

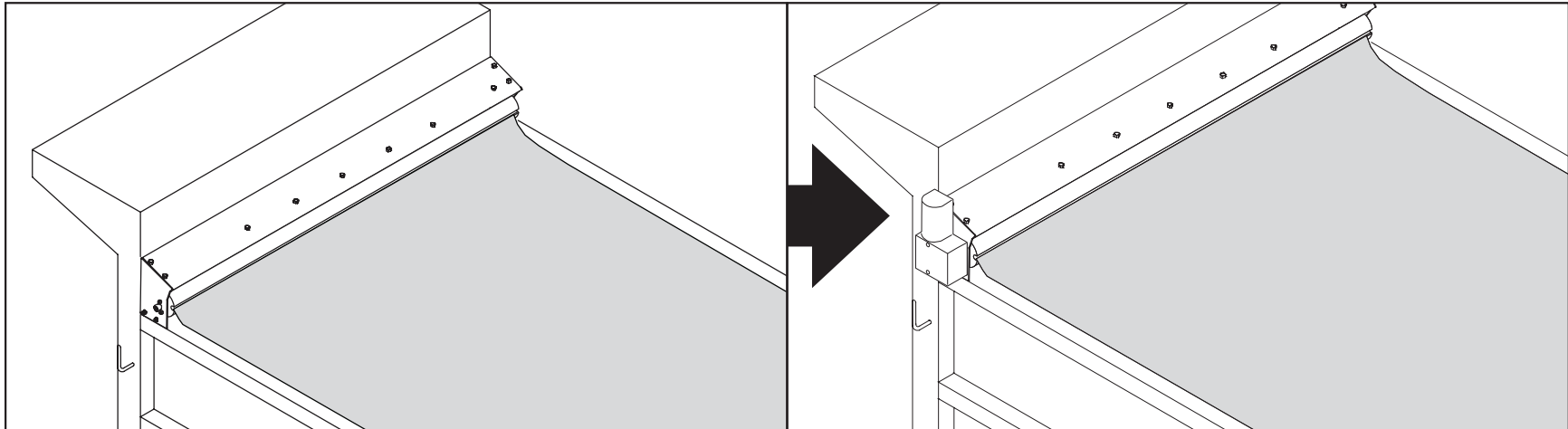


1404 N. Marshall Ave. El Cajon CA. 92020

WLH 04/20/17

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

501-0715, 501-0719, 501-0725, 501-0736
(230-0215 Configuration)



607-0138

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1404 N. Marshall Ave. El Cajon CA. 92020

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

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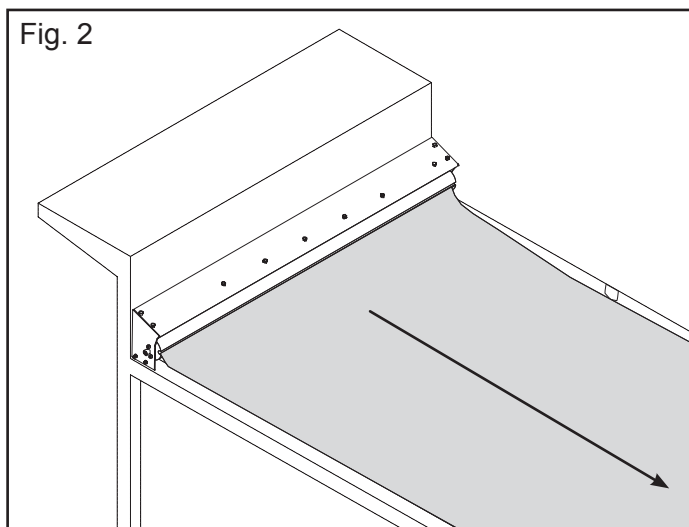
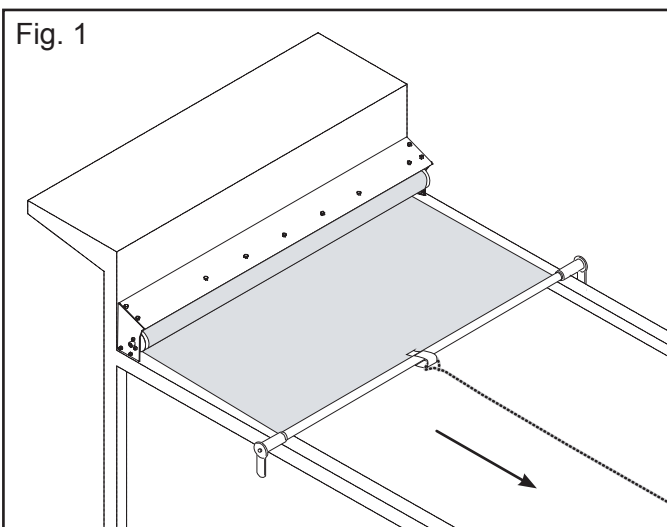
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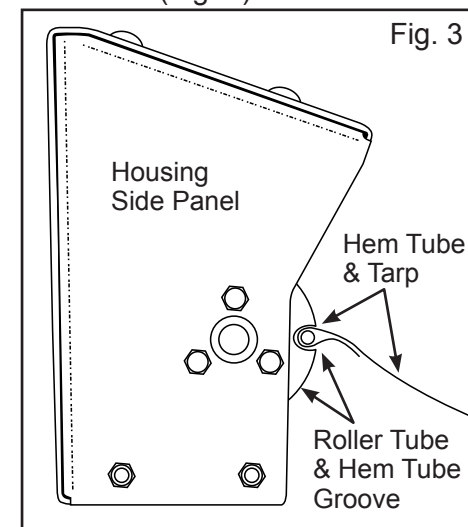
Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

Securing Roller and Removing Tarp

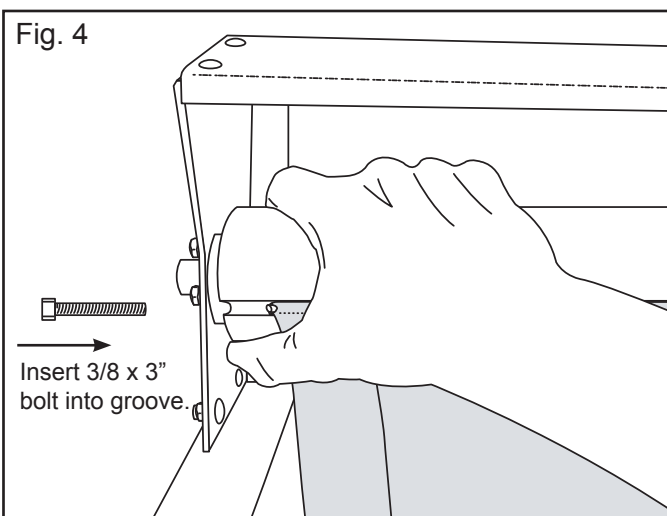
Step 1: Extend tarp until it is completely unrolled from the roller tube (Fig 1 & 2) and over the tail gate. Once tarp is fully extended, tie off at the end of the tail gate, so tarp will not roll back.



