THM 4T60-E
FINAL DRIVE IDENTIFICATION

CHANGE: Beginning in model year 1995, General Motors introduced a "Fine Pitch" final drive assembly with the teeth cut in the opposite direction of the 1st design. With the teeth cut in the opposite direction they were easy to identify from the 1st design. However, for the 1996 model year the "Fine Pitch" final drive assembly has the teeth cut in the same direction as the 1st design, and this sometimes makes it difficult to identify in case parts replacement is necessary. We now have nine different final drive combinations, and not all will interchange.
To complicate this even further there are five different tooth counts on the output speed sensor rotor on the different final drive carriers that will not interchange. We have provided you with all identification information to prevent you from making these mistakes.

Special Note:
If the wrong ratio final drive assembly or the wrong tooth count speed sensor rotor is used, the vehicle will have no 4th gear and/or no converter clutch operation.

REASON: The "Fine Pitch" final drive assemblies were introduced to address noise concerns.

PARTS AFFECTED:

(1) FINAL DRIVE INTERNAL RING GEAR:

"Regular Pitch" This internal ring gear has 70 internal teeth for all three final drive ratios that are available, as illustrated in Figure 1.

"1995 Fine Pitch" This internal ring gear has 78 internal teeth for all three final drive ratios that are available, as illustrated in Figure 2. The internal teeth are also cut in the opposite direction of the regular pitch design.

"1996-Up Fine Pitch" This internal ring gear has 78 internal teeth for all three final drive ratios that are available, as illustrated in Figure 3. The internal teeth are cut in the same direction as the regular pitch design.

(2) FINAL DRIVE SUN GEAR:

"Regular Pitch" There are three different ratios available as shown in Figure 1. The 2.84 ratio sun gear has 38 teeth, the 3.06 ratio sun gear has 34 teeth, and the 3.33 ratio has 30 teeth. The pitch direction is also illustrated in Figure 1.

"1995 Fine Pitch" There are three different ratios available as shown in Figure 2. The 2.86 ratio sun gear has 42 teeth, the 3.05 ratio sun gear has 38 teeth, and the 3.29 ratio has 34 teeth. Notice that the pitch direction is also the opposite direction of the regular pitch, as illustrated in Figure 2.

"1996-Up Fine Pitch" There are three different ratios available as shown in Figure 3. The 2.86 ratio sun gear has 42 teeth, the 3.05 ratio sun gear has 38 teeth, and the 3.29 ratio has 34 teeth. Notice that the pitch direction is the same as the direction of the regular pitch, as illustrated in Figure 3. When the pitch direction is changed, it changes the thrust direction of the final drive carrier.

Continued on next Page.

(3) FINAL DRIVE CARRIER

"Regular Pitch" There are three different final drive carrier ratios available. They are 2.84, 3.06, and 3.33. The 2.84 ratio final drive carrier has 16 teeth on the pinion gears, the 3.06 ratio has 18 teeth on the pinion gears, and the 3.33 has 20 teeth on the pinion gears as illustrated in Figure 1. Notice that the pitch angle of the planetary pinions is to the left as illustrated in Figure 1.

"1995 Fine Pitch" There are three different final drive carrier ratios available. They are 2.86, 3.05, and 3.29. The 2.86 ratio final drive carrier has 18 teeth on the pinion gears, the 3.05 ratio has 20 teeth on the pinion gears, and the 3.29 has 22 teeth on the pinion gears as illustrated in Figure 2. Notice that the pitch angle of the planetary pinions is the opposite, to the right, of the regular pitch as illustrated in Figure 2.

"1996-Up Fine Pitch" There are three different final drive carrier ratios available. They are 2.86, 3.05, and 3.29. The 2.86 ratio final drive carrier has 18 teeth on the pinion gears, the 3.05 ratio has 20 teeth on the pinion gears, and the 3.29 has 22 teeth on the pinion gears as illustrated in Figure 3. Notice that the pitch angle of the planetary pinions is the same, to the left, as the regular pitch as illustrated in Figure 3.

Special Note:
We have also provided you with the formula to calculate the final drive ratios, and provided you with two examples of this formula in Figure 4.

