DURING INSTALLATION, SOME FABRICATION MAY BE REQUIRED.
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TOOLS, DIAGRAMS & PARTS
Recommended Tools

- Safety Glasses and Gloves
- Welding Equipment & Helmet
- Pencil or Marker
- Tape Measure
- Adjustable Wrench
- Philips Screwdriver
- Mallet or Deadblow Hammer
- 3/4" Box Wrench
- Socket Wrench
- 3/4", 7/16" & 5/16" Sockets
- Impact Drill (Optional)
**BOOT COLORS**

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<th>Red</th>
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<th>Yellow</th>
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**WIRING INSTRUCTIONS**

See document 607-0089/Basic Smart Switch–12 Volt in Technical Documents at Pulltarps.com

Note: 12” Max distance between Battery and Breaker.
INSTALLATION INSTRUCTIONS

Steel Protector™ #208-0215

Steel Protector (Automatic) Systems for Arm Sets up to 22'

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART #</th>
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<th>QTY</th>
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<tbody>
<tr>
<td>1</td>
<td>501-01XX</td>
<td>Galv. Steel Protector Hsg. 80, 84, 87, 89, 96, 100”</td>
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<td>2</td>
<td>501-13XX</td>
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<td>3</td>
<td>501-0138</td>
<td>48” x 5 1/2” Galvanized Insert</td>
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<td>4</td>
<td>501-152X</td>
<td>System Mount Bracket (Specify Steel or Aluminum - Left)</td>
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<td>System Mount Bracket (Specify Steel or Aluminum - Right)</td>
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<td>Right End Plate for “N” System</td>
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<td>Electric End Plate “N” System</td>
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<td>8</td>
<td>501-0633</td>
<td>Universal Bolt In Stud Kit</td>
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<td>9</td>
<td>503-2505</td>
<td>1/4” - 20 x 3/4”lg. Carriage Bolt</td>
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<td>10</td>
<td>505-2502</td>
<td>1/4” Flat Washer USS</td>
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<td>11</td>
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<td>5/16” - 18 x 3/4”lg. HHCS Bolt</td>
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<td>17</td>
<td>505-3102</td>
<td>5/16” Lock Washer</td>
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<td>18</td>
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<td>Pulltarps® 1.3 HP 12V DC Electric Motor</td>
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<td>Driver Aluminum End Cap</td>
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(Mounts to back of System)

REV. 11/18/21 WLH
Steel Protector (Automatic) Systems for Arm Sets up to 22’

INSTALLATION INSTRUCTIONS

High Mount Extended Reach Arm System #501-1766 (With Wire)
#501-1767 (No Wire)

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<td>103” Teardrop Pull Bar</td>
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<td>2</td>
<td>501-1729</td>
<td>51” Aluminum Bent Upper Arm</td>
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<td>501-1209</td>
<td>103” Aluminum Lower Arm</td>
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<td>4</td>
<td>501-1250</td>
<td>Aluminum Elbow &amp; Upper Connection</td>
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<td>501-1293</td>
<td>Teardrop Bumper Kit</td>
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<td>6</td>
<td>501-2203</td>
<td>4 Spring Enclosed Housing Assembly (Left)</td>
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<td>501-2204</td>
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<td>501-2235</td>
<td>EZ-Mount Assembly</td>
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<td>9</td>
<td>514-0122</td>
<td>6GA. Wire 80’ Long (For 501-1766)</td>
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Illustration view shown looking from passenger side to rear of vehicle.

REV. 09/09/20 WLH
### Steel Protector (Automatic) Systems for Arm Sets up to 22'

#### EZ-Mount 4 Spring Arm System #501-1768 (With Wire)  
#501-1769 (No Wire)

**Illustration view shown looking from passenger side to rear of vehicle.**

**INSTALLATION INSTRUCTIONS**

<table>
<thead>
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<th>ITEM</th>
<th>PART #</th>
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<td>103&quot; Teardrop Pull Bar</td>
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<td>4 Spring Enclosed Housing Assembly (Right)</td>
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<td>EZ-Mount Assembly</td>
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<td>9</td>
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<td>6GA. Wire 70’ Long (For 501-1768)</td>
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REV. 09/09/20 WLH
Steel Protector (Automatic) Systems for Arm Sets up to 22’

**INSTALLATION INSTRUCTIONS**

4 Spring Enclosed Housing Assembly Right #501-2204 (not shown) & Left #501-2203 (shown)

<table>
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<th>ITEM</th>
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<td>501-1162</td>
<td>Washer 1-7/8” x 1-1/4” Narrow Rim Bushing</td>
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<td>UHMW Enclosed Spring End Cap</td>
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<td>501-2210</td>
<td>Enclosed 4 Spring Housing</td>
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<td>4</td>
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<td>Steel Adjustable Enclosed 4 Spring Pivot Only</td>
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<td>3/8” - 16 x 3” Hex Head Bolt</td>
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<td>1-1/4” Snap Ring</td>
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<td>8</td>
<td>517-9966</td>
<td>Spring, Underbody Arm System</td>
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Assembled View of 501-2203

REV. 08/27/19 WLH
Mounting Positions

Step 1: Determine the mounting position for your truck Fig. 1 - 7.

