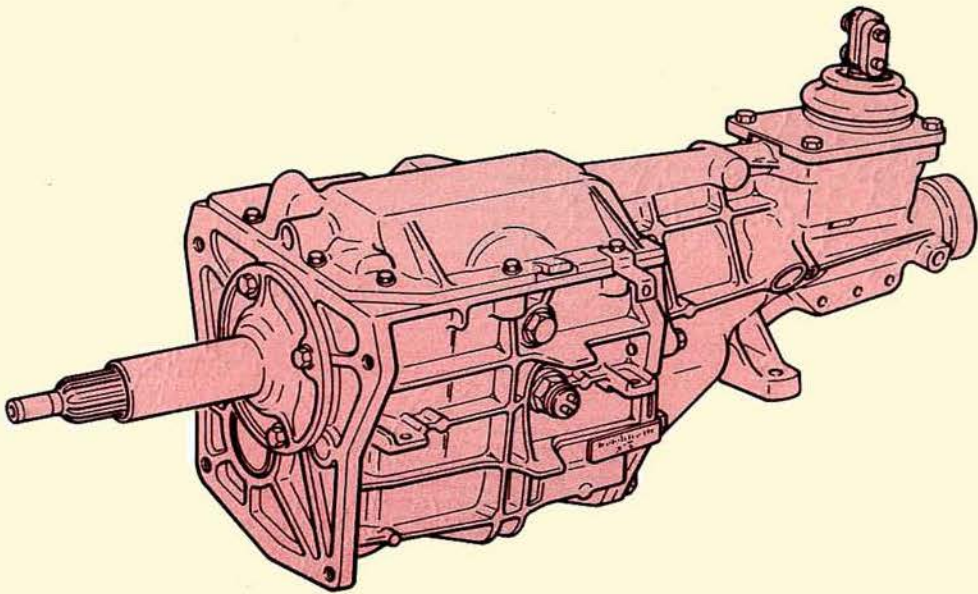


# *T5 Overdrive Manual Transmission*



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## **T5 Overdrive Manual Transmission**

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## IMPORTANT SAFETY NOTICE

Appropriate service methods and proper repair procedures are essential for the safe, reliable operation of all motor vehicles as well as the personal safety of the individual doing the work. This program provides general directions for accomplishing service and repair work with tested, effective techniques. Following them will help assure reliability.

There are numerous variations in procedures, techniques, tools, and parts for servicing vehicles, as well as in the skill of the individual doing the work. This publication cannot possibly anticipate all such variations and provide advice or cautions as to each. Accordingly, anyone who departs from the instructions provided in this publication must first establish that he compromises neither his personal safety nor the vehicle integrity by his choice of methods, tools or parts.

## NOTES, CAUTIONS, AND WARNINGS

As you read through the procedures, you will come across NOTES, CAUTIONS, and WARNINGS. Each one is there for a specific purpose. NOTES give you added information that will help you to complete a particular procedure. CAUTIONS are given to prevent you from making an error that could damage the vehicle. WARNINGS remind you to be especially careful in those areas where carelessness can cause personal injury. The following list contains some general WARNINGS that you should follow when you work on a vehicle.

- Always wear safety glasses for eye protection.
- Use safety stands whenever a procedure requires you to be under the vehicle.
- Be sure that the ignition switch is always in the OFF position, unless otherwise required by the procedure.

- Always block the wheels and set the parking brake when working on the vehicle.
- If you have a manual transmission, it should be in NEUTRAL unless instructed otherwise for a specific service operation.
- Operate the engine only in a well-ventilated area to avoid the danger of carbon monoxide.
- Keep yourself and your clothing away from moving parts, when the engine is running, especially the fan and belts. Remove neckties and tie long hair securely behind the head.
- To prevent serious burns, avoid contact with hot metal parts such as the radiator, exhaust manifold, tail pipe, catalytic converter and muffler.

**WARNING: Do not smoke, carry lighted tobacco or an open flame of any type when working on or near any fuel related component. Highly flammable mixtures are always present and may be ignited, resulting in possible human injury.**

- To avoid damage to the vehicle and personal injury, always remove rings, watches, loose hanging jewelry, and loose clothing before beginning to work on a vehicle.
- Keep hands and other objects clear of the radiator fan blades! The electric cooling fan on some engines is mounted behind the radiator and can start to operate at any time by an increase in underhood temperature, even though the ignition switch position may be off. For this reason care should be taken to ensure that the electric cooling fan motor is completely disconnected when working under the hood, unless otherwise required by the procedure.

