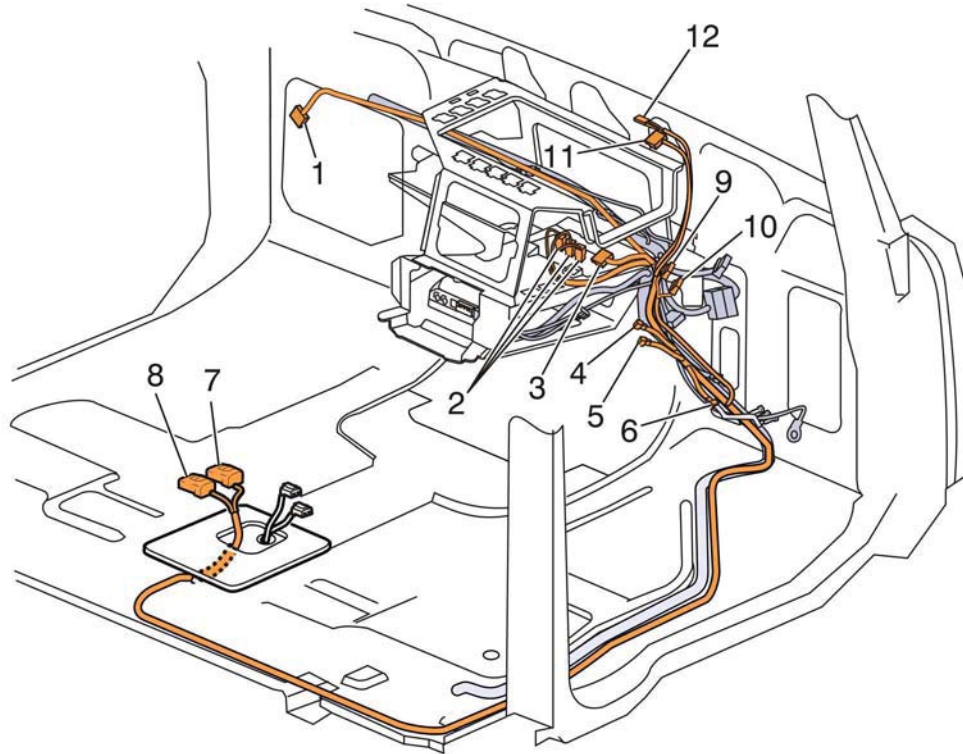


# Body Builder Harness

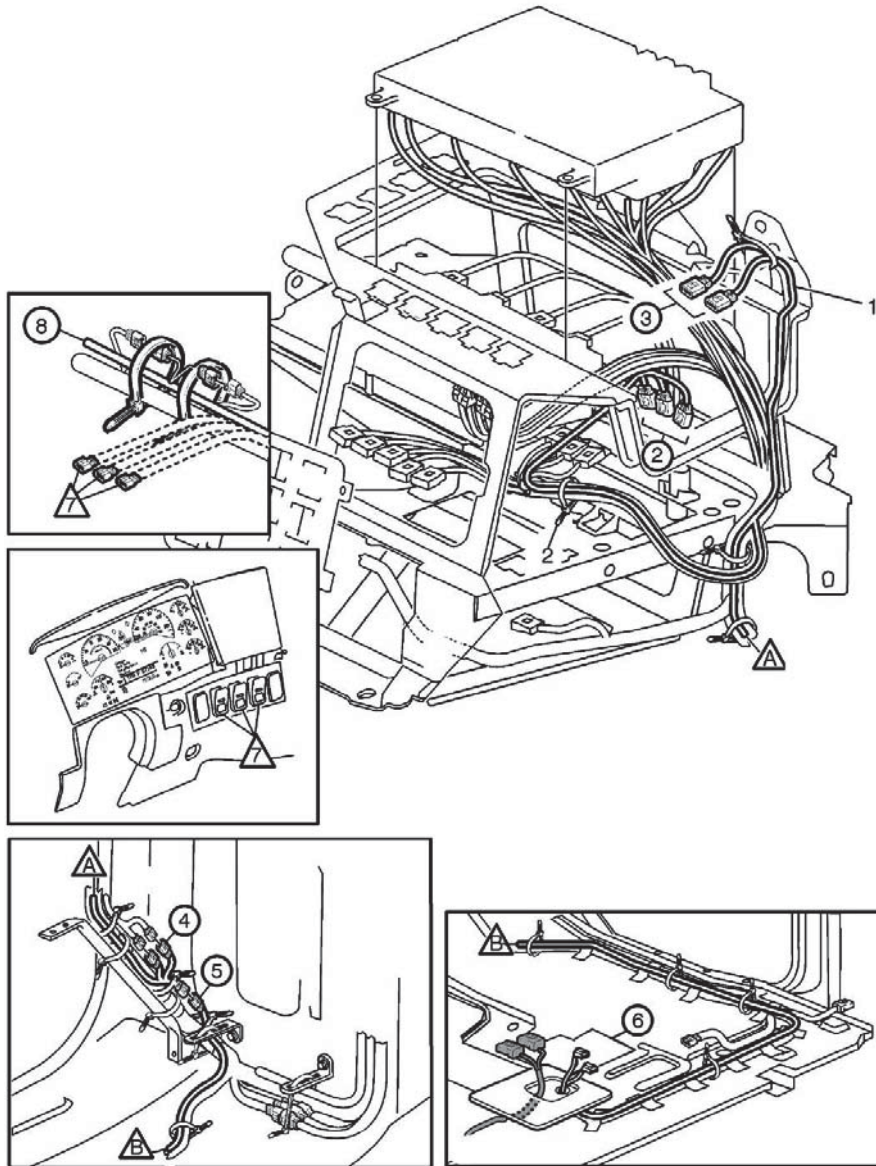
## Body Builder Harness with Auxiliary Switch Overlay (Dash), VN



