MODEL: PRO-12TP

12,OOO LB. 2-POST
AUTOMOBILE LIFT

CO7338.4 IN50006 Rev. B 05/14/2009

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Safety Summary

General Safety Instructions

This summary describes physical and chemical processes that may cause injury or death to personnel, or damage to equipment if not properly followed. This safety summary includes general safety precautions and instructions that must be understood and applied during operation and maintenance to ensure personnel safety and protection of equipment. Prior to performing any task, the WARNINGs, CAUTIONs, and NOTEs included in that task should be reviewed and understood.

Warnings, Cautions, and Notes

WARNINGs and CAUTIONs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements that are considered essential to protection of personnel (WARNING) or equipment (CAUTION). WARNINGs or CAUTIONs immediately precede the step or procedure to which they apply. NOTEs are used in this manual to highlight operating or maintenance procedures, practices, conditions or statements that are not essential to the safeguarding of personnel or equipment. NOTEs may precede or follow the step or procedure, depending on the information to be highlighted. The Headings used and their definitions are as follows.

WARNING

Highlights essential operating or maintenance procedure, practice, condition, statement, etc. that if not strictly observed, could result in injury to, or death of, personnel or long term health hazards.

CAUTION

Highlights essential operating or maintenance procedure, practice, condition, statement, etc. that if not strictly observed, could result in damage to, or destruction of equipment.

NOTE

Highlights essential operating or maintenance procedure, practice, condition, or statement.

Hazardous Material Description, Precautions and First Aid

This lift uses ISO Grade 32 AW, 46 or other good grade non-detergent hydraulic oil. Its toxicological properties, precautionary measures to take, and first aid measures are stated below.

1 General Information and Specifications

1.1 General Information

This lift is a 12,000 lb. capacity, two-column lift. The safety system in this lift is attached to the back of the carriage to provide a single point release that saves time when operating. This lift is equipped with two heavy-duty direct-drive cylinders to provide consistent power to the lift.

An electrical-hydraulic power unit included with the lift will provide up to 3000 psi of hydraulic pressure to actuate the cylinders.

1.2 Specifications

The specifications are shown in the following table.

Table 1-1. Basic PRO-12TP Specifications

Specification		Value
A.	Rise Height	86-3/4 in., Highest position, with long truck adapter
B.	Adjustable Overall Height	165 in. Standard Setup; 177 in. High Setup
C.	Width Overall	157 in.
D.	Drive Through	109-1/2 in.
E.	Floor to Overhead Switch	157-1/2 in. Low, 169-1/2 in. High
F.	Front Arm Reach	Min.38-1/2 in./Max. 57-1/2 in.
G.	Real Arm Reach	Min.38-1/2 in./Max. 57-1/2 in.
H.	Lifting Pad Height	5-1/2 in.
	Lifting Pad Height w/Short Ext.	10 in.
	Lifting Pad Height w/High Ext.	14
I.	Between Columns	123-1/2 in.
	Lifting Capacity	12000 Lbs
	Max. Load Per Arm	3000 Lbs per arm
	Cylinders	Dual Cylinder, Direct Drive
	Motor	2 HP
	Voltage	208v - 230v
	Speed of Rise	60 Seconds

The remaining chapters in this manual are as follows:

Chapter/Title:	Page:
2 - Installation and Preparation for Use	2-1
3 - Operating Instructions	3-1
4 - Maintenance and Troubleshooting	4-1
5 - illustrated Parts Breakdown	5-1

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2 Installation and Preparation for Use

2.1 General Information

1. Any freight damage must be noted on the freight bill before signing and reported to the freight carrier with a freight claim established. Identify the components and check for shortages. If shortages are discovered, contact Direct Lift immediately.

2. Consult building owner and / or architect's plans when applicable to establish the best lift location. The lift should be located on a relatively level floor with 4 in. minimum thickness, 3000-psi concrete slab that has been properly cured. ***There can be no cracks in the slab within 36 in. of the base plate location, and no seams in the foundation within 6 in. of its' location! Remember: any structure is only as strong as the foundation on which it is located!***

3. This lift has two set-up dimensions as below:

   a) STANDARD set-up
      1) Overhead Clearance: 165 in.
      2) Ceiling Height Required: 167 in.

   b) HIGH set-up
      1) Overhead Clearance: 177 in.
      2) Ceiling Height Required: 179 in.

NOTE

Check for ceiling clearance first to see how high the lift can be set up in your bay.

2.2 Tools and Equipment Required

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

- Appropriate lifting equipment
- AW 32, 46 or other good grade Non-Detergent Hydraulic Oil SAE-10 (12 quarts)
- Chalkline and 12' Tape Measure
- Rotary Hammer Drill with 3/4 in. Drill Bit. Core Drill Rebar Cutter recommended
- Transit and a 4' Level
- Sockets and Open Wrench set, 1/2 in. thru 1-1/2 in. (1-1/8 in. for 3/4 in. Anchors)
- Locking Pliers, 8mm Socket Head Wrench

2.3 Foundation Requirements

The foundation requirements are listed below:

CAUTION

Columns are supported only by anchoring in the floor.
DO NOT install on asphalt or other similar unstable surface Failure to follow the requirements of the following step could result in damage to, or destruction of equipment.

The foundation has to be long enough for the vehicles to be supported, wide enough to provide support for the lift, and the concrete shall have compression strength of at least 3,000 PSI and a minimum thickness of 4 in. in order to achieve a minimum anchor embedment of 3-1/4 in. When using the standard supplied ¾ in. x 5 ½ in. long anchors, if the top of the anchor exceeds 2-1/4 in. above the floor grade you **DO NOT** have enough embedment. Figure 2-1 provides an overview of the foundation sizing requirements.

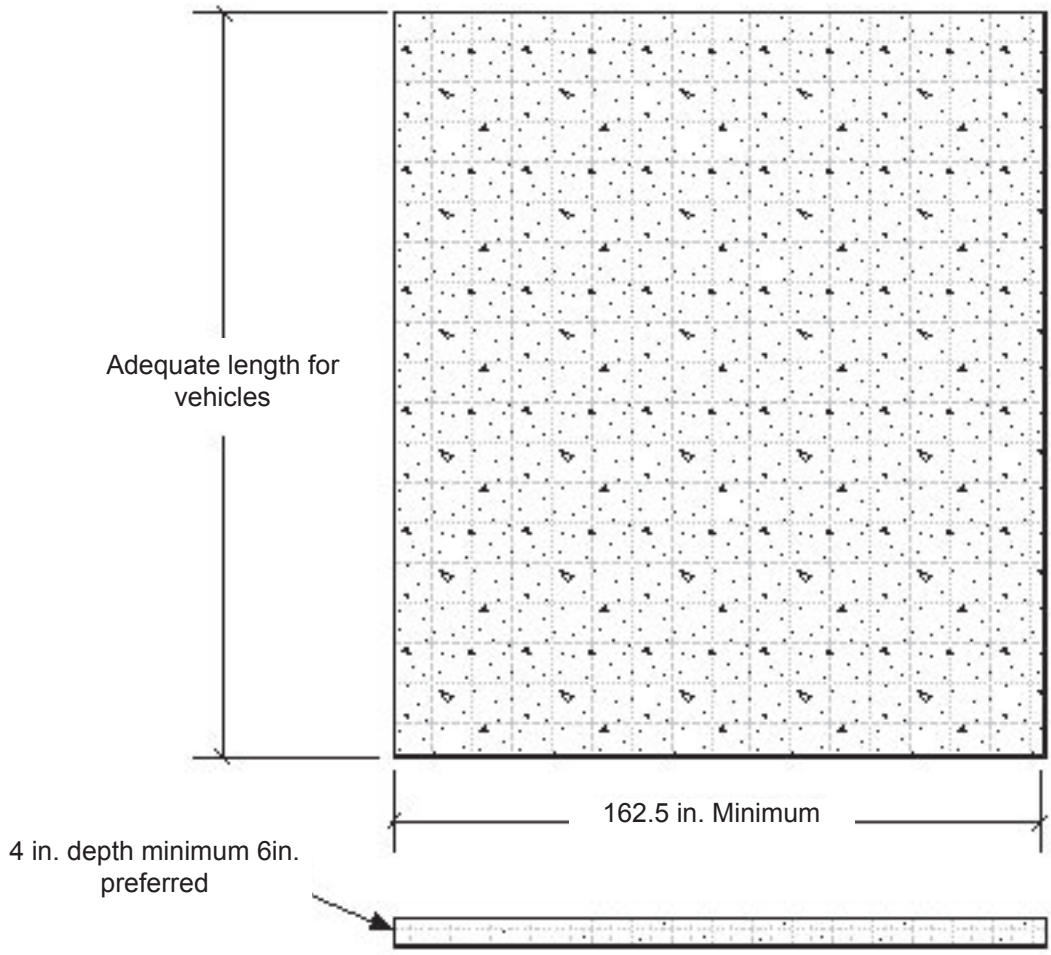

Figure 2-1. Foundation requirements

2.4 Installation

Install as given in the following paragraphs.

2.4.1 Assemble Columns and Uprights

Assemble the columns and uprights according to the following steps:

1. After unloading the lift, place it near the intended installation location.

2. Remove the shipping bands and packing materials from the lift. The power unit will be unpacked from the top. Take out all parts and components packed inside the column other than carriage, including cylinders.

3. Unbolt the column from the shipping brackets. Unbolt the up-rights from the columns and assemble it to the column as shown in figure 2-2.

