Vehicle Attachment – 2004 International Specifications

Clarendon Hills, IL

HWY22MH009

(35 pages)

Line Set Ticket

VIN Number	1HTMKAANX*4H661279*	**Model**	4400 SBA 4X2	**Build Date**	10/20/2003
Eng Srl Number	001435574	**Model Code**	MA03500	**Order Qty**	1
Dealer Number	823229	**Order Number/Suffix**	733030	**Starting Job Number**	661279
Sold To	[redacted]	**Sales Region**	222	**Paint Code**	9219
GVWR	33000	**Ignition Key**	[redacted]	**Wheel Base**	293.3 in / 745.0 cm
AF Dimension	124 in / 315.0 cm	**Gear Ratio**	3.36	**Recall Pending**	No

Grp	Unit	Description	Cost Code
01	0001950	FRAME PIERCING	Yes
01	0001CAH	FRAME RAIL 120,000 PSI YIELD 456.0" OAL	
01	0001LLD	FRT BPR CONTOURED STL	
01	0001SAM	(2) REAR AF XMBR	
01	0001WEK	WHEELBASE RANGE 256" THRU 311"	Yes
02	0002ADD	INTL I-120SG 12K FRT AXLE	
03	0003ADC	SPRING FRONT SUSP 12K	
04	0004091	TRUCK DUAL AIR BRK SYSTEM	
04	0004AZA	AIR BRK ABS BENDIX 4-CHAN	
04	0004EBS	AIR DRYER BENDIX AD-9	
04	0004JBG	15X4 FRT S-CAM W/20" LONG STROKE CHMBRS	
04	0004NCE	16.5X7 RR W/TR3030 HEAVY DUTY MGM CHMBRS	
04	0004SBC	AIR CPRSR 13.2 CFM BENDIX TU-FLO 550	
04	0504057	AIR TANK VOLUME ID NOMINAL 3484	Yes
04	0504200	DRAIN VALVE 3 PETCOCKS	Yes
04	0504306	R/S AUTO-SLACK ADJSTRS-FRONT	Yes
04	0504355	R/S AUTO-SLACK ADJSTRS-REAR	Yes
04	0504396	A/D LOC LSM BOC INSIDE RAIL	Yes
04	0504438	MERITOR MA212 FRONT BRAKE LININGS	Yes
04	0504439	MERITOR MA212 REAR BRAKE LININGS	Yes
04	0504441	MERITOR Q-PLUS FRONT BRAKE	Yes
04	0504442	MERITOR Q-PLUS REAR BRAKE	Yes
04	0504605	LOCATE 2 AIR TANKS	
05	0005708	STRG COL, TILTING	Yes
05	0005CAL	STRG WHL BLK 2-SPK	
05	0005PRJ	1-PWR STRG GEAR TRW ROSS TAS65	
06	0506001	TRANSMISSION OUTPUT YOKE	
06	0506010	REAR REAR AXLE INPUT YOKE	
06	0506100	DRIVELINE LABOR	
06	0506102	FIRST CENTER BEARING	
06	0506103	CENTER BEARING SECOND XMBR	
06	0506104	THIRD CENTER BEARING	
06	0506110	CENTER BEARING MOUNTING PARTS	
07	0007AAY	EXH SGL HORZ/HORZ SHORT TP	
08	0008000	ELEC SYS (12 VOLT)	
08	0008518	CIGAR LIGHTER	Yes
08	0008GCU	145A 12V ALT DELCO 22SI	
08	0008MKL	3-12V 1950CCA BTRY SYS-INTL	
08	0008RBK	DUAL CB ANTENNAS	
08	0008RCB	CB RADIO ACCOM PKG HEADER MTD	Yes
08	0008RDW	AM/FM/CASS/RADIO PANASONIC CQ-4400U	
08	0008THB	BACK UP ALARM 102 DBA ELECTRIC	
08	0008WCL	1-AIR HORN BLACK	
08	0008WPB	HEADLIGHTS HALOGEN W/DRL COMPOSITE AERO	Yes
08	0008WPH	CAB/SUNSHADE CLEARANCE LIGHTS LED AMBER	Yes
08	0008WPJ	2-COURTESY LIGHTS UNDER INSTR PANEL	Yes
08	0008WWW	START MOTOR (L/N) MS2 SUB FOR M100R	Yes
08	0508003	BATT BOX STL LSM BOFT 2-3 CAP	
08	0508010	AIR SOLENOID 4-PAK NO ECU OR J1939	
08	0508014	STOP TURN TAIL B/U INSIDE RAIL	Yes
09	0009HAD	GRILLE CHROME	Yes
09	0009WAY	FRONT END, TILT 3-PIECE	
10	0010060	SINGLE COLOR 100 PT SCHEMATIC	Yes
10	0010210	EMISSION LABELS (FUEL ECONOMY/NOISE)	Yes
10	0010761	PAINT-BASE COAT/CLEAR COAT 1-2 TONE	Yes
10	0010WYY	QUALIFICATION ID FOR DIAMOND SPEC	Yes
10	0010WZD	COMPETITIVE SURCHARGE CREDIT	Yes
10	0040AAW	WRNTY STD BAS VEH DSPEC 24/UNL	Yes
10	0510000	BULK MATERIAL	
10	0510002	SERVICE ASM; CAB, DCM, HARNESS, IP	
10	0510908	RED EXTENDED LIFE COOLANT EFFECTS	Yes
10	0510910	VEPS IDENTITY NGV REQUIRES FOR I6 ENGINE	Yes
10	0535001	PAINT COLOR GROUP NO. 01	

