

Linear Step Motors & Linear Slides (Lead Screws)



Lead Screw Motors

- LE08 Series
- LE11 Series
- LE14 Series
- LE17 Series
- LE23 Series

Linear Slides

- MS28 Series
- MS35 Series
- MS42 Series
- CS35 Series
- CS42 Series

Stepper Drives

- SR Series
- ST Series

• Quick Response • Design Flexibility • Stable Performance



Milestones

MAY. 2017	AMP & MOONS' Automation (Germany) GmbH was officially registered in Frankfurt, Germany
MAY. 2017	MOONS' Electric was successfully listed on the Shanghai Stock Exchange
JUN. 2015	MOONS' acquired LIN ENGINEERING
MAY. 2015	MOONS' Electric and PBC Linear officially established Joint Venture
JUN. 2014	MOONS' acquired Applied Motion Products
MAR. 2014	MOONS' Guangzhou Branch Office opened
OCT. 2013	MOONS' Industries Japan was established in Yokohama
OCT. 2013	MOONS' Ningbo Branch Office opened
DEC. 2012	MOONS' Xin'an Branch Office opened
JUN. 2012	MOONS' Chengdu Branch Office opened
AUG. 2011	MOONS' Wuhan Branch Office opened
JUN. 2010	MOONS' Industries (South-East Asia) Pte Ltd. was established in Singapore
SEP. 2009	MOONS' Industries (Europe) S.R.L was established in Milan, Italy
JAN. 2009	MOONS' Qingdao Branch Office opened
MAR. 2008	MOONS' PM Stepper Motor production started
FEB. 2007	MOONS' established joint venture with Applied Motion Products and a driver company was set up
JUL. 2006	MOONS' Nanjing Branch Office opened
MAY. 2006	MOONS' new facility was built and factory relocation was completed
JAN. 2005	First LED Driver was introduced to the market
SEP. 2002	MOONS' Beijing Branch Office opened
OTC. 2001	MOONS' Shenzhen Branch Office opened
DEC. 2000	MOONS' Industries (America), Inc. was established in Chicago, USA
NOV. 2000	MOONS' Wiring Harness Factory was set up and put into production.
OCT. 2000	MOONS' Power Supply Factory was set up and production started
APR. 1998	MOONS' International Trading Company was established
FEB. 1998	MOONS' Motor Factory was set up and HB Stepper Motor production started
AUG. 1997	MOONS' Mini-Detective Polling System was introduced to the China market
FEB. 1994	MOONS' was founded

Catalogue

Lead Screw Motors

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Lead Screw Motors

MOONS' LE Series products are designed based on the know-how technology of hybrid step motors , lead screws and nuts. Provide high torque, high precision, and high efficiency to fit the application needs of designers. The combination of lead screw motor styles, sizes, lead-screws and nuts, gives the freedom to use motors of different form factors to exactly fit in the application. And, it provides the best performance with any drive and power supply.

- Five frame Sizes: NEMA08, 11, 14, 17, 23
- Multiple motor lengths and special PowerPlus motors, provide more than 10 different motor sizes
- Each frame size motor has 3-22 different standard lead screws
- Each frame size motor has Anti-Backlash Nut options



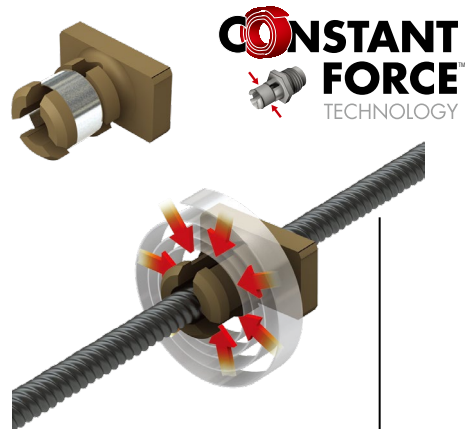
MOONS' has committed to product innovation design and technical improvement, with excellent product quality,application technology, fast and flexible services,which provide customers with high level Linear motion solutions.

Constant Force Technology

Constant Force™ Anti-Backlash Nut

An intuitive leap forward in nut design for lead screw applications,Constant Force Technology utilizes a constant force spring to apply a uniform pressure to the nut at all stages of the motion profile.

- Greater consistency and resistance to backlash
- Configurable for various torque requirements
- Patent pending self-adjusting anti-backlash feature
- Polymer nuts are self-lubricating and maintenance free



Patent pending Constant Force Technology nut provides consistent anti-backlash operation

Standard Fixed Nut

- Good rigidity and vibration damping
- Polymer nuts are self-lubricating and maintenance free



Model Numbering System

LE 17 2S - M0602 C - 100 - AR1 - 0 - xxx

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Motor Size Code

Code	Motor Body Length Max(mm)	Step Angle (°)
08	0K	20.3
	1K	27.3
11	1S	32
	3S	41
	5S	52
14	1A	28
	1S	28
	3S	36
17	4A	34.3
	4S	34.3
	2S	39.8
	6S	48.3
23	8S	57
	AS	79
	ASP	79(Power Plus)

Lead Screw Type Code

Code	Nominal Diameter (mm)	Lead (mm)
E03006	3.505	0.6096
E03012	3.505	1.2192
E03024	3.505	2.4384
E04006	4.76	0.635
E04025	4.76	2.54
E05006	5.54	0.6096
E05012	5.54	1.2192
E05048	5.54	4.8768
E06063	6.35	6.35
E06127	6.35	12.7
E09050	9.53	5.08
T6503	6.5	3
T0808	8	8
T08012	8	1.25
T10105	10	10.5

Code	Nominal Diameter (mm)	Lead (mm)
T1206	12	6
M0601	6	1
M0602	6	2
M0605	6	5
M0610	6	10
M0612	6	12
M1001	10	1
M1002	10	2
M1005	10	5
M1010	10	10
M1012	10	12
M1016	10	16
M1025	10	25

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
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Special Custom Type

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
E	Add Encoder
B	Add Brake
C	Other Special Custom Type

Nut Type Code

Code	Nut Type	Mating Lead Screw
AR0	Round Standard Nut	E03006 E03012 E03024 E04006 E04025
BR0	Round Anti-Backlash Nut	
AT0	Triangular Standard Nut	
BT0	Triangular Anti-Backlash Nut	
AR1	Round Standard Nut	E05006 E05012 E05048 E06063 E06127 T6503 M0601 M0602 M0605 M0610 M0612
BR1	Round Anti-Backlash Nut	
AT1	Triangular Standard Nut	
BT1	Triangular Anti-Backlash Nut	
AR2	Round Standard Nut	E09050 T10105 M1001 M1002 M1005 M1010 M1012 M1016 M1025
BR2	Round Anti-Backlash Nut	
AT2	Triangular Standard Nut	
BT2	Triangular Anti-Backlash Nut	
AR3	Round Standard Nut	T0808 T08012
BR3	Round Anti-Backlash Nut	
AT3	Triangular Standard Nut	
BT3	Triangular Anti-Backlash Nut	
AR4	Round Standard Nut	T1206
BR4	Round Anti-Backlash Nut	
AT4	Triangular Standard Nut	
BT4	Triangular Anti-Backlash Nut	
CN	Custom Made Nut	

Lead Screw Lengths(Lx)

###	Provided in 1 mm increments
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Screw Surface Coating Code

Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

Configuration Table

Nominal Diameter (mm)	Lead (mm)	Lead Screw Code						
			LE080K	LE081K	LE111S	LE113S	LE115S	LE141A
3.505	0.6096	E03006	⊙	⊙	-	-	-	-
3.505	1.2192	E03012	⊙	⊙	-	-	-	-
3.505	2.4384	E03024	⊙	⊙	-	-	-	-
4.76	0.635	E04006	-	-	⊙	⊙	⊙	-
4.76	2.54	E04025	-	-	⊙	⊙	⊙	-
5.54	0.6096	E05006	-	-	⊙	⊙	⊙	⊙
5.54	1.2192	E05012	-	-	⊙	⊙	⊙	⊙
5.54	4.8768	E05048	-	-	⊙	⊙	⊙	⊙
6.35	6.35	E06063	-	-	⊙	⊙	⊙	⊙
6.35	12.7	E06127	-	-	⊙	⊙	⊙	⊙
9.53	5.08	E09050	-	-	-	-	-	-
6.5	3	T6503	-	-	⊙	⊙	⊙	⊙
8	8	T0808	-	-	-	-	-	-
8	1.25	T08012	-	-	-	-	-	-
10	10.5	T10105	-	-	-	-	-	-
12	6	T1206	-	-	-	-	-	-
6	1	M0601	-	-	⊙	⊙	⊙	⊙
6	2	M0602	-	-	⊙	⊙	⊙	⊙
6	5	M0605	-	-	⊙	⊙	⊙	⊙
6	10	M0610	-	-	⊙	⊙	⊙	⊙
6	12	M0612	-	-	⊙	⊙	⊙	⊙
10	1	M1001	-	-	-	-	-	-
10	2	M1002	-	-	-	-	-	-
10	5	M1005	-	-	-	-	-	-
10	10	M1010	-	-	-	-	-	-
10	12	M1012	-	-	-	-	-	-
10	16	M1016	-	-	-	-	-	-
10	25	M1025	-	-	-	-	-	-

Note:Marked with “ ⊙ ”is available.

Motor Options									
	LE141S	LE143S	LE174A	LE174S	LE172S	LE176S	LE238S	LE23AS	LE23ASP
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	-	-	⊙	⊙	⊙	⊙	-	-	-
	-	-	⊙	⊙	⊙	⊙	-	-	-
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	-	-	-	-	⊙	⊙	⊙
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	⊙	⊙	⊙	⊙	⊙	⊙	-	-	-
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙
	-	-	⊙	⊙	⊙	⊙	⊙	⊙	⊙

LE08 Series

Phases	2
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C~+50°C
Insulation Class	B(130°C)
Insulation Resistance	100MegOhms



Ordering Information

LE 08 0K - E03006 C - 100 - AR0 - 0 - XXX

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Frame Size Code

Code	Frame Size
08	20mm

Motor Body Length Code

Code	Motor Body Length Max(mm)	Step Angle (°)
0K	20.3	1.8
1K	27.3	1.8

Lead Screw Type Code

Code	Nominal Diameter(mm)	Lead (mm)	Travel(mm)	
			Travel Per 1.8°	Travel Per 5°
E03006	3.505	0.6096	0.003048	0.008467
E03012	3.505	1.2192	0.006096	0.016933
E03024	3.505	2.4384	0.012192	0.033867

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
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Special Custom Type Code

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
C	Other Special Custom Type

Nut Type Code

Code	Nut Type
AR0	Round Standard Nut
BR0	Round Anti-Backlash Nut
AT0	Triangular Standard Nut
BT0	Triangular Anti-Backlash Nut
CN	Custom Made Nut

Lx

Provided in 1 mm increments

Screw Surface Coating Code

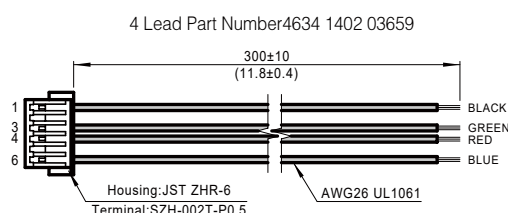
Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

LE08 Step Motor - 4 Lead Bi-Polar

Motor Type Code	Motor Body Length (mm)	Step Angle (°)	Electrical Connection	Rated Current (Amps)	Winding	
					Resistanc(Ohms) ±10% @ 20°C	Inductance(mH) Typ.
LE080K	20.3	1.8°	Plug In Connector	0.4	13.9	4
LE081K	27.3	1.8°	Plug In Connector	0.4	6.2	1.6

Note: Recommended Driver, DC Input: SR2-Plus, SR3-mini; DC Input Controller Type: ST5-S/Q/C-AN(RN).

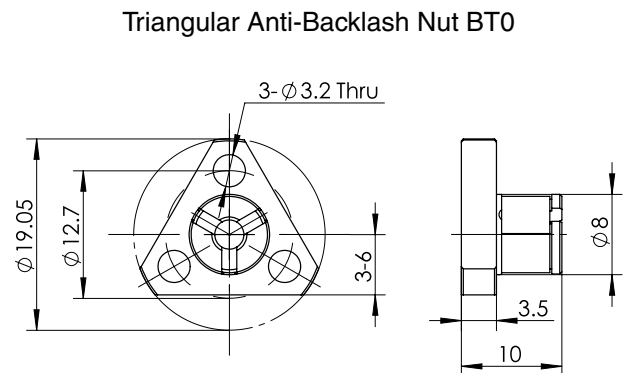
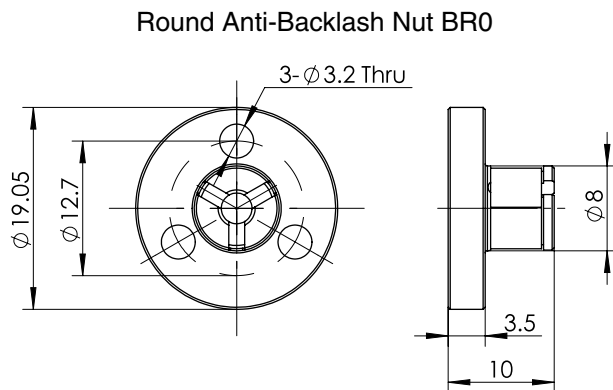
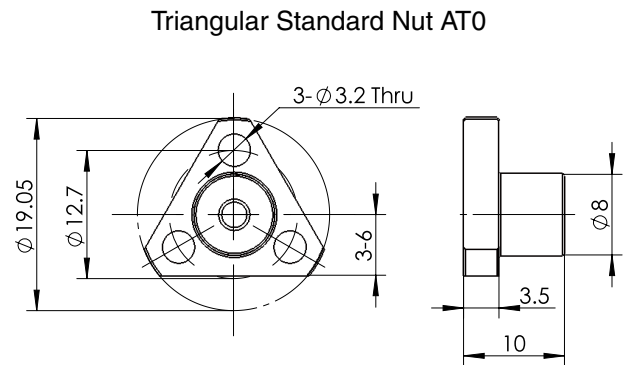
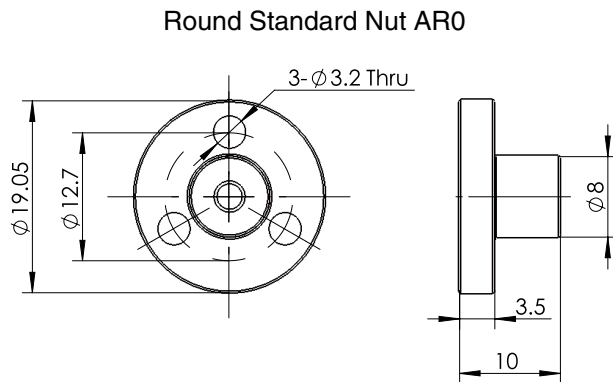
Mating Connector With Leads (order separately)



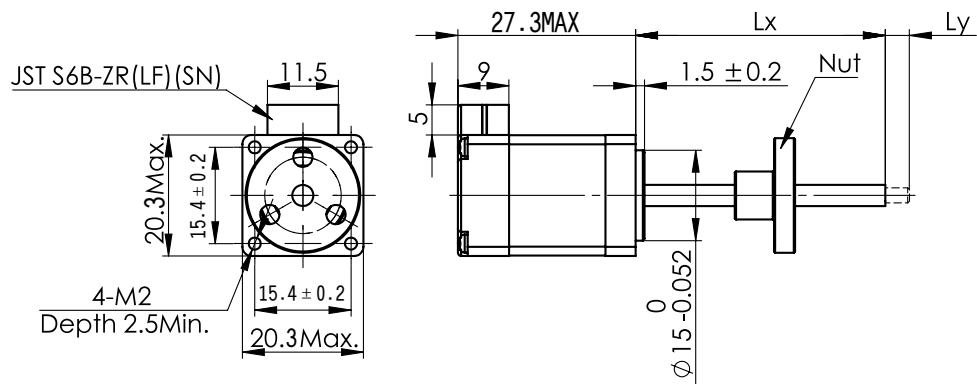
LE08 Series

Nut Type

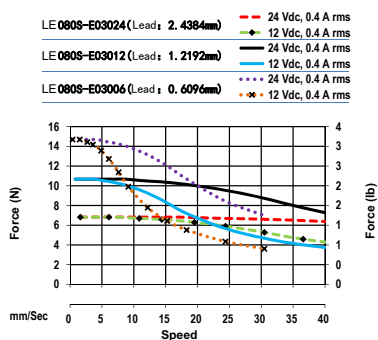
UNIT:mm



LE080K LE081K Series



Force-Speed Curves



LE11 Series

Phases	2
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C~+50°C
Insulation Class	B(130°C)
Insulation Resistance	100MegOhms



Ordering Information

LE 11 1S - M0601 C - 100 - AR1 - 0 - XXX

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Frame Size Code

Code	Frame Size
11	28mm

Motor Body Length Code

Code	Motor Body Length Max(mm)	Step Angle (°)
1S	32	1.8
3S	41	1.8
5S	52	1.8

Lead Screw Type Code

Code	Nominal Diameter(mm)	Lead (mm)	Travel Per 1.8°(mm)
E04006	4.76	0.635	0.003175
E04025	4.76	2.54	0.0127
E05006	5.54	0.6096	0.003048
E05012	5.54	1.2192	0.006096
E05048	5.54	4.8768	0.024384
E06063	6.35	6.35	0.03175
E06127	6.35	12.7	0.0635
T6503	6.5	3	0.015
M0601	6	1	0.005
M0602	6	2	0.01
M0605	6	5	0.025
M0610	6	10	0.05
M0612	6	12	0.06

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
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Special Custom Type Code

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
E	Add Encoder
B	Add Brake
C	Other Special Custom Type

