

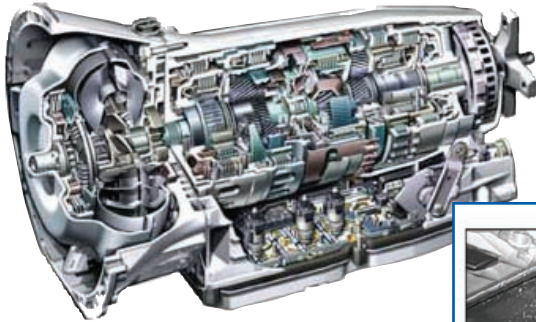
Mercedes 722.9

Preliminary

Information, Part 2



by Mike Souza



We left off in the last article verifying the type of fluid required for the Mercedes 722.9. We also mentioned that it had a different shift strategy, powerflow, and some unusual or unique features associated with it. Before we go into those, let's begin with the procedures for fluid exchange or transmission service for this unit.

The oil pan you're accustomed to on earlier Mercedes transmissions has been redesigned. There's no longer a filler tube on the transmission case. Now it's filled and the fluid level checked through an overflow tube (figure 1).

This new design pan has also been updated. The overflow tube, which clips onto the pan, and overall pan depth have been increased. The updated pan is now 3mm deeper and the overflow tube is 13.5mm longer than the previous design (figure 2); you can identify the new pan by its white color. This updated pan now holds 0.2 liters more fluid than the older pan. If you remove the earlier design pan for repairs, you should update to the later design, part #220-270-09-12.

Now let's look at one of the unusual shift features built into the shift strategy of this 7-speed automatic transmission. This transmission has a clutch-

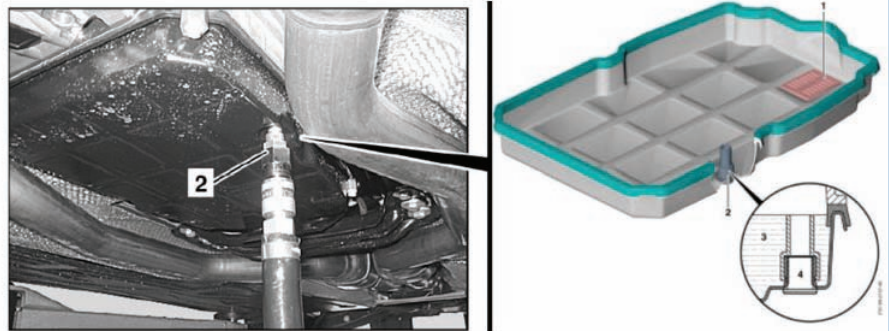
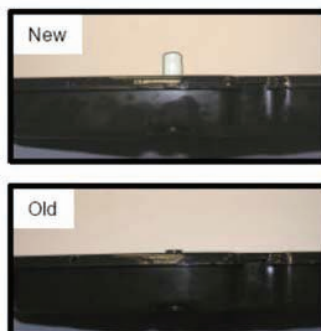


Figure 1



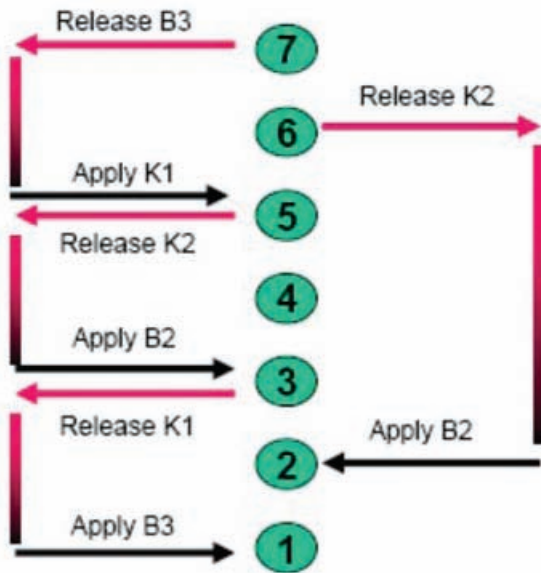
Changes Compared to Old Pan



Pan Depth:	+3 mm	
Overflow Pipe:	+13.5mm	
Initial Fill Check		
Celsius deg.	Old	New
Fahrenheit	30	40
	86	104
Level Check		
Celsius deg.	30-35	40-45
Fahrenheit	86-95	104-113
Total Fill Liters	9.5	9.7

Figure 2

There was also a slight change to the crescent-type pump; although the same design as the 722.6, there's an additional recess on the suction side to help reduce intake noise.