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# T5 OD MANUAL TRANSMISSION

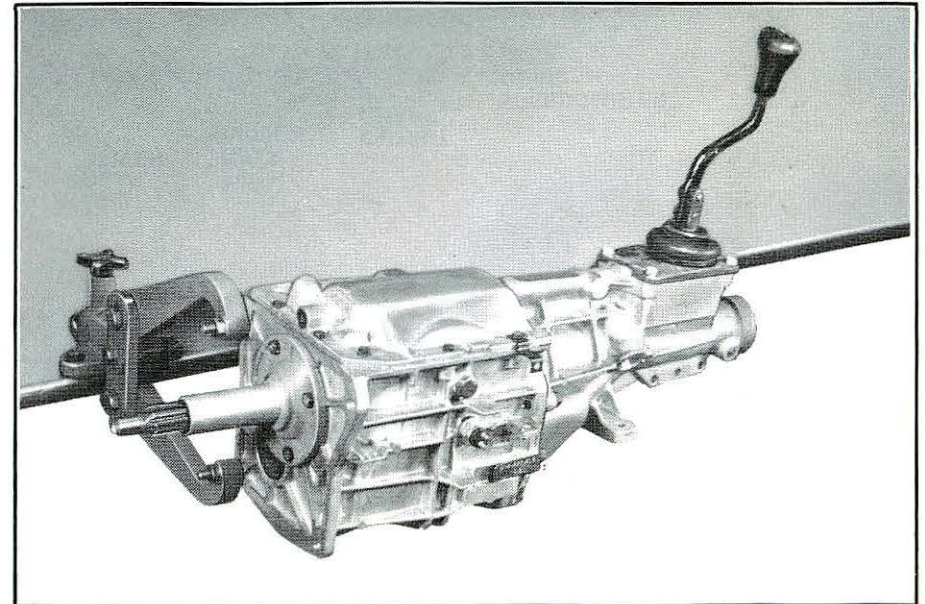
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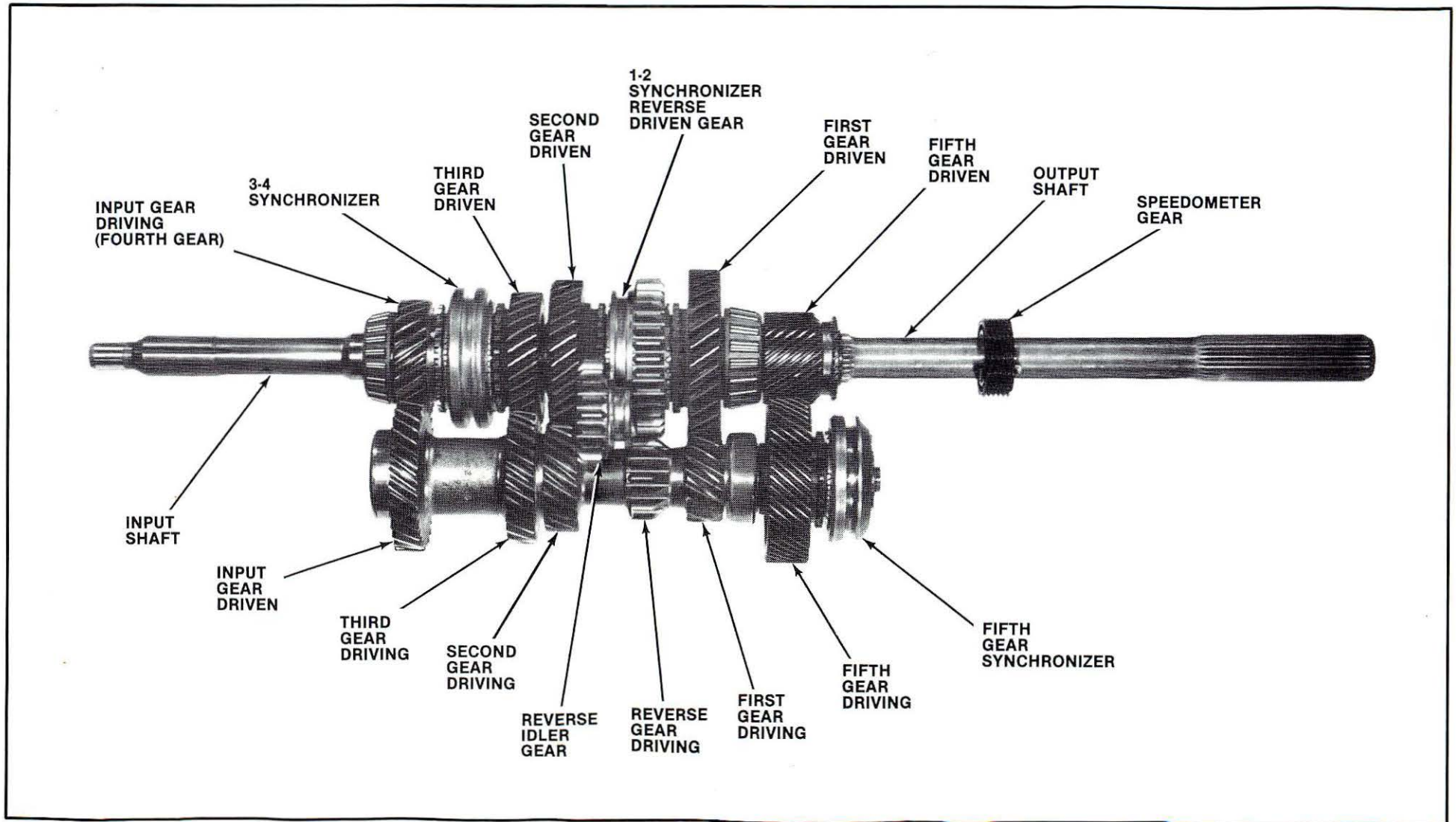
## DESCRIPTION