Nut Type Code

Code	Nut Type	Mating Lead Screw
AR0	Round Standard Nut	E04006 E04025
BR0	Round Anti-Backlash Nut	
AT0	Triangular Standard Nut	
BT0	Triangular Anti-Backlash Nut	
AR1	Round Standard Nut	E05006 E05012 E05048 E06063 E06127 T6503 M0601 M0602 M0605 M0610 M0612
BR1	Round Anti-Backlash Nut	
AT1	Triangular Standard Nut	
BT1	Triangular Anti-Backlash Nut	
CN	Custom Made Nut	

Lx

###	Provided in 1 mm increments
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Screw Surface Coating Code

Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

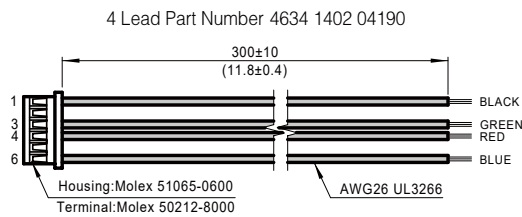
LE11 Series

LE11 Step Motor - 4 Lead Bi-Polar

Motor Type Code	Motor Body Length (mm)	Step Angle (°)	Electrical Connection	Rated Current (Amps)	Winding	
					Resistance(Ohms) ±10%@20°C	Inductance(mH) Typ.
LE111S	32	1.8°	Plug In Connector	1	2.7	2.5
LE113S	41	1.8°	Plug In Connector	0.95	3.8	3.5
LE115S	52	1.8°	Plug In Connector	0.7	6.7	6.8

Note: Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN)。

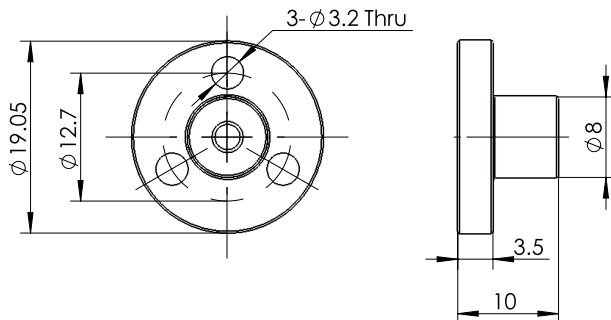
Mating Connector With Leads (order separately)



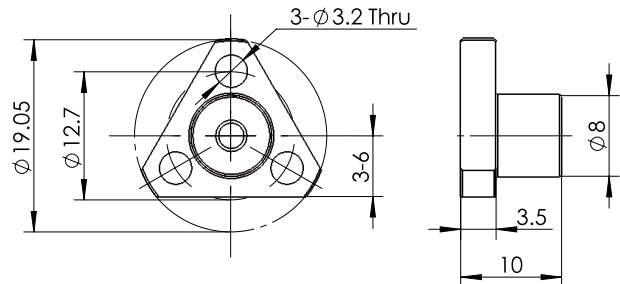
Nut Type

UNIT:mm

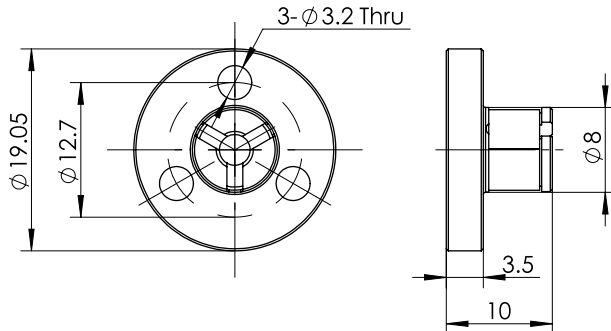
Round Standard Nut AR0



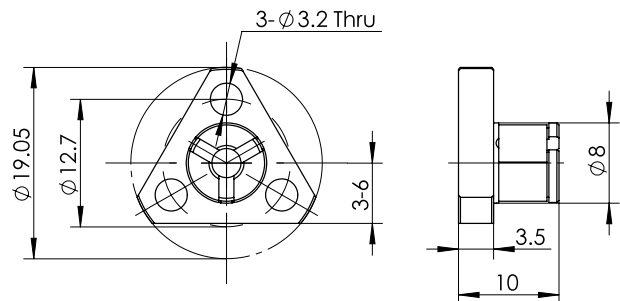
Triangular Standard Nut AT0



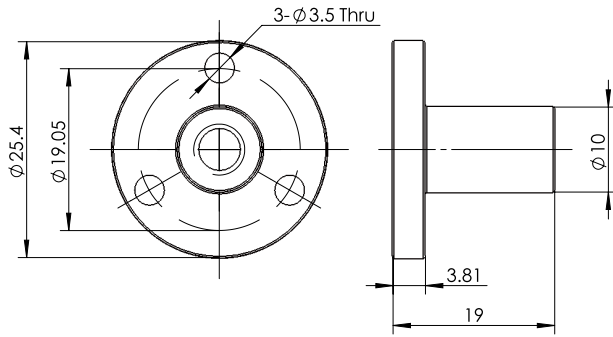
Round Anti-Backlash Nut BR0



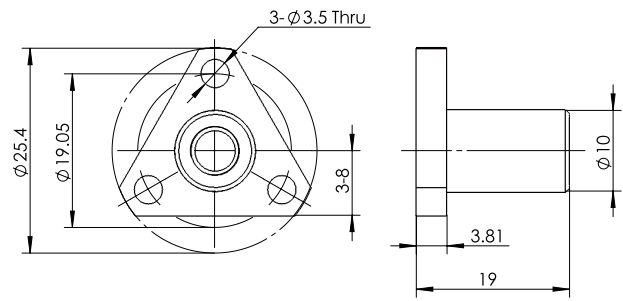
Triangular Anti-Backlash Nut BT0



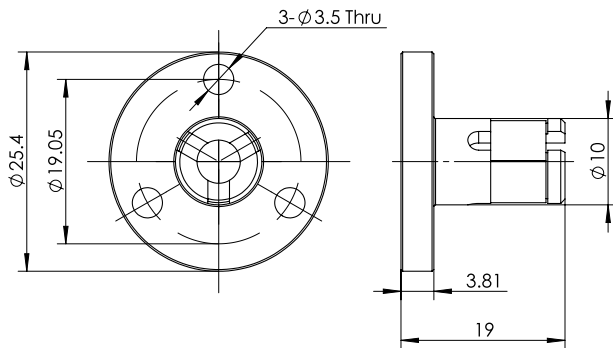
Round Standard Nut AR1



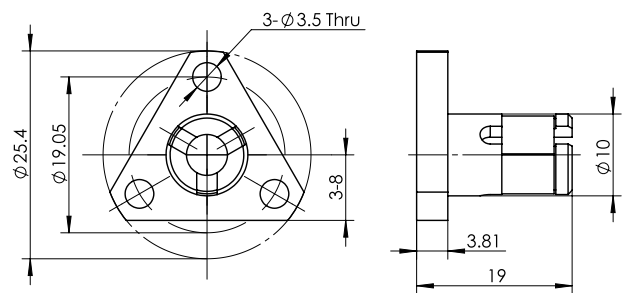
Triangular Standard Nut AT1



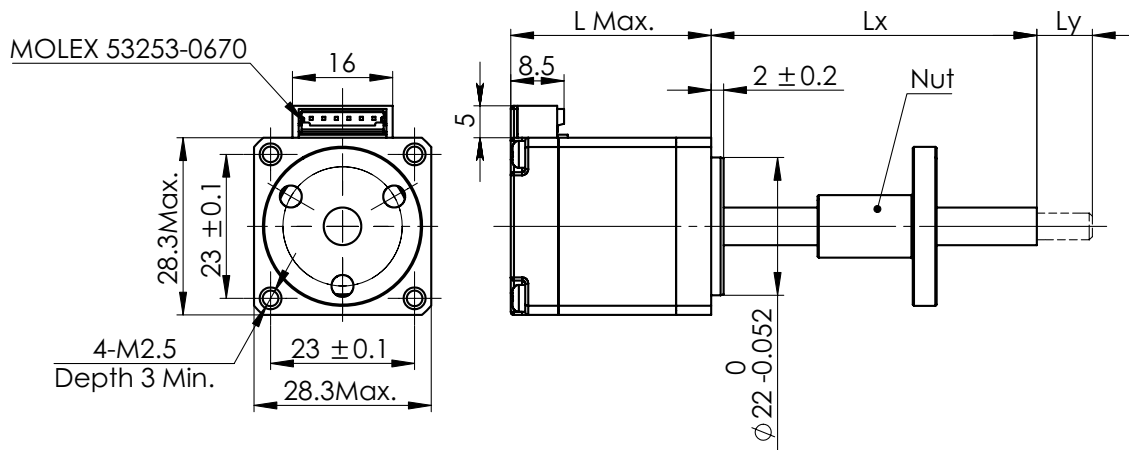
Round Anti-Backlash Nut BR1



Triangular Anti-Backlash Nut BT1

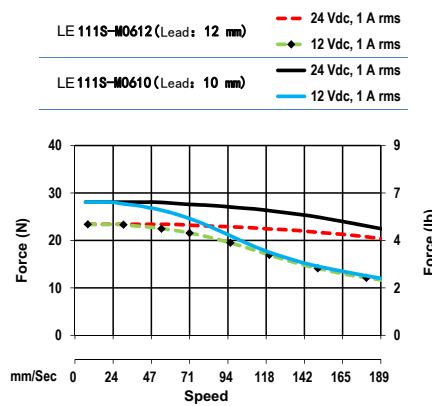
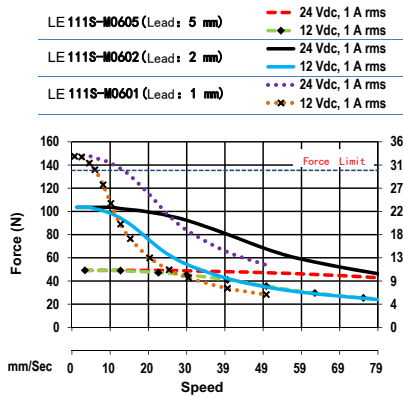
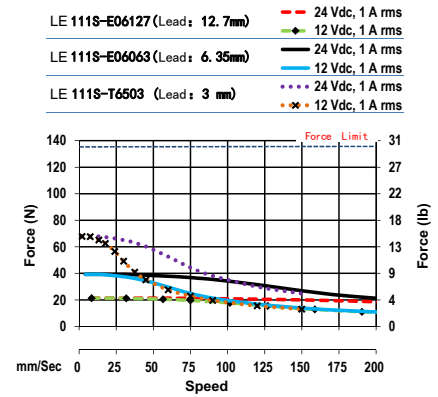
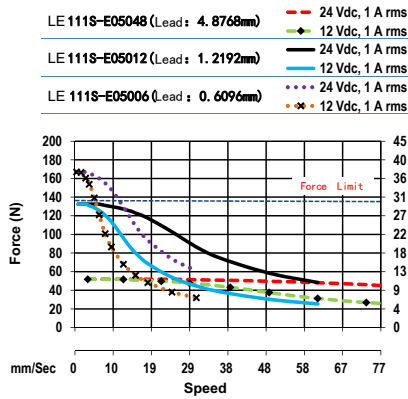
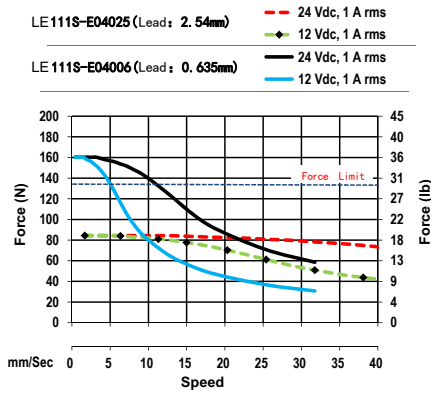


LE11 Series



Motor Type	Dimension "L"
LE111S	32 mm
LE113S	41 mm
LE115S	52 mm

Force-Speed Curves



LE14 Series

Phases	2
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C~+50°C
Insulation Class	B(130°C)
Insulation Resistance	100MegOhms



Ordering Information

LE 14 1S - M0601 C - 100 - AR1 - 0 - XXX

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Frame Size Code

Code	Frame Size
14	35mm

Motor Body Length Code

Code	Motor Body Length Max(mm)	Step Angle (°)
1A	28	0.9
1S	28	1.8
3S	36	1.8

Lead Screw Type Code

Code	Nominal Diameter(mm)	Lead (mm)	Travel(mm)	
			Travel Per 1.8°	Travel Per 0.9°
E05006	5.54	0.6096	0.003048	0.001524
E05012	5.54	1.2192	0.006096	0.003048
E05048	5.54	4.8768	0.024384	0.012192
E06063	6.35	6.35	0.03175	0.015875
E06127	6.35	12.7	0.0635	0.03175
T6503	6.5	3	0.015	0.0075
M0601	6	1	0.005	0.0025
M0602	6	2	0.01	0.005
M0605	6	5	0.025	0.0125
M0610	6	10	0.05	0.025
M0612	6	12	0.06	0.03

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
-------------	---

Special Custom Type Code

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
E	Add Encoder
B	Add Brake
C	Other Special Custom Type

Nut Type Code

Code	Nut Type
AR1	Round Standard Nut
BR1	Round Anti-Backlash Nut
AT1	Triangular Standard Nut
BT1	Triangular Anti-Backlash Nut
CN	Custom Made Nut

Lx

Provided in 1 mm increments

Screw Surface Coating Code

Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

LE14 Series

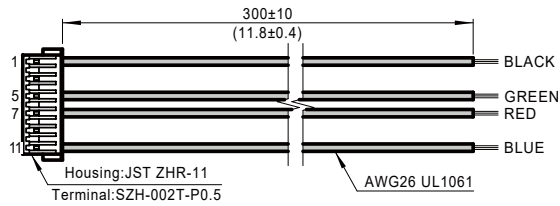
LE14 Step Motor - 4 Lead Bi-Polar

Motor Type Code	Motor Body Length (mm)	Step Angle (°)	Electrical Connection	Rated Current (Amps)	Winding	
					Resistance(Ohms) ±10% @ 20°C	Inductance(mH) Typ.
LE141A	28	0.9°	Plug In Connector	0.6	10.6	12.6
LE141S	28	1.8°	Plug In Connector	1.5	1.55	1.53
LE143S	36	1.8°	Plug In Connector	1.5	1.61	2.5

Note: Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN)。

Mating Connector With Leads (order separately)

