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What Really Matters?

- Fuel Economy
- Driver Satisfaction/Retention/Productivity
- Quality, Safety and Environmental Care
- Reliability
- Industry Leading Technology
- Training to Support it All, On Line and Free

VHD



- D11 and D13 Engines
- Very High Spec Content

VNX

- D16
- 500 to 600 HP
- 20# FA
- 52# RA
- Haul Truck



VNM

- D11 & D13
- Class 7 & 8
- No Frame Ext.
- Small Dump
- Straight Truck



Volvo Engine Lineup



D11

Lightweight Heavy-duty Performance

- 6 Engine Ratings
- 355 – 405 HP
- 1250 – 1550 Lb-Ft Torque

D13

Power and Efficiency for Every Application

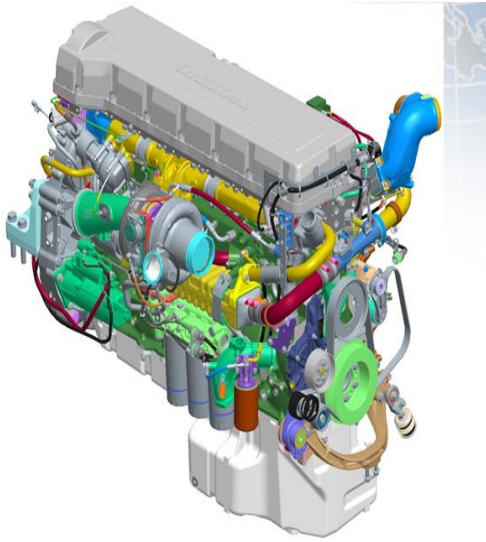
- 17 Engine Ratings
- 375 – 500 HP
- 1450 – 1850 Lb-Ft Torque

D16

Big Block Power

- 500 – 600 HP 1850 – 2050 Lb-Ft Torque

Volvo 2014 GHG Engines



2014 GHG Green House Gas engines will be available Jan. 2014 offering Better fuel economy, reliability and serviceability than it's predecessors.

How?

- New piston, liner, and oil scraper ring for improved fuel economy.
- New injector for improved fuel economy.
- Clutched air compressor for improved fuel economy.
- New cylinder head for improved cooling.
- New 2 piece valve cover to improve serviceability on the 13L.
- Shimless rocker for improved serviceability on the 13L.
- Updated Ladder frame and cylinder block for improved reliability.

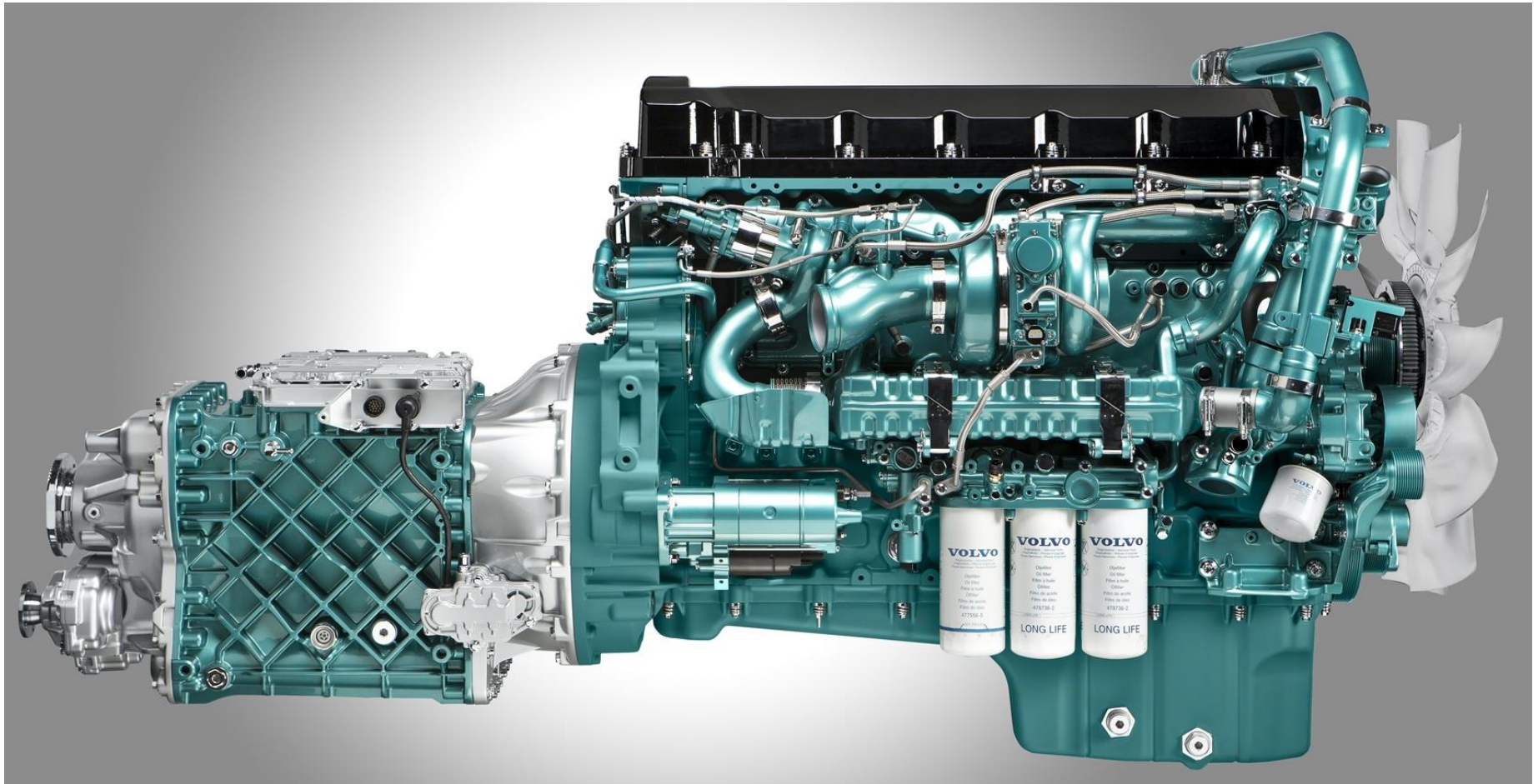
Alternative Fuels?

