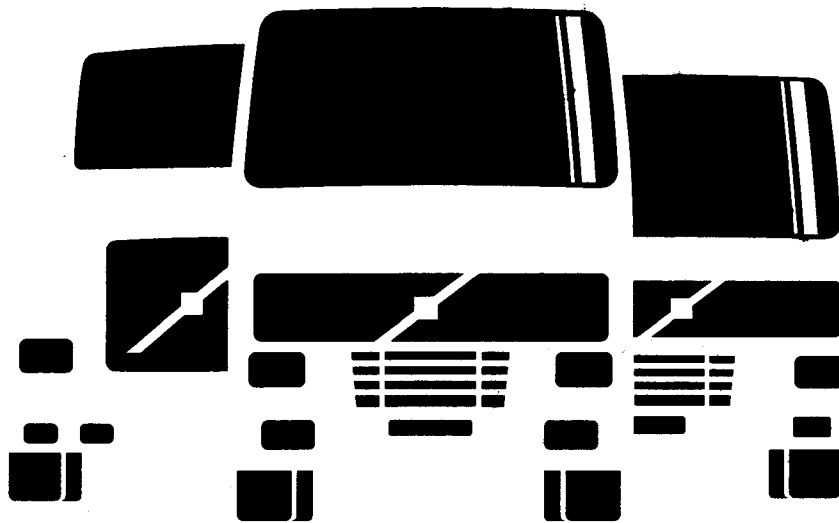


Service Manual Trucks

Group 370-500

Circuit and Wiring Numbers

VN, VHD



Foreword

The descriptions and service procedures contained in this manual are based on designs and methods studies carried out up to August 00.

The products are under continuous development. Vehicles and components produced after the above date may therefore have different specifications and repair methods. When this is believed to have a significant bearing on this manual, supplementary service bulletins will be issued to cover the changes.

The new edition of this manual will update the changes.

In service procedures where the title incorporates an operation number, this is a reference to an S.R.T. (Standard Repair Time).

Service procedures which do not include an operation number in the title are for general information and no reference is made to an S.R.T.

The following levels of observations, cautions and warnings are used in this Service Documentation:

Note: Indicates a procedure, practice, or condition that must be followed in order to have the vehicle or component function in the manner intended.

Caution: Indicates an unsafe practice where damage to the product could occur.

Warning: Indicates an unsafe practice where personal injury or severe damage to the product could occur.

Danger: Indicates an unsafe practice where serious personal injury or death could occur.

Volvo Trucks North America, Inc.
Greensboro, NC USA

Order number: PV776-TSP145180

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Feedback

General

Circuit Number Index

Circuit and Wiring Numbers

Wire and Cable Number Marking

All wire and cable smaller than 0 AWG (American Wire Gauge) is imprinted with circuit and wire numbers. The circuit numbers are imprinted repeatedly every two to three inches (50 to 75 mm) horizontally along the entire length of the wire or cable. In cases when imprinting of the circuit number on the wire or cable is not practical (e.g. multiple conductor cable) circuit number markers will be applied one to two inches (25 to 50 mm) from the terminal or end of cable.

Wire Color

Note: All wire used in the vehicle has a cross-linked polyethylene insulation (XLPE). It complies to SAE standard J1128.

BLACK	Fused power and signal
WHITE	Ground
RED	Unfused battery
MULTI-COLOR	Wire harnesses may be used as interfaces to some components; definition of multi-colored wires varies by component.

Electronic Sub-system Circuit Numbers

The increased use of electronic subsystems has caused the introduction of vendor circuit identification numbers which could conflict with the existing Volvo circuit numbers. For example, circuit number 209 can be either Volvo Transformer-Rectifier System Voltmeter "Positive" Feed or Cummins Pace Tachometer. To avoid this conflict and still retain the vendor circuit numbers, a prefix has been added to the vendor circuit numbers.

This prefix will identify the circuit as a **vendor electronic** subsystem. For example circuit 209 would be noted as:

209 Volvo circuit
C209 Cummins circuit

Note: The prefix added to vendor circuits only applies to Volvo-supplied wiring harnesses. Components that come with their own wiring harnesses, such as electronically controlled diesel engines, will not follow the numbering system explained in this manual. For identification of circuit numbers/colors on vendor supplied components, see the component manufacturer's technical literature.

For information on terms and abbreviations see "Definitions" page 6.

The table (see table page 4) lists prefixes and the corresponding vendor.

Circuit Suffixes

Design of branch circuits that originate from a base circuit may contain a hyphenated suffix. For example, if circuit 0 requires a splice to feed two branch circuits, then those branch circuits may be labelled 0-A and 0-B. The text that appears after the suffix separator does not apply to the function of the circuit and is therefore not listed.