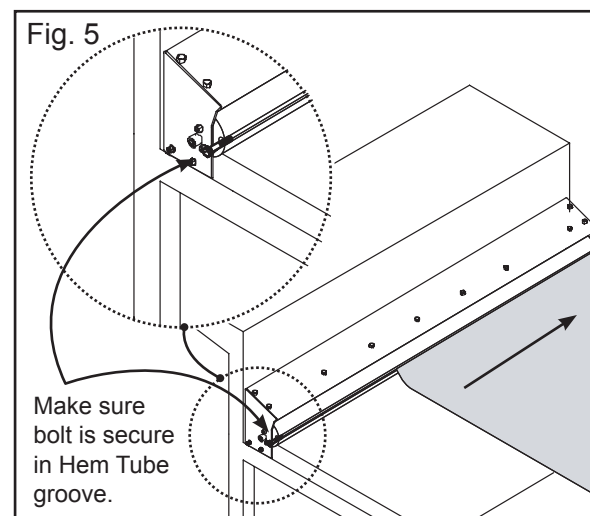
Side View (Fig. 3).



Note: The Steel Protector is to remain on box during entire conversion.



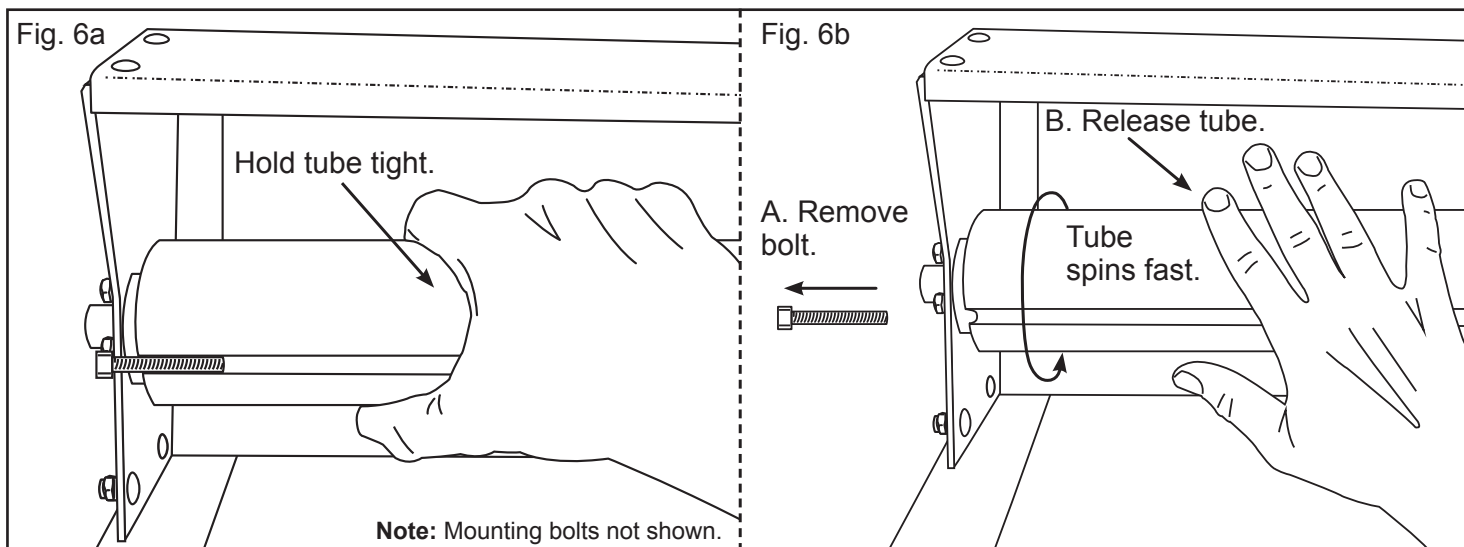
Step 2: Roll the roller tube hem tube groove to allow for insertion of the included 3/8" bolt. When the two are aligned, hold the tube in place and insert the bolt into the hole and roller tube. This will assure that the roller tube will not rotate as the tarp is removed (Fig. 4).



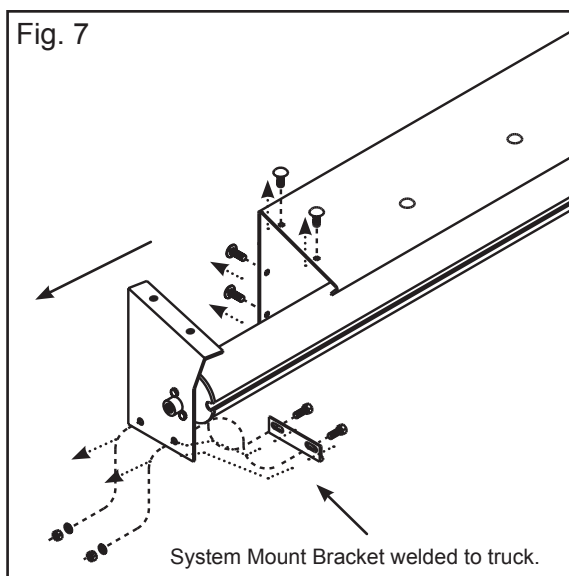
Step 3: Once roller tube is secure, remove tarp from groove through slot on the right side of the Steel Protector (Fig. 5) and set aside.

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

Removing Roller Tube

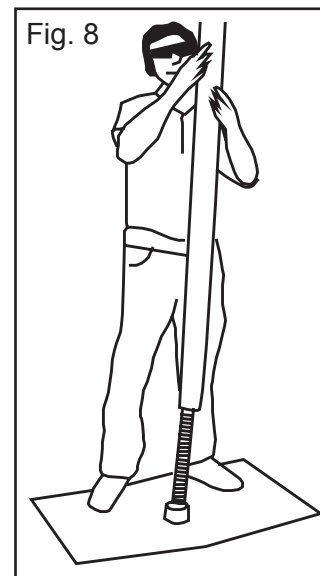


Step 4: With bolt in roller groove, hold roller tight with hand then use other hand to remove bolt (Fig 6a). Once the bolt is removed, let go of the roller to release the spring tension (Fig. 6b-A & B). When released, the roller tube will spin rapidly until all tension is released.



Step 5: Remove the end plate and roller tube from the housing (Fig. 7).

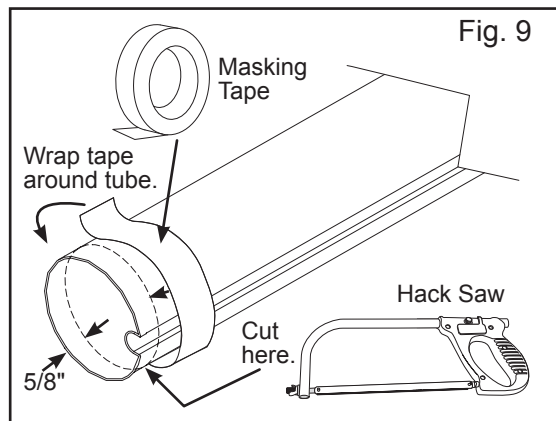
Note: The mounting bracket will need to be reused with the new end plate.