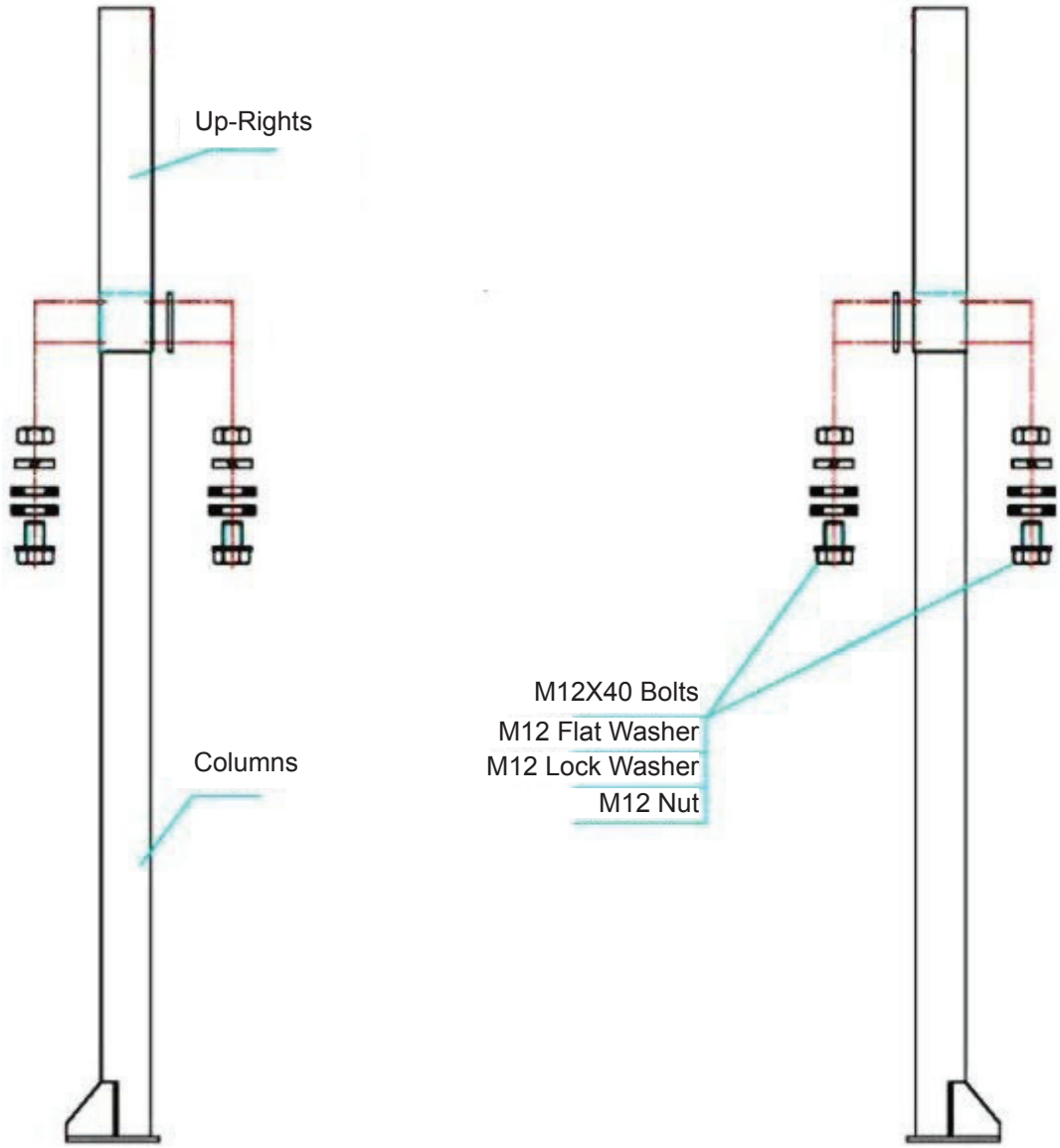

Figure 2-2. Overhead Beam and Upright Assembly

4. Open the oil port on each cylinder by unscrewing the black plastic cap. The oil port is located in the cylinder rod end that will fit into the cylinder retainer welded on the bottom plate of the column. Move the carriage up about 50 in. to 60 in. Next, carefully slide the cylinder inside from the bottom of the carriage.

WARNING

Failure to position the columns as directed in the following step could result in foundation damage that can cause death or serious injury as well as damage to the equipment. Columns are supported only by anchoring in the floor. DO NOT install on asphalt or other similar unstable surface.

5. Position the columns facing each other 150-1/4 in. outside base plates (see figure 2-3). Allow a minimum of 6 in. from the column base plate to the foundation edge. Square the columns by measuring diagonally from corner points on base plates (within1/4 in.). Trace around the column base plates to make sure that positions do not shift in the following steps.

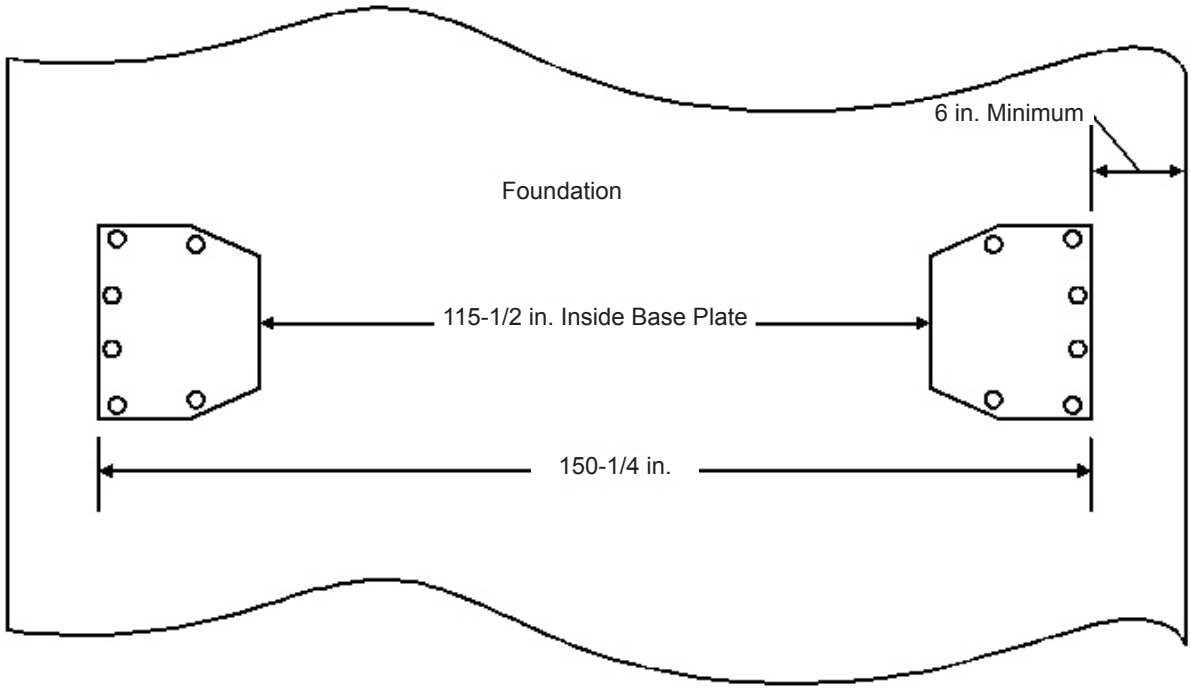

Figure 2-3. Placement of Columns on Foundation

WARNING

Failure to follow the requirements of the following step could result in damage to, or destruction of equipment. If anchors do not tighten to 85 ft-lbs. Installation torque, replace the concrete under each column base with a 4’ x 4’ x 6 in. thick 3,000 PSI minimum concrete pad keyed under and flush with the top of existing floor. Allow concrete to cure and return to Step 5.

6. Secure the columns to the foundation as follows (refer to figure 2-4):

   a) Using a 3/4 in. diameter concrete drill, drill the anchor holes in the concrete for the main side column, installing anchors as you go. Use a concrete hammer drill with a carbide tip solid drill bit the same diameter as the anchor, 3/4". (.775 to .787 inches diameter). **Do not** use excessively worn bits or bits which have been incorrectly sharpened. Refer to figure 2- 4 Detail A. Use the following guide while drilling the anchor holes in the concrete:

      1) Keep the drill in a perpendicular line while drilling.

      2) Use a block of wood or rubber mallet to drive anchor bolts into the concrete.

      3) Drill to a minimum depth of 4 in. to make sure maximum holding power is achieved. Drilling thru concrete (recommended) will allow the anchor to be driven thru the bottom if the threads are damaged.

      4) Let the drill do the work. Do not apply excessive pressure. Lift the drill up and down occasionally to remove residue to reduce binding.

      5) Drill the hole to depth equal to the length of anchor.

      6) For better holding power blow dust from the hole (.Refer to figure 2-4 Detail B).

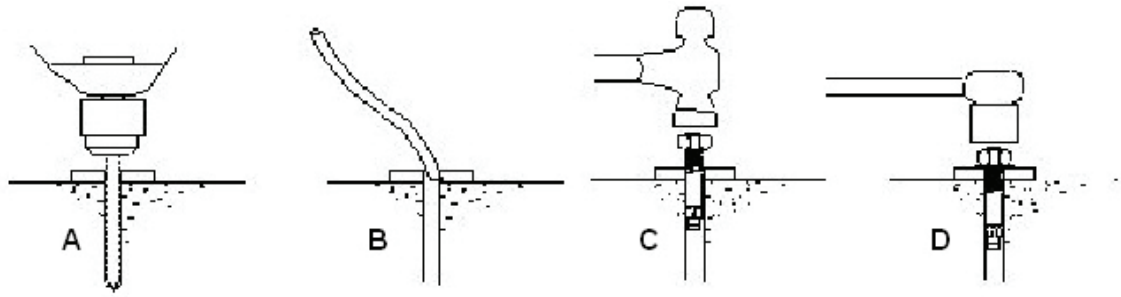

Figure 2-4. Anchor Hole Drilling and Seating

   b) Place a flat washer and hex nut over threaded end of anchor, leaving approximately 1/2 inch of thread exposed and carefully tap anchor (Refer to figure 2-4 Detail C). **Do not** damage threads.

   c) Tap anchor into the concrete until nut and flat washer are against base plate. Do not use an impact wrench to tighten (Refer to figure 2-4 Detail D).

   d) 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 required. Check each anchor bolt with torque wrench set to 85 foot-pounds.

NOTE

If 85 foot-pounds of torque cannot be obtained on any anchor, return to the warning preceding step 6 and follow the instructions in the warning.

7. Using a level, check column for side-to-side plumb and front-to-back plumb. 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 plates (Shim thickness should not exceed ½ in.). Tighten ¾ in. anchor bolts to 85 ft-lbs. of torque.

NOTE

If 85 foot-pounds of torque cannot be obtained on any anchor, return to the warning preceding step 6 and follow the instructions in the warning.

8. Using a tape measure, measure from back corner of the base to the opposite back corner to make sure the legs are square. After confirming dimensions, drill and install the anchors on the other side leg as given in step 6.

9. Level the second column as described in step 7.

2.4.2 Installation of Overhead Beam

Install the overhead beam as follows:

1. Install the overhead cross beam as shown in figure 2-5. This cross beam has two pieces, to be connected by six (6) bolts in the center of the beam. Be sure to bolt them together by installing the bolts from inside the cross beam out. This is to avoid interference with the cable when operating the lift.

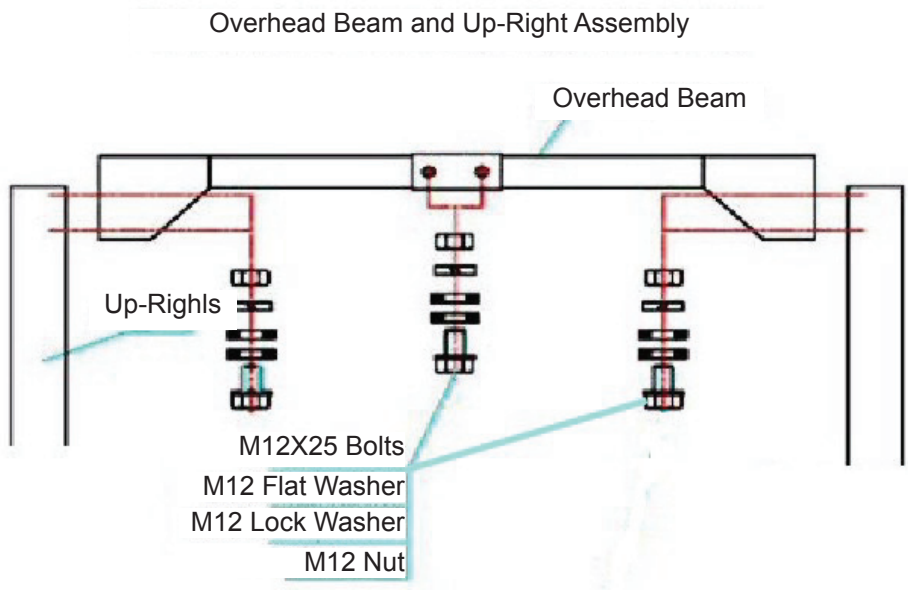

Figure 2-5. Overhead Beam Installation

2. Connect the safety release cable between the two latches as shown on figure 2-6 on page 2-8. Check that the tension of the cable is tight. Pull the single point release handle several times and check the tension again by making sure both latches release at the same time when the handle is pulled.

2.4.3 Installation of Power Unit

Install the power unit as follows. Refer to figure 2-7 on page 2-9:

1. Mount the power unit on the main side leg to the power unit bracket using the four 5/16 in. bolts and nuts. Install the “T” fitting with o-ring on the power unit, and then install the 6 in. pipe into the backside of the main column cylinder (power unit side).