INTERCHANGEABILITY:

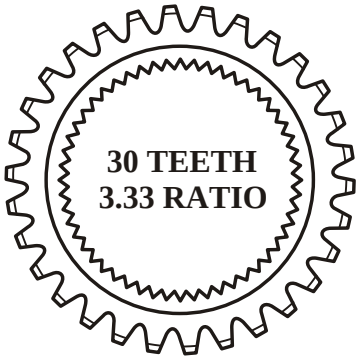
The 2.86 ratio will replace the 2.84 ratio with no adverse effects, as long as the proper speed sensor rotor tooth count is maintained for the model you are working on.
The 3.05 ratio will replace the 3.06 ratio with no adverse effects, as long as the proper speed sensor rotor tooth count is maintained for the model you are working on.
The 3.29 ratio will replace the 3.33 ratio with no adverse effects, as long as the proper speed sensor rotor tooth count is maintained for the model you are working on.
None of the individual components from the "Regular Pitch", "1995 Fine Pitch", or the "1996-Up Fine Pitch" will interchange with one another. You should not have any trouble here because they will not assemble.

TRANSAXLE IDENTIFICATION BY MODEL NUMBER AND RATIO

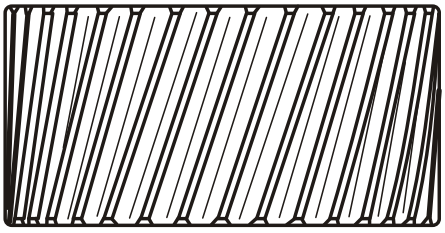
This bulletin will also help you identify 4T60-E transmissions by model number so that you get the right sprocket ratio, final drive ratio, and speed sensor rotor tooth count back into the proper vehicle. The first column gives you the broadcast code off of the I.D. tag, the second column gives you the engine size and vehicle that it came out of, the third column gives you the final drive ratio/speed sensor rotor tooth count, the fourth column gives you the drive/driven sprocket tooth count, the fifth column gives you the stall speed of the torque converter, and the last column tells you which structual side cover is required in that particular model if it requires one.

For 1991 Model vehicles, refer to Figure 5.
For 1992 Model vehicles, refer to Figure 6.
For 1993 Model vehicles, refer to Figure 7.
For 1994 Model vehicles, refer to Figure 8.
For 1995 Model vehicles, refer to Figure 9.
For 1996 Model vehicles, refer to Figure 10.

