



SPOA30/SPOA40/SPO40

600 M Series And 700 E Series

Two Post Surface Mounted Lifts

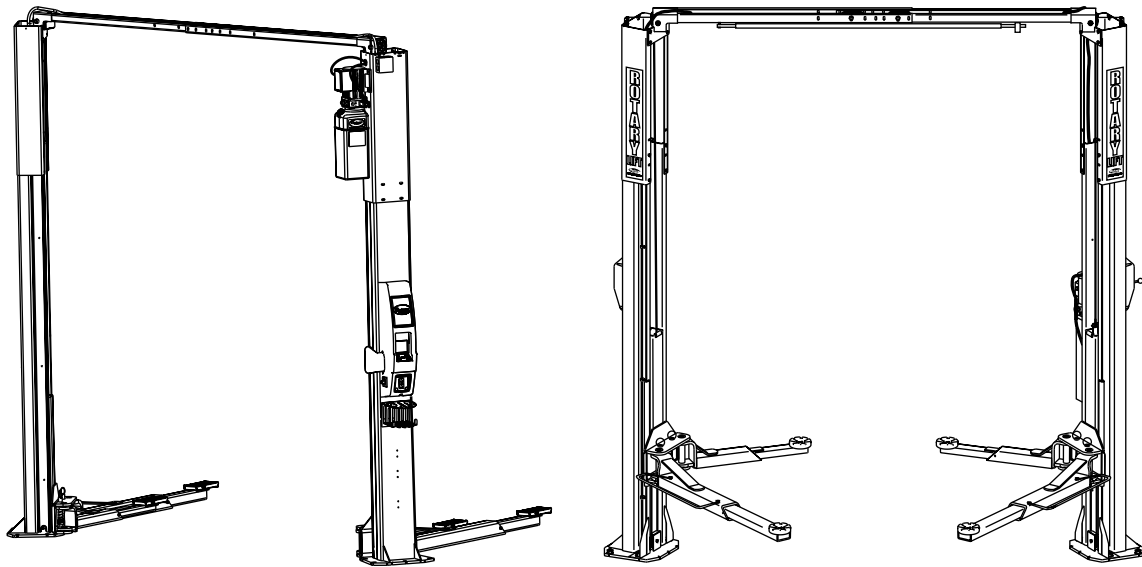
SPOA30 Series Capacity: 3,100kg (775 kg per arm)

SPOA40 Series Capacity: 4,000kg (1,000kg per arm)

SPO40 Series Capacity: 4,000kg (1,000kg per arm)



TÜV
Rheinland



INSTALLATION INSTRUCTIONS

LP20354

Typical Bay Layout For SPOA30E And SPOA40E Series Lifts

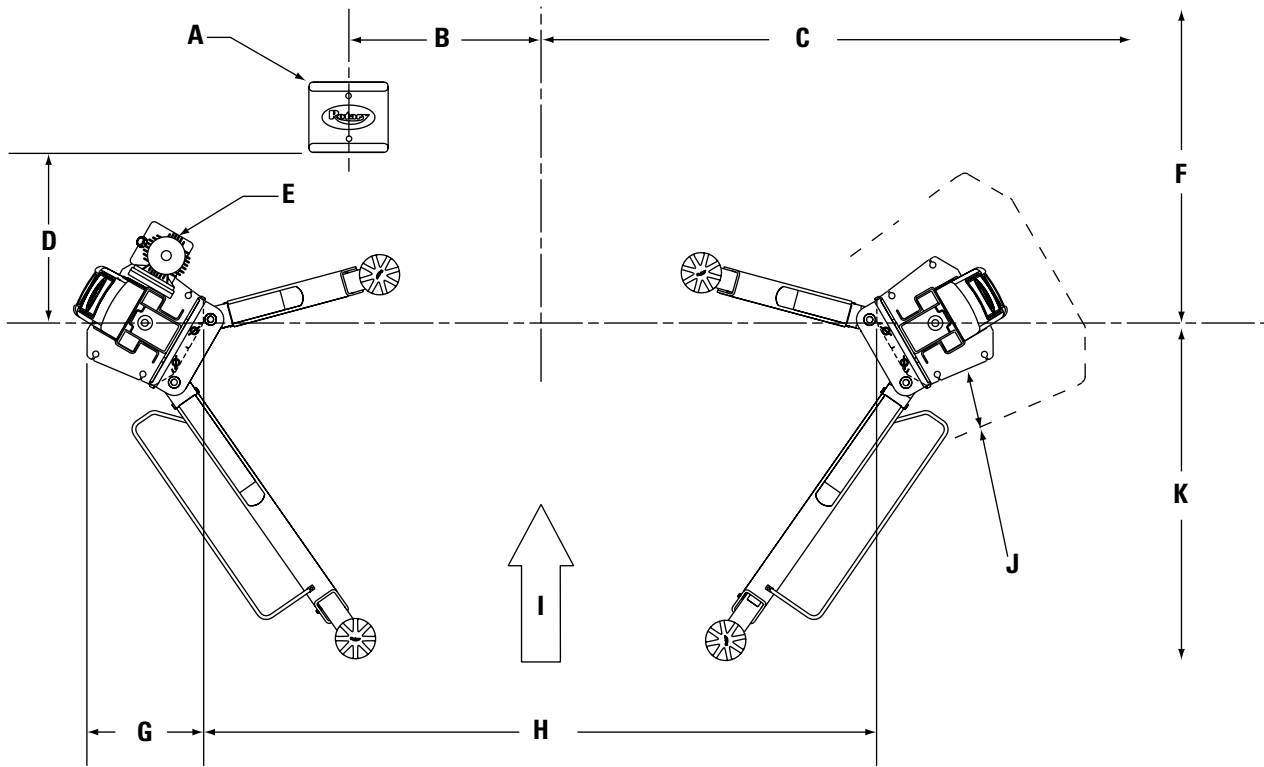


Fig. 1a

A	Wheel Spotting Dish
B	737mm
C	1829mm Minimum to nearest obstruction or bay. 2134mm minimum nearest wall.
D	657mm
E	Power unit (Driver Side)
F	2743mm Minimum to nearest obstruction.
G	457mm
H	2423mm SPOA30E Series* 2219mm SPOA30ENB Series (Narrow Bay)* 2082mm SPOA30E Series (3 Meter Bay)* 2575mm SPOA40E Series* *Note: Dimension is from inside of baseplate to inside of baseplate
I	Approach
J	165mm Minimum to other equipment.
K	4572mm Minimum to nearest obstruction.

Typical Bay Layout For SP040E Series Lifts

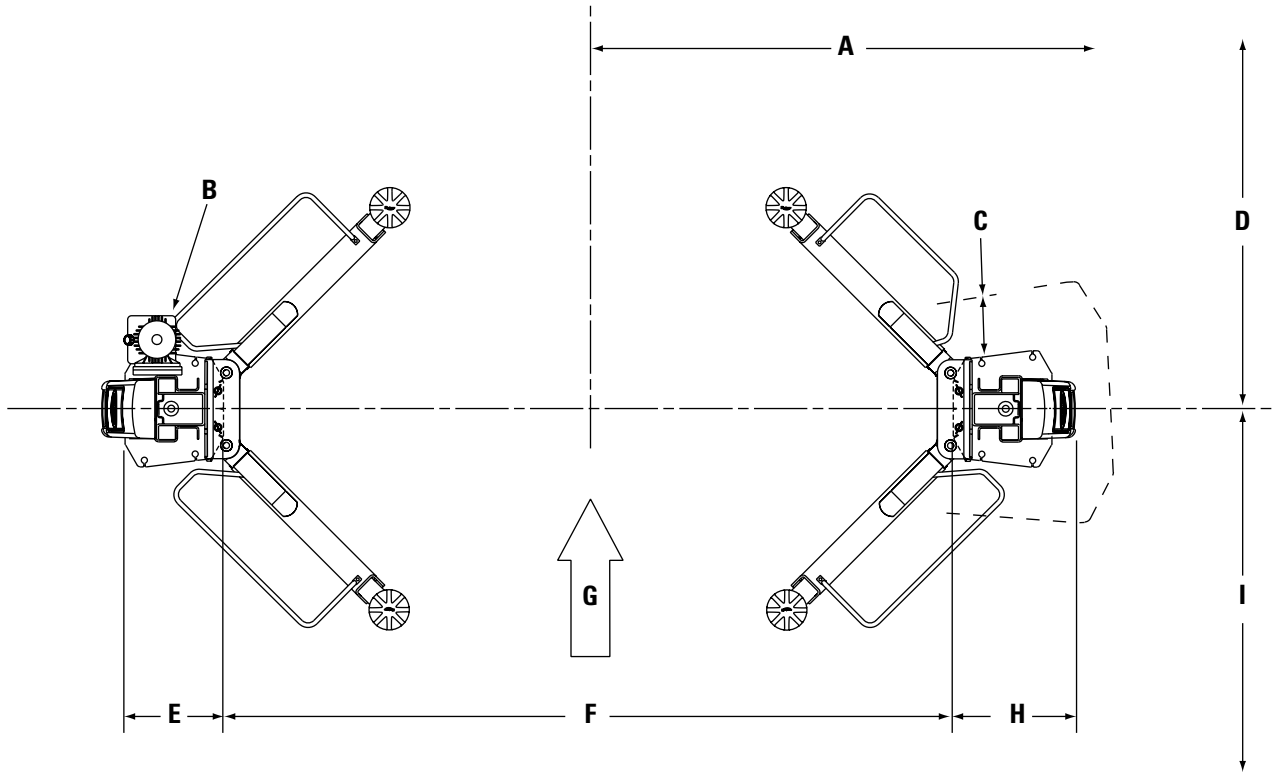


Fig. 1b

A	Wheel Spotting Dish
B	737mm
C	1829mm Minimum to nearest obstruction or bay. 2134mm minimum nearest wall.
D	1178mm
E	Power unit (Driver Side)
F	165mm Minimum to nearest obstruction.
G	3353mm Minimum to nearest obstruction.
H	381mm
I	2734mm Series*
	*Note: Dimension is from inside of baseplate to inside of baseplate
J	Approach
K	437mm Minimum to other equipment.
L	3963mm Minimum to nearest obstruction.

Typical Bay Layout For SPOA30M And SPOA40M Series Lifts

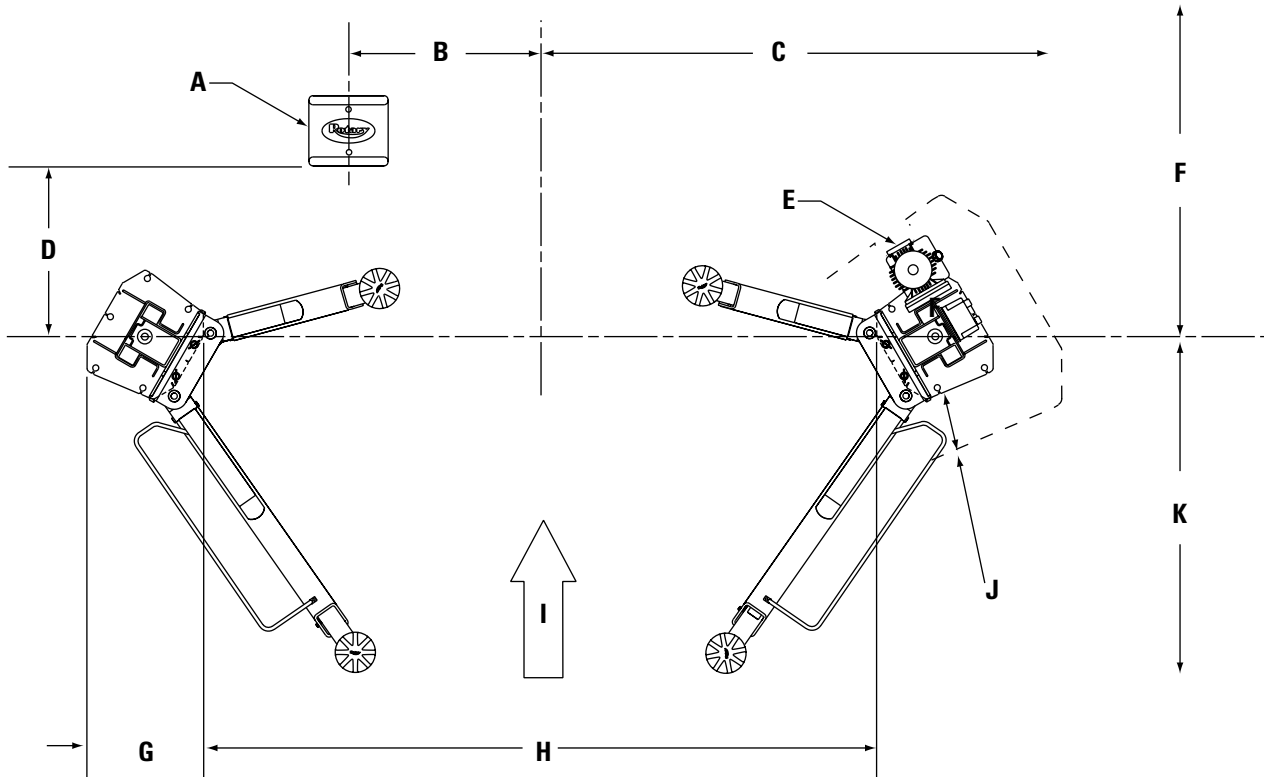


Fig. 2a

A	Wheel Spotting Dish
B	737mm
C	1829mm Minimum to nearest obstruction or bay. 2134mm minimum nearest wall.
D	657mm
E	Power unit
F	2743mm Minimum to nearest obstruction.
G	457mm
H	2423mm SPOA30M Series* 2219mm SPOA30MNB Series (Narrow Bay)* 2082mm SPOA30M Series (3 Meter Bay)* 2575mm SPOA40M Series*
	*Note: Dimension is from inside of baseplate to inside of baseplate
I	Approach
J	165mm Minimum to other equipment.
K	4572mm Minimum to nearest obstruction.

Typical Bay Layout For SP040E Series Lifts

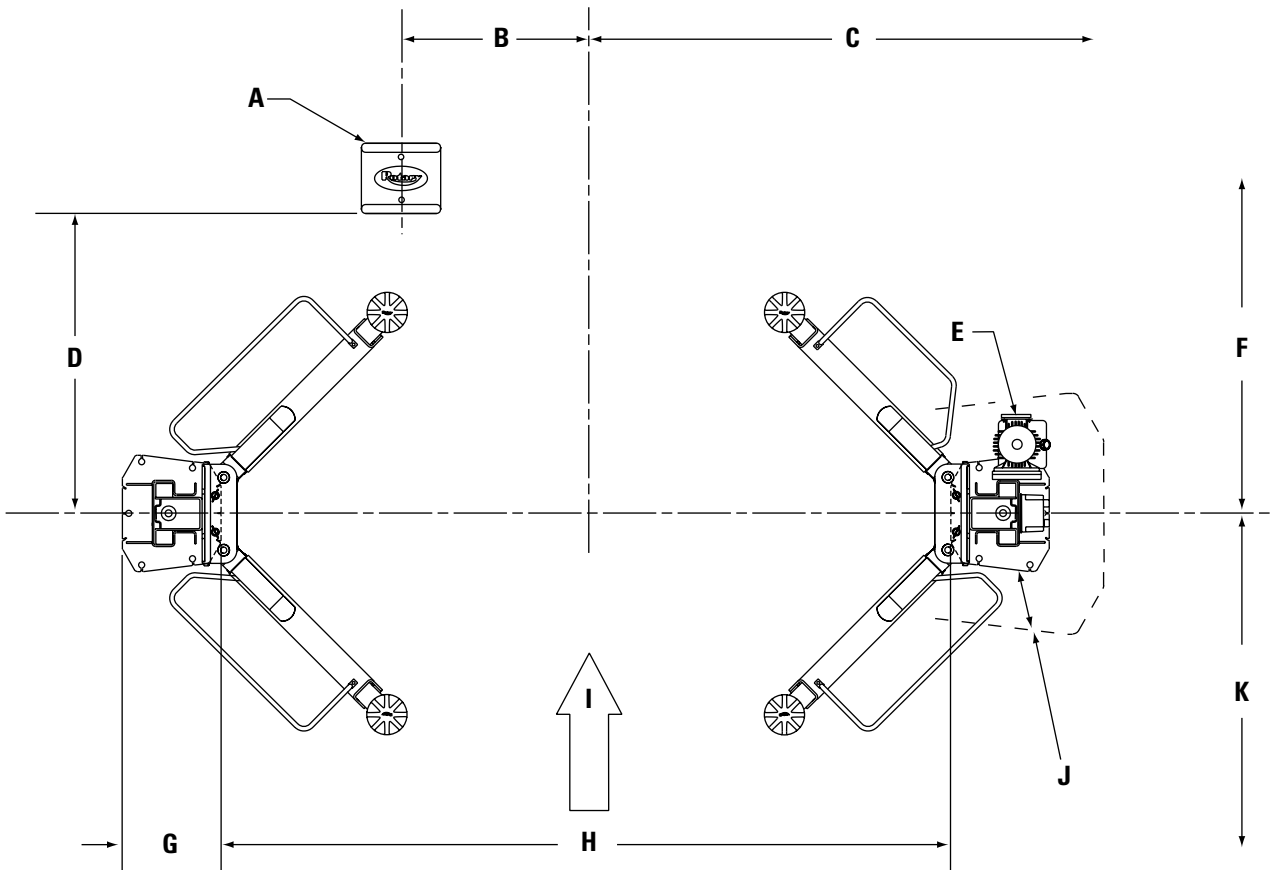


Fig. 2b

A	Wheel Spotting Dish
B	737mm
C	1829mm Minimum to nearest obstruction or bay. 2134mm minimum nearest wall.
D	1178mm
E	Power unit
F	3353mm Minimum to nearest obstruction.
G	381mm
H	2734mm SP040 Series*
	*Note: Dimension is from inside of baseplate to inside of baseplate
I	Approach
J	165mm Minimum to other equipment.
K	3963mm Minimum to nearest obstruction.

