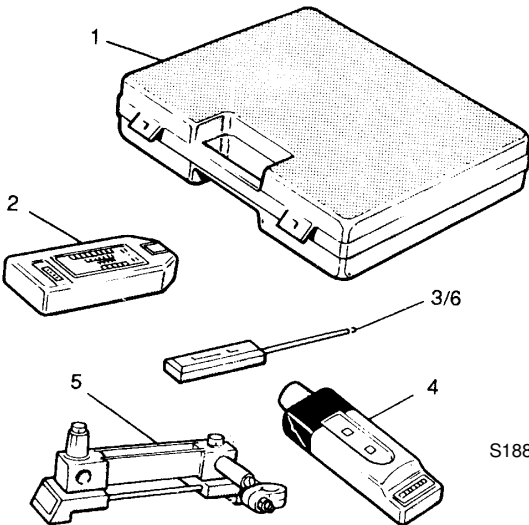


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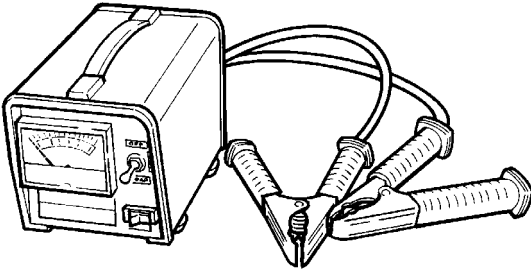
1
2
3/6
4
5

S188231

AVO Test Kit

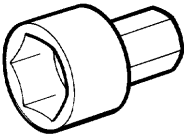
1	892/00283	Tool Kit Case
2	892/00298	Fluke Meter 85
3	892/00286	Surface Temperature Probe
4	892/00284	Venture Microtach Digital Tachometer
5	892/00282	100 amp Shunt - open type
6	892/00285	Hydraulic Temperature Probe

993/85700 Battery Tester



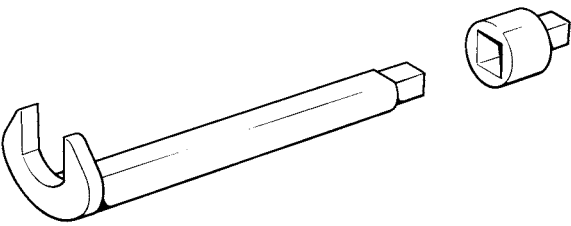
S239510

892/00882 Socket for Alternator Pulley Nut



S216770

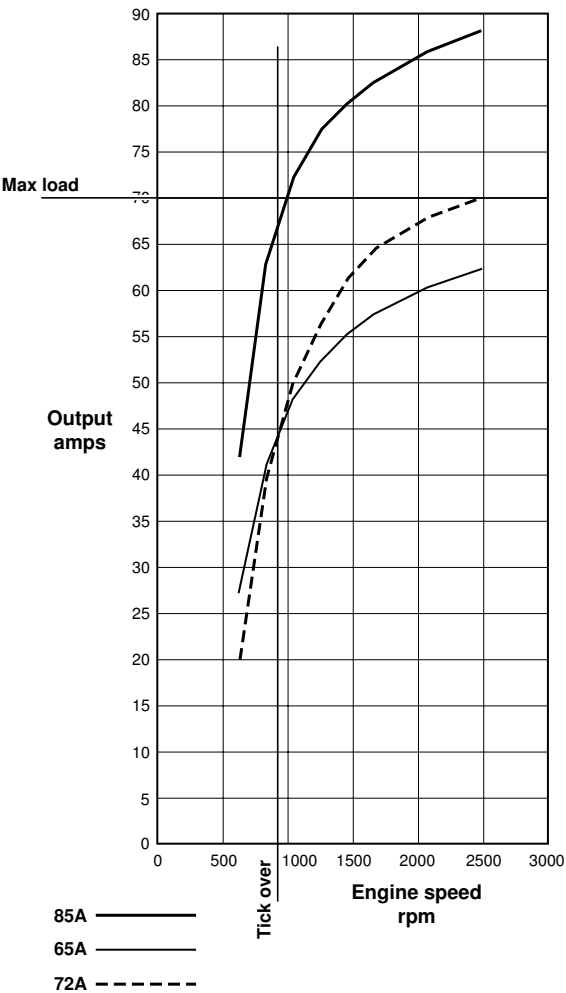
825/00410 15 mm Crowfoot Wrench
825/99833 Adapter



S216200

General Electrical Data

System Type	12 Volt, negative earth
Battery (Heavy Duty)	
- Cold crank amps for 1 minute to 1.4 volts per cell at -18 deg C (0 deg F)	550
- Reserve capacity (minutes) for 25 amp load	220
Battery (Temperate)	
- Cold crank amps for 1 minute to 1.4 volts per cell at -18 deg C (0 deg F)	410
- Reserve capacity (minutes) for 25 amp load	170
Alternator	
2WS	65 Amp nominal output
4WS	72 Amp nominal output
4WS (air conditioning or ServoPlus builds)	85 Amp nominal output



A323770

Fuses and Relays

Fuses

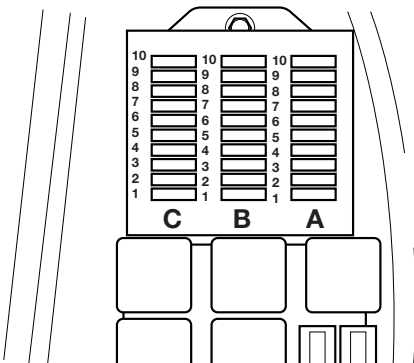


Always replace fuses with ones of correct ampere rating to avoid electrical system damage.

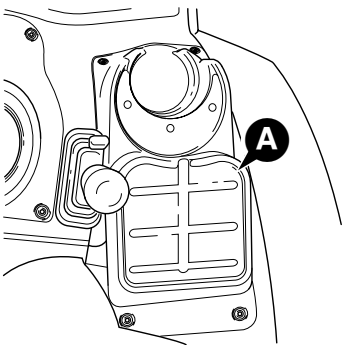
8-3-3-5

The relays and fuses are located in the side console underneath cover **A**.

If a fuse melts, find out why and rectify the fault before fitting a new one. The fuses are identified using column letters (A, B and C) and row numbers (1 to 10). Note that all the fuses are shown (including optional equipment fuses). Your machine may not be equipped with all the fuses shown.



396500



396490

Machines up to serial no. 933756

COLUMN 'A'		Fuse Rating
1	Hydraulic auxiliary	10 Amp
2	Fuel pump solenoid (engine stop)	5 amp
3	Direction indicators	7.5 amp
4	Steer mode proximity switch	7.5 Amp
5	Gearbox control, Transmission	10 Amp
6	Spare	
7	Brake lights	5 Amp
8	4 wheel drive (automatic brakes)	3 Amp
9	Left hand side lights	5 Amp
10	Right hand side lights	5 Amp
COLUMN 'B'		
1	Instruments, Buzzer	5 Amp
2	Front horn, Front washer/wiper	15 Amp
3	Rear horn	7.5 Amp
4	Heated seat, Cigar lighter, Face level fan	15 Amp
5	Rear wiper/wash	10 Amp
6	Brake switch	10 Amp
7	Return to dig enable	5 Amp
8	Rear working lights	25 Amp
9	Headlights	20 Amp
10	Front working lights	25 Amp
COLUMN 'C'		
1	Lights	7.5 Amp
2	Hazard light	15 Amp
3	Beacon, Interior light	10 Amp
4	Radio	5 Amp
5	Thermostart	20 Amp
6	Heater	30 Amp
7	Ignition relay coils	3 Amp
8	Main beam	15 Amp
9	Fog light	3 Amp
10	Dip beam	15 Amp

* Machines from serial no. 933757

COLUMN 'A'		Fuse Rating
1	Hydraulic auxiliary	10 Amp
2	Fuel pump solenoid (engine stop)	5 amp
3	Direction indicators	7.5 amp
4	Steer mode proximity switch	7.5 Amp
5	Transmission	10 Amp
6	Gear select / Forward Reverse	3 Amp
7	Transmission	10 Amp
8	Brake lights	7.5 Amp
9	Left hand side lights	5 Amp
10	Right hand side lights	5 Amp
COLUMN 'B'		
1	Instruments, Buzzer	5 Amp
2	Front horn, Front washer/wiper	15 Amp
3	Rear horn	7.5 Amp
4	Heated seat, Cigar lighter, Face level fan	15 Amp
5	Rear wiper/wash	10 Amp
6	Brake switch	10 Amp
7	Return to dig enable	5 Amp
8	Rear working lights	25 Amp
9	Headlights	20 Amp
10	Front working lights	25 Amp
COLUMN 'C'		
1	Lights	7.5 Amp
2	Hazard light	15 Amp
3	Beacon, Interior light	10 Amp
4	Radio	5 Amp
5	Thermostart	20 Amp
6	Heater	30 Amp
7	Ignition relay coils	3 Amp
8	Main beam	15 Amp
9	Fog light	3 Amp
10	Dip beam	15 Amp

Fuses and Relays

Fuses

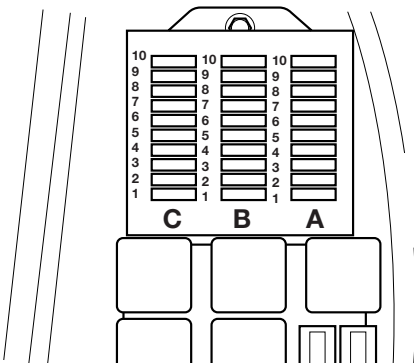


Always replace fuses with ones of correct ampere rating to avoid electrical system damage.

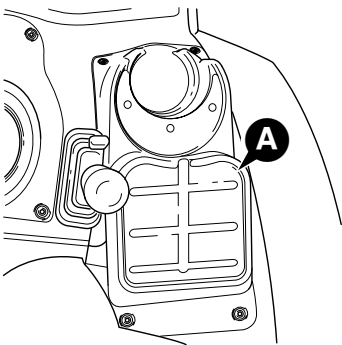
8-3-3-5

The relays and fuses are located in the side console underneath cover **A**.

If a fuse melts, find out why and rectify the fault before fitting a new one. The fuses are identified using column letters (A, B and C) and row numbers (1 to 10). Note that all the fuses are shown (including optional equipment fuses). Your machine may not be equipped with all the fuses shown.



396500



396490

Machines up to serial no. 933756

COLUMN 'A'		Fuse Rating
1	Hydraulic auxiliary	10 Amp
2	Fuel pump solenoid (engine stop)	5 amp
3	Direction indicators	7.5 amp
4	Steer mode proximity switch	7.5 Amp
5	Gearbox control, Transmission	10 Amp
6	Spare	
7	Brake lights	5 Amp
8	4 wheel drive (automatic brakes)	3 Amp
9	Left hand side lights	5 Amp
10	Right hand side lights	5 Amp
COLUMN 'B'		
1	Instruments, Buzzer	5 Amp
2	Front horn, Front washer/wiper	15 Amp
3	Rear horn	7.5 Amp
4	Heated seat, Cigar lighter, Face level fan	15 Amp
5	Rear wiper/wash	10 Amp
6	Brake switch	10 Amp
7	Return to dig enable	5 Amp
8	Rear working lights	25 Amp
9	Headlights	20 Amp
10	Front working lights	25 Amp
COLUMN 'C'		
1	Lights	7.5 Amp
2	Hazard light	15 Amp
3	Beacon, Interior light	10 Amp
4	Radio	5 Amp
5	Thermostart	20 Amp
6	Heater	30 Amp
7	Ignition relay coils	3 Amp
8	Main beam	15 Amp
9	Fog light	3 Amp
10	Dip beam	15 Amp

* Machines from serial no. 933757

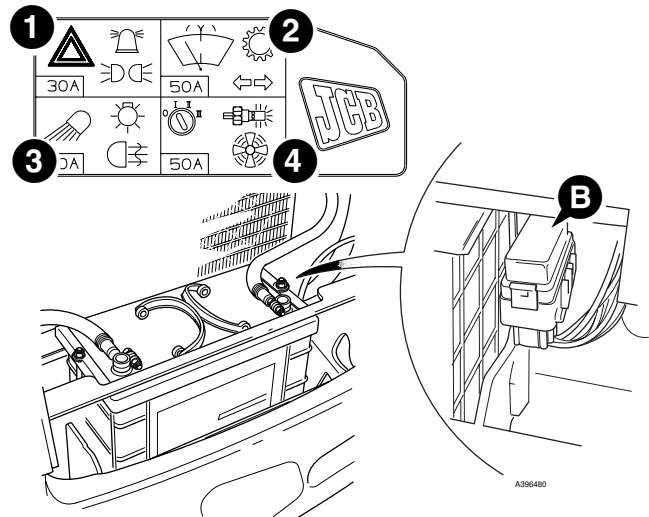
COLUMN 'A'		Fuse Rating
1	Hydraulic auxiliary	10 Amp
2	Fuel pump solenoid (engine stop)	5 amp
3	Direction indicators	7.5 amp
4	Steer mode proximity switch	7.5 Amp
5	Transmission ECU 1	10 Amp
6	Gear select / Forward Reverse	3 Amp
7	Transmission ECU 2	10 Amp
8	Brake lights	7.5 Amp
9	Left hand side lights	5 Amp
10	Right hand side lights	5 Amp
COLUMN 'B'		
1	Instruments, Buzzer	5 Amp
2	Front horn, Front washer/wiper	15 Amp
3	Rear horn	7.5 Amp
4	Heated seat, Cigar lighter, Face level fan	15 Amp
5	Rear wiper/wash	10 Amp
6	Brake switch	10 Amp
7	Return to dig enable	5 Amp
8	Rear working lights	25 Amp
9	Headlights	20 Amp
10	Front working lights	25 Amp
COLUMN 'C'		
1	Lights	7.5 Amp
2	Hazard light	15 Amp
3	Beacon, Interior light	10 Amp
4	Radio	5 Amp
5	Thermostart	20 Amp
6	Heater	30 Amp
7	Ignition relay coils	3 Amp
8	Main beam	15 Amp
9	Fog light	3 Amp
10	Dip beam	15 Amp

Fuses and Relays (continued)

Link Box Fuses

To further protect the machine wiring harnesses and electrical circuits, a fuse link box is fitted to the battery, as shown at **B**. Remember to check the main circuit fuses as well as the link box fuses shown on this page.

- | | | |
|---|---------------------------------------|--------|
| 1 | Hazard warning lights, Beacon, Lights | 30 Amp |
| 2 | Wash/Wipe, Transmission, Indicators | 50 Amp |
| 3 | Work lights, Fog Lights, Brake lights | 50 Amp |
| 4 | Ignition, Heater, Thermostart | 50 Amp |



Relays

4 speed Powershift / Synchro Shuttle

The relays listed below are located in the side console underneath cover **A**.

- | | |
|------|---|
| 1 | Ignition 1 |
| 2 | Hammer |
| 3 | Auxiliary (jaw bucket) |
| 4 | Main lights |
| 5 | Engine run |
| 6 | Hydraulic speed control (HSC) |
| * 7 | Buzzer (from serial no. 933757 only) |
| 8 | Buzzer |
| 9 | Ignition 2 |
| 10 | Front working lights |
| 11 | Rear working lights |
| 12 | Direction indicator |
| 13 | Neutral start |
| * 14 | Rear horn |
| * 15 | Parking brake warning light |
| 16 | Air conditioning compressor |
| * 17 | Parking brake (from serial no. 933757 only) |

6 speed Powershift (Shiftmaster)

The relays listed below are located in the side console underneath cover **A**.

- | | |
|------|-------------------------------|
| 1 | Ignition 1 |
| 2 | Hammer |
| 3 | Auxiliary (jaw bucket) |
| 4 | Main lights |
| 5 | Engine run |
| 6 | Hydraulic speed control (HSC) |
| * 7 | Buzzer |
| 8 | Buzzer |
| 9 | Ignition 2 |
| 10 | Front working lights |
| 11 | Rear working lights |
| 12 | Direction indicator |
| 13 | Neutral start |
| * 14 | Rear horn |
| * 15 | Parking brake warning light |
| 16 | Air conditioning compressor |
| * 17 | Parking brake |

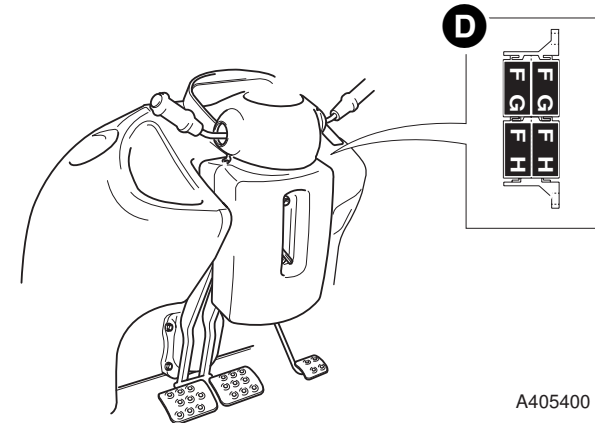
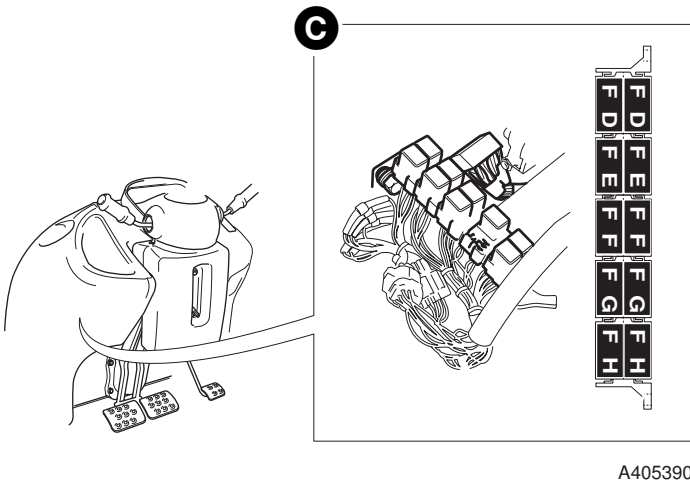
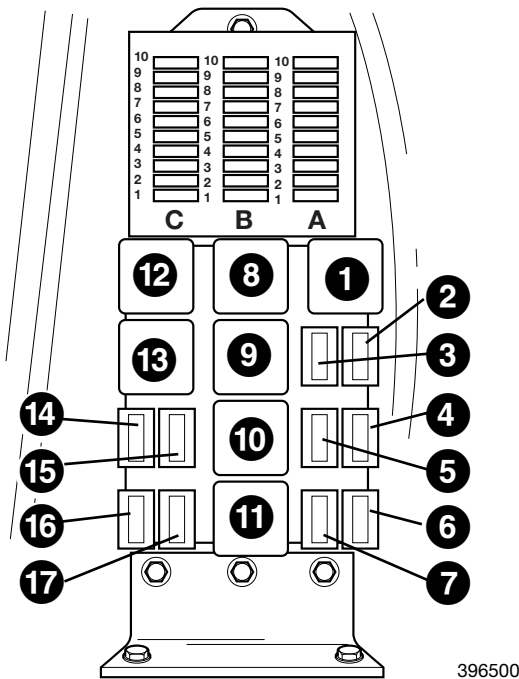
The relays listed below are located in the front console as shown at **C**.

- | | |
|------------|-------------------|
| FD1 | Forward HI/LO |
| FD2 | Forward |
| FE1 | Reverse HI/LO |
| FE2 | Reverse |
| FF1 | Interlock |
| FF2 | Drive |
| FG1 | Blank |
| FG2 | Transmission dump |
| FH1 | Auto 2WD |
| FH2 | 4WB |

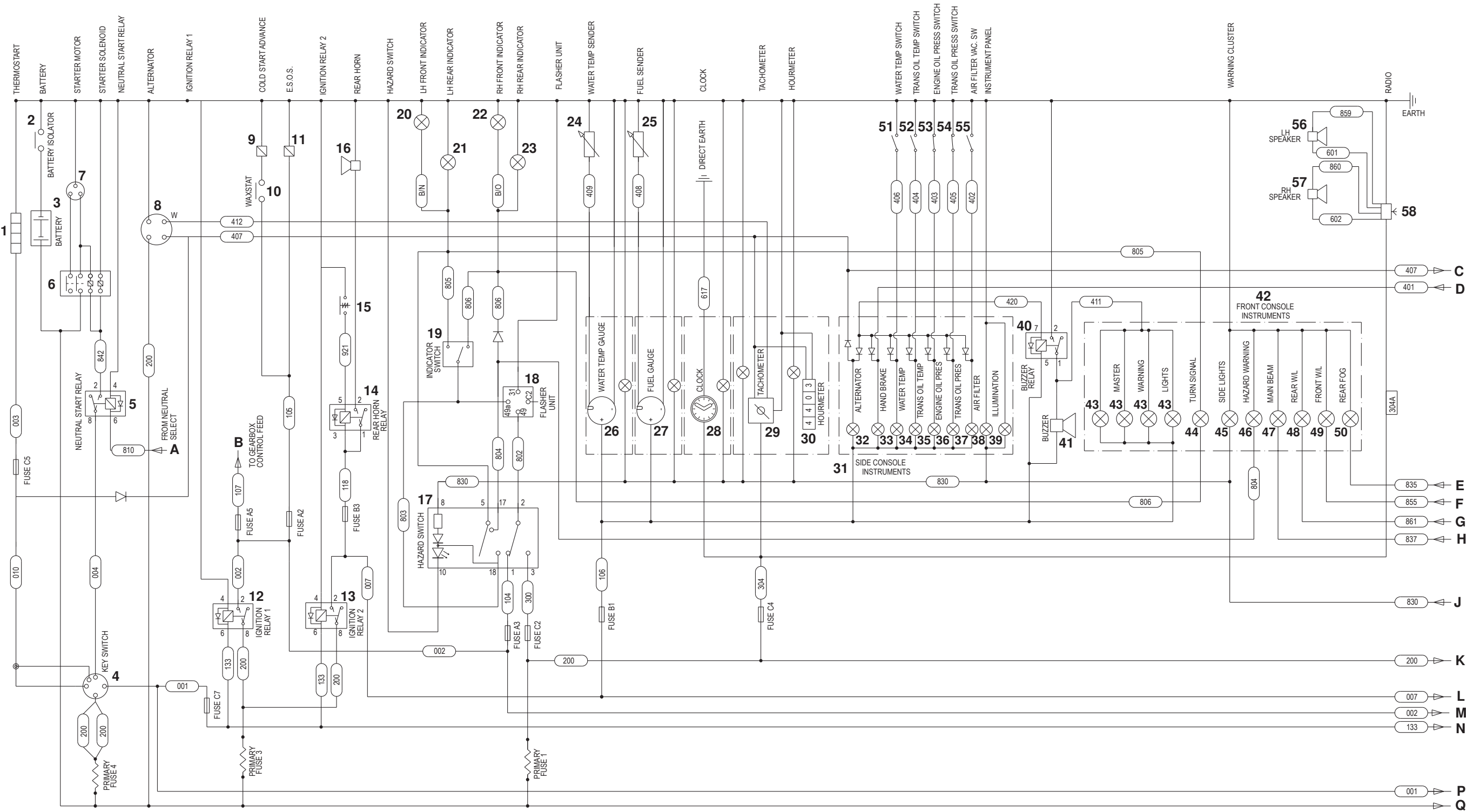
The relays listed below are located in the front console as shown at **D**.

- | | |
|------------|-------------------|
| FG1 | Reverse Alarm |
| FG2 | Transmission dump |
| FH1 | 2WB |
| FH2 | Brake lights |

Note: Relay base positions may vary from those shown at **D**. Compare wire numbers on the relevant front consloe harness drawing to confirm relay identification



Circuit Schematic - Basic Machine



A409180

852/30241sht1 Iss1

Circuit Schematic - Basic Machine

Refer to pages C/4-1 and C/4-4.

The basic circuit shows a standard machine. The remaining pages in section C/4 show machine circuits that differ from the 'basic'. Note that ONLY the differences are shown.

* Main Components:

- 1 Thermostart
- 2 Battery Isolator
- 3 Battery
- 4 Starter Switch
- 5 Neutral Start Relay
- 6 Starter Solenoid
- 7 Starter Motor
- 8 Alternator
- 9 Cold Start Advance Solenoid
- 10 Cold Start Advance Switch
- 11 Engine Shut-Off Solenoid (ESOS)
- 12 Ignition Relay '1'
- 13 Ignition Relay '2'
- 14 Rear Horn Relay
- 15 Rear Horn Switch
- 16 Rear Horn
- 17 Hazard Warning Switch
- 18 Indicator Flasher Unit
- 19 Direction Indicator Switch
- 20 LH Front Indicator
- 21 LH Rear Indicator
- 22 RH Front Indicator
- 23 RH Rear Indicator
- 24 Engine Coolant Temperature Sender
- 25 Fuel Gauge Sender
- 26 Engine Coolant Temperature Gauge
- 27 Fuel Gauge
- 28 Clock
- 29 Tachometer
- 30 Hourmeter
- 31 Side Instrument Console
- 32 Alternator Warning Indicator Light
- 33 Parking Brake Indicator Light
- 34 Engine Coolant Temperature Indicator Light
- 35 Transmission Oil Temperature Indicator Light
- 36 Engine Oil Pressure Indicator Light
- 37 Transmission Oil Pressure Indicator Light
- 38 Air Filter Blocked Indicator Light
- 39 Panel Illumination
- 40 Warning Buzzer Relay
- 41 Warning Buzzer
- 42 Front Instrument Console
- 43 Master Warning Lights
- 44 Turn Signal Indicator
- 45 Side Lights Indicator
- 46 Hazard Warning Indicator
- 47 Main Beam Warning Indicator Light
- 48 Rear Working Light Indicator
- 49 Front Working Light Indicator
- 50 Rear Fog Light Indicator

- 51 Engine Coolant Temperature Switch
- 52 Transmission Oil Temperature Switch
- 53 Engine Oil Pressure Switch
- 54 Transmission Oil Pressure Switch
- 55 Air Filter Restriction Switch
- 56 LH Speaker
- 57 RH Speaker
- 58 Radio (if fitted)

* Connections:

- A From **A** on page C/4-5 and C/4-13 as applicable
- B To **B** on page C/4-5
- C To **C** on page C/4-4
- D From **D** on page C/4-5 and C/4-13 as applicable
- E From **E** on page C/4-4
- F From **F** on page C/4-4
- G From **G** on page C/4-4
- H From **H** on page C/4-4
- J From **J** on page C/4-4
- K To **K** on page C/4-4
- L To **L** on page C/4-4 and C/4-8, and C/4-13 as applicable
- M To **M** on page C/4-8 and C/4-13 as applicable
- N To **N** on page C/4-4
- P To **P** on page C/4-4
- Q To **Q** on page C/4-4

Circuit Schematic - Basic Machine (cont'd)*** Main Components:**

- 59 Cigar Lighter
- 60 Face Level Fan
- 61 Face Level Fan Switch
- 62 Heated Seat
- 63 Heated Seat Switch
- 64 Rear Washer/Wiper Switch
- 65 Rear Wiper Motor
- 66 Rear Washer Motor
- 67 Front Washer/Wiper Switch
- 68 Front Washer Motor
- 69 Front Wiper Intermittent Electronic Control Unit
- 70 Front Wiper Motor
- 71 Head Light Flasher Switch
- 72 Front Horn Switch
- 73 Front Horn
- 74 Rear Fog Light Switch
- 75 Rear Fog Light
- 76 Removed For Territories - Italy, Germany
- 77 Fitted For Territories - Italy, Germany
- 78 Road Lights Relay
- 79 Road Lights Switch
- 80 Head Light Dip Switch
- 81 LH Main Beam Light
- 82 RH Main Beam Light
- 83 LH Dip Beam Light
- 84 RH Dip Beam Light
- 85 LH Tail Light
- 86 LH Side Light
- 87 Socket (Dipper Light)
- 88 Number Plate Light
- 89 RH Tail Light
- 90 RH Side Light
- 91 Engine Running Relay
- 92 Front Working Lights Relay
- 93 Rear Working Lights Relay
- 94 Front Working Lights Switch
- 95 Rear Working Lights Switch
- 96 Front Working Lights
- 97 Rear Working Lights
- 98 Cab Interior Light/Switch
- 99 Beacon Switch
- 100 Beacon
- 101 Heater Switch
- 102 Heater Motor
- 103 Heater Resistor
- 104 Air Conditioning Pressure Switches
- 105 Air Conditioning Compressor Solenoid

*** Connections:**

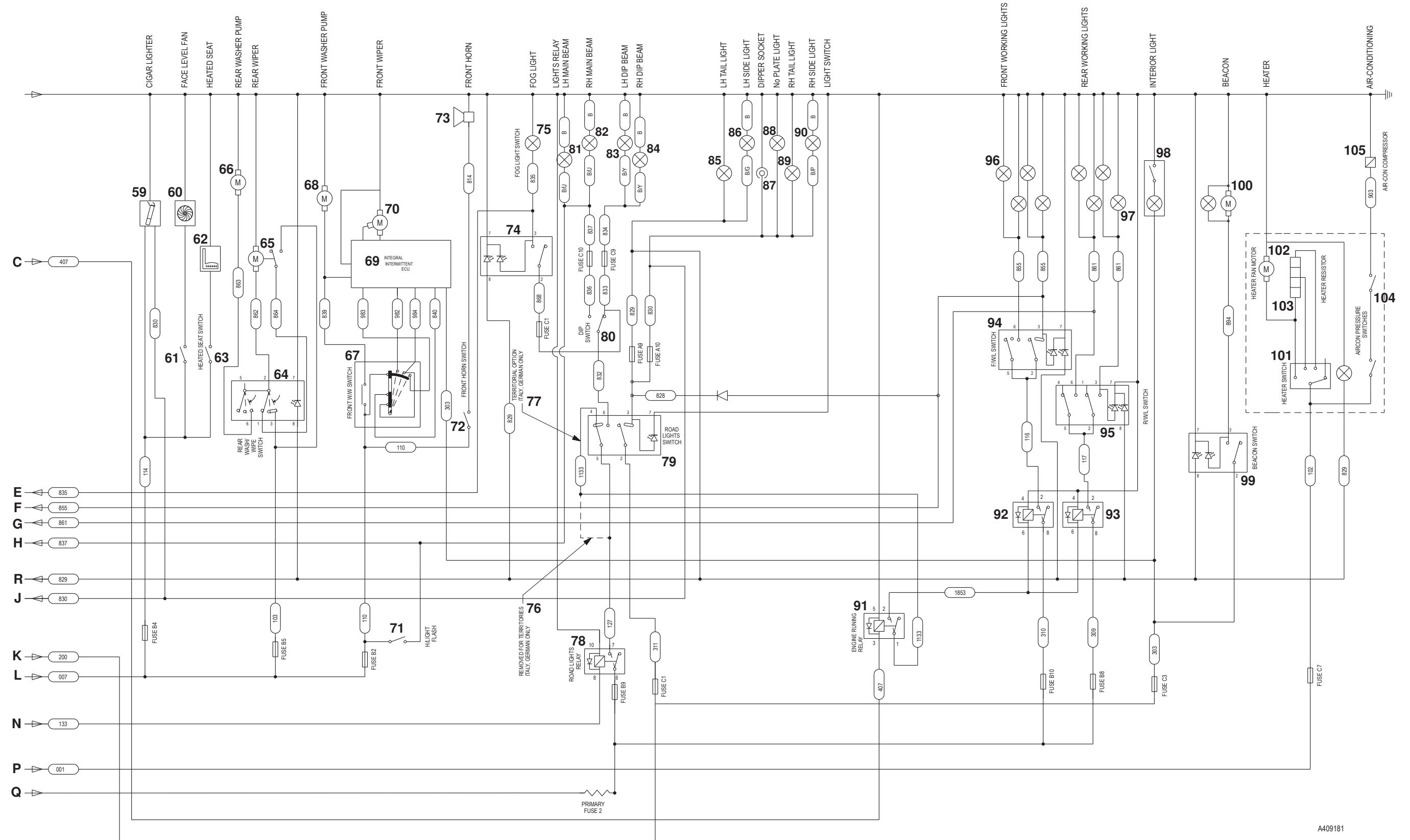
- C From **C** on page C/4-1
- E To **E** on page C/4-1
- F To **F** on page C/4-1
- G To **G** on page C/4-1
- H To **H** on page C/4-1
- J To **J** on page C/4-1 and C/4-9
- K From **K** on page C/4-1
- L From **L** on page C/4-1
- N From **N** on page C/4-1
- P From **P** on page C/4-1
- Q From **Q** on page C/4-1
- R To **R** on page C/4-9

Fuses:

- A1 - A10
- B1 - B10
- C1 - C10

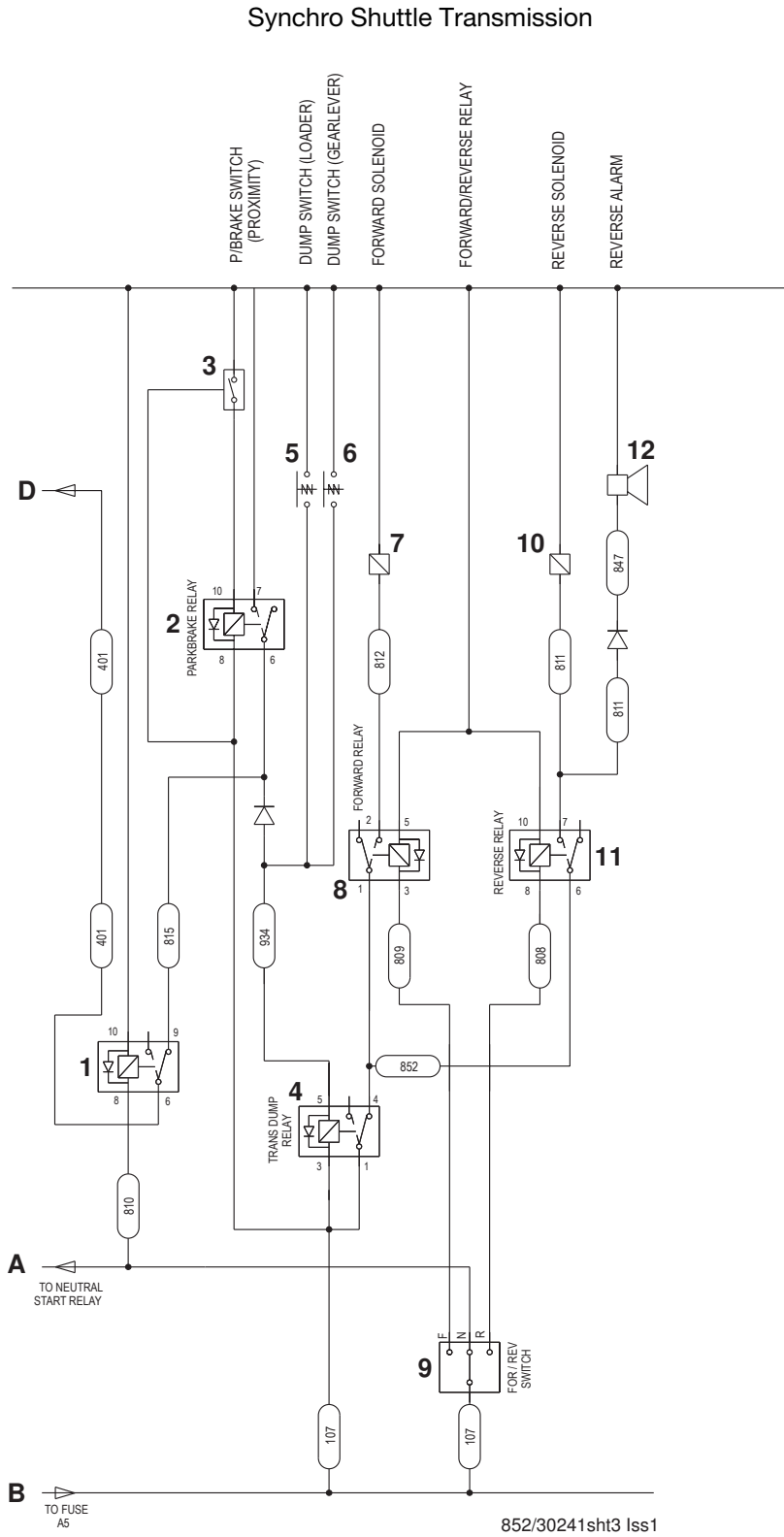
Refer to Technical Data pages at the beginning of Section C for further fuse details and ratings.

