| Component/ | Fault | Monitor Strategy | Malfunction Criteria | | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tim Requi | | Mil Illum. |
|--------------------------------------|-------|---|--|----------|------|------------------------|---|------------|-------------------------|----------------|----|--------------|-----------------|---------------|
| System | Code | Description | | \vdash | V | aiuė | wanufiction | | Conditions | | + | Kequi | red | One Trip |
| Transmission Control Module (TCM) | P0601 | Transmission Electro-Hydraulic Control Module Read Only Memory | Incorrect program/calibrations checksum | = | TRUE | Boolean | | | | | >= | 5 | Fail Counts | |
| | | | | | | Disable | MIL was Illumation as a different | TOM DO004 | | | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0601 | | | | | | |
| | | | | | | | | ECM: None | | | | | | |
| Tarananianian Opertual Marketa (TOM) | P0603 | Transmission Electro-Hydraulic | Non-volatile memory (static or | | TRUE | Boolean | | | | | | Runs | | One Trip |
| Transmission Control Module (TCM) | P0003 | Control Module Long-Term Memory Reset | dynamic) checksum failure at Powerup | | IRUE | Boolean | | | | | Co | ntinously | | |
| | | | | | | Disable | MIL not Illuminated for | TCM: P0603 | | | | | | |
| | | | | | | Conditions: | DTC's: | | | | | | | |
| | | | | | | | | ECM: None | | | | | | |
| Transmission Control Module (TCM) | P0604 | Transmission Electro-Hydraulic Control Module Random Access | RAM Read/Write Failure (Single | | TRUE | Boolean | | | | | >= | 5 | Fail Counts | One Trip |
| (, | | Memory | Word) |) | | | | | | | | • | | |
| | | | | | | | | | | | = | 16 | Sample Counts | |
| | | | | | | | | | | | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0604 | | | | | | |
| | | | | | | | | ECM: None | | | | | | |
| Transmission Control Module (TCM) | P062F | Transmission Electro-Hydraulic | TCM Non-Volatile Memory bit | t _ | TRUE | Boolean | | | | | | Runs | | One Trip |
| Transmission Control Module (TCM) | P002F | Control Module Long Term Memory Performance | Incorrect flag at Powerdown | 1 - | IRUE | Doolean | | | | | Co | ntinously | | |
| | | | | | | | | | | | | | | |
| | | | | | | Disable | MIL not Illuminated for | TCM: P062F | | | | | | |
| | | | | | | Conditions: | DTC's: | ECM: None | | | | | | |
| | +- | Transmission Electro-Hydraulic | Fail Case 1 | | | | | | | | | | | One Trip |
| Transmission Control Module (TCM) | P0634 | Control Module Internal Temperature Too High | Substrate Temperature | >= | 144 | °C | | | | | >= | 5 | Fail Time (Sec) | |
| | | | Fail Case 2 Substrate Temperature | >= | 50 | °C | | | | | >= | 2 | Fail Time (Sec) | |
| | | | Ignition Voltage | | 18 | Volts | | | | | | | | |
| | | | Note: either fail case can set the DTC | | | | | | | | | | | |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi | >= <= | 9 31.99023 | Volts Volts | | | | |
| | | | | | | | Substrate Temp Lo | >= | 0 | °C | | | | |
| | | | | | | | Substrate Temp Hi Substrate Temp Between | <= | 240 | °C | | | | |
| | | | | | | | Temp Range for Time | >= | 0.25 | Sec | | | | |
| | | | | | | | | | Test Failed | | | | | |
| | | | | | | | P0634 Status is | ≠ | This Key On or Fault | | | | | |
| | | | | | | | | | On or Fault Active | | | | | |
| | | | | I | | | | | | | l | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum. |
|-----------------------------------|---------------|---|---|---|------------------------|--|--------------------------------------|--|---|-----------------|------|-------------------------------|---------------|
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| High Side Driver 1 | P0658 | Actuator Supply Voltage Circuit Low | The HWIO reports a low voltage (open or ground short) error flag | | lean | | | | | >= out of | 4 | Fail Counts Sample Counts | One Trip |
| | | | | | | P0658 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | High Side Driver 1 On | = | True | Boolean | | | | |
| ı | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None | | | | | | |
| Transmission Control Module (TCM) | P0667 | TCM Internal Temp (substrate) Sensor Circuit Range/Performance | If transmission oil temp to substrate temp Δ | Refer to Table 19 in supporting documents | | | | | | | | | Two Trips |
| | | | If TCM substrate temp to power up temp Δ | Refer to Table > 20 in °C supporting documents | | | | | | | | | |
| | | | Both conditions above required to increment fail counter | | | | | | | >= | 3000 | Fail Counts (100ms loop) | |
| | | | Note: table reference temp = to the median temp of trans oil temp, substrate temp and power up temp. | | | | | | | Out of | 3750 | Sample Counts (100ms loop) | |
| | | | Non-continuous (intermittent) fail conditions will delay resetting fail counter until | | | | | | | >= | 700 | Pass Counts (100ms loop) | |
| | | | | | | | | | | Out of | 875 | Sample Counts (100ms loop) | |
| | | | | | | Engine Torque Signal Valid Accelerator Position Signal Valid Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Mithin the | = = >= <= >= <= >= | TRUE TRUE 9 31.99023 400 7500 5 | Boolean Boolean Volts Volts RPM RPM Sec | | | | |
| | | | | | | allowable limits for Brake torque active | | FALSE | 360 | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary | | Enable | | Time | Mil |
|----------------------------------|--------|--------------------------------------|--|--------------|---------------------------------|-------------|-----------------|-----------|----------|--------|
| System | Code | Description | Criteria | Value | Malfunction | | Conditions | | Required | Illum. |
| | | | | | Below describes the brake | | | | | |
| | | | | | torque entry criteria | | | | | |
| | | | | | Engine Torque | >= | 90 | N*m | | |
| | | | | | Throttle | >= | 30.0003 | Pct | | |
| | | | | | Transmission Input Speed | <= | 200 | RPM | | |
| | | | | | Vehicle Speed | <= | 8 | Kph | | |
| | | | | | Transmission Range | ≠ | Park | , | | |
| | | | | | Transmission Range | | Neutral | | | |
| | | | | | PTC | | Not Active | | | |
| | | | | | | | NOT ACTIVE | | | |
| | | | | | Set Brake Torque Active TRUE | >= | 7 | sec | | |
| | | | | | if above conditions are met for | | 1 | 560 | | |
| | | | | | B | | | | | |
| | | | | | Below describes the brake | | | | | |
| | | | | | torque exit criteria | | | | | |
| | | | | | Brake torque entry criteria | = | Not Met | | | |
| | | | | | | | Clutch | | | |
| | | | | | Clutch hydraulic pressure | ≠ | Hydraulic | | | |
| | | | | | Ciuteri fiyuraulic pressure | <i>+</i> | Air Purge | | | |
| | | | | | | | Event | | | |
| | | | | | | | CeTFTD_e | | | |
| | | | | | Clutch used to exit brake | = | _C3_RatlE | | | |
| | | | | | torque active | | nbl | | | |
| | | | | | The above clutch pressure is | | IIDI | | | |
| | | | | | greater than this value for one | >= | 600 | kpa | | |
| | | | | | | | 000 | кра | | |
| | | | | | loop | | | | | |
| | | | | | Set Brake Torque Active | | | _ | | |
| | | | | | FALSE if above conditions are | >= | 20 | Sec | | |
| | | | | | met for | | | | | |
| | | | | | | | | | | |
| | | | | | | | Test Failed | | | |
| | | | | | D0007 0t-t i- | ≠ | This Key | | | |
| | | | | | P0667 Status is | <i>+</i> | On or Fault | | | |
| | | | | | | | Active | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | Disab | le MIL not Illuminated for | TOM: DOGEO | DOCCO DOCCO | DOGAD | | |
| | | | | | | | | | | |
| | | | | Condition | S: DIC'S: | | 16, P0712, P071 | | | |
| | | | | | | | 3, P0962, P096 | | | |
| | | | | | | | 0, P0971, P215 | C, P2720, | | |
| | | | | | | P2721, P272 | 9, P2730 | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | ECM: P010 | 1, P0102, P0103 | . P0106. | | |
| | | | | | | | 8, P0171, P017 | | | |
| | 1 | | | | | | 11, P0202, P020 | | | |
| | 1 | | | | | | 16, P0207, P020 | | | |
| | 1 | | | | | | | | | |
| | | | | | | | 12, P0303, P030 | | | |
| | 1 | | | | | P0306, P030 | 7, P0308, P040 | 1, P042E | | |
| | + | | | 0-TETL - V-I | - | | | | 1 | - |
| | Decase | TCM internal temperature (substrate) | <u> </u> | CeTFTI_e_Vol | | l | | | | Two |
| ransmission Control Module (TCM) | P0668 | thermistor failed at a low voltge | Type of Sensor Used | | | | | | | Trips |
| | 1 | and at a low rongo | | ор | | | | | | |
| | 1 | | If TCM Substrate Temperature | | 1 | l | | | | |
| | | | | | | | | | | |
| | | | Sensor = Direct Proportional and Temp | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | T Red | ime quired | Mil Illum. |
|-----------------------------------|---------------|--|---|------------------------|--|------------------------|-----------------------------------|-------------------------------------|----|----------|------------------|---------------|
| Oyoto | 0000 | 2008.ipilot. | If TCM Substrate Temperature Sensor = Indirect Proportional and Temp | | | | | | | | 1 | |
| | | | Either condition above will satisfy the fail conditions | | | | | | >= | 60 | Fail Timer (Sec) | |
| | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | P0668 Status is | ≠ | This Key On or Fault Active | | | | | |
| | | | | Disable Conditions: | | TCM: None ECM: None | | | | | | |
| Transmission Control Module (TCM) | P0669 | TCM internal temperature (substrate) thermistor failed at a high voltage | Type of Sensor Used If TCM Substrate Temperature Sensor = Direct Proportional and Temp If TCM Substrate Temperature Sensor = Indirect Proportional and | op >= -254 °C | | | | | | | | Two Trips |
| | | | Temp Either condition above will satisfy the fail conditions | | | | | | >= | 60 | Fail Timer (Sec) | |
| | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | P0669 Status is | ≠ | This Key On or Fault Active | | | | | |
| | | | | | For Hybrids, below conditions must also be met | | | | | | | |
| | | | | | Estimated Motor Power Loss Estimated Motor Power Loss | | 0 | kW | | | | |
| | | | | | greater than limit for time | >= | 0 | Sec | | | | |
| | | | | | Lost Communication with Hybrid Processor Control Module | = | FALSE | | | | | |
| | | | | | Estimated Motor Power Loss Fault | | FALSE | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary Malfunction | | Enable | | | | me | Mi Illur |
|----------------------------------|---------|----------------------------------|---|----------------|---|-------------|------------------------|----------|-----------|------|---------------|-------------|
| System | Code | Description | Criteria | Value | Waitunction | | Conditions | | - | Req | uired | IIIur |
| | | | | | 1 | | | | | | | 1 |
| | | | | Disab | e MIL not Illuminated for | TCM: P0716 | P0717 P0722 | P0723 | | | | |
| | | | | Conditions | | 10111111111 | , 1 01 11, 1 0122 | , 1 0120 | | | | |
| | | | | |] | ECM: None | | | | | | |
| | | | | | | | | | | | | |
| | | | | Refer to Table | | | | | | | | Tw |
| ransmission Control Module (TCM) | P06AC | TCM Power-up Temp Sensor Circuit | If TCM power-up temp to substrate | | | | | | | | | Tri |
| and models (1 cm) | . 00/10 | Range/Performance | temp Δ | supporting | | | | | | | | |
| | | | | documents | | | | | | | | |
| | | | | Refer to Table | | | | | | | | |
| | | | If transmission oil temp to power up | 10 in | | | | | | | | |
| | | | temp Δ | | | | | | | | | |
| | | | | documents | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | Both conditions above required to | | | | | | >= | 3000 | Fail Counts | |
| | | | increment fail counter | | 1 | | | | | | (100ms loop) | |
| | | | Note: table reference temp = to the median temp of trans oil temp, | | | | | | Out | | Sample Counts | |
| | | | substrate temp and power up | | | | | | Out of | 3750 | (100ms loop) | ' |
| | | | temp. | | | | | | OI | | (Tooms loop) | |
| | | | Non-continuous (intermittent) fail | | | | | | | | D 0 1 | 1 |
| | | | conditions will delay resetting fail | | | | | | >= | 700 | Pass Counts | |
| | | | counter until | | | | | | | | (100ms loop) | |
| | | | | | | | | | Out | | Sample Counts | |
| | | | | | | | | | of | 875 | (100ms loop) | |
| | | | | | | | | | | | () | |
| | | | | | Engine Torque Signal Valid | = | TRUE | Boolean | | | | - |
| | | | | | Accelerator Position Signal | | | | | | | |
| | | | | | Valid | = | TRUE | Boolean | | | | |
| | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | |
| | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | |
| | | | | | Engine Speed Lo | | 400 | RPM | | | | |
| | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | |
| | | | | | Engine Speed is within the | >= | 5 | Sec | | | | |
| | | | | | allowable limits for Brake torque active | = | FALSE | | | | | |
| | | | | | Below describes the brake | | FALSE | | | | | 1 |
| | | | | | torque entry criteria | | | | | | | |
| | | | | | Engine Torque | >= | 90 | N*m | | | | |
| | | | | | Throttle | >= | 30.0003 | Pct | | | | |
| | | | | | Transmission Input Speed | <= | 200 | RPM | | | | |
| | | | | | Vehicle Speed | <= | 8 | Kph | | | | |
| | | | | | Transmission Range | ≠ | Park | | | | | 1 |
| | | | | | Transmission Range | | Neutral Not Active | | | | | |
| | | | | | | | INOLACTIVE | | | | | |
| | | | | | Set Brake Torque Active TRUE | >= | 7 | sec | | | | |
| | | | | | if above conditions are met for: | | | -30 | | | | |
| | | | | | Below describes the brake | | | | | | | 1 |
| | | | | | torque exit criteria | | | | | | | |
| | | | | | Brake torque entry criteria | = | Not Met | | | | | |
| | | | | | 1 | | Clutch | | | | | 1 |
| | | | | | | | | | • | | | |
| | | | | | Clutch hydraulic pressure | ≠ | Hydraulic Air Purge | | | | | |

| Clutch used to exit brake torque active CaTFTD_6 | Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | | ime uired | Mil Illum. |
|--|-----------------------------------|---------------|------------------------------|-------------------------|--------------------|---|--|--|--|----|----|-----------------|---------------|
| Passe Pass | | - 340 | | | | Clutch used to exit brake torque active | = | CeTFTD_e _C3_RatlE | | | | | |
| Test Failed This Key On or Fault PoSAC Status is # On or Fault PoSAC POTE POTE POTE POTE POTE POTE POTE POTE | | | | | | greater than this value for one loop Set Brake Torque Active | >= | | | | | | |
| Position | | | | | | | >= | | Sec | | | | |
| Conditions | | | | | | P06AC Status is | ≠ | This Key On or Fault | | | | | |
| POFAD POFA | | | | | | | P06AE, P07 P0722, P072 P0967, P09 | 16, P0712, P071 23, P0962, P0963 70, P0971, P2150 | 3, P0717, 3, P0966, | | | | |
| Voltage low Ignition Voltage lo Ignition Voltage low RPM Low Voltage low Volta | | | | | | | P0107, P010 P0175, P020 P0205, P020 P0301, P030 | 08, P0171, P0172 01, P0202, P0203 06, P0207, P0208 02, P0303, P0304 | 2, P0174, 3, P0204, 8, P0300, 4, P0305, | | | | |
| Ignition Voltage Lo Set 9 Volts 19 | Transmission Control Module (TCM) | P06AD | | Power Up Temp | <= 254 °C | | | | | >= | 60 | Fail Time (Sec) | |
| P06AD Status is ### This Key On or Fault Active For Hybrids, below conditions must also be met Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Control Module Estimated Motor Power Loss #### This Key On or Fault Active Sec | | | | | | Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the | <= >= <= | 31.99023 400 7500 | Volts RPM RPM | | | | |
| must also be met Estimated Motor Power Loss >= 0 kW Estimated Motor Power Loss greater than limit for time Lost Communication with Hybrid Processor Control = FALSE Module Estimated Motor Power Loss FALSE | | | | | | P06AD Status is | ≠ | This Key On or Fault | | | | | |
| Estimated Motor Power Loss Sec Estimated Motor Power Loss Greater than limit for time Lost Communication with Hybrid Processor Control Module Estimated Motor Power Loss FALSE FALSE | | | | | | | | | | | | | |
| greater than limit for time Lost Communication with Hybrid Processor Control = FALSE Module Estimated Motor Power Loss _ FALSE | | | | | | | >= | 0 | kW | | | | |
| Hybrid Processor Control = FALSE Module Estimated Motor Power Loss _ FALSE | | | | | | greater than limit for time | >= | 0 | Sec | | | | |
| | | | | | | Hybrid Processor Control | = | FALSE | | | | | |
| | | | | | | | = | FALSE | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | | Thresho | | Secondary Malfunction | | Enable | | | | ime | Mil Illum |
|-------------------------------------|-------|---------------------------------|--|----------------|----------------|-------------|--|----------------|--------------|---------|-----|------|-----------------|--------------|
| System | Code | Description | Criteria | | Value | Disable | | TOM: D0746 | P0717, P0722 | D0702 | | Req | uired | IIIum |
| | | | | | | Conditions: | MIL not Illuminated for DTC's: | TCIVI: PU7 16, | P0/1/, P0/22 | , PU/23 | | | | |
| | | | | | | Conditions. | | ECM: None | | | | | | |
| | | | | | | | | LOM. HONG | | | | | | |
| ransmission Control Module (TCM) | P06AE | TCM power-up thermistor circuit | Power Up Temp | \ | .254 °C | ` | | | | | >= | 60 | Fail Time (Sec) | Two |
| ransmission Control Module (TCM) | PUOAE | voltage high | Power op Temp | / ₄ | 254 -0 | , | | | | | /- | 00 | raii Time (Sec) | Trips |
| | | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | |
| | | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | |
| | | | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | |
| | | | | | | | Engine Speed is within the | >= | 5 | Sec | | | | |
| | | | | | | | allowable limits for | | | | | | | |
| | | | | | | | | | Test Failed | | | | | |
| | | | | | | | | | This Key | | | | | |
| | | | | | | | P06AE Status is | ≠ | On or Fault | | | | | |
| | | | | | | | | | Active | | | | | |
| | | | | | | | | | Active | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | Disable | MIL not Illuminated for | TCM: None | | | | | | |
| | | | | | | Conditions: | DTC's: | | | | | | | |
| | | | | | | | | ECM: None | | | | | | |
| | | | | | | | | | | | _ | | | _ |
| ii Fluid T O | | T Fluid T 0 0ii4 | If to a series of the series o | | to Table | | | | | | | | | Tw |
| ansmission Fluid Temperature Sensor | P0711 | Trans Fluid Temp Sensor Circuit | If transmission oil temp to substrate | | 19 in | ; | | | | | | | | Trip |
| FT) | | Range/Performance | temp Δ | | porting uments | | | | | | | | | |
| | | | | uoci | umems | | | | | | | | | |
| | | | | Refer | to Table | | | | | | | | | |
| | | | If transmission oil temp to power up | | 0: | | | | | | | | | |
| | | | temp Δ | | porting °C | ; | | | | | | | | |
| | | | | | uments | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | Both conditions above required to | | | | | | | | >= | 3000 | Fail Counts | |
| | | | increment fail counter | | | | | | | | | 3000 | (100ms loop) | |
| | | | Note: table reference temp = to the | | | | | | | | | | | |
| | | | median temp of trans oil temp, | | | | | | | | Out | 3750 | Sample Counts | |
| | | | substrate temp and power up | | | | | | | | of | | (100ms loop) | |
| | | | temp. Non-continuous (intermittent) fail | | | | | | | | | | | 1 |
| | | | conditions will delay resetting fail | | | | | | | | >= | 700 | Pass Counts | |
| | | | counter until | | | | | | | | | 700 | (100ms loop) | |
| | | | oountor until | | | | | | | | | | | |
| | | | | | | | | | | | Out | 875 | Sample Counts | |
| | | | | | | | | | | | of | | (100ms loop) | |
| | | | | | | | | | | | | | | 1 |
| | | | | | | | Engine Torque Signal Valid | = | TRUE | Boolean | | | | |
| | | | | | | | Accelerator Position Signal | = | TRUE | Boolean | | | | |
| | | | | | | | Valid | | | | | | | I |
| | | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | I |
| | | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | I |
| | | | | | | | Engine Speed Lo | >= | 400 | RPM | I | | | |
| | | | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | |
| | | | | | | | Engine Speed is within the allowable limits for | >= | 5 | Sec | I | | | |
| | 1 | | | | | | Brake torque active | = | FALSE | | 1 | | | 1 |
| | | | | | | | | | | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary | | Enable | | Time | Mil |
|---|-------|---|--|--------------------|---|--|--|--|----------|--------------|
| System | Code | Description | Criteria | Value | Malfunction | | Conditions | | Required | Illum. |
| | | | | | Below describes the brake torque entry criteria Engine Torque | 1 | 90 | N*m | | |
| | | | | | Throttle Transmission Input Speed | >= | 30.0003 200 | Pct RPM | | |
| | | | | | Vehicle Speed | <= | 8 | Kph | | |
| | | | | | Transmission Range Transmission Range PTO | ≠ | Park Neutral | | | |
| | | | | | Set Brake Torque Active TRUE if above conditions are met for: | | Not Active | sec | | |
| | | | | | Below describes the brake torque exit criteria | | | | | |
| | | | | | Brake torque entry criteria | = | Not Met Clutch | | | |
| | | | | | Clutch hydraulic pressure | . ≠ | Hydraulic Air Purge | | | |
| | | | | | Clutch used to exit brake torque active | | Event CeTFTD_e _C3_RatIE | | | |
| | | | | | The above clutch pressure is greater than this value for one | s ; >= | nbl 600 | kpa | | |
| | | | | | Set Brake Torque Active FALSE if above conditions are met for: | >= | 20 | Sec | | |
| | | | | | P0711 Status is | | Test Failed This Key On or Fault Active | | | |
| | | | | Disab Condition | | P06AE, P07 P0722, P07 | 16, P0712, P071 23, P0962, P096 70, P0971, P215 | 3, P0717, 3, P0966, | | |
| | | | | | | P0107, P01 P0175, P02 P0205, P02 P0301, P03 | 1, P0102, P0103 08, P0171, P017 01, P0202, P020 06, P0207, P020 02, P0303, P030 07, P0308, P040 | 2, P0174, 3, P0204, 8, P0300, 4, P0305, | | |
| Transmission Fluid Temperature Sensor (TFT) | P0712 | Transmission fluid temperature thermistor failed at a low voltage | Type of Sensor Used If Transmission Fluid Temperature Sensor = Direct Proportional and Temp If Transmission Fluid Temperature | op <= 254 °C | | | | | | Two Trips |
| | | | Sensor = Indirect Proportional and Temp | >= 254 °C | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thres Val | shold lue | Secondary Malfunction | | Enable Conditions | | | Ti Req | me uired | Mil Illum |
|--------------------------------------|---------------|--|---|--------------------------------------|------------------------|--|----------------|--|-------------------------------------|----|-----------|-----------------|--------------|
| | | | Either condition above will satisfy the fail conditions | | | | | _ | | >= | 60 | Fail Time (Sec) | |
| | | | un un condition | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | <= >= <= | 9 31.99023 400 7500 | Volts Volts RPM RPM Sec | | | | - |
| | | | | | | P0712 Status is | ≠ | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | For Hybrids, below conditions must also be met | : | | | | | | |
| | | | | | | Estimated Motor Power Loss Estimated Motor Power Loss | \ | 0 | kW Sec | | | | |
| | | | | | | greater than limit for time Lost Communication with Hybrid Processor Control | | FALSE | 060 | | | | |
| | | | | | | Module Estimated Motor Power Loss Fault | _ | FALSE | | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | | i, P0717, P0722, | P0723 | | | | |
| ransmission Fluid Temperature Sensor | P0713 | Transmission fluid temperature thermistor failed at a high voltage | Type of Sensor Used | CeTFTI_e_Vo = tageInversePr op | | | | | | | | | Two Trips |
| | | | If Transmission Fluid Temperature Sensor = Direct Proportional and Temp | >= -254 | °C | | | | | | | | |
| | | | If Transmission Fluid Temperature Sensor = Indirect Proportional and Temp | | °C | | | | | | | | |
| | | | Either condition above will satisfy the fail conditions | | | | | | | >= | 60 | Fail Time (Sec) | |
| | | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Li Engine Speed Hi Engine Speed is within the allowable limits for | <= >= <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | | P0713 Status is | <i>≠</i> | Test Failed This Key On or Fault Active | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | shold Ilue | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum. |
|--|---------------|---|---|---------|------|------------------------|---|---------------------------------------|--|--|----|-----|-----------------|---------------|
| | | 2000, | | | | Disable Conditions: | MIL not Illuminated for DTC's: | | | , P0722, | | - 1 | | |
| Transmission Input Speed Sensor (TISS) | P0716 | Input Speed Sensor Performance | Transmission Input Speed Senso Drops | r >= | 1350 | RPM | | ECM: None | | | >= | 0.8 | Fail Time (Sec) | One Trip |
| | | | | | | | Engine Torque is Engine Torque is Engine Speed Engine Speed Engine Speed is within the allowable limits for Vehicle Speed is Throttle Position is | >= <= >= >= >= | 0 8191.88 400 7500 5 10 | N*m N*m RPM RPM Sec Kph | | | | |
| | | | | | | | Transmission Input Speed is The previous requirement has been satisfied for | >= | 0 | RPM Sec | | | | |
| | | | | | | | The change (loop to loop) in transmission input speed is The previous requirement to | >= | 8191.75 0 | RPM/Loop Sec | | | | |
| | | | | | | | been satisfied for Throttle Position Signal Valid | | TRUE | Boolean | | | | |
| | | | | | | | Engine Torque Signal Valid Ignition Voltage Ignition Voltage | >= | TRUE 9 31.99023 | Boolean Volts Volts | | | | |
| | | | | | | | P0716 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | | , P0102, P0103 | | | | | |
| Transmission Input Speed Sensor (TISS) | P0717 | Input Speed Sensor Circuit Low Voltage | Fail Case 1 Transmission Input Speed is | | 33 | RPM | | | | | >= | 4.5 | Fail Time (Sec) | One Trip |
| | | | Fail Case 2 When P0722 DTC Status equal to Test Failed and Transmission Inpu Speed is | | 1000 | RPM | Controller uses a single power supply for the speed sensors | = | 1 | Boolean | | | | |
| | | | | | | | Engine Torque is Engine Torque is Vehicle Speed Engine Torque Signal Valid Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed Engine Speed is within the allowable limits for | <= >= = >= <= >= <= | 50 8191.88 16 TRUE 9 31.99023 400 7500 5 | N*m N*m Kph Boolean Volts Volts RPM RPM | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | reshold /alue | Secondary Malfunction | | Enable Conditions | | | | ime Juired | Mil Illum. |
|---|---------------|--|---|-------|------------------------|--|----------------------|--|--|----|-----|----------------|---------------|
| , | | | | | | P0717 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | Disable Conditions: | | | , P0723 , P0102, P0103 | | | | | |
| Transmission Output Speed Sensor (TOSS) | P0722 | Output Speed Sensor Circuit Low Voltage | Transmission Output Speed Sensor Raw Speed | <= 35 | RPM | | | | | >= | 4.5 | Fail Time (Sec | One Trip |
| | | | | | | P0722 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Transmission Input Speed Check Engine Torque Check Throttle Position Transmission Fluid Temperature Disable this DTC if the PTO is active Engine Torque Signal Valid | >= >= = | TRUE TRUE 8.0002 -40 1 TRUE | Boolean Boolean Pct °C Boolean Boolean | | | | |
| | | | | | | Throttle Position Signal Valid Ignition Voltage is Ignition Voltage is Engine Speed is Engine Speed is Engine Speed is within the allowable limits for | >= <= >= <= | TRUE 9 31.99023 400 7500 5 | Boolean Volts Volts RPM RPM Sec | | | | |
| | | | | | | Enable_Flags Defined Below The Engine Torque Check is TRUE, if either of the two following conditions are TRUE Engine Torque Condition 1 | | | | | | | |
| | | | | | | Range Shift Status OR Transmission Range is Engine Torque is Engine Torque is Engine Torque Condition 2 | = >= <= | Range shift completed Park or Neutral 8191.75 8191.75 | ENUM N*m N*m | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thre Va | shold llue | Secondary Malfunction | | Enable Conditions | | | Ti Reg | me uired | Mil Illum. |
|---|---------------|---|---|----------------------|------------------------|---|----------|----------------------|------------|----|-----------|--|---------------|
| Oyston | Couc | Description | 5.110.112 | | | Engine Torque is Engine Torque is | >= <= | 30 8191.75 | N*m N*m | | | unou | |
| | | | | | | The Transmission Input Speed (TIS) Check is TRUE, if either of the two following conditions are TRUE | | | | | | | - |
| | | | | | | TIS Check Condition 1 Transmission Input Speed is Transmission Input Speed is | >= <= | 1000 8191.75 | RPM RPM | | | | |
| | | | | | | TIS Check Condition 2 Engine Speed without the brake applied is Engine Speed with the brake | >= | 3200 3200 | RPM RPM | | | | |
| | | | | | | applied is Engine Speed is | >= <= | 3200 8191.75 | RPM | | | | |
| | | | | | | Controller uses a single power supply for the speed sensors | | 1 | Boolean | | | | |
| | | | | | | Powertrain Brake Pedal is Valid | | TRUE | Boolean | | | | |
| | | | | | Disable Conditions: | | : | , P0102, P010 | | | | | |
| Transmission Output Speed Sensor (TOSS) | P0723 | Output Speed Sensor Circuit Intermittent | Transmission Output Speed Sensor Raw Speed | >= 105 | RPM | | | | | >= | 0 | Enable Time (Sec) | One Trip |
| | | | Output Speed Delta | <= 8191.75 | RPM | | | | | >= | 0 | Enable Time (Sec) | |
| | | | Output Speed Drop | > 1000 | RPM | | | | | >= | 3 | Output Speed Drop Recovery Fail Time (Sec) | |
| | | | AND Transmission Range is | = Driven range (R,D) | | | | | | | | | |
| | | | | | | Range_Disable OR | = | FALSE | See Below | | | | |
| | | | | | | Neutral_Range_Enable And | = | TRUE | See Below | | | | |
| | | | | | | Neutral_Speed_Enable are TRUE concurrently | = | TRUE | See Below | | | | |
| | | | | | | Transmission_Range_Enable | = | TRUE | See Below | | | | |
| | | | | | | Transmission_Input_Speed_En able | = | TRUE | See Below | | | | |
| | | | | | | No Change in Transfer Case Range (High <-> Low) for | | 5 | Seconds | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary | Enable | | Time | Mil |
|------------|-------|------------------|-------------|-----------|--|--|----------------|----------|--------|
| System | Code | Description | Criteria | Value | Malfunction | Conditions | | Required | Illum. |
| | | | | | P0723 Status is not | Test Failed This Key On or Fault Active | | | |
| | | | | | Disable this DTC if the PTO is | = 1 | Boolean | | |
| | | | | | active Ignition Voltage is Ignition Voltage is | >= 9 <= 31.99023 | Volts Volts | | |
| | | | | | Engine Speed is | >= 400 | RPM | | |
| | | | | | Engine Speed is Engine Speed is within the allowable limits for | <= 7500 >= 5 | RPM Sec | | |
| | | | | | Enable_Flags Defined Below | | | | |
| | | | | | Transmission_Input_Speed_En | | | | - |
| | | | | | able is TRUE when either TIS Condition 1 or TIS Condition 2 is TRUE: | | | | |
| | | | | | TIS Condition 1 is TRUE when both of the following conditions | >= 0 | Enable Time | | |
| | | | | | are satsified for | | (Sec) | | |
| | | | | | Input Speed Delta Raw Input Speed | <= 4095 >= 500 | RPM RPM | | |
| | | | | | TIS Condition 2 is TRUE when ALL of the next two conditions | | | | |
| | | | | | are satisfied Input Speed | = 0 | RPM | | |
| | | | | | A Single Power Supply is used for all speed sensors | = TRUE | Boolean | | |
| | | | | | Neutral_Range_Enable is | | | | - |
| | | | | | TRUE when any of the next 3 conditions are TRUE | | | | |
| | | | | | Transmission Range is | = Neutral | ENUM | | |
| | | | | | Transmission Range is | Reverse/N = eutral | ENUM | | |
| | | | | | | Transitonal | | | |
| | | | | | Transmission Range is | Neutral/Dri = ve Transitiona | FNIIM | | |
| | | | | | And when a drop occurs | l | | | |
| | | | | | Loop to Loop Drop of Transmission Output Speed is | > 650 | RPM | | |
| | | | | | Range_Disable is TRUE when | | | | _ |
| | | | | | any of the next three conditions are TRUE | | | | |
| | | | | | Transmission Range is | = Park | ENUM | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | Tir Requ | me uired | Mil Illum. |
|------------------------------|---------------|------------------------------|--|-----------------------|---|-----|---|---------|----|-------------|----------------------|---------------|
| _, | 3.543 | | | | Transmission Range is | s = | Park/Rever se Transitonal | ENUM | | | | |
| | | | | | Input Clutch is no | t = | ON (Fully Applied) | ENUM | | | | |
| | | | | | Neutral_Speed_Enable is TRUE when All of the next three conditions are satsified | | 1.5 | Seconds | | | | |
| | | | | | Transmission Output Speed | > | 130 | RPM | | | | |
| | | | | | The loop to loop change of the Transmission Output Speed is | | 125 | RPM | | | | |
| | | | | | The loop to loop change of the Transmission Output Speed is | > | -10 | RPM | | | | |
| | | | | | Transmission_Range_Enable is TRUE when one of the nexi six conditions is TRUE Transmission Range is | t | Neutral | ENUM | | | | - |
| | | | | | Transmission Range is | s = | Reverse/N eutral Transitiona | ENUM | | | | |
| | | | | | Transmission Range is | ; = | I Neutral/Dri ve Transitiona I | ENUM | | | | |
| | | | | | Time since a driven range (R,D) has been selected | | Table Based Time Please Refer to Table 21 in supporting documents | Sec | | | | |
| | | | | | Transmission Output Speed Sensor Raw Speed | >= | 500 | RPM | | | | |
| | | | | | Output Speed when a fault was detected | | 500 | RPM | | | | |
| | | | | Disable Conditions | | : | 1, P0102, P0103, | | | | | |
| orque Converter Clutch (TCC) | P0741 | TCC System Stuck OFF | TCC Pressure Either Condition (A) or (B) Must be Met | · | | | | | >= | 2 | Enable Time (Sec) | Two Trips |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary Malfunction | Enable | | | me | Mil Illum. |
|------------|-------|------------------|---|-------------------------|---|--|----|------|-------------------------------|---------------|
| System | Code | Description | Criteria | Value Refer to Table | Maitunction | Conditions | - | Requ | uirea | IIIum. |
| | | | (A) TCC Slip Error @ TCC On Mode | s= 1 in RPM | | | >= | 5 | Fail Time (Sec) | |
| | | | (B) TCC Slip @ Lock On Mode | >= 130 RPM | | | >= | 5 | Fail Time (Sec) | |
| | | | If Above Conditions Have been Met, and Fail Timer Expired, Increment Fail Counter | | | | >= | 2 | TCC Stuck Off Fail Counter | |
| | | | | | TCC Mode | = On or Lock | | | | |
| | | | | | Ignition Voltage Lo Ignition Voltage H Engine Speec Engine Speed is within the allowable limits for Engine Torque Lo Engine Torque Lo Engine Torque Lo Throttle Position Lo Throttle Position Lo 2nd Gear Ratio Lo 2nd Gear Ratio Lo 3rd Gear Ratio High 3rd Gear Ratio High 4th Gear Ratio Lo 4th Gear Ratio Lo 5th Gear Ratio Lo 5th Gear Ratio Lo 6th Gear Ratio Lo 6th Gear Ratio Lo 6th Gear Ratio Lo 1ransmission Fluic Temperature Lo Temperature Lo | <pre> <= 31.99023</pre> | | | | |
| | | | | | PTO Not Active Engine Torque Signal Valid | = TRUE Boolean | | | | |
| | | | | | Throttle Position Signal Valid | | | | | |
| | | | | | Dynamic Mode P0741 Status is | Test Failed | | | | |
| | | | | Disable Conditions | | TCM: P0716, P0717, P0722, P0723, P0742, P2763, P2764 ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, | | | | |
| | | | | | | P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E | | | | |

