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## **USER MANUAL**

### **POWER DOUBLE SCISSOR LIFT TABLE**



**MODEL NO. 293227, 293228, 293229**



Owner/Operator must read and understand this manual

1.



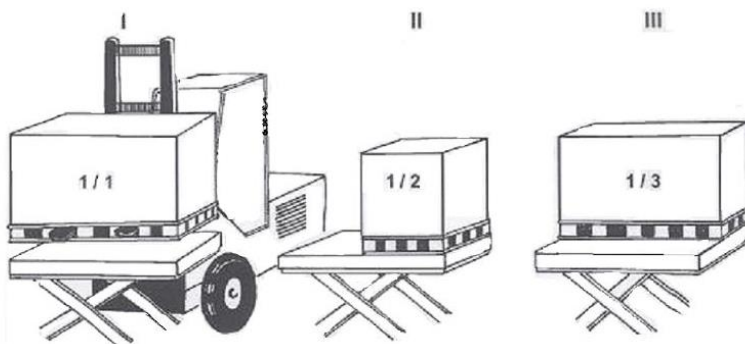
**WARNING!** *If operating the lift table improperly, a person may be seriously injured. Therefore, operate properly according to the following instruction*

- ◇ Read & thoroughly understand the Instruction Manual completely before using. Follow all safety instructions strictly.
- ◇ It is necessary to check all safety devices before operation.
- ◇ Make sure that there are no obstacles in the working area.
- ◇ Do not put foot or hand in scissors mechanism or through frame.
- ◇ Screw the lifting eyes on the base frame before working on the lift table.
- ◇ Do not overload the lift table. Load should be distributed on the table according to relevant load distribution chart.
- ◇ Pay attention if local voltage and frequency is as same as the input specification of the lift table.
- ◇ Use the lift table on flat and solid ground.
- ◇ All the electrical connection and disconnection operations must be carried out by skilled and competent personal.
- ◇ While operation, it is forbidden to contact the moving parts of the lift table.
- ◇ While the lift table moving, it is forbidden to adjust or to move the load.
- ◇ It is forbidden to lift the load, which perhaps does harm to a person or other object.
- ◇ It is forbidden to operate the lift table while a person is under the table.
- ◇ Do not adjust the safety valve of hydraulic power pack.
- ◇ It is forbidden to operate the lift table even if there is small structure distortion.
- ◇ Do not use in an explosive or flammable place.

**Note !Maximum load refers to the load being uniformly distributed over the entire platform area.**

In accordance with **EN1570**, Safety Requirements for Lifting Tables, the basic requirements are:

- I 100% of the rated load(maximum load) uniformly distributed over the entire platform area.
- II or 50% of the rated load(maximum load) uniformly distributed over half the length of the platform.
- III or 33% of the rated load(maximum load) uniformly distributed over half the width of the platform.



**2. INSTALLATION OF LIFT TABLE ON THE FLOOR/GROUND OR IN A PIT**



Double or triple vertical scissors tables must be fixed to the floor/ground

by means of expander bolts or similar,

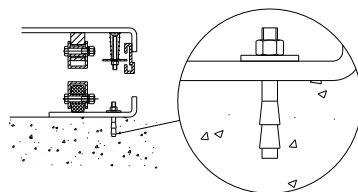
We also recommend that all other lift

table types, with the exception of mobile units, are securely

affixed on the floor to Prevent unintentional movement

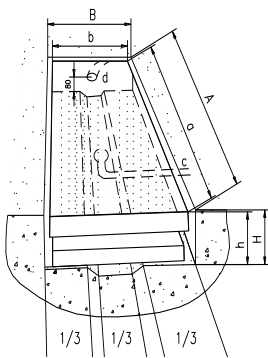
**MECHANICAL/ELECTRICAL INSTALLATION**

1.The base frame of the lift table is not as standard self-supporting .It is important that the flooring is flat and stable and that the installation area or pit, when necessary, is well drained.



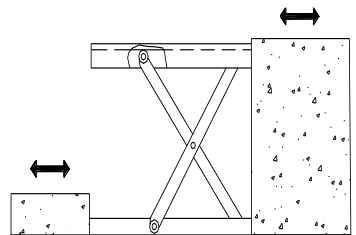
2. Utilize a lifting sling through the scissor package. Tie the base frame to the platform or the scissor mechanism. Locate the table into the desired position. Turn the fixed arm end to the side where the load will be moved on or off at upper level. See picture below.
3. Check the operation of the safety frame on all sides.
4. The control device should be positioned so that the operator has a clear view over the lift table and the load at all times when the lift is operated.

