



# SP065M

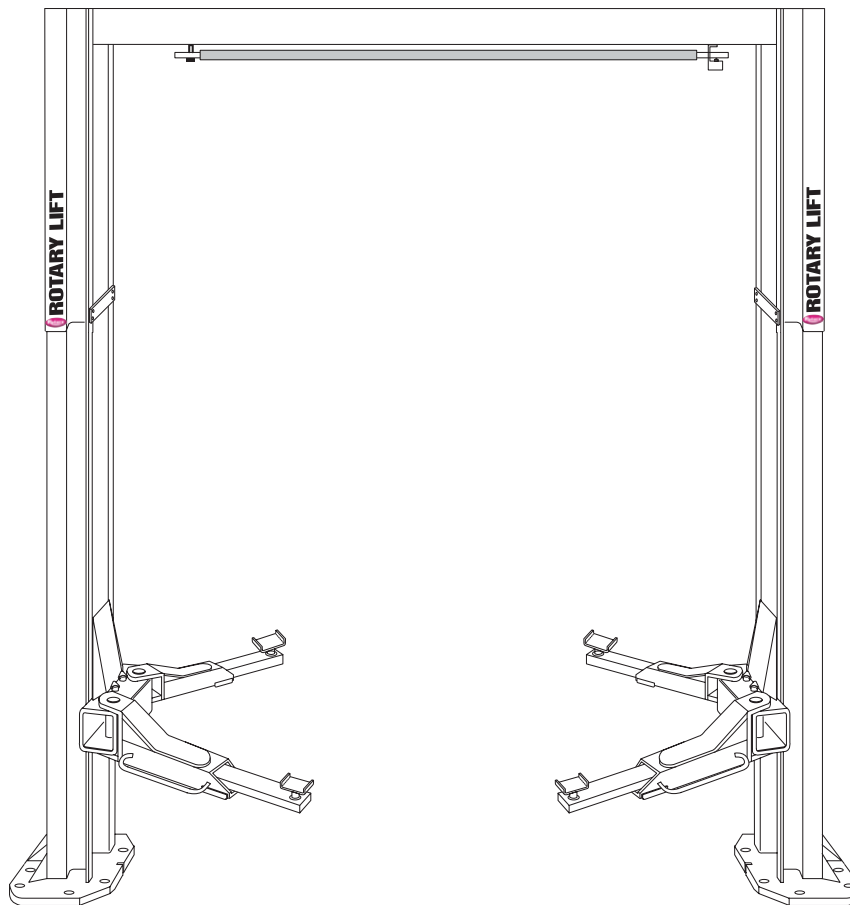
(200 Series Lifts)

Standard Arms Capacity 6500 kg. (14,300 lbs.)

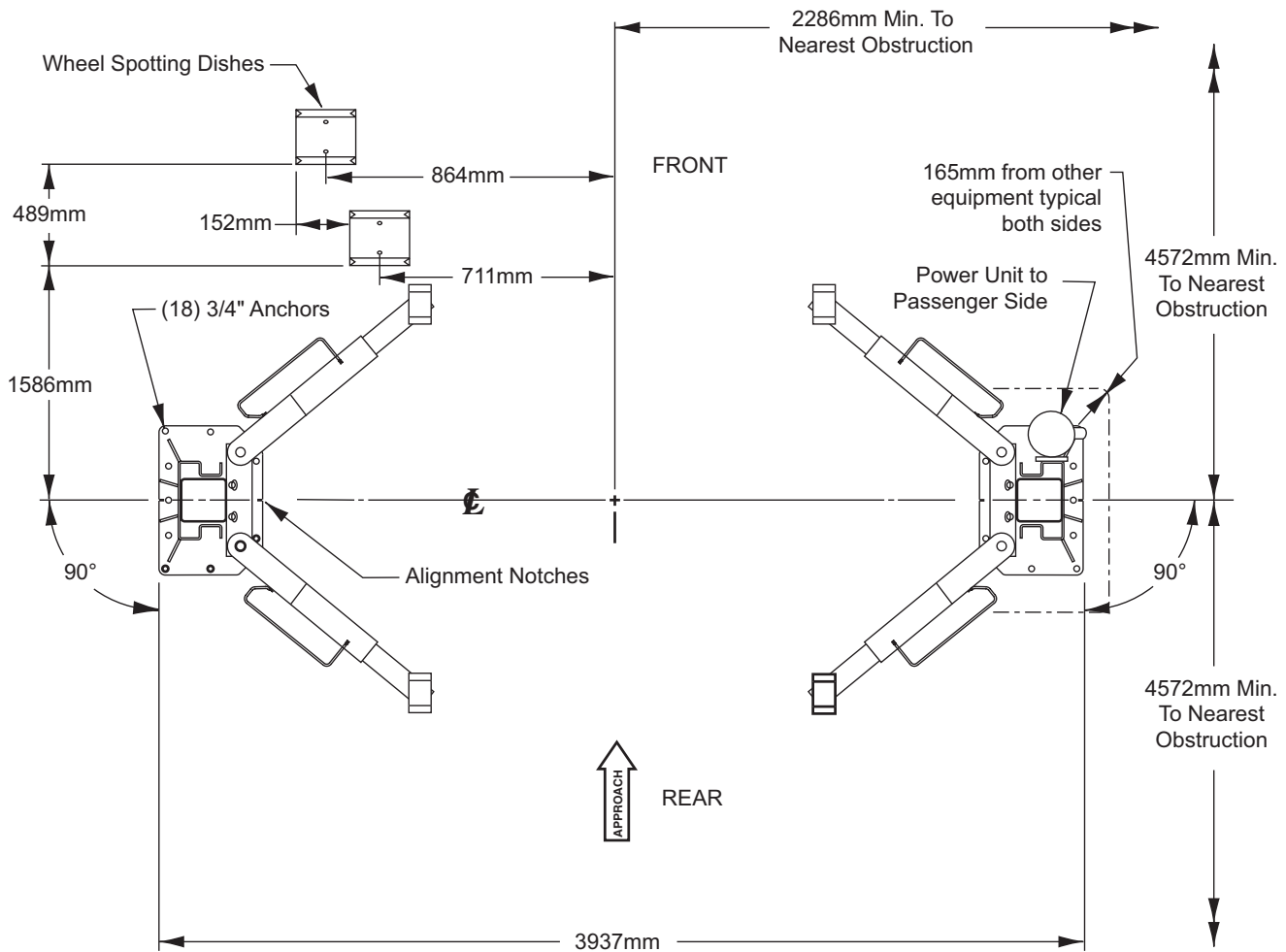
Sprinter Arms Capacity 5000 kg. (11,000 lbs.)



TÜV  
Rheinland



INSTALLATION INSTRUCTIONS



**Fig. 1**

**1. Lift Location:** Use architects plan when available to locate lift. Fig. 1 shows dimensions of a typical bay layout.

**2. Lift Height:** See Fig. 4 for overall lift height of each specific lift model. Add 25.4mm min. to overall height to lowest obstruction.

