



FORD A4LD REAR PLANETARY CARRIER AND LUBE CIRCUIT CHANGES

CHANGE: Sometime in model year 1987, the 1st design *3 pinion aluminum* rear planetary carrier was replaced with a 2nd design pinion steel rear planetary carrier (See Figure 2). In model year 1990, on 4.0L engine models only, the 4 pinion steel carrier was once again revised to a 6 pinion steel rear planetary carrier (See Figure 2). Included in this change were changes in the internal lubrication circuit. These changes have affected many of the related parts and created confusion for many rebuilders.

REASON: Greater torque carrying capacity to meet increased horsepower demands.

PARTS AFFECTED:

(1) REAR PLANETARY CARRIER - The 1st design *3 pinion aluminum* rear carrier was eliminated and replaced with a 2nd design *4 pinion steel* rear carrier, as shown in Figure 2. Both 1st and 2nd design rear carriers have 10 lugs where it lugs into the reverse drum, as shown in Figure 2. The 1st design 3 pinion aluminum rear carrier is no longer serviced by Ford Motor Co, and automatically supercedes to the 4 pinion steel rear carrier. It is available as a service package under OEM part number E7SZ-7D006-C, which includes the number 8 and number 9 thrust washers, to make it compatible. Beginning in 1990, on 4.0L engine models only, Ford introduced a 3rd design *6 pinion steel* rear carrier, which has multiple lugs where it lugs into the reverse drum (See Figure 2).

(2) REVERSE DRUM - The 1st design Reverse Drum contains the low roller clutch and has the “Castles” on the front of the drum to accept the 10 lug, 4 pinion steel rear carrier, as shown in Figure 3. The 2nd design Reverse Drum contains the low sprag clutch and is machined to accept the multiple lug, 6 pinion steel rear carrier for the 4.0L models, as shown in Figure 3.

(3) REAR RING GEAR HUB - The 1st design Rear Ring Gear Hub is identified with a “Stepped” washer surface as shown in Figure 4, and uses the 1st design number 9 thrust washer as shown in Figure 2. The 2nd design Rear Ring Gear Hub is identified with a “Flat” washer surface as shown in Figure 4, to accommodate the new 2nd design number 9 thrust washer (See Figure 2). The 3rd design Rear Ring Gear Hub is identified with a machined recess to accommodate the added oil sleeve and the thicker output shaft snap ring, and you can also see the added lube grooves in the spline area to accommodate the internal lube flow changes (See Figure 4). The 2nd & 3rd design Ring Gear Hub also has step removed out next to the ring gear teeth, to accommodate larger diameter of the 2nd design number 9 thrust washer (See Figure 4).

(4) NUMBER 8 THRUST WASHER - Thrust washer tab locations and design changed, to accommodate the 2nd design 4 pinion steel rear carrier (See Figure 2). The 2nd design number 8 thrust washer was carried forward, and used also on the 6 pinion steel rear carrier for the 4.0L engine models (See Figure 2).

Continued on next Page



Technical Service Information

INTERCHANGEABILITY:

(5) NUMBER 9 THRUST WASHER - Thrust washer tab locations, and thrust washer surface area changed, to accommodate the 2nd design 4 pinion steel rear planetary carrier (See Figure 2). The 2nd design number 9 thrust washer was carried forward, and used also on the 6 pinion steel rear carrier for the 4.0L engine models (See Figure 2).

(6) NUMBER 10 THRUST WASHER - Receive a change in outside diameter (See Figure 4), and is now used to retain the low sprag end bearing on 4.0L engine models. Refer to the cutaway illustrations in Figure 6. The outside diameter on the number 10 thrust washer for the 4 pinion carrier is 2.275", and the outside diameter on the number 10 thrust washer for the 6 pinion carrier is 3.205", as shown in Figure 4.

(7) OIL SLEEVE - An added oil delivery sleeve, or lubrication guide, was added to the output shaft rear ring gear hub to direct lube oil from the added grooves in the hub, through the sun gear to the front planetary gear set (See Figures 1 and 4).

