INSTRUCTION MANUAL

AIR BALANCER

EHB-50S

EHB-50

EHB-85

EHB-130

EHB-270

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⚠ WARNING

- Never use the AIR BALANCER for lifting or lowering people.
- Supply this manual to the user.
- Read this manual before installation, operation, or maintenance.
- Keep this manual available.

ENDO KOGYO CO., LTD.

HM-10086s

Issued on May 2025

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SAFETY ALERT SYMBOL AND ALERT SIGNS

Please read this manual carefully and follow its instructions.

The SAFETY ALERT SYMBOL(⚠), WARNING, CAUTION, and NOTE carry special messages.

⚠ This SAFETY ALERT SYMBOL is used to call your attention to items or operations that could be dangerous to you or other persons using this equipment. Please read these messages and follow these instructions carefully.

⚠ **WARNING :** WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION :** CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury, damage or destruction or the equipment and others.

NOTE : NOTE indicates a special instruction in operation or maintenance.

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Scope of warranty and liabilities for the equipment

1. We will repair or replace the product free of charge if a failure due to manufacturing defects occurs under proper usage during the warranty period. For details, contact us or your dealer.

2. The warranty will be void in the following cases:
   1) Change in ownership.
   2) Repair, adjustment, or modification performed by a party other than the manufacturer, agents, or dealers.

3. The warranty period is one (1) year from the date of purchase except for consumables.

4. Repairs applicable to any of the following shall be charged even during the warranty period:
   1) Failure/damage caused by incorrect use.
   2) Failure/damage caused by use of non-genuine parts.
   3) Failure/damage caused by fire, earthquake, natural disaster, or other unexpected incident.
   4) Incident caused by fall, shock, negligence, or by inadequate storage.
   5) Failure/damage caused by use of parts or other equipment that are not included in this product.
   6) Replacement of consumables.
   7) Usage in violation of dangers or cautions stipulated in this Instruction Manual or the warning labels.
   8) Failure/damage caused by any reason that is not attributable to the manufacturer.

5. Warranty exclusions such as mechanical loss.
   Either during or after the warranty period, mechanical loss, damage to anything other than our product(s), or other duties incurred on you/your customer as a result of the failure of our product(s) are outside the scope of the warranty.

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1. ⚠ Safety Instructions

If the air balancer is not used correctly a serious accident may occur, such as dropping the load or the air balancer itself.
Before installing, operating, controlling, inspecting of air balance, read and understand this instruction manual.
*Until understanding of all equipment terminology, safety information, caution and warning, do not use the air balancer.

1.1 Review of Safety Instruction

⚠ WARNING

- Do not use this air balancer or attached equipment for lifting, supporting, or transporting people or lifting or supporting loads over people.
- Before installing, operating, storing of air balancer, read and understand this instruction manual carefully to prevent the accidents by the incorrect operation.
- Keep this manual available for maintenance and inspections.
- Always check the supporting member from which the air balancer is suspended is strong enough to support the weight of the air balancer plus the weight of the rated load, etc. The customer has the responsibility for this.

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1.2 Instruction for safe operation

If there are any differences between instruction manual and the standard of your company, give the priority to stricter standards from either of both.

1.2.1 General Handling

⚠ WARNING

- Never operate the air balancer unless the contents of this manual and caution plate (warning label) are completely known.
- Never operate the air balancer nor sling a load unless you were trained in safety rules and in operating manner of the air balancer. Never allow untrained persons to do so. Never remove or deface any nameplates, caution plates or warning labels which are attached to the air balancer.
- Always check the air balancer before each shift, and inspect it periodically.
- Never operate the air balancer if you are not physically fit to do so. The operator must have good hearing, vision and depth perception.
- When instruction signs put on the push button switches such as “EQUIPMENT BEING INSPECTED” or “DO NO RUN”, never operate the hoist until the sign is removed by the designated person.

1.2.2 Installation

⚠ WARNING

- Always employ specialists or well trained persons for installation.
- Never install the hoist in any environments which are out of specifications.
  For example, the air balancer should not be exposed to rain or water.
- Always install stoppers at the end of the rails for traveling or traversing.
- Always check the supporting member for the air balancer has enough strength.
- Always attach a secondary support wire rope.

⚠ CAUTION

Never operate the air balancer when the air balancer is placed on the floor.
Only operate the air balancer when it is hanging.
*Never operate the air balancer when the wire rope is loose.

1.2.3 Air pressure

⚠ WARNING

Never exceed the working air pressure of 0.7MPa (7kgf/cm^2).
*If it is necessary, reduce and set the air pressure to the requirement of working air pressure by the regulator.

⚠ CAUTION

- Never use the lubricator on the air supply hose to the air balancer.
  *Using a lubricator on the air supply hose will cause the failure of control module on air balancer.
- Always locate the filter and regulator.

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1.2.4 Operation and Handling

⚠ WARNING

- Never lift a load greater than the rated capacity of the air balancer.
  *The rated load is marked on the air balancer body.
- Never stand on a suspended load.
  Also never apply and use the air balancer for transporting people.
- Never stand and walk under the suspended loads, and keep out of its area of projection.
  Never place hands, feet and etc., under or between suspended loads.
- Never operate the air balancer when anyone is in the traveling area of the load.
- Always check there are no objects in the ways of the load or the load hook when moving the air balancer.
- Never carry a load over people.
- Never leave a load suspended for any extended period.
- Always pay attention to the load at all times when operating the air balancer.
- Never swing the load or the load hook when moving the air balancer.
- Never use the stopper as a means of stopping the air balancer.
- Never pull a load at an angle.
  Never lift a load when the load hook is not over the load's center of gravity.
  *Always move the air balancer over the load's center of gravity before lifting.
- Never face the wire rope to the sharp edged material.
- Never wind the wire rope around the suspended load of air balancer directly.
- Never do earth suspending (lifting locked loads).
- Never turnover a suspended load.
  *Always employ special equipments in case of turn over work.
- Always check movement of the push button switches before operation.
  Never operate the air balancer if the push button switches do not move smoothly.
- Stop the air balancer immediately when up / down operations are contrary to the indications marked on the push button switches.
- Never operate the air balancer when damaged or abnormal sound / vibration occurs.
- Never operate the air balancer with the wire rope in any of the following conditions.
  1. Twisted, kinked and deformed.
  2. The number of broken wires reaches the service limit.
  3. The reduction of diameter reaches the service limit.
- Never perform cutting work on a load suspended by the air balancer.
- Never perform electro-welding work on a load suspended by the air balancer.
- Never use the wire rope of the air balancer as a ground for welding.
- Never attach a welding electrode to the wire rope of the air balancer.
- Never lift any single load with 2 or more air balancers.
- Never lock the push button switches.
  *The air balancer must be manually operated by the operator herself at all times.
- When moving a load with a plain trolley, never push the wire rope of air balancer but push the load itself. Never pull the load.
- If the air supply hose or control hose are come off or cut, the load may fall down so handle the air balancer with care.

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⚠ CAUTION

- Never use the hook with a damaged or malfunctioning hook latch.
- Carry out the smooth operation of lifting up and lowering.
  Never start, stop or reverse the air balancer suddenly.
- Never keep holding stopper while operating.
- Never allow the suspended load to touch the nearby structure or power lines, etc.
- Never jerk the hose of the push button switches nor catch it on the nearby structure.
- Never allow the air balancer or trolley to collide with the I-beam stopper or the structure.
- Always check the load hook can swivel smoothly before operating the air balancer.
- Always position the slings at the center or the load hook.
- When starting to lift, stop the air balancer once as the wire cable becomes tensioned.
  *Never jerk the air balancer.
  Never operate the air balancer suddenly while the wire rope is slack.
- Always check the load-lifting height of the air balancer is enough for required work.
- Never leave a load suspended for any extended period.
  After the several hours, the suspended load will go down slowly.
- If the air supply is stopped, the suspended load will keep staying the height by functioning the check valve.
- While the air balancer is not used, the suspending load will slowly go down, so lower the suspended load after the operation.
- Lower the bottom hook by manual paying out when the hook could not lower automatically because of maximal stroke of the wire rope.

1.2.5 Maintenance, Inspection and Alterations

⚠ WARNING

- Never alter the air balancer or its accessories.
- Always use genuine parts for replacement.
- Always shut off the air supply before carrying out maintenance, inspection or repair.
- Always employ specialists or well trained persons for maintenance, inspection and repair.
- Always remove the load from the air balancer before maintenance, inspection or repair.
- Always disassemble the air balancer on the floor.
- If any problems are detected during maintenance or inspection, never use the air balancer but correct and repair the problems immediately.
- Periodically, inspect the air balancer thoroughly and replace any worn or damaged parts.
- Stretched, worn or damaged hooks should be discarded.
  Never attempt to repair it, just replace it with a new hook.
- Always put up an instruction sign(“EQUIPMENT BEING INSPECTED”, “DO NOT OPEN THE VALVE”, etc.) before carrying out maintenance, inspection or repair.
- Never do anything if you have any questions about the air balancer, please do not hesitate to contact you dealer or us.

⚠ CAUTION

- Follow the lubrication instructions.
- Always hang the air balancer when carrying out test run after maintenance or repair.
  *Never operate the air balancer when the wire rope of air balancer is slackened.

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2. Specification

2.1 Specification

Model	Air Pressure (MPa)	Capacity range (kg) Lifting control	Mass (kg)	Stroke (mm)	Dia of wire rope (mm)	Air inlet
EHB-50S	0.7	55	20	700	4.76	Rc 3/8
	0.6	48				
	0.5	40				
	0.4	32				
EHB-50	0.7	55	29	1900		
	0.6	48				
	0.5	40				
	0.4	32				
EHB-85	0.7	90	30			
	0.6	75				
	0.5	62				
	0.4	50				
EHB-130	0.7	140	37			
	0.6	120				
	0.5	100				
	0.4	80				
EHB-270	0.7	270	44	1800	6.0	
	0.6	230				
	0.5	190				
	0.4	150				

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<note>

- Weight of trolley is approx. 7kg.
  Ex.EHB-85（30kg）－upper hook（1kg）＋trolley（7kg）＝36kg
- Depending on the choice of control module, 1kg to 15kg of control module weight must be added to total mass of air balancer.

Working conditions

Application area: Indoor and normal atmospheric condition
Temperature range: –5°C to +50°C

2.2 Labels and tags position

Warning label, name plate, tag are attached as the drawing below.
In inspection, see this figure and warning label, name plate, tag are in the right position.
*Parts has "※" will be applied with control module MS.