1. Lift Location: Use architects plan when available to locate lift. Fig. 1a, 1b or Fig. 2a, 2b shows dimensions of a typical bay layout.

2. Lift Height: See Fig. 3 for overall lift height of each specific lift model. Add 25mm to overall height to lowest obstruction.

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

4. Column Extensions: Before standing columns upright, install the column extensions using (12) 3/8"-16NC x 3/4" Carriage HHCS and Flanged Lock nuts, Fig. 3 and Fig. 4.

Overhead Mounting Bracket: Install Mounting Brackets to column extensions, Fig 3.

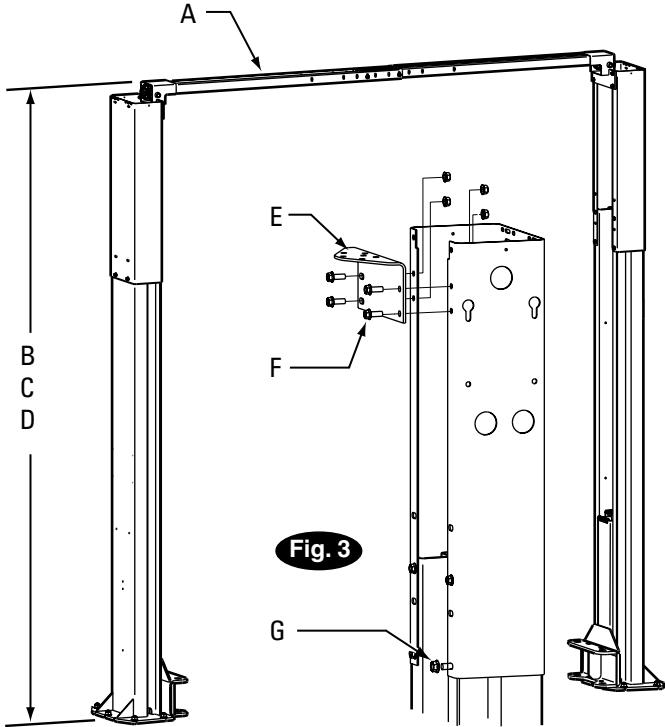


Fig. 3

Fig. 3 Detail	
A	Overhead assembly
B	3778mm Top of cylinder*
C	3556mm Top of overhead assembly (standard)*
D	3454mm Top of overhead assembly (low ceiling)*
*B, C, and D are for SPOA30 and SPO40 series. Low ceiling (LC) is not available for the SPO40.	
E	Overhead mounting bracket
F	3/8"-16NCx3/4" HHCS and flanged lock nut
G	Use (4) 3/8"-16NCx3/4" carriage bolts and flanged lock nuts in front and (2) in back.

Attention: E Series Lifts DO NOT Have Latch Cable Conduit Guides or Locking Latch Cables.

3. Latch Cable Guides for M Series Lifts: Install the latch cable conduit guide brackets to column extensions with (1) 1/4"-20NC x 1" HHCS and 1/4"-20NC Flanged lock nuts, Fig. 5. HHCS should go through hole nearest the edge as shown, Fig. 5.

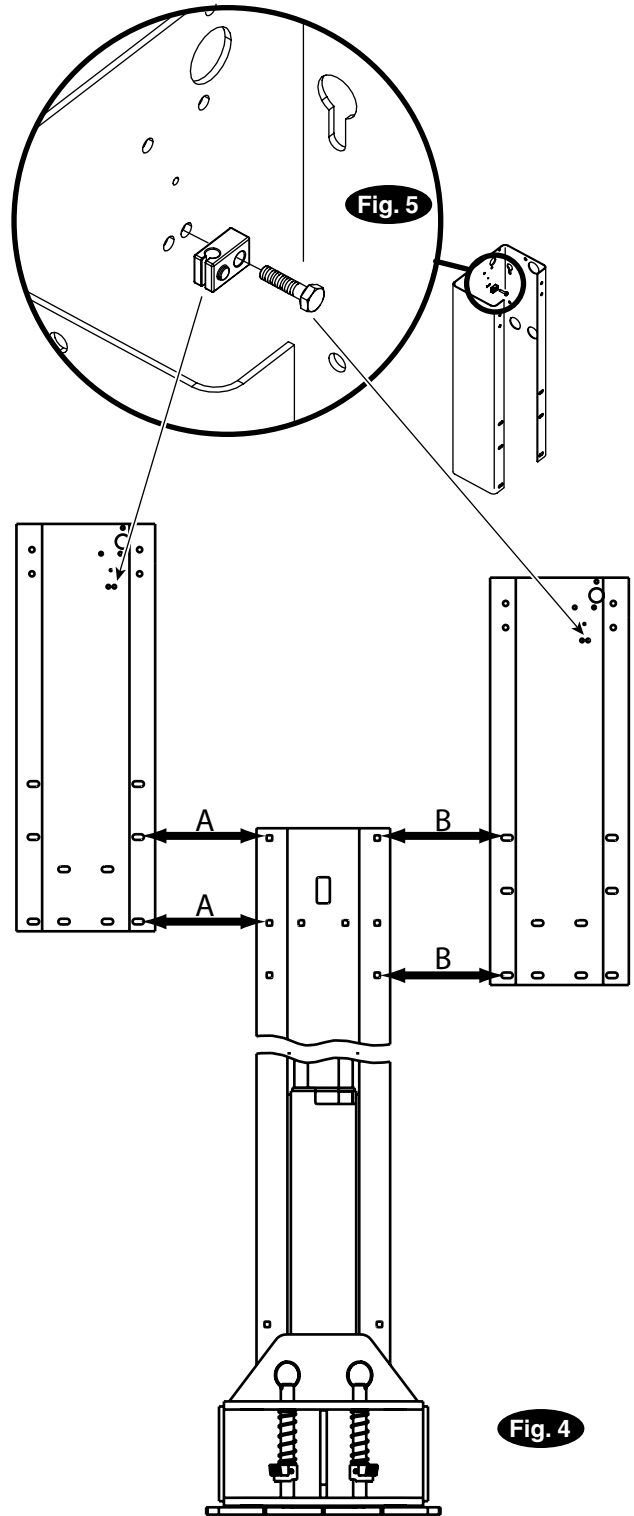


Fig. 4

Fig. 4 Detail	
A	Standard Setting
B	102mm Lower Height Setting

5. Lift Setting: Position columns in bay using dimensions shown in Fig. 1a, 1b or Fig. 2a, 2b. 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 plate to indicate center line of lift. Using appropriate equipment, raise carriage to first latch position. Be sure locking latch is securely engaged.

Note: For M Series lifts place column with power unit mounting bracket on vehicle passenger side of lift.

6. Concrete and Anchoring: Concrete shall have a compression strength of at least 20N/mm² and a minimum thickness of 200mm in order to achieve a minimum anchor embedment of 95mm. When using the standard supplied 20mm x 170mm lg. anchors, if the top of the anchor exceeds 75mm above the floor grade, you **DO NOT** have enough embedment. Drill (10) 20mm dia. holes in concrete floor using holes in column base plate as a guide. See Fig. 6 and Fig. 7 for hole depth, hole spacing, and edge distance requirements.

7. IMPORTANT Using the horse shoe shims provided, shim each column base until each column is plumb, Fig. 7a. 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. For M Series Lifts, install Toe Guards, Fig. 7a. 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.

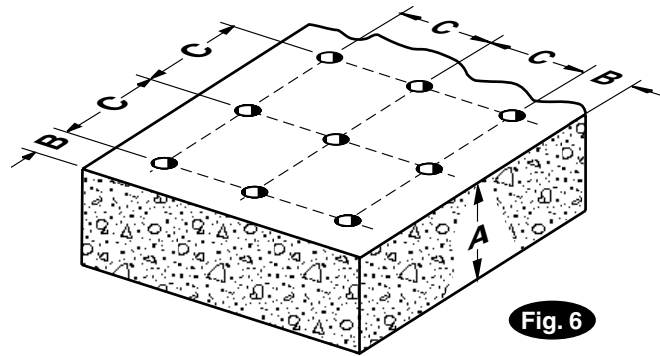
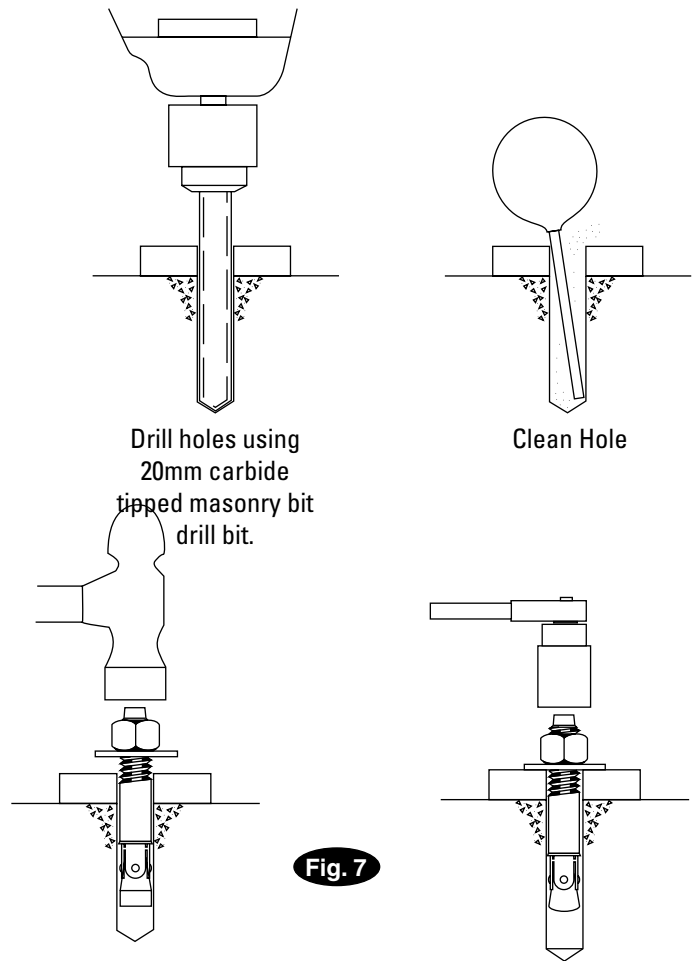


Fig. 6

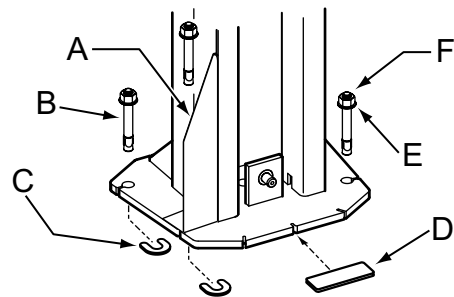
Fig. 6 Detail	
A	Concrete Thickness (200mm) and hole depth (114mm)
B	Edge Distance (150mm)
C	Hole spacing (150mm)

Fig. 7 And 7a Detail	
A	114mm Minimum
B	75mm
C	95mm
D	108mm
E	Toe guard M series only.
F	Anchor
G	Shims (13mm maximum)
H	Use rectangular shims at inside edge of baseplate. Use construction adhesive or silicon cement to hold shim in place. INSURE shims are held tightly between base plate and floor after torquing anchors. 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.
I	Flat washer
J	Nut



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.



8. Overhead Assembly: Assemble overhead, Fig 8. Adjust to appropriate dimension. Install (4) HHCS and Flanged lock nuts, (2) Each Side. DO NOT TIGHTEN.

9a. Overhead Switch Installation:

Mount switch assembly towards power unit column using (2) 1/4"-20NC x 3/4" lg. HHCS, 1/4"-20NC Nuts and 1/4" Star Washers, Fig. 9. For Narrow Bay and 3 meter wide bay installation, see step 9b, all others go to step 10.

9b. For Narrow Bay and 3 Meter wide bay installation only:

Remove cotter pin and switch bar. Cut off (Narrow Bay =143mm) or (3Meter Bay =431mm) from the length of the bar and cushion on the end opposite the 9mm mounting hole. Drill 4mm hole through bar 6mm from the cut edge. Replace switch bar and cotter pin. Continue to step 10.

10. Continued crosshead installation:

Insert 1/4"-20NC x 2-3/4" HHCS through pivot hole in end of switch bar. Insert opposite end of bar through slot in switch mounting bracket Fig 10. Then secure HHCS and Switch Bar to overhead as shown, using (2) 19mm spacer and 1/4"-20NC Lock nut. Tighten Hex bolt leaving 1.6mm gap between the spacer and the overhead assembly.

Fig. 8 Detail	
A	SPOA40 Series
A.1	(4) 3/8"-1NC x 3/4" Flanged HHCS and flanged lock nut.
A.2	2829mm
B	SPO40 Series
B.1	(4) 3/8"-1NC x 3/4" Flanged HHCS and flanged lock nut.
B.2	2896mm
C	SPOA30 Series
C.1	(4) 3/8"-1NC x 3/4" Flanged HHCS and flanged lock nut.
C.2	2676mm
D	SPOA30NB Series (Narrow Bay)
D.1	(4) 3/8"-1NC x 3/4" Flanged HHCS and flanged lock nut.
D.2	2473mm
E	SPOA30MB Series (3 meter bay)
E.1	(4) 3/8"-1NC x 3/4" Flanged HHCS and flanged lock nut.
E.2	2337mm

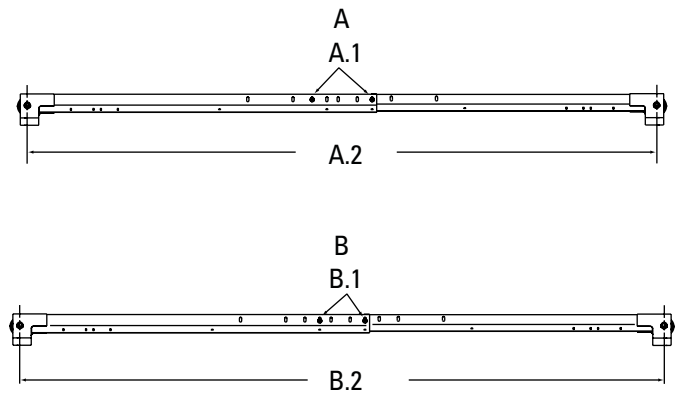


Fig. 8

Fig. 9 Detail	
A	(2) 1/4"-20NC x 3/4" lg. HHCS
B	On one side use (2) 1/4" External Tooth Lock washers.
C	(2) 1/4"-20NC Zinc Hex Nuts

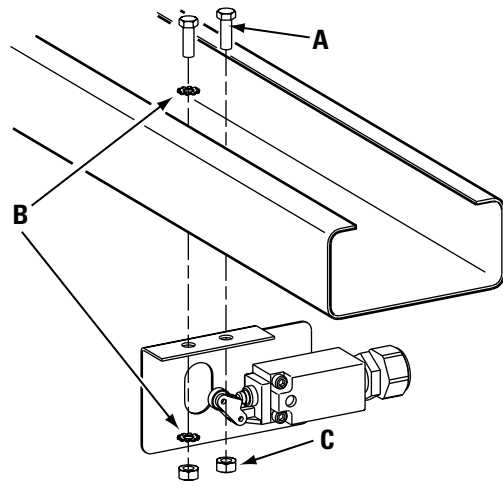


Fig. 9

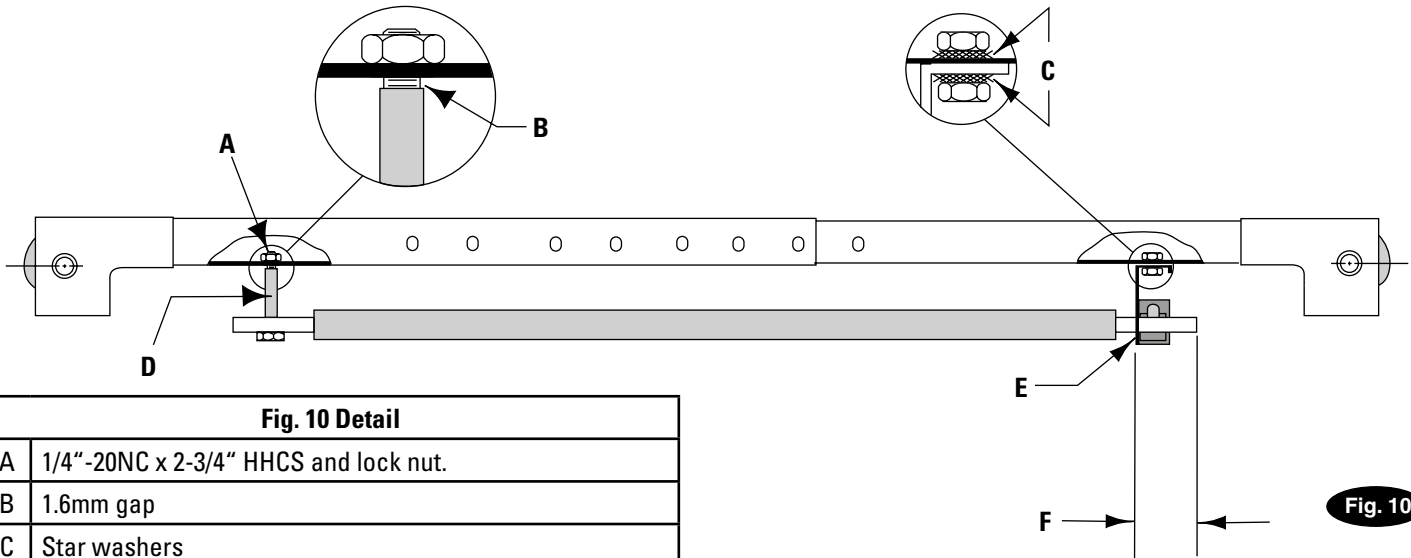


Fig. 10

Fig. 10 Detail	
A	1/4"-20NC x 2-3/4" HHCS and lock nut.
B	1.6mm gap
C	Star washers
D	197mm Standard SPOA30M Series
	197mm Narrow Bay SPOA30M Series
	197mm 3 Meter Bay SPOA30M Series
	197mm Standard SPOA40M Series
	298mm Standard SPO40M Series
E	(2) 19mm Spacers
F	Overhead Switch
G	50mm minimum

11. Overhead: With a ladder by each column, two people position the overhead assembly onto column mounting brackets and fasten with (2) 3/8"-16NC x 3/4" lg. Flanged HHCS and (2) 3/8" flanged lock nuts, Fig. 11. Use middle holes for SPO40 and outside holes (marked R for Right and L for Left) for SPOA30/SPOA40. Tighten bolts at center of overhead assembly.

