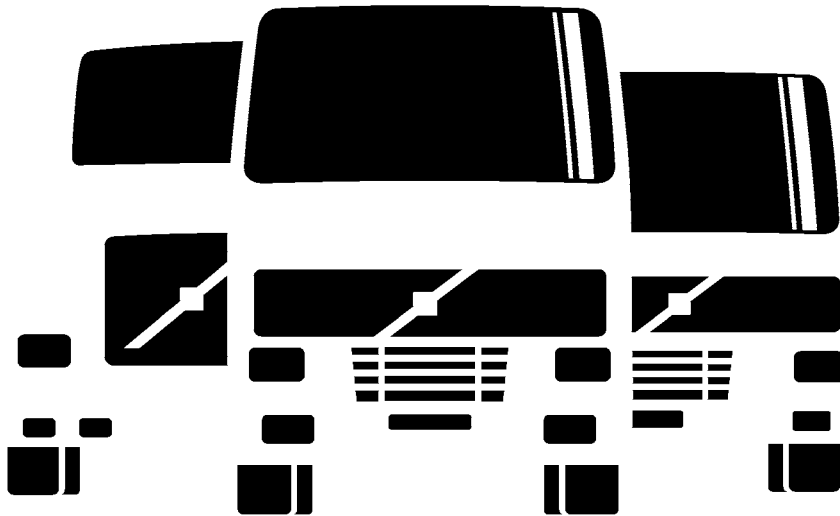


Service Manual Trucks

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

© 00 Volvo Trucks North America, Inc., Greensboro, NC USA

All rights reserved. No part of this publication may be reproduced, stored in retrieval system, or transmitted in any forms by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Volvo Trucks North America, Inc..

Contents

General	3
Circuit Number Index	3
Circuit and Wiring Numbers	3
Wire and Cable Number Marking	3
Wire Color	3
Electronic Sub-system Circuit Numbers	4
Circuit Suffixes	4
Circuit Groups	5
Definitions	6
Specifications	7
Circuit Numbers	7
Bodybuilder Circuits	7
0: Ground	7
1–19: Primary Power	8
20–29: Polarity Reversing Circuits	9
30–49: Headlamps and Fog Lamps	9
50–69: Marker and Clearance Lamps	10
70–89: Stop Lamps	10
90–109: Tail and Parking Lamps	10
110–129: Turn Signal Lamps	11
130–139: Secondary Lamps	11
140–149: Instrument Lamps	11
150–179: Heater, Defroster and Air Conditioner	12
180–219: Instruments	12
220–239: Cab Hoist	14
240–259: Ignition	14
260–279: Horns	14
280–299: Starter	14
300–309: Compressor Clutch	14
310–329: Transmission	15
330–339: Power Seat	15
340–349: Power Vent	16
350–359: Power Window	16
360–369: Starting Aids	16
370–379: Cigar Lighter	16
380–389: Windshield Wiper	17
390–399: Electric Fuel Pump	17
400–409: Diagnostics and Control	17
410–419: Back-up Lamps	18
420–459: Indicator Lamps	18
460–489: Rear Axle	18
490–499: Radio	19
500–549: Miscellaneous Lamps	19
550–599: Engine Electronics	20
600–639: Engine Controls	22
680–699: Air Conditioning Control Wiring	24
700–709: Heated Mirrors	24
710–719: Door Locks	24
720–729: Safety and Warning Systems	24
730–799: Anti-lock (ABS) Control	25
800–850: Automatic Transmission	26
900–910: Detroit Diesel Feeds	28
950–959: Protected “Branch Connector” Circuit Feeds	28

970–979: Inverter	28
990–999: Auxiliary Circuits	29

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.

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

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.