■EHB-50S

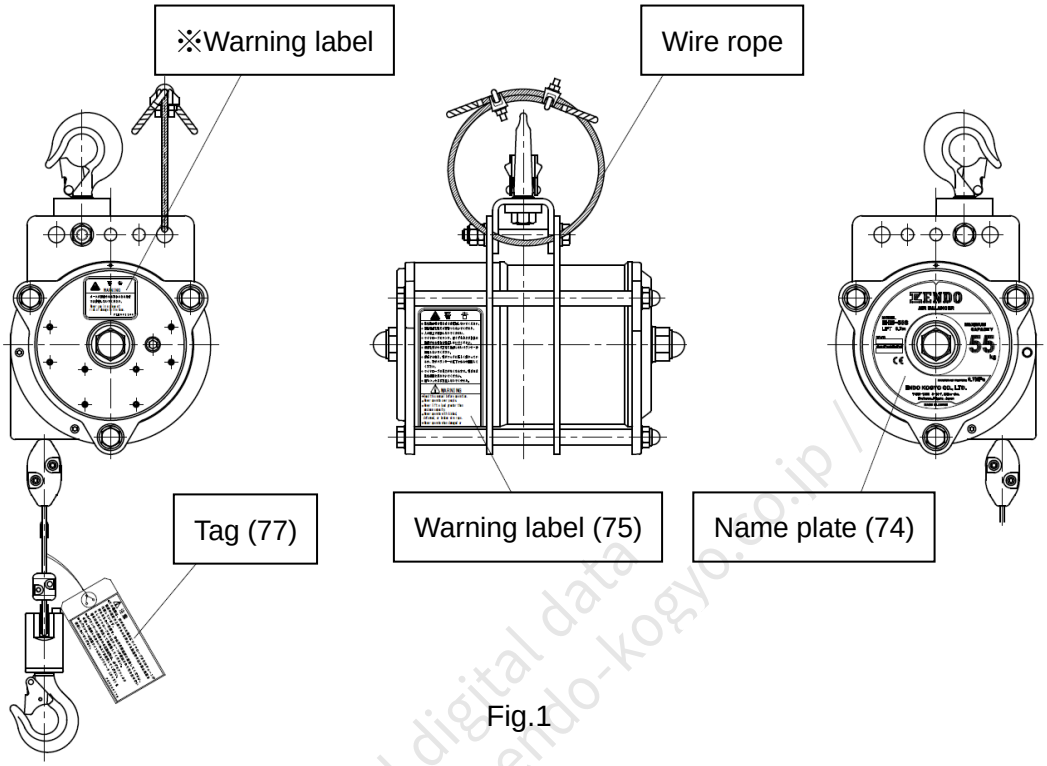

Fig.1

■EHB-50, EHB-85, EHB-130, EHB-270

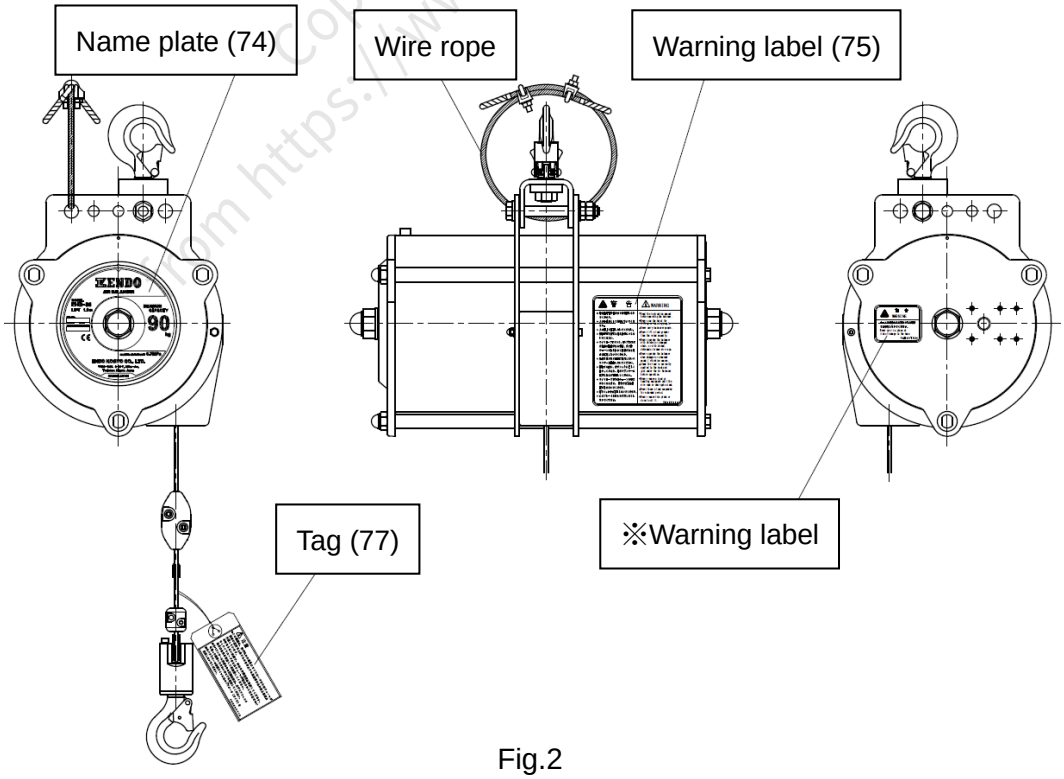

Fig.2

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3. Checks and Instructions before the Installation

3.1 Checks of the Product

- Check the delivered air balancer is what you ordered(Check the name plate)
- Check there was no damaged or deformation on the air balancer during the transportation.
- Check the pressure of the available air supply corresponds to the working air pressure of the air balancer.

3.2 Instructions on Working Condition

⚠ WARNING

- Never use the air balancer at a temperature below –5°C or above +50°C.

⚠ CAUTION

- Do not install and leave the air balancer outdoors.
  Using the air balancer outdoors could be the cause of rust inside of components.
  So if it is necessary to use the air balancer outdoors, always make a shelter with a roof for housing the air balancer.
- Under hostile environments such as high temperatures, high humidity, acidic corrosive and / or extremely dusty atmospheric conditions, the mechanical parts of the air balancer may be seriously damaged(for example, corroded). Therefore, frequently check the air balancer is maintained in normal conditions at all times.

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4. Installation

*If the accessory and the air balancer are separately delivered, attach the accessory to the main body of air balancer following the procedures before installing the accessory to the air balancer.
*For details and procedures, follow the instruction manual of accessory.

4.1 Installation

⚠ WARNING

- Always check the supporting member from which the air balancer is suspended is strong enough to support the weight of the air balancer plus the weight of the rated load, etc.
- Always attach secondary support wire rope.

- Install the air balancer properly.
- Check the top hook is correctly rigged onto the supporting member and the hook latch is correctly closed.
- Never use a supporting member that suspends the air balancer at an angle.

4.2 Checks before piping the air inlet

⚠ WARNING

- Always keep the working pressure no greater than 0.7MPa (7kgf/cm^2).
  If necessary, use an air regulator for reducing air pressure.
- The air balancer is designed to operate with air pressure with no greater than a working pressure range of 0.7MPa(7kgf/cm^2).

⚠ CAUTION

- Never use the lubricator for the piping of air balancer.
  *If used, it could be failure of control module by damaging components inside of air balancer.
- Never operate air balancer without filter and regulator.

- Check sufficient air can be supplied to the opening are of the air balancer.
  For a pipe of excessively small diameter or of greater length, the pressure drop can become large enough to prevent the specified performance.
- Use an air hose whose inside diameter is at least 9.5mm(3/8 in)
- Before connecting the air hose or pipe to the air balancer, be sure to flush or blow out with air to prevent the invasion of foreign matter (dust, etc) into the air balancer.
  In addition, take the same care for control hose and air chamber.
- Compressed air supplied to the air balancer should be free from moisture or foreign matter.
  Install an air filter to eliminate them from air supply.
- Install a dump valve (drain valve) at the lowest point in the piping.

5. Check after Installation and Test run

5.1 Check Lifting Operation

- Keep the working air pressure no greater than 0.7 MPa(7kgf/cm^2).
- Check the indications marked on the push buttons correctly show the actual directions of up / down operations.

5.2 Checking the flying up prevention apparatus

⚠ WARNING

Never use the internal flying up prevention apparatus and a stopper as a means of stopping air balancer.
Use them only in emergency case of preventing the snap back of bottom hook.
If the stopper is frequently used, wire rope will be worn and broke hitting by the ball stopper.

Check the activation of the flying up prevention apparatus by making fast rotation to the drum when no load is suspended.
To release the flying up prevention apparatus, push the lower button (or turn the regulator switch to left fully) to payout the wire rope.
But if does not work, push the lower button and pull the lower hook at the same time.
This procedure will release the flying up prevention apparatus.

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5.3 Check of application range

> **⚠ WARNING**
> Never use the air balancer at maximum length.

Check the stopper does not hit the main body and the internal flying up prevention apparatusdoes not work during the regular operation.
If the activation of the internal flying up prevention apparatus or hit of stopper is happened, readjust the speed and relocate the stopper position.

5.4 Other Checks

Operate the air balancer lifting and lowering with the load.
If the air balancer is using a trolley, run the trolley sideway.
Make sure that lifting loads stops when releasing “UP” and “DOWN” button.
If the I-beam application is using for the air balancer operation, check I beam condition and length of air hose.

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6. Checks before operation – At the beginning of each shift

> **⚠ WARNING**
> - Always execute the following checks at the beginning of each shift.
> - If a malfunction occurs during the operation of the air balancer, stop operation immediately and take the necessary steps to rectify the problem.
>
> Never operate the air balancer if damaged or malfunctioning.
> This is serious hazard and could result in personal injury or death.

6.1 Check before Start up

(1) Check wire rope is not twisted, kinked, damaged, or worn. See “Wire cable inspection and service limit of wire rope”
(2) Check Load hook is not stretched or damaged and hook latch is in the normal position.
(3) Check cap screw is not loose.
Tighten cap screw with following torque if cap screw is loose.

EHB-50S/EHB-50/EHB-85/EHB-130	5.9N･m
EHB-270	9.1N･m

(4) Check no cracks and wear on the hose.
(5) Check no air leakage around the body and control module.
(6) Check the trolley wheels track the rails properly and the wheels and rails are not worn.
(7) Check the lifting sling (suspension fastening) is not damaged or worn.

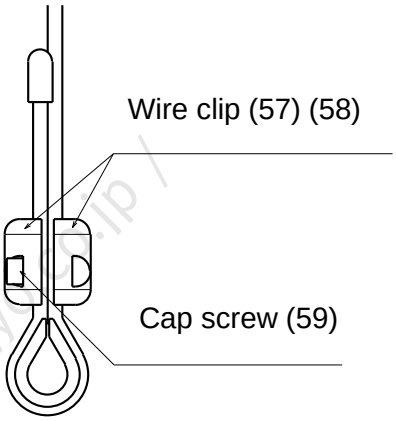

Fig.3

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6.2 Check by Idling Operation

(1) Check the push buttons can be easily operated and up/down operations are correct as indicated.
(2) Check the retract control does not work.
In case the retract control works, adjust it according to the “operating adjustment” in instruction manual of accessories.

6.3 Check by Load Operation

(1) Lift related or equivalent load suspended a few inches off the floor and check whether the air balancer stops after lifting and lowering operation.
(2) Check the air balancer is not abnormally noisy or vibrating.

7. Periodic Inspections

⚠ WARNING

- Periodically, inspect the air balancer thoroughly and replace any worn or damaged parts.
- Always shut off air supply after pull out all wire rope until wire rope will be slack and all air inside cylinder will come out before carrying out inspections.
  Exceptions are checks or inspections of the push button, floating operation, the safety retract control and etc., during that the air balancer should be operated.

Monthly Inspection

Inspect the air balancer at least once a month. Correct and repair any problems which are detected.

- Required interval for inspection depends on the operating environment, operating frequency and loading conditions of the air balancer.
  Therefore, make the inspection interval shorter according to your operation condition.
- For inspection items and methods, see Chapter 8, Section 8.2 “Inspection procedure”.

Service Limit of Parts

If any part is found to be worn beyond its service limit in the monthly, annual, or other inspections, never reuse it.

8. Maintenance and Inspection

⚠ WARNING

- Never alter the air balancer or its accessories.
- Always remove the load from the air balancer before maintenance, inspection or repair.
- Always shut off air supply after pull out all wire rope until wire rope will be slack and all air inside cylinder will come out before carrying out maintenance, inspection, or repair.
  Exceptions are checks or inspections of the push button switches, floating operation and the safety retract system.
- Always employ specialists or well trained persons for maintenance, inspection and repair.
- Always disassembly the air balancer on the floor.
- Always use genuine parts for replacement.
- Replace any parts damaged or worn beyond its service limit.
- Always execute the load test after disassembling the air balancer for maintenance or inspection. See section 8.2”(6) General Operation Inspection”.

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8.1 Lubrication

(1) Main body

The following table shows the recommended lubricants.
Always use the same type or equivalents recommended by the oil manufacturer.

Manufacturer	Case and piston	Ball screw and thrust bearing
Exxon Mobil	Mobilux EP1	Mobilux EP2
Kyodo	Oneluber MP1	Oneluber MP1
Cosmo Oil	COSMO GREASE DYNAMAX EP No.1	COSMO GREASE DYNAMAX EP No.2
Shell	Alvania EP grease 1	Alvania EP grease 2

(2) Control module

⚠ CAUTION
Never apply any type of lubricants to the control module.

- Control module is using the elaborated components on the air circuit, so never use the lubricator to the piping for the air balancer.
- The air supply for air balancer must be come through the air filter.
- Periodically remove drain water deposited in the air filter bowl.

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8.2 Inspection

(1) Inspection of Hook and Service Limit

⚠ WARNING
Never repair the hooks.
Always replace a stretched, worn or damaged hook with new one.

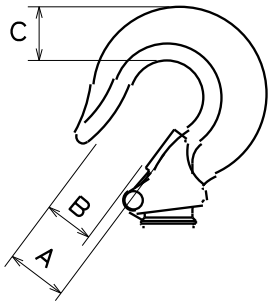
Inspection on hook opening, cracks and wear.
If any of the following conditions apply to the inspected hook, never reuse always replace with new one.
- The hook opening is visibly stretched, or the opening dimension is different from the specified.
- The hook is deformed or cracked.
  Carefully check for any bends or cracks on the hook shank.
- Wear on the hook saddle, where the lifting sling(suspension fastening).
  Rests, reaches the service limit.
- The hook latch is damaged or malfunctioning.
- Check hook rotates smoothly. Hook which does not rotate smoothly (feels rugged when manually rotated) is beyond it service limit.

Hook opening dimension and wear limit

For the hook opening dimension A, B, D, E refer the standard dimension in the table right side for the inspectional standards.

Inspection of bottom hook for control module MS-AG or MS-ATC, refer to the instruction manual of accessories (HM-10087).

Upper hook

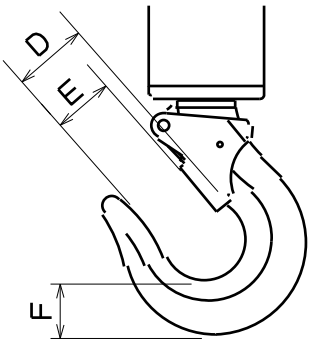


	Standard dimension	Service limit
A	25.5mm	Never exceed the standard dimension
B	23.0mm	Never exceed the standard dimension
C	22.0mm	20.7mm

EHB-50S/EHB-50/EHB-85

	Standard dimension	Service limit
D	26.0mm	Never exceed the standard dimension
E	21.0mm	Never exceed the standard dimension
F	19.0mm	16.9mm

Bottom hook



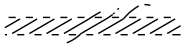
EHB-130/EHB-270

	Standard dimension	Service limit
D	28.0mm	Never exceed the standard dimension
E	25.0mm	Never exceed the standard dimension
F	26.0mm	24.0mm

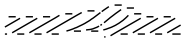
Control digital data
http://www.endo-kanyo.co.jp/

(2) Inspection of wire rope and Service Limit

Inspect the entire length of wire rope.


