

OPERATION MANUAL

ELECTRIC HOIST FOR HE-773-Di



INTRODUCTION

Thank you very much for purchasing our product.

- Please be sure to read this operating manual carefully and understand the contents before the actual operation in order to keep your safety.
- Please store this manual safely at the convenient place so that you can read it when needed.
- Please pass this manual to new owner when you resell or give this unit to someone else.
- We are not responsible for any physical injuries and property damages under product liability (PL) law by wrong usage or any other operations not described in this manual.

DEFINITION OF SYMBOL MARK [CAUTION FOR SAFETY]



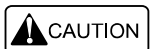
DANGER

: Incur the accident resulting in the death or serious injuries unless you keep the descriptions.



WARNING

: Be in danger of incurring the accident resulting in the death or serious wound unless you keep the descriptions.



CAUTION

: Be in danger or incurring the slight wound to human or damage to other physical property unless you keep the descriptions.



: Prohibited



: Must-follow

- Do not reproduce a part or all of contents described in this manual.
- Please understand that the unit may differ from the contents described in this manual due to the specification changes etc.
- Please inform us if you see errors and/or unclear descriptions in this manual.

BASIC SPECIFICATIONS (12V and 24V spec)

There exists 2 types of products: 12V and 24V.
Please be sure which operating voltage is required before the installation.

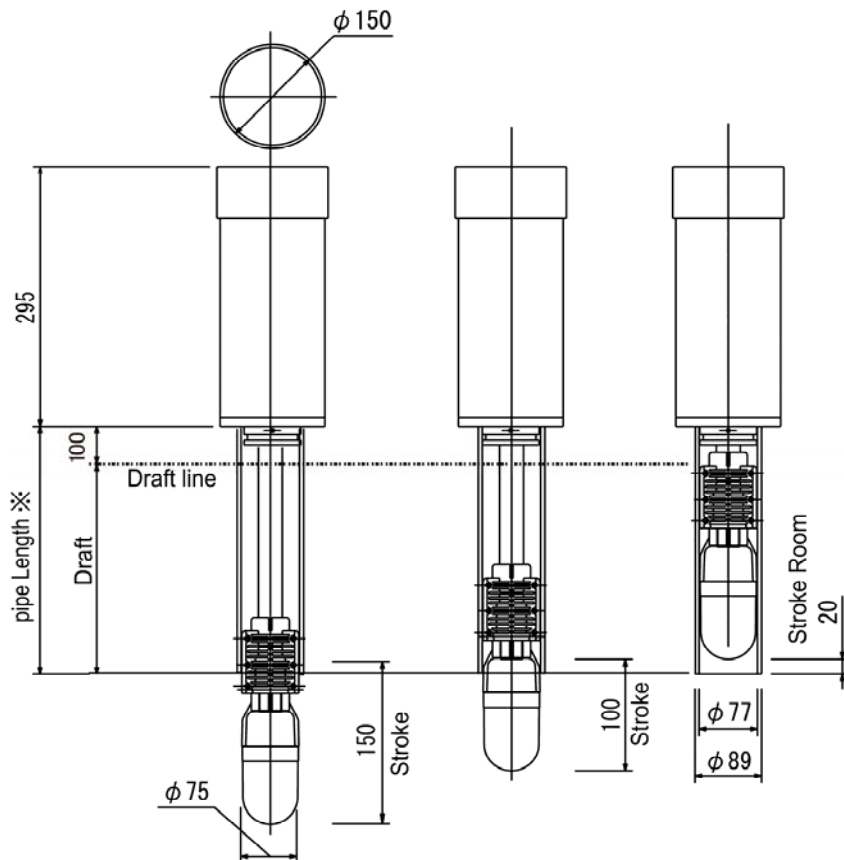
ELECTRIC HOIST DIMENSION

Warning

The main unit part of electric hoist is not waterproof.
The hoist has the open area such as cable slot etc.
Please make sure to install the product beyond the water line.

electric Host Dimension

- ※ 1 : Trank pipe should be min, 50mm hight than waterline.
- ※ 2 : Trank pipe should be min, 330mm or longer.



TRANSDUCER INSTALLATION



DANGER

- Any works on the vessel are very unstable and risky.
Installation/maintenance of transducer should be handled after landing the vessel on ground or fixing the vessel at shipyard etc. If not, it may cause serious injuries.



WARNING



- Be sure to ventilate well inside the vessel when installing the transducer at the bottom of vessel. Volatile gas from solvent etc causes the toxic symptoms.
- Water proof treatment is required for Thru-Hull installation.
If not, it causes the marine accident.
- Do not operate the electronic tools with wet hands.
It causes electronic shock.

1. Installation Location

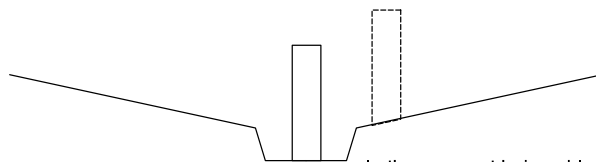
Please be cautious when deciding the installation location with the consideration of following points.

• **This is not a waterproof product.**

Select the location where no water is present. This product is not waterproof so that water may enter from the bottom part.