Step 6: Remove the screw that retains the End Cap (Shaft End). Place a piece of cardboard on the ground and hold the roller assembly vertically, with the end plate towards the ground. Shake the roller assembly up and down above the cardboard to pop the end cap and spring assembly free from the roller tube (Fig. 8).

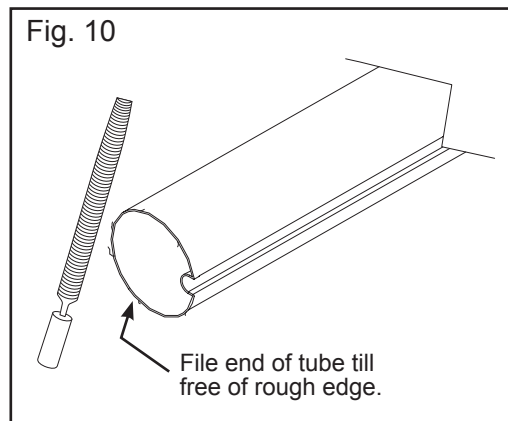
Note: The cardboard is to protect the end of the spring shaft when it breaks free.

Roller Tube End Cap Installation

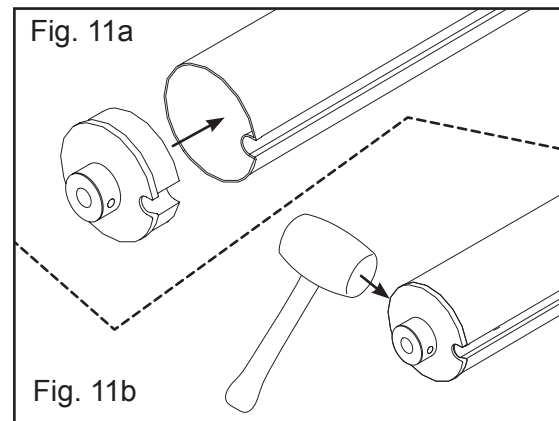


Step 7: Position the roller tube on a flat surface. Cut roller tube 5/8" from end using a hack saw (Fig. 9).

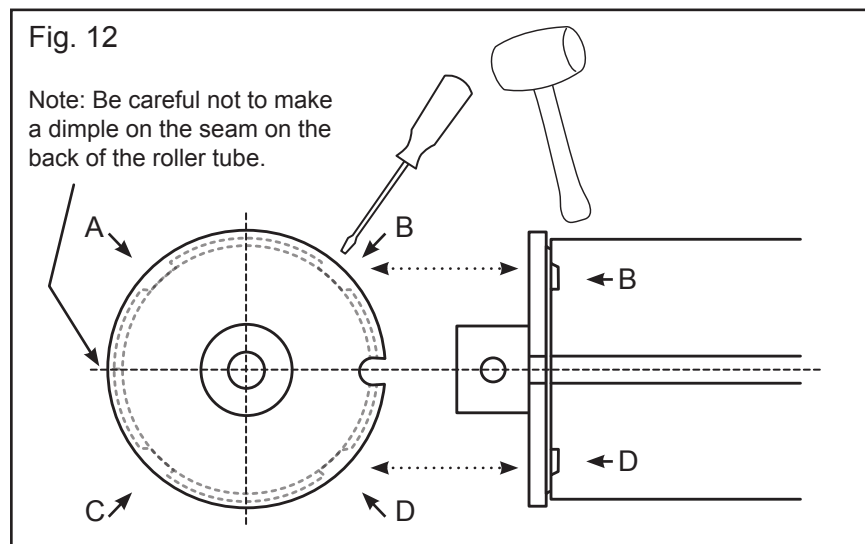
Note: Use masking tape wrapped around tube as a cutting guide.



Step 8: After cutting off the 5/8" section and removing the masking tape (Fig. 10), file the edges to smooth out end of tube and provide a better fit for the end cap.



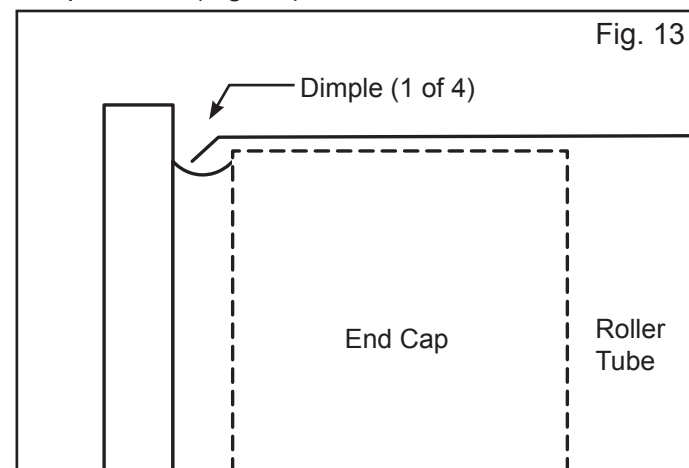
Step 9: Insert end cap into roller tube. Use a rubber mallet to tap the edges of the end cap lightly to ensure that it has been seated properly (Fig. 11a & 11b).



Step 10: To secure the end cap in the roller tube, make four (4) indentations or dimples to hold the end cap in place. Use a mallet and flathead screwdriver to make the dimples (Fig. 12 - A, B, C & D).

WARNING: Do not make indentation on welded seam.

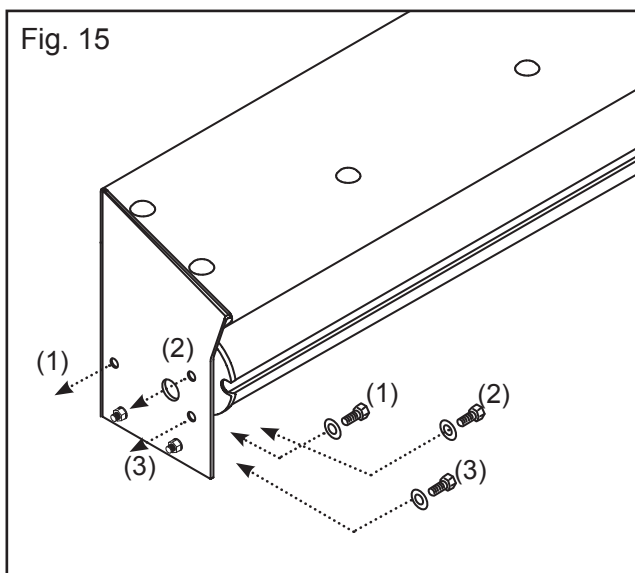
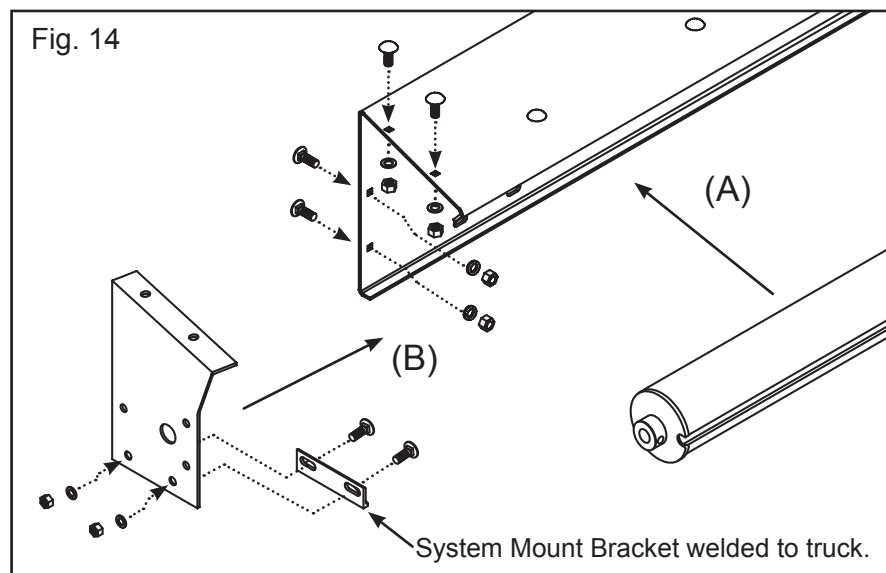
Dimple detail (Fig. 13).



Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

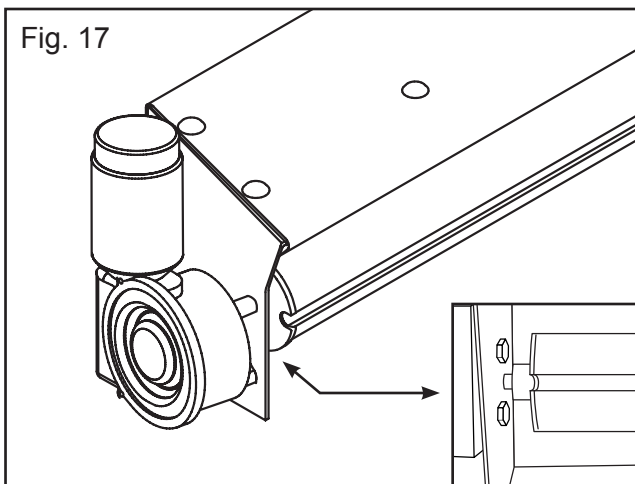
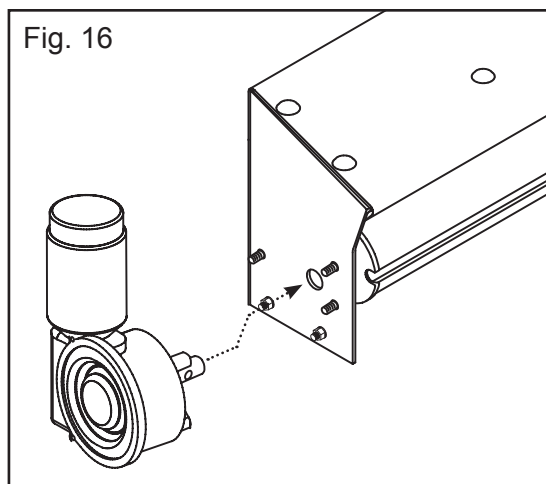
Roller Tube and Electric Motor Installation

Step 11: Insert Roller tube into Steel Protector Housing (Fig. 14-A) and secure to Electric End Plate (Fig. 14-B) using existing fasteners.



Step 12: Insert three (3) HHCS bolts (Fig. 15) to allow for the Electric Motor to be mounted on the side of the Steel Protector.

Step 13: With the HHCS bolts in place, attach and secure the Electric Motor (Fig. 16) to the Electric End Plate using a 5/16" wrench.

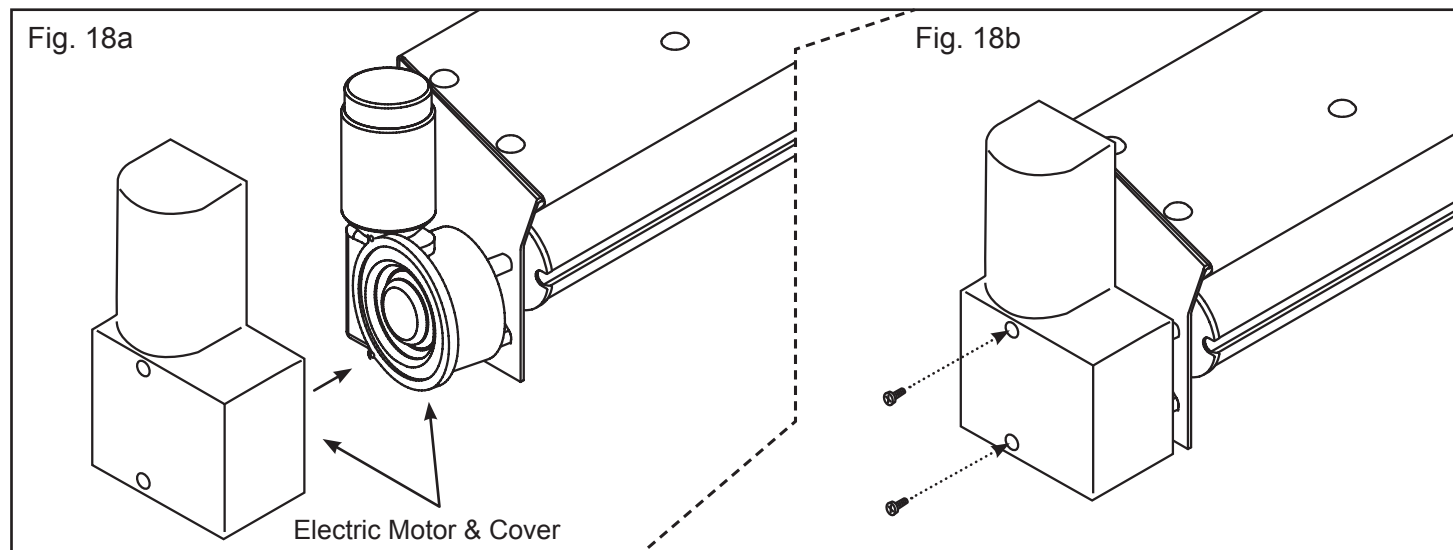


Step 14: With the Electric Motor in place, secure with three (3) HHCS Bolts (Fig. 17).

Note: Make sure the motor shaft is inserted in the roller tube end cap.

