LIFT KING

Model 165948BLK

Turned Two-post Hydraulic Lift

(Clear Floor type)

Operation Manual

(2nd edition)

Manufactured exclusively for Liftking Hoists

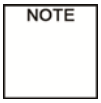
May 2015

CONTENT

1. Safety Information

1.1 Note, Caution and Warning

This document uses the following conventions—Note, Caution and Warning – to alert you to special instructions, tips, or hazards for a given procedure. Please familiarize yourself with the conventions described below.



Indicates important information that requires special attention, such as a procedure for a specific vehicle, or tips on operating the equipment.

Indicates the potential for damage to equipment, accessories, or the vehicle unless you follow the instructions or procedure exactly.

Indicates the potential for property damage, personal injury, or death due to hazards associated with the equipment, vehicle, or environment. Do no perform any procedure until you have read and understood the warning instructions.

1.2 Important Information

1. Read this manual thoroughly before installing, operating, or maintaining this lift.
2. This lift is designed for indoor use only, and should not be installed in a pit or depression.
3. The floor on which the lift is to be installed must be **200 mm minimum thickness concrete, with a minimum compressive strength of 3000 psi, and reinforced with steel bar.**
4. The lifts have specific electrical requirements as described in the Installation Instructions section of this manual.
5. This lift has a minimum ceiling height requirement as described in the Installation Instructions section of this manual.
6. Failure by the owner to provide the **recommended shelter, mounting surface, electrical supply, and ceiling height** could result in unsatisfactory lift performance, property damage, or personal injury.
7. The operation of the lift is permitted by authorized person only.

1.3 Safety Instructions

1. **Do not** raise a vehicle on the lift until the installation is completed as described in this manual.
2. Technicians should be trained to use and care for the lift by familiarizing themselves with the publications listed above. The lift should **never be operated by an untrained person.**
3. Always position the arms and adapters properly out of the way before pulling the vehicle into, or out of the bay. Failure to do so could damage the vehicle and/or the lift.
4. **Do not overload the lift.** The capacity of the lift is shown on cover of this document and on the lift's serial number tag
5. Positioning the vehicle is very important. Only trained technicians should position the vehicle on the lift. **Never allow anyone to stand in the path of the vehicle as it is being positioned and never raise vehicle with passengers inside.**
6. Position the arms to the vehicle manufacturer's recommended pickup points. Raise the lift until contact is made with the vehicle. Make sure that the arms have properly engaged the vehicle before raising the lift to a working height.
7. Keep everyone clear of the lift when the lift is moving, the locking mechanism is disengaged, or the vehicle is in danger of falling.
8. Unauthorized personnel should never be in the shop area when the lift is in use.
9. Inspect the lift daily. **The lift should never be operated if it has damaged components, or is malfunctioning.** Only qualified technicians should service the lift. **Replace damaged components with manufacturer's parts, or equivalent.**
10. **Keep the area around the lift clear of obstacles.**
11. **Never override the self-returning lift controls.**
12. Use safety stands when removing or installing heavy vehicle components.
13. Avoid excessive rocking of the vehicle when it is on the lift.
14. To reduce the risk of personal injury, keep hair, loose clothing, fingers, and all body parts away from moving parts.
15. To reduce the risk of electric shock, **do not** use the lift when wet, do not expose the lift to rain.
16. To reduce the risk of fire, **do not** operate equipment in the vicinity of open containers of flammable liquids (gasoline).
17. Use the lift only as described in this manual, **use only manufacturer's recommended attachments.**

18. **Unusual vehicles, such as limousines, RV's, and long wheelbase vehicles, may not be suitable for lifting on this equipment.** If necessary, consult with the manufacturer or the manufacturer's representative.

19. The troubleshooting and maintenance procedures described in this manual can be done by the lift's owner/employer. Any other procedure should only be performed by trained lift service personnel. **These restricted procedures include, but are not limited to, the following: cylinder replacement, carriage and safety latch replacement, column replacement, overhead structure replacement.**

20. Anyone who will be in the vicinity of the lift when it is in use should familiarize themselves with following Caution, Warning, and Safety related decals supplied with this lift, and replace them if the are illegible or missing.

Disclaimers

The information contained in this manual was considered accurate at the time of printing and is subject to change without notification. Any corrections should be directed to KERNEL

2. Technical Manual

2.1 Product Description

The 165948M 2-post hydraulic lift is a surface mounted, frame contact lift incorporating the latest safety technologies. Designed and manufactured for a lifting capacity of 4,000kg, is fully capable for lifting vehicles, vans and trucks and safely holding them in an elevated position.

The 165948M 2-post hydraulic lift consists of a fixed structural unit (base and posts), the mobile unit (carriage and arms), the hydraulic power system and safety devices.

2.2 Technical Data

Capacity	4,500 kg / 10000lbs
Lifting Height	1,630mm / 64 3/16”
Height Overall	3,692 mm / 145 3/8”
Width Overall	3,985 mm / 156 7/8”
Front Arm Reach, Max.	1,259mm / 49 9/16”
Front Arm Reach, Min.	635 mm / 25”
Rear Arm Reach, Max.	1,840 mm / 72 7/16”
Rear Arm Reach, Min.	860 mm / 33 7/8”
Power Unit	220V, 60Hz, single phase. (16A, 2.2KW)
Ambient Air Temperature	+5℃ ~ +40℃
Ambient Air Humidity	30% ~ 95%
Altitude	below 1,000 m above sea level
Storage Temperature	-25℃ ~ +55℃