**Fig. 1**
- "A" Mount level to side rails

**Fig. 2**
- "B" Mounted to cab shield

**Fig. 3**
- "C" Mounted on front of cab shield

**Fig. 4**
- "D" Mount to side rails (no cab shield)

**Fig. 5**
- "E" Mounted in front

**Fig. 6**
- "F" Mounted on back of cab shield

**Fig. 7**
- "G" Mounted in front so tarp rolls off top

"B" BRACKETS

**NOTE:** Use optional “B” brackets when mounting in position “B” and “E” (Fig. 8).
INSTALLATION INSTRUCTIONS

Steel Protector (Automatic) Systems for Arm Sets up to 22’

Welding System to Truck

Step 2: Weld system mounting bar to truck (Fig. 9).

Step 3: If needed, remove tarp before welding to avoid damage (Fig. 10). To remove tarp slide the tarp out of the slotted end of the housing and remove from work area.

Fig. 9

Weld Mounting Bar to Truck

Fig. 10

Step 4. Reinstall Tarp - If arms already installed:

Slide the front end of tarp (with beaded rod) into the slot of the roller from the opposite side of the locking bolt. If needed, lubricate the edge of the tarp with soapy water so it will slide into the roller slot easy (Fig. 11).

After the tarp is in place, make sure that it is centered on the roller with an equal amount of space on each end, and that the bead tubing is also equally spaced. If the tarp rolls up consistently off to one side or the other, you can offset the tarp to the opposite side on the roller to start with, this way the tarp will roll up as centered as possible. Note: See Step 14 & 15 for installing tarp into pullbar.

Fig. 11

TARP MUST BE IN THE OPEN POSITION WHEN DUMPING!
Pivot Points and Mounting Locations (Low Mount)

**Step 5:** Determining the Pivot Points and Mounting Locations on each side, careful measurement must be taken to insure that the arm and pivot assemblies are mounted square and parallel to the truck or trailer body. Locate the proper mounting positions by determining Point “A” and Point “B” and insuring measurement “D” and “E” are equal (Fig. 12). Point “C” must be located as low as possible and be the same on both sides.

**Step 6 - Arm Preload:** Install Arm and Pivot assemblies with Arm indexed (Fig. 13). Arms must be indexed with no spring load on pivots. Index Arm at 180 degrees of travel from the Roller Mechanism for proper preload of the spring. The dotted lines represent proper 180 degree preload position for applications with Bent Arms. Mark pivot pin location on box.

**Step 7 - Mounting the Pivot Mount:**
Locate the 4 Spring Housing with marks made in Step 5. Weld the Spring Mounting in place and then bolt on the Spring Housing 180° from Housing Location (Fig. 14).
Note: Applies to Lower Mounting.
Pivot Points and Mounting Locations (High Mount)

Step 8: Careful measurements must be taken to insure that the arm and pivot assemblies are mounted square and parallel to the truck or trailer body. Locate the proper mounting positions by determining Point “A” and Point “B” and insuring measurement “D” and “E” are equal (Fig. 15). The pivot “C” should be 1/2 way between Point “A” and Point “B” and 7” below the top rail on both sides (Fig. 16).

Step 9 - Arm Preload:
Arm must be indexed with no load at 24 degrees to top rail for proper preload of springs (Fig. 17).

Step 10 - Setting the Index for EZ-Mount System (High Mount Only):
Indexing illustrations are for DRIVER SIDE index (Fig 18A, 18B, & 18C).
**Arm Alignment, Tarp and Pullbar Installation**

**Step 11 - Correct Alignment of arm to truck:**
Arms and pivots must be square and parallel to truck (Fig. 19).
(Dimension “A” must equal “B” - Dimension “C” must equal “D” - Dimension “E” must equal “F”)

**Step 12: Adjust the Arms on both sides to be the same length (Fig. 20).**

**Step 13 - Tarp Installation:**
Slide Tarp into Groove on roller tube and center (Fig. 21).

**Step 14 - Installing The Pullbar:**
Cut the pullbar to length making sure the arms remain parallel and square to the body.