Circuit Schematic - Basic Machine (cont'd)



A409181
852/30241sht2 lss1

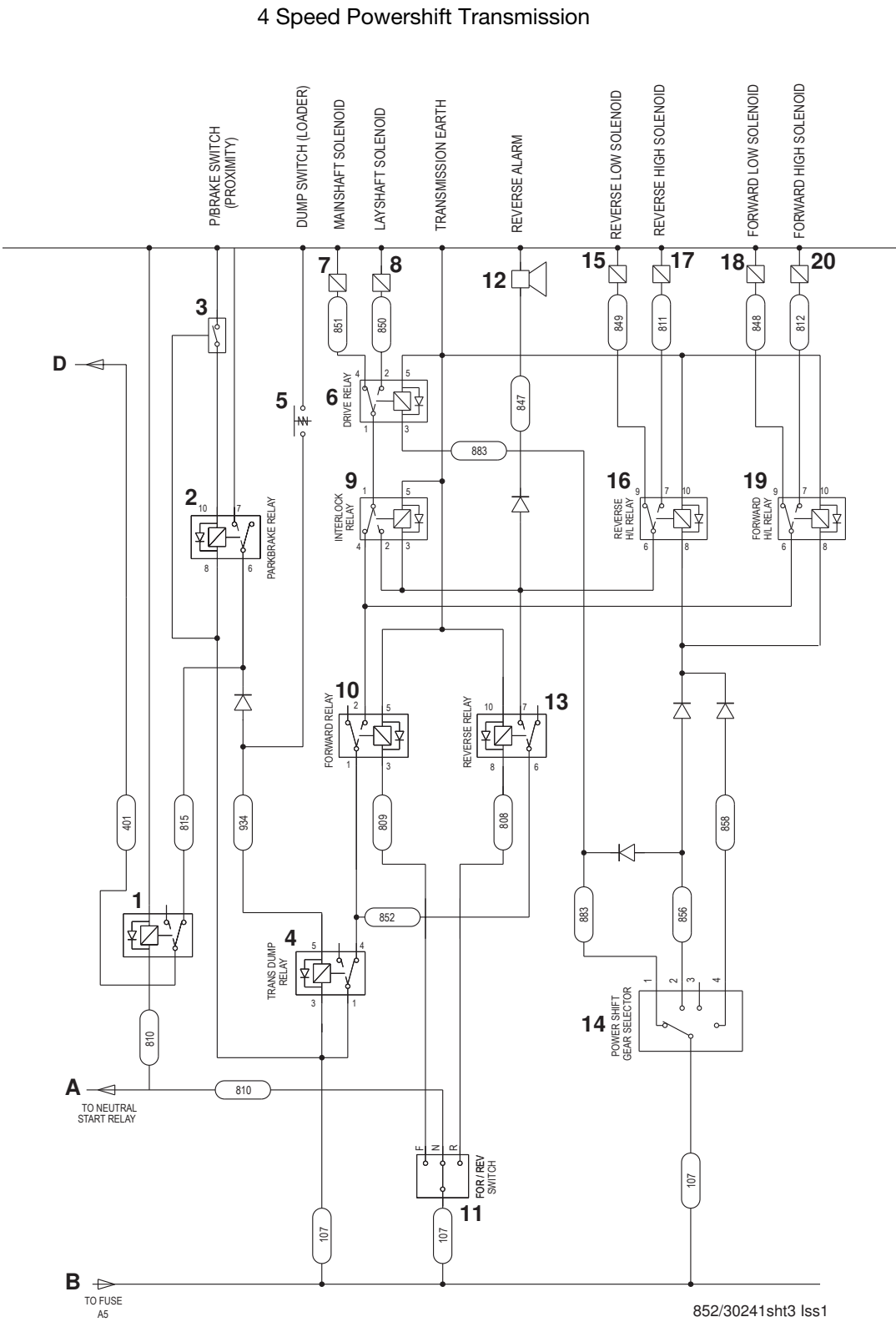
Circuit Schematic - Synchro Shuttle



A409182

Circuit Schematic - Powershift

Note: For further details on Powershift gearbox electrical circuits and connections, refer to **Section F - Electrical Connections**.



A409182

Circuit Schematic - Synchro Shuttle and Powershift

* Synchro Shuttle Transmission

- 1 Parking Brake Warning Light Relay
- 2 Parking Brake Relay
- 3 Parking Brake Switch
- 4 Transmission Dump Relay
- 5 Transmission Dump Switch on Loader Lever
- 6 Transmission Dump Switch on Gear Lever
- 7 Forward Solenoid
- 8 Forward Relay
- 9 Forward/Reverse Selector Lever
- 10 Reverse Solenoid
- 11 Reverse Relay
- 12 Reverse Alarm

Connections:

- A To **A** on page C/4-1
- B From **B** on page C/4-1
- D To **D** on page C/4-1

* 4 Speed Powershift Transmission

- 1 Parking Brake Warning Light Relay
- 2 Parking Brake Relay
- 3 Parking Brake Switch
- 4 Transmission Dump Relay
- 5 Transmission Dump Switch on Loader Lever
- 6 Drive Relay
- 7 Mainshaft Solenoid
- 8 Layshaft Solenoid
- 9 Interlock Relay
- 10 Forward Relay
- 11 Forward/Reverse Selector Lever
- 12 Reverse Alarm
- 13 Reverse Relay
- 14 Gear Selector Switch
- 15 Reverse Low Solenoid
- 16 Reverse High/Low Relay
- 17 Reverse High Solenoid
- 18 Forward Low Solenoid
- 19 Forward High/Low Relay
- 20 Forward High Solenoid

Connections:

- A To **A** on page C/4-1
- B From **B** on page C/4-1
- D To **D** on page C/4-1

Circuit Schematics - Options

Steer Mode - 4CX and 3CX Super (4x4x4)

- 1 Front Axle Proximity Switch
- 2 Rear Axle Proximity Switch
- 3 Steer Mode Selector Switch
- 4 Steer Mode Printed Circuit Board
- 5 Crab Relay
- 6 Crab/4 Wheel Steer Relay
- 7 2 Wheel Steer Relay
- 8 4 Wheel Steer Relay
- 9 4 Wheel Steer/Crab Mode Selector (part of 4)
- 10 2 Wheel Steer/4 Wheel Steer Mode Selector (part of 4)
- 11 Crab/4 Wheel Steer Solenoid
- 12 4 Wheel Steer Solenoid
- 13 4 Wheel Steer Indicator Light
- 14 Crab Solenoid
- 15 Crab Indicator Light
- 16 2 Wheel Steer Solenoid
- 17 2 Wheel Steer Indicator Light (Side Console)
- 18 2 Wheel Steer Indicator Light (Front Console)

* Connections:

- L From **L** on page C/4-1
M From **M** on page C/4-1

* 2 Wheel Steer/Brake Mode

- 1 LH Brake Light
- 2 RH Brake Light
- 3 Brake Light Switch
- 4 4 Wheel Braking Relay
- 5 Brake Mode Selector Switch
- 6 4 Wheel Drive/4 Wheel Braking Solenoid
- 7 Auto 2 Wheel Drive Relay

Connections:

- S From **14** on page C/4-5 and **9** on C/4-13 as applicable

* 2 Wheel Steer/Brake Mode (Germany)

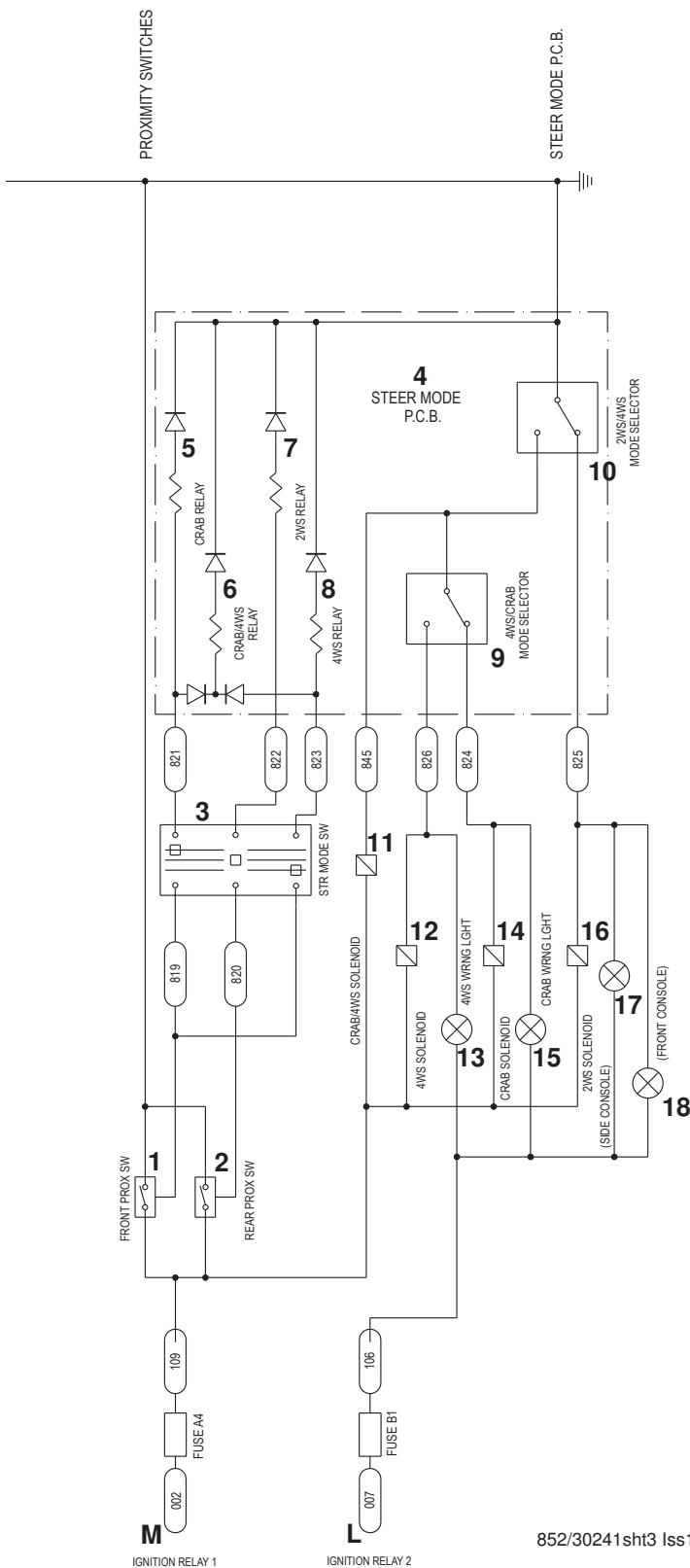
- 1 LH Brake Light
- 2 RH Brake Light
- 3 Brake Light Switch
- 4 4 Wheel Braking Relay
- 5 2 Wheel Drive Solenoid
- 6 Brake Mode Selector Switch
- 7 Auto 2 Wheel Drive Relay

Connections:

- S From **14** on page C/4-5 and **9** on C/4-13 as applicable

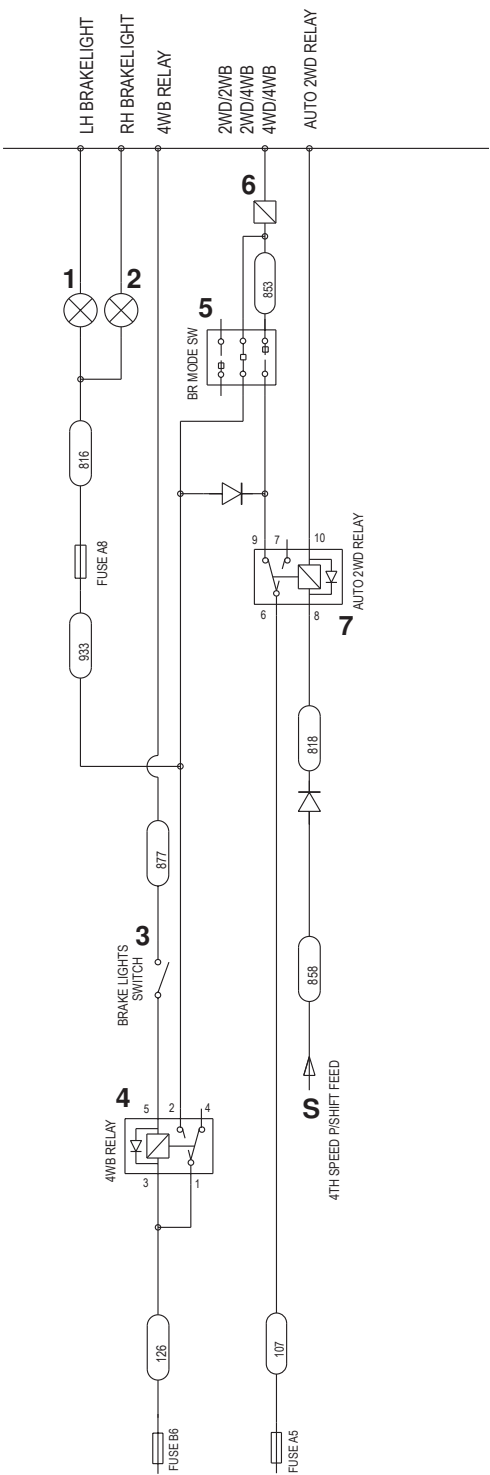
Circuit Schematics - Options

Steer Mode - 4CX and 3CX Super (4x4x4)



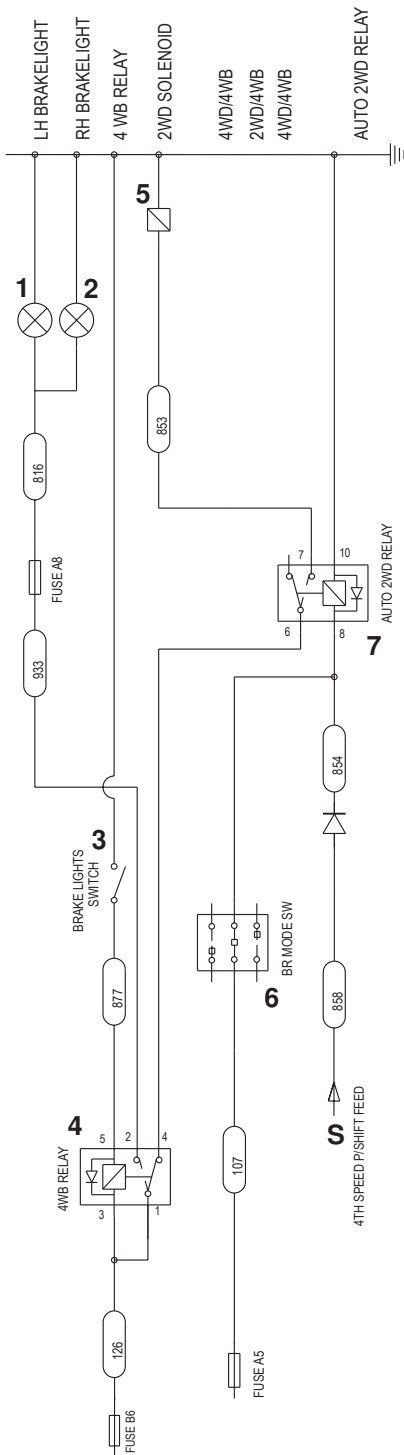
A409182

2 Wheel Steer/Brake Mode



A409183

2 Wheel Steer/Brake Mode (Germany)



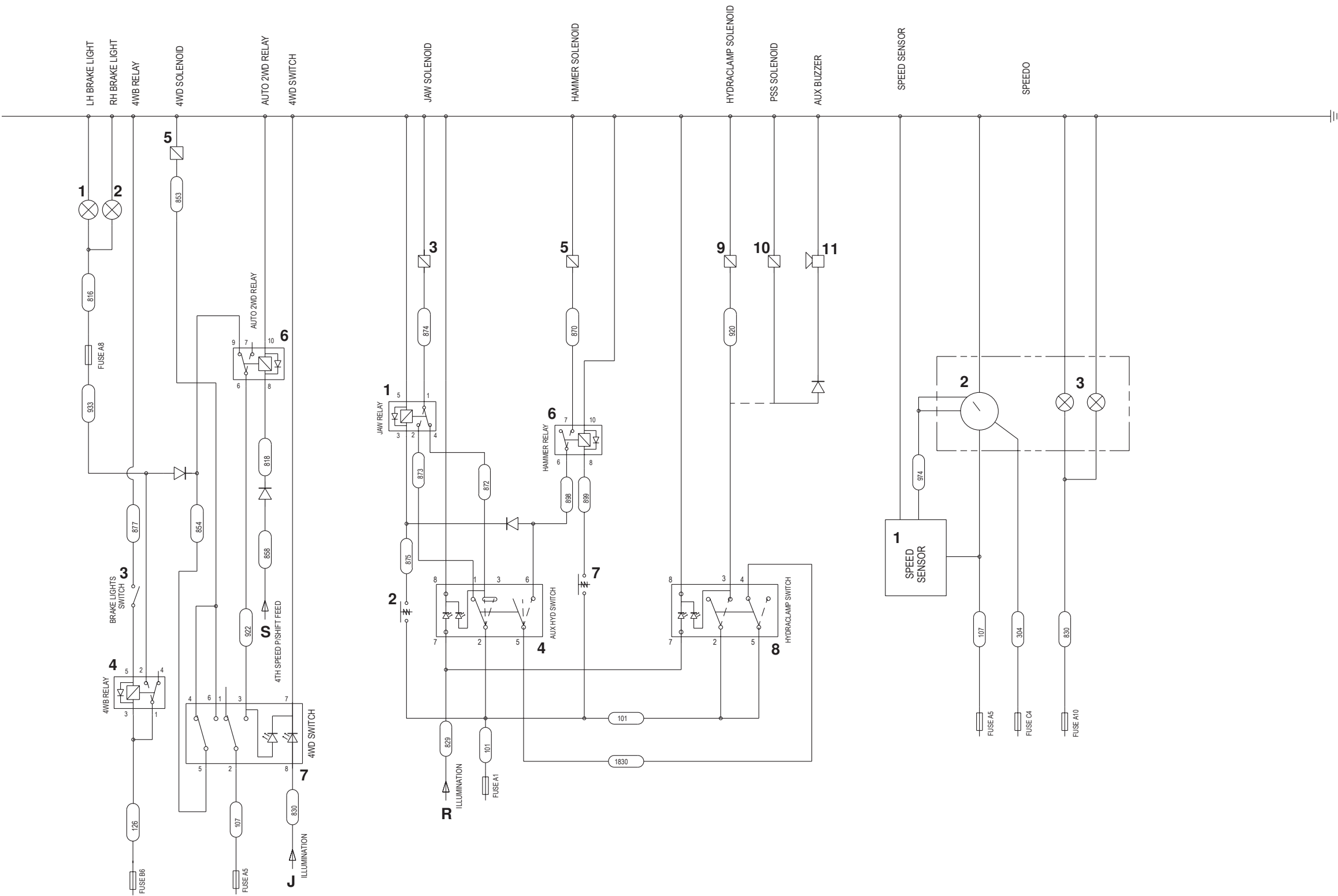
A409185

Circuit Schematics - Options

All Wheel Steer/Brake Mode

Auxiliary and Hydraclamp Hydraulics

Speedometer



A409183
852/30241sht4 Iss1

Circuit Schematics - Options

* All Wheel Steer/Brake Mode

- 1 LH Brake Light
- 2 RH Brake Light
- 3 Brake Light Switch
- 4 4 Wheel Braking Relay
- 5 4 Wheel Drive Solenoid
- 6 Auto 2 Wheel Drive Relay
- 7 4 Wheel Drive Selector Switch

Connections:

- J From **J** on page C/4-4
- S From **14** on page C/4-5 and **9** on C/4-13 as applicable

Auxiliary and Hydraclamp Hydraulics

- 1 Jaw Relay
- 2 Push-Button Switch on Excavator Lever
- 3 Jaw Solenoid
- 4 Auxiliary Hydraulics Selector Switch
- 5 Hammer Solenoid
- 6 Hammer Relay
- 7 Footpedal Switch
- 8 Hydra-clamp Selector Switch
- 9 Hydra-clamp Solenoid
- 10 Power Sideshift Solenoid (if fitted)
- 11 Warning Buzzer

Connections:

- R From **R** on page C/4-4

Speedometer Option

- 1 Speed Sensor
- 2 Speedometer
- 3 Illumination

Circuit Schematics - Options*** Hand Held Tools**

- 1 Selector Switch
- 2 Indicator Lamp
- 3 Roadbreaker Solenoid

*** Dedicated Quickhitch**

- 1 Hitch Enable Switch
- 2 Quick-Hitch Relay
- 3 Warning Buzzer
- 4 Lever 'hold-in' Button
- 5 Lever 'hold-in' Button
- 6 Quick-Hitch Solenoid

*** Pole Planter**

- 1 Selector Switch
- 2 Grab Solenoid
- 3 Rotation Solenoid

*** Smooth Ride System (SRS)**

- 1 Accumulator Solenoids
- 2 Hose Burst Control Valve Relay (if fitted)
- 3 Selector Switch
- 4 Hose Burst Control Valve Solenoids (if fitted)

*** Return to Dig (Shovel Reset)**

- 5 Lever 'hold-in' Solenoid
- 6 Ram Proximity Switch
- 7 Selector Switch

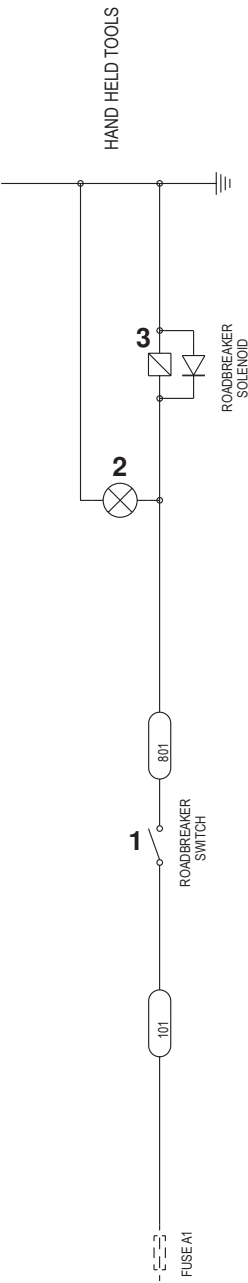
*** Hydraulic Speed Control (HSC)**

- 1 Selector Switch
- 2 HSC Solenoid
- 3 HSC Relay
- 4 Control Lever Push-Button

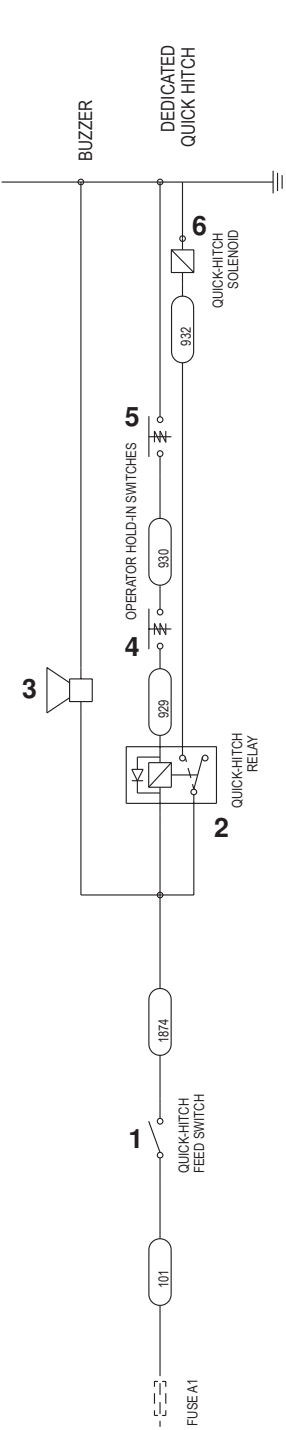
Connections:

- S From **14** on page C/4-5 and **9** on C/4-13 as applicable

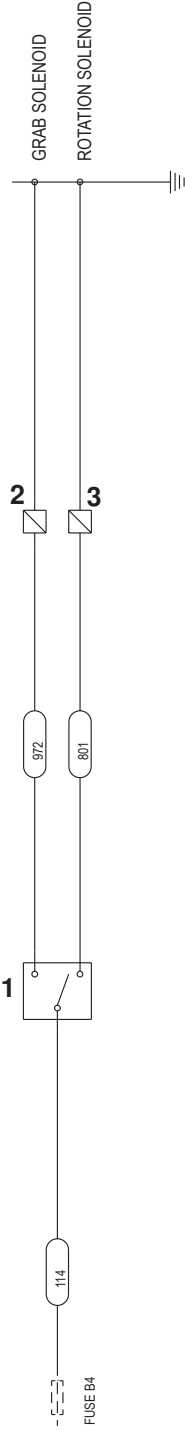
Circuit Schematics - Options



Hand Held Tools

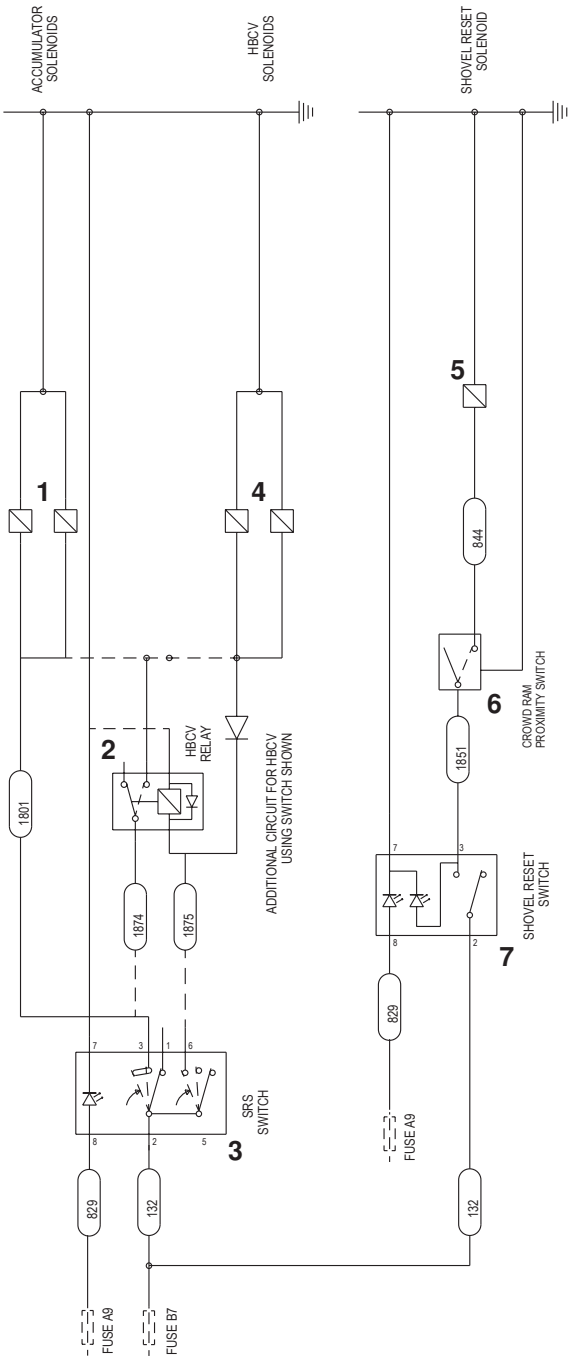


Dedicated Quick-Hitch

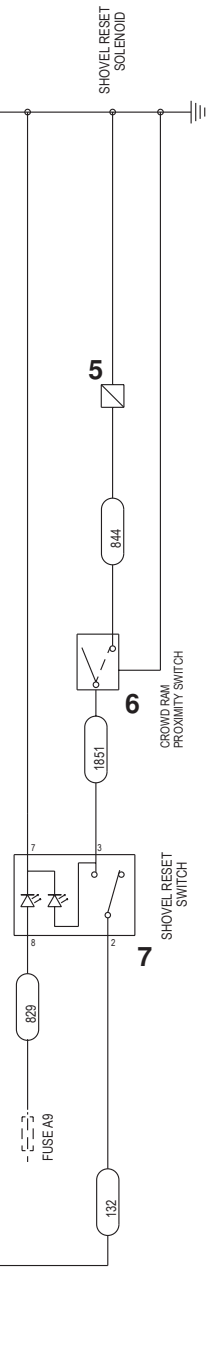


Pole Planter

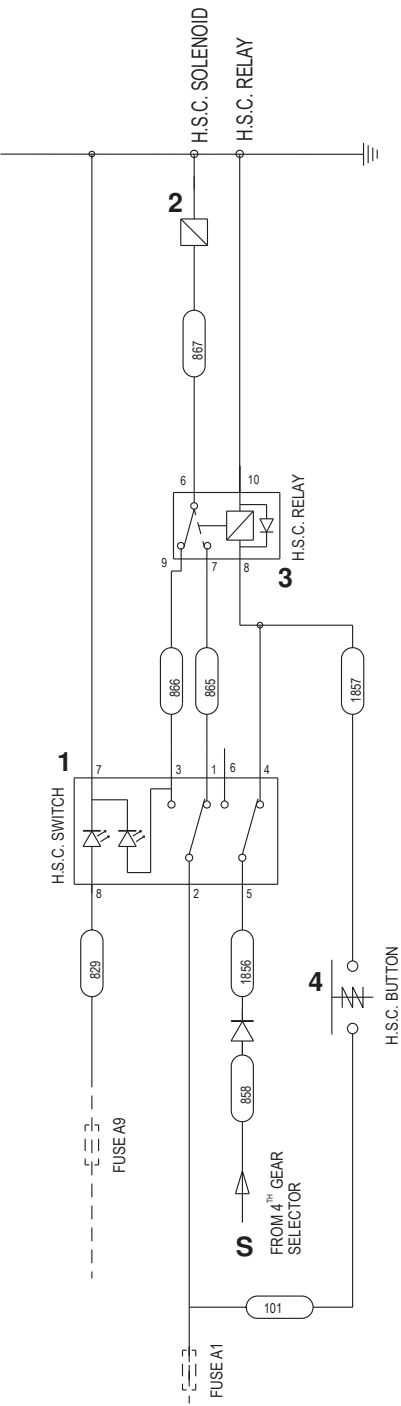
A409185
852/30241sht6 Iss1



Smooth Ride System (SRS)



Return To Dig (Shovel Reset)

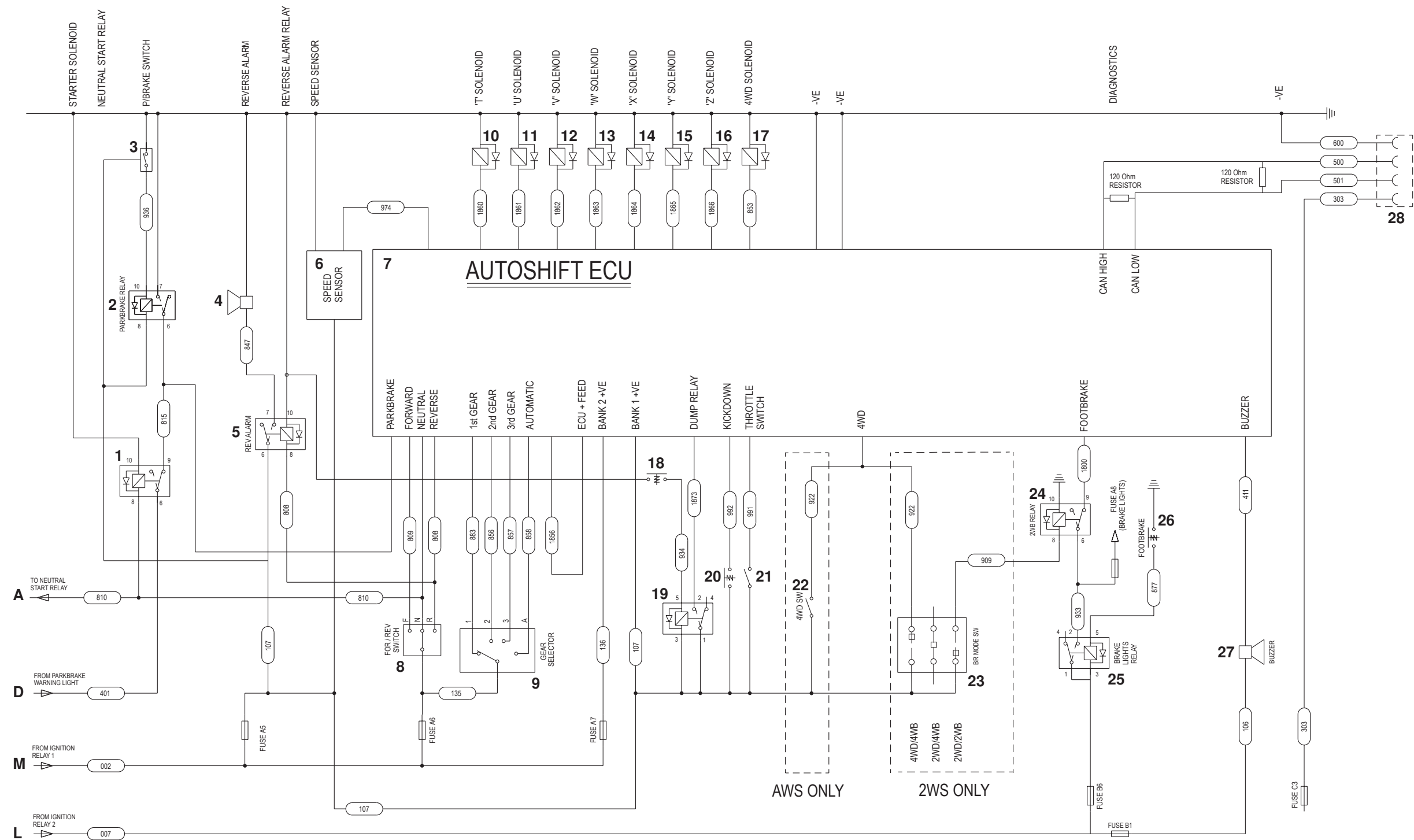


Hydraulic Speed Control (HSC)

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Circuit Schematics - 6 Speed Powershift (Shiftmaster)

Note: For further details on Powershift gearbox electrical circuits and connections, refer to **Section F - Electrical Connections**.



A409184

852/30241sht5 Iss1

*** Circuit Schematic**
- 6 Speed Powershift (Shiftmaster)

6 Speed Powershift Transmission

- 1 Parking Brake Warning Light Relay
- 2 Parking Brake Relay
- 3 Parking Brake Switch
- 4 Reverse Alarm
- 5 Reverse Alarm Relay
- 6 Speed Sensor
- 7 Electronic Control Unit
- 8 Forward/Reverse Selector Lever
- 9 Gear Selector Switch
- 10 Solenoid 'T'
- 11 Solenoid 'U'
- 12 Solenoid 'V'
- 13 Solenoid 'W'
- 14 Solenoid 'X'
- 15 Solenoid 'Y'
- 16 Solenoid 'Z'
- 17 4 Wheel Drive Solenoid
- 18 Transmission Dump Switch
- 19 Transmission Dump Relay
- 20 Kick-down Switch
- 21 Throttle Switch
- 22 4 Wheel Drive Switch
- 23 Brake Mode Selector Switch
- 24 2 Wheel Braking Relay
- 25 Brake Lights Relay
- 26 Footbrake Switch
- 27 Warning Buzzer
- 28 Diagnostics Connector

Connections:

- A To **A** on page C/4-1
D To **D** on page C/4-1
M From **M** on page C/4-1
L From **L** on page C/4-1

Circuit Schematic - 214e Machines

Refer to pages C/4-16 and C/4-17.