The T5 is a five speed manual transmission with fifth speed as an overdrive gear. First through fourth and reverse gears mesh within the case. The fifth speed gears and synchronizer are located on the back of the case in the extension housing. The floor mounted shift lever operates a shift rail which extends from the extension housing turret to the shift cover. The first-second and third-fourth shift forks are mounted in the cover. The fifth speed synchronizer and reverse sliding gear are shifted through an intermediate lever mounted on a pivot pin. A shift interlock system, located in the cover, prevents engagement of more than one gear. The shift detent is located in the extension housing turret and consists of a detent plate, offset lever and spring loaded ball. All gears, except reverse, are synchronized and helical cut for smooth, crisp shifts and quiet operation. Reverse is provided through a reverse idler gear which slides along a shaft to engage spur gears on the countershaft and output shaft. The case is aluminum and all fasteners are metric.



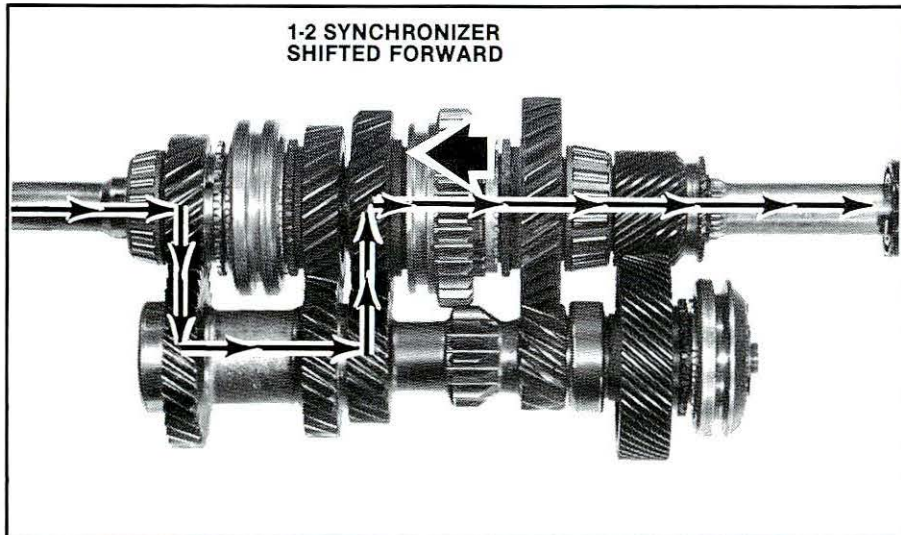
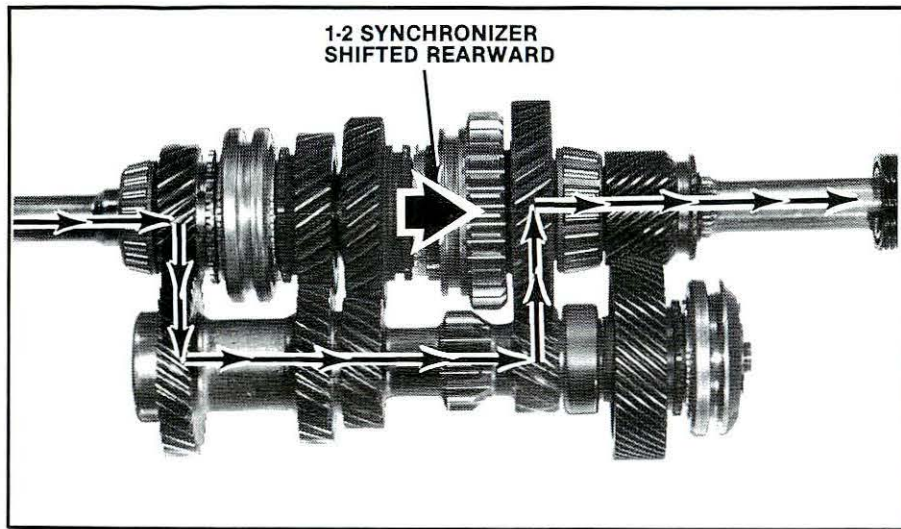
# T5 OD MANUAL TRANSMISSION