2. Connect the 90-degree hydraulic fitting on the other end of the 6 in. pipe.

3. Connect the short hydraulic hose to one side of the “T” fitting at power unit, then run the hose down the column and connect to the fitting on the base of cylinder.

4. Connect the long hydraulic hose to the other side of the “T” fitting. Place the hose across over the overhead beam to the opposite column, then down the side and connect to the fitting on the other column cylinder.

2.4.4 Installation of Equalizing Cables

Connect the equalizing cables as shown in figure 2-8 on page 2-10 by doing the following in the order given:

NOTE

Do not tighten at this stage of assembly.

1. Note – The cable stud that connects to the front right corner of the carriage should be connected first by pulling the stud through the carriage hole and up where it is easy to be held by locking pliers. Pull the stud back into place after threading at least ½ in. of the stud past locknut.

2. Connect the other ends to the rear right corners of the carriage with at least ½ in. of thread showing past lock nut (cables run on inside of carriage). It may be necessary to manually raise both carriages above the cylinder to provide enough space to use the locking pliers. Make sure the carriage is set in the LOCK position.

3. Adjust the carriage cable tension. This is accomplished by tightening the center nut on top of each carriage. The center carriage adjustment nut adjusts the opposite post carriage height. The left post carriage nut adjusts the right column carriage, and the right column carriage nut adjusts the left column carriage. Adjust each cable to approximately 1/2 in. side-to-side play. Check the latch releases to make sure the carriage is still engaged in the appropriate latch.

4. Install the half moon gear locks on each swing arm (USA side up). Position the swing arms on the carriages using the included 1 1/2 in. diameter pins (2 short for front arms and 2 long for rear arms). Check for proper engagement of the arm lock – the rack on the lock should fully engage the gear on the arm.

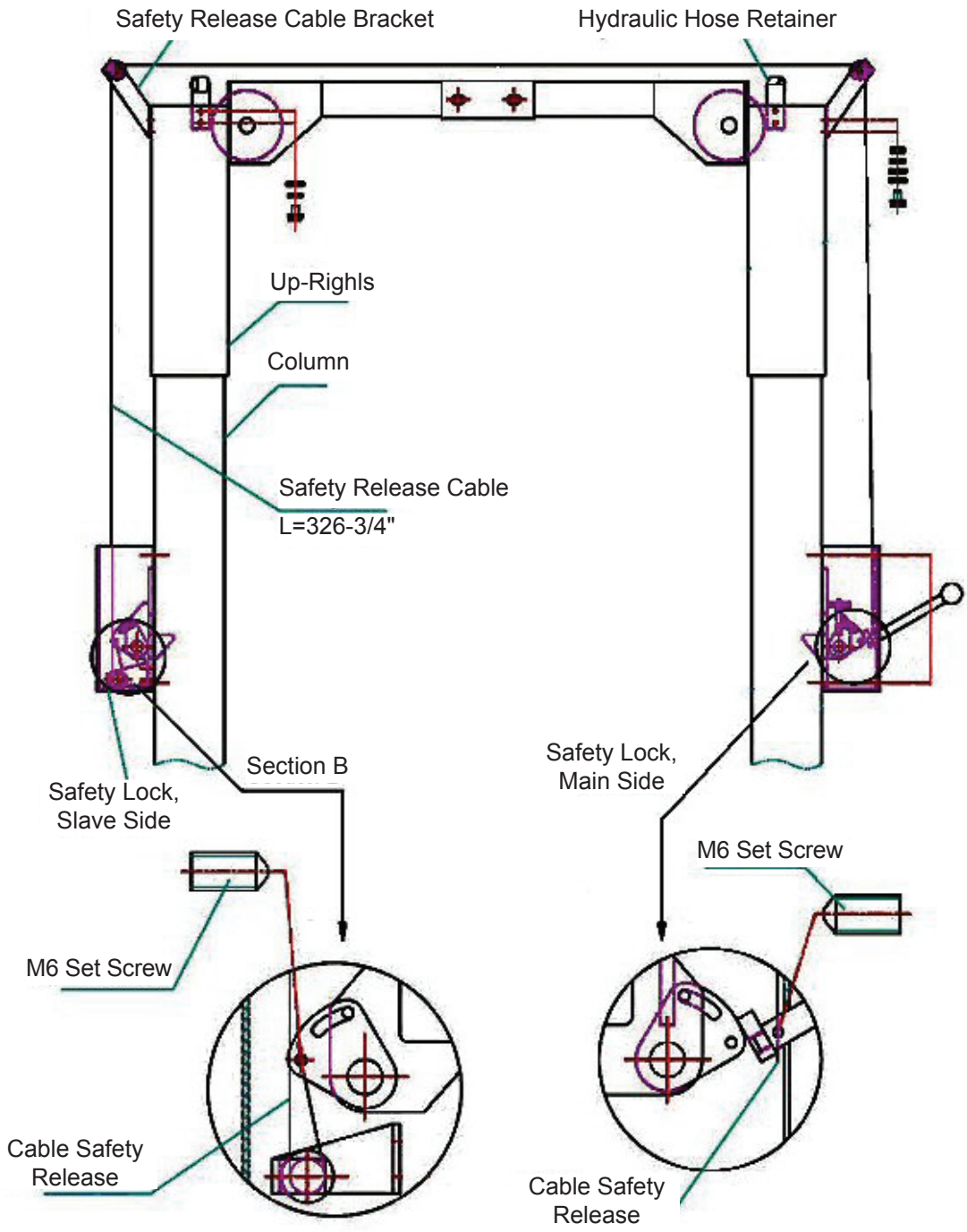

Figure 2-6. Safety Release Cable Installation

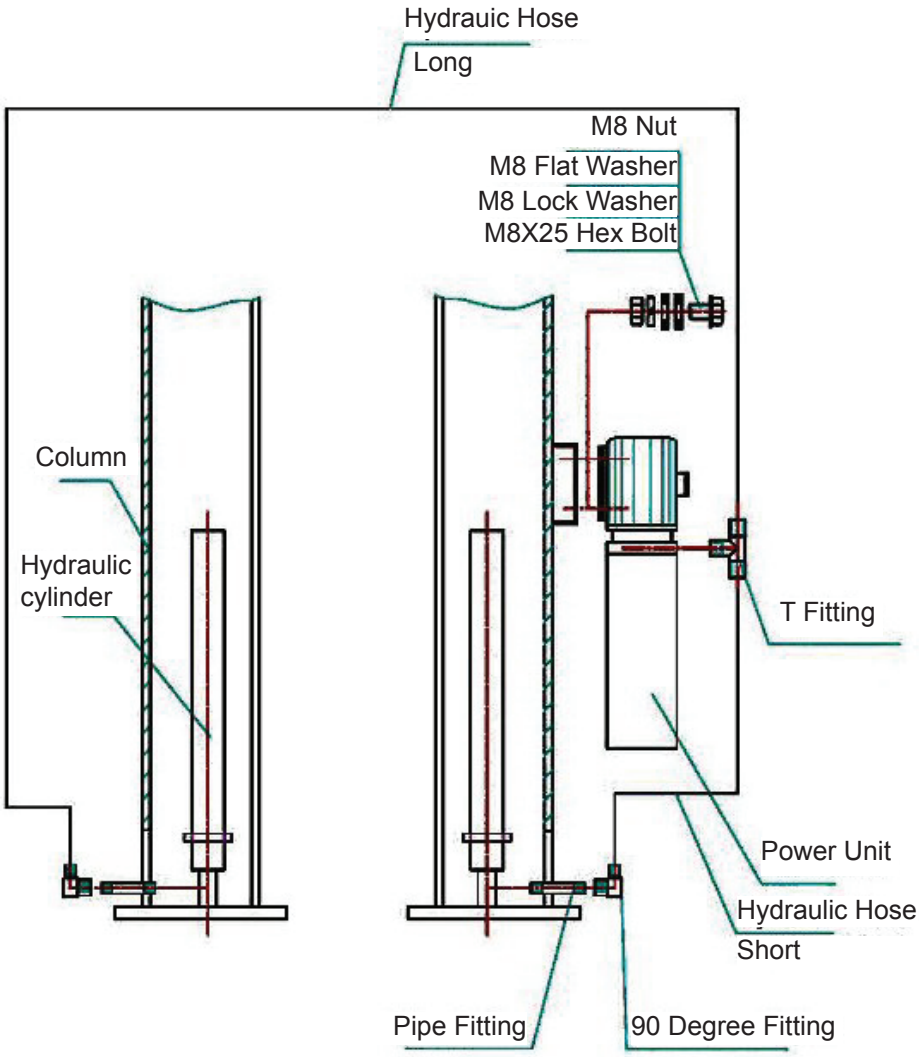

Figure 2-7. Power Unit Installation

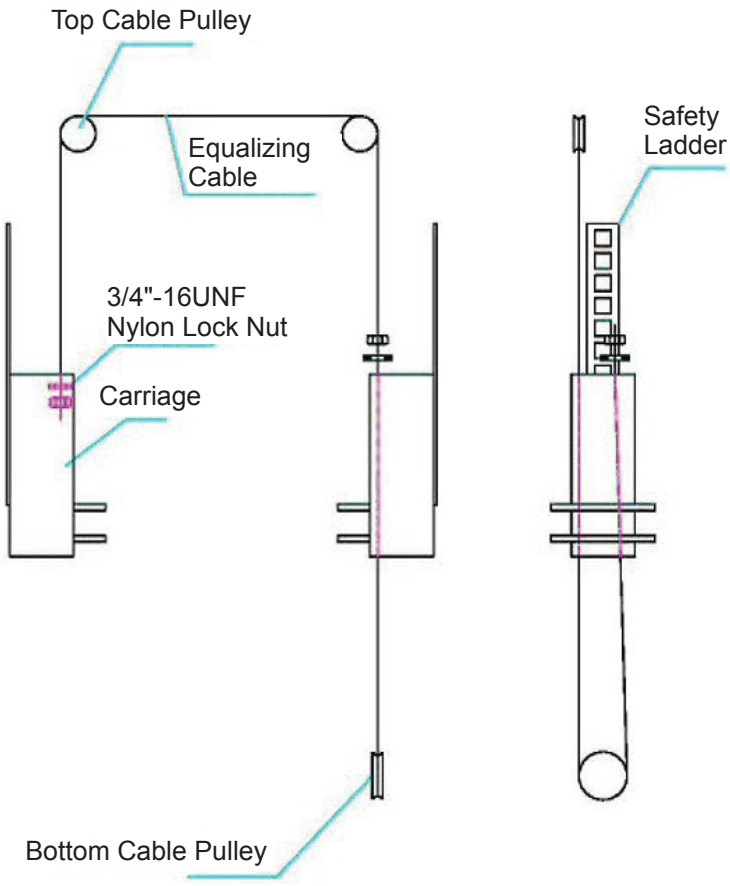

Figure 2-8. Installation of Equalizing Cables

5. Install the overhead shut off cable. Using 2.5 mm cable supplied with the lift and aluminum ferrells, clamp one end of cable to eye bolt A, run the cable through eye bolt B, and then clamp the another end to C which is the shut off switch on the power unit. See sheet 6 of figure 5-1on page 5-12 for details.

6. Remove the vent plug from the power unit and fill the reservoir. Use a Ten Weight (SAE-10) non-foaming, non-detergent hydraulic fluid (Texaco HD46 or equal). The unit will hold approximately twelve quarts of fluid.

WARNING

Failure to comply with this warning could result in death or injury. The wiring must comply with local code. In the following step have a certified electrician make the electrical hook-up to the power unit. Protect each circuit with time delay fuse or circuit breaker rated at 208v-230v single phase. 60 Hz 30 amp. Motor cannot run on 50 Hz without a physical change to motor.