Circuit Groups

- [“Bodybuilder Circuits” page 7](#)
- [“0: Ground” page 7](#)
- [“1–19: Primary Power” page 8](#)
- [“20–29: Polarity Reversing Circuits” page 9](#)
- [“30–49: Headlamps and Fog Lamps” page 9](#)
- [“50–69: Marker and Clearance Lamps” page 10](#)
- [“70–89: Stop Lamps” page 10](#)
- [“90–109: Tail and Parking Lamps” page 10](#)
- [“110–129: Turn Signal Lamps” page 11](#)
- [“130–139: Secondary Lamps” page 11](#)
- [“140–149: Instrument Lamps” page 11](#)
- [“150–179: Heater, Defroster and Air Conditioner” page 12](#)
- [“180–219: Instruments” page 12](#)
- [“220–239: Cab Hoist” page 14](#)
- [“240–259: Ignition” page 14](#)
- [“260–279: Horns” page 14](#)
- [“280–299: Starter” page 14](#)
- [“300–309: Compressor Clutch” page 14](#)
- [“310–329: Transmission” page 15](#)
- [“330–339: Power Seat” page 15](#)
- [“340–349: Power Vent” page 16](#)
- [“350–359: Power Window ” page 16](#)
- [“360–369: Starting Aids” page 16](#)
- [“370–379: Cigar Lighter” page 16](#)
- [“380–389: Windshield Wiper” page 17](#)
- [“390–399: Electric Fuel Pump” page 17](#)
- [“400–409: Diagnostics and Control” page 17](#)
- [“410–419: Back-up Lamps” page 18](#)
- [“420–459: Indicator Lamps” page 18](#)
- [“460–489: Rear Axle” page 18](#)
- [“490–499: Radio” page 19](#)
- [“500–549: Miscellaneous Lamps” page 19](#)
- [“550–599: Engine Electronics” page 20](#)
- [“600–639: Engine Controls” page 22](#)
- [“680–699: Air Conditioning Control Wiring” page 24](#)
- [“700–709: Heated Mirrors” page 24](#)
- [“710–719: Door Locks” page 24](#)
- [“720–729: Safety and Warning Systems” page 24](#)
- [“730–799: Anti-lock \(ABS\) Control” page 25](#)
- [“800–850: Automatic Transmission” page 26](#)
- [“900–910: Detroit Diesel Feeds” page 28](#)
- [“950–959: Protected “Branch Connector” Circuit Feeds” page 28](#)
- [“970–979: Inverter” page 28](#)
- [“990–999: Auxiliary Circuits” page 29](#)

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

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 Ground
0Z	Diagnostic Ground

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

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	<ul style="list-style-type: none"> • Marker and Tail Lamp Switch Feed • Master Lighting Switch Supply for Tractor Lighting – VN Only
50A	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 / Rheostat 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 to 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)
		IPJ4	Cluster Jumper (1996 Cluster VN Only)
203	Tachograph Remote Control Switch Feed	IPJ5	Cluster Jumper (1996 Cluster VN Only)
204	Engine Oil Temp Sending Unit to Gauge	IPJ6	Cluster Jumper (1996 Cluster VN Only)
205	Electric Speedometer Feed	IPJ7	Cluster Jumper (1996 Cluster VN Only)
206	Low Oil Pressure Alarm Feed – Electric	IPJ8	Cluster Jumper (1996 Cluster VN Only)
207	Water Temp Switch or Alarmstat “Normally Open” Feed	CJ1	Cluster Jumper (1996 Cluster VN Only)
		CJ2	Cluster Jumper (1996 Cluster VN Only)
208	Transformer-Rectifier System Secondary Battery Charge Indicator Feed (Storage)	CJ3	Cluster Jumper (1996 Cluster VN Only)
		CJ4	Cluster Jumper (1996 Cluster VN Only)
209	Transformer-Rectifier System Voltmeter “Positive” Feed	CJ5	Cluster Jumper (1996 Cluster VN Only)
210	Transformer-Rectifier System Voltmeter “Negative” Feed	CJ6	Cluster Jumper (1996 Cluster VN Only)
		CJ7	Cluster Jumper (1996 Cluster VN Only)
211	Diode Common to Buzzer	CJ8	Cluster Jumper (1996 Cluster VN Only)
212	Clock Feed – Alarm/Radio	CJ9	Cluster Jumper (1996 Cluster VN Only)
213	Power Feed to Instrument Panels		
214	Speedometer Head to Sender – Ground		

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
426	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

490	<ul style="list-style-type: none"> • Radio / CB Radio Feed • Radio Accessory Feed
491	CB Radio Power Stud Feed
492	Radio Battery Feed
493	Headlamp/Marker Lamp On Signal
497L+	Door Speaker Left, Positive
497L-	Door Speaker Left, Negative
497R+	Door Speaker Right, Positive
497R-	Door Speaker Right, Negative
498LR+	Rear Speaker, Left, Positive
498LR-	Rear Speaker, Left, Negative
498RR+	Rear Speaker, Right, Positive
498RR-	Rear Speaker, Right, Negative
499LF+	Front Speaker, Left, Positive
499LF-	Front Speaker, Left, Negative
499RF+	Front Speaker, Right, Positive
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

