AC Servo Motor | Motorless Type

Electric Actuator
Rod Type

CE RoHS

- **Max. force: 12000 N, Work load: 1200 kg, Max. stroke: 1000 mm**
- **Can be mounted in accordance with ISO 15552**
- **Modify the force/speed specifications**
  (Change specifications by changing or removing the reducer)
- **Motorless type**
- **An auto switch can be mounted**

Motorless Type

Can be used with your current motor and driver!

Manufacturers of compatible motors: 7 companies

- Mitsubishi Electric Corporation
- YASKAWA Electric Corporation
- SANYO DENKI CO., LTD.
- NIDEC SANKYO CORPORATION
- KEYENCE CORPORATION
- FUJI ELECTRIC CO., LTD.
- Delta Electronics, Inc.

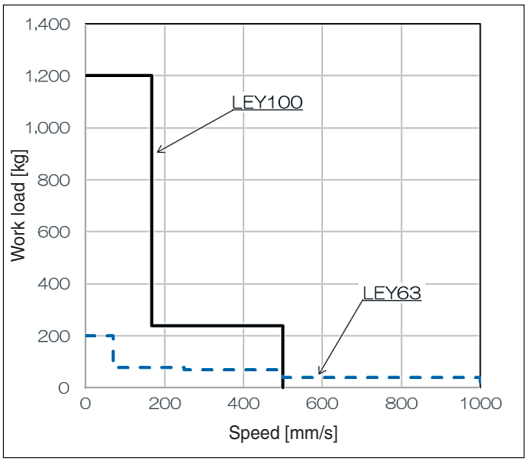
LEY100 Series

SMC

P-EU21-3-UK

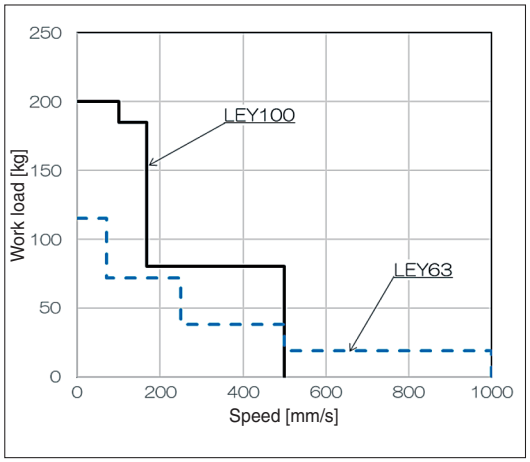
Work load

Max. work load (Horizontal)
LEY100DT9L (Lead 2) **1200 kg (6 times)**



Compared with the existing model LEY63□L
(Max. horizontal work load 200 kg)

Max. work load (Vertical)
LEY100DT9L (Lead 2) **200 kg (1.7 times)**



Compared with the existing model LEY63□L
(Max. vertical work load 115 kg)

Max. force

LEY100DT9L (Lead 2) **12000 N (3.5 times)**
Compared with the existing model LEY63□L (Max. 3343 N)

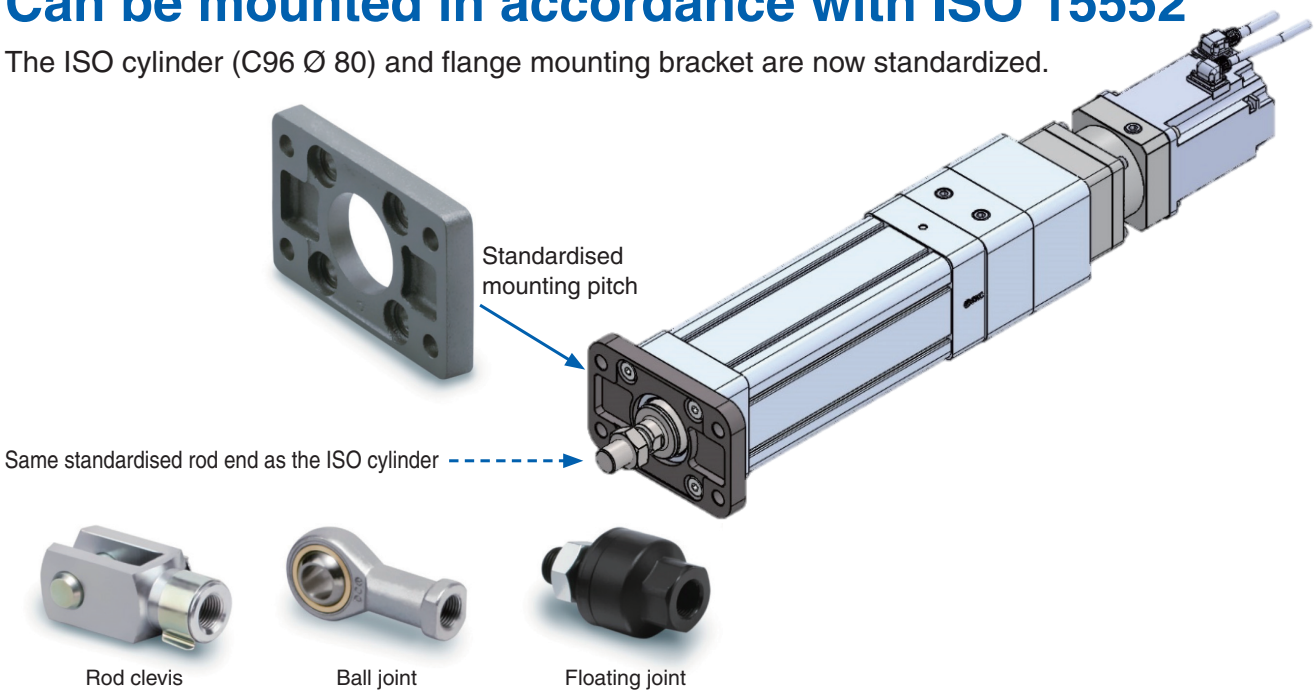
Applicable stroke

LEY100D **100 to 1000 mm (1.2 times)**
Compared with the existing model LEY63□ (Stroke 100 to 800 mm)

AC Servo Motor Rod Type Series Variations

Can be mounted in accordance with ISO 15552

The ISO cylinder (C96 Ø 80) and flange mounting bracket are now standardized.

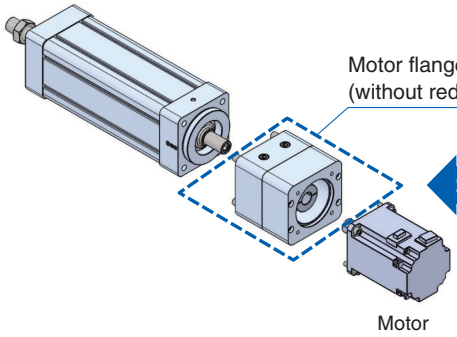


Rod clevis | Ball joint | Floating joint

Modify the force/speed specifications

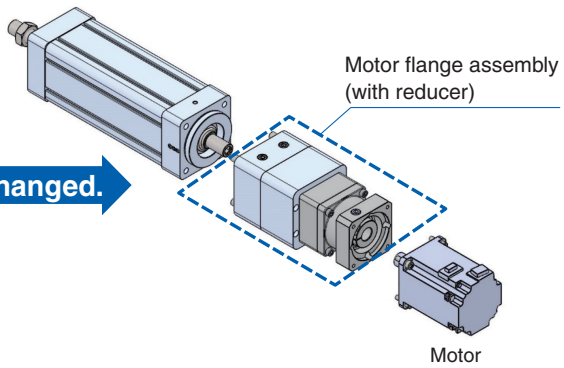
The max. force and max. speed settings can be changed by changing the reducer.

