



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



513-0019: Dual Stage Pulltarp Tower



SuperShield™ 9500M



Open 9000M

607-0115

WLH 10/18/18

For technical support call us at (877) 861-6265 or visit our website at Pulltarps.com.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



TABLE OF CONTENTS

Assembly

Dual Stage Tower Systems

Mounting the Tower System	2
Hydraulic Pump Positioning	3
Installing the Hydraulic Pump	4-5
Attaching the Manual Control Box to the Tower	6-7
Connecting Control Box to Hydraulic Pump	8
Adding Hydraulic Fluid to Pump Reservoir	9
Installing Hydraulic Protective Cover	10

Ratchet & Rollertube Operation

Installing Tarp and Adding Spring Tension to Ratchet	12-13
Removing Spring Tension from Ratchet	14

Tower Operation

Extending & Retracting Tarp	16-18
-----------------------------------	-------

Maintenance

Hydraulic Pack, Oil Levels & Filtration	20
Recommended Scheduled Maintenance	21
Hydraulic Pack Diagnostics	22
Motor Check Out Procedure	23

Components

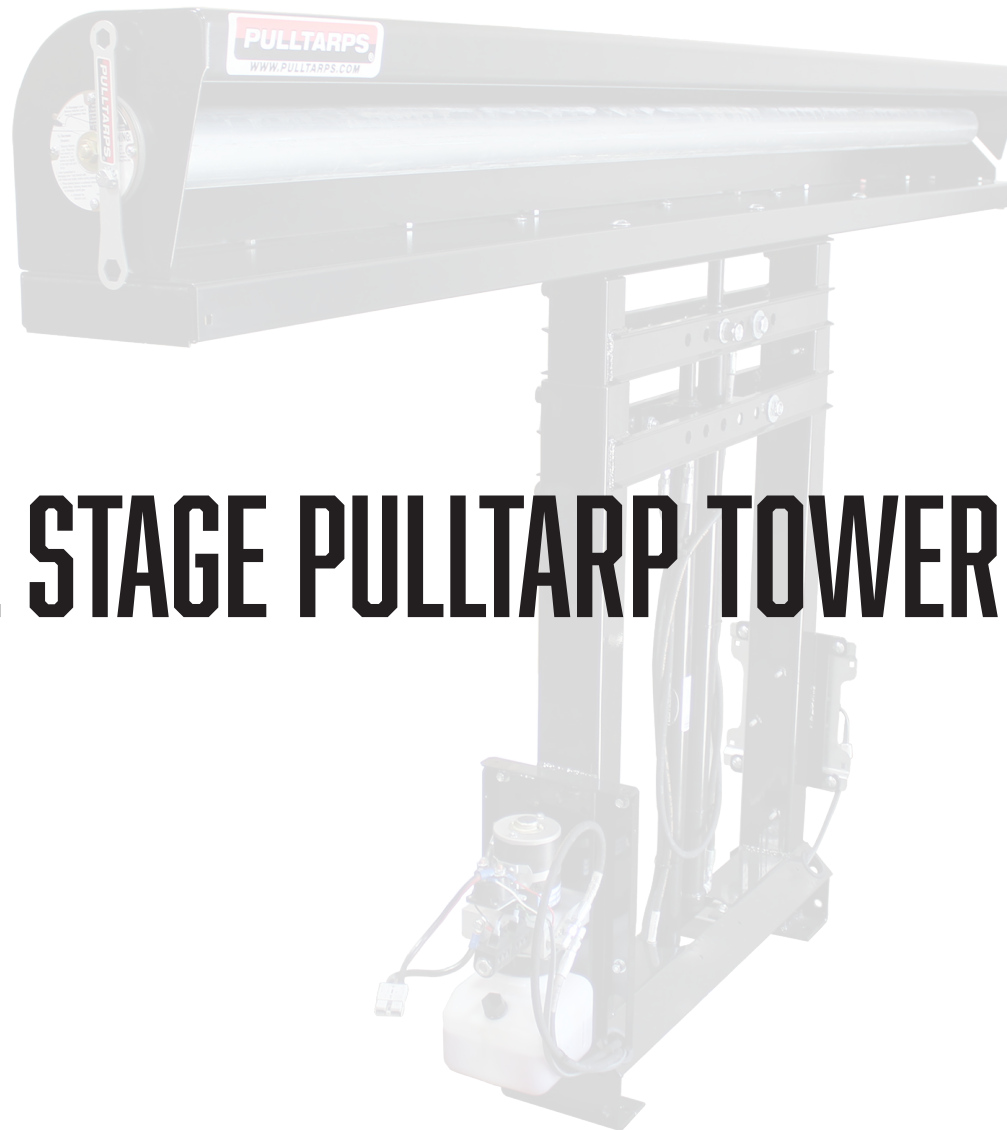
Parts

Dual Stage Pulltarp Tower - #513-0019	25
SuperShield™ 9500M 100" Tower Assy w/Tray - #513-0082	26
Open 9000M 102" Tower Assembly with Tray - #513-0073	27
Tower Tray Hardware Kit - #501-0687	28
105" Pullrod with Hardware - #501-0420	29



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower
Installation Instructions



DUAL STAGE PULLTARP TOWER SYSTEMS



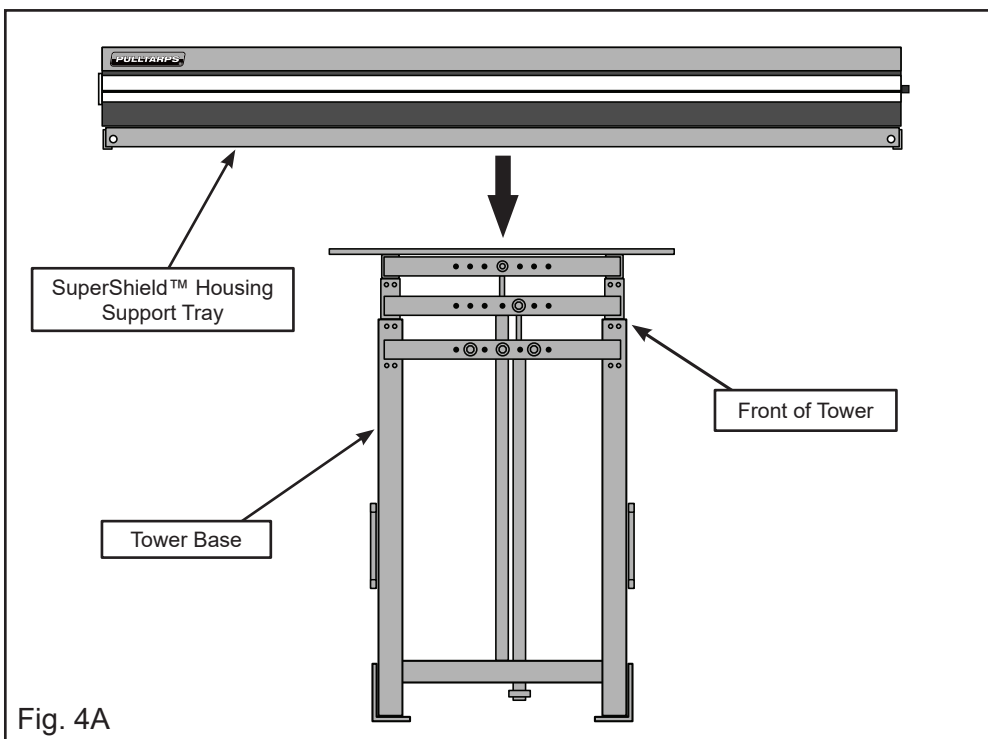
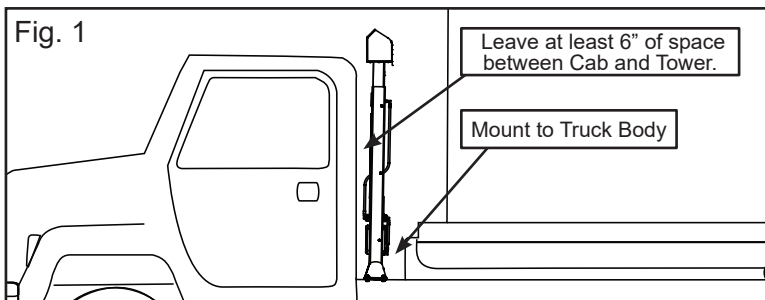
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



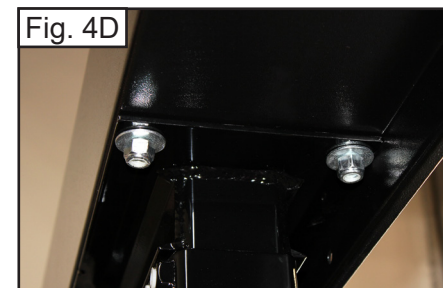
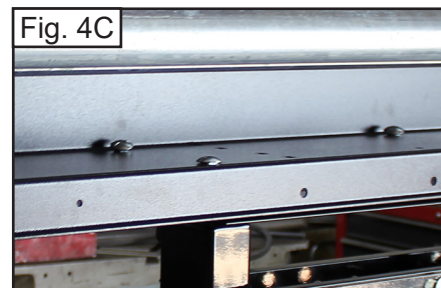
Mounting the Tower System

Step 1: Mount the Tower Base onto the Frame Rails and leave at least 6" of space between Cab and Tower (Fig. 1). Verify there is enough space between Cab and Tower. Mount with Weld Brackets (Fig. 2) or U-Bolt Brackets (Fig. 3).



Step 2: With a team member, lift the Housing & Support Tray then place on top of Tower Base. Secure with the supplied hardware (Fig. 4A through 4D).

Note: Make sure the Tower Base is level and secured before mounting.





1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Hydraulic Pump Positioning

Step 3: The pump for the **SuperShield™ 9500M** can be mounted on either side of the tower for Driver access (Fig. 5).

The pump for **Open 9000M** can also be mounted on either side of the tower for Driver access (Fig. 6).

