



Operation Manual

SS0407E/AS0607E/AS0812E/AS1012E/
AS1212E/AS1413E

Mobile Elevating Work Platform

Warning

Before operation and maintenance, the drivers and service personnel shall always read and thoroughly understand all information in this manual. Failure to do so may result in, fatal accidents or personal injury.

This manual must be kept with this machine at all times.

Mobile Elevating Work Platform Operation Manual

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Forewords

Thanks for purchasing and using the elevating work platform of Lingong Group Jinan Heavy Machinery Co., Ltd. This machine is designed according to AS/NZS 1418.10:2011. The mechanism, drive, operation, maintenance, adjustment, technical parameter, repair adjustment data of elevating work platform are specified in this manual for safety guidance and correct use & maintenance of this machine.

How to achieve the best benefit with this machine is our common pursue, which is greatly depending on the acknowledge and maintenance of your machine. We sincerely wish you can go through this manual before the first start, operation, repair and maintenance of this machine and wish you are familiar with the operation and maintenance specified.

The correct illustration and instructions are provided in this manual at the moment of publication. However, the structure and performance of our products are continuously improved and completed. Changes of related design, operation and maintenance instruction will be made without notice. Thanks for understanding. For any doubts of the latest machine information and the manual, please consult us.

This manual is applicable to the elevating work platform. The user shall make the maintenance to the machine strictly according to the interval specified in the maintenance schedule.

Please keep the manual at the specified location for convenience of reference at any time. This manual is one part of this machine. When the ownership or use right of this machine is transferred, this manual shall be transferred with this machine. For any loss, damage or identification problem, please replace the manual in time.

Lingong Group Jinan Heavy Machinery Co., Ltd refers the copyright of this manual. The reproduction or copy of this manual is not allowed without the written approval of the company.

Warning

- **Only the staff receiving the professional training and having corresponding qualifications are allowed to operate, repair and maintain this machine.**
- **The incorrect operation, maintenance and repair are very dangerous and can cause the personal injury and death.**
- **Before the operation or maintenance, the operator shall carefully go through this manual. Do not make any operation, maintenance and repair on this machine before going through and comprehending this manual.**
- **The user shall load the platform strictly according to the rated one and shall be responsible for consequences caused due to overload or any modification without permission.**
- **The operation regulations and preventions in this manual are only applicable for the specified use of this machine. For any un-forbidden operation beyond the regulation, be sure to ensure such operation will not cause any personal injury.**

Safety precaution

The operator shall understand and follow the existing safety regulations of the state and the local government. If these are unavailable, the safety instructions in this manual shall be followed.

Most accidents are caused due to the violation to the operation and maintenance regulations of the machine. To avoid accidents, please go through, comprehend and follow all warnings and precautions in this manual before the operation and maintenance.

The safety measures are specified in Chapter 1 Safety.

As it is impossible to foresee every possible hazard, the safety instructions in this manual may not cover all safety prevention measures. Be sure to ensure the safety of yourself and others and protect the machine against any damage, if the steps and operation beyond this manual are adopted. If you are unable to confirm the safety of some operations, please feel free to consult us or the distributor.

The operation & maintenance prevention measures listed in this manual are only applicable to the specified uses of this machine. Our company shall assume no responsibility if this machine is used beyond the range of this manual. The user and the operator shall be responsible for the safety of such operations.

Do not carry on any operation forbidden in this manual in any cases.

The following signal words are applicable for identifying the safety information of this manual.

Hazard:

If not avoided, the dangerous results as severe injuries or death can be caused. This word is also applicable to the situation that serious machine damage can be caused, if not avoided.

Warning:

If not avoided, the potential dangerous results as severe injuries or death can be caused. This word is also applicable to situation that the serious machine damage may be caused, if not avoided.

Notice:

If not avoided, the minor or intermediate injury may be caused. This word is also applicable to situation that the machine damage may be caused or the machine service life may be shortened, if not avoided.

Chapter 1 Safety

**Hazard**

The death or severe injuries can be caused if the instruction and safety regulations in this manual are not followed.

**Warning: Forbidden operation, unless**

The safe operation rules of the machine are understood and practiced.

The dangerous conditions are avoided. The safety regulations shall be acknowledged and comprehended before the next step.

The pre-operation inspection is always made.

The function test is always made before the use.

The workstation is checked.

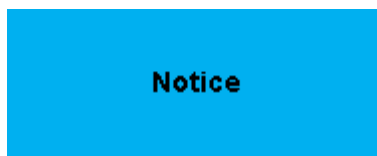
The machine is used for its design purposes

The manufacturer's instruction and safety regulations, the safe operation manufacturer and machine's label, shall be read, comprehended and followed.

The safety regulations for user and the site regulations shall be read, comprehended and followed.

All applicable laws and regulations of the government are read, understood and followed.

The appropriate training on safe operation of machine is made

 **Notice: Classification of hazards**

The meanings of symbols, color codes and characters of Lingong's product are as follows:

Security warning and sign: be used for warning the potential personal injuries. Please observe all safety instructions below this sign, for fear of potential personal injury and death.

Red: remind the dangerous situations. If not avoided, the personal death or severe injury can be caused.

Orange: remind the dangerous situations. If not avoided, the personal death or severe injury may be caused.

Yellow: remind the dangerous situations. If not avoided, the minor or intermediate personal injury may be caused

Blue: remind the dangerous situations. If not avoided, the property loss can be caused

1.1 Design use

This machine is a self-traveling and electric elevating device, which is provided with a work platform on a scissors mechanism.

1.2 Maintenance of safety sign

Replace any missed or damaged safety signs or

Decals. If necessary, use mild soap and water to clean safety signs. Do not use solvent-based cleaners because they may damage the safety sign material.

Electric shock hazard

- The machine is not insulated, and does not provide any electric shock Protection when touching or getting close to the electric wire. Please keep the safe distance away from the power line and the power equipment according to the applicable laws and regulations and the description in the table below.

Voltage	Required clearance
0~300V	Prohibit touch
300V~50KV	3.05m
50KV~200KV	4.6m
200KV~350KV	6.10m
350KV~500KV	7.62m
500KV~750KV	10.67m
750KV~1000KV	13.72m

- Please consider the influence to the displacement of platform and swinging & relaxation of electric wire by the strong or gust.

- Please stay away from the machine if it contacts by a live electric wire. Do not touch or operate the machine on the ground or the platform before cutting off the power supply.
- Do not operate the machine in the lightning or rainstorm weather.
- Do not use the machine as an earth wire in the process of welding.
- Do not touch charger when charging.

Tipping-over hazard

The staff, equipment and material on the platform shall not exceed the maximum bearing capacity of the platform and the extending platform.

Model (order No.)	SS0407E (S0407SDTNE10)			
Maximum occupant capacity	indoor	2	outdoor	1
Maximum working load of platform	indoor	240Kg	outdoor	240Kg
Recommend load capacity of extension deck	indoor	113Kg	outdoor	113Kg
Model (order No.)	AS0607E (S06070DTNE10)			
Maximum occupant capacity	indoor	2	outdoor	1
Maximum working load of platform	indoor	230Kg	outdoor	125Kg
Recommend load capacity of extension deck	indoor	120Kg	outdoor	113Kg

Model (order No.)	AS0812E (S08120DTNE10)			
Maximum occupant capacity	indoor	2	outdoor	1
Maximum working load of platform	indoor	450Kg	outdoor	450Kg
Recommend load capacity of extension deck	indoor	113Kg	outdoor	113Kg
Model (order No.)	AS1012E (S10120DTNE10)			
Maximum occupant capacity	indoor	2	outdoor	1
Maximum working load of platform	indoor	320Kg	outdoor	320Kg
Recommend load capacity of extension deck	indoor	113Kg	outdoor	113Kg
Model (order No.)	AS1212E (S121200NDTONE1000)			
Maximum occupant capacity	indoor	2	outdoor	-
Maximum working load of platform	indoor	320Kg	outdoor	-
Recommend load capacity of extension deck	indoor	113Kg	outdoor	-
Model (order No.)	AS1413E (S141300NDTONE1000)			
Maximum occupant capacity	indoor	2	outdoor	1
Maximum working load of platform	indoor	320Kg	outdoor	320Kg
Recommend load capacity of extension deck	indoor	113Kg	outdoor	113Kg

1.3 Safety of workstation

- 1) The platform can be lifted on a solid and flat ground only.

The running speed in case of the platform

being lifted shall be no more than 0.8km/h;

The running speed in case of the platform SS0407E being lifted shall be no more than 0.5km/h.

- 2) Do not use the tilting alarm as a level indicator. The tilting alarm of chassis and platform only alarms when the machine is severely tilted.
- 3) In case the tilting alarm sounds: lower the platform and move the platform to a horizontal ground. In case the tilting alarm sounds when lifting the platform, pay special attention to lower the platform.
- 4) In case the machine is used outdoor, do not lift the platform when the wind speed is above 12.5m/stiff the wind speed exceeds the limit after lifting the platform, please immediately lower the platform and stop the machine operation
- 5) The ambient temperature for use of this machine is -20℃ to 40℃.
- 6) The relative humidity for use of this machine shall be greater than 90% (at 20℃).
- 7) The allowable voltage fluctuation of the machine is $\pm 10\%$.
- 8) Do not operate the machine under strong wind or gust. Do not increase the surface area of platform or load. Increase of exposure area in wind will reduce the stability

of machine.

AS1413E

Indoor: 400N Outdoor:200N

- 9) When the platform is caught, stuck or blocked by a nearby item and is unable to normally move, do not try to release the platform via the platform controller. All staff must leave the platform before releasing the platform via a ground controller.
- 10) Be especially careful and lower the speed when the machine in the folding status is driving on an uneven road, a gravel road, an unstable or smooth surface, near a hole and on a slope.
- 11) Do not travel the machine in any uneven or unstable road or in any other dangerous conditions, when the platform is lifted.
- 12) Do not drive in high-speed descending any slope.



Caution

Make sure slow speed (turtle) is selected before descending any slope.

- 13) Do not push off or pull toward any object outside of the platform.

Maximum allowable manual force	
Model	Manual Force
SS0407E	Indoor: 400N Outdoor:200N
AS0607E	Indoor: 400N Outdoor:200N
AS0812E	Indoor: 400N Outdoor:200N
AS1012E	Indoor: 400N Outdoor:200N
AS1212E	Indoor use onl:400N

- 14) Do not use the machine as a crane.
- 15) Do not place, anchorage or suspend any load on the any part of the machine.
- 16) Do not push the machine or other items via the platform.
- 17) Do not operate the machine in case the chassis tray is stretched.
- 18) Do not lean the platform against any nearby structure.
- 19) Do not change or limit the use of the limit switch.
- 20) Do not bind the platform on a nearby member.
- 21) Do not place the load outside the platform guard rail.
- 22) Without the written consent of the manufacturer, do not modify or change the aerial work platform. Installing an additional device, used for carrying tools or other materials, on the platform, pedal or guard rail, will increase platform weight, platform surface area or load.
- 23) Do not change or damage any safety or stability related parts of the machine.
- 24) Do not replace the key stability-related parts with those with different weights or specifications.
- 25) When cleaning the vehicle, do not wash directly.

26) The maximum allowable tilt angle of the machine, as shown in following table:

Model Item	SS0407E (S0407SDTNE10)	AS0607E (S06070DTNE10)
Maximum allowable working angle (forward)	3°	3°
Maximum allowable working angle (backward)	3°	3°
Maximum allowable working angle (sideward)	1.5°	1.5°
Model Item	AS0812E (S08120DTNE10)	AS1012E (S10120DTNE10)
Maximum allowable working angle (forward)	3°	3°
Maximum allowable working angle (backward)	3°	3°
Maximum allowable working angle (sideward)	1.5°	1.5°
Model Item	AS1212E (S121200NDTON E1000)	AS1413E (S141300NDTON E1000)
Maximum allowable working angle (forward)	3°	3°
Maximum allowable working angle (backward)	3°	3°
Maximum	1.5°	1.5°

allowable
working angle
(sideward)

27) It is forbidden to use the battery whose weight is less than the original battery. The battery installed on the chassis not only balances the weight, but also is vital for the stability of machine. Every battery has a different weight (as detailed in the following table).

Model	Battery weight (Kg)
SS0407E	28
AS0607E	
AS0812E	30
AS1012E	
AS1212E	39
AS1413E	

28) The minimum weight of battery tray (including the battery) on the chassis varies with the battery model (as detailed in the following table).

Model	Weight of battery tray (including the battery) on the chassis (kg)
SS0407E	85
AS0607E	146
AS0812E	157
AS1012E	
AS1212E	193
AS1413E	225.4

29) Do not place the stair or scaffold in the platform or lean the same against any part of the machine.

30) The tools and materials, evenly distributed and able to be safely moved by the person on the platform, can be transferred by the platform only.

31) Do not use the machine on a movable surface or vehicle.

32) Be sure to keep all tyres in good conditions and appropriately tighten the nuts.

Crush hazard

- Do not stretch the arms and the hands to any position where there is a hazard of scissor wound or crush
- When the machine is running via a controller on the ground, please make the correct and planned judgment. Keep the safe distance between the operator, machine and the fixing item.

Hazard during operation on a slope

Do not drive the machine on a slope and side slope with over proof gradient. The rated value of slope is applicable to the stowed machine.

