FORD 5R55N, 5R55W/S

FALSE PRESSURE CONTROL SOLENOID CODES

COMPLAINT: A Ford vehicle equipped with a 5R55N or 5R55W/S transmission comes in with the "MIL" Lamp illuminated. When the PCM is scanned for codes, gear ratio error codes are stored, as well as codes for ***what appears to be***, Pressure Control Solenoid (PCS) ***electrical circuit*** faults. In many shops, when a vehicle comes in with the possibility of electrically generated codes, the shop attempts to diagnose the electrical codes before the transmission is removed for other repairs. In most instances, the solenoid fault codes cannot be resolved, even after solenoid replacement, circuit inspections and PCM replacement. In some cases the transmission is removed from the vehicle for repair of the gear ratio error complaint even though the pressure control solenoid code problem has not been resolved. When the transmission is installed back into the vehicle, the gear ratio error codes are gone, and mysteriously, so are the pressure control solenoid codes.

CAUSE: Code definitions for P0775 in some service manuals and scan tools, define this code as being electrically generated. In some manuals it defines this code as both electrical and mechanically generated. This includes codes P0745 and P0975. This causes the technician to address these codes in the wrong direction, these are solenoid performance codes as a general rule.

Pressure Control Solenoids A, B and C are responsible for maintaining proper clutch pressure in their related gears.

For example, if a gear ratio error in second or fifth gear is stored, a code will also be stored for Pressure Control Solenoid "B", because it supplies clutch pressure in 2nd and 5th gear (Refer to Figure 1), which is why you will most likely also have gear ratio error codes P0732 and P0735 stored.

CORRECTION: You can have a gear ratio error code without an electrical solenoid code, but it is unlikely that you will have an electrical circuit code without a gear ratio error. ***In other words, address the gear ratio error codes first.*** Figures 2 through 8 contain all transmission related codes for these vehicles.

Gear ratio codes are common on these transmissions due to servo pin bore wear at relatively low mileage. Servo repair kits for these transmissions as well as others are available.

Servo pin bore repair kits are available for the above units from, Northland Transmission Service and you can reach them at, servobore.com or call 715-458-2617.

PRESSURE CONTROL SOLENOID IN USE	GEARS EFFECTED	GEAR RATIO ERROR CODE	PRESSURE CONTROL SOLENOID CODE
PC "A"	3RD	P0733	P0745
PC "B"	2ND, 5TH	P0732, P0735	P0775
PC "C"	4TH, 5TH	P0734, P0735	P0975

Figure 1

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P0102 P0103 P1100 P1101	5R55N 5R55W 5R55S	Mass Air Flow Sensor	MAF Signal Out of Range: MAF related transmission concerns such as high/low line pressure, incorrect shift schedule or incorrect TCC apply.
P0113	5R55N 5R55W 5R55S	Intake Air Temp Sensor	IAT Sensor Circuit Signal High: High/low line pressure.
P0114	5R55N 5R55W 5R55S	Intake Air Temp Sensor	IAT Sensor Circuit Out of Range.
P0116	5R55N 5R55W 5R55S	Engine Coolant Temp Sensor	ECT Sensor Out of Range.
P0117	5R55N 5R55W 5R55S	Engine Coolant Temp Sensor	ECT Sensor Signal Low.
P0118	5R55N 5R55W 5R55S	Engine Coolant Temp Sensor	ECT Sensor Signal High.
P0121 P1120 P1124	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Signal Out of Range: Harsh engagements, firm shifts, abnormal shift scheduling, no TCC apply or TCC cycling
P0122	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Signal Low: Harsh engagements, firm shifts, abnormal shift scheduling, no TCC apply or TCC cycling.
P0123	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Signal High: Harsh engagements, firm shifts, abnormal shift scheduling, no TCC apply or TCC cycling.
P1121	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Signal Inconsistent With MAF: Harsh engagements, firm shifts, abnormal shift scheduling, no TCC apply or TCC cycling.
P1125	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Signal Intermittent: Harsh engagements, firm shifts, abnormal shift scheduling, no TCC apply or TCC cycling.
P0705	5R55N 5R55W 5R55S	Digital Range Sensor	Digital Range Sensor Circuit Failure: Harsh engagement, incorrect commanded gear. Defaults to “D” or “D5” indicator or an invalid position.
P0708	5R55N 5R55W 5R55S	Digital Range Sensor	Digital Range Sensor Circuit Failure: Harsh engagements, incorrect commanded gear. Defaults to "D" or "D5" indicator
P0711	5R55W 5R55S	Transmission Fluid Temp Sensor	TFT Sensor Signal Out of Range: A substitute value will be displayed.