10	0535007	PAINT CHASSIS COLOR GROUP NO. 07	
10	0535011	IDENTITY CODE FOR STD PAINT COLORS ONLY	Yes
10	0595008	ESC PROG AIR PRESSURE GAUGE/AIR BRAKE	Yes
10	0595009	ESC PROG ABS WARN LIGHT NOT TRAILER	Yes
10	0595014	ESC PROG PARK BRAKES W/IND LIGHT	Yes
10	0595015	ESC PROG BRAKES SWITCH	Yes
10	0595018	ESC PROG HEADLIGHTS DAY/RUN	Yes
10	0595021	ESC PROG TURN SIGNAL/BRAKE	Yes
10	0595022	ESC PROG AIR HORN W/ OR WITHOUT SWITCH	Yes
10	0595023	ESC PROG ELECTRIC HORN CITY KEYLESS ENTR	Yes
10	0595024	ESC PROG DOME LT W/DIM & KEYLESS ENTRY	Yes
10	0595027	ESC PROG DIAGNOSTICS	Yes
10	0595031	ESC PROG IGNITION KEY OR KEYLESS	Yes
10	0595037	ESC PROG CLUTCH SWITCH	Yes
10	0595049	ESC PRG ELET PRAM DEFL SET W/ALL UNIT	Yes
10	0595050	ESC PROG REFRIGERANT CONTROL HVAC	Yes
10	0595061	ESC PROG VOLTMETER	Yes
10	0595063	ESC PROG SEAT BELT IND LIGHT	Yes
10	0595066	T/R DATA ENGINE OIL PRESS GAUGE	Yes
10	0595067	T/R DATA ENGINE COOLANT TEMP GA	Yes
10	0595069	T/R DATA VEHICLE SPEED GAUGE	Yes
10	0595079	T/R DATA WARNING LIGHTS	Yes
10	0595080	ESC PROG AIR SOLENOID POWER	Yes
10	0595083	ESC PROG CRUISE CONTROL SWITCH STATE	Yes
10	0595085	ESC PROG GAUGE CLUSTER ALARM HANDLER	Yes
10	0595095	ESC PROG ENGINE STATE	Yes
10	0595102	ESC PROG CRUISE/RESCM OUTPUT HANDLER	Yes
10	0595103	ESC PROG HARDWIRE CONFIG DATA	Yes
10	0595104	ESC PROG NETWORK CONFIG DATA	Yes
10	0595105	ESC PROG IP CONFIG DATA	Yes
10	0595112	T/R DATA NO PRNDL	Yes
10	0595130	T/R DATA, ENGINE TYPE INTERNATIONAL	Yes
10	0595162	ESC PROG OMIT STOP/TURN DIAGNOSTICS	Yes
10	0595192	ESC PROG, FUEL TRANSFER PUMP DUAL TANKS	Yes
10	0595208	T/R DATA, ENGINE SPEED GAUGE	Yes
10	0595232	ELECT SYSTEM CONTROLLER ESC2	Yes
10	0595234	ESC PROG BATT FEED FUES DET #2	Yes
10	0595249	ESC PROG HEATED MIRROR	Yes
10	0595251	ESC PROG PARKING/MARKER W/15AMP FUSE	Yes
10	0595253	ESC PROG WINDSHIELD WIPER ESC2	Yes
10	0595273	ESC PROG AIR SUSPENSION DUMP	Yes
11	0011LEY	CLUTCH 14" EATON SAS 1402	
12	0012959	ENG BLOCK HTR 120V/1250W	
12	0012NMJ	INTL DT466 HT 250HP/2600 GOV	
12	0012TSY	FAN DRIVE VISCOUS BORG WARNER SA85	
12	0012UVS	RAD 516" CAC 270"	
12	0012UXC	2002 FED EMISSIONS INT'L ENGINES N/HT530	Yes
12	0012VBC	AIR CLNR SINGLE ELEMENT	
12	0012VXT	ENGINE SPEED CONTROL, STEER WHEEL MTD	Yes
13	0013GMS	FULLER FS-6406N 6SPD	
13	0013WLA	TRANS OIL-SAE 50W SYNTHETIC	
14	0014899	HTG CNTRL AIR SUSPN//DUMP	Yes
14	0014AET	SGL RA 21K 200 WE DANA 21060S	
14	0014TBS	SGL RR AIR SUSP 21K INTL IROS	
14	0014WLA	REAR AXLE OIL 75W-90 SYNTH EMGARD	Yes
14	0514001	REAR SUSPENSION PARTS	
15	0015DMR	2-FL TK UC STL 70G LT/RT 19"DP D-STY	
15	0015LAR	FUEL/WATER SEPARATOR (ROOSAMASTER)	
16	0016000	XMSN COVER, FLOOR MATS, SEALS	
16	0016030	CAB CONVENTIONAL DAY CAB	
16	0016HBA	ENGLISH GA CLUSTER W/ENGLISH SPEEDO	
16	0016JNV	DRVR SEAT AIR SUSP CLOTH NATL	
16	0016RPX	PASS SEAT AIR SUSP CLOTH NATL	
16	0016SDL	2-MIRRORS HEAT BLACK HEADS	
16	0016WBY	RIGHT ARM REST, DRIVER SEAT	Yes
16	0016WBZ	LEFT ARM REST, PASSENGER SEAT	Yes
16	0016WJS	INSTR PANEL CENTER SECTION FLAT	Yes
16	0016WKB	AIR CONDITIONER & HEATER	
16	0016WRX	CAB INT TRIM - DELUXE	
16	0516003	CAB ACCESS 2 STEPS PER DOOR DAY/EXT CAB	
16	0516100	MIRROR, CONVEX LEFT ONLY	Yes
16	0516104	MIRROR STYLE RECTANGULAR NON AERO	Yes

16	0516116	MIRROR, HEATED ALL HEADS	Yes
17	0027DMA	DISC FR WHL 22.5X8.25 PT/STL	
17	0028DMA	DUAL DISC RR WHL 22.5X8.25 PT/STL	
17	0530100	TIRES	

Paint Control Code	Paint Schematic	Paint Location	Paint Break Code	Paint Color Code	Paint Description
1	100GA	S	01	9219	WHITE

Explanation of Prop Shaft Locations

Prop Code	Qty	Location
0427DTA1310	1	2
0427DTA1325	1	1
0427DTA1550	1	5
0427DTH1320	1	3

Front Tire		Rear Tire		Non Driving Tire		Pusher Tire		Tag Tire	
Code	Qty	Code	Qty	Code	Qty	Code	Qty	Code	Qty
07352130179	2	07302690140	4						

	Front	Rear
Suitable Tire	295/75R22.5G	295/75R22.5G
Suitable Rim	22.5X8.25	22.5X8.25

	Front	Rear	Pusher	Tag
Actual Tire				
Actual Rim				

	GVWR	FRONT	FR--REAR	REAR--RR	Pusher	Tag
AXLE-BRK						
SPRNG-AUX						
TIRE-RIM						
GAWR-LBS		12000	21000			
GAWR-KGS		5443	9525			

Summary

VIN:1HTMKAANX4H661279

General Information

Customer Name: Update	[redacted]	Engine :	International : INTL DT466 HT 250HP/2600 GOV EPA 1998, Electro-Hydraulic Fuel System, 250HP @ 2300/2600 RPM, 660 lb-ft Torque @ 1400 RPM, 2600 RPM Governed Speed, 258 Peak HP (Max) (0012NMJ)
Application:	Expedited Freight	Model:	4400 SBA 4X2
		Engine Serial Number:	470HM2U1435574
Repair Management	Create Estimate		

Contact Name:	Add	Unit No:	Edit
Position:		Inspection Exp:	
Phone Number:		Notes:	No
Email Address:			
Customer ID:			
Contact Type:			
		OCC Authorization Form :	N/A

Warranty Information

Order Date:	07/28/2003	DTU Status:	DTU
Build Date:	10/20/2003	DTU Miles:	783 Miles
Warranty Start Date:	**03/05/2004**	Standard Warranty:	Standard Warranty
Time In Service:	18 Years 2 Months	Diamond Spec:	Yes
DTU Engine Hours:	0	DTU Fuel Used:	0.
Extended Warranty Coverage:	No		

Managed Repair Information

Open Recalls:	No	Open AFCs:	No
Open MRCs:	No	Open FSC:	No

Calibration Status	
BCM Status:	Vehicle Calibration Scorecard
Electronic Feature(s):	Vehicle Calibration Scorecard

Uptime

Uptime

VIN : 1HTMKAANX4H661279

Reserve / Release	Type	Number	Description	Status	RO Number	Dealer / Account	Active
Completed	AFC	04906	POLLAK ODOMETER ROLLBACK	**Vehicle corrections completed**			

Details

Vehicle Information

VIN :	1HTMKAANX4H661279	Order Date :	07/28/2003
Model :	4400 SBA 4X2	Build Date :	10/20/2003
Engine :		DTU Date :	03/05/2004
Application Family :	Van	Warranty Start Date :	03/05/2004
Application :	Expedited Freight	DTU Status :	DTU
Wheel Base :	293.0	DTU Odometer :	783 Miles
DTU Engine Hours :	0	DTU Fuel Used :	0.
GVWR :	33000	Original Gear Ratio :	336
GCWR :	0	Programmed Gear Ratio :	336 As Of: 10/20/2003
PC Number :	231020059	Order Number :	733030
Paint Color Code :	9219	After Frame :	0.0
Selling Dealer :	[redacted]	Original Customer :	[redacted]
Customer :	[redacted]	Address :	[redacted]
Address :	[redacted]	City, State Zip :	[redacted]
City, State Zip :	[redacted]		
Toe (MM/M)	N/A		
Forward Rear / Scrub (MM/M)	N/A		
Rear Rear / Thrust (MM/M)	N/A		

WarrantyHistory

Warranty History

VIN : 1HTMKAANX4H661279 :

***Only those User IDs that have been properly registered in ER (Employee Registration) as a Warranty Admin will be able to view claim dollar information for their respective dealer accounts/locations. DYYs need to be setup properly in ER. For each dealer account and location code, each User ID that is allowed to access Warranty Claim History needs to be setup in ER with the Employee Position of: Warranty Administrator. CYYs will no longer be able to view claim dollar information on ISIS. CYYs need to use DDEW (or iClaim after it is released).**

There is no Warranty History Information to display for this vehicle.

