

## RT4000 Series

For V-belt, V-ribbed, Synchronous Belt Drives  
and Roller Chain Drives

### Mounting Requirements

Before beginning the installation,  
review the following:

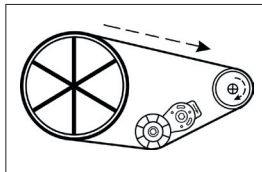


Fig. 1

- Mounting bracket and supporting framework must be rigid to prevent twisting under load.
  - Mounting bracket and rotary tensioner must be located to allow for correct alignment of the idler with the driveR and driveN pulleys or sprockets.
  - Rotary tensioner should always be mounted on the slack side of the belt or chain drive. See Figure 1.
  - The preferred location of a rotary tensioner/idler is on the inside of the belt drive. Optimum location would be where the idler provides nearly equal arcs of contact on both the driveR and driveN pulleys.
  - As a rule of thumb, the inside idler pulley should be the same diameter as the driveR pulley.
  - An outside spring-loaded rotary tensioner may be used, but it imposes a back bend on the belt. Follow the belt manufacturer's recommendations for diameter and location. Typically, this diameter should be 1/3 larger than the driveR pulley.
  - Rotary tensioner and idler sprocket should always be positioned on the outside of the chain.
- Note: At least three idler sprocket teeth must engage the chain.**
- If possible, position the rotary tensioner with idler approximately 1/2, but no less than 1/3, of the center distance from the driveR sprocket.
  - **Never use a spring-loaded rotary tensioner/idler on a reversing drive.**

# Assembly Instructions

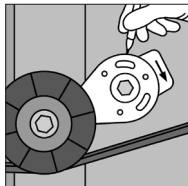


Fig. 2

1. The directional arrow at the bottom of the tensioner housing must point in the direction of the belt(s) (Figure 2). If not, it is necessary to disassemble the tensioner and reverse the spring. See steps 2 and 3. Otherwise, proceed to step 4.
2. RT4100/RT4902 — Remove the 1/2" bolt and washer from the body of the tensioner.  
RT4101/RT4900 — Remove the cable tie from the tensioner. When handling, be certain to securely hold both the housing/arm and base to prevent the unit from coming apart.
3. Lift off the aluminum housing/arm assembly, exposing the spring. Remove the spring, flip it over, and replace it on the tensioner base. The spring's center "tail" must engage the slot in the center shaft. On the aluminum housing/arm assembly, push out the directional arrow piece (you may need to squeeze it to disengage the catch). Reverse it so the arrow points the opposite way and snap it back into place.  
Note: if arrow is not pointing in the correct direction, the tensioner cannot be reassembled. Replace the housing/arm assembly onto the tensioner base.  
RT4100/RT4902 — Reinsert 1/2" bolt with washer and tighten.  
RT4101/RT4900 — Hold tensioner together securely.
4. Drill a hole in the mounting bracket corresponding to mounting bolt sizes 1/2-13 for RT4100/RT4902 and .510" for RT4101/RT4900.
5. Mount the idler to the tensioner arm. The holes in the arm are designed to accept a 1/2" diameter bolt. The hole closest to the tensioner body yields the highest force but accommodates a smaller idler diameter. The hole farthest from the tensioner body has a lesser force but will accommodate a larger idler. Table 1.
6. Bolt the tensioner/idler assembly onto the mounting bracket. Hand tighten only! Check the alignment of the idler with the driveR and driveN pulleys.  
**Any misalignment must be corrected.**

7. Place belt/chain over all pulleys/sprockets.
8. The tensioner spring is not yet under tension. Put the idler in light contact with the belt(s) and rotate the tensioner base clockwise if the arrow points to “CW” or counterclockwise if the arrow points to “CCW” until you feel light spring pressure. Mark a line on both the housing and base of the tensioner. This will be reference point 0° for establishing tensioner force and degrees of rotation. Figure 2.
9. The housing of the tensioner has equally spaced graduation marks (every 10°) that can be used to establish rotational degrees and resulting tensioner force. See Figure 3. For reference you may want to place a mark on or near the desired graduation mark.
10. Using a 3-15/16" fixed head hook-style spanner wrench on the outside of the tensioner base, rotate the wrench (use the same direction as step 8) until the 0° marks are aligned. From the 0° mark, continue to rotate the base to the desired degrees of rotation (graduation mark). Holding the spanner wrench securely at the desired degrees of rotation, tighten the 1/2" mounting bolt holding the tensioner to the bracket. Remove the spanner wrench.
11. Before starting drive, recheck drive alignment and check all mounting fasteners for tightness.

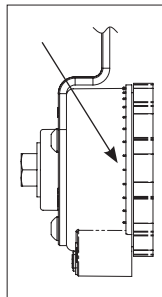


Fig. 3

**Once installed, the tensioner has considerable force. A spanner wrench must be used to hold the tensioner base when loosening the mounting bolt.**

**Tensioner comes with a limited use spanner wrench. To assemble, align arrows and push together.**

Tensioner Model	Maximum Idler Diameter		Maximum Rotation & Force	
	Closest Hole	Farthest Hole	Closest Hole	Farthest Hole
RT4100, RT4101	4.50"	6.25"	85° @ 85 lbs	85° @ 70 lbs
RT4900, RT4902	–	6.25"	–	85° @ 70 lbs

Table 1

Note – At closest hole, 1" rotation = 1 lb. force. At farthest hole, 1" rotation = .83 lb. force.  
All forces (lbs.) are nominal.

[www.youtube.com/fennerdrives](http://www.youtube.com/fennerdrives)



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**US**

*Tel.* 1.800.243.3374

1.717.665.2421

*Fax* 1.717.665.2649

**UK**

*Tel.* +44 (0)870 757 7007

+44 (0)1924 482 470

*Fax* +44 (0)1924 482 471

**[www.fennerdrives.com](http://www.fennerdrives.com)**