

# Moon Lifter

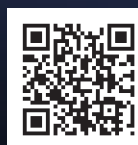
## Intelligent Assist Balancer

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**UNIPULSE**

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# Lightweight type



**UNIPULSE**  
**Moon Lifter**  
最大重量 40 kg  
定格速度 500 mm/s

The hard, heavy-duty work that once required manual labor is now easy and accessible to anyone. Compact and lightweight, it's ideal for workplaces with even lower ceilings. Smooth horizontal movement when installed on rails.

## ML-40K

Maximum lifting load 40 kg  
Maximum lifting/lowering speed 500 mm/s

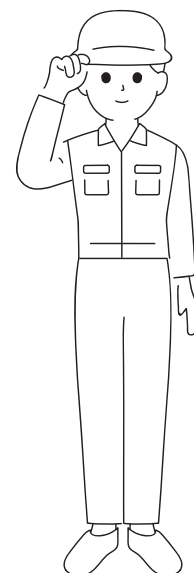
## MLS-60K

Maximum lifting load 60 kg  
Maximum lifting/lowering speed 250 mm/s

**463 mm**  
When the chain feeding  
amount is set to minimum



Power supply AC 100 to 110 V or 200 to 240 V  
Chain lifting height 2.3 or 4.3 m  
Lower hook Convertible to stainless steel



The main unit weighs only **8.5 kg !!**

Space-saving installation!

For support of operations done by human power!

20 kg door fitting operation



For sorting 20 kg cardboard boxes



The electric balancer Moon Lifter is a completely new power-assist device that allows workpieces to be handled as if they were weightless.

# Dust-proof & All-weather type



Dust-proof and suitable for all-weather conditions —ideal for outdoor use. Equipped with a stainless steel chain as standard. Fanless design allows reliable operation even in oil mist or dusty environments.

## MLT-60K

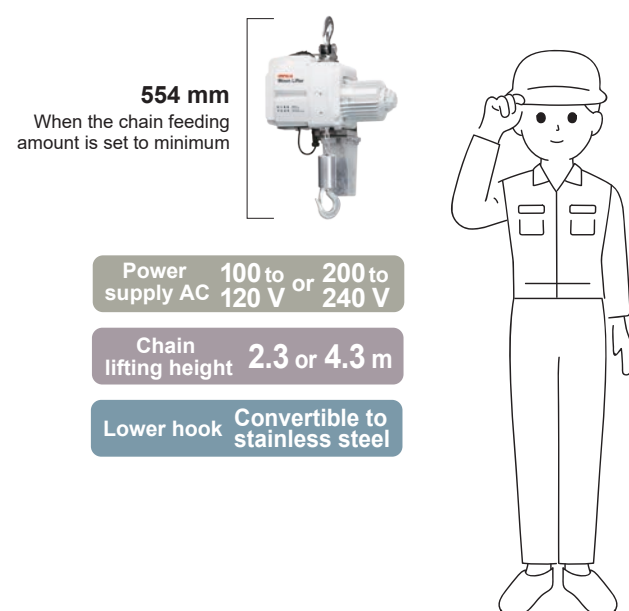
Maximum lifting load 60 kg  
Maximum lifting/lowering speed 500 mm/s

## MLT-120K

Maximum lifting load 120 kg  
Maximum lifting/lowering speed 250 mm/s

## MLT-240K

Maximum lifting load 240 kg  
Maximum lifting/lowering speed 125 mm/s



**Dust-proof & All-weather**

**Fanless structure!**  
Ideal for harsh environments

**Low dust-emission.**  
Ideal for clean room use

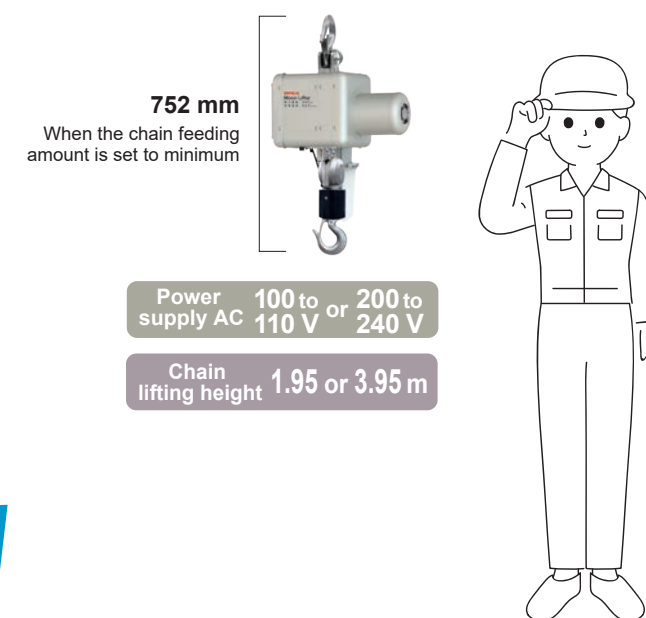
# Large capacity type



Useful for handling super-heavy loads up to 480 kg! Improves workplace efficiency by reducing reliance on hoist cranes or chain blocks in heavy manual tasks. Versatile across a wide range of applications. Frees both hands, making it ideal for transporting long or delicate workpieces.

## ML-480K

Maximum lifting load 480 kg  
Maximum lifting/lowering speed 62.5 mm/s



**Best solution for precise positioning**  
such as assembly work

**Gently transports**  
fragile large glassware, etc.

**Increases robot's payload**  
through cooperative operation!



# Safe and comfortable to use for everyone, in any workplace.

The electric balancer Moon Lifter, an innovative power-assist device, lets you precisely control position and speed using the force of your hands on the workpiece. You can move the workpiece freely while holding it directly with both hands, enabling accurate positioning exactly where it's needed. This ensures gentle handling, preventing any scratches or damage to the workpiece.

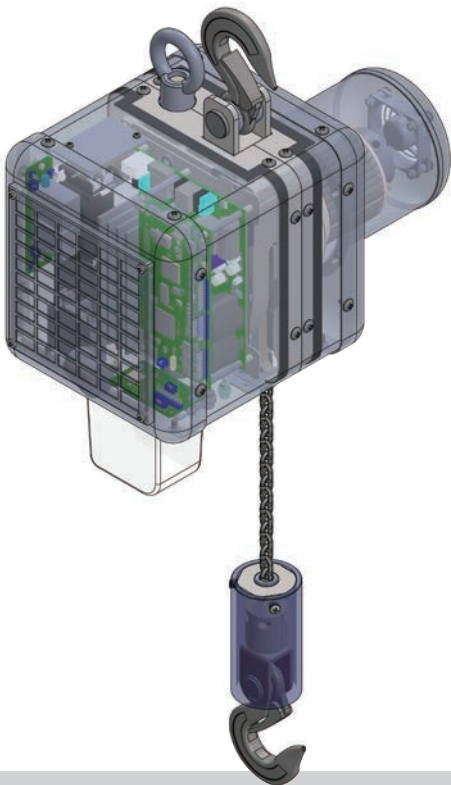
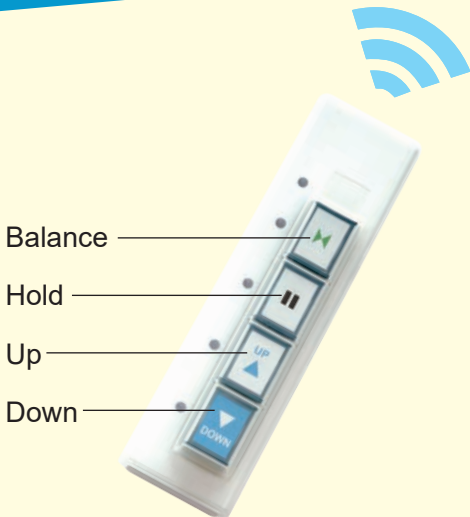
This is  
BALANCE  
mode!

Assist Power  
VS.  
Weight of  
Workpiece



Attached controller is  
wireless!

Dust-Proof & Drip-Proof !



- ✓ Sensor detects the weight of the workpiece.
- ✓ Operates simply by plugging into a power outlet
- ✓ Precise positioning with millimeter accuracy
- ✓ Adapts movement according to the job requirements.
- ✓ Flexible handling of different weights with ease
- ✓ Wide variety of options such as lifting clamps and installation jigs
- ✓ Robot power-assist functionality also available



Q Is it different from hoist cranes?

A Workpieces in balance mode can be moved **intuitively and effortlessly by human hands**. Positioning and assembly of heavy objects can also be done with both hands.

Q Are electric balancers safe? I am concerned about the movement.

A Moon Lifter's unique control allows it to **move only as long as force is applied by hand, and stops as soon as the hand is released**, for safe and efficient operation.

Q Does it only move up and down? How do you hold the workpiece?

A **Lateral movement** can be done by combining with an installation jig. We offer lifting clamps for holding workpieces too.

Q What if the layout is changed?

A It will be ready to use only with **AC 100-110 V** or **AC 200-240 V power supply**. The light weight of the main unit allows for easy layout changes.

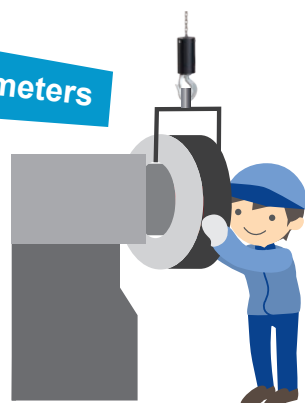




# You can do it because of Moon Lifter

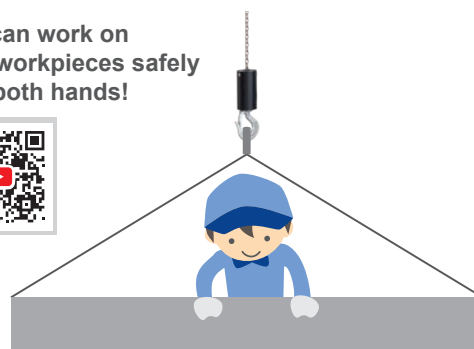
## Positioning in millimeters

Smooth movement makes precise positioning easy.