W3035627

- 1 Dual power take off (PTO), Switch
- 2 Body Builder Module (BBM) Electronic Control Unit (ECU)
- 3 Splice Pack (5K141B)
- 4 Main Cab (OPT5)
- 5 Main Cab (OPT1587)
- 6 Main Cab (MCBB)
- 7 Body Builder Connector # 4 (203D.A)
- 8 Body Builder Connector # 3 (203C.A)
- 9 Body Builder Connector # 3 (203C)
- 10 Body Builder Connector # 4 (203D)
- 11 Terminating Resistor (R08A)
- 12 Overlay Options (OPT3)

# Body Builder Harness with Auxiliary Switch Overlay (Dash), VHD



W3118564

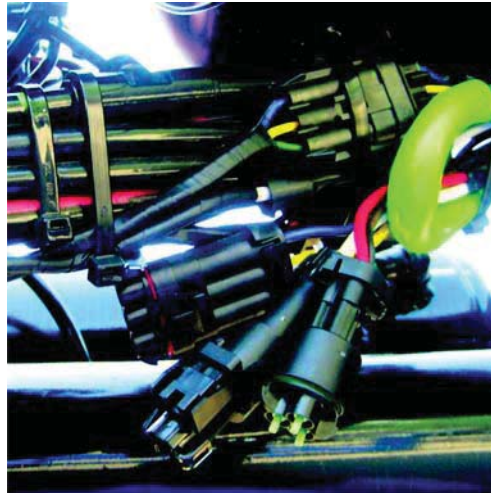
- 1 Wiring Harness
- 2 BB Module
- 3 Datalink Option Connector
- 4 Datalink Connection
- 5 Body Builder Module Connection
- 6 Body Builder Module Connection
- 7 Auxiliary Switch Connectors
- 8 To 141A Splice

# Body Builder Connections End of Frame

Body Builder connections end of frame provides access to the electrical lighting connections. The circuits provide for separate STOP and TURN signals.

Notes:

- Mating connectors are located in the cab when the truck is delivered.
- If a combined Stop/Turn is required, use the in-line connection point in the rear lighting in-line connector.



W3118341

Fig. 1 Connectors located at the end of frame

## Notes

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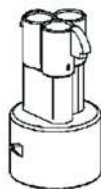
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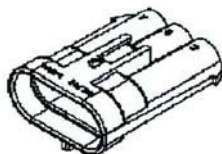
The connections are grouped into three connectors:

3-Way Metri-Pack 480 Series Connector		
Cavity Assignment	Wire Color	Description
1	Black	Trailer Marker/Clearance lamps
2	Brown	Trailer Tail lamps
3	Red	Stop Lights



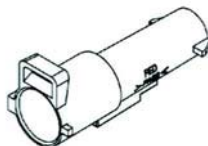
W3118342

3-Way Metri-Pack 630 Series Connector		
Cavity Assignment	Wire Color	Description
A	Yellow	LH Turn Signal Light
B	Green	RH Turn Signal Light
C	Blue	Auxiliary (12V ignition power)



W3118343

1-Way Maxi Connector		
Cavity Assignment	Wire Color	Description
A	White	Ground



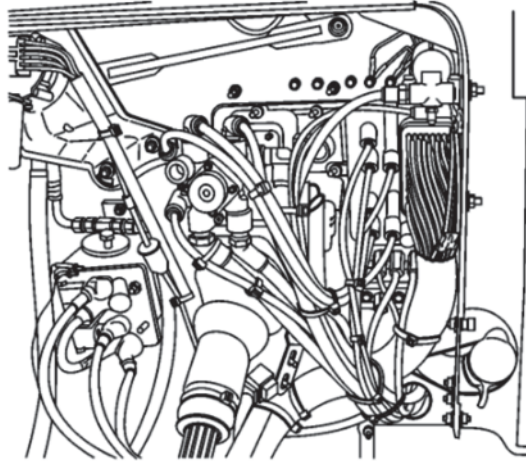
W3118344

# Body Builder Pass Through Connectors (VHD)

Three body builder option connectors are in the cab and engine harnesses. These wires provide a pass-through for add-on wiring from the engine compartment to inside the cab.

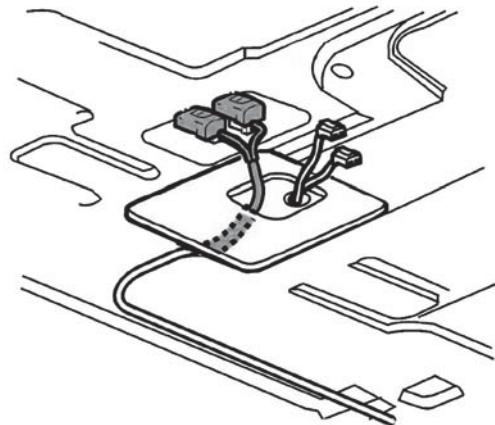
They are single wires, with plugged connectors, circuit numbers 999A, 999B, and 999C. They are located near the engine pass-through on the engine side, and inside the dash, behind the instrument cluster, on the cab side.

