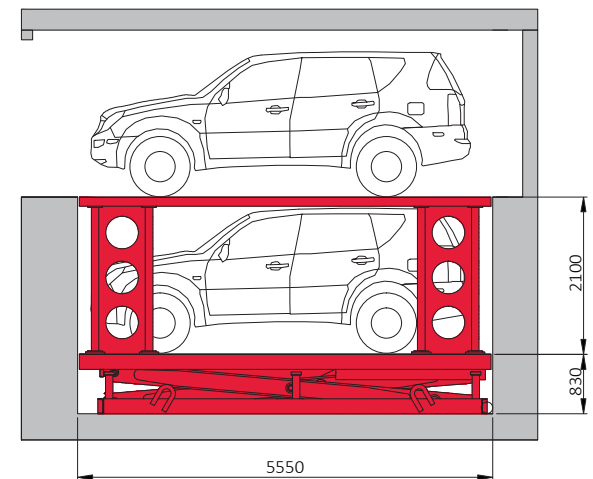
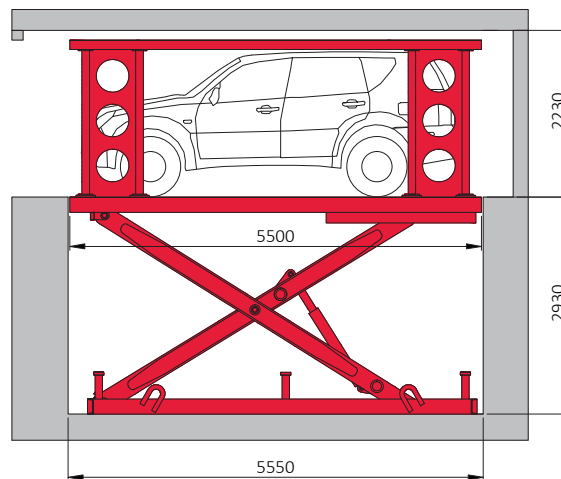
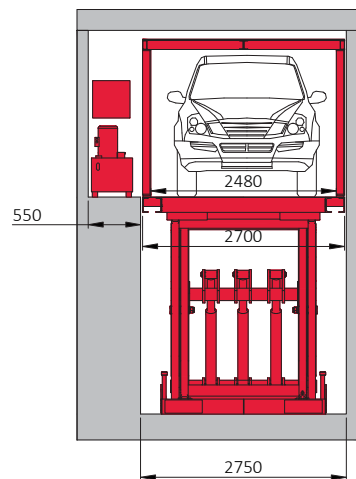
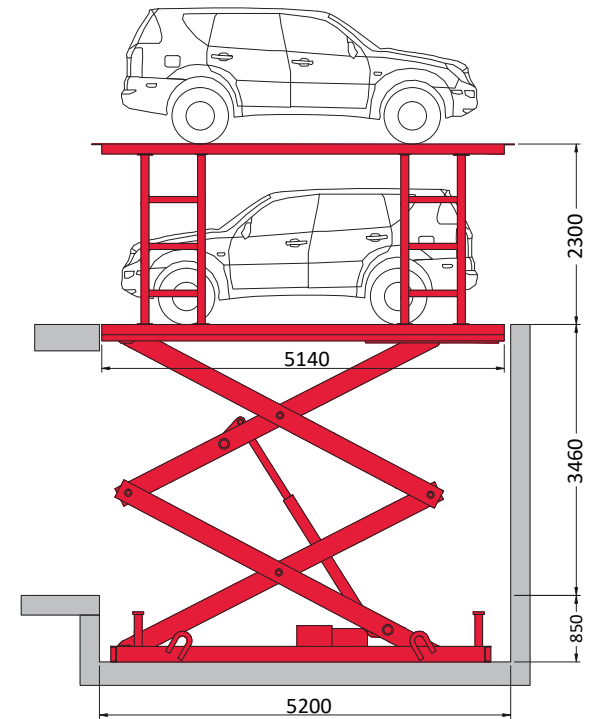
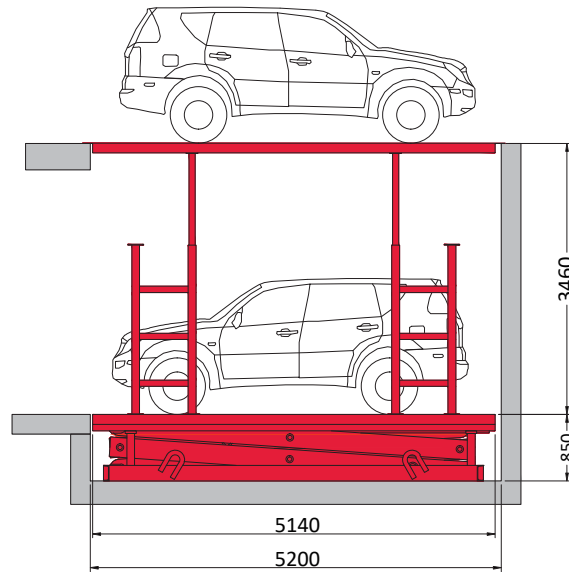
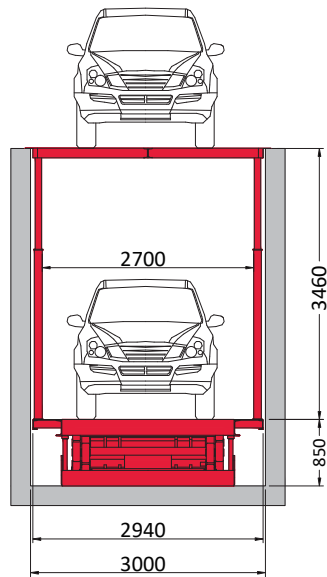