**⚠ WARNING DO NOT install this lift in a pit or depression due to fire or explosion risks.**

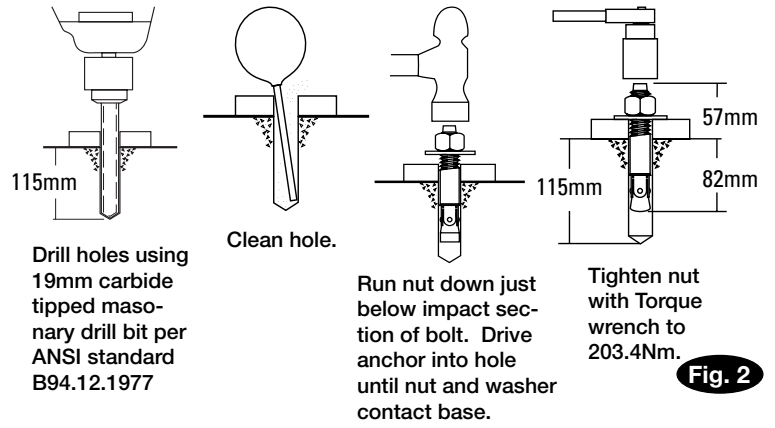
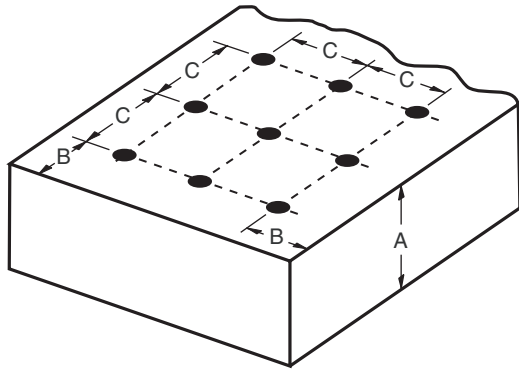
**3. Lift Setting:** Using a block and tackle (or similar device that increases mechanical advantage), stand the columns up. Position columns in bay using dimensions shown in Fig.1. Place column with power unit mounting bracket on vehicle passenger side of lift. Both column base plate backs must be square on center line of lift. Notches are cut into each base plate to indicate center line of lift.

Use appropriate equipment to raise carriage to first latch position. Be sure locking latch is securely engaged.

- A) Concrete Thickness & Hole Depth (107mm)
- B) Edge Distance (120mm)
- C) Hole Spacing (165mm)

**4. Concrete and Anchoring:** Concrete shall have a compression strength of at least 20.68 N/mm<sup>2</sup> and a minimum thickness of 108mm in order to achieve a minimum anchor embedment of 83mm. When using the standard supplied 3/4" x 5-1/2" lg. anchors, if the top of the anchor exceeds 57mm above the floor grade, you **DO NOT** have enough embedment.

Drill (18) 19mm dia. holes in concrete floor using holes in column base plate as a guide. See diagrams for hole depth, hole spacing, and edge distance requirements.

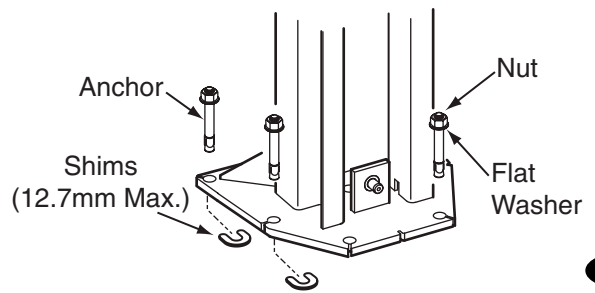


**Installation torque of 203.4Nm. is required for all anchor bolts.**

**CAUTION** DO NOT install on asphalt or other similar unstable surfaces. Columns are supported only by anchors in floor.

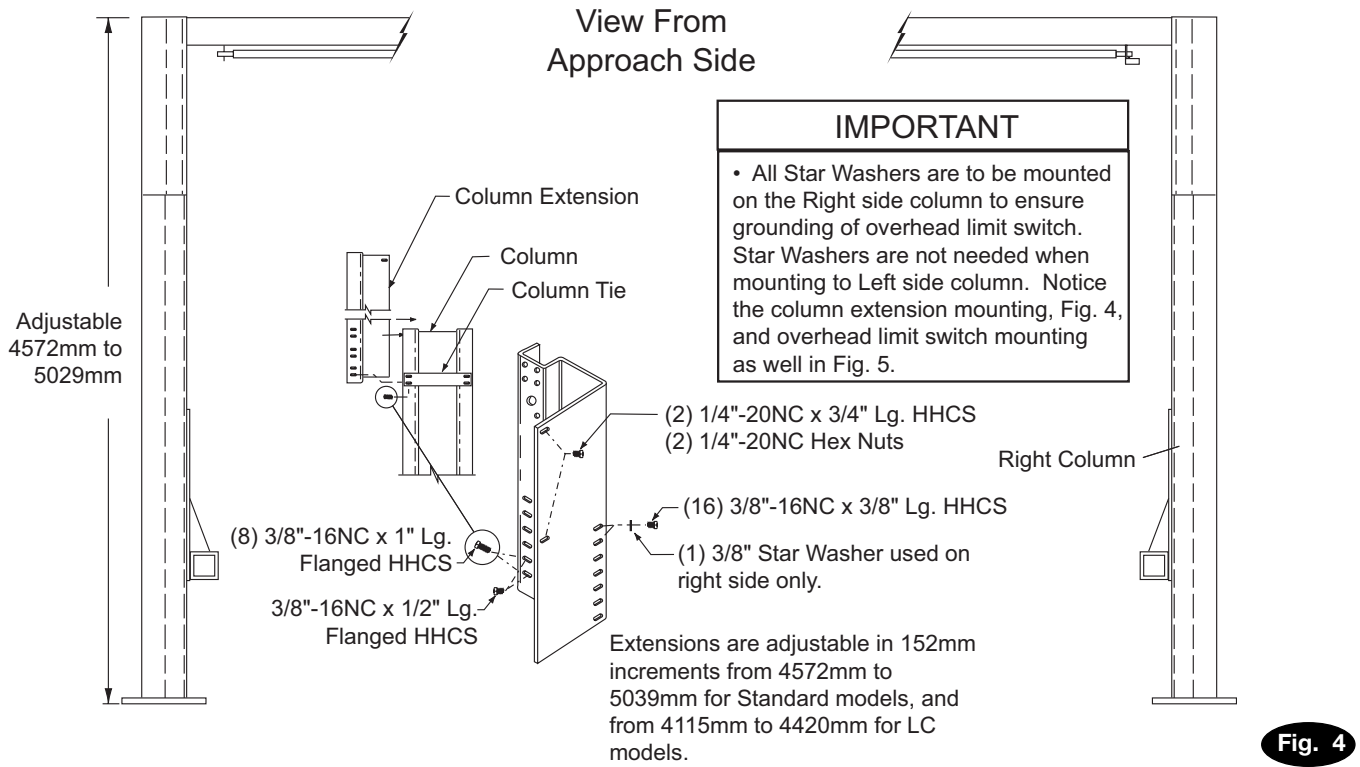
**IMPORTANT** Using the horse shoe shims provided, shim each column base until each column is plumb. If one column has to be elevated to match the plane of the other column, full size base shim plates should be used (Reference Shim Kit). Recheck columns for plumb. Tighten anchor bolts to an installation torque of 203.4 Nm. Shim thickness MUST NOT exceed 13mm when using the 140mm long anchors provided with the lift.

If anchors do not tighten to 203.4 Nm. installation torque, replace concrete under each column base with a 1219mm x 1219mm x 152mm thick 20.68 Nmm<sup>2</sup> minimum concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors.



