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## I. PRODUCT FEATURES AND SPECIFICATIONS

### 4-POST MODEL W-14 / W-14A FEATURES

- · Electric-air control operation system.
- · Mechanical self-lock and air-drived safety release.
- · Electrical hydraulic power system, cable-drived.
- · Sand finish platform
- · Adjustable platform and adjustable safety lock ladders.
- · Optional Jack: With hand pump/Air-operated hydraulic pump/Controlled by power unit.



Fig. 1

#### MODEL W-14 / W-14A SPECIFICATIONS

Model	Lifting Capacity	Lifting Height	Lifting Time	Overall Length (Inc. Ramps)	Overall Length (No Ramps)	Overall Width	Width Between Columns	Gross Weight	Motor
W-14 / W-14A	6.5T	1865mm	405	6541mm	5500mm	3324mm	2946mm	1245 Kg	
	W-14A	14,000 lbs	73 1/2″	005	257 1/2″	216 1/2″	130 7/8″	116″	2740 lbs

- II. INSTALLATION REQUIREMENT
- A. TOOLS REQUIRED
  - ✓ Rotary Hammer Drill (19)



✓ Hammer



✓ Level Bar



✓ English Spanner (12")



✓ Ratchet Spanner With Socket (28<sup>#</sup>)



✓ Wrench set
(10<sup>#</sup>, 12<sup>#</sup>, 13<sup>#</sup>, 14<sup>#</sup>, 17<sup>#</sup>, 19<sup>#</sup>, 24<sup>#</sup>, 30<sup>#</sup>)



✓ Carpenter's Chalk



- ✓ Screw Sets
- ✓ Tape Measure (7.5m)



✓ Pliers



✓ Socket Head Wrench (3<sup>#</sup>, 5<sup>#</sup>, 6<sup>#</sup>)



✓ Lock Wrench



## B. SPECIFICATIONS OF CONCRETE (See Fig. 3)

Specifications of concrete must be adhered to the specification as following. Failure to do so may result in lift and/or vehicle falling.

- 1. Concrete must be thickness 4" (100mm) minimum and without reinforcing steel bars, and must be dried totally before the installation.
- Concrete must be in good condition and must be of test strength 3,000psi (210kg/cm<sup>2</sup>) minimum.
- 3. Floors must be level and no cracks.



Fig. 3

## C. AIR SUPPLY

D. POWER SUPPLY

The electrical source must be 3KW minimum. The source cable size must be 2.5mm<sup>2</sup> and in good condition of contacting with floor.

## III. STEPS OF INSTALLATION

A. Location of installation

Check and insure the installation location (concrete, layout, space size etc.) is suitable for lift installation.

- B. Check the parts before assembly
- 1. Packaged lift and hydraulic power unit (See Fig. 4).



#### Fig. 4

2. Open the outer packing carefully (See Fig. 5).



3. Take off the drive-thru ramps and columns (See Fig. 6).



Fig. 6

- 4. Loose the screws of the upper package stand, take off the off side platform, take out the parts inside the power side platform, than remove the package stand.
- 5. Move aside the parts and check the parts according to the shipment parts list (See Fig. 7).



6. Open the carton of parts and check the parts iscording to the parts box list (See Fig. 8).



Fig. 8

7. Check the parts of the parts bag according to the parts bag list (See Fig. 9).



## Fig. 9

C. Use a carpenter's chalk line to establish installation layout as per Table 1Make sure the size is right and base is flat (see Fig. 10).Note: Reserve space front and behind the installation site.



Fig. 10

MODEL	А	В	С
W-14 / W-14A	5500mm	3324mm	6426mm
	216 1/2″	130 7/8″	253″

Table 1

D. Install cross beams (See Fig. 11, Fig. 12).



- E. Fix the anchor bolts
- 1. Prepare the Anchor Bolts (See Fig. 13).