Maximum slope rating, stowed position:	25%(14°)
	

Maximum side slope rating, stowed position:

25%(14°)



Note: Slope rating is subject to ground conditions and adequate traction.

Falling hazard

- The workers on the platform must put on all safety devices and fix the accepted rope anchorage point with the safety strap hook in the operation process. Each rope anchorage point is only applicable to one hook.
- Do not climb on or sit on the guard rail of the platform. Please stably stand on the platform base plate in any time.
- Do not climb down the platform when it is lifted.
- Keep the platform floor free from debris.
- Please shut down the entrance door before the operation.
- Do not run the machine when the guard rail is not correctly installed or the safe operation cannot be insured by the entrance door.

- Do not get in and out of the platform, except the machine is folded.

 Crash Hazard

- Pay attention to the items within the sight line and the black spot when starting or running the machine.
- Pay attention to the position of the extending platform when moving the machine.
- Check the workstation to avoid any overhead barrier or other possible hazards.
- Pay attention to the crush danger when holding the guard rail of the platform.
- The user must follow the service rules for the personal protection equipment, made by the owner, the service rules for the workstation and the laws and regulations made by the government.
- Please observe and follow the traveling arrow and the turning direction arrows on the platform controller and the platform's label and nameplate.
- Do not operate the machine on the line of any crane or movable

overhead machine, unless the crane controller is locked and/or the potential bump prevention measure is taken.

- Avoid dangerous driving or careless operation when running the machine.
- The platform can be lowered only when there are no person and barriers below the platform.
- Limit the traveling speed according to the ground status, traffic jam, road grade, person position and any other possible bump factors.

 Component damage hazard

- Do not charge the battery with any above 24V battery charger.
- Do not use the machine as an earth wire in the process of welding.

 Explosion and fire hazard

Do not operate or charge the machine at the location with possible inflammable or explosive gas or particles.

 Machine damage hazard

- Do not use any damaged or failed machine.

- Please make an absolute operation check and test all functions before each shift. Attach a mark on the damaged or failed machine. immediately and stop the operation
- Be sure to make all maintenance and operation according to the provisions in this manual.
- Be sure to keep all labels at the appropriate locations and keep them recognizable.
- Be sure to keep this manual in the manual box of the platform.

 Personal injury hazard

- Do not run the machine in case of hydraulic oil leakage. The leaked hydraulic oil may permeate or burn the skin.
- The severe injury may be caused if any component below the cover is touched by mistake. Only the trained maintenance staff can maintain the compartment. It is suggested that the operator shall make the maintenance before the pre-operation inspection. Be sure to keep all compartments closed and locked during the operation.

1.4 Battery safety

 Combustion hazard

- The battery contains the acid material. Please put on the protective clothing and safety goggles when using the batter.
- When the vehicle stops for a long time, it is necessary to turn off the main power switch.
- Take measures to protect the acid material from overflowing or being touched. Neutralize the overflowed acid material from the battery with soda and water.

 Explosion danger

- Keep the battery away from any spark, flame or alight cigarette. The battery can release the explosive gas.
- Do not touch the battery terminal or the cable clamp with any tool which is possible to cause the spark.

 Component damage hazard

Do not charge the battery with any above 24V battery charger



Electrocution/burn hazard

- The battery charger can be connected to the grounded AC three-wire power socket.
- Check if the wire cable, electric cable and wiring are damaged every day. Replace the damaged items before the operation.
- Take measures to prevent the electric shock caused due to the touch with the battery terminal. Take off the ring, watch and other decorations.



Tipping-over hazard

It is forbidden to use the battery whose weight is less than the original battery. The battery installed on the chassis not only balances the weight, but also is vital for the stability of machine. Every battery has a different weight (as detailed in the following table).

Model	Battery weight (Kg)
SS0407E	28
AS0607E	
AS0812E	30
AS1012E	
AS1212E	39
AS1413E	

The minimum weight of battery tray (including

the battery) on the chassis varies with the battery model (as detailed in the following table).

Model	Weight of battery tray (including the battery) on the chassis (kg)
SS0407E	85
AS0607E	146
AS0812E	157
AS1012E	
AS1212E	193
AS1413E	225.4



Hazard in the process of lifting

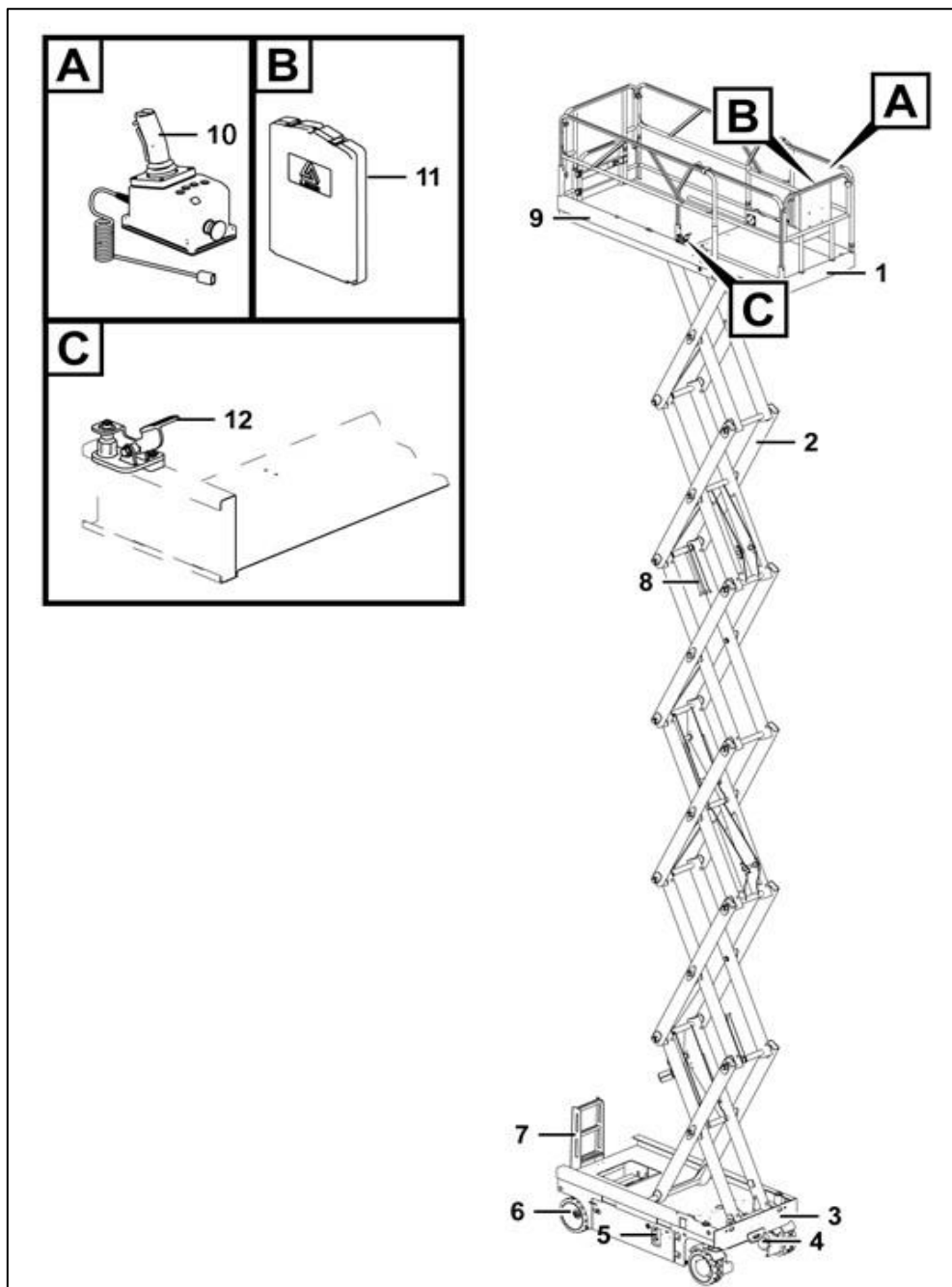
When lifting the battery, please choose the appropriate number of person and lifting method.

1.5 Lock after each use

- 1) Choose a safe parking position which can be a solid and horizontal ground where there is no barrier and any busy transport.
- 2) Lower the platform
- 3) Rotate the key switch to the "OFF" position and pull out the key, to avoid unauthorized use
- 4) Chock up the wheels with wedges.
- 5) Charge the battery.

Chapter 2 Legend

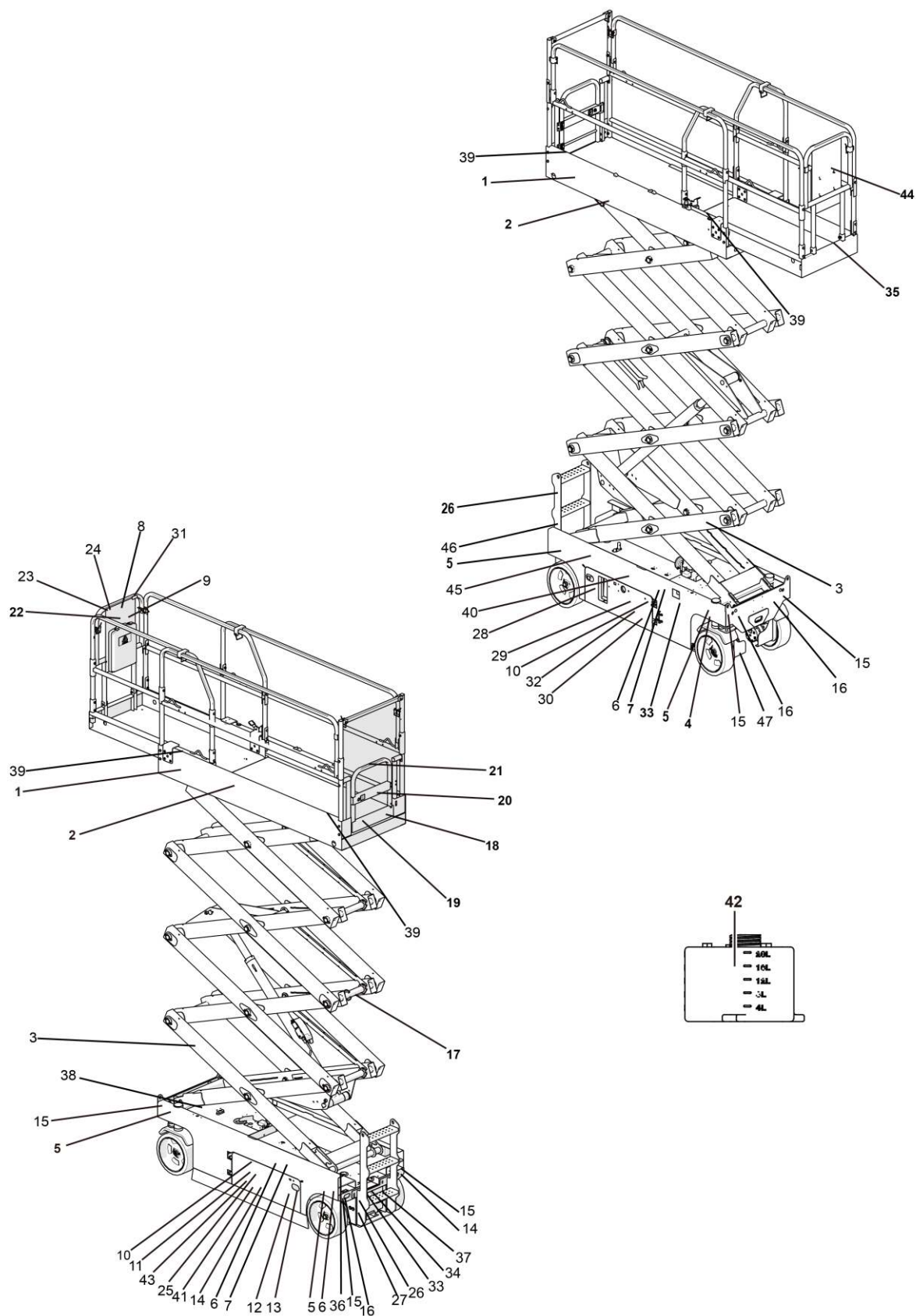
! Notice: The product structure diagram of AS1212E is used as an example, and can be referred by other models



- | | |
|-------------------------|--------------------------|
| 1. Extending platform | 7. Ladder |
| 2. Scissors | 8. Safety arm |
| 3. Chassis assembly | 9. Main working platform |
| 4. Motor | 10. Control lever |
| 5. Ground control panel | 11. Folder |
| 6. Tire | 12. Pedal |

Chapter 3 Decal

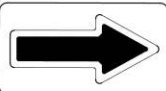
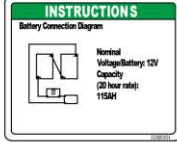
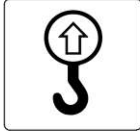
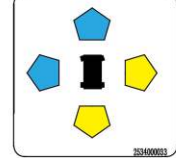
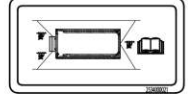
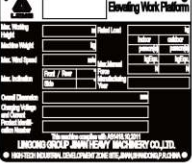
SS0407E Label