Fig. 11 Detail	
A	(2) 3/8"-16NC x 3/4" HHCS
B	(2) 3/8" Lock Nuts

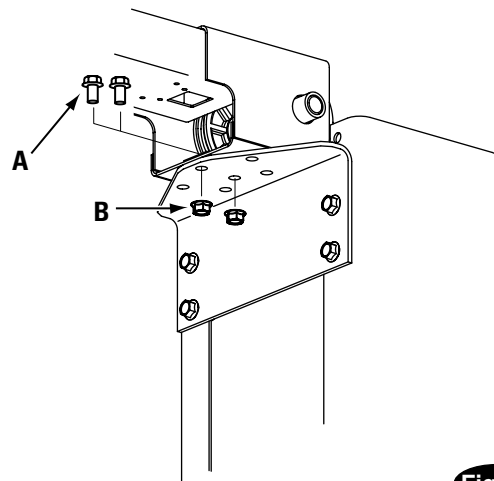


Fig. 11

ATTENTION Instillation of power unit for E series lifts go to section 13.

IMPORTANT Over tightening lock nut may tear O-ring.

12. Power Unit for M Series Lifts:

- A. Install (1) star washer onto one of the (4) 5/16"-18NC x 1-1/2" Lg. HHCS. **This is very important for grounding.** Put the (4) 5/16"-18NC x 1-1/2" Lg. HHCS through the holes in the power unit bracket, using push nuts to hold in place, Fig. 12. With 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 5/16" lock washers and 5/16"-18NC Nuts.
- B. Mount Adapter Plate on column, as shown in Fig. 12, using (3) 5/16"-18NC x 1/2" Socket Flat Head Counter Sunk Machine Screws.
- C. Remove Control Panel Cover by loosening retaining screws in each corner. Mount Control Panel Base on Adapter Plate, as shown in Fig. 12, using (4) #8-32NC x 3/8" Socket Head Cap Screws. Re-attach Control Panel Cover.
- D. Install and hand tighten Branch Tee to pump until O-ring is seated, Fig 13. Continue to tighten the lock nut to 14 - 20Nm (1.4 - 2.1kg-m), or until the nut and washer bottom out against the pump manifold. NOTE: You may still be able to rotate the Branch Tee. This is acceptable unless there is seepage at the O-ring. If so, slightly tighten the lock nut.

ATTENTION Continue to section 14.

Fig. 12 Detail	
A	5/16"-18NC x 1-1/2" Lg. HHCS
B	5/16" External Tooth Lock Washer
C	Push Nut
D	5/16"-18NC Hex Nut
E	Strain Relief
F	Power Unit
G	Adapter Plate
H	5/16"-18NC x 1/2" Socket Flat Head MS
I	Control Panel Base
J	Control Panel Cover
K	#8-32NC x 3/8" Hex SHCS
Fig. 13 Detail	
L	Overhead Hose
M	Branch Tee
N	Crimped Hose Sleeve (Typical)
O	Power Unit Hose (Short)

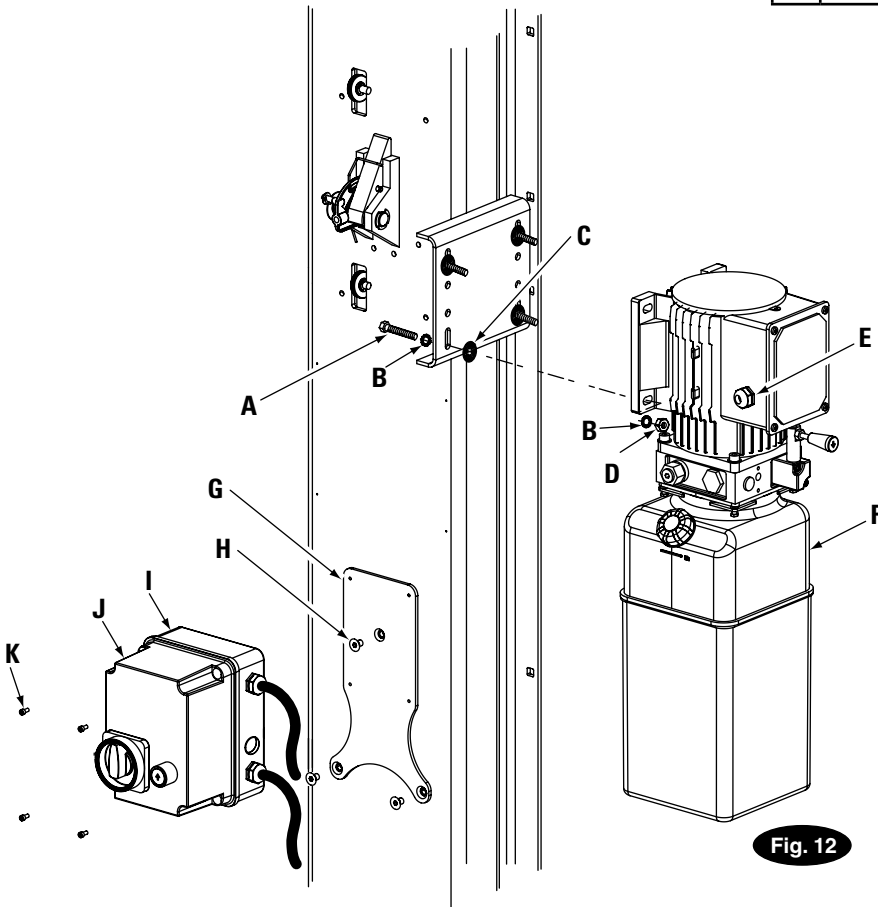


Fig. 12

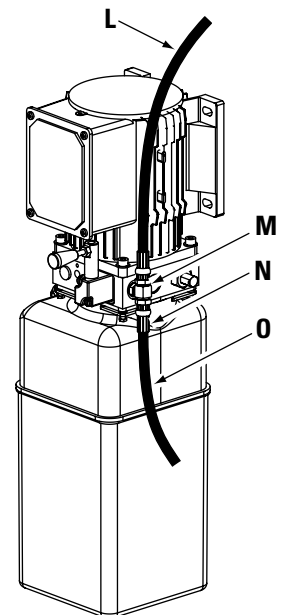


Fig. 13

13. Power Unit E Series Lifts:

Put (2) 5/16"-18NC x 1-1/2" HHCS through top holes in power unit bracket using Vibration Pad to hold in place, Fig. 14. Install 5/16"-18NC Flanged Nuts until bolt end is flush with end of nut. Install power unit onto column extension, Fig. 15. 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. Install and hand tighten Male Extension to pump until O-ring is seated, Fig 16. Continue to tighten the lock nut to 14 - 20Nm (1.4 - 2.1kg-m), or until the nut and washer bottom out against the pump manifold.

IMPORTANT Over tightening lock nut may tear O-ring.

Install Female Swivel Tee To Male Extension, Fig. 16. Use Flared Fittings Tightening Procedure to tighten the Female Swivel Tee to the Male Extension.

14. Flared Fittings Tightening Procedure:

Flared Fittings Tightening Procedure

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

IMPORTANT Over tightening will damage fittings resulting in fluid leakage.

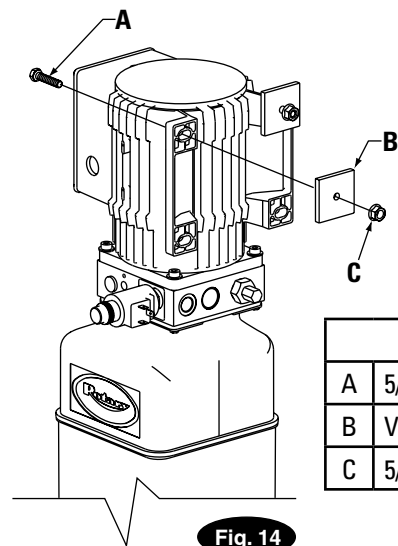


Fig. 14 Detail	
A	5/16"-18NC x 1-1/2" Lg. HHCS
B	Vibration Pad
C	5/16"-18NC Flanged Lock Nut

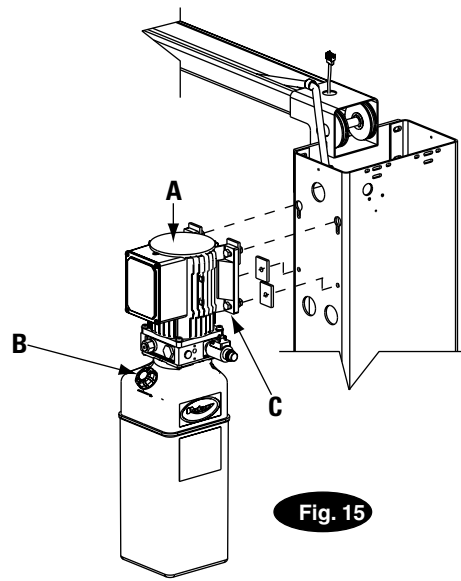


Fig. 15

Fig. 15 Detail	
A	Hang power unit from bolts in top of power unit bracket.
B	Fill Breather Cap
C	Insert bottom bolts through holes after power unit is hung attach flanged lock nut from inside column.

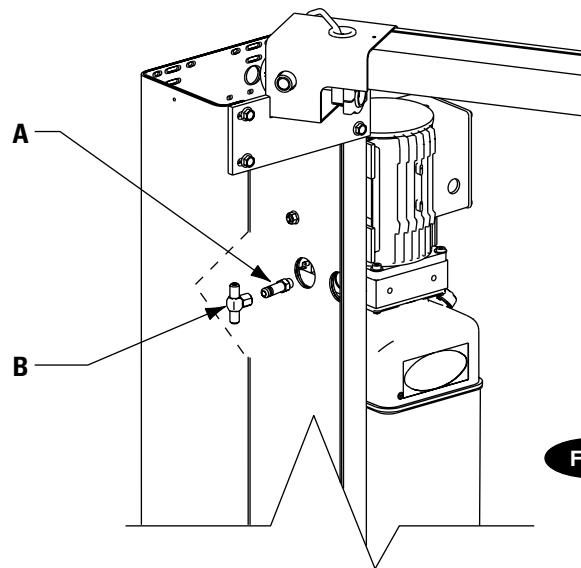


Fig. 16

Fig. 16 Detail	
A	Install male extension after power unit is mounted.
B	Install Tee after male extension is placed on power unit.
Note: DO NOT ROTATE MALE EXTENSION WHILE INSTALLING TEE.	

15. Hoses: Clean adapters and hose. Inspect all threads for damage and hose ends to be sure they are crimped. Install hose using Flared Fittings Tightening Procedure, Section 14. Install hose clamps.

Adapter & Hose Installation (see Fig. 17 & 18)

1. Install item (2) with hose clamps, on power unit column side connecting it to the cylinder (1) first. E series lifts only: Install item #7 behind hose clip indicated. Orient such that welded plug is inserted in near by hole.

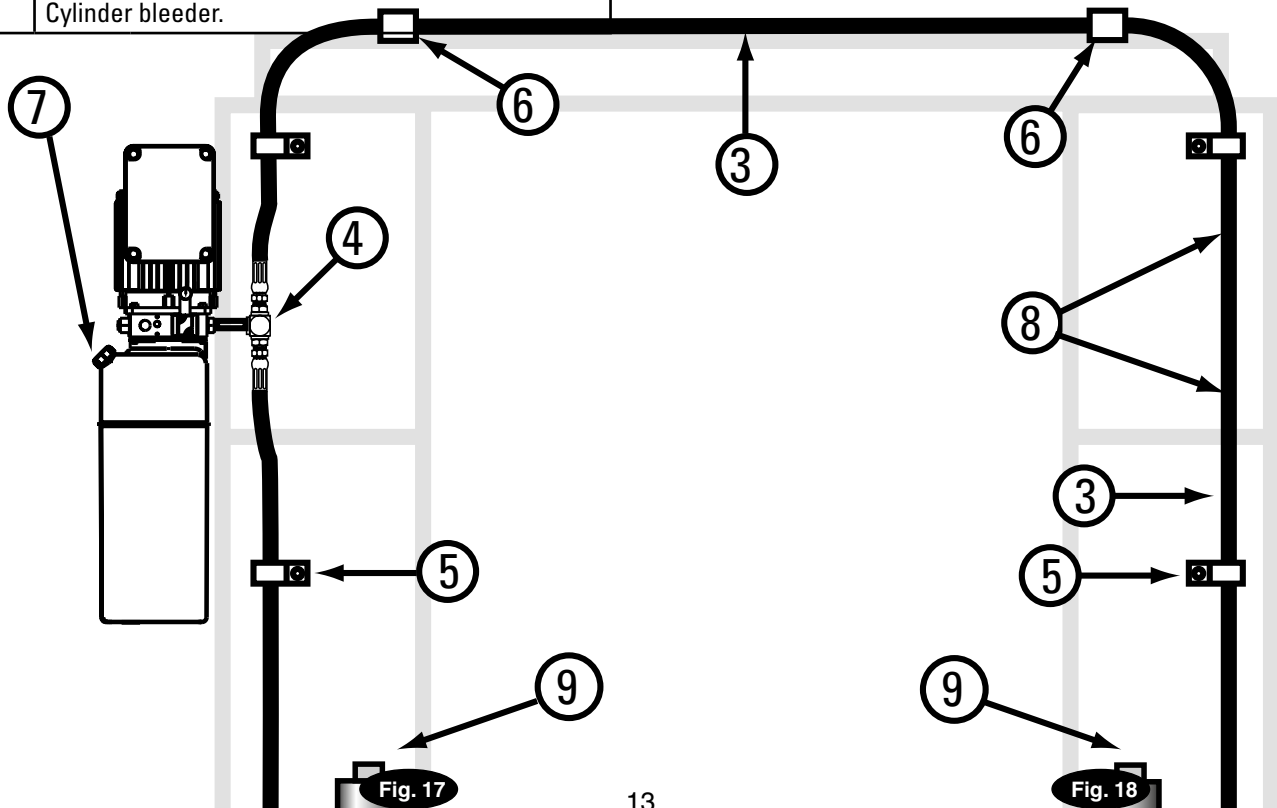
2. Install item. (3) with hose clamps item (5) starting at opposite cylinder and working toward the power unit. All excess hose should be at bends & inside overhead assembly.
3. Connect item (2) & item (3) to Tee (4).

NOTE: Route Power Unit hose inside columns using slots provided at column base, Fig. 19. Route Overhead Hose in column channel on outside of column, Fig. 19. Overhead hose goes over top end of overhead assembly, Fig. 20.