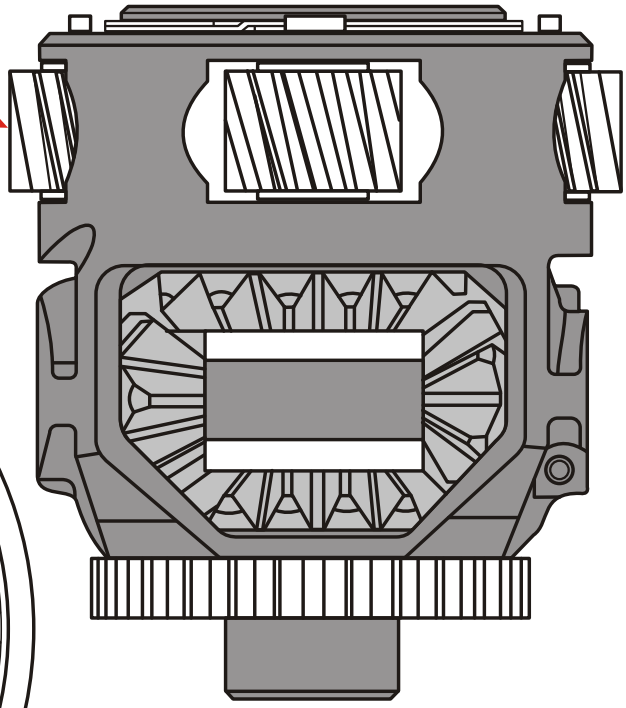
"REGULAR" FINAL DRIVE IDENTIFICATION



DIRECTION OF PITCH



2.84 = 16 Teeth
3.06 = 18 Teeth
3.33 = 20 Teeth



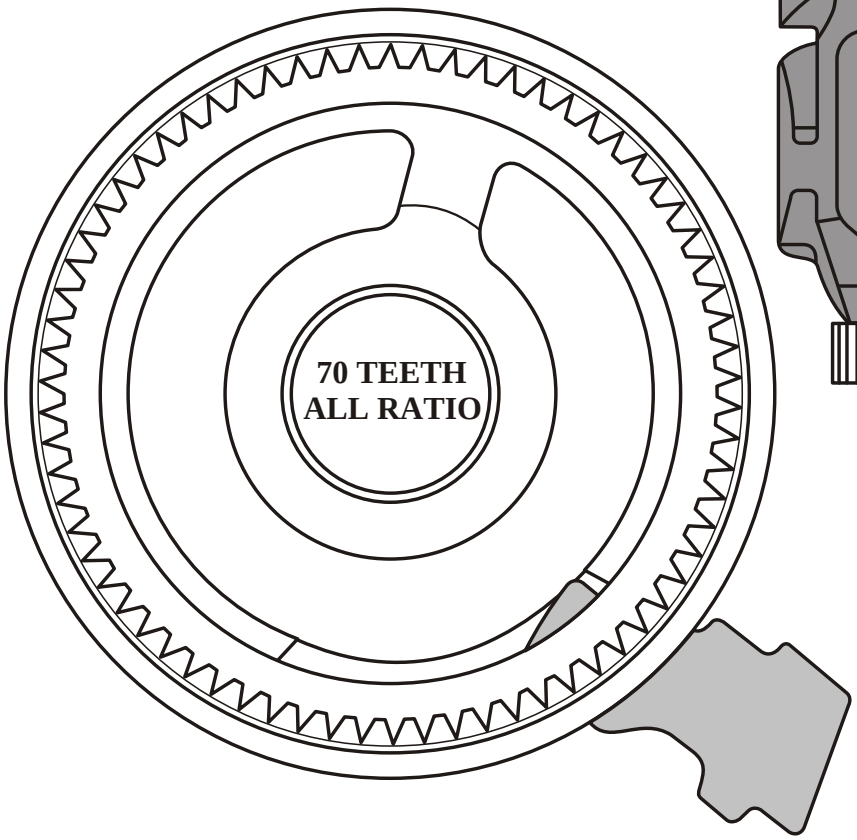
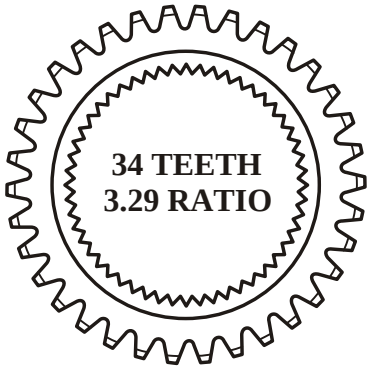
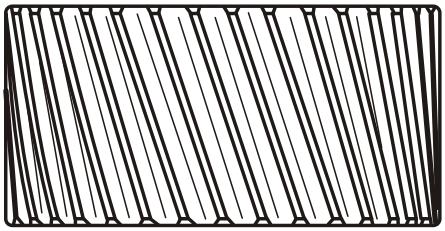


Figure 1

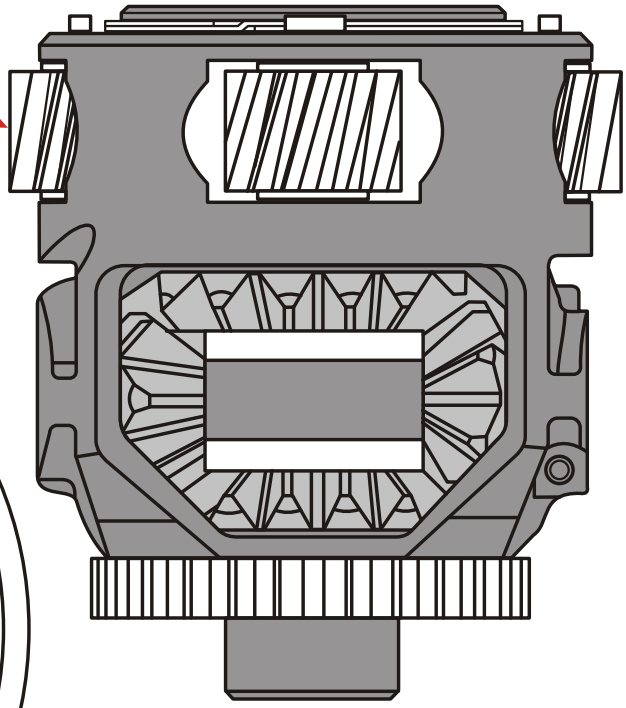
"1995 FINE PITCH" FINAL DRIVE IDENTIFICATION
(Cut Opposite Direction of Regular)