(8) OUTPUT SHAFT - The Output Shaft was revised in three areas:

- The front output shaft bushing was replaced with a caged needle bearing (See Figure 5).
- The output shaft snap ring groove was machined approximately .030" wider to make room for a revised thickness snap ring (See Figure 5). The new snap ring thickness is .077", as shown in Figure 5.
- The lube holes in the 1st design output shaft were eliminated entirely, to accommodate the revisions in the lube circuit on the 4.0L engine models (See Figure 5).

(9) OUTPUT SHAFT SNAP RING - The snap ring that retains the rear ring gear and hub onto the output shaft on 4.0L models was increased in thickness, and now measures .077" thick. On all other applications the snap ring measures .046" thick (See Figure 5).

(10) REVERSE DRUM SNAP RING - The snap ring that retains the 10 lug (4 Pinion) rear carrier in the Reverse Drum was eliminated on the "Multiple Lug" (6 Pinion) rear carrier for the 4.0L engine models (See Figure 6).

SERVICE INFORMATION:

Number 8 Thrust Washer (1st Design).	D4ZZ-7A166-A
Number 8 Thrust Washer (2nd Design).	FOTZ-7A166-A
Number 9 Thrust Washer (1 st Design).	D4ZZ-7A 166-A
Number 9 Thrust Washer (2nd Design).	FOTZ-7A166-B
Number 10 Thrust Washer (1 st Design).	.D4ZZ-7D422-B
Number 10 Thrust Washer (2nd Design).	FOTZ-7D422-A
Oil Sleeve, Output Shaft (4.0L Engine).	FOTZ-7B 176-A
Snap Ring, Output Shaft (.046" Thick).	E661125-S
Snap Ring, Output Shaft (.077" Thick).	E860527-S
Rear Carrier, 4 Pinion Steel (Includes No. 8 & No. 9 Washers).	E7SZ-7D006-C
Rear Ring Gear Hub, (4 Pinion Steel).	E7SZ-7D164-A
Rear Carrier, 6 Pinion Steel (4.0L Engine).	FOTZ-7D006-A
Rear Ring Gear Hub, (6 Pinion Steel).	FOTZ-7D 164-C