Technical Service Information

TSI–05–08–08

Date: August, 2005

Subject File: ELECTRICAL

Subject: Power Distribution Center (PDC) Water or Debris Intrusion on 4000 and 7000 HPV Models

Model: 4200, 4300, 4400, 7300, 7400, 7500, 7600, 7700

DESCRIPTION

A kit has been released to prevent water or debris from entering the power distribution center (PDC) on 4000 and 7000 HPV models.

PARTS INFORMATION

Table 1

Part Number	Description	Quantity
2589899C91	PDC Water / Debris Protection Kit Contains the Following: 2589888R1 Instructions 2589886C1 Foam Insulation Tape (1) 2589887C1 Foam Block Insulation (1) 3610869C1 Rubber Splash Deflector for 7000 Models (1) 1677377C1 Splash Deflector Fasteners for 7000 Models (3)	1

SERVICE PROCEDURE

WARNING – To avoid property damage, personal injury, or death, park the vehicle on a flat level surface, set the parking brake, turn the engine off, and chock the wheels.

1. Locate and remove the PDC cover (Figure 1). Note that the side wall of the cover is stepped.

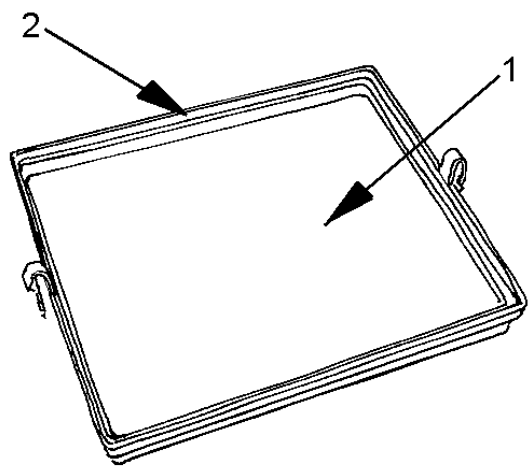


Figure 1 Power Distribution Center Cover (Inner Surface Shown)

1. Bottom Surface
2. Side Wall Step

2. Clean the area on the cover where the foam tape will be attached.

3. Cut two (2) pieces of foam tape 7 5/8 inches long and two (2) pieces of foam tape 5 5/8 inches long. Starting in the corner of the PDC cover, remove the paper backing from the foam tape and install a 5 5/8 strip as shown in Figure 2, Item 1. NOTE: This attaches to the large flat surface and butts up to the step and levels the surface for the final tape installation. Continue this process by installing a 7 5/8 inch long piece of foam tape butted to the first piece of foam tape as shown in Figure 2, Item 2. Continue with the remaining two pieces. Firmly press the tape strips for good adhesion.

SERVICE PROCEDURE (CONT.)

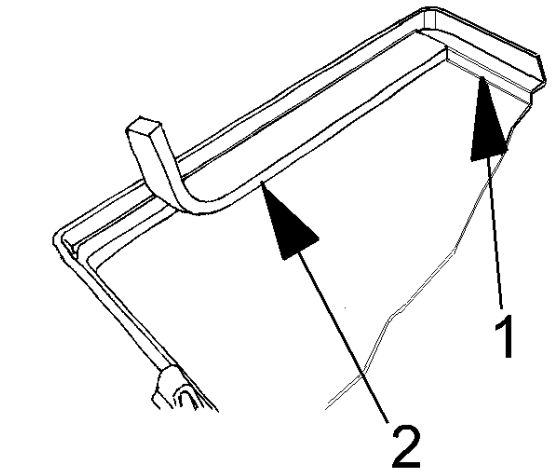


Figure 2 Install First Layer of Foam Insulation

1. 5 5/8 Inch Long Foam Tape
2. 7 5/8 Inch Long Foam Tape

4. Following the same procedure, cut two (2) pieces of foam tape 6 3/4 inches long and two (2) pieces 8 inches long. Install these pieces, over the step and first layer of foam tape (Figure 1, Item 2) and (Figure 3), following the same procedure. Firmly press the tape strips for good adhesion.

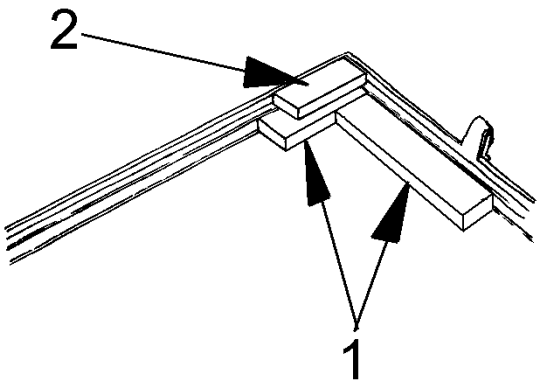


Figure 3 Install Second Layer of Foam Insulation

1. Bottom Layer of Foam Tape
2. Top Layer of Foam Tape Covers the Step and Bottom Layer

5. Re-install the PDC cover.

SERVICE PROCEDURE (CONT.)

6. Use the precut foam block from the kit, open the slit in the center of the foam block and install the harness wires into the slit as shown in Figure 4. Push the foam block into the PDC opening as shown in Figure 4.

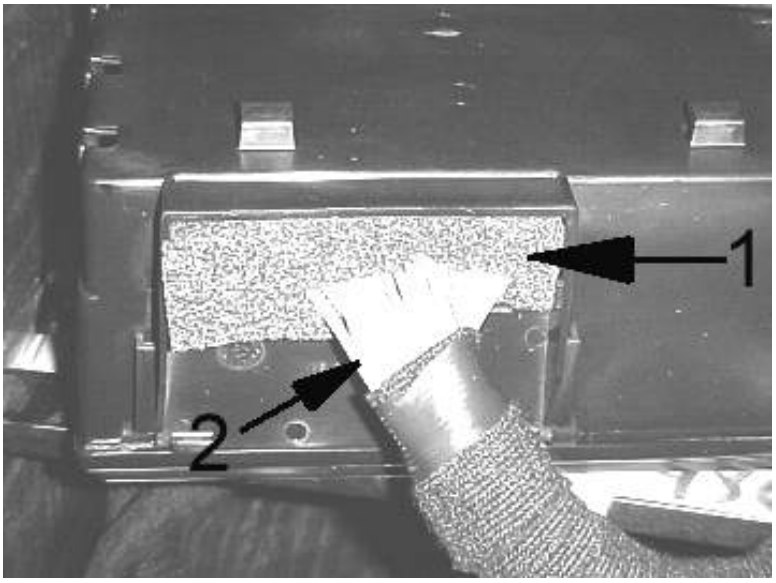


Figure 4 Install Foam Block

1. Foam Block
2. Harness Wires

The following procedure is for 7000 Models only

7. Locate the driver side rear hood reinforcement area (Figure 5). Clean the area of dirt and road debris.

Figure 5 Rear Hood Reinforcement Area (see Arrows)

SERVICE PROCEDURE (CONT.)