Wire breakage

Kink


Deformation

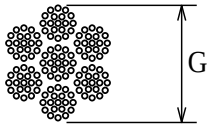
Never use the wire rope having any one of the following defects.

- Kinked, deformed or corroded.
- The number of broken wires reaches the service limit.
- The reduction of diameter reaches the service limit.

Wear limit and limit of broken wires.

The number of broken wires in one lay should be no greater than 10% of all wires.

And the number of broken wires which are close each other and in the same strand should be No greater than 5%. (mm)



	Model	Standard dimension	Service limit
G	EHB-50S/EHB-50/ EHB-85/ EHB-130	4.76	4.3
	EHB-270	6.0	5.6

Model	Number of all wires	Limit of broken wires	
		in one lay 10%	close each other and in the same strand 5%
EHB-50S/EHB-50/ EHB-85/ EHB-130	133(7x19)	13	7
EHB-270	114(6x19)	11	5

Fixed fitting of wire rope edge.

- Are there any deformation, cracks?
- Is cap screw loose?

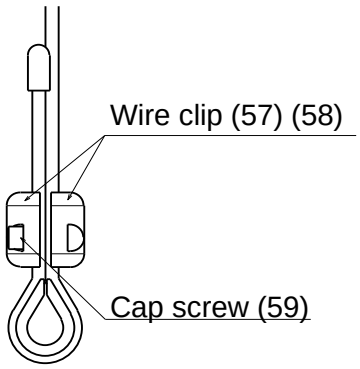


Fig. 4

Repair parts

Always use genuine wire rope for replacement.

(3) Inspection of Air balancer

- Are there any cracks on casing?
- Are there any deformation, cracks on hanger?
- Are there any cracks in mounting hole for bolt on end cap?
- Are there any deformation or cracks?
- Check for air leakage.
- Are the bolts loose?

(4) Inspection of Switch and Valve

- Check for air leakage.
- Is fitting connection loose?
- Do the push buttons correctly return to the neutral position after being pushed?
- Are the bolts loose?
- Is the hose damaged, or is the connection part loose?

(5) Inspection on Other

1. Label and tag
   Check the location of labels and tags. Is it easy to see it? If it is not, replace it.
   *Attaching position is mentioned in the chapter 2.2 「Labels and tags position」.
2. Trolley
   - Check wheels of trolley run on I-beam and H-beam or other rails properly.
   - Check the tire of trolley or I-beam and H-beam is worn or not. If so, replace the defective part.
3. The structure of supporting member.
   Are there any defects such as deformation, wear, and cracks?

(6) General Operation Inspection

After completing the inspections described in the foregoing sections, reassemble the whole unit and inspect as follows:

Idling

-Check the push button switches can be easily operated and up / down operations are correct as indicated.
- Check the air balancer is not abnormally noisy or vibrating.

Rated load test

- Check for malfunctions while lifting and lowering.
  Operate the air balancer at least twice through the full lifting range.
- Check the air balancer stops after the lifting and lowering operation.
- Check there is no significant reduction in the air balancer performance.
- Check the air balancer is not abnormally noisy or vibrating.

8.3 Storing the Air Balancer

If the air balancer is to be stored for a long time, store the air balancer in a dry location.

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8.4 Troubleshooting

⚠ WARNING

If a malfunction occurs during the operation the air balancer, stop operation immediately and take the necessary steps to rectify the problem.

⚠ CAUTION

Careless repairs can cause damaged to the air balancer or personal injury.
Therefore, be careful but through when making repairs.

The following shows probable causes and solutions of common malfunctions.
Contact your dealer or us if a malfunction is not listed below occurs.

Malfunction	Main causes	Solution
The air balancer does not run in the lifting direction.	Insufficient air pressure	Increase air pressure. Check for air leak around pipe fitting.
	Load over capacity of air balancer.	Check the weight of load.
	The flying up prevention works.	Replace spring which keeps ratchet.
	Ball screw and thrust bearing do not work.	Clean and lubricate ball screw and thrust bearing or replace it.
The air balancer does not hold load.	Air leak around bolt at the center of end cap	Replace O-ring between ball screw cover and end cap.
	Air leak from between end cap and casing.	Replace O-ring on end cap.
	Air leak from between piston and casing.	Replace worn piston then clean and lubricate inside of casing.

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9. Installing the supporting wire

WARNING

- Always attach the supporting wire rope which are attached in the same box to the hanger of the air balancer.
It protects the operator when the upper hook of air balancer or supporting member (hanging ring) is broken.

- Always check the supporting member from which the air balancer is suspended is strong enough to support the weight of the air balancer plus the weight of the rated load, etc.
The customer has the responsibility for this.

1. Wind the supporting wire rope over the supporting member after take through the supporting wire rope (12) into the hall of bracket.
2. Make sure to clamp the supporting wire rope (12) by wire clip (13) after gathering and adjusting the length of supporting wire rope.
   In addition, give the 10Nm of torque to clamp nut of the wire clip (13).
   Please adjust the supporting wire rope in order that the drop of air balancer must be within 100mm.

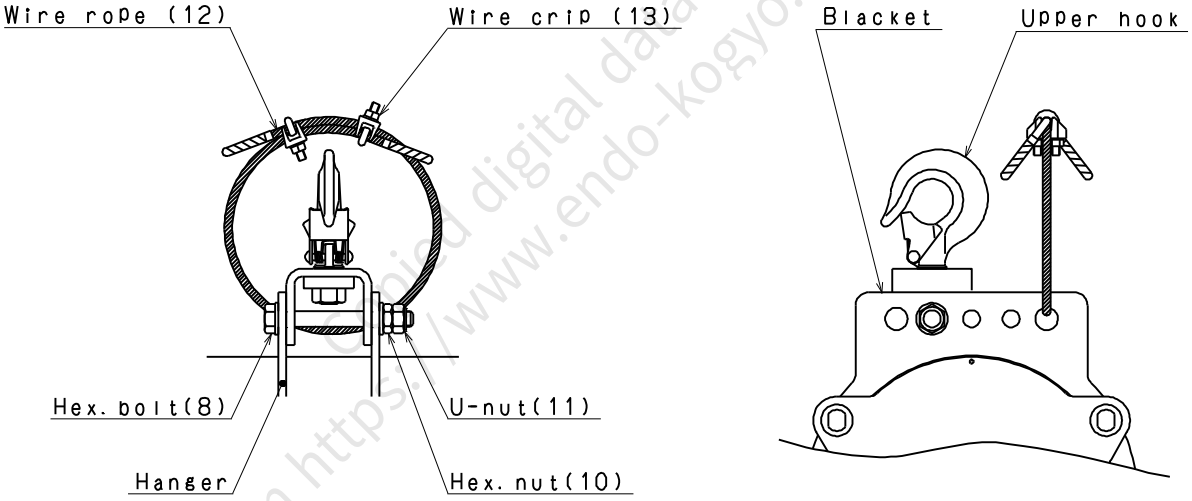

Fig.5

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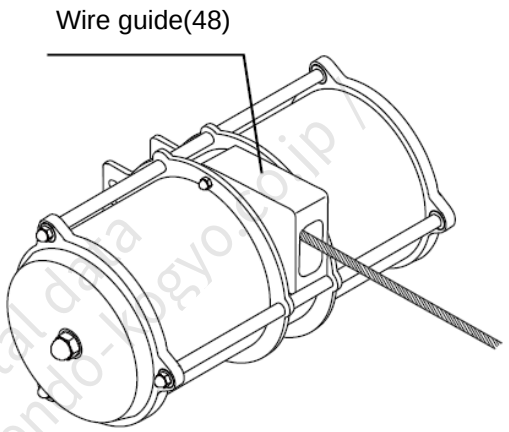
10. Wire rope Assembly

> **⚠ WARNING**
> - Shut off air supply after pull out all wire rope until wire rope will be slack and all air inside cylinder will come out.
> - Always disassemble the air balancer on the floor.

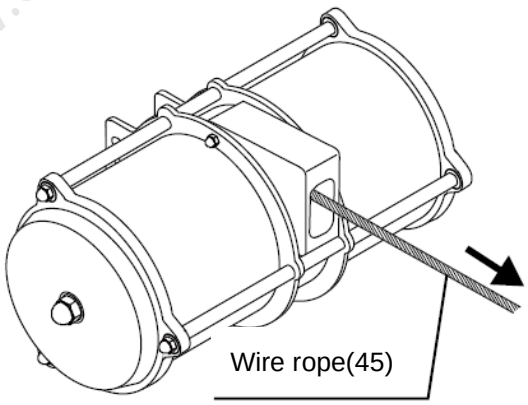
*Refer to the disassembly drawing and follow procedure below.

10. 1 Disconnecting the Wire Rope

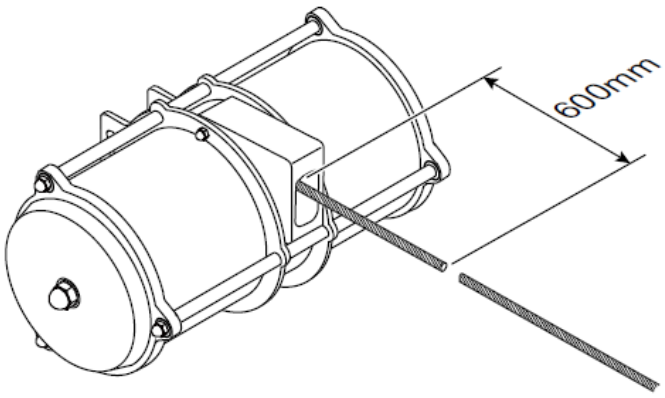
(1)Place the air balancer on the level as mentioned in right. Wire guide (48) must be turned up.



(2)Pull out the wire rope (45) until the drum (18) will stop.



(3)Cut the wire rope at approx. 600mm from outside of the wire guide (48). (See Fig. 6)



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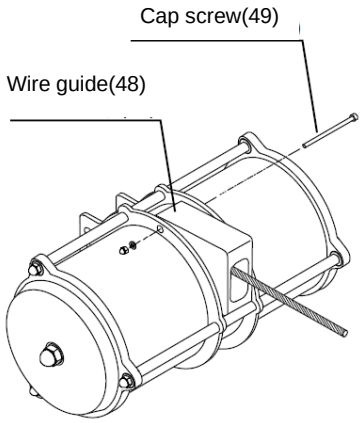
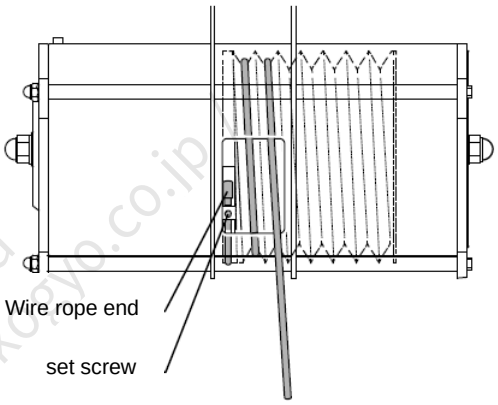
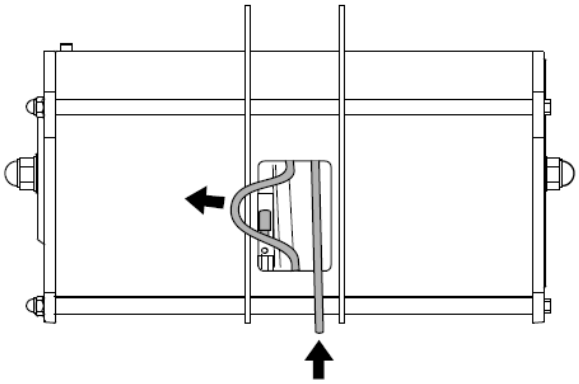
(4)Remove the cap screw (49) and the wire guide (48) from the casing (1).



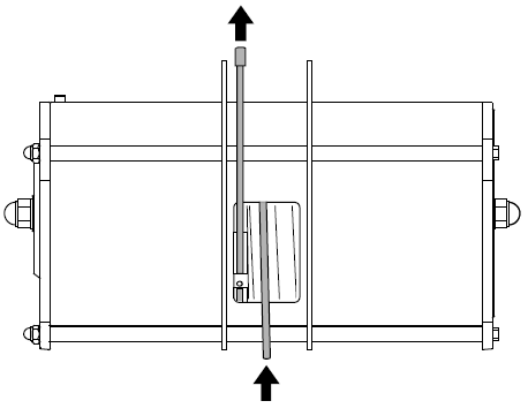
(5)Check terminal of the wire rope is on the left.
Turn set 7.Turn set screw of wire rope end 3 rounds to counter clockwise direction and loosen it with the exception of EHB-270.
*Do not remove set screw from the drum completely.



(6)Push the wire rope (45) into the drum (18) and pull out the coming out wire rope.



(7)Push into the wire rope (45) more and pull out the end of coming out wire rope then remove the wire rope.