## Can work with both hands

You can work on long workpieces safely with both hands!



## It's okay if the workpiece changes

Even if the weight or shape of the workpiece changes, it can be handled with the same operation!



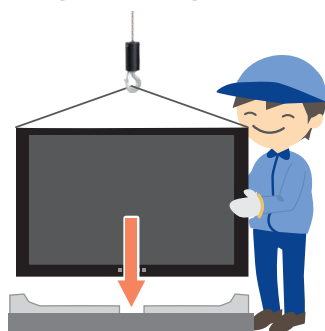
## Buttonless operation mode

Completely no button operations required! Shorten takt time!

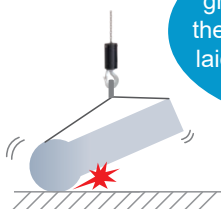


## Offset assist load

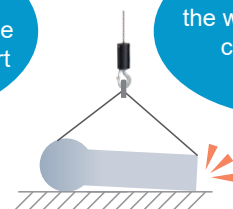
The amount of assistance can be reduced comparing to the weight of the workpiece.



If the center of gravity is unbalanced, the workpiece cannot be laid down when the part of it grounds.



By offsetting, the whole workpiece can be safely grounded.

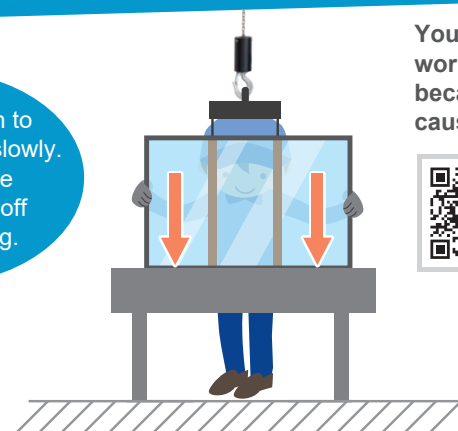


## Descend slowly until grounding is detected

Press the button to start descending slowly. Assisting mode gradually turns off after grounding.

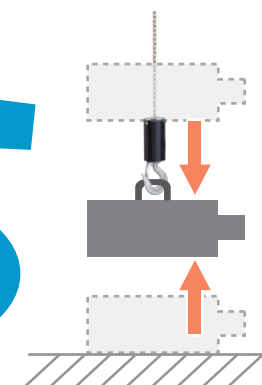


You can handle delicate workpieces with a relief because it does not cause shocks!



## Move to position with one button

Convenient when the height to be worked on is fixed each time.



Automatically moves to an assigned position no matter where the workpiece is. It is safe due to load restrictions during movement.



## Automatic unchucking lifting clamps



So troublesome...

"Gently grounding" and "automatically unchucking" can be operated at a time.



## Pouring mode

Pouring from cans and paper bags can be done at the ideal height.



When the can is tilted, the pail will hit the can.



The can rises according to the weight so it does not hit anything.

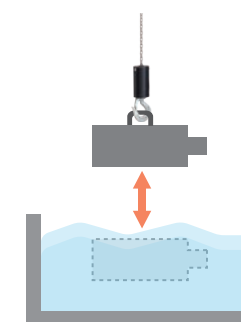


## Automatic iterative lifting and lowering

You can even control movements such as repeating lift up and down movements within a certain range.



Then keep balance and transport safely!



Ideal for applications where workpieces are poured in and out of liquid many times, such as cleaning or painting.

## HOLD mode

**HOLD!**

Hold the workpiece in the air, assembling & inputting raw materials is possible in a suspended situation! Even if the weight changes, rebalance with one touch!



Improve work efficiency by holding at the ideal height!

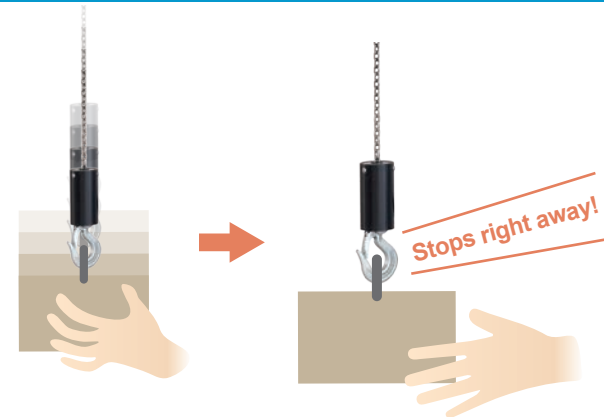


# Moon Lifter's unique function

## Unique

### "Inertia Cancellor" of Moon Lifter

Even with electric balancers that can handle heavy objects as if they were weightless, it was necessary to continue applying force in the opposite direction in order to stop a workpiece that has gained momentum. Enabling "Inertia Cancellor" allows you to raise and lower safely while increasing work efficiency.



#### Emphasis on safety: "When your hands off, it stops immediately."

You can stop the workpiece immediately by simply relaxing your hand pressure being added to it.



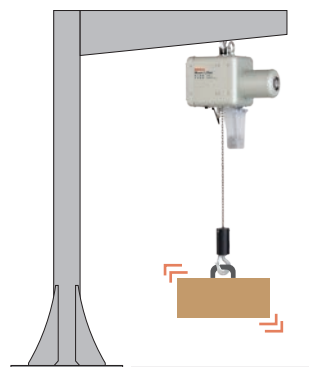
#### Emphasis on workability: "When touched a little, it stops immediately."

When the hand is released, the workpiece moves due to inertia but it will stop as soon as being touched by a human or hitting something.



## Tips Safety features in case of emergency

### Blackout



The brake prevents the workpiece from falling.



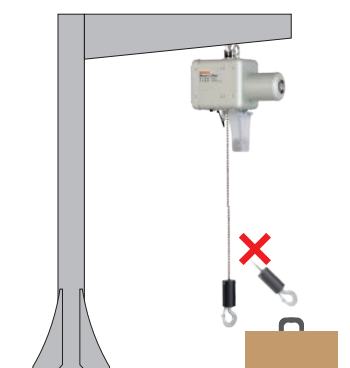
### Overload



Moon Lifter constantly detects force and does not generate force exceeding the specified load.



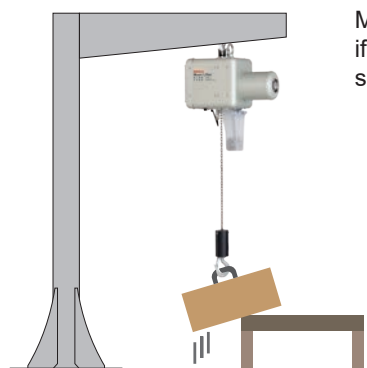
### Buck-jumping



Moon Lifter will not buckjump even if the hook is unexpectedly released.



### Falling



Moon Lifter will be locked if the hook is pulled suddenly.



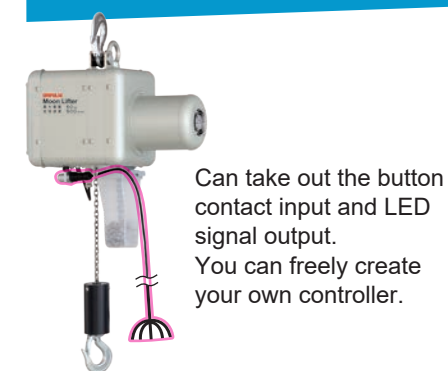
# Full range of options

You can watch the videos from the QR codes.

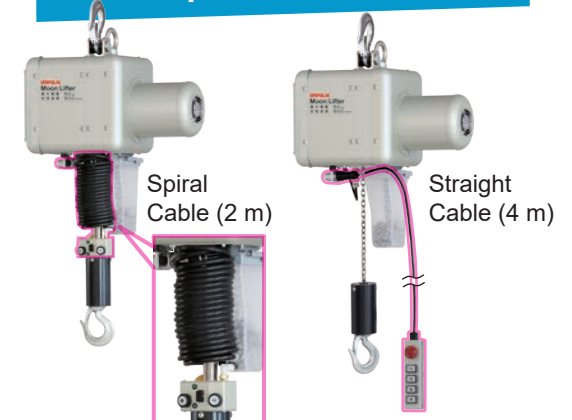
### Controller mounting bracket



### Input/output signal cable for control



### Wired controller specifications

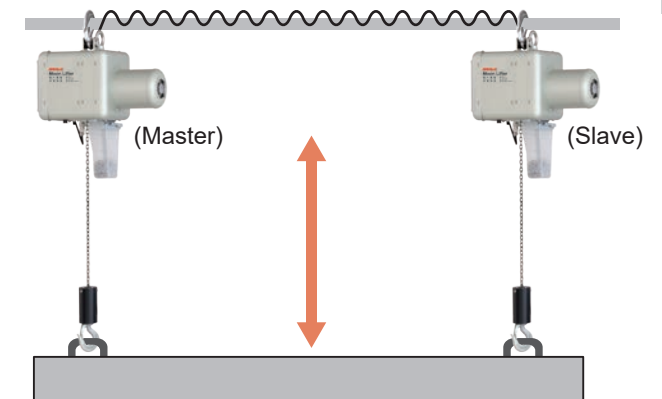
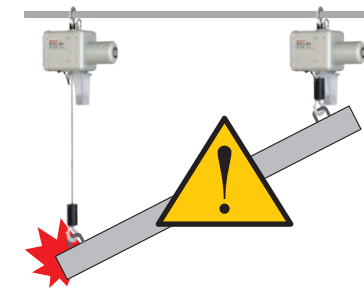


## Parallel operation option

Balance movements are possible no matter where you hold the workpiece while maintaining it level!