Fig. 13



2. Using the prescribed rotary hammer drill, and drill all the anchor holes and install

the anchor bolts. Do not tighten the anchor bolts (See Fig. 14). Note: Anchor bolts driven into the ground at least 3.5" (90mm)



- F. Install the safety ladders
- Take off the pulley safety cover and unscrew the four upper nuts of the safety ladders, and then adjust the four lower nuts to be at the same position. Withdraw the Slack-cable safety lock of the cross-beam to insert the safety ladder in, raise the safety ladder, and screw the upper nuts (See Fig. 15).



2. Install safety ladders (See Fig. 16).



the hole of the top plate, then tighten the two nuts

G. Put the cross beams at the same height (See Fig. 17).



H. Install powerside platform.

1. Put the power side platform upon the cross beams by fork lift or manual, offset the cross beams to the outside till the pulleys of both platforms can set up into the cross beams (See Fig.18), Install the powerside platform and screw up the bolts (See Fig.19).



I. Assembly offside platform and slider block, check the plumbness of columns with level, adjusting with the shims if not, and then tighten the anchor bolts (See Fig. 20).



Install the slider block

Note: The tightening torque for the anchor bolt is 90 Ft. Lbs.(117N.m) Fig. 20

- J. Install cables (See Fig. 21).
- 1. Pass through the cables from the platform to the columns according to the number of the cables.





2. The cable pass through cross beam and top plate of column and be screwed with cable nuts (See Fig. 22).



Fig. 22

3. After cables pass through the pulleys under the platform, installing the Slack-cable bolts No.19 (See Fig. 22).



Fig. 23

K. Install oil-water separator, air solenoid valve, control box and power unit





2. Optional: For Manual control air-operated four post lift (See Fig. 25).



Fig. 25

L. Install hydraulic system (See Fig. 26).

Note: Oil hoses connected to oil cylinder must be passed above the cable, upturn oil input port as photo to avoid the oil hose scratched by cable.





#### Fig. 26

- M. Install air-line system
- 1. Connecting front and rear cross beam using  $\phi 6 \times \phi 4$  black air line (See Fig. 27).
- 2. Connecting air solenoid valve using  $\[ \] \phi 6 \times \[ \] \phi 4$  black air line (See Fig. 27).





3. Connecting oil-water separator and air solenoid valve using air line (See Fig. 28).



Fig. 28

4. Connecting air inlet (Air supply pressure 5kg/cm<sup>2</sup>- 8kg/cm<sup>2</sup>), adjusting the air pressure of oil-water separator to 0.4 - 0.6MPa (See Fig. 29).



Fig. 29



Fig. 30

2. Install lower alarm limit switch (See Fig. 31)



Fig. 31



3. Connecting wire of limit switch on cross beam to control box (See Fig. 32)

Fig. 32

- 4. Connecting wire with control box (See Fig. 33).
  - Note: 1) Specification of wire of limit switch and Air solenoid value is  $2 \times 1^2$  (two wires cable, wire size 1 mm<sup>2</sup>)
    - 2) Wire cable for power source and motor are  $4 \times 2.5^2$  (Four wires cable, wire size 2.5 mm<sup>2</sup>)
    - 3) Using white bobbin to wind around wire and air line.



Fig. 33

5. Adjusting the current rating of thermal relay in control box according to the different configurations of hydraulic power unit. In general, the electric current of thermal relay should equal or larger than that of motor. The following table shows rated current regulation of thermal relay in case of different hydraulic power unit.

Hydraulic power unit		PEAK				
	220V 3HP					
Rated current of thermal relay	16A					



Fig. 34

- 7. 220V Wire connection and circuit diagram
- 7.1 Wire Connection diagram in the control box (See Fig. 38).