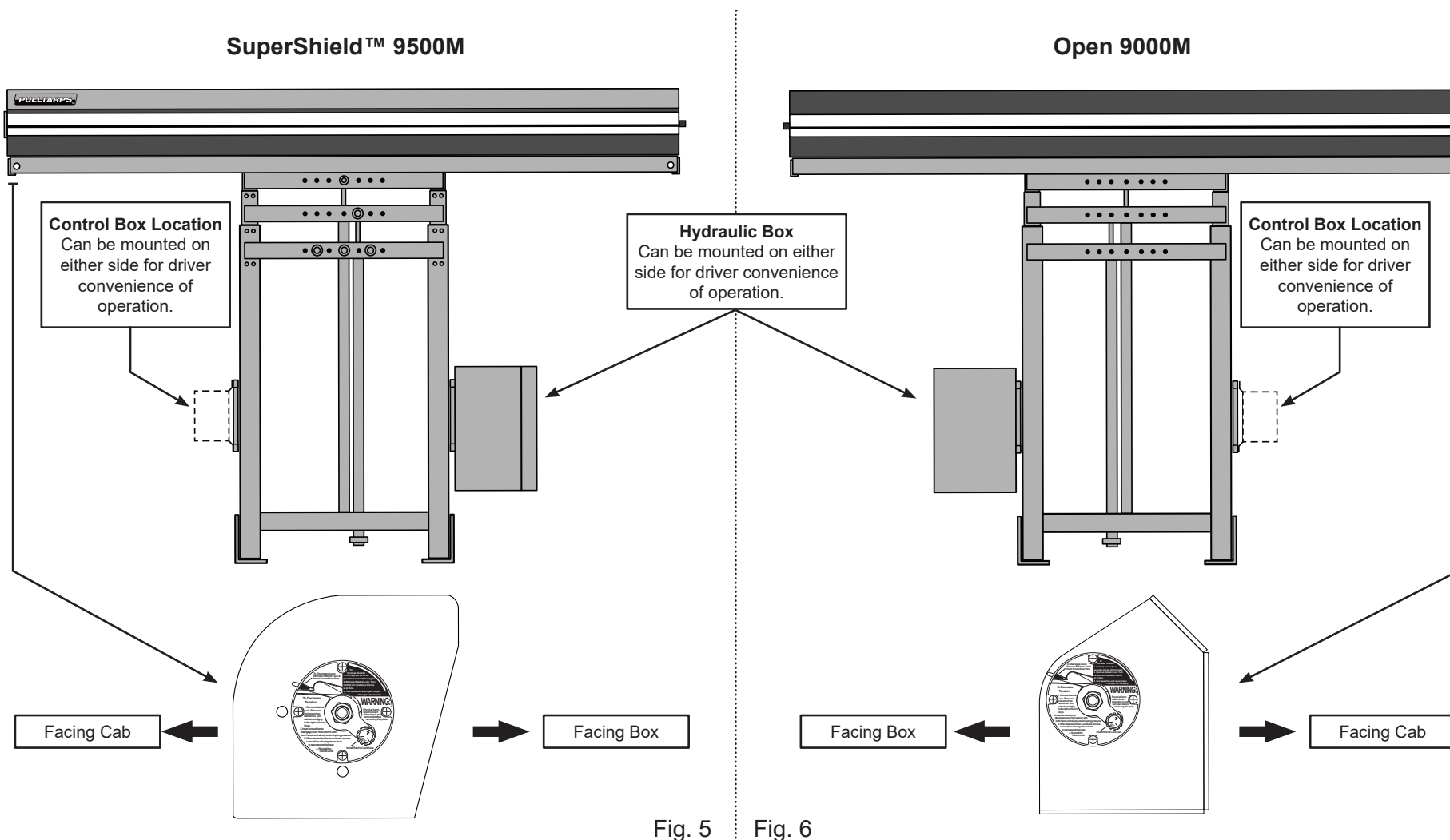


Fig. 5 Fig. 6



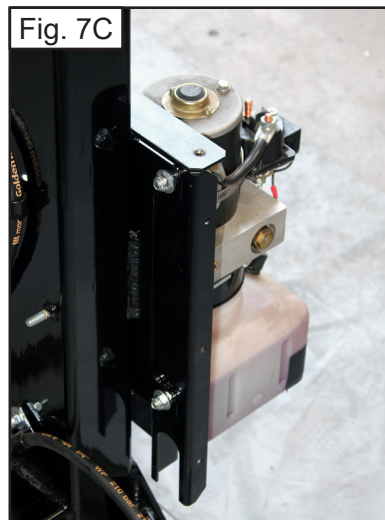
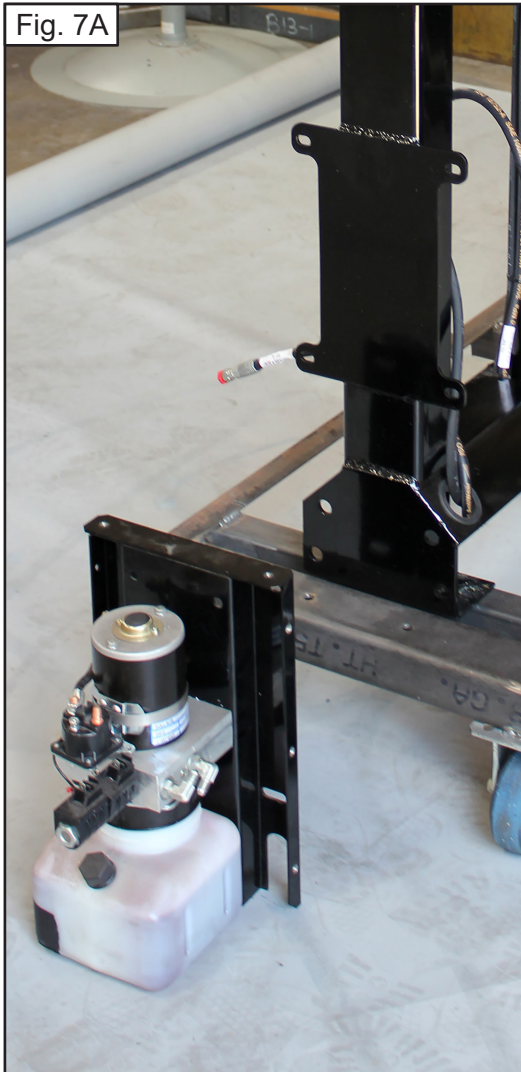
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Installing the Hydraulic Pump

Step 4: Secure the Hydraulic Pump to the corresponding side of the Tower Base using the supplied mounting hardware (Fig. 7A, B & C).



Step 5: Rotate the Hydraulic Connectors to face the tower (Fig. 8).

Note: Hydraulic fluid may leak when removing the caps at the end of each hose.



Step 6: Attach the first Hydraulic line, marked green and yellow, to the first connector (Fig. 9).

Note: Use a backup wrench when attaching Hydraulic line.





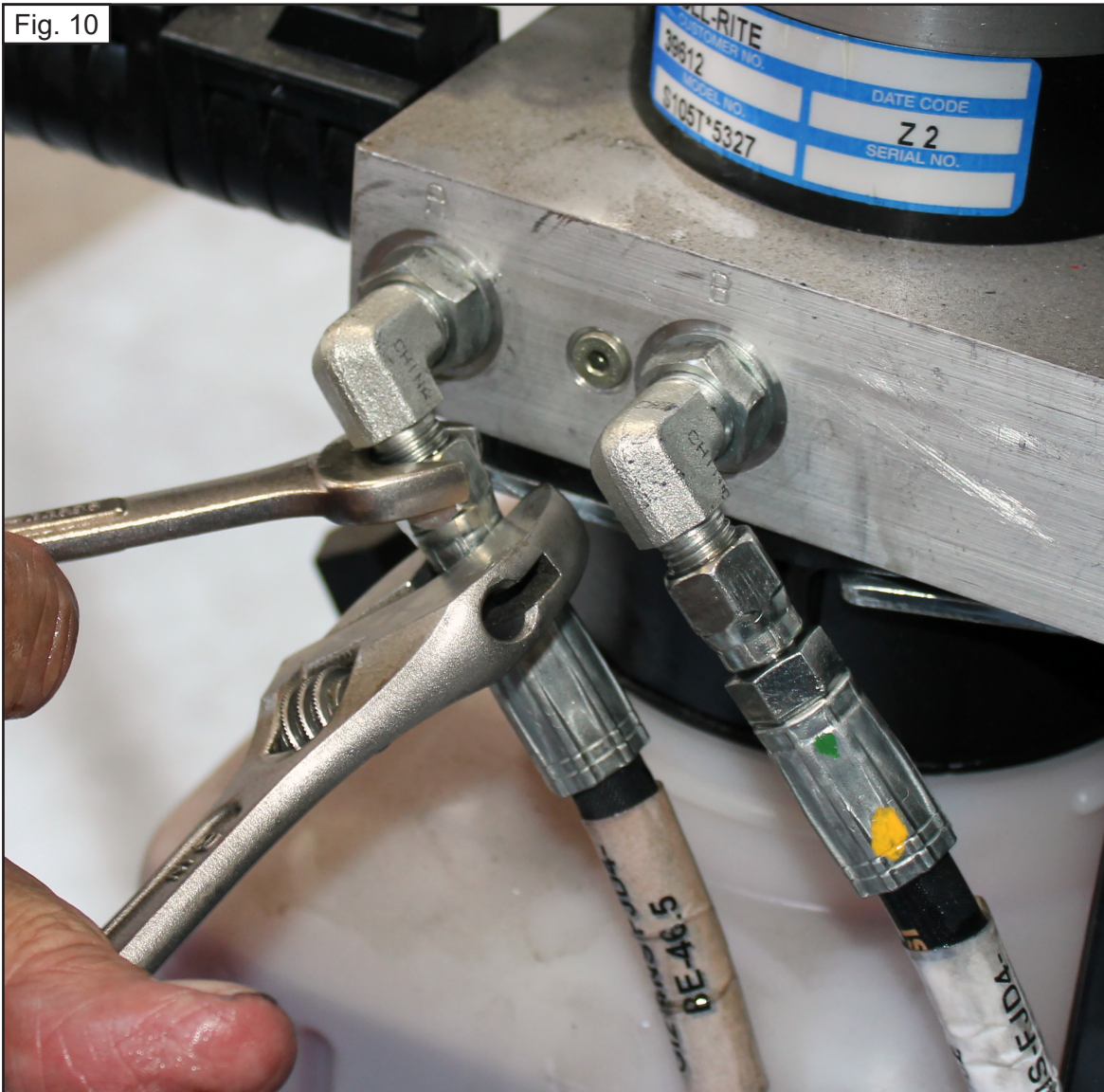
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Installing the Hydraulic Pump

Fig. 10

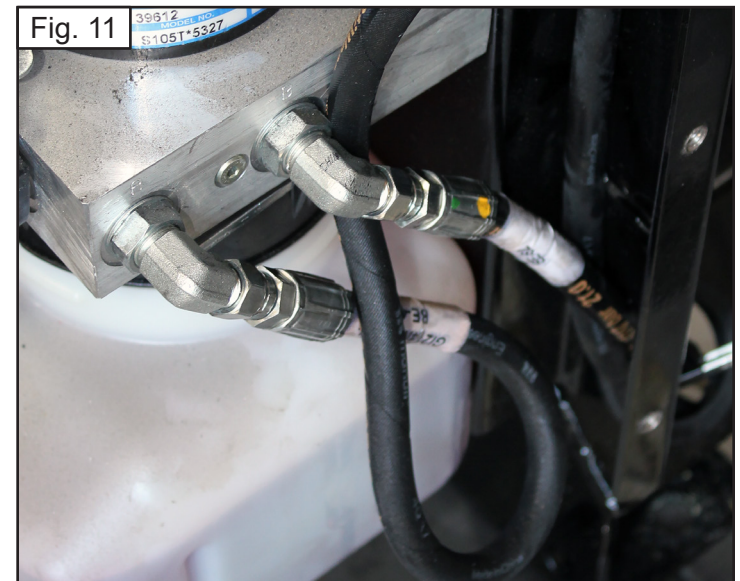


Step 7: Attach the second Hydraulic line (Marked Red) to the second (outer) Hydraulic connector (Fig. 10).

Note: Use a backup wrench when attaching Hydraulic line.

Step 8: Check the lines to make sure there aren't any leaks from the Hydraulic lines (Fig. 11).

Fig. 11





1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Attaching the Manual Control Box to the Tower

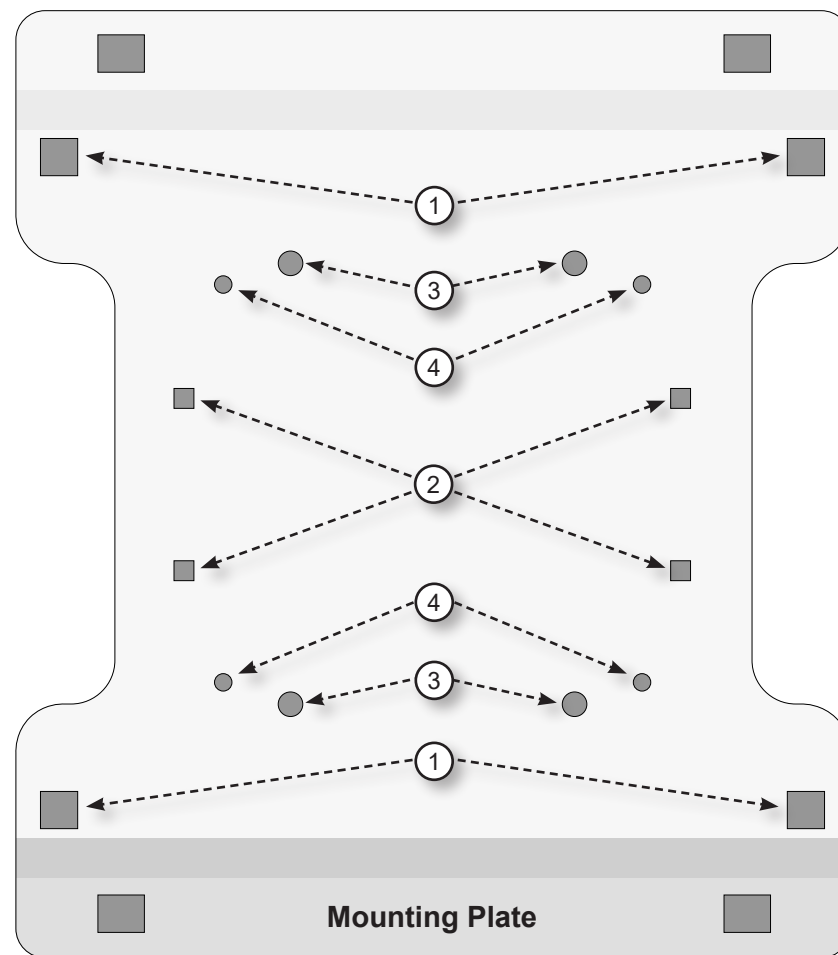
Step 9: Shown below (Fig. 12A) is the The Mounting Plate installed without the Control Box. The Mounting Plate is engineered to hold four (4) different Control Systems (Fig. 12B).



