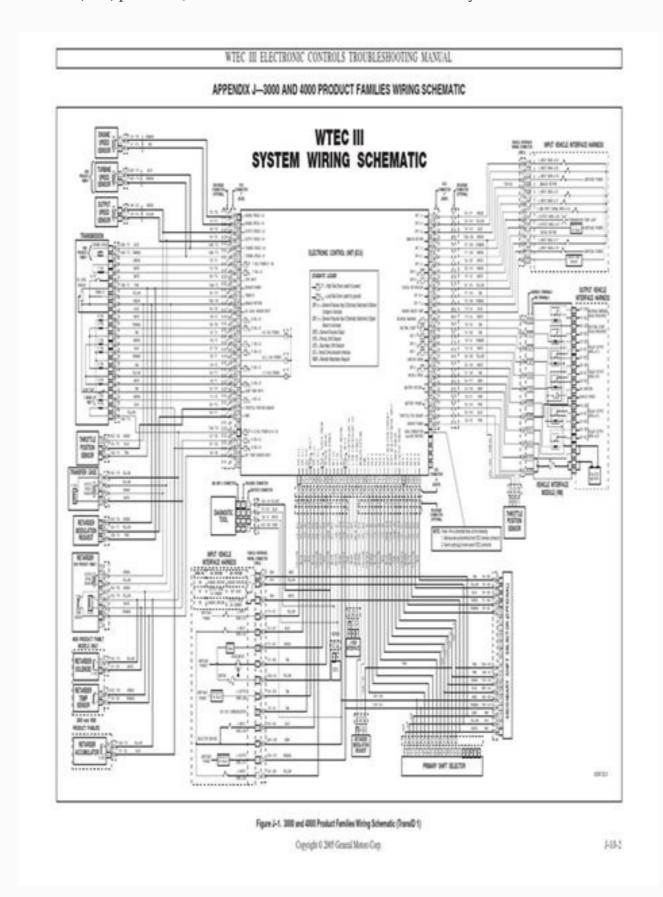
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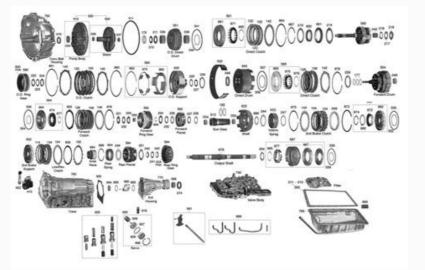
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Allison 3000 transmission identification

10-digit serial number on the bottom left of the transmission data plate. Transmission data plate is most commonly found on the side of the transmission on the lower rear face of the rear housing Allison Transmission on the lower rear face of the transmission of the transmission on the lower rear face of the transmission of the lower rear face of the transmission of the transmission of the transmission of the lower rear face of the transmission of the lower rear face of the transmission of the speeds, including two overdrive ratios and several engine-driven Power Take-Off (PTO) provisions, the 3000 Series is built to make medium-duty vehicles more fuel efficient and easier to operate.



. 9 THROTTLE POSITION SENSOR . . 10 NEUTRAL START BACK UP SWITCH 11 TRANSMISSION CONTROL OPERATION 12 DIAGNOSTIC TROUBLE CODE IDENTIFICATION MODULE CONNECTOR IDENTIFICATION 14 SOLENOID IDENTIFICATION AND OPERATION 16 INTERNAL WIRING HARNESS SCHEMATIC AND 23 BELL HOUSING OIL PASSAGE IDENTIFICATION 27 OIL PUMP COVER OIL PASSAGE IDENTIFICATION 29 SHIFT VALVE BODY OIL PASSAGE IDENTIFICATION 31 MAIN VALVE BODY "TOP VIEW" OIL PASSAGE IDENTIFICATION 32 MAIN VALVE BODY "BOTTOM VIEW" OIL PASSAGE IDENTIFICATION 33 MAIN CASE "BOTTOM VIEW" OIL PASSAGE IDENTIFICATION35 TRANSMISSION DISASSEMBLY PROCESS 53 OIL PUMP AND 72 VALVE BODY ASSEMBLY 91 GEAR TRAIN PARTS 83 EXTENSION HOUSING ASSEMBLY
100 FINAL TRANSMISSION ASSEMBLY PROCESS IDENTIFICATION 102 BOLT IDENTIFICATION CHART 120 CAUTION: ATSG service manuals are intended for use by 119 TORQUE SPECIFICATION CHART professional, qualified technicians. Attempting repairs or service without the proper training to damage to the vehicle training at the start of production for the 2000 May, 2000 Updated October, 2003 INTRODUCTION ALLISON 1000/2000 SERIES Beginning at the start of production for the 2000 model year, General Motors introduced two new Allison automatic transmissions referred to as the 1000 Series and the 2000 Series transmission. The 2000 Series uses wider steps to accommodate the greater vehicle weights associated with the 2000 Series. The gear ratios for both of the new units are shown in this Manual. The 1000 and 2000 Series transmissions.



9 THROTTLE POSITION SENSOR . 10 NEUTRAL START BACK UP SWITCH 11 TRANSMISSION CONTROL MODULE CONNECTOR IDENTIFICATION 12 DIAGNOSTIC . 16 INTERNAL WIRING HARNESS SCHEMATIC AND RESISTANCE CHART TROUBLE CODE IDENTIFICATION. . 14 SOLENOID IDENTIFICATION AND OPERATION .. . 18 EXTERNAL WIRING HARNESS . 19 PRESSURE SWITCH ASSEMBLY IDENTIFICATION AND OPERATION .



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4. CONVERTER IN 5. CONVERTER OUT 6. TO COOLER 7. FROM COOLER 8. LUBE OIL 9.

53 31 35 47 54 51 32 45 37 44 37 40 15 57 37 2 2 33 2 44 57 54 53 44 31 2 2 2 37 16 11 32 32 14 14 6837 34 LEGEND FOUND ON PAGE 30.

LOCK-UP APPLY 10. C1 CLUTCH 11. C2 CLUTCH 12. LOCK-UP SIGNAL 13.