| Code P0742 | Description TCC System Stuck ON | Criteria TCC Slip Speed TCC Slip Speed | | Valu 50 | RPM | Malfunction | | Conditions | | 1 | | uired | Illu |
|----------------------|---------------------------------|--|------|------------|---------------------------|--|--------------------|-----------------|------------|----|---|-------------------|-------|
| | | | | | 1 (1 141 | | | | | | | | One ' |
| | | | (= 1 | 13 | RPM | | | | | | | | |
| | | | | | | | | | | >= | 1 | Fail Time (Sec) | |
| | | | | | | | | | | /- | ' | raii Tiille (Sec) | |
| | | If Above Conditions Have been | | | | | | | | | | | |
| | | Met, and Fail Timer Expired, | , | | | | | | | >= | 5 | Fail Counter | |
| | | Increment Fail Counter | 1 | | | | | | | | | | 1 |
| | | | | | | TCC Mode | = | Off | | | | | |
| | | | | | | Enable test if Cmnd Gear = | = | 1 | Boolean | | | | |
| | | | | | | 1stFW and value true | | | | | | | 1 |
| | | | | | | Enable test if Cmnd Gear = 2nd | = | 0 | Boolean | | | | 1 |
| | | | | | | and value true | | 0000 | DDM | | | | |
| | | | | | | Engine Speed Hi | <= | 6000 | RPM | | | | |
| | | | | | | Engine Speed Lo Vehicle Speed HI | >= <= | 500 511 | RPM KPH | | | | |
| | | | | | | Vehicle Speed Lo | | 1 | KPH KPH | | | | |
| | | | | | | Engine Torque Hi | >= <= | 8191.88 | Nm | | | | |
| | | | 1 | | | Engine Torque Lo | >= | 60 | Nm | | | | 1 |
| | | | | | | Current Range | <i>></i> - ≠ | Neutral | Range | | | | |
| | | | | | | Current Range | <i>+</i> ≠ | Reverse | Range | | | | 1 |
| | | | | | | Transmission Sump | | | | | | | |
| | | | | | | Temperature | <= | 130 | °C | | | | 1 |
| | | | | | | Transmission Sump | | | | | | | |
| | | | | | | Temperature | >= | 15 | °C | | | | |
| | | | | | | Throttle Position Hyst High | >= | 10.0006 | Pct | | | | |
| | | | | | | AND | | | , | | | | |
| | | | | | Max Vehicle Speed to Meet | | _ | | | | | | |
| | | | | | | Throttle Enable | <= | 8 | KPH | | | | |
| | | | | | | Once Hyst High has been met, | | | | | | | |
| | | | | | | the enable will remain while | >= | 2.0004 | Pct | | | | |
| | | | | | | Throttle Position | | | | | | | |
| | | | | | | Disable for Throttle Position | >= | 75 | Pct | | | | |
| | | | | | | Disable if PTO active and | = | 1 | Daelaan | | | | |
| | | | | | | value true | = | 1 | Boolean | | | | |
| | | | | | | Disable if in D1 and value true | _ | 4 | Daalaan | | | | |
| | | | | | | Disable if in D1 and value true | = | 1 | Boolean | | | | |
| | | | | | | Disable if in D2 and value true | = | 1 | Boolean | | | | |
| | | | | | | Disable ii iii D2 and value true | - | ı | boolean | | | | |
| | | | | | | Disable if in D3 and value true | = | 1 | Boolean | | | | |
| | | | | | | Disable ii iii D3 and value true | - | Į. | DUUIEAII | | | | |
| | | | | | | Disable if in D4 and value true | = | 1 | Boolean | | | | |
| | | | | | | Disable ii iii b4 and value tide | _ | | Doolcan | | | | 1 |
| | | | | | | Disable if in D5 and value true | = | 1 | Boolean | | | | 1 |
| | | | | | | | | • | Doolouii | | | | 1 |
| | | | | | | Disable if in MUMD and value | = | 1 | Boolean | | | | 1 |
| | | | | | | true | | · | Boologii | | | | |
| | | | | | | Disable if in TUTD and value | = | 1 | Boolean | | | | |
| | | | | | | true | | | | | | | |
| | | | | | | 4 Wheel Drive Low Active | = | FALSE | Boolean | | | | |
| | | | | | | Disable if Air Purge active and | = | 0 | Boolean | | | | |
| | | | | | | value false | = | | | | | | |
| | | | 1 | | | RVT Diagnostic Active | = >= | FALSE 9 | Boolean | | | | |
| | | | | | | Ignition Voltage | | | V V | | | | 1 |
| | | | | | | Ignition Voltage | <= | 31.99023 511 | V KPH | | | | 1 |
| | | | | | | Vehicle Speed | <= >= | 400 | RPM | | | | 1 |
| | | | | | | Engine Speed Engine Speed | >= <= | 7500 | RPM RPM | | | | |
| | | | | | | | | | | | | | 1 |
| | | | | | | Engine Speed is within the allowable limits for | >= | 5 | Sec | | | | 1 |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | Thre: Va | shold lue | Secondary Malfunction | | Enable Conditions | | | T Red | ime Juired | Mil Illum. |
|------------------------|---------------|----------------------------------|--|-------|-----------------------------|------------------------|--|--|---|--|----------|----------|-------------------------|---------------|
| -, | 1 2230 | | | | | | Engine Torque Signal Valid | = | TRUE | Boolean | | | | |
| | | | | | | | Throttle Position Signal Valid | = | TRUE | Boolean | | | | |
| | | | | | | | P0742 Status is | ≠ | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Disable Conditions: | | P0741, P270 | | | | | | |
| | | | | | | | | P0107, P010 P0175, P020 P0205, P020 P0301, P030 | 08, P0171, P01: 01, P0202, P02: 06, P0207, P02: 02, P0303, P03: 07, P0308, P04: | 72, P0174, 03, P0204, 08, P0300, 04, P0305, | | | | |
| Mode 2 Multiplex Valve | P0751 | Shift Solenoid Valve A Stuck Off | Commaned Gear Slip | >= | 400 | RPM | | | | | Ì | | | Two |
| | | | Commanded Gear Gear Ratio Gear Ratio | <= 1. | st Lock .51831 .37366 | rpm | | | | | >= = | 0.3 5 | Fail Tmr Fail Counts | Trips |
| | | | If the above parameters are true | | | | | | | | ≠ | 0 | Neutral Timer (Sec) | |
| | | | | | | | | | | | >= | 0.3 | Fail Timer (Sec) | |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Transmission Fluid Temperature | <= >= <= >= >= | 9 31.99023 400 7500 5 -6.6563 Range | Volts Volts RPM RPM Sec | >= | 8 | Counts | |
| | | | | | | | Range Shift State | | Shift Completed | ENUM | | | | |
| | | | | | | | TPS OR | | 0.5005 | % | | | | |
| | | | | | | | Output Speed Throttle Position Signal Valid from ECM | >= | 100 TRUE | RPM Boolean | | | | |
| | | | | | | | Engine Torque Signal Valid from ECM, High side driver is enabled | = | TRUE | Boolean | | | | |
| | | | | | | | High-Side Driver is Enabled Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present | = = | TRUE FALSE FALSE TRUE | Boolean Boolean Boolean | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | | | eshold | Secondary Malfunction | | Enable | | | Time | | Mil |
|------------------------|-------|---------------------------------|--|----|----------------------------|------------------------|--|--|--|--|--------------------|---------|------------------------|--------|
| System | Code | Description | Criteria | | V | alue | Malfunction | | Conditions | | - | Require | ed | Illum |
| | | | | | | Disable Conditions: | | | , P0717, P0722 | , P0723, | | | | |
| | | | | | | | | P0107, P010 P0175, P020 P0205, P020 P0301, P030 | , P0102, P0103 8, P0171, P017 11, P0202, P020 6, P0207, P020 2, P0303, P030 17, P0308, P040 | 72, P0174, 03, P0204, 08, P0300, 04, P0305, | | | | |
| | | | | | | | | | ,, | | | | | |
| Mode 2 Multiplex Valve | P0752 | Shift Solenoid Valve A Stuck On | Gear Box Slip | >= | 400 | RPM | | | | | | | | One Tr |
| | | | Commanded Gear Commanded Gear has Achieved 1st Locked OR 1st Free-Wheel OR 2nd with Mode 2 Sol. Commanded | | 3rd TRUE | Gear Boolean | | | | | | | | |
| | | | On If the above parameters are true | | | | | | | | >= to Tabl Supp | | Neutral Timer (Sec) | |
| | | | Command 4th Gear once Output Shaft Speed If Gear Ratio And Gear Ratio | >= | 1000 4.35486 4.81323 | RPM | | | | | Docui | ments | | |
| | | | | | | | | | | | | .5 I | Fail Timer (Sec) |) |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi | >= <= >= <= | 9 31.99023 400 7500 | Volts Volts RPM RPM | | | | |
| | | | | | | | Engine Speed is within the | >= | 5 | Sec | | | | |
| | | | | | | | allowable limits for High-Side Driver is Enabled | = | TRUE | Boolean | | | | |
| | | | | | | | Throttle Position Signal Valid from ECM | = | TRUE | Boolean | | | | |
| | | | | | | | Output Speed | >= | 100 | RPM | | | | |
| | | | | | | | OR TPS | >= | 0.5005 | % | | | | |
| | | | | | | | Range Shift State | = | Range Shift | ENUM | | | | |
| | | | | | | | Transmission Fluid | | Completed | 00 | | | | |
| | | | | | | | Temperature Input Speed Sensor fault | >= | -6.6563 FALSE | °C Boolean | | | | |
| | | | | | | | Output Speed Sensor fault Default Gear Option is not present | = | FALSE TRUE | Boolean | | | | |