Without this option, it is dangerous because the workpiece cannot maintain level.



## External input/output options

Make your work safer and more comfortable!

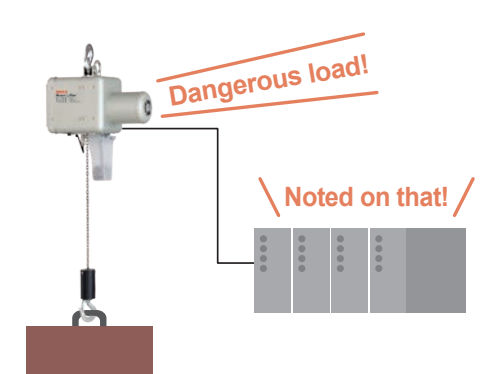
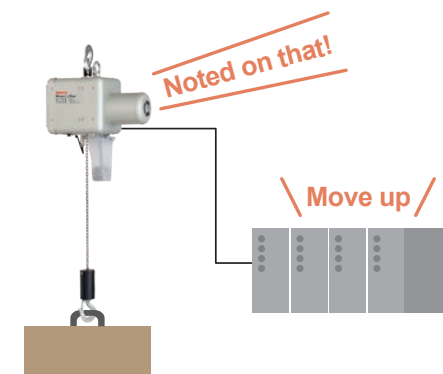
Safety can be enhanced by interlocking with area sensors, patrol lamps, and workpiece chucking signals.

### Supports full and semi-automation by the input signal!

Issue commands to Moon Lifter from PLC  
Preset weight and tare can be switched from PLC

### Detects danger and stops with output signal!

Notify the control situation from Moon Lifter to PLC  
Output abnormalities from Moon Lifter to PLC



Such as Moon Lifter's operation commands, load comparisons and feed position settings and more, 4 bits of input and 4 bits of output can be assigned.





## Cooperative operation with robots

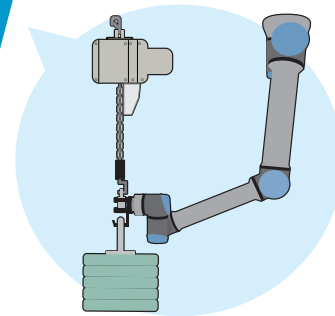
Cooperative operation greatly increases the robot's payload capacity!

Collaborative robots can also transport workpieces with different weights

Capable of managing and sorting items by weight

We have many implementation results up to 1 ton or more

Compatible with ceiling-mounted robots



Hanging from the ceiling is also OK!

Interlocked with UR10e of Universal Robots



Space saving with a diameter of 2.4 m!  
No safety fence required!

Interlocked with TM12 of TECHMAN ROBOT



Weight capacity 12 kg  
Collaborative robots are also OK!

## Lifting clamp

Work becomes more comfortable with a workpiece-specific lifting clamp. Please leave the special design to us.

You can watch the videos from the QR codes.



## Intelligent lifting clamp

The gripping tools allow to release the workpiece without button operations on the controller by interlocking Moon Lifter and a sensor.

### Mechanical lifting clamp

Clamp both ends of the cardboard box!  
Can be transported without tilting.



Assist ON by the photo sensor



Assist OFF by the switch

### Horizontal lifting clamp

Easy clamping & unclamping!  
Ideal for palletizing.



Assist ON by the contact sensor



Assist OFF by the switch



## Vacuum gripper



Moon Lifter and ON/OFF of the suctioning are interlocked.

As the air pressure and the load sensor are monitored, safe transport is possible.



Generate vacuum with ON.

Descend with DOWN.  
Unclamp automatically when the workpiece touches the ground.





# Lifting clamp

You can watch the videos from the QR codes.

## For paper bags

### Insertion type

Just insert it into the bottom of the paper bag!  
Perfect for speedy transport.



## For paper bags

### Clamping type

Clamp the thin part at the top of the bag!  
Ideal for charging raw materials.



## For container

Equipped with a rotating mechanism for easy removal of contents.



## Flat lifting belt type

Recommended for container and folding container.  
Belt length can be adjusted freely.



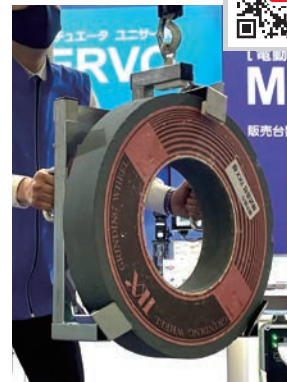
## For folding container

Just clamp by pressing from above.  
Speedy transport is possible.



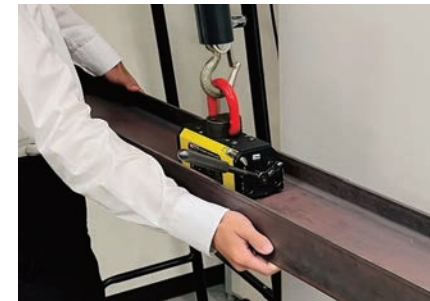
## For grinding wheel

Clamp three points on the outer perimeter.  
Can be set to the grinding machine directly.



## Magnet type

Clamp with magnet.  
Easy to attach and detach with ON/OFF switch.



## U-shaped

Set workpieces smoothly even in deep places with shelves and ceilings.



## For cardboard box

### Horizontal type

Easy clamping & unclamping!  
Ideal for palletizing.



## For cardboard box

### Mechanical type

Clamp both ends of the cardboard box!  
Can be transported without tilting.



## For tire

Just pull the lever up for clamping.  
Unclamping is possible automatically.



## For cylindrical workpieces

Chuck and lift the inner diameter.  
The workpiece can be tilted sideways.



## For cardboard box

### Insertion type

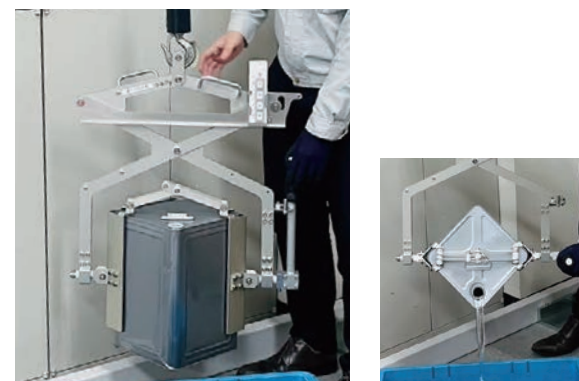
Just insert it into the bottom of the cardboard box!  
Perfect for speedy transport.



## For 5-gallon square can

### Mechanical type

Insert and clamp! With rotating mechanism.



## Screw clamp type

Insert into screw hole and clamp.  
Easy attachment and detachment by inserting and removing screw threads with a button operation.



Easy to put on and take off with just the push of a button!



## Hammock gear sling

Recommended for cylinders and spheres that are difficult to grasp with a clamping type.





# Installation example

Moon Lifter is used hanging in midair. Please select the installation jig that is compatible for your usage method.

**NEW!!**

## Jib Moon

When the ceiling is low, you need to use it in multiple locations, can't install rail systems overhead, or want to insert a workpiece into a narrow spot...

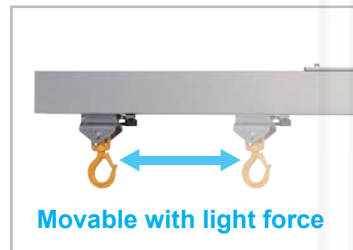
Jib Moon will fulfill these needs!

Only the domestic transport in Japan is available for this product. (It is a customer's responsibility to make the export arrangements of the product.)



Moon Lifter assists!

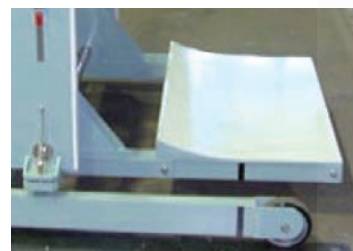
Possible to select a form that fits a workpiece