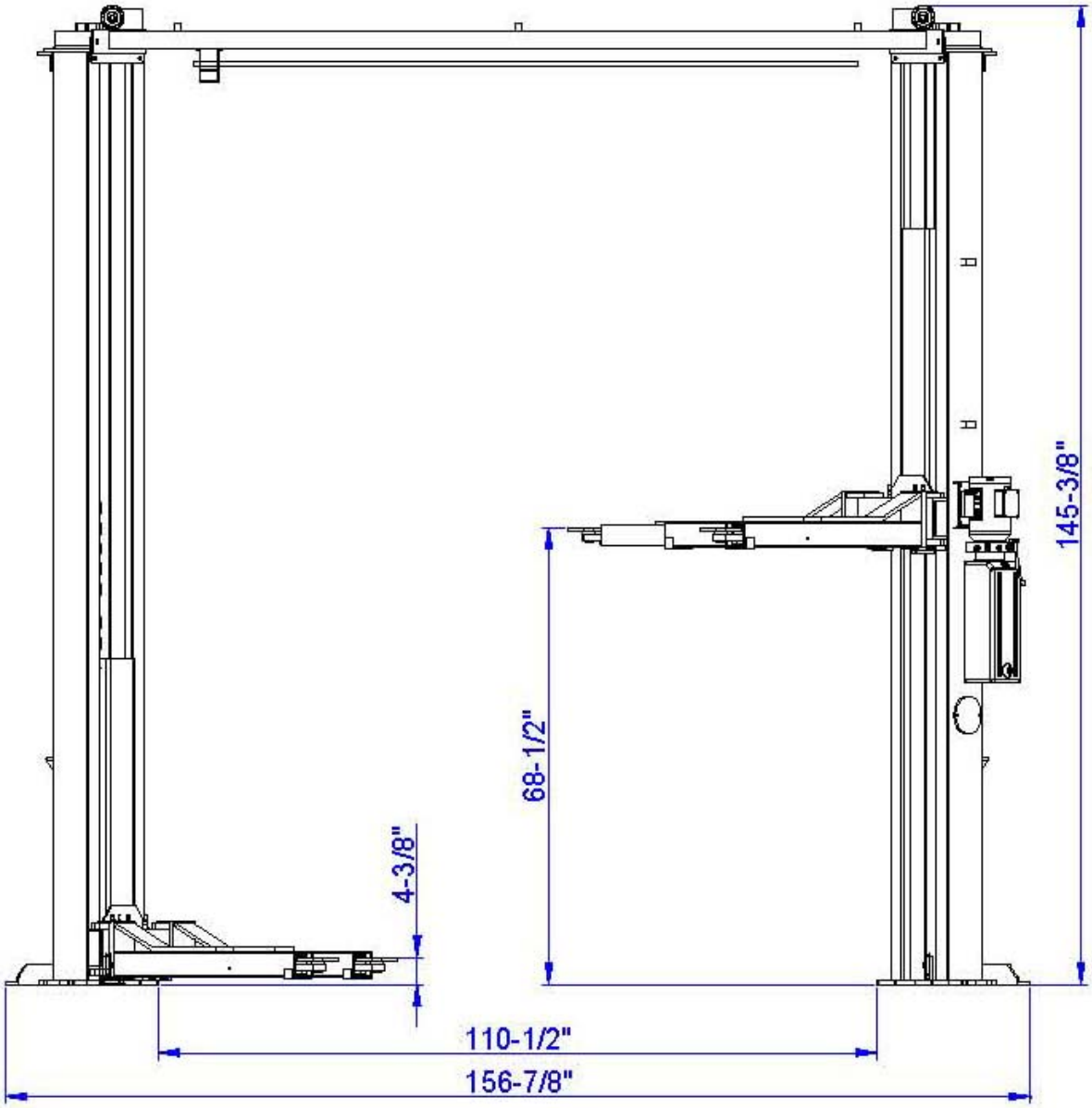


Fig. 1 – Front View Spec.

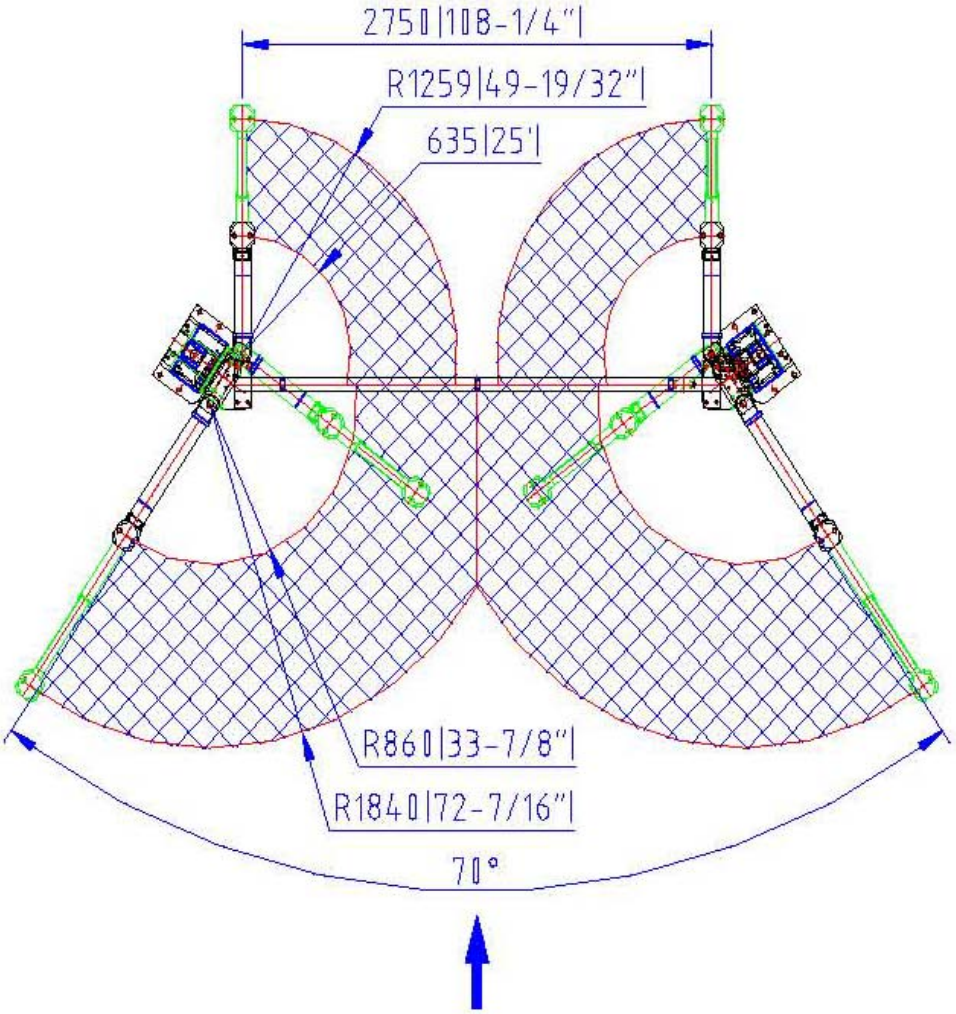


Fig.2 –Top View Spec.

3. Installation

3.1. Site Selection

The hydraulic lift is designed only for indoor use. Application in a room with explosion hazard is not permitted. Setting in a wet place, a car wash center for instance, is forbidden.

3.2. Surface Condition

The 2-post hydraulic lift should be installed on level ground. The foundation must be 200mm minimum thickness concrete, with a minimum compressive strength of 3,000 psi, reinforced with steel bar.

Failure in accomplish the foundation requirement may cause the lift instability or personal injury. Installing on asphalt, soft clay floor or near the expansion gap is prohibited.

3.3. Tools Required

Tools requires for installation:

- Concrete hammer drill.
- Open end wrench
- Torque wrench
- Deep socket or wrench
- Socket
- Level (450 mm minimum length)
- Vise grips
- Tape measure
- Funnel
- Hoist or Forklift
- Two 4 meter step ladders
- 6.35 mm drive ratchet with 8 mm socket

3.4. Installation Procedure

DO NOT USE THESE LINES TO POSITION THE COLUMNS, FOLLOW THE INSTRUCTIONS IN THIS MANUAL.