Figure 2

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P0712	5R55N 5R55W 5R55S	Transmission Fluid Temp Sensor	TFT Signal Low: Firm shifts, high temperature indicated.
P0713	5R55N 5R55W 5R55S	Transmission Fluid Temp Sensor	TFT Sensor Open Circuit: Firm shifts, Temperature displayed at -40º F.
P0715	5R55N 5R55W 5R55S	Turbine Speed Sensor	Loss Of Signal From TSS: Harsh engagement, harsh shifts or harsh TCC engagement.
P0717	5R55N 5R55W 5R55S	Turbine Speed Sensor	TSS Signal Intermittent: Harsh engagement, harsh shifts or harsh TCC engagement.
P0718	5R55N 5R55W 5R55S	Turbine Speed Sensor	TSS Signal Erratic: Harsh engagement, harsh shifts or harsh TCC engagement.
P0720	5R55N 5R55W 5R55S	Output Shaft Speed Sensor	Loss Of Signal From OSS: Harsh shifts, abnormal shift schedule.
P0721	5R55N 5R55W 5R55S	Output Shaft Speed Sensor	OSS Signal Erratic: Harsh engagement, harsh shifts.
P0722	5R55N 5R55W 5R55S	Output Shaft Speed Sensor	OSS Signal Intermittent: Harsh engagement, harsh shifts.
P0731	5R55N 5R55W 5R55S	1st Gear Component	1st Gear Ratio Error: Wrong gear start, Mechanical shift solenoid fault, stuck valve or internal component failure.
P0732	5R55N 5R55W 5R55S	2nd Gear Component	2nd Gear Ratio Error: Incorrect gear selection, mechanical shift solenoid fault, stuck valve or internal component failure.
P0733	5R55N 5R55W 5R55S	3rd Gear Component	3rd Gear Ratio Error: Incorrect gear selection, mechanical shift solenoid fault, stuck valve or internal component failure.
P0734	5R55N 5R55W 5R55S	4th Gear Component	4th Gear Ratio Error: Incorrect gear selection, mechanical shift solenoid fault, stuck valve or internal component failure.
P0735	5R55N 5R55W 5R55S	5th Gear Component	5th Gear Ratio Error: Incorrect gear selection, mechanical shift solenoid fault, stuck valve or internal component failure.
P0740	5R55W 5R55S	TCC Solenoid Circuit Fault	TCC Solenoid Open or Shorted: Harsh shifts, harsh engagements, engine rpm higher that normal TCC Solenoid Shorted To Ground: Engine stalls when transmission is pulled into drive at idle.

