

Fully Electric Scissor Lifted Working Platform

(extensible platform)

Instruction Manual

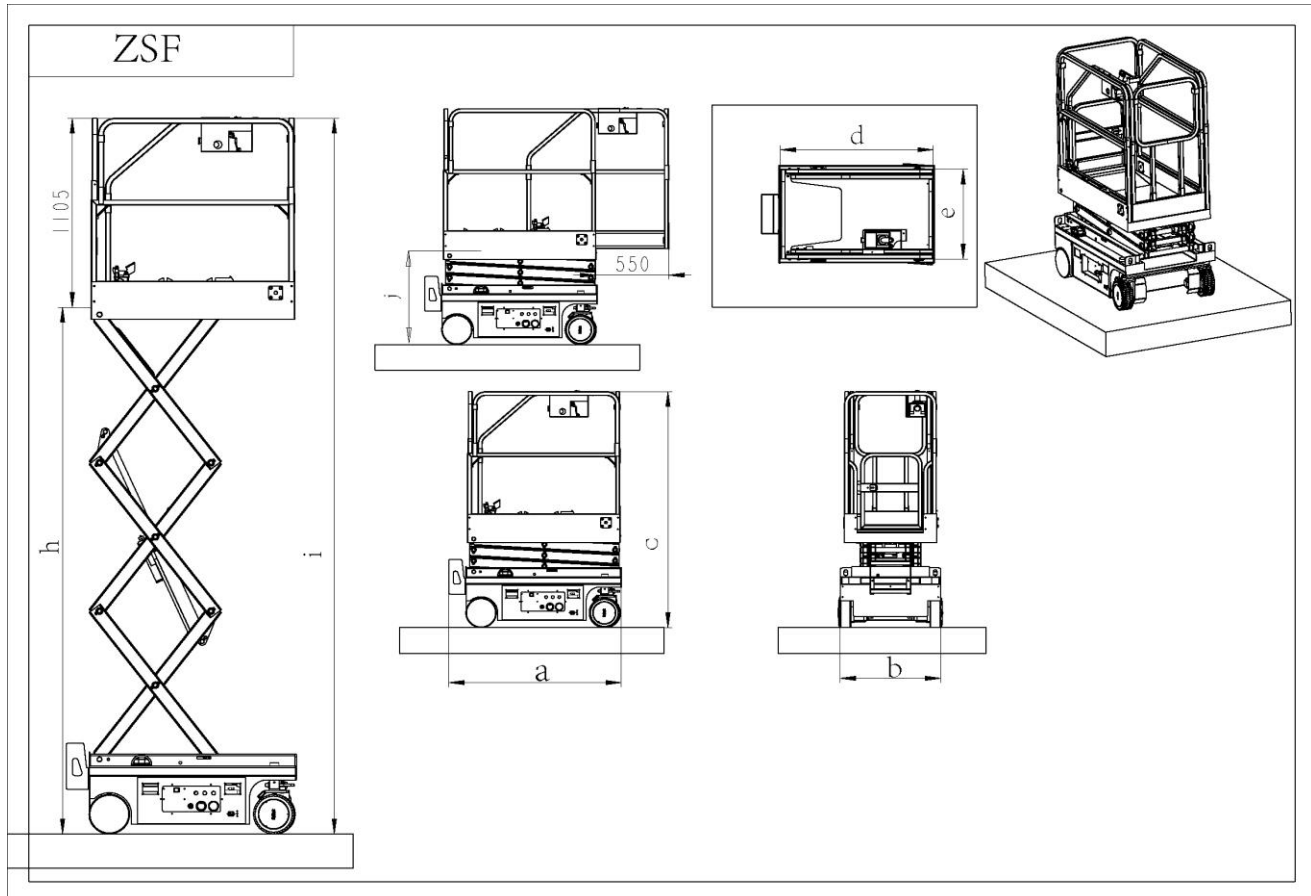


(electric drive liquid transfer)

ZSF SERIE

The factory reserves the amending right for the materials and technical specifications related to this manual.