**NOTE:** If more than 2 horse shoe shims are used at any of the column anchor bolts, pack non-shrink grout under the unsupported area of the column base. Insure shims are held tightly between the baseplate and floor after torquing anchors.

5. Install column extensions to columns using (16) 3/8"-16NC x 3/8" lg. Flanged HHCS, Fig. 4, and Column Ties using (8) 3/8"-16NC x 1" Flanged HHCS, also Fig. 4. Adjust column extensions plumb as required.
6. Mount switch assembly towards power unit column as



shown, Fig. 5, using (2) 1/4"-20NC x 3/4" lg. HHCS, nuts and Star Washers. Insert 2" Hex bolt through pivot hole in end of switch bar. Insert opposite end (weighted end) of bar through slot in switch mounting bracket. Then secure Hex bolt and switchbar to overhead as shown, using 3/4" spacer and lock nut. Tighten Hex bolt leaving 1.6mm gap between the spacer and the crosshead assembly.

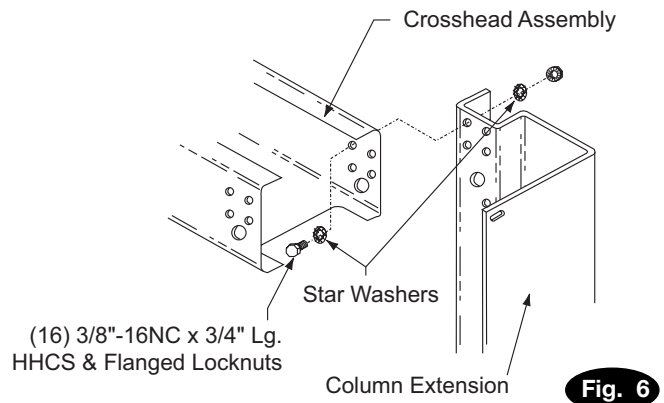
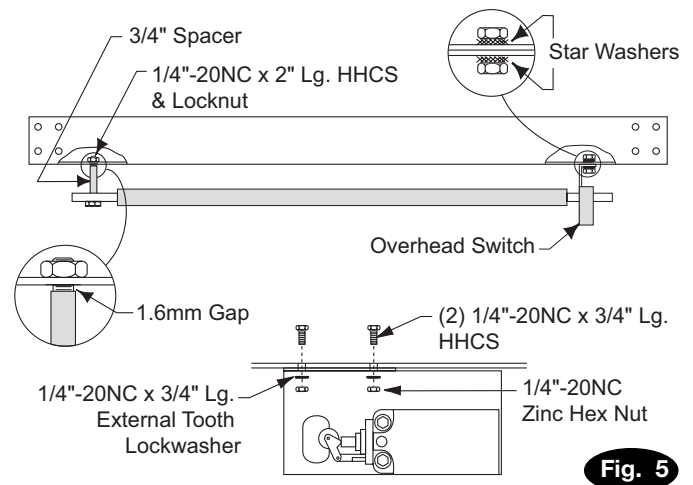
7. Install crosshead assembly to column extensions with (16) 3/8"-16NC x 3/4" lg. HHCS, Flanged Locknuts and Star Washers, Fig. 6.

8. **Power Unit:** First install (1) Star Washer onto one of the (4) 5/16" 18NC x 1-1/2" bolts. **This is very important for grounding.** Put (4) 5/16" 18NC x 1-1/2" lg. bolts thru holes in power unit bracket using push-nuts to hold in place. With the motor being the heaviest part of the unit, two people lift the unit, each with one hand supporting the motor. Position the unit on the bolts with one person supporting the power unit while the other installs lock washers and nuts. Install and tighten Hydraulic Hose Adapter to pump. Then install and tighten Tee, and connect supply hoses to Tee, Fig. 7.

9. **Hoses:** Clean adapters and hose. Inspect all threads for damage and hose ends to be sure they are crimped, Fig. 7.

#### Flared Fittings Tightening Procedure

1. Screw the fittings together finger tight. Then, using



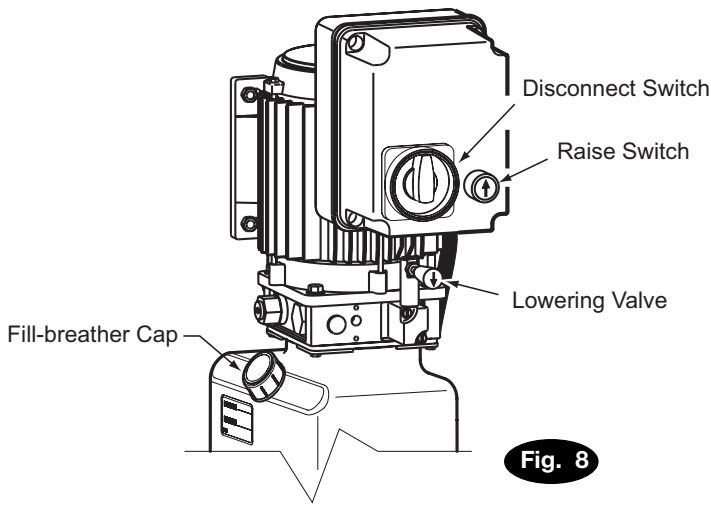


Fig. 8

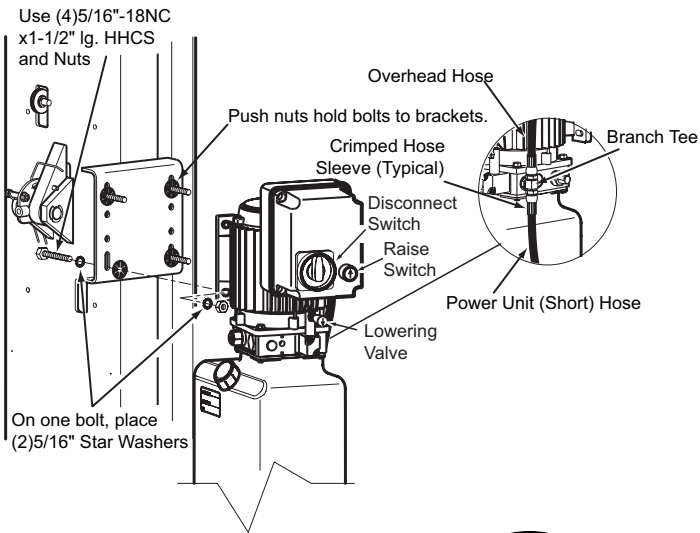


Fig. 7

**HOSE ROUTING FOR SPO65M SERIES**

ITEM	QTY.	DESCRIPTION
1	2	Hydraulic Cylinder
2	1	Power Unit Hose
3	1	Overhead Hose
4	1	Branch Tee
5	6	Hose Clips
6	6	3/8"-16NC x 3/4" Carriage Bolts
6	6	3/8"-16NC Flanged Locknuts
6	4	Hose Clips
4	4	3/8"-16NC x 3/4" HHCS
4	4	3/8"-16NC Flanged Locknuts
7	2	Mechanical Lift Hole Plug

