RATCHET OPERATION & REPLACEMENT

To Increase Tension:
1. Pull tarp out as far as possible and tie off at tailgate.
2. Remove Ratchet Lock. Turn ratchet nut clockwise 5 turns at a time.
3. Test operation and repeat steps 1 through 3 if necessary.

WARNING:
Physical harm could occur if all tension is not removed before removing this plate.

To Disengage Lever:
Remove Ratchet Lock & Insert Screwdriver Here

To Decrease Tension:
1. Remove Ratchet Lock. Place box end wrench on ratchet nut. Turn ratchet nut slightly to the right and don't let go.
2. Insert screwdriver to disengage lever. Hold wrench with both hands and slowly unwind spring pressure.
3. When desired tension is achieved, remove screwdriver allowing release lever to reengage ratchet gear.
4. Reinstall the Ratchet Lock.

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### ***Required Tools***

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Semi-Automatic Ratchet & Rollertube
Operation Instructions

RATCHET OPERATION

To Increase Tension
1. Pull tarp out as far as possible and tie off at tailgate
2. Remove Ratchet Lock. Turn ratchet nut clockwise 5 turns at at time.
3. Test operation and repeat steps 1 through 3 if necessary.

WARNING:
Physical harm could occur if all tension is not removed before removing this plate.

To Decrease Tension:
1. Remove Ratchet Lock. Place box end wrench on ratchet nut. Turn ratchet nut slighty to the right and don’t let go.
2. Insert screwdriver to disengage lever. Hold wrench with both hands and slowly unwind spring pressure.
3. When desired tension is achieved, remove screw driver allowing release lever to reengage ratchet gear.
4. Reinstall the Rachet Lock.

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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 Hemtub and insert in to the system housing (Fig. 1).

*Note: Make sure the Pulltarps logo is facing up.*

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

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

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

---

Fig. 1

Fig. 2

Fig. 3

Tarp fully extended and tied off.

Fig. 4A

Fig. 4B

Fig. 4C

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Installing Tarp and Adding Spring Tension to Ratchet

Step 5: With the included Ratchet Wrench, turn the ratchet nut clockwise to the appropriate number of rotations (Fig. 5A & B).

Step 6: Test the spring tension by having a team member cycle the tarp in and out, 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. 6).

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

Approximate pre-load rotations or winds.

<table>
<thead>
<tr>
<th>Tarp Length</th>
<th>13 feet</th>
<th>18 feet</th>
<th>25 feet</th>
<th>30 feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winds or Rotation (360° = 1 rotation)</td>
<td>25/30</td>
<td>30/35</td>
<td>35/40</td>
<td>45/50</td>
</tr>
</tbody>
</table>

Flaps

- Longer taps with flaps may require 5 to 10 additional turns

NOTE: DO NOT EXCEED 65 WINDS.
Tarp must be fully extended when adding tension to the spring.

Fig. 5A

Fig. 6

Cycle tarp in and out several times to test spring tension.

Fig. 7A

Fig. 7B

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Semi-Automatic Ratchet & Rollertube Operation Instructions

Releasing Spring Tension from Ratchet (With Tarp Installed)

**Step 1:** Fully extend tarp and tie off on the Tailgate (Fig. 8).

**Step 2:** Remove the Ratchet Lock Nut and Star Lock Washer (Fig. 9A & B).

**Step 3:** Insert screwdriver to disengage lever (Fig. 10).

**Step 4:** Hold wrench and slowly unwind spring pressure (Fig. 11).

**Step 5:** When desired tension is achieved remove screwdriver, allowing release lever to reengage ratchet gear (Fig. 12A & B).

**Step 6:** Reinstall the Ratchet Lock (Fig. 13).
Releasing Spring Tension from Ratchet (Without Tarp Installed)

**Step 1:** Remove the Ratchet Lock Bolt, Star Lock Washer & Ratchet Lock (Fig.14A, B & C).

**Step 2:** Insert 3/8" into Lock Nut hole. This will keep the rollertube in place while removing tension from the rollertube spring (Fig. 15A & B).

**Step 3:** Insert screwdriver to disengage lever (Fig. 16). Hold wrench and slowly unwind spring pressure (Fig. 17).

**Step 4:** When desired tension is achieved remove screwdriver, allowing release lever to reengage ratchet gear (Fig. 18).