Loading/unloading at the fixed arm end



### PIT DRAWING

- A. Pit length= $a+30\text{mm}$
- B. Pit width= $b+30\text{mm}$
- H. Pit depth=closed height of table+5mm
- a. Platform length
- b. Platform width
- c. Drainage hole (when required)
- d. Tube for external cables and hoses  $\phi 60\text{mm}$
- h. Lowest height



3.



**CAUTION!** *If operating the lift table improperly, a person may be injured. Therefore, operate properly according to the following instruction.*

- ◇ The lift table is a movable lifter designed to lift or lower rated load. Do not use it for other purpose.
- ◇ Do not allow a person to operate the lift table, who does not understand its operation.
- ◇ It is forbidden to change the lift table without manufacturer's written admission.
- ◇ It is necessary to use the spare parts designated by manufacturer.

- ◇ Make sure to keep a distance between the table and ambient objects enough to operate the lift table safely.
- ◇ Keep the hydraulic system under clean and safe condition.
- ◇ The hydraulic power pack features an electric lowering control. The coils must be fed with the required voltage as described on those coils. The power supply voltage should not exceed  $\pm 10\%$  of the rated required voltage.
- ◇ Always do maintenance and routine check while the lift table is unloaded.
- ◇ The lift table is not waterproof and should be used in a dry environment.

#### 4. DAILY INSPECTION

Daily inspection is effective to find the malfunction or fault on the lift table. Before operation, check the lift table according to the following points.



**CAUTION!** *Do not use the lift table if any malfunction or fault is found.*

- ◇ Check all the terms of WARNING and CAUTION.
- ◇ Check scratches, bending or crack on the lift table.
- ◇ Check smooth movement of the table.
- ◇ Check if there is any hydraulic oil leakage.
- ◇ Check the vertical creep of the table.
- ◇ Check if all the bolts and nuts are firmly tightened.

## 5. OPERATING THE LIFT TABLE

### ■ LOADING

Load should be distributed on the lift table equably.

### ■ LIFTING THE TABLE



**CAUTION!** Do not overload the lift table. Ensure the balance of loading. Do not load partially or concentrically.

- ◇ Screw and loose emergency stop switch.
- ◇ Push the UP button and power pack starts to work to lift the load.
- ◇ Loose the UP button and power pack stops working.

### ■ LOWERING THE TABLE



**WARNING!** Do not put foot or hand in scissors mechanism.

- ◇ Push the DOWN button and the table will lower.
- ◇ Loose the DOWN button and the table will stop.

#### NOTE

- ◇ The table is equipped with an aluminum guard to avoid accidental danger.
- ◇ If aluminum guard strikes an object while the table lowers, stop operation and check the lift table. After making sure no any abnormality, strike the UP button slightly and then the electric system will function as before.

### ■ EMERGENCY STOP

There are two methods of emergency stop as follows.

- ◇ Push down the emergency stop switch and the movement of table stops.
- ◇ Strike aluminum guard upward and the movement of table also stops.

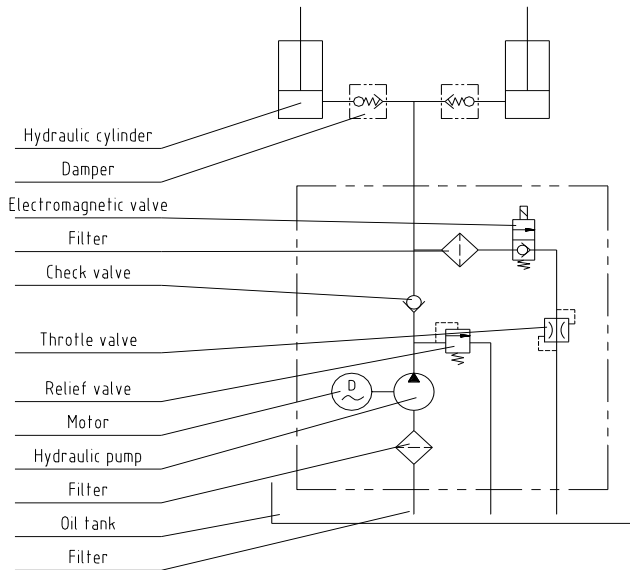
## ■ TRANSPORTATION

If necessary, the lift table can be transported with attached ringbolts.