| Debtoks | Component/ | Fault Code | Monitor Strategy | Malfunction Criteria | | eshold | Secondary Malfunction | Enable Condition | | | Tim | | 111 |
|--|---------------------------|---------------|----------------------------------|---------------------------------------|------------|------------------|------------------------------|------------------------|--------------|-----|-------------|-----------------|------|
| Post | System | Code | Description | Criteria | - v | | | | | + | Requi | ıı cu | +''' |
| POTTO Passent Control (PC) Stanced B PotTo | | | | | | | MIL not illuminated for | TCM: P0/16, P0/1/, P0/ | 722, P0723, | | | | |
| Part | | | | | | Conditions | DICS | P182E | | | | | |
| Part | | | | | | | | | | | | | |
| Policy Price Pri | | | | | | | | | | | | | |
| P0776 P077 | | | | | | | | | | | | | |
| Peace Peac | | | | | | | | P0107, P0108, P0171, P | 0172, P0174, | | | | |
| P0705 P070 | | | | | | | | P0175, P0201, P0202, P | 0203, P0204, | | | | |
| Person Control (PC) Solemoid B Fal Case 1 Case Seedy State Size Case Commanded General General General Commanded General G | | | | | | | | P0205, P0206, P0207, P | 0208, P0300, | | | | |
| PRESENCE Control (PC) Scienced B Suck Off (C35R) Pressure Control (PC) Scienced B Suck Off (C35R) Commanded Science Capture Commanded Science Commanded Science Commanded Science Commanded Science Commanded Science Capture Commanded Science Capture Commanded Science Capture Ca | | | | | | | | P0301, P0302, P0303, P | 0304, P0305, | | | | |
| Pressure Control (PC) Solvenoid B Stuck Off (C3SF) Commanded Solve off (C3SF) Commanded Goes = 3rd Goes Coestoo Sign >= 400 RPM Commanded Goes = 3rd Goes Coestoo Sign >= 400 RPM Shall Speed Solvenoid (PCS) And Gener Ratio = 1 151831 >= 3 Fall Time (Sec) Counter | | | | | | | | | | | | | |
| Commend 4th Generator Step > 2 and Generator Step 2 and Generator Step 2 and Generator Step 3 and Generator Step 3 and Generator Step 400 RPM 3 and Generator Step 400 RPM 4 and Generator Step 4 and Generator Ste | | | | | | | | , | | | | | |
| Command 4th Gen once Output Command 4th Gen output Command 4th Gen once Output Command 4 | - LI- Did O-lid A/DO) | D0770 | Pressure Control (PC) Solenoid B | Fail Case 1 | | | | Ì | | 1 | | | Or |
| Command 4th Gear conce Output Shaft Stoped If Gear Ratio <= 1000 RPM If the above conditions are true. Increment 3rd gear fail counter and CSSR Fail counter GearDox Sip >= 400 Rpm If the above conditions are true. Increment 3rd gear fail counter Command 4th Gear Counter If the above conditions are true. Increment 3rd gear fail counter GearDox Sip >= 400 Rpm Fail Case 2 Case Searchy Stade 5th Gear Command 6th Gear Fail Case 2 Case Searchy Stade 5th Gear Command 6th Gear If statished Gear—Fine pear Time >= 15th Cear If statished Gear—Fine pear Time >= 15th Cear Fail Case 1 Time Searchy Stade 5th Gear Fail Case 1 Time Searchy Stade 5th Gear Fail Case 1 Time Searchy Stade 5th Gear Searchy St | able Rieed Solehold (ARS) | P0776 | | Case: Steady State 3rd Ge | ar | | | | | | | | |
| Command 4th Gear onco Output | | | | Commanded Ge | ar = 3rd | Gear | | | | | | | |
| Command 4th Gear once Cutput = 1000 RPM Shirth Speed if Gear Ratio >= 137366 And Gear Ratio >= 1 | | | | | | | | | | | | | |
| Command 4th Cear once Output Sant Speed If Gear Ratio >= 1,51831 If the above condistions are true, Increment 3rd gear fall counter and C3SR Fall counter Fait Cases 2 Cases Steady State 5th Cear Commanded Gear Gearbox Stip >= 400 Rpm Intrusive Teat Command 6th Gear If attained Gear-6th gear Time >= 5th Cear Please-rater to back apporting documents If the above condistions are true, Increment 5th gear fait counter A 400 Rpm Please-rater to back a fait Time (Sec) apporting documents If the above condistions are true, Increment 5th gear fait counter and C3SR Fail counter Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting documents Please-rater to back a fait Time (Sec) apporting to the apporting fait Time (Sec) apporting | | | | | | | | | | Ple | ease Refer | | 1 |
| Command 4th Gear once Output Shart Speed Care Rafe Care Care Rafe Care Rafe Care Rafe Care Care | | | | | | | | | | to. | | | |
| Command 4th Gear none Output Shaft Speed of If Clear Ratio >= 1,37366 And Gear Ratio >= 1,51831 It the above condistions are true, Increment 3rd gear fail counter and C3SR Fail counter Fail Case 2 Caser Sheafy State 5th Gear Commandad Gear = 5th Gear Gearbox Sip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear=6th gear Time >= 1808 3 in supporting Gear documents If the above condistions are true, Increment String gear fail counter and C3SR Fail counter First Case 2 Caser Sheafy State 5th Gear Gearbox Sip >= 400 Rpm Please refer to Table 3 in Shift Time (Sec) supporting Gear Su | | | | | | | | | | | | | |
| Command 4th Gear one Output Case Shift Spead In Clear Ratio 25 | | | | 1 | | | | | | | | (000) | 1 |
| Shaft Spead of If Cear Ratio >= 137366 And Gear Ratio <= 1.51831 It the above condictions are true, increment 3rd gear fail counter If the above condictions are true, increment 3rd gear fail counter | | | | Command 4th Goor once Out | u t | | | | | 1 " | OCUITICITIS | | 1 |
| If cear Ratio > 1.37866 And Gear Ratio > 1.51831 >= 3 Fail Timer It the above condistions are true, increment 3rd gear fail counter and C35R Fail counter Fail Case 2 Case. Steedy State 5th Gear Gearbox Sip >= 400 Rpm Gearbox Sip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear=6th gear Time >= 1.5 Mills Time (Sec) documents It the above condistions are true, increment 5th gear fail counter and C35R Fail counter Final Case 2 Case. Steedy State 5th Gear Please refer to Table 5 in Neutral T Table 5 in Ne | | 1 | | Command 4th Gear once Out | <= 1000 | RPM | | | | 1 | | | 1 |
| And Gear Ratio <= 1.51831 It the above conditations are true, increment 3rd gear field counter >= 2 3 7 6 at Timer | | | | | | | | | | 1 | | | 1 |
| It the above condiations are true, increment 3rd gear fail counter and CSSR Fail counter Fail Case 2. Case: Steady State 5th Gear Commanded Gear = 5th Gear Gearbox Sip >= 400 Rpm Gearbox Sip >= 400 Rpm If attained Gear-Gibt gear Time It the above condiations are true, increment 5th gear fail counter And CSSR Fail counter Please refer to Table 5 in Neutral Table 3 in supporting (Sec) Shift Time (Sec) documents PRONUL State defaulter = FALSE Boolean Hydraulic System Pressurzed = TRUE Boolean | | | | | | | | | | | | | П |
| If the above condisions are true, Increment 3rd gear fail counter and C3SR Fail counter Case: Stady State 5th Gear Commanded Gear Commanded Gear Commanded Gear State Stady State 5th Gear Commanded Gear Gearbox Stp >= 400 Rpm Fail Case 2 Case: Stady State 5th Gear Gearbox Stp >= 400 Rpm Intrusive Test: Command 6th Gear Intrusive Test: Command 6th Gear If attained Gear-6th gear Time >= 1400 Table 5 in Supporting (Sec) Table 3 Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting documents Please refer to Table 5 in Supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 Shift Time (Sec) supporting documents PRNDL State defaulted = FALSE Bookean inhibit FVT = FALSE Bookean FALSE Bookean Hydraulic System Pressurized = TRUE Bookean Hydraulic System Pressurized = TRUE Bookean FALSE Bookean Hydraulic System Pressurized = TRUE Bookean FALSE Bookean FALSE Bookean Hydraulic System Pressurized = TRUE Bookean FALSE | | | | And Gear Ra | 1.51831 | | | | | | | | П |
| It the above condictions are true, Increment 3rd gear fail counter and C3SR Fail counter Fail Case 2 Case: Stoady State 5th Gear Count C | | | | | | | | | | >= | 3 | Fail Timer (Sec |) |
| Increment 3rd gear fail counter and C3SR Fail counter Fail Case 2 Case: Steady State 5th Gear Commanded Gear Gearbox Stip >= 400 Rpm Gearbox Stip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear-6th gear Time supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Table 3 in Supporting (Sec) Table 3 in Supporting (Sec) Table 3 in Supporting (Sec) Table 5 in Supportin | | | | | | | | | | | | | |
| Increment 3rd gear fail counter and C3SR Fail counter Fail Case 2 Case: Steady State 5th Gear Commanded Gear Gearbox Stip >= 400 Rpm Gearbox Stip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear-6th gear Time > Table 5 in Shift Time (Sec) supporting documents Please refer to Table 5 in Shift Time (Sec) supporting documents Please refer to Table 5 in Shift Time (Sec) supporting documents Please refer to Table 5 in Shift Time (Sec) supporting documents Please refer to Table 5 in Shift Time (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting (Sec) Supporting documents Please refer to Table 5 in Supporting documents Table 5 in Supporting documents Please refer to Table 5 in Supporting documents Table 5 in Supportin | | | | It the above condiations are tru | ie. | | | | | | _ | 3rd Gear Fail | П |
| and C3SR Fail counter Fail Case 2 | | | | | | | | | | >= | 2 | | |
| and C35R Fail counter Fail Case 2 | | | | morement or a goar ian ocan | | | | | | | | 0001110 | |
| Fail Case 2 Case: Steady State A Gear Gearbox Slip >= 400 Rpm Gearbox Slip >= 400 Rpm Please refer to Table 5 in Supporting Supporting Jocuments Intrusive Test: Command 6th Gear It the above condictions are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean Type Soolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting Implication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting IMS fault pending indication = FALSE Boolean Type Supporting Implication = FALSE | | | | | | | | | | | | | |
| Fall Case 2 Case: Steady State 5th Gear Gearbox Slip >= 400 Rpm Jease refer to Table 3 in Supporting documents If attained Gear-6th gear Time >= Shift Time (Sec) documents If the above condictions are true, Increment 5th gear fail counter and C3SR Fail counter Please refer to Table 3 in Shift Time (Sec) documents Please refer to Table 3 in Shift Time (Sec) documents Please refer to Table 3 in Shift Time (Sec) documents Please refer to Table 3 in Shift Time (Sec) documents Please refer to Table 3 in Shift Time (Sec) documents Please refer to Table 3 in Shift Time (Sec) documents PRNDL State defaulted = FALSE Boolean Instituted = FALSE Boolean Type State of Table Boolean Type State Type Type Type Type Type Type Type Typ | | | | and C35D Fail coun | or | | | | | \ | 1/ | 3-5R Clutch Fai | ıl |
| Commanded Gear Gearbox Sip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear=6th gear Time Please refer to Table 3 in supporting documents It the above conditations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted FALSE Boolean FALSE Boolean TRS validity flag TRUE Boolean Hydraulic System Pressurized TRUE Boolean TRUE Boolea | | | | and Cook Fall Court | ei | | | | | /- | 14 | Counts | |
| Gearbox Slip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear=6th gear Time >= Please refer to Table 3 in Supporting documents It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter Please refer to Table 3 in Shift Time (Sec) supporting documents Please refer to Table 3 in Shift Time (Sec) supporting documents PRNDL State defaulted = FALSE Boolean inhibit RVT FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Hydraulic System Pressurized | | | | Fail Case 2 Case: Steady State 5th Ge | ar | | | | | 1 | | | 1 |
| Gearbox Slip >= 400 Rpm Intrusive Test: Command 6th Gear If attained Gear=6th gear Time It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter Please refer to Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 3 in Shift Time (Sec) To count or Table 4 in Shift Time (Sec) To count or Table 5 in Neutral Time (Sec) To count or Table 5 in Neutral Time (Sec) To count or Table 5 in Neutral Time (Sec) Table 5 in Neutral Time (Sec) Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 in Neutral Time (Sec) Table 5 in Table 5 i | | | | Commanded Ge | ar = 5th | Gear | | | | | | | |
| Searbox Slip Sear | | | | | | | | | | | | | |
| Count | | | | | | | | | | Ple | ease Refer | | |
| Intrusive Test: Command 6th Gear Please refer to Table 3 in supporting documents | | | | | | | | | | to | | | |
| Intrusive Test: Command 6th Gear If attained Gear=6th gear Time >= Flease refer to Table 3 in Supporting documents It the above condictions are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean TYS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | Gearbox S | lip >= 400 | Rpm | | | | | | | |
| Intrusive Test: Command 6th Gear If attained Gear=6th gear Time Secuptoring documents It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted FALSE Boolean PRNDL State defaulted FALSE Boolean Inhibit RVT FALSE Boolean PRNDL State defaulted FALSE Boolean PRNDL STATE FALSE FALSE Boolean PRNDL STATE FALSE FALSE Boolean PRNDL STATE FALSE FALSE FALSE FALSE FALSE FALSE FALSE PRNDL STATE FALSE FALSE FALSE | | | | | | | | | | | | (000) | |
| If attained Gear=6th gear Time >= Flease refer to Table 3 in supporting documents Shift Time (Sec) It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted FALSE Boolean Inhibit RVT FALSE FALSE Boolean Inhibit RVT FALSE FALSE Boolean Inhibit RVT FALSE FALSE FALSE FALSE FALSE Inhibit RVT FALSE FALSE FALSE FALSE FALSE FALSE FALSE Inhibit RVT FALSE FALSE | | | | | | | | | | " | Deuments | | |
| It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted inhibit RVT = FALSE Boolean inhibit RVT = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | Intrusive Test: Command 6th Ge | ar | | | | | | | | П |
| It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted inhibit RVT = FALSE Boolean TPS validify flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | | DI (| 1 | | | | | | | |
| It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | | | IO . | | | | 1 | | | |
| It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | If attained Gear=6th gear Tir | | Shift Time (Sec) | | | | 1 | | | 1 |
| It the above condiations are true, Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | 1 | supporting | , , | | | | 1 | | | 1 |
| Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | 1 | | | documents | | | | | 1 | | | 1 |
| Increment 5th gear fail counter and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | It the above condiations are tru | ie. | | | | | 1 | | 5th Gear Fail | 1 |
| and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | | | | | | | >= | 3 | | 1 |
| and C35R Fail counter PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | morement our goar fail court | ~·[| | | | | 1 | | | 1 |
| PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | | I | | | | | 1 | | | |
| PRNDL State defaulted = FALSE Boolean inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | and C3ED Eail sour | or | | | | | \ | 1/ | 3-5R Clutch Fai | d |
| inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | and Cook Fall Court | .01 | | | <u> </u> | | | 14 | Counts | ┚ |
| inhibit RVT = FALSE Boolean IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | | | - | PRNDL State defaulted | = FALSE | Boolean | | | | 1 |
| IMS fault pending indication = FALSE Boolean TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | 1 | | | | | | 1 | | | 1 |
| TPS validity flag = TRUE Boolean Hydraulic System Pressurized = TRUE Boolean | | | | 1 | | | | | | 1 | | | 1 |
| Hydraulic System Pressurized = TRUE Boolean | | | | | I | | | | | 1 | | | 1 |
| | | | | | I | | | | | 1 | | | |
| | | | | | I | | Hydraulic System Pressurized | = TRUE | Boolean | 1 | | | 1 |
| ARCHITECTURE CONTRACTOR CONTRACTO | | | | | I | | | | | 1 | | | |
| | | | | 1 | | | Minimum output speed for RVT | >= 100 | RPM | 1 | | | 1 |
| A OR B | | | | 1 | | | | | | 1 | | | 1 |

| Component/ System | Fault Code | Monitor Strategy Description | | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | | ime Juired | Mil Illum |
|-------------------------------|---------------|----------------------------------|-------------|--|---|---|---------------|--------------------------------|--------------------|----|-----|-------------------|--------------|
| oyetem. | 0000 | 2000.1511011 | | | | (A) Output speed enable | >= | 100 | RPM | | | | |
| | | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Pct | | | | |
| | | | | | | Common Enable Criteria | | | | | | | |
| | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | |
| | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | |
| | | | | | | Engine Speed Lo Engine Speed Hi | >= <= | 400 7500 | RPM RPM | | | | |
| | | | | | | Engine Speed is within the | | 5 | | | | | |
| | | | | | | allowable limits for | 1 | | Sec | | | | |
| | | | | | | Throttle Position Signal valid HSD Enabled | | TRUE TRUE | Boolean Boolean | | | | |
| | | | | | | Transmission Fluid | | | | | | | |
| | | | | | | Temperature | | -6.6563 | °C | | | | |
| | | | | | | Input Speed Sensor fault | | FALSE FALSE | Boolean Boolean | | | | |
| | | | | | | Output Speed Sensor fault Default Gear Option is not | | | Doolean | | | | |
| | | | | | | present | = | TRUE | | | | | |
| | | | | | | | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | TCM: P0716 | P0717 P072 | P0723 | | | | |
| | | | | | Conditions | | P182E | , , | -, , | | | | |
| | | | | | | | | B0400 B040 | | | | | |
| | | | | | | | | , P0102, P010 8, P0171, P01 | | | | | |
| | | | | | | | | 11, P0202, P02 | | | | | |
| | | | | | | | P0205, P020 | 6, P0207, P02 | 08, P0300, | | | | |
| | | | | | | | | 2, P0303, P03 7, P0308, P04 | | | | | |
| | | | | | | | 1 0300, 1 030 | 77, 1 0300, 1 04 | 01, 1 042L | | | | |
| Variable Bleed Solenoid (VBS) | P0777 | Pressure Control (PC) Solinoid B | Fail Case 1 | Case: Steady State 1st | | | | | | | | | One Tr |
| , , | | Stuck On [C35R] (Steady State) | | Attained Gear slip | | | | | | | | | |
| | | | | ritaniou oour onp | Table Based | | | | | | | | |
| | | | | | Time Please | | | | | | | | |
| | | | | If the Above is True for Time | >= Refer to Table Enable Time 4 in (Sec) | | | | | | | | |
| | | | | | supporting | | | | | | | | |
| | | | | | documents | | | | | | | | |
| | | | | Intrusive test: (CBR1 clutch exhausted) | | | | | | | | | |
| | | | | Gear Ratio | <= 2.00732 | | | | | | | | |
| | | | | Gear Ratio | | | | | | | | | |
| | | | | If the above parameters are true | | | | | | | | | |
| | | | | | | | | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | | | >= | 2 | Fail Count in 1st | |
| | | | | | | | | | | | - | Gear | |
| | | | | | | | | | | | | or Total Fail | |
| | | | | | | | | | | >= | 3 | Counts | |
| | | | Fail Case 2 | Case: Steady State 2nd gear | Table Based | | | | | | | | |
| | | | | | I DI | | | | | | | | |
| | | | | Max Delta Output Speed | Refer to Table | | | | | | | | |
| | | | | Hysteresis | | | | | | | | | |
| | | | | | supporting | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | _ [, | Time Required | ı |
|----------------------|---------------|------------------------------|---|---------------------------------|--------------------------|----------------------|--------|-------------------|---|
| 0,0.0 | | 200011911011 | | Table Based | | | | - 4 | 十 |
| | | | | value Please | | | | | |
| | | | | Refer to Table | | | | | |
| | | | Min Delta Output Speed Hysteresis | >= Refer to Table rpm/sec 23 in | | | | | |
| | | | | supporting | | | | | П |
| | | | | documents | | | | | |
| | | | | Table Based | | | | | Т |
| | | | | Time Please | | | | | П |
| | | | | | | | | | ı |
| | | | If the Above is True for Time | >= 17 in Sec | | | | | ı |
| | | | | | | | | | Т |
| | | | | supporting | | | | | П |
| | | | Intrusive test: | documents | | | | | |
| | | | (CB26 clutch exhausted) | | | | | | |
| | | | | 4- 0.00720 | | | | | |
| | | | Gear Ratio | | | | | | |
| | | | Gear Ratio | | | | | | |
| | | | If the above parameters are true | | | | | | ı |
| | | | | | | | >= 1.1 | Fail Timer (Sec) |) |
| | | | | | | | | Fail Count in | |
| | | | | | | | >= 3 | 2nd Gear | |
| | | | | | | | | or | |
| | | | | | | | | or Total Fail | 1 |
| | | | | | | | >= 3 | Counts | 1 |
| | | | Fail Case 3 Case: Steady State 4th gear | | | | | Couries | + |
| | | | Gase. Steady State 4(I) geal | Table Based | | | | | |
| | | | | value Please | | | | | ı |
| | | | Max Delta Output Speed | Pofor to Table | | | | | П |
| | | | Hysteresis | >= 10 Table rpm/sec | | | | | |
| | | | Trysteresis | supporting | | | | | П |
| | | | | documents | | | | | |
| | | | | Table Based | | | | | |
| | | | | value Please | | | | | П |
| | | | | Pefer to Table | | | | | П |
| | | | Min Delta Output Speed Hysteresis | >= 10 Table rpm/sec | | | | | П |
| | | | | 20 111 | | | | | П |
| | | | | supporting documents | | | | | Т |
| | | | | Table Based | | | | | Т |
| | | | | Time Please | | | | | 1 |
| | | | | Pofor to Table | | | | | ı |
| | | | If the Above is True for Time | >= Refer to Table 17 in Sec | | | | | |
| | | | | | | | | | Т |
| | | | | supporting | | | | | 1 |
| | | | Intrusive test: | documents | | | | | 1 |
| | | | (C1234 clutch exhausted) | | | | | | ı |
| | | | (C1254 Guidi exhausted) Gear Ratio | <= 1.06995 | | | | | |
| | | | Gear Ratio | | | | | | |
| | | | If the above parameters are true | | | | | | |
| | | | ii tile above parameters are true | | | | | | 1 |
| | | | | | | | >= 1.1 | Fail Timer (Sec) |) |
| | | | | | | | | Eail Count in 4th | 1 |
| | | | | | | | >= 3 | | 4 |
| | | | | | | | | Gear | |
| | | | | | | | | or T-t-1 T-11 | |
| | | | | | | | >= 3 | Total Fail | |
| | | | | | | | | Counts | 1 |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary | | Enable | | | | ime | Mil |
|------------|-------|------------------|-----------------------------------|---|--|-----|----------------|--------------------|----|-----|------------------------------------|-------|
| System | Code | Description | Criteria | Value | Malfunction | | Conditions | | | Req | uired | Illum |
| | | | Max Delta Output Speed | Table Based value Please Refer to Table | | | | | | | | |
| | | | Hysteresis | >= Refer to Table rpm/sec 22 in supporting | | | | | | | | |
| | | | | documents Table Based | | | | | | | | |
| | | | Min Dalla Outant Canad Unatarasia | value Please >= Refer to Table rpm/sec | | | | | | | | |
| | | | Min Delta Output Speed Hysteresis | 23 in rpm/sec supporting | | | | | | | | |
| | | | | documents Table Based Time Please | | | | | | | | |
| | | | If the Above is True for Time | >= Refer to Table Sec 17 in | | | | | | | | |
| | | | Intrusive test: | supporting documents | | | | | | | | |
| | | | (CB26 clutch exhausted) | 4 00007 | | | | | | | - II - (0) | |
| | | | Gear Ratio Gear Ratio | | | | | | >= | 1.1 | Fail Timer (Sec) counts | |
| | | | If the above parameters are true | | | | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | | >= | 3 | Fail Count in 6th | |
| | | | | | | | | | >= | 3 | Gear or Total Fail Counts | |
| | | | | | PRNDL State defaulted inhibit RVT | = = | FALSE FALSE | Boolean Boolean | | | Counts | |
| | | | | | IMS fault pending indication | = | FALSE | Boolean | | | | |
| | | | | | output speed | >= | 0 | RPM | | | | |
| | | | | | TPS validity flag HSD Enabled | = | TRUE TRUE | Boolean Boolean | | | | |
| | | | | | Hydraulic_System_Pressurized | = | TRUE | Boolean | | | | |
| | | | | | A OR B (A) Output speed enable | >= | 100 | Nm | | | | |
| | | | | | (B) Accelerator Pedal enable Ignition Voltage Lo | >= | 0.5005 9 | Nm Volts | | | | |
| | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | |
| | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | Engine Speed Hi Engine Speed is within the | <= | 7500 | RPM | | | | |
| | | | | | allowable limits for if Attained Gear=1st FW | >= | 5 | Sec | | | | |
| | | | | | Accelerator Pedal enable if Attained Gear=1st FW Engine | >= | 10.0006 45 | Pct Nm | | | | |
| | | | | | Torque Enable if Attained Gear=1st FW Engine | <= | 8191.88 | Nm | | | | |
| | | | | | Torque Enable Transmission Fluid Temperature | >= | -6.6563 | °C | | | | |
| | | | | | Input Speed Sensor fault | = | FALSE | Boolean | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thi | eshold 'alue | Secondary Malfunction | Enable Conditions | Time Required | Mil Illum |
|------------------------------|---------------|----------------------------------|--|-------------------------------------|------------------|---------------------------|---|------------------|--------------|
| 0,0.0 | | 2000.191.011 | | | ** ** * | Output Speed Sensor fault | | | |
| | | | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | TCM: P0716, P0717, P0722, P0723, | | |
| | | | | | Conditions: | | P182E | | |
| | | | | | | | · | | |
| | | | | | | | | | |
| | | | | | | | ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, | | |
| | | | | | | | P0175, P0201, P0202, P0203, P0204, | | |
| | | | | | | | P0205, P0206, P0207, P0208, P0300, | | |
| | | | | | | | P0301, P0302, P0303, P0304, P0305, | | |
| | | | | | | | P0306, P0307, P0308, P0401, P042E | | |
| | | | Primary Offgoing Clutch is | | | | | | One 7 |
| ariable Bleed Solenoid (VBS) | P0777 | Pressure Control (PC) Solenoid B | exhausted (See Table 12 in | = TRUE | Boolean | | | | |
| anable blood colonida (vbc) | 1 0/// | StuckOn [C35R] (Dymanic) | Supporting Documents for Exhaust | ITTOL | Dooloun | | | | |
| | | | Delay Timers) Primary Oncoming Clutch Pressure | Maximum | | | | | |
| | | | Command Status | | t | | | | |
| | | | Primary Offgoing Clutch Pressure | Clutch | | | | | |
| | | | Command Status | exhaust command | | | | | |
| | | | | Initial Clute | | | | | |
| | | | Range Shift Status | ≠ Control | | | | | |
| | | | Attained Gear Slip | <= 40 | RPM | | | | |
| | | | | | | | | | |
| | | | If the above conditions are true run | | | | | | |
| | | | appropriate Fail 1 Timers Below: | | | | | | |
| | | | fail timer 1 | >= 0.5 | Fail Time (Cae) | | | | |
| | | | (3-1 shifting with Closed Throttle) | >= 0.5 | Fail Time (Sec) | | | | |
| | | | fail timer 1 | >= 0.40039 | Fail Time (Sec) | | | | |
| | | | (3-2 shifting with Throttle) | 0.40003 | Tall Time (Occ) | | | | |
| | | | fail timer 1 | >= 0.5 | Fail Time (Sec) | | | | |
| | | | (3-2 shifting with Closed Throttle) | 0.0 | Tall Time (CCC) | | | | |
| | | | fail timer 1 | >= 0.40039 | Fail Time (Sec) | | | | |
| | | | (3-4 shifting with Throttle) fail timer 1 | | () | | | | |
| | | | (3-4shifting with Closed Throttle) | >= 0.5 | Fail Time (Sec) | | | | |
| | | | fail timer 1 | >= 0.40039 | Fail Time (Sec) | | | | |
| | | | (3-5 shifting with Throttle) | 0.40003 | r all Time (Sec) | | | | |
| | | | fail timer 1 | >= 0.5 | Fail Time (Sec) | | | | |
| | | | (3-5 shifting with Closed Throttle) | 0.0 | Tall Time (CCC) | | | | |
| | | | fail timer 1 | >= 0.40039 | Fail Time (Sec) | | | | |
| | | | (5-3 shifting with Throttle) | | () | | | | |
| | | | fail timer 1 | >= 0.5 | Fail Time (Sec) | | | | |
| | | | (5-3 shifting with Closed Throttle) | | ,, | | | | |
| | | | fail timer 1 | >= 0.40039 | Fail Time (Sec) | | | | |
| | | | (5-4 shifting with Throttle) | | , , | | | | |
| | | | fail timer 1 | >= 0.5 | Fail Time (Sec) | | | | |
| | | | (5-4 shifting with Closed Throttle) | | . , | | | | |
| | | | fail timer 1 (5-6 shifting with Throttle) | >= 0.40039 | Fail Time (Sec) | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | reshold Value | Secondary Malfunction | Ena Cond | ble | | Tir Requ | | Mil Illum. |
|---|---------------|---------------------------------|--|---|------------------------|---|---|---|-------------|---|-------------------------------|---------------|
| vystem | Sour | Securipitori | fail timer 1 (5-6 shifting with Closed Throttle) | >= 0.5 | Fail Time (Sec) | | 5010 | | Ti | Total Fail ime = (Fail 'Fail 2) See | ı | |
| | | | If Attained Gear Slip is Less than Above Cal Increment Fail Timers | | | | | | Er >= fo | nable Timer or Fail Timer 1, and Reference Supporting Fable 15 for Fail Timer 2 | s sec | |
| | | | If fail timer is greater than threshold increment corresponding gear fail counter and total fail counter | | | | | | | | | |
| | | | 3rd gear fail counter | | | | | | >= | 3 | 3rd gear fail counts OR | |
| | | | 5th gear fail counter | | | | | | >= | 3 | 5th gear fail counts OR | |
| | | | Total fail counter | | | | | | >= | 3 | total fail counts | |
| | | | | | | TUT Enable temperature Input Speed Sensor fault Output Speed Sensor fault Command / Attained Gear High Side Driver ON output speed limit for TUT input speed limit for TUT PRNDL state defaulted IMS Fault Pending Service Fast Learn Mode HSD Enabled Default Gear Option is not present | = FA = FA = Ti >= 2 >= 2 = FA = FA = Ti | 5563 °C LSE Boolean LSE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean RUE Boolean LSE Boolean RUE Boolean RUE Boolean | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0716, P0717 P182E | P0722, P0723, | | | | |
| | | | | | | | ECM: P0101, P0102 P0107, P0108, P017 P0175, P0201, P020 P0205, P0206, P020 P0301, P0302, P030 P0306, P0307, P030 | 1, P0172, P0174, 2, P0203, P0204, 7, P0208, P0300, 3, P0304, P0305, | | | | |
| Transmission Output Speed Sensor (TOSS) | P077C | Output Speed Sensor Circuit Low | TOSS Analog Signal Voltage | | Volts | | | | >= | 0.05 | sec | One Trip |
| | | | P077C Status is not | Test Faile = This Key (or Fault Ac | On | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | i | Secondary Malfunction | | Enable Conditions | | Tim Requi | ne ired | Mil Illum. |
|--|---------------|-------------------------------------|--|--------------------|---------------|--------------------------|-------------|----------------------|---------|--------------------------------|------------------------|---------------|
| System | Code | Description | If the above conditons have been | value | | Manufiction | | Conditions | | Requi | iicu | muil. |
| | | | met, increment the P077C Fai | | | | | | | | | |
| | | | Counter | | | | | | | | | |
| | | | DTC P077C Sets when the Fai | >= 75 Cou | unto | | | | | | | 1 |
| | | | Counter | /- /5 COU | ints | | | | | | | |
| | | | | | | P077C Enable Calibration | = | 1 | Boolean | | | |
| | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | |
| | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | |
| | | | | | | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | TCM: P077D | | | | | |
| | | | | | Conditions: | DTC's: | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| ransmission Output Speed Sensor | P077D | Output Speed Sensor Circuit High | TOSS Analog Signal Voltage | >= 4.75 Volt | · c | | | | | >= 0.05 | sec | One Tri |
| TOSS) | 1.05 | Surpar opoda concer circuit i iigii | l soo / malog olgital voltage | 1 | | | | | | 0.00 | 000 | |
| | | | | Test Failed | | | | | | | | |
| | | | P077D Status is no | = This Key On | | | | | | | | |
| | | | | or Fault Active | | | | | | | | |
| | | | If the above conditons have been | | | | | | | | | |
| | | | met, increment the P077D Fai | | | | | | | | | |
| | | | Counter | | | | | | | | | |
| | | | DTC P077D Sets when the Fai | >= 75 Cou | into | | | | | | | 1 |
| | | | Counter | /- /5 Cou | IIIIS | | | | | | | |
| | | | | | | P077D Enable Calibration | = | 1 | Boolean | | | |
| | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | |
| | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | |
| | | | | | | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | TCM: P077C | | | | | |
| | | | | | Conditions: | DTC's: | 10111.10110 | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| /ariable Bleed Solenoid (VBS) | P0796 | Pressure Control (PC) Solenoid C | Fail Case 1 Case: Steady State 4th Gear | | | | | | | | | One Trip |
| . a. | 1.0.00 | Stuck Off [C456] (Steady State) | Substitution of the substi | | | | | | | | | |
| | | | | | | | | | | Please See | Nantal Times | |
| | | | Gear slip | >= 400 RPN | VI | | | | | >= Table 5 For Neutral Time | Neutral Timer (Sec) | |
| | | | | | | | | | | Cal | (360) | |
| | | | Intrusive test | | | | | | | Oai | | |
| | | | commanded 5th gear | | | | | | | | | |
| | | | | Please refer to | | | | | | | | |
| | | | If attained Gear ≠5th for time | _ Table 3 in Shif | t Time (Sec) | | | | | | | |
| | | | ii attained Geal 7-5til loi tillie | Supporting | t Tille (Sec) | | | | | | | |
| | | | | Documents | | | | | | | | |
| | | | if the above conditions have been | | | | | | | | | |
| | | | me | | | | | | | | 4th Gear Fail | |
| | 1 | | Increment 4th Gear Fail Counter | | | | | | | >= 2 | 4th Gear Fall Count | |
| | | | | | | | | | | | OR | |
| | 1 | | 104505 "0 | | | | | | | | C456 Fail | 1 |
| | 1 | | and C456 Fail Counters | | | | | | | >= 14 | Counts | |
| | | | Fail Case 2 Case: Steady State 5th Gear | | | | | | | | | |
| | | | | | | | | | | Please See | | |
| | 1 | | Gear slip | >= 400 RPM | И | | | | | >= Table 5 For | Neutral Timer | |
| | 1 | |] | | | | | | | Neutral Time | (Sec) | |
| | 1 | 1 | 1 | I | | | | | | Cal | | 1 |