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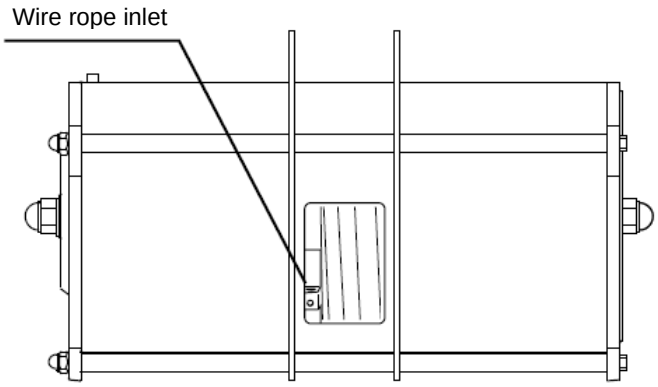
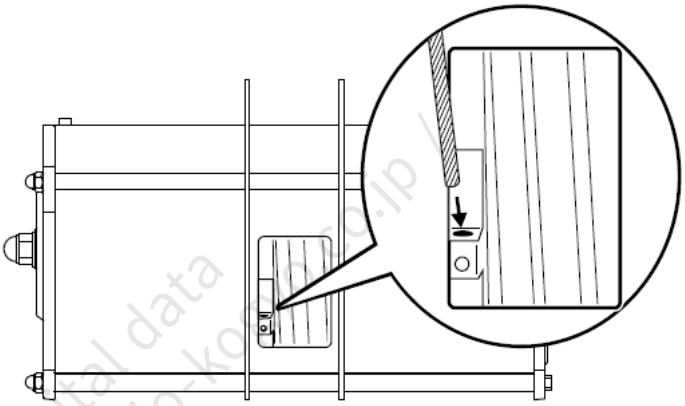
10.2 Assembling the Wire Rope

(1)Check the anchor hole for wire rope is on the left same as when the wire rope was removed.
Be sure the wire rope has attached the plain washer(47).

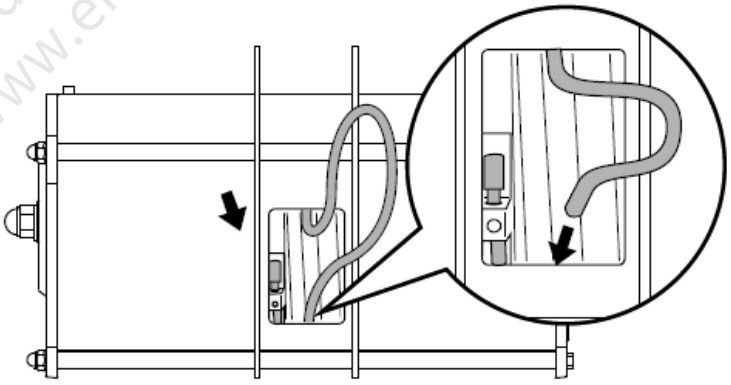


(2)Insert the end of wire rope(45) to the anchor hole in the drum(18).

*Pull out all wire rope(45) from the top of drum and keep pushing until the lock tube and plain washer on the wire rope will be touched to the drum

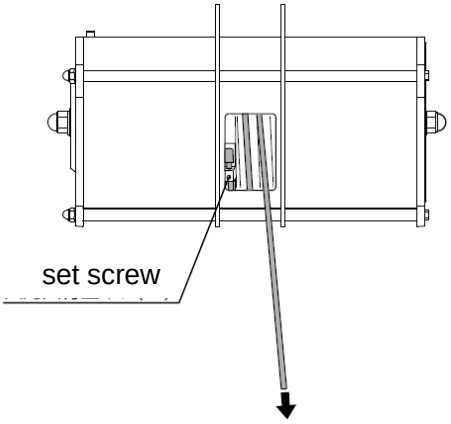


(3)Push the wire rope which comes out from upper side of the drum(18) into the same groove .
Never twist the wire rope.



(4)The wire rope (45) will come out from upper side ofthe second groove on the drum then pull out all wire rope. After that, turn set screw in clockwise, tighten up and fix the wire rope(45).

*Tightening torque 0.7N・m



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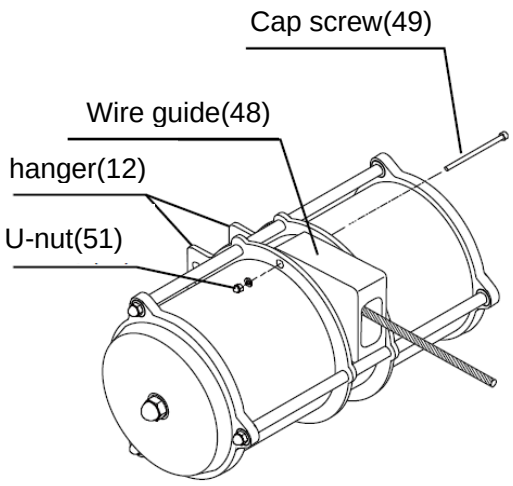
(5)Let the wire rope (45) into the wire guide (48) and attach he wire guide (48) to the casing (1).

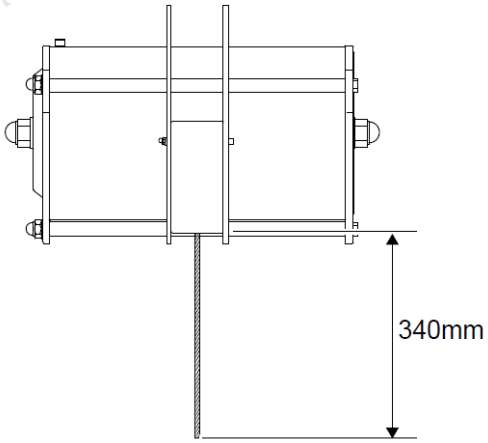
*Screw up the U-nut (51) until the hanger (12) and the wire guide (48) will be touched.



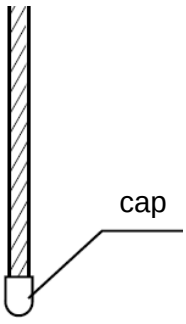
(6)After assembling the wire guide, suspend the air balancer using crane, etc. and connect temporary piping.

(7)Pressure of air supply should be under 0.1MPa and slowly rewind all wire rope.

(8)Cut the wire rope at 340mm from the wire guide (48)



(9)After cutting the wire rope (45), ravel prevention treatment or bonding the cap to the wire rope (45) is necessary.*In case of using the cap, bond the wire rope after degreasing the end of wire rope.



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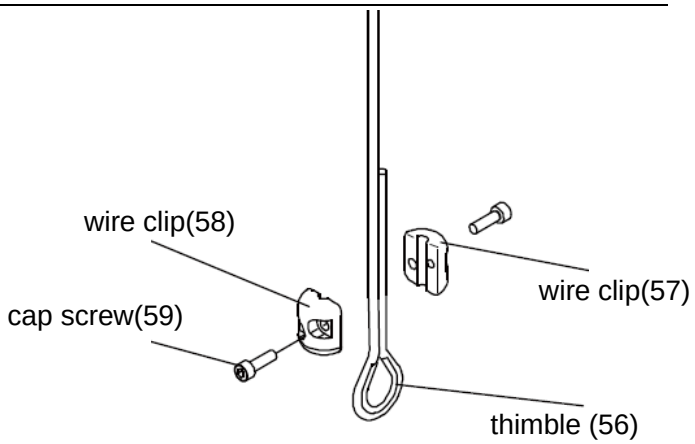
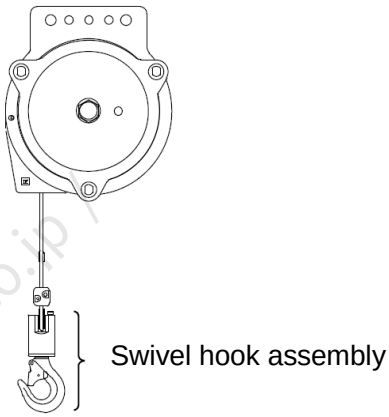
(10)Attach the wire rope to the thimble (54) and tighten the wire clip (55)(56) by the cap screw (57).

*Tightening torque
EHB-50S/EHB-50/EHB-85/EHB-130 5.9N・m
EHB-270 9.1N.m

*Distance between the wire guide and bottom of the thimble --- 190mm

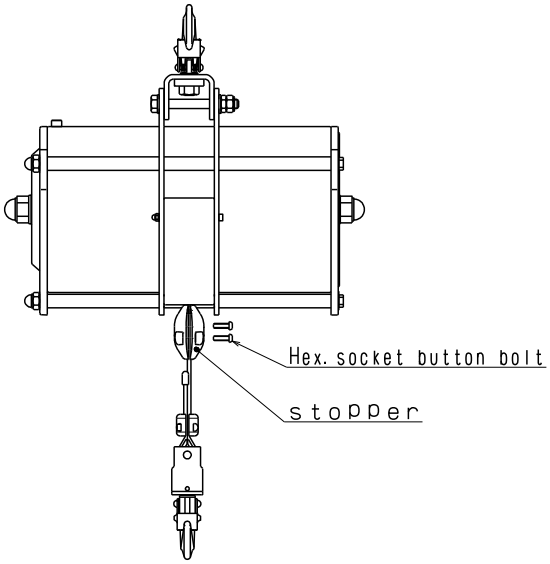


(11)Attach the swivel hook assembly.
*See chapter 11 「Replacement of bottom hook」



(12)Attach the stopper(52), (53)by spring washer (54) and Hex. socket button bolt (55) in the slightly separated position from the wire guide(48).

*Tightening torque --- 9.1N・m



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11. Bottom hook replacement

EHB-50S/EHB-50/EHB-85

(1) Remove the cap screw (72), pin (70) and swivel hook.
(2) Align mounting hole for the pin (70) on new swivel hook with the thimble (54) and insert pin.
(3) Attach the CD-washer (71) and cap screw (72) then fix the pin (70).

EHB-130/EHB-270

(1) Remove the set screw (70), pin (69) and swivel hook.
(2) Align mounting hole for the pin (69) on new swivel hook with the thimble (56) and insert pin.
(3) Attach the set screw (72) then fix the pin (69).

