

Stepping Motor



SCREWTECH
斯科勒自动化

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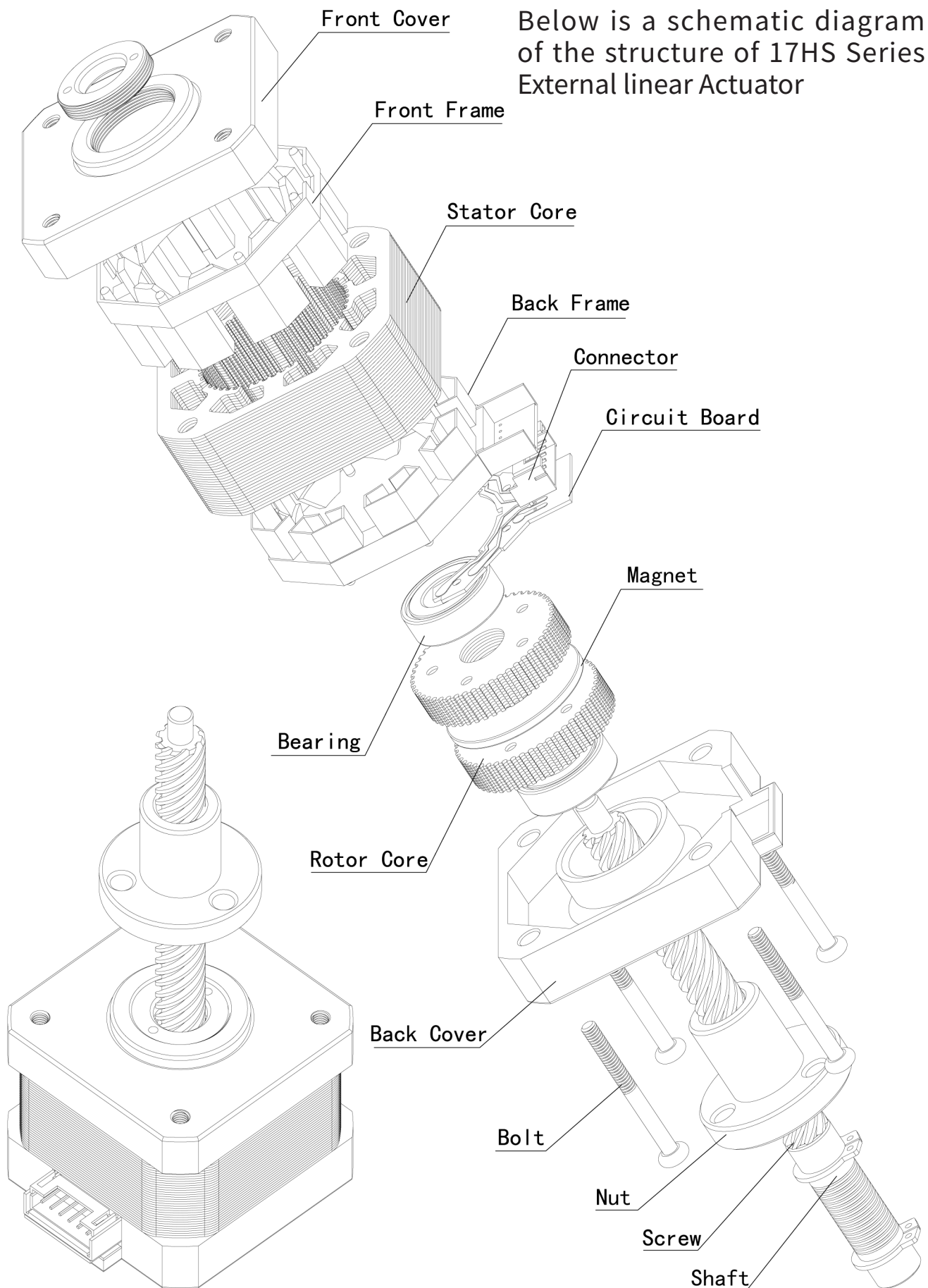
<http://www.screwtech.cn/>



SCREWTECH
斯科勒自动化

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Below is a schematic diagram of the structure of 17HS Series External linear Actuator



Screw Code	Diameter		Screw Lead		Resolution		Motor Size
	mm	in	mm	in.	mm	in.	
* A35	3.5	0.138	0.6096	0.024	0.003048	0.00012	8HY/11HY
A35-1			1.2192	0.048	0.006096	0.00024	8HY/11HY
A35-2			1	0.0393	0.005	0.000197	8HY/11HY
A35-3			2.4384	0.096	0.012192	0.00048	8HY/11HY
A35-4			4	0.157	0.02	0.0007874	8HY/11HY
A476	4.76	0.187	0.635	0.025	0.003175	0.000125	8HY/11HY
A476-1			1.27	0.05	0.00635	0.00025	8HY/11HY
A476-2			2.54	0.1	0.0127	0.0005	8HY/11HY
A476-3			1	0.0394	0.005	0.000197	8HY/11HY
T5	5	0.197	2	0.079	0.01	0.000394	8HY/11HY
T5-1			4	0.157	0.01	0.00079	8HY/11HY
T5-2			8	0.315	0.01	0.00157	8HY/11HY
A556	5.56	0.219	4.8768	0.192	0.024384	0.00096	11HY/14HY/17HS
A556-1			2.4384	0.096	0.012192	0.00048	11HY/14HY/17HS
A556-2			9.7536	0.384	0.048768	0.00192	11HY/14HY/17HS
A556-3			1.2192	0.048	0.006096	0.00024	11HY/14HY/17HS
A635	6.35	1/4	2	0.079	0.01	0.000394	11HY/14HY/17HS
A635-1			3.175	1/8	0.015875	0.000625	11HY/14HY/17HS
A635-2			6.35	1/4	0.03175	0.00125	11HY/14HY/17HS
A635-3			1.27	0.05	0.00635	0.00025	11HY/14HY/17HS
A635-4			12.7	0.5	0.0635	0.0025	11HY/14HY/17HS
A635-5			0.79	0.0311	0.00395	0.000156	11HY/14HY/17HS
A635-6			2.54	0.1	0.0127	0.0005	11HY/14HY/17HS
A635-7			25.4	1	0.127	0.005	11HY/14HY/17HS
T65	6.5	0.256	3	0.118	0.015	0.00059	11HY/14HY/17HS
T8	8	0.315	8	0.315	0.04	0.00157	14HY/17HS/23HS
T8-1			4	0.157	0.02	0.00079	14HY/17HS/23HS
T8-2			16.66	0.656	0.0833	0.00328	14HY/17HS/23HS
T8-3			20	0.787	0.1	0.00394	14HY/17HS/23HS
T8-4			2	0.079	0.01	0.000394	14HY/17HS/23HS
T8-5			12	0.472	0.06	0.00236	14HY/17HS/23HS
T8-6			1	0.039	0.005	0.000197	14HY/17HS/23HS
A953	9.525	3/8	6.35	1/4	0.003175	0.00125	17HS/23HS
A953-1			1.5875	1/16	0.0079375	0.0003125	17HS/23HS
A953-2			12.7	0.5	0.0635	0.0025	17HS/23HS
A953-3			1.27	0.05	0.00635	0.00025	17HS/23HS
A953-4			2.54	0.1	0.0127	0.0005	17HS/23HS
A953-5			25.4	1	0.127	0.005	17HS/23HS
A953-6			3.175	1/8	0.015875	0.000625	17HS/23HS
T10	10	0.393	20	0.787	0.1	0.00394	23HS/34HS
T10-1			2	0.079	0.01	0.000394	23HS/34HS
T10-2			4	0.157	0.02	0.00079	23HS/34HS
T10-3			10	0.394	0.05	0.00197	23HS/34HS
T11	11	0.433	2	0.079	0.01	0.000394	23HS/34HS
T11-1			4	0.157	0.02	0.00079	23HS/34HS
T12	12	0.472	12	0.472	0.06	0.00236	34HS
T14	14	0.551	3	0.118	0.015	0.00059	34HS
T14-1			4	0.157	0.02	0.00079	34HS

*A for acme thread ,T for meter screw ,G for ball screw.

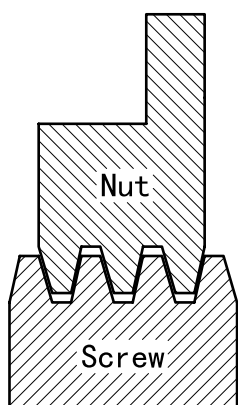
Screw Code	Diameter		Screw Lead		Resolution		Motor Size
	mm	in.	mm	in.	mm	in.	
A158	15.875	5/8	25.4	1	0.127	0.005	34HS
A158-1			2.54	0.1	0.0127	0.0005	34HS
A158-2			12.7	0.5	0.0635	0.0025	34HS
A158-3			6.35	1/4	0.03175	0.00125	34HS
T18	18	0.709	3	0.118	0.015	0.00059	34HS
T18-1			6	0.236	0.03	0.00118	34HS
T22	22	0.866	8	0.315	0.04	0.00157	34HS
G4	4	0.157	1	0.0393	0.005	0.000197	8HY
G6	6	0.236	1	0.0393	0.005	0.000197	11HY/14HY
G8	8	0.315	2	0.079	0.01	0.000394	17HS
G12	12	0.472	2	0.079	0.01	0.000394	23HS
G12-1			4	0.157	0.02	0.00079	23HS
G12-2			5	0.197	0.025	0.000984	23HS
G16	16	0.630	5	0.197	0.025	0.000984	23HS/34HS
G16-1			10	0.394	0.05	0.00197	23HS/34HS
G16-2			16	0.630	0.08	0.00315	23HS/34HS
G20	20	0.787	5	0.197	0.025	0.000984	34HS
G20			20	0.787	0.1	0.00394	34HS

*A for acme thread ,T for meter screw ,G for ball screw.

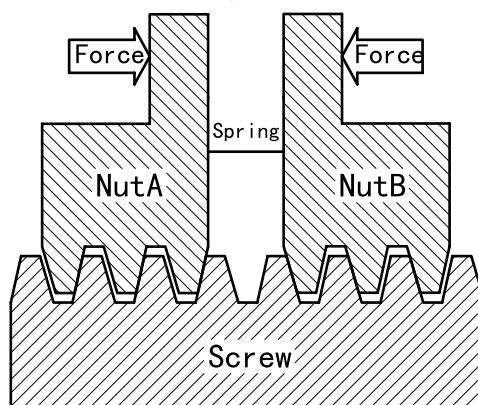
Anti-Back Lash Nut

Backlash is the relative axial movement between a screw and nut at standstill. It is normal for backlash to increase with wear overtime. Backlash compensation or correction can be accomplished through the application of an anti-backlash nut. Backlash is usually only a concern with bi-directional positioning.

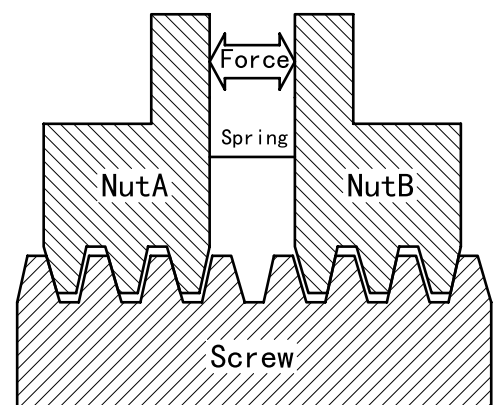
Standard Nut



Anti-Backlash Nut
Compression



Anti-Backlash Nut
Tension

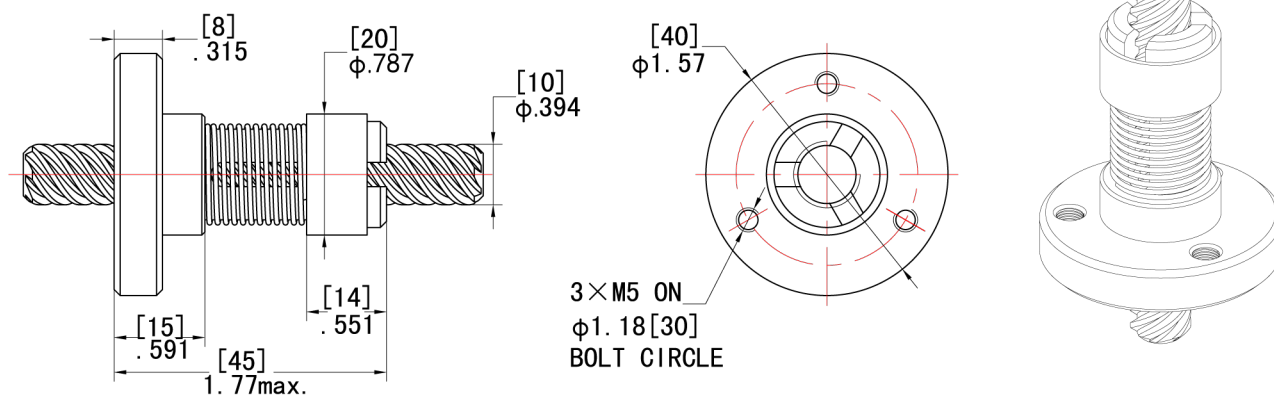


Stepping Motor

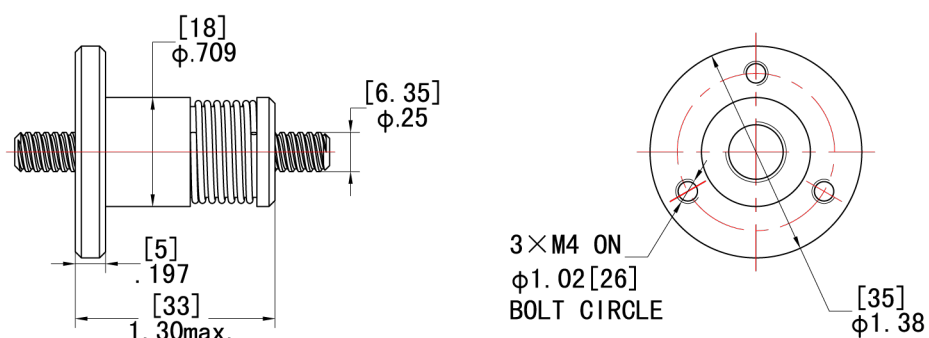
Anti-Back Lash Nut

Unit:[mm]in.

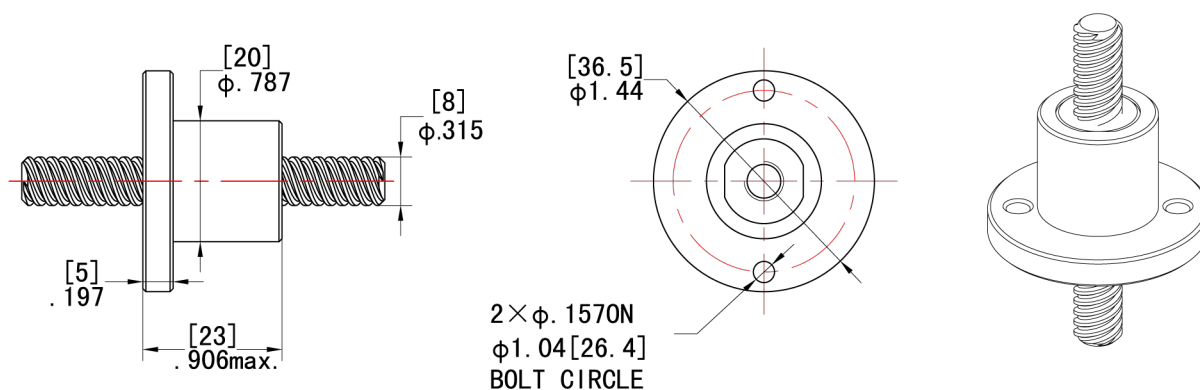
Model 1



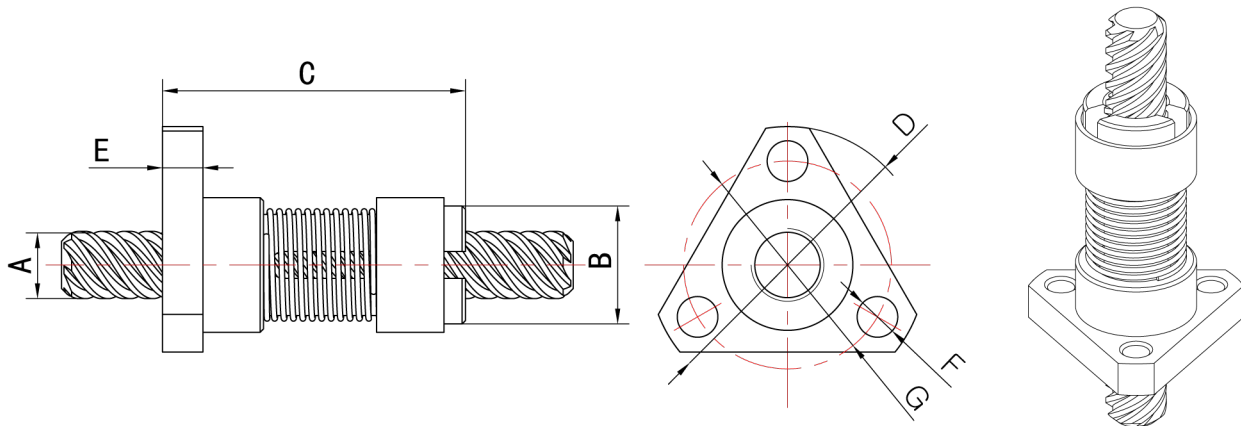
Model 2



Model 3



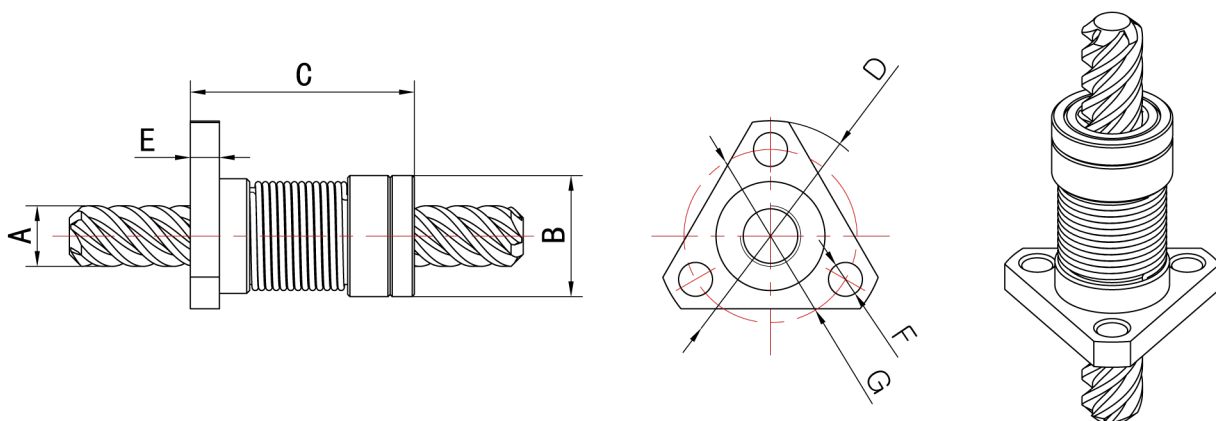
Model 4



A		B		C		D		E		F		G	
mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
6.35	0.25	12.7	0.5	26	1.0	25.4	1.0	4.6	0.18	3.6	0.14	19.1	0.75
8	0.315	17.8	0.7	48	1.9	38.1	1.5	4.6	0.18	5.08	0.2	28.6	1.12
9.525	0.375	17.8	0.7	48	1.9	38.1	1.5	4.6	0.18	5.08	0.2	28.6	1.12
11	0.433	20.3	0.8	48	1.9	25.4	1.0	4.6	0.18	5.08	0.2	28.6	1.12
15.88	0.625	26.9	1.06	50.8	2.0	44.5	1.75	6.6	0.26	5.08	0.2	34.9	1.375

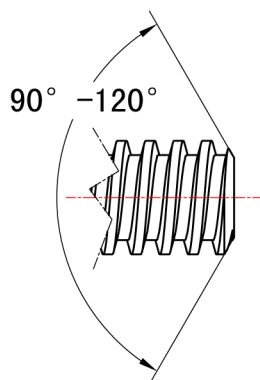
Unit: mm

Model 5

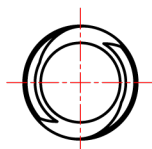


A		B		C		D		E		F		G	
mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
8	0.315	20.3	0.8	50.8	2.0	38.1	1.5	4.8	0.19	5.08	0.2	28.6	1.12
9.525	0.375	20.3	0.8	50.8	2.0	38.1	1.5	4.8	0.19	5.08	0.2	28.6	1.12

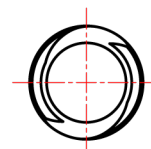
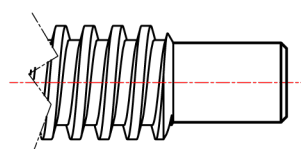
Unit: mm



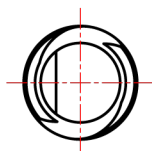
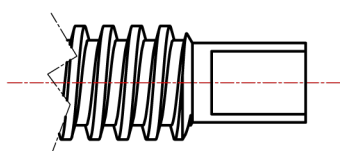
Chamfer



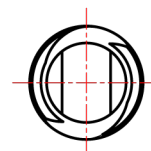
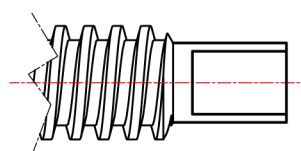
Round Shaft



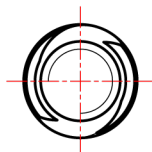
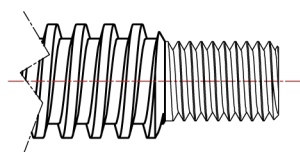
Single Flat



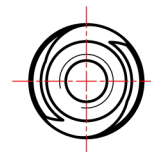
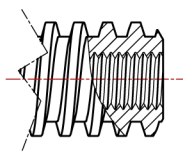
Double Flat



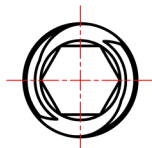
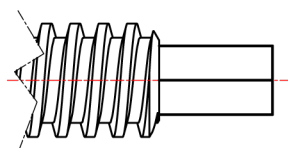
External Thread



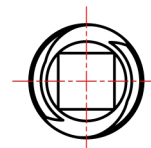
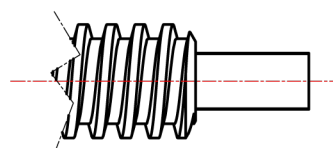
Internal Thread



Hexagonal



Square



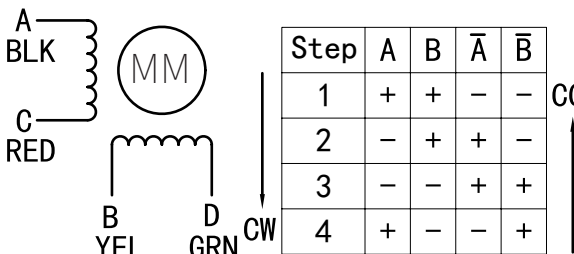
Stepping Motor

Wiring Diagram & Drive Sequence Model

Wiring Diagram

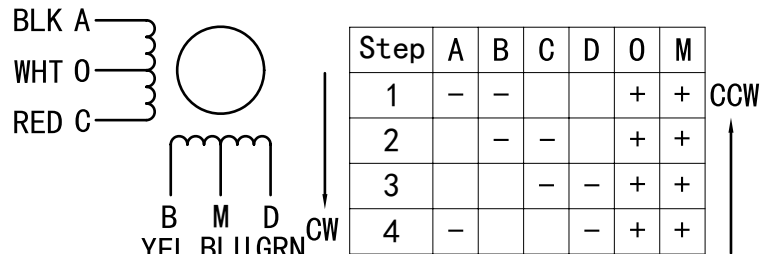
Bipolar-4 Lead Wires

WIRING DIAGRAM DRIVE SEQUENCE MODEL



Unipolar-6 Lead Wires

WIRING DIAGRAM DRIVE SEQUENCE MODEL



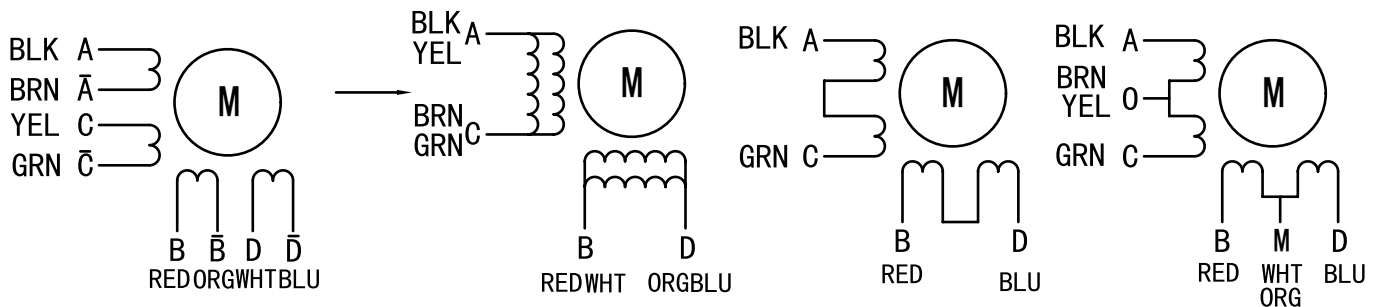
8 Lead Wires

WIRING DIAGRAM

1. Bipolar (Parallel)

2. Bipolar (Series)

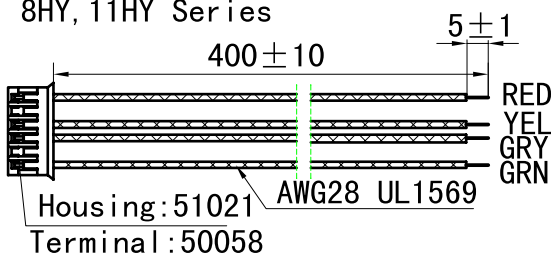
3. Unipolar



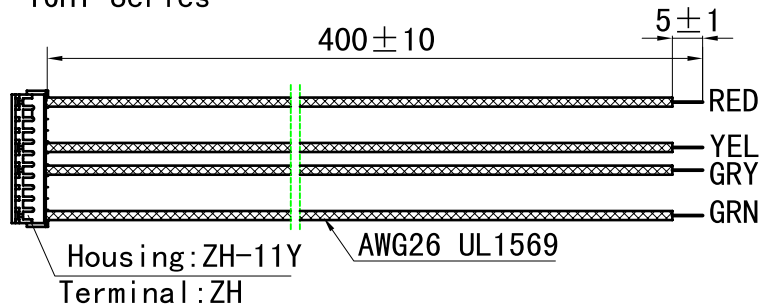
Accessory Harness Model

Unit:mm

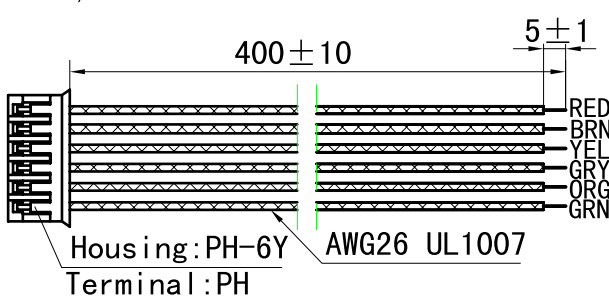
8HY, 11HY Series



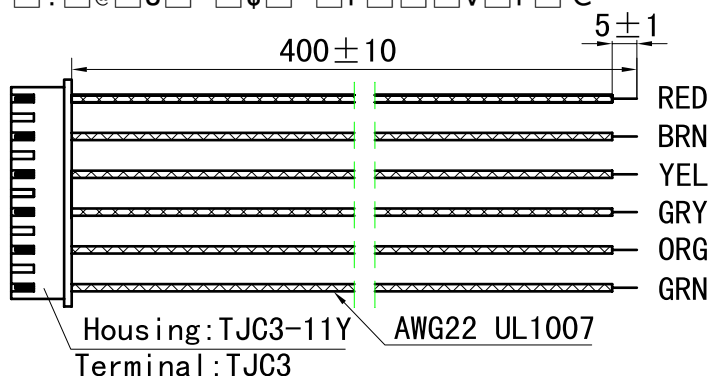
16HY Series



14HY, 17HS Series



□?□@□U□`□\$□`□r□□□v□r□€



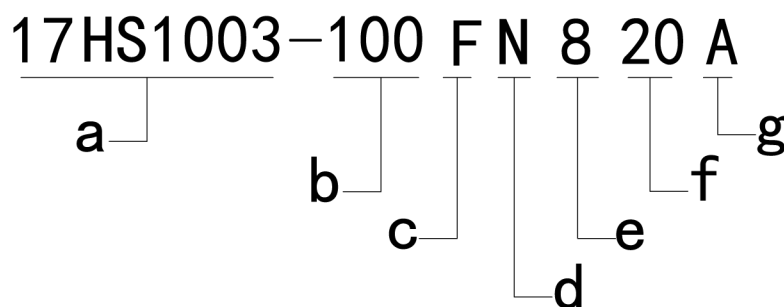
The styles above are in normal way.

Other special harnesses can be customized.

Motor's General Specification

Positional error	±5%
Ambient temperature	-10°C~+40°C
Temperature rise	85K
Insulation resistance	100Mohm min 500VDC
Insulation class	B
Resistance error	±10%
Inductance error	±20%
Radial Play	<0.02
Axial Play	<0.1

Hybrid Linear Stepper Motor Naming Rules



a:The same as page 30.

b:The maximum stroke for captive linear actuator,
The screw length for non-captive linear actuator and external linear actuator.

C:Screw be covered with special coating surface.

d:D for captive linear actuator.

N for external linear actuator.

T for non-captive linear actuator.