• **Select the location having small influence from bubble, interference, noise.**

The preferable location is on the keel if possible.



In the case not being able to install the sonar on the keel, Shift the location to aside.

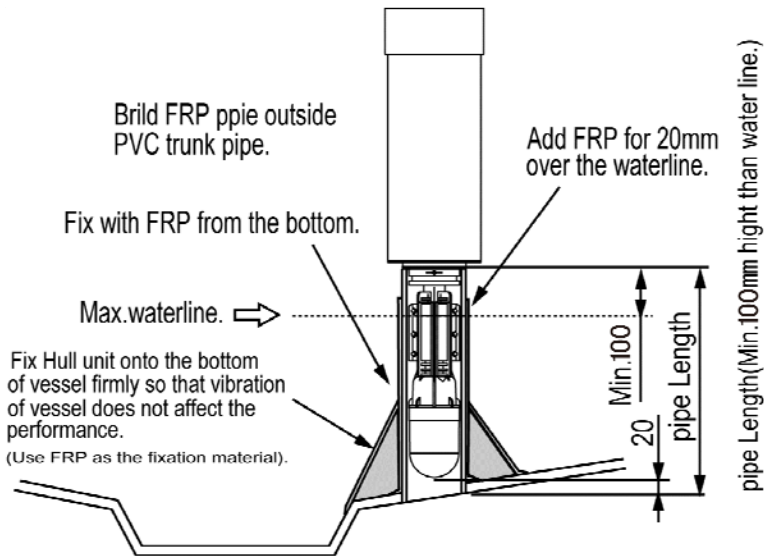
• **Select the location having no ultrasonic interference among existing equipment.**

• **No obstacles near the hull unit. (especially for bow side)**

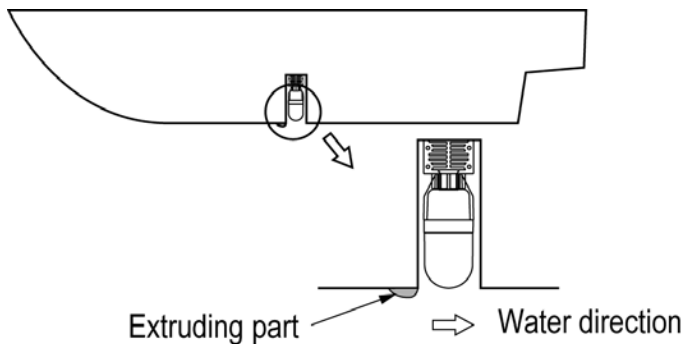
Any obstacles at bow side cause bubbling and detection problem in addition to the cut-off for ultrasonic beam.

2. Hull Unit

Please make sure to proper location of hull unit to be installed. The important points to be concerned are safety (intensity and water tightness) and easy maintenance.



Add the extruding part of approx. 5mm with FRP for the purpose of reducing the water pressure inside the trunk pipe while sailing.



Pipe Length : Lt

The installation method defines the pipe length accordingly. Cut off the unnecessary parts. Also, take a note for the pipe length as the reference figure of adjusting joint pipe. Be sure to keep the room for the hull unit.

Pipe Length Lt = Full-loaded water line + Min.50m

STORAGE/OPERATING METHOD FOR ELE.HOIST/SOUNDOME

Please refer to the cautions below when installing the soundome to electric hoist or removing the soundome from trunk-pipe for the storage.

1. Oil filled inside the soundome

Make sure that the transducer is always placed/stored straight-up.

Placing side-way has the risk of leaking oil to the cable.

Do NOT place it side-way.

2. Soundome consists of precise components.

It may be damaged by strong shock and vibration without having clear appearances such as scratch or dent etc. Handle with care.

3. Do not exceed 10 knots when lowering the soundome.

The transducer may become damaged or malfunctioned when exceeding 10 knots.

Make sure to raise the transducer all the way up when speeding.

4. Be sure to stop the vessel when raising/lowering electric hoist.

Electric hoist may be damaged if operating the hoist at the time of sailing.

Stop the vessel (3 knots or less) before the operation.

5. Current consumption during the operation of electric hoist

Approx.2A for 12V system, Approx.1A for 24V system

The current level will increase if operating the hoist at the time of sailing.

This may cause the damages to the electric hoist and serious accidents.

6. Tact time for upward or downward of electric hoist (case of 150mm stroke)Approx.15sec for 12V system, Approx.12sec for 24V system.

