



## Manual: 47RH/RE Transmission Band Adjustment

ver.1.0



There have been a lot of misconceptions about adjusting the bands in Chrysler transmissions. Chrysler specifies that every time the transmission is serviced the bands should be checked and adjusted. This is not necessarily the case; under normal usage conditions, the bands commonly do not fall out of adjustment.

After accumulating many miles on a transmission, the band material will wear away and may necessitate a rebuild of the transmission. For those individuals that use their vehicles for plowing and other extreme usage tasks, the bands can and most likely will, wear at an accelerated rate. When this occurs, shift timing can change which may cause damage to the direct clutches. In ATS transmissions, and some others, Kevlar-Composite bands are used to help prevent this premature wear from happening.

One of the most common mistakes that are made during adjustment is not attaining the correct clearances within the bands. In this article, we will describe two methods in which to adjust the bands correctly.

For both methods, you must first drain and remove the transmission pan. Make sure that you have an oil catch pan under the transmission pan before you start to loosen it so you don't make a mess on the floor (a quick and easy funnel you can make is to use a plastic trash can lid with holes drilled in it, turned upside down, sitting on top of your oil catch pan). Start by loosening the pan bolts on the rear of the transmission pan, and work your way forward. Leave the bolts loose enough for the pan to hang down but not fall off. The bolts at the front of the transmission can now be loosened. Once the pan has started to drain it can be allowed to droop down further and drain completely. If your truck is equipped with an aftermarket transmission pan it may feature a built-in drain plug. The bolts can then be removed, and the pan taken down. It is not uncommon to see some material in the bottom of the pan, which is shed by the gear train during normal op-

eration. Larger chunks are a bad thing to see, however, and may necessitate a rebuild.

The preferred method first. This involves using an lb/in (inch pound) torque wrench, a 3/4 and 9/16 inch box wrench, 1/4 inch socket, and a T-40 Torx™ bit. Start with the front or intermediate band on the outside of the case on the driver's side. The procedure involves loosening the jamb nut which retains the force screw using the 3/4 inch wrench, and turning the jamb nut out a few turns [FIG.A1].

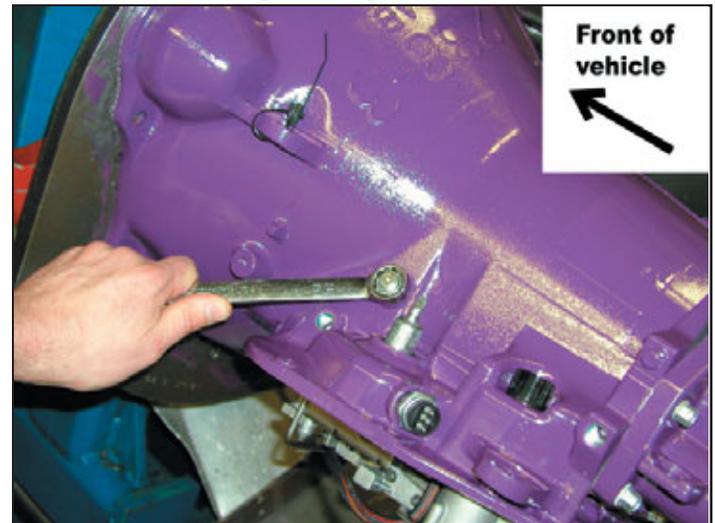


Fig.A1

Then tighten the force screw to 72 inch pounds using the torque wrench with the T-40 Torx™ bit [FIG.A2].



Fig.A2

Once the force screw is tightened, back it off 1 7/8 turns. While holding the force screw to prevent further rotation, tighten the jamb nut until it seats using the 3/4 inch box wrench. Once the jam nut is seated, continue tightening the nut an additional 1/8 turn (most people do not have access to the special tools needed to torque the jam nut while holding the force screw from turning, so the fore mentioned procedure will achieve an adequate result).

The low/reverse band is next; this is the adjustment on the inside of the pan. Loosen the jamb nut and back it off a few turns [FIG.A3].