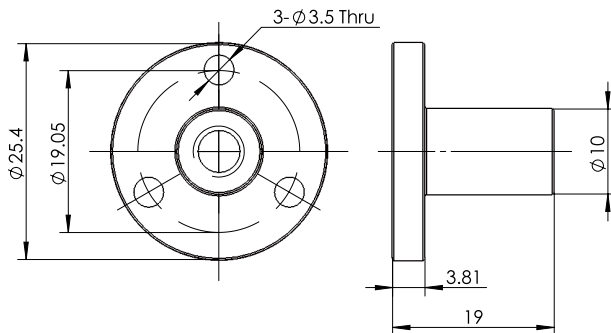
4 Lead Part Number 4634 1402 04581



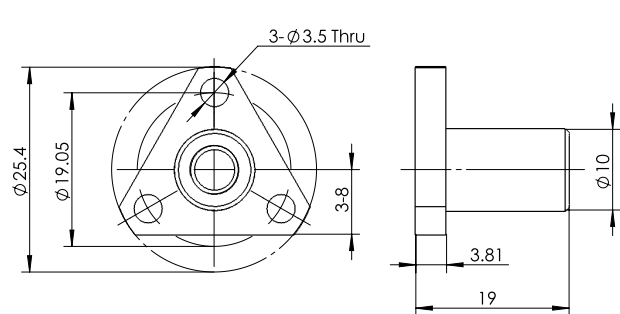
Nut Type

UNIT:mm

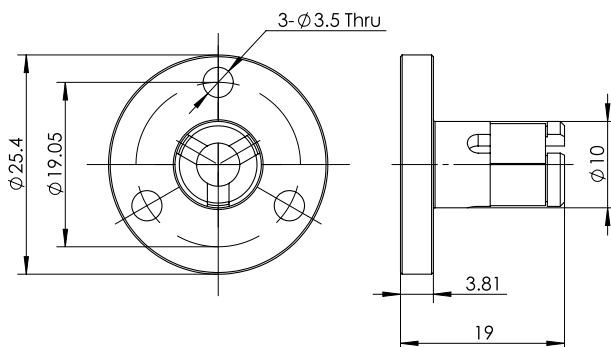
Round Standard Nut AR1



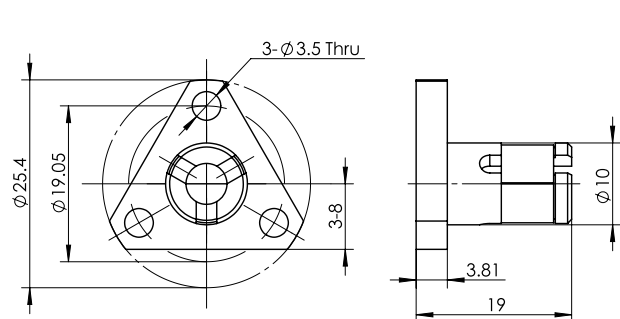
Triangular Standard Nut AT1



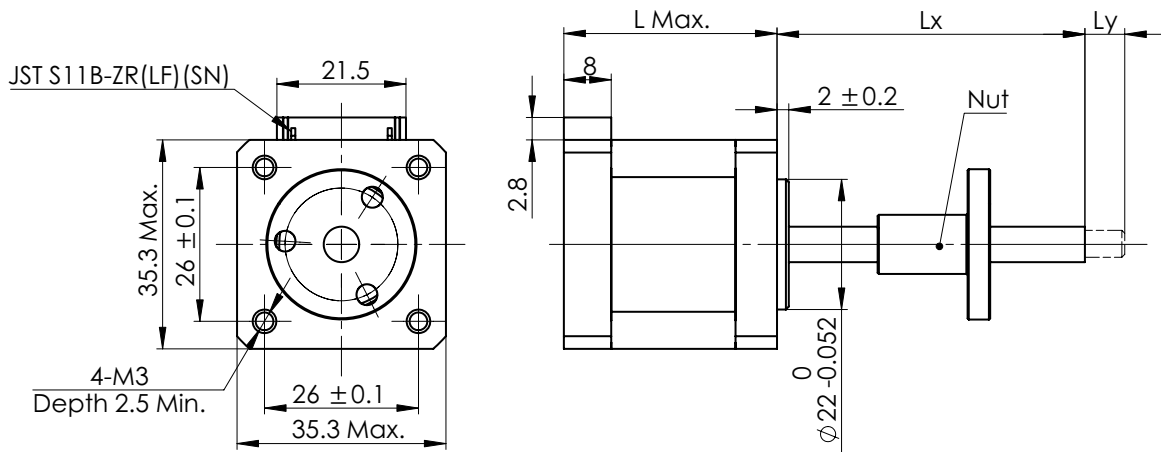
Round Anti-Backlash Nut BR1



Triangular Anti-Backlash Nut BT1

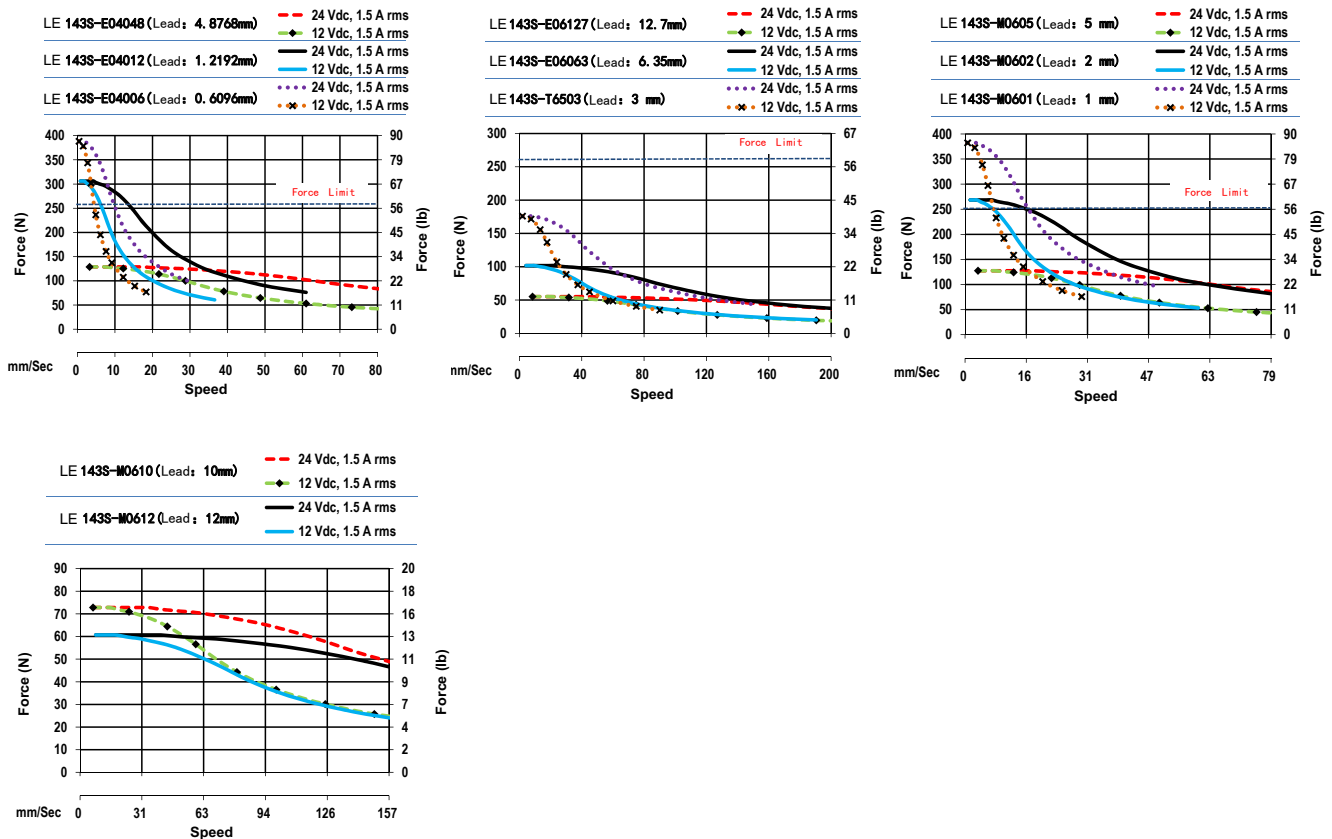


LE14 Series



Motor Type	Dimension "L"
LE141A	28 mm
LE141S	28 mm
LE143S	36 mm

Force-Speed Curves



LE17 Series

Phases	2
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C~+50°C
Insulation Class	B(130°C)
Insulation Resistance	100MegOhms



Ordering Information

LE 17 2S - M0602 C - 100 - AR1 - 0 - XXX

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Frame Size Code

Code	Frame Size
17	42mm

Motor Body Length Code

Code	Motor Body Length Max(mm)	Step Angle (°)
4A	34.3	0.9
4S	34.3	1.8
2S	39.8	1.8
6S	48.3	1.8

Lead Screw Type Code

Code	Nominal Diameter (mm)	Lead (mm)	Travel(mm)		Code	Nominal Diameter (mm)	Lead (mm)	Travel(mm)	
			Travel Per 1.8°	Travel Per 0.9°				Travel Per 1.8°	Travel Per 0.9°
E05006	5.54	0.6096	0.003048	0.001524	M0601	6	1	0.005	0.0025
E05012	5.54	1.2192	0.006096	0.003048	M0602	6	2	0.01	0.005
E05048	5.54	4.8768	0.024384	0.012192	M0605	6	5	0.025	0.0125
E06063	6.35	6.35	0.03175	0.015875	M0610	6	10	0.05	0.025
E06127	6.35	12.7	0.0635	0.03175	M0612	6	12	0.06	0.03
E09050	9.53	5.08	0.0254	0.0127	M1001	10	1	0.005	0.0025
T6503	6.5	3	0.015	0.0075	M1002	10	2	0.01	0.005
T0808	8	8	0.04	0.02	M1005	10	5	0.025	0.0125
T08012	8	1.25	0.00625	0.003125	M1010	10	10	0.05	0.025
T10105	10	10.5	0.0525	0.02625	M1012	10	12	0.06	0.03
					M1016	10	16	0.08	0.04
					M1025	10	25	0.125	0.0625

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
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Special Custom Type Code

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
B	Add Encoder
E	Add Brake
C	Other Special Custom Type

Nut Type Code

Code	Nut Type	Mating Lead Screw
AR1	Round Standard Nut	E05006 E05012 E05048
BR1	Round Anti-Backlash Nut	E06063 E06127
AT1	Triangular Standard Nut	T6503 M0601 M0602 M0605 M0610 M0612
BT1	Triangular Anti-Backlash Nut	E09050 T10105 M1001 M1002 M1005 M1010 M1012 M1016 M1025
AR2	Round Standard Nut	E09050 T10105
BR2	Round Anti-Backlash Nut	M1001 M1002
AT2	Triangular Standard Nut	M1005 M1010 M1012 M1016 M1025
BT2	Triangular Anti-Backlash Nut	
AR3	Round Standard Nut	
BT3	Round Anti-Backlash Nut	
AT3	Triangular Standard Nut	
BT3	Triangular Anti-Backlash Nut	
CN	Custom Made Nut	

Lx

Provided in 1 mm increments

Screw Surface Coating Code

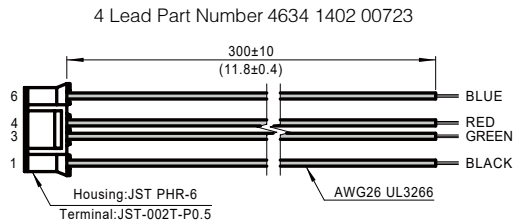
Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

LE17 Step Motor - 4 Lead Bi-Polar

Motor Type Code	Motor Body Length (mm)	Step Angle (°)	Electrical Connection	Rated Current (Amps)	Winding	
					Resistance(Ohms) ±10% @ 20°C	Inductance(mH) Typ.
LE174A	34.3	0.9°	Leads	0.7	5.4	14
LE174S	34.3	1.8°	Plug In Connector	1	4.3	7.7
LE172S	39.8	1.8°	Plug In Connector	2	1.04	2.73
LE176S	48.3	1.8°	Plug In Connector	2	1.3	2.9

Note: Recommended Driver, DC Input: SR2-Plus, SR4-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN)。

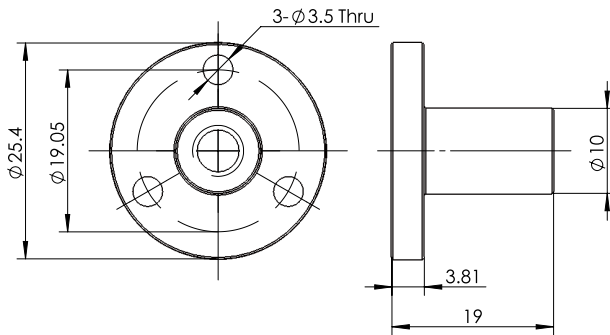
Mating Connector With Leads (order separately)