Circuits functionally related to a given base circuit are often created for new designs. These circuits appear without a hyphenated suffix. For example, circuit 0A (the main alternator ground) is related to circuit 0 (the main vehicle ground). Please note that a functional relationship does not imply electrical continuity.

Prefix	Vendor
A	Allison
B	Caterpillar
C	Cummins
D	Detroit Diesel
E	VDO
L	Delphi Delco Electronics
M	Meritor
P	Delphi Packard Electronics
Q	Qualcomm
T	Eaton Bosch EBS
V	Eaton VORAD

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Definitions

APADS 	Air Conditioning Protection And Diagnostic System (or A/C Diagnostic System)
ATC	Automatic Traction Control (also called TCS or traction control system)
ATC	Automatic Temp Control
CAN	Controller Area Network (associated with J1939 data link)
DLO	Differential Lock Out
DRL	Daytime Running Lights
ECU	Electronic Control Unit
EECU	Engine Electronic Control Unit
EMS	Engine Management System
EOL	End Of Line
EPL	Eaton Proprietary Link
HVAC	Heating/Ventilation/Air Conditioning
ISM/ISX	Cummins Engine Type
J1587/J1708	Data Link
J1939 	High-speed Data Link
NC	Normally Closed
NO	Normally Open
PTO	Power Take-Off
SAE	Society of Automotive Engineers
SRS	Supplemental Restraint System (Airbag)
VECU	Vehicle Electronic Control Unit



Specifications

Circuit Numbers

Bodybuilder Circuits

A312CM	PTO – Common
A312NC	PTO – Normally Closed
A312NO	PTO – Normally Open
A314CM	Auto Neutral – Common
A314NC	Auto Neutral – Normally Closed
A314NO	Auto Neutral – Normally Open
BAT	12-Volt Battery
BATT	12-Volt Battery
IGN	Ignition Feed
NEU	12-Volt Neutral Start Feed

0: Ground

ABS	Antilock Brake System Ground
0	Engine or Main Ground to Cab
0A	Alternator
V0A	VORAD Front Antenna Ground
0B	Blower - Heater
V0B	VORAD Driver Display Ground
0C	Console (Accessories)
0CG	VORAD Power Ground
V0C	VORAD Side Sensor/Side Sensor Display Ground
0D	Differential Lockout
0E	Exhaust Brake
0EP	Power Take-Off
0F	Fuel
0G	Windshield Wiper/Washer
0GA	Snow Plow Lamp – Right Hand
0GB	Snow Plow Lamp – Left Hand
0GS	Snow Plow Lamp
0H	Headlamp
0HS	Headlamp

0J	<ul style="list-style-type: none"> • HVAC Lamp • Lift Axle
0L	Lighter - Cigar
0M	Marker and Turn Signal
0MA	Marker and Turn Signal – Left Hand
0MB	Marker and Turn Signal – Right Hand
0NV	Inverter Power Ground
0P	Panel - Instruments
0PA	Priming Pump Supply Return (Cummins ISX)
0PB	Park Brake Ground
0PP	Pump Pressure Ground
0PTO	PTO Ground
0R	Relay/Solenoid
0S	Speedometer
0T	<ul style="list-style-type: none"> • Trailer • Central Tire Inflation
0V	Starting Aid
0VA	Overcrank Protection (OCP) Ground Jumper
0VB	Ether Start Sensor Ground
0W	Warning System (Air, Oil, Water, Wiper, Kysor)
0X	Electronic Ground
0XA	Cluster Electronic Ground
0XB	SRS ECU Electronic Ground
0XC	Cab Electronic Ground
0XE	ECU Electronic Ground (BAT–)
0Y	Automatic Transmission Ground
0YA	Automatic Transmission ECU Ground
0YB	Automatic Transmission ECU
0Z	Diagnostic Ground