Note: A body builder connector is installed with 14 wires for passing circuits through the cab floor.



W8003318

Option Connectors, Driver Side Engine Compartment



W3118565

Body Builder Connector

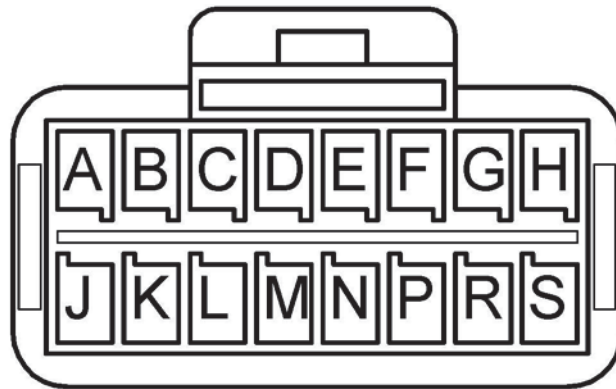
# VHD Body Builder Connectors

## Connector Usage/Gender Information

Connector/Item	Connector Series	Gender On-Vehicle
BB Connector #1 (ELCE-PK)	280-GT, Unsealed 16-way	Female Housing/Female Terminals
BB Connector #2 (ELCE-PK)	280-GT, Unsealed 16-way	Male Housing/Male Terminals
BB Connector #3 (ELCE-CK)	150-GT, Unsealed 16-way	Female Housing/Female Terminals
BB Connector #4 (ELCE-CK)	150-GT, Unsealed 16-way	Male Housing/Male Terminals
Snow Plow Prep.	280-GT, Sealed 10-way	Male Housing/Male Terminals
Cable kit 85148537 is for connectors 1 and 2. Cable kit 85146080 is for connectors 3 and 4.		

## Delphi/Packard 150-GT, Unsealed 16-way

### Female Housing/Female Terminals

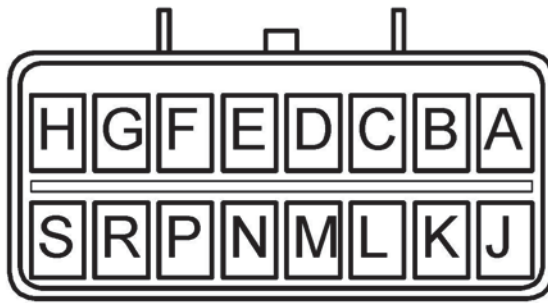


W9000766

Item	Supplier P/N	VOLVO P/N
Housing	15332177	20481359
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	12191811	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	12191812	N/A
Cable Seals-Not Required		
Cavity Plugs-Not Required		



## Male Housing/Male Terminals

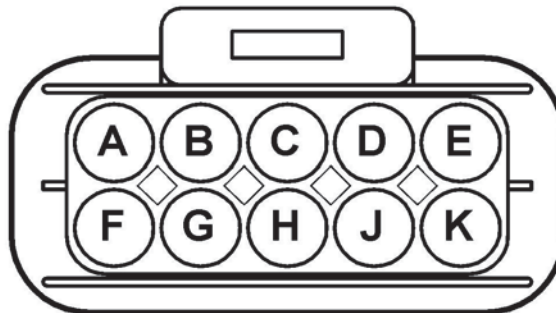


W9000767

Item	Supplier P/N	VOLVO P/N
Housing	15332182	20481361
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	15304701	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	15304702	N/A
Cable Seals-Not Required		
Cavity Plugs-Not Required		

## Delphi/Packard 280-GT, Sealed 10-way

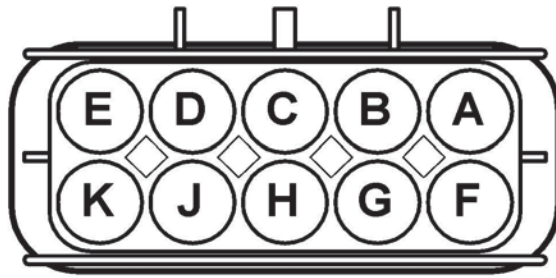
### Female Housing/Female Terminals



W9000768

Item	Supplier P/N	VOLVO P/N
Housing	15326660	20478205
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	15304718	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	15304719	N/A
1.50-3.00 mm <sup>2</sup> (0.059-0.118 in <sup>2</sup> )	15304720	N/A
Cable Seals-choose by insulation O.D.		
1.85-2.25 mm <sup>2</sup> (0.072-0.088 in <sup>2</sup> )	15366066	N/A
2.50-3.20 mm <sup>2</sup> (0.098-0.125 in <sup>2</sup> )	15366067	N/A
3.40-3.90 mm <sup>2</sup> (0.133-0.153 in <sup>2</sup> )	12191235	N/A
Cavity Plugs	15305170	N/A