- **You will need to have a Plan to Reduce GHG**
- **We Offer on-line Cummins 9L & 12G Engines**
- **We Introduced DME**
- **We Support CNG, LNG and DME for Fuel**
- **Many new Tank Configurations**
- **Keep an Open Mind**

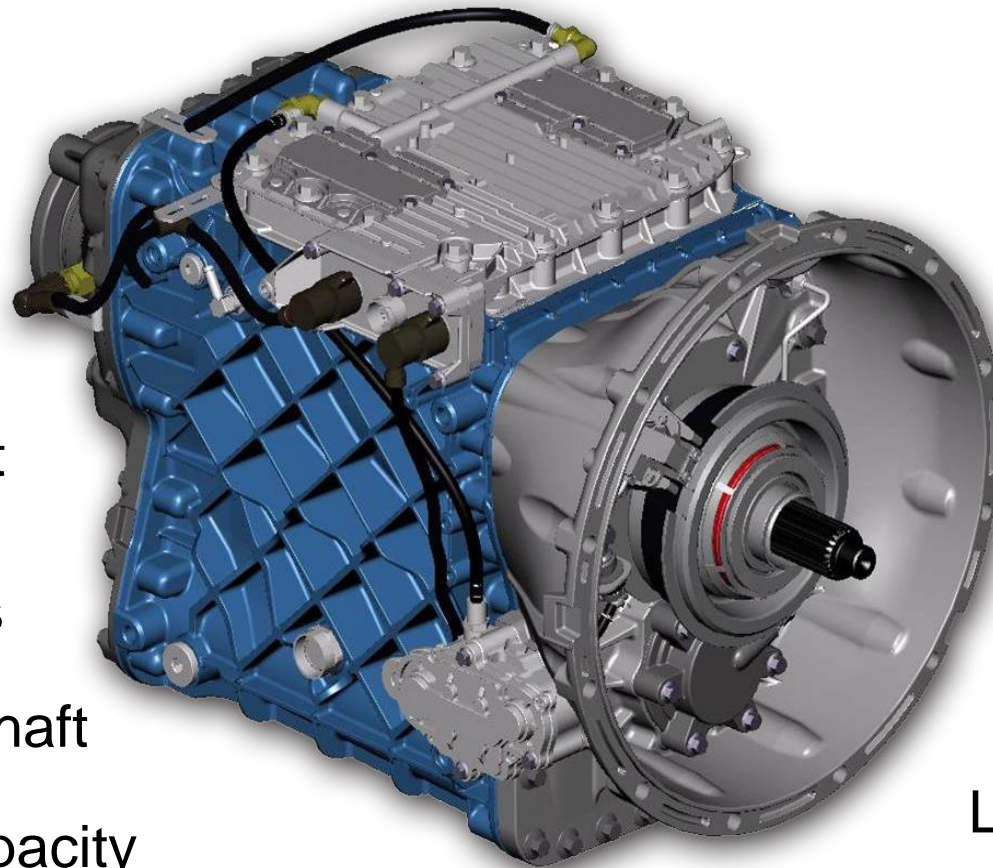
DME – Dimethyl Ether

- **Convert Methane and Carbon Dioxide to DME**
- **Small- Scale Regional Fuel Production**
- **Those with Methane will Purchase First**
- **GHG Reduction Solution**
- **Engine Power and Efficiency like Diesel Fuel**
- **Simple Tanks – 75 PSI / normal Temperature**

Volvo Engines with I-Shift Transmission



Volvo I-Shift 12 Speed, 2 Pedal Automated Mechanical Transmission



Overall
Reduction
15.04:1 for OD,
14.94:1 for Direct

28% Gear Steps

Single Countershaft

High Torque Capacity

Light Weight
597 to 611 lbs.

Integrated Engine Brake Interface

Engine Cruise Control, Engine Brake, & Transmission Integrated Together for Seamless Performance