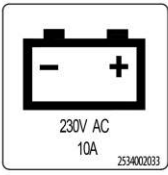
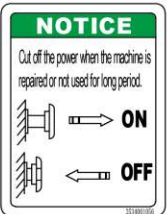
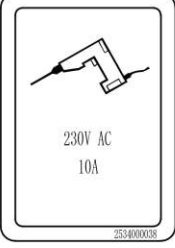


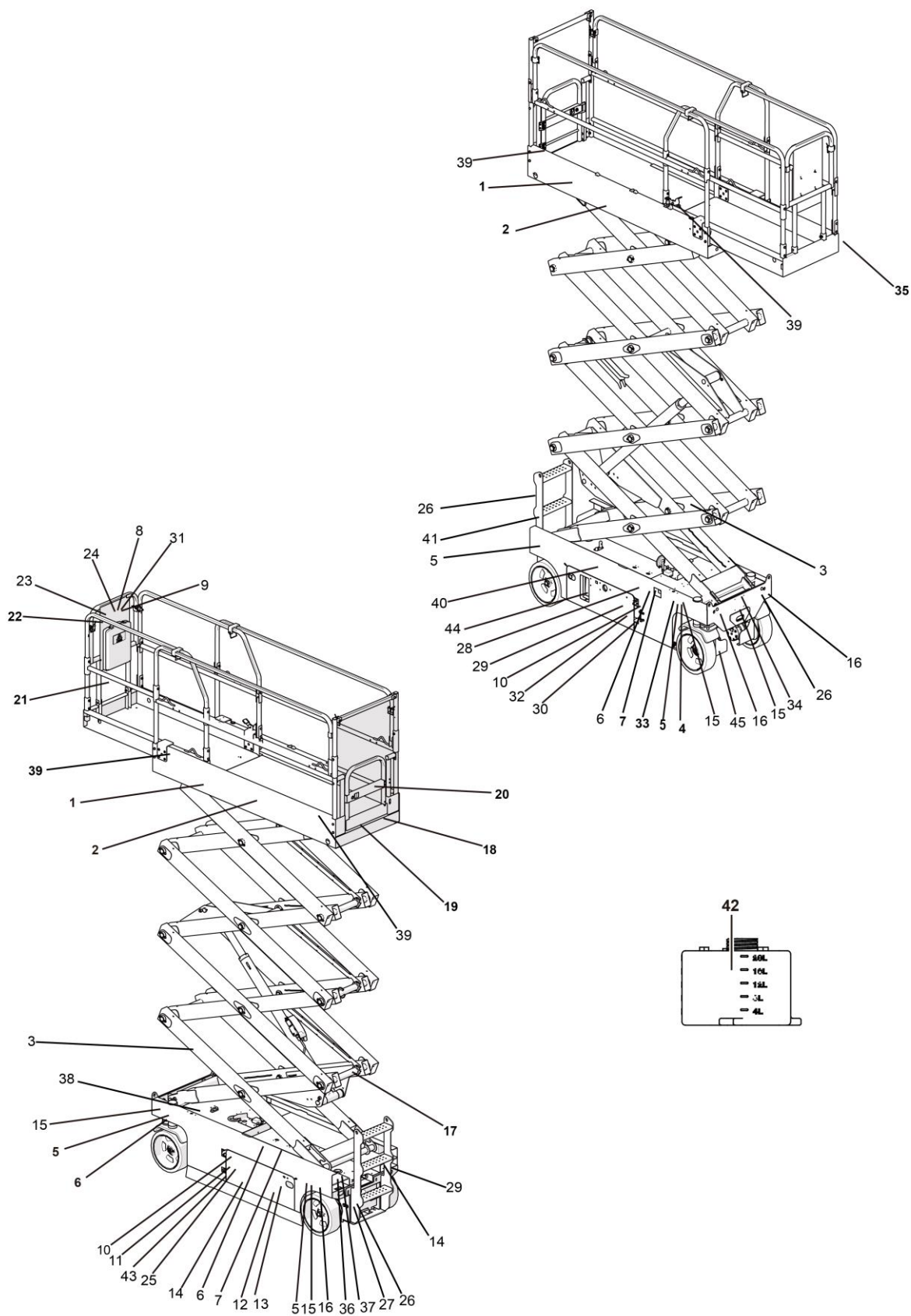
SS0407E Label List

Code	Name	Code	Name
1	Company Logo	24	Description of file loss
2	Model identification	25	Annual inspection instruction
3	Stay away from machine sign	26	Transportation sign
4	Direction indicator sign	27	Electric shock sign
5	Wheel load capacity sign	28	Indicator for lower control panel
6	Pressure hazard identification	29	Prohibition of sparks sign
7	Electric shock hazard	30	Attention in overhaul
8	Notices indication	31	Suspension position sign
9	Safety rules description sign	32	Attention mark of skin infraction
10	Close the chassis bracket warning sign	33	Emergency lowering mark
11	Warning signs for explosive burns	34	Whole machine nameplate
12	Battery charging sign	35	Warning line
13	Warning sign	36	Forklift Fork Position
14	Battery connection indicator identification	37	Battery charging sign
15	Hanger sign	38	Tilting hazard sign
16	Lifting Position	39	Lanyard Anchorage Point
17	Forklift safety arm sign	40	Danger description
18	Maximum manual force sign	41	Turn off power identification
19	Platform safety warning mark	42	Oil position sign
20	Operation sign	43	Battery for counterweight warning sign
21	Instructions sign	44	Company Logo
22	Reduce platform warning sign	45	Rated voltage sign
23	Arrow indication sign	46	Brake release safety warning sign
		47	No water spray signs

SS0407E Label

1-2534000335	2-2534000913	3-2534000973	4-2534000102	5-2534001042	6-2534000977
					
7-2534000982	8-2534000983	9-2534000984	10-2534000979	11-2534000988	12-2534000990
					
13-2534001004	14-2534001034	15-2831990027	16-2534000828	17-2534000992	18-2534001106
					
19-2534001271	20-2534000997	21-2534000986	22-2534000985	23-2534000033	24-2534001015
					
25-2534001016	26-2534000021	27-2534000976	28-2534000808	29-2534000998	30-2534000974
					
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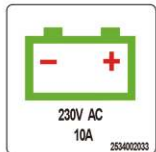
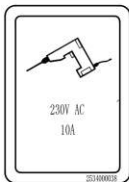
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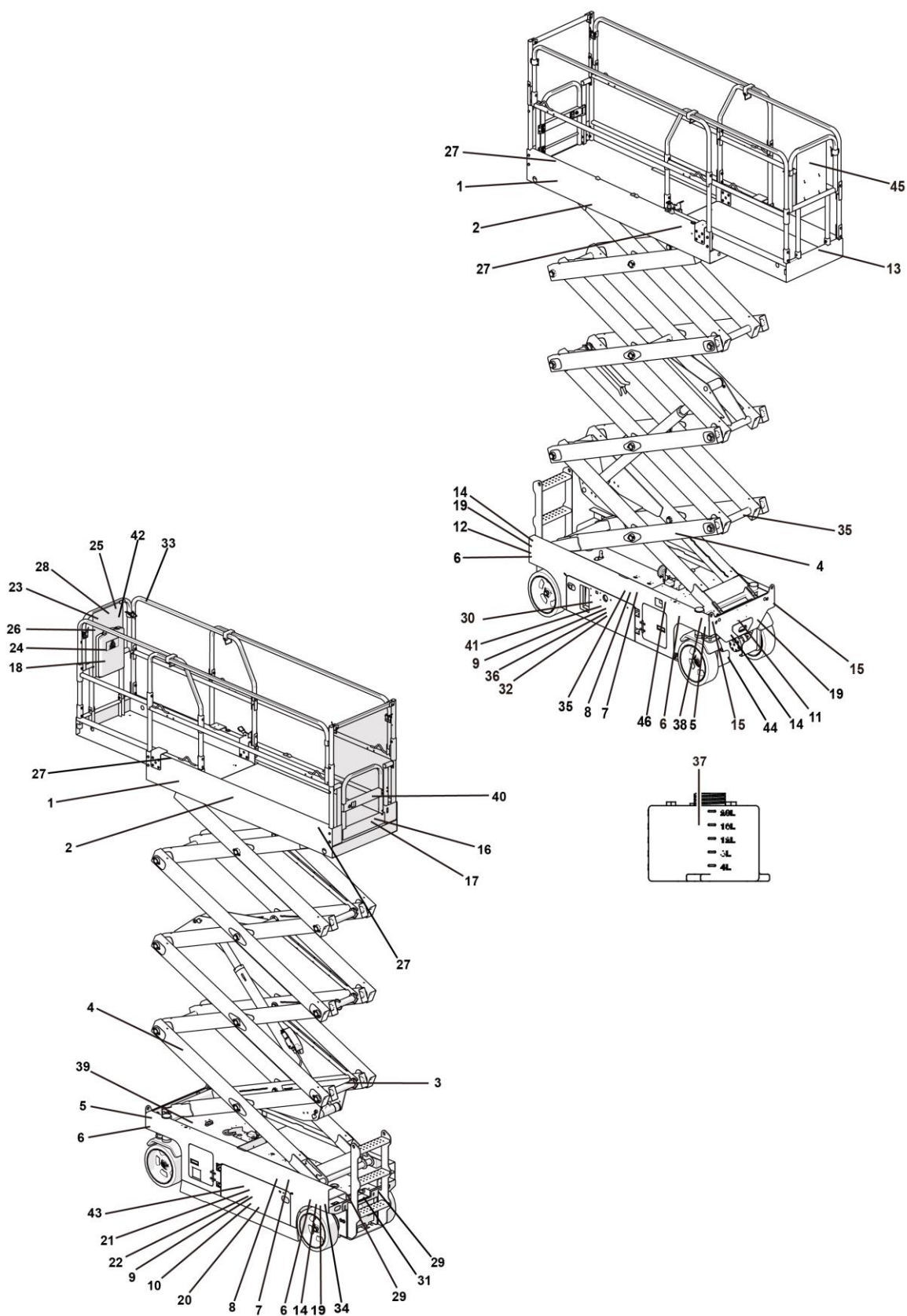


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18	Maximum manual force sign	41	Brake release safety warning sign
19	Platform safety warning mark	42	Oil position sign
20	Operation sign	43	Battery for counterweight warning sign
21	Instructions sign	44	Rated voltage sign
22	Reduce platform warning sign	45	No water spray
23	Arrow indication sign		

1-2534000218	3-2534000261	3-2534000973	4-2534000102	5-2534001018	6-2534000977
7-2534000982	8-2534000983	9-2534000984	10-2534000979	11-2534000988	12-2534000990
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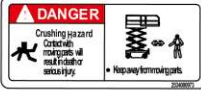
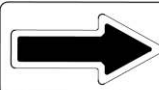
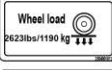
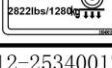
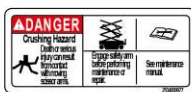
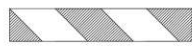
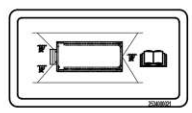
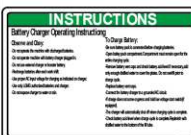
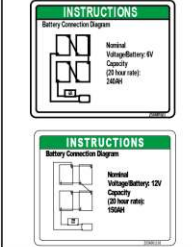
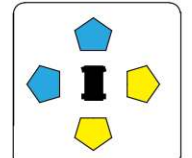
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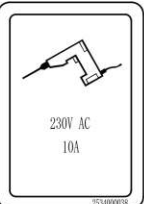


AS0812E/AS1012E/AS1212E Label list

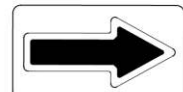
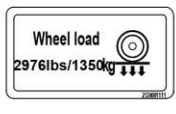
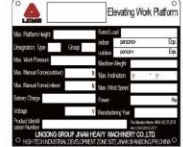
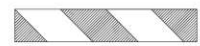
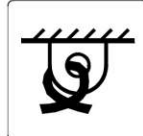
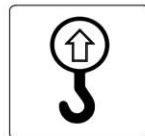
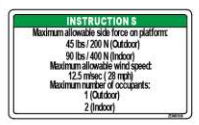
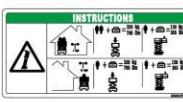
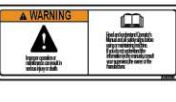
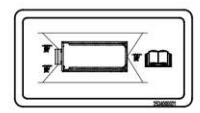
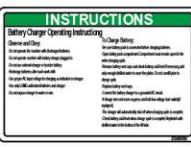
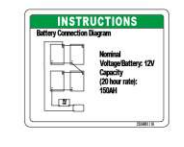
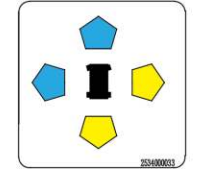
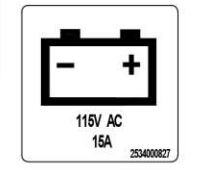
Code	Name	Code	Name
1	Company Logo	24	Safety rules description sign
2	Model identification	25	Arrow indication sign
3	Forklift safety arm sign	26	Notices indication
4	Stay away from machine sign	27	Lanyard Anchorage Point
5	Direction indicator sign	28	Reduce platform warning sign
6	Wheel load capacity sign	29	Forklift Fork Position
7	Electric shock hazard	30	Indicator for lower control panel
8	Pressure hazard identification	31	Battery charging sign
9	Close the chassis bracket warning sign	32	Attention in overhaul
10	Warning signs for explosive burns	33	Suspension position sign
11	Whole machine nameplate	34	Electric shock sign
12	Fasting mark of transportation parts	35	Danger description
13	Warning line	36	Attention mark of skin infraction
14	Hanger sign	37	Oil position sign
15	Lifting Position	38	Emergency lowering mark
16	Maximum manual force sign	39	Tilting hazard sign
17	Platform safety warning sign	40	Operation sign
18	Instructions sign	41	Prohibition of sparks sign
19	Transportation sign	42	Description of file loss
20	Battery charging sign	43	Battery for counterweight warning sign
21	Battery connection indicator identification	44	No water spray
22	Warning sign	45	Company Logo
23	Annual inspection instruction	46	Rated voltage sign

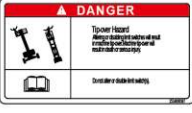
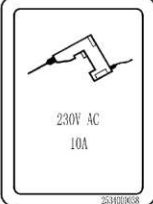
AS0812E/AS1012E/AS1212E

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37-2534000100	38-2534000981	39-2534000987	40-2534000997	41-2534000998	42-2534001015
					
43-2534001021	44-2534000124	45-2534000220	46-2534000038		
					

Exploded view diagram of a scissor lift truck, showing various components and their assembly positions. The diagram includes a side view of the truck body and a top-down view of the scissor mechanism. Numerous parts are labeled with numbers 1 through 48. A small inset shows a control panel with a joystick and buttons labeled 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48.