7.2 220V Wire connection of hydraulic power unit (See Fig. 39).Motor wire (M1、M2) separately connected to two wires in the motor



7.3 Circuit diagram (See Fig. 40)



Fig. 40

Circuit component

		<u> </u>	a 101 11	1			<u> </u>	<b>a</b> 101 11
Item	Name	Code	Specification		Item	Name	Code	Specification
1	Power switch	QS	380V AC		10	Duch button	Down1	Triplex
2	Fuse	FU <sub>1</sub>	25A		10	Push button	Down2	Duplex
3	Fuse	FU <sub>2</sub>	3A		11	Push button	LOCK	Single
4	AC contactor	KM	24V AC		12	Motor	М	Single phase
5	Time relay	КТ	24V AC		13	Transformer	TC	24V AC
6	Limit switch	SQ <sub>(1~6)</sub>	10A		14	Thermal relay	FR	17A~24A
7	Air solenoid valve	Y2	24V AC		15	Intermediate relay	KA	24V AC
8	Hydraulic solenoid valve	Y1	24V AC		16	Alarm	Н	24V AC
9	Push button	UP	Duplex					

O. Install spring and safety cover of cross beam (See Fig. 41).



P. Install Drive-in ramp, Tire stop plate, Platform lock plates (See Fig. 42).



The lock plates are used to prevent the turning & slipping of offside platform, Using Hex bolt M8 $\times$ 20 for the connection.

Fig. 42

## IV. EXPLODED VIEW







CYLINDERS



#### CONTROL BOX





#### PEAK ELECTRIC POWER UNIT



Fig. 47

Illustration of hydraulic valve for PEAK power unit

a. PEAK electric power unit, 220V/60HZ, Single phase (See Fig. 48)



V. TEST RUN

- 1. Fill the reservoir with approximately 12L hydraulic oil (Note: In consideration of power unit's durability, please use <u>Hydraulic Oil 46#</u>).
- Press button <u>up</u>↑, the cables will be strained. Check whether the Cables match the pulley. Make sure the cables are not across.
- 3. Press self-lock button Lock , the cross-beam will be locked to the safety ladders, and then adjust the platforms to be level by adjusting the nuts of Safety Ladders.
- 4. Adjust the cable fitting Hex nuts to make platforms and four safety locks work synchronously. You need to run the lift up and down for several times, meanwhile do the synchronous adjustment till the four safety devices can lock and release at the same time.
- Adjust the clearance between the post and the plastic slider of cross-beam to about 2mm, and then tighten the fixing nut of slider.
- 6. Adjust Limit Switch on Cross Beam:
- 6.1 Press button UP 1, the cables will be strained. Check whether the distance between lever of limit switch on cross beam and the slack-cable safety lock is 5mm. If not, please adjust the distance correctly (See Fig. 50).
- 6.2 Press self-lock button Lock , the cross-beam will be locked to the safety ladders, and the cables are released, check whether lever of limit switch on cross beam touch the slack-cable safety lock and whether limit switch is open completely. If not be opened, then adjust the lever of limit switch till the slack-cable safety lock can completely open the switch (See Fig. 51).



7. After finishing the above adjustment, test running the lift with load. Run the lift with platforms in low position first, make sure the platforms can rise and lower synchronously and the safety device can lock and release synchronously. And then test run the lift to the top completely. If there is anything improper, repeat the above adjustment.

Circuit Diagram of Hydraulic System



Fig. 52

## VI. OPERATION INSTRUCTIONS

To lift vehicle

- 1. Keep clean of environment near the lift;
- 2. Drive vehicle to the Platform and put on the brake;
- 3. Turn on the power and press the button UP, raise the lift to the working position; Note: make sure the vehicle is steady when the lift is raised.
- 4. Press the button LOCK, lock the lift in the safety position. Make sure the Safety device is locked at the same height.

To lower vehicle

- 1. Be sure the clearance of around and under the lift, only leaving operator in lift area;
- 2. Press the button DOWN , the lift will be raised for 3-5 seconds, and then the safety device would be released and the lift starts lowering automatically;
- 3. The lift will be stopped automatically when coming down to about 300 mm to ground, check around and make sure it is safety and no any obstacle under the lift, then push both DOWN buttons (one on the side) at the same time, the lift would be lowered with the tone alarm;
- 4. Drive away the vehicle when the lift is lowered to the lowest position;
- 5. Turn off the power.



