



# Technical Service Information

## MERCEDES 722.6 VARIETY OF SHIFT AND/OR TCC COMPLAINTS

**COMPLAINT:** Before or after a rebuild, a 722.6 Mercedes transmission may experience one or more shift complaints such as delayed engagements, flared up shifts, flared kick down shifts, implausible ratio codes, coast downshift clunks, TCC slip codes, no movement in reverse and/or no movement forward. It has been determined that the first design Pressure Regulator Control Valve Spring is not broken and when the unit is removed, all frictions look good.

**CAUSE:** Low retention of OEM scarf cut sealing rings for the K2 clutch drum on the input shaft as well as the output shaft rings for the K3 clutch drum (See Figure 1). The rings on the input shaft could cause a loss of pressure for the K2 clutch and/or the converter clutch while the rings on the output shaft could lose K3 clutch pressure. The severity of the leak would determine the degree of shift complaints.

It should be noted that the F1 and F2 sprags are also known to slip causing shift complaints and implausible shift errors (gear ratio errors) especially if they are not the later 20 element design.

A defective TCM with M112 and M113 engines has also been known to cause the transmission go to neutral by itself while driving. The transmission may or may not re-engage with a lower vehicle speed and/or ignition cycle. A complaint of an intermittent slipping through all the gears may occur as well as an intermittent lose of engagement after a brief stop. It comes to the shop and the problem is hard to duplicate for customer complaint verification. A code 146 Transmission Slipping may also be stored.

**CORRECTION:** Since pressure testing with a gauge is not available, it is highly recommended to update the rings to the newer style as seen in figure 1 and replace the sprags, especially if the F1 sprag has 16 elements and the F2 has 14. These are early sprags and are prone to slipping. Both sprags have been updated to 20 elements each (See Figure 2 and 3).

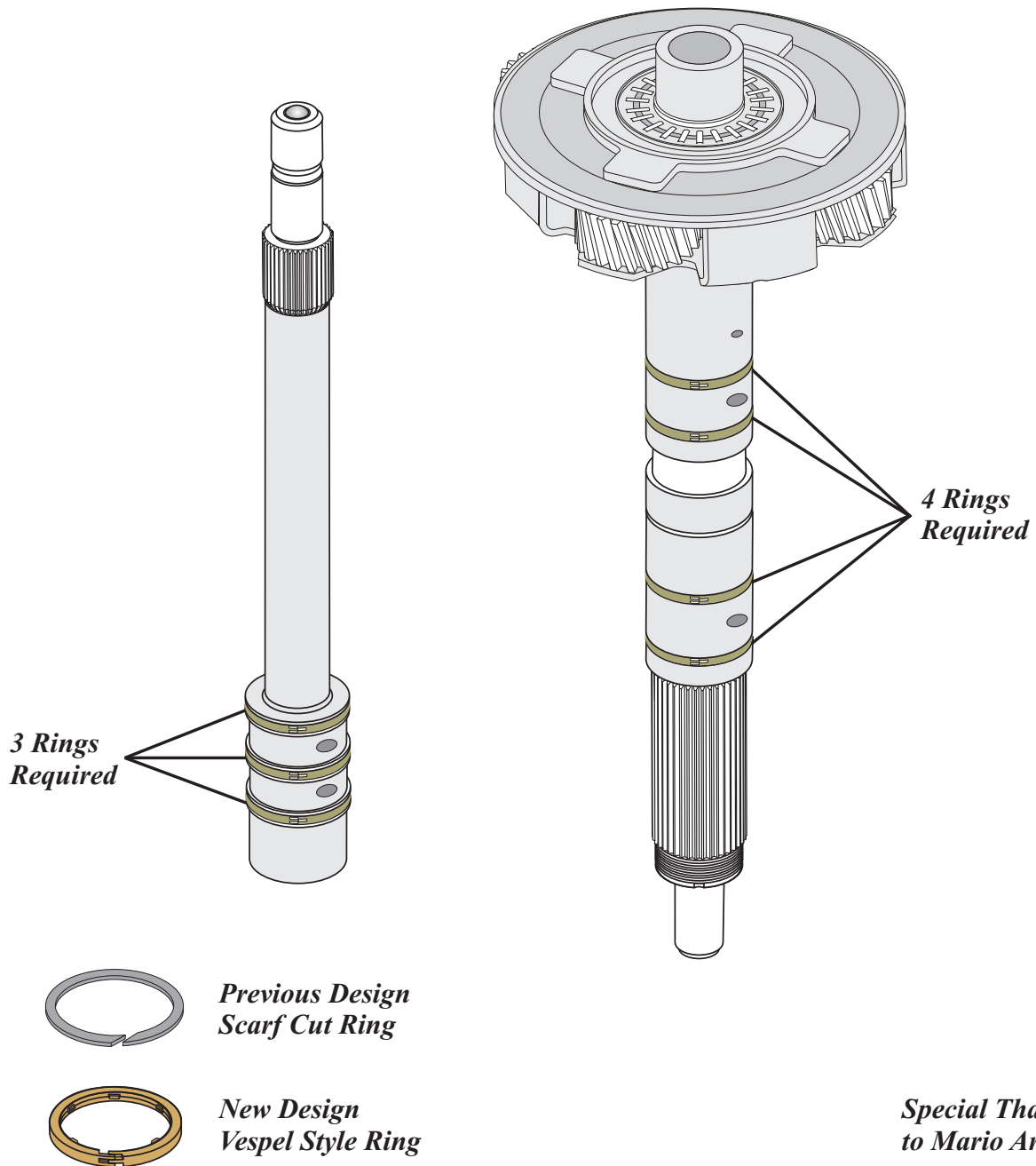
If there are no other apparent reasons for the slipping problem, suspect the TCM.

