



4L30-E Manual

The Complete Tech Video Library



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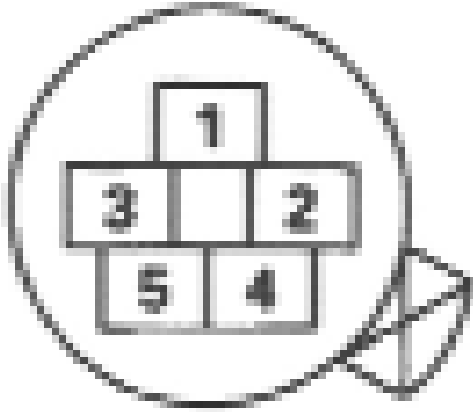
Torque Specifications

Seperator Plate to V. B.	113 lb.in
V. B. to Case	15 lb. ft.
Servo Cover to Case	18 lb. ft.
Pan (Front and Rear)	96 lb. in.
Pump to Bell Housing	15 lb. ft.
Bell Housing to Main Case	29 lb. ft.
Center Support to Overdrive Housing	18 lb. ft.
Solenoids to Valvebody	87 lb. in.
Extension Housing to Main Case	24 lb. ft.

Fluid Type and Capacity

Fluid Type Dextron III
Capacity 9.2 Qts. (Empty)

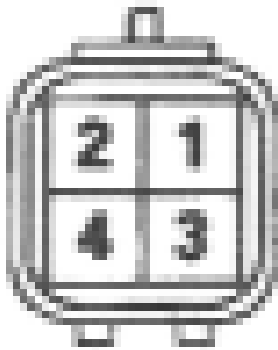
Electrical Case Connector 1991 - 1999



Connector A

1	Force Motor Control (-)	3-7 Ohms
2	Force Motor Control (+)	3-7 Ohms
3	TFT Sensor Input	See Chart
4	Torque Converter Clutch Solenoid	17.5-18.5 Ohms
5	TFT Sensor Ground	See Chart

NOTE: Test Between Terminal 4 and Case Ground for TCC Solenoid Resistance

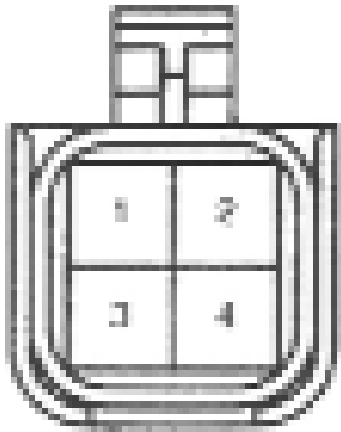


Connector B

1	2-3 Shift Solenoid	17.5-18.5 Ohms
2	Band Apply Solenoid	10-12 Ohms
3	1-2/3-4 Shift Solenoid	17.5-18.5 Ohms
4	Solenoid Power	_____

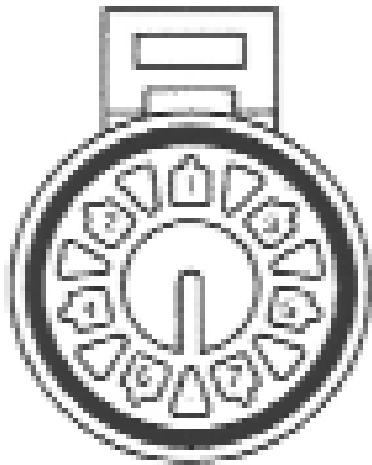
NOTE: Test Between Terminal 4 and 1, 2 and 3 for Solenoid Resistance

Electrical Case Connector 2000 - Up



Connector A

1	Torque Converter Clutch Solenoid (B+)	9.5-10.5 Ohms
2	Pressure Control Solenoid (+)	3-7 Ohms
3	Torque Converter Clutch Solenoid Control	9.5-10.5 Ohms
4	Pressure Control Solenoid (-)	3-7 Ohms



1	TFT Sensor Ground	See Chart
2	Solenoid Power	_____
3	1-2/3-4 Shift Solenoid Control	18-20 Ohms
4	TFT Sensor Input	See Chart
6	2-3 Shift Solenoid Control	18-20 Ohms
7	Band Apply Solenoid Control	10-12 Ohms

NOTE:

Test Between Terminal 2 and 3, 6 and 7 for Solenoid Resistance

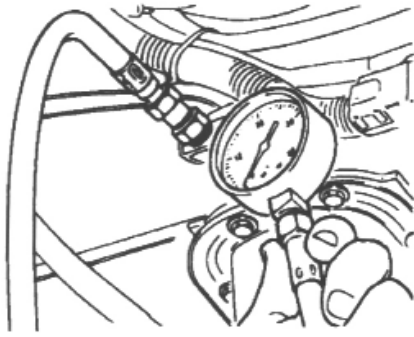
Transmission Fluid Temperature Sensor Chart for all years