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

Roller Tube and Electric Motor Installation

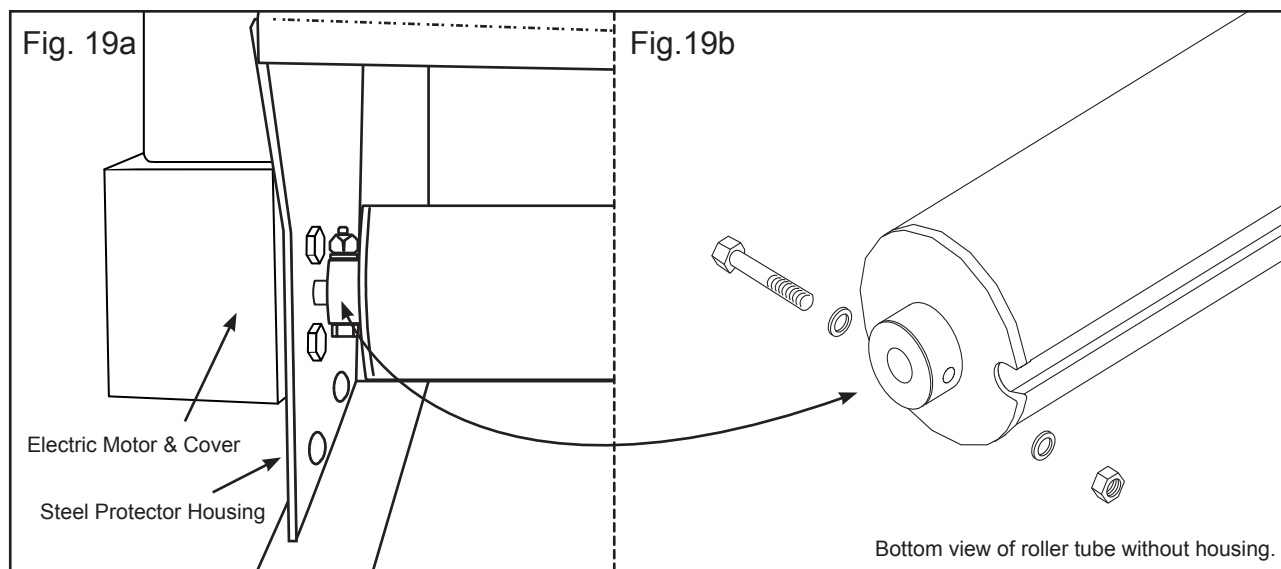


Step 15: Wire motor with Switch Kit per instructions on page 7 & 8.

Step 16: Place Electric Motor Cover on the mounted motor (Fig. 18a) and then secure with two (2) mounting screws (Fig. 18b).

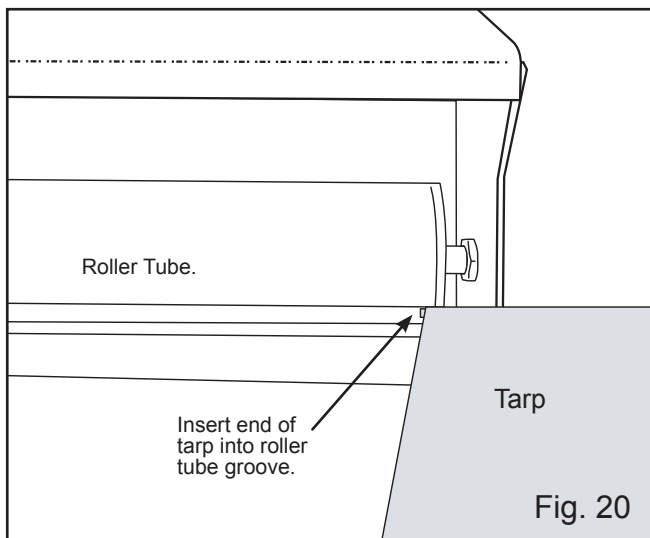
Step 17: With the Electric Motor drive shaft inserted into the roller tube end cap, install the HHCS bolt, flat washers and nyloc nut (Fig. 19a & b) and tighten.

Note: Make sure the roller tube is firmly secured to the Electric Motor shaft.

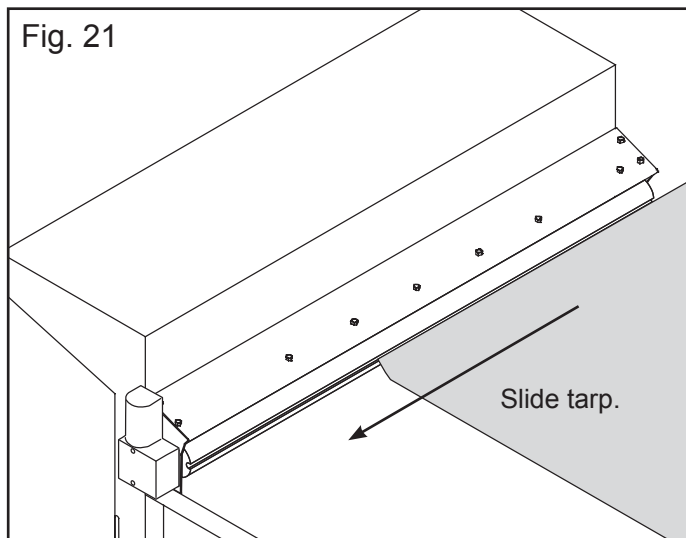


Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

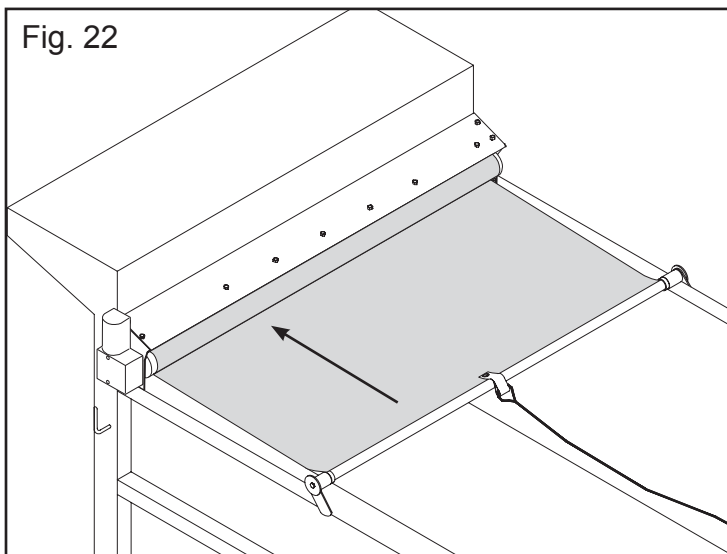
Tarp Reinstallation



Step 18: Slide the edge of the tarp into the housing and roller tube groove (Fig. 20).



Step 19: Slide tarp in roller tube groove until it is flush with the other side (Fig. 21).



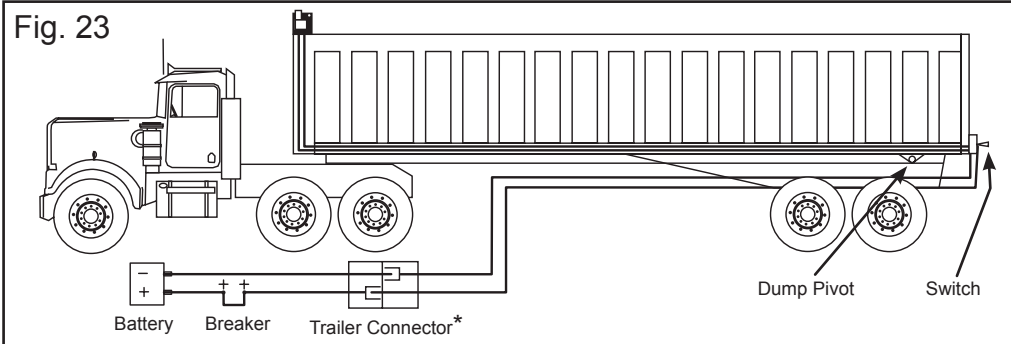
Step 20: Once the tarp is installed and square on the box, use the electric motor to retract tarp (Fig. 22).