Control Box Mounting Positions (4 Mounting Holes for each)

1. Roll-Rite Control Box (Electric Tower Only)
2. Smart Switch Control Box (Electric Tower Only)
3. Manual Control Box
4. Icarus Blue Tooth Control Box (Pending)

Fig. 12B





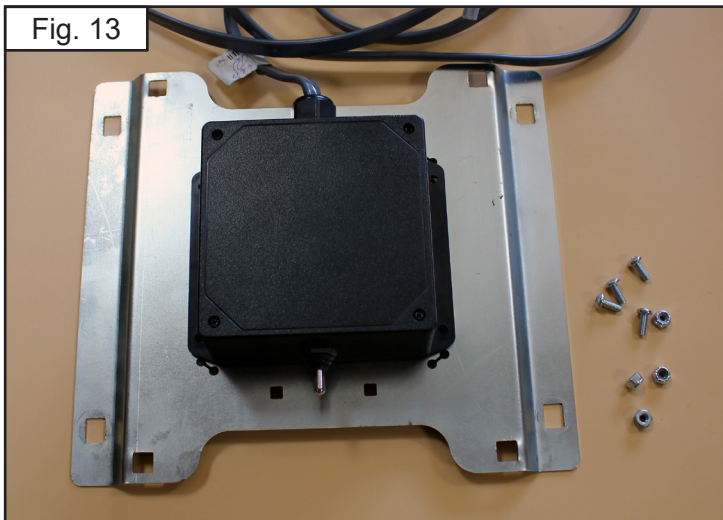
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

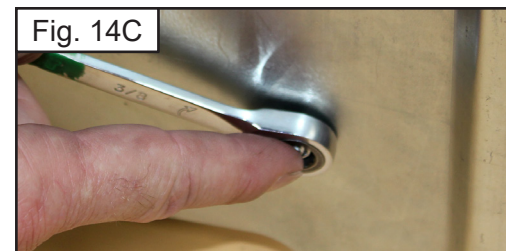
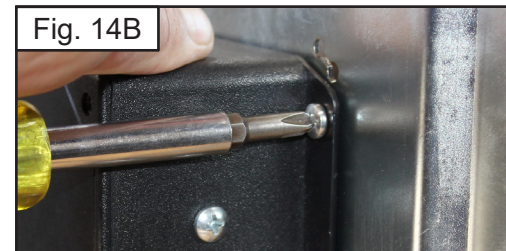
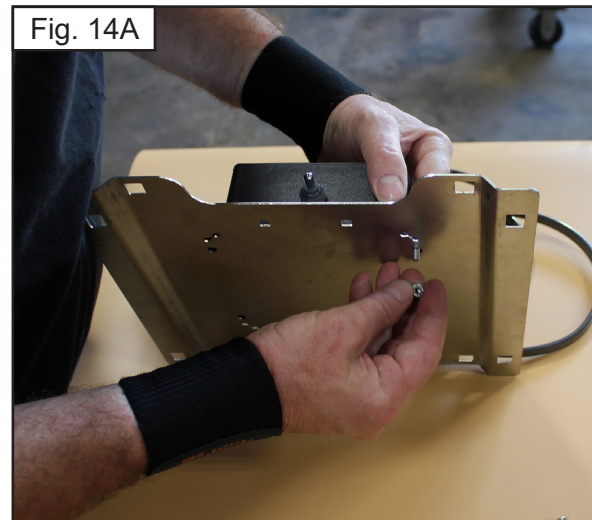


Attaching the Manual Control Box to the Tower

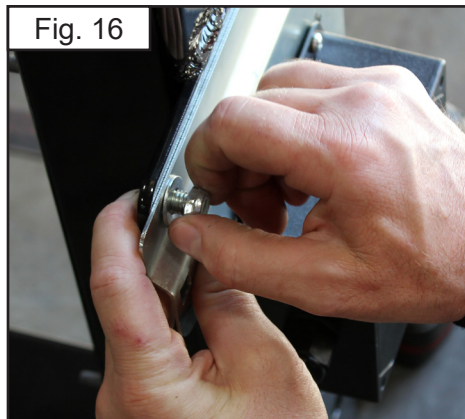
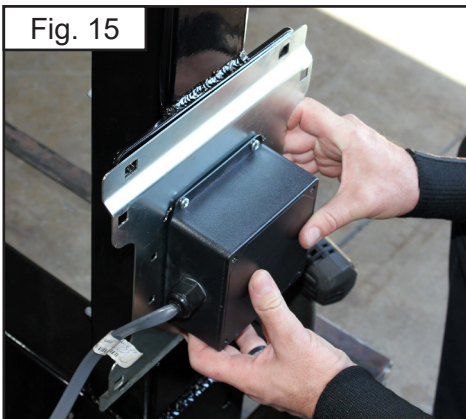
Step 10: Align the four (4) holes on the Control Box with the corresponding holes on the Mounting Plate (Fig. 13). See mounting guide in Step 9 for reference.



Step 11: Place the mounting screws through the front of the Control Box, through the mounting plate and secure with a Nylock Nut. Use a wrench to hold the Nylock Nut in place while you tighten with a Philips Screw Driver (Fig. 14A-C).



Step 12: Place the mounted Switch on the Tower Mount (Fig. 15), see Step 3 for proper mounting position. Insert the Carriage Bolts from the back side of the Tower Mount (Fig. 16). Once all four (4) bolts and nuts are mounted, tighten securely onto the Tower (Fig. 17).



Note: You may need an assistant to safely mount the Control Box.



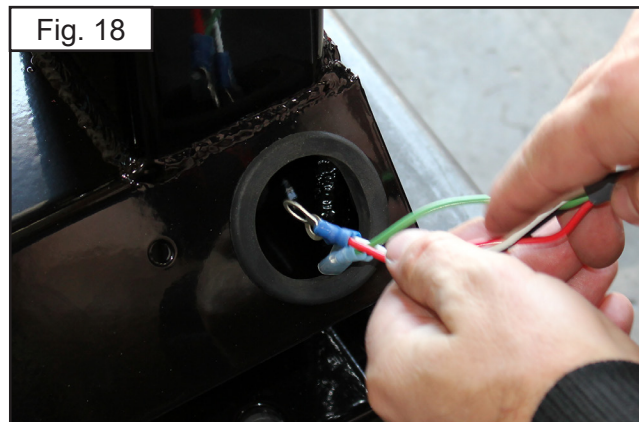
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

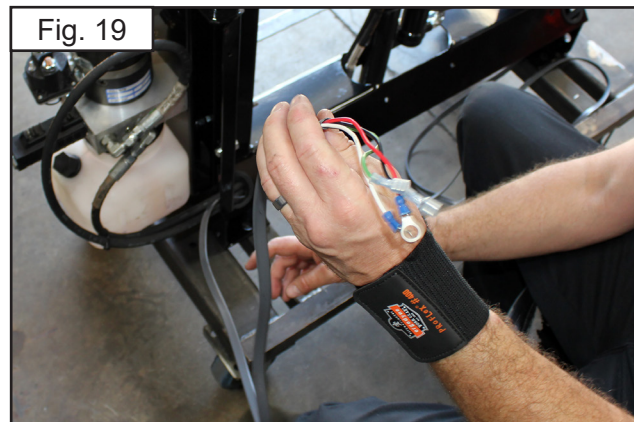


Connecting Control Box to Hydraulic Pump

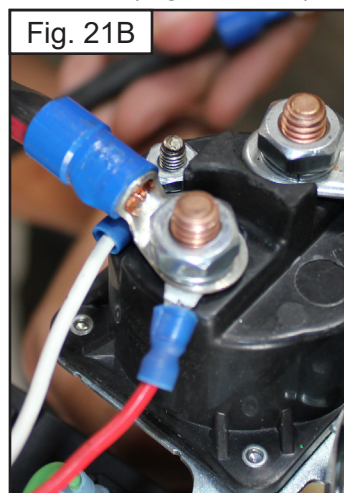
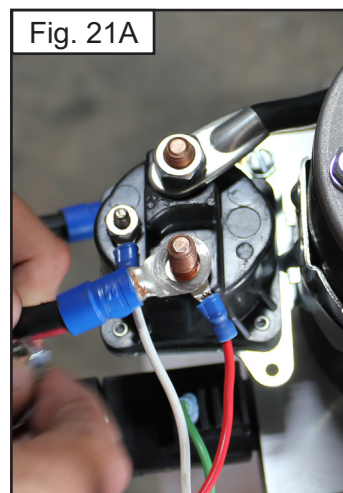
Step 13: Once the Control Box is secured, take the end of the attached power cable and insert into wiring harness cover (Fig. 18).



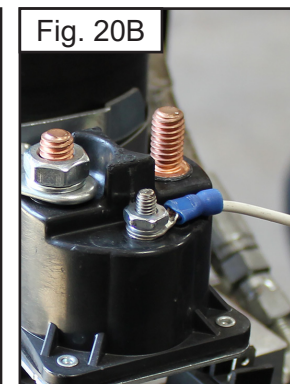
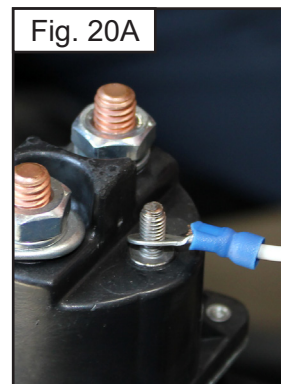
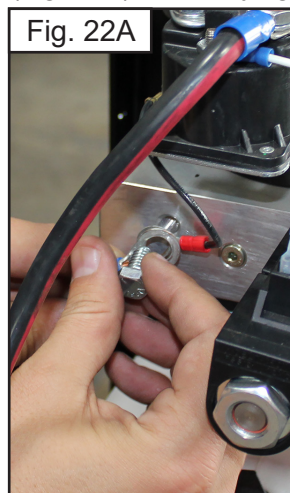
Step 14: Pull the wires through the other end of the wire cover hole. Make sure the full wire is pulled through (Fig. 19).



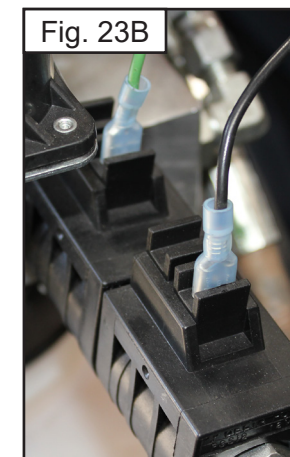
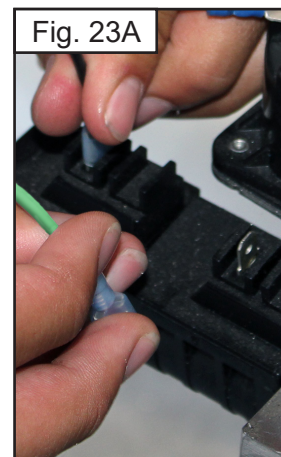
Step 16: Connect Red Wire and Power Plug Wire with Blue Connector to Copper Bolt. Then place washer and nut on bolt and secure (Fig. 21A & B).



Step 17: Connect the Power Plug Ground Wire and Black Ground Wire to the positions shown (Fig. 22A). Securely tighten with nut (Fig. 22B).



