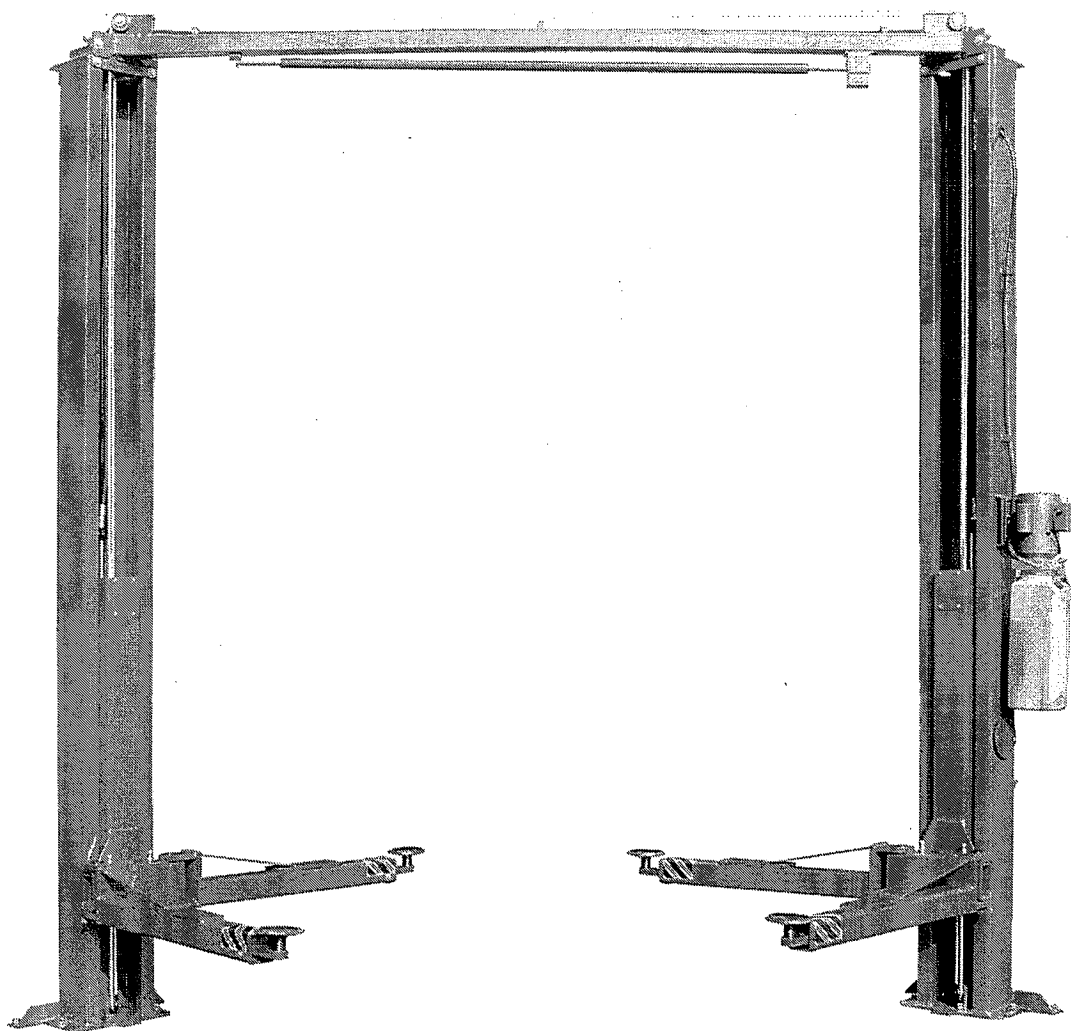


Model TP10KC-DTC
Turned Column Two-Post Lift
10,000 lbs Capacity
Installation and Operation Manual



KERNEL PRODUCT LIMITED WARRANTY

KERNEL is guaranteed for 24 months from date of Kernel export invoice against defects in workmanship and /or materials for the structural components when the product is installed and used according to Kernel's specifications.

Kernel's obligation under this warranty is limited to repairing or replacing any part or parts returned to Kernel authorized locations, with prove of purchase, freight prepaid which prove upon inspection to be defective and which have not been misused.

Damage or failure to any part due to freight damage or faulty maintenance is not covered under this warranty. This warranty does not extend to defects caused by ordinary wear, abuse, misuse, improper installation or altered, unauthorized software updating, using improper fluid; any cosmetic defect not interfering with equipment functional or any incidental, indirect, or consequential loss that may result from any defect, failure or malfunction of a Kernel product or the breath or delay in performance of the warranty. This warranty does not apply to any product, which has been altered or used with special attachments other than recommended by Kernel.

All faults due to negligence, tampering or incorrect use are excluded from the warranty while Kernel declines all responsibility for direct or indirect damages.

This limited warranty runs to the original purchaser from Kernel only and it is not transferable or assignable.

Kernel reserves the right to decline responsibility when repairs have been made or attempted by others.

To the fullest extent allowed by the Chinese Law, Kernel shall not be liable for loss of use, cost of cover, lost profits, inconvenience, lost time, commercial loss or other incidental or consequential damages.

This warranty is exclusive and in lieu of all other expressed and implied.

Full warranty statements can be found in the respective Kernel manuals.

Kernel International Trading (Shanghai) Ltd.
Shanghai Kernel Auto-Equip Manufacturing Co.Ltd.
180 Jiu Jing Road, Song Jiang, Shanghai, China 201615
Tel: 0086-21-67697388 Fax: 0086-21-67697018
E-Mail: Sales@kernel-sh.com

KERNEL PRODUCT LIMITED WARRANTY

Kernel KP-series Portable Column Lift:
2- Post Lift / 4-Post Lift / 4 Post Storage Lift:
Portable Scissor Lift / Mid-Rise Lift:
Single Post Lifts / Single Post Storage Lift
Motorcycle Lifts / Rolling Jacks

Structural Warranty

The following parts and structural components subject to there is any on the lifts carry a 24 months warranty:

Columns / Uprights:
Carriage Units:
Arms / Legs:
Tracks / Runways:
Swivel Pins / Shafts:
Overhead Beams / Top Rail Beams / Cross Rails.