Main Components:

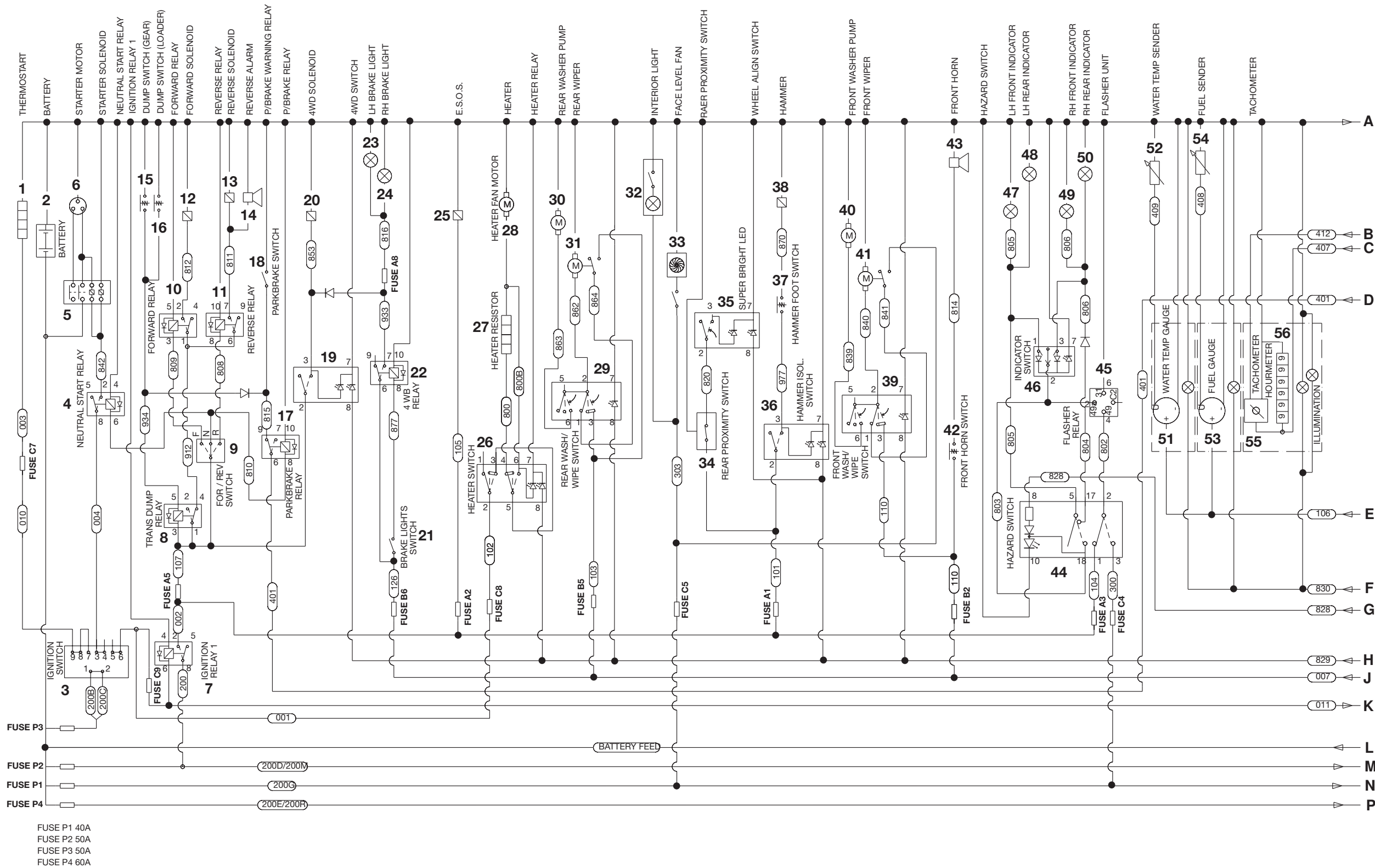
- 1 Thermostart
- 2 Battery
- 3 Starter Switch
- 4 Neutral Start Relay
- 5 Starter Solenoid
- 6 Starter Motor
- 7 Ignition Relay '1'
- 8 Transmission Dump Relay
- 9 Forward/Reverse Selector Lever
- 10 Forward Relay
- 11 Reverse Relay
- 12 Forward Solenoid
- 13 Reverse Solenoid
- 14 Reverse Alarm
- 15 Transmission Dump Switch on Gear Lever
- 16 Transmission Dump Switch on Loader Lever
- 17 Parking Brake Relay
- 18 Parking Brake Switch
- 19 4 Wheel Drive Selector Switch
- 20 4 Wheel Drive Solenoid
- 21 Brake Light Switch
- 22 4 Wheel Braking Relay
- 23 LH Brake Light
- 24 RH Brake Light
- 25 Engine Shut-Off Solenoid (ESOS)
- 26 Heater Switch
- 27 Heater Resistor
- 28 Heater Fan Motor
- 29 Rear Washer/Wiper Switch
- 30 Rear Washer Motor
- 31 Rear Wiper Motor
- 32 Cab Interior Light/Switch
- 33 Face Level Fan/Switch
- 34 Rear Proximity Switch
- 35 Wheel Align Switch
- 36 Hammer Isolaton Switch
- 37 Hammer Foot Switch
- 38 Hammer Solenoid
- 39 Front Washer/Wiper Switch
- 40 Front Washer Motor
- 41 Front Wiper Motor
- 42 Front Horn Switch
- 43 Front Horn
- 44 Hazard Warning Switch
- 45 Indicator Flasher Unit
- 46 Direction Indicator Switch
- 47 LH Front Indicator
- 48 LH Rear Indicator
- 49 RH Front Indicator
- 50 RH Rear Indicator

- 51 Engine Coolant Temperature Gauge
- 52 Engine Coolant Temperature Sender
- 53 Fuel Gauge
- 54 Fuel Gauge Sender
- 55 Tachometer
- 56 Hourmeter

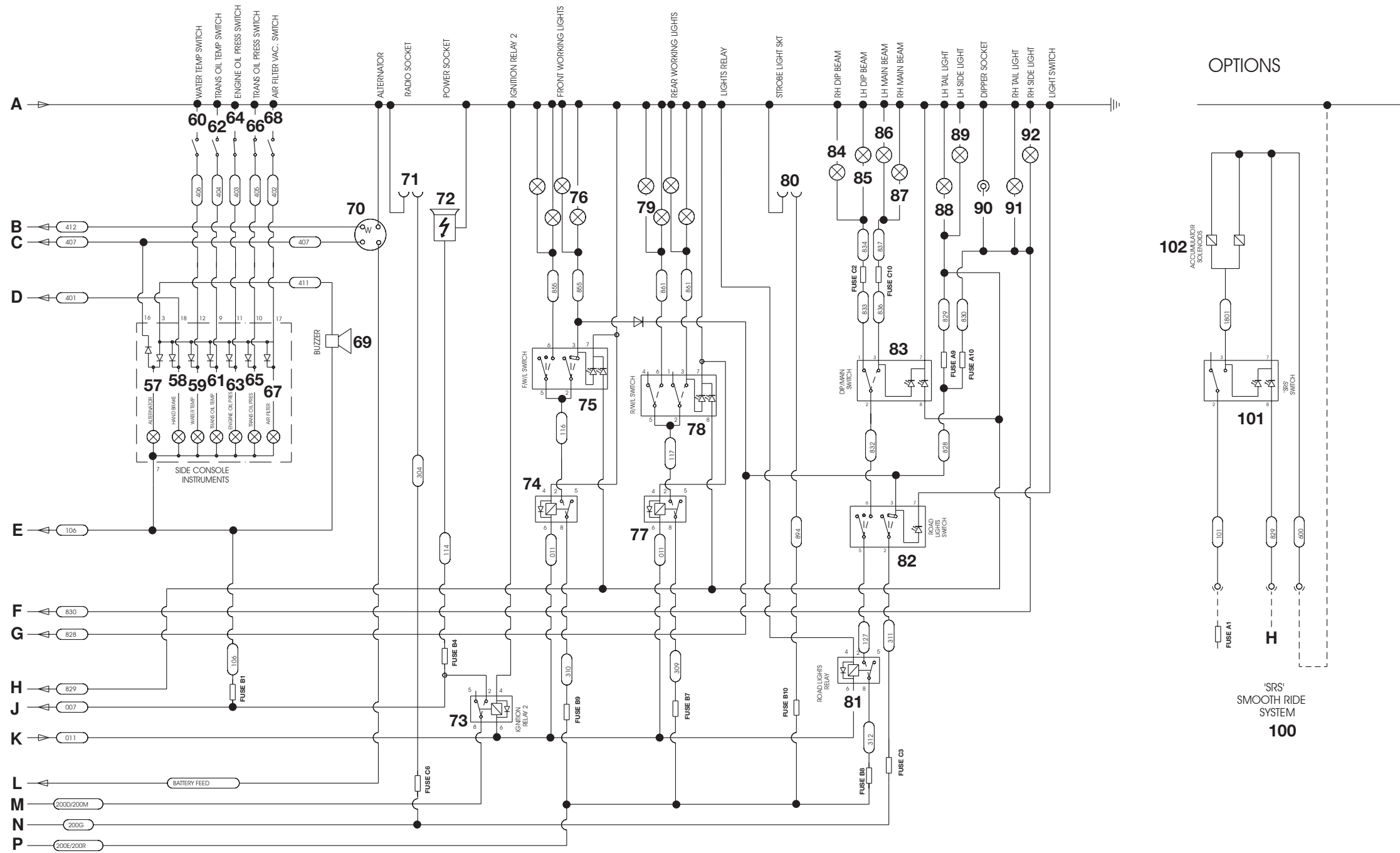
Connections:

- A To **A** on page C/4-17
- B From **B** on page C/4-17
- C From **C** on page C/4-17
- D From **D** on page C/4-17
- E From **E** on page C/4-17
- F From **F** on page C/4-17
- G From **G** on page C/4-17
- H From **H** on page C/4-17
- J From **J** on page C/4-17
- K To **K** on page C/4-17
- L From **L** on page C/4-17
- M To **M** on page C/4-17
- N To **N** on page C/4-17
- P To **P** on page C/4-17

Circuit Schematic - 214e Machines



Circuit Schematic - 214e Machines (cont'd)



Circuit Schematic - 214e Machines (cont'd)**Main Components:**

- 57 Alternator Warning Indicator Light
- 58 Parking Brake Indicator Light
- 59 Engine Coolant Temperature Indicator Light
- 60 Engine Coolant Temperature Switch
- 61 Transmission Oil Temperature Indicator Light
- 62 Transmission Oil Temperature Switch
- 63 Engine Oil Pressure Indicator Light
- 64 Engine Oil Pressure Switch
- 65 Transmission Oil Pressure Indicator Light
- 66 Transmission Oil Pressure Switch
- 67 Air Filter Blocked Indicator Light
- 68 Air Filter Restriction Switch
- 69 Warning Buzzer
- 70 Alternator
- 71 Radio Socket
- 72 Cab Auxiliary Power Socket
- 73 Ignition Relay '2'
- 74 Front Working Lights Relay
- 75 Front Working Lights Switch
- 76 Front Working Lights
- 77 Rear Working Lights Relay
- 78 Rear Working Lights Switch
- 79 Rear Working Lights
- 80 Beacon/Strobe Light Socket
- 81 Road Lights Relay
- 82 Road Lights Switch
- 83 Head Light Dip Switch
- 84 RH Dip Beam Light
- 85 LH Dip Beam Light
- 86 LH Main Beam Light
- 87 RH Main Beam Light
- 88 LH Tail Light
- 89 LH Side Light
- 90 Socket (Dipper Light)
- 91 RH Tail Light
- 92 RH Side Light

Options:

- 100 SRS Smooth Ride System
- 101 Selector Switch
- 102 Accumulator Solenoids

Connections:

- A From **A** on page C/4-16
- B To **B** on page C/4-16
- C To **C** on page C/4-16
- D To **D** on page C/4-16
- E To **E** on page C/4-16
- F To **F** on page C/4-16
- G To **G** on page C/4-16
- H To **H** on page C/4-16
- J To **J** on page C/4-16
- K From **K** on page C/4-16
- L To **L** on page C/4-16
- M From **M** on page C/4-16
- N From **N** on page C/4-16
- P From **P** on page C/4-16

Fuses:

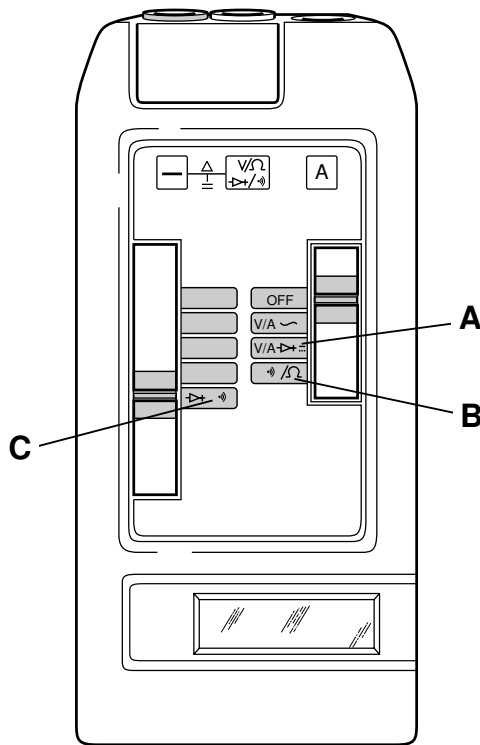
- A1 - A10
- B1 - B10
- C1 - C10

Refer to Technical Data pages at the beginning of Section C for further fuse details and ratings.

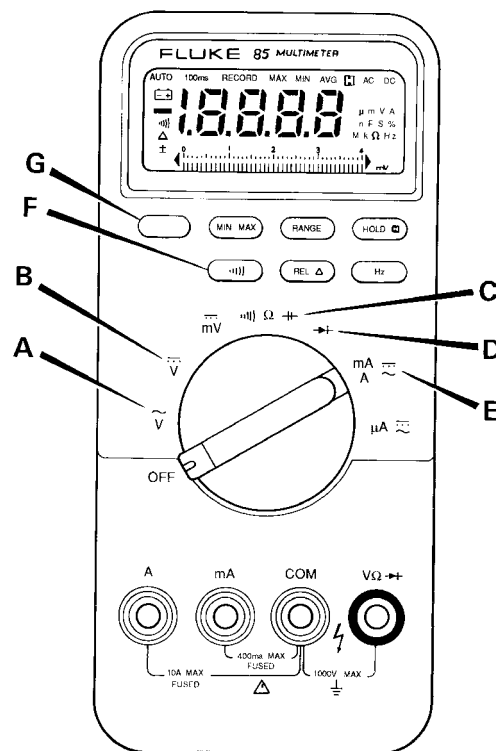
Electrical Testing Methods

- Using a Multimeter

These instructions are intended to cover the use of the recommended multimeters.

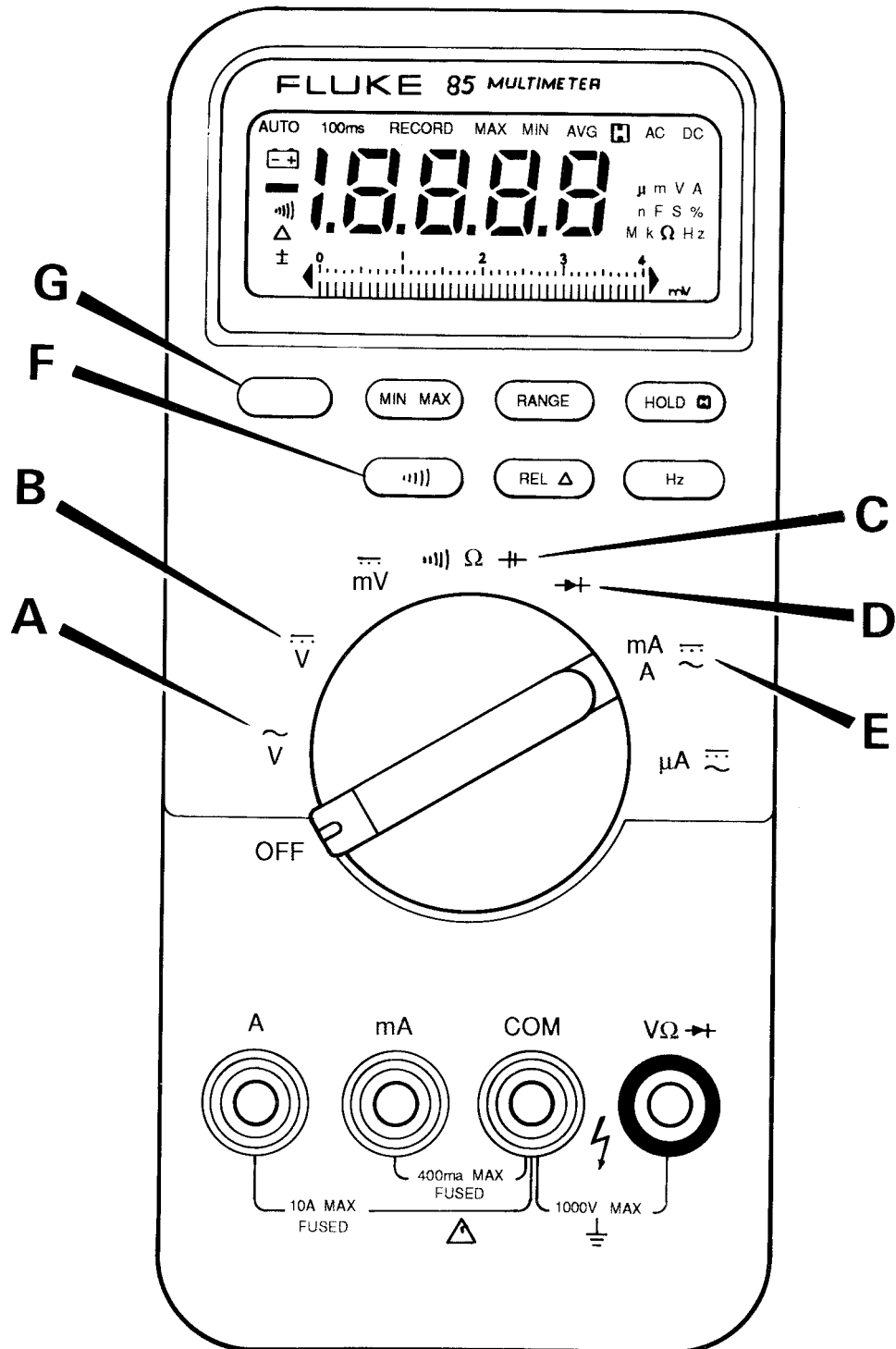


A171900



S153070

- 1 Make sure that the test leads are plugged into the correct sockets. The black test lead should be plugged into the black socket (sometimes, this socket is also marked by a "-", or "E" or marked as "COMMON" or "COM"). The red test lead should be plugged into the red socket marked with "+", "V" or "Ω".
- 2 When making measurements ensure that the test probes have a good clean contact with bare metal, free from grease, dirt, and corrosion as these can cause a false reading.
- 3 When measuring voltage:
Make sure that the correct range is selected, that is set the selector to a value equal to or greater than that you are about to measure.
e.g. If asked to measure 12 Volts, set the selector to the 12V range. If there is no 12V range, set the selector to the next range higher, 20V for instance.
If the meter is set to a range that is too low, it may be damaged.
e.g. setting to the 2V range to measure 12V.



S153070

Electrical Testing Methods - Using a Multimeter

1 Measuring DC Voltage

- a** On the FLUKE 85
Turn the switch to position **B**.
- b** On the AV0 2003
Move the right slider switch to position **A**, and the left hand slider switch to the appropriate range.
- c** On an analogue meter
Turn the dial to the appropriate DC Volts range.

Connect the black probe to the nearest available suitable earth point, usually this will be the starter motor earth, the battery negative, or the chassis. Connect the red probe to the wire or contact from which you are measuring the voltage.

2 Measuring Resistance

Make sure there is no power to the part of the circuit you are about to measure.

Connect one probe at one end of the component or wire to be checked and the other probe at the other end. It does not matter which way round the two probes are placed.

- a** On the FLUKE 85
Turn the switch to position **C** and check that the Ω sign at the right hand side of the display window is on. If the **F** sign is on instead, press the blue button **G** to change the reading to Ω .

Touch the meter lead probes together and press the **REL** ³ key on the meter to eliminate the lead resistance from the meter reading.
- b** On the AV0 2003
Move the right hand slider switch to position **B**, and the left hand slider switch to the appropriate Ohms (Ω) range.
- c** On an analogue meter
Move the dial to the appropriate Ohms (Ω) range.

3 Measuring Continuity

Make sure there is no power to the part of the circuit you are checking for continuity.

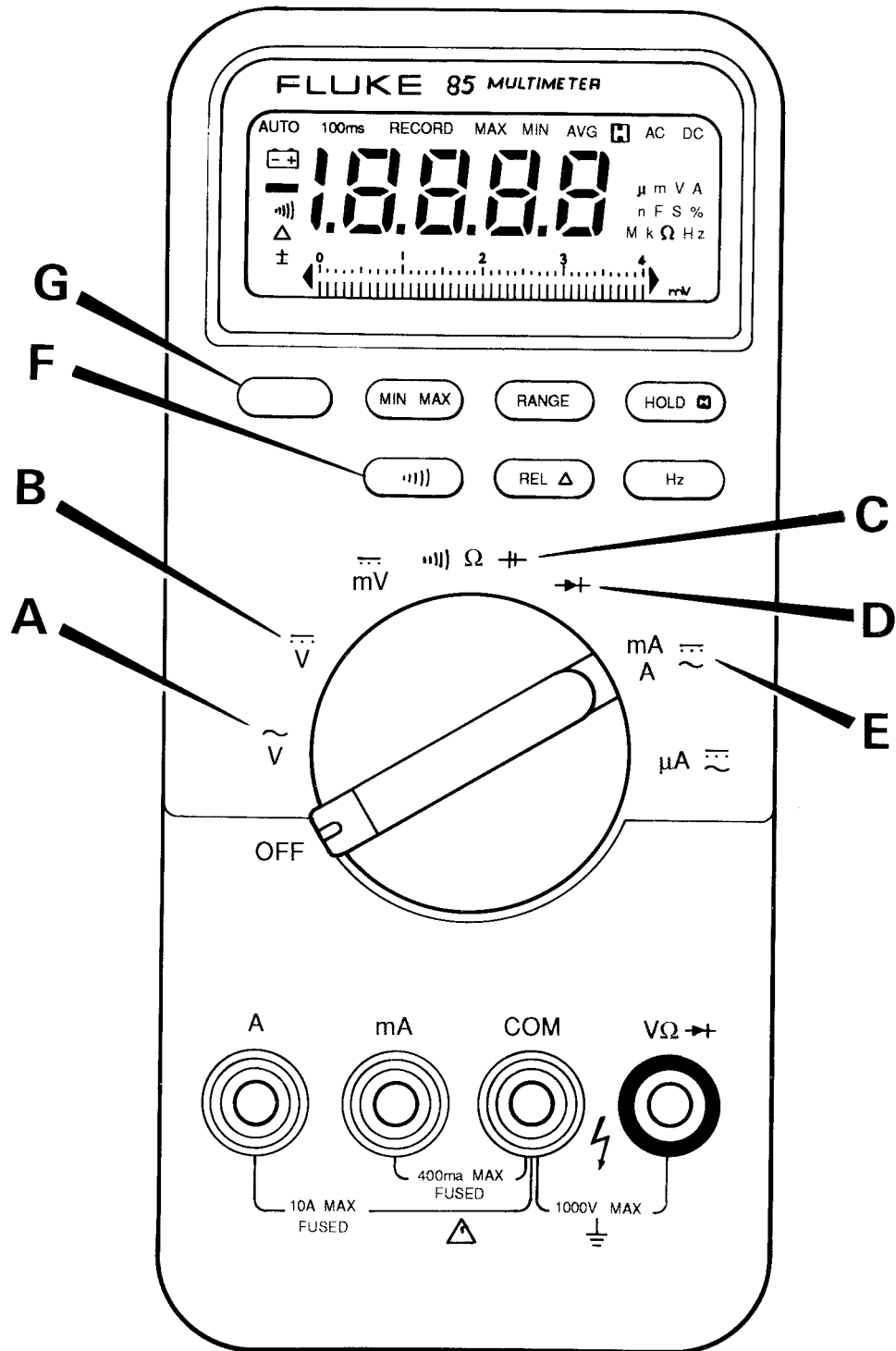
Connect one probe to one end of the component or wire to be checked and the other probe to the other end. It does not matter which way round the two probes are placed.

- a** On the FLUKE 85
Turn the switch to position **C** and check that the beeper symbol appears at the left hand side of the display window. If the **F** sign is on instead, press the button labelled **F** in the meter drawing.

If there is continuity in the circuit, the beeper will sound. If there is no continuity (open circuit), the beeper will not sound.
- b** On the AV0 2003
Move the right hand slider switch to position **B**, and the left hand slider switch to position **C**.

If there is continuity (i.e. very low resistance) between two points the buzzer will sound.
- c** On an analogue meter
Turn the dial to the lowest Ohms (Ω) range.

If there is continuity (i.e. very low resistance) between two points the needle will move across fully (or almost fully) to the right hand side of the scale.



Electrical Testing Methods - Using a Multimeter

4 Testing a Diode or a Diode Wire

A diode wire is a diode with male connector fitted on one end and a female connector fitted on the other end. The diode is sealed in heatshrink sleeving.

- a** On the FLUKE 85
Turn the switch to position **D**.

Press the **HOLD** button and check that the **H** sign appears at the top right hand side of the display window.

Connect the black probe to the end of the diode with a band or to the male connector of the diode wire. Connect the red probe to the other end of the diode or diode wire. If the beeper does not sound the diode or diode wire is faulty.

Connect the red probe to the end of the diode marked with a band, or to the male connector of the diode wire, the black probe should be connected to the other end of the diode or diode wire. If the beeper sounds or the meter does not read **O.L.**, the diode or diode wire is faulty.

Press the **HOLD** button and check that the **H** sign disappears from the right hand side of the display window.

- b** On the AV0 2003
Move the right hand slider to position **A**, and the left hand slider switch to position **C**.

Connect the black probe to the end of the diode marked with a band, or to the male connector of the diode wire, the red probe should be connected to the other end of the diode or diode wire. If the Avometer does not buzz the diode is faulty.

Connect the red probe to the end of the diode marked with a band, or to the male connector of the diode wire, the black probe should be connected to the other end of the diode or diode wire. If the Avometer does not read "1" the diode is faulty.

- c** On an analogue meter
Select the Ohms 1000s (1k) range.
Connect the black probe to the end of the diode marked with a band, or to the male connector of the diode wire, the red probe should be connected to the other end of the diode or diode wire. The meter should read 20-400 K Ω , if it reads more than this the diode is faulty.

Select the Ohms 100s range.
Connect the red probe to the end of the diode marked with a band, or to the male connector of the diode wire, the black probe should be connected to the other end of the diode or diode wire. The meter should read 300-400 Ω , if it reads less than this the diode is faulty.

Battery

Maintenance

To ensure that the battery provides optimum performance the following steps should be observed:

- 1 Make sure that the electrical connections are clean and tight. Smear petroleum jelly on connectors to prevent corrosion.
- 2 When applicable - never allow the electrolyte level to fall below the recommended level - 6 mm (1/4 in) above the plates. Use only distilled water for topping up.
- 3 Keep the battery at least three quarters charged, otherwise the plates may become sulphated (hardened) - this condition makes recharging the battery very difficult.

Extra precautions must be taken when bench charging maintenance free batteries, they are more prone to damage by overcharging than the standard type of battery:

- NEVER boost-charge a maintenance free battery.
- NEVER charge a maintenance free battery at a voltage in excess of 15.8 Volts.
- NEVER continue to charge a maintenance free battery after it begins to gas.

Safety

WARNING

Batteries give off an explosive gas. Do not smoke when handling or working on the battery. Keep the battery away from sparks and flames.

Battery electrolyte contains sulphuric acid. It can burn you if it touches your skin or eyes. Wear goggles. Handle the battery carefully to prevent spillage. Keep metallic items (watches, rings, zips etc) away from the battery terminals. Such items could short the terminals and burn you.

Set all switches in the cab to OFF before disconnecting and connecting the battery. When disconnecting the battery, take off the earth (-) lead first.

When reconnecting, fit the positive (+) lead first.

Re-charge the battery away from the machine, in a well ventilated area. Switch the charging circuit off before connecting or disconnecting the battery. When you have installed the battery in the machine, wait five minutes before connecting it up.

First Aid - Electrolyte

Do the following if electrolyte:

GETS INTO YOUR EYES

Immediately flush with water for 15 minutes, always get medical help.

IS SWALLOWED

Do not induce vomiting. Drink large quantities of water or milk. Then drink milk of magnesia, beaten egg or vegetable oil. Get medical help.

GETS ONTO YOUR SKIN

Flush with water, remove affected clothing. Cover burns with a sterile dressing then get medical help.

5-3-4-3/1

Battery (cont'd)

Testing

This test is to determine the electrical condition of the battery and to give an indication of the remaining useful 'life'.

Before testing ensure that the battery is at least 75% charged (SG of 1.23 to 1.25 for ambient temperature up to 27 °C).

Ensure that the battery is completely disconnected from the vehicle.

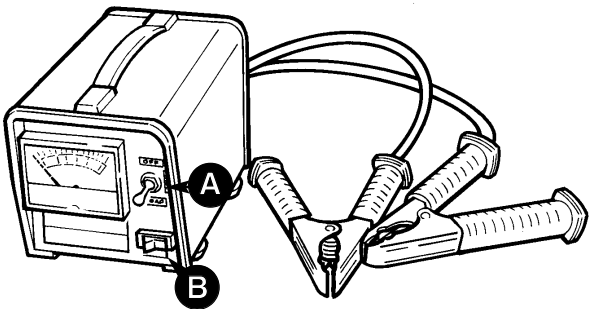
Connect up the battery tester (part no. 993/85700) as follows:

- 1 Set the CHECK/LOAD switch **A** to OFF.
- 2 Set rocker switch **B** to the battery voltage (12V).
- 3 Connect the red flying lead to the battery positive (+) terminal and the black flying lead to the battery negative (-) terminal.
- 4 Set the CHECK/LOAD switch **A** to CHECK to read the battery no-load voltage which should be at least 12.4 volts.

- 5 Set the CHECK/LOAD switch **A** to LOAD and hold down for 5 - 10 seconds until the meter reading stabilises. The reading should be at least 9 volts.

Note: Do not hold the switch in the LOAD position for more than 10 seconds.

- 6 If the foregoing tests are unsatisfactory, consult Fault Diagnosis below.



239510

Fault Diagnosis

Battery Tester Readings	Remedy
1 CHECK: 0 - 12.6 Volts LOAD: less than 6 Volts	Renew battery
2 CHECK: 6 - 12.4 Volts LOAD: less than 9 Volts and falls steadily but remains in yellow zone.	Recharge and re-test. If tests still unsatisfactory renew battery.
3 CHECK: less than 10 Volts LOAD: less than 3 Volts	Indicates battery has been over-discharged and unlikely to recover. Renew battery.
4 CHECK: more than 11 Volts LOAD: 6 - 10 Volts steady	Charge battery which will probably recover.

Specific Gravity Testing

The specific gravity of the electrolyte gives an idea of the state of charge of the battery. Readings should be taken using a hydrometer, when the electrolyte temperature is 15 °C (60 °F). If the battery has recently been on charge, wait approximately one hour (or slightly discharge the battery) to dissipate the surface charge before testing.

Readings should be as tabulated and should not vary between cells by more than 0.04. A greater variation indicates an internal fault on that particular cell.

If the electrolyte temperature is other than 15 °C (60 °F) a 'correction factor' must be applied to the reading obtained. Add 0.07 per 10 °C (18 °F) if the temperature is higher than 15 °C (60 °F) and subtract the same if the temperature is lower.

Specific Gravity at 15 °C (60 °F)	Fully Charged	Half Discharged	Fully Discharged
Ambient temperature up to 27 °C (80 °F)	1.270 - 1.290	1.190 - 1.210	1.110 - 1.130
Ambient temperature above 27 °C (80 °F)	1.240 - 1.260	1.170 - 1.190	1.090 - 1.110

Alternator

General Description

The alternator is a three phase generator having a rotating field winding and static power windings.

When the start switch is turned on, current from the battery flows by way of the 'No Charge' warning light to the field winding. This creates a magnetic field which supplements the residual magnetism in the rotor poles. As the engine is started, the fan belt drives the rotor and alternating current is generated in the power windings as they are cut by the rotating magnetic field. Output is controlled by a solid state regulator which varies the field current in accordance with electrical demand.

Servicing is restricted to periodic inspection of slip ring brushes. Bearings are 'sealed for life'.

Service Precautions

- a Ensure that the battery negative terminal is connected to the earthing cable.
- b Never make or break connections to the battery or alternator, or any part of the charging circuit whilst the engine is running. Disregarding this instruction will result in damage to the regulator or rectifying diodes.
- c Main output cables are 'live' even when the engine is not running. Take care not to earth connectors in the moulded plug if it is removed from the alternator.
- d During arc welding on the machine, protect the alternator by removing the moulded plug (or if separate output cables fitted, remove the cables).
- e If slave starting is necessary, connect the second battery in parallel without disconnecting the vehicle battery from the charging circuit. The slave battery may then be safely removed after a start has been obtained. Take care to connect batteries positive to positive, negative to negative.

Charging Test

Ensure that all battery and alternator connections are in place, secure and making good metal - to - metal contact, especially the 'earth' connections to chassis and engine.

Make sure that the alternator drive belt tension is correctly adjusted.

If the battery is in a fully charged condition, switch on the working lights for 3 minutes before commencing the test. Alternatively, operate the starter for a few moments with the engine shut off solenoid (ESOS) fuse removed (refer to fuse identification pages).

Install a 100 amp open - type shunt between the battery positive lead and the battery positive terminal.

Connect a multimeter positive lead to machine side of the shunt and negative lead to battery side of the shunt.

Connect the leads to the meter and set the meter to the relevant range as follows.

- | | |
|----------|--|
| AVO 2002 | Red lead to volts (middle) socket on meter.
Black lead to negative on meter.
RH slider to DC voltage.
LH slider as shown in the illustration. |
| AVO 2003 | Red lead to amps socket (marked A) on the meter.
Black lead to negative on meter.
RH slider to DC voltage
LH slider to 200 Shunt |
| FLUKE 85 | Red lead to volts socket (marked V) on meter.
Black lead to COM socket on meter.
Set dial to mV. |

Start the engine and run at maximum speed (see **Technical Data**). Meter should show maximum alternator output in Amps (see **Technical Data**).

Note: The meter reading should be taken as soon as possible after starting the engine, as the charging current will fall rapidly.

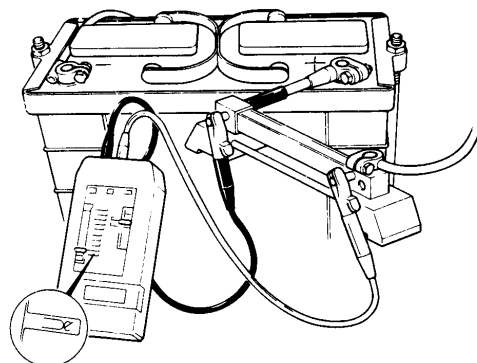
A zero reading indicates failure of the alternator and may be caused by one of the following conditions. These are listed in the order of probability.

- a Defective suppression capacitor.
- b Dirty slip rings or worn brushes.
- c Defective regulator.
- d Defective rectifier.
- e Open or short - circuited field (rotor) windings.
- f Open or short - circuited power (stator) windings.

To check for fault **a**, disconnect the capacitor and repeat the charging test. Renew the capacitor if necessary.

To check for faults **b** and **c**, remove the regulator and brush box assembly. Check the condition of the brushes and, if necessary, clean the slip rings using extra-fine glasspaper. The regulator may only be checked by substitution.

Faults **d**, **e**, and **f** may be checked only by removing and dismantling the alternator for further testing.



S08346

Starter Motor

Starting Circuit Test

Before carrying out the voltmeter tests, check the battery condition (see Battery Testing) and ensure that all connections are clean and tight.

To prevent the engine starting during the tests ensure that the engine stop fuse is removed, (refer to fuse identification page).

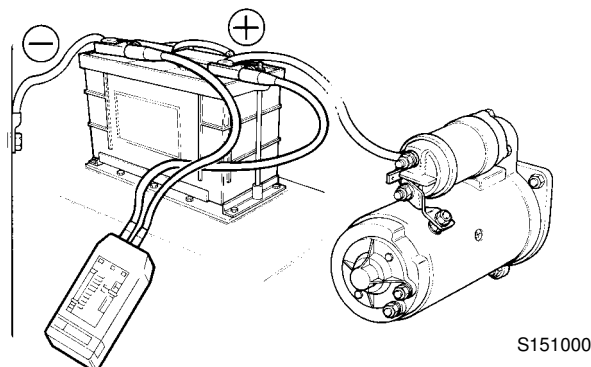
Check the readings in the following sequence using a voltmeter. Unless otherwise stated, the readings must be taken with the starter switch held in the 'start' position ('HS') and the transmission forward/reverse selector in neutral.