## GEARTRAIN COMPONENTS



# T5 OD MANUAL TRANSMISSION

## POWERFLOW



### First Gear

Ratio: 2.95:1 — 5.0 Liter Engine  
4.03:1 — 2.3 Liter Turbocharged Engine

- 1-2 synchronizer is splined to output shaft.
- When synchronizer sleeve is shifted rearward, first gear is locked to output shaft through the synchronizer.
- Input gear is driving countershaft.
- First gear on countershaft drives first gear on output shaft.
- Output shaft is driven in reduction.

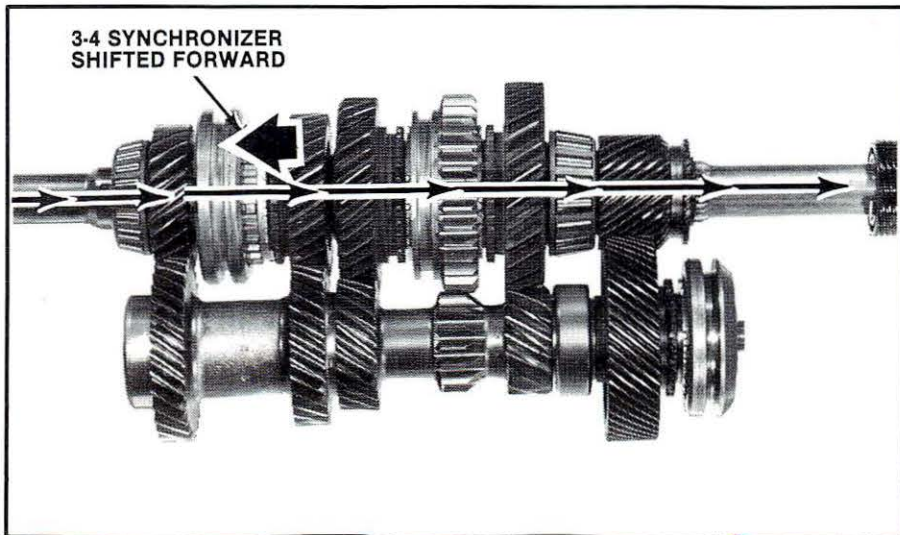
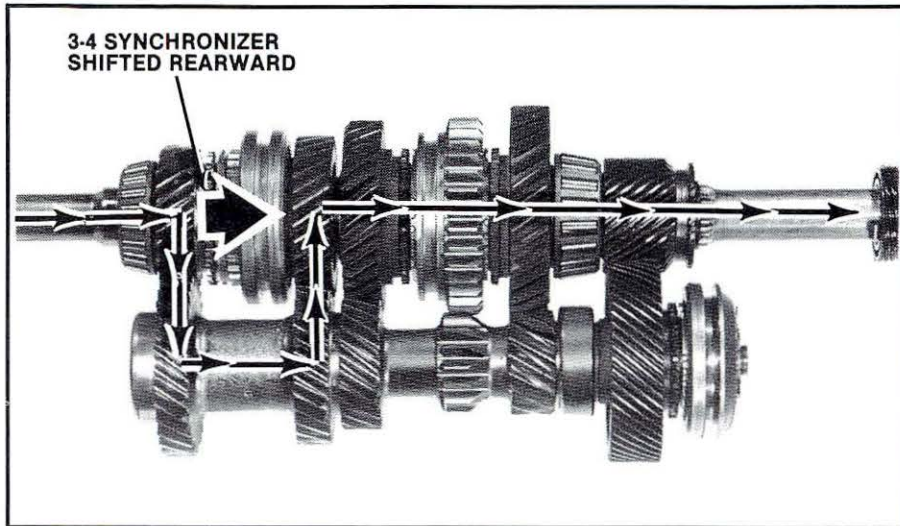
### Second Gear