Arm



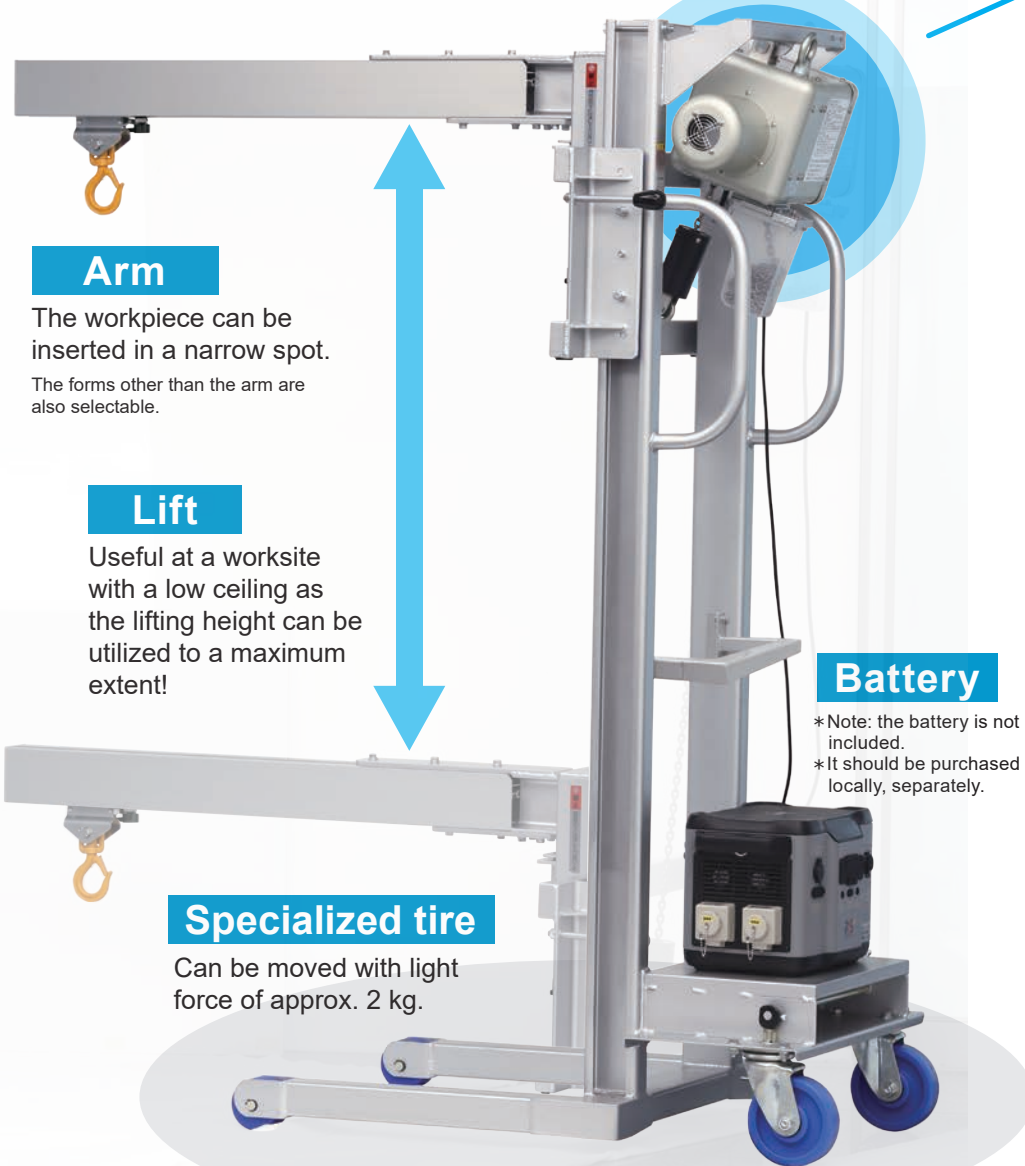
Forks



Plate



Clamp for circular cylinder



### Arm

The workpiece can be inserted in a narrow spot. The forms other than the arm are also selectable.

### Lift

Useful at a worksite with a low ceiling as the lifting height can be utilized to a maximum extent!

### Specialized tire

Can be moved with light force of approx. 2 kg.

### Battery

\*Note: the battery is not included.  
\*It should be purchased locally, separately.

With various lock functions



Wheel lock



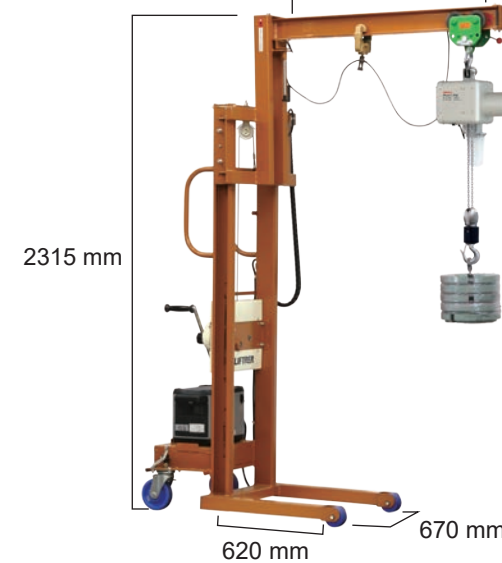
Oscillation lock

See P33 for the specifications and the external dimensions.

Even each part size is changeable

- Total length
- Arm length
- Leg length, height & width

Movable range 700 mm

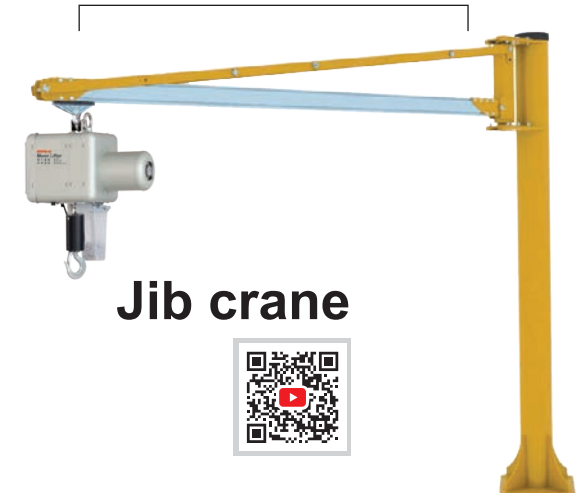


## Jib lift

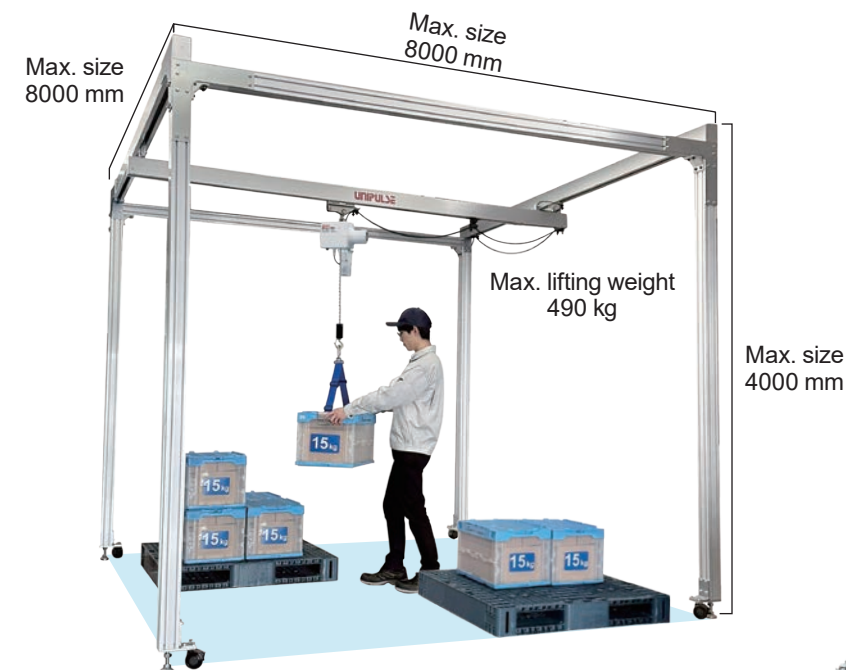
Move freely without power cord



Movable range up to 4970 mm



## Jib crane



## Gantry crane

Adjustable height for easy movement



## Ceiling crane

There are no pillars, so you can use the space freely



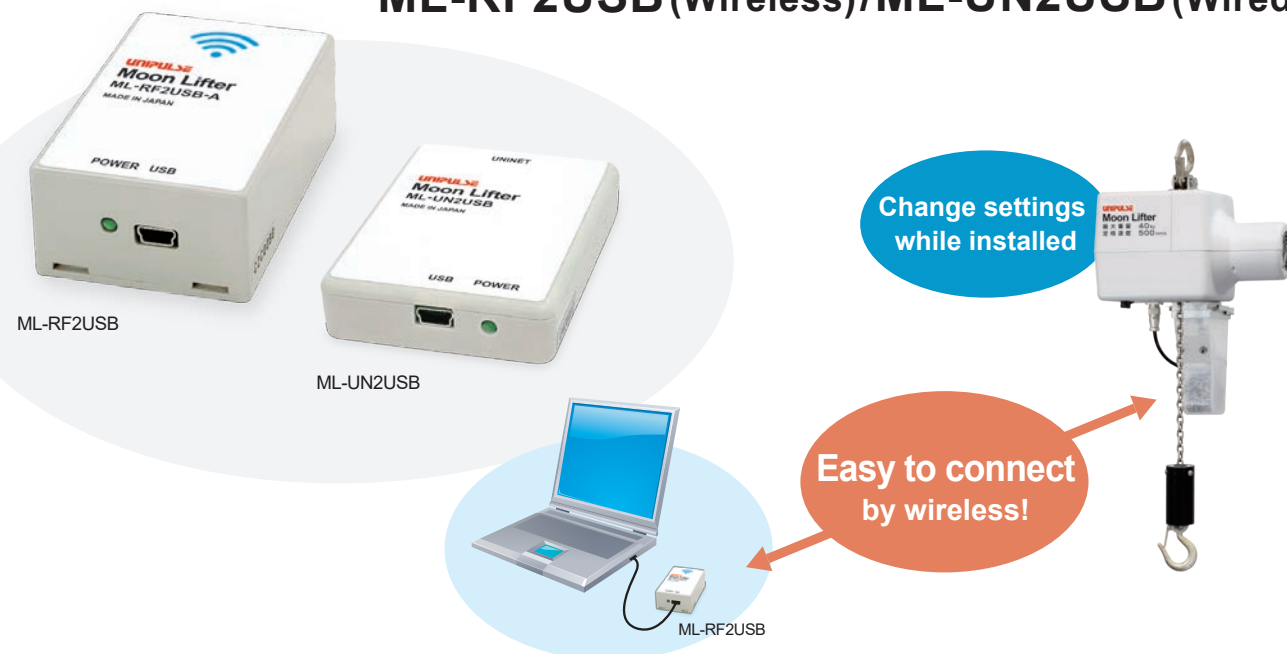
## Ceiling rail

Can also be used on curved rails



You can watch the videos from the QR codes.

