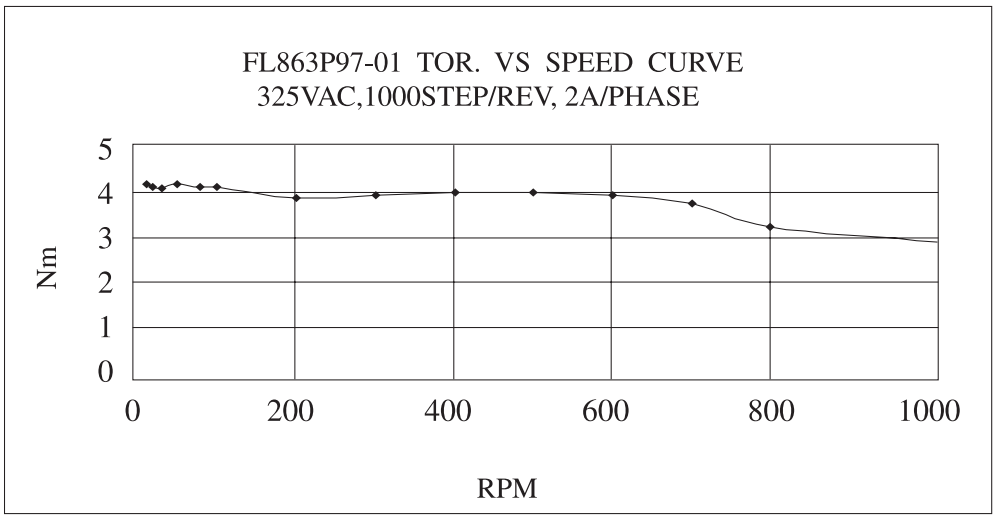
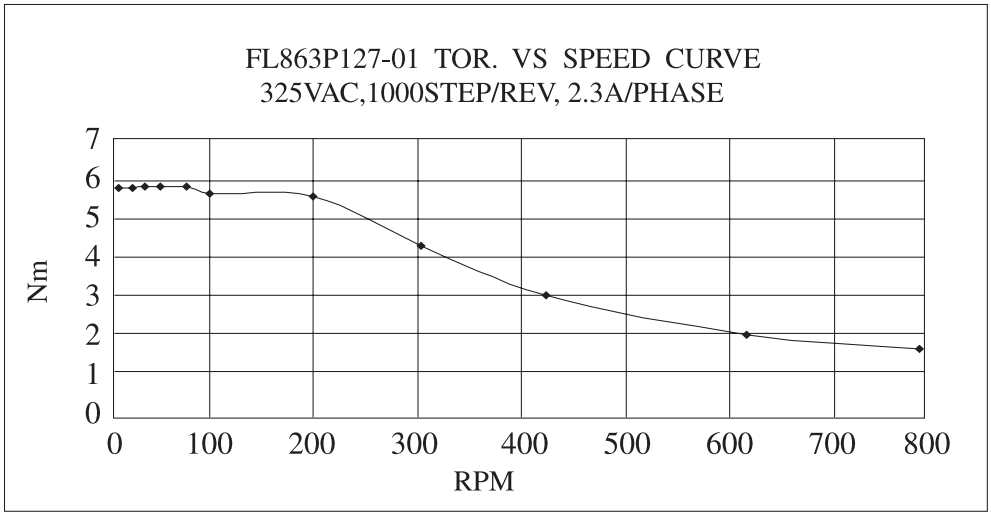
1.8° Size 86mm High Torque Hybrid Stepping Motor

- **Pull out Torque Curve**







1.8° Size 110mm High Torque Hybrid Stepping Motor

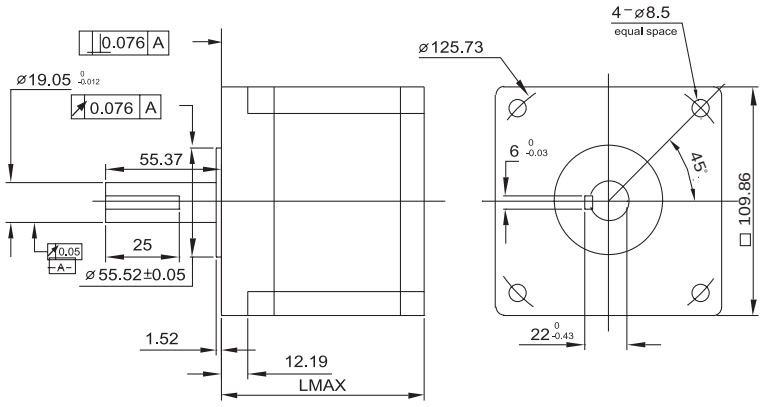
General Specification for High Torque Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C ~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW(See from Front Flange)