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

550–599: Engine Electronics

550	Vehicle Speed Input to EECU	557M	ECU Common +5 Volt Output to Parking Brake Switch
550A	Vehicle Speed Input to EECU	557N	ECU Common +5 Volt Output to Power Control
551	Vehicle Speed Return from EECU	557P	ECU Common +5 Volt to Remote Throttle
551A	Vehicle Speed Return from EECU	557R	ECU Common +5 Volt to Fan Control Override
552	Throttle Position Sensor Supply	557S	ECU Common +5 Volt to AC Status
553	Throttle Position Sensor Input to EECU	558	ECU Common +12 Volt Output
554	Throttle Position Sensor Return	558A	ECU Common +12 Volt Output to Brake Switch
555	Idle Validation Input to EECU	558B	ECU Common +12 Volt Output to Clutch Switch
555A	Idle Validation VECU to EECU	558C	ECU Common +12 Volt Output to Idle / Diagnostic Switch
556	Throttle Validation Input to EECU	558D	ECU Common +12 Volt Output to Cruise Control/PTO On/Off Switch
557	ECU Common +5 Volt Output	558E	ECU Common +12 Volt Output to Cruise Control/PTO Set/Resume Switch
557A	ECU Common +5 Volt Output to Brake Switch	558F	ECU Common +12 Volt Output to Engine Brake On/Off Input
557B	ECU Common +5 Volt Output to Clutch Switch	558G	ECU Common +12 Volt Output to Diagnostic Test Input
557C	ECU Common +5 Volt Output to Idle / Diagnostic Switch	558H	ECU Common +12 Volt Output to Idle Validation Switch
557D	ECU Common +5 Volt Output to Cruise Control/ PTO On/Off Switch	558J	ECU Common +12 Volt Output to Remote PTO
557E	ECU Common +5 Volt Output to Cruise Control/ PTO Set/Resume Switch	558K	ECU Common +12 Volt Output to Throttle Position Sensor
557F	ECU Common +5 Volt Output to Engine Brake On/Off Input	558L	ECU Common +12 Volt Output to Coolant Level Sensor
557G	ECU Common +5 Volt Output to Diagnostic Test Input	558M	ECU Common +12 Volt Output to Parking Brake Switch
557H	ECU Common +5 Volt Output to Idle Validation Switch	558N	ECU Common +12 Volt Output to Power Control
557J	ECU Common +5 Volt Output to Remote PTO	558P	ECU Common +12 Volt to Remote Throttle
557K	ECU Common +5 Volt Output to Throttle Position Sensor	558R	ECU Common +12 Volt to Fan Control Override
557L	ECU Common +5 Volt Output to Coolant Level Sender	558S	ECU Common +12 Volt Output to AC Status

559	ECU Common Ground	561	Idle/Diagnostic Switch Decrement Input to EECU
559A	ECU Common Ground to Brake Switch	562	Cruise Control/PTO Switch Input to EECU
559B	ECU Common Ground to Clutch Switch	562A	Cruise Control On Input to VECU
559C	ECU Common Ground to Idle/Diagnostic Switch	563	Cruise Control/PTO Switch Set ON Input to EECU
559D	ECU Common Ground to Cruise Control/PTO On/Off Switch	563A	Cruise Control/PTO Set (+)
559E	ECU Common Ground to Cruise Control/PTO Set/Resume Switch	D563	Eaton Top 2 Lockout Solenoid
559F	ECU Common Ground to Engine Brake On/Off Input	564	Cruise Control/PTO Switch Set OFF Input to EECU
559G	ECU Common Ground to Diagnostic Test Input	564A	Cruise Control/PTO Set (-)
559H	ECU Common Ground to Idle Validation Switch	C564	Icon Indicator Lamp
559J	ECU Common Ground to Remote PTO	D564	Opt. Idle Indicator Lamp
559K	ECU Common Ground to Throttle Position Sensor	565	Cruise Control/PTO Switch Resume ON Input to EECU
559L	ECU Common Ground to Coolant Level Sender	565A	Cruise Control/PTO Resume
559M	ECU Common Ground to Parking Brake Switch	D565	Eaton Top 2 Shift Solenoid
559N	ECU Common Ground to Power Control	566	Cruise Control/PTO Switch Resume OFF Input to EECU
559P	ECU Common Ground to Remote Throttle	567	Service Brake Switch Input to EECU
559R	ECU Common Ground to Fan Control Override	567A	Service Brake Switch Input to EECU
559S	ECU Common Ground to AC Status	567B	Service Brake Switch Input to EECU
559X	ECU Common Return 1 (ISM/ISX)	568	Service Brake Switch ON to Clutch Switch NC Terminal
559Y	ECU Common Return 2 (ISM/ISX)	569	Service Brake Switch OFF to Clutch Switch Common Terminal
559Z	Cab Return (ISM/ISX)	570	Not Used
560	Idle/Diagnostic Switch Increment Input to EECU	571	Clutch Switch Input to EECU
560AA	Idle/Diagnostic Switch Increment Input to EECU (ISM/ISX)	572	Engine Brake Switch ON to EECU
560A	Diagnostic Enable to EECU (ISM/ISX)	573	Remote PTO Switch ON to EECU
560B	Diagnostic Switch On Indicator	573A	Remote PTO 1 Enable
		573B	Remote PTO 2 Enable
		573C	Remote PTO 3 Enable
		574	Diagnostic Request/Engine Shutdown Override to EECU