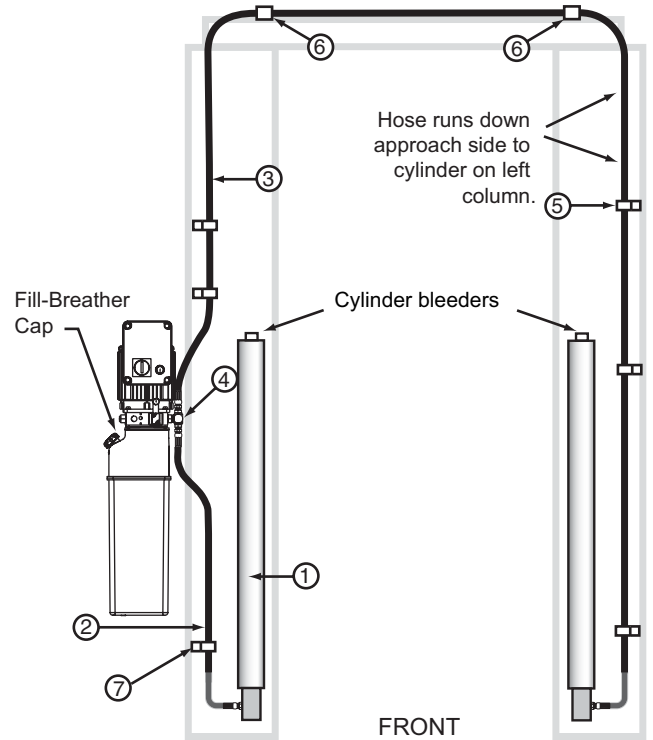


Fig. 9

the proper size wrench, rotate the fitting 2-1/2 hex flats (1/3 of a revolution).

2. Back the fitting off one full turn.
3. Again tighten the fittings finger tight; then using a wrench, rotate the fitting 2-1/2 hex flats (1/3 revolution). This will complete the tightening procedure and develop a pressure tight seal.

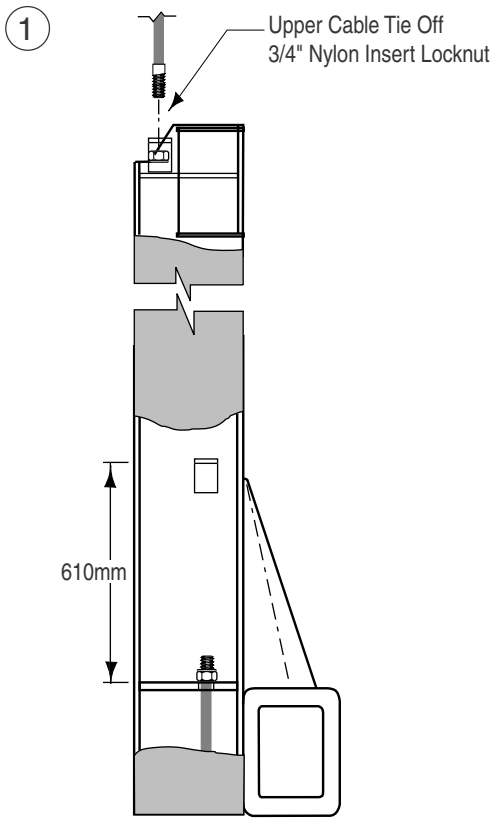
**Adapter & Hose Installation**

1. Install item (2) with hose clamps, on power unit column side connecting it to the cylinder (1) first.
2. Install item (3) with hose clamps starting at left column cylinder (5) and working toward the right column. All excess hose should be at bends & inside overhead assembly.
3. Install item (4) into power unit.
4. Connect item (2) & item (3) to Tee (4).

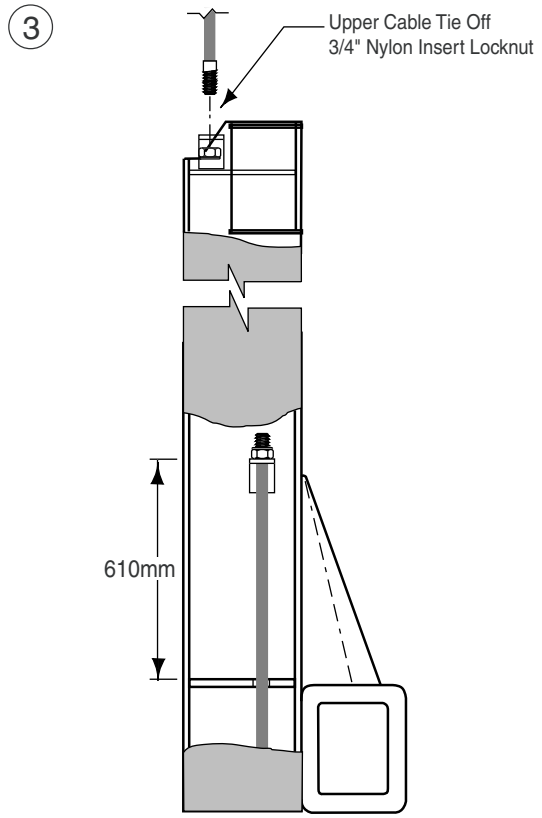
**NOTE:** Route Power Unit hose inside columns using slots provided at column base, Fig. 9b. Route Overhead Hose in

column channel on outside of column, Fig. 9c. Overhead hose goes over top end of overhead assembly, Fig. 9d.

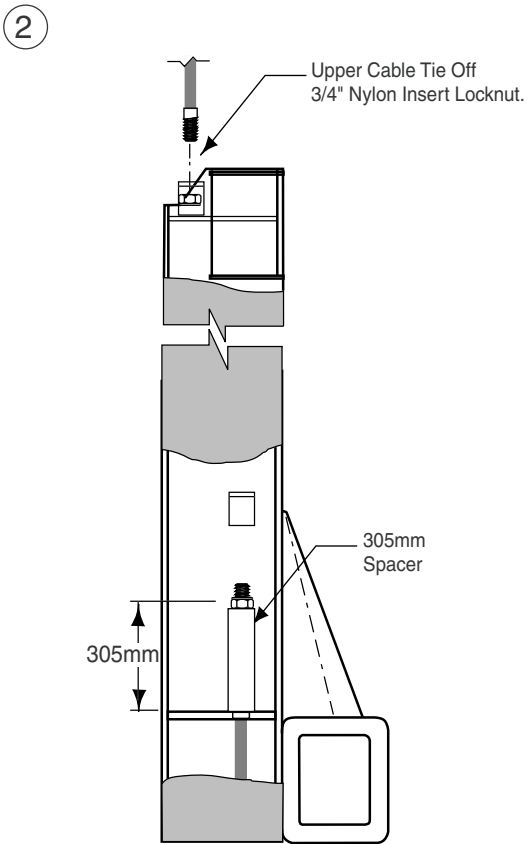
10. **Equalizer Cables:** Fig. 11 describes general cable arrangements. It is easier to tie-off lower studs first.



