



SPOA3TE
600 Series
Two Post Surface Mounted Lifts

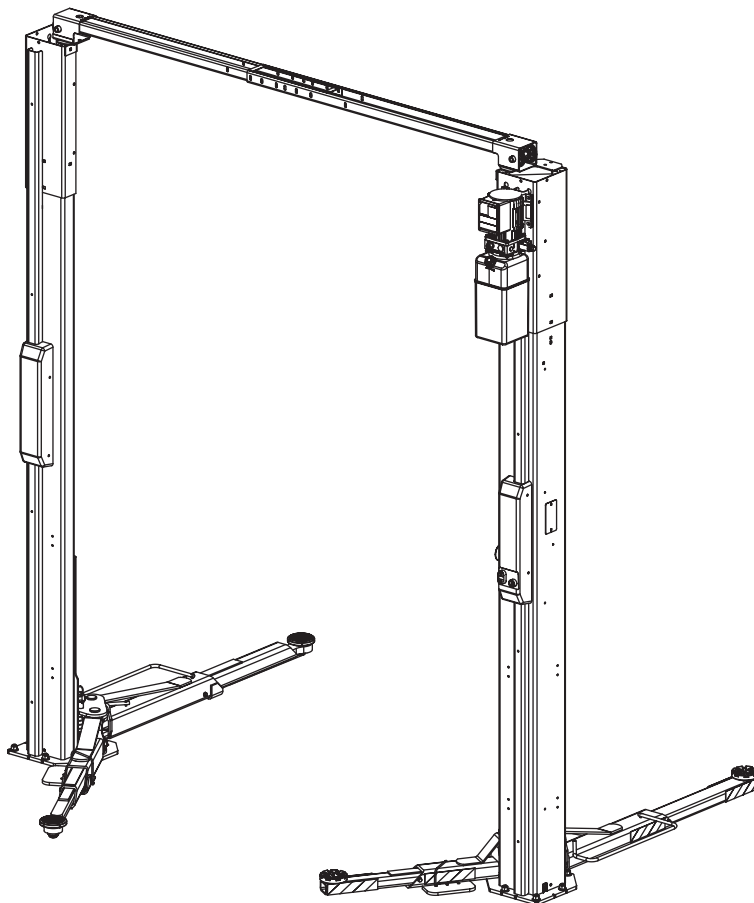
SPOA3T Series Capacity:

3000 kg (6600 lbs.)

750 kg (1650 lbs.) per arm



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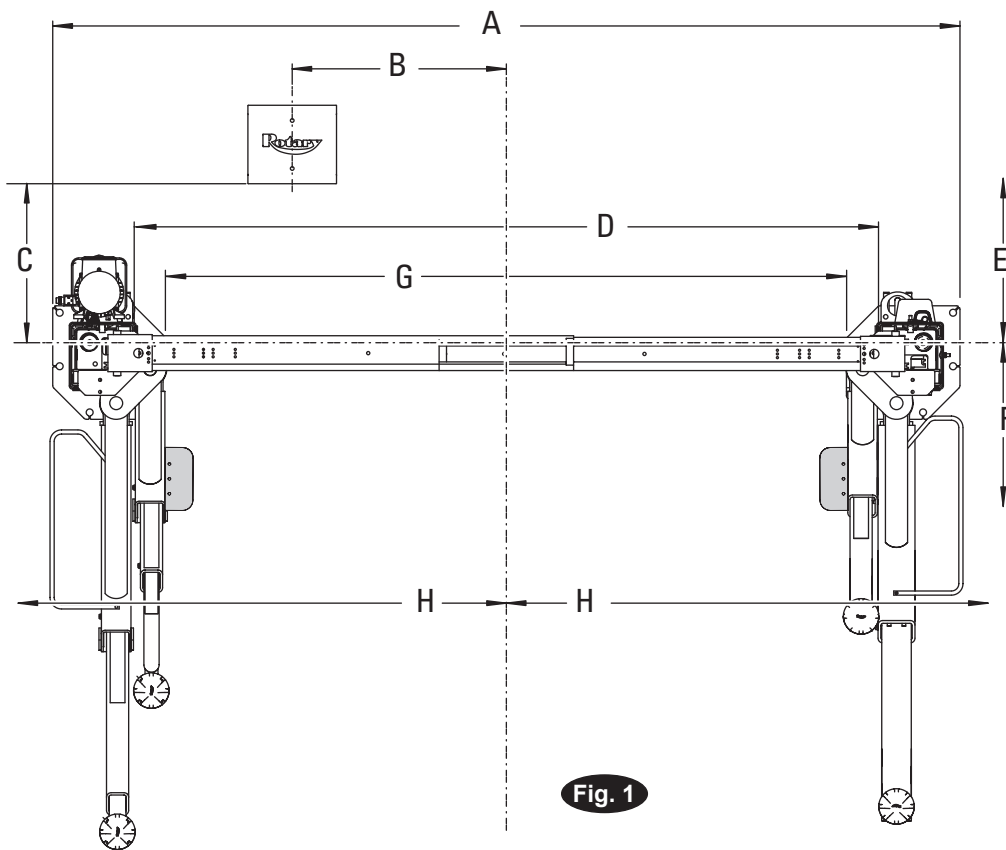


Fig. 1

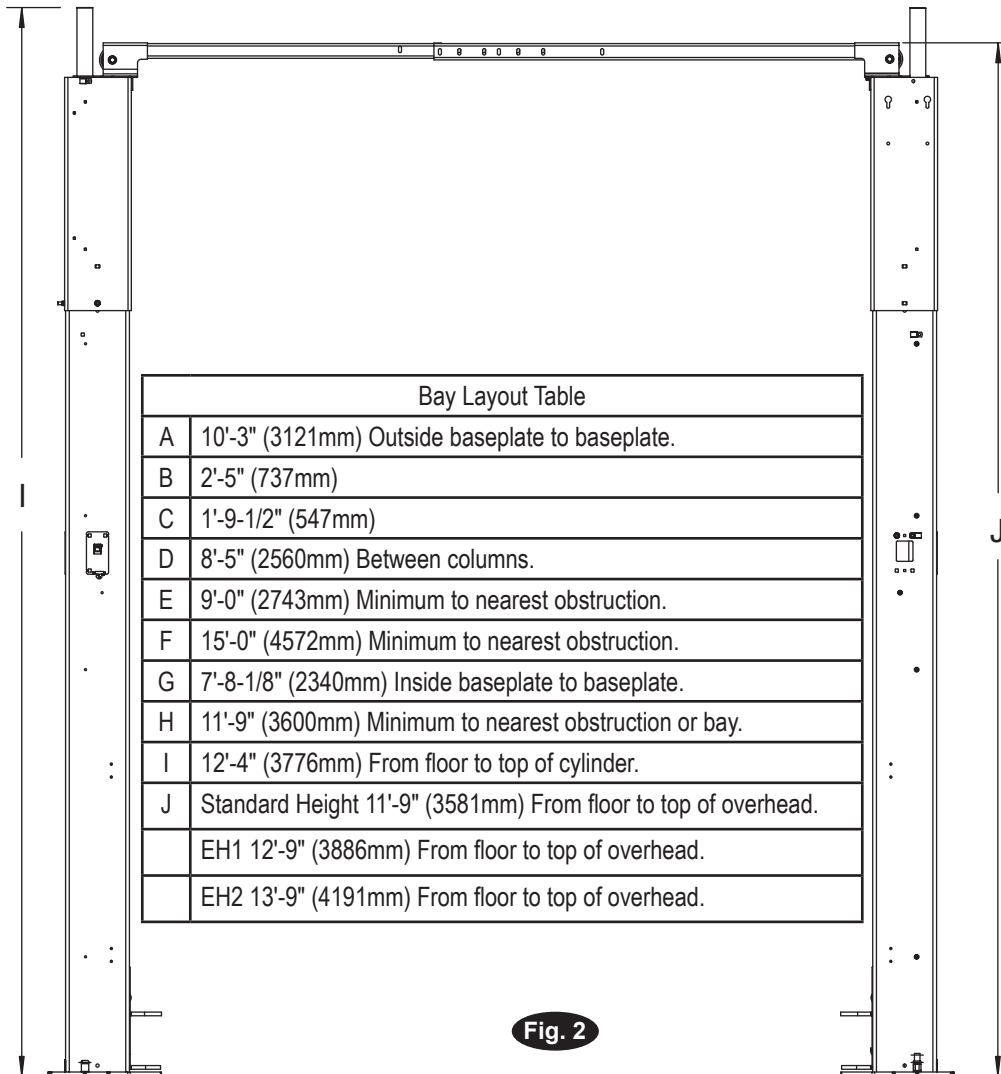


Fig. 2

Bay Layout Table	
A	10'-3" (3121mm) Outside baseplate to baseplate.
B	2'-5" (737mm)
C	1'-9-1/2" (547mm)
D	8'-5" (2560mm) Between columns.
E	9'-0" (2743mm) Minimum to nearest obstruction.
F	15'-0" (4572mm) Minimum to nearest obstruction.
G	7'-8-1/8" (2340mm) Inside baseplate to baseplate.
H	11'-9" (3600mm) Minimum to nearest obstruction or bay.
I	12'-4" (3776mm) From floor to top of cylinder.
J	Standard Height 11'-9" (3581mm) From floor to top of overhead.
	EH1 12'-9" (3886mm) From floor to top of overhead.
	EH2 13'-9" (4191mm) From floor to top of overhead.

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. 2 for overall lift height.
Add 1" (25mm) to overall height to lowest obstruction.

3. Column Extensions:

Before standing columns upright, install the column extensions using (12) M10x20mm Carriage HHCS and Flanged Locknuts, Fig. 3. Overhead Mounting Bracket: Install Mounting Brackets to column extensions, Fig 3.

4. Lift Setting:

Position columns in bay using dimensions shown in Figs. 1, 2 and Fig. 5a. With column lying on the floor, two people can lift the top of the column and walk towards the base. As the column approaches vertical, one of the two people should move to the opposite side of the column and assist in slowly setting the column flat on its base. Both column base plate backs must be square on center line of lift. Notches are cut into each base plates to indicate center line of lift for use with a chalk line, Fig. 5a.

5. Concrete and Anchoring (Anchors Not Provided):

Note: Recommended anchors - Hilti HSA-A stud anchor
20mm dia. x 170mm Lg. or equal.

Concrete shall have a compression strength of at least 20N/mm² and a minimum thickness of 125mm in order to achieve a minimum anchor embedment of 95mm. When using the recommended 20mm x 170mm lg. anchors, if the top of the anchor exceeds 75mm above the floor grade, you DO NOT have enough embedment. Drill (8) 20mm dia. holes in concrete floor using holes in column base plate as a guide. See Fig. 4, Fig. 5, and Fig. 5a for hole depth, hole spacing, hole selection and edge distance requirements.

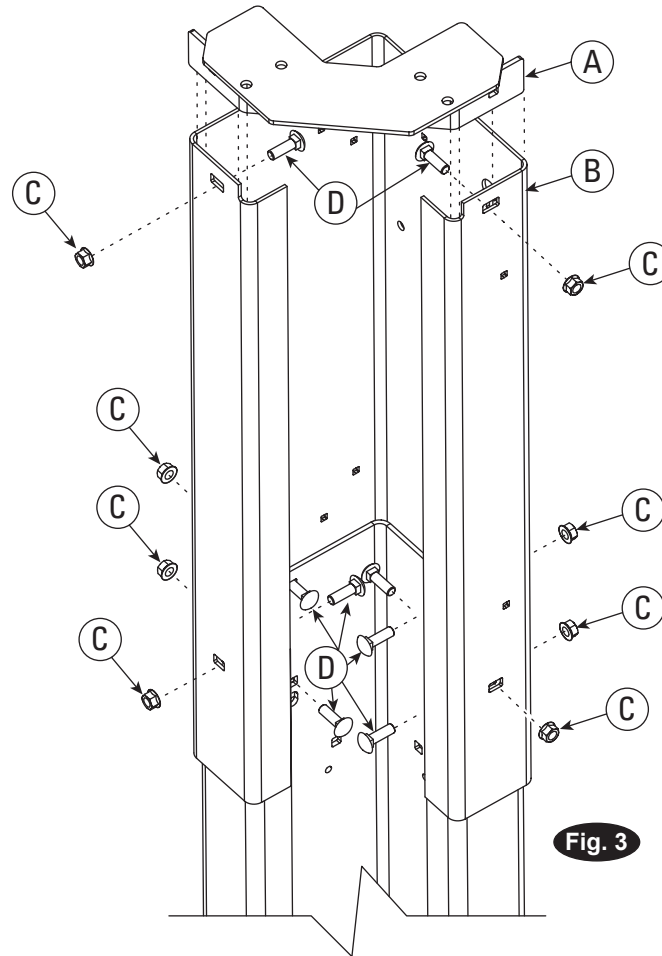


Fig. 3

Column Extension / Overhead Mounting Bracket	
A	Overhead mounting bracket
B	Column extension
C	M10 locknut
D	M10x20mm carriage bolt

6. IMPORTANT Using the horse shoe shims provided, shim each column base until each column is plumb, Fig. 5a. 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 200Nm(20.4kg-m). Shim thickness **MUST NOT** exceed 13mm. Adjust the column extensions plumb. If anchors do not tighten to 200Nm(20.4kg-m) installation torque, replace concrete under each column base with a 1219mm x1219mm x 152mm thick 20N/mm² minimum concrete pad keyed under and flush with the top of existing floor. Let concrete cure before installing lifts and anchors.