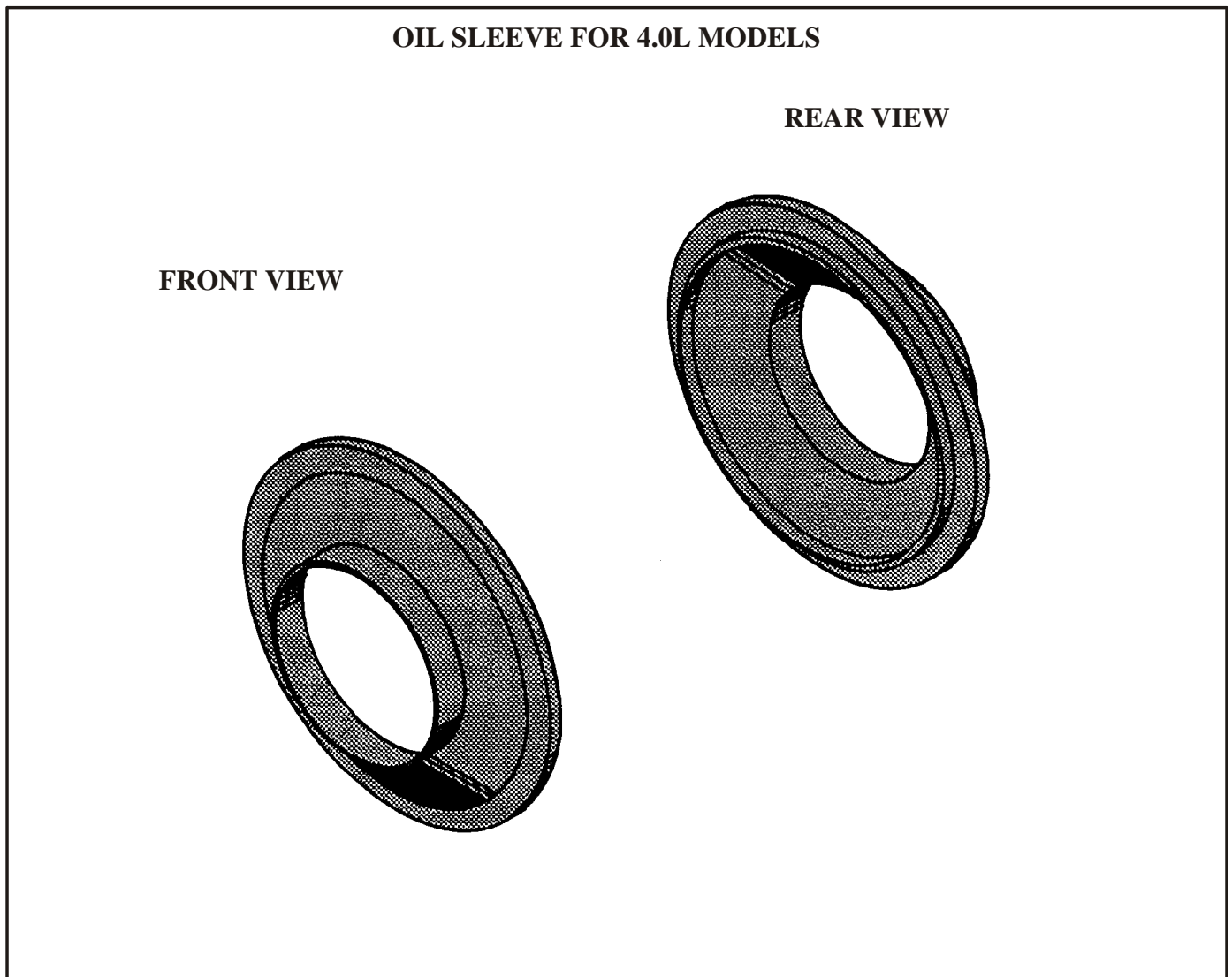


Figure 1