575	Stop Engine Indicator Lamp
576	Check Engine Indicator Lamp
577	Engine Protection System Indicator Lamp
578	Cruise Control Indicator Lamp
578A	Cruise Control Relay Ground (ISX)
579	Engine Brake Enable from EECU
580	Cruise Control/PTO Switch Resume ON to Diagnostic Request Switch
581	Parking Brake Switch Input to EECU
581B	Parking Brake Switch Input to Time Relay
581C	Parking Brake Switch Feed
582	Auxiliary Shutdown Input to EECU
583	Power Control from EECU
584	EECU Sensor Return
584A	EECU Sensor Return from Throttle Position Sensor
584B	EECU Sensor Return from Remote PTO
585	Cruise Control Switch to Cruise Control Brake Switch Common Terminal
586	Cruise Control Service Brake Switch Feed
587	Cruise Control Service Brake Switch ON Feed
588	Remote PTO Sensor Input to EECU
589	Low Coolant Level Input to EECU
590	Remote PTO Sensor Input to Relay
591	Data Display Battery Feed
592	Engine Switched Battery Feed
592A	EECU A Supply (Volvo)
592B	EECU B Supply (Volvo)
592V	VORAD Fused Ignition
593	Diagnostic Indicator Lamp
594	On/Off Fan Enable from EECU

594A	On/Off Manual Fan Enable Switch to ECU
595	Engine Shutdown Signal
596	Battery Event Recorder
597	ECU Common +12V Output
598A	Icon Ambient Air Temp Sensor Supply
598B	Icon Ambient Air Temp Sensor Return

600–639: Engine Controls

600	Engine Governor Solenoid Valve Feed
601	Engine Governor Pressure Switch Feed
602	Engine Choke Solenoid Feed
603	Engine Choke Push Switch Feed
604	Engine Control Relay Feed
604A	Speed Limiter Engine Shutdown Signal
605	Engine Control Relay Switch Feed
605A	IGNITION Signal Converter Feed
605B	IGNITION Speed Limiter Feed from Signal Converter
606	Engine Control Relay Pressure Switch Feed
607	Engine Shutdown System Feed
608	Alarmstat to Pressurestat Feed Jumper
608A	Alarmstat/High Water Temp Warning Signal
609	Warning Lamp and Buzzer Feed
610	Engine Radiator Low Coolant Probe Feed
610A	Low Coolant Indicator and Alarm Feed
611	Alarmstat “Normally Closed” Terminal Feed
611A	Alarmstat/High Water Temp Time Relay Signal Ground
612	Alarm High Temp Warning Feed