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

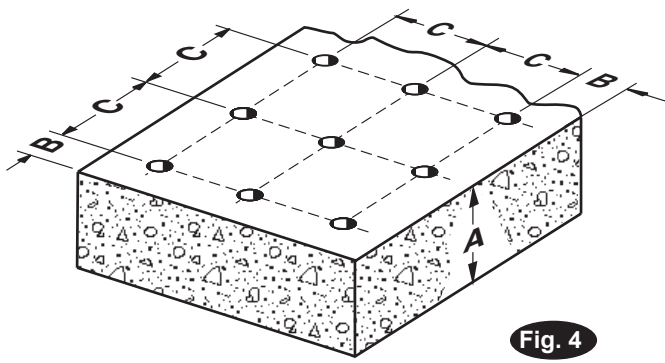
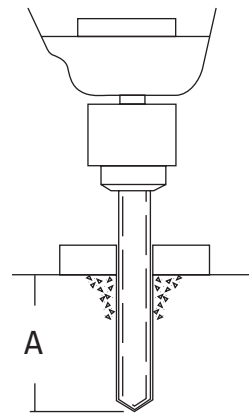
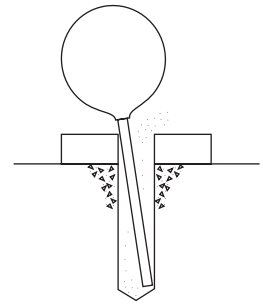


Fig. 4

A	Concrete thickness (125mm) and hole depth (114mm)
B	Edge distance (150mm)
C	Hole Spacing (150mm)



Drill holes using 20mm carbide tipped masonry drill bit.



Clean Hole

A	114mm Minimum
B	75mm
C	95mm
D	108mm

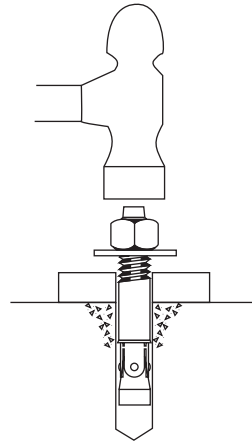
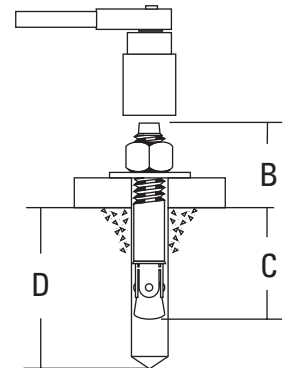


Fig. 5

Run nut down just below impact section of bolt. Drive anchor into hole until nut and washer contact base.



Tighten nut with torque wrench to 200 Nm.

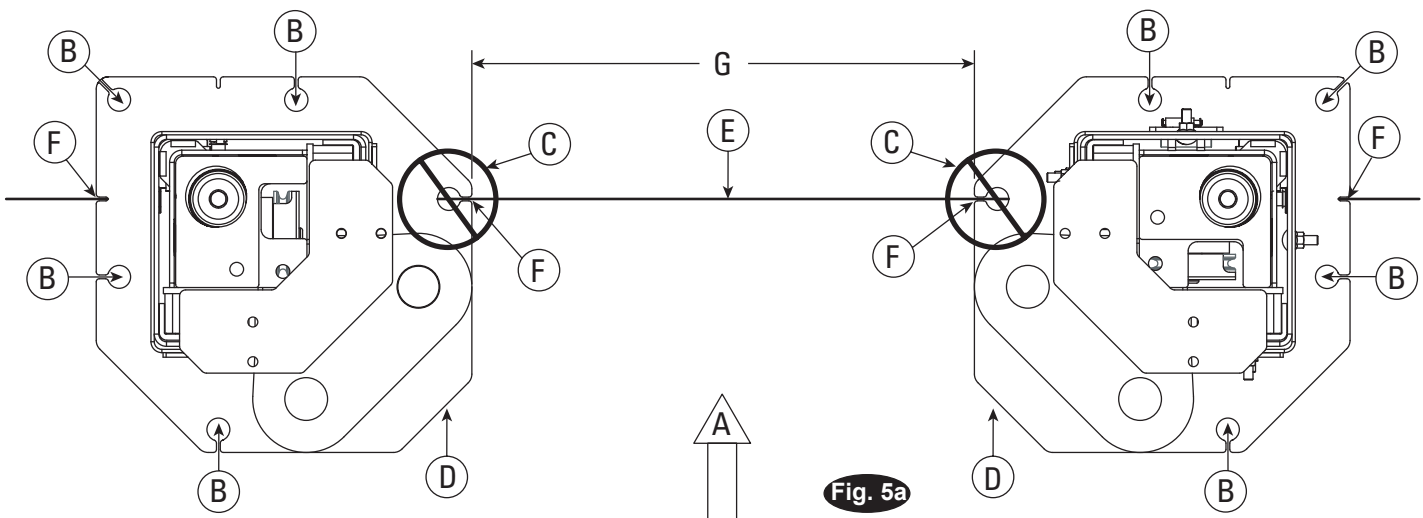


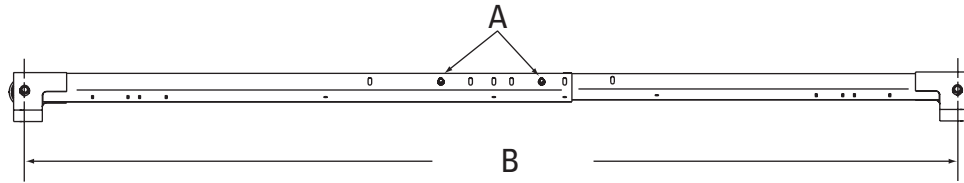
Fig. 5a

A	Approach
B	Anchor Here
C	DO NOT ANCHOR HERE
D	Use long flat shims here

E	Chalk line
F	Align notches in baseplates with chalk line.
G	7'-8-1/8" (2340mm) Inside baseplate to baseplate.

7. Overhead Assembly:

Assemble overhead, Fig 6. Adjust to dimension, shown. Install (4) M10 x 20Lg. HHCS and Flanged lock nuts, (2) Each Side. DO NOT TIGHTEN.

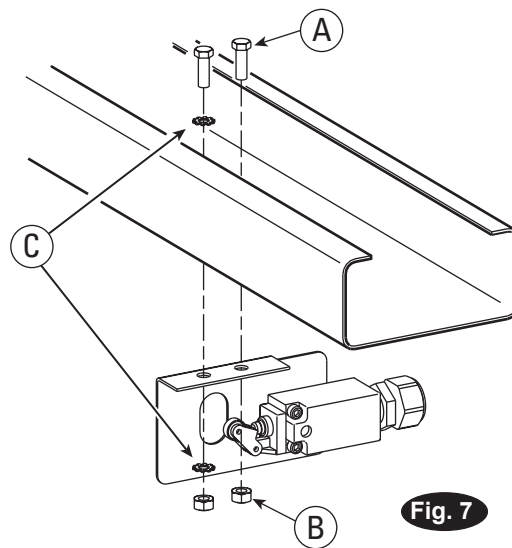


A	(4) M10 x 20Lg. HHCS
B	8'-9-1/2" (2676mm)

Fig. 6

8. Overhead Switch Installation:

Mount switch assembly towards power unit column using (2) M6 x 20 lg. HHCS, M6 Nuts and M6 Star Washers, Fig. 7.

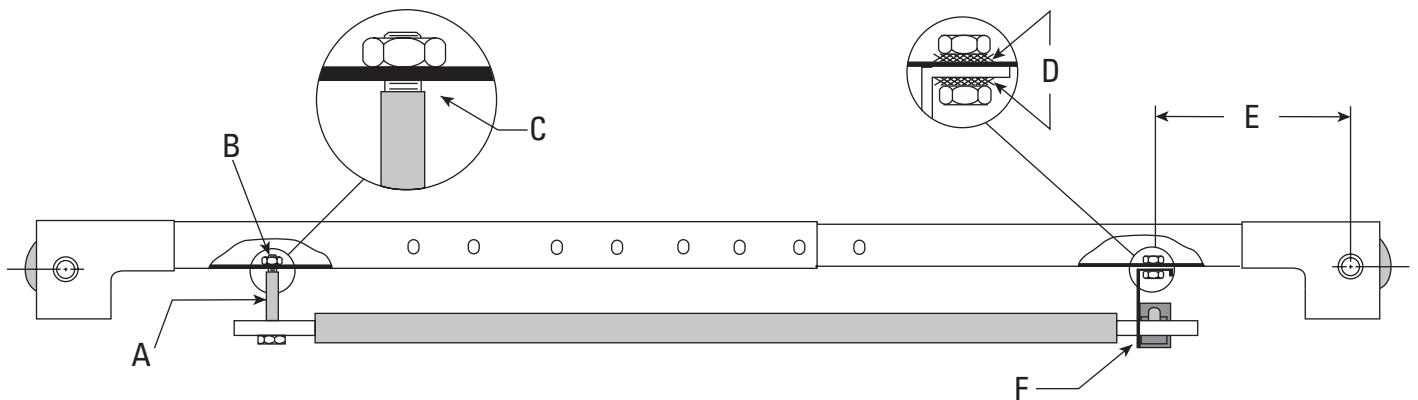


A	M6 x 20Lg. HHCS
B	M6 nuts
C	M6 star washer

Fig. 7

9. Continued Crosshead Installation:

Insert M6 x 70mm HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket Fig 8. Then secure HHCS and Switch Bar to overhead as shown, using (2) 19mm spacers and lock nut. Tighten Hex bolt leaving 1.6mm gap between the spacer and the overhead assembly.



A	(2) 19mm spacers
B	M6 x 70mm HHCS and lock nut
C	5/8" (16mm) gap

D	Star washers
E	7-3/4" (195mm)
F	Overhead switch

Fig. 8

10. Overhead:

With a ladder by each column, two people position the overhead assembly onto column mounting brackets and fasten with (2) M10 x 20mm HHCS and (2) M10 lock nuts, Fig. 9. Tighten bolts at center of overhead assembly.

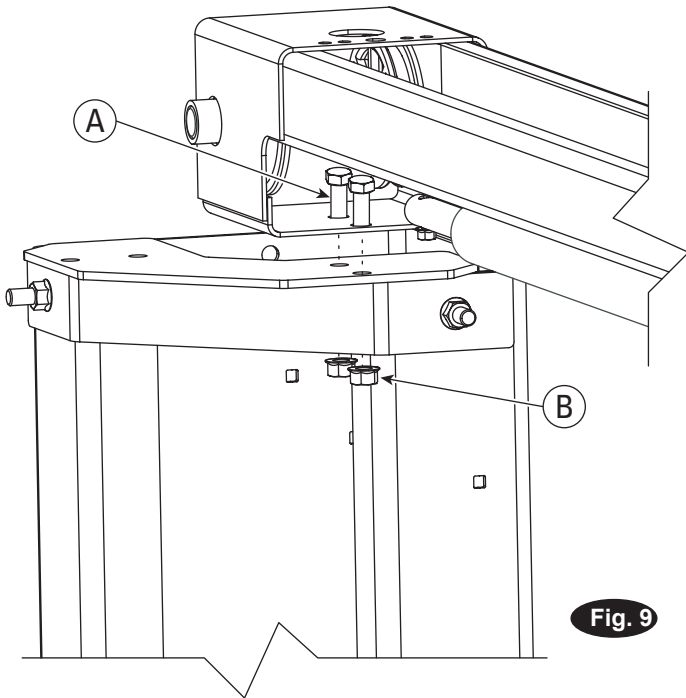


Fig. 9

A	(2 each column) M10 x 1.5 20Lg. HHCS bolt
B	(2 each column) M10 flanged lock nuts

Install power unit onto column extension, Fig. 11. Slide bolt/nut combination into top set of holes and down to bottom of slot. Install HHCS, Vibration Pad, and Flanged HHCS in bottom power unit holes and tighten. (Be sure to place vibration pad between power unit and column extension). Tighten top HHCS and Nut.

