Lifting platform
User manual

Operational safety rules

14.1 Before operation

Before using high-altitude work machinery, operators must:

a) Trained and thoroughly read the user manual and safety rules;

b) Familiarize oneself with all charts and warning contents marked on high-altitude work machinery;

c) Check if the hydraulic oil, fuel, and electrical systems meet the requirements.

Before each shift handover, the high-altitude operation machinery should be checked for any defects that may affect its use and operation. The inspection content is as follows:

a) Observe for cracked welds or other structural defects, hydraulic system leaks, damage to control cables, loosening of steel wire ropes on the street, and damage to tires;

b) Verify by operating various control systems to ensure that various actions can be completed.

All suspicious items should be carefully inspected and a conclusion should be drawn on whether they pose a

threat to safety. All factors that endanger safety must be eliminated before use.

Before using high-altitude work machinery, it is necessary to check if there are any hazards in the workplace. For example, trenches, steep slopes, caves, gravel, aerial obstacles, high-voltage wires, and other places that may cause danger.

14.2 During the operation process

14.2.1 High altitude work machinery can only be used in accordance with the manufacturer's instructions and safety rules.

14.2.2 During each operation, the operator should:

a) Check for air obstacles and high-voltage lines. According to current regulations and standards, the platform should be kept at a safe distance from the live high-voltage lines from beginning to end and should not be crossed;

b) It is necessary to work on a solid and flat ground;

c) The load and its distribution on the platform must comply with the regulations of the production plant;

d) Legs or stabilizers should be used according to the manufacturer's instructions;

e) All personnel on the platform should fasten their seat belts correctly.

14.2.3 For high-altitude work machinery that is allowed to operate while in motion, the operator should:

a) Pay attention to the driving route and maintain a good view, while ensuring that the road surface is solid and flat;

b) Keep a certain distance from obstacles.

4.2.4 No stunt driving or other fancy driving is allowed.

14.2.5 During the work process, the staff on the platform should always have a stable foothold.

14.2.6 During the homework process, any faults or malfunctions should be immediately eliminated before continuing to use.

14.2.7 It is prohibited to change, modify or abandon safety devices.

14.2.8 When the platform is lifted, lowered, or moved, attention should be paid to preventing entanglement of wire ropes, wires, hoses, etc.

14.3 Other requirements

14.3.1 Fuel tank

a) It is not allowed to add fuel while the engine is

running, and fuel should not splash out during refueling.

b) It is not allowed to add hydraulic oil in working condition.

14.3.2 Battery Charging

Battery charging can only be carried out in an open, well ventilated environment with no smoke or open flames.

The above content is excerpted from the "Construction Industry Standard of the People's Republic of China" - Safety Rules for Aerial Work Machinery

1. Overview

The GYYT series lifting platform produced by our company is a multi-purpose high-altitude operation machinery. Its function is to transport the platform carrying operators and equipment to a designated height for aerial operations as a special engineering equipment. This type of equipment is widely used for

indoor and outdoor lighting decoration, train maintenance, house decoration, maintenance, and scientific detection in industrial and mining workshops, tall halls, warehouses, stations, laboratories, squares, and other indoor and outdoor environments.

This series of lifting platforms has the advantages of innovative design, small size, beautiful appearance, convenient operation and maintenance, and smooth lifting. The whole machine is composed of a platform, telescopic oil cylinder, single or double ladder anti rotation mechanism, chassis oil tank, support legs, walking wheels, etc. From the appearance diagram (see Figure 1, Figure 2), it can be seen that the platform is directly lifted by the telescopic oil cylinder. When the motor is started (see Figure 6), the gear pump is driven by the motor to supply oil. The oil is input into the oil cylinder through the one-way valve and electromagnetic channel, and the telescopic oil cylinder rises step by step. When the platform reaches its maximum height, the system pressure also reaches the rated working pressure. At this time, the relief valve unloads the load, and the oil pressure is maintained at a constant working pressure.

After stopping, the one-way valve maintains pressure, and the platform stays at the maximum height position. The platform can stay at any position below the maximum height according to the on-site operation height.

