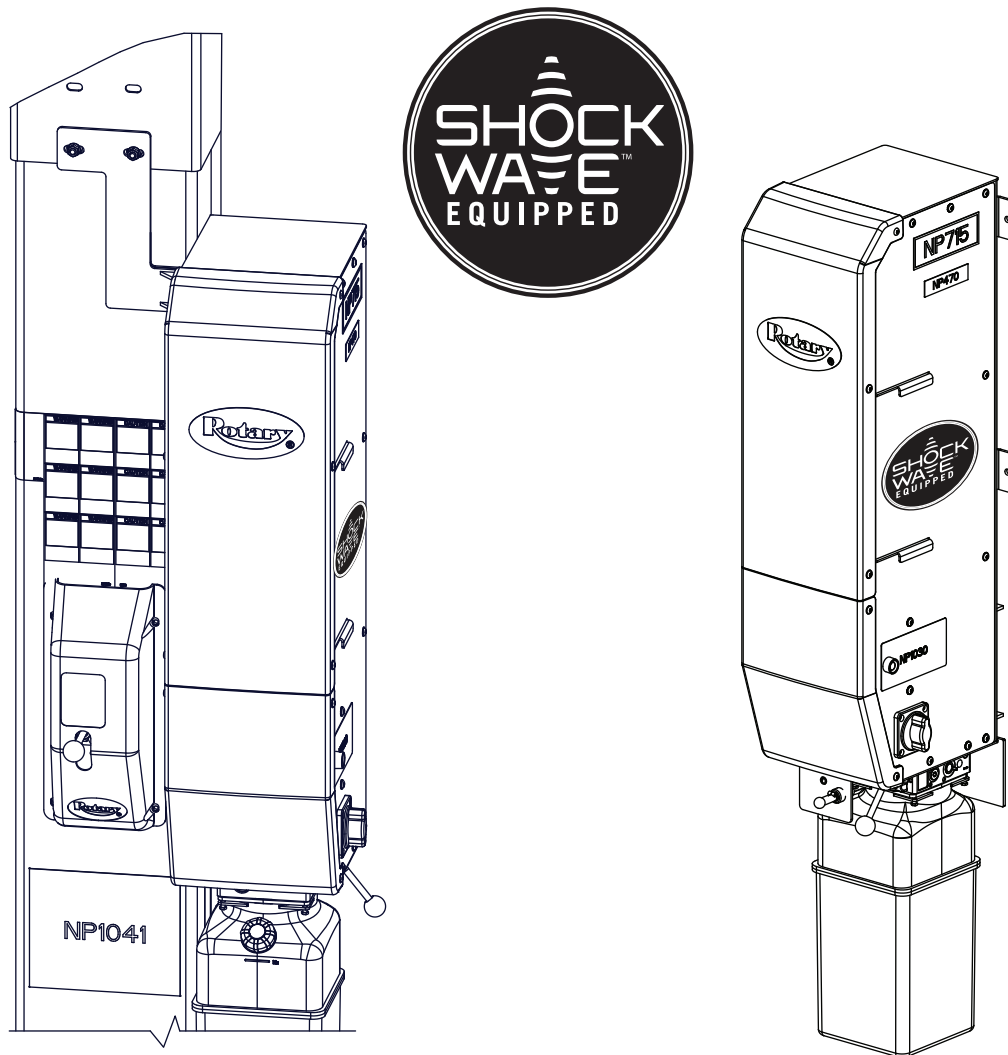




# SHOCKWAVE EQUIPPED SUPPLEMENT

(2-POST AND SMART LIFT INSTALLATION)



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INSTALLATION INSTRUCTIONS

# 2-Post Installation

(See Page 16 For Smart Lift)

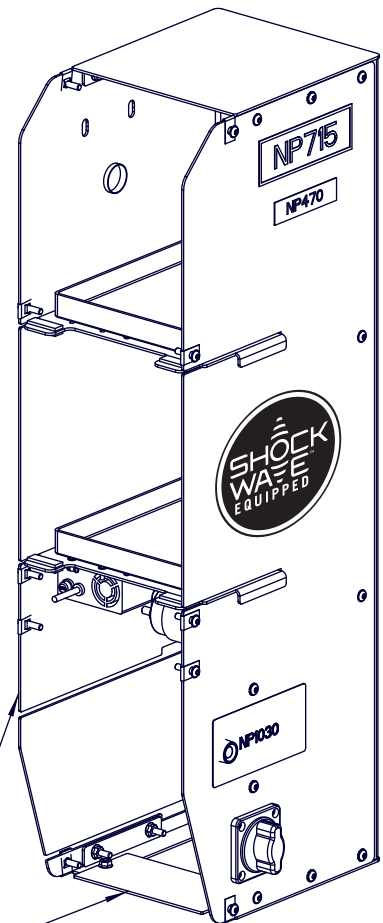
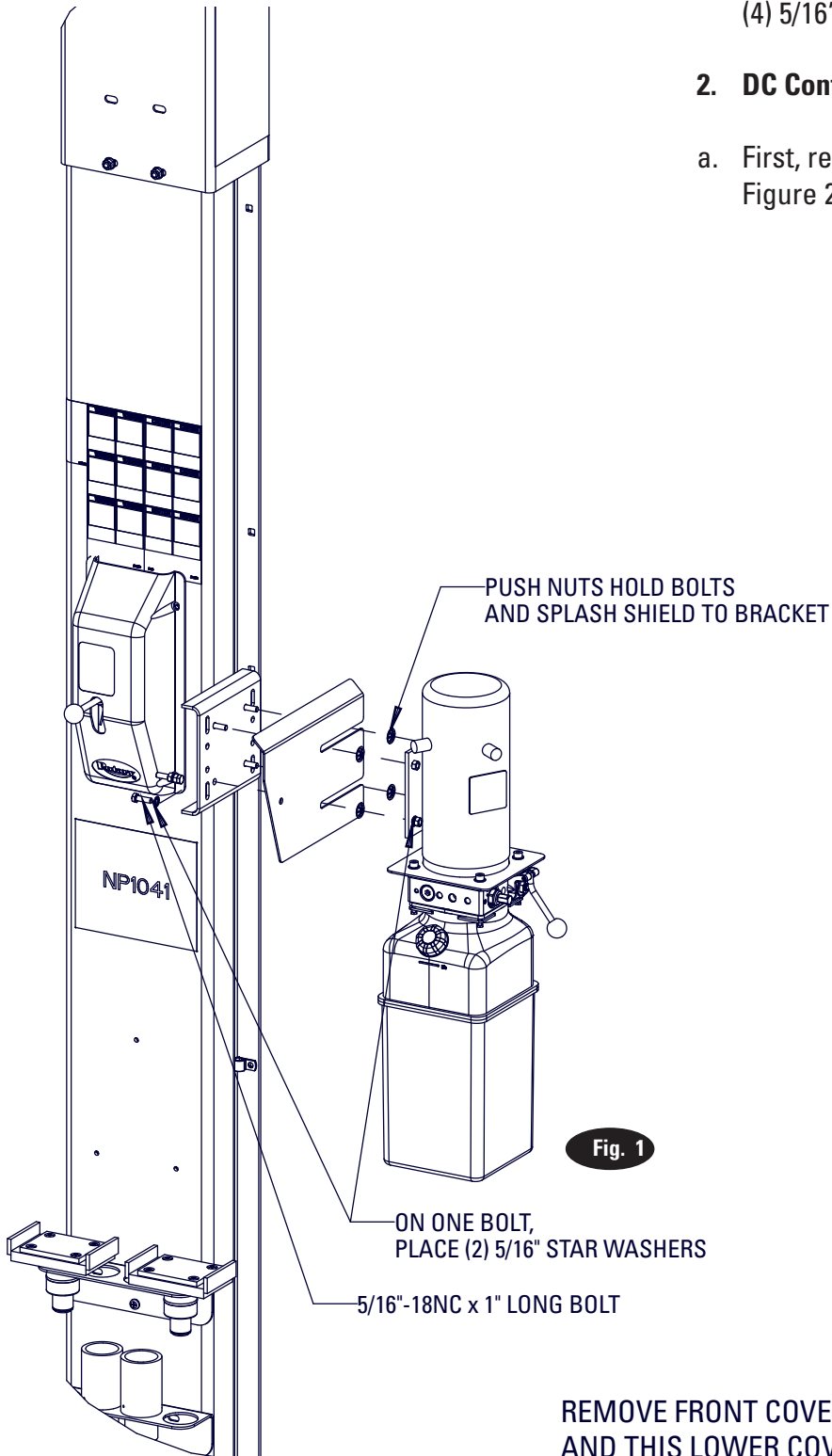
## 1. Power Unit:

- a. First, install (1) star washer onto one of the (4) 5/16"-18NX x 1" long HHCS. *This is very important for grounding.*

- b. Put the (4) 5/16"-18NC x 1" HHCS thru holes in the power unit bracket and splash shield using push-nuts to hold in place, Figure 1.
- c. Mount power unit with motor up to the column bracket and install (2) 5/16" star washers and (4) 5/16" nuts.

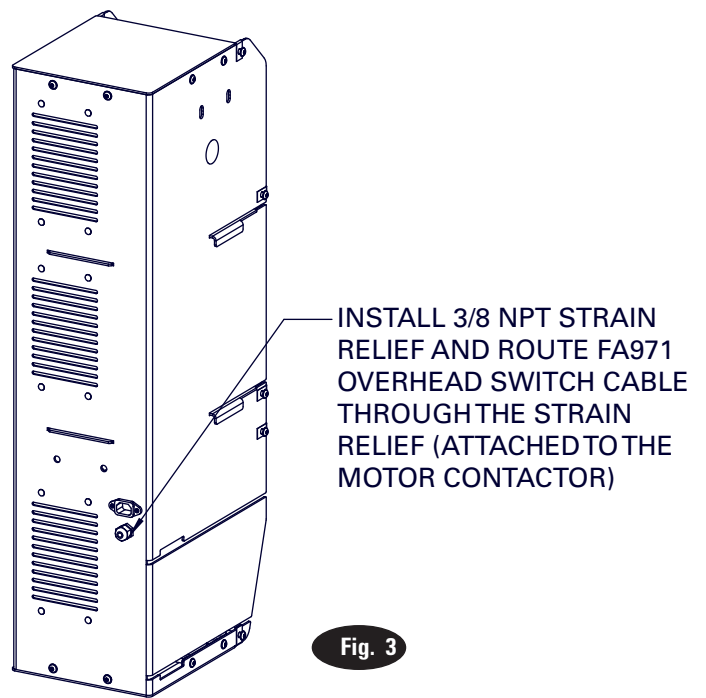
## 2. DC Control Cabinet:

- a. First, remove front plastic covers and lower cover, Figure 2, and set aside to be reinstalled later.

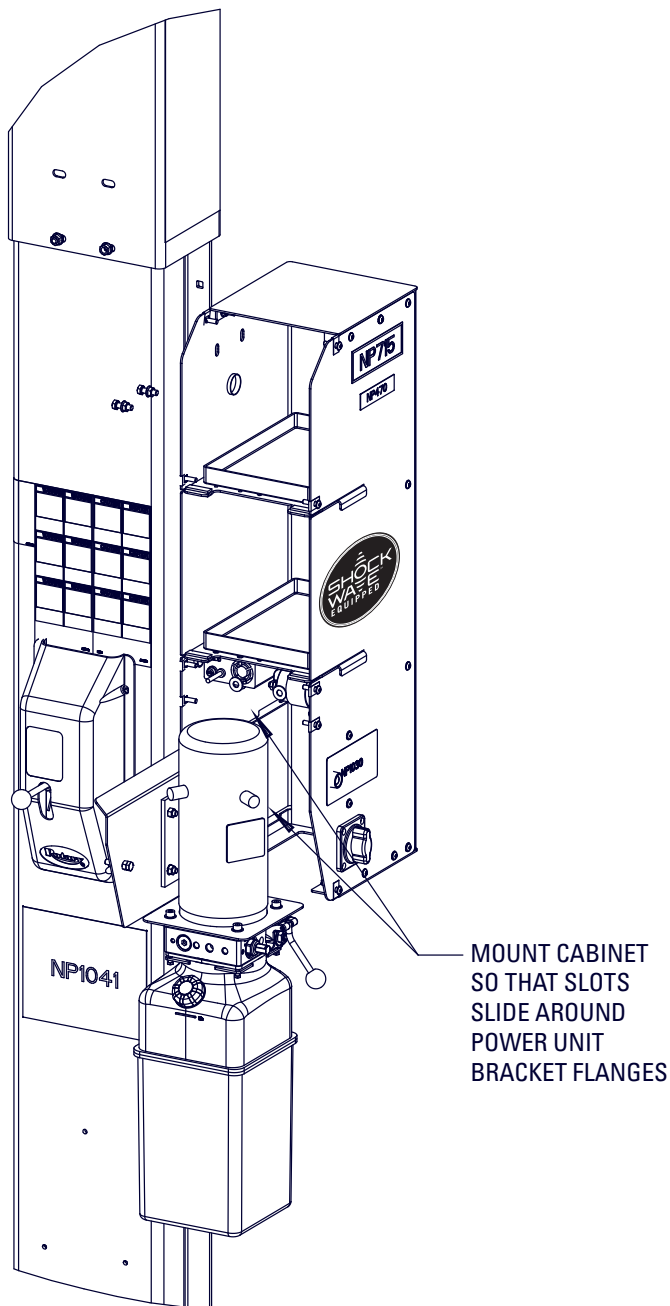


REMOVE FRONT COVER AND THIS LOWER COVER

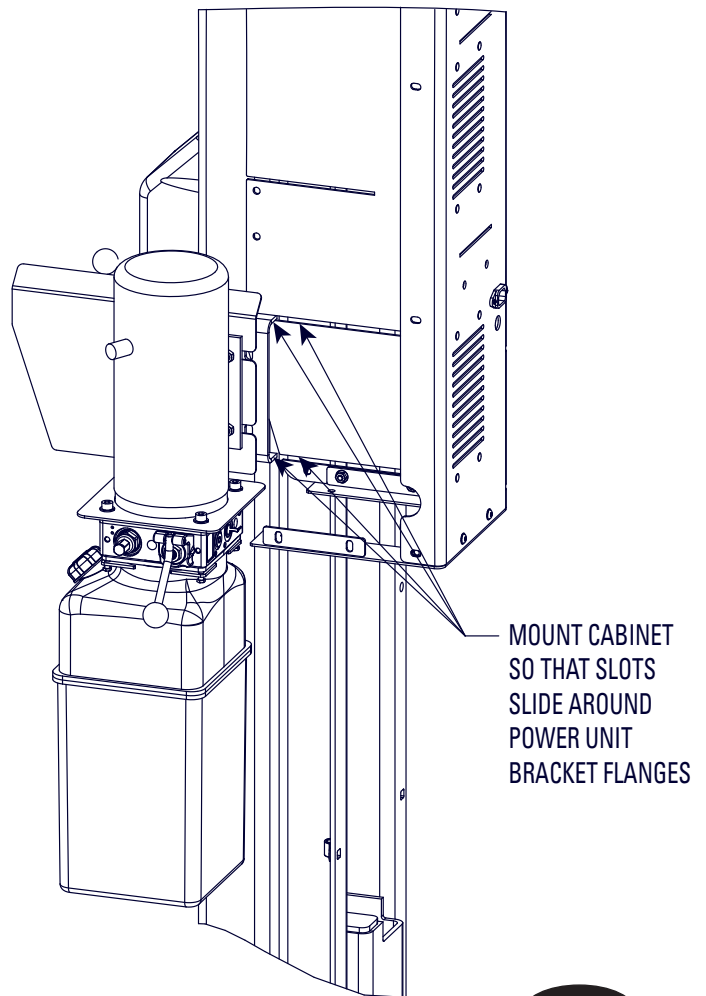
- b. Install included 3/8 NPT strain relief and nut to the back of the cabinet and route the FA971 overhead switch cable through the strain relief, Figure 3. The FA971 overhead switch cable is shipped attached to the motor contactor inside the DC control cabinet.
- c. Mount DC control cabinet by sliding slots around the power unit bracket flanges, Figure 4a and 4b.