| | Fault | Monitor Strategy | Malfunction | | shold | Secondary | | Enable | | l | Tin | | Т. |
|--------|-------|------------------|---|-----------------|------------------|--------------------------------|----|------------|---------|--|--------------|---------------|----|
| System | Code | Description | Criteria | Va | lue | Malfunction | | Conditions | | | Requ | ired | |
| | | | Intrusive test: | | | | | | | | | | |
| | | | commanded 6th gear | | | | | | | | | | |
| | | | | Please Refer | | | | | | | | | |
| | | | If attained Gear ≠ 6th for time > | to Table 3 in | Shift Time (Sec) | | | | | | | | |
| | | | ii didiiiod ocai / oti ioi tiiio | Supporting | Orant Tamo (OCO) | | | | | | | | |
| | | | | Documents | | | | | | | | | |
| | | | if the above conditions have been | | | | | | | | | | |
| | | | met | | | | | | | | | | |
| | | | Increment 5th Gear Fail Counter | | | | | | | >= | 2 | 5th Gear Fail | Т |
| | | | moromon, our oddi'r dii oddinol | | | | | | | | _ | Count | |
| | | | | | | | | | | | | OR | |
| | | | and C456 Fail Counters | | | | | | | >= | 14 | C456 Fail | 1 |
| | | | | | | | | | | | 1-1 | Counts | ┛ |
| | | | Fail Case 3 Case: Steady State 6th Gear | | | | | | | | | | |
| | | | | | | | | | | | Please See | | |
| | | | Gear slip > | ÷= 400 | RPM | | | | | | Table 5 For | Neutral Timer | |
| | | | | | | | | | | N | leutral Time | (Sec) | П |
| | | | | | | | | | | | Cal | | |
| | | | Intrusive test: | | | | | | | | | | 1 |
| | | | commanded 5th gear | Di (: | | | | | | | | | 1 |
| | | | | Please refer to | |] | | | | | | | 1 |
| | | | If attained Gear ≠ 5th for time > | Table 3 in | Shift Time (Sec) | | | | | | | | |
| | | | | Supporting | , ,, |] | | | | | | | 1 |
| | | | 70 I PC I I | Documents | | | | | | | | | Т |
| | | | if the above conditions have been | | | | | | | | | | ۱ |
| | | | met | | | | | | | | | C#- O F-!! | Т |
| | | | Increment 6th Gear Fail Counter | | | | | | | >= | 2 | 6th Gear Fail | ı |
| | | | and C456 Fail Counter | | | | | | | | | Count OR | 1 |
| | | | | | | | | | | | | C456 Fail | |
| | | | and C456 Fail Counter | | | | | | | >= | 14 | Counts | |
| | | | | | | PRNDL State defaulted | - | FALSE | Boolean | | | Counts | 1 |
| | | | | | | inhibit RVT | = | FALSE | Boolean | | | | 1 |
| | | | | | | IMS fault pending indication | = | FALSE | Boolean | | | | 1 |
| | | | | | | TPS validity flag | = | TRUE | Boolean | | | | ı |
| | | | | | | 1 | | | | | | | ı |
| | | | | | | Hydraulic System Pressurized | = | TRUE | Boolean | | | | П |
| | | | | | | | | | | | | | 1 |
| | | | | | | Minimum output speed for RVT | >= | 100 | RPM | | | | 1 |
| | | | | | | A OR B | | | | | | | 1 |
| | | | | | | (A) Output speed enable | >= | 100 | RPM | | | | 1 |
| | | | | | | | | | | | | | 1 |
| | | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Pct | | | | 1 |
| | | | | | | Common Enable Criteria | | | | | | | 1 |
| | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | |
| | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | 1 |
| | | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | |
| | | | | | | Engine Speed is within the | >= | 5 | Sec | | | | 1 |
| | | | | | | allowable limits for | >- | | Sec | | | | 1 |
| | | | | | | Throttle Position Signal valid | = | TRUE | Boolean | | | | 1 |
| | | | | | | HSD Enabled | = | TRUE | Boolean | | | | 1 |
| | | | | | | Transmission Fluid | >= | -6.6563 | °C | | | | 1 |
| | | | | | | Temperature | >- | -0.0003 | -0 | | | | |
| | | | | | | Input Speed Sensor fault | = | FALSE | Boolean | | | | |
| | | | | | | OutputSpeed Sensor fault | = | FALSE | Boolean | | | | |
| | | | | | | Default Gear Option is not | = | TRUE | | | | | |
| | | | | | | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | | ime quired | Mil Illum. |
|-------------------------------|---------------|--|---|--|--------------------------|--|--------|---------------------------|---------------|
| - Cyclem | 0000 | 2555 | | Disable Conditions: | MIL not Illuminated for | TCM: P0716, P0717, P0722, P0723, P182E | | , | |
| | | | | | | ECM: P0101, P0102, P0103, P0106, P0107, P0108, P0171, P0172, P0174, P0175, P0201, P0202, P0203, P0204, P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, P0306, P0307, P0308, P0401, P042E | | | |
| Variable Bleed Solenoid (VBS) | P0797 | Pressure Control (PC) Solenoid C Stuck On [C456] (Steady State) | Fail Case 1 Case: Steady State 1st | | | | | | One Trip |
| | | Stuck On [C456] (Steady State) | Attained Gear slip | >= 400 RPM | | | | | |
| | | | If the Above is True for Time | Table Based Time Please Refer to Table Enable Time 4 in (Sec) supporting | | | | | |
| | | | | documents | | | | | |
| | | | Intrusive test: (CBR1 clutch exhausted) | | | | | | |
| | | | Gear Ratio Gear Ratio | | | | | | |
| | | | If the above parameters are true | | | | | | |
| | | | | | | | >= 1.1 | Fail Timer (Sec) | |
| | | | | | | | >= 2 | Fail Count in 1st Gear | |
| | | | | | | | | or | |
| | | | | | | | >= 3 | Total Fail Counts | |
| | | | Fail Case 2 Case Steady State 2nd | Table Based | | | | | |
| | | | Max Delta Output Speed Hysteresis | value Please >= Refer to Table rpm/sec 22 in | | | | | |
| | | | | supporting documents Table Based value Please | | | | | |
| | | | Min Delta Output Speed Hysteresis | >= Refer to Table rpm/sec 23 in supporting documents | | | | | |
| | | | If the Above is True for Time | Table Based Time Please Refer to Table | | | | | |
| | | | | supporting documents | | | | | |
| | | | Intrusive test (CB26 clutch exhausted) Gear Ratic | <= 1.52905 | | | | | |
| | | | Gear Ration If the above parameters are true | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | | ime quired | IIIu |
|----------------------|---------------|------------------------------|--|-----------------------------|---|----------|----------------------|--------------------|----|-----|-------------------|------|
| | | | | | | _ | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | | >= | 3 | Fail Count in | |
| | | | | | | | | | | 0 | 2nd Gear or | |
| | | | | | | | | | >= | 3 | Total fail counts | |
| | | | | | | | | | - | 0 | rotal fall counts | |
| | | | Fail Case 3 Case Steady State 3rd | | | | | | | | | |
| | | | | Table Based value Please | | | | | | | | |
| | | | Max Delta Output Speed | Refer to Table | | | | | | | | |
| | | | Hysteresis | 22 in supporting | | | | | | | | |
| | | | | documents | | | | | | | | |
| | | | | Table Based value Please | | | | | | | | |
| | | | Min Delta Output Speed Hysteresis | Refer to Table | | | | | | | | |
| | | | Will Bold Gapat Spood Hydiologis | 23 in supporting | | | | | | | | |
| | | | | documents | | | | | | | | |
| | | | | Table Based Time Please | | | | | | | | |
| | | | If the Above is True for Time | _ Refer to Table Sec | | | | | | | | |
| | | | If the Above is that for time | 17 in supporting | | | | | | | | |
| | | | | documents | | | | | | | | |
| | | | Intrusive test: (C35R clutch exhausted) | | | | | | | | | |
| | | | Gear Ratio | | | | | | | | | |
| | | | Gear Ratio If the above parameters are true | | | | | | | | | |
| | | | ii die above paramotore are dae | | | | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | | | | Fail Count in 3rd | |
| | | | | | | | | | >= | 3 | Gear | |
| | | | | | | | | | | OR | Total Fail | |
| | | | | | | | | | >= | 3 | Counts | |
| | | | | | PRNDL State defaulted inhibit RVT | = = | FALSE FALSE | Boolean Boolean | | | | 1 |
| | | | | | IMS fault pending indication | = | FALSE | Boolean | | | | |
| | | | | | output speed TPS validity flag | >= = | 0 TRUE | RPM Boolean | | | | 1 |
| | | | | | HSD Enabled | = | TRUE | Boolean | | | | 1 |
| | | | | | Hydraulic_System_Pressurized | = | TRUE | Boolean | | | | 1 |
| | | | | | A OR B | | 400 | N | | | | |
| | | | | | (A) Output speed enable | >= | 100 | Nm | | | | 1 |
| | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Nm | | | | |
| | | | | | Ignition Voltage Lo Ignition Voltage Hi | >= <= | 9 31.99023 | Volts Volts | | | | 1 |
| | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | Engine Speed Hi Engine Speed is within the | <= | 7500 | RPM | | | | |
| | | | | | allowable limits for | >= | 5 | Sec | 1 | | | 1 |

| Component/ | Fault | Monitor Strategy | Malfunction | | | shold | Secondary | | Enable | | Time | Mil |
|-------------------------------|-------|----------------------------------|---|----------|-----------------|------------------------|---|-------------|--------------------------------|------------|----------|----------|
| System | Code | Description | Criteria | | Va | ue | Malfunction | | Conditions | | Required | Illum. |
| | | | | | | | if Attained Gear=1st FW Accelerator Pedal enable | >= | 10.0006 | Pct | | |
| | | | | | | | if Attained Gear=1st FW Engine | >= | 45 | Nm | | |
| | | | | | | | Torque Enable if Attained Gear=1st FW Engine | | | | | |
| | | | | | | | Torque Enable | <= | 8191.88 | Nm | | |
| | | | | | | | Transmission Fluid | >= | -6.6563 | °C | | |
| | | | | | | | Temperature Input Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | | Output Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | | Default Gear Option is not present | = | TRUE | | | |
| | | | | | | | present | | | | | |
| | | | | | | | | | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | | , P0/1/, P0/2 | 2, P0723, | | |
| | | | | | | oonanons. | D103. | 1 1022 | | | | |
| | | | | | | | | =011 50101 | D0100 D010 | | | |
| | | | | | | | | | , P0102, P010 8, P0171, P01 | | | |
| | | | | | | | | P0175, P020 | 1, P0202, P02 | 03, P0204, | | |
| | | | | | | | | | 6, P0207, P02 2, P0303, P03 | | | |
| | | | | | | | | | z, P0303, P03 7, P0308, P04 | | | |
| | | | D: 0" : 01.11: | | | | | | | | | 0 |
| | | Pressure Control (PC) Solenoid C | Primary Offgoing Clutch is exhausted (See Table 11 in | | | | | | | | | One Trip |
| Variable Bleed Solenoid (VBS) | P0797 | Stuck On [C456] (Dynamic) | Supporting Documents for Exhaust | = | TRUE | Boolean | | | | | | |
| | | | Delay Timers) Primary Oncoming Clutch Pressure | | Maximum | | | | | | | |
| | | | Command Status | = | pressurized | | | | | | | |
| | | | Primary Offgoing Clutch Pressure | _ | Clutch | | | | | | | |
| | | | Command Status | | exhaust command | | | | | | | |
| | | | Range Shift Status | ≠ | Initial Clutch | | | | | | | |
| | | | Attained Gear Slip | | Control 40 | RPM | | | | | | |
| | | | Attairieu Gear Siip | \- | 40 | KLINI | | | | | | |
| | | | If the above conditions are true | | | | | | | | | |
| | | | increment appropriate Fail 1 Timers Below: | | | | | | | | | |
| | | | fail timer 1 | >= | 0.40039 | Fail Time (Sec) | | | | | | |
| | | | (4-1 shifting with throttle) fail timer 1 | - | 0.40000 | Tall Tillio (OCC) | | | | | | |
| | | | (4-1 shifting without throttle) | >= | 0.5 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 | >= | 0.40039 | Fail Time (Sec) | | | | | | |
| | | | (4-2 shifting with throttle) fail timer 1 | | | , , | | | | | | |
| | | | (4-2 shifting without throttle) | >= | 0.5 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 | >= | 0.7002 | Fail Time (Sec) | | | | | | |
| | | | (4-3 shifting with throttle) fail timer 1 | | | | | | | | | |
| | | | (4-3 shifting without throttle) | >= | 0.5 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 (5-3 shifting with throttle) | >= | 0.40039 | Fail Time (Sec) | | | | | | |
| | | | (5-3 shirting with throttle) fail timer 1 | | 0.5 | | | | | | | |
| | | | (5-3 shifting without throttle) | >= | 0.5 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 (6-2 shifting with throttle) | >= | 0.40039 | Fail Time (Sec) | | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | 1 | Threshold | Secondary | | Enable | | | | me | Mil |
|---------------------------------------|-------|---|---|------------|-----------------|---|--------------|---------------|----------------|-------|------------------------|--------------------|----------|
| System | Code | Description | Criteria | | Value | Malfunction | | Conditions | | - | Req | uired | Illum. |
| | | | fail timer 1 (6-2 shifting without throttle) | >= 0.5 | Fail Time (Sec) | | | | | | | | |
| | | | (0-2 Siliting without thotae) | | | | | | | | | | |
| | | | | | | | | | | | Total Fail | | |
| | | | | | | | | | | | me = (Fail | | |
| | | | | | | | | | | | Fail 2) See | | |
| | | | If Attained Gear Slip is Less than | | | | | | | | nable Time | | |
| | | | Above Cal Increment Fail Timers | | | | | | | >= 10 | or Fail Time 1, and | sec | |
| | | | Above Cal increment Fall Timers | | | | | | | | Reference | | |
| | | | | | | | | | | | Supporting | | |
| | | | | | | | | | | | able 15 for | | |
| | | | | | | | | | | F | ail Timer 2 | ! | |
| | | | | | | | | | | | | | |
| | | | If fail timer is greater than threshold | | | | | | | | | | |
| | | | increment corresponding gear fail | | | | | | | | | | |
| | | | counter and total fail counter | | | | | | | | | | |
| | | | 4th gear fail counter | | | | | | | >= | 3 | Fail Counter | |
| | | | 4til geal lail Wullter | | | | | | | /- | J | From 4th Gear | • |
| | | | | | | | | | | | | OR | |
| | | | 5th gear fail counter | | | | | | | >= | 3 | Fail Counter | |
| | | | · · | | | | | | | | | From 5th Gear | |
| | | | | | | | | | | | | OR Fail Counter | |
| | | | 6th gear fail counter | | | | | | | >= | 3 | From 6th Gear | |
| | | | | | | | | | | | | OR | |
| | | | | | | | | | | | | Total Fail | |
| | | | Total fail counter | | | | | | | >= | 3 | Counter | |
| | | | | | | TUT Enable temperature | | -6.6563 | °C | | | | 1 |
| | | | | | | Input Speed Sensor faul | = | FALSE | Boolean | | | | |
| | | | | | | Output Speed Sensor faul | | FALSE | Boolean | | | | |
| | | | | | | Command / Attained Gea | | 1st | Boolean | | | | |
| | | | | | | High Side Driver ON | = >= | TRUE | Boolean RPM | | | | |
| | | | | | | output speed limit for TUT input speed limit for TUT | >= | 200 200 | RPM | | | | |
| | | | | | | PRNDL state defaulted | | FALSE | Boolean | | | | |
| | | | | | | IMS Fault Pending | | FALSE | Boolean | | | | |
| | | | | | | Service Fast Learn Mode | | FALSE | Boolean | | | | |
| | | | | | | HSD Enabled | = | TRUE | Boolean | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | Disable | | | P0717, P072 | 2, P0723, | | | | |
| | | | | | Conditions | DICS | P182E | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | ECM: P0101, | D0102 D010 | 3 P0106 | | | | |
| | | | | | | | P0107, P0108 | | | | | | |
| | | | | | | | P0175, P0201 | | | | | | |
| | | | | | | | P0205, P0206 | | | | | | |
| | | | | | | | P0301, P0302 | | | | | | |
| | | | | | | | P0306, P0307 | 7, P0308, P04 | 01, P042E | | | | |
| | + | Input/Turbine Speed Sensor A Circuit | | | | | - | | | ₽ | | | One Tri- |
| Transmission Input Speed Sensor (TISS | P07BF | Input/Turbine Speed Sensor A Circuit Low | TISS Analog Signal Voltage | <= 0.25 | Volts | | | | | >= | 0.05 | sec | One Trip |
| | | | | | | | | | | | | | |
| | | | | Test Fa | | | | | | | | | |
| | 1 | 1 | P07BF Status is not | | | 1 | | | | 1 | | | 1 |
| | | | | or Fault A | | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | shold lue | Secondary Malfunction | | Enable Conditions | | | Tim Requi | | Mil Illum. |
|--|---------------|---|---|-----------|---|------------------------|--|---------------|----------------------|---------------------------|----|--------------|-----------------|-------------------|
| | | | If the above conditons have beer met, increment the P07BF Fa Counte DTC P07BF Sets when the Fai | iil er | 75 | Counts | | | | | | | | |
| | | | Counte | er | 75 | Couries | P07BF Enable Calibration Ignition Voltage Lo Ignition Voltage Hi | = >= <= | 1 9 31.99023 | Boolean Volts Volts | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P07C0 | | | | | | |
| Transmission Input Speed Sensor (TISS) | P07C0 | Input/Turbine Speed Sensor A Circuit High | TISS Analog Signal Voltage | e >= | 4.75 | Volts | | | | | >= | 0.05 | sec | One Trip |
| | | | P07C0 Status is no | | Test Failed This Key On or Fault Active | | | | | | | | | |
| | | | If the above conditons have beer met, increment the P07C0 Fa Counte | iil er | | | | | | | | | | |
| | | | DTC P07C0 Sets when the Fai Counte | | 75 | Counts | P07C0 Enable Calibration Ignition Voltage Lo Ignition Voltage Hi | = >= <= | 1 9 31.99023 | Boolean Volts Volts | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P07BF | | | | | | |
| Tap Up Tap Down Switch (TUTD) | P0815 | Upshift Switch Circuit | Fail Case 1 Tap Up Switch Stuck in the Up Position in Range 1 Enabled Tap Up Switch Stuck in the Up | d = | 1 | Boolean | | | | | | | | Special No MIL |
| | | | Position in Range 2 Enable Tap Up Switch Stuck in the Up Position in Range 3 Enable | d p _ | 1 | Boolean Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Range 4 Enabled | р _ | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Range 5 Enabled Tap Up Switch Stuck in the Up | d | 1 | Boolean | | | | | | | | |
| | | | Position in Range 6 Enabled Tap Up Switch Stuck in the Up | d p _ | 1 | Boolean Boolean | | | | | | | | |
| | | | Position in Neutral Enabled Tap Up Switch Stuck in the Up Position in Park Enabled | р_ | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Reverse Enabled | р_ | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch ON | N = | TRUE | Boolean | | | | | >= | 1 | Fail Time (Sec) | |
| | | | Fail Case 2 Tap Up Switch Stuck in the Up Position in Range 1 Enabled | d | 1 | Boolean | | | | | | | | |
| | 1 | | Tap Up Switch Stuck in the Up Position in Range 2 Enabled | | 1 | Boolean | | | | | | | | ı l |