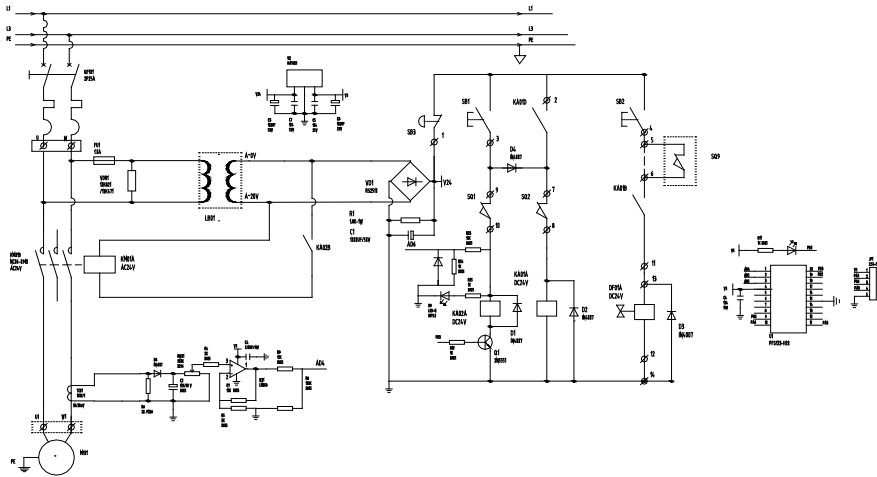
- ◇ Pay attention to the maximum capacity of lifting equipment to be used.
- ◇ Keep the ringbolts with reasonableness.

## 6. HYDRAULIC CIRCUIT & ELECTRIC PRINCIPLE DIAGRAM

See Figure 1 & Figure 2.



**Fig. 1** Hydraulic circuit



No	Type	Name	Description	Qty
1	F1 F2	Quick fuse	5A	2
2	VDR1	Voltage dependent resistor	10K/471 10K/821	1
3	R1	Resistor	1.8K/1W	1
4	VD1	Rectifier	RS-2510	1
5	D1 D2 D3 D4 D5 D6 D7	Silicon rectifying diode	IN4007	7
6	C1	Electrolytic condenser	470uF/50V	1
7	KM01	AC contactor	BC-30-10	1
8	KA1 KA2 KA3	Middle relay	SRC-24VDC-SH	2
9	DF01	Electromagnetic valve	DC24V	1
10	TA01	Current transformer	20A	1
11	SB1	Up button	XB2-BA21C	1
12	SB2	Down button	XB2-BA21C	1
13	SB3	Emergency stop button	XB2-ES542C+ZB-BY9101	1
14	SQ1	Up limit switch	D4V-8108Z	1
15	SQ9	Down limit switch	D4V-8108Z	1
16	SQ2	safety switch	D4V-8108Z(Prepared by customer)	2
17	M101	Pump motor		1
18	QF101	Circuit breaker	C45N3P 25A(Prepared by customer)	1
19	LB01	Control power transformer	DF30-110V-460V/0-24V 50VA	1



20	R6	Resistor	100/0.5w	1
21	R4	Resistor	10K/0805	1
22	R5	Resistor	1K/0805	1
23	RW01	Rheostat	50K	1
24	WD01	Stabilovolt tube	3.3V	1
25	C3 C4 C7 C8	Electrolytic condense	10uf/16V-10uf/50V	4
26	IC01	Integrated circuit	LM358	1
27	U04	Integrated circuit	KA7812	1
28	R11	Resistor	300K/0.5W	1
29	R9 R10	Resistor	24K/0805	2
30	R8	Resistor	5.1K/0805	1
31	C5 C6	Electrolytic condense	0.015uf/1000 0.01uf/1000V	2
32	U02	Electric dipole	P521	2

**Fig. 1 Electric Principle Diagram (2 P)**

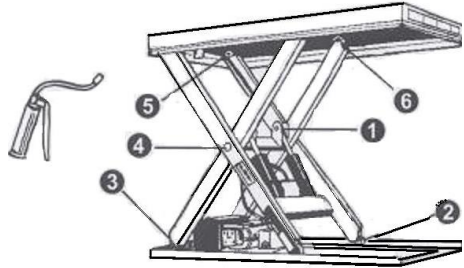
## 7. SERVICE INSTRUCTIONS

- Do routine check of fasteners, packing and oil leaking.
- Do routine check of the function of the lift table.
- Before service the lift table, make sure to turn off the AC power supply.
- After service it is necessary to check the function of the lift table again.
- ONLY qualified personnel can do service work.
- Do routine check of the micro-switches on the safety guard.
- Do routine check of the hydraulic system by listening its noise, touch motor's surface.
- Caution: It is necessary to turn off the AC power supply before touch motor's surface.
- Pay attention to clear or even replace the oil filter after operating for a long time.
- Appropriate lubrication is necessary to make the lift table work easily and have a prolonged service life.
- Following table is recommended to service the lift table periodically.

