

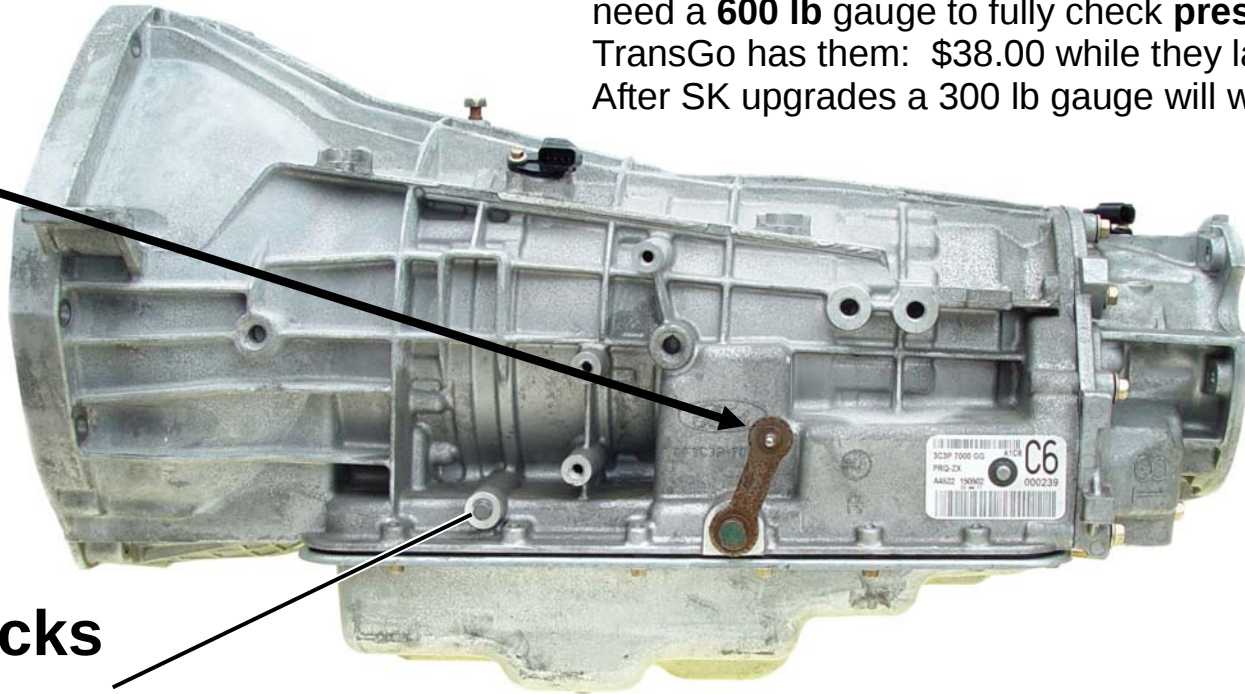
Identification

LOOK:

Has shifter arm here.
No electrical switch.

5R110W

Watch it! Before installing **SK®** upgrades you will need a **600 lb** gauge to fully check **pressures**. TransGo has them: \$38.00 while they last. After SK upgrades a 300 lb gauge will work OK



Pressure Checks

Line pressure tap

Pressures are adaptive and may vary a little from base specifications shown.

Selector	Min psi	Max
Park	50	
Neutral	50	
Reverse	100	320
Drive	70	220
3	80	220
2	80	215
1	80	220

Very common for this trans to have high line pressure error, of around 450 lbs, especially in reverse with throttle on.

Sooner or later this will blow off Low reverse snap ring lugs.

The Shift Kit® has upgrades that brings pressure to safe Specs.

"Thanks for listening."

Tech Team

Trans Identification and Gear Ratios

Identification

Assembly part number
prefix and suffix.

Transmission
model

Build date



Serial number

Gear Ratios

1st	3.09 to 1	
2nd	2.2 to 1	
3rd	1.538 to 1	
4th	1.096 to 1	Note: 4th is used only in cold shift strategy.
5th	1 to 1	
6th	.712 to 1	
Reverse	2.88 to 1	

Identification

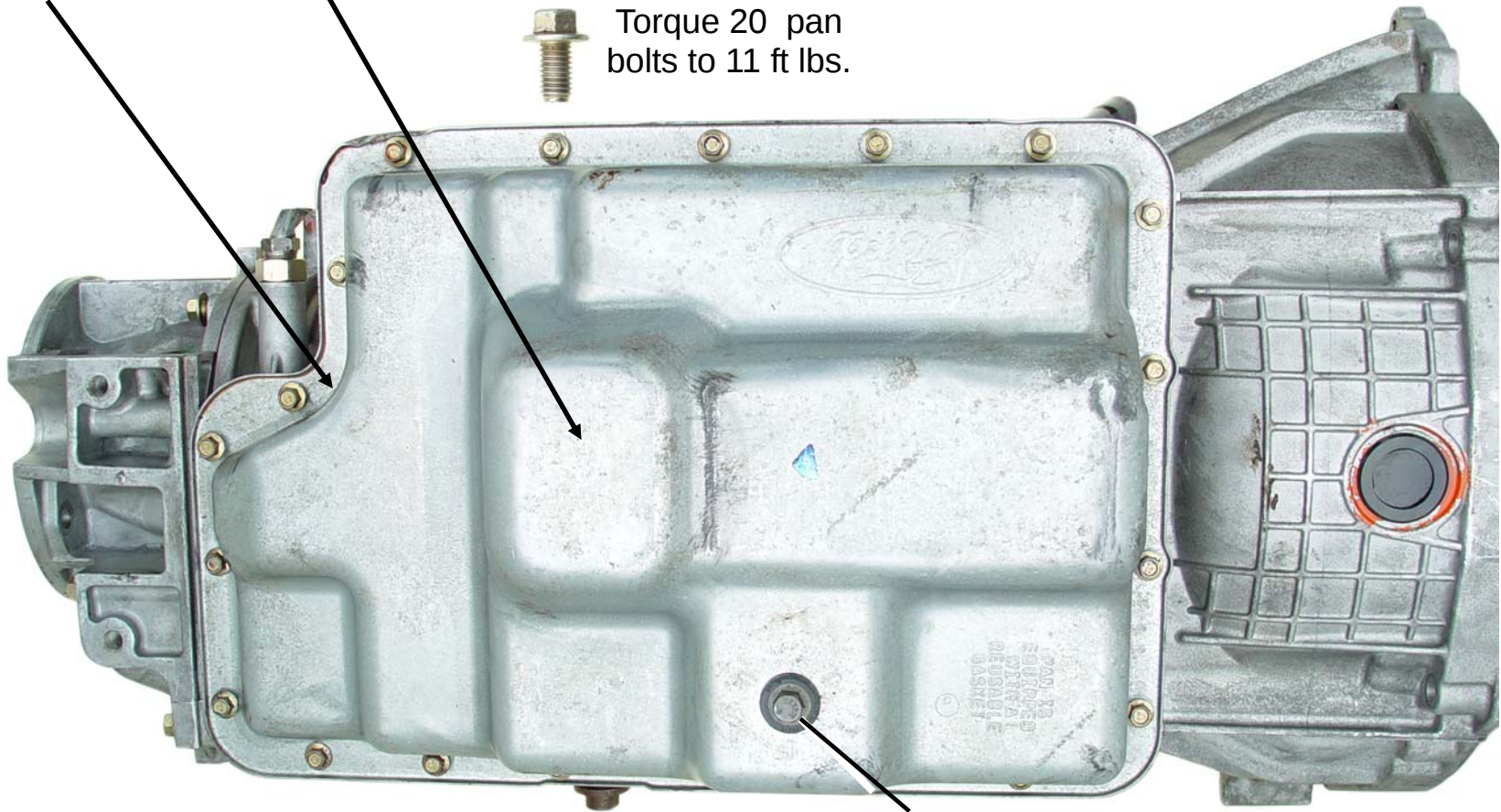
Oil Pan & Filter

Bump for deep pickup.

Corner notch in pan.

Torque 20 pan bolts to 11 ft lbs.

Torque drain plug to 18 lb ft

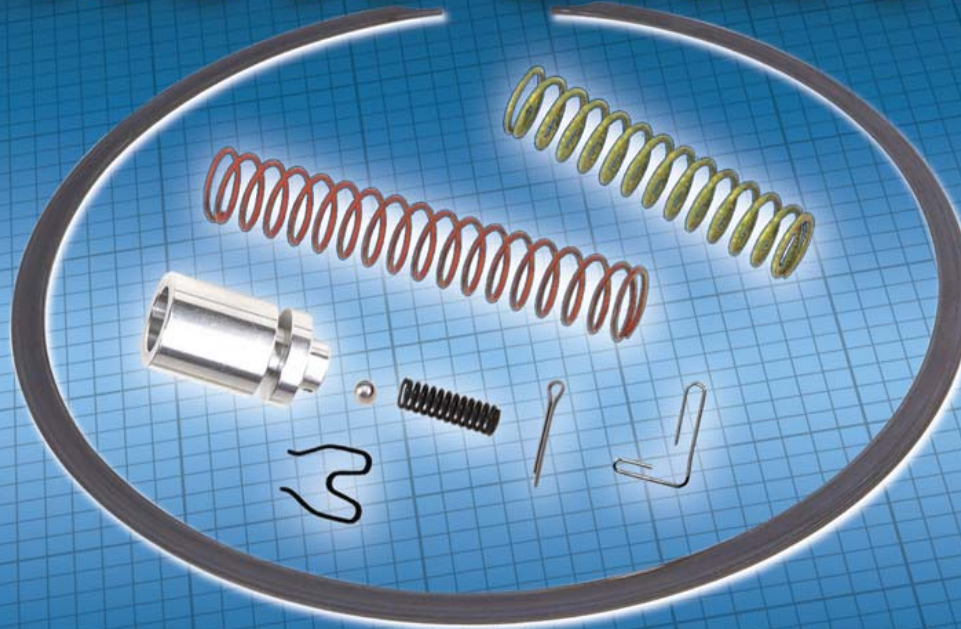


Identification

Upgrade Kit

5R110W Shift Kit®

Fits 2003-05
5R110W
TORQSHIFT:
Trucks, Vans,
SUVs, Gas &
Diesel.



REDUCES

Case Lug
Blow Out

STOPS

Runaway
Pressure

Hi-Tech Snap Ring: Stays In Position - 400% Stronger
You'll just Love it

NOW: YOU Can Fix 5 Speed Fords: "Let Us Hear From You."

Product Support: [626] 443-7451

Fast Reference

Parts and Labor?

If parts and labor fixed trans's the corner gas station would have all the business.

P&L can replace the worn or broken parts, but does not fix the causes of the wear or breakage.

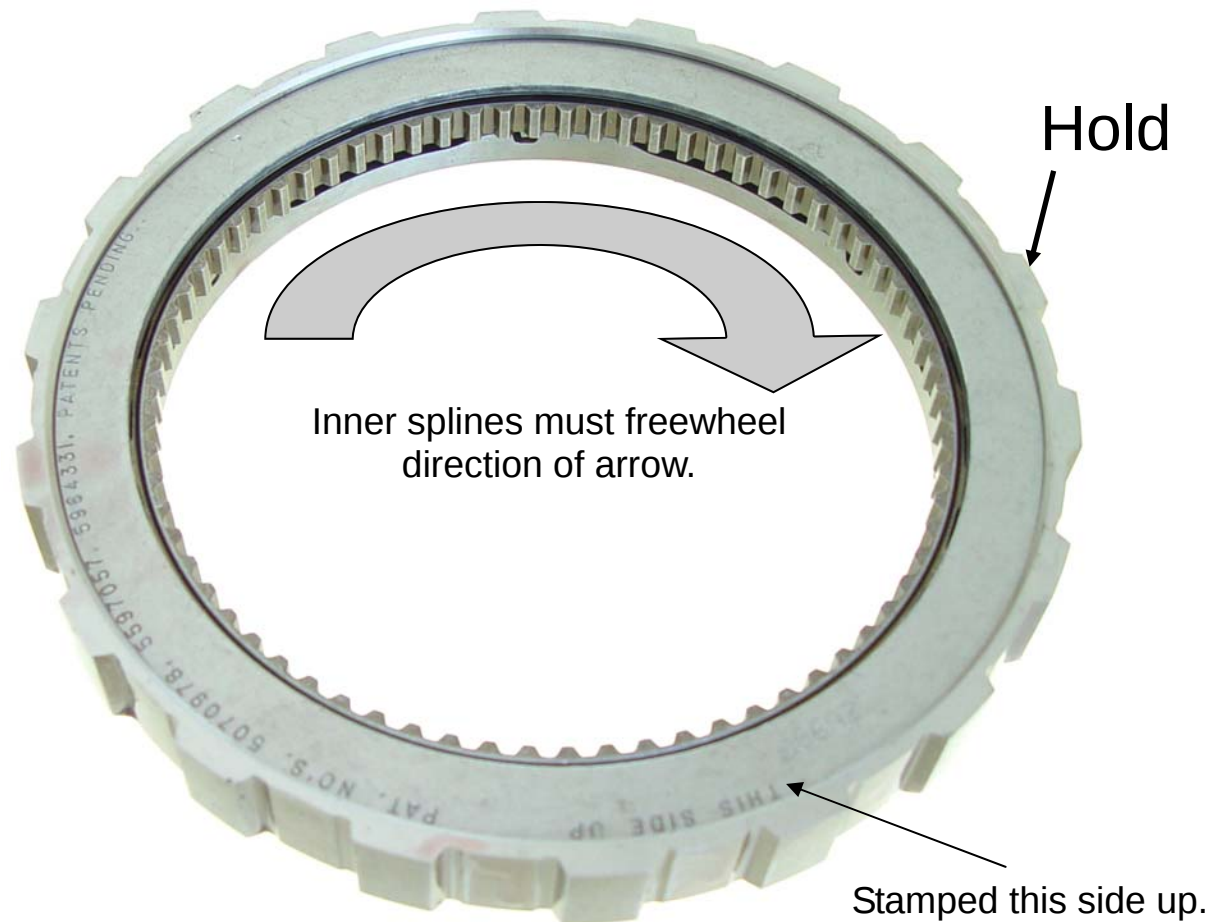
Consciousness fixes things: and that is Attention, Knowledge and Experience and Caringness.

While you are learning the knowledge and experience can be borrowed from persons who care about you, but you have to furnish the caringness for the trans and the customer from the get go.

Have a great day,

Gil Younger

Low one-way Clutch



Fast Reference

Case Lug Blow Out Low Reverse Snap Ring



Please install the snap ring exactly as shown.

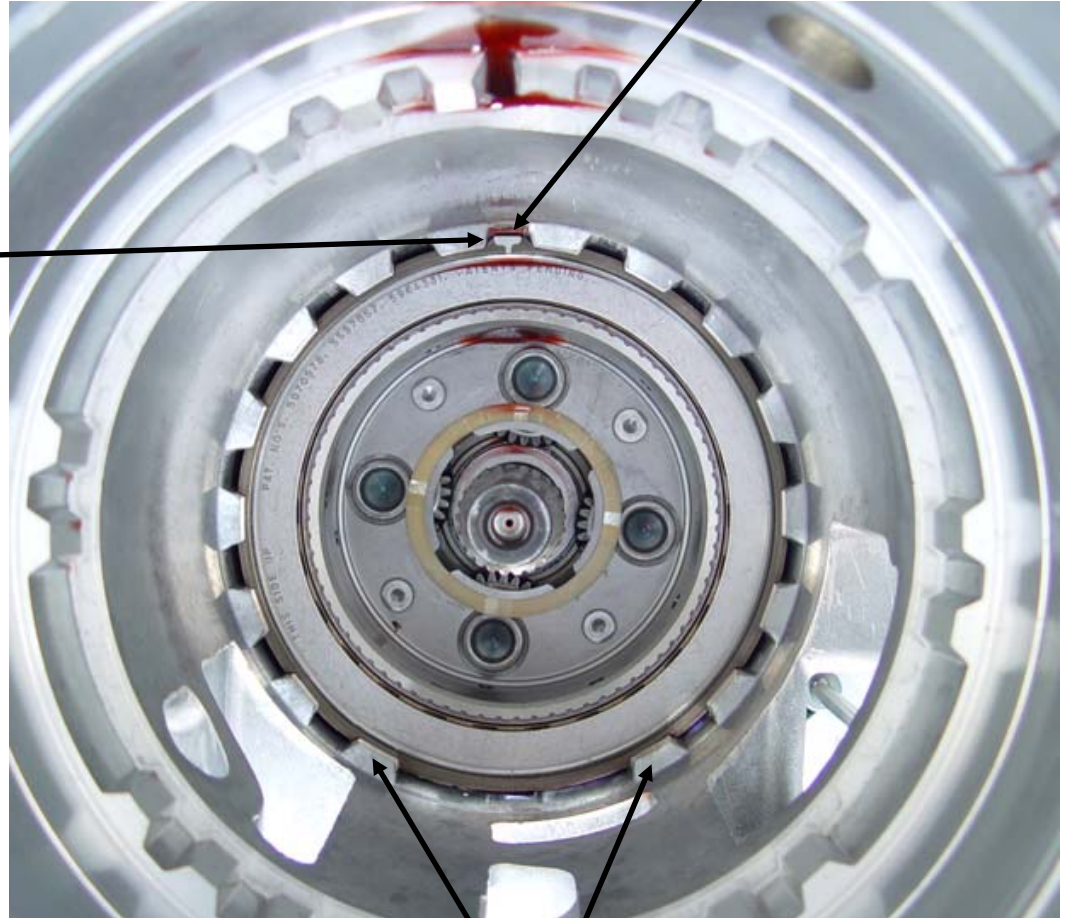


Install the Hi-Tension Low Reverse **Snap Ring** with the ends toward top of the case-opposite the pan.

Snap Ring Upgrade

If the trans came in with no Reverse or Slip in Reverse, this is the first thing to look at. Because it will probably need a new case.

Snap Ring Ends



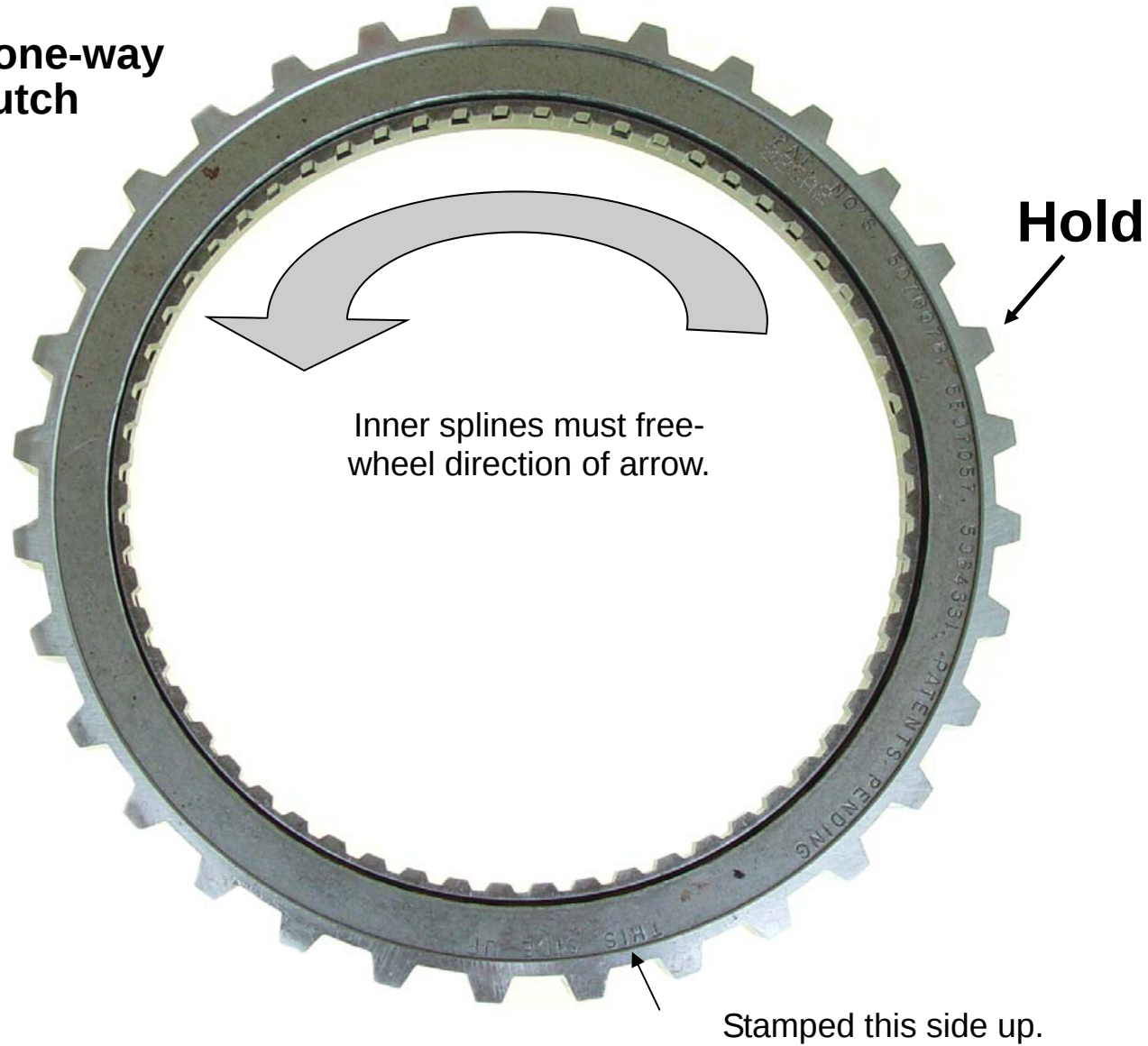
Pan side.

“A” These are the two lugs that break off. If they're broken off a new case is needed. If they are angle worn but still there the tougher snap ring will save the case.

Fast Reference

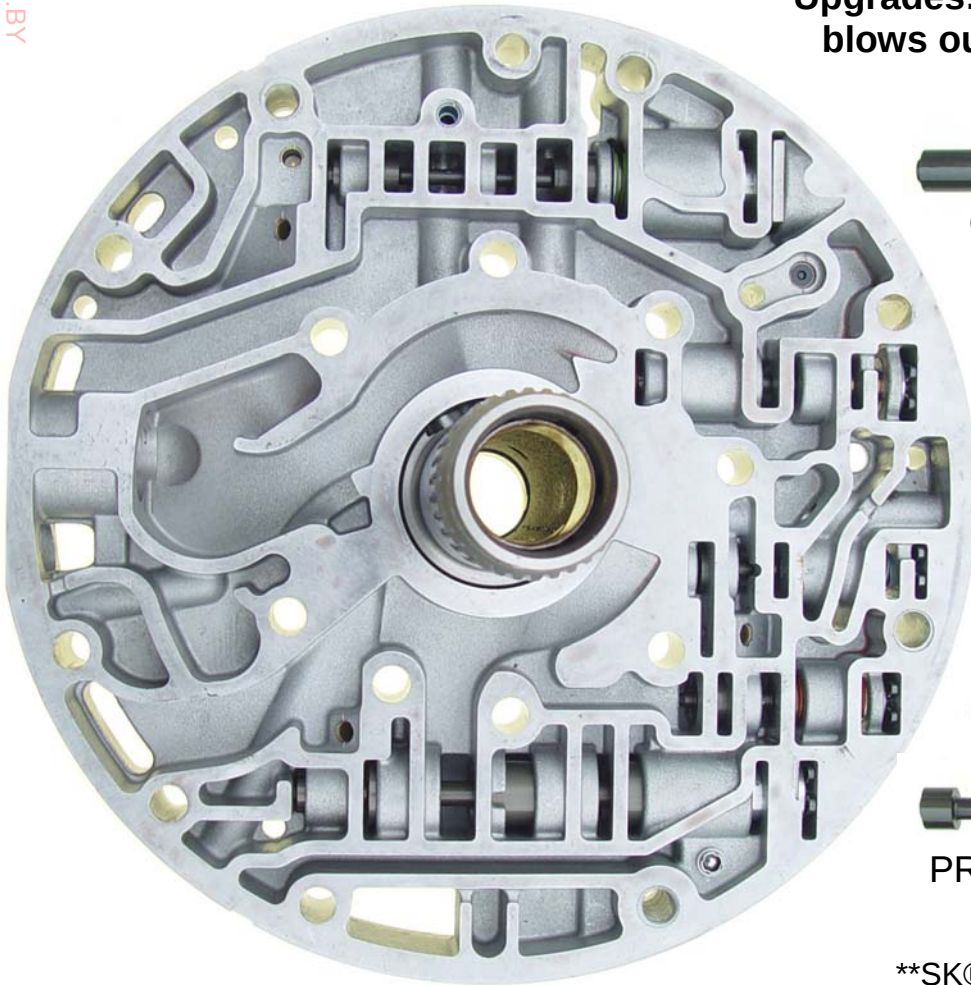
Diode One Way Clutch Rotations

**Coast one-way
Clutch**



Fast Reference

Stator Body-Support

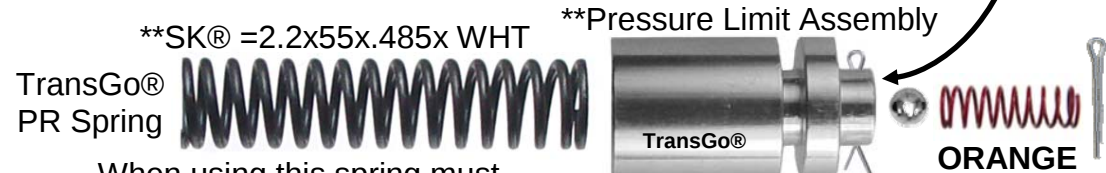
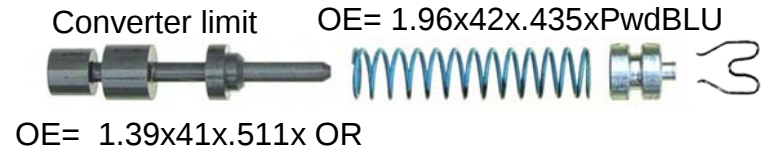
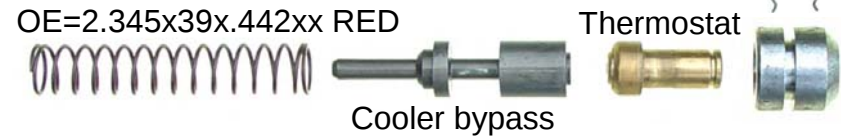
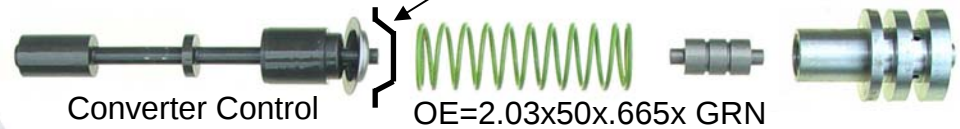


**SK® Converter Limit =1.85x45x.440x YEL
Slightly firmer lockup with high throttle.

Stator Support - Valve and Spring Assembly Pressure Control and Limit Upgrades.