G for External Linear Actuator For Ball Screw.

e:The diameter of screw.

f:Screw lead.

g:The Screw End Processing Scheme.

Stepping Motor

8HY Series Hybrid Stepper Linear Actuator

Three structures can be chosen, including captive, noncaptive and external. Can provide 6Kg load at most. Resolutions range from 0.00304mm to 0.01mm. Maximum speed can be up to 10mm/s.



Model Specifications

Model		Resistance per phase	Inductance per phase	Rated current	Holding torque	
		ohm $\pm 10\%$	mH $\pm 20\%$	A	mNm	oz-in
Bi-polar	8HY0002-D/T/N	5	1	0.5	20	2.83
	8HY0003-D/T/N	20	4.5	0.25	30	4.25

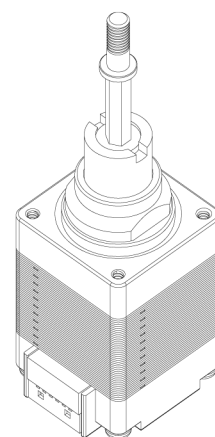
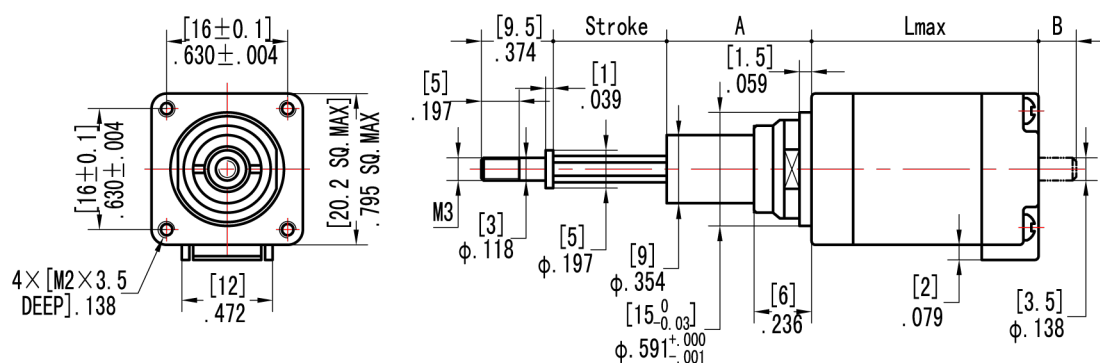
General Specification Of Motor Page 10. More Model Specifications Page 32.

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
A35	3.5	.138	0.61	.024	0.003048	.00012
A35-1			1.22	.048	0.006096	.00024
*A476	4.76	.187	0.635	.025	0.003175	.00012
*A476-1			1.27	.05	0.00635	.00025
*T5	5	.197	2	.079	0.01	.00039

Figure Dimensions

Unit:[mm]in

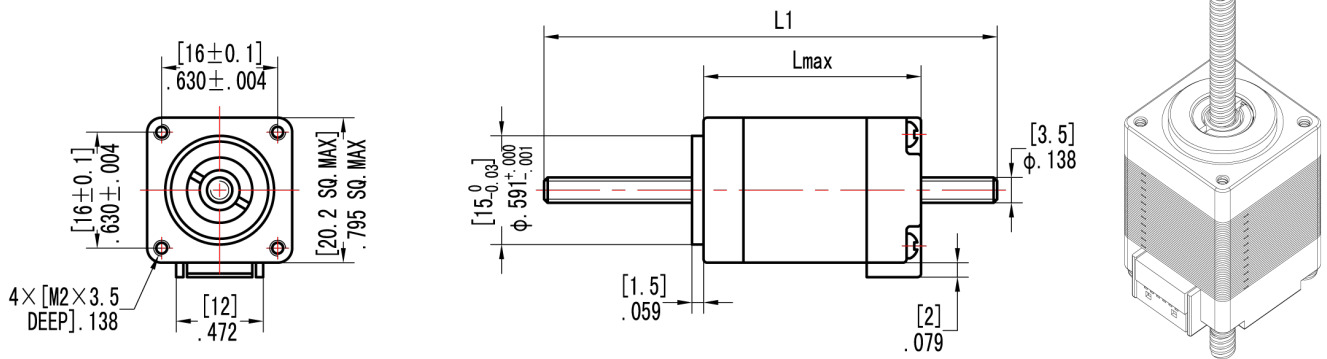
Captive Linear Actuator



Model	Lmax		Motor mass		Rotor inertia	
	mm	in.	g	oz	g.cm ²	oz-in ²
8HY0XXX	30	1.18	60	2.12	2	0.011
8HY1XXX	38	1.50	80	2.82	3	0.016
8HY2XXX	33	1.30	70	2.47	2.5	0.014

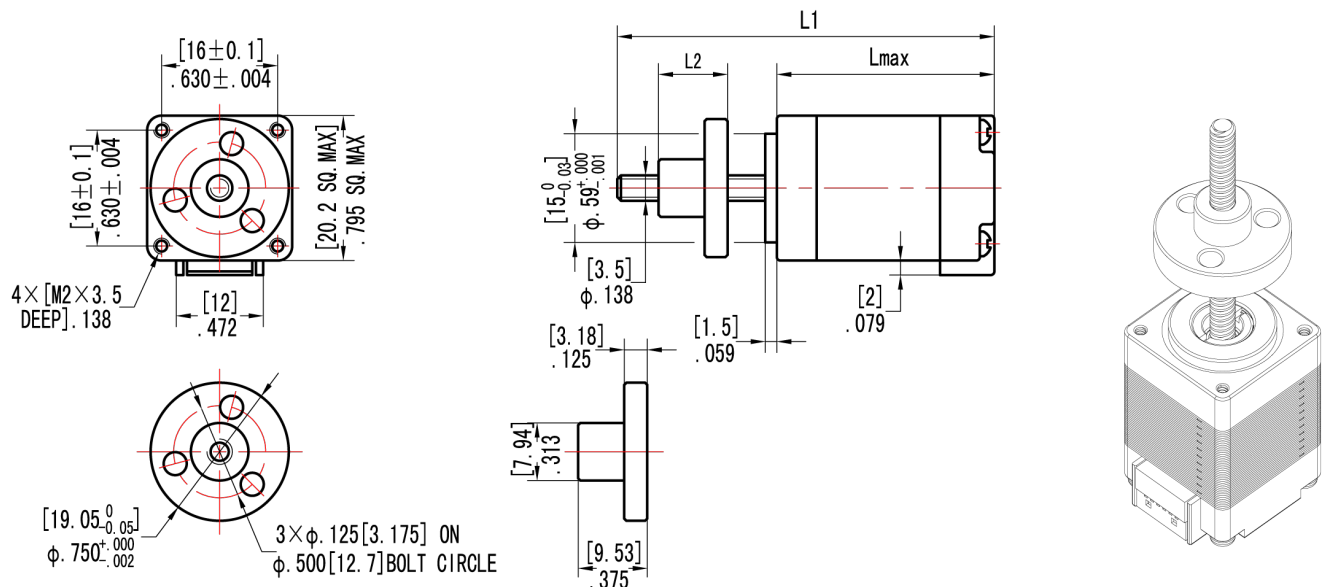
Stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
9	.354	11.1	.437	1.3	.051
12.7	.500	14.8	.583	5	.197
19.05	.750	21.15	.833	11.35	.447
25.4	1.00	27.5	1.08	17.7	.697

Non-captive Linear Actuator



Maximum Stroke (L1-L) For [200mm] 7.87in.

External Linear Actuator



Maximum Stroke (L1-L-L2) For [200mm] 7.87in.

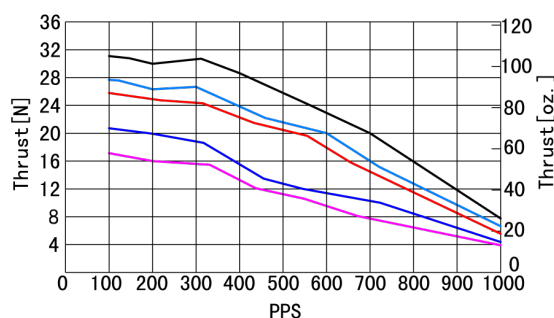
Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.

The Screw End Processing Scheme Page08.

Thrust-Speed Characteristics

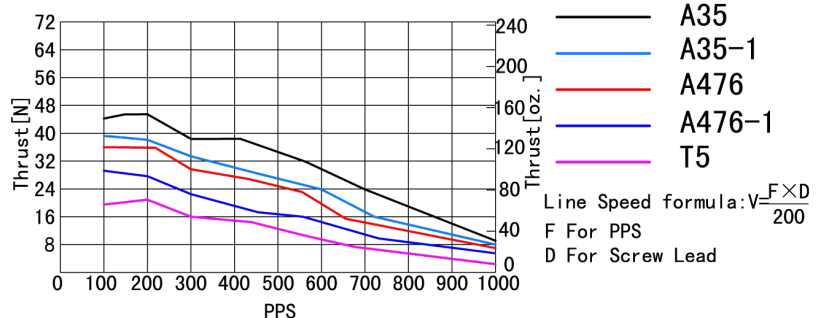
8HY0002

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.5A



8HY0003

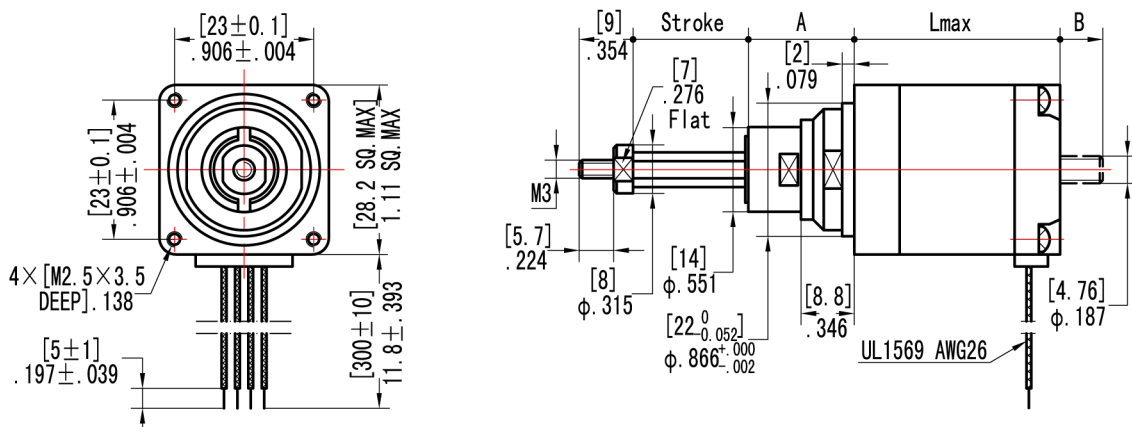
Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.25A



Stepping Motor

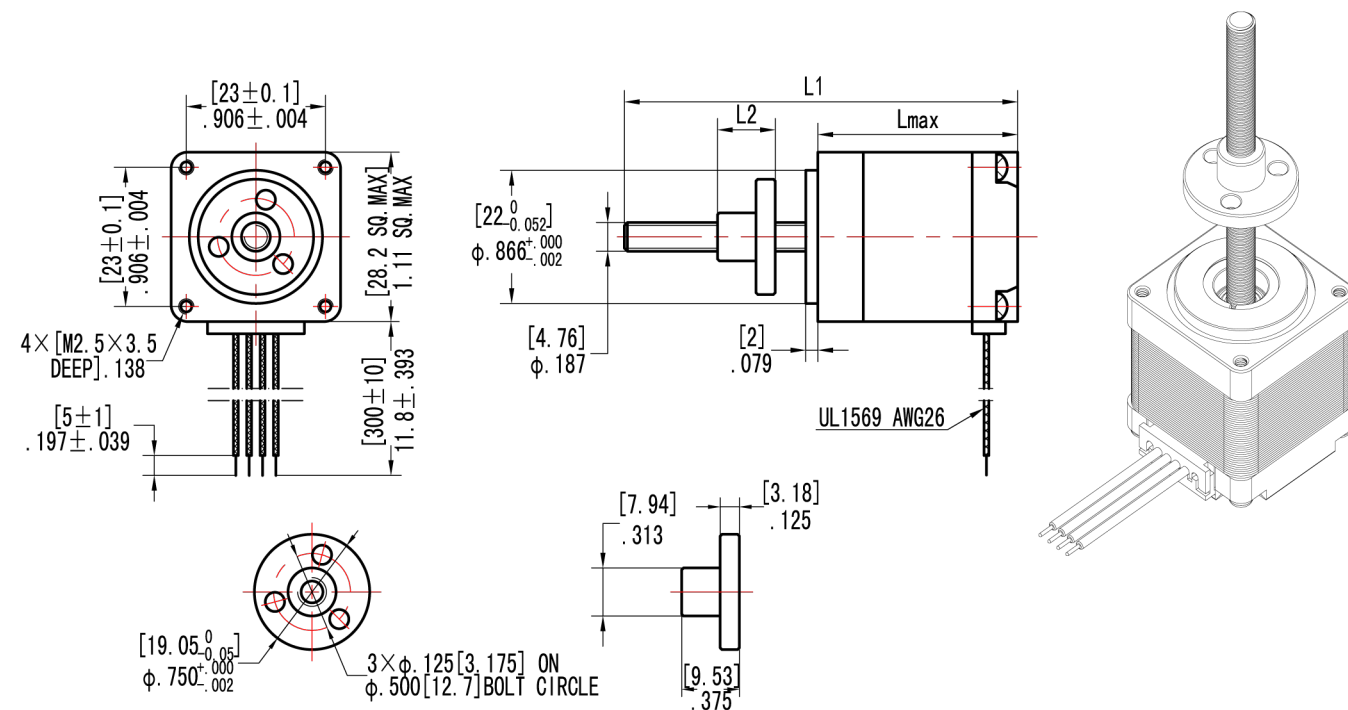
11HY Series Hybrid Stepper Linear Actuator

Captive Linear Actuator



Stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
12.7	.500	17.4	.685	1.1	.043
19.05	.750	23.75	.935	7.45	.293
25.4	1.00	30.1	1.19	13.8	.543
31.8	1.25	36.5	1.44	20.2	.795
38.1	1.5	42.8	1.69	26.5	1.04
50.8	2.0	55.5	2.19	39.2	1.54
63.5	2.5	68.2	2.69	51.9	2.04

External Linear Actuator



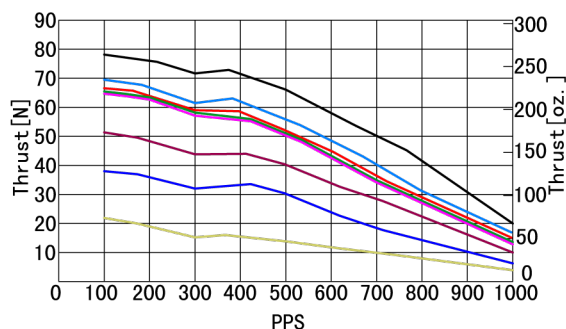
Maximum Stroke(L1-L2) For [250mm]9.84in.
 Wiring Diagram & Drive Sequence Model Page 09.
 The Screw End Processing Scheme Page 08.

Stepping Motor

11HY Series Hybrid Stepper Linear Actuator

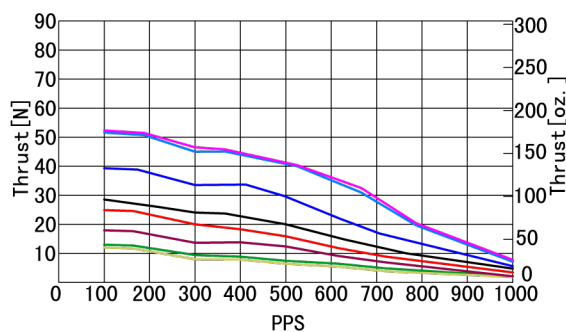
11HY3401

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



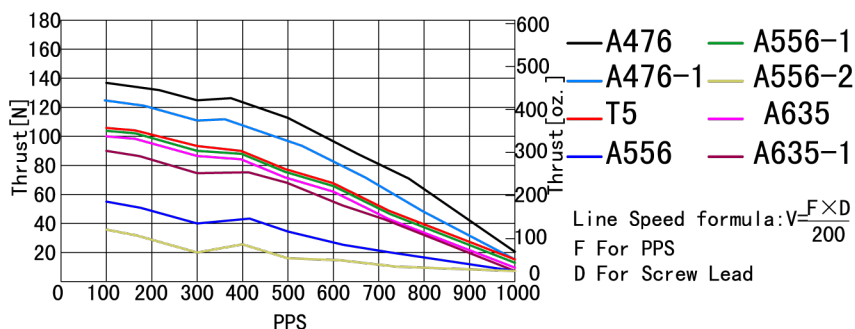
11HY3401

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



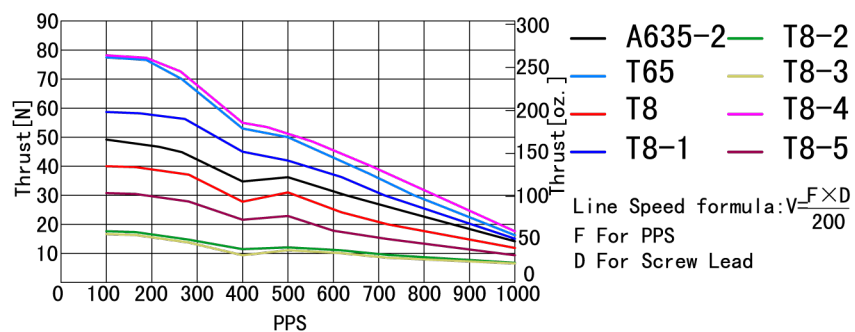
11HY4401

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



11HY4401

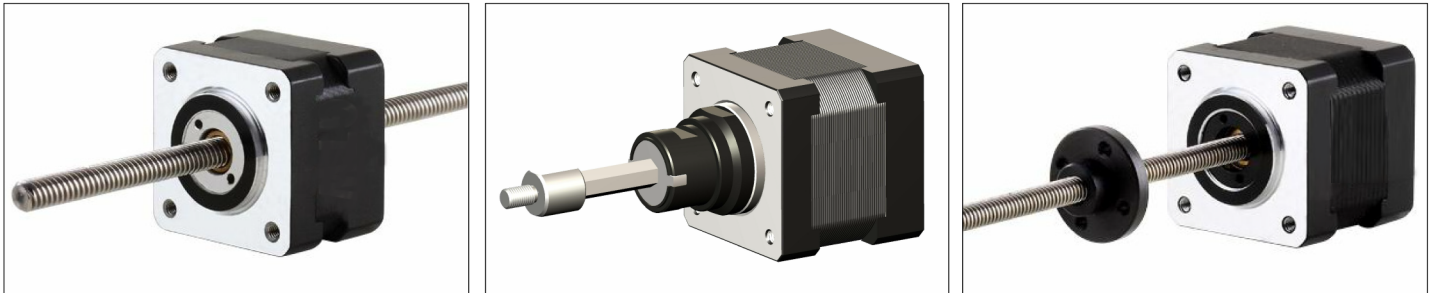
Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



Stepping Motor

14HY Series Hybrid Stepper Linear Actuator

Three structures can be chosen, including non-captive and external. Can provide 15Kg load at most. Resolutions range from 0.003175mm to 0.1mm. Maximum speed can be up to 60mm/s.



Model Specifications

Model		Resistance per phase	Inductance per phase	Rated current	Holding torque	
		ohm $\pm 10\%$	mH $\pm 20\%$	A	mNm	oz-in
Bi-polar	14HY0004-D/T/N	3	4.5	1	150	21.26
	14HY3001-D/T/N	20	20	0.4	100	3.94

Model	L(max)		Motor mass		Rotor inertia	
	mm	in.	g	oz	g.cm ²	oz-in ²
14HY0XXX	34	1.34	180	6.35	14	0.077
14HY3XXX	26	1.02	150	5.29	12	0.066

Parameters Of Screw

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
A476	4.76	.187	0.635	.025	0.003175	.000125
A476-1			1.27	.05	0.00635	.00025
T5	5	.197	2	.079	0.01	.000394
A556	5.56	.219	4.8768	.192	0.024384	.00096
A556-1			2.4384	.096	0.012192	.00048
A556-2			9.7536	.384	0.048768	.00192
T65	6.5	.256	3	.118	0.015	.00059
A635	6.35	1/4	2	.079	0.01	.000394

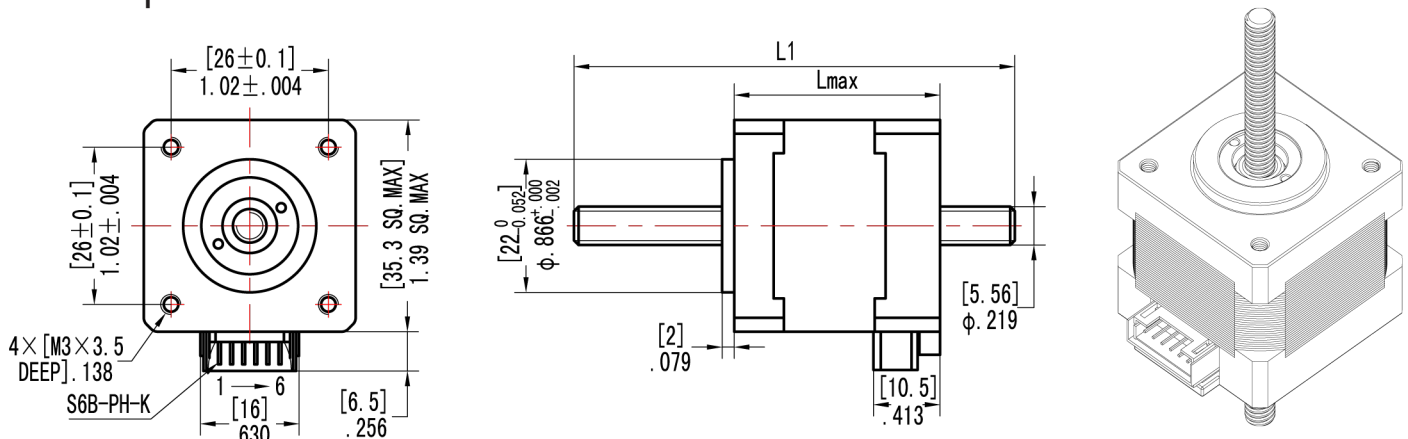
Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
A635-1	6.35	1/4	3.175	1/8	0.015875	.000625
A635-2			6.35	1/4	0.03175	.00125
*T8	8	.315	8	.315	0.04	.00157
*T8-1			4	.157	0.02	.00079
*T8-2			16.6	.656	0.0833	.00328
*T8-3			20	.787	0.1	.00394
*T8-4			2	.079	0.01	.000394
*T8-5			12	.472	0.06	.00236

General Specification Of Motor Page 10. More Model Specifications Page 36.

Figure Dimensions

Unit:[mm]in.

Non-captive Linear Actuator

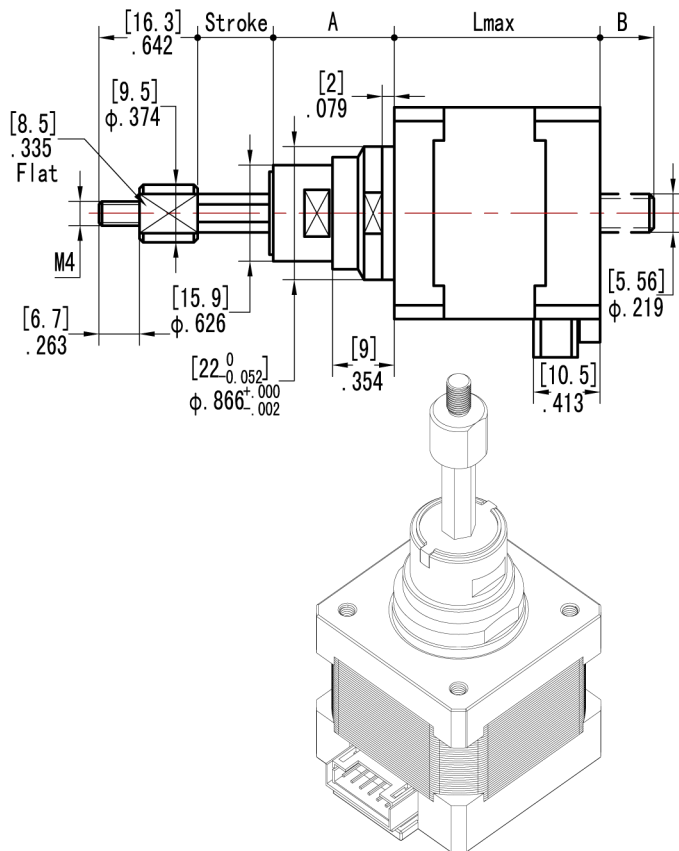
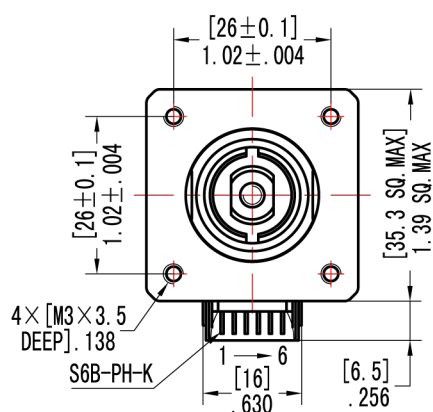


Maximum Stroke(L1-L) For [300mm]11.8in.

Stepping Motor

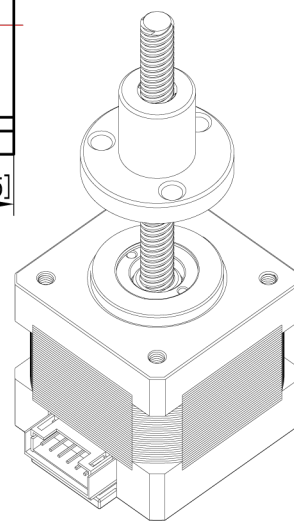
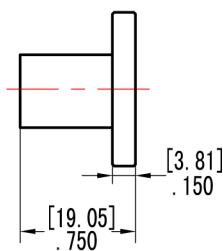
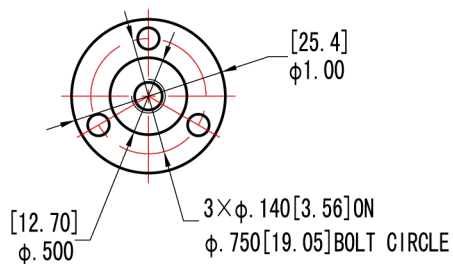
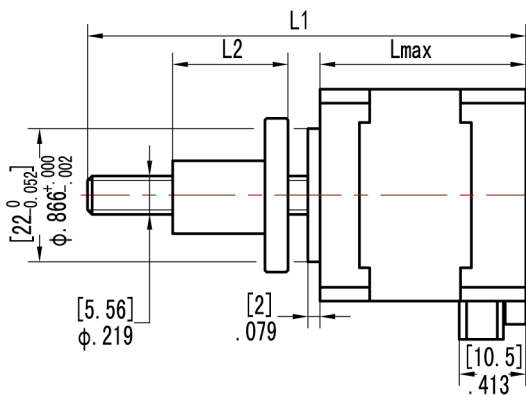
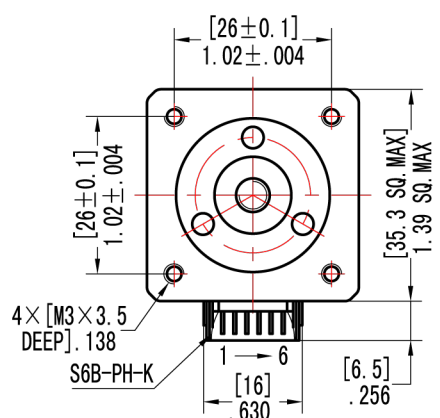
14HY Series Hybrid Stepper Linear Actuator

Captive Linear Actuator



Stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
12.7	.500	18.4	.724	2.3	.009
19.05	.750	24.75	.974	8.65	.341
25.4	1.00	31.1	1.22	15	.591
31.8	1.25	37.5	1.48	21.4	.843
38.1	1.5	43.8	1.72	27.7	1.09
50.8	2.0	56.5	2.22	40.4	1.59
63.5	2.5	69.2	2.72	53.1	2.09

External Linear Actuator



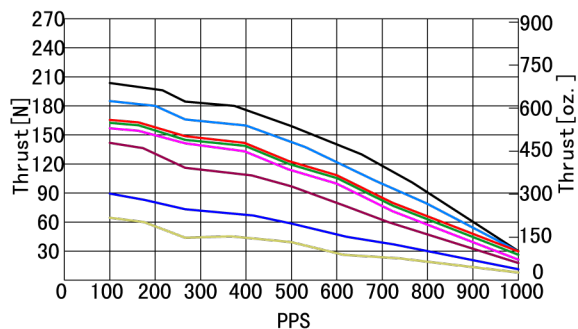
Maximum Stroke (L1-L2) For [300mm]11.8in.
 Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.
 The Screw End Processing Scheme Page 08.