Note: Do not operate the starter motor for more than 20 seconds at one time. Let the starter motor cool for at least two minutes between starts.

Test 1

Connect the voltmeter across the battery terminals. Reading in 'start' position: 10.0V approximately. Minimum permissible reading in 'start' position 9.5V.

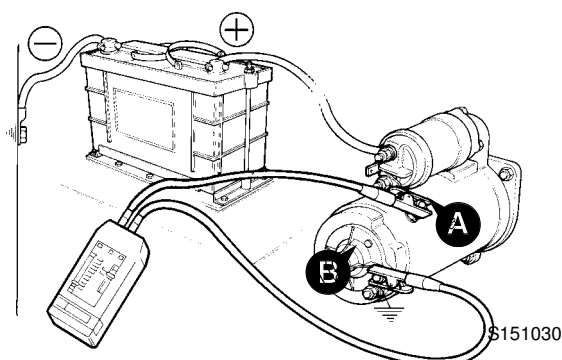
A low reading probably indicates a fault in the starter motor.



Test 2

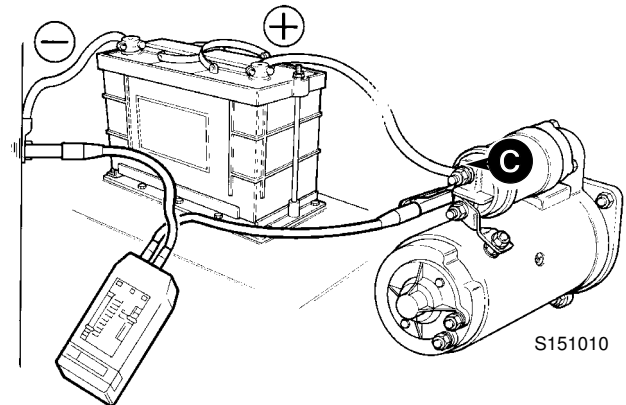
Connect the voltmeter between the starter main terminal **A** and the commutator end bracket **B**. In the 'start' position, the reading should not be more than 0.5V below the reading obtained in Test 1. Minimum permissible reading in 'start' position 9.0V.

If the reading is within this limit, continue to Test 3. If the reading is outside the limit, proceed to Tests 4 and 5.



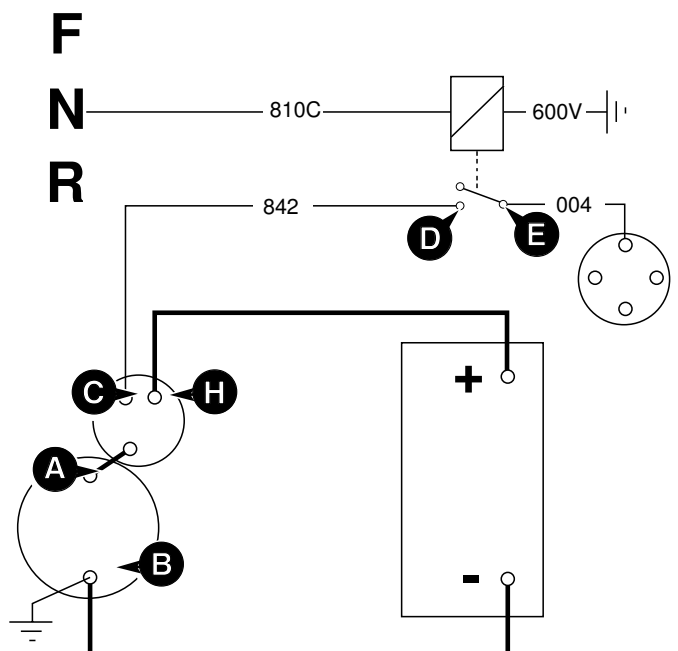
Test 3

Connect the voltmeter between the solenoid terminal **C** and a good earth. Minimum permissible reading in 'start' position: 8.0V.



Test 3a

If the reading is less than specified, connect the voltmeter between the neutral start relay terminal **D** and earth. An increase in reading to 8.0V indicates a fault in the wiring from the start relay to the solenoid.



Starter Motor (cont'd)

Starting Circuit Test (cont'd)

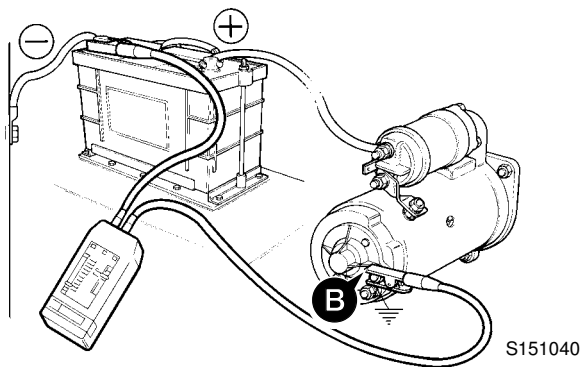
Test 3b

If the reading between terminal **D** and earth is below 8.0V, connect the voltmeter between terminal **E** and earth. An increase in the reading to 8.0V indicates either a faulty start relay or a fault in the feed from the transmission selector switch to the relay solenoid. Check also the solenoid earth connection.

If the reading between **E** and earth is less than 8.0V, the fault must be in either the starter switch or in the wiring between the solenoid, starter switch, and the start relay.

Test 4

Connect the voltmeter between battery negative and starter earth connection **B**. The reading in the 'start' position should be practically zero, maximum permissible reading 0.25V.

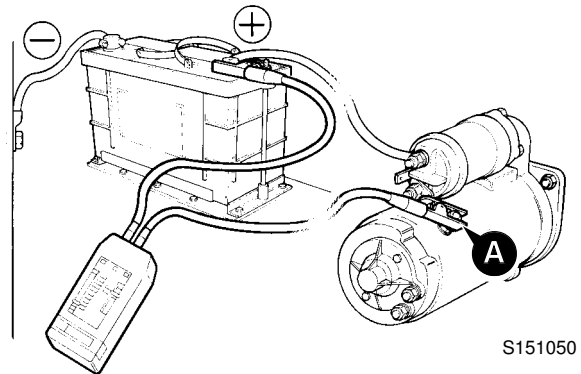


S151040

If the reading is above 0.25V, a high resistance in the earth lead or connections is indicated.

Test 5

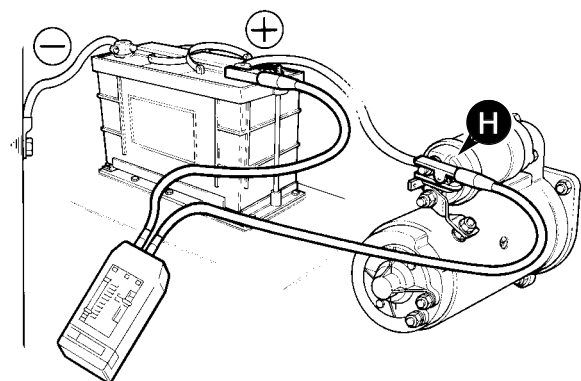
Connect the voltmeter between battery positive and the starter main terminal **A**. With the starter switch 'off', the voltmeter should indicate battery voltage, but it should fall to practically zero when the switch is turned to the 'on' position, maximum permissible reading 0.25V.



S151050

Test 5a

If the reading is above 0.25V, a high resistance is present in the insulated lead or in the solenoid. Connect the voltmeter between the battery positive and solenoid connection **H**. If the voltmeter now reads zero with the switch closed, the fault is in the solenoid.



Finally refit the engine stop fuse.

Wiring Harness

Introduction

Instances do occur where it is necessary to incorporate auxiliary electrical components into existing electrical circuits and, although unlikely with present wiring harnesses, repair or replace specific individual wires within a harness. This will also apply to other machines in addition to those of JCB manufacture.

To ensure that either the inclusion of an auxiliary electrical component or a repair within a harness is completed to an acceptable standard it is strongly recommended that the following tools, equipment and procedures are always used. Note that JCB harnesses have an International Protection rating of 67 (I.P.67).

The sheath covering of the recommended splice is heat shrunk onto the original wire insulation. This results in a seal and corresponding joint to IP 67 specifications.

CAUTION

When installing Auxiliary Electrical Components always ensure that the additional load rating is suitable for that particular circuit. It is unacceptable to simply increase the fuse rating as this can cause overloading and consequential failure of wiring, along with failure of integral circuit components, which the fuse is protecting.

ELEC 2 - 1

WARNING

In addition to the warnings incorporated into the procedure, extreme care should be taken when handling the gas heating tool to ensure that the flame does not damage or set fire to any items in the vicinity of the repair, i.e. other wires, floor panels, floor mats, sound proofing, paintwork. etc. This tool should not be used in any restricted location prohibiting the use of 'Naked Flames' or where risk of explosive gas or similar safety parameters apply. No other heat source should be used to attempt a sealed joint .

ELEC 2 - 2

CAUTION

When the heater is in use, the reflector and the air coming out are extremely hot. Keep away to avoid accidental burns. Do not touch the reflector until it has had time to cool down after switching off. If flame reappears at the reflector when the heater is in use, the catalytic element is damaged or used up. Stop work immediately and replace the heater.

ELEC 2-3

Tools Required

892/00350	Butane Heater assembly	1
892/00349	Crimp tool	1
892/00351	Splice 0.5-1.5 mm (Red)	50
892/00352	Splice 1.5-2.5 mm (Blue)	50
892/00353	Splice 3.0-6.0 mm (Yellow)	50

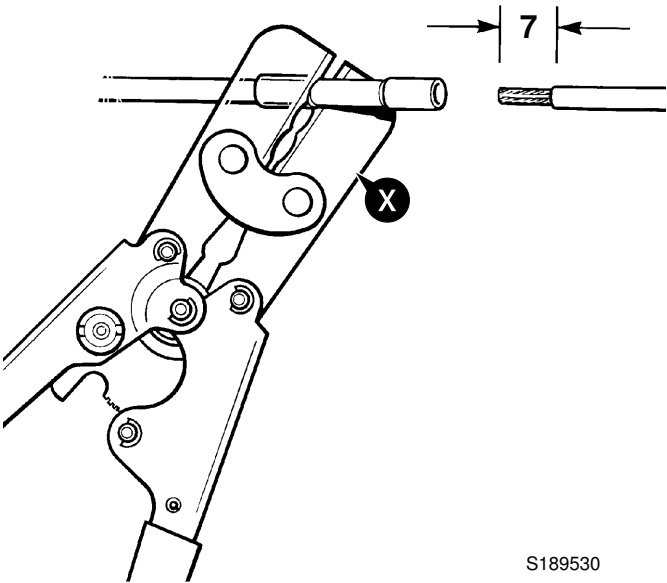
Repair Procedure

- 1 Cut the wire and remove the protective insulation for a suitable distance dependent upon the size of wire and splice to be used. For the splices detailed above, the dimension is 7mm.
- 2 Using the correct sized splice, attach the new section of wire required or auxiliary flying lead to the existing harness and secure using the crimp tool X, part number 892/00349.

Note that each of the splices detailed is colour-coded to make size and range readily visible. They are secured using the corresponding size and matching colour-coded jaws of the crimp tool to ensure joint security. This tool also incorporates a ratchet closing mechanism which will not release until the splice is fully closed to the correct compression size.

- 3 With the Butane heater assembly, 892/00350, seal the connection using the procedure on the next page.

....continued

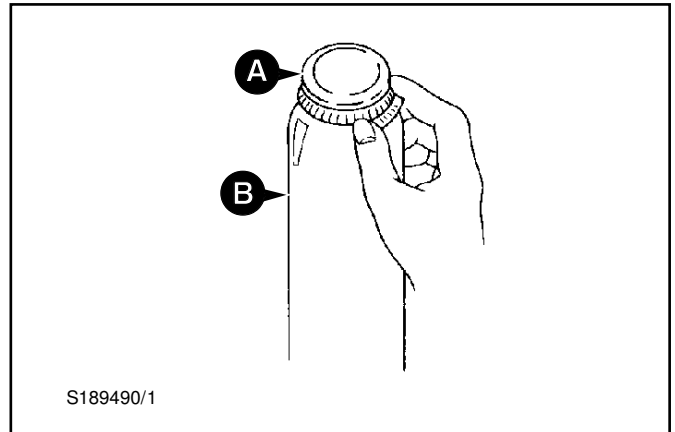


S189530

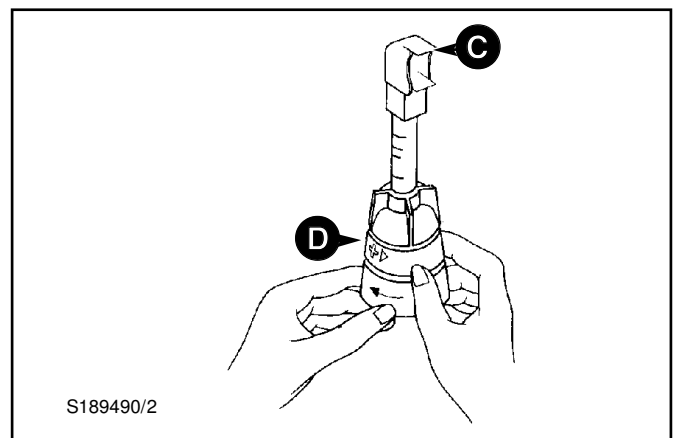
Wiring Harness - Repair Procedure (cont'd)

With the Butane Heater assembly 892/00350, seal the connection using the following procedure.

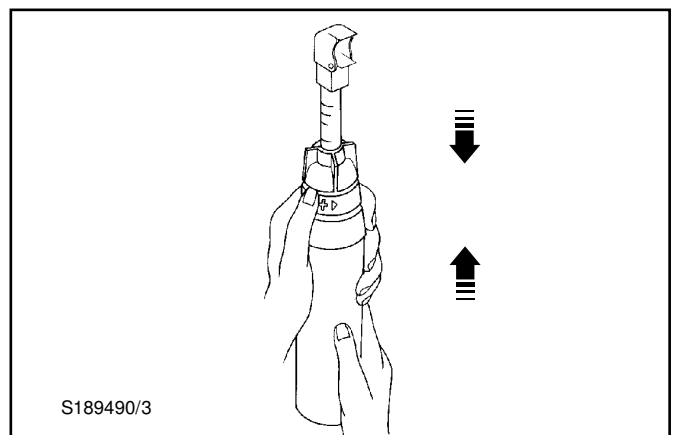
- a Remove the cap **A** from the end of the disposable gas cartridge **B**.



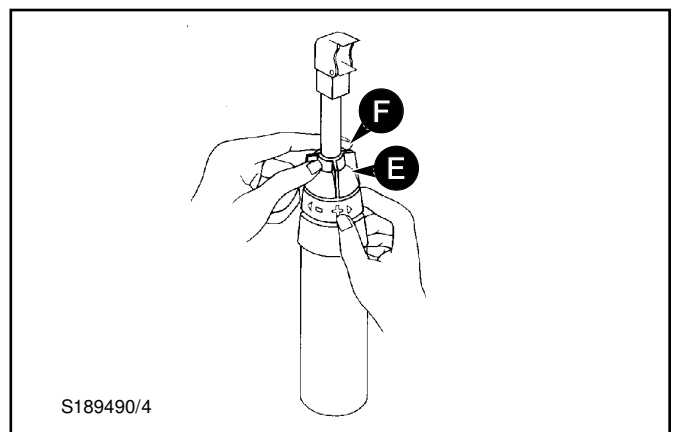
- b Before assembling the gas cartridge to the reflector element **C**, turn the red ring **D** to the left, (in the direction of the minus sign marked on the ring).



- c Position the tube hanging down from inside the reflector assembly into the hole at the top of the gas cartridge. Then press the gas cartridge up into the reflector assembly as far as possible until the two elements are clasped firmly together. A click will be heard.



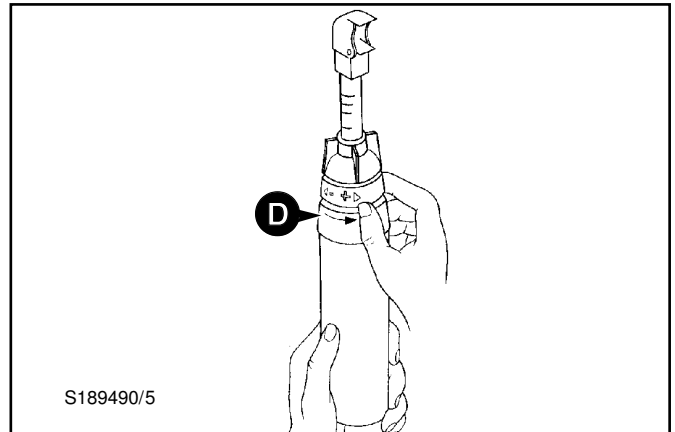
- d Turn the small ring **E** so that the air holes at **F** are completely closed.



Wiring Harness - Repair Procedure (cont'd)

- e Turn the red ring **D** to the right (in the direction of the plus sign) in order to turn on the gas.

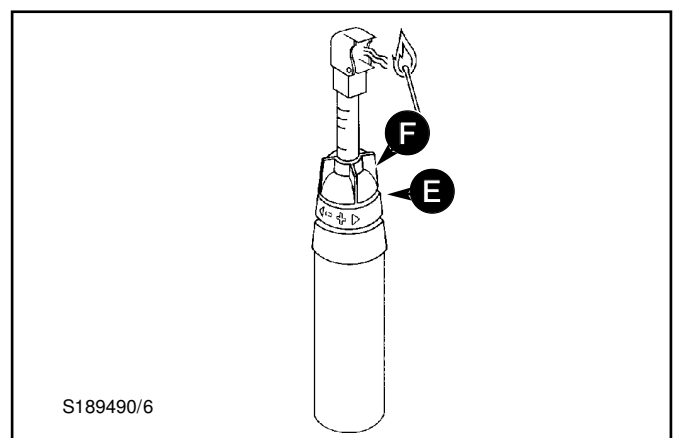
IMPORTANT: Before turning the heater on, make sure that the cartridge is not hotter than the reflector element. This may occur if the cartridge is held in the hand for a long time. The temperature difference between the cartridge and the reflector element may cause long yellow flames to appear on ignition.



- f Hold the heater vertically and, using a match or cigarette lighter, light the gas as shown.

Note: The fact that the sound of liquid cannot be heard when the cartridge is shaken does not mean it is empty. No sound will be heard even when the cartridge is full.

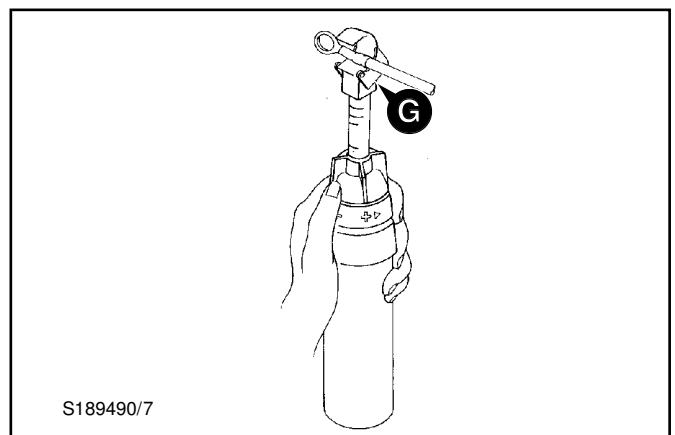
Hold the heater vertically for 1 to 2 minutes until the catalytic reaction occurs. This is indicated when the blue flame fades and the ceramic element glows red. Then turn the small ring **E** until the air holes at **F** are completely open. The tool is ready for use.



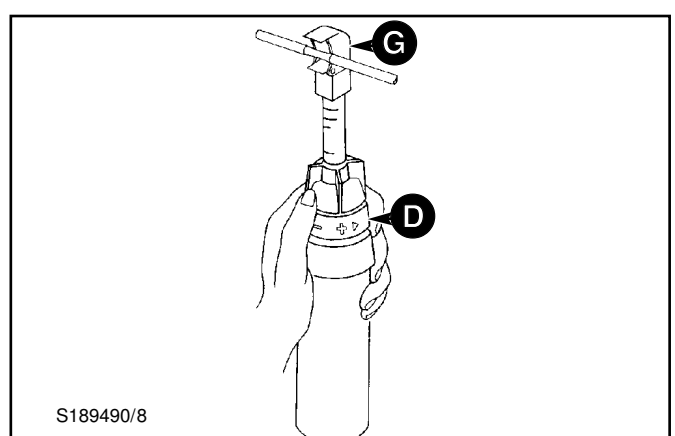
The heater can be used in two modes:

- g Side wings **G** down, reflector head completely open. In this mode the infra-red heat waves are dominant (recommended for the light coloured plastic splices).

Side wings **G** up (see fig at step h), reflector head opening reduced. In this mode the heating is done only by the hot gas (use for dark coloured plastic splices).



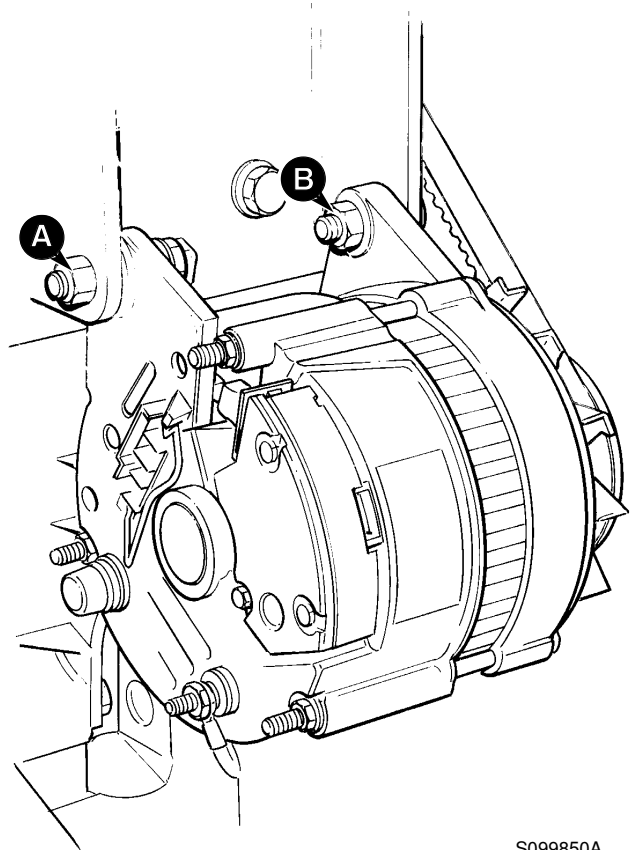
- h To switch off the heater, turn the red ring **D** to the left (in the direction of the minus sign).



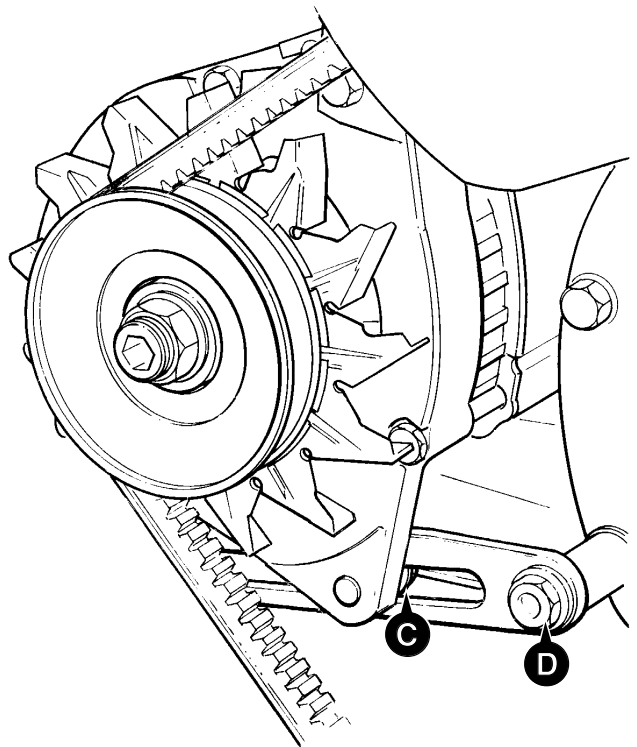
Removal and Replacement

Disconnect cables from rear of alternator, remove bolts **A**, **B** and **C** and withdraw unit from machine.

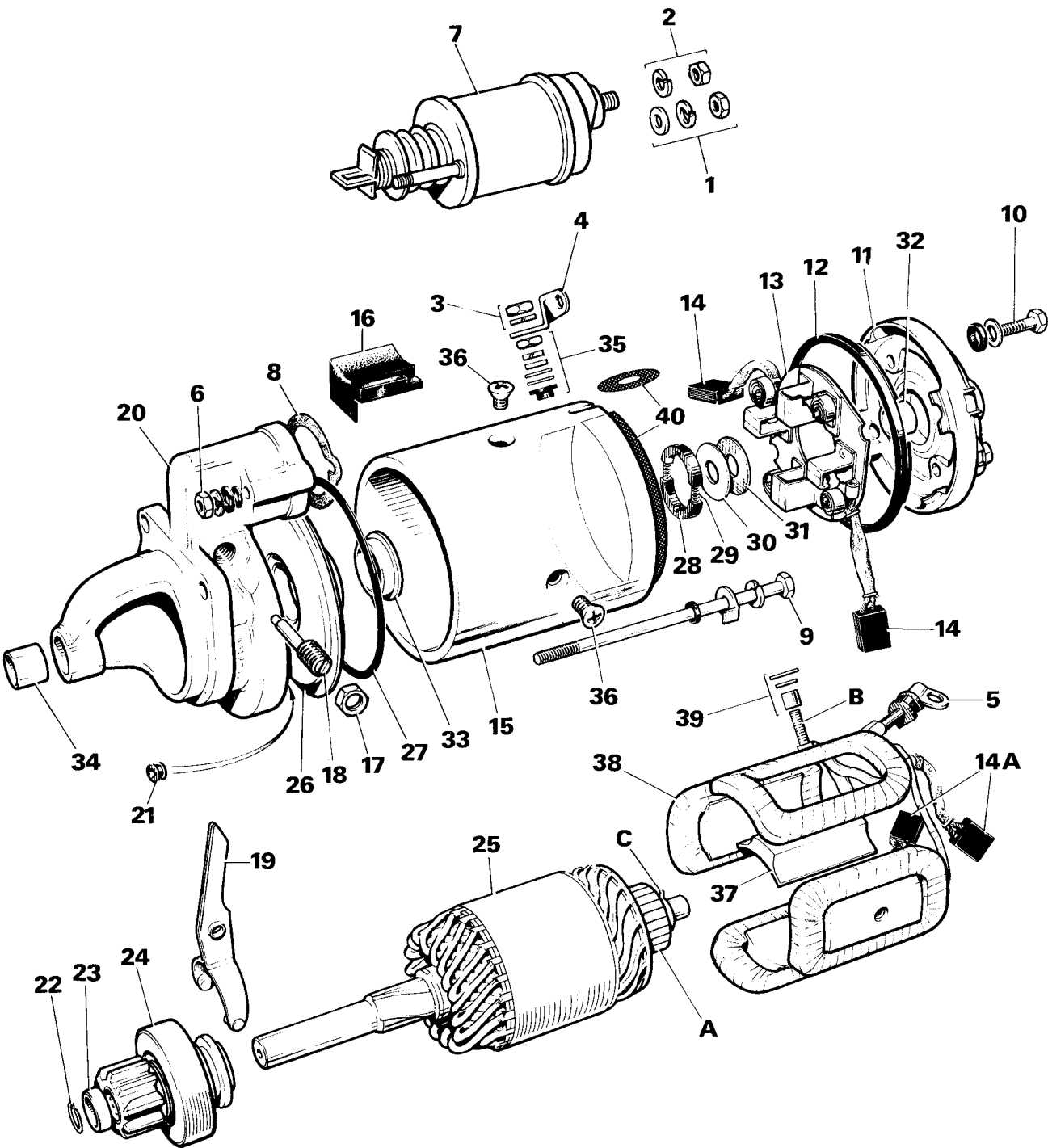
Replace by reversing the removal sequence. Position the alternator until belt deflection is approximately 10mm (3/8 in) before tightening bolts **B** and **C**. It may be necessary to slacken bolt **D** to allow full movement of alternator. Tighten bolt **A** last of all.



S099850A



S099850B



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Removal and Replacement

Disconnect cables and remove battery. Remove cables from main starter terminal and solenoid terminal. Using special tool 825/00410 (and adapter 825/99833 if required) unscrew three securing nuts and remove starter motor.

Replace by reversing the removal sequence.

Dismantling

Note: Dismantle only to item **34** unless the field windings are to be renewed. Test the windings electrically before removing them from the motor yoke **15**.

Using a slotted steel tube, displace ring **23** to permit withdrawal of ring **22**.

Allow brake shoes **28** to remain in the end plate **11** unless requiring renewal.

Inspection

Renew brushes **14** and **14A** if their length is less than 8mm (0.3in.).

Clean the commutator **A**. If individual copper bars are burned or eroded the armature has broken windings and must be renewed. Otherwise polish with fine grade glass paper (not emery). Renew armature if commutator diameter is 38mm (1.5in.) or less.

Check the field windings for open circuits by connecting a multimeter set to measure resistance (see **Electrical Testing Methods**) between the stud terminal **B** and each positive brush **14A** in turn. A high or infinity reading indicates an open circuit. Similarly, connect the meter between brushes **14A** and the motor yoke **15**. Any reading other than infinity indicates a short circuit between the coils and the yoke. Renew the coils as necessary, removing screws **36** with a pole shoe screwdriver C50 (obtainable from Lucas dealers).

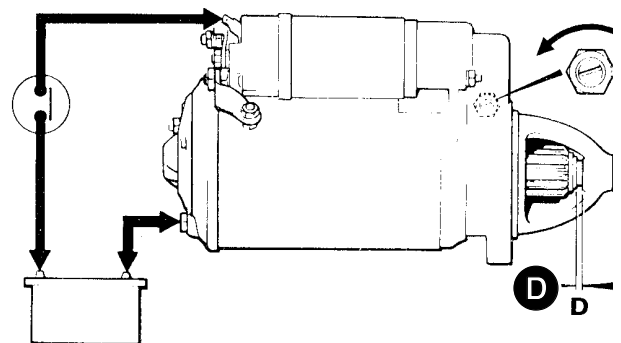
Check bronze bushes **32** and **34** for wear.

Assembly

Align crosspin **C** with the notches in the brake shoes **28** before assembling brush carrier and back plate to motor yoke. Ensure that brushes **14A** are correctly located in the insulated brush boxes.

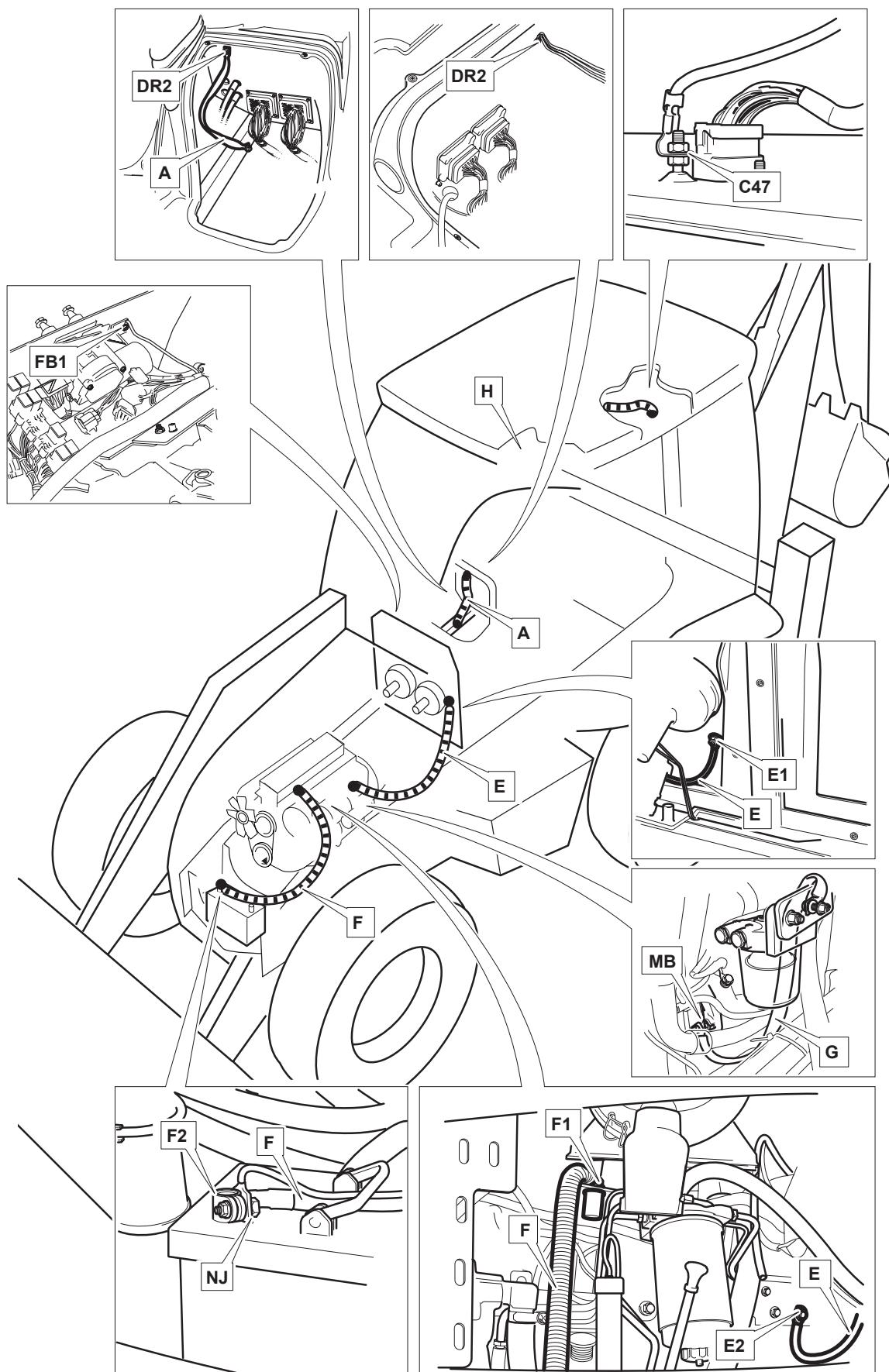
Smear drive shaft splines and operating collar bearing surface with JCB MPL Grease before assembly. Assemble operating fork **19** with curved face toward the armature.

Set the movement of drive pinion **24** by connecting a 6v battery and switch as shown. Operate switch and check dimension **D**. Adjust to 0.13-1.14mm (0.005-0.045in.) by slackening locknut **17** and rotating eccentric pin **18** as necessary. Re-tighten locknut.



S02303A

Earth Points



A405010

Earth Points

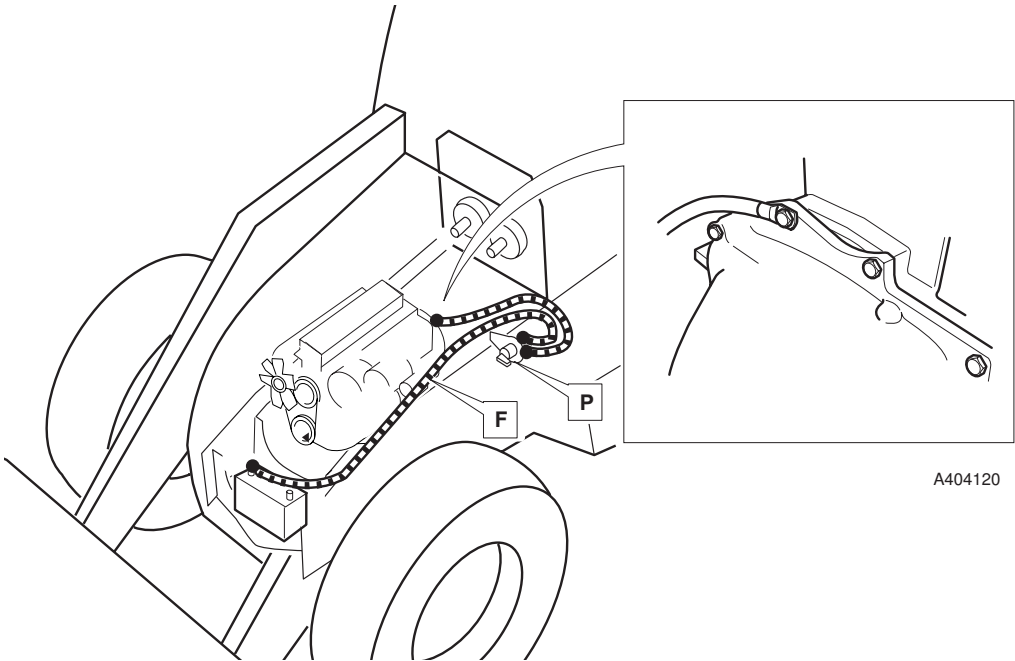
Introduction

The illustration opposite shows the machine electrical earth point locations. This can be useful when tracing electrical faults, typically when several electrical devices are malfunctioning.