Note: See electric motor wiring instructions on page 7 & 8.

Special note: If installing an Arm Kit, use Spring Kit instructions from here on.

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

Electric Motor Wiring and Plug Assembly

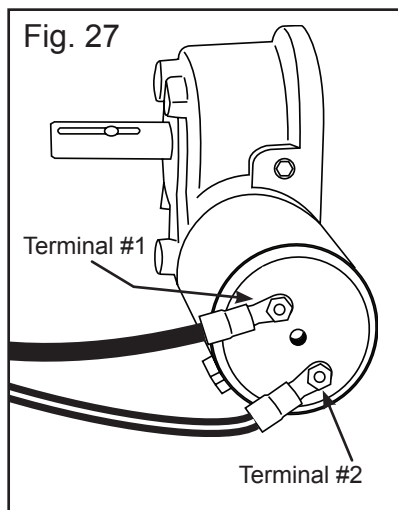
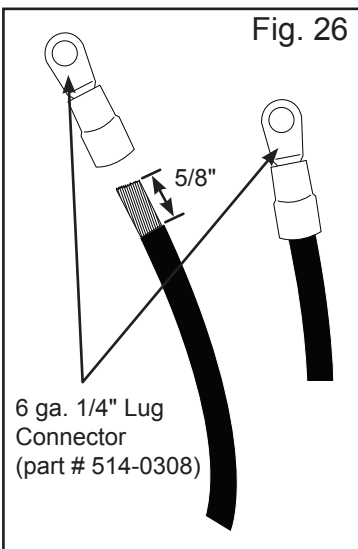


Step A - Wiring:

First, remove motor housing, then run the 6 ga. wire to both locations (motor & battery box) and attach to truck body (Fig. 23).

Note: The wire must go beyond the pivot point.

Caution: Make sure wire does not get pinched at the pivot.

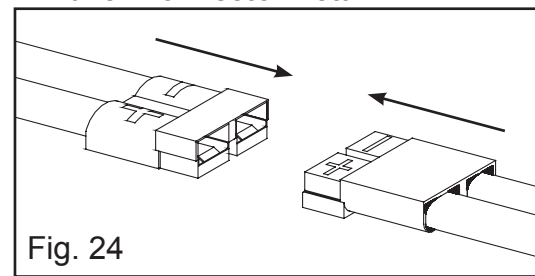


Step D - Attaching The Connectors (Motor):

1. Split the molded 6 ga. wire approximately 4" and strip the ends about 5/8" down.
2. Attach connectors (part # 514-0308) and crimp (Fig. 26).
3. Attach black wire to Terminal #1 on motor (Fig. 27).
4. Attach red striped wire to Terminal #2 on motor (Fig. 27).

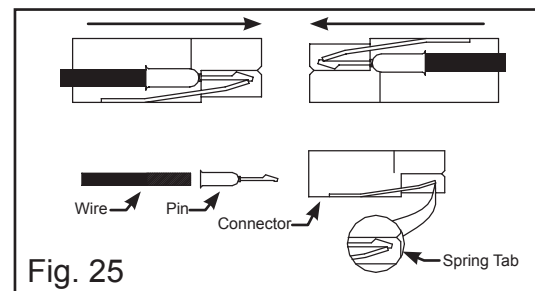
Note: Wire Cutters required.

* Trailer Connector Detail



Step B - Wiring:

Assemble the Quick Disconnect as shown (Fig. 24).



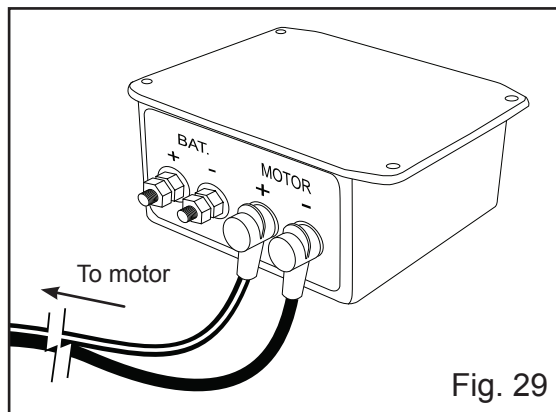
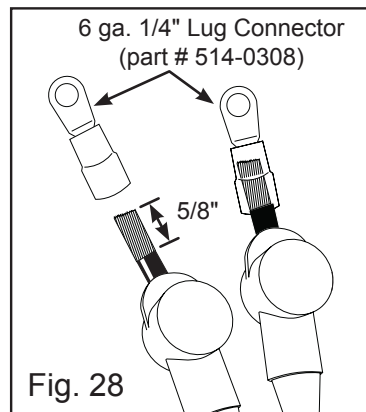
Step C:

Crimp or solder pin to wire (Fig. 25).

Note: Make sure the pin snaps over the end of the spring tab.

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

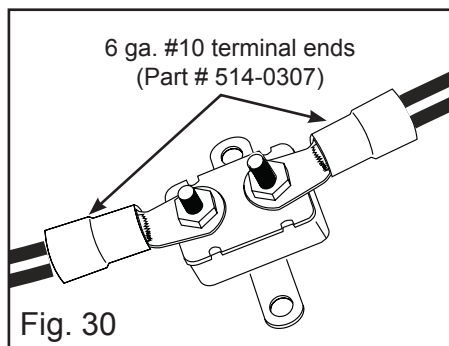
Electric Motor and Breaker Wiring



Step E:

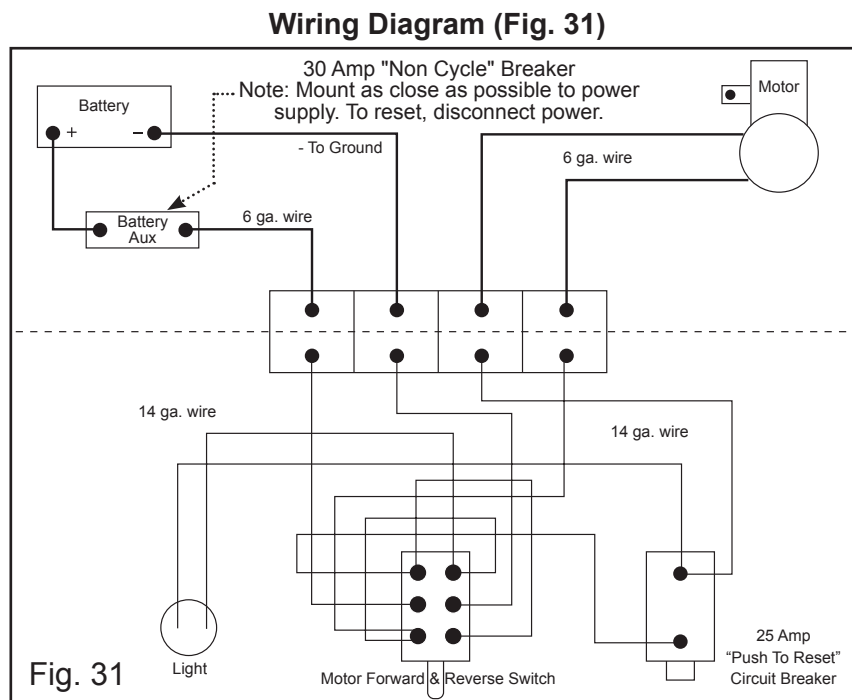
1. Mount the Control Box at tailgate.
2. Spilt the 6 ga. wire at the Control Box about 4" back and slip on rubber boots Red Boot (part # 514-0319) on red striped wire and Black Boot (part # 514-0317) on black wire (Fig. 28 & 29).
3. Strip wire about 5/8" and attach connectors (part # 514-0308) (Fig. 28).
4. Attach Red Striped wire to Motor (+) and Black wire to Motor (-) on Control Box (Fig. 29).

