INSTRUCTION MANUAL

FULL AUTO MODULE

ABC-5G-B
ABC-5P-B

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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.

ENDO

HM-10092d

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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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1. Specification

Control module

Model	Air balancer	Air Pressure MPa	Capacity kg	Mass kg	Air inlet
ABC-5G-B ABC-5P-B	EHB-50 EHB-50C	0.5	40	11	Rc 3/8
		0.4	30		
		0.3	20		
	EHB-85 EHB-85C	0.5	60		
		0.4	45		
		0.3	30		
	EHB-130 EHB-130C	0.5	85		
		0.4	62.5		
		0.3	40		
ABC-5P-B	EHB-270CR	0.5	160		
		0.4	115		
		0.3	70		

<note> Weight of trolley is approx. 7kg and top hook is approx. 1kg.

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2. Checks and Instructions before installation

- 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. Installation of Full auto module

*Accessories should be attached to the air balancer according to this instruction.

3.1 Installing to the air balancer

1. Put bracket (1) into the outside of hanger (12) and adjust bores of both hanger and bracket as Fig. 1.
2. Pass pipe (27) through between hangers and insert hex. bolt (25).
   Hex. bolt must be fixed with hex. nut and U nut.
3. Connect the adapter (22) with air inlet.

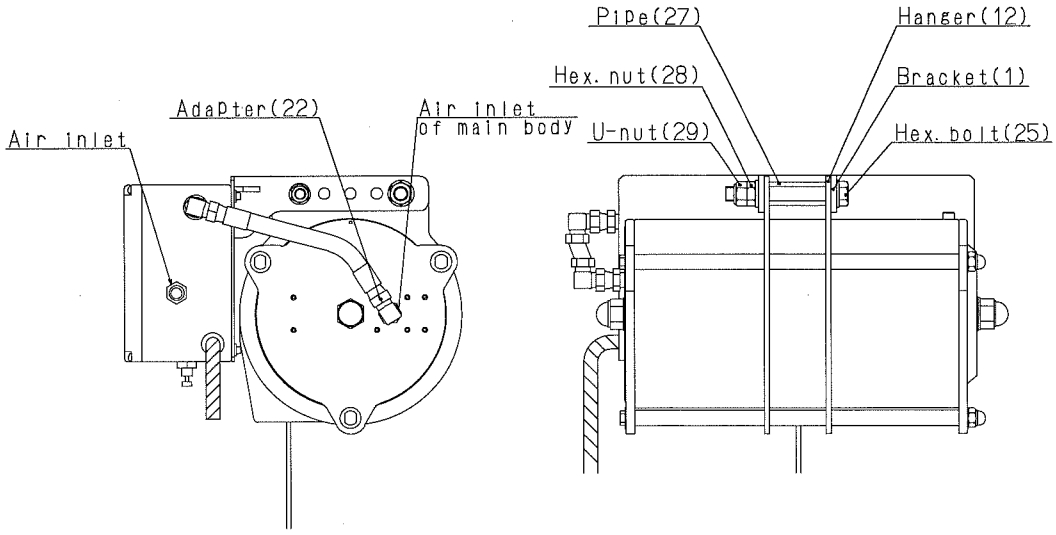

Fig.1

3.2 Piping the air inlet

1. Before installing air hose and piping to the air balancer, blow the dust inside of piping. Then make sure there is no foreign matter in the piping.
2. Supply clean air pressure with no moisture and no foreign matter to the Air inlet. (Use less than 5 μ m air filter and supply air with no lubrication)

3.3 Operating adjustment

Note: "UP" and "DN" speed control dials are strangled clockwise to prevent unexpected accident when the items are leaving from the manufacturer.

Turn the each knobs of "UP" ① and "DN" ② speed control dial to counterclockwise and adjust the speed.
If making turns of the knob to counterclockwise, the lifting and lowering speed will be increased. In another hand, the lifting and lowering speed will be decreased if making turns to clockwise.

Pressure control valve is a regulator which adjust the balance in the case of no-loading.
If making turns the knobs of pressure control valve ③ to clockwise, the pressure could be increased, and to counterclockwise, it could be decreased.