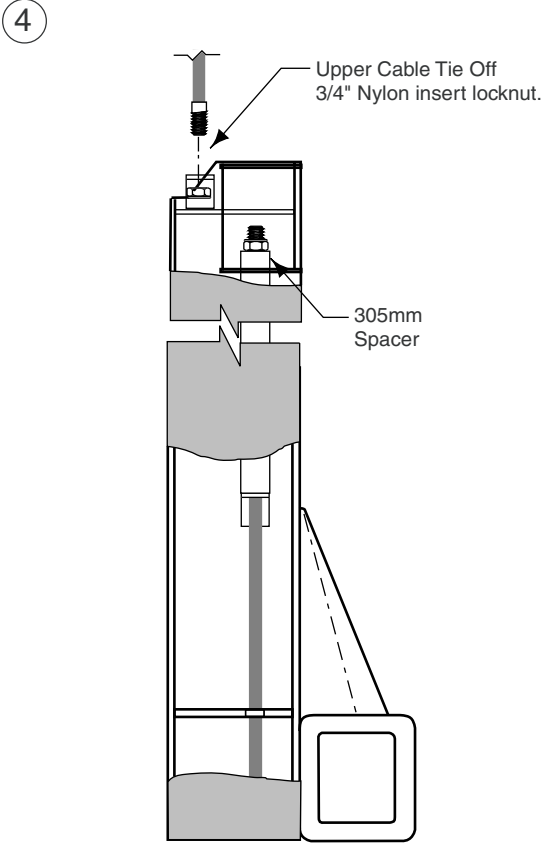
For 5029mm height with 11,989mm long cable or for 4420mm height with 10,770mm long cable, both use pattern one.



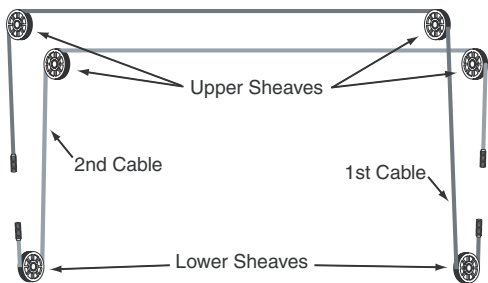
For 4724mm height lift with 11,989mm cable, or 4115mm height lift with 10,770mm long cable. Use pattern 3.



For 4877mm height lift with 11,989mm cable or for 4267mm height lift with 10,770mm long cable, both use pattern two. Has 305mm spacer provided.



For 4572mm height carriages use pattern four with 11,989mm cable. Has 305mm spacer provided.



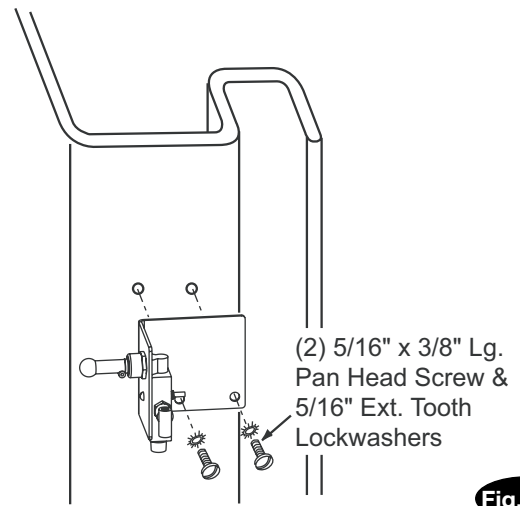
**Fig. 11**

- A)** Run cable stud up through the lower tie-off plate, and/or bracket(s), and/or spacer(s) depending on the lift model, Fig. 10.
- B)** Push cable up until stud is above top of carriage Fig. 10.
- C)** Run nylon insert locknut onto studs so that 12mm extends out from locknut Fig. 10.
- D)** Pull cables back down through carriage Fig. 10.
- E)** Run cable overhead and tie-off top studs and torque to about 11.3J., see Fig. 10 & Fig. 11.

**11. Locking Latch & Air Cylinders:**

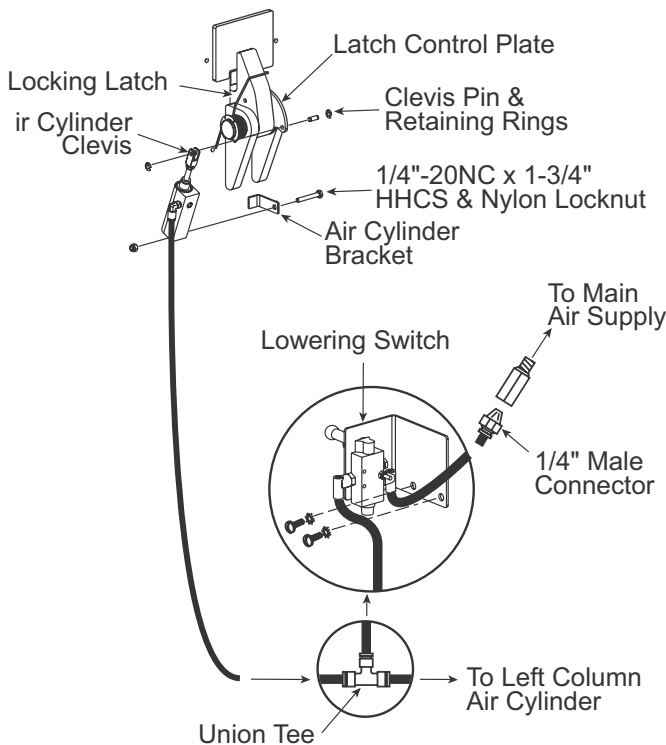
- A)** To install cylinder, first slip dampening spacer over rod

*Note:* Absence of air filter will void the warranty on all pneumatic components



**Fig. 12b**

- with rod in retracted position as shown below, Fig. 12.
- B)** Put locknut on threaded shaft and run it down to the dampening spacer.
- C)** Let rod extend and thread locknut down 1-1/2 more turns.
- D)** Screw Bracket Clevis onto shaft, position, and tighten locknut securely, Fig. 12.
- E)** Slide latch control plate into top cylinder Bracket Clevis.
- F)** Insert Pivot Pin through hole in bracket and Latch Plate. Install one clip ring on each side of Upper Pin.
- G)** Extend cylinder where column Pivot Bracket is to be mounted.
- H)** Slide one side of lower Pivot Pin (pre-installed & fixed in cylinder) into one half of the column Pivot Bracket. Install Pivot Bracket into column using (2) 1/4"-20NC x 3/8" lg. PHMS, Fig. 12.
- I)** Install other half of Pivot Bracket the same way.
- J)** Install air lines from main air supply (with filter) to lowering switch. Install air line from lowering switch to union tee then to the right column air cylinder.
- K)** Install air line from union tee to left column air cylinder. Fig. 13.
- L)** Mount lowering switch and bracket to column using (2) 5/16"-18NC x 3/8" lg. PHMS, Fig. 12.

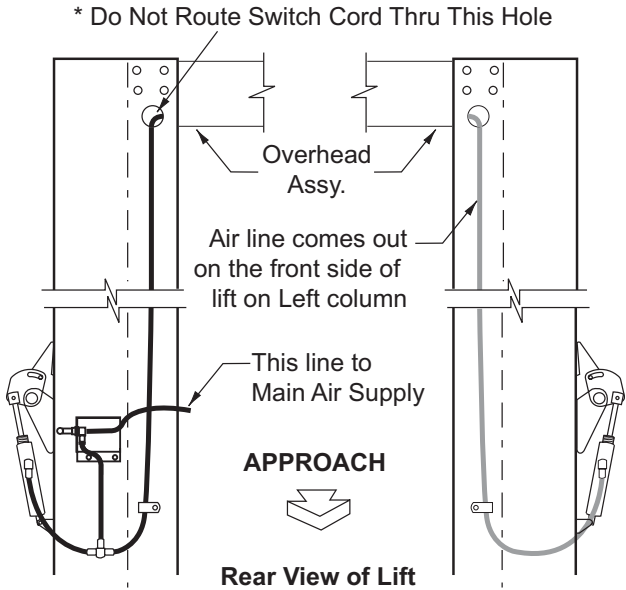


**Fig. 12**

**Note:** Cut provided tubing with sharp blade to length as required. Tubing must be cut square with no burrs. To assemble air line tubing into fitting, use firm, manual pressure to push tubing into fitting until it bottoms, see below. If removal of the air line tubing from the fitting is ever required, hold Push Sleeve in (against fitting) and at the same time, pull out on tubing.