Stepping Motor

14HY Series Hybrid Stepper Linear Actuator

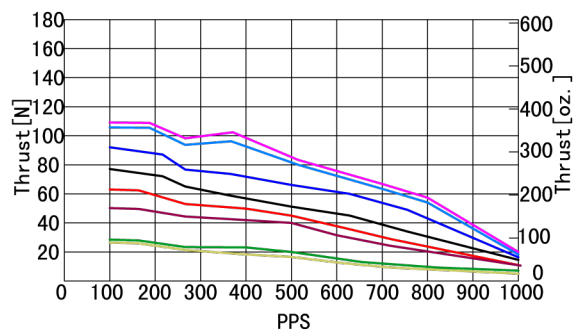
14HY0004

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 1A



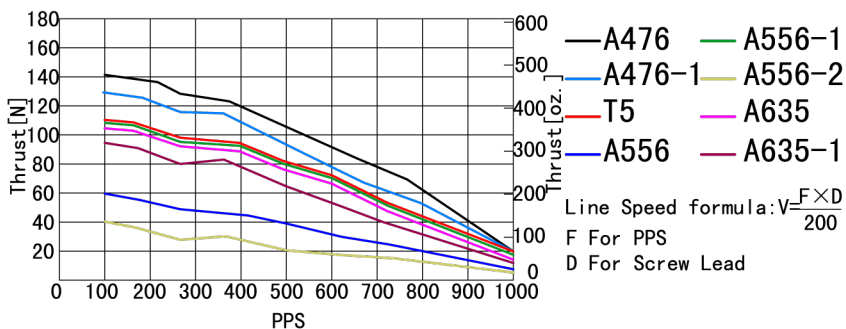
14HY0004

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 1A



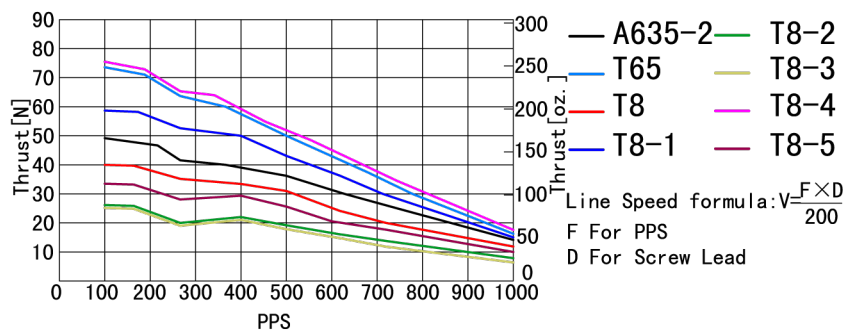
14HY3001

Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



14HY3001

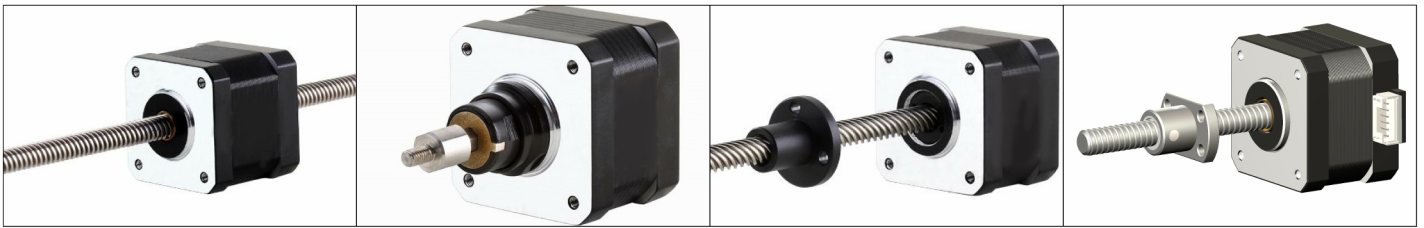
Condition: Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



Stepping Motor

17HS Series Hybrid Stepper Linear Actuator

Three structures can be chosen, including captive, noncaptive and external. Can provide 30Kg load at most. Resolutions range from 0.003175mm to 0.127mm. Maximum speed can be up to 80mm/s.



Model Specifications

Model		Resistance per phase	Inductance per phase	Rated current	Holding torque	
		ohm $\pm 10\%$	mH $\pm 20\%$	A	mNm	oz-in
Bi-polar	17HS1070-D/T/N	1.56	2.4	1.5	260	36.84
	17HS5005-D/T/N	2	3.85	1.5	430	60.94

Model	L(max)		Motor mass		Rotor inertia	
	mm	in.	g	oz	g.cm ²	oz-in ²
17HS1XXX	34	1.34	200	7.05	38	0.21
17HS3XXX	40	1.57	240	8.47	57	0.31
17HS5XXX	48	1.89	340	11.99	82	0.45
17HS6XXX	60	2.36	500	17.64	102	0.56

Parameters Of Screw

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
A476	4.76	.187	0.635	.025	0.003175	.000125
A476-1			1.27	.05	0.00635	.00025
T5	5	.197	2	.079	0.01	.000394
A556	5.56	.219	4.8768	.192	0.024384	.00096
A556-1			2.4384	.096	0.012192	.00048
A556-2			9.7536	.384	0.048768	.00192
T65	6.5	.256	3	.118	0.015	.00059
A635	6.35	1/4	2	.079	0.01	.000394
A635-1			3.175	1/8	0.015875	.000625
A635-2			6.35	1/4	0.03175	.00125
T8	8	.315	8	.315	0.04	.00157

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
T8-1	8	.315	4	.157	0.02	.00079
T8-2			16.6	.656	0.0833	.00328
T8-3			20	.787	0.1	.00394
T8-4			2	.079	0.01	.000394
T8-5			12	.472	0.06	.00236
*G8			2	.079	0.01	.000394
*A953	9.525	3/8	25.4	1	0.127	.00236
*A953-1			1.5875	1/16	0.0079375	.0003125
*T10	10	.394	20	.787	0.1	.00394
*T10-1			2	.079	0.01	.000394
*T10-2			4	.157	0.02	.00079
*T10-3			10	.394	0.05	.00197

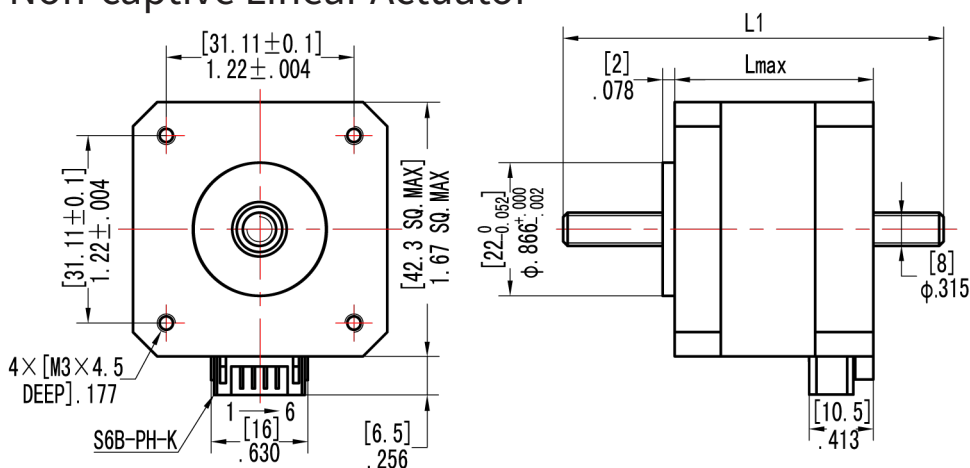
General Specification Of Motor Page 10. More Model Specifications Page 39.

*External Linear Actuator Only.

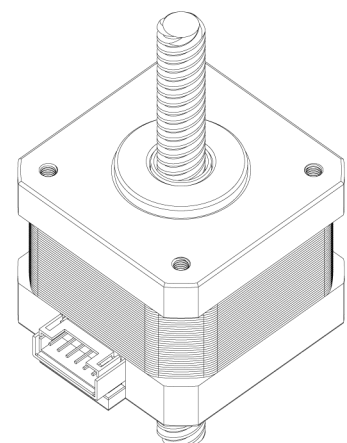
Figure Dimensions

Unit:[mm]in.

Non-captive Linear Actuator



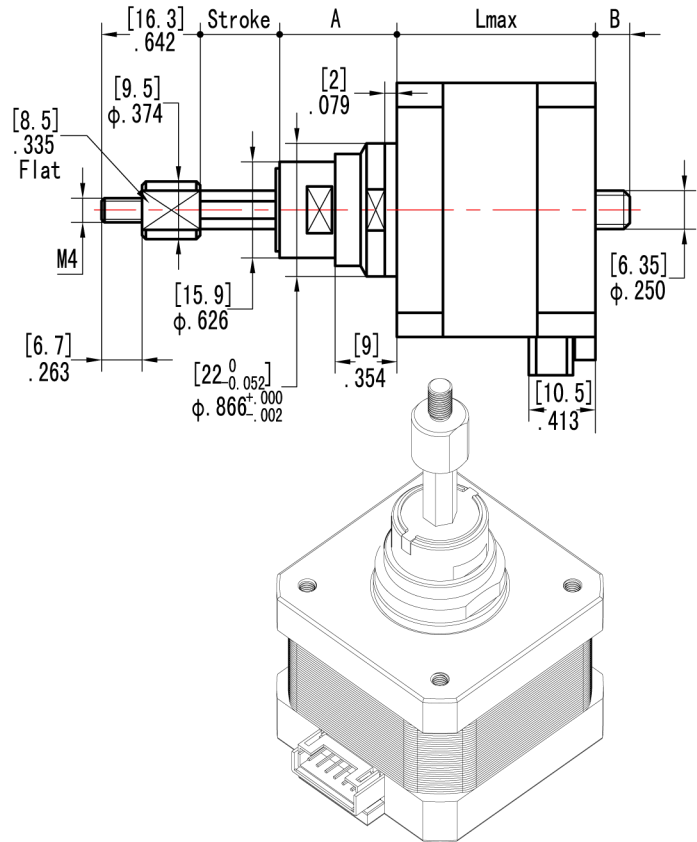
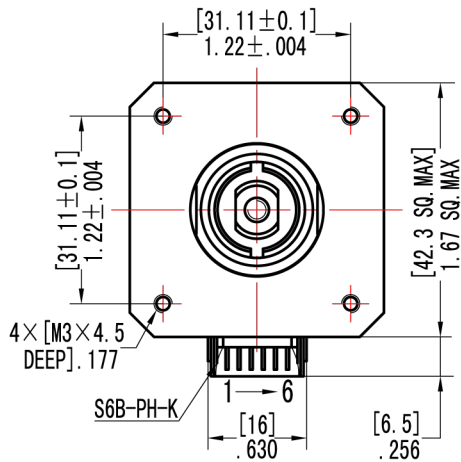
Maximum Stroke(L1-L) For [500mm]19.7in.



Stepping Motor

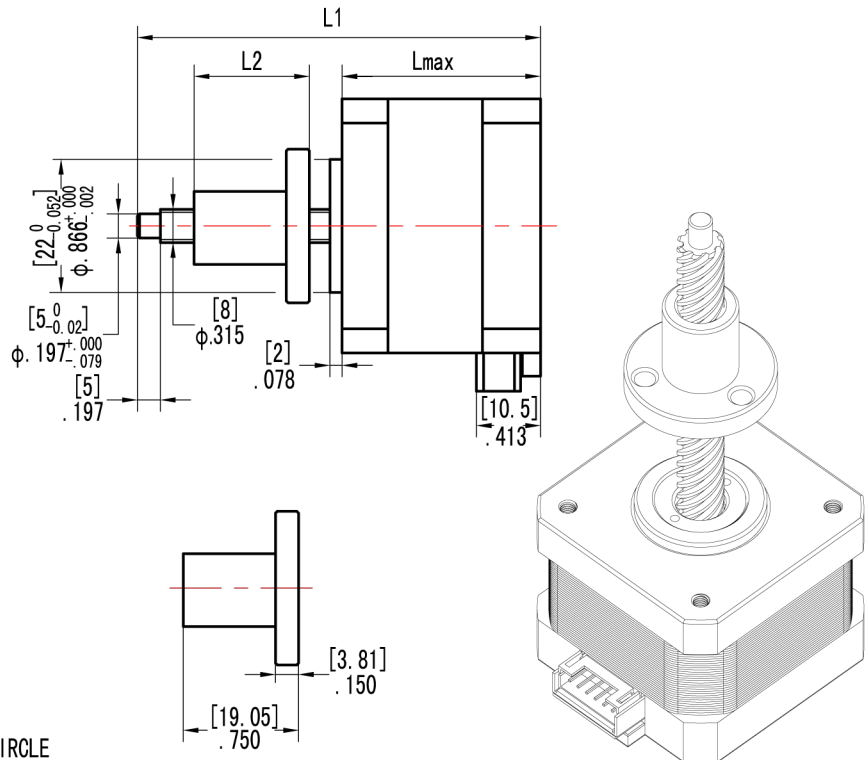
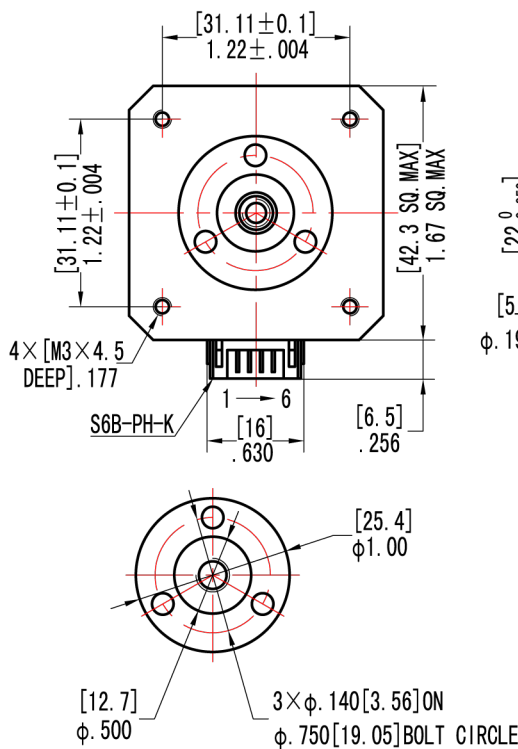
17HS Series Hybrid Stepper Linear Actuator

Captive Linear Actuator



Stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
12.7	.500	18.4	.724	2.3	.009
19.05	.750	24.75	.974	8.65	.341
25.4	1.00	31.1	1.22	15	.591
31.8	1.25	37.5	1.48	21.4	.843
38.1	1.5	43.8	1.72	27.7	1.09
50.8	2.0	56.5	2.22	40.4	1.59
63.5	2.5	69.2	2.72	53.1	2.09

External Linear Actuator

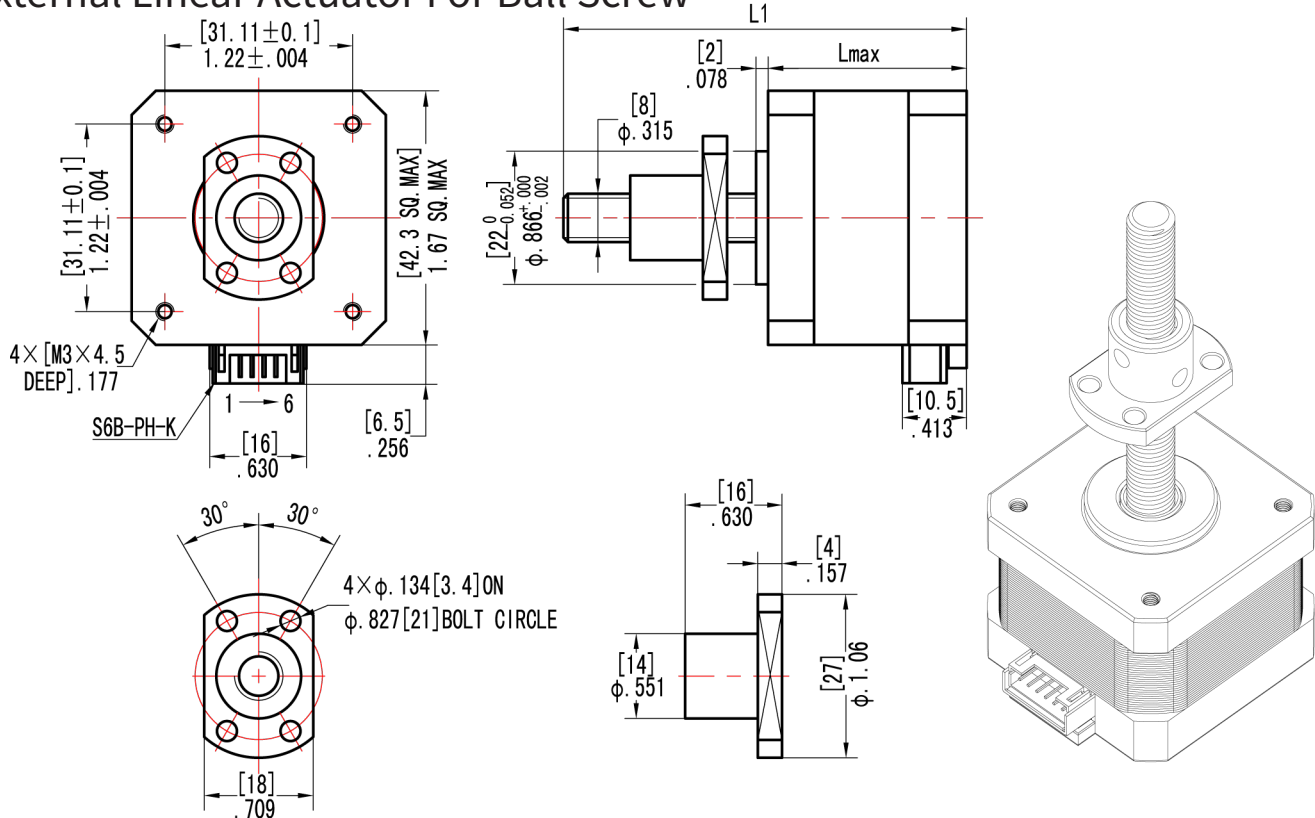


Maximum Stroke(L1-L2) For [500mm]19.7in.
 Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.
 The Screw End Processing Scheme Page08.

Stepping Motor

17HS Series Hybrid Stepper Linear Actuator

External Linear Actuator For Ball Screw

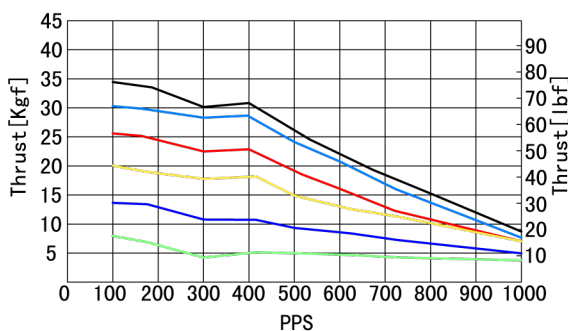


Maximum Stroke(L1-L2) For [500mm]19.7in

Thrust-Speed Characteristics

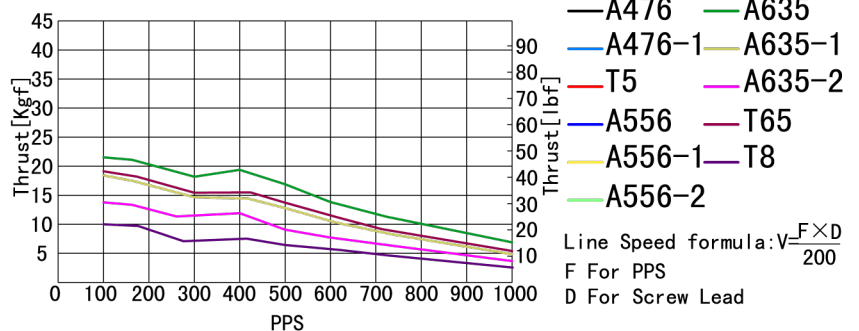
17HS1070

Condition:Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode:Full Step Driver current:1.5A



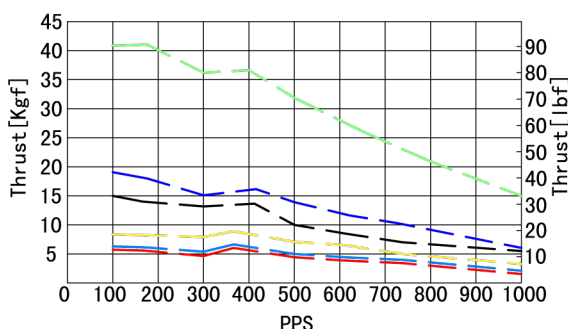
17HS1070

Condition:Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode:Full Step Driver current:1.5A



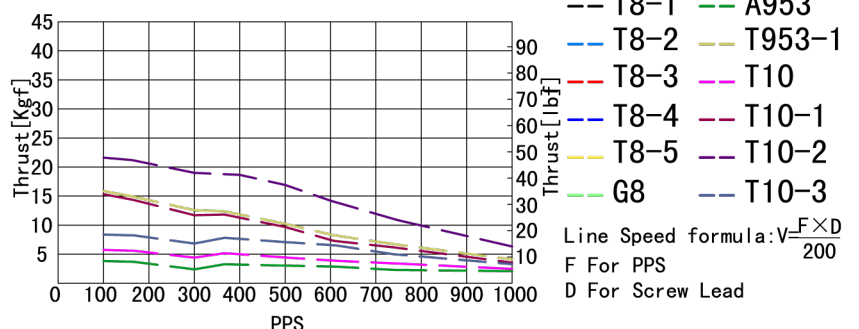
17HS1070

Condition:Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode:Full Step Driver current:1.5A



17HS1070

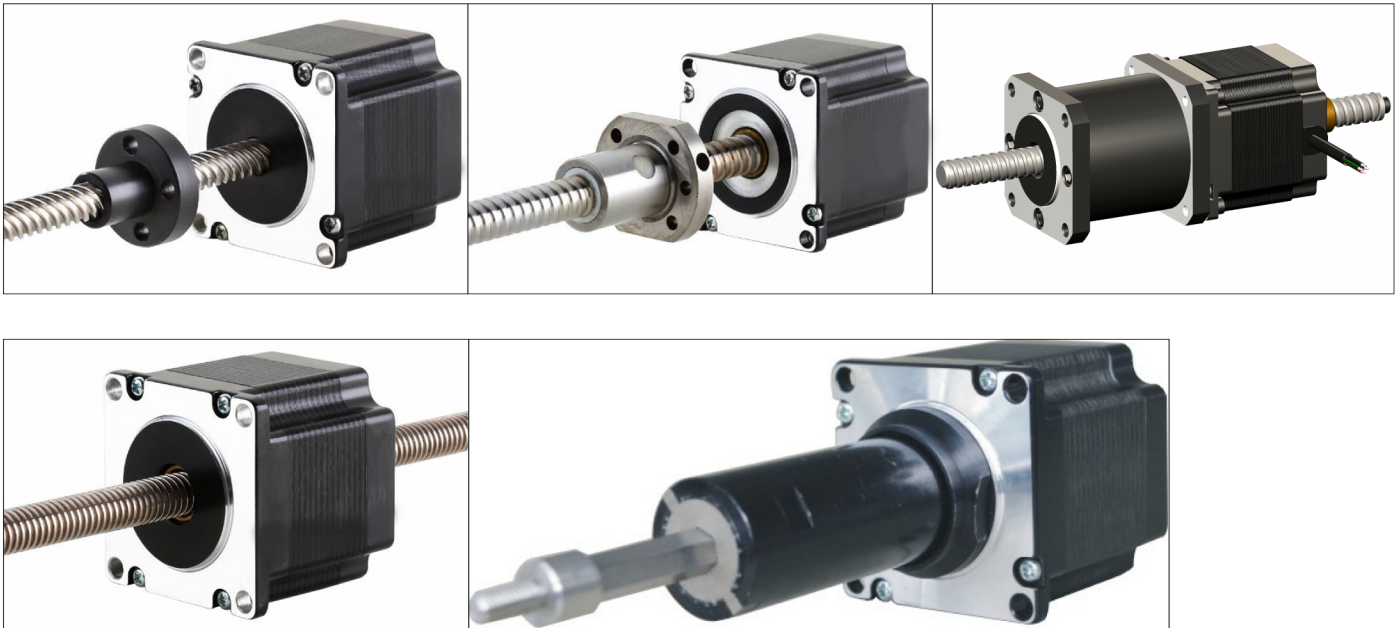
Condition:Bi-polar Constant Current Driver
Driver: GTW422R (24V)
Mode:Full Step Driver current:1.5A



Stepping Motor

23HS Series Hybrid Stepper Linear Actuator

Three structures can be chosen, including noncaptive and external. Can provide 80Kg load at most. Resolutions range from 0.0079375mm to 0.127mm. Maximum speed can be up to 80mm/s.



Model Specifications

Model		Resistance per phase	Inductance per phase	Rated current	Holding torque	
		ohm $\pm$ 10%	mH $\pm$ 20%	A	mNm	oz-in
Bi-polar	23HS2402-D/T/N	2	5	1.5	0.7	6.18
	23HS4404-D/T/N	1.1	3.2	3	1.3	11.48

Parameters Of Screw

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
T8-1	8	.315	4	.157	0.02	.00079
T8-2			16.6	.656	0.0833	.00328
T8-3			20	.787	0.1	.00394
T8-4			2	.079	0.01	.000394
T8-5			12	.472	0.06	.00236
*G8	9.525	3/8	2	.079	0.01	.000394
*A953			25.4	1	0.127	.00236
*A953-1			1.5875	1/16	0.0079375	.0003125
*T10	10	.394	20	.787	0.1	.00394
*T10-1			2	.079	0.01	.000394
*T10-2			4	.157	0.02	.00079
*T10-3			10	.394	0.05	.00197

General Specification Of Motor Page 10. More Model Specifications Page 39.

Model	L(max)		Motor mass		Rotor inertia	
	mm	in.	g	oz	g.cm ²	oz-in ²
23HS0XXX	41	1.61	0.42	0.924	135	0.74
23HS1XXX	51	2.01	0.55	1.21	220	1.21
23HS2XXX	45	0.79	0.5	1.10	155	0.85
23HS4XXX	56	1.34	0.62	1.37	280	1.54
23HS6XXX	76	1.89	1	2.20	460	2.53

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
T11	11	.433	2	.079	0.01	.000394
T11-1			4	.157	0.02	.00079
T12	12	.472	12	.472	0.06	.00236
*T14	14	.551	3	.118	0.015	.00059
*T14-1			4	.157	0.02	.00079
*G12	12	.472	2	.079	0.01	.000394
*G12-1			4	.157	0.02	.00079
*G12-2			5	.197	0.025	.000984
*G16	16	.630	5	.197	0.025	.000984
*G16-1			10	.394	0.05	.00197
*G16-2			16	.630	0.08	.00315

*External Linear Actuator Only.

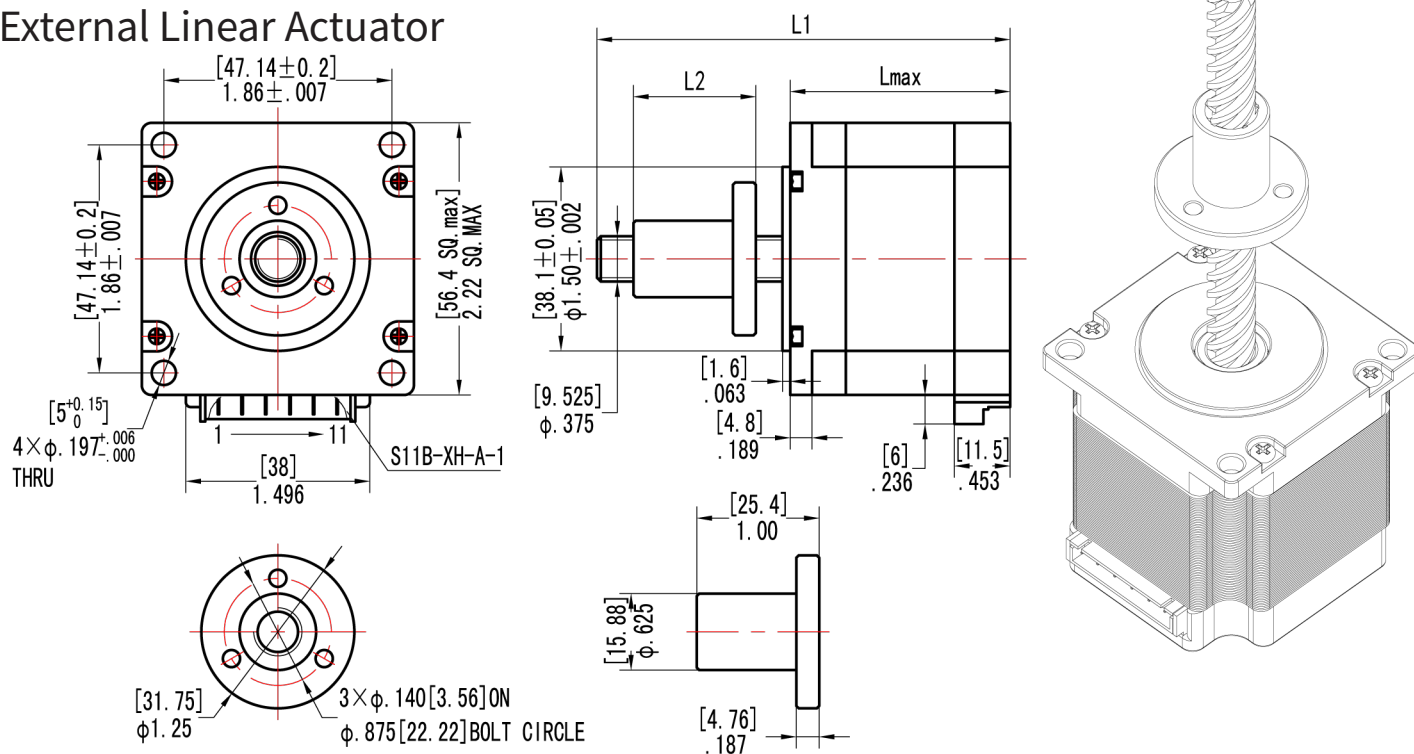
Stepping Motor

23HS Series Hybrid Stepper Linear Actuator

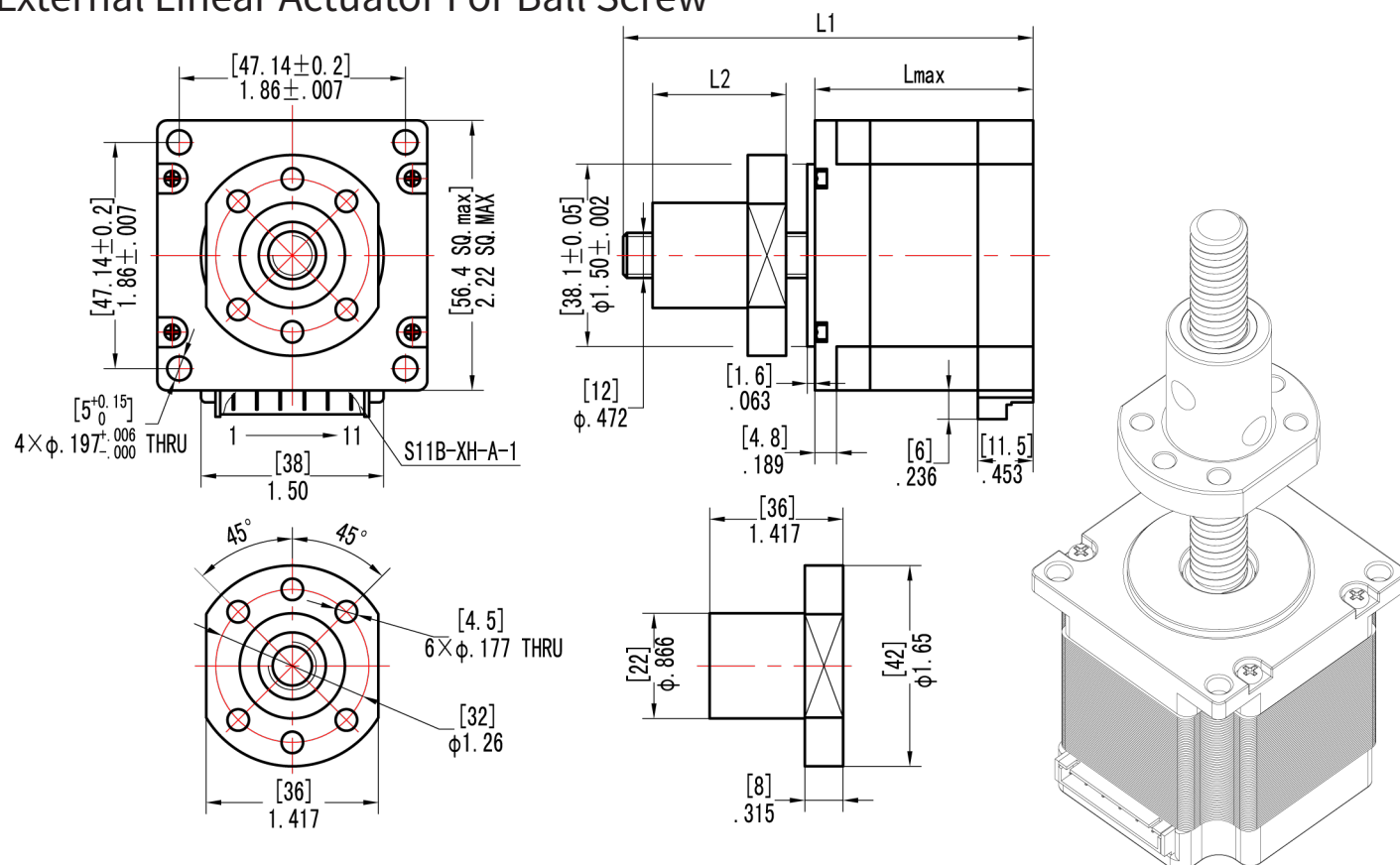
Figure Dimensions

Unit:[mm]in.