# SUBTERRA

## INSTALLATION GUIDE



# SUBTERRA

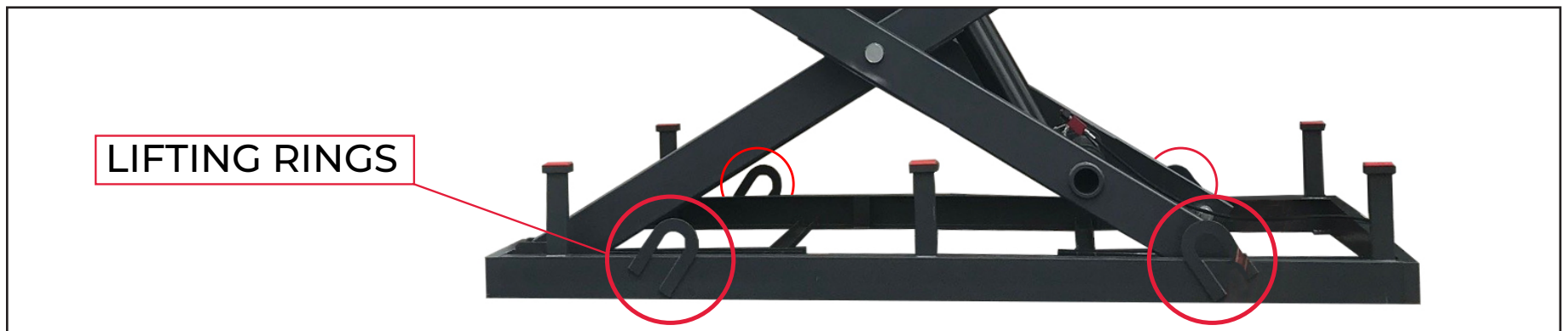
- 1** Ensure the bottom of the pit is level, correcting any horizontal errors if necessary. Mark the installation pit based on the actual equipment size. When placing the lifter into the pit, use appropriate steel shims to level it, then fill in the gaps. Additionally, ensure the walls are perfectly vertical.

The error in the pit's diagonal should be less than 10mm. Ensure that the upper opening of the pit is vertically aligned with the opening on the second floor.

- 2** Lowering the lift into the pit.

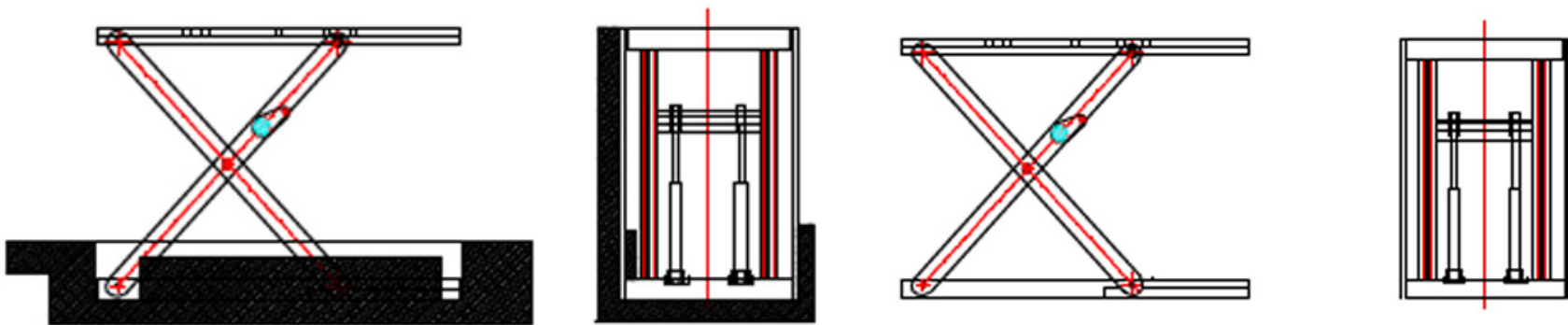
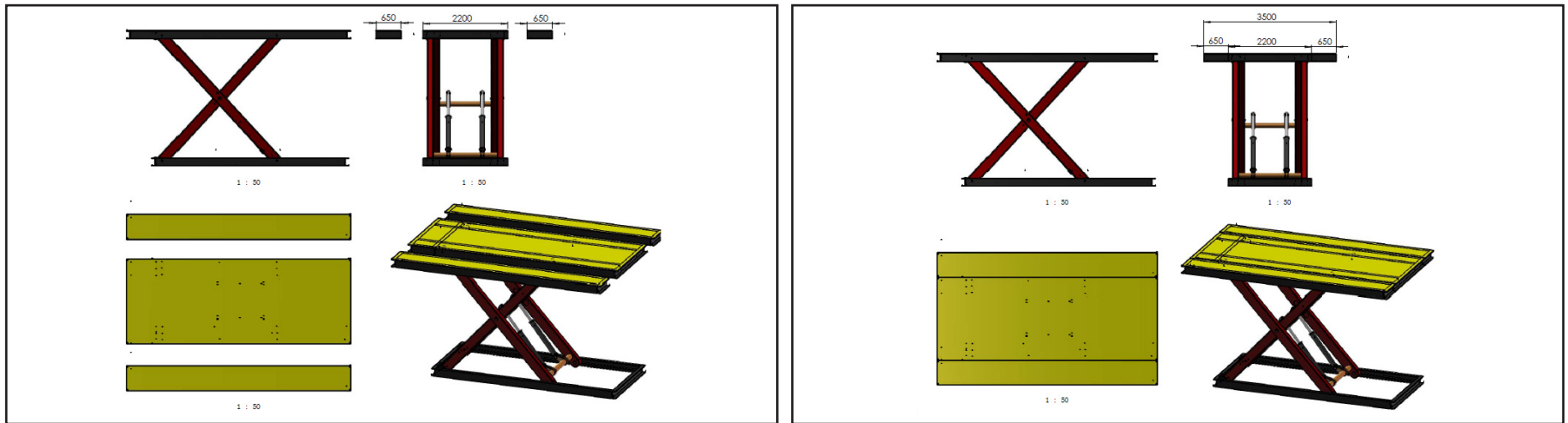
Thread the four wire ropes through the four lifting rings, then lift the assembly into the pit. Ensure the distance between the pit's edge and the lift entrance is as small as possible without interfering with the hoistway on the canopy. The distance between the lifting rings and the pit sides should be equal on both sides.