**Step 5:** Rotate counter clockwise until lever reengages (Fig. 19).

**Step 6:** Remove the 3/8" bolt and Reinstall the Ratchet Lock. See page 4 (Fig. 13).
RATCHET REPLACEMENT
**Removing Tarp & Roller Tube**

**Step 1:** Extend tarp until it is completely unrolled from the roller tube (Fig. 20A & B) 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.

![Fig. 20A](image1)

![Fig. 20B](image2)

**NOTE:** See page 4 for example of tarp extended and properly tied off.

**Step 2:** Remove the Ratchet Lock bolt (Fig. 21).

**NOTE:** See page 4 for instructions.

**Step 3:** After removing Ratchet Lock bolt, roll the roller tube hem tube groove to align with the bolt hole. When the two are aligned, hold the tube in place and insert the provided 3/8" bolt into the hole and roller tube. This will assure that the roller tube will not rotate as the tarp is removed (Fig. 22).

![Fig. 22](image3)

**Step 4:** Once roller tube is secure, remove tarp from groove through slot on the right side and set aside (Fig. 23).

![Fig. 23](image4)
**Semi-Automatic Ratchet & Rollertube**

**Operation Instructions**

- **Step 1:** Release spring tension. NOTE: To release spring tension, see page 4.
- **Step 2:** Once tension is released, remove 3/8" bolt from ratchet cover plate. Install the 7/16” Ratchet Lock Bolt (Fig. 24A & B).
  
  ![Fig. 24A](image)
  ![Fig. 24B](image)

  **NOTE:** The four (4) ratchet plate screws stay in place in Step 2.

- **Step 3:** With 7/16” bolt in place, remove the four (4) screws from ratchet plate cover and carefully take off the plate (Fig. 25).

  ![Fig. 25](image)

  **SPECIAL NOTE:**
  When removing the ratchet plate, there may be some spring tension remaining in the roller tube. Let the ratchet plate spin until tension is fully released.

- **Step 4:** Remove Ratchet Lock Bolt, Ratchet Dog and Spring (Fig. 26).

  ![Fig. 26](image)

- **Step 5:** Out the side of the roller housing (Fig. 27).

  ![Fig. 27](image)

- **Step 6:** Use a pair of vise grips or channel locks to secure spring shaft and remove ratchet nut (Fig. 28).

  ![Fig. 28](image)

- **Step 7:** Remove ratchet housing (Fig. 29).

  ![Fig. 29](image)

**NOTE:** Do not remove nylon washer from spring shaft.

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Replacing Ratchet

**Step 7:** Replace ratchet housing and gear/nut on end of spring shaft by carefully following these steps.

A. Slide ratchet cover onto the end of the spring shaft (Fig. 30).

B. Apply Red Lock-Tight to threads and tighten the ratchet gear/nut using a 3/4” box end wrench while holding the shaft with vise grips or channel locks. Tighten snugly but don’t over tighten (Fig. 31).

**Step 8:** Slide roller assembly into roller housing and seat end cap onto stub shaft (Fig. 32 & 33). Be sure nylon washer is in place.

**Step 9:** The ratchet housing must be installed on the roller housing with the large hole in the lower right position and ratchet dog horizontal. Place new dog in dog slot and engage it in the gear teeth. Place new dog spring on top of dog with open end of arch facing up (Fig. 34). Replace ratchet cover plate and secure all four screws into housing (Fig. 35). Reinstall Ratchet Lock as shown on page 4 (Fig. 13).

**NOTE:** To add tension to spring, follow the steps on pages 1 & 2.
REQUIRED TOOLS
Tools used for Ratchet Operation and Replacement

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<thead>
<tr>
<th>ITEM</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>1</td>
<td>Flat Blade Screw Driver</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>#2 Phillips Screw Driver</td>
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</tr>
<tr>
<td>3</td>
<td>Ratchet Tool or 3/4” Box End Wrench</td>
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</tr>
<tr>
<td>4</td>
<td>Vice Grips or Channel Locks</td>
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</tr>
<tr>
<td>5</td>
<td>Red Lock Tight</td>
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</tbody>
</table>

WLH 03/25/19