2. MAIN LINE PRESSURE.

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systems to minimize noise concerns and come in two different gear ratio configurations. The 1000 Series uses closer steps to improve the shift quality that we now expect from an automatic transmission. The 2000 Series uses wider steps to accommodate the greater vehicle weights associated with the 2000 Series. The gear ratios for both of the new units are shown in this Manual. The 1000 and 2000 Series transmissions have a Park position, Reverse, Neutral and five forward speeds with 5th gear being overdrive, and are completely electronic shift controlled. Notice that the standard General Motors case connector has been utilized, and the Park/Neutral switch is exactly the same switch used
 currently on the THM 4L60-E transmission. Two different bottom pan configurations are also provided to make these units even more versitile. The 1000 and 2000 Series transmissions utilize five clutch packs (No Bands-No Freewheels) to obtain the five forward gears and reverse. This manual will cover the dis-assembly, rebuild of all components and
 re-assembly of both the 1000 and 2000 Series units. No part of any ATSG publication may be reproduced, stored in any retrieval system or transmitted in any form or by any means, including but not limited to electronic, mechanical, photocopying, recording or otherwise, without written permission of Automatic Transmission Service Group. This
"Portions of materials contained herein have been reprinted under license from General Motors Corp, Service & Parts Operations." The information and part numbers contained in this booklet have been carefully compiled from industry sources known for their reliability, but ATSG does not guarantee its accuracy. DALE ENGLAND FIELD SERVICE CONSULTANT WAYNE COLONNA TECHNICAL SUPERVISOR PETER LUBAN TECHNICAL CONSULTANT JON GLATSTEIN TECHNICAL CONSULTANT GERALD CAMPBELL TECHNICAL CONSULTANT GREGORY LIPNICK TECHNICAL CONSULTANT MIKE SOUZA TECHNICAL CONSULTANT AUTOMATIC TRANSMISSION SERVICE GROUP 18639 S.W. 107TH AVENUE MIAMI, FLORIDA 33157 (305) 670-4161 1 Technical Service Information ALLISON
1000/2000 SERIES Engine Speed Sensor AllisonAllison Output Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR WHEEL DRIVE Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR Turbine Speed Sensor Turbine Speed Sensor Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor Two WHEEL DRIVE Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR Turbine Speed Sensor Turbine Speed Sensor AllisonAllison Neutral Start Switch FOUR Turbine Speed Sensor Purbine Speed Sensor Purbine Speed Sensor Purbine Speed Sensor Pu
 UAW 933 Figure 3 TRANSMISSION IDENTIFICATION TAG Several different transmission configurations are available within the 1000/2000/2400 Series 2400 Series 2400 Series Each transmission is identified by a model designation, group numbers, and serial number. This information is
 included on the transmission identification tag located on the right rear side of the transmission with parking pawl. Maximum GVW = 30000 lb. Heavy-duty automatic transmission with parking pawl.
 Maximum GVW = 26000 lb. Copyright © 2000 ATSG This information must be used when discussing specific service issues, or when parts replacement is necessary. The transmission identification number used with the diagnostic systems. Special Note: Allison Series
                                   transmissions are designed and manufactured to metric standards, and metric tools are required for service. The cooler ports and the main line pressure tap are the only non-metric fittings on the transmission case. The output flange/yoke retaining bolt is also non-metric. AUTOMATIC TRANSMISSION SERVICE GROUP 5 Technical
  Service Information GENERAL DESCRIPTION AND OPERATION Allison 1000/2000/2400 Series transmissions are torque converter driven fully automatic units. All models have neutral, reverse, and up to 5 forward speeds, with 5th gear being overdrive. Refer to Figure 2 for the different gears ratios available in the different models. The torque
  Flexplate drive is used for all engine to transmission torque transfer. Several different torque converter is a single stage, three element unit, consisting of a pump, stator, and turbine, with the addition of a converter clutch to provide direct
  packs are hydraulically applied and spring released, with automatic wear compensation, and their locations in the transmission are shown in the cutaway in Figure 2. The Transmission Control Module (TCM) signals six different solenoids, located on the valve body, to apply and release clutches based on vehicle speed and power combinations, and the
  range selected by the operator. The planetary gear train consists of three constant mesh, helical gear planetary gear sets react singly or together to provide 5 forward speeds, neutral, and reverse. A common hydraulic system provides
  fluid for all hydraulic operations, lubrication, and cooling. The front oil pump, driven by the converter, provides the pressure needed for the hydraulic system, and a spin-on filter provides full time
  protection for the control solenoids and multipass protection for the entire system. The spin-on filter is located externally on the converter housing at the lower left front of the transmission.
  Some 1000/2000/2400 Series transmissions are available with an optional extension housing that accommodates an OEM installed two shoe, expanding type, drum parking brake. The vehicle may be equipped with one or two shift selectors, depending on the
 The shift positions on the shift selector can vary according to the shift selector positions, and corresponding ranges that can be attained for all 1000/2000/2400 Series models. TYPICAL MANUAL SHIFT TOWER DO NOT SHIFT P R N D 4 2 1 DO NOT SHIFT Copyright ©
 2000 ATSG Figure 4 6 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information ALL 1000 AND 2400 SERIES Shift Selector Position P (Park) R (Reverse) N (Neutral) D (Drive) 4 (Fourth) 3 (Third) 1 (First) * With Park Pawl Engaged ** 4 Speed Calibration or Trailering Mode Gears Available Neutral*
  1st Selector Position P (Park) R (Reverse) N (Neutral) D (Drive) 4 (Fourth) 2 (Second) 1 (First) ALL 2000 SERIES "WITH" AUTO-APPLY PARKING BRAKE Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Shift Selector Position PB = (Park) R (Reverse) Shift Selector Position PB = (Park) R (Reverse) Shift Selector Position PB = (Park) R (Reverse) Shift Selector PB = (Park) R (Reverse) Sh
  Available Neutral* Reverse Shift Selector Position P (Park) R (Reverse) D (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 1 (First) Shift Selector Position PB = (Park) R (Reverse) N (Neutral) D (Drive) 3 (Third) 2 (Second) 2 (S
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  CONNECTOR 7 PIN 4 PIN NSBU SWITCH CONNECTOR CO
 Transmission Control Module (TCM). Transmissin Control Modules are available in both 12V and 24V configurations, to match the configurations, to match the configuration of the vehicle electrical system. The TCM determines shift sequences, shift timing, and clutch apply and
  release pressures. The TCM uses this information to control solenoids and valves, supply system status, and provide diagnostic information for service technicians. EXTERNAL COMPONENTS SPEED SENSORS The speed sensors are variable reluctance devices which convert mechanical motion to an AC voltage. Each sensor consists of a wire coil
  wrapped around a pole piece that is adjacent to a permanent magnet. These elements are contained in a housing which is mounted adjacent to a permanent magnet are contained in a housing which is mounted adjacent to a permanent magnet. These elements are contained in a housing which is mounted adjacent to a permanent magnet.