°C	°F	Resistance (kOHM)
- 40	- 40	672
0	32	65
20	68	25
80	176	2.5
120	248	0.78
150	304	0.37



4L30E Manual

Line Pressure Test Port and Specifications



Line Pressure

Mode	Lever Position	Engine Speed	Line Pressure		Force Motor Current (mA)
			kPa	PSI	
Normal/Power	D,3,2,L	Idle	590-730	86-106	680-720
Winter	D	Idle	300-390	44-57	1,020-1,060
Normal/Power Winter	Reverse	Idle	460-630	67-91	880-920
Normal/Power	D,3,2,L	Stall Speed	1,250-1,380	181-200	70-110
Winter	D	Stall Speed	1,250-1,380	181-200	70-110
Normal/Power Winter	Reverse	Stall Speed	1,400-1,580	203-229	340-380

Solenoid/Clutch and Band Application Chart

Range	Gear	1-2/ 3-4 Sol. N.C.	2-3 Sol. N.O.	O/Drive Roller Clutch	Overrun Clutch	Fourth Clutch	Third Clutch	Reverse Clutch	Second Clutch	Low Sprag	Band	Engine Braking
P-N		OFF	ON		Applied							NO
R	Rev.	OFF	ON	LD	Applied			Applied		LD		NO
D	1st	OFF	ON	LD	Applied					LD	Applied	NO
	2nd	ON	ON	LD	Applied				Applied	FW	Applied	YES
	3rd	ON	OFF	LD	Applied		Applied		Applied	NE		YES
	4th	OFF	OFF	FW		Applied	Applied		Applied	NE		YES
3	1st	OFF	ON	LD	Applied					LD	Applied	NO
	2nd	ON	ON	LD	Applied				Applied	FW	Applied	YES
	3rd	ON	OFF	LD	Applied		Applied		Applied	NE		YES
2	1st	OFF	ON	LD	Applied		Applied			LD	Applied	YES
	2nd	ON	ON	LD	Applied				Applied	FW	Applied	YES
L	1st	OFF	ON	LD	Applied		Applied			LD	Applied	YES