## Male Housing/Male Terminals

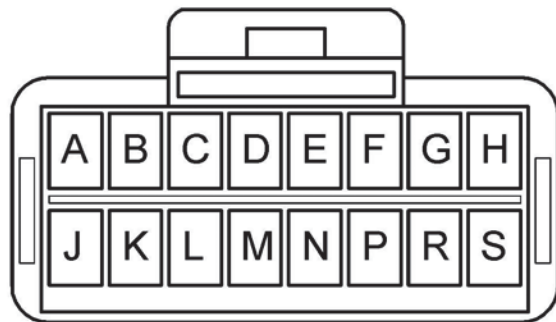


W9000769

Item	Supplier P/N	VOLVO P/N
Housing	15326661	20478204
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	15304730	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	15304731	N/A
1.50-3.00 mm <sup>2</sup> (0.059-0.118 in <sup>2</sup> )	15304732	N/A
Cable Seals-choose by insulation O.D.		
1.85-2.25 mm <sup>2</sup> (0.072-0.088 in <sup>2</sup> )	15366066	N/A
2.50-3.20 mm <sup>2</sup> (0.098-0.125 in <sup>2</sup> )	15366067	N/A
3.40-3.90 mm <sup>2</sup> (0.133-0.153 in <sup>2</sup> )	12191235	N/A
Cavity Plugs	15305170	N/A

## Delphi/Packard 280-GT, Unsealed 16-way

## Female Housing/Female Terminals

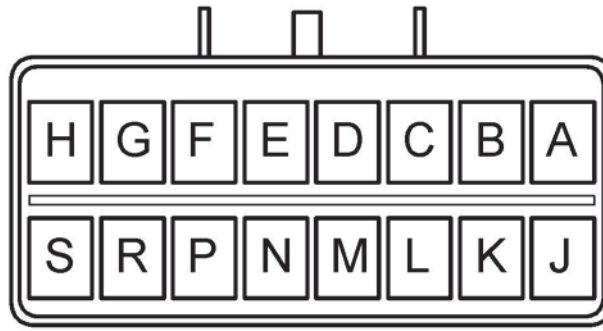


W9000770

Item	Supplier P/N	VOLVO P/N
Housing	15326952	20378995
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	15304711	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	15304712	N/A
4.00-5.00 mm <sup>2</sup> (0.157-0.196 in <sup>2</sup> )	15304713	N/A
Cable Seals-Not Required		
Cavity Plugs-Not Required		



# Male Housing/Male Terminals



W9000771

Item	Supplier P/N	VOLVO P/N
Housing	15326956	3186494
Terminals-choose by conductor size:		
0.35–0.50 mm <sup>2</sup> (0.013-0.019 in <sup>2</sup> )	15304723	N/A
0.75–1.00 mm <sup>2</sup> (0.029-0.039 in <sup>2</sup> )	15304724	N/A
4.00-5.00 mm <sup>2</sup> (0.157-0.196 in <sup>2</sup> )	15304725	N/A
Cable Seals-Not Required		
Cavity Plugs-Not Required		

## Notes

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# Basic Prep Kit

## “Basic” Prep Kit - ELCE-PK (Sales Code: L3-A1)

The basic prep package installed in all VHDs prewires for the most commonly used body builder circuits. It includes fused battery power circuits (both switched and unswitched), ground, Reverse power, and access to the 'stalk' PTO engine speed adjustment circuits.

A 31-way pass through connector in the cab floor is included for passing circuits from inside to outside the cab in a safe, weather-proof manner. In addition, there are two unassigned circuits (MAAA1 and MAAB1) installed in the 102-way pass through from the cab to the engine compartment for body builder use.

If the vehicle is equipped with an Allison Transmission, additional Allison-specific circuits are pre-wired to the body builder connector, as well.

The following tables list the pinout and mating connector information for the 16-way body builder connectors which are part of the ELCE-PK package, located on the cab floor between the seats.

## Description of Circuits included in ELCE-PK (Basic Prep Kit)

This is the 'basic' prep kit; Available with all engines. Content is the same for all engines, but differs depending on transmission.

Note: Verify fuse numbers and values with the fuse legend decal installed in your particular vehicle.

### Connector #1

Type: 16-way, unsealed Packard GT 280-series (female housing w/ female terminals)

Location: Between driver and passenger seat

Present: Always present with ELCE-PK option (sales code L3-A1)

Pin	Circuit Gen 2 2018	Circuit Gen 1 Pre 2018	Description	Notes
A	X03DH3	X03EA2	Body Builder Ground Return	30A Max.
B	HA10AB	MABA1	Alternator “R” Terminal	N/A
C	F19A1	F43A2	Fused, Unswitched Battery Power	30A “Body Builder” Maxi Fuse; 25A Max.
D	F35A1	F65A1	Fused, Ignition Switched Power	15A “IGN-X” fuse; draw 12A Max.
E	N122A1	N122A1	Allison Defined	N/A
F	N123A1	N123A1	Varies; typically Reduced Eng Load at Stop Input	Typ. Reduced Engine Load at Stop Input
G	F49A4	F62F2	+12V when transmission in REVERSE	Fed via “Body Builder Reverse” fuse; 5A Max.
H	F47A1	F64A1	Fused, Ignition-Switched Power	15A “IGN-Y” fuse; draw 12A Max.
J	F46A1	F29A1	Fused, Ignition-Switched Power	15A “IGN-Z” fuse; draw 12A Max.
K	CAKJ5C5	MAKA1	Stalk PTO engine speed increase	Active High Input
L	CALJ5F5	MALA1	Stalk PTO engine speed decrease	Active High Input
M	F65A3	F34C3	Remote PTO1 Output	Active High Output; 4A Max.
N	CA1AN	F34E3	Remote PTO1 Input/Activation	Active High Input