Note: Do not over tighten nuts on connections!



Step F:

1. Mount breaker in the battery box away from moisture.
2. Cut a section in the red 6 ga. wire that will run to the positive terminal on the battery.
3. Strip wire the ends about 5/8" and attach 6 ga. #10 terminal ends (part # 514-0307) (Fig. 30).
4. Attach to breaker.



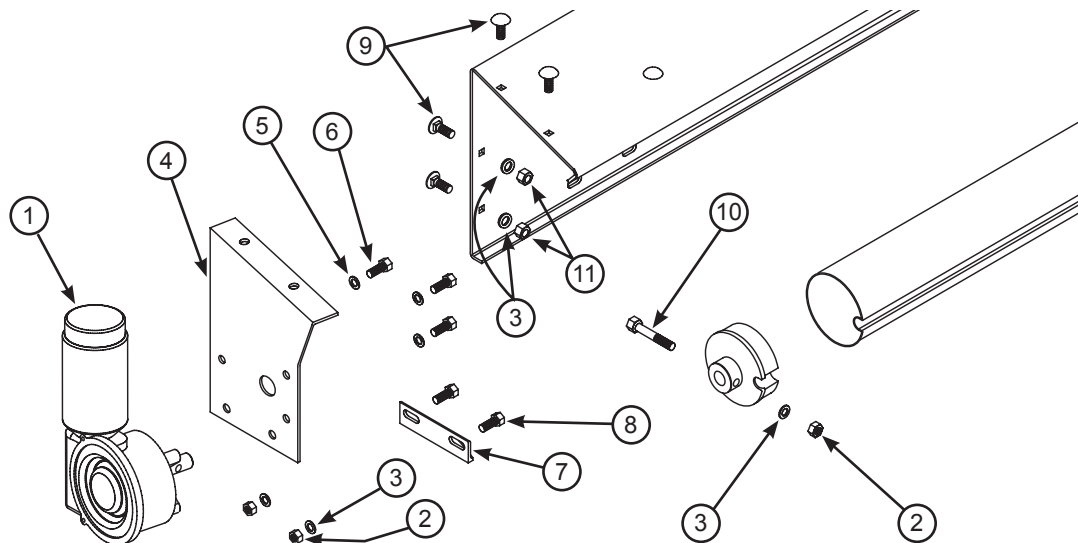
Motor check out procedure:

1. Remove leads from motor & attach volt meter to the leads.
2. With the switch in the on position, the volt meter should read 12 volts minimum. If voltage is low recheck with engine running. Recheck wiring and connections (minimum 6 gauge wire must be used).
3. Return switch to the neutral position & reattach leads to motor.
4. Attach volt meter to leads at the motor.
5. With the switch in the on position and the leads attached, the volt meter should read 8.5 volts minimum. If voltage is low recheck with engine running. Recheck wiring and connections (minimum 6 gauge wire must be used).
6. Return switch to the neutral position and attach amp meter to leads at the motor.
7. With the switch in the on position, amp meter should read approximately 20 – 30 amps. Constant amperage reading of over 40 amps indicated binding in the system and/or low voltage.

Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

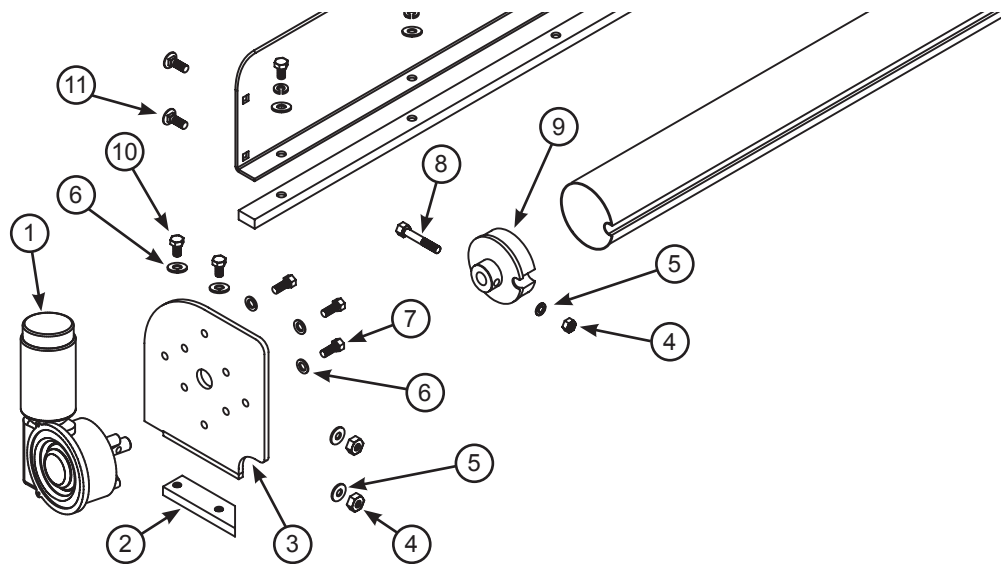
Steel Protector Housing Conversion Kit: 501-0715

ITEM	PART #	DESCRIPTION	QTY
1	517-0906	12V DC Electric Motor	1
2	504-3103	5/16" - 18 Nyloc Nut	3
3	505-2502	1/4" Flat Washer USS	5
4	501-0214	Electric End Plate "N" System	1
5	505-3102	5/16" Lock Washer	3
6	503-3105	5/16" - 18 x 1"lg. HHCS Bolt	3
7	501-1521	System Mount Bracket (Left)	1
8	503-3104	5/16" - 18 x 3/4"lg. Carriage Bolt	2
9	503-2505	1/4" - 20 x 3/4"lg. Carriage Bolt	4
10	503-3108	5/16" - 18 x 1-3/4"lg. HHCS Bolt	1
11	504-2506	1/4" - 20 x Nyloc Nut (Thin)	2