(ZSF MODEL OVERVIEW DIAGRAM)



Chapter 1. General Description and Application

ZSF series small scissor lifting platform is the upgraded version of ASF model which adopts electric intelligent control of moving and lifting system, equipped with outward moving enlarged working platform (max platform size: 1150x600, platform extension 550mm), adopting electric and liquid direction transfer, rear and front wheel size $\Phi 230 \times 80$ MM

The mini scissor lift can help personnel enter more narrower confined spaces and complete indoor aerial work tasks more flexibly. Improve work efficiency and make operators safer, as well the mini scissor lift is an efficient and safer solution for indoor aerial work than ladders and scaffolding.

It is Easy to operate, the width of the whole machine is only 0.76 Meter, it is one man scissor lift which can easily pass through the standard door and enter the narrow passage of the room. It is the ideal lift for home maintenance work.

This is a light-weight machine and can adapt to working on sensitive indoor floors because it has an electronic differential steering function, when it works on carpeted floors, it will not damage the carpet.

Due to its small volume which is easy to transport and storage as well Intelligent walking and lifting aerial work performance, this stable and flexible machine is popular favored by customers. The product mainly applicable to indoor and outdoor aerial installation and maintenance operations, can be used for the installation and maintenance of road traffic equipment and facilities, workshop aerial work, etc. in concrete it was widely used in airports, schools, libraries, exhibition halls,

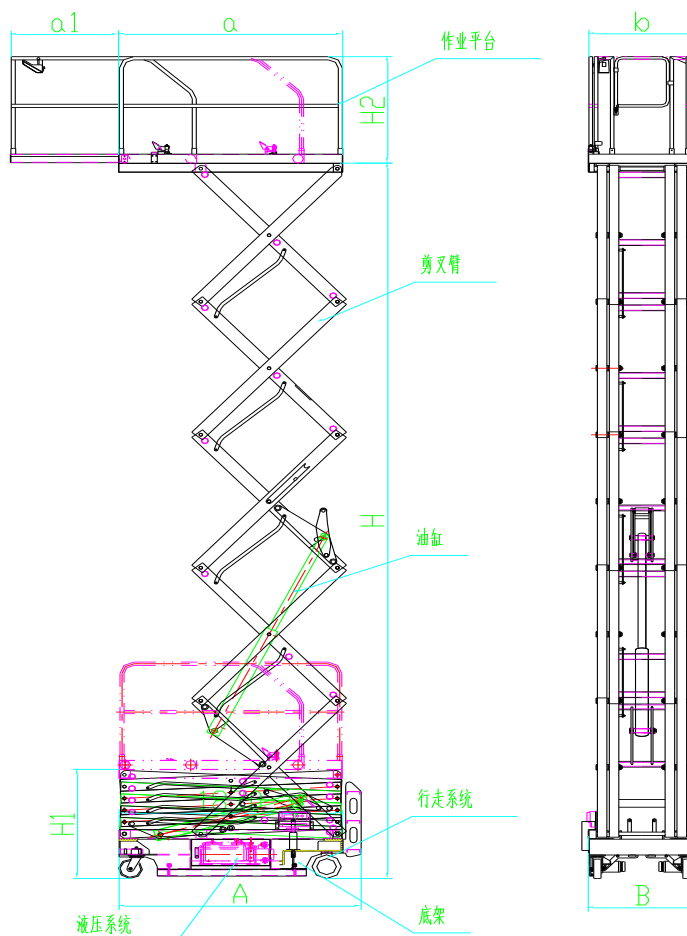
government agencies, theaters, large supermarkets and other venues.