| Component/ | Fault | Monitor Strategy | Malfunction | | | eshold | Secondary | | Enable | | | | me | Mil |
|-------------------------------|-------|--------------------------|--|----------|------|-------------|---|-------------|-------------|-------------|----|-----|-----------------|--------|
| System | Code | Description | Criteria | | V | alue | Malfunction | | Conditions | | - | Req | uired | Illum. |
| | 1 | | Tap Up Switch Stuck in the Up | = | 1 | Boolean | | | | | | | | |
| | 1 | | Position in Range 3 Enabled Tap Up Switch Stuck in the Up | | | | | | | | | | | |
| | | | Position in Range 4 Enabled | | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up | | | | | | | | | | | |
| | | | Position in Range 5 Enabled | | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up | | | | | | | | | | | |
| | | | Position in Range 6 Enabled | | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up | | 4 | Daalaan | | | | | | | | |
| | | | Position in Neutral Enabled | - | 1 | Boolean | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up | | 1 | Boolean | | | | | | | | |
| | | | Position in Park Enabled | | ' | Doolcan | | | | | | | | |
| | | | Tap Up Switch Stuck in the Up | | 1 | Boolean | | | | | | | | |
| | | | Position in Reverse Enabled | | | | | | | | | | | |
| | | | Tap Up Switch ON | | TRUE | Boolean | | | | | | | | |
| | | | NOTE: Both Failcase1 and | | | | | | | | >= | 600 | Fail Time (Sec) | |
| 1 | 1 | | Failcase 2 Must Be Met | | | | | | | | - | | <u> </u> | ł |
| | 1 | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | 1 |
| | 1 | | | | | | Time Since Last Range | >= | 1 | Enable Time | | | | |
| | 1 | | | | | | Change | | | (Sec) | | | | |
| | 1 | | | | | | Ignition Voltage Lo | | 9 | Volts | | | | |
| | | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | |
| | | | | | | | Engine Speed Lo | >= <= | 400 | RPM | | | | |
| | | | | | | | Engine Speed Hi Engine Speed is within the | | 7500 | RPM | | | | |
| | | | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | | | allowable lilling for | | | | | | | |
| | | | | | | | | | Test Failed | | | | | |
| | | | | | | | | | This Key | | | | | |
| | | | | | | | P0815 Status is | ≠ | On or Fault | | | | | |
| | | | | | | | | | Active | | | | | |
| | | | | | | | | | | | | | | |
| | 1 | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | 1 | | | | | Disable | MIL not Illuminated for | | | , P1876, | | | | |
| | 1 | | | | | Conditions: | DTC's: | P1877, P191 | 5, P1761 | | | | | |
| | 1 | | | | | | | | | | | | | |
| | 1 | | Fail Cope 1 | <u> </u> | | | | ECM: None | | | ├ | | | Cnadia |
| Tap Up Tap Down Switch (TUTD) | D0016 | Downshift Switch Circuit | Fail Case 1 Tap Down Switch Stuck in the | = | 1 | Boolean | | | | | | | | Specia |
| Tap up Tap Down Switch (TUTD) | PU016 | DOWNSHILL SWILCH CITCUIL | Down Position in Range 1 Enabled | - | 1 | DUURAII | | | | | | | | No MII |
| | 1 | | | | | | | | | | | | | |
| | 1 | | Tap Down Switch Stuck in the | = | 1 | Boolean | | | | | | | | |
| | 1 | | Down Position in Range 2 Enabled | | | 23010411 | | | | | | | | |
| | 1 | | T D 0 71 2 | | | | | | | | | | | |
| | 1 | l | Tap Down Switch Stuck in the | | 1 | Boolean | | I | | | | | | l |
| | | | Down Position in Range 3 Enabled | | | | | | | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | | reshold | Secondary Malfunction | Enable | | Time | Mil |
|------------|-------|------------------|---|--------|---------|--------------------------|------------|--------|----------|--------|
| System | Code | Description | Criteria | | /alue | Malfunction | Conditions | | Required | Illum. |
| | | | Tap Down Switch Stuck in the Down Position in Range 4 Enabled | | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 5 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 6 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range Neutral Enabled | | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range Park Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range Reverse Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch ON | = TRUE | Boolean | | | >= 1 | sec | |
| | | | Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 2 Enabled | | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 3 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 4 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 5 Enabled | | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 6 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Neutral Enabled | - ' | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Park Enabled | ' | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Reverse Enabled | = 1 | Boolean | | | | | |
| | | | Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met | | Boolean | | | >= 600 | sec | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thre V: | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tiı Reqı | me uired | Mil Illum. |
|-------------------------------|---------------|---|---|------------|------------------------|--|---|---|---|-----------------|-------------|-----------------------------------|-------------------|
| | | | | | | Time Since Last Range Change Ignition Voltage Lo Ignition Voltage He Engine Speed Lo Engine Speed He Engine Speed is within the allowable limits for | \ | 1 9 31.99023 400 7500 5 Test Failed This Key On or Fault Active | Enable Time (Sec) Volts Volts RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0815, P1877, P191 ECM: None | | E, P1876, | | | | |
| Tap Up Tap Down Switch (TUTD) | P0826 | Up and Down Shift Switch Circuit | TUTD Circuit Reads Invalid Voltage | = TRUE | Boolean | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | >= <= >= <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | >= | 60 | Fail Time (Sec) | Special No MIL |
| | | | | | Disable Conditions: | P0826 Status is MIL not Illuminated for DTC's: | ≠ TCM: P1761 ECM: None | This Key On or Fault Active | | | | | |
| Variable Bleed Solenoid (VBS) | P0961 | Pressure Control (PC) Solenoid A Control Circuit Rationality Test (Line Pressure VBS) | The HWIO reports an invalid voltage (out of range) error flag | | Boolean | | | | | >= out of | 4.4 5 | Fail Time (Sec) Sample Time (Sec) | Two Trips |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed is within the allowable limits for | >= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold /alue | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum. |
|-------------------------------|---------------|---|---|--------|------------------------|--|----------------------------|--|-------------------------------------|-----------------|----------|-----------------------------------|---------------|
| Variable Bleed Solenoid (VBS) | P0962 | Pressure Control (PC) Solenoid A Control Circuit Low Voltage (Line Pressure VBS) | The HWIO reports a low voltage (ground short) error flag | = TRUE | Boolean | manufaction. | | Conditions | | >= | 1.5 | Fail Time (Sec) | One Trip |
| | | | | | | | | | | out of | 1.875 | Sample Time (Sec) | |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | , | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| Variable Bleed Solenoid (VBS) | P0963 | Pressure Control (PC) Solenoid A Control Circuit High Voltage (Line Pressure VBS) | The HWIO reports a high voltage (open or power short) error flag | = TRUE | Boolean | | | | | >= out of | 4.4 5 | Fail Time (Sec) Sample Time (Sec) | Two Trips |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= >= <= >= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | Oi | | (360) | - |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| Variable Bleed Solenoid (VBS) | P0966 | Pressure Control (PC) Solenoid B Control Circuit Low Voltage (C35R VBS) | The HWIO reports a low voltage (ground short) error flag | = TRUE | Boolean | | | | | >= out | 0.3 | Fail Time (Sec) | One Trip |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= >= | 9 31.99023 400 7500 5 Test Failed This Key | Volts Volts RPM RPM Sec | of | | (Sec) | - |
| | | | | | Disable Conditions: | P0966 Status is not MIL not Illuminated for DTC's: | | On or Fault Active | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Ti | me uired | Mil Illum. |
|-------------------------------|---------------|---|---|---------|------------------------|--|------------------------|--|-------------------------------------|-----------------|--------------|-----------------------------------|---------------|
| Variable Bleed Solenoid (VBS) | P0967 | Pressure Control (PC) Solenoid B Control Circuit High Voltage (C35R VBS) | The HWIO reports a high voltage (open or power short) error flag | - TDIJE | Boolean | | | | | >= out | 0.3 | Fail Time (Sec) Sample Time | One Trip |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | of | | (Sec) | |
| | | | | | | P0967 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None | | | | | | |
| Variable Bleed Solenoid (VBS) | P0970 | Pressure Control (PC) Solenoid C Control Circuit Low Voltage (C456/CBR1 VBS) | The HWIO reports a low voltage (ground short) error flag | = TRUE | Boolean | | | | | >= out | 0.3 | Fail Time (Sec) | One Tri |
| | | | | | | P0970 Status is not | = | Test Failed This Key On or Fault Active | | of | | (Sec) | |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | <= >= <= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| /ariable Bleed Solenoid (VBS) | P0971 | Pressure Control (PC) Solenoid C Control Circuit High Voltage (C456/CBR1 VBS) | The HWIO reports a high voltage (open or power short) error flag | = TRUE | Boolean | | | | | >= out of | 0.3 0.375 | Fail Time (Sec) Sample Time (Sec) | One Tri |
| | | | | | | P0971 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Ignition Voltage | >= | 9 | Volts | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | | ime quired | Mil Illum. |
|----------------------|---------------|---|---|--------|------------------------|--|----------------------------|--|-------------------------------------|-----------------|-----|-----------------------------------|---------------|
| - Oystenii | Code | Description | Cincina | · | uuu | Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | <= >= <= >= | 31.99023 400 7500 5 | Volts RPM RPM Sec | | Rec | quired | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| Shift Solinoid | P0973 | Shift Solenoid A Control Circuit Low (Mode 2 Solenoid) | The HWIO reports a low voltage (ground short) error flag | = TRUE | Boolean | | | | | >= out | 1.2 | Fail Time (Sec) | One Trip |
| | | | | | | P0973 Status is not | = | Test Failed This Key On or Fault Active | | of | 1.5 | (Sec) | <u> </u> |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= >= <= >= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| Shift Solinoid | P0974 | Shift Solenoid A Control Circuit High (Mode 2 Solenoid) | The HWIO reports a high voltage (open or power short) error flag | = TRUE | Boolean | | | | | >= out of | 1.2 | Fail Time (Sec) Sample Time (Sec) | Two Trips |
| | | | | | | P0974 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | >= <= >= <= >= | 9 31.99023 400 7500 5 | Volts Volts RPM RPM Sec | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | eshold alue | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum. |
|-------------------------------|---------------|---------------------------------------|--|-----|--------------------|------------------------|---|---------------|-----------------------|------------|-----|---------|-----------------------|------------------|
| Oyatem | Jour | Безоприон | o none | Т | • | Disable | MIL not Illuminated for | TCM: None | | | i i | | | |
| | | | | | | Conditions: | DTC's: | ECM: None | | | | | | |
| | | | | | | | | LCIVI. INOTIE | | | | | | |
| Top Up Top Down Cuitab /TUTD) | P1761 | Tap Up and Down switch signal circuit | Rolling count value received from | | TRUE | Boolean | | | | | >= | 3 | Fail Counter | Specia No MIL |
| Tap Up Tap Down Switch (TUTD) | P1/61 | (rolling count) | BCM does not match expected value | | IKUE | Doolean | | | | | | 3 | raii Countei | INO IVIIL |
| | | | | | | | | | | | > | 10 | Sample Timer (Sec) | |
| | | | | H | | | Tap Up Tap Down Message | = | TRUE | Deeleen | | | (Sec) | - |
| | | | | | | | Health | | | Boolean | | | | |
| | | | | | | | Engine Speed Lo Engine Speed Hi | | 400 7500 | RPM RPM | | | | |
| | | | | | | | Engine Speed is within the | | 5 | Sec | | | | |
| | | | | | | | allowable limits for | | | | | | | |
| | | | | | | Disable | MIL was Illuminated for | TOM: No. | | | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | I CIVI: None | | | | | | |
| | | | | | | | | ECM: None | | | | | | |
| | +- | Internal Mode Switch Does Not | | 一 | Dad | | | | | | 1 | | | One Tri |
| Internal Mode Switch (IMS) | P1915 | Indicate Park/Neutral (P/N) During | PRNDL State is | 5 ≠ | Park or Neutral | Enumeration | | | | | | | | |
| | | Start | The following events must occur | r | | | | | | | | | | |
| | | | Sequentially | / | | | | | | | | | 5 W T | |
| | | | Initial Engine speed | <= | 50 | RPM | | | | | >= | 0.1 | Enable Time (Sec) | |
| | | | Ther Engine Speed Between Following | | | | | | | | | | | |
| | | | Engine Speed Between Following | | | | | | | | | | | |
| | | | Engine Speed Lo His |)= | 50 | RPM | | | | | | | Enable Time | |
| | | | Engine Speed Hi His | => | 480 | RPM | | | | | >= | 0.06875 | (Sec) | |
| | | | Ther Final Engine Speed | | 500 | RPM | | | | | | | | |
| | | | Final Transmission Input Speed | 1 | 100 | RPM | | | | | >= | 1.25 | Fail Time (Sec) | |
| | | | Final Transmission input Speed | | 100 | KFIVI | | | | | /- | 1.23 | rall fille (Sec) | - |
| | | | | | | | DTC has Ran this Key Cycle? | = | FALSE | Boolean | | | | |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi | >= <= | 6 31.99023 | V V | | | | |
| | | | | | | | Ignition Voltage Hyst High | >= | 5 | V | | | | |
| | | | | | | | (enables above this value) Ignition Voltage Hyst Low | /- | 5 | | | | | |
| | | | | | | | (disabled below this value) | <= | 2 | V | | | | |
| | | | | | | | Transmission Output Speed | <= | 90 | rpm | | | | |
| | | | | | | | | | Test Failed | | | | | |
| | | | | | | | P1915 Status is | ≠ | This Key | | | | | |
| | | | | | | | | | On or Fault Active | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | 1 | | | | | Disable | MIL not Illuminated for | TCM: P0722, | P0723 | | | | | |
| | | | | | | Conditions: | DTC's: | ECM: None | | | | | | |
| | 1 | | | | | | | LOWI. INDIRE | | | | | | 1 |

| Component/ | Fault | Monitor Strategy | Malfunction | Т | reshold | Secondary Malfunction | | Enable Conditions | | | Tim | | M Illu |
|---------------------------------|-------|------------------------------------|---|--------------|-------------------|------------------------------|-----------|----------------------|---------|------|-------------|----------------|-----------|
| System | Code | Description | Criteria | | Value | Mairunction | | Conditions | | - | Requ | ired | |
| ansmission Control Module (TCM) | P2534 | Ignition Switch Run/Start Position | TCM Run crank active (based on | = FALSE | Boolean | | | | | | | | One |
| (, | | Circuit Low | voltage thresholds below) | | | | | | | | | | |
| | | | Ignition Voltage High Hyst (run | | | | | | | | | Fail Counts | |
| | | | crank goes true when above this | 5 | Volts | | | | | >= | 280 | (25ms loop) | |
| | | | value) | | | | | | | | | (231113 100P) | |
| | | | Ignition Voltage Low Hyst (run | | | | | | | Out | | Camala Caunta | |
| | | | crank goes false when below this | 2 | Volts | | | | | Out | 280 | Sample Counts | |
| | | | value) | | | | | | | of | | (25ms loop) | |
| | | | , | | | ECM run/crank active status | | | | | | | 1 |
| | | | | | | available | = | TRUE | Boolean | | | | |
| | | | | | | ECM run/crank active status | = | TRUE | Boolean | | | | |
| | | | | | | LOW TUTICIATIK active status | 1 - | INOL | Doolcan | | | | |
| | | | | | | | | | | | | | 1 |
| | | | | | Disable | NAIL | TOM N | | | | | | |
| | | | | | Disable | | TCM: None | | | | | | 1 |
| | | | | | Conditions | : DTC's: | | | | | | | |
| | | | | | | | ECM: None | | | | | | |
| | | | | | | | | | | | | | \bot |
| riable Bleed Solenoid (VBS) | P2714 | Pressure Control (PC) Solenoid D | Fail Case 1 Case: Steady State 2nd Gear | | | | | | | | | | One |
| IANIE DIEGO SOIGHOIO (VDS) | PZ/14 | Stuck Off [CB26] | Case, Steady State 2nd Gear | | | | l | | | l | | | 1 |
| | | | | | | | | | | Р | lease See | | |
| | | | | | DDM | | l | | | , Ta | able 5 For | Neutral Timer | 1 |
| | | | Gear slip | >= 400 | RPM | | l | | | | eutral Time | | 1 |
| | | | | | | | | | | | Cal | (000) | 1 |
| | | | Intrusive test: | | | | | | | | Oui | | |
| | | | | | | | | | | | | | 1 |
| | | | commanded 3rd gear | T | | | | | | | | | 1 |
| | | | | Table Bas | | | | | | | | | 1 |
| | | | If attained Gear = 3rd for Time | Time Plea | se Enable Time | | | | | | | | 1 |
| | | | If attained Gear = 3rd for Time | >= see Table | 2 in (Sec) | | | | | | | | 1 |
| | | | | Supporti | ng (Sec) | | | | | | | | 1 |
| | | | | Documer | its | | | | | | | | |
| | | | KAL O 197 | | | | | | | | | | |
| | | | If Above Conditions have been met | | | | | | | | | | |
| | | | | | | | | | | | | 2nd Gear Fail | |
| | | | Increment 2nd gear fail count | | | | | | | >= | 3 | Count | |
| | | | | | | | | | | | | or | |
| | | | | | | | | | | | | UI | |
| | | | and CB26 Fail Count | | | | | | | >= | 14 | CB26 Fail Coun | t |
| | | | | | | | | | | | | | - |
| | | | Fail Case 2 Case: Steady State 6th Gear | | | | | | | | | | |
| | | | | | | | | | | | lease See | | 1 |
| | | | Gear slip | >= 400 | RPM | | | | | | able 5 For | Neutral Timer | |
| | | | Gear Slip | /- 400 | KEW | | | | | N∈ | eutral Time | (Sec) | |
| | | | | | | | | | | | Cal | | |
| | | | Intrusive test: | | | | | | | | | | |
| | | | commanded 5th gear | | | | | | | | | | |
| | | | oommanada dan gaar | Table Bas | ha | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | If attained Gear = 5th For Time | Tille Flee | Enable Time | | | | | | | | 1 |
| | | | ii attained Gear – Stri For Time | | | | | | | | | | 1 |
| | | | | Cupporti | '9 | | l | | | l | | | 1 |
| | | | | Documer | its | | | | | | | | |
| | | | If Above Conditions have been | | | | l | | | l | | 5th Gear Fail | 1 |
| | | | met, Increment 5th gear fail | | | | l | | | >= | 3 | | 1 |
| | | | counter | | | | l | | | | | Count | 1 |
| | | | | | | | l | | | | | or | 1 |
| | | | | | | | | | | | | | 1 |
| | | | and CB26 Fail Count | | | | l | | | >= | 14 | CB26 Fail Coun | t |
| | | | - | | | PRNDL State defaulted | = | FALSE | Boolean | 1 | | | 1 |
| | | | | | | | | | | | | | 1 |
| | | | | | | inhibit RVT | = | FALSE | Boolean | | | | 1 |
| | | 1 | • | | | IMS fault pending indication | = | FALSE | Boolean | ī | | | |
| | | | | | | TPS validity flag | | TRUE | Boolean | l | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | Thres Val | | Secondary Malfunction | | Enable Conditions | | Time Required | Mil Illum. |
|-------------------------------|---------------|----------------------------------|---|----------------|--------------------------|-------------------|---|-------------|--|--------------------|------------------|---------------|
| | | | | | | | Hydraulic System Pressurized | = | TRUE | Boolean | | |
| | | | | | | | Minimum output speed for RVT | >= | 0 | RPM | | |
| | | | | | | | A OR B | | Ü | | | |
| | | | | | | | (A) Output speed enable | >= | 100 | RPM | | |
| | | | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Pct | | |
| | | | | | | | Common Enable Criteria | | | | | |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi | >= <= | 9 31.99023 | Volts Volts | | |
| | | | | | | | Engine Speed Lo | >= | 400 | RPM | | |
| | | | | | | | Engine Speed Hi Engine Speed is within the | <= | 7500 | RPM | | |
| | | | | | | | allowable limits for | >= | 5 | Sec | | |
| | | | | | | | Throttle Position Signal valid HSD Enabled | = | TRUE TRUE | Boolean Boolean | | |
| | | | | | | | Transmission Fluid | >= | -6.6563 | °C | | |
| | | | | | | | Temperature Input Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | | Output Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | | Default Gear Option is not present | = | TRUE | | | |
| | | | | | | | present | | | | | |
| | | | | | | Disable | MIL not Illuminated for | TCM: D0716 | : D0717 D0722 | D0723 | | |
| | | | | | | Conditions: | DTC's: | | ,, | ., 1 0/25, | | |
| | | | | | | | | | | | | |
| | | | | | | | | ECM: P0101 | , P0102, P0103 | 3, P0106, | | |
| | | | | | | | | | 08, P0171, P017 01, P0202, P020 | | | |
| | | | | | | | | | 06, P0207, P020 | | | |
| | | | | | | | | | 02, P0303, P030 | | | |
| | | | | | | | | P0306, P030 |)7, P0308, P040 | J1, P042E | | |
| | | Pressure Control (PC) Solenoid D | Primary Offgoing Clutch is exhausted (See Table 13 in | | | | | | | | | One Trip |
| Variable Bleed Solenoid (VBS) | P2715 | Stuck On [CB26] (Dynamic) | Supporting Documents for Exhaust | | TRUE | Boolean | | | | | | |
| | | | Delay Timers) Primary Oncoming Clutch Pressure | | Maximum | | | | | | | |
| | | | Command Status | | pressurized | | | | | | | |
| | | | Primary Offgoing Clutch Pressure | | Clutch exhaust | | | | | | | |
| | | | Command Status | | command | | | | | | | |
| | | | Range Shift Status | ≠ | nitial Clutch Control | | | | | | | |
| | | | Attained Gear Slip | <= | | RPM | | | | | | |
| | | | If above coditons are true, | | | | | | | | | |
| | | | increment appropriate Fail 1 | | | | | | | | | |
| | | | Timers Below: fail timer 1 | | | | | | | | | |
| | | | (2-1 shifting with throttle) | >= | 0.40039 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 (2-1 shifting without throttle) | >= | 0.5 | Fail Time (Sec) | | | | | | |
| | | | fail timer 1 | | 0.40039 | Fail Time (Sec) | | | | | | |
| I | 1 | Į . | (2-3 shifting with throttle) | 1~~ | J.70003 | 1 dii 11116 (060) | l | | | | I | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold 'alue | Secondary Malfunction | | Enable Conditions | | | | me uired |
|----------------------|---------------|------------------------------|--|-----------|-----------------|---|---------|----------------------|--------------------|----|----------------------------|-----------------------|
| | | | fail timer 1 > (2-3 shifting without throttle) | = 0.5 | Fail Time (Sec) | | | | | | | |
| | | | fail timer 1 | = 0.40039 | Fail Time (Sec) | | | | | | | |
| | | | fail timer 1 | = 0.5 | Fail Time (Sec) | | | | | | | |
| | | | (2-4 shifting without throttle) | | | | | | | | | |
| | | | (6-4 shifting with throttle) | = 0.40039 | Fail Time (Sec) | | | | | | | |
| | | | fail timer 1 > (6-4 shifting without throttle) | = 0.5 | Fail Time (Sec) | | | | | | | |
| | | | fail timer 1 > (6-5 shifting with throttle) | 0.7002 | Fail Time (Sec) | | | | | | | |
| | | | fail timer 1 > (6-5 shifting without throttle) | = 0.5 | Fail Time (Sec) | | | | | | | |
| | | | (6-5 snitting without throttie) | | | | | | | | | |
| | | | | | | | | | | | Total Fail me = (Fail | |
| | | | | | | | | | | + | Fail 2) Se | е |
| | | | If Attained Gear Slip is Less than | | | | | | | fo | nable Time or Fail Time | ar . |
| | | | Above Cal Increment Fail Timers | | | | | | | >= | 1, and | sec |
| | | | | | | | | | | | Reference Supporting | |
| | | | | | | | | | | | able 15 fo | |
| | | | | | | | | | | ' | all fillier 2 | - |
| | | | If fail timer is greater than threshold increment corresponding gear fail | | | | | | | | | |
| | | | counter and total fail counter | | | | | | | | | |
| | | | 2nd gear fail counter | | | | | | | >= | 3 | Fail Counter |
| | | | | | | | | | | | | From 2nd Gear OR |
| | | | 6th gear fail counter | | | | | | | >= | 3 | Fail Counter |
| | | | our goar ian oourion | | | | | | | | Ü | From 6th Gear OR |
| | | | total fail counter | | | | | | | >= | 3 | Total Fail Counter |
| | | | | | | TUT Enable temperature | >= | -6.6563 | °C | | | Counter |
| | | | | | | Input Speed Sensor fault Output Speed Sensor fault | = = | FALSE FALSE | Boolean Boolean | | | |
| | | | | | | Command / Attained Gear | ≠ | 1st | Boolean | | | |
| | | | | | | High Side Driver ON output speed limit for TUT | = >= | TRUE 200 | Boolean RPM | | | |
| | | | | | | input speed limit for TUT PRNDL state defaulted | >= = | 200 FALSE | RPM Boolean | | | |
| | | | | | | IMS Fault Pending | = | FALSE | Boolean | | | |
| | | | | | | Service Fast Learn Mode HSD Enabled | = = | FALSE TRUE | Boolean Boolean | | | |
| | | | | | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | | Time equired | Mil Illum |
|------------------------------|---------------|----------------------------------|--|---------------------------------|--------------------------|---|--------|------------------------------------|--------------|
| System | Code | Description | Criteria | Disable | | TCM: P0716, P0717, P0722, P0723, | N. | equireu | mum |
| | | | | Conditions: | | P182E | | | |
| | | | | | | | | | |
| | | | | | | ECM: P0101, P0102, P0103, P0106, | | | |
| | | | | | | P0107, P0108, P0171, P0172, P0174, | | | |
| | | | | | | P0175, P0201, P0202, P0203, P0204, | | | |
| | | | | | | P0205, P0206, P0207, P0208, P0300, P0301, P0302, P0303, P0304, P0305, | | | |
| | | | | | | P0306, P0307, P0308, P0401, P042E | | | |
| | | | | | | 0000,1 0007,1 0000,1 0401,1 0421 | | | |
| ariable Bleed Solenoid (VBS) | P2715 | Pressure Control (PC) Solenoid D | Fail Case 1 Case: Steady State 1st | | | | | | One T |
| mable bleed Solemoid (VBS) | F2/13 | Stuck On [CB26] (Steady State) | | | | | | | |
| | | | Attained Gear slip | | | | | | |
| | | | | Table Based Time Please | | | | | |
| | | | | Pofor to Table Enable Time | | | | | |
| | | | If the Above is True for Time | >= 4 in (Sec) | | | | | |
| | | | | supporting | | | | | |
| | | | | documents | | | | | |
| | | | Intrusive test: | | | | | | |
| | | | (CBR1 clutch exhausted) | 0.44007 | | | | | |
| | | | Gear Ratio | | | | | | |
| | | | Gear Ratio If the above parameters are true | 2.70532 | | | | | |
| | | | ii tile above parameters are tide | | | | | | |
| | | | | | | | >= 1.1 | Fail Timer (Sec) Fail Count in 1st | 1 |
| | | | | | | | >= 5 | Gear | |
| | | | | | | | | or | |
| | | | | | | | >= 5 | Total Fail | |
| | | | | | | | /- 5 | Counts | |
| | | | Fail Case 2 Case: Steady State 3rd Gear | Table Daned | | | | | |
| | | | | Table Based value Please | | | | | |
| | | | Max Delta Output Speed | Refer to Table | | | | | |
| | | | Hysteresis | | | | | | |
| | | | , | supporting | | | | | |
| | | | | documents | | | | | |
| | | | | Table Based | | | | | |
| | | | | value Please | | | | | |
| | | | Min Delta Output Speed Hysteresis | >= Refer to Table rpm/sec 23 in | | | | | |
| | | | | supporting | | | | | |
| | | | | documents | | | | | |
| | | | | Table Based | | | | | |
| | | | | Time Please | | | | | |
| | | | If the Above is True for Time | >= Refer to Table Sec | | | | | |
| | | | | 17 111 | | | | | 1 |
| | | | | supporting documents | | | | | 1 |
| | | | Intrusive test: | doddinonto | | | | | |
| | | | (C35R clutch exhausted) | | | | | | |
| | 1 | | Gear Ratio | | | | | | |
| | | | Gear Ratio | | | | | | |
| | | | If the above parameters are true | | | | | | |
| | - 1 | | I | | | I | >= 1.1 | Fail Timer (Sec) | . 1 |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary Malfunction | Enable | | | Γime | Mi |
|------------|-------|------------------|--|---------------------------------|--------------------------|------------|----|-----|---------------------------|-------|
| System | Code | Description | Criteria | Value | Mairunction | Conditions | + | | quired | IIIui |
| | | | | | | | >= | 3 | Fail Count in 3rd Gear | 1 |
| | | | | | | | | | or | |
| | | | | | | | | | or Total Fail | |
| | | | | | | | >= | 5 | Counts | |
| | | | Fail Case 2 Cases Steady State And Case | | | | - | | Counts | - |
| | | | Fail Case 3 Case: Steady State 4rd Gear | Table Based | | | | | | |
| | | | | velue Dieses | | | | | | |
| | | | May Dalta Output Canad | Pefer to Table | | | | | | |
| | | | Max Delta Output Speed Hysteresis | | | | | | | |
| | | | Hysteresis | | | | | | | |
| | | | | supporting | | | | | | |
| | | | | documents Table Based | | | | | | |
| | | | | value Dieses | | | | | | |
| | | | | >= Refer to Table rpm/sec | | | | | | |
| | | | Min Delta Output Speed Hysteresis | >= Refer to Table rpm/sec 23 in | | | | | | |
| | | | | | | | | | | 1 |
| | | | | supporting | | | | | | |
| | | | | documents Table Based | | | | | | 1 |
| | | | | Time Please | | | | | | 1 |
| | | | | Refer to Table | | | | | | 1 |
| | | | If the Above is True for Time | >= Relef to Table Sec | | | | | | 1 |
| | | | | 17 10 | | | | | | 1 |
| | | | | supporting | | | | | | 1 |
| | | | Intrusive test: | documents | | | | | | 1 |
| | | | (C1234 clutch exhausted) | | | | | | | 1 |
| | | | Gear Ratio | <= 0.79822 | | | | | | |
| | | | Gear Ratio | | | | | | | |
| | | | If the above parameters are true | | | | | | | |
| | | | ii tile above parameters are tide | | | | | | | |
| | | | | | | | >= | 1.1 | Fail Timer (Sec) |) |
| | | | | | | | | | Fail Count in 4th | |
| | | | | | | | >= | 3 | Gear | 1 |
| | | | | | | | | | or | |
| | | | | | | | | | Total Fail | |
| | | | | | | | >= | 5 | Counts | |
| | | | Fail Case 4 Case: Steady State 5th Gear | | | | | | | 1 |
| | | | | Table Based | | | | | | 1 |
| | | | | value Please | | | | | | 1 |
| | | | Max Delta Output Speed | | | | | | | |
| | | | Hysteresis | | | | | | | 1 |
| | | | , | supporting | | | | | | 1 |
| | | | | documents | | | | | | |
| | | | | Table Based | | | | | | 1 |
| | | | | value Please | | | | | | 1 |
| | | | Min Dolto Output Spood Unatoragia | >= Refer to Table rpm/sec | | | | | | |
| | | | Min Delta Output Speed Hysteresis | 23 in | | | | | | 1 |
| | | | | supporting | | | | | | 1 |
| | | | | documents | | | | | | 1 |
| | | | | Table Based | | | | | | |
| | | | | Time Please | | | | | | |
| | | | If the Above is True for Time | Refer to Table | | | | | | |
| | | | II the Above is True for Time | >= 17 in Sec | | | | | | |
| | | | | supporting | | | | | | |
| | | | 1 | documents | I | | | | | 1 |
| | | | | | | | | | | |
| | | | Intrusive test: | documento | | | | | | |
| | | | Intrusive test: (C35R clutch exhausted) Gear Ratio | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thre: Va | shold | Secondary Malfunction | | Enable Conditions | | | | ime Juired | Mil Illum. |
|-------------------------------|---------------|---|----------------------------------|-------------|------------|--|------------------------------|----------------------|----------------|----------|-------|----------------------|---------------|
| System | Code | Description | Gear Ratio | | iido | manufaction. | | Conditions | | | itoq | uncu | |
| 1 | | | If the above parameters are true | | | | | | | | | | |
| | | | | | | | | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | | | | | Fail Count in 5th | |
| | | | | | | | | | | >= | 3 | Gear | |
| | | | | | | | | | | | | or | |
| | | | | | | | | | | >= | 5 | Total Fail Counts | |
| | | | | | | PRNDL State defaulted | = | FALSE | Boolean | | | Odditis | 1 1 |
| | | | | | | inhibit RVT | = | FALSE | Boolean | | | | |
| | | | | | | IMS fault pending indication | | FALSE | Boolean | | | | |
| | | | | | | output speed TPS validity flag | >= = | 0 TRUE | RPM Boolean | | | | |
| | | | | | | HSD Enabled | = | TRUE | Boolean | | | | |
| | | | | | | Hydraulic_System_Pressurized | = | TRUE | Boolean | | | | |
| | 1 | | | | | | | INUE | DOUBAII | | | l l | |
| | 1 | | | | | A OR B (A) Output speed enable | | 100 | Nm | | | l l | |
| | 1 | | | | | | | | | | | l l | |
| | | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Nm | | | | |
| | 1 | | | | | Ignition Voltage Lo | | 9 | Volts | | | l l | |
| | | | | | | Ignition Voltage Hi | <= >= | 31.99023 | Volts | | | | |
| | | | | | | Engine Speed Lo Engine Speed Hi | >= <= | 400 7500 | RPM RPM | | | | |
| | | | | | | Engine Speed is within the | | | | | | | |
| | | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | | if Attained Gear=1st FW | >= | 10.0006 | Pct | | | | |
| | | | | | | Accelerator Pedal enable if Attained Gear=1st FW Engine | | | | | | | |
| | | | | | | Torque Enable | >= | 45 | Nm | | | | |
| | | | | | | if Attained Gear=1st FW Engine | <= | 8191.88 | Nm | | | | |
| | | | | | | Torque Enable | | 0191.00 | INIII | | | | |
| | | | | | | Transmission Fluid Temperature | >= | -6.6563 | °C | | | | |
| | | | | | | Input Speed Sensor fault | = | FALSE | Boolean | | | | |
| | | | | | | Output Speed Sensor fault | | FALSE | Boolean | | | | |
| | | | | | | Default Gear Option is not | = | TRUE | | | | | |
| | | | | | | present | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | Disable | | | P0717, P0722 | 2, P0723, | | | | |
| | | | | | Conditions | DTC's: | P182E | | | | | | |
| | 1 | | | | | | | | | | | l l | |
| | 1 | | | | | | ECM: P0101, | P0102, P010 | 3, P0106, | | | l l | |
| | 1 | | | | | | P0107, P0108 | | | | | ļ. | |
| | 1 | | | | | | P0175, P0201 P0205, P0206 | | | | | ļ. | |
| | | | | | | | P0205, P0206 P0301, P0302 | | | | | | |
| | | | | | | | P0306, P0307 | | | | | | |
| | + | Description (DO) Colored D | | | | | | | | <u> </u> | | | One T-i |
| Variable Bleed Solenoid (VBS) | P2720 | Pressure Control (PC) Solenoid D Control Circuit Low | The HWIO reports a low voltage | | Boolean | | | | | >= | 0.3 | Fail Time (Sec) | One Trip |
| - aabio biood colollold (Vbo) | 1.2/20 | (CB26 VBS) | (ground short) error flag | INOL | Doolouit | | | | | 1 - | 0.0 | 1 4.1 1.1116 (006) | |
| | 1 |] | | | | | | | | out | 0.375 | Sample Time | |
| 1 | I | I | | | | | I | | | of | 3.070 | (Sec) | l l |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | Time Required | Mil Illum. |
|-------------------------------|---------------|--|--|---|--|--|---|---------------|
| System | Code | Description | Oneria | value | P2770 Status is no | Test Failed t = This Key On or Fault Active | Required | |
| | | | | | Ignition Voltage Engine Speec Engine Speec Engine Speed is within the allowable limits for | <pre> <= 31.99023 Volts i >= 400 RPM i <= 7500 RPM </pre> | | |
| | | | | Disable Conditions | | | | |
| Variable Bleed Solenoid (VBS) | P2721 | Pressure Control (PC) Solenoid D Control Circuit High (CB26 VBS) | The HWIO reports a high voltage (open or power short) error flag | = TRUE Boolean | | | >= 0.3 Fail Time (Sec) out 0.375 Sample Time | |
| | | | | | P2721 Status is not | Test Failed t = This Key On or Fault Active | of (Sec) | _ |
| | | | | | Ignition Voltage Ignition Voltage Engine Speec Engine Speec Engine Speed is within the allowable limits for | <pre><= 31.99023 Volts ! >= 400 RPM ! <= 7500 RPM ?</pre> | | |
| | | | | Disable Conditions | | TCM: None ECM: None | | |
| Variable Bleed Solenoid (VBS) | P2723 | Pressure Control (PC) Solenoid E Stuck Off | Fail Case 1 Case: Steady State 1st Gear Gear slip | | | | Please See Table 5 For Neutral Timer Neutral Time (Sec) | One Trip |
| | | | Intrusive test: commanded 2nd gear If attained Gear ≠ 2nd for Time | Please refer to >= Table 3 in Supporting Shift Time (Sec) | | | Cal | |
| | | | If Above Conditions have been met, Increment 1st gear fail counter | Documents | | | >= 2 1st Gear Fail Count | |