**Fig. 3**



**Fig. 4a**



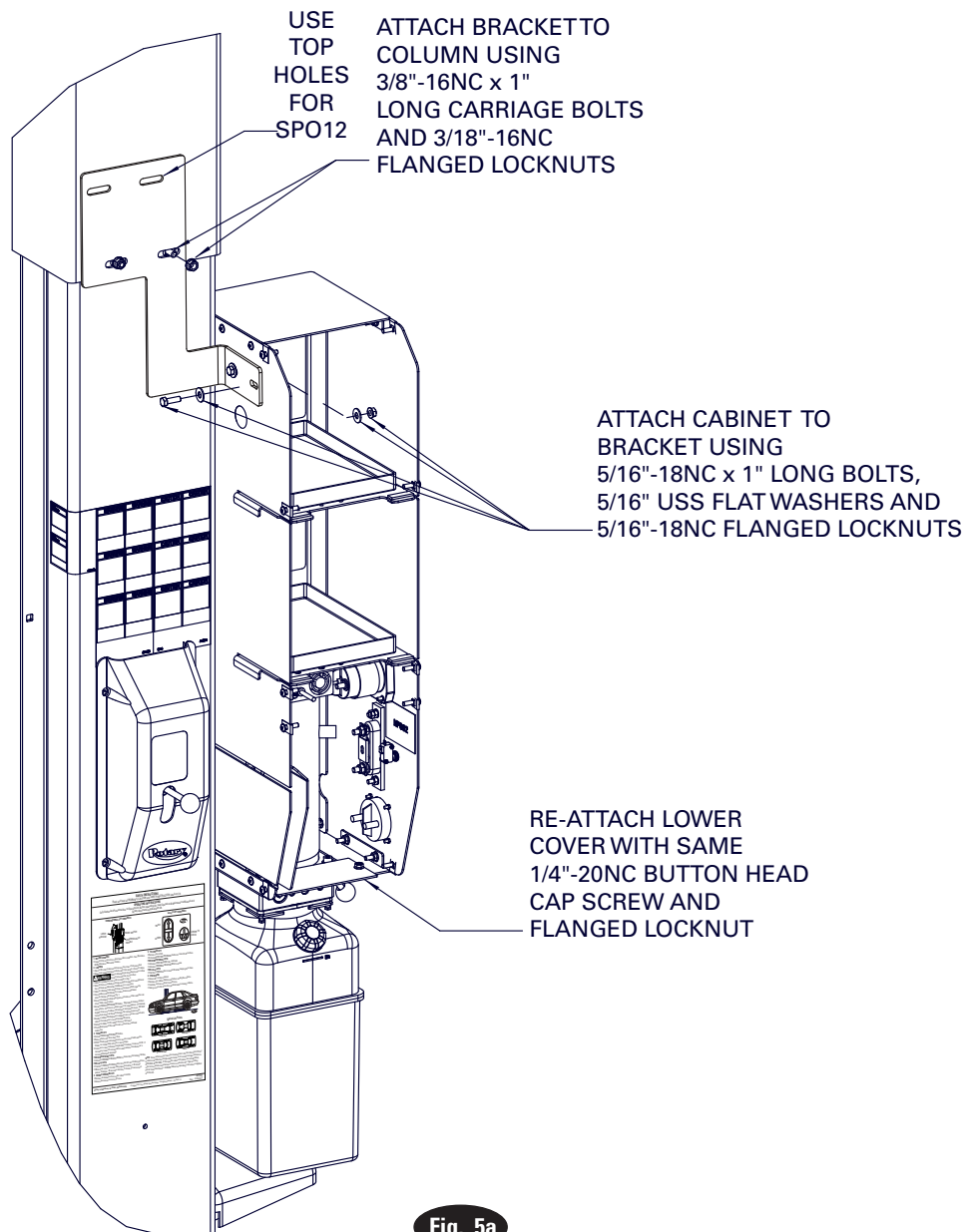
**Fig. 4b**

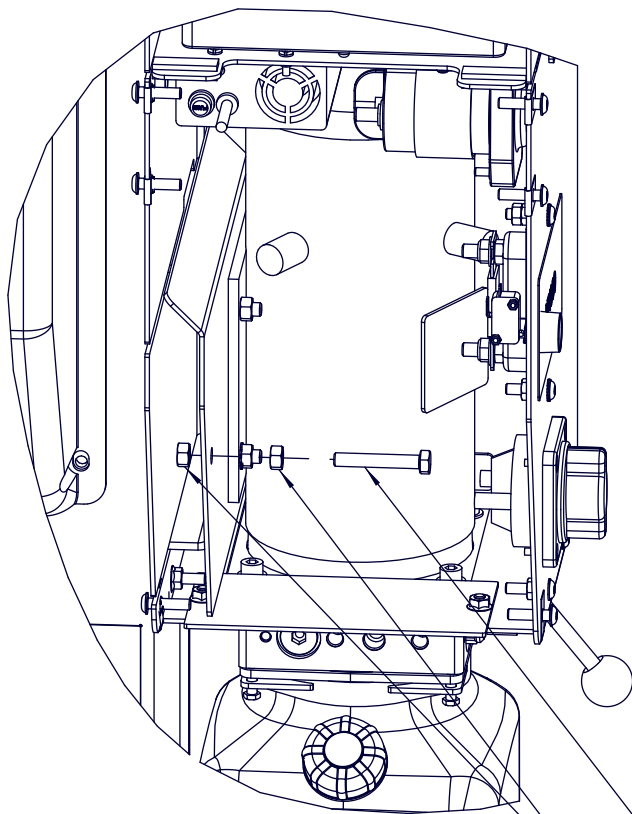
**NOTE: SIDE PANEL NOT SHOWN**

### 3. DC Control Cabinet Top Bracket:

- a. Secure top of DC control cabinet by mounting it to the top of the column using the included z-shaped bracket. Fasten the left side of the cabinet to the top of the extension using the z-shaped bracket.
- b. Fasten the bracket to the column, thru the extension, using the included longer (2) 3/8"-16NC x 1" long carriage bolts and (2) 3/8"-16NC flanged locknuts, Figure 5.
- c. Mount the bracket to the side of the cabinet using the included (2) 5/16"-18NC x 1" long bolts, (4) 5/16" USS flat washers and (2) 5/16"-18NC flanged lock nuts, Figure 5a.
- d. The DC control cabinet should rest against the side of the column.
- e. Fasten the included 5/16"-18NC x 1-1/2" full thread bolt and (2) 5/16"-18NC hex nuts to the splash shield as shown in figures 5b & 5c.

**ATTENTION** Do not overtighten the bolt and push the enclosure outward.

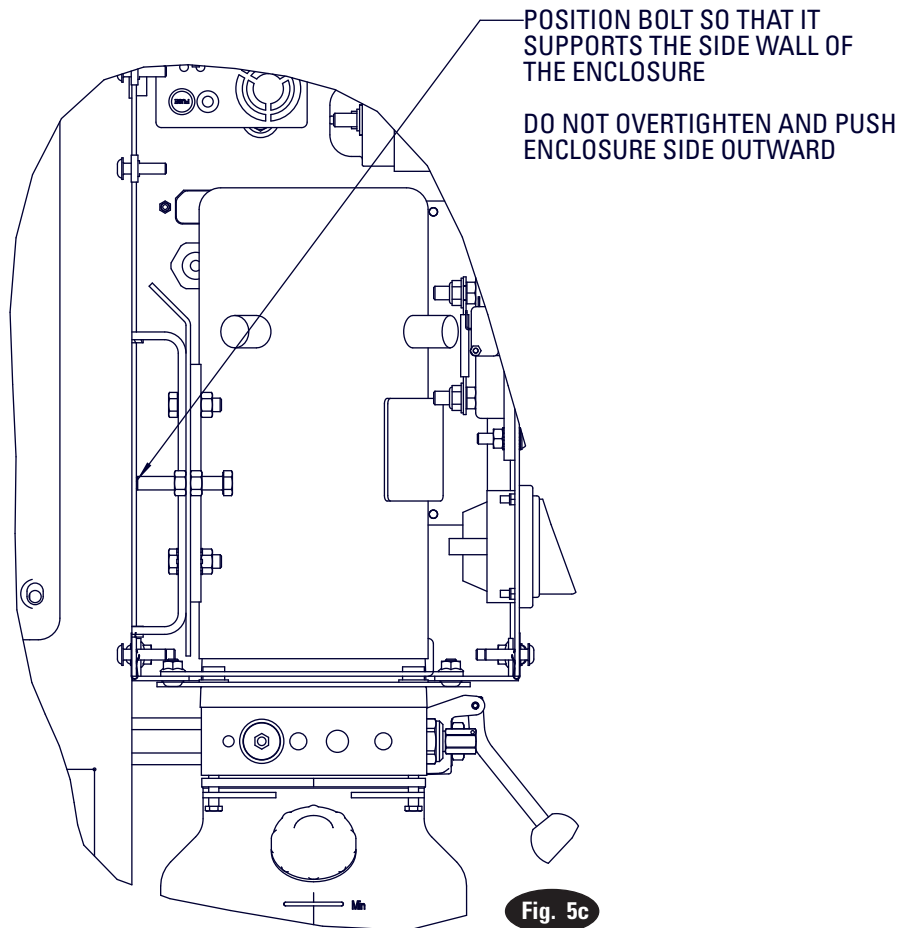




**Fig. 5b**

5/16"-18NC x 1-1/2" FULL THREAD BOLT

5/16"-18NC HEX NUTS



POSITION BOLT SO THAT IT SUPPORTS THE SIDE WALL OF THE ENCLOSURE

DO NOT OVERTIGHTEN AND PUSH ENCLOSURE SIDE OUTWARD

**Fig. 5c**

#### 4. DC Control Cabinet Bottom Bracket:

- a. Secure bottom of DC control cabinet by mounting it to the side of the column using the included brackets. Fasten the back side of the cabinet to the column using the (2) angle brackets.
- b. Fasten the t-shaped bracket to the column, using the included longer (2) 3/8"-16NC x 1" long carriage bolts and (2) 3/8"-16NC flanged locknuts, Figure 6.

- c. Fasten the remaining bracket to the back of the cabinet using the included (2) 5/16"-18NC x 1" long bolts, (4) 5/16" USS flat washers and (2) 5/16"-18NC flanged locknuts, Figure 6.
- d. Attach the two brackets to each other using included (2) 5/16"-18NC x 1" long bolts, (2) 5/16" USS flat washers and (2) 5/16"-18NC flanged locknuts, Figure 6.
- e. Re-attach the lower cover with the same 1/4"-20NC button head cap screws and flanged locknuts, Figure 5.

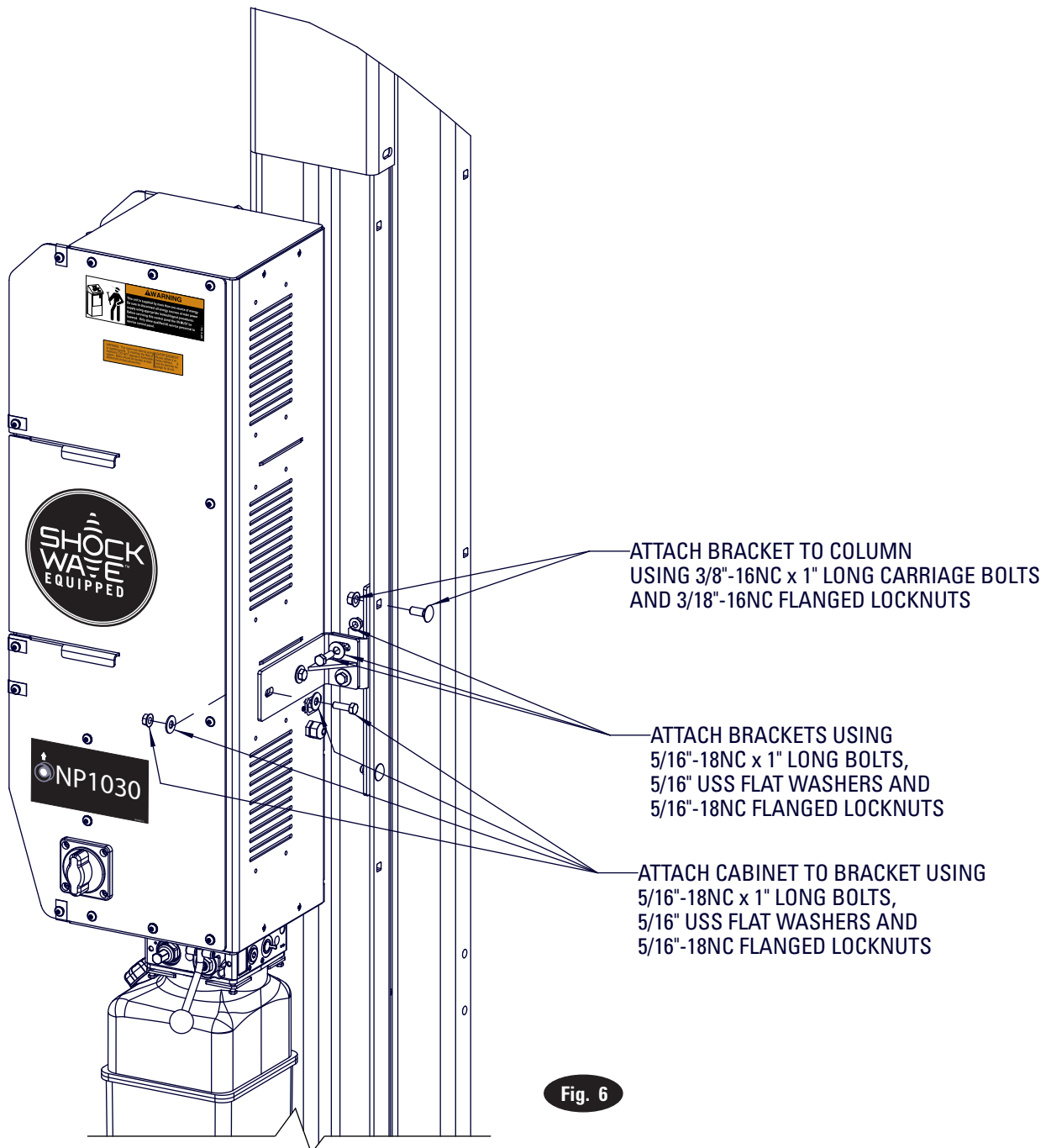


Fig. 6

5. **Group 24 Batteries:** (2) 12 volt group 24 car batteries are required to operate the lift and are not included. The batteries must be mounted inside the cabinet using the included battery trays, Figure 7.

Recommended Battery Specifications		
	Normal Operation and Life	High Use (15 minutes or less between lift cycles) or increase in life under normal use
Battery Type	Standard Lead Acid	Absorbed Glass Mat (AGM) Technology
Voltage	12V	12V
Size	Group 24	Group 24
Cold Cranking Amps	525	710
Terminal Location	Top	Top
<b>Note:</b> If a single battery fails during use the system should be evaluated to determine if the second battery should be replaced at the same time to avoid down time at a later date due to issues with the battery.		