7. Make the Electrical hookup to the power unit; 220V Single Phase. It is recommended that a 220 Volt, 30 Amp twist lock plug be installed in the power line just ahead of the power unit. Use wire capable of supporting a 30-amp circuit.

CAUTION

Failure to comply with this caution could result in damage to the lift.
Do not place any vehicle on the lift at this time.

8. Cycle the lift up and down several times to make sure latches engage properly and all air is removed from the system. To lower the lift, first raised the lift to clear the latches and then pull down the safety release handle to lower the lift. If latches function out of synchronization, tighten the cable on the latch that engages first.

2.5 Installation test

Test the Lift operation by doing the following:

9. Raise the lift by pressing the button on the power unit.

NOTE

The safety latch mechanism will 'trip over' when the lift raises and drop into each latch stop. To lock the lift you must press the Lower lever to relieve the hydraulic pressure and let the latch set tight in a lock position.

NOTE

In the following step it is normal for an empty lift to lower slowly - it may be necessary to add weight.

10. Lower the lift by doing the following:

a) Raise the lift until the latches clear the safety racks in both sides.

CAUTION

Failure to comply with this caution could result in damage to the lift.
In the following step always make sure latches on both sides clear the rack at same time when pulling down the release handle by adjusting the cable.

b) Pull down and hold the safety release handle.
c) Press the lowering lever at the power unit to lower the lift.

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3 Operating Instructions

3.1 Safety Procedures

WARNING

Failure to adhere to the following can result in death or injury, or damage to the equipment and vehicle. All personnel will be made aware of this warning and trained in the use and care of the lift.

1. Never allow unauthorized persons to operate lift. Thoroughly train new employees in the use and care of lift.
2. Caution - the power unit operates at high pressure.
3. Remove passengers before raising vehicle.
4. Prohibit unauthorized persons from being in shop area while lift is in use.
5. Total lift capacity is 12,000-lbs. with 3,000-lbs. per swivel pad. Do not exceed this capacity.
6. Prior to lifting vehicle, walk around the lift and check for any objects that might interfere with the operation of lift and safety latches; tools, air hoses, shop equipment.
7. When approaching the lift with a vehicle, center the vehicle between the columns so that the tires will clear the swing arms easily. Slowly drive the vehicle up between the posts. Have some one outside the vehicle guide the driver.
8. Always lift vehicle using all four pads.
9. Never use lift to raise one end or one side of vehicle.
10. Raise vehicles about 3 in. and check stability by rocking.
11. Prior to lowering vehicle, walk around the lift and check for any objects that might interfere with the operation of lift and safety latches; tools, air hoses, shop equipment. Swing the arms out and slowly drive the vehicle out. Have some one outside the vehicle guide the driver.
12. Always lock the lift before going under the vehicle. Never allow anyone to go under the lift when raising or lowering.

3.2 Daily Pre-Operation Check (8-Hours).

NOTE

Occupational Safety and Health Administration (OSHA) and the American National Standards Institute (ANSI) require users to inspect lifting equipment at the start of every shift. These and other periodic inspections are the responsibility of the user.

WARNING

Failure to perform the daily pre-operational check can result in expensive property damage, lost production time, serious personal injury, and even death. The safety latch system must be checked and working properly before the lift is put to use.

The daily pre-operational check consists of the following:

1. Check safety lock audibly and visually while in operation.
2. Check safety latches for free movement and full engagement with rack.
3. Check hydraulic connections, and hoses for leakage.
4. Check cables connections- bends, cracks-and looseness.
5. Check for frayed cables in both raised and lowered position.
6. Check snap rings at all rollers and sheaves.
7. Check bolts, nuts, and screws and tighten if needed.
8. Check wiring & switches for damage.
9. Keep base plate free of dirt, grease or any other corrosive substances.
10. Check floor for stress cracks near anchor bolts.
11. Check swing arm restraints.

3.3 Controls

The controls are located on the column as shown in figure 3-1 in page 3-3 and their use and function given in table 3-1 below.

Table 3-1. PRO-12TP Controls

Item No.	Type	Purpose
1	Safety release handle	Used to release safety latches when lowering vehicle.
2	Push button switch	Controls electrical power to the power unit. Push to turn-on, and push again to turn-off the power unit.
3	Lower lever	Used to relieve hydraulic pressure when pressed down.
4	Reservoir cap	Cap for the power unit fluid reservoir. Remove to add fluid.

3.4 Operation

Operate the lift as given in the following paragraphs.

3.4.1 Positioning Vehicle

When approaching the lift with a vehicle, center the vehicle between the columns so that the tires will clear the lift arms easily. Refer to figure 3-2 on page 3-3. Slowly drive the vehicle up between the posts. Have some one outside the vehicle guide the driver.

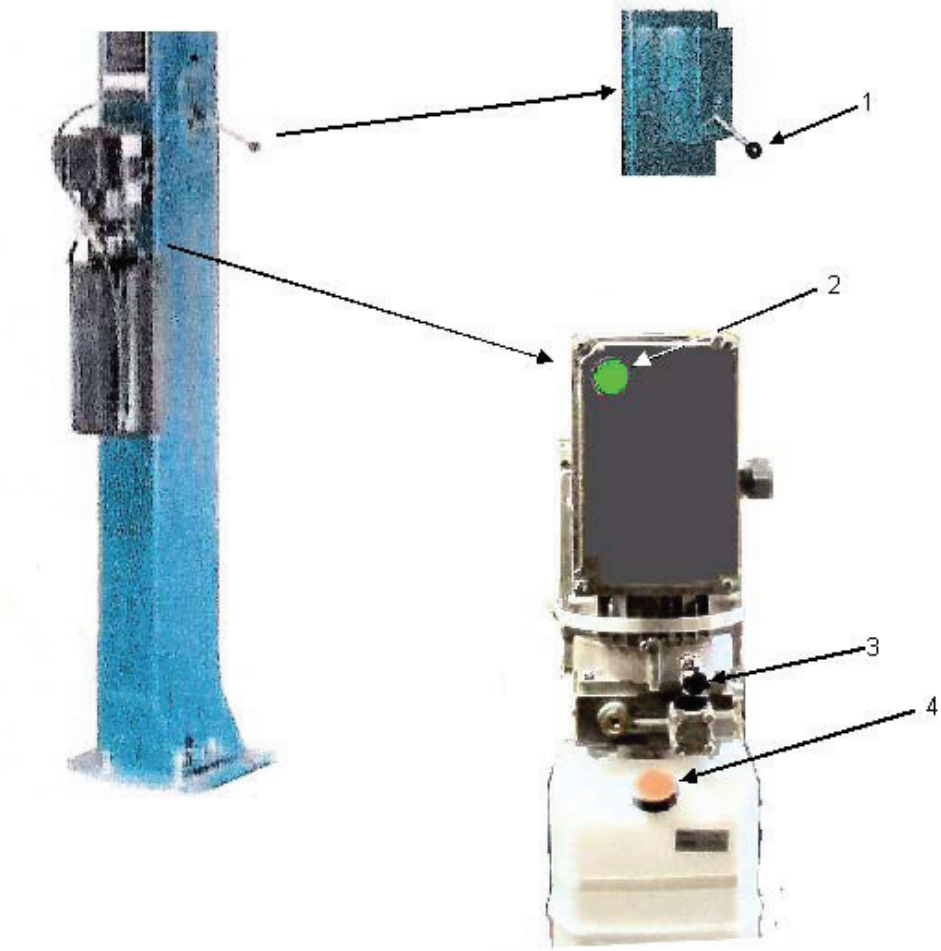

Figure 3-1. PRO-12TP Controls

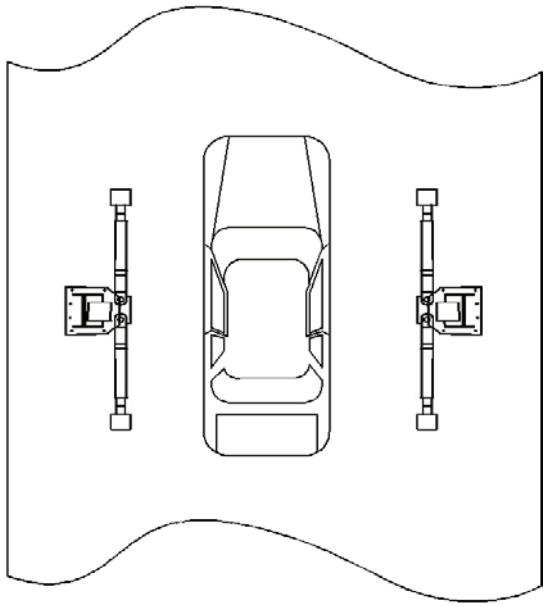

Figure 3-2. Vehicle positioning

3.4.2 Raising Vehicle

WARNING

Failure to adhere to the following can result in death or injury, or damage to the equipment and vehicle. All personnel will be made aware of this warning and trained in the use and care of the lift. Remove passengers before raising vehicle and prohibit unauthorized persons from being in shop area while lift is in use. Do not exceed the weight limitation of 12,000-lbs. Total and 3,000-lbs. Per swivel pad. Always lift the vehicle using all four pads.

1. Position the lift arms as shown in figure 3-3. Make sure the lifting pads are in a proper and safe position to support the vehicle.

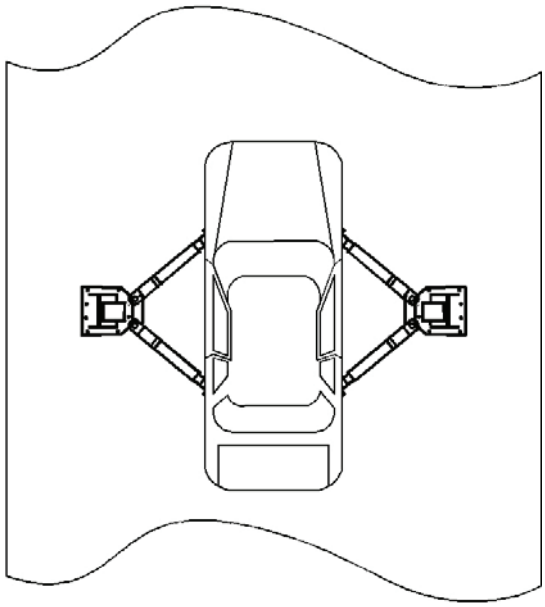

Figure 3-3. Positioning Lift Arms

2. Prior to lifting vehicle, walk around the lift and check for any objects that might interfere with the operation of lift and safety latches; tools, air hoses, shop equipment.

3. Raise vehicle about 3 in. by pressing the button on the power unit and check stability by rocking.

4. Raise the lift by pressing the button on the power unit until the vehicle is at the desired height and the safety latches are properly seated.

NOTE

The safety latch mechanism will 'trip over' when the lift raises and drop into each latch stop. To lock the lift you must press the lower lever to relieve the hydraulic pressure and let the latch set tight in a lock position.

WARNING

Failure to adhere with the following step could result in death or injury as well as damage to the lift and vehicle. Always lock the lift before going under the vehicle. Never allow anyone to go under the lift when raising or lowering.

5. Lock the lift by pressing the lower lever to relieve the hydraulic pressure and let the latch set tight in a lock position.

3.4.3 Lowering Vehicle

Lower the vehicle as follows:

WARNING

Failure to adhere with this warning could result in death or injury as well as damage to the lift and vehicle. Prior to lowering vehicle, walk around the lift and check for any objects that might interfere with the operation of lift and safety latches; tools, air hoses, shop equipment.

1. Raise the lift until the latches clear the safety racks in both sides.

2. Pull down and hold the safety release handle.

CAUTION

Failure to comply with this caution could result in damage to the lift and/or vehicle. Lower the lift slowly under heavy loads.