Fig. 53

## VII. MAINTENANCE SCHEDULE

## Monthly:

- 1. Re-torque the anchor bolts to 90 Ft. Lbs. (117 Nm)
- 2. Lubricate cable with lubricant;
- 3. Check all cable connection, bolts and pins to insure proper mounting;
- 4. Make a visual inspection of all hydraulic hoses/lines for possible wear or leakage;
- 5. Lubricate all Rollers, Safety devices with 90wt. gear oil or equivalent.
- Note: All anchor bolts should take full torque. If any of the bolts does not function for any reason, DO NOT use the lift until the bolt has been replaced.

Every six months:

- 1. Make a visual inspection of all moving parts for possible wear, interference or damage.
- 2. Check and adjust as necessary, equalizer tension to insure level lifting.
- 3. Check columns for plumbness.

# VIII. TROUBLE SHOOTING

TROUBLE	CAUSE	REMEDY	
	1. Button does not work	1.Replace button	
Motor does	2. Wiring connections are not in good	2. Repair all wiring connections	
	condition	3.Repair or replace motor	
Motor does	3. Motor burned out	4.Replace AC contactor	
not run	4. AC contactor burned out	5.Replace	
	5. Height limit switch is damaged		
	1.Motor runs in reverse rotation	1.Reverse two power wire	
Motor runs	2. Hydraulic solenoid valve in damage	2.Repair or replace	
but the lift is	3.Gear pump in damage	3.Repair or replace	
but the lift is	4.Relief valve or check valve in damage	4.Repair or replace	
not raised	5.Low oil level	5.Fill tank	
	1.Solenoid valve out of work		
Lift does not	2 Relief valve or check valve leakage.	Repair or replace	
stay up	3.Cylinder or fittings leaks		
	1.Oil line is jammed	1.Clean the oil line	
	2.Motor running on low voltage	2.Check electrical system	
Lift raises	3. Oil mixed with Air	3. Fill tank	
too slow	4.Pump leaks	4.Replace Pump	
	5.Overload lifting	5.Check load	
	1.Air solenoid valve damaged	1.Replace or repair	
Lift can not	2. Hydraulic solenoid valve damaged	2.Replace or repair	
	3.Air Cylinder damaged	3.Replace the cylinder	
IOWEI	4. Air –line leaked	4.Check the air-line	

Item	Part#	Description	QTY.	Note
(See Fig.	.43, Fig.16, Fig	18-Fig.20,Fig.22, Fig.24,Fig.30-Fi	g.32& Fig.4	12)
1	460020	Powerside Column	1	
2	460021	Offside Column	3	
3	460022	Front Cross Beam	1	
4	460023	Rear Cross Beam	1	
5	209059	Anchor Bolt	16	
6	410022	Safety Ladder	4	
7	420175A	Hex Nut	16	
8	460024	Powerside Platform	1	
9	460025	Pulley Shaft Weldment	2	
10	420023A	Washer	12	
11	420024B	Pulley	10	
11A	420132A	Bronze Bush for Pulley	10	
12	209043	Hex Bolt	12	
13	209034	Lock Washer	2	
14	420144	Washer	2	
15	420030	Hex Bolt	8	
16	420137	Lock Washer	8	
17	420029	Washer	8	
18	460026	Offside Platform	1	
19	460027	Hex Bolt	4	
20	420145	Oil-water Separator	1	
21	420146	Straight Fitting for Air Line	1	
22	209009	Cup Head Bolt	6	
23	420076	90 <sup>0</sup> Fitting for Air Line	1	
24	201034	Bleeding Plug	1	
25	420147	Straight Fitting for Air Line	1	
26	420077	Air Solenoid Valve	1	
27	420148	Washer	2	
28	420149	Cup Head Bolt	2	
29	420150	Cover of Air Solenoid Valve	1	
30	420045	Washer	17	
31	420151	Straight Fitting for Air Line	1	
32	420018	Nylok Nut	6	
33	440036	Control Box	1	
34	420153	Cup Head Bolt	9	
202	440033	Electric Power Unit	1	
36	209005	Nylok Nut	14	
37	209004	Rubber Ring	8	
38	209003	Hex Bolt	4	
39	420152	Washer	26	
40	206011	Cup Head Bolt	26	
41	206013	Limit Switch	4	
42	420010A	Fixing Plate For Limit Switch	1	
43	206013 420202	Height limit switch assy. 🔘	1	
44	420203	Fixing Plate For Limit Switch	1	