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AS1413E Label List

Item	Description	Item	Description
1	Company Logo	25	Arrow indication sign
2	Model identification	26	Notices indication
3	Forklift safety arm sign	27	Lanyard Anchorage Point
4	Stay away from machine sign	28	Reduce platform warning sign
5	Direction indicator sign	29	Forklift Fork Position
6	Wheel load capacity sign	30	Indicator for lower control panel
7	Electric shock hazard	31	Battery charging sign
8	Pressure hazard identification	32	Attention in overhaul
9	Close the chassis bracket warning sign	33	Suspension position sign
10	Warning signs for explosive burns	34	Electric shock sign
11	Whole machine nameplate	35	Danger description
12	Fasting mark of transportation parts	36	Attention mark of skin infraction
13	Warning line	37	Oil position sign
14	Hanger sign	38	Emergency lowering mark
15	Lifting Position	39	Tilting hazard sign
16	Maximum manual force sign	40	Operation sign
17	Platform safety warning sign	41	Prohibition of sparks sign
18	Instructions sign	42	Description of file loss
19	Transportation sign	43	Battery for counterweight warning sign
20	Battery charging sign	44	Company Logo
21	Battery connection indicator identification	45	Label -Prohibition of spray
22	Warning sign	46	Label-Rated voltage
23	Annual inspection instruction	47	Warning signs for switch
24	Safety rules description sign		

Chapter 4 Specification

Operation Manual of Elevating Work Platform

Model		SS0407E
Item		Parameter
Maximum number of worker		2
Max.Free Standing Height(m)		4.7
Max.Working/Platform Height(m)		3.6
Extending size of platform (m)		0.6
Traveling speed of machine (folding status) (km/h)		3.2±0.2
Traveling speed of machine (lifting status) (km/h)		0.5±0.1
Lifting/lowering speed (S)		25±2/20±2
Minimum turning radius (m)		1.5
Theoretical gradeability		25%
Overall length (m) (with ladder/without ladder)		1.55/1.37
Overall width (m)		0.76
Tyre size (diameter×width)(mm)		230×80
Dimension of working platform (L×W) (m)		1.35×0.7
Wheel tread (mm)		680
Wheelbase (front/rear) (mm)		1120
Ground clearance (folding /lifting status) (mm)		50/16
Overall height (m) (Folding without enclosure/Folding)		2.075/1.65
Overall weight (kg)		880
Hoisting Motor	Rated Power (KW)	1.6
Drive Motor	Rated Power (KW)	0.5
Battery	Output Voltage(V)	12
	Capacity (Ah)	115
Charge	Nominal AC Input Voltage(V)	100-240 AC
	Maximum DC Output Current(A)	15
	Nominal DC Output Voltage(V)	24
Ground environment noise radiation		< 70dBA
Platform environment noise		< 70dBA
Type		Open-type system

Main pump	Gear Pump
System pressure (MPa)	15
Hydraulic oil(L)	4.5
Reducer oil(L)	0.25
Ground bearing information	
Maximum wheel load	480Kg
Tire contact pressure	1116.71KPa
Ground pressure	10.71KPa

Model		AS0607E
Item		Parameter
Maximum number of worker		2
Max.Free Standing Height(m)		6.9
Max.Working/Platform Height(m)		5.8
Extending size of platform (m)		0.9
Traveling speed of machine (folding status) (km/h)		3.5±0.2
Traveling speed of machine (lifting status) (km/h)		0.8±0.1
Lifting/lowering speed (S)		16±2/28±3
Minimum turning radius (m)		1.72
Theoretical gradeability		25%
Overall length (m) (with ladder/without ladder)		1.86/1.68
Overall width (m)		0.76
Tyre size (diameter×width)(mm)		323×100
Dimension of working platform (L×W) (m)		1.63×0.74
Wheel tread (mm)		660
Wheelbase (front/rear) (mm)		1350
Ground clearance (folding /lifting status) (mm)		60/20
Overall height (m) (Folding without enclosure/Folding)		2.14/1.84
Overall weight (kg)		1610
Hoisting Motor	Rated Power (KW)	3.3
Drive Motor	Rated Power (KW)	0.81
Battery	Output Voltage(V)	6
	Capacity (Ah)	185

Operation Manual of Elevating Work Platform

Charger	Nominal AC Input Voltage(V)	100-240 AC	Overall height (m) (Folding without enclosure/Folding)		2.33/1.75
	Maximum DC Output Current(A)	30	Overall weight (kg)		2715
	Nominal DC Output Voltage(V)	24	Hoisting Motor	Rated Power (KW)	3.3
Ground environment noise radiation		< 70dBA	Drive Motor	Rated Power (KW)	0.81
Platform environment noise		< 70dBA	Battery	Output Voltage(V)	6
Type		Open-type system		Capacity (Ah)	240
Main pump		Gear Pump	Charger	Nominal AC Input Voltage (V)	100-240 AC
System pressure (MPa)		21		Maximum DC Output Current (A)	30
Hydraulic oil (L)		9.5		Nominal DC Output Voltage (V)	24
Reducer oil (L)		0.3	Ground environment noise radiation		< 70dBA
Ground bearing information			Platform environment noise		< 70dBA
Maximum wheel load		600Kg	Type		Open-type system
Tire contact pressure		1074.83Kpa	Main pump		Gear Pump
Ground pressure		14.30Kpa	System pressure (MPa)		21

Model	AS0812E
Item	Parameter
Maximum number of worker	2
Max.Free Standing Height(m)	9.1
Max.Working/Platform Height(m)	8
Extending size of platform (m)	0.9
Traveling speed of machine (folding status) (km/h)	4±0.2
Traveling speed of machine (lifting status) (km/h)	0.8±0.1
Lifting/lowering speed (S)	35±4/40±4
Minimum turning radius (m)	2.3
Theoretical gradeability	25%
Overall length (m) (with ladder/without ladder)	2.42/2.25
Overall width (m)	1.18
Tyre size (diameter×width)(mm)	380×130
Dimension of working platform (L×W) (m)	2.26×1.12
Wheel tread (mm)	1040
Wheelbase (front/rear) (mm)	1850
Ground clearance (folding /lifting status) (mm)	100/20

Model	AS1012E
Item	Parameter
Maximum number of worker	2
Max.Free Standing Height(m)	11.1
Max.Working/Platform Height(m)	10
Extending size of platform (m)	0.9
Traveling speed of machine (folding status) (km/h)	4±0.2
Traveling speed of machine (lifting status) (km/h)	0.8±0.1
Lifting/lowering speed (S)	58±4/48±4
Minimum turning radius (m)	2.3
Theoretical gradeability	25%

Model	AS1012E
Item	Parameter
Maximum number of worker	2
Max.Free Standing Height(m)	11.1
Max.Working/Platform Height(m)	10
Extending size of platform (m)	0.9
Traveling speed of machine (folding status) (km/h)	4±0.2
Traveling speed of machine (lifting status) (km/h)	0.8±0.1
Lifting/lowering speed (S)	58±4/48±4
Minimum turning radius (m)	2.3
Theoretical gradeability	25%

Operation Manual of Elevating Work Platform

Overall length (m) (with ladder/without ladder)		2.47/2.25
Overall width (m)		1.18
Tyre size (diameter×width)(mm)		380×130
Dimension of working platform (L×W) (m)		2.26×1.12
Wheel tread (mm)		1040
Wheelbase (front/rear) (mm)		1850
Ground clearance (folding /lifting status) (mm)		100/20
Overall height (m) (Folding without enclosure/Folding)		2.43/1.86
Overall weight (kg)		3000
Hoisting Motor	Rated Power (KW)	3.3
Battery	Output Voltage(V)	6
	Capacity (Ah)	240
Charger	Nominal AC Input Voltage (V)	100-240VAC
	Maximum DC Output Current (A)	30
	Nominal DC Output Voltage (V)	24
Ground environment noise radiation		< 70dBA
Platform environment noise		< 70dBA
Type		Open-type system
Main pump		Gear Pump
System pressure (MPa)		21
Hydraulic oil		23L
Ground bearing information		
Maximum wheel load		1190Kg
Tire contact pressure		1238.78 KPa
Ground pressure		11.48Kpa

Model	AS1212E
Item	Parameter
Maximum number of worker	2
Max.Free Standing Height(m)	13.1
Max.Working/Platform Height(m)	12
Extending size of platform (m)	0.9
Traveling speed of machine	3±0.2

(folding status) (km/h)		
Traveling speed of machine (lifting status) (km/h)		0.8±0.1
Lifting/lowering speed (S)		58±4/60±4
Minimum turning radius (m)		2.3
Theoretical gradeability		25%
Overall length (m) (with ladder/without ladder)		2.47/2.25
Overall width (m)		1.18
Tyre size (diameter×width)(mm)		380×130
Dimension of working platform (L×W) (m)		2.26×1.12
Wheel tread (mm)		1040
Wheelbase (front/rear) (mm)		1850
Ground clearance (folding /lifting status) (mm)		100/20
Overall height (m) (Folding without enclosure/Folding)		2.56/1.99
Overall weight (kg)		3160
Hoisting Motor	Rated Power (KW)	3.3
Battery	Output Voltage(V)	12
	Capacity (Ah)	150
Charger	Nominal AC Input Voltage (V)	100-240VAC
	Maximum DC Output Current (A)	30
	Nominal DC Output Voltage (V)	24
Ground environment noise radiation		< 70dBA
Platform environment noise		< 70dBA
Type		Open-type system
Main pump		Gear Pump
System pressure (MPa)		21
Hydraulic oil		23L
Ground bearing information		
Maximum wheel load		1280Kg
Tire contact pressure		1316.78 KPa
Ground pressure		13.41Kpa

Model		AS1413E
Item		Parameter
Maximum number of worker		2
Max.Free Standing Height(m)	Indoor	14.9
	Outdoor	9.1
Max.Working/ Platform Height(m)	Indoor	13.8
	Outdoor	8
Extending size of platform (m)		0.9
Traveling speed of machine (folding status) (km/h)		3.5±0.2
Traveling speed of machine (lifting status) (km/h)		0.8±0.1
Lifting/lowering speed (S)		80±4/65±4
Minimum turning radius (m)		2.85
Theoretical gradeability		25%
Overall length (m) (with ladder/without ladder)		2.8/2.65
Overall width (m)		1.18
Tyre size (diameter×width)(mm)		380×130
Dimension of working platform (L×W) (m)		2.64×1.12
Wheel tread (mm)		1175
Wheelbase (front/rear) (mm)		2220
Ground clearance (folding /lifting status) (mm)		100/20
Overall height (m) (Folding without enclosure/Folding)		2.74/1.94
Overall weight (kg)		3500
Hoisting Motor	Rated Power (KW)	4.5
Battery	Output Voltage(V)	12
	Capacity (Ah)	150
Charger	Nominal AC Input Voltage (V)	100-240VAC
	Maximum DC Output Current (A)	30
	Nominal DC Output Voltage (V)	24
Ground environment noise radiation		< 70dBA
Platform environment noise		< 70dBA
Type		Open-type system
Main pump		Gear Pump

System pressure (MPa)	21
Hydraulic oil	23L
Ground bearing information	
Maximum wheel load	1350Kg
Tire contact pressure	1154.71 KPa
Ground pressure	10.8Kpa



Notice: To fill the hydraulic oil, it is required to use the applicable hydraulic oil in accordance with the use environment and temperature with reference to the followings:

- L-HM 46 antiwear hydraulic oil: minimum air temperature>-9℃;
- L-HV 46 low temperature hydraulic oil: -33℃ < minimum air temperature ≤ -9℃;
- L-HS 46 Ultralow temperature hydraulic oil: -39℃ < minimum air temperature ≤ -33℃
- 10# aviation hydraulic oil: minimum air temperature ≤ -39℃;;
- Oil level in the oil tank when SS0407E is folded after the whole machine is lifted, steering or running: 4L
- Oil level in the oil tank when AS0607E is folded after the whole machine is lifted, steering or running: 6L.
- Oil level in the oil tank when AS0812E is folded after the whole machine is

lifted, steering or running: 11.5L.