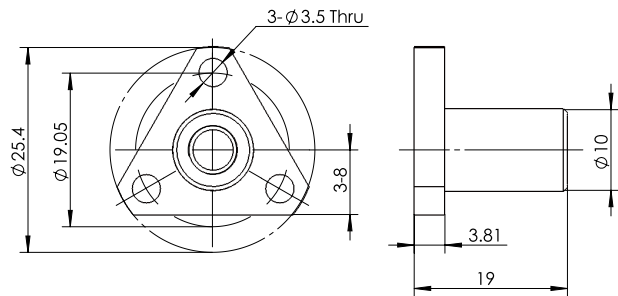
Nut Type

UNIT:mm

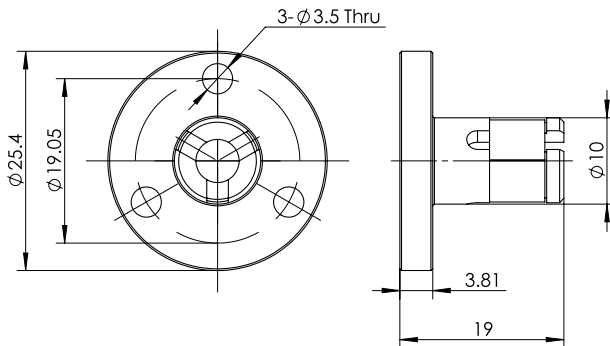
Round Standard Nut AR1



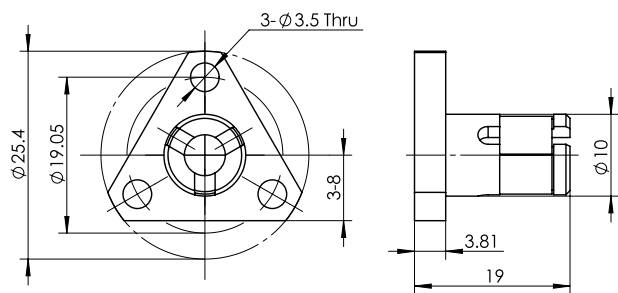
Triangular Standard Nut AT1



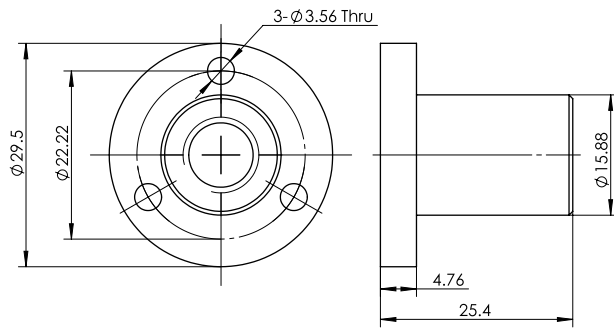
Round Anti-Backlash Nut BR1



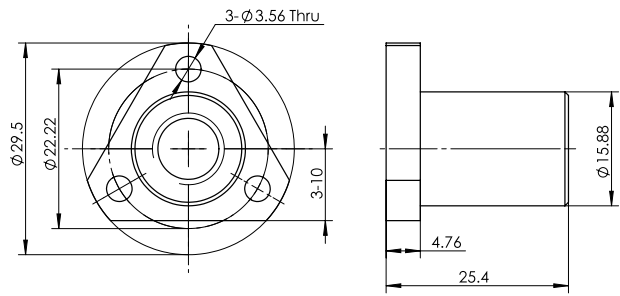
Triangular Anti-Backlash Nut BT1



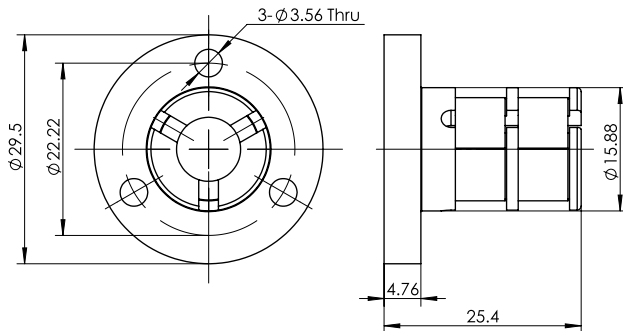
Round Standard Nut AR2



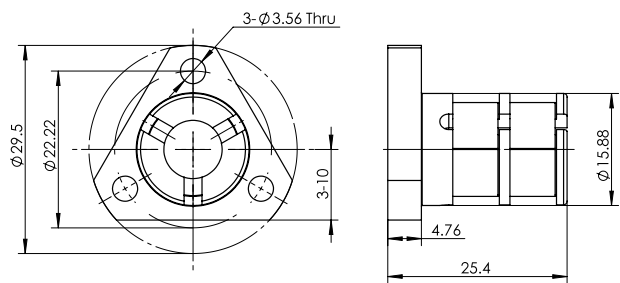
Triangular Standard Nut AT2



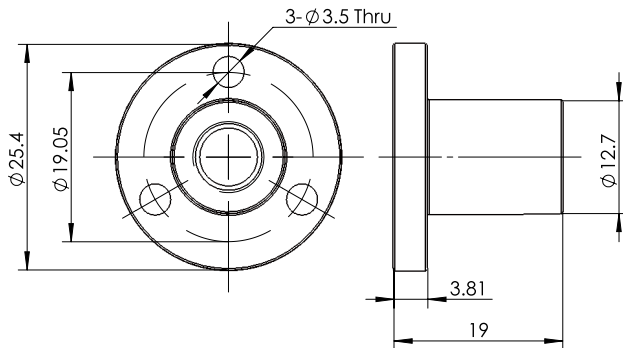
Round Anti-Backlash Nut BR2



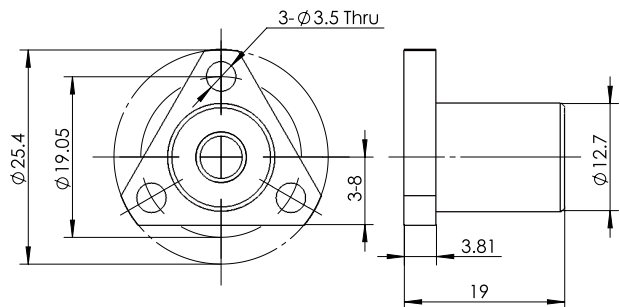
Triangular Anti-Backlash Nut BT2



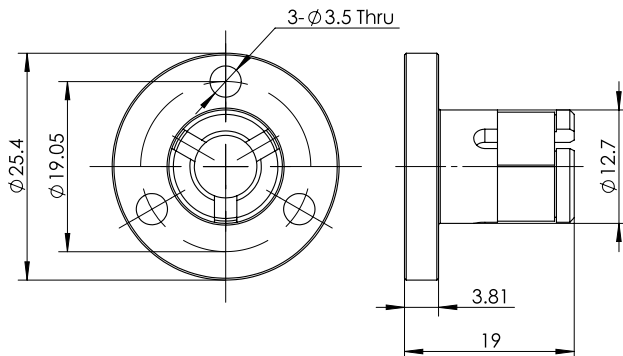
Round Standard Nut AR3



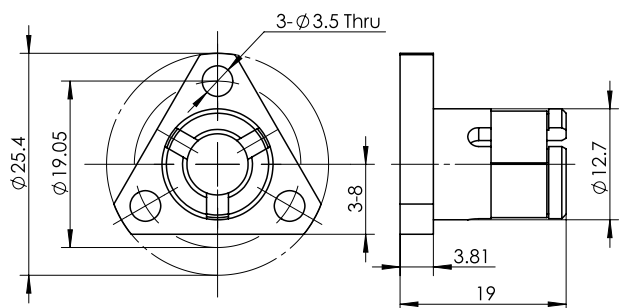
Triangular Standard Nut AT3



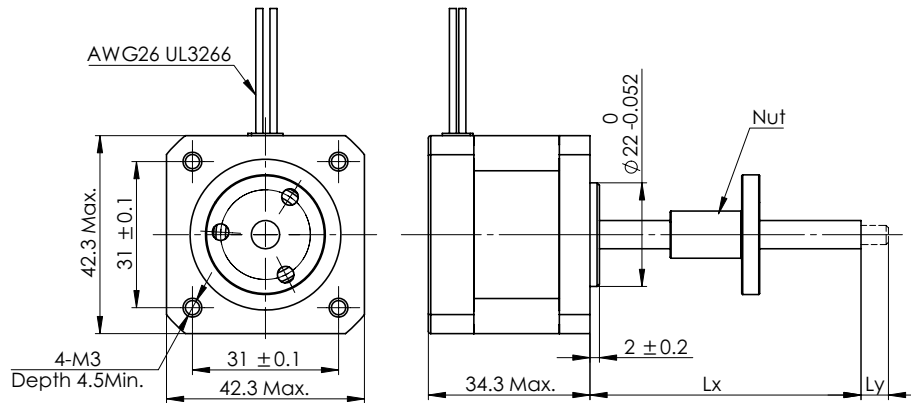
Round Anti-Backlash Nut BR3



Triangular Anti-Backlash Nut BT3

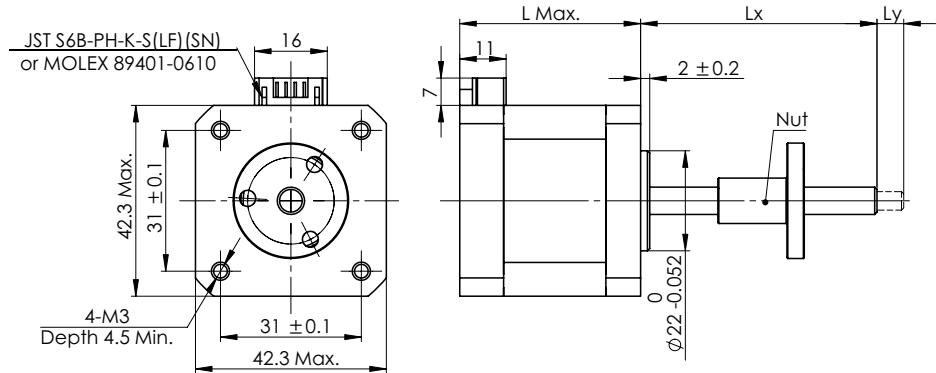


LE174A Series

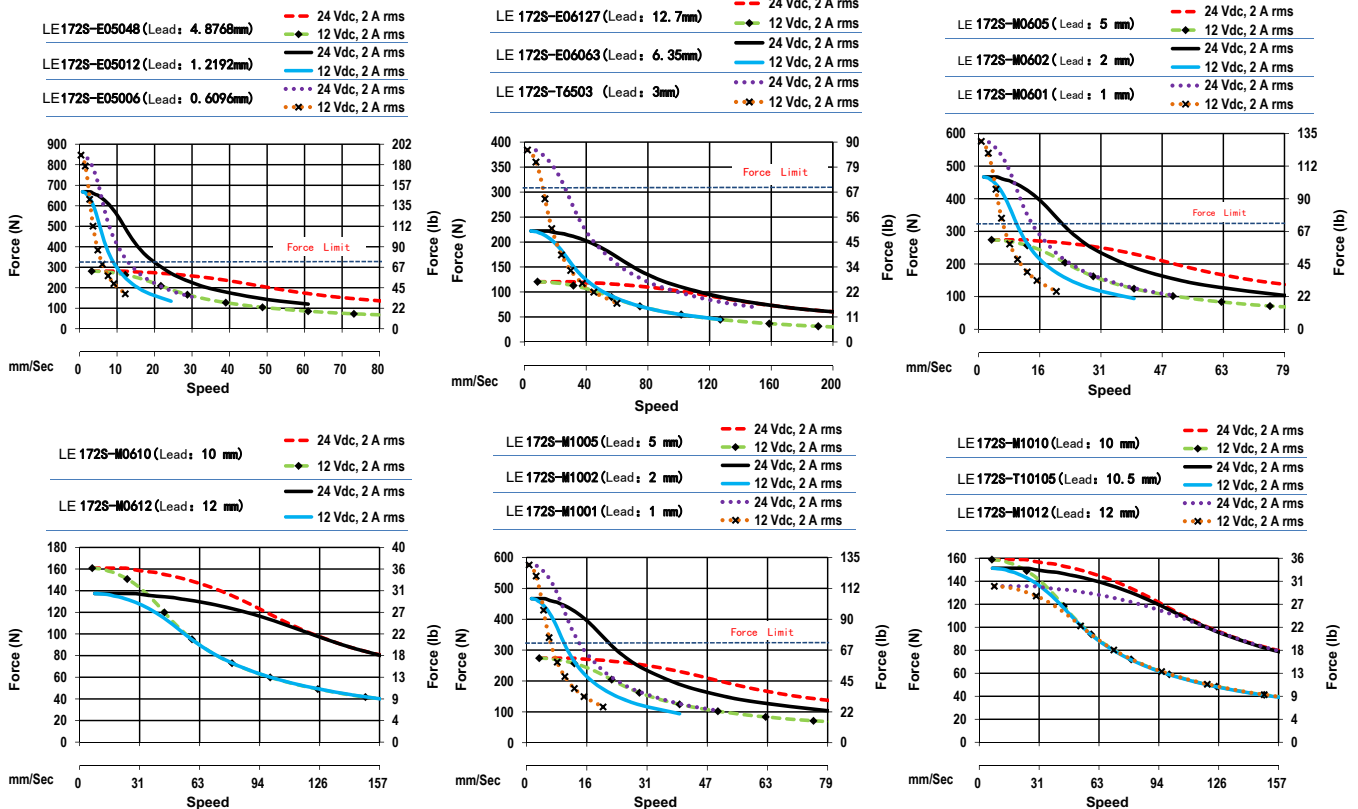


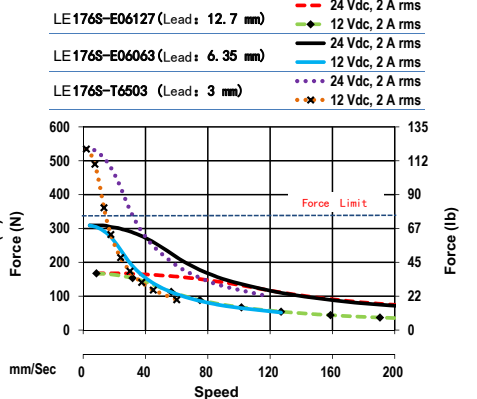
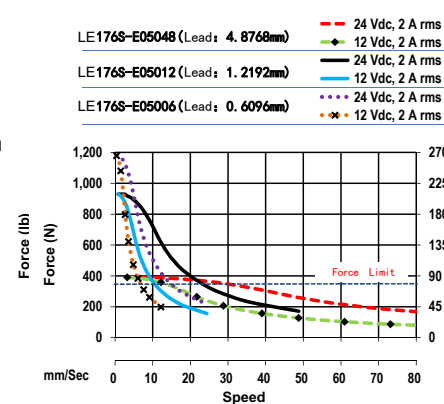
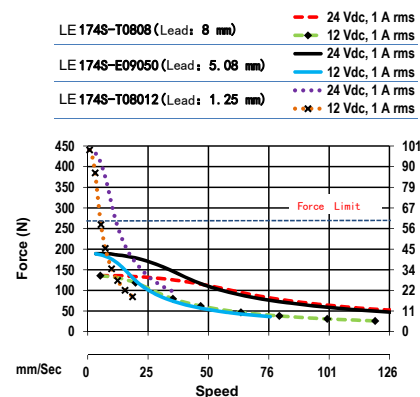
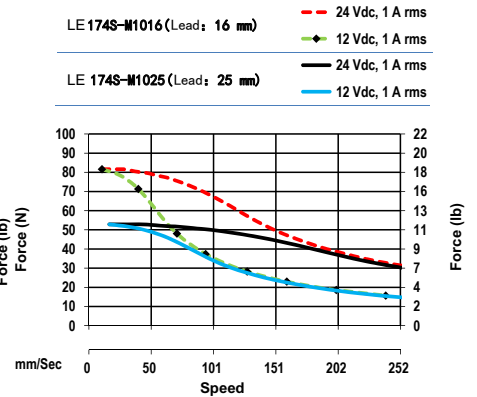
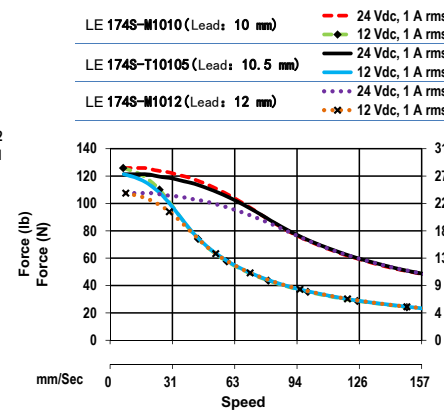
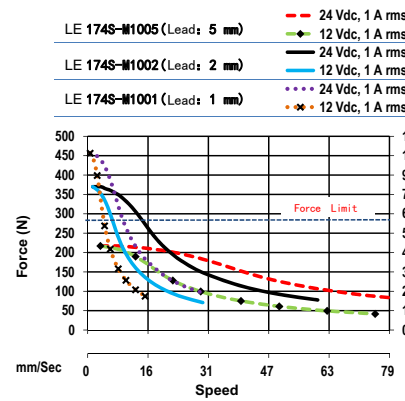
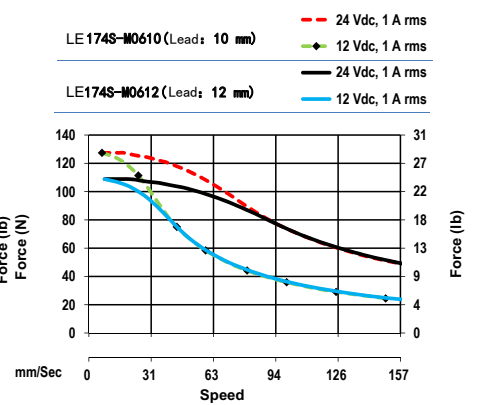
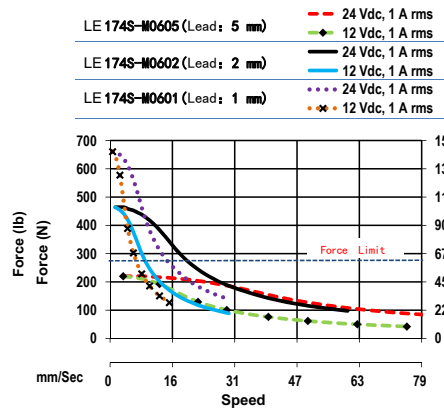
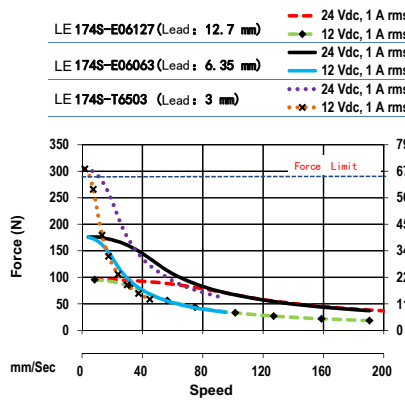
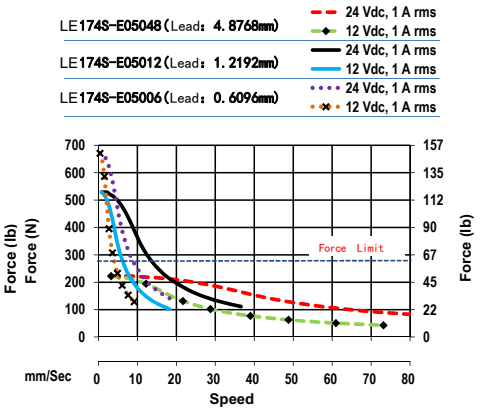
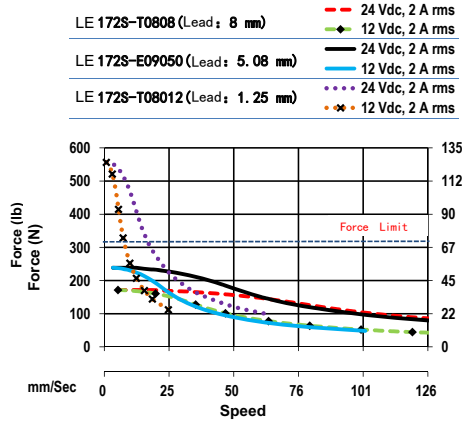
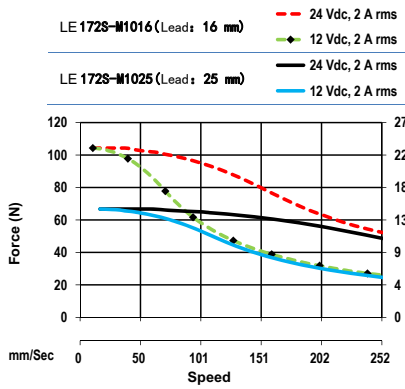
LE172S LE174S LE176S Series

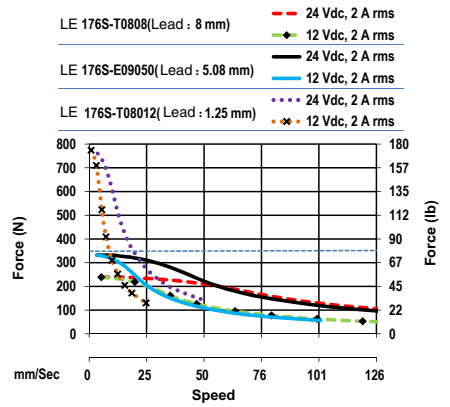
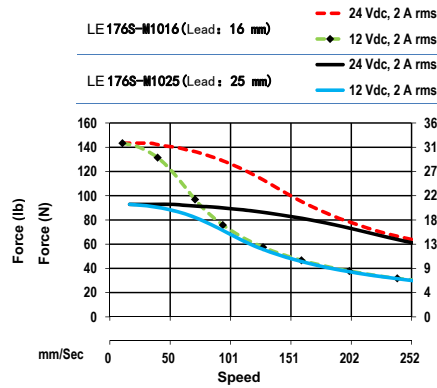
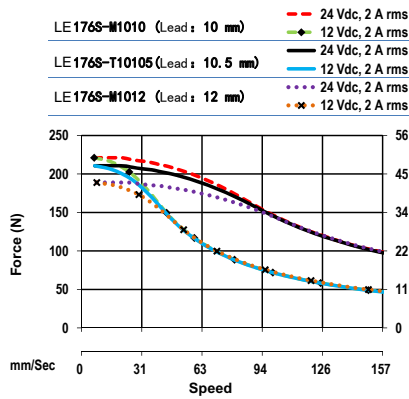
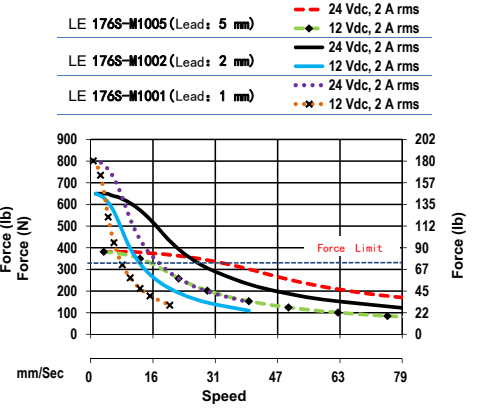
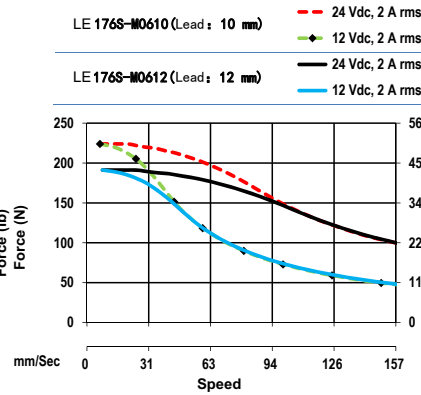
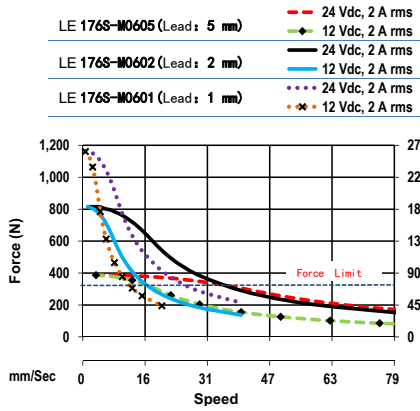
Motor Type	Dimension "L"
LE174S	34.3 mm
LE172S	39.8 mm
LE176S	48.3 mm



Force-Speed Curves

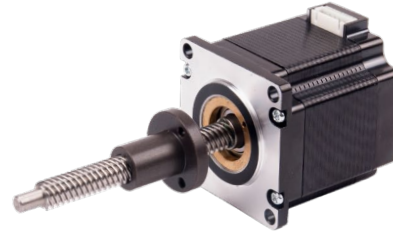






LE23 Series

Phases	2
Step Accuracy	±5%
IP Rating	40
Approvals	RoHS
Operating Temp.	-20°C~+50°C
Insulation Class	B(130°C)
Insulation Resistance	100MegOhms



Ordering Information

LE 23 8S - M1001 C - 100 - AR2 - 0 - XXX

Lead Screw Motor Type Code

Code	Structure Type
LE	External Nut - Lead screw Shaft

Frame Size Code

Code	Frame Size
23	57mm

Motor Body Length Code

Code	Motor Body Length Max(mm)	Step Angle (°)
8S	57	1.8
AS	79	1.8
ASP	79(Power Plus)	1.8

Lead Screw Type Code

Code	Nominal Diameter (mm)	Lead (mm)	Travel Per 1.8° (mm)
E09050	9.53	5.08	0.0254
T10105	10	10.5	0.0525
T1206	12	6	0.03
M1001	10	1	0.005
M1002	10	2	0.01
M1005	10	5	0.025
M1010	10	10	0.05
M1012	10	12	0.06
M1016	10	16	0.08
M1025	10	25	0.125

Rated Current Code

XXX=X.XX(A)	This code defines by our technical department
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Special Custom Type Code

Code	Custom Type
0	Non Special Custom
S	Lead Screw End Machining
E	Add Encoder
B	Add Brake
C	Other Special Custom Type

Nut Type Code

Code	Nut Type	Mating Lead Screw
AR2	Round Standard Nut	E09050 T10105
BR2	Round Anti-Backlash Nut	M1001 M1002
AT2	Triangular Standard Nut	M1005 M1010 M1012
BT2	Triangular Anti-Backlash Nut	M1016 M1025
AT4	Round Standard Nut	T1206
BR4	Round Anti-Backlash Nut	
AT4	Triangular Standard Nut	
BT4	Triangular Anti-Backlash Nut	
CN	Custom Made Nut	

Lx

Provided in 1 mm increments

Screw Surface Coating Code

Code	Screw Surface Coating
-	Non Coating
C	PTFE Coating

LE23 Series

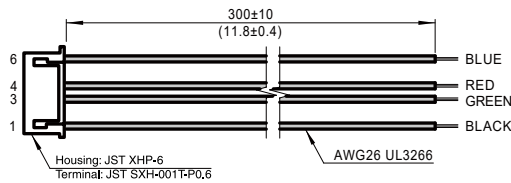
LE23 Step Motor - 4 Lead Bi-Polar

Motor Type Code	Motor Body Length (mm)	Step Angle (°)	Electrical Connection	Rated Current (Amps)	Winding	
					Resistance(Ohms) ±10%@20°C	Inductance(mH) Typ.
LE238S	57	1.8°	Plug In Connector	2.2	1.6	7.2
LE23AS	79	1.8°	Plug In Connector	3	1.1	5.0
LE23ASP	79	1.8°	Plug In Connector	3	1.1	3.7

Note: Recommended Driver, DC Input: SR8-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN), ST10-S/Q/C-AN(RN).