**Locking Latch Engagement Test:**

- A) Raise carriages past the first latch position and then lower onto latches.
- B) Check that the latches have fully engaged when the



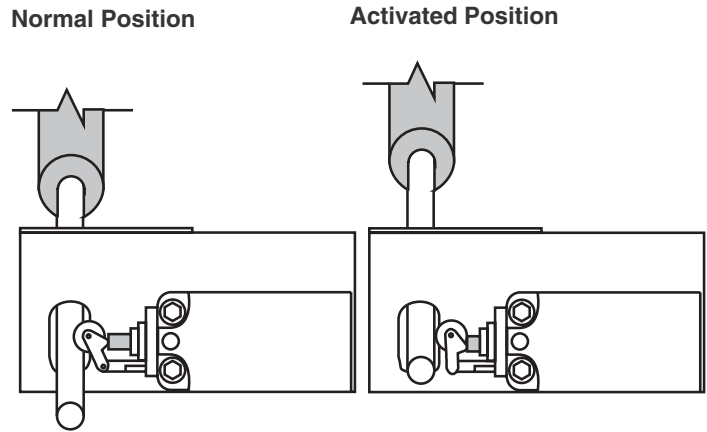
**Fig. 13**

release switch is not depressed.

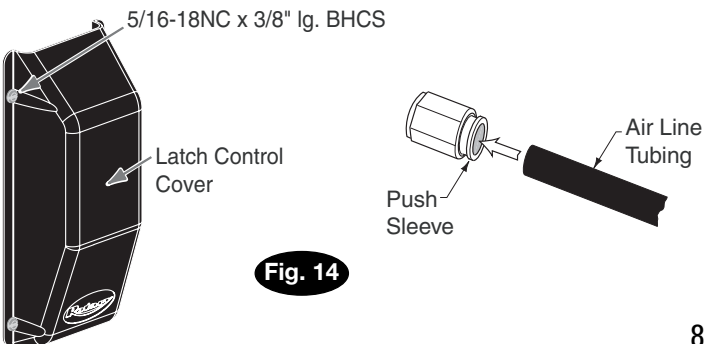
- C) Raise carriages fully off latches. Now depress release switch and check that the latches have fully disengaged.
- D) Check for air leaks, make necessary adjustments or repairs if required.
- E) Install latch covers with 5/16"-18NC x 3/8" lg. BHCS,

**12. Overhead Switch:** Check overhead switch assembly to assure that switch bar activates the switch when raised. Switch is wired normally closed and will cut off motor when activated. See Fig. 15.

**13. Electrical:** Have a certified electrician run 400-415 volt three phase 50Hz. power supply to motor, Fig. 16. Size wire for 15 amp circuit. See Motor Operating Data Table.

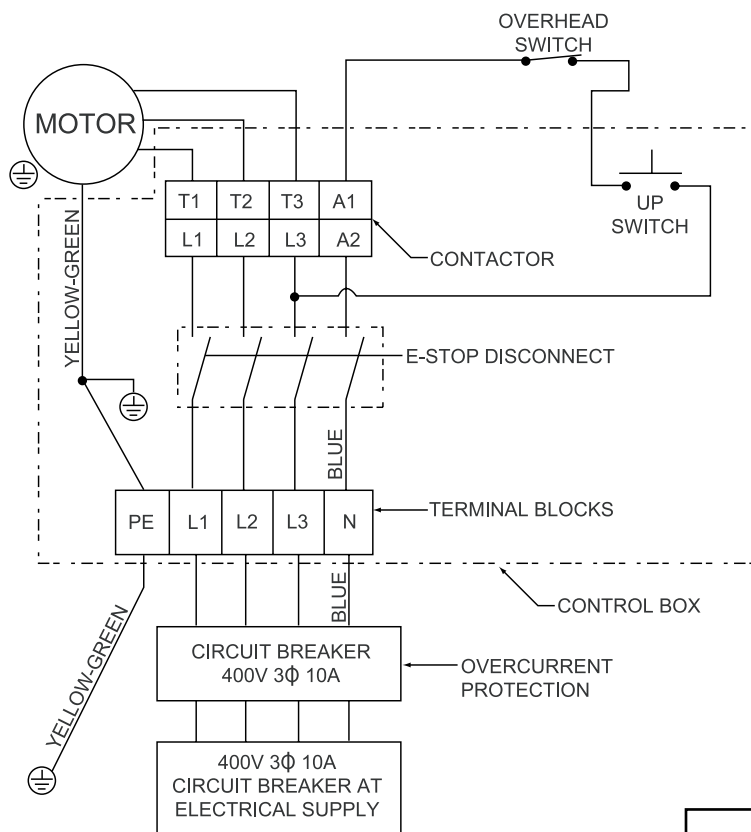


**Fig. 15**



**Fig. 14**





**Notes:**

- 1.) Unit not suitable for use in unusual conditions. Contact Rotary for moisture and dust environment duty unit.
- 2.) Motor rotation is counter clockwise from top of motor.

**IMPORTANT**

Use separate circuit for each power unit. Protect each circuit with circuit breaker per local code. Provide a separate disconnect (400V, 3Phase, 10A circuit breaker) between the power supply and the power unit. Wiring must comply with all local electrical codes.

MOTOR OPERATING DATA - THREE PHASE				
LINE VOLTAGE		CURRENT		POWER
400-415 Volts	50 HZ	4.8A	-	2.2 kW

**Fig. 16**

**CAUTION**

When bleeding, hold a shop cloth over bleeder screw to buffer the air and fluid while bleeder valve is open.

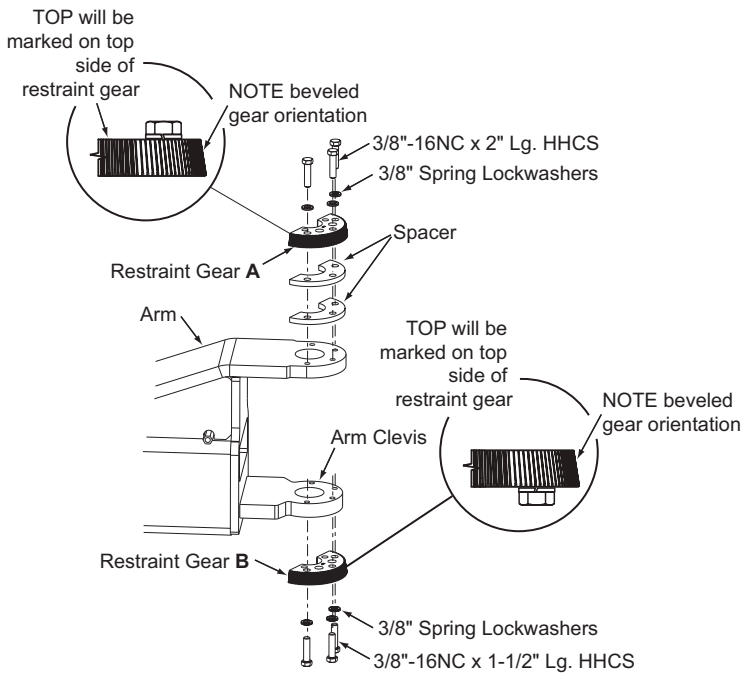
14. **Oil Filling & Bleeding:** System capacity is (14) liters. Use Dexron III or equivalent ATF. Remove fill-breather cap, Fig. 8. Pour in (8) liters of fluid. Start unit, raise lift about 650mm. Open cylinder bleeders approx. 2 turns, Fig. 9. Close when fluid streams. Fully lower lift. Add more fluid until it reaches the fill line.