## IX. PARTS LIST FOR MODEL W-14 / W-14A

Item	Part#	Description	QTY.	Note
45	420204	Wire protective cover	1	
46	420156	Protecting Rubber Ring	1	
47	420004	Pin for Drive-in Ramp	2	
48	420005	Fixing Bolt	4	
49	460028	Drive-in Ramp	2	
50	420031	Tire Stop Plate	2	
51	206013A 420201	Lower limit switch assy. 🔘	1	
52	209066	Hex Nut	4	
55	420007	Platform Lock Plate	4	
56	460029	Fixing Ring For Oil Cylinder	1	
57	460030	Oil Cylinder	1	
58	420013	Cylinder Connecting Plate	1	
59	420014	Hex Nut	1	
60	201005	Split Pin	1	
60A	620065	Shim	20	
Optional	Parts (See Fig	.25)		
61	420159	Straight Fitting For Air Line	1	
62	420160	Fixing plate of Manual Control Valve	1	
63	420161	Nylok Nut	2	
64	209009	Cup Head Bolt	2	
65	420162	Manual Control Valve	1	
66	420163	Straight Fitting For Air Line	1	
67	420148	Washer	2	
68	420164	Cup Head Bolt	2	
203	440035	Manual Power Unit	1	
Parts Fo	r Cable (See Fi	g.21)		
70	460031	No.① Cable	1	
71	460032	No. <sup>2</sup> Cable	1	
72	460033	No.3 Cable	1	
73	460034	No. 4 Cable	1	
Parts Fo	r Hydraulic Sys	stem (See Fig.26)		
74	420166	90 <sup>0</sup> Fitting	1	
75	420119	Straight Fitting For Cylinder	1	
76	460036	Oil Hose	1	
77	420120	Extended Straight Fitting (with Nut)	1	
78	460038	Oil Hose	1	
79	440009	Straight Fitting For Power Unit	1	
80	420095	Straight Fitting	1	
81	440011	Needle Valve	1	
82	420097	90 <sup>0</sup> Fitting	1	
Parts Fo	r Air Line Syste	em (See Fig.27-28)		
83	420124	T-Fitting For Air Line	2	
84	420125	T-Fitting For Air Line	1	
85	420126A	Straight Fitting For Air Line	1	
86	420206	Oil return hose	1	
86A	460013	Black Air Line	1	
87	420167B	Black Air Line	1	