Content	After every 500 hours' working or every 3 months later	After every 2000 hours' working or every year
Check oil level of oil tank	☆	
Check the cleanliness of oil filter	☆	
Fasten all the connecting parts again	☆	
Check wear and tear of pressure oil pipes	☆	
Check hydraulic cylinder	☆	
Fix main parts tightly again	☆	
Check the function of micro-switches	☆	
Check whole working state of the lift table	☆	
Lubricate all the joints and pivot points	☆	
Check wear and tear of all axial bushes		☆
Replace hydraulic oil for the first time	Accumulated working ten hours'	
Replace hydraulic oil		☆
Check oil leaking		☆
<b>Remark:</b> ☆ stands for proceeding the item.		

## 8. GREASING POINTS

1. Piston rod bearing
2. Lower running wheel
3. Lower arm fixing
4. Arm center
5. Upper arm fixing
6. Upper running wheel



**When greasing the bearings, the Lift Table must not be loaded! When determining oil levels, bear in mind that the tank contains the greatest amount when the lift table is in its lowest position. Hydraulic oil must be treated as dangerous waste!**

## 9. TROUBLE SHOOTING

Note: Before service it is necessary to put down the prop lest the table lowers accidentally.

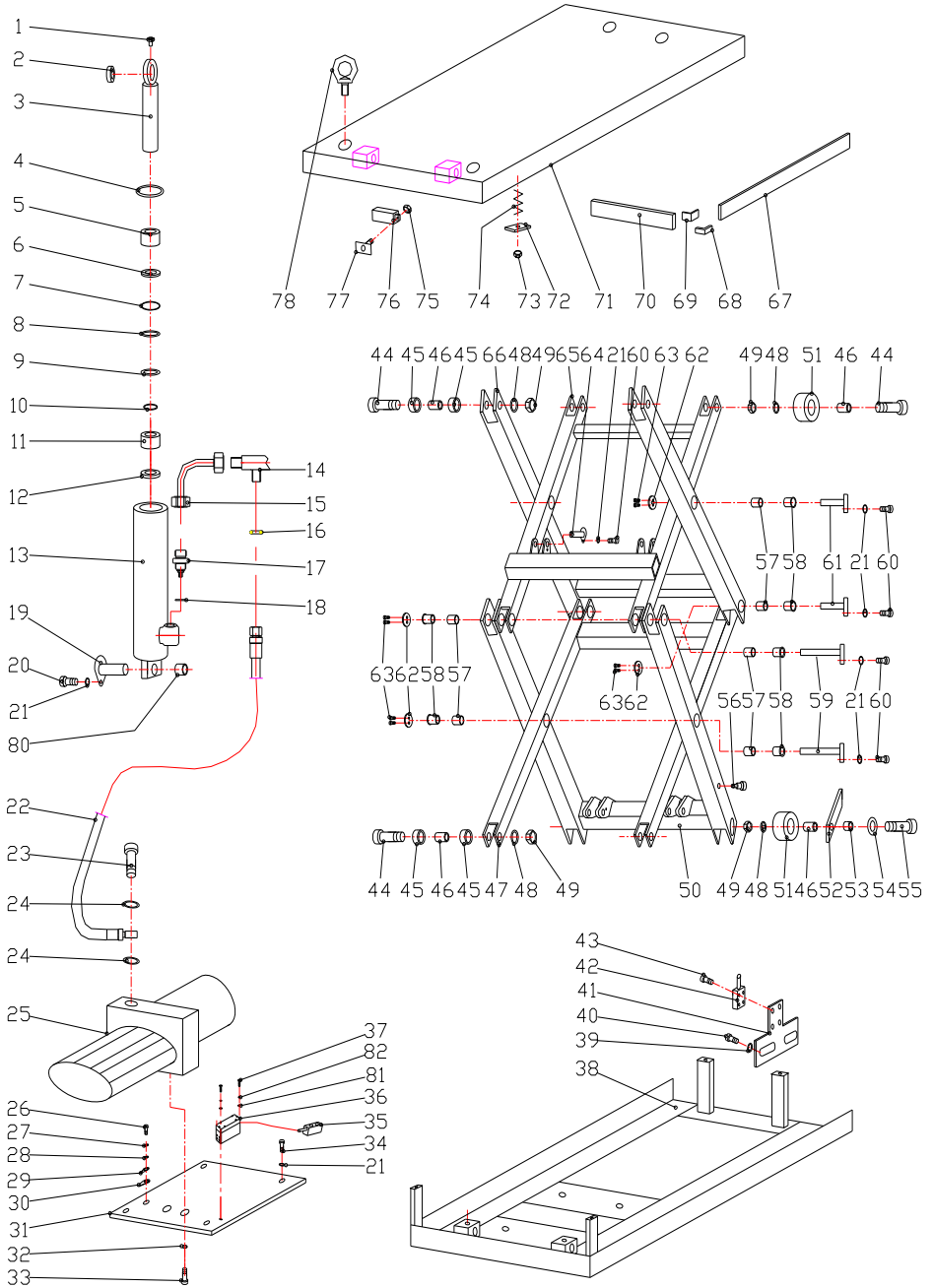
Trouble	Cause	Remedy
Table cannot lift while motor works normally	<ul style="list-style-type: none"> <li>◇ Eyebolt has not been removed</li> <li>◇ AC voltage phrases mistake</li> <li>◇ Electromagnetic dysfunctions</li> <li>◇ The table is overloaded</li> </ul>	<ul style="list-style-type: none"> <li>◇ Remove eyebolt</li> <li>◇ Correct AC voltage phrase</li> <li>◇ Check the function of electromagnetic valve and repair it</li> <li>◇ Remove excessive load</li> </ul>
Table cannot lift and motor does not work	<ul style="list-style-type: none"> <li>◇ Lowering limit switch (if existed) damaged</li> </ul>	<ul style="list-style-type: none"> <li>◇ Replace limit switch</li> </ul>
Table cannot lower	<ul style="list-style-type: none"> <li>◇ Lowering limit switch or micro-switch on safety guard damaged</li> <li>◇ Electromagnetic valve dysfunctions</li> <li>◇ Safety guard works</li> <li>◇ Something wrong with electric circuit board</li> </ul>	<ul style="list-style-type: none"> <li>◇ Replace lowering limit switch or micro-switch.</li> <li>◇ Check the function of electromagnetic valve and repair it</li> <li>◇ Strike the UP button slightly</li> <li>◇ Replace electric circuit board</li> </ul>
Table's legs go over limit position (if existed) while table lowers	<ul style="list-style-type: none"> <li>◇ Internal leaking in electromagnetic valve</li> <li>◇ Packing damaged in hydraulic cylinder</li> </ul>	<ul style="list-style-type: none"> <li>◇ Repair electromagnetic valve and if necessary replace it</li> <li>◇ Check and replace packing</li> </ul>
Table cannot reach the highest position	<ul style="list-style-type: none"> <li>◇ Oil not enough</li> <li>◇ Limit switch damaged</li> </ul>	<ul style="list-style-type: none"> <li>◇ Fill enough oil</li> <li>◇ Check and repair limit switch. If necessary, replace it</li> </ul>