3. Press the lowering lever at the power unit to lower the lift.

4. Swing the arms out and slowly drive the vehicle out. Have some one outside the vehicle guide the driver.

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4 Maintenance and Troubleshooting

4.1 Maintenance

4.1.1 Owner/Employer Responsibilities

The owner/employer is responsible for, and will do the following:

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

2. Shall provide necessary lockout / tag outs of energy sources per ANSI Z244.1 – 1982 before beginning any lift repairs.

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

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

5. Shall make sure 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.

4.1.2 Periodic Maintenance Schedule

The periodic maintenance given in the following paragraphs is the suggested minimum requirements and minimum intervals; accumulated hours or monthly period, which ever comes sooner.

WARNING

Failure to heed this warning can result in death or serious injury, or damage to equipment. If you hear a noise not associated with normal lift operation, or, if there is any indication of impending lift failure - ***CEASE OPERATION IMMEDIATELY!*** - Inspect, correct and/or replace parts as required.

Periodic maintenance is to be performed on a daily, weekly, and yearly basis as given in the following paragraphs.

4.1.2.1 Daily Pre-Operation Check (8-Hours)

This daily pre-operational check is shown in the Operation Chapter as it is performed on a daily basis before use of the lift. Refer to page 3-1.

4.1.2.2 Weekly Maintenance (every 40-Hours)

On a weekly basis, perform the following checks:

1. Check anchor bolts torque to 50 ft-lbs for the ¾ in. anchor bolts. **Do not use an impact wrench.**

2. Check floor for stress cracks near anchor bolts.

3. Check hydraulic oil level.
4. Check and tighten bolts, nuts, and screws.
5. Check cylinder pulley assembly for free movement or excessive wear on cylinder yoke or pulley pin.
6. Check cable pulley for free movement and excessive wear.

4.1.2.3 Yearly Maintenance

The following shall be accomplished on a yearly basis

1. Grease rub blocks and column surface contacting rub blocks.
2. 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.

4.1.2.4 Special Maintenance Tasks

The following items should only be performed by a trained maintenance expert.

1. Replacement of hydraulic hoses.
2. Replacement of cables and sheaves.
3. Replacement or rebuilding air and hydraulic cylinders as required.
4. Replacement or rebuilding pumps / motors as required.
5. Checking of hydraulic cylinder rod and rod end (threads) for deformation or damage.

NOTE

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. Most important - cleanliness - contamination is the most frequent cause of malfunction or failure of hydraulic equipment.

4.2 Troubleshooting

The common problems that may be encountered and their probable causes are covered in the following paragraphs:

Paragraph:	Problem:	Page:
4.2.1	Motor Does Not Operate	4-3
4.2.2	Motor Functions But Lift Will Not Rise	4-3
4.2.3	Oil Blows Out Breather Of Power Unit	4-3
4.2.4	Motor Hums and Will Not Run	4-4
4.2.5	Lift Jerks Going Up and Down	4-4
4.2.6	Oil Leaks	4-4
4.2.7	Lift Makes Excessive Noise	4-4

4.2.1 Motor Does Not Operate

Failure of the motor to operate is normally caused by one of the following:

1. Breaker or fuse blown.
2. Motor thermal overload tripped. Wait for overload to cool.
3. Faulty wiring connections; call electrician.
4. Defective up button call electrician for checking.

4.2.2 Motor Functions but Lift Will Not Rise

If the motor is functioning, but the lift will not rise do the following in the order given:

1. 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.
2. Check the clearance at the plunger valve of the lowering handle. There should be 1/16 in.
3. Remove the check valve cover and clean ball and seat.

WARNING

Failure to properly relieve pressure in the following step can cause injury to personnel. This lift uses ISO Grade 32 AW, 46 or other good grade non-detergent hydraulic oil at a high hydraulic pressure. Be familiar with its toxicological properties, precautionary measures to take, and first aid measures as stated in the Safety Summary before performing any maintenance with the hydraulic system.

4. Oil level too low. Oil level should be just under the vent cap port when the lift is down. Relieve all hydraulic pressure and add oil as required.

4.2.3 Oil Blows out Breather of Power Unit

If oil blows out of the breather of the power unit, take the following actions:

WARNING

Failure to properly relieve pressure in the following step can cause injury to personnel. Failure to properly relieve pressure in the following step can cause injury to personnel. This lift uses ISO Grade 32 AW, 46 or other good grade non-detergent hydraulic oil at a high hydraulic pressure. Be familiar with its toxicological properties, precautionary measures to take, and first aid measures as stated in the Safety Summary before performing any maintenance with the hydraulic system.

1. Oil reservoir overfilled. Relieve all pressure and siphon out hydraulic fluid until at a proper level.
2. Lift lowered too quickly while under a heavy load. Lower the lift slowly under heavy loads.

4.2.4 Motor Hums and Will Not Run

If the motor hums but fails to run, take the following actions:

1. Impeller fan cover is dented. Remove cover and straighten.
2. Lift overloaded. Remove excessive weight from lift.

WARNING

The voltages used in the lift can cause death or injury to personnel. In the following steps, make sure that a qualified electrician is used to perform maintenance.

3. Faulty wiring..…..... Call electrician
4. Bad capacitor..…... Call electrician
5. Low voltage..... Call electrician

4.2.5 Lift Jerks Going Up and Down

If the lift jerks while going up and down, it is usually a sign of air in the hydraulic system. Raise lift all the way to top and return to floor. Repeat 4-6 times. **Do not let this overheat power unit.**

4.2.6 Oil Leaks

Oil leak causes at the power unit and cylinders are normally caused by the following. Take the actions shown to fix the problem.

WARNING

Failure to heed this warning could cause serious injury or damage to the lift. Failure to properly relieve pressure in the following step can cause injury to personnel. This lift uses ISO Grade 32 AW, 46 or other good grade non-detergent hydraulic oil at a high hydraulic pressure. Be familiar with its toxicological properties, precautionary measures to take, and first aid measures as stated in the Safety Summary before performing any maintenance with the hydraulic system. Make sure that pressure is fully relieved before checking oil levels, loosening any hydraulic lines, or removing any cylinders.

1. 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. A screwdriver can be used as a “dipstick”.
2. Rod end of the cylinder: the rod seal of the cylinder is out. Rebuild or replace the cylinder.
3. Breather end of the cylinder: the piston seal of the cylinder is out. Rebuild or replace the cylinder.

4.2.7 Lift Makes Excessive Noise

Excessive noise from the lift is normally caused by the following. Take the corrective actions shown.

1. Leg of the lift is dry and requires grease.
2. Cylinder pulley assembly or cable pulley assembly is not moving freely.
3. May have excessive wear on pins or cylinder yoke.

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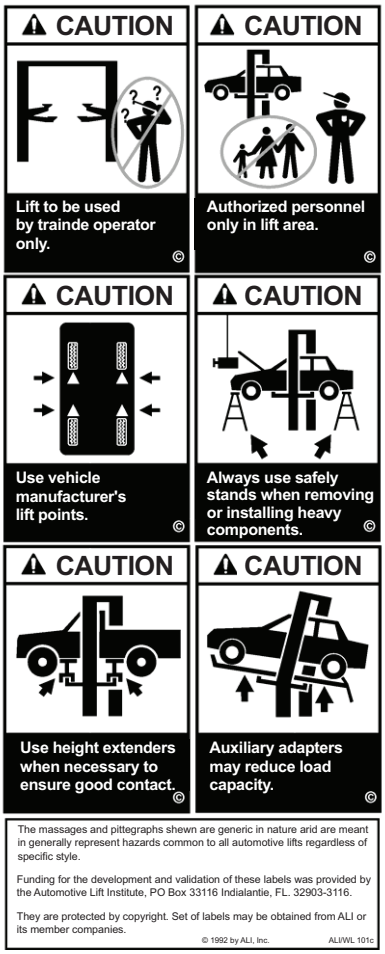
Safety Instructions:

1. **Do not raise a vehicle on the lift until the installation is completed as described in this manual.**
2. **Anyone who will be in the vicinity of the lift** when it is in use should read and refer to the following publications supplied with this lift:
   - "INSTALLATION AND OWNERS MANUAL", I MAN 991022
   - "LIFTING IT RIGHT", ALI SM93-1.
   - "AUTOMOTIVE LIFT SAFETY TIPS", ALI-ST90.
   - "VEHICLE LIFTING POINTS FOR FRAME ENGAGING LIFTS", ALI/LP-GUIDE.
   - "SAFETY REQUIREMENTS FOR OPERATION, INSPECTION, AND MAINTENANCE"ANSI/ALI ALOIM-1994.
3. **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.
4. **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.
5. **Do not overload the lift.** The capacity of the lift is shown on cover of this document.
6. **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.
7. **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.
8. **Keep everyone clear of the lift when the lift is moving, the locking mechanism is disengaged, or the vehicle is in danger of falling.**
9. **Unauthorized personnel** should never be in the shop area when the lift is in use.
10. **Inspect the lift daily.** The lift should never be operated if it has damaged components, or is malfunctioning. Only qualifiedtechnicians should service the lift. Replace damaged components with manufacturer's parts, or equivalent.
11. **Keep the area around the lift clear** of obstacles.
12. **Never** override the self-returning lift controls.
13. **Use safety stands** when removing or installing heavy vehicle components.
14. **Avoid excessive rocking** of the vehicle when it is on the lift.
15. **To reduce the risk of personal injury,** keep hair, loose clothing, fingers, and all body parts away from moving parts.
16. **To reduce the risk of electric shock,** do not use the lift when wet, do not expose the lift to rain.
17. **To reduce the risk of fire,** do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).
18. **Use the lift only as described in this manual,** use only manufacturer's recommended attachments.

19. 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.

20. 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, and leg replacement.

21. **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:



Monthly Maintenance:

1. With lift lowered check the hydraulic fluid level. If necessary add oil as described in the Installation Instruction section of this manual.
2. Check carriage latch synching: Latches should click at the same time. If necessary adjust cables as described in the Installation Instruction section of this manual.
3. Check tightness of all bolts.
4. Check anchor bolt tightness. If the anchor bolts are loose, they should be re-torqued to 90ft/lbs.
    - Check the nuts for tightness every week for the first month, and every month afterwards.
5. Replace worn or broken parts only with lift manufacturer's parts, or their equivalent.

Troubleshooting:

1. The power unit does not run:
    - Check electrical supply breaker, or fuse.
    - Check micro-switch and connections in motor control box.
    - Check voltage to the motor.
2. The power unit runs but does not raise the lift:
    - Check the oil level.
    - Check that the lowering valve is not stuck open.
    - Check the connections and components on the suction side of the pump.
3. The power unit raises the lift empty, but will not lift a vehicle.
    - Make sure the vehicle is not above the rated capacity of the lift.
    - Make sure the vehicle is positioned properly.
    - Clean the lowering valve by running the power unit for 30 seconds while holding the lowering valve open.
    - Check the motor voltage.
4. Lift drifts down.
    - Check for external leaks.
    - Clean the lowering valve by running the power unit for 30 seconds while holding the lowering valve open. Repeat this procedure three times.
    - Clean the check valve seat.
5. Slow Lifting and/or oil foaming up.
    - Check that oil used meets the specification in the Installation Instruction section of this manual.
    - Tighten all suction line fittings.