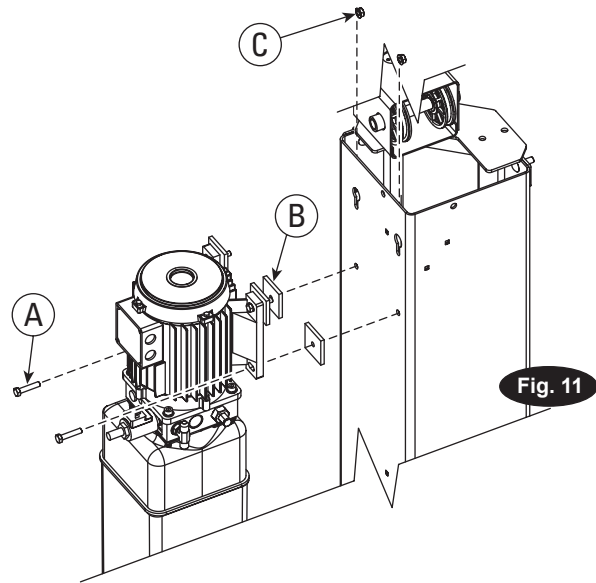


Fig. 11

A	(2) M8 x 40Lg. HHCS
B	Vibration pad
C	(2) M8 lock nuts

11. Power Unit:

Put (2) M8 x 40Lg. HHCS through top holes in power unit bracket using Vibration Pad to hold in place, Fig. 10. Install M8 flanged lock nuts until bolt end is flush with end of nut.

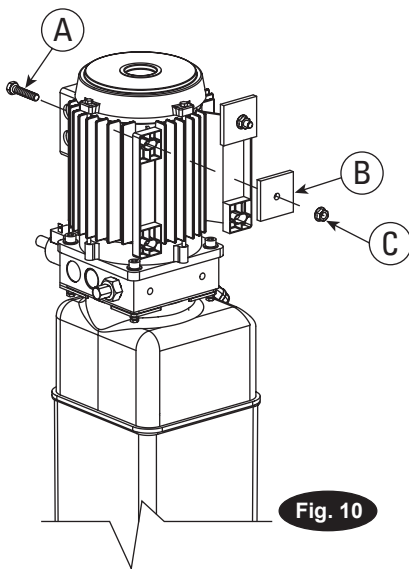


Fig. 10

A	(2) M8 x 40Lg. HHCS
B	Vibration pad
C	(2) M8 lock nuts

Install branch tee adapter to power unit, Fig. 12.

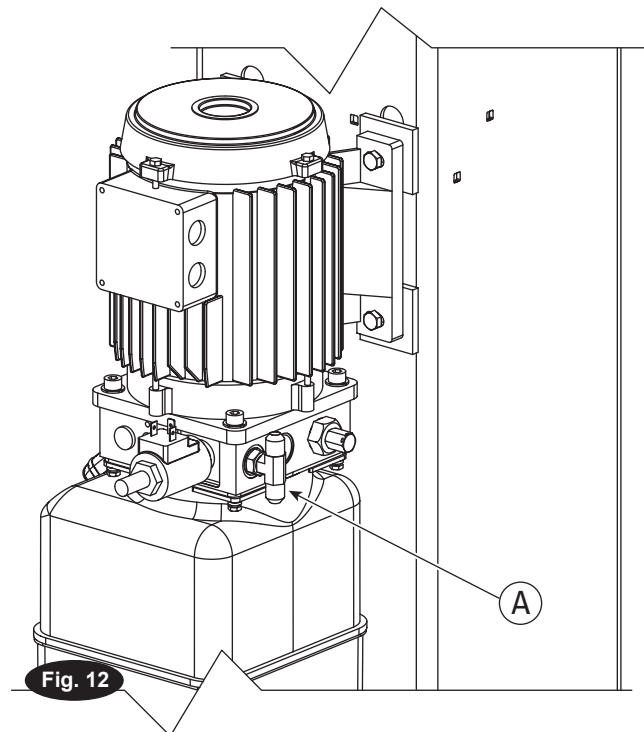


Fig. 12

12. Installing Locking Latches:

A) Install locking latches, lock hole covers, (1 hose clamp each side) and lower column hole plugs onto columns, Fig. 13.

NOTE: Do not tighten nuts and bolts with hose clamps until after you install the hydraulic hoses in later steps.

CAUTION Locking latch solenoids get extremely hot when lift is being lowered.

A	(2 each column) M6 x 1.0 x 12Lg. carriage bolt
B	(2 each column) M6 x 1.0 lock nut
C	(3 each column) M10 x 1.5 x 20Lg. carriage bolt
D	(3 each column) M10 lock nut
E	Hose clamp (1 on each locking latch assembly)
F	Locking latch assembly
G	Lower column hole plug
H	Lock hole cover
I	Approach

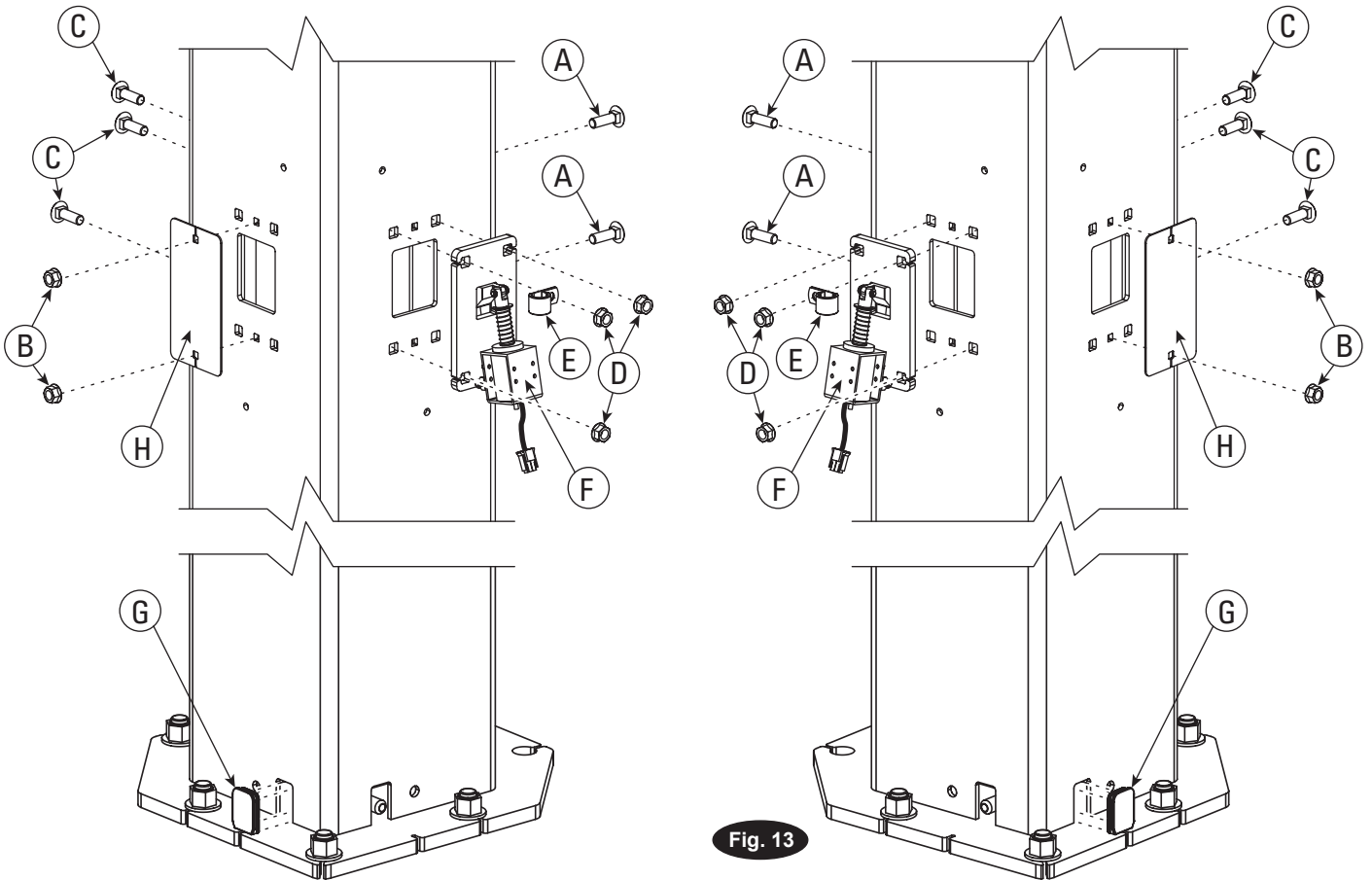
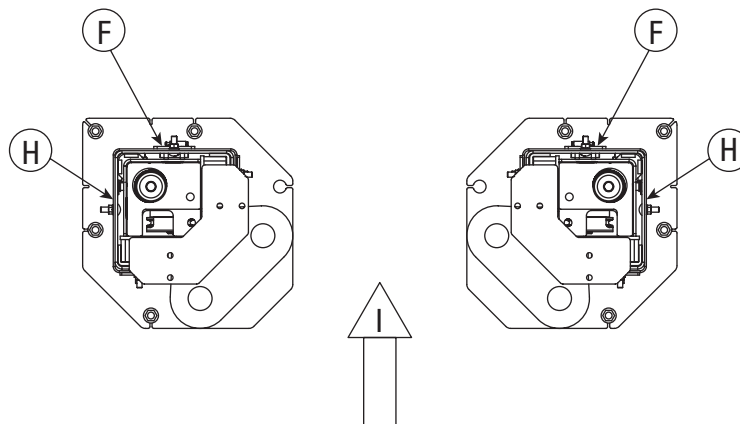


Fig. 13



13. Installing Upper Enclosure Mounting Studs:

- A) Install (6) M6 x 12 carriage bolts and mounting studs, Fig. 14. Mounting studs protrude outward from column.

14. Raising Carriages:

- A) Using appropriate equipment, raise carriage 43" (1100mm). Be sure locking latch is securely engaged, Fig. 14.

15. Attaching Hydraulic Hoses:

- A) Raise cylinders out of base plates, Fig. 15.
B) Attach hoses to cylinder, Fig 15 and Fig 15a.
C) After hoses are attached place cylinders back into base plates.
D) Install hoses and hose clips, Fig. 15a.
E) Item G of Fig. 15a illustrates hose routing for EH1 and EH2 models. Hose will route through hole with grommet on the inside of column and a hose clamp will hold it in place from inside.

NOTE: Clean adapters and hoses. Inspect all threads for damage and make sure all hose ends are crimped. Install hoses using Flared Fittings Tightening Procedure, Section 16. Install hose clamps.