INSTALLATION OF ELECTRIC HOIST

1. Cut off the joint-pipe according to trunk-pipe length Lt.

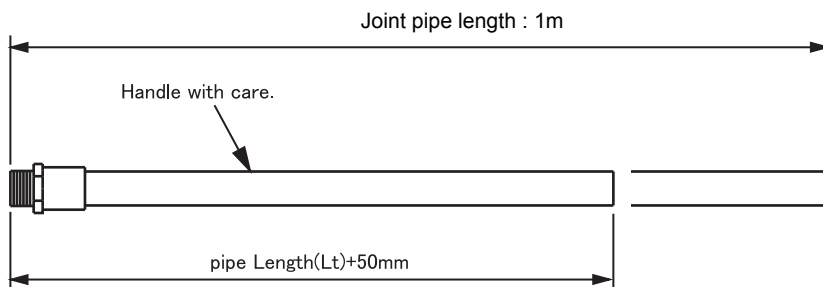
Pipe Length (Lt) = Waterline (fully loaded) + Min.100mm

Trunk Pipe	SPEC
PVC Pipe	PVC-U VP-75

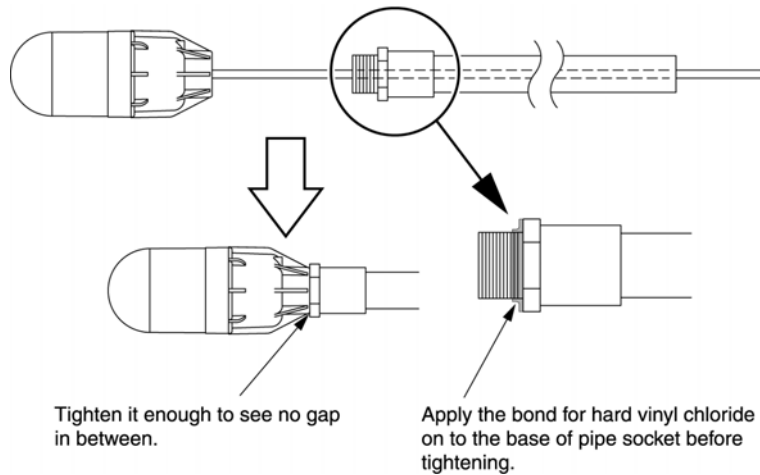
Outside diameter	:	89±0. 5mm
Thickness	:	5. 5+0. 8mm

Joint Pipe Length : Trunk Pipe Length (Lt) + 50mm

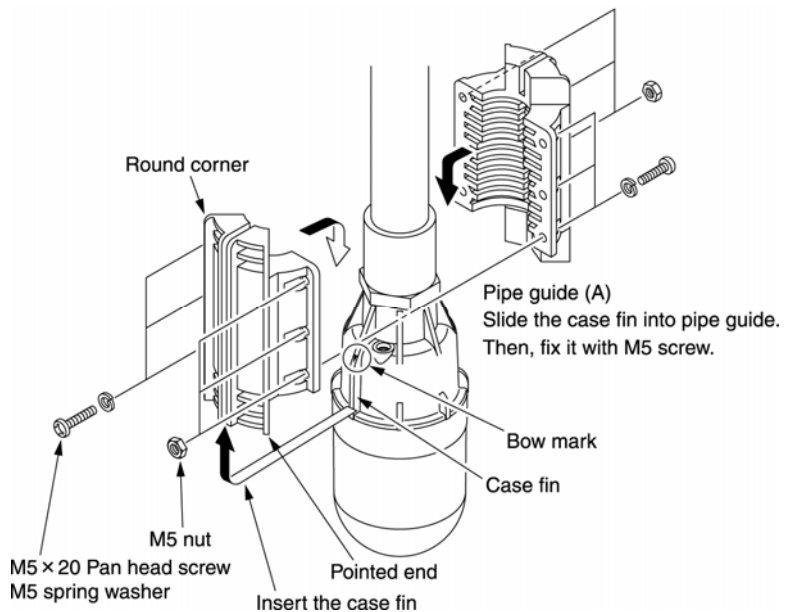
Standard Length : 1m



2. Pass the cable of soundome inside the joint-pipe.
3. Apply the adhesive agent (for PVC pipe) onto the base of joint part (one round).
Tighten the soudome and joint part. (clamping torque: 8~10kgf.m)