Use a crane or other lifting device to lower the base of the Subterra into the pit. Once the position is correctly adjusted and verified, finish electrical and hydraulic connections and perform several test runs with the base and the first floor platform.



# SUBTERRA

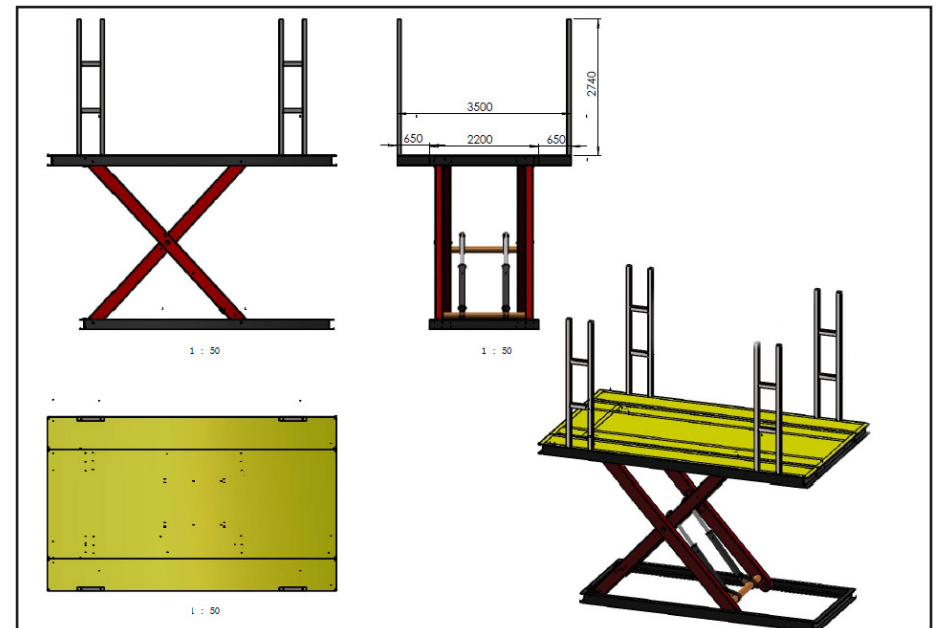
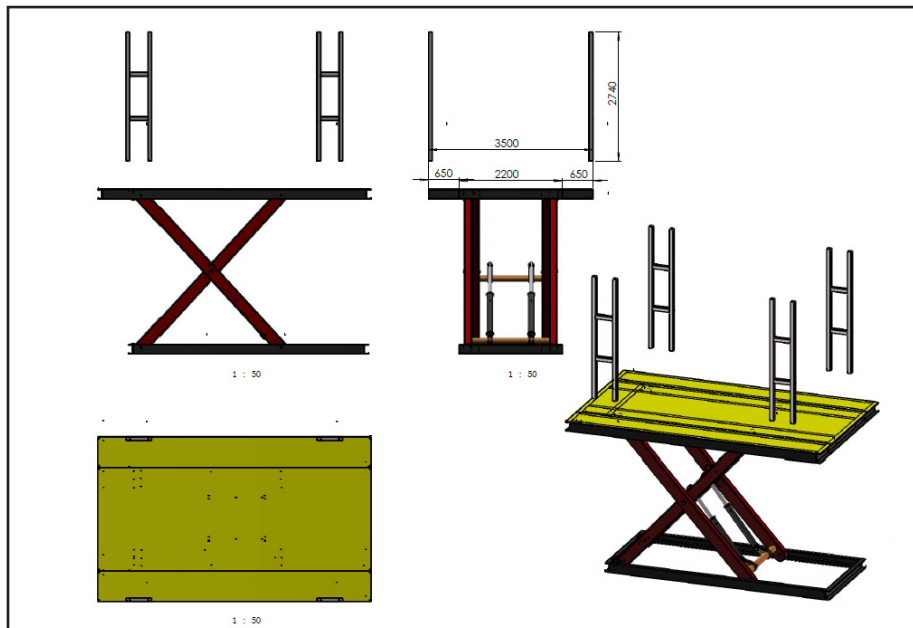
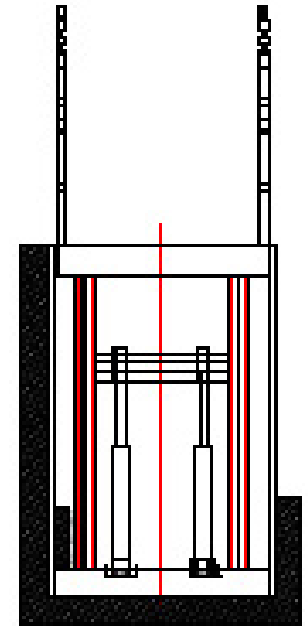
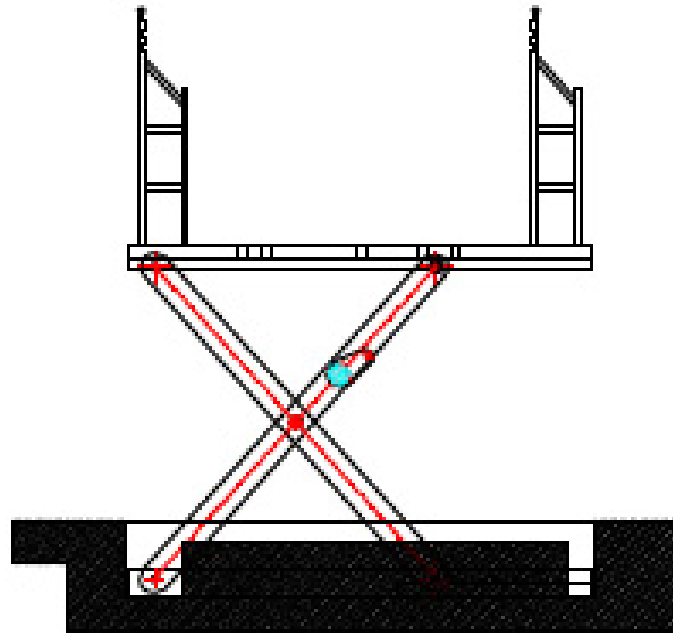
- 3** First, secure the two side platforms to the middle platform on the first floor using bolts and nuts. Then, check and adjust the positions of the middle platform and the side platforms. Attach them together securely.