The platform descends and relies on its own weight to press the oil into the oil tank through the electromagnetic directional valve. When the electromagnetic directional valve is connected, the telescopic oil cylinder will descend step by step, and the electromagnetic directional valve can also be cut off at any height during the descent process to stop descending.

The products can be divided into various specifications according to the height of the job, including 6, 8, 10, 12, 14, 16, 18, 20, 21, 23, 26 meters, etc. Among them, the 6, 8, 10, 12, and 14 meter models are GYYT-A types, with the external structure shown in Figure 1. The rotation mechanism adopts a single ladder anti rotation structure. 16. The models 18, 20, 21, 23, and 26 are GYYT-B, and the external structure is shown in Figure 2. The various specifications of elevators mentioned above can also

provide additional manual pumps to achieve dual use of hand and electric functions.

The GYYT-16 and above models are a relatively large hydraulic elevator recently designed by our factory with a double ladder anti rotation stability mechanism. Its structure (see Figure 2) is to fix a ladder seat at the top of each sleeve of the telescopic oil cylinder, with two ladders in each section. They are suspended on both sides of the ladder seat with adjusting nuts. During the lifting condition, each ladder seat and the ladder suspended on it rise with the telescopic oil cylinder, forming a pagoda shaped square frame structure. This structure not only plays an anti rotation role on the work platform, but also assists in stabilizing it, reducing the deflection of the work platform and greatly improving the design height of the hydraulic elevator. Figure 3 shows the structural diagram of a component section of the anti rotation stable structure under rising conditions. This product complies with the industry standard JJ82-91 of the People's Republic of China for high-altitude work platforms.

2. Main technical parameters

Table 1 Main technical parameters of GYYT series lifting platform

型号	最大升高 M	额定载荷 Kg	工作压力 Mpa	平台尺寸 M	外型尺寸 M	电源电压 V	电机功率 Kw	整机重量 Kg
GYYT-4	4	200	1	0.8×0.8	0.92×0.79×1.7	手动	手动	350
GYYT-6	6	200	1	0.8×0.8	1.02×0.85×1.8	220/380	1.1	480
GYYT-8	8	200	1	0.8×0.8	1.16×0.92×2.05	220/380	1.1	580
GYYT-10	10	200	1	0.8×0.8	1.16×1.0×2.14	220/380	1.1	650
GYYT-12	12	200	1	0.8×0.8	1.36×1.15×2.23	220/380	1.1	900
GYYT-14	14	200	1	0.8×0.8	1.4×1.23×2.30	220/380	1.1	1075
GYYT-16	16	200	1	0.8×0.8	1.7×1.39×2.36	220/380	1.5	1350
GYYT-18	18	200	1	0.8×0.8	1.78×1.47×2.65	220/380	1.5	1430
GYYT-20	20	150	1	0.8×0.8	1.78×1.56×2.65	220/380	1.5	1650
GYYT-21	21	150	1	0.8×0.8	1.78×1.56×2.75	220/380	1.5	1700
GYYT-23	23	150	1	0.8×0.8	1.97×1.65×2.8	220/380	1.5	2000
GYYT-26	26	150	1	0.8×0.8	2.1×1.8×3.05	220/380	1.5	2450
GYYT-30	30	120	1	0.8×0.8	2.31×1.71×3.25	220/380	1.5	2800

3. Usage

3.1 Preparation before use

3.1.1 Before the initial use of newly purchased equipment, it should be inspected and necessary tests should be carried out according to the instructions in this manual. Only when it is confirmed that the operation is normal, safe and reliable, can the next step of work be carried out.

3.1.2 Add YA-N32 ordinary hydraulic oil or YC-N32 low pour point hydraulic oil to the oil tank according to Table 2.

Table 2 Fuel Tank Refueling Quantity

型　　号	加油量（升）	型　　号	加油量（升）
GYYT-6A	60	GTTY-18B	340
GYYT-8A	80	GTTY-20B	400
GYYT-10A	100	GTTY-21B	450
GYYT-12A	160	GTTY-23B	500
GYYT-14A	200	GTTY-26B	550
GYYT-16B	300	GTTY-30B	720

3.1.3 Check whether the connections of each pipeline, fasteners, and wire joints are secure.

3.1.4 Install the platform guardrail and tighten the knurled nuts of the horizontal guardrail by flipping the guardrail and the protective fence.