613	Alarm Low Oil Switch Feed	632	Oil Temp Lamp Feed
614	High Coolant Temp Switch – Warning	633	Oil Temp Switch Feed
615	High Coolant Temp Switch – Shutdown	634	Solenoid Valve to Throttle Switch Feed
616	Low Oil Pressure Switch “Shutdown” (Normally Open Ground)	635	Engine Brake Mode Select Switch Feed
617	Low Oil Pressure Switch Warning (Nor- mally Closed Ground Return)	635A	Engine Brake Switch Lamp Feed
618	Low Oil Indicator Lamp Ground Return	635B	Engine Brake Switch Lamp Feed (ISM/ISX)
619	<ul style="list-style-type: none"> • Cummins/Caterpillar Engine – Coolant Level Low Signal to EECU • Detroit Diesel Engine – Coolant Level Low Signal to EECU 	636	Brake Feed/Skinner Valve-Exhaust Switch Feed
620	Cummins/Caterpillar Engine – Coolant Level Normal Signal to EECU	636A	Circuit Breaker Engine Brake Exhaust Switch Feed
621	Coolant Level Module Feed	636B	Circuit Breaker Air Pressure Switch and Skinner Valve Feed
624	Engine Brake On/Off Switch Feed	636C	Engine Preheat Time Relay to Exhaust Brake Solenoid/Engine Brake Switch
625	Clutch Switch Feed	636D	PTO Feed to Engine Preheat Time Relay
626	Clutch Switch to Throttle Switch Feed	636E	Exhaust Brake Throttle Switch Feed
627	Throttle Switch to Mode Select Switch Feed	636F	Exhaust Brake Select Switch Feed
628	Engine Brake “Low” Feed	636G	Exhaust Brake Clutch Switch Feed
628A	<ul style="list-style-type: none"> • Engine Brake 001 (ISX) • Engine Brake Switch Jumper (Volvo D7, D12) 	636H	Governor Switch Feed
628B	<ul style="list-style-type: none"> • Engine Brake 010 (ISX) • Engine Brake Signal to EECU (Volvo D7, D12) 	636J	Engine Brake Control Module Power Feed
628C	Engine Brake 100 (ISX)	636K	Exhaust Back Pressure Governor Sole- noid Valve Feed
628D	Engine Brake 01 (ISM)	637	Transmission Lockup Switch Feed
628E	Engine Brake 10 (ISM)	638	Clutch Switch to Solenoid Valve
629	Engine Brake “Medium” Feed	639	PTO Solenoid Valve Feed
629A	Forward Engine Cylinder Bank Engine Brake Feed – 3 Position Brake	639A	PTO Switch 12V Supply
629B	Rear Engine Cylinder Bank Engine Brake Feed – 3 Position Brake	639B	PTO Switch Indicator Lamp Feed
630	Engine Brake Mode Select to Transmis- sion Lockup Switch Feed	639C	PTO Switch 12V Supply
631	Lockup Switch to Throttle Switch Feed	639D	PTO Switch 12V to Solenoid
		639E	PTO Switch 12V Supply
		639F	PTO Switch Indicator Lamp Feed
		639G	PTO Switch 12V Supply

680–699: Air Conditioning Control Wiring

680	Low Refrigerant Pressure Switch Return Low Side
681	High Refrigerant Pressure Switch Return High Side
682	High Refrigerant Pressure Switch Feed (Fan Control)
682A	Fan Clutch Solenoid Return
682B	Signal Out from Data Concentrator
682C	Feed from APADS Module to Data Concentrator
682G	A/C High Pressure Signal to VECU
683	High Refrigerant Pressure Switch Return (Fan Control)
684	On/Off Fan Solenoid Override Switch Feed
685	On/Off Fan Solenoid Override Switch Return
686	Bunk Temp Control Switch Supply
687	Bunk Temp Control Switch Signal
688	Bunk Temp Control Switch Return
689	Not Used
690	Defrost Switch Feed
691	Defrost Switch Return
692	Low Refrigerant Pressure Switch Feed Low Side (A/C Compressor Clutch Control)
693	High Refrigerant Pressure Switch Feed High Side (A/C Compressor Clutch Control)
694	Low Refrigerant Pressure Switch Return – Low Side (A/C Compressor Clutch Control)
695	Low Refrigerant Pressure Switch Return – High Side (A/C Compressor Clutch Control)
695A	Auto A/C On/Off Switch Feed
696	ATC Temp. Sensor Return
697	ATC Temp. Sensor Return
698	ATC Temp. Sensor Feed