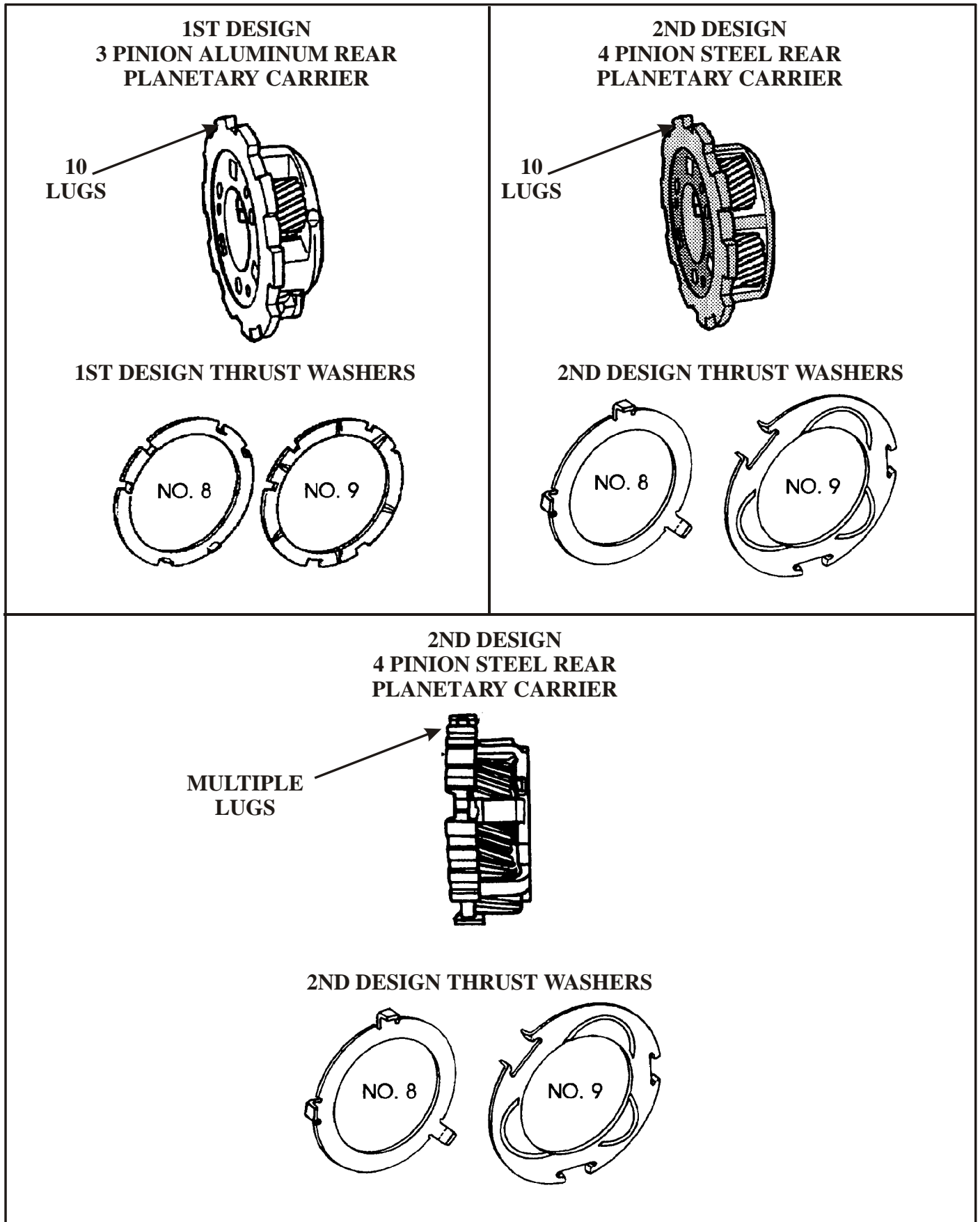


Figure 2