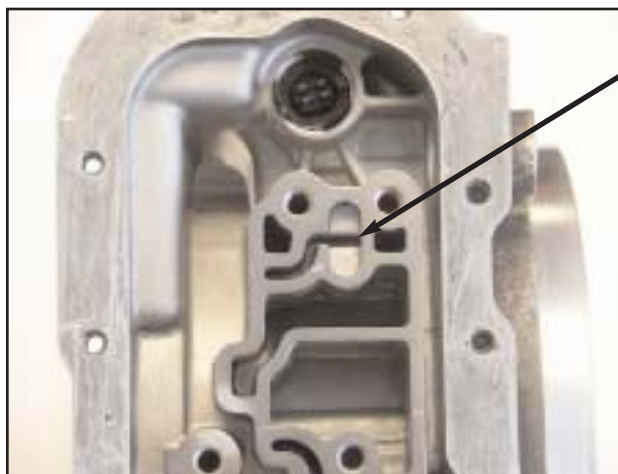
Overdrive Housing



**Checking Adapter Case for Warpage
max Deflection .0015-.002**



**Removing Overdrive Piston return
Spring using Tool made from A404
Reverse Band**



**Adapter Case Check Ball
Location (Some Models)**

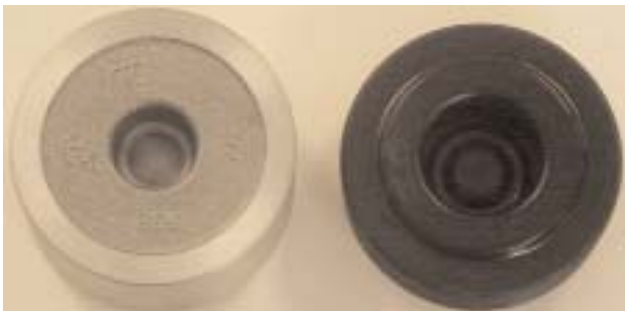
Overdrive Housing Cont'd



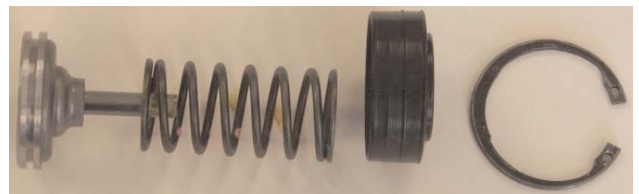
Lube Orifice



Lube Orifice Location in Overdrive Housing

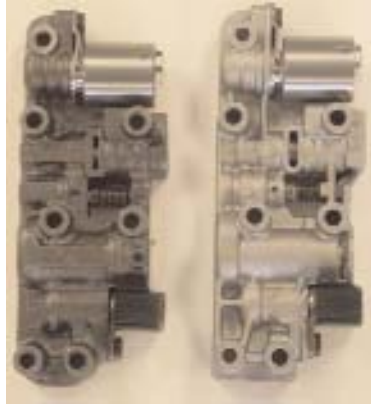


*Early and Late 3-4 Accumulator Covers.
Do Not Interchange*

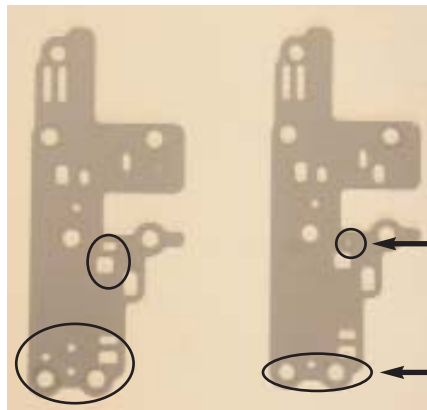


3-4 Accumulator Stack Up

Adapter Case Valve Body



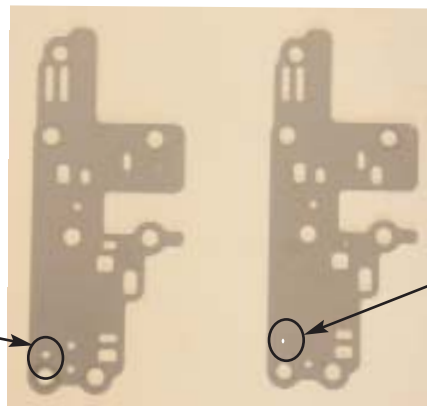
Cast Iron and Aluminum Adapter Case Valve Bodies will Interchange



Difference in this area will Interchange

One Hole Does Not Take Check Ball in Adapter Case Two Holes Do

Adapter Case Valve Body Separator Plates

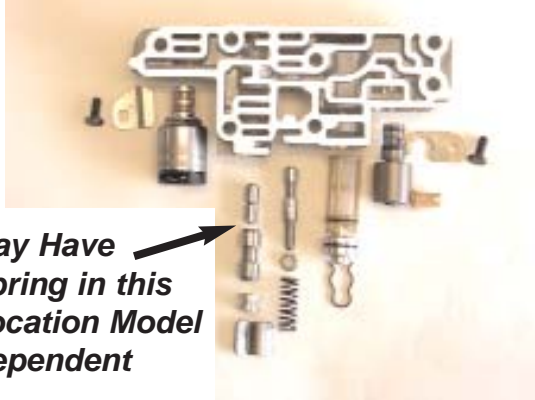


On/Off TCC Solenoid (small orifice) Difference in this area will not interchange

PWM TCC Solenoid

Adapter Case Valve Body Separator Plates

Adapter Case Valve Body Cont'd



May Have Spring in this Location Model Dependent

Adapter Case Valve Body On/Off and PWM Torque Converter Clutch Valve Bodies are the Same



1

2

3

*3 Different EPC Solenoids
#1 Bosch Type Used up until 2000
#2 Ford Type Used 2000 up
#3 4L60E Replacement (may give high line pressure)*

NOTE:

Keep Old Solenoid in Case you have a Problem with Line Pressure



*On/Off and PWM Torque Converter Clutch Solenoids
On/Off Solenoid has Built on Retainer Resistance 17.9 OHMS
PWM Solenoid Does Not have Built on Retainer Resistance 10.6 OHMS*

Center Support



Center Support with Plain Selective Washer



Center Support with Three Tab Selective Washer

Center Support Cont'd



Type 1 Center Support uses Roll Pins to Retain Valve End Plugs



Type 1 Support with Valves Out. Reverse Inhibit Valve Not used in All Models



Type 2 Center Support uses Plates to Retain Valve End Plugs



Type 2 Center Support with Valves Out. Reverse Inhibit Valve not used in All Models

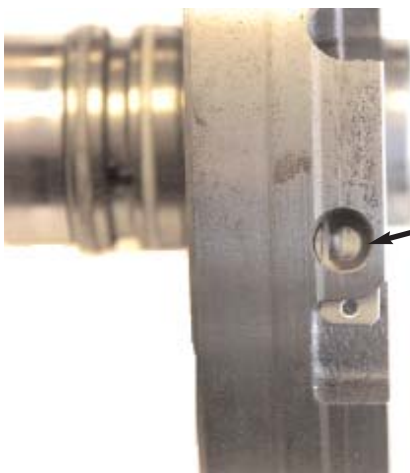
Center Support Cont'd



Checking 3rd Clutch Drum Support Bushing. Use 1/4" Wide Piece of Scotch Tape on Shaft and See if Drags on Bushing.