Electrical and Electronic Parts

The following electrical and electronic parts and structural components subject to there is any on the lifts carry a 12 months warranty:

Power Units:
Optical-Electro Encoder / Sensors:
PLC Units:
Text Display Units:
Limit Switches:
Electro-Magnets:
Valves:
Transformers:
Contactors / Capacitors.

Other Limitations

This warranty does not cover:

- A) Parts needed for normal maintenance**
- B) Wear parts, including but not limited to cables, slider blocks, chains, rubber pads and pulleys etc.**
- C) Leakage on hydraulic cylinders. Replacement cylinder after the first 30 days. A seal kit and installation instructions will be sent for repairs thereafter.**
- D) On-site labor**

**** Upon receipt, the customer must visually inspect the equipment for any potential freight damage before signing clear on the shipping receipt. Freight damage is not considered a warranty issue and therefore must be noted for any potential recovery with the shipping company.**

**** The customer is required to notify Kernel of any missing parts with 72 hours. Timely notification must be received to be covered under warranty.**

**** Kernel will replace any defective part under warranty at no charge as soon as a formal written notice is received by Kernel. No guarantee is given as to the immediate availability of replacement parts.**

Kernel reserves the right to make improvements and/or design changes to its lifts without any obligation to previously sold, assembled or fabricated equipment.

The warranty adjustment within the above stated policies are base on the model and serial number of the equipment.

Kernel International Trading (Shanghai) Co. Ltd.

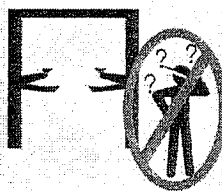
Shanghai Kernel Auto-Equip Manufacturing Co. Ltd.

180 Jiu Jing Road, Song Jiang, Shanghai, China 201615

Tel: 0086-21-67697388 Fax: 0086-21-67697018

E-Mail: Sales@kernel-sh.com

▲ CAUTION



Lift to be used by trained operator only.

▲ CAUTION




Authorized personnel only in lift area.

▲ WARNING



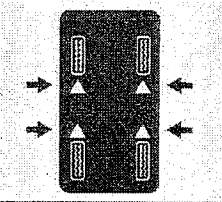
Clear area if vehicle is in danger of falling.

▲ WARNING



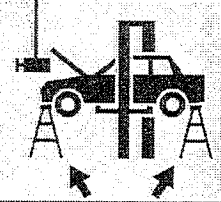
Position vehicle with center of gravity midway between adapters.

▲ CAUTION



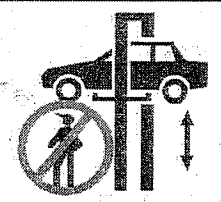
Use vehicle manufacturer's lift points.

▲ CAUTION



Always use safety stands when removing or installing heavy components.

▲ WARNING



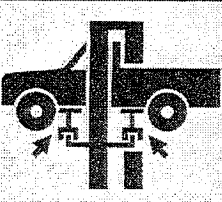
Remain clear of lift when raising or lowering vehicle.

▲ WARNING



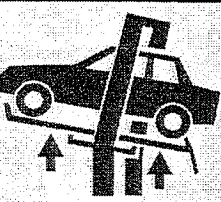
Avoid excessive rocking of vehicle while on lift.

▲ CAUTION



Use height extenders when necessary to ensure good contact.

▲ CAUTION



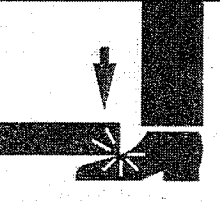
Auxiliary adapters may reduce load capacity.

▲ WARNING



Do not override self-closing lift controls.

▲ WARNING



Keep feet clear of lift while lowering.

DEFINITION

The lift is a Two-Column Hydraulic, Direct driven one.

The name / model numbers is designated below:

Surface Mounted 2-Post Clear floor, Turned angle 35° , 10000lbs Lifting Capacity, Asymmetric Swing Arm set up. *Model number: 165948B.*

The safety latch system of this lift is very similar to an extension ladder. The safety latch is in contact with the rack as the lift ascends and drops. Safety latch engages in the rack in a 3" increment at about 20" from the ground. The latch must be manually disengaged for the lift to descend. It is released by pulling two handles to raise the latch up off the rack. Once the raise button is pressed, the latch will automatically re-engage after approximately 3" of travel. Heavy bearings are used throughout the lift. The work is done with two 3" cylinders, driven by a electric-hydraulic power unit capable of providing 3,000psi hydraulic pressure.

Please read the Safety Procedures and Operation Instructions in this manual before operating the lift. Proper installation is very important. To minimize the chance of making an error in installation, please read this manual through carefully before beginning installation. Check with building owner and / or architect's building plans when applicable. The lift should be located on a relatively level floor with min 5" thickness and 3000psi tensile strength concrete sufficiently cured.

This is a vehicle lift installation / operation manual and no attempt is made or implied herein to instruct the user in lifting methods particular to an individual application. Rather, the contents of this manual are intended as a basis for operation and maintenance of the unit as it stands alone or as it is intended and anticipated to be used in conjunction with other equipment.

Proper application of the equipment described herein is limited to the parameters detailed in the specifications and the usages set forth in the descriptive passages. Any other proposed application of this equipment should be documented and submitted in writing to the factory for examination. The user assumes full responsibility for any equipment damage, personal injury that occurs as the result of alteration of the equipment described in this manual or any subsequent damages.

Basic Specification

Description	Capacity	Lifting Time	Overall Height	Overall Width	Lifting height
Clear floor, turned angle	4.5 ton	(about)	145 3/8"	140"	58 1/2"
(symmetric)	10000 lbs	60 Sec	3690 mm	3556 mm	1486 mm

PREPARATION

The installation of this lift is relatively simple and can be accomplished by 2 men in a few hours. The following tools and equipment are needed:

- AW 32,46 Non-Detergent Non-Foaming Anti-Wear Hydraulic Oil SAE-10 (12 quarts)
- Chalk line and 12' Tape Measure, Transit and a 4' Level
- Rotary Hammer Drill with 3/4" Masonry Drill Bit. Core Drill ReBar Cutter recommended
- Hammer and Hex-Key / Allen Wrench Set
- Sockets and Open Wrench set, 1/2" thru 1-1/2" (1-1/8" for 3/4" Anchors)
- Medium Crescent Wrench and Medium Pipe Wrench
- Crow Bar for Shim Installation and Medium Flat Screwdriver
- Vise Grips and Needle Nose Pliers

GENERAL INFORMATION

1. Carefully remove the crating and packing materials. CAUTION! Be careful when cutting steel banding material as items may become loose and fall causing personal harm or injury.
2. Identify the components and check for damage or shortages. If damage or shortages are discovered, contact distributor immediately. *Save the shipping bolts for use in the installation.*

Packing:

- *The lift packed into two columns in one rack.
- *Every column with its cylinder, carriage, lifting arms, pad with holders, oil pipes, and cart. Accessory box is in one column.
- *There is the hydraulic motor pump in one carton separately.