- Off
- “A” – Automatic
 - Eco-Roll Enabled
 - Brake Cruise Control Enabled
- 1,2,3 – Manual I-VEB Engine Brake Control
- “B” – I-Shift Brake Program Shifts Down for Maximum Retardation
- Plus / Minus switch on end for Brake Cruise Control function



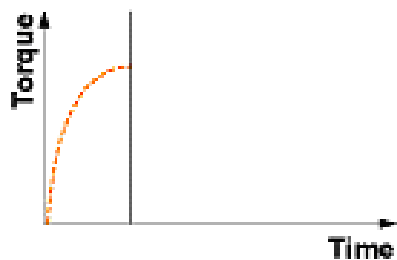
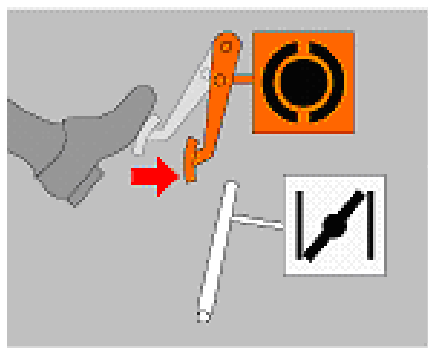
Grade Sensor Allows I-Shift To “See” What’s Ahead

Informed Technology

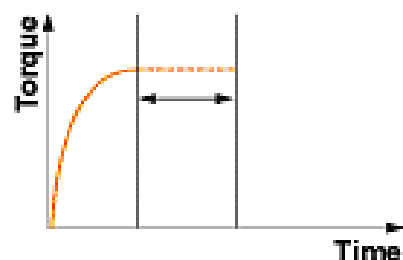
- I-Shift has a Grade Sensor, so it knows how steep the grade is and if it’s changing
- I-Shift continuously monitors the grade, vehicle speed, acceleration, torque demand, weight, rolling and air resistance
- I-Shift continuously predicts and selects the most efficient utilization of the engine over the next rolling 30 second period.

Hill Start Assist

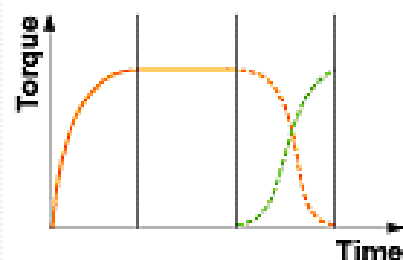
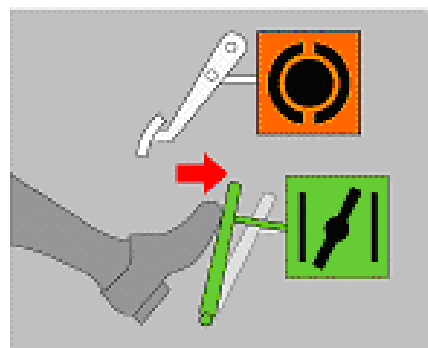
Brake Pedal Engaged



