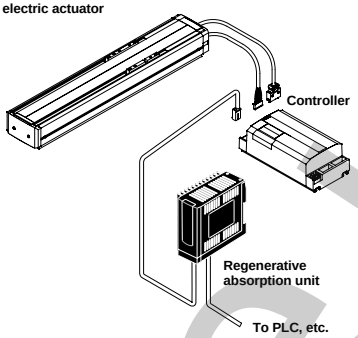
Series LC7R Dedicated Regenerative Absorption Unit

The regenerative absorption unit absorbs the energy (regenerative energy) that is generated by the motor when it decelerates. It is used to prevent drive power abnormality in the controller.

Standard motor vertical mount specification electric actuator



⚠ Danger

1. **Contact P/A if the connected controller power supply voltage will be 110VAC or 220VAC, as this may cause fire or malfunction.**
2. **Secure a distance of 50mm or more between the body and control panel interior or other equipment, as this may cause fire or malfunction.**
3. **Confirm that there are no problems with terminal polarity, pin numbers, and crimping before connecting, as they may cause damage, malfunction, injuries, or fire.**
4. **Set up a circuit that shuts off the connected controller main power supply if trouble occurs in the regenerative absorption unit.**
5. **The regenerative absorption unit (LC7R) is exclusively for use with series LC1 controller connection. Therefore, never connect it to other equipment as this may cause fire or malfunction.**

How to Order

Regenerative Absorption Unit

LC7R—K1□A□

Connected controller power supply voltage Note 1)

1	100VAC (50/60Hz)
2	200VAC (50/60Hz)

Accessory type

Nil	Without accessory
S1	Series LC1 connector and contact pin + Regenerative absorption unit connector and contact pin
C1	Series LC1 connection cable (0.5m) Note 2)

Note 1) Consult P/A if the connected controller power supply voltage will be 110VAC or 220VAC.
Note 2) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Single Option

LC7R—1—□

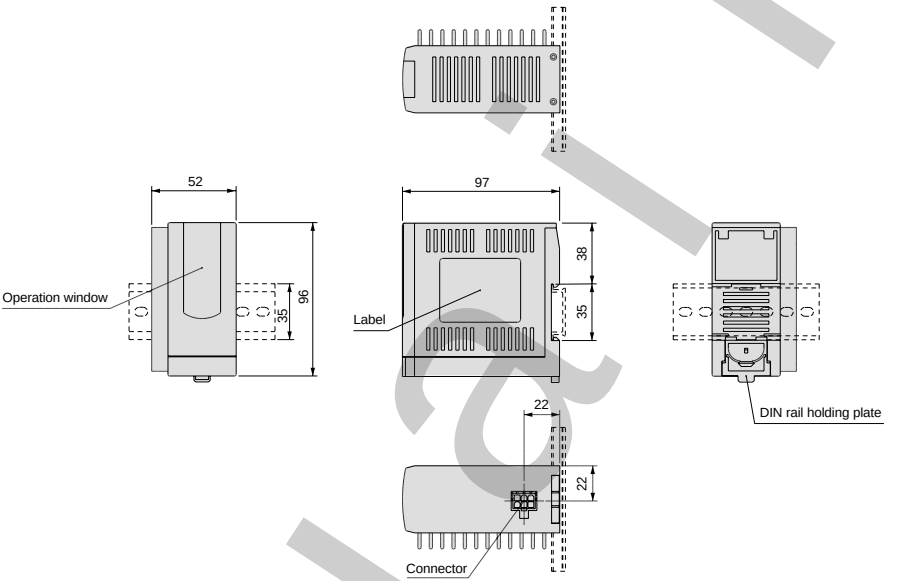
S0	Regenerative absorption unit connector and pin
S1	Series LC1 connector and pin
C1	Series LC1 connection cable (0.5m) Note 3)

Note 3) The temperature control output cable length is 1m. Also, the connector cable already has the required contact pin and connector assembled.

Specifications

Model	LC7R-K11A□□	LC7R-K12A□□
Regeneration method	Heat exchange method based on resistance	
Regenerative resistance capacity	40W	
Regenerative operation voltage	180V	380V
Protective circuit	Regenerative voltage input mis-wiring protection Over current protection, Overheating protection (Normally closed, Radiator sensor OFF at 100°C)	
Ambient operating temperature	0 to 40°C	
Connected controller power voltage	100VAC	200VAC
External connection method	Connector	
Insulation resistance	500VDC, 50MΩ or more	
Mounting	DIN rail mount	

Dimensions



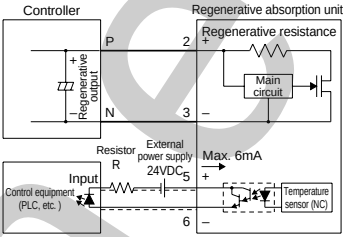
Connection Examples

• Electrical wire

——— Cover O.D.: Max. 3.1mm (AWG18 to 20) [0.5m or less]
- - - - - Cover O.D.: Max. 3.1mm (AWG18 to 24) [1m or less]

• Temperature control output terminal

Maximum rated voltage: 30V
Maximum rated current: 6mA



Note) Select 6mA or less for resistor R after confirming the input capacity of the control equipment.