# SUBTERRA

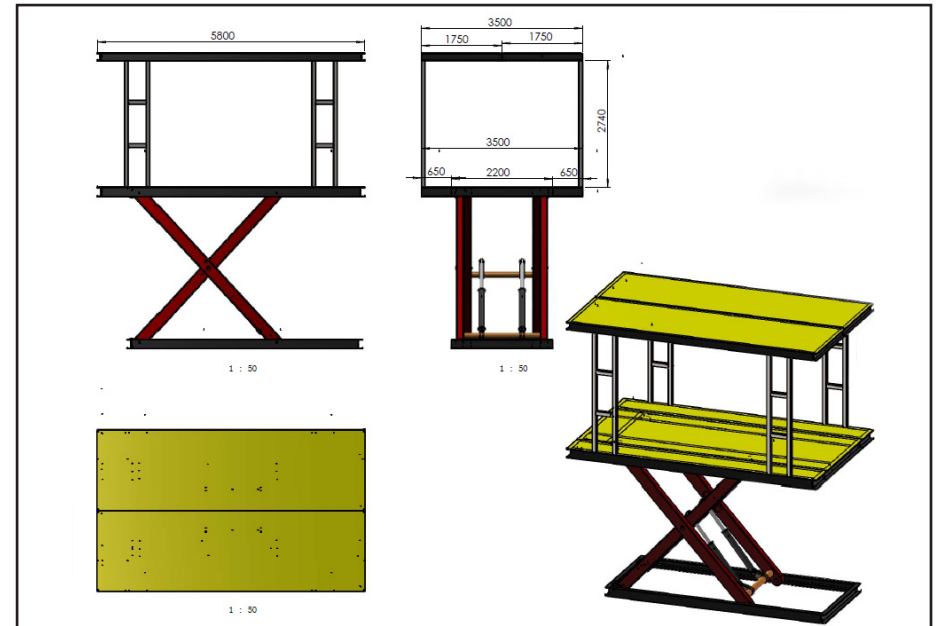
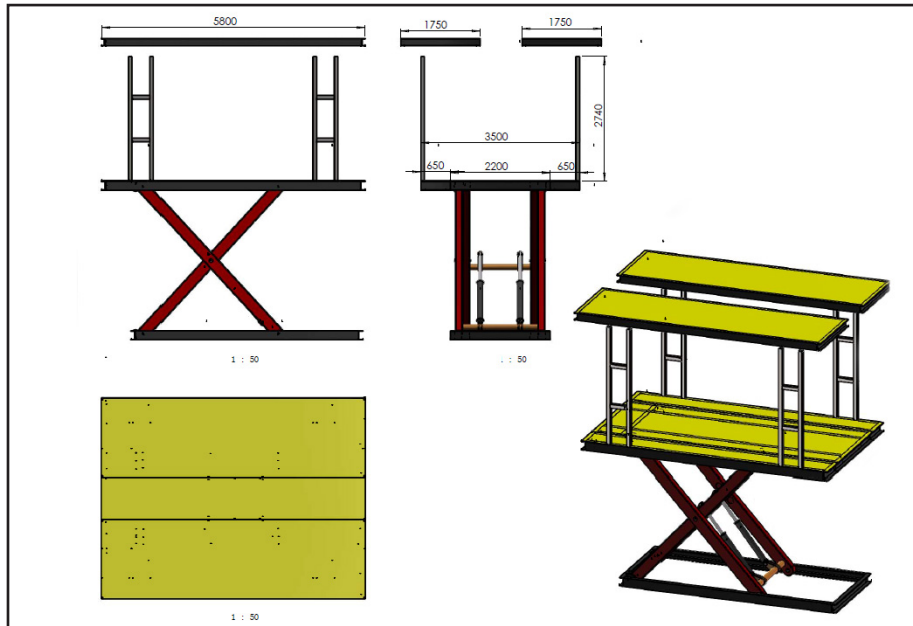
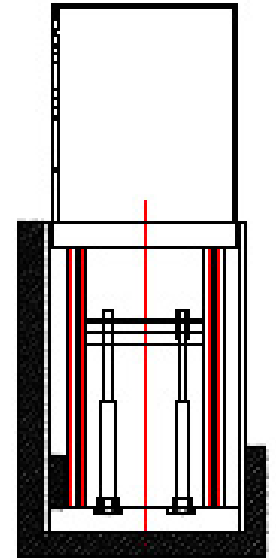
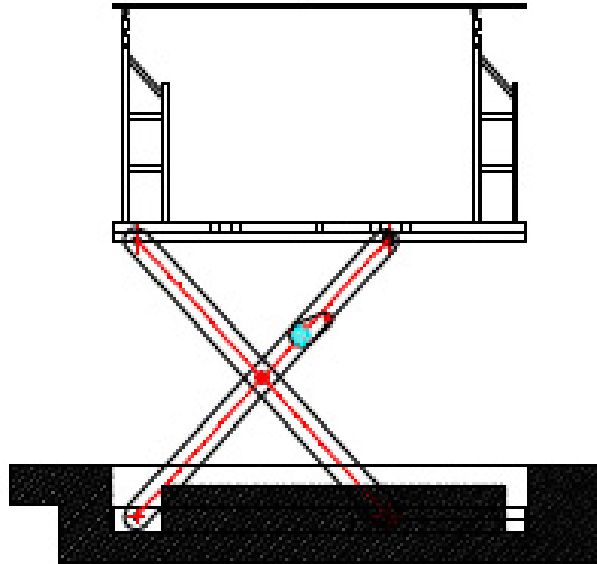
4

Raise the first-floor platform to ground level and secure it to the four support columns using bolts/nuts.