1. **Read this manual thoroughly before installing, operating, or maintaining this lift.**
2. **Site Evaluation and Lift Location:**

   A. Always use an architect's plan when provided. Before unpacking the lift entirely, determine if the site is adequate for the lift model being installed see figures 1 & 2 for typical bay layout and ceiling height requirements.

   B. Snap chalk lines to identify the lift's centerline (Fig.3).

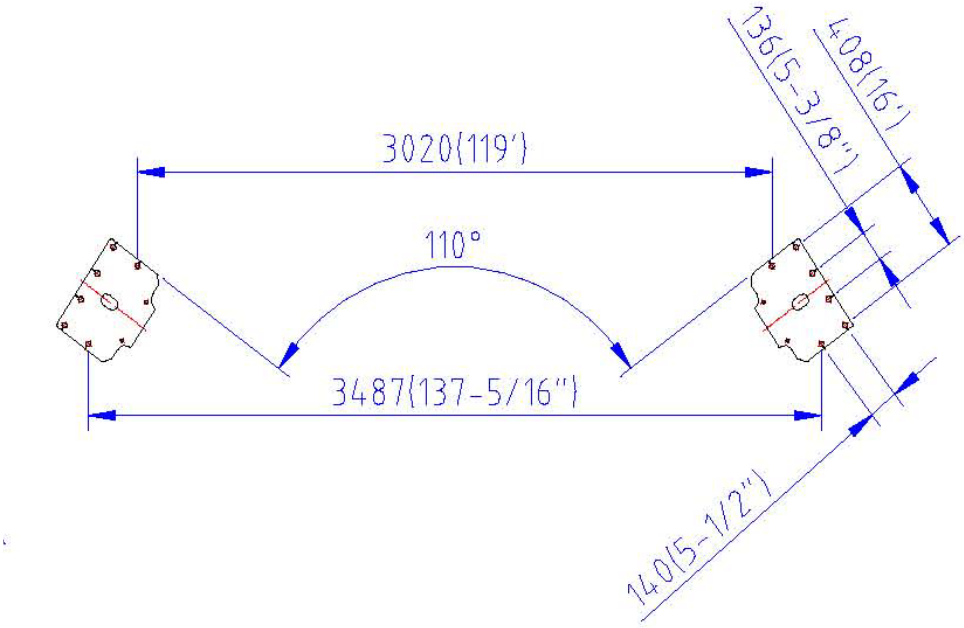


Fig. 3

Snap a chalk line parallel to the lift's centerline, **spaced 230 mm** toward the rear of the bay. This line represents the back edge of the column bases.

C. Snap chalk lines parallel to the lift's centerline **spaces 1,750 mm to the left and 1,750 mm to the right.** These lines represent the APPROXIMATE outside edges of the column bases.

3. **Unpack the lift. Remove the swing arms, bolt box, power unit box, and overhead beam.**

   A. Save all packing hardware, as these components are necessary to complete the installation.

   B. **Remove the bolts** from the uprights which hold the two columns together.

   C. **Remove the upper column. Do not** stand the columns up now but lay the columns with their flat backs on the floor.

4. **Attach the cylinder base and the cross beam base on the column using bolts, washers and nuts provided as shown in figure 4a &4b.**

Fig. 4a

Fig. 4b

Fig. 5a

5. **Install hydraulic cylinders.**

   A. Install the cylinder to the cylinder base with **cylinder pin and the bolts, bushings (spacers), washers, and nylon nuts, as in figure 5.**

   B. The hose connecting port near the other end of the cylinder should be positioned pointing to the column's opening. (Fig. 5b)

   C. Bolt the cylinder rod with the carriage. （Fig. 5c）

Fig. 5b

Fig. 5c

6. **Set up the columns at e desired place facing each other. Then lift up the carriage to first latch locking height (about one foot high). (Fig. 6)**

Attention: (1) the main column is suggested at the left hand with vehicle head forward.
(2) the distance between column to wall is suggested to be at least 2 feet for safe.

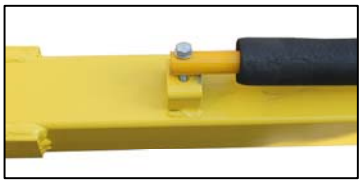


Fig. 7a

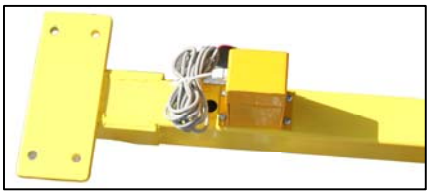


Fig. 7b

Fig. 6

7. **Assemble the ceiling safety device to the overhead cross beam. (Fig. 7a, 7b & 7c) Then Install the beam on the column tops. (Fig. 7d)**

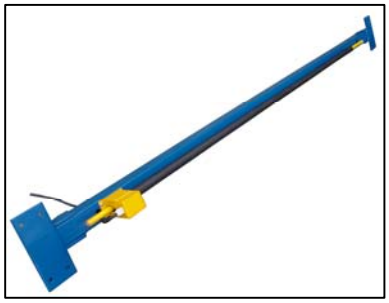


Fig. 7c

Fig. 7d

8. **Mount the cable seat with roller on the beam base at the top of the column. (Fig. 8)**

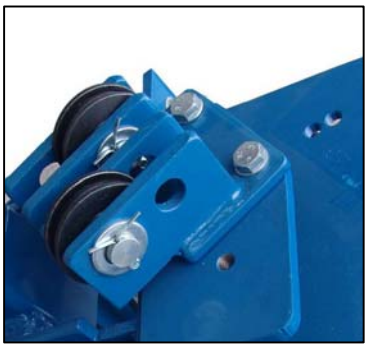


Fig.8a

Fig. 8b

9. Rout the balancing cables.

Rout the balancing steel cables according to Fig. 9a, 9b, 9c, 9d & 9e from carriage to carriage through the cable rollers.