External Linear Actuator



External Linear Actuator For Ball Screw

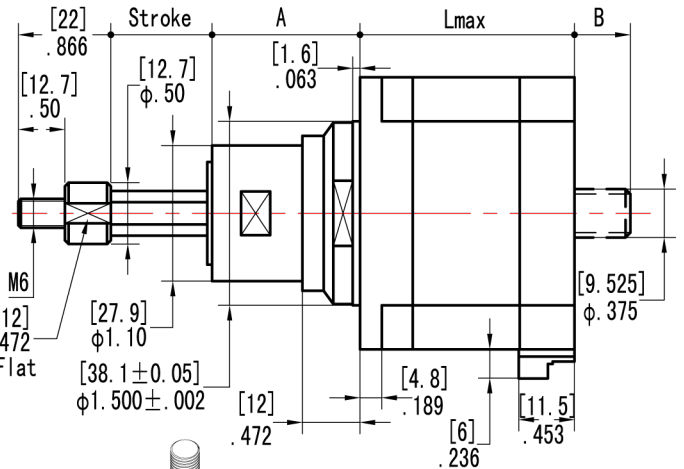
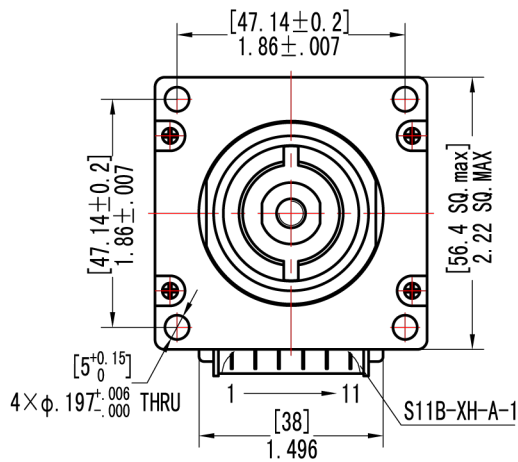


Maximum Stroke(L1-L2) For [750mm]29.5in.

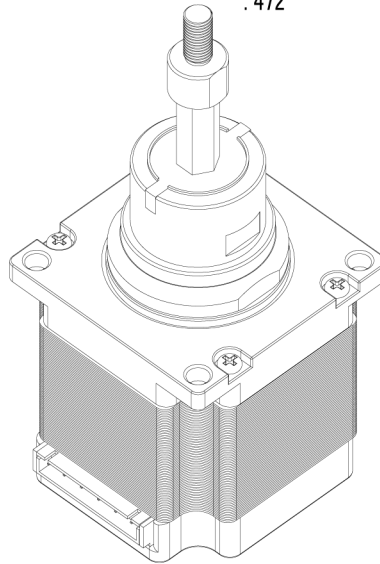
Stepping Motor

23HS Series Hybrid Stepper Linear Actuator

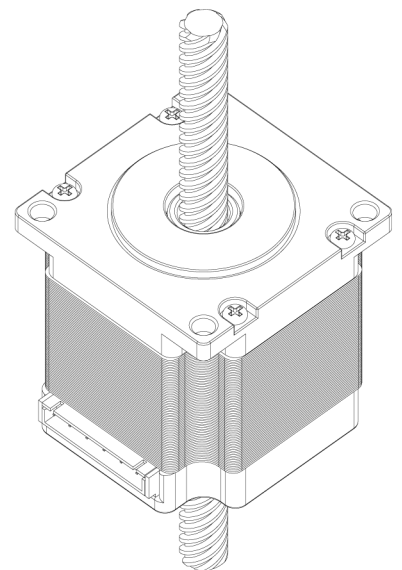
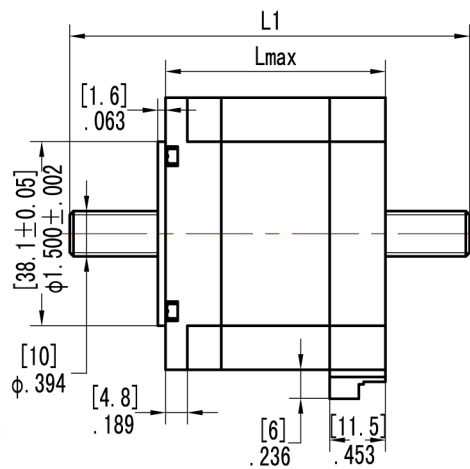
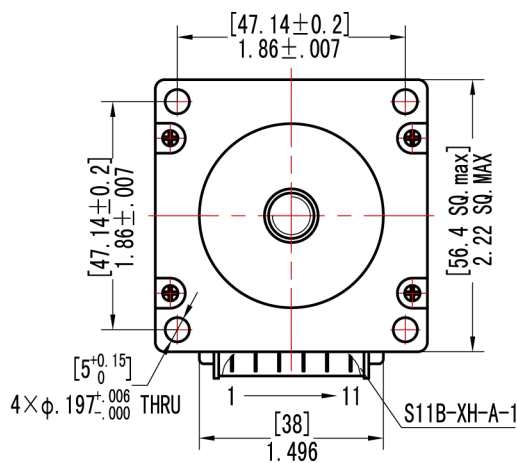
Captive Linear Actuator



Maximum stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
12.7	.500	20.9	.823	—	—
19.05	.750	26.25	1.03	—	—
25.4	1.00	33.6	1.32	4.2	.165
31.8	1.25	40	1.57	10.6	.417
38.1	1.5	46.3	1.82	16.9	.665
50.8	2.0	59	2.32	29.6	1.17
63.5	2.5	71.7	2.82	42.3	1.66

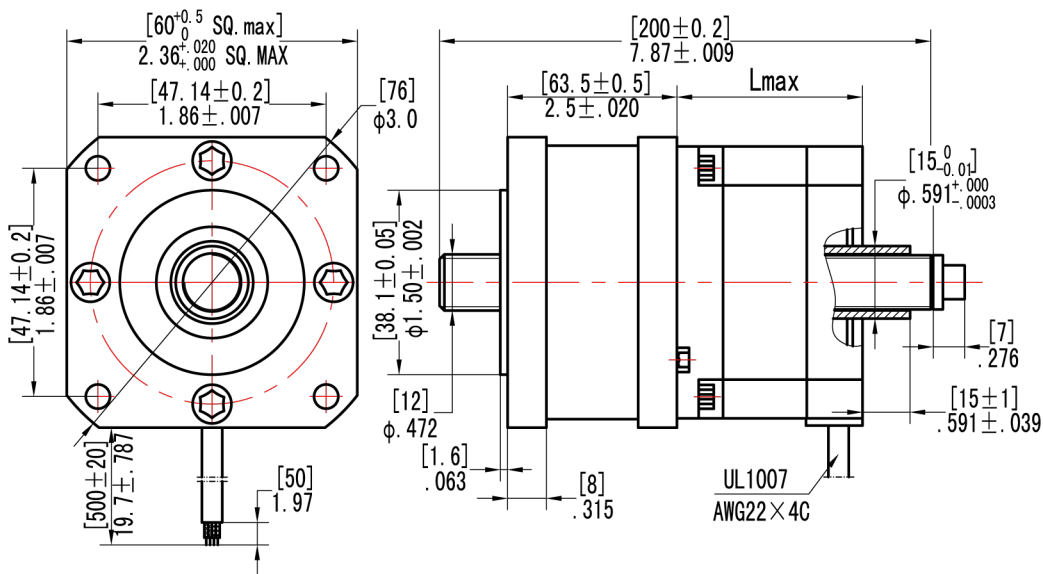


Non-captive Linear Actuator



Maximum Stroke($L1-L$) For [750mm]29.5in.
 Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.
 The Screw End Processing Scheme Page 08.

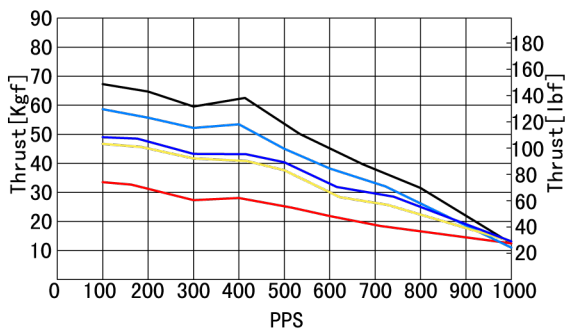
Non-captive Linear Actuator For Ball Screw



Thrust-Speed Characteristics

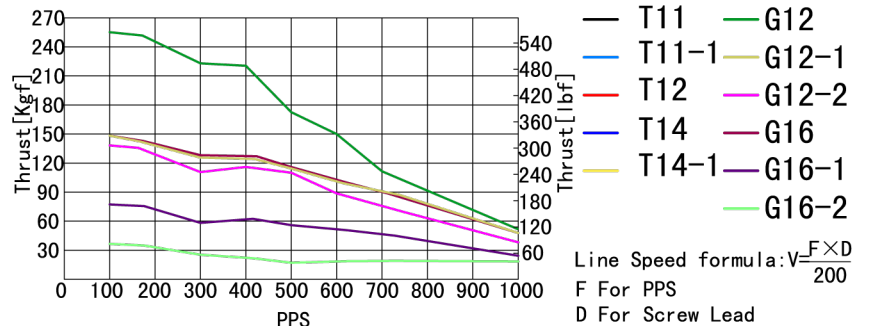
23HS4404

Condition: Bi-polar Constant Current Driver
Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



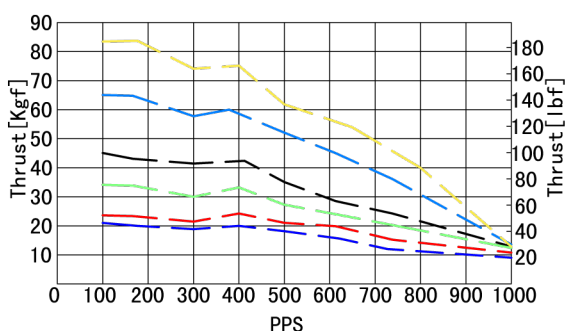
23HS4404

Condition: Bi-polar Constant Current Driver
Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



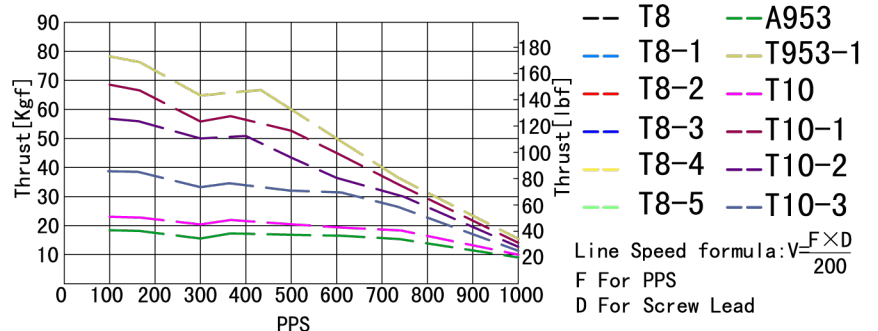
23HS4404

Condition: Bi-polar Constant Current Driver
Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



23HS4404

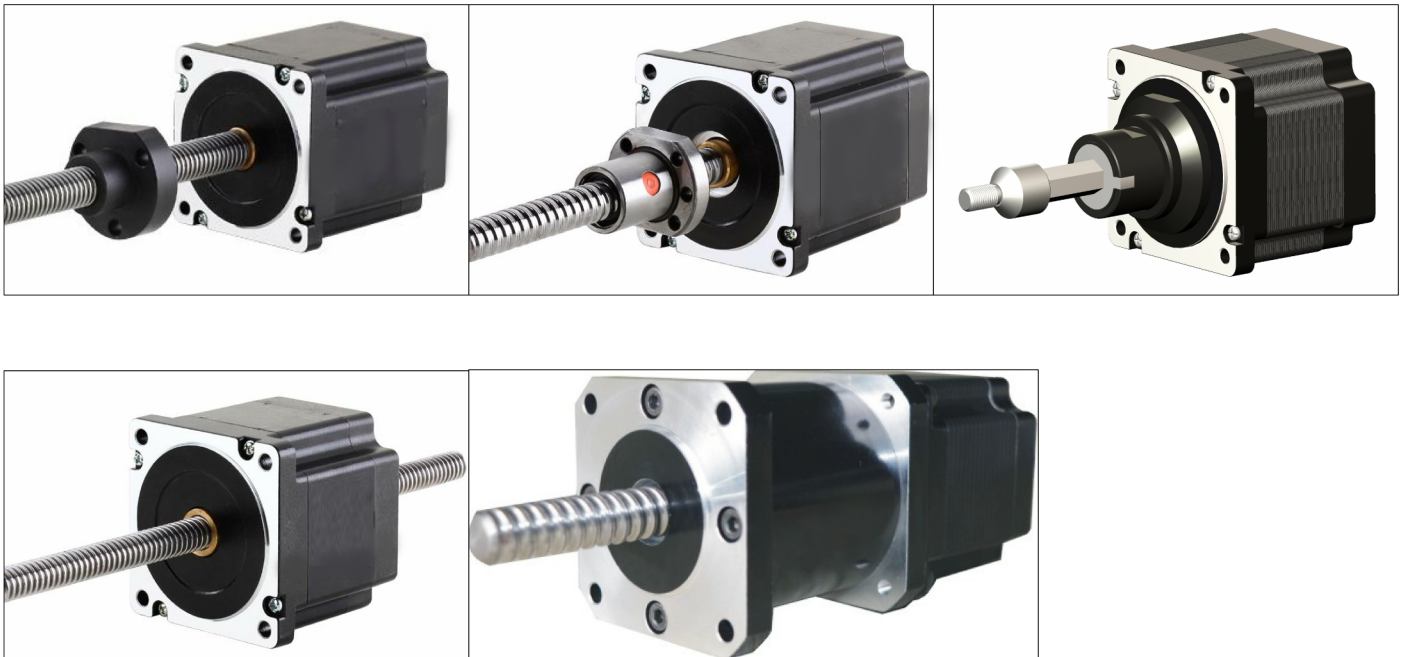
Condition: Bi-polar Constant Current Driver
Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



Stepping Motor

34HS Series Hybrid Stepper Linear Actuator

Three structures can be chosen, including noncaptive and external. Can provide 100Kg load at most. Resolutions range from 0.01mm to 0.08mm. Maximum speed can be up to 60mm/s.



Model Specifications

Model		Resistance per phase	Inductance per phase	Rated current	Holding torque	
		ohm $\pm 10\%$	mH $\pm 20\%$	A	mNm	oz-in
Bi-polar	34HS1401-D/T/N	1.2	12	3	3.5	30.92
	34HS1403-D/T/N	0.5	3.7	4	3.5	30.92

Model	L(max)		Motor mass		Rotor inertia	
	mm	in.	g	oz	g.cm ²	oz-in ²
34HS1XXX	76	2.99	1.4	3.09	1400	7.69
34HS2XXX	98	3.86	2.7	5.95	1700	9.34
34HS3XXX	112	4.41	3.5	7.72	2700	14.84

Parameters Of Screw

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
T14	14	.551	3	.118	0.015	.00059
T14-1			4	.157	0.02	.00079
T18	18	.709	3	.118	0.015	.00059
T18-1			6	.236	0.03	.00012
*T22	22	.866	8	.315	0.04	.00016
*G20	20	.787	5	.197	0.025	.00010

General Specification Of Motor Page 10. More Model Specifications Page 39.

Screw Code	Diameter		Screw Lead		Resolution	
	mm	in	mm	in	mm	in
*G12	12	.472	2	.079	0.01	.000394
*G12-1			4	.157	0.02	.00079
*G12-2			5	.197	0.025	.000984
*G16	16	.630	5	.197	0.025	.000984
*G16-1			10	.394	0.05	.00197
*G16-2			16	.630	0.08	.00315

*External Linear Actuator Only.

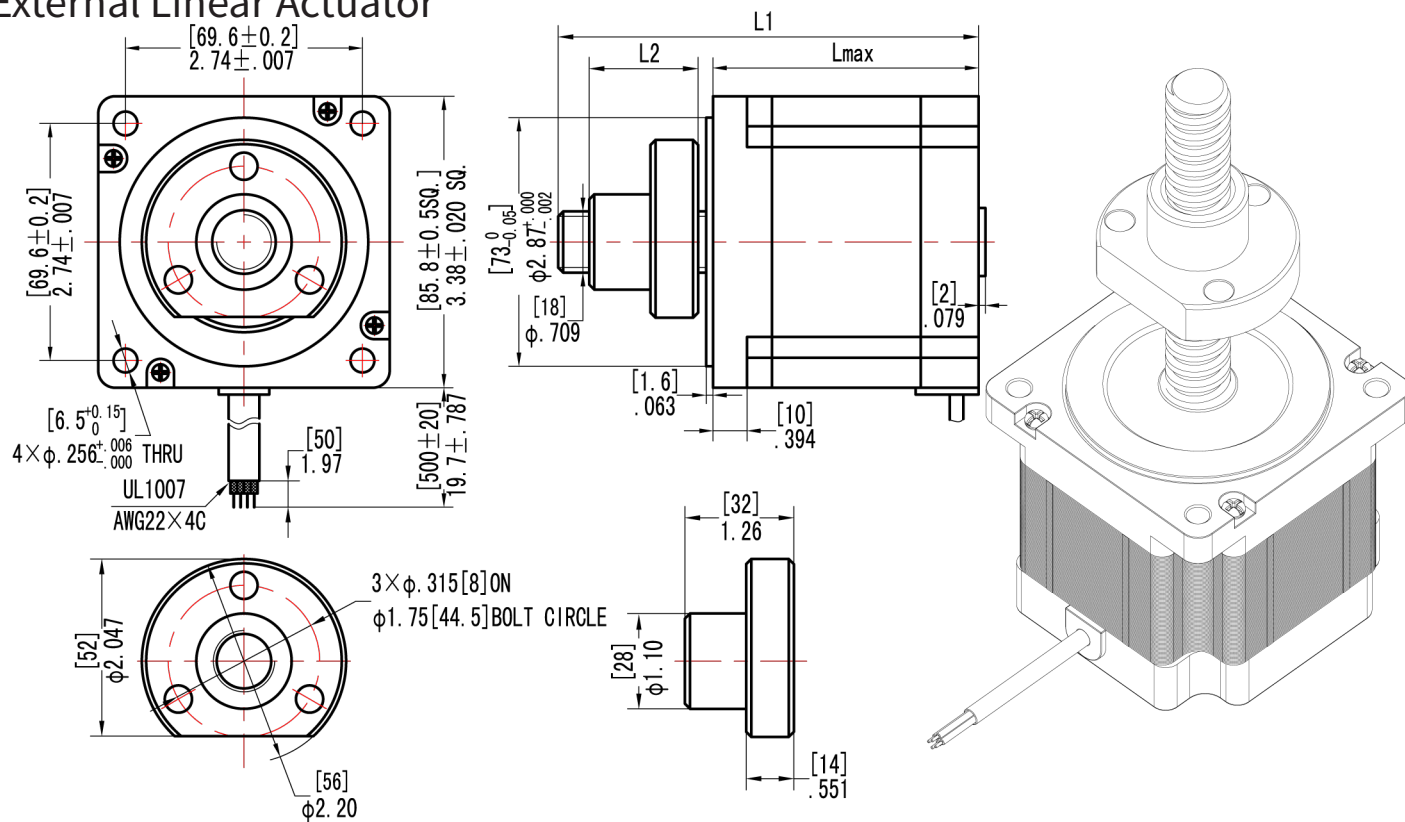
Stepping Motor

34HS Series Hybrid Stepper Linear Actuator

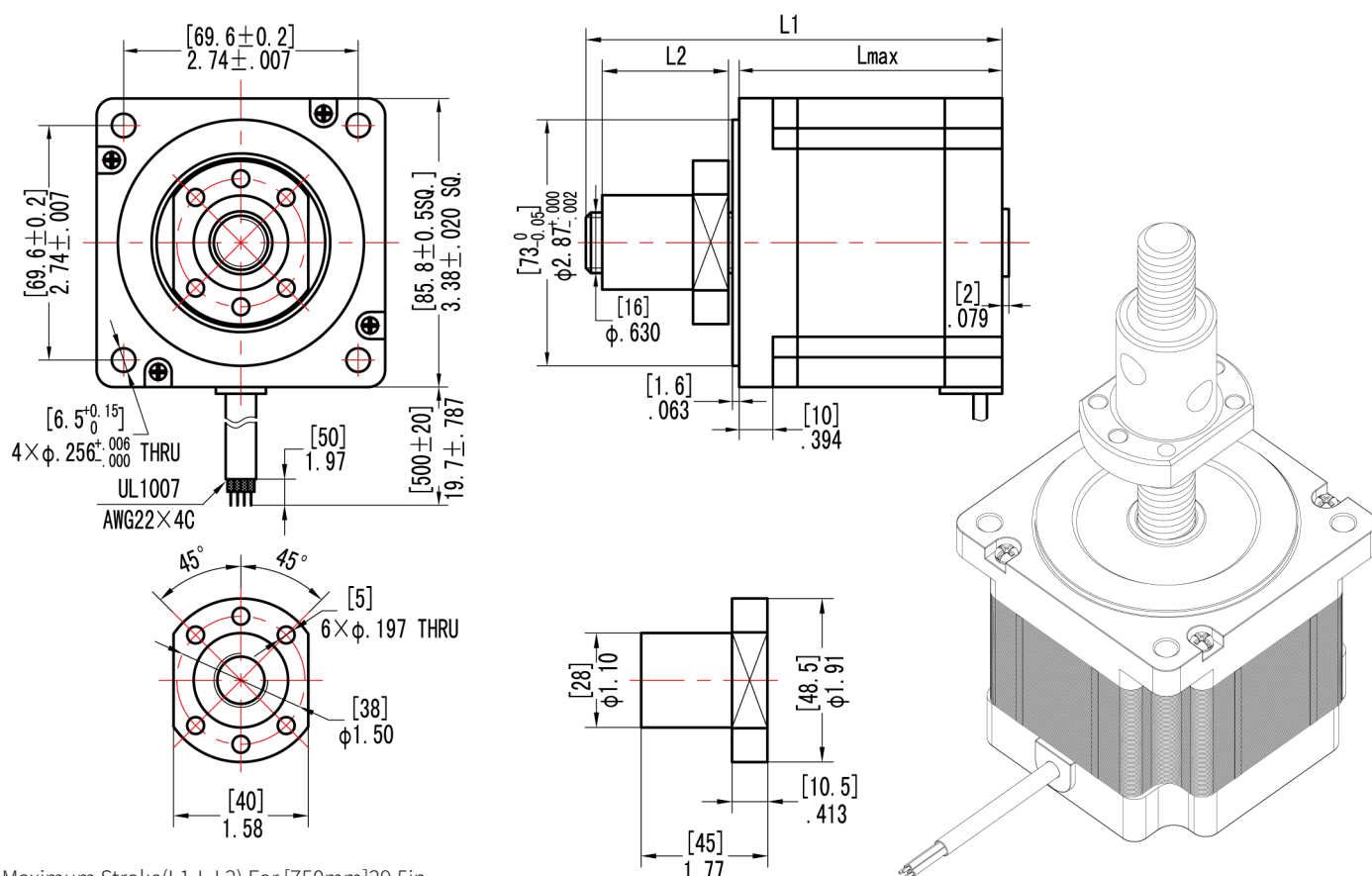
Figure Dimensions

Unit:[mm]in.

External Linear Actuator



External Linear Actuator For Ball Screw

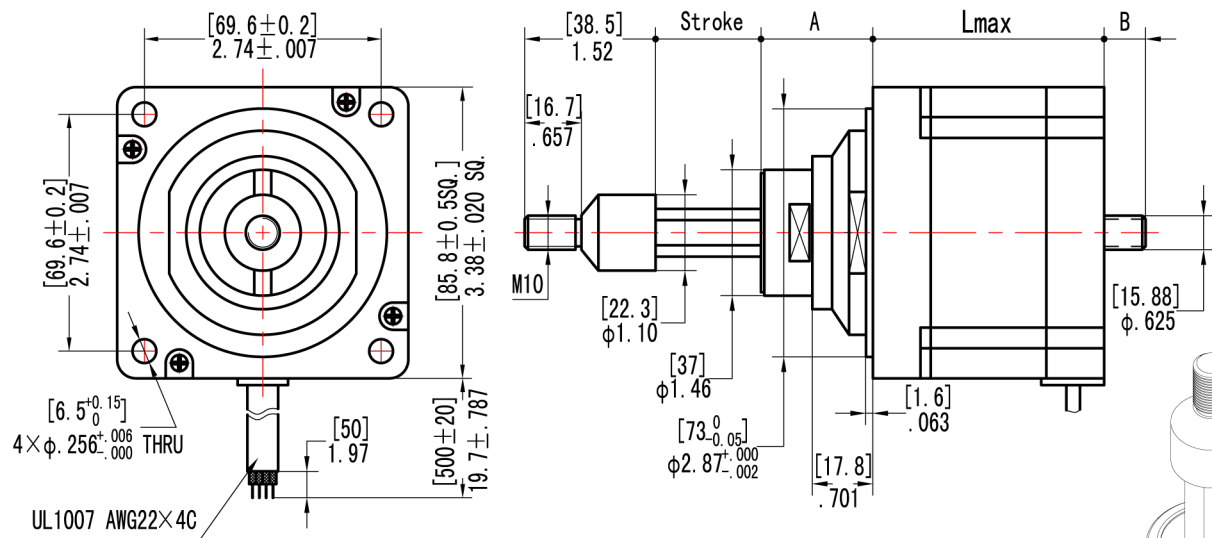


Maximum Stroke(L1-L2) For [750mm]29.5in.