**The brand of oil is ISO HL32(such as Rando oil R&O32、 D.T.E.oil light、 Turbo32)**

## 10. SPECIFICATIONS

Model		293227	293228	293229
Capacity	(lbs)	2200	4400	8800
Lowered Height	(in.)	12	14	15.7
Raised Height	(in.)	70	70	80.7
Platform Length	(in.)	51	51	67
Platform Width	(in.)	32	33	47
Lift Time	(S)	28~38	35~45	40~50
Motor	Horsepower (HP)	2P/1.5KW	2P/1.5KW	3P/2.2KW
	Voltage (V)	110		
Net Weight	(lbs)	541	730	1219

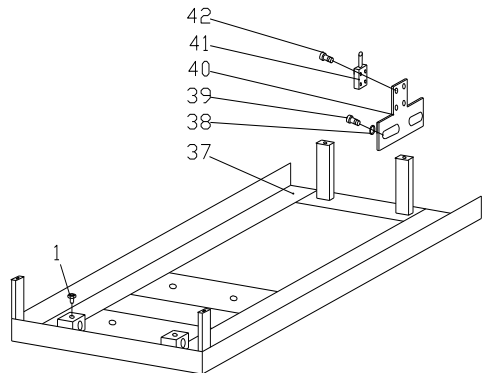
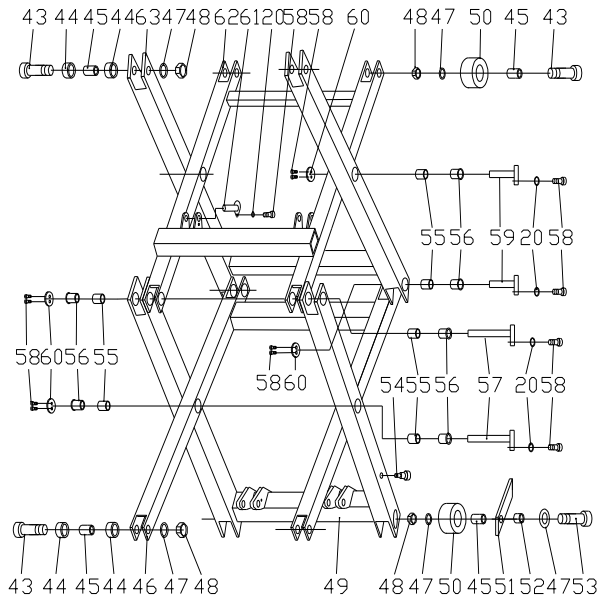
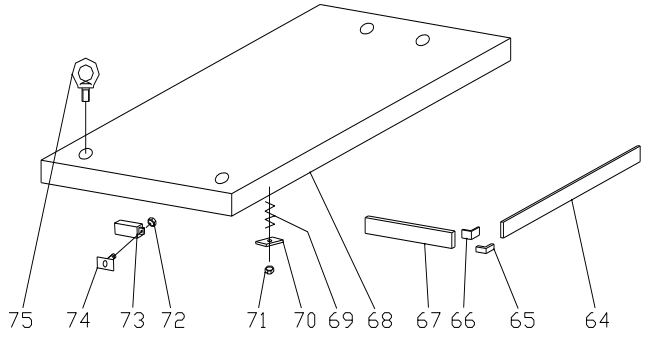
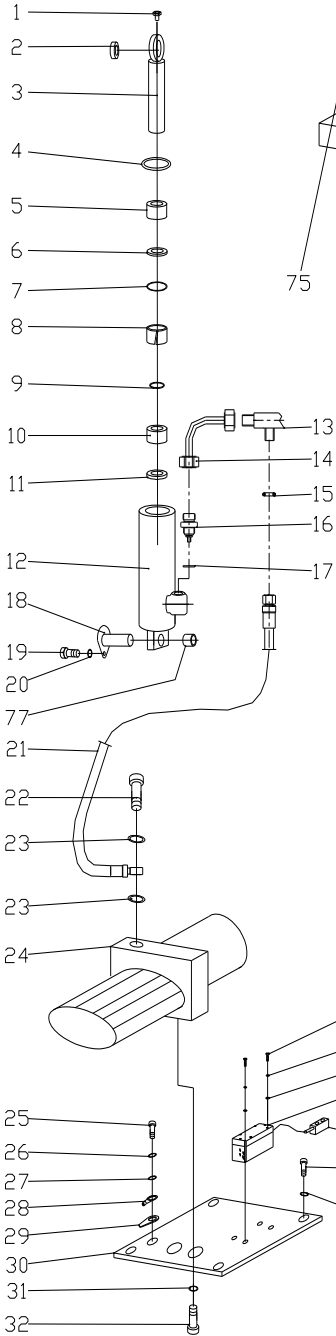
MODEL NO. 293227



## PARTS LIST: MODEL NO. 293227

NO	DESCRIPTION	QTY	NO	DESCRIPTION	QTY
1	Grease cup	2	42	Travel switch	1
2	Bearing GE25ZS	2	43	Bolt M5×10	4
3	Piston rod	2	44	Hexagon bolt M12×60	6
4	Retaining ring $\phi$ 55	2	45	Axle bearing	8
5	Cylinder cover	2	46	Bushing	8
6	Dust cover	2	47	Inside scissor (lower)	1
7	Snap ring $\phi$ 60	2	48	Spring washer 12	8
8	O-ring 55×2.65	2	49	Nut M12	8
9	O-ring 25×2.65	2	50	Outside scissor (lower)	1
10	Snap ring $\phi$ 25	2	51	Roller	4
11	Piston	2	52	Prop	2
12	Composite packing	2	53	Bushing	2