## Easily change settings with the free PC application ML-RF2USB (Wireless)/ML-UN2USB (Wired)



You can make settings like this!

**Speed** Moving slowly **Feeling** Moving lightly **Movable range** Do not let the work grounded

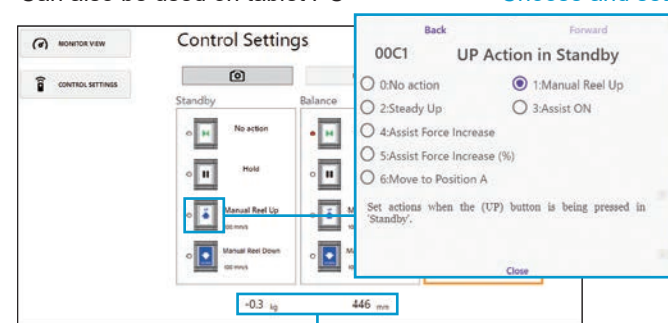


## Easy settings, just select the functions you want to use

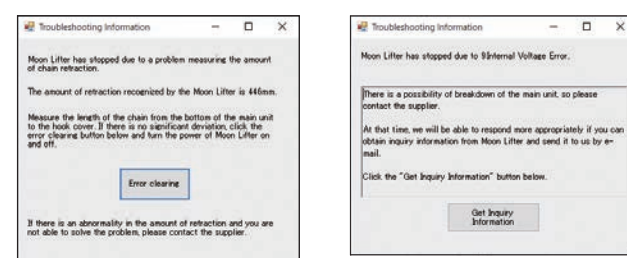
## Quick recovery from trouble!

Can also be used on tablet PC

Choose and set!



You can check the error information that has occurred. Because error info can be sent by e-mail, smooth to inquire!



## Wireless SI/F converter ML-RF2SIF

Receiving workpiece weight wirelessly.  
A SI/F converter that can be easily connected to recorders and display.

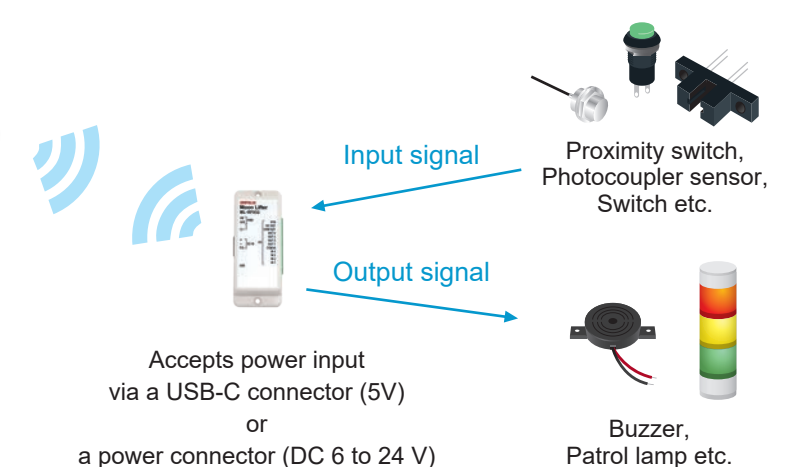
(SI/F is a dedicated interface for communicating with UNIPULSE product)



## Wireless external controller ML-RFIO2

An external controller that sends and receives control signals.

- By linking the operation of the gear and the ON/OFF of the switch, it is not necessary to operate on the controller.
- In addition, Moon Lifter state such as BALANCE and HOLD can be output.





Optional accessories

You can watch the videos from the QR codes.



ML SERIAL CONVERTER

A serial converter for communicating with PLC.  
(Cannot be used in conjunction with parallel operation option)



Wired connection



RS-232C/  
RS-422



To change the settings of Moon Lifter

Check in real time



OK!

This time,  
assist for 25 kg!



20 kg and  
800 mm!

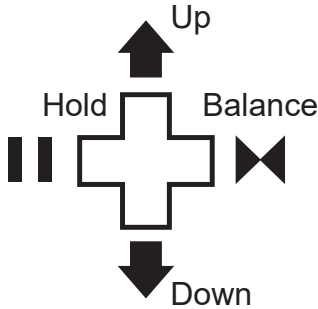


What is your  
current weight and  
current location?



Ring-style controller  
ML-FRC

You can work with both hands on the workpiece  
without looking remote control.



Recommended  
for both hands  
operation!



Want to fit it while  
holding it with both  
hands so that it does  
not lift up.



Because it is  
a fragile item,  
want to work with  
both hands from  
beginning to end.

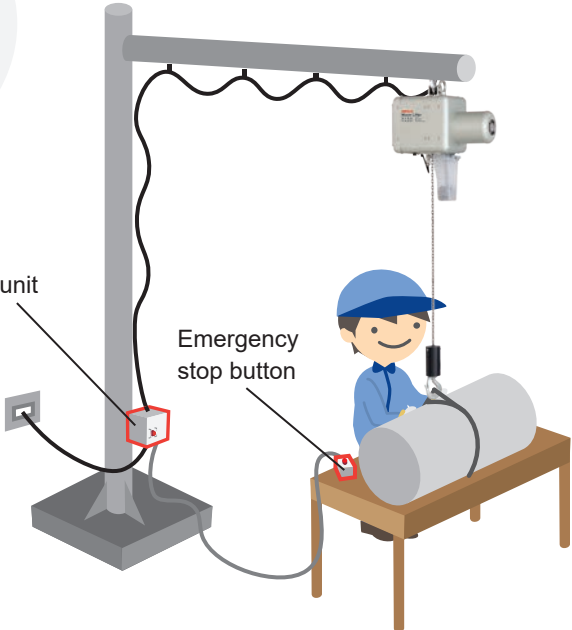
Emergency stop unit  
ML-EMG/ML-EMG(SW)

You can install it  
by simply connecting it to the power line.



Main unit

Emergency  
stop button





# Ground large window glass “gently and softly”



Invert large window glass by using only one sling belt

## Ground the window glass gently

The ground-fault detection function allows the work progress to be handled safely, even when handling fragile items.

## Space-saving inversion work

Window glass inversion is a large operation when using the air-assisted suction method. However, with a sling belt, the task can be done easily.

## Four-person operation can be done by two people

Large window glass weighing 110 kg or more can be safely transported by two people.

## High-quality manufacturing

Good quality products cannot be made in workplaces where workers face heavy and painful tasks.

# Moon Lifter innovates door fitting operation



Bolt tightening work that used to be done by two persons can now be done by one

## Severe & heavy work of door fitting

Fitting a door into a cabin requires staying in a fixed position while fastening it, which puts significant strain on the lower back. Reducing this physical stress is essential for ensuring workplace safety and employee health.

## Positioning with human hands

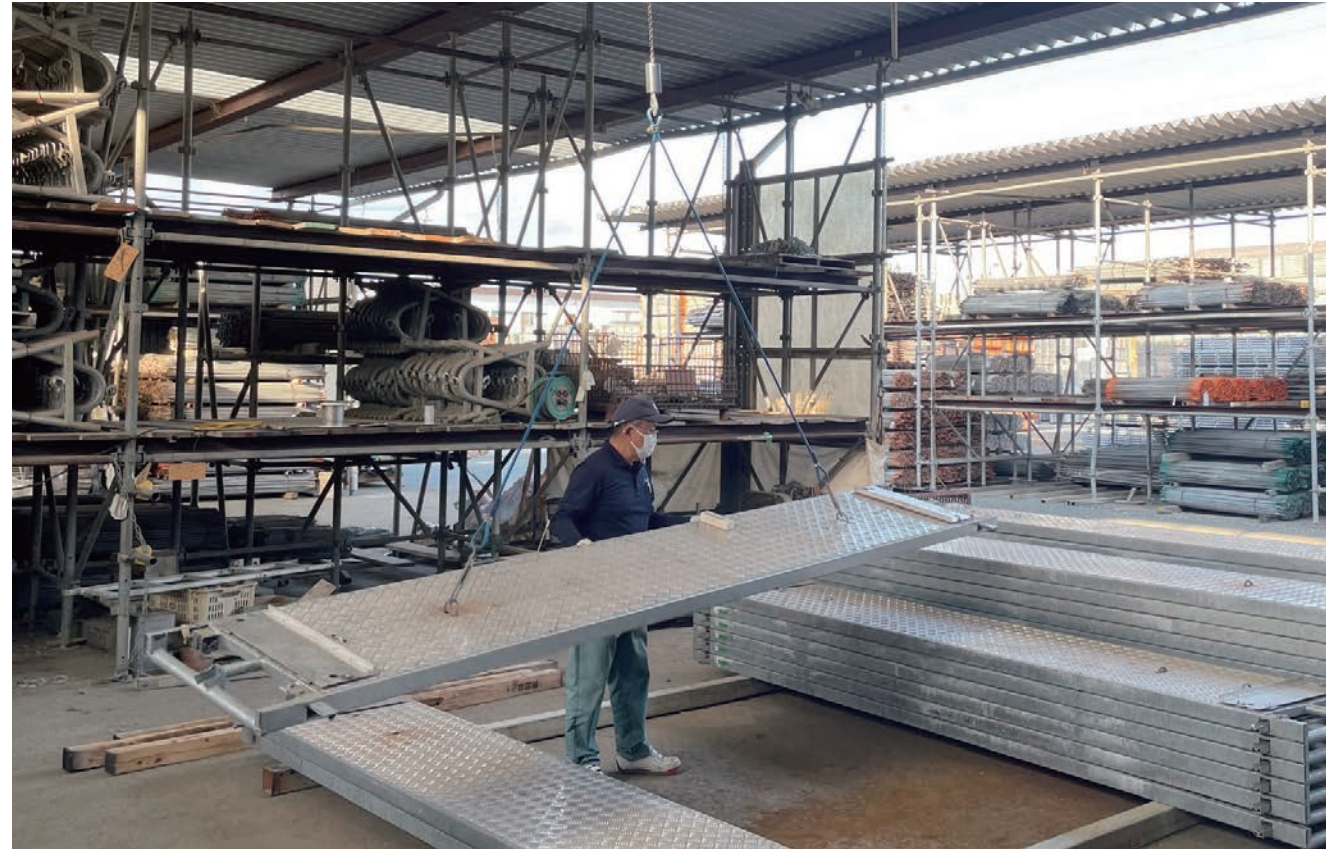
The outfitting of doors weighing more than 20 kg in the cabin assembly process of construction and agricultural machinery is a typical heavy work. While supporting the door with one hand, the bolt is tightened with the other hand. It is now possible to align the fastening with sensation of a human hand.