 gear tooth approaches and passes through the gap at the end of the pole piece, an AC voltage generated varies from 150mV at low speed to 15V at high speed. The signal wires from the sensor are formed as twisted
  The cable is also shielded to protect from voltage-related fields. The typical speed sensor is shown in Figure 7. Noise from other sources is eliminated by using two-wire differential inputs at the TCM. ENGINE SPEED SENSOR The Engine Speed Sensor is externally mounted in the torque converter housing, and directed at the ribs protruding from the
  torque converter as shown in Figure 1. TURBINE SPEED SENSOR The Turbine Speed Sensor is externally mounted in the main transmission case, and directed at the tone wheel or PTO drive gear attached to the C1/C2 clutch housing as shown in Figure 1. OUTPUT SPEED SENSOR The Output Speed Sensor is externally mounted in the extension
  One end of the cable is attached to the throttle lever and the other end, inside a protective housing, to the potentiometer. Output voltage from the TPS is directed to the Transmission Control Module (TCM) through the external harness. The voltage from the TPS is directed to the Transmission Control Module (TCM) through the external harness.
  Connector Transmission Control Module (TCM) 20 9 19 (TPS) Distance of Travel Versus Volts mm/inch 0/0 1/.039" 2/.079" 3/.118" 4/.157" 5/.197" 6/.236" 7/.275" 8/.314" 9/.354" 10/.394" 11/.433" 12/.472" 13/.511" 14/.551" 15/.590" 16/.629" 17/.669" 18/.708" 19/.748" 20/.787" 21/.826" 22/.866" 23/.905" 24/.945" 25/.984" 26/1.023" 27/1.063"
  28/1.102" 29/1.142" 30/1.181" 31/1.220" 32/1.260" 33/1.299" 34/1.339" 35/1.378" 36/1.477" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1.496" 38/1
 3.40 3.51 3.62 3.73 3.84 3.95 4.06 4.17 4.28 4.39 4.50 4.61 4.72 4.83 4.94 5.05 10 Figure 9 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information NEUTRAL START BACK-UP SWITCH The installation of a transmission mounted Neutral Start/ Reverse Signal switch is required. This switch commonly referred to as an
  "NSBU Switch", mounts directly onto the transmission case from the outside and detects the angular position of the manual shift selector shaft. This position of the position of the shift controls. The NSBU Switch has redundant circuitry to alert the TCM in the event of
  a single wire or switch failure. The switch failure. The switch is interfaced to the starter circuit, and the reverse signal provision may be used to activate vehicle back-up lights and/or reverse warning devices. Refer to Figures 11 and 12. NSBU SWITCH WIRE SCHEMATIC NSBU SWITCH WIRE SCHEM
 Back-up Lamps Not Used A G B F C E D C A D B Harness Connectors A G B F C E D C A D B NSBU Switch (Face View) A B C E F G D A B C D Tan Blue Yellow Pink Orange Green Blue Gray White Yellow TCM "J2" (RED) Connector 20 5 7 8 6 Copyright © 2000 ATSG Starter Relay Transmission Control Module (TCM) Figure 12 AUTOMATIC
  TRANSMISSION SERVICE GROUP 11 TCM "J2" (Red) Receptacle TRANSMISSION CONTROL MODULE (TCM) S S IS IS TO TO SSI SSI D TO D TO N N ND ND U U CHASS CHASS U U CHA CHA E E O O E E N N N N L L R R RO RO C C
  ICL ICL I I IO IO H H T G T G T T TIO TIO EH EH O O U U OT G OT G VE VE V V N N A A AU AU N N O O O C C C C D D D D 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 1322313304295286278251023122114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 7 26 132231330429528627825102114 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 TCM "J2" (Red) Harness Connector (Face View) 72692411221320151816 TCM "J2" (Red) Harn
  1322313304295286278251023122114 19 17 72692411221320151816 19 17 TCM "J1" (Gray) Receptacle 14 11 13 151816 21 19 22 20 17 7269 25 23 24 10 12 1322313304295286278 TCM "J1" (Gray) Harness Connector (Face View) 12 Copyright © 2000 ATSG Figure 13 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information
  Throttle Position Sensor Tan Tan Tan Tan Tan Tan Tan Sump Temp Input Retarder Temp Input (Opt) Engine Speed Sensor (High) Turbine Speed Sensor (High) Engine Speed Sensor (High) Output Speed Sensor (High) Output Speed Sensor (High) Turbine Speed Sensor (High) Turbine Speed Sensor (High) Engine Speed Sensor (High) Turbine Speed Sensor (High) Output Speed Sensor (High) Engine Speed Sensor (High) Eng
  (High) Trim Solenoid A (Low) Trim Solenoid B (How) C Solenoid Ground (On/Off) E Solenoid Ground (On/Of
 4C TPS-B Trans-G R Temp-A ECTS-A TSS-B OSS-A OSS-B ESS-A ESS-B TPS-C Trans-H, ECTS-A, Temp-B, NSBU-7D R-Temp-B, TPS-A Trans-J Trans-J Trans-J Trans-J Trans-J Trans-S 21 22 23 24 25 26 27 28 29 30 31 32 Gray Yellow Pink Yellow Gray Blue Orange Green White Yellow Green