Checking Center Support for Warpage Max Deflection .0015 - .002



Install Plate Type Retainers with Bump Facing Out

Center Support Plates



*Center Support Spacer Plate with
Reverse Inhibit Valve*

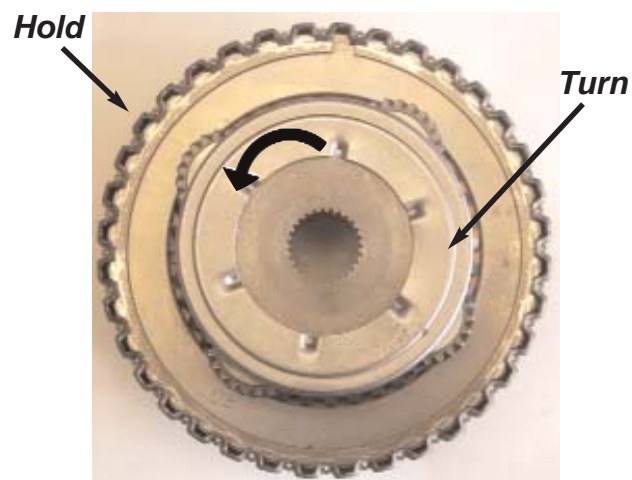


*Center Support Spacer Plate without
Reverse Inhibit Valve*

OD Planet



Checking Overdrive Planet Pinion Endplay. Clearance should be .009 - .025



Overdrive Sprag Rotation



Install Overdrive Sun Gear with Lube Slot Short Offset Down Toward Drum

Overrun Clutch



Overrun Clutch Stack Up with Two Frictions (Goes with Picture on Page 4)



Overrun Clutch Stack Up with Wave Plate

OD Clutch

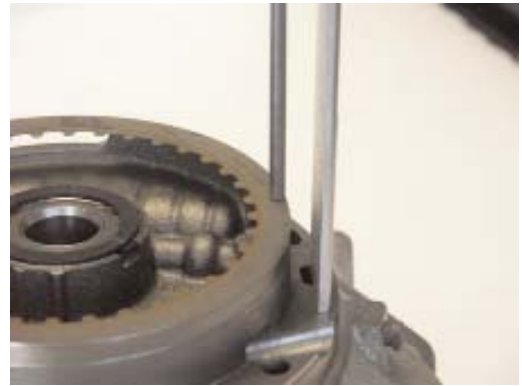
*Early Groove Depth is .150
Late Groove Depth is .180*



*Two Different Overdrive Clutch Apply
Pistons and Seals*



*Wide and Narrow Lip Seals to Match
Piston*



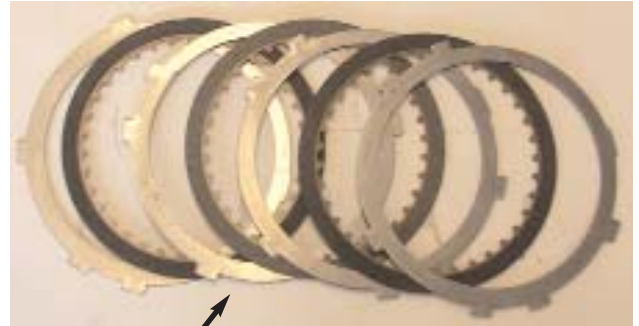
***Checking Overdrive Clutch Clearance with Additional Friction.
Keep to a Minimum of .040 - .045 if using Additional Friction***



OD Clutch Cont'd



Overdrive Clutch Stack Up



If Clearance Permits an Additional Friction can be added between the Two Center Steels

Input Shaft



Always Use a Solid Teflon Ring in the Front Ring Location



On/Off Torque Converter Clutch has a Check Ball in the End of the Input Shaft. PWM Torque Converter Clutch Does Not