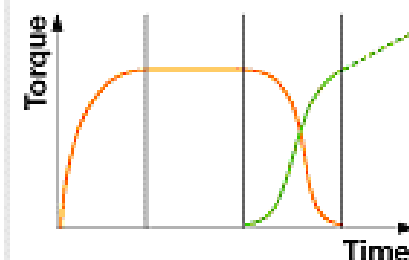
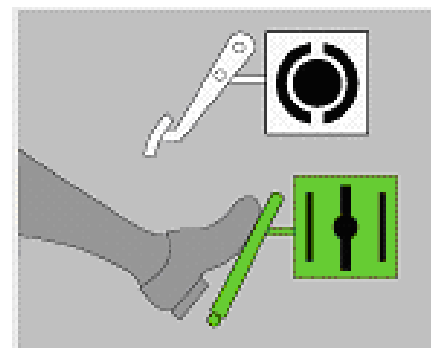
Hill Start Engaged





Accelerator Pressed



Hill Start Released



 Braking torque  Driving torque

I-Shift

Volvo's automated manual transmission

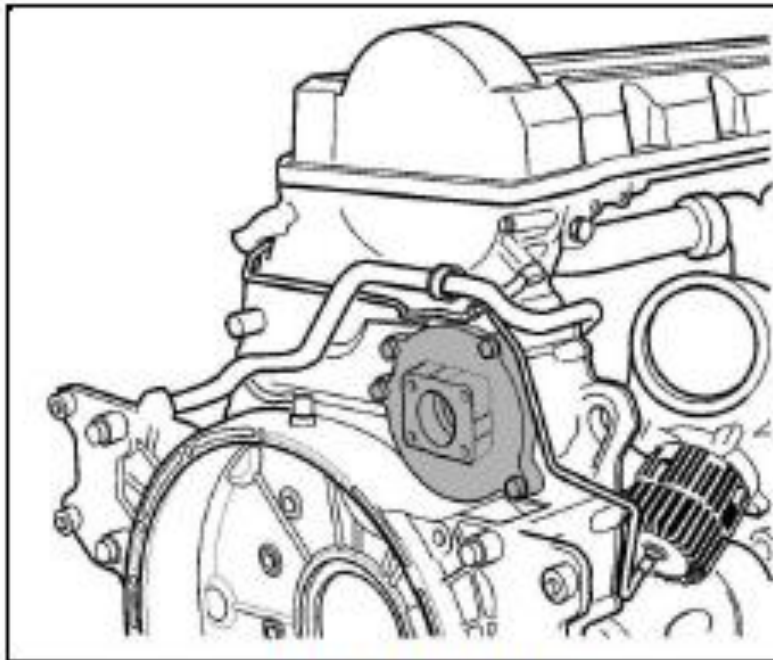
- improves performance
- optimizes shifting
- weight savings = fuel savings
- fuel savings up to 1.56%
\$1,045 truck/year
(\$3.75/gallon, 7.0 mpg, 125,000 miles)



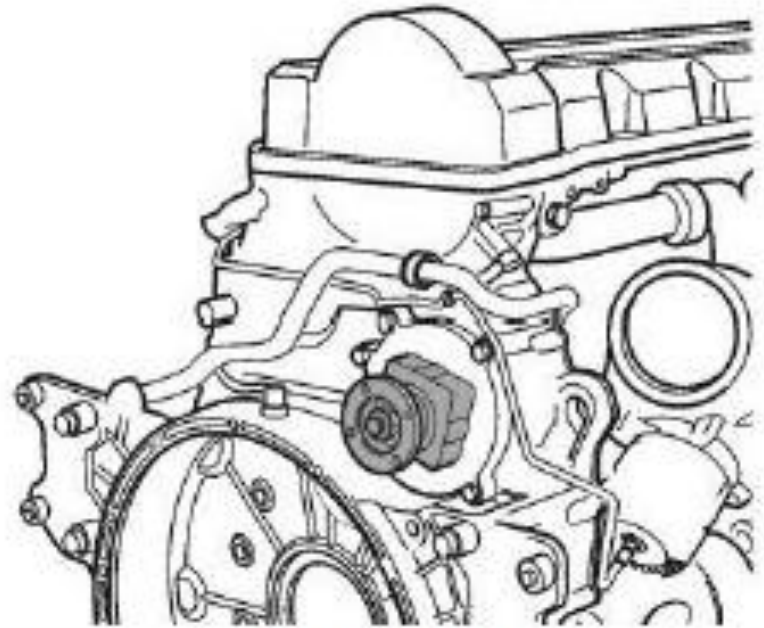
Available PTO's



Rear Engine Mounted PTO's (REPTO)



