521F
Tier 4
Wheel Loader

SERVICE MANUAL

Part number 47462778

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CASE CONSTRUCTION

MidWestTech | Case 521F Tier 4 Wheel Loader Service Manual | Publication 47462778

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Wire harnesses - Electrical schematic frame 13 -Joystick steering

#	Location	Component
175	12F	Joystick pvres
176	10E	Transmission kick down switch
177	9G	Arm pos
178	11D	FNR switch (option)
179	7E	FNR relay
180	11C	Pilot dump valve
181	12D	JSS valve
182	7C	Load sense pressure sensor
183	7B	Pilot pressure switch
184	3H	JSS relay
185	1E	Joystick STR switch (option)
186	1C	JSS controller
F-47	1D	Fuse ECA-F2 : Joystick steering

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19092-12 Volt supply for dosing module - Below lower limit

521F NA

Possible failure modes:

1. Problem battery or charging system.
2. Denox module/supply module internal failure.

Solution:

1. Verify that the fault code is still active, refer to **0000 - Retrieving fault codes, Wheel Loaders**.
   Prior to clearing fault codes write down all fault codes, number of occurrences, and engine hours at last occurrence.

   (1) Turn ignition switch to RUN position.

   (2) Clear all fault codes.

   (3) To check for fault code: Start and operate machine.

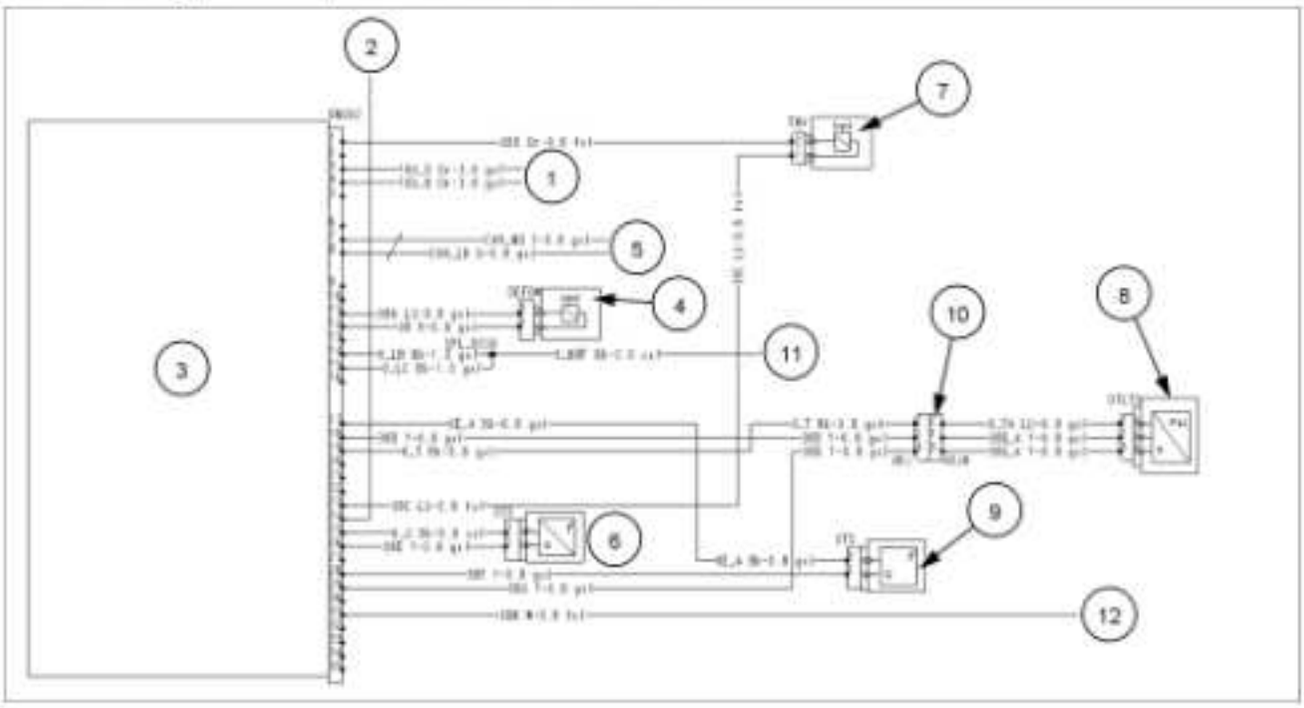
   A. Fault code 19092 is recorded again. Go to Step **2**.

   B. The fault is not recorded again. OK for return to service.
2. Verify the harness and connectors are not damaged.

   (1) Turn the key switch OFF.

   (2) Inspect the NOX Controller connections and Doser Metering Valve connections. All connections should be secure, tight, free of corrosion, abrasion and damage.

   (3) Inspect the harness from the NOX Controller connections to the Doser Metering Valve. Verify that the harness is free of damage, corrosion, abrasion or incorrect attachment.



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19806-UREA Tank Temperature sensor - Short Circuit

521F NA

Context:
The Dosing Control Unit (DCU) has detected the Diesel Exhaust Fluid (DEF)/AdBlue® tank temperature and DCU temperature are not in agreement.

Possible failure modes:

1. DEF/AdBlue® tank level/temperature sensor is faulty.
2. Faulty electrical wiring.
3. The DCU is faulty.

Solution:

1. Verify the fault is still present and in an active state.

   A. If fault is still present and active, continue with step **2**.

   B. If the fault code is no longer present or inactive, continue with step **7**.
2. Check to see if other DEF/AdBlue® level/temperature sensor fault codes are present.

   A. If there are other fault code(s) are present, correct these fault code(s).

   B. If there are no other fault code(s) are present, continue with step **3**.
3. Check the DEF/AdBlue® level/temperature sensor resistance. Disconnect DEF/AdBlue® tank level/temperature sensor connector from the harness. Use a multi-meter to measure the resistance of the DEF/AdBlue® level/temperature sensor from pin 2 to pin 3. See expected resistance at given temperatures in table below.

-30 °C (-22.0 °F)	**12850 Ω**
-20 °C (-4.0 °F)	**7500 Ω**
0 °C (32.0 °F)	**2800 Ω**
20 °C (68.0 °F)	**1215 Ω**
30 °C (86.0 °F)	**825 Ω**
50 °C (122.0 °F)	**410 Ω**

   A. If resistance is correct continue with step **4**.

   B. If the resistance is not correct, replace the DEF/AdBlue® tank level/temperature sensor.
4. Check the DCU to DEF/AdBlue® tank level/temperature sensor wiring harness.

   Check the resistance between the DCU pin 19 and the DEF/AdBlue® tank level/temperature sensor pin 2.

   Check the resistance between the DCU pin 29 and the DEF/AdBlue® tank level/temperature sensor pin 3.

   A. If the resistance is greater than **5 Ω**, repair/replace the damaged wire.

   B. If the resistance is less than **5 Ω**, continue to step **5**.
5. Check the DCU harness connector for continuity between pin 19 and chassis ground.

   Check the DCU harness connector for continuity between pin 29 and chassis ground.