Step 15: Take the White wire with the small Blue Connector and attach to the single bolt on the Distribution Box. Secure with washer and nut (Fig. 20A & B).



Step 18: Connect the Black and Green wires with the Pin Connectors to the Black Box next to the Distribution Box (Fig. 23A & B).



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Adding Hydraulic Fluid to Pump Reservoir

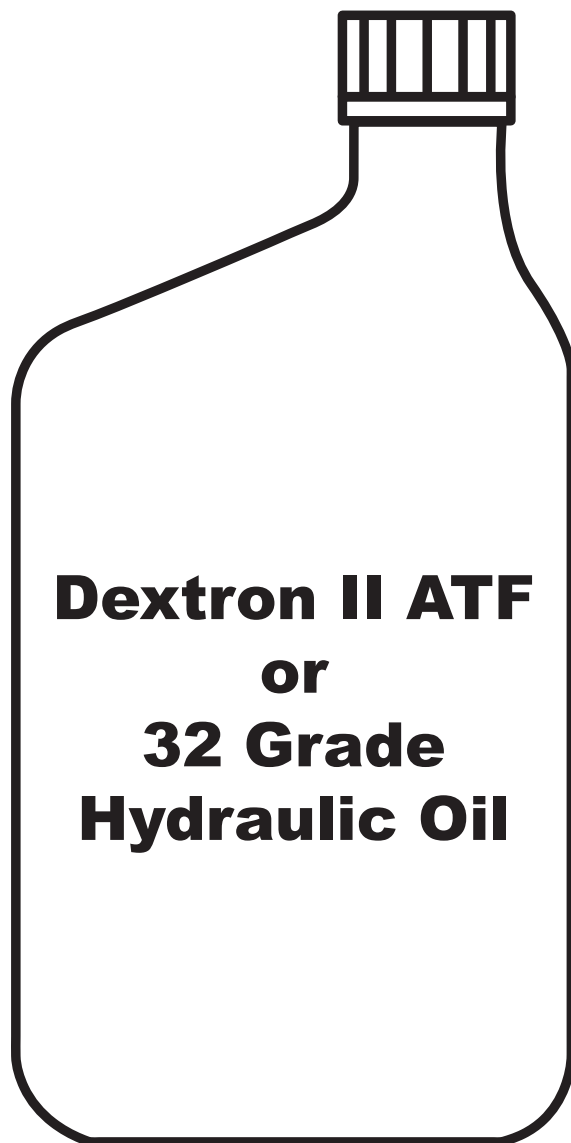


Fig. 24



Step 19: Fill pump reservoir with two (2) quarts of Automatic Transmission Fluid or 32 Grade Hydraulic oil (not supplied) (Fig. 31).

Fig. 25



Step 20: After filling, reinsert filler cap and secure. Check system for leaks (Fig. 25).



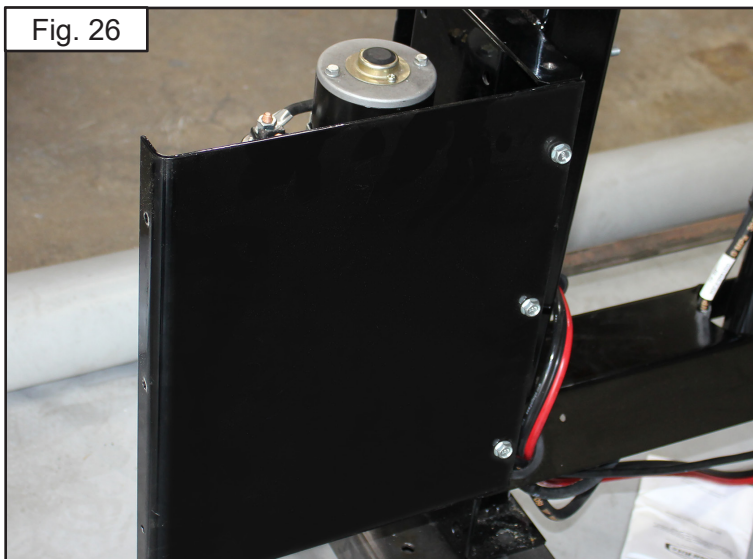
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



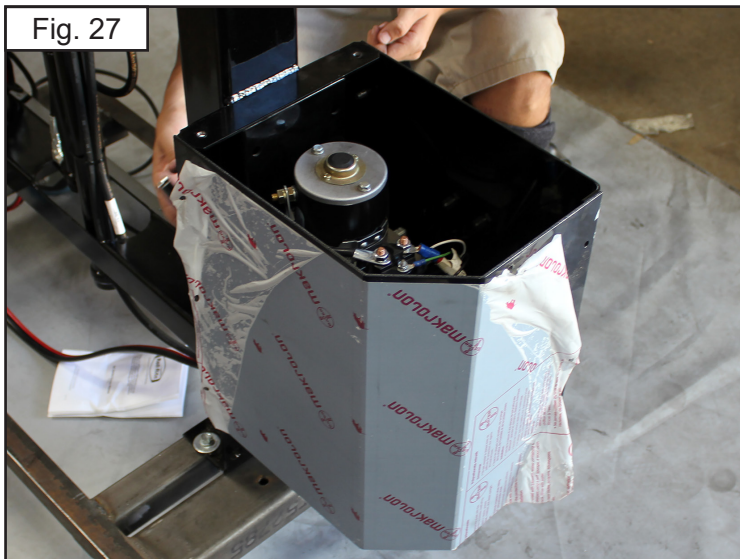
Installing Hydraulic Protective Cover

Fig. 26



Step 21: Facing the back of the Tower System, take the Hydraulic Case back panel and attach with supplied hardware (Fig. 26).

Fig. 27



Step 22: Take the second panel that is bent at two points and attach to the back plate and tower (Fig. 27).

Fig. 28

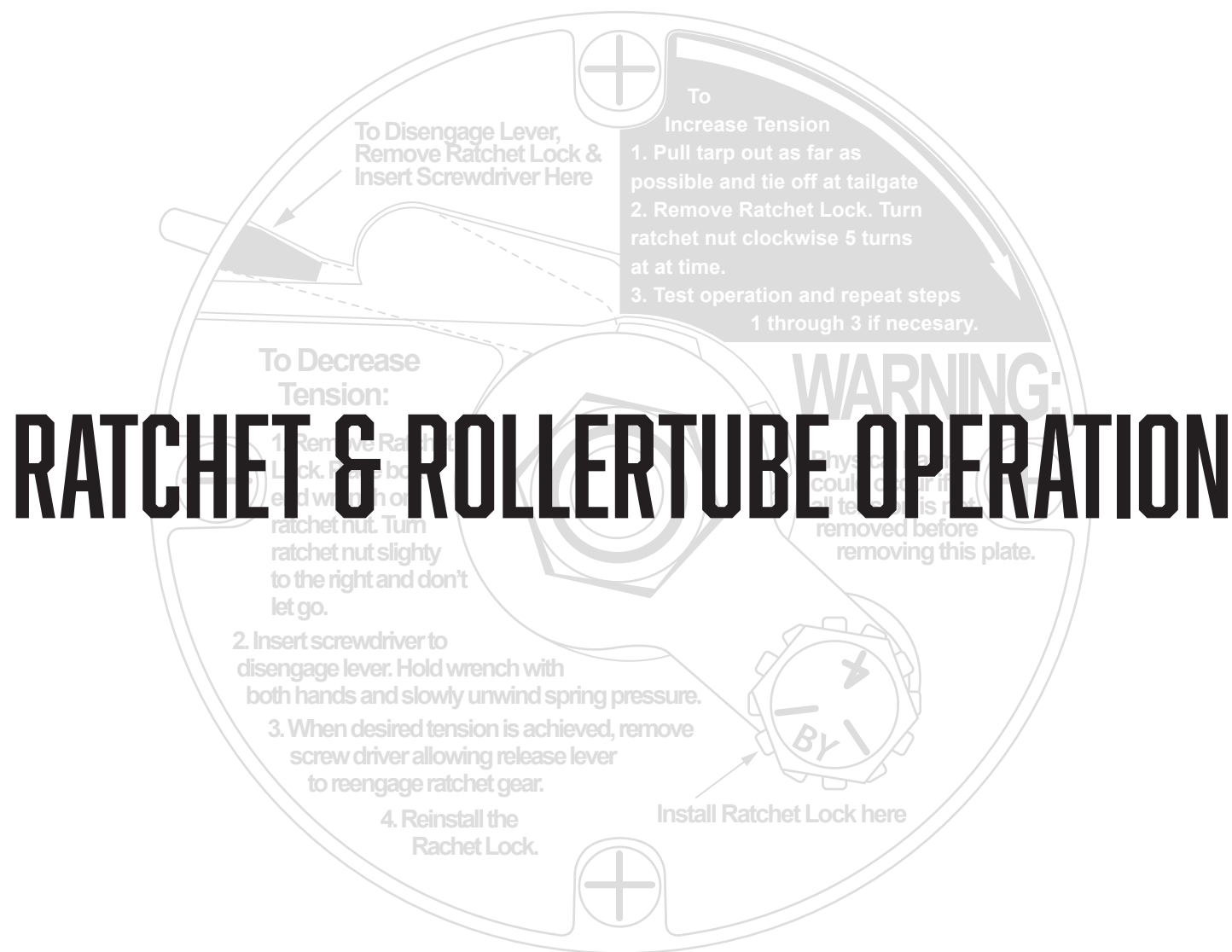


Step 23: Secure the Hydraulic Cover lid and remove any remaining tape (Fig. 28).



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions





1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

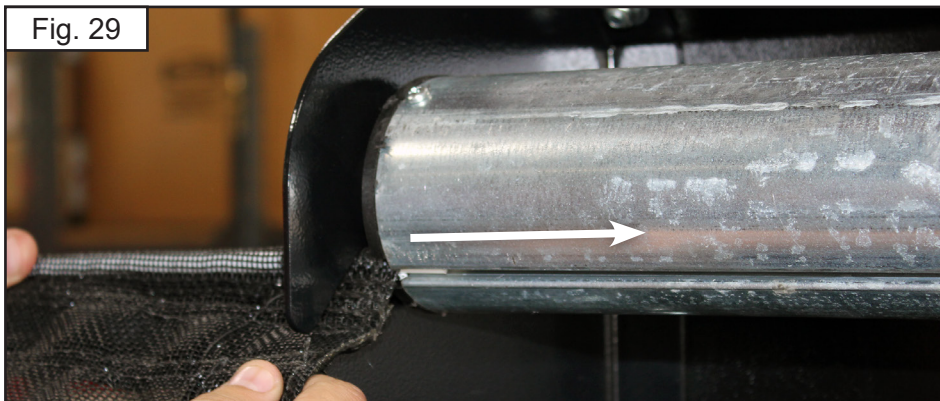


Installing Tarp and Adding Spring Tension to Ratchet

Step 1: Align the Roller Tube groove with the Slot in the Housing (Opposite of the Ratchet Plate). Take the end of the tarp with the Hemtube and insert in to the system housing (Fig. 29).

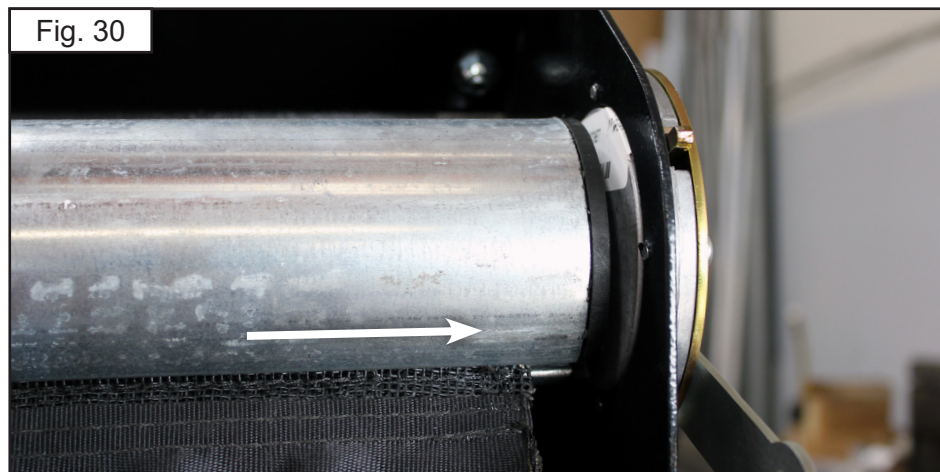
Note: Make sure the Pulltarps logo is facing up.