6. Anchors continually work loose
    - If holes were drilled too large relocate the lift per the Installation Instruction section of this manual.
    - Floor is not sufficient to provide the necessary resistance, remove an area of concrete and repour as described in the Installation Instruction section of this manual.
7. Lift does not raise and lower smoothly.
    - Reposition vehicle for a more even weight distribution.
    - Check the four inside corners of the two legs for roughness. Any rust or burrs must be removed with 120 grit emery cloth.
    - Lubricate the leg corners with heavy duty bearing grease.
    - Use a level to check the legs for vertical alignment both side to side and front to back. Shim the legs as necessary per the Installation Instruction section of this manual.
    - Check the oil level.
    - Make sure there is no air in the hydraulic lines, bleed system as described in the Installation Instruction section of this manual.
8. The lift will only lower approximately, 1" then stops.
    - Check that the safety latch pull rods are disengaged.
9. Power Unit will not stop running
    - Switch is damaged, **turn off power to the lift** and replace switch.

6. Lift Lockout/Tagout Procedure

Purpose

This procedure establishes the minimum requirements for the lockout of energy that could cause injury to personnel by the operation of lifts in need of repair or being serviced. All employees shall comply with this procedure.

Responsibility

The responsibility for assuring that this procedure is followed is binding upon all employees and service personnel from outside service companies (i.e., Authorized Rotary Installers, contactors, etc.). All employees shall be instructed in the safety significance of the lockout procedure by the facility owner/manager. Each new or transferred employee along with visiting outside service personnel shall be instructed by the owner/manager (or assigned designee) in the purpose and use of the lockout procedure.

Preparation

Employees authorized to perform lockout shall ensure that the appropriate energy isolating device (i.e., circuit breaker, fuse, disconnect, etc.) is identified for the lift being locked out. Other such devices for other equipment may be located in close proximity of the appropriate energy isolating device. If the identity of the device is in question, see the shop supervisor for resolution.
Assure that proper authorization is received prior to performing the lockout procedure.

Sequence of Lockout Procedure

1) Notify all affected employees that a lockout is being performed and the reason for it.
2) Unload the subject lift. Shut it down and assure the disconnect switch is "OFF" if one is provided on the lift.
3) The authorized lockout person operates the main energy isolation device removing power to the subject lift.
   - If this is a lockable device, the authorized lockout person places the assigned padlock on the device to prevent its unintentional reactivation. An appropriate tag is applied stating the person's name, at least 3" x 6" in size, an easily noticeably color, and states not to operate device or remove tag.
   - If this device is a non-lockable circuit breaker or fuse, replace with a "dummy" device and tag it appropriately as mentioned above.
4) Attempt to operate lift to assure the lockout is working. Be sure to return any switches to the "OFF" position.

Restoring Equipment to Service

1) Assure the work on the lift is complete and the area is clear of tools, vehicles, and personnel.
2) At this point, the authorized person can remove the lock (or dummy circuit breaker or fuse) & tag and activate the energy isolating device so that the lift may again be placed into operation.

Rules for Using Lockout Procedure

Use the Lockout Procedure whenever the lift is being repaired or serviced, waiting for repair when current operation could cause possible injury to personnel, or for any other situation when unintentional operation could injure personnel. No attempt shall be made to operate the lift when the energy isolating device is locked out.

7. Operating Conditions

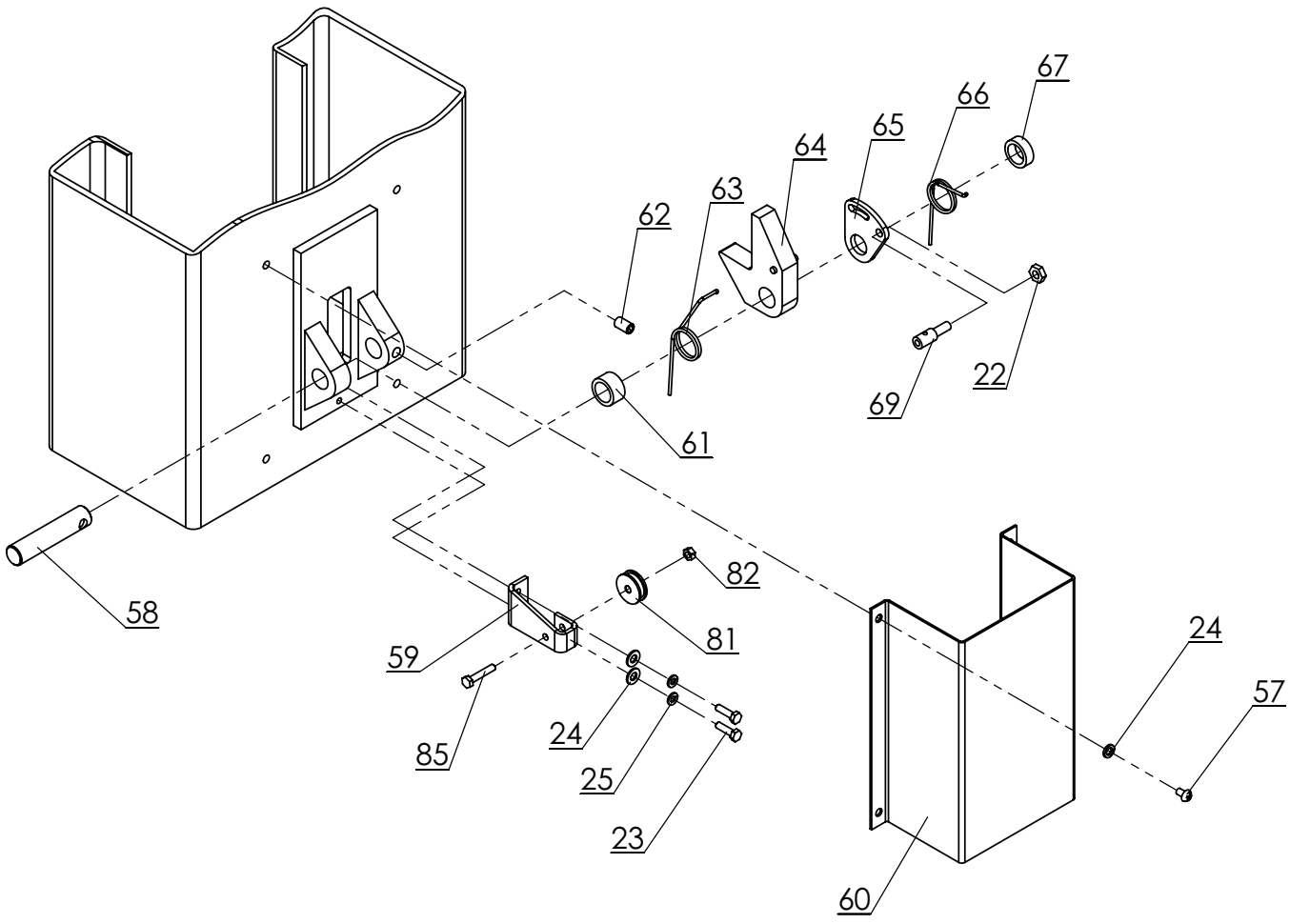
Lift is not intended for outdoor use and has an operating ambient temperature range of 41º-104ºF (5º-40ºC).

5 Illustrated Parts Breakdown

The following pages consist of the detailed illustrations and parts listings for the Model PRO-12TP 12,000 Pound Two-Column Automotive Lift. Certain parts may be shown on more than one figure in order to illustrate their relationship with other components shown in the figure. The illustrations are shown on the left-hand pages with their corresponding parts listing shown on the right-hand pages.