Pump/Bell Housing



4 Valve Pump (PWM TCC)



Throttle Signal Accumulator 2 & 4 Valve Pumps

Pump/Bell Housing Cont'd



***Checking Inner Pump Gear Clearance.
Clearance should be .0015 - .002 Max***



***When Installing Front Pump Bushing
make sure Bushing doesn't protrude
into Channel in Bell Housing***



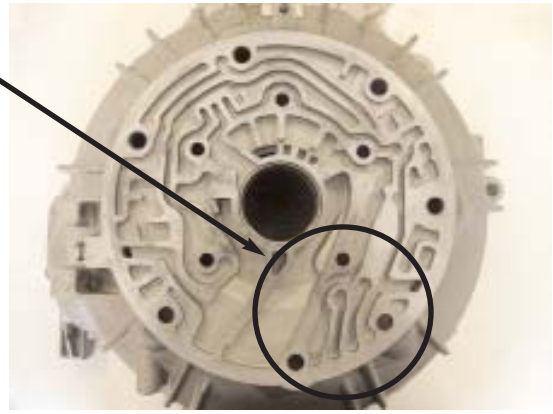
***Must use Tool to Align Bell Housing to
Pump Body during Reassembly***

Pump/Bell Housing Cont'd

Difference is in this area!

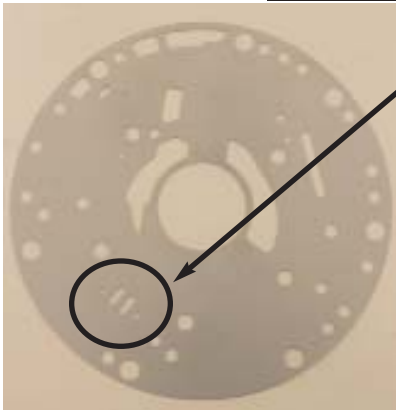


On/Off Torque Converter Clutch Bell Housing

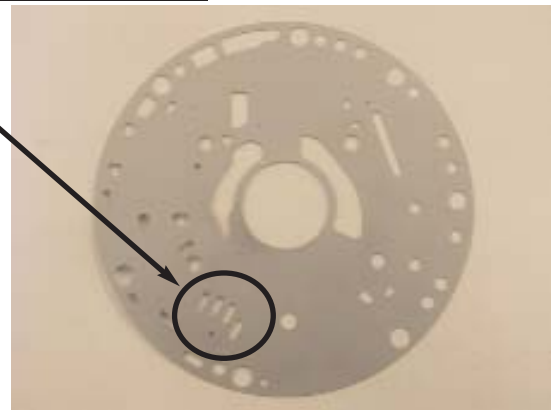


PWM Torque Converter Clutch Bell Housing

Difference is in this area!



On/Off Torque Converter Clutch Pump Wear Plate

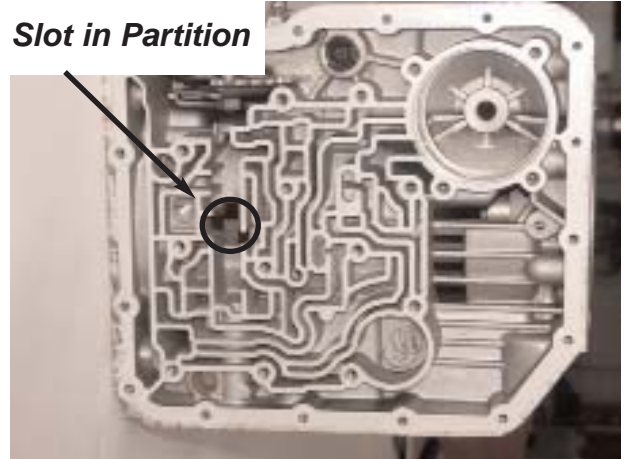


PWM Torque Converter Clutch Pump Wear Plate

Case



Type 1 Valve Body Plate Must Match Case



Type 1 Case



Type 2 Valve Body Plate Must Match Case



Type 2 Case

Case Cont'd

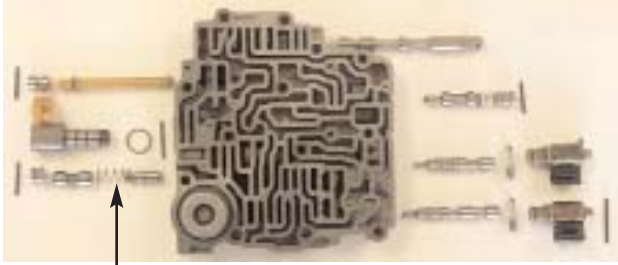


Check Ball Locations in Case



Drilled Case to Check Servo Release Pressure

Valve Body



*May Not have a Spring in this Location
Model Dependent*

Main Valve Body
Shift Solenoid Resistance 17.5-18.5
OHMS. Band Apply Solenoid
Resistance 10 OHMS