1-19: Primary Power

1	Cab Unswitched Battery Feed	15	Alternator Ignition "No Charge" Resistor Feed to Regulator
1A	Cab Unswitched Battery Feed to Ignition Relay	16	Alternator Ignition "No Charge" Lamp Feed
1AD	Icon Thermostat Power	17	Unswitched Battery Feed to EECU
1B	Cab Unswitched Battery Feed to Turn Signal Maxi Fuse	17A	EECU Unswitched Battery Feed
1C	Cab Unswitched Battery Feed to Maxi Fuse	17AA	Fused '17A' Feed
1D	Cab Unswitched Battery Feed to Maxi Fuse	17B	EECU Unswitched Battery Feed
1P	12 Volt Battery Protection	17BB	Fused '17B' Feed
1PA	12 Volt Battery Protection	17C	EECU Unswitched Battery Feed
1PB	12 Volt Battery Protection	17D	EECU Unswitched Battery Feed
1PC	12 Volt Battery Protection	17E	Antilock Brake System Unswitched Battery Feed
1PD	12 Volt Battery Protection	17F	Electronic Engine Unswitched Battery Feed to Transmission (non-Volvo)
2	Ammeter to Circuit Breakers, Switches, Voltage Regulator, Etc.	17FB	Transmission-generated Battery Feed
3	Generator Armature to Voltage Regulator	17FF	Fused '17F' Feed
4	Generator Field (F1)	17NV	Inverter Unswitched Battery Power Feed
5	Voltage Regulator "Ignition" Terminal Supply	18	Electronic Engine Switched Battery Feed
6	Voltage Regulator "Armature" Terminal to Rectifier	18A	Switched Battery Feed to EECU
7	Alternator to Rectifier	18B	Switched Battery Feed to EECU
8	Load Battery to Alternator	18C	Electronic Engine Switched Battery Feed to Circuit Protection
9	Self Load-Limiting Alternator to Voltage Regulator "B" Terminal (Sensing)	18D	Electronic Engine Switched Battery Feed to Throttle Pedal
10	Generator Field (F2)	18E	Electronic Engine Switched Battery Feed to EECU
11	Relay Rectifier to Voltage Regulator (Ignition)	18G	Electronic Engine Switched Battery Feed to Gearbox
12	Alternator to Ammeter	18V	Electronic Engine Switched Battery Feed to VECU
13	Alternator to Start Battery	18X	Electronic Engine Switched Battery Feed to EMS "A" Supply
14	Alternator "No Charge" Lamp Feed from Alternator Regulator	18Y	Electronic Engine Switched Battery Feed to EMS "B" Supply
14A	Alternator "No Charge" Lamp Feed from Auxiliary Relay	19	Alternator "R" Terminal Signal

20–29: Polarity Reversing Circuits

20	Low Air Switch Neutral Wire
21	Alarm System Neutral Wire
21A	Alternator No-Charge Relay to Alarm Buzzer Feed
21B	Alarm Buzzer to Diode Feed

30–49: Headlamps and Fog Lamps

30	Headlamp Switch Feed/Split System – LH
30A	Headlamp Switch Feed/Split System – RH
30L	Headlamp Feed – LH
30R	Headlamp Feed – RH
31	Dimmer Switch Feed
31L	Dimmer Switch Feed/ Split System LH
31R	Dimmer Switch Feed/ Split System RH
32	Headlamp Low Beam Circuit
32L	Headlamp Low Beam – LH
32LA	Headlamp Flash Option – LH
32R	Headlamp Low Beam – RH
32RA	Headlamp Flash Option – RH
32RB	Headlamp Flash Option – RH
33	Headlamp High Beam Circuit
33A	<ul style="list-style-type: none"> ● High Beam Relay Control Feed ● Flash to Pass Control Supply
33B	High Beam Indicator Lamp Ground
33F	Flash to Pass Contact Feed
33L	Headlamp High Beam – LH
33R	Headlamp High Beam – RH
34	Fog Lamp Switch Supply
34A	Aux. Lamp Switch Feed
35	Fog Lamp Feed
35L	Fog Lamp Feed – LH
35R	Fog Lamp Feed – RH

36	Driving Lamp Switch Feed
37	Driving Lamp Feed
37L	Driving Lamp Feed – LH
37R	Driving Lamp Feed – RH
38	Driving/Fog Relay Control Feed
39	<ul style="list-style-type: none"> ● Driving/Fog Relay Feed ● LED Supply for Aux. Lamp Switch
39A	Driving/Fog Switch Indicator
40	DRL Module Battery Feed
41	DRL Module Ignition Feed
42	DRL Module Park Brake Signal
42A	Parking Brake Switch
43	DRL Indicator Lamp
43A	DRL Control Relay Feed
44	DRL Module Low Beam Feed
45	DRL High Beam Disable

50–69: Marker and Clearance**Lamps**

- 50** ● Marker and Tail Lamp Switch Feed
● Master Lighting Switch Supply for Tractor Lighting – VN Only
- 50A** ● Trailer Marker and Tail Lamp Switch Feed
● Master Lighting Switch Supply for Trailer Lighting – VN Only
- 51** Trailer Marker and Tail Lamp Feed
- 52** Overhead Cab Marker Lamp Feed from Interrupter Switch
- 52A** Marker Interrupter Switch Supply from Master Lighting Switch
- 52X** Central Tire Inflation ECU from Marker Lamps
- 53** ICC Trailer Marker and Clearance Lamp Feed from Interrupter Switch
- 53A** Marker Interrupter Switch Supply from Master Lighting Switch
- 54** Cab Marker Lamp Switch Feed
- 55** Cab Marker Lamp Circuit Breaker Feed
- 56** Side Marker Lamp Feed
- 56L** Side Marker Lamp Feed – LH
- 56R** Side Marker Lamp Feed – RH
- 57** Marker Lamp Relay Feed
- 58** Marker Lamp Relay Control Feed
- 59** Beacon Lamp Feed
- 59A** Beacon Lamp Feed
- 59B** Beacon Lamp Feed