700–709: Heated Mirrors

700	Low Heat (Black) Element Feed
701	High Heat (Red) Element Feed
702	Heated Mirror Indicator Lamp Feed
702A	Heated Mirror Feed
703	Heated Mirror Switch Feed
704	Mirror Switch Power Feed
704L	Mirror Control – LH Side
704R	Mirror Control – RH Side
705	Mirror Motor Common Feed
705L	Mirror Motor Common Feed – LH Side
705R	Mirror Motor Common Feed – RH Side
706	Mirror Motor Up or Down Feed
706L	Mirror Motor Up or Down Feed – LH Side
706R	Mirror Motor Up or Down Feed – RH Side
707	Mirror Motor Left or Right Feed
707L	Mirror Motor Left or Right Feed – LH Side
707R	Mirror Motor Left or Right Feed – RH Side

710–719: Door Locks

710	Battery Feed to Door Lock Module
711	Door Lock Module to Left-Hand Switch
712	Door Lock Module to Right-Hand Switch
713	Door Lock Module to Motor – Unlock
713L	Door Lock Module to Motor – Unlock LH Side
713R	Door Lock Module to Motor – Unlock RH Side
714	Door Lock Module to Motor – Lock
714L	Door Lock Module to Motor – Lock LH Side
714R	Door Lock Module to Motor – Lock RH Side

720–729: Safety and Warning Systems

720	SRS Warning Lamp Feed
721	SRS Airbag Feed
722	Smoke Detector Ignition Feed
723	Smoke Detector Disable Signal

730–799: Anti-lock (ABS) Control*Left*

730	Left Front Sensor Signal
731	Left Front Sensor Return
732	Left Front Modulator Exhaust
733	Left Front Modulator Hold
734	Left Front Modulator Common
735	Left Mid Sensor Signal
736	Left Mid Sensor Return
737	Left Rear Sensor Signal
738	Left Rear Sensor Return
739	Left Rear Modulator Exhaust
740	Left Rear Modulator Hold
741	Left Rear Modulator Common

Right

750	Right Front Sensor Signal
751	Right Front Sensor Return
752	Right Front Modulator Exhaust
753	Right Front Modulator Hold
754	Right Front Modulator Common
755	Right Mid Sensor Signal
756	Right Mid Sensor Return
757	Right Rear Sensor Signal
758	Right Rear Sensor Return
759	Right Rear Modulator Exhaust
760	Right Rear Modulator Hold
761	Right Rear Modulator Common
770	Engine Brake Interrupt Relay – Common
771	Engine Brake Interrupt Relay – NC
772	Engine Brake Interrupt Relay from ABS ECU
773	Traction Control Enable

774	Traction Control Lamp
774A	Traction Control Lamp, WABCO
774B	Traction Control Lamp, Bendix
775	Engine Brake Disable
776	ABS ECU +12 Volt Battery Fuse Feed
777	ABS ECU +12 Volt Ignition Feed
777A	ABS ECU +12 Volt Ignition Feed
777B	ABS ECU +12 Volt Ignition Feed
777C	ABS ECU +12 Volt Ignition Feed
778	ABS Warning Lamp Enable
779	ABS Warning Lamp – Tractor
779A	ABS Warning Lamp – Trailer
780	Traction Control Solenoid Feed
781	Traction Control Solenoid Ground
T101	LH Front Lining Wear Sensor Ground
T102	LH Front Lining Wear Sensor Signal
T103	LH Front Lining Wear Sensor Supply 5 Volts
T104	RH Front Lining Wear Sensor Ground
T105	RH Front Lining Wear Sensor Signal
T106	RH Front Lining Wear Sensor Supply 5 Volts
T107	Front Axle Pressure Control Valve Ground
T108	Front Axle Pressure Control Valve Supply 12 Volts
T109	Front Axle Pressure Control Valve CAN HIGH
T110	Front Axle Pressure Control Valve CAN LOW
T111	Service Brake Valve Sensor Common Ground
T112	Service Brake Valve Sensor Supply 5 Volts
T113	Service Brake Valve Sensor Signal #1