## Huge promise in automation to encourage women involvements

Applicable machine like Moon Lifter eliminates heavy work, thus women can play more active role in workplace.



## For checking the appearance of suspended scaffolds after rental and transportation work



### Reduction in the number of workers

Transporting a 42 kg suspended scaffold, which used to be hard work for two elderly people, can now be done by one person.

### Can work at any height

The ability to lock the unit at any height allows the worker to check the appearance of both sides in a comfortable position.

### Easy positioning with the wireless controller

Because it's wireless, the cord doesn't get in the way when changing direction, and the controller can be placed wherever it's needed.

### We wish for young people to stay longer in the workplace

Heavy-duty outdoor work, especially in winter, was challenging due to limited body movement caused by bulky winter clothing. By eliminating heavy labor, the workplace becomes significantly more comfortable.

## For transporting molds up to 1 ton



### Introduction of MLH-1500K\*

The MLH-1500K\* is used for placing and inverting molds weighing up to 1 ton on the maintenance table.

### Both hands can be used freely

Both hands can be used to operate the molds, which eliminates load shaking and ensures safety.

### Smooth fitting of molds

The worker can check the condition of the workpiece while operating the machine, in order to make sure that there is no galling or scratching even when fitting super-heavy loads.

\*MLH is the high capacity type for super-heavy workpiece. Please consult with us if you consider Moon Lifter for the use of transporting super-heavy objects.



## Saving labor & strength for plastic container handling



Move to a corner of the room  
when not in use  
Effective use of space

### Lifting container easily with only 1 person

This operation is to repeatedly place heavy plastic containers, which can weigh 15 kg or more, on a cart. No cumbersome operations are required and can be done smoothly with both hands.

### Easier alignment

Because it can be operated just like a human hand, positioning of the collapsible plastic crate became not confusing for anyone who works with it.

### Moving freely

The main unit is lightweight, which make it easy to move. Moon Lifter can be used anywhere as long as there is a 100 V outlet\*.

### Creating an environment for willingness to work long-term

Work environment must able to support aging staffs. By eliminating heavy workload, women can work comfortably too.

\*Moon Lifter operates at AC 100 to 110 V as well as 200 to 240 V.

## Bag-in-box (BIB) Inserting without tearing the inner bag



Speedy operation of stuffing workpieces into cardboard boxes with no gaps



### Ground automatically and gently

The machine descends automatically and slowly until it detects the grounding and then releases the assist function.

### Space-saving is the deciding factor

The system can be installed in limited space, which is even difficult to install an arm-type assist device.

### Operation that anyone can do

Since the work is no longer heavily reinforced, anyone can now do it.

### Production of even the gripping tools

The introduction of the special gripping tools, from design to production, went smoothly.



User case

You can watch the videos from the QR codes.

For smooth cardboard boxes sorting work



For the site where automation is difficult

Automation was difficult because visual sorting was required. We were able to eliminate the heavy work without changing the work content or layout.

Quick introduction

We wanted to finish everything from equipment selection to installation during the off-season for fish. The service was smooth, from the demonstration to the quotation and scheduling of the installation.

Quick transport

Up to 8 tons of fish are shipped per day, so speed was important. By eliminating button operations, the work speed improved a lot.

Specifications & External dimensions

unit : mm

Main unit: Lightweight type

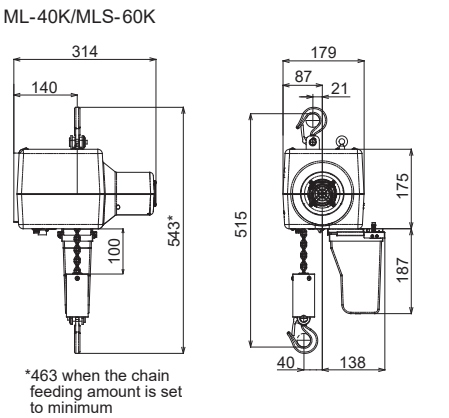
Model	ML-40K	MLS-60K
Maximum lifting load	40 kg	60 kg
Maximum lifting/ lowering speed	500 mm/s	250 mm/s
Lift	2300 mm/4300 mm (Option)	
Chain	φ 4.0×12 (Electroless nickel plating)	
Chain breaking strength	20 kN or more	
Power supply	ML-40K : AC 100 to 110 V (-15% +10%) 7 A MLS-60K : AC 100 to 110 V (-15% +10%) 5 A	
Main unit dimensions	314×179×175 mm	
Main unit weight	Approx. 8.5 kg	
Operating temperature range	0 to 40°C	
Operating humidity range	80% RH or less (No condensation)	
Durability	Equivalent to M8	
Power cable	Approx. 3 m (Exchangeable)	

Please contact us if you wish to change the chain or the lower hook and surrounding parts to stainless steel, change the maximum load, change the lifting height to 4 m or higher, or extend the power cable.

Structure of product code

ML - 40K	
①	
①Option	
Sign	Option
N/A	Standard
-200V	AC power supply
(L4)	200 to 240 V (Single phase) 4 A
(JAB)	Lifting height: 4.3 m
(JAB)	Attach bellows
The lifting height when selecting (JAB) is 2 m. (L4) cannot be selected.	
MLS - 60K	
①	
①Option	
Sign	Option
N/A	Standard
-200V	AC power supply
(L4)	200 to 240 V (Single phase) 3 A
(JAB)	Lifting height: 4.3 m
(JAB)	Attach bellows
The lifting height when selecting (JAB) is 2 m. (L4) cannot be selected.	

External dimensions



Main unit: Dust-proof & All-weather type

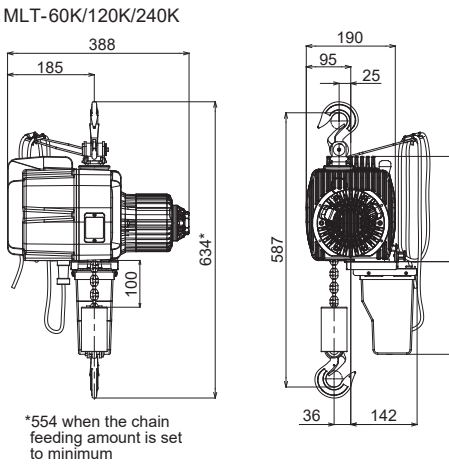
Model	MLT-60K	MLT-120K	MLT-240K
Maximum lifting load	60 kg	120 kg	240 kg
Maximum lifting/ lowering speed	500 mm/s	250 mm/s	125 mm/s
Lift	2300 mm/4300 mm (Option)		
Chain	φ 5.0×15 (Stainless steel)		
Chain breaking strength	20 kN or more		
Power supply	AC 100 to 120 V (-15% +10%) 8 A		
Main unit dimensions	388×190×225 mm		
Main unit weight	Approx. 18 kg		
Operating temperature range	0 to 40°C		
Operating humidity range	80% RH or less (No condensation)		
Durability	Equivalent to M8		
Power cable	Approx. 3 m (Exchangeable)		

Please contact us if you wish to change the lower hook and surrounding parts to stainless steel, change the maximum load, change the lifting height to 4 m or higher, or attach cable bellows.

Structure of product code

MLT - K	
①	
①Maximum lifting load	
Sign	Maximum lifting load
60	60 kg
120	120 kg
240	240 kg
②Option	
Sign	Option
N/A	Dust-proof & All-weather type, standard
-200V	AC power supply
(M)	200 to 240 V (Single phase) 4 A
(L4)	Parallel operation
(L4)	Lifting height: 4.3 m
(EXO)	External I/O

External dimensions



Main unit: Large capacity type

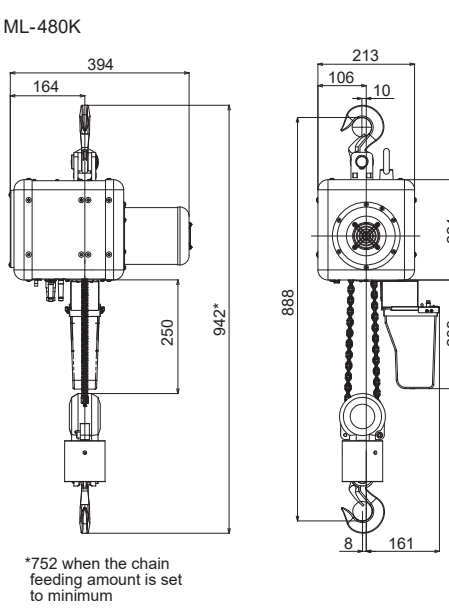
Model	ML-480K
Maximum lifting load	480 kg
Maximum lifting/ lowering speed	62.5 mm/s
Lift	1950 mm/3950 mm (Option)
Chain	φ 4.0×12 (Electroless nickel plating)
Chain breaking strength	20 kN or more
Power supply	AC 100 to 110 V (-15% +10%) 8 A
Main unit dimensions	394×213×221 mm
Main unit weight	Approx. 26 kg
Operating temperature range	0 to 40°C
Operating humidity range	80% RH or less (No condensation)
Durability	Equivalent to M8
Power cable	Approx. 3 m (Exchangeable)

Please contact us if you wish to change the chain or the lower hook and surrounding parts to stainless steel, change the lifting height to 4 m or higher, or extend the power cable.