70–89: Stop Lamps

- 70** Stop Lamp Switch Feed
- 71** Tractor Stop Lamp and Trailer Receptacle Feed
- 71A** Stop Lamp Switch Output
- 72** Trailer Stop Lamp Feed
- 73** Spring Brake Stop Lamp Switch Feed
- 74** Trailer Emergency Stop
- 75** Stop Lamp Relay Coil Feed
- 75A** ECU Stop Lamp Coil Feed
- 75B** Trailer Stop Lamp Relay Coil Feed
- 75C** Tractor Stop Lamp Relay Coil Feed
- 76** Tractor Stop Lamp Relay Feed
- 77** Trailer Stop Lamp Relay Feed

90–109: Tail and Parking Lamps

- 90** Tractor Tail Lamp Feed
- 90A** ● Tractor Tail Lamps ON Output
● Radio Illumination Supply from Master Lighting Switch – VN Only
- 90B** HVAC Lamp Control Switch Illumination
- 91** Parking Lamp Switch Feed
- 92** Parking Lamp Feed

110–129: Turn Signal Lamps

110	Turn Signal Flasher Feed
110B	Turn Signal Flasher Feed
111	Turn Signal Switch Feed from fuse
111A	Hazard Switch to Fuse Feed
112	Front Turn Signal Lamp, Trailer Receptacle and Indicator Feed – LH
112A	Hazard Switch Feed to Fuse
113	Front Turn Signal Lamp, Trailer Receptacle and Indicator Feed – RH
113A	Hazard Switch Feed to Fuse
V113	VORAD Right Turn Input
114	Turn Signal Indicator Feed
115	LH Stop and Rear Turn Lamp Feed
116	RH Stop and Rear Turn Lamp Feed
117	LH Tail Lamp Feed (Turn Signal Switch Control)
118	RH Tail Lamp Feed (Turn Signal Switch Control)
119	Turn Signal Fuse Feed
120	Turn Signal Repeater Lamp Feed
121	Hazard Warning Switch Flasher Feed
122	Tractor Stop Lamp Relay Feed
122A	LED Feed Hazard Warning Switch
122B	Hazard Switch Feed to Fuse

130–139: Secondary Lamps

130	Courtesy & Dome Lamp Switch Feed
131	Courtesy & Dome Lamp Feed
131B	Bunk Lighting Master Feed
132	Sleeper Compartment Reading Lamp Feed
133	Trailer Dome Lamp Switch Feed
134	Trailer Dome Lamp Feed
135	Luggage Dome Lamp Feed
135A	Luggage Lamp Feed RH Side
135B	Luggage Lamp Feed LH Side
136	Utility Spot Lamp Switch Feed
137	Utility Spot Lamp Feed
138	Bunk Reading Lamp Switch Feed
139	Back of Cab Lamp Switch Feed
139A	Back of Cab Lamp Switch Indicator
139B	Back of Cab Lamp Feed

140–149: Instrument Lamps

140	Instrument Lamp Switch Feed, or stat Feed from Headlamp Switch
140A	Aux. Lamp Enable Relay Coil Feed
140P	Instrument Lamp Switch Feed to Pro-Driver
141	Instrument Lamp Feed
141A	Instrument Lamp Feed to Option Connector
141R	Instrument Lamp Feed to Radio

150–179: Heater, Defroster and Air Conditioner

150	Heater Switch Feed / 12V Feed to AC/Heater Blower
151	Defroster Switch Feed
152	Left Hand Heater Feed
153	Right Hand Heater Feed
154	Left Hand Defroster Feed
155	Blower Motor Speed (Low)
156	Blower Motor Speed (High)
157	Air Conditioner Circuit Breaker Feed
158	Air Conditioner Feed/Relay (Battery)
159	Blower Motor Speed (Medium)
160	Defroster Fan Speed
161	Blower Motor Speed (Maximum)
162	Circuit Breaker Air Conditioner Relay Control Coil Feed
163	Bunk Blower Motor Feed
164	+12V Feed to Parking Heater Motor
165	Parking Heater Fuel Pump Supply
166	Parking Heater Fuel Pump Return
167	Parking Heater Thermostat Output
168	Parking Heater Temp Sensor Output
169	Parking Heater LED Output
170	Parking Heater Thermostat Ground
171	Parking Heater LED Input
172	Parking Heater "On" Signal
173	Bunk Unit Water Valve Return
174	Bunk Unit Water Valve Feed
175	Bunk Unit Blower Return