Max. force 2600 N **Max. speed 500 mm/s**



Specifications can be changed.

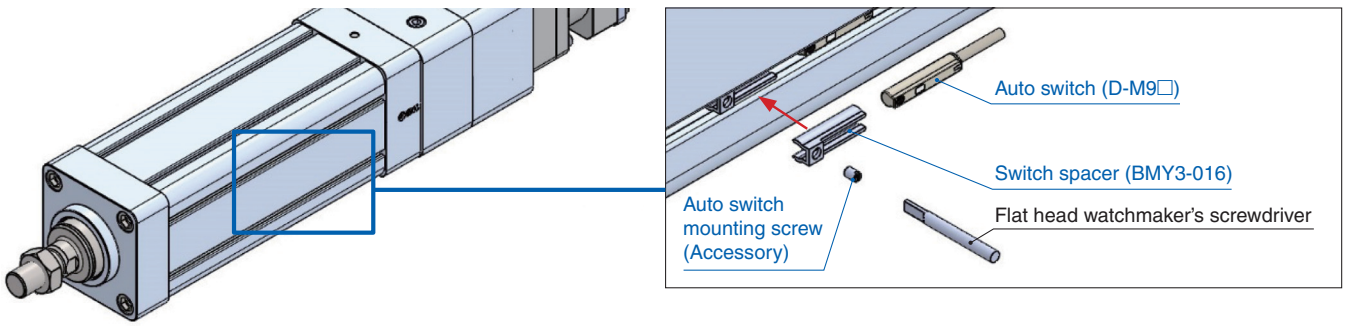
Max. force 12000 N **Max. speed 100 mm/s**



"Without reducer," "Reduction ratio 1/3," and "Reduction ratio 1/5" can be selected.

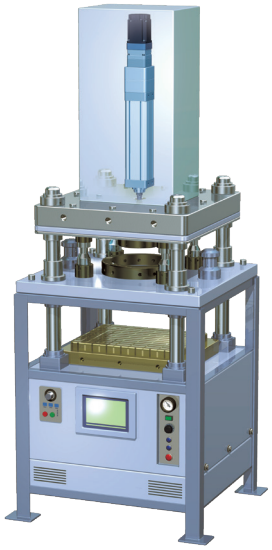
An auto switch can be mounted

An auto switch can be mounted from the front of the groove.

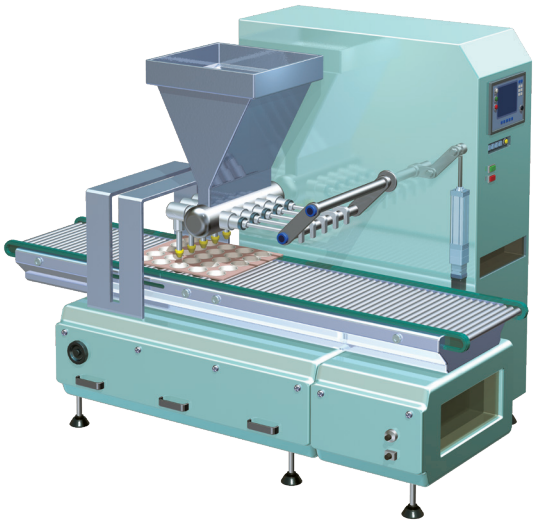


Application examples

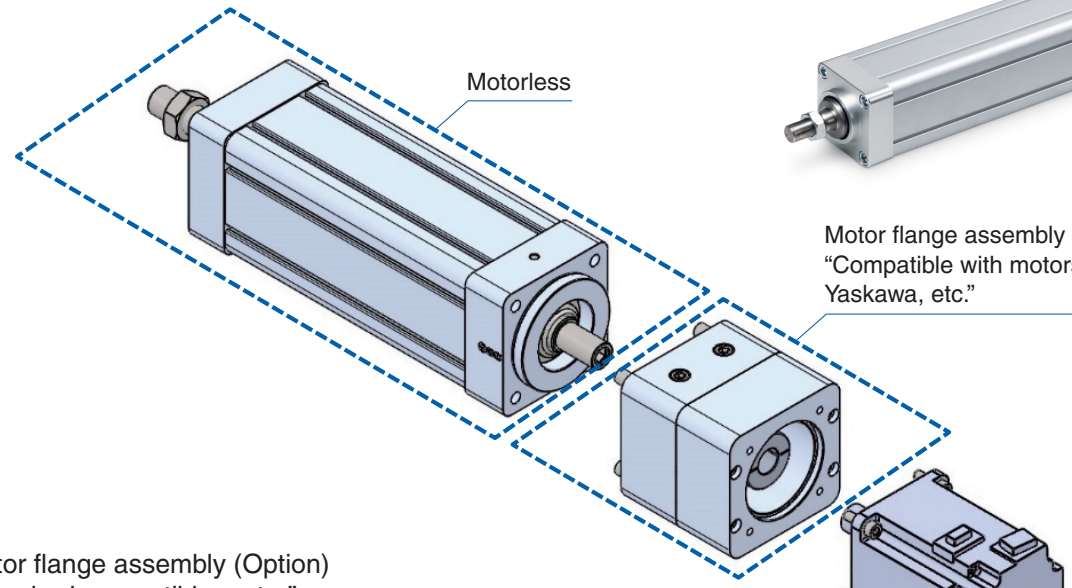
Servo-driven press machine



Replenishment unit (spring extended piston control)



Motorless Type



Motor flange assembly (Option)
"Compatible with motors from Mitsubishi, Yaskawa, etc."