Upgrades: Stops RunAway pressure in Reverse that blows out case lugs. Goes neutral at a stop sign.

Spring seat faces as shown.



**Pressure Limit Assembly

Stops Case lug blow out.

Fast Reference

Solenoid and Pressure Switch Identification

Manifold Body

Coast clutch
SSPC-A

Overdrive
clutch
SSPC-B

OD pressure
switch PS-B

Converter clutch

Pressure
control PC-A

Coast clutch pressure
switch PS-A

Manual valve

Low/reverse

Low/reverse
clutch pres-
sure switch
PS-E

Direct
clutch
SSPC-D

Direct clutch
pressure
switch PS-D

Intermediate
clutch SSPC-C

Intermediate clutch
pressure switch PS-C

*How long has it been
since you told a valve
body how pretty it is?*

Pressure Con- trol in SK® Kit.

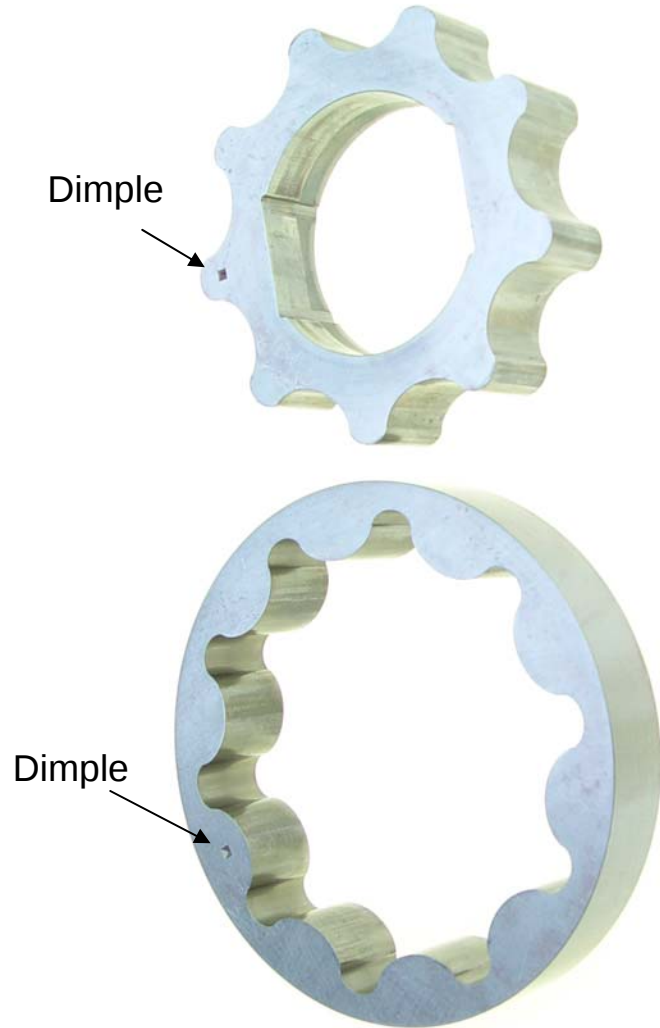
Fluid
Temp

PLAIN

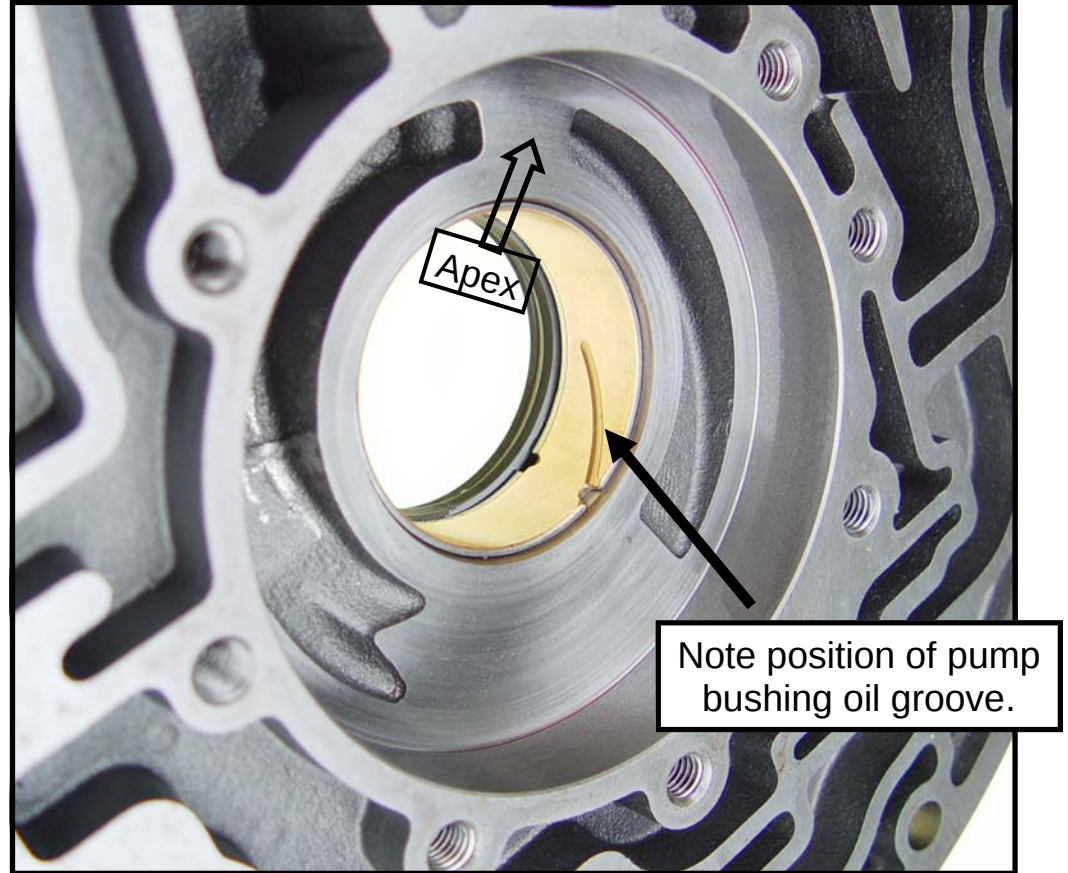
Listen: Pressure Control.
Special regulating spring
in the 5R110 Shift Kit®.
Part of RunAway line **FIX.**

Some Models: Don't have pressure switches.

Fast Reference



Pump pocket should have no deep scratches and not over .004 clearance at the apex. See next page.



Fast Reference

Pump Quality Inspection

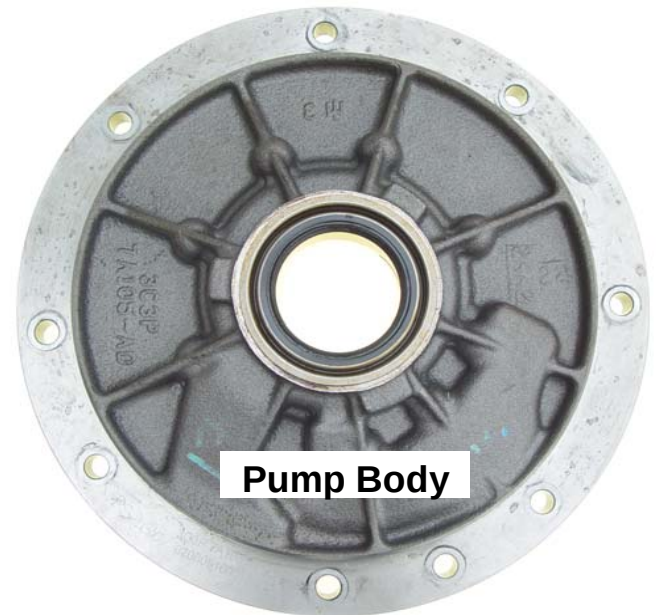
Place outer gear in pump with a tooth centered at the apex. [[page 10]

Press Firmly on the gear at "A" and "B". If a .003 feeler will start under the gear replace the pump.



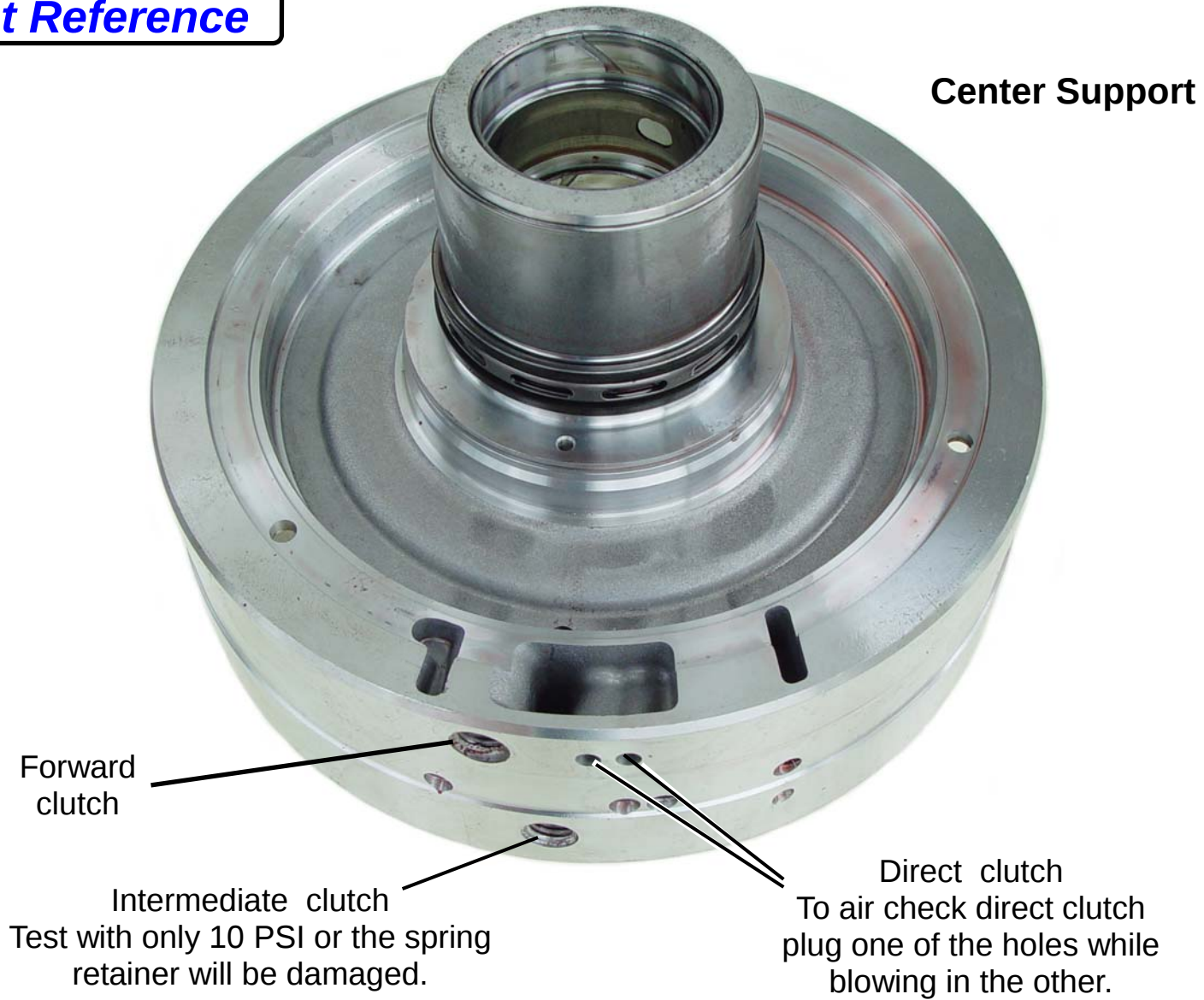
Wear Plate

The front edge of E4OD separator plate makes a good straight edge.



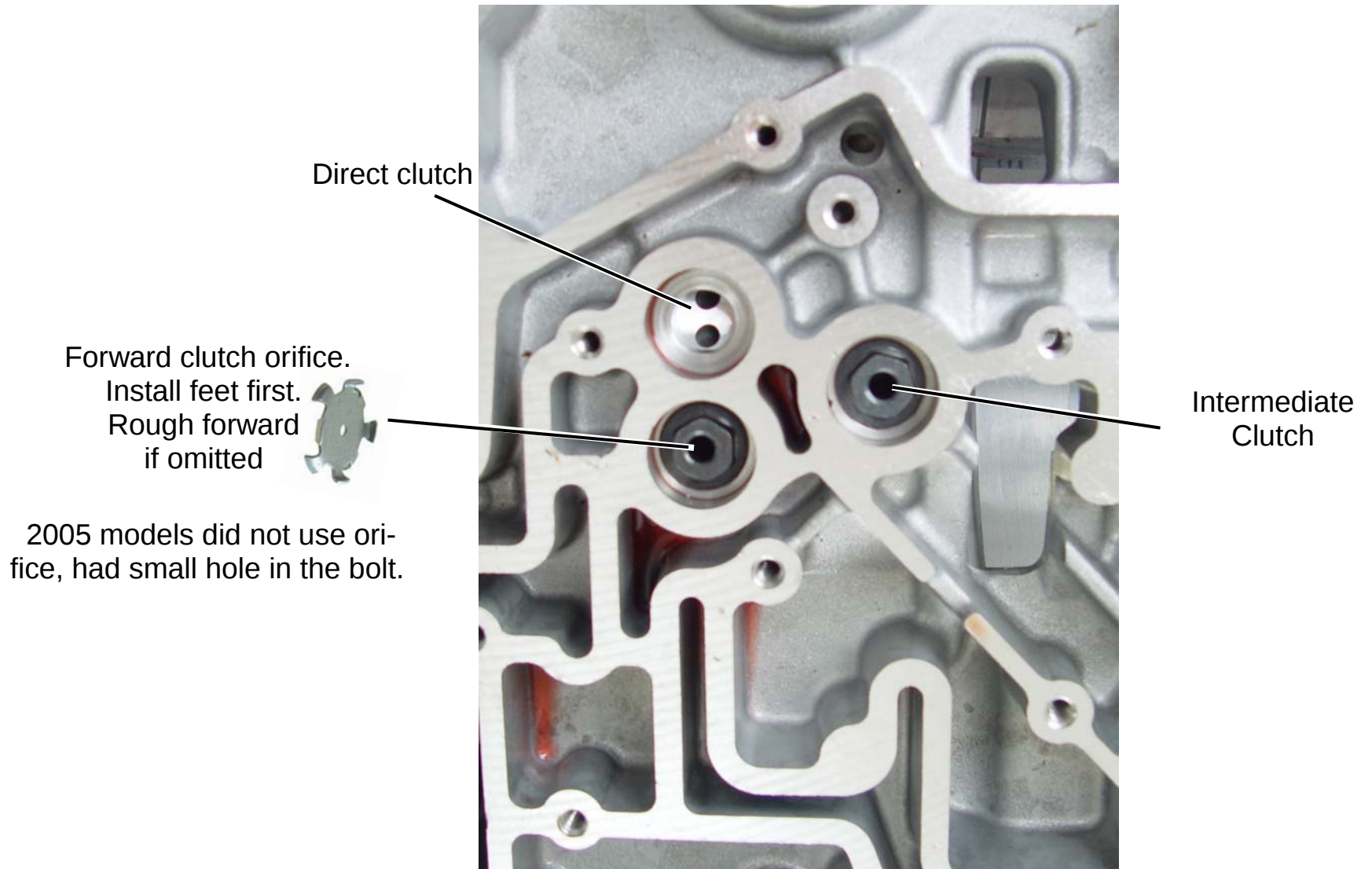
Pump Body

Fast Reference



Fast Reference

Tighten 2 center support bolts: 24 ft lbs.



Fast Reference

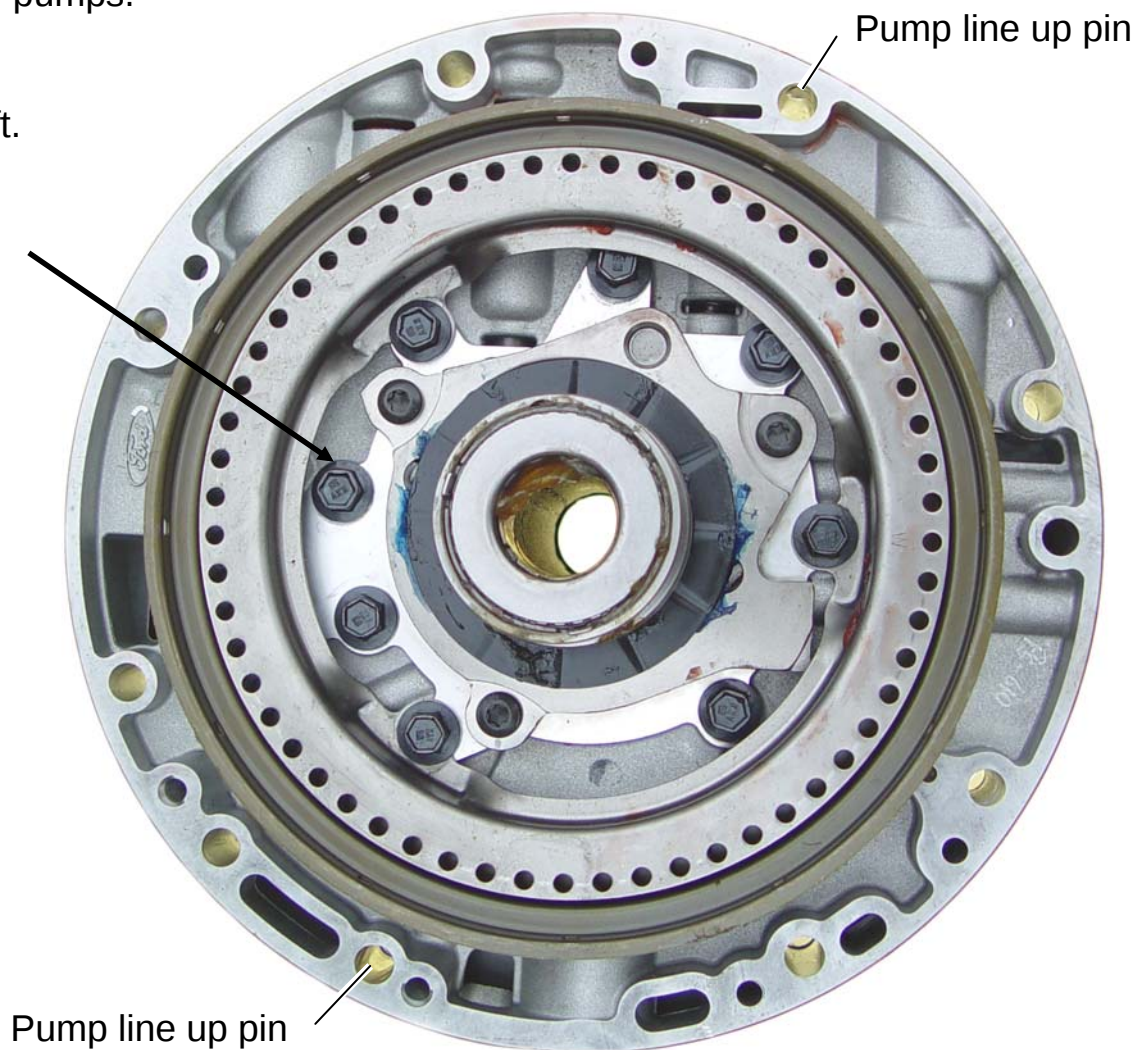
Nissan Bell Housing Bolts have a shoulder that will align this pump and E4OD pumps.

Torque 8 bolts to 23 lb. ft.



Ford line up pins #307-466 locations shown.
Then use the Ford band strap # 307-D004 on the outside to align pump and stator bodies.

Pump Alignment



Fast Reference

The Technology IS the Ethic

If the sign on the building or any advertising says, "Transmissions" that is declaration to the whole Universe that you know how to fix them.

When a product or service is offered, the offer itself is a specific claim by the seller that he is accepting the MORAL and TECHNICAL responsibility for correct function, for a reasonable length of time, in exchange for money.

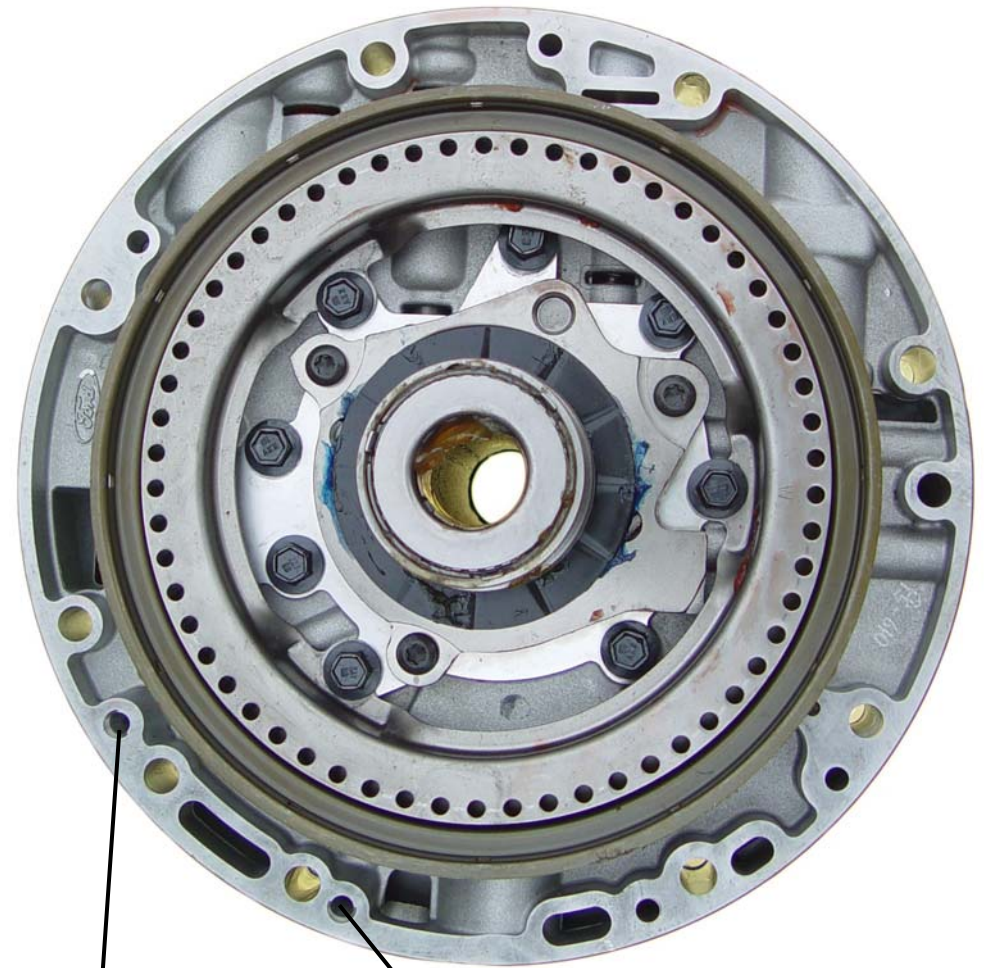
Regardless what you may call your repair, the job is in your shop to have the complaints and failures corrected. It doesn't matter how honest you are, as a person, if you do not fix the causes of the complaints and failures where is the ethic?

Each transmission develops 3 to 5 complaints and failures you see over and over again and again.