180–219: Instruments

180	Main Instrument Feed
181	Water Temp Sender Feed
182	Engine Oil Pressure Sender Feed
183	Fuel Tank Sender Feed – LH
184	Fuel Tank Sender Feed – RH
185	Fuel Gauge Switch Feed
186	Fuel Tank Selector Switch Feed
187	Fuel Tank Selector Valve Feed
188	Oil and Water Alarm Indicator Feed
189	Oil and Water Alarm Switch Feed
190	Electric Tachometer Sender to Head – Negative or Pyrometer Feed
191	Electric Tachometer Sender to Head – Positive or Pyrometer Return
193	Tachograph Feed
194	Tachograph Lamp Feed
195	Ignition Switch "Accessory" Relay Coil Feed
195A	Accessory Relay Feed to Vehicle Loads
195D	Optimized Idle No-Start Relay Coil Feed
196	Ignition Switch "Ignition" Relay Coil Feed
D196	Detroit Diesel Optimized Idle System Feed
196A	Ignition Relay 1 Feed to Vehicle Loads
196AA	Ignition Feed to Fuses 1 – 7
196AB	Ignition Feed to Fuses 8 – 14
V196A	VORAD Front Antenna Power
196B	Ignition Relay 2 Feed to Vehicle Loads
196BA	Ignition Feed to Fuses 46 – 51
V196B	VORAD Driver Display Power
196C	Data Display Ignition Feed
V196C	VORAD Side Sensor/Side Sensor Display Power
196D	Ignition Feed Splice to ABS/Brakes
196DR	DR Feed to Splice

196G	DR Feed to Gearbox	215	Speedometer Head to Sender
196R	Ignition Power Relay 2 Coil Feed	215A	Positive Speedometer Signal Control Module Speed Limiter
196T	Ignition Feed to Diagnostic Tool		
196V	DR Feed to VECU	216	Tachometer Head to Sender – Ground
196W	DR Feed to Wiper Relay	217	Tachometer Head to Sender
196X	Ignition Feed to Central Tire Inflation	218	Ignition Feed – Clock
196Y	Ignition Feed to Camera Prep	219	Cluster Display Common Output
197	Buzzer Feed	219A	Cluster Display Escape Input
V197C	VORAD Side Sensor Signal	219B	Cluster Display Down Input
V197D	VORAD Side Sensor Display Signal	219C	Cluster Display Up Input
198	Low Air System Warning	219D	Cluster Display Select Input
199	Air Filter Restriction Switch Feed	219E	Cluster Display Set Input
199A	ECU Pressure Switch Feed (Central Tire Inflation)	219F	Cluster Display Mode Input
200	Tachograph Head Feed (Battery)	IPJ1	Cluster Jumper (1996 Cluster VN Only)
201	Hourmeter Feed	IPJ2	Cluster Jumper (1996 Cluster VN Only)
202	<ul style="list-style-type: none"> • Battery - Generator Gauge Feed (Load) • Instrument Panel Feed (VN only) 	IPJ3	Cluster Jumper (1996 Cluster VN Only)
203	Tachograph Remote Control Switch Feed	IPJ4	Cluster Jumper (1996 Cluster VN Only)
204	Engine Oil Temp Sending Unit to Gauge	IPJ5	Cluster Jumper (1996 Cluster VN Only)
205	Electric Speedometer Feed	IPJ6	Cluster Jumper (1996 Cluster VN Only)
206	Low Oil Pressure Alarm Feed – Electric	IPJ7	Cluster Jumper (1996 Cluster VN Only)
207	Water Temp Switch or Alarmstat “Normally Open” Feed	IPJ8	Cluster Jumper (1996 Cluster VN Only)
208	Transformer-Rectifier System Secondary Battery Charge Indicator Feed (Storage)	CJ1	Cluster Jumper (1996 Cluster VN Only)
209	Transformer-Rectifier System Voltmeter “Positive” Feed	CJ2	Cluster Jumper (1996 Cluster VN Only)
210	Transformer-Rectifier System Voltmeter “Negative” Feed	CJ3	Cluster Jumper (1996 Cluster VN Only)
211	Diode Common to Buzzer	CJ4	Cluster Jumper (1996 Cluster VN Only)
212	Clock Feed – Alarm/Radio	CJ5	Cluster Jumper (1996 Cluster VN Only)
213	Power Feed to Instrument Panels	CJ6	Cluster Jumper (1996 Cluster VN Only)
214	Speedometer Head to Sender – Ground	CJ7	Cluster Jumper (1996 Cluster VN Only)
		CJ8	Cluster Jumper (1996 Cluster VN Only)
		CJ9	Cluster Jumper (1996 Cluster VN Only)