## 6. DC Control Cables:

**CAUTION** Before making electrical connections, verify the red disconnect switch on the side panel is in the **OFF** position.

- A) Fasten the “A” labeled terminal end of the FA9190-8 cable to the positive terminal of the motor, Fig. 7 and Fig. 7a. Fasten the other end of FA9190-8 cable to the empty motor contact terminal, Fig. 7b.
- B) Fasten the “B” labeled terminal end of the FA9190-12 red cable to the “Battery” side of the disconnect switch. (Note: FA9190-12 black cable wired to ground from charger), Fig. 7b.
- C) Fasten the “C” labeled terminal end of the FA9190-6 red cable to the small right terminal contactor, Fig. 7b. (Note: FA9190-6 black cable wired to ground.)
- D) Attach battery post connectors to the positive and negative posts on both the top and bottom batteries, Fig. 7.
- E) Fasten the “D” labeled terminal end of the FA9190-9 cable to the positive post of the top battery, Fig. 7. The FA9190-9 cable is shipped connected to disconnect.
- F) Fasten the “E” labeled terminal end of the FA9190-7 cable to the negative post of the top battery, Fig 7.

G) Fasten the “F” labeled terminal end of the FA9190-7 cable to the positive post of the bottom battery, Fig 7.

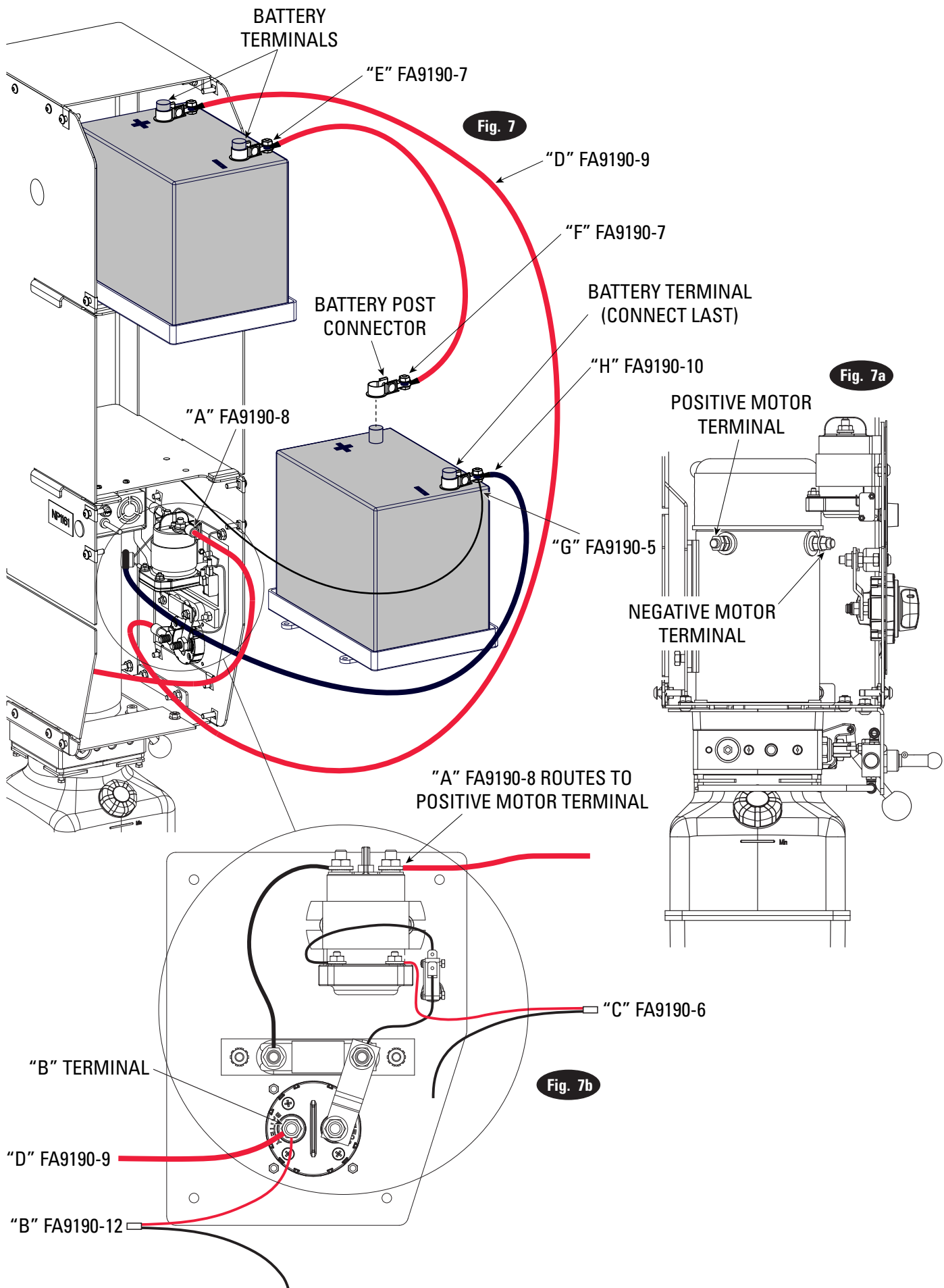
H) Fasten the FA9190-5 black cable to the negative post of the bottom battery, terminal “G”, Fig. 7. The opposite end is shipped connected to ground.

I) Fasten the “H” labeled terminal end of the FA9190-10 cable to the negative post of the bottom battery, terminal “H”, Fig. 7. Fasten the other end of the FA9190-10 cable to the negative motor terminal, Fig. 7a.

**CAUTION** This step must be completed last.

**CAUTION** When removing batteries always disconnect black FA9190-10 ground cable first.

J) Re-attach top and bottom cover, Fig. 8.





## 7. Hydraulic Fittings and Flow Control:

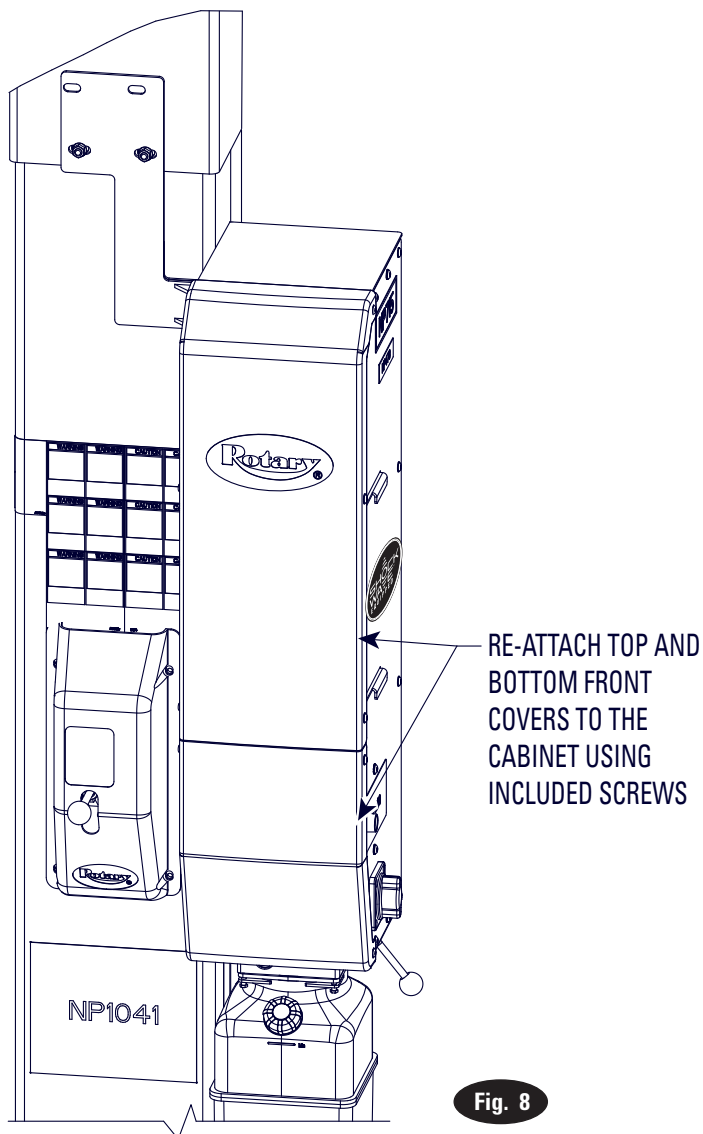
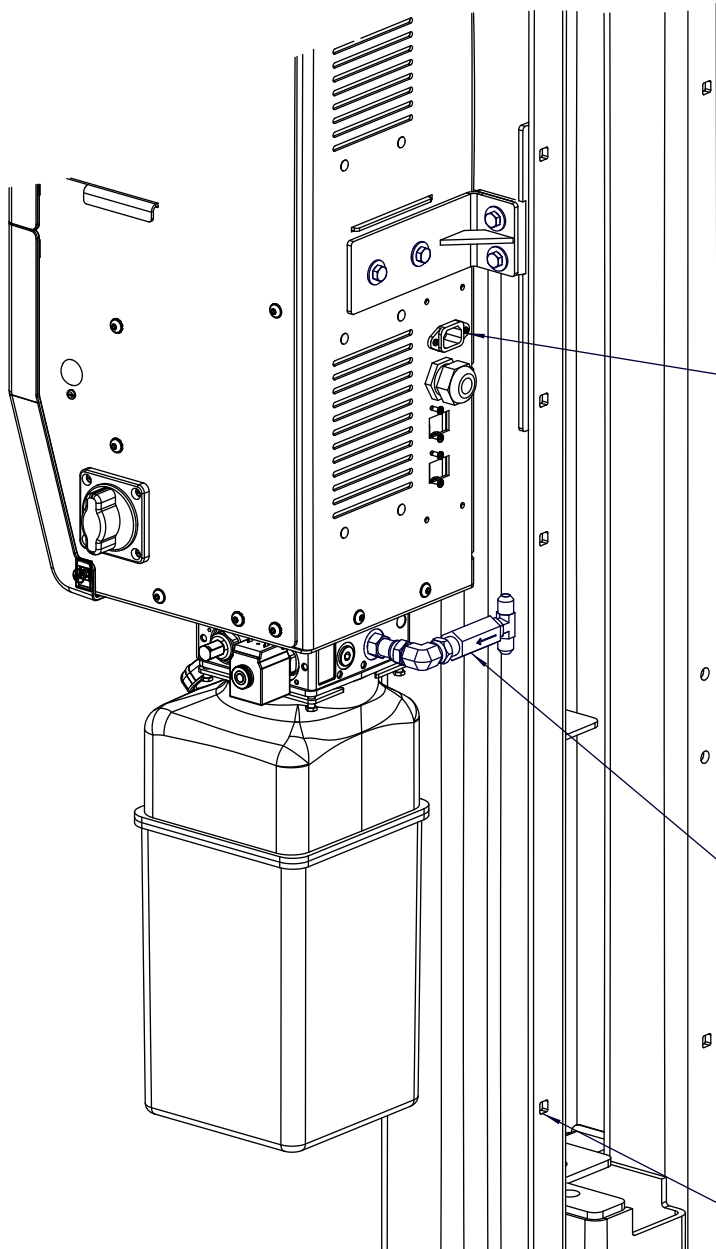


Fig. 8

- Attach the included straight thread adapter, swivel elbow, flow regulator and JIC tee, as shown in Figure 9. The straight thread adapter is inserted in the port on the power unit manifold. Torque fittings to 26 Ft-lbs.
- Route overhead hose from the top port of the JIC tee to the hydraulic cylinder inside the opposing column as shown in the standard lift instructions.
- Route power unit hose from the bottom of the JIC tee to the hydraulic cylinder located inside this column.
- Fasten the power unit hose to the column using the included  $\frac{1}{4}$ " hose clamp as shown in Figure 9. Make sure that the power unit hose is adjusted so that it doesn't rub the lift carriage when in the down position.

**IMPORTANT: Use the flared fittings tightening procedure included in the standard instructions.**



PLUG CHARGER CABLE INTO THIS RECEPTACLE AND ROUTE CHARGER CABLE AND OVERHEAD SWITCH CABLE UP TO THE TOP OF THE EXTENSION WITH OVERHEAD HOSE USING WIRE TIES

ATTACH STRAIGHT THREAD ADAPTER, SWIVEL ELBOW, FLOW REGULATOR AND JIC TEE AS SHOWN

ROUTE OVERHEAD HOSE FROM TOP PORT OF TEE TO HYDRAULIC CYLINDER ON OPPOSING COLUMN

ROUTE POWER UNIT HOSE FROM BOTTOM PORT OF TEE TO HYDRAULIC CYLINDER LOCATED IN THIS COLUMN

ATTACH POWER UNIT HOSE TO COLUMN HERE

**Fig. 9**

## 8. **Charger Cable & Overhead Switch Cable:**

- a. Plug the male end of the 10 foot charger cable into the receptacle on the back of the DC control cabinet.
- b. Route the charger and overhead switch cable to the top of the power unit column extensions by wire tying them to the overhead hose.

9. **Overhead Switch:** Connect the overhead switch cable to the overhead switch using the included wire nuts.

## 10. **Receptacle:**

- a. Mount the receptacle box to the extension directly above the DC control cabinet with the included #12-24NC x 3/4" long pan head machine screws and nuts, Figure 10. Be sure to mount #12 star washers to one mounting screw as shown in Figure 10. This is very important for grounding.
- b. Remove the hole punch covering the hole in the receptacle box than lines up with the hole in the extension. Mount the included 1/2" cord grip thru the hole in the extension and receptacle box.
- c. Mount the included ground wire hook terminal using the included green self-tapping ground screw through the grounding hole in the receptacle box.
- d. Fasten the receptacle to the receptacle box cover with the included fastener and the cover to the box with the included fasteners. The ears on the top and bottom of the receptacle may need to be

removed to allow it to fit inside the cover properly. Fasten the tinned end inside the ground terminal of the receptacle.

11. **Electrical:** Have a certified electrician run appropriate power supply to the 120 volt receptacles mounted at the top of the lift.

LIFT ELECTRICAL INPUT: 110-120 Volt, 60 Hz, 3.15 Amps

**Note: A separate circuit is not required for each ShockWave DC powerunit.**

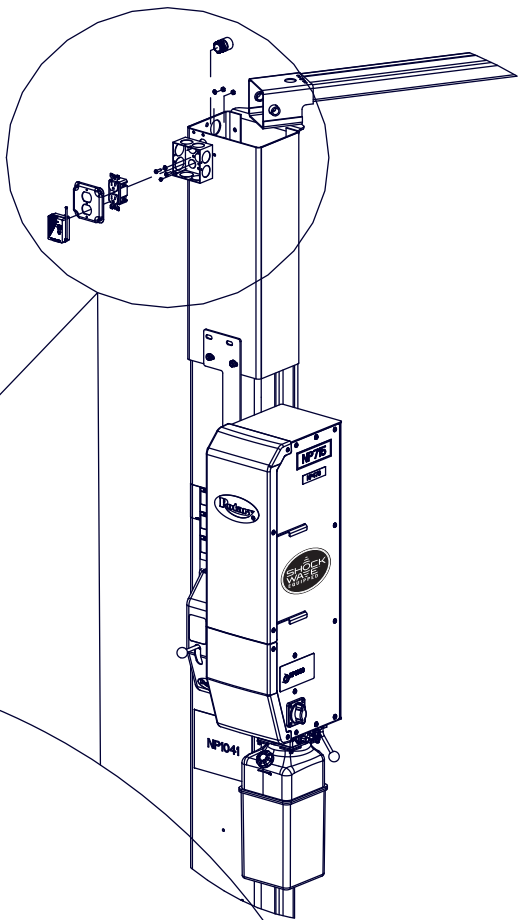
**CAUTION: Never operate the motor on line voltage. Motor damage may occur.**

12. **Laser Spotter:** Mount the laser using the instructions included with the laser spotting kit.