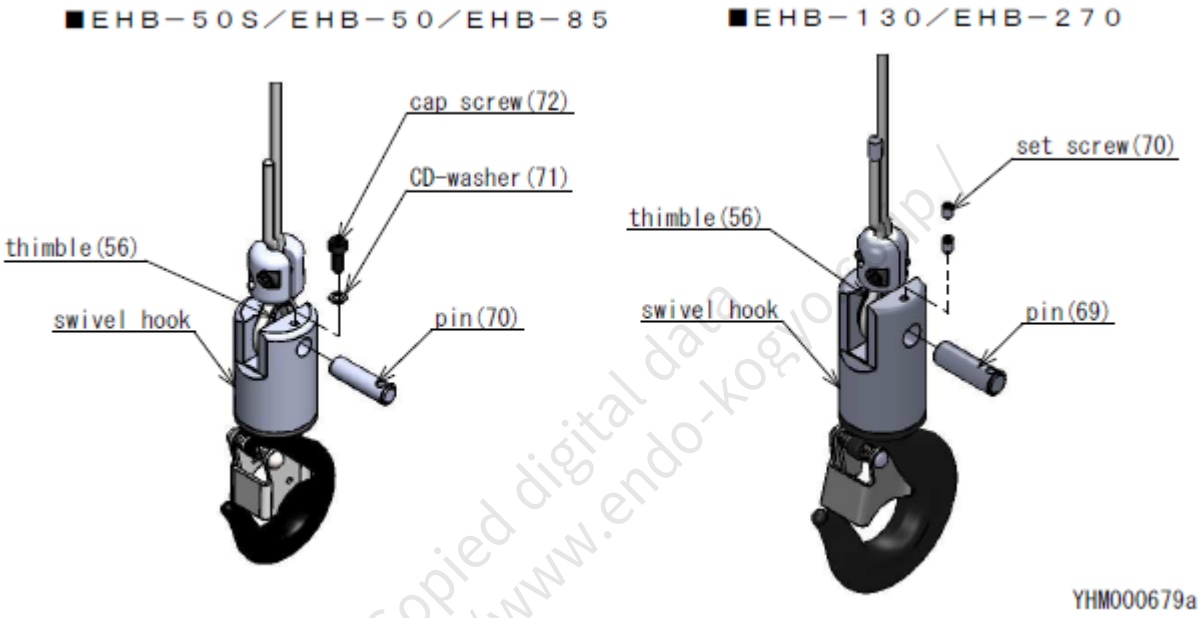

Fig. 6

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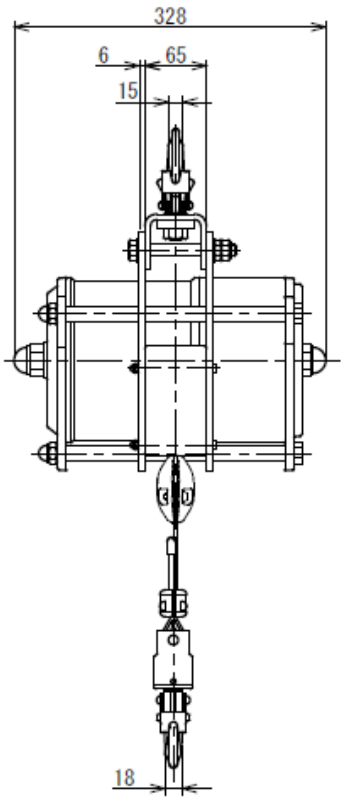
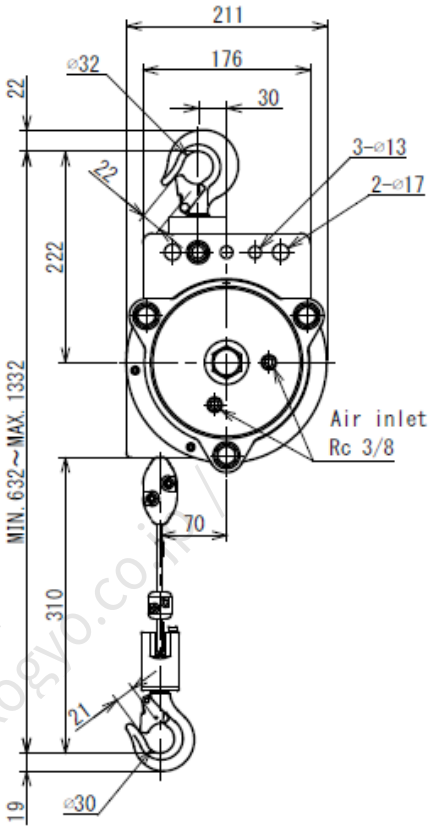
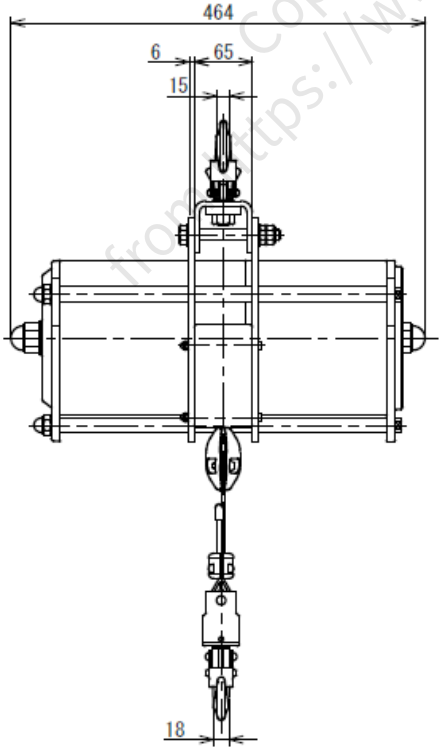
12. Dimensions of Air Balancer

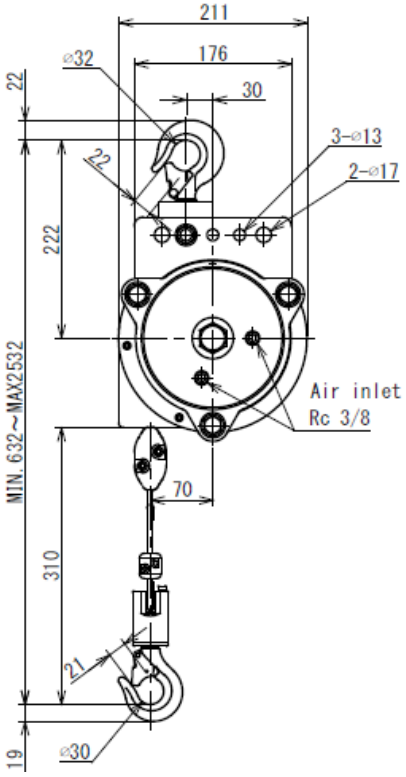
■EHB-50S





■EHB-50





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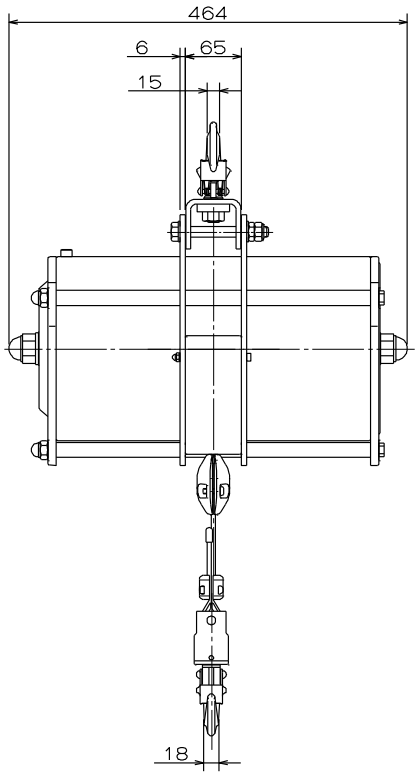
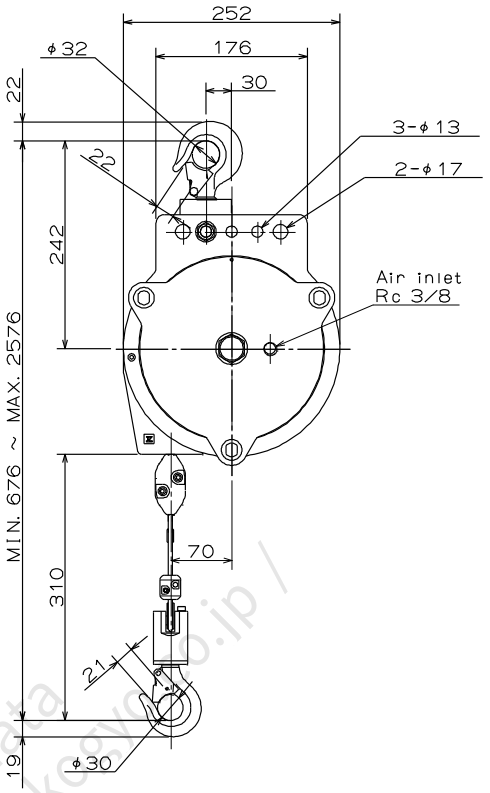
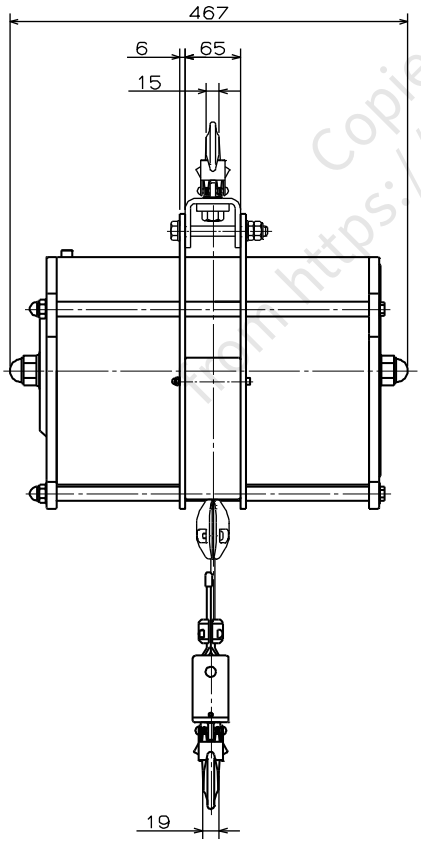
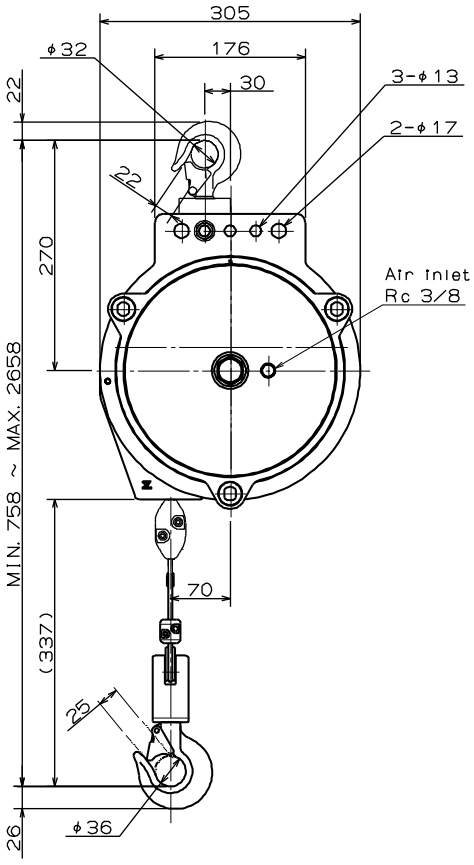
■EHB-85





■EHB-130





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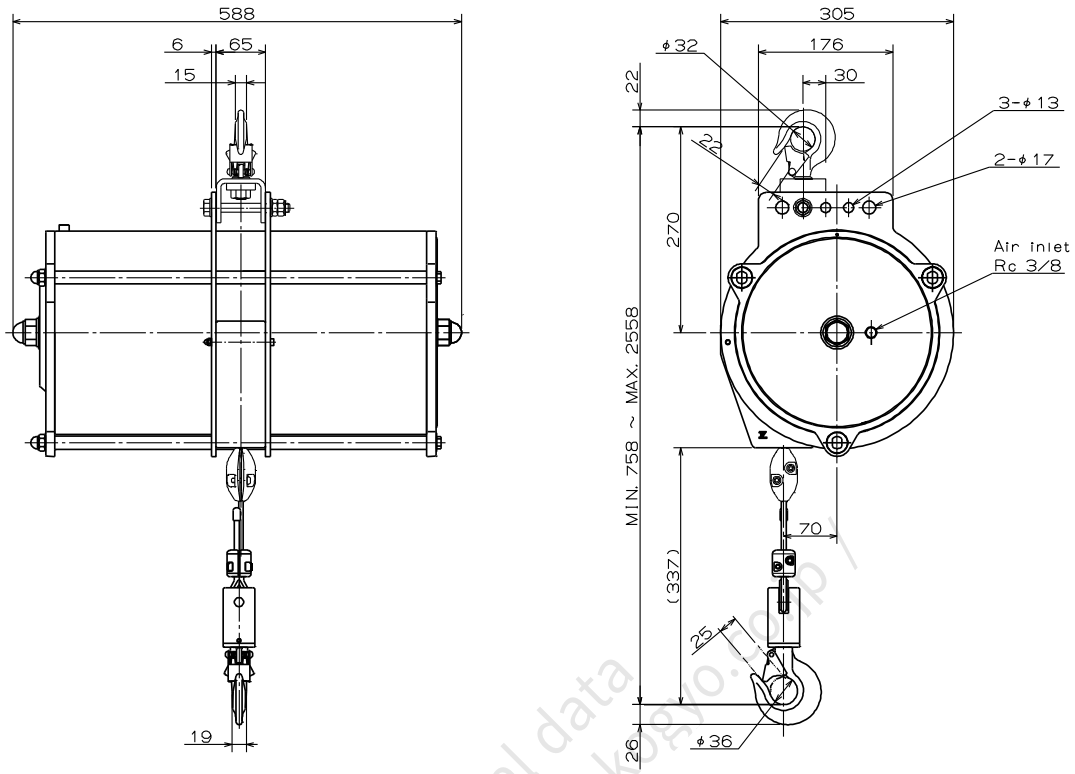
■EHB-270



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13. Parts list

Remarks when purchasing parts

- Specify the part No., part name and model name of the hoist.
- State SER. No. (product No.) clearly if attached.
- Parts without a part number cannot be supplied individually. Please purchase a set or complete unit.

■ How to read parts list

Ref No.	Part No.	Quantity	Description
-	LHP000844	1	Swivel hook assembly
-	LHP000843a	1	－Hook compl.
58	－	1	－－Hook
-	LHP001674	1	－－Hook latch set
59	－	1	－－－Hook latch
60	－	1	－－－Spring
61	－	1	－－－Rivet
62	－	1	－－Nut
63	P2H200215	1	－－Spring pin

The mark indicates the range of the set or the complete unit.

