

Supercharger Pulley Tensioner Bracket Installation

The TDR Tensioner Bracket installs using the existing power steering assembly and utilizes the same 4-rib belt configuration. The advantages of the new tensioner system are improved pulley guides, increased belt adjustment, and easier belt tensioning. Installation requires removal of the existing pulley tensioner. All new hardware is supplied. The TDR Pulley Tensioner Bracket works for the JRSC M45 and the BRP MP62 superchargers using 4-rib belt configurations.



Step 1

First, remove the supercharger belt. The JRSC tensioner assembly will be removed in its entirety as shown in Photo 2. Remove the hard line bracket shown in Photo 1 that is attached to the power steering (P/S) bracket. This will not be reused. The JRSC tensioner is attached with 3 bolts. One bolt is attached to a cast iron support near the head, and the other two bolts are located through the P/S pulley. There are two openings on the P/S pulley for accessing these two bolts. Photo 2 shows the JRSC tensioner assembly ready to be removed. Note that you will have to loosen the P/S line and push the hard line out of the way to remove the JRSC assembly. Use a 17 mm wrench to turn the P/S nut about a ¼ turn as shown in Photo 3. Hand-tighten after removal so fluid will not leak out; the P/S hard line will be moved again when installing the new TDR tensioner bracket.

Earlier year Miatas may require removing the P/S line instead of loosening. If required, temporarily move to the side. A small amount of fluid will be lost so be sure to have paper towels to keep any oil from getting on your car. Power steering fluid is not corrosive like brake fluid.



Photo 1: Remove bracket from P/S line



Photo 2: Remove JRSC pulley tensioner system

Step 2

Before installing the TDR Tensioner Bracket make sure the non-adjustable pulley, as shown in Photo 4, mounting bolt is tight. This can be done after the assembly, but it is more accessible now. On earlier models, route the P/S hose rearward and attach from behind the P/S pump. Be careful that the hose does not interfere and tighten the flare nut. Install the new tensioner behind the P/S pulley; you will need to move the P/S hard line to improve access as discussed in Step 1. Install the 14 mm bolt without the flange bolt head first as shown in Photo 4 to hold the tensioner in place. Do not tighten until all hardware has been installed. This low-profile 14 mm bolt head is used in this mounting hole for more belt clearance.

NOTE: Do not forget to retighten the P/S hard line after the new tensioner is in place.



Photo 3: Loosen the P/S line so the hard line can be moved



Photo 4: Install the TDR Tensioner Bracket and the 14 mm bolt to hold the assembly in place

Step 3

Install the two 14 mm bolts with the flange bolt heads through the P/S pulley as shown in photos 5 and 6. The new bolts are longer than the stock bolts to engage more threads in the P/S pump. Tighten the two 14 mm bolts first followed by the 14 mm bolt holding the tensioner in place. The power steering pump no longer moves as part of the tensioning process. All of the belt tensioning is performed by the TDR tensioner.



Photo 5: Install the 14 mm bolt through the P/S pulley



Photo 6: Install the 14 mm bolt through the P/S pulley

Step 4

The pulleys use a 14 mm wrench to tighten. Before installing the belt, loosen the 14 mm bolt holding the adjustable pulley just enough that you can slide it without too much friction. Adjust the 12 mm tensioner bolt out far enough to get the belt on. After the belt is properly tensioned the pulley will be tighten. Install the belt between the two pulleys as shown in Photo 7. Make sure the belt is centered on the pulleys before proceeding.

Apply belt tension to the pulley as shown in Photo 8. Turn the 12 mm tensioner bolt by hand until you feel tension and complete using a 12 mm wrench. The ideal wrench to use is a 12 mm ratcheting wrench to speed the tensioning process as shown in Photo 9. Belt tension should be about +/- 1/4" deflection in the longest section as shown in Photo 11. When the belt tensioning is complete, tighten the 13 mm jam nut and the 14 mm pulley bolt as shown in Photo 12.



Photo 7: Install belt between the pulleys



Photo 8: Apply tension to the adjustable pulley while tightening down the tensioner bolt by hand



Photo 9: Adjust the belt tension by turning the 10 mm bolt using a ratcheting wrench



Photo 10: Tighten the Jam Nut when tensioning is complete



Photo 11: Adjust belt tension to about +/- 1/4" deflection



Photo 12: Tighten the 14 mm pulley bolt after tensioning is complete

Step 5

After the new TDR tensioner bracket is installed, check your supercharger for proper alignment. Use a 12" straight rule or other straight device to check the alignment with the power steering pulley as shown in Photo 13. The drive belt will ride more toward the front of center on the tensioner pulleys. If the supercharger needs to be realigned, loosen the top support bolts and slide the supercharger. Tighten down and check the vertical alignment.

It is not uncommon, due to the constant tension from the drive belt for the supercharger alignment to become altered over time. Use a 12" straight rule or other straight device to check the alignment. To measure the horizontal alignment, place the ruler on the front of the supercharger pulley as shown in Photo 14. Check alignment by comparing the horizontal plane at the valve cover. If necessary you can add a shim to the front support mount of the supercharger as shown in Photos 15 and 16 to improve alignment. Use a thin piece of metal or a washer to shim. To ease installation, cut a slot in a washer or shim so it can be placed in the front support mount without having to completely remove the mounting hardware.



Photo 13: Check for vertical alignment



Photo 14: Check for horizontal alignment



Photo 15: Shim on MP62 supercharger setup



Photo 16: Shim on M45 supercharger setup

This completes the installation of the TDR tensioner bracket. Belt replacement and tensioning is now much easier. New drive belts stretch initially and usually takes 2-3 readjustments before they reach their final stretch. Be sure to check periodically for belt tightness and excess wear.

If you have any questions please don't hesitate to contact us.

The Track Dog Racing Team

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