  Blue Pink Orange Yellow White Pink Green Tan Orange White Blue Pink White Green Tan Pink Yellow Red Blue Green Black 14 11 13 151816 21 19 22 20 17 7269 25 23 24 10 12 TCM "J1" (Gray) Harness Connector (Face View) Ignition Power Battery Power Ignition Power Battery Ground GPI 1 GPI 2 GPI 3 GPI 4 GPI 5 GPI 6 GPI 7 GPI 8 GPI 9
  Retarder Mod. Reg. (Opt) PWM Throttle Sensor Power Analog Ground GPO 1 GPO 2 GPO 3 GPO 4 Range Inhibit Indicator GPO 6 CHECK TRANS Vehicle System Vehicle Sy
  System Vehicle System
  1939 C or S J 1939 B or L Figure 14 AUTOMATIC TRANSMISSION SERVICE GROUP Copyright © 2000 ATSG 13 DTC Description Technical Service Information DIAGNOSTIC TROUBLE CODE (DTC) CHART "Check Trans" Light P0117 P0118 P0121 P0122 P0123 P0218 P0561 P0562 P0563 P0602 P0606 P0700 P0703 P0705 P0706 P0708 P0711
  P0712 P0713 P0716 P0717 P0721 P0722 P0726 P0727 P0731 P0732 P0733 P0734 P0735 P0736 P0747 YES P0746 P0747 YES 
  Problem Throttle Position Sensor Circuit Low Voltage Transmission Fluid Over Temperature Urealistic variations in vehicle system Voltage Elumination requested Brake Switch Circuit Ci
 Transmission Range Sensor Circuit (PRNDL Input) Transmission Fluid Temperature Circuit High Voltage (High Temperature Circuit High Voltage (Low Temperature) Transmission Fluid Temperature Circuit High Voltage (Low Temperature)
  Incorrect 5th Gear Ratio Incorrect Reverse Gear Ratio Torque Converter Clutch System Stuck Off Torque Converter Clutch System Stuck Off Torque Converter Clutch System Stuck On Pressure Controlled Clutch System Stuck Off Torque Converter Clutch System Stuck Off Solenoid A controlled Clutch System Stuck Off Torque Converter Clutch System Stuck Off Torque Converter Clutch System Stuck Off Solenoid A controlled Clutch Stuck Off Solenoid Torque Converter Clutch System Stuck Off Solenoid A controlled Clutch Stuck Off Solenoid Torque Converter Clutch System Stuck Off Solenoid Torque Converter Clu
  P1760 P1835 P1860 P1891 Pressure Switch, Solenoid C Circuit Transmission Pressure Switch, Solenoid C Circuit Stuck Closed Transmission Pressure Switch Switch Switch Closed Transmission Pressure Switch Switch
  Unmanaged Engine Torque Delivered To TCM Transmission Pressure Switch, Solenoid E Circuit Transmission Pressure Switch, Solenoid E Circuit Stuck Open Transmission Pressure Switch, Solenoid E Circuit Transmission Pressure Switch, Solenoid E Circuit Stuck Open Transmission Pressure Switch, Solenoid E Circuit Transmission Pressure Switch, Solenoid E Circuit Stuck Open Transmission Pressure Switch, Solenoid E Circuit Transmission Pressure Switch Pressure Switc
  (Normally Closed) Figure 17 Shift Solenoid "D" (Normally Closed) Copyright © 2000 ATSG 16 Internal Wiring Harness And Case Connector Assembly Copyright © 2000 ATSG Figure 18 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information INTERNAL COMPONENTS Several components of the 1000/2000/2400 Series
  electrical control system are located inside of the transmission as part of the main control valve body. These components include three different types of solenoids for controlling the hydraulic action of the valves in the valve body, and the pressure switch assembly. An internal wiring harness and case connector assembly links the internal components
  with the Transmission Control Module. SOLENOIDS The 1000/2000/2400 Series solenoid locations are shown in Figure 17. The solenoids may be normally closed or normally closed solenoid remains closed until a signal from the TCM energizes the solenoid.
 A normally open solenoid remains open until the TCM energizes the solenoid. TCC (PWM) Solenoid F - This solenoid a normally closed, pulse width modulated, and operates at a frequency of 100 Hz (cycles per second) during a shift. The percentage of time the voltage is ON during each 100th of a second is called the solenoid duty cycle. INTERNAL
  WIRING HARNESS ASSEMBLY A 100 percent duty cycle indicates a maximum signal to the solenoid. A zero percent duty signal indicates a minimum or no signal to the solenoid. The TCM, using pulse width modulation programming, varies the percentage of voltage ON time during a cycle. As the pulse width, or duty cycle is increased, the solenoid is
 ON longer. Shift Solenoids C, D, E - Shift Solenoids C, D, & E are normally closed solenoids that provide the necessary logic to distribute fluid to the correct clutch packs in the transmission. The shift solenoids provide either full control line pressure, or exhaust, to the lands of each of the corresponding Shift V alves C, D, and E.
 Shift Solenoids C, D, and E may operate in the open or closed state with no modulation capability at all. Trim Solenoids A and B are used to control oncoming, off-going, and holding pressure to the five clutch packs. These solenoids A and B are used to control oncoming, off-going, and holding pressure to the five clutch packs.