7" Aluminum Windguard Conversion Kit: 501-0719

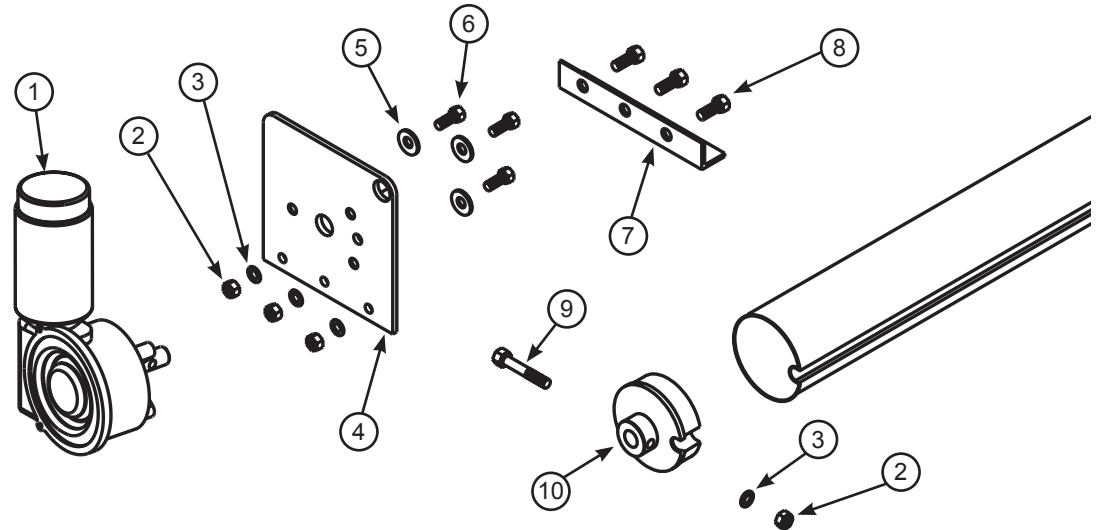
ITEM	PART #	DESCRIPTION	QTY
1	517-0906	12V DC Electric Motor 1.1 HP	1
--	517-0909	12V DC Electric Motor 1.3 HP	--
2	501-150X	5" Mounting Bar (Steel or Aluminum)	1
3	501-0209	7.5" Folded Ele. Alum. End Plate (Drvr.)	1
4	504-3103	5/16" - 18 Nyloc Nut	3
5	505-2502	1/4" Flat Washer USS	3
6	505-3102	5/16" Lock Washer	5
7	503-3103	5/16" - 18 x 1"lg. HHCS Bolt	3
8	503-3108	5/16" - 18 x 1-3/4"lg. HHCS Bolt	1
9	501-9915	Aluminum Driver End Cap	1
10	503-3102	5/16" - 18 x 5/8"lg. HHCS Bolt	2
11	503-3104	5/16" - 18 x 3/4"lg. Carriage Bolt	2



Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

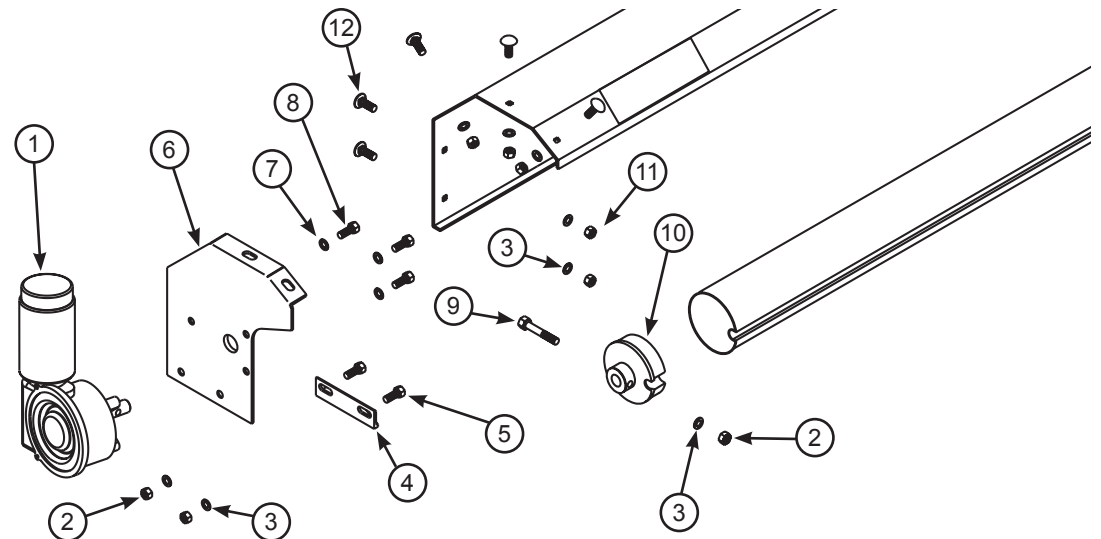
9" Open Conversion Kit: 501-0725

ITEM	PART #	DESCRIPTION	QTY
1	517-0906	12V DC Electric Motor 1.1 HP	1
--	517-0909	12V DC Electric Motor 1.3 HP	--
2	504-3103	5/16" - 18 Nyloc Nut	4
3	505-2502	1/4" Flat Washer USS	4
4	501-0221	9" Open End Plate, Electric (Drvr.)	1
5	505-3102	5/16" Lock Washer	3
6	503-3103	5/16" - 18 x 3/4"lg. HHCS Bolt	3
7	501-1526	Open System Mount Bracket (Steel)	1
8	503-3104	5/16" - 18 x 3/4"lg. Carriage Bolt	3
9	503-3108	5/16" - 18 x 1-3/4"lg. HHCS Bolt	1
10	501-9915	Roller Drive Aluminum End Cap	1



Steel Protector Plus Conversion Kit: 501-0736

ITEM	PART #	DESCRIPTION	QTY
1	517-0906	12V DC Electric Motor 1.1 HP	1
--	517-0909	12V DC Electric Motor 1.3 HP	--
2	504-3103	5/16" - 18 Nyloc Nut	3
3	505-2502	1/4" Flat Washer USS	8
4	501-152X	System Mount Bracket (Left) (Steel or Aluminum)	1
5	503-3104	5/16" - 18 x 3/4"lg. Carriage Bolt	2
6	501-0241	Electric End Plate "N" System	1
7	505-3102	5/16" Lock Washer	3
8	503-3103	5/16" - 18 x 3/4"lg. HHCS Bolt	3
9	503-3108	5/16" - 18 x 1-3/4"lg. HHCS Bolt	2
10	501-9915	Roller Drive Aluminum End Cap	1
11	504-2503	1/4" - 20 Nyloc Nut	5
12	503-2505	1/4" - 20 x 3/4"lg. Carriage Bolt	5





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Steel Protector, 7" Aluminum Windguard, 9" Open & Steel Protector Plus w/Electric Drive Conversion Kit Installation Instructions

Tools Required

ITEM	DESCRIPTION	QTY
1	Hack Saw	1
2	Adjustable Wrench	1
3	Rubber Mallet	1
4	Metal File	1
5	Flathead Screwdriver	1
6	Masking Tape	1
7	Wire Cutters	1
8	5/16" Wrench	1