| Component/ System | Fault Code | Monitor Strategy Description | | Malfunction Criteria | | Thres Val | | Secondary Malfunction | | Enable Conditions | | | Tim Requi | | T |
|----------------------|---------------|------------------------------|-------------|---------------------------------|--|-------------------------|------------------|------------------------------|---|----------------------|---------|-----|---------------------|----------------------------|----|
| System | Code | Description | 1 | | | Vai | uc | Manunction | | Conditions | | | | C1234 Clutch | +" |
| | | | | and C1234 fail counter | ď | | | | | | | >= | 14 | Fail Count | |
| | | | Fail Case 2 | Case: Steady State 2nd Gear | r | | | | | | | | | | 1 |
| | | | | | | | | | | | | | Please See | | |
| | | | | Gear slip | >= | 400 | RPM | | | | | | Table 5 For | Neutral Timer | ı |
| | | | | | | | | | | | | N | leutral Time Cal | (Sec) | |
| | | | | Intrusive test | | | | | | | | | Gai | | ı |
| | | | | commanded 3rd gear | | | | | | | | | | | ı |
| | | | | · | | ease refer to | | | | | | | | | |
| | | | | If attained Gear ≠ 3rd for Time | | Table 3 in | Shift Time (Sec) | | | | | | | | |
| | | | | | 1 | Supporting Documents | ` , | | | | | | | | |
| | | | | If Above Conditions have been | | ocuments | | | | | | | | | |
| | | | | met, Increment 2nd gear fai | | | | | | | | >= | 2 | 2nd Gear Fail | |
| | | | | counter | r | | | | | | | | | Count | |
| | | | | | | | | | | | | | | or | ı |
| | | | | and C1234 fail counter | r | | | | | | | >= | 14 | C1234 Clutch Fail Count | |
| | | | Fail Case 3 | Case: Steady State 3rd Gear | 1 | | | | | | | | | i un Oount | 1 |
| | | | | , | | | | | | | | | Please See | | |
| | | | | Gear slip | >= | 400 | RPM | | | | | | Table 5 For | Neutral Timer | |
| | | | | | | | | | | | | l N | leutral Time Cal | (Sec) | |
| | | | | Intrusive test | | | | | | | | | Gai | | |
| | | | | commanded 4th gear | | | | | | | | | | | |
| | | | | - | | ease refer to | | | | | | | | | |
| | | | | If attained Gear ≠ 4th for time | >=] | Table 3 in | Shift Time (Sec) | | | | | | | | |
| | | | | | 1 | Supporting Documents | ` ' | | | | | | | | |
| | | | | If Above Conditions have been | | ocuments | | | | | | | | | |
| | | | | met, Increment 3rd gear fai | | | | | | | | >= | 2 | 3rd Gear Fail | ı |
| | | | | counter | r | | | | | | | | | Count | |
| | | | | | | | | | | | | | | or C1234 Clutch | ı |
| | | | | and C1234 fail counter | r | | | | | | | >= | 14 | Fail Count | |
| | | | Fail Case 4 | Case: Steady State 4th Gear | r | | | | | | | | | | 1 |
| | | | | | | | | | | | | | Please See | | |
| | | | | Gear slip | >= | 400 | RPM | | | | | | Table 5 For | Neutral Timer | |
| | | | | · | | | | | | | | l N | leutral Time Cal | (Sec) | |
| | | | | Intrusive test | : | | | | | | | | Oul | | 1 |
| | | | | commanded 5th gear | r | | | | | | | | | | 1 |
| | | | | | | ease refer to | | | | | | | | | |
| | | | | If attained Gear = 5th For Time | | Table 3 in | Shift Time (Sec) | | | | | | | | |
| | | | | | | Supporting Documents | | | | | | | | | 1 |
| | | | | If Above Conditions have been | | | | | | | | | | 4th Gear Fail | |
| | | | | met, Increment 4th gear fai | | | | | | | | >= | 3 | 4th Gear Fail Count | |
| | | | | counter | ď | | | | | | | | | | |
| | | | | | | | | | | | | | | or C1234 Clutch | |
| | | | | and C1234 fail counter | 1 | | | | | | | >= | 14 | Fail Count | |
| | | | | | | | | PRNDL State defaulted | = | FALSE | Boolean | | | | 1 |
| | | | | | | | | inhibit RVT | = | FALSE | Boolean | | | | 1 |
| | | | | | | | | IMS fault pending indication | = | FALSE | Boolean | | | | |
| | | | | | | | | TPS validity flag | = | TRUE | Boolean | | | | ı |
| | | | | | 1 | | | Hydraulic System Pressurized | = | TRUE | Boolean | 1 | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | shold lue | Secondary Malfunction | | Enable Conditions | | Time Required | Mil Illum. |
|--------------------------------|---------------|----------------------------------|--|---------------------------------|--------------|---|----------|-----------------------------------|--------------------|------------------|---------------|
| | | | | | | Minimum output speed for RVT | >= | 0 | RPM | | |
| | | | | | | A OR B | | | | | |
| | | | | | | (A) Output speed enable | | 100 | RPM | | |
| | | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Pct | | |
| | | | | | | Common Enable Criteria Ignition Voltage Lo | >= | 9 | Volts | | |
| | | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | |
| | | | | | | Engine Speed Lo Engine Speed Hi | >= <= | 400 7500 | RPM RPM | | |
| | | | | | | Engine Speed is within the | | 5 | | | |
| | | | | | | allowable limits for | 1 | | Sec | | |
| | | | | | | Throttle Position Signal valid HSD Enabled | = | TRUE TRUE | Boolean Boolean | | |
| | | | | | | Transmission Fluid | | -6.6563 | °C | | |
| | | | | | | Temperature Input Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | Output Speed Sensor fault | = | FALSE | Boolean | | |
| | | | | | | Default Gear Option is not present | = | TRUE | | | |
| | | | | | | present | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | Disable | | | 6, P0717, P0722 | 2, P0723, | | |
| | | | | | Conditions: | DTC's: | P182E | | | | |
| | | | | | | | | | | | |
| | | | | | | | | 1, P0102, P0103 08, P0171, P01 | | | |
| | | | | | | | | 00, P0171, P01 01, P0202, P02 | | | |
| | | | | | | | | 06, P0207, P02 | | | |
| | | | | | | | | 02, P0303, P03 07, P0308, P04 | | | |
| | | | Primary Offgoing Clutch is | | | | | | | | One Trip |
| Variable Bleed Solenoid (VBS) | P2724 | Pressure Control (PC) Solenoid E | exhausted (See Table 10 in | = TRUE | Boolean | | | | | | One mp |
| Valiable bleed Soletiold (VBS) | F2124 | Stuck On (Dynamic) | Supporting Documents for Exhaust | - INUE | DUUIEdII | | | | | | |
| | | | Delay Timers) Primary Oncoming Clutch Pressure | _ Maximum | | | | | | | |
| | | | Command Status | pressurized | | | | | | | |
| | | | Primary Offgoing Clutch Pressure | Clutch = exhaust | | | | | | | |
| | | | Command Status | command | | | | | | | |
| | | | Range Shift Status | ≠ Initial Clutch Control | | | | | | | |
| | | | Attained Gear Slip | | RPM | | | | | | |
| | | | If the above conditions are true increment appropriate Fail 1 | | | | | | | | |
| | | | Timers Below: | | | | | | | | |
| | | | fail timer 1 | >= 0.40039 | sec | | | | | | |
| | | | (2-6 shifting with throttle) fail timer 1 | | | | | | | | |
| | | | (2-6 shifting without throttle) | >= 0.5 | sec | | | | | | |
| | | | fail timer 1 (3-5 shifting with throttle) | >= 0.40039 | sec | | | | | | |
| | | | fail timer 1 | >- 0.5 | sec | | | | | | |
| I | | l | (3-5 shifting without throttle) | 0.0 | | [| l | | | I | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | shold Ilue | Secondary Malfunction | | Enable Conditions | | | Tin Requ | | IIIu |
|----------------------|---------------|------------------------------|--|-------|--------|---------------|--|---------|----------------------|--------------------|-------|--------------------------------|---------------|------|
| | | | fail timer 1 (4-5 shifting with throttle) | >= 0. | .40039 | sec | | | | | | | | |
| | | | fail timer 1 | >= | 0.5 | sec | | | | | | | | |
| | | | (4-5 shifting without throttle) fail timer 1 | | | | | | | | | | | |
| | | | (4-6 shifting with throttle) | >= 0 | .40039 | sec | | | | | | | | |
| | | | fail timer 1 (4-6 shifting without throttle) | >= | 0.5 | sec | | | | | | | | |
| | | | , , , , | | | | | | | | | Total Fail | | |
| | | | | | | | | | | | | ime = (Fail 1 · Fail 2) See | | |
| | | | | | | | | | | | | nable Timers | | |
| | | | If Attained Gear Slip is Less than | | | | | | | | >= fc | or Fail Timer | sec | |
| | | | Above Cal Increment Fail Timers | | | | | | | | | 1, and Reference | | |
| | | | | | | | | | | | | Supporting | | |
| | | | | | | | | | | | | Table 15 for Fail Timer 2 | | |
| | | | | | | | | | | | | | | |
| | | | If fail timer is greater than threshold increment corresponding gear fail | | | | | | | | | | | |
| | | | counter and total fail counter | | | | | | | | | | | |
| | | | 2nd gear fail counter | | | | | | | | >= | 3 | Fail Counter | |
| | | | zilu geal fall Guillei | | | | | | | | - | 3 | From 2nd Gear | |
| | | | | | | | | | | | | | Fail Counter | |
| | | | 3rd gear fail counter | | | | | | | | >= | 3 | From 3rd Gear | |
| | | | | | | | | | | | | | Fail Counter | |
| | | | 4th gear fail counter | | | | | | | | >= | 3 | From 4th Gear | |
| | | | | | | | | | | | | | Total Fail | |
| | | | total fail counter | | | | | | | | >= | 3 | Counter | |
| | | | | | | | TUT Enable temperature Input Speed Sensor fault | >= | -6.6563 FALSE | °C Boolean | | | | |
| | | | | | | | Output Speed Sensor fault | = | FALSE | Boolean | | | | |
| | | | | | | | Command / Attained Gear High Side Driver ON | ≠ = | 1st TRUE | Boolean Boolean | | | | |
| | | | | | | | output speed limit for TUT | >= | 200 | RPM | | | | |
| | | | | | | | input speed limit for TUT PRNDL state defaulted | >= = | 200 FALSE | RPM Boolean | | | | |
| | | | | | | | IMS Fault Pending | | FALSE | Boolean | | | | l |
| | | | | | | | Service Fast Learn Mode HSD Enabled | | FALSE TRUE | Boolean | | | | |
| | | | | | | | HOD FUSDIEG | = | IKUE | Boolean | | | | |
| | | | | | | | | | | | | | | ı |

| Component/ | Fault Code | Monitor Strategy | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | | Tir Requ | | Mil Illum |
|------------------------------|---------------|----------------------------------|-----------------------------------|------------------------------------|--------------------------|------------------------------------|----|-------------|-------------------|--------------|
| System | Code | Description | Griteria | Value Disable | MIL not Illuminated fo | | + | кеді | unea | mum |
| | | | | Conditions: | | P182E | | | | |
| | | | | Conditions: | DICS | P182E | | | | |
| | | | | | | | | | | |
| | | | | | | ECM: P0101, P0102, P0103, P0106, | | | | |
| | | | | | | P0107, P0108, P0171, P0172, P0174, | | | | |
| | | | | | | P0175, P0201, P0202, P0203, P0204, | | | | |
| | | | | | | P0205, P0206, P0207, P0208, P0300, | | | | |
| | | | | | | P0301, P0302, P0303, P0304, P0305, | | | | |
| | | | | | | P0306, P0307, P0308, P0401, P042E | | | | |
| | | | | | | | | | | |
| ariable Bleed Solenoid (VBS) | P2724 | Pressure Control (PC) Solenoid E | Fail Case 1 Case: 5th Gear | | | | | | | One T |
| nable bleed colonela (VBC) | 1 2/21 | Stuck On (Steady State) | ouse. our cour | | | | | | | |
| | | | | Table Based | | | | | | |
| | | | | value Please | | | | | | |
| | | | Max Delta Output Speed | Refer to Table >= 22 in rpm/sec | | | | | | |
| | | | Hysteresis | 22 in 1pm/sec | | | | | | |
| | | | | supporting | | | | | | |
| | | | | documents | | | | | | |
| | | | | Table Based | | | | | | |
| | | | | value Please | | | | | | |
| | | | | Refer to Table | | | | | | |
| | | | Min Delta Output Speed Hysteresis | >= Refer to Table rpm/sec | | | | | | |
| | | | | supporting | | | | | | |
| | | | | documents | | | | | | |
| | | | | Table Based | | | | | | |
| | | | | Time Please | | | | | | |
| | | | | Refer to Table | | | | | | |
| | | | If the Above is True for Time | >= Relet to Table Sec | | | | | | |
| | | | | 17 10 | | | | | | |
| | | | | supporting | | | | | | |
| | | | | documents | | | | | | |
| | | | Intrusive test: | | | | | | | |
| | | | (C35R clutch exhausted) | l l | | | | | | |
| | | | Gear Ratio | | | | | | | |
| | | | Gear Ratio | | | | | | | |
| | | | If the above parameters are true | | | | | | | |
| | | | | | | | >= | 1.1 | Fail Timer (Sec) | |
| | | | | | | | | 1.1 | rall filler (Sec) | |
| | | | | | | | >= | 3 | Fail Count in 5th | |
| | | | | | | | | J | Gear | |
| | | | | | | | | | OR | |
| | | | | | | | | 2 | Total Fail | 1 |
| | | | | | | | >= | 3 | Counts | l |
| | | | Fail Case 2 Case: 6th Gear | | | | | | | 1 |
| | | | | Table Based | | | | | | |
| | | | | value Please | | | | | | 1 |
| | | | Max Delta Output Speed | | | | | | | l |
| | | | Hysteresis | >= 1toler to Fusio rpm/sec | | | | | | l |
| | | | Tryotorosio | supporting | | | | | | |
| | | | | documents | | | | | | l |
| | | | | Table Based | | | | | | I |
| | | | | | | | | | | I |
| | | | | value Please | | | | | | I |
| | | | Min Delta Output Speed Hysteresis | Refer to Table rpm/sec 23 in | | | | | | l |
| | | | Solid Super Spood Hydioroolid | · · | | | | | | |
| | | | | supporting | | | | | | l |
| | - 1 | i | | documents | | ĺ | 1 | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | Threshold | Secondary Malfunction | | Enable | | | | ime | L |
|------------|-------|------------------|------------------------------------|-----------------------|--------------------------------|----|------------|---------|----|-----|-------------------|----|
| System | Code | Description | Criteria | Value | Malfunction | | Conditions | | | Re | quired | +' |
| | | | | Table Based | | | | | | | | |
| | | | | Time Please | 1 | | | | | | | |
| | | | If the Above is True for Time | >= Refer to Table Sec | 1 | | | | | | | |
| | | | ii tile / tbovo le True lei Tillie | >= 17 in Sec | 1 | | | | | | | |
| | | | | supporting | 1 | | | | | | | Т |
| | | | | documents | 1 | | | | | | | Т |
| | | | Intrusive test: | | 1 | | | | | | | П |
| | | | (CB26 clutch exhausted) | | 1 | | | | | | | |
| | | | Gear Ratio | <= 1.52905 | | | | | | | | 1 |
| | | | Gear Ratio | >= 1.32898 | | | | | | | | 1 |
| | | | If the above parameters are true | | | | | | | | | 1 |
| | | | | | | | | | | | | |
| | | | | | 1 | | | | >= | 1.1 | Fail Timer (Sec) | ;) |
| | | | | | 1 | | | | | | Fail Count in 6th | th |
| | | | | | 1 | | | | >= | 3 | Gear | 1 |
| | | | | | 1 | | | | | | OR | 1 |
| | | | | | | | | | | | Total Fail | 1 |
| | | | | | 1 | | | | >= | 3 | Counts | 1 |
| | | ļ | | | PRNDL State defaulted | = | FALSE | Boolean | | | 5545 | 1 |
| | | | | | inhibit RVT | = | FALSE | Boolean | | | | 1 |
| | | | | | IMS fault pending indication | = | FALSE | Boolean | | | | П |
| | | | | | output speed | >= | 0 | RPM | | | | П |
| | | | | | TPS validity flag | = | TRUE | Boolean | | | | 1 |
| | | | | | HSD Enabled | = | TRUE | Boolean | | | | 1 |
| | | | | | | _ | | | | | | 1 |
| | | | | | Hydraulic_System_Pressurized | = | TRUE | Boolean | | | | |
| | | | | | A OR B | | | | | | | П |
| | | | | | (A) Output speed enable | >= | 100 | Nm | | | | П |
| | | | | | ` ' ' ' | /- | | | | | | |
| | | | | | (B) Accelerator Pedal enable | >= | 0.5005 | Nm | | | | |
| | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | ı |
| | | | | | Ignition Voltage Hi | <= | 31.99023 | Volts | | | | П |
| | | | | | Engine Speed Lo | >= | 400 | RPM | | | | П |
| | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | 1 |
| | | | | | Engine Speed is within the | | | | | | | П |
| | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | if Attained Gear=1st FW | | | | | | | |
| | | | | | Accelerator Pedal enable | >= | 10.0006 | Pct | | | | П |
| | | | | | if Attained Gear=1st FW Engine | | | | | | | П |
| | | | | | Torque Enable | >= | 45 | Nm | | | | |
| | | | | | if Attained Gear=1st FW Engine | | | | | | | 1 |
| | | | | | | <= | 8191.88 | Nm | | | | 1 |
| | | | | | Torque Enable | | | | | | | |
| | | | | | Transmission Fluid | >= | -6.6563 | °C | | | | 1 |
| | | | | | Temperature | | | | | | | 1 |
| | | | | | Input Speed Sensor fault | = | FALSE | Boolean | | | | 1 |
| | | | | | Output Speed Sensor fault | = | FALSE | Boolean | | | | 1 |
| | | | | | Default Gear Option is not | = | TRUE | | | | | П |
| | | | | | present | | | | | | | |
| | | | | | | | | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | | ime uired | Mil Illum. |
|-------------------------------|-------|---|---|--------|------------------------|--|--|--|--|-----------|-------|-----------------------------|---------------|
| System | Code | Description | Criteria | V | Disable Conditions: | MIL not Illuminated for DTC's: | | | P0723, | | Keq | uired | IIIum. |
| | | | | | | | P0107, P010 P0175, P020 P0205, P020 P0301, P030 | , P0102, P0103, 08, P0171, P0172 01, P0202, P0203 06, P0207, P0208 02, P0303, P0304 07, P0308, P040 | 2, P0174, 3, P0204, 8, P0300, 4, P0305, | | | | |
| Variable Bleed Solenoid (VBS) | P2729 | Pressure Control (PC) Solenoid E Control Circuit Low | The HWIO reports a low voltage (ground short) error flag | = TRUE | Boolean | | | | | >= | 0.3 | Fail Time (Sec) | One Trip |
| | | (C1234 VBS) | | | | | | | | out of | 0.375 | Sample Time (Sec) | |
| | | | | | | P2729 Status is not | = | Test Failed This Key On or Fault Active | | | | | |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | <= >= <= | 9 31.99023 400 7500 | Volt Volt RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |
| Variable Bleed Solenoid (VBS) | P2730 | Pressure Control (PC) Solenoid E Control Circuit High (C1234 VBS) | The HWIO reports a high voltage (open or power short) error flag | | Boolean | | | | | >= out | 0.3 | Fail Time (Sec) Sample Time | One Trip |
| | | | | | | P2730 Status is not | = | Test Failed This Key On or Fault Active | | of | 0.070 | (Sec) | _ |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for | <= >= <= | 9 31.99023 400 7500 5 | Volt Volt RPM RPM Sec | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: None ECM: None | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | Thre | shold alue | Secondary Malfunction | | Enable Conditions | | | Ti | ime uired | Mil Illum. |
|-------------------------------|---------------|--|---|----|--------|------------------------|--|---------------------------------|--|--|-----------------|-----|-----------------------------------|---------------|
| Variable Bleed Solenoid (VBS) | P2763 | Torque Converter Clutch Pressure High | The HWIO reports a low pressure/high voltage (open or power short) error flag | = | TRUE | Boolean | | | Containe | | >= out of | 4.4 | Fail Time (Sec) Sample Time (Sec) | Two Trips |
| | | | | | | | P2763 Status is not | = | Test Failed This Key On or Fault Active | | 0. | | (633) | |
| | | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled | >= <= >= <= >= = | 9 31.99023 400 7500 5 TRUE | Volt Volt RPM RPM Sec Boolean | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0658, ECM: None | P0659 | | | | | |
| Variable Bleed Solenoid (VBS) | P2764 | Torque Converter Clutch Pressure Control Solenoid Control Circuit Low | The HWIO reports a high pressure/low voltage (ground short) error flag | | TRUE | Boolean | | | | | >= out | 4.4 | Fail Time (Sec) Sample Time | One Trip |
| | | | | | | | P2764 Status is not | = | Test Failed This Key On or Fault Active | | of | | (Sec) | |
| | | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the allowable limits for High Side Driver Enabled | >= <= >= <= >= = | 9 31.99023 400 7500 5 TRUE | Volt Volt RPM RPM Sec Boolean | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P0658, ECM: None | P0659 | | | | | |
| Communication | U0073 | Controller Area Network Bus Communication Error | CAN Hardware Circuitry Detects a Low Voltage Error | | TRUE | Boolean | | | | | >= | 62 | Fail counts (≈ 10 seconds) | One Trip |
| | | | Delay timer | >= | 0.1125 | sec | | | | | Out of | 70 | Sample Counts (≈ 11 seconds) | |
| | | | | | | | Stabilization delay Ignition Voltage Ignition Voltage Power Mode | >= >= <= = | 3 9 31.99023 Run | sec Volt Volt | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | | Enable Conditions | | | Tir Requ | me uired | Mil Illum. |
|----------------------|---------------|--|---|------------------------|---|-------|---------------------------|---------------------|----|-------------|-------------|---------------|
| | | | | Disable Conditions: | DTC's: | | | | | | | |
| Communication | U0100 | Lost Communications with ECM (Engine Control Module) | CAN messages from ECM are not received by the TCM | = TRUE Boolean | Stabilization delay Ignition Voltage Ignition Voltage Power Mode | >= <= | 3 9 31.99023 Run | sec Volt Volt | >= | 12 | sec | One Trip |
| | | | | Disable Conditions: | DTC's: | | | | | | | |