Item	Part#	Description	QTY.	Note
Parts for	Circuit System	n (See Fig.32-33, Fig.24)		
88	420009A	Protecting Plastic Hose	1	
89	420009B	Protecting Plastic Hose	1	
90	420016B	Protecting Plastic Hose	1	
91	420140C	Wire Cable (A)	1	
92	420141C	Wire Cable B	1	
93	420168	White Winding Tape	1	
94	420016A	Wire cable	1	
95	420205	Wire cable	2	
96	460500	Parts box	1	
Parts For	r Cross Beam (	See Fig.44 & Fig.41)		
3-1	460042	Front Cross Beam Assy.	1	
3-2	460043	Pulley Safety Cover	4	
3-3	209009	Cup Head Bolt	8	
3-4	420044	Limit Plate	4	
3-5	420138	Socket Bolt	8	
3-6	420038	Pin	12	
3-7	420037	Snap Ring	24	
3-8	420033	Spring	4	
3-9	420050	Hex Nut	8	
3-10	420049	Split Pin	4	
3-11	420048	Air Cylinder	4	
3-12	420047	Fitting for Air Cylinder	4	
3-13	420046	Split Pin	8	
3-14	420042	Plastic Slider	8	
3-15	209033	Washer	16	
3-16	420043	Socket Bolt	16	
3-17	420175	Slack-cable safety lock (left & right )	2/ea.	
3-18	420171	Pin	8	
3-19	420172	Pin Bush For Slack-cable Safety Lock	8	
3-20	206019	Snap Ring	16	
3-21	209010	Snap Ring	4	
3-22	420035	Tension Pulley	4	
3-23	420174	Spacer	4	
3-24	420041A	Pulley Pin	4	
3-25	420040A	Pulley Bush	4	
Parts For	r Cylinder (See	Fig.45)		
57-1	420059	Dust Ring	1	
57-2	420060	Y- Ring	1	
57-3	460046	Head Cap	1	
57-4	460047	O- Ring	1	
57-5	460048	Bore Weldment	1	
57-6	420064	Piston Rod	1	
57-7	460050	Pin	1	
57-8	460051	Support Ring	1	
57-9	460052	Y- Ring	1	
57-10	460053	Piston	1	

Item	Part#	Description	QTY.	Note
Parts For	r Control Box (	See Fig.46)		
33-1	420069A	Cover Of Control Box	1	
33-2	420071	Button UP	1	
33-3	209099A	Button Lock	1	
33-4	420072	Button Down 1	1	
33-5	420139	Screw	4	
33-6	420074	Power Switch (QS1)	1	
33-7	420085	Fuse Cap	3	
33-8	420086	Fuse (FU1)	3	
33-9	420087	Fuse Base	3	
33-10	420075A	Terminal Group	1	
33-11	420133A	Panel for Installing Element	1	
33-12	420135	Thermal Relay Connector	2	
33-13	420073	Cup Head Bolt	4	
33-14	440034	Thermal Relay (FR)	1	
33-15	420141	Intermediate Relay (KA)	1	
33-16	420176	Fuse Protector (FU2)	1	
33-17	420083	Timer Relay (KT)	1	
33-18	420134	Transformer (TC)	1	
33-19	420084A	24V AC Contactor (KM)	1	
33-20	420142	Button Down 2	1	
33-21	420143	Alarm Lamp (F)	1	
33-22	420088	Fitting For White Wire Cable	6	
Parts For	r PEAK Electric	Power Unit 220V/60HZ/1 Phase	(See Fig.47	')
202-1	440014A	Motor	1	
202-2	440015	Start Capacitor	1	
202-2A	440016	Run Capacitor	1	
202-3	440017	Socket Bolt	4	
202-4	440018	Motor Fix Frame	2	
202-5	209083A	Motor Connecting Shaft	1	
202-6	440019A	Valve Body	1	
202-7	209085A	Relief Valve	1	
202-8	209113	Throttle Valve	1	
202-9	209086A	Lock Washer	4	
202-10	209087A	Socket Bolt	4	
202-11	440020	Inlet Pipe	1	
202-12	209089A	O-ring	1	
202-13	209090A	Filter	1	
202-14	440021	Hex Bolt	4	
202-15	440022	Reservoir	1	
202-16	209109	Protective Ring	2	
202-17	440030	Cover of Motor Terminal Box	1	
202-18	680005	Cup Head Bolt	4	
202-19	209110A	Oil Return Port	1	
202-20	209100A	Oil Outlet	1	
202-21	209162A	Hydraulic Solenoid Valve Nut	1	
202-22	209115A	Hydraulic Solenoid Valve Coil	1	

Item	Part#	Description	QTY.	Note
202-23	209116A	Hydraulic Solenoid Valve Body	1	
202-24	209117A	Pressure Adjusting Bar	1	
202-25	209105A	Check Valve	1	
202-26	440025A	Gear Pump	1	
202-27	440026	Oil Return Pipe	1	
202-28	440027	Filler Cap	1	
				1