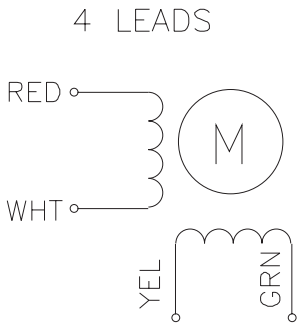
Size 110mm High Torque Hybrid Stepping Motor Specifications

Model No.	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	# of Leads	Rotor Inertia	Weight	Detent Torque	Length
Single shaft	V	A	Ω	mH	N.m		g-cm²	kg	kg-cm	mm
FL110STH995504A	3.2	5.5	0.58	10.1	11.5	4	5500	5	3	99
FL110STH150-6504A	3.9	6.5	0.6	12.8	22	4	10900	8.4	5.9	150
FL110STH201-8004A	4	8	0.5	11	30	4	16200	11.7	7.5	201

Dimension



Wiring Diagram



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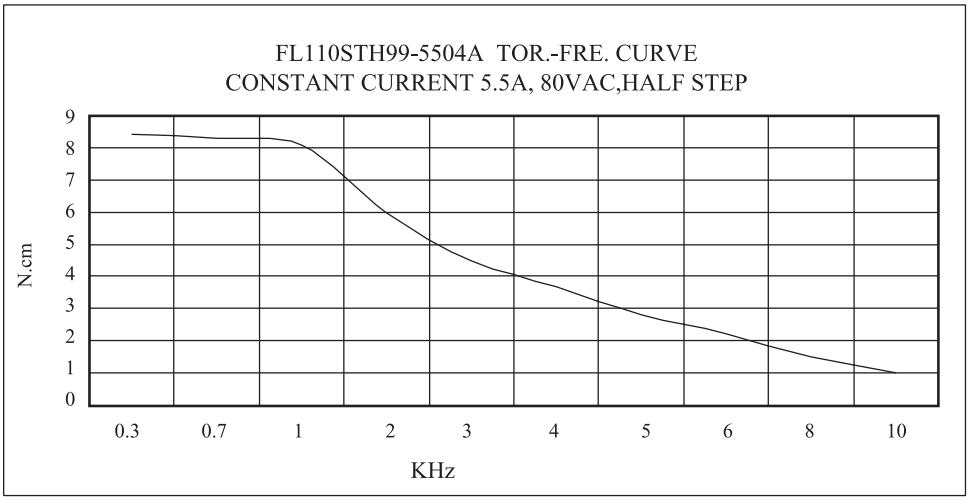
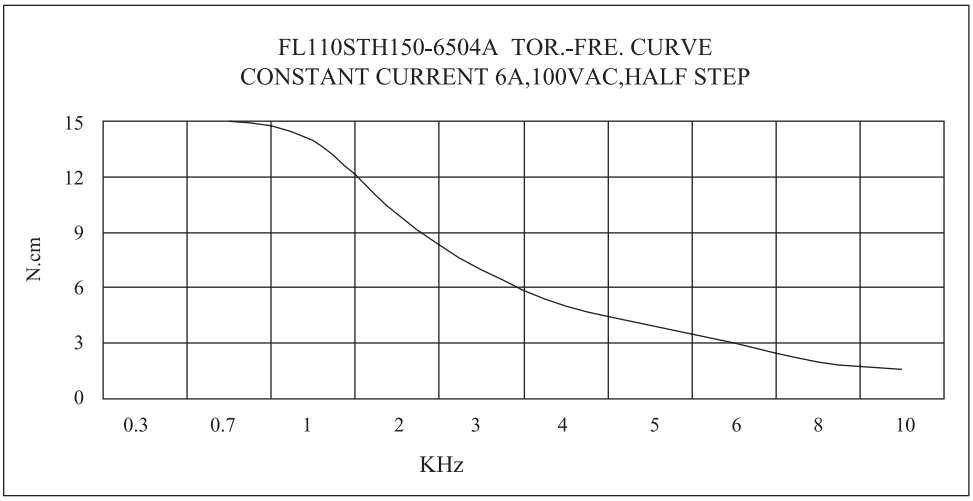
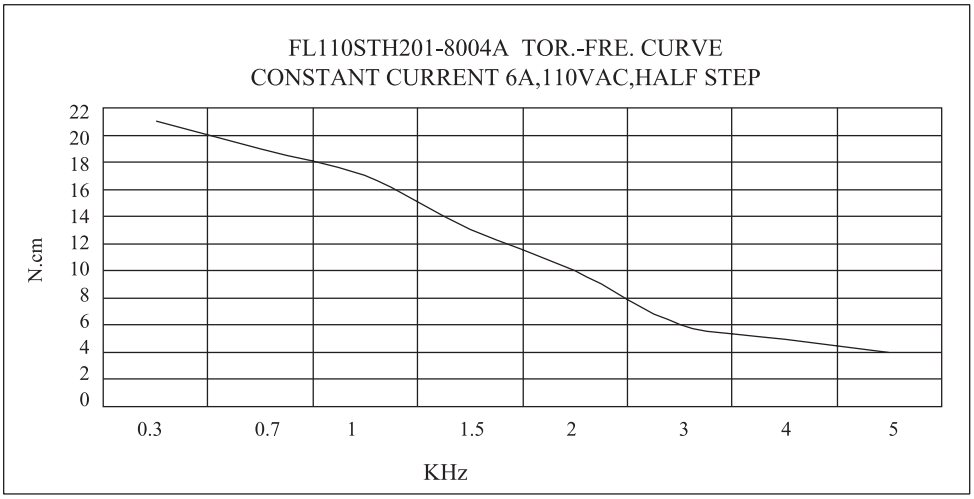
1.8° Size 110mm High Torque Hybrid Stepping Motor