Fig. 29



Step 2: Carefully slide the tarp through the Roller Tube groove until the tarp is centered.(Fig. 30).

Fig. 30



Step 3: Fully extend tarp and tie off on the Tailgate (Fig. 31).

Fig. 31



Step 4: Remove the Ratchet Lock Nut and Star Lock Washer (Fig. 32A, B & C).

Fig. 32A



Fig. 32B

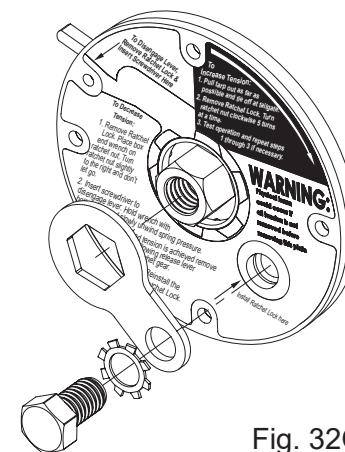


Fig. 32C



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Installing Tarp and Adding Spring Tension to Ratchet

Step 5: With the included Ratchet Wrench, turn the ratchet nut clockwise 35 - 40 winds (Fig. 33).

Note: Insert 3/8" bolt into Lock Nut hole for added safety.

Fig. 33



Step 6: Test the spring tension by having a team member hold the end of the tarp while the other team member removes the 3/8" bolt holding the Roller Tube in place. Let go of tarp while holding Pullrope, and if tarp returns to the housing, no more winds are needed. If more winds are needed, repeat Steps 3-5 then add 5 winds and test again. (Fig. 34).

Fig. 34



Step 7: Reinstall the Ratchet Lock (Fig. 35A & B).

Fig. 35A



Fig. 35B



NOTE: Tarp must be fully extended when adding tension to the spring.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

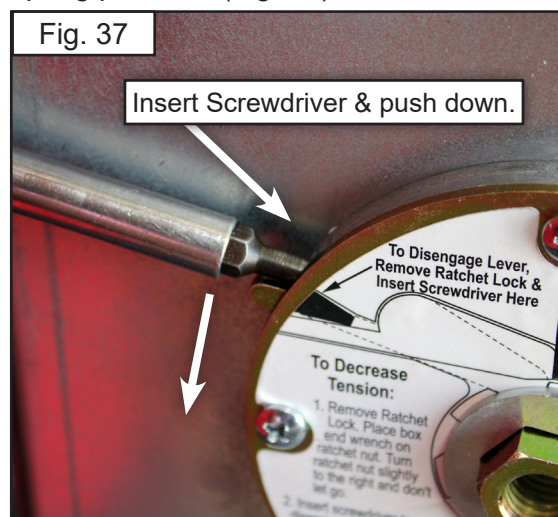


Removing Spring Tension from Ratchet

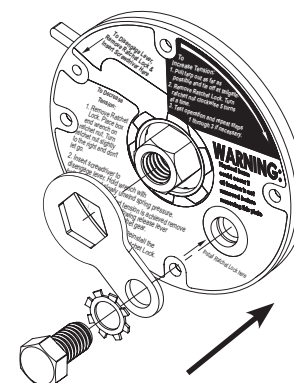
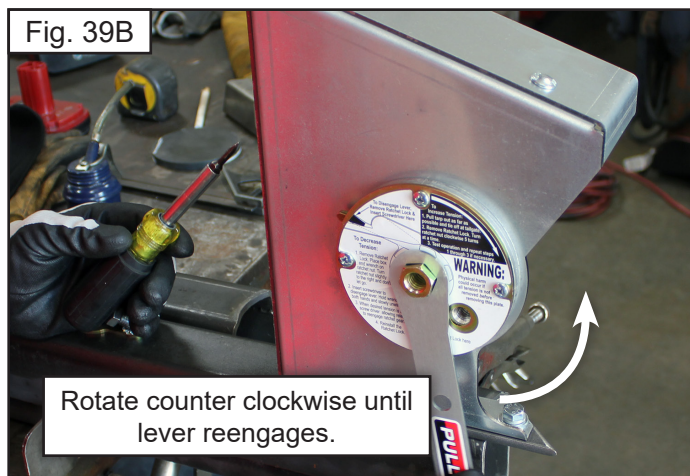
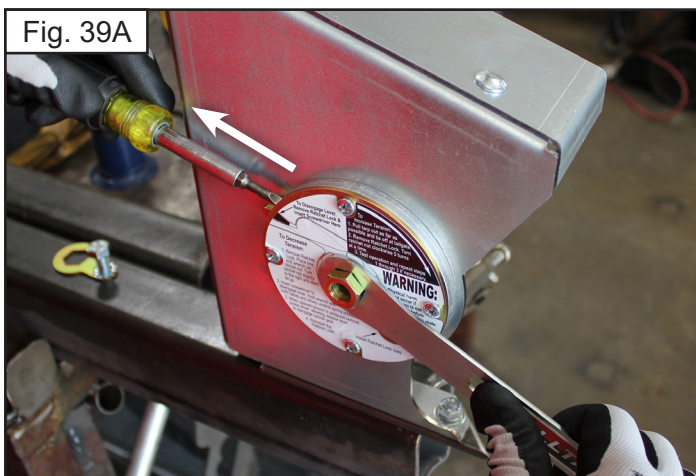
Step 1: Remove the Ratchet Lock Nut and Star Lock Washer (Fig. 36A & B).



Step 2: Insert screwdriver to disengage lever (Fig. 37). Hold wrench and slowly unwind spring pressure (Fig. 38).



Step 3: When desired tension is achieved remove screwdriver, allowing release lever to reengage ratchet gear (Fig. 39A & B).



Step 4: Reinstall the Ratchet Lock (Fig. 40).



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower
Installation Instructions

A large, semi-transparent background image showing a dual-stage pulltarp tower. The tower is a metal frame structure with a dark, textured tarp covering the top. It is mounted on a vehicle, with a hydraulic cylinder and other mechanical components visible. The text "TOWER OPERATION" is overlaid in the center of the image.

TOWER OPERATION

For technical support call us at (877) 861-6265 or visit our website at Pulltarps.com.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Extending & Retracting Tarp

IMPORTANT: Thank you for purchasing your new Pulltarps Tower. Before you start using your new tower, please ensure that you carefully read and understand these instructions and make sure that you always operate this equipment in a safe manner.

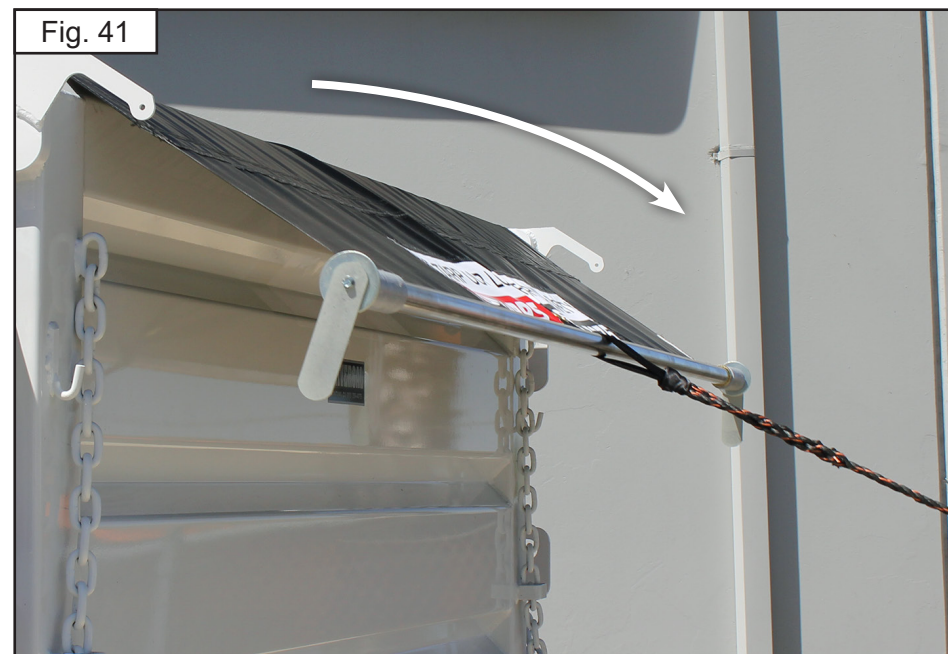
WARRANTY: Pulltarps warrants that the products are free from defect in workmanship and material under normal and proper use and on condition that the machine has been used in accordance with the operating instructions. The warranty period is 12 months or time of operation corresponding to this, from the date the machine is installed by the customer.

The tarp itself is not guaranteed for tearing or wearing out; however, it is guaranteed against defects in workmanship and materials for a period of six months from the date of purchase.

Step 1: Raise tower as high as possible to keep tarp from dragging on the load in the container (Fig. 40). Ensure Pull Rope is untied and accessible. **Note: Never operate vehicle with tower extended.**



Step 2: Pull the tarp over the container past the tarp return ramps. When deploying and retracting, be sure there are no obstructions protruding from the box that will interfere with operation of the tarp system (Fig. 41).





1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Extending & Retracting Tarp

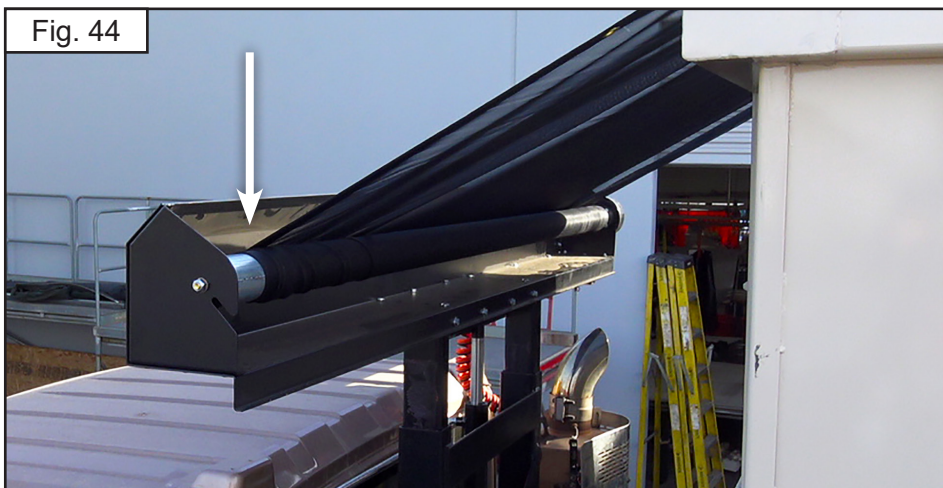
Step 3: Pull the Pullbar past the Tarp Return Ramps, then slowly seat the Pullbar into the Tarp Return Ramps (Fig. 42).



Step 4: Secure the Pull Rope on the Rope Hooks at the end of the container. (Fig. 43).



Step 5: Slowly lower the tower so that the tarp wraps neatly around the container (Fig. 44).



Step 6: To retract the tarp, raise the tower completely, then pull the Pull Rope until the Pullbar clears the Tarp Return Ramps and let the spring tension retract the tarp into the housing. Flip the rope over the box towards the rope hooks on the front of the container (Fig. 45).