Ratio: 1.94:1 — 5.0 Liter Engine  
2.37:1 — 2.3 Liter Turbocharged Engine

- 1-2 synchronizer is splined to output shaft.
- When synchronizer sleeve is shifted forward, second gear is locked to output shaft through the synchronizer.
- Input gear is driving countershaft.
- Second gear on countershaft drives second gear on output shaft.
- Output shaft is driven in reduction.

# T5 OD MANUAL TRANSMISSION

## POWERFLOW (continued)



### Third Gear

Ratio: 1.34:1 — 5.0 Liter Engine  
1.50:1 — 2.3 Liter Turbocharged Engine

- 3-4 synchronizer is splined to output shaft.
- When synchronizer sleeve is shifted rearward, third gear is locked to output shaft through the synchronizer.
- Input gear is driving countershaft.
- Third gear on countershaft drives third gear on output shaft.
- Output shaft is driven in reduction.

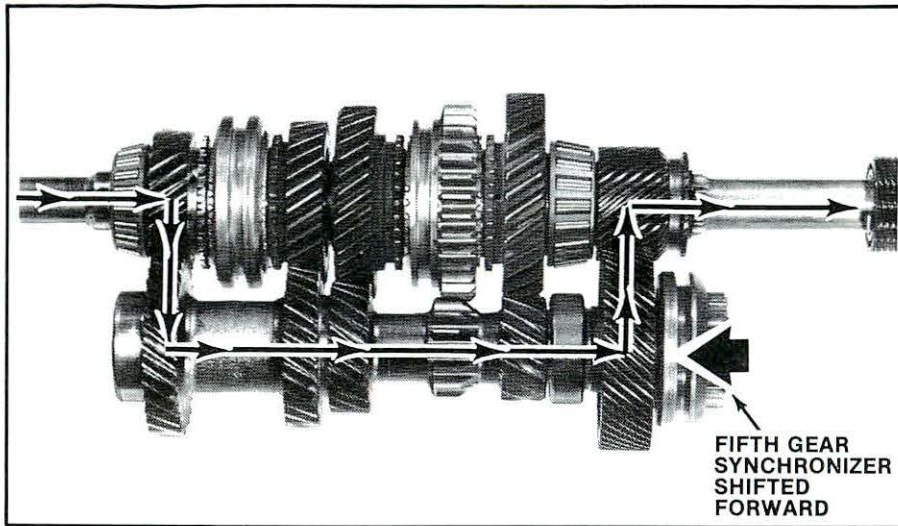
### Fourth Gear

Ratio: 1:1 — 5.0 Liter Engine  
1:1 — 2.3 Liter Turbocharged Engine

- 3-4 synchronizer is splined to output shaft.
- When synchronizer sleeve is shifted forward, input shaft is locked to output shaft through the synchronizer.
- The separate shafts are now linked into a single shaft.
- Output and input shafts are driven at the same speed.

# T5 OD MANUAL TRANSMISSION

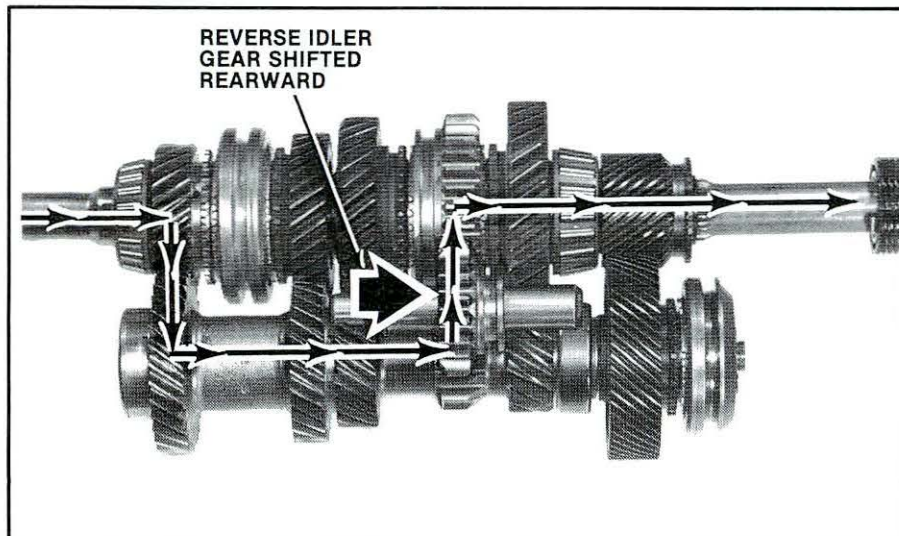
## POWERFLOW (continued)



