

What To Do With GM's Muncie 282

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The Muncie 282 front-wheel-drive, five-speed transaxle is found in many GM car lines. It comes behind turbo and regularly aspirated engines, has excellent torque capacity and is a very smooth-shifting unit. Designed in Germany and produced by the GM Muncie plant, it is, as most German units, very tightly put together. With such tight specs, it is very important to understand the proper method of

teardown and correct rebuilding procedures. Judging from the volume of phone calls we get on this trans, very few shops are in possession of a service manual when working on a 282. Without reading the manual, it will be very difficult to get one apart. A glance through the book will make repairs simple. There are some special tools that make working on this unit easy, and we give their numbers farther along in this article.

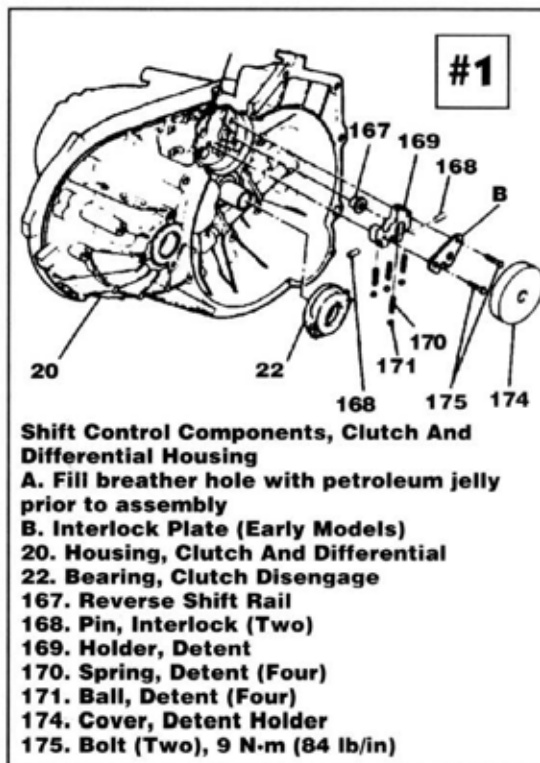
An easy way to identify the 282 is by the large circular cover inside the clutch housing just above the input shaft. On the side of the

transmission case is a cover retained by a snap ring that, for those of you old enough to remember, looks just like an ST300 side servo. After checking endplay and bearing and gear feel, we are ready to start taking this unit apart. Check the clutch fork for wear and play in the case bushings. If the clutch fork has excessive wear, or the bushings allow too much side play, the clutch-release bearing eventually will break off the input-shaft collar. The collar contains the input-shaft front bearing and seal and presses out from the inside of the clutch housing. This means

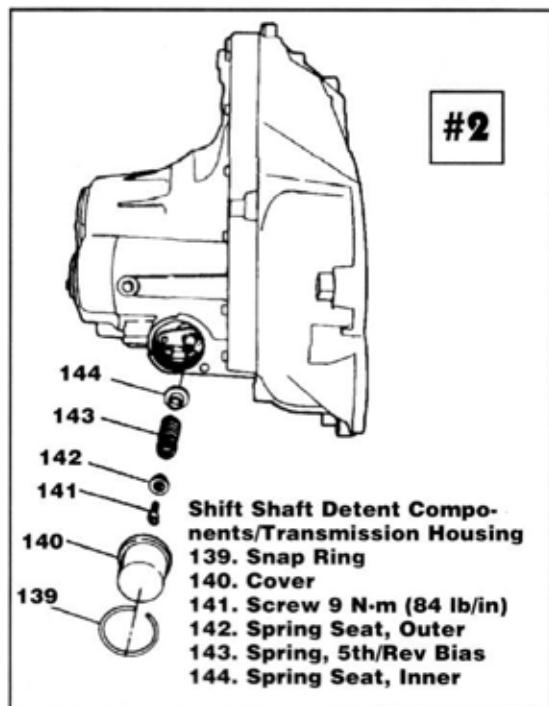
partial disassembly of the transmission.

Now, we remove the external-shift mechanism and the shift cover on the side of the case. Drive a flat-blade screwdriver through the front of the larger circular cover on the clutch housing and pry it off. Located underneath are the shift rails, detent holder, interlock pins and detent balls and springs (See Figure 1). Remove the two 10mm retaining bolts and CAREFULLY remove the detent assembly. Next, look at the top shift rail (reverse) and you will see two slots molded into the case. Use two small pry bars or Allen keys and pry out the reverse rail bushing. You cannot separate the cases with the bushing in place. Remove the case-attaching bolts and tap off the clutch housing (See Figure 2).