3. The power supply for the motor pump of this lift is 220V, single phase, 60Hz, 15A.

IMPORTANT CONCRETE AND ANCHORING INFORMATION

1. Concrete shall have compression strength of at least 3,000 PSI and a minimum thickness of 5 " in order to achieve a minimum anchor embedment of $3\frac{1}{4}$ ". When using the standard supplied $\frac{3}{4}$ " * 5 $\frac{1}{2}$ " long anchors, if the top of the anchor exceeds 2 $\frac{1}{4}$ " above the floor grade, you DO NOT have enough embedment.
2. Before drilling anchor holes in concrete floor using holes in column base plate as a guide. Make sure the distance from the hole to the concrete edge is not less than 6 " . Hole to hole spacing should not be less than 6 $\frac{1}{2}$ " in any direction. The hole depth should be a minimum of 4 $\frac{1}{4}$ " .
3. **CAUTION:** DO NOT install the lift on any asphalt or other similar unstable surface. Only anchor in floor to support columns.
4. Shim each column base until each column is plumb. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used. Shim thickness MUST NOT exceed $\frac{1}{2}$ " when using the 5 $\frac{1}{2}$ " long anchor provided with the lift.
5. If anchors do not tighten to 80 ft-lbs. Installation torque, replace concrete under each column base with a 4' x 4' x 6 " thick 3,000 PSI minimum concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors.

ANCHORING TIP SHEET

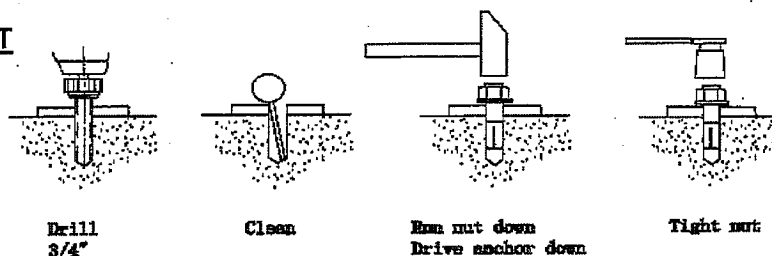


Fig. 1

Anchors must be at least 6" from the edge of the slab or any seam.

1. Use a concrete hammer drill with a carbide tip, solid drill bit the same diameter as the anchor, $\frac{3}{4}$ " (0.775 to 0.787 inches diameter). Do not use excessively worn bits or bits which have been incorrectly sharpened.
2. Keep the drill perpendicularly while drilling.
3. Let the drill do the work. Do not apply excessive force. Pull the drill up occasionally to remove residue while drilling.
4. Drill the hole to depth equal to length of anchor.
5. For better holding power blow dust from the hole.
6. Place a flat washer and hex nut over thread of an anchor, leaving approximately $\frac{1}{2}$ inch of thread exposed carefully tap anchor. Do not damage threads. Tap anchor into the concrete carefully until nut and flat washer are against base plate. Do not use an impact wrench to tighten. Tighten the nut two or three turns on average concrete (28-day cure). If the concrete is very hard, only one or two turns may be applied. Check each anchor bolt with torque wrench set to 150 foot pounds.
7. Drilling thru concrete (recommended) will allow the anchor to be driven thru the bottom if the threads are damaged.

INSTALLATION INSTRUCTION

STEP 1: (Selecting Site)

Before installing your new lift, check the following:

1. **LIFT LOCATION:** Always use architects plans when available. Check layout dimension against floor plan requirements making sure that adequate space is available.
2. **OVERHEAD OBSTRUCTIONS:** The area where the lift located should be free of overhead obstructions such as heaters, building supports, electrical lines etc. (Fig. 2 & 3)
3. **DEFECTIVE CONCRETE:** Visually inspect the site where the lift is to be installed and check for cracked or defective concrete.
4. **FLOOR REQUIREMENTS:** The lift should be installed on a 3000 PSI concrete with little gradients.