16. Oil Filling: Remove fill-breather cap on power unit, Fig. 17 & 18. Fill to MIN____ mark on tank with Dexron III ATF, or hydraulic fluid that meets ISO 32 specifications. Replace fill-breather cap.

Fig. 17 Detail Hose Routing For M Series Lifts		
Item	Quantity	Description
1	2	Hydraulic Cylinder
2	1	Power Unit Hose
3	1	Overhead Hose
4	1	Branch Tee
5	6	Hose Clips
	6	3/8-16NC x 3/4" Carriage Bolts
	6	3/8-16NC Flanged Lock Nuts
6	4	Hose Clips
	4	3/8-16NC x 3/4" HHCS
	4	3/8-16NC Flanged Lock Nuts
7	2	Mechanical Lift Hole Plug
8	Fill Breather Cap	
9	Hose runs down approach side to cylinder on left column.	
10	Cylinder bleeder.	

Fig. 18 Detail Hose Routing For E Series Lifts		
Item	Quantity	Description
1	2	Hydraulic Cylinder
2	1	Power Unit Hose
3	1	Overhead Hose
4	1	Branch Tee
5	6	Hose Clips
	6	3/8-16NC x 3/4" Carriage Bolts
	6	3/8-16NC Flanged Lock Nuts
6	4	Hose Clips
	4	3/8-16NC x 3/4" HHCS
	4	3/8-16NC Flanged Lock Nuts
7	Fill Breather Cap	
8	Hose runs down approach side to cylinder on left column.	
9	Cylinder bleeder.	



17. Equalizing Cables:

A) Remove sheave cover, Fig. 19.

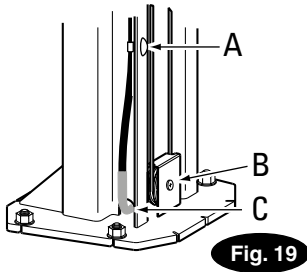


Fig. 19

Fig. 19 Detail	
A	Attach hose to column using 3/8-16NC x 3/4" carriage bolts, flanged lock nuts, and hose clips.
B	Sheave Cover
C	Hose slot and hose.

B) Refer to Fig. 21 for the general cable arrangement. First, run a cable end up through the small hole in the lower tie-off plate, Fig. 22.

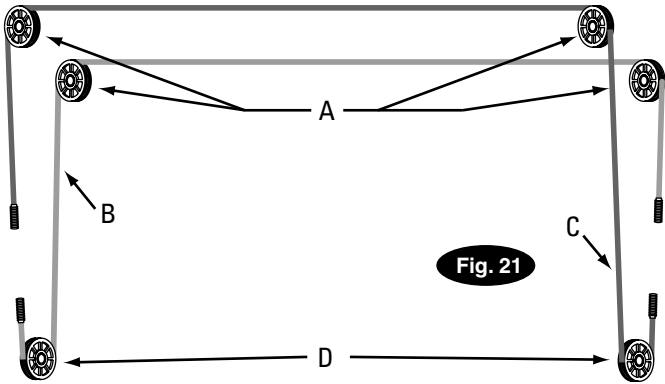


Fig. 21

Fig. 21 Detail	
A	Upper sheaves
B	Cable 2
C	Cable 1
D	Lower sheaves

- C) Push the cable up until the stud is out of the carriage top opening.
- D) Run a nylon insert lock nut onto the cable stud so 13mm of the stud extends out of the lock nut.
- E) Pull the cable back down, Fig. 22.
- F) Run cable around the lower sheave, then up and around overhead sheave and across and down to the opposite carriage, Fig. 21. Install sheave cover, Fig. 19.
- G) Fasten the cable end to the carriage upper tie-off bracket. Tighten the lock nut enough to apply light tension to the cable.

H) Repeat procedure for the second cable. Adjust the tension of both cables during the final adjustments in section. See Section 38 for E series lifts and Section 41 for M series lifts.

ATTENTION For E Series Lifts Continue To Section 22.

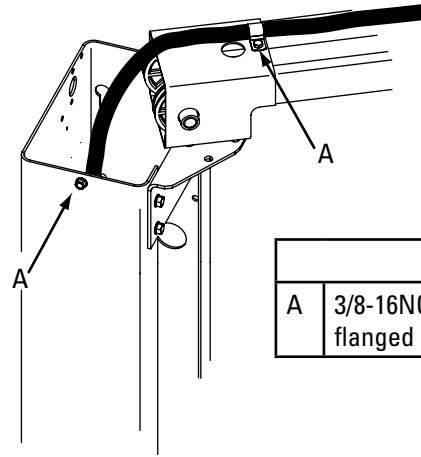


Fig. 20

Fig. 20 Detail	
A	3/8-16NC x 3/4" flanged HHCS and flanged lock nut.

Fig. 22 Detail	
A	Upper cable tie-off plate and 5/8" nylon insert lock nut.
B	Lower cable tie-off and 5/8" nylon insert lock nut.
C	Steel pipe spacer for narrow bay and low ceiling.

To set up cables for a narrow bay (NB), 3 meter wide bay (3MB), or a low ceiling (LC), use approximately 16mm I.D. with a 3mm minimum wall thickness steel pipe located at the lower cable tie off. The lengths required are as follows:

SPOA30

-NB or LC = 203mm

-NB or LC = 406mm

-3MB = 340mm

SPOA40

-LC = 203MM

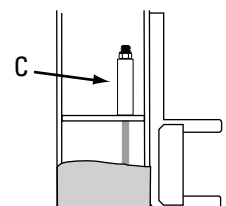
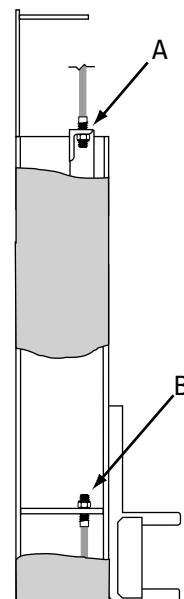


Fig. 22

18. Locking Latch Cable:

- A) Install latch cable sheave, sheave covers, and retaining rings in upper slot of power unit column as shown, Fig. 23.
- B) Slip loop end of cable over end of shoulder screw on right side latch control plate, Fig. 24.
- C) Feed the other end of the cable through the latch cable sheave slot making sure that the cable is running between the bottom side of the latch cable sheave and sheave cover then inside the right column, Fig. 24.

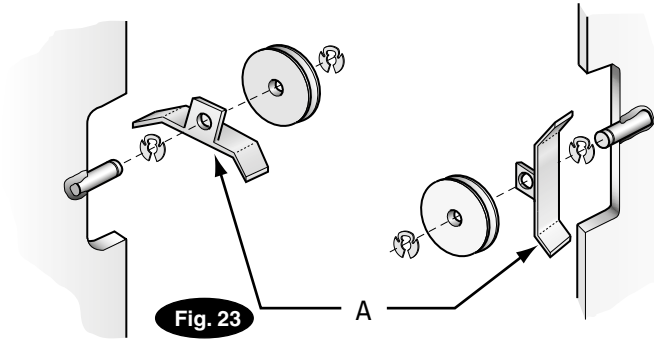


Fig. 23 Detail	
A	Sheave Covers

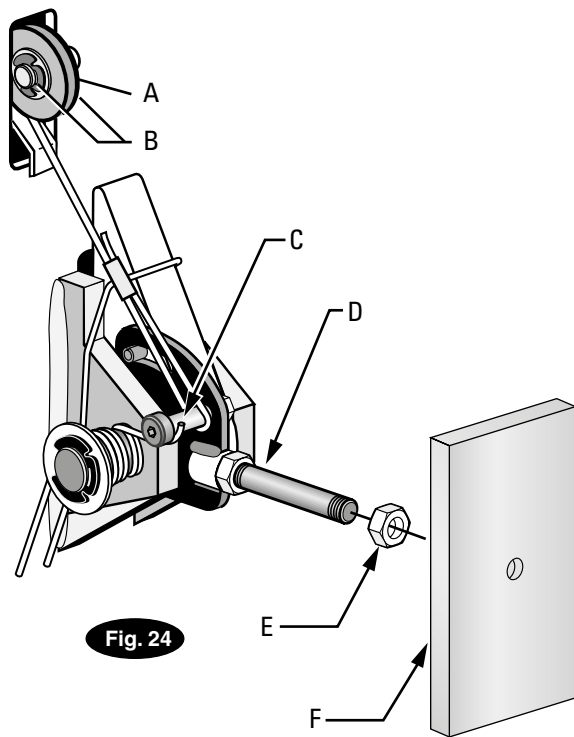


Fig. 24 Detail	
A	Latch Cable Sheave
B	(2) 3/8" Retaining Rings
C	Shoulder Bolt
D	Install latch handle using a 3/8" hex jam nut to lock in place. Then install spacer nut and slot cover.
E	1/2"-13NC Jam Nut
F	Slot Cover

- D) Attach latch cable conduit guide brackets to overhead as shown, Fig. 25a & Fig. 25b. Always use the holes on the approach side of the lift. HHCS should be in hole nearest the center of the overhead, Fig. 25b.
- E) Route cable up inside column and through the latch cable guide, Fig. 25a & Fig. 25b.

IMPORTANT Using wire ties provided, tie off cable guide to column extension as shown, Fig. 25b. Guide must be attached in hole closest to the outside edge of the column on the NON-APPROACH side.

- F) Continue routing cable to the left column latch cable guide, Fig. 25a & Fig. 25b, routing the cable through the left column latch cable guide, Fig. 25b.

IMPORTANT Using wire ties provided, tie off cable guide to column extension as shown, Fig. 25b. Guide must be attached in hole closest to the outside edge of the column on the NON-APPROACH side.

- G) Bring the cable down inside the left column and feed the end of the cable through the lower latch cable sheave slot so that the cable is now back outside the column, Fig. 26.
- H) Install latch cable sheave and retaining rings in lower slot of non-power unit column as shown, Fig. 26.

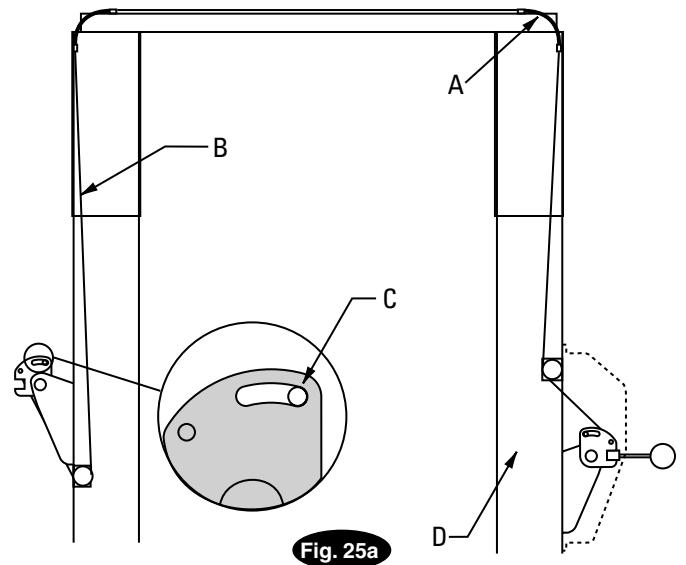


Fig. 25a Detail	
A	Latch Cable Conduit Guide
B	Latch Cable
C	Notice the clearance removed between the control plate slot and the latch dog pin.
D	Right Column

- I) Route cable under the bottom side of the latch cable sheave, Fig. 26.
- J) At this point you **MUST** install the latch handle, jam nut, and right column latch cover Fig. 24 & Fig. 27. Install latch handle ball, Fig. 27.

- K) Insert cable in cable clamp along one side, loop around shoulder screw and back down, inserting cable along other side of cable clamp, Fig. 26. Place top back on clamp, barely tightening.
- L) Next, pull the control plate down, Fig. 25a & Fig. 26, to eliminate any clearance between the control plate slot and the latch dog pin, Fig. 25a.
- M) Using Pliers, pull cable tight and secure the clamp close to the shoulder screw. Tighten clamp.

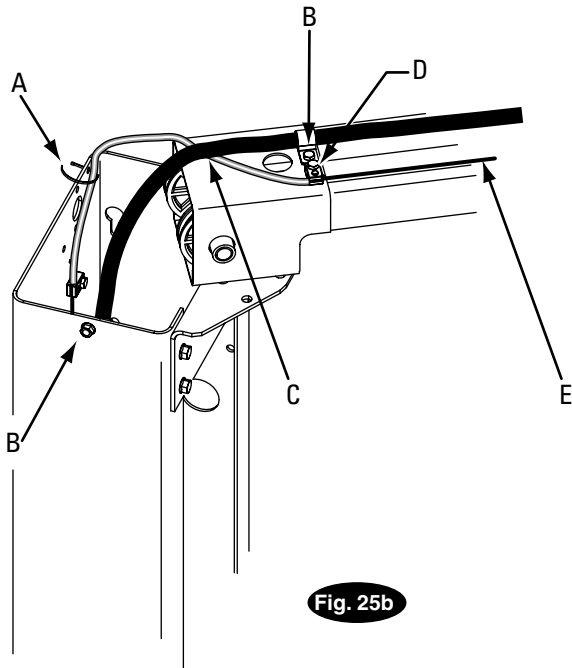


Fig. 25b

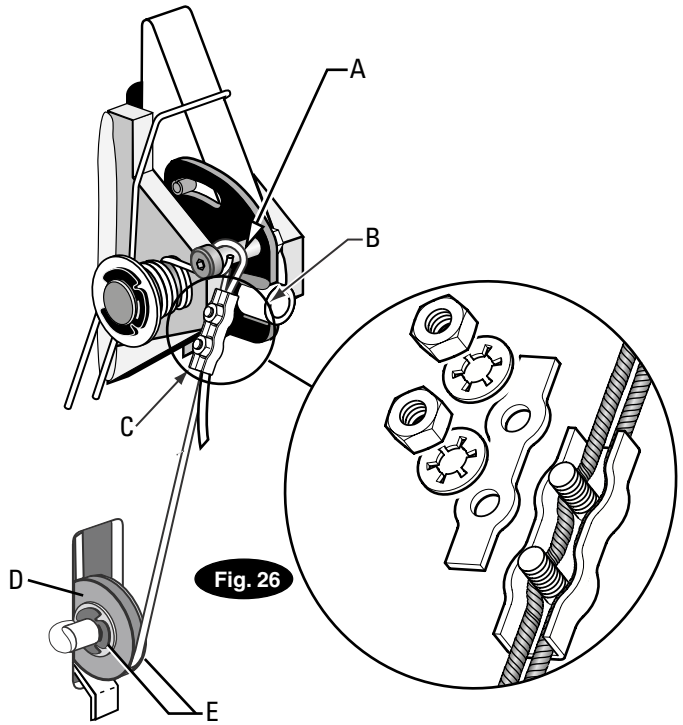


Fig. 26

Fig. 25b Detail	
A	Attach to extension using wire tie. Use hole closest to OUTSIDE edge and on NON-APPROACH side.
B	3/8"-16NC x 3/4" HHCS and flanged lock nut.
C	Cable guide runs UNDER hydraulic hose.
D	1/4"-20NCx1" HHCS and flanged lock nut.
E	Latch cable runs along approach side of overhead.

Fig. 26 Detail	
A	Shoulder Bolt
B	Feed cable up through cable clamp, loop over end of shoulder bolt and feed back down through cable clamp.
C	Cable Clamp
D	Latch Cable Sheave
E	(2) 3/8" Retaining Rings

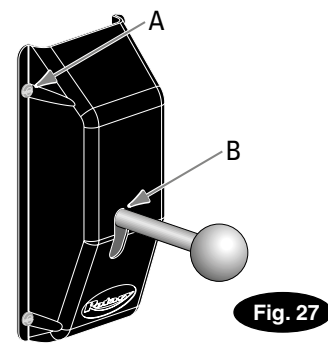


Fig. 27

Fig. 27 Detail	
A	5/16-18NCx3/8" Lg. BHMS
B	Latch handle MUST be positioned at the top of the latch control cover slot.

NOTES:

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

***Notes: F, D, or T Model?**

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

EXAMPLE: SPOA30MD585 would be a **D Model**.



Model number can be found on a tag on the side of the lift. For **E or S Models** go to page 18.

19. Electrical: Have a certified electrician run power supply to motor, Fig. 28, 28a, or 28b. Size wire for appropriate amperage as indicated. See Motor Operating Data Table, per Fig. 28, 28a, 28b. Use separate circuit for each power unit. Protect each circuit with circuit breaker per local code. Provide a separate disconnect between the power supply and the power unit (Mark with "O" for OFF and "I" for ON). Wiring **MUST** comply with all local electrical codes.

20. 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. 28, 28a, or 28b & Fig. 29.

21. Check Operation: Operate lift and assure that push button raises lift when pushed and stops lift when released. Check disconnect 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.

Attention: Continue to Section 37.