	B1	B2	B3	K1	K2	K3
7 th Gear						
6 th Gear						
5 th Gear						
4 th Gear						
3 rd Gear						
2 nd Gear						
1 st Gear						

Figure 3

on-clutch, sequential shift strategy, similar to the 722.6. The 722.9 can also skip gears on downshift, provided one clutch member is released and one is applied, as shown in the chart in figure 3.

Something else that's new for Mercedes is the cooler lines no longer have threads or banjo-type fittings. The cooler lines are sealed with rubber O-rings on push-in type fittings, secured with a retaining bolt (figure 4).

The next component change was the transmission housing (case) and converter housing (bellhousing) material. The converter housing is die-cast aluminum, and the transmission housing is die-cast magnesium. This change reduced weight compared to aluminum by 2.5 kg (5.5 lb). This combination requires aluminum bolts, because steel bolts have a different expansion rate, and because of corrosion. Always replace the aluminum bolts whenever you've removed them from the unit.

The intermediate panel or gasket was made from an aluminum sheet with an elastomer coating. This gasket extends beyond the sealing surfaces of the converter and transmission housing, to prevent water from settling on the transmission housing. Standing water (especially salt water) can corrode magnesium in as little as eight weeks. The gasket lip faces forward and can be reused if there's no damage to the elastomer coating (figure 5).

There was also a slight change to the crescent-type pump; although the same design as the 722.6, there's an additional recess on the suction side to help reduce intake noise. This modification will probably start showing up on later 722.6

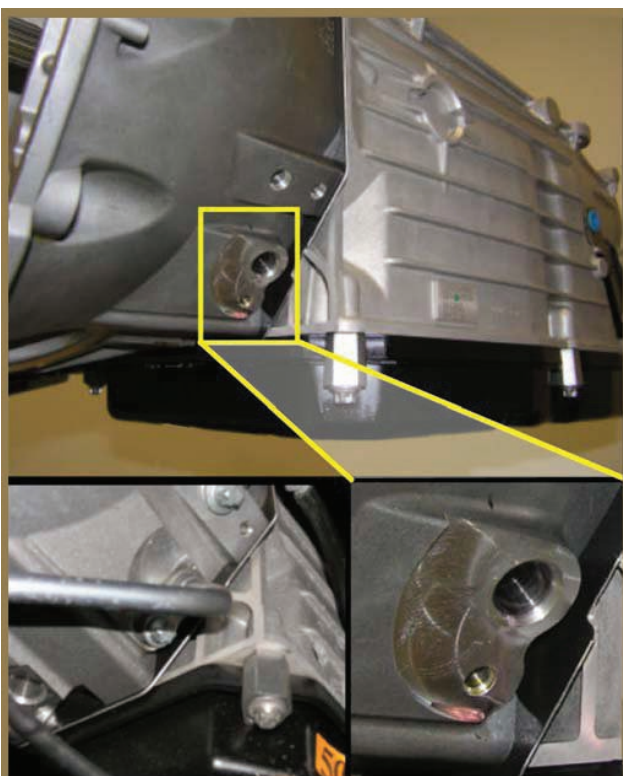


Figure 4

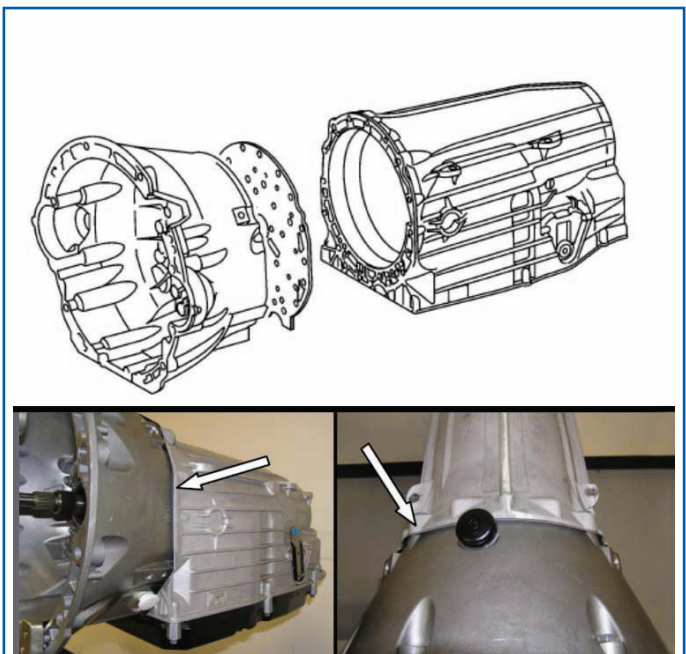


Figure 5

transmissions. Future pump housings and gears may be made of aluminum to reduce weight and handle high temperatures (figure 6).