220-239: Cab Hoist

220	Cab Hoist Panel Switch Feed
221	Cab Hoist Control Switch Feed
222	Cab Hoist Solenoid Switch Coil Feed
223	Cab Hoist Solenoid Switch Coil Feed
224	Cab Hoist Solenoid Switch Feed
225	Cab Hoist Motor Armature Feed
226	Cab Hoist Safety Switch Feed

240-259: Ignition

240	Ignition Coil Feed
241	Ignition Coil to Distributor
242	Ignition Coil Resistor or Diesel Fuel Valve Feed
243	Ignition Switch Feed (B+)
243A	Lock Switch Position Feed (30)
244	Ignition Safety Switch Feed
245	<ul style="list-style-type: none"> Ignition Fuel Heater Control Feed VOLVO Engine - Engine Pre-heat Circuit Protection Feed Detroit Diesel Engine - Diagnostic Request / Shutdown Engine Override Feed
245A	Circuit Breaker to Time Relay Signal
246	Diesel Fuel Valve Relay Control
247	Fuel Switch to Magnetic Switch Feed
248	Ignition Sender Supply
248A	Ignition Supply to Oil Pressure Sender

260-279: Horns

260	Electric Horn Relay Feed (Battery)
261	Electric Horn Feed
262	Electric Horn Button
262A	Electric Horn Relay NC
262B	Electric Horn Relay Common
263	Air Horn Solenoid Feed
264	Air Horn Button

280-299: Starter

280	Starter Solenoid Coil Feed
281	Series Parallel Switch Terminal #5 to Solenoid on Starter
282	Series Parallel Switch Terminal #4 to Solenoid on Starter
283	Starter Push Button Switch Feed
284	12 Volt Starter Control Solenoid Feed
284A	12 Volt Optimized Idle Relay Feed
284C	12 Volt Neutral Start Feed
285	12 Volt Starter Solenoid Feed
285A	12 Volt Starter Feed for Solenoid Relay
286	Magnetic Switch Control

300-309: Compressor Clutch

300	Air Clutch Solenoid Valve Feed
300A	Manual Fan Switch Feed
300B	APADS Module Feed
300C	VECU A/C Relay Coil Feed
300D	VECU Manual Fan Control I/P
301	Air Conditioning Compressor Clutch Feed
301A	Air Conditioning Compressor Clutch Return
302	Cold Control Switch Feed
302A	Air Conditioning Switch Feed
302B	Air Conditioning Feed Jumper
302C	Air Conditioning Control Feed Jumper
303	Dryer Receiver Low Freon Switch Feed
304	Low Freon Switch to Override Valve
305	Normally Closed Freon Switch Feed
306	Freon Switch and On/Off Fan Override Valve Feed
307	On/Off Fan Switch Feed
308	Air Conditioning Relay Feed
309	Cold Control Switch to Air Conditioning Relay Coil Feed

310–329: Transmission

310	Transmission Neutral Switch Feed
311	Transmission Range Control Switch Feed
311A	Eaton Lightning Splitter Switch Signal
311B	Eaton Lightning Splitter Switch Signal
311C	Meritor G Low Solenoid Feed
311D	Meritor G High Solenoid Feed
312	Transmission Area Inhibitor Valve Feed
312A	Transmission Area Inhibitor Valve Return
312B	Transmission Range Inhibitor Valve Feed
312C	Transmission Range Inhibitor Valve Return
312D	Eaton Lightning Protected Battery Feed
313	Transmission Neutral Indicator Lamp Feed
314	Transmission Oil Temp Sending Unit Feed
315	Transmission Oil Pressure Sending Unit Feed
316	Transmission High Oil Temp Switch Feed
317	Indicator Lamp Switch Feed
317A	Transmission Low Range Indicator Switch Feed
317B	Transmission Low Range Indicator Signal to VECU
317C	Eaton Lightning Service Lamp
317D	Eaton Lightning Service Lamp
318	Forward Indicator Lamp Feed
319	Reverse Indicator Lamp Feed
320	Auxiliary Transmission Oil Temp Sending Unit Feed
321	High Oil Temp Indicator Lamp Feed
322	Neutral Switch/Shift Lever Control Relay Feed

322A	Eaton Lightning Shift Knob Ground
322B	Eaton Lightning Shift Knob Ground
323	Relay to Park Pressure Switch
324	Park Pressure Switch to Alarm
325	"Do Not Shift" Warning Lamp Return
326	Ignition Feed to Vehicle Interface Mode (VIM)
327	Automatic Transmission Feed
328	PTO Switch to ECU
329	Engine Brake Select Switch to Transmission ECU

330–339: Power Seat

330	Power Seat Relay Feed
330L	Power Seat Feed LH Side
330R	Power Seat Feed RH Side
331	Power Seat Control Switch Feed
332	Power Seat UP Circuit
333	Power Seat DOWN Circuit
334	Power Seat FORWARD Circuit
335	Power Seat REAR Circuit
336	Heated Seat Feed
336L	Heated Seat Feed Left
336R	Heated Seat Feed Right