Motor flange assembly (Option)
"Standard-compatible motor"

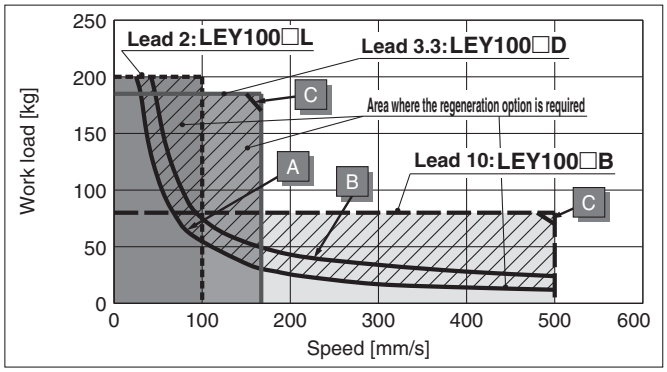
Manufacturer	Series	Type	NN
Mitsubishi Electric Corporation	MELSERVO-J4	HG-KR	●
	MELSERVO-J5	HK-KT	●
YASKAWA Electric Corporation	Σ-V	SGMJV	●
	Σ-7	SGM7J	●
SANYO DENKI CO., LTD.	SANMOTION R	R2	●
NIDEC SANKYO CORPORATION	S-FLAG	MX	●
KEYENCE CORPORATION	SV	SV-M/SV-B	●
FUJI ELECTRIC CO., LTD.	ALPHA5/7	GYS/GYB/GYG	●
Delta Electronics, Inc.	ASDA-A2	ECMA	●

(Motor: Provided by the customer)

Model Selection

* Motorless specification is lead 10 only

Speed–Vertical Work Load Graph/Required Conditions for the Regeneration Option



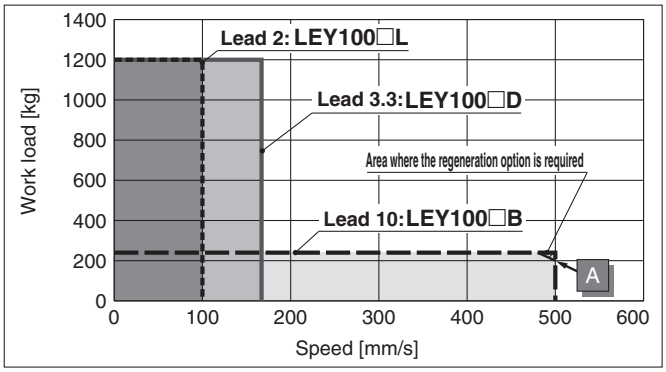
Required conditions for the regeneration option

* The regeneration option is required when using the product above the regeneration line in the graph. (It must be ordered separately.)

Regeneration Option Models

Size	Model	Duty ratio	Note
LEY100□	LEC-MR-RB-032	100	A area
	LEC-MR-RB-12		B area
		90	C area

Speed–Horizontal Work Load Graph/Required Conditions for the Regeneration Option



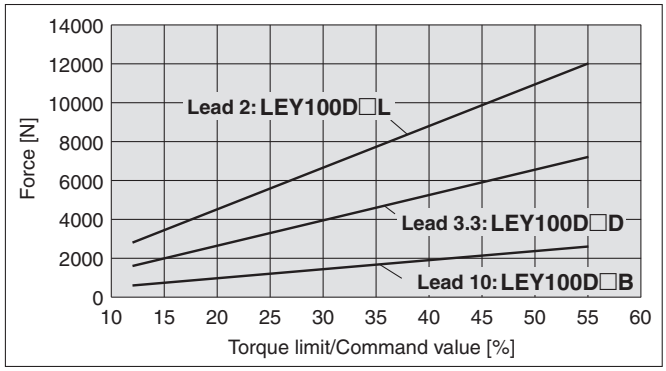
Required conditions for the regeneration option

* The regeneration option is required when using the product above the regeneration line in the graph. (It must be ordered separately.)

Regeneration Option Models

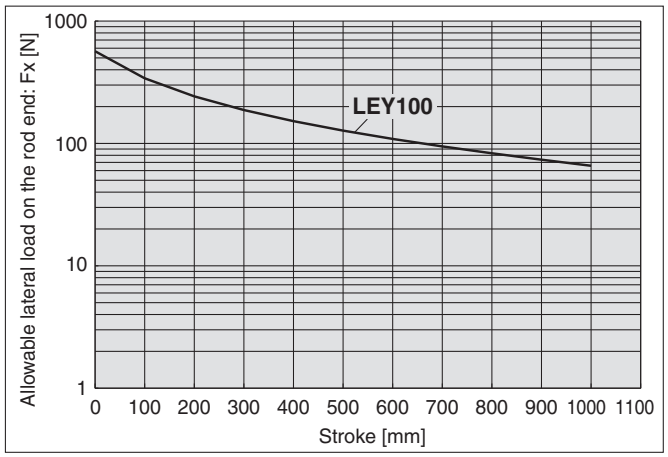
Size	Model	Note
LEY100□	LEC-MR-RB-032	A area

Force Conversion Graph (Guide) For the LECSS-T (/LECSB-T)

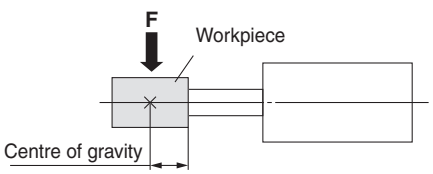


Torque limit/Command value [%]	Duty ratio [%]	Continuous pushing time [min]
25 or less	100	—
30	90	6.00 or less
40	50	1.23 or less
50	30	0.57 or less
55	20	0.25 or less

Graph of Allowable Lateral Load on the Rod End (Guide)



[Stroke] = [Product stroke] + [Distance from the rod end to the centre of gravity of the workpiece]



Load–Acceleration/Deceleration Chart

Max. acceleration/deceleration (Horizontal)

[mm/s²]

Lead		Work load [kg]											
Symbol	[mm]	100	200	300	400	500	600	700	800	900	1000	1100	1200
B	10	3000	2000*1	—									
D	3.3	2370	2250	2120	2000	1870	1750	1620	1500	1370	1250	1120	1000
L	2	1900	1800	1700	1600	1500	1420	1350	1280	1210	1140	1070	1000

*1 The max. work load can be set to any weight up to 240 kilograms.

Max. acceleration/deceleration (Vertical)

[mm/s²]

Lead		Work load [kg]									
Symbol	[mm]	20	40	60	80	100	120	140	160	180	200
B	10	2500	2000	1500	1000	—					
D	3.3	2370	2200	2020	1850	1680	1510	1340	1170	1000*2	—
L	2	1880	1770	1660	1550	1450	1360	1270	1180	1090	1000

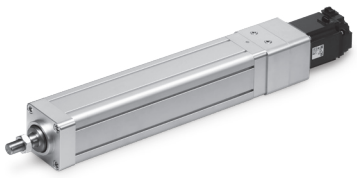
*2 The max. work load can be set to any weight up to 185 kilograms.

Force–Stroke Table

	Stroke [mm]										
	0	100	200	300	400	500	600	700	800	900	1000
Force [N]	12000	12000	12000	12000	12000	12000	11000	8900	6900	5600	4600

Electric Actuator/ Rod Type

LEY100 Series Size 100



CE RoHS

How to Order

Driver LECS□ Series

LEY 100 D T9 B – 200 □ □ □ – S 2 B2 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬

❶ Size

100

❷ Motor mounting position

D	In-line

❸ Motor type

Symbol	Type	Output [W]	Actuator size	Compatible drivers
T9	AC servo motor (Absolute encoder)	750	100	LECSB2-T9 LECSC2-T9 LECSS2-T9 LECSN2-T9(-□)

❹ Lead [mm]

Symbol	LEY100
B	10
D	3.33*1
L	2*2

*1 Screw lead 10 mm, reducer ratio [1:3]
*2 Screw lead 10 mm, reducer ratio [1:5]

❺ Stroke [mm]

100	100
to	to
1000	1000

* For details, refer to the applicable stroke table below.