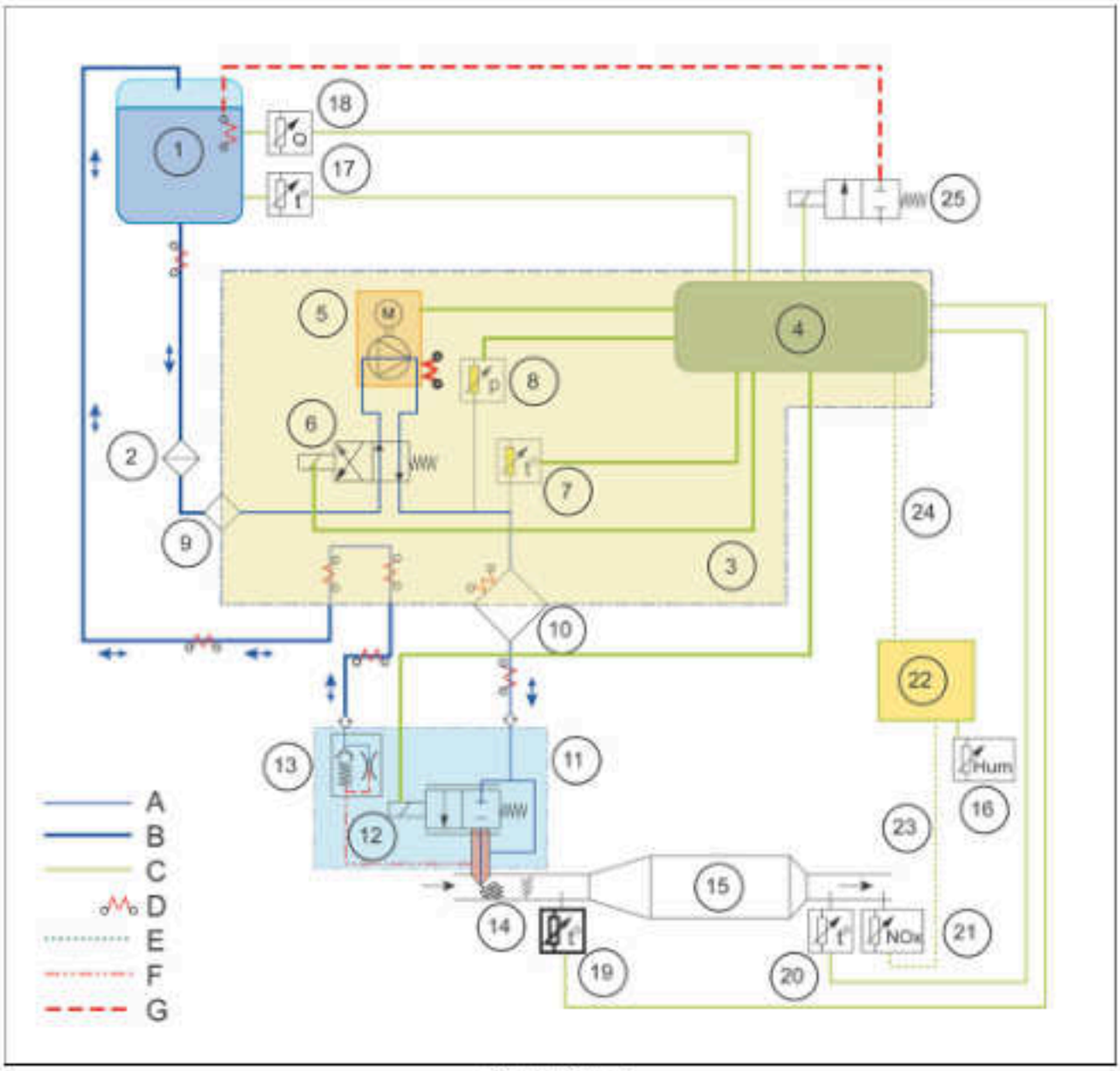
   Check the DCU harness connector for continuity between pin 19 and pin 29.

   A. If there is continuity on any of these circuits, repair/replace the wiring harness.

   B. If there is no continuity on any of these circuits, continue to step **6**.
6. Update the software in the DCU.

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shutdown. This after run draws the DEF fluid from the system and sends it back to tank. Do not turn the master disconnect off until the pump has stopped this after run cycle.