Note: The Lifting speed without the suspended load are different from the lifting speed with the suspended load.
In case the lifting speed is adjusted faster, the retract control system may work as the lifting speed without the suspended load is too fast. It is recommended to adjust the speed with the suspended load and the lifting speed must be adjusted in the range which the retract control system will not work.

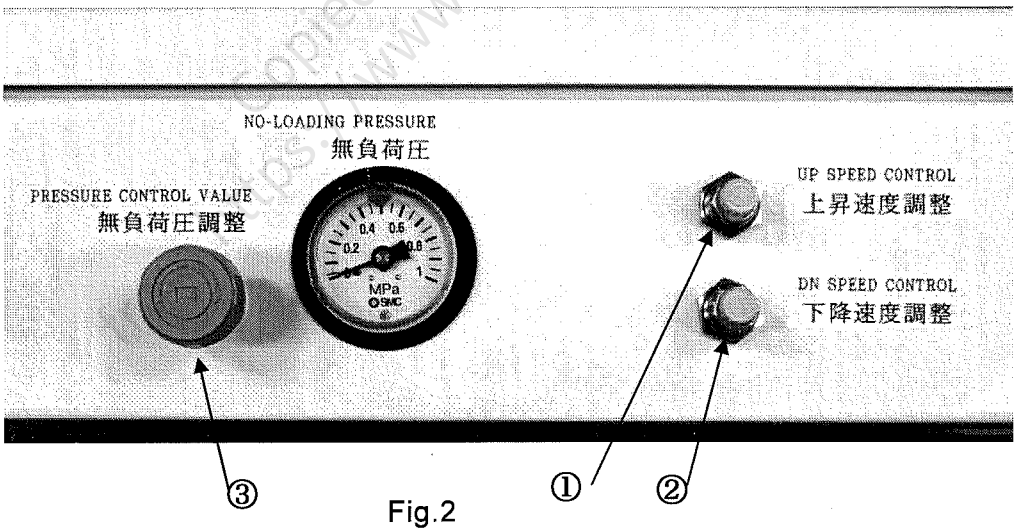

Fig.2

3.4 System reset

* If the safety retract control system cannot be released, take the next procedures to release the system.

1. Payout the wire rope with sliding down of grip in the case of ABC-5G-B and with pushing of DN button in the case of ABC-5P-B.
   But in case not to lower the bottom hook even if you took this procedure then pull down the button hook with pushing the lowering switch button.
2. After taking this procedure, the safety retract control system should be released and up / down control will be available.

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3.5 Operation

(1) Handling with GRIP/ABC-5G-B

Hold the grip,
the hook lifts when the grip is slid up
and the hook lowers when the grip is slid down.

The loaded device is balanced with loaded weight when the grip is released.

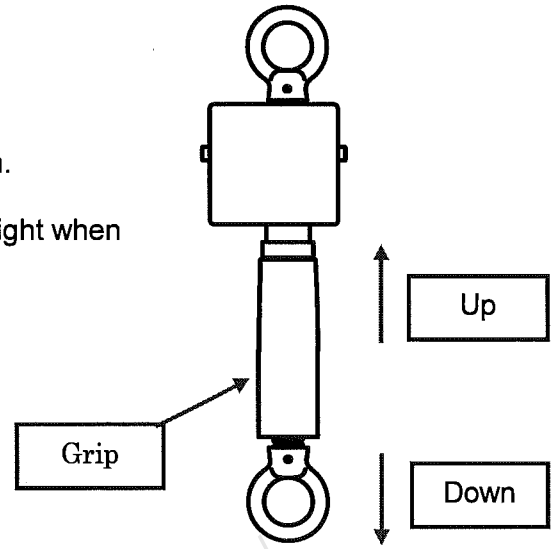

Fig.3

(2) Handling with PENDANT/ABC-5P-B

The hook lifts when Up button is pushed.
The hook lowers when Down button is pushed.
The loaded device is balanced with loaded weight when the button is released.