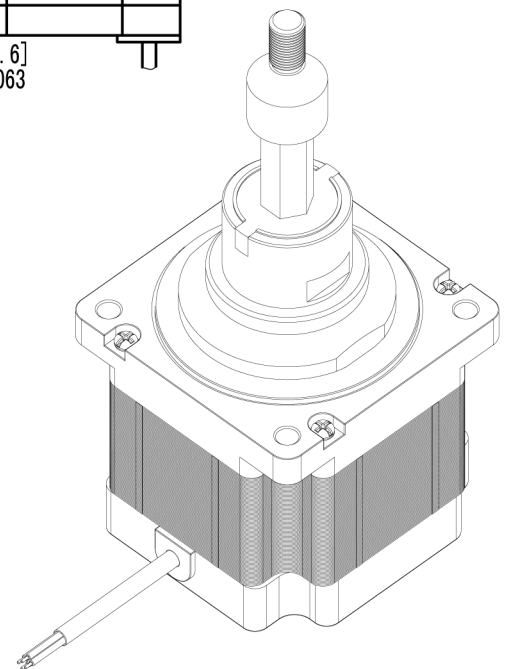
Stepping Motor

34HS Series Hybrid Stepper Linear Actuator

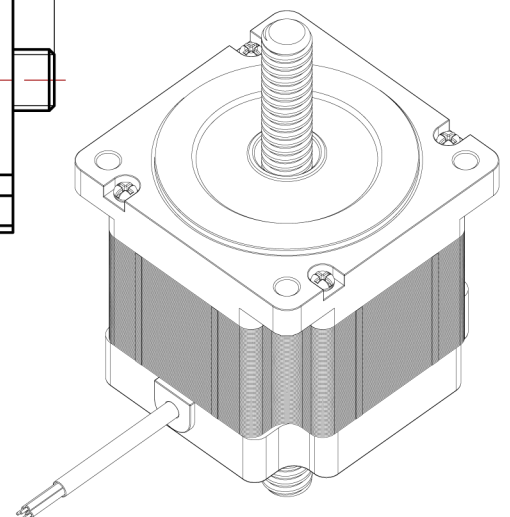
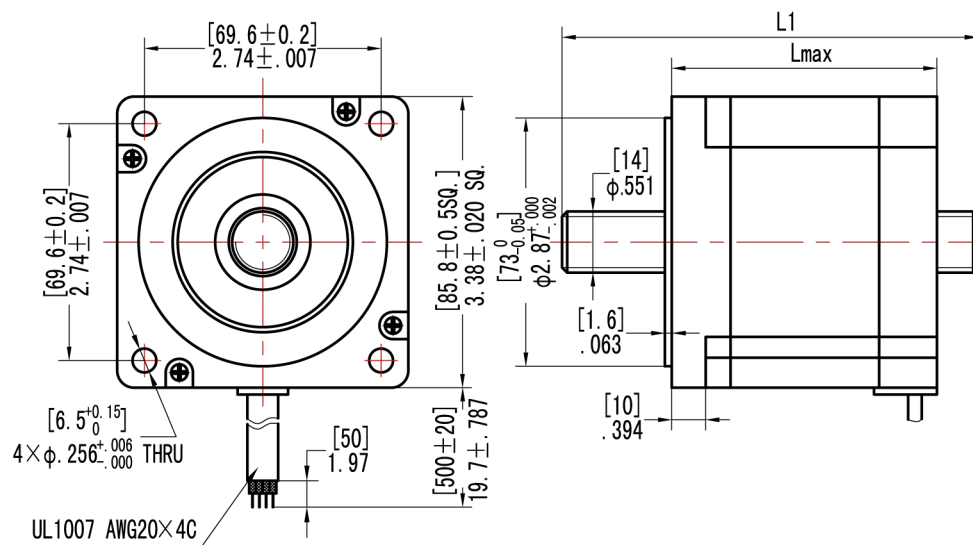
Captive Linear Actuator



Stroke		A(max)		B(max)	
mm	in.	mm	in.	mm	in.
12.7	.500	23.9	.823	—	—
19.05	.750	29.25	1.03	1.3	.005
25.4	1.00	36.6	1.32	6.6	.260
31.8	1.25	43	1.57	13	.512
38.1	1.5	49.3	1.82	19.3	.760
50.8	2.0	62	2.32	32	1.26
63.5	2.5	74.7	2.82	44.7	1.76



Non-captive Linear Actuator

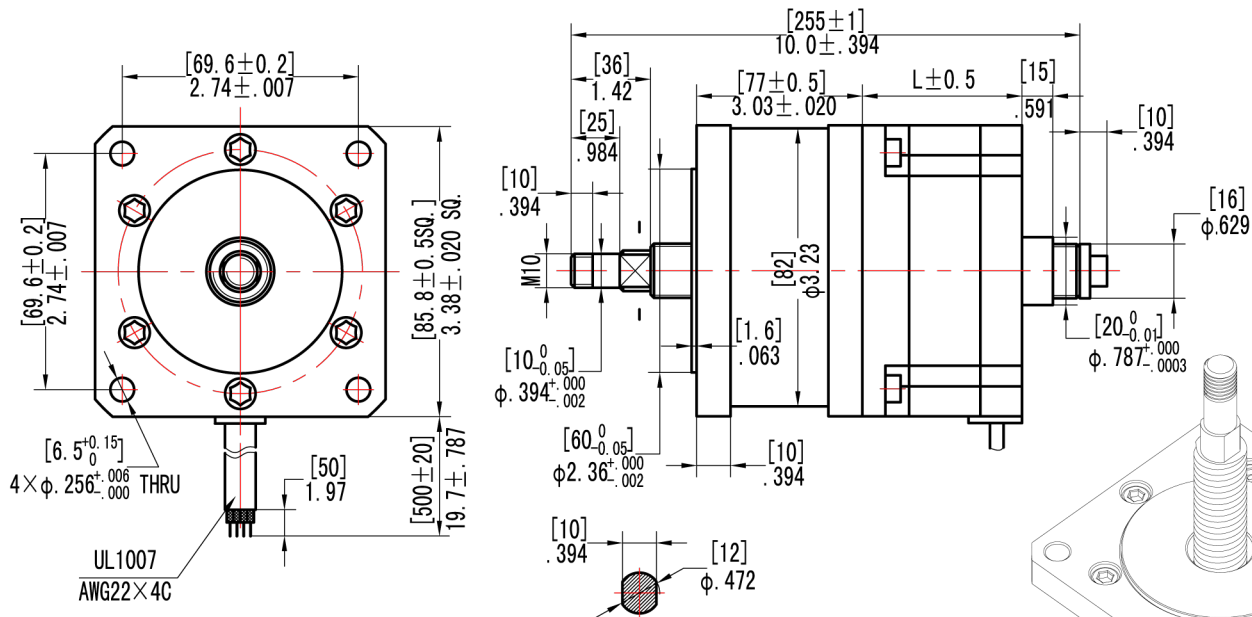


Maximum Stroke(L1-L) For [750mm]29.5in.
Wiring Diagram & Drive Sequence Model Page 09.
The Screw End Processing Scheme Page 08.

Stepping Motor

34HS Series Hybrid Stepper Linear Actuator

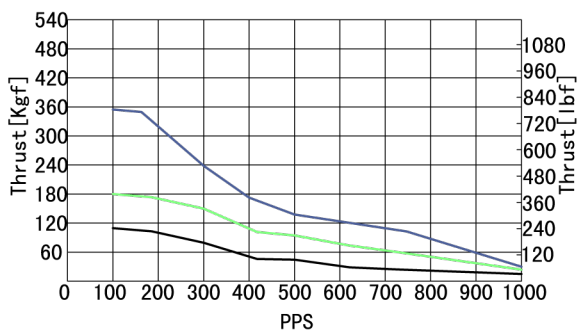
Non-captive Linear Actuator For Ball Screw



Thrust-Speed Characteristics

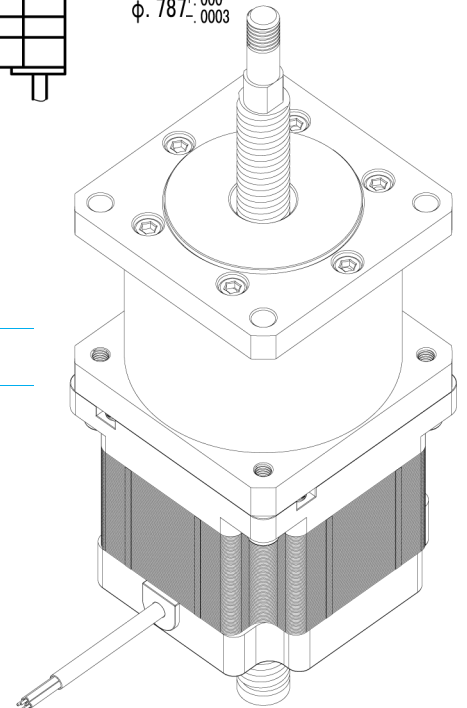
34HS1401

Condition: Bi-polar Constant Current Driver
Driver: GTW880R (48V)
Mode: Full Step Driver current: 3A



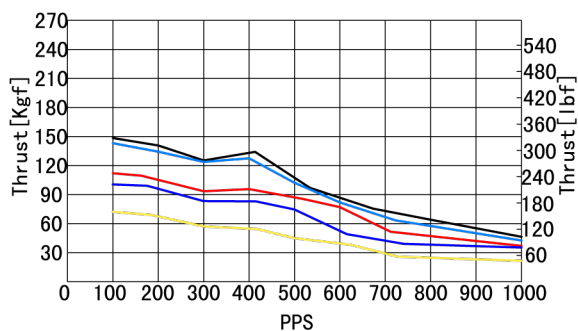
— G16-1
— G16-2
— G20

Line Speed formula: $V = \frac{F \times D}{200}$
F For PPS
D For Screw Lead



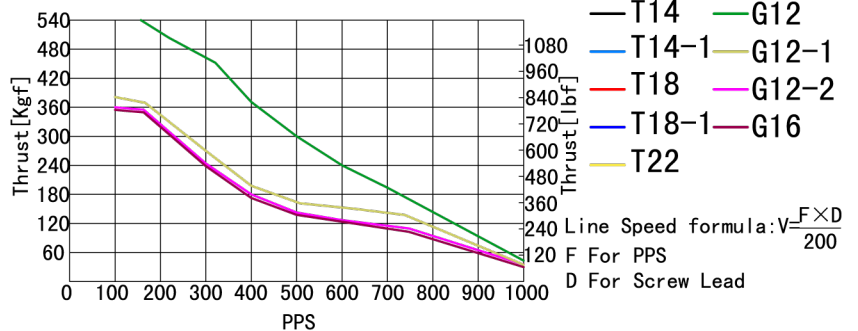
34HS1401

Condition: Bi-polar Constant Current Driver
Driver: GTW880R (48V)
Mode: Full Step Driver current: 3A



34HS1401

Condition: Bi-polar Constant Current Driver
Driver: GTW880R (48V)
Mode: Full Step Driver current: 3A



— T14 — G12
— T14-1 — G12-1
— T18 — G12-2
— T18-1 — G16
— T22

Line Speed formula: $V = \frac{F \times D}{200}$
F For PPS
D For Screw Lead

17 H S 1 0 03-N 24 S

a b c d e f g h i

a:The motor frame size (motor 10 times of inch).

b:Indicate hybrid stepper motor.

c:Step angle code :A-0.9° , D, S, Y-1.8° .

d:Code for body length

e:Outlet way:0-connector, 4-4 lead wire, 6-6 lead wire, and so on.

f:Parameter code of motor performance.

g:N-motor structure for high precision positioning.

K-hollow shaft motor.

h:Length of output shaft.

i:Derived symbol, eg:S-double extensions of shaft, B-Flat.

Unit:mm

Code Body Length Series	0	1	2	3	4	5	6	7	8	9
8HY	30	38	33	42						
11HY	41			34	45	51				
14HY	34	32	20	26			44			
16HY		20	22	25	34		40		48	
17HS	22	34	44	40		48	60			30
23HD	41	51	45	54	56	65	76	82	100	112
23HS	41	51	45	54	56	65	76	82	100	112
24HS								80	86.5	100
34HS		76	98	112	128	150				

Stepping Motor

8HY SERIES 1.8° Hybrid Stepper Motor

Body length range from 30mm to 38mm, holding torque can reach up to 40mN.m, maximum shaft diameter for 5mm.



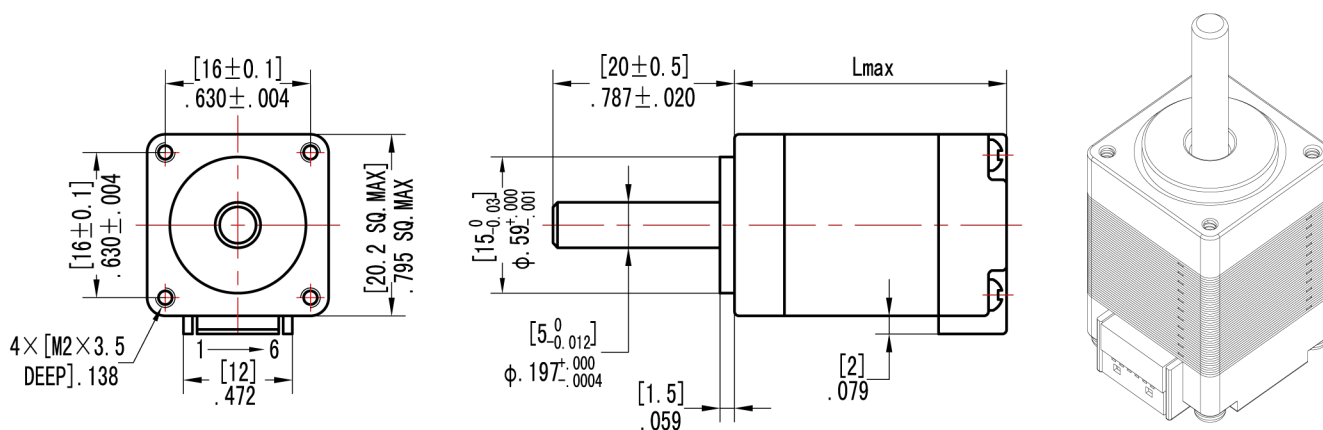
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	8HY0001-XX	18	2.55	0.6	6.5	1.7	2	0.28	2	0.011	60	2.12	30	1.18
	8HY0006-XX	24	3.40	0.12	50	10.5								
	8HY1001-XX	32	4.54	0.4	27	7.5	4	0.56	3	0.016	80	2.82	38	1.50
	8HY1005-XX	25	3.54	0.8	5	1.3								
	8HY2001-XX	20	2.83	0.6	6.5	1.5	2.5	0.35	2.5	0.014	70	2.47	33	1.30
	8HY2002-XX	40	5.67	0.15	25	6								
Uni-polar	8HY0005-XX	15	2.13	0.4	12	1.5	2	0.28	2	0.011	60	2.12	30	1.18
	8HY1003-XX	20	2.83	0.4	16	2	3	0.43	3	0.016	80	2.82	38	1.50

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram



Drive Sequence Model & Accessory Harness Model Page 09.

Stepping Motor

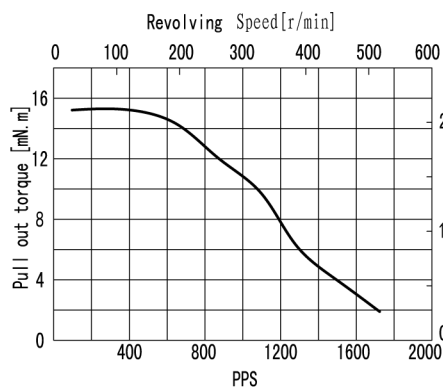
8HY SERIES 1.8° Hybrid Stepper Motor

Torque-Speed Characteristics

Bi-polar

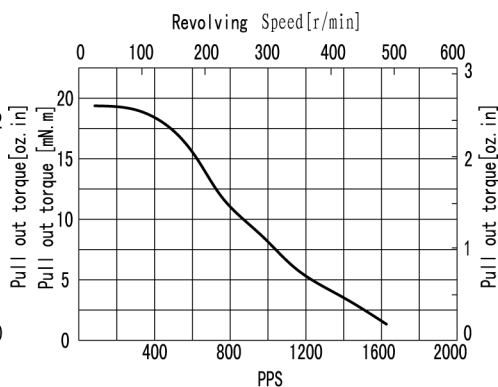
8HY0001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.6A



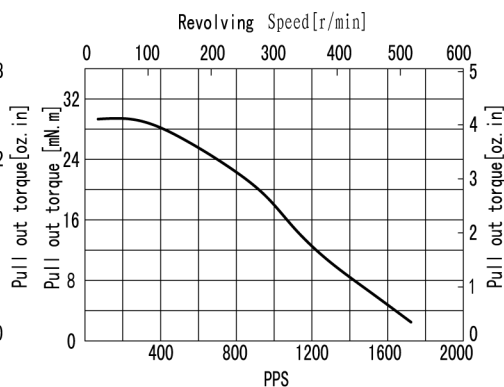
8HY0006

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.12A



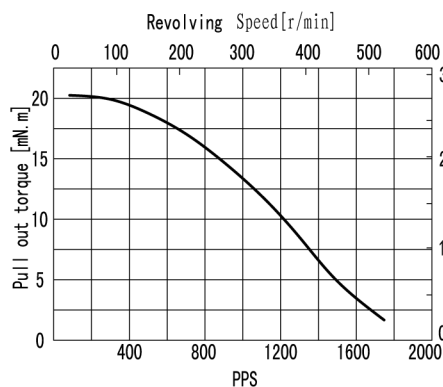
8HY1001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



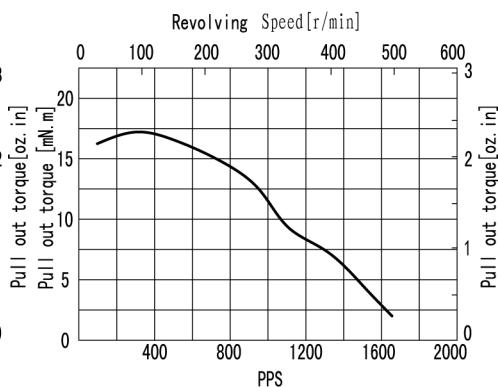
8HY1005

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.8A



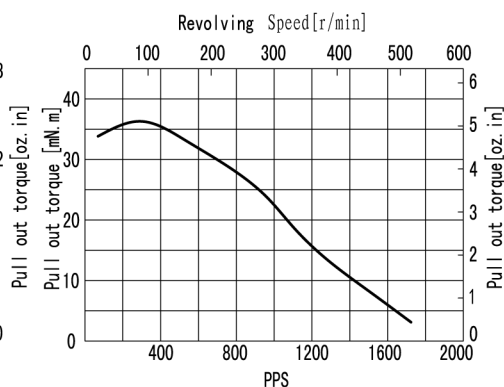
8HY2001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.6A



8HY2002

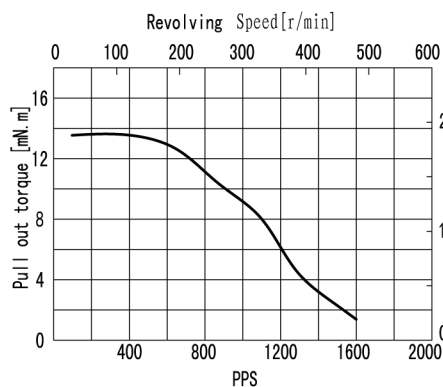
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.15A



Uni-polar

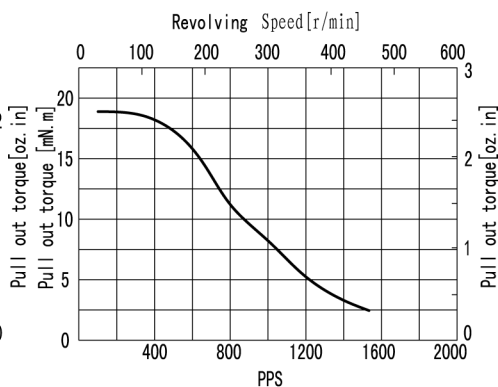
8HY0005

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 0.4A



8HY1003

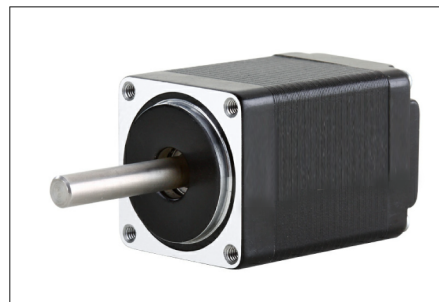
Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 0.4A



Stepping Motor

11HY SERIES 1.8° Hybrid Stepper Motor

Body length range from 34mm to 51mm, holding torque can reach up to 120mN.m, maximum shaft diameter for 7mm.



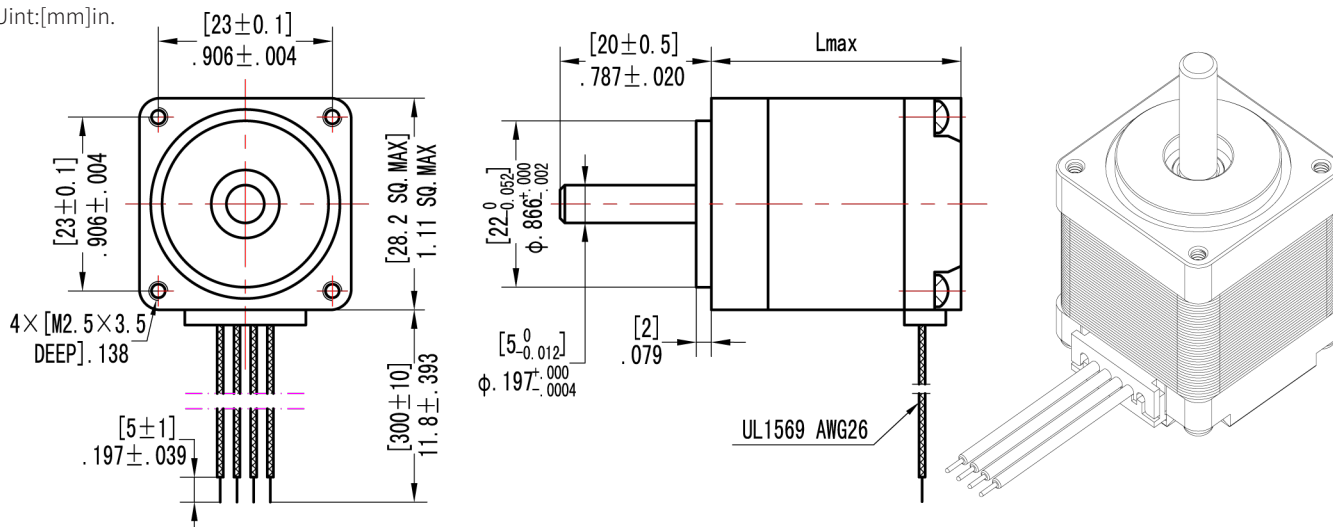
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	11HY0401-XX	80	11.34	0.75	7.5	4.5	6	0.85	12	0.066	140	4.94	41	1.61
	11HY3401-XX	60	8.50	0.75	6.5	3.2	5	0.71	9	0.049	120	4.23	34	1.34
	11HY3402-XX	60	8.50	1.0	1.5	0.4								
	11HY4401-XX	95	13.46	0.75	6.7	3	8	1.13	15	0.082	160	5.64	45	1.77
	11HY4403-XX	50	7.09	1	2.5	1.4								
	11HY5402-XX	120	17.01	0.9	5	3.4								
Uni-polar	11HY0601-XX	30	4.25	0.9	3.3	0.9	6	0.85	12	0.066	140	4.94	41	1.61
	11HY3601-XX	35	4.96	0.67	3	0.6	5	0.71	9	0.049	120	4.23	34	1.34

General Specification Of Motor Page 10.

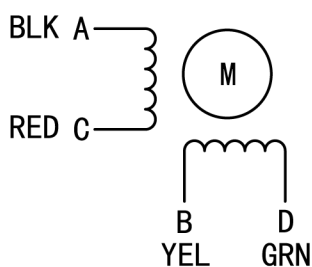
Figure Dimensions

Unit:[mm]in.

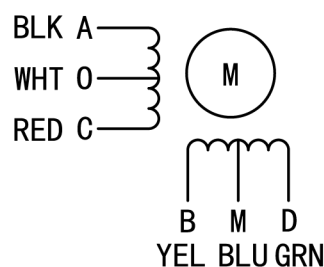


Wiring Diagram

Bi-polar



Uni-polar

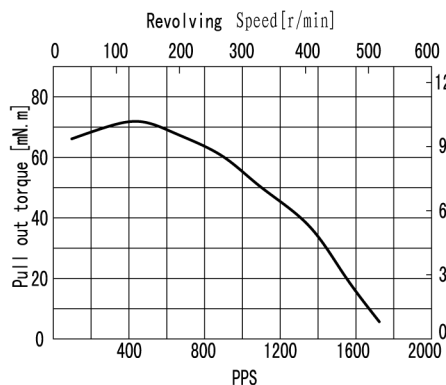


Drive Sequence Model Page 09.

Torque-Speed Characteristics

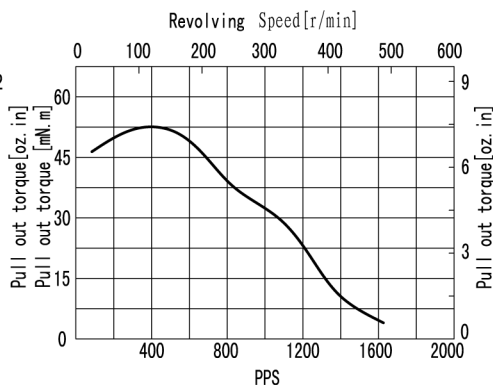
11HY0401

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



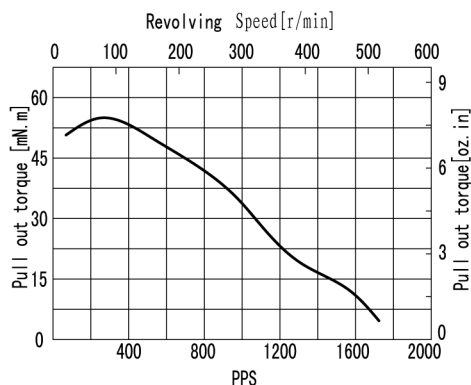
11HY3401

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



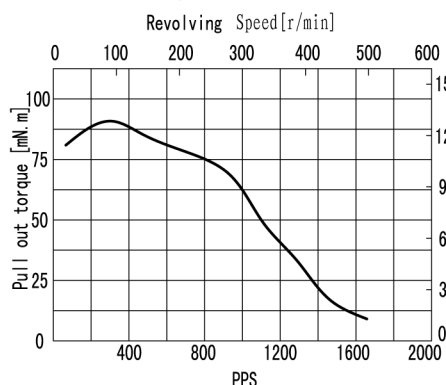
11HY3402

Driver: GTW422R (24V)
Mode: Full Step Driver current: 1.0A



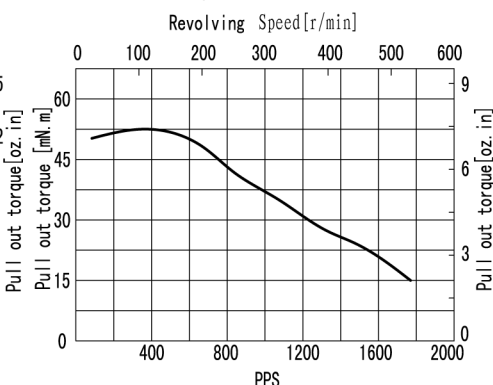
11HY4401

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



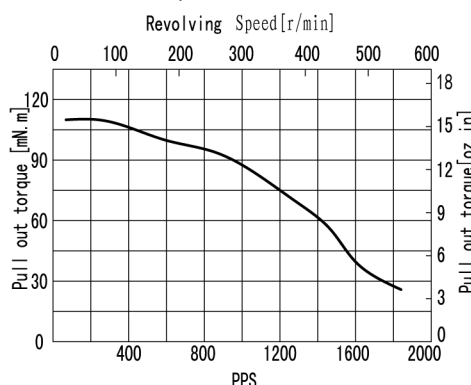
11HY4403

Driver: GTW422R (24V)
Mode: Full Step Driver current: 1A



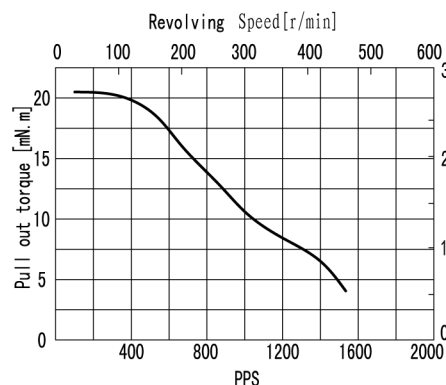
11HY5402

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.9A



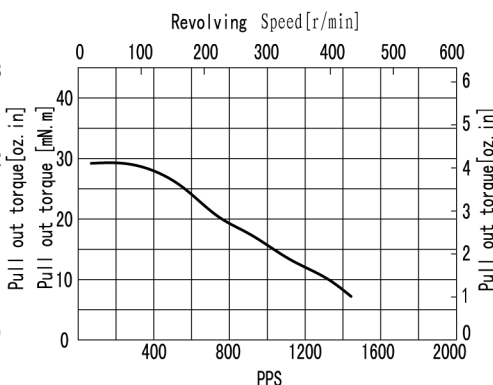
11HY0601

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 0.9A



11HY3601

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 0.67A



Stepping Motor

14HY SERIES 1.8° Hybrid Stepper Motor

Body length range from 20mm to 44mm, holding torque can reach up to 250mN.m, maximum shaft diameter for 8mm.