## 13. **Plug-in Laser and Charger:**

- a. Plug wireless receiver for the laser in the bottom receptacle and wire tie it to the receptacle box, Figure 10.
- b. Plug the charger cable into the top receptacle. Check to make sure the charger lights are on. If charger lights are not on, flip switch on back of charger.
- c. Plug the laser cable into the outlet on the bottom of the receiver.

14. **Close DC Control Cabinet:** Re-attach the front plastic covers to the DC control cabinet using the same button head cap screws, Figure 8.



**Fig. 10**

MOUNT RECEPTACLE BOX TO POWER UNIT COLUMN WITH INCLUDED #12-24NC X 3/4" LONG PHMS, AND #12-24NC NUTS. MOUNT #12 STAR WASHERS WITH ONE MOUNTING SCREW, AS SHOWN

MOUNT THRU HOLE IN EXTENSION. PUNCH OUT HOLE IN RECEPTACLE BOX THAT LINES UP WITH HOLE IN EXTENSION

PLUG CHARGER CABLE INTO TOP RECEIVER

FASTEN GROUND WIRE TO RECEPTACLE AND GROUND SCREW

PLUG LASER CABLE INTO RECEPTACLE ON BOTTOM OF RECEIVER

PLUG WIRELESS RECEIVER FOR LASER IN LOWER RECEPTACLE. WIRE TIE RECEIVER TO RECEPTACLE BOX.

## 15. Fluid Filling:

- a. System capacity is 19 quarts. Use Dextron III ATF, or hydraulic fluid that meets ISO 32 specifications.
- b. Remove fill-breather cap, Figure 8.
- c. Pour in 8 quarts of fluid.
- d. Bleed lift by cycling to full rise several times.
- e. Fully lower lift.

**IMPORTANT: Lift must be fully lowered before changing or adding fluid.**

- f. Add fluid to the power unit until it reaches the MIN\_\_\_\_ mark on the tank.
- g. Replace fill-breather cap.

**CAUTION: If fill-breather cap is lost or broken, order a replacement. Do not substitute with a solid plug.**

## 15. Base Plate Covers:

- a. Attach base plate covers as shown in Figure 11 (for SPOA10 and SPO10 models only). Make sure that the base covers engage the column forming and are slid downward until it sits on the floor.

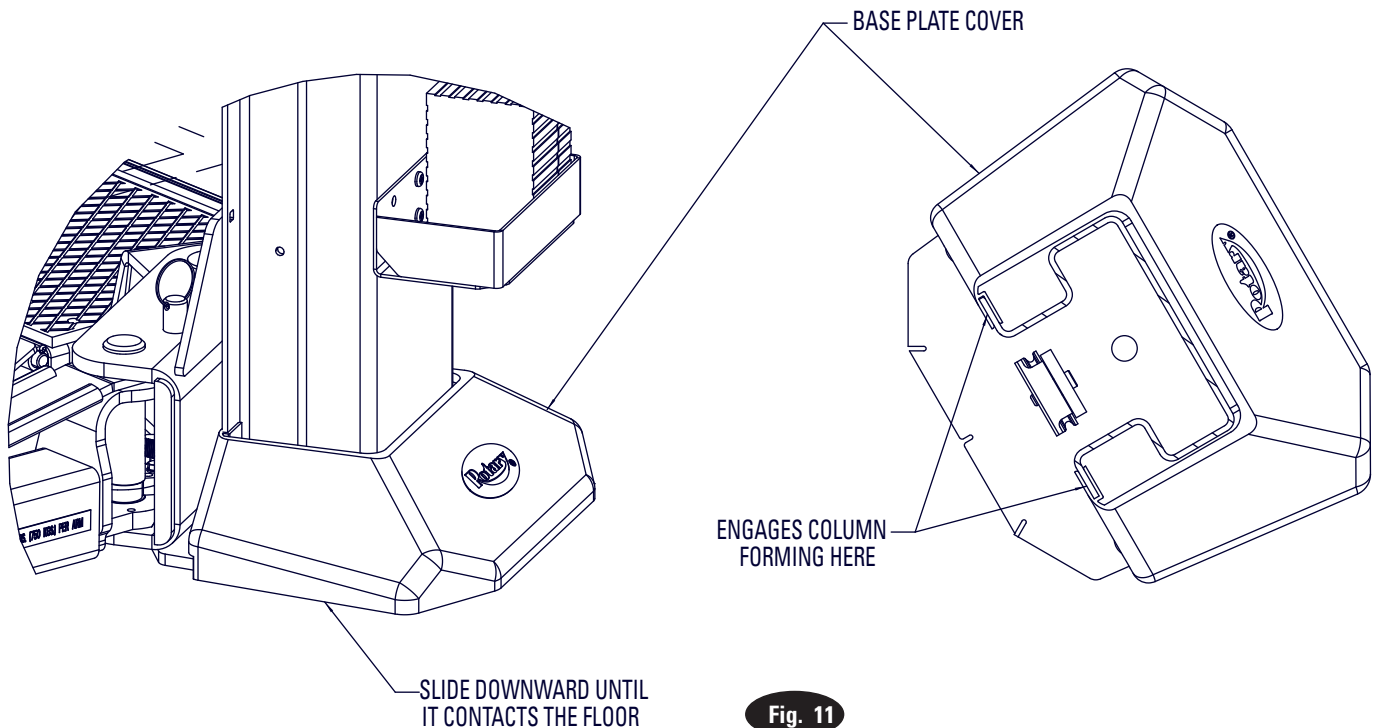
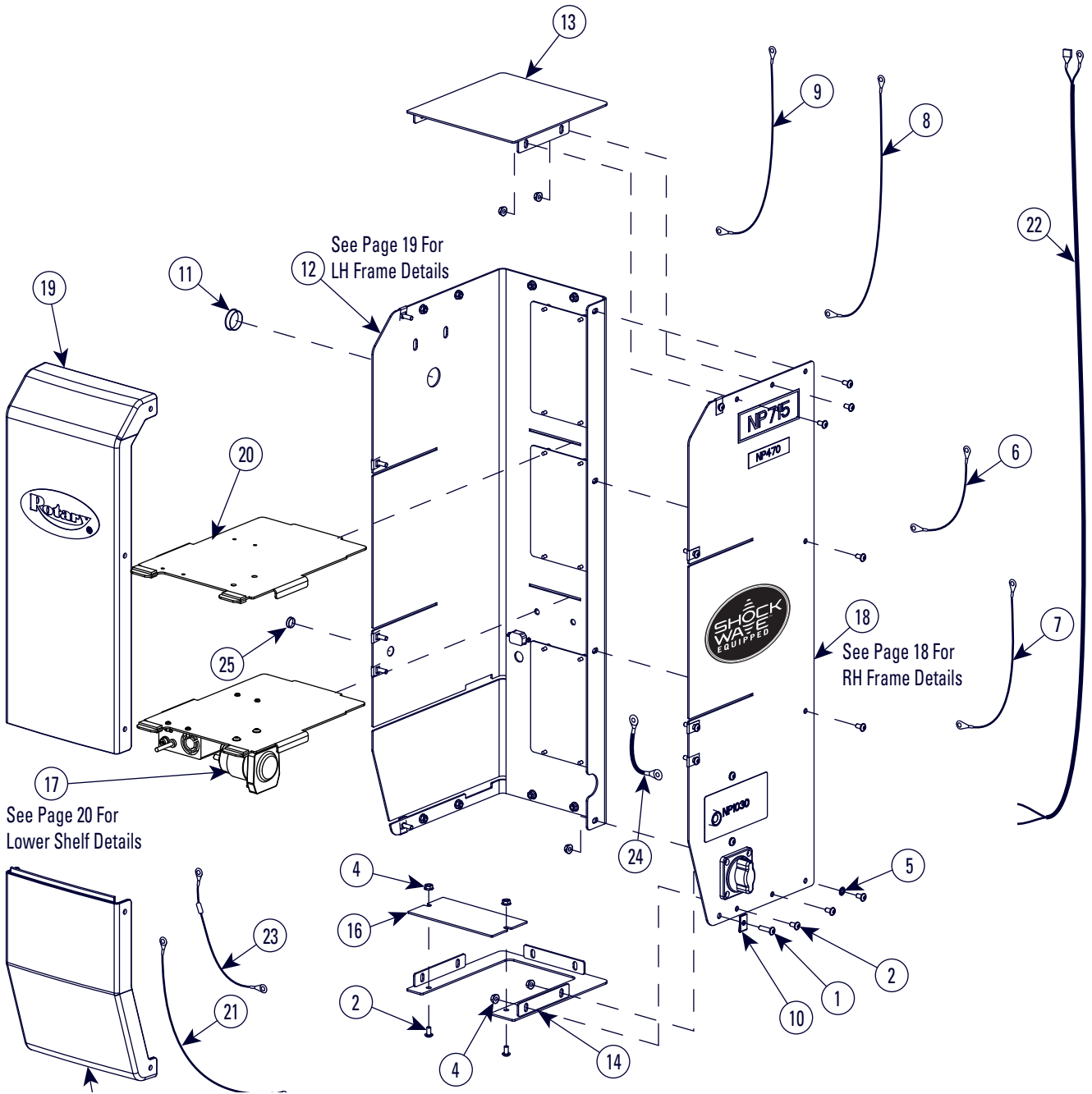


Fig. 11



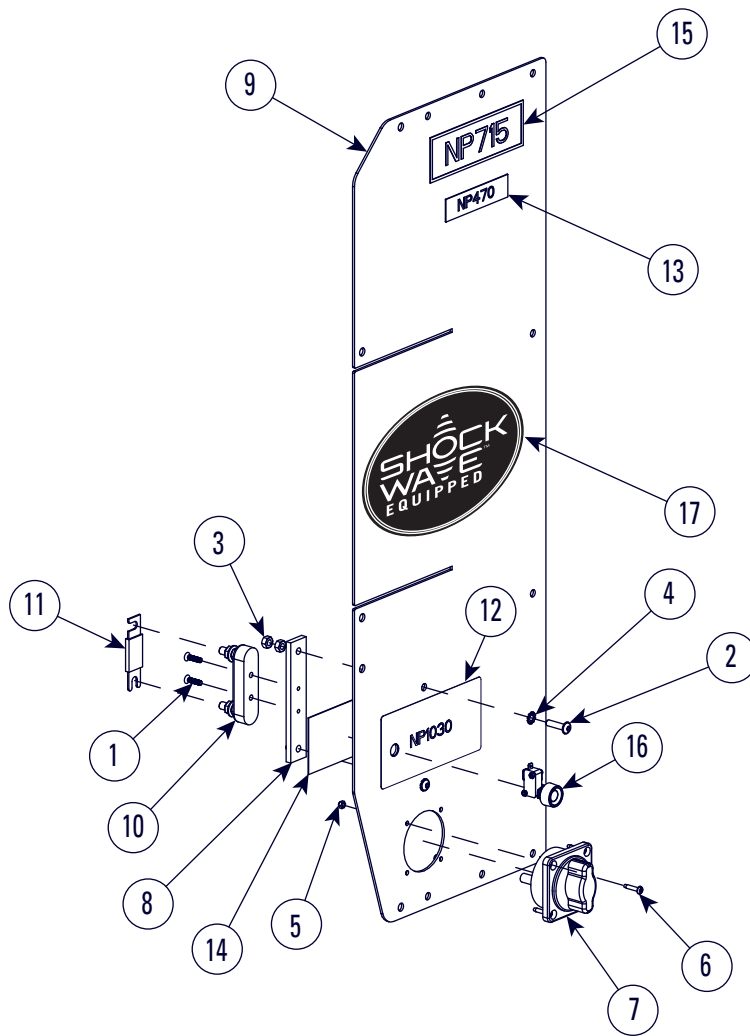
ITEM	PART NO.	DESCRIPTION
1	40167	3/8"-16NC x 1" Lg. CAR. BOLT, Gr. 5, PLTD.
2	40217	5/16" USS FLAT WASHER, PLTD
3	40221	5/16"-18NC x 1" Lg HHCS, GRD5 PLTD
4	40650	#12-24NC HEX NUT, PLTD
5	40678	5/16"-18NC HEX FLGD WZLOCK NUT, PLTD
6	FA997-1	#10-32 x 1/4" Lg. HEX WHSFTS, PLTD, COLORED GREEN
7	41526	#12-24NC x 3/4" Lg. PHIL. PHMS, PLTD
8	41527	#12 EXT TOOTH LW, PLTD
9	629888	TY-RAP CABLE TIE, NYLON, BLACK, 11 1
10	EFX60010319	ADAPTER, STRAIGHT THREAD/ SWIVEL (ORB/ORFS 6X6)
11	FA7180-31	WIRE GROMMET
12	FA7189-14	3/8" NPT STRAIN RELIEF
13	FA7189-15	3/8" NPT LOCKNUT
14	FA7616	BATTERY-BATTERY CABLE
15	FA7958-28	CORD GRIP
16	FA997	JUNCTION BOX
17	FA966	DC CONTROL ASSEMBLY
18	FA966-16	BATTERY TRAY
19	FA966-47	BATTERY CABINET 2-POST SPLASH SHIELD
20	FA966-51	10FT UNIVERSAL POWER CORD (NEMA 5-15P TO IEC320C13)
	FA966-65	13FT UNIVERSAL POWER CORD (SPO12 EXTENDED HEIGHT MODELS ONLY)
21	FA966-55	BATTERY CABINET UPPER MOUNTING BRKT WELD
22	FA966-56	BATTERY CABINET MOUNTING BRKT WELD
23	FA966-57	BATTERY CABINET MOUNTING COLUMN BRKT WELD
24	FA979	POSITIVE BATTERY TERMINAL END
25	FA980-1	DUPLEX RECEPTACLE COVER 4" SQUARE BOX
26	FA980-2	DUPLEX FEMALE RECEPTACLE
27	FA980-3	GROUND WIRE
28	FA981	NEGATIVE BATTERY TERMINAL END
29	FJ71003	FLOW REGULATOR
30	FJ71007	MALE ORFS x FEMALE ORFS SWIVEL ELBOW
31	FJ7669	COLUMN HOSE CLAMP
32a	P3577	DC POWER UNIT - PAD LIFT
32b	P3579	DC POWER UNIT - ARM LIFT
32c	P3586	DC POWER UNIT - SPO12
33	N3151Y	HYDRAULIC CYLINDER
34	FJ7352-3	ADAPTER
35	N539	BASE PLATE COVER (FOR SPOA10 & SPO10 MODELS ONLY)
36	40271	5/16"-18NC x 1-1/2" HHCS FULL THREAD
37	40670	5/16"-18NC HEX NUT