# SUBTERRA

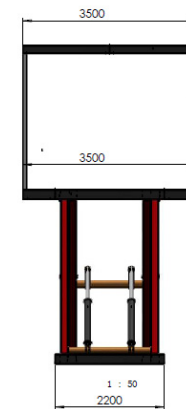
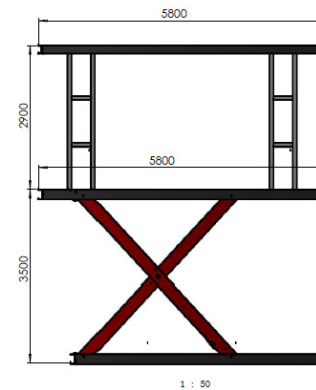
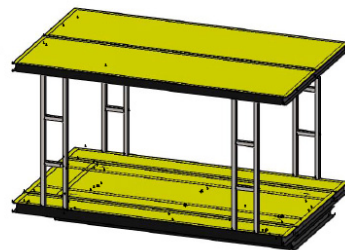
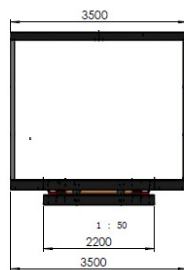
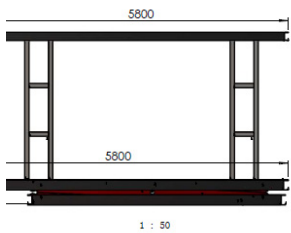
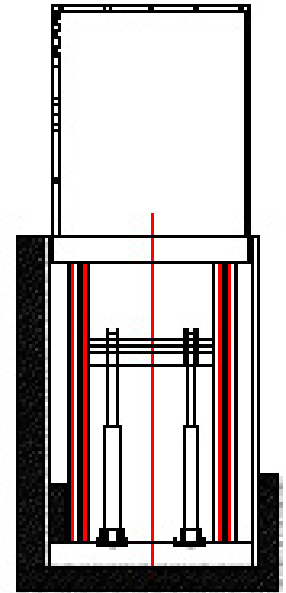
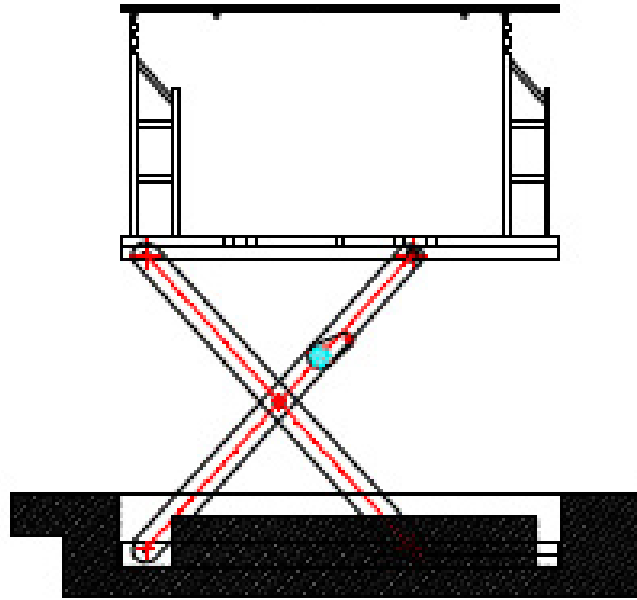
- 5** Place braces / supports across the span of the upper opening, lay canopy halves together ensuring they align perfectly, and secure and install the canopy platform. Set the lifting height to match the distance between the two platforms.



# SUBTERRA

6

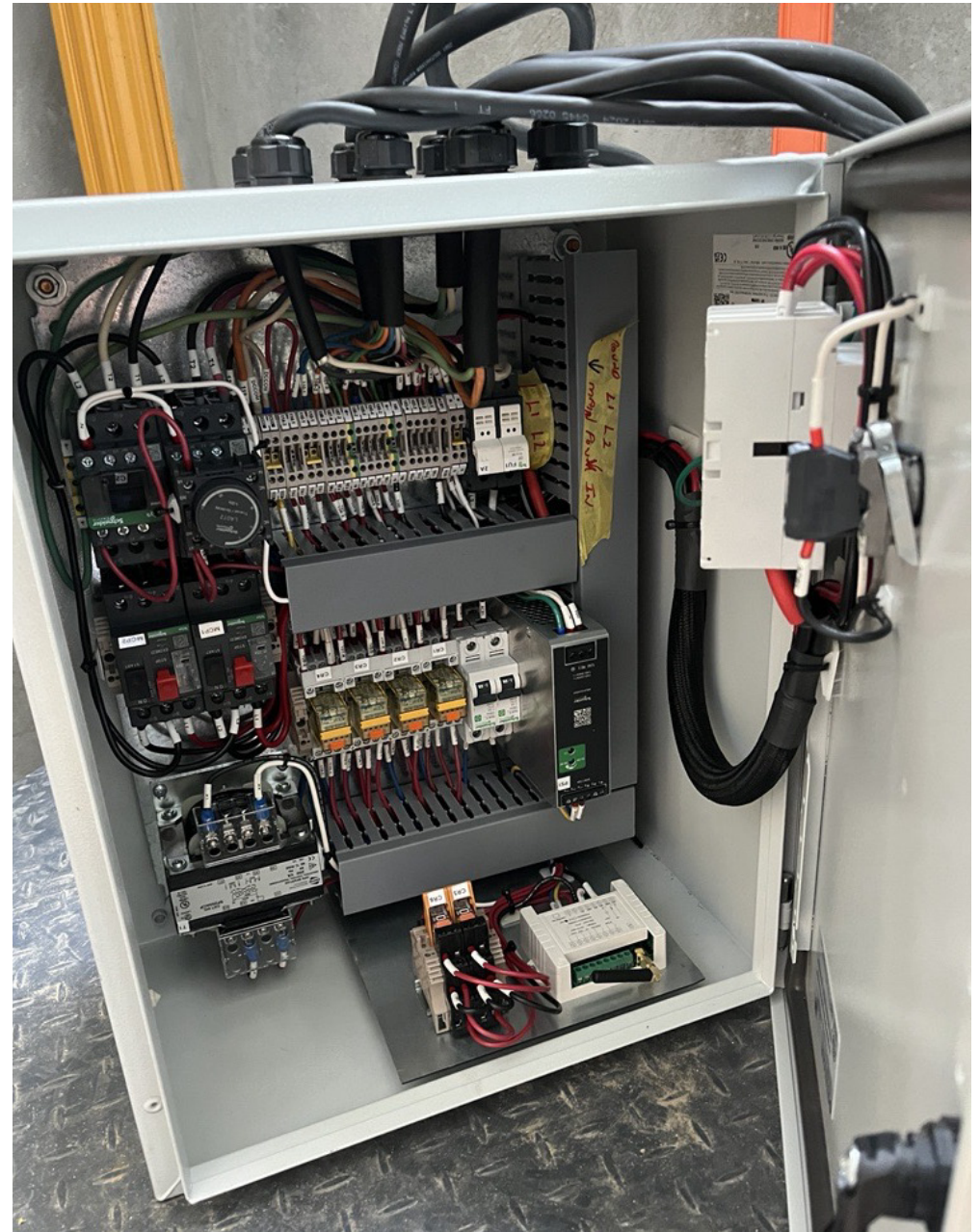
Perform multiple test runs on the entire equipment. Once you are confident that everything is functioning correctly, securely anchor the foundation bolts.