1404 N. Marshall Ave. El Cajon CA. 92020

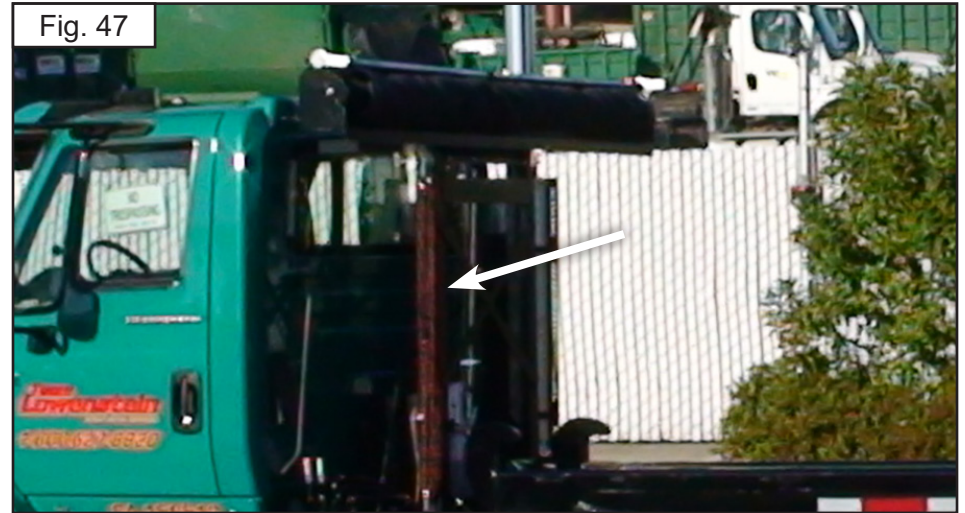
Dual Stage Pulltarp Tower Installation Instructions



Extending & Retracting Tarp

Step 7: Lower tower completely (Fig. 46). After Tower is fully lowered, secure Pull Rope and Rope Hooks (Fig. 47).

Note: Never operate vehicle with tower extended.



WARNING: Never operate the vehicle with tower extended; it might cause serious injuries or damages.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Tower
Operation & Maintenance Instructions

A large, light-colored, rectangular industrial unit, likely a Dual Stage Tower, is shown in a faded, grayscale background. It has various ports, a control panel, and a large white container attached to its side. The unit is mounted on a metal frame.

TOWER MAINTENANCE



1404 N. Marshall Ave. El Cajon CA. 92020

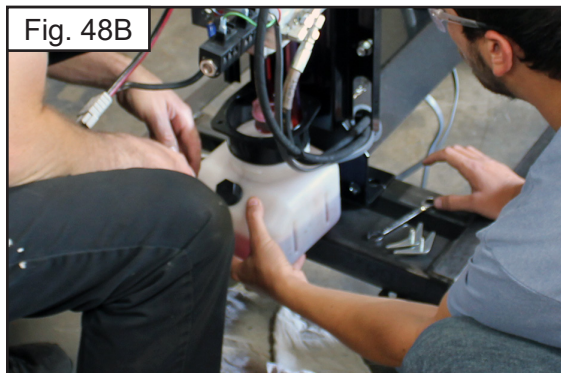
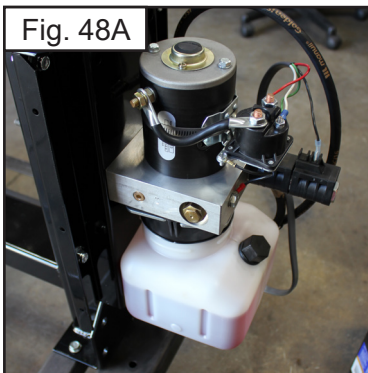
Dual Stage Tower Operation & Maintenance Instructions



Hydraulic Pack, Oil Levels & Filtration

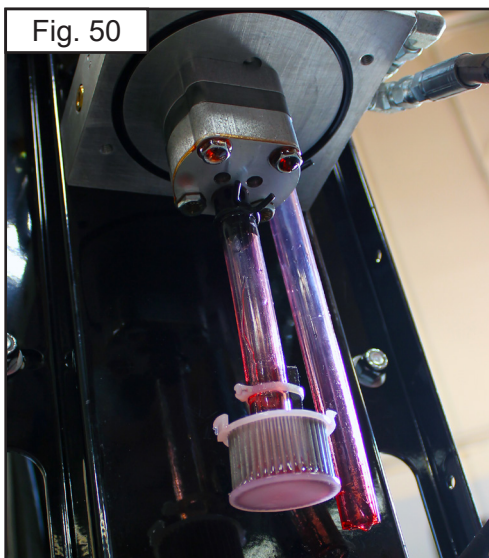
Step 1: For maintenance purposes, you will have to separate tank from the power unit (Fig. 48A & B). Be sure to have O-ring installed before assembling again. Forgetting this step will cause fluid to gush out.

Note: There are 4 bolts and brackets in between valve block and tank.



Step 2: The level of oil inside the reservoir should be verified daily and topped up if necessary (Fig. 49).

If you see a change in the need to add oil to the system, there may be a system problem where oil is leaking from the hydraulic circuit.



Step 3: Each system comes equipped with a filtered filler-breather to help prevent foreign material from contaminating the hydraulic oil reservoir. Over time, the breather can become clogged and it should be replaced regularly. In addition, a suction strainer is mounted to the intake side of the hydraulic pump, and is located inside the reservoir (Fig. 50).

Note: The suction filter should be cleaned or replaced as part of a regular maintenance routine.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Tower Operation & Maintenance Instructions



Recommended Scheduled Maintenance

Daily Maintenance

- Check hydraulic hoses for wear, tear and leaks.
- Check mechanism for any damage.
- Check tarpaulin for tears.
- Check if the system operates smoothly.

Weekly Maintenance

- Check mechanism for any excessive wear and tear.
- Check hydraulic hoses and components for leak and damage.
- Check arm spring tension.
- Check hydraulic fluid in power unit. Check the level with tower fully lowered, to top of the side indents.

Monthly Maintenance

- Verify the tightness of hydraulic fittings, do not over tighten.
- Verify the tightness of the fasteners.
- Check welds and other joins for cracks.
- Apply grease to inner stages.

Two Year Maintenance

- Clean and wipe tank.
- Flush out Oil.
- Replace Intake Strainer.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Tower Operation & Maintenance Instructions



Hydraulic Pack Diagnostics

Power Pack won't lift load.	<ul style="list-style-type: none">• Check fluid level. If there is not enough oil in the unit, you will not be able to operate the actuator.• Gear Pump might not be priming. Remove relief valve, operate pump for a few seconds until fluid comes out of port, replace relief valve and rety unit (See Fig. 46).• Air being introduces in system. If air is being introduced in the system, the gear pump might have some priming problems.
Motor not running.	<ul style="list-style-type: none">• Check for power connection to DC Motor.• Check power to start solenoid.• Check connections at the battery.
Start solenoid just clicks, Motor not turning.	<ul style="list-style-type: none">• Check for loose wire from start solenoid to DC motor.• Make sure you use a minimum of 6 guage of wire from your battery to the unit.• Check for cracked housing on start solenoid, if so, replace start solenoid.• If an older unit, check for rust buildup inside DC motor.
Electric Motor will not stop running.	<ul style="list-style-type: none">• Low battery or poor ground connection has caused the start solenoid to weld on. Replace start solenoid and check battery and ground. Ground must be connected directly to battery.
Excessive heat from unit.	<ul style="list-style-type: none">• A bad electrical ground or poor battery performance will cause motor to generate more heat. Verify battery and ground for good performance.



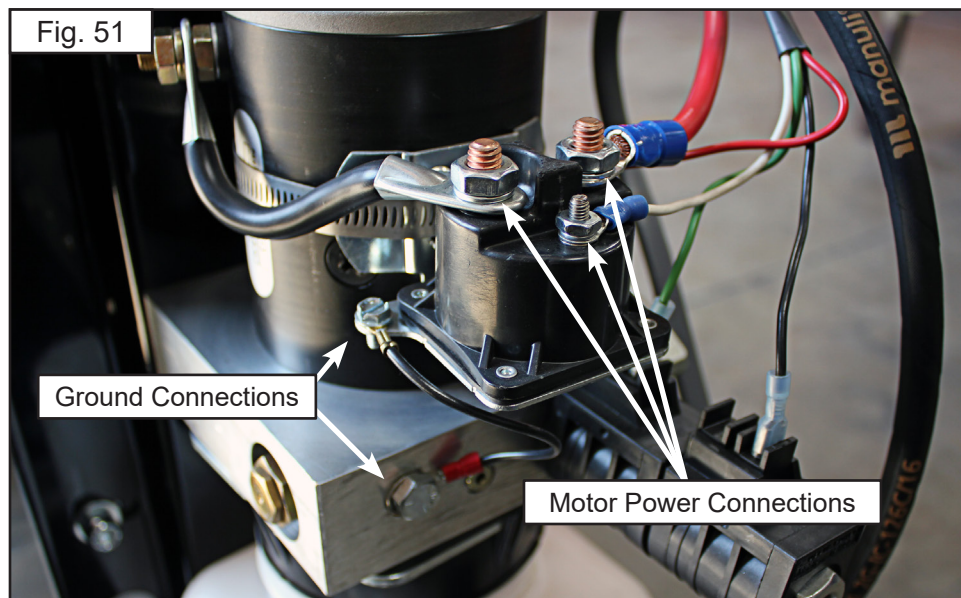
1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Tower Operation & Maintenance Instructions



Motor Check Out Procedure

1. Remove leads from motor and attach volt meter to leads
2. With the switch in the ON position, the volt meter should read 12 on 12 volt system and 24 on 24 volt system. If voltage is low, recheck with engine running and inspect wiring and connections (minimum 6 guage wire ust be used).
3. Return switch to the neutral positon and reattach leads to motor.
4. Attach volt meter to leads at the motor.
5. With the switch in the ON postions and the leads attached, the volt meter should read 10.5 on 12 volt system and 18.5 on a 24 volt system. If voltage is low, recheck with engine running. Recheck wiring and connections (minimum 6 guage wire mush be used).
6. Return switch to the neutral positon and attach amp meter to leads at the motor.
7. With the switch in the ON postion, the amp meter should read approximately 30 amps. A constant amperage reading of over 50 amps indicats binding in the system and/or low voltage.
8. Check 100 amp breaker for failure.



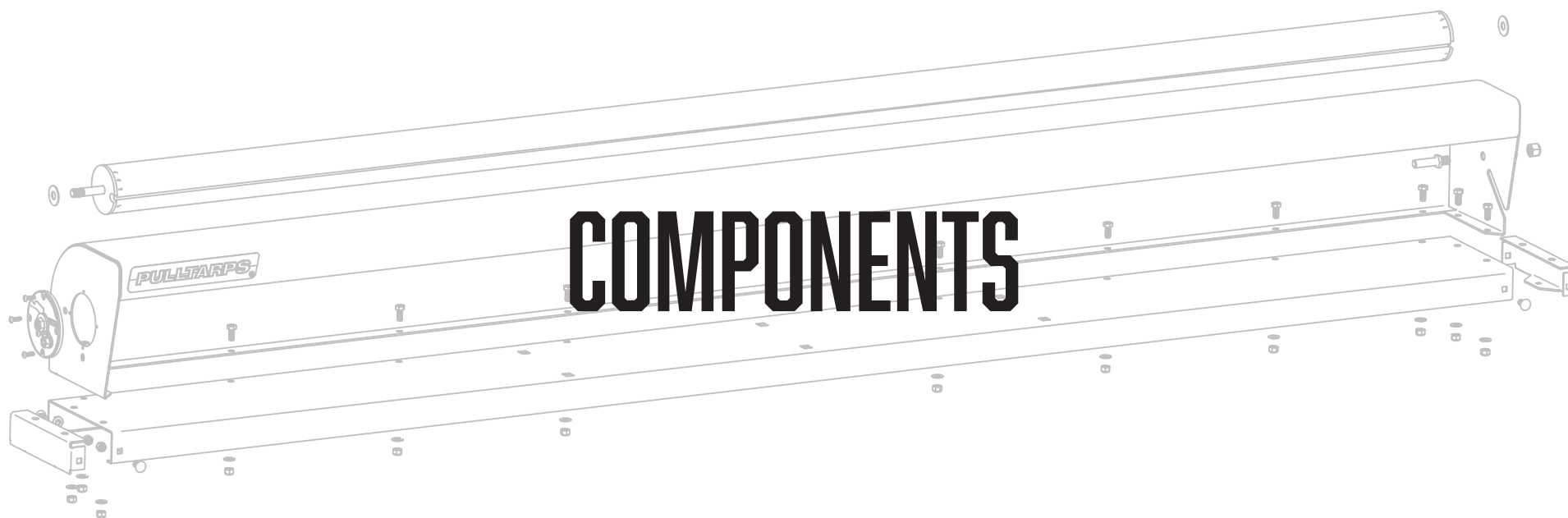
Power Wire Connections

Figure 51 shows the proper wire connections.