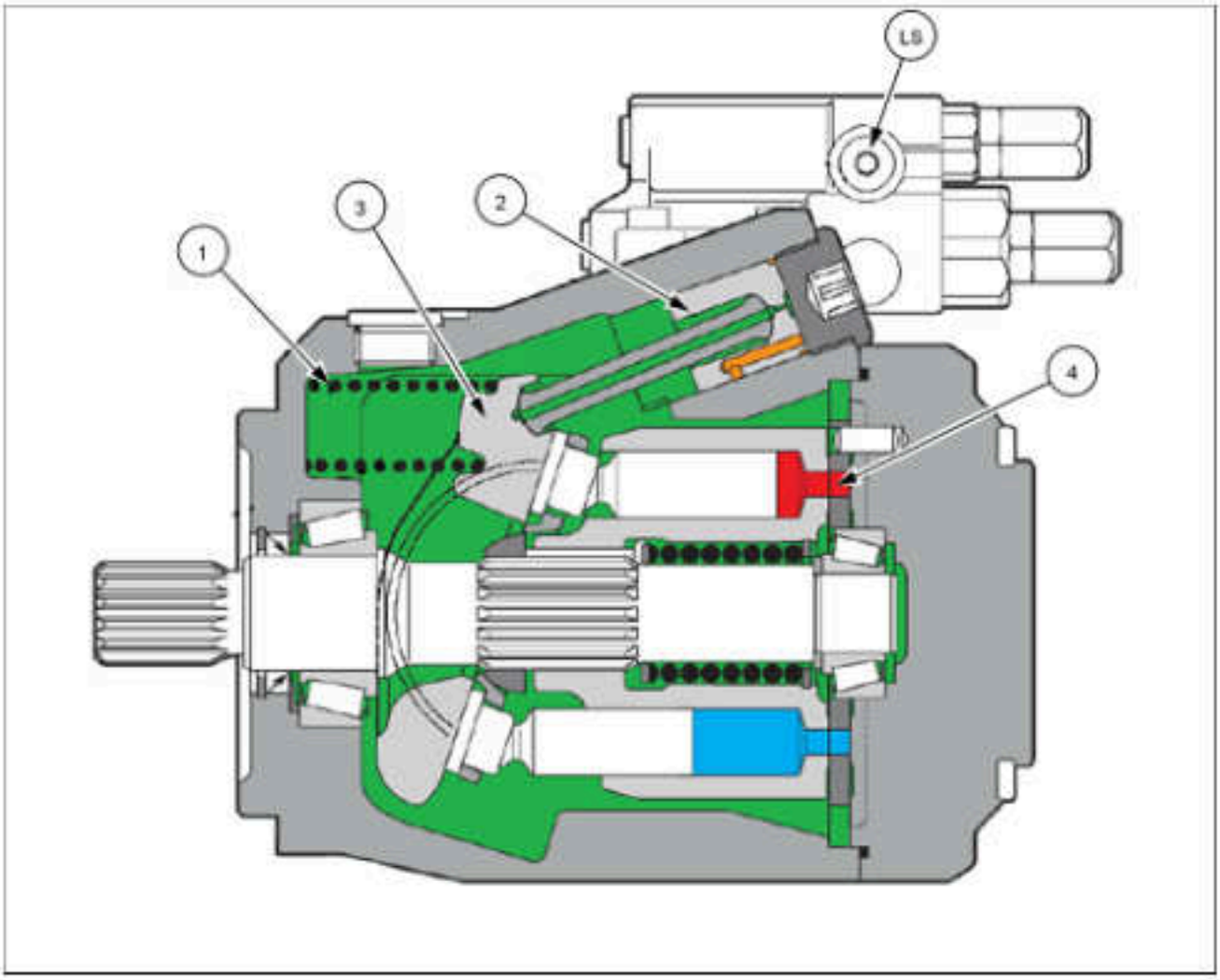


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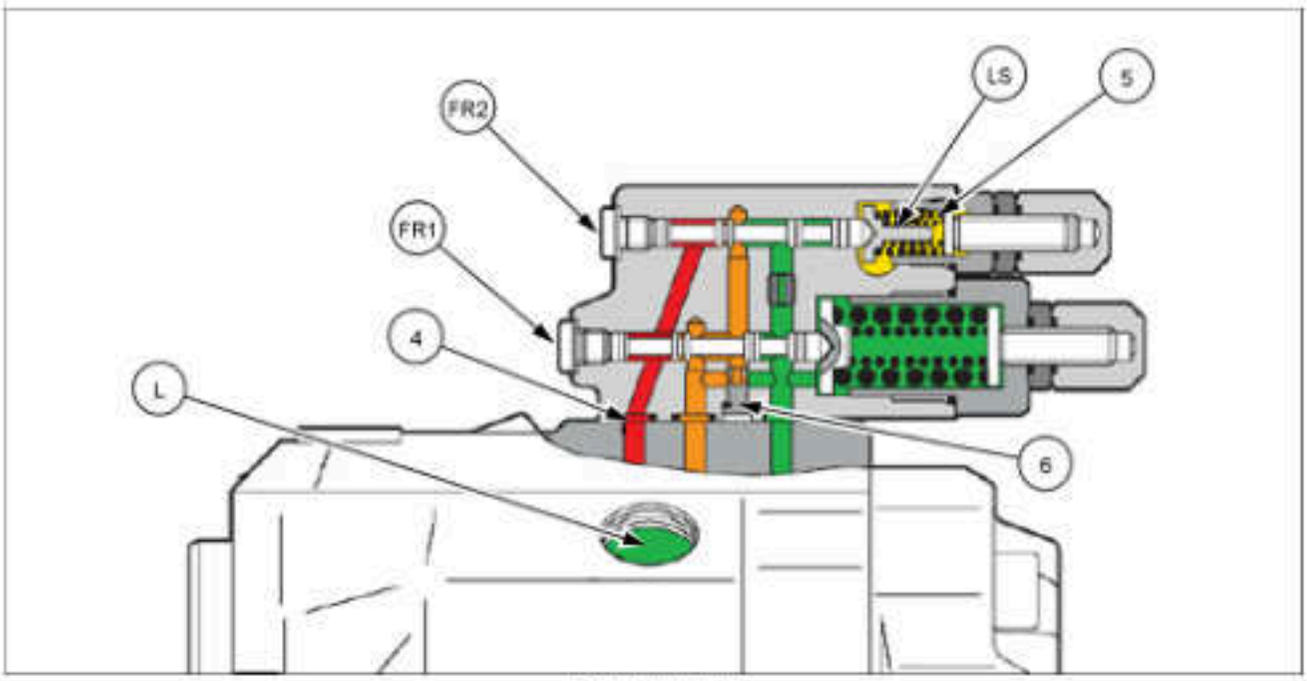
SCR System Components

Graphic Legend	
A – DEF fluid passage	D – Heater
B – DEF fluid hose	E – CAN wire
C – Electrical wiring	F – Dosing module cooling
Components	
1 – Diesel Exhaust Fluid (DEF) tank	14 – Mixer
2 – Inline filter	15 – Catalyst
3 – Supply module	16 – Humidity sensor
4 – Denox Controller Unit (DCU)	17 – DEF tank temperature sensor
5 – Pump	18 – DEF tank level sensor
6 – Reversing valve	19 – Catalyst inlet temperature sensor
7 – DEF temperature sensor	20 – Catalyst outlet temperature sensor
8 – DEF pressure sensor	21 – NOx sensor
9 – Prefilter	22 – Engine Controller Unit (EDC7UC31)
10 – Filter	23 – CAN wire (from NOx sensor to ECU)
11 – Dosing module	24 – CAN wire (between DCU and ECU)
12 – Dosing valve	25 – DEF tank heater solenoid
13 – Return flow valve	

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RCPH11WHL039EAN 4



RCPH11WHL039FAN 5

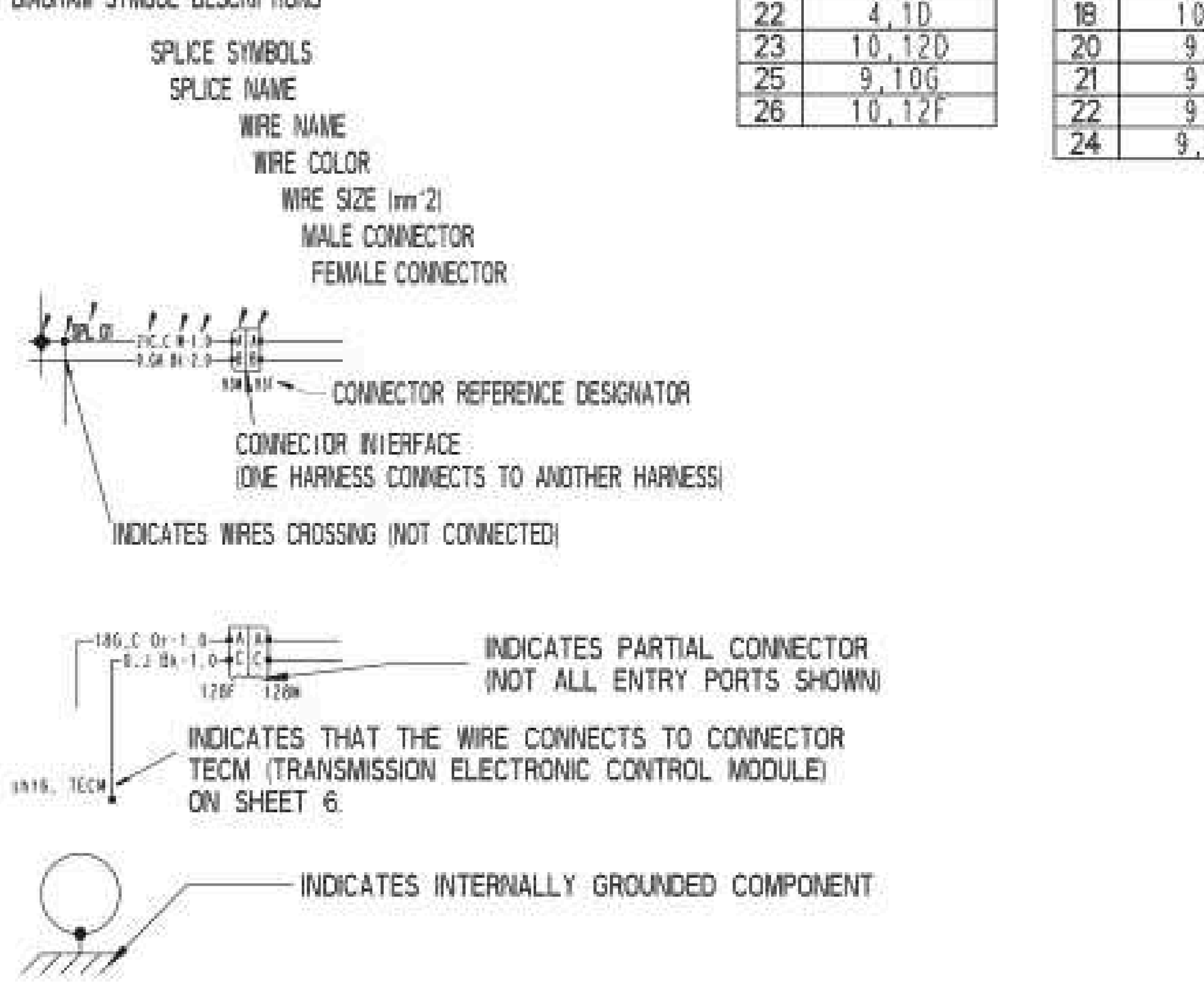
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REF DES NAMING CONVENTION
S... ROCKER SWITCHES
L... LIGHTS
P... PRESSURE SENSORS/SWITCHES
Y... SOLENOIDS
R... RESISTANCE MEASURE
ABOVE LETTER FOLLOWED BY THE FIRST LETTER OF THE FIRST TWO WORDS OF THE SYMBOL LABEL.
SPL... SPLICE

DIAGRAM SYMBOL DESCRIPTIONS



COLOR ABBREVIATIONS

ABBREVIATION	COLOR
Bk	BLACK
DU	DARK BLUE
G	GREEN
K	PINK
LG	LIGHT GREEN
LU	LIGHT BLUE
N	BROWN
Or	ORANGE
P	PURPLE OR VIOLET
R	RED
S	GREY
T	TAN
U	BLUE
W	WHITE
Y	YELLOW