13	Cylinder welding	2	54	Washer 12	2
14	T joint	1	55	Hexagon head bolt M12×70	2
15	Steel tube	2	56	Bolt	2
16	O-ring 6×1.8	1	57	Axle bearing	8
17	Hose break valve	2	58	Axle bearing	8
18	Seal ring 16	2	59	Long pin	2
19	Pin for cylinder	2	60	Hexagon head bolt M8×20	8
20	Hexagon bolt M8×12	2	61	Short pin	4
21	Spring washer 8	14	62	Washer	6
22	High pressure hose	1	63	Hex bolt M6×20	12
23	Joint	1	64	Pin for piston rod	2
24	Composite packing washer 14	2	65	Inside scissor (upper)	1
25	Hydraulic power pack	1	66	Outside scissor (upper)	1
26	Bolt M6×12	1	67	Safety frame I	2
27	Spring washer 6	1	68	Fixed-board	4
28	Washer 6	1	69	Connected-board	4
29	Connector lug $\phi$ 6-4	1	70	Safety frame II	2
30	Indicator $\phi$ 6	1	71	Table	1
31	Pump pack base	1	72	Buffer-board	4
32	Spring washer 10	2	73	Self-locking nut M8	4
33	Hex screw bolt M10×20	2	74	Spring	4
34	Bolt M8×10	4	75	Nut M4	2
35	Control switch	1	76	Safety switch	2
36	Electric box	1	77	Fixed-board	2
37	Bolt M5×10	4	78	Lifting bolt M10	4
38	Chassis	1	79	Lifting bolt M16	1
39	Washer 6	2	80	Axle bearing	2
40	Bolt M6×10	2	81	Washer 5	4
41	Frame of travel switch	1	82	Spring washer 5	4