• Regenerative absorption unit connectors
[Manufacturer: Molex Japan Co., Ltd.]

Description	Part no.	Quantity
Receptacle	5557-06R	1
Female terminal	5556PBTL	6

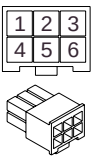
• Wiring tools [Manufacturer: Molex Japan Co., Ltd.]
Wiring tools should be provided by customer.

Description	Part no.
Crimping tool	57026-5000 (for UL1007) 57027-5000 (for UL1015)
Puller	57031-6000

• Contact pin number

Terminal	Pin no.	Description
Vin (P)	**2**	Regenerative absorption unit power input (positive)
Vin (N)	**3**	Regenerative absorption unit power input (negative)
Vout (P)	**1**	Extended regenerative resistance output (positive)
Vout (N)	**4**	Extended regenerative resistance output (negative)
ALM (P)	**5**	Temperature control output terminal (positive)
ALM (N)	**6**	Temperature control output terminal (negative)

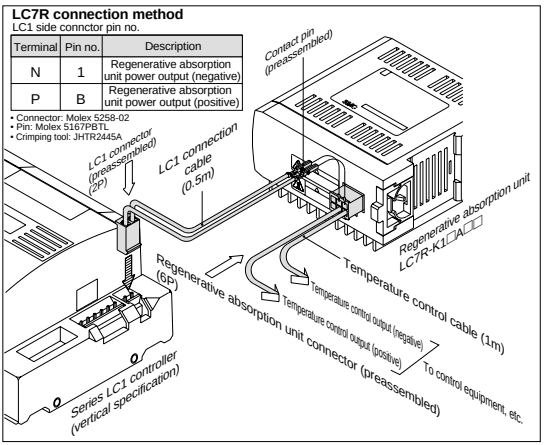
Insertion side



LC7R connection method
LC1 side connctor pin no.

Terminal	Pin no.	Description
N	1	Regenerative absorption unit power output (negative)
P	B	Regenerative absorption unit power output (positive)

• Connector: Molex 5258-02
• Pin: Molex 5167PBTL
• Crimping tool: JHTR2445A



Series LC7R

Regenerative Absorption Unit Selection Guide

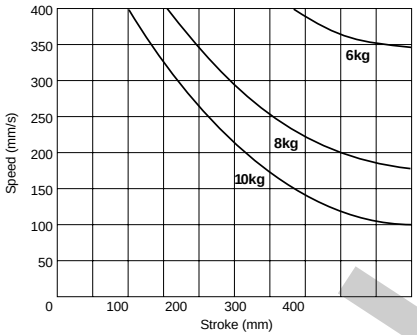
The graphs show the relationship between speed and distance where the use of a **regenerative absorption unit becomes necessary** for each vertical specification actuator based on the desired work piece load.
When setting a speed and distance that are above the line on the graphs, based on the work piece load for the actuator to be used, be sure to use a regenerative absorption unit.

Note 1) If a graph line for the work piece load (within the actuator's maximum load weight) on the actuator is not found, be sure to refer to the graph line for the heavier work piece load that is closest to the desired load.
Note 2) The use of a regenerative absorption unit is recommended for any operating conditions.

Applicable Controller Power Supply Voltage 100VAC Specification

Series LJ1H10

LJ1H1021□H-□□□K (8mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

LJ1H1021□B-□□□K (12mm lead)

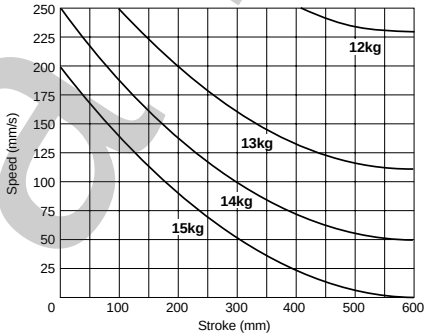
It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Maximum work piece load: 5kg
Maximum speed: 600mm/s
Maximum stroke: 500mm