LARGE CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
AIC_1	ADV INSTR CLUSTER 1	4,1D, 7,2G, 9,12G, 9,11G, 9,10G, 9,8G, 9,7G, 9,6G, 9,6D, 9,4G, 10,12F, ...
AIC_2	ADV INSTR CLUSTER 2	4,2E, 6,6F, 7,12G, 9,11G, 9,10G, 9,9G, 9,6G, 9,5G, 9,5D, 9,4G, 10,11F, ...
CAB_E	CAB-ENGINE	4,7E, 4,7C, 5,6F, 9,11F, 9,5C, 10,12C, 11,3D, 12,11G, 12,8F
CAB_F	CAB-FRNT_CHAS	6,9C, 10,8E, 10,3D
CAN_MOD_2	JSS CAN MOD	13,11G, 13,10G, 13,9G, 13,8G, 13,7G
ECA	ELECT CNTR A	4,7H, 5,11G, 6,11F, 6,1H, 7,12C, 8,1G, 9,7F, 9,3G, 10,11F, 10,1H, 11,11G, ...
ECB	ELECT CNTR B	4,4E, 4,4D, 4,3D, 6,9F, 6,9E, 6,9D, 6,8G, 6,8F, 9,3F, 10,11D, 12,4F, 12,2G, ...
ECC	ELECT CNTR C	4,6C, 4,1F, 6,11F, 6,9H, 7,10E, 7,7E, 8,2G, 9,10F, 10,7E, 10,6H, 11,7H, ...
ECD	ELEC CNTR D	4,7D, 4,2C, 5,12F, 6,5F, 6,2F, 10,8G, 10,2F, 11,4G, 11,4F, 12,9G
ENG	ENGINE-CAB1	4,8E, 4,7D, 5,6G, 9,12F, 9,5C, 10,12C, 11,3D, 12,11G, 12,8F
FRONT	FRNT_CHAS-CAB	6,10C, 10,8E, 10,3D
SW_PD	SWITCH PAD	6,9D, 9,12G, 9,10G, 9,8G, 9,6G, 10,11D, 12,11E, 12,10E

FRONT

PIN	LOCATION
1	6,10C
2	6,10C
3	6,10C
4	10,8E
5	6,10C
6	6,10C
7	6,10C
8	10,4D
9	10,3D
10	6,10C
11	10,3D
12	10,3D
13	10,8E
14	6,10C
15	6,10C
16	6,10C
17	10,8E
18	10,8E

(62) AIC 1

PIN	LOCATION
1	9,7G
2	9,12G
3	12,12E
4	12,12E
6	9,6D
7	7,2G
9	9,8G
11	9,11G
12	9,6D
13	9,6G
14	9,4G
19	10,12F
20	10,2E
21	13,2E
22	4,1D
23	10,12D
25	9,10G
26	10,12F

(71) AIC 2

PIN	LOCATION
2	7,12G
4	9,9G
5	9,4G
6	9,5G
7	10,11F
8	10,11F
9	6,6F
10	6,6F
11	11,9G
12	12,8G
14	9,10G
15	9,5D
16	10,10F
17	4,2E
18	10,1E
20	9,9G
21	9,6G
22	9,5D
24	9,11G

ECA

PIN	NAME	LOCATION
A1	A1	8,1G
A2	A2	13,1D
A3	A3	9,7F
A4	A4	11,10H
A5	A5	10,1H
A6	A6	9,3G
A7	A7	10,11F
A8	A8	6,11F
A9	A9	4,7H
A10	A10	5,11G
C1	C1	12,10G
C2	C2	11,4G
C3	C3	11,2F
C4	C4	6,1H
C5	C5	12,2E
C6	C6	12,6H
C7	C7	11,11G
C8	C8	12,4H
C9	C9	7,12C
L1	L1_1	8,2G
L1	L1_2	13,1D
L1	L1_3	9,7F
L1	L1_4	11,11H
L1	L1_5	10,2H
L1	L1_6	9,3G
L1	L1_7	10,12F
L1	L1_8	6,12F
L1	L1_9	4,8H
L1	L1_10	5,12G
L2	L2_1	12,11G
L2	L2_2	11,4G
L2	L2_3	11,2F
L2	L2_4	6,2H
L2	L2_5	12,3E
L2	L2_6	12,7H
L2	L2_7	11,11G
L2	L2_8	12,5H
L2	L2_9	7,12D

ECB

PIN	NAME	LOCATION
B1	30_K1	4,3D
B3	30_K2	4,4E
B5	30_K3	4,4D
B7	30_K4	10,11D
B9	30_K5	9,3F
B2	85_K1	4,3D
B4	85_K2	4,4E
B6	85_K3	4,4C
B8	85_K4	10,11C
B10	85_K5	9,3E
D1	86_K1	4,3D
D3	86_K2	4,4E
D5	86_K3	4,4D
D7	86_K4	10,11D
D9	86_K5	9,3F
C2	87A_K1	4,3D
C4	87A_K2	4,4E
C6	87A_K3	4,4C
C8	87A_K4	10,11C
C10	87A_K5	9,3E
D2	87_K1	4,3D
D4	87_K2	4,4E
D6	87_K3	4,4C
D8	87_K4	10,11C
D10	87_K5	9,3E
A1	A1	12,3G
A2	A2	12,3G
A3	A3	6,10F
A4	A4	6,10E
A5	A5	6,10D
A6	A6	6,10E
A7	A7	6,9G
A8	A8	6,9F
A9	A9	12,5F
A10	A10	12,3F
AA1	B1	12,2G
AA2	B2	12,2G
AA3	B3	6,9F
AA4	B4	6,9E
AA5	B5	6,9D
AA6	B6	6,9E
AA7	B7	6,8G
AA8	B8	6,8F
AA9	B9	12,4F
AA10	B10	12,2F

ECC

PIN	NAME	LOCATION
B1	30_K1	11,7G
B3	30_K2	11,6G
B7	30_K4	10,7E
B9	30_K5	4,5C
B2	85_K1	11,7F
B4	85_K2	11,6F
B8	85_K4	10,7E
B10	85_K5	4,6B
D1	86_K1	11,7G
D3	86_K2	11,6G
D7	86_K4	10,7E
D9	86_K5	4,6C
C2	87A_K1	11,7F
C4	87A_K2	11,6F
C8	87A_K4	10,7E
C10	87A_K5	4,5B
D2	87_K1	11,7F
D4	87_K2	11,6F
D8	87_K4	10,7E
D10	87_K5	4,5B
A1	A1	7,10E
A2	A2	7,7E
A3	A3	6,11F
A4	A4	6,9H
A5	A5	4,1F
A6	A6	10,6H
A7	A7	11,7H
A8	A8	9,10F
A9	A9	12,8E
A10	A10	8,2G
L11	L1_1	7,10E
L12	L1_2	7,7E
L13	L1_3	6,11F
L14	L1_4	6,10H
L15	L1_5	4,1F
L16	L1_6	10,7H
L17	L1_7	11,8H
L18	L1_8	9,10F
L19	L1_9	12,9E
L1,10	L1_10	8,2G

ECD

PIN	NAME	LOCATION
B1	30_K1	11,4G
B3	30_K2	11,4F
B5	30_K3	10,2F
B7	30_K4	10,8G
B9	30_K5	12,8G
B2	85_K1	11,4F
B4	85_K2	11,4E
B6	85_K3	10,2F
B8	85_K4	10,8G
B10	85_K5	12,9F
D1	86_K1	11,4G
D3	86_K2	11,4F
D5	86_K3	10,2F
D7	86_K4	10,8G
D9	86_K5	12,9G
C2	87A_K1	11,4F
C4	87A_K2	11,4E
C6	87A_K3	10,2F
C8	87A_K4	10,8G
C10	87A_K5	12,8F
D2	87_K1	11,4F
D4	87_K2	11,4E
D6	87_K3	10,2F
D8	87_K4	10,8G
D10	87_K5	12,8F
AA2	A1	6,5F
AA1	A2	6,5F
AA4	A3	4,2C
AA3	A4	4,2C
AA6	A5	4,7D
AA5	A6	4,7D
AA8	A7	5,12F
AA7	A8	5,12G
AA10	A9	6,2F
AA9	A10	6,2G
A2	AA1	6,5F
A1	AA2	6,5F
A4	AA3	4,2C
A3	AA4	4,2C
A6	AA5	4,7D
A5	AA6	4,7D
A8	AA7	5,12G
A7	AA8	5,12G
A10	AA9	6,2G
A9	AA10	6,2F