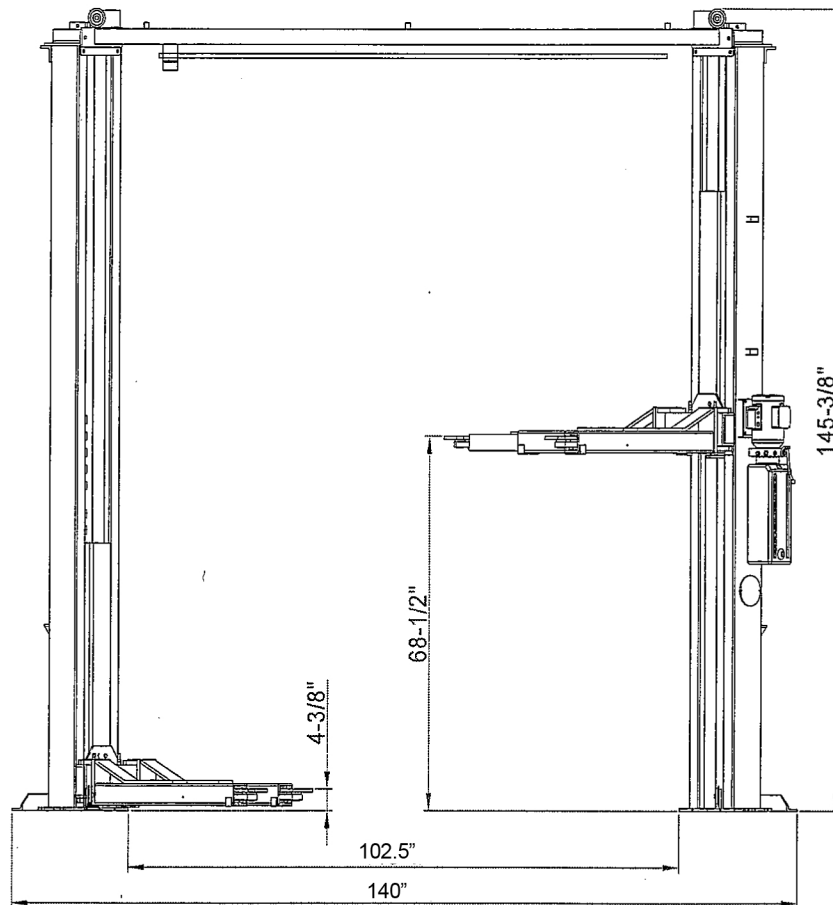
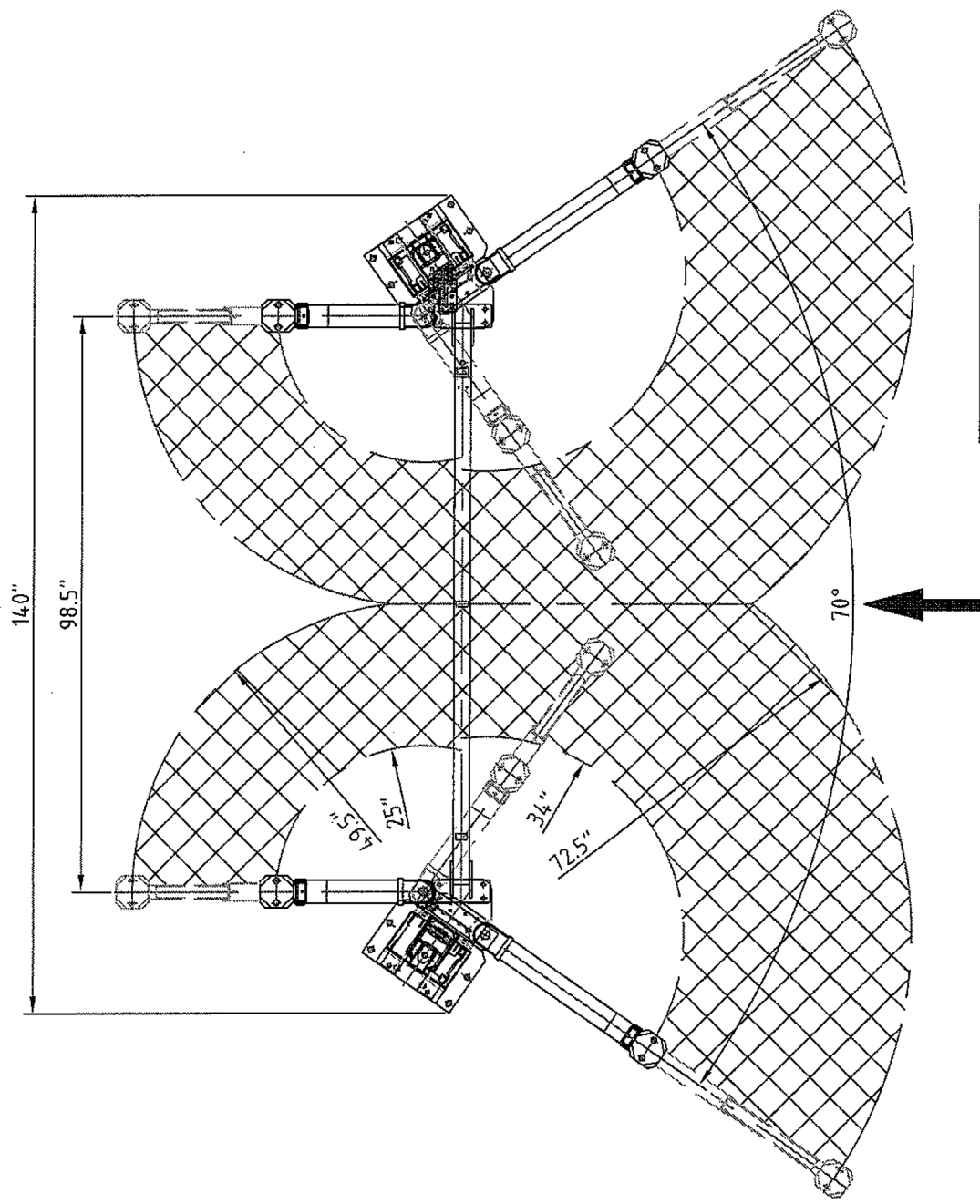


Fig. 2



35°直脚俯视图									
SJ090S-00									
阶段标记		重量		比例					
						共 张 第 张			
标记	处数	分区	更改文件号	签名	年月日				
设计			标准化						
审核						批准			
工艺									

STEP 2: (Unloading and Unpacking)

1. After unloading the lift, place it near the intended installation location.
2. Remove the shipping bands and packing materials from the unit.
3. Remove the packing brackets and bolts holding the two columns together. (Do not discard bolts, they may be used in the assembling of the lift)
4. Take out the lifting arms, pads, accessory box, oil pipes, etc, from the column. Check the quantity of every item with the parts list. If any missing, please contact with your dealer at once.

STEP 3: (Site Layout)

1. Determine which side will be the approach side.
2. Once a location is determined, use a carpenter's chalk line to layout a grid for the post locations. Keep all dimensions and square within $\frac{1}{8}$ "otherwise malfunction of the lift will occur. (See Fig. 3)
3. After the post locations are properly marked, use a chalk or crayon to make an outline of the posts on the floor at each location using the post base plates as a template.
4. Double check all dimensions and make sure that the layout is perfectly square.

STEP 4: (Cylinder mounting)

1. Mount the fittings on both ends of the cylinder. (Fig. 4)
2. Mount the cylinder base on the top of the column. (Fig. 5)
3. Pull out the ram as long as possible. (Fig. 6)
4. Put the cylinder through the base and the carriage. Using nut and pin to fix the cylinder with base and carriage. (Fig. 7 & 8)
5. Do above steps 1-4 for the other cylinder and carriage.