8. Use the rubber splash deflector from the kit, Part Number 3610869C1, fold as shown in Figure 6 and position the deflector on the hood reinforcement area, as shown in Figure 7.

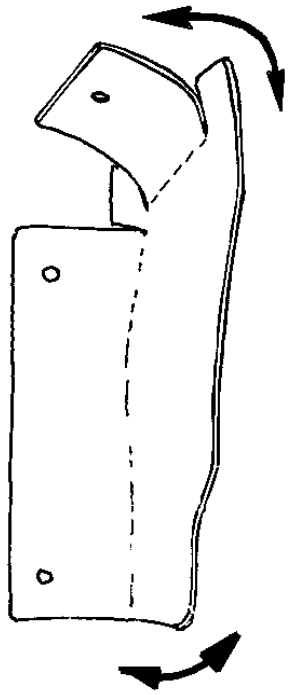


Figure 6 Fold the Rubber Splash Deflector

SERVICE PROCEDURE (CONT.)

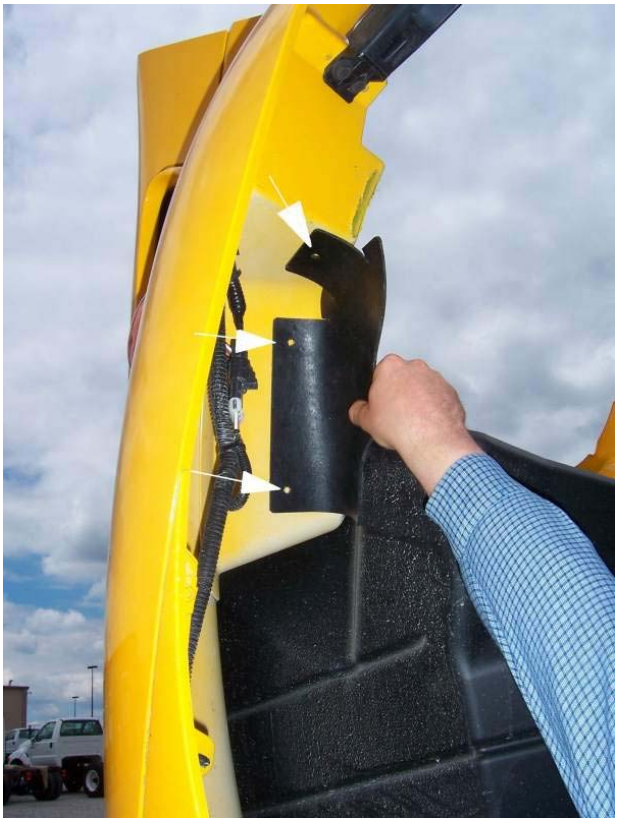


Figure 7 Hold Rubber Splash Deflector to Locate and Mark Mounting Holes

9. Mark mounting hole positions (3) as shown in Figure 7. Drill 10 mm holes.

10. Fold rubber splash deflector and install with xmas tree fasteners, 1677377C1, from the kit.

Technical Service Information

TSI–04–08–03R

This TSI replaces 04–08–03

Date: December, 2004

Subject File: ELECTRICAL

Subject: Engine and Transmission ECU Clean Power Connector Checks To Correct Intermittent Operation

Model: 4300
Start Date: 01/01/2001 End Date: 04/05/2004

Model: 4400
Start Date: 01/01/2001 End Date: 04/05/2004

Model: 7300
Start Date: 01/01/2001 End Date: 04/05/2004

Model: 7400
Start Date: 01/01/2001 End Date: 04/05/2004

Model: 7500
Start Date: 01/01/2001 End Date: 04/05/2004

Model: 8500
Start Date: 01/01/2001 End Date: 04/05/2004

Engine Family: DT 466E

Engine Family: 530E

DESCRIPTION

Intermittent operation of the engine ECM and/or the Allison transmission ECU's can often be caused by poor electrical connections in the Clean Power and Ground Connectors 6323, 7104, or 7104F, or the Chassis/Dash Connector 9700. These poor connections can be caused by "pushed back" pins, loose pins, corroded connectors, or poorly mated connectors because of improperly routed harnesses. The following procedures should be followed to diagnose and repair these connector problems.

PARTS INFORMATION

2587365C91, Splice Kit and instruction sheet for 1-10 gauge and 1-18 gauge wire

2587366C91, Splice Kit and instruction sheet for 2-10 gauge wires

1831731C1, Grease, dielectric

PROCEDURE

WARNING – Batteries expel explosive gases. Keep sparks, flames, burning cigarettes, or other ignition sources away at all times. Always wear safety glasses and a face shield when working near batteries to avoid property damage, personal injury or death.

WARNING – To prevent electrical shock which could result in property damage, personal injury or death, always disconnect the negative battery terminal before working on the electrical system.

WARNING – Park the vehicle on a level surface. Block the wheels to prevent vehicle from moving. Support the vehicle with safety stands. Do not work under a vehicle supported only by jacks. Jacks can slip and fall over causing property damage, personal injury, or death.

Engine Clean Power and Ground Connector 6323

Figure 1 Engine and Transmission Clean Power and Ground Connectors

1. Locate engine clean power and ground connector near the starter. Refer to Figure 1. Engine harness wires are violet in color.

2. Disconnect the connector and check for corrosion and pushed back pins. If corrosion is present, replace the existing connector and terminals with kit 2587366C91 (See Table 1).

3. Drag test all terminals with a new terminal 1687848C1. Refer to Figure 2. If terminal does not fit securely and have a significant amount of drag, the terminals and connector will need to be replaced with kit 2587366C91 (See Table 1).

PROCEDURE (CONT.)

4. If the connector/terminals pass the drag test and show no sign of corrosion, apply a small amount of dielectric grease, part number 1831731C1 to the terminals and around the seal and reconnect.

5. Strap lock connector to battery cable so connector is above the bottom of the frame rail. Tie strap should go around the connector body and not the wires. (Caution: connector should not be lower than the bottom flange of the frame rail.)

Allison Transmission Clean Power and Ground Connector 7104 or 7104F

1. Locate transmission clean power and ground connector near the starter. Refer to Figure 1. Transmission harness wires are tan in color.

2. Disconnect the connector and check for corrosion and pushed back pins. If corrosion is present, replace the existing connector and terminals with kit listed in Table 1.

3. Drag test all terminals with a new terminal 2025423C1. Refer to Figure 2. If terminal does not fit securely and have a significant amount of drag, the terminals and connector will need to be replaced with the kit listed in Table 1.

4. If the connector passes the drag test and shows no sign of corrosion, apply a small amount of dielectric grease, part number 1831731C1 to the terminals and around the seal and reconnect.

5. Strap lock connector to battery cable that is no lower than the bottom of the frame rail. Tie strap should go around the connector body and not the wires. (Caution: connector should not be lower than the bottom flange of the frame rail).

Figure 2 Performing Drag Test

PROCEDURE (CONT.)