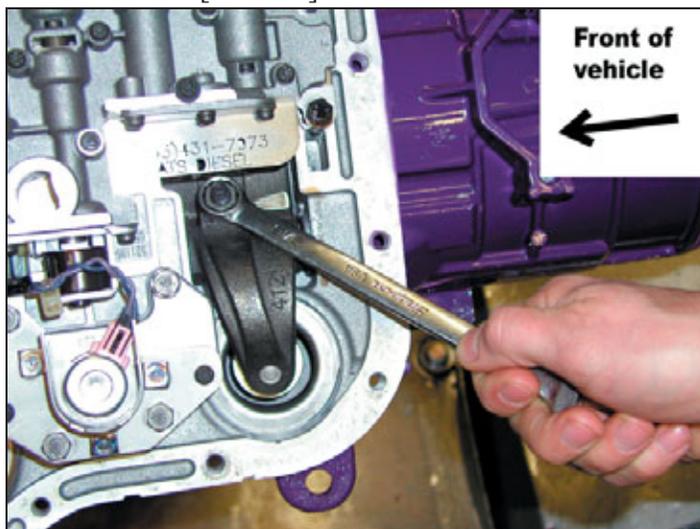


Fig.A3

Tighten the force screw using a 1/4 inch socket to 72 inch pounds with the torque wrench and then back it off 3 turns. You will now retighten the jamb nut back down making sure not to rotate the force screw.

The 'other' method, the 'shade tree' or 'backyard' way of doing things can also be done (with adequate results without using a torque wrench)(counting is a needed skill though). You will still need the same wrenches to adjust. Start by loosening the jamb nut on the intermediate band with the 3/4 inch wrench. Back it off a few turns and tighten down the force screw until it JUST becomes snug. You will feel tension start to occur when this happens, up to that point the screw will be loose. Now tighten down the screw about a quarter of a turn. You can feel the play on the apply (to the fulcrum to the apply piston) (on the front passenger side of the transmission) snug up and lose all free play. You will now loosen the force screw by 1 1/2 turns. Retighten the jamb nut back down while holding the force screw. Snug up the jamb nut and then give the nut an additional 1/8 turn. You don't want to over tighten the jamb nut too much or you can strip out the threads in the case (bad thing will happen).

Now you will go to the low/reverse adjustment. Loosen the jamb nut on the force screw with the 9/16 inch wrench. Back it off a few turns. Using a 1/4 inch wrench tighten up the free play on the force screw. Once the screw is SNUG (just at the point where the screw stops free rotation), tighten the force screw an additional quarter of a turn. Once done, loosen the force screw off 2 1/2 turns and tighten the jamb nut without rotating the force screw. This method of adjusting will work, but is by no means exact, and if you have other problems within the transmission than inspection by a transmission technician might be necessary.

Trying to adjust bands that are worn out, or a transmission that is slipping, is only a temporary fix at best. If you are unsure about the condition of the fluid or the debris in the pan, bring them into your local ATRA transmission shop and show them what you have. They can give you a better idea if you have some big-

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ger problems at hand.

Once you have finished adjusting your bands, clean up your pan and inspect the surface of the pan to make sure that neither over tightening, nor wear and tear have not warped the pan surface around the bolt holes (this should help save the headache of leaks later) [FIG.A4].