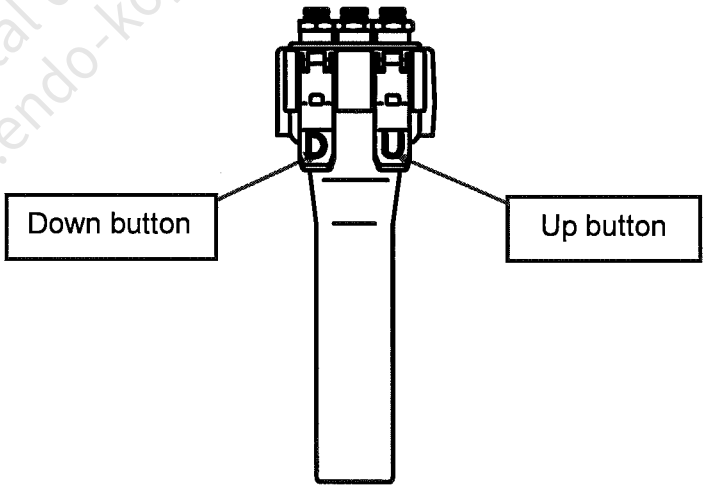

Fig.4

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4. Installing upper hook and trolley

4.1 Installing upper hook

1. Install upper hook to the position mentioned in Fig.6
   Pass hex. bolt (8) through the collar of bracket, hanger, and top hook
2. Make sure to tie the hex. bolt (8) by hex. nut (10) and U-nut (11) as mentioned in Fig 5.

Note: Do not bend or deform the hanger by overturning of bolts.

4.2 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 hanger.
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).

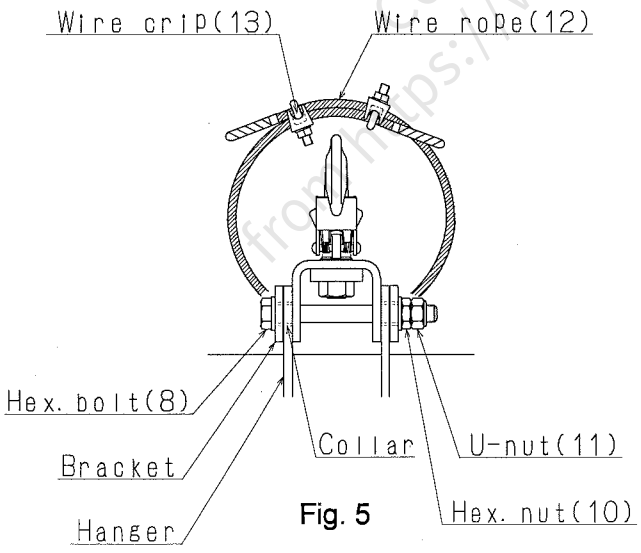

Fig. 5

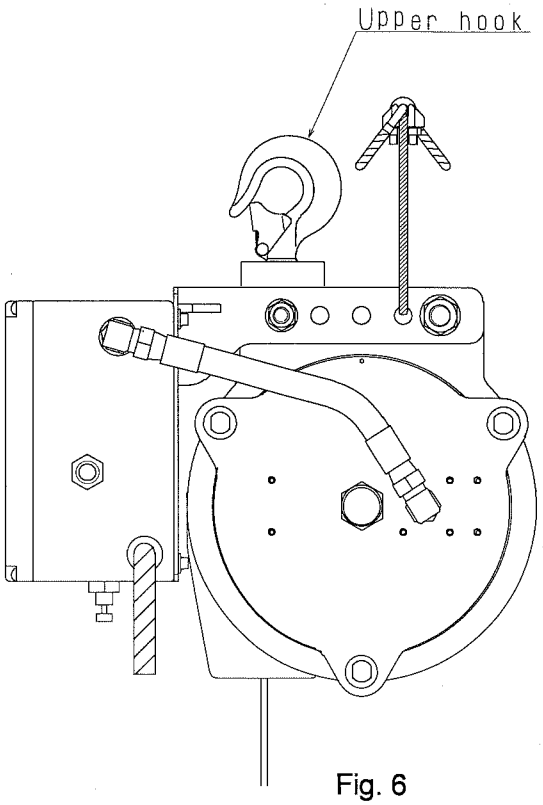

Fig. 6

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5. Checks after Installation and Test run

5.1 Check Lifting Operation

- Keep the working air pressure no greater than 0.5 MPa (5kgf/cm^2).
- Check the indications marked on the push buttons correctly show the actual directions of up / down operations.