NOTE

The part quantities shown are the totals for that part contained within the entire lift. Therefore, the quantities shown may be greater than what is shown on an individual sheet of the IPB illustrations.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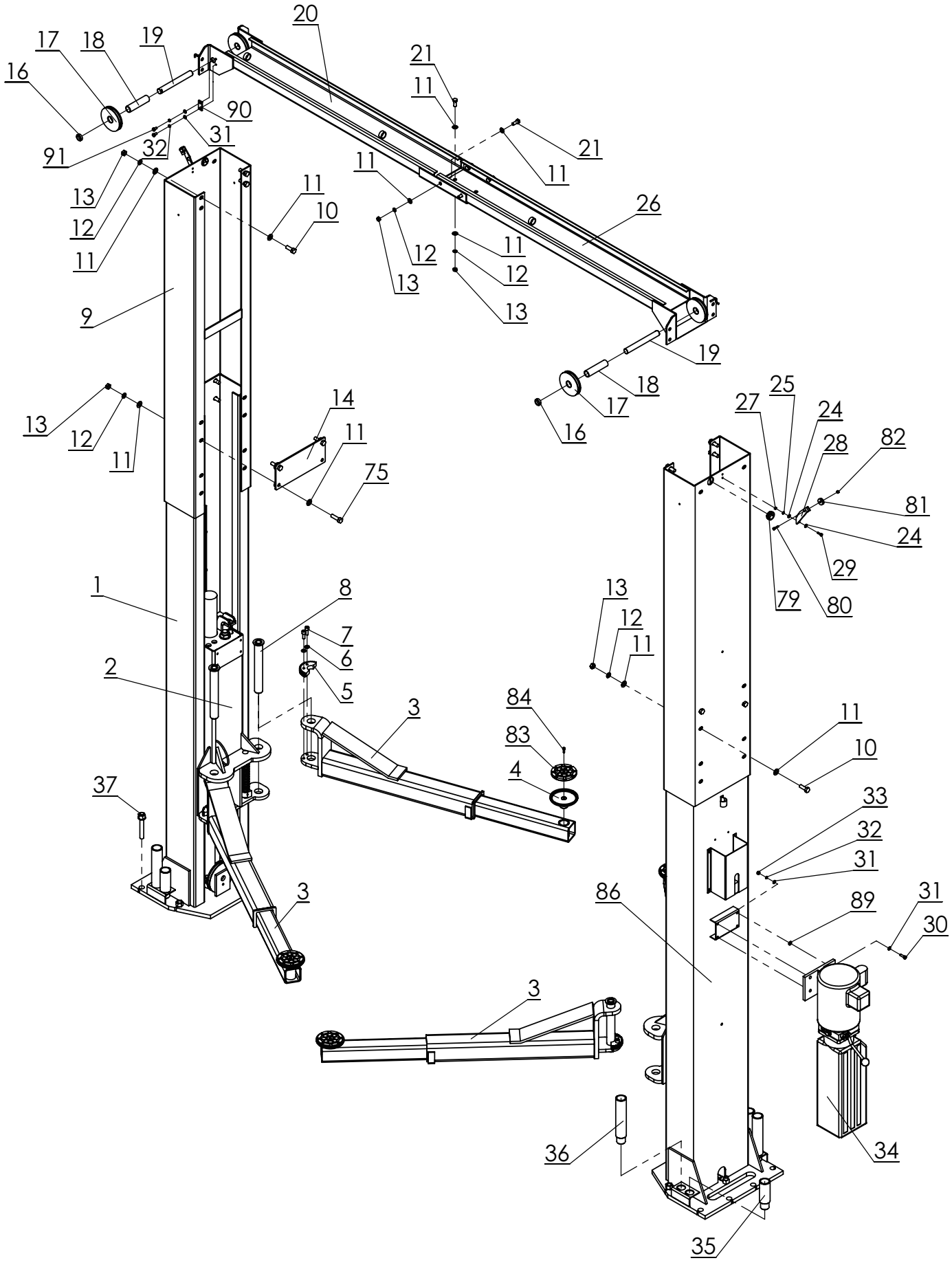
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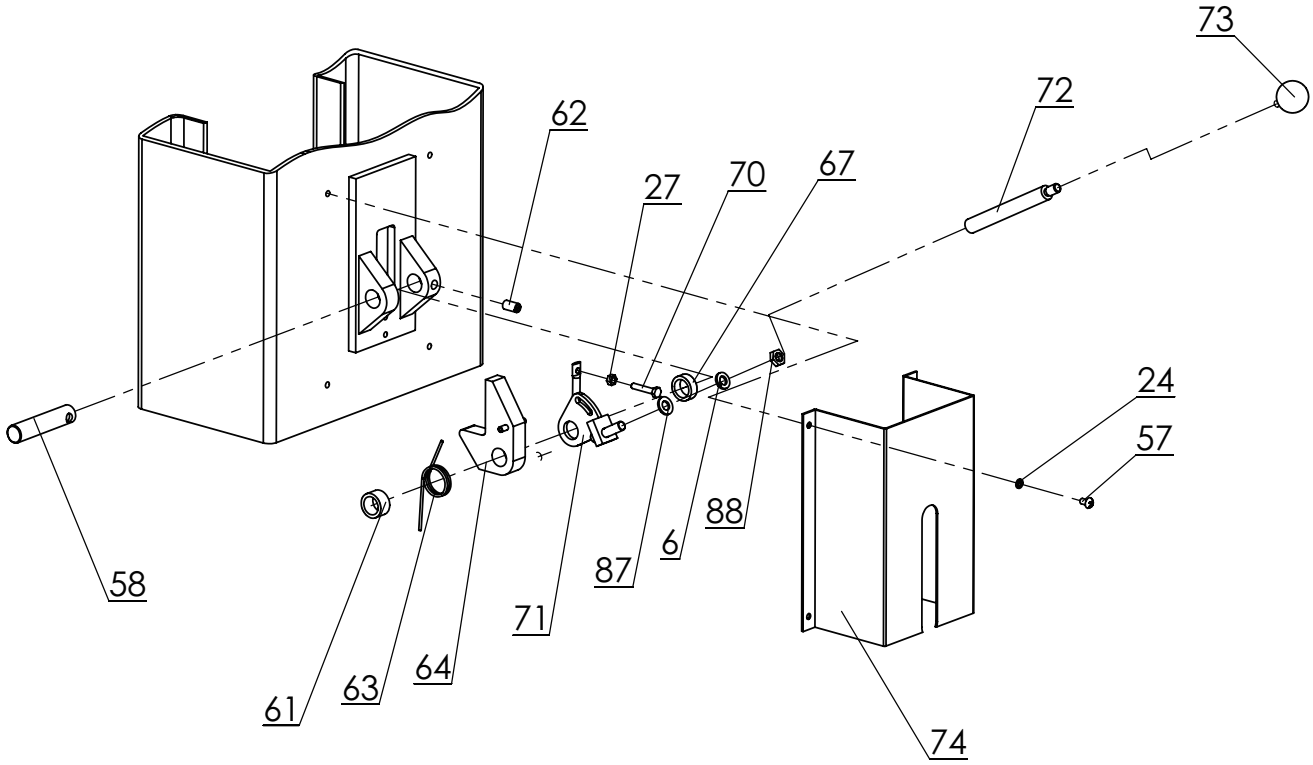
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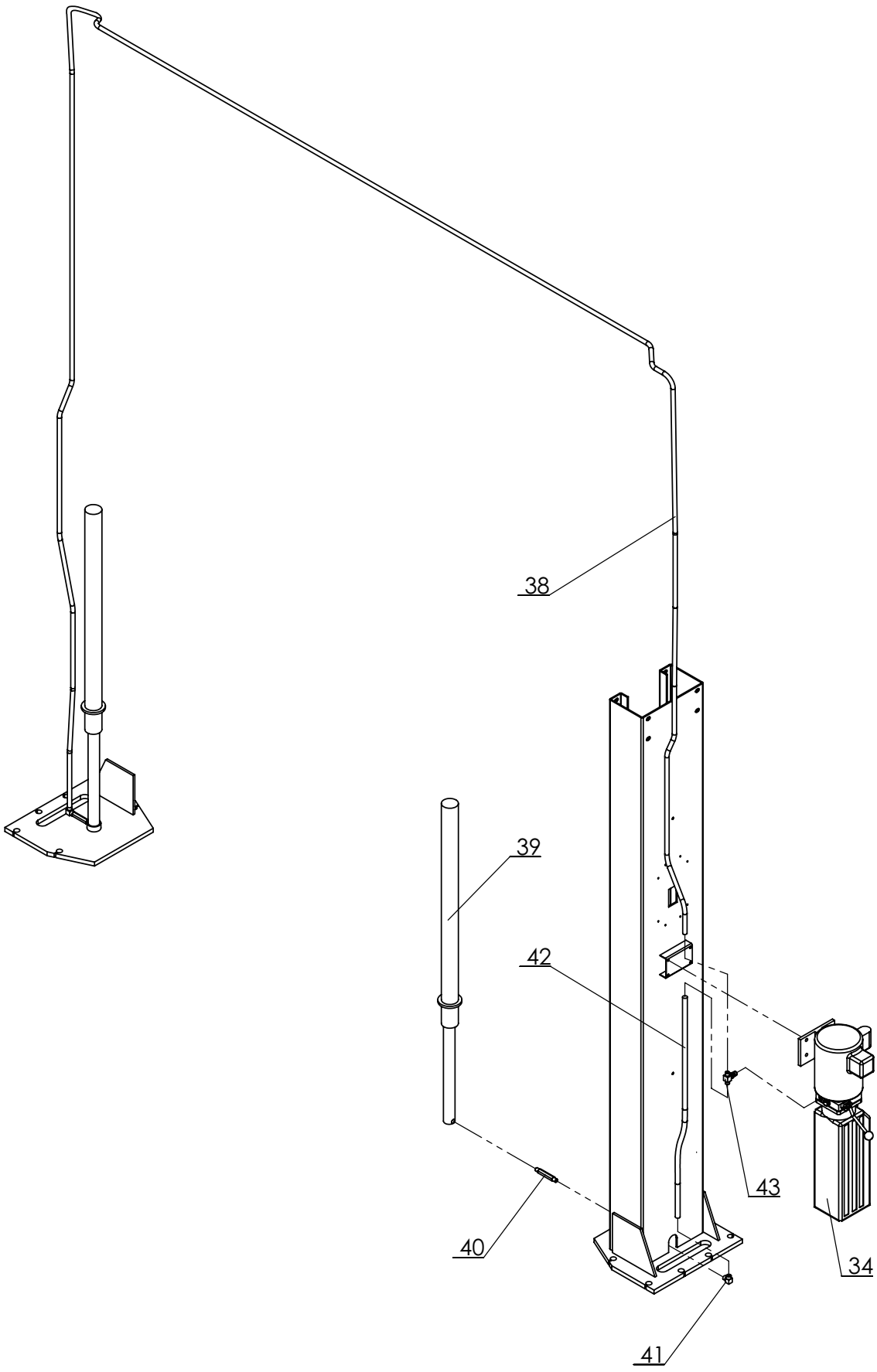
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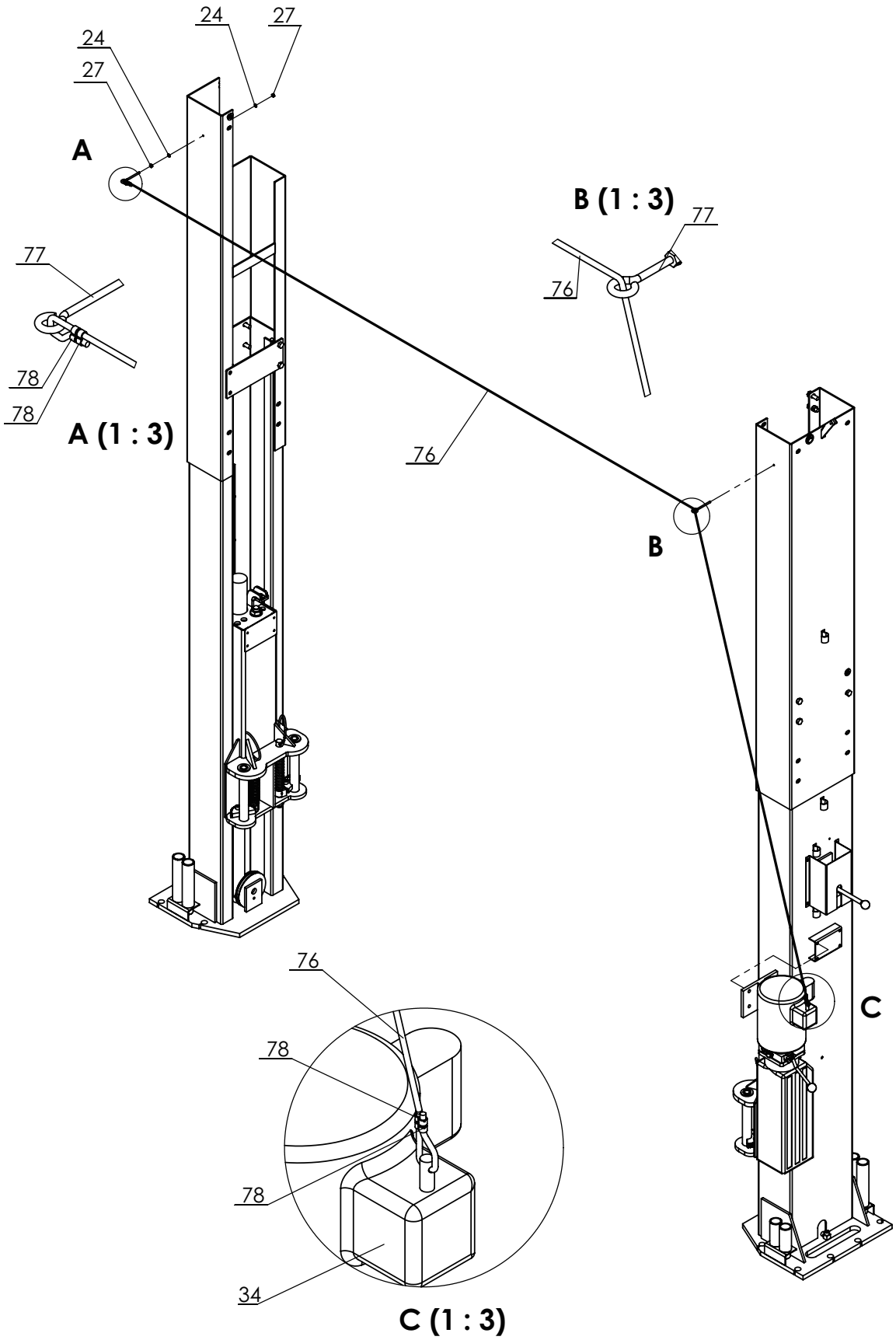
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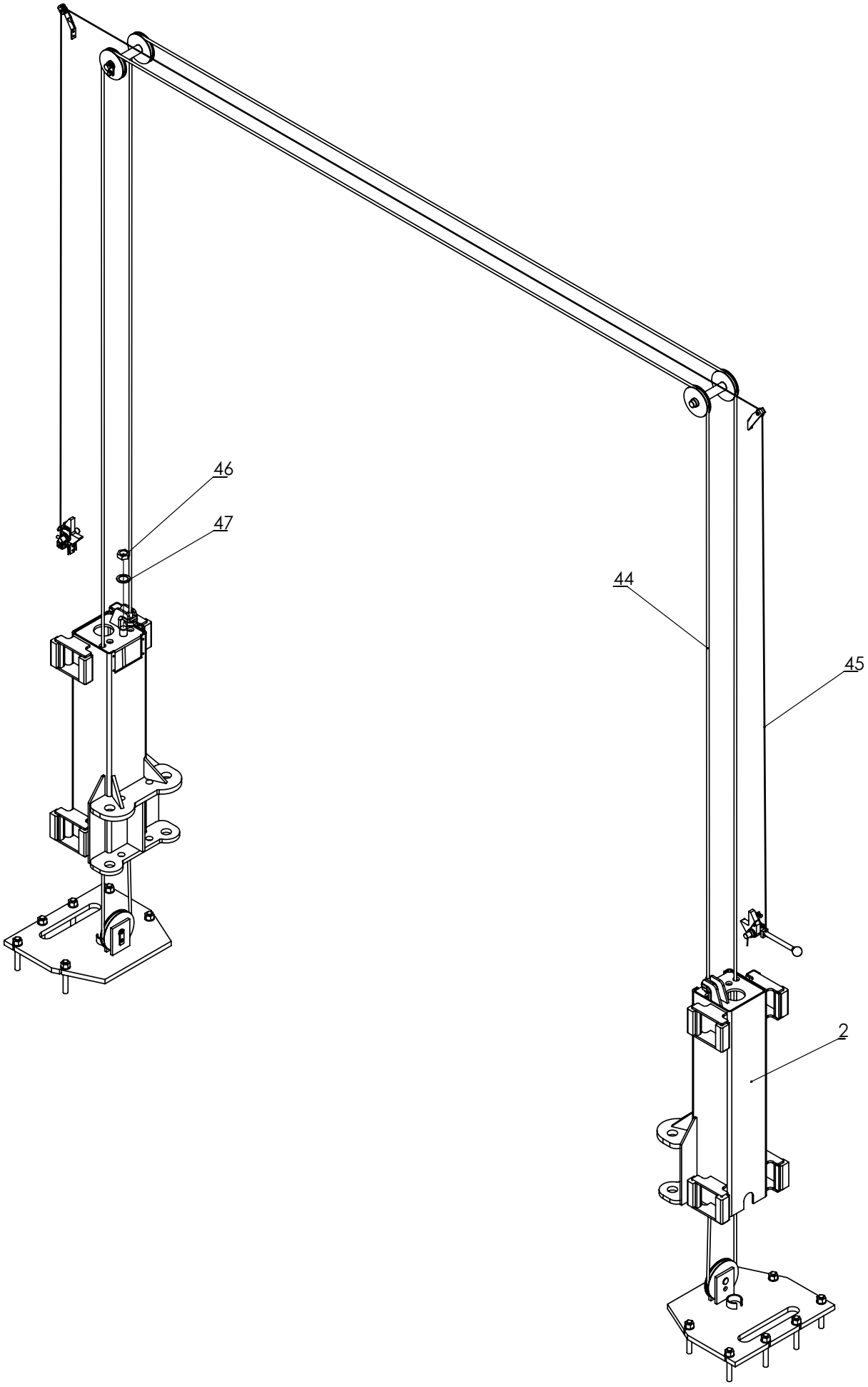
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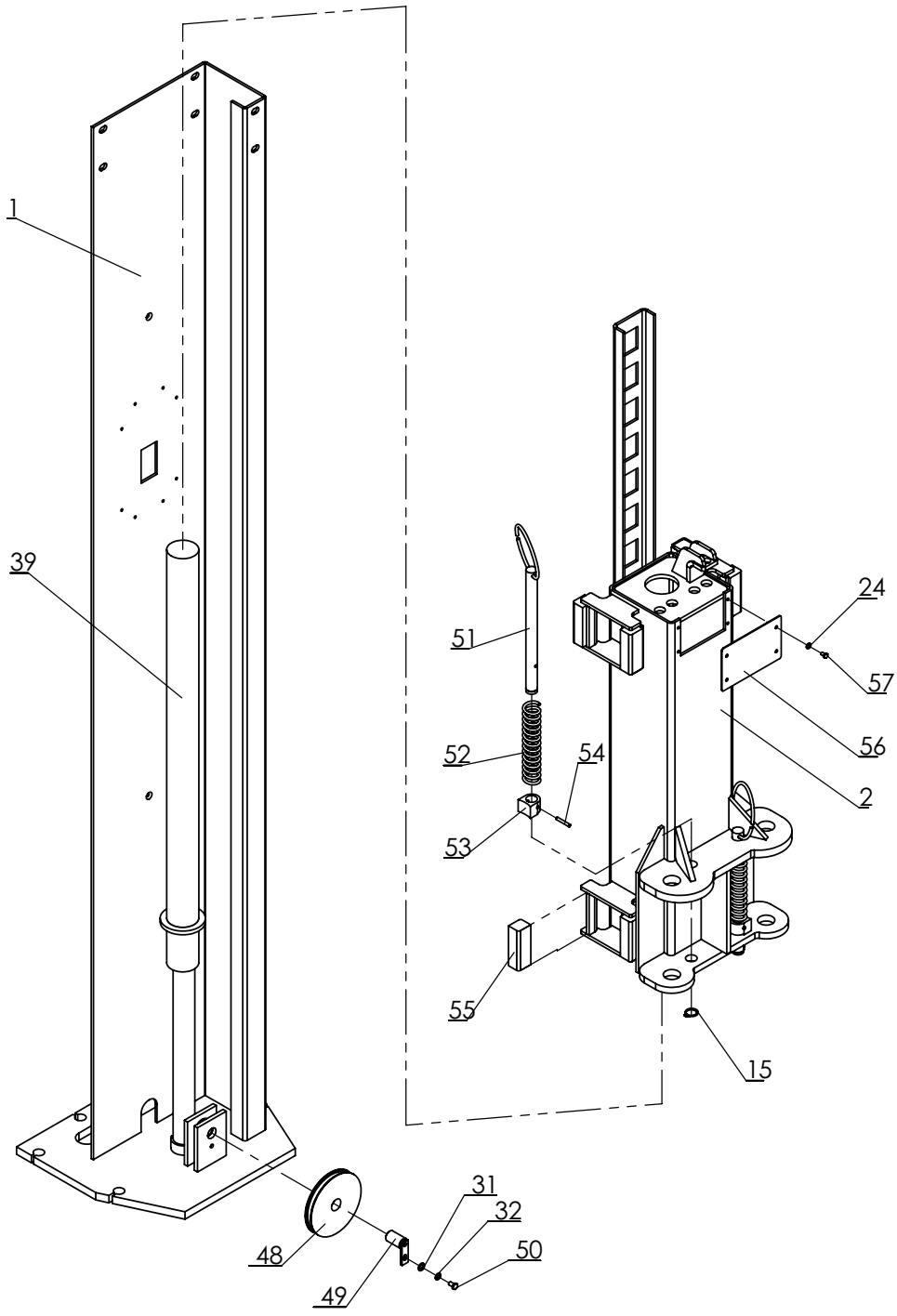
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PRO-V12 PARTS LIST