DIRECTION OF PITCH



2.86 = 18 Teeth
3.05 = 20 Teeth
3.29 = 22 Teeth



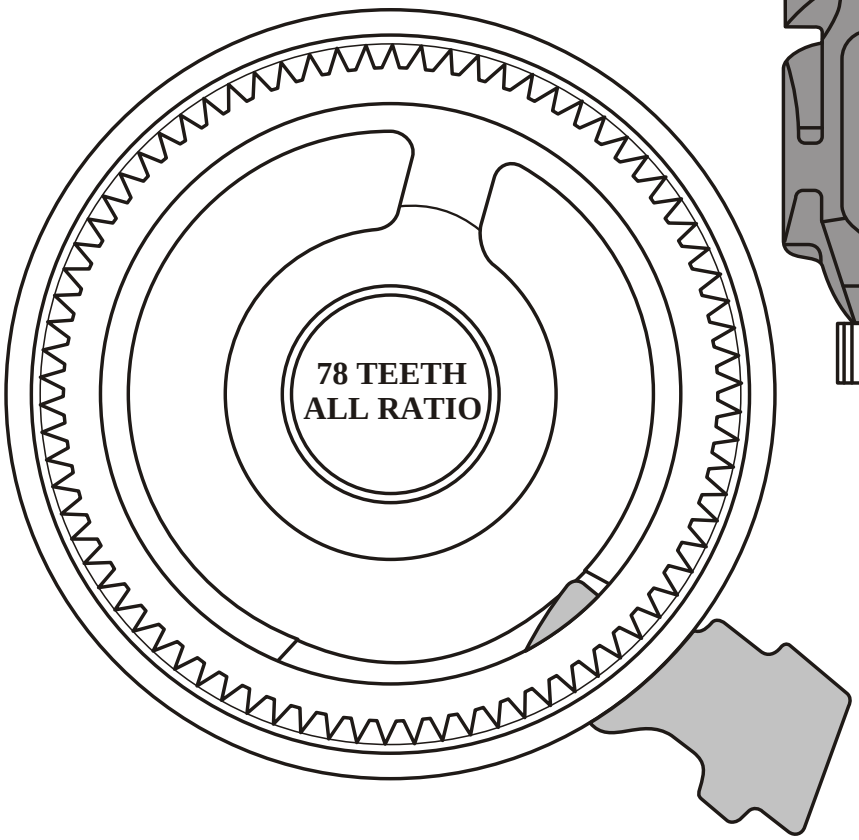
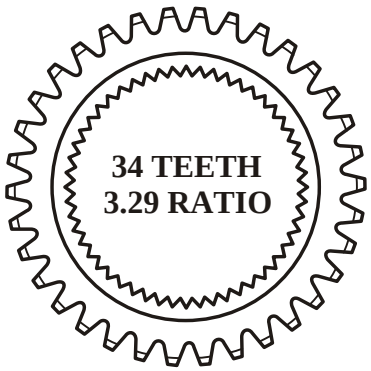
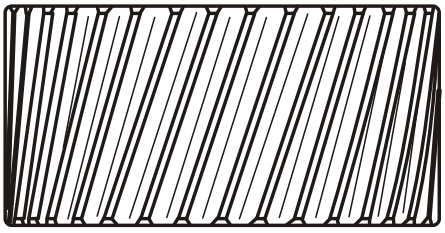