Pin	Circuit Gen 2 2018	Circuit Gen 1 Pre 2018	Description	Notes
P	N/A	N/A	Empty	
R	N/A	N/A	Empty	
S	N/A	N/A	Empty	

## Connector #2

Type: 16-way, unsealed Packard GT 280-series (male housing w/ male terminals)

Location: Between driver and passenger seat

Present: Present with ELCE-PK option (only when Allison transmission installed)

Pin	Circuit Gen 2 2018	Circuit Gen 1 Pre 2018	Description	Notes
A	N/A	N/A	Empty	
B	FR15A87A	NABA1	N.C. contact of relay controlled by A112	Typical PTO Enable Output
C	FR15A87	NACA1	N.O. contact of relay controlled by A112	
D	FR15A30	NADA1	COM contact of relay controlled by A112	
E	FR16A87	NAEA1	N.O. contact of relay controlled by A114	Typical Neutral Indicator for PTO
F	FR16A87A	NAFA1	N.C. contact of relay controlled by A114	
G	FR16A30	NAGA1	COM contact of relay controlled by A114	
H	N103A2	N103A2	Switch Return (Ground)	Use for all Allison-connected active low inputs
J	N117A2	N117A2	Allison defined	Typically AutoNeutral Input
K	N143A1	N143A1	Allison defined	Typically PTO Enable Input
L	XO3BA	XO3BA	Allison ECU Power Ground	Use for ground-connected Allison Outputs
M	N142A1	N142A1	Allison defined	Typically Range Hold Input
N	N101A1	N101A1	Allison defined	Typically Range Inhibit Input
P	N125A1	N125A1	Allison defined	Typically Speedometer Output
R	N113A1	N113A1	Allison defined	Output; varies by application
S	N105A1	N105A1	Allison defined	Typically 'Speed Indicator A' Output

1 The function of all Allison-defined circuits (Axxx) will depend on the chosen Vocational Package. Always refer to Allison Documentation for details.

Note: Allison-Only Circuits numbered "Axxx": Refer to Allison Transmission documentation or Body Builder Transmission service bulletins (using the "Axxx" circuit references) to determine the exact function of each Allison circuit, as they can vary depending upon the vocational package chosen.

## Connector/Mating Part Information

Note: Unless otherwise indicated, all part numbers are Delphi / Packard:

Connector/Item	Supplied on vehicle	Mate required to plug into vehicle
Connector #1	Packard 280-GT series (unsealed), 16-way; Female housing & Terminals	Packard 280-GT series (unsealed), 16-way; Male housing & Terminals
Housing Assy:	Packard PN 15326952 VOLVO PN 20378995	Packard PN 15326956 VOLVO PN 3186494
Terminals	Female Terminals, size as required	Male Terminals: Packard 15304723 (0.75 ~ 1.00 mm <sup>2</sup> ) Packard 15304724 (1.50 ~ 3.00 mm <sup>2</sup> ) Packard 15304725 (4.00 ~ 5.00 mm <sup>2</sup> )
Connector #2	Packard 280-GT series (unsealed), 16-way; Male housing & Terminals	Packard 280-GT series (unsealed), 16-way; Female housing & Terminals
Housing Assy:	Packard PN 15326956 VOLVO PN 3186494	Packard PN 15326952 VOLVO PN 20378995
Terminals:	Male Terminals, size as required	Female Terminals: Packard 15304711 (0.75 ~ 1.00 mm <sup>2</sup> ) Packard 15304712 (1.50 ~ 3.00 mm <sup>2</sup> ) Packard 15304713 (4.00 ~ 5.00 mm <sup>2</sup> )

## Battery and Ignition Feed circuits (F43A1, F65A1, F64A1, and F29A1)

These unswitched and ignition-switched power feeds are provided for body builder's use. Note that each circuit is fused by either a Maxifuse in the Power Module, and/or a minifuse in the standard Fuse and Relay Center. Observe the maximum current capabilities of each circuit.

Note: Verify fuse numbers and values with the fuse legend decal installed in your particular vehicle.

Circuit	Fuse/Fuse Size	Maximum Usable Current
F43A1	F43/10A/30A	25 A (80% of fuse rating)
F65A1	F65/15A	12A
F64A1	F64/15A	12A
F29A1	F29/15A	12A

Note: NEVER increase the size of the fuse beyond what is listed above (or on the Fuse and Relay Center decal). If needed for the application, though, the fuse size may be reduced as dictated by load of the attached equipment.

Special NOTE for the F65A1 circuit (Fuse F65) and F64A1 circuit (Fuse F64)

These circuits are in the electrical 'path' of the PLC4TRUCK signal as it makes its way from the trailer (AUX circuit) to the tractor ABS ECU. Do not use the F65A1 or F64A1 circuits for powering items such as:

- large inductive or capacitive loads such as electric motors or continuously-activated solenoids
- add-on equipment which uses a type of Power Line Carrier (PLC) communication which is not compatible with the PLC4TRUCK signal

Doing so may affect the PLC4TRUCK signal, resulting in a loss of trailer ABS malfunction indication.

Likewise, do not use the F65A1 or F54A1 circuits for powering sensitive communication or weighing equipment which may be affected by the PLC4TRUCK signal.

If you will be connecting to a trailer equipped with the PLC4TRUCK system (basically, any air-braked trailer manufactured after March, 2001), it will be the user's responsibility to ensure that any add-on electrical equipment does not interfere with the trailer ABS malfunction circuit function.