T114	Service Brake Valve Sensor Signal #2
T115	Rear Axle Pressure Control Valve Ground
T116	Rear Axle Pressure Control Valve Supply 12 Volts
T117	Rear Axle Pressure Control Valve CAN HIGH
T118	Rear Axle Pressure Control Valve CAN LOW
T119	Trailer Pressure Control Valve Ground
T120	Trailer Pressure Control Valve Supply 12 Volts
T121	Trailer Pressure Control Valve CAN HIGH
T122	Trailer Pressure Control Valve CAN LOW
T123	LH Rear Brake Lining Wear Sensor Common Ground
T124	LH Rear–Mid Brake Lining Wear Sensor Signal
T125	LH Rear–Rear Brake Lining Wear Sensor Signal
T126	LH Rear Brake Lining Wear Sensor Supply 5 Volts
T127	RH Rear Brake Lining Wear Sensor Common Ground
T128	RH Rear–Mid Brake Lining Wear Sensor Signal
T129	RH Rear–Rear Brake Lining Wear Sensor Signal
T130	RH Rear Brake Lining Wear Sensor Supply 5 Volts
T131	EBS Load Sensor Ground
T132	EBS Load Sensor Signal
T133	EBS Load Sensor Supply 5 Volts
T134	EBS ECU Low Air Pressure Sensor Feed
T135	EBS ECU Low Air Pressure Sensor Signal

800–850: Automatic Transmission

800	Automatic/Electronic Transmission
801	Ignition Feed to Vehicle Interface Module
802	Automatic Transmission Feed
803	PTO Switch to Transmission ECU
804	PTO Relay Common Feed
805	PTO Relay Normally Open Feed
806	ABS Relay Normally Open Feed
807	ABS Relay Common Feed
808	PTO Relay Normally Closed Feed
809	Oil Pressure Switch Feed
810	Oil Pressure Switch to Transmission ECU / Check Transmission Relay
811	Transmission Filter Indicator Lamp
812	Transmission Filter Switch
813	Transmission Control RPM Sensor Signal
814	Transmission Control RPM Sensor Return
815	Autoshift Transmission – EPL (+)
816	Autoshift Transmission – EPL (-)
817	Autoshift Transmission – EPL Shield
818	Transmission Ground – Autoshift Only
819	Transmission Ground – Autoshift Only
820	Clock (+) – Autoshift Display
821	Data (-) – Autoshift Display
822	Display Ground – Autoshift Display
823	Transmission in Neutral Signal from Autoshift Transmission ECU
850	PTO RPM
851	PTO Switch “ON”
852	PTO Pump Solenoid
853	PTO Overspeed Indicator
854	PTO Pressure Switch

A101	N Solenoid, Low	A136A	Battery Power
A102	A, D, J Solenoid Power	A136S	Battery Power
A103	C Solenoid, Low	A137	General Purpose Output 7 (–)
A104	G Solenoid, Low	A138	Retarder Temp Sensor Input
A105	General Purpose Output 5 (–)	A139	Output Speed – HIGH
A107	F Solenoid Power (F–HI)	A140	Turbine Speed – LOW
A110	F Solenoid Low	A140A	Turbine Speed – LOW
A112	General Purpose Output 3 (+)	A141	Engine Speed – HIGH
A113	Reverse Warning (–)	A142	Serial Common Interface – HIGH
A114	General Purpose Output 1 (–)	A143	Battery Ground
A115	Check Transmission (–)	A146	Ignition Sense
A116A	H, N Solenoid Power (H, N HI)	A147	Sump Temp Input
A117	General Purpose Input 8 (–)	A148	Output Speed – LOW
A118	General Purpose Input 3 (+)	A149	Turbine Speed – HIGH
A119	General Purpose Input 4 (+)	A149A	Turbine Speed – HIGH
A120	A Solenoid Low	A150	Engine Speed – LOW
A121	B, E Solenoid Power	A151	Serial Common Interface – LOW
A123	Neutral Start (+)	A153	General Purpose Input 2 (–)
A124	Sensor Power	A155	General Purpose Input 1 (–)
A124A	Sensor Power	A157	Vehicle Speed
A125	General Purpose Output 4 (–)	A161	Digital Ground (GPI)
A127	H Solenoid Low	A162	C3PS Input
A128	B Solenoid Low	A163	General Purpose Output 6 (–)
A129	E Solenoid Low	A164	Retarder Modulation Request
A130	C, G Solenoid Power	A165	Oil Level Sensor Input
A131	D Solenoid Low	A166	General Purpose Output (–)
A132	General Purpose Output 2 (–)	A167	General Purpose Output 6 (–)
A135	Analog Ground	A169	General Purpose Input (–)
A135A	Analog Ground	A170	Primary Shift Selector 1
A136	Battery Power	A171	Primary Shift Selector 2
		A172	Primary Shift Selector 4
		A173	Primary Shift Selector 8
		A174	Primary Shift Selector P