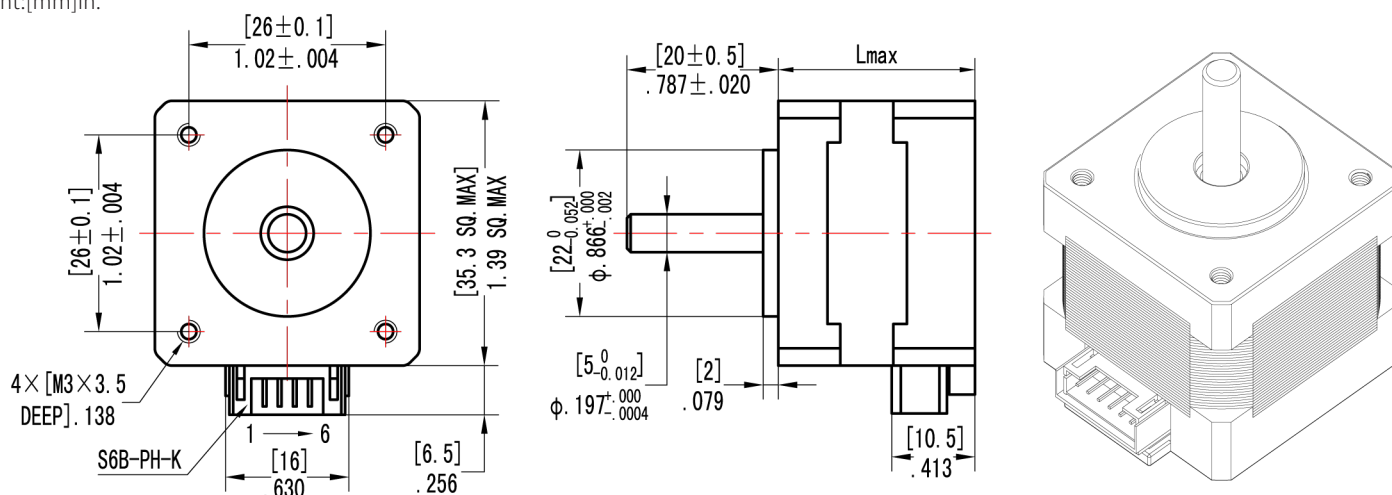
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	14HY0001-XX	150	21.26	0.4	24	38	12	1.70	14	0.077	180	6.35	34	1.34
	14HY0403-XX	100	14.17	1	2.7	4								
	14HY0006-XX	150	21.26	0.85	6	10								
	14HY2403-XX	70	9.92	0.4	23	16	8	1.13	10	0.055	100	3.53	20	0.79
	14HY3001-XX	100	14.17	0.4	20	20								
	14HY3002-XX	70	9.92	0.75	4.3	4	10	1.42	12	0.066	150	5.29	26	1.02
	14HY6001-XX	250	35.43	1	3.3	4.3	15	2.13	16	0.088	250	8.82	44	1.73

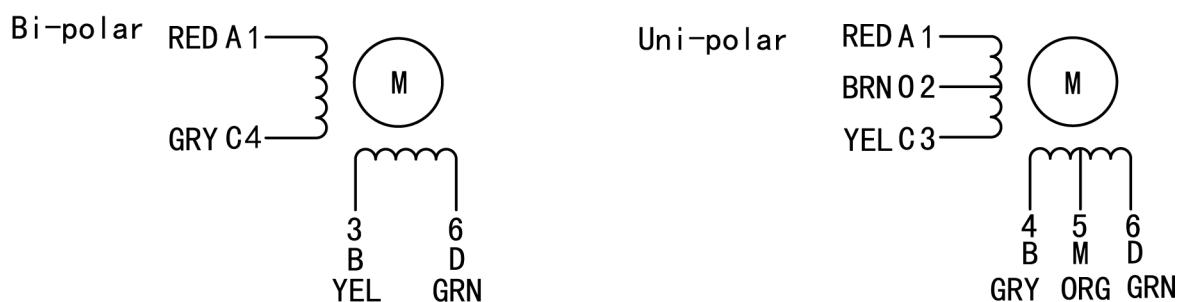
General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram

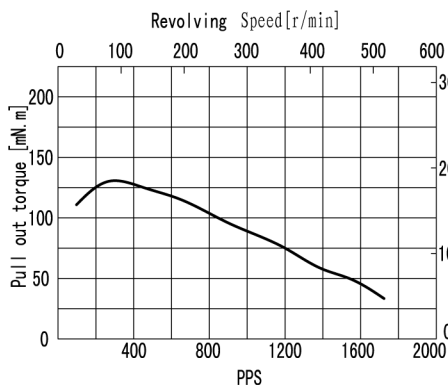


Drive Sequence Model & Accessory Harness Model Page 09.

Torque-Speed Characteristics

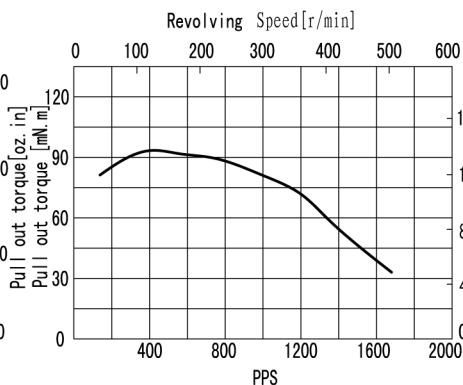
14HY0001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



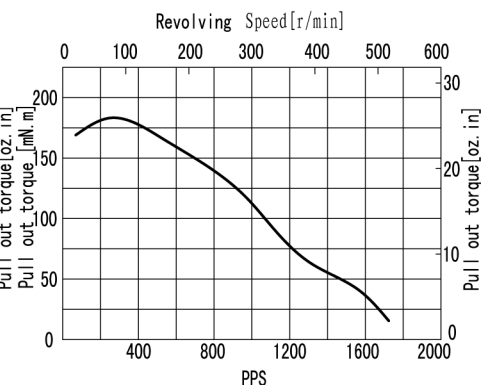
14HY0403

Driver: GTW422R (24V)
Mode: Full Step Driver current: 1A



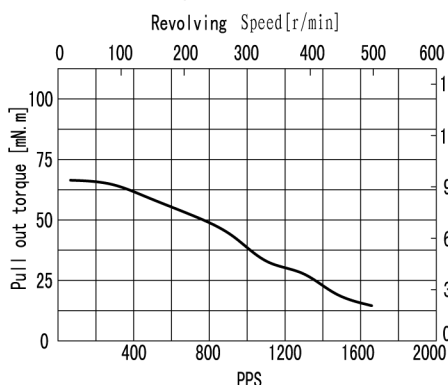
14HY0006

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.85A



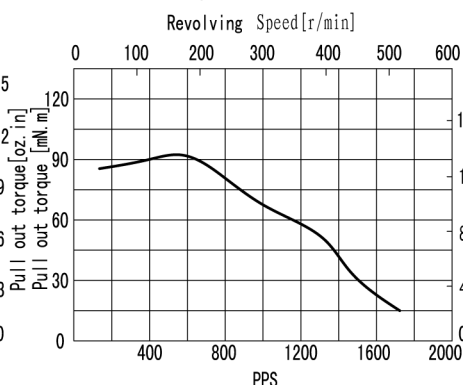
14HY2403

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



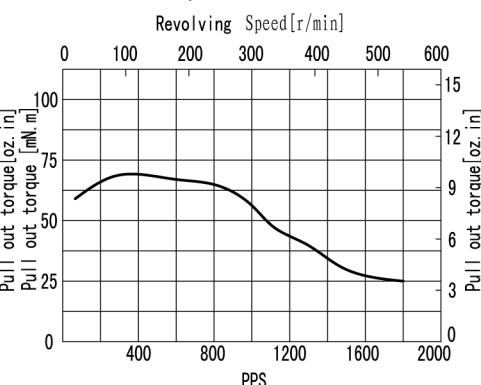
14HY3001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



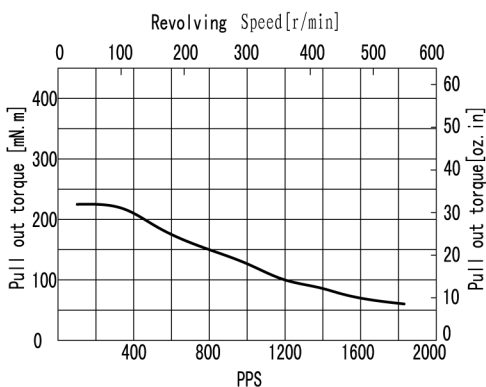
14HY3002

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.75A



14HY6001

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 1A



Stepping Motor

16HY SERIES 1.8° Hybrid Stepper Motor

Body length range from 20mm to 40mm, Holding torque can reach up to 280mN.m, maximum shaft diameter for 8mm.



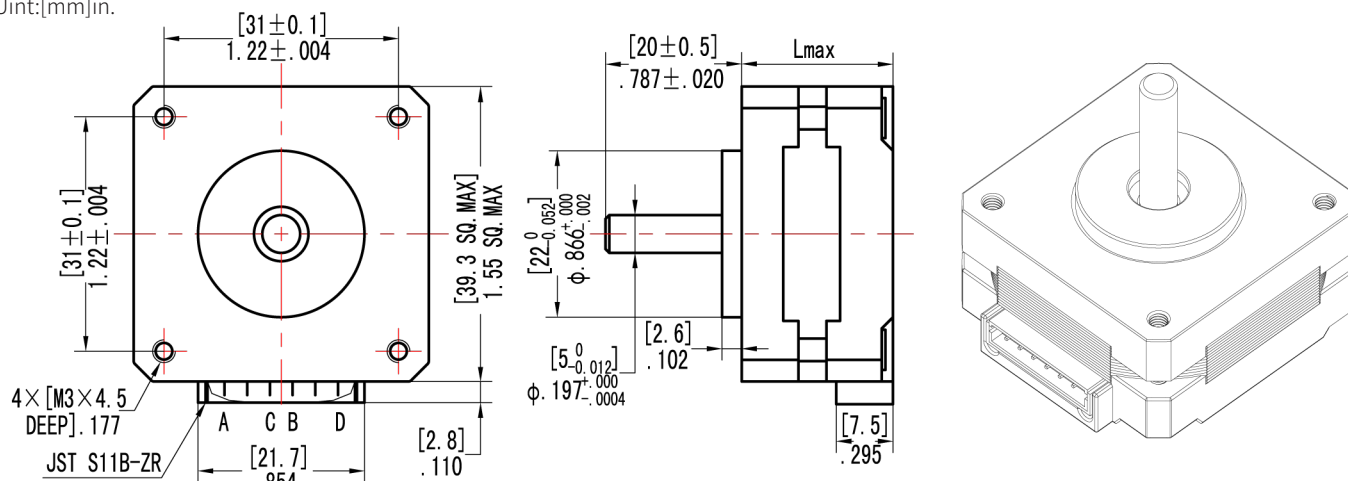
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	16HY1001-XX	100	14.17	0.48	25	26	5	0.71	11	0.06	120	4.23	20	0.79
	16HY3003-XX	160	22.68	0.6	10	12	12	1.70	18	0.10	170	6.00	25	0.98
	16HY4001-XX	220	31.18	0.6	15	16	15	2.13	20	0.11	200	7.05	34	1.34

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page

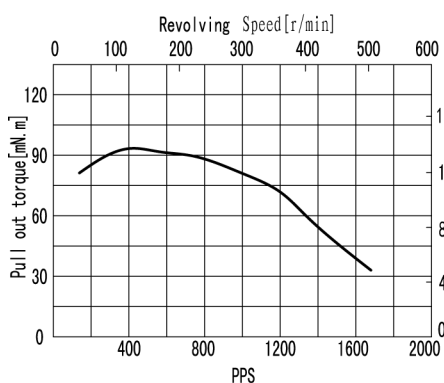
09.

Torque-Speed Characteristics

Bi-polar

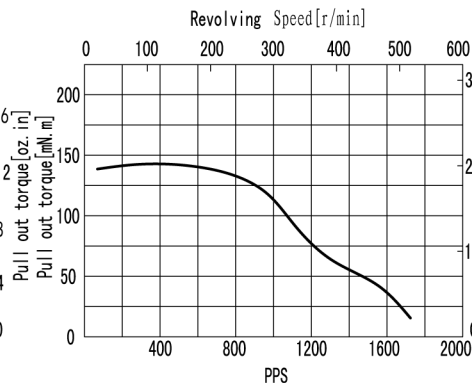
16HY0001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.48A



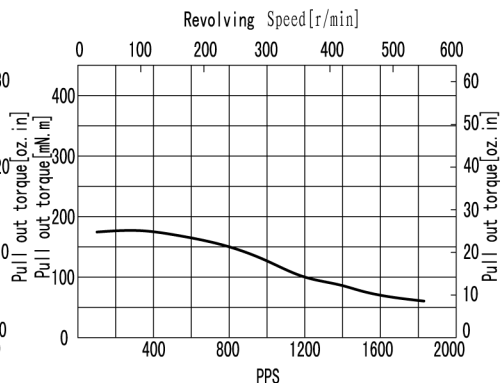
16HY3003

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.6A



16HY4001

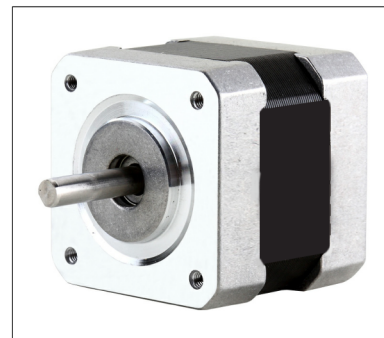
Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.6A



Stepping Motor

17HS SERIES 1.8° Hybrid Stepper Motor

Body length range from 20mm to 60mm, holding torque can reach up to 650mN.m, maximum shaft diameter for 10mm.



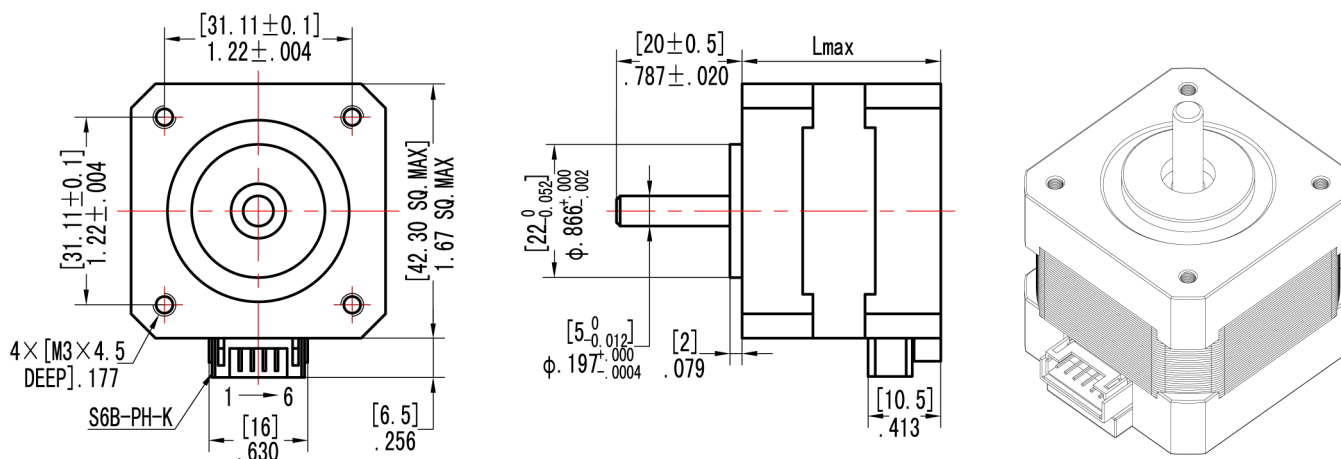
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	17HS0401-XX	80	11.34	0.8	3.3	3	3	0.43	15	0.08	140	4.94	20	0.79
	17HS1001-NXX	160	22.68	0.95	4.2	5	12	1.70	38	0.21	200	7.05	34	1.34
	17HS1007-NXX	280	39.68	2.0	1	1.8								
	17HS3001-XX	400	56.69	1.67	1.9	4.5	18	2.55	57	0.31	240	8.47	40	1.57
	17HS5001-NXX	460	65.19	0.4	30	45	24	3.40	82	0.45	340	12.0	48	1.89
	17HS6002-NXX	650	92.12	1.5	2.7	6.5	40	5.67	102	0.56	500	17.6	60	2.36
Uni-polar	17HS3006-XX	260	36.85	1.2	3.3	3.2	18	2.55	57	0.31	240	8.47	40	1.57
	17HS5012-XX	350	49.60	0.4	30	25	24	3.40	82	0.45	340	12.0	48	1.89

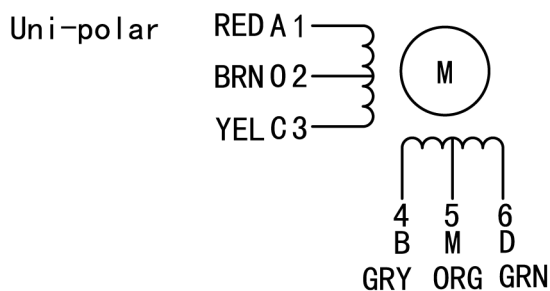
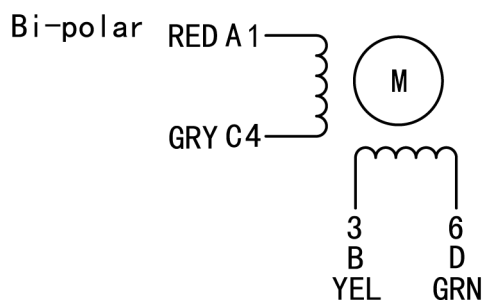
General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram



Drive Sequence Model & Accessory Harness Model Page 09.

Stepping Motor

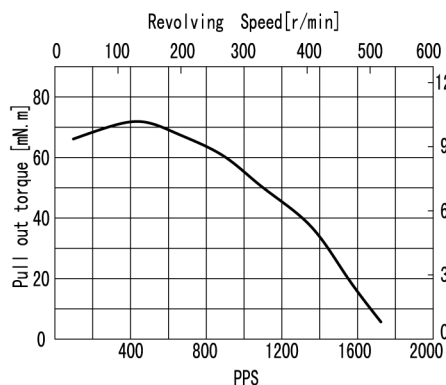
17HS SERIES 1.8° Hybrid Stepper Motor

Torque-Speed Characteristics

Bi-polar

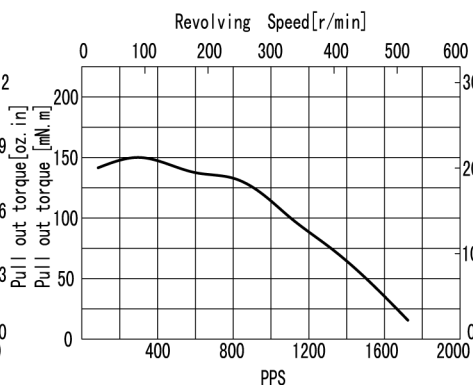
17HS0401

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.8A



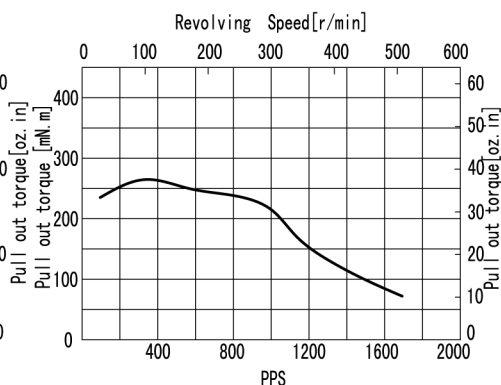
17HS1001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.95A



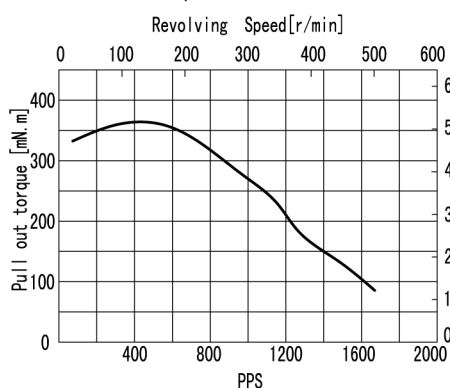
17HS1007

Driver: GTW422R (24V)
Mode: Full Step Driver current: 2.0A



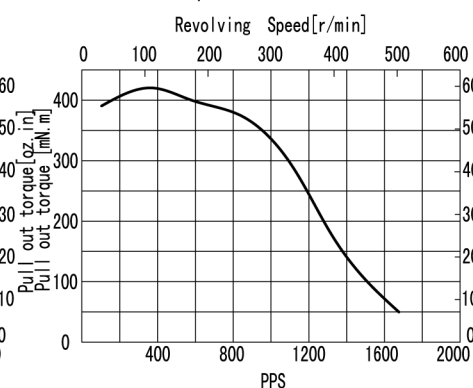
17HS3001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 1.67A



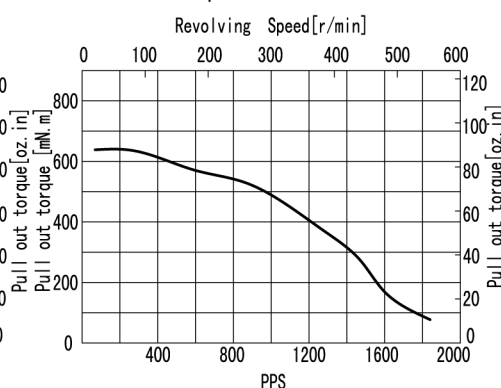
17HS5001

Driver: GTW422R (24V)
Mode: Full Step Driver current: 0.4A



17HS6002

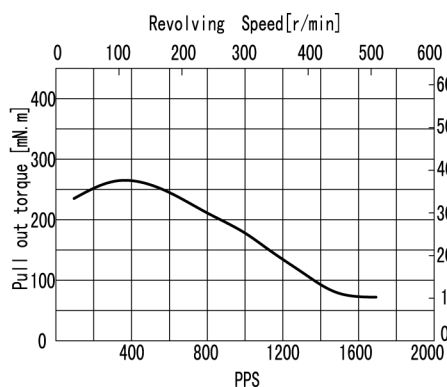
Driver: GTW422R (24V)
Mode: Full Step Driver current: 1.5A



Uni-polar

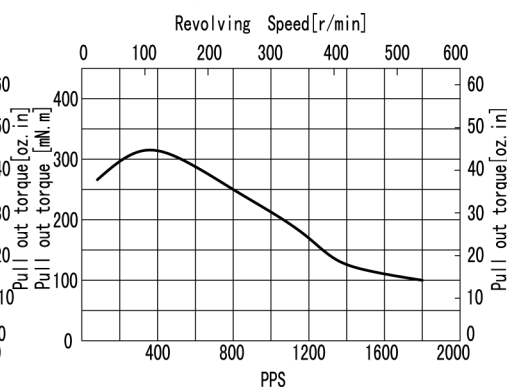
17HS3006

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 1.2A



17HS5012

Driver: GTW422R-1 (24V)
Mode: Full Step Driver current: 0.4A



Stepping Motor

23HD SERIES 1.8° Hybrid Stepper Motor

Body length range from 45mm to 100mm, holding torque can reach up to 3N.m, maximum shaft diameter for 10mm.



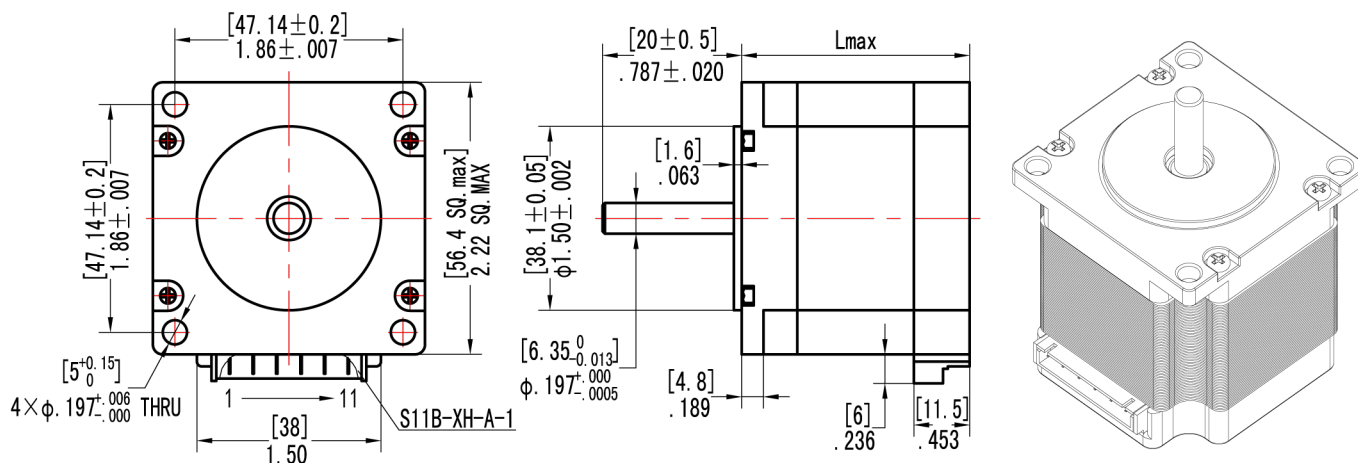
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	23HD2403-XX	0.3	2.65	6	0.2	0.3	25	3.54	155	0.85	0.5	1.10	45	0.79
	23HD3005-XX	0.8	7.1	3	0.45	1.5	40	5.57	260	1.43	0.6	1.32	54	1.34
	23HD4004-XX	1.3	11.5	3	1.1	3.2	45	6.38	280	1.54	0.62	1.37	56	1.34
	23HD5401-XX	1.2	10.6	2	4.2	10	60	8.50	380	2.09	0.9	1.98	65	1.57
	23HD6001-XX	1.5	13.2	2.3	1.65	6	70	9.92	460	2.53	1	2.20	76	1.89
	23HD8434-XX	3	26.5	3	2.8	11	100	14.17	660	3.63	1.5	3.31	100	2.36
Uni-polar	23HD2601-XX	0.6	5.3	1.6	2.5	3.5	25	3.54	155	0.85	0.5	1.10	45	0.79
	23HD6603-XX	1.6	14.2	3	1	2	70	9.92	460	2.53	1	2.20	76	1.89
	23HD7801-XX	1.7	15.0	4	1.2	2.8	78	11.05	520	2.86	1.2	2.65	82	3.23

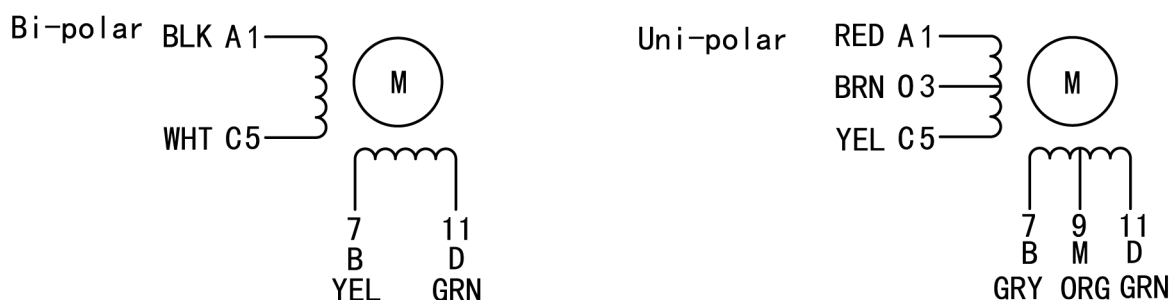
General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram



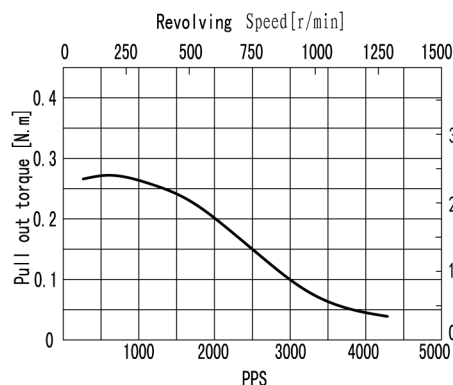
Drive Sequence Model & Accessory Harness Model Page 09.