Figure 3

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P0741	5R55W	TCC System Component	TCC Stuck Off: When TCC is commanded "ON", there is insufficient engine rpm drop due to a mechanical failure of the TCC system.
P0741	5R55N 5R55W	TCC System Component	TCC Slippage Detected: TCC disabled.
P0743	5R55S 5R55N	TCC Solenoid Circuit	TCC Solenoid Electrical Circuit Failure: Harsh shifts and engagements, engine rpm higher than normal, engine stall
P0745	5R55N 5R55W 5R55S	Pressure Control Solenoid "A"	PC "A" Solenoid Functional Fault, Low Pressure: Slipping transmission, may be accompanied by gear ratio error codes. The PCM will check voltage across the solenoid. If the target is not met, an electrical circuit code will also be stored.
P0748	5R55S	Pressure Control Solenoid "A"	PC "A" Solenoid Functional Fault, Low Pressure: Slipping transmission, may be accompanied by gear ratio error codes. The PCM will check voltage across the solenoid.
P0750	5R55N 5R55W 5R55S	Shift Solenoid "A"	Shift Solenoid "A" Electrical Circuit Failure: W/S=No 1st gear, no 4th gear. N= No 1st gear, no 4th or 5th gear. Gear ratio error codes may be stored.
P0753	5R55N 5R55W 5R55S	Shift Solenoid "A"	Shift Solenoid "A" Electrical Circuit Failure: W/S=No 1st gear, no 4th gear. N= No 1st gear, no 4th or 5th gear. Gear ratio error codes may be stored.
P0755	5R55N 5R55W 5R55S	Shift Solenoid "B"	Shift Solenoid "B" Electrical Circuit Failure: W/S=No 3rd gear, no 1st gear. N= No 1st gear, no 4th or 5th gear. Gear ratio error codes may be stored.
P0758	5R55N 5R55W 5R55S	Shift Solenoid "B"	Shift Solenoid "B" Electrical Circuit Failure: W/S=No 3rd gear, no 1st gear. N= No 1st gear, no 4th or 5th gear. Gear ratio error codes may be stored.
P0760	5R55N 5R55W 5R55S	Shift Solenoid "C"	Shift Solenoid "C" Electrical Circuit Failure: No 2nd, no 5th, and no 1st gear. Gear ratio error codes may be stored.
P0763	5R55N 5R55W 5R55S	Shift Solenoid "C"	Shift Solenoid "C" Electrical Circuit Failure: No 2nd, no 5th, and no 1st gear. Gear ratio error codes may be stored.
P0765	5R55N 5R55W 5R55S	Shift Solenoid "D"	Shift Solenoid "D" Electrical Circuit Failure: No engine braking.
P0768	5R55N 5R55W 5R55S	Shift Solenoid "D"	Shift Solenoid "D" Electrical Circuit Failure: No engine braking.

Figure 4

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P0775	5R55N 5R55W 5R55S 5R55S	Pressure Control Solenoid "B"	PC "B" Solenoid Functional Fault, Low Pressure: Slipping transmission, may be accompanied by gear ratio error codes. The PCM will check voltage across the solenoid. If the target is not met, an electrical circuit code will also be stored.
P0778		Pressure Control Solenoid "B"	Intermittent Short To Ground: Voltage through the solenoid is checked. The TCIL will flash.
P0779	5R55W 5R55S 5R55N	Pressure Control Solenoid "B"	Intermittent Short To Ground Or Power: Voltage through the solenoid is checked. The TCIL will flash. No 2nd and 5th gear. Harsh engagements and shifts.
P0779		Pressure Control Solenoid "B"	Intermittent Short To Ground: Voltage through the solenoid is checked. No 2nd and 5th gear.
P0791	5R55N 5R55W 5R55S	Intermediate Speed Sensor	Loss Of Signal From ISS: Harsh Shifts.
P0794	5R55N 5R55W 5R55S	Intermediate Speed Sensor	Intermittent Loss of ISS Signal:Harsh shifts.
P0795 P0797	5R55N 5R55W	Pressure Control Solenoid "C"	PC Solenoid "C" Functional Fault: No 4th or 5th gear, or incorrect shift pattern indicating a mechanical or hydraulic transmission fault. Voltage will be checked through solenoid.
P0796	5R55N 5R55W	Pressure Control Solenoid "C"	PC Solenoid “C” Electrical Circuit Open: Maximum PC “C” pressure, harsh engagements and shifts.
P0798	5R55S	Pressure Control Solenoid "C"	PC Solenoid "C" Functional Failure, Low Pressure. Voltage will be checked through solenoid. If an error is detected, an electrical fault code will be stored.
P0799	5R55N 5R55W 5R55S	Pressure Control Solenoid "C"	PC “C” Solenoid Intermittent Short To Ground: No 4th or 5th gears, or harsh shifts and engagements.
P0814	5R55N	"J" Gate Fault	J-Gate Circuit Input Signal Failed: No illumination or incorrect illumination of the J-GATE position.
P0815	5R55N 5R55S (Car)	"Select Shift" Transmission +/- Switches	SST +/- Circuit Input Signal Failed: May not be able to shift in Manual Mode.
P0840	5R55N 5R55S	Reverse Pressure Switch	RP Circuit Input Signal Failed: No engine braking in manual 3rd and 4th gear.
P0960	5R55S	Pressure Control Solenoid "A"	PC “A” Solenoid Electrical Circuit Open: Maximum PC “A” pressure, harsh shifts and engagements.
P0962	5R55S	Pressure Control Solenoid "A"	PC “A” Solenoid Circuit Short To Ground: No 3rd gear.
P0963	5R55S	Pressure Control Solenoid "A"	PC “A” Solenoid or Electrical Circuit Open: Maximum PC "A" pressure, harsh shifts and engagements.