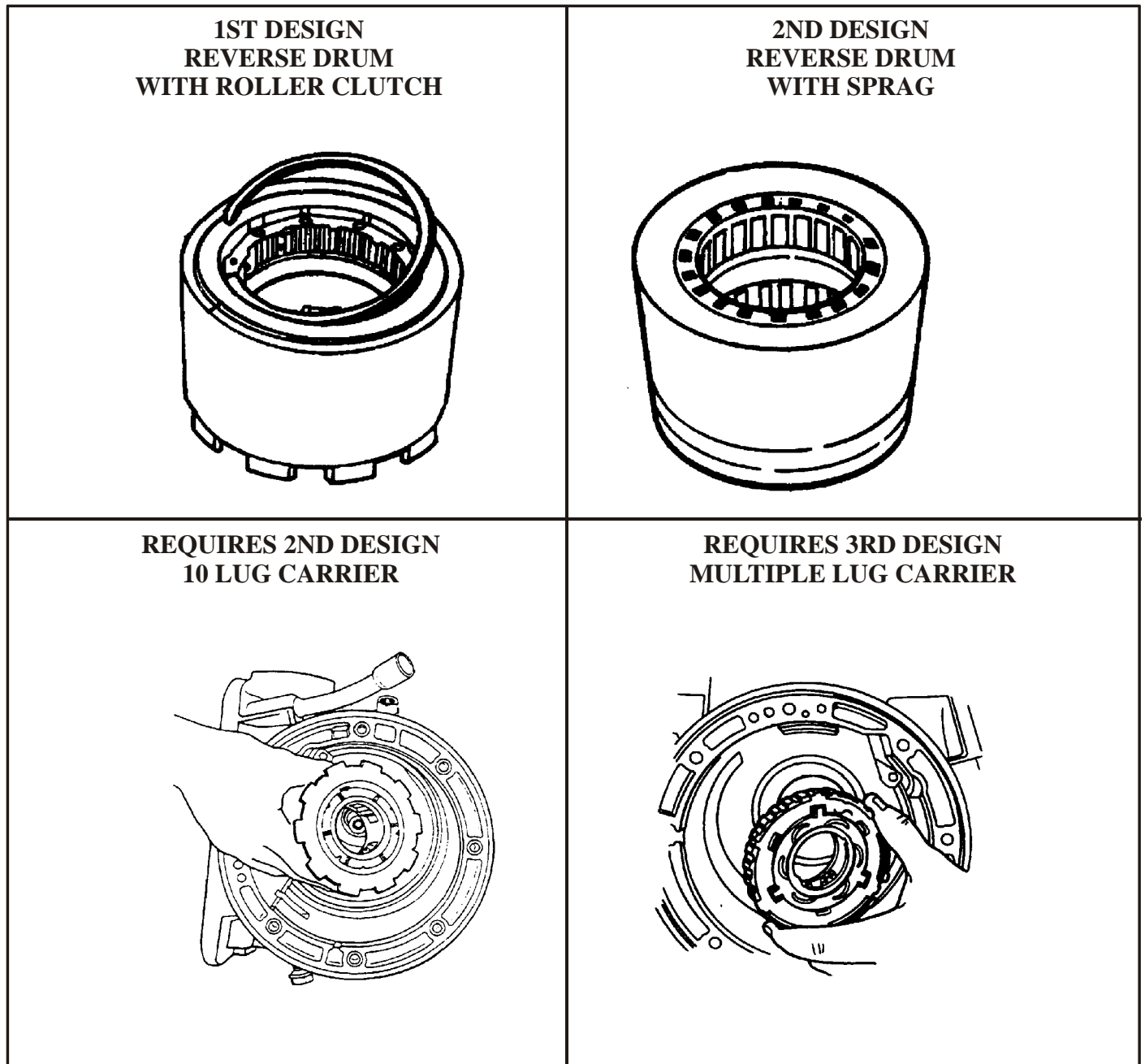


Figure 3

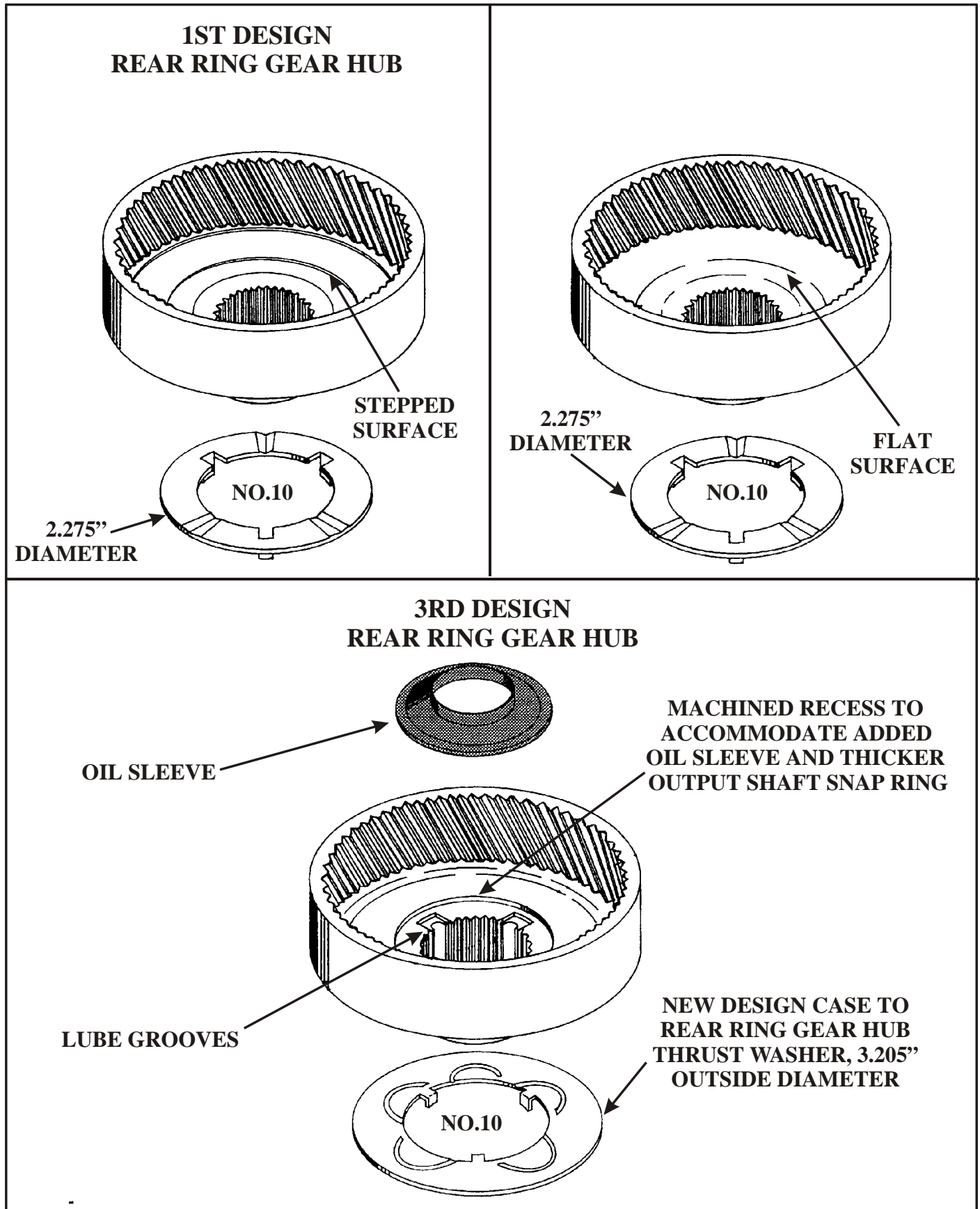