16. Flared Fittings Tightening Procedure:

Flared Fittings Tightening Procedure

1. Screw the fittings together finger tight. Then, using the proper size wrench, rotate the fitting 2-1/2 hex flats.

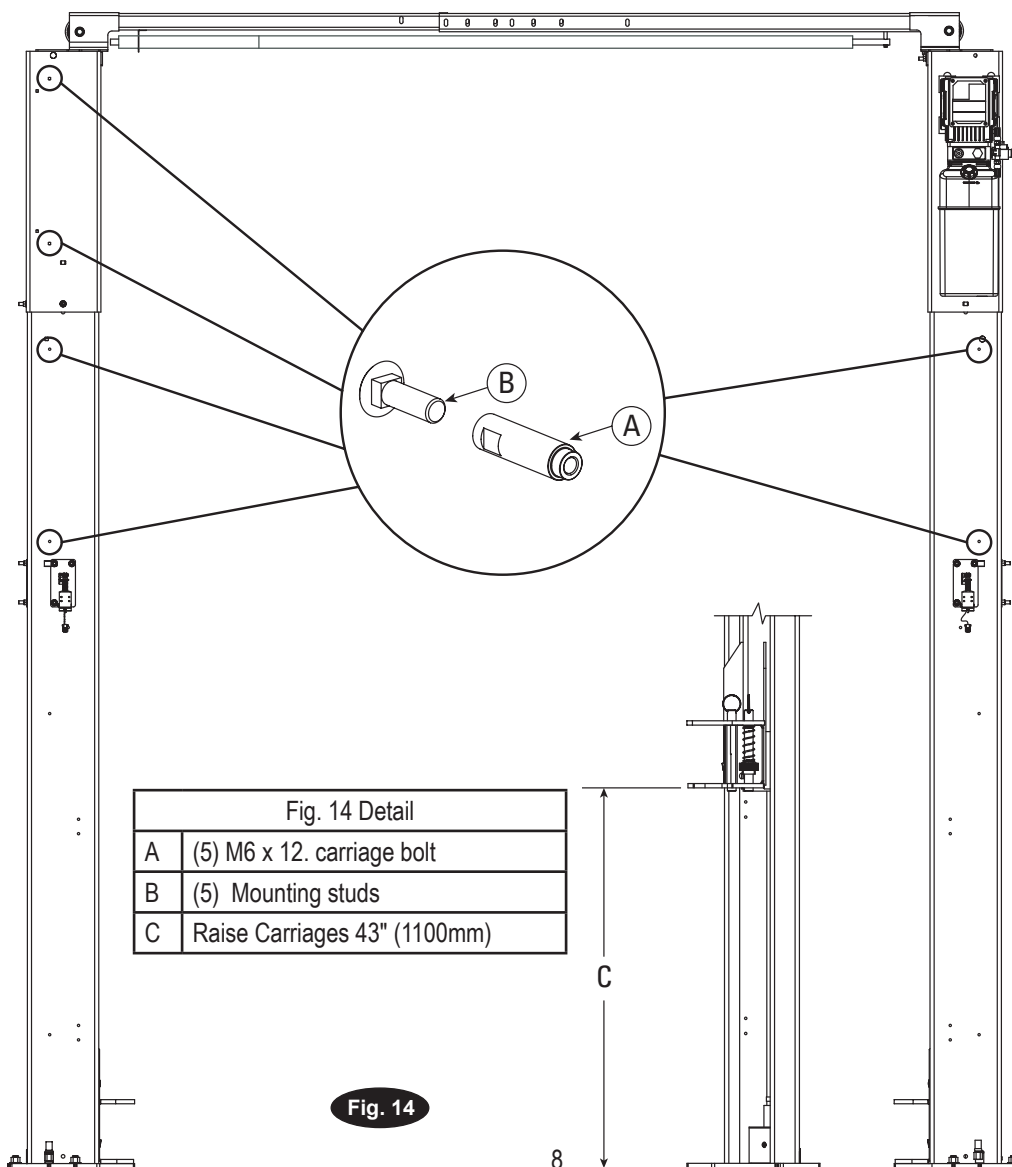
IMPORTANT Flare seat MUST NOT rotate when tightening. Only the nut should turn.

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. This will complete the tightening procedure and develop a pressure tight seal.

the **CAUTION** Overtightening will damage fitting resulting in fluid leakage.

17. Oil Filling:

Remove fill-breather cap on power unit, Fig. 15a. Fill to MIN___ mark on tank with Dexron III ATF, or hydraulic fluid that meets ISO 32 specifications. Replace fill-breather cap.



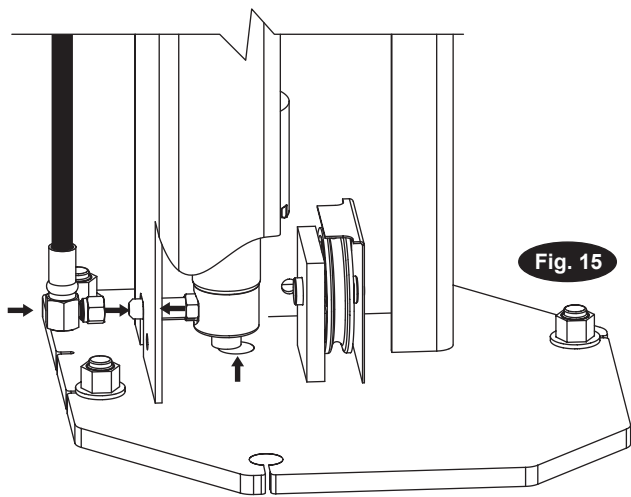


Fig. 15

HOSE DETAIL	
A	M10 x 1.5 x 20Lg. carriage bolt
B	Hose clamp
C	M10 lock nut
D	M10 x 1.5 x 20Lg. HHCS
E	Overhead hose
F	Power unit hose
G	Fill breather cap
H	Review step 15

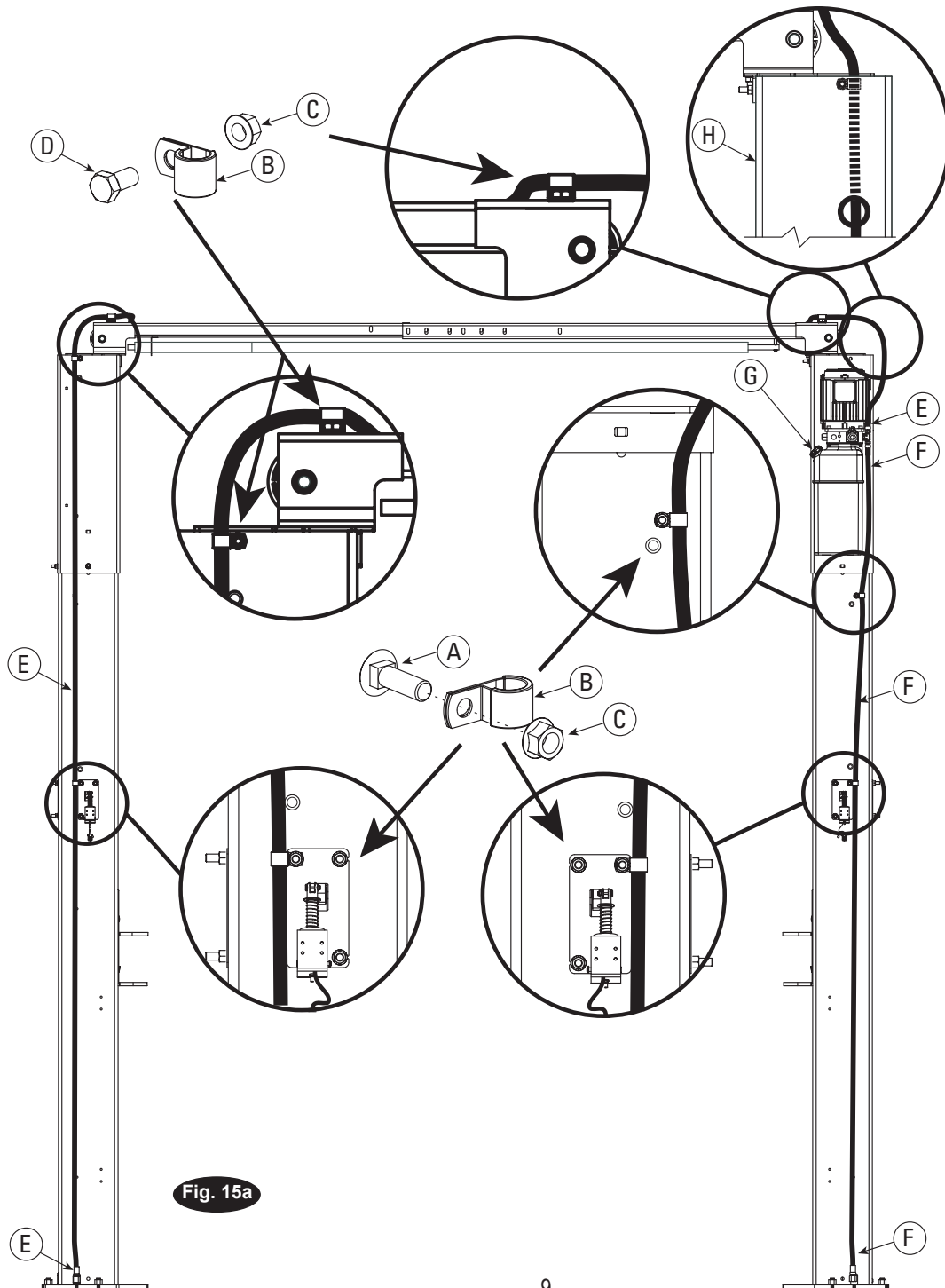


Fig. 15a

**18. Installing Lower Enclosure Mounting Studs,
(Adapter Holders, and Tool Holders Optional):**

- A) Install lower enclosure mounting studs, (adapter holders and tool holders optional), Fig. 16
- B) (Install adapters optional), Fig. 16.

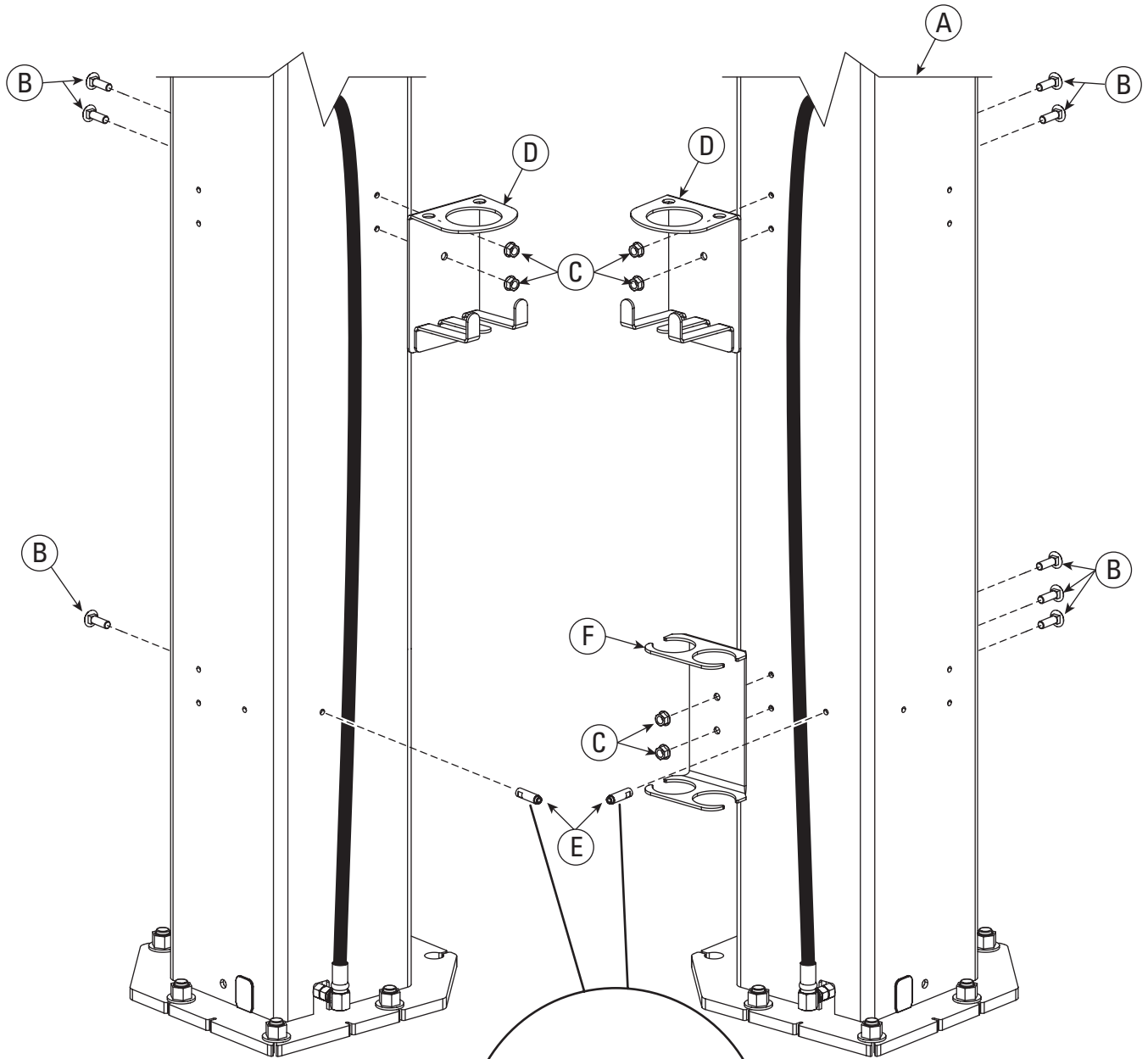
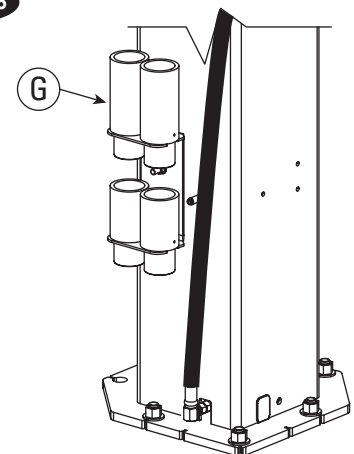


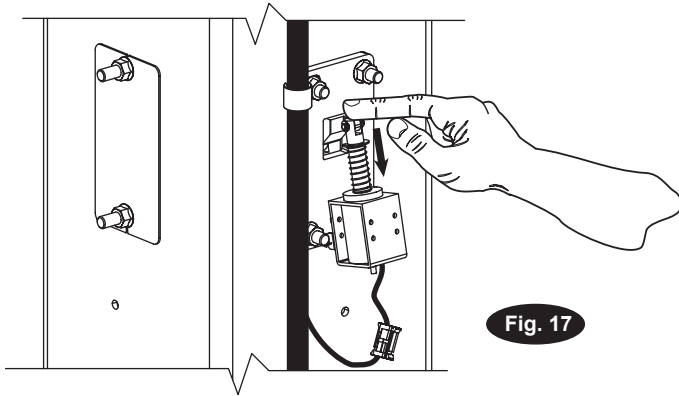
Fig. 16

Fig. 16 Detail	
A	Power unit column
B	M6 x 1.0 x 16mm carriage bolt
C	M6 x 1.0 lock nut
D	Tool holder (Optional)
E	Mounting stud
F	Adapter Holder (Optional)
G	Install adapters



19. Equalizing Cables:

- A) Slightly raise each carriage assembly and depress the locking latch assembly and lower carriages to lowest latch position, Fig. 17.