■ PARTS LIST EHB-50S

Ref. No.	Part No.	Quantity	Description	Ref No.	Part No.	Quantity	Description
1	P2H301343	1	Case	● 48	P2H301202	1	Wire guide
2	P2H200261	1	End cap	49	P2H402364	2	Cap screw
● 3	KA50301500	2	O-ring	50	KA30220500	2	Washer
● 5	KA50300250	1	O-ring	51	KA25720502	2	U-nut
6	P2H200262	1	Piston	52	P2H301547	1	Stopper
● 7	P2H402791	1	Packing	53	P2H301548	1	Stopper
● 8	P2H402792	1	Wear ring	54	KA31120600	2	Spring washer
● 9	P2H402470	1	Packing	55	KA01710620	2	Hex.socket button bolt
● 10	P2H402471	1	Wear ring	56	P2B400067	1	Thimble
11	KA42510312	2	Spring pin	57	P2H301141	1	Wire crip
12	P2H301201	2	Hanger	58	P2H301142	1	Wire crip
13	P2H200243	1	End cap	59	KA00910516	2	Cap screw
14	P2H200260	1	Ratchet wheel	-	LHP000844	1	Swivel hook assembly
16	P2H301330	1	Ball screw	-	LHP000843	1	－Hook compl.
17	P2H402353	1	Pin	● 60	—	1	——Hook
18	P2H200263	1	Drum	-	LHP001674	1	——Hook latch set
19	KA60401140	1	Thrust bearing	61	—	1	———Hook latch
20	P2H402354	1	Plate	62	—	1	———Spring
21	KA10120510	3	Machine screw	63	—	1	———Rivet
22	KA31120500	3	Spring washer	64	—	1	——Nut
23	KA00910825	4	Cap screw	65	KA42419820	1	——Spring pin
24	KA31120800	4	Spring washer	66	P2H401216	1	－Hook holder
25	P2H402355	1	Shaft	67	KA60401000	1	－Thrust bearing
26	P2H301140	1	Ratchet	68	P2H300665	1	－Hook holder
27	P2H402356	1	Coller	69	KA16510506	1	－Set screw
28	P2S400020	1	Pin	70	P2H401218	1	－Pin
29	KA20320500	1	Hex. nut	71	KA32410520	1	－CD-washer
30	P2H402357	1	Plate	72	KA00910512	1	－Cap screw
31	P2H402358	1	Pin	73	P2H402365	1	Cap
32	KA30221000	1	Washer	74	P2H301678	1	Name plate
33	KA25521002	1	U-nut	75	P2H301333	1	Warning label
34	P2H402359	1	Pipe	77	P2H300779	1	Tag
35	KA00121044	1	Hex. bolt	78	P2H400137	2	Plug
36	KA31121000	1	Spring washer	79	KA16410609	8	Set screw
37	P2H402360	1	Spring	80	P2H402976	1	Set screw
38	KA30222000	2	Washer				
39	KA25722001	2	U-nut				
40	P2H402793	3	Bolt				
41	KA30221200	6	Washer				
42	P2H402362	6	Pipe				
43	P2H402363	3	Pipe				
44	KA25721202	3	U-nut				
● -	LHP002237	1	Wire rope				
45	—	1	－Wire rope				
46	—	1	－Lock tube				
47	—	1	－Washer				

We recommend that you stock parts indicated by a bullet (●).
Parts without part numbers can not be supplied separately.

from https://www.emori-sangyo.co.jp / Copied digital data

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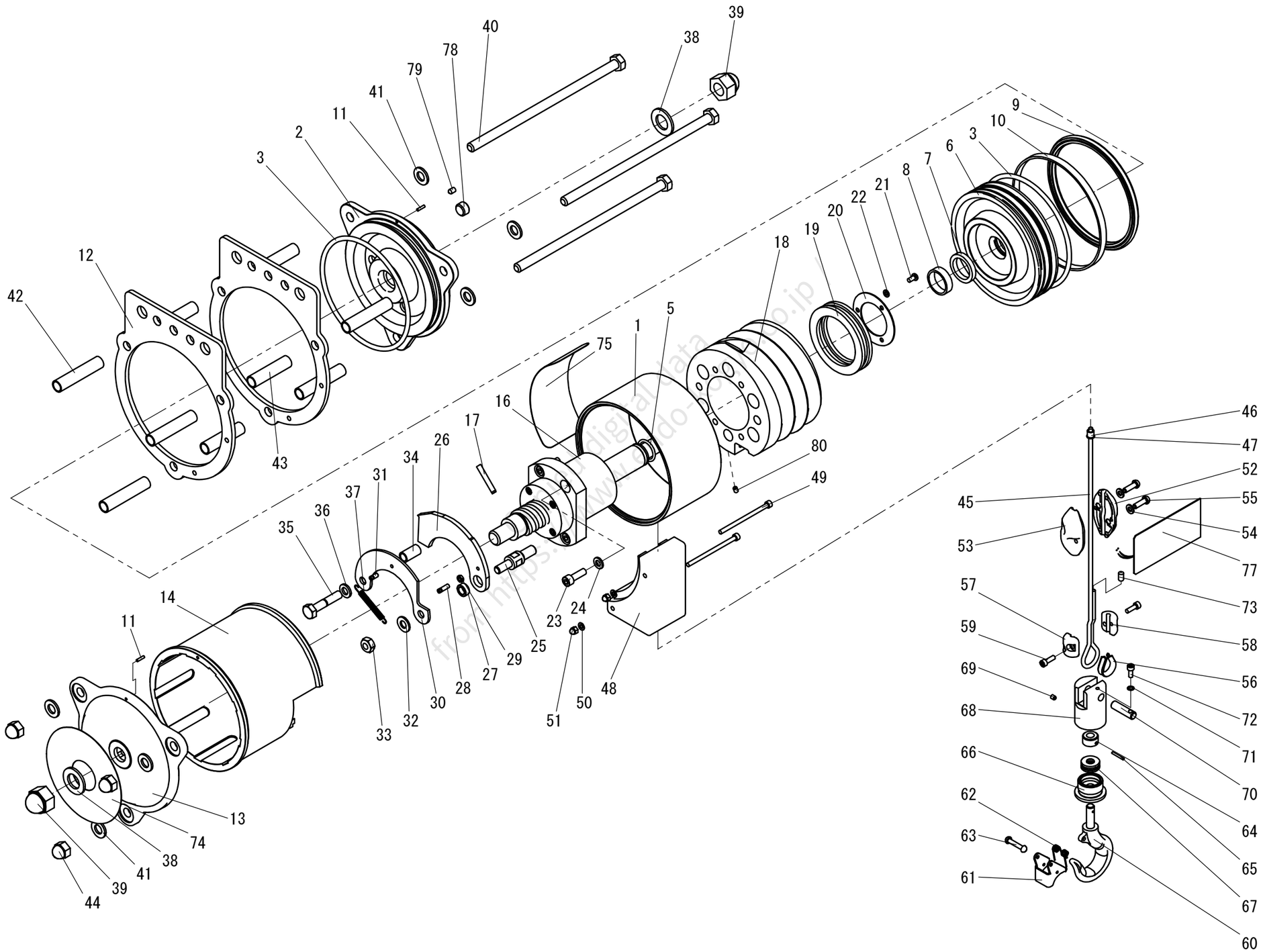

from https://www.kubota-digital-data.co.jp

■ PARTS LIST EHB-50

Ref. No.	Part No.	Quantity	Description	Ref No.	Part No.	Quantity	Description
1	P2H301200	1	Case	47	—	1	—Washer
2	P2H200241	1	End cap	● 48	P2H301202	1	Wire guide
● 3	KA50301500	2	O-ring	49	P2H402364	2	Cap screw
4	P2H301137	1	Ball screw cover	50	KA30220500	2	Washer
● 5	KA50200420	1	O-ring	51	KA25720502	2	U-nut
6	P2H200242	1	Piston	52	P2H301547	1	Stopper
● 7	P2H402349	1	Packing	53	P2H301548	1	Stopper
● 8	P2H402350	1	Wear ring	54	KA31120600	2	Spring washer
● 9	P2H402470	1	Packing	55	KA01710620	2	Hex.socket button bolt
● 10	P2H402471	1	Wear ring	56	P2B400067	1	Thimble
11	KA42510312	2	Spring pin	57	P2H301141	1	Wire crip
12	P2H301201	2	Hanger	58	P2H301142	1	Wire crip
13	P2H200243	1	End cap	59	KA00910516	2	Cap screw
14	P2H200244	1	Ratchet wheel	-	LHP000844	1	Swivel hook assembly
16	P2H301139	1	Ball screw	-	LHP000843	1	—Hook compl.
17	P2H402353	1	Pin	60	—	1	——Hook
18	P2H200235	1	Drum	● -	LHP001674	1	——Hook latch set
19	KA60401140	1	Thrust bearing	61	—	1	———Hook latch
20	P2H402354	1	Plate	62	—	1	———Spring
21	KA10120510	3	Machine screw	63	—	1	———Rivet
22	KA31120500	3	Spring washer	64	—	1	——Nut
23	KA00910825	4	Cap screw	65	KA42419820	1	——Spring pin
24	KA31120800	4	Spring washer	66	P2H401216	1	—Hook holder
25	P2H402355	1	Shaft	67	KA60401000	1	—Thrust bearing
26	P2H301140	1	Ratchet	68	P2H300665	1	—Hook holder
27	P2H402356	1	Coller	69	KA16510506	1	—Set screw
28	P2S400020	1	Pin	70	P2H401218	1	—Pin
29	KA20320500	1	Hex. nut	71	KA32410520	1	—CD-washer
30	P2H402357	1	Plate	72	KA00910512	1	—Cap screw
31	P2H402358	1	Pin	73	P2H402365	1	Cap
32	KA30221000	1	Washer	74	P2H301679	1	Name plate
33	KA25521002	1	U-nut	＊ 74	P2H301696	1	Name plate
34	P2H402359	1	Pipe	75	P2H301149	1	Warning label
35	KA00121044	1	Hex. bolt	77	P2H300779	1	Tag
36	KA31121000	1	Spring washer	78	P2H400137	2	Plug
37	P2H402360	1	Spring	79	KA16410610	8	Set screw
38	KA30222000	2	Washer	80	P2H402976	1	Set screw
39	KA25722001	2	U-nut				
40	P2H402361	3	Bolt				
41	KA30221200	6	Washer				
42	P2H402362	6	Pipe				
43	P2H402363	3	Pipe				
44	KA25721202	3	U-nut				
● -	LHP001904	1	Wire rope				
45	—	1	—Wire rope				
46	—	1	—Lock tube				

We recommend that you stock parts indicated by a bullet (●).
Parts without part numbers can not be supplied separately.

Parts has "＊" will be applied with Full auto module ABC-5G-B or ABC-5P-B.

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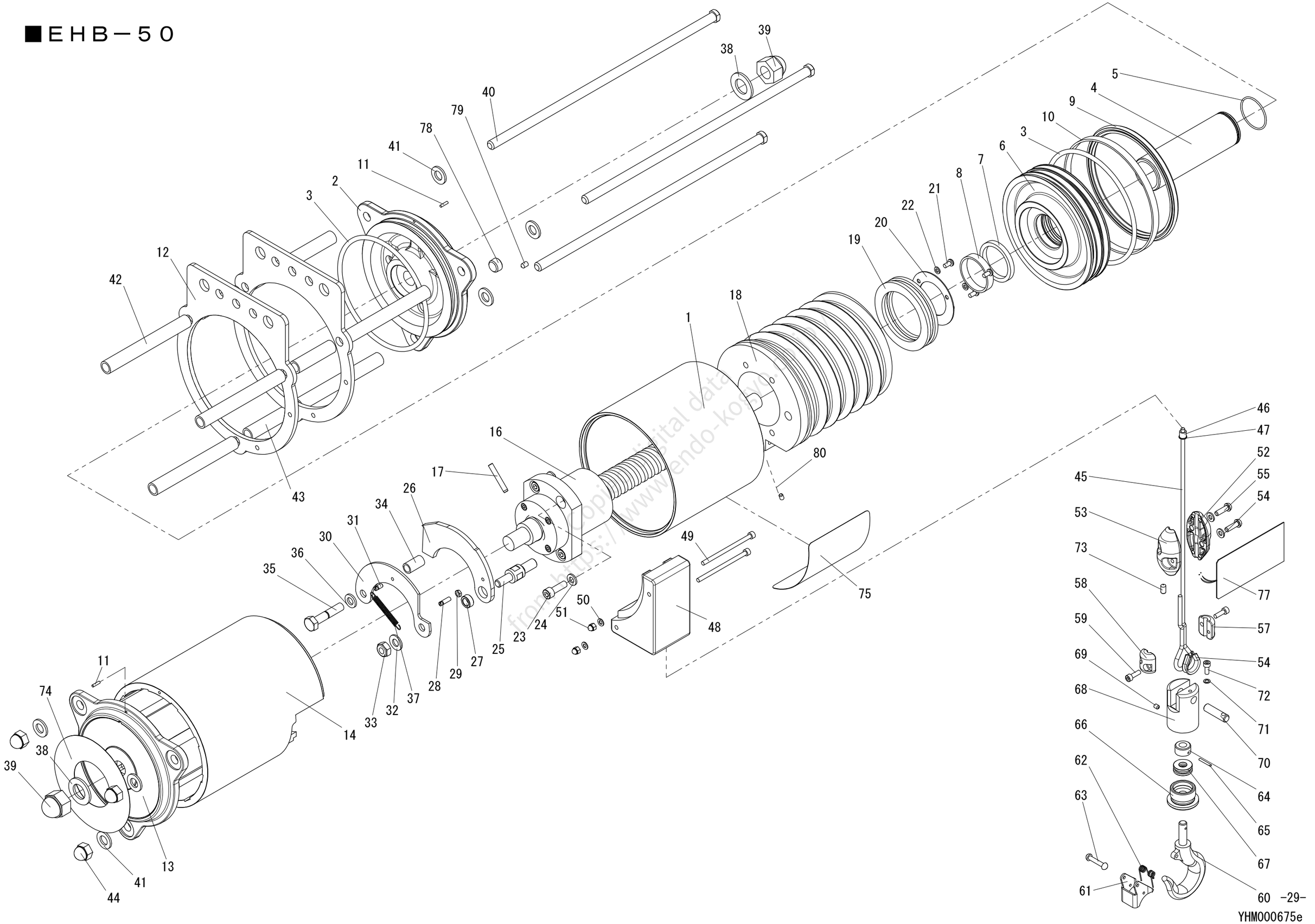
■EHB−50



