



## FORD A4LD FRONT PLANETARY GEARSET CHANGES

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

**REASON:** Greater torque carrying capacity because of increased horsepower demands.

**PARTS AFFECTED:**

**(1) FRONT PLANETARY CARRIER** - The 1st design *3 pinion aluminum* carrier was eliminated and replaced with a revised *4 pinion steel* carrier. The snap ring groove and the snap ring that previously retained the carrier into the ring gear were eliminated (See Figure 1). In 1990 the steel carrier was once again upgraded with a *6 pinion steel* carrier, for 4.0L engine models only. The 6 pinion steel carrier was also shortened in overall height, by approximately .125", to accommodate a new design number 6 (3 piece) thrust bearing (See Figures 1 & 3). **NOTE:** The 1st Design 3 pinion aluminum and 2nd Design 4 pinion steel front carriers are no longer serviced by Ford Motor Co. They are now upgraded to the latest 3rd Design 6 pinion steel front planetary system, which comes as a service package and includes all necessary hubs and washers to make it compatible.

**(2) FORWARD RING GEAR HUB** - The 1st Design forward ring gear hub uses a number 7 thrust washer as shown in Figure 3. On the 2nd Design ring gear hub, a recess was machined to accommodate an added number 7 thrust bearing, that replaced the number 7 thrust washer. Refer to Figures 2 and 3. Both 1st and 2nd design ring gear hubs inside diameter measure 1.500", as shown in Figure 2.

On the 3rd Design ring gear hub the inside diameter was machined approximately .080" larger to accommodate a new design number 6 "Top Hat" thrust washer (See Figure 3). The inside diameter on the 3rd Design ring gear hub measures 1.580", as shown in Figure 2.

**(3) NUMBER 6 THRUST WASHER** - Was changed from a 3 tab thrust washer to a "Top Hat" design thrust washer in 1987 (See Figure 3). This change is what required the larger inside diameter on the ring gear hub. Beginning in 1990, on 4.0L engine models, the number 6 "Top Hat" thrust washer was replaced with a new number 6 (3 Piece) thrust bearing, as shown in Figure 3. Notice also the added washer (7D090), that must be used with the 3 piece bearing design (See Figure 3). This is what required the carrier to be machined shorter. The 3 piece thrust bearing has now been changed to a normal "Torrington" (Snap Together) type bearing and replaces the 3 piece design without any other changes.

**(4) NUMBER 7 THRUST WASHER** - Sometime in 1986, the number 7 thrust washer was eliminated, and replaced with a number 7 thrust bearing as shown in Figure 3. This change required the machined recess in the ring gear hub, to make room for the thrust bearing, as shown in Figure 2. The number 7 thrust bearing is still used through current production (See Figure 3).

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# Technical Service Information

## INTERCHANGEABILITY:

(1) The 1st Design 3 pinion aluminum front planetary carrier system, as shown in Figure 3, is recommended for nothing larger than 2.3L engine models. The 1st Design 3 pinion aluminum front planetary carrier is no longer serviced by Ford Motor Co. It now upgrades to the latest 3rd Design 6 pinion steel front planetary carrier system, which comes as a service package and includes all necessary hubs and washers to make it compatible, and is available under OEM part number F0TZ-7A398-E.

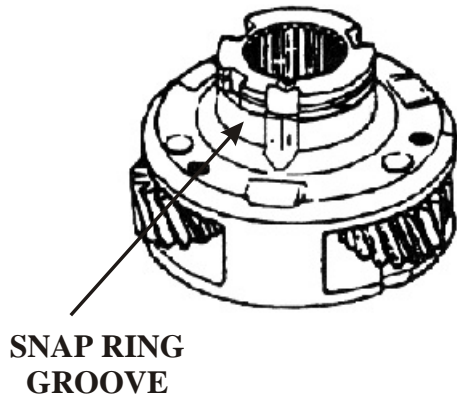
(2) The 2nd Design 4 pinion steel front planetary carrier system, as shown in Figure 3, with the 1.580" inside diameter ring gear hub, the number 7 thrust bearing, the number 6 "Top Hat" thrust washer WILL retro-fit back on all models, except 4.0L engine models, but all parts listed above must be used as an assembly (See Figure 3). The 2nd Design 4 pinion steel front planetary carrier is no longer serviced by Ford Motor Co. It now upgrades to the latest 3rd Design 6 pinion steel front planetary carrier system, which comes as a service package and includes all necessary hubs and washers to make it compatible, and is available under OEM part number F0TZ-7A398-E.

(3) The 3rd Design 6 pinion steel, 4.0L engine front planetary system, as shown in Figure 3, with the 1.580" inside diameter ring gear hub, the number 7 thrust bearing, number 6 (3 Piece) thrust bearing, and bushing (7D090) WILL retro-fit back on all previous models, but the parts listed above are mandatory on 4.0L models (See Figure 3).