Figure 3 Locate Chassis / Dash Connector

Table 1

Kit #	Connector Desc.	Conn #	Cir FM Bat	Cir to ECU
2587366C91	Engine ECM Clean Pwr.	6323	N97AA (10RD)	K97AA (10VT)
2587366C91	Engine ECM Ground	6323	N97-G (10WH)	K97-GA (10VT)
2587365C91	Allison 2000 Clean Pwr.	7104	N92A (10RD)	L92#103 (14TN)
2587365C91	Allison 2000 Ground	7104	N92-G (10WH)	L92-G (14TN)
2587366C91	Allison MD Clean Pwr.	7104F	N92A (10RD)	*L92#136 (10TN)
2587366C91	Allison MD Ground	7104F	N92-G (10WH)	*L92#143 (10TN)
* 10-gauge wire was used in these circuits until the end of calendar year 2001 (approximate) when they were changed to 14-gauge wire.				

Use Packard crimper 12085115 or equivalent to properly crimp open terminal splices without creating sharp edges during the crimping process.

Chassis/Dash Connector 9700

1. Locate the Chassis / Dash connector 9700 in the engine compartment near the wiper motor. Connector 9700 has a gray cam lock lever. Refer to Figure 3.

2. Inspect harness for proper routing and clipping. If harness and connector are tight, remove tie straps and clamps and reposition harness to remove stresses on wires at the connector.

Test vehicle systems for correct operation and system controller for fault codes. Refer to TSI -01-08-07.

Special Field Notification

SFN–08–17R

Date: May 2, 2008

Subject File: ELECTRICAL

Subject: Battery Box Located Clean Power Fuses for the IDM (Injector Drive Module), ECM (Engine Control Module), and TCM (Transmission Control Module) Failing, Resulting in Problems with Power to the Associated Module

Model: 4100, 4300, 4400, 7300, 7400, 7500, 7600, 7700, 8500, 8600, BE Bus, CE Bus, FE Bus, RE Bus
Start Date: 01/01/2003 End Date: 01/01/2008

Engine Family: DT 466

Engine Family: VT 365

Engine Family: MaxxForce 7

Engine Family: MaxxForce DT

DESCRIPTION

The following procedure provides guidance if a truck, tractor or bus is experiencing hard start, no start, erratic engine operation, or transmission shifting issues and the engine or transmission fault codes indicate problems with power to the module.

PARTS INFORMATION

Service replacement part number varies based upon vehicle platform, build date, engine, and transmission configuration. Utilize the VIN parts breakdown inside the Service Parts Catalog. (Figure 1 shows a typical jumper cable assembly).

The newly released jumpers built with copper beryllium terminals have been released in the parts system. All of the old jumper harnesses have been purged from the PDC's. So, if you order a new jumper harness from the PDC, you will receive the updated harness.

PARTS INFORMATION (CONT.)

Figure 1 Jumper Cable Assembly — Typical

SERVICE PROCEDURE

WARNING – To prevent personal injury or death, make sure the transmission is in neutral or park, parking brake is set, and wheels are blocked before doing diagnostic or service procedures on engine or vehicle.

1. Pull fault codes from both the engine and transmission. Hard start / no start issues can be a result of problems with power to the ECM, IDM, or TCM (not applicable for manual transmissions). The transmission controls a crank inhibit relay that will inhibit cranking if the transmissions interlocks (such as being in neutral) are not satisfied, the TCM does not have adequate power, or if active fault codes exist that are deemed necessary to resolve prior to starting the vehicle.

2. Inspect all fuse holders inside the battery box for spread fuse holder terminals, the fuse blades not fitting securely inside the mating terminals, evidence of damage to the terminals (Figure 2), or damage to the fuse itself (Figure 3). If the fuse holder(s), terminals, and fuse(s) appear good, and the fuse fits securely inside the holder, then further diagnostics and troubleshooting will be required.

SERVICE PROCEDURE (CONT.)

Figure 2

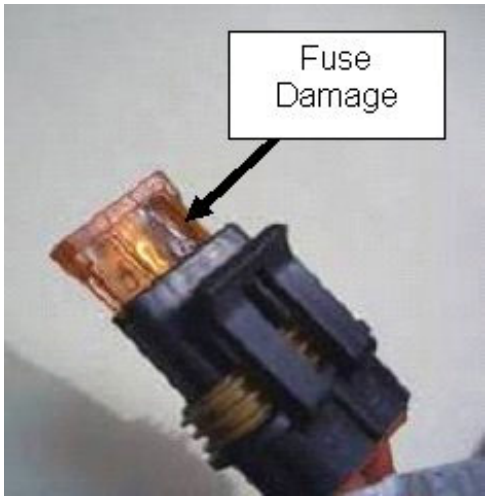


Figure 3

3. If evidence of a damaged jumper cable assembly is found, it will need to be replaced with a new jumper cable assembly as specified in the parts information section. Two improvements have been implemented to insure the integrity of these connections. July 2007: Manufacturing process change to prevent the fuse holder terminals from being spread during the assembly and end of line testing. Dec 2007: The terminals were changed from tin plated copper to copper beryllium. The copper beryllium terminals provide an improvement in their ability to retain spring force on the fuse blades as well as having a higher resistance to thermal cycling.

Special Field Notification

SFN–06–34

This SFN replaces 05–22

Date: September 12, 2006

Subject File: ELECTRICAL

Subject: Electrical System Controller (ESC) Software Revision Levels

Model: 3200, 4200, 4300, 4400, 7300, 7400, 7500, 7600, 7700, 8500, 8600
Start Date: 10/31/2000

DESCRIPTION

A number of software revisions have been made to the ESC's since their introduction in the early 4000 HPV Series trucks. While many of these revisions have been made to add "features" to the ESC they have not necessarily provided problem resolution or troubleshooting solutions to help the service technician. These "feature only" revisions are not included in this SFN. The table below was compiled to help the service technician determine which revision levels were released to resolve the indicated issues.

Initial production used an Infinion ESC for approximately eight months, then production changed to the Hitachi ESC. The revisions listed below show the Infineon OP Revisions until June 2001, then the Hitachi OP Revisions are added. The Feature Set Revisions are the same for both processors after the Hitachi went into production. Each software revision after the Hitachi processor was introduced was released to both processors, thus the two OP Revision numbering systems, one for each respective processor. Both INTUNE and ICAP will read the ESC OP Revision (Kernel) and Feature Set Revision.

Table 1

ESC PROCESSOR				
Infineon OP Revision	Hitachi OP Revision	Feature Set Revision	Description	Approx. Off Line Date
3	N/A	N/A	Initial production	10/31/00
4	N/A	N/A	Added SS features; Improved door pod communication; Combined Allison WTEC and LCT warning lights	11/10/00
5	N/A	N/A	Improved switchpack diagnostics; Changed ESC to remain active when any fused output is active	11/15/00

DESCRIPTION (CONT.)

Table 1 (cont.)