Main Standard product Configuration as below:

DC 24V POWER control	Automatic braking system	Charge protection system
Beeping Strobe Light and horn	Emergency descent system	Maintenance free battery
self-locking door	Emergency stop button	Three in one digital display
Electric walk and Electric drive	Extensible Platform 55cm	Safety maintenance support
Liquid transfer direction	Fault diagnosis system	Truck forks hole for load
Non-marking Tires	Tilt protection electronic system	Folding fence
Drawer type center control box	Italy ZAPI controller	4 x $\Phi 230 \times 80\text{mm}$ tires

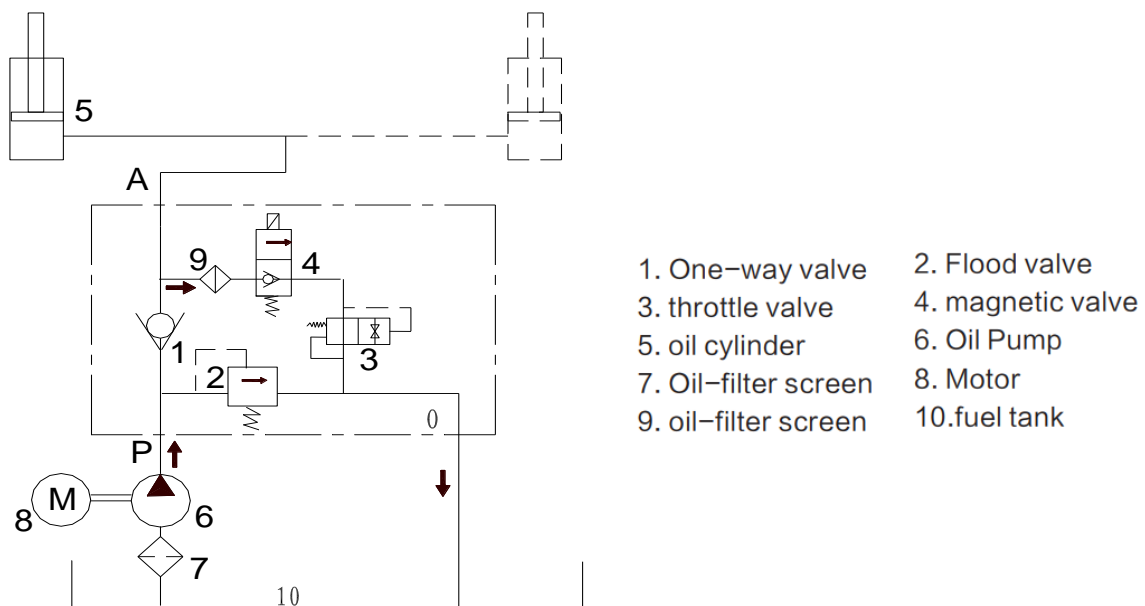
Chapter 2. General Construction

ZSF model is composed of lifting work platform, scissor lifting arm, lifting cylinder, hydraulic control system, base frame, walking system, hydraulic system, total of seven parts. (See Figure 1 for details)



Chapter 3. Working Principle

- 3.1** The oil pump is driven by the motor, and the high-pressure oil enters the P cavity of the valve block, and is output to the A cavity through the check valve 1, entering the lifting cylinder, so that the working platform slowly rises.
- 3.2** Depending on the load, the working pressure is adjusted by the relief valve 2 to prevent overload or overpressure.
- 3.3** When the working platform is lowered, the solenoid valve 4 is opened by power, and the lifting cylinder is under the gravity of the load of the working platform, and its hydraulic oil flows to the A cavity into the valve block, because the check valve 1 is closed in reverse, the hydraulic oil can only pass through the open solenoid valve 4, through the adjustable flow valve 3, and discharge into the oil tank from the O cavity, at this time the working platform slowly descends.
- 3.4** Due to the pressure balance structure is adopted inside the valve, its closed start is only controlled by the solenoid, so it will not affect the stability of the lifting speed due to load fluctuations. (See figure II)