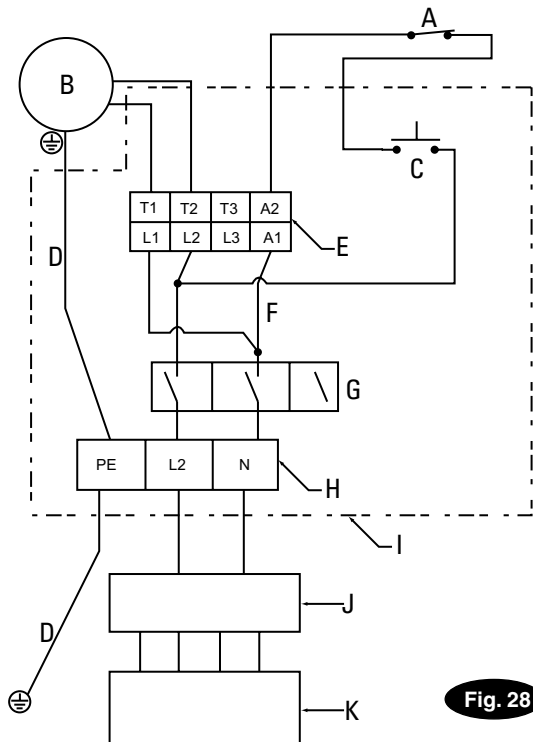


Fig. 28

MOTOR OPERATING DATA - SINGLE PHASE (*F Model)			
LINE VOLTAGE		CURRENT	POWER
220-240 Volts	50Hz	17A	1.5Kw

Fig. 28 F Model Detail	
A	Overhead Switch
B	Motor
C	UP Switch
D	Yellow-Green Wire
E	Contactor
F	Blue Wire
G	E-Stop Disconnect
H	Terminal Blocks
I	Control Box
J	Circuit Breaker 230v 1ø 20A (Over-Current Protection)
K	230v 1ø 20A Circuit breaker at electrical supply.

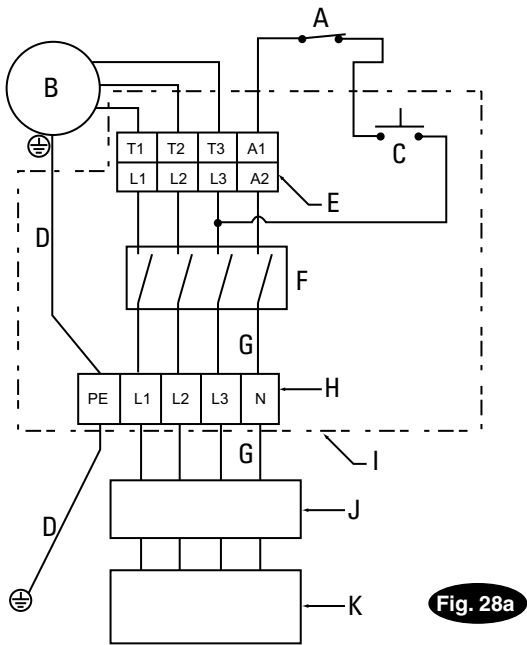


Fig. 28a

MOTOR OPERATING DATA - THREE PHASE (*D Models)			
LINE VOLTAGE	CURRENT	POWER	
400 - 415 Volts	50Hz	4.55A	- 3Kw

Fig. 28a D Model Detail	
A	Overhead Switch
B	Motor
C	UP Switch
D	Yellow-Green Wire
E	Contactor
F	E-Stop Disconnect
G	Blue Wire
H	Terminal Blocks
I	Control Box
J	Circuit Breaker 400v 3Ø 10A (Over-Current Protection)
K	400v 3Ø 10A Circuit breaker at electrical supply.

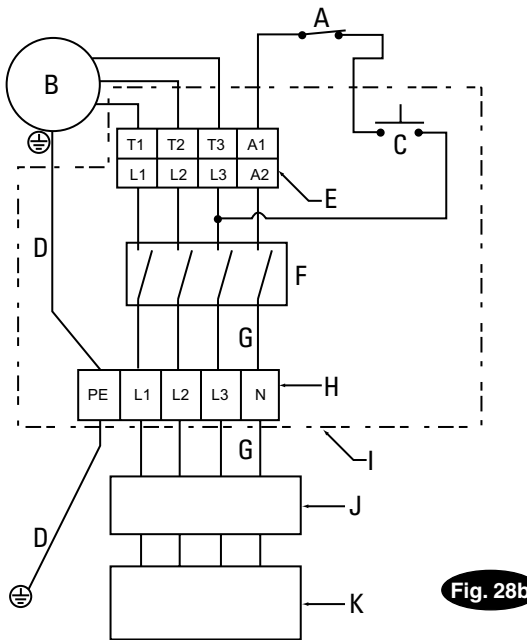


Fig. 28b

MOTOR OPERATING DATA - THREE PHASE (*T Models)			
LINE VOLTAGE	CURRENT	POWER	
400 - 415 Volts	50Hz	10A	- 4.9Kw

Fig. 28b D Model Detail	
A	Overhead Switch
B	Motor
C	UP Switch
D	Yellow-Green Wire
E	Contactor
F	E-Stop Disconnect
G	Blue Wire
H	Terminal Blocks
I	Control Box
J	Circuit Breaker 400v 3Ø 10A (Over-Current Protection)
K	400v 3Ø 10A Circuit breaker at electrical supply.

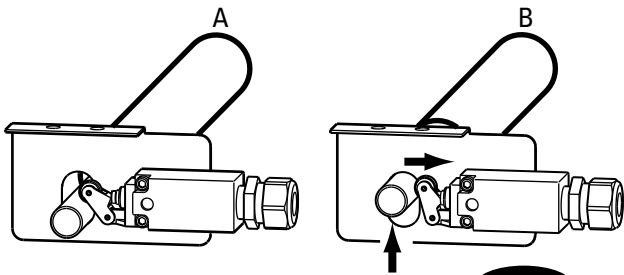


Fig. 29

Fig. 29 Detail	
A	Normal Position
B	Activated Position

Installing Electrical And Inbay Controller Components For E Series Lifts.

22. Solenoid Attachment: Attach solenoids under locking latches of both columns, Fig. 30. Place sliders onto solenoid plunger rods. Place solenoids onto columns and tighten, Fig. 30.

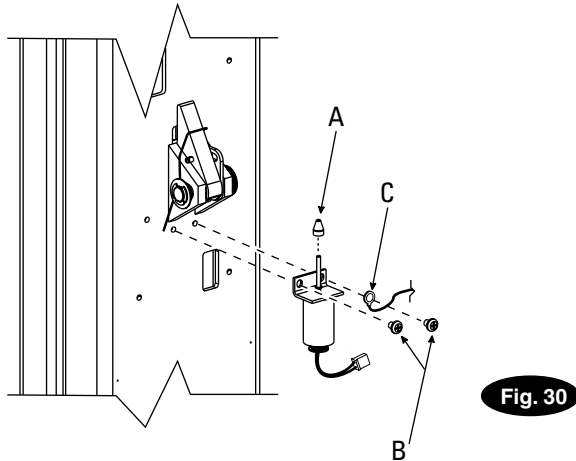


Fig. 30 Detail

A	IMPORTANT Attach slider to solenoid plunger rod.
B	5/16"-18NCx3/8" PHMS Place screws through solenoid and attach to column.
C	Solenoid ground wire from control panel.

23. Installing Master Control Panel & Tool Holder:

Remove access panel from the master control panel (master control panel has 5 cables attached to it), Fig. 31. Install (2) 5/16"-18NC x 3/8" PHMS screws in holes on each side of the locking latch (power unit side) leaving approximately 3mm exposed to hold the panel. Hang the master control panel over locking latch to column on the 5/16"-18NC x 3/8" PHMS screws and pull the locking latch solenoid wire through the panel, Fig. 31. Plug locking latch solenoid into master control panel. Connect the ground wire with ring to terminal at one of the lock solenoid mounting screws, Fig. 30.

Install (1) 5/16"-18NC x 3/8" PHMS in bottom of master control panel. Tighten down all (3) screws. Do not install access panel back into control panel at this time. It will be reinstalled in a later step.

23a. Install one of the air tool holders under the master control panel with two 5/16"-18NC x 3/8" PHMS, Fig. 31.

23b. Install Master Cable Motor Cable to Master panel connections.

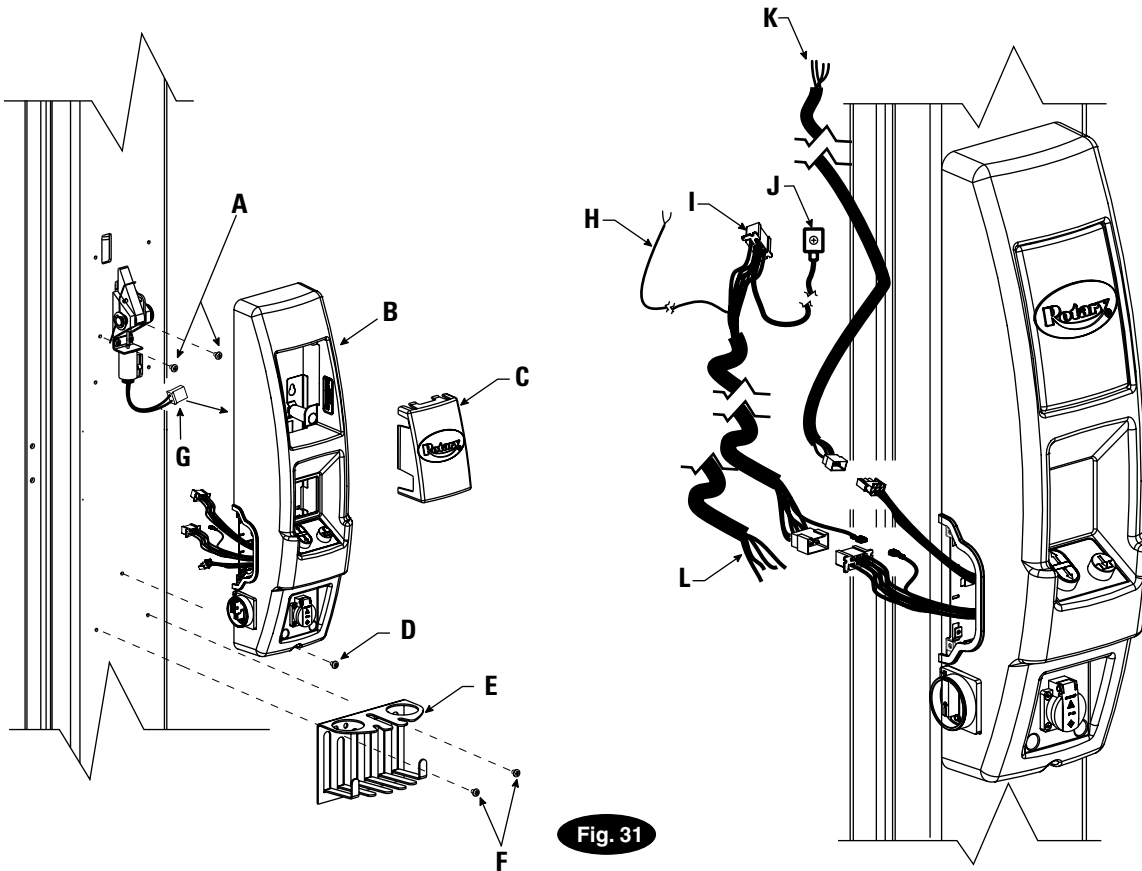


Fig. 31

Fig. 31 Detail	
A	5/16"-18NCx3/8" PHMS, Leave these two screws exposed out of the column approximately 3mm.
B	IMPORTANT Master control panel always mounts on the power unit side.
C	Access Panel
D	5/16"-18NCx3/8" PHMS, Through the control panel.
E	Tool Holder
F	5/16"-18NCx3/8" PHMS

Fig. 31 Detail	
G	Pull connector through panel
H	Overhead Switch Cable
I	Master Cable
J	Lowering Valve Cable
K	Motor Cable
L	Power Cable (connected in Step 26)

24. Routing Motor and Master Cables:

From the master control panel route cables up through column along the hose routing, Fig. 32.

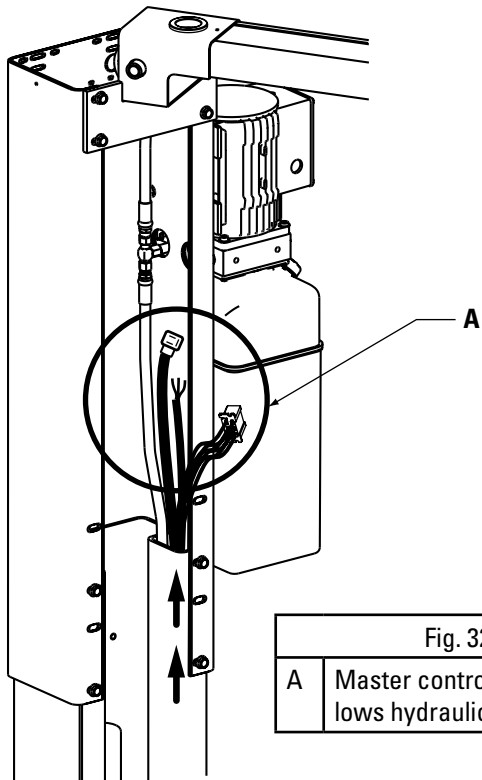


Fig. 32

Fig. 32 Detail	
A	Master control wire routing follows hydraulic hose routing

- A) Locate the overhead switch cable at the master cable connector. Feed the overhead switch cable through the strain relief and into the overhead switch box, Fig. 34.
- B) Attach lowering valve cable to lowering valve and tighten screw on top, Fig. 34.
- C) Run the motor cable through strain relief in the motor junction box. Motor wiring and wire diagrams are detailed in, Fig. 34.

25. Installing Slave Control Panel & Tool Holder:

Plug the 3-wire slave solenoid cable into the slave solenoid, connect the ground ring under the solenoid and attach the cover to the columns using (4) 9/16"-18NC x 3/8" PHMS.

25a. Install one of the air tool holders under the slave control panel with two 5/16"-18NC x 3/8" PHMS, Fig. 33.

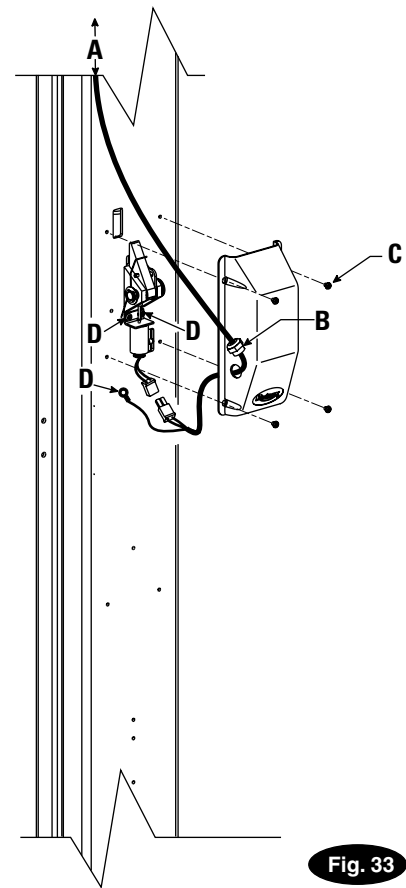


Fig. 33

Fig. 33 Detail	
A	Slave solenoid cable routes up and over to attach to master harness at the top of the master column.
B	Cord grip installs into hole in slave solenoid cover.
C	Slave solenoid cover attaches to lift column using (4) 5/16" -18NC x 3/8" PHMS.
D	Sole cable routes thru slave solenoid cover to connector on the slave solenoid. The ground ring attaches to one of the solenoid mounting screws as shown.