### Fifth Gear

Ratio: 0.73:1 — 5.0 Liter Engine  
0.86:1 — 2.3 Liter Turbocharged Engine

- Fifth gear synchronizer is splined to countershaft.
- When synchronizer sleeve is shifted forward, fifth gear is locked to the countershaft.
- Input gear is driving countershaft.
- Fifth gear on countershaft drives fifth gear splined to output shaft.
- Output shaft is driven in overdrive.



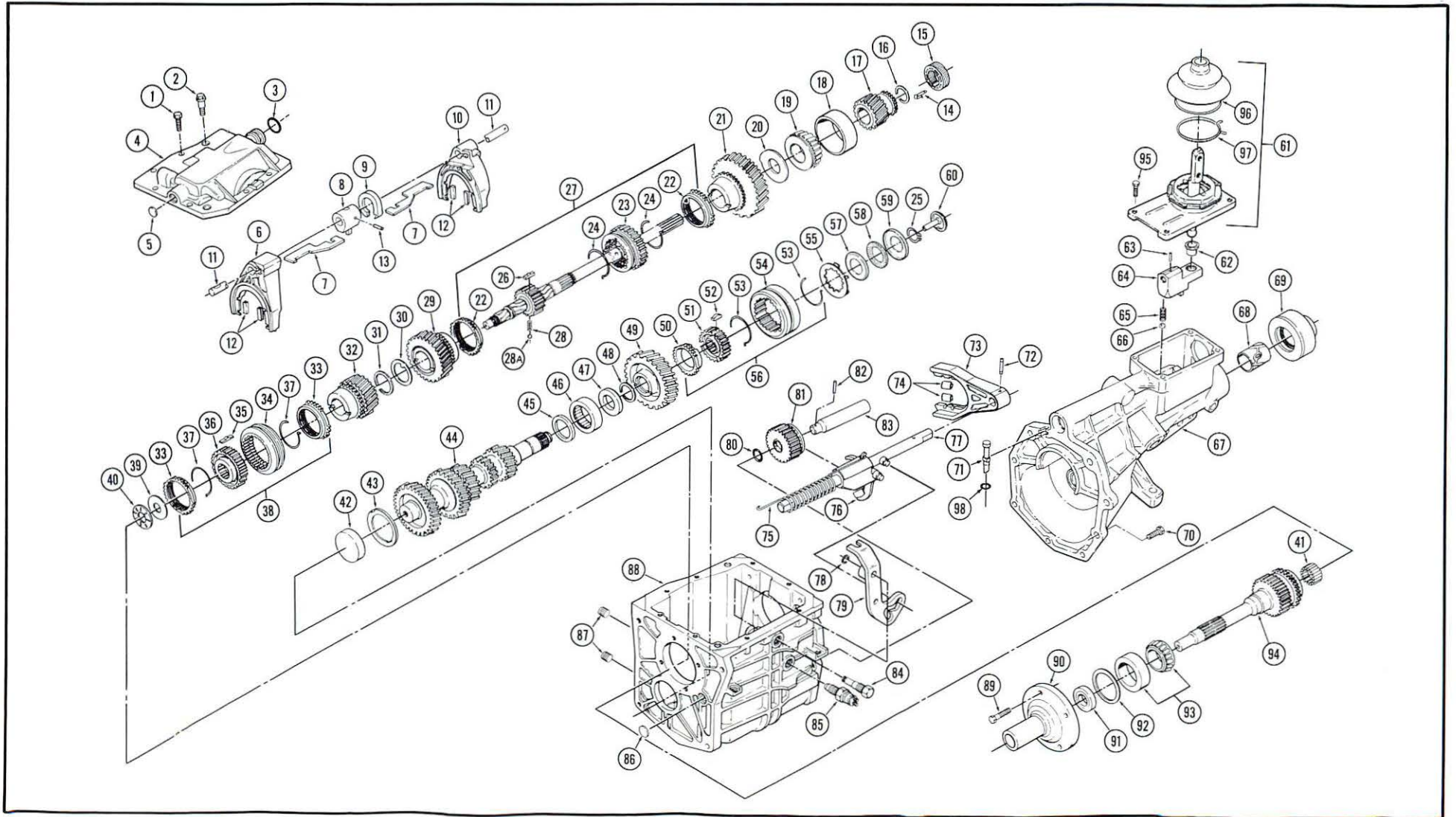
### Reverse

Ratio: 2.76:1 — 5.0 Liter Engine  
3.76:1 — 2.3 Liter Turbocharged Engine

- To reverse output shaft rotation, an idler gear is shifted into position between the reverse gear on the countershaft and the reverse gear on the output shaft.
- The reverse gear on the output shaft is part of the 1-2 synchronizer which is splined to the output shaft.
- The input gear is driving the countershaft.
- The countershaft drives the reverse idler.
- The idler gear reverses the rotation of the output shaft and drives it in reduction.