  pressure supplied by these solenoids is proportional to the current commanded. Trim Solenoids A and B operate using a frequency of 1000 Hz. The trim solenoids operate using battery voltage. Trim Solenoid A is a
  Normally Closed solenoid, providing 86 psi (590 kpa) at zero current, and no trim pressure at full current. Trim Solenoid B is a Normally Open solenoid, and prrovides zero pressure at full current. Trim Solenoid B is a Normally Open solenoid B is
 Copyright © 2000 ATSG Figure 19 AUTOMATIC TRANSMISSION SERVICE GROUP INTERNAL WIRING HARNESS The Internal Wiring Harness Assembly and temperature sensor to the external harness that leads to the Transmission
  72°F TRIM "A" 5.5 - 8.0 W TRIM "B" SHIFT "C" SHIFT "C" SHIFT "B" SCLENOID "C" To Pressure Switch Assembly 5.5 - 8.0 W TCC SOLENOID "F" A B C D E F 20 -30 W 20 -30 W 20 -30 W 20 -30 W 8 - 15 W 2.8K W @ 72° F
  SPEEDO SIGNAL RETURN TCM "J1" (Gray) Yellow Yellow Pink Gray Green Red Black Green CONNECTOR CON
 TRANSMISSION (TCM) (TCM) CAN 2.08 J=1939 DATA LINK CAUTIONCAUTION VEHICLE CHASSIS VEHICLE CHASSIS TCM "J2" (Red) CONNECTOR 15 16 13 14 17 18 23 22 24 25 31 26 27 28 29 REDRED 30 32 21 1 2 3 4 10 5V 19 9 12 20 5 6 7 88 RECOMMENDED WIRE COLORS Yellow Green Orange Blue Tan Orange White
    TRANSMISSION CASE CONNECTORTRANSMISSION CASE CONNECTOR A BF CE DK EG FH OUTPUT SPEED OUTPUT SPEED SENSOR SE
  PRESSURE SWITCH PRESSURE SWITCH ASSEMBLY ASSEMBLY C THROTTLE B POSITION POSITION SENSOR SENSOR A TEMP SENSOR 12V OR 24V 1
 DIAGNOSTIC CONNECTOR AUTOMATIC TRANSMISSION SERVICE GROUP TRANSMISSION TRANSMISSION
 ATSG PK/NEUT PK/NEUT VOLT FEED VOLT 
 SENSOR (THERMISTER) Copyright © 2000 ATSG Figure 22 PRESSURE SWITCH CONNECTOR PIN FUNCTION AND IDENTIFICATION A B C D E F A B C D E F Pressure Switch Assembly Receptacle (Face View) (A) SHIFT "C" SIGNAL TO PCM (CASE CONNECTOR TERMINAL
  "F") (C) SHIFT "E" SIGNAL TO PCM (CASE CONNECTOR TERMINAL "E") (D) REVERSE SWITCH TO PCM (CASE CONNECTOR TERMINAL "G") (F) TEMP SENSOR LOW (CASE CONNECTOR TERMINAL "H") 20 Copyright © 2000 ATSG Figure 23 AUTOMATIC TRANSMISSION
 SERVICE GROUP Technical Service Information PRESSURE SWITCH CONNECTOR PIN FUNCTION AND IDENTIFICATION TCM "12" (Red) Connector 21 1 2 3 4 10 20 Yellow TRANS ID Blue Pink White Green Tan Green Transmission Case Connector Figure 24 PRESSURE SWITCH ASSEMBLY The Pressure Switch Assembly (PSA) is made up of
 three normally open switches and one normally closed switch. There are also 2 additional switches in the PSA that are not used. All switches and from the manual valve to the reverse switch. This logic indicates the current
 transmission operating range to the TCM. The three pressure switches corresponding to the switch, so that electrical current is stopped at the switch from the switch from the switch closes and allows current to flow from the positive contact
 and through the switch. Refer to Figure 24. The pressure switch corresponding to reverse is a normally closed (N/C) switch, and pressure is fed to the switch when the transmission is placed into the reverse position. The Pressure switch corresponding to reverse position.
 Changes in fluid temperature are indicated by changes in sensor resistance. Pressure Switch Connector Tan T Lt Green D Blue Red Tan Orange Black C A NOT USED D BF E CE NOT USED D BF E CE NOT USED D BF E CE NOT USED R DK EG FH PRESSURE SWITCH ASSEMBLY ASSEMBLY Copyright ©
 2000 ATSG TEMP SENSOR The PSA terminal identification and functions are illustrated in Figure 23 to assist in switch diagnosis. There is also a complete wiring schematic from the Pressure Switch Assembly through the transmission case connector and to the TCM shown in Figure 24. We have also provided a pressure switch logic state chart in
  Pause Break Scroll Lock Print Home Scrn Backspace F12 F11 - F10 F9 0 F8 9 F7 F6 7 F5 6 F4 5 F3 F2 3 F1 2 ESC 1 W ~ `Q b Ta A ps Lock Ca Shift rl Ct Fn Y 4 T R G E F D V S C X Z Alt n Wi P 8 O I L U K < J, H M N B PqUp + | = \} PqDn ] r { Ente [:; > . Alt End "ift 'Sh?/Del Ins C or SB or L J-1939 Connector Copyright © 2000 ATSG Figure
 26 CHECK TRANS LIGHT The electronic control system is programmed to inform the operator of any type problem with the transmission. To do this, the TCM turns on the Check Trans light on the instrument panel, which will notify the operator that a Diagnostic
 Trouble Code (DTC) has been stored in the TCMs memory. Each time the engine is started, the Check Trans light will illuminate momentarily and then go off after a few seconds. This momentary lighting is to ensure that the
 TCM has stored a DTC, or the TCM is not working properly. Anytime the Check Trans light is on, upshifts and downshifts will be restricted and direction changes may not occur. The converter clutch is also shut off when transmission shifting is restricted. If power is interrupted while the transmission is operating in a forward range, the default
 positions of the shift valves and solenoids will enable application of two clutches to maintain forward range operation (Either 3 or 5th). If power is interrupted while the transmission defaults to or continues Neutral operation untill a key cycle. The operator may turn off and restart the engine,