Structure of product code

ML - 480K	
①	
①Option	
Sign	Option
N/A	Standard
-200V	AC power supply
(M)	200 to 240 V (Single phase) 4 A
(L4)	Parallel operation
(L4)	Lifting height: 3.95 m
(PGW)	Wired controller straight cable
(EXO)	External I/O

External dimensions



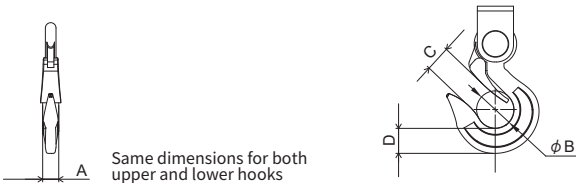


Specifications & External dimensions

unit : mm

Hook External dimensions

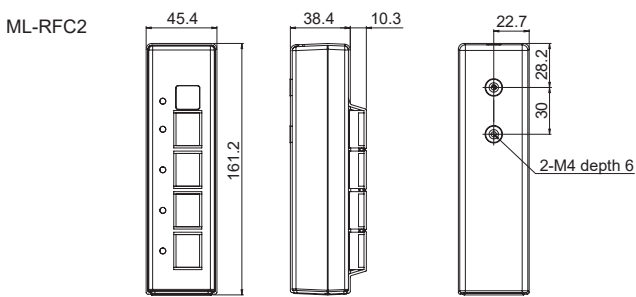
Model	A	φ B	C	D
ML-40K	12	φ 22	23	14
MLS-60K				
MLT-60K/120K/240K	15.5	φ 35	24	23.5
ML-480K	22	φ 43	28	27



Rechargeable wireless controller

Model	ML-RFC2
Dimensions	45.4×38.4×161.2 mm
Weight	Approx. 220 g
Operating environment	The same as main unit
Power supply	Built-in lithium-ion battery
Charging time	Approx. 5 hours
Continuous operating time	Approx. 1 month (Assuming power is ON for 8 hours a day)
Communication frequency	920.7 to 927.9 MHz
Communication range	10 m

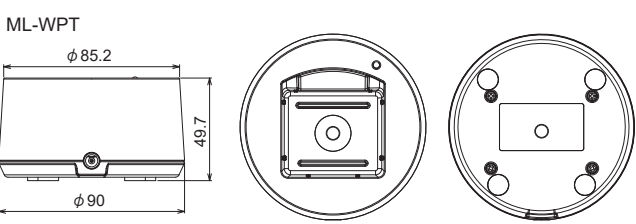
External dimensions



Charging stand

Model	ML-WPT
Dimensions	φ 90×49.7 mm
Weight	Approx. 360 g
Operating environment	The same as main unit
Power supply	DC 12 V (Dedicated AC adapter)
Accessory	AC adaptor (AC power supply 100 to 240 V, DC 12 V output)

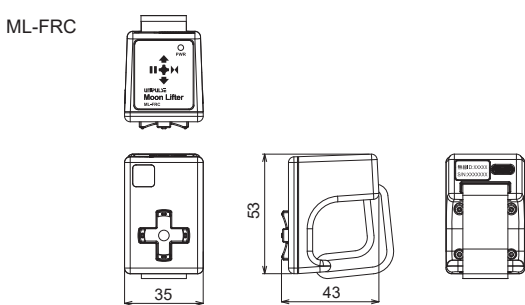
External dimensions



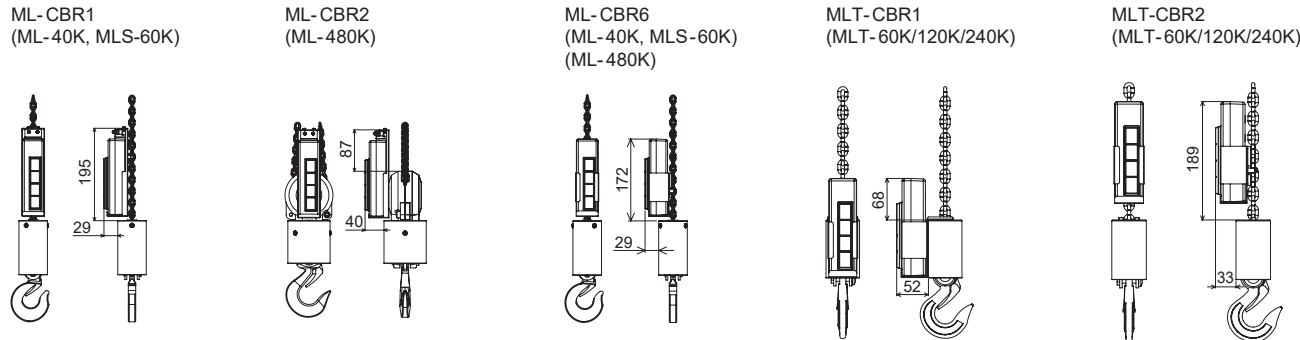
Ring-style controller (Optional accessories)

Model	ML-FRC
Dimensions	35×43×53 mm
Weight	Approx. 50 g
Operating environment	The same as main unit
Power supply	Built-in lithium polymer battery
Charging time	Approx. 3 hours
Continuous operating time	Approx. 1 week (Assuming power is ON for 8 hours a day)
Communication frequency	920.7 to 927.9 MHz
Communication range	5 m
Accessory	AC adapter, USB cable, Sticker showing the communication channel

External dimensions



Bracket for mounting controller (Optional accessories) External dimensions



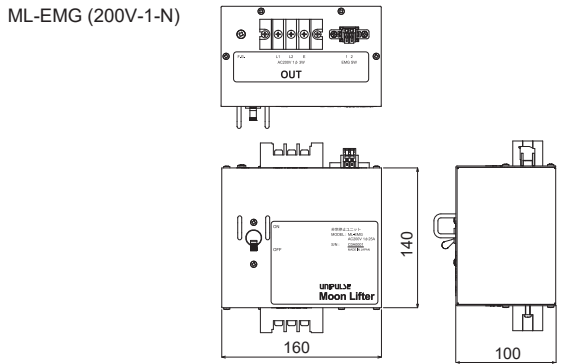
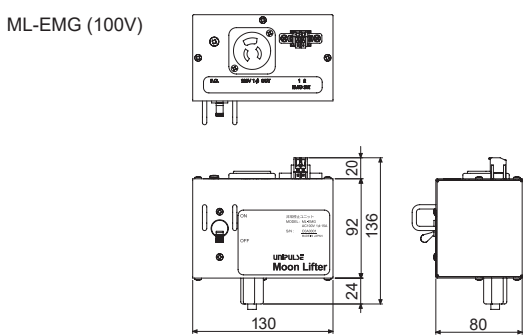
The illustration above is an usage example of ML-40K.

Emergency stop unit (Optional accessories)

Model	ML-EMG (100V)
Dimensions	130×92×80 mm
Weight	Approx. 1.2 kg
Operating environment	The same as main unit
Power cable	Approx. 2 m
Supported series	Each series of ML, MLS, MLT (100 V specification)
Usage	Use by connecting the power cable of the main unit. Power shut off by opening EMG SW connector.

Model	ML-EMG(200V-1-N)
Dimensions	160×140×100 mm
Weight	Approx. 1.6 kg
Operating environment	The same as main unit
Power cable	Terminal block
Supported series	Each series of ML, MLS, MLT (200 V specification)
Usage	Use by connecting the power cable of the main unit. Power shut off by opening EMG SW connector.

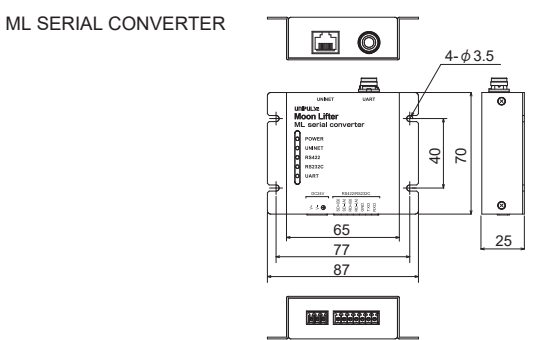
External dimensions



ML serial converter (Optional accessories)

Model	ML SERIAL CONVERTER
Dimensions	65×70×25 mm
Weight	Approx. 100 g
Power supply	DC 24 V (±10%)
Power consumption	Approx. 0.5 W
Operating environment	The same as main unit
Accessory	Cable for UNINET connection (5 m)

External dimensions



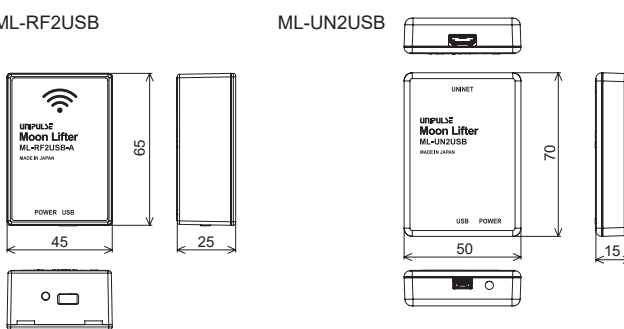
Communication condition  
(Fixed as follows based on the communication condition of UNINET)