3.2 Operation steps

3.2.1 Walking operation

When walking, the supporting legs should be retracted and the adjustment screw should be rotated to raise them to the maximum.

3.2.2 Lifting operation

a. Turn the rotary support legs to the diagonal position of the base, then pull the telescopic support legs out of the rotary support legs, and then turn the adjustment screw to use a level to level the entire machine, as shown in Figure 4. It is not advisable to lift all four

walking wheels off the ground during leveling.

b. When working against the wall, the two legs against the wall can be placed parallel to the wall to make the platform as close to the wall as possible for easy operation (see Figure 5).

c. The control system is shown in Figure 7. Turn on the combination switch HK and connect the power.

d. Press the up button 1SA or 2SA (remote control) to raise the platform. When it reaches the desired height, press the stop button 1TA or 2TA (remote control) to stop the platform from rising and maintain pressure at the desired position. Press the down button 1JA or 2JA (remote control) to lower the platform. Press the stop button to stop the platform from descending.

4. Working conditions and precautions

4.1 Working conditions

4.1.1 The altitude shall not exceed 1000 meters.

4.1.2 The temperature should be between -20 ℃ and 40 ℃.

4.1.3 The wind force during operation shall not exceed level 5.

4.1.4 The work ground should be solid and flat, and the

ground should not sink during the work process.

4.1.5 The allowable error of the working power supply voltage is ± 8%. If it is lower than the allowable voltage by 8%, it can cause

Contactor continuously jumps, using power cord, with a length of no less than 2.5mm2 within 50m

If the length exceeds 50m, a power cord larger than 2.5m2 should be used and the plug should be checked

Check if the seat connection is tight.

4.2 Precautions

4.2.1 After the platform is lifted, the entire machine is strictly prohibited from moving.

4.2.2 Work is prohibited when the legs are not supported and leveled.

4.2.3 It is strictly prohibited to work with electricity on the platform.

The lateral horizontal operating force of the platform at maximum height shall not exceed 150N.

4.2.5 When using a motorized lifting operation on a dual-purpose manual and electric lifting platform, reverse the direction of the manual pump

Rotate the valve to the oil inlet position.

4.2.6 When the platform reaches its maximum height, a button should be pressed to stop the machine, and it is not advisable to operate at full load for a long time.

When the platform is placed at the bottom, the stop button should also be pressed. Prolonged operation can cause electrical damage

The magnetic valve coil is burnt out.

4.2.7 If a malfunction is found during the lifting process, the machine should be stopped immediately and the platform should be operated according to the method in 4.2.10

Descend and troubleshoot before continuing to use.

4.2.8 The adjustment nuts and fastening nuts (see Figure 3) used for hanging ladders have been adjusted at the factory

Okay, it is generally not advisable to loosen the nut easily.

If a certain section of ladder and ladder appears during the descent process

When the zodiac sign experiences resistance, it can continue to descend, and the segment that needs to be resisted will descend to its lowest point

When in position, a wooden stick can be used to hit the

ladder that is being supported, causing it to fall into the slot in the ladder seat,

Adjust again after all the oil cylinders have lowered.

4.2.9 It is not advisable to go up and down from the anti rotation ladder.

4.2.10 If there is a sudden power outage after the platform rises, press the top rod at the end of the solenoid valve to open it

Start, platform descent.

5. Repair and maintenance

5.1 After completing the homework, the platform should be lowered to the lowest position, the power should be cut off and wiped clean

Retract the support legs according to 3.2.1.

5.2 The machine should be parked indoors without corrosive gases.

5.3 Regular inspection should be conducted to check for any looseness in pipe joints, fasteners, etc. If any looseness is found, it should be promptly checked

Tighten.

5.4 After long-term shutdown (more than a month), inspection and no-load testing should be conducted

before use.

5.5 The hydraulic oil should be replaced after the first 500 hours of operation.

Regularly clean the oil pump suction filter screen.

5.7 When replacing or repairing hydraulic components, the components should be cleaned and blown clean, and the inlet and outlet should be temporarily closed

Sealing should be done, and no bumps or scratches should be allowed during the disassembly and assembly process. It is strictly prohibited for debris to enter the oil circuit system.