A service is ethical and deserving to the exact extent that your service corrects the causes of those complaints and failures; and does not include a whole bunch of parts that were not needed.

No more and no less,

Gil



Coast Clutch

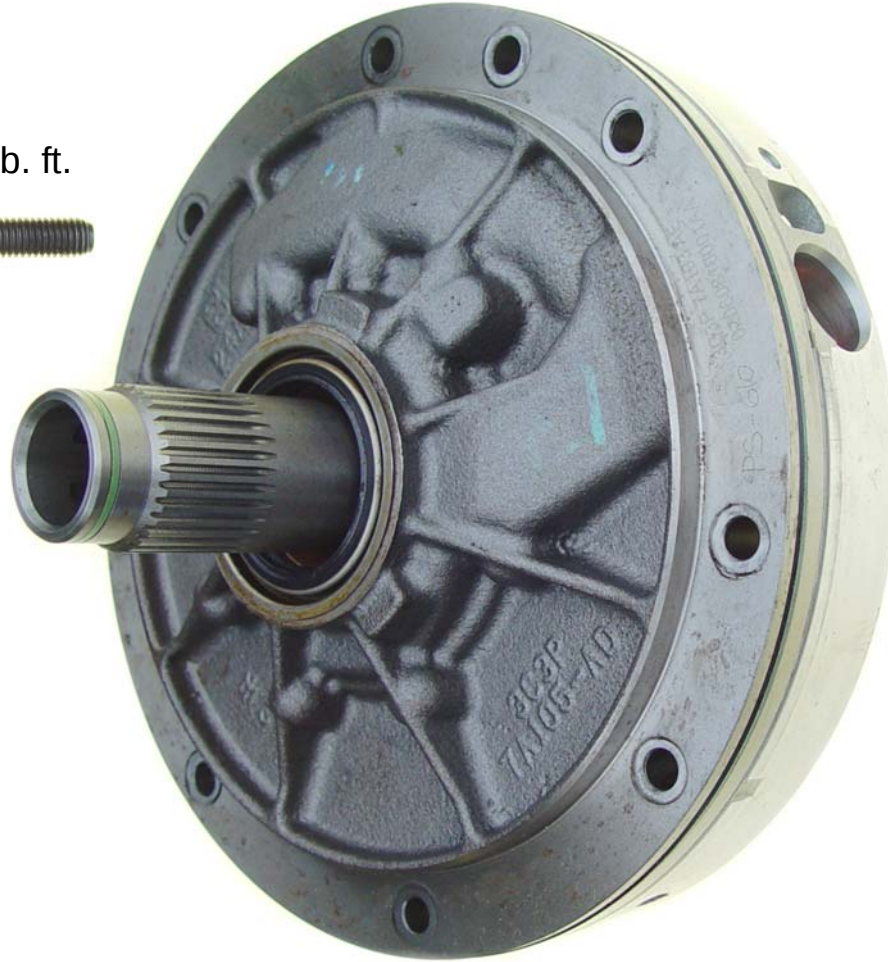
Overdrive Clutch

Air test with mouth or 10 PSI.
More can damage the spring retainer.

Fast Reference

Pump Install

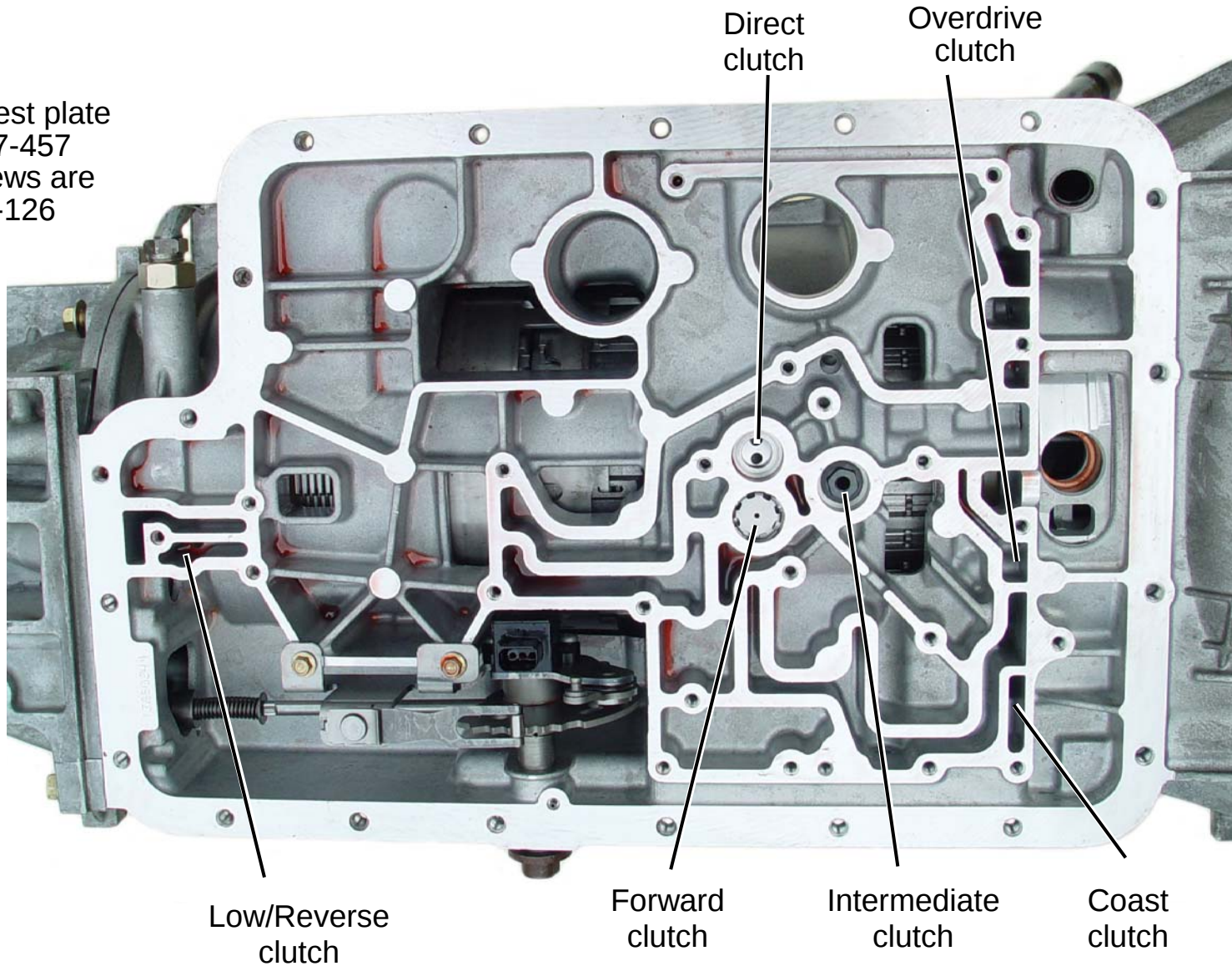
Torque bolts to 20 lb. ft.



Fast Reference

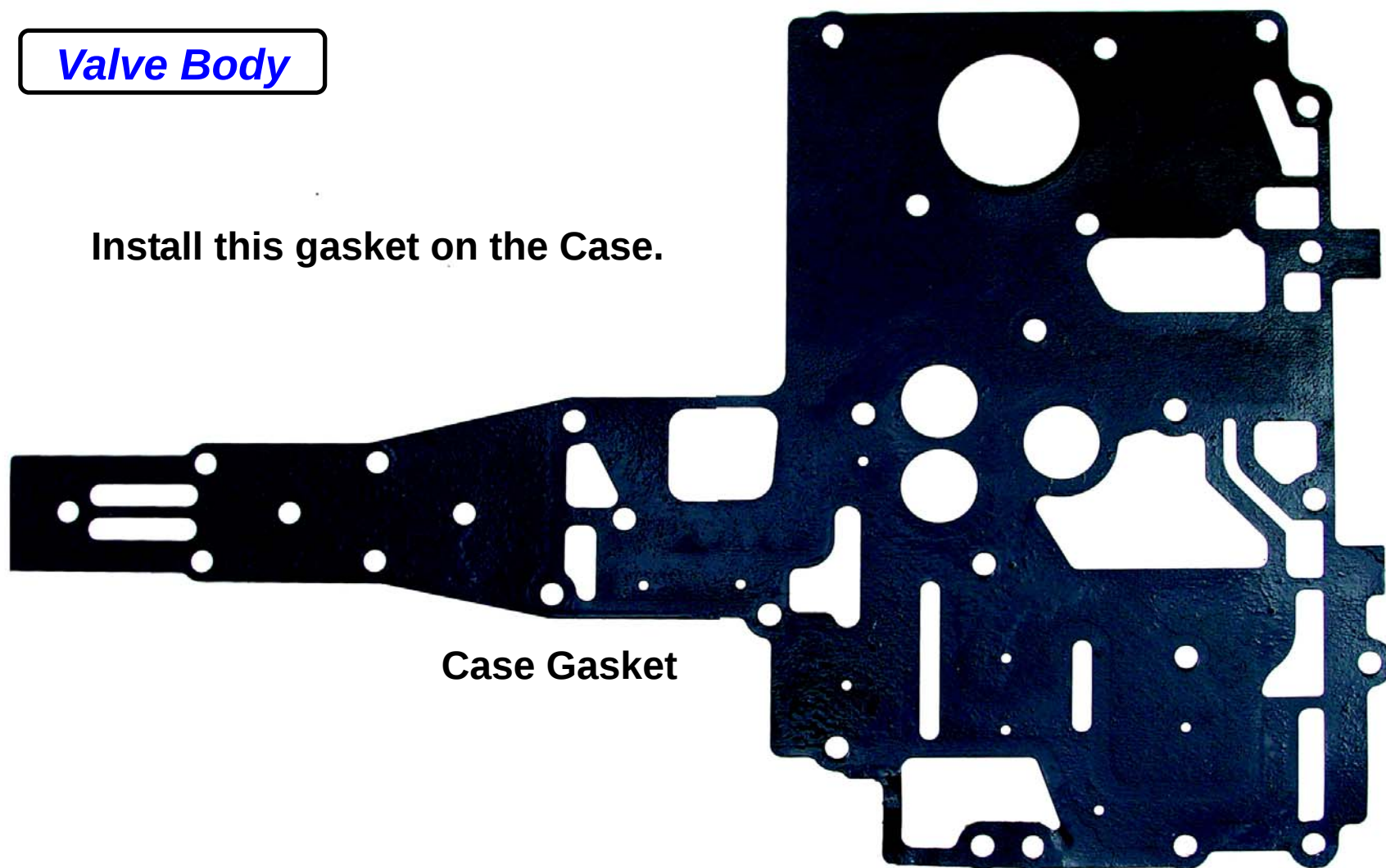
Air Pressure Checks

Ford air test plate
is #307-457
and screws are
#307-126



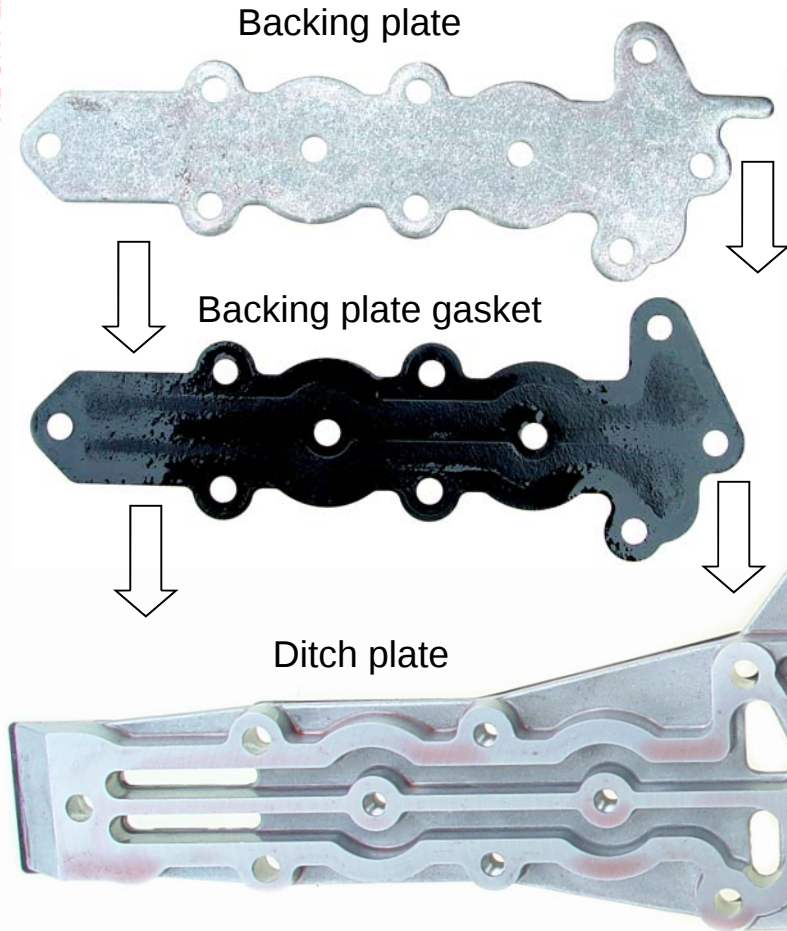
Valve Body

Install this gasket on the Case.

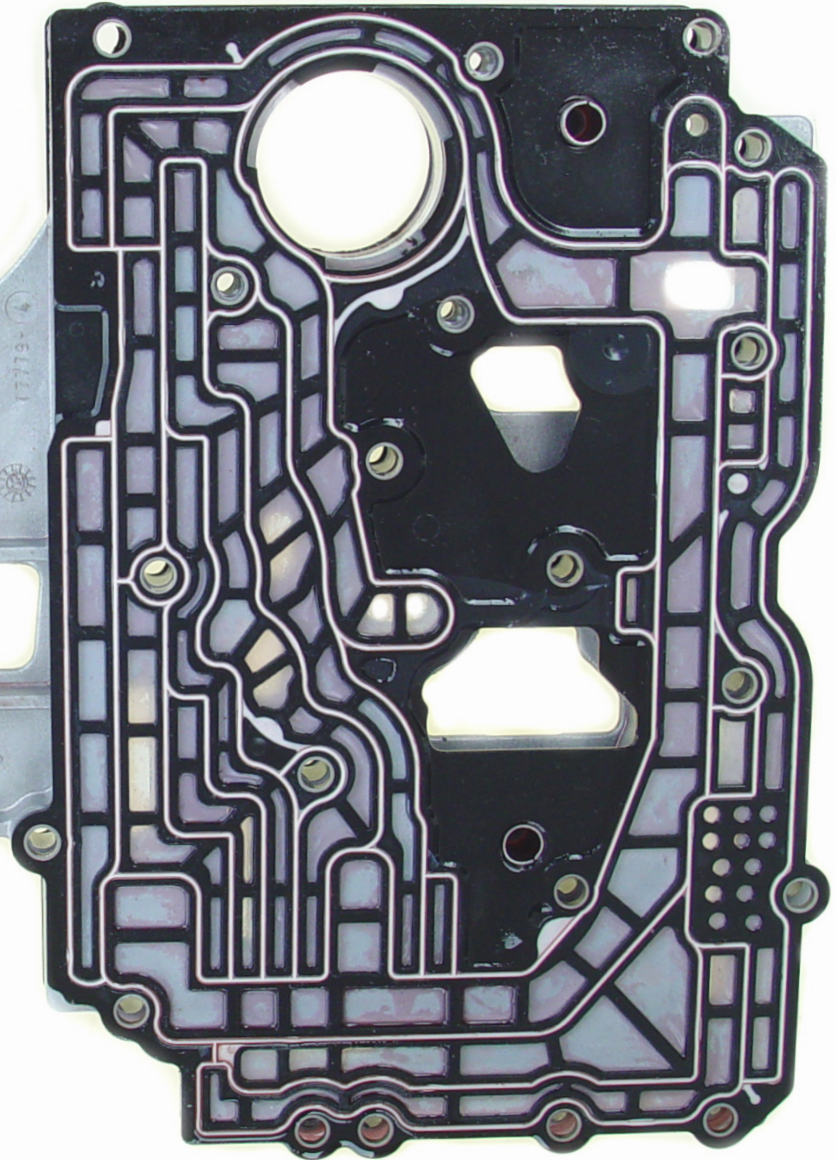


Case Gasket

Valve Body



Filter Screen Gasket



Install this Channel casting onto the case gasket.

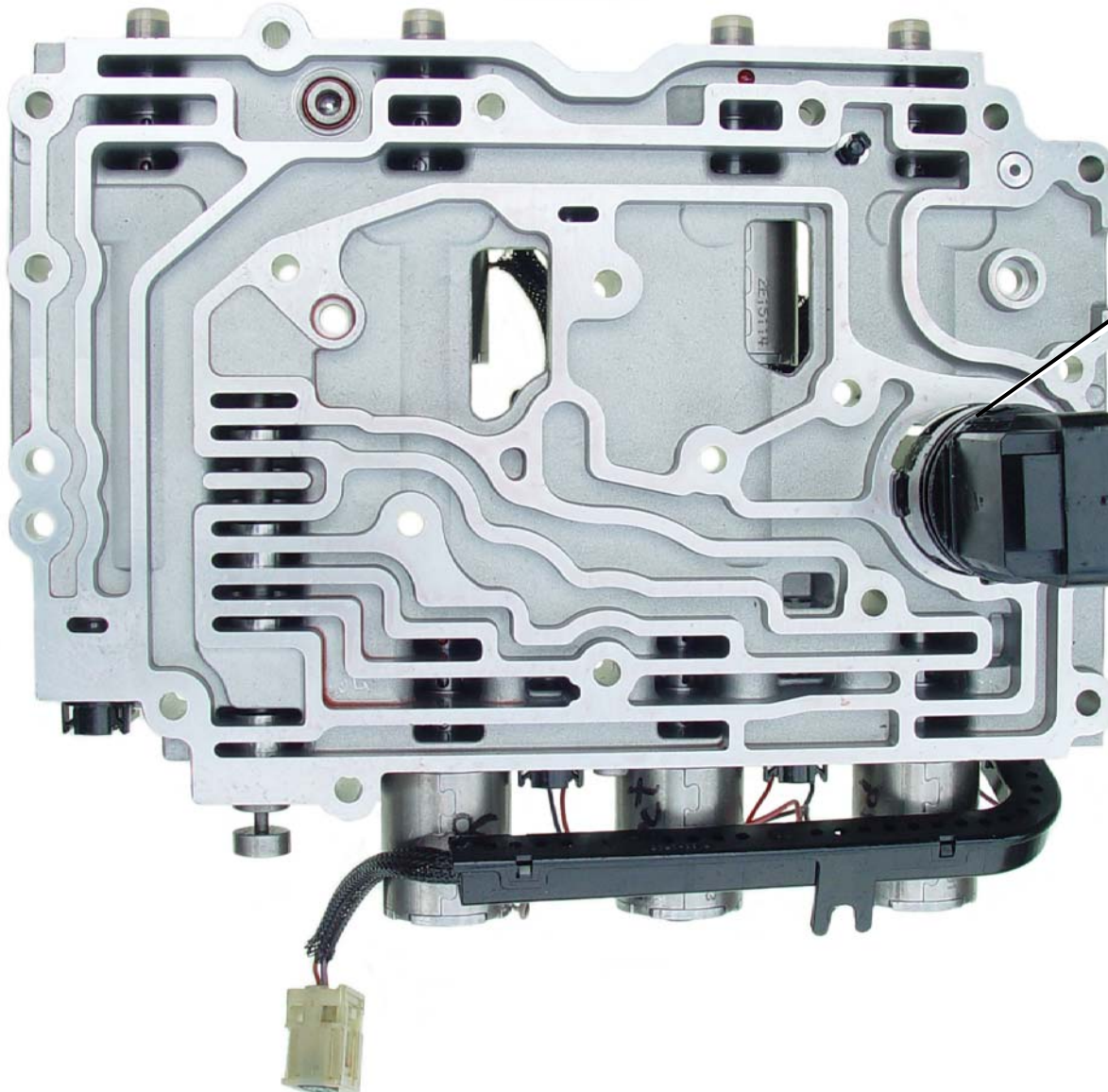
Valve Body

Manifold body

LISTEN UP:
O'ring must be installed
prevent leak..

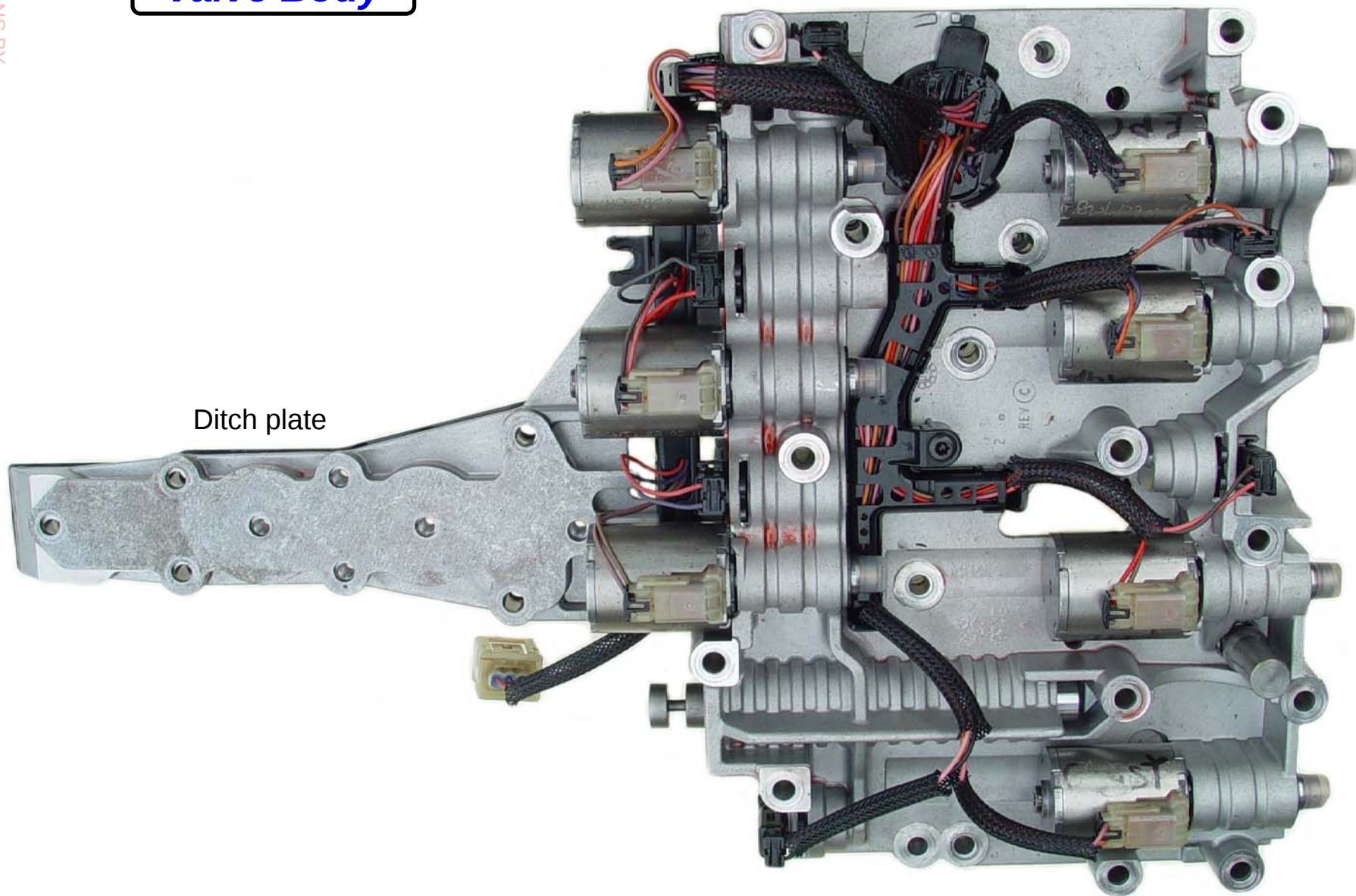
O-ring

Bulkhead
connector



Valve Body

Valve Body



Valve Body

Solenoid and Pressure Switch Identification

Manifold Body

Coast clutch
SSPC-A

Coast clutch pressure
switch PS-A

Manual valve

Low/reverse

Overdrive
clutch
SSPC-B

*How long has it been
since you told a valve
body how pretty it is?*

OD pressure
switch PS-B

Low/reverse
clutch pres-
sure switch
PS-E

Converter clutch

Direct
clutch
SSPC-D

Direct clutch
pressure
switch PS-D

Fluid
Temp

Intermediate
clutch SSPC-C

PLAIN
SPRING

Pressure
control PC-A

Intermediate clutch
pressure switch PS-C

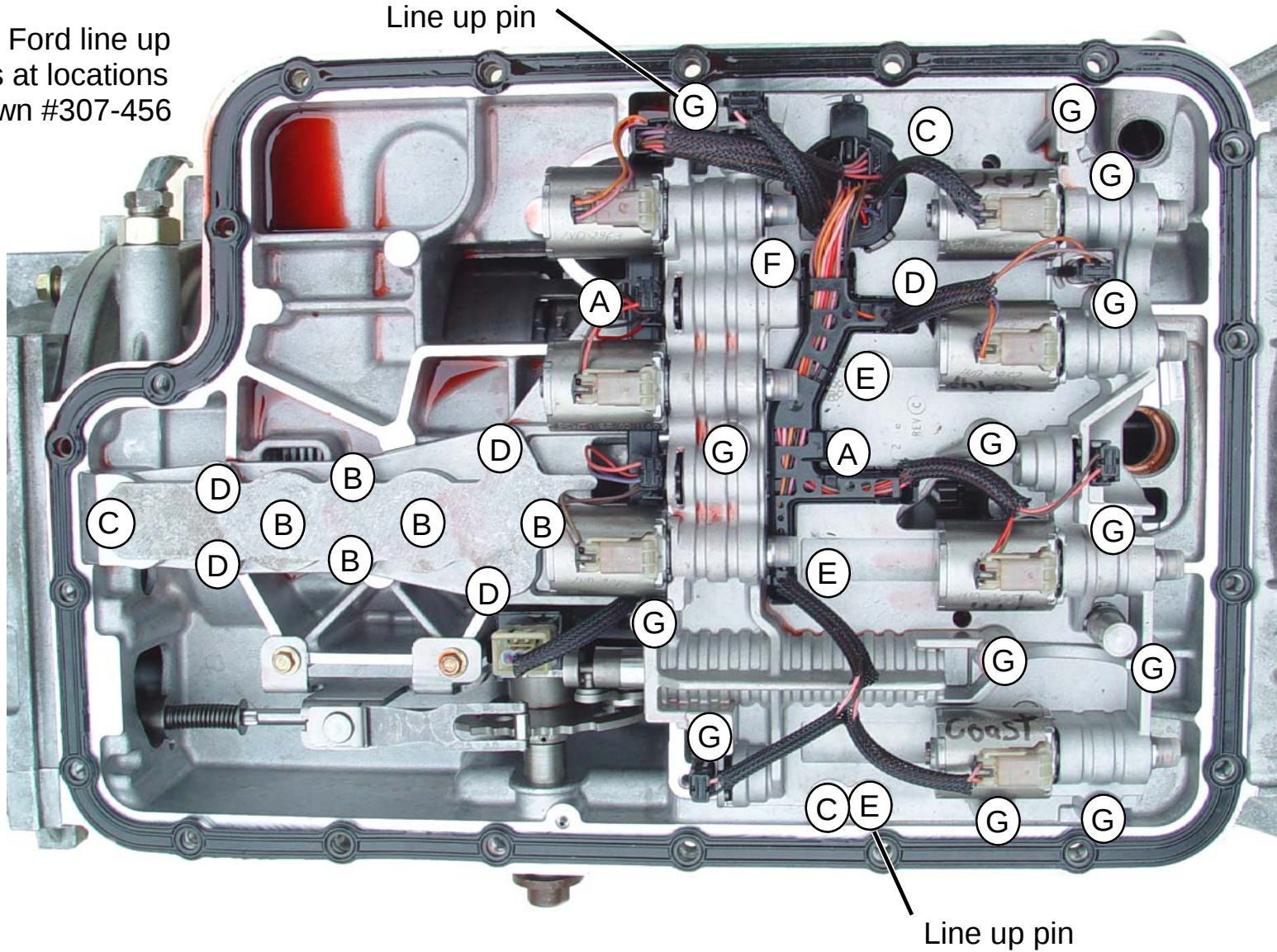
Listen: Pressure Control.
Special regulating spring
comes in the Shift Kit®.
Part of RunAway line **FIX.**

Some models don't have pressure switches.