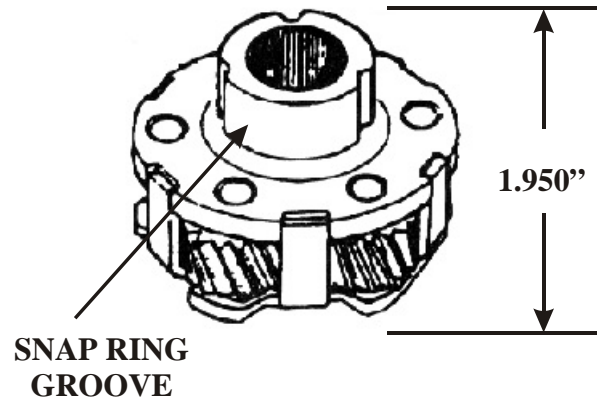
## SERVICE INFORMATION:

3 Piece Thrust Bearing, 6 Pinion Steel Front Carrier ..... F3TZ-7D234-A  
Washer (70090), 6 Pinion Steel Front Carrier ..... F0TZ-7D090-A  
Service Package, 6 Pinion Steel Front Carrier  
(Includes the following:)  
Front Planetary Assembly (7A3 98)  
Number 7 Thrust Bearing (7F374)  
Front Ring Gear Hub, 3rd Design (7B067)  
Forward Clutch Thrust Washer (7D090)  
3 Piece Thrust Bearing Assembly (7D234) ..... F0TZ-7A398-E

**1ST DESIGN  
3 PINION ALUMINUM  
FRONT PLANETARY**



**2ND DESIGN  
3 PINION STEEL  
FRONT PLANETARY**



**2ND DESIGN  
3 PINION STEEL  
FRONT PLANETARY**

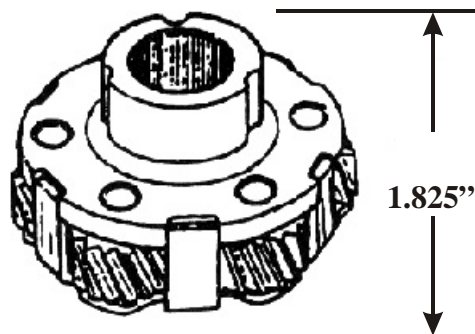
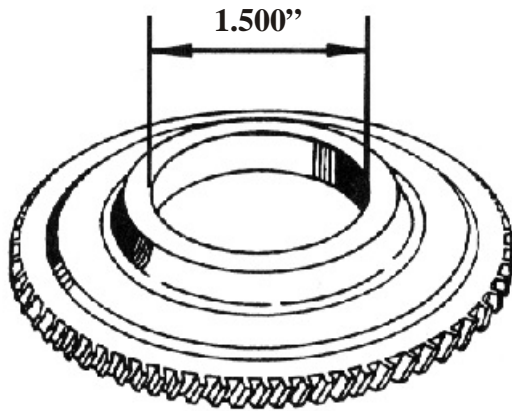
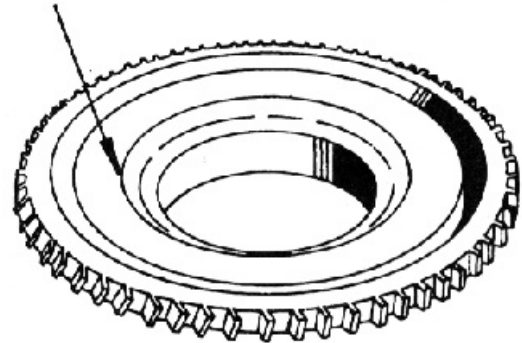