5.8 Electrical components should be kept clean, flexible in operation, and have good contact with the contacts. In case of burns

Damage should be repaired or replaced promptly.

5.9 The inspection and handling of faults are shown in Table 3.

6. On the condition that users comply with the rules of use, storage, and maintenance, one (1) day from the date of shipment

During the year, if there is a malfunction due to poor product manufacturing that prevents normal operation,

the factory will be free of charge

Responsible for repairs.

7. Due to the continuous updates of our products, we must reserve the right to make technical changes.

Unless otherwise specified, this manual is reserved for further modifications.

Table 3 Common Faults and Handling Methods

Fault phenomenon

Possible causes of oil cylinder leakage

1. No power supply
2. Voltage too low, power cord too long
3. Mechanical transmission stuck.
4. The winding of the motor is burnt out due to factors such as moisture and rain.
5. The sealing ring is damaged.

Handling method

1. Check the condition of fuses, wires, switches, etc. If damaged, repair them before starting.
2. Check the cause of voltage reduction in the external circuit, eliminate factors such as poor socket contact and unreasonable wiring, and ensure that the voltage reaches the allowable error range.
3. Check the transmission mechanism and eliminate mechanical faults.
4. Replace the electric motor.
5. Replace the sealing ring.

Possible causes of cylinder sinking

1. The one-way valve is stuck or abnormally worn due to foreign objects.
2. Oil pipe rupture.
3. The solenoid valve is stuck or damaged.

Handling method

1. Disassemble or replace the one-way valve.
2. Replace the oil pipe.
3. Disassemble or replace the solenoid valve.

Possible causes of descent failure

1. The solenoid valve is not powered.
2. The solenoid valve coil is burnt out.
3. The solenoid valve is stuck and cannot be released.

Handling method

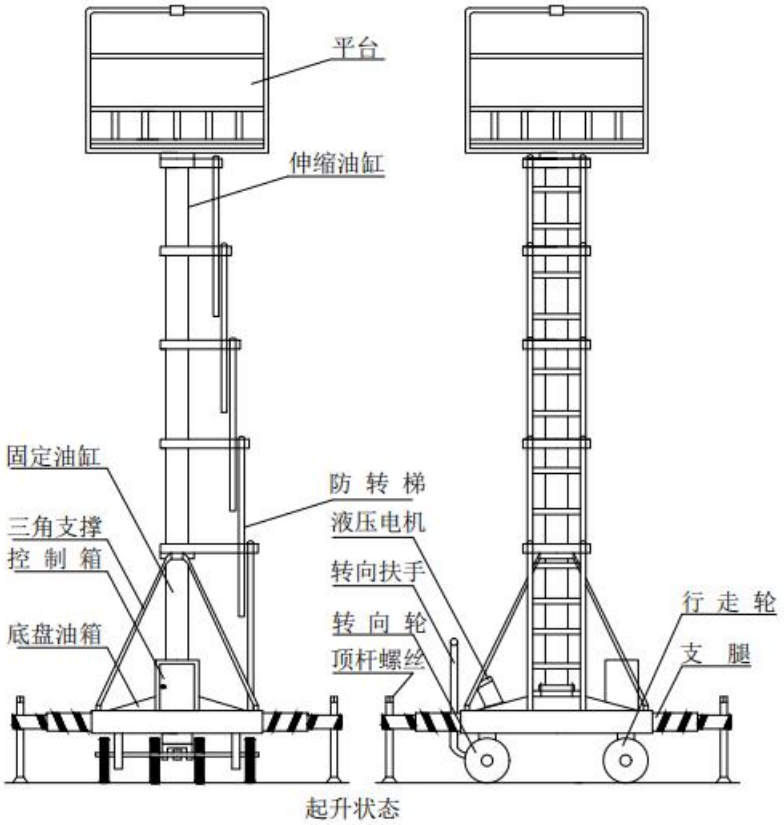
1. Press the top rod at the end of the solenoid valve to lower the platform.
2. Check if the circuit is in good condition.
3. Check the buttons and other components, and replace them if they are damaged.
4. Disassemble or replace the solenoid valve, and replace the solenoid valve coil.