Valve Body

Valve Body Bolt Locations

Use Ford line up pins at locations shown #307-456



Valve Body

Bolts shown are actual size when printed.

Two A  Torx #25 x .720" long
Wiring Harness Bolts

Torque bolts B thru G to 89 in. lb.



.830" x 10MM



1.440"x 8MM

1.300" x 10MM



1.920"x 8MM



2.420"x 10MM



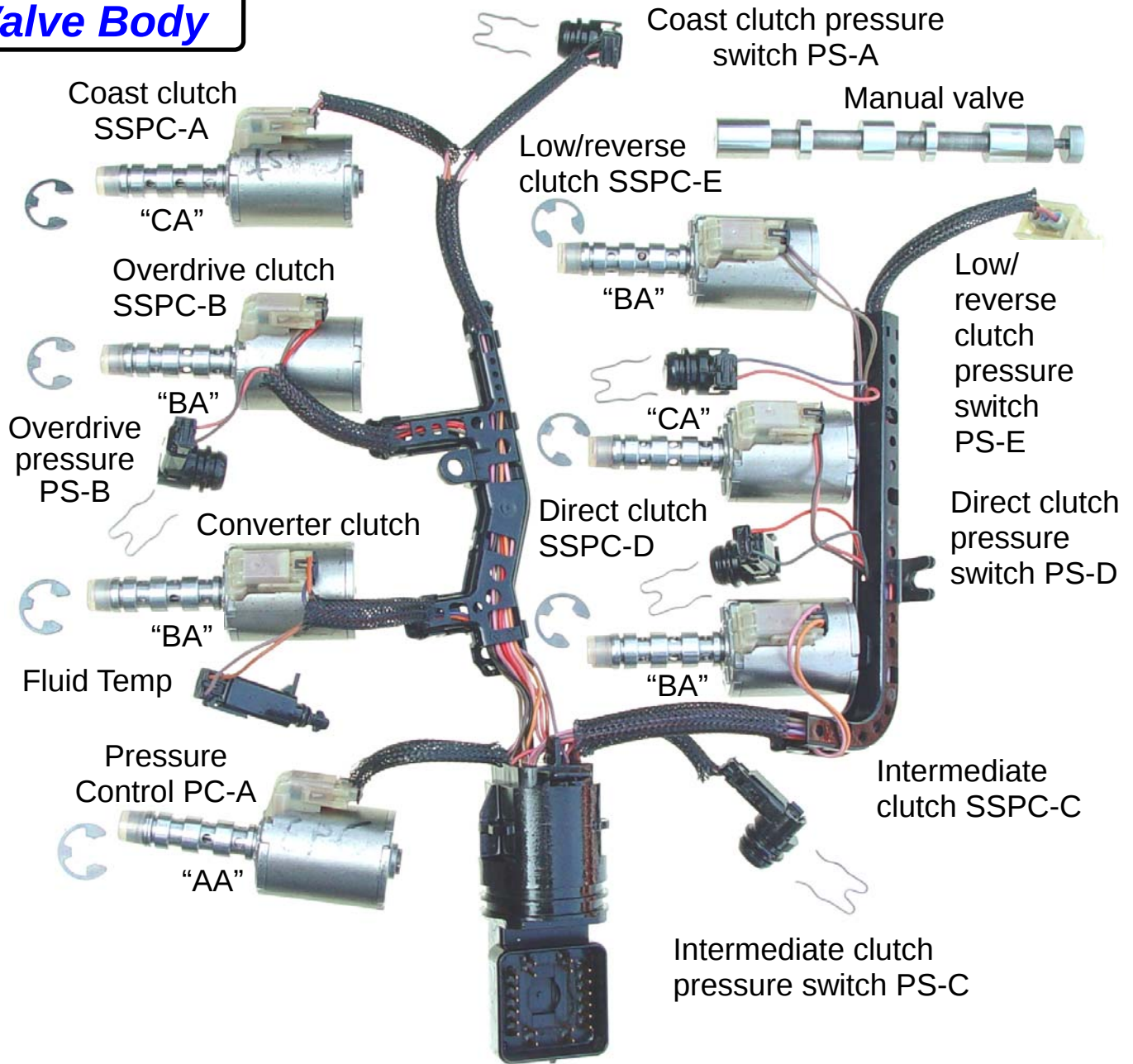
2.920" x 8MM

Valve Body

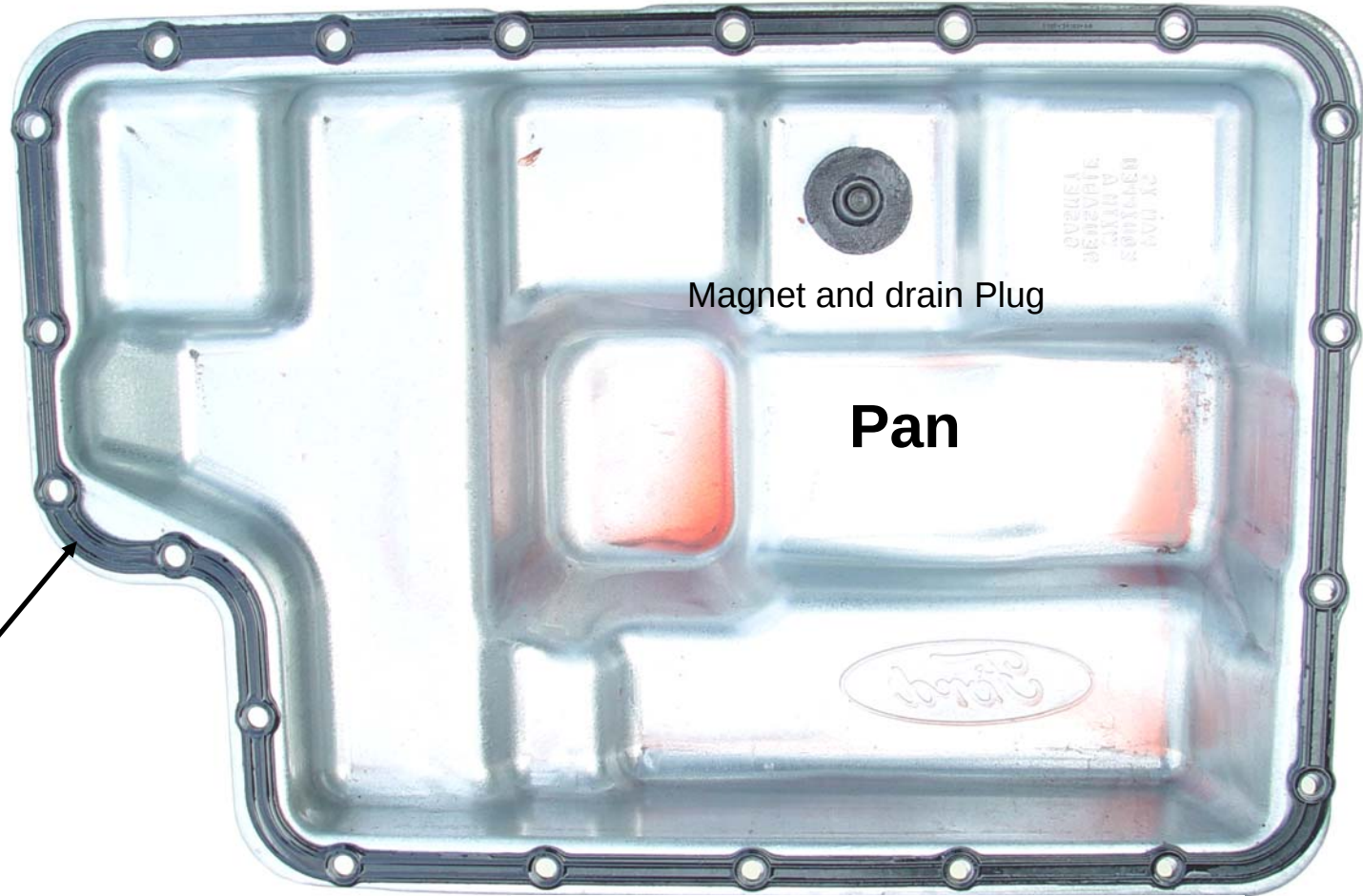


Each solenoid is identified, do not mix! "AA" = Line Pressure Control Solenoid.

To look at solenoids installed on the valve Body - See page 4.



Oil Pan-Gasket-Filter

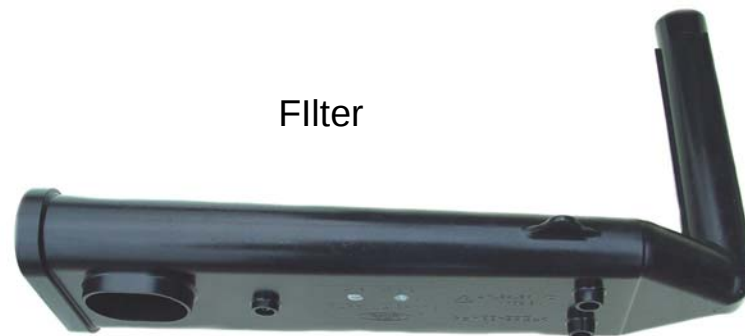


Gasket

Magnet and drain Plug

Pan

Use Mercon SP fluid only.
Clutch plate friction material,
computer strategy and this oil
are all tuned to go together.



Filter

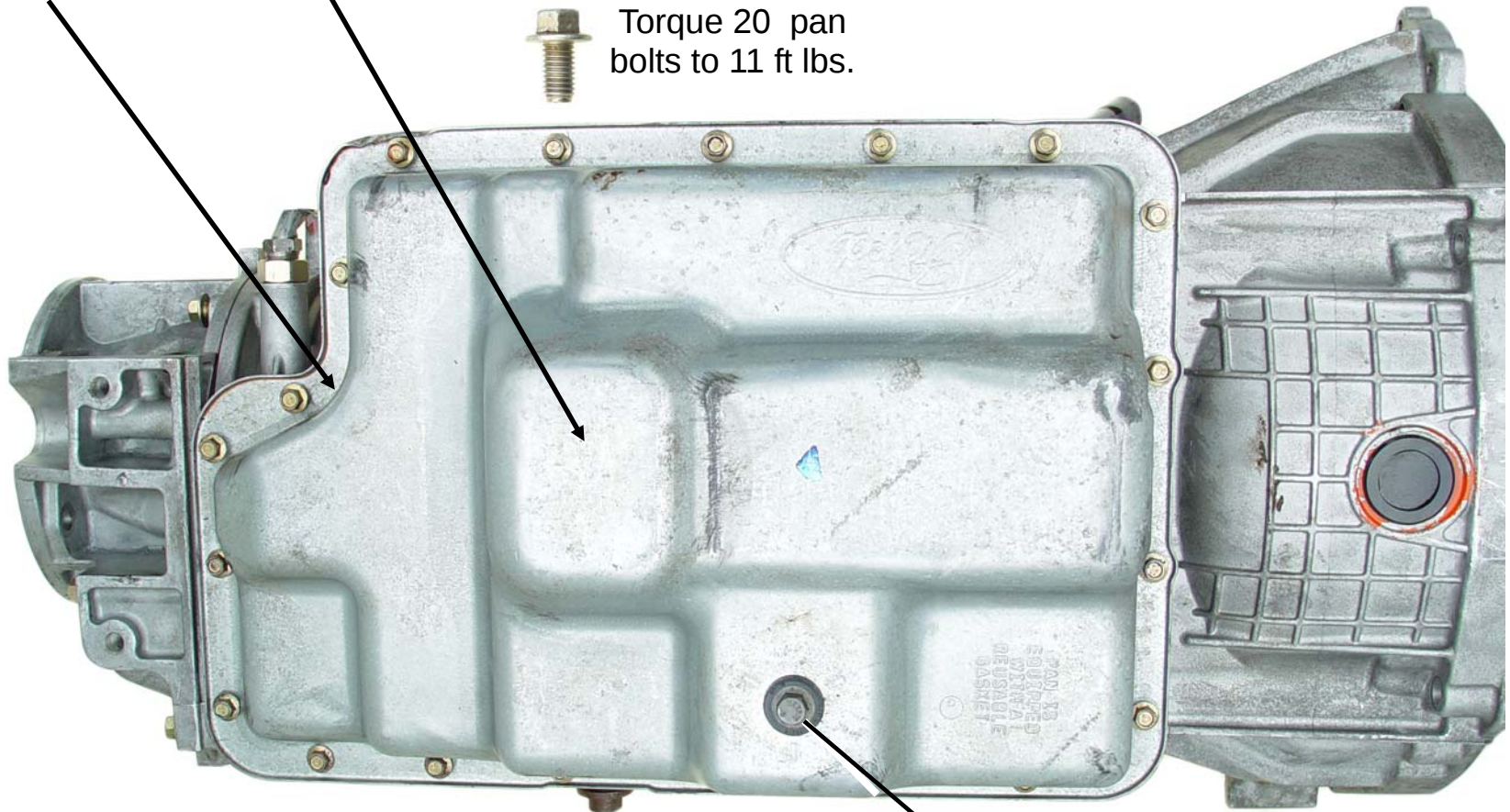
Oil Pan & Filter

Bump for deep pickup.

Corner notch in pan.



Torque 20 pan
bolts to 11 ft lbs.



Torque drain
plug to 18 lb ft

Internal Components

Internal Parts

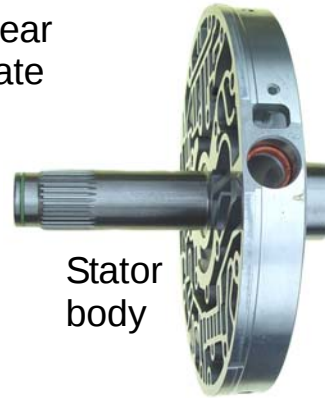
Pump body



Pump gears



Wear plate



Stator body

Tab face



Coast drum



Pump gasket

Overdrive Piston



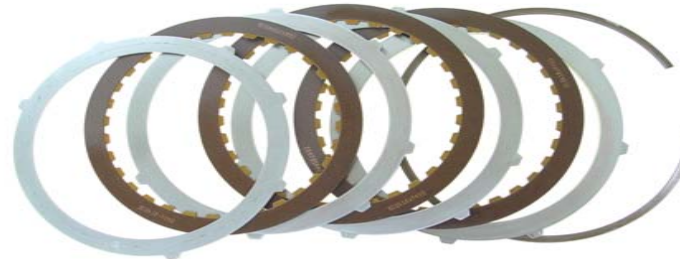
Return Springs



Selective Plastic washer



Overdrive clutches



Coast clutch drum



Overdrive planet



Bearing faces as shown



Overdrive ring gear

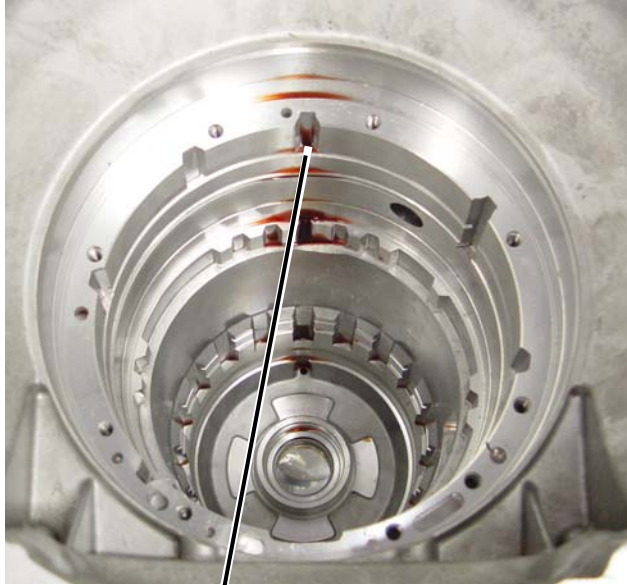


Bearing faces as shown

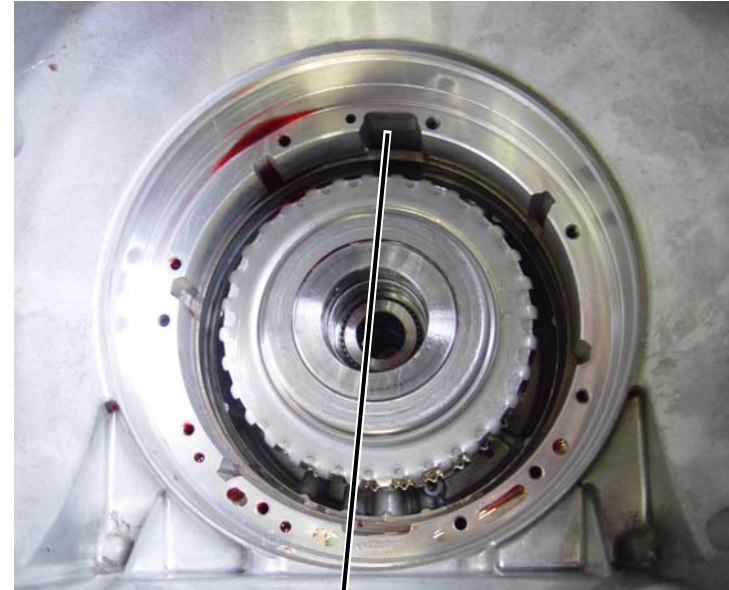


Internal Parts

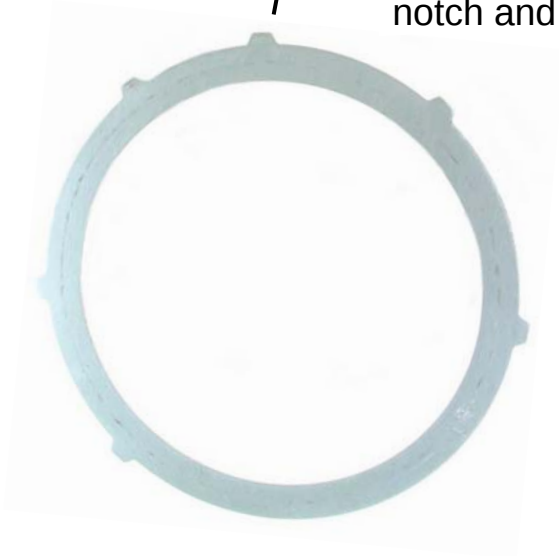
Overdrive Steel: 1st and 2nd Design



1st design. Narrow case notch and apex tooth



2nd design: Wider case notch and apex tooth.



Correct plates only.
They will not swap.





.108" snap ring
Beveled side
faces up

Center
Support

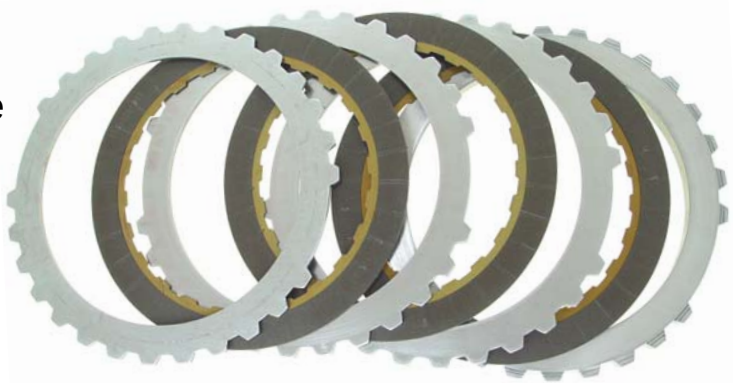


Internal Parts



Selective
Plastic
Washer

Intermediate
Clutches



Direct clutch drum



NEEDLE BEARING TALK

Faces Up means:
Towards Converter

Faces Down means:
Towards extension housing

Inner lip
faces up



Plastic
washer



Tabs face down



Fast Reference

Snap Ring Upgrade

Case Lug Blow Out Low Reverse Snap Ring



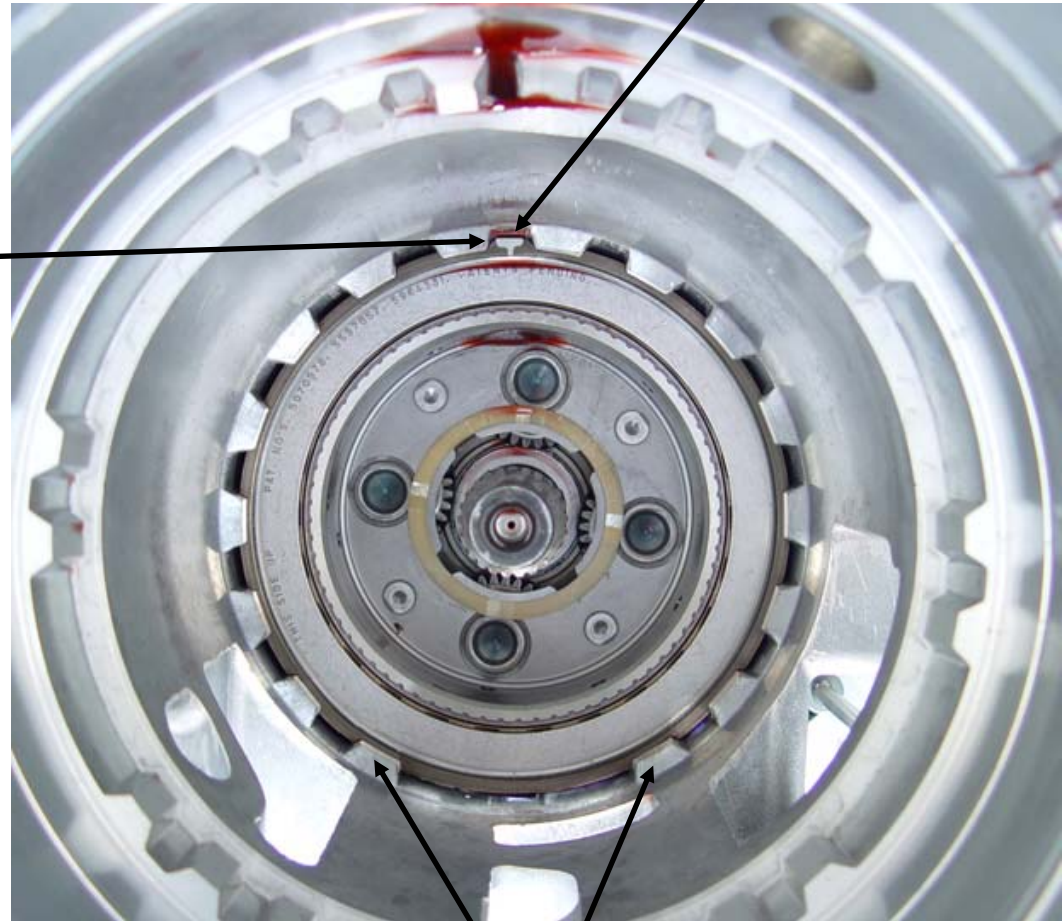
Please install the snap ring exactly as shown.