## 7 Electric Instructions

(1) The main control box should be installed near the pump station for convenient operation, ideally positioned on the first floor. For the second floor, auxiliary control panels should be mounted at the car's entrance and exit point.

(2) One travel switch will be used on the first level.



## 8 Test Running

Before loading the lift, the lift must be thoroughly checked, including the quality of the installation. Confirm that the mechanical transmission is free of jamming. The starting and stopping should occur without interference, abnormal sounds, or vibrations, and movement should be smooth and flexible. After this inspection, the Subterra can proceed with normal operations.

## 9 Operation Instruction

- (1) Before regular use, the platform should be inspected by lifting it without any load. After this inspection, the Subterra can proceed with normal operations. *(See above)*
- (2) The inspection should include checking the hydraulic pressure line and the electrical system. Ensure there are no leaks in the hydraulic circuit or joints, no exposed electrical wires, and no loose connections in the electrical system. Only after confirming that all items are in good condition can the Subterra be used regularly.
- (3) When the platform lifts goods or vehicles, the center of gravity should be as close to the center of the work floor as possible.

## 10 Considerations

- (1) Movement of goods or climbing is prohibited while the Subterra is loading or unloading goods.
- (2) Only when the platform is lifted, secured, and all other operations of the Subterra are stopped, can other activities be carried out (such as loading or unloading goods, or parking or removing a vehicle from the platform).
- (3) No operations involving excessive height or weight.
- (4) Hydraulic oil should be kept clean and must not be contaminated with water or other impurities. **Use ATF or AW32.**
- (5) If the Subterra fails to operate, the power source should be promptly disconnected.
- (6) Operating faulty equipment is prohibited. Non-professionals are not permitted to remove or adjust hydraulic valve blocks and electrical components.

# SUBTERRA

## 11 Mode of Control

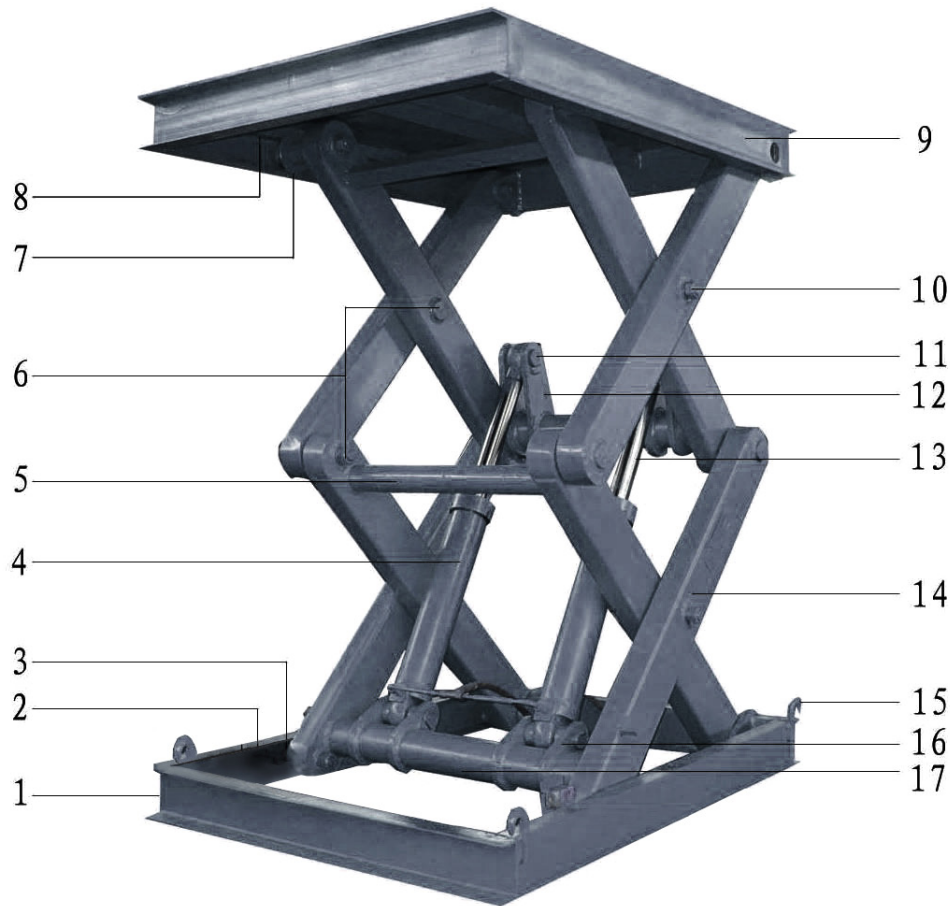
Activate the power source. On the electrical control box, the “power” button indicator light illuminates. Press and hold the “up” button on either the call station or remote, causing the platform to ascend to its maximum height. Once the limit switch activates, it cuts off the power source, halting the platform’s movement.