1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower
Installation Instructions



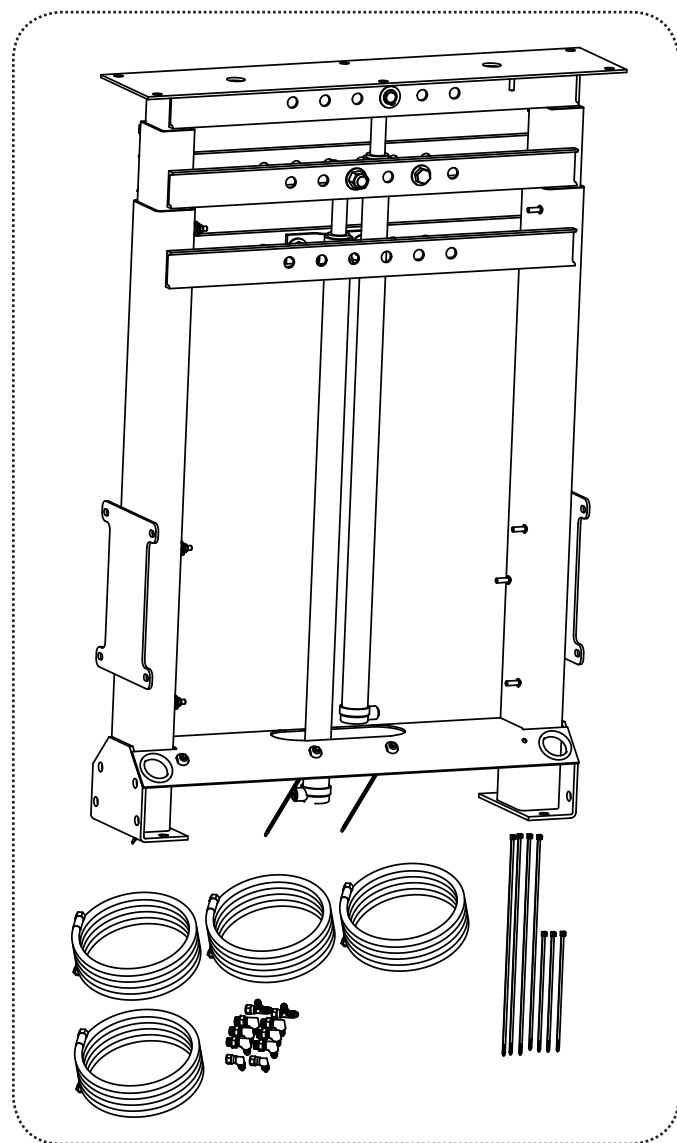


1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

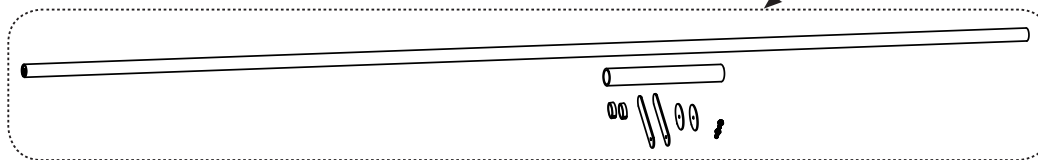
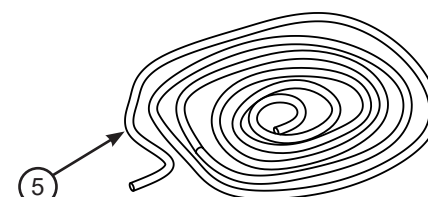
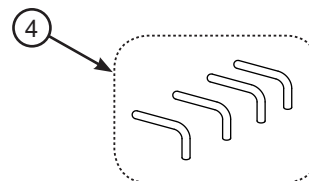
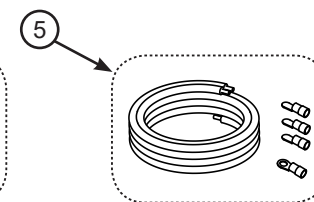
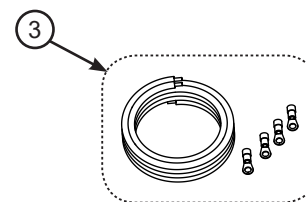
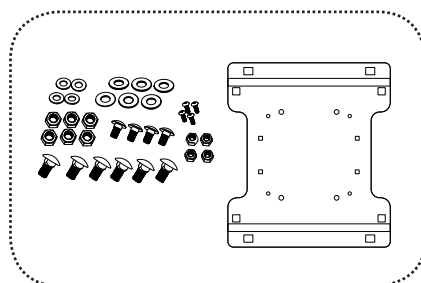


Dual Stage Pulltarp Tower - #513-0019



ITEM	PART #	DESCRIPTION	QTY
1	513-0080	Dual Stage Electric Tower	1
2	501-0687	Tower Tray Hardware Kit	1
3	514-9986	10' Pump Power Wire	1
4	501-0621	Steel Rope Hook Kit	1
5	517-1009	Pull rope 50' with Bungee	1
6	501-0420	105" Pullrod with Hardware Bag	1

WLH 09/28/18





1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions

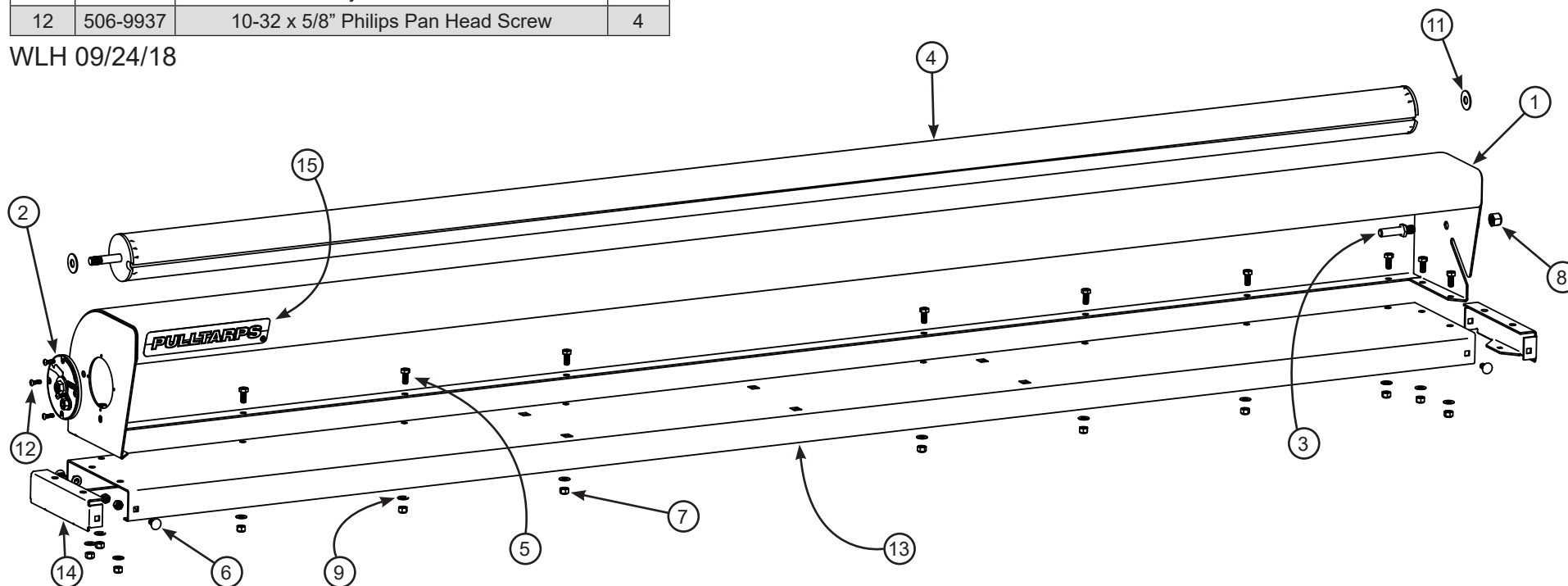


SuperShield™ 9500M 100" Tower Assembly with Tray - #513-0082

ITEM	PART #	DESCRIPTION	QTY
1	501-0121	9.5" x 100" SuperShield™ Housing	1
2	501-0647	System End Plate Ratchet	1
3	501-0801	System End Plate Stud	1
4	501-1307	100" Spring Roller Tube	1
5	503-3101	5/16" - 18 x 1/2" Hex Bolt	12
6	503-3104	5/16" - 18 x 3/4" Carriage Bolt	4
7	504-3103	5/16" - 18 Nylock Nut Steel	16
8	504-5001	1/2" Crimp Nut	1
9	505-2502	1/4" USS Washer 5/16"	16
10	505-5001	1/2" AN Washer 1/16" Thick (Not Shown)	1
11	505-5002	Washer Nylon .51D x 1.25OD	2
12	506-9937	10-32 x 5/8" Philips Pan Head Screw	4

ITEM	PART #	DESCRIPTION (Continued)	QTY
13	513-0079	100" R/R Tower Tray	1
14	513-0090	Tower End Support Insert	2
15	607-0061	Pulltarps Decal for System	1

WLH 09/24/18



For technical support call us at (877) 861-6265 or visit our website at Pulltarps.com.

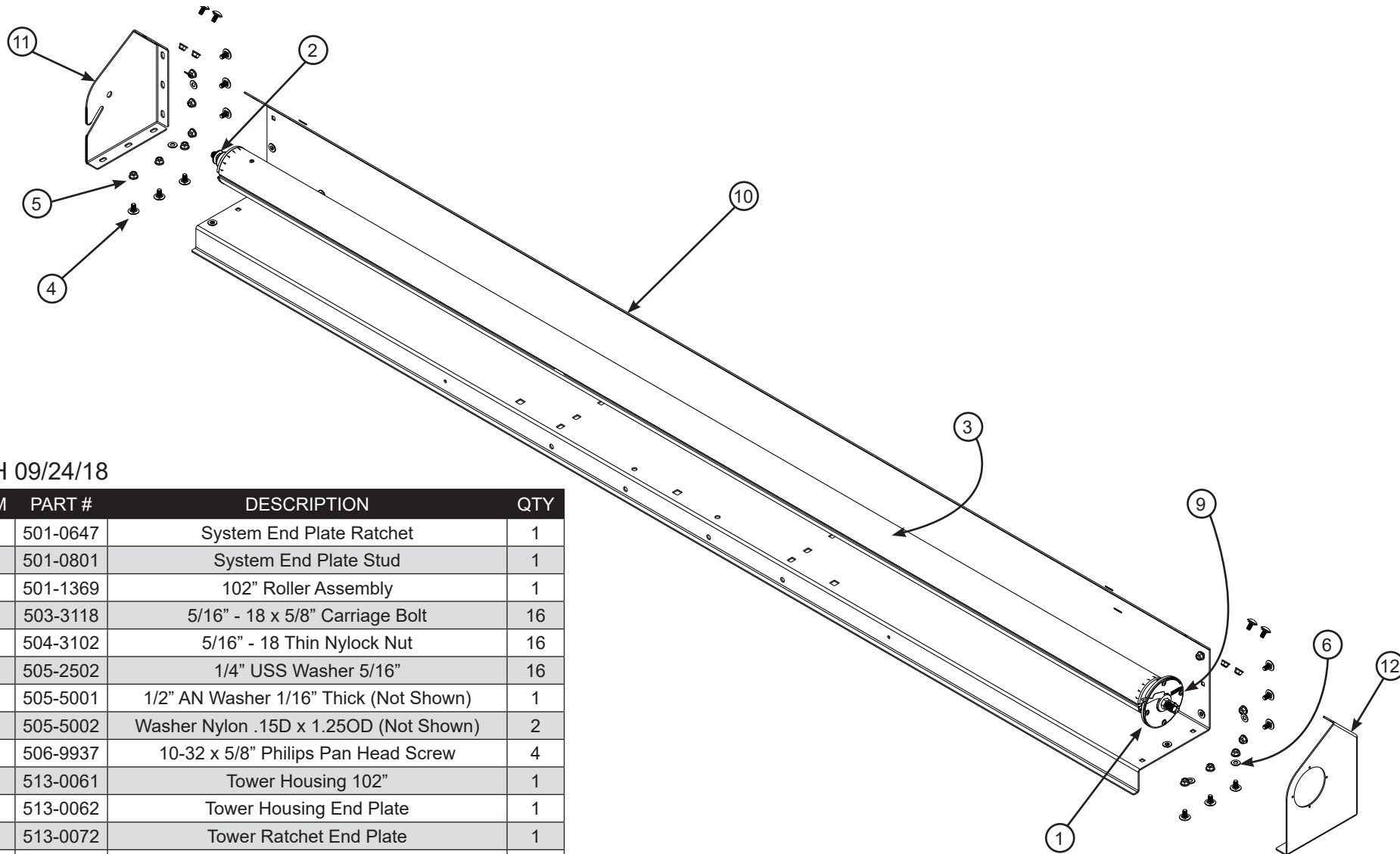


1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Open 9000M 102" Tower Assembly with Tray - #513-0073