ENG2 ENG BULKHD 2

PIN	LOCATION
A	5,11F
B	4,7F
C	5,11F
D	4,7F
E	4,7F
F	5,11F
G	4,7F
H	5,11F
J	6,7C
K	6,7C
L	6,7C
M	6,7C
N	6,7C
P	6,7C
R	6,7D
S	6,7D
T	11,8F
U	11,8F
V	11,7F
W	11,7F
X	11,7F

ENG ENGINE-CAB1

PIN	LOCATION
1	9,11F
2	12,8F
3	4,7C
4	4,7D
5	9,11F
6	4,7D
7	9,12F
8	10,12C
9	4,8D
10	5,6F
11	4,7C
12	5,6F
13	5,6G
14	5,6G
15	4,8E
16	9,11F
17	9,5C
18	5,6F
19	9,5C
20	9,5C
21	4,8E
22	10,12C
23	10,12C
24	11,3D
25	11,3D
26	4,8E
27	4,7C
28	9,12F
29	12,11G
30	12,11G
31	12,8F

(70) SW PD SWITCH PAD

PIN	LOCATION
1	6,9D
3	10,11D
4	9,8G
5	9,12G
7	12,11E
8	12,10E
9	9,10G
10	9,6G

TRANS TRANSMISSION-CAB

PIN	LOCATION
1	9,8F
2	8,9F
3	11,10F
4	11,10F
5	8,9E
6	11,10F
7	8,9D
8	8,9D
9	8,9D
10	8,9E
11	8,9D
12	8,9D
13	8,9D
14	8,2F
15	8,3F
16	8,9E
17	8,9E
18	8,9E
19	8,9E
20	8,9E
21	8,9E
22	8,9E
23	9,8F
24	8,2F
25	8,3F
26	11,10F
27	8,9F
28	8,9E
29	8,9E
30	9,8F
31	8,9E

INDEX / WIRE INFORMATION

1

CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
115	GRID_HTR_PWR	4,12C
193	STARTER_RELAY	4,12D
194	STARTER_SIGNAL	4,10F
195	STR_REL_PWR	4,12D
108F	DIAGNOSTIC_CONNECTOR	8,3E
140M	DIODE_MODULE	11,3D
197F	MAIN_CAB_FNR	8,4F
197M	FNR-MAIN_CAB	8,4F
202M	ROLLBACK_JUMPER	10,8C
209F	BACK-UP_ALRM_DISA_JMP	6,1D
209M	BACK-UP_ALRM_DISA_JMP	6,1D
20M	TRANS_KICK-DOWN	8,5F
215F	ALTERNATOR_RESISTOR	4,6E
216F	ALTERNATOR_RESISTOR	4,6E
21M	TRANS_KICK-DOWN	13,11E
242F	CHAS_GRD-SEC_STRG_MTR	11,12D
244F	STARTER-SEC_STRG_MTR	11,11E
245F	SEC_STR_FLYBACK	11,12E
64F	FLASHER_CONNECTOR	6,7G
64M	FLASHER_CONNECTOR	6,7G
AB+	ALTERNATOR_B+	4,11H
AB_5	ALTERNATOR B+	4,11G
ACT	AC_COMP_CLUTCH	12,7F
AD	ALTERNATOR D+	4,11H
ALT_5	ALTERNATOR D+	4,11H
ARM_FNR	FNR-MAIN_CAB	13,9D
ARM_POS	ARM POSITION	13,9G
B1	STARTER PWR STUD	4,10F
B2	STARTER_POWER	4,11F
B3	STARTER-BATTERY	4,11F
B4	STARTER_POWER	4,11F
B5	STARTER PWR STUD	4,10F
B6	STARTER POWER	4,11F
B7	STARTER-BATTERY	4,11F
B8	STARTER_POWER	4,11F
BPP	PEDAL POSITION	8,4D
BT1	BATTERY_STARTER	4,12G
BT2	BATTERY_NEG_STUD	4,12G
BT3	STARTER-BATTERY	4,12F
BT4	BATTERY_NEG_STUD	4,12F
BTM_C	CAB BOTTOM BULKHD	6,5H, 8,4C, 9,2C
BTM_E	CAB BTTOM	5,9E, 9,1C, 12,12F
BU1	BACKUP_ALARM_GRND	6,2D
BU2	BACKUP_ALARM	6,2D
BUZ	AIC_BUZZER	9,5F
CABE2	CAB TO ENG2 BULKHD	4,7F, 5,11F, 6,7C, 11,7F
CAB_ARM	CAB TO ARMREST	13,6F
CAB_ARM_FRM	CAB TO ARM TO FRM	13,3E, 13,3D
CAB_B	CAB BTM BULKHEAD	6,5H, 8,4D, 9,2C
CAB_FNR	MAIN_CAB_FNR	13,9D
CAB_FRM	CAB TO JSS FRAME	13,7C
CAB_PW	CAB POWER	4,8E
CAB_RF	CAB TO ROOF CONNECTION	7,11G, 7,5F, 11,2C, 12,5F
CAB_T	CAB-TRANSMISSION	8,9D, 8,3F, 9,8F, 11,10F
CBPW	CAB POWER	4,8E
CL	CIGAR_LIGHTER	12,5G
CNV	24V TO 12V PWR CONVERTER	12,2H
DC1	DISCONNECT-BATTERY	4,11E
DC2	DISCONNECT-BATTERY	4,11E
DC3	FUEL_SOL_DISCONNECT	4,11E
DC4	FUEL_SOL_DISCONNECT	4,12E
DEFDM	DOSER METERING VLV	5,8D
DIA	DIAGNOSTIC	12,7D
DIA_2	DIAGNOSTIC	5,5G
DISC	DISCONNECT-ENGINE	4,9E

CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
DM	DIODE OR	11,8G
DNOX2	NOX CONTROLLER	5,9E
DS	DOOR SWITCH	7,10G
DTLTS	DEF_TANK_LEVEL_TEMP_SENSOR	5,5C
DTS	DOWNSTREAM TEMP SENS	5,8C
D_OR	DIODE OR	7,4H
ECA_L1	B+ POWER	4,3G
EDC7	ENGINE CONTROLLER	4,9C, 5,9F
EM	RTD_HEIGHT_CONT_RTT	10,4E
ENG2	ENG BULKHD 2	4,7F, 5,11F, 6,7C, 11,8F
ENG_B	CAB BTTOM	5,9E, 9,1C, 12,12F
ENG_D	DISC_HARNESS	4,9E
ENG_H	ENGINE TO HOOD	6,5C
ESS	ENG_SPEED_SENS	8,11D
EVGT_3	EVGT_FUSE	5,4E
EVGT_4	EVGT	5,5D
E_HD	TRANS-HOOD	6,4C
FFH	FUEL_FLTR_HTR	4,8G
FLSHR	FLASHER_MODULE	6,7G
FM	FILT_MAINT_SW	8,11E
FNR_RLY	RELAY K2	13,7D
FSS	FAN_SPEED_SENS	9,11D
FWD_DIODE	DIODE ASSY	13,9E
FWM	FRONT-WIPER_MOTOR	11,5D
FWMG	WIPER GROUND	11,5D
FWW	FRONT_WASHER	11,2D
GH	GRID_HEATER	4,10B
GHC	GRID_HEATER_REL	4,12C
GHF1	GRID HTR FUSE	4,11C
GHF3	GRID_HTR_FUSE	4,11C
GHF4	GRID_HTR	4,12C
GH_1	GRID_HTR	4,10B
GND_CAB1	GROUND_A	7,4C
GND_CAB2	GROUND_A	11,6C
GND_CAB3	GROUND_C	12,4C
GND_CAB4	GROUND_C	12,3C
GND_CAB5	GROUND_C	12,1C
GND_CAB6	STRT, FFH, WAT_SEP_HTR	4,3C
GND_CAB3D	GROUND_A	8,3C
GND_CAB_SPL	CAB GRND SPLICE	12,6C
GND_CAB_SPL2	SPL BACK LGHT GD	4,2B, 6,3F
GND_CB	GROUND, ON COOLING BOX	6,2B
GND_ENG1	STRT, FFH, WAT_SEP_HTR	4,11B
GND_ENG2	DEDICATED WIF, EDC	5,7G
GND_ENG3	SPLC_PK, WSHR MTR	11,5C
GND_ENG4	REAR LIGHTING	6,4D
GND_ENG6	DEDICATED	9,6C
GND_ENG7	GRND TRANS_CLNT	9,11C
GND_FC	GROUND_A	10,4C
GND_GH1	STRT, FFH, WAT_SEP_HTR	4,9B
GND_GL	GROUND, REAR GRILL	6,2B
GND_JSS	GROUND_A	13,9B
GND_POST	GROUND_A	9,4C
GND_POST1	GROUND_A	9,4C
GND_POST2	GROUND_A	9,3C

CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
GND_S1	GROUND_A	10,6C
GND_S2	GROUND_A	10,5C
GND_SSCHAS	SSM_GROUND_CABLE	11,12C
GND_SSMOD	SEC STR CHASIS GND	11,10B
GND_TRANS	GROUND_TRANS	9,9C
GND_WIF	GRND WIF RING TERM	9,5B
HD	HOOD_SWITCH	11,7D
HDM	HOOD_LIFT_MOTOR	11,6D
HD_9	HOOD TO ENG	6,5C
HD_E	HOOD-TRANS	6,4C
HD_N	HOOD TO ENG	6,5B
HN1	HORN_PWR	10,7D
HN2	HORN_GRND	10,7D
HOT	HYD_OIL_TEMP_SEND	9,7D
HTS	HMDTY AND AMB TEMP	5,6G
HVAC1	HVAC1	12,10F
HVAC2	HVAC2	12,11F
ISS	INT_SPEED_SENS	8,11D
JMP1	JSS LOAD SENSE	13,7B
JMP2	JSS LOAD SENSE	13,6C
JSS_197F	MAIN_CAB_FNR	13,11E
JSS_197M	FNR-MAIN_CAB	13,7F
JSS_ARM	JSS ARMREST TO CAB	13,6F
JSS_CAB	JSS CAB	12,11B, 13,3D
JSS_CNT	JSS CONTROLLER	13,2C
JSS_FRM	JSS FRAME TO CAB	13,7D
JSS_LS	JSS LOAD SENSE	13,8B
JSS_LS2	JSS LOAD SENSE	13,7C
JSS_PIL_DUMP	JSS PILOT DUMP	13,11C
JSS_PIL_PR	JSS PILOT PRESSURE	13,7B
JSS_RLY	RELAY K2	13,3G
JSS_VALVE	JSS HYD VALVE	13,11C
K5		
KD_DIODE	DIODE ASSY	13,8E
KWCO	WIPER CUTOUT	11,5F
L1_ECC	ECC BATT PWR	7,9F
LBEGRD	LIGHT BEACON GRND	7,3C
LBEPWR	LIGHT BEACON PWR	7,3C
LDM1	DOME_LIGHT_B+	7,2C
LDM2	DOME_LIGHT_AUTO	7,2C
LDM3	DOME_LIGHT_GND	7,2C
LLF	LIGHTS_LH	6,12C
LLFW	LH_FRONT_WK_LT	7,3D
LLR	LH_REAR_COMB_LT	6,4E
LLRW	LH_REAR_WK_LT	7,1F
LLR_9	LH_REAR_COMB_LT	6,6D
LLR_E	LH_REAR_COMB_LT	6,6D
LPL	LIC_PLATE_LIGHT	6,2C
LRF	LIGHTS_RH	6,11C
LRFO	FRONT_WK_LT_OPT	7,2E
LRFR	FRONT_WK_LT_OPT	7,2E
LRFS	FRONT_WK_LT_OPT	7,3E
LRFW	RH_FRONT_WK_LT	7,3E
LRR	RH_REAR_COMB_LT	6,3E
LRRW	RH_REAR_WK_LT	7,1G
LRR_9	RH_REAR_COMB_LT	6,5D
LRR_E	RH_REAR_COMB_LT	6,5D
LSPK	LEFT_SPEAKER	12,4E
MH	HEATED MIRROR	12,2D
MHS	TRANS_ENABLE_SW	12,4C
MH_C	HEATED MIRROR	12,2D
MH_L	MIRROR_HTR	12,2C
MH_R	MIRROR_HTR	12,2D
MON	CAMERA/MONITOR	7,10C
NOXS	NOX SENSOR	5,6E
NTRL_DIODE	DIODE ASSY	13,9E
OSS	OUT_SPEED_SENS	8,10E
PAF	AIR_FILT_RES_SW	9,12C
PBD	DEC_PRESS_SW	8,2F
PBL	BRAKE_LT_PRES_SW	6,4H
PBW	BRK_WARN_PR_SW	9,3D

CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
PHF	HYD_OIL_FILT_RES_SW	9,9E
PHF9	HYD_FLTR_RES_SW	9,8E
PO1	POWER_OUTLET	12,2G
PO2	POWER_OUTLET	12,2G
PRB1	RED_BRAKE_SW	9,9D
PRB2	RED_BRAKE_SW	9,9C
PRBF	ROLLBACK_PRES_SW	10,8C
PRH	AC HIGH PRESS SW	12,11G
PRL	AC LOW PRESS SW	12,11F
PRMB_L1	B+ POWER	4,4G
PRMB_L2	B+ POWER	4,3G
PRM_A	PWR RLY MOD A	
PRM_A1	PRM OUTPUT	4,5G
PRM_A2	PRM SIGNAL	4,5G
PRM_B1	PRM SIGNAL	4,3G
PRM_C1	PRM SIGNAL	4,2G
PRM_D	PWR RLY MOD D	
PRM_D1	PRM OUTPUT	4,9H
PRM_D2	PRM SIGNAL	4,9G
PSS	SEC STR PRES SWITCH	11,9C
PVRES	JSS JOYSTICK	13,12E
PW_B	CAB POWER	4,11G
PW_E	CAB POWER	4,11G
PXF	RTD	10,2D
PXH	HGT_CNTRL-RTT	10,3C
PXM	RTD	10,2D
PXT	RTD	10,2D
P_A1	B+ POWER	4,3F
P_A2	B+ POWER	4,6F
P_A3	B+ POWER	4,3F
P_C1	B+ PWR FRM PRMD	4,10F
P_C2	B+ PWR FRM PRMD	4,10F
P_C3	B+ PWR FRM PRMD	4,9F
P_C4	B+ PWR FRM PRMD	4,10F
P_C6	B+ PWR FRM PRMD	4,9F
R1	RESISTOR	13,5C
RAD	RADIO_POWER	12,3F
RAD_J1	RADIO_POWER	12,3E
RAD_J2	SPEAKER	12,3E
RAD_J3	RADIO_JUMPER	12,3F
RECT	ENG_COOL_TEMP	9,10E
RFL	FUEL_SENDER	9,11E
RFLG	FUEL_SEND_GRND	9,11D
RFL_23	FUEL_LEVEL_SEND	9,11D
ROOF	ROOF TO CAB CONNECTION	7,11G, 7,4F, 11,2C, 12,4F
RSPK	RIGHT_SPEAKER	12,4E
RTHP	THROTTLE_PEDAL	5,9E
RVS_DIODE	DIODE ASSY	13,9E
RWM	REAR_WIPER_MTR	11,3C
RWMG	REAR_WIPER_MTR_GD	11,3C
RWW	REAR_WASHER	11,2D
SAJ	FNR_SWITCH	13,10D
SBE	BEACON_SW	7,9D
SBU	BACK-UP_ALRM_DIS_SW	6,2E
SC	SEAT_COMP_MOTOR	12,6G
SDA	DIFF LOCK SWITCH	8,8G
SDC	DECLUTCH_SWITCH	8,2C
SDM	DIFF LOCK SWITCH	8,9G
SDR	DRIVING LIGHTS SW	6,11G
SFC	FAN_CONTROL_SW	10,11E
SFL	RETURN_TO_TRAVEL_SW	10,4G
SFNR	FNR_SWITCH	8,6F
SFWW	FRONT WIPER/WASHER	11,2G
SHC	HEIGHT CONTROL SW	10,4F
SHZ	HAZARD_SWITCH	6,3G
SJS	JOYSTICK_CONTROL_SW	13,1E
SPB	PARKING_BRAKE_SWITCH	9,6E
SPC	PILOT_CONTROL_SWITCH	10,3D
SPE	PIN_ENGAGE_SW	10,9F
SPK	SPEAKER	12,3E
SPL2	ULTRASONIC	12,3D