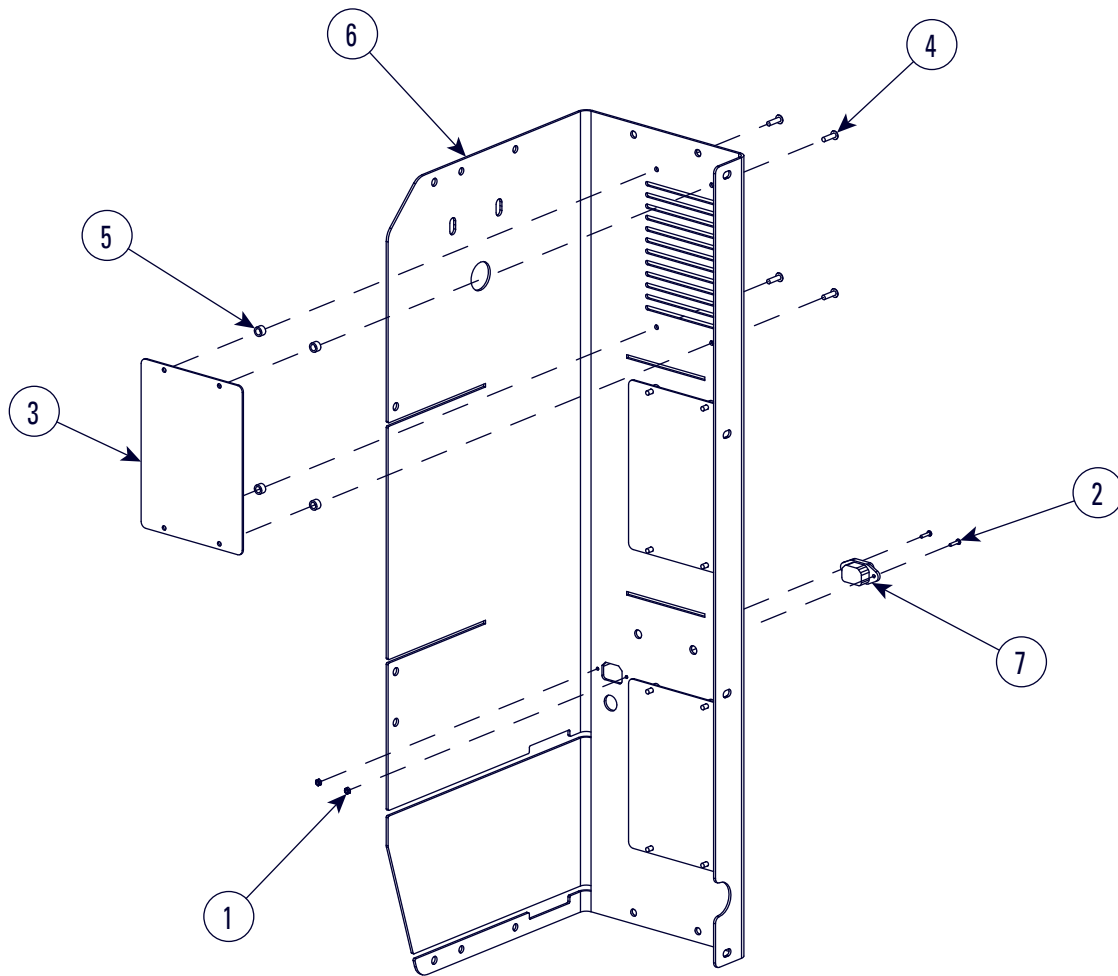
**DC CONTROL**



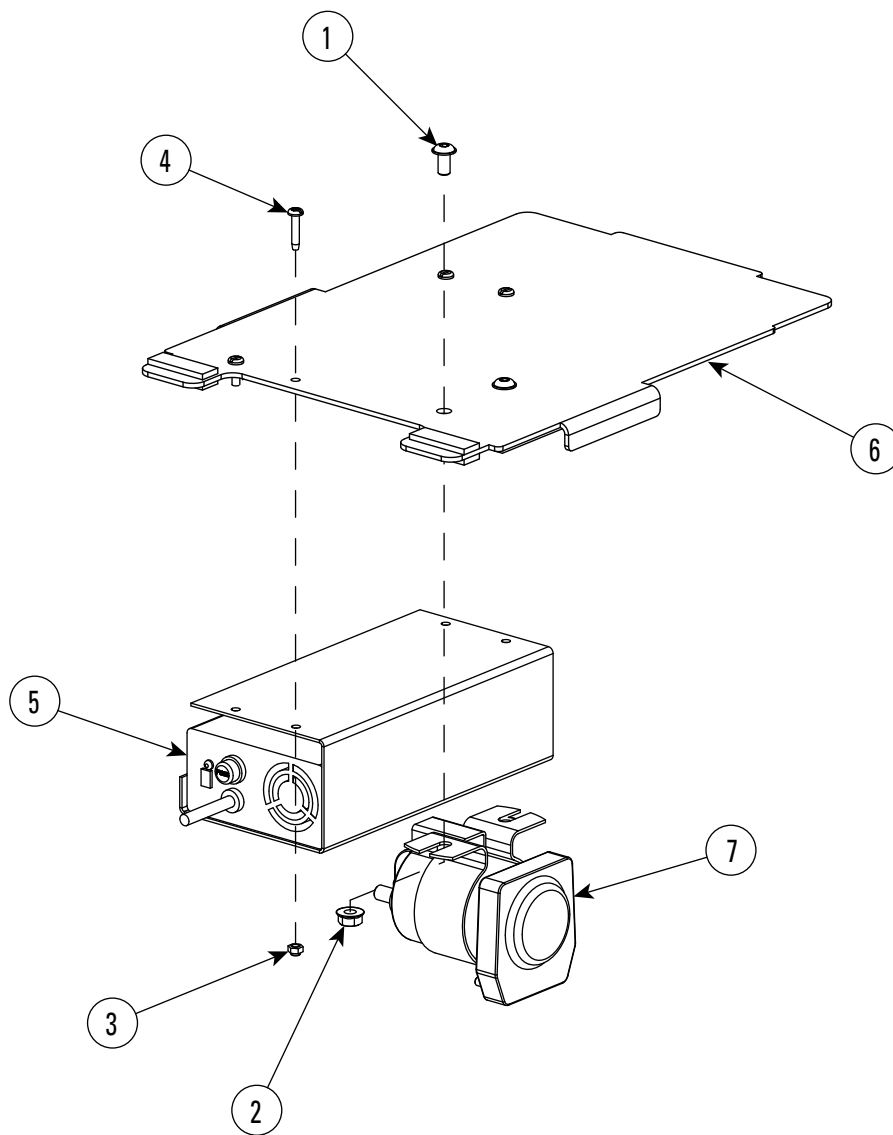
DC CONTROL		
ITEM	PART NO.	DESCRIPTION
1	40077	1/4"-20NC x 1" Lg FLGD HEX SOC BHCS, GRD2
2	40094	1/4"-20NC x 1/2" Lg FLGD HEX SOC BHCS
3	NA	NA
4	40641	1/4"-20NC HEX FLGD WZLOCK NUT, PLTD
5	40779	1/4" EXT TOOTH LW
6	FA7618	DISCONNECT-FUSE CABLE
7	FA7619	FUSE-CONTACTOR CABLE
8	FA7667	BATTERY-DISCONNECT CABLE
9	FA7668	BATTERY-MOTOR CABLE
10	FA966-22	CLIP-ON NUT
11	FA966-34	1-1/4" HOLE PLUG
12	FA966-37	BATTERY CABINET LH FRAME ASSY
13	FA966-39	BATTERY CABINET TOP COVER WELDMENT
14	FA966-42	BATTERY CABINET BOTTOM COVER WELDMENT
15	FA966-45	BATTERY CABINET FRONT BOTTOM COVER
16	FA966-46	BATTERY CABINET SMALL BOTTOM COVER
17	FA966-48	BATTERY CABINET LOWER SHELF ASSEMBLY
18	FA986-1	BATTERY CABINET RH FRAME ASSEMBLY
19	FA966-50	BATTERY CABINET FRONT TOP COVER ASSY
20	FA966-58	BATTERY CABINET SHELF WELD
21	FA970	CONTACTOR HARNESS
22	FA971	OVERHEAD HARNESS
23	FA978	DISCONNECT HARNESS
24	FA982	GROUND WIRE
25	FA966-60	TRANSPARENT HOLE PLUG



RIGHT HAND FRAME ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	40004	#10-24 x 5/8 PFHMS, McMASTWR-CARR # 90471A315 or EQUAL
2	40077	1/4"-20NC x 1" Lg FLGD HEX SOC BHCS, GRD2
3	40627	1/4"-20NC HEX NUT, PLTD
4	40779	1/4" EXT TOOTH LW
5	450957	#8-32NC NYLON LOCKNUTS
6	40022	#8-32NC X 1/2" Lg PHMS
7	FA7958-4	DC DISCONNECT SWITCH
	FA9256-1	ALTERNATE LOCKABLE DC DISCONNECT SWITCH
8	FA966-8	FUSE HOLDER MOUNTING BRACKET
9	FA986-10	BATTERY CABINET RH FRAME
10	FA975	FUSE HOLDER
11	FA975-1	350 AMP FUSE
12	NP1030	PUSH BUTTON NAMEPLATE
13	NP470	MOTOR LOCATION WARNING LABEL
14	NP692	NAMEPLATE
	NP1066	NAMEPLATE
15	NP715	NAMEPLATE
16	<a href="#">P1483</a>	<a href="#">LIMIT SWITCH ASSEMBLY</a>
17	NP1067	SHOCKWAVE DECAL



LEFT HAND FRAME ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	41628	#4-40 NYLON INSERT LOCKNUT MMC #90633A005
2	796443	#4-40 x 1/2 Lg. PHMS, PLTD
3	FA966-17	SPLASH SHIELD
4	FA966-18	DOME HEAD RIVET
5	FA966-21	SPACER
6	FA966-52	BATTERY CABINET LH FRAME FORMING
7	FA983	CHARGER INTERNAL POWER CORD



LOWER SHELF ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	40094	1/4"-20NC x 1/2" Lg FLGD HEX SOC BHCS
2	40641	1/4"-20NC HEX FLGD WZLOCK NUT, PLTD
3	450957	#8-32NC NYLON LOCK NUT
4	40022	#8-32NC x 1/2" LG. PHMS
5	FA966-62	24V 8A CHARGER ASSEMBLY
6	FA966-58	BATTERY CABINET SHELF WELD
7	<a href="#">FA976</a>	<a href="#">DC CONTACTOR</a>

# Smart Lift Installation

(See Page 2 For 2-Post Installation)

## 1. Power Unit & Cabinet Wall Mounting Brackets:

Use Figure 1 to locate and mount the power unit and cabinet wall mounting brackets to the wall using 3/8" wall anchors. Anchors must be able to hold 20 lbs of shear force.

**NOTE: If a pedestal is required to position the DC control and power unit in the desired location, the DC control pedestal, kit# T110606.**

## 2. Power Unit:

- Put the (4) 5/16"-18NC x 1" HHCS thru holes in the power unit bracket and splash shield using push-nuts to hold in place, Figure 1.
- Mount power unit with motor up to the column bracket and install (4) 5/16" star washers and 5/16" nuts, Figure 2.