Communication method	Start/stop synchronous half-duplex communication
Board rate	115200 bps

Communication unit for PC application (Optional accessories)

Model	ML-RF2USB	ML-UN2USB
Dimensions	45×25×65 mm	50×15×70 mm
Weight	Approx. 50 g	Approx. 40 g
Power supply	Supplied via USB port (DC 5 V)	
Operating environment	The same as main unit	
Connection method	Wireless	USB cable
Communication range	10 m	-
Accessory	USB cable (1.8 m)	USB cable (1.8 m) Wired connection cable (5 m)
Support OS for PC application	Windows 10, 11	

External dimensions





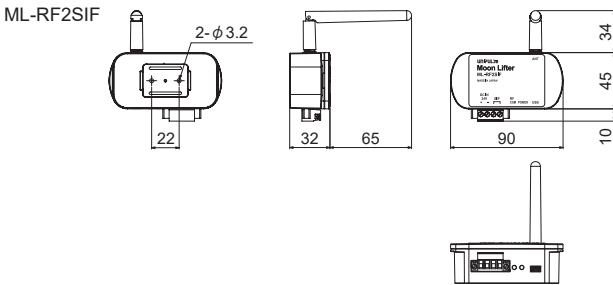
Specifications & External dimensions

unit : mm

Wireless SI/F converter (Optional accessories)

Model	ML-RF2SIF
Dimensions	90×32×45 mm (Not including projections)
Weight	Approx. 70 g
Power supply	DC 24 V (±10%)
Power consumption	0.8 W
Operating environment	The same as main unit
Connection method	Non-polar 2-wire
Communication frequency	920.7 to 927.9 MHz
Communication range	30 m (Depends on communication environment)
Accessory	Dedicated antenna, SIF connector, Sticker showing the communication channel

External dimensions



Installation jig Jib Moon

Maximum lifting load	80 kg	Trolley movable range	560 mm
Maximum lifting/lowering speed	250 mm/s	Oscillation angle	±15°
Lift (From the center of the hook)	350 to 1610 mm	Total weight (Including Moon Lifter)	Approx. 190 kg
Overall height	1890 mm	Lock function	Installed with wheel lock & oscillation lock functions
Overall width	670 mm		
Overall length	1645 mm	Operating temperature range	0 to 40°C
Turning radius	Approx. 1300 mm	Operating humidity range	80% RH or less (No condensation)

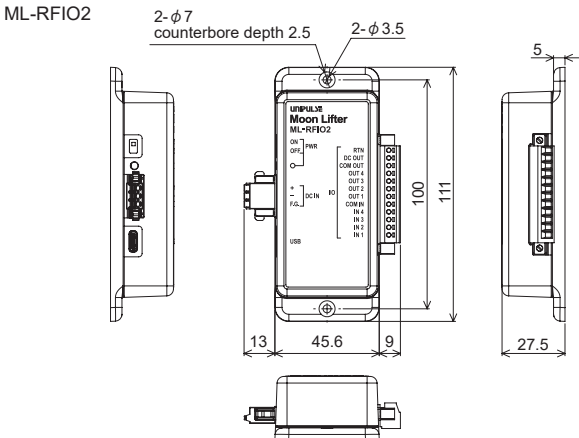
The specification with the maximum lifting load of 120 kg is also available. Contact us for more details.  
The material of the arm part is the aluminum frame.  
The material of the jib lift part is changeable to stainless steel.

unit : mm

Wireless external controller (Optional accessories)

Model	ML-RFIO2
Dimensions	45.6×27.5×111 mm
Weight	Approx. 78 g
Power supply	DC 6 to 24 V or USB (5 V)
Power consumption	0.75 W or less
Operating environment	The same as main unit
I/O signal	Input: 4 ch/Output: 4 ch
Power output	Max. 0.3 A (Depends on the power source voltage)
Communication frequency	920.7 to 927.9 MHz
Communication range	10 m (Depends on communication environment)
Accessory	IO connector, Power connector, Mini screwdriver, USB cable (2 m), Sticker showing the communication channel

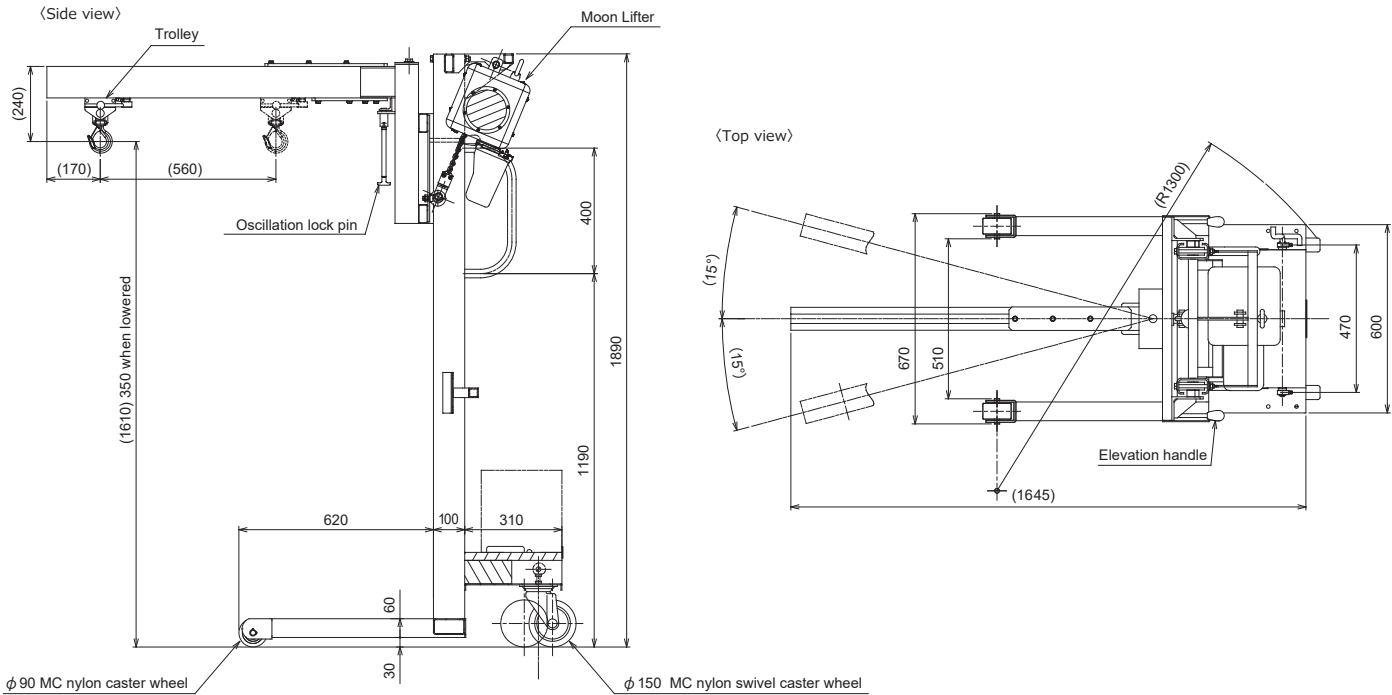
External dimensions



I/O signal control cable, loose end (Optional accessories)

Model	MLX-C-TS2M	MLX-C-TS4M
Cable length	2 m	4 m

External dimensions



Maintenance for Moon Lifter main unit

- Use a lubricant which UNIPULSE specifies.
- Clean and lubricate the chain every three months  
(More than once a month in case using under harsh conditions such as outside.)

Safety precautions

Make sure to comply with applicable laws concerning to radio communications of a country where Moon Lifter is used.  
The safety precaution on the operation manual attached to Moon Lifter is meant to ensure correct usage of this product,  
prevent any harm to customers and protect this product.  
Be sure to read these precautions carefully, and please keep the instruction manual in a place where you can refer to at  
any time.  
The manufacturer is not liable for any personal injury or accidental damage caused by misuse of improper handling.



# Comparison with air balancer/hoist

Air Balancer	Moon Lifter
Plant air and piping required	Available immediately with AC 100 to 110 V or AC 200 to 240 V
Difficult to change weight	Built-in load sensor enables one-touch change
Movement is sudden and freighting	Works as safely as you want
Wire bounces up when hook is removed	Detects load changes and locks in place
Dangerous if weight changes in mid-air	Hold function enables work in the air
Partial grounding is dangerous if the workpiece's center of gravity is unbalanced	Can safely ground the entire unit even if the center of gravity is unbalanced
High running cost	Energy-efficient and environmentally friendly since it is electrically powered

Hoist	Moon Lifter
Work with one hand as you operate the buttons	Safe two-handed operation with no shaking of the workpiece
Difficult to position	Smooth movement for easy precision positioning
Collision upon grounding	Gently ground the workpiece without collision

# Moon Lifter

Lightweight

Dust-proof & All-weather

Large capacity

Lineup

## Extensive lineup with 3 types, 6 models in total

Lightweight type		
ML-40K	Maximum lifting load 40 kg	Maximum lifting/lowering speed 500 mm/s
MLS-60K	Maximum lifting load 60 kg	Maximum lifting/lowering speed 250 mm/s
Dust-proof & All-weather type		
MLT-60K	Maximum lifting load 60 kg	Maximum lifting/lowering speed 500 mm/s
MLT-120K	Maximum lifting load 120 kg	Maximum lifting/lowering speed 250 mm/s
MLT-240K	Maximum lifting load 240 kg	Maximum lifting/lowering speed 125 mm/s
Large capacity type		
ML-480K	Maximum lifting load 480 kg	Maximum lifting/lowering speed 62.5 mm/s

Video available on our YouTube channel!