| System | | Dearwinden | | Critorio | | 1/- | due | Secondary Malfunction | | Condition- | | Time | п |
|------------------------------|-------|------------------------|--------------|---|---|------|----------|--|----|----------------|----|--------------|----------|
| - | Code | Description | Fail C 4 | Criteria Top Un Curitoh Chuck in the Un | _ | Va | alue | Waitunction | | Conditions | _ | Required | |
| ap Up Tap Down Switch (TUTD) | P0815 | Upshift Switch Circuit | Fail Case 1 | Tap Up Switch Stuck in the Up | | 0 | Boolean | | | | | | Sp |
| , , | | · | | Position in Range 1 Enabled | | | | | | | | | No |
| | | | | Tap Up Switch Stuck in the Up | | 0 | Boolean | | | | | | |
| | | | | Position in Range 2 Enabled | | • | 20010411 | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | 0 | Boolean | | | | | | |
| | | | | Position in Range 3 Enabled | _ | U | Doolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | _ | 0 | Davis | | | | | | |
| | | | | Position in Range 4 Enabled | = | U | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | Position in Range 5 Enabled | | 0 | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | Position in Range 6 Enabled | | 0 | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | | | 1 | Boolean | | | | | | |
| | | | | Position in Neutral Enabled | | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | = | 1 | Boolean | | | | | | |
| | | | | Position in Park Enabled | | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | 0 | Boolean | | | | | | |
| | | | | Position in Reverse Enabled | _ | U | Doolean | | | | | | |
| | | | | Ton Un Curitab ON | _ | TDUE | Daalaan | | | | | 1 Fail Tin | (Coo) |
| | | | | Tap Up Switch ON | - | TRUE | Boolean | | | | >= | ı ralı illi | ne (Sec) |
| | | | | | | | | | | | | | |
| | | | Fail Case 2 | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | r dii Odoo L | Position in Range 1 Enabled | | 1 | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | Position in Range 2 Enabled | | 1 | Boolean | | | | | | |
| | | | | | | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | 1 | Boolean | | | | | | |
| | | | | Position in Range 3 Enabled | | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | 1 | Boolean | | | | | | |
| | | | | Position in Range 4 Enabled | | - | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | _ | 1 | Boolean | | | | | | |
| | | | | Position in Range 5 Enabled | _ | ' | DUUIEAII | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | _ | 4 | Davis | | | | | | |
| | | | | Position in Range 6 Enabled | | 1 | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | Position in Neutral Enabled | | 0 | Boolean | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | | | | | | | | |
| | | | | Position in Park Enabled | = | 0 | Boolean | | | | | | |
| | | | | | | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | | 0 | Boolean | | | | | | |
| | | | | Position in Reverse Enabled | | TDUT | | | | | | | |
| | | | | Tap Up Switch ON | | TRUE | Boolean | | | | | | |
| | | | | NOTE: Both Failcase1 and | | | | | | | >= | 600 Fail Tin | e (Sec) |
| | | | | Failcase 2 Must Be Met | | | | | | | | | (000) |
| | | | | | | | | | | | | | |
| | | | | | I | | | | | | | | |
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| | | | | | I | | | | | | | | |
| | | | | | | | | <u> </u> | | | _L | | |
| | | | | | | | | Time Since Last Range | | _ Enable T | me | | |
| | | | | | 1 | | | Change | >= | 1 (Sec) | | | |
| | | | | | I | | | Ignition Voltage Lo | >= | 9 Volts | | | |
| | 1 | | | | I | | | Ignition Voltage Hi | <= | 31.99023 Volts | | | |
| | | | | | | | | • rutiliiuti vultade ⊓ii | | | | | |
| | | | | | | | | Engine Speed Lo | >= | 400 RPM | | | |

| Component/ | Fault | Monitor Strategy | Malfunction Criteria | | reshold /alue | Secondary Malfunction | | Enable Conditions | | | Time Required | | Mil Illum. |
|-------------------------------|-------|--------------------------|--|--------|------------------|----------------------------|------------|-----------------------|-------|----|------------------|-----|---------------|
| System | Code | Description | Griteria | · ' | raiue | Engine Speed is within the | | | | | Required | | mum. |
| | | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | Test Failed | | | | | |
| | | | | | | P0815 Status is | ≠ | This Key | | | | | |
| | | | | | | | | On or Fault Active | | | | | |
| | | | | | | | | Active | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | | | 1876, | | | | |
| | | | | | Conditions: | DIC S: | P1877, P19 | 15, 1761 | | | | | |
| | | | | | | | ECM: None | | | | | | |
| | | | Fail Case 1 Tap Down Switch Stuck in the | | | | | | | | | | Special |
| Tap Up Tap Down Switch (TUTD) | P0816 | Downshift Switch Circuit | Down Position in Range 1 Enabled | = 0 | Boolean | | | | | | | | No MIL |
| | | | · · | | | | | | | | | | |
| | | | Tap Down Switch Stuck in the | = 0 | Boolean | | | | | | | | |
| | | | Down Position in Range 2 Enabled | ľ | 200,0411 | | | | | | | | |
| | | | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range 3 Enabled | | Boolean | | | | | | | | |
| | | | 3 | | | | | | | | | | |
| | | | Tap Down Switch Stuck in the | = 0 | Boolean | | | | | | | | |
| | | | Down Position in Range 4 Enabled | ľ | 200.04.1 | | | | | | | | |
| | | | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range 5 Enabled | = 0 | Boolean | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | Tap Down Switch Stuck in the | | Boolean | | | | | | | | |
| | | | Down Position in Range 6 Enabled | ľ | 200.04.1 | | | | | | | | |
| | | | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range Neutral | = 1 | Boolean | | | | | | | | |
| | | | Enabled Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range Park | | Boolean | | | | | | | | |
| | | | Enabled | | | | | | | | | | |
| | | | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range Reverse | = 0 | Boolean | | | | | | | | |
| | | | Enabled Tap Down Switch ON | = TRUE | Boolean | | | | | >= | 1 | sec | |
| | | | Tup Bown Gillion Gil | 11102 | Booloun | | | | | | | 000 | |
| | | | Fail Case 2 Tap Down Switch Stuck in the | | | | | | | | | | |
| | | | Down Position in Range 1 Enabled | = 1 | Boolean | | | | | | | | |
| | | | 3 | | | | | | | | | | |
| | | | Tap Down Switch Stuck in the | = 1 | Boolean | | | | | | | | |
| | | 1 | Down Position in Range 2 Enabled | · ' | 200.00/1 | | | | | | | | |
| | | 1 | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | 1 | Down Position in Range 3 Enabled | | Boolean | | | | | | | | |
| | | 1 | _ | | | | | | | | | | |
| | 1 | | Tap Down Switch Stuck in the | | Boolean | | | | | | | | |
| | | 1 | Down Position in Range 4 Enabled | | | | | | | | | | |
| | | 1 | Tap Down Switch Stuck in the | | | | | | | | | | |
| | | 1 | Down Position in Range 5 Enabled | | Boolean | | | | | | | | |
| | 1 | I | 1 | I | | | l | | | I | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Thre: Va | shold lue | Secondary Malfunction | | Enable Conditions | | | Tin Requ | ne iired | Mil Illum. |
|----------------------------|---------------|--------------------------------------|--|-------------------------------|------------------------|---|----------------|-----------------------------|-----------------------|----|-------------|-------------|---------------|
| ,, | | | Tap Down Switch Stuck in the Down Position in Range 6 Enabled | | Boolean | | | | | | - 1 | | |
| | | | Tap Down Switch Stuck in the Down Position in Neutral Enabled | = 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Park Enabled | = 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Reverse Enabled | = 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch ON NOTE: Both Failcase1 and Failcase 2 Must Be Met | | Boolean | | | | | >= | 600 | sec | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | Time Since Last Range Change | >= | 1 | Enable Time (Sec) | | | | |
| | | | | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo | >= <= >= | 9 31.99023 400 | Volts Volts RPM | | | | |
| | | | | | | Engine Speed Hi Engine Speed is within the allowable limits for | <= >= | 7500 5 | RPM Sec | | | | |
| | | | | | | B0040 04 4 4 | , | Test Failed This Key | | | | | |
| | | | | | | P0816 Status is | ≠ | On or Fault Active | | | | | |
| | | | | | a | | | | | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | P1877, P191 | , P0826, P182E 15, P1761 | , P1876, | | | | |
| | | | Fail Case 1 | Transition 1 | | | ECM: None | | | | | | One Trip |
| Internal Mode Switch (IMS) | P182E | Internal Mode Switch - Invalid Range | Current range | 1110) | | | | | | | | | |
| | | | Previous range | ≠ CeTRGR_e_F RNDL_Drive6 | Range | | | | | | | | |
| | | | Previous range | ≠ CeTRGR_e_F ≠ RNDL_Drive4 | Range | | | | | | | | |
| | | | Range Shift State | = Range Shift Completed | ENUM | | | | | | | | |
| | | | Absolute Attained Gear Slip Attained Gear Attained Gear | <= 50 <= Sixth | rpm | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | shold Ilue | Secondary Malfunction | | Enable Conditions | | | Ti Req | me uired | |
|----------------------|---------------|------------------------------|-------------------------------------|-----|--------------|---------------|--|----------|----------------------|---------|----|-----------|--------------|-----|
| -, | 1 | | Throttle Position Available | = | TRUE | | | | | | | | | † |
| | | | Throttle Position | >= | 8.0002 | pct | | | | | | | | |
| | | | Output Speed | >= | 200 | rpm | | | | | | | | |
| | | | Engine Torque | >= | 50 | Nm | | | | | | | | |
| | | | Engine Torque | <= | 8191.75 | Nm | | | | | | | | |
| | | | If the above conditions are met | | | | | | | | | 1 | F-11 O | |
| | | | then Increment Fail Timer | | | | | | | | >= | 1 | Fail Seconds | |
| | | | If Fail Timer has Expired then | | | | | | | | | - | F-:1 0t- | П |
| | | | Increment Fail Counter | | | | | | | | >= | 5 | Fail Counts | П |
| | | | Fail Case 2 Output Speed | <= | 70 | rpm | | | | | | | | ٦ |
| | | | | | | • | | | | | | | | - |
| | | | The following PRNDL sequence | | | | | | | | | | | - |
| | | | events occur in this exact order: | | | | | | | | | | | - |
| | | | | | Drive 6 (bit | _ | | | | | | | | 1 |
| | | | PRNDL state | | tate 0110) | Range | | | | | | | | - |
| | | | PRNDL state = Drive 6 for | | 1 | Sec | | | | | | | | 1 |
| | | | . 14452 0000 511/6 0 101 | | ransition 8 | 200 | | | | | | | | - |
| | | | PRNDL state | | (bit state | Range | | | | | | | | |
| | | | . MADE state | | 0111) | . tarigo | | | | | | | | - [|
| | | | | г | Orive 6 (bit | | | | | | | | | |
| | | | PRNDL state | | tate 0110) | Range | | | | | | | | |
| | | | | | ransition 1 | | | | | | | | | |
| | | | PRNDL state | | (bit state | Range | | | | | | | | - |
| | | | PRINDL State | l - | 1110) | range | | | | | | | | - [|
| | | | Above sequencing occurs in | | 1 | Sec | | | | | | | | |
| | | | Neutral Idle Mode | | Inactive | 360 | | | | | | | | |
| | | | If all conditions above are met | - | mactive | | | | | | | | | 1 |
| | | | | | | | | | | | | | | |
| | | | Increment delay Timer | | | | | | | | | | | - |
| | | | If the below two conditions are met | | | | | | | | >= | 3 | Fail Seconds | П |
| | | | Increment Fail Timer | | | | | | | | | | | П |
| | | | delay timer | >= | 1 | Sec | | | | | | | | - |
| | | | Input Speed | >= | 400 | Sec | | | | | | | | П |
| | | | If Fail Timer has Expired then | | | | | | | | >= | 2 | Fail Counts | - |
| | | | Increment Fail Counter | _ | | | | | | | | | | 4 |
| | | | Fail Case 3 | | ransition 13 | | | | CeTRGR_ | | | | | П |
| | | | Current range | = | (bit state | Range | Previous range | ≠ | e_PRNDL_ | | | | | - |
| | | | | | 0010) | | | | Drive3 | | | | | - |
| | | | | | | | | | CeTRGR_ | | | | | - |
| | | | Engine Torque | >= | -8192 | Nm | Previous range | ≠ | e_PRNDL_ | | | | | 1 |
| | | | | | | | | | Drive2 | | | | | - |
| | | | Engine Torque | <= | 8191.75 | Nm | IMS is 7 position configuration | = | 0 | Boolean | | | | - |
| | | | Liigine Tolque | l | 0101.10 | 1410 | inio is r position configuration | - | · · | Doolean | | | | 1 |
| | | | | | | | If the "IMS 7 Position config" = | | | | | | | 1 |
| | | | | | | | 1 then the "previous range" | | | | | | | - |
| | | | If the above conditions are met | | | | | | | | >= | 0.225 | Casanda | - |
| | | | then, Increment Fail Timer | | | | criteria above must also be satsified when the "current | | | | /- | 0.225 | Seconds | |
| | | | | | | | | | | | | | | |
| | | | | | | | range" = "Transition 13" | | | | | | | |
| | | | If Fail Timer has Expired then | | | | | | | | Ι. | 45 | E-310 (| - |
| | | | Increment Fail Counter | | | | | | | | >= | 15 | Fail Counts | 1 |
| | | | Fail Case 4 | - | r | | Dis-No. 5 7 0 4 77 1 | | | | | | | 1 |
| | | | | | ransition 8 | | Disable Fail Case 4 if last | | | | | | | |
| | | | Current range | = | (bit state | Range | positive range was Drive 6 and | | | | | | | 1 |
| | | | | | 0111) | | current range is transition 8 | | | | | | | 1 |
| | | | | | | | Set inhibit bit true if PRNDL = | | | | | | | - |
| | | | | | | | 1100 (rev) or 0100 (Rev-Neu | | | | | | | 1 |
| | | | 1 | l | | | | | | | 1 | | | - 1 |
| | 1 1 | | Inhihit hit (see definition) | _ | EVICE | | transition 11) | | | | | | | - 1 |
| | | | Inhibit bit (see definition) | = | FALSE | | transition 11) Set inhibit bit false if PRNDL = | | | | | | | ۱ |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | | Time Required | IIIu |
|----------------------|---------------|------------------------------|--|--|---|--|---------|------------------|------|
| | | | Steady State Engine Torque | >= 100 Nm <= 8191.75 Nm | | | >= 0.22 | | |
| | | | If the above Condtions have been met, Increment Fail Counter | | | | >= 15 | Fail Counts | |
| | | | Time tall Treatment and the state of the sta | = TRUE Boolean | | | | | 1 |
| | | | The following PRNDL sequence events occur in this exact order: | | | | | | |
| | | | PRNDL State | = Reverse (bit state 1100) Transition 11 | | | | | |
| | | | PRNDL State | = (bit state Range 0100) | | | | | |
| | | | PRNDL State | = Neutral (bit state 0101) Range Transition 11 | | | | | |
| | | | | = (bit state Range 0100) | | | | | |
| | | | Above sequencing occurs in Then delay timer increments Delay timer | | | | | | |
| | | | 1 | _ Range Shift | | | | | |
| | | | Absolute Attained Gear Slip Attained Gear | Complete <= 50 rpm <= Sixth | | | | | |
| | | | | >= First >= 8.0002 pct | | | | | |
| | | | Output Speed | >= 200 rpm | | | | | |
| | | | If the above conditions are met Increment Fail Timer | | | | >= 20 | Seconds | |
| | | | Fail Case 6 Current range | Illegal (bit = state 0000 or 1000 or 0001) | A Open Circuit Definition (flag set false if the following conditions are met): | | | | |
| | | | and | | Current Range | Transition ≠ 11 (bit state 0100) | | | |
| | | | A Open Circuit (See Definition) | = FALSE Boolean | or | | | | |
| | | | | | Last positive state | ≠ Neutral (bit state 0101) | | | |
| | | | | | or | Transition | | | |
| | | | | | Previous transition state | ≠ 8 (bit state 0111) | | | |
| | | | If the above Condtions are met then, Increment Fail timer | | Fail case 5 delay timer | = 0 sec | >= 6.25 | 5 Seconds | |
| | | | Fail Case 7 Current PRNDL State | = PRNDL circuit Range | | | | | |
| | | | and | | | | | | |
| | | | Previous PRNDL state | = PRNDL circuit Range | | | | | |

| Component/ | Fault | Monitor Strategy | Malfunction | | shold | Secondary | | Enable | | | Tim | | Mi |
|------------|-------|------------------|--------------------------------------|---------|-------------|----------------------------|-------------|------------------------------------|------------|----|-------|---------|-------|
| System | Code | Description | Criteria | | lue | Malfunction | | Conditions | | | Requi | ired | Illun |
| | | | Input Speed | 150 | RPM | | | | | | | | |
| | | | Reverse Trans Ratio | 2.73694 | ratio | | | | | | | | |
| | | | Reverse Trans Ratio | 3.14905 | ratio | | | | | | | | |
| | | | If the above Condtions are met | | | | | | | >= | 6.25 | Seconds | |
| | | | then, Increment Fail timer | | | | | | | | | | - |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | P182E will report test fail when any | | | | | | | | | | 1 |
| | | | of the above 7 fail cases are met | | | | | | | | | | |
| | | | 0. 0.0 0.000 . 10.0 0.000 0.0 1.000 | | | | | | | | | | |
| | | | | | | Ignition Voltage Lo | >= | 9 | Volts | | | | |
| | | | | | | Ignition Voltage Hi | | 31.99023 | Volts | | | | |
| | | | | | | Engine Speed Lo | | 400 | RPM | | | | |
| | | | | | | Engine Speed Hi | | 7500 | RPM | | | | |
| | | | | | | Engine Speed is within the | | | | | | | |
| | | | | | | allowable limits for | | 5 | Sec | | | | |
| | | | | | | Engine Torque Signal Valid | | TRUE | Boolean | | | | |
| | | | | | | gqg | | | | | | | |
| | | | | | Disable | MIL not Illuminated for | TOM: D0716 | D0747 D0700 | D0702 | | | | |
| | | | | | Conditions: | | | BF, P0777C, P0722 | | | | | |
| | | | | | Conditions. | DIC S. | F07C0, F071 | BF, FUI / G, FUI | 10 | | | | |
| | | | | | | | ECM: D010 | 1, P0102, P010 | 3 D0106 | | | | |
| | | | | | | | |)8, P0171, P017 | | | | | 1 |
| | | | | | | | |)1, P0202, P020 | | | | | 1 |
| | | | | | | | |)6, P0207, P020 | | | | | |
| | | | | | | | | 00, F0207, F020 02, P0303, P030 | | | | | 1 |
| | | | | | | | |)2, P0303, P030)7, P0308, P040 | | | | | |
| | | | | | | | F0300, P030 | 11, FUSUO, PU40 |) I, FU42E | I | | | 1 |

15 OBDG05 TCM Supporting Tables (Common)

Table 1

| Axis | 0.00 | 64.00 | 128.00 | 192.00 | 256.00 | 320.00 | 384.00 | 448.00 | 512.00 | N*m |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|----------|-----|
| Curve | 100.00 | 120.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 | 150.00 F | RPM |

Table 2

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|-------|--------|-------|-------|-----|
| Curve | 409.59 | 2.00 | 2.00 | Sec |

Table 3

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|-------|--------|-------|-------|-----|
| Curve | 409.59 | 3.50 | 3.50 | Sec |

Table 4

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|-------|--------|-------|-------|-----|
| Curve | 409.59 | 2.99 | 2.00 | Sec |

Table 5

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|-------|--------|-------|-------|-----|
| Curve | 409.59 | 3.00 | 3.00 | Sec |

Table 6

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 °C |
|-------|--------|-------|-------|-------|-----------|
| Curve | 409.00 | 3.60 | 1.60 | 1.40 | 1.40 Sec |

Table 7

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 °C |
|-------|--------|-------|-------|-------|-----------|
| Curve | 409.00 | 3.40 | 1.40 | 1.30 | 1.20 Sec |

Table 8

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|--------|-------|-------|-------|--------|-----|
| Curve | 409.00 | 3.60 | 1.60 | 1.50 | 1.40 | Sec |

15 OBDG05 TCM Supporting Tables (Common)

Table 9

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 °C |
|-------|--------|-------|-------|-------|-----------|
| Curve | 409.00 | 3.30 | 1.30 | 1.20 | 1.10 Sec |

Table 10

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|-------|-------|-------|-------|--------|-----|
| Curve | 8.85 | 3.75 | 1.31 | 0.28 | 0.28 | Sec |

<u>Table 11</u>

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|-------|-------|-------|-------|--------|-----|
| Curve | 5.00 | 1.70 | 0.40 | 0.25 | 0.25 | Sec |

<u>Table 12</u>

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|-------|-------|-------|-------|--------|-----|
| Curve | 8.00 | 2.20 | 0.70 | 0.25 | 0.25 | Sec |

<u>Table 13</u>

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|-------|-------|-------|-------|--------|-----|
| Curve | 5.20 | 1.60 | 0.50 | 0.27 | 0.23 | Sec |

Table 14

| Axis | -6.67 | -6.66 | 40.00 | 80.00 | 120.00 | ٥С |
|-------|-------|-------|-------|-------|--------|-----|
| Curve | 5.00 | 1.50 | 0.70 | 0.25 | 0.25 | Sec |

<u>Table 15</u>

| Axis | -40.00 | -30.00 | -20.00 | -10.00 | 0.00 | 10.00 | 20.00 | 30.00 | 40.00 | ٥С |
|-------|--------|--------|--------|--------|------|-------|-------|-------|-------|-----|
| Curve | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Sec |

Table 16

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|-------|--------|-------|-------|-----|
| Curve | 409.59 | 2.50 | 2.50 | Sec |

<u>Table 17</u>

| Axis | -6.67 | -6.66 | 40.00 | ٥С |
|------|-------|-------|-------|----|
| - | | | | _ |

15 OBDG05 TCM Supporting Tables (Common)

| Curve | 0.40 | 0.35 | 0.30 | Sec |
|-------|------|------|------|-----|

Table 18

| Axis | -40.10 | -40.00 | -20.00 | 0.00 | 30.00 | 60.00 | 100.00 | 149.00 | 149.10 °C |
|-------|--------|--------|--------|-------|-------|-------|--------|--------|-----------|
| Curve | 256.00 | 50.00 | 45.00 | 40.00 | 34.00 | 25.00 | 20.00 | 20.00 | 256.00 °C |

Table 19

| Axis | -40.10 | -40.00 | -20.00 | 0.00 | 30.00 | 60.00 | 100.00 | 149.00 | 149.10 | ٥С |
|-------|--------|--------|--------|-------|-------|-------|--------|--------|--------|----|
| Curve | 256.00 | 50.00 | 45.00 | 40.00 | 34.00 | 25.00 | 20.00 | 20.00 | 256.00 | ٥С |

<u>Table 20</u>

| Axis | -40.10 | -40.00 | -20.00 | 0.00 | 30.00 | 60.00 | 100.00 | 149.00 | 149.10 | ٥С |
|-------|--------|--------|--------|------|-------|-------|--------|--------|--------|----|
| Curve | 256.00 | 10.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 8.00 | 256.00 | ٥С |

<u>Table 21</u>

| Axis | -40.00 | -20.00 | 40.00 | ٥С |
|-------|--------|--------|-------|-----|
| Curve | 5.00 | 3.00 | 1.00 | Sec |

Table 22

| Axis | -6.67 | -6.66 | 40.00 | °C |
|-------|---------|---------|---------|---------|
| Curve | 8191.75 | 8191.75 | 8191.75 | RPM/Sec |

