

AX5 And AX15 5-Speed



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Contributing Editor

There seems to be a large number of tech calls dealing with reverse problems on AX5 and AX15 5-speed manual transmissions in Jeep and Dodge Dakota vehicles. Here are some observations:

1. New transmission assemblies purchased by shop and received stuck in reverse (with shifter in neutral). If the shifter is placed in any other position the unit will bind up as it is in two gears at once. The problem also may be found in used units purchased from salvage yards that arrive at the shop in the same condition.

Solution – On AX5 and 15 units it is possible for the reverse idler gear to move into the reverse position with the stick in neutral. This can occur because of mishandling by the freight carrier where the unit is dropped and centrifugal force moves the reverse idler into reverse engagement. Do not disassemble the unit, but look through the rear of the adapter housing and move the reverse rail back into neutral position with a hooked tool

like a seal puller. Whenever these units are shipped or handled, shift the unit to reverse and secure the shifter in that position.

2. After rebuild the trans functions properly but gets stuck in reverse, 5th or two gears at once.

Solution – Missing or incorrectly located detent balls or interlock pins. Refer to Figure 4 for proper placement of detents and interlocks. Be extremely careful on tear-down to note the locations and prevent the loss of the pins and balls.

3. Transmission shifts perfectly through forward ranges until fifth gear, after which shift mechanism locks up. Also may lock up after shift to reverse. All shift rails, forks and detents are functioning correctly and in good condition.

Solution – 5th reverse synchronizer hub is cracked and will not permit slider to come back out of 5th or reverse gear. Replace the reverse synchro assembly as a set.

4. AX15 manual trans blocked out of reverse with clutch fully depressed.

What is blockout? The engineering definition is "that normal shift effort will not permit engagement of a selected gear."

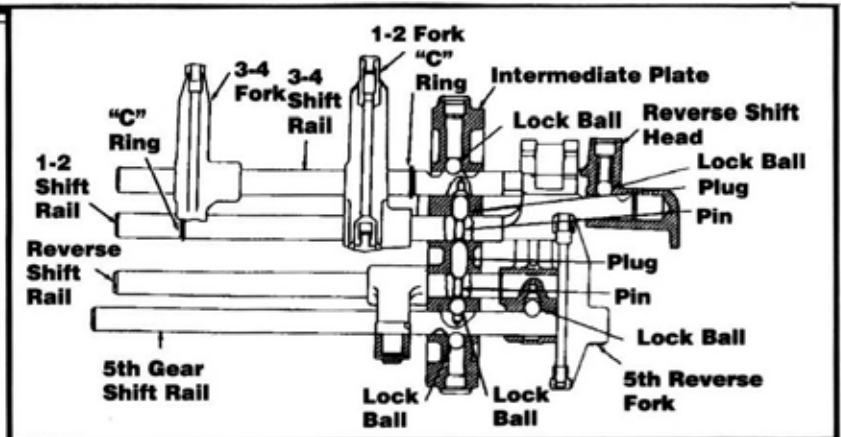
The following symptoms are evidence of problems but are NOT blockout.

1. Grinding because of improper clutch release, not waiting for clutch to spin down, trying to shift into reverse while vehicle is moving.

2. The reverse gears on the AX15 are straight or "spur" cut. This gives maximum strength with slightly noisier operation. On straight-cut gears a shift to reverse occasionally will cause tooth-to-tooth contact and engagement is not possible. Letting the clutch out and depressing the clutch again will move the geartrain enough so that reverse engages. This is not blockout.

3. Aisin transmissions have a reverse lockout mechanism that prevents a shift from 5th to reverse at speed. If the driver moves the stick into the 5th reverse gate and moves the stick toward 5th before going for reverse the lockout mechanism will react and prevent engagement to reverse. This is not a malfunction.

4. 1992-1993 AX15 units with serial number 10900001 to 21199999 may suffer from a mismachined reverse gear. Most of the units likely will have been corrected under warranty by the dealer, but if you have one that gets blocked out at least 3 times per 20 shifts replace the reverse gear with part #5252082.



5. Reverse blockout also may occur because of worn shift components, bad clutch hydraulics, worn clutch assemblies, peened-over gear teeth because of poor clutch release, failure to wait for the clutch to spin down and reverse shifts attempted with the vehicle rolling forward.

File this stuff away for future reference. It has value. Enough gray hair, premature male baldness and a few pounds of Tums went into putting answers to the questions. Thanks to the talented, interested gearheads who solve the mysteries, we all can look like heroes to our customers and make a few bucks at the same time. **TD**

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