❻ Motor option

—	Without option
B	With lock

❼ Rod end thread

—	Rod end female thread
M	Rod end male thread (1 rod end nut is included.)

❽ Mounting*3 *4

Symbol	Type
—	Ends tapped
L	Foot
F	Flange

*3 The mounting bracket is shipped together with the product but does not come assembled.
*4 Do not mount using the "flange" or "ends tapped" options for the horizontal type with one end secured.

❾ Cable type*5 *6

—	Without cable
S	Standard cable
R	Robotic cable (Flexible)

*5 A motor cable and encoder cable are included with the product. (A lock cable is also included if motor option "B: With lock" is selected.)
*6 Standard cable entry direction is "(B) Counter axis side."

❿ Cable length [m]*7

—	Without cable
2	2
5	5
A	10

*7 The length of the encoder, motor, and lock cables are the same.

⓫ Driver type*8

	Compatible drivers	Power supply voltage [V]
—	Without driver	
B2	**LECSB2-T9**/Pulse input (Absolute encoder)	200 to 240
C2	**LECSC2-T9**/CC-Link (Absolute encoder)	200 to 230
S2	**LECSS2-T9**/SSCNET/H (Absolute encoder)	200 to 240
92	**LECSN2-T9-9**/EtherNet/IP (Absolute encoder)	200 to 240
E2	**LECSN2-T9-E**/EtherCAT (Absolute encoder)	200 to 240
P2	**LECSN2-T9-P**/PROFINET (Absolute encoder)	200 to 240
N2	**LECSN2-T9**/Without network card (Absolute encoder)	200 to 240

*8 When a driver type is selected, a cable is included. Select the cable type and cable length.
Example)
S2S2: Standard cable (2 m) + Driver (LECSS2)
S2: Standard cable (2 m)
—: Without cable and driver

⓬ I/O cable length [m]*9

—	Without cable
H	Without cable (Connector only)
1	1.5

*9 When "—: Without driver" is selected for the driver type, only "—: Without cable" can be selected.
Refer to the **Catalogue on www.smc.eu** if an I/O cable is required.

Applicable Stroke Table

Size	Stroke [mm]										
	100	200	300	400	500	600	700	800	900	1000	Manufacturable stroke range
100	●	●	●	●	●	●	●	●	●	●	100 to 1000

* Please contact SMC for non-standard strokes as they are produced as special orders.

Specifications

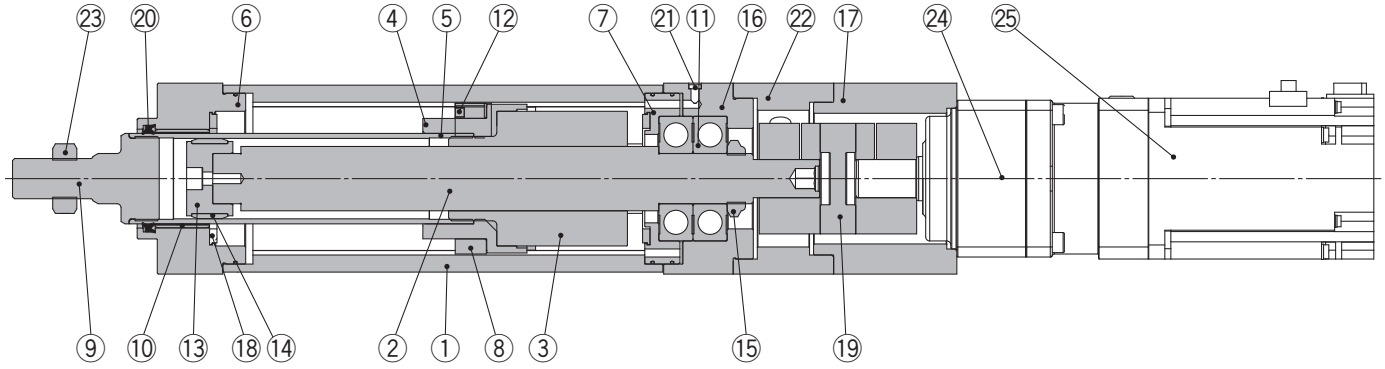
	Model			LEY100D□L	LEY100D□D	LEY100D□B
Actuator specifications	Stroke [mm]			100, 200, 300, 400, 500, 600, 700, 800, 900, 1000		
	Work load [kg]		Horizontal*1	1200	1200	240
			Vertical	200	185	80
	Rated force [N]/Set value*2: 25 %*3			5500	3300	1100
	Max. force [N]/Set value*2: 55 %*3 *4			12000	7200	2600
	Max. speed [mm/s]*5	Stroke range	Up to 500	100	167	500
			600	74	123	370
			700	57	95	285
			800	45	75	225
			900	36	60	180
			1000	30	50	150
	Pushing speed [mm/s]*6			20 or less		
	Max. acceleration/deceleration [mm/s²]*7			2000	3000	
	Positioning repeatability [mm]			0.02		
	Lost motion [mm]*8			0.10		
	Screw lead [mm]			10		
	Reduction ratio			1/5	1/3	—
	Lead [mm]			2	3.3	10
	Impact/Vibration resistance [m/s²]*9			50/20		
	Actuation type			Ball screw		
	Guide type			Sliding bushing (Piston rod)		
	Operating temperature range [°C]			5 to 40		
	Operating humidity range [%RH]			90 or less (No condensation)		
Electric specifications	Motor output [W]/Size [mm]			750/□80		
	Motor type			AC servo motor (200 VAC)		
	Encoder			Absolute 22-bit encoder (Resolution: 4194304 p/rev) Absolute 18-bit encoder (Resolution: 262144 p/rev) (For LECSC-T□ only)		
	Power*10			Max. power 1100		
Lock unit specifications	Type*11			Non-magnetizing lock		
	Holding force [N]			5700	3400	1200
	Power consumption [W] at 20°C*12			10		
	Rated voltage [V]			24 VDC $^{0}_{-10\%}$		

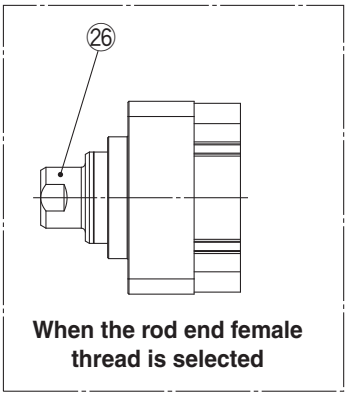
*1 This is the max. value of the horizontal work load. An external guide is necessary to support the load. The actual work load changes according to the condition of the external guide. Confirm the load using the actual device.
*2 Set values for the driver
*3 The force setting range (set values for the driver) for the force control with the torque control mode. The force and duty ratio change according to the set value. Set it while referencing the "Force Conversion Graph" and "Speed–Work Load Graph" on page 4.
The driver applicable to the pushing operation is "LECSB-T", and "LECSS-T."
- The LECSB-T is only applicable when the control method is positioning. The point table is used to set the pushing operation settings.
  To set the pushing operation settings, an additional dedicated file (pushing operation extension file) must be downloaded separately to be used with the setup software (MR Configurator2™: LEC-MRC2□).
  Please download this dedicated file from the SMC website: https://www.smc.eu/
- When selecting the LECSS-T, combine it with a master station (such as the Simple Motion module manufactured by Mitsubishi Electric Corporation) which has a pushing operation function.