WLH 09/24/18

ITEM	PART #	DESCRIPTION	QTY
1	501-0647	System End Plate Ratchet	1
2	501-0801	System End Plate Stud	1
3	501-1369	102" Roller Assembly	1
4	503-3118	5/16" - 18 x 5/8" Carriage Bolt	16
5	504-3102	5/16" - 18 Thin Nylock Nut	16
6	505-2502	1/4" USS Washer 5/16"	16
7	505-5001	1/2" AN Washer 1/16" Thick (Not Shown)	1
8	505-5002	Washer Nylon .15D x 1.25OD (Not Shown)	2
9	506-9937	10-32 x 5/8" Philips Pan Head Screw	4
10	513-0061	Tower Housing 102"	1
11	513-0062	Tower Housing End Plate	1
12	513-0072	Tower Ratchet End Plate	1
13	607-0061	Pulltarps Decal for System (Not Shown)	1

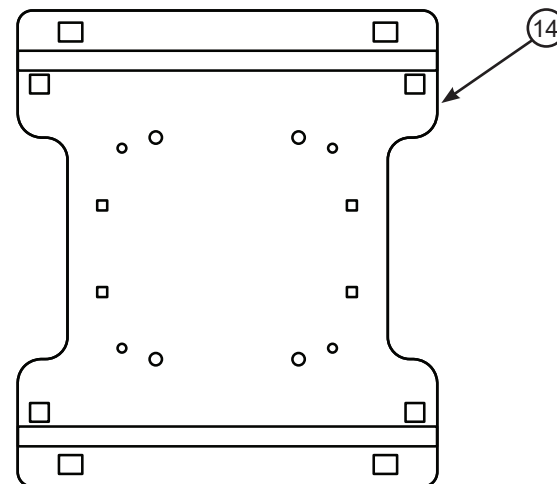
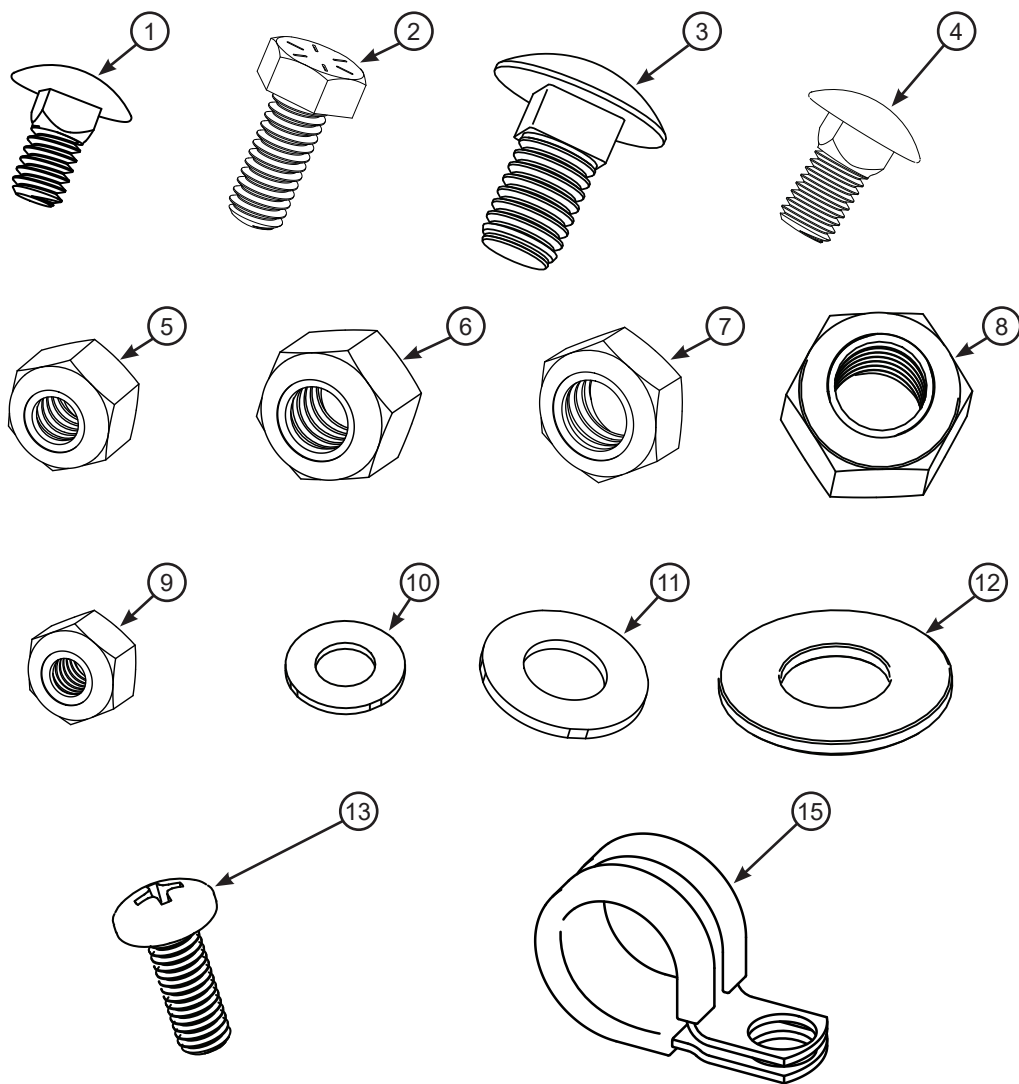


1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



Tower Tray Hardware Kit - #501-0687 (Illustrations not to scale)



ITEM	PART #	DESCRIPTION	QTY
1	503-2501	1/4" - 20 x 1/2" USS Carriage Bolt	2
2	503-3103	5/16" - 18 x 3/4" HHCS Bolt	2
3	503-3717	3/8" - 16 x 3/4" Carriage Bolt	8
4	503-5020	1/2" - 13 x 1" Carriage Bolt	6
5	504-2503	1/4" - 20 USS Nylock Nut	2
6	504-3103	5/16" - 18 Nylock Nut Steel Zinc	2
7	504-3705	3/8" - 16 Nylock Nut "Thin"	8
8	504-5004	1/2" - 13 Nylock Nut	6
9	504-9903	10 - 32 Nylock Nut	4
10	505-2502	1/4" USS Washer 5/16" Hole	4
11	505-3702	Washer 3/8" SAE Flat Zinc	8
12	505-5004	1/2" USS Flat Washer	6
13	506-9905	10 - 32 x 1/2" Philips Pan Head Screw	4
14	513-0093	Universal Tower Switch Plate	1
15	514-9977	Wire Clamps 3/4" ID	2

WLH 09/25/18

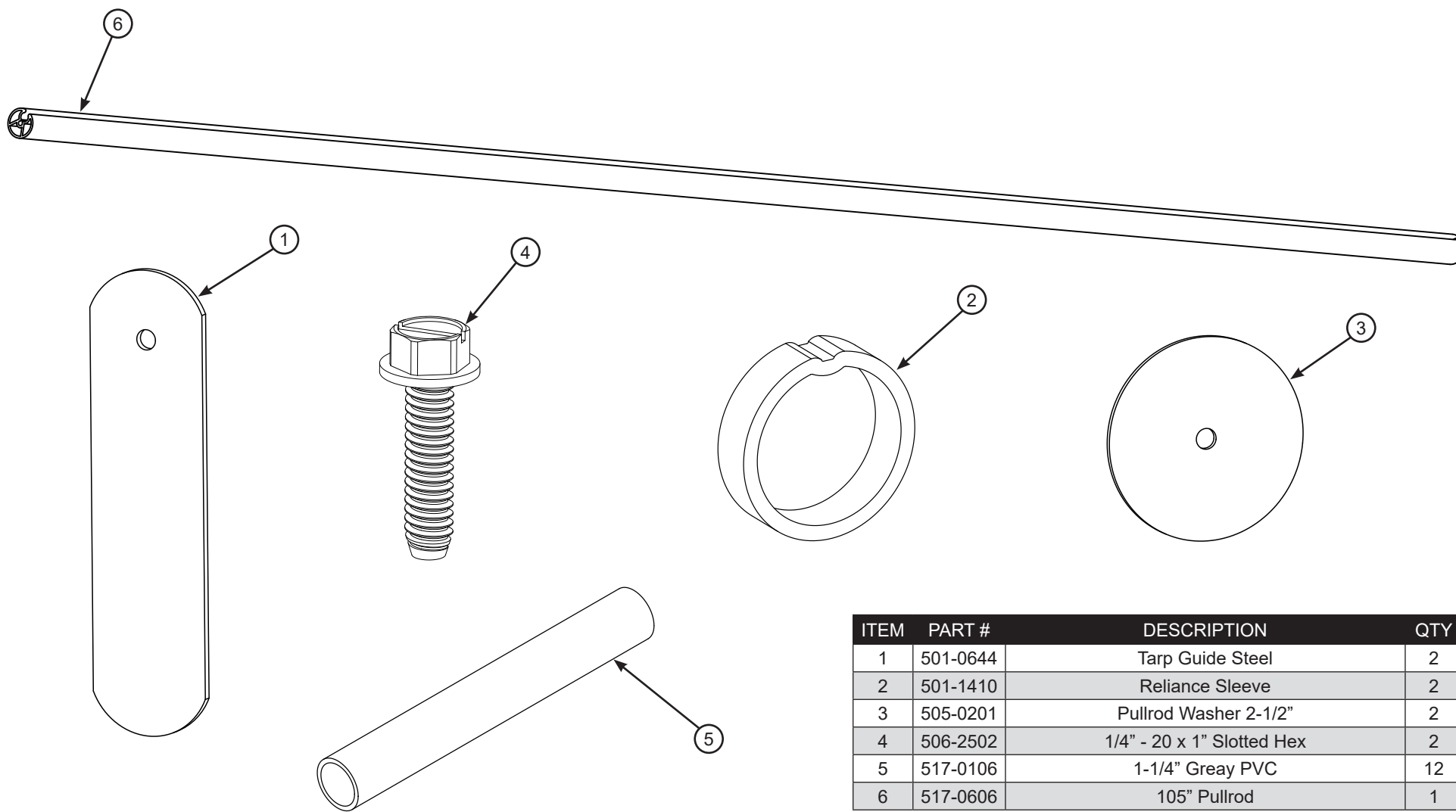


1404 N. Marshall Ave. El Cajon CA. 92020

Dual Stage Pulltarp Tower Installation Instructions



105" Pullrod with Hardware - #501-0420 (Illustrations not to scale)



ITEM	PART #	DESCRIPTION	QTY
1	501-0644	Tarp Guide Steel	2
2	501-1410	Reliance Sleeve	2
3	505-0201	Pullrod Washer 2-1/2"	2
4	506-2502	1/4" - 20 x 1" Slotted Hex	2
5	517-0106	1-1/4" Gray PVC	12
6	517-0606	105" Pullrod	1

WLH 10/08/18