### Ground Circuit (X03EA2)

This ground circuit should be used as much as possible for all body builder ground needs. It connects to a ground stud on the vehicle firewall which is a central ground point for all vehicle electrical loads. Note the maximum current capacity of the circuit (dictated by the 6.0mm<sup>2</sup> conductor size) of 30A.

### Reverse Circuit (F63H2)

This is a 10A (max) circuit, live when the transmission is placed into REVERSE gear. It shares a relay (RLY14) and fusing (F63) with the lift-axle logic: when the transmission is not in reverse, the lift axles are allowed to operate; when the transmission is in reverse, circuit F63H2 receives power.

Note: OVERLOADING CIRCUIT F63H2 (and causing F63 to blow) WILL PREVENT PROPER OPERATION OF THE LIFT AXLES.

### Notes

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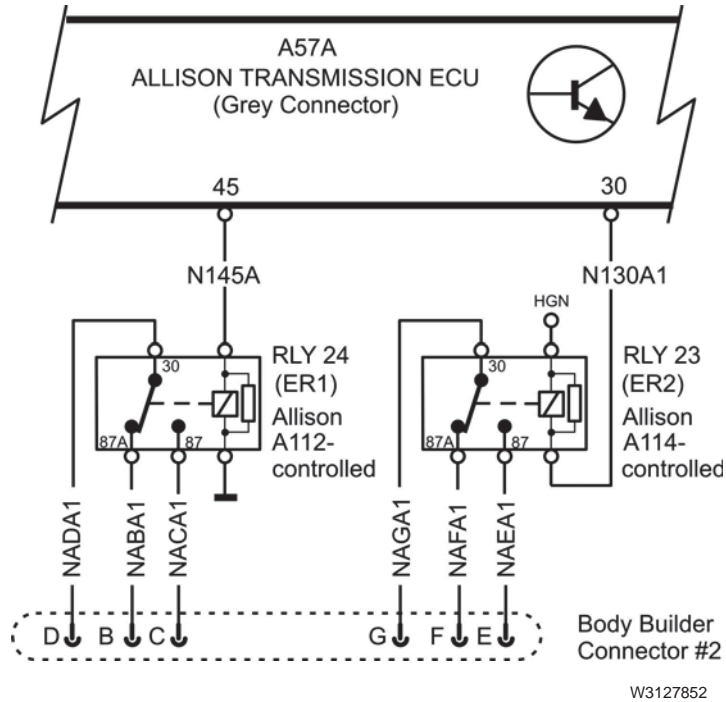
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# Allison Controlled Relays

## (NADA1/NACA1/NABA1 and NAEA1/NAFA1/NAGA1) - Allison Transmission Only

Two relays are provided which are controlled by the Allison Transmission circuits N145A1 and N130A1. See the diagram below.



Refer to either Allison Transmission documentation, or the Body Builder Transmission service bulletins, for details on the exact functions of these circuits, as they differ depending upon which vocational package was chosen.

## Stalk PTO Engine Speed INC/DEC (MAKA1, MALA1)

These circuits are provided for "remote" adjustment of the engine speed while operating in "stalk PTO" mode. They are connected to relays which operate in parallel with the "SET+" and "SET-" stalk switches, and will allow trimming of the PTO engine speed just as if the in-cab controls were used, except for the added requirement that the vehicle's park brake must be set in order to use these "remote" control circuits.

As with the in-cab stalk PTO mode of operation, the Cruise Control On/Off switch must remain "on". The 'base' PTO set speed should be selected before exiting the cab.

These circuits are usable on both VOLVO and Cummins engines (VNL only), with the same mode of operation that each engine has concerning the in-cab "stalk PTO" operation. Refer to the "Stalk PTO" topic in the "PTO Functions" section of this document.

# PTO1 Input/Enable and Output

## (F34E3, F34C3) - VOLVO Engine Only

These circuits provide access to the single PTO function of the VECU, and are usable with the VOLVO engine only. If more than one PTO function is required for your application with the VOLVO engine, a body builder module (BBM) ECU will be required - refer to the section on the ELCE-CK prep package.

For a complete description of the PTO1 Input/Enable and Output functions of the VECU, please refer to the "VECU Functions" section of this document.

For all wired-PTO functions with the Cummins engines, it will be necessary to wire directly to the Engine ECU. Refer to the section on the ELCE-EK prep package for available pre-wired circuits, and also to Cummins Engine Company documentation for PTO operation with these engines.

### Notes:

- 1 ELCE-PK is standard equipment on all VHDs (truck and tractor), unless specified otherwise.
- 2 ELCE-PK is available with all engines.
- 3 ELCE-PK is available with all transmissions; additional content is included when Allison transmission is specified.
- 4 The wiring for the PTO Relay (RLY07), PTO DASH SWITCH, and "PTO" fusing are present in every VHD; the components themselves are only installed when one of the available PTO-prep options are ordered.
- 5 The function of all Allison Transmission circuits (Axxx) will depend on the chosen Vocational Package; REFER TO ALLISON DOCUMENTATION FOR DETAILS.