*4 The max. force changes according to the stroke. Check the "Force–Stroke Table" on page 5.
*5 The allowable speed changes according to the stroke. Set the number of rotations according to speed.
*6 The allowable collision speed for collision with the workpiece with the torque control mode
*7 The max. acceleration/deceleration changes according to the work load. Check the "Load–Acceleration/Deceleration Chart" on page 5.
*8 A reference value for correcting errors in reciprocal operation
*9 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 4 5 to 2 0 0 0 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*10 Indicates the max. power during operation (including the driver) When selecting the power supply capacity, refer to the power supply capacity in the operation manual of each driver.
*11 Only when motor option "With lock" is selected
*12 For an actuator with lock, add the power consumption for the lock.

Construction

In-line motor type: LEY100





When the rod end female thread is selected

Component Parts

No.	Description	Material	Note
1	**Body**	Aluminium alloy	Anodised
2	**Screw shaft**	Alloy steel	
3	**Ball screw nut**	Alloy steel	
4	**Piston**	Aluminium alloy	
5	**Piston rod**	Alloy steel	Hard chrome plating
6	**Rod cover**	Aluminium alloy	Anodised
7	**Bearing holder**	Aluminium alloy	
8	**Rotation stopper**	Synthetic resin	
9	**Socket (Male thread)**	Alloy steel	Nickel plating
10	**Bushing**	Bearing alloy	
11	**Bearing**	—	
12	**Magnet**	—	
13	**Wear ring holder**	Aluminium alloy	

No.	Description	Material	Note
14	**Wear ring**	Synthetic resin	
15	**Lock nut**	Alloy steel	
16	**Motor block**	Aluminium alloy	Anodised
17	**Motor flange**	Aluminium alloy	Anodised
18	**Bumper**	Urethane	
19	**Coupling**	—	
20	**Scraper**	NBR	
21	**Sintered element**	Stainless steel	
22	**Motor adapter**	Aluminium alloy	Anodised
23	**Nut**	Alloy steel	Zinc chromating
24	**Reducer**	—	
25	**Motor**	—	
26	**Socket (Female thread)**	Alloy steel	Nickel plating

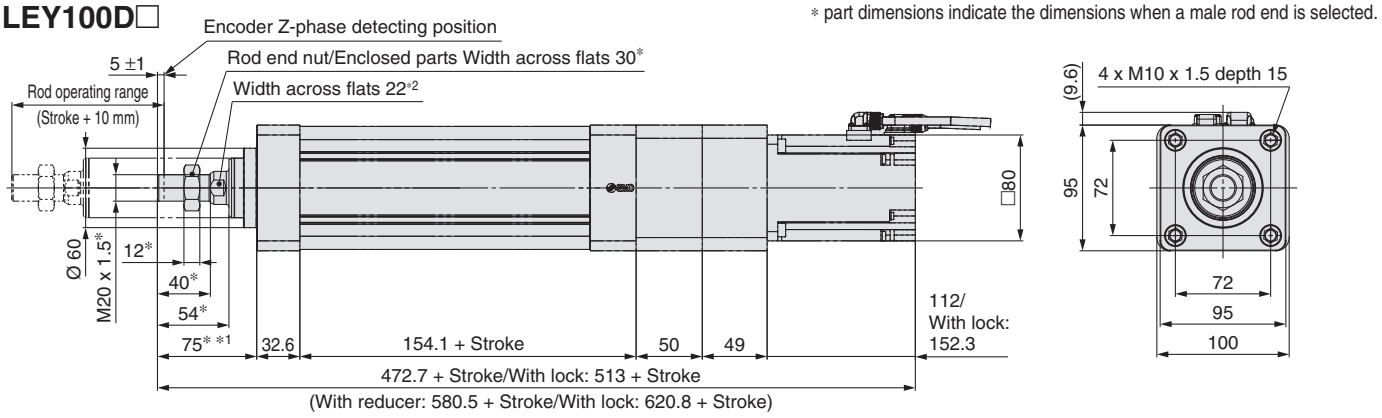
Replacement Parts/Grease Pack

Applied portion	Order no.
Piston rod	GR-S-010 (10 g)
	GR-S-020 (20 g)

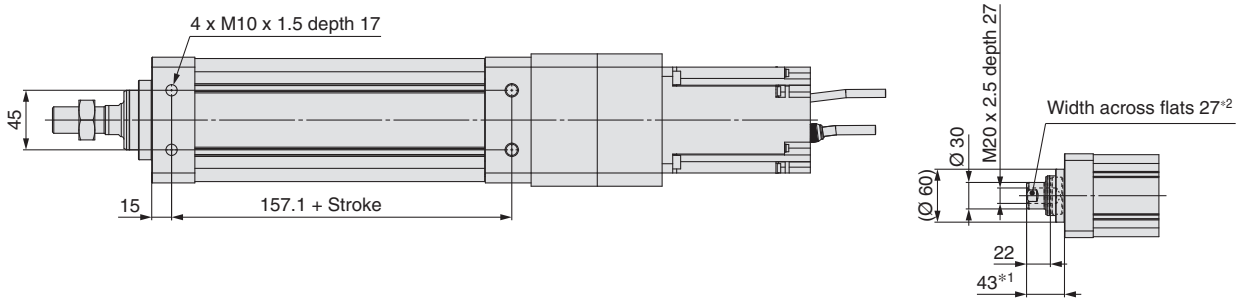
Dimensions: In-line Motor

LEY100D□

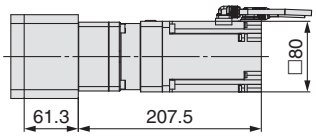
∗ part dimensions indicate the dimensions when a male rod end is selected.