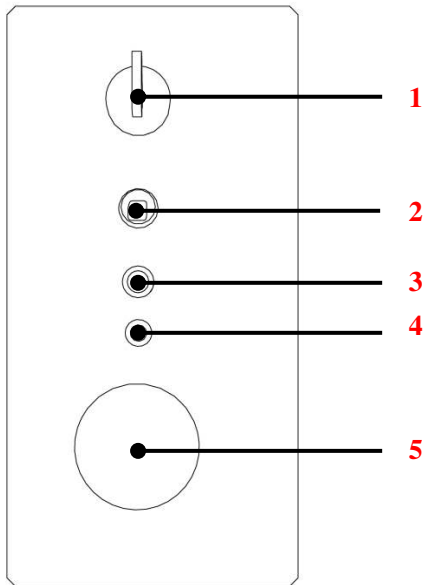
selected part.

- Oil level in the oil tank when AS1012E is folded after the whole machine is lifted, steering or running: 14L.

**Notice:**

- The ground bearing information is approximate information, and the different options are not included. The information can be used only if the security coefficient is high enough.
- The information, technical parameters and diagrams in the operation manual are latest and effective when the manual is issued. Owing to technical innovation, product upgrade and enhancement of laws and regulations, Lingong Group Jinan Heavy Machinery Co., Ltd. reserves the right to change the technical parameters and related information without further notice. If any technical parameter and information in the manual are not uniform with your machine, please contact the service department of Lingong Group Jinan Heavy Machinery Co., Ltd. timely for the updated information.
- The weight of the machine varies according to the configuration of the

Chapter 5 Controller



1. Key switch
2. Platform lifting switch
3. Auto reset fuse (7A)
4. Overload indicator lamp
5. Emergency stop switch (red)

5.1 Ground controller

5.1.1 key switch

The key switch controls the power supply of the machine, for which three operating modes are available. When the key switch is set in the left position, the platform operation mode will be enabled; when the key switch is set in the right position, the chassis operation mode will be enabled; when the key switch is set in the middle position, the power off mode will be enabled.



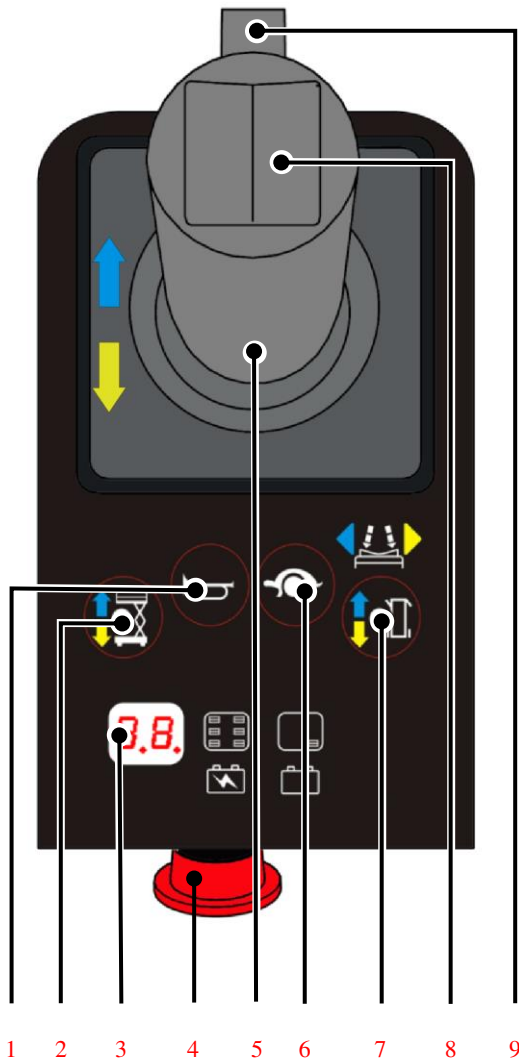
Notice: The key can be plugged or removed only when it is set in the middle position (some products is optionally equipped with the keys which can be plugged or removed at the three positions).

5.1.2 Emergency stop switch

The power supply will be disconnected when the emergency stop switch is pressed.



Notice: An emergency stop switch is installed on the chassis and the platform controller, respectively. The two switches are serially connected. The normal work can be done when the two switches are pulled out. The power



1. Horn button
2. Lifting button
3. Display
4. Emergency stop button (red)
5. Control lever
6. Drive speed button
7. Drive function button
8. Rocker direction button
9. Enabling switch

supply will be cut off once any emergency stop switch on the chassis or the platform is pressed. The safety function is based on a complete loop which can be disconnected once any emergency stop switch is pressed.

5.1.3 Platform lifting switch

The platform lifting switch is only used to control the lifting or lowering of platform.

5.2 Platform controller

5.2.1 Horn button

The horn will beep when this button is pressed, and will stop beeping when this button is released.

5.2.2 Lifting button

Pressing this button can activate the lifting function.

5.2.3 Displays

Diagnostic reading device and battery charging indicator.

Operating step	Displayed data
Power on but no moving	Battery capacity
Move forward or backward	Battery capacity
Lift up the platform	Battery capacity
Lower the platform	Battery capacity
A fault occurs	Error code
Chassis control mode	C H

5.2.4 Emergency stop switch

See “5.1.2” for detailed operation.

5.2.5 Control lever

Lifting function:

After the enabling switch is pressed, the platform will ascend when the control lever is moved to the direction indicated by the blue arrow, or descend when the control lever is moved to the direction indicated by the yellow arrow.



Notice: When the platform is descending, the lowering alarm will beep.

Drive function:

After the enabling switch is pressed, the machine will move to the direction (front) indicated by the blue arrow when the control lever is moved to the direction indicated by the blue arrow, or to the direction (back) indicated by the yellow arrow

when the control lever is moved to the direction indicated by the yellow arrow.

5.2.6 Drive speed button

Pressing this button can activate the slow or fast drive function.

5.2.7 Drive function button

Pressing this button can activate the drive function.

5.2.8 Rocker steering button

After the drive function button and the enabling switch on the lever are pressed, the rocker steering button can be used to control the steering direction of machine.

5.2.9 Enabling switch

The driving, steering, lifting or lowering function can be activated only when the enabling switch on the lever is pressed.

5.2.10 Indoor or outdoor mode selection (If equipped)

AS0607E:

- 1) Via the lift button on the Platform controller for indoor or outdoor mode select (indoor

light, outdoor flashing).

- 2) When outdoor mode is selected, the platform rated load is not exceed 125Kg.

AS1413E:

- 3) Via the lift button on the PCU for indoor or outdoor mode select (indoor light, outdoor flashing).
- 4) When indoor mode is selected, the machine AS1413E can be lifted up to 13.8m; when outdoor mode is selected, the machine can be lifted up to 8m and stop lifting.
- 5) At the retracted state, the indoor/outdoor mode can be switched; at the lifting state, the indoor/outdoor mode cannot be switched.
- 6) When the machine is restarted at the retracted state: the default mode is outdoor mode. When the machine is restarted at the lifting state: the default mode is the one when the machine is turned off (Key switch off or emergency stop switch off).



Warning : In case of indoor mode, it is prohibited to move the machine from indoors to outdoors.

Chapter 6 Pre-operation inspection

**Warning: Forbidden operation,**

unless the safe operation principles of the machine are understood and practiced.

- The dangerous conditions are avoided.
- The pre-operation inspection is always made.
- The workstation is checked.
- The function test is always made before the use.
- The machine is used for its design purposes.

6.1 Basic principle

- 1) The pre-operation inspection and the routine maintenance are within the responsibilities of the operator.
- 2) The pre-operation inspection is a visual process, which shall be made by the operator before each shift. The purpose of the inspection is to check if the machine has any significant problems before running the functional test.
- 3) The pre-operation inspection can also be used for confirming if the routine maintenance is required. The operator shall only carry on the routine maintenance items specified in this manual.
- 4) Please check the list in the next page and

check every item.

- 5) If any damage is found or any un-permitted change different to the delivery status is found, please make the mark and stop the operation of the machine.
- 6) Only the qualified maintenance technicians are allowed to repair the machine as per the regulations of the manufacturer. After the maintenance, the operator must carry out the pre-operation inspection again before the function test.

6.2 Pre-operation inspection

- 1) Ensure the manual is complete and readable. Keep it in the manual box on the platform.
- 2) Keep all labels clear and readable and place them appropriately. Go through the label.
- 3) Check if there is any hydraulic oil leakage and if the oil level is appropriate. Go through the label.
- 4) Check if there is any electrolyte leakage and if the liquid level is suitable. Add the distilled water, if required.
- 5) Check if the following components or areas are damaged, if the installation is proper and the parts are lost and if there is any unauthorized change:
 - a) Electric element, wiring and cable
 - b) Hydraulic hose, connector, hydraulic cylinder and hydraulic valve

- c) Battery pack and its connection
- d) Drive motor/motor
- e) Wear-resistant slide block and liner
- f) Tyre and wheel
- g) Static conductive belt
- h) Limit switch, alarm and horn
- i) Nut, bolt and other fasteners
- j) Platform overload component
- k) Platform entrance door
- l) Indicator lamp and alarm
- m) Safety prop
- n) Extending platform
- o) Scissor arm pin and fastener
- p) Platform control handle
- q) Brake release component
- r) Hollow protector

- 6) Check the complete machine to find:
- a) weld joint or crack of the structural member
 - b) Machine pitting or damage
 - c) Keep all structural members and other key parts complete, keep related fasteners and pins in the correct position and fasten the same.
 - d) Install the guard rail, place the guard rail pin in place and tighten bolts.
 - e) Keep the chassis battery tray and oil pump tray closed and locked and correctly connect the battery.



Notice: if the machine must be checked by lifting the platform, please keep the safety prop in the correct position. Refer to the “Operation notice”.

Chapter 7 Workstation inspection



Warning: Forbidden operation,

unless the safe operation principles of the machine are understood and practiced.

- 1) The dangerous conditions are avoided.
- 2) The pre-operation inspection is always made.



Notice: The workstation inspection

is understood and comprehended before the next step.

The workstation is checked.

The function test is always made before the use.

The machine is used for its design purposes.

operating the machine

7.2 Workstation inspection

Be careful and watch out the following hazards:

- 1) Abrupt slope or cave
- 2) Uplift, ground barrier or debris
- 3) Inclined plane
- 4) Infirm or smooth surface
- 5) Overhead barrier and high-voltage power line
- 6) Dangerous location
- 7) Surface supporting unable to bearing all load of machine
- 8) Wind and weather
- 9) Unauthorized staff
- 10) Other possible unsafe conditions

7.1 Basic principle

- 1) Via the workstation inspection, the operator can determine if the safe operation of machine is guaranteed in the workstation.

The operator shall carry out this process before moving the machine to the workstation

- 2) Understanding and bearing the hazards of the workstation are the responsibilities of the operator. Be careful and avoid this problems in the process of transferring, installing and

Chapter 8 Function test



Warning: Forbidden operation,

unless the safe operation principles of the machine are understood and practiced.

- 1) The dangerous conditions are avoided.**
- 2) The pre-operation inspection is always made .The function test is understood and comprehended before the next step.**
- 3) The workstation is checked.**
- 4) The function test is always made before the use.**
- 5) The machine is used for its design purposes.**

8.1 Basic principle

- 1) The function test is aimed to find the failure before using the machine
- 2) The operator must test all machine functions as per the step instruction
- 3) Do not use the failed machine. Mark and stop using the failed machine.
- 4) Only the qualified maintenance technicians are allowed to repair the machine as per the regulations of the manufacturer.
- 5) After the maintenance, the operator must carry out the pre-operation inspection and

the functional test again before running the machine.

8.2 Function test

- 1) Carry out the function test on a firm and horizontal ground without any barrier.
- 2) Ensure the battery pack is connected.

8.3 On the ground controller

- 1) Pull the red emergency stop buttons on the platform controller and the ground controller to the “OFF” position.
- 2) Switch the key switch to the ground controller
- 3) Observe the LED reading diagnosis device on the platform controller.

8.4 Test of emergency stop

- 1) Push the red ground emergency stop button inward to the “OFF” position.

Result: all functions shall be enabled.
- 2) Place the red emergency stop button to the “OFF” position.

8.5 Test of lifting/lowering function and initializing of function



Notice: The central alarm system

will control the buzzer to output the alarms with different frequencies. The lowering alarm will ring 60 times per minute. If the hollow protector fails to reach the place, the buzzer will ring 180 times per minute. The buzzer will ring 180 times per minute for any overload.

- 1) Switch the key switch to the platform controller or the OFF position.
- 2) Push up and hold the platform lifting and lowering switch.

Result: the platform fails in lifting.
- 3) Switch the key switch to the ground control position
- 4) Push up and hold the platform lifting and lowering switch.

Result: the platform shall rise

- 5) Push down and hold the platform lifting and lowering switch

Results: The platform shall descend. When the platform is descending, the lowering alarm shall beep. SS0407E platform shall stop

lowering when it descends to 1.46m ;

AS0607E platform shall stop lowering when it descends to 1.5m; AS0812E/ AS1012E

platform shall stop lowering when it descends to 2.1m. AS1212E platform shall stop lowering when it descends to 2.76m. AS1413E platform shall stop lowering when it descends to 2.95m.