Possible reasons why pressure cannot be sustained

1. The oil suction filter is blocked.
2. The pressure regulating screw of the relief valve is loose or has foreign objects.

Handling method

1. Clean the oil suction filter.
2. Adjust the pressure or clean the valve core.



GYYT-A外型图

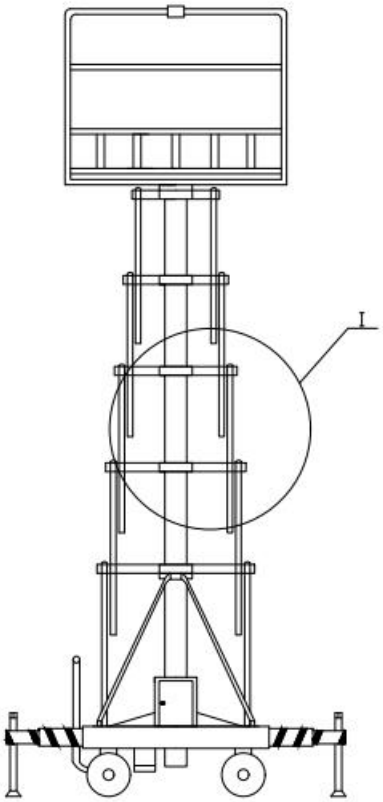


图2 GYYT-B型外形图

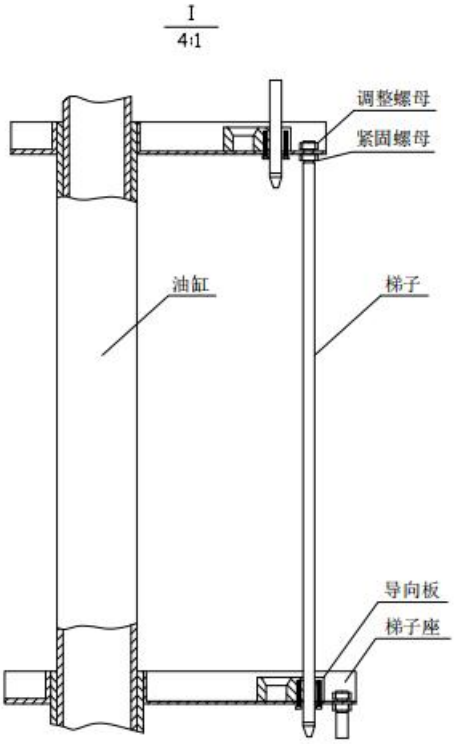


图3

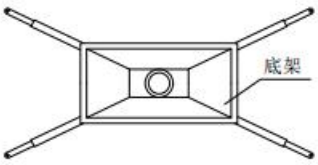


图4

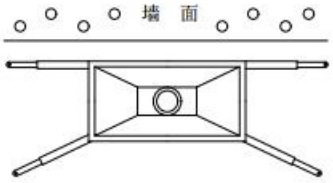
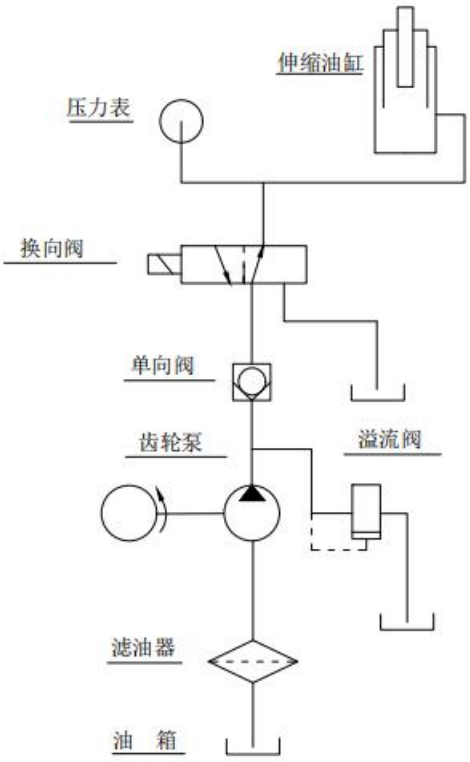


图5



液压系统原理图