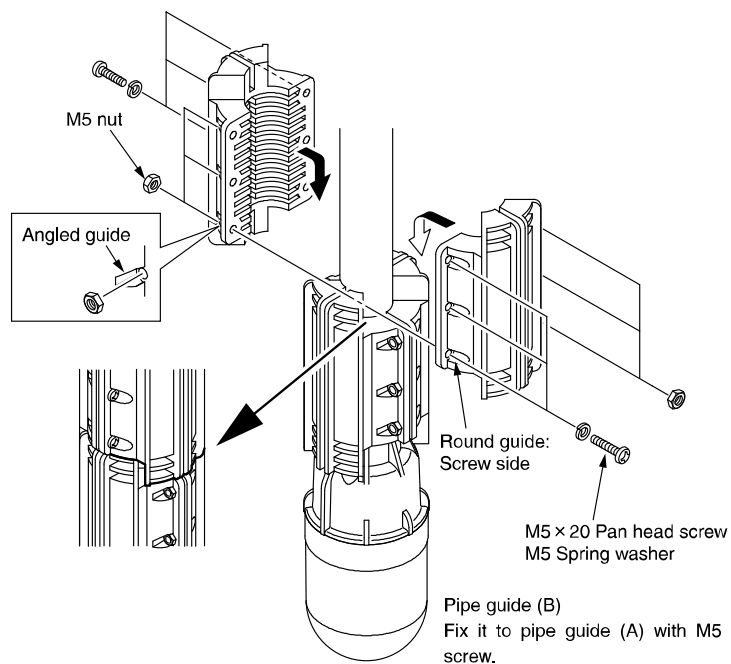


4. Fix the joint pipe and soundome with pipe guide (A).

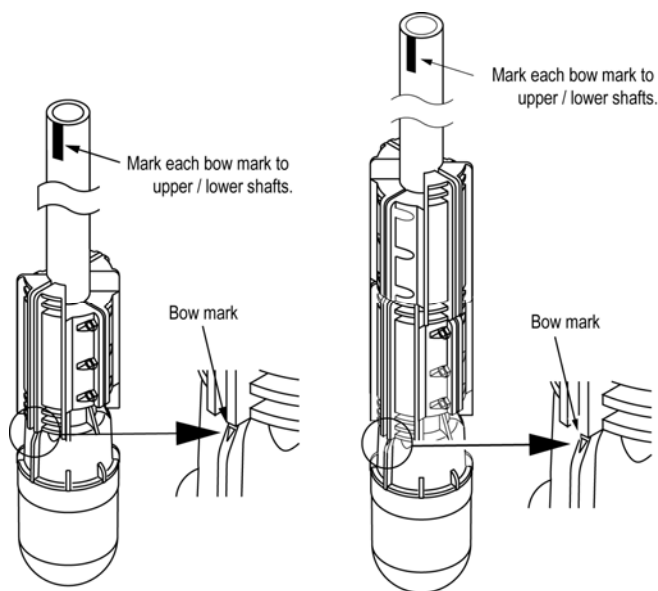


5. Use pipe guide (B) when trunk pipe length is 408mm or more.

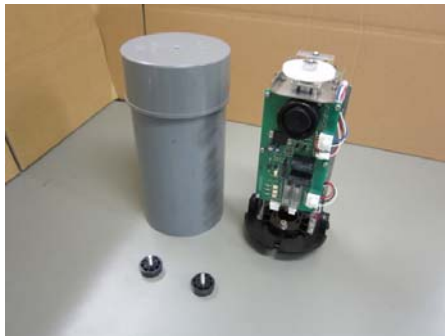
※No need to use pipe guide (B) when the trunk pipe length is 408mm or less.



6. Check the bow mark of soundome and put the marking on the joint pipe with pen etc.



7. Remove the clamping knobs and cover of electric hoist.



Place the electric hoist on the trunk pipe.

Choose the cable path and the direction for easier maintenance.

(Consider the position of cover and clamping knob.)

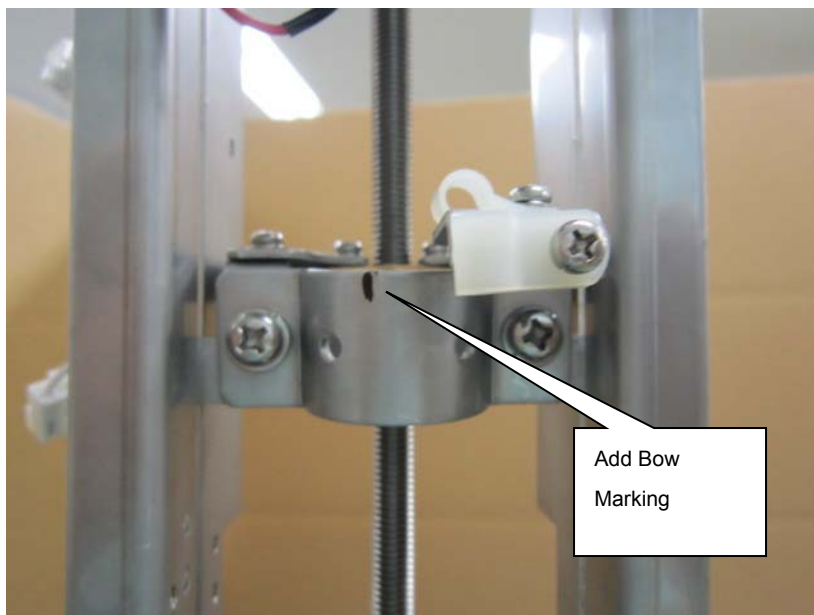
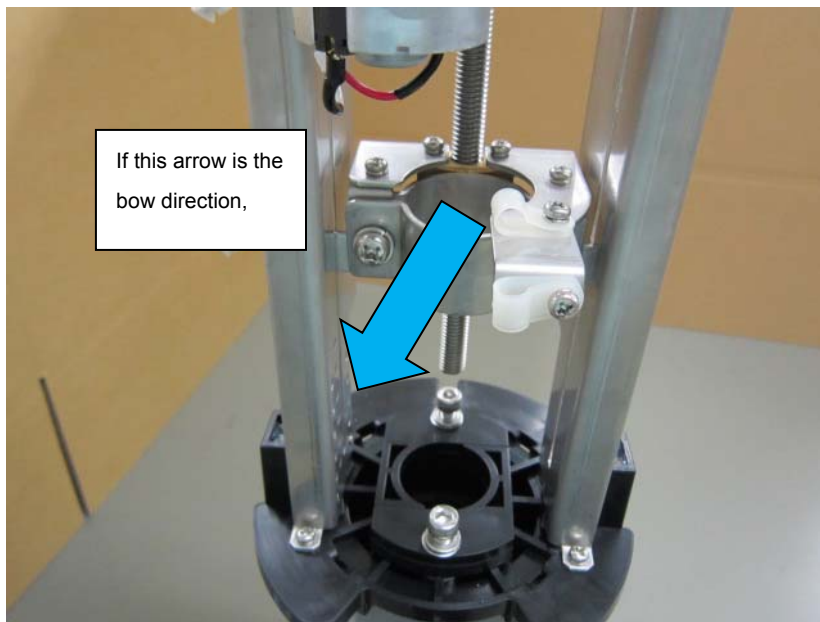


PCB side has the connection between power and Upper/Lower signal lines. The opposite side has the transducer cable.