Fig. 9a

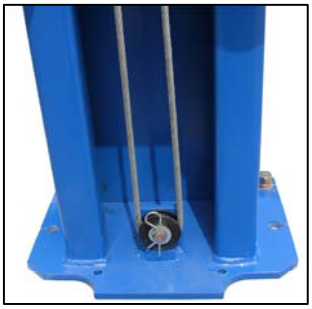


Fig. 9b

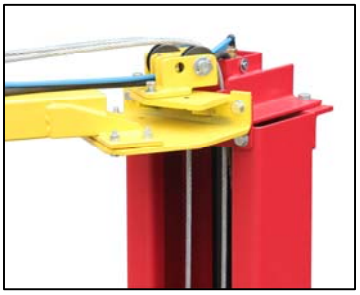


Fig. 9c

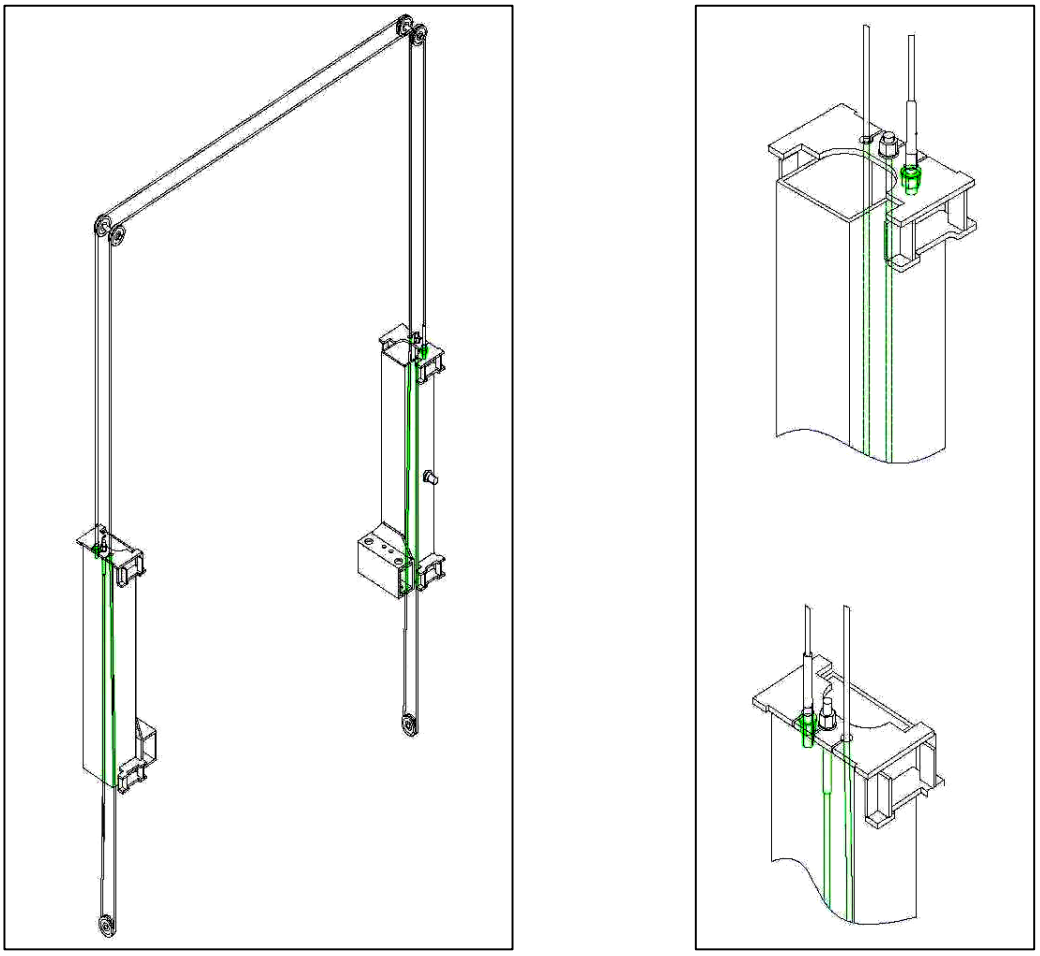


Fig. 9d & 9e cable routing

10. Install the fittings on cylinder(Fig. 10), and rout the hoses and pipes

A. Hose connecting

1. Connect the longest hose from the cylinder in off side column to the top of main side column. Remember to rout the hose through the hook on cross beam. (Fig. 10a & 10b)
2. Then through a T-fitting, one middle length hose connecting to the main side cylinder. (Fig. 10c)
3. Another shortest hose from the T-fitting goes to the motor pump. (Fig. 10d)

Fig. 10d

Fig. 10c

Fig. 10a

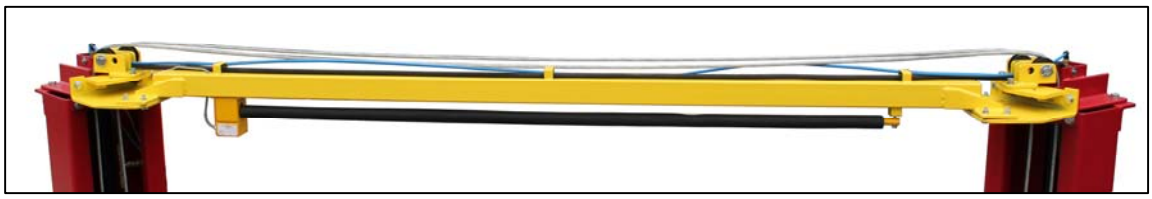


Fig. 10b

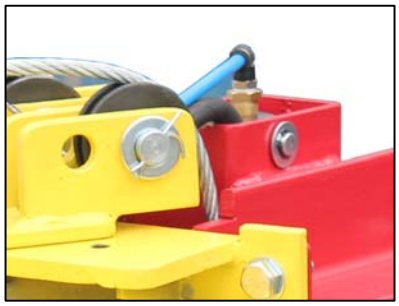


Fig. 11a

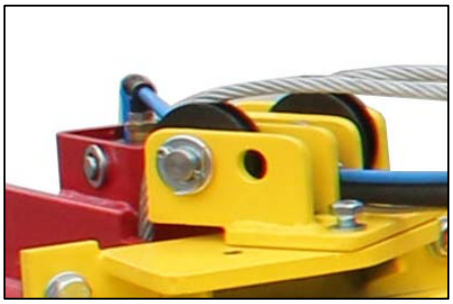


Fig. 11b

B. Return pipe connecting

1. Screw in an elbow pipe fitting on the end of the off side cylinder (Fig. 11a).
2. Screw in another T pipe fitting on the end of main side cylinder. (Fig. 11b)
3. Connect the return pipe from off side cylinder to main side cylinder through fittings. Then it goes to the motor pump also.

11. Mount on the motor pump on main side column (Fig. 12) with bolts and nuts

A. Connect the hose and the pipe to the pump valve block.

DO NOT HOLD THE CYLINDER ROD IN A WAY THAT COULD DAMAGE THE FINISH.

CYLINDER LEAKS CAUSED BY DAMAGED RODS ARE NOT COVERD BY WARRANTY.