Install the Hi-Tension Low Reverse **Snap Ring** with the ends toward top of the case-opposite the pan.

If the trans came in with no Reverse or Slip in Reverse, this is the first thing to look at. Because it will probably need a new case.

Snap Ring Ends



Pan side.

"A"

"A" These are the two lugs that break off. If they're broken off a new case is needed. If they are angle worn but still there the tougher snap ring will save the case.

Internal Parts



Forward Hub



Bearing inner lip faces up



Forward Planet



Bearing tabs faces down

Input shell



Plastic washer



Reverse Planet



Plastic washer



Low / reverse clutch



Internal Parts

Reverse ring gear

Bearing tabs
faces up



Bearing tabs
faces up



Low / Reverse Clutch Piston

Return Springs

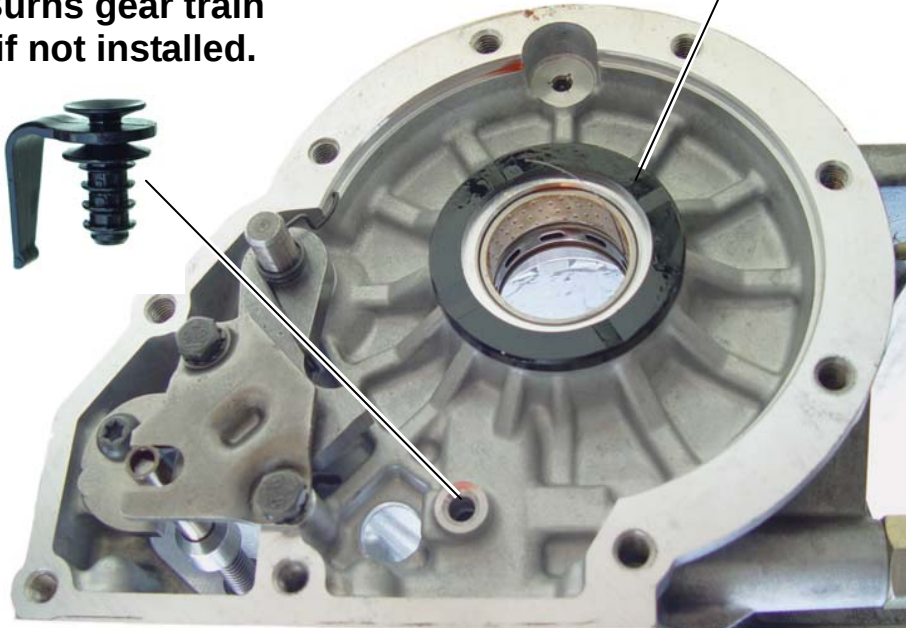


Internal Parts

Extension Housing

Lube orifice plug
**Burns gear train
if not installed.**

Plastic washer

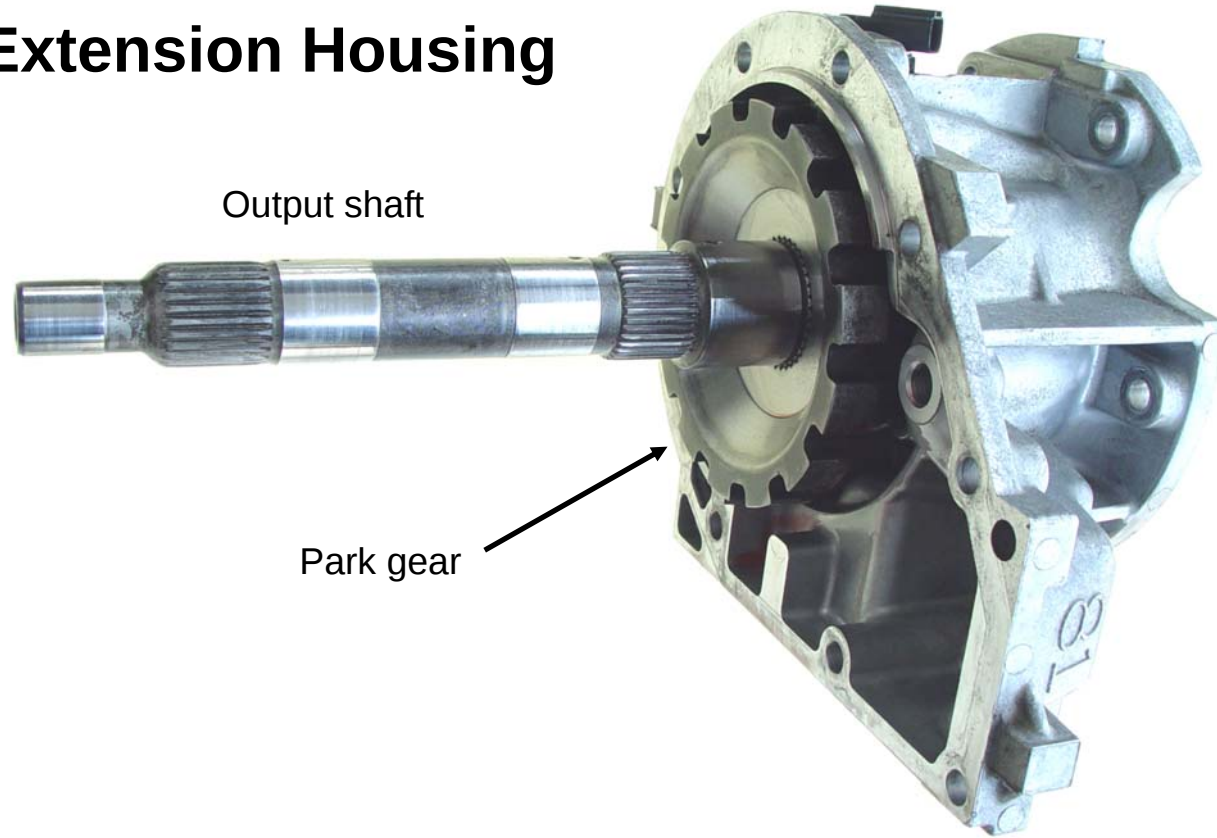


Extension housing gasket



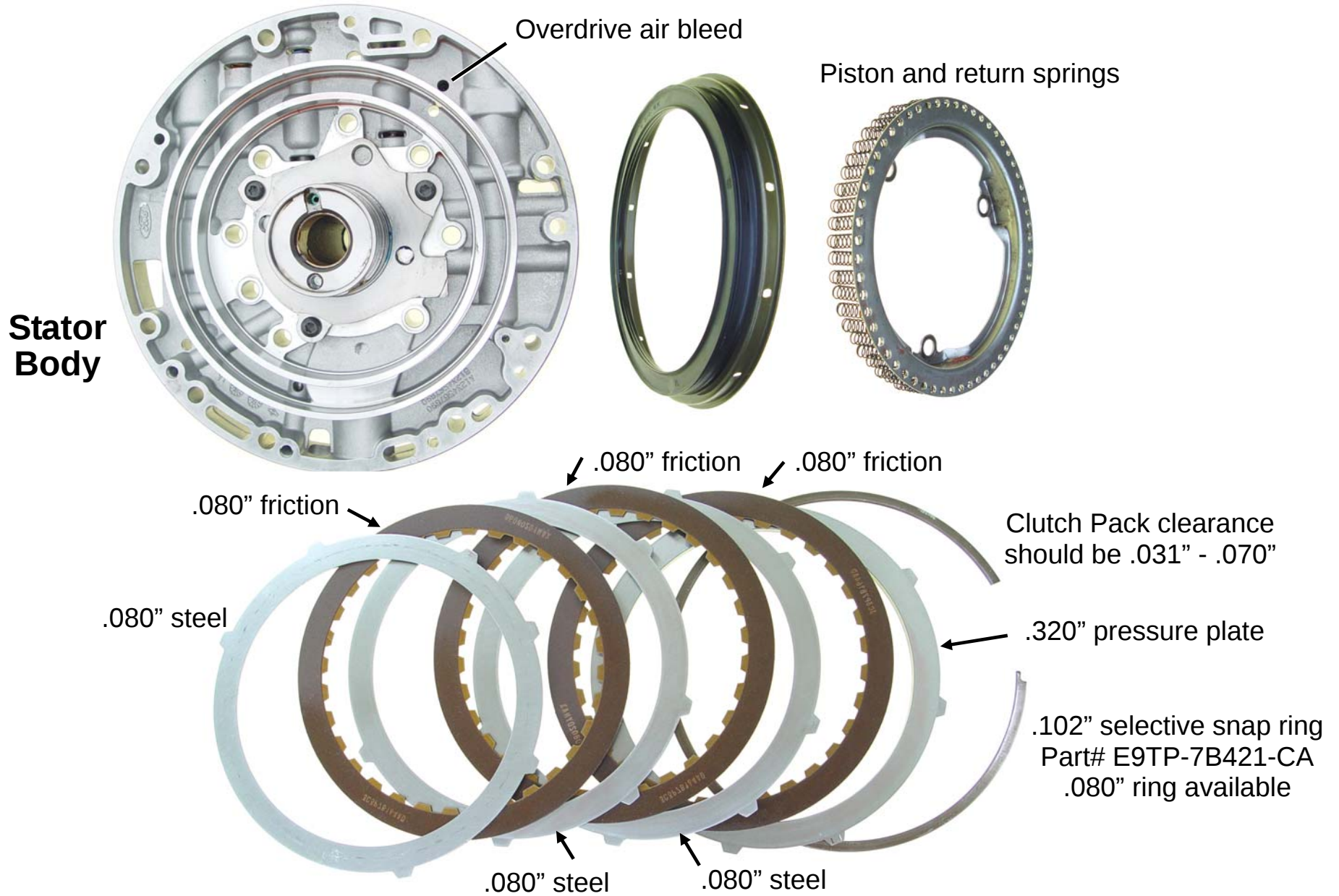
Internal Parts

Extension Housing



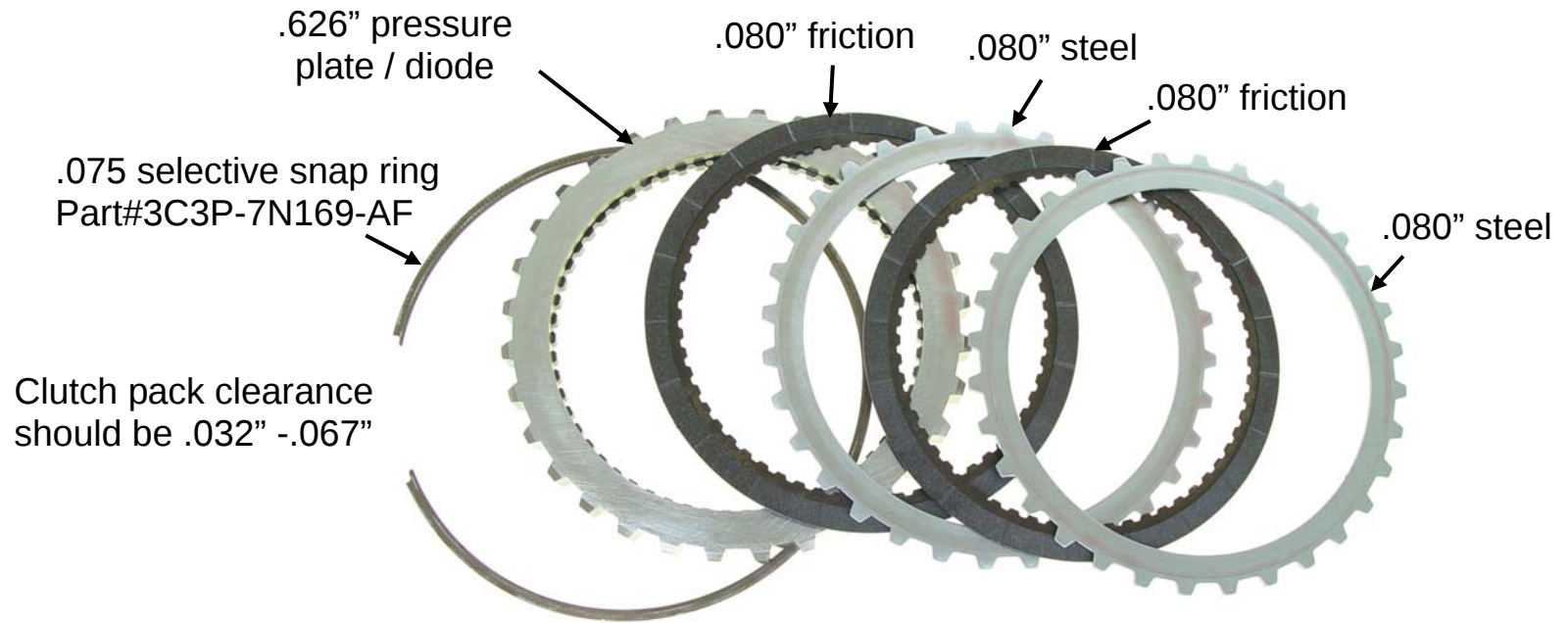
Clutch Packs

Overdrive clutch



Clutch Packs

Coast Clutch



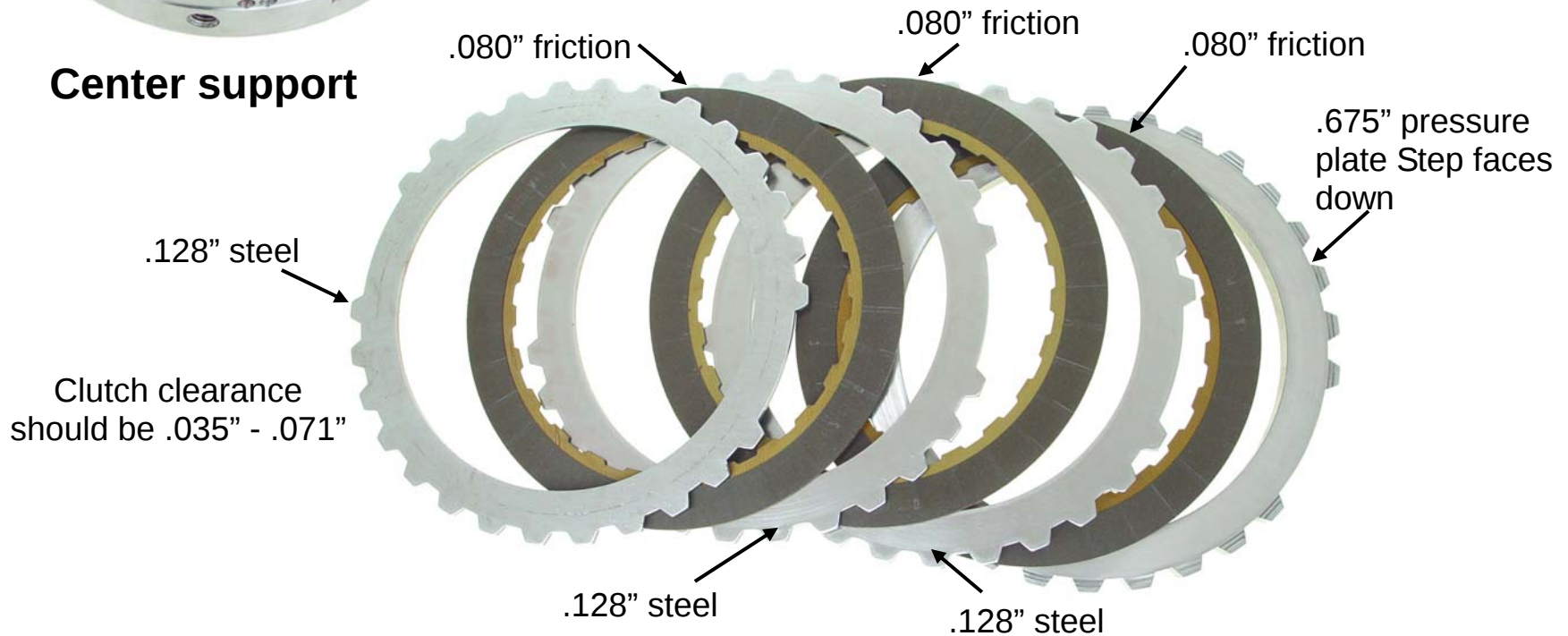
Clutch Packs

Intermediate clutch

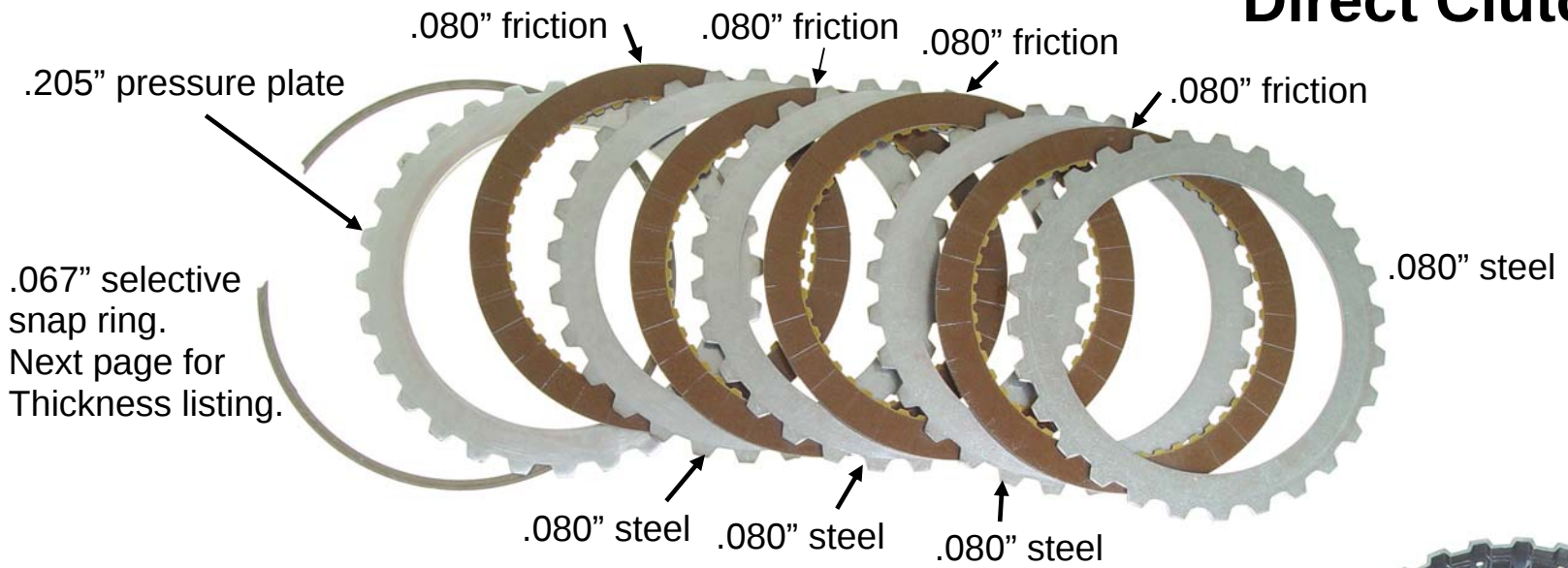
Clutch piston and return springs



Center support



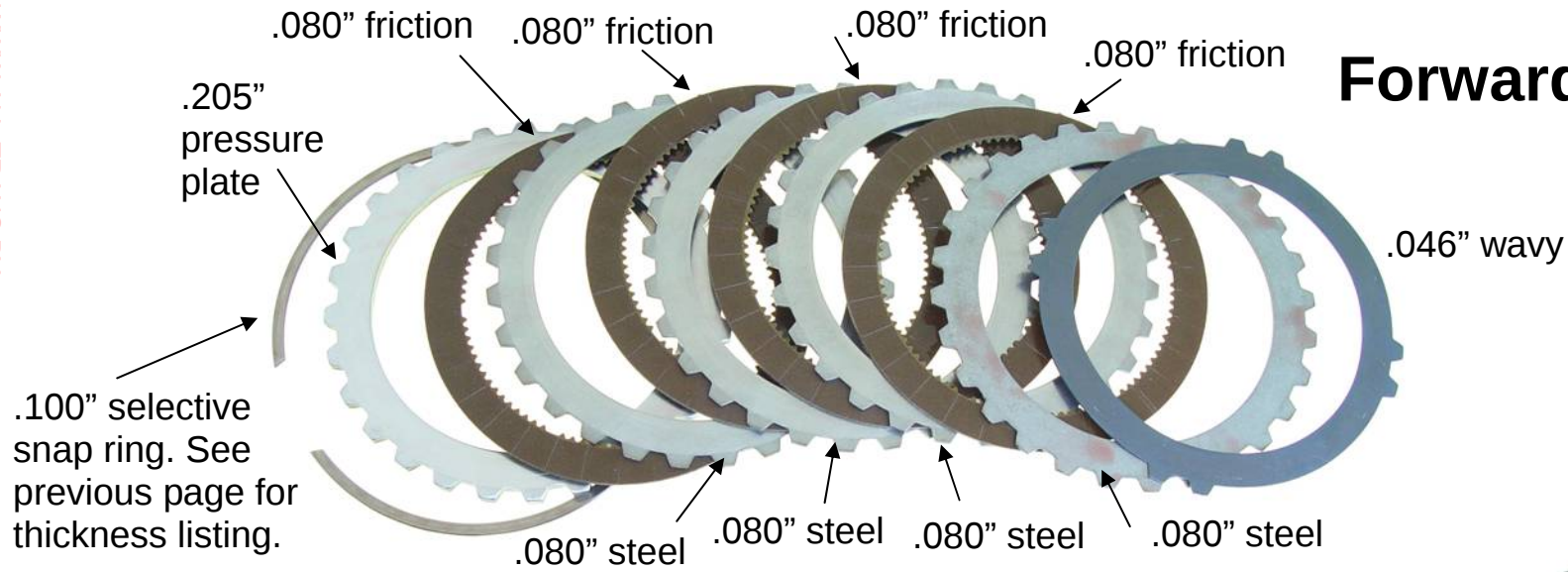
Direct Clutch



Clutch Packs

Clutch clearance
.050" to .068"





Forward clutch

Snap Ring



Balance piston



Release spring faces as shown.