5.2 Checking the safety retract control

⚠ WARNING

Never use the internal safety retract control and a ball stopper as a means of stopping air balancer. Use them only in emergency case of preventing the snap back of bottom hook.
It is very dangerous to use the ball stopper frequently. It will cause the breakage of the wire rope and the drop down of the suspended load.

Speed adjustment dial or speed controller for lifting and lowering are strangled clockwise when the items are leaving from the manufacturer.
For speed adjustment, refer to "Operating adjustment".
Check the activation of the safety retract control by making fast rotation to the drum when no load is suspended.
To release the safety retract control, pay out the wire rope fully by sliding down of grip or by pushing of "DN" button.
But in case not to lower the bottom hook even if you took this procedure then pull down the bottom hook with sliding down of the grip or with pushing of "DN" button.
This procedure will release the safety retract control.

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6. Lubrication

Each time the air balancer is disassembled for inspection, use lithium-saponified molybdenum disulfide grease corresponding to the No. 2 class of NLGI (National Lubrication Grease Institute) to slide O-ring.
(Molykote BR2-S or equivalents)

7. Disassembly drawing and part description on body part

Remarks when purchasing parts

- Specify the part No., part name and model name of the air balancer.
- 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
-	LHP001963	1	Hook assembly
-	LHP000851	1	-Hook
1	P2H100058	1	--Hook
2	LHP000145	1	--Plate
3	KA42410325	4	--Plate
4	P2H400296	1	--Hex. nut
5	P2H400297b	1	-Hook latch set
6	P2H400298	1	-- Hook latch
7	KA42410206	2	--Spring
● 8	KA50200090	1	--Rivet

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

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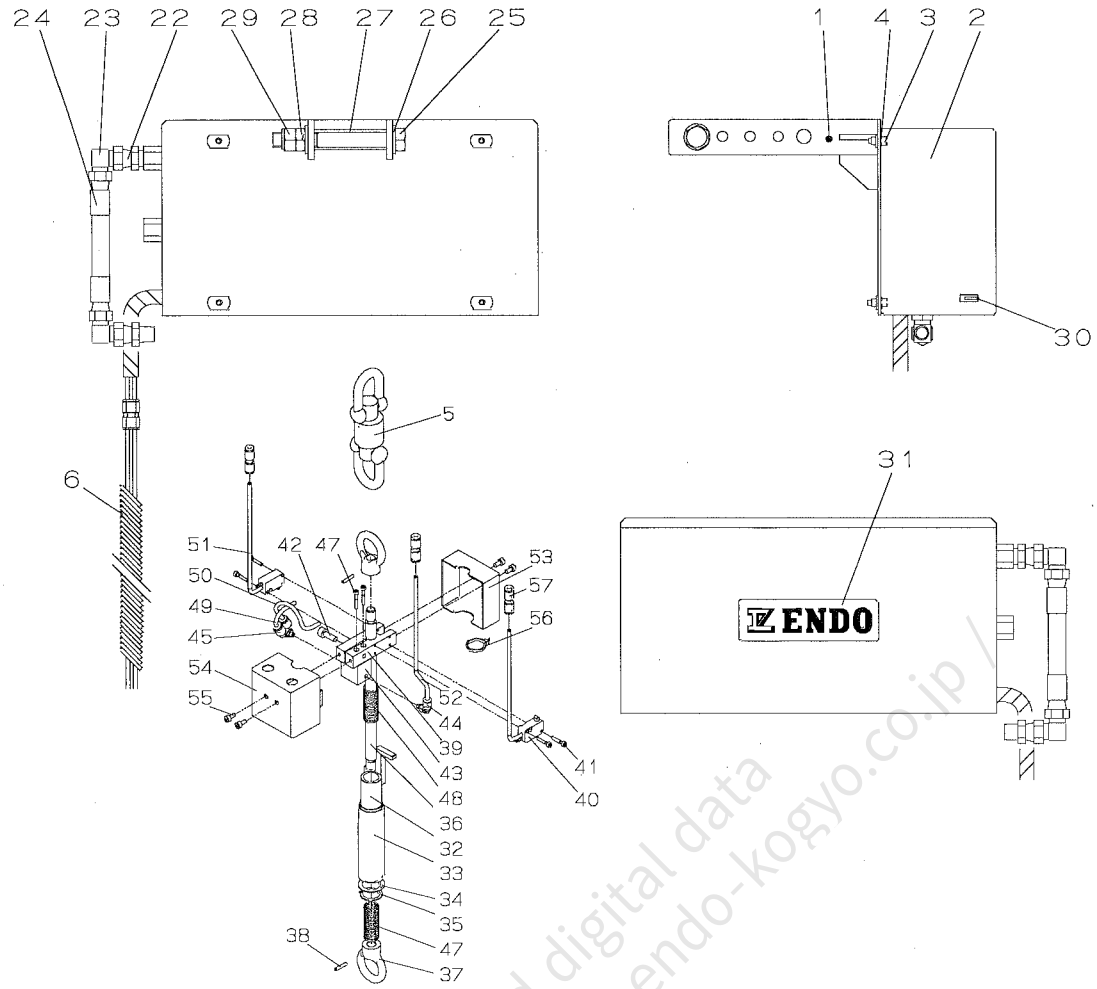
■PARTS LIST ABC-5G-B