Mating Connector With Leads (order separately)

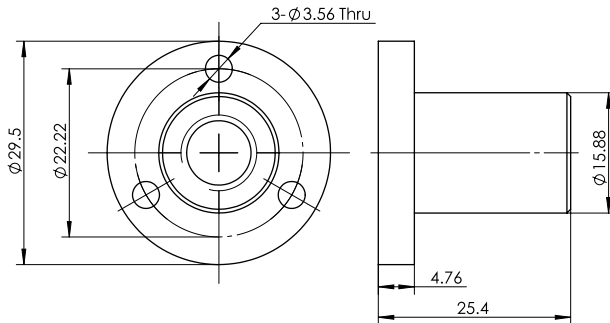
4 Lead Part Number 4634 1402 01891



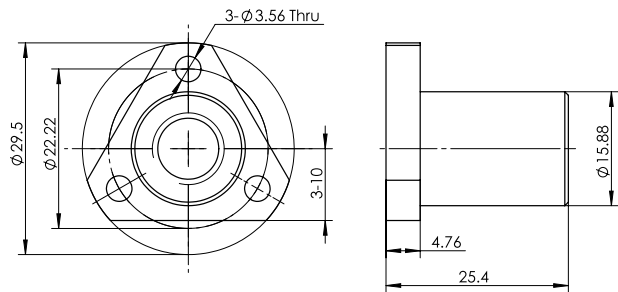
Nut Type

UNIT:mm

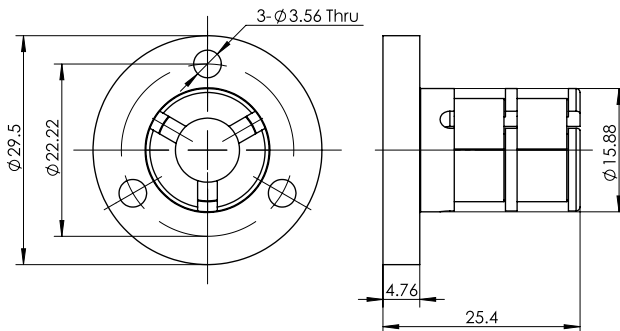
Round Standard Nut AR2



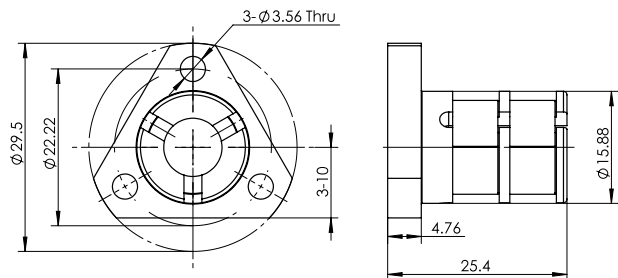
Triangular Standard Nut AT2



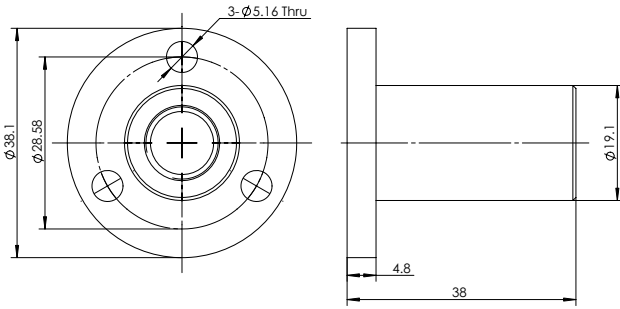
Round Anti-Backlash Nut BR2



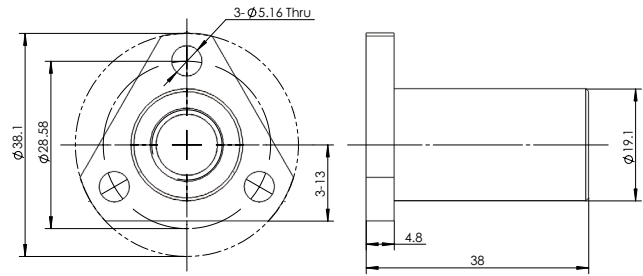
Triangular Anti-Backlash Nut BT2



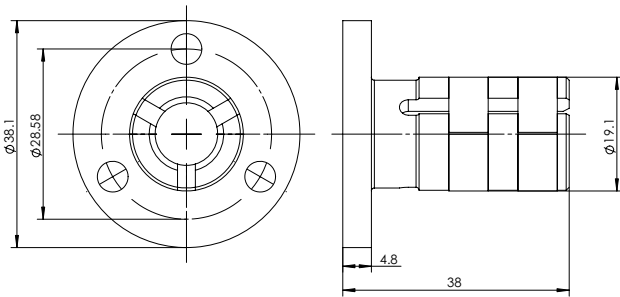
Round Standard Nut AR4



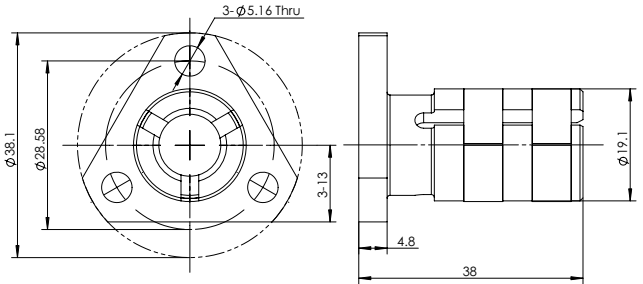
Triangular Standard Nut AT4



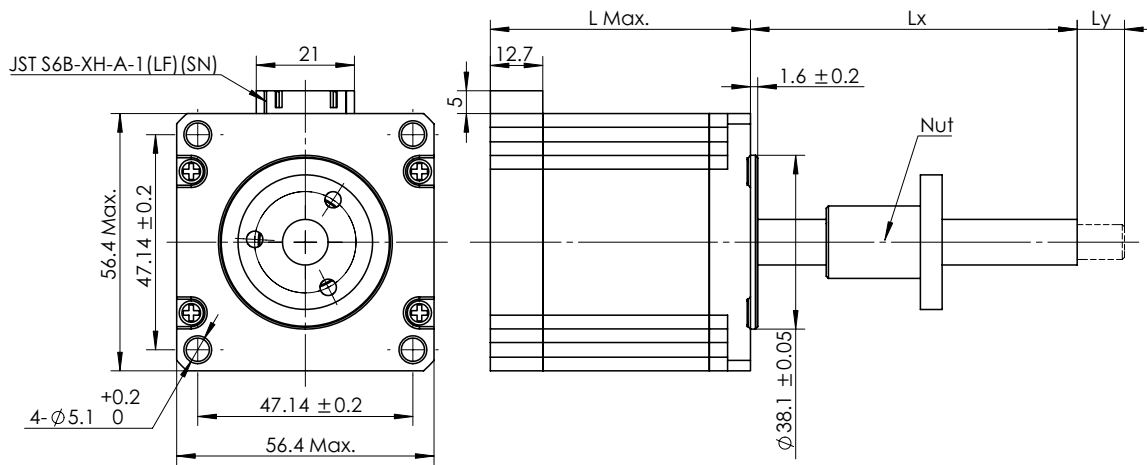
Round Anti-Backlash Nut BR4



Triangular Anti-Backlash Nut BT4

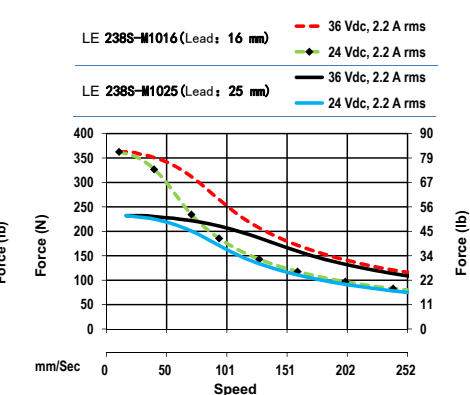
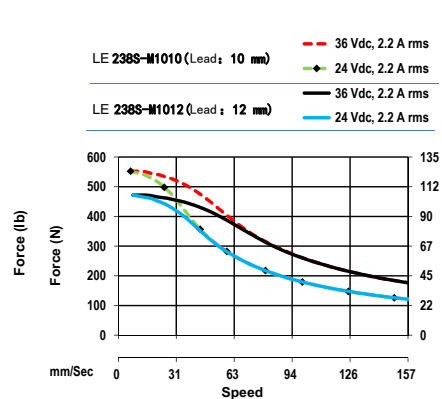
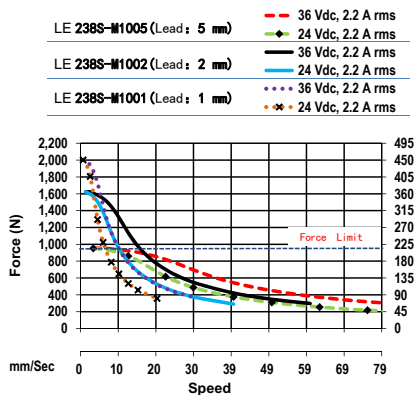
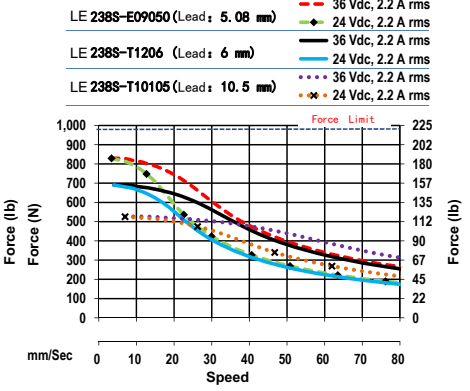
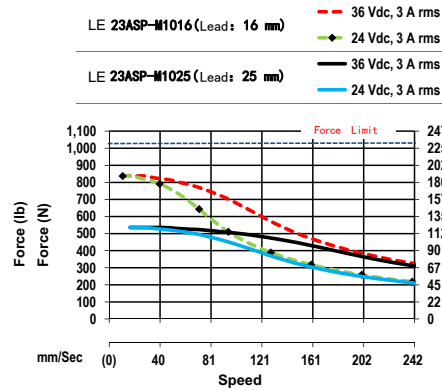
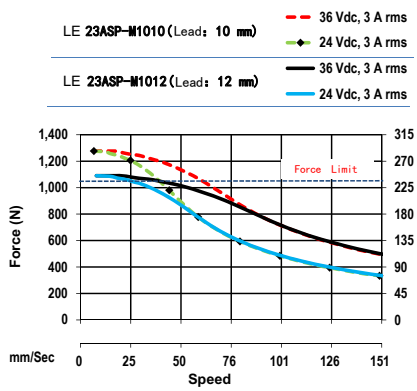
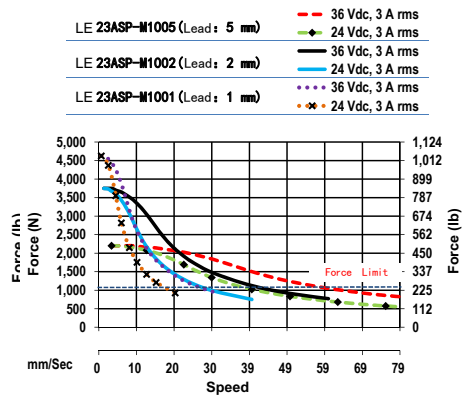
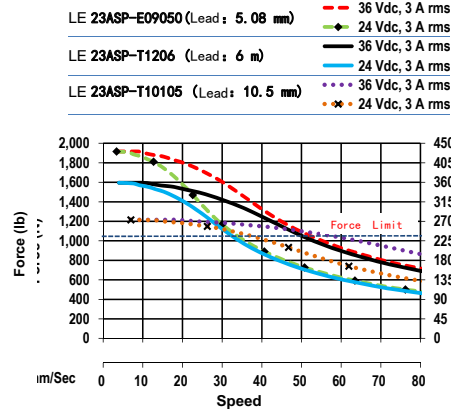
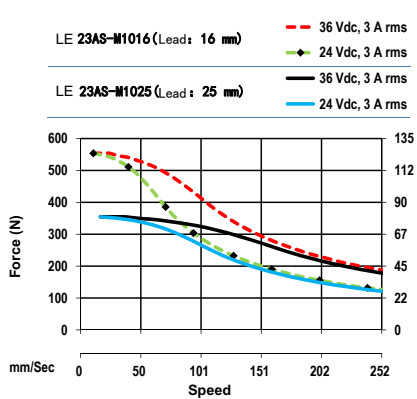
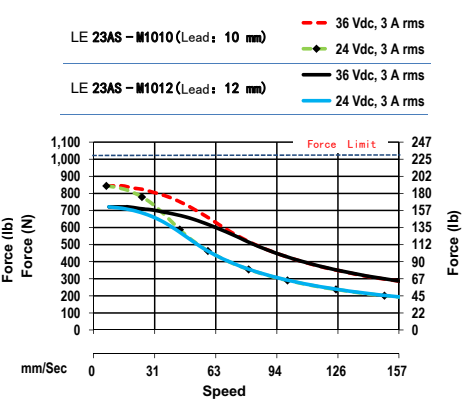
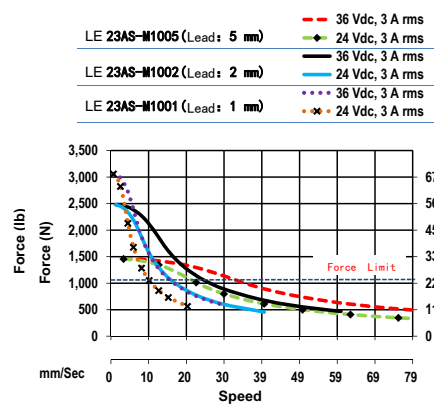
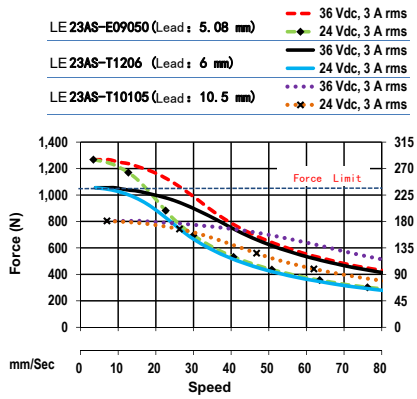


LE238S LE23AS LE23ASP Series



Motor Type	Dimension "L"	Note
LE238S	57 mm	Standard
LE23AS	79 mm	Standard
LE23ASP	79 mm	Power Plus

Force-Speed Curves



Encoder Options-Suitable for applications that require feedback

Parameter

Mating Motor	Supply Voltage (VDC)			CPR	PPR	Operating Temperature(°C)		Vibration (g) (5HZ-2KHZ)	Output	
	Min.	Typ.	Max.			Low	High			
LE08/11	4.5	5	5.5	400	1600	-20	100	20	Single-ended Electrical	Differential Electrical
LE14/17/23				1000	4000	-40	100			



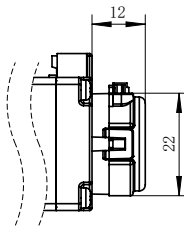
LE11 with encoder



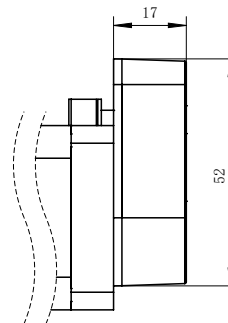
LE17 with encoder

Dimensional Information

Unit: mm



The encoder mating LE08/11

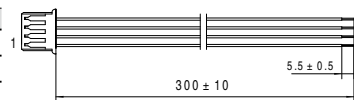


The encoder mating LE14/17/23

Mating Connector With Leads

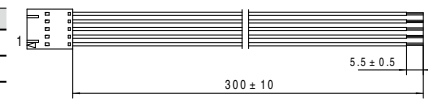
Single-ended Electrical

Pin	Function	Color
1	+5VDC Power	Black
2	A Channel	Green
3	Ground	Red
4	B Channel	Blud



For the encoder mating LE08/11

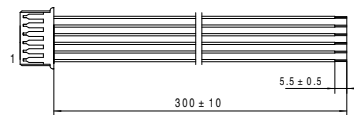
Pin	Function	Color
1	Ground	Black
2	Index	Green
3	A Channel	Red
4	+5VDC Power	Blud
5	B Channel	Yellow



For the encoder mating LE14/17/23

Differential Electrical

Pin	Function	Color
1	Ground	Black
2	A+Channel	Green
3	A- Channel	Red
4	Power	Blud
5	B+Channel	Yellow
6	B- Channel	White



For the encoder mating LE08/11

Pin	Function	Color
1	-	-
2	Ground	Black
3	I- Channel	Green
4	I+Channel	Red
5	A- Channel	Blud
6	A+Channel	Yellow
7	Power	White
8	-	-
9	B- Channel	Orange
10	B+Channel	Brown



For the encoder mating LE14/17/23

Brake Options

Parameter

Mating Motor	Supply Voltage (VDC)	Braking Torque (N·M)	Power (W)	Reaction Time (ms)	Insulation Grade
LE11/14	24	0.4	4	15	B
LE17	24	0.6	5	50	B
LE23	24	1.2	4.5	50	B

Note:
 1. All the brakes with 300mm leads.
 2. 12 VDC brake options are available, please consult our technical department for further information.