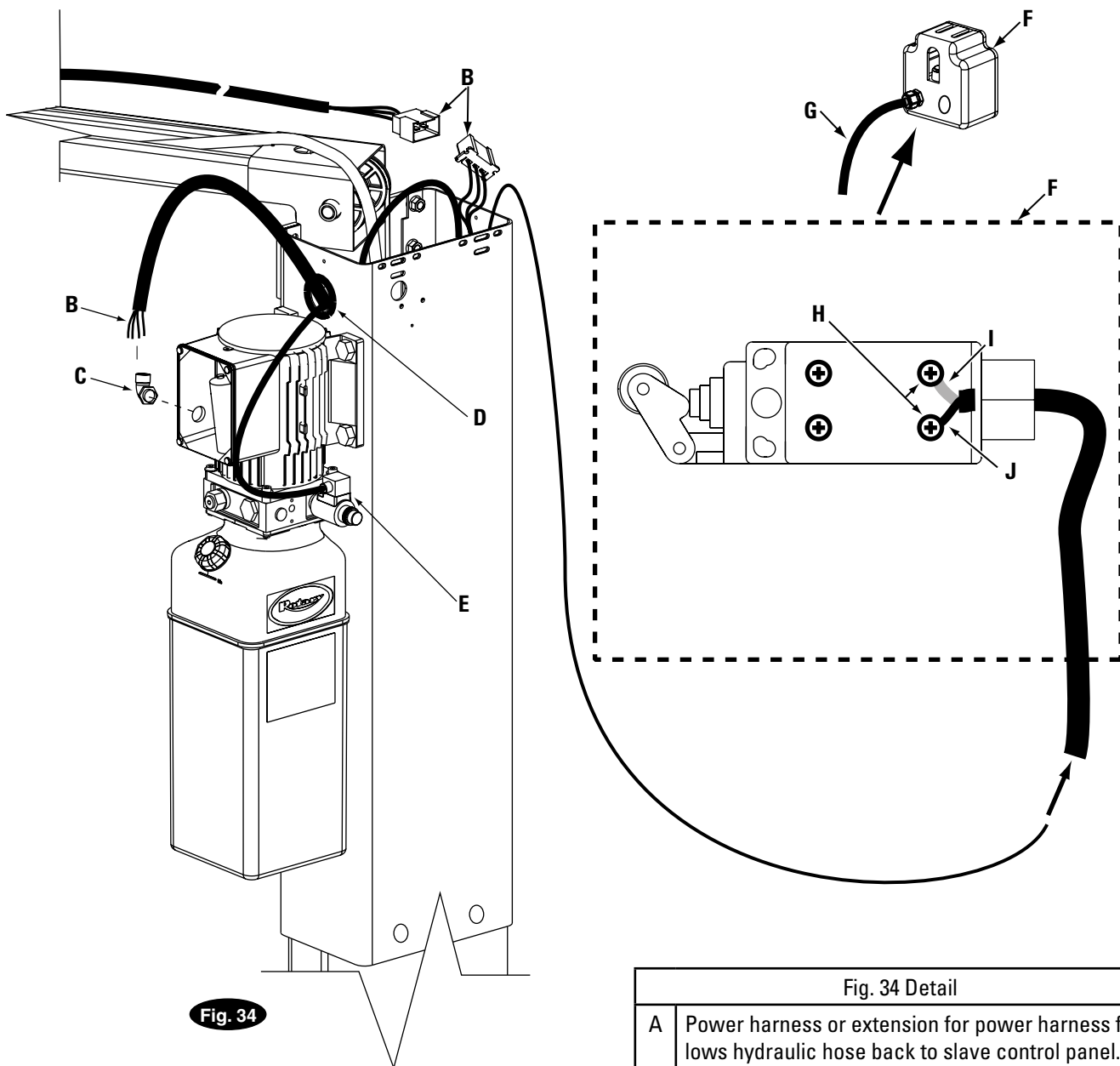


Fig. 34

Fig. 34 Detail

A	Power harness or extension for power harness follows hydraulic hose back to slave control panel.
B	4 wire from master control panel goes through strain relief into junction box on powerunit motor.
C	Strain Relief
D	Grommet Note: Secure all cables coming up from master control panel to grommet hole with a wire tie when hook-up is complete.
E	Plug in lowering valve cord and tighten screw on top to lock in place.
F	Overhead Limit Switch
G	From master cable connector
H	N.O. Contacts
I	White Wire
J	Black Wire

26. Disconnect Harness Routing:

- A) Remove cover panel from master control, Fig. 35 disconnecting the pushbutton cable from master harness. Take one end of the 1/2" hose (40' provided) and push air line into the air fitting. Air line should be clean and have a straight edge. Make sure air line is not crimped before placing the slave hood and access panel back on it's bracket. The air line should be routed out of the master control panel and back up through the column and to the facility's main air supply. Use air fitting (provided) to make connection to main air supply, Figs. 35, 35b, and 35c.
- B) Wire the disconnect harness into the bottom of the slave side disconnect as shown in Fig. 35a (single phase power) or Fig. 35b (three phase power). Facility power will be wired into top of the slave side disconnect.

C) When finished refer to step 28 for instructions on installing gaskets before replacing the control cover panel back over the backplate.

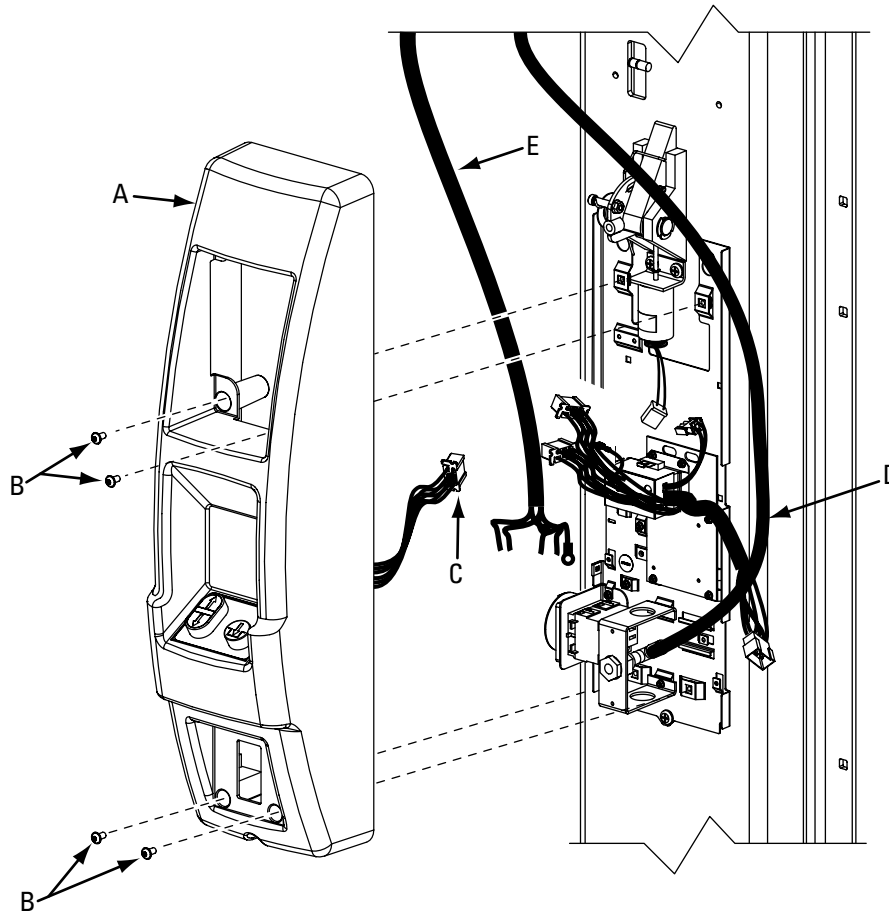


Fig. 35

Fig. 35 Detail	
A	Master Cover Panel
B	(4) 1/4-20NC x 1/2"
C	Button Harness
D	1/2" Air Line
E	Facility Power

Fig. 35b Single Phase Detail

A	Motor Cable
B	Facility power connects into the top of the disconnect.
C	Connection plugs into solenoid.
D	Master Harness
E	PE wires attach to green grounding screw on backplate of control panel near disconnect.
F	1/2" Air Line

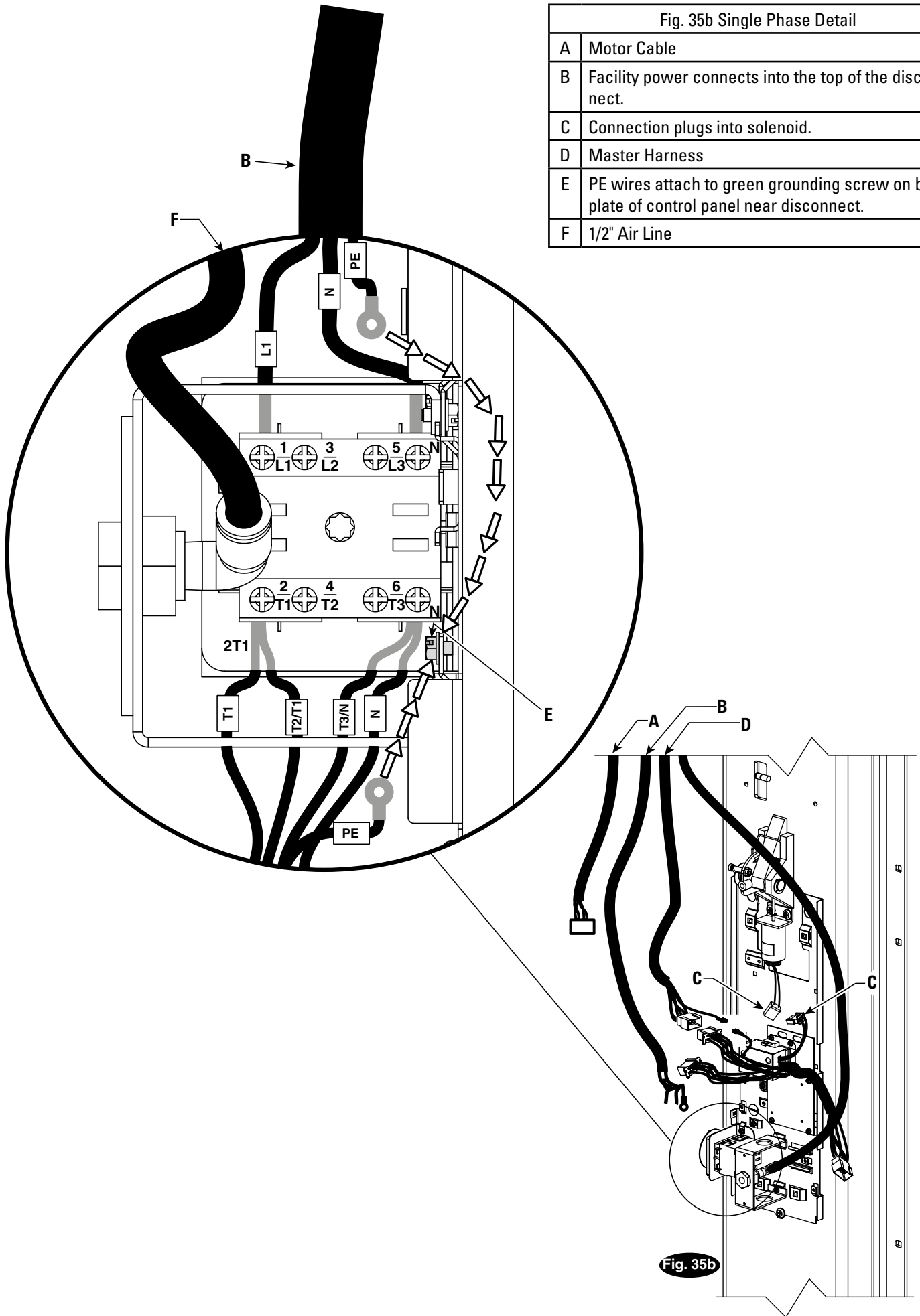


Fig. 35b

Fig. 35c Three Phase Detail

A	Motor Cable
B	Facility power connects into the top of the disconnect.
C	Connection plugs into solenoid.
D	Master Harness
E	PE wires attach to green grounding screw on back-plate of control panel near disconnect.
F	1/2" Air Line

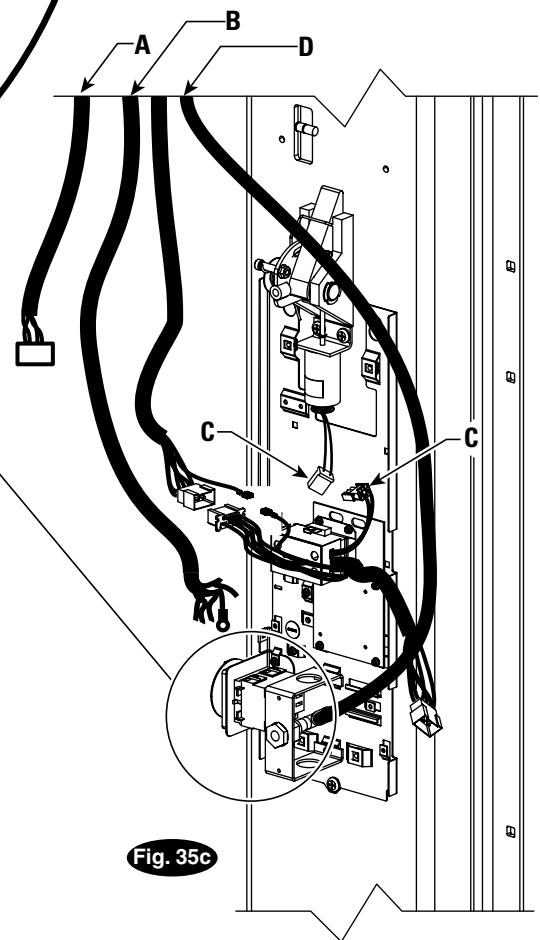
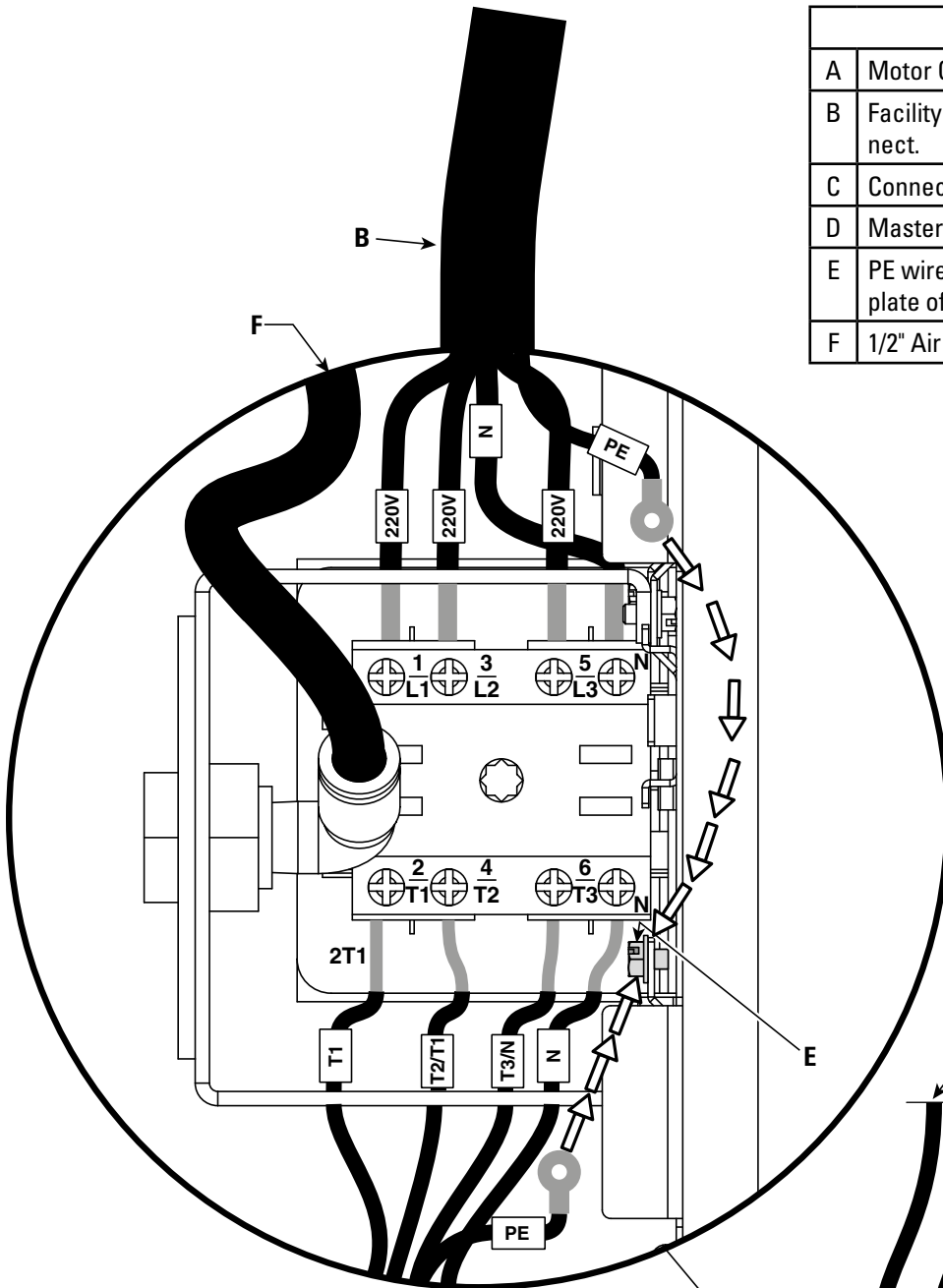


Fig. 35c

27. Electrical For E Series Lifts:

Have a certified electrician run power supply to slave side disconnect, Fig. 35b for single phase and Fig. 35c for three phase. Size wire for 20 amp circuit. See Motor Operating Data Table.

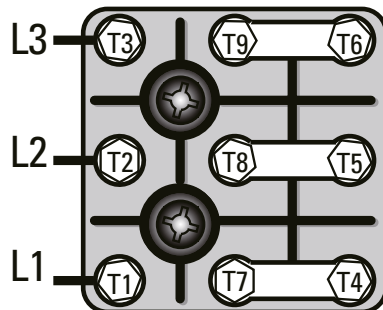
IMPORTANT Use separate circuit for each power supply. Protect each circuit with time delay fuse or circuit breaker. For single phase 230V (*F Model), use 20 amp fuse. For three phase 400V (*E Model), use 10 amp fuse. For three phase 400V (*S Model), use 16 amp fuse. All wiring must comply to all local electrical codes. Wire motor according to wiring diagram provided on page 27.