- C) Push cable 1 up until the stud is out of the carriage top opening.
 D) Run a nylon insert locknut onto cable 1 stud so 13mm of the stud extends out of the locknut.
 E) Pull cable 1 back down, Fig. 19.
 F) Run cable 1 around the lower sheave, then up and around overhead sheave and across and down to the opposite carriage, Fig. 19. Install sheave cover, Fig. 17a.
 G) Fasten cable 1 end to the carriage upper tie-off bracket. Tighten the locknut enough to apply light tension to the cable.
 H) Repeat procedure for cable 2. Adjust the tension of both cables during the final adjustments in section 31.

- A) Remove sheave cover, Fig. 17a.

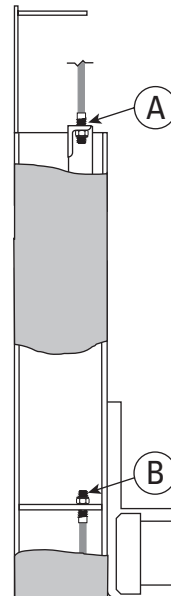
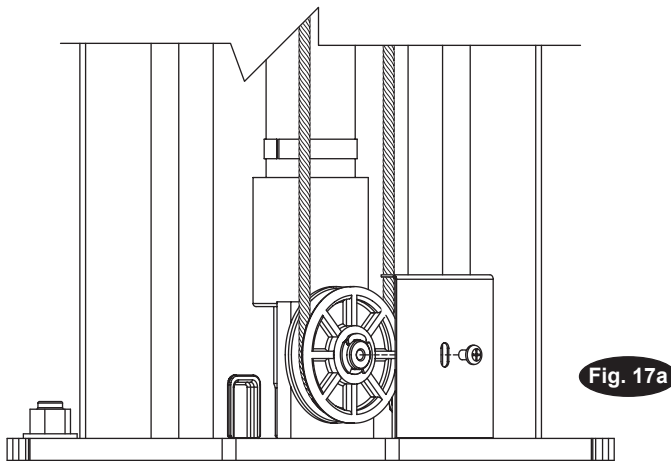


Fig. 19 Detail	
A	Upper cable tie off plate and 13mm nylon insert lock nut
B	Lower cable tie off plate and 13mm nylon insert lock nut

- B) Refer to Fig. 18 for the general cable arrangement. First, run a cable end up through the small hole in the lower tie-off plate, Fig. 19.

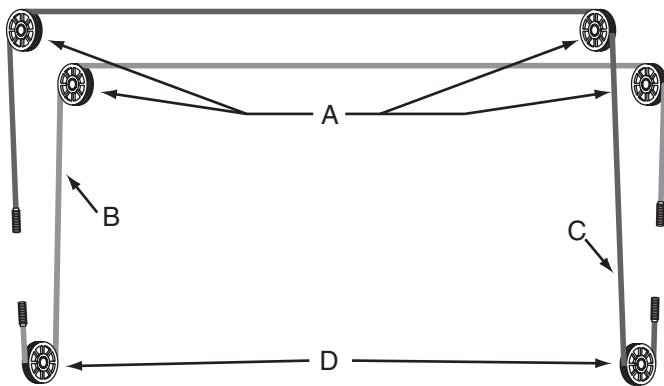


Fig. 18 Detail	
A	Upper sheaves
B	Cable 2
C	Cable 1
D	Lower sheaves

Fig. 18

20. Installing Master Control Panel Back Plate:

A) Install master control panel back plate to powerunit column, Fig. 20.

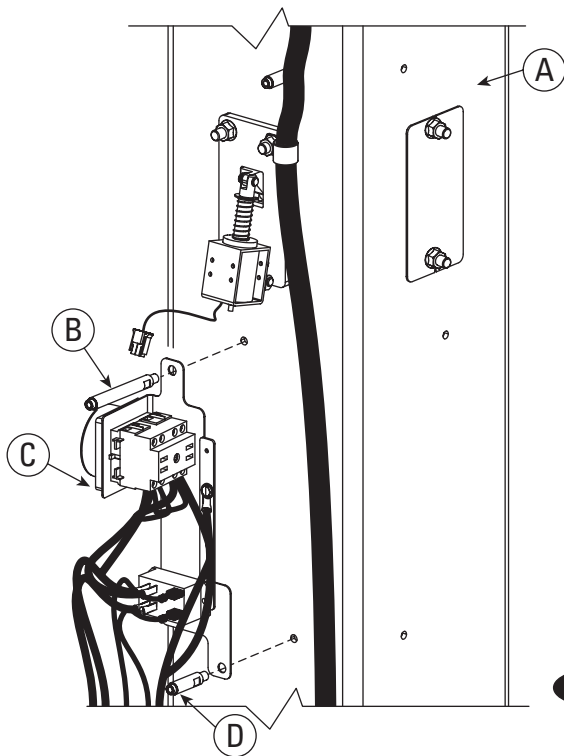


Fig. 20

Fig. 20 Detail

Fig. 20 Detail	
A	Power unit column
B	Long stud through back plate into tapped hole.
C	Master control back plate.
D	Short stud through back plate into tapped hole.

21. Electrical:

Have a certified electrician run power supply to disconnect switch attached to back plate of master control, Fig. 21 refer to schematic, Fig. 21a. Size wire for 25 amp circuit. See Motor Operating Data Table.

IMPORTANT Use separate circuit for each power supply. Protect each circuit with time delay fuse or circuit breaker. For single phase 230V (*F Model), use 20 amp fuse. For three phase 400V (*S Model), use 12 amp fuse. All wiring must comply to all local electrical codes. Wire motor according to wiring diagrams provided, Fig. 21a and Fig. 22. Plug in lowering valve connection to power unit after motor is wired, Fig. 22.

IMPORTANT As with all electronic equipment, the control modules can be affected by voltage irregularities. It is the lift owner's responsibility to ensure that adequately protected power sources are available for connecting this equipment.

NOTES:

Unit not suitable for use in unusual conditions. Contact Rotary Lift for moisture and dust environment duty unit.

MOTOR OPERATING DATA - SINGLE PHASE (*F MODELS)

LINE VOLTAGE	CURRENT	POWER
220 - 240 Volts	50Hz	17A - 1.5Kw

MOTOR OPERATING DATA - THREE PHASE (*S MODELS)

LINE VOLTAGE	CURRENT	POWER
400 - 415 Volts	50Hz	10A - 4.9Kw

*Notes: F or S Model?

To find out if you have a F or S model Power Unit look at the 4th letter from the end of your lift model number.

EXAMPLE: SPOA30EF585 would be a F Model.



Model number can be found on a tag on the side of the lift.

3 Phase Installation

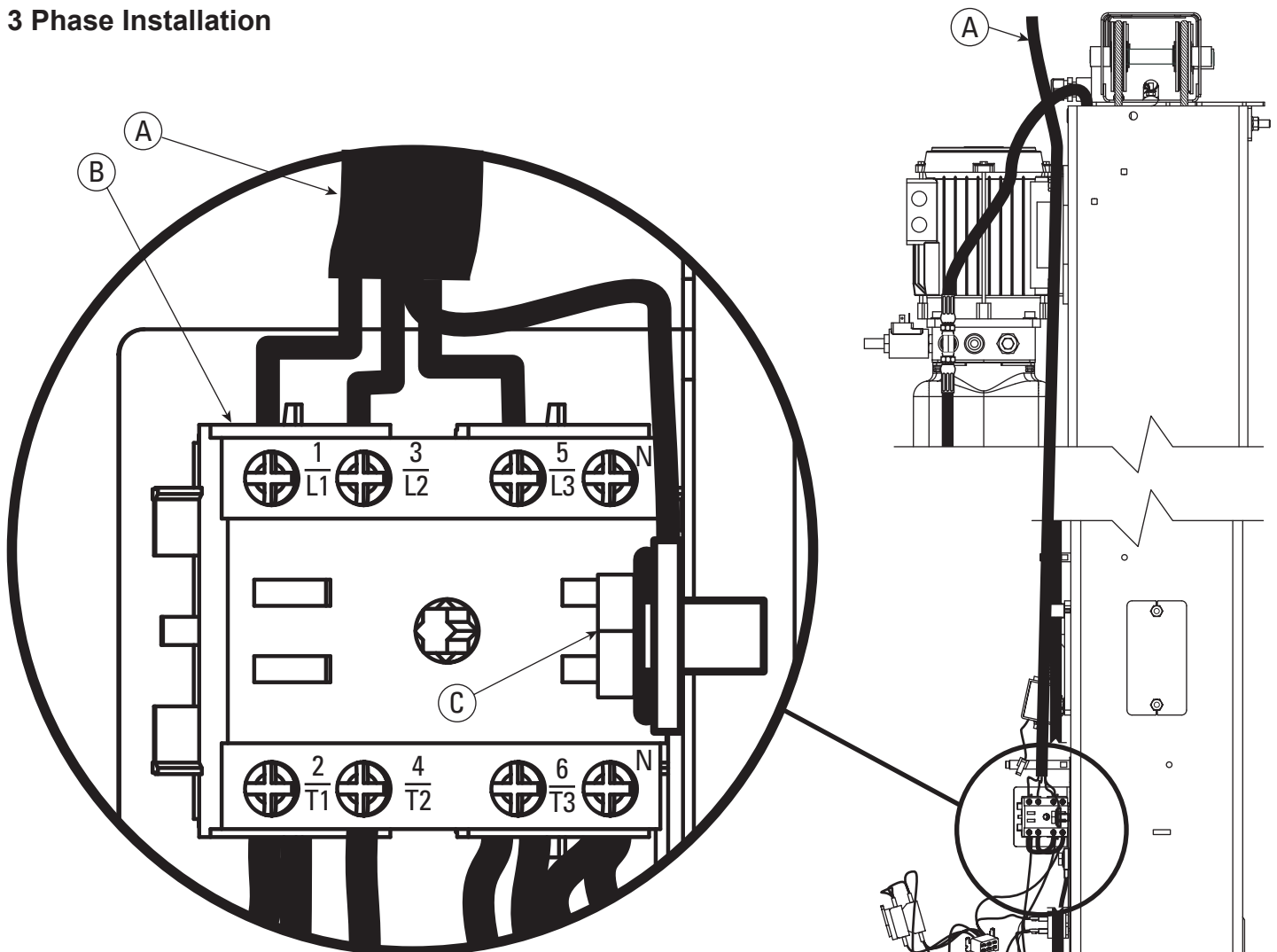


Fig. 21 Detail	
A	Facility power cable.
B	Back side of disconnect.
C	Grounding screw attached to back plate.

