E4OD/4R100 Technical Information

Both the E4OD (introduced in 1989) and the 4R100 (1998 and up) transmissions are basically one and the same and we shall group technical information together as it's the same.

Ratios:

1st Gear: 2:71 to 1

2nd Gear: 1:54 to 1

3rd Gear: 1 to 1

4th Gear: .71 to 1

Reverse: 2:18 to 1

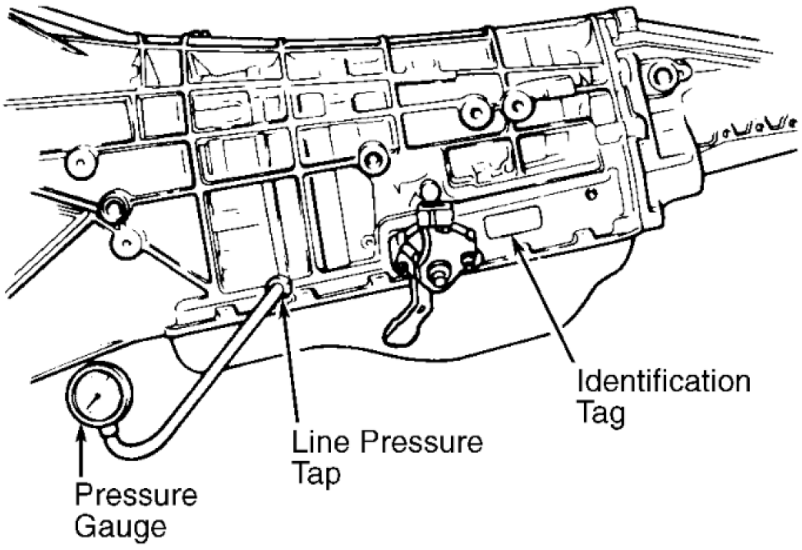
Lock up is either on/off or PWM controlled depending on year/model.

Clutches	1st	2nd	3rd	4th	Rev	Man 1	Man2
Forward	X	X	X	X		X	
Int.		X	X	X			
Direct			X	X	X		
O/D				X			
O/R					X	X	X
L/Rev.					X	X	
2nd band							X
Low Sprague	hold					hold	
o/r Sprague	hold	hold	hold			hold	hold
Int sprague		hold					hold

Overun clutches are applied with overdrive button off in forward gears.

Limp mode or total power failure will give you 4th gear and reverse only in these transmissions. Some trouble codes will result in limp mode of 1-3rd gears with high line pressure and no 4th or lock up.

Pressure Tests



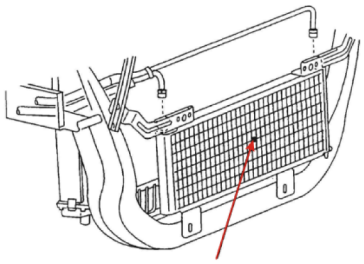
LINE PRESSURE SPECIFICATIONS

Selector Lever Position	Idle psi (kg/cm^2)	WOT Stall psi (kg/cm^2)
"P" & "N"	50-65 (3.5-4.6)	(Not Applicable)
"R"	70-100 (4.9-7.0)	245-290 (17.2-20.3)
"OD" & "2"	50-65 (3.5-4.6)	165-185 (11.6-13.0)
"1"	(1) 70-100 (4.9-7.0)	175-210 (12.3-14.7)

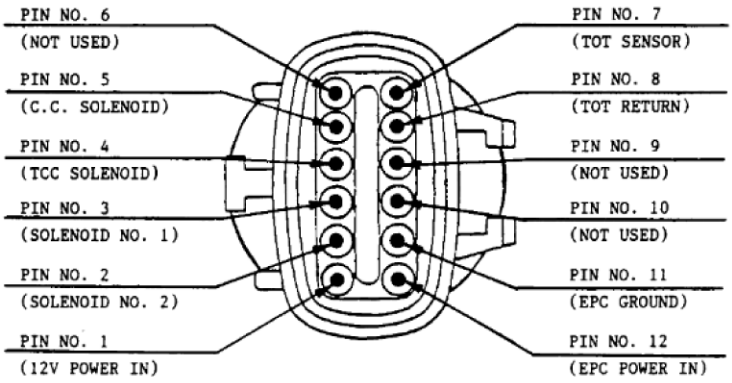
(1) On Expedition/Navigator models, 145-175 (10.2-12.3).

Use a 0-300 P.S.I. gauge for pressure testing. do not maintain wide open throttle test for more than 5 seconds at a time or transmission damage can result. Apply parking brake at all times and use wheel blocks. Apply service brake during all tests. Do no drive vehicle during tests.

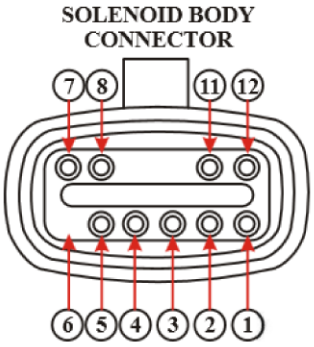
Cooler flushing: If you have a 1998 and newer truck with an auxilary cooler like the one pictured to the right and your rebuilding or replacing the transmission you must replace the cooler with new from Ford or aftermarket replacement. this will not flush debris out with flushing machine due to its internal construction. reuse can result in debris getting back into your new transmission from this cooler.



Wiring Terminal pin-outs



1989-1994 E4OD case connector



1995 and up E4OD and 98 and up 4R100 case connector

Solenoid Resistance Chart		
Solenoid	*Solenoid Body Pin Numbers*	*Resistance*
Shift Solenoid "B" (2)	*1 and 2*	*20-30 Ohms*
Shift Solenoid "A" (1)	*1 and 3*	*20-30 Ohms*
TCC Solenoid, Gasoline (On-Off)	*1 and 4*	*20-30 Ohms*
TCC Solenoid, Diesel (PWM)	*1 and 4*	*10-20 Ohms*
Coast Clutch Solenoid	*1 and 5*	*20-30 Ohms*
Electronic Pressure Control Solenoid	*11 and 12*	*3.0-5.0 Ohms*
Transmission Fluid Temp Sensor	*7 and 8*	See chart

Transmission Fluid Temperature		
°C	*°F*	*Resistance*
-40 to -20	*-40 to -4*	*1062k - 284k* W
-19 to -1	*-3 to 31*	*284k - 100k* W
0 - 20	*32-68*	*100k - 37k* W
21-40	*69-104*	*37k - 16k* W
41-70	*105-158*	*16k - 5k* W
71-90	*159-194*	*5k - 2.7k* W
91-110	*195-230*	*2.7k - 1.5k* W
111-130	*231-266*	*1.5k - 0.8k* W
131-150	*267-302*	*0.8k - 0.54k* W

1995 and up vehicles used either PWM or on-off TCC solenoid. To identify which you have look at the internal plastic solenoid cover: Black color is on-off and grey color is PWM.
(All diesels are PWM after 1995 and most gas are on-off however some gas engine vehicles are also PWM thru 2001.)