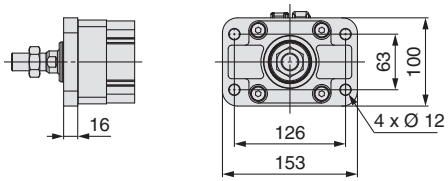
Rod end female thread: LEY100DT9□-□□□



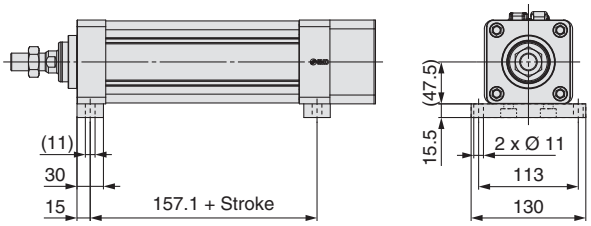
With reducer: LEY100DT9(D/L)-□□□□



Rod flange shape: LEY100DT9□-□□□F



Foot: LEY100DT9□-□□□L



∗1 The dimension in the figure is the first Z-phase detecting position.
∗2 The orientation of the width across flats at the end of the rod differs for each product.

Stroke and Product Weight

[kg]

Stroke	100	200	300	400	500	600	700	800	900	1000
Product weight	12.7	14.4	16.0	17.7	19.3	21.0	22.6	24.2	25.9	27.5

Additional Weight

[kg]

With reducer		2.4
Motor option	With lock	1.0
Rod end thread	Male thread	0.11
	Nut	0.05
Mounting	Foot	1.1
	Flange	0.8

Motorless Type

Electric Actuator/ Rod Type

LEY100 Series

Size 100

RoHS

How to Order

Motorless Type **LEY 100 D NN B – 200 ❶ ❷ ❸ ❹ ❺ ❻ ❼**

❶ Size

100

❷ Motor mounting position

D	In-line

❸ Motor type

Symbol	Type
NN	Motorless*1

*1 A motor adapter and motor flange are not included.

❹ Lead [mm]

Symbol	LEY100
B	10

❺ Stroke [mm]

100	100
to	to
1000	1000

* For details, refer to the applicable stroke table below.

❻ Rod end thread

—	Rod end female thread
M	Rod end male thread (1 rod end nut is included.)

❼ Mounting*2 *3

Symbol	Type
—	Ends tapped
L	Foot
F	Flange

*2 The mounting bracket is shipped together with the product but does not come assembled.

*3 Do not mount using the “flange” or “ends tapped” options for the horizontal type with one end secured.

Applicable Stroke Table

Size	Stroke [mm]										
	100	200	300	400	500	600	700	800	900	1000	Manufacturable stroke range
100	●	●	●	●	●	●	●	●	●	●	100 to 1000

* Please contact SMC for non-standard strokes as they are produced as special orders.

Compatible Motors

Manufacturer	Series	Type	NN
Mitsubishi Electric Corporation	MELSERVO-J4	HG-KR	●
	MELSERVO-J5	HK-KT	●
YASKAWA Electric Corporation	Σ-V	SGMJV	●
	Σ-7	SGM7J	●
SANYO DENKI CO., LTD.	SANMOTION R	R2	●
NIDEC SANKYO CORPORATION	S-FLAG	MX	●
KEYENCE CORPORATION	SV	SV-M/SV-B	●
FUJI ELECTRIC CO., LTD.	ALPHA5/ALPHA7	GYS/GYB/GYG	●
Delta Electronics, Inc.	ASDA-A2	ECMA	●

Specifications

* The values in this specifications table are the allowable values of the actuator body with the standard motor mounted.
* Do not use the actuator so that it exceeds these values.

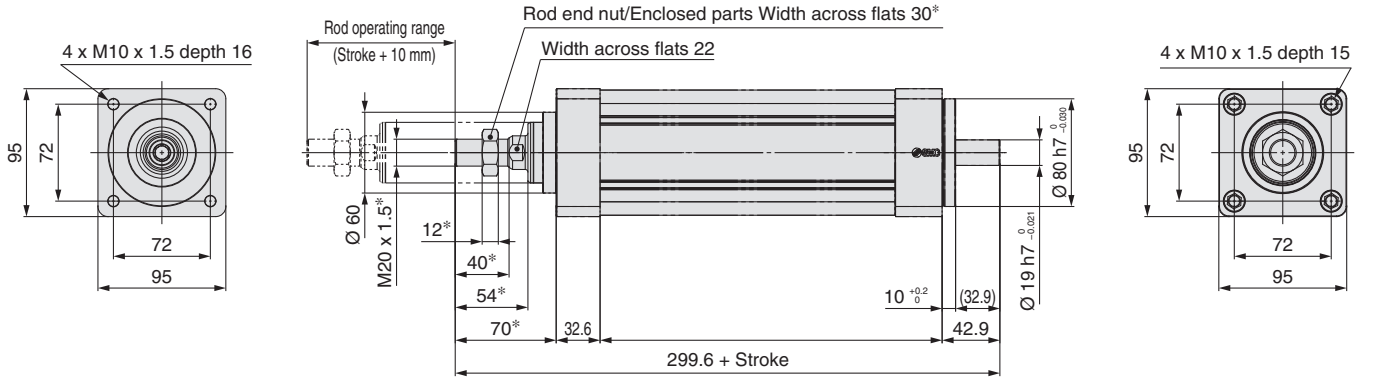
Model			LEY100DNNB
Actuator specifications	Stroke [mm]		100, 200, 300, 400, 500, 600, 700, 800, 900, 1000
	Work load [kg]	Horizontal*1	240/1200 [When equipped with reducer (reduction ratio 1/5)]
		Vertical	80/200 [When equipped with reducer (reduction ratio 1/5)]
	Rated force [N]/Set value: Rated torque 87%*2		1100/5500 [When equipped with reducer (reduction ratio 1/5)]
	Max. force [N]/Set value: Max. torque 192%*2 *3		2600/12000 [When equipped with reducer (reduction ratio 1/5)]
	Max. speed [mm/s]*4	Up to 500	500
		600	370
		700	285
		800	225
		900	180
		1000	150
	Pushing speed [mm/s]*5		20 or less
	Max. acceleration/deceleration [mm/s²]		3000/2000 [When equipped with reducer (reduction ratio 1/5)]
	Positioning repeatability [mm]		±0.02
	Lost motion [mm]*6		0.1 or less
	Ball screw specifications	Thread size [mm]	Ø 32
		Lead [mm]	10
		Shaft length [mm]	Stroke + 202
	Screw lead [mm]		10
	Impact/Vibration resistance [m/s²]*7		50/20
	Actuation type		Ball screw
	Guide type		Sliding bushing (Piston rod)
	Operating temperature range [°C]		5 to 40
	Operating humidity range [%RH]		90 or less (No condensation)
Other specifications*8	Actuation unit weight [kg] (* [ST]: Stroke)		2.80 + (7.50 x 10^{-3}) x [ST]
	Other inertia [kg·cm]		0.047
	Friction coefficient		0.05
	Mechanical efficiency		0.9
Reference motor spec.	Motor shape		□80
	Motor type		AC servo motor
	Rated output capacity [W]		750
	Rated torque [N·m]		2.4
	Rated rotation [rpm]		3000

*1 This is the max. value of the horizontal work load. An external guide is necessary to support the load (Friction coefficient of guide: 0.1 or less). The actual work load changes according to the condition of the external guide. Confirm the load using the actual device.
*2 The force setting range for the force control (Speed control mode, Torque control mode) The force changes according to the set value. The set value is the ratio [%] in relation to the rated torque of the reference motor.
*3 The max. force changes according to the stroke. Check the "Force–Stroke Table" on page 5.
*4 The allowable speed changes according to the stroke.
*5 The allowable collision speed for collision with the workpiece
*6 A reference value for correcting errors in reciprocal operation
*7 Impact resistance: No malfunction occurred when the actuator was tested with a drop tester in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
Vibration resistance: No malfunction occurred in a test ranging between 4 5 to 2 0 0 0 Hz. The test was performed in both an axial direction and a perpendicular direction to the lead screw. (The test was performed with the actuator in the initial state.)
*8 Each value is only to be used as a guide to select a motor of the appropriate capacity.