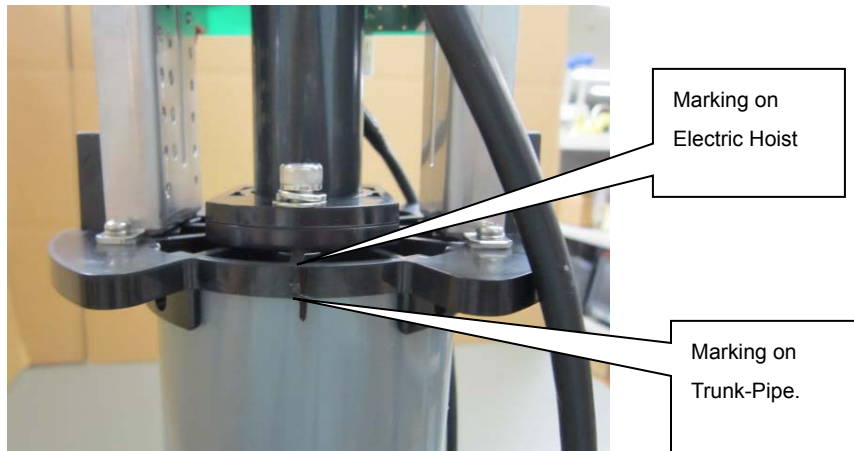
Set the installation location with the consideration of cable out direction and the room for maintenance environment.

Remove the cable connectors followed by removing 6 screws to take out the PCB.

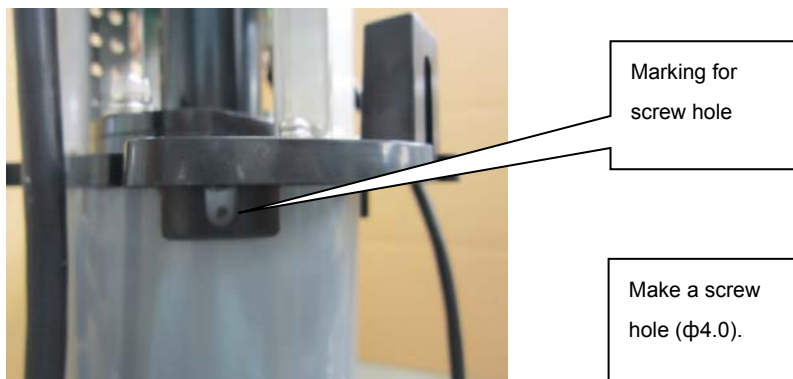
Recheck the location of electric hoist and put the marking of bow direction.



After fixing the location of electric hoist, put the marking with pen on the hoist and trunk pipe.



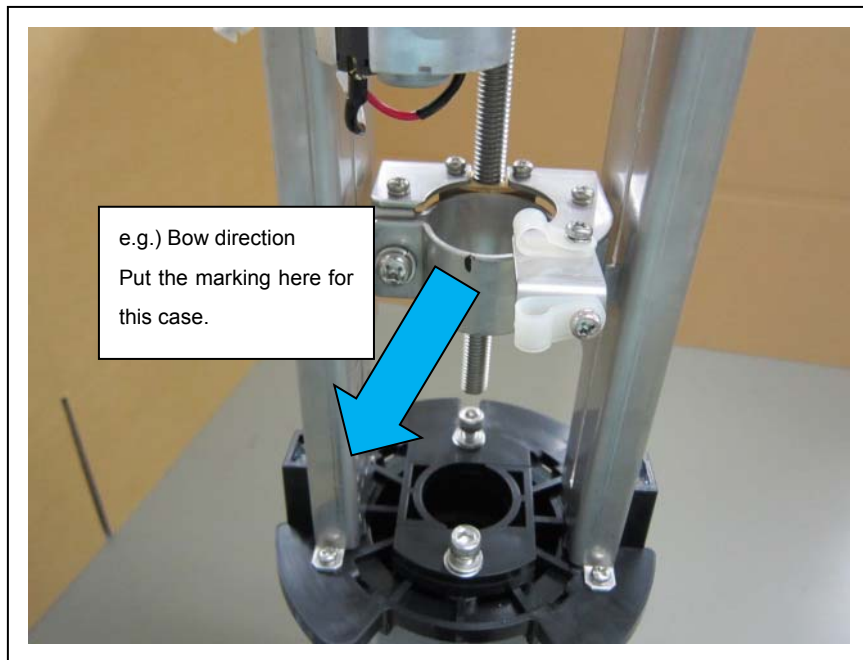
8. According to the fixation location above, put the marking for screw hole on trunk pipe.
4 holes (Min.3 holes required at least.)