MODEL NO. 293228

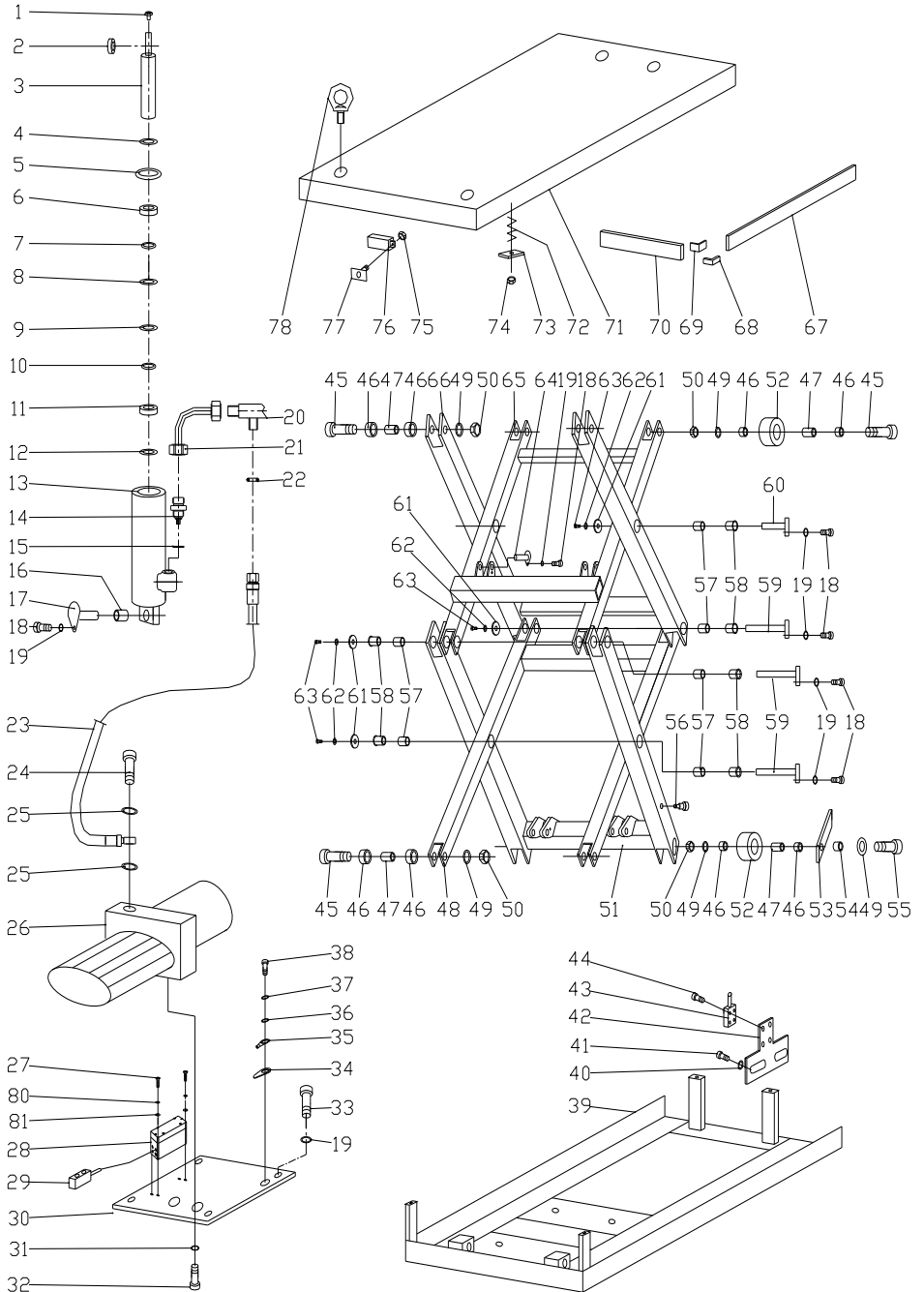


## PARTS LIST: MODEL NO. 293228

NO	DESCRIPTION	QTY	NO	DESCRIPTION	QTY
1	Grease cup	2	41	Travel switch	1
2	Bearing GE30ZS	2	42	Bolt M5×10	4
3	Piston rod	2	43	Bolt	6
4	Retaining ring $\phi$ 60	2	44	Bushing	8
5	Cylinder cover	2	45	Bushing	8
6	Dust cover 48×40×6.5	2	46	Inside scissor (lower)	1
7	Snap ring $\phi$ 65	2	47	Washer 14	10
8	Guide-ring $\delta$ 2×20	2	48	Self-locking nut M14	8
9	Snap ring $\phi$ 40	2	49	Outside scissor (lower)	1
10	Piston	2	50	Roller	4
11	Composite packing	2	51	Prop	2
12	Cylinder welding	2	52	Bushing	2
13	T joint	1	53	Bolt	2
14	Steel tube	2	54	Bolt	2
15	O-ring 6×1.8	1	55	Axle bearing	8
16	Hose break valve	2	56	Axle bearing	8
17	Seal ring 16	2	57	Long pin	2
18	Pin for cylinder	2	58	Hexagon head bolt M8×20	20
19	Hexagon bolt M8×12	2	59	Short pin	4
20	Spring washer 8	26	60	Washer	6
21	High pressure hose	1	61	Pin for piston rod	2
22	Joint	1	62	Inside scissor (upper)	1
23	Composite packing washer 14	2	63	Outside scissor (upper)	1
24	Hydraulic power pack	1	64	Safety frame I	2
25	Bolt M6×12	1	65	Fixed-board	4
26	Spring washer 6	1	66	Connected-board	4
27	Washer 6	1	67	Safety frame II	2
28	Connector lug $\phi$ 6-4	1	68	Table	1
29	Indicator $\phi$ 6	1	69	Spring	4
30	Pump pack base	1	70	Buffer-board	4
31	Spring washer 10	2	71	Self-locking nut M8	4
32	Hex screw bolt M10×20	2	72	Nut M4	2
33	Bolt M8×10	4	73	Safety switch	2
34	Control switch	1	74	Fixed-board	2
35	Bolt M5×10	4	75	Lifting bolt M10	4
36	Electric box	1	76	Lifting bolt M16	1
37	Chassis	1	77	Axle bearing	2
38	Washer 6	2	78	Washer 5	4
39	Bolt M6×10	2	79	Spring washer 5	4