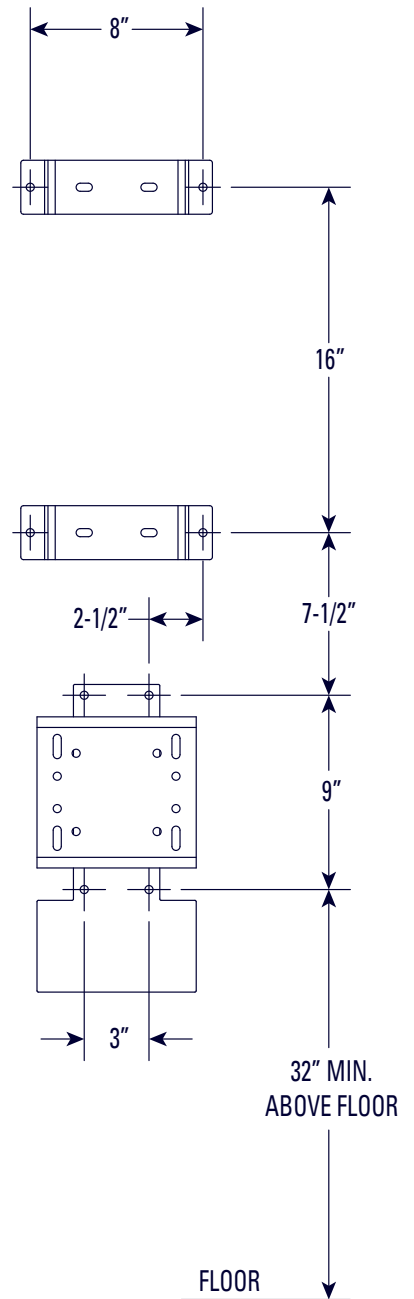


Fig. 1

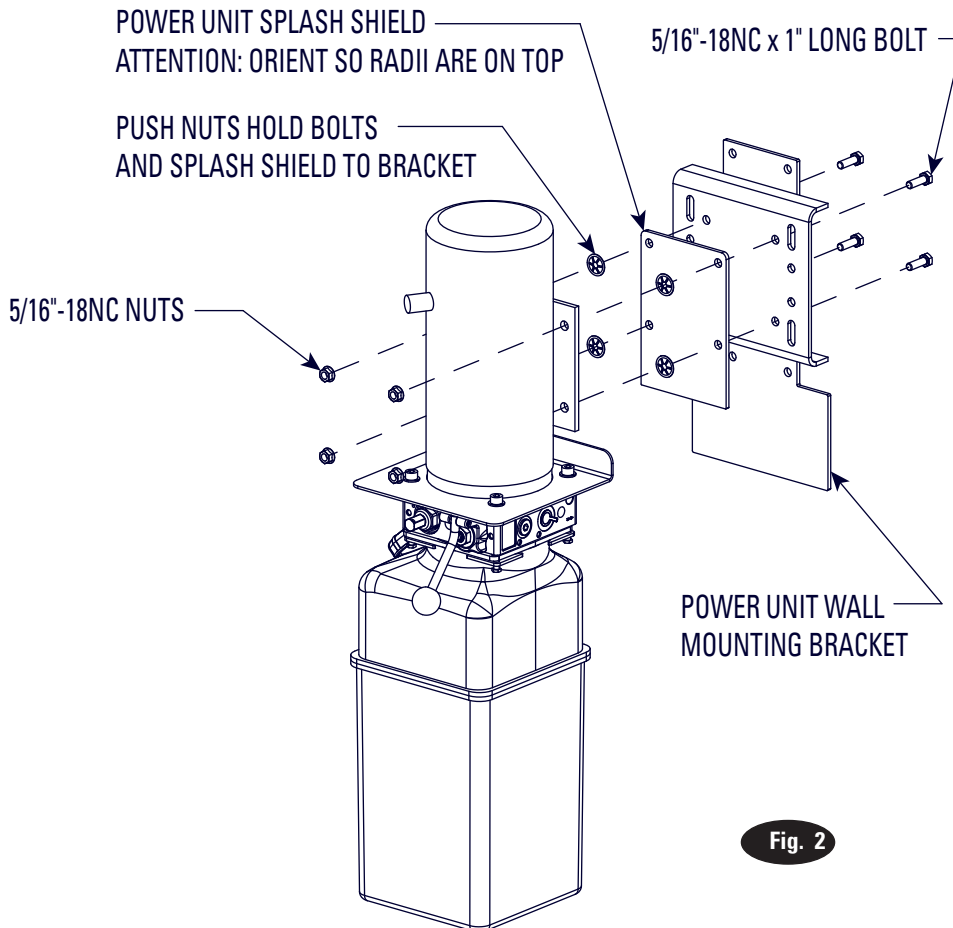
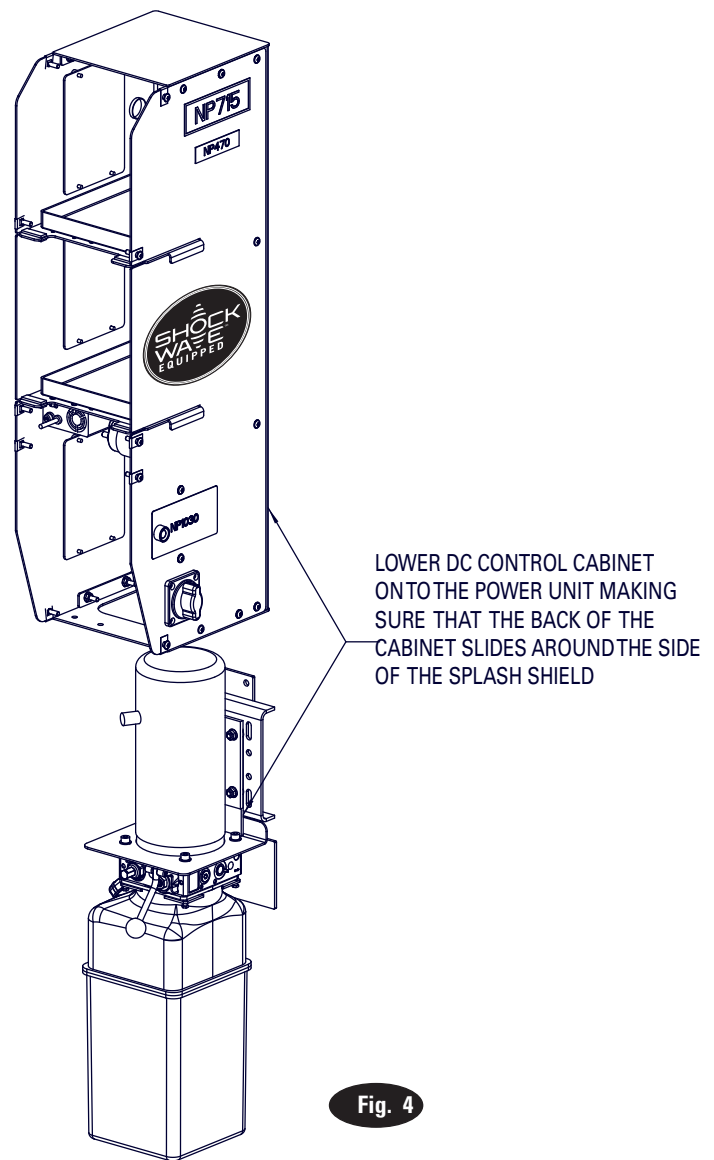
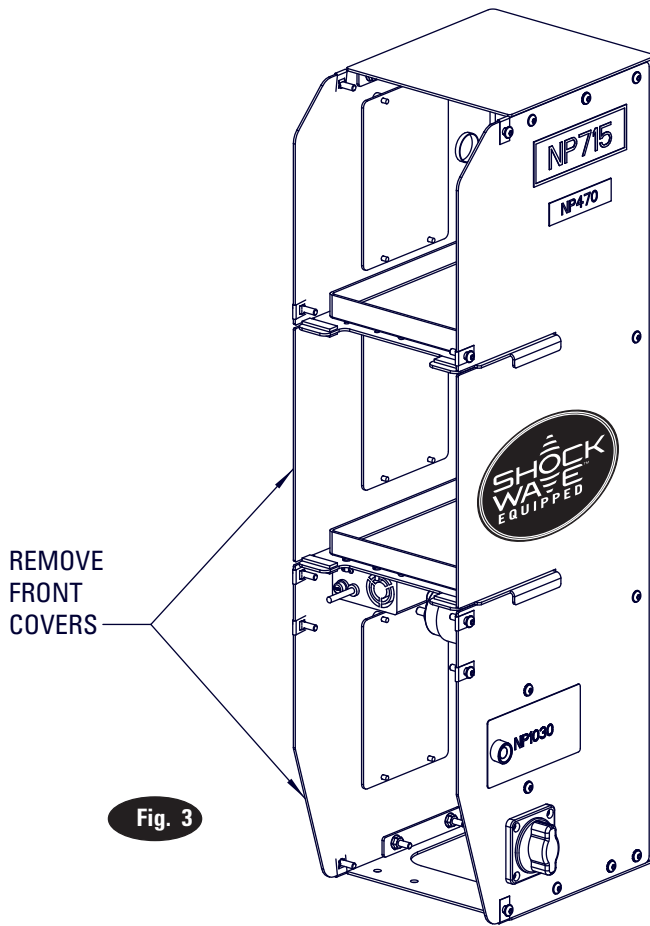


Fig. 2

### 3. DC Control Cabinet:

- a. First, remove front plastic covers and lower cover, Figure 3, and set aside to be reinstalled later.



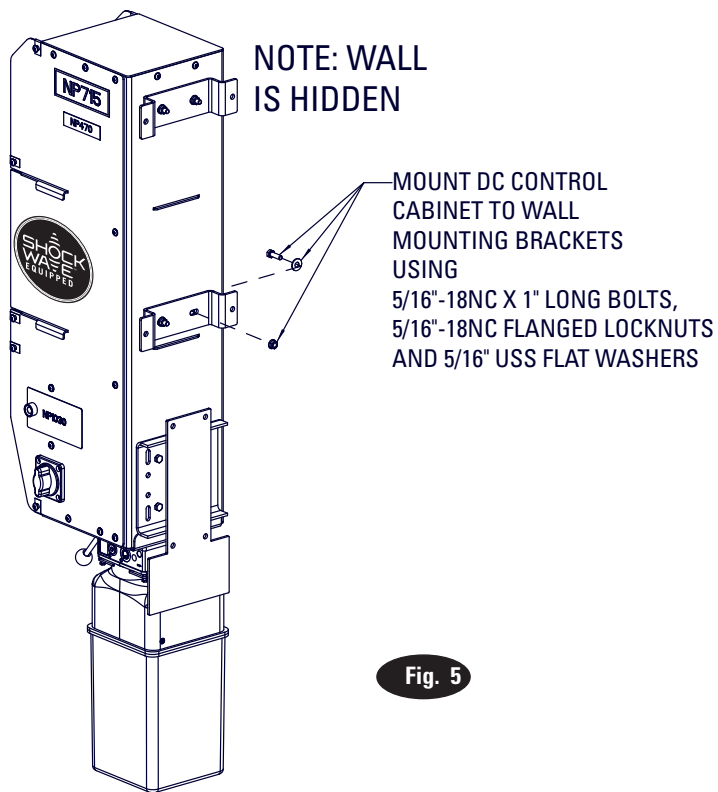
- b. Mount DC control cabinet by sliding the cabinet from the top of the power unit. Slide the back wall of the cabinet around the power unit splash shield that is mounted between the motor and power unit wall mounting bracket, Figure 4.

### 4. DC Control Cabinet Wall Mounting Brackets:

Secure the DC control cabinet by mounting it to the cabinet wall mounting brackets which were attached to the wall in step 1. Fasten the cabinet using the included (4) 5/16"-18NC x 1" long bolts, (4) 5/16" USS flat washers and (4) 5/16"-18NC flanged locknuts, Figure 5.

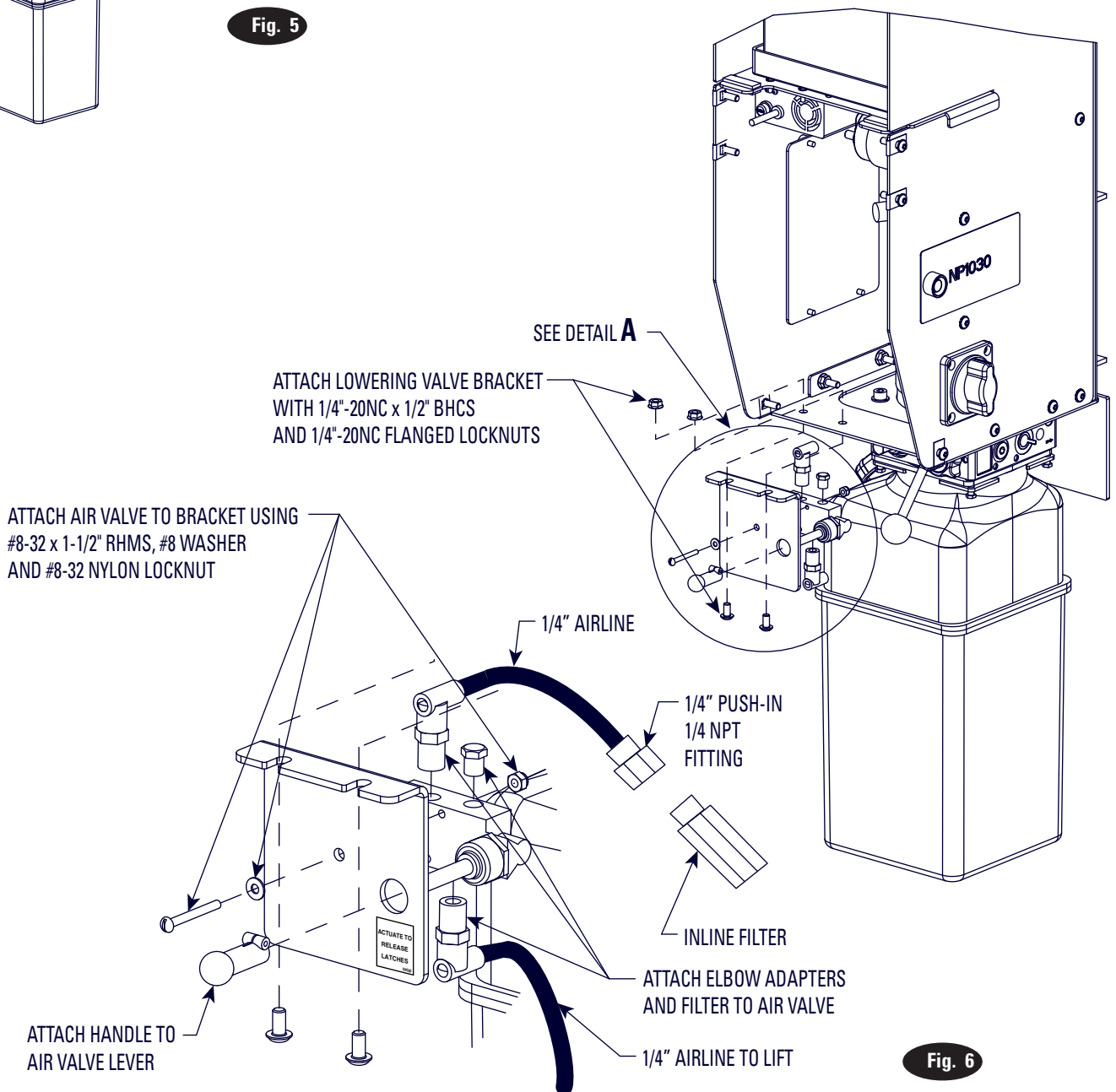
### 5. Lowering Valve Bracket:

- a. First, attach brass filter and swivel elbows to the air valve, Figure 6.
- b. Mount the air valve to the lowering valve bracket using the included #8-32NC x 1-1/2" screw, washer and nut. Attach the handle to the air valve lever.
- c. Next, attach the lowering valve bracket to the underside of the control cabinet, see Figure 6. Fasten the bracket using the included (2) 1/4"-20NC x 1/2" long button head cap screws and (2) 1/4"-20NC flanged locknuts, Figure 6.



**Fig. 5**

- d. Finally, fasten the NP280 label to the front of the bracket and connect the shop air supply with included in-line filter to latch release air valve brass elbow fitting, Figure 6.
- e. Run air line from elbow shown in Figure 6 to the lift using 1/4" polypropylene tubing with 300 psi working pressure. Run the air line through the 2" PVC pipe chase and connect to air-line attached to the vertical hose using push union.



**Fig. 6**

6. **Group 24 Batteries:** (2) 12 volt group 24 car batteries are required to operate the lift and are not included. The batteries must be mounted inside the cabinet using the included battery trays, Figure 7.

Recommended Battery Specifications		
	Normal Operation and Life	High Use (15 minutes or less between lift cycles) or increase in life under normal use
Battery Type	Standard Lead Acid	Absorbed Glass Mat (AGM) Technology
Voltage	12V	12V
Size	Group 24	Group 24
Cold Cranking Amps	525	710
Terminal Location	Top	Top
<b>Note:</b> If a single battery fails during use the system should be evaluated to determine if the second battery should be replaced at the same time to avoid down time at a later date due to issues with the battery.		

7. **DC Control Cables:**

- a. First, make sure that the disconnect switch is in the "off" position. Refer to Figure 7 and the wiring diagram on the inside of the top plastic cover while fastening the following cables and wires.
- b. Fasten the red FA7669 cable, shipped connected to the positive terminal of the motor, to the empty motor contactor terminal.
- c. Attach the red FA7667 cable, shipped connected to the disconnect to the positive terminal of the top battery using the included terminal connectors.
- d. Connect the red FA7616 cable to the negative terminal of the top battery and positive terminal of the bottom battery using the included terminal connectors.

- e. Connect the FA982 shipped connected to the ground post to the negative terminal of the lower battery using the included terminal connector.
- f. Connect the black FA7668 cable to the negative terminal of the motor and the negative terminal of the lower battery.

**CAUTION** Connect the black FA7668 cable to the motor last.

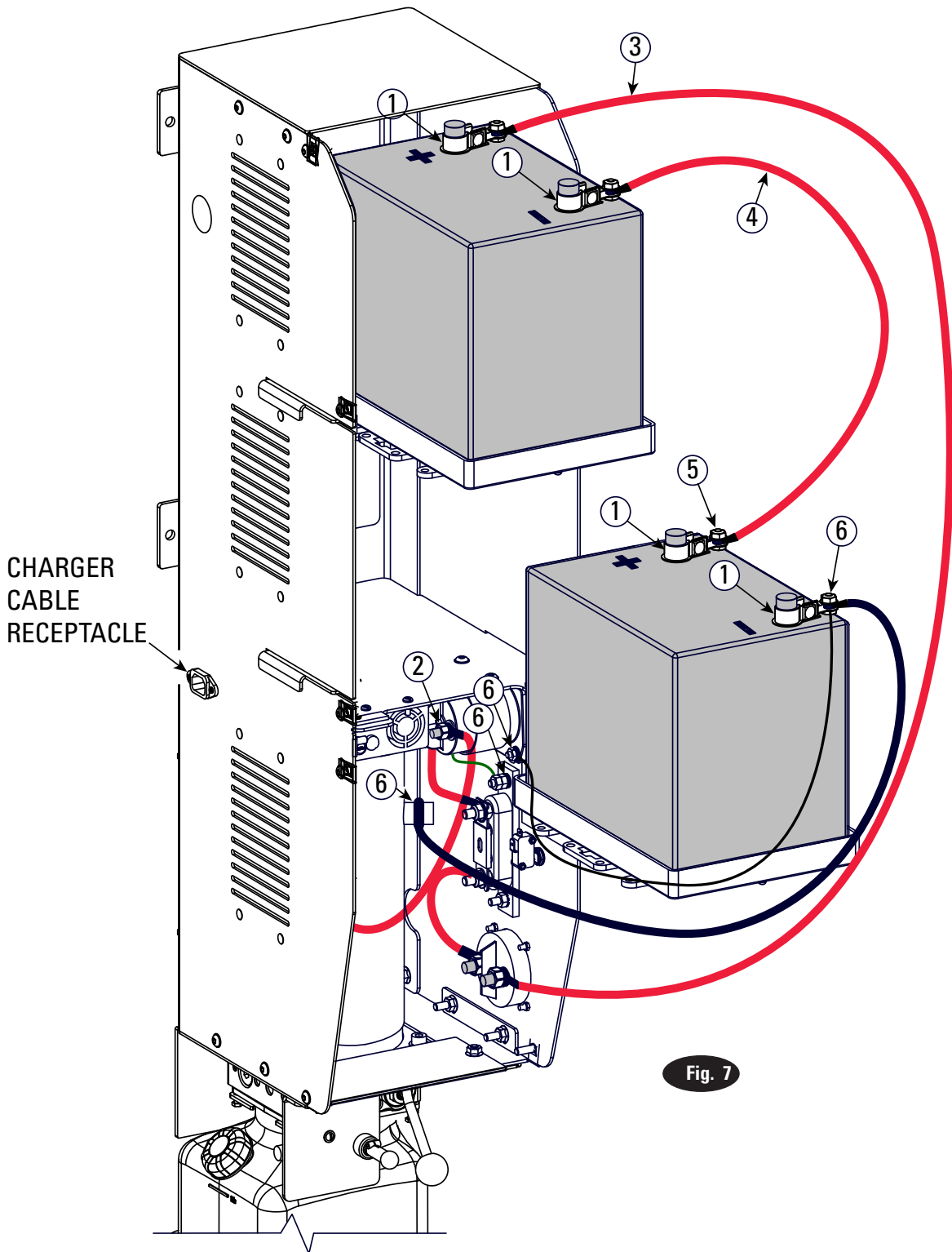
8. **Charger Cable:** Plug the male end of the 10 foot charger cable into the receptacle on the back of the DC control cabinet, Figure 7. Plug the other end into a 120 volt 15 amp receptacle. Check to make sure the charger lights are on. If charger lights are not on, flip switch on back of charger.