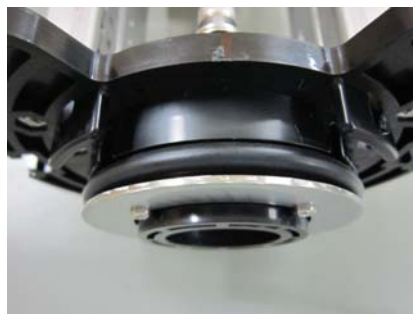
Make a screw hole ($\phi 4.0$)



Put the marking of bow direction after re-confirming the positioning of hoist.



Insert O-ring.



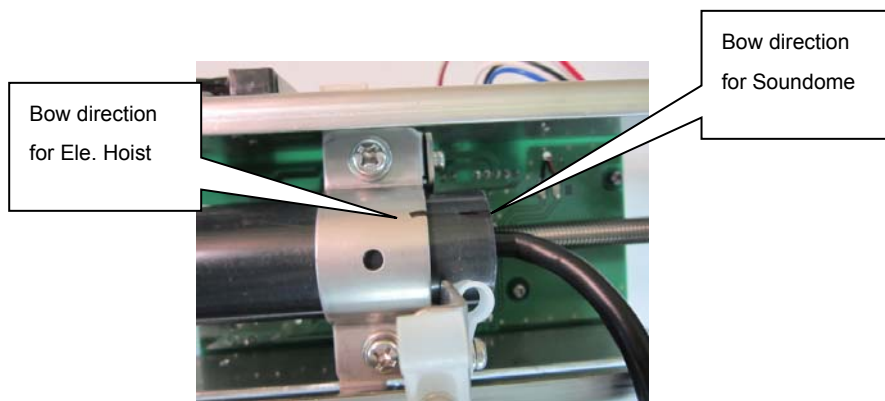
Insert the rubber bush into transducer part.



Insert the cable of soundome.



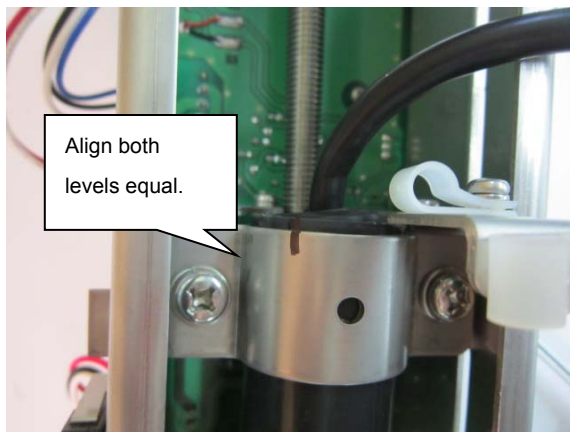
Set both markings for bow direction.



Align the level of silver plate and joint pipe.

Temporary fix with clamping screws.

Fix the nut with screw wrench from the opposite side and tighten the screws.



Insert the joint pipe into trunk pipe carefully so that no scratch is on the soundome surface. Execute the temporary fixation.

At this stage, no need to joint the hoist and trunk pipe since O-ring is ON.

Again, recheck the bow direction is correct against the fixation position of hoist.

Lastly, remove the parts from trunk pipe.

Final tightening of clamping screws

Fix the nut with screw wrench from the opposite side and tighten the screws.



Use 4x10 tapping screw for fixation.

Use the center-hole on the right.



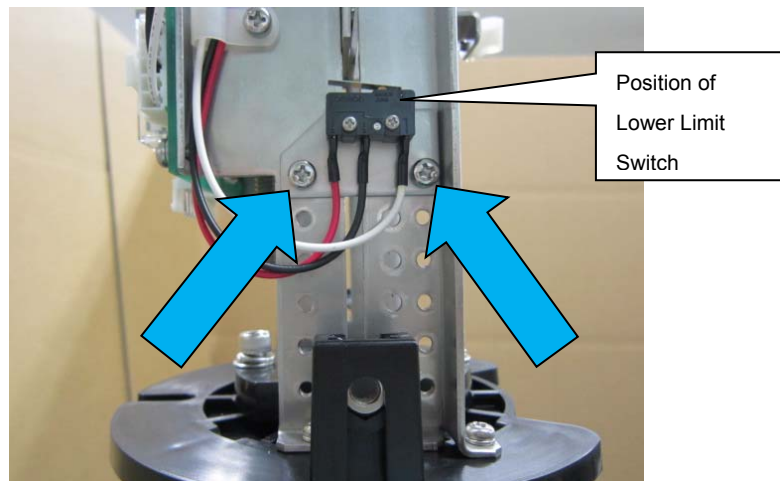
Remove the cable clamp and fix the cable.



Place the PCB back to the original location and fix it with 6 screws.

Stroke Adjustment

Initial set-up : 100mm



Remove 2pcs screws shown above to lower the lower limit switch for longer stroke.
1cm step for each screw hole. The bottom hole means 5cm stroke spreading overall stroke to 150mm.