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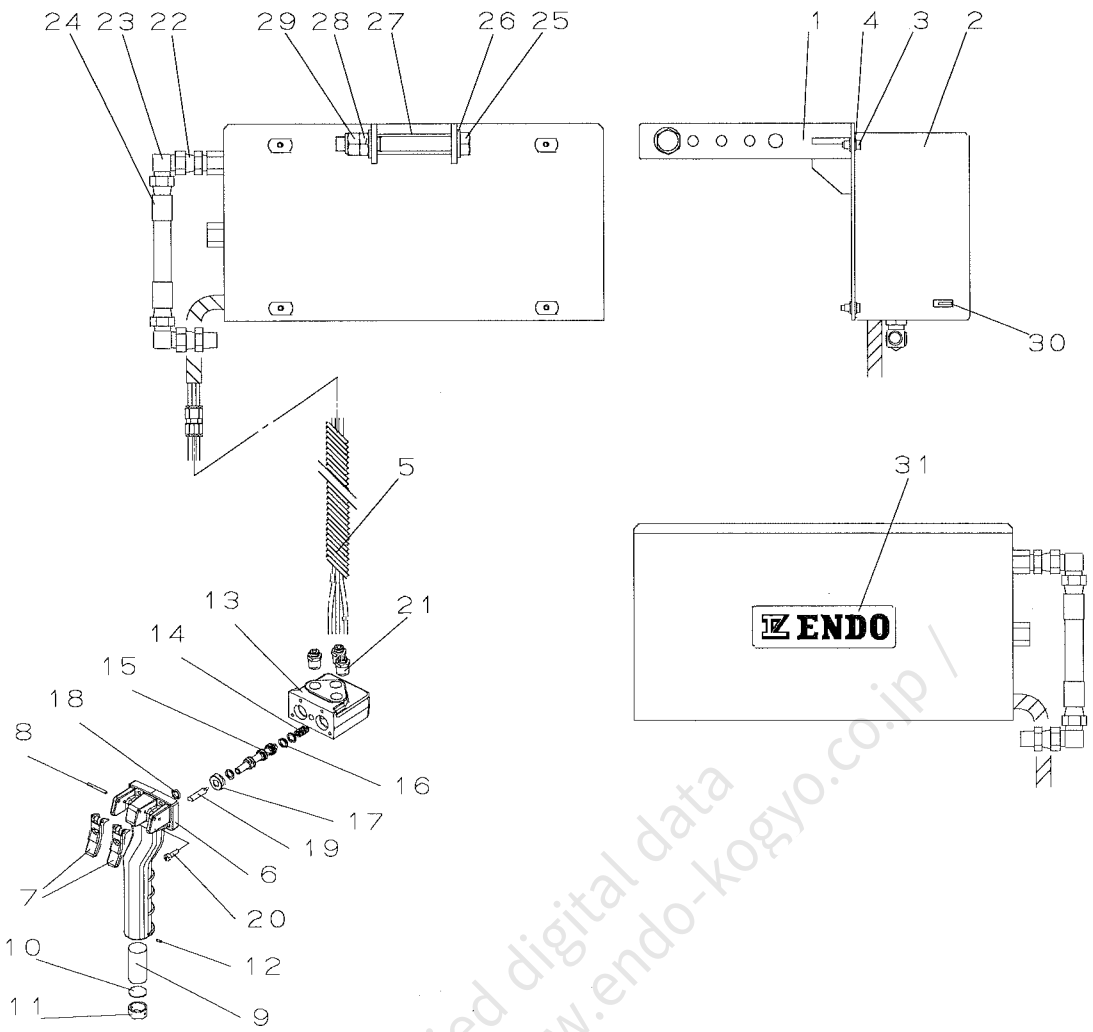
Ref.No.	Part No.	Quantity	Description	Ref.No.	Part No.	Quantity	Description
1	LHP002045	1	Bracket	—	LHP002185	1	—Shaft compl.
*1 1	LHP002046	1	Bracket	37	—	1	——Shaft
2	LHP002056	1	Control box	38	—	2	——Eyenut
3	KA00910614	4	Cap screw	39	—	2	——Spring pin
4	KA31120600	4	Spring washer	40	P2H301257	1	—Plate
*2 5	P2H400792	1	Swivel	41	P2H402585	2	—mechanical valve
6	P2H402540	1	Spiral tube	42	KA00910316	4	—Cap screw
22	P2H402460	2	Adapter	43	KA00910616	1	—Cap screw
23	P2H402461	2	Adapter	44	P2H402586	1	—manifold
24	P2H301191	1	Hose	45	P2H402587	1	—Elbow
25	KA00171667	1	Hex. Bolt	46	P2H402588	1	—Elbow
26	KA30221600	2	Washer	47	KA0910320	2	—Cap screw
27	P2H402475	1	Pipe	48	P2H402589	1	—Spring
28	KA20321600	1	Hex. Nut	49	P2H402590	1	—Spring
29	KA25521601	1	U-nut	50	P2H402591	1	—Tube
30	P2H402478	2	Collar	51	P2H402592	1	—Tube
31	P2H301208	1	Name plate	52	P2H402593	2	—Tube
32	P2H300777	1	Name plate	53	P2H402594	1	—Tube
—	LHP002111	1	Grip switch	54	P2H402595	1	—Cover
33	LHP002110	1	-Grip	55	P2H301258	1	—Cover
34	P2H402584	1	-Grip	56	KA00910408	4	—Cap screw
35	P2H402880	1	-Washer	57	P2H402597	5	—Banding band
36	KA40110020	1	-Retaining ring	58	P2H402596	3	—Straight