**CAUTION: Never operate the motor on line voltage. Motor damage may occur.**

**LIFT ELECTRICAL INPUT: 110-120 Volt, 60 Hz, 3.15 Amps**

Figure 7 Cable Connections	
Follow these steps in order: Note wires and cables are labeled with a part number.	
Step 1 - Balloon 1	Attach included terminal connections to battery posts
Step 2 - Balloon 2	Motor contactor: Red FA7669 Cable
Step 3 - Balloon 3	Top battery positive terminal: • Red FA7667 Cable
Step 4 - Balloon 4	Top battery negative terminal: • Red FA7616 Cable
Step 5 - Balloon 5	Bottom battery positive terminal: • Red FA7616 Cable
Step 6 - Balloon 6	Bottom battery negative terminal: • Black FA982 Wire • Black FA7668 Cable





9. **Close DC Control Cabinet:** Re-attach the front plastic covers to the DC control cabinet using the same button head cap screws, Figure 8.

10. **Laser Spotter:** Mount the laser using the instructions included with the laser spotting kit.

11. **Plug-in Laser:** Plug wireless receiver for the laser into a 120 volt 15 amp receptacle. Plug the laser cable into the outlet on the bottom of the receiver.

12. **Power Unit Hose:** connect the hose to the power unit using the included elbow adapter.

### 13. Fluid Filling:

a. System capacity is 19 quarts. Use Dextron III ATF, or hydraulic fluid that meets ISO 32 specifications.

b. Remove fill-breather cap, Figure 8.

c. Pour in 8 quarts of fluid.

d. Bleed lift by cycling to full rise several times.

e. Fully lower lift.

**IMPORTANT: Lift must be fully lowered before changing or adding fluid.**

f. Add fluid to the power unit until it reaches the MIN\_\_\_\_\_ mark on the tank.

g. Replace fill-breather cap.

**CAUTION: If fill-breather cap is lost or broken, order a replacement. Do not substitute with a solid plug.**

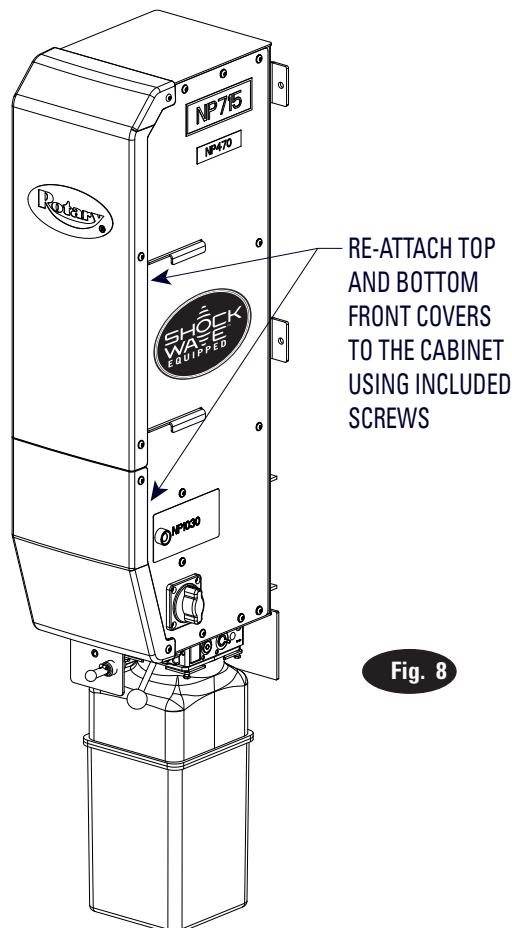
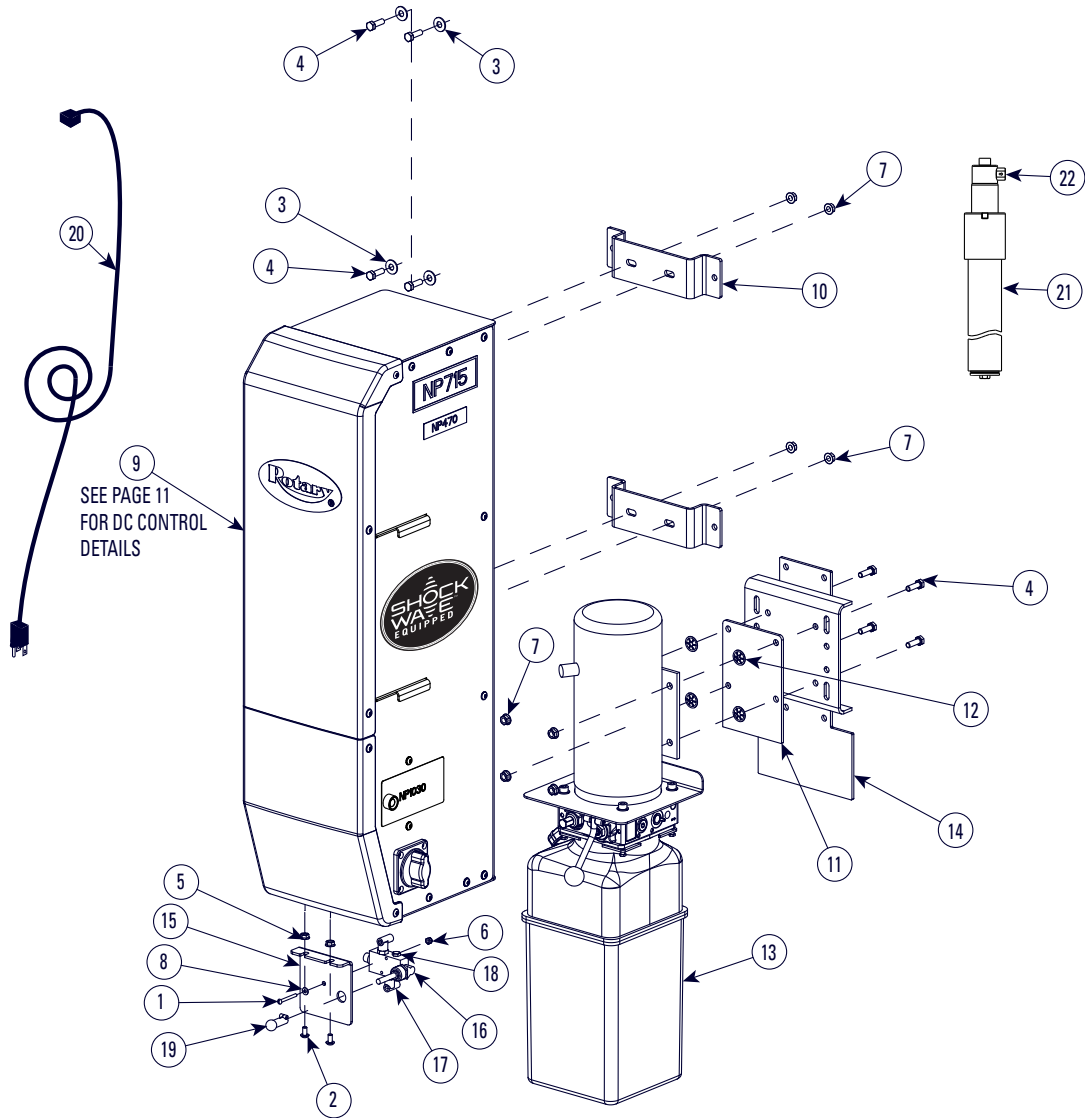


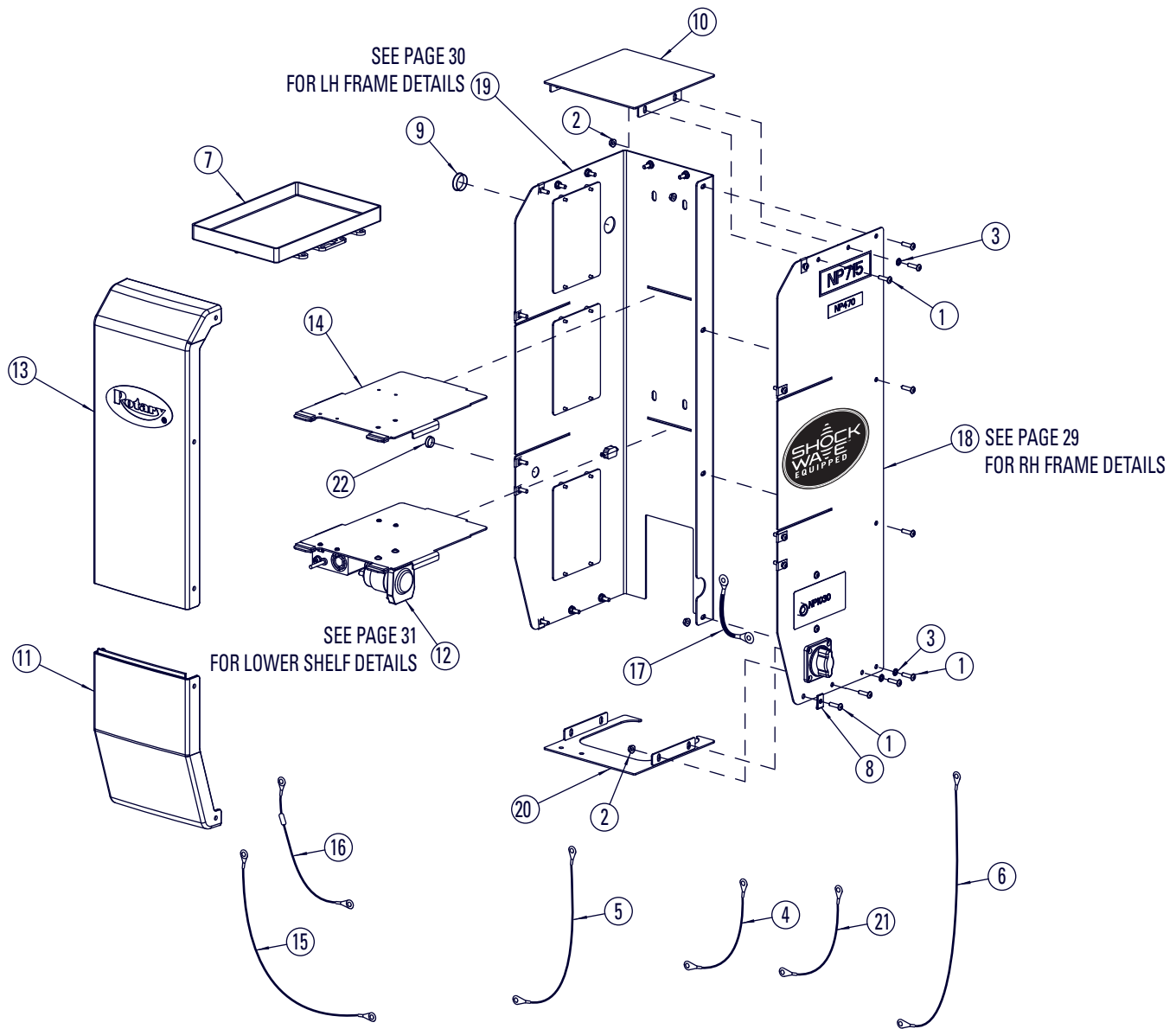
Fig. 8

# Smart Lift Parts Breakdown



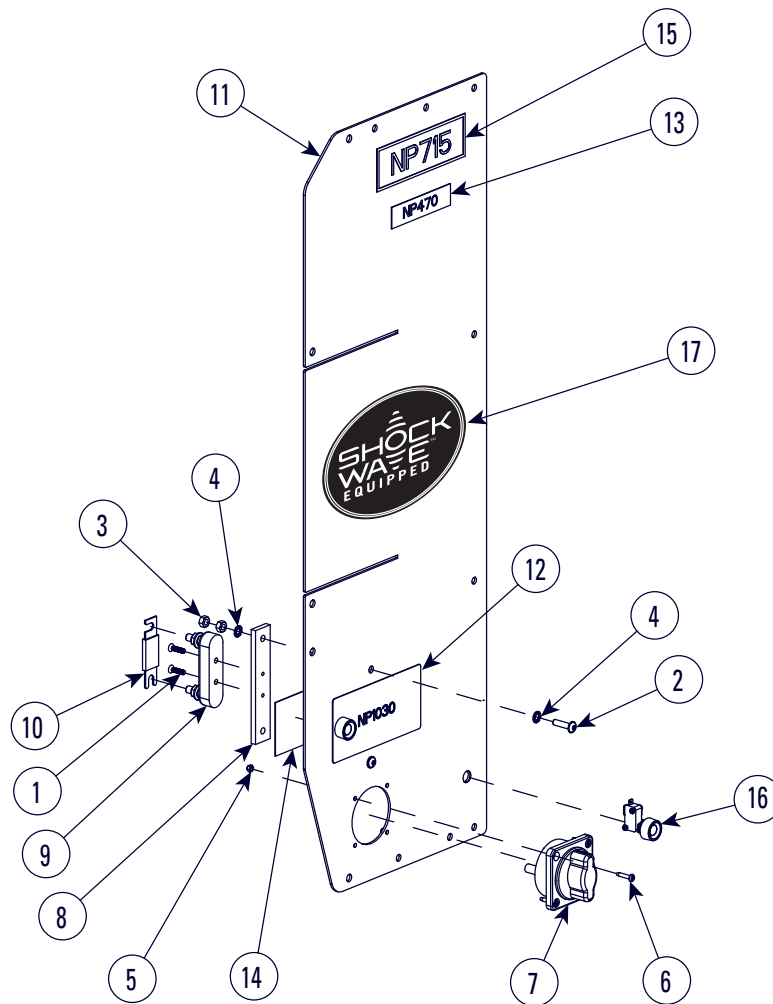
SMART LIFT DC CONTROL MOUNTING		
ITEM	PART NO.	DESCRIPTION
1	40007	#8-32NC x 1-1/2" SLOTTED RHMS
2	40094	1/4"-20NC x 1/2" Lg FLGD HEX SOC BHCS
3	40217	5/16" USS FLAT WASHER, PLTD
4	40221	5/16"-18NC x 1" Lg HHCS, GRD5 PLTD
5	40641	1/4"-20NC HEX FLGD WZLOCK NUT, PLTD
6	40649	#8-32NC HEX NYLON INSERT LOCKNUT
7	40678	5/16"-18NC HEX FLGD WZLOCK NUT, PLTD
8	40788	#8 SAE FLAT WASHER
9a	FA986	SMART LIFT DC CONTROL ASSEMBLY
9b	FA9135	SMART LIFT DC CONTROL ASSEMBLY W/O LASER