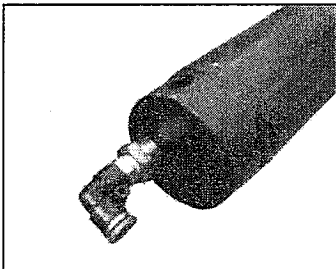


Fig. 4a

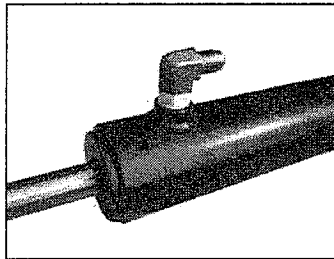


Fig. 4b

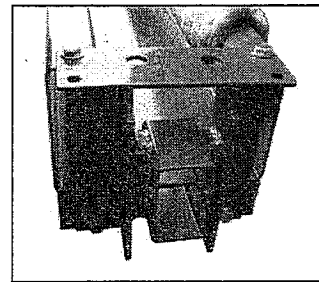


Fig. 5

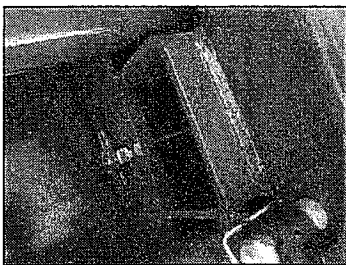


Fig. 7

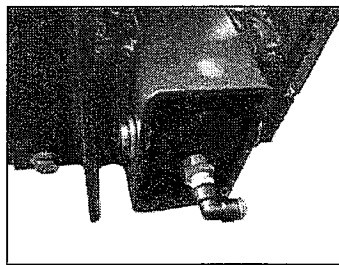


Fig. 8

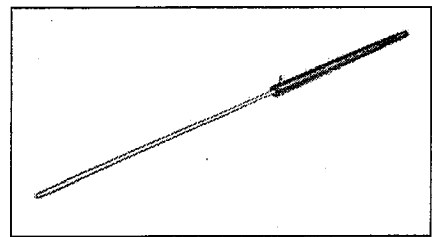


Fig. 6

STEP 5: (Installing the Column)

1. Before proceeding, double check measurements and make certain that aligned with the chalk line.
2. Assemble the cable dolly on the bracket. Then mount them on the column head.(Fig. 9)
3. Upright the column. Position it on the place correctly.(Fig 10)

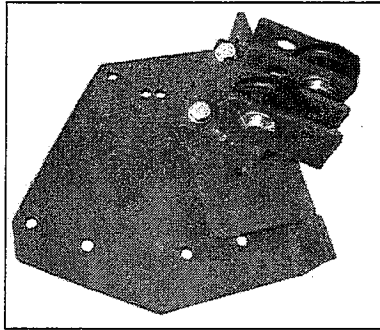


Fig. 9a

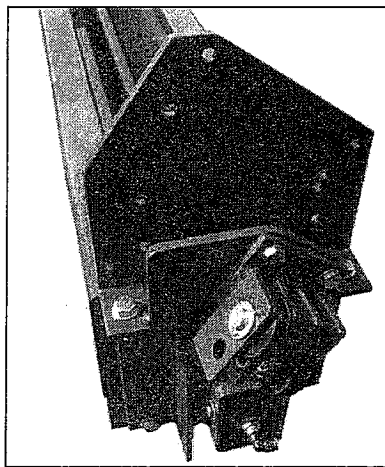


Fig. 9b

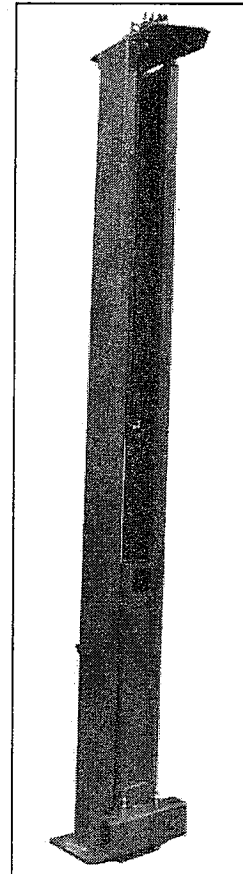


Fig. 10

4. Using the base plate on one column as a guide, drill each anchor hole in the concrete with depth equal to a minimum depth of 4" to insure maximum holding power using a rotary hammer drill and $\frac{3}{4}$ " concrete drill-bit. To assure full holding power, do not ream the hole or allow the drill to wobble. (See Fig.1)
5. After drilling, remove dust thoroughly from each hole using compressed air and/or wire brush. Then install anchors as you go. Use a block of wood or rubber mallet to drive anchor bolts in. Drill thru concrete (recommended) will allow the anchor to be driven thru the bottom if the threads are damaged.
6. Using a level, check column for side-to-side plumb and front-to-back plumb (Fig.11). If needed, use horseshoe shims provided by placing shims underneath the base plate and around the anchor bolt. This will prevent bending the column bottom plate (Shim thickness should not exceed 1/2"). Tighten the anchor bolts to 150 ft-lbs. of torque.

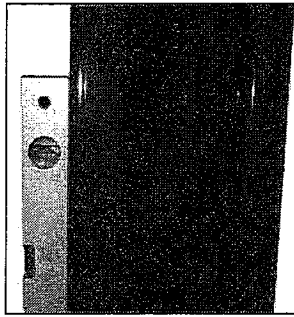


Fig. 11

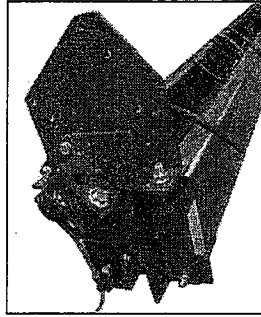


Fig. 12

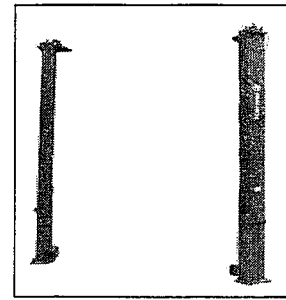


Fig. 13

7. Assemble another cable dolly on the bracket. Then mount them on another column head. (Fig. 12)
Upright that column also. Position it on the place correctly. (Fig 13)
8. Mount the ceiling limiting bar and limit switch on the cross beam. (Fig. 14)