Figure 2

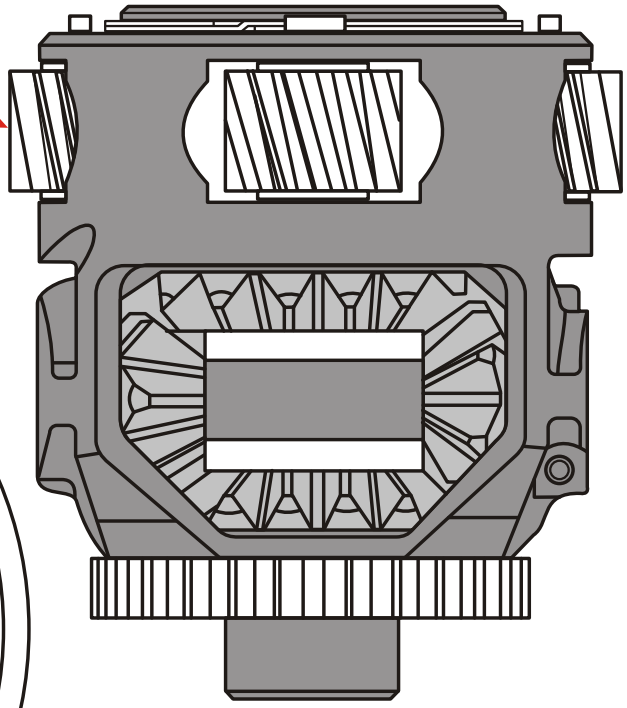
"1996-UP FINE PITCH" FINAL DRIVE IDENTIFICATION
(Cut Same Direction as Regular)



DIRECTION OF PITCH



2.86 = 18 Teeth
3.05 = 20 Teeth
3.29 = 22 Teeth



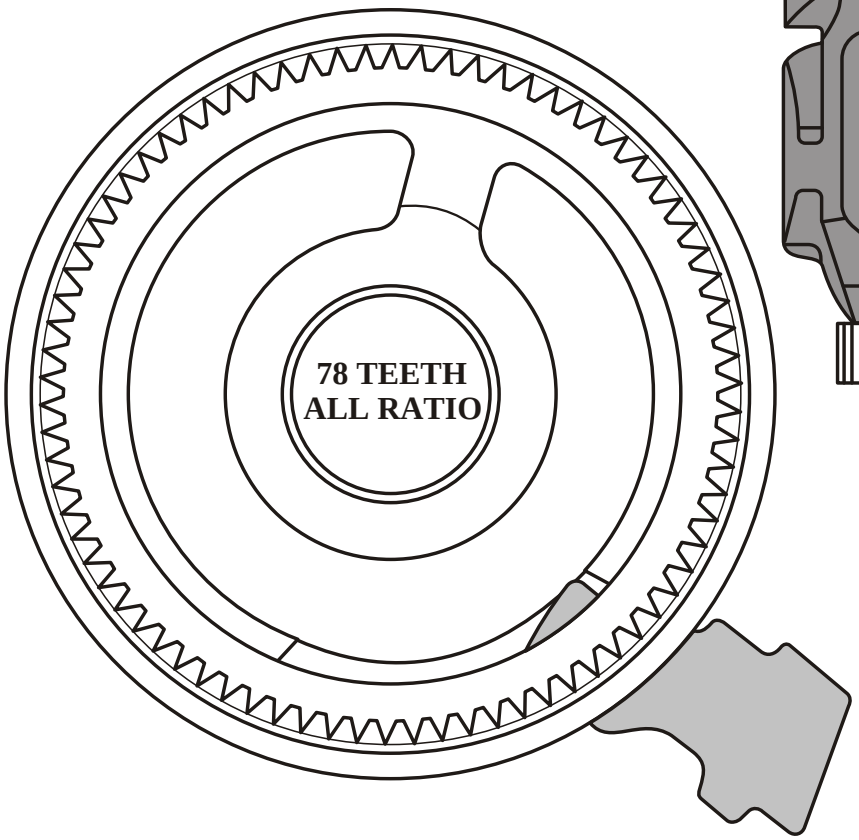
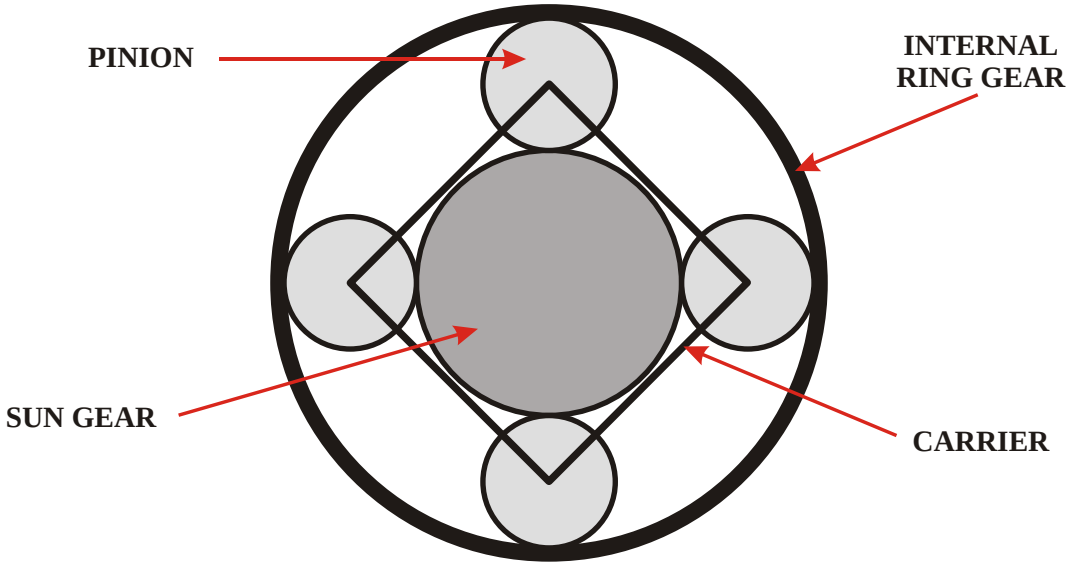