ESC PROCESSOR				
Infineon OP Revision	Hitachi OP Revision	Feature Set Revision	Description	Approx. Off Line Date
6	N/A	N/A	Improved ESC diagnostic codes; Corrected air solenoid startup fault codes; Improved ABS lamp test	12/11/00
7	N/A	N/A	Separated Allison WTEC and LCT lights; Corrected Hydromax alarm logic; Corrected washer fluid level warning; Removed plow lights from electrical current check; Improved HVAC diagnostics	01/24/01
8	N/A	N/A	Added brake interlock logic for Allison ECT with park pawl	02/08/01
9	N/A	N/A	Changed software for ESC sleep mode; Corrected HVAC cycling fault; Improved switchpack communications	03/12/01
10	N/A	N/A	Corrected communication issue with Remote Power Module (RPM); Added programmable parameters for virtual fuse to correct minimum current diagnostics; Added air deflector light feature; Improved interface with INTUNE software; Changed RPM logic so key-off will turn off RPM outputs	05/01/01
11	N/A	N/A	Changed startup logic for air gauges, faults recorded at 9.5 volts and higher with a 2 second startup delay	05/10/01
			Improved A/C diagnostics	05/18/01
N/A	102	N/A	Initial Hitachi Production	06/12/01
N/A	103	N/A	Changed software for ESC sleep mode	06/21/01
12	104	v 12	Removed the software for detecting the following A/C Diagnostic Trouble Code: 613 14 11 1 Set the undercurrent fault detection level for the right and left rear stop/turn lamps to “0” amps. (SSM 11-08-06, Installing LED taillights, in TIPS 11 will no longer need to be performed as these parameters will be set to “0” from the factory.) Note that undercurrent detection can be added again by	07/27/01

DESCRIPTION (CONT.)

Table 1 (cont.)

ESC PROCESSOR				
Infineon OP Revision	Hitachi OP Revision	Feature Set Revision	Description	Approx. Off Line Date
			changing the four parameters identified in TIPS 11 to 0.5 amps.	
13	105	v 13	Modified the fusing software to fix headlight issues; INTUNE software not able to perform EGC diagnostics	09/20/01
14	106	v 14	INTUNE able to perform EGC diagnostics	10/09/01
15	106	v 15	Fix for “Analog Fault” problem; Added software to support the pyrometer/ ammeter model; Added software to support the Auxiliary Transmission Feature; Enhanced on-board diagnostics for AGSP	11/12/01
15	106	v 16	Added software to support Powered Park Brake	12/17/01
16	107	v 17	Removed the software for detecting the following A/C Diagnostic Trouble Codes: 613 14 1 9 and 612 14 31 1 The Check Engine System Warning Lamp will no longer illuminate when there is an active ESC Diagnostic Trouble Code (DTC)	04/12/02 SFN-02-46
17	108	v 20	The new software will allow the ESC to better control the fuel transfer pump operation and optimize fuel levels of the draw tank; When ignition is turned off and ESC goes into low power mode it will still recognize RPM requests; The new software will now accommodate a new three switch switchpack; ESC continues to trace RPM if communication is lost	07/22/02 SFN-02-66
18	109	v 23	The cruise function is now disabled when the brake or clutch switch first registers a fault code	11/07/02 SFN-02-90
19	110	v 25	Prevents inaccurate fuel sensor faults from sloshing fuel in tank; Now cuts back dome lamp power to 1% after 10 minutes	01/28/03 SFN-03-11

DESCRIPTION (CONT.)

Table 1 (cont.)

ESC PROCESSOR				
Infineon OP Revision	Hitachi OP Revision	Feature Set Revision	Description	Approx. Off Line Date
19	110	v 26	When a speed sensor fault occurs the software will no longer log a clutch switch and brake switch stuck fault	03/25/03 SFN-03-21
19	112	V37	Eliminates the premature setting of HVAC fault code 613-14-1-6	5/18/04 SFN-04-38
19	114	V40	Prevents the Service Parking Brake warning light from latching on when service or power parking brake air pressure is low.	11/15/04 SFN-05-33
19	115	V42	Prevents the ESC from “waking up” RESCM and other modules preventing excessive battery draw when the key is OFF; Provides software to support new cluster with light and buzzer to warn before idle shut down occurs; Allows for more signal variability from CE Bus steering wheel mounted door/warning light switches.	04/01/05 SFN-05-18
19	115	V44	A/C refrigerant light failure mode enhancements.	07/08/05
19	115	V45	Ramps up engine speed when A/C is turned on-Bus	07/15/05
19	115	V57	Eliminates false A/C light with high temperature soak (Code 613-14-1-10)	12/12/05 SFN-06-05
19	115	V61	The ESC has changed the operation of the Service Park Brake Light “SERVICE (P)” so when it senses a park brake issue it now blinks and is accompanied by an audible alarm for 20 seconds. The Park Brake Light “Park (P)” is still a constant light indicating that the park brake is applied.	03/17/06
19	115	V64	Delays starter engagement from TEM Remote Engine Start (gives ESC time to “wake up” before engaging starter which prevents the starter from engaging and disengaging).	06/02/06

Special Field Notification

SFN–03–75

Date: December 17, 2003

Subject File: ELECTRICAL

Subject: Positive Engagement Starters

Truck Model: 4300, 4400, 7300, 7400, 7500, 7600, 8500, 8600
Start Date: 09/28/2003

DESCRIPTION

This SFN applies to the models listed above with International I6 engines.

After September 28, 2003 all High Performance Vehicles equipped with International I6 Engines come standard with HD Leece-Neville MS2 positive engagement starter motors. The positive engagement starter's advantage over the more conventional automotive type starter is that the starter motor will not begin to turn until the gear is completely engaged in the flywheel ring gear. This greatly improves the starter life as it never spins during initial engagement which can cause gear tooth wear. On rare occasions the starter will try to engage but may not do so because the teeth of the starter are "butting" against the ring gear teeth. When the starter is reengaged a second time, the starter gear will index ¼ tooth and should then engage completely, allowing the starter to activate and spin the flywheel ring gear. If a customer complains that occasionally the starter does not engage but on reactivating the starter switch it engages and works fine, the system is operating properly. This occasional starter drive tooth butting is characteristic of a positive engagement starter.

Authorized Field Change

AFC G-04906

Date: August, 2004

Subject File: ELECTRICAL

Subject: Version 11.0 and 17.0 Instrument Cluster Improvement for 3200, 4000, 7000, and 8000 HPV Models Built Between January 5, 2003 and November 26, 2003

Model: 3200, 4200, 4300, 4400, 7300, 7400, 7500, 7600, 8500, 8600
Start Date: 01/05/2003 End Date: 11/26/2003

DESCRIPTION

Print ready (PDF file) copy of the AFC letter

Version 11.0 and 17.0 instrument clusters in 3200, 4000, 7000, and 8000 HPV Models built between January 5, 2003 and November 26, 2003 may have odometer readings that are not accurate.

To remedy this , International Truck and Engine Corporation has implemented a program to inspect the current instrument cluster for software version level, and if found to be version 11.0 or 17.0, to replace the instrument cluster rear cover with a new design cover that has an interceptor circuit board attached.

INSPECTION PROCEDURE

The write up person should perform this simple instruction before a repair order is written.

When turning the ignition switch on, watch the instrument cluster display because it will identify the version of software in the instrument cluster. If the software version is 11.0 or 17.0 the repair is required. If any other version, including 17.1, is displayed, there is no repair necessary. Just mark the customer notification card as **inspected** and **no repair is necessary** and drop it in the mail.

PARTS INFORMATION

Table 1

Part Number	Description	Quantity
8000849R91	Instrument Cluster / Interceptor Circuit Kit	1

SERVICE PROCEDURE

WARNING – To avoid property damage, personal injury, or death, park the vehicle on a flat level surface, set the parking brake, turn the engine off, and chock the wheels.

SERVICE PROCEDURE (CONT.)

WARNING – Batteries expel explosive gases. Keep sparks, flames, burning cigarettes, or other ignition sources away at all times. Always wear safety glasses and a face shield when working near batteries to avoid personal injury.

NOTE – DO NOT reset trip miles and trip hours before installing the Interceptor.

NOTE – After installation of the Interceptor, the instrument cluster PTO hourmeter will be reset to zero. Please note and record PTO hours if the instrument cluster PTO hourmeter is used, and retain this information for the customer because PTO hours will restart from zero.