# T5 OD MANUAL TRANSMISSION

## DISASSEMBLED VIEW



# T5 OD MANUAL TRANSMISSION

## DISASSEMBLED VIEW (continued)

### LEGEND

1. E602167-S	BOLT — COVER ATTACHING (M6-1.00 x 20 Hex Head)	33. 7107	RING — SYNCHRONIZER BLOCKING (3rd-4th Synchronizer — 2 Required)	65. 7234	SPRING — OFFSET LEVER DETENT
2. N800037-S	BOLT — COVER ATTACHING DOWEL (M6-1.00 x 20 Hex Head)	34. N.S.	SLEEVE — 3RD-4TH SYNCHRONIZER	66. 372720-S	BALL — OFFSET LEVER DETENT
3. 87038-S	SEAL — O-RING (Cover to Extension Housing)	35. 7A044	INSERT — SYNCHRONIZER HUB (3rd-4th Speed — 3 Required)	67. 7A039	HOUSING — EXTENSION
4. 7222	COVER — CASE	36. N.S.	HUB — 3RD-4TH SYNCHRONIZER	68. 7A034	BUSHING — EXTENSION HOUSING
5. 74113-S	PLUG — 3/4" DIAMETER EXPANSION	37. 7109	SPRING — SYNCHRONIZER RETAINING (2 Required)	69. 7052	SEAL — EXTENSION HOUSING O.L
6. 7230	FORK — 3RD & 4TH GEARSHIFT	38. 7124	SYNCHRONIZER ASSEMBLY — 3RD-4TH SPEED	70. E800152-S	BOLT — EXTENSION HOUSING ATTACHING (M10 x 30 Hex Head)
7. 7N232	PLATE — GEARSHIFT SELECTOR ARM (2 Required)	39. 7D235	RACE — INPUT SHAFT THRUST BEARING	71. 7034	VENT — BREATHER
8. 7302	ARM ASSEMBLY — CONTROL SELECTOR	40. 7D234	BEARING ASSEMBLY — INPUT SHAFT THRUST	72. 357479-S	PIN — 5TH SPEED SHIFT FORK ATTACHING (3/16" Diameter x 13/16" Rolled Spring)
9. 7K201	PLATE — GEAR SELECTOR INTERLOCK	41. 7118	BEARING — INPUT SHAFT ROLLER (15)	73. 7230	FORK — 5TH SPEED SHIFT
10. 7230	FORK — 1ST & 2ND GEARSHIFT	42. 7F431	BEARING ASSEMBLY — COUNTERSHAFT FRONT	74. 7L082	INSERT — GEARSHIFT FORK (5th Speed — 2 Required)
11. 7358	SHAFT — SHIFTER	43. 7119	WASHER — COUNTERSHAFT GEAR THRUST	75. 7K205	SPRING — GEARSHIFT LEVER RETURN
12. 7L082	INSERT — GEARSHIFT FORK (1st-2nd & 3rd-4th — 4 Required)	44. 7113	GEAR — COUNTERSHAFT	76. 7231	FORK — REVERSE GEARSHIFT
13. 305061-S	PIN — CONTROL SELECTOR ARM ATTACHING (13/16" Diameter x 3/16" Rolled Spring)	45. 7125	SPACER — COUNTERSHAFT REAR BEARING (Front)	77. 7240	RAIL — 5TH SPEED SHIFT
14. 17B336	CLIP — SPEEDOMETER DRIVE GEAR RETAINING	46. 7F431	BEARING ASSEMBLY — COUNTERSHAFT REAR	78. 371197-S2	RING — 7/16" RETAINING (C-Clip)
15. 17285	GEAR — SPEEDOMETER DRIVE	47. 7149	SPACER — COUNTERSHAFT REAR BEARING (Rear)	79. 7K002	LEVER — GEARSHIFT (5th-Reverse)
16. 7064	SNAP RING — 5TH GEAR RETAINING	48. 7026	SNAP RING — 5TH GEAR RETAINING	80. 7E397	O-RING — REVERSE IDLER GEAR OVER-TRAVEL STOP