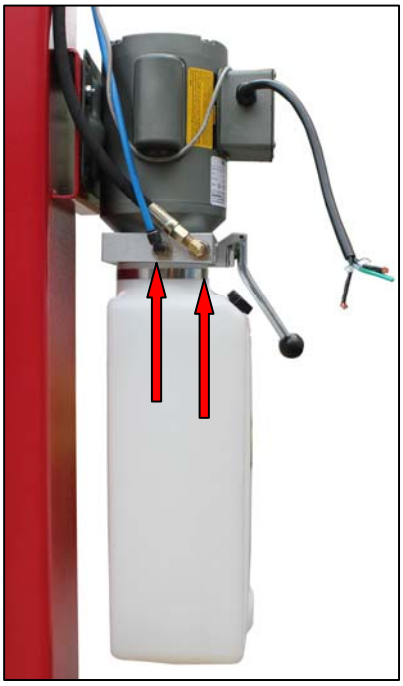


Fig. 12

12. Ceiling switch cable wiring and accessories mounting.

A. The ceiling limit switch cable must be connected in the contactor of the motor pump. (Fig. 13) according to the wiring label.

.

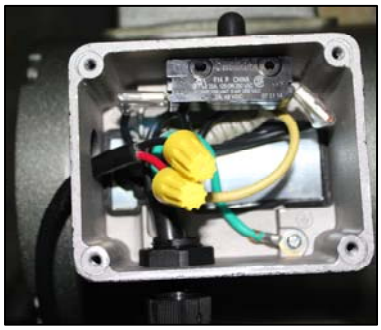


Fig. 13

B. Install arms

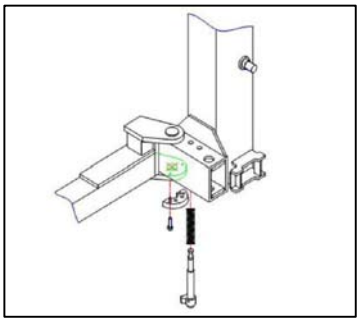
1. Position the gears with TOP against the bottom of the arms in the orientation shown in Fig.14. Attach the gears to the arms **with bolts. Do not tighten at this time.**
2. Position the restraint pawls on the carriage to mate with the gears on the arms.
3. Install the swing arms and pins.

Suggestion:

The longer arms go to the rear or drive in side of the lift, and the short arms go to the front.

Don't force the gears, it may be necessary to pull up on the restraint actuator pin in order to install the swing arm pin.

4. Tighten the gear bolts to 40~46N-m.



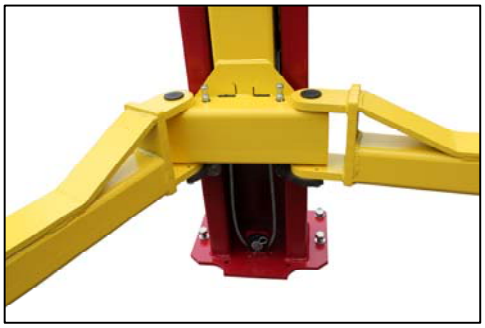


Fig. 14a and 14 b

13. Column anchoring.

Note:

A. The anchor bolts must be **installed at least 145 mm from any edge or seam in the concrete.**

B. The concrete must be at least **108 mm thick with a compressive strength of 3,000 psi.**

C. Use a hammer drill with **a Carbide tip, 19 mm diameter, solid drill bit.**

↓

STEPS:

1. Using the column as a template, drill the anchor bolt holes **for the Main side column Only!!**

2. Assemble the washers and nuts onto the anchor bolts. Thread the nuts onto the anchor bolts where the tops of the nuts are just above the top of the bolts. Using a hammer, carefully tap the anchor bolts into the concrete until the washer rests against the base plate. **Do not damage the nuts or threads.**

3. Using a level, plumb the main side column both side to side and front to back. Shim the column as necessary next to and on both sides of the anchor bolts, (Figure 15). If more than **13 mm of shimming** is required, **do not** use the anchors and shims provided with the lift. Use longer anchors and fabricate larger shims from steel flat, **6.5 mm or 13 mm thick by 50 mm, or more, wide.**

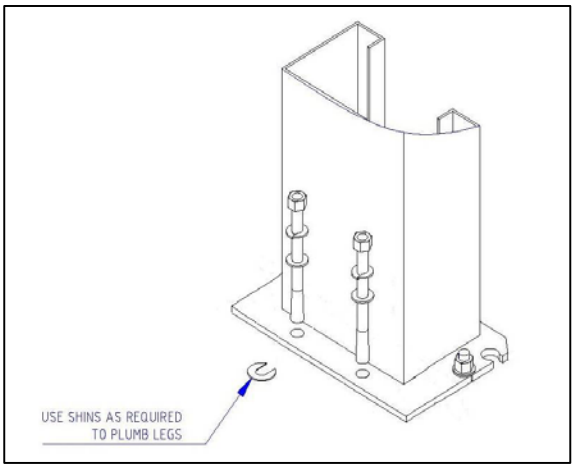


Fig 15

4. Once the column is plumb tighten the anchor bolts **to 203 N-m. Do not** use an impact wrench on anchor bolts.

   a. If after tightening the anchor supplied with the lift extends more than 57 mm above the floor the anchor does not have enough embedment.

   b. If an anchor will not reach 203 N-m or does not have enough embedment or adequate spacing cannot be achieved, **replace the concrete under the column with a 1220 X 1220 X200 mm thick pad of 3,000 psi concrete** keyed under the existing floor. Let the concrete cure before reinstalling the lift.

5. Recheck the column's verticality after tightening the anchor bolts. Add shims if necessary.

6. Using a level check the alignment and plumbness of the entire structure. Plumb the offside column both side to side and front to back. (the column be perpendicular to the floor and parallel to the other column)
7. Same as main column, drill then anchor the off side column as well.

14. Fill the tank.

Remove the fill level screw of the power unit tank. Fill it with Dexron III ATF or hydraulic oil that meets **ISO-22,** until fluid reaches the bottom of the screw hole. Replace the fill screw and tank breather.

15. Lubricate the four inside corners of both columns with heavy duty grease.

16. Power hook up.

Please connect the motor pump to a power supply (220V/60Hz, single phase)

WARNING:

While hooking up the power supply to the control box, please ask an expert or electrician to do it for you. The supply circuit and the breaker must be capable for at least 50A current.

17. Testing

Note: (1) in this step A, there is no load on the lift.
(2) Circle up and down must be with interval rest of 2 min.
(3) Also refer to the operation steps in chapter 4.

A. Without a load, raise the lift empty to the top of its travel and lower it to the floor three (3) times to remove the remaining air from the hydraulic system.