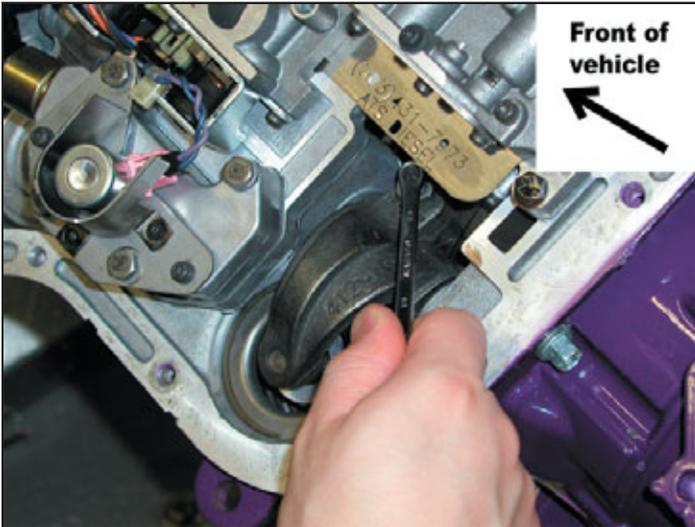


Fig.A4

If the pan is dimpled from over tightening, using a socket and hammer can help flatten out those spots. Place the socket on the bench (have someone help hold the pan) and place the pan bolt hole on the socket, you can lightly pound the surface flat again. Check the pan's gasket surface on a flat surface to make sure it is not warped as well, if it is, you're better off to replace it. A good suggestion regardless of the condition of the pan is to replace it with an aftermarket aluminum pan such as the high capacity transmission pan offered by ATS Diesel [FIG.A5].

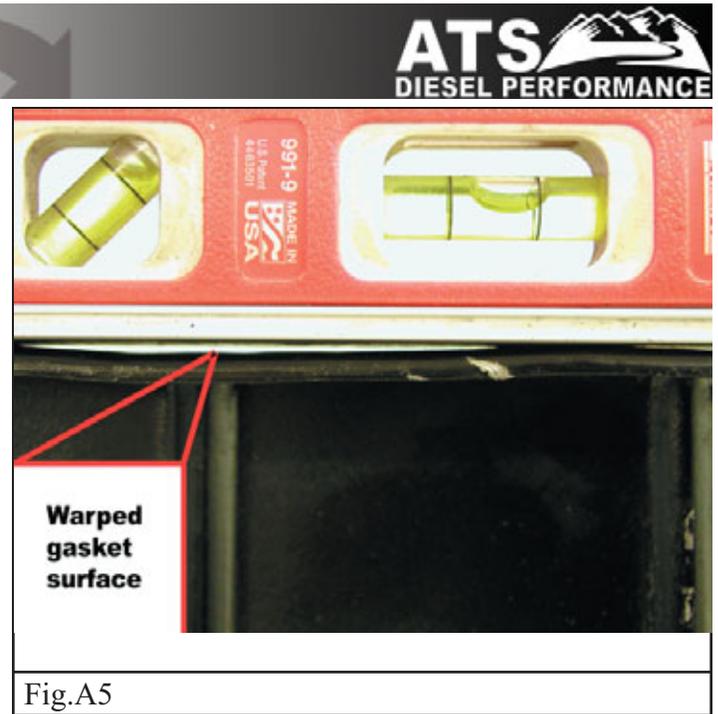


Fig.A5

They are manufactured out of cast aluminum and have an O-ring gasket, and a magnetic drain plug in the bottom of the pan for ease of service. They will also help to keep the transmission fluid temperatures down due to increased fluid capacity and external cooling fins. If you are using your stock pan, use a new gasket. Chrysler has a metal reinforced rubber gasket that works very well. Clean the gasket surface on the transmission and put the pan up in place with a few bolts. Start the bolts in by hand; don't tighten them down until you have all the bolts in place. Now snug up the bolts by working your way around the pan. Do NOT over tighten the pan bolts. Over tightening the bolts can cause you to have leaks. All that is needed is 10 to 13 lb/ft of torque (that is enough to go just beyond snug).

Fill up the transmission with at least 4 quarts of transmission fluid and start the engine. Put the transmission into all gear positions and recheck the level. Fill the transmission to the lower limit on the stick. Now go out and drive the vehicle for a short distance to warm up the transmission oil and cycle it through the unit. Recheck the level once more to make sure you are at the proper level.

That's all there is to adjusting the bands. Pretty easy, actually. Properly adjusted bands generally only need to be checked roughly every 50,000 miles. The most

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important thing that we can stress is to change the oil and filter on a regular basis. The contaminants are what do the most harm. Changing the transmission fluid and filter every year or 15,000 miles gets rid of the contaminants and is just cheap insurance for your investment.

Sources:

ATS Diesel Performance  
4295 Kipling Street  
Wheat Ridge, Colorado 80033  
800.949.6002  
[www.ATSDiesel.com](http://www.ATSDiesel.com)