Piston



Clutch Packs

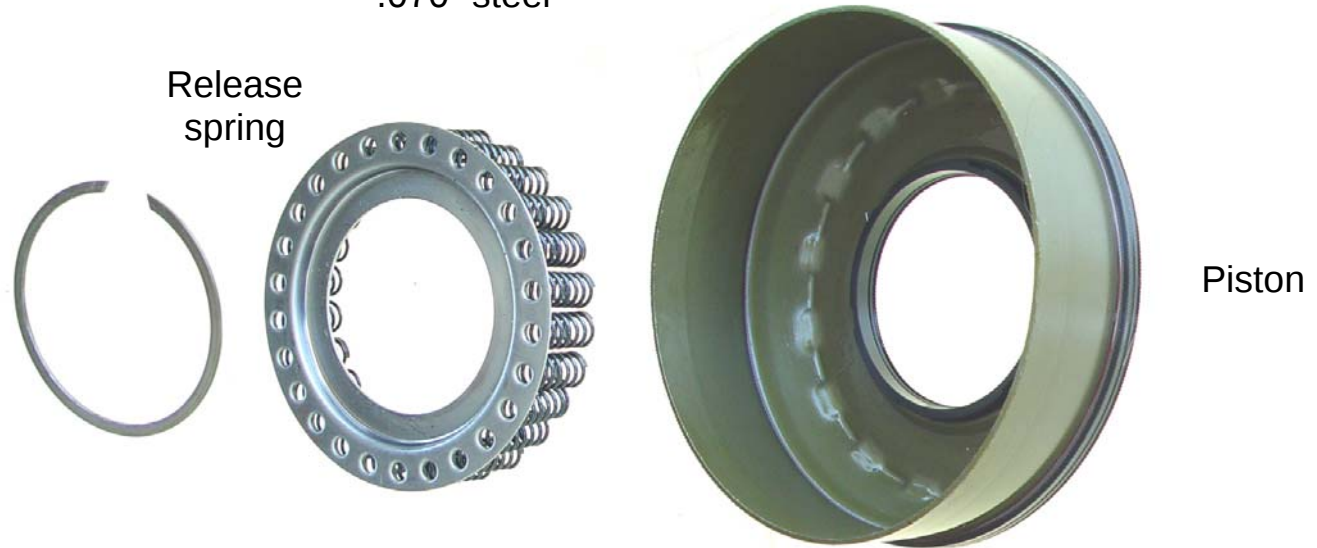
Clutch pack clearance should be .045" - .065"



Drum



Low / Reverse clutch



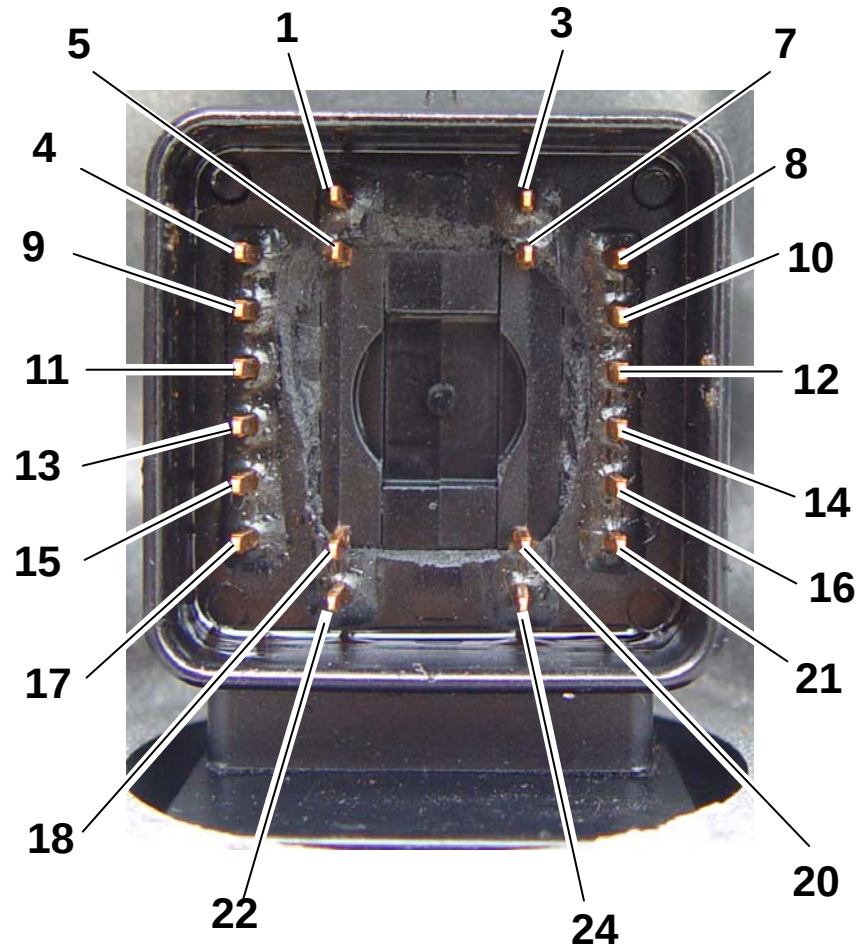
Clutch Packs**Direct clutch drum
selective snap rings**

Thickness	Part#
.056"	377437-S
.065"	377126-S
.074"	377127-S
.083"	377128-S
.092"	377444-S

**Forward clutch drum
selective snap rings**

Thickness	Part#
.075"	3C3P-7G367-KA
.087"	3C3P-7G367-JA
.099"	3C3P-7G367-HA
.111"	3C3P-7G367-GA
.123"	3C3P-7G367-FA

Case Connector and Electronics



Internal Harness Connector

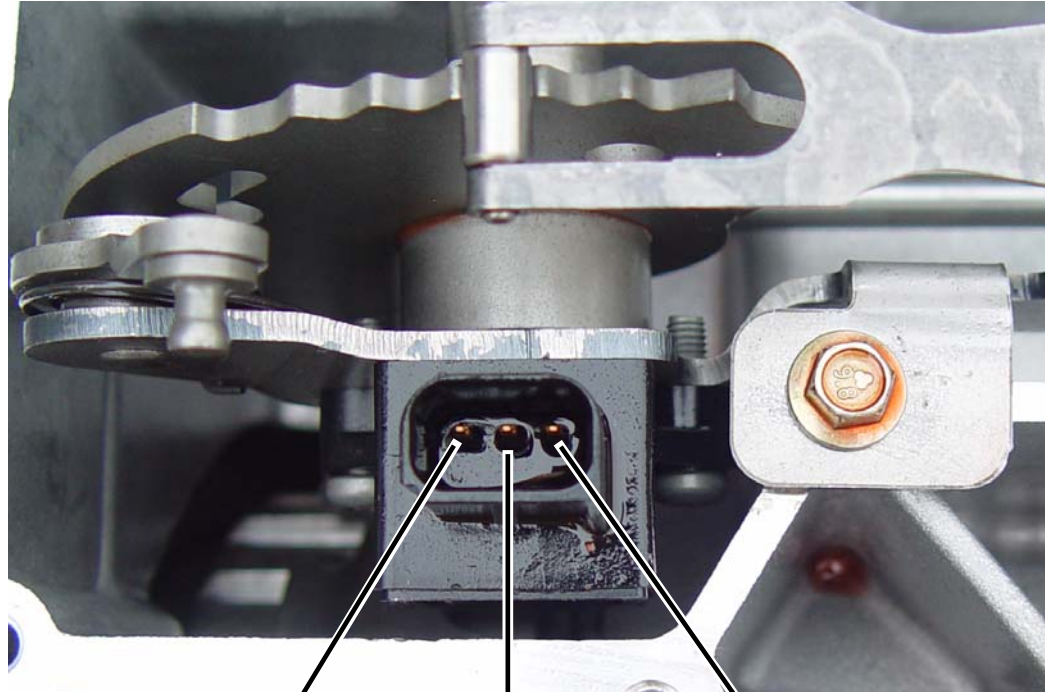
Note: Not all pins are present.

Pin chart and descriptions on the next page.

Internal Harness to PCM Connector

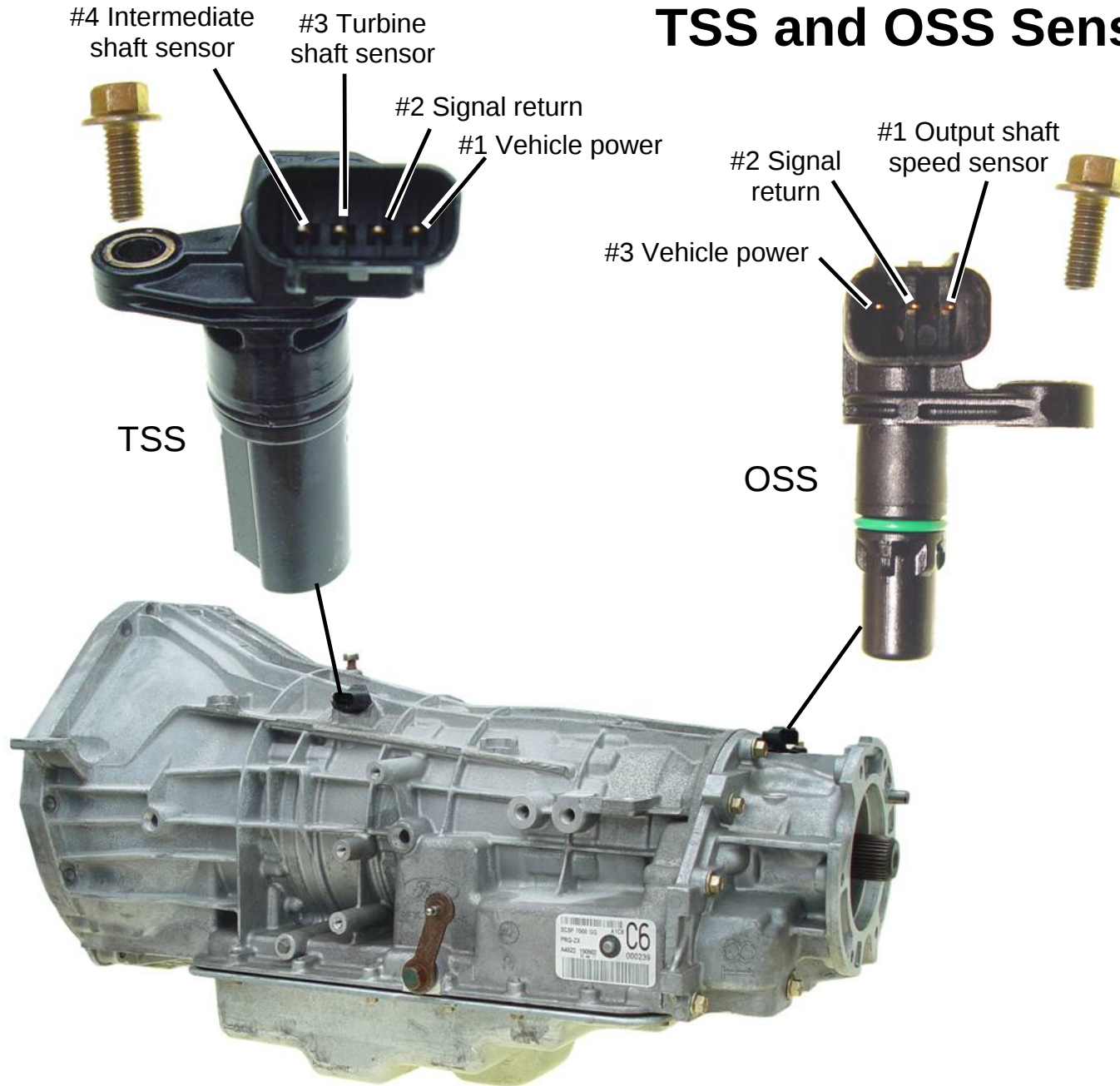
Harness Pin	Description	Pin Number at PCM
1	SSPC-E	13
2	None	
3	SSPC-B	10
4	SSPC-D	12
5	SSPC-C	11
6	None	
7	Sol. VPWR	7
8	TCC	14
9	PS-C	19
10	PC-A	17
11	PS-D	20
12	SSPC-A	9
13	PS-E	21
14	PS-A	17
15	TR-P signal	25
16	PS-B	18
17	TR-P ground	22
18	TFT signal	26
19	None	
20	Sol. VPWR	7
21	VPWR for TR-P only	1
22	Signal return	30
23	None	
24	Sol VPWR	7

TR-P Sensor



Pin Number	Circuit Function
1	Power
2	Sensor Ground
3	Ground

TSS and OSS Sensors



Clutch Application & Gear Ratios

Clutch Application Chart

Gear	Applied Units
1st	Forward, OD one way, Low & reverse
2nd	Forward, Overdrive
3rd	Forward, Intermediate
4th	Forward, Overdrive & intermediate
5th	Forward, Direct
6th	Forward, Direct & Overdrive
Reverse	Coast, Direct, Low & reverse

Gear Ratios

1st	3.09 to 1
2nd	2.2 to 1
3rd	1.538 to 1
4th	1.096 to 1
5th	1 to 1
6th	.712 to 1
Rev	2.88 to 1

Note: 4th is used only in cold shift strategy.

Technology and Ethics

The Technology IS the Ethic

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A service is ethical and deserving to the exact extent that your service corrects the causes of those complaints and failures; and does not include a whole bunch of parts that were not needed.

No more and no less, Gil

Copyright TransGo 2005

Abbreviations

A	Ampere(s)/Amp(s)
ABS	Antilock Brake System
A/C	Air Conditioning
AC	Alternating Current
ACC	Automatic Climate Control
ACL	Air Cleaner
ACR4	Air Conditioning Refrigerant, Recovery, Recycling, Recharging
A/D	Analog to Digital
ADL	Automatic Door Lock
A/F	Air/Fuel Ratio
AIR	Secondary Air Injection
ALC	Automatic Level Control
AM/FM	Amplitude Modulation/Frequency Modulation
Ant	Antenna
AP	Accelerator Pedal
API	American Protection Institute
APP	Accelerator Pedal Position
APT	Adjustable Part Throttle
ARS	Automatic Restraint System
A/T	Automatic Transmission/ Transaxle
ATC	Automatic Temperature Control
ATDC	After Top Dead Center
Auto	Automatic
avg	Average
AWD	All Wheel Drive
AWG	American Wire Gage
B+	Battery Positive Voltage
B	Battery Negative Voltage
BARO	Barometric Pressure sensor
batt	Battery
BBV	Brake Booster Vacuum
BCM	Body Control Module
BHP	Brake Horsepower
BLK	Black
BLU	Blue
BOO	Brake on / off switch
BP	Back Pressure
BPM	Brake Pressure Modulator
BPMV	Brake Pressure Modulator Valve
BPP	Brake Pedal Position
BRN	Brown
BTDC	Before Top Dead Center
BTSI	Brake Transmission Shift Interlock

Btu	British Thermal Units
C	Degrees Celsius
CAC	Charge Air Cooler
CAFÉ	Corporate Average Fuel Economy
Cal	Calibration
Cam	Camshaft
CARB	Calif Air Resources Board
cc	cubic centimeters
CCM	Central Control Module
CCOT	Cycling Clutch Orifice Tube
CCP	Climate Control Panel
CD	Compact Disc
CE	Commutator End
CEAB	Cold Engine Air Bleed
CEMF	Counter Electromotive Force
cfm	cubic feet per minute
cg	center of gravity
CID	Cubic Inch Displacement
CKP	Crankshaft Position sensor
CKT	Circuit
CL	Closed Loop
C/Ltr	Cigar Lighter
CMP	Camshaft Position sensor
CNG	Compressed Natural Gas
CO	Carbon Monoxide
CO2	Carbon Dioxide
Coax	Coaxial
COMM	Communication
Conn	Connector
CPA	Connector Position Assurance
CPP	Clutch Pedal Position
CPS	Central Power Supply
CPU	Central Processing Unit
CRT	Cathode Ray Tube
CRTC	Cathode Ray Tube Controller
CS	Charging System
CTP	Closed Throttle Position
cu ft	Cubic foot/feet
cu in	Cubic inch/inches
CV	Constant Velocity (Joint)
Cyl	Cylinder(s)
DAB	Delayed Accessory Bus
DB	Decibels on A-weighted Scale
DC	Direct Current
DCM	Door Control Module
DE	Drive End

DEC	Digital Electronic Controller
DERM	Diagnostic Energy Reserve Module
DI	Distributor Ignition
dia	diameter
DIC	Driver Information Center
Diff	Differential
DK	Dark
DLC	Data Link Connector
DMM	Digital Multimeter
DOHC	Dual Overhead Camshafts
DR	Driver
DRL	Daytime Running Lamps
DTC	Diagnostic Trouble Code
DTM	Diagnostic test mode
EBCM	Electronic Brake Control Module
EBTCM	Electronic Brake & Traction Control Module
EC	Electrical Center
ECC	Electronic Climate Control
ECI	Extended Compressor at Idle
ECL	Engine Coolant Level
ECM	Engine Control Module
ECS	Emission Control System
ECT	Engine Coolant Temperature
EEPROM	Electrically Erasable Programmable Read Only Memory
EEVIR	Evaporator Equalized Values in Receiver
EFE	Early Fuel Evaporation
EGR	Exhaust Gas Recirculation
EGRTVV	Exhaust Gas Recirculation Thermal Vacuum Valve
EI	Electronic Ignition
ELAP	Elapsed
ELC	Electronic Level Control
E/M	English/Metric
EMF	Electromotive Force
Eng	Engine
EOP	Engine Oil Pressure
EOT	Engine Oil Temperature
EPA	Environmental Protection Agency
EPR	Exhaust Pressure Regulator
EPROM	Erasable Programmable Read Only Memory
ESC	Electronic Suspension Control
ESD	Electrostatic Discharge
ETC	Electronic Throttle Control or Electronic Temperature Control

ETR Electronically Tuned Receiver
 EVAP Evaporative Emission
 EVO Electronic Variable Orifice
 Exh Exhaust
 F Degrees Fahrenheit
 FC Fan Control
 FDC Fuel Data Center
 FED Federal (all United States except Calif)
 FEDS Fuel Enable Data Stream
 FF Flexible Fuel
 FI Fuel Injection
 FMEM Failure management effects mode
 FMVSS Federal Motor Vehicle Safety Standards
 F/P Fuel Pump
 Ft foot/feet
 FT Fuel Trim
 F4WD Full Time Four Wheel Drive
 4WAL Four Wheel Antilock
 4WD Four Wheel Drive
 FW Flat Wire
 FWD Front Wheel Drive
 g gram(s) or Gravitational Acceleration
 GA Gage
 gal gallon(s)
 gas gasoline
 GCW Gross Combination Weight
 Gen Generator
 GL Gear Lubricant
 GM General Motors
 GM SPO General Motors Service Parts Operations
 gnd ground
 gpm gallons per minute
 GRN Green
 GRY Gray
 GVWR Gross Vehicle Weight Rating
 H Hydrogen
 H₂O Water
 Harn Harness
 HC Hydrocarbons
 H/CMPR High Compression
 HD Heavy Duty
 HDC Heavy Duty Cooling
 hex hexagon
 Hg Mercury
 Hi Alt High Altitude
 HO₂S Heated Oxygen Sensor
 hp horsepower
 HPL High Pressure Liquid
 HPS High Performance System

HPV High Pressure Vapor
 Htd Heated
 HTR Heater
 HUD Head-up Display
 HVAC Heater-Vent-Air Conditioning
 HVACM Heater-Vent-Air Conditioning Module
 HVM Heater Vent Module
 Hz Hertz
 IAC Idle Air Control
 IAT Intake Air Temperature
 IC Integrated Circuit or Ignition Control
 ICM Ignition Control Module
 ID Identification or Inside Diameter
 IDI Integrated Direct Ignition
 ign ignition
 ILC Idle Load Compensator
 in inch(es)
 INJ Injection
 inst instantaneous
 I/P Instrument Panel
 IPC Instrument Panel Cluster
 I/PEC Instrument Panel Electrical Center
 ISC Idle Speed Control
 ISO International Standards Organization
 ISS Input Speed Shaft
 KAM Keep Alive Memory
 KDD Keyboard Display Driver
 kg kilogram
 kHz kilohertz
 km kilometer
 km/h kilometers per hour
 km/l kilometers per liter
 kPA kilopascals
 KS Knock Sensor
 kV kilovolts
 L Liter
 L4 In-Line Four Cylinder Engine
 L6 In-Line Six Cylinder Engine
 lb pound
 lb ft pound feet (torque)
 lb in pound inch (torque)
 LCD Liquid Crystal Display
 LDCL Left Door Closed Locking
 LDCM Left Door Control Module
 LED Light Emitting Diode
 LF Left Front
 LH Left Hand
 Lm lumens
 LR Left Rear

lt left
 LT Light
 MAF Mass Air Flow
 Man Manual
 MAP Manifold Absolute Pressure
 MAT Manifold Absolute Temperature
 max maximum
 M/C Mixture Control
 MDP Manifold Differential Pressure
 MFI Multiport Fuel Injection
 mi mile(s)
 MIL Malfunction Indicator Lamp
 min minimum
 ml milliliter
 MLP Manual lever position sensor
 mm millimeter
 mpg miles per gallon
 mph miles per hour
 ms millisecond
 MST Manifold Surface Temperature
 M/T Manual Transmission/Transaxle
 MV Megavolt
 mV millivolt
 NAES North American Export Sales
 NC Normally Closed
 NEG Negative
 Neu Neutral
 NLGI National Lubricating Grease Institute
 N-m Newton-meter (torque)
 NO Normally Open
 NOx Nitrogen Oxides
 NPTC National Pipe Thread-Course
 NPTF National Pipe Thread-Fine
 NVRAM Non-volatile Random Access Memory
 O₂ Oxygen
 O₂S Oxygen Sensor
 OBD II On-board Diagnostics II
 OC Oxidation Converter (Catalytic)
 OD Outside Diameter
 ODO Odometer
 OE Original Equipment
 OEM Original Equipment Manufacturer
 OHC Overhead Camshaft
 OL Open Loop
 ORN Orange
 OSS Output Shaft Speed
 oz ounce(s)
 PAG Polyalkylene Glycol
 PASS Passenger

P/B Power Brakes
 PC Pressure Control
 PCB Printed Circuit Board
 PCM Powertrain Control Module
 PCS Pressure Control Solenoid
 PCV Positive Crankcase Ventilation
 PM Permanent Magnet (Generator)
 P/N Part Number
 PNK Pink
 PNP Park/Neutral Position
 PRNDL Park, Reverse, Neutral, Drive, Low
 POA Pilot Operated Absolute (Valve)
 POS Positive
 POT Potentiometer (Variable Resistor)
 PPL Purple
 ppm parts per million
 PROM Programmable Read Only Memory
 P/S Power Steering
 PSD Power Sliding Door
 PSP Power Steering Pressure
 psi pounds per square inch
 psia pounds per square inch absolute
 psig pounds per square inch gauge
 pt pint
 PWM Pulse Width Modulated
 qt quart(s)
 R-12 Refrigerant-12
 R-134a Refrigerant-134a
 RAM Random Access Memory (impermanent memory device; memory contents lost when power removed)
 RAP Retained Accessory Power
 RAV Remote Activation Verification
 RCDLR Remote Control Door Lock Receiver
 RDCM Right Door Control Module
 Ref Reference
 Rev Reverse
 RF Right Front or Radio Frequency
 RFA Remote Function Actuation
 RFI Radio Frequency Interference
 RH Right Hand
 Rly relay
 RM Relay module
 ROM Read Only Memory (permanent memory device)
 RPM Revolutions Per Minute—Engine Speed
 RPO Regular Production Option
 RR Right Rear
 rt right

RTD Real Time Damping
 RTV Room Temperature Vulcanizing (Sealer)
 RWAL Rear Wheel Antilock
 RWD Rear Wheel Drive
 s second(s)
 SAE Society of Automotive Engineers
 SC Supercharger
 SCB Supercharger Bypass
 SCM Seat Control Module
 SDM Sensing & Diagnostic Module
 SEO Special Equipment Option
 SFI Sequential Multipoint Fuel Injection
 SI System International (modern version of metric system)
 SIR Supplemental Inflatable Restraint
 SLA Short/Long Arm
 sol solenoid
 SO2 Sulfur Dioxide
 SP Splice Pack
 SPO Service Parts Operations
 sq ft square foot/feet
 sq in square inch(es)
 SRC Service Ride Control
 SRI Service Reminder Indicator
 ST Scan Tool
 S4WD Selectable Four Wheel Drive
 sw Switch
 syn synchronizer
 Tach Tachometer
 TB Throttle body
 TBI Throttle Body Fuel Injection
 TC Turbocharger
 TCC Torque Converter Clutch
 TCIL Transmission control indicator lamp
 TCS Transmission control switch
 TDC Top Dead Center
 TEMP Temperature
 Term Terminal
 TFP Transmission Fluid Pressure
 TFT Transmission Fluid Temperature
 TOC Transmission Oil Cooler
 TP Throttle Position
 TPA Terminal Positive Assurance
 TPM Tire Pressure Monitoring
 TR Transmission Range / Sensor
 TRANS Transmission/Transaxle
 TSS Turbine shaft sensor
 TVRS Television & Radio Suppression
 TVV Thermal Vacuum Valve

TWC Three-way Converter (Catalytic)
 TWC+OC Three-way + Oxidation Converter (Catalytic)
 TXV Thermal Expansion Valve
 UART Universal Asynchronous Receive & Transmit
 U/H Under Hood
 U/HEC Under Hood Electrical Center
 U-Joint Universal Joint
 UTD Universal Theft Deterrent
 UV Ultraviolet
 V Volt(s) or Voltage
 V6 V-type 6 Cylinder Engine
 V8 V-type 8 Cylinder Engine
 Vac Vacuum
 VAC Vehicle Access Code
 VATS Vehicle Anti-theft System
 VCM Vehicle Control Module
 VDOT Variable Displacement Orifice Tube
 VDV Vacuum Delay Valve
 vel velocity
 VES Variable Effort Steering
 VF Vacuum Fluorescent
 VIO Violet
 VIN Vehicle Identification Number
 VMV Vacuum Modulator Valve
 VR Voltage Regulator
 V ref Voltage reference
 VSS Vehicle Speed Sensor – also called OSS sensor
 W/ with
 W/B Wheel Base
 WHL Wheel
 WHT White
 W/o without
 WOT Wide Open Throttle
 W/P Water Pump
 W/S Windshield
 WSS Wheel Speed Sensor
 WU-OC Warm-up Oxidation Converter (Catalytic)
 WU-TWC Warm-up Three-way Converter (Catalytic)
 X-valve Expansion Valve
 yd yard(s)
 YEL Yellow