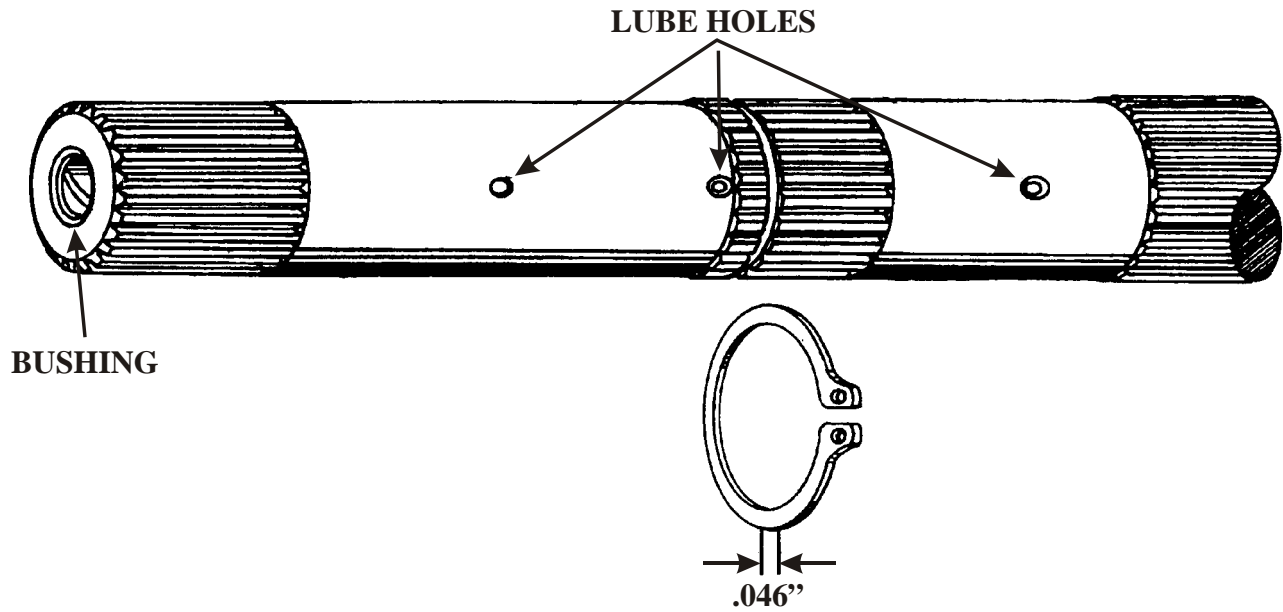