This next feature is unusual, but it's also being used on some BMW models with ZF6HP26 transmissions: Some late model vehicles with the 722.9 will be equipped with shift-by-wire, called *Direct Select*. These systems have no mechanical connection to a shifter in the passenger compartment.

An Intelligent Servo Module (ISM) mounts to the left rear of the case, just above the pan rail. As you can see in figure 7, this electronically-controlled motor (module) is quite large. The module will control and monitor the shift valve lever position.

If the vehicle's electrical system fails, there's a back-up, Emergency P function to release the transmission from park. A spare battery underneath the floor panel on the passenger side of the vehicle will energize the module in emergency mode.

In figure 8 you can see how it splines onto the manual valve control shaft; a closer look at the back of the module identifies the detents. Figure 9 is an inside look at how the module is designed.

Well, that's it for this issue; look for the powerflow charts in part III of this series in the August issue of *GEARS*.

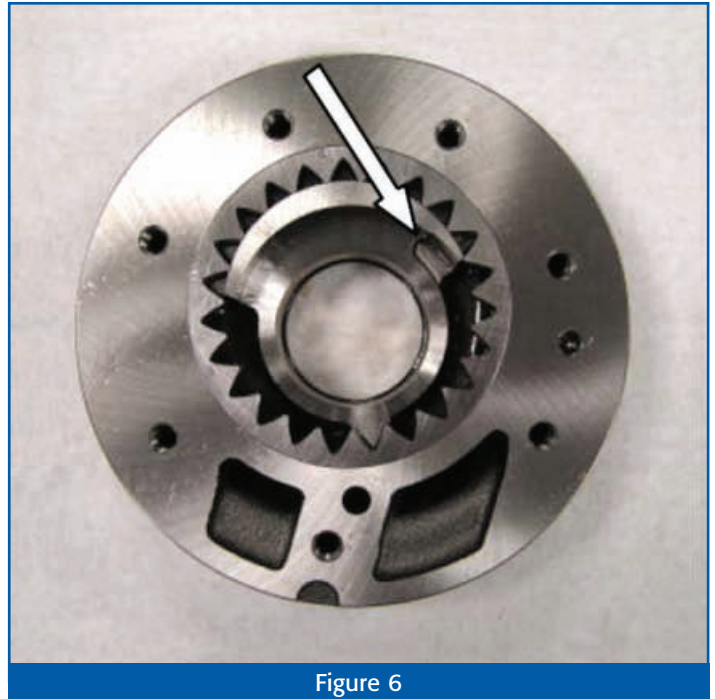


Figure 6

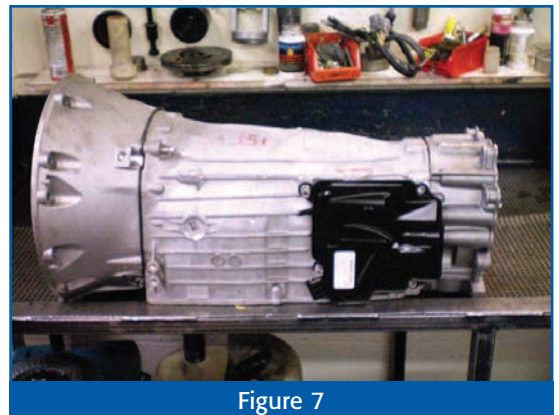


Figure 7

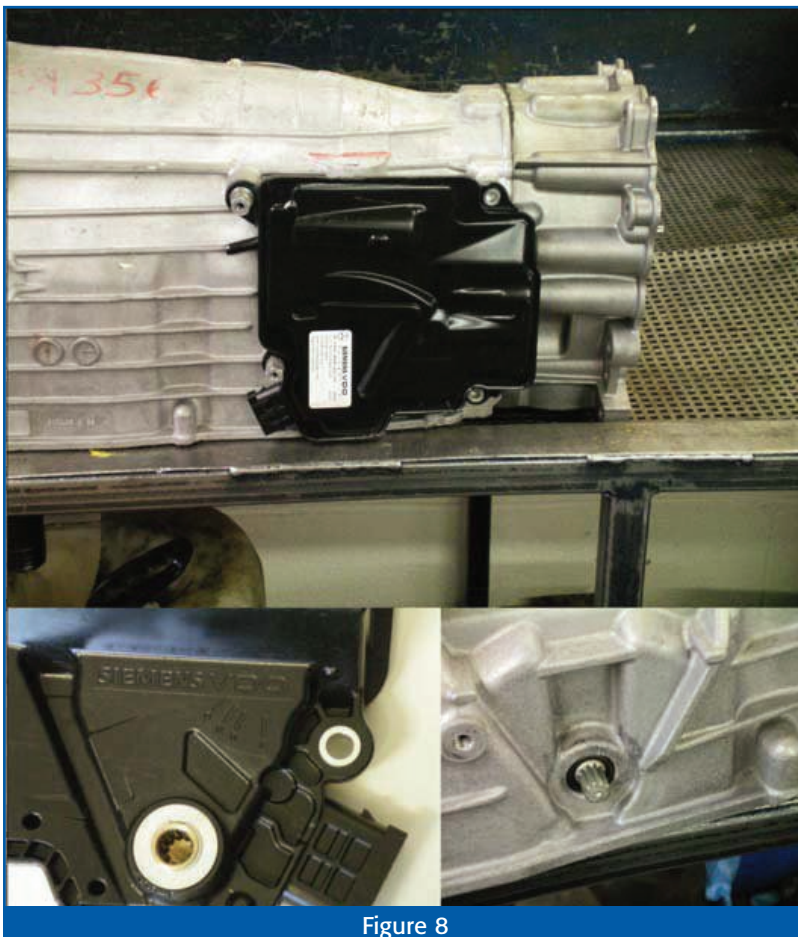


Figure 8

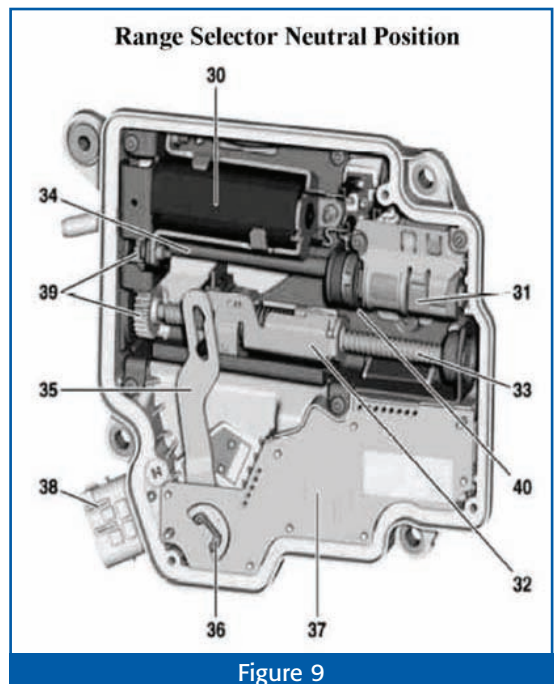
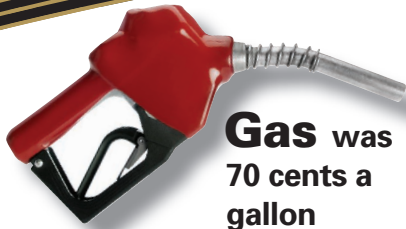


Figure 9

1978 was a good year.



Gas was
70 cents a
gallon



A movie ticket cost **\$2**

Mork & Mindy
was a **TV** favorite



TransTec® kits were introduced

Mork and Mindy are long gone, along with \$2.00 movie tickets and gas at 70 cents a gallon. But TransTec® transmission kits have grown to become the leading brand requested by transmission professionals. In fact, more TransTec® kits are installed than all other kits combined.

We'd like to thank our customers, representatives, suppliers and associates for their faithfulness and support throughout the past 30 years.

These years have been very good to us. We can't wait to see what the future holds.

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