Press and hold the “down” button on either the call station or remote to engage the solenoid valve, opening the valve core and initiating platform descent. During descent, releasing the “down” button can be used to halt the platform at any desired height. Upon reaching the minimum height, release the button on the call station or remote, stopping the platform.

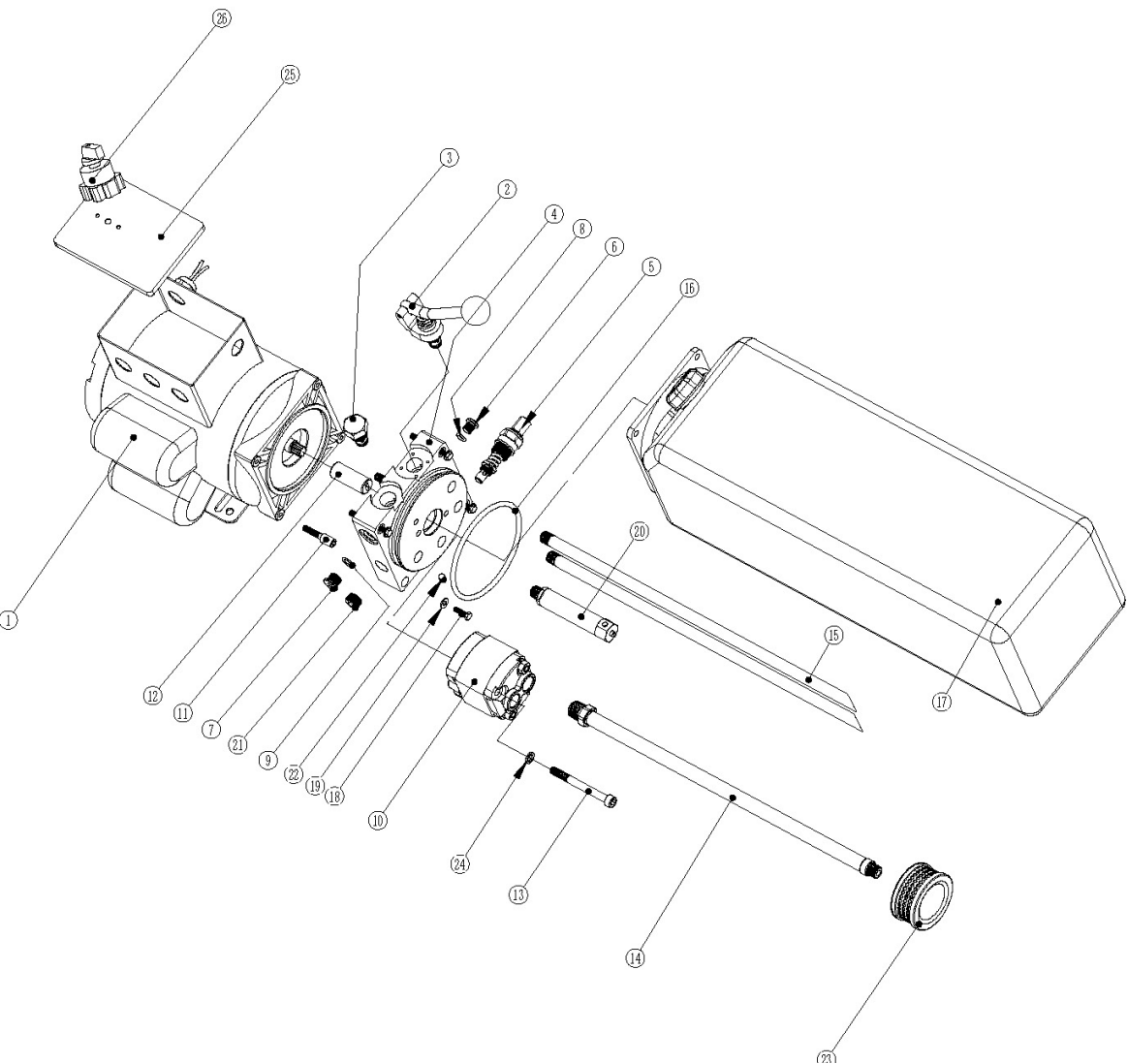
## 12 Parts Reference

The Subterra can be designed with either a single group of struts or multiple groups of struts. However, as the main parts have the same names, we label the parts of the two groups of struts lift for clarity. (*See next page*)

## 13 Parts Reference Continued



- 1.) Underframe
- 2.) Low Slide Way
- 3.) Low Idler Wheel
- 4.) Hydraulic Oil Cylinder
- 5.) Strut Bracket
- 6.) Arm Pin
- 7.) Top Idler Wheel
- 8.) Top Slide Way
- 9.) Platform
- 10.) Nut of Strut
- 11.) Cylinder Pin
- 12.) Top Support Arm
- 13.) Piston Rod
- 14.) Strut
- 15.) Lifting Hooks
- 16.) Low Support Arm
- 17.) Shaft