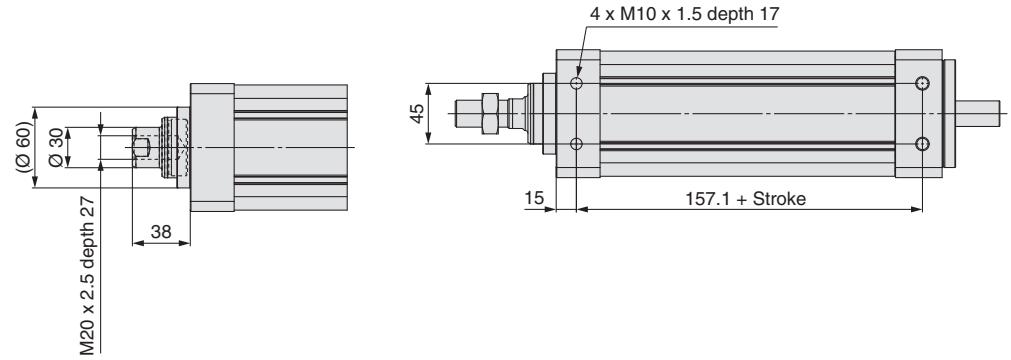
Dimensions: In-line Motor

LEY100

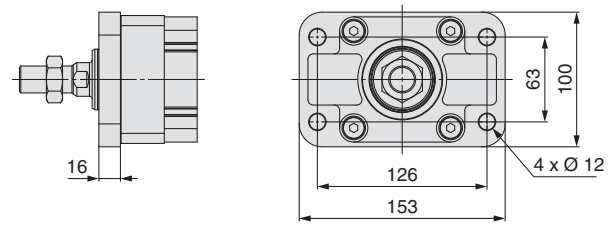
∗ part dimensions indicate the dimensions when a male rod end is selected.



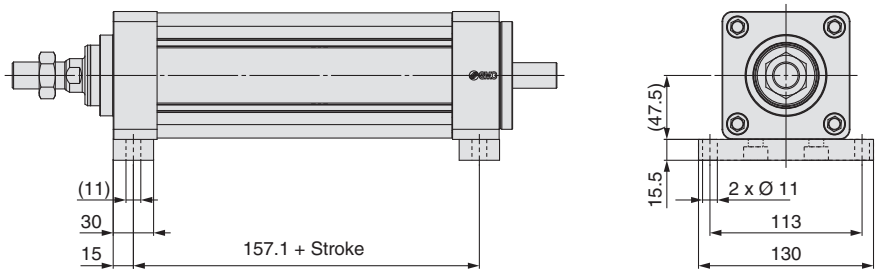
Rod end female thread: LEY100DNNB-□□□



Rod flange shape: LEY100DNNB-□□□F



Foot: LEY100DNNB-□□□L



LEY100 Series
Option

Motor Flange Assembly

Motor flange **LEY − MF 100 D − NZ**

❶

❶ Motor flange type

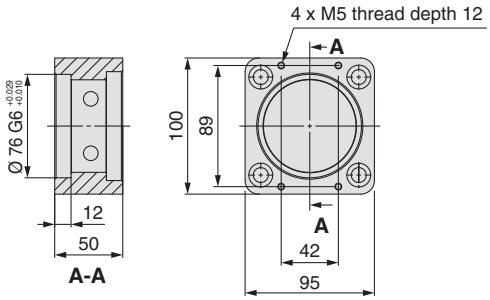
Symbol	Motor type	(Note)	Ⓐ Motor adapter	Ⓑ Motor flange	Ⓒ Coupling (O.D. Ø 40)	Ⓒ Coupling (O.D. Ø 55)	Ⓓ Reducer
NZ	Mounting type Z	Mitsubishi and others	●	●	—	—	—
NZC	Mounting type Z + Coupling included	O.D. Ø 40	●	●	●	—	—
NG	Mounting type G	For reducers	●	●	—	—	—
NGC	Mounting type G + Coupling included	O.D. Ø 55	●	●	—	●	—
NGC3	Mounting type G + With reducer*1	Reduction ratio 1/3	●	●	—	●	●
NGC5	Mounting type G + With reducer*1	Reduction ratio 1/5	●	●	—	●	●
N	Without motor flange	Motor adapter only	●	—	—	—	—

*1 A coupling (O.D. Ø 55) is also included.

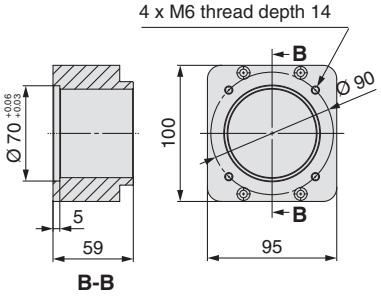
Compatible Motors

Manufacturer	Series	Type	NZC/ NGC3/ NGC5
Mitsubishi Electric Corporation	MELSERVO-J4	HG-KR	●
	MELSERVO-J5	HK-KT	●
YASKAWA Electric Corporation	Σ-V	SGMJV	●
	Σ-7	SGM7J	●
SANYO DENKI CO., LTD.	SANMOTION R	DXF	●
	SANMOTION R	R2	●
NIDEC SANKYO CORPORATION	S-FLAG	MX	●
KEYENCE CORPORATION	SV	SV-M/SV-B	●
FUJI ELECTRIC CO., LTD.	ALPHA5/ALPHA7	GYS/GYB/GYG	●
Delta Electronics, Inc.	ASDA-A2	ECMA	●

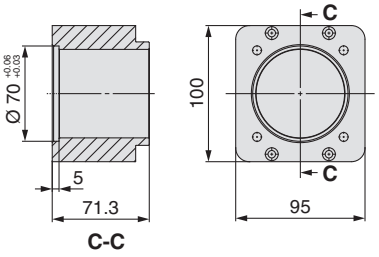
ⒶMotor adapter



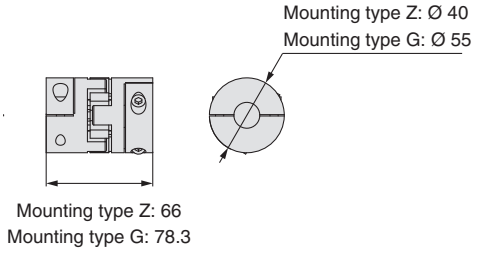
ⒷMotor flange (Mounting type Z)