17. 7K316	GEAR — 5TH SPEED	49. 7144	GEAR — 5TH SPEED	81. 7141	GEAR/BUSHING ASSEMBLY — REVERSE IDLER
18. 7169	CUP — OUTPUT SHAFT REAR BEARING	50. 7107	RING — SYNCHRONIZER BLOCKING (5th Speed Synchronizer)	82. 357479-S	PIN — REVERSE IDLER SHAFT ATTACHING (3/16" Diameter x 13/16" Rolled Spring)
19. 1216	CONE AND ROLLER ASSEMBLY — OUTPUT SHAFT REAR BEARING	51. N.S.	HUB — 5TH SPEED SYNCHRONIZER	83. 7140	SHAFT — REVERSE IDLER GEAR
20. 7071	WASHER — 1ST GEAR THRUST	52. 7A044	INSERT — SYNCHRONIZER HUB (5th Speed — 3 Required)	84. 7K024	PIN — GEARSHIFT LEVER PIVOT (5th-Reverse)
21. 7100	GEAR — 1ST SPEED	53. 7109	SPRING — SYNCHRONIZER RETAINING	85. 15520	SWITCH ASSEMBLY — BACK-UP LAMP
22. 7107	RING — SYNCHRONIZER BLOCKING (1st-2nd Synchronizer — 2 Required)	54. N.S.	SLEEVE — 5TH SPEED SYNCHRONIZER	86. 74113-S	PLUG — 3/4" DIAMETER EXPANSION
23. N.S.	SLEEVE/GEAR — 1ST-2ND SYNCHRONIZER/REVERSE	55. 7C396	RETAINER — 5TH SPEED SYNCHRONIZER	87. 87675-S	PLUG — DRAIN/REFILL (Pipe, 1/2"-14 Square, Internal Head — 2 Required)
24. 7109	SPRING — SYNCHRONIZER RETAINING (2 Required)	56. 7124	INSERT	88. 7005	CASE ASSEMBLY
25. 7059	SNAP RING — 5TH SPEED SYNCHRONIZER RETAINING	57. 7E487	SYNCHRONIZER ASSEMBLY — 5TH SPEED	89. N602187-S	BOLT — BEARING RETAINER ATTACHING (M8 x 20 Hex Head, Lock — 2 Required)
26. 7A044	INSERT — SYNCHRONIZER HUB (1st-2nd Speed — 3 Required)	58. 3571	RACE — COUNTERSHAFT THRUST BEARING (Front)	90. 7050	RETAINER — INPUT SHAFT BEARING
27. 7061	SHAFT ASSEMBLY — OUTPUT (Includes 1st-2nd Synchronizer Assembly)	59. 7D236	BEARING ASSEMBLY — COUNTERSHAFT THRUST (Rear)	91. 7052	SEAL — INPUT SHAFT
28. 7234	SPRING — DETENT (1st-2nd Synchronizer)	60. 7L276	RACE — COUNTERSHAFT THRUST BEARING (Rear)	92. 7L172	SHIM — INPUT SHAFT FRONT BEARING (Geartrain Endplay)
28A 371350-S	BALL — 5/16" DETENT (1st-2nd Synchronizer)	61. 7210	FUNNEL — LUBRICATION	93. 7025	BEARING ASSEMBLY — INPUT SHAFT
29. 7102	GEAR — 2ND SPEED	62. 7K453	LEVER ASSEMBLY — GEARSHIFT LOWER (Turret Cover)	94. 7017	SHAFT — INPUT
30. 7119	WASHER — 2ND GEAR THRUST	63. 357479-S	BUSHING — GEARSHIFT DAMPER	95. 7A443	BOLT — GEARSHIFT LEVER ATTACHING (7210-7A039 — 4 Required)
31. 7064	SNAP RING — 2ND GEAR RETAINING	64. 7F018	PIN — OFFSET LEVER ATTACHING (3/16" Diameter x 13/16" Rolled Spring)	96. 7277	BOOT — GEARSHIFT LOWER
32. 7B340	GEAR — 3RD SPEED		LEVER ASSEMBLY — GEARSHIFT OFFSET	97. 7C108	CLAMP — GEARSHIFT BOOT
				98. 87008-S95	O-RING — BEARING VENT SEAL