### SERVICE INFORMATION:

Input Shaft Rings (3 required) part number only gets you one ring.....	220-272-04-55
Output Shaft Rings (4 required) part number only gets you one ring.....	220-272-03-55
F1 20 Element Sprag.....	A722-270-00-31
F2 20 Element Sprag.....	A 220-270-01-31
TCM/ETC M112*.....	026-545-84- 32/26
TCM/ETC M113*.....	026-545-73- 32/26

\*Mercedes Bulletin 30/99-2 Group 27

## MERCEDES 722.6 VARIETY OF SHIFT AND/OR TCC COMPLAINTS



*Special Thanks  
to Mario Aristides*

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Figure 1

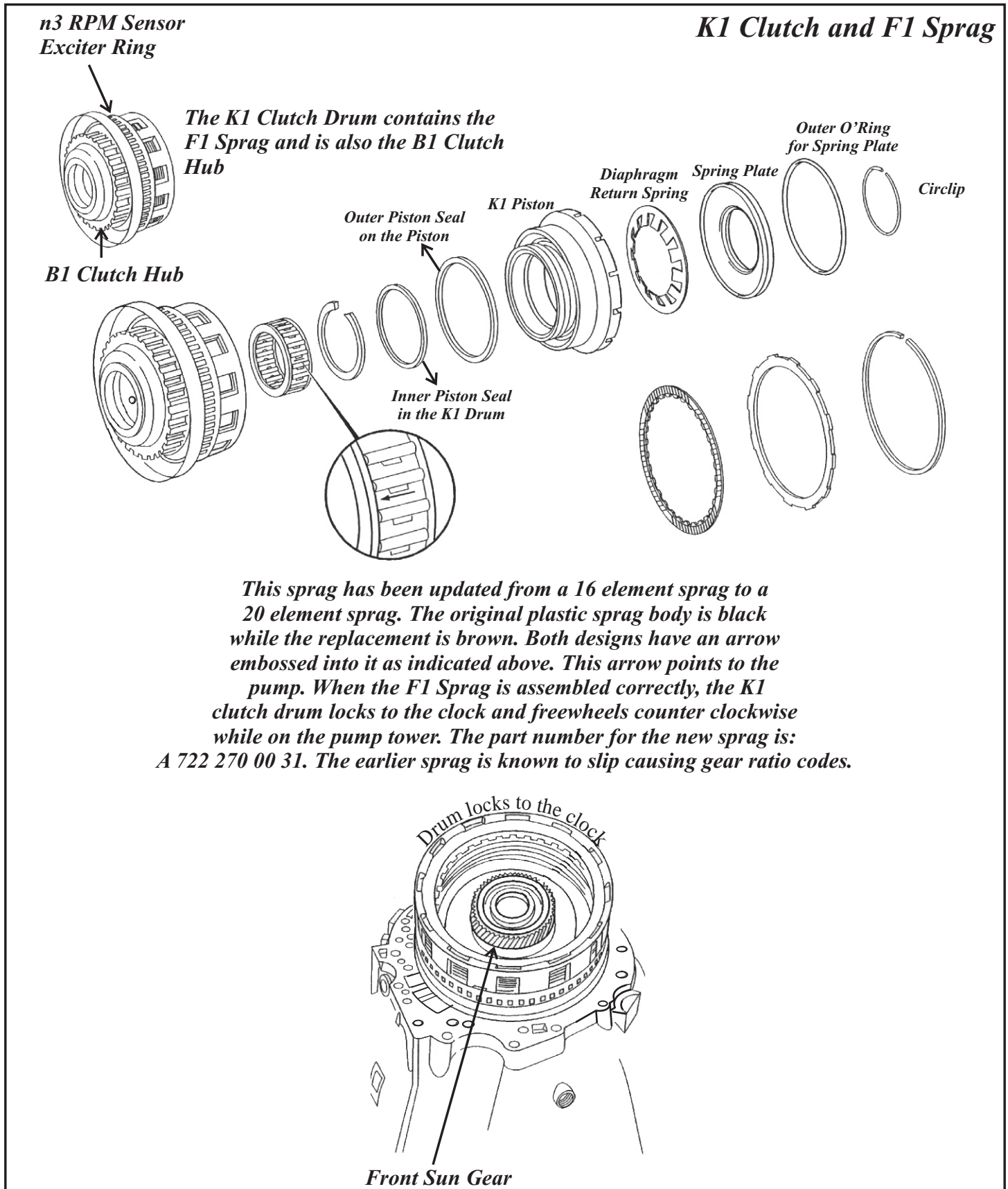
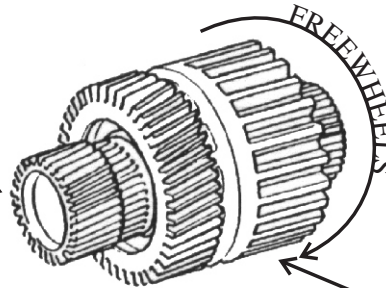