Fig. 21

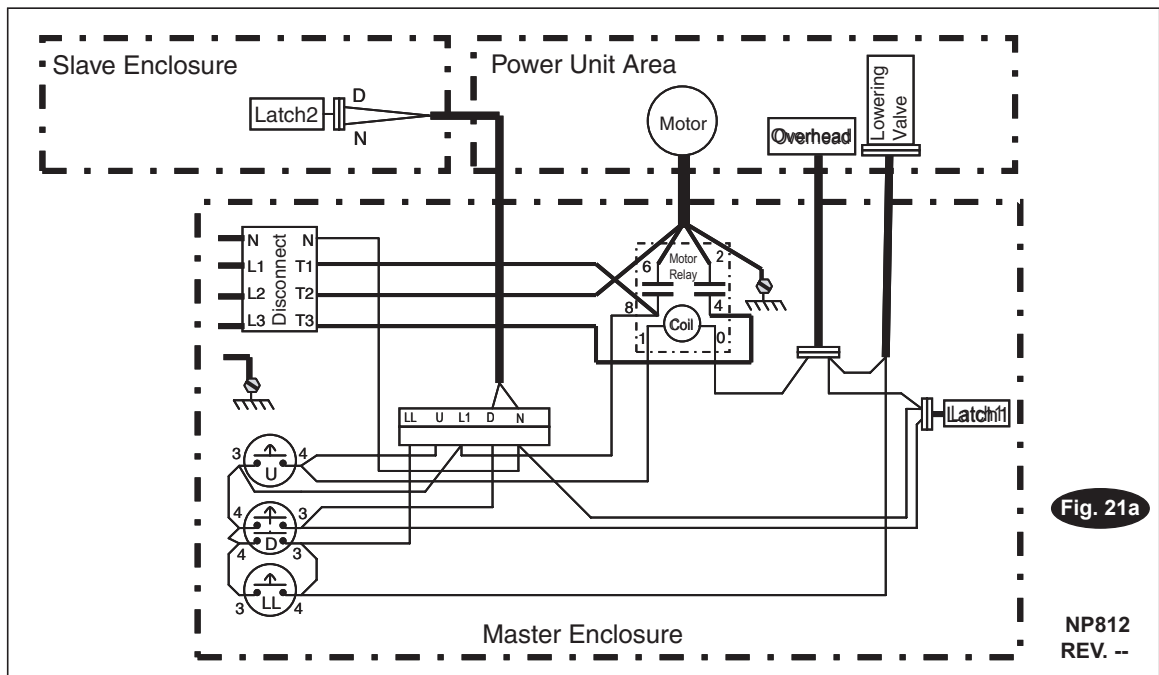


Fig. 21a

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21. Electrical Continued:

- A) Wire overhead switch, Fig. 21a and Fig.23.
- B) Route overhead cable along hydraulic hose and plug into harness on back plate of master control panel.
- C) Attach plug from harness of master control panel into the master side lock solenoid.
- D) Attach 6 position plug on slave solenoid cable to 6 position plug on master side wiring harness. Route cable over to slave solenoid following hydraulic hose and plug into slave solenoid.

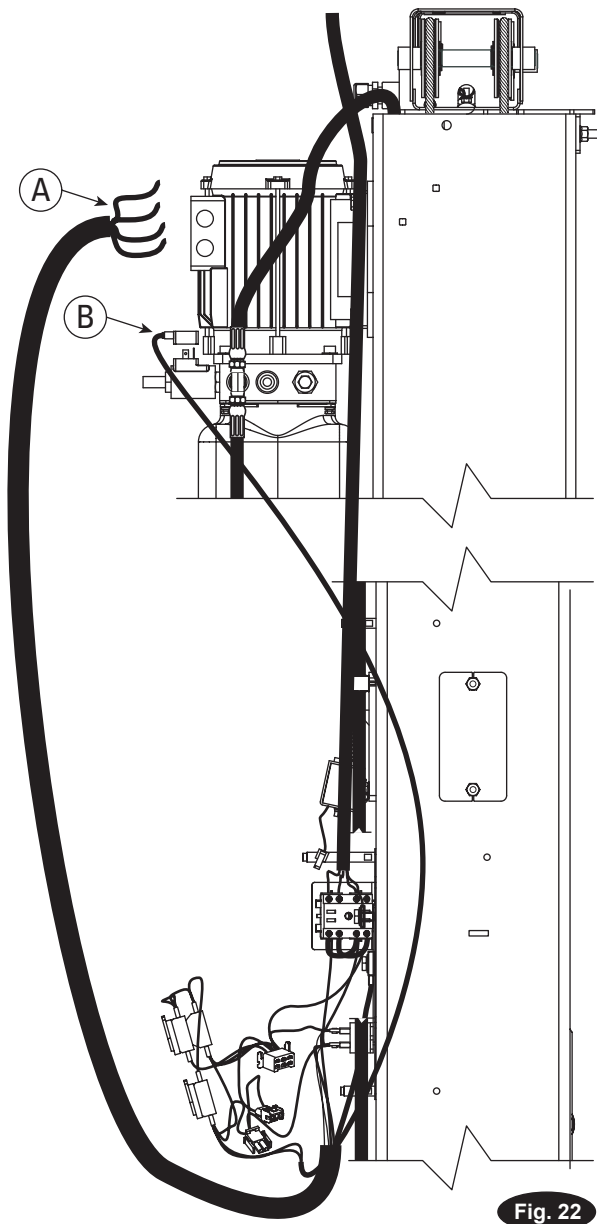


Fig. 22

Fig. 22 Detail

A	(4) Wire cable from harness connected to back plate to power unit motor.
B	Lowering valve connection from harness to lowering valve on power unit.

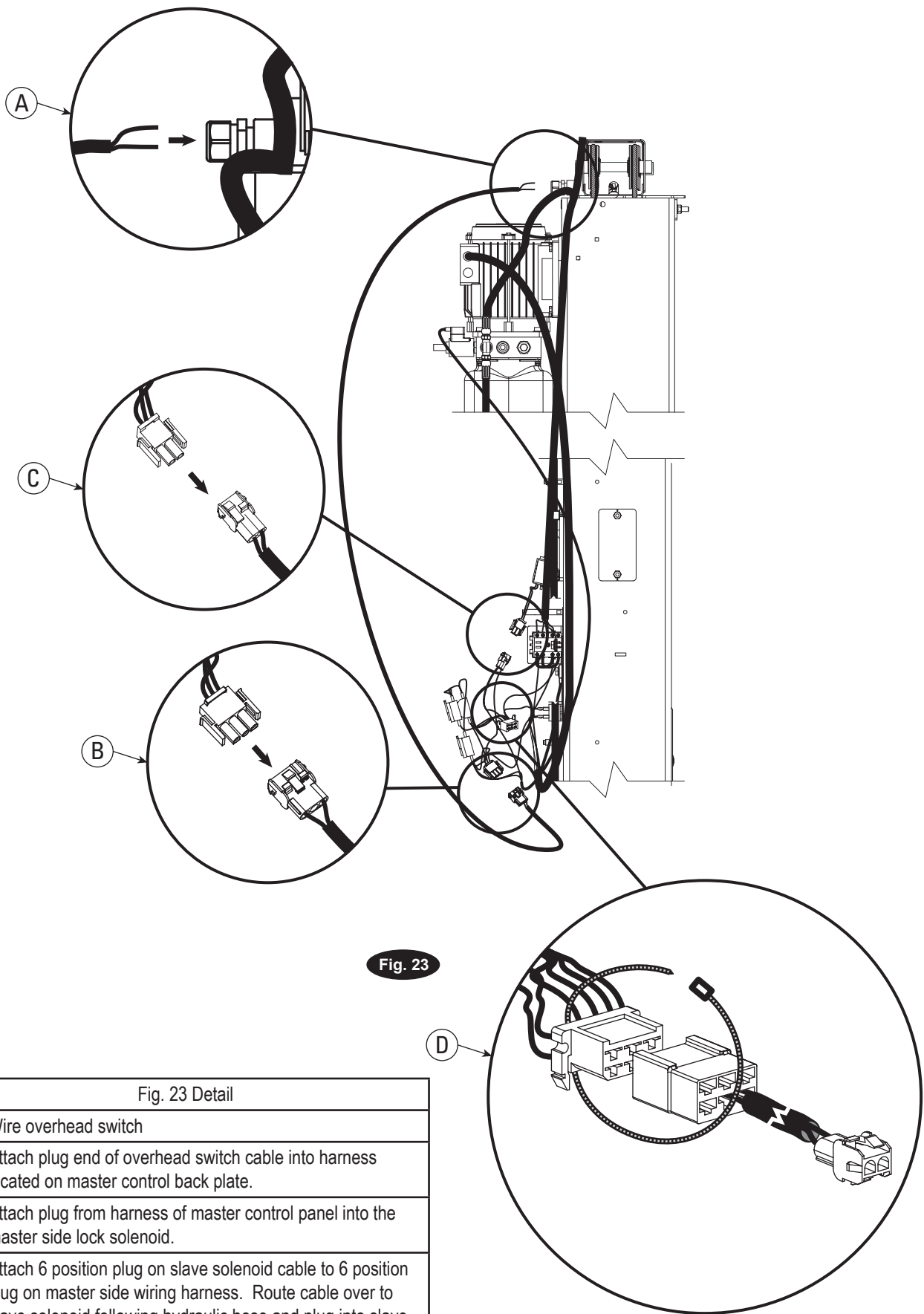


Fig. 23

Fig. 23 Detail	
A	Wire overhead switch
B	Attach plug end of overhead switch cable into harness located on master control back plate.
C	Attach plug from harness of master control panel into the master side lock solenoid.
D	Attach 6 position plug on slave solenoid cable to 6 position plug on master side wiring harness. Route cable over to slave solenoid following hydraulic hose and plug into slave solenoid. Wire tie 6 position plug together.

22. Installing The Master Control Cover:

Attach the switch contactors from harness on back plated of master control to the master control cover. Tabs that lock switch contactors into place must be orientated upward, Fig. 24.

23. Installing Master Control Cover, Slave Cover And Enclosures To Lift:

- A) Cut to fit gaskets and install around master control cover and slave cover, Fig. 25.
- B) Wire tie all hoses and cables together, Fig. 25. NOTE: Transparent hose guard should be placed at top of enclosure to prevent chafing.
- C) Master control panel attaches to column with (3) M6 x 1.0 x 10Lg. flanged BHCS and rubber washers, Fig. 25.

- D) Enclosures will attach to column with M6 x 1.0 x 10Lg. flanged BHCS and rubber washers, Fig. 25.
- E) Slave cover attaches to column with (3) M6 x 1.0 x 10Lg. flanged BHCS and rubber washers, Fig. 25.
- F) Covers and enclosures should be attached in 10 places.

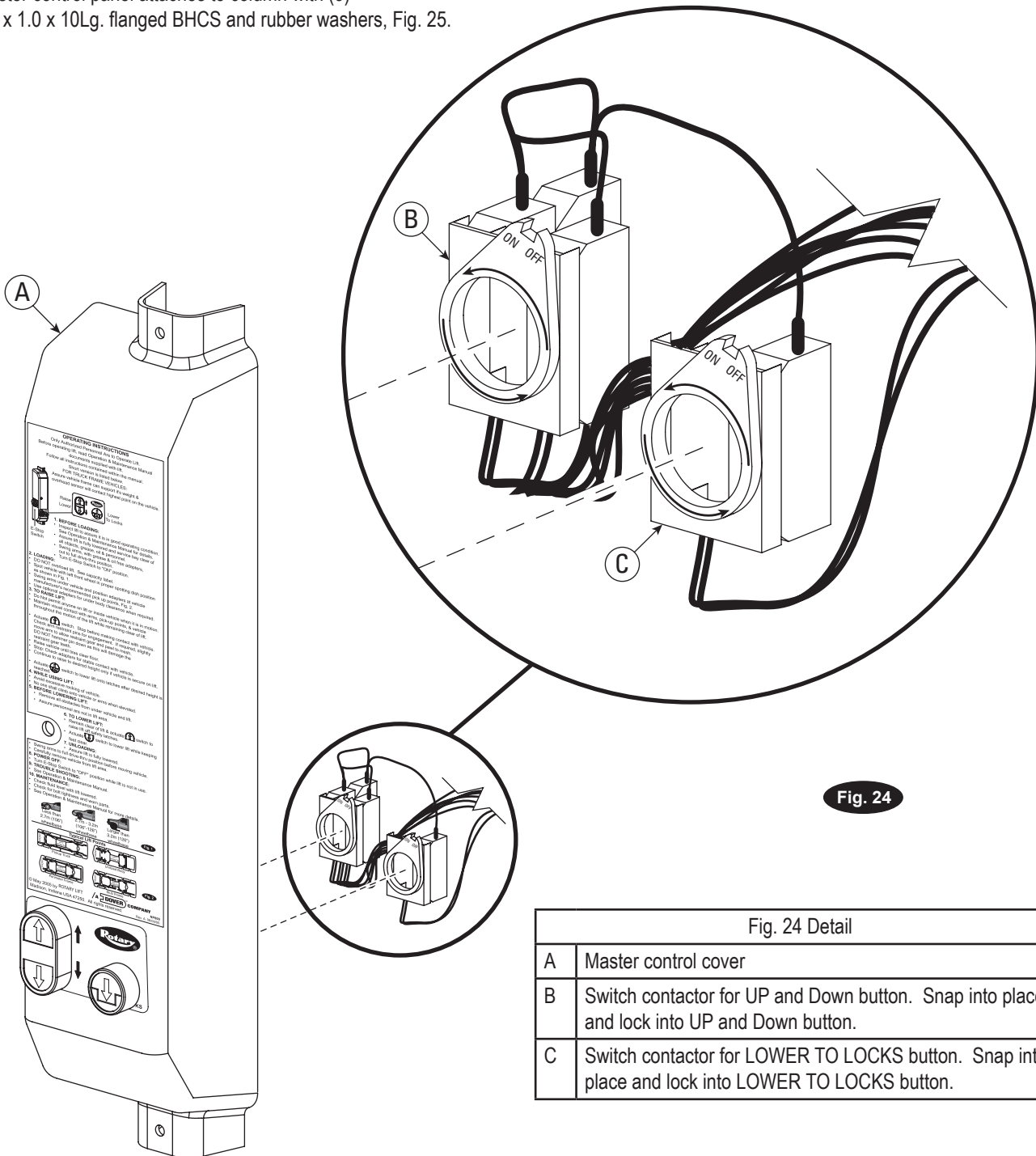


Fig. 24

Fig. 24 Detail	
A	Master control cover
B	Switch contactor for UP and Down button. Snap into place and lock into UP and Down button.
C	Switch contactor for LOWER TO LOCKS button. Snap into place and lock into LOWER TO LOCKS button.