B. **The latches should click together as the lift is being raised.**

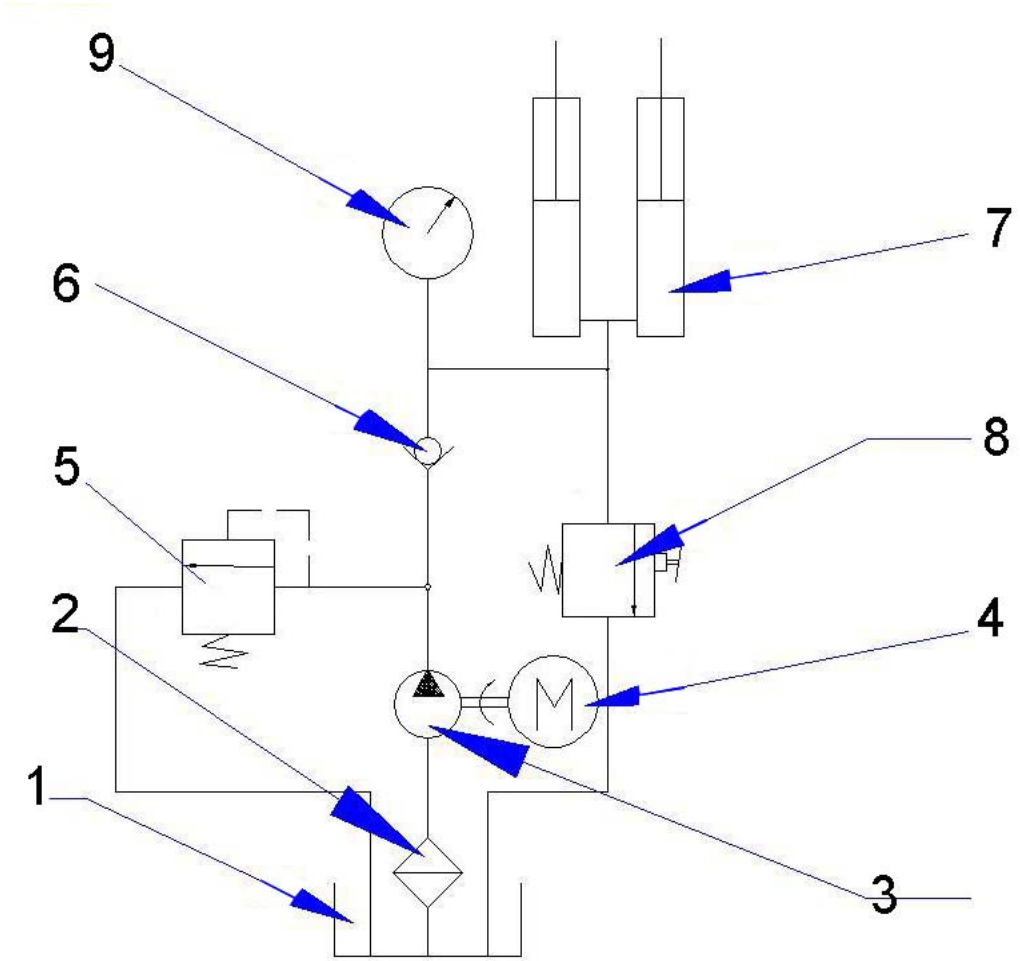
C. **The first time a vehicle is placed on the lift, raise it no higher than three feet.** Lower the vehicle onto the safety latches. Raise the lift a few inches and pull out both latch pull rods then lower the vehicle to the floor.

D. Raise the vehicle to full height and lower the carriages onto the safety latches. Lower the vehicle to the floor.

E. After cycling the lift **ten times** with a vehicle on it, **recheck the tightness of the anchors to at least 122 N-m.**

Now the lift is ready for operation.

3.5. Hydraulic Scheme



1. Oil Tank	**2. Mesh**	**3. Gear Pump**
4. Power Unit	**5. Overflow Valve**	**6. One-way Valve**
7. Cylinder	**8. Hand Release Valve**	**9. Pressure Gauge (not supplied)**
Hydraulic Pump	2.2KW, 2850 rpm	
Setting Pressure	20 Mpa	
Flow rate for the Pump	2.1 ml / rev	

4. Operation

Be sure to read and familiarize yourself with the Safety Instructions at the beginning of this manual. Failure to follow Safety Instructions may result in property damage, personal injury or death.

4.1 Caution and Warning Label

4.2 Operating Instructions

Be sure to read and familiarize yourself with the Safety Instructions at the beginning of this manual. Failure to follow Safety Instructions may result in proper damage, personal injury or death.

To avoid personal injury and/or property damage, permit only trained personnel to operate lift. After reviewing these instructions, get familiar with lift controls by running the lift through a few cycles before loading vehicle on the lift.

Always lift the vehicle using all four adapters. **NEVER** raise just one end, one corner, or one side of vehicle.

The heavy end of the vehicle **MUST** put on the **Rear** arms.

4.2.1 Lift Preparation:

Lift must be fully lowered and service bay clear of all personnel before the vehicles brought on lift. Swing arms out to full drive-thru position

4.2.2 Loading Lift:

Swing arms under vehicle and position adapters at vehicle manufacturer's recommended lift points. Use intermediate, high step, or optional adapters for under body clearance when required.

Typical Lifting Points. Some Vehicle may have the manufacturer's Service Garage Lift Point locations identified by triangle shape marks on it's undercarriage. Also, there may be a label located on the right front door lock face showing specific vehicle lift points. If the specific vehicle lift points are not identified, refer to the vehicle operation manual or consult the vehicle agent. ALWAYS follow the operating instructions supplied with the lift.

4.2.3 To Raise Lift

a. Push START button on motor.

b. Stop before making contact with vehicle. Check arm restraint pins for engagement. If required, slightly move arm to allow restraint gear and pawl to mesh. DO NOT hammer pin down, as this will damage the restraint gear teeth.

c. Raise vehicle again until it just leaves the floor, then release the button.

d. Check support adapters for secure contact at vehicle manufacturer's recommended lift points.

e. Continue to raise to desired height only if vehicle is secure on lift

f. DO NOT go under vehicle if all four adapters are not in secure contact at vehicle manufacture's recommended lift point.

g. Repeat complete spotting, loading and raising procedures if required.

h. Push the release lever to lower the vehicle into the locking position if locking latches are not engaged.

DO NOT go under vehicle if locking latches are not engaged.

Before attempting to lift pickup trucks or other truck frame vehicles, be sure that:

- **Vehicle frame is strong enough to support it's weight and has not been weakened by modification or corrosion.**
- **Vehicle individual axle weight does not exceed one-half lift capacity.**
- **Adapters are in secure contact with frame at vehicle manufacturers recommended lift point.**
- **Vehicle is stable on lift**
- **The overhead switch bar will contact the highest point on the vehicle**

4.2.4 While Using Lift

a. Avoid excessive rocking of vehicle while on lift.

b. Always use safety stands as needed or when removing or installing heavy components.