from https://www.endo-kobo.com

■ PARTS LIST EHB-85

Ref. No.	Part No.	Quantity	Description	Ref No.	Part No.	Quantity	Description
1	P2H301136	1	Case	47	—	1	—Washer
2	P2H200232	1	End cap	● 48	P2H301145	1	Wire guide
● 3	KA50301900	2	O-ring	49	P2H402364	1	Cap screw
4	P2H301137	1	Ball screw cover	50	KA30220500	1	Washer
● 5	KA50200420	1	O-ring	51	KA25720502	1	U-nut
6	P2H200233	1	Piston	52	P2H301547	1	Stopper
● 7	P2H402349	1	Packing	53	P2H301548	1	Stopper
● 8	P2H402350	1	Wear ring	54	KA31120600	2	Spring washer
● 9	P2H402351	1	Packing	55	KA01710620	2	Hex.socket button bolt
● 10	P2H402474	1	Wear ring	56	P2B400067	1	Thimble
11	KA42510312	2	Spring pin	57	P2H301141	1	Wire crip
12	P2H301138	2	Hanger	58	P2H301142	1	Wire crip
13	P2H200234	1	End cap	59	KA00910516	2	Cap screw
14	LHP001903	1	Ratchet wheel	-	LHP000844	1	Swivel hook assembly
15	KA00910614	2	Cap screw	-	LHP000843	1	—Hook compl.
16	P2H301139	1	Ball screw	60	—	1	——Hook
17	P2H402353	1	Pin	● -	LHP001674	1	——Hook latch set
18	P2H200235	1	Drum	61	—	1	———Hook latch
19	KA60401140	1	Thrust bearing	62	—	1	———Spring
20	P2H402354	1	Plate	63	—	1	———Rivet
21	KA10120510	3	Machine screw	64	—	1	——Nut
22	KA31120500	3	Spring washer	65	KA42419820	1	——Spring pin
23	KA00910825	5	Cap screw	66	P2H401216	1	—Hook holder
24	KA31120800	4	Spring washer	67	KA60401000	1	—Thrust bearing
25	P2H402355	1	Shaft	68	P2H300665	1	—Hook holder
26	P2H301140	1	Ratchet	69	KA16510506	1	—Set screw
27	P2H402356	1	Coller	70	P2H401218	1	—Pin
28	P2S400020	1	Pin	71	KA32410520	1	—CD-washer
29	KA20320500	1	Hex. nut	72	KA00910512	1	—Cap screw
30	P2H402357	1	Plate	73	P2H402365	1	Cap
31	P2H402358	1	Pin	74	P2H301680	1	Name plate
32	KA30221000	1	Washer	* 74	P2H301697	1	Name plate
33	KA25521002	1	U-nut	75	P2H301149	1	Warning label
34	P2H402359	1	Pipe	77	P2H300779	1	Tag
35	KA00121044	1	Hex. bolt	79	KA16410610	8	Set screw
36	KA31121000	1	Spring washer	80	P2H402976	1	Set screw
37	P2H402360	1	Spring				
38	KA30222000	2	Washer				
39	KA25722001	2	U-nut				
40	P2H402361	3	Bolt				
41	KA30221200	6	Washer				
42	P2H402362	6	Pipe				
43	P2H402363	3	Pipe				
44	KA25721202	3	U-nut				
● -	LHP001904	1	Wire rope				
45	—	1	—Wire rope				
46	—	1	—Lock tube				

We recommend that you stock parts indicated by a bullet (●).
Parts without part numbers can not be supplied separately.

Parts has "＊" will be applied with Full auto module ABC-5G-B or ABC-5P-B.

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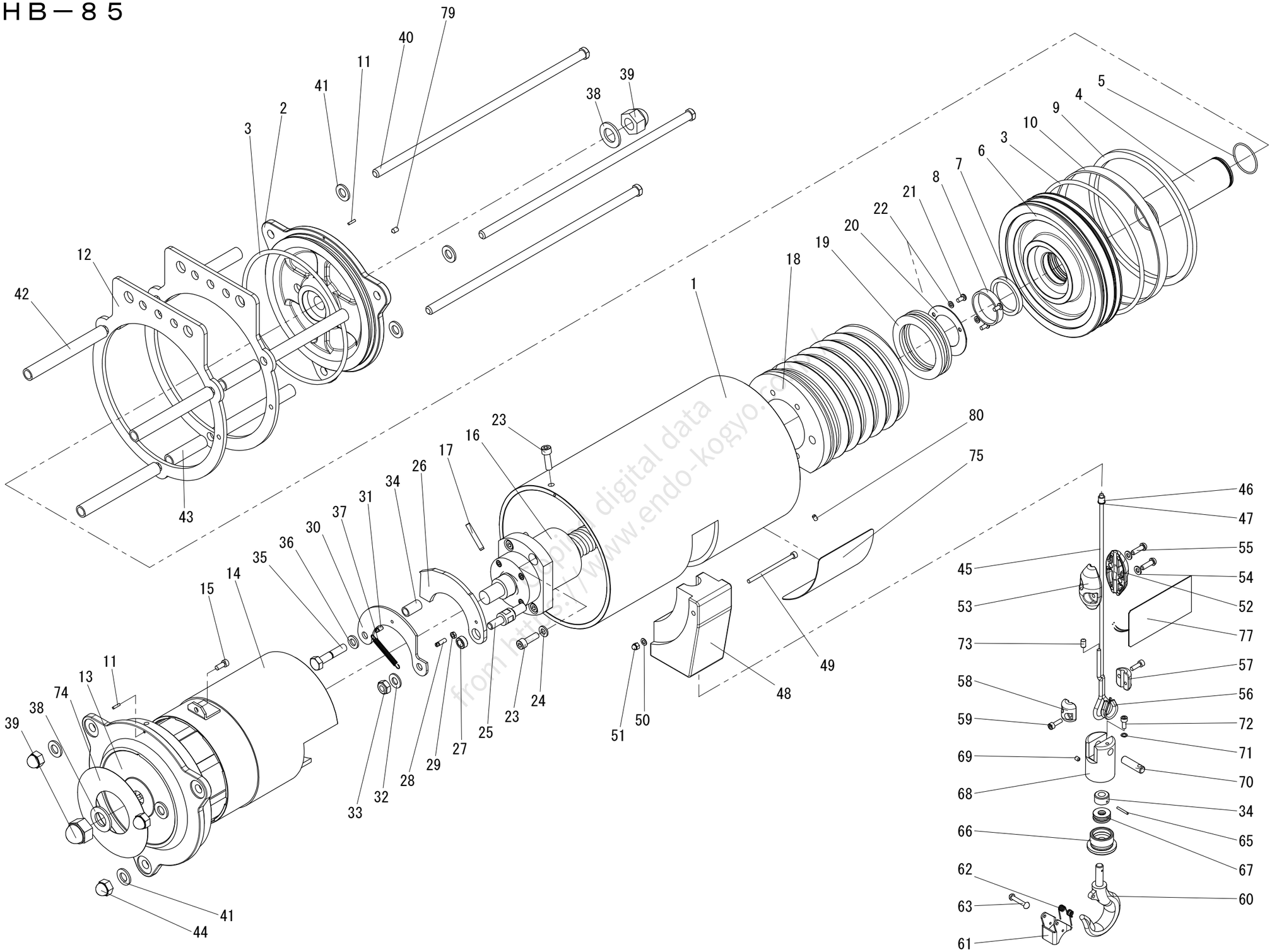
■ＥＨＢ－８５



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www.endo-kogyo.co.jp/

■ PARTS LIST EHB-130

Ref. No.	Part No.	Quantity	Description	Ref No.	Part No.	Quantity	Description
1	P2H301214	1	Case	47	—	1	—Washer
2	P2H200245	1	End cap	● 48	P2H301216	1	Wire guide
● 3	KA50312400	2	O-ring	49	P2H402364	1	Cap screw
4	P2H301137	1	Ball screw cover	50	KA30220500	1	Washer
● 5	KA50200420	1	O-ring	51	KA25720502	1	U-nut
6	P2H200247	1	Piston	52	P2H301547	1	Stopper
● 7	P2H402349	1	Packing	53	P2H301548	1	Stopper
● 8	P2H402350	1	Wear ring	54	KA31120600	2	Spring washer
● 9	P2H402501	1	Packing	55	KA01710620	2	Hex.socket button bolt
● 10	P2H402502	1	Wear ring	56	P2B400068	1	Thimble
11	KA42510314	2	Spring pin	57	P2H301141	1	Wire crip
12	P2H301215	2	Hanger	58	P2H301142	1	Wire crip
13	P2H200246	1	End cap	59	KA00910516	2	Cap screw
14	LHP001903	1	Ratchet wheel	-	LHP000263	1	Swivel hook assembly
15	KA00910614	2	Cap screw	-	LHP000261	1	—Hook compl.
16	P2H301139	1	Ball screw	60	—	1	——Hook
17	P2H402353	1	Pin	● -	LHP000213	1	——Hook latch set
18	P2H200235	1	Drum	61	—	1	———Hook latch
19	KA60401140	1	Thrust bearing	62	—	1	———Spring
20	P2H402354	1	Plate	63	—	1	———Rivet
21	KA10120510	3	Machine screw	64	—	1	——Spring pin
22	KA31120500	3	Spring washer	65	—	1	——Nut
23	KA00910825	5	Cap screw	-	LHP000262	1	—Hook holder compl.
24	KA31120800	4	Spring washer	66	—	1	——Hook holder
25	P2H402355	1	Shaft	67	KA60401010	1	——Thrust bearing
26	P2H301140	1	Ratchet	68	—	1	——Hook holder
27	P2H402356	1	Coller	69	P2H400523	1	——Pin
28	P2S400020	1	Pin	70	KA16410508	2	——Set screw
29	KA20320500	1	Hex. nut	71	KA16510506	1	——Set screw
30	P2H402357	1	Plate	73	P2H402365	1	Cap
31	P2H402358	1	Pin	74	P2H301681	1	Name plate
32	KA30221000	1	Washer	* 74	P2H301698	1	Name plate
33	KA25521002	1	U-nut	75	P2H301149	1	Warning label
34	P2H402359	1	Pipe	77	P2H300779	1	Tag
35	KA00121044	1	Hex. bolt	79	KA16410610	8	Set screw
36	KA31121000	1	Spring washer	80	P2H402976	1	Set screw
37	P2H402360	1	Spring				
38	KA30222000	2	Washer				
39	KA25722001	2	U-nut				
40	P2H402505	3	Bolt				
41	KA30221200	6	Washer				
42	P2H402362	6	Pipe				
43	P2H402363	3	Pipe				
44	KA25721202	3	U-nut				
● -	LHP001904	1	Wire rope				
45	—	1	—Wire rope				
46	—	1	—Lock tube				

We recommend that you stock parts indicated by a bullet (●).

Parts without part numbers can not be supplied separately.

Parts has "＊" will be applied with Full auto module ABC-5G-B or ABC-5P-B.

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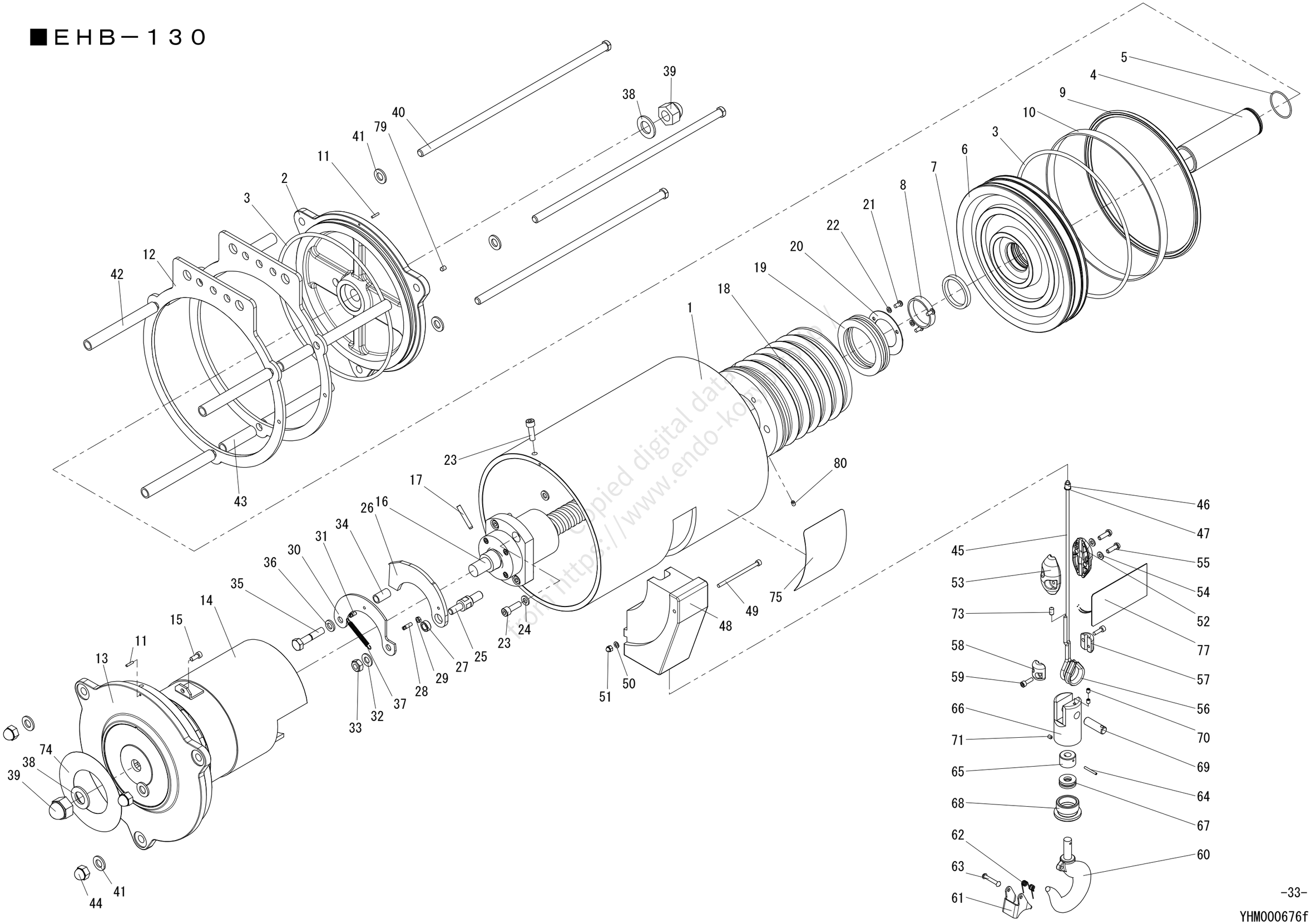