IMPORTANT As with all electronic equipment, the inbay 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:

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

Fig. 36 Single Phase Motor Wiring 220V/50Hz	
A	Connection from Master Control panel.
B	N
C	L1
D	Black Wire
E	White Wire
F	Capacitor
G	Ground Connection



**High Voltage
440V, 50Hz**

MOTOR OPERATING DATA - SINGLE PHASE (*F MODELS)			
LINE VOLTAGE	CURRENT	POWER	
220 - 240 Volts	50Hz	17A	- 1.5Kw

MOTOR OPERATING DATA - THREE PHASE (*E MODELS)			
LINE VOLTAGE	CURRENT	POWER	
400 - 415 Volts	50Hz	4.55A	- 3Kw

MOTOR OPERATING DATA - THREE PHASE (*S MODELS)			
LINE VOLTAGE	CURRENT	POWER	
400 - 415 Volts	50Hz	10A	- 4.9Kw

*Notes: F, E or S Model?
To find out if you have a F, E or S model Power Unit look at the 4th letter from the end of your lift model number.
EXAMPLE: SPOA30EE585 would be a E Model .
Model number can be found on a tag on the side of the lift.
For F, D or T Models go to page 14.

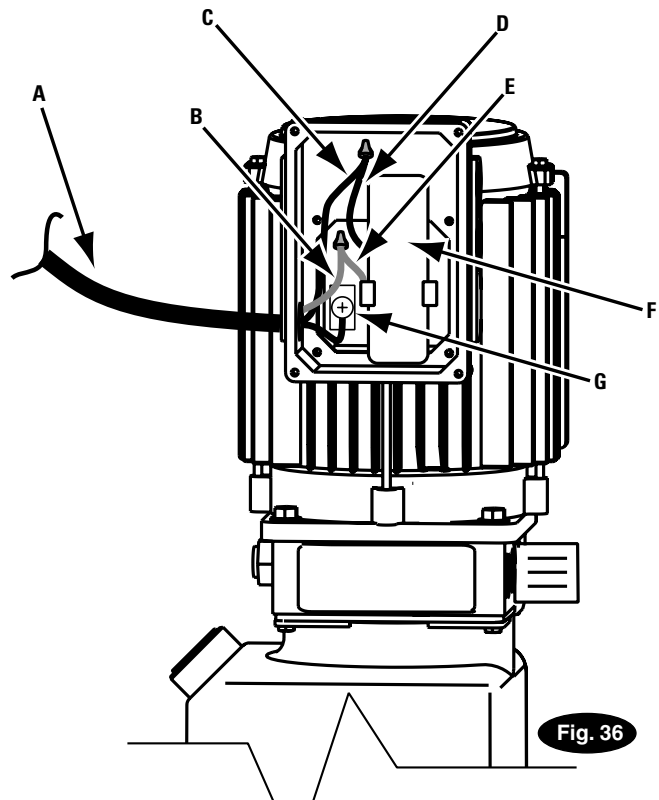
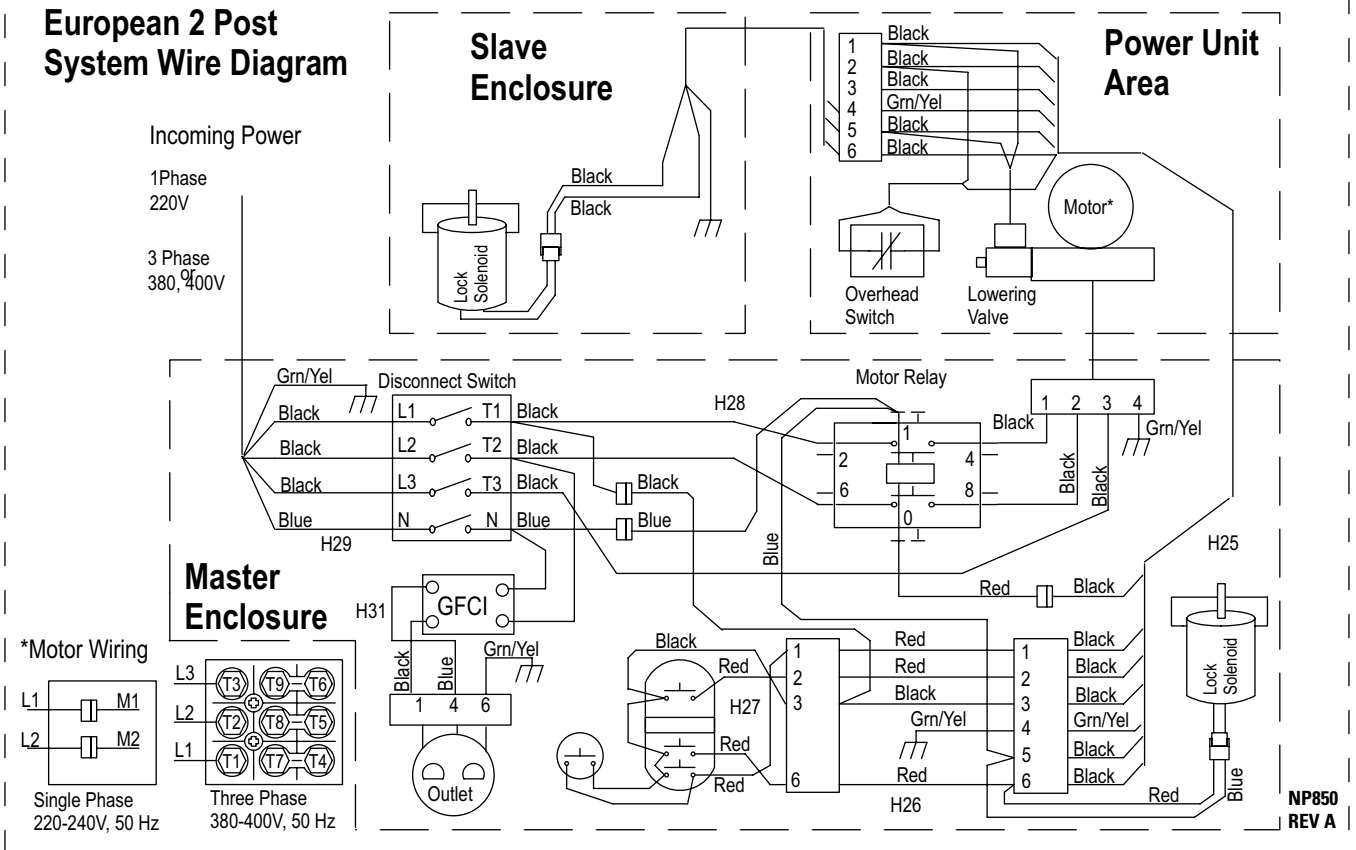


Fig. 36

European 2 Post System Wire Diagram



NP850
REV A

28. Installing Gaskets:

IMPORTANT These gaskets must be installed to maintain CE certification

- A) To install gasket on master side control. Fit the gasket behind the master enclosure and tighten down the screws, Fig. 37. Tighten down the mounting screws until the gasket makes a good seal with the column. Do not over tighten.
- B) Re-install access panel.

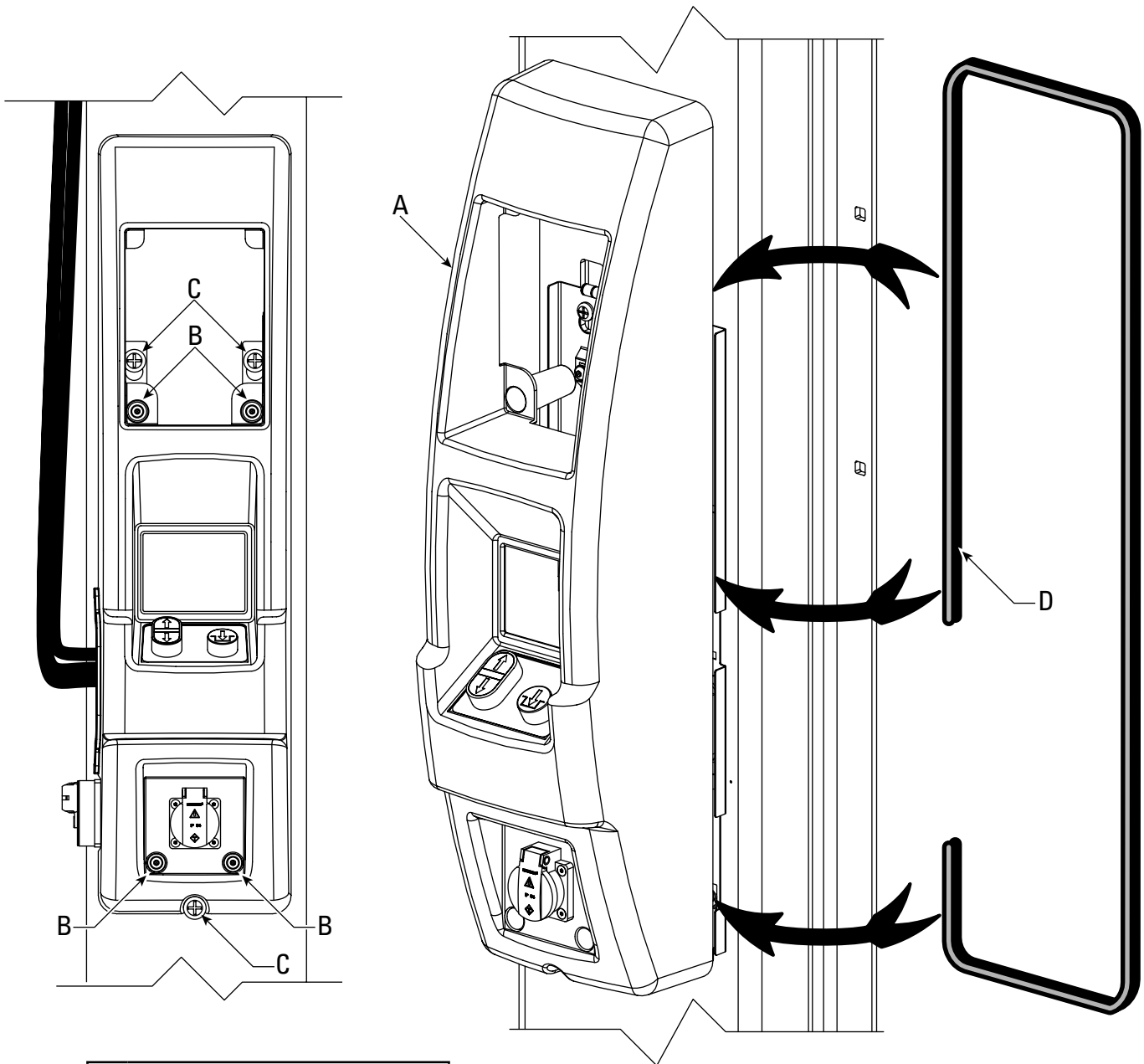


Fig. 37	
A	Master Cover
B	(4) 5/16"-18NCx3/8" BHCS
C	(3) 5/16"-18NCx3/8" PHMS
D	Master Cover Gasket

Fig. 37

29. Power Up For E Series Lifts:

Turn disconnect to ON position from the master control panel, Fig. 38.

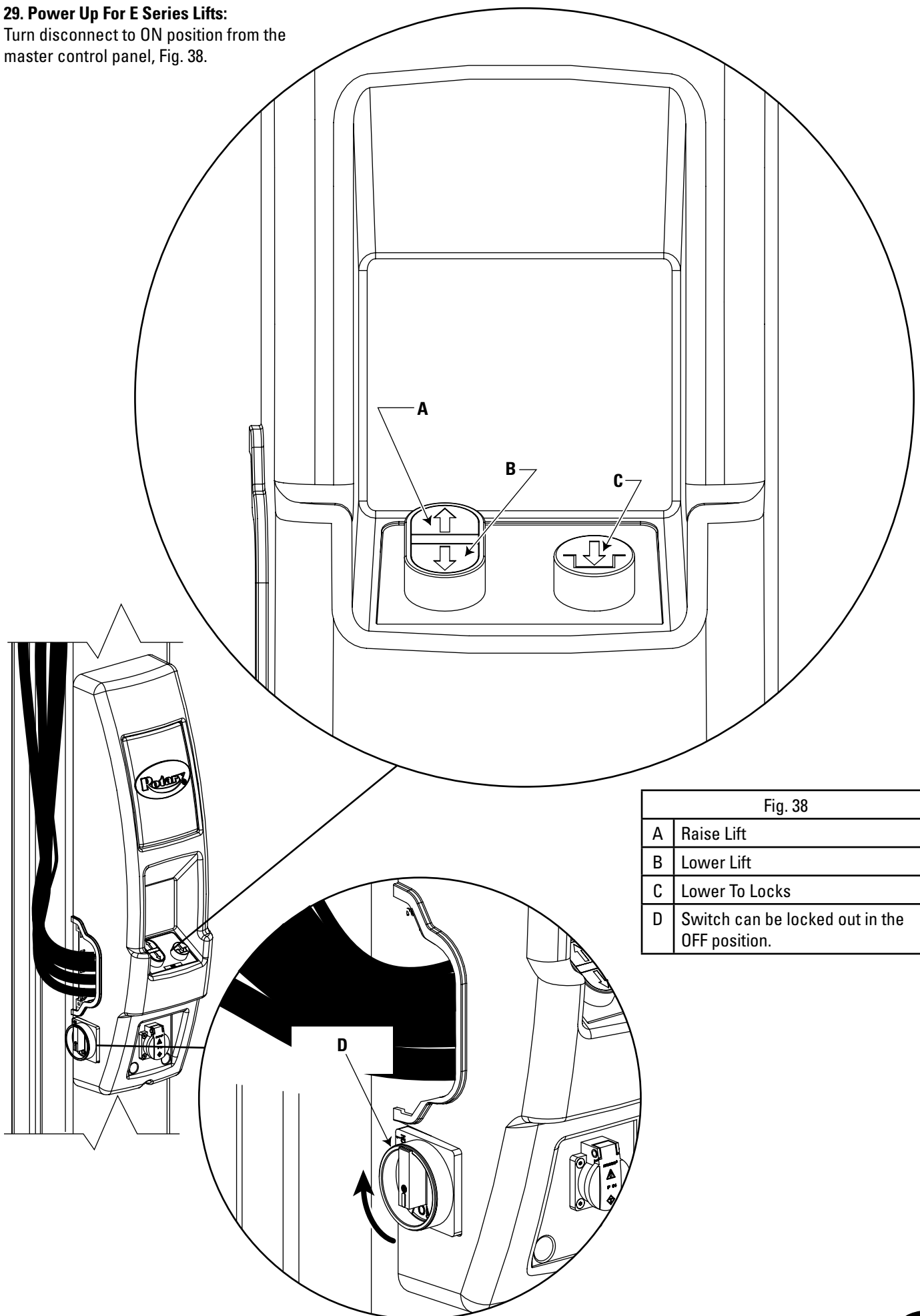


Fig. 38	
A	Raise Lift
B	Lower Lift
C	Lower To Locks
D	Switch can be locked out in the OFF position.

30. Web covering and wire chase placement, Fig. 39: Start by wire tying all the wires and hoses neatly and out of the way of the cables. Place edge and rib gaskets around wire chases. Take one of the wire chases and attach it to one of the control panels with two #8-32NC x 5/8" Lg. PHTS. It may be necessary to remove the cover of the control assembly to install the wiring chase and maintain seal position. Snap the front of the wire chase into the column. Next slide the 1 meter cover up into the column extension and then down into the wire chase. Adjust covers accordingly to make sure hoses and wires are covered.