4.2.5 To Lower Lift

a. Remove all tools or other objects from lift area
b. Push START button on the motor for 1-2 seconds. The latch will not be engaged then.
c. Pull each latch-release bar on both sides under the carriage. (Fig.17)
d. Press release lever to lower down the lift till the vehicle sits on ground.

Fig.17

Remain clear of lift when lowering vehicle. Observe pinch point warning decals.

4.2.6 Unloading Lift

a. Remove adapters from under vehicle and swing arms to full drive-thru position before moving vehicle

If lift is not operating properly, DO NOT use until adjustment or repairs are made by qualified lift service personnel.

4.3 Maintenance Instructions

Contact your service provider for instruction before starting up if you are not completely familiar with automotive lift maintenance procedures. Only qualified personnel can perform maintenance on this equipment. Any failure in operation may cause personal injury or death.

- ✓ Always keep bolts tight. Check periodically.
- ✓ Always keep lift components clean.
- ✓ Always if oil leakage is observed, contact your service provider.
- ✓ Check cables and sheaves for wear everyday. Replace worn or broken parts with lift manufacturer's parts, or their equivalent.

Every Month

- ✓ Check equalizer cable tension.
- ✓ Lubricate locking latch shafts. Push latch handle several times for oil to penetrate joints.
- ✓ Lubricate the four inside corners of the columns with heavy duty bearing grease.
- ✓ With lift lowered check the hydraulic fluid level. If necessary add oil as described in the Installation Instruction section of this manual
- ✓ Check carriage latch synching: Latches should click at the same time. If necessary adjust equalization cables as described in the Installation Instruction section of this manual.
- ✓ Check tightness of all bolts.
- ✓ Check the nuts for tightness every week for the first month, and every month afterwards.

Every 3 Month

- ✓ Check anchor bolts for tightness. Anchors should be torque to 122N-m
- ✓ Check and clean the oil filter

Every 6 Month

- ✓ Check fluid level of lift power unit and refill if required.
- ✓ If Lift stops short of full rise or chatters, contact your service provider.
- ✓ Replace all caution, warning or safety related decals on the lift If unable to read or missing. Reorder labels from service provider.

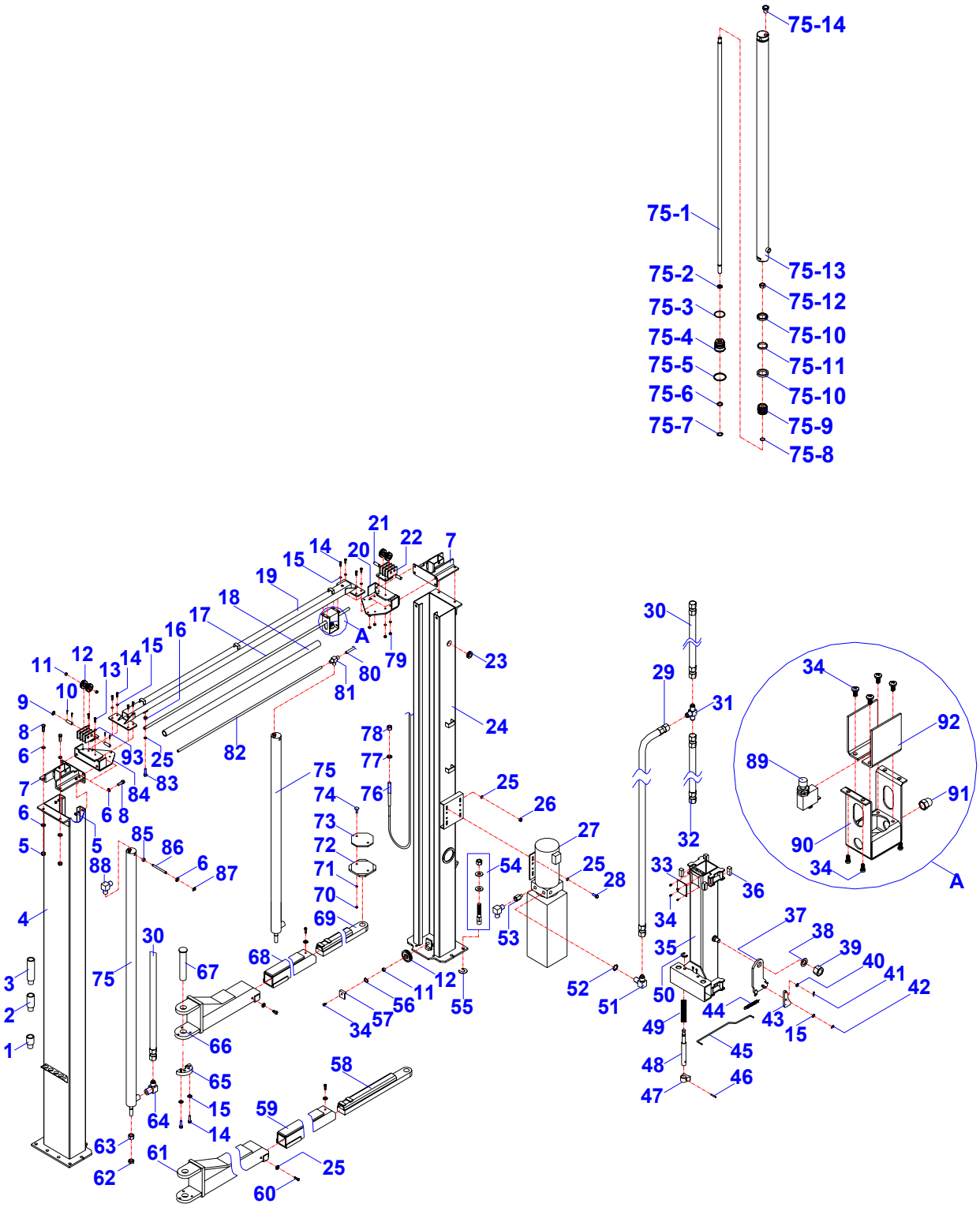
NOTE

Adaptor (Figure 16) can connect with pressure gauge for diagnosing leaking problem.