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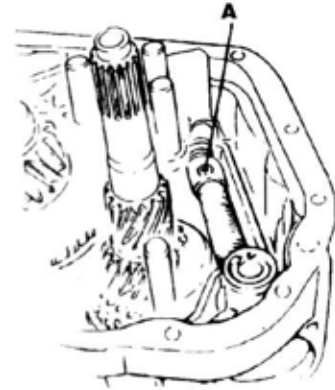


Shift Control Components, Clutch And Differential Housing
A. Fill breather hole with petroleum jelly prior to assembly
B. Interlock Plate (Early Models)
20. Housing, Clutch And Differential
22. Bearing, Clutch Disengage
167. Reverse Shift Rail
168. Pin, Interlock (Two)
169. Holder, Detent
170. Spring, Detent (Four)
171. Ball, Detent (Four)
174. Cover, Detent Holder
175. Bolt (Two), 9 N-m (84 lb/in)



Shift Shaft Detent Components/Transmission Housing
139. Snap Ring
140. Cover
141. Screw 9 N-m (84 lb/in)
142. Spring Seat, Outer
143. Spring, 5th/Rev Bias
144. Spring Seat, Inner

#3



Shift Lever Pin Removal
A. Location Of Pin (156)

Back to the side shift cover we removed earlier. Remove the Allen head bolt retaining the 5th-Reverse bias spring and two spring seats. Looking at the transmission case, drive out the roll pin that retains the shift finger on the main shift rail (See Figure 3). Slide the rail out

of the case toward the side cover. As the rail clears the case, remove the four circular roller bearings before they disappear into the Speedy Dry (See Figure 4). Now remove the reverse fork,

1-2 bias spring and shift finger. Next, we remove the 13mm bolts retaining the back bearing cover and tap off the cover and remove the selective shim underneath it. This will expose two sealed ball bearings, which support the input and output shafts.

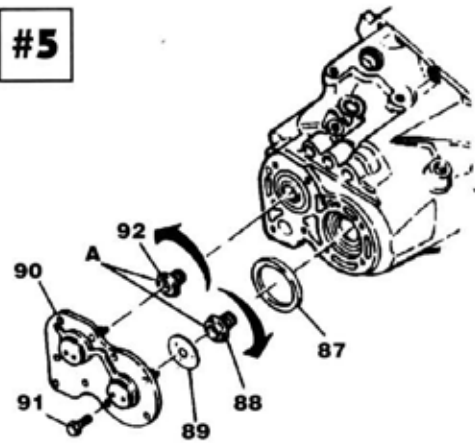
Go back to the front of the case and push down on the reverse rail and down on the 3-4 rail, putting the unit in two gears at once. With the shafts locked, you can remove the rear bearing-retainer

bolts with an appropriate size hex key (See Figure 5). NOTE: The input-shaft bolt has right-hand threads and the output-shaft bolt has left-hand threads. The factory uses some really tough thread lock on these bolts and a little heat helps a lot to get a quick release. Place the shift rails back in neutral and you are ready to press the shaft and the shift rails out of the case (See Figure 6). Kent-Moore tool set J36182 and press stand J36185 come in real handy here, as both shafts must be pressed at the same time. It can be done without tools, but be careful.

All the speed gears in this unit are mounted on needle bearings.

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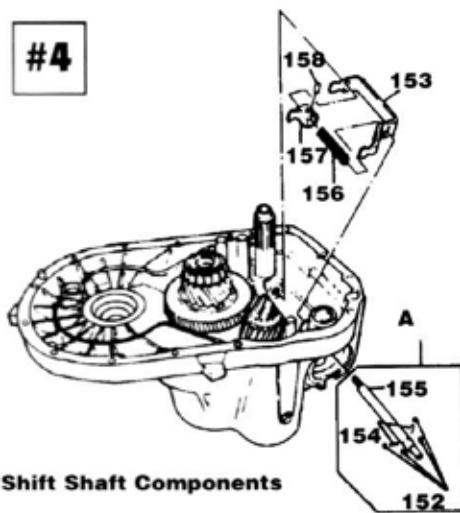
#5



Gear Cluster Support Components

- A. Use J36031 Or Equivalent
- 87. Shim (Selective)
- 88. Retainer (Clockwise Rotation)
- 89. Shield, Oil
- 90. Plate, End
- 91. Bolt (Nine), 21 N-m (15 lb/ft)
- 92. Retainer (Counterclockwise Rotation)

#4



Shift Shaft Components

- A. Shift Shaft Assembly
- 152. Rollers (Four), Shift Shaft
- 153. Lever, Reverse
- 154. Pins (Two), Shift Shaft
- 155. Shift Shaft
- 156. Spring, 1-2 Bias
- 157. Lever, Shift
- 158. Pin, Lever Retainer

Model	9XAX	9XBX	9XCX	9XFX	9XMX	9XNX	9XSX	9XXX	9XLX
Beginning Serial No.	10	10	6	5611	879	4344	3767	1139	2639
Ending Serial No.	4471	9920	1047	8830	5002	22157	8380	4457	5611

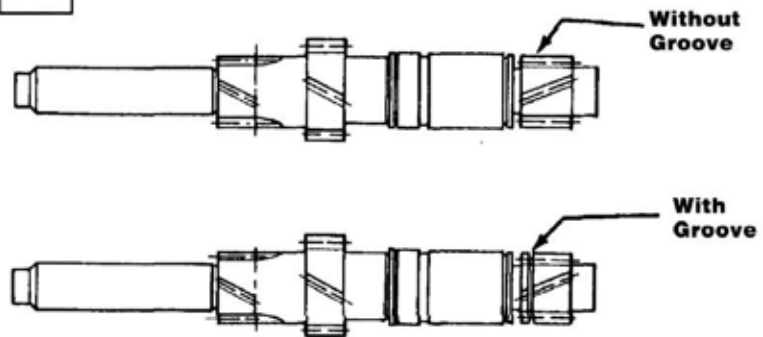
*These serial numbers are found on the transaxle Bar Code Label. Any transaxle model built between and including the beginning and ending serial numbers may exhibit gear noise.