Parts has "＊1" will be applied with air balancer EHB-130.
Part has "＊2" will not be applied with chain type air balancer.

■PARTS LIST ABC-5P-B



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Ref.No.	Part No.	Quantity	Description	Ref.No.	Part No.	Quantity	Description
1	LHP002045	1	Bracket	15	P2H300170	2	—Spool
＊1 1	LHP002046	1	Bracket	● 16	KA50110080	6	—O-ring
＊2 1	LHP002701	1	Bracket	17	P2H401220	2	—Spacer
2	LHP002056	1	Control box	● 18	KA50200090	1	—O-ring
3	KA00910614	4	Cap screw	19	P2H400307	2	—Pin
4	KA31120600	4	Spring washer	20	P2H400957	4	—Cap screw
5	P2H402540	1	Spiral tube	21	P2H402515	3	—Union
—	LHP002050	1	Handle assembly	22	P2H402460	2	Adapter
—	LHP000851	1	—Handle compl.	23	P2H402461	2	Adapter
6	P2H100058	1	——Handle	24	P2H301191	1	Hose
7	LHP000145	1	——Push button set	25	KA00171667	1	Hex. Bolt
8	KA42410325	4	——Spring pin	＊2 25	KA00171669	1	Hex. Bolt
9	P2H400296	1	——Silencer	26	KA30221600	2	Washer
10	P2H400297	1	——Support	27	P2H402475	1	Pipe
11	P2H400298	1	——Collar	28	KA20321600	1	Hex. Nut
12	KA42410206	2	——Spring pin	29	KA25521601	1	U-nut
13	P2H200254	1	—Valve body	30	P2H301208	1	Name plate
14	P2H400293	2	—Spring	31	P2H300777	1	Name plate

Parts has "＊1" will be applied with air balancer EHB-130 or EHB-130C.
Parts has "＊2" will be applied with air balancer EHB-270CR.

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