- 6) Push down and hold the platform lifting and lowering switch again.

Result: the platform shall descend to the lowest position. When the platform descends, the lowering alarm shall ring

8.6 Test of auxiliary lowering function

- 1) Push up the platform lifting and lowering switch to lift the platform by about 60cm.
- 2) Pull out the emergency lowering control button at the right front part of the machine.

Result: the platform shall descend. The lowering alarm shall not ring.

- 3) Switch the key switch to the platform controller

8.7 Test on platform controller

- 1) Push the red ground emergency stop button to the "OFF" position.

Result: all functions shall not be enabled.

- 2) Place the red emergency stop button to the "OFF" position.

Result: the LED data diagnosis device indicator lamp shall light up

Result: the platform shall descend. When the platform descends, the lowering alarm shall ring

8.8 Test of horn

- 1) Press the horn button
- 2) Result: the horn shall ring.

8.9 Test of lifting/lowering function and initializing of function

- 1) Do not press the enable key on the control handle.
- 2) Slowly move the control handle as per the blue arrows and then move it as per the yellow arrows.
- 3) Press the lifting function selector button
- 4) Press the enable key on the control handle.
- 5) Slowly move the control handle as per the blue arrows.

Result: all functions shall not be enabled.

Result: the platform shall rise. The hollow protector shall be stretched.

- 6) Release the platform control handle
Result: the platform shall stop rising
- 7) Press the enable key. Slowly move the control handle as per the yellow arrows

8.10 Turning test



Notice: please stand on the

platform and face to the machine turning port when testing the turning and driving function

- 1) Press the drive function selector button and then the indicator lamp lights up
- 2) Press the enable key on the control handle.
- 3) Press the rocker switch on top of control handle according to the direction indicated by leftward arrows on the control panel

Result: the steering wheel shall move as per the direction indicated by the leftward arrows on drive chassis

8.11 Test of driving and braking function

- 1) Press the enable key on the control handle.
- 2) Slowly move the control handle as per the directions of the up arrows on the control panel until the machine is moving and return the handle to the center

Result: the machine shall move as per the

direction of the upward arrows on the control panel and suddenly stop.

the platform is lifted. Please immediately mark the machine and stop the operation.

 **Notice: the brake must be able to stop the machine at any grade it is able to climb.**

8.12 Test of driving and braking function

- 1) Press the lifting button; then the indicator lamp goes on. Press and hold the enabling button on the lever to lift the platform for a height stipulated in the following table.

Model	Height (m)
SS0407E	1.36
AS0607E	1.19
AS0812E	1.71
AS1012E	
AS1212E	1.9
AS1413E	2.52

Result: the hollow protector shall be stretched.

- 2) Press the drive function selector button and then the indicator lamp lights up.
- 3) Press the enable key on the control handle and slowly move the control handle to the complete driving position.

Result: the lifting speed of platform shall not be greater than 0.8km/h (SS0407E shall not be greater than 0.5km/h) when the platform is lifted.

Result: the lifting speed of platform is greater than 0.8km/h (SS0407E is greater than 0.5km/h) when

8.13 Test for operation of inclination sensor

 **Notice: this test shall be carried out with a platform controller on the ground. Do not stand on the platform.**

- 1) Please completely lower the platform.
- 2) Drive the two wheels on the same side to a 3.5×20cm cushion block.
- 3) Lift up the platform for a height.
Result: the platform shall stop moving and the inclination alarm shall ring 120 times per minute.
- 4) Move the control handle as per the up arrows and then move it as per the down arrows.
- 5) Result: the drive function shall be disabled at any direction.
- 6) Lower the platform and drive the machine away from the barrier.

8.14 Test of hollow protector

 **Notice: when the platform is lifted, the hollow protector shall be automatically stretched. The hollow protector can initialize another limit**

switch to enable the continuous operation of machine. If the hollow protector fails to be stretched, the alarm will ring and the machine shall stop driving at the same time.

AS0607E	2.45
AS0812E	2.2
AS1012E	
AS1212E	3.2
AS1413E	2.78

- 5) Lower the platform and remove the 3.5×20cm wood brick.

- 1) Lift the platform.

Result: When the platform ascends for a given height above the ground (as detailed in the following table), the pit protection device shall extend.

Model	Height (m)
SS0407E	1.36
AS0607E	1.19
AS0812E	1.71
AS1012E	
AS1212E	1.86
AS1413E	2.52

- 2) Press one side of the hollow protector at first and then other side.

Result: the hollow protector shall not move

- 3) Lower the platform

Result: the hollow protector shall be returned to the folding position

- 4) Cushion the hollow protector with a 3.5×20cm wood brick or a similar one. Lift the platform

Result: When the platform ascends for a given height above the ground (as detailed in the following table), the alarm will beep; at this moment, the drive function is invalid.

Model	Height (m)
SS0407E	1.7

Chapter 9 Operation notice



Warning: Forbidden operation,

unless the safe operation principles of the machine are understood and practiced

- **The dangerous conditions are avoided.**
- **The pre-operation inspection is always made.**
- **The workstation is checked.**
- **The function test is always made before the use.**
- **The machine is used for its design purposes.**

9.1 Basic principle

- 1) This machine is a self-traveling and hydraulic /electric elevating device, which is provided with a work platform on a scissors mechanism. The vibration produced by the running machine causes no hazards to the operators on the work platform. This machine can be used for carrying the workers and their tools to the specified height above the ground and also for reaching the workstation above the machine or equipment
- 2) The details of each operation aspect are specified in the operation notice. The responsibilities of the operator are to follow all safety regulations and descriptions in the operation and maintenance manual.

- 3) It is unsafe and even dangerous to use the machine for any other purposes other than carrying the staff, equipment, tool and material to the overhead workstation
- 4) Only the trained and authorized staff can operate this machine. If the machine is running by more than one operators of the same shift at different time, the operators must have the qualification and follow all safety regulations and description in the operation and maintenance manual. It means that each new operator shall make the pre-operation inspection, function test and workstation inspection before running the machine.

9.2 Emergency stop

- 1) Push the red emergency stop button on the ground or platform controller to the "OFF" position to disable all functions.
- 2) The recovery of any operation function must be done by pressing the red emergency stop button

9.3 Emergency lowering

Pull the emergency lowering control button outward.

9.4 Operation on the ground

- 1) Switch the key switch to the ground controller.
- 2) Place the red emergency stop buttons on the ground controller and the platform controller to the "ON" position.
- 3) Keep the battery well connected before running the machine

9.5 Platform position

adjustment

Move the platform lifting and lowering switch according to the mark on the control panel. The driving and turning functions are unavailable via the ground controller

9.6 Operation on the platform

- 1) Switch the key switch to the platform controller.
- 2) Place the red emergency stop buttons on the ground controller and the platform controller to the "ON" position.
- 3) Keep the battery well connected before running the machine

9.7 Platform position

adjustment

- 1) Press the lifting function selector button.
- 2) Press the enable key on the control handle.
- 3) Move the handle according to the mark on the control panel.

9.8 Turning

- 1) Press the drive function selector button.
- 2) Press the enable key on the control handle.
- 3) Rotate the steering wheel via the rocker switch on the top of control handle.

9.9 Drive

- 1) Press the drive function selector button.
- 2) Hold the enable key on the control handle.
- 3) Speed increase: slowly move the control handle from the center.

Speed decrease: slowly move the control handle toward the center.

Stop: return the control handle to the center or release the enable key.
- 4) Determine the machine advancing direction with the direction arrows on the platform controller and the platform.
- 5) When the platform is lifted, the moving speed of machine is limited.
- 6) The status of battery will affect the machine

performance.

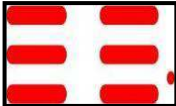
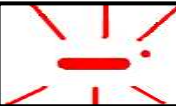
- 7) When the battery level indicator lamp flashes, the driving speed and functional speed of machine will be degraded

9.10 Driving speed option

The driving controller can be run at two different driving speeds. When the driving speed selector button lamp lights up, the slow driving speed mode is enabled. When the driving speed selector button lamp goes out, the rapid driving speed mode is enabled. Press the driving speed selector button to select the required driving speed

9.11 Operation with controller on the ground

- 1) Keep the safe distance between the operator, machine and the fixing item
- 2) Watch out the advancing direction of machine when the controller is used
- 3) Identify the battery level with the LED reading diagnosis device.

Platform display	Battery percentage (%)	Description
	90-100	The battery capacity is full
	70	Percentage of remaining battery capacity
	50	Percentage of remaining battery capacity
	30	Percentage of remaining battery capacity
	20	The battery must be charged
	10	The battery capacity is very low



Notice: When the battery capacity is very low ($\leq 10\%$), the machine will change to low speed mode automatically.

9.12 Driving on a slope

Determine the slope and side slope ratings for the machine and determine the slope grade.

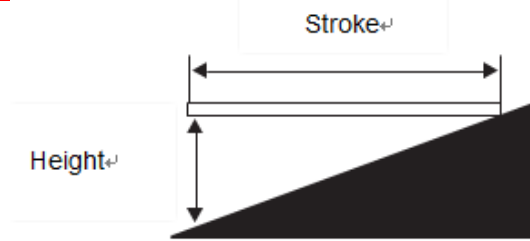
Maximum slope rating, stowed position: 	25%(14°)
Maximum side slope rating, stowed position: 	25%(14°)

Note: Slope rating is subject to ground conditions with one person in the platform and adequate traction.

Additional platform weight may reduce slope rating.

Measure the slope by using a digital inclinometer or as per the following steps.

- ✓ Required tools: Carpenters rule, straight wood block (with length of at least 1m), tape measure and other tools.
- ✓ Place the wood block on the slope, place the carpenters rule on the upper limb of the wood block at the end of down-slope, and lift the end of the wood block until it is horizontal.
- ✓ Keep the wood block in the horizontal state, and measure vertical height from the bottom of the wood block to the ground.
- ✓ Height is divided by the length of wood block (stroke), i.e.,



Stroke=3.6m/11.8ft

Lifting height=0.3m/1ft

$0.3 \div 3.6 = 0.083 = 8.3\%$

If the slope exceeds the maximum uphill, downhill or side slope rating, the vehicle must be winched or transported up or down the slope.

9.13 Usage of safety prop

- 1) Lift the platform for a given height above the ground (the lifting height of every model is given in the following table).

Model	Height (m)
SS0407E	1.8
AS0607E	2.5
AS0812E	3.2
AS1012E	3.73
AS1212E	4
AS1413E	

- 2) Lift the safety prop, move it to the center of the scissor sleeve center and rotate it upward until it is vertical
- 3) Lower the platform height until the safety prop completely contacts the shaft sleeve. Keep the platform away from the movable parts in the lowering process



Hazard: do not carry any load on the platform when the safety prop supporting is used. No long time(8 hours)to use safe arm support in empty state.

9.14 How to fold guard rail

On models SS0407E/AS0607E, the platform guardrail system consists of a folding guardrail on an extended platform and a folding guardrail on the main platform.

- 1) Fully lower the platform and lock it into the extended platform.
- 2) Remove the platform controller.
- 3) Remove the M-shaped fixed seat between the guardrails of the main platform and the extended platform from the inside of the platform and place it in the platform.
- 4) Remove the two retaining pins at the front of the extended platform from the inside of the main platform.
- 5) Fold the front guardrail of the extended platform inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the left and right guardrails of the extended platform from tilting over.
- 6) Install the two retaining pins which were

removed back to the guardrail on each side.

- 7) Fold the left guardrail of the extending platform inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the right guardrails of the extended platform from tilting over.
- 8) Fold the right guardrail of the extending platform inward. Do not place your hands in places where there may be a pinch point.
- 9) Remove the two retaining pins on the upper part of the door.
- 10) Fold the door guardrail from the ladder or the ground inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the guardrails of the extended platform from tilting over.
- 11) Fold the left guardrail of main platform from the ladder or the ground inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the right guardrails of the main platform from tilting over.
- 12) Fold the right guardrail of main platform from the ladder or the ground inward. Do not place your hands in places where there may be a pinch point.

On models, AS0812E/AS1012E/AS1212E/AS1413E the platform guardrail system consists of a folding guardrail on an extended platform and

a folding guardrail on the main platform.

- 1) Fully lower the platform and lock it into the extended platform.
- 2) Remove the platform controller.
- 3) Remove the M-shaped fixed seat between the guardrails of the main platform and the extended platform from the inside of the platform and place it in the platform.
- 4) Remove the two retaining pins at the front of the extended platform from the inside of the main platform.
- 5) Fold the front guardrail of the extended platform inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the left and right guardrails of the extended platform from tilting over.
- 6) Install the two retaining pins which were removed back to the guardrail on each side.
- 7) Fold the left guardrail of the extending platform inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the right guardrails of the extended platform from tilting over.
- 8) Fold the right guardrail of the extending platform inward. Do not place your hands in places where there may be a pinch point.
- 9) Remove the two retaining pins on the upper part of the door.

- 10) Fold the door guardrail from the ladder or the ground inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the left and right guardrails of the extended platform from tilting over.
- 11) Rotate the semi-revolving door until the right and left guardrails can be folded smoothly, from the ladder or the ground inward. Do not place your hands in places where there may be a pinch point. At the same time, prevent the guardrails of the main platform from tilting over.
- 12) Install the two retaining pins which were removed back to the guardrail on each side.