### Notes

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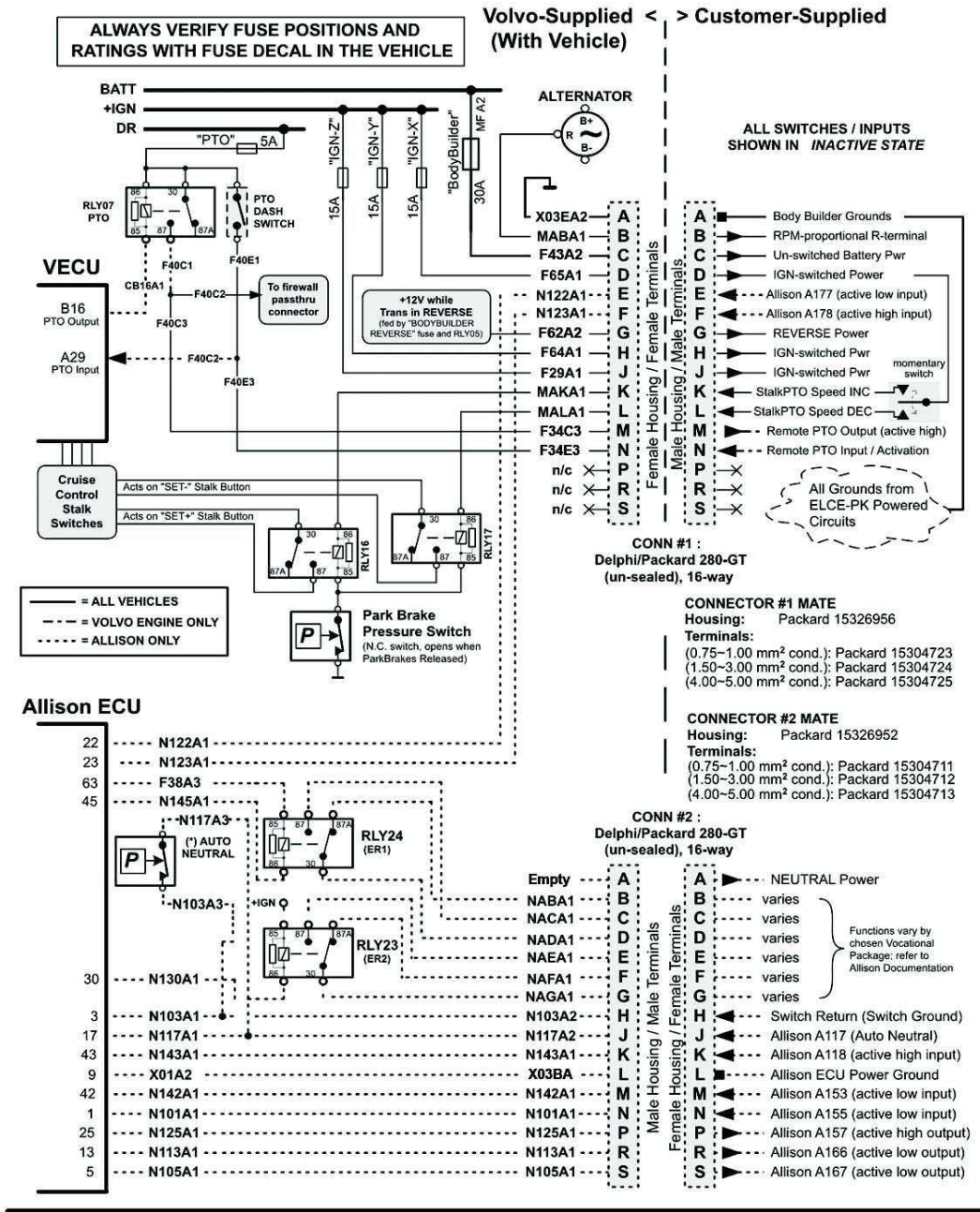
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# VHD Body Builder Wiring



## VHD 'BASIC' BODY BUILDER WIRING Variant ELCE-PK, SalesCode L3-A1

W3119185

# “Complete” Prep Kit; Including BBM ECU; ELCE-CK (Sales Code: L3-C1)

The "complete" prep kit adds a body builder module (BBM) electronic control unit (ECU) and associated wiring to the standard "basic" prep kit. The ELCE-CK kit is only available with a VOLVO engine.

The following tables list the pinout and mating connector information for the 16-way body builder connectors which are part of the ELCE-CK package, located on the cab floor between the seats.

## Description of Circuits Included in ELCE-CK ("Complete" Prep Kit)

In addition to all the circuits listed above in the ELCE-PK package, the ELCE-CK package adds the body builder module (BBM) electronic control unit (ECU), together with the following circuits brought out to two additional connectors located between the seats (same location as -PK package).