Grease Cloth

4pcs grease clothes enclosed



Remove 2 screws from the black plate for grease cloth fixation.



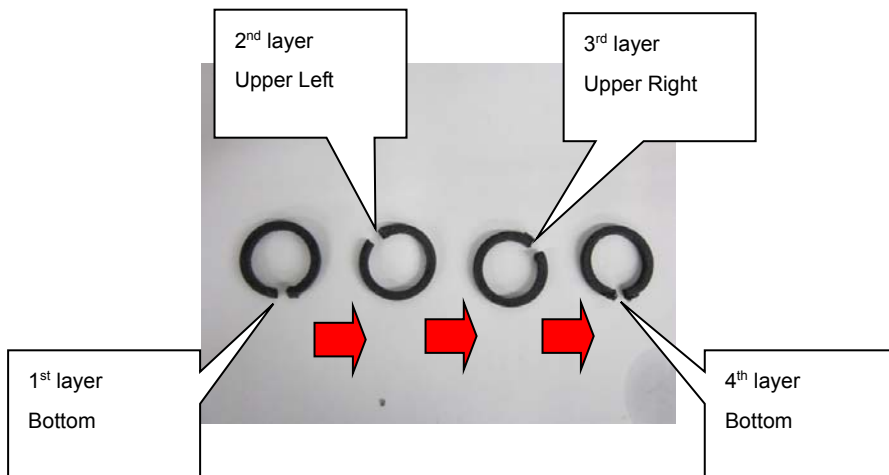
Rotate the plate 90 degree, lift it to split into 2 pieces.



Each plate part is identical.



Rotate the cut area of each layer for 120 degree and insert 4 layers to the joint area.



Lastly, tighten the plate with M6x20 screws and flat washers.

Manage the flatness of plate by controlling left/right screws. 3mm is the initial reference gap in between.

As the usual maintenance, check the water leakage at this area. Tighten them up if needed.



Add some water for smoothing O-ring and trunk pipe. Insert the joint pipe into trunk pipe carefully without causing any damage onto soundome. Keep pushing the joint pipe until the location of trunk pipe reaches the fixation position.

Fix the trunk pipe and electric hoist with 4pcs 5x12 tapping screws. (Min 3pcs)



Initial Set-up

Refer to the operating manual for the initial set-up of main unit.

Software ver.1.19 or later is required for the usage of electric hoist.

Select "Auto" for "Auto Hoist".

Wiring

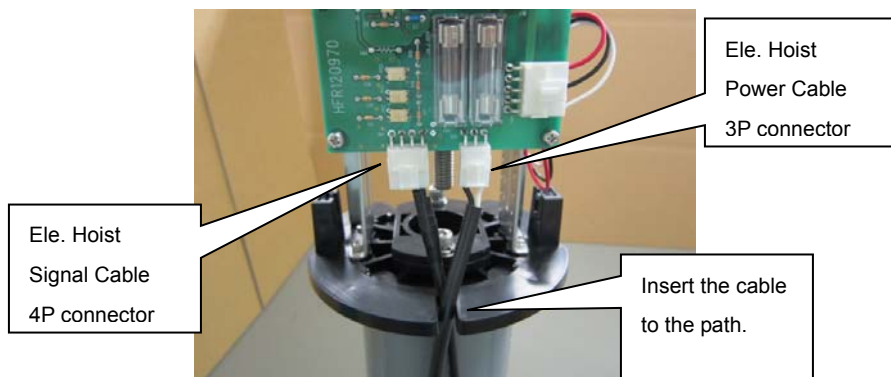
Power cable is connected to battery via breaker.

(Breaker is in OFF status.)

Upper/Lower signal cable is to be conned to 8p connector of HE-773-Di.

(Power has to be set to OFF before the connection.)

Electric Hoist Wiring



Confirmation of Up/Down Movement

Confirm the Up/Down movement.

- ① After setting the power breaker ON, the alarm goes ON followed by soundome moving upward.
- ② After reaching the upper limit position, the movement and alarm stop.
(Check the soundome position stored inside correctly.)
- ③ Turn ON the power of HE-773-Di main unit.
Go to MENU1 and select "DOWN" for AUTO HOIST.
Soundome goes down. Alarm is ON.
- ④ After reaching the lower limit position, the movement and alarm stop.
(Check the soundome position extended correctly.)
Also, re-check the bow direction.

After confirming the Up/Down movement, turn OFF the power of HE-773-Di.

- ⑤ Alarm ON. Soundome goes up and stored inside pipe.

Followed by the steps above, confirm smooth Up/Down movement of soundome.

Transducer cable also moves Up/Down during the soundome movement.

Adjust the wiring if any excessive force is put on the cable.

Remove foreign materials if existing any inside trunk pipe. Foreign materials disrupt smooth movement and locks the soundome.

After confirming all the correct movement, seal the cover and fix it with knobs.



Operating Precautions

1. Vessel needs to be stopped (3knots or less) for the operating the electric hoist (Up/Down movement).
2. Vessel speed needs to be 10knots or less when soundome is lowered.
Soundome may be damaged or malfunctioned when exceeding the speed limit.
Be sure to stop the vessel first and store the soundome back to trunk pipe before increase the vessel speed.