Key

Decription	Access
A Earth strap, cab. From DR2 to cab frame.	Remove loader control console.
C47 Earth, cab roof harness.	Remove - inside cab: 'B' post covers, roof lining. Outside cab: lift moulded roof panel.
DR2 Earth, side console harness.	Remove side console.
E Earth cable E, cab to engine.	
E1 Earth cable E, cab end.	Undo one side on the flexible grey moulding at the front on the cab (outside).
E2 Earth cable E, engine end.	Remove engine side panel.
F Earth cable F, engine to battery. [†]	
F1 Earth cable F, engine end.	Remove engine side panel.
F2 Earth cable F, battery end.	Remove front grille.
FB1 Earth, front console harness.	Remove front console, see Section B, Body and Framework .
G Earth strap, starter motor.	Remove engine side panel.
H Earth, work lights harness.	Remove - inside cab: 'B' post covers, roof lining. Outside cab: lift moulded roof panel.
MB Earth at starter motor, engine/mainframe harness.	Remove engine side panel.
NJ Earth at battery, engine/mainframe harness.	Remove front grille.

[†]The illustration opposite shows the battery earth cable connection for machines not fitted with a battery isolator switch. Machines fitted with a battery isolator **P** have earth cable connections as shown below.



A404120

Drawings

Introduction

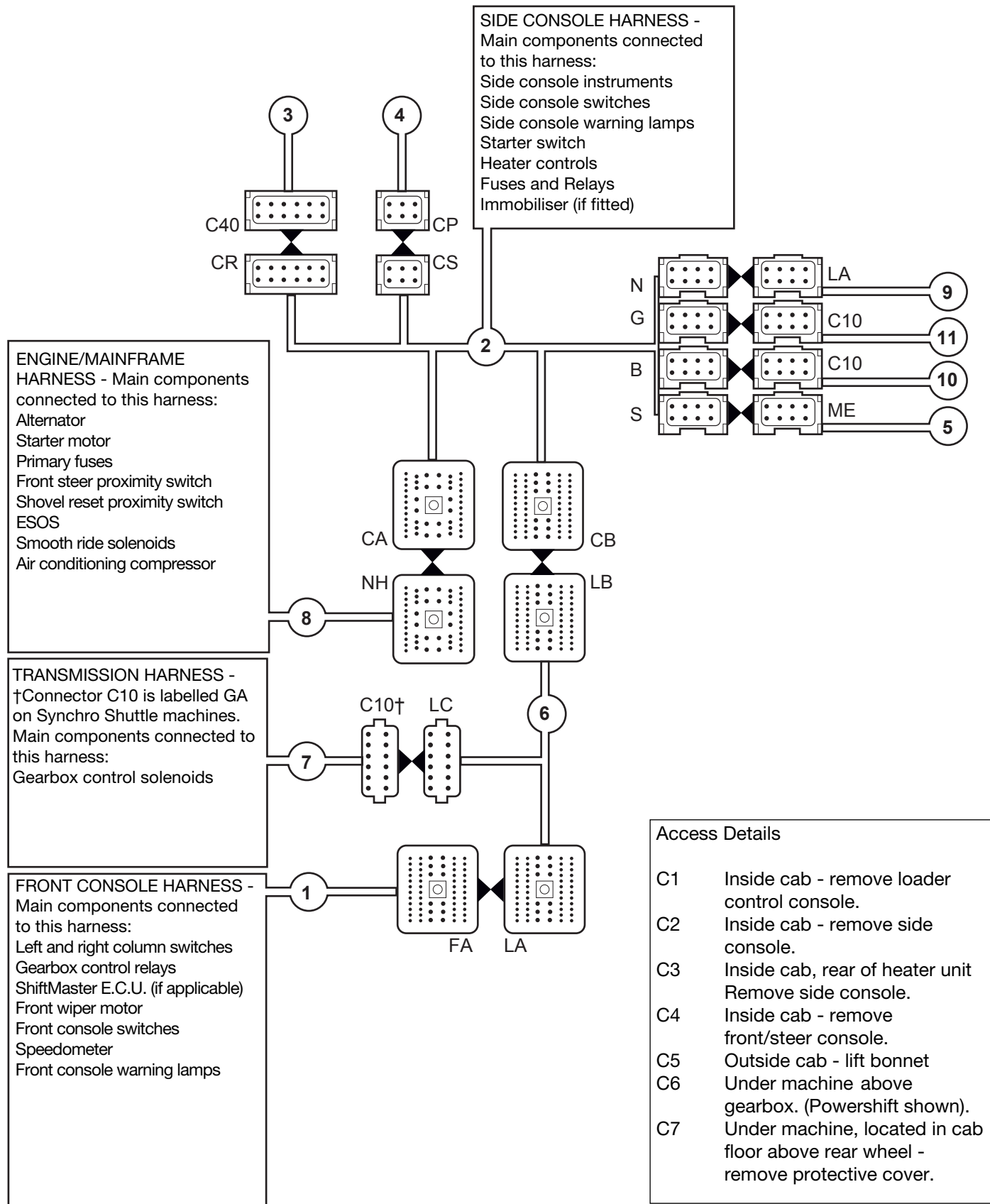
The following drawings are reproduced from production electrical harness drawings. Each harness drawing includes tables showing wire connections and destinations for all the connectors on the harness.

* Harness Interconnection

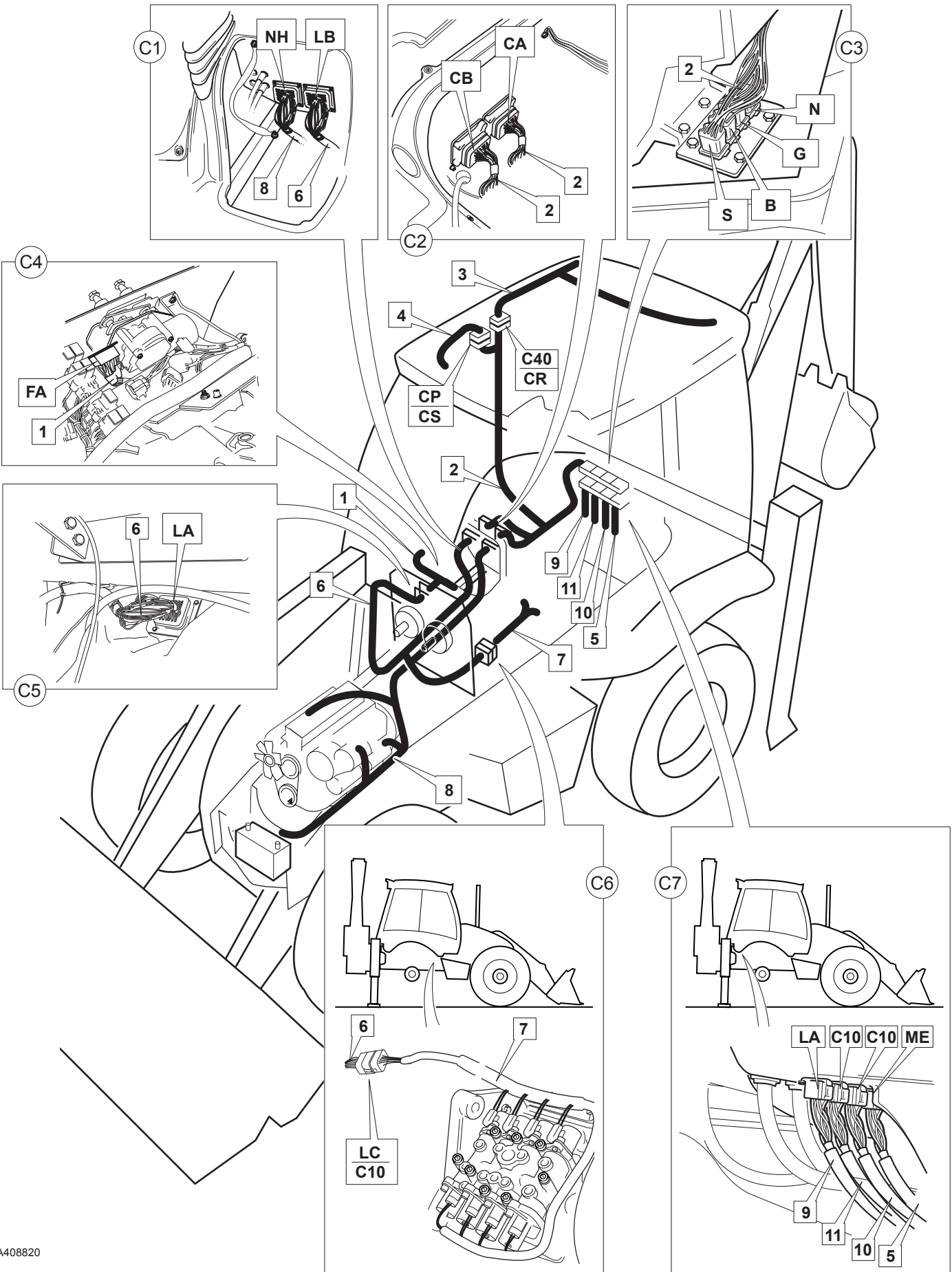
The harness number refers to and corresponds with the annotations in the schematic drawing on the adjacent page.

Harness No.	Issue	Remarks	Page
1 Front Console			
721/10940	1	4 speed Powershift / Synchro Shuttle	151 - 1
721/10937	3	6 speed Powershift (ShiftMaster)	151 - 3
2 Side Console			
721/10936	1	Machines up to S/No. 933756	153 - 1
721/10970	2	Machines from S/No. 933757	153 - 5
3 Cab Roof			
721/10966	1	USA only	155 - 1
721/10965	1	Not USA	155 - 3
4 Interior Light, Radio Speakers			
721/11050	1		155 - 5
5 Steer Controls			
721/10968	1	Not crab steer	157 - 1
721/10967	1		157 - 2
6 Cab Link			
721/10943	1	6 speed Powershift (ShiftMaster)	160 - 1
721/10942	1	4 speed Powershift / Synchro Shuttle	160 - 3
7 Transmission			
721/10941	1	6 speed Powershift	160 - 5
721/10938	2	Synchro Shuttle	160 - 7
721/10939	1	4 speed Powershift	160 - 8
8 Engine/Mainframe			
721/10935	2		165 - 1
9 Rear Lights, Hydraclamp			
721/10944	1	Sideshift	165 - 3
10 Rear Horn, Alarm			
721/10946	1	Sideshift	165 - 4
721/10947	1	Centre mount	165 - 5
11 Auxiliary			
721/10974	1	Excavator	165 - 6

Harness Interconnection (continued)

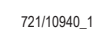


A408780



A408820

FL	Column Switch - Powershift
FM	Footbrake Switch
FN	Wiper Motor
FP	Column Switch - RH
FR	Front Warning Lights
FS	Speedometer
FSA	Speedometer Illumination
FSB	Speedometer Illumination
FT	Steer Mode Switch
FU	Brake Mode Switch
FV	Hazard switch
FW	Main Lights
FX	2/4WD Select
FY	Fog Light Switch
FZ	Brake Link Socket
GA	Brake Link Pin



Harness Drawing - Front Console, 4 speed Powershift, Synchro Shuttle, page 2 of 2 - CAD 721/10940 Issue 1

FA	BULKHEADPLUG			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	FC3	AA
2	810E	1.0	FL 6	AA
3	826B	1.0	FC4	AA
4	845	1.0	FC6	AA
5	825D	1.0	SB	AA
6	812	1.0	FD7	AA
7	934	1.0	SK	AA
8	819	1.0	SD	AA
9	820	1.0	FT 1	AA
10	815	1.0	FK1 1	AA
11	812/848	1.0	FD9	AA
12	1858	1.0	ST	AA
13	811	1.0	FE7	AA
14	853	1.0	SG	AA
15	811/849	1.0	FE9	AA
16	850	1.0	FF2	AA
17	126A	1.0	FH1	AA
18	1133A	1.0	FW4	AA
19	851	1.0	FF4	AA
20	830C	1.0	SR	AA
21	839	1.0	SW	AA
22	818G	1.0	SF	AA
23	933	1.0	SE	AA
24	805D	1.0	SN	AA
25	802	2.0	FV2	AB
26	803	2.0	FV18	AB
27	828	2.0	FW3	AB
28	110	2.0	SP	AB
29	104	2.0	FV1	AB
30	311	2.0	FW2	AB
31	300	2.0	FV3	AB
32	814	2.0	FL 8	AB
33	127A	2.0	FW5	AB
34	107	2.0	SS	AB
35	833	2.0	FP 9	AB
36	836	2.0	FP 13	AB
37	837D	0.6	FR2	AA
38	855D	0.6	FR7	AA
39	861D	0.6	FR8	AA
40	411A	0.6	FR1 1	AA
41	405	0.6	FA 59	AA
42	974	0.6	FS2	AA
43	868	1.0	FY 2	AA
44	835	1.0	FY 3	AA
45	-	-	-	AC
46	106N	1.0	FS1	AA
47	303C	1.0	FN8	AA
48	806D	1.0	SM	AA
49	600DP	1.0	SA	AA
50	600DN	1.0	SA	AA
51	934B	1.0	SK	AA
52	-	-	-	AC
53	-	-	-	AC
54	-	-	-	AC
55	-	-	-	AC
56	-	-	-	AC
57	-	-	-	AC
58	-	-	-	AC
59	405	0.6	FA 41	AA
60	-	-	-	AC

FB	FRONT CABEARTH			-
TERM	WIRE	SIZE	DEST	TYPE
1	621	6.0	SA	C,X

FC	STEERMODEUNIT			D,E
TERM	WIRE	SIZE	DEST	TYPE
1	822	0.6	FT 5	AF,AG
2	821	0.6	FT 6	AF,AG
3	824B	1.0	FA 1	AF,AG
4	826B	1.0	FA 3	AF,AG
5	823	0.6	FT 3	AF,AG
6	845	1.0	FA 4	AF,AG
7	825B	1.0	SB	AF,AG
8	600L	1.0	SA	AF,AG

FD	FORWARDRELA Y			F
TERM	WIRE	SIZE	DEST	TYPE
1	852N	1.0	FG4	AU
	852P	1.0	FE1	
2	846	1.0	FD6	AU
	846B	1.0	FF9	
3	809	0.6	FL 4	AV
4	-	-	-	-
5	600AC	0.6	SA	AV

FORWARDH/L				
6	846	1.0	FD2	AT
7	812	1.0	FA 6	AT
8	884D	0.6	SH	AV
9	812/848	1.0	FA 11	AV
10	600AE	0.6	SA	AV

FE	REVERSERELA Y			F
TERM	WIRE	SIZE	DEST	TYPE
1	852P	1.0	FD1	AT
2	1858A	1.0	ST	AT
3	808	0.6	FL 10	AV
4	-	-	-	-
5	600AD	0.6	SA	AV

REVH/L				
6	1858D	1.0	ST	AT
7	811	1.0	FA 13	AT
8	884C	0.6	SH	AV
9	811/849	1.0	FA 15	AV
10	600AF	0.6	SA	AV

FF	DRIVERELA Y			F
TERM	WIRE	SIZE	DEST	TYPE
1	999	1.0	FF6	AT
2	850	1.0	FA 16	AT
3	883B	0.6	SU	AV
4	851	1.0	FA 19	AV
5	600AG	0.6	SA	AV

INTERLOCKRELA Y				
6	999	1.0	FF1	AT
7	1858B	1.0	ST	AT
8	1858C	0.6	ST	AV
9	846B	1.0	FD2	AV
10	600LF	0.6	SA	AV

FG	TRANSDUMP			F
TERM	WIRE	SIZE	DEST	TYPE
1	107AD	1.0	SS	AT
2	-	-	-	-
3	107AL	0.6	SS	AV
4	852N	1.0	FD1	AV
5	934D	0.6	SK	AV

BLANK				
6	-	-	-	-
7	-	-	-	-
8	-	-	-	-
9	-	-	-	-
10	-	-	-	-

FH	4WB			F
TERM	WIRE	SIZE	DEST	TYPE
1	126A	1.0	FA 17	AU
	126	1.0	FM1	
2	933B	1.0	SE	AT
3	107P	0.6	SS	AV
4	922E	1.0	SV	AV
5	877	0.6	FM3	AV

AUTO2WD				
6	107/922	1.0	FJ5	AT
7	1855	1.0	GA 10	AT
8	818H	0.6	SF	AV
9	854E	1.0	SJ	AV
10	600AB	0.6	SA	AV

FJ	LINK			G,H
TERM	WIRE	SIZE	DEST	TYPE
1	857B	0.6	FL 5	AF,AG
2	107AE	1.0	SS	AF,AG
3	922C	1.0	FX3	AF,AG
4	922A	1.0	SV	AF,AG
5	107/922	1.0	FH6	AF,AG
6	818E	0.6	SF	AF,AG
7	933C	1.0	SE	AF,AG
8	858K	1.0	SL	AF,AG
9	818F	0.6	SF	AF,AG
10	854H	1.0	SJ	AF,AG

FK	DIODES			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	856A	0.6	SC	AF,AG
2	856B	0.6	SC	AF,AG
3	858A	0.6	SL	AF,AG
4	883E	0.6	SU	AF,AG
5	884	0.6	SH	AF,AG
6	884A	0.6	SH	AF,AG
7	934C	0.6	SK	AF,AG
8	804A	1.0	FV17	AF,AG
9	-	-	-	AK
10	-	-	-	AK
11	815	1.0	FA 10	AF,AG
12	806	1.0	SM	AF,AG
13	-	-	-	AK
14	-	-	-	AK

FL	COLUMNSWITCH-P/SHIFT			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	-	-	-	AK
2	-	-	-	AK
3	-	-	-	AK
4	809	0.6	FD3	AF,AG
5	857B	0.6	FJ1	AF,AG
6	810E	1.0	FA 2	AF,AG
7	107R	0.6	SS	AF,AG
8	814	2.0	FA 32	AH,AJ
9	856	0.6	SC	AF,AG
10	808	0.6	FE3	AF,AG
11	110H	2.0	SP	AH,AJ
12	883	0.6	SU	AF,AG
13	858	0.6	SL	AF,AG
14	107A	0.6	SS	AF,AG

FM	FOOTBRAKESW			L,M
TERM	WIRE	SIZE	DEST	TYPE
1	126	0.6	FH1	AD
2	628	0.6	SA	AD
3	877	0.6	FH5	AD

FN	WIPERMOTOR			D,E
TERM	WIRE	SIZE	DEST	TYPE
1	600AK	1.0	SA	AF,AG
2	840	1.0	FP 7	AF,AG
3	982	1.0	FP 2	AF,AG
4	983	1.0	FP 3	AF,AG
5	984	1.0	FP 12	AF,AG
6	110K	1.0	SP	AF,AG
7	839B	1.0	SW	AF,AG
8	303C	1.0	FA47	AF,AG

FP	COLUMNSWITCH-RH			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	110B	1.0	SP	AF,AG
2	982	1.0	FN3	AF,AG
3	983	1.0	FN4	AF,AG
4	110A	1.0	SP	AF,AG
5	-	-	-	AK
6	839A	1.0	SW	AF,AG
7	840	1.0	FN2	AF,AG
8	832	1.4	FW6	AF,AG
9	833	2.0	FA 35	AH,AJ
10	805B	1.0	SN	AF,AG
11	806B	1.0	SM	AF,AG
12	984	1.0	FN5	AF,AG
13	836	2.0	FA 36	AH,AJ
14	803A	1.0	FV18	AF,AG

FR	FRONT WARNINGLIGHTS			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	600EK	1.0	SA	AF,AG
2	837D	0.6	FA 37	AF,AG
3	830AG	0.6	SR	AF,AG
4	805A	0.6	SN	AF,AG
5	806H	0.6	SM	AF,AG
6	804	0.6	FV17	AF,AG
7	855D	0.6	FA 38	AF,AG
8	861D	0.6	FA 39	AF,AG
9	835C	0.6	FY 3	AF,AG
10	825C	0.6	SB	AF,AG
11	411A	0.6	FA 40	AF,AG
12	106B	1.0	FS1	AF,AG
13	-	-	-	AK
14	-	-	-	AK

FS	SPEEDO			R
TERM	WIRE	SIZE	DEST	TYPE
1	106B	1.0	FR12	AM
	106N	1.0	FA 46	
2	974	0.6	FA 42	AL
3				
4				-
5	600MA	0.6	SA	AL
6	300A	0.6	FV3	AL
7	-	-	-	-
8	-	-	-	-

FSA	SPEEDOILLUM			S
TERM	WIRE	SIZE	DEST	TYPE
1	830AK	0.6	SR	AN
2	600JA	0.6	SA	AN

FSB	SPEEDOILLUM			S
TERM	WIRE	SIZE	DEST	TYPE
1	830AU	0.6	SR	AN
2	600JB	0.6	SA	AN

FT	STEERMODESW			N,P
TERM	WIRE	SIZE	DEST	TYPE
1	820	1.0	FA 9	AF,AG
2	819A	0.6	SD	AF,AG
3	823	0.6	FC5	AF,AG
4	819B	0.6	SD	AF,AG
5	822	0.6	FC1	AF,AG
6	821	0.6	FC2	AF,AG

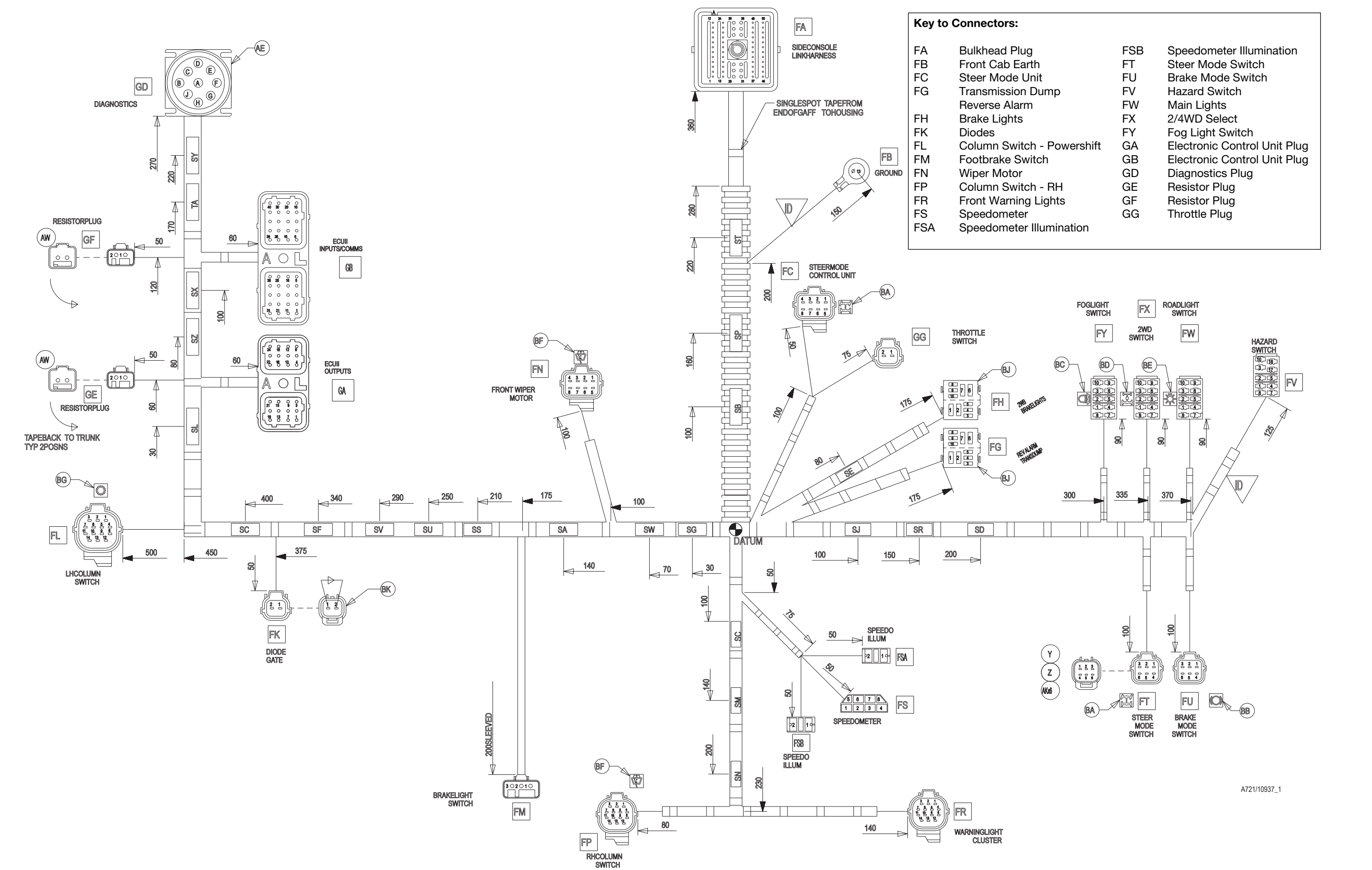
FU	BRAKEMODESW			N,P
TERM	WIRE	SIZE	DEST	TYPE
1	922G/933D	1.0	FZ2	AF,AG
2	107S	1.0	FZ1	AF,AG
3	853N	1.0	FZ6	AF,AG
4	854J	1.0	FZ3	AF,AG
5	853M	1.0	FZ5	AF,AG
6	853L	1.0	FZ4	AF,AG

FV	HAZARDSWITCH			T
TERM	WIRE	SIZE	DEST	TYPE
1	104	2.0	FA 29	AR
2	802	2.0	FV25	AR
3	300	2.0	FA 31	AS
	300A	0.6	FS6	
4				
5	805	1.0	SN	AP
7				
8	830AL	0.6	SR	AP
10	600DX	0.6	SA	AP
17	804	0.6	FR6	AR
	804A	1.0	FK8	
18	803	2.0	FA 26	AS
	803A	1.0	FP 14	

FW	MAINLIGHTS			U
TERM	WIRE	SIZE	DEST	TYPE
1				
2	311	2.0	FA 30	AR
3	828	2.0	FA 27	AR
4	1133A	1.0	FA 18	AP
5	127A	2.0	FA 33	AR
6	832	1.4	FP 8	AR
7	600DW	0.6	SA	AP
8	830AJ	0.6	SR	AP
9				
10				

FX	2/4WDSELECT			U
TERM	WIRE	SIZE	DEST	TYPE
1				
2	107D	1.0	SS	AP
3	922C	1.0	FJ3	AP
4	853G	1.0	SG	AP
5	854F	1.0	SJ	AP
6	853H	1.0	SG	AP
7	600BR	0.6	SA	AP
8	830AH	0.6	SR	AP
9				
10				

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FA BULKHAEDPLUG					A,B				
TERM	WIRE	SIZE	DEST	TYPE	TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	FC3	AA	31	300	2.0	FV3	AB
2	810E	1.0	SF	AA	32	814	2.0	FL 8	AB
3	826B	1.0	FC4	AA	33	127A	2.0	FW5	AB
4	845	1.0	FC6	AA	34	107	2.0	SS	AB
5	825B	1.0	SB	AA	35	833	2.0	FP 9	AB
6	1861	1.0	GC6	AA	36	836	2.0	FP 13	AB
7	934B	1.0	FG5	AA	37	837D	0.6	FR2	AA
8	819	1.0	SD	AA	38	855D	1.0	FR7	AA
9	820	1.0	FT 1	AA	39	861D	1.0	FR8	AA
10	815C	1.0	GB30	AA	40	411A	1.0	SU	AA
11	1860	1.0	GC24	AA	41	405A	1.0	GC1 1	AA
12	1858	1.0	FG7	AA	42	974	1.0	GC3	AA
13	1862	1.0	GC20	AA	43	868	1.0	FY 2	AA
14	853	1.0	GC18	AA	44	835	1.0	FY 3	AA
15	1863	1.0	GC23	AA	45	992	1.0	GB39	AA
16	1866	1.0	GC4	AA	46	106N	1.0	FS1	AA
17	126A	1.0	SG	AA	47	303K	1.0	ST	AA
18	134	1.0	FW4	AA	48	806D	1.0	SM	AA
19	1865	1.0	GC15	AA	49	600DP	1.0	SA	AA
20	830C	1.0	SR	AA	50	600DN	1.0	SA	AA
21	839	1.0	SW	AA	51	1864	1.0	GC12	AA
22	818/858	1.0	SL	AA	52	135	1.0	SC	AA
23	933	1.0	SE	AA	53	136	1.0	GB2	AA
24	805D	1.0	SN	AA	54	-	-	-	AC
25	802	2.0	FV2	AB	55	-	-	-	AC
26	803	2.0	FV18	AB	56	402	1.0	GB23	AA
27	828	2.0	FW3	AB	57	403	1.0	GB35	AA
28	110	2.0	SP	AB	58	404	1.0	GC21	AA
29	104	2.0	FV1	AB	59	405	1.0	GB13	AA
30	311	2.0	FW2	AB	60	406	1.0	GB15	AA

FB FRONT CABEAR TH				-
TERM	WIRE	SIZE	DEST	TYPE
1	621	4.0	SA	C

FC STEERMODEUNIT				D,E
TERM	WIRE	SIZE	DEST	TYPE
1	822	0.6	FT 5	AF,AG
2	821	0.6	FT 6	AF,AG
3	824B	1.0	FA 1	AF,AG
4	826B	1.0	FA 3	AF,AG
5	823	1.0	FT 3	AF,AG
6	845	1.0	FA 4	AF,AG
7	825D	1.0	SB	AF,AG
8	600L	1.0	SA	AF,AG

FG TRANSDUMP				F
TERM	WIRE	SIZE	DEST	TYPE
1	107AD	1.0	SS	AS
2	1873	1.0	GB37	AS
3	107AL	0.6	SS	AV
4				
5	934B	1.0	FA 7	AV
REV ALARM				
6	107V	1.0	SS	AS
7	1858	1.0	FA 12	AS
8	808F	0.6	SJ	AV
9	-	-	-	-
10	600JX	0.6	SA	AV

FH BRAKELIGHTS				F
TERM	WIRE	SIZE	DEST	TYPE
1	126C	1.0	SG	AS
2	933B	1.0	SE	AS
3	126D	0.6	SG	AV
4				-
5	877	0.6	FM3	AV
2WB				
6	933D	1.0	SE	AS
7	-	-	-	-
8	909	1.0	FU3	AV
9	1800	1.0	GB20	AV
10	600AB	0.6	SA	AV

FK DIODES				BN,BP
TERM	WIRE	SIZE	DEST	TYPE
1	804A	1.0	FV17	AF,AG
2	806	1.0	SM	AF,AG

FM FOOTBRAKESW				L,M
TERM	WIRE	SIZE	DEST	TYPE
1	126	0.6	SG	AD
2	628	0.6	SA	AD
3	877	0.6	FH5	AD

FL COLUMNSWITCH-P/SHIFT				J,K
TERM	WIRE	SIZE	DEST	TYPE
1	-	-	-	AK
2	-	-	-	AK
3	-	-	-	AK
4	809	0.6	GB7	AF,AG
5	857	0.6	GB27	AF,AG
6	810	1.0	SF	AF,AG
7	135B	0.6	SC	AF,AG
8	814	2.0	FA 32	AH,AJ
9	856	0.6	GB8	AF,AG
10	808	0.6	SJ	AF,AG
11	110H	2.0	SP	AH,AJ
12	883	0.6	GB18	AF,AG
13	858	1.0	SL	AF,AG
14	135C	0.6	SC	AF,AG

FN WIPERMOTOR				D,E
TERM	WIRE	SIZE	DEST	TYPE
1	600AK	1.0	SA	AF,AG
2	840	1.0	FP 7	AF,AG
3	982	1.0	FP 2	AF,AG
4	983	1.0	FP 3	AF,AG
5	984	1.0	FP 12	AF,AG
6	303C	1.0	ST	AF,AG
7	839B	1.0	SW	AF,AG
8	-	-	-	AK

FP COLUMNSWITCH-RH				J,K
TERM	WIRE	SIZE	DEST	TYPE
1	110B	1.0	SP	AF,AG
2	982	1.0	FN3	AF,AG
3	983	1.0	FN4	AF,AG
4	110A	1.0	SP	AF,AG
5	-	-	-	AK
6	839A	1.0	SW	AF,AG
7	840	1.0	FN2	AF,AG
8	832	1.4	FW6	AH,AJ
9	833	2.0	FA 35	AH,AJ
10	805B	1.0	SN	AF,AG
11	806B	1.0	SM	AF,AG
12	984	1.0	FN5	AF,AG
13	836	2.0	FA 36	AH,AJ
14	803A	1.0	FV18	AF,AG

FR FRONT WARNINGLIGHTS				J,K
TERM	WIRE	SIZE	DEST	TYPE
1	600EK	1.0	SA	AF,AG
2	837D	1.0	FA 37	AF,AG
3	830AG	0.6	SR	AF,AG
4	805A	1.0	SN	AF,AG
5	806H	1.0	SM	AF,AG
6	804	1.0	FV17	AF,AG
7	855D	1.0	FA 38	AF,AG
8	861D	1.0	FA 39	AF,AG
9	835C	0.6	FY 3	AF,AG
10	825C	0.6	SB	AF,AG
11	411C	1.0	SU	AF,AG
12	106B	1.0	FS1	AF,AG
13	-	-	-	AK
14	-	-	-	AK

FS SPEEDO				R
TERM	WIRE	SIZE	DEST	TYPE
1	106B	1.0	FR12	AM
	106N	1.0	FA 46	
2	974	0.6	GB14	AL
3				
4				
5	600MA	0.6	SA	AL
6	300A	0.6	FV3	AL

FSA SPEEDOILLUM				S
TERM	WIRE	SIZE	DEST	TYPE
1	830AK	0.6	SR	AN
2	600JA	0.6	SA	AN

FSB SPEEDOILLUM				S
TERM	WIRE	SIZE	DEST	TYPE
1	830AU	0.6	SR	AN
2	600JB	0.6	SA	AN

FT STEERMODESW				N,P
TERM	WIRE	SIZE	DEST	TYPE
1	820	1.0	FA 9	AF,AG
2	819A	0.6	SD	AF,AG
3	823	0.6	FC5	AF,AG
4	819B	0.6	SD	AF,AG
5	822	0.6	FC1	AF,AG
6	821	0.6	FC2	AF,AG

FU BRAKEMODESW				N,P
TERM	WIRE	SIZE	DEST	TYPE
1	-	-	-	AK
2	107S	1.0	SS	AF,AG
3	909	1.0	FH8	AF,AG
4	107L	1.0	SS	AF,AG
5	-	-	-	AK
6	922G	1.0	FX3	AF,AG

FV HAZARDSWITCH				T
TERM	WIRE	SIZE	DEST	TYPE
1	104	2.0	FA 29	AR
2	802	2.0	FA 25	AR
3	300	2.0	FA 31	AS
	300A	0.6	FS6	
4	-	-	-	-
5	805	1.0	SN	AR
7	-	-	-	-
8	830AL	0.6	SR	AP
10	600DX	0.6	SA	AP
17	804	1.0	FR6	AR
	804A	1.0	FK1	
18	803	2.0	FA 26	AS
	803A	1.0	FP 14	