Torque-Speed Characteristics

Bi-polar

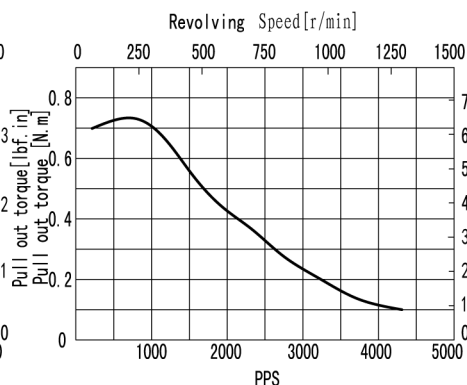
23HD2403

Driver: GTW545R (36V)
Mode: Full Step Driver current: 6A



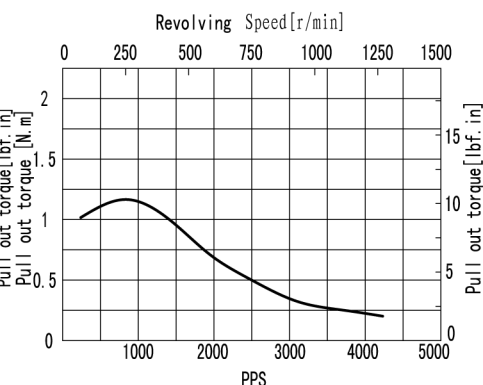
23HD3005

Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



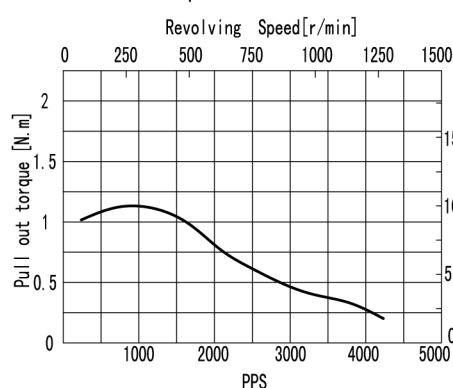
23HD4004

Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



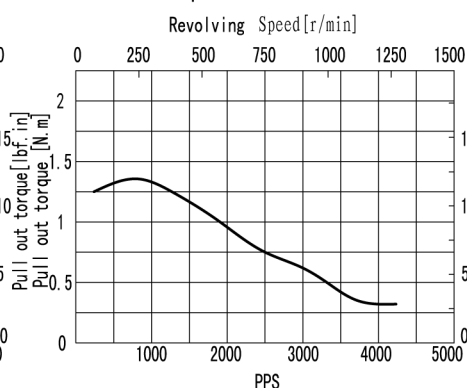
23HD5401

Driver: GTW545R (36V)
Mode: Full Step Driver current: 2A



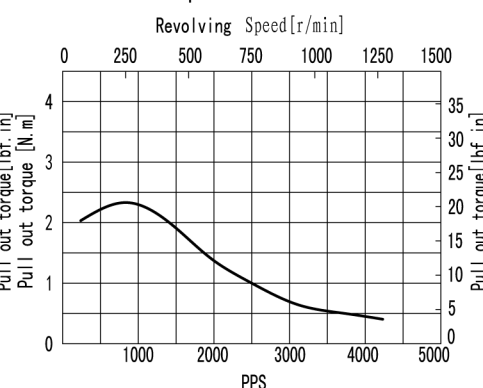
23HD6001

Driver: GTW545R (36V)
Mode: Full Step Driver current: 2.3A



23HD8434

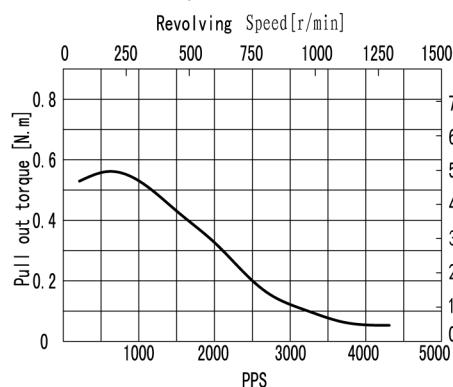
Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



Uni-polar

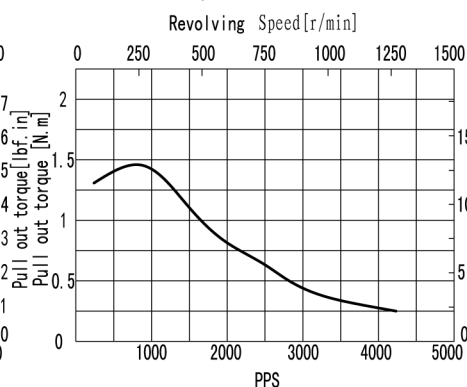
23HD2601

Driver: GTW545R-1 (36V)
Mode: Full Step Driver current: 1.6A



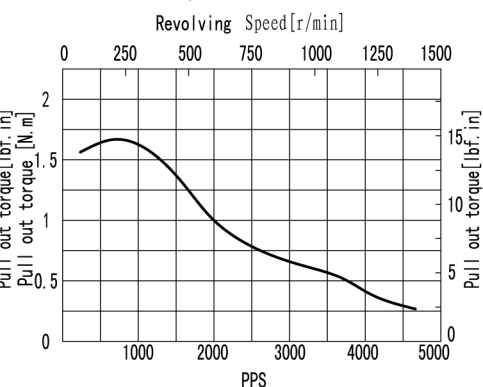
23HD6603

Driver: GTW545R-1 (36V)
Mode: Full Step Driver current: 3A



23HD7801

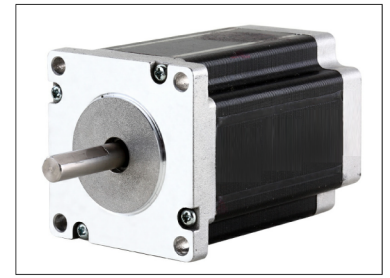
Driver: GTW545R-1 (36V)
Mode: Full Step Driver current: 4A



Stepping Motor

24HS SERIES 1.8° Hybrid Stepper Motor

Body length range from 80mm to 86mm, holding torque can reach up to 3N.m, maximum shaft diameter for 10mm.

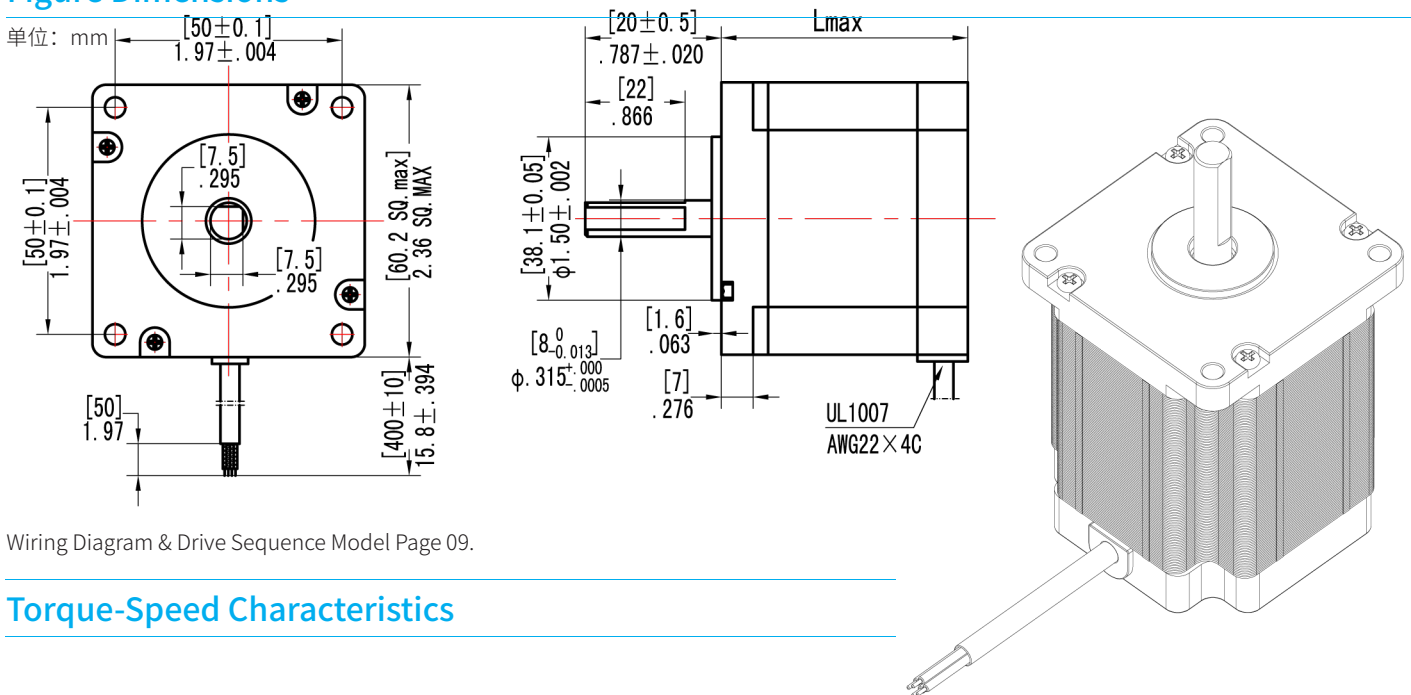


Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	24HS7401-XX	3	26.55	2.5	2.2	10	100	14.2	560	3.08	1.2	2.65	80	3.15
	24HS8402-XX	3	26.55	4	0.45	1.5	120	17.0	580	3.19	1.4	3.09	86	3.39

General Specification Of Motor Page 10.

Figure Dimensions



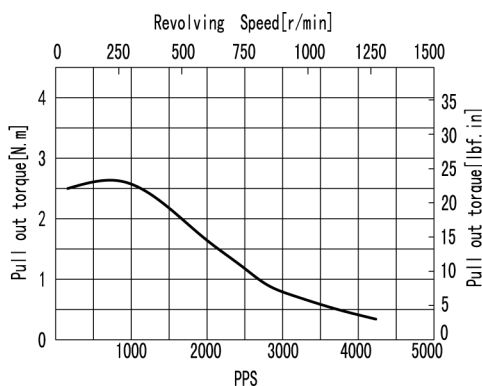
Wiring Diagram & Drive Sequence Model Page 09.

Torque-Speed Characteristics

Bi-polar

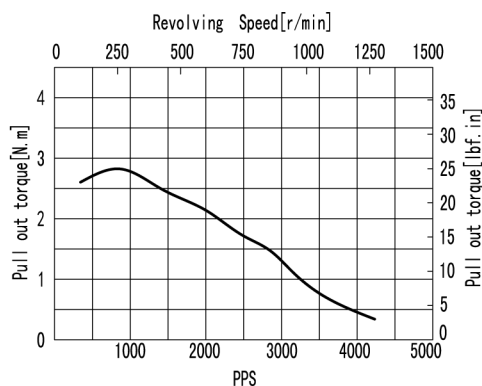
24HS7401

Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



24HS8402

Driver: GTW545R (36V)
Mode: Full Step Driver current: 3A



Stepping Motor

34HS SERIES 1.8° Hybrid Stepper Motor

Body length range from 76mm to 150mm, holding torque can reach up to 13N.m, maximum shaft diameter for 15mm.



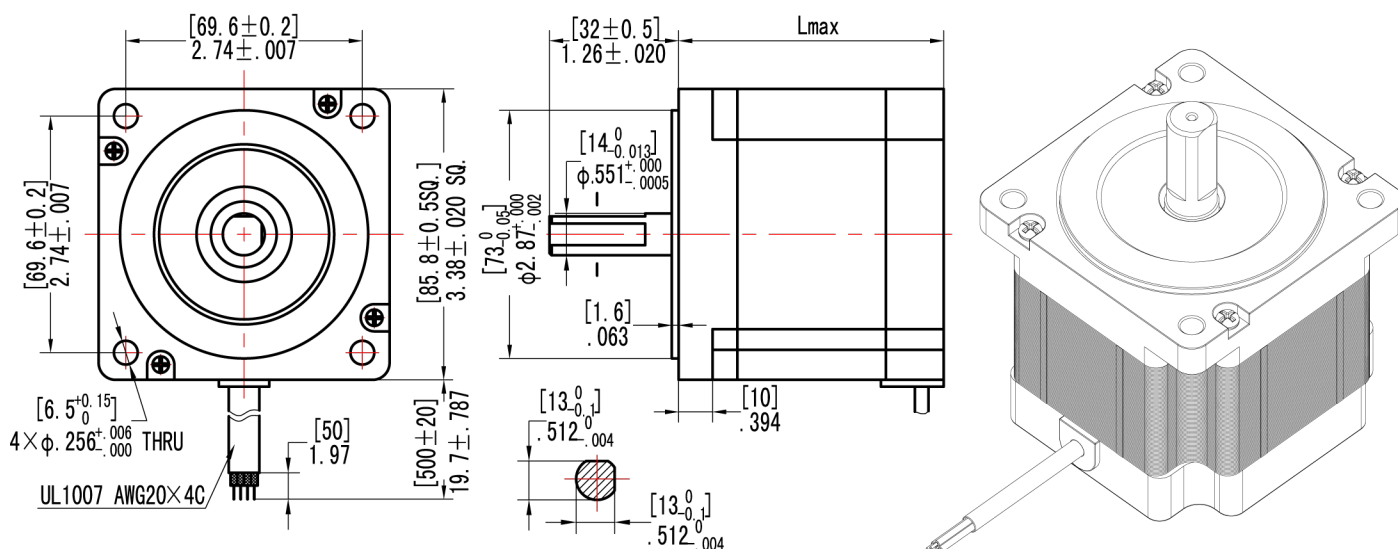
Model Specifications

Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass		Lmax	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
Bi-polar	34HS1401-XX	3.5	31.0	3	1.2	12	0.14	1.24	1400	7.69	1.4	3.08	76	2.99
	34HS1403-XX	3.5	31.0	4	0.5	3.7								
	34HS2403-XX	7	61.9	6	0.6	3	0.19	1.68	1700	9.34	2.7	5.95	98	3.86
	34HS3402-XX	7.6	67.3	5	0.6	5	0.23	2.04	2700	14.84	3.5	7.72	112	4.41
	34HS4401-XX	10	88.5	6	0.6	5.5	0.24	2.12	2800	15.38	4.2	9.26	128	5.04
	34HS5401-XX	13	115.0	5	1.25	8	0.32	2.83	3600	19.78	5.3	11.68	150	5.91
Uni-polar	34HS1601-XX	2.2	19.5	3	2.4	12	0.14	1.24	1400	7.69	1.4	3.08	76	2.99
	34HS3802-XX	5.6	49.6	3.5	1.2	5	0.23	2.04	2700	14.84	3.5	7.72	112	4.41

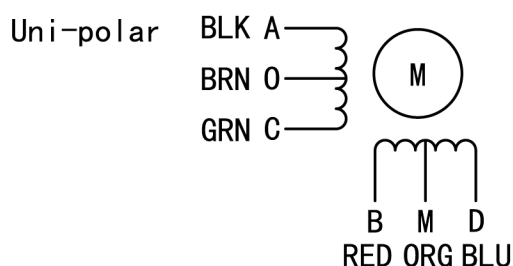
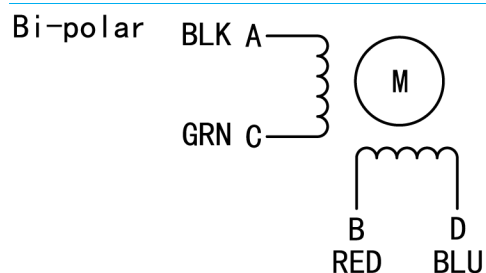
General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram



Drive Sequence Model Page 09.

Stepping Motor

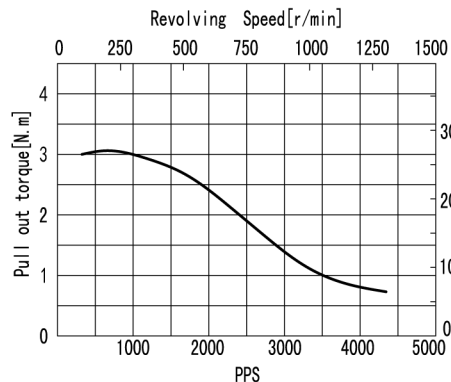
34HS SERIES 1.8° Hybrid Stepper Motor

Torque-Speed Characteristics

Bi-polar

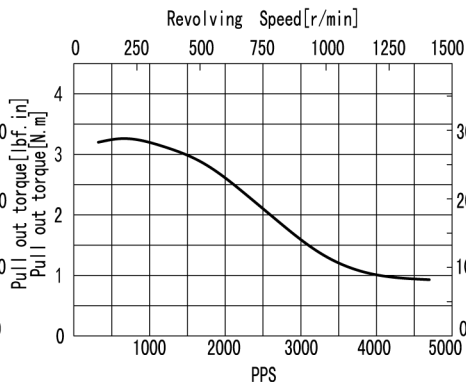
34HS1401

Driver: GTW880R (48V)
Mode: Full Step Driver current: 3A



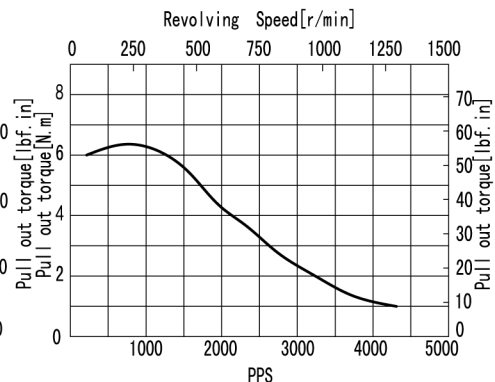
34HS1403

Driver: GTW880R (48V)
Mode: Full Step Driver current: 4A



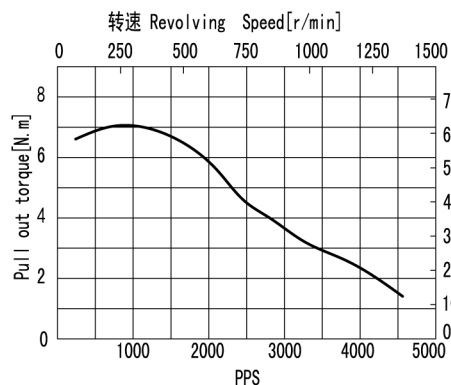
34HS2403

Driver: GTW880R (48V)
Mode: Full Step Driver current: 6A



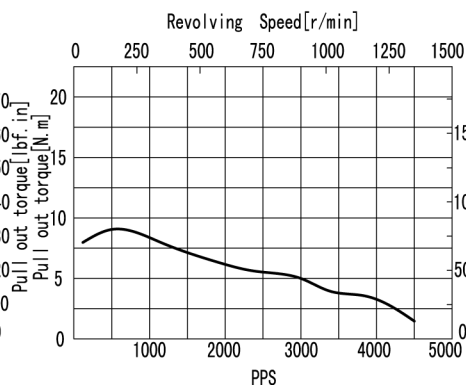
34HS3402

Driver: GTW880R (48V)
Mode: Full Step Driver current: 5A



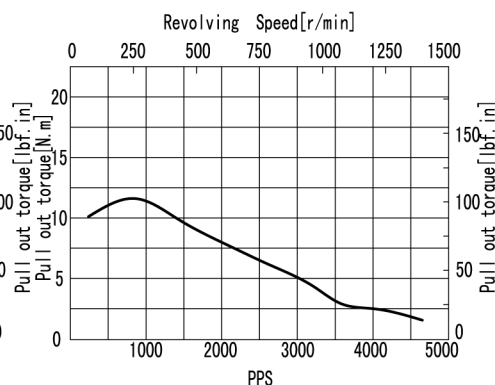
34HS4401

Driver: GTW880R (48V)
Mode: Full Step Driver current: 6A



34HS5401

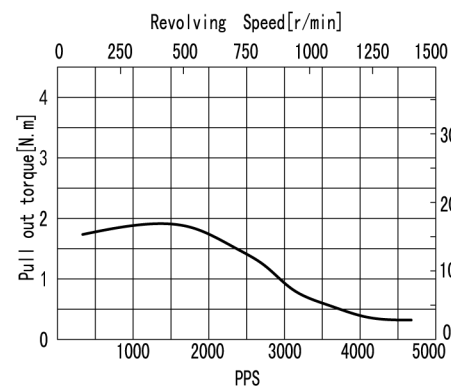
Driver: GTW880R (48V)
Mode: Full Step Driver current: 5A



Uni-polar

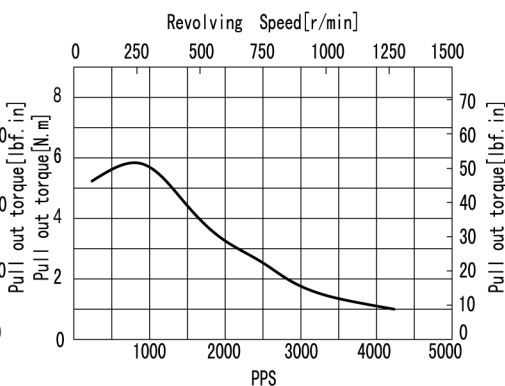
34HS1601

Driver: GTW880R (48V)
Mode: Full Step Driver current: 3A



34HS3802

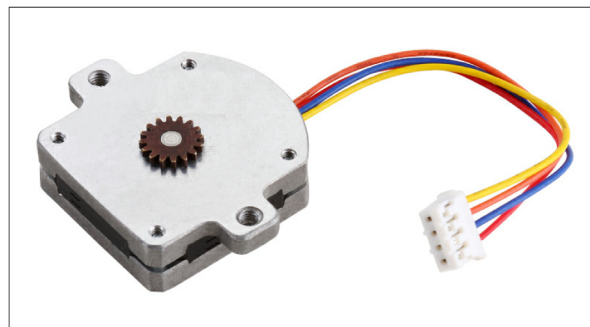
Driver: GTW880R (48V)
Mode: Full Step Driver current: 3.5A



Stepping Motor

11HS SERIES 1.8° Hybrid Stepper Motor

Model Specifications

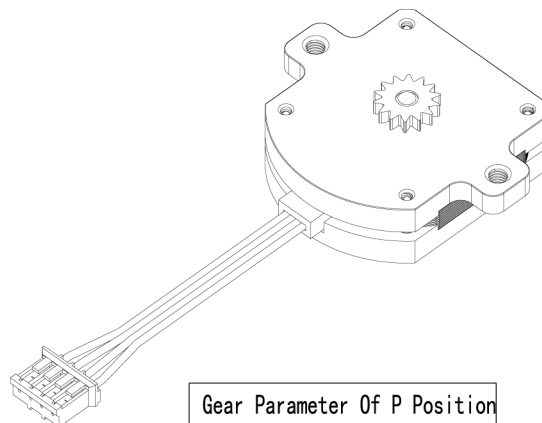
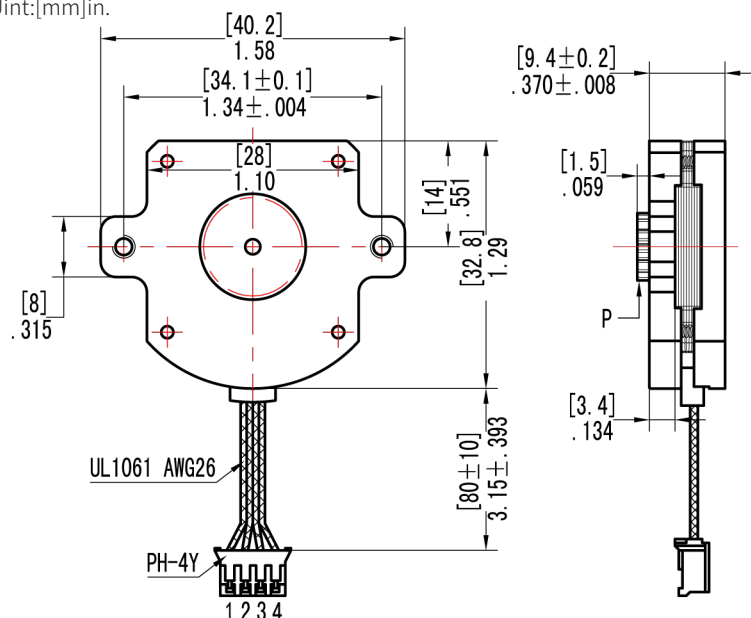


Model		Holding torque		Rated current	Resistance per phase	Inductance per phase	Detent torque		Rotor inertia		Motor mass	
		mN.m	oz-in	A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz
Bi-polar	11HS0401-2A	18	2.55	0.3	3.6	0.7	2	0.28	2	0.01	50	1.76

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Gear Parameter Of P Position	
Number of teeth	16
Module	0.5
Angle Of Pressure	20°
Diameter	$[9]$ ϕ .354

Drive Sequence Model Page 09.

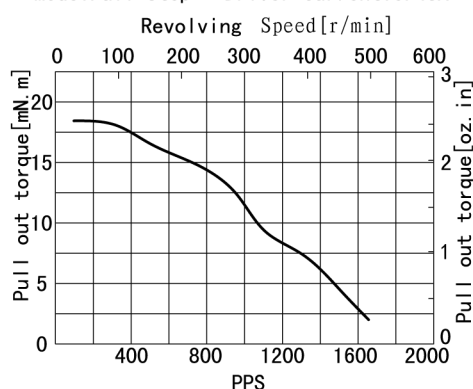
Torque-Speed Characteristics

Bi-polar

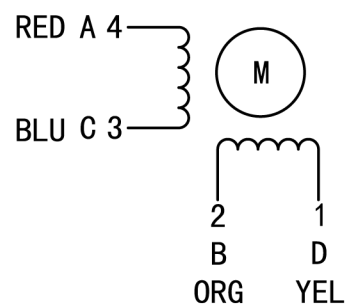
11HS0401-2A

Driver: GTW422R (24V)

Mode: Full Step Driver current: 0.48A



Wiring Diagram



Stepping Motor

8HY Hollow Shaft Stepper Motor

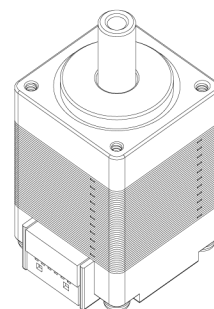
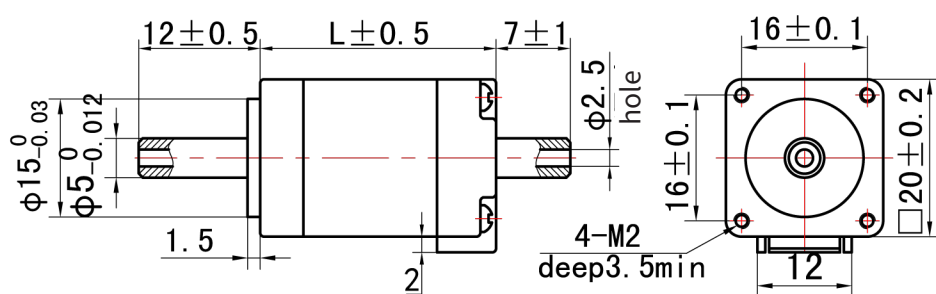
Hollow shaft motor is applied to equipment requiring special installation or function. Currently, there are five types: 8HY, 11HY, 17HS, 23HD, 34HS



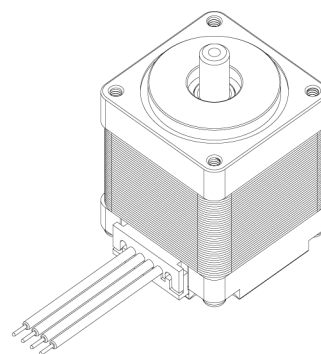
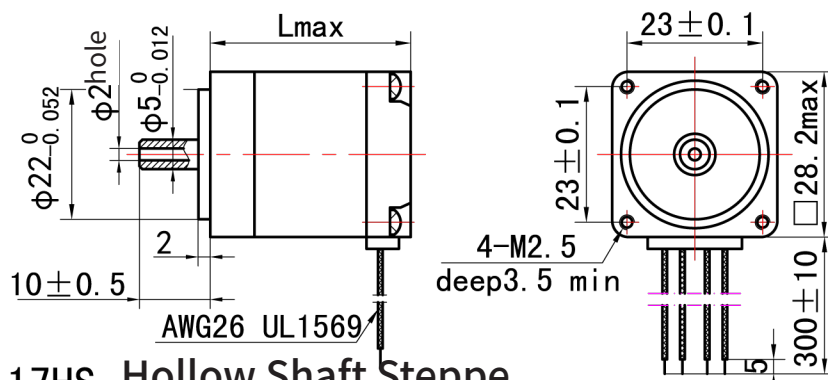
Figure Dimensions

Unit: [mm] in.

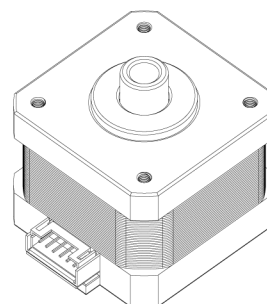
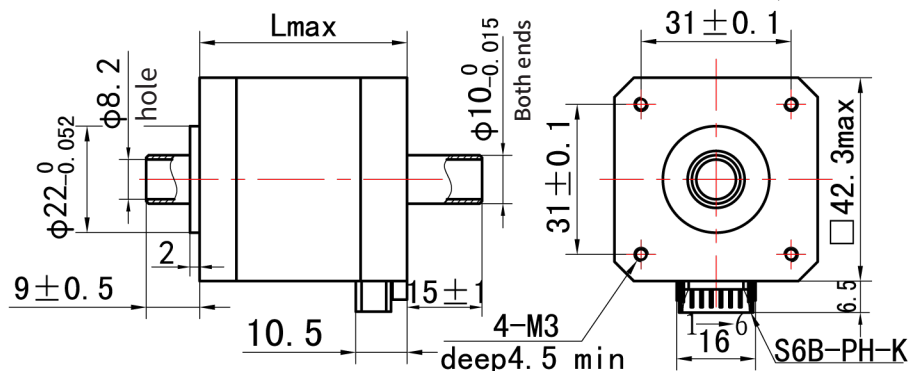
8HY Hollow Shaft Stepper



11HY Hollow Shaft Stepper



17HS Hollow Shaft Stepper



For general parameters of motor, wiring diagram, power phase sequence, please refer to page No. 09, 10. Regarding standard parameters, distance frequency characteristics of the curve, please refer to the 8HY series, 11HY series and 17HS series. Shaft size can be customized according to your requirements.