Figure 2

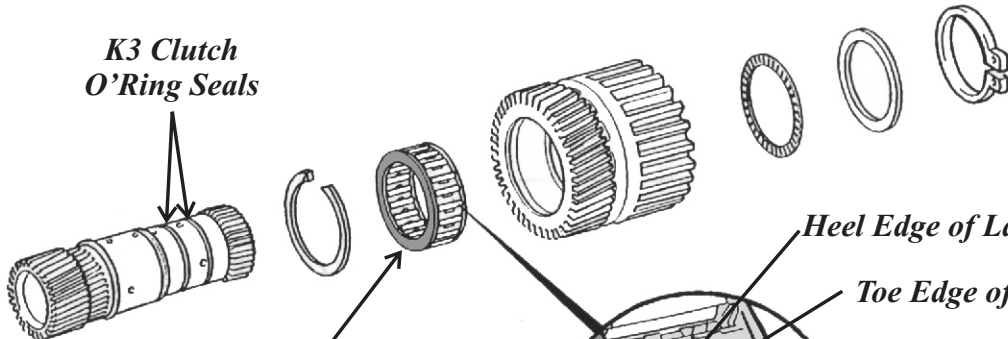
## F2 Sprag

**HOLD STATIONARY**  
The Center Sun Gear  
Shaft which is the  
F2 Sprag's Inner Race

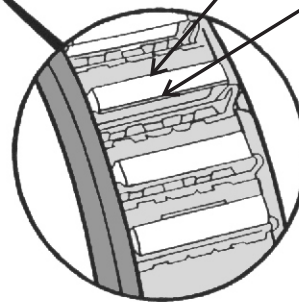


**URNS COUNTER CLOCKWISE**  
The Rear Sun Gear and  
K3 Clutch Hub should  
turn Counter Clockwise  
and Lock to the Clock

K3 Clutch  
O'Ring Seals

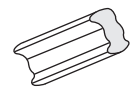


The F2 Sprag has one brass  
end cap integral to the cage. This  
end cap faces the center sun gear.  
\*Be careful, the elements fall out  
of the cage easily.

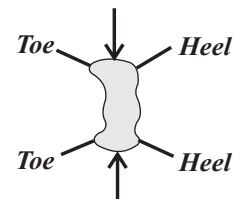


Heel Edge of Large Foot

Toe Edge of Large Foot



Large Foot Edge  
of Element faces  
the Outer Race



Small Foot Edge  
of Element faces  
the Inner Race

This sprag has been updated from 14 elements to 20. The new 20 element sprag part number is A 220 270 01 31. It is very common to find that some of the elements have fallen out from the retaining cage and laying loose in the package. This does not mean the sprag is defective. It is imperative that you insert the element back into the cage slot correctly. The shorter foot of the element faces the inner race as seen to the right. With the brass cap to the left as seen in the enlarged circled view, the toes face down. The early design sprag is known to slip causing gear ratio codes.

Figure 3