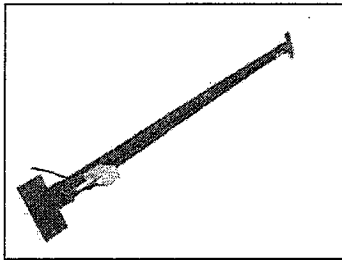


Fig. 14

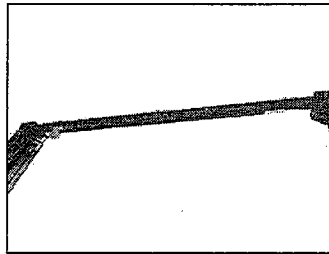


Fig. 15

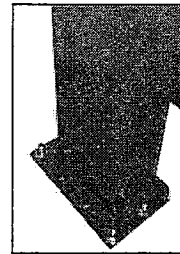


Fig. 16

9. Put on the crossbeam on the top of the columns then bolt it. (Fig. 15)
10. Check all the dimensions of the column bases. If OK, anchor another column either.(Fig16)

STEP 5: (Mounting the POWER UNIT)

1. Attach the power unit to the POWERSIDE COLUMN using bolts, nuts and washers supplied (See Fig. 17).
2. Remove the vent plug from the power unit and fill the reservoir with hydraulic oil. Make sure the funnel used to fill the power unit is clean.

Suggestion: Use AW 32,46 Non-Detergent Non-Foaming Anti-Wear Hydraulic Oil SAE-10 (Texaco HD46 or equal). The unit will holds approximately ten quarts of fluid.

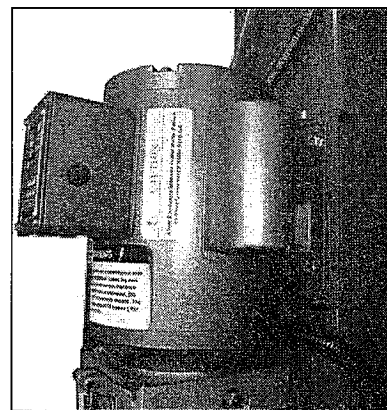


Fig. 17

STEP 6: (Connecting the hydraulic hoses)

1. Screw the L-fittings on the valve block. (Fig. 18)
2. Connect the hydraulic hose from the fittings to the cylinder through T-fittings. (Fig. 19-22)

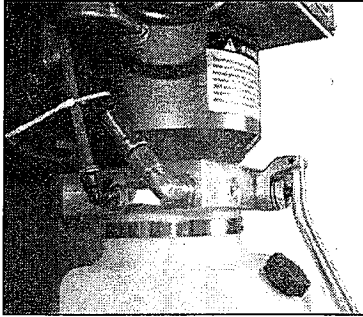


Fig. 18

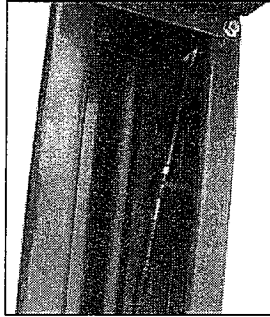


Fig. 19

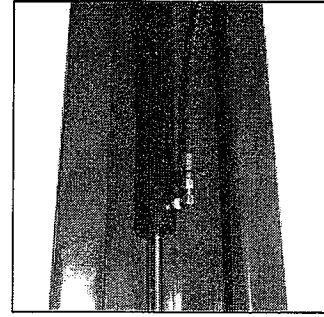


Fig. 20

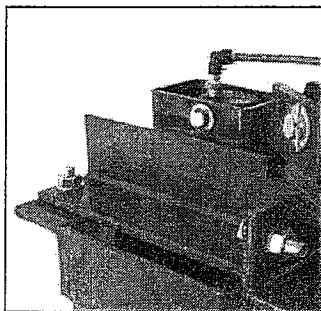


Fig. 21

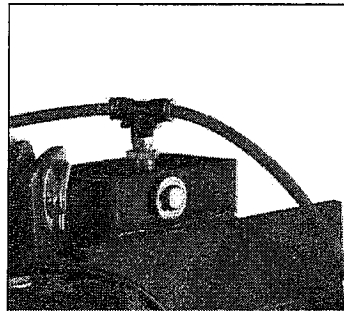


Fig. 22

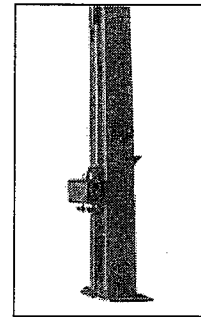


Fig. 23

STEP 7: (cable wiring)

1. Pull up both carriages to first height lock.(Fig. 23)
2. Line the cables through the cable dolly on the top, then down to the bottom of the column. (Fig. 24)
3. Take off the dolly on the bottom. Put the cable on it then position them back to the bracket. (Fig. 25-26)
4. Bolt the end of the cables on the carriage. (Fig. 27-28)

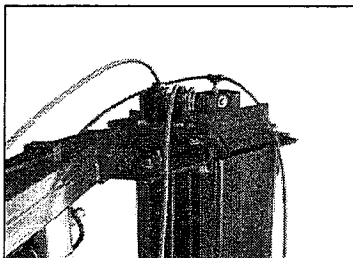


Fig. 24

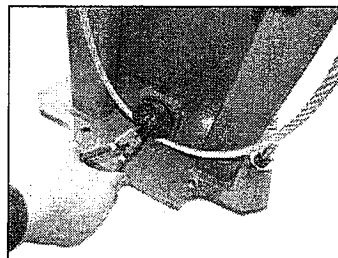


Fig. 25

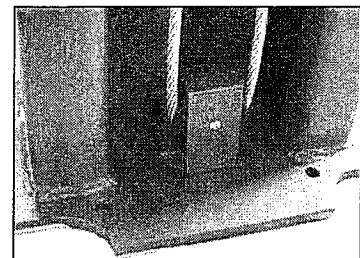


Fig. 26

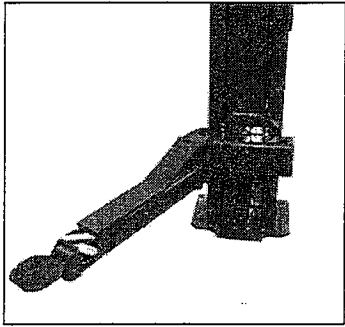


Fig. 27

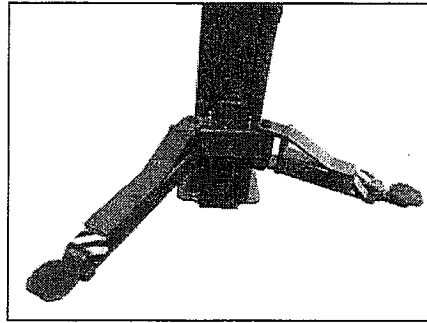


Fig. 28

STEP 8: (Install the lifting arms)

Install the swing arms on the carriages using the included 1 1/2" diameter pins. Check for proper engagement of the arm lock. The rack on the lock should fully engage the gear on the arm. (Fig. 27,28)

STEP 9: (Power connection)

1. Connect the ceiling limit switch cable in the line of the main running button. Normally the limit switch is closed. So the motor will run if the button is pressed.
2. Make the Electrical hookup to the power unit (220V Single Phase). It is recommended that a 220 Volt, 30Amp twist lock plug be installed in the power line just ahead of the power unit. Size wire for 30 - amp circuit.