- **Pull out Torque Curve**







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CONTROL PRODUCTS LTD

1.8° and 0.9° or 0.72° and 0.36° Size 110mm Hybrid Stepping Motor

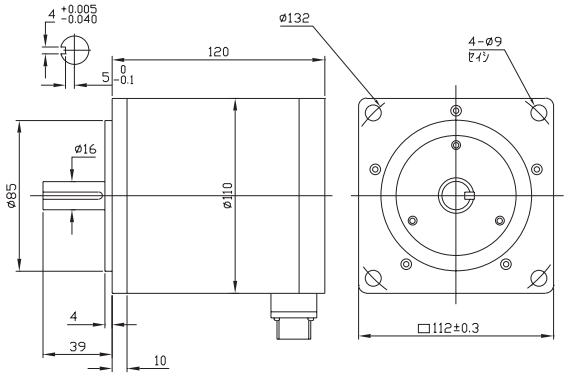
● General Specification for Hybrid Stepping Motor

Item	Specifications
Step Angle	1.8° or 0.9°,0.72° or 0.36°
Step Angle Accuracy	± 5% (full step, no load)
Resistance Accuracy	± 10%
Inductance Accuracy	± 20%
Temperature Rise	80°C Max.(rated current,2 phase on)
Ambient Temperature	-20°C~+50°C
Insulation Resistance	100M Ω Min. ,500VDC
Dielectric Strength	500VAC for one minute
Shaft Radial Play	0.02Max. (450 g-load)
Shaft Axial Play	0.08Max. (450 g-load)
Max. radial force	220N (20mm from the flange)
Max. axial force	60N
Rotation	CW(See from Front Flange)

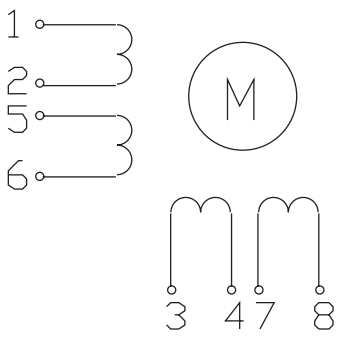
● Size 110mm Hybrid Stepping Motor Specifications