SAE OBDII Code Listing

P0100	Mass or Volume Air Flow Circuit Malfunction
P0101	Mass or Volume Air Flow Circuit Range/Performance Problem
P0102	Mass or Volume Air Flow Circuit Low Input
P0103	Mass or Volume Air Flow Circuit High Input
P0104	Mass or Volume Air Flow Circuit Intermittent
P0105	Manifold Absolute Pressure/Barometric Pressure Circuit Malfunction
P0106	Manifold Absolute Pressure/Barometric Pressure Circuit Range/Performance
P0107	Manifold Absolute Pressure/Barometric Pressure Circuit Low Input
P0108	Manifold Absolute Pressure/Barometric Pressure Circuit High Input
P0109	Manifold Absolute Pressure/Barometric Pressure Circuit Intermittent
P0109	Intake Air Temperature Circuit Malfunction
P0111	Intake Air Temperature Circuit Range/Performance Problem
P0112	Intake Air Temperature Circuit Low Input
P0113	Intake Air Temperature Circuit High Input
P0114	Intake Air Temperature Circuit Intermittent
P0115	Engine Coolant Temperature Circuit Malfunction
P0116	Engine Coolant Temperature Circuit Range/Performance Problem
P0117	Engine Coolant Temperature Circuit Low Input
P0118	Engine Coolant Temperature Circuit High Input
P0119	Engine Coolant Temperature Circuit Intermittent
P0120	Throttle/Petal Position Sensor/Switch A Circuit Malfunction
P0121	Throttle/Petal Position Sensor/Switch A Circuit Range/Performance Problem
P0122	Throttle/Petal Position Sensor/Switch A Circuit Low Input
P0123	Throttle/Petal Position Sensor/Switch A Circuit High Input
P0124	Throttle/Petal Position Sensor/Switch A Circuit Intermittent
P0125	Insufficient Coolant Temperature for Closed Loop Fuel Control
P0126	Insufficient Coolant Temperature for Stable Operation
P0130	O2 Sensor Circuit Malfunction (Bank 1 Sensor 1)
P0131	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 1)
P0132	O2 Sensor Circuit High Voltage (Bank 1 Sensor 1)
P0133	O2 Sensor Circuit Slow Response (Bank 1 Sensor 1)
P0134	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 1)
P0135	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 1)
P0136	O2 Sensor Circuit Malfunction (Bank 1 Sensor 2)
P0137	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 2)
P0138	O2 Sensor Circuit High Voltage (Bank 1 Sensor 2)
P0139	O2 Sensor Circuit Slow Response (Bank 1 Sensor 2)
P0140	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 2)
P0141	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 2)
P0142	O2 Sensor Circuit Malfunction (Bank 1 Sensor 3)
P0143	O2 Sensor Circuit Low Voltage (Bank 1 Sensor 3)
P0144	O2 Sensor Circuit High Voltage (Bank 1 Sensor 3)
P0145	O2 Sensor Circuit Slow Response (Bank 1 Sensor 3)
P0146	O2 Sensor Circuit No Activity Detected (Bank 1 Sensor 3)
P0147	O2 Sensor Heater Circuit Malfunction (Bank 1 Sensor 3)
P0150	O2 Sensor Circuit Malfunction (Bank 2 Sensor 1)
P0151	O2 Sensor Circuit Low Voltage (Bank 2 Sensor 1)
P0152	O2 Sensor Circuit High Voltage (Bank 2 Sensor 1)
P0153	O2 Sensor Circuit Slow Response (Bank 2 Sensor 1)
P0154	O2 Sensor Circuit No Activity Detected (Bank 2 Sensor 1)
P0155	O2 Sensor Heater Circuit Malfunction (Bank 2 Sensor 1)

P0156	02 Sensor Circuit Malfunction (Bank 2 Sensor 2)
P0157	02 Sensor Circuit Low Voltage (Bank 2 Sensor 2)
P0158	02 Sensor Circuit High Voltage (Bank 2 Sensor 2)
P0159	02 Sensor Circuit Slow Response (Bank 2 Sensor 2)
P0160	02 Sensor Circuit No Activity Detected (Bank 2 Sensor 2)
P0161	02 Sensor Heater Circuit Malfunction (Bank 2 Sensor 2)
P0162	02 Sensor Circuit Malfunction (Bank 2 Sensor 3)
P0163	02 Sensor Circuit Low Voltage (Bank 2 Sensor 3)
P0164	02 Sensor Circuit High Voltage (Bank 2 Sensor 3)
P0165	02 Sensor Circuit Slow Response (Bank 2 Sensor 3)
P0166	02 Sensor Circuit No Activity Detected (Bank 2 Sensor 3)
P0167	02 Sensor Heater Circuit Malfunction (Bank 2 Sensor 3)
P0170	Fuel Trim Malfunction (Bank 1)
P0171	System too Lean (Bank 1)
P0172	System too Rich (Bank 1)
P0173	Fuel Trim Malfunction (Bank 2)
P0174	System too Lean (Bank 2)
P0175	System too Rich (Bank 2)
P0176	Fuel Composition Sensor Circuit Malfunction
P0177	Fuel Composition Sensor Circuit Range/Performance
P0178	Fuel Composition Sensor Circuit Low Input
P0179	Fuel Composition Sensor Circuit High Input
P0180	Fuel Temperature Sensor A Circuit Malfunction
P0181	Fuel Temperature Sensor A Circuit Range/Performance
P0182	Fuel Temperature Sensor A Circuit Low Input
P0183	Fuel Temperature Sensor A Circuit High Input
P0184	Fuel Temperature Sensor A Circuit Intermittent
P0185	Fuel Temperature Sensor B Circuit Malfunction
P0186	Fuel Temperature Sensor B Circuit Range/Performance
P0187	Fuel Temperature Sensor B Circuit Low Input
P0188	Fuel Temperature Sensor B Circuit High Input
P0189	Fuel Temperature Sensor B Circuit Intermittent
P0190	Fuel Rail Pressure Sensor Circuit Malfunction
P0191	Fuel Rail Pressure Sensor Circuit Range/Performance
P0192	Fuel Rail Pressure Sensor Circuit Low Input
P0193	Fuel Rail Pressure Sensor Circuit High Input
P0194	Fuel Rail Pressure Sensor Circuit Intermittent
P0195	Engine Oil Temperature Sensor Malfunction
P0196	Engine Oil Temperature Sensor Range/Performance
P0197	Engine Oil Temperature Sensor Low
P0198	Engine Oil Temperature Sensor High
P0199	Engine Oil Temperature Sensor Intermittent
P0200	Injector Circuit Malfunction
P0201	Injector Circuit Malfunction - Cylinder 1
P0202	Injector Circuit Malfunction - Cylinder 2
P0203	Injector Circuit Malfunction - Cylinder 3
P0204	Injector Circuit Malfunction - Cylinder 4
P0205	Injector Circuit Malfunction - Cylinder 5
P0206	Injector Circuit Malfunction - Cylinder 6
P0207	Injector Circuit Malfunction - Cylinder 7
P0208	Injector Circuit Malfunction - Cylinder 8
P0209	Injector Circuit Malfunction - Cylinder 9
P0210	Injector Circuit Malfunction - Cylinder 10

P0211	Injector Circuit Malfunction - Cylinder 11
P0212	Injector Circuit Malfunction - Cylinder 12
P0213	Cold Start Injector 1 Malfunction
P0214	Cold Start Injector 2 Malfunction
P0215	Engine Shutoff Solenoid Malfunction
P0216	Injection Timing Control Circuit Malfunction
P0217	Engine Overtemp Condition
P0218	Transmission Over Temperature Condition
P0219	Engine Overspeed Condition
P0220	Throttle/Petal Position Sensor/Switch B Circuit Malfunction
P0221	Throttle/Petal Position Sensor/Switch B Circuit Range/Performance Problem
P0222	Throttle/Petal Position Sensor/Switch B Circuit Low Input
P0223	Throttle/Petal Position Sensor/Switch B Circuit High Input
P0224	Throttle/Petal Position Sensor/Switch B Circuit Intermittent
P0225	Throttle/Petal Position Sensor/Switch C Circuit Malfunction
P0226	Throttle/Petal Position Sensor/Switch C Circuit Range/Performance Problem
P0227	Throttle/Petal Position Sensor/Switch C Circuit Low Input
P0228	Throttle/Petal Position Sensor/Switch C Circuit High Input
P0229	Throttle/Petal Position Sensor/Switch C Circuit Intermittent
P0230	Fuel Pump Primary Circuit Malfunction
P0231	Fuel Pump Secondary Circuit Low
P0232	Fuel Pump Secondary Circuit High
P0233	Fuel Pump Secondary Circuit Intermittent
P0234	Engine Overboost Condition
P0235	Turbocharger Boost Sensor A Circuit Malfunction
P0236	Turbocharger Boost Sensor A Circuit Range/Performance
P0237	Turbocharger Boost Sensor A Circuit Low
P0238	Turbocharger Boost Sensor A Circuit High
P0239	Turbocharger Boost Sensor B Malfunction
P0240	Turbocharger Boost Sensor B Circuit Range/Performance
P0241	Turbocharger Boost Sensor B Circuit Low
P0242	Turbocharger Boost Sensor B Circuit High
P0243	Turbocharger Wastegate Solenoid A Malfunction
P0244	Turbocharger Wastegate Solenoid A Range/Performance
P0245	Turbocharger Wastegate Solenoid A Low
P0246	Turbocharger Wastegate Solenoid A High
P0247	Turbocharger Wastegate Solenoid B Malfunction
P0248	Turbocharger Wastegate Solenoid B Range/Performance
P0249	Turbocharger Wastegate Solenoid B Low
P0250	Turbocharger Wastegate Solenoid B High
P0251	Injection Pump Fuel Metering Control "A" Malfunction (Cam/Rotor/Injector)
P0252	Injection Pump Fuel Metering Control "A" Range/Performance (Cam/Rotor/Injector)
P0253	Injection Pump Fuel Metering Control "A" Low (Cam/Rotor/Injector)
P0254	Injection Pump Fuel Metering Control "A" High (Cam/Rotor/Injector)
P0255	Injection Pump Fuel Metering Control "A" Intermittent (Cam/Rotor/Injector)
P0256	Injection Pump Fuel Metering Control "B" Malfunction (Cam/Rotor/Injector)
P0257	Injection Pump Fuel Metering Control "B" Range/Performance (Cam/Rotor/Injector)
P0258	Injection Pump Fuel Metering Control "B" Low (Cam/Rotor/Injector)
P0259	Injection Pump Fuel Metering Control "B" High (Cam/Rotor/Injector)
P0260	Injection Pump Fuel Metering Control "B" Intermittent (Cam/Rotor/Injector)
P0261	Cylinder 1 Injector Circuit Low
P0262	Cylinder 1 Injector Circuit High
P0263	Cylinder 1 Contribution/Balance Fault

P0264	Cylinder 2 Injector Circuit Low
P0265	Cylinder 2 Injector Circuit High
P0266	Cylinder 2 Contribution/Balance Fault
P0267	Cylinder 3 Injector Circuit Low
P0268	Cylinder 3 Injector Circuit High
P0269	Cylinder 3 Contribution/Balance Fault
P0270	Cylinder 4 Injector Circuit Low
P0271	Cylinder 4 Injector Circuit High
P0272	Cylinder 4 Contribution/Balance Fault
P0273	Cylinder 5 Injector Circuit Low
P0274	Cylinder 5 Injector Circuit High
P0275	Cylinder 5 Contribution/Balance Fault
P0276	Cylinder 6 Injector Circuit Low
P0277	Cylinder 6 Injector Circuit High
P0278	Cylinder 6 Contribution/Balance Fault
P0279	Cylinder 7 Injector Circuit Low
P0280	Cylinder 7 Injector Circuit High
P0281	Cylinder 7 Contribution/Balance Fault
P0282	Cylinder 8 Injector Circuit Low
P0283	Cylinder 8 Injector Circuit High
P0284	Cylinder 8 Contribution/Balance Fault
P0285	Cylinder 9 Injector Circuit Low
P0286	Cylinder 9 Injector Circuit High
P0287	Cylinder 9 Contribution/Balance Fault
P0288	Cylinder 10 Injector Circuit Low
P0289	Cylinder 10 Injector Circuit High
P0290	Cylinder 10 Contribution/Balance Fault
P0291	Cylinder 11 Injector Circuit Low
P0292	Cylinder 11 Injector Circuit High
P0293	Cylinder 11 Contribution/Balance Fault
P0294	Cylinder 12 Injector Circuit Low
P0295	Cylinder 12 Injector Circuit High
P0296	Cylinder 12 Contribution/Range Fault
P0300	Random/Multiple Cylinder Misfire Detected
P0301	Cylinder 1 Misfire Detected
P0302	Cylinder 2 Misfire Detected
P0303	Cylinder 3 Misfire Detected
P0304	Cylinder 4 Misfire Detected
P0305	Cylinder 5 Misfire Detected
P0306	Cylinder 6 Misfire Detected
P0307	Cylinder 7 Misfire Detected
P0308	Cylinder 8 Misfire Detected
P0309	Cylinder 9 Misfire Detected
P0311	Cylinder 11 Misfire Detected
P0312	Cylinder 12 Misfire Detected
P0320	Ignition/Distributor Engine Speed Input Circuit Malfunction
P0321	Ignition/Distributor Engine Speed Input Circuit Range/Performance
P0322	Ignition/Distributor Engine Speed Input Circuit No Signal
P0323	Ignition/Distributor Engine Speed Input Circuit Intermittent
P0325	Knock Sensor 1 Circuit Malfunction (Bank 1 or Single Sensor)
P0326	Knock Sensor 1 Circuit Range/Performance (Bank 1 or Single Sensor)
P0327	Knock Sensor 1 Circuit Low Input (Bank 1 or Single Sensor)
P0328	Knock Sensor 1 Circuit High Input (Bank 1 or Single Sensor)

P0329 Knock Sensor 1 Circuit Intermittent (Bank 1 or Single Sensor)
 P0330 Knock Sensor 2 Circuit Malfunction (Bank 2)
 P0331 Knock Sensor 2 Circuit Range/Performance (Bank 2)
 P0332 Knock Sensor 2 Circuit Low Input (Bank 2)
 P0333 Knock Sensor 2 Circuit High Input (Bank 2)
 P0334 Knock Sensor 2 Circuit Intermittent (Bank 2)
 P0335 Crankshaft Position Sensor A Circuit Malfunction
 P0336 Crankshaft Position Sensor A Circuit Range/Performance
 P0337 Crankshaft Position Sensor A Circuit Low Input
 P0338 Crankshaft Position Sensor A Circuit High Input
 P0339 Crankshaft Position Sensor A Circuit Intermittent
 P0340 Camshaft Position Sensor Circuit Malfunction
 P0341 Camshaft Position Sensor Circuit Range/Performance
 P0342 Camshaft Position Sensor Circuit Low Input
 P0343 Camshaft Position Sensor Circuit High Input
 P0344 Camshaft Position Sensor Circuit Intermittent
 P0350 Ignition Coil Primary/Secondary Circuit Malfunction
 P0351 Ignition Coil A Primary/Secondary Circuit Malfunction
 P0352 Ignition Coil B Primary/Secondary Circuit Malfunction
 P0353 Ignition Coil C Primary/Secondary Circuit Malfunction
 P0354 Ignition Coil D Primary/Secondary Circuit Malfunction
 P0355 Ignition Coil E Primary/Secondary Circuit Malfunction
 P0356 Ignition Coil F Primary/Secondary Circuit Malfunction
 P0357 Ignition Coil G Primary/Secondary Circuit Malfunction
 P0358 Ignition Coil H Primary/Secondary Circuit Malfunction
 P0359 Ignition Coil I Primary/Secondary Circuit Malfunction
 P0360 Ignition Coil J Primary/Secondary Circuit Malfunction
 P0361 Ignition Coil K Primary/Secondary Circuit Malfunction
 P0362 Ignition Coil L Primary/Secondary Circuit Malfunction
 P0370 Timing Reference High Resolution Signal A Malfunction
 P0371 Timing Reference High Resolution Signal A Too Many Pulses
 P0372 Timing Reference High Resolution Signal A Too Few Pulses
 P0373 Timing Reference High Resolution Signal A Intermittent/Erratic Pulses
 P0374 Timing Reference High Resolution Signal A No Pulses
 P0375 Timing Reference High Resolution Signal B Malfunction
 P0376 Timing Reference High Resolution Signal B Too Many Pulses
 P0377 Timing Reference High Resolution Signal B Too Few Pulses
 P0378 Timing Reference High Resolution Signal B Intermittent/Erratic Pulses
 P0379 Timing Reference High Resolution Signal B No Pulses
 P0380 Glow Plug/Heater Circuit "A" Malfunction
 P0381 Glow Plug/Heater Indicator Circuit Malfunction
 P0382 Exhaust Gas Recirculation Flow Malfunction
 P0385 Crankshaft Position Sensor B Circuit Malfunction
 P0386 Crankshaft Position Sensor B Circuit Range/Performance
 P0387 Crankshaft Position Sensor B Circuit Low Input
 P0388 Crankshaft Position Sensor B Circuit High Input
 P0389 Crankshaft Position Sensor B Circuit Intermittent
 P0400 Exhaust Gas Recirculation Flow Malfunction
 P0401 Exhaust Gas Recirculation Flow Insufficient Detected
 P0402 Exhaust Gas Recirculation Flow Excessive Detected
 P0403 Exhaust Gas Recirculation Circuit Malfunction
 P0404 Exhaust Gas Recirculation Circuit Range/Performance
 P0405 Exhaust Gas Recirculation Sensor A Circuit Low

P0406	Exhaust Gas Recirculation Sensor A Circuit High
P0407	Exhaust Gas Recirculation Sensor B Circuit Low
P0408	Exhaust Gas Recirculation Sensor B Circuit High
P0410	Secondary Air Injection System Malfunction
P0411	Secondary Air Injection System Incorrect Flow Detected
P0412	Secondary Air Injection System Switching Valve A Circuit Malfunction
P0413	Secondary Air Injection System Switching Valve A Circuit Open
P0414	Secondary Air Injection System Switching Valve A Circuit Shorted
P0415	Secondary Air Injection System Switching Valve B Circuit Malfunction
P0416	Secondary Air Injection System Switching Valve B Circuit Open
P0417	Secondary Air Injection System Switching Valve B Circuit Shorted
P0418	Secondary Air Injection System Relay "A" Circuit Malfunction
P0419	Secondary Air Injection System Relay "B" Circuit Malfunction
P0420	Catalyst System Efficiency Below Threshold (Bank 1)
P0421	Warm Up Catalyst Efficiency Below Threshold (Bank 1)
P0422	Main Catalyst Efficiency Below Threshold (Bank 1)
P0423	Heated Catalyst Efficiency Below Threshold (Bank 1)
P0424	Heated Catalyst Temperature Below Threshold (Bank 1)
P0430	Catalyst System Efficiency Below Threshold (Bank 2)
P0431	Warm Up Catalyst Efficiency Below Threshold (Bank 2)
P0432	Main Catalyst Efficiency Below Threshold (Bank 2)
P0433	Heated Catalyst Efficiency Below Threshold (Bank 2)
P0434	Heated Catalyst Temperature Below Threshold (Bank 2)
P0440	Evaporative Emission Control System Malfunction
P0441	Evaporative Emission Control System Incorrect Purge Flow
P0442	Evaporative Emission Control System Leak Detected (small leak)
P0443	Evaporative Emission Control System Purge Control Valve Circuit Malfunction
P0444	Evaporative Emission Control System Purge Control Valve Circuit Open
P0445	Evaporative Emission Control System Purge Control Valve Circuit Shorted
P0446	Evaporative Emission Control System Vent Control Circuit Malfunction
P0447	Evaporative Emission Control System Vent Control Circuit Open
P0448	Evaporative Emission Control System Vent Control Circuit Shorted
P0449	Evaporative Emission Control System Vent Valve/Solenoid Circuit Malfunction
P0450	Evaporative Emission Control System Pressure Sensor Malfunction
P0451	Evaporative Emission Control System Pressure Sensor Range/Performance
P0452	Evaporative Emission Control System Pressure Sensor Low Input
P0453	Evaporative Emission Control System Pressure Sensor High Input
P0454	Evaporative Emission Control System Pressure Sensor Intermittent
P0455	Evaporative Emission Control System Leak Detected (gross leak)
P0460	Fuel Level Sensor Circuit Malfunction
P0461	Fuel Level Sensor Circuit Range/Performance
P0462	Fuel Level Sensor Circuit Low Input
P0463	Fuel Level Sensor Circuit High Input
P0464	Fuel Level Sensor Circuit Intermittent
P0465	Purge Flow Sensor Circuit Malfunction
P0466	Purge Flow Sensor Circuit Range/Performance
P0467	Purge Flow Sensor Circuit Low Input
P0468	Purge Flow Sensor Circuit High Input
P0469	Purge Flow Sensor Circuit Intermittent
P0470	Exhaust Pressure Sensor Malfunction
P0471	Exhaust Pressure Sensor Range/Performance
P0472	Exhaust Pressure Sensor Low
P0473	Exhaust Pressure Sensor High

P0474	Exhaust Pressure Sensor Intermittent
P0475	Exhaust Pressure Control Valve Malfunction
P0476	Exhaust Pressure Control Valve Range/Performance
P0477	Exhaust Pressure Control Valve Low
P0478	Exhaust Pressure Control Valve High
P0479	Exhaust Pressure Control Valve Intermittent
P0480	Cooling Fan 1 Control Circuit Malfunction
P0481	Cooling Fan 2 Control Circuit Malfunction
P0482	Cooling Fan 3 Control Circuit Malfunction
P0483	Cooling Fan Rationality Check Malfunction
P0484	Cooling Fan Circuit Over Current
P0485	Cooling Fan Power/Ground Circuit Malfunction
P0500	Vehicle Speed Sensor Malfunction
P0501	Vehicle Speed Sensor Range/Performance
P0502	Vehicle Speed Sensor Low Input
P0503	Vehicle Speed Sensor Intermittent/Erratic/High
P0505	Idle Control System Malfunction
P0506	Idle Control System RPM Lower Than Expected
P0507	Idle Control System RPM Higher Than Expected
P0510	Closed Throttle Position Switch Malfunction
P0520	Engine Oil Pressure Sensor/Switch Circuit Malfunction
P0521	Engine Oil Pressure Sensor/Switch Circuit Range/Performance
P0522	Engine Oil Pressure Sensor/Switch Circuit Low Voltage
P0523	Engine Oil Pressure Sensor/Switch Circuit High Voltage
P0530	A/C Refrigerant Pressure Sensor Circuit Malfunction
P0531	A/C Refrigerant Pressure Sensor Circuit Range/Performance
P0532	A/C Refrigerant Pressure Sensor Circuit Low Input
P0533	A/C Refrigerant Pressure Sensor Circuit High Input
P0534	Air Conditioner Refrigerant Charge Loss
P0550	Power Steering Pressure Sensor Circuit Malfunction
P0551	Power Steering Pressure Sensor Circuit Range/Performance
P0552	Power Steering Pressure Sensor Circuit Low Input
P0553	Power Steering Pressure Sensor Circuit High Input
P0554	Power Steering Pressure Sensor Circuit Intermittent
P0560	System Voltage Malfunction
P0561	System Voltage Unstable
P0562	System Voltage Low
P0563	System Voltage High
P0565	Cruise Control On Signal Malfunction
P0566	Cruise Control Off Signal Malfunction
P0567	Cruise Control Resume Signal Malfunction
P0568	Cruise Control Set Signal Malfunction
P0569	Cruise Control Coast Signal Malfunction
P0570	Cruise Control Accel Signal Malfunction
P0571	Cruise Control/Brake Switch A Circuit Malfunction
P0572	Cruise Control/Brake Switch A Circuit Low
P0573	Cruise Control/Brake Switch A Circuit High
P0574	Cruise Control Related Malfunction
P0575	Cruise Control Related Malfunction
P0576	Cruise Control Related Malfunction
P0576	Cruise Control Related Malfunction
P0578	Cruise Control Related Malfunction
P0579	Cruise Control Related Malfunction

P0580	Cruise Control Related Malfunction
P0600	Serial Communication Link Malfunction
P0601	Internal Control Module Memory Check Sum Error
P0602	Control Module Programming Error
P0603	Internal Control Module Keep Alive Memory (KAM) Error
P0604	Internal Control Module Random Access Memory (RAM) Error
P0605	Internal Control Module Read Only Memory (ROM) Error
P0606	PCM Processor Fault
P0608	Control Module VSS Output "A" Malfunction
P0609	Control Module VSS Output "B" Malfunction
P0620	Generator Control Circuit Malfunction
P0621	Generator Lamp "L" Control Circuit Malfunction
P0622	Generator Field "F" Control Circuit Malfunction
P0650	Malfunction Indicator Lamp (MIL) Control Circuit Malfunction
P0654	Engine RPM Output Circuit Malfunction
P0655	Engine Hot Lamp Output Control Circuit Malfunction
P0656	Fuel Level Output Circuit Malfunction
P0700	Transmission Control System Malfunction
P0701	Transmission Control System Range/Performance
P0702	Transmission Control System Electrical
P0703	Torque Converter/Brake Switch B Circuit Malfunction
P0704	Clutch Switch Input Circuit Malfunction
P0705	Transmission Range Sensor Circuit malfunction (PRNDL Input)
P0706	Transmission Range Sensor Circuit Range/Performance
P0707	Transmission Range Sensor Circuit Low Input
P0708	Transmission Range Sensor Circuit High Input
P0709	Transmission Range Sensor Circuit Intermittent
P0710	Transmission Fluid Temperature Sensor Circuit Malfunction
P0711	Transmission Fluid Temperature Sensor Circuit Range/Performance
P0712	Transmission Fluid Temperature Sensor Circuit Low Input
P0713	Transmission Fluid Temperature Sensor Circuit High Input
P0714	Transmission Fluid Temperature Sensor Circuit Intermittent
P0715	Input/Turbine Speed Sensor Circuit Malfunction
P0716	Input/Turbine Speed Sensor Circuit Range/Performance
P0717	Input/Turbine Speed Sensor Circuit No Signal
P0718	Input/Turbine Speed Sensor Circuit Intermittent
P0719	Torque Converter/Brake Switch B Circuit Low
P0720	Output Speed Sensor Circuit Malfunction
P0721	Output Speed Sensor Range/Performance
P0722	Output Speed Sensor No Signal
P0723	Output Speed Sensor Intermittent
P0724	Torque Converter/Brake Switch B Circuit High
P0725	Engine Speed input Circuit Malfunction
P0726	Engine Speed Input Circuit Range/Performance
P0727	Engine Speed Input Circuit No Signal
P0728	Engine Speed Input Circuit Intermittent
P0730	Incorrect Gear Ratio
P0731	Gear 1 Incorrect ratio
P0732	Gear 2 Incorrect ratio
P0733	Gear 3 Incorrect ratio
P0734	Gear 4 Incorrect ratio
P0735	Gear 5 Incorrect ratio
P0736	Reverse incorrect gear ratio