ITEM	DRAWING NUMBER	DESCRIPTION	QTY
1	V12TP-1000	COLUMN, SLAVE SIDE	1
2	V12TP-5000	CARRIAGE WELDMENT	2
3	V12TP-4000	ARM WELDMENT	4
4	30500-6300HJ	LIFT PAD WELDMENT	4
5	30500-6011(A)	MOON GEAR, ARM LOCK	4
6	B40-10	LOCK WASHER Ø10	9
7	B11-10×35	HEXHEAD BOLT M10×35	8
8	V12TP-5200	ARM PIN	4
9	V12TP-2000	UP-RIGHT WELDMENT	2
10	B10-12×40	HEXHEAD BOLT M12×40	16
11	B41-12	FLAT WASHER Ø12	60
12	B40-12	LOCK WASHER Ø12	30
13	B30-12	NUT M12	30
14	V12TP-1015	FACE BRACE	2
15	B60-25	SNAP RING Ø25	8
16	30500-3000-09	SPACER B	4
17	52005	4.75" CABLE PULLEY	4
18	30500-3000-08	SPACER A	2
19	V12TP-3001	SHAFT, TOP CABLE PULLEY	2
20	V12TP-3100	CROSS BEAM WELDMENT A	1
21	B10-12×25	HEXHEAD BOLT M12×25	6
22	30500-5001(B) -27	SPECIAL SHOULDER BOLT	1
23	B10-6×16	HEXHEAD BOLT M6×16	2
24	B41-6	FLAT WASHER Ø6	26
25	B40-6	LOCK WASHER Ø6	6
26	V12TP-3200	CROSS BEAM WELDMENT B	1
27	B30-6	NUT M6	13
28	30500-8000-2-1	PULLEY BRACKET A	2
29	B10-6×20	HEXHEAD BOLT M6×20	4
30	B10-8×25	HEXHEAD BOLT M8×25	4
31	B41-8	FLAT WASHER Ø8	14
32	B40-8	LOCK WASHER Ø8	10
33	B30-8	NUT M8	4
34	P/U	POWER UNIT	1
35	V12TP-4301	SHORT ADAPTER	4
36	V12TP-4302	LONG ADAPTER	4
37	B14-3/4×140	ANCHOR BOLT 3/4"×140	12
38	1WB-18	HYDRAULIC HOSE	1
39	YG15-9100	HYDRAULIC CYLINDERS	2
40	V12TP-6007	PIPE FITTING	2
41	V12TP-6006	ELBOW FITTING	2
42	1WB-17	HYDRAULIC HOSE	1
43	V12TP-6005	T FITTING	1
44	V12TP-6001	EQUALIZING CABLE	2
45	V12TP-9001	Ø2.5 CABLE	1

46	B33-3/4-16	NYLON LOCK NUT 3/4"-16 UNF	4
47	B41-20	FLAT WASHER Ø20	4
48	V12TP-1012	CABLE PULLEY	2
49	V12TP-1010	SHAFT, TOP CABLE PULLEY	2
50	B10-8×16	BOLT M8×16	2
51	V12TP-5101	PIN, ARM LOCK	4
52	V12TP-5102	SPRING	4
53	30500-5202 (A)	GEAR RACK	4
54	B51-6×40	ROLL PIN Ø6×40	4
55	V12TP-5009	RUBBER BLOCKS	16
56	V12TP-5010	COVER	2
57	B23-6×8	PHILLIP SCREWS M6×8	16
58	30500-5001 (B)-09	SHAFT	2
59	30500-8000-3	PULLEY BRACKET B	1
60	30500-8000-1A	COVER A	1
61	30500-5001 (B)-07	SPACER	2
62	B22-10×16	BOLT M10×16	2
63	30500-5001 (B)-10	SPRING	2
64	V12TP-1020	LATCHES	2
65	30500-5001 (B)-22	CAM PLATE, SLAVE SIDE	1
66	30500-5001 (B)-25G1	SPRING	1
67	30500-5001 (B)-24	SPACER	2
68	NOT USED		
69	30500-5001 (B)-23	SHOULDER BOLT	1
70	B10-6×35	HEXHEAD BOLT M6×35	1
71	30500-5001 (B)-26G1	CAM PLATE, MAIN SIDE	1
72	30500-5001 (B)-12	OPERATING HANDLE	1
73	B84-35	KNOB Ø35×M10	1
74	30500-8000-1B	COVER B	1
75	B10-12×50	BOLT M12×50	8
76	B86-1.5×7400	SHUT-OFF CABLE	1
77	B15-6×50	BOLT M6×50	2
78	B87-1.5	ALUMINUM CLEVIS	4
79	30500-2000-12	HYDRAULIC HOSE GUIDE	2
80	B20-6×25	SCREW M6×25	2
81	30500-8000-2-2	CABLE SHEAVE	3
82	B33-6	NYLON LOCK NUT M6	3
83	PV-6003	RUBBER PAD	4
84	B20-6×20	M6×20 PAD SCREW	4
85	B10-6×35	HEXHEAD BOLT M6×35	2
86	V12TP-1000A	COLUMN, MASTER SIDE	1
87	B41-10	FLAT WASHER Ø10	1
88	B36-10	NUT M10	1
89	30400-1999	WASHER	4
90	NH4D-2005	STOP NON-ROTATOR BAR	2
91	B10-8×16	HEXHEAD BOLT M8×16	4