Model	No. of phase	Step angle	Rated Voltage	Current /Phase	Resistance /Phase	Inductance /Phase	Holding Torque	Rotor Inertia	Weight	Detent Torque	Length
Single shaft		degree	V	A	Ω	mH	N.m	kg-cm²	kg	N.m	mm
FL110ST130-6008A	4	1.8	80-200	6	0.18	2	4.5	3.8	3.8	0.3	130
FL110ST130-6008MA	4	0.9	80-200	6	0.18	2	4.5	3.8	3.8	0.3	130
FL110ST192-6008A	4	1.8	80-200	6	0.22	2.1	7.1	7.5	7.5	0.6	192
FL110ST192-6008MA	4	0.9	80-200	6	0.22	2.1	7.1	7.5	7.5	0.6	192
FL110ST192-50010A	5	0.72	130	5	0.3	1.9	6.8	7.5	7.5	0.6	192
FL110ST192-50010MA	5	0.36	130	5	0.3	1.9	6.8	7.5	7.5	0.6	192
FL110ST192-30010A	5	0.72	130	3	0.5	5.3	6.8	7.5	7.5	0.6	192
FL110ST192-30010MA	5	0.36	130	3	0.5	5.3	6.8	7.5	7.5	0.6	192
FL110ST240-6008A	4	1.8	80-200	6	0.3	3.2	10.3	11.5	11.5	0.9	240
FL110ST240-6008MA	4	0.9	80-200	6	0.3	3.2	10.3	11.5	11.5	0.9	240
FL110ST240-50010A	5	0.72	130	5	0.37	3.4	10.3	11.5	11.5	0.9	240
FL110ST240-50010MA	5	0.36	130	5	0.37	3.4	10.3	11.5	11.5	0.9	240
FL110ST240-30010A	5	0.72	130	3	0.62	9.5	10.3	11.5	11.5	0.9	240
FL110ST240-30010MA	5	0.36	130	3	0.62	9.5	10.3	11.5	11.5	0.9	240

● Dimension



Wiring Diagram



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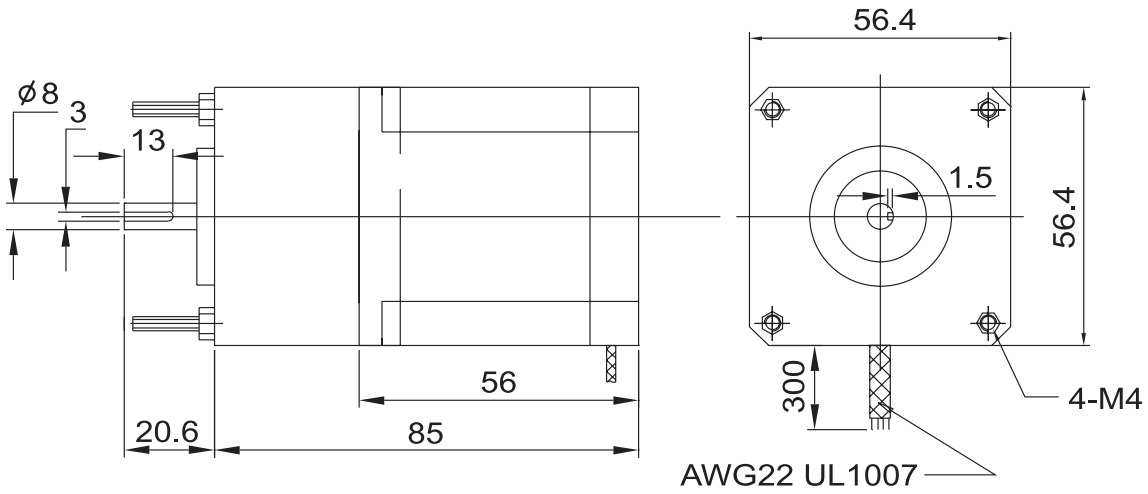
FL57HBGJB Gearbox Stepping Motor

General Specification

Model	Unit	FL57HBGJB					
		6	10	18	36	50	100
Phase		4					
Manner of distribution		2-2					
Motor's stepping angle	deg	1.8					
Resistance/phase	ohms	80 ± 10%					
Exciting voltage	V	24					
Static torque	N.cm	6.2					
Reduction ratio		6	10	18	36	50	100
Number of gear trains		2	3	4	4	5	5
Efficiency	%	81	72	66	66	59	59
No load starting frequency	pps	380	370	350	350	330	330
No load operating frequency	pps	400	385	360	360	350	350
Load starting frequency	1kg/pps	360	380	400	400	430	430
Max. permissible load	Kg.cm	25					
Stepping angle with a gearbox	deg	0.3	0.18	0.1	0.05	0.36	0.018

Dimension



Wiring Diagram