FW MAINLIGHTS				U
TERM	WIRE	SIZE	DEST	TYPE
1	-	-	-	-
2	311	2.0	FA 30	AR
3	828	2.0	FA 27	AR
4	134	1.0	FA 18	AP
5	127A	2.0	FA 33	AR
6	832	1.4	FP 8	AR
7	600DW	0.6	SA	AP
8	830AJ	0.6	SR	AP

FX 2/4WDSELECT				U
TERM	WIRE	SIZE	DEST	TYPE
1	-	-	-	-
2	107D	1.0	SS	AP
3	922	1.0	GB40	AR
	922G	1.0	FU6	
4	-	-	-	-
5	-	-	-	-
6	-	-	-	-
7	600BR	1.0	SA	AP
8	830AH	1.0	SR	AP

FY FOGLIGHT SWITCH				U
TERM	WIRE	SIZE	DEST	TYPE
2	868	1.0	FA43	AP
3	835	1.0	FA44	AR
	835C	0.6	FR9	
7	600N	0.6	SA	AP
8	830AV	0.6	SR	AP

GA ECUII'B'PLUG				G
TERM	WIRE	SIZE	DEST	TYPE
1				AC
2				AC
3	974	1.0	FA 42	V
4	1866	1.0	FA 16	V
5				AC
6	1861	1.0	FA 6	V
7				AC
8				AC
9				AC
10				AC
11	405A	1.0	FA 41	V
12	1864	1.0	FA 51	V
13	600MH	1.0	SA	V
14				AC
15	1865	1.0	FA 19	V
16				AC
17				AC
18	853	1.0	FA 14	V
19				AC
20	1862	1.0	FA 13	V
21	404	1.0	FA 58	V
22				AC
23	1863	1.0	FA 15	V
24	1860	1.0	FA 11	V

GB ECUII/A'PLUG				H
TERM	WIRE	SIZE	DEST	TYPE
1	135A	0.6	SC	V
2	136	1.0	FA 53	V
3				AC
4	107X	1.0	SS	V
5				AC
6	500	1.0	SX	V
7	809	0.6	FL 4	V
8	856	1.0	FL 9	V
9				AC
10				AC
11				AC
12				AC
13	405	1.0	FA 59	V
14	974	0.6	FS2	V
15	406	1.0	FA 60	V
16	501	1.0	SZ	V
17	858A	1.0	SL	V
18	883	1.0	FL 12	V
19	991	1.0	GG2	V
20	1800	1.0	FH9	V
21				AC
22				AC
23	402	1.0	FA 56	V
24				AC
25	411B	1.0	SU	V
26	600MJ	1.0	SA	V
27	857	1.0	FL 5	V
28	810D	1.0	SF	V
29				AC
30	815C	1.0	FA 10	V
31				AC
32				AC
33				AC
34				AC
35	403	1.0	FA 57	V
36	600MK	1.0	SA	V
37	1873	1.0	FG2	V
38	808G	0.6	SJ	V
39	992	1.0	FA 45	V
40	922	1.0	FX3	V

GD DIAGNOSTICS'PLUG				W
TERM	WIRE	SIZE	DEST	TYPE
A	600ML	1.0	SA	AB
B	303L	1.0	ST	AB
C	500D	1.0	SY	AB
D	501D	1.0	TA	AB
E				-
F				-
G				-
H				-
J				-

GE RESISTOR'PLUG				AU,BH
TERM	WIRE	SIZE	DEST	TYPE
1	500A	1.0	SX	AD
2	501A	1.0	SZ	AD

GF RESISTOR'PLUG				AU,BH
TERM	WIRE	SIZE	DEST	TYPE
1	500C	1.0	SY	AD
2	501C	1.0	TA	AD

GG THROTTLE'SWITCH				BL,BM
TERM	WIRE	SIZE	DEST	TYPE
1	107T	1.0	SS	AF,AG
2	991	1.0	GB19	AF,AG

(machines up to serial no. 333.00)



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(Machines up to serial no. 933756)

CA MAINFRAME PLUG					A,B
TERM	WIRE	SIZE	DEST	TYPE	
1	105	1.0	CCA 4	BN	
2	402	0.6	CV 6	BN	
3	403	0.6	CV 11	BN	
4	819	0.6	CB 8	BN	
5	101AS	1.0	SH	BN	
6	-	-	-	BP	
7	-	-	-	BP	
8	1857	1.0	DE 4	BN	
9	903A	1.0	DB 2	BN	
10	-	-	-	BP	
11	406	0.6	CV 12	BN	
12	1801	1.0	DF 3	BN	
13	003	2.0	CCC10	BR	
14	114C	2.0	SW	BR	
15	-	-	-	BS	
16	200V	4.0	CCA15	BT	
17	-	-	-	BS	
18	-	-	-	BS	
19	-	-	-	BS	
20	814	2.0	CB 32	BR	
21	200B	4.0	CU 1	BT	
22	200C	4.0	CU 2	BT	
23	200D	4.0	SF	BT	
24	200E	4.0	CCB15	BT	
25	200G	4.0	CCC 3	BT	
26	200M	4.0	CE 8	BT	
27	200R	4.0	CCB19	BT	
28	842	3.0	CF 2	BT	
29	617	0.6	CV 3	BU	
30	-	-	-	BS	
31	-	-	-	BS	
32	-	-	-	BS	
33	-	-	-	BS	
34	-	-	-	BS	
35	-	-	-	BS	
36	-	-	-	BS	
37	1851	1.0	DG 3	BN	
38	407	0.6	SZ	BN	
39	408	0.6	CW 5	BN	
40	863	1.0	DJ 6	BN	
41	109A	1.0	SY	BN	
42	934F	1.0	CB 7	BN	
43	514	0.6	CV 2	BN	
44	513	0.6	EA 7	BN	
45	867B	1.0	CN 6	BN	
46	409	0.6	CX 5	BN	
47	412	0.6	CY 8	BN	
48	839	1.0	CB 21	BN	

CB CAB LINK					C,D
TERM	WIRE	SIZE	DEST	TYPE	
1	824B	0.6	SA	BN	
2	810E	0.6	SJ	BN	
3	826B	0.6	SU	BN	
4	845	0.6	CTS 5	BN	
5	825B	0.6	SN	BN	
6	405	0.6	CV 10	BN	
7	934F	1.0	CA 42	BN	
8	819	0.6	CA 4	BN	
9	820	0.6	CTS 6	BN	
10	815A	0.6	CM 9	BN	
11	404	0.6	CV 9	BN	
12	1858	1.0	DT 3	BN	
13	-	-	-	BP	
14	-	-	-	BP	
15	-	-	-	BP	
16	-	-	-	BP	
17	126A	1.0	CCB12	BN	
18	134	1.0	CL 1	BN	
19	-	-	-	BP	
20	830C	1.0	SK	BN	
21	839	1.0	CA 48	BN	
22	818G	0.6	DT 1	BN	
23	933	1.0	CCA13	BN	
24	805D	1.0	SP	BN	
25	802	2.0	CH 4	BR	
26	803	2.0	CH 2	BR	
27	828	2.0	CCA17	BR	
28	110	2.0	CCB 4	BR	
29	104	2.0	CCA 6	BR	
30	311	2.0	CCC 2	BR	
31	300	2.0	CCC 4	BR	
32	814	2.0	CA 20	BR	
33	127A	2.0	CL 7	BR	
34	107H	2.0	EA 6	BR	
35	833	2.0	CCC15	BR	
36	836	2.0	CCC19	BR	
37	837D	0.6	CCC20	BU	
38	855D	0.6	SR	BU	
39	861D	0.6	ST	BU	
40	411A	0.6	CG 6	BU	
41	-	-	-	BP	
42	-	-	-	BP	
43	868	1.0	CCC18	BU	
44	835	1.0	CTB 1	BU	
45	-	-	-	BP	
46	106N	1.0	SD	BU	
47	303C	1.0	SX	BU	
48	806D	1.0	SV	BU	
49	-	-	-	BP	
50	-	-	-	BP	
51	-	-	-	BP	
52	-	-	-	BP	
53	-	-	-	BP	
54	-	-	-	BP	
55	-	-	-	BP	
56	-	-	-	BP	
57	-	-	-	BP	
58	-	-	-	BP	
59	-	-	-	BP	
60	-	-	-	BP	

CCA FUSE BOX A					E,F
TERM	WIRE	SIZE	DEST	TYPE	
1					
3					
5	002	4.0	CD 2	BY	
7					
9					
11	200T	2.0	SF	BZ	
13	933	1.0	CB 23	BY	
15	200V	4.0	CA 16	CA	
17	828	2.0	CB 27		BX
19	828K	1.0	DN 2		
2	101AG	2.0	SH	BZ	
4	105	1.0	CA 1	BZ	
	105B	0.6	EA 8		
6	104	2.0	CB 29	BZ	
8	109	2.0	SY	BZ	
10	107	2.0	EA 3		CA
	107S	0.6	DW 1		
12					
14	816	1.0	SL	BY	
16					
18	829	1.0	SM	BY	
20	830	1.0	SK	BY	

CCB FUSE BOX B					E,F
TERM	WIRE	SIZE	DEST	TYPE	
1					
3					
5	007	4.0	CE 2	BW	
7					
9					
11					
13					
15	200E	4.0	CA 24	BX	
17					
19	200R	4.0	CA 27	CA	
2	106	1.0	SD	BY	
4	110	2.0	CB 28	BZ	
6	118	1.4	CM 1	BZ	
8	114	2.0	SW	BZ	
10	103	1.0	DJ 3	BY	
12	126A	1.0	CB 17	BY	
14	132A	1.0	DG 2	BY	
16	309	3.0	CK 8	CA	
18	312	2.0	CL 6	BZ	
20	310	3.0	CJ 8	CA	

CCC FUSE BOX C					E,F
TERM	WIRE	SIZE	DEST	TYPE	
1					
3					
5	200G	4.0	CA 25	DE	
7					
9	010	3.0	CU 9	CA	
11					
13	001	3.0	CU 6	BX	
15					
17	833	2.0	CB 35	BX	
19	836	2.0	CB 36	BZ	
2	311	2.0	CB 30	BZ	
4	300	2.0	CB 31	BZ	
6	303	3.0	SX	CA	
8	304	1.0	SS	BY	
10	003	2.0	CA 13	BZ	
12	102B	3.0	SG	CA	
14	133	1.4	SE	BZ	
16	834	1.4	CR 12	BZ	
18	868	1.0	CB 43	BY	
	837	1.4	CR 10		
20	837D	0.6	CB 37	BZ	

CD IGN 1					G
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	002	4.0	CCA 5	CA	
3	-	-	-	-	
4	600W	0.6	SC	BY	
5	-	-	-	-	
6	133B	0.6	SE	BY	
7	-	-	-	-	
8	200S	4.0	SF	CA	

CE IGN 2					G
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	007	4.0	CCB 5	CA	
3	-	-	-	-	
4	600FF	0.6	SC	BY	
5	-	-	-	-	
6	133A	0.6	SE	BY	
7	-	-	-	-	
8	200M	4.0	CA 26	CA	

CF START INHIBIT					G
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	842	3.0	CA 28	CA	
3	-	-	-	-	
4	600V	0.6	SC	BY	
5	-	-	-	-	
6	810C	0.6	SJ	BY	
7	-	-	-	-	
8	004	3.0	CU 3	CA	

CG BUZZER					H
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	106C	0.6	SD	BY	
3	-	-	-	-	
4	-	-	-	-	
5	-	-	-	-	
6	411	0.6	CV 17	BZ	
	411A	0.6	CB 40		
7	-	-	-	-	
8	-	-	-	-	

CH DI RELAY					H
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	803	2.0	CB 26	BZ	
3	-	-	-	-	
4	802	2.0	CB 25	BZ	
5	-	-	-	-	
6	600BL	0.6	SC	BY	
7	-	-	-	-	
8	-	-	-	-	

CJ FRONT WORKLIGHT RELAY					G
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	116	1.4	DC 2	CA	
	116A	1.4	DC 5		
3	-	-	-	-	
4	600JD	0.6	SC	BY	
5	-	-	-	-	
6	1853	0.6	CL 2		BZ
	1853B	0.6	CK 6		
7	-	-	-	-	
8	310	3.0	CCB 20	CA	

CK REAR WORKLIGHT RELAY					G
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	-	
2	117	1.4	DH 2	CA	
	117A	1.4	DH 5		
3	-	-	-	-	
4	600JE	0.6	SC	BY	
5	-	-	-	-	
6	1853B	0.6	CJ 6	BY	
7	-	-	-	-	
8	309	3.0	CCB 16	CA	

CL ENG RUN RELAY					J
TERM	WIRE	SIZE	DEST	TYPE	
1	134	1.0	CB 18		CA
	134A	1.0	DP 1		
2	1853	0.6	CJ 6	BY	
3	407D	0.6	SZ	CB	
4	-	-	-	-	
5	600LZ	0.6	SC	CB	
6	312	2.0	CCB 18	BZ	
7	127A	2.0	CB 33	CA	
	127B	1.0	DP 2		
8	133C	0.6	SE	CB	
9	-	-	-	-	
10	600FJ	0.6	SC	CB	

CM	REAR HORN			J
TERM	WIRE	SIZE	DEST	TYPE
1	118	1.4	CCB 6	CA
	118A	0.6	CM 3	
2	871	1.4	CTB 6	BY
3	118A	0.6	CM 1	CB
4	-	-	-	-
5	921	0.6	CTB 5	CB
PARK BRAKE RELAY				
6	401	0.6	CV 8	BY
7	-	-	-	-
8	810A	0.6	SJ	CB
9	815	0.6	DW 3	BZ
	815A	0.6	CB 10	
10	600BN	0.6	SC	CB

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(Machines up to serial no. 933756)

CU IGNITION SWITCH					P
TERM	WIRE	SIZE	DEST	TYPE	
1	200B	4.0	CA 21	CE	
2	200C	4.0	CA 22	CE	
3	004	3.0	CF 8	CE	
4					
					R
5					
6	001	3.0	CCC 11	CJ	
7	010A	2.0	CU 8	CH	
8	010A	2.0	CU 7	CH	
9	010	3.0	CCC 9	CJ	
10					

CV INSTRUMENT PANEL					S,T
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	514	0.6	CA 43	CL	
3	617	0.6	CA 29	CL	
4	304C	0.6	SS	CL	
5	600T	0.6	SB	CL	
6	402	0.6	CA 2	CL	
7	106A	0.6	SD	CL	
8	401	0.6	CM 6	CL	
9	404	0.6	CB 11	CL	
10	405	0.6	CB 6	CL	
11	403	0.6	CA 3	CL	
12	406	0.6	CA 11	CL	
13	825A	0.6	SN	CL	
14	826A	0.6	SU	CL	
15	824A	0.6	SA	CL	
16	407B	0.6	SZ	CL	
17	411	0.6	CG 6	CL	
18	830AW	0.6	SK	CL	

CW FUEL GAUGE					U
TERM	WIRE	SIZE	DEST	TYPE	
+	106F	0.6	SD	CM	
-	600HP	0.6	SB	CM	
S	408	0.6	CA 39	CM	

CWA FUEL GAUGE ILLUM					V
TERM	WIRE	SIZE	DEST	TYPE	
1	830X	0.6	SK	CN	
2	600HN	0.6	SB	CN	

CX WATER TEMP GAUGE					U
TERM	WIRE	SIZE	DEST	TYPE	
+	106G	0.6	SD	CM	
-	600HM	0.6	SB	CM	
S	409	0.6	CA 46	CM	

CXA WATER TEMP ILLUM					V
TERM	WIRE	SIZE	DEST	TYPE	
1	830W	0.6	SK	CN	
2	600HL	0.6	SB	CN	

CY TACHOMETER					W
TERM	WIRE	SIZE	DEST	TYPE	
1					
2					
3	600HK	0.6	SB	CG	
4	407C	0.6	SZ	CG	
5	304D	0.6	SS	CG	
6					
7					
8	412	0.6	CA 47	CG	

CYA TACHO ILLUM					V
TERM	WIRE	SIZE	DEST	TYPE	
1	830U	0.6	SK	CN	
2	600HR	0.6	SB	CN	

CYB TACHO ILLUM.					V
TERM	WIRE	SIZE	DEST	TYPE	
1	830V	0.6	SK	CN	
2	600HS	0.6	SB	CN	

CZ RADIO CASSETTE					X
TERM	WIRE	SIZE	DEST	TYPE	
1					
2					
3					
4					
5					
6					
7	304A	1.0	SS	CB	
8	600R	1.0	SB	CB	

DA RADIO SPEAKER					Y
TERM	WIRE	SIZE	DEST	TYPE	
1					
2					
3	860	1.0	CS 3	CB	
4	602	1.0	CS 6	CB	
5	859	1.0	CS 2	CB	
6	601	1.0	CS 5	CB	
7					
8					

DB HEATER CONTROLS					Z,AA
TERM	WIRE	SIZE	DEST	TYPE	
1	903	1.0	DS 3	CP	
2	903A	1.0	CA 9	CP	
3	903B	0.6	DZ 3	CP	
4	903C	1.0	DZ 2	CP	

DB A HEATER JUMPER					AB,AC
TERM	WIRE	SIZE	DEST	TYPE	
1	H-LINK	1.0	DBA 2	BN	
2	H-LINK	1.0	DBA 1	BN	
3				BP	
4				BP	

DC FWL SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	116	1.4	CJ 2	CH	
3	855M	1.4	SR	CH	
4					
5	116A	1.4	CJ 2	CH	
6	1871	1.4	CR 11	CH	
7	600P	0.6	SB	CG	
8	829R	0.6	SM	CG	
9					
10					

DD BEACON SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	303B	1.4	SX	CH	
3	894	1.4	CR 3	CH	
4					
5					
6					
7	600DY	0.6	SB	CG	
8	829S	0.6	SM	CG	
9					
10					

DE H.S.C. SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1	865	1.0	CN 7	CG	
2	101P	1.0	SH	CG	
3	866	1.0	CN 9	CG	
4	1857	1.0	CA 8	CH	
	1857A	0.6	CN 8		
5	1856	0.6	DT 4	CG	
6					
7	600DF	0.6	SB	CG	
8	829T	0.6	SM	CG	
9					
10					

DF SRS SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	132B	1.0	DG 2	CG	
3	1801	1.0	CA 12	CG	
4					
5					
6					
7	600LL	0.6	SB	CG	
8	829AU	0.6	SM	CG	
9					
10					

DG SHOVEL RESET					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	132A	1.0	CCB14	CH	
	132B	1.0	DF 2		
3	1851	1.0	CA 37	CG	
4					
5					
6					
7	600LY	0.6	SB	CG	
8	829AS	0.6	SM	CG	
9					
10					

DH RWL SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	117	1.4	CK 2	CH	
3	861G	1.4	ST	CH	
4					
5	117A	1.4	CK 2	CH	
6	861	1.4	CR 4	CH	
7	600BE	0.6	SB	CG	
8	829V	0.6	SM	CG	
9					
10					

DJ R WASH/WIPE SW					AD
TERM	WIRE	SIZE	DEST	TYPE	
1	864	1.0	DM 2	CG	
2	862	1.0	DM 4	CG	
3	103	1.0	CCB10	CH	
	103F	1.0	DM 3		
4					
5					
6	863	1.0	CA 40	CG	
7	600EF	0.6	SB	CG	
8	829W	0.6	SM	CG	
9					
10					

DK AUX HYD SWITCH					AD
TERM	WIRE	SIZE	DEST	TYPE	
1	873	1.0	CP 2	CG	
2	101BG	1.0	SH	CG	
3	872	1.0	CP 4	CG	
5	1830	1.0	DL 4	CG	
6	898	1.0	CP 6	CG	
7	600CH	0.6	SB	CG	
8	829Y	0.6	SM	CG	
9					
10					

DL HYDRACLAMP SW					AD
TERM	WIRE	SIZE	DEST	TYPE	
1					
2	101AH	1.0	SH	CG	
3	920	1.0	CTN 7	CH	
	920A	0.6	DV 1		
4	1830	1.0	DK 5	CG	
5	101BH	1.0	SH	CG	
7	600FC	0.6	SB	CG	
8	829X	0.6	SM	CG	
9					
10					

DM REAR WIPER					AE,AF
TERM	WIRE	SIZE	DEST	TYPE	
1	600BD	1.0	SC	CC,CD	
2	864	1.0	DJ 1	CC,CD	
3	103F	1.0	DJ 3	CC,CD	
4	862	1.0	DJ 2	CC,CD	

DN WORKLIGHT DIODE					AG
TERM	WIRE	SIZE	DEST	TYPE	
1	855N	1.0	SR	CF	
2	828K	1.0	CCA17	CF	

DP WORK LIGHT CONN.					AH,AJ
TERM	WIRE	SIZE	DEST	TYPE	
1	134A	1.0	CL 1	CC,CD	
2	127B	1.0	CL 7	CC,CD	

DPA WORK LIGHT CONN.					AK,AL
TERM	WIRE	SIZE	DEST	TYPE	
1	134B/127B	1.0	DPA 2	CR,CD	
2	134B/127B	1.0	DPA 1	CR,CD	

DR EARTH RING					-
TERM	WIRE	SIZE	DEST	TYPE	
1	620	6.0	SB	AM	
2	619	6.0	SC	AM	

DS HEATER UNIT					AN
TERM	WIRE	SIZE	DEST	TYPE	
1	102	3.0	SG	CJ	
2	600BH	3.0	SC	CJ	
3	903	1.0	SG	CG	
4	829AA	0.6	SM	CG	

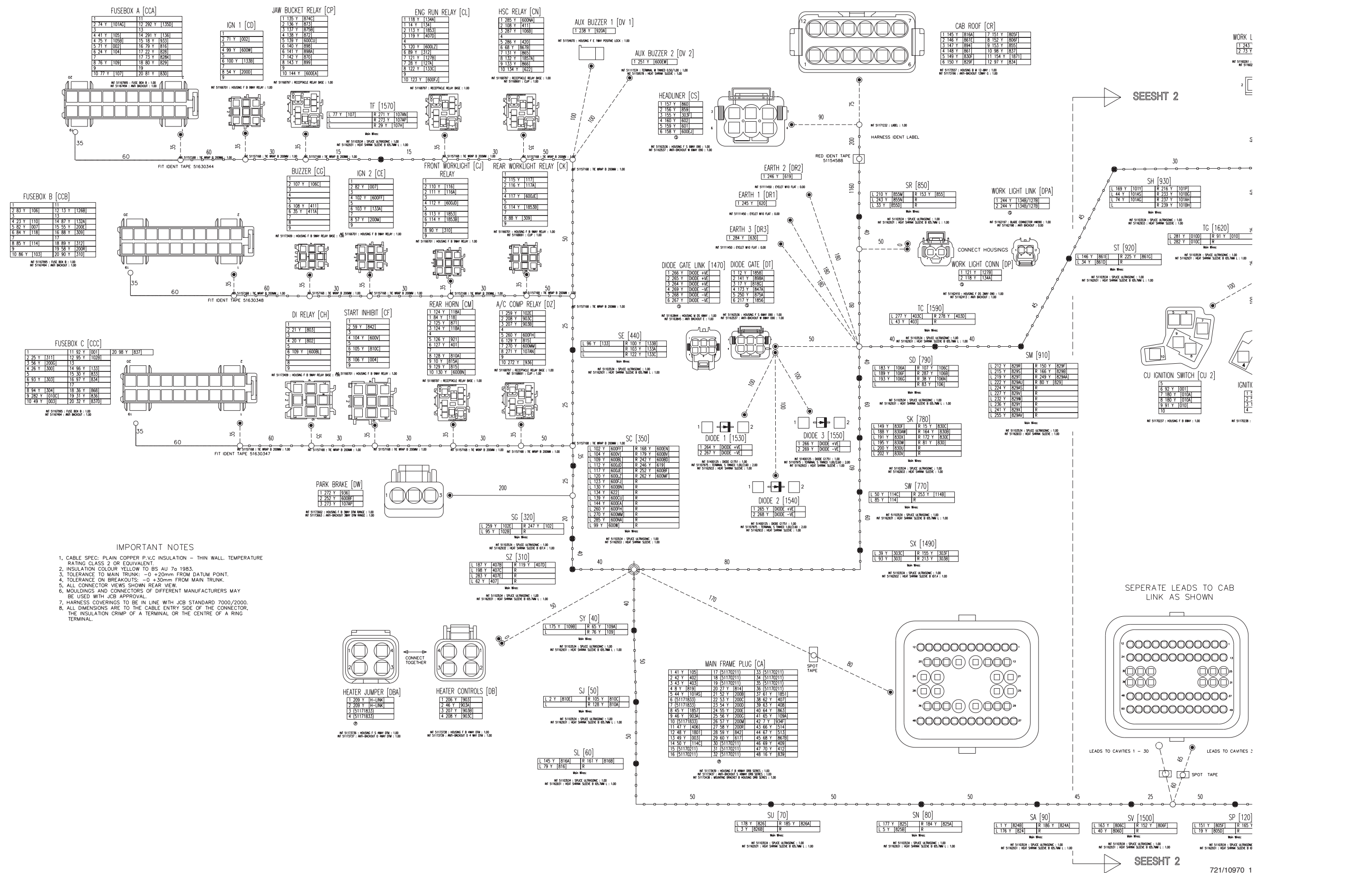
DT DIODE GATE					M,N
TERM	WIRE	SIZE	DEST	TYPE	
1	818G	0.6	CB 22	CC,CD	
2	898A	1.0	CP 6	CC,CD	
3	1858	1.0	CB 12	CC,CD	
4	1856	0.6	DE 5	CC,CD	
5	875A	0.6	TA	CC,CD	
6	847A	1.0	CTB 3	CC,CD	

DV PSS BUZZER					
TERM	WIRE	SIZE	DEST	TYPE	
1	920A	0.6	DL 3	CN,CS	
2	600EW	0.6	SB	CT,CU	

DW PARK BRAKE					AR,AS
TERM	WIRE	SIZE	DEST	TYPE	
1	107S	0.6	CCA 10	CP	
2	600BF	0.6	SC	CP	
3	815	0.6	CM 9	CP	

DX		CIGAR LIGHTER			AT
TERM	WIRE	SIZE	DEST	TYPE	
1	114B	1.0	SW	CN	
2	600DB	1.0	SB	CN	
3	829AV	0.6	SM	CX,CU	

Harness Drawing - Side Console, page 1 of 5 - CAD 721/10970 Issue 2 (Machines from serial no. 933757)



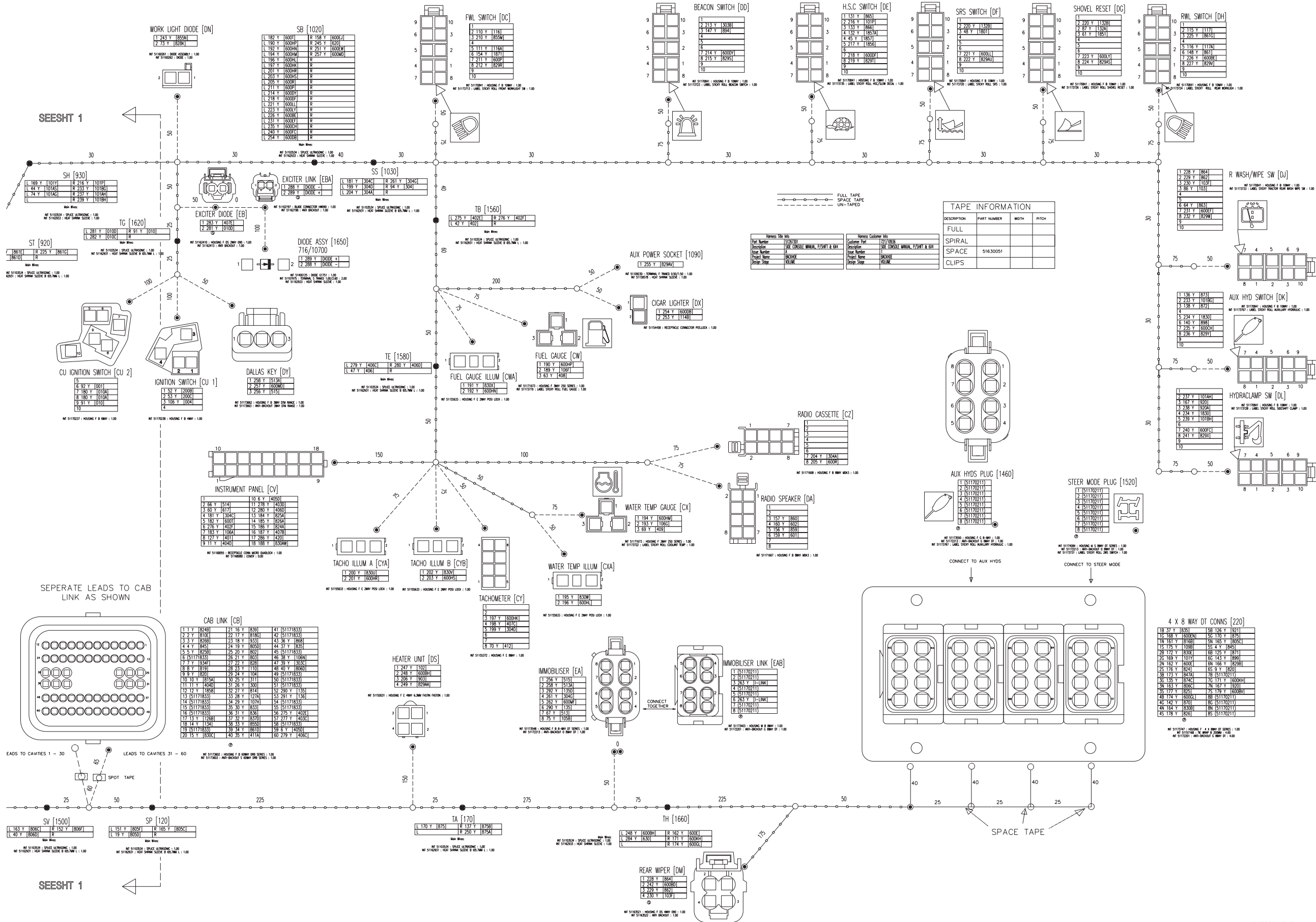
**Harness Drawing - Side Console, page 2 of 5 - CAD 721/10970 Issue 2
(Machines from serial no. 933757)****Key to Connectors:**

CA	Main Frame Plug
CCA	Fusebox A
CCB	Fusebox B
CCC	Fusebox C
CD	Ignition 1
CE	Ignition 2
CF	Start Inhibit
CG	Buzzer
CH	Direction Indicator Relay
CJ	Front Work Light Relay
CK	Rear Work Light Relay
CL	Engine Run Relay
CM	Rear Horn
CN	Hydraulic Speed Control Relay
CP	Jaw Bucket Relay
CR	Cab Roof
CS	Headliner
CU	Ignition Switch (CU2)
DB	Heater Controls
DBA	Heater Jumper
DP	Work Light
DPA	Work Light link
DR1	Earth 1
DR2	Earth 2
DR3	Earth 3
DT	Diode Gate
DV1	Auxiliary Buzzer 1
DV2	Auxiliary Buzzer 2
DW	Park Brake
DZ	Air Conditioning Compressor Relay

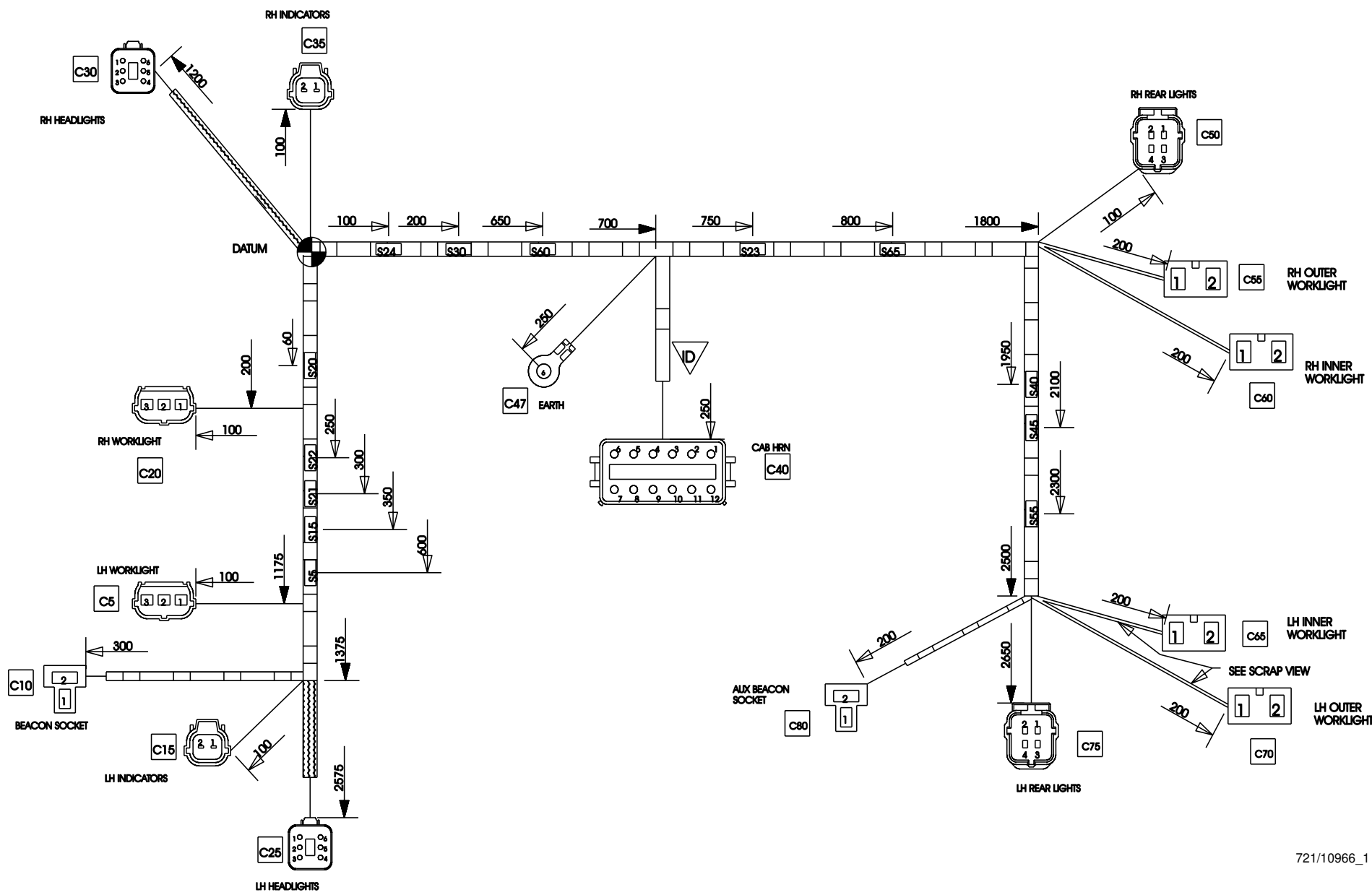
**Harness Drawing - Side Console, page 3 of 5 - CAD 721/10970 Issue 2
(Machines from serial no. 933757)****Key to Connectors:**

CB	Cab Link
CU	Ignition Switch (CU1)
CV	Instrument Panel
CW	Fuel Gauge
CWA	Fuel Gauge Illum
CX	Water Temperature Gauge
CXA	Water Temperature Illum
CY	Tachometer
CYA	Tachometer Illum A
CYB	Tachometer Illum B
CZ	Radio Cassette
DA	Radio Speaker
DC	Front Work Light Switch
DD	Beacon Switch
DE	Hydraulic Speed Control Switch
DF	Smooth Ride System Switch
DG	Shovel Reset
DH	Rear Work Light Switch
DJ	Rear Wash/Wipe Switch
DK	Auxiliary Hydraulic Switch
DL	Hydraclamp Switch
DM	Rear Wiper
DN	Work Light Diode
DS	Heater Unit
DX	Cigar Lighter
DY	Dallas Key
EA	Immobiliser
EAB	Immobiliser Link
EB	Exciter Diode
EBA	Exciter Link