  and the manual selector lever will provide reverse when in R. Neutral when in P/N, and 3rd Gear when in any forward range, regardless of the range where the failure occurred. RETRIEVING DIAGNOSTIC CODES Currently you must use PC Tool Software called TransPro® which is available through Kent-Moore Heavy-Duty Division, and must be
 loaded onto a Windows 95/98 Lap-T op PC as shown in Figure 26. The TransPro® software transmits and recieves data to and from the TCM via the J-1939 connector, as shown in Figure 26. The TransPro® is describeded in detail in the instruction manual that is
 furnished with each set of software. We have provided you with a typical screen, that is utilized in the TransPro® software, for retrieving DTCs in Figure 27. Hopefully aftermarket scanner manufacturers will be able to provide us with a cartridge for the more popular scanners in the future. 22 AUTOMATIC TRANSMISSION SERVICE GROUP
 Technical Service Information Allison TransPro 3 4 6 9 1 2 6 0 5 8 1 3 6 5 2 2 6 4 5 4 8 9 1 0 4 3 3 6 7 3 3 8 TYPICAL TransPro® DISPLAY Transmission Demo Mode ON P0713 Trans Fluid Temp Sensor Circuit High Input Y P0722 Output Speed Sensor Circuit High Input Speed Sensor Circuit High Input Speed Sensor Cir
 Electrical DTCs RetrievedDTCs Retrieved Allison TransProStartStart Copyright © 2000 ATSG Figure 27 ? MAIN PRESSURE TAP LOCATION AND SPECIFICATIONS ActiveDescriptionCode Y Y Y Y Y MIL 10:45 AM LINE PRESSURE TEST Check transmission fluid level. All transmission XX fluid level and pressure checks must be made at normal
 operating temperatures (160-200°F). Connect a 0-300 psi oil pressure tap as illustrated in Figure 28, and compare readings with the pressure tests, and use a quage with an extended line so that it can be read from inside the vehicle. Range
 PARK/NEUTRAL REVERSE FORWARD (TCC On) MAIN PRESSURE TEST SPECIFICATIONS Pressure @ 600 RPM 900-1380 kpa (115-200 psi) 800-1380 kpa (115-200 psi) 800-1380 kpa (115-200 psi) 800-1380 kpa (120-260 psi)
 1515-1795 kpa (220-260 psi) 1515-1795 kpa (220-260 psi) 1000-1170 kpa (145-170 psi) Figure 28 AUTOMATIC TRANSMISSION SERVICE GROUP 23 Technical Service Information BELL HOUSING OIL PASSAGE IDENTIFICATION 16 16 9 15 16 16 29536810 3 2 1 13 2 9 14 2 10 3 3 16 3 1 8 1 16 7 1 6 11 1. PUMP SUCTION 2.
 OVERAGE (CONV RELEASE) 4. CONVERTER IN 5. CONVERTER OUT 6. TO COOLER 7. FROM COOLER 8. LUBE OIL 9. LOCK-UP APPLY 10. C1 CLUTCH 11. C2 CLUTCH 12.
 LOCK-UP SIGNAL 13. CUT-BACK (5TH GEAR) 14. LINE - TO FILTER 15. LINE - FROM FILTER 16. EXHAUST 24 15 14 16 2 16 6 BOTTOM BELL HOUSING COOLER MANIFOLD SURFACE Figure 29 AUTOMATIC TRANSMISSION SERVICE GROUP 7 16 Copyright © 2000 ATSG Technical Service Information PUMP COVER SPACER PLATE OIL
  LUBE OIL 9. LOCK-UP APPLY 10. C1 CLUTCH 11. C2 CLUTCH 12. LOCK-UP SIGNAL 13. CUT-BACK (5TH GEAR) 14. LINE - TO FILTER 15. LINE - TO FILTER 15. LINE - TO FILTER 15. LINE - TO FILTER 16. EXHAUST 11 10 1 2 13 Figure 30 AUTOMATIC TRANSMISSION SERVICE GROUP 15 14 Copyright © 2000 ATSG 25 Technical Service Information MAIN CASE "FRONT" PASSAGE
 I.D. 16 16 16 1. PUMP SUCTION 2.
```

LINE PRESSURE 3. OVERAGE (CONV RELEASE) 4. CONVERTER IN 5. CONVERTER OUT 6. TO COOLER 7. FROM COOLER 8. LUBE OIL 9. LOCK-UP SIGNAL 13. CUT-BACK (5TH GEAR) 14. LINE - TO FILTER 15. LINE - FROM FILTER 16. EXHAUST 16 16 11 16 N/A 9 13 2 1 10 14 15 Copyright

TO COOLER 7, FROM COOLER 14, LINE - TO FILTER Figure 33 AUTOMATIC TRANSMISSION SERVICE GROUP COPYRIGHT © 2000 ATSG 27 Technical Service Information PUMP COVER OIL PASSAGE I.D. 9 3 16 9 5 6 3 3 8 6 8 1 11 4 4 16 12 9 2 2 1 16 2 10 12 2 13 3 16 9 28 7 1, PUMP SUCTION 2, LINE PRESSURE 3, OVERAGE (CONV RELEASE)

CUT-BACK (5TH GEAR) 16. EXHAUST AUTOMATIC TRANSMISSION SERVICE GROUP 6 1 10 16 Copyright © 2000 ATSG Figure 34 Technical Service Information OIL PUMP PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "TOP VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "TOP VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "TOP VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "TOP VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "TOP VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PRESSURE 14. EXHAUST 14 1 1 10 16 Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 2 14 1. PUMP SUCTION 2. LINE PROSE IN Copyright © 2000 ATSG Figure 35 SHIFT VALVE BODY "BOTTOM VIEW"

TRANSMISSION SERVICE GROUP Copyright © 2000 ATSG Copyright © 2000 ATSG 31 Technical Service Information MAIN VALVE BODY "TOP VIEW" PASSAGE I.D. 16 16 16 30 39 38 2 37 2 2 16 37 41 2 43 16 33 2 44 44 37 16 39 15 32 31 15 44 45 35 45 37 40 57 2 57 44 37 51 37 2 53

FLUID TEMPERATURE SENSOR (THERMISTER). AUTOMATIC TRANSMISSION SERVICE GROUP Copyright © 2000 ATSG Figure 40 33 Technical Service Information TYPICAL VALVE BODY SPACER PLATE 56 36 16 3534 15 16 43 37 41 39 38 37 40 2 42 16 56 30 15 37 37 9 14 11 55 30 10 30 13 47 13 37 11 47 14 55 2 10 31 2 53 56 36 40 34 51

PASSAGE I.D. 56 37 47 13 13 37 37 11 16 37 31 56 31 13 34 40 36 56 37 16 31 37 37 53 49 2 44 31 53 16 32 2 49 54 47 37 35 57 2 51 37 52 45 44 37 2 37 14 32 32 15 40 16 LEGEND FOUND ON PAGE 30. 15 46 16 16 41 37 2 15 15 40 15 48 Figure 38 AUTOMATIC

© 2000 ATSG 26 Figure 31 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information MAIN CASE "REAR" PASSAGE I.D. 15 14 C5 CLUTCH Figure 32 COOLER MANIFOLD PASSAGE I.D. MAIN LINE PRESSURE TAP TO TO CLR CLR Copyright © 2000 ATSG FROM 76 FROM CLR CLR CLR C.