Stepping Motor

23HS Hollow Shaft Stepper Motor

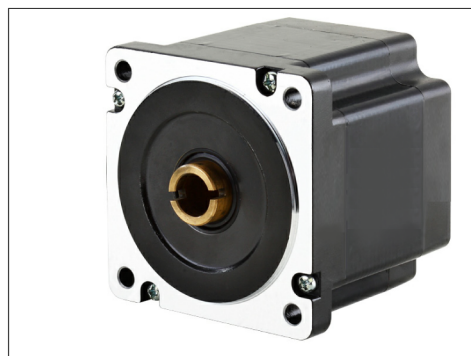
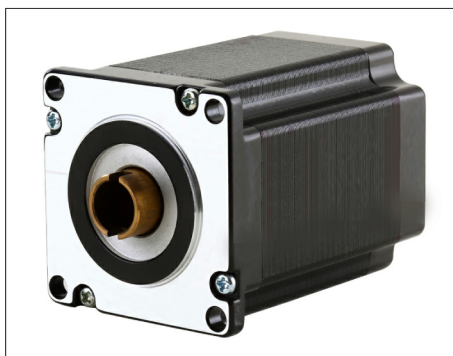
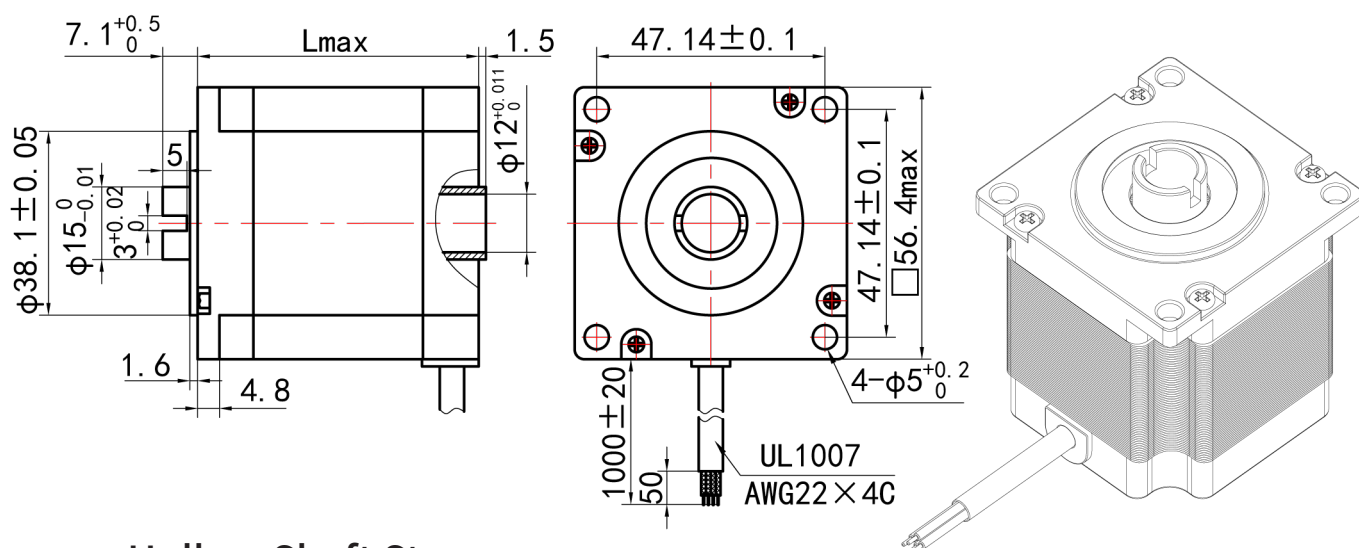


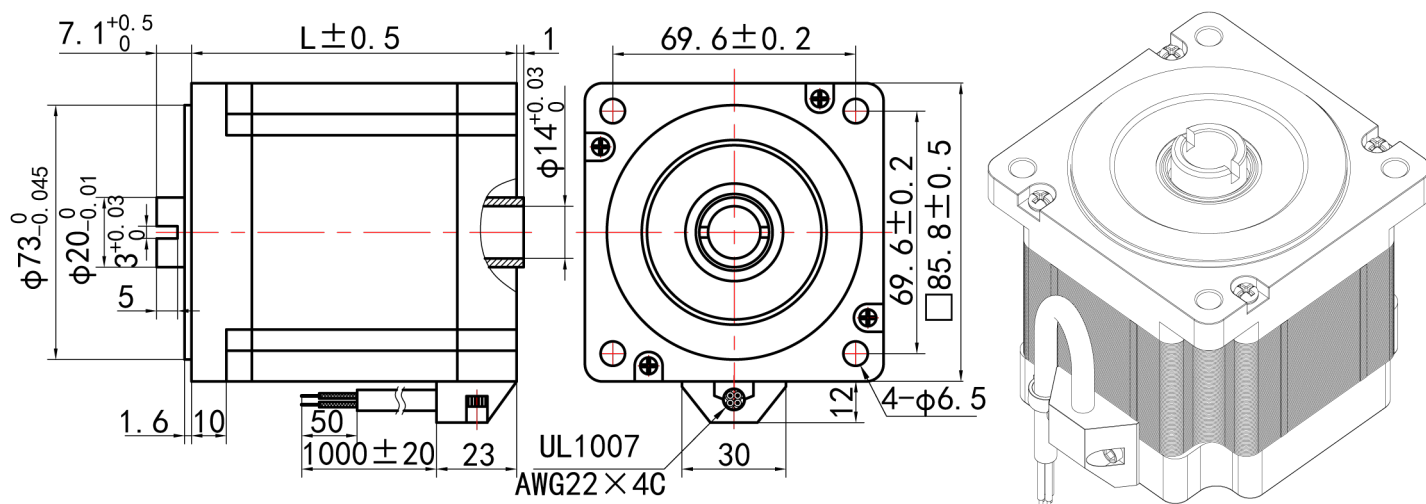
Figure Dimensions

Unit:[mm]in.

23HD Hollow Shaft Stepper



34HS Hollow Shaft Stepper



For general parameters of motor, wiring diagram, power phase sequence, please refer to page No. 09, 10. Regarding standard parameters, distance frequency characteristics of the curve, please refer to the 23HY series and 34HS series. Shaft size can be customized according to your requirements.

Introduction

Reduction Box is generally used for which need both low speed and large output torque. The stepping motor deceleration with output shaft installed a gear box, achieve the purpose of slowing down by gear meshing of small number teeth on motor output shaft and big teeth on gear box out shaft, of which the motor at the resonant frequency, and get more output torque.

The Advantage Of Planetary Reducer

- 1 Lighter Weight
- 2 Smaller Volume
- 3 Larger Transmission,
- 4 Higher Transition Efficient
- 5 Lower Noise
- 6 Smaller Backlash

Term

Rated torque

The maximum torque of Reduction Box.

Back lash

The biggest angle between output and input of reduction box.

Arcmin

Angular unit, 1° equals 60 arcmin.

Stage of gearbox

The pair number of axial gear mesh on gear motor output shaft, or Number of reduction.

Reducer Stepping Motor Naming rules

<u>23HS1003</u>	<u>C</u>	<u>5</u>	<u>X</u>
a	b	c	d

a: The same as page .

b: Indicates the stepping motor equipped with gear box.

C: Reduction ratio is 1:5.

d: Indicates the stepping motor equipped with planetary gear box.

Stepping Motor

8HY Series Planetary Reducer Stepper Motor

The largest reduction ratio of $1:107\frac{11}{64}$ and maximum holding torque can be up to 0.9N.m.



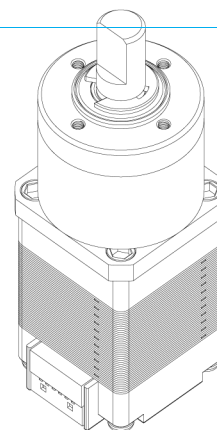
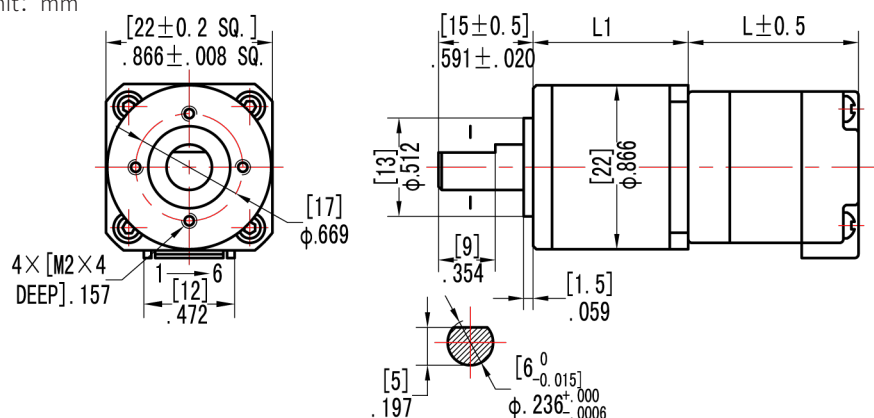
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
8HY0001-C4X	1:4	0.5	6.5	1.7	70	9.92	2	0.01	120	4.23	30	1.18
8HY1002-C16X	1:16	0.4	9	2.5	350	49.6	3	0.02	140	4.94	38	1.50

General Specification Of Motor Page 10.

Figure Dimensions

Unit: mm



Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.

Gearbox Specifications

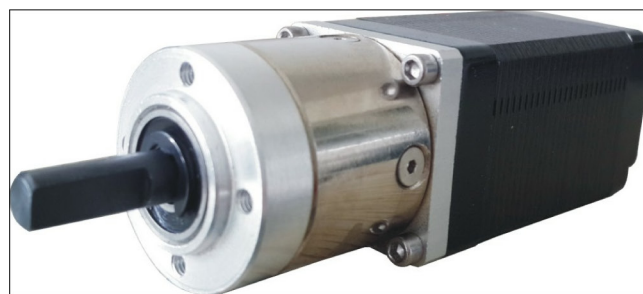
Reduction ratio	4	$4\frac{3}{4}$	16	19	$22\frac{9}{16}$	64	76	$90\frac{1}{4}$	$107\frac{11}{64}$
Stage Of Gearbox	1		2			3			
Length L1	20.5mm	0.81in	25.7mm	1.01in		30.95mm		1.22in	
Rated Torque	0.5N.m	4.4lbf. in	0.7N.m	6.2lbf. in		0.9N.m		8.0lbf. in	
Peak Torque	1N.m	8.8lbf. in	1.5N.m	13.3lbf. in		2N.m		17.7lbf. in	
Back Lash	<30Arcmin		<45Arcmin			<1°			
Efficiency	96%		94%			92%			

Max.Radial Force	<25N[5.62lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max.Axial Force	<5N[1.12lbf]	Shaft Axial play	<0.03mm[0.001in.]

Stepping Motor

11HY Series Planetary Reducer Stepper Motor

The largest reduction ratio of $1:139\frac{184}{1221}$ and maximum holding torque can be up to 4N.m.



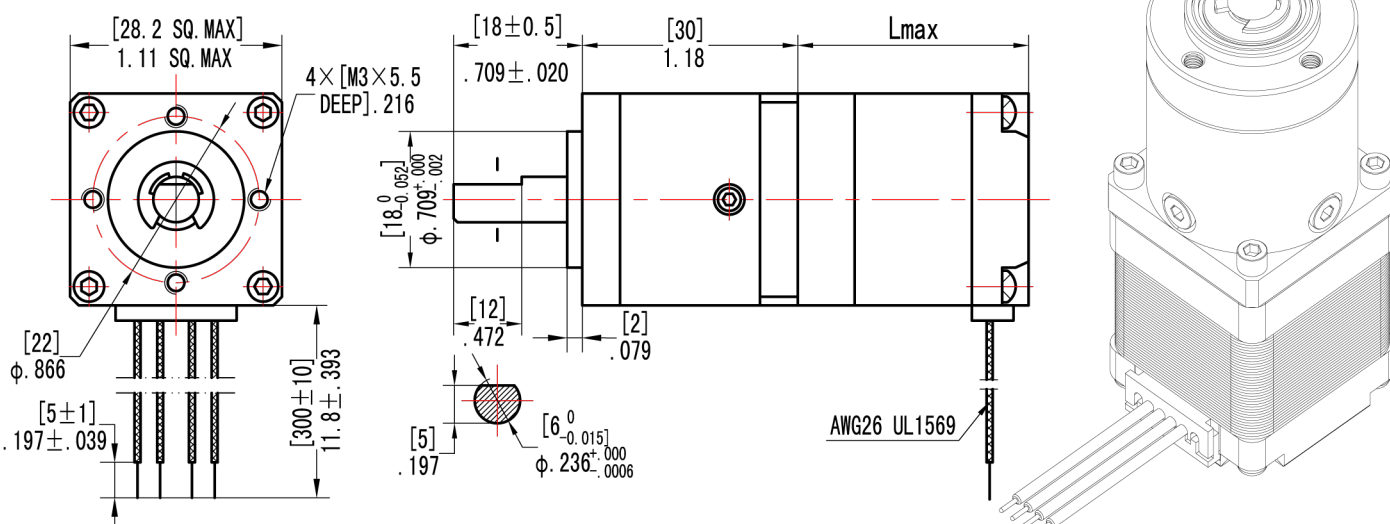
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	mN.m	oz-in	g.cm ²	oz-in ²	g	oz	mm	in.
11HY3401-C5X	1:5 $\frac{2}{11}$	0.75	6.5	3.2	280	39.68	9	0.049	220	7.76	34	1.34
11HY5401-C19X	1:19 $\frac{38}{187}$	0.67	9.2	7	1200	170.1	18	0.098	300	10.58	51	2.01

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.

Gearbox Specifications

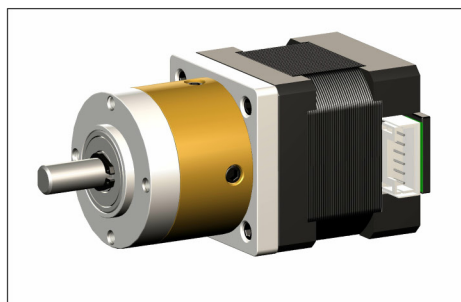
Reduction ratio	3 $\frac{12}{17}$	5 $\frac{2}{11}$	13 $\frac{212}{289}$	19 $\frac{38}{187}$	26 $\frac{103}{121}$	50 $\frac{4397}{4913}$	71 $\frac{2}{25}$	99 $\frac{1044}{2057}$	139 $\frac{184}{1221}$
Stage Of Gearbox	1		2			3			
Length L1	29.2mm	1.15in	36.8mm	1.45in		44.6mm		1.76in	
Rated Torque	2N.m	17.7lbf.in	3N.m	26.5lbf.in		4N.m		35.4lbf.in	
Peak Torque	4N.m	35.4lbf.in	5N.m	44.2lbf.in		6N.m		53.1lbf.in	
Back Lash	<30Arcmin		<45Arcmin			<1°			
Efficiency	96%		94%			92%			

Max.Radial Force	<25N[5.62lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max.Axial Force	<5N[1.12lbf]	Shaft Axial play	<0.03mm[0.001in.]

Stepping Motor

14HY Series Planetary Reducer Stepper Motor

The largest reduction ratio of $1:139\frac{184}{1221}$ and maximum holding torque can be up to 4N.m.



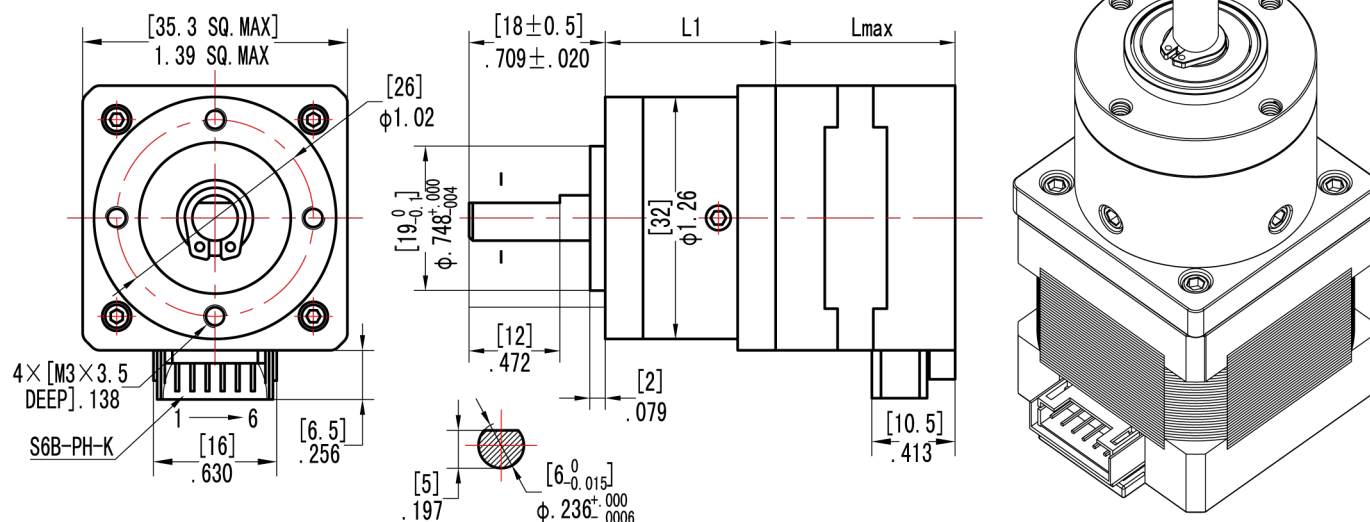
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	N.m	lbf.in	g.cm2	oz.in2	kg	lb	mm	in.
14HY0006-C14X	1:13 $\frac{212}{289}$	0.85	5.8	6.5	1.8	15.9	14	0.08	0.36	0.79	34	1.34
14HY3001-C5X	1:5 $\frac{2}{11}$	0.4	20	20	0.5	4.42	12	0.07	0.32	0.71	26	1.02

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.

Gearbox Specifications

Reduction ratio	$3\frac{12}{17}$	$5\frac{2}{11}$	$13\frac{212}{289}$	$19\frac{38}{187}$	$26\frac{103}{121}$	$50\frac{4397}{4913}$	$71\frac{2}{25}$	$99\frac{1044}{2057}$	$139\frac{184}{1221}$
Stage Of Gearbox	1		2			3			
Length L1	29.2mm	1.15in	36.8mm		1.45in	44.6mm		1.76in	
Rated Torque	2N.m	17.7lbf.in	3N.m		26.5lbf.in	4N.m		35.4lbf.in	
Peak Torque	4N.m	35.4lbf.in	5N.m		44.2lbf.in	6N.m		53.1lbf.in	
Back Lash	<30Arcmin		<45Arcmin			<1°			
Efficiency	96%		94%			92%			

Max.Radial Force	<25N[5.62lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max.Axial Force	<5N[1.12lbf]	Shaft Axial play	<0.03mm[0.001in.]

Stepping Motor

17HS Series Planetary Reducer Stepper Motor

The largest reduction ratio of $1:139\frac{184}{1221}$ and maximum holding torque can be up to 4N.m.



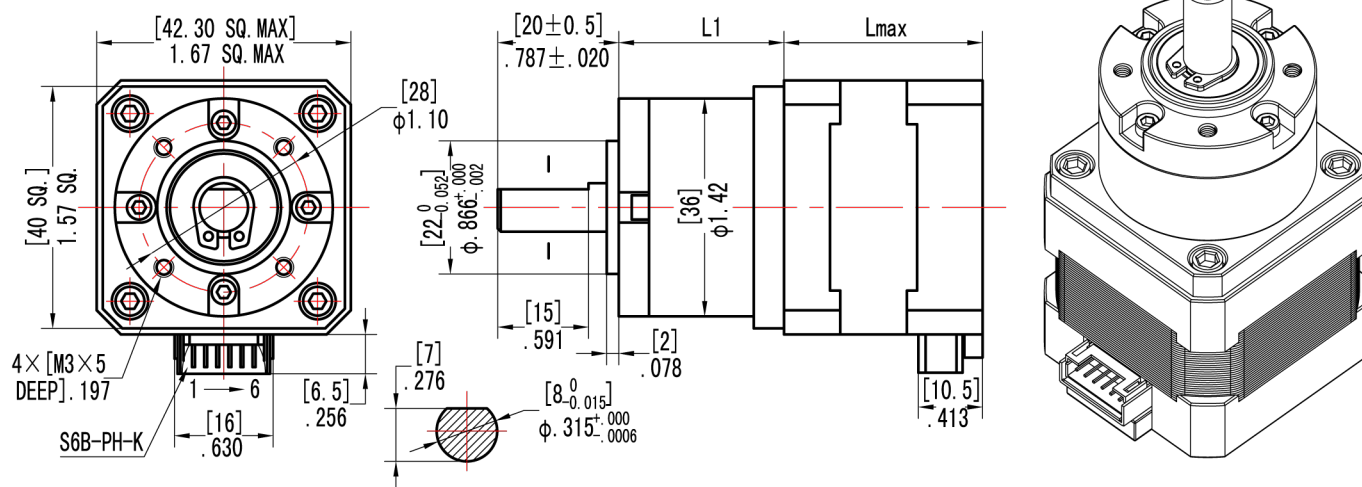
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	N.m	lbf.in	g.cm ²	oz.in ²	kg	lb	mm	in.
17HS1070-C14X	1:13 $\frac{212}{289}$	1.5	1.56	2.4	3	26.5	38	0.21	0.45	0.99	34	1.34
17HS3001-C51X	1:50 $\frac{4297}{4913}$	1.67	1.9	4.5	4	35.4	57	0.31	0.52	1.15	40	1.57
17HS5005-C5X	1:5 $\frac{2}{11}$	1.5	2	3.85	2	17.7	82	0.45	0.8	1.76	48	1.89

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram , Drive Sequence Model & Accessory Harness Model Page 09.

Gearbox Specifications

Reduction ratio	$3\frac{12}{17}$	$5\frac{2}{11}$	$13\frac{212}{289}$	$19\frac{38}{187}$	$26\frac{103}{121}$	$50\frac{4397}{4913}$	$71\frac{2}{25}$	$99\frac{1044}{2057}$	$139\frac{184}{1221}$
Stage Of Gearbox	1		2			3			
Length L1	27.2mm	1.07in	35mm	1.38in	42.7mm	1.68in			
Rated Torque	2N.m	17.7lbf. in	3N.m	26.5lbf. in	4N.m	35.4lbf. in			
Peak Torque	4N.m	35.4lbf. in	5N.m	44.2lbf. in	6N.m	53.1lbf. in			
Back Lash	<30Arcmin		<45Arcmin			<1°			
Efficiency	96%		94%			92%			

Max.Radial Force	<28N[6.29lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max.Axial Force	<10N[2.25lbf]	Shaft Axial play	<0.03mm[0.001in.]

Stepping Motor

23HD Series Planetary Reducer Stepper Motor

The largest reduction ratio of $1:76\frac{49}{64}$ and maximum holding torque can be up to 30N.m.



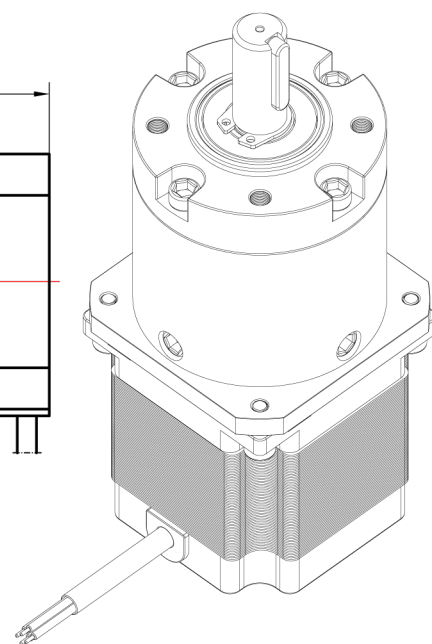
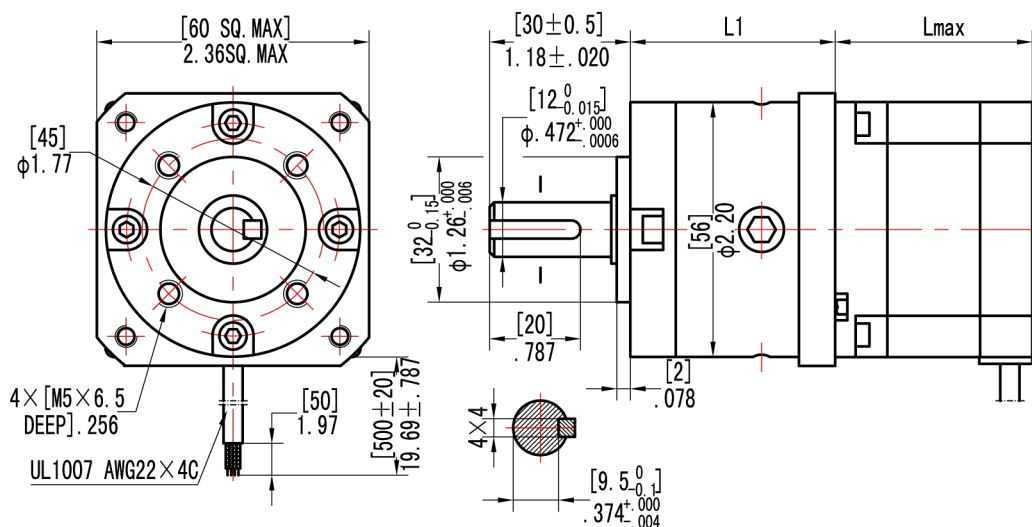
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	N.m	lbf.in	g.cm ²	oz.in ²	kg	lb		
23HD1409-C55X	1:55 $\frac{2}{25}$	0.88	7	22	30	265.5	220	1.21	1.3	2.87	51	2.01
23HD4404-C3X	1:3 $\frac{3}{5}$	3	1.1	3.2	4.5	39.8	280	1.54	1.5	3.31	56	2.20
23HD6405-C13X	1:13 $\frac{24}{25}$	2.5	2.4	9	14	123.9	460	2.53	2.4	5.29	76	2.99

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram & Drive Sequence Model Page 09.

Gearbox Specifications

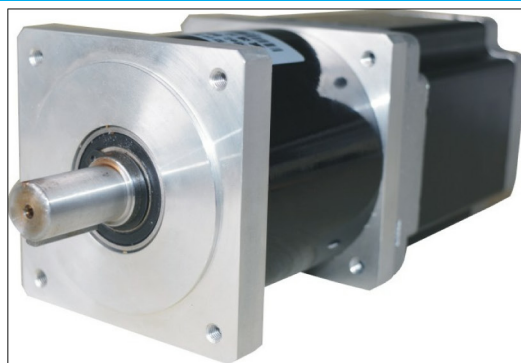
Reduction ratio	3 ³ ₅	4 ¹ ₄	13 ²⁴ ₂₅	15 ³ ₁₀	18 ¹ ₁₆	46 ⁸² ₁₂₅	55 ² ₂₅	65 ¹ ₄₀	76 ⁴⁹ ₆₄
Stage Of Gearbox	1		2			3			
Length L1	48mm	1.89in	60mm	2.36in		72mm		2.83in	
Rated Torque	10N.m	88.5lbf.in	20N.m	177.0lbf.in		30N.m		265.5lbf.in	
Peak Torque	15N.m	132lbf.in	30N.m	265.5lbf.in		45N.m		398.2lbf.in	
Back Lash	<30Arcmin		<45Arcmin			<1°			
Efficiency	96%		94%			92%			

Max. Radial Force	<75N[16.85lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max. Axial Force	<15N[3.37lbf]	Shaft Axial play	<0.03mm[0.001in.]

Stepping Motor

34HS Series Planetary Reducer Stepper Motor

The largest reduction ratio of 1:100 and maximum holding torque can be up to 80N.m.



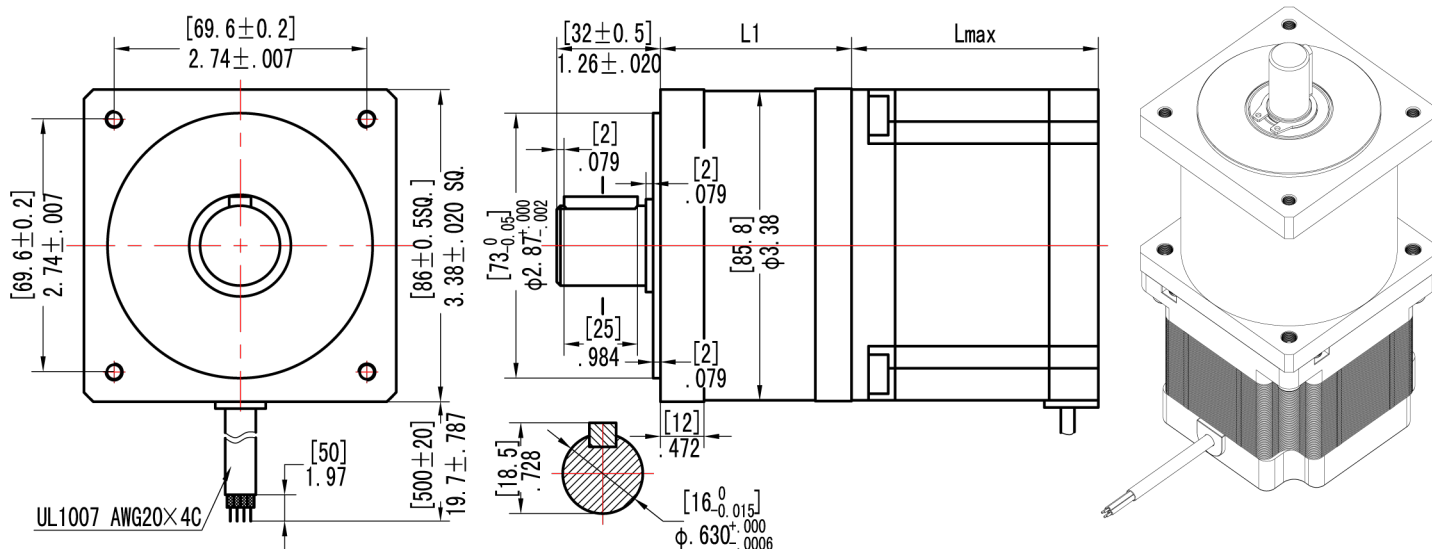
Model Specifications

Model	Ratio	Rated current	Resistance per phase	Inductance per phase	Holding torque		Rotor inertia		Motor mass		L±0.5	
		A	Ω	mH	N.m	lbf.in	g.cm ²	oz.in ²	kg	lb	mm	in.
34HS2403-C10X	1:10	6	0.6	3	50	441	1700	9.34	5.2	2.87	98	3.86
34HS3404-C16X	1:16	6	0.22	2	80	706	2700	14.84	6.2	3.31	112	4.41

General Specification Of Motor Page 10.

Figure Dimensions

Unit:[mm]in.



Wiring Diagram & Drive Sequence Model Page 09.

Gearbox Specifications

Reduction ratio	4	5	7	9	10	16	20	25	28	35	36	40	45	49	50	63	70	81	90	100
Stage Of Gearbox	1					2														
Length L1	73mm		1.89in			87mm							2.36in							
Rated Torque	50N.m		88.5lbf. in			80N.m							177.0lbf. in							
Peak Torque	100N.m		132lbf. in			160N.m							265.5lbf. in							
Back Lash	<15Arcmin					<25Arcmin														
Efficiency	96%					94%														

Max. Radial Force	<75N[16.85lbf]	Shaft Radial play	<0.05mm[0.002in.]
Max. Axial Force	<15N[3.37lbf]	Shaft Axial play	<0.03mm[0.001in.]

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