9.15 How to lift guide rail

Follow the guard rail folding instruction and adopt the sequence reverse to that of the installation.

9.16 Extending and retracting of platform

- 1) Step on the positioning pedal on the extending platform.
- 2) Push the guard rail of extending platform to extend the later to the expected position.



Notice: do not stand on the extending platform when extending the

platform.

9.17 Power Supply Switch

1. DC power switch (If equipped)



Press the DC power switch, power supply of the whole machine will be disconnected.

Pull out the DC power switch and power supply of the whole machine will be connected.

2. Anderson connector (if equipped)



Connect



Disconnect



Notice:

Disconnect the main power switch when the machine is in transportation/ repaired or not used for a long time. (DC power switch or Anderson connector)

9.18 Error state (alarm code)

 **Notice:** In the error alarm status, the alarm code will flash once per second on the displays of ECU and PCU.

Table: alarm code

Display	Description	Response
01	System initialization error	Stop all actions
02	System communication error	Stop all actions
03	No machine code is set during the first use	Stop all actions
04	The set code is invalid	Stop all actions
06	Prompt of successful release of the remote parameter	Display alarm only
07	Secondary lock alarm	Disable lifting and running
08	Prompt of successful release of weight calibration data	Display alarm only
09	Incorrect feature configuration settings	Disallow all actions
12	Chassis lifting or lowering button opening error during start	Stop all chassis controls
18	Pothole protection error	Stop lifting and running
23	Lifting restriction prompt	Prohibit traveling after lifting
27	Proportional solenoid valve failure	Stop lifting and running
31	Pressure sensor error	Stop lifting and running
32	Angle sensor error	Stop lifting and running
33	1412 light load mode data calibration error	No lifting
35	Calibration data error	Display alarm only
36	Low battery alarm	Speed reduced to walking speed after lifting
37	ECU standby prompt	Display alarms only
38	Activated overload function and uncompleted weight calibration error	No lifting
39	The battery level switch detects the low level of the battery.	Display alarm only
40	Alarm of failed ECU and GPS handshake	No lifting or walking
41	Lock vehicle status through platform (only applicable to the ECU with the GPS function)	No lifting
42	Platform left turn button pressing error during start	Display alarm only
43	Platform right turn button pressing error during start	Display alarm only
44	AC pump motor parameter setting malfunction	Display alarms only
45	AC pump motor hardware malfunction	Display alarms only

46	Platform handle enable switch button pressing error during start	Stop platform control
47	“The platform handle is not in the middle position” error during start	The speed is reduced to the speed after lifting
49	AC pump motor detection malfunction	Display alarms only
50	AC pump motor contactor malfunction	Display alarms only
52	Forward coil error	Stop lifting and running
53	Backward coil error	Stop lifting and running
54	Lifting error of lifting coil	Stop lifting and running
55	Lifting error of lowering coil	Stop lifting and running
56	Right turn coil error	Stop lifting and running
57	Left turn coil error	Stop lifting and running
58	Brake coil error (because the brake coil is optional, this function is temporarily shielded)	Stop lifting and running
60	Motor controller error	Stop lifting and running (Triplat only)
61	Electric drive motor controller current sensor error (overheating of running or lifting motor)	Display alarm only
62	Motor controller hardware damage error	Display alarm only
63	Motor controller motor output error	Display alarm only
64	Motor controller SRO error	Display alarm only
65	Motor controller throttle valve error	Display alarm only
66	Motor controller emergency reverse error	Display alarm only
67	Motor controller HPD error	Display alarm only
68	Low voltage alarm	Stop all actions
69	High neutral current (MC is detecting current in the motor, but there shall be no current in this case)	Stop lifting and running
70	The steering input is beyond the range (the improper voltage is in the steering input)	Stop lifting and running
71	Motor controller main contactor error	Stop lifting and running
72	Motor controller overvoltage error	Display alarm only
73	Motor controller heat reduction error	Display alarm only
74	Motor controller motor error	Display alarm only
75	Motor controller pump motor error	Display alarm only
76	Motor controller left drive motor error	Stop lifting and running
77	Motor controller right drive motor error	Triplat prohibits lifting and walking combiacx shows only alarms
78	Pump motor short circuit error	Triplat show only alarms combiacx prohibits lifting and walking
79	Left drive motor short circuit error	Stop lifting and running
80	Alarm of exceeding 80% load	Alarm only
81	Right drive motor short circuit error	Stop lifting and running
82	Left brake coil error	Stop lifting and running
83	Right brake coil error	Stop lifting and running
84	Motor controller short circuit error	Stop lifting and running

85	Brake release switch error	Alarm only
86	Brake release not open error	Alarm only
87	Brake application failure	Alarm only
89	Motor protection open error	Stop lifting and running
90	Alarm of exceeding 90% load	Alarm only
91	Short circuit of left drive motor protection	Stop lifting and running
92	Right drive motor protection short circuit	Stop lifting and running
93	AC pump motor braking fault	Display alarms only
94	AC pump motor driver temperature fault	Display alarms only
95	AC pump motor temperature fault	Display alarms only
96	AC pump motor voltage or electric quantity abnormality	Display alarms only
97	AC pump motor CANBUS communication malfunction	Display alarms only
98	AC pump motor speed sensor malfunction	Display alarms only
99	Alarm of exceeding 99% load	Alarm only
OL	Platform overload alarm	Stop all actions
LL	"The machine tilts over the safety limit" error	Stop lifting and running

Table: troubleshooting and guide

Display	Description
01	System initialization error: The ECU may have fault, replace the ECU.
02	System communication error: Check connection between the communication line and other cables. If fault still exists, please replace the PCU or the ECU.
03	Invalid option setting error: Set proper options for the machine
04	The selected machine code is not within the application range, make selection again based on the model
06	Prompt of successful release of the parameter: Restart it
07	Determine whether the GPS platform issues a car lock command
08	Prompt of successful release of calibration data: Restart it
09	Whether the function bit is not configured
12	Chassis lifting or lowering button opening error during start: Check the wiring of the toggle switch or check whether the toggle switch is jammed.
18	Pothole protection error: Check whether the pothole protection is activated, and check the pothole protection limit switch. Check the wiring of the switch, lower limit switch and wiring.
23	Enable the lift travel with the minimum height, or shutdown lifting limit function
27	Check that the proportional valve is wired correctly.
31	Pressure sensor error: Check the sensor wiring and the sensor. Check to confirm that the correct machine option with overload detection is selected.
32	Angle sensor error: Check the sensor wiring and the sensor. Check to confirm that the correct machine option with overload detection is selected.
33	1412 light load mode unsuccessful overload weight function data calibration error: Carry out weight calibration again.
35	Check whether the calibration process is reversed
36	Check whether the vehicle voltage is too low and whether it needs to be charged.

Display	Description
37	Press the enable / Travel button and cancel ECU sleep
38	Error of unsuccessful overload weight function calibration: Carry out weight calibration again.
39	Too low level of the battery: Check the battery level and fill the electrolyte if liquid level is too low. Check whether the liquid level switch is installed correctly.
40	GPS reconnection error: Check connection status
41	Release unlocking instruction through platform (only applicable to the ECU with the GPS function)
42	Platform left turn button pressing error during start: Ensure that buttons on the handle are not pressed. If not, consider replacing the handle or the PCU.
43	Platform right turn button pressing error during start: Ensure that buttons on the handle are not pressed. If not, consider replacing the handle or the PCU.
44	AC pump motor parameter setting failure
45	AC pump motor hardware failure
46	Platform handle enable switch button pressing error during start: Ensure that the enable switch on the handle is not pressed. If not, consider replacing the handle or the PCU.
47	"The platform handle is not in the middle position" error during start: Confirm that the handle is in the middle position, and check the middle position parameter setting. If normal, consider replacing the handle or the PCU.
49	AC pump motor detection failure
50	AC pump motor contactor failure
52	Forward coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
53	Backward coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
54	Lifting error of lifting coil: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
55	Lifting error of lowering coil: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
56	Right turn coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
57	Left turn coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
58	Brake coil error: Check the connection of the coil and confirm that it is normal. If normal, check the coil for short circuit or open circuit.
60	Check the motor controller.
61	Cool down the machine, and check the wiring. If the wiring is OK, replace the motor controller
62	Restart the machine, if fault exists, check the root cause; if fault still exists, replace the motor controller
63	Check the wiring, and then restart it, and replace the motor controller if necessary
64	Check whether the motor parameter enable delay is too short, and confirm that the parameter is correct
65	Check the wiring, and ensure that the correct throttle type is selected in the motor controller
66	Ensure that the emergency reverse check parameter in the motor controller is set to off
67	The motor enable delay may be too short, and confirm that parameter of other motor controllers is correct
68	Low voltage error: Check the battery voltage and charge if necessary. Check connection between the battery and the switch, reinforce or clean it. Check whether the voltage of the PCU and the ECU is normal.
69	MC is detecting current in the motor, but there shall be no current in this case. MC thinks that the brake is turned on

Display	Description
70	Adjust the ZAPI and/or check the toggle voltage due to loose wiring
71	Check wiring of main contactor, replace contactor if necessary, or replace motor controller
72	Check the battery voltage, check if it is charging. If the fault still exists, try to replace the motor controller
73	Cool down the restart machine or replace the motor controller
74	Check the wiring of the motor or replace the motor controller
75	Check the wiring of the pump motor, restart the machine or replace the motor controller
76	Check the wiring of the left drive motor, restart the machine or replace the motor controller
77	Check the wiring of the motor, restart the machine or replace the motor controller
78	Check the wiring of the pump motor, restart the machine or replace the motor controller
79	Check the motor connection and ensure that they are tightened, and check the motor for short circuit
80	Alarm of exceeding 80% load: As the platform is close to the load limit, it is not recommended to increase the load.
81	Check the motor connection and ensure that they are tightened, and check the motor for short circuit
82	Check the connection of the coil terminal and ensure that they are tightened, and check whether the coil is connected properly
83	Check the connection of the coil terminal and ensure that they are tightened, and check whether the coil is connected properly
84	Motor controller short circuit fault
85	Check that the brake connection is correct
86	Check that the brake connection is correct
87	Check that the brake connection is correct
89	Check motor circuit connection status
90	Alarm of exceeding 90% load: As the platform is close to the load limit, it is not recommended to increase the load.
91	Check if the left drive motor is shorted
92	Check if the right drive motor is shorted
93	AC pump motor braking failure
94	AC pump motor driver temp failure
95	AC pump motor temp failure
96	AC pump motor voltage or battery abnormality
97	AC pump motor driver temp failure
98	AC pump motor speed sensor failure
99	Alarm of exceeding 99% load: As the platform has reached the load limit, do not to increase the load.
OL	Platform overload alarm: Remove excessive loads immediately.
LL	"The machine tilts over the safety limit" error: If the machine tilts, try to make it recover horizontal status. If the machine is horizontal, check the wiring of the level sensor or the sensor.

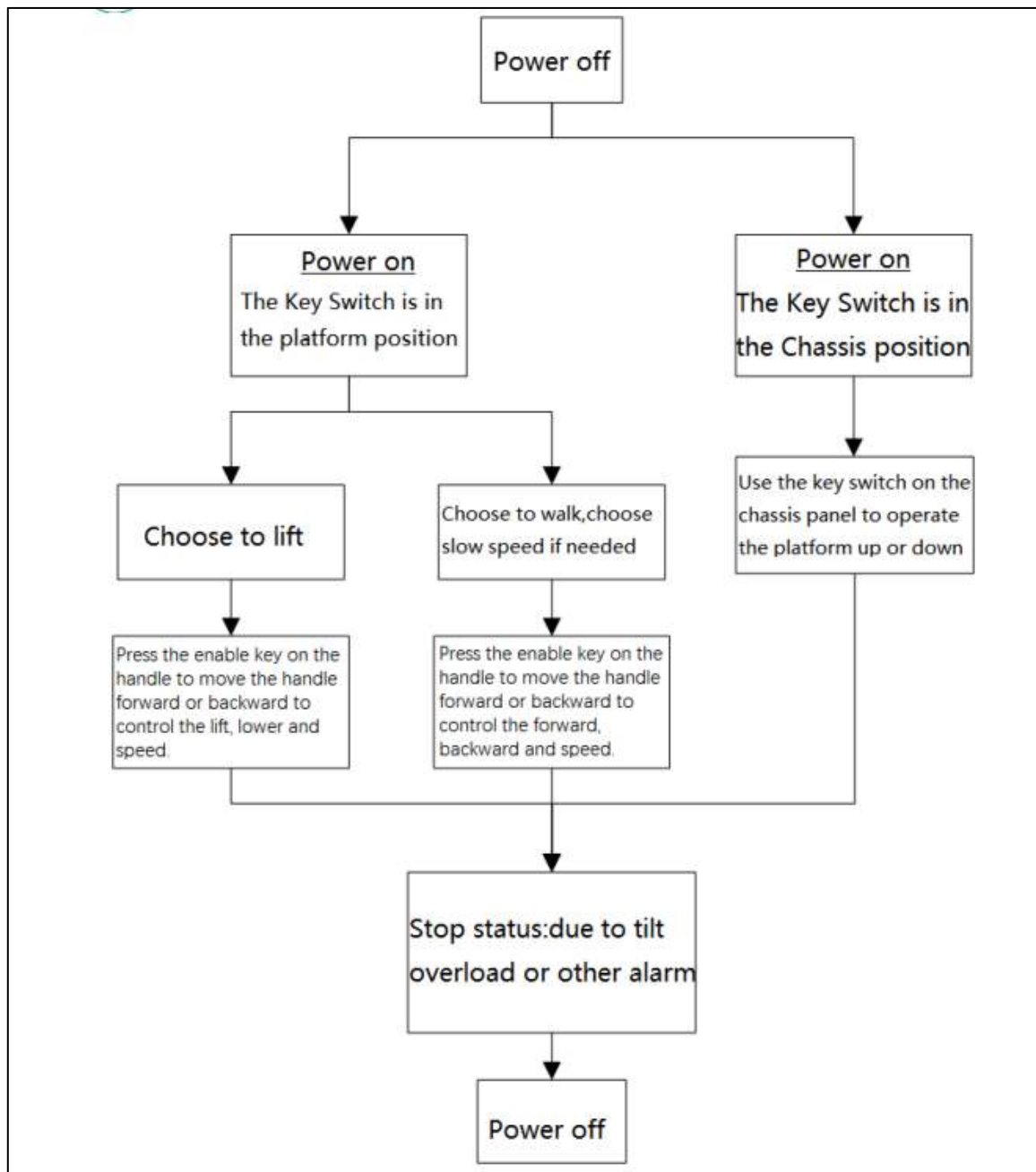
Historical error status

- 1) The controller can display the latest 10 error alarm codes. Press the right turn key on top of handle and hold it for 10 seconds (do not press the enable key of the handle) to log in the historical error

status.

- 2) Press the left turn key to view the former error code until reaching the earliest one. Press the right turn key, to view the historical error code in the reverse sequence until reaching the latest one. For error codes, please refer to the table above.
- 3) Pressure the enable switch on the handle to recover the normal operation status.

9.19 Operation flow chart



Chapter 10 Transport and lifting instruction

 Warning: Compliance and**obedience**

- When lifting the machine with a crane, please make the correct judgment and make a plan to control the displacement of machine.
- Only the staff with the aerial lifting qualification is allowed to load and unload the machine.
- The carrier vehicle must be parked on a level ground.
- When loading the machine, be sure to fix the carrier vehicle, for fear of movement.
- Ensure that vehicle volume, loading surface, chain or belt is sufficient to bear the machine weight. Please refer to the nameplate for the machine weight.
- Be sure to place the machine on the horizontal plane or fix the machine before releasing the brake.
- Do not drive the machine when climbing up and down a slope or when driving on a slope with over proof gradient. For “Slope driving”, refer to the “Operation notice”, If the gradient of carrier vehicle exceeds the

maximum gradient rating, be sure to load and unload the machine with a winch as per the instruction for brake releasing operation.

10.1 Brake release

 Collision Hazard

Failure to secure machine before releasing brakes will result in death or serious injury.

1. Make sure machine is on a firm, level surface or secured.
2. Chock wheels.
3. Release brakes.

Brake Release Operation

1. Chock wheels to prevent machine from rolling.
2. Be sure winch line is properly secured to drive chassis tie points and path is clear of all obstructions.
3. Turn the key switch to the right side to release the brake.



After brake release operation:

1. Chock wheels to prevent machine from rolling.
2. Turn the key switch to the off position to

engage the brake.

3. If system voltage is lower than 16.8v, operate the drive motor according to the following procedure.

- ① Unscrew the drive motor end cover;



- ② Screw the M6*25 bolt into the screw holes in the brake disc, see Figure2 ;



Notice: For SS0407E models, screw the M3*20 bolt into the screw holes in the brake disc.



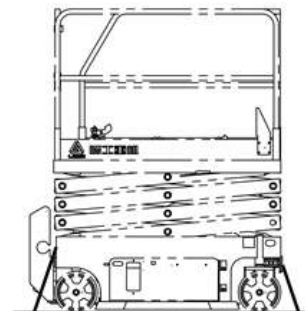
- ③. Turn the bolt clockwise. When the brake clearance is greater than 0.003in (0.08 mm), the brake is released.



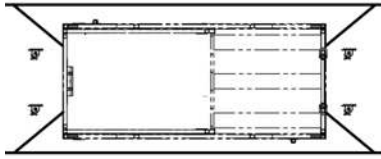
- ④ Repeat the above procedure on opposite drive motor. With both drive motor brake released the machine can be moved manually.
- ⑤ After moving the machine, reinstall both drive motors to the original conditions.

10.2 Transport safety

- 1) Please lock the machine wheels when preparing the transport.
- 2) Retract and fix the extending platform.
- 3) Switch the key switch to the “OFF” position and take off the key before the transportation.
- 4) The front and rear wheel with wedge blocks are respectively fixed and comprehensive inspection machine to prevent loose or loose parts.
- 5) Fix the machine on the transport surface via the anchorage part on the chassis.



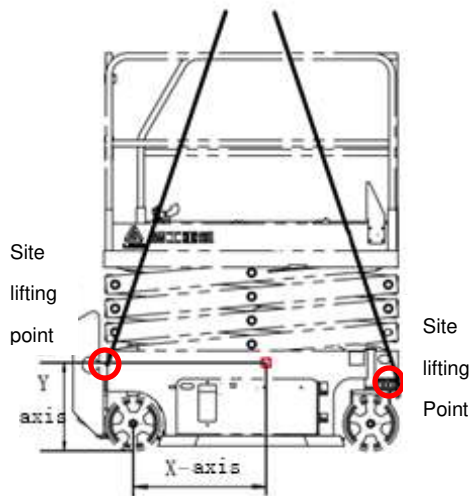
- 6) Use at least four chains or belts.



- 7) Be sure to use used chains or belts of sufficient load density.
- 8) Please fix the folded guard rail (if any) with a belt before the transport

Warning: Compliance and obedience

- Only the qualified hooker operator is allowed to assemble the lock and lift the machine.



Model	X-axis(mm)	Y-axis (mm)
SS0407E	553	521
AS0607	546.3	478.8
AS0812E	847.76	606.13
AS1012E	991.5	645
AS1212E	1202	683.15
AS1413E	1090.5	853

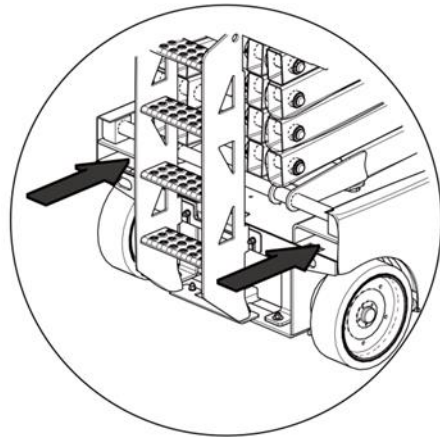
- Only the staff with the forklift operation qualification is allowed to load and unload the

machine with a forklift.

- Ensure that the lifting capacity, loading surface, belt or rope of the crane is sufficient to bear the machine weight. For serial number, please refer to the nameplate.

10.3 Forklift

- Be sure to safely and reliably fix the extending platform, the controller and the chassis tray. Remove all movable components from the machine.
- Please completely lower the platform. Keep the platform folded in each transport process.
- Please make use the forklift rebates on both sides of the ladder



- Place the fork of the forklift on the forklift rebates.
- Drive the forklift forward to completely insert the fork into the rebates.
- Lift the machine by 15cm and slightly tilting the fork backward to keep the machine stable.

- 7) Keep the machine level when lowering the fork.



Notice: the component damage

may be caused if the machine is lifted on its side.

10.4 Lifting guide

- 1) Please completely lower the platform. Be sure to safely and reliably fix the extending platform, the controller and the chassis tray. Remove all movable components from the machine.



Notice: Use the gravity center of machine in the sign.

- 2) The spreader can only be attached to the specified lifting point on the machine shown.
- 3) There are two long holes in the front panel of the machine, and there are two long holes in the rear end board. They are all used for lifting.
- 4) Adjust the lock tool in such a way that the machine is not damaged and the machine is kept horizontal.

good-ventilation area.

- 2) Be sure to completely lower the working table.
- 3) Place the emergency stop switch on the "OFF" position.
- 4) If necessary, cover the control panel and the warning signs to protect them against the severe environment influence.
- 5) If the machine is parked for a long period, please cover the wheels on both sides with a baffle plate.
- 6) Switch the power supply selector switch to the "OFF" position and unplug the key to avoid the starting and unauthorized use of equipment.
- 7) If the optional anti-breaking suit is provided, the working table and the ground control box can be covered and locked for fear of invasion.

10.5 Parking and storage

Please follow the parking and storage instructions below:

- 1) Drive the machine to the well-protected and

Chapter 11 Appendix

Maintenance

Routine inspection and maintenance interval table

Maintenance level	Routine inspection	Level I	Level II	Level III	Level IV	Level V
Maintenance period	Every day	25h/1m	50h/3m	100h/6m	200h/12m	400h/24m



Notice: The working hours are based on the hour meter.

Maintenance items of every level are given in the following table

Maintenance item	Description	Maintenance level					
		Routine inspection	Level I	Level II	Level III	Level IV	Level V
Electric system	Check the battery capacity	•	•	•	•	•	•
	Check if all the buttons on the PCU panel function normally	•	•	•	•	•	•
	Check if the PCU emergency stop switch is secure	•	•	•	•	•	•
	Check if the switch is sensitive	•	•	•	•	•	•
	Check if the spring wiring harness is broken	•	•	•	•	•	•
	Check if the PCU wiring harness connector is secure	•	•	•	•	•	•
	Check if the PCU wiring harness connector is stained	•	•	•	•	•	•
	Check if the PCU wiring harness is squeezed or broken	•	•	•	•	•	•
	Check if the pressure switch wiring is secure	•	•	•	•	•	•
	Check if the lowering solenoid valve is secure	•	•	•	•	•	•
	Check if the wirings of horizon sensor and inclination sensor are secure	•	•	•	•	•	•
	Check the position and wiring of every limit switch rocker arm	•	•	•	•	•	•

Maintenance item	Description	Maintenance level					
		Routine inspection	Level I	Level II	Level III	Level IV	Level V
Electric system	Check if the angle sensor wiring harness and connector are secure	•	•	•	•	•	•
	Check if the emergency stop switch, key switch and plug switch on the lowering control panel and their wirings are loose	•	•	•	•	•	•
	Check if the warning lamp and horn function normally	•	•	•	•	•	•
	Check if the motor, motor controller, relay and ECU wirings are loose	•	•	•	•	•	•
	Check if the wiring of every solenoid valve winding of main valve block is normal or loose	•	•	•	•	•	•
	Check if the charger wiring is loose or rusty	•	•	•	•	•	•
	Check if the battery poles are loose or rusty	•	•	•	•	•	•
	Check the battery	•					
	Machine performance and various limit switches	•					
	Check if any connector is loose, interfered or rusty	•	•	•	•	•	•
Hydraulic System	Check if the pressure of monitoring system is normal	•	•	•	•	•	•
	Check if the lifting pressure system is normal	•	•	•	•	•	•
	Check if the pressure of steering system is normal	•	•	•	•	•	•
	Check if the pressure of driving system is normal	•	•	•	•	•	•
	Check if any oil pipe or joint is loose	•	•	•	•	•	•
	Check the oil cylinder for oil leaking	•	•	•	•	•	•
	Check every valve element for oil leaking	•	•	•	•	•	•

Maintenance item	Description	Maintenance level					
		Routine inspection	Level I	Level II	Level III	Level IV	Level V
Hydraulic System	Check if the yoke oil pipe is fastened securely	•	•	•	•	•	•
	Check if the driving oil pipe clip is loose	•	•	•	•	•	•
	Check the oil level in the hydraulic oil tank	•	•	•	•	•	•
	Replace the hydraulic oil	Once a year					
	Hydraulic oil return filter element	Once half a year					
	Check if the hydraulic oil tank vent cap leaks	•	•	•	•	•	•
	Replace the hydraulic oil tank vent cap			•	•	•	
	Replace the reducer lubricating oil	Firstly 50 hours, every 1000 hours or every year					
Whole machine	Check the fork sliding block for abnormal noise					•	•
	Check and replace the sliding block					•	•
	Check if any bolt of whole machine is loose or has abnormal noise	•					
	Check if any circlip or washer of fork arm fails	•					
	Check if the emergency lowering device is normal	•					
	Check if the platform, yoke and chassis are deformed or unwelded	•					
	Check if the paint of whole machine peels off	•					
	Check if the safety sign is correct or stained	•					
	Check if any manual or sticker is missing, blurred or broken	•					
	Machine performance and various limit switches	•					
Lubrication	Lubrication of steering knuckle	Once a month					

Selection of oil

Use temperature	Oil type
Minimum air temperature $> -9^{\circ}\text{C}$	L-HM 46 antiwear hydraulic oil
$-33^{\circ}\text{C} < \text{minimum air temperature} \leq -9^{\circ}\text{C}$	L-HV 46 low temperature hydraulic oil
$-39^{\circ}\text{C} < \text{minimum air temperature} \leq -33^{\circ}\text{C}$	L-HS 46 ultralow temperature hydraulic oil
Minimum air temperature $\leq -39^{\circ}\text{C}$	10# aviation hydraulic oil