Figure 39 AUTOMATIC TRANSMISSION SERVICE GROUP 14 10 9 13 15 14 Copyright © 2000 ATSG Technical Service Information MAIN VALVE BODY "BOTTOM VIEW" PASSAGE I.D. 16 30 39 16 16 16 31 30 DuPage 29536840 30 16 16 32 38 50 33 16 16. EXHAUST. 30. REVERSE PRESSURE SWITCH

32 11 30 2 14 16 44 34 34 36 34 35 51 40 5454 47 36 56 37 53 16 16 16 2 9 9 31 56 36 51 15 34 40 40 56 55 47 15 37 11 9 5 11 13 2 10 10 30 6 9 15 37 30 15 9 37 11 30 31 32 16 16 11 14 16 LEGEND FOUND ON PAGE 30.

Copyright © 2000 ATSG Figure 41 AUTOMATIC TRANSMISSION SERVICE GROUP Technical Service Information MAIN CASE "BOTTOM VIEW" PASSAGE I.D. 16 11 16 35 1 29536808 34 16 36 56 10 14 13 2 15 9 1. SUCTION.

31. "D" SHIFT VALVE PRESSURE SWITCH. 32. "E" SHIFT VALVE PRESSURE SWITCH. 33. "C" SHIFT VALVE PRESSURE SWITCH. 38. "A" TRIM SOLENOID SIGNAL. 39. "B" TRIM SOLENOID SIGNAL. 50.

9. TCC APPLY. 10. C-1 CLUTCH. 11. C-2 CLUTCH. 13.

CUT-BACK (OverDrive). 14. CONTROL MAIN TO FILTER. 15. CONTROL MAIN FROM FILTER. 16. EXHAUST TO SUMP. 34. C-3 CLUTCH. 35. C-4 CLUTCH.

We had to stop about 6 times before making it to a spot to stop for the night.

56. C-5 CLUTCH (Power -Off State). AUTOMATIC TRANSMISSION SERVICE GROUP Figure 42 Copyright © 2000 ATSG Copyright © 2000 ATSG State). AUTOMATIC TRANSMISSION DISASSEMBLY EXTERNAL COMPONENTS 1. Remove the six PTO cover retaining bolts or the Power Take Off whichever it is equipped with, on the right hand side of the transmission as shown in Figure 43. 2. Install holding fixture shown in Figure 43, onto the PTO surface, to be used with the bench fixture base or in a suitable turn-over stand. 3. Using a suitable hoist, lift the transmission and install into bench fixture base, or the suitable turn-over stand. 4. With transmission assembly locked, in the pan facing down position, remove the converter by pulling it straight out (See Figure 44). Caution: This torque converter weighs about 60 pounds, so exercise extreme caution. 5. Remove the engine speed sensor, turbine speed sensor, and the output speed sensor and output speed sensor, as shown in Figure 45. Note: The engine speed sensor, and the output speed sensor, and the output speed sensor, as shown in Figure 45). 7. Remove the

8 9 . 8 9 . 8 BENCH FIXTURE BASE HOLDING FIXTURE Copyright © 2000 ATSG Figure 43 AUTOMATIC TRANSMISSION SERVICE GROUP Help us help you. By posting the year, make, model and engine near the beginning of your help request, followed by the symptoms (no start, high idle, misfire etc.) Along with any prevalent Diagnostic Trouble Codes, aka DTCs, other forum members will be able to help you get to a solution more quickly and easily! Probrd Topic Author Offline New Member Less More Posts: 4 Thank you received: 0 4 years 7 months ago +27773 by Probrd I bought a 2000 Newmar Dutchstar with a Cat 350hp engine and an Allison 3000 6 speed transmission. It only has 26,000 miles on it so it has been sitting for quite sometime down in Florida. I picked it up in Ohio from a guy that bought it to flip. I paid half of what one generally goes for. (Should have known then it was too good to be true although I knew it had some interior issues from a roof leak). It had a recent oil change and fuel filters and runs great. On our way home about 100 miles into our 500 mile trip the transmission started to go again. It shifted hard through the gears and got to 3rd and it suddenly downshifted back to first and the check transmission light came on. I pulled over, put it in neutral. Put it back into gear and it just stayed in neutral. After shutting it off and starting again it went into gear.

It never downshifted like that again, it just had the check trans light come on and it stuck in whatever gear it was in. Once it got into 6th it seemed ok till we had to stop again. Checked all I knew to check and headed out in the morning. It did it several more times before it seemed to pull out of it. We made it fine till about 20 miles from home.

The last 10 miles took about an hour. We had to stop several times. Fast forward I wanted to take it to our last big race of the year. I cleaned the 3 connectors to the transmission ECU. Drove it around and it seemed good, so hooked up the car trailer and tried it again. All seemed good. Made it all the way to Memphis (400 miles without one issue). It did great until we hit St. Louis on the way home, it started again. It slowly got worse. Last 10 miles it took an hour. I learned how to get the codes from the keypad shifter and wrote them down once home. It stores the last 5. I cleared them and let it sit a couple weeks before cleaning the ECU connectors again thinking that was the problem. It seemed ok for about 10 miles and started again. Every time going into neutral, but just turning the ignition off isn't resetting it anymore. I'm having to go back and unplug the ECU every time. It might go 50 feet

or 2 miles before the check transmission light would come on and go into neutral. I recorded the codes each of them came up twice, 2 of them came up twice, 3 of them came 443 page troubleshooting guide and trying to figure out if they all have anything in common, it may be an output speed sensor, turbine speed sensor, turbi is \$1800. I'd like to rule everything out before going there. Has anyone had any issues like this before? Any ideas? Maybe change the fluid since it's been sitting? Sorry for the long post but one other thing I forgot to mention. Looking at the info plate on the transmission it is a remanufactured one and it looks like the date code is from 2008. The ECU was also swapped in 2008. Maybe they were having the same issues before. I wish I knew why it was all changed 11 year ago. I don't think it has very many miles on it since it was changed. Maybe why it's been sitting for so long. I've checked the voltage at the ECU (13.6), looked over the wiring best I can, and pulled out the output speed sensor. Nothing looks bad.