1. Disconnect the negative cable and ECM ground from the battery.

2. Remove fasteners and the steering wheel lower column (Figure 1).

Figure 1 Remove Steering Column Lower Cover

3. Remove fasteners and the instrument cluster dash trim panel (Figure 2).

SERVICE PROCEDURE (CONT.)

Figure 2 Remove Cluster Dash Trim Panel

4. Remove fasteners from the instrument cluster (Figure 3) and move the instrument cluster from the dash to gain access to the harness connector (Figure 4). Remove the instrument cluster.

Figure 3 Remove Instrument Cluster Fasteners

SERVICE PROCEDURE (CONT.)

CAUTION – Static electricity can cause permanent damage to the instrument cluster. Before working on the cluster, be sure to discharge all static from your body by touching metal that is grounded. Do not wear clothing that causes static buildup (such as nylon). Do not touch any pin connectors during removal and installation of the cluster. Work on the instrument cluster in a clean environment.

Figure 4 Disconnect Instrument Cluster Harness Connector

5. Place the instrument cluster face down on a protected work surface.

6. Remove the fasteners from the rear instrument cluster cover (Figure 5). Remove the cover.

SERVICE PROCEDURE (CONT.)

Figure 5 Remove Fasteners from Rear Cover

7. Remove new rear cover with interceptor circuit from Kit 8000849R91 (Figure 6).

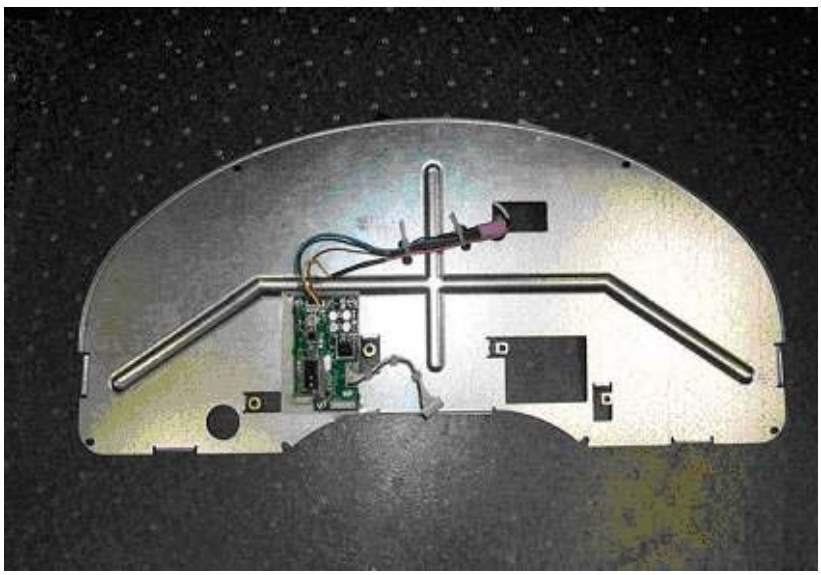


Figure 6 New Rear Cover with Interceptor Circuit

8. Disconnect LCD display harness connector from the cluster center circuit board (Figure 7 and Figure 8).

SERVICE PROCEDURE (CONT.)

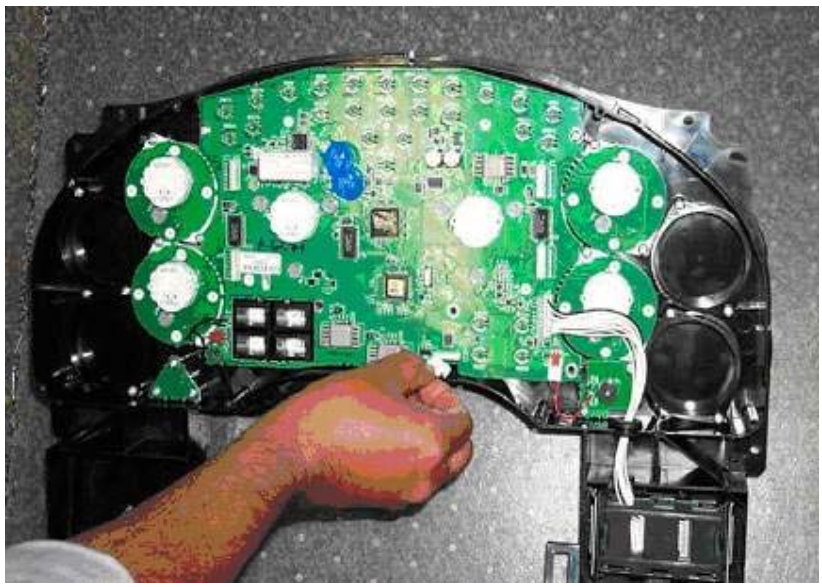


Figure 7 Disconnect LCD Harness Connector

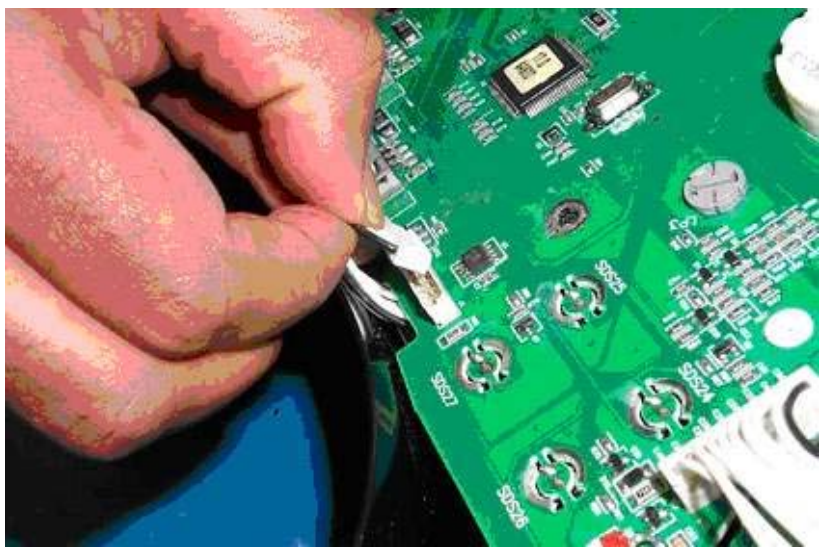
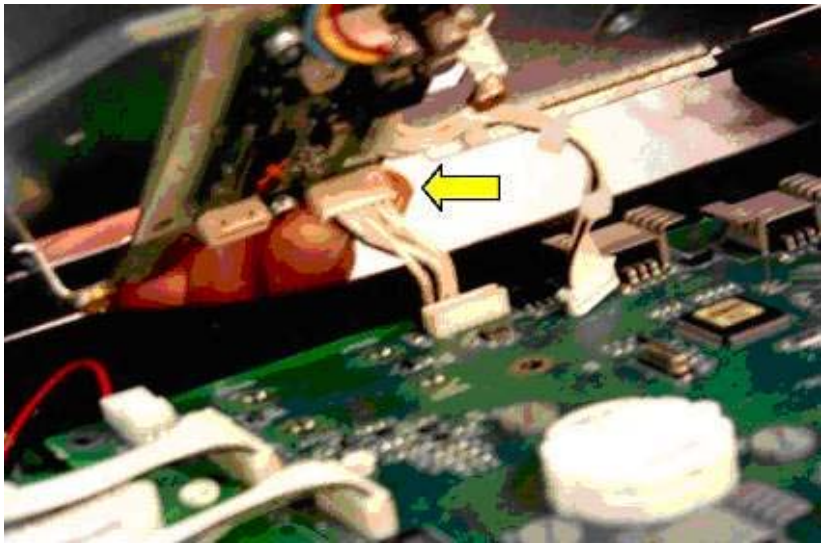


Figure 8 Disconnect LCD Harness Connector (close up)

9. Connect LCD display harness to the Interceptor circuit on the new rear cover (Figure 9).

SERVICE PROCEDURE (CONT.)