CONNECTOR LIST

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CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
SPL3	ULTRASONIC	12,3D
SPL_1	ULTRASONIC	12,3D
SPL_2	ULTRASONIC	11,10G
SPL_3	ULTRASONIC	11,1C
SPL_12V	ULTRASONIC	12,4G
SPL_13M	ULTRASONIC	4,9E
SPL_19S	ULTRASONIC	11,9G
SPL_1N	ULTRASONIC	4,8F
SPL_35A	ULTRASONIC	6,3D
SPL_42C	ULTRASONIC	7,6F
SPL_A1	ULTRASONIC	10,8D
SPL_A2	ULTRASONIC	10,3C
SPL_A3	ULTRASONIC	10,3D
SPL_A4	ULTRASONIC	9,3D
SPL_A1A	ULTRASONIC	6,5C
SPL_AC	ULTRASONIC	12,10G
SPL_ACC	ULTRASONIC	4,3F
SPL_ACP	ULTRASONIC	12,12G
SPL_ACS	ULTRASONIC	12,12G
SPL_AJ	ULTRASONIC	13,10D
SPL_ALT	ULTRASONIC	4,7E
SPL_AP	ULTRASONIC	9,6G
SPL_B1		6,5D
SPL_B8	ULTRASONIC	6,6D
SPL_BCK_LGT	SPLICE BACK LGHT PWR	7,5H
SPL_BCK_LGT2	SPL_BACK LGT PWR	10,7F
SPL_BCK_LT_GD	SPL BACK LGHT GD	7,6D
SPL_BCK_LT_GD2	SPL_BACK LGT GRND	10,3B
SPL_BLWR	ULTRASONIC	12,9F
SPL_BUZ	ULTRASONIC	9,6F
SPL_C3	ULTRASONIC	11,10C
SPL_CAN	ULTRASONIC	12,11E
SPL_CAN_DH	ULTRASONIC	5,8G
SPL_CAN_DIAG	ULTRASONIC	12,9D
SPL_CAN_DIAG_L	ULTRASONIC	12,9D
SPL_CAN_DL	ULTRASONIC	5,8G
SPL_CAN_GH	ULTRASONIC	5,5G
SPL_CAN_GL	ULTRASONIC	5,5G
SPL_CAN_HT	ULTRASONIC	5,6F
SPL_CAN_HV	ULTRASONIC	5,7F
SPL_CAN_JS_H1	ULTRASONIC	12,10C
SPL_CAN_JS_H2	ULTRASONIC	12,10C
SPL_CAN_JS_L1	ULTRASONIC	12,10C
SPL_CAN_JS_L2	ULTRASONIC	12,10C
SPL_CAN_L	ULTRASONIC	12,10E
SPL_CAN_LT	ULTRASONIC	5,7F
SPL_CAN_LV	ULTRASONIC	5,7F
SPL_CAN_TEL	ULTRASONIC	12,9C
SPL_CAN_TEL2	ULTRASONIC	12,9C
SPL_CAN_TRANS	ULTRASONIC	12,10E
SPL_CAN_TRANS_L	ULTRASONIC	12,9E
SPL_CNV	ULTRASONIC	12,3H
SPL_CR	ULTRASONIC	4,4D
SPL_CRK	ULTRASONIC	4,2E
SPL_D1	ULTRASONIC	10,4E
SPL_D11	ULTRASONIC	8,9C
SPL_D12	ULTRASONIC	8,6E
SPL_D15	ULTRASONIC	8,4H
SPL_D16	ULTRASONIC	8,3F
SPL_D17	ULTRASONIC	8,4D
SPL_D19	ULTRASONIC	8,4E
SPL_D24	ULTRASONIC	10,2G
SPL_D25	ULTRASONIC	10,3F
SPL_D26	ULTRASONIC	10,8F
SPL_D8_C1	ULTRASONIC	6,2D
SPL_DC	ULTRASONIC	8,2C
SPL_DCUG	ULTRASONIC	5,8D
SPL_DLY3	ULTRASONIC	9,10F