LE11 with brake



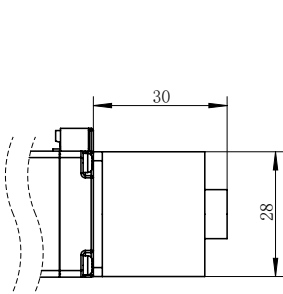
LE17 with brake



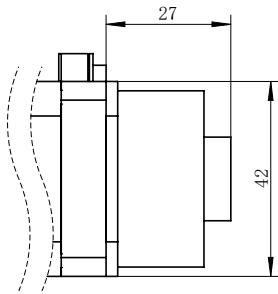
LE23 with brake

Dimensional Information

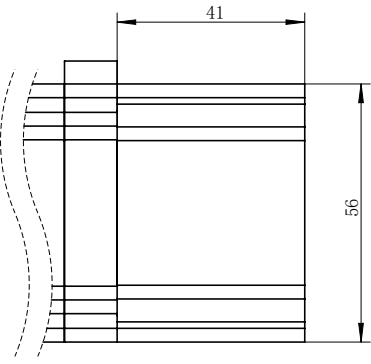
Unit: mm



The brake mating LE11/14



The brake mating LE17



The brake mating LE23

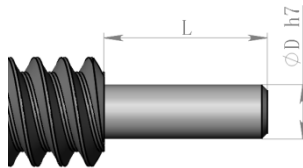
Optional Construction & Modifications

MOONS' often modifies linear actuators to meet application needs. Typical changes include:

- Leadscrews: lengths, end machining and so on.
- Nuts: basic style, materials, lengths, mounting and so on.

To help our customers design efforts, standardized leadscrew features are available.

■ Lead screw End Machining



NO.	Lead Screw Nominal Diameter (mm)	Dimension	
		D(mm)	L(mm)
1	3.505	2.5	2.5
2	4.76	2.5	2.5
3	5.54	4	5
4	6	4	5
5	6.35	4	5
6	6.5	4	5
7	8	6	6
8	9.53	6	6
9	10	6	6
10	12	8	8

Linear Slides

MOONS' Linear Slides are designed to meet the needs of customers' compact structure. These products offer many advantages such as high integration, small size, quieter operation, stable product quality and lower cost. Not only provides the best performance but also easier to use.

- Structural features of MS and CS Series: Can meet the requirements of compact space in different directions
- 3 Sizes motor options: NEMA11, NEMA14, NEMA17
- Each size of Linear Slides has a variety of lead options.
- Each size of Linear Slides has encoder & brake options.

MOONS' has committed to product innovation design and technical improvement, with excellent product quality, application technology, fast and flexible services, which provide customers with high level motion control solutions.



MS28 Series



MS35 Series



MS42 Series



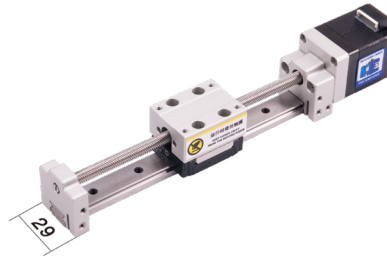
CS35 Series



CS42 Series

MS28 Series

- Integrated design, Easy installation
- Small Size, Width 29mm
- Anti-Backlash technology, High repeatability



Ordering Information

MS28 - 3D1 0 T - C AE 1 - XX - 0 - XXXX

Series Code

Code	Mating Motor
MS28	NEMA11

Motor Length Code

Code	Motor Length Max(mm)
3D1	32(LE111S)
3D2	41 (LE113S)

Additional Options Code

Code	Additional Options*
0	No additional
B	Brake
E	Encoder

Outlet Direction Code

Code	Outlet Direction**
T	Top
B	Bottom
L	Left
R	Right

Screw Type Code

Code	Screw Type
L	Standard Screw
C	PTEF Cating Screw

Special Custom Type Code

This code defines by our technical department

Sensor Options Code

Code	Sensor Quantity
0	No Sensor
1	1
2	2

Stroke (MAX:150mm)

Effective stroke(Customize), Provided in 10 mm increments

Nut Type Code

Code	Nut Type
1	Standard Nut
2	Anti-Backlash Nut

Lead code

Code	Lead (inch)	Code	Lead (mm)
ED	0.024	AH	1
EC	0.025	AG	2
EB	0.048	AE	3
AM	0.1	AX	5
EQ	0.192	AJ	10
AB	0.25	BD	12
AC	0.5		

Note:

*Additional Options: Additional Options: MOONS' provides encoders & brakes for LE11 series motors as additional options,see page 11 & page 12 for more details.

**Outlet Direction:Customer can choose the outlet direction according to the actual requirements,see the dimensional information for outlet direction definition in next page.

MS28 Series

Technical Data

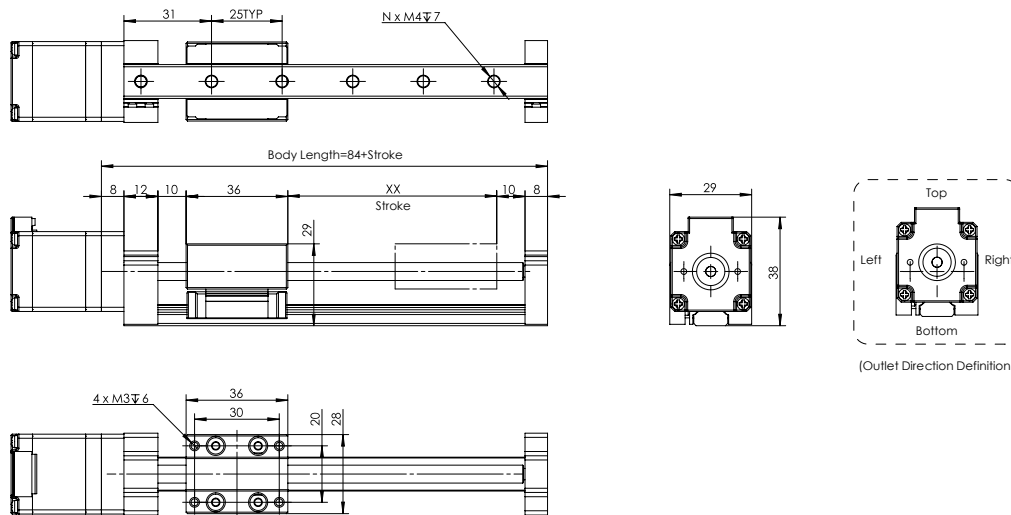
Series	Lead code	Lead	Maximum Speed (mm/s)	Maximum Load(kg) Motor: LE111S		Maximum Load(kg) Motor: LE113S	
				Horizontal	Vertical	Horizontal	Vertical
MS28	ED	0.024"	6.096	3	2	3	2
	EC	0.025"	6.35	3	2	3	2
	EB	0.048"	12.192	3	2	3	2
	AM	0.1"	25.4	3	2	3	2
	EQ	0.192"	48.768	2.4	1.6	3	2
	AB	0.25"	63.5	1.8	1.2	3	2
	AC	0.5"	127	1	0.6	1.6	1.1
	AH	1mm	10	3	2	3	2
	AG	2mm	20	3	2	3	2
	AE	3mm	30	3	2	3	2
	AX	5mm	50	2.3	1.5	3	2
	AJ	10mm	100	1.3	0.9	2.1	1.4
	BD	12mm	120	1.1	0.7	1.8	1.2

Note:

- 1.The above options are common choices, please consult our technical department for further information.
- 2.Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN).

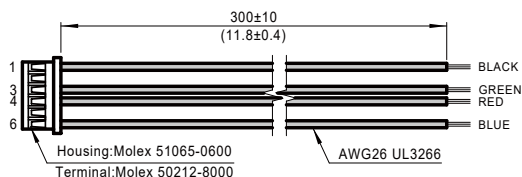
Dimensional Information

Unit: mm



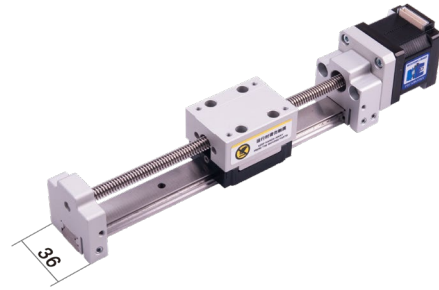
Mating Connector With Leads

4 Lead Part Number 4634 1402 04190



MS35 Series

- Integrated design, Easy installation
- Small Size, Width 36mm
- Anti-Backlash technology, High repeatability



Ordering Information

MS35 - 3C2 0 T - C AE 1 - XX - 0 - XXXX

Linear Slides

Series Code

Code	Mating Motor
MS35	NEMA14

Motor Length Code

Code	Motor Length Max(mm)
3C2	36 (LE143S)

Additional Options Code

Code	Additional Options*
0	No additiona
B	Brake
E	Encoder

Outlet Direction Code

Code	Outlet Direction**
T	Top
B	Bottom
L	Left
R	Right

Screw Type Code

Code	Screw Type
L	Standard Screw
C	PTEF Cating Screw

Special Custom Type Code

This code defines by our technical department

Sensor Options Code

Code	Sensor Quantity
0	No Sensor
1	1
2	2

Stroke (MAX:250mm)

Effective stroke(Customize), Provided in 10 mm increments

Nut Type Code

Code	Nut Type
1	Standard Nut
2	Anti-Backlash Nut

Lead code

Code	Lead (inch)	Code	Lead (mm)
ED	0.024	AH	1
EB	0.048	AG	2
EQ	0.192	AE	3
AB	0.25	AX	5
AC	0.5	AJ	10
		BD	12

Note:

*Additional Options: Additional Options: MOONS' provides encoders & brakes for LE14 series motors as additional options,see page 11 & page 12 for more details .

**Outlet Direction:Customer can choose the outlet direction according to the actual requirements,see the dimensional information for outlet direction definition in next page.

MS35 Series

Technical Data

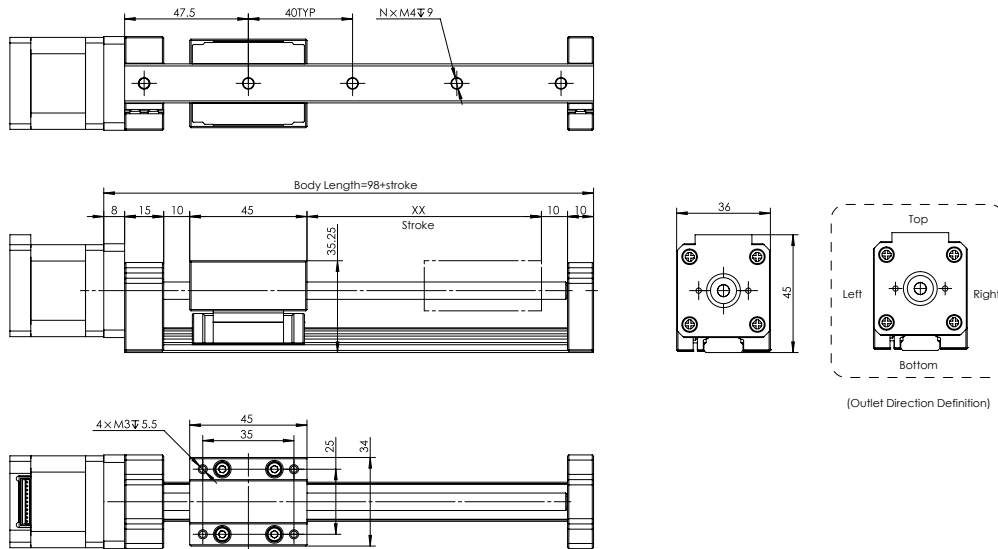
Series	Lead code	Lead	Maximum Speed (mm/s)	Maximum Load(kg) Motor: LE143S	
				Horizontal	Vertical
MS35	ED	0.024"	6.096	5	3
	EB	0.048"	12.192	5	3
	EQ	0.192"	48.768	5	3
	AB	0.25"	63.5	4.5	3
	AC	0.5"	127	2.4	1.6
	AH	1mm	10	5	3
	AG	2mm	20	5	3
	AE	3mm	30	5	3
	AX	5mm	50	5	3
	AJ	10mm	100	3.2	2.1
	BD	12mm	120	2.7	1.8

Note:

- 1.The above options are common choices, please consult our technical department for further information.
- 2.Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN).

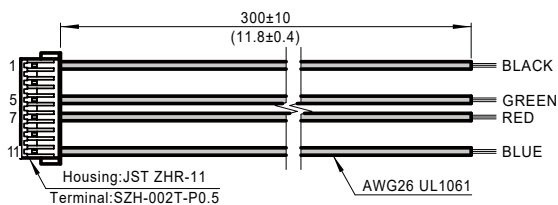
Dimensional Information

Unit: mm



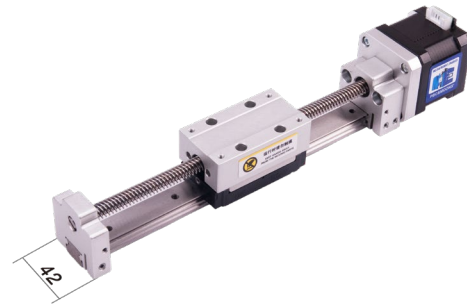
Mating Connector With Leads

4 Lead Part Number 4634 1402 04581



MS42 Series

- Integrated design, Easy installation
- Small Size, Width 42mm
- Anti-Backlash technology, High repeatability



Ordering Information

MS42 - 3A1 0 T - C AR 1 - XX - 0 - XXXX

Series Code

Code	Mating Motor
MS42	NEMA17

Motor Length Code

Code	Motor Length Max(mm)
3A1	39.8 (LE172S)
3A2	48.3 (LE176S)

Additional Options Code

Code	Additional Options*
0	No additional
B	Brake
E	Encoder

Outlet Direction Code

Code	Outlet Direction **
T	Top
B	Bottom
L	Left
R	Right

Screw Type Code

Code	Screw Type
L	Standard Screw
C	PTEF Cating Screw

Special Custom Type Code

This code defines by our technical department

Sensor Options Code

Code	Sensor Quantity
0	No Sensor
1	1
2	2

Stroke (MAX:350mm)

Effective stroke(Customize), Provided in 10 mm increments

Nut Type Code

Code	Nut Type
1	Standard Nut
2	Anti-Backlash Nut

Lead code

Code	Lead (mm)	Code	Lead (mm)
CG	1.25	AX	5
AA	5.08	BH	8
BX	10.5	AJ	10
AH	1	BD	12
AG	2	AF	16
AR	4	AW	25

Note:

*Additional Options: Additional Options: MOONS' provides encoders & brakes for LE17 series motors as additional options,see page 11 & page 12 for more details.

**Outlet Direction:Customer can choose the outlet direction according to the actual requirements,see the dimensional information for outlet direction definition in next page.

MS42 Series

Technical Data

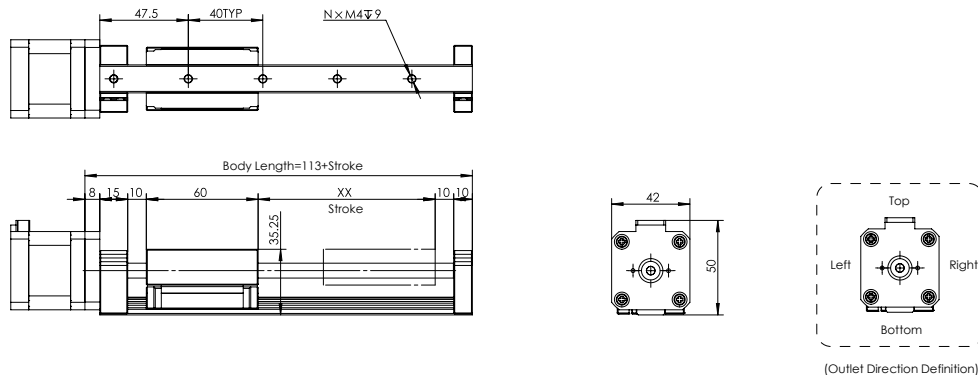
Series	Lead code	Lead	Maximum Speed (mm/s)	Maximum Load(kg) Motor: LE172S		Maximum Load(kg) Motor: LE176S	
				Horizontal	Vertical	Horizontal	Vertical
MS42	CG	1.25mm	12.5	5	3	5	3
	AA	5.08mm	50.8	5	3	5	3
	BX	10.5mm	105	5	3	5	3
	AH	1mm	10	5	3	5	3
	AG	2mm	20	5	3	5	3
	AR	4mm	40	5	3	5	3
	AX	5mm	50	5	3	5	3
	BH	8mm	80	5	3	5	3
	AJ	10mm	100	5	3	5	3
	BD	12mm	120	5	3	5	3
	AF	16mm	160	3.8	2.5	4.8	3
	AW	25mm	250	2.4	1.6	3.1	2

Note:

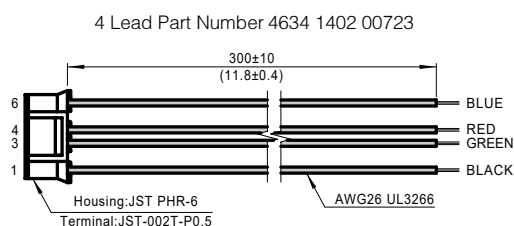
- 1.The above options are common choices, please consult our technical department for further information.
- 2.Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN).