Figure 4

1ST DESIGN OUTPUT SHAFT



2ND DESIGN OUTPUT SHAFT

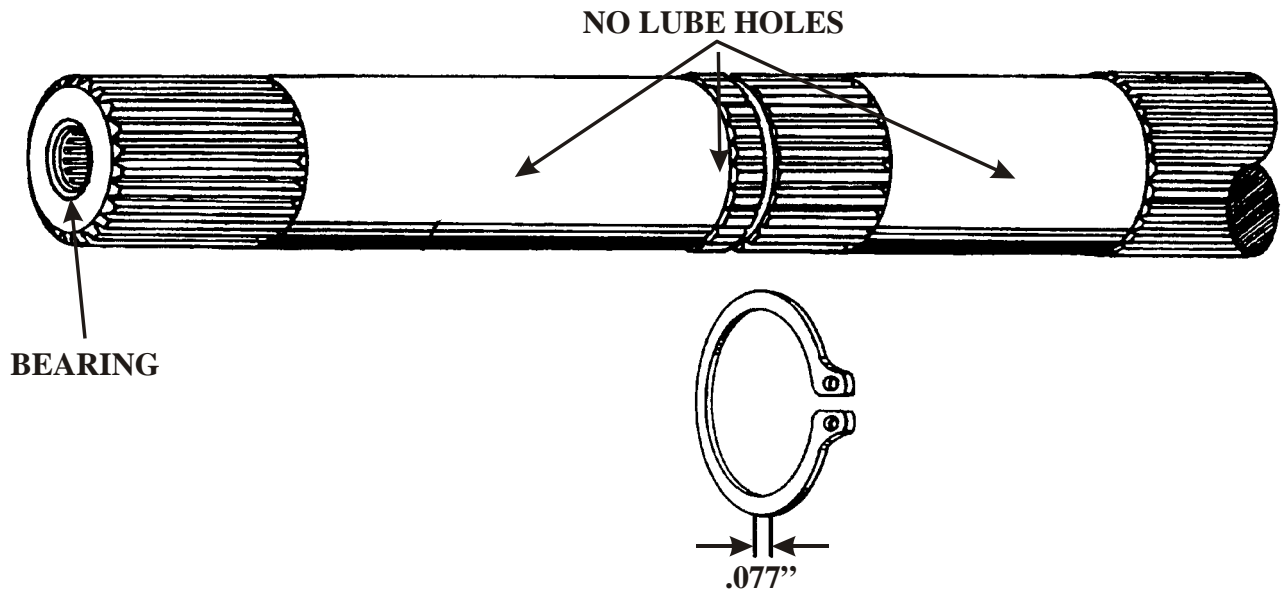
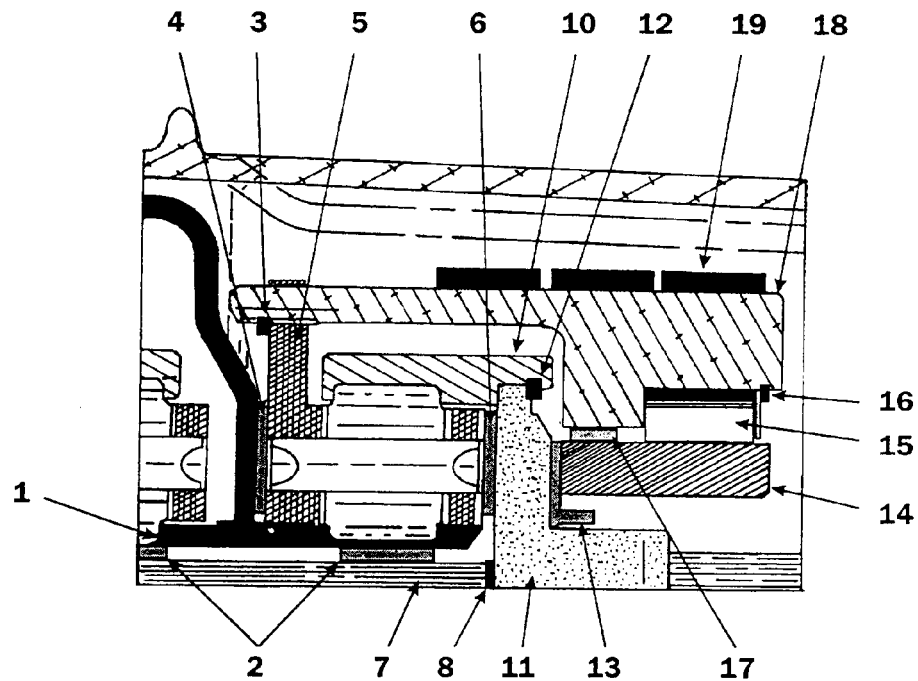