Warning: the wiring must comply with local code. Have a certified electrician make the electrical hook-up to the power unit. Protect each circuit with time delay fuse or circuit breaker 208V-230V single Phrase 30 Amp.

STEP 10: (Checking running first time)

Do not place any vehicle on the lift at this moment. Cycle the lift up and down several times to insure all air is removed from the cylinder system.

Note:

1. Because of no loading, the lowering time will be longer than with vehicle on
2. Between cycles there shall be at least 2 minutes break for the motor.
3. Before lower down the lift every time, please raise the lift a little, then pull the release hook under **each** carriage to unlock (Fig. 29). Remember both side need to be released.

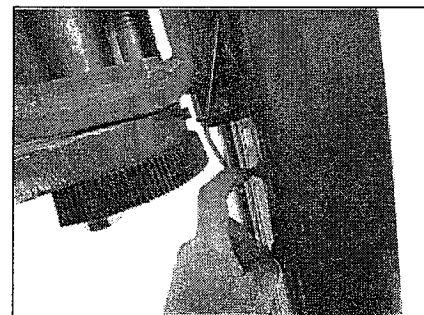


Fig. 29

NOW THE LIFT IS READY FOR USE.

PERFORMANCE

RAISE-LIFT

1. Read operating and safety manuals before using lift.
2. Always lift a vehicle according to the manufacturers recommended lifting positions
3. Position vehicle between columns.
4. Adjust swing arms so that the vehicle is positioned with the center of gravity midway between pads.
5. Use truck adapters as needed. Never exceed 9" of pad height.
6. Raise the lift by pressing button on power unit until support contacts underside of the vehicle.
Recheck to make sure vehicle is secure.
7. Raise vehicle to desired working height. Then, to lock the lift you must press the **lower lever** to relieve the hydraulic pressure and let the carriage set on the locking position.

ALWAYS LOCK THE LIFT BEFORE GOING UNDER THE VEHICLE. NEVER ALLOW ANYONE TO GO UNDER THE LIFT WHEN RAISING OR LOWERING.

LOWER LIFT

1. Be sure tool trays, stands or personnel are removed from under vehicle.
2. First to raise the lift until the carriage leaves the locking position.
3. Pull the locking hook under both carriage.
WARNING: ALWAYS RELEASE BOTH SIDES
4. Press the release lever at the power unit to lower the lift.
5. Before removing vehicle from lift area, position the lift arms and supports to provide an unobstructed exit.

WARNING: Never drive over lift arms.

Note: It is normal for an empty lift to lower slowly.

MAINTENANCE SCHEDULE

The following periodic maintenance is the suggested minimum requirements and minimum intervals; accumulated hours or monthly period, whichever comes sooner. If you hear a noise not associated with normal lift operation, or, see any indication of impending failure - **cease operation immediately** – inspect, correct and / or replace parts as required.

WARNING: OSHA AND ANSI REQUIRE USERS TO INSPECT LIFTING EQUIPMENT AT THE START OF EVERY SHIFT. THESE AND OTHER PERIODIC INSPECTIONS ARE THE RESPONSIBILITY OF THE USER.

DAILY PRE-OPERATION CHECK (8 HOURS)

The user should perform daily check. ATTENTION! Daily check of safety latch system is very important - the discovery of device failure could save you from expensive property damage, lost production time, serious personal injury and even death.

- Check safety lock audibly and visually while in operation
- Check safety latches for free movement and **full engagement with rack.**
- Check hydraulic connections, and hoses for leakage.
- Check chain connections- bends, cracks-and loose links.
- Check cables connections- bends, cracks-and looseness
- Check for frayed cables in both raised and lowered position.
- Check snap rings at all rollers and sheaves.
- Check anchors, bolts, nut, and screws and tighten them.
- Check wiring & switches for damage.
- Keep base plate free of dirt, grease or any other corrosive substances.
- Check floor for stress cracks near anchor bolts.
- Check swing arm restraints.

WEEKLY MAINTENANCE (40 HOURS)

- Check anchor bolts torque to 80 ft-lbs for the $\frac{3}{4}$ " anchor bolts. *Do not use impact wrench.*
- Check floor for stress cracks near anchor bolts.
- Check hydraulic oil level.
- Check and tighten bolts and nuts, and screws.
- Check cylinder pulley assembly for free movement and also check excessive wear on cylinder yoke or pulley pin.
- Check cable pulley for free movement and excessive wear.

YEARLY MAINTENANCE

- Lubricate chain
- Grease rub blocks and column surface contacting rub blocks
- Change the hydraulic fluid. Good maintenance procedure makes it mandatory to keep hydraulic fluid clean. No hard fast rules can be established;-operating temperature, type of service, contamination levels, filtration, and chemical composition of fluid should be considered. If operating in dusty environment shorter interval may be required.

Only a trained maintenance expert should perform the following items.

- Replace hydraulic hoses
- Replace chains and rollers.
- Replace cables and sheaves.
- Replace or rebuild air and hydraulic cylinders as required.
- Replace or rebuild pumps / motors as required.
- Check hydraulic cylinder rod and rod end (threads) for deformation or damage.
- Check cylinder mount for looseness and damage.

Relocating or changing components may cause problems. Each component in the system must be compatible; an undersized or restricted line will cause a drop in pressure. All valve, pump, and hose connections should be sealed and / or capped until just prior to use. Air hoses can be used to clean fittings and other components. However, the air supply must be filtered and dry to prevent contamination. Contamination is the most frequent cause of malfunction or hydraulic equipment.