Table 23

| Axis | -6.67 | -6.66 | 40.00 | °C |
|-------|---------|---------|---------|---------|
| Curve | 8191.75 | 8191.75 | 8191.75 | RPM/Sec |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tim Requ | | Mil Illum. |
|----------------------|---------------|--|---|----|-------|------------------------|--|------------------------------|---|----------------|-----------|-------------|---------|-------------------|
| System | Code | The lateral accleration signal is stuck | Criteria | | v | aiuc | Manufiction | | CONTRIBUTION | | | requ | ii eu | Special |
| Acceleration Sensor | C124F | at a low magnitude out of range because of a low circuit | Lateral accleration magnitude | >= | -3.85 | g's | | | | | >= | 105 | seconds | No MIL |
| | | because of a low circuit | Lateral accleration magnitude is within the range above for | >= | 120 | Sec | | | | | out of | 120 | sample | |
| | | | main are range above to | | | | | | | | 0. | | | |
| | | | | | | | Lateral accleration magnitude | >= | -3.85 | g's | | | | |
| | | | | | | | Lateral accleration magnitude is within the range above for | >= | 105 | Sec | | | | |
| | | | | | | | Sensor Type | = | Voltage Directional Proportion ate | | | | | |
| | | | | | | | Transmission Type | = | Clutch to Clutch Transmissi on | | | | | |
| | | | | | | | Lateral acceleration sensor circuit low diagnostic enable | = | TRUE | Boolean | | | | |
| | | | | | | | Battery Voltage Battery Voltage | <= >= | 31.99902 9 | Volts Volts | | | | |
| | | | | | | | Battery voltage is within the allowable limits for | | 0.1 | Sec | | | | |
| | | | | | | | Ignition Voltage | <= | 31.99902 | Volts | | | | |
| | | | | | | | Ignition Voltage Service Fast Learn (SFL) | >= | 9 | Volts | | | | |
| | | | | | | | Mode Ignition voltage and SFL | = >= | FALSE 0.1 | Boolean | | | | |
| | | | | | | | conditions met for | | 0.1 | 000 | | | | |
| | | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: If calib (U0073, U01 | | ate the MIL | | | | |
| | | | | | | | | ECM: None | | | | | | |
| | | | | | | | | | | | | | | |
| Acceleration Sensor | C1250 | The lateral accleration signal is stuck at a high magnitude out of range | Lateral accleration magnitude | >= | 3.85 | g's | | | | | >= | 105 | seconds | Special No MIL |
| | | because of a high circuit | Lateral accleration magnitude is within the range above for | >= | 120 | Sec | | | | | out of | 120 | sample | _ |
| | | | | | | | Lateral accleration magnitude | >= | 3.85 | g's | | | | |
| | | | | | | | Lateral accleration magnitude is within the range above for | \- | 105 | Sec | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | Threshold Value | | Secondary Malfunction | | Enable Conditions | | Time Required | Mil Illum. |
|----------------------|---------------|---|--|---------|--------------------|------------------------|---|-----------------------------|---|----------------|------------------|---------------|
| | | | | | | | Sensor Type | = | Voltage Directional Proportion ate | | | |
| | | | | | | | Transmission Type | = | Clutch to Clutch Transmissi on | | | |
| | | | | | | | Lateral acceleration sensor circuit high diagnostic enable | = | TRUE | Boolean | | |
| | | | | | | | Battery Voltage Battery Voltage | <= >= | 31.99902 9 | Volts Volts | | |
| | | | | | | | Battery voltage is within the allowable limits for Ignition Voltage | >= <= | 0.1 31.99902 | Sec Volts | | |
| | | | | | | | Ignition Voltage Service Fast Learn (SFL) | >= | 9 | Volts | | |
| | | | | | | | Mode Ignition voltage and SFL conditions met for | >= | FALSE 0.1 | Boolean Sec | | |
| | | | | | (| Disable Conditions: | MIL not Illuminated for DTC's: | TCM: If calit (U0073, U0 | brated to illumina | ate the MIL | | |
| | | | | | | | | ECM: None | | | | |
| Acceleration Sensor | C1251 | The lateral accleration signal is stuck | Lateral accleration magnitude | <= 3.85 | j g's | | | | | | | Special |
| recoloration conces | 01201 | at a high magnitude in range | Lateral accleration magnitude Lateral accleration magnitude is within the range above for | | g's | | | | | | | No MIL |
| | | | , and the second | | | | Lateral accleration magnitude | <= | 3.85 | g's | | |
| | | | | | | | Lateral accleration magnitude | >= | 0.53 | g's | | |
| | | | | | | | Lateral accleration magnitude is within the range above for | >= | 90 | Sec | | |
| | | | | | | | Diagnostic shifting override command | = | FALSE | Boolean | | |
| | | | | | | | Attained Gear State | = | 1st through 6th | | | |
| | | | | | | | Attained Gear Slip | <= | 100 Clutch to | RPM | | |
| | | | | | | | Transmission Type | = | Clutch Transmissi on | | | |
| | | | | | | | High Side Driver 1 On Vehicle Speed | = >= | TRUE 15 | Boolean kph | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tim Requi | | Mil Illum. |
|------------------------|---------------|------------------------------------|--|----------------------------|------------------------|---|--|---|--|----------|--|------------------------|---------------|
| Gystein | Code | Description | Cinceria | | Disable | Lateral acceleration stuck in range diagnostic enable Battery Voltage Battery voltage is within the allowable limits for Ignition Voltage Ignition Voltage Ignition Voltage Service Fast Learn (SFL) Mode Ignition voltage and SFL conditions met for MIL not Illuminated for | | TRUE 31.99902 9 0.1 31.99902 9 FALSE 0.1 | | | roqui | | |
| | | | | | Conditions: | | | 17, P0721, P07 20, P077B, P07 (3) | | | | | Special |
| Mode Switch | P071D | Transmission Mode Switch B Circuit | Sport Mode Switch state | = TRUE | Boolean | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | >= <= >= <= >= | 8.5996094 31.990234 400 7500 5 | Volts Volts RPM RPM Sec | >= | 600 | Fail Time (Sec) | No MIL |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P1762 ECM: None | | | | | | |
| Mode 2 Multiplex Valve | P0756 | Shift Solenoid Valve B Stuck Off | Fail Case 1 Commanded Gear Gear Box Slip Intrusive Shift to 2nd Commanded Gear Previous Gear Ratio Gear Ratio If the above parameters are true | = 1st Locked <= 2.48218 | RPM | | | | | >= to Ta | se Refer able 5 in porting uments | Neutral Timer (Sec) | One Tri |
| | | | n and above parameters are true | | | Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Output Speed OR TPS | >= <= >= <= >= >= >= | 8.59961 31.99902 400 7500 5 67 0.5005 | Volts Volts RPM RPM Sec RPM | | 1 3 | sec counts | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tir Requ | | Mil Illum. |
|---|---------------|--|--|--------|------------------------|--|--|--|--|-----------|-------------|--|-------------------|
| | | | | | | Range Shift State | = | Range Shift Completed | ENUM | | | | |
| | | | | | | Transmission Fluid Temperature | >= | -6.6563 | °C | | | | |
| | | | | | | High-Side Driver is Enabled Throttle Position Signal Valid from ECM | = | TRUE TRUE | Boolean Boolean | | | | |
| | | | | | | Input Speed Sensor fault Output Speed Sensor fault Default Gear Option is not present | = = = | FALSE FALSE TRUE | Boolean Boolean | | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | | P0717, P0722 | , P0723, | | | | |
| | | | | | | | P0107, P0108 P0175, P0201 P0205, P0206 P0301, P0302 | P0102, P0103 3, P0171, P017 1, P0202, P020 5, P0207, P020 2, P0303, P030 7, P0308, P040 | 2, P0174, 3, P0204, 8, P0300, 4, P0305, | | | | |
| Mode 3 Multiplex Valve | P0977 | Shift Solenoid B Control Circuit High (Mode 3 Solenoid) | The HWIO reports a high voltage (open or power short) error flag | = TRUE | Boolean | | | | | >= out | 1.2 | Sec | One Trip |
| | | | | | | | | Test Failed This Key | | of | 1.5 | Sec | = |
| | | | | | | P0977 Status is not | = | On or Fault Active | | | | | |
| | | | | | | Ignition Voltage Ignition Voltage Engine Speed Engine Speed Engine Speed is within the | >= <= >= <= >= | 8.59961 31.99902 400 7500 | Volts Volts RPM RPM Sec | | | | |
| | | | | | Disable | allowable limits for MIL not Illuminated for | TCM: None | v | 000 | | | | |
| | | | | | Conditions: | DTC's: | ECM: None | | | | | | |
| Acceleration Sensor Signal Message Counter Incorrect | P175F | \$1FC Rolling Count and CheckSum | Fail Case 1 CheckSum value received from EBCM does not match expected value | = TRUE | Boolean | | | | | >= | 54 | Sec | Special No MIL |
| | | | Fail Case 2 Rolling count value received from EBCM does not match expected value | = TRUE | Boolean | | | | | >= | 9 | Fail Counter (sliding window of 10 counts) | |

| Component/ System | Fault Code | Monitor Strategy Description | | Malfunction Criteria | | eshold alue | Secondary Malfunction | | Enable Conditions | | | | ime uired | Mil Illum. |
|-----------------------|---------------|---|-------------|---|--------|----------------|---|-----------|----------------------|---------|----|----|------------------|------------------|
| • | | İ | | | | | | | | | > | 54 | Fail Timer (Sec) | |
| | | | | P175F will report test fail when either fail case 1 or fail case 2 are | | | Lateral/Longitudinal accleration serial data | = | TRUE | Boolean | | | () | |
| | | | | met | | | message State Of Health Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | | Engine Speed Hi Engine Speed is within the | <= | 7500 | RPM | | | | |
| | | | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | | | Ignition Voltage Ignition Voltage | >= <= | 9 | Volts | | | | |
| | | | | | | Disable | MIL not Illuminated for DTC's: | TCM: None | | | | | | |
| | | | | | | Conditions: | | ECM: None | | | | | | |
| Mode Switch | P1762 | Transmission Mode Switch Signal Circuit (rolling count) | | | = TRUE | Boolean | | | | | >= | 3 | Fail Counter | Specia No MIL |
| | | | | value | | | | | | | > | 10 | Sample Timer | |
| | | | | | | | Pattern Switch Message Health | = | TRUE | Boolean | | - | (Sec) | |
| | | | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | | Engine Speed Hi Engine Speed is within the | <= | 7500 | RPM | | | | |
| | | | | | | | allowable limits for | >= | 5 | Sec | | | | |
| | | | | | | Disable | MIL not Illuminated for | TCM: None | | | | | | |
| | | | | | | Conditions: | DTC's: | ECM: None | | | | | | |
| ap Up Tap Down Switch | P1765 | Upshift Switch Circuit #2 | Fail Case 1 | Tap Up Switch Stuck in the Up | = 0 | Boolean | | | | | | | | Specia |
| TUTD) | | | | Position in Range 1 Enabled Tap Up Switch Stuck in the Up Position in Range 2 Enabled | = 0 | Boolean | | | | | | | | No MIL |
| | | | | Tap Up Switch Stuck in the Up Position in Range 3 Enabled | = 0 | Boolean | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up Position in Range 4 Enabled | = 0 | Boolean | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | = 0 | Boolean | | | | | | | | |
| | | | | Position in Range 5 Enabled Tap Up Switch Stuck in the Up | = 0 | Boolean | | | | | | | | |
| | | | | Position in Range 6 Enabled Tap Up Switch Stuck in the Up | = 1 | | | | | | | | | |
| | | | | Position in Neutral Enabled Tap Up Switch Stuck in the Up | | Boolean | | | | | | | | |
| | | | | Position in Park Enabled | = 1 | Boolean | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up Position in Reverse Enabled | = 0 | Boolean | | | | | | | | |
| | | | | Tap Up Switch ON | = TRUE | Boolean | | | | | >= | 1 | Fail Time (Sec) | |
| | | | Fail Case 2 | Tap Up Switch Stuck in the Up Position in Range 1 Enabled | = 1 | Boolean | | | | | | | | |
| | | | | Tap Up Switch Stuck in the Up | = 1 | Boolean | | | | | | | | |
| | ı | 1 | I | Position in Range 2 Enabled | | | | | | | l | | | l |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | reshold /alue | Secondary Malfunction | Enable Conditions | | Time quired | Mil Illum. |
|----------------------------------|---------------|------------------------------|---|--------|------------------------|--|---|--------|-----------------|-------------------|
| 2,5 | | 2000. | Tap Up Switch Stuck in the Up Position in Range 3 Enabled | = 1 | Boolean | | | | - | |
| | | | Tap Up Switch Stuck in the Up Position in Range 4 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Range 5 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Range 6 Enabled | = 1 | Boolean | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Neutral Enabled | = 0 | Boolean | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Park Enabled | = 0 | Boolean | | | | | |
| | | | Tap Up Switch Stuck in the Up Position in Reverse Enabled | = 0 | Boolean | | | | | |
| | | | Tap Up Switch ON NOTE: Both Failcase1 and | = TRUE | Boolean | | | | | |
| | | | Failcase 2 Must Be Met | | | Time Since Last Range | , Enable Time | >= 600 | Fail Time (Sec) | - |
| | | | | | | Inne Since Last Range Change Ignition Voltage Lo Ignition Voltage Hi Engine Speed Lo Engine Speed Hi Engine Speed Is within the allowable limits for | >= 1 (Sec) >= 8.59961 Volts <= 31.99902 Volts >= 400 RPM <= 7500 RPM >= 5 Sec | | | |
| | | | | | | P1765 Status is | Test Failed This Key ≠ On or Fault Active | | | |
| | | | | | Disable Conditions: | MIL not Illuminated for DTC's: | TCM: P1767, P1761, P182E, P1915 ECM: None | | | |
| Tap Up Tap Down Switch (TUTD) | P1766 | Downshift Switch Circuit #2 | Fail Case 1 Tap Down Switch Stuck in the Down Position in Range 1 Enabled | = 0 | Boolean | | | | | Special No MIL |
| | | | Tap Down Switch Stuck in the Down Position in Range 2 Enabled | = 0 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 3 Enabled | = 0 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 4 Enabled | = 0 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 5 Enabled | = 0 | Boolean | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 6 Enabled | = 0 | Boolean | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | eshold alue | Secondary Malfunction | | Enable Conditions | | | Tim Requi | | III |
|----------------------|---------------|------------------------------|---|-----|------|----------------|---|----------|--------------------------|----------------|----|--------------|-----|-----|
| | | | Tap Down Switch Stuck in the Down Position in Range Neutral Enabled | = | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range Park | = | 1 | Boolean | | | | | | | | |
| | | | Enabled Tap Down Switch Stuck in the | | • | Boologii | | | | | | | | |
| | | | | = | 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch ON | = 1 | TRUE | Boolean | | | | | >= | 1 | sec | |
| | | | Fail Case 2 Tap Down Switch Stuck in the Down Position in Range 1 Enabled | | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 2 Enabled | = | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 3 Enabled | = | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 4 Enabled | | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 5 Enabled | = | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Range 6 Enabled | = | 1 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Neutral Enabled | = | 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Park Enabled | = | 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch Stuck in the Down Position in Reverse Enabled | = | 0 | Boolean | | | | | | | | |
| | | | Tap Down Switch ON NOTE: Both Failcase 1 and Failcase 2 Must Be Met | = 1 | TRUE | Boolean | | | | | >= | 600 | sec | |
| | | | | | | | Time Since Last Range Change | >= | 1 | Sec | | | | |
| | | | | | | | Ignition Voltage Lo Ignition Voltage Hi | >= <= | 8.59961 18 | Volts Volts | | | | |
| | | | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | | Engine Speed Hi Engine Speed is within the | <= >= | 7500 5 | RPM | | | | ı |
| | | | | | | | allowable limits for | >= | | Sec | | | | |
| | | | | | | | | | Test Failed This Key | | | | | |
| | | | | | | | P1766 Status is | ≠ | On or Fault Active | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | shold Ilue | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum |
|--------------------------|---------------|--------------------------------------|---|----------------------------|---------------|-----------------------------------|-------------|----------------------|-------|--|----|-----------------|--------------|
| - Cystem | Joue | Description | Ontona | *** | Disable | MIL not Illuminated for | TCM: P1767. | | P1915 | | | | 1 |
| | | | | | Conditions: | DTC's: | , | , | | | | | |
| | | | | | | | ECM: None | | | | | | |
| p Up Tap Down Switch | - | | TUTD Circuit Reads Invalid | | | | | | | | | | Speci |
| UTD) | P1767 | Up and Down Shift Switch Circuit #2 | Voltage | = TRUE | Boolean | | | | | >= | 60 | Fail Time (Sec) | No M |
| - / | | | | | | Ignition Voltage Lo | >= | 8.59961 | Volts | | | | 1 |
| | | | | | | Ignition Voltage Hi | <= | 31.99902 | Volts | | | | |
| | | | | | | Engine Speed Lo | >= | 400 | RPM | | | | |
| | | | | | | Engine Speed Hi | <= | 7500 | RPM | | | | |
| | | | | | | Engine Speed is within the | >= | 5 | Sec | | | | |
| | | | | | | allowable limits for | | | | | | | |
| | | | | | | | | Test Failed | | | | | |
| | | | | | | | | This Key | | | | | |
| | | | | | | P1767 Status is | ≠ | On or | | | | | |
| | | | | | | | | Fault | | | | | |
| | | | | | | | | Active | | | | | |
| | | | | | | | | | | | | | |
| | | | | | Dil-I- | MIL | TOM D4704 | | | | | | |
| | | | | | Disable | MIL not Illuminated for DTC's: | TCM: P1/61 | | | | | | |
| | | | | | Conditions: | DICS: | ECM: None | | | | | | |
| | | | | | | | ECIVI: None | | | | | | |
| | 1 | | Fail Case 1 | Transition 1 | | | | | | | | | One |
| nal Mode Switch (IMS) P1 | P182E | Internal Mode Switch - Invalid Range | Current range | = (bit state | Range | | | | | | | | |
| | | | | 1110) | | | | | | | | | |
| | | | | CeTRGR_e_ | | | | | | | | | |
| | | | Previous range | ≠ PRNDL_Drive | e Range | | | | | | | | |
| | | | | 6 | | | | | | | | | |
| | | | Previous range | CeTRGR_e_ ≠ PRNDL_Drive | | | | | | | | | |
| | | | Previous range | ≠ PRINDL_DIIVE | Range | | | | | | | | |
| | | | | Range Shift | | | | | | | | | |
| | | | Range Shift State | = Completed | ENUM | | | | | | | | |
| | | | Absolute Attained Gear Slip | | rpm | | | | | | | | |
| | | | Attained Gear | <= Sixth | · | | | | | | | | |
| | | | Attained Gear | >= First | | | | | | | | | |
| | | | Throttle Position Available | = TRUE | | | | | | | | | |
| | | | | >= 8.0002 | pct | | | | | | | | |
| | | | Output Speed | | rpm | | | | | | | | |
| | | | Engine Torque | >= 50 | Nm | | | | | | | | |
| | | | Engine Torque If the above conditions are met | <= 8191.75 | Nm | | | | | | | | |
| | | | then Increment Fail Timer | | | | | | | >= | 1 | Fail Seconds | |
| | | | If Fail Timer has Expired then | | | | | | | | | | |
| | | | Increment Fail Counter | | | | | | | >= | 5 | Fail Counts | |
| | | | Fail Case 2 Output Speed | <= 70 | rpm | | | | | | | | 1 |
| | | | The following PRNDL sequence | | | | | | | 1 | | | 1 |
| | | | events occur in this exact order: | | | | | | | 1 | | | |
| | | | oronio occar in and order order. | Daine C (199 | | | | | | | | | 1 |
| | | | PRNDL state | = Drive 6 (bit state 0110) | Range | | | | | | | | 1 |
| | | | PRNDL state = Drive 6 for | | Sec | | | | | 1 | | | 1 |
| | | | I MADE State - DIIVE O IOI | Transition 8 | | | | | | | | | |
| | | | PRNDL state | | Range | | | | | 1 | | | 1 |
| | 1 | | . TATE GLACO | 0111) | 90 | | | | | 1 | | | 1 |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | | | shold lue | Secondary Malfunction | | Enable Conditions | | | Tir Requ | | III |
|----------------------|---------------|------------------------------|--|----|---|--------------|---|----------|-------------------------------|---------|----|-------------|--------------|-----|
| | 3.000 | | PRNDL state | | Drive 6 (bit state 0110) Transition 1 (bit state | Range | | | | | | | | |
| | | | Above sequencing occurs in Neutral Idle Mode If all conditions above are met Increment delay Timer | | 1110) 1 Inactive | Sec | | | | | | | | |
| | | | If the below two conditions are met Increment Fail Timer delay timer | | 1 | Sec | | | | | >= | 3 | Fail Seconds | |
| | | | Input Speed If Fail Timer has Expired then Increment Fail Counter | | 400 | Sec | | | | | >= | 2 | Fail Counts | |
| | | | Fail Case 3 Current range | | Transition 13 (bit state 0010) | | Previous range | ≠ | CeTRGR_ e_PRNDL _Drive5 | | | | | |
| | | | Engine Torque | >= | -8192 | Nm | Previous range | ≠ | CeTRGR_ e_PRNDL _Drive5 | | | | | |
| | | | Engine Torque | <= | 8191.75 | Nm | IMS is 7 position configuration If the "IMS 7 Position config" = | = | 0 | Boolean | | | | |
| | | | If the above conditions are met then, Increment Fail Timer | | | | 1 then the "previous range" criteria above must also be satsified when the "current range" = "Transition 13" | | | | >= | 0.225 | Seconds | |
| | | | If Fail Timer has Expired then Increment Fail Counter | | | | | | | | >= | 15 | Fail Counts | |
| | | | Fail Case 4 Current range | = | Transition 8 (bit state 0111) | Range | Disable Fail Case 4 if last positive range was Drive 6 and current range is transition 8 | | | | | | | |
| | | | Inhibit bit (see definition) | | FALSE | | Set inhibit bit true if PRNDL = 1100 (rev) or 0100 (Rev-Neu transition 11) Set inhibit bit false if PRNDL = 1001 (park) | | | | | | | |
| | | | Steady State Engine Torque Steady State Engine Torque If the above conditions are met then Increment Fail Timer | <= | 30 8191.75 | Nm Nm | | | | | >= | 0.225 | Seconds | |
| | | | If the above Condtions have been met, Increment Fail Counter | | | | | | | | >= | 15 | Fail Counts | |
| | | | Fail Case 5 Throttle Position Available The following PRNDL sequence | = | TRUE | Boolean | | | | | | | | |
| | | | events occur in this exact order: PRNDL State | = | Reverse (bit state 1100) | Range | | | | | | | | |
| | | | PRNDL State | | Transition 11 (bit state 0100) | Range | | | | | | | | |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | Secondary Malfunction | Enable Conditions | Time Required | Illu |
|----------------------|---------------|------------------------------|--|--|---|--|------------------|------|
| Gyatem | Code | Београмі | PRNDL State PRNDL State Above sequencing occurs in Then delay timer increments Delay timer Range Shift State Absolute Attained Gear Slip Attained Gear | = Neutral (bit state 0101) Transition 11 = (bit state Range 0100) <= 1 Sec >= 5 sec = Range Shift Complete <= 50 rpm | | | noquiod | |
| | | | Attained Gear Throttle Position Output Speed If the above conditions are met Increment Fail Timer | >= 8.0002 pct >= 200 rpm | | | >= 20 Seconds | |
| | | | Fail Case 6 Current range | Illegal (bit = state 0000 or 1000 or 0001) | A Open Circuit Definition (flag set false if the following conditions are met): | Transition | | |
| | | | and A Open Circuit (See Definition) | = FALSE Boolean | Current Range | ≠ 11 (bit state 0100) | | |
| | | | | | Last positive state | Neutral (bit ≠ state 0101) | | |
| | | | KI | | Previous transition state Fail case 5 delay timer | Transition ≠ 8 (bit state 0111) = 0 sec | | |
| | | | If the above Condtions are met then, Increment Fail timer | | | | >= 6.25 Seconds | |
| | | | Fail Case 7 Current PRNDL State and | ABCP = 1101 | | | | |
| | | | Previous PRNDL state | >= 150 RPM | | | | |
| | | | Reverse Trans Ratio Reverse Trans Ratio If the above Condtions are met then, Increment Fail timer | >= 3.42395 ratio | | | >= 6.25 Seconds | |
| | | | P182E will report test fail when any of the above 7 fail cases are met | | | | | |
| | | | | | lgnition Voltage Lo Ignition Voltage Hi | >= 8.59961 Volts <= 31.99902 Volts | | |

| Fault Code | Monitor Strategy Description | Malfunction Criteria | | shold Ilue | Secondary Malfunction | | Enable Conditions | | | | me uired | Mil Illum. |
|---------------|--|--|---|--|--|---|--|--|---|--|------------------------------|-------------------|
| - | | | | | Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for Engine Torque Signal Valid | >= <= >= = | 400 7500 5 TRUE | RPM RPM Sec Boolean | | | | |
| | | | | Disable Conditions: | | | | | | | | |
| | | | | | | P0107, P010 P0175, P020 P0205, P020 P0301, P030 | 8, P0171, P017 1, P0202, P020 6, P0207, P020 2, P0303, P030 | 72, P0174, 03, P0204, 08, P0300, 04, P0305, | | | | |
| P1876 | Tap Up and Down Enable Switch Circuit | Current range | | Range State | | | | | | | | Special No MIL |
| | | TUTD Enable Switch is Active | | Boolean | | | | | >= | 3 | Fail Time (Sec) | |
| | | | | | | | | | >= | 5 | Fail Counts | |
| | | | | | Ignition Voltage Hi Vehicle Speed Lo Engine Speed Lo Engine Speed Hi Engine Speed is within the allowable limits for | \= \= \= \= \= | 31.99902 511 400 7500 | Volts KPH RPM RPM Sec | | | | |
| | | | | | P1876 Status is | ≠ | Test Failed This Key On or Fault Active | | | | | |
| | | | | Disable Conditions: | | | | | | | | |
| | | | | | | ECM: None | | | | | | |
| P2535 | Ignition Switch Run/Start Position Circuit High | TCM Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run | = TRUE | Boolean | | | | | | | | One Trip |
| | | crank goes true when above this value) | 5 | Volts | | | | | >= | 280 | Fail Counts (25ms loop) | |
| | | Ignition Voltage Low Hyst (run crank goes false when below this value) | 2 | Volts | | | | | Out of | 280 | Sample Counts (25ms loop) | |
| | | , | | | ECM run/crank active status available ECM run/crank active status | = | TRUE FALSE | Boolean Boolean | | | | |
| | P1876 | P1876 Tap Up and Down Enable Switch Circuit D2535 Ignition Switch Run/Start Position | P1876 Circuit Current range TUTD Enable Switch Switch is Active P2535 Ignition Switch Run/Start Position Circuit High TCM Run crank active (based on voltage thresholds below) Ignition Voltage High Hyst (run crank goes true when above this value) Ignition Voltage Low Hyst (run crank goes false when below this | P1876 Tap Up and Down Enable Switch Current range Circuit Current Tange Teverse or Neutral TUTD Enable Switch is Active TRUE P2535 Ignition Switch Run/Start Position Circuit High Town Start Position Circuit High Town Start Position Circuit High Town Start Position Town Start Position Circuit High Town Start Position Town St | P1876 Tap Up and Down Enable Switch Current range = Reverse or Range State Neutral = TRUE Boolean P2535 Ignition Switch Run/Start Position Circuit High TCM Run crank active (based on voltage things high tyst (run crank goes true when above this value) Ignition Voltage Low hyst (run crank goes false when below this value) Ignition Voltage Low hyst (run crank goes false when below this value) Ignition Voltage Low hyst (run crank goes false when below this value) Ignition Voltage Low hyst (run crank goes false when below this 2 Volts | P1876 Tap Up and Down Enable Switch Circuit Tap Up and Down Enable Switch Circuit TUTD Enable Switch is Active P1876 Tap Up and Down Enable Switch Circuit TUTD Enable Switch is Active P1876 Tap Up and Down Enable Switch Circuit TUTD Enable Switch is Active P1876 Tap Up and Down Enable Switch Circuit TUTD Enable Switch is Active P1876 Status is Ignition Voltage Love Institution | Engine Speed Lo Regime Speed Lo Regime Speed Hill and Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Lo Regime Speed Lo Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Hill Regime Speed Lo Regime Speed Lo Regime Speed Lo Regime Speed Hill Regime Speed Lo Re | Engine Speed Lo >= 440 | Engine Speed to = # 400 RPM Engine Speed to = # 7500 RPM Engine Torque Signal Valid = # 7500 RPM PM PM PM PM PM PM PM | Part Conditions: Engine Speed to >= 400 RPM Engine Speed switch <= 7500 RPM Engine Torque Signal Valid = 1 TRUE Societal | Pitro | Park cr |

| Component/ System | Fault Code | Monitor Strategy Description | Malfunction Criteria | Threshold Value | | Secondary Malfunction | | Enable Conditions | | | Time Requir | | Mil Illum. |
|----------------------|---------------|--|--|--------------------|------------------------|---|------------------------|---------------------------|---------------------|----|----------------|-----|---------------|
| | | | | | Disable Conditions: | DTC's: | TCM: None ECM: None | | | | | | |
| Communication | U0293 | Loss Communications with HPCM (Hybrid Powertrain Control Module) | CAN messages from HPCM are not received by the TCM | = | TRUE Boolean | | | | | >= | 12 | sec | Two Trips |
| | | | | | | Stabilization delay Ignition Voltage Ignition Voltage Power Mode | >= <= | 3 9 31.99023 Run | sec Volt Volt | | | | |