CONNECTOR LIST

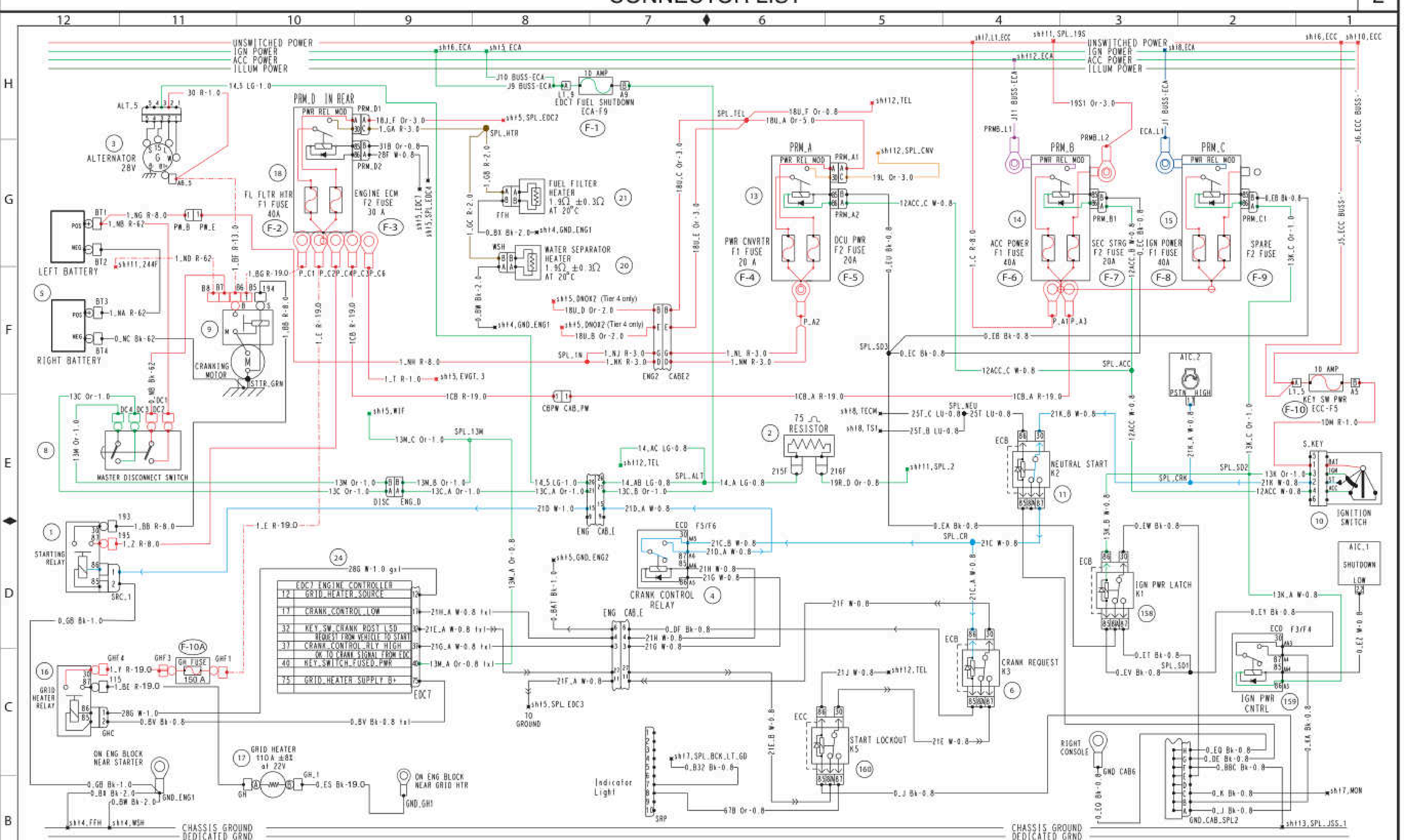
NAME	DESCRIPTION	SHEET, LOCATION
SPL_DR	ULTRASOIC	6,10F
SPL_EDC1	ULTRASONIC	5,8G
SPL_EDC2	ULTRASONIC	5,8H
SPL_EDC3	ULTRASONIC	5,8G
SPL_EDC4	ULTRASONIC	5,8G
SPL_ENG	ULTRASONIC	11,5C
SPL_FAN	ULTRASONIC	10,12C
SPL_FLSHR_PWR	ULTRASONIC	6,6H
SPL_FNR	ULTRASONIC	8,5F
SPL_FW	ULTRASONIC	11,3G
SPL_H1	ULTRASONIC	8,11E
SPL_H2	ULTRASONIC	8,10D
SPL_HB	ULTRASONIC	6,10E
SPL_HC	ULTRASONIC	11,3F
SPL_HOOD	ULTRASONIC	11,7H
SPL_HOOD_GRND	HOOD GRND 6PCK	11,5E
SPL_HRN	ULTRASONIC	10,8F
SPL_HTR	ULTRASONIC	4,8H
SPL_J1	ULTRASONIC	6,3D
SPL_J2_N	ULTRASONIC	6,4D
SPL_JSS_1	ULTRASONIC	13,2E
SPL_JSS_2	ULTRASONIC	13,2D
SPL_JSS_3	ULTRASONIC	13,2D
SPL_JSS_4	ULTRASONIC	13,4E
SPL_JSS_5	ULTRASONIC	13,5D
SPL_JSS_6	ULTRASONIC	13,5F
SPL_JSS_7	ULTRASONIC	13,4F
SPL_JSS_9	ULTRASONIC	13,5D
SPL_JSS_10	ULTRASONIC	13,7F
SPL_JSS_11	ULTRASONIC	13,5D
SPL_JSS_13	ULTRASONIC	13,10F
SPL_JSS_14	ULTRASONIC	13,6C
SPL_JSS_15	ULTRASONIC	13,10F
SPL_JSS_16	ULTRASONIC	13,8C
SPL_JSS_17	ULTRASONIC	13,10C
SPL_JSS_18	ULTRASONIC	13,4E
SPL_JSS_20	ULTRASONIC	13,4C
SPL_JSS_21	ULTRASONIC	13,8F
SPL_L1		6,6D
SPL_LB	ULTRASONIC	6,10E
SPL_LT	ULTRASONIC	7,8E
SPL_NEU	ULTRASONIC	4,4E
SPL_P9		6,4C
SPL_PBS	ULTRASONIC	9,2G
SPL_PED_BL	SPL BACK LGT PWR 6 PCK	10,10D
SPL_PED_BL_GD	SPL BACK LGT GD 6PCK	10,9B
SPL_PIN	SPL_BACK LGT PWR	10,10E
SPL_PINE	ULTRASONIC	10,8F
SPL_PK1	SPLICE 3-4WAY	7,2H, 12,8D
SPL_PK3	SPLICE 3-4WAY	6,7F, 11,3G
SPL_POS	ULTRASONIC	6,5C
SPL_POS_L	ULTRASONIC	6,7E
SPL_POS_NA	ULTRASONIC	6,3B
SPL_POS_R	ULTRASONIC	6,8D
SPL_PR	ULTRASONIC	6,10F
SPL_PTM	ULTRASONIC	9,3E
SPL_RAD	ULTRASONIC	12,4F
SPL_RD	ULTRASONIC	9,10D
SPL_REV		6,4D
SPL_ROOF	SPLICE ROOF GROUND	7,5E
SPL_RTT	ULTRASONIC	10,4G
SPL_RWW	ULTRASONIC	11,1E
SPL_SD1	ULTRASONIC	4,2C
SPL_SD2	ULTRASONIC	4,2E
SPL_SD3	ULTRASONIC	4,5F
SPL_SEC	ULTRASONIC	11,11C
SPL_SS	ULTRASONIC	11,9D
SPL_SW_PD	ULTRASONIC	9,10F

CONNECTOR LIST

NAME	DESCRIPTION	SHEET, LOCATION
SPL_TEL	ULTRASONIC	4,6H
SPL_TRNS_PWR	TRANS_PWR	8,1D
SPL_WHS	ULTRASONIC	11,4E
SPL_WK	ULTRASONIC	7,4E
SPL_WL	ULTRASONIC	7,6F
SPL_WL1	ULTRASONIC	7,5F
SPL_WLS	ULTRASONIC	11,3D
SPL_WR	ULTRASONIC	7,3F
SPL_WRK1	ULTRASONIC	7,2E
SPL_WRK2	ULTRASONIC	7,2E
SPL_WRKF	ULTRASONIC	7,4E
SPL_WRKR	ULTRASONIC	7,3G
SRC	RIDE_CONTROL_SW	10,9G
SRC_1	RELAY	4,12D
SRHSTLK	RH STALK SWITCH	6,12E
SRP	WORK LIGHTS SW	4,7B
SRTD	DETENT_SWITCH	10,4E
SRWP	REAR_WIPER_SW	11,2D
SSD	SEC_STR_DIODE	11,11F
SSM	SEC STR MOD	11,9D
SSS	SS MAG SWITCH	11,12E
SS_TR	SS_MOD-TRANS	11,10E
STA	TRANS_AUTO_SW	8,2E
STE	TRANS_ENABLE_SW	8,5G
STTR_GRN	GRID_HTR_FUSE	4,10E
SWL	WORK LIGHTS SW	7,7F
S_KEY	IGNITION_SWITCH	4,1E
TCOT	TCO_SENDER	8,11E
TECM	TRANS	8,8E, 8,8C, 8,5C
TEL	TELEMATICS	12,8C
TERM_CAN_2	CAN BULK HEAD	5,6F
THV	TANK HEATER CONTROLVALVE	5,7D
TRANS	TRANSMISSION-CAB	8,9E, 8,3F, 9,8F, 11,10F
TRC	TRANS_CONTROL	8,10F
TRLY	TIMER RELAY	12,4D
TR_SS	SEC_STR_MOD_OPT	11,9E
TS1	TRANSMISSION_SHIFTER	8,9C
TS2	TRANSMISSION_SHIFTER	8,9C
TSS	TURB_SPEED_SENS	8,11D
TURBO	ENG DASH_TURBO	5,3D
UBJ	DEF LEVEL TEMP	5,6C
UBJM	DEF LEVEL TEMP	5,6C
UTS	UPSTREAM TEMP SENSE	5,7C
WIF	WATER_IN_FUEL_SNSR	5,6H
WSH	WATER_SEP_HTR	4,8F
YDL	DIFF LOCK SOLENOID	8,12G
YDL_1	DIFF LOCK SOLENOID	8,12G
YDL_2	DIFF LOCK SOLENOID	8,11G
YFN	FAN_PWM_SOL	10,11C
YFR	FAN_REV_SOL_OPT	10,11C
YLS	TC_LOCKUP_VALVE	8,2F
YLV	HEATED VALVE OPT	10,11B
YLV2	HEATED VALVE OPT	10,11B
YLV3	HEATED VALVE OPT	10,10B
YPB	PARK_BRK_SOL	9,3D
YPE	PIN ENGAGE JUMPER	10,9D
YPE1	PIN ENGAGE JUMPER	10,9D
YPE2	PIN_ENGAGE_OPT	10,9D
YPP	PILOT_PRES_SOL	10,2F
YRC	RIDE_CONTROL_OPT	10,8C
YRC_J	RIDE CNTRL_JUMPER	10,8C
YRC_J2	RIDE_CONTROL_OPT	10,7C
YSS	SEC_STRG_SOL	11,9D
S4_S		14,4D

CONNECTOR LIST

3



COLD START

POWER DISTRIBUTION

IGNITION SWITCH

4

ELECTRICAL SCHEMATIC SIDE 1

521F TIER 4 WHEEL LOADER

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