Check Ball Location in Valve Body



1-2/3-4

2-3

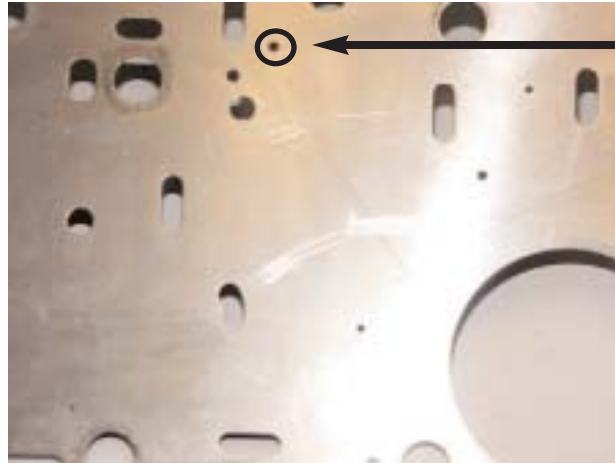
1-2/3-4 Shift Solenoid is Normally
Closed

2-3 Shift Solenoid is Normally Open

Resistance of Solenoids 17.5 - 18.5
Ohms.

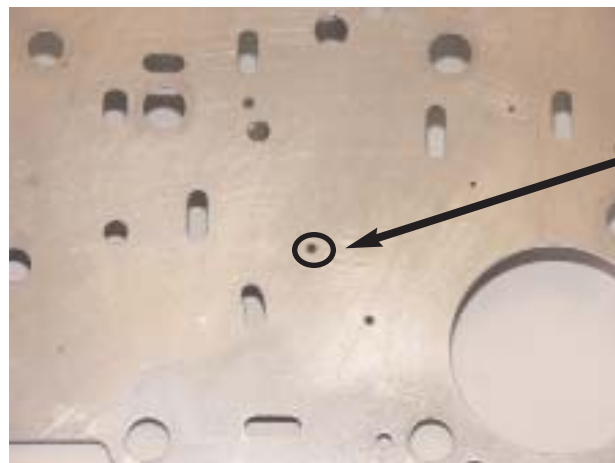
NOTE: Position of Line Up Tabs

Valve Body Modifications



*To Help Feed 2nd & 3rd
Clutch Circuits Drill to .090
Type 1 Case*

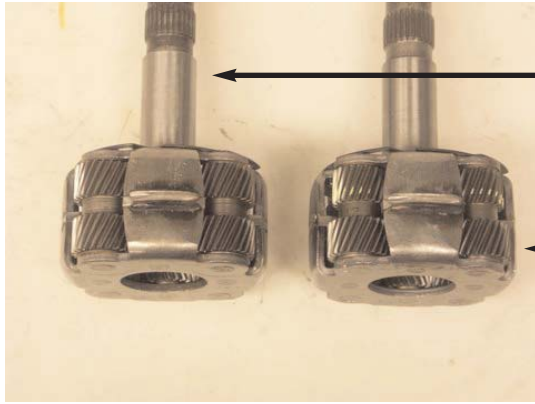
Type 1 Valve Body Plate



*To Help Feed 2nd & 3rd
Clutch Circuits Drill to .090
Type 2 Case*

Type 2 Valve Body Plate

Planetary



**2:40 First Gear Planet Pinions 23
Teeth Front and Rear this Planet
Does Not have to be Timed on
Assembly**

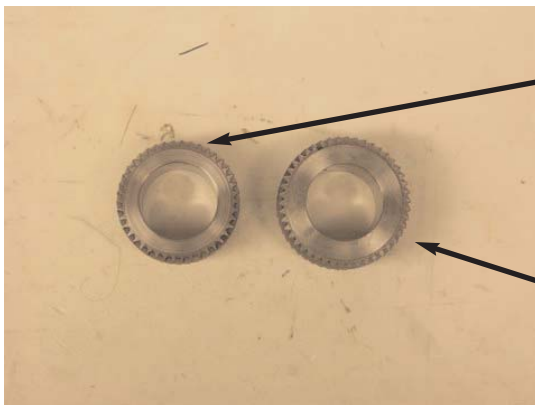
**2:86 First Gear Planet Pinions 23
Teeth Front 19 Teeth Rear This
Planet Must Be Timed on Assembly**