ITEM	DESCRIPTION	P/N	QTY
1	Motor	ZP2-1G0025	1
2	Manual Release Valve	WX2-01-4010	1
3	Check Valve	WX2-01-1008	1
4	Center Manifold	BCP2-01-093X	1
5	Relief Valve 2850PSI	WX2-01-2003	1
6	Steel plug M10×1	WG-04-3013	1
7	Steel plug9/16-18	WG-04-3019	2
8	O-ring 8×*2.1	WG-01-2073	1
9	O-ring 11.8×1.8	WG-01-2010	2
10	Gear Pump	CP1-01-075Q4	1
11	Composite screw	SPZL000100	4
12	Coupling	WX2-04-002	1
13	Pump Mounting Bolt	WG-01-1048	2
14	Suction pipe	WX2-02-1043	1
15	Return Tube	WX2-02-2005	2
16	O-ring 120×5.7	WG-01-2170	1
17	Tank	WG-06-2017	1
18	Hexagon screws M5×18	WG-01-1451	4
19	Plain washers 5	ZX2-02-813	1
20	Buffer valve	WX2-01-6002	1
21	Steel plug NTP3/8	WG-04-3020	1
22	Steel ball plug	WG-01-3020	1
23	Filter 100 mesh	WG-07-002	2
24	Spring lock washers 8	WG-01-1009	1
25	Juncting box cover	WG-03-3346	1
26	32A Motor Switch	WG-03-3347	1

## 14 Troubleshooting

Problem	Reason	Solution
The pump station isn't supplying oil, preventing the platform from lifting.	Power of electrical machine (25) is abnormal ( virtual connection or inversion)	Connect the motor power correctly or regulate diversion.
	There is no oil or not enough oil in the cylinder.	Add hydraulic oil.
	Oil filter (06) is blocked.	Clean the oil filter or replace hydraulic oil.
	Normally closed valve (17) is dirty	Tear down the normally closed valve and wash it with cleaning agent or paraffin.
	The normally closed valve (17) and motor (25) are powered up simultaneously.	Connect the lines correctly. When the motor (25) is electrified, the normally closed valve (17) should interrupt the power.
	Gear pump (28) is old or damaged	Replace the gear pump (08)
	Hydraulic oil is old or bad	Change the hydraulic oil.
	Emergency bolt becomes loose	Tighten the emergency bolt (19)
	The joint between the oil suction pipe (07) and gear pump (08) becomes loose and leaks air	Screw the oil suction pipe (07)

## 14 Troubleshooting

Problem	Reason	Solution
<b>Pump station doesn't return oil and the platform cannot descend.</b>	Power of normally closed valve (17) is not connected or there is not enough electricity.	Connect the lines correctly and check voltage.
	The voltage and voltage type of normally closed valve coil (17b) is different from that of power.	Check the voltage and it's type (AC or DC). Supply the same voltage as the normally closed valve coil (17b).
	The normally closed valve coil (17b) is damaged.	Replace the normally closed valve coil (17b)
	The normally closed valve nut (17c) is loose.	Screw normally closed valve nut (17c)
	The normally closed valve (17) is jammed.	Remove the normally closed valve (17) and wash it.

Problem	Reason	Solution
<b>Platform Descends.</b>	Normally closed valve (17) or no-return valve (15) is dirty.	Wash or replace the normally closed valve (17) and no-return valve (15).
	Emergency bolt (19) loosens.	Tighten the emergency bolt (19)
	Hosepipe is leaking oil or oil cylinder is leaking inside.	Thoroughly check hosepipe and oil cylinder.

## 14 Troubleshooting

Problem	Reason	Solution
Lift is swaying when lifting or descending.	Normally closed valve (17) is dirty.	Wash the normally closed valve (17).
	Oil filter (06) is blocked or oil suction pipe (07) is loose.	Wash oil filter (06) or tighten oil suction pipe (07).
	Hydraulic oil is going bad or is not enough.	Replace hydraulic oil or fill up hydraulic oil.
	Power line is too long.	Shorten power line.
	Emergency bolt (19) loosens.	Tighten emergency bolt (19).
	The descending speed is too slow or too quick.	Adjust flow speed control valve (23).
	The oil pipeline has an air leak, causing the oil cylinder to move erratically.	Check and repair oil pipeline.
	The cylinder is deformed, or the seal kit is too tight, causing the oil cylinder to move erratically.	Change the oil cylinder or seal kit.

# SUBTERRA

## 15 Maintenance



Before performing any maintenance on the Subterra, verify that it is completely disconnected from power. The Subterra uses electrical energy; if your organization has Lockout / Tagout policies, make sure to implement them before performing any maintenance. If you come into contact with high voltage, you could be injured or killed.

Read your manual and understand how this equipment works before using, maintaining, or repairing. Routine maintenance and adjustments are the responsibility of the owner/employer and does not require trained lift service personnel. Replace worn, damaged or broken parts with original approved parts or with parts that meet or exceed the original specifications.

### TO MAINTAIN YOUR LIFT:

- **Daily:** Keep the Subterra clean. Wipe up any spills, clean any dirt.
- **Daily:** Make a visual inspection of all moving parts and check for damage or excessive wear. Replace any damaged or worn parts before using the lift.



Do not use the Subterra if the cables are damaged or extremely worn. If a Vehicle is raised when you notice the damage or extreme wear, very carefully lower the Vehicle to the ground. When the Lift is on the ground, remove it from service, disconnect it from power, and make arrangements for repair.

## 15 Maintenance

- ▶ **Daily:** Visually inspect that the Safety Locks are in good operating condition. Do not use your Lift the Safety Locks are damaged or excessively worn.
- ▶ **Weekly:** Check all controls to make sure they are functioning normally.
- ▶ **Weekly:** Check all labels on the Subterra. Replace them if they are illegible or missing.
- ▶ **Monthly:** Lubricate the Posts. We recommend using white lithium grease or similar.

### TO MAINTAIN YOUR LIFT CONTINUED:

- ▶ **Monthly:** Check Hydraulic Fluid Levels. Refill if low.
- ▶ **Monthly:** Check cable connections, bolts, and pins for proper mounting and torque.
- ▶ **Monthly:** Make sure all pivot arm pins are properly secure.
- ▶ **Every 2 Months:** Check all Anchor Bolts to make sure they are correctly torqued. If they are not, torque them to 85-95 ft lb.
- ▶ **Every 3 Months:** Inspect and lubricate the Wire Rope, Guide Rollers, Sheaves and Pins.
- ▶ **Every 3 - 5 Years or as needed:** Carefully check the Equalizing Cables every three to five years, or immediately if there are signs of damage or extreme wear. See Wire Rope Inspection and Maintenance for additional information.

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