Slide the tarp into groove in the pullbar and center the tarp.

Roll the tarp up on the pullbar two revolutions (Fig. 22).

**Step 15: Fasten the tarp in place by sliding the two urethane bumpers on to the pullbar far enough to touch the edges of the tarp. Lock in place by installing a 1-1/2” long (506-9933) self drilling screw through the bumper and into the hem tube groove of the pullbar (Fig. 23).**

For elbows, use the long bolts provided in the kit, when deployed to catch the rope on flap tarps.

**Note:** Tarp must be retracted when dumping.
Quick Disconnect Plug Assembly

Step 16: Assemble the Quick Disconnect (Fig. 24, 25 & 26).
Option #1, Plug Assembly - Part # 514-0505.

Option #2, Plug Assembly - Part # 514-0501.
FLAP TARP, ROPE & HOOK INSTALLATION
Optional Flap Tarp, Rope and Hook Installation

**Parts:**
- Tie Down Hooks (Steel or Alum.)
- Pull Down Hook

*Note: The Location Of The Tie Down Hooks Is Critical!*

**Step 1:** Flip the braided rope over the corner so that the flaps and tie down ropes hang over each side of the box. The number of tie down hooks vary depending on the length of your tarp. One pull down hook is included with your Pulltarp system. If needed. Use the hook to pull the braided rope and flaps over the side of the box.

The tie down hooks must be positioned so that:

1. The tie down rope can be reached from the ground.
2. The bungee cord has to be stretched to reach the last hook (see Step 2 in *Bungee Cord Installation* section).
3. The rope has no slack.
4. The tie down hooks are level with one another.

To ensure proper hook placement, first duct tape the rope to the box in place of the tie down hooks. Start with hook closest to the cab.

1. Position the first hook 6” (15.24cm) down and 12” (30.48cm) forward (toward the cab) from the first grommet (Fig. 27).
2. Position 2nd hook straight down from 1st grommet. This hook should be reached from ground (Fig. 28).
3. Place middle hooks equal distances from grommet (Fig. 29). These hooks should be placed at the same height as the second hook.
4. Position last hook (closest to the tailgate) below the last grommet at the same height as the others (Fig. 30).
5. Weld hooks in place.
**Bungee Cord Installation**

**Parts:**
- 2 Bungee Cords
- 2 Oval Compression Sleeves
- 1 Snap Clip

**Step 2:** After side hooks are installed, the tie down rope must be installed and cut to proper length. It is important to get all of the slack out of the rope to prevent blowing and rubbing of flaps in windy conditions.

**Tarps with Side Flaps**

To tighten, pull loose end of rope through the Oval Compression Sleeve (Fig. 31). Stretch the bungee cord making sure all slack is taken out of the rope, crimp compression sleeve (Fig. 32). Be sure to keep flaps even on sides so Tie Down Ropes remain equal in length.

**Note:** Check for proper placement of rope through the last two hooks.

**Snap Clip Installation**

Flip the rope back on top of the tarp, making sure to hold the bungee at all times. The first snap clip is factory installed 5’-6” from the pullrod. Open the clip and enclose the rope. Weave the second clip through the main pullrope where the ends of the bungee cords meet the main pullrope. Make sure the rope is taught when clipped (Fig. 33).

**Note:** First snap clip should not be used on long wheel base belly dumps.

**Connect Bungee Cord to Rope**

1. Thread braided rope through Oval Compression Sleeve.
2. Feed rope through the eye of the bungee cord.
3. Thread the rope back through the oval compression sleeve. Adjust for proper length. Crimp compression sleeve.

**Excess Rope**

You may need extra rope to keep the side flap system ground operated. If your application requires extra rope, the slack needs to be taken up by a taching the end of the bungee cord to an alternate hook (Fig. 34).

**Parts:**
- 2 Bungee Cords
- 2 Oval Compression Sleeves
- 1 Snap Clip

**Fig. 31**
**Fig. 32**
**Fig. 33**
**Fig. 34**
**Steel Protector (Automatic) Systems for Arm Sets up to 22’**

**INSTALLATION INSTRUCTIONS**

**Flap, Rope and Rope Hook Placement**

**Step 3 - Flap / Tie Down Rope Placement and Installation (Fig. 35).**

**Step 4 - Rope Hook Placement:** Weld rope storage hook on the top of the arms approx. 32” apart (Fig. 36).

**Step 5 - Rope Hook Placement For Aluminum Arms:**
Use Self Drilling screws (part #506-9933) to install hooks (Fig. 37).

**Step 6 - Rope storage on Arms**
(Fig. 38).