**Align Timing Marks on 2:86 First Gear
Ratio Planetary**



**Checking Planet Pinion Endplay
Clearance Should be .005 - .035**



**2:40 First Gear Rear Sun Gear 42
Teeth**

**2:86 First Gear Rear Sun Gear 46
Teeth**

2nd Clutch



5 Friction 2nd Clutch Stack-Up with Wave Plate on Bottom. No Published Clutch Clearance Rule of Thumb .010 - .015 per Friction can use TH180 .070 Steels in Combination to Adjust



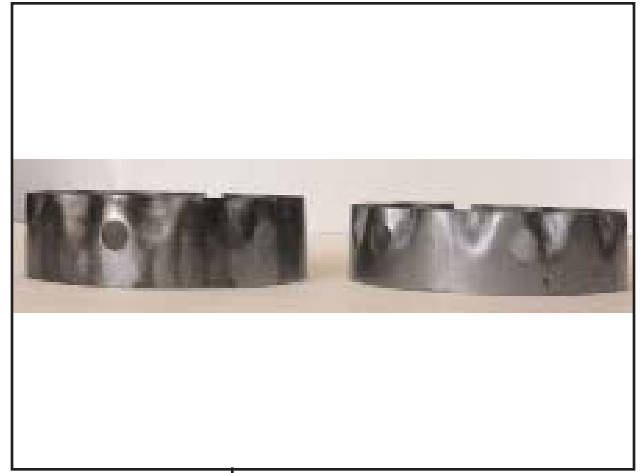
Six Friction 2nd Clutch Stack-Up with Wave Plate on Bottom. No published Clutch Clearance. Rule of Thumb .010 - .015 per Friction can use TH180 .070 Steels in Combination to Adjust



Six Friction 2nd Clutch Stack-Up with Wave Plates on Top and Bottom no published Clutch Clearance. Rule of Thumb .010 - .015 per Friction can use TH180 .070 Steels in Combination to Adjust

2nd Clutch Cont'd

2nd Clutch Apply Ring Different Heights

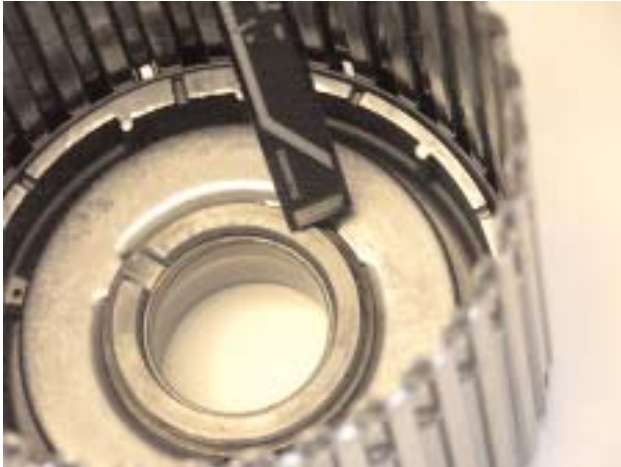


NOTE:

Different Height Apply Pistons and Rings Determine Amount of Clutches in Pack.



2nd Clutch Cont'd



There are Two Different 2nd Clutch Drums. When Replacing Drum Always Check Washer Face to Top of Snap Ring Height. If Short Drum is Installed in Place of Tall the 3rd Clutch Drum will Hit the Spring Retainer. Short Drum approx. .102 Tall Drum Approx. .178

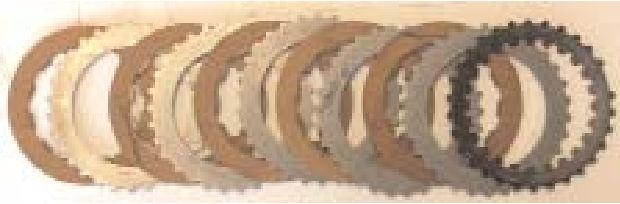


Check 2nd Clutch Drum for Cracks in this Area



Ring Gear is Installed with Flat Side Down

3rd Clutch



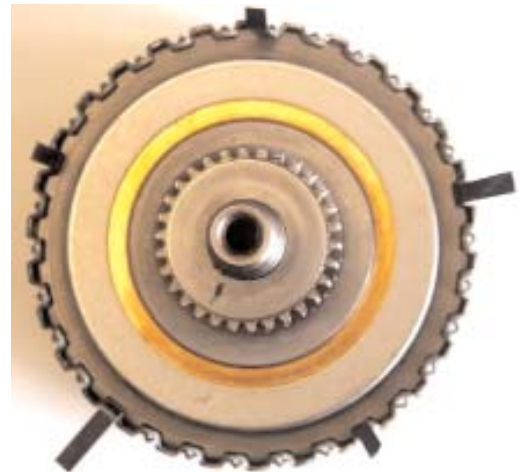
5 Friction 3rd Clutch Stack-Up. Dish Plate on Bottom with Dish Down uses .098 Frictions and .083 Steels