Figure 5

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P0964	5R55S 5R55S	Pressure Control Solenoid "B"	PC "B" Solenoid or Electrical Circuit Open: Maximum PC "B" pressure, harsh shifts and engagements.
P0966		Pressure Control Solenoid "B"	PC "B" Solenoid Short To Ground: Voltage through the solenoid is checked. No 2nd and 5th gear.
P0967	5R55S	Pressure Control Solenoid "B"	PC "B" Solenoid Short To Power: Maximum PC "B" pressure, Harsh shifts and engagement.
P0968	5R55S	Pressure Control Solenoid "C"	PC "C" Solenoid Or Electrical Circuit Open: Maximum PC "C" pressure, Harsh shifts and engagements.
P0970	5R55S	Pressure Control Solenoid "C"	PC "C" Solenoid Or Electrical Circuit Shorted To Ground: No 4th or 5th gears.
P0971	5R55S	Pressure Control Solenoid "C"	PC Solenoid "C" Electrical Circuit Shorted To Power: Maximum PC "C" pressure, harsh engagements and shifts.
P0975	5R55S	Pressure Control Solenoid "C"	PC "C" Solenoid Functional Failure, Low Pressure: Voltage will be checked through solenoid. If an error is detected, an electrical fault code will be stored.
P1112	5R55N 5R55W 5R55S	Intake Air Temperature Sensor	IAT Sensor Circuit Voltage LOW: High/Low line pressure resulting in unacceptable shifts.
P1124	5R55N 5R55W 5R55S	Throttle Position Sensor	TPS Out Of Range: TPS signal voltage was high or low.
P1460	5R55N 5R55W 5R55S	Air Conditioning Switch	A/C Pressure Cycling Switch Error: A/C or defrost was "ON" during Self-Test, rerun with A/C "OFF". Failed "ON": Line pressure slightly low with A/C "OFF".
P1572	5R55N 5R55W 5R55S	Brake Pedal Position Switch	BPP Switch Circuit Fault: Failed "ON"=TCC will not engage at less than 1/3 throttle. Failed "OFF"=TCC will not disengage when the brake is applied.
P1636	5R55N 5R55W 5R55S	SSx	SSx ISIG Communication Error: The PCM has detected an error with the ISIG chip. May illuminate the "MIL" Lamp.
P1700	5R55N 5R55W 5R55S	Internal Transmission Component	Internal Transmission Component Failure: Engine speed limited to 4000 rpm. No 1st, 3rd or 4th gear in automatic mode. FMEM is activated. May also store codes P0745, P0750, P0755, P1714, P1715, P1747 or P1760.
P1702	5R55N 5R55W 5R55S	Digital Transmission Range Sensor	Digital Range Sensor Signal Intermittent: Codes P0705 and P0708 are also stored.
P1703	5R55N 5R55W 5R55S	Brake Pedal Position Switch	BPP Switch Circuit Failed "ON": TCC will not engage at less than 1/3 throttle. Failed OFF: TCC will not disengage when the brake is applied.