The synchro assemblies use springs, balls and struts instead of the traditional keys, and the synchro rings are compound lined, which requires GM Synchronesh fluid for smooth shifting. Tolerances are very tight on this design and having the right specs handy will ensure LCB (less come-backs).

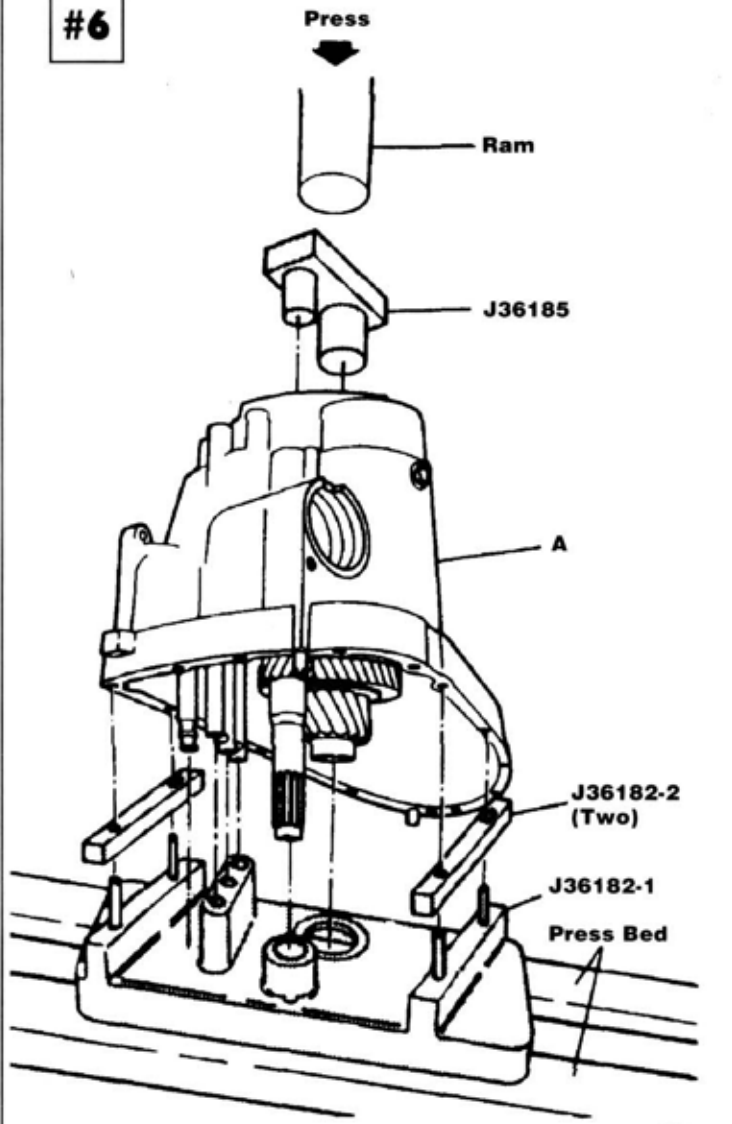
The early 282 units built from 11/88 through 4/89 were prone to gear damage that caused noise. It is important to define the noise correctly. The units in question exhibit a light knocking or tapping

#7

Gear Cluster, Input Gear



#6



**Transmission Case And Gear/Shift Rail Clusters Separation
A. Transmission Case/Gear And Shift Rail Cluster Assembly**

noise in all forward gears and neutral with the clutch engaged. Don't confuse this with a clutch rattle or normal neutral-rollover noise. The noise must be present with the clutch engaged in ALL gears and neutral. We have included a chart of the transmission model and serial numbers of the affected models. Look for the bar-code tag on the cases and compare the numbers to see if your unit falls into the category.

If the unit you are working on came in for this condition or falls into the guidelines of the chart, inspect the reverse gear and reverse idler gear for any chips, wear or deformity. Inspect the input gear for a groove as illustrated in Figure 7. If your shaft has no groove, it should be updated to the later version and the reverse gear train replaced.

The following parts list will help you order the parts needed for this repair:

Part Number	Description
8672955	Input Gear (non-turbo)
8672956	Input Gear (turbo)
8672179	Reverse Output Gear
14080558	Reverse Idler Gear
8672918	Overhaul Package

This is a nice unit to work on, once you get used to the design. There are a lot of them around and repairs usually are good money makers for the shop.

All the tech stuff aside, I would like to wish all of you a wonderful holiday season and a healthy and prosperous New Year. No matter how tough business is or how crazy your life becomes, take a little time out and make the holidays special for your family and friends. All the problems still will be there, but they won't seem as tough after a few days off with the holiday spirit. ■