340–349: Power Vent

340	Power Vent Switch Feed
341	Power Vent OPEN Circuit
342	Power Vent Armature Feed
343	Power Vent CLOSED Circuit

350–359: Power Window

350	Power Window Switch Feed
350L	Power Window Switch Feed – LH Side
350R	Power Window Switch Feed – RH Side
351	Power Window DOWN Circuit
352	Power Window Armature Feed
353	Power Window UP Circuit
354	Power Window Switch Feed to Power Window Switch
355	Power Window Switch Feed to Power Window Switch

360–369: Starting Aids

360	Engine Pre-heat Cab Switch Feed/or Relay Coil Feed
361	Engine Pre-heat Indicator Lamp Feed
361A	Engine Pre-heat Time Relay Indicator Lamp Feed
362	Engine Pre-heat Glow Plug/Flame Start Feed
363	Engine Glow Plug Magnetic Switch Feed
364	Engine Pre-heat Solenoid Coil Feed
365	Engine Pre-heat Thermal Sensor Feed
366	Engine Pre-heat Solenoid Switch Feed
367	Engine Pre-heat Element Feed
367A	Engine Pre-heat Element Failure Indication to Time Relay
367B	Engine Pre-heat Element Failure Indication to Time Relay
368	Engine Pre-heat Time Relay "Ignition" Feed
368A	Engine Pre-heat Time Relay "Coil" Feed
369	Engine Pre-heat Oil Pressure Switch Feed
369A	Engine Pre-heat Controller Feed

370–379: Cigar Lighter

370	Cigar Lighter / Power Supply Feed
370A	Power Supply Feed
370B	Power Supply Feed
370C	Bunk Power Supply Feed
375A	Sink Feed
375B	Sink Switch Feed
375C	Sink Pump Feed

380–389: Windshield Wiper

380	Electric Windshield Wiper Switch Feed – LH
381	Electric Windshield Wiper Switch Feed – RH
382	Low Speed Electric Wiper Motor
382A	Low Speed Wiper Interval Relay to Bulkhead
383	High Speed Electric Wiper Motor
384	+12 Volt Supply Switch to Motor
385	Park Control Wiper Motor
385A	Park Control to VECU
385B	Park Control to Switch
386	Supply from Circuit Breaker to Switch
387	Switch Feed to Washer Motor
387A	Washer Fluid Level Input to Instrument Cluster
387B	Washer Motor 12V Supply
388	Intermittent Wiper
389	Intermittent Wiper Feed to Wiper Control Module
389A	Intermittent Wiper Relay Coil Supply
389B	Intermittent Wiper Relay Coil Return

390–399: Electric Fuel Pump

390	Electric Fuel Pump Switch Feed
391	Electric Fuel Pump Starting Feed
392	Electric Fuel Pump Feed

400–409: Diagnostics and Control

400	SAE J1708/1587 Data Link (+)
401	SAE J1708/1587 Data Link (-)
402	Unswitched Battery Fused to Datalink
403	Engine Programming Enable
403A	EOL Enable Instrument Cluster
404	SAE J1922 Noninverted Data Link (+)
405	SAE J1922 Inverted Data Link (-)
406	SAE J1939 Noninverted Data Link (+) CAN HIGH
406A	SAE J1939 Noninverted Data Link (+) CAN HIGH
406V	VORAD ECU – SAE J1939 Noninverted Data Link (+) CAN HIGH
V406A	VORAD Front Antenna – SAE J1939 Noninverted Data Link (+) CAN HIGH
V406B	VORAD Driver Display – SAE J1939 Noninverted Data Link (+) CAN HIGH
407	SAE J1939 Inverting Data Link (-) CAN LOW
407A	SAE J1939 Inverting Data Link (-) CAN LOW
407V	VORAD ECU – SAE J1939 Inverting Data Link (+) CAN LOW
V407A	VORAD Front Antenna – SAE J1939 Inverting Data Link (+) CAN LOW
V407B	VORAD Driver Display – SAE J1939 Inverting Data Link (+) CAN LOW
408	SAE J1939 Shield
408A	SAE J1939 Shield
408B	SAE J1939 Shield
408V	VORAD ECU – SAE J1939 Shield