Figure 5

EARLY LOW ONE WAY CLUTCH ASSEMBLY



LATE (4.0L) LOW ONE WAY CLUTCH ASSEMBLY

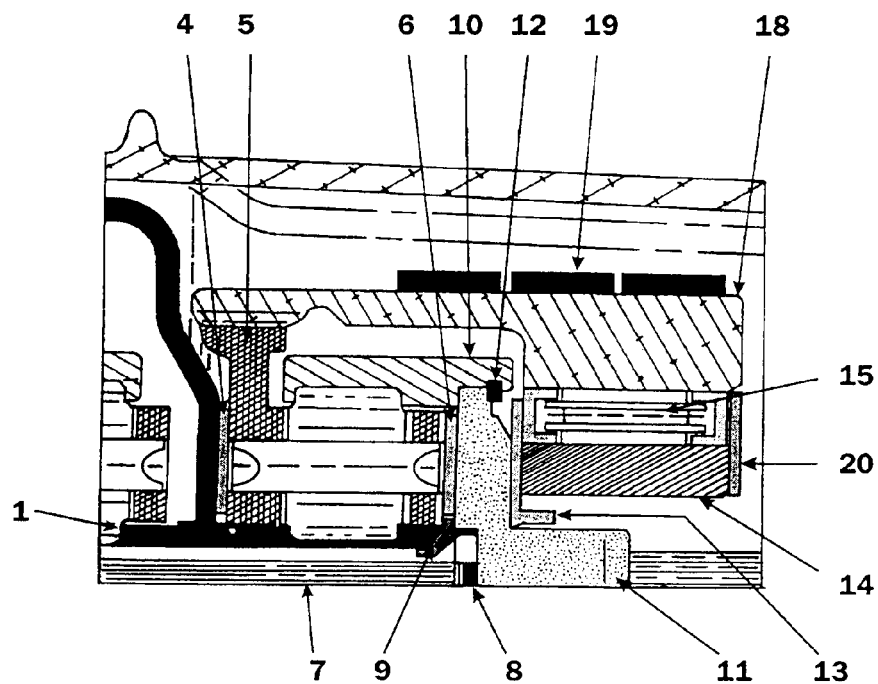


Figure 6

1. SUN GEAR.
2. SUN GEAR BUSHING.
3. REVERSE DRUM RETAINING SNAP RING.
4. NUMBER 8 THRUST WASHER.
5. REAR PLANETARY CARRIER.
6. NUMBER 9 THRUST WASHER.
7. OUTPUT SHAFT.
8. OUTPUT SHAFT TO REAR RING GEAR HUB
RETAINING SNAP RING (.046" OR .077").
9. OIL SLEEVE, OUTPUT SHAFT (LUBE GUIDE).
10. REAR PLANETARY RING GEAR.
11. REAR RING GEAR HUB.
12. REAR RING GEAR TO RING GEAR HUB
RETAINING SNAP RING.
13. NUMBER 10 THRUST WASHER.
14. LOW ROLLER / LOW SPRAG CLUTCH
INNER RACE.
15. LOW ROLLER / LOW SPRAG ASSEMBLY.
16. LOW ROLLER CLUTCH TO REVERSE DRUM
RETAINING SNAP RING.
17. REVERSE DRUM BUSHING.
18. REVERSE DRUM.
19. LOW & REVERSE BAND ASSEMBLY.
20. NUMBER 15 THRUST WASHER.
(PART OF CASE)

Figure 9