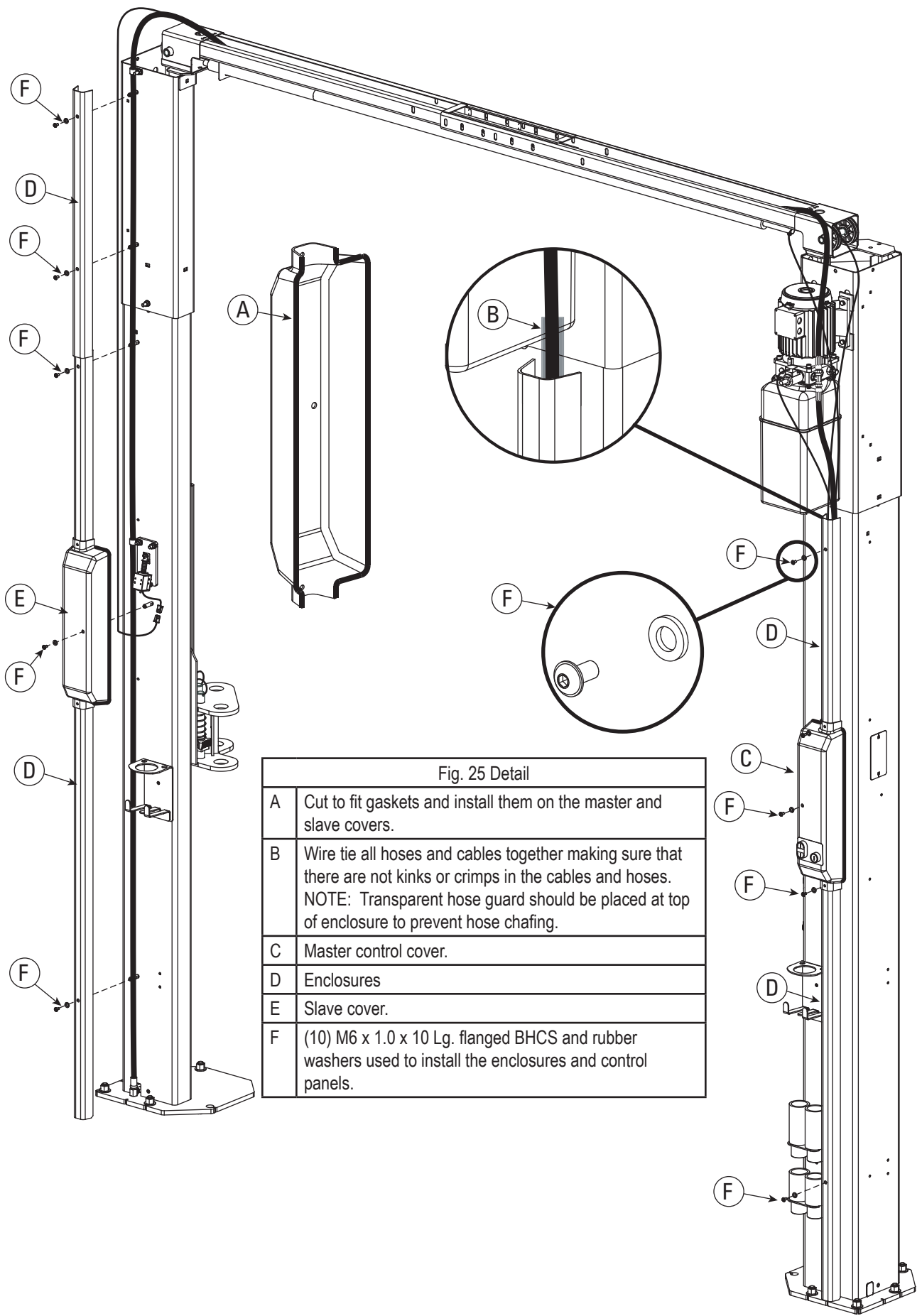


Fig. 25 Detail

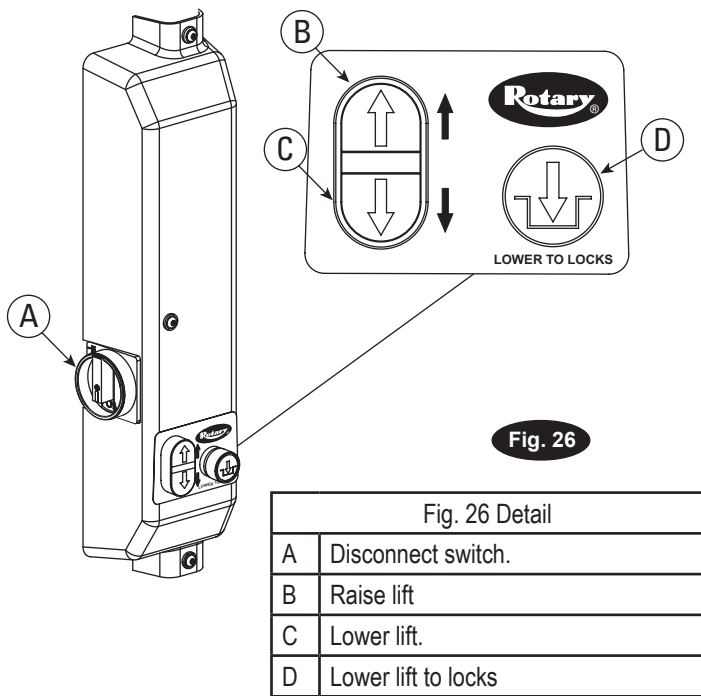
A	Cut to fit gaskets and install them on the master and slave covers.
B	Wire tie all hoses and cables together making sure that there are not kinks or crimps in the cables and hoses. NOTE: Transparent hose guard should be placed at top of enclosure to prevent hose chafing.
C	Master control cover.
D	Enclosures
E	Slave cover.
F	(10) M6 x 1.0 x 10 Lg. flanged BHCS and rubber washers used to install the enclosures and control panels.

Fig. 25

24. Initial Start Up:

Turn disconnect to ON position from the master control panel, Fig. 26.

NOTE: For further operation instructions refer to the operation and maintenance guide included with this literature package.



25. Arms & Restraints:

Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke, Fig. 27. Install 1-3/4" diameter arm pin(s).

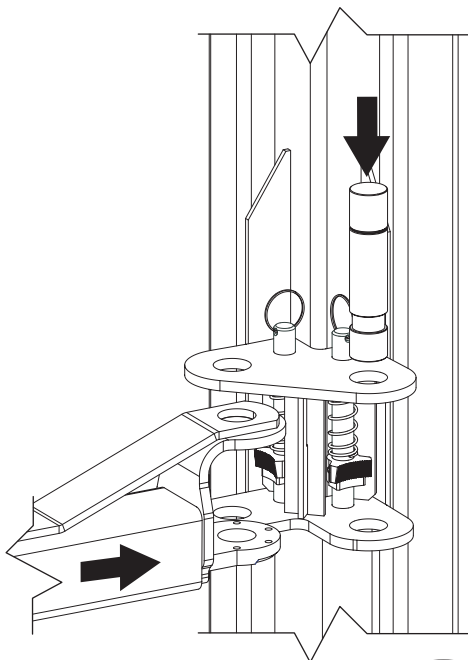
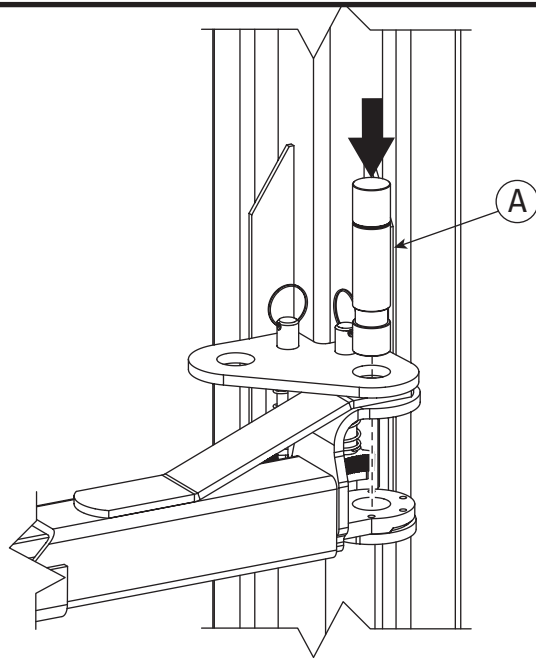


Fig. 27

CAUTION



A Installation pinch point keep hands above groove

After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 28. Ensure side of gear marked TOP is facing upward, Fig. 28.

NOTE: TOP is stamped on top side of gear. You may need to pull up on the pin-ring to allow enough room to install Restraint Gear.

Then, install the (3) 3/8"-16NC x 1-1/2" HHCS (12 total for all 4 arms) and 3/8" Spring Lock washers into the gear and arm, Fig. 28. Torque the Restraint Gear bolts to 30-34 ft.-lbs (46 N·m).

NOTE: To check operation of arm restraints, raise carriage 1" 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.

NOTE: Pin & Ring, Spring, & Gear Block are all preassembled.

NOTE: Once arm is installed in yoke, pull up actuator pin and swing arm fully around, being sure that the Restraint Gear and Gear Block always stay aligned. If they do not stay aligned, remove restraint gear and install in the opposite position.

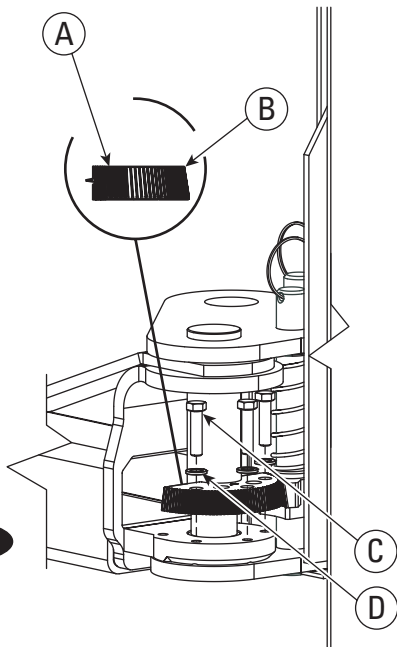


Fig. 28

Fig. 28 Detail	
A	TOP will be marked on top side of restraint gear.
B	Note beveled orientation
C	(3) Each arm - 3/8"-16NC x 1-1/2" HHCS
D	(3) Each arm - 3/8" lock washers

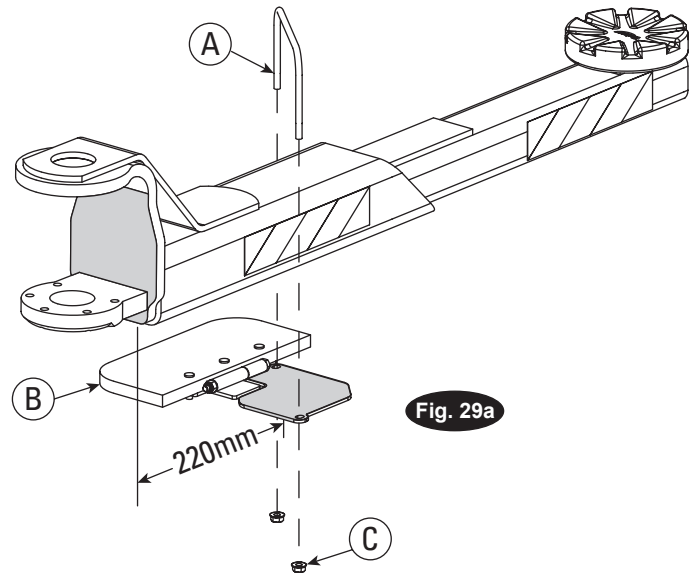


Fig. 29a

Fig. 29a Front Arm Guard Detail	
A	(2) Straps
B	(2) Arm guard assemblies
C	(4) 1/4"-20NC Hex FLgd Wzlock nuts Pltd

26. Arm Guard Installation:

Install arm guards, Fig. 29, Fig. 29a, Fig. 29b.