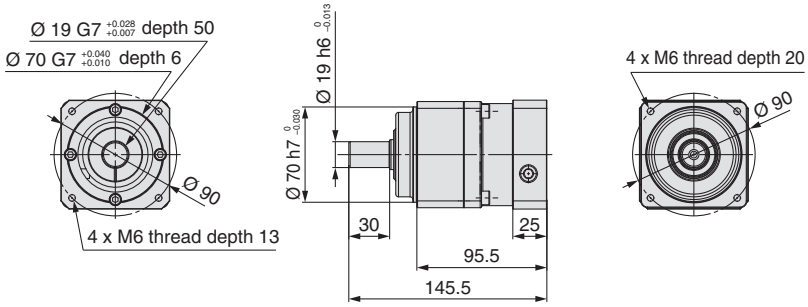
ⒷMotor flange (Mounting type G)



ⒸCupling



ⒹReducer (Reduction ratio 1:3/1:5)



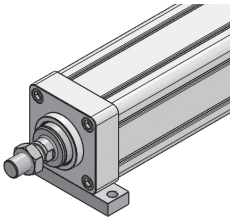
Mounting Bracket

LEY − L 100

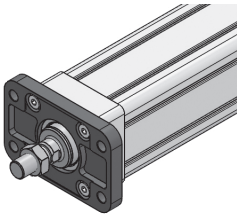
❶

❶ Mounting bracket

Symbol	Mounting bracket
L	Foot
F	Flange



L: Foot



F: Flange

SMC

LEY100 Series
Specific Product Precautions
Be sure to read this before handling the products.

Handling

⚠Caution

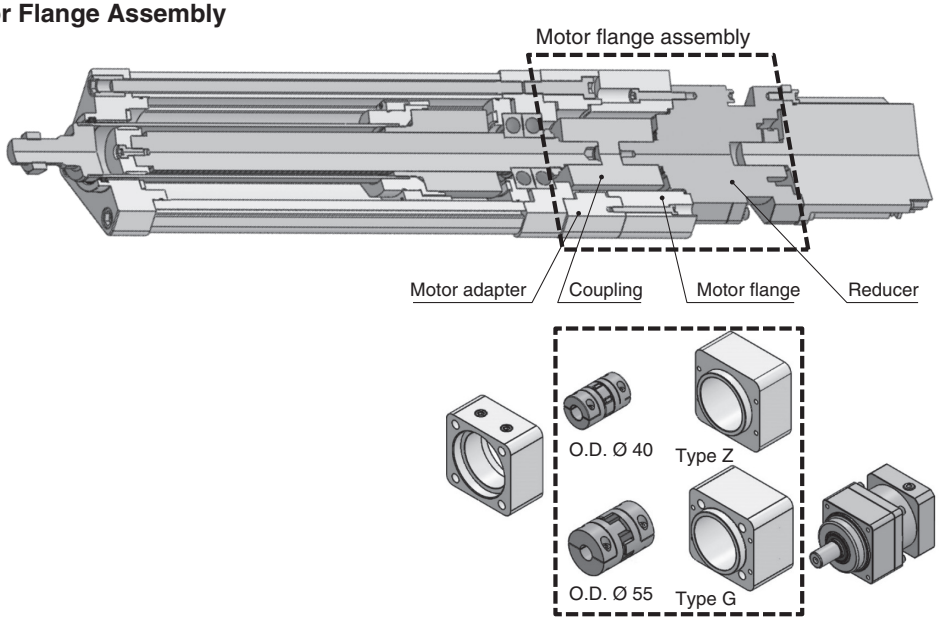
Continuous use at max. force is prohibited.

When using the product at max. force, be sure to use the product within 15 s and with a duty ratio of 20% or less. (With motor)

Example of driving conditions with a duty ratio of 20 %

For the motorless type, be sure to check the specifications of the motor and driver to be used in combination before use.
The force should be within the rated force when using continuously.

Motor Flange Assembly



Products from other companies and
self-produced products can be used instead.

Symbol	Motor adapter	Motor flange (Type)	Coupling (Ø 40)	Coupling (Ø 55)	Reducer (Reduction ratio)
NZ	●	● (Z)	—	—	—
NZC	●	● (Z)	●	—	—
NG	●	● (G)	—	—	—
NGC	●	● (G)	—	●	—
NGC3	●	● (G)	—	●	● (1/3)
NGC5	●	● (G)	—	●	● (1/5)
N	●	—	—	—	—

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) [1], and other safety regulations.

⚠ **Caution:**	**Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning:**	**Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger:**	**Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first. [2] Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.

2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Caution

SMC products are not intended for use as instruments for legal metrology.
Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

SMC Corporation (Europe)

Austria	+43 (0)2262622800	www.smc.at	office@smc.at
Belgium	+32 (0)33551464	www.smc.be	info@smc.be
Bulgaria	+359 (0)2807670	www.smc.bg	office@smc.bg
Croatia	+385 (0)13707288	www.smc.hr	office@smc.hr
Czech Republic	+420 541424611	www.smc.cz	office@smc.cz
Denmark	+45 70252900	www.smcdk.com	smc@smcdk.com
Estonia	+372 6510370	www.smcpneumatics.ee	smc@info@smcee.ee
Finland	+358 207513513	www.smc.fi	smcfi@smc.fi
France	+33 (0)164761000	www.smc-france.fr	supportclient@smc-france.fr
Germany	+49 (0)61034020	www.smc.de	info@smc.de
Greece	+30 210 2717265	www.smchellas.gr	sales@smchellas.gr
Hungary	+36 23513000	www.smc.hu	office@smc.hu
Ireland	+353 (0)14039000	www.smcautomation.ie	sales@smcautomation.ie
Italy	+39 03990691	www.smcitalia.it	mailbox@smcitalia.it
Latvia	+371 67817700	www.smc.lv	info@smc.lv
Lithuania	+370 5 2308118	www.smclt.lt	info@smclt.lt
Netherlands	+31 (0)205318888	www.smc.nl	info@smc.nl
Norway	+47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	+48 222119600	www.smc.pl	office@smc.pl
Portugal	+351 214724500	www.smc.eu	apoioclientept@smc.smces.es
Romania	+40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	+7 (812)3036600	www.smc.eu	sales@smcru.com
Slovakia	+421 (0)413213212	www.smc.sk	office@smc.sk
Slovenia	+386 (0)73885412	www.smc.si	office@smc.si
Spain	+34 945184100	www.smc.eu	post@smc.smces.es
Sweden	+46 (0)86031240	www.smc.nu	smc@smc.nu
Switzerland	+41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	+90 212 489 0 440	www.smcpnomatik.com.tr	info@smcpnomatik.com.tr
UK	+44 (0)845 121 5122	www.smc.uk	sales@smc.uk
South Africa	+27 10 900 1233	www.smcza.co.za	zasales@smcza.co.za

Printing ZT 00 Printed in Spain