TROUBLE SHOOTING

1. Motor dose not run:
 - A. Breaker or fuse blown
 - B. Motor thermal overload tripped. Wait for overload to cool.
 - C. Defective up button. Call electrician for checking.
 - D. Faulty wiring connections. Call electrician.
2. Motor runs but will not raise:
 - A. Oil level to low. Oil level should be just under the vent cap port when the lift is down!!!
 - B. Check the clearance in the plunger valve of the lowering handle. There should be 1/16".
 - C. Remove the check valve cover and clean ball and seat.
 - D. A piece of trash is under check valve. Push handle down and push the up button at the same time. Hold for 10-15 seconds. This should flush the system.
3. Oil blows out breather of power unit:
 - A. Oil reservoir overfilled.
 - B. Lift lowered too quickly while under a heavy load.
4. Motor hums and will not run:
 - A. Lift overloaded-----remove excessive weight from lift
 - B. Bad capacitor -----call electrician/service engineer
 - C. Low voltage -----call electrician
 - D. Faulty wiring -----call electrician
5. Lift jerks going up and down:
 - A. Air in hydraulic system-----Raise lift all the way to top and return to floor. Repeat 4-6 times with interval at least 2 minutes. Not let this overheat power unit.
6. Oil leaks
 - A. Power unit-----If the power unit leaks hydraulic oil around the tank-mounting flange, check the oil level in the tank. The level should be two inches below the flange of the tank. Check with a screwdriver as a 'dipstick'.
 - B. Rod end of cylinder-----The rod seal of the cylinder is out. Rebuild or replace the cylinder.
 - C. Breather end of the cylinder-----the piston seal of the cylinder is out. Rebuild or replace the cylinder.
7. Lift makes excessive noise.
 - A. Rub block on carriage of the lift is dry and requires grease.
 - B. Cylinder pulley assembly or cable pulley assembly is not moving freely. Check and grease it.
 - C. May have excessive wear on pins or cylinder yoke. Check and replace them.

OWNER / EMPLOYER RESPONSIBILITIES

The owner / Employer:

Shall establish procedures to periodically maintain, inspect and care for the lift in accordance with the manufactures recommended procedures to ensure its' continued safe operations.

Shall provide necessary lockout of energy sources per ANSI Z244.1 -1982 before beginning any lift repairs.

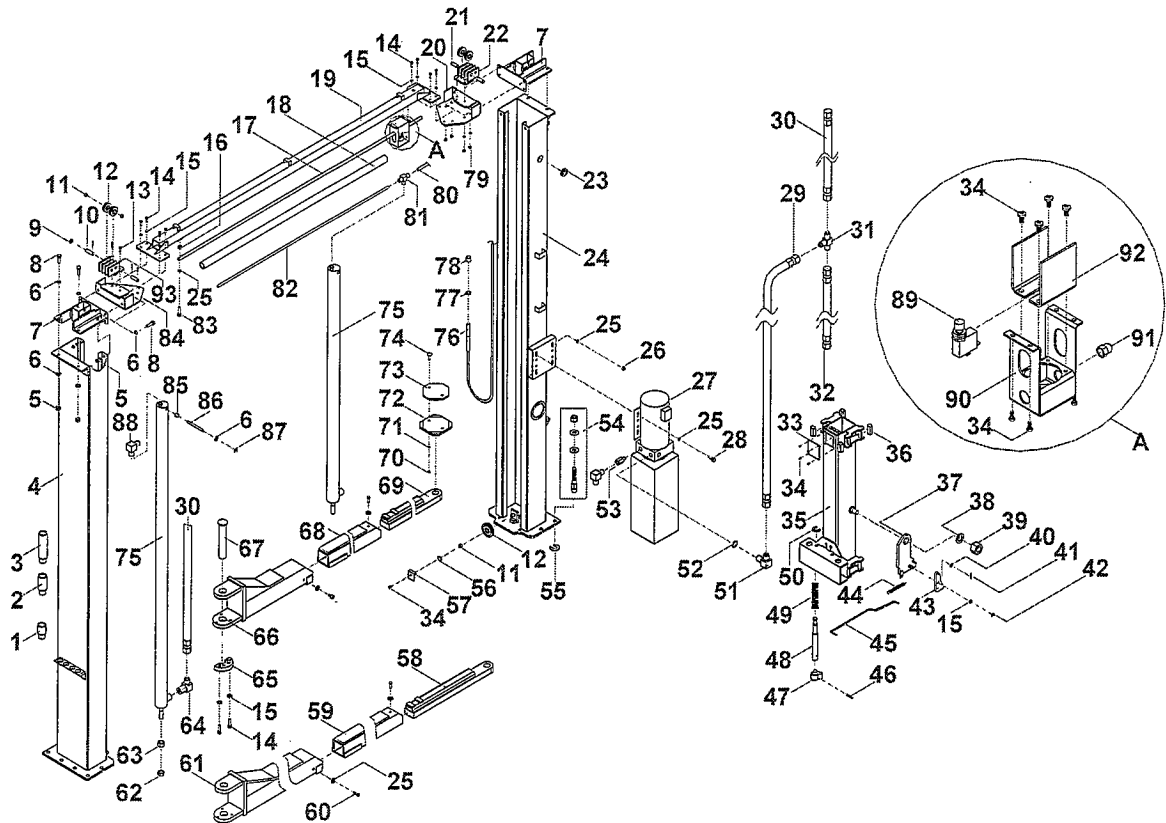
Shall not modify the lift in any manner without prior written consent of the manufacture.

Shall display the operating instructions and 'Lifting It Right' and 'Safety Tips' supplied with the lift in a conspicuous location in the lift area convenient to the operator.

Shall insure that lift operators are instructed in the proper and safe use and operation of the lift using the manufacturer's instructions and "Lift It Right: and "safety Tips" supplied with the lift.

PARTS CODE AND DRAWING Fig. 30

(column, carriage, lifting arm & cylinder)



PARTS CODE LIST

ITEM	CODE	DESCRIPTION	QTY	NOTE
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	hose 1#	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	NOTE
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 extention 1#	2	
59	165948B*01-059	arm extention 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	NOTE
75	165948B*01-075	cylinder	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	