**CAUTION**

If fill-breather is lost or broken, order replacement. Reservoir must be vented.

15. **Wheel Spotting Dishes:** Position wheel spotting dishes as described in Fig. 1. Drill (4) 9.5mm holes 63.5mm deep in concrete floor using holes in wheel spotting dishes as guide. Drive all anchors, provided, into concrete to secure dish.

16. **Arm Restraints & Superstructure:** Before installing arms, install arm Restraint Gears as follows making sure Restraint Gear is oriented so that the beveled edge (top side) of the gear teeth is facing upward:
  - Install Restraint Gear **A** with (2) Spacers onto upper

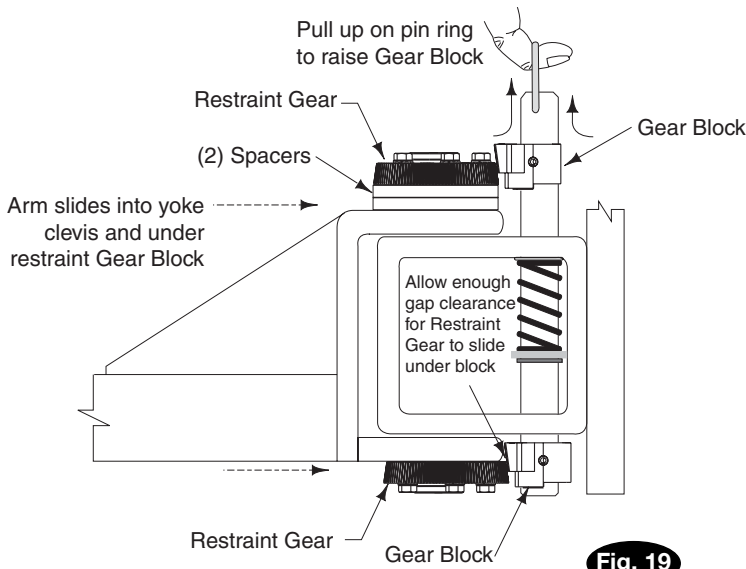


**Fig. 18**

Arm Clevis with (3) 3/8"-16NC x 2" Lg. HHC Screws and 3/8" Spring Lockwashers as illustrated Fig. 18, but do not tighten.

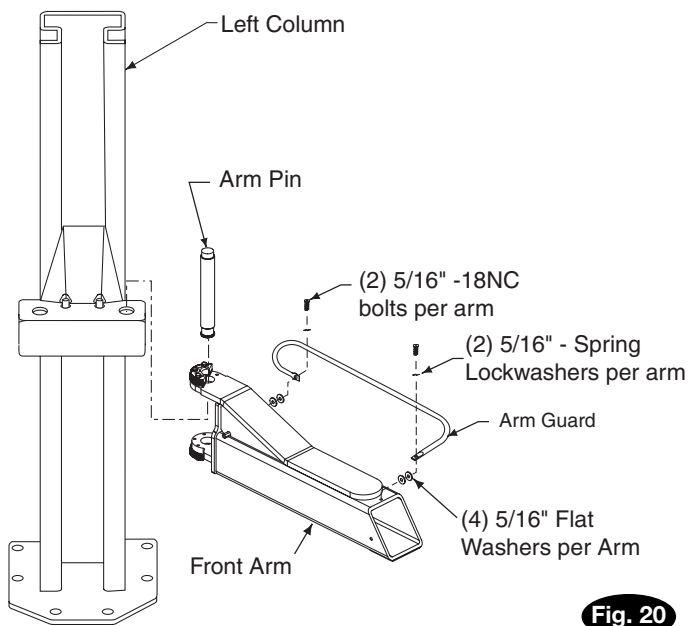
- Install Restraint Gear B with (3) 3/8"-16NC x 1 1/2" Lg. and 3/8" Spring Lockwashers as illustrated Fig. 18, but do not tighten.

After installing Restraint Gears, raise carriage to a convenient height. Grease Arm Pins and holes with Lithium grease. Raise Gear Block by pulling upward on pin-ring to allow enough clearance for the Restraint Gear and arm to slide over the yoke and under the



**Fig. 19**

**Note:** Pin, Ring, Spring and Gear Block are pre-assembled at factory. No set up required.



teeth of the Gear Block (or gear stop), Fig. 19. Install 1 1/2" diameter Arm Pin(s), Fig. 20. Bottom of Restraint Gear **B** holds the Arm Pin in place. Make sure bottom of Gear **B** slides into groove in Arm Pin. Leave 7mm of Spring Pin protruding from hole. Install Arm Guards as shown in Fig. 20.

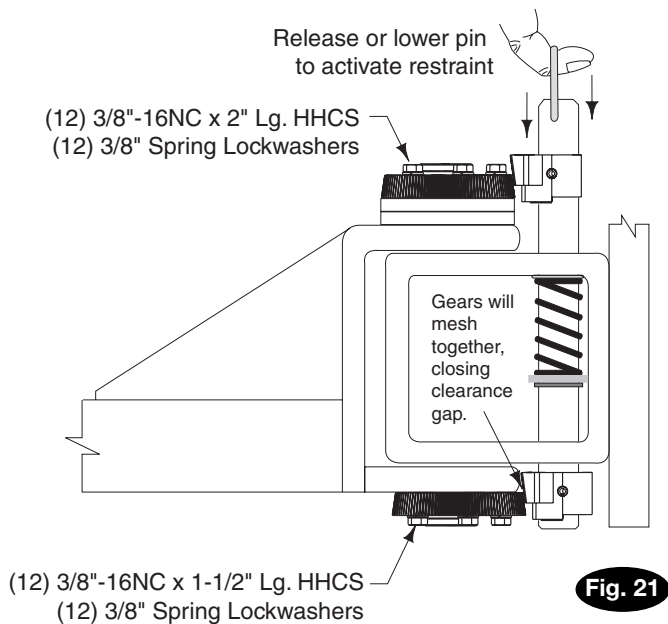
After installing arm pin, torque the three Restraint Gear bolts to 40.7 - 46.1Nm.. Let the Gear Block down allowing the teeth of the Restraint Gear and Gear Block to mesh together, Fig. 21.

**Note:** To check operation of arm restraints, raise carriage 25mm min. from full down position. Pull up on pin-ring and adjust arms to desired position. To engage restraint, let pin-ring down allowing gear teeth to mesh together. It may be necessary to rotate arm slightly to engage gear teeth.

### 17. Door Bumper Installation:

- 1) Press bumpers on column edge and carriage, Fig. 22.

**Note:** Door Bumpers may need to be installed in different areas depending upon type(s) of vehicles used. The above installation is the most recommended.