Pressure Gauge can connect to the hydraulic circuit via the adaptor (the arrow below)

Figure 16

4. Parts Draw and List



ITEM	CODE	DESCRIPTION	QTY
1	165948B*01-001	adaptor 1#	4
2	165948B*01-002	adaptor 2#	4
3	165948B*01-003	adaptor 3#	4
4	165948B*01-004	column A	1
5	165948B*01-005	nut	12
6	165948B*01-006	washer	28
7	165948B*01-007	cylinder base	2
8	165948B*01-008	bolt	12
9	165948B*01-009	flat washer	8
10	165948B*01-010	locking pin	8
11	165948B*01-011	bearing	6
12	165948B*01-012	dolly	6
13	165948B*01-013	bolt	4
14	165948B*01-014	bolt	16
15	165948B*01-015	flat washer	26
16	165948B*01-016	nut	1
17	165948B*01-017	ceiling bar	1
18	165948B*01-018	soft rubber	1
19	165948B*01-019	crossbeam	1
20	165948B*01-020	angle bracket 2#	1
21	165948B*01-021	shaft	4
22	165948B*01-022	dolly bracket	2
23	165948B*01-023	protecting ring	1
24	165948B*01-024	column B	1
25	165948B*01-025	washer	17
26	165948B*01-026	self lock nut	4
27	165948B*01-027	motor pump	1
28	165948B*01-028	bolt	4
29	165948B*01-029	hose 3#	1
30	165948B*01-030	hose1#	1
31	165948B*01-031	T-fitting	1
32	165948B*01-032	hose 2#	1
33	165948B*01-033	cover	2
34	165948B*01-034	screw	18
35	165948B*01-035	carriage	2
36	165948B*01-036	nylon block	16
37	165948B*01-037	latch board 1#	2

ITEM	CODE	DESCRIPTION	QTY
38	165948B*01-038	washer	2
39	165948B*01-039	self lock nut	2
40	165948B*01-040	washer	2
41	165948B*01-041	pin	2
42	165948B*01-042	Circlip	2
43	165948B*01-043	latch board 2#	2
44	165948B*01-044	spring	2
45	165948B*01-045	pull hook	2
46	165948B*01-046	cotton pin	4
47	165948B*01-047	half gear small	4
48	165948B*01-048	gear axle	4
49	165948B*01-049	spring	4
50	165948B*01-050	Circlip	4
51	165948B*01-051	L-fitting	1
52	165948B*01-052	O-ring	1
53	165948B*01-053	fitting	1
54	165948B*01-054	anchor	12
55	165948B*01-055	shim	16
56	165948B*01-056	Circlip	2
57	165948B*01-057	cover	2
58	165948B*01-058	arm extension 1#	2
59	165948B*01-059	arm extension 2#	2
60	165948B*01-060	bolt	8
61	165948B*01-061	arm 3#	2
62	165948B*01-062	nut	2
63	165948B*01-063	nut	2
64	165948B*01-064	L-fitting	2
65	165948B*01-065	half gear large	4
66	165948B*01-066	arm 6#	2
67	165948B*01-067	pin	4
68	165948B*01-068	arm 5#	2
69	165948B*01-069	arm 4#	2
70	165948B*01-070	self lock nut	8
71	165948B*01-071	washer	8
72	165948B*01-072	pad	4
73	165948B*01-073	rubber pad	4
74	165948B*01-074	screw	8

ITEM	CODE	DESCRIPTION	QTY
75	165948B*01-075	cylinder	2
75-1	165948B*03-075-1	ram	1
75-2	165948B*03-075-2	seal	1
75-3	165948B*03-075-3	O-ring	1
75-4	165948B*03-075-4	guide-ring	1
75-5	165948B*03-075-5	steel-ring	1
75-6	165948B*03-075-6	dust-ring	1
75-7	165948B*03-075-7	Circlips	1
75-8	165948B*03-075-8	O-ring	1
75-9	165948B*03-075-9	piston	1
75-10	165948B*03-075-10	seal	2
75-11	165948B*03-075-11	guide-ring	1
75-12	165948B*03-075-12	nut	1
75-13	165948B*03-075-13	cylinder body	1
75-14	165948B*03-075-14	fitting	2
76	165948B*01-076	cable	2
77	165948B*01-077	washer	4
78	165948B*01-078	nut	8
79	165948B*01-079	nut	8
80	165948B*01-080	hose 2#	1
81	165948B*01-081	T-fitting	1
82	165948B*01-082	hose 1#	1
83	165948B*01-083	bolt	1
84	165948B*01-084	angle bracket 1#	1
85	165948B*01-085	sleeve	4
86	165948B*01-086	shaft	2
87	165948B*01-087	Circlip	4
88	165948B*01-088	L-fitting	2
89	165948B*01-089	micro switch	1
90	165948B*01-090	case	1
91	165948B*01-091	cable nut	1
92	165948B*01-092	bracket	1
93	165948B*01-093	washer	4

6. Troubleshooting Guide

A.	Problem	**Motor does not run.**
	Possible cause:	Solution:
	1. Blown fuse or circuit breaker 2. Incorrect voltage to motor 3. Bad wiring connections. 4. Motor START switch burned out. 5. Overhead LIMIT switch burned out. 6. Motor windings burned out.	1. Replace fuse or reset circuit breaker. 2. Supply correct voltage to motor. 3. Repair and insulate all connections. 4. Replace START switch. 5. Replace LIMIT switch. 6. Replace motor.
B.	Problem	**Motor runs but lift will not raise.**
	Possible cause:	Solution:
	1. Lowering valve not closed. 2. Pump sucking air 3. Suction stub off pump. 4. Low oil level	1. Repair or replace lowering valve. 2. Tighten all suction line fittings. 3. Replace suction stub. 4. Fill tank with Dexron III ATF
C	Problem	**Lift will raise up only without load.**
	Possible cause:	Solution:
	1. Motor running on low voltage 2. Debris in lowering valve. 3. Improper relief valve adjustment. 4. Overloading	1. Supply correct voltage to motor. 2. Clean lowering valve. 3. Replace relief valve cartridge. 4. Check or balance the vehicle weight on lift.
D	Problem	**Lift slowly settles down.**
	Possible cause:	Solution:
	1. Debris in check valve seat. 2. Debris in lowering valve seat. 3. External oil leaks	1. Clean check valve. 2. Clean lowering valve. 3. Repair eternal leaks.
E	Problem	**Slow lifting speed or oil blowing out breather cap**
	Possible cause:	Solution:
	1. Air mixed with oil. 2. Air mixed with oil suction. 3. Oil return tube loose	1. Change oil to Dexron III ATF 2. Tighten all suction line fittings. 3. Reinstall oil return tube.
F	Problem	**Lift going up unleveled.**
	Possible cause:	Solution:
	1. Equalizer cables out of adjustment. 2. Lift installed on unleveled floor.	1. Adjust the cable for better balancing. 2. Level the columns by shims in anchoring.
G	Problem	**Anchors will not stay tight.**
	Possible cause:	Solution:
	1. Holes drilled oversize. 2. Concrete floor thickness or holding strength not sufficient	1. Relocate lift using a new bit to drill holes. 2. Break out old concrete and pour new pads for lift per lift column
H	Problem	**Locking latches do not engage.**
	Possible cause:	Solution:
	1. Latch shafts rusted. 2. Latch spring broken. 3. Latch cable needs adjustment.	1. Oil latch mechanism. Grease the shaft. 2. Replace broken spring. 3. Adjust clamps at cable end