10. Connect Interceptor circuit display harness to the center circuit board (Figure 10).

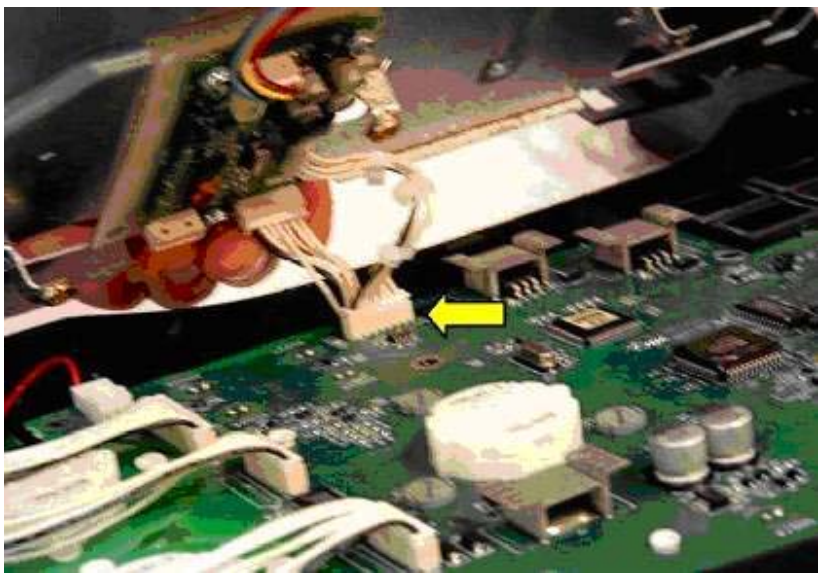


Figure 10 Connect Interceptor Circuit Display Harness

11. Interceptor circuit should be connected as shown in Figure 11.

SERVICE PROCEDURE (CONT.)

Figure 11 Interceptor Circuit Connections

12. Align the rear cover on the cluster and connect the interceptor circuit main harness to the center circuit board (Figure 12).

    Make sure the connector from the Interceptor harness is properly seated into the connector of the instrument cluster. An audible clicking sound is heard when connector is seated. Also visually inspect to verify the connection.

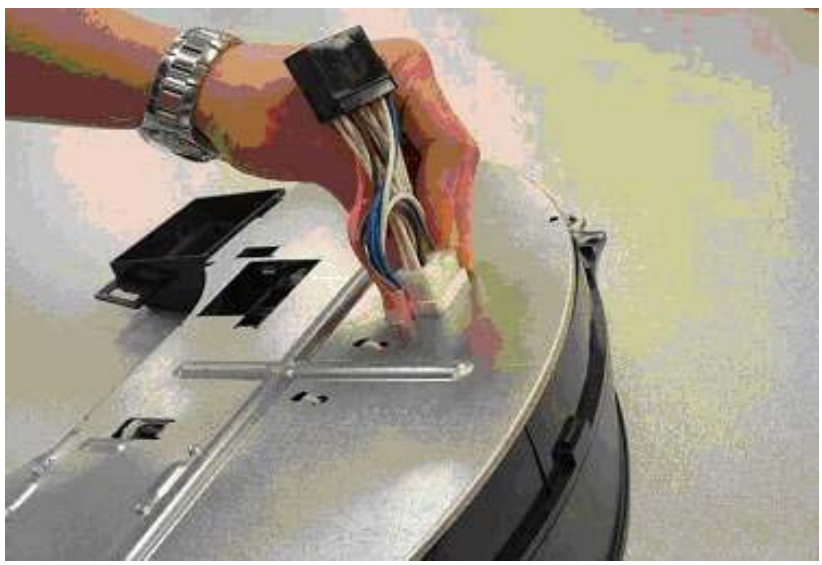


Figure 12 Connect Main Harness

13. Continue following steps 1 to 6 in reverse order.

    Verify that the module is working correctly after the cluster is reinstalled. The display will have the odometer reading in the LCD without the key in. Turn the hazards on. The hazard light indicators will flash without key in.

SERVICE PROCEDURE (CONT.)

NOTE – Trip miles and trip hours may not reset to zero after installing the Interceptor. This may require driving the vehicle a short distance (less than 1 mile). Then push the reset and verify that trip miles and trip hours have reset to zero.

Operation number must appear on all claims.

Table 2 Labor Information

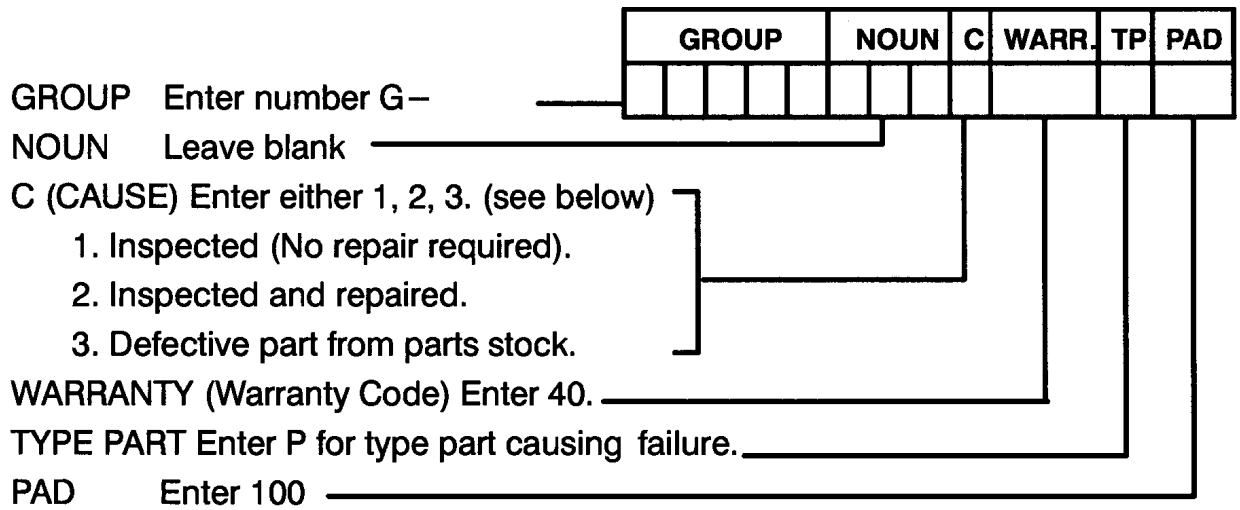
Operation No.	Description	Time
A40–04906–1	Install Interceptor	0.5 Hr.

ADMINISTRATIVE PROCEDURE

Expense is to be charged to Warranty. Claims are to be submitted in the normal manner, making reference to Authorized Field Change Number G-04906.

It is important that the coding be completed properly to assist in processing the warranty claim. Complete instructions will be found in the Warranty Manual, Section 7–1. Special attention should be given to Items 39 through 44.

To assure this important improvement is made in a timely manner, all claims for G-04906 activity must be submitted by August 31, 2005 or within the normal warranty period for the vehicle, if after August 31, 2005.



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