Dimensional Information

Unit: mm

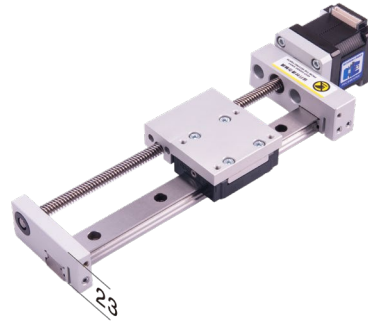


Mating Connector With Leads



CS35 Series

- Integrated design, Easy installation
- Small Size, Height 23mm
- Anti-Backlash technology, High repeatability



Ordering Information

CS35 - 3C2 0 T - C AE 1 - XX - 0 - XXXX

Series Code

Code	Mating Motor
CS35	NEMA14

Motor Length Code

Code	Motor Length Max(mm)
3C2	36 (LE143S)

Additional Options Code

Code	Additional Options*
0	No additional
B	Brake
E	Encoder

Outlet Direction Code

Code	Outlet Direction**
T	Top
B	Bottom
L	Left
R	Right

Screw Type Code

Code	Screw Type
L	Standard Screw
C	PTEF Cating Screw

Special Custom Type Code

This code defines by our technical department

Sensor Options Code

Code	Sensor Quantity
0	No Sensor
1	1
2	2

Stroke (MAX:250mm)

Effective stroke(Customize), Provided in 10 mm increments

Nut Type Code

Code	Nut Type
1	Standard Nut
2	Anti-Backlash Nut

Lead code

Code	Lead (inch)	Code	Lead (mm)
ED	0.024	AH	1
EB	0.048	AG	2
EQ	0.192	AE	3
AB	0.25	AX	5
AC	0.5	AJ	10
		BD	12

Note:

*Additional Options: Additional Options: MOONS' provides encoders & brakes for LE14 series motors as additional options,see page 11 & page 12 for more details .

**Outlet Direction:Customer can choose the outlet direction according to the actual requirements,see the dimensional information for outlet direction definition in next page.

CS35 Series

Technical Data

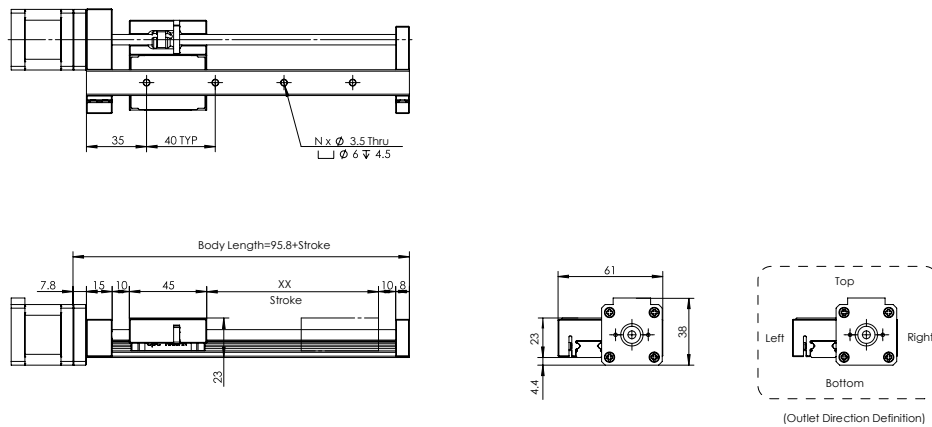
Series	Lead code	Lead	Maximum Speed (mm/s)	Maximum Load(kg) Motor: LE143S	
				Horizontal	Vertical
CS35	ED	0.024"	6.096	5	3
	EB	0.048"	12.192	5	3
	EQ	0.192"	48.768	5	3
	AB	0.25"	63.5	4.5	3
	AC	0.5"	127	2.4	1.6
	AH	1mm	10	5	3
	AG	2mm	20	5	3
	AE	3mm	30	5	3
	AX	5mm	50	5	3
	AJ	10mm	100	3.2	2.1
	BD	12mm	120	2.7	1.8

Note:

- 1.The above options are common choices, please consult our technical department for further information.
- 2.Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN).

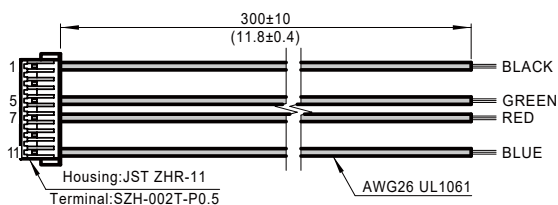
Dimensional Information

Unit: mm



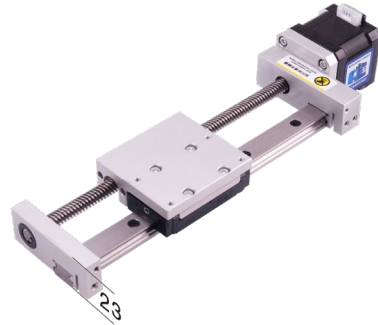
Mating Connector With Leads

4 Lead Part Number 4634 1402 04581



CS42 Series

- Integrated design, Easy installation
- Small Size, Height 23mm
- Anti-Backlash technology, High repeatability



Ordering Information

CS42 - 3A1 0 T - C AR 1 - XX - 0 - XXXX

Series Code

Code	Mating Motor
CS42	NEMA17

Motor Length Code

Code	Motor Length Max(mm)
3A1	39.8 (LE172S)
3A2	48.3 (LE176S)

Additional Options Code

Code	Additional Options*
0	No additional
B	Brake
E	Encoder

Outlet Direction Code

Code	Outlet Direction **
T	Top
B	Bottom
L	Left
R	Right

Screw Type Code

Code	Screw Type
L	Standard Screw
C	PTEF Cating Screw

Special Custom Type Code

This code defines by our technical department

Sensor Options Code

Code	Sensor Quantity
0	No Sensor
1	1
2	2

Stroke (MAX:350mm)

Effective stroke(Customize), Provided in 10 mm increments

Nut Type Code

Code	Nut Type
1	Standard Nut
2	Anti-Backlash Nut

Lead code

Code	Lead (mm)	Code	Lead (mm)
CG	1.25	AX	5
AA	5.08	BH	8
BX	10.5	AJ	10
AH	1	BD	12
AG	2	AF	16
AR	4	AW	25

Note:

*Additional Options: Additional Options: MOONS' provides encoders & brakes for LE17 series motors as additional options,see page 11 & page 12 for more details.

**Outlet Direction:Customer can choose the outlet direction according to the actual requirements,see the dimensional information for outlet direction definition in next page.

CS42 Series

Technical Data

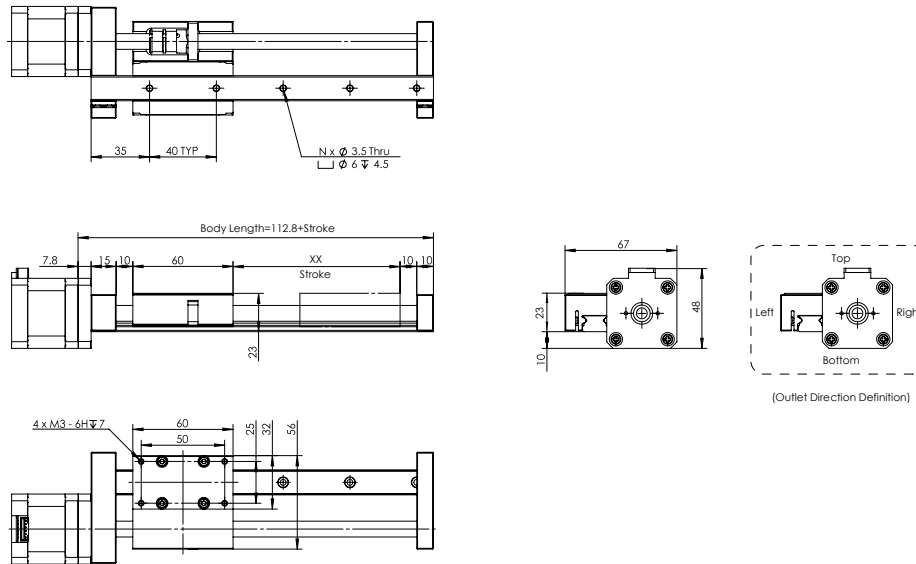
Series	Lead code	Lead	Maximum Speed (mm/s)	Maximum Load(kg) Motor: LE172S		Maximum Load(kg) Motor: LE176S	
				Horizontal	Vertical	Horizontal	Vertical
CS42	CG	1.25mm	12.5	5	3	5	3
	AA	5.08mm	50.8	5	3	5	3
	BX	10.5mm	105	5	3	5	3
	AH	1mm	10	5	3	5	3
	AG	2mm	20	5	3	5	3
	AR	4mm	40	5	3	5	3
	AX	5mm	50	5	3	5	3
	BH	8mm	80	5	3	5	3
	AJ	10mm	100	5	3	5	3
	BD	12mm	120	5	3	5	3
	AF	16mm	160	3.8	2.5	4.8	3
	AW	25mm	250	2.4	1.6	3.1	2

Note:

- 1.The above options are common choices, please consult our technical department for further information.
- 2.Recommended Driver, DC Input: SR2-Plus; DC Input Controller Type: ST5-S/Q/C-AN(RN).

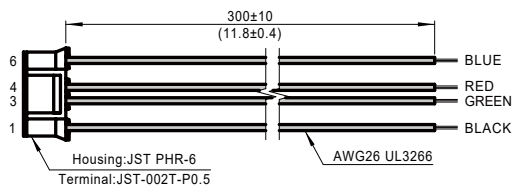
Dimensional Information

Unit: mm



Mating Connector With Leads

4 Lead Part Number 4634 1402 00723



DC Input Stepper Drive-SR Series

SR Series Drives

The SR series are compact, powerful, digital stepper drives feature advanced microstepping performance and sophisticated current control. All drive setup is done via dip or rotary switches.

- Advanced Current Control
- Anti-Resonance
- Torque Ripple Smoothing
- Microstep Emulation
- Self Test

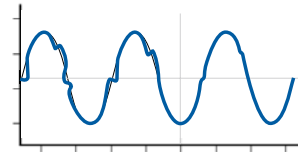


■ Features

Anti-Resonance

Step motor systems have a natural tendency to resonate at certain speeds. The SR drives automatically calculate the system's natural frequency and apply damping to the control algorithm. This greatly improves midrange stability, allows higher speeds and greater torque utilization, and also improves settling times.

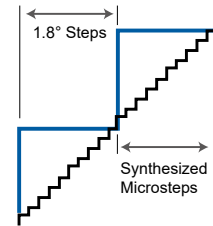
Provides better motor performance and higher speeds



Microstep Emulation

With Microstep Emulation, low resolution systems can still provide smooth motion. The drive can take low resolution step pulses and create fine resolution motion.

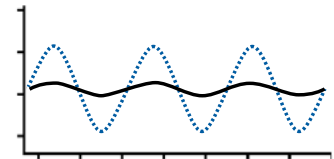
Delivers smoother motion in any application



Torque Ripple Smoothing

All step motors have an inherent low speed torque ripple that can affect the motion profile of the motor. By analyzing this torque ripple the system can apply a negative harmonic to counter this effect. This gives the motor much smoother motion at low speed.

Produces smoother motion at low speeds



Command Signal Smoothing

Command Signal smoothing can soften the effect of immediate changes in velocity and direction, making the motion of the motor less jerky. An added advantage is that it can reduce the wear on mechanical components.

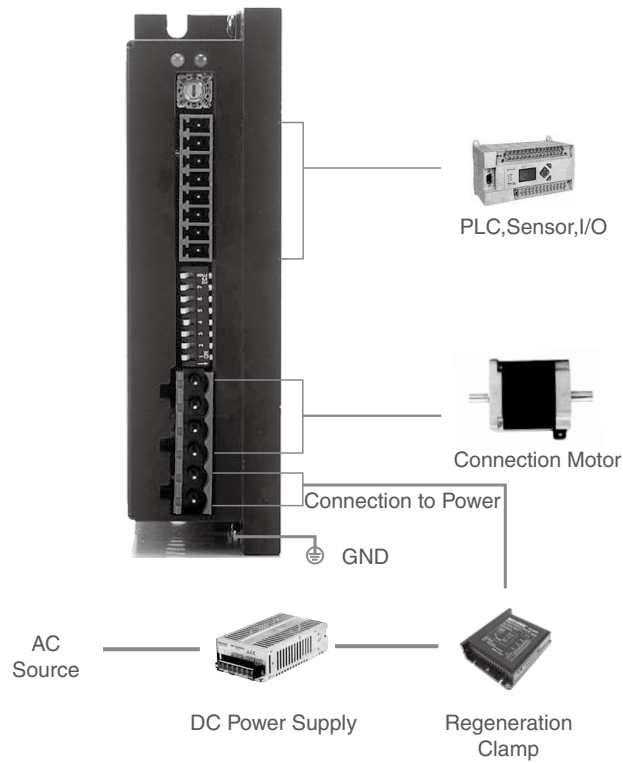
Improves overall system performance



Auto Setup & Self Test

At start-up the drive measures motor parameters, including the resistance and inductance, then uses this information to optimize system performance. The drive can also detect open and short circuits.

■ System Configuration



■ Numbering System

SR	2	-	PLUS
Series	Max.Current 2=2.2A Max. 3=3.0A Max. 4=4.5A Max. 8=7.8A Max.		Blank=Standard Plus=Enhanced Mini=Compact

■ Ordering Information

Model	Current	Voltage	Microstep Selection	Current Selection
SR2-Plus	0.3-2.2A	12-48VDC	16	8
SR3-mini	0.4-3.0A	12-48VDC	16	8
SR4-Plus	1.0-4.5A	24-48VDC	16	8
SR8-Plus	2.4-7.8A	24-75VDC	16	8

■ Drive Specifications

Specification	
Speed Range	Up to 3000RPM
Operating Temperature	0 - 40C°
Ambient Humidity	90% or less(non-condensing)
Vibration Resistance	5.9m/s ² maximum
Storage Temperature	-10 - 70C°
Heat Sinking Method	Natural cooling or fan-forced cooling
Atmosphere	Avoid dust, oily mist and corrosive air
Mass	SR2-Plus/SR3-mini: Approx. 120g
	SR4/8-Plus: Approx. 310g
Certification	RoHS , CE (EMC): EN 61800-3:2004
Features	
Idle Current	Automatic idle current reduction to reduce heat after motor stops moving for 1 second Dip switch selectable 50% or 90%
Anti-Resonance	Raises the system-damping ratio to eliminate midrange instability and allow stable operation throughout the speed range of the motor, dip switch selectable load inertia
Control Mode	Pulse input control Step&Dir
Inupt Signal Filter	Digital filters prevent position error from electrical noise on command signals, Dip switch selectable 2MHz or 150KHz
Microstep Emulation	Switch selectable microstep emulation provides smoother, more reliable motion
Motor Database	Rotary switch easily selects from many popular motors
Self Test	Switch selectable automatic self test, while self test, drive will rotate the motor back and forth, two turns in each direction
Fault output	Optically isolated,30VDC max, 100mA max

■ Electrical Specifications

SR2-Plus

Parameter	Min.	Typical	Max.	UNIT
Power Supply	12	-	42	VDC
Output Current (Peak)	0.3	-	2.2	Amps
Cost current of digital input signal	6	10	15	mA
Step Frequency	2	-	2M	Hz
STEP minimum pulse width	250	-	-	ns
DIR minimum pulse width	80	-	-	us
Under Voltage Protection	-	10	-	VDC
Over Voltage Protection	-	52	-	VDC
Input Signal Voltage	4	-	28	VDC
Initialization time	-	-	2.5	S
OUT maximum output current	-	-	100	mA
OUT maximum voltage	-	-	30	VDC

SR4-Plus

Parameter	Min.	Typical	Max.	UNIT
Power Supply	24	-	48	VDC
Output Current (Peak)	1	-	4.5	Amps
Cost current of digital input signal	6	10	15	mA
Step Frequency	2	-	2M	Hz
STEP minimum pulse width	250	-	-	ns
DIR minimum pulse width	80	-	-	us
Under Voltage Protection	-	20	-	VDC
Over Voltage Protection	-	60	-	VDC
Input Signal Voltage	4	-	28	VDC
Initialization time	-	-	2.5	S
OUT maximum output current	-	-	100	mA
OUT maximum voltage	-	-	30	VDC

SR3-mini

Parameter	Min.	Typical	Max.	UNIT
Power Supply	12	-	48	VDC
Output Current (Peak)	0.4	-	3	Amps
Cost current of digital input signal	6	10	15	mA
Step Frequency	2	-	500K	Hz
STEP minimum pulse width	1000	-	-	ns
DIR minimum pulse width	80	-	-	us
Under Voltage Protection	-	10	-	VDC
Over Voltage Protection	-	53	-	VDC
Input Signal Voltage	4	-	28	VDC
Initialization time	-	-	2.5	S

SR8-Plus

Parameter	Min.	Typical	Max.	UNIT
Power Supply	24	-	75	VDC
Output Current (Peak)	2.4	-	7.8	Amps
Cost current of digital input signal	6	10	15	mA
Step Frequency	2	-	2M	Hz
STEP minimum pulse width	250	-	-	ns
DIR minimum pulse width	80	-	-	us
Under Voltage Protection	-	20	-	VDC
Over Voltage Protection	-	85	-	VDC
Input Signal Voltage	4	-	28	VDC
Initialization time	-	-	2.5	S
OUT maximum output current	-	-	100	mA
OUT maximum voltage	-	-	30	VDC

DC Input Controller Type Stepper Drive-ST Series

ST Series

The ST series are compact digital stepper drives with multiple control options and many sophisticated features. Step motors run smoother and faster than ever with features of advanced current control.

With multiple control options, ST series support stand-alone programming and various bus control as RS-232/485, Ethernet UDP/TCP, CANopen and Ethernet/IP.