### Connector #3

Connector # BB-EK

Type: 16-way, unsealed Packard GT 150-series (female housing w/ female terminals)

Location: Between driver and passenger seat

Present: Always present with ELCE-CK option (sales code L3-C1)

Pin	Circuit Gen 2 2018	Circuit Gen 1 Pre 2018	Description	Notes
A	X03DB16	X03EA21	Ground return for all BBM-connected Inputs	
B	MB5A3	MB5A3	+V Power for BBM-connected Switches	Limit to -10 switches per +V output
C	MB19A1	MB19A1	+V Power for BBM-connected Switches	Limit to -10 switches per +V output
D	MA18A2	MA18A2	PTO2 Input/Enable	All PTO inputs are Active High; See VECU (ELCE-PK) for PTO1 Input/Enable
E	MA19A1	MA19A1	PTO3 Input/Enable	
F	MA20A1	MA20A1	PTO4 Input/Enable	
G	MA4A1	MA4A1	PTO1 Engine Speed Control Input	Active High Inputs
H	MB21A1	MB21A1	PTO2 Engine Speed Control Input	
J	MA3A1	MA3A1	PTO3 Engine Speed Control Input	
K	MA5A1	MA5A1	PTO4 Engine Speed Control Input	
L	MB2A1	MB2A1	PTO2 Output	Active Low Outputs; limit to 1 Amp per output. See VECU (ELCE-PK) for PTO1 Input/Enable
M	MB3A1	MB3A1	PTO3 Output	
N	MB4A1	MB4A1	PTO4 Output	
P	MA1A1	MA1A1	Remote PTO Engine Speed DECrement	Active High Inputs; act on PTO2-4 only
R	MA2A1	MA2A1	Remote PTO Engine Speed INCrement	
S	F44BS	N/A	Hood Position Switch	Optional

## Connector #4

Connector # BB-EK

Type: 16-way, unsealed Packard GT 150-series (male housing w/ male terminals)

Location: Between driver and passenger seat

Present: Always present with ELCE-CK option (sales code L3-C1)

Pin	Circuit Gen 2 2018	Circuit Gen 1 Pre 2018	Description	Notes
A	MA6A1	MA6A1	Engine Shutdown #1 Input (See Note 1)	Normally Open (N.O.) Switch to +V
B	MA27A1	MA27A1	Engine Shutdown #2 Input (See Note 1)	Normally Closed (N.C.) Switch to Ground
C	MA7A1	MA7A1	Forced Idle/Throttle Interlock Input	Active High Input
D	MA17A1	MA17A1	Engine Speed Limit Input	Active High Input
E	MA25A1	MA25A1	Engine Torque Limit Input	Active Low Input
F	MA26A1	MA26A1	Road Speed Limit Input	Active Low Input
G	MA24A1	MA24A1	PTO Neutral Interlock Input	Active Low Input
H	MA28A1	MA28A1	PTO Low Split Gear Interlock Input	Active Low Input
J	MA29A1	MA29A1	Split Shaft PTO Input	Active High Input
K	MB12A1	MB12A1	Remote Throttle Enable Input	Active Low Input; See Note 2 and 3
L	MB10A1	MB10A1	Remote Throttle V-Ref (5V) Output	See Note 2 and Note 3. Use twisted-trio wiring for these three circuits
M	MB9A1	MB9A1	Remote Throttle Sensor/Signal Input	
N	MB22A1	MB22A1	Remote Throttle Ground Reference	
P	MB28A1	MB28A1	Road Speed Output ("C3" Output)	Active High Output
R	MB16A1	MB16A1	System Warning Output	Active Low Output
S	MB18A1	MB18A1	Databus Triggered Output	Active Low Output

### Notes:

- 1 Engine Shutdown Input #1 is always enabled. Do not install a switch at that position if function is not required. Engine Shutdown Input #2 must be enabled in software, and once enabled will shutdown the engine unless ground is present at that input.
- 2 For stationary 2nd Throttle use, it is recommended to add a redundant Park Brake pressure switch in series with the Remote Throttle Enable Input (see schematic). This will allow remote throttle only while the park brake is set. DO NOT tie into the factory-installed Park Brake pressure switch for this purpose.
- 3 For non-stationary 2nd Throttle use, an Accelerator Pedal with Idle Validation Switch (IVS) is required. Circuits for the IVS are not brought out to Body Builder Connector #4. Refer to the BBM ECU section of this document for details on the circuitry needed for a 2nd driving position.

# Connector/Mating Part Information

All part numbers shown are Delphi / Packard, unless otherwise noted.

Connector/Item	Supplied on vehicle	Mate required to plug in to Vehicle
Connector #3	Connector #3 Packard 150-GT series (unsealed), 16-way; Female housing & Terminals Packard 150-GT series (unsealed), 16-way; Male housing & Terminals	Packard 150-GT series (unsealed), 16-way; Male housing & Terminals
Housing Assembly	Packard PN 15332177 VOLVO PN 20481359	Packard PN 15332182 VOLVO PN 20481361
Terminals	Packard 12191812 (0.75 ~ 1.00 mm <sup>2</sup> )	Packard 15304702 (0.75 ~ 1.00 mm <sup>2</sup> ) Packard 15304701 (0.35 ~ 0.50 mm <sup>2</sup> )
Connector #4	Packard 150-GT series (unsealed), 16-way; Male housing & Terminals	Packard 150-GT series (unsealed), 16-way; Female housing & Terminals
Housing Assembly	Packard PN 15332182 VOLVO PN 20481361	Packard PN 15332177 VOLVO PN 20481359
Terminals	Packard 15304702 (0.75 ~ 1.00 mm <sup>2</sup> )	Packard 12191812 (0.75 ~ 1.00 mm <sup>2</sup> ) Packard 12191811 (0.35 ~ 0.50 mm <sup>2</sup> )

## Notes:

- 1 ELCE-CK is standard equipment on VHD trucks; optional on VHD tractors.
- 2 ELCE-CK includes all contents of the 'basic' prep (ELCE-PK).
- 3 ELCE-CK is only available with VOLVO engines.
- 4 ELCE-CK is available with all transmissions.

## Notes

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