Figure 3

FORMULA FOR FINAL DRIVE RATIO IDENTIFICATION



I = NUMBER OF TEETH ON INTERNAL RING GEAR
S = NUMBER OF TEETH ON SUN GEAR
P = NUMBER OF TEETH ON PINION GEAR

HELD	INPUT	OUTPUT	REVOLUTIONS SUN	REVOLUTIONS CARRIER	REVOLUTIONS INTERNAL	REVOLUTIONS PINION
INTERNAL	SUN	CARRIER	1	$\frac{I + S}{S}$	0	$\left(\frac{S}{I + S}\right)\left(\frac{I}{P}\right)$

Regular Pitch Example: $\frac{I = 78 + S = 34}{S = 34} = \frac{112}{34} = 3.29$

Fine Pitch Example: $\frac{I = 70 + S = 38}{S = 38} = \frac{108}{38} = 2.84$

Figure 4

1991 THM 4T60-E MODELS

TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
1AHW, 1AVW	4.9L CADILLAC (EXPORT)	3.06/30	37/33	1825	
1AMW, 1A2W	4.9L CADILLAC E/K BODY	3.33/30	37/33	1825	
1APW, 1A4W	4.9L CADILLAC C/K BODY (EXPORT)	3.33/30	37/33	1825	
1AYW, 1A7W	4.9L CADILLAC E/K BODY (TOUR)	3.33/30	35/35	1825	
1AZW	4.9L CADILLAC C BODY (LIMO)	3.06/32	37/33	1825	
1YMW	3800 V6 C/H BODY	2.84/30	35/35	1420	
1YPW	3800 V6 REATTA	3.33/30	35/35	1897	
1YZW	3800 V6 C/H BODY	3.33/30	35/35	1897	
1CWW	3.4L DOHC W BODY (NON PWM)	3.06/30	33/37	2095	
1BTW	3800 V6 C BODY	3.33/31	37/33	1897	