The ST series also has optional encoder feedback with close loop for improved system performance and reliability.

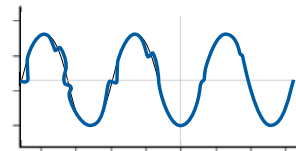


- **Advanced Current Control**
- **Anti-Resonance**
- **Torque Ripple Smoothing**
- **Microstep Emulation**
- **Stall Detection and Stall Prevention**

■ Features

Anti-Resonance

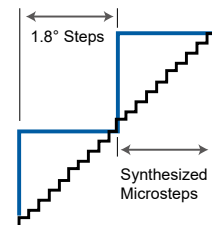
Step motor systems have a natural tendency to resonate at certain speeds. The MSST drives automatically calculate the system's natural frequency and apply damping to the control algorithm. This greatly improves midrange stability, allows higher speeds and greater torque utilization, and also improves settling times.



Provides better motor performance and higher speeds

Microstep Emulation

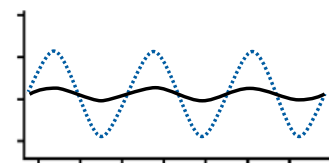
With Microstep Emulation, low resolution systems can still provide smooth motion. The drive can take low resolution step pulses and create fine resolution motion.



Delivers smoother motion in any application

Torque Ripple Smoothing

All step motors have an inherent low speed torque ripple that can affect the motion profile of the motor. By analyzing this torque ripple the system can apply a negative harmonic to counter this effect. This gives the motor much smoother motion at low speed.



Produces smoother motion at low speeds

Command Signal Smoothing

Command Signal smoothing can soften the effect of immediate changes in velocity and direction, making the motion of the motor less jerky. An added advantage is that it can reduce the wear on mechanical components.



Improves overall system performance

Stall detection & Stall prevention (only available on drives with encoder option)

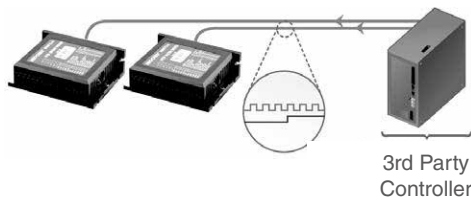
The optional encoder detects the rotor's position to provide Stall Detection and Stall Prevention functions.

Auto Setup & Self Test

At start-up the drive measures motor parameters, including the resistance and inductance, then uses this information to optimize the system performance. The drive can also detect open and short circuits.

■ Which model is right for your application?

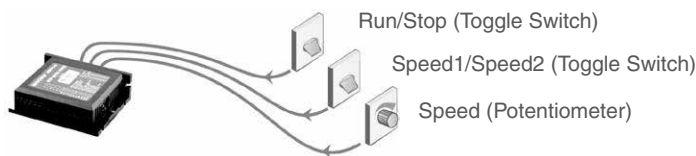
Step & Direction



S

- Step & Direction
- CW & CCW pulse
- Master Encoder

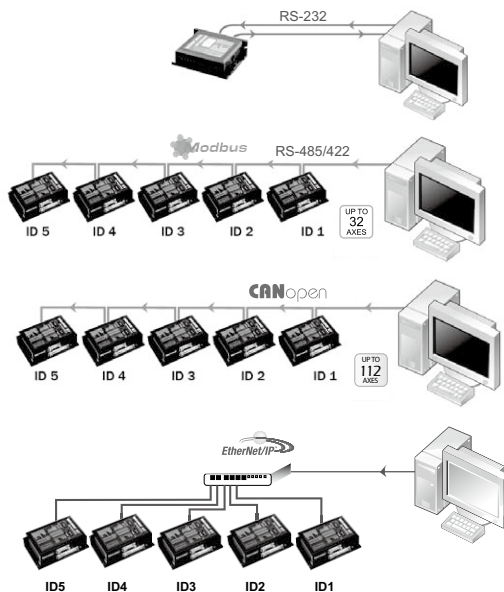
Oscillator / Run-Stop



S

- Software Configuration
- Two Speeds
- Vary speed with analog input
- Joystick compatible

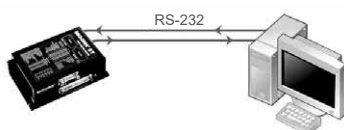
Host Control



S Q
C IP

- Accepts commands from host PC or PLC
- Multi-axis capable
- Real time control

Stand Alone Programmable



Q

- Accepts commands from host PC or PLC
- Multi-axis capable
- Real time control

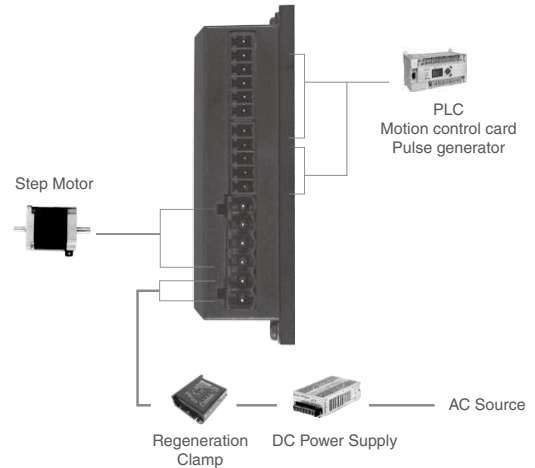
■ ST Lineup Control Modes

-S Pulse Input Control

Controlled via pulse generator.

Main Features

- Accepts three types of pulse signal input as Pulse&Direction, CW/CCW and A/B Quadrature

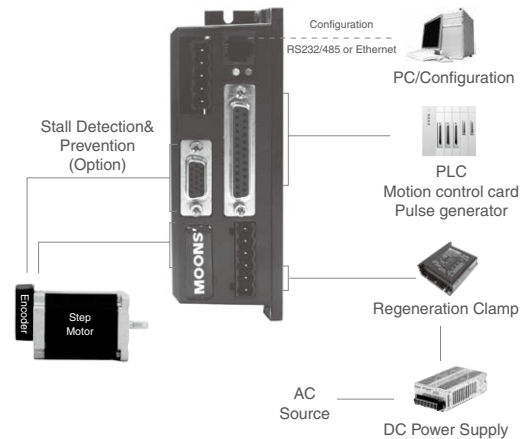


-Q Built-in programmable motion controller (Includes Modbus/RTU Type)

Run stand-alone with sophisticated and functional programs. Commands for controlling motion, inputs & outputs, drive configuration and status, as well as math operations, register manipulation, and multi-tasking.

Main Features

- Stand-alone operation plus Serial host control
- Math operations
- Register manipulation
- Multi-tasking
- With all features in S type

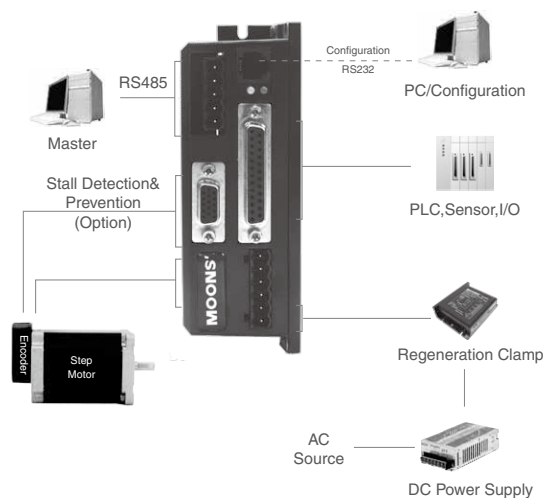


-S/Q Basic type with RS-232/RS-485 communication

Controlled via pulse signals, analog signal or MOONS' SCL streaming series commands.

Main Features

- Pulse control
- Analog control
- Host real time control using SCL via RS-232/RS-485
- Up to 32 axes per channel for RS-485

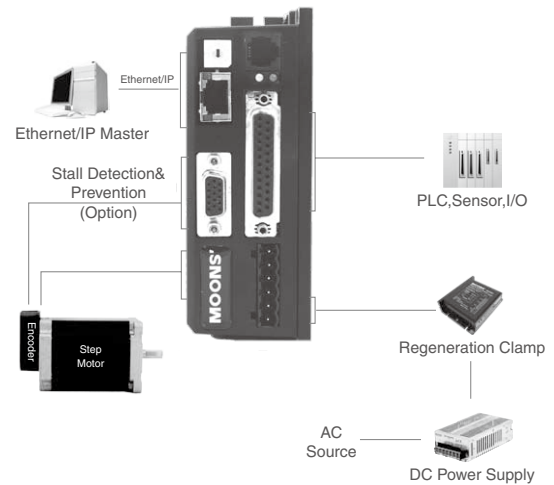


-Q With Ethernet communication

Run stand-alone with sophisticated and functional programs, controlled via MOONS' SCL streaming commands.

Main Features

- Stand-alone operation
- Host real time control using SCL via Ethernet UDP/TCP

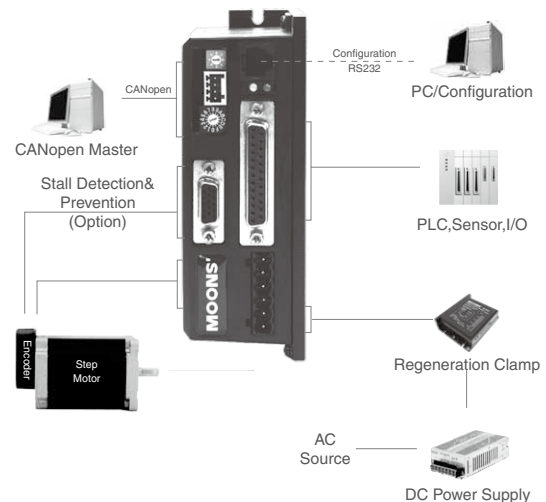


-C With CANopen communication

Operates on a CANopen communication network and conforms to CiA301 and CiA402. It supports running stored Q programs via MOONS'-specific CANopen objects.

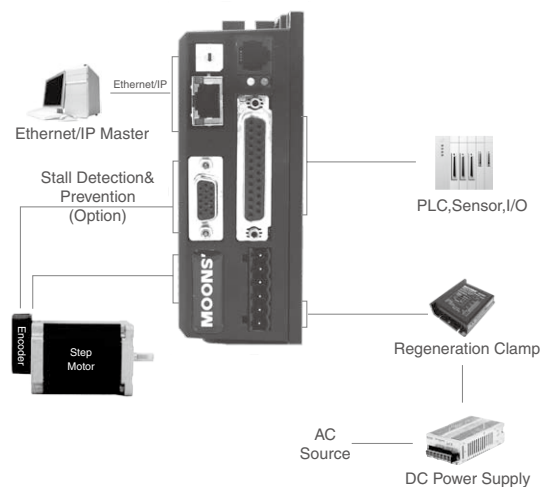
Main Features

- CANopen network
- Up to 112 axes per channel
- Objects for Q programming



-IP With EtherNet/IP communication

Communicate with PLCs and other industrial devices supporting the Ethernet/IP standard. They can also be commanded to execute stored Q programs.



■ Numbering System

MSST 5 - Q - A E

Series	Feedback(Blank in S type)
Output Current	N = None
5 = 5A Peak	E = Encoder
10 = 10A Peak	Communication(Blank in S type)
Control Mode	A = RS-232
S = Basic Type	C = CANopen
Q = Q Program Type(Modbus/RTU)	E = Ethernet
C = CANopen	R = RS-485
IP = EtherNet/IP	

■ Ordering Information

Model	Control	Current	Voltage	Encoder	RS-232	RS-485	Modbus/RTU	CANopen	Ethernet	EtherNet/IP
MSST5-S	S	0.1-5A	24-48VDC		✓					
MSST10-S		0.1-10A	24-75VDC		✓					
MSST5-Q-AN	Q	0.1-5A	24-48VDC		✓					
MSST5-Q-AE				✓	✓	✓	✓			
MSST5-Q-RN					✓	✓	✓			
MSST5-Q-RE				✓	✓					
MSST5-Q-EN									✓	
MSST5-Q-EE				✓					✓	
MSST10-Q-AN		0.1-10A	24-75VDC		✓					
MSST10-Q-AE				✓	✓					
MSST10-Q-RN					✓	✓	✓			
MSST10-Q-RE				✓	✓	✓	✓			
MSST10-Q-EN									✓	
MSST10-Q-EE				✓					✓	
MSST5-C-CN	C	0.1-5A	24-48VDC		✓			✓		
MSST5-C-CE				✓	✓			✓		
MSST10-C-CN		0.1-10A	24-75VDC		✓			✓		
MSST10-C-CE				✓	✓			✓		
MSST5-IP-EN	IP	0.1-5A	24-48VDC						✓	✓
MSST5-IP-EE				✓					✓	✓
MSST10-IP-EN		0.1-10A	24-75VDC						✓	✓
MSST10-IP-EE				✓					✓	✓

■ Drive Specifications

Amplifier Type	Dual H-Bridge, 4 Quadrant
Current Control	4 state PWM at 16 KHz
Protection	Over-voltage, under-voltage, over-temp, internal motor shorts (phase-to-phase, phase-to-ground)
Idle Current	Automatic idle current reduction to reduce heat after motor stops moving, software selectable current and idle delay
Microstep Resolution	Software selectable from 200 to 51200 steps/rev in increments of 2 steps/rev
Microstep Emulation	Performs high resolution stepping by synthesizing fine microsteps from coarse steps. Reduces jerk and extraneous system resonances.
Anti-Resonance	Raises the system damping ratio to eliminate midrange instability and allow stable operation throughout the speed range and improves settling time
Torque Ripple Smoothing	Allows for fine adjustment of phase current waveform harmonic content to reduce low-speed torque ripple in the range of 0.25 to 1.5 rps
Encoder Feedback	Optional encoder feedback for stall detection and stall prevention
Non-Volatile Storage	Configurations are saved in FLASH memory on-board the DSP
Approvals	RoHS, CE
Humidity	90% non-condensing
Ambient Temperature	0 - 40°C when mounted to a suitable heat sink
Mass	-S: Approx. 0.2Kg, -Q/C/IP: Approx. 0.3Kg

■ I/O Specifications

-S	STEP, DIR inputs: Optically isolated, differential, 5 VDC, minimum pulse width = 250 ns, maximum pulse frequency = 2 MHz EN input: Optically isolated, 5-12 VDC OUT output: Optically isolated, 24 VDC max, 10 mA max AIN analog input: Range = 0-5 VDC, resolution = 12 bits
-Q/C/IP	X1, X2 inputs: Optically isolated, differential, 5 VDC, minimum pulse width = 250 ns, maximum pulse frequency = 2 MHz X3-X6 inputs: Optically isolated, single-ended, shared common, sinking or sourcing, 12-24 VDC X7, X8 inputs: Optically isolated, differential, 12-24 VDC Y1-Y3 outputs: Optical darlington, single-ended, shared common, sinking, 30 VDC max, 100 mA max Y4 output: Optical darlington, sinking or sourcing, 30 VDC max, 100 mA max Analog inputs IN1, IN2: Can be used as two single-ended inputs or one differential input. Range =software selectable 0-5, +/-5, 0-10, or +/-10 VDC. Software configurable offset, deadband, and filtering. Resolution = 12 bits (+/-10 volt range), 11 bits (+/-5 or 0-10 volt range), or 10 bits (0-5 volt range).

How To Get Samples Quickly

If you require a specific configuration, and wish for our engineering department to provide samples that meet your critical parameters, please fill out the application data sheet below and sent to MOONS'.

(E-mail : info@moons.com.cn)

Application info. of Linear Step Motors & Linear Slides

Customer Info.

Customer: _____ Contact Info.: _____

Project No.: _____ Telephone: _____

Project Info.

Products Category : ☐ Linear Step Motors ☐ Linear Slides ☐ Stepper Drive

Background: ☐ New Design ,Competitor: _____ ☐ Substitution Project ,Current State: _____

Quantity of samples: _____ EAU: _____ Pain: _____

Expected Delivery Time: _____ Target Price: _____ USD/EA

Design Info.

Installation: ☐ Horizontal ☐ Vertical

Driving Condition: Voltage : _____ V Current : _____ A

Thrust Force: _____ N Working Speed: _____ mm/s

Stroke: _____ mm Repeatability: $\pm$ _____ mm

Working Frequency: _____ cycles per hour, _____ hours per day.

Additional Options : ☐ Add Encoder ☐ Add Brake ☐ No additional

Environment : ☐ Indoor(Normal) ☐ Indoor(Dust-free) ☐ Medium or Heavy Dust ☐ Sticky Substance

☐ High Humidity ☐ Salt Spray ☐ High Temp. _____ °C ☐ Low Temp. _____ °C

☐ Vacuum ☐ Others: _____

Industry

☐ Factory Automation ☐ Biochemical Analysis ☐ Medical Science ☐ 3D Printer ☐ Automatic Vending

☐ Semiconductor Mfg. ☐ Lithium Battery Mfg. ☐ Photovoltaic Mfg. ☐ Electron Mfg. ☐ Measuring Instrument

☐ Coordinate Robot ☐ Packaging Equipment ☐ Others: _____

Application Description

(Please describe your application so we can ensure the best possible solution.)

Worldwide Service Map



MOONS' Business Philosophies

• Customer satisfaction

MOONS' aims to enhance customer satisfaction through the provision development of innovative solutions, manufacture of high quality products, on-time delivery and outstanding customer support.

• Employee satisfaction

MOONS' values and respects our employees' input and encourages them to grow together with the company. We have been working to develop tools and trainings to build a thriving culture of excellence internally to support the future growth of our employees and the company.

• Partnership

MOONS' strongly believes in a true integrated partnership between all partners in business including customers, distributors and all these in supply chain. As a result of this philosophy, we endeavor to provide the best value contribution to all partners, which can help our partners improve their competitiveness to achieve the win-win situation.

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MOONS'
moving in better ways

- All specifications and technical parameters of the products provided in this catalog are for reference only, and are subject to change without notice. For details, please contact our sales team.