18. **Pressure Test:** Run lift to full rise and keep motor running for 5 seconds. Stop and check all hose connections. Tighten or reseal if required. Repeat air bleeding of cylinders.

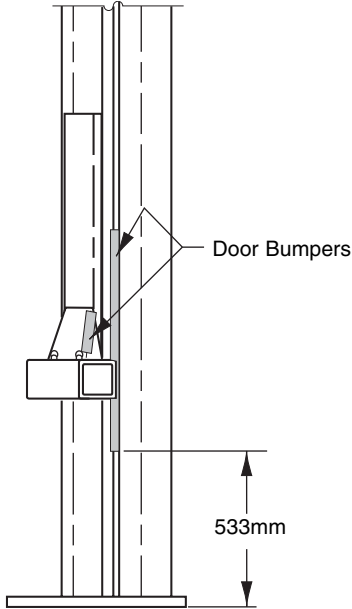


Fig. 22

19. **Final Adjustments:** Raise lift to check equalizer cable tension. Below carriage, grasp adjacent cables between thumb and forefinger, with about 67N. effort you should just pull the cables together. Adjust at upper tie-offs, Fig. 23.

20. Check continuity of the protective bonding circuit, perform installation resistance tests, and perform voltage tests according to sections 20.2, 20.3, and 20.4 in EN60204-1:1992.
21. Operate lift and assure that push button raises lift when pushed and stops lift when released. Check key switch for cutting power to push-button. Also check that overhead switch stops lift from raising when actuated and that lift regains power when deactivated.

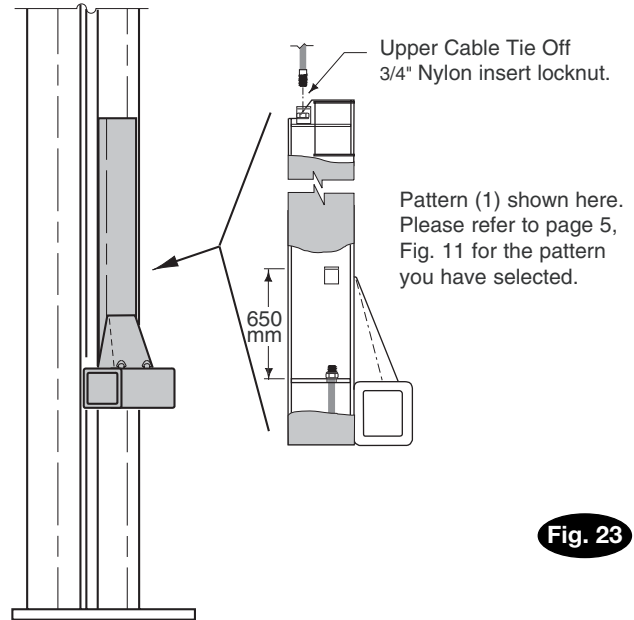


Fig. 23

22. Check hydraulic pressure at the below indicated location on the power unit. The maximum relief is not to exceed 17.2 N/mm.
23. Relief valve RV-16 will give proper relief (RV-14.5 for Sprinter Arms). It is non-adjustable. Replace if improper relief valve is in place.

**WARNING** Adapter extensions are furnished in 5" (127mm) & 10" (254mm) increments. The stack-up height should not exceed 15" (381mm). Use adapter extension combination to keep vehicle as level as possible while it is being supported by the lift.

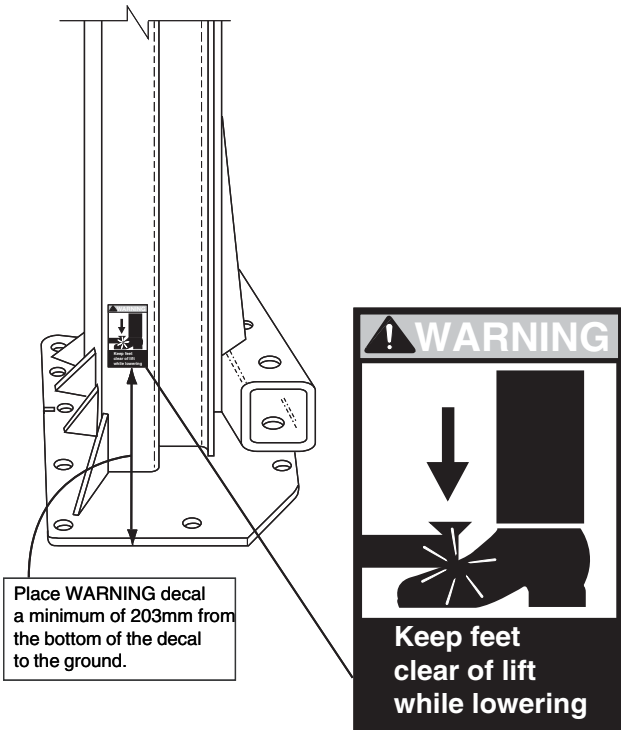
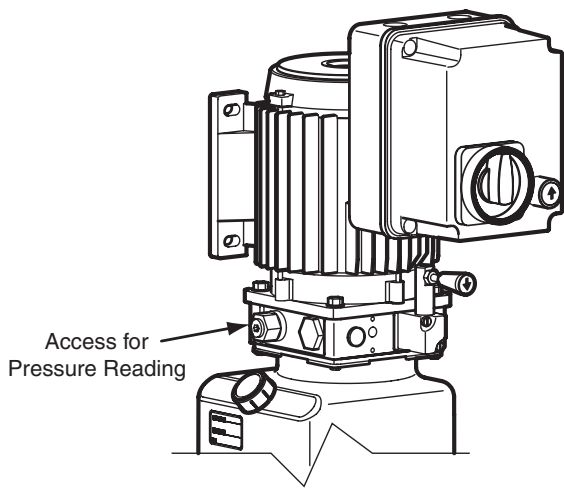
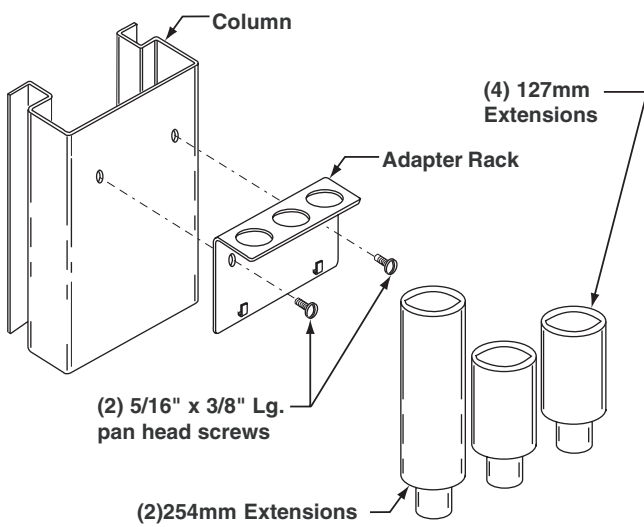


Fig. 24



**Fig. 25**



**Fig. 26**

# NOTES


# NOTES

**Installer: Please return this booklet to literature package, and give to lift owner/operator.**

*Thank You*

**Trained Operators and Regular Maintenance Ensures Satisfactory Performance of Your Rotary Lift.**

**Contact Your Nearest Authorized Rotary Parts Distributor for Genuine Rotary Replacement Parts. See Literature Package for Parts Breakdown.**

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