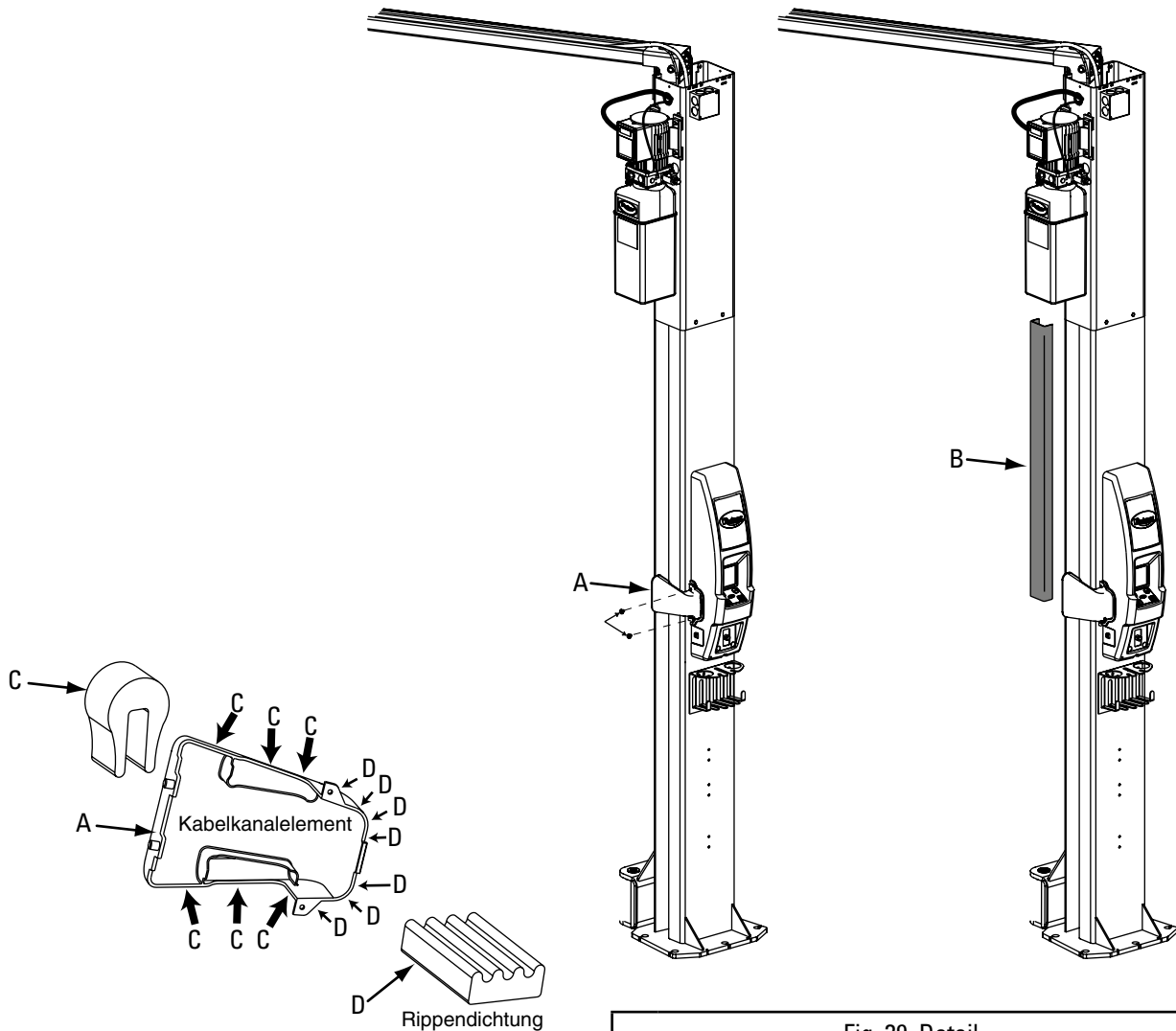


Fig. 39 Detail

A	Wiring chase attaches into control panel with (2) #8-32 x 5/8" Lg. PHTS then snaps into column.
B	1 Meter web cover slides up into extension then slides down into wire chase.
C	Edge Gasket
D	Rib Gasket

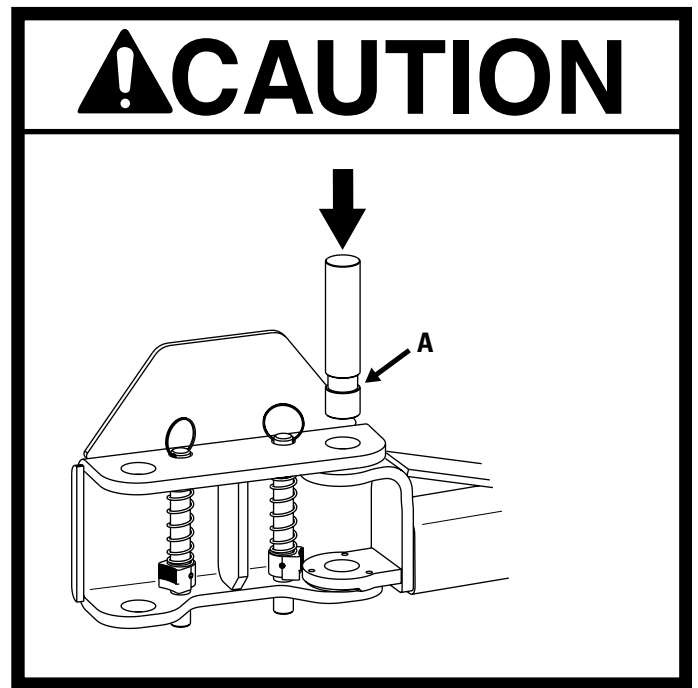
31. Arms & Restraints: Before installing arms, raise carriages to a convenient height. Grease swivel arm pins and holes with Lithium grease. Slide arm into yoke, Fig. 40a. Install 1-3/4" diameter arm pin(s), Fig. 40a.

After installing arms and pins, install arm Restraint Gears as follows: Install Restraint Gear onto arm clevis, as shown, Fig. 40b. Ensure side of gear marked TOP is facing upward, Fig. 40b.

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 (2) 3/8"-16NC x 1-1/2" HHCS (8 total for all 4 arms) and 3/8" Spring Lock washers into the gear and arm, but do not tighten. Reference Fig. 40c, Fig. 41, and Fig. 42.

Torque the Restraint Gear bolts to 30-34 ft.-lbs.



A **CAUTION** Installation Pinch Point Keep Hands Above Groove

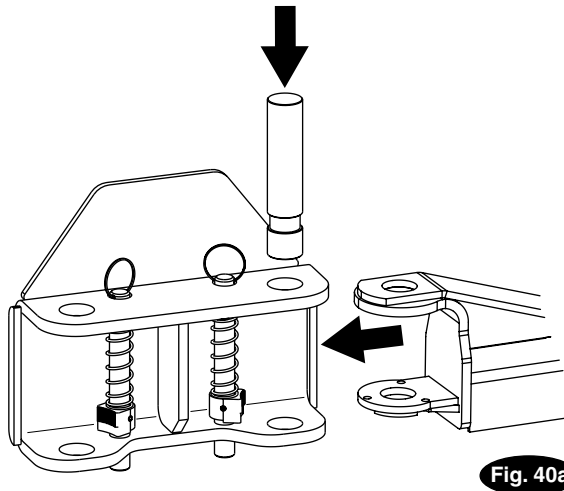


Fig. 40a

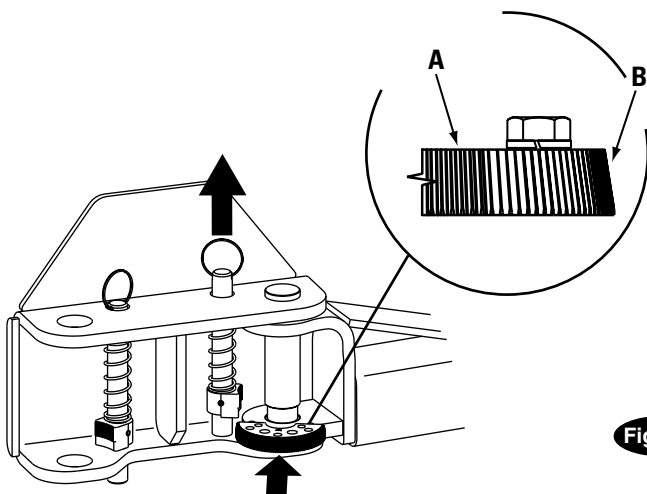


Fig. 40b

Fig. 40b Detail	
A	TOP will be marked on top side of restraint gear.
B	NOTE beveled gear orientation

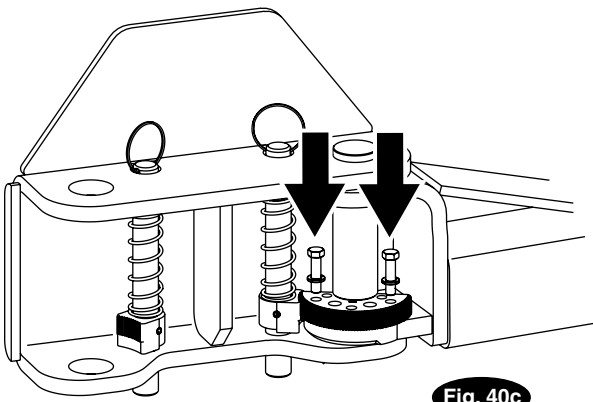


Fig. 40c

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.

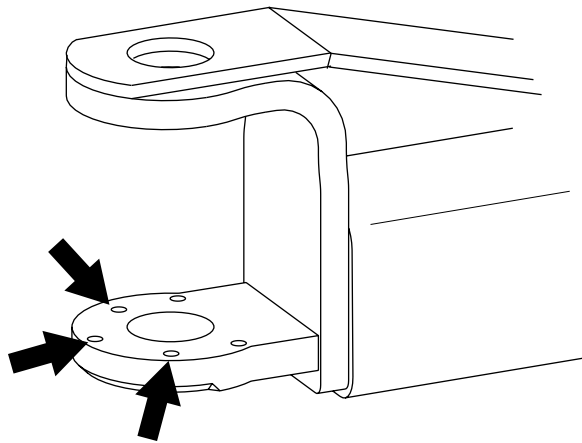


Fig. 41

Fig. 41 Detail	
A	DO NOT use holes marked with arrows

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.

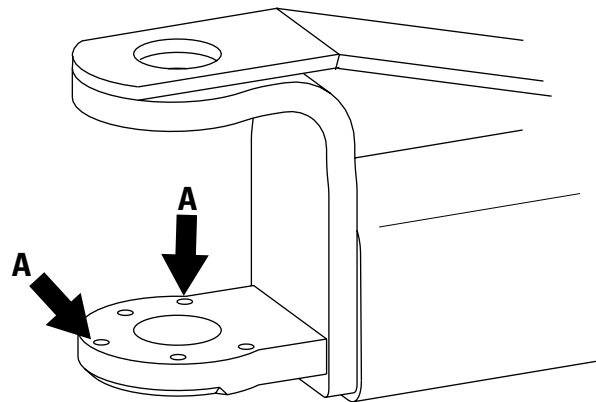


Fig. 42

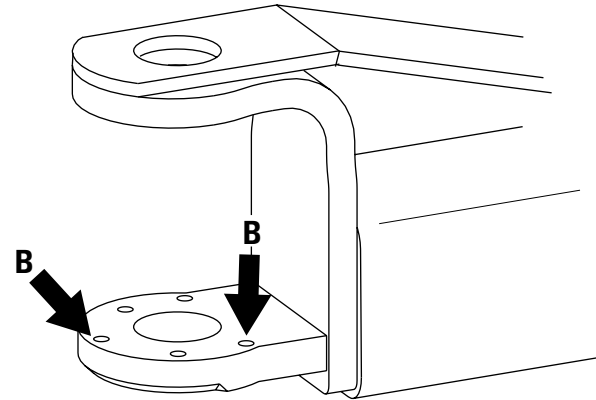


Fig. 42 Detail	
A	Use holes marked with arrow for Right Front and Left Rear.
B	Use holes marked with arrow for Left Front and Right Rear.

32. Arm Guard Installation: Install arm guards, Fig. 43.

33. Latch Release Decal For M Series Lifts: Install latch release decal on cover above latch release handle, Fig. 44.

34. Door Bumper Installation (All Models):

1. Press 457mm bumper on column edge, Fig. 45.
2. Press 152mm bumper on top front edge and top side of carriage tube, Fig. 45.
3. Press bumper back side of carriage between carriage and column as shown, Fig. 45.

35. Wheel Spotting Dish (All Models): Position wheel spotting dish, for appropriate lift model, as illustrated in Fig. 1a, 1b or 2a, 2b. 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.

Attention: For M Series lifts continue to Section 39.

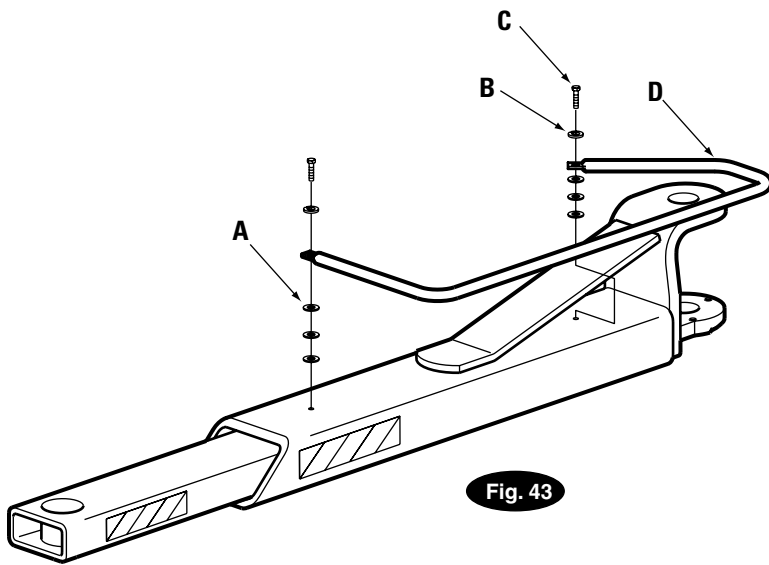


Fig. 43

Fig.43 Detail	
A	(6) 5/16" Flat Washers
B	(2) 5/16" Spring Lockwashers
C	(2) 5/16"-18NC HHCS (per arm)
D	Arm Guard (For SP040M the different arm guard goes on the right front arm, see Fig. 2b)

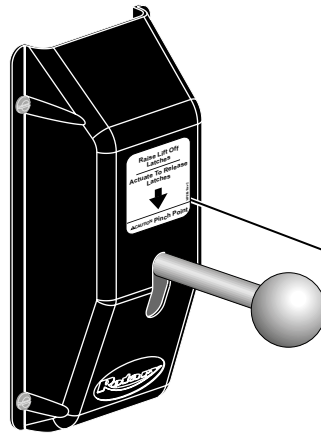


Fig. 44

Raise Lift Off Latches

Actuate To Release Latches

↓

CAUTION Pinch Point

NP266 Rev C

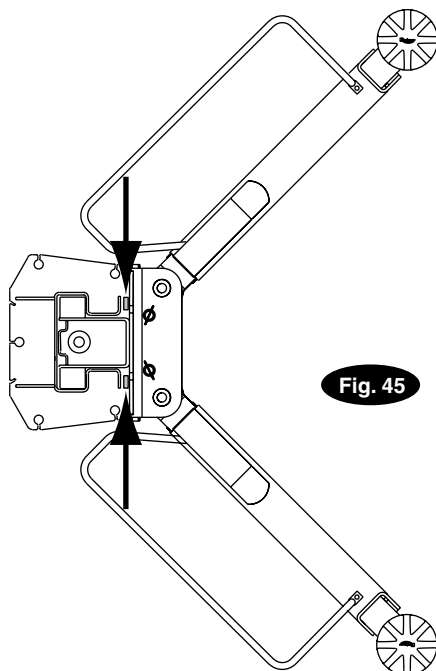


Fig. 45

Fig. 45 Detail	
A	534mm
B	152mm
C	152mm
D	457mm
E	Attach self adhesive sponge rubber finger guard on back of carriage between column and carriage back.

A

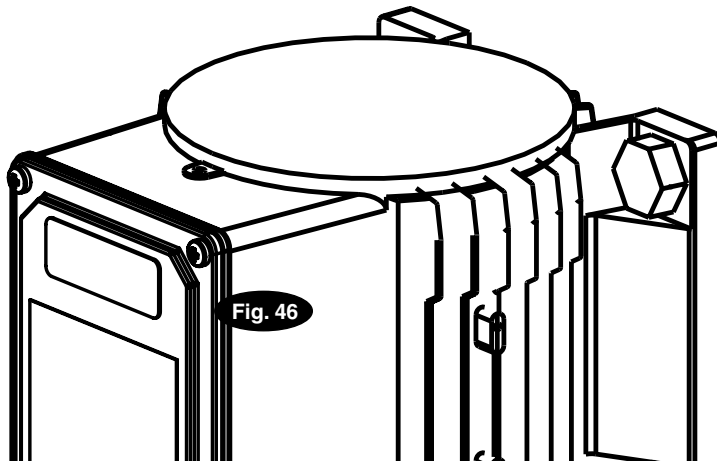




Fig. 46 Detail	
A	E Series Power Units
B	M Series Power Units
C	Access for pressure reading


36. Oil Bleeding for E Series lifts:

Press  on touch pad and raise lift about 609mm. Open cylinder bleeders approximately 2 turns, Fig. 18. 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.

37. Pressure Test for E 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.

38. Equalizer Cable Adjustment for E Series lifts:

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.

39. Oil Bleeding for M series lifts: Start unit, raise lift about 609mm. Open cylinder bleeders approximately 2 turns, Fig. 17. Close when fluid streams. Fully lower lift. Add more fluid until it reaches **MIN**_____ mark on 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.

40. Pressure Test for M Series lifts: 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.

41. Equalizer Test For M Series lifts: 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.

42. Check Electrical (All Models): 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.

43. Check Operation (All Models): 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 gains power when deactivated.

44. Check Pressure (All Models): Check hydraulic pressure at indicated location on the power unit, Fig. 46. The maximum relief is not to exceed 18.99N/mm² for the SPOA40 and SPO40 Series lifts. Not to exceed 14.50N/mm² for the SPOA30 Series lifts. These valves are nonadjustable. Replace if improper relief valve is in place.

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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