P0740	Torque Converter Clutch Circuit Malfunction
P0741	Torque Converter Clutch Circuit Performance or Stuck Off
P0742	Torque Converter Clutch Circuit Stuck On
P0743	Torque Converter Clutch Circuit Electrical
P0744	Torque Converter Clutch Circuit Intermittent
P0745	Pressure Control Solenoid Malfunction
P0746	Pressure Control Solenoid Performance or Stuck Off
P0747	Pressure Control Solenoid Stuck On
P0748	Pressure Control Solenoid Electrical
P0749	Pressure Control Solenoid Intermittent
P0750	Shift Solenoid A Malfunction
P0751	Shift Solenoid A Performance or Stuck Off
P0752	Shift Solenoid A Stuck On
P0753	Shift Solenoid A Electrical
P0754	Shift Solenoid A Intermittent
P0755	Shift Solenoid B Malfunction
P0756	Shift Solenoid B Performance or Stuck Off
P0757	Shift Solenoid B Stuck On
P0758	Shift Solenoid B Electrical
P0759	Shift Solenoid B Intermittent
P0760	Shift Solenoid C Malfunction
P0761	Shift Solenoid C Performance or Stuck Off
P0762	Shift Solenoid C Stuck On
P0763	Shift Solenoid C Electrical
P0764	Shift Solenoid C Intermittent
P0765	Shift Solenoid D Malfunction
P0766	Shift Solenoid D Performance or Stuck Off
P0767	Shift Solenoid D Stuck On
P0768	Shift Solenoid D Electrical
P0769	Shift Solenoid D Intermittent
P0770	Shift Solenoid E Malfunction
P0771	Shift Solenoid E Performance or Stuck Off
P0772	Shift Solenoid E Stuck On
P0773	Shift Solenoid E Electrical
P0774	Shift Solenoid E Intermittent
P0780	Shift Malfunction
P0781	1-2 Shift Malfunction
P0782	2-3 Shift Malfunction
P0783	3-4 Shift Malfunction
P0784	4-5 Shift Malfunction
P0785	Shift/Timing Solenoid Malfunction
P0786	Shift/Timing Solenoid Range/Performance
P0787	Shift/Timing Solenoid Low
P0788	Shift/Timing Solenoid High
P0789	Shift/Timing Solenoid Intermittent
P0790	Normal/Performance Switch Circuit Malfunction
P0801	Reverse Inhibit Control Circuit Malfunction
P0803	1-4 Upshift (Skip Shift) Solenoid Control Circuit Malfunction
P0804	1-4 Upshift (Skip Shift) Lamp Control Circuit Malfunction

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B1231	Longitudinal acceleration threshold exceeded	C1165	Wheel speed RR input circuit failure
B1318	Battery voltage low	C1175	Wheel speed LR input circuit failure
B1342	ECU internal failure	C1230	Rear wheel speed sensor input circuit fault
B1342B	ECU is defective	C1233	LF wheel speed signal comparison fault
B1485	Stop lamp switch input circuit battery short	C1234	RF wheel speed signal comparison fault
B1676	Battery voltage out of range	C1235	Speed wheel RR input signal missing
B1869	Lamp air bag warning indicator circuit open	C1236	Speed wheel RR input signal missing
B1870	Lamp air bag warning indicator circuit short to battery	C1237	Rear wheel speed signal comparison fault
B1871	Passenger air bag disable module fault	C1414	Incorrect module design level
B1877	Seatbelt driver pretensioner circuit open	P1000	OBDII drive cycle not complete
B1878	Seatbelt driver pretensioner circuit short to battery	P1001	KOER not able to complete, KOER aborted
B1879	Seatbelt driver pretensioner circuit short to ground	P1039	Vehicle speed signal missing or improper
B1881	Seatbelt passenger pretensioner circuit open	P1051	Brake switch signal missing or improper
B1882	Seatbelt passenger pretensioner circuit short to battery	P1100	Mass air flow sensor intermittent
B1883	Seatbelt passenger pretensioner circuit short to ground	P1101	Mass air flow (MAF) sensor out of self test range
B1884	PAD warning lamp inoperative	P1105	Dual alternator upper fault
B1885	Seatbelt driver pretensioner circuit resistance low on squib	P1106	Dual alternator lower fault
B1886	Seatbelt passenger pretensioner circuit resistance low on squib	P1107	Dual alternator lower circuit
B1887	Air bag driver circuit short to ground	P1108	Dual alternator Battery lamp circuit
B1888	Air bag passenger circuit short to ground	P1111	System pass
B1889	Passenger air bag disable module sensor obstructed	P1112	Intake air temperature sensor intermittent
B1890	PAD warning lamp circuit short to battery	P1116	Engine coolant temperature (ECT) sensor out of self test range
B1891	Air bag tone warning indicator circuit short to battery	P1117	Engine coolant temperature (ECT) sensor intermittent
B1892	Air bag tone warning indicator circuit failure	P1118	Manifold air temperature sensor (MAT) (ACT)
B1900	Driver side air bag fault	P1119	Manifold air temperature sensor (MAT) (ACT)
B1901	Air bag crash sensor #1 feed/return circuit short to ground	P1120	Throttle position circuit out of range low
B1916	Air bag driver circuit short to battery	P1121	Throttle position sensor inconsistent with MAF sensor
B1921	Air bag diagnostic monitor ground circuit open	P1124	Throttle position sensor out of self test range
B1925	Air bag passenger circuit short to battery	P1125	Throttle position sensor intermittent
B1927	Passenger side air bag fault	P1127	Exhaust not warm enough downstream oxygen sensor not tested
B1932	Air bag driver circuit open	P1128	Upstream oxygen sensors swapped from bank to bank
B1933	Air bag passenger circuit open	P1129	Downstream oxygen sensors swapped from bank to bank
B1934	Air bag driver inflator circuit resistance low on squib	P1130	Lack of HO2S11 switch adaptive fuel at limit (bank 1 upstream)
B1935	Air bag passenger inflator circuit resistance low on squib	P1131	Lack of HO2S11 switch sensor indicates lean (Bank 1 upstream)
B1941	Air bag crash sensor #1 feed/return circuit open	P1132	Lack of HO2S11 switch sensor indicates rich (Bank 1 upstream)
B2141	NVM configuration failure	P1133	HO2S11 fuel control shifted lean (Bank 1upstream)
C1095	Hydraulic pump motor circuit failure	P1134	HO2S11 fuel control shifted rich (Bank 1upstream)
C1102	Acceleration switch circuit failure	P1135	Ignition switch signal missing or improper
C1145	Wheel speed RF input circuit failure	P1137	Lack of HO2S12 switch sensor indicates lean (Bank 1 downstream)
C1155	Wheel speed LF input circuit failure	P1138	Lack of HO2S12 switch sensor indicates rich (Bank 1 downstream)
		P1139	Water in fuel circuit malfunction
		P1140	Water in fuel condition fail

P1141	Fuel restriction indicator circuit malfunction	P1210	Injector control pressure higher than desired (engine off)
P1142	Fuel restriction switch condition fault	P1211	Injector control pressure higher than desired (engine crank or run)
P1148	Generator 2 control circuit	P1212	Injection control pressure fail minimum pressure test at crank
P1149	Generator 2 monitor circuit high	P1218	CID high
P1150	Lack of HO2S12 switch adaptive fuel at limit (Bank 2 upstream)	P1219	CID low
P1151	Lack of HO2S21 switch sensor indicates lean (Bank 2 upstream)	P1220	Throttle position sensor B out of range
P1152	Lack of HO2S21 switch sensor indicates rich (Bank 2 upstream)	P1224	Throttle position sensor B out of self test range
P1153	HO2S21 fuel control shifted lean (Bank 2 upstream)	P1227	Waste gate failed closed (Over pressure)
P1154	HO2S21 fuel control shifted rich (Bank 2 upstream)	P1228	Waste gate failed open (Under pressure)
P1157	Lack of HO2S21 switch sensor indicates lean (Bank 2 downstream)	P1229	Intercooler pump driver fault
P1158	Lack of HO2S21 switch sensor indicates rich (Bank 2 downstream)	P1230	Fuel pump low speed malfunction (VLCM)
P1170	Engine shutoff solenoid	P1231	Fuel pump secondary circuit low high speed (VLCM)
P1171	Rotor sensor	P1232	Fuel pump secondary circuit high high speed (VLCM)
P1172	Rotor control	P1233	Fuel system disabled or offline
P1173	Rotor calibration	P1234	Fuel system failed or offline
P1174	Cam sensor	P1235	Fuel pump control out of range (VLCM)
P1175	Cam control	P1236	Fuel pump control out of range (VLCM)
P1176	Cam calibration	P1237	Fuel pump secondary circuit malfunction
P1177	Synchronization	P1238	Fuel pump secondary circuit malfunction
P1178	Boltup limits	P1244	Alternator load input failed high
P1184	KOER fail engine oil temperature out of self test range	P1245	Alternator load input failed low
P1185	Fuel pump temperature sensor high	P1247	Turbo boost pressure low
P1186	Fuel pump temperature sensor low	P1248	Turbo boost pressure not detected
P1187	Variant selection	P1249	Waste-gate control valve performance
P1188	Calibration memory	P1250	Lack of power to FPRC solenoid
P1189	Pump speed signal	P1252	Pedal correlation PDS1 and LPDS high
P1190	Calibration sensor out of range	P1253	Pedal correlation PDS1 and LPDS low
P1191	Key line voltage	P1254	Pedal correlation PDS2 and LPDS high
P1192	V external	P1255	Pedal correlation PDS2 and LPDS low
P1193	EGR driver over current	P1256	Pedal correlation PDS2 and LPDS
P1194	ECM/PCM A/D converter	P1257	Pedal correlation PDS2 and LPDS
P1195	SCP HBCC chip failed to initialize	P1258	Pedal correlation PDS1 and PDS2
P1196	Key off voltage high		
P1197	Key off voltage low		
P1198	Pump rotor control underfueling		
P1209	Injector control pressure peak delta test fault		

P1260 Theft detected – engine disabled
P1261 Cylinder #1 high to low side short
P1262 Cylinder #2 high to low side short
P1263 Cylinder #3 high to low side short
P1264 Cylinder #4 high to low side short
P1265 Cylinder #5 high to low side short
P1266 Cylinder #6 high to low side short
P1267 Cylinder #7 high to low side short
P1268 Cylinder #8 high to low side short
P1270 Engine RPM or vehicle speed limiter reach
P1271 Cylinder #1 high to low side open
P1272 Cylinder #2 high to low side open
P1273 Cylinder #3 high to low side open
P1274 Cylinder #4 high to low side open
P1275 Cylinder #5 high to low side open
P1276 Cylinder #6 high to low side open
P1277 Cylinder #7 high to low side open
P1278 Cylinder #8 high to low side open
P1280 Injection control pressure sensor out of range low
P1281 Injection control pressure sensor out of range high
P1282 Injection control pressure higher than desired
P1283 Injection pressure regulator control circuit
P1284 Aborted KOER - injection control pressure failure
P1285 Cylinder head over temperature sensed
P1288 Cylinder head temperature sensor out of self test range
P1289 Cylinder head temperature sensor high input
P1290 Cylinder head temperature sensor low input
P1291 Injector high side short to ground or VBATT—bank 1
P1292 Injector high side short to ground or VBATT—bank 2
P1293 Injector high side open—bank 1
P1294 Injector high side open—bank 2
P1295 Injector multiple faults—bank 1
P1296 Injector multiple faults—bank 2
P1297 Injector high side switches shorted together
P1298 Injector driver module failure
P1299 Cylinder head over temperature protection active
P1300 Boost calibration fault
P1301 Boost calibration high
P1302 Boost calibration low

P1303 Exhaust gas recirculation calibration fault
P1304 Exhaust gas recirculation calibration high
P1305 Exhaust gas recirculation calibration low
P1306 Kickdown relay pull-in circuit
P1307 Kickdown relay hold circuit
P1309 Misfire monitor failure
P1316 Injection Driver Module codes detected
P1317 Injection Driver Module codes not retrieved
P1331 Turbo/Super charger boost high side circuit / open
P1334 EGR throttle position sensor minimum stop performance
P1335 EGR position sensor minimum stop performance
P1337 Throttle position output circuit
P1351 Ignition diagnostic monitor (IDM) circuit malfunction
P1352 Ignition coil A primary malfunction
P1353 Ignition coil B primary malfunction
P1354 Ignition coil C primary malfunction
P1355 Ignition coil D primary malfunction
P1356 PIP's occurred while IDM pulse width indicates engine not turning
P1357 Ignition diagnostic monitor pulse width not detected
P1358 IDM signal out of self test range
P1359 Spark output circuit malfunction
P1364 Ignition coil circuit malfunction
P1369 Engine temperature light monitor failure
P1378 Fuel injection control module system voltage low
P1379 Fuel injection control module system voltage high
P1380 Variable cam timing solenoid A malfunction
P1381 Variable cam timing over advanced (Bank A)
P1383 Variable cam timing over retarded (Bank A)
P1385 Variable cam timing solenoid B malfunction
P1386 Variable cam timing over advanced (Bank B)
P1388 Variable cam timing over retarded (Bank B)
P1389 Glow plug circuit high side, low input
P1390 Octane adjust service pin out of self test range
P1391 Glow plug circuit low input (bank 1)
P1392 Glow plug circuit high input (bank 1)
P1393 Glow plug circuit low input (bank 2)
P1394 Glow plug circuit high input (bank 2)
P1395 Glow plug monitor fault bank #1
P1396 Glow plug monitor fault bank #2

- P1397 System voltage out of self test range
- P1399 Glow plug circuit high side, high input
- P1400 DPFE sensor circuit low voltage detected
- P1401 DPFE sensor circuit high voltage detected
- P1403 DPFE sensor hoses reversed
- P1405 DPFE sensor upstream hose off or plugged
- P1406 DPFE sensor downstream hose off or plugged
- P1407 Exhaust gas recirculation no flow detected
- P1408 EGR flow out of self test range
- P1409 EGR control circuit malfunction
- P1410 EGR barometric pressure sensor VREF voltage
- P1411 Secondary air injection system incorrect downstream flow detected
- P1412 Exhaust gas recirculation valve frozen
- P1413 Secondary air injection system monitor circuit low voltage
- P1414 Secondary air injection system monitor circuit high voltage
- P1442 Evaporative emission control system leak detected (small leak)
- P1443 Evaporative emission control system purge control valve malfunction
- P1444 Purge flow sensor circuit low input
- P1445 Purge flow sensor circuit high input
- P1450 Unable to bleed up fuel tank vacuum
- P1451 Evaporative emission control system vent control valve circuit malfunction
- P1452 Unable to bleed up vacuum in tank
- P1455 Evaporative emission control system purge control leak detected (gross leak)
- P1457 Unable to pull vacuum in tank
- P1460 Wide open throttle A/C cutout circuit malfunction
- P1461 A/C pressure sensor circuit high input
- P1462 A/C pressure sensor circuit low input
- P1463 A/C pressure sensor insufficient pressure change
- P1464 A/C demand out of self test range
- P1469 Low A/C cycling period
- P1473 Fan secondary high with fan(s) off (VLCM)
- P1474 Low fan control primary circuit malfunction
- P1479 High fan control primary circuit malfunction
- P1480 Fan secondary low with low fan on
- P1481 Fan secondary low with high fan on
- P1484 Open power ground to VLCM (VLCM)
- P1500 VSS intermittent
- P1501 Vehicle speed sensor out of self test range
- P1502 Vehicle speed sensor intermittent
- P1503 Invalid test—auxiliary power control module functioning
- P1504 Idle air control circuit malfunction
- P1505 Idle air control system at adaptive clip
- P1506 Idle air control overspeed error
- P1507 Idle air control underspeed error
- P1512 Inlet manifold runner control malfunction (Bank #1 stuck closed)
- P1513 Inlet manifold runner control malfunction (Bank #2 stuck closed)
- P1516 Inlet manifold runner control input error (Bank #1)
- P1517 Inlet manifold runner control input error (Bank #2)
- P1518 Inlet manifold runner control malfunction (stuck open)
- P1519 Inlet manifold runner control malfunction (stuck closed)
- P1520 Inlet manifold runner control circuit malfunction
- P1525 KOER or cont. mon. fail charge air bypass valve
- P1527 AWS solenoid circuit malfunction
- P1528 PONLY solenoid circuit malfunction
- P1529 SCAIR solenoid circuit malfunction
- P1530 A/C clutch circuit malfunction
- P1531 Invalid test—accelerator pedal movement
- P1536 Park brake switch circuit
- P1537 Inlet manifold runner control malfunction (bank 2 stuck open)
- P1538 Inlet manifold runner control malfunction (bank 1 stuck open)
- P1539 Power to A/C clutch circuit overcurrent (VLCM)
- P1540 Air bypass valve circuit malfunction
- P1549 Intake manifold communication control circuit malfunction
- P1550 Power steering pressure switch out of self test range
- P1600 Loss of KAM power, circuit open
- P1601 ECM/TCM serial communication error
- P1602 Imm/TCM serial communication error
- P1605 Keep alive memory test fail
- P1608 Internal control module malfunction
- P1610 Interactive reprogramming code—replace module (used with P1615/17/19/20)
- P1611 Interactive reprogramming code—replace module (used with P1616/18)

P1612	Flash EPROM reprogramming error	P1686	MOP stepping motor circuit malfunction
P1613	Flash EPROM reprogramming error	P1687	MOP stepping motor circuit malfunction
P1614	Flash EPROM reprogramming error	P1688	MOP stepping motor circuit malfunction
P1615	Interactive reprogramming code—erase error	P1689	MOP stepping motor circuit malfunction
P1616	Interactive reprogramming code—erase error, low voltage	P1690	Wastegate solenoid circuit
P1617	Interactive reprogramming code—block program error	P1691	SPCNT solenoid circuit malfunction
P1618	Interactive reprogramming code—block program error, low voltage	P1692	SEXEC solenoid circuit malfunction
P1619	Flash EPROM reprogramming error	P1693	SINEC solenoid circuit malfunction
P1620	Flash EPROM reprogramming error	P1694	SINLF solenoid circuit malfunction
P1621	Immobilizer code word / ID write failure	P1700	Transmission indeterminate failure (failed to neutral)
P1622	Immobilizer ID unmatched	P1701	Reverse engagement error
P1623	Immobilizer code word / ID write failure	P1702	Transmission range sensor circuit intermittent
P1625	B+ supply to VLCM fan circuit malfunction (VLCM)	P1703	Brake switch out of range
P1625	B+ supply to VLCM A/C circuit malfunction (VLCM)	P1704	Transmission range circuit not indicating Park/Neutral during self test
P1630	Alternator #1 circuit malfunction	P1705	Transmission range circuit not indicating Park/Neutral during self test
P1631	Alternator #2 circuit malfunction	P1706	High vehicle speed observed in park
P1634	Data output link circuit	P1707	Transfer case neutral indicator hard fault present
P1636	Inductive signature chip communication error	P1708	Clutch switch circuit malfunction
P1639	Vehicle ID block corrupted, not programmed	P1709	Park neutral position switch out of self test range
P1645	F/P resistor switch circuit malfunction	P1710	Transmission concern
P1650	Power steering pressure switch out of self test range	P1711	Transmission fluid temperature sensor out of self test range
P1651	Power steering pressure switch input malfunction	P1713	Transmission fluid temperature sensor in range failure –50 deg F
P1660	Output circuit check circuit high output	P1714	Shift solenoid A inductive signature
P1661	Output circuit check circuit low output	P1715	Shift solenoid B inductive signature
P1662	UDU_EN output circuit	P1716	Shift solenoid C inductive signature
P1663	Fuel demand command signal output circuit	P1718	Transmission fluid temperature sensor in range failure +250 deg F
P1667	Cylinder ID circuit	P1720	VSS (meter) circuit malfunction
P1668	PCM/IDM communications error	P1725	Insufficient engine speed increase during self test
P1670	Electronic feedback signal not detected	P1726	Insufficient engine speed decrease during self test
P1680	Metering oil pump malfunction	P1727	Coast clutch solenoid inductive signature
P1681	Metering oil pump malfunction	P1728	Transmission slip
P1682	Metering oil pump malfunction	P1729	4x4 low switch fail
P1683	MOP thermosensor circuit malfunction	P1730	4x4 low switch
P1684	MOP position sensor circuit malfunction	P1731	1-2 shift malfunction
P1685	MOP stepping motor circuit malfunction	P1732	2-3 shift malfunction
		P1733	3-4 shift malfunction

P1735 1st gear switch circuit malfunction
 P1736 2nd gear switch circuit malfunction
 P1738 Shift time error
 P1740 Torque converter clutch inductive signature
 P1741 Torque converter clutch solenoid control error
 P1742 Torque converter clutch solenoid circuit failed on
 P1743 LOOP solenoid circuit malfunction
 P1744 Torque converter clutch solenoid circuit performance
 P1745 Transmission concern
 P1746 Pressure control solenoid A open circuit
 P1747 Pressure control solenoid A short circuit
 P1748 Pressure control solenoid A
 P1749 EPC solenoid failed low
 P1751 Shift solenoid A performance
 P1754 Coast clutch solenoid circuit
 P1756 Shift solenoid B performance
 P1760 Pressure control solenoid short circuit intermittent
 P1761 Shift solenoid C performance
 P1762 Transmission concern
 P1765 Solenoid 5 circuit malfunction
 P1766 Shift solenoid D performance
 P1767 Transmission concern
 P1770 Clutch solenoid circuit malfunction
 P1773 Can link PCM/fuel fired heater malfunction
 P1775 Shift 1 circuit malfunction
 P1776 Shift 2 circuit malfunction
 P1779 Transmission control indicator light circuit
 P1780 Transmission control switch 9OD cancel) circuit out of self test range
 P1781 4x4 circuit out of self test range
 P1783 Transmission overtemperature condition
 P1784 Transmission 1st and Reverse mechanical fail
 P1785 Transmission 1st and 2nd mechanical failure
 P1887 Transmission 3rd or 4th gear electrical fault
 P1788 VFS #2 open circuit
 P1788b Transmission 2-3 timing or CCS circuit open
 P1789 VFS #2 short circuit
 P1789b Transmission 2-3 timing or CCS circuit shorted

P1790 TPS (mechanical) circuit malfunction
 P1791 TPS (electrical) circuit malfunction
 P1792 Atmospheric pressure circuit malfunction
 P1793 Intake air volume circuit malfunction
 P1794 Battery voltage circuit malfunction
 P1795 Idle switch circuit malfunction
 P1796 Kick down switch circuit malfunction
 P1797 Neutral switch circuit malfunction
 P1798 Water thermosensor circuit malfunction
 P1799 Hold switch circuit malfunction
 P1900 Transmission concern
 P1902 Kick down solenoid relay control circuit
 P1903 Kick down solenoid circuit low voltage
 P1904 Kick down solenoid circuit high voltage
 P2029 Fuel fired heater disabled
 P2030 Fuel fired heater performance
 P2121 Throttle/pedal position sensor/switch D circuit range/circuit
 P2122 Throttle/pedal position sensor/switch D circuit low input
 P2123 Throttle/pedal position sensor/switch D circuit high input
 P2124 Throttle/pedal position sensor/switch D circuit intermittent
 P2125 Throttle/pedal position sensor/switch E circuit
 P2126 Throttle/pedal position sensor/switch E circuit range/performance
 P2127 Throttle/pedal position sensor/switch E circuit low input
 P2128 Throttle/pedal position sensor/switch E circuit high input
 P2700 Coast clutch system error
 P2701 Overdrive clutch system error
 P2702 Intermediate clutch system error
 P2703 Direct clutch system error
 P2704 Low / reverse clutch system error
 U1020 Module communications network concern
 U1021 SCP indicates lack of A/C clutch status input
 U1039 SCP indicates VSS signal missing or incorrect
 U1051 SCP indicates brake switch signal missing
 U1073 SCP indicates lack of engine coolant fan status
 U1131 SCP indicates lack of fuel pump status response
 U1135 SCP indicates ignition switch signal missing
 U1256 SCP indicates A communications error
 U1451 Lack of response at PATS module engine off
 U1850 Invalid or missing fuel system data