

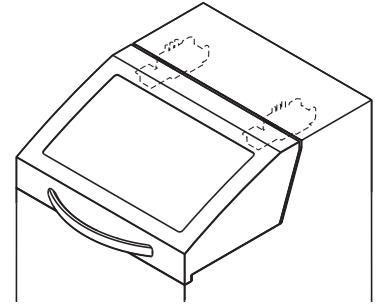
# LAMP® HG-PA231

## Lift Assist Hinge Installation Manual

Thank you for selecting our product. Before starting installation, please read this manual thoroughly to ensure correct installation. Please keep this manual at hand for future reference.

### ABOUT THE PRODUCT

- Hinge for upward opening
- The built-in spring lets you open the lid lightly.



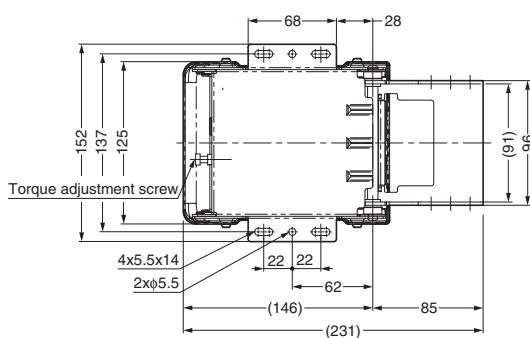
### FOR YOUR SAFE WORK AND CORRECT INSTALLATION

	This symbol denotes prohibited action.
	This symbol denotes what must be done.

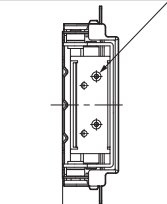
#### **Caution: If these cautions are not followed, it may result in injury or damage.**

- It is necessary to manufacture the cabinet with sufficient strength so as to endure the weight of the lid.
- Do not put an unbalanced load to the hinges.
- Use more than 2 hinges per lid and adjust hinge center.
- Provide a stopper to prevent the hinges from opening beyond the full opening angle and damage. Hinges may be damaged if no stopper is provided.
- To lay down cabinet may lead to injury or damages for parts and hinges. Please use locks to prevent sudden open in that case.
- This product is for indoor use only. Do not use outside or anywhere it will be exposed to water.
- Do not open/close the hinges repeatedly.
- Design a cabinet which allows an access to the torque adjustment screw located on the tail part of the hinge.

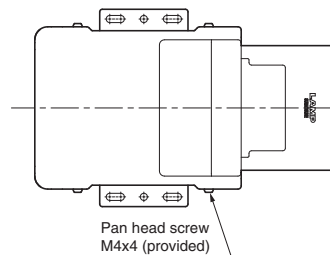
### DIMENSIONS



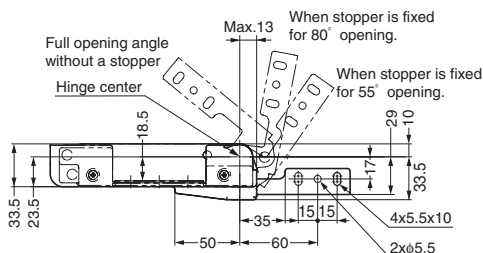
Hexagon socket head cap screw M4x8 (provided)



Example of stopper for 80° opening



Pan head screw M4x4 (provided)



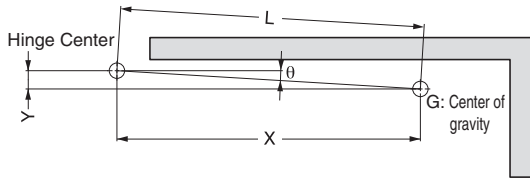
### SPECIFICATIONS

- Fixing screws are not included. Please prepare screws of suitable length.

- Torque:
  - 15±10% N·m (HG-PA231-15)
  - 20±10% N·m (HG-PA231-20)
  - 25±10% N·m (HG-PA231-25)
- Torque adjustment range: ±5%
- Operating temperature range: 0 - 40° C
- Lift assist angle: 0 - 90°  
Available for 0 - 55° or 0 - 80° by changing the direction of a stopper.
- Opening angle: 0 - 140°  
(Torque free range: 90° - 140°)

## 1 Maximum Lid Torque Calculation

Calculation formula:  $\mu = W \times L \times \cos \theta$



X	Horizontal distance from hinge center to center of gravity
Y	Vertical distance from hinge center to center of gravity
L	Distance from hinge center to center of gravity
$\theta$	Angle from hinge center to center of gravity
W	Lid weight
G	Center of gravity

## 2 Relationship between lid torque and hinge torque

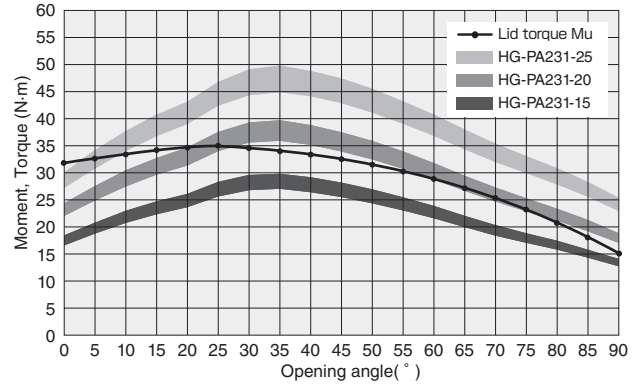
The chart shows an ideal example of lid torque and hinge torque.