A175	Shift Select Mode Input
A176	General Purpose Output 6 (–)
A177	General Purpose Input 10 (–)
A178	General Purpose Input 11 (+)
A180	Shift Selector Display
A186	Ground
A187	Ground
A188	Ground
A195	Transmission ID
A325CM	Retarder Power Relay (Common)
A325NC	Retarder Power Relay (Normally Closed)

900–910: Detroit Diesel Feeds

D888	ProDriver Alarm Output
901	Pneumatic Control Unit Feed
902	Pneumatic Control Unit Deflate
903	Pneumatic Control Unit Drive
904	Pneumatic Control Unit Steer Solenoid Feed
905	Pneumatic Control Unit Power Supply
906	Pneumatic Control Unit Trailer Solenoid Feed
907	ECU Sensor Transducer Signal
908	ECU Transducer Voltage Reference
909A	Cummins ICON Alarm
909B	Cummins ICON Alarm Return
D909	Optimized Idle Alarm Output
910	Cummins ICON ECU Common
910A	Cummins ICON Start Signal
910B	Cummins ICON Safety Loop Feed
D910	Optimized Idle Start Relay Output
D910A	Optimized Idle Start Supply

950–959: Protected “Branch Connector” Circuit Feeds

950	Communication System – Battery Feed
951	Communication System – Ignition Feed
952	Air Drier Feed – Relay to Heater
953	Fuel Heater Feed – Relay to Heater
954	Fuel Heater – Relay Power Feed
955	Accessory Circuit Breaker Feed to Branch Connector
956	Ignition Circuit Breaker Feed to Branch Connector
957	Battery Circuit Breaker Feed to Branch Connector
958	Cummins ICON Thermostat Data
D958	Optimized Idle Thermostat Input

970–979: Inverter

95A	Ground IN 120V
95B	Ground OUT 120V
96A	Neutral IN
96B	Neutral OUT
97A	120V AC IN
97B	120V AC OUT
971	Inverter Remote Control Feed
972	Inverter Remote Control Return
973	LED Common Cathode
974	AC IN LED
975	Inverter on LED

990–999: Auxiliary Circuits

AUX	Ignition Relay Feed from Maxi Fuse to Trailer
AUXA	Auxiliary Switch 12V Feed
EXPB1–1	Expansion Block Feed
EXPB1–2	Expansion Block Feed
EXPB1–3	Expansion Block Feed
EXPB1–4	Expansion Block Feed
EXPB1–5	Expansion Block Feed
EXPB1–6	Expansion Block Feed
EXPB2–1	Expansion Block Feed
EXPB2–2	Expansion Block Feed
EXPB2–3	Expansion Block Feed
EXPB2–4	Expansion Block Feed
990	Overcrank Protection (OCP) Battery Power
991	Fuel Cooler Fan Feed
992	Fuel Cooler Temperature Signal
999	Auxiliary Switch Illumination Feed
999A	Engine Auxiliary Pass-through Circuit
999B	Engine Auxiliary Pass-through Circuit
999C	Engine Auxiliary Pass-through Circuit
999D	Engine Auxiliary Pass-through Circuit
999E	Chassis Auxiliary Pass-through Circuit
999F	Chassis Auxiliary Pass-through Circuit
999G	Chassis Auxiliary Pass-through Circuit

Feedback

One of our objectives is that workshop personnel should have access to correct and appropriate service manuals where it concerns fault tracing, repairs and maintenance of Volvo trucks.
In order to maintain the high standards of our literature, your opinions and experience when using this manual would be greatly appreciated.
If you have any comments or suggestions, make a copy of this page, write down your comments and send them to us, either via telefax or mailing directly to the address listed below.

To
Volvo Trucks North America, Inc.
Dept. 516 Service Publications
7825 National Service Road
P.O. Box 26115
Greensboro, NC 27402-6115
USA
Fax (336) 393-3170

From
.....
.....
.....
.....
.....
.....
.....

Comments/proposals

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Concerns Service Manual:

VOLVO

Volvo Trucks North America, Inc.

P.O. Box 26115, Greensboro, NC 27402-6115

Volvo Trucks Canada, Ltd.

6490 Vipond Drive, Mississauga, Ontario L5T 1W8

<http://www.volvotrucks.volvo.com>