Figure 6

DTC	TRANSMISSION APPLICATION	COMPONENT	DESCRIPTION/SYMPTOMS
P1704	5R55N 5R55W 5R55S	Digital Transmission Range Sensor	Digital Range Sensor Not In Park: Commanded line pressure error, shift linkage problem or DTR Sensor problem.
P1705	5R55N 5R55W 5R55S	Digital Transmission Range Sensor	DTR Sensor Not In Park During Self-Test: DTC is set.
P1711	5R55N 5R55W 5R55S	Transmission Fluid Temp Sensor	TFT Out Of Range: Transmission not at proper operating temperature during diagnostic tests.
P1713	5R55N	Transmission Fluid Temp Sensor	TFT Temperature Stuck In LOW Range: Increased line pressure, Incorrect TCC apply times, Harsh shifts and engagements.
P1714	5R55N 5R55W 5R55S	Shift Solenoid "A"	Shift Solenoid “A” Inoperative: Mechanical failure and no gear ratio error codes. No 1st gear or no 4th or 5th gears.
P1715	5R55N 5R55W 5R55S	Shift Solenoid "B"	Shift Solenoid “B” Inoperative: Mechanical failure and no gear ratio error codes. No 1st or 3rd gears.
P1716	5R55N 5R55W 5R55S	Shift Solenoid "C"	Shift Solenoid “C” Inoperative: Mechanical failure and no gear ratio error codes. No 1st, 2nd or 5th gears. Incorrect gear selection.
P1717	5R55N 5R55W 5R55S	Shift Solenoid "D"	Shift Solenoid “D” Inoperative: Mechanical failure and no gear ratio error codes. No engine braking. Incorrect gear selection.
P1718	5R55N	Transmission Fluid Temp Sensor	TFT Temperature Stuck In HIGH Range: Increased line pressure, Incorrect TCC apply times, Harsh shifts and engagements.
P1740	5R55N 5R55W 5R55S	TCC System Error	TCC Inoperative: Mechanical failure of the TCC system. Engine rpm higher than expected or stalls when coming to a stop.
P1744	5R55W 5R55S	TCC System Error	TCC Performance Fault: TCC slipping when commanded “ON”, indicating a mechanical or hydraulic failure of the TCC system.
P1746	5R55N 5R55W	Pressure Control Solenoid "A"	PC “A” Solenoid Circuit Open: Maximum PC “A” pressure, harsh shifts and engagements.
P1747	5R55N 5R55W 5R55S	Pressure Control Solenoid "A"	PC “A” Solenoid Electrical Circuit Fault: No 3rd gear, may turn “ON” or flash the “MIL” Lamp.
P1760	5R55N 5R55W 5R55S	Pressure Control Solenoid "A"	PC “A” Solenoid Intermittent Short To Ground: No 3rd gear, harsh shifts and engagements when shorted to power.

Figure 7

DTC	*TRANSMISSION APPLICATION*	*COMPONENT*	*DESCRIPTION/SYMPTOMS*
P1780	**5R55N 5R55W 5R55S**	***Transmission Control Switch***	***TCS input incorrect for selected position: W/S = TCS voltage incorrect, no OD cancel when TCS is pressed. N = No OD cancel when shifter is moved.***
P1783	**5R55N 5R55W 5R55S**	***Transmission Fluid Temp Sensor***	***Transmission Overtemp Condition Indicated: Transmission temperature exceeded 270º F, Increased line pressure.***
P1788	**5R55N 5R55W**	***Pressure Control Solenoid "B"***	***PC "B" Solenoid Circuit Open: Maximum PC "B" pressure, Harsh shifts and engagements.***
P1789	**5R55W**	***Pressure Control Solenoid "B"***	***PC "B" Solenoid Circuit Shorted To Ground: No 2nd or 5th gears.***

Figure 8