Figure 1

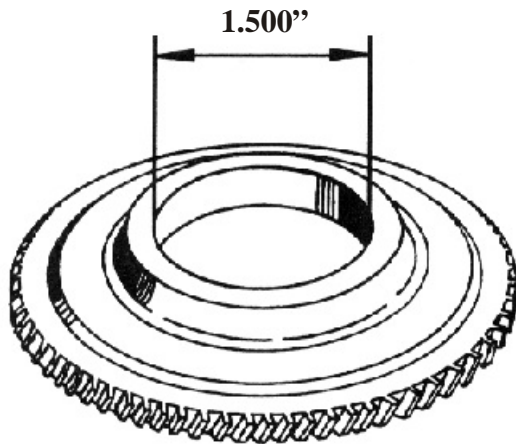
## 1ST DESIGN FORWARD RING GEAR HUB



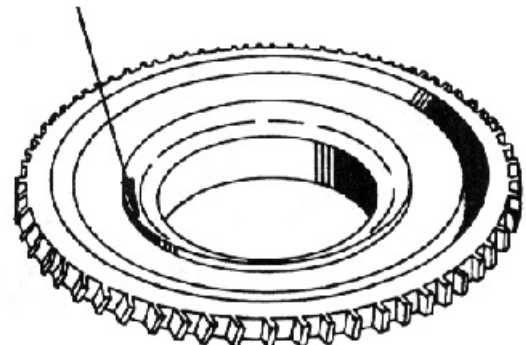
FLAT SURFACE FOR  
NO. 7 THRUST WASHER



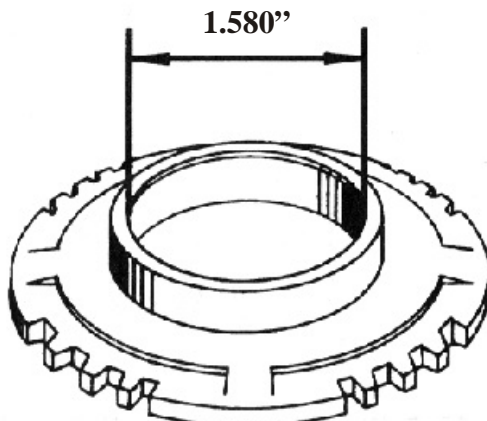
## 2ND DESIGN FORWARD RING GEAR HUB



RECESSED SURFACE FOR  
NO. 7 THRUST BEARING



## 3RD DESIGN FORWARD RING GEAR HUB



RECESSED SURFACE FOR  
NO. 7 BEARING

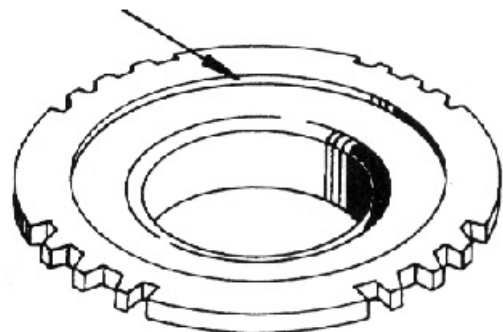
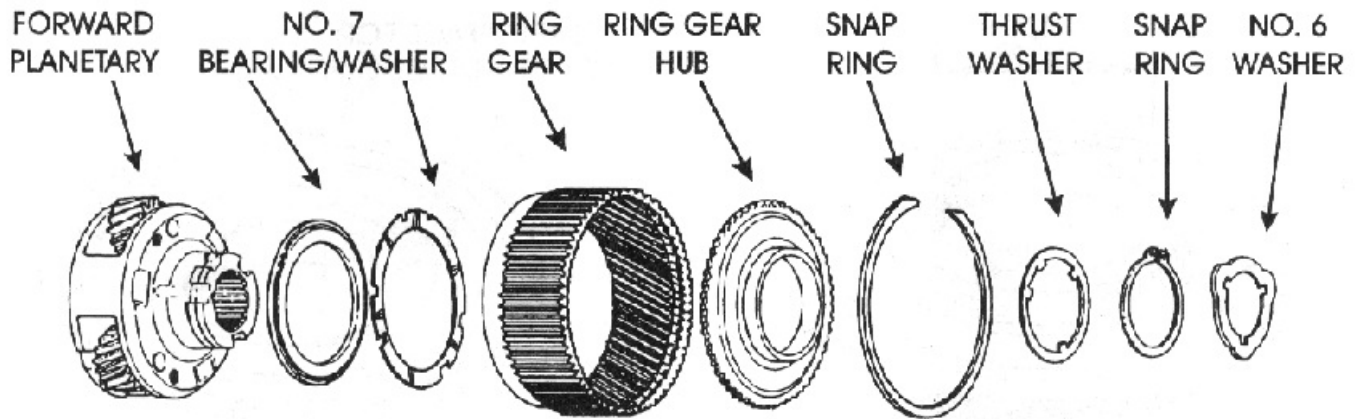
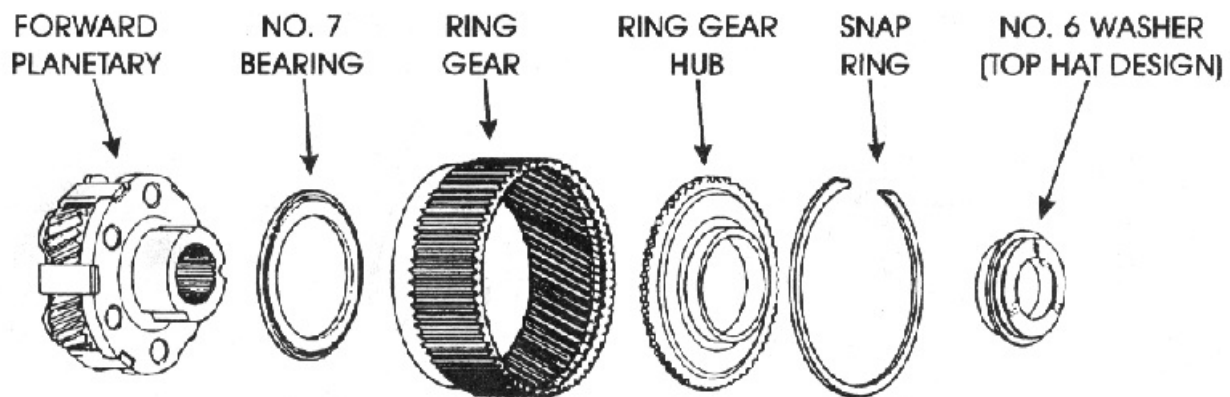


Figure 4

## 1ST DESIGN 3 PINION ALUMINUM FRONT PLANETARY



## 2ND DESIGN 3 PINION STEEL FRONT PLANETARY



## 2ND DESIGN 3 PINION STEEL FRONT PLANETARY