Lid torque  $\mu >$  Hinge torque . . . Lid will close.  
Lid torque  $\mu <$  Hinge torque . . . Lid will open.

■ Please confirm whether hinges move correctly if Lid torque  $\mu$  is Max or Min.

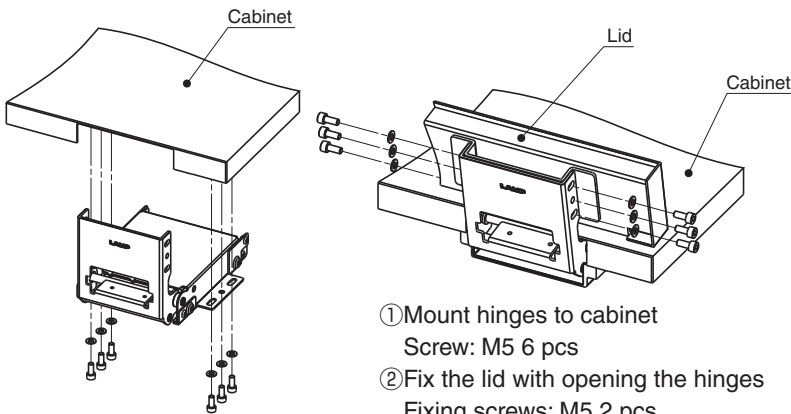
Example of lid size: X = 29 cm, Y = -14 cm, L = 32.2 cm, W = 11.0 kg

Example of overlapped torque for lid and hinges (for two hinges)

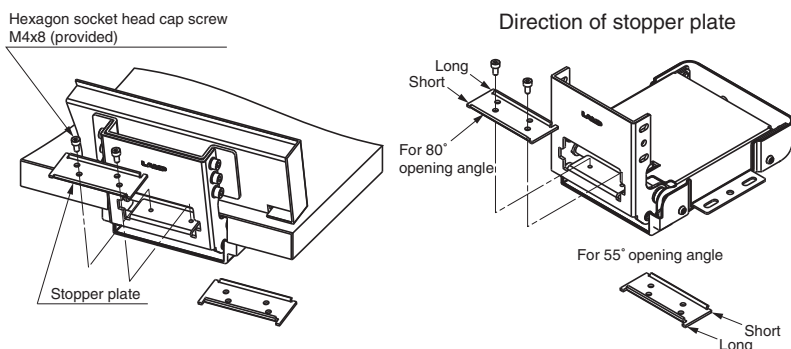


## INSTALLATION PROCEDURE

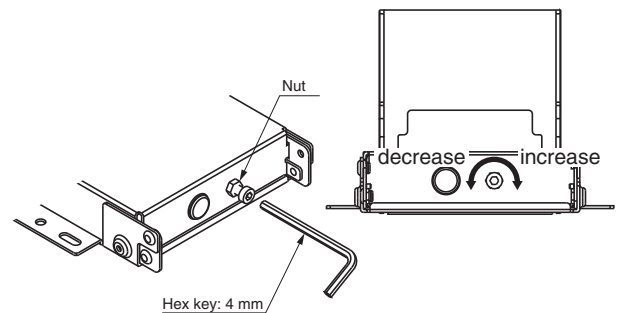
### 1 Fixing hinges



### 2 Fixing stopper plate

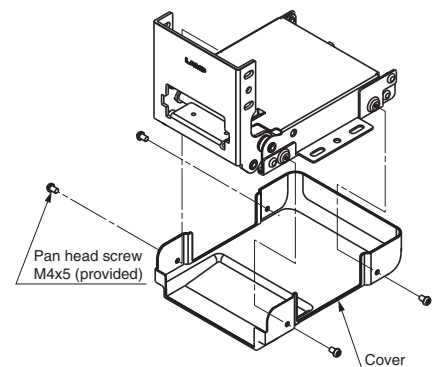


### 3 Torque adjustment



- Loosen the nut of adjustment screw.
- Adjust the torque by turning the screw.  
Adjust torque in order to fit the moment of lid.
- Tighten the nut.

### 4 Assembling cover



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