I measured the sensor and it is 287.7 ohms. Anyway, if you have any ideas I'm all ears. Here are the different codes: 2511 (3 times), 3233 (2x), 5412 (2x), 5423 (2x), 5432 (1x), 5445 (1x), 5587 (3x), 5611 (2x), 5625 (1x), 5655 (2x).

Thanks! Please Log in or Create an account to join the conversation. guafa Offline Platinum Member Less More Posts: 476 Thank you received: 80 4 years 6 months ago #27775 by guafa Hi probrd. You are going to need scope, the right pressure gauge and information in order to do a good diagnostic. It seems TCM is getting into "limp mode". That can be caused by hydraulic (valves or drain lines inside) or electronic (tcm or sensors). Otherwise, you are going to change parts randomly Please Log in or Create an account to join the conversation. ScannerDanner Offline Administrator Religion says do, Jesus says done! Less More Posts: 939 Thank you received: 474 4 years 6 months ago #27781 by Scanner Danner From the description, the good news is, it sounds electrical and not "rebuild time" Don't be a parts changer! Please Log in or Create an account to join the conversation. Probrd Topic Author Offline New Member Less More Posts: 4 Thank you received: 0 4 years 6 months ago - 4 years 6 months ago #27795 by Probrd Scanner Danner wrote: Please list the definitions of each code! Thank you Will do: 2511- Output speed sensor, detected 0 output rpm 1st gear Main code 25 occurs if the output speed sensor reports a zero speed reading while both engine and turbine speeds are approximately equal, turbine speed is above a calibration value, and neutral is not selected or commanded. Main code 25 indicates either the output speed sensor has failed or the required oncoming clutch or clutches did not come on. Code 25 11 can be generated by a false turbine speed reading. This may be due to crosstalk between solenoid and turbine speed sensor circuits caused by direct wire-to-wire short or by water in the electrical connectors. See Section 4 for correct, but the C3 pressure switch is open when it should be closed. 5412oncoming ratio test (after shift) 1 to 2 5432- oncoming ratio test. The ratio test (after shift) 2 to 3 5445- oncoming ratio test (after shift) 4 to 5 Main code 54 indicates a failed oncoming ratio test. The ratio test (after shift) 4 to 5 Main code 54 indicates a failed oncoming ratio test. output speeds). Erratic readings from speed sensors are a likely cause of an oncoming ratio test failure. If conditions for a shift still exist, the shift will be retried one more time.

If the ratio test is still not met, a code is logged and the DO NOT SHIFT response is commanded. If the code is set during a direction change, Neutral with No Clutches is commanded, otherwise the transmission is commanded to the previous range. 5587- oncoming C3PS test (after shift) N1 to R Main code 55 indicates the C3 clutch is the oncoming clutch in a shift and the C3 pressure switch did not close at the end of the shift. When this code is set, the DO NOT SHIFT response and Neutral with No Clutches is commanded. On the N1 to R shift the transmission is commanded to the previous range. Additional codes could be logged for other shifts where "X" indicates the range verification test, 5th Main code 56 indicates a failed range verification speed sensor ratio test. The ratio test occurs after a shift and determines if a clutch has lost torque carrying capability. If output speed is above programmed output speed for a range but the correct speed sensor ratio is not present, the DO NOT SHIFT response is commanded and a range which can carry the torque without damage is commanded or attempted. Turbine and output speed sensor readings are used to calculate the actual ratio that is compared to the commanded ratio. There is more detail and which tests to do for each code. I still need to take apart the connector that comes out of the transmission and connects to the wiring harness coming from the ECU to make

sure it's not all corroded. I haven't really seen any corrosion so far with any of the connectors I've taken apart. These darn transmissions are too darn smart for their own good. Please Log in or Create an account to join the conversation. ScannerDanner Offline Administrator Religion says do, Jesus says done! Less More Posts: 939 Thank you received: 474 4 years 6 months ago #27838 by ScannerDanner I would absolutely start with replacing that output speed sensor. I know I am suggesting changing a part, but things are difficult to test on these giant beasts lol. It's not like you are going to have 30-40 ft test leads connected to the speed sensor to watch it while driving. Do a good visual inspection of the wires while you are down there too. Don't be a parts changer! Please Log in or Create an account to join the conversation. Probrd Topic Author Offline New Member Less More Posts: 4 Thank you received: 0 4 years 6 months ago #27918 by Probrd Thanks for the reply. You are correct. It is hard to work on these huge things.

I'll get it changed once I get a chance here in the next few weeks and report back. You're videos are very helpful. I didn't have a speedometer jumping like you did though. I'm wondering if maybe a valve or solenoid is sticking causing an issue. I know that Transynd fluid isn't cheap and it takes a LOT. I watched you're video on changing the filters and it was really helpful. If I decide to do it I'll probably go a little further and pull the pan off to check the other sensor and the c3 pressure switch to rule them out. Thanks again. Please Log in or Create an account to join the conversation. Mzrh6 Offline New Member Less More Posts: 1 Thank you received: 0 3 years 8 months ago #36818 by Mzrh6 Hello Probrd, would like to know if you solved your problem as I am having the 55 87 code with my md3060 Allison and was thinking it's the c3 pressure switch. Please Log in or Create an account to join the conversation. Time to create page: 0.227 seconds