Early 5 Friction 3rd Clutch with Steel on top and Bottom. Dish Plate on Bottom with Dish Down



6 Friction 3rd Clutch Stack-Up. Dish Plate on Bottom with Dish Down. Uses .062 Frictions and .083 Steels

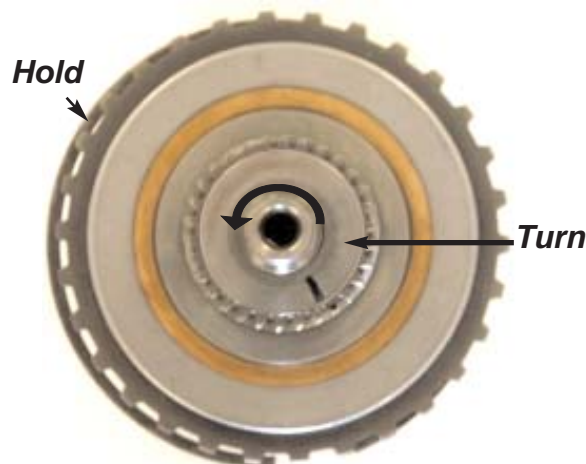


Tools in Position to Remove Low Sprag Race from 3rd Clutch Drum

3rd Clutch Cont'd



Checking 3rd Clutch Clearance with Drill Bit. No Published Specification. Rule of Thumb is .010 - .015. Clearance per Friction can use combinations of .062 - .098 Frictions and .070 and .083 Steels to get to desired Clearance

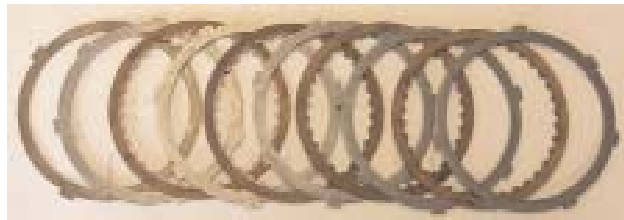


Low Sprag Rotation

Reverse Clutch



Checking Reverse Clutch Clearance Before Assembly. No Published Specification. Rule of Thumb .010 - .015 per Friction. Can use .070 Thin Steels in Combination with .083 Steels to Adjust



Reverse Clutch Stack Up, Wave Plate Goes on Top Toward Clutch Apply Piston

Assembly



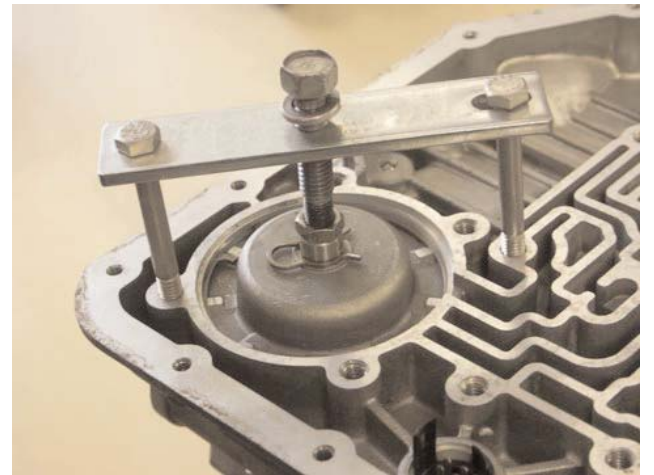
Checking Rear Unit Endplay. Clearance should be .014 - .031 Washer is Selective



Checking Front Unit Endplay Clearance should be .004 - .030 Washer is Selective



To adjust 1-2 band tighten servo adjusting screw to 40 inch pounds and back off 5 turns



Using special tool to remove and install 1-2 servo



Sealing Ring on Parking Gear

Special Tools



**Tools to Disassemble 3rd Clutch Drum
made from .010 - .012 Spring Steel 3/16"
Wide**



**Late Model 3-4 Accumulator Cover
Removal Tool
Kent Moore Tool # J-46260-1**



**Early Model 3-4 Accumulator Cover
Removal Tool
Kent Moore Tool # J-38552**

Special Tools Cont'd



***1-2 Servo Sealing Ring Compressor.
Kent Moore Tool # J-38428***



***1-2 Servo Spring Compressor Tool
made from Saver Bar***



OD Clutch Spring Compressor



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