Series LJ1H20

LJ1H2021□F-□□□K (5mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

LJ1H2021□A-□□□K (10mm lead)

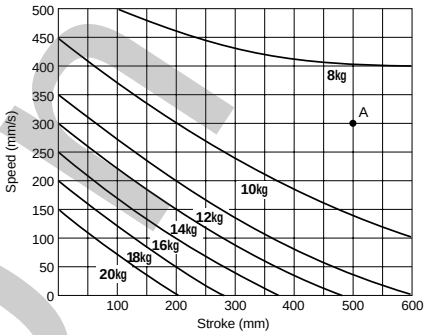
It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Maximum work piece load: 8kg
Maximum speed: 500mm/s
Maximum stroke: 600mm

Series LJ1H30

LJ1H3031□A-□□□K (10mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph to the left, **be sure to use a regenerative absorption unit.**

Example)

Actuator: LJ1H3031□A-□□□K
Work piece load: 9kg
Speed: 300mm/s
Stroke: 500mm

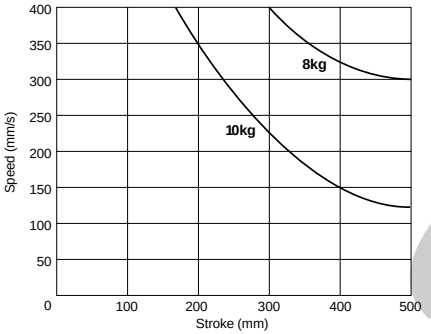
When the above conditions are used, mark a position based on the speed and stroke.(See point A on the graph for series LJ1H30.)
Since point A is above the line for 10kg, a regenerative absorption unit is required.

⚠ **Danger** **Consult P/A if the connected controller power supply voltage is 110VAC, as this may cause fire or malfunction.**

Applicable Controller Power Supply Voltage 200VAC Specification

Series LJ1H10

LJ1H1022□H-□□□K (8mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

LJ1H1022□B-□□□K (12mm lead)

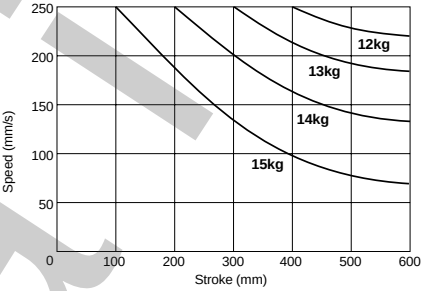
It is not necessary to mount a regenerative absorption unit when the work piece load, speed, and stroke are within the actuator rating. However, use of a regenerative absorption unit is recommended under all conditions.

Actuator rating

Maximum work piece load: 5kg
Maximum speed: 600mm/s
Maximum stroke: 500mm

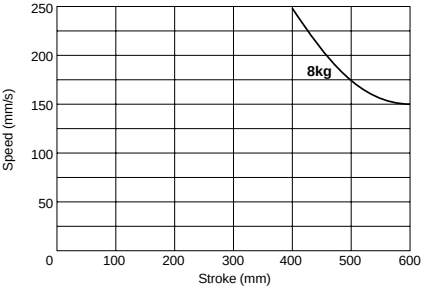
Series LJ1H20

LJ1H2022□F-□□□K (5mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

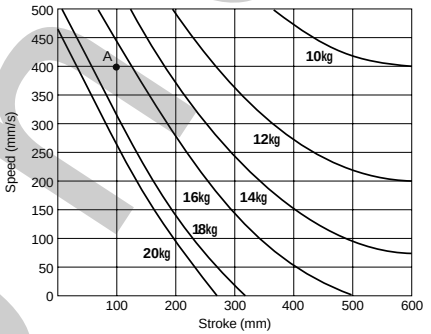
LJ1H2022□A-□□□K (10mm lead)



∗ When an actuator is operated under conditions that exceed the lines on the graph above, **be sure to use a regenerative absorption unit.**

Series LJ1H30

LJ1H3032□A-□□□K (10mm lead)



∗ When an actuator is operated with conditions that exceed the lines on the graph to the left, **be sure to use a regenerative absorption unit.**

Example)

Actuator: LJ1H3032□A-□□□K
Work piece load: 17kg
Speed: 400mm/s
Stroke: 100mm

When the above conditions are used, mark a position based on the speed and stroke. (See point A on the graph for Series LJ1H30.)
Since point A is above the line for 18kg, a regenerative absorption unit is required.

⚠ **Danger** **Consult P/A if the connected controller power supply voltage is 220VAC, as this may cause fire or malfunction.**