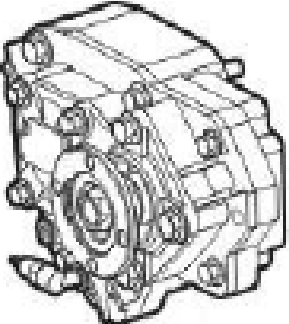
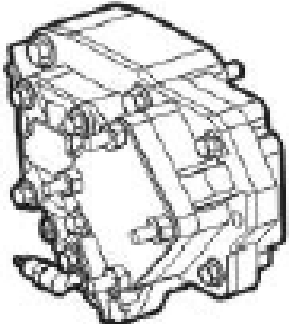
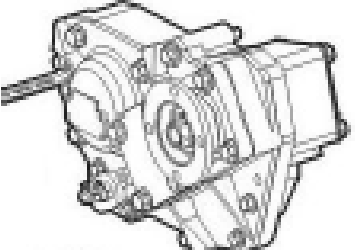
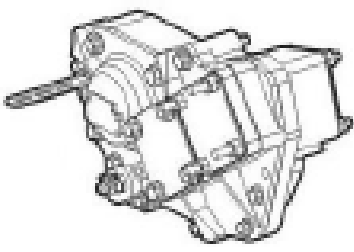
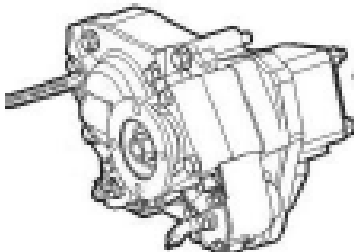
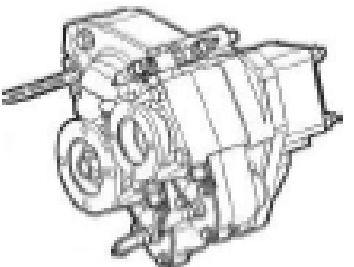
T1-K1 (PTER-DIN)



T1-A1 (PTER-1400)

I-Shift PTO Options

I-Shift Transmission Mounted Power Take-Offs (4.1)

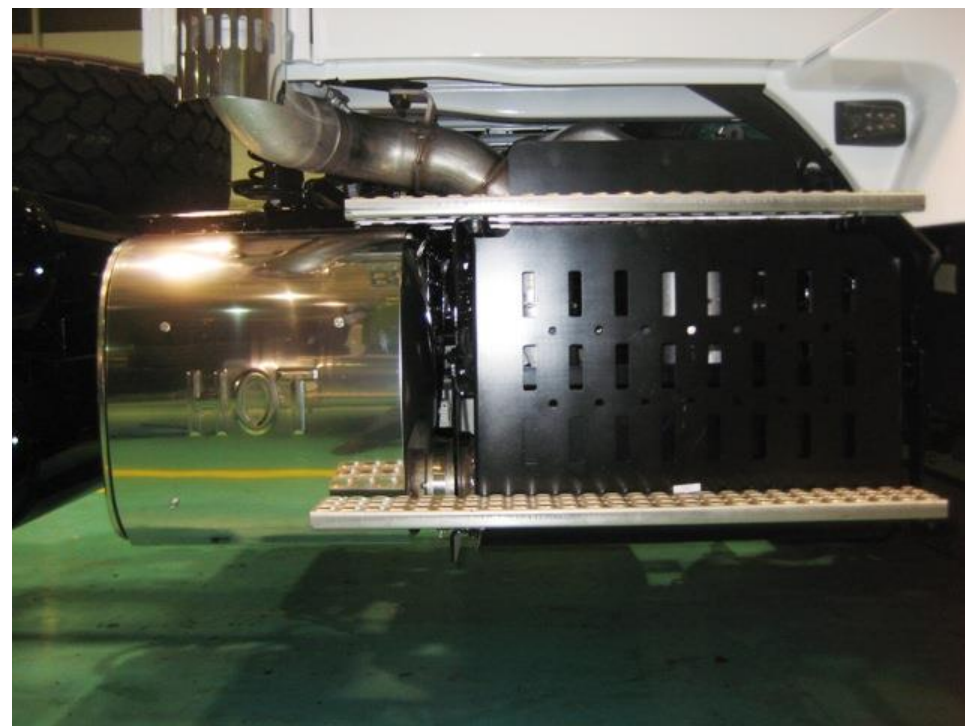
Single, Medium Duty						
Double & Triple, Heavy Duty						
	T4-AK (PTR-FL)	T4-DM (PTR-DM)	T4-F1 (PTRD-F)	T4-G1 (PTRD-D)	T4-H1 (