410–419: Back-up Lamps

410	Back-Up Lamp Feed/Back-Up Alarm Feed
411	Back-Up Lamp Switch Feed

420–459: Indicator Lamps

420	Parking Brake Indicator Lamp Feed
420A	Parking Brake Indicator to VECU
421	Parking Brake Pressure Switch Feed
422	Differential Lockout Indicator Lamp Feed
422A	Differential Lockout Indicator Lamp Jumper Feed
422B	Differential Lockout Indicator Lamp Feed (external to instrument cluster)
423	Differential Lockout Indicator Lamp Switch Feed
424	Fifth Wheel Indicator Lamp Feed
424A	Fifth Wheel Indicator Lamp Jumper Feed
425	Fifth Wheel Indicator Lamp Switch Feed
42557	Differential Lockout Interwheel Indicator Lamp Feed
427	Differential Lockout Interwheel Switch Feed
427A	Differential Lockout Interwheel Forward Rear Axle Switch Feed
427B	Differential Lockout Interwheel Rear Rear Axle Switch Feed
427C	Differential Lockout Interwheel Dash Switch Feed
428	Low Air Pressure Indicator Lamp Feed
429	Front Axle Lockout Indicator Lamp Feed
430	PTO Indicator Lamp Feed
431	Air Suspension Pressure Indicator Lamp Feed

460–489: Rear Axle

460	Selector Switch Safety Switch Feed
461	Selector Switch Feed
462	Forward Rear Axle Solenoid Valve Feed
463	Rear Rear Axle Solenoid Valve Feed
464	Speedometer Adapter Feed
465	Rear Axle Solenoid Valve Feed
466	Differential Lock Safety Switch Feed
467	Differential Lock Solenoid Valve Feed
468	Forward Rear Axle Oil Temp Sending Unit Feed
469	Rear Rear Axle Oil Temp Sending Unit Feed
470	Two (2) Speed Axle
471	Lift Axle 12V Feed
472	Lift Axle Switch
472A	Lift Axle Switch #1
472B	Lift Axle Switch #2
472C	Lift Axle Switch #3
473	Lift Axle Solenoid
473A	Lift Axle Solenoid #1
473B	Lift Axle Solenoid #2
473C	Lift Axle Solenoid #3

490-499: Radio

<i>LARGE RED</i> 490	● Radio / CB Radio Feed
	● Radio Accessory Feed <i>POWER</i>
491	CB Radio Power Stud Feed
<i>LIGHT GREEN</i> 492	Radio Battery Feed (<i>ACCESSORY</i>)
493	Headlamp/Marker Lamp On Signal
<i>ORANGE</i> 497L+	Door Speaker Left, Positive
<i>YELLOW</i> 497L-	Door Speaker Left, Negative
<i>SMALL BLACK</i> 497R+	Door Speaker Right, Positive
<i>PURPLE</i> 497R-	Door Speaker Right, Negative
<i>(497L+)</i> 498LR+ <i>498LA</i>	Rear Speaker, Left, Positive
<i>(497L-)</i> 498LR- <i>498LB</i>	Rear Speaker, Left, Negative
<i>(497R+)</i> 498RR+ <i>498RA</i>	Rear Speaker, Right, Positive
<i>(497R-)</i> 498RR- <i>498RB</i>	Rear Speaker, Right, Negative
<i>DARK GREEN</i> 499LF+	Front Speaker, Left, Positive
<i>SMALL RED</i> 499LF-	Front Speaker, Left, Negative
<i>BLUE</i> 499RF+	Front Speaker, Right, Positive
<i>WHITE</i> 499RF-	Front Speaker, Right, Negative
L+	Lower Left Rear, Positive
L-	Lower Left Rear, Negative
R+	Lower Right Rear, Positive
R-	Lower Right Rear, Negative
S1+	Subwoofer Coil 1, Positive
S1-	Subwoofer Coil 1, Negative
S2+	Subwoofer Coil 2, Positive
S2-	Subwoofer Coil 2, Negative
<i>BROWN</i> 90A	<i>Radio Illumination Supply</i>
<i>GREY</i> 141R	<i>Instrument Lamp Feed</i>
<i>LARGE BLACK</i> 0G-F	<i>Ground</i>

500-549: Miscellaneous Lamps

500	Courtesy Door Lamp Switch Feed
500L	Door Switch Feed - LH Side
500R	Door Switch Feed - RH Side
501	Courtesy Door Lamp Feed
501L	Door Lamp Feed - LH Side
501R	Door Lamp Feed - RH Side
502	Roof Sign Light Feed
503	Courtesy Door Lamp to Relay
504	Courtesy Door Lamp Relay Coil Return
504L	Door Switch Relay Coil Return - LH Side
504R	Door Switch Relay Coil Return - RH Side
505	Cab Overhead Lamp to Relay
505A	Cab Overhead Lamp VN770
506	Bunk Overhead Lamp to Switch
507	Fluorescent Lamp Switch Feed
508	Work Center Fluorescent Lamp Feed
509A	Overhead Fluorescent Lamp Switch Feed
509B	Overhead Fluorescent Lamp Switch Feed
510	Overhead Fluorescent Lamp Feed

Annotations on this page are from my installation of an Aftermarket Radio. - Joe