(Figure 2) Schematic diagram of the working principle of hydraulic system

Chapter 4. Operation Instruction

4.1 Description of bottom controller operation and platform joystick Toggle switch:

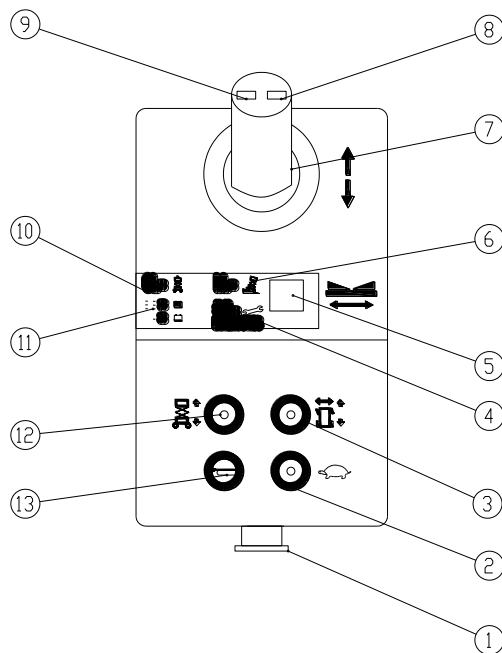
When the key rotates clockwise, the display can see the power display, at this time, the bottom controller up and down buttons can work, so that the platform rise and down freely. When the key rotates counterclockwise, the display can see the power display, at this time, the bottom controller, the rise and fall button can not work, but the working platform lever can work.

4.2 The walking mode and the lifting mode can be switched between each other (just the touch of a finger). When switching to walking mode, the white rabbit pattern is to accelerate, the turtle pattern is to slow down, and the finger is lightly pressed the enable button. The speed of the ascending mode is constant, but at the same time you need to press the enable key.

Warning :

1. It is strictly forbidden overload .
2. When the lifting platform rised, it is strictly forbidden for the operator to do any force actions in the horizontal direction with the help of other items at height.

4.3 Schematic diagram of platform operating handle



- | | | | |
|--------------------------|-----------------------------|-------------------|--------------------------|
| 1. Emergency stop switch | 2. Fast and slow conversion | 3. walk switch | 4. / |
| 5. Display Screen | 6. / | 7. Control Handle | 8. Right steering switch |
| 9. Left steering switch | 10. / | 11. / | 12. Lift and fall switch |
| 13. Horn Switch | | | |

4.4 Equipped with inclination switch, 3 degree for front and rear, 1.5 degree for left and right, tilt will alarm, at this time the platform can't rise but only fall, to ensure safe operation.

Chapter 5. Technical Parameters

Model No.:		ZSF0.3-1.8	ZSF0.3-3.0	ZSF0.3-3.9	ZSF0.2-4.8	ZSF2-5.6
Max Platform Height	mm	1800	3000	3900	4800	5600
Max machine Height	mm	2860	4060	4960	5860	6600
Platform Size	mm	1155 × 600				1155x700
Rated Load Capacity		300			200	200
Extent Platform load	kg	100			80	80
Platform outward size	mm	550				550
Rise time	s	11	17	23	29	33
Descent time	s	9	15	21	70	35
Ground clearance min	mm	60				
Turning Radius (Min)	mm	1600			1600	1900
Battery voltage/capacity	V/Ah	2 pieces × 12/80				2 × 12/108
Rise Motor	V/Kw	24/1.2				24/1.2
Walk Motors	V/Kw	2 pieces × 24/0.5				2 × 24/0.5
Walking Speed	Km/h	0~3.5				0~3.5
Power charger	V/A	24/15				24/15
Drive Wheels	mm	2 x Φ 230 × 80				2 x Φ 230 × 80
Front Wheels	mm	2 x Φ 230 × 80				2 x Φ 230 × 80
Overall length	mm	1300				1500
Overall Width	mm	760				810
Overall Height	mm	1645	1725	1805	1885	2005
Platform above ground	mm	585	665	745	825	930
Gross Weight	kg	690	710	730	750	980