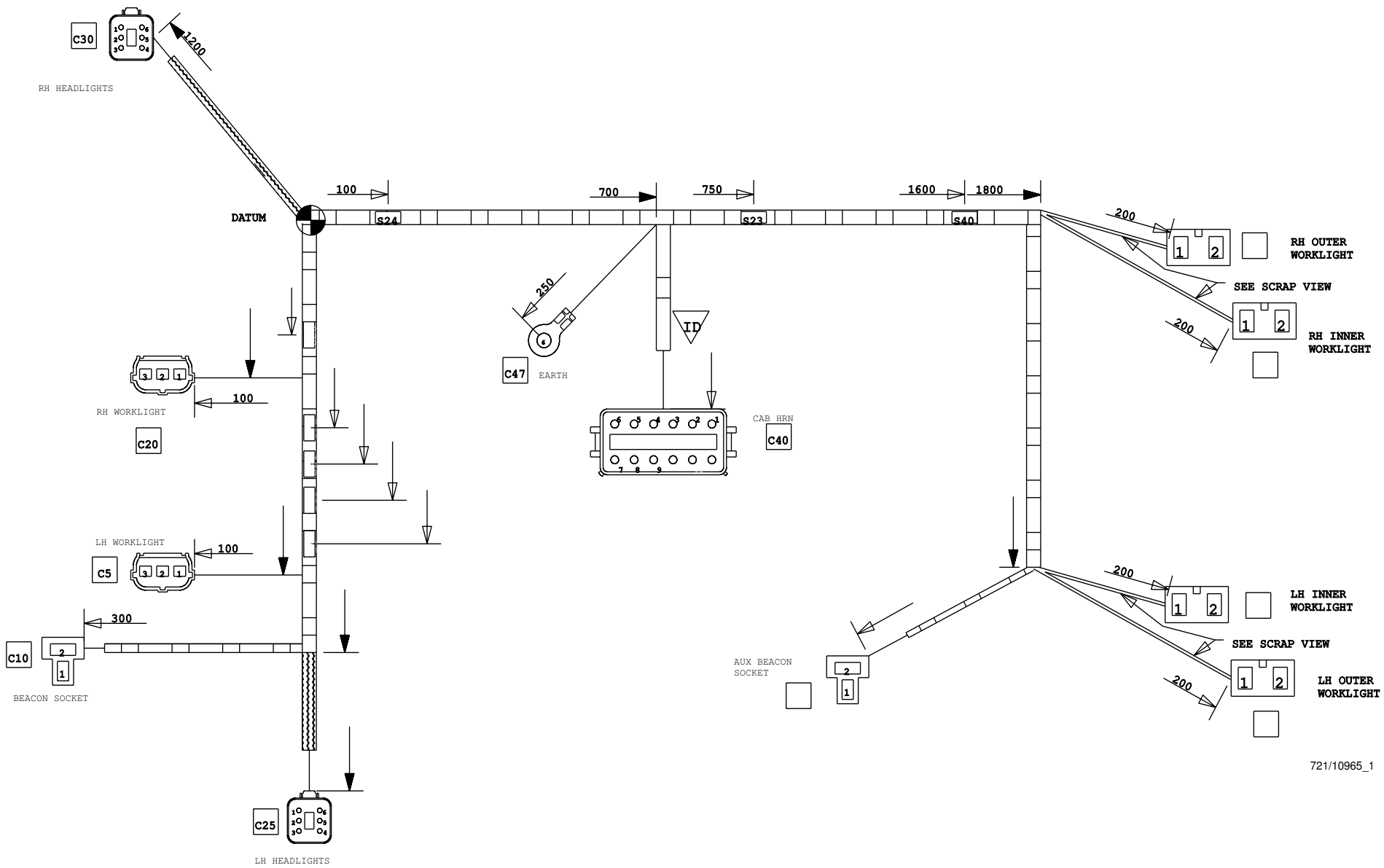
Harness Drawing - Side Console, page 4 of 5 - CAD 721/10970 Issue 2
(Machines from serial no. 933757)



Harness Drawing - Cab Roof (USA only) page 1 of 2 - CAD 721/10966 Issue 1



Harness Drawing - Cab Roof (not USA) page 1 of 2 - CAD 721/10965 Issue 1



Harness Drawing - Cab Roof (not USA) page 2 of 2 - CAD 721/10965 Issue 1

Key to Connectors:

C5	LH Worklight
C10	Beacon Socket
C20	RH Worklight
C25	LH Headlights
C30	RH Headlights
C40	Cab Horn
C47	Earth
C55	RH RR/Out Worklight
C60	RH RR/In Worklight
C65	LH RR/In Worklight
C70	LH RR/Out Worklight
C80	Auxiliary Beacon Socket
S5	FWL O
S15	FWL 1
S20	Beacon
S21	Dip
S22	HD.L
S23	Earth
S24	RH Indicators
S40	RWL

C5	LH WORKLIGHT				D,E
TERM	WIRE	SIZE	DEST	TYPE	
1	1871B	1.0	S5	F,H	
2	600AS	1.4	S23	F,H	
3	855B	1.0	S15	F,H	

C10	BEACON SOCKET				A
TERM	WIRE	SIZE	DEST	TYPE	
1	894A	1.4	S20	B	
2	600AP	1.4	S23	B	

C20	RH WORKLIGHT				D,E
TERM	WIRE	SIZE	DEST	TYPE	
1	855A	1.0	S15	F,H	
2	600AR	1.4	S23	F,H	
3	1871A	1.0	S5	F,H	

C25	LH HEADLIGHTS				W,X
TERM	WIRE	SIZE	DEST	TYPE	
1	806K	1.0	S24	U	
2	834B	1.4	S21	U	
3	837B	1.4	S22	U	
4	829E	1.0	C40 6	U	
5	805N	1.0	C40 7	U	
6	600BC	1.4	S23	U	

C30	RH HEADLIGHTS				W,X
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	C	
2	834A	1.0	S21	U	
3	837A	1.0	S22	U	
4	830D	1.0	C40 5	U	
5	806	1.0	S24	U	
6	600BD	1.0	S23	U	

C40	CAB HRN				S,T
TERM	WIRE	SIZE	DEST	TYPE	
1	-	-	-	C	
2	861E	1.4	S40	U	
3	894	1.4	S20	U	
4	861	1.4	S40	U	
5	830D	1.0	C30 4	U	
6	829E	1.0	C25 4	U	
7	805N	1.0	C25 5	U	
8	806F	1.0	S24	U	
9	855	1.4	S15	U	
10	837	1.4	S22	U	
11	1871	1.4	S5	U	
12	834	1.4	S21	U	

C47	EARTH				-
TERM	WIRE	SIZE	DEST	TYPE	
1	600B	10.0	S23	AB	

C55	RH RR/OUT W/LIGHT				N,R
TERM	WIRE	SIZE	DEST	TYPE	
1	861A	1.0	S40	P	
2	600AY	1.0	S23	P	

C60	RH RR/IN W/LIGHT				N,R
TERM	WIRE	SIZE	DEST	TYPE	
1	861C	1.0	S40	P	
2	600JL	1.0	S23	P	

C65	LH RR/IN W/LIGHT				N,R
TERM	WIRE	SIZE	DEST	TYPE	
1	861D	1.0	S40	P	
2	600JM	1.0	S23	P	

C70	LH RR/OUT W/LIGHT				N,R
TERM	WIRE	SIZE	DEST	TYPE	
1	861B	1.0	S40	P	
2	600AV	1.0	S23	P	

C80	AUX BEACON SKT				A
TERM	WIRE	SIZE	DEST	TYPE	
1	894B	1.4	S20	B	
2	600AU	1.4	S23	B	

S5	FWL O	G,V
WIRE	SIZE	DEST
1871A	1.0	C20 3
1871B	1.0	C5 1
1871	1.4	C40 11

S15	FWL I	G,V
WIRE	SIZE	DEST
855	1.4	C40 9
855A	1.0	C20 1
855B	1.0	C5 3

S20	BEACON	G,V
WIRE	SIZE	DEST
894	1.4	C40 3
894A	1.4	C10 1
894B	1.4	C80 1

S21	DIP	G,V
WIRE	SIZE	DEST
834	1.4	C40 12
834A	1.0	C30 2
834B	1.4	C25 2

S22	HD.L.	G,V
WIRE	SIZE	DEST
837	1.4	C40 10
837A	1.0	C30 3
837B	1.4	C25 3

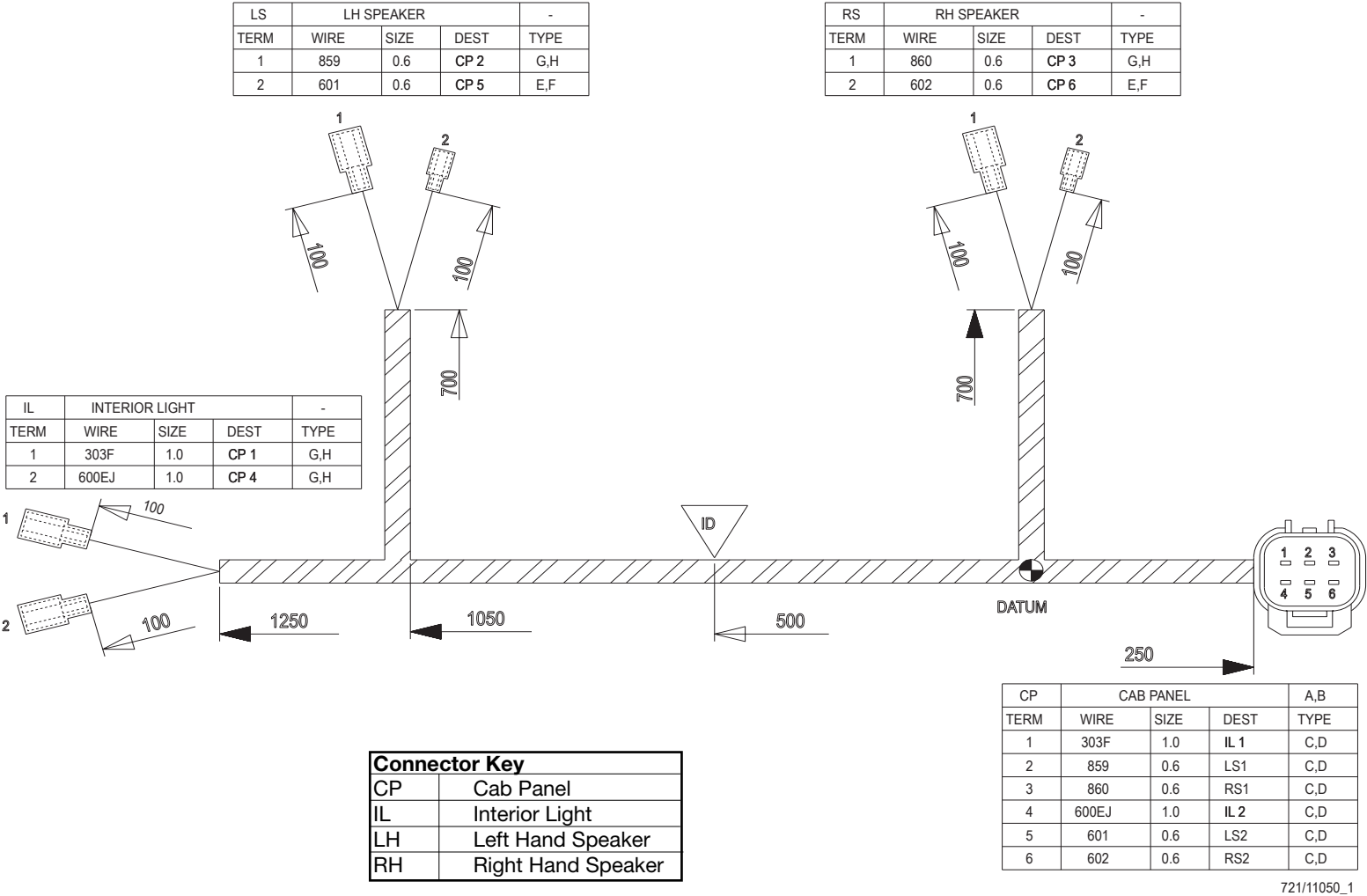
S23	EARTH	G,Y
WIRE	SIZE	DEST
600B	10.0	C47 1
600BC	1.4	C25 6
600BD	1.0	C30 6
600AS	1.4	C5 2
600AR	1.4	C20 2
600AP	1.4	C10 2
600AU	1.4	C80 2
600AY	1.0	C55 2
600AV	1.0	C70 2
600JL	1.0	C60 2
600JM	1.0	C65 2

S24	RH IND	G,V
WIRE	SIZE	DEST
806	1.0	C30 5
806K	1.0	C25 1
806F	1.0	C40 8

S40	RWL	G,Y
WIRE	SIZE	DEST
861	1.4	C40 4
861A	1.0	C55 1
861B	1.0	C70 1
861C	1.0	C60 1
861E	1.4	C40 2
861D	1.0	C65 1

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Harness Drawing - Interior Light, Radio Speakers page 1 of 1 - CAD 721/11050 Issue 1



Harness Drawing - Steer Controls, page 1 of 1- CAD 721/10968 Issue 1

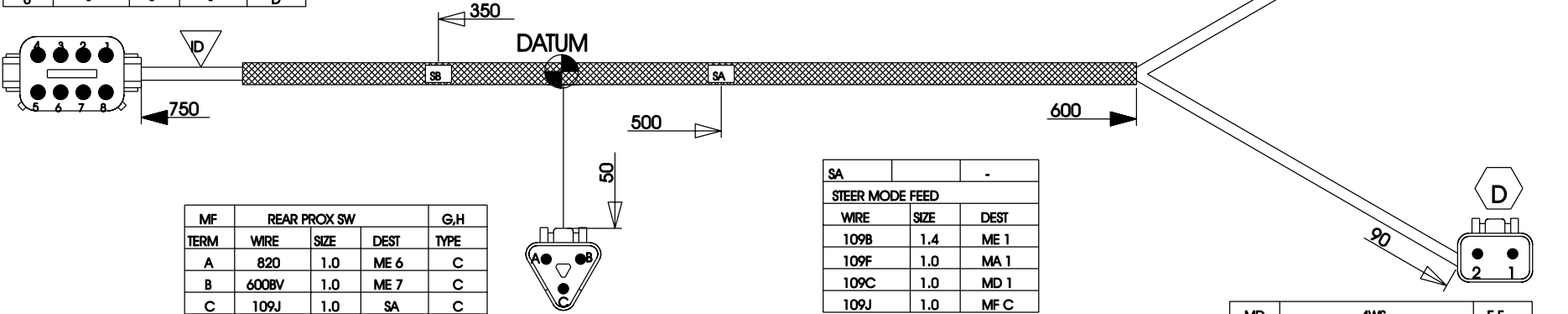
Key to Connectors:

MA	2WS
MD	4WS
ME	Cab Connector
MF	Rear Proximity Switch
SA	Steer Mode Feed
SM	Steer Mode Feed

ME	CAB CONNECTOR			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	109B	1.4	SA	C
2	-	-	-	D
3	825	1.0	MA 2	C
4	826	1.0	SB	C
5	826/845	1.0	SB	C
6	820	1.0	MF A	C
7	600BV	1.0	MF B	C
8	-	-	-	D

SB		-
STEER MODE FEED		
WIRE	SIZE	DEST
826	1.0	ME 4
826C	1.0	MD 2
826/845	1.0	ME 5

MA		2WS		E,F
TERM	WIRE	SIZE	DEST	TYPE
1	109F	1.0	SA	C
2	825	1.0	ME 3	C

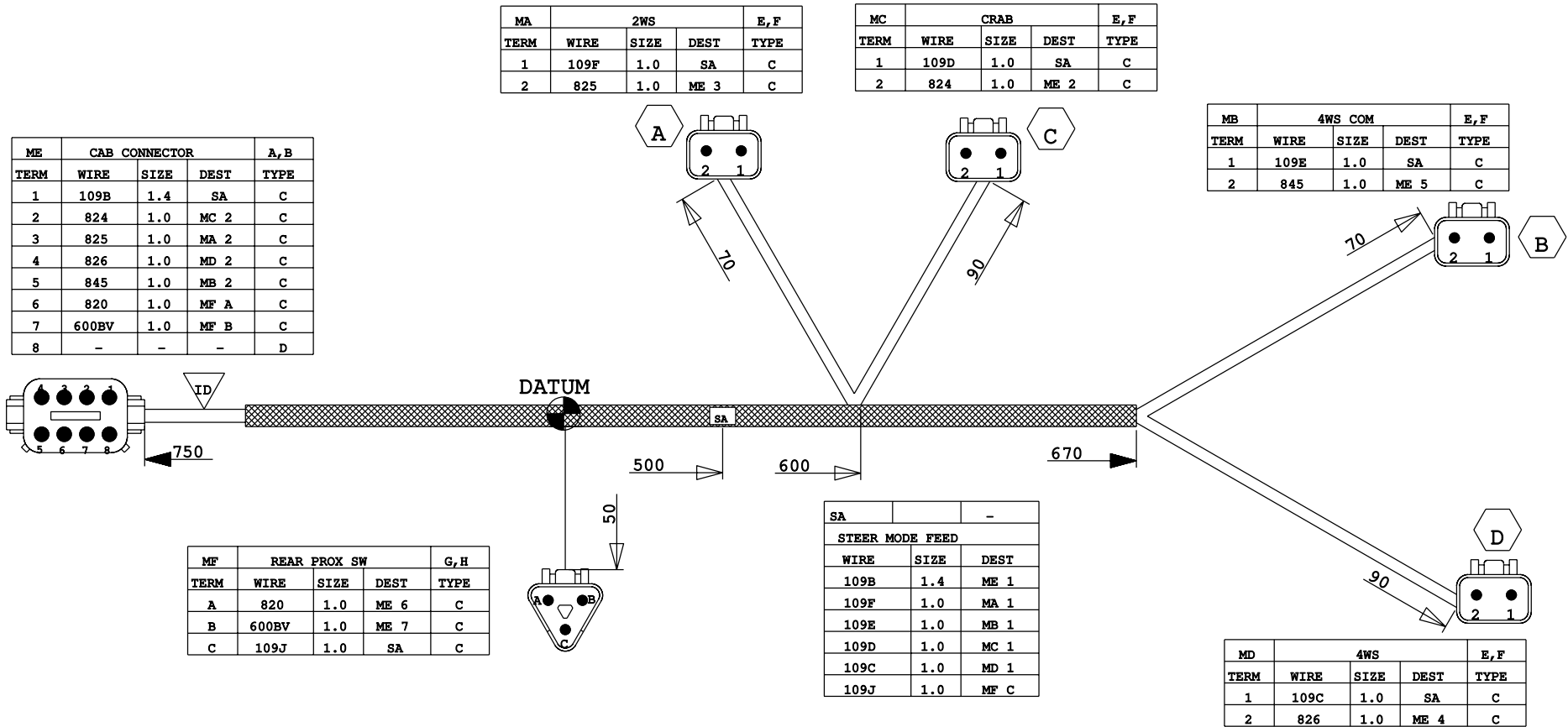


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Harness Drawing - Steer Controls, page 1 of 1 - CAD 721/10967 Issue 1

Key to Connectors:

MA	2WS
MB	4WS com
MC	Crab
MD	4WS
ME	Cab Connector
MF	Rear Proximity Switch
SA	Steer Mode Feed

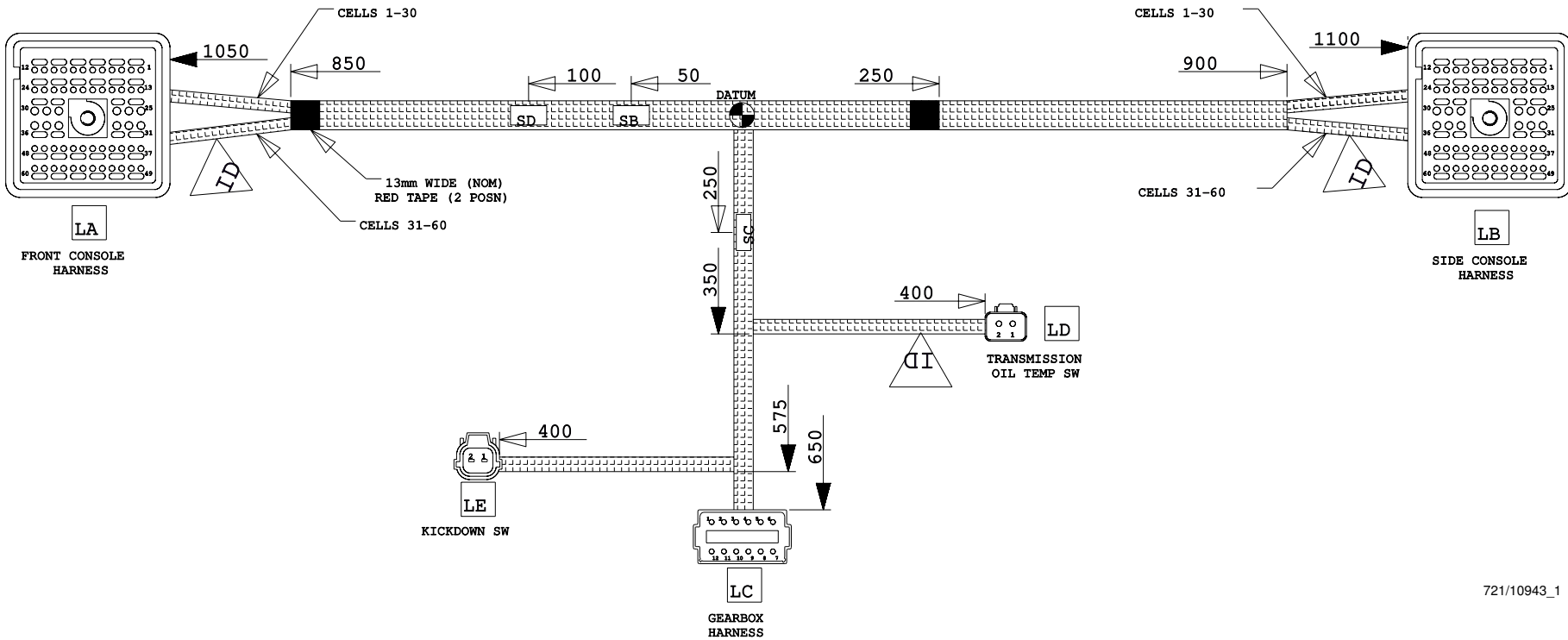


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Harness Drawing - Transmission, page 1 of 2 - CAD 721/10943 Issue 1

Key to Connectors:

LA	Front Console Harness
LB	Side Console Harness
LC	Gearbox
LD	Transmission Oil Temperature Switch
LE	Kickdown Switch
SB	Transmission Fused Splice
SC	Earth Splice
SD	Transmission Oil P Splice



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Harness Drawing - Transmission, page 2 of 2 - CAD 721/10943 Issue 1

LA	FRONT CONSOLE HARNESS			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	LB 1	C
2	810E	1.0	LB 2	C
3	826B	1.0	LB 3	C
4	845	1.0	LB 4	C
5	825B	1.0	LB 5	C
6	1861	1.0	LC 4	C
7	934	1.0	LB 7	C
8	819	1.0	LB 8	C
9	820	1.0	LB 9	C
10	815A	1.0	LB 10	C
11	1860	1.0	LC 8	C
12	1858	1.0	LB 12	C
13	1862	1.0	LC 3	C
14	853	1.0	LC 5	C
15	1863	1.0	LC 9	C
16	1866	1.0	LC 10	C
17	126A	1.0	LB 17	C
18	134	1.0	LB 18	C
19	1865	1.0	LC 11	C
20	830C	1.0	LB 20	C
21	839	1.0	LB 21	C
22	818G	1.0	LB 22	C
23	933	1.0	LB 23	C
24	805D	1.0	LB 24	C
25	802	2.0	LB 25	D
26	803	2.0	LB 26	D
27	828	2.0	LB 27	D
28	110	2.0	LB 28	D
29	104	2.0	LB 29	D
30	311	2.0	LB 30	D
31	300	2.0	LB 31	D
32	814	2.0	LB 32	D
33	127A	2.0	LB 33	D
34	107H	2.0	SB	D
35	833	2.0	LB 35	D
36	836	2.0	LB 36	D
37	837D	1.0	LB 37	C
38	855D	1.0	LB 38	C
39	861D	1.0	LB 39	C
40	411A	1.0	LB 40	C
41	405A	1.0	LC 2	C
42	974	1.0	LC 7	C
43	868	1.0	LB 43	C
44	835	1.0	LB 44	C
45	992	1.0	LE 2	C
46	106N	1.0	LB 46	C
47	303C	1.0	LB 47	C
48	806D	1.0	LB 48	C
49	600DF	1.0	SC	C
50	600DN	1.0	SC	C
51	1864	1.0	LC 12	C
52	-	-	-	E
53	-	-	-	E
54	-	-	-	E
55	-	-	-	E
56	402	1.0	LB 56	C
57	403	1.0	LB 57	C
58	404B	1.0	SD	C
59	405	1.0	LB 59	C
60	406	1.0	LB 60	C

LB	SIDE CONSOLE HARNESS			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	LA 1	C
2	810E	1.0	LA 2	C
3	826B	1.0	LA 3	C
4	845	1.0	LA 4	C
5	825B	1.0	LA 5	C
6	-	-	-	E
7	934	1.0	LA 7	C
8	819	1.0	LA 8	C
9	820	1.0	LA 9	C
10	815A	1.0	LA 10	C
11	404A	1.0	SD	C
12	1858	1.0	LA 12	C
13	-	-	-	E
14	-	-	-	E
15	-	-	-	E
16	-	-	-	E
17	126A	1.0	LA 17	C
18	134	1.0	LA 18	C
19	-	-	-	E
20	830C	1.0	LA 20	C
21	839	1.0	LA 21	C
22	818G	1.0	LA 22	C
23	933	1.0	LA 23	C
24	805D	1.0	LA 24	C
25	802	2.0	LA 25	D
26	803	2.0	LA 26	D
27	828	2.0	LA 27	D
28	110	2.0	LA 28	D
29	104	2.0	LA 29	D
30	311	2.0	LA 30	D
31	300	2.0	LA 31	D
32	814	2.0	LA 32	D
33	127A	2.0	LA 33	D
34	107	2.0	SB	D
35	833	2.0	LA 35	D
36	836	2.0	LA 36	D
37	837D	1.0	LA 37	C
38	855D	1.0	LA 38	C
39	861D	1.0	LA 39	C
40	411A	1.0	LA 40	C
41	-	-	-	E
42	-	-	-	E
43	868	1.0	LA 43	C
44	835	1.0	LA 44	C
45	-	-	-	E
46	106N	1.0	LA 46	C
47	303C	1.0	LA 47	C
48	806D	1.0	LA 48	C
49	-	-	-	E
50	-	-	-	E
51	-	-	-	E
52	-	-	-	E
53	-	-	-	E
54	-	-	-	E
55	-	-	-	E
56	402	1.0	LA 56	C
57	403	1.0	LA 57	C
58	-	-	-	E
59	405	1.0	LA 59	C
60	406	1.0	LA 60	C

LC	GEARBOX			F,G
TERM	WIRE	SIZE	DEST	TYPE
1	600Z	2.0	SC	K
2	405A	1.0	LA 41	L
3	1862	1.0	LA 13	L
4	1861	1.0	LA 6	L
5	853	1.0	LA 14	L
6	107AK	1.0	SB	L
7	974	1.0	LA 42	L
8	1860	1.0	LA 11	L
9	1863	1.0	LA 15	L
10	1866	1.0	LA 16	L
11	1865	1.0	LA 19	L
12	1864	1.0	LA 51	L

LD	TRANS OIL TEMP SW			H,J
TERM	WIRE	SIZE	DEST	TYPE
1	404	1.0	SD	R
2	600C	1.0	SC	R

LE	KICKDOWN SW			S,T
TERM	WIRE	SIZE	DEST	TYPE
1	107U	1.0	SB	U,V
2	992	1.0	LA 45	U,V

SB		M, P
TRANS FUSED SPLICE		
WIRE	SIZE	DEST
107AK	1.0	LC 6
107	2.0	LB 34
107H	2.0	LA 34
107U	1.0	LE 1

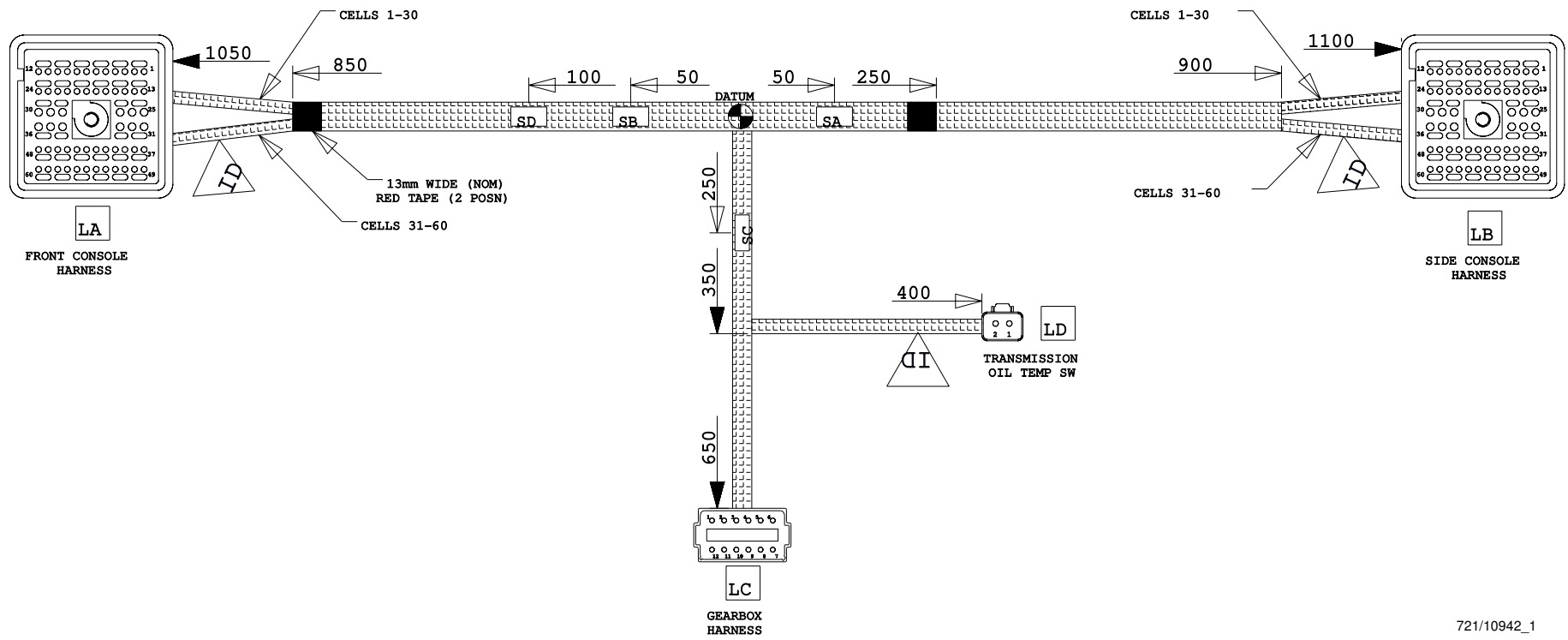
SC		M,P
EARTH SPLICE		
WIRE	SIZE	DEST
600DN	1.0	LA 50
600DP	1.0	LA 49
600C	1.0	LD 2
600Z	2.0	LC 1

SD		M,P
TRANS OIL P SPLICE		
WIRE	SIZE	DEST
404	1.0	LD 1
404A	1.0	LB 11
404B	1.0	LA 58

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Key to Connectors:

LA	Front Console Harness
LB	Side Console Harness
LC	Gearbox
LD	Transmission Oil Temperature Switch
SA	Dump Splice
SB	Transmission Feed Splice
SC	Earth Splice
SD	Transmission Oil P Splice



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LA FRONT CONSOLE HARNESS A,B				
TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	LB 1	C
2	810E	1.0	LB 2	C
3	826B	1.0	LB 3	C
4	845	1.0	LB 4	C
5	825B	1.0	LB 5	C
6	812	1.0	LC 4	C
7	934	1.0	SA	C
8	819	1.0	LB 8	C
9	820	1.0	LB 9	C
10	815A	1.0	LB 10	C
11	812/848	1.0	LC 8	C
12	1858	1.0	LB 12	C
13	811	1.0	LC 3	C
14	853	1.0	LC 5	C
15	811/849	1.0	LC 9	C
16	850	1.0	LC 10	C
17	126A	1.0	LB 17	C
18	134	1.0	LB 18	C
19	851	1.0	LC 11	C
20	830C	1.0	LB 20	C
21	839	1.0	LB 21	C
22	818G	1.0	LB 22	C
23	933	1.0	LB 23	C
24	805D	1.0	LB 24	C
25	802	2.0	LB 25	D
26	803	2.0	LB 26	D
27	828	2.0	LB 27	D
28	110	2.0	LB 28	D
29	104	2.0	LB 29	D
30	311	2.0	LB 30	D
31	300	2.0	LB 31	D
32	814	2.0	LB 32	D
33	127A	2.0	LB 33	D
34	107H	2.0	SB	D
35	833	2.0	LB 35	D
36	836	2.0	LB 36	D
37	837D	1.0	LB 37	C
38	855D	1.0	LB 38	C
39	861D	1.0	LB 39	C
40	411A	1.0	LB 40	C
41	405A	1.0	LC 2	C
42	974	1.0	LC 7	C
43	868	1.0	LB 43	C
44	835	1.0	LB 44	C
45	-	-	-	E
46	106N	1.0	LB 46	C
47	303C	1.0	LB 47	C
48	806D	1.0	LB 48	C
49	600DP	1.0	SC	C
50	600DN	1.0	SC	C
51	-	-	-	E
52	-	-	-	E
53	-	-	-	E
54	-	-	-	E
55	-	-	-	E
56	402	1.0	LB 56	C
57	403	1.0	LB 57	C
58	404B	1.0	SD	C
59	405	1.0	LB 59	C
60	406	1.0	LB 60	C

LB SIDE CONSOLE HARNESS A,B				
TERM	WIRE	SIZE	DEST	TYPE
1	824B	1.0	LA 1	C
2	810E	1.0	LA 2	C
3	826B	1.0	LA 3	C
4	845	1.0	LA 4	C
5	825B	1.0	LA 5	C
6	-	-	-	E
7	934F	1.0	SA	C
8	819	1.0	LA 8	C
9	820	1.0	LA 9	C
10	815A	1.0	LA 10	C
11	404A	1.0	SD	C
12	1858	1.0	LA 12	C
13	-	-	-	E
14	-	-	-	E
15	-	-	-	E
16	-	-	-	E
17	126A	1.0	LA 17	C
18	134	1.0	LA 18	C
19	-	-	-	E
20	830C	1.0	LA 20	C
21	839	1.0	LA 21	C
22	818G	1.0	LA 22	C
23	933	1.0	LA 23	C
24	805D	1.0	LA 24	C
25	802	2.0	LA 25	D
26	803	2.0	LA 26	D
27	828	2.0	LA 27	D
28	110	2.0	LA 28	D
29	104	2.0	LA 29	D
30	311	2.0	LA 30	D
31	300	2.0	LA 31	D
32	814	2.0	LA 32	D
33	127A	2.0	LA 33	D
34	107	2.0	SB	D
35	833	2.0	LA 35	D
36	836	2.0	LA 36	D
37	837D	1.0	LA 37	C
38	855D	1.0	LA 38	C
39	861D	1.0	LA 39	C
40	411A	1.0	LA 40	C
41	-	-	-	E
42	-	-	-	E
43	868	1.0	LA 43	C
44	835	1.0	LA 44	C
45	-	-	-	E
46	106N	1.0	LA 46	C
47	303C	1.0	LA 47	C
48	806D	1.0	LA 48	C
49	-	-	-	E
50	-	-	-	E
51	-	-	-	E
52	-	-	-	E
53	-	-	-	E
54	-	-	-	E
55	-	-	-	E
56	402	1.0	LA 56	C
57	403	1.0	LA 57	C
58	-	-	-	E
59	405	1.0	LA 59	C
60	406	1.0	LA 60	C

LC GEARBOX FG				
TERM	WIRE	SIZE	DEST	TYPE
1	600Z	2.0	SC	K
2	405A	1.0	LA 41	L
3	811	1.0	LA 13	L
4	812	1.0	LA 6	L
5	853	1.0	LA 14	L
6	107AK	1.0	SB	L
7	974	1.0	LA 42	L
8	812/848	1.0	LA 11	L
9	811/849	1.0	LA 15	L
10	850	1.0	LA 16	L
11	851	1.0	LA 19	L
12	934B	1.0	SA	L