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■ PARTS LIST EHB-270

Ref. No.	Part No.	Quantity	Description	Ref No.	Part No.	Quantity	Description
1	P2H301305	1	Case	● 48	P2H301216	1	Wire guide
2	P2H200245	1	End cap	49	P2H402364	1	Cap screw
● 3	KA50312400	2	O-ring	50	KA30220500	1	Washer
4	P2H301306	1	Ball screw cover	51	KA25720502	1	U-nut
● 5	KA50200420	1	O-ring	52	P2H301547	1	Stopper
6	P2H200247	1	Piston	53	P2H301548	1	Stopper
● 7	P2H402349	1	Packing	54	KA31120600	2	Spring washer
● 8	P2H402350	1	Wear ring	55	KA01710620	2	Hex.socket button bolt
● 9	P2H402501	1	Packing	56	P2B400068	1	Thimble
● 10	P2H402502	1	Wear ring	57	P2H301310	1	Wire crip
11	KA42510314	2	Spring pin	58	P2H301311	1	Wire crip
12	P2H301308	2	Hanger	59	KA00910620	2	Cap screw
13	P2H200257	1	End cap	-	LHP000263	1	Swivel hook assembly
14	LHP002168	1	Ratchet wheel	-	LHP000261	1	－Hook compl.
15	KA00910614	2	Cap screw	60	—	1	＝－Hook
16	P2H301304	1	Ball screw	● -	LHP000213	1	＝－Hook latch set
17	P2H402701	1	Pin	61	—	1	＝＝－Hook latch
18	P2H200259	1	Drum	62	—	1	＝＝＝Spring
19	KA60401140	1	Thrust bearing	63	—	1	＝＝＝Rivet
20	P2H402702	1	Plate	64	—	1	＝－Spring pin
21	KA10120510	3	Machine screw	65	—	1	＝－Nut
22	KA31120500	3	Spring washer	-	LHP000262	1	－Hook holder compl.
23	KA00910825	5	Cap screw	66	—	1	＝－Hook holder
24	KA31120800	4	Spring washer	67	KA60401010	1	＝－Thrust bearing
25	P2H402355	1	Shaft	68	—	1	＝－Hook holder
26	P2H301140	1	Ratchet	69	P2H400523	1	＝－Pin
27	P2H402356	1	Coller	70	KA16410508	2	＝－Set screw
28	P2S400020	1	Pin	71	KA16510506	1	＝－Set screw
29	KA20320500	1	Hex. nut	73	P2H402705	1	Cap
30	P2H402357	1	Plate	74	P2H301682	1	Name plate
31	P2H402358	1	Pin	75	P2H301149	1	Warning label
32	KA30221000	1	Washer	77	P2H300779	1	Tag
33	KA25521002	1	U-nut	79	KA16410610	8	Set screw
34	P2H402359	1	Pipe				
35	KA00121044	1	Hex. bolt				
36	KA31121000	1	Spring washer				
37	P2H402360	1	Spring				
38	KA30222000	2	Washer				
39	KA25722001	2	U-nut				
40	P2H402703	3	Bolt				
41	KA30221200	6	Washer				
42	P2H402704	6	Pipe				
43	P2H402363	3	Pipe				
44	KA25721202	3	U-nut				
● -	LHP002169	1	Wire rope				
45	—	1	－Wire rope				
46	—	1	－Lock tube				
47	—	1	－Washer				

We recommend that you stock parts indicated by a bullet (●).
Parts without part numbers can not be supplied separately.

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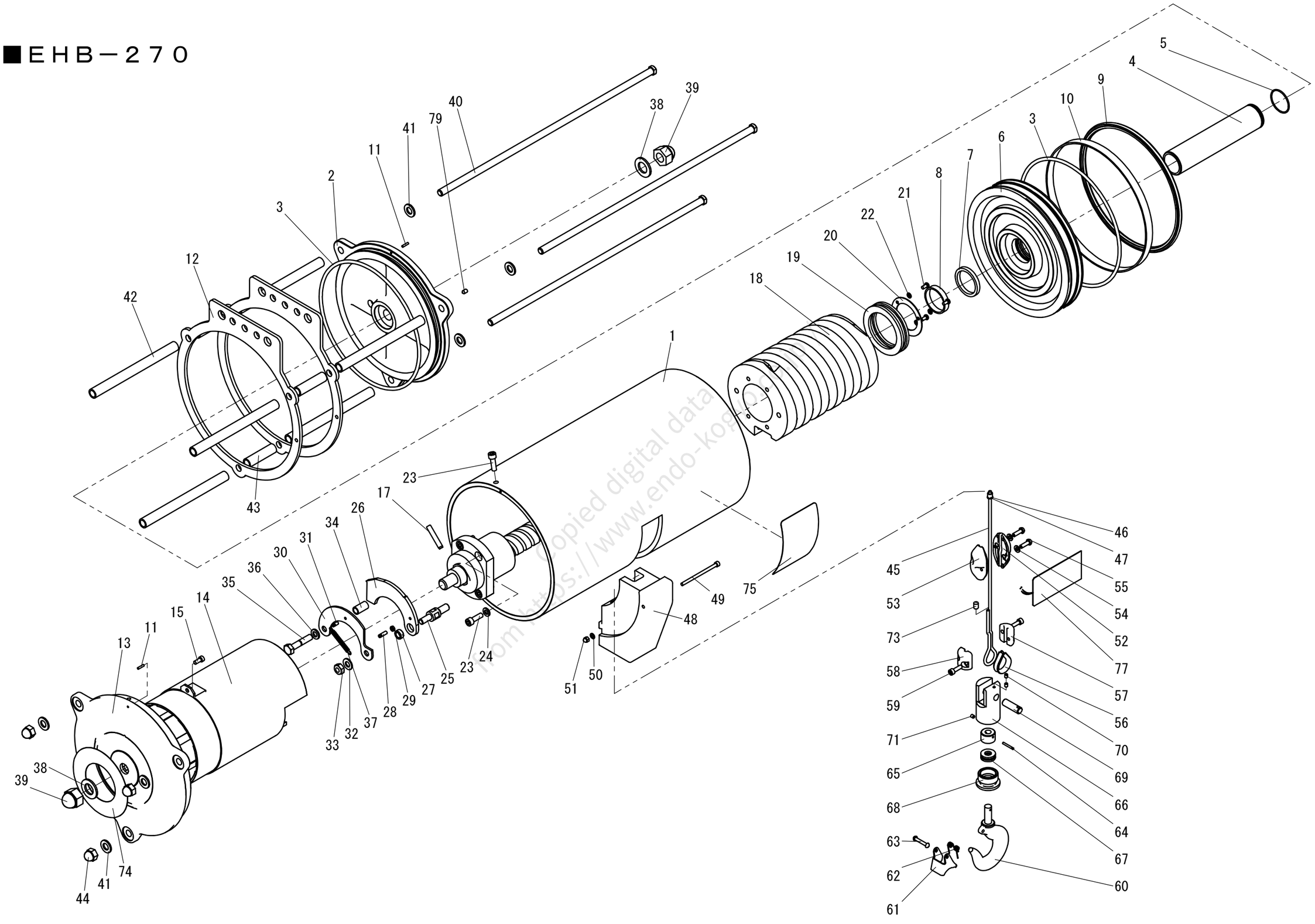

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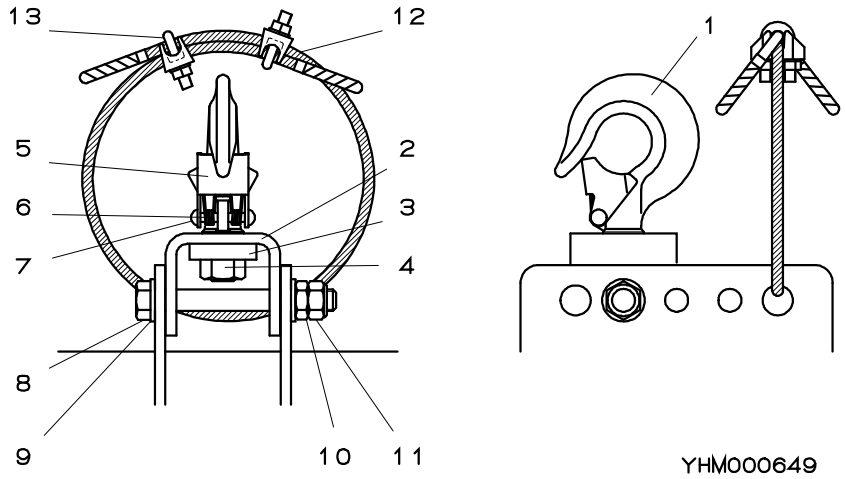
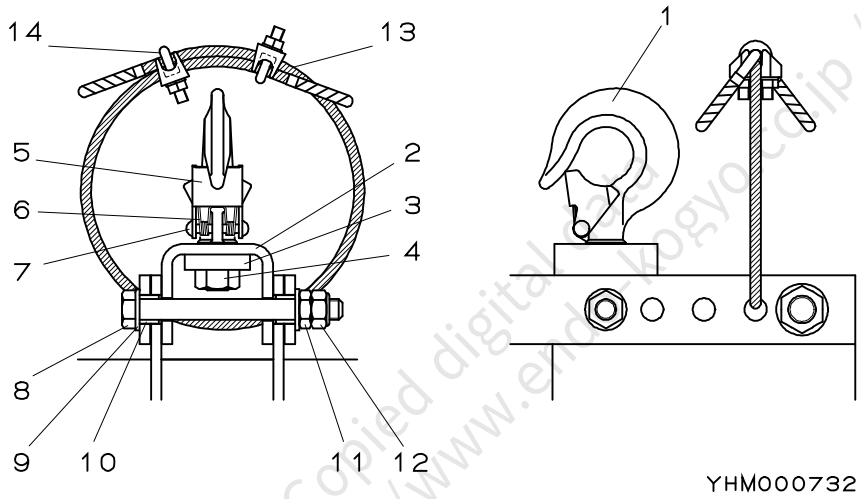
■PARTS LIST Upper hook

1. Control module / MS,MSS, MS-A, MS-AG, MS-ATC, BC1



2. Control module / BC2, ABC-5P-B, ABC-5G-B



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1. Parts list

Ref.No.	Part No.	Quantity	Descrption
-	LHP001918	1	Hook compl.
-	LHP001917	1	－Hook
1	-	1	－－Hook
2	-	1	－－Plate
3	-	1	－－Plate
4	-	1	－－Hex. nut
● -	LHP000470	1	－Hook latch set
5	-	1	－－Hook latch
6	-	1	－－Spring
7	-	1	－－Rivet
8	KA00171262	1	Hex. bolt
9	KA30221200	2	Washer
10	KA20321200	1	Hex. nut
11	KA25521202	1	U-nut
● 12	P2H401776	1	Wire rope
13	P2B400261	2	Wire clip

2. Parts list

Ref.No.	Part No.	Quantity	Descrption
-	LHP001918	1	Hook compl.
-	LHP001917	1	－Hook
1	-	1	－－Hook
2	-	1	－－Plate
3	-	1	－－Plate
4	-	1	－－Hex. nut
● -	LHP000470	1	－Hook latch set
5	-	1	－－Hook latch
6	-	1	－－Spring
7	-	1	－－Rivet
8	KA00171262	1	Hex. bolt
9	KA30221200	2	Washer
10	P2H402478	2	collar
11	KA20321200	1	Hex. nut
12	KA25521202	1	U-nut
● 13	P2H401776	1	Wire rope
14	P2B400261	2	Wire clip

We recommend that you stock parts indicated by a bullet (●).
Parts without part numbers can not be supplied separately.

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3-14-7, Akiba cho, Tsubame, Niigata 959-1261, Japan
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