Figure 5

1992 THM 4T60-E MODELS					
TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
2AVW, 2A5W	4.9L CADILLAC C - BODY (EXPORT)	3.06/30	37/33	1825	
2AMW, 2A2W	4.9L CADILLAC E/K - BODY	3.33/31	37/33	1825	
2ABW, 2A1W	4.9L CADILLAC C - BODY	3.06/30	37/33	1825	
2ANW, 2A3W	4.9L CADILLAC C - BODY	3.33/30	37/33	1825	
2APW, 2A4W	4.9L CADILLAC E/K - BODY (EXPORT)	3.33/31	37/33	1825	
2AWW, 2A6W	4.9L CADILLAC C - BODY (EXPORT)	3.33/30	37/33	1825	
2AZW, 2A8W	4.9L CADILLAC C - BODY (LIMO)	3.06/32	37/33	1825	
2AYW, 2A7W	4.9L CADILLAC E/K - BODY	3.33/31	35/35	1825	
2BTW, 2B1W	3.8L C - BODY	3.33/31	37/33	1897	
2BYW, 2B2W	3800 C/H - BODY SSE	3.06/31	35/35	1897	
2CLW, 2C1W	3800 C/H - BODY	2.84/30	35/35	1420	
2CSW, 2C2W	3800 C/H - BODY	3.06/30	35/35	1897	
2CTW, 2C3W	3800 C/H - BODY SSE	3.06/31	35/35	1897	
2CWW, 2C4W	3.4L W - BODY (NON PWM)	3.06/30	33/37	2095	
2CXW, 2C5W	3800 C - BODY	3.33/31	37/33	1897	
2CZW, 2C6W	3.8L H - BODY SSEI/SSE	3.33/31	37/33	1897	
2PHW, 2P1W	3.8L H - BODY SSE	3.33/31	37/33	1897	
2WAW, 2W1W	3800 C/H - BODY & GM200 (U - BODY)	3.06/31	35/35	1897	
2YLW, 2Y1W	3800 C/H - BODY	2.84/31	35/35	1420	
2YMW, 2Y2W	3800 C/H - BODY	2.84/30	35/35	1420	
2YZW, 2Y4W	3800 C/H - BODY	3.06/30	35/35	1897	

Figure 6

1993 THM 4T60-E MODELS

TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
3ABW	4.9L CADILLAC C - BODY	306/30	37/33	1825	
3AMW	4.9L CADILLAC E/K - BODY	333/31	37/33	1825	
3ANW	4.9L CADILLAC C - BODY	333/30	37/33	1825	
3APW	4.9L CADILLAC E/K - BODY (EXPORT)	333/31	37/33	1825	
3AVW	4.9L CADILLAC C - BODY	306/30	37/33	1825	
3AWW	4.9L CADILLAC C - BODY (EXPORT)	333/30	37/33	1825	
3AZW	4.9L CADILLAC C - BODY (LIMO)	306/32	37/33	1825	
3BTW	3800 C - BODY	333/31	37/33	1897	
3BYW	3800 H - BODY	306/31	35/35	1897	
3CLW	3800 C/H - BODY	284/30	35/35	1420	
3CSW	3800 C/H - BODY (EXPORT)	333/30	35/35	1897	
3CTW	3800 H - BODY SSE	306/31	35/35	1897	
3CXW	3800 C - BODY	306/31	37/33	1897	
3CZW	3800 H - BODY SSEI/SSE	333/31	37/33	1897	
3PHW	3800 H - BODY SSE	333/31	37/33	1897	
3WAW	3800 C/H - BODY & GM200 (U - BODY)	306/31	35/35	1897	
3YMW	3800 C/H - BODY	284/30	35/35	1420	
3YZW	3800 C/H - BODY (EXPORT)	306/30	35/35	1897	
3CWW	3.4L W - BODY (NON PWM)	306/30	33/37	2095	
3CMW	3.1L W - BODY (NON PWM)	333/30	35/35	2060	
3YLW	3800 H - BODY	284/31	35/35	1420	
3YRW	3800 E - BODY	306/30	35/35	1897	
3BHW	3.1L W - BODY	333/30	35/35	2095	YES/4 BOLT

Figure 7

1994 THM 4T60-E MODELS

TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
4ATW	4.9L CADILLAC K - BODY	306/31	37/33	1825	
4CLW	2.3L QUAD-4 N - BODY	306/29	33/37	2095	YES/6 BOLT
4PHW	2.3L QUAD-4 N - BODY	333/29	33/37	2363	YES/6 BOLT
4AFW	3.1L W - BODY	333/30	35/35	2095	YES/4 BOLT
4AJW	3.1L A - BODY (EXPORT)	333/29	37/33	1630	
4CMW	3.1L W - BODY (NON PWM)	333/30	35/35	2060	
4PAW	3.1L A - BODY	333/29	37/33	1630	
4WSW	3.1L L/N - BODY	333/29	37/33	1630	YES/6 BOLT
4PBW	3.4L W - BODY	306/30	33/37	2060	YES/4 BOLT
4BLW	3800 W - BODY	306/31	35/35	1897	YES/4 BOLT
4KUW	3800 U - BODY	306/31	35/35	1897	
4KHW	3800 SUPERCHARGED H - BODY	333/31	37/33	1897	
4PFW	3800 H - BODY	306/31	35/35	1897	
4WAW	3800 C/H - BODY	306/31	35/35	1897	
4YCW	3800 SUPERCHARGED C/H - BODY	333/31	37/33	1897	
4YMW	3800 H - BODY	284/30	35/35	1420	
4YZW	3800 H - BODY	306/30	35/35	1897	