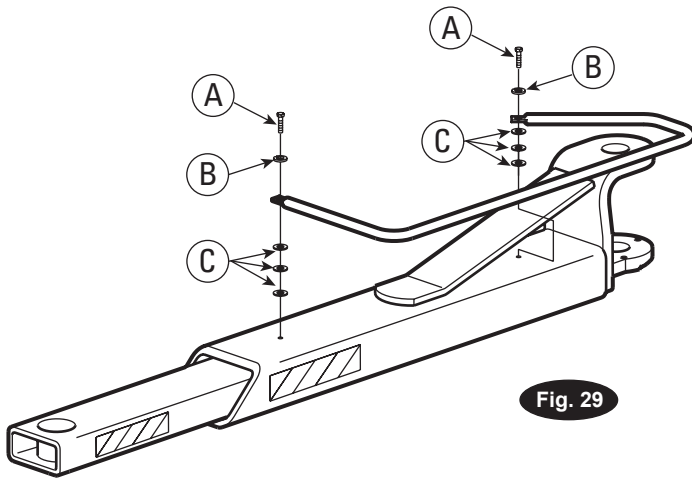


Fig. 29

Fig. 29 Rear Arm Guard Detail	
A	(2) 5/16"-18NC HHCS (per arm)
B	(2) 5/16" spring lock washers (per arm)
C	(6) 5/16" flat washers (per arm)

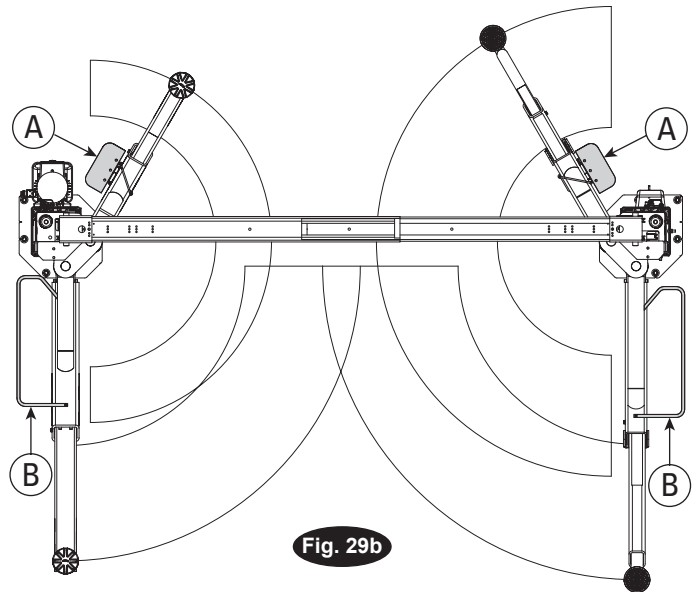


Fig. 29b

Fig. 29b Arm Guard Location Detail	
A	(2) Front arm guards
B	(2) Rear arm guards

27. Door Bumper Installation:

Install door bumpers and finger guards, Fig. 30.

28. Wheel Spotting Dish:

Position wheel spotting dish, for appropriate lift model, as illustrated in Fig. 1. Drill (2) 3/8" holes 2-1/2" deep in concrete floor using holes in wheel spotting dish as guide. Drive both anchors, provided, into concrete to secure dish.

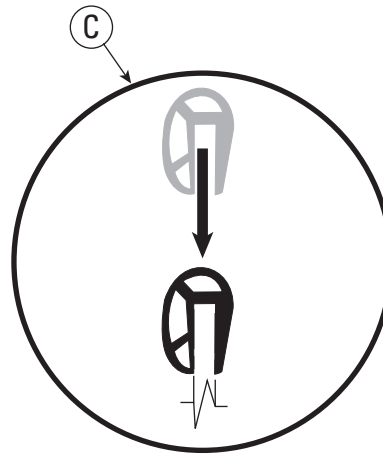


Fig. 30 Detail	
A	Remove backing from door bumpers and install 3" (75mm) from bottom of carriage.
B	(2) Door bumpers (one each carriage).
C	Attach self adhesive finger guards.

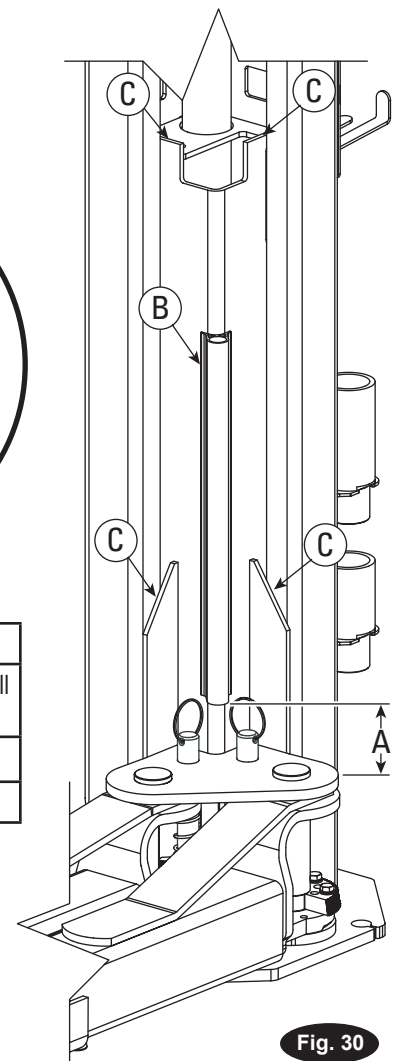


Fig. 30

29. Pinch Point Decal / Capacity Decal Location:

Install enclosed pinch point decals. Place (1) decal on each column, Fig. 31. Decals should be a minimum of 203mm from the bottom of decal to the ground. Capacity decals should be located just above the lock hole covers on each column, Fig.31a.

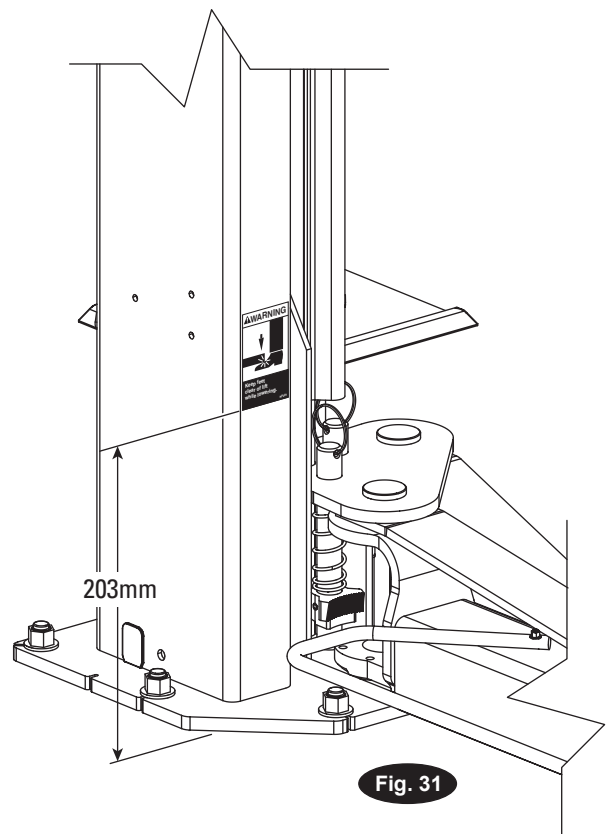


Fig. 31

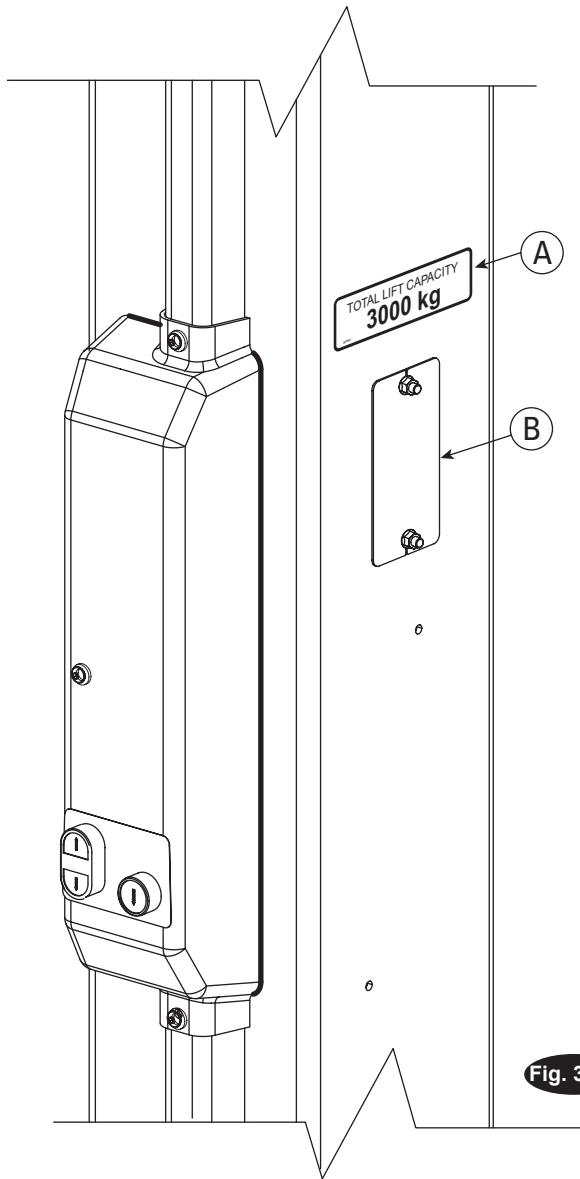




Fig. 31a


Fig. 31 Detail	
A	3000kg capacity sticker (one each column).
B	Lock hole cover.

30. Oil Bleeding:


Press  on touch pad and raise lift about 609mm. Open cylinder bleeders approximately, 2 turns. Close bleeders when fluid streams. Press  on the touch pad to fully lower lift. Fill tank until it reaches the MIN _____ mark on the tank. System capacity is (18) liters. Replace fill-breather cap.

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

31. Pressure Test for E and i Series lifts:

Press  on touch pad and raise 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.

32. Equalizer Cable Adjustment:

Press  on touch pad and 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. 22.

33. Check Electrical:

Check continuity of the protective bonding circuit, perform installation resistance tests, and perform voltage tests according to sections 19.2, 19.3, and 19.4 in EN60204-1:1997.

34. Check Operation:

Operate lift and assure that push button raises lift when pushed and stops lift when released. Check disconnect switches for cutting power to push-buttons. Also check that overhead switch stops lift from raising when actuated and that lift regains power when deactivated.

35. Check Pressure:

Check hydraulic pressure at indicated location on the power unit, Fig. 32. The maximum relief is not to exceed 14.50N/mm². These valves are nonadjustable. Replace if improper relief valve is in place.

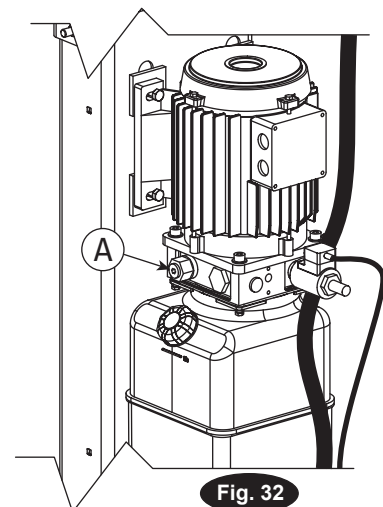


Fig. 32

Fig. 32 Detail	
A	Access for pressure reading.

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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