Operating Method

1. Lower Soundome

- ① Stop the vessel. (3 knots or less)
- ② Press MENU button of HE-773-Di.
- ③ Go to MENU1 and select "DOWN" for AUTO HOIST.

Caution: This function is disabled when connecting to NMEA speed information and exceeding the speed limit. Stop the vessel completely for this operation.

- ④ Alarm is ON when electric hoist is under operation.
Alarm is OFF after soundome reaches to the lower position and stops.

2. Raise Soundome

- ① Stop the vessel. (3 knots or less)
- ② Press MENU button of HE-773-Di.
- ⑤ Go to MENU1 and select "UP" for AUTO HOIST.
- ⑥ Alarm is ON when electric hoist is under operation.

Alarm is OFF after soundome reaches to the upper position and stops.

Caution: Sail the vessel at 10 knots or less when soundome is lowered.

Soundome is damaged or malfunctioned when exceeding the speed limit.

Be sure to stop the vessel first and store the soundome back to trunk pipe before increase the vessel speed.

Caution: Red indicator blinks on the display when connecting to NMEA speed information and exceeding 3 knots while soundome is lowered.

Warning message appears on the display when exceeding 11 knots.

Press MENU button to clear the warning message.

Case of Problem

1. Alarm is ON when the following conditions occur.

- ① Fuse is blown caused by overcurrent.
- ② Soundome moving upward
- ③ Soundome moving downward

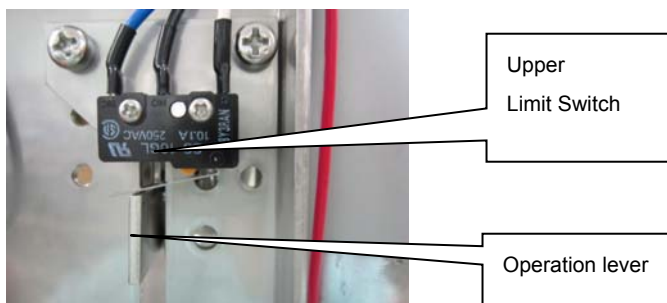
Therefore, alarm turns OFF after soundome stops.

2. Stop the vessel when confirming the condition of problem. Turn OFF the electric hoist before starting the operation.

- ① Remove the clamping knob and open the cover.
- ② Remove the fuse cover to see if the fuse is blown. (2A/125V 2pcs)
Exchange old fuse to new one if broken.
Caution: Use fuse less than 2A spec.
- ③ After fuse exchange, turn ON the power and confirm the operation.
If the motor still does not activate, turn OFF the power of unit.
Raise the soundome manually with the following procedure.
Use 17mm wrench for hexagon nut on the top and rotate it clockwise.
(Soundome will move upward.)
Do NOT rotate the nut to counter-clockwise since the nut gets loosen.

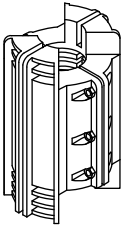
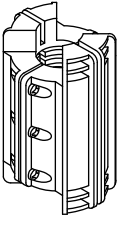

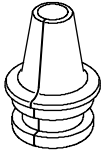
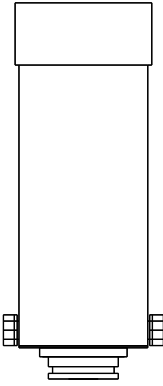
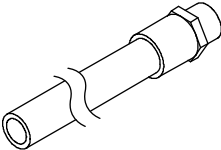
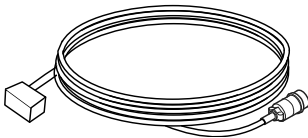
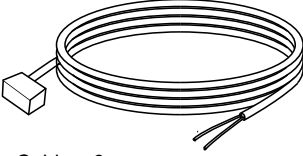


Caution: Do NOT raise the soundome too high. That causes the damage onto the upper limit switch. Raise the soundome by looking at the positioning of limit switch and operation lever.



3. After foreign material is stuck inside the pipe, return to the port for safe tie-up, and remove the material.

STANDARD CONFIGURATION

<p>Pipe Guide-A x2</p>  <ul style="list-style-type: none"> M5x20 SUS Screw x8 M5 SUS Spring Washer x8 M5 SUS Nut x8 	<p>Pipe Guide-B x2</p>  <ul style="list-style-type: none"> M5x20 SUS Screw x8 M5 SUS Spring Washer x8 M5 SUS Nut x8
<p>Joint Pipe Fixation Screw</p>  <p>4×10 Screw x1</p>	<p>Rubber Bush</p> 
<p>Electric Hoist System</p>  <ul style="list-style-type: none"> O Ring x1 Grease Cloth x4 5×12 Screw x4 Clamping Knob x2 Spare Fuse 2A x2 	<p>Joint Pipe with Socket</p>  <p>PVC Pipe HI-VP VP25 1m Pipe Socket HI-VS VP25 x1</p>
	<p>Upper/Lower Signal Cable 8P 10m</p>  <p>Power Cable 6m</p> 



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