Figure 8

1995 THM 4T60-E MODELS

TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
5ATW	4.9L CADILLAC K - BODY	306/31	37/33	1825	
5PCW	2.3L QUAD 4 N - BODY	* 329/29	33/37	2363	YES/6 BOLT
5AFW	3.1L W - BODY	333/30	35/35	2095	YES/4 BOLT
5AJW	3.1L A - BODY (EXPORT)	333/29	37/33	1630	
5PAW	3.1L A - BODY	333/29	37/33	1630	
5WFW	3.1L L/N - BODY	* 329/29	37/33	1630	YES/6 BOLT
5PBW	3.4L W - BODY	306/30	33/37	2060	YES/4 BOLT
5BLW	3800 W - BODY	306/31	35/35	1897	YES/4 BOLT
5CAW	3800 G - BODY	* 305/31	35/35	1897	YES/6 BOLT
5BFW	3800 SUPERCHARGED G - BODY	* 329/31	37/33	1897	YES/6 BOLT
5KUW	3800 U - BODY	306/31	35/35	1897	
5PMW	3800 U - BODY (EXPORT)	306/30	35/35	1897	
5ACW	3800 C/H - BODY	306/30	35/35	1897	
5ASW	3800 C/H - BODY	284/30	35/35	1420	
5YZW	3800 H - BODY	306/30	35/35	1897	
5BXW	3800 H - BODY	306/31	35/35	1897	
5BKW	3800 H - BODY	306/31	35/35	1897	
5YMW	3800 H - BODY	284/30	35/35	1420	
5YDW	3800 SUPERCHARGED C/H - BODY	333/31	37/33	1897	
5YNW	3800 SUPERCHARGED H - BODY	333/31	37/33	1897	

** 3.05 AND 3,29 RATIOS ARE "FINE PITCH" FINAL DRIVES. SUN GEARS, INTERNAL RING GEARS AND PINION GEARS ARE NOT INTERCHANGEABLE WITH OTHER FINAL DRIVES.*

Figure 9

1996 THM 4T60-E MODELS					
TRANSAXLE MODEL CODE	DESCRIPTION	FINAL DRIVE RATIO/ROTOR	SPROCKETS DRIVE/DRIVEN	STALL SPEED	STRUCTURAL SIDE COVER
6CUW	2.4L N - BODY	* 305/30	33/37	2363	YES/6 BOLT
6AFW	3.1L W - BODY	333/30	35/35	2095	YES/4 BOLT
6AJW	3.1L A - BODY (EXPORT)	333/30	37/33	1630	
6PAW	3.1L A - BODY	333/30	37/33	1630	
6WFW	3.1L L - BODY	* 329/30	37/33	1630	YES/6 BOLT
6BSW	3.1L N - BODY	* 329/30	37/33	1630	YES/6 BOLT
6PBW	3.4L W - BODY	306/30	33/37	2060	YES/4 BOLT
6PKW	3.4L U - VAN	* 329/30	35/35	1897	
6CAW	3800 G - BODY	* 305/30	35/35	1897	YES/6 BOLT
6HBW	3800 W - BODY	306/30	35/35	1897	YES/4 BOLT
6ACW	3800 C/H - BODY	306/30	35/35	1897	
6ASW	3800 C/H - BODY	284/30	35/35	1420	
6BXW	3800 H - BODY	306/30	35/35	1897	
6YLW	3800 SUPERCHARGED C/H - BODY (H.D.)	* 329/30	37/33	1897	
6YRW	3800 SUPERCHARGED H - BODY (H.D.)	* 329/30	37/33	1897	
6CTW	3800 SUPERCHARGED G - BODY (H.D.)	* 329/30	37/33	1897	YES/6 BOLT

** 3.05 AND 3,29 RATIOS ARE "FINE PITCH" FINAL DRIVES. SUN GEARS, INTERNAL RING GEARS AND PINION GEARS ARE NOT INTERCHANGEABLE WITH OTHER FINAL DRIVES.*

Figure 10