40	Frame of travel switch	1			



MODEL NO. 293229



## PARTS LIST: MODEL NO. 293229

NO	DESCRIPTION	QTY	NO	DESCRIPTION	QTY
1.	Grease cup M6	2	42	Frame of travel switch	1
2.	Bearing GE40ET	2	43	Travel switch	1
3.	Piston rod	2	44	Bolt M5×10	4
4.	Seal cover 52×40×7	2	45	Bolt	6
5.	Retaining ring φ 75	2	46	Bushing φ 34× φ 30×20	16
6.	Cylinder cover	2	47	Bushing	8
7.	O-ring 40×2.65	2	48	Inside scissor (lower)	1
8.	Snap ring φ 80	2	49	Washer 18	10
9.	O-ring 75×2.65	2	50	Lock-nut M18	8
10.	Snap ring φ 40	2	51	Outside scissor (lower)	1
11.	Piston	2	52	Roller	4
12.	Seal ring 80×60×22.3	2	53	Prop	2
13.	Cylinder	2	54	Bushing	2
14.	Hose break valve	2	55	Bolt	2
15.	Seal ring 16	2	56	Bolt	2
16.	Bushing φ 34× φ 30×25	2	57	Bushing φ 50× φ 45×20	8
17.	Pin	2	58	Bushing φ 50× φ 45×50	8
18.	Hex bolt M8×20	9	59	Pin	3
19.	Spring washer 8	13	60	Pin	2
20.	T joint	1	61	Washer	5
21.	Steel tube	2	62	Spring washer 12	5
22.	O-ring 6×1.8	1	63	Hex bolt M12×20	5
23.	High pressure hose	1	64	Pin	2
24.	Joint	1	65	Inside scissor (upper)	1
25.	Seal ring 18	2	66	Outside scissor (upper)	1
26.	Hydraulic power pack	1	67	Safety frame I	2
27.	Bolt M5×10	4	68	Fixed-board	4
28.	Electric box	1	69	Connected-board	4
29	Control switch	1	70	Safety frame II	2
30	Pump pack base	1	71	Table	1
31	Spring washer 10	2	72	Spring	6
32	Hex bolt M10×20	2	73	Buffer-board	6
33	Bolt M8×12	4	74	Lock-nut M8	6
34	Indicator φ 6	1	75	Nut M4	4
35	Connector lug φ 6-4	1	76	Safety switch	2
36	Washer 6	1	77	Fixed-board	4
37	Spring washer 6	1	78	Lifting bolt M10	4
38	Bolt M6×12	1	79	Lifting bolt M16	1
39	Chassis	1	80	Spring washer 5	4
40	Washer 6	2	81	Washer 5	4
41	Bolt M6×10	2			