10	FA986-7	SL BATTERY CABINET MOUNTING BRACKET
11	FA986-8	BATTERY CABINET BOTTOM COVER
12	FC5209	5/16 PUSHNUT PALNUT #PV312015
13a	P3578	DC POWER UNIT - ARM LIFT
13b	P3581	DC POWER UNIT - PAD LIFT
13c	P3579	DC POWER UNIT - SL212
14	T120020	P.U. WALL BRACKET
15	T130635	AIR VALVE BRACKET (DC)
16	T140073	AIR LOCK VALVE
17	T140074	ELBOW
18	T140075	BRASS FILTER
19	T140119	AIR LOCK VALVE HANDLE
20	FA966-51	10FT UNIVERSAL POWER CORD (NEMA 5-15P TO IEC320C13)
21	N3151Y	HYDRAULIC CYLINDER
22	N3128	FITTING

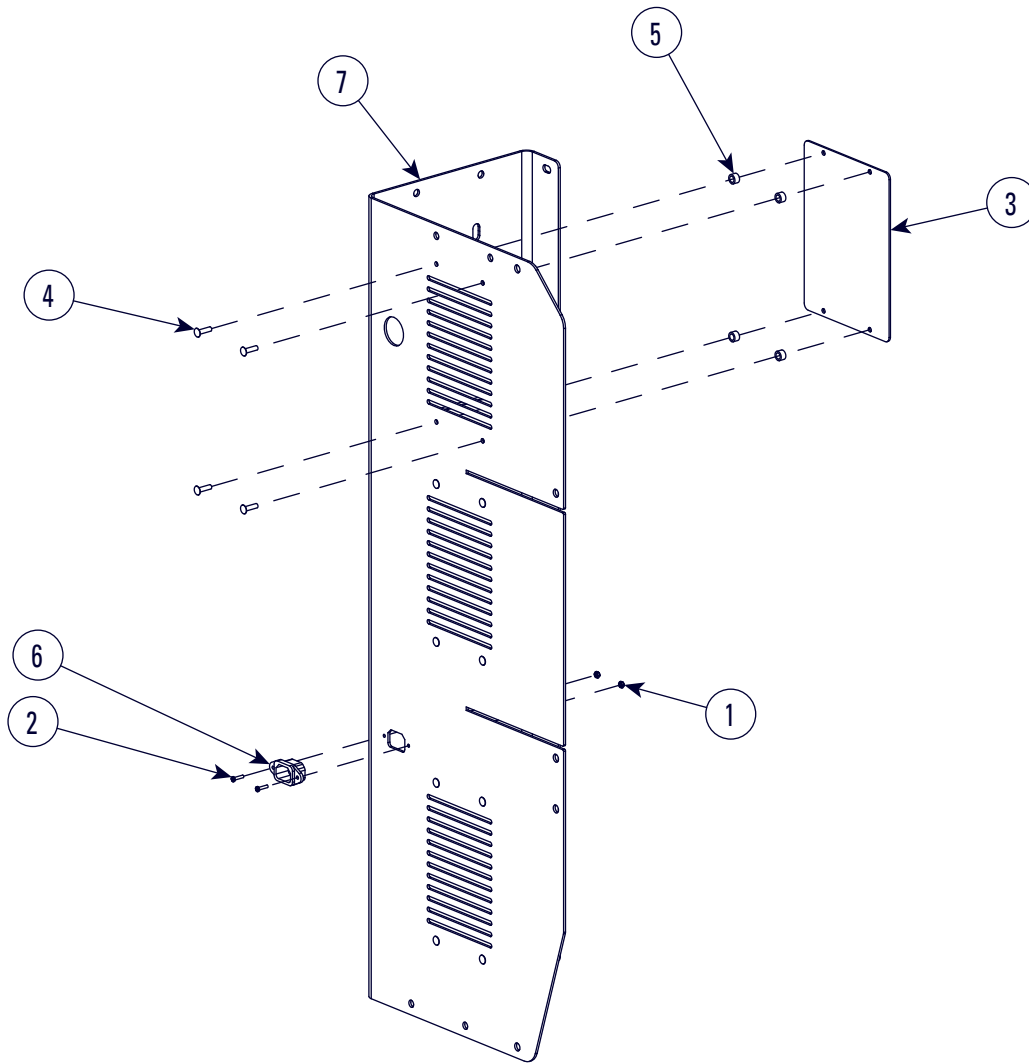


## SMART LIFT DC CONTROL

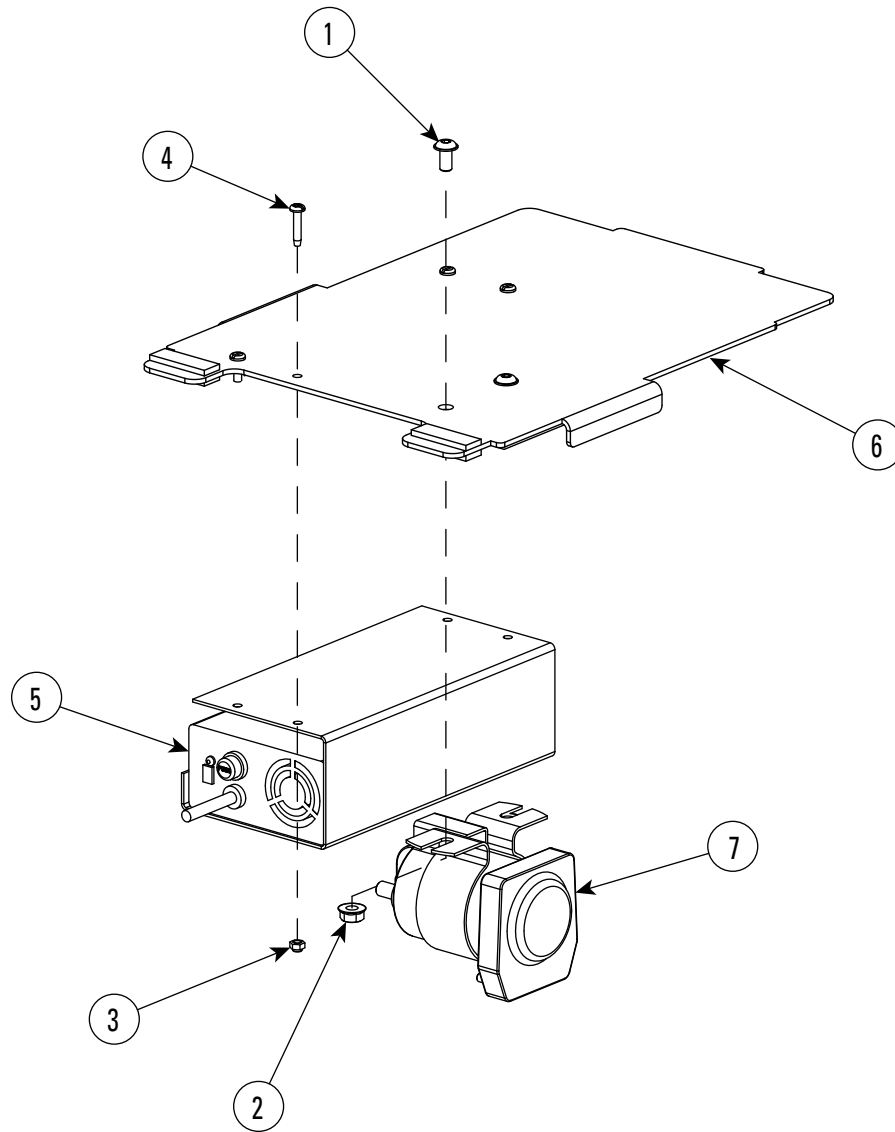
ITEM	PART NO.	DESCRIPTION	ITEM	PART NO.	DESCRIPTION
1	40077	1/4"-20NC x 1" Lg FLGD HEX SOC BHCS, GRD2	12	FA966-48	BATTERY CABINET LOWER SHELF ASSEMBLY
2	40641	1/4"-20NC HEX FLGD WZLOCK NUT, PLTD	13	FA966-50	BATTERY CABINET FRONT TOP COVER ASSY
3	40779	1/4" EXT TOOTH LW	14	FA966-58	BATTERY CABINET SHELF WELD
4	FA7618	DISCONNECT-FUSE CABLE	15	FA970	CONTACTOR HARNESS
5	FA7619	FUSE-CONTACTOR CABLE	16	FA978	DISCONNECT HARNESS
6	FA7667	BATTERY-DISCONNECT CABLE	17	FA982	GROUND WIRE
7	FA966-16	BATTERY TRAY	18	FA986-1	BATTERY CABINET RH FRAME ASSEMBLY
8	FA966-22	CLIP-ON NUT	19	FA986-2	SL BATTERY CABINET LH FRAME SUB-ASSY
9	FA966-34	1-1/4" HOLE PLUG	20	FA986-4	SL BATTERY CABINET BOTTOM COVER WELDMENT
10	FA966-39	BATTERY CABINET TOP COVER WELDMENT	21	FA986-11	SMART LIFT DISCONNECT HARNESS
11	FA966-45	BATTERY CABINET FRONT BOTTOM COVER	22	FA966-60	TRANSPARENT HOLE PLUG



SMART LIFT RIGHT HAND FRAME ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	40004	#10-24 x 5/8 PFHMS, McMASTWR-CARR # 90471A315 or EQUAL
2	40077	1/4"-20NC x 1" Lg FLGD HEX SOC BHCS, GRD2
3	40627	1/4"-20NC HEX NUT, PLTD
4	40779	1/4" EXT TOOTH LW
5	450957	#8-32NC NYLON LOCKNUT
6	40022	#8-32NC x 1/2" Lg PHMS
7	FA7958-4	DC DISCONNECT SWITCH
	FA9256-1	ALTERNATE LOCKABLE DC DISCONNECT SWITCH
8	FA966-8	FUSE HOLDER MOUNTING BRACKET
9	FA975	FUSE HOLDER
10	FA975-1	350 AMP FUSE
11	FA986-10	BATTERY CABINET RH FRAME
12	NP1030	PUSHBUTTON NAMEPLATE
13	NP470	MOTOR LOCATION WARNING LABEL
14	NP692	NAMEPLATE
	NP1066	NAMEPLATE
15	NP715	NAMEPLATE
16	P1483	POWER UNIT SWITCH ASSEMBLY
17	NP1067	SHOCKWAVE DECAL



SMART LIFT LEFT HAND FRAME ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	41628	#4-40 NYLON INSERT LOCKNUT MMC #90633A005
2	796443	#4-40 x 1/2 Lg. PHMS, PLTD
3	FA966-17	SPLASH SHIELD
4	FA966-18	DOMED HEAD RIVET
5	FA966-21	SPACER
6	FA983	CHARGER INTERNAL POWER CORD
7	FA986-9	SL BATTERY CABINET LH FRAME



LOWER SHELF ASSEMBLY		
ITEM	PART NO.	DESCRIPTION
1	40094	1/4"-20NC x 1/2" Lg FLGD HEX SOC BHCS
2	40641	1/4"-20NC HEX FLGD WZLOCK NUT, PLTD
3	450957	#8-32NC NYLON LOCK NUT
4	40022	#8-32NC x 1/2" LG. PHMS
5	FA966-62	24V 8A CHARGER
6	FA966-58	BATTERY CABINET SHELF WELD
7	FA976	DC CONTACTOR

## DC Trouble Shooting

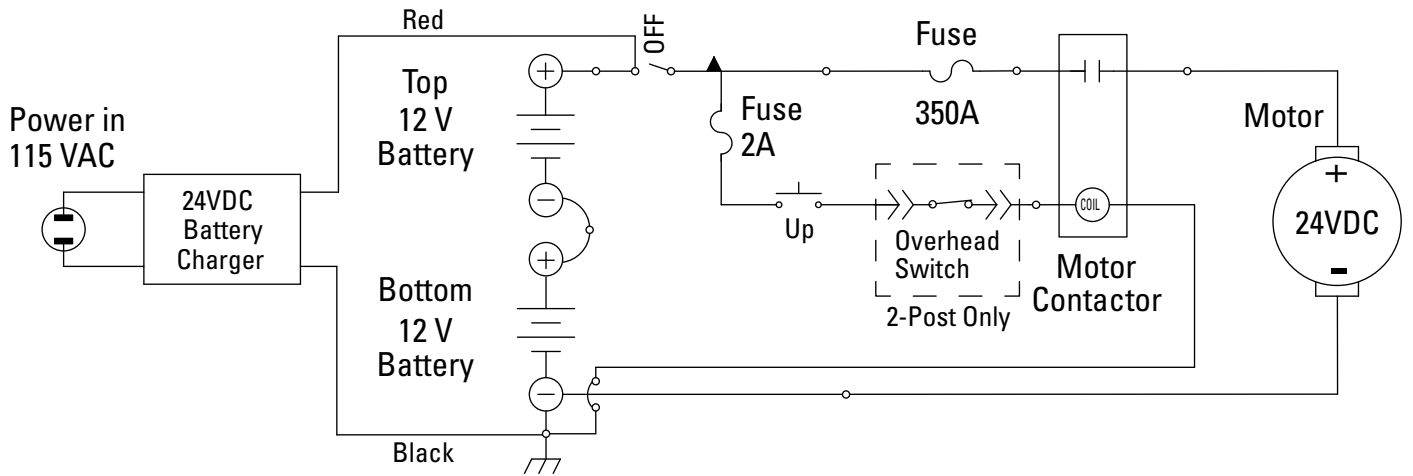
Trouble	Cause	Remedy
Lift stops short of full rise or slow raise speed.	<ol style="list-style-type: none"> <li>1. Low oil level.</li> <li>2. Air in hydraulic lines/cylinders</li> <li>3. Batteries not being charged (charger lights off)</li> <li>4. Batteries worn out</li> <li>5. Charger failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Fill tank to MIN__ mark with ISO AW 32 hydraulic oil or Dextron III ATF</li> <li>2. 2-Post: Start unit, raise lift about 2ft. Open cylinder bleeders 2 turns. Close bleeders when fluid streams. Lower lift and fill tank.</li> <li>3. Ensure that 110 volt power source is reaching control.</li> <li>4. Replace Batteries</li> <li>5. Replace fuse Replace charger</li> </ol>
Motor doesn't run.	<ol style="list-style-type: none"> <li>1. Disconnect switched <b>"OFF"</b></li> <li>2. Check overhead switch burned out</li> <li>3. 350 Amp fuse blown</li> <li>4. 2 Amp fuse blown</li> <li>5. Loose wire</li> <li>6. Batteries not being charged</li> <li>7. Batteries worn out</li> <li>8. Charger failure</li> </ol>	<ol style="list-style-type: none"> <li>1. Turn disconnect to <b>"ON"</b> position</li> <li>2. Replace switch</li> <li>3. Replace fuse</li> <li>4. Replace fuse</li> <li>5. Make sure wired properly</li> <li>6. Ensure 110 volt power source is reaching control (all plugs attached)</li> <li>7. Replace batteries</li> <li>8. Replace fuse Replace Charger</li> </ol>

## 2-Post Lowering Trouble Shooting

Trouble	Cause	Remedy
Lift won't lower	<ol style="list-style-type: none"> <li>1. Velocity fuse tripped</li> </ol>	<ol style="list-style-type: none"> <li>1. Raise lift to disengage velocity fuse and then press lower handle slowly</li> </ol>



# WIRING DIAGRAM



## NOTES

## NOTES

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