LD TRANS OIL TEMP SW H,J				
TERM	WIRE	SIZE	DEST	TYPE
1	404	1.0	SD	R
2	600C	1.0	SC	R

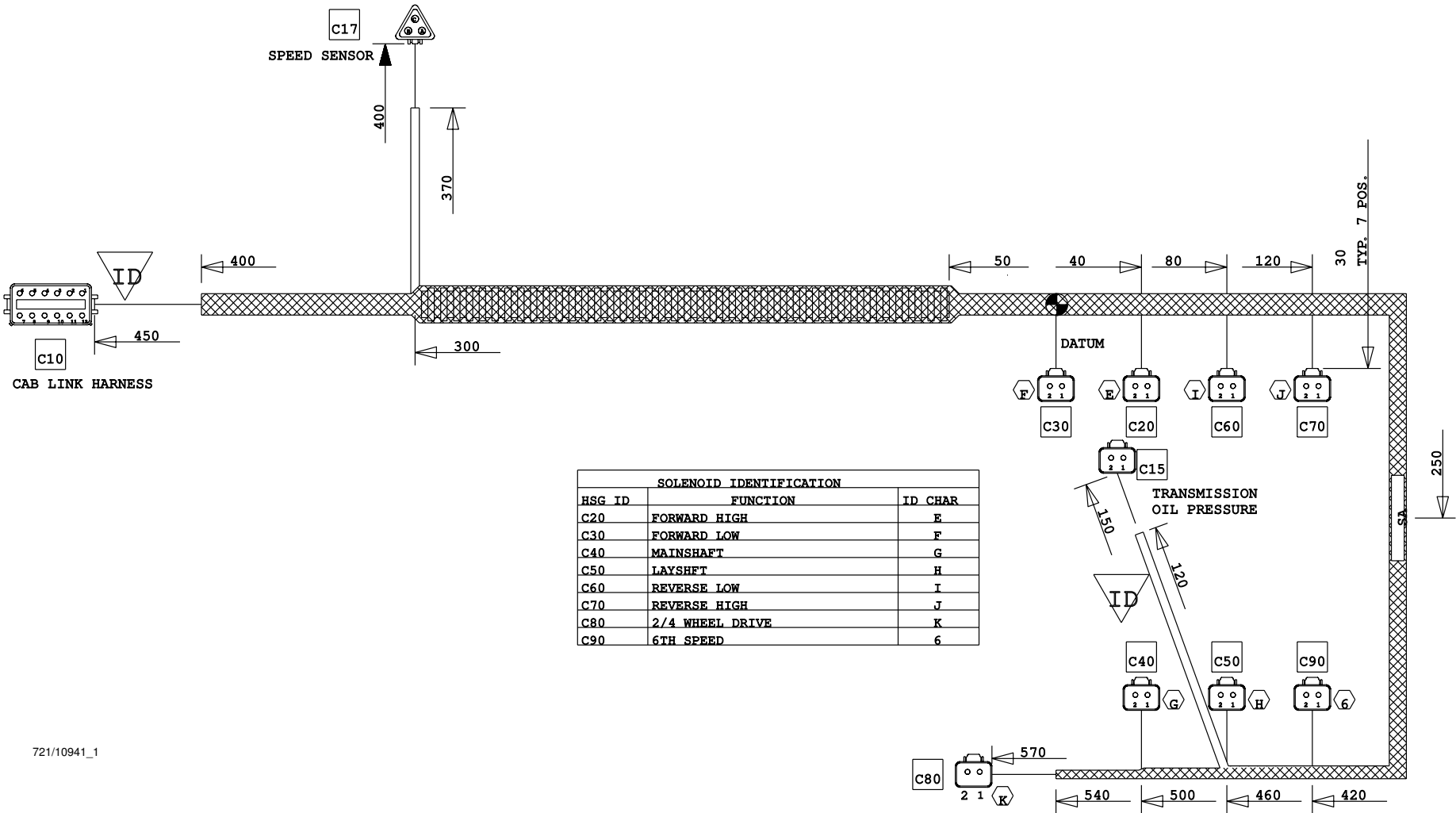
SA M,P		
DUMP SPLICE		
WIRE	SIZE	DEST
934	1.0	LA 7
934F	1.0	LB 7
934B	1.0	LC 12

SB M,P		
TRANS FUSED SPLICE		
WIRE	SIZE	DEST
107AK	1.0	LC 6
107	2.0	LB 34
107H	2.0	LA 34

SC M,P		
EARTH SPLICE		
WIRE	SIZE	DEST
600DN	1.0	LA 50
600DP	1.0	LA 49
600C	1.0	LD 2
600Z	2.0	LC 1

SD M,P		
TRANS OIL P SPLICE		
WIRE	SIZE	DEST
404	1.0	LD 1
404A	1.0	LB 11
404B	1.0	LA 58

Harness Drawing - Transmission, page 1 of 2 - CAD 721/10941 Issue 1



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Harness Drawing - Transmission - *Powershift 6 speed, page 2 of 2 - CAD 721/10941 Issue 1

Key to Connectors:

- C10 Cab Panel
- C15 XMSN Oil Press Switch
- C17 Speed Sensor
- C20 Forward High
- C30 Forward Low
- C40 Main Shaft
- C50 Lay Shaft
- C60 Reverse Low
- C70 Reverse High
- C80 4WD
- C90 6th Speed

C10	CAB PANEL			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	600Z	2.0	SA	G
2	405	1.0	C15 1	H
3	1862	1.0	C70 1	H
4	1861	1.0	C20 1	H
5	853	1.0	C80 1	H
6	107AK	1.0	C17 3	H
7	974	1.0	C17 2	H
8	1860	1.0	C30 1	H
9	1863	1.0	C60 1	H
10	1866	1.0	C50 1	H
11	1865	1.0	C40 1	H
12	1864	1.0	C90 1	H

C15	XMSN OIL PRESS SW			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	405	1.0	C10 2	H
2	600BU	1.0	SA	H

C17	SPEED SENSOR			E,F
TERM	WIRE	SIZE	DEST	TYPE
1	600HV	1.0	SA	H
2	974	1.0	C10 7	H
3	107AK	1.0	C10 6	H

C20	FORWARD HIGH			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1861	1.0	C10 4	H
2	600BS	1.0	SA	H

C30	FORWARD LOW			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1860	1.0	C10 8	H
2	600BX	1.0	SA	H

C40	MAIN SHAFT			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1865	1.0	C10 11	H
2	600BZ	1.0	SA	H

C50	LAY SHAFT			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1866	1.0	C10 10	H
2	600BY	1.0	SA	H

C60	REVERSE LOW			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1863	1.0	C10 9	H
2	600CA	1.0	SA	H

C70	REVERSE HIGH			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1862	1.0	C10 3	H
2	600BT	1.0	SA	H

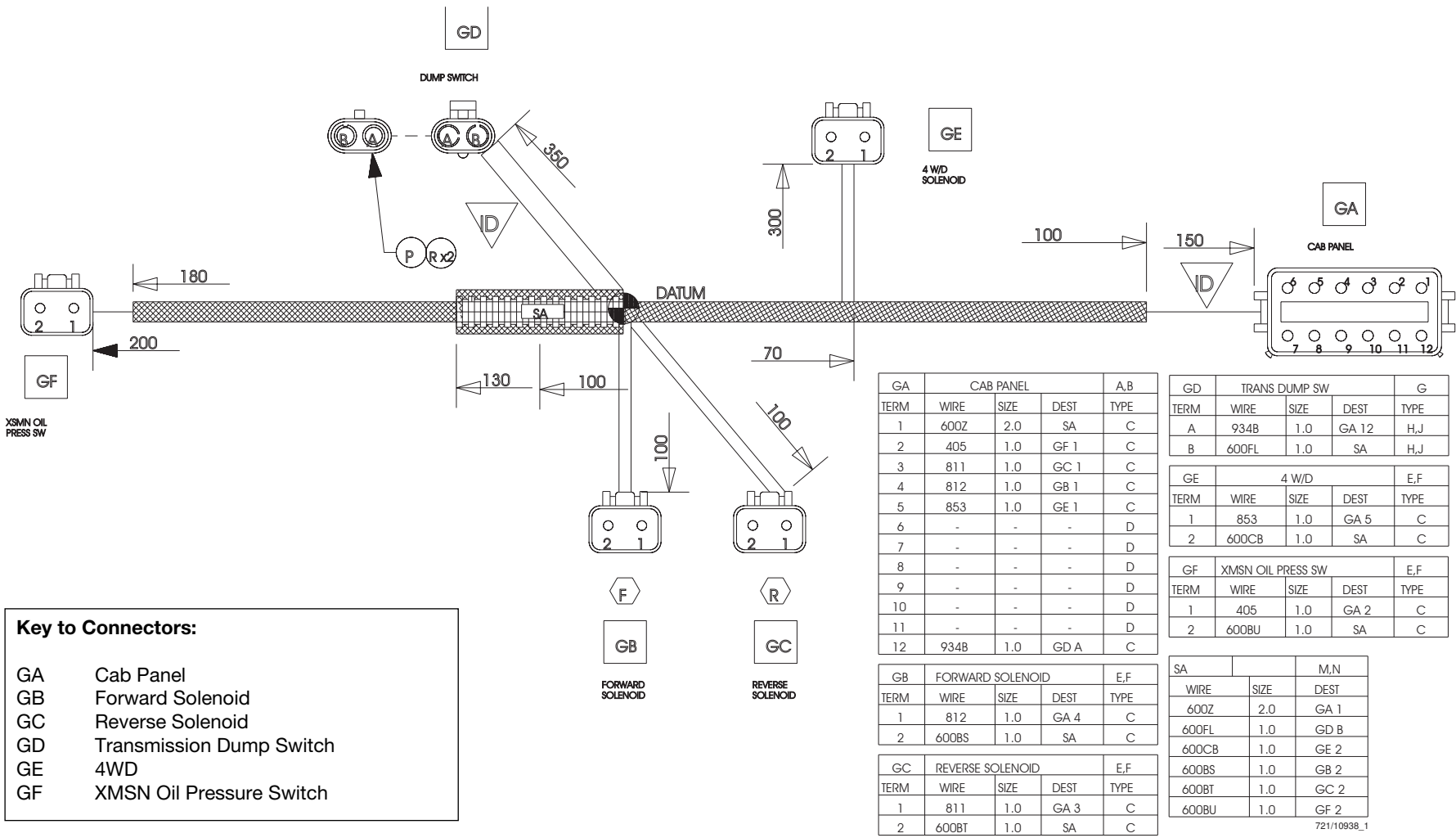
C80	4 W/D			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	853	1.0	C10 5	H
2	600CB	1.0	SA	H

C90	6TH SPEED			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1864	1.0	C10 12	H
2	600ME	1.0	SA	H

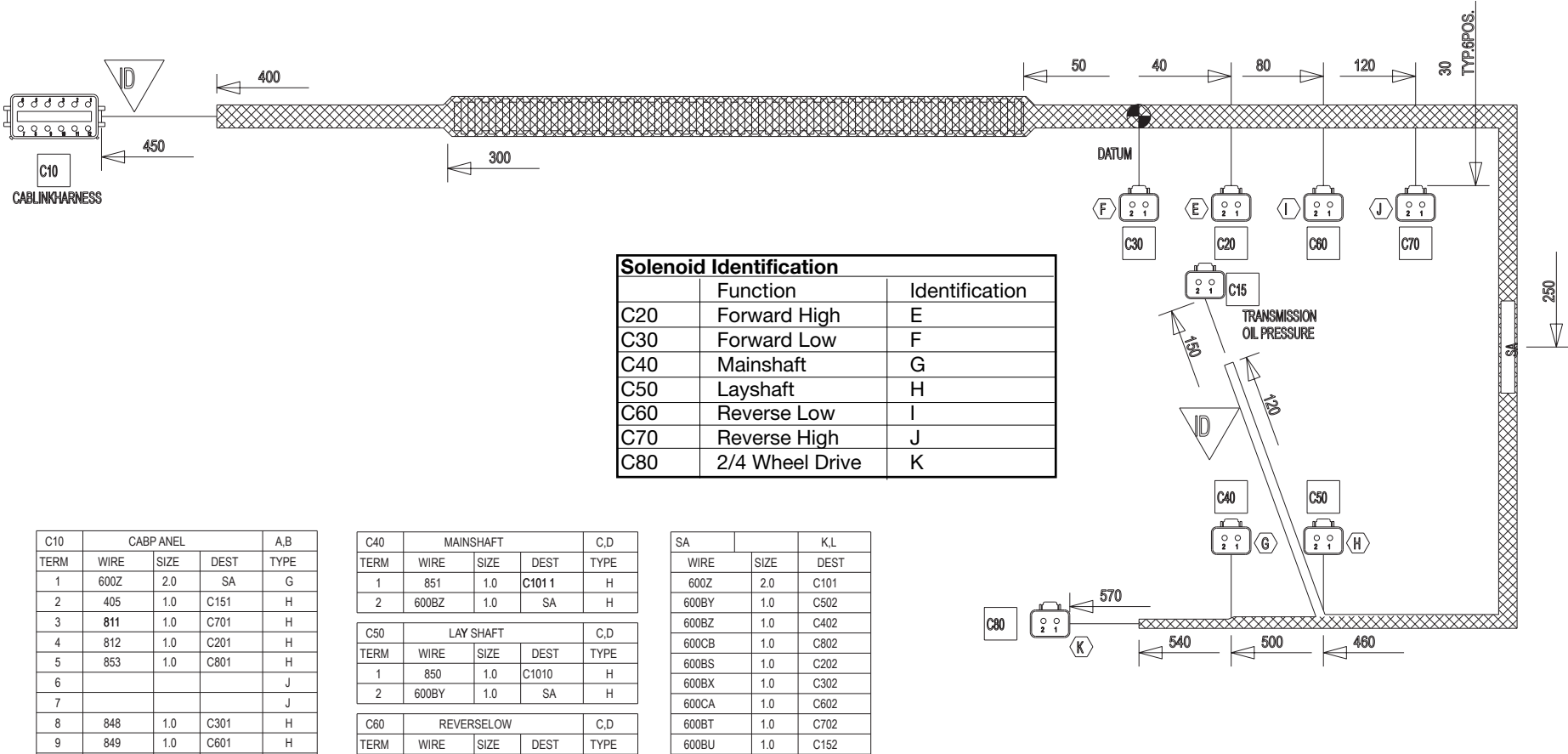
SA		K,L
WIRE	SIZE	DEST
600Z	2.0	C10 1
600BY	1.0	C50 2
600BZ	1.0	C40 2
600CB	1.0	C80 2
600BS	1.0	C20 2
600BX	1.0	C30 2
600CA	1.0	C60 2
600BT	1.0	C70 2
600BU	1.0	C15 2
600HV	1.0	C17 1
600ME	1.0	C90 2

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Harness Drawing - Transmission - Sychro Shuttle, page 1 of 1 - CAD 721/10938 Issue 2*

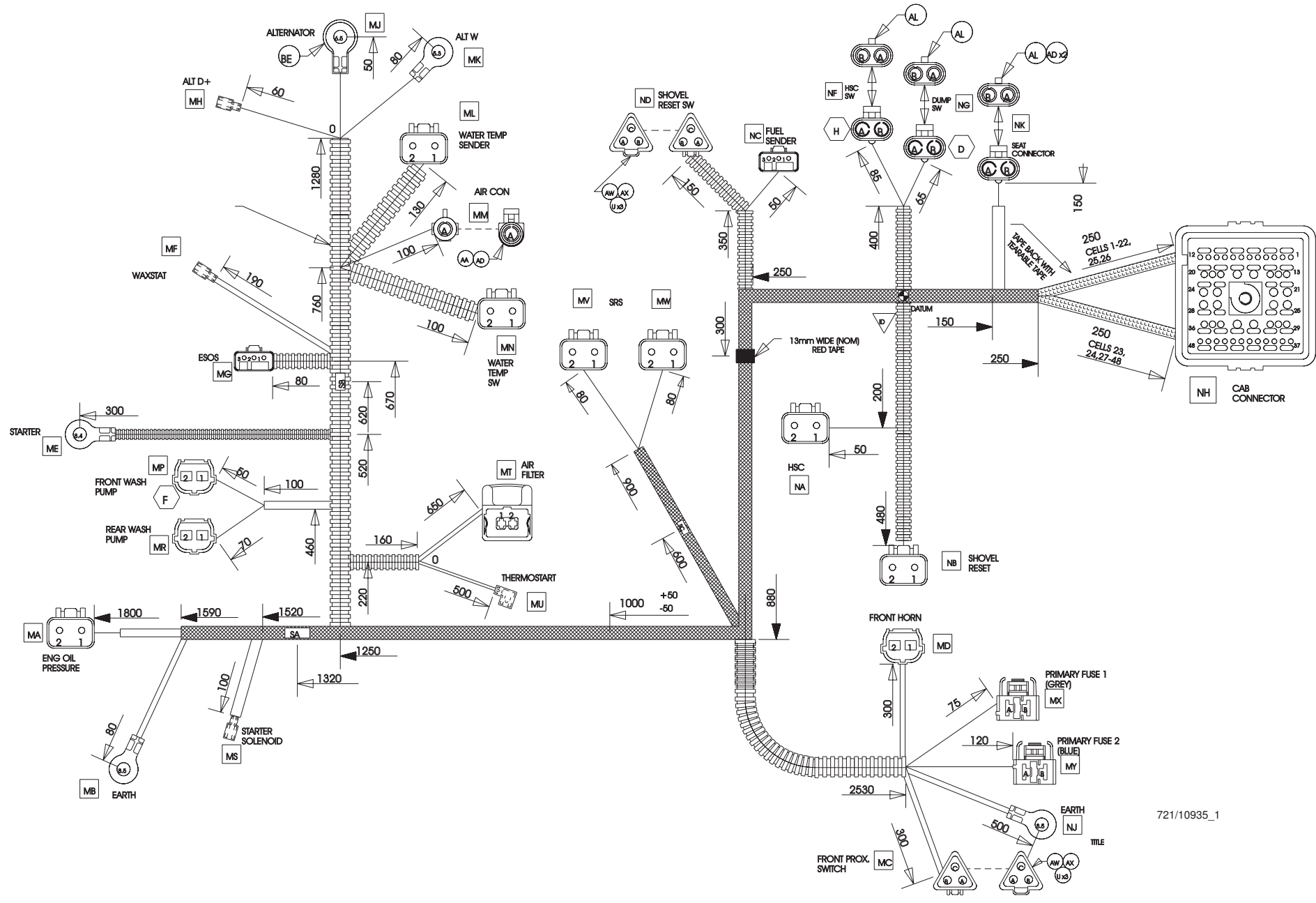


Harness Drawing - Transmission - Powershift 4 speed, page 1 of 1 - CAD 721/10939 Issue 1



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Harness Drawing - Engine Mainframe, page 1 of 2 - CAD 721/10935 Issue 2*



Harness Drawing - Engine Mainframe, page 2 of 2 - CAD 721/10935 Issue 2*

Key to Connectors:

MA	Engine Oil Pressure
MB	Earth
MC	Front Proximity Switch
MD	Front Horn
ME	Starter
MF	Waxstat
MG	ESOS
MH	Alternator D+
MJ	Alternator PWR
MK	Alternator W
ML	Water Temperature Sender
MM	Air Conditioning
MN	Water Temperature Switch
MP	Front wash Pump
MR	Rear Wash Pump
MS	Start Solenoid
MT	Air Filter
MU	Thermostart
MV	SRS
MW	SRS
MX	Primary Fuse 1 (Grey)
MY	Primary Fuse 2 (Blue)
NA	HSE Solenoid
NB	Shovel Reset
NC	Fuel Sender
ND	Reset Switch
NF	HSC Switch
NG	Dump Switch
NH	Cab Panel - Bulk Head
NU	Earth
NK	Seat Connector

MA	ENG OIL PRESS			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	403	1.0	NH 3	BB
2	600MC	1.0	SA	BB

MB	EARTH			-
TERM	WIRE	SIZE	DEST	TYPE
1	600A	4.0	SA	A,AN

MC	FRONT PROX SW			AU,AV
TERM	WIRE	SIZE	DEST	TYPE
A	819	1.0	NH 4	BB
B	600BW	1.0	SA	BB
C	109	1.0	NH 41	BB

MD	FRONT HORN			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	814	2.0	NH 20	M,N
2	600B	2.0	SA	M,N

ME	STARTER			-
TERM	WIRE	SIZE	DEST	TYPE
1	200J	16.0	MJ 1	AM,B

MF	WAXSTAT			-
TERM	WIRE	SIZE	DEST	TYPE
1	105A	1.0	SB	V,W

MG	ESOS			AR,AS
TERM	WIRE	SIZE	DEST	TYPE
1	105B	1.0	SB	BF
2	600	1.0	SA	BF
3	513	1.0	NH 44	BF

MH	ALTERNATOR D+			-
TERM	WIRE	SIZE	DEST	TYPE
1	407	1.0	NH 38	V,W

MJ	ALTERNATOR PWR			-
TERM	WIRE	SIZE	DEST	TYPE
1	200J	16.0	ME 1	X,B

MK	ALTERNATOR W			-
TERM	WIRE	SIZE	DEST	TYPE
1	412	1.0	NH 47	Y,AN

ML	WATER TEMP SENDER			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	409	1.0	NH 46	BB
2	600JT	1.0	SA	BB

MM	AIR CON			Z
TERM	WIRE	SIZE	DEST	TYPE
1	903	1.0	NH 9	AB,AC

MN	WATER TEMP SW			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	406	1.0	NH 11	BB
2	600CK	1.0	SA	BB

MP	FRONT WASH PUMP			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	839	1.0	NH 48	L,M
2	600BG	1.0	SA	L,M

MR	REAR WASH PUMP			J,K
TERM	WIRE	SIZE	DEST	TYPE
1	863	1.0	NH 40	L,M
2	600BK	1.0	SA	L,M

MS	START SOLENOID			-
TERM	WIRE	SIZE	DEST	TYPE
1	842	3.0	NH 28	AP,V

MT	AIR FILTER			R
TERM	WIRE	SIZE	DEST	TYPE
1	402	1.0	NH 2	S,T
2	600CF	1.0	SA	S,T

MU	THERMOSTART			-
TERM	WIRE	SIZE	DEST	TYPE
1	003	2.0	NH 13	AF,AE

MV	SRS			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1801A	1.0	SC	BB
2	600LH	1.0	SA	BB

MW	SRS			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	1801B	1.0	SC	BB
2	600LJ	1.0	SA	BB

MX	PRIMARY FUSE 1 (GREY)			AH
TERM	WIRE	SIZE	DEST	TYPE
A	200B	4.0	NH 21	AJ
	200C	4.0	NH 22	
	200E	4.0	NH 24	AJ
B	200R	4.0	NH 27	

MY	PRIMARY FUSE 2 (BLUE)			AG
TERM	WIRE	SIZE	DEST	TYPE
A	200G	4.0	NH 25	AJ
	200V	4.0	NH 16	
	200D	4.0	NH 23	AJ
B	200M	4.0	NH 26	

NA	HSC SOLENOID			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	867B	1.0	NH 45	BB
2	600DE	1.0	SA	BB

NB	SHOVEL RESET			C,D
TERM	WIRE	SIZE	DEST	TYPE
1	844	1.0	ND A	BB
2	600D	1.0	SA	BB

NC	FUEL SENDER			AR,AS
TERM	WIRE	SIZE	DEST	TYPE
1	408	1.0	NH 39	BF
2	600CE	1.0	SA	BF
3	514	1.0	NH 43	BF

ND	RESET SWITCH			AU,AV
TERM	WIRE	SIZE	DEST	TYPE
A	844	1.0	NB 1	BB
B	600LW	1.0	SA	BB
C	1851	1.0	NH 37	BB

NF	HSC SWITCH			AK
TERM	WIRE	SIZE	DEST	TYPE
A	101AS	1.0	NH 5	G,AB
B	1857	1.0	NH 8	G,AB

NG	DUMP SWITCH			AK
TERM	WIRE	SIZE	DEST	TYPE
A	934A	1.0	NH 42	G,AB
B	600EZ	1.0	SA	G,AB

NJ	EARTH			-
TERM	WIRE	SIZE	DEST	TYPE
1	617	1.0	NH 29	Y,AN

NK	SEAT CONNECTOR			AK
TERM	WIRE	SIZE	DEST	TYPE
A	114C	2.0	NH 14	G,AB
B	600DH	2.0	SA	G,AB

NH	CAB PANEL BLK HD			E,F
TERM	WIRE	SIZE	DEST	TYPE
1	105	1.0	SB	BF
2	402	1.0	MT 1	BF
3	403	1.0	MA 1	BF
4	819	1.0	MC A	BF
5	101AS	1.0	NF A	BF
6	-	-	-	P
7	-	-	-	P
8	1857	1.0	NF B	BF
9	903	1.0	MM 1	BF
10	-	-	-	P
11	406	1.0	MN 1	BF
12	1801	1.0	SC	BF
13	003	2.0	MU 1	BC
14	114C	2.0	NK A	BC
15	-	-	-	U
16	200V	4.0	MY A	BA
17	-	-	-	U
18	-	-	-	U
19	-	-	-	U
20	814	2.0	MD 1	BB
21	200B	4.0	MX A	BA
22	200C	4.0	MX A	BA
23	200D	4.0	MY B	BA
24	200E	4.0	MX B	BA
25	200G	4.0	MY A	BA
26	200M	4.0	MY B	BA
27	200R	4.0	MX B	BA
28	842	3.0	MS 1	BA
29	617	1.0	NJ 1	BB
30	-	-	-	U
31	-	-	-	U
32	-	-	-	U
33	-	-	-	U
34	-	-	-	U
35	-	-	-	U
36	-	-	-	U
37	1851	1.0	ND C	BF
38	407	1.0	MH 1	BF
39	408	1.0	NC 1	BF
40	863	1.0	MR 1	BF
41	109	1.0	MC C	BF
42	934A	1.0	NG A	BF
43	514	1.0	NC 3	BF
44	513	1.0	MG 3	BF
45	867B	1.0	NA 1	BF
46	409	1.0	ML 1	BF
47	412	1.0	MK 1	BF
48	839	1.0	MP 1	BF

SA		H,AZ
WIRE	SIZE	DEST
600A	4.0	MB 1
600B	2.0	MD 2
600CE	1.0	NC 2
600BW	1.0	MC B
600	1.0	MG 2
600BG	1.0	MP 2
600BK	1.0	MR 2
600CK	1.0	MN 2
600CF	1.0	MT 2
600JT	1.0	ML 2
600LH	1.0	MV 2
600LJ	1.0	MW 2
600D	1.0	NB 2
600DE	1.0	NA 2
600LW	1.0	ND B
600EZ	1.0	NG B
600MC	1.0	MA 2
600DH	2.0	NK B

SB		H,AY
WIRE	SIZE	DEST
105	1.0	NH 1
105A	1.0	MF 1
105B	1.0	MG 1

SC		H,AY
WIRE	SIZE	DEST
1801	1.0	NH 12
1801A	1.0	MV 1
1801B	1.0	MW 1

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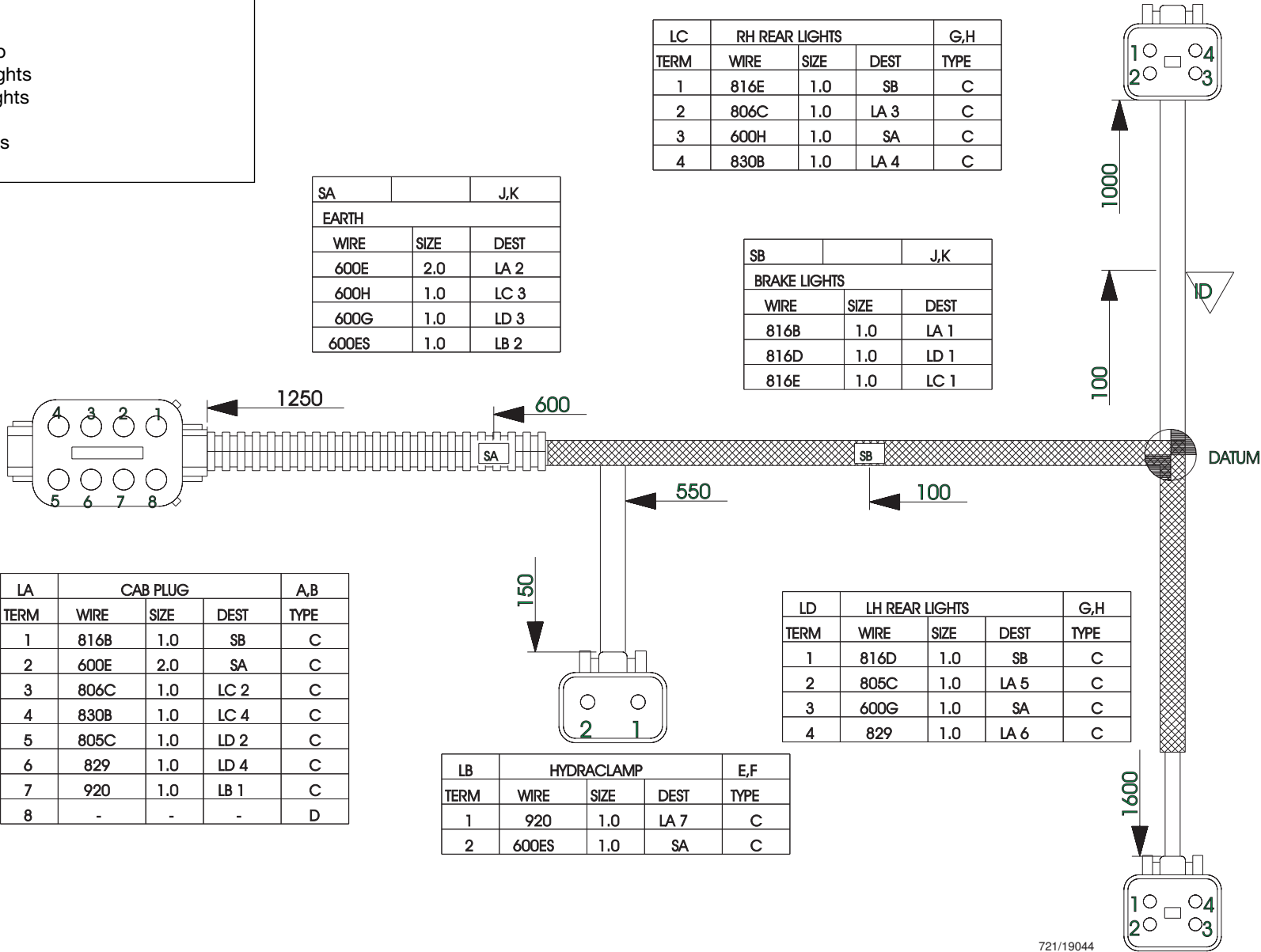
* Harness Drawing - Rear Lights / Hydraclamp - Sideshift, page 1 of 1 - CAD 721/10944 Issue 1

Key to Connectors:	
LA	Cab Plug
LB	Hydraclamp
LC	RH Rear Lights
LD	LH Rear Lights
SA	Earth
SB	Brake Lights

SA		J,K
EARTH		
WIRE	SIZE	DEST
600E	2.0	LA 2
600H	1.0	LC 3
600G	1.0	LD 3
600ES	1.0	LB 2

LC	RH REAR LIGHTS			G,H
TERM	WIRE	SIZE	DEST	TYPE
1	816E	1.0	SB	C
2	806C	1.0	LA 3	C
3	600H	1.0	SA	C
4	830B	1.0	LA 4	C

SB		J,K
BRAKE LIGHTS		
WIRE	SIZE	DEST
816B	1.0	LA 1
816D	1.0	LD 1
816E	1.0	LC 1

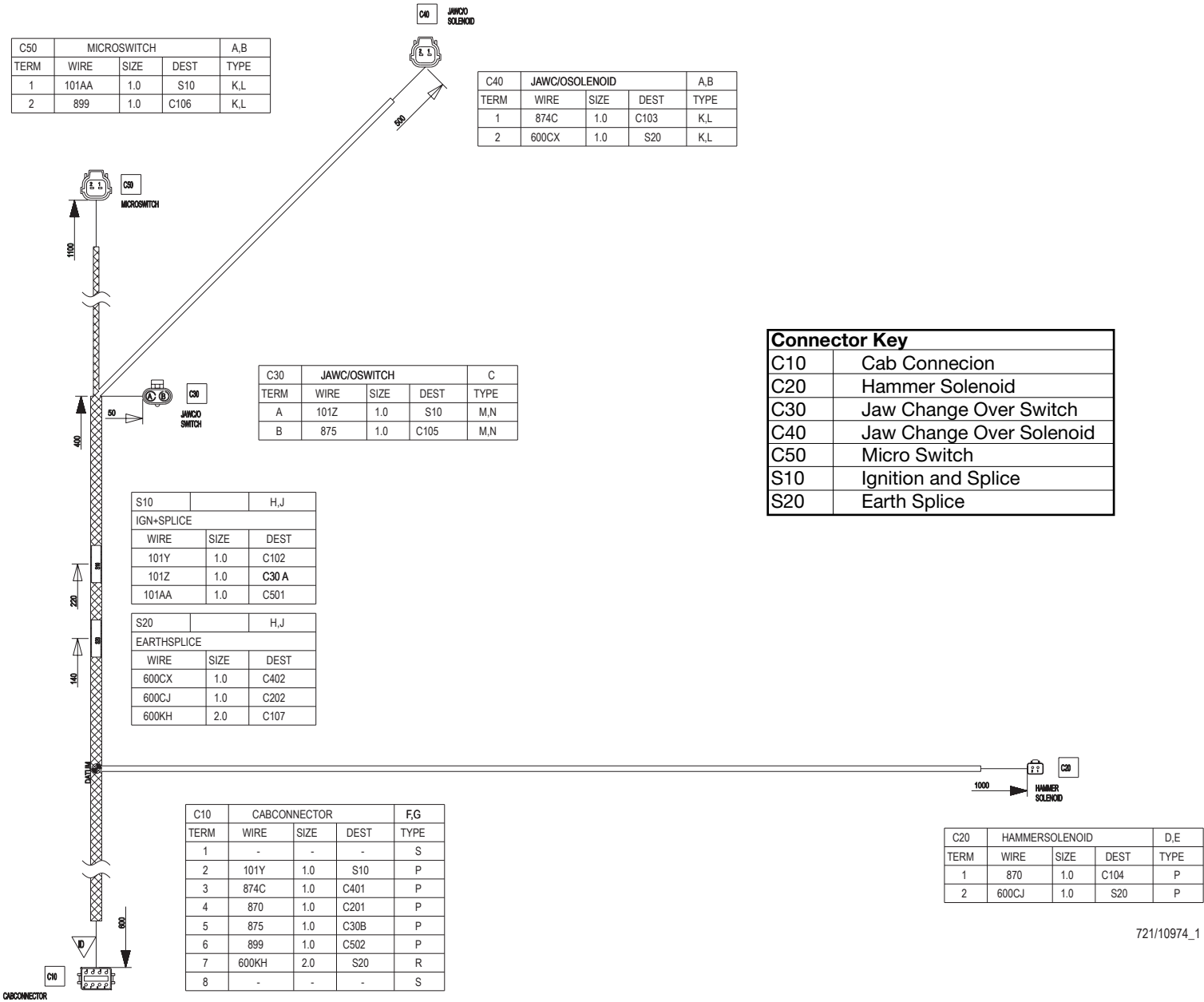


LA	CAB PLUG			A,B
TERM	WIRE	SIZE	DEST	TYPE
1	816B	1.0	SB	C
2	600E	2.0	SA	C
3	806C	1.0	LC 2	C
4	830B	1.0	LC 4	C
5	805C	1.0	LD 2	C
6	829	1.0	LD 4	C
7	920	1.0	LB 1	C
8	-	-	-	D

LB	HYDRACLAMP			E,F
TERM	WIRE	SIZE	DEST	TYPE
1	920	1.0	LA 7	C
2	600ES	1.0	SA	C

LD	LH REAR LIGHTS			G,H
TERM	WIRE	SIZE	DEST	TYPE
1	816D	1.0	SB	C
2	805C	1.0	LA 5	C
3	600G	1.0	SA	C
4	829	1.0	LA 6	C

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