Chapter 6. Common Maintenance

1. The battery is 80AH, 2x12V, the charging voltage is **110V**, and the charging time is about **6-8 hours**.
2. The hydraulic oil (32# hydraulic oil) should be replaced after 12 months of product use, and then replaced irregularly depending on the number of uses and the degree of hydraulic oil pollution. When replacing the hydraulic oil, the inner wall of the tank is thoroughly cleaned, and foreign objects such as metal particles, cotton yarn, and fibers cannot enter the tank

3. The pollution of hydraulic oil must be strictly prevented, there must be no water, acid, alkali and other impurities in the oil, and anti-rust oil must not be coated in the oil tank
4. If the solenoid valve is blocked by a foreign object, the hydraulic system fails. M14×1.5 screw plug drilled with $\Phi 10$ through hole in the middle, unscrew out the copper valve sleeve, pull it out together with the valve core, immerse it in kerosene and gently rotate the valve core, clean out the stuck debris, and then gently pull out the valve core, check the foreign matter and damage in the valve sleeve, carefully load the valve core after treatment, so that the valve core can slide smoothly in the valve sleeve.
Pay attention to maintain the original assembly accuracy, and then load it into the valve body together, and then install the solenoid valve.
5. If the platform is found to fall automatically, check whether the check valve seal is reliable, whether the emergency oil drain valve is loose, or check whether there are soft fibers in the oil that cause the check valve to fail.
6. Periodically check whether the upper limit switch fails.
7. Non-professionals should not disassemble the hydraulic system parts at will, if you are not sure, do not repair yourself, you can entrust our factory for repair.
8. Fill the hinge of the support arm with lubricating oil regularly.

Chapter 7、 Cautions and Safe Notes

- 7.1. Personnel on the work platform after ascending are strictly prohibited to do all actions with lateral thrust or pull ;
- 7.2. After installation and commissioning, it is forbidden in principle to adjust the speed of the rise and fall of the platform ;
- 7.3. Not allowed to overload.
- 7.4. During the lifting operation, personnel are strictly prohibited from entering the bottom of the platform ;
- 7.5. During maintenance, the bottom of the platform must be protected by safety support before entering the platform for maintenance ;
- 7.6. It is strictly forbidden to risk overloading operation by illegal means of increasing the pressure of the hydraulic system;
- 7.7. Parts and components may not be removed or modified without authorization.

Chapter8. Common Faults and Solutions

Failure phenomena	Cause of failure	Solutions
Hydraulic motor does not work	1、 Power not on 2、 Switch normally closed contact off 3, other electrical connector is poor	One by one to check in the electric line and Connectors to exclude
Oil pump to move difficult	1、 overloading 2、 Different shaft of oil pump motor 3、 Pump jamming 4、 Valve block 5、 Hydraulic oil pollution is serious	1、 Rated load limit 2、 Adjust the coaxial 3、 Hand motor shaft can not run, then confirm the pump jamming, need to replace the oil pump 4、 After confirming the wash or change valve 5、 Replace hydraulic oil
Motor, oil pump operation is normal, but the operating platform does not rise or load up to less than the rated weight	1、 pressure system set pressure is too low 2、 Oil pump suction pipe leakage, so that the air into the hydraulic system 3、 The tank level is too low	1、 Relief valve of hydraulic control valve block 2、 Tighten each joint or replace the sealing ring 3、 To add the hydraulic oil to the normal level
platform lift suddenly can not fall	Electromagnetic valve block	Wash or replace solenoid valve , valve block

Chapter9. Warranty After Service

Contact your local or web sales agent for all after service issues.

Quality Warranty is accordance with the agreement between the sales agent and the buyer, but it is limited to product limitations or errors, not including false damage caused by human improper use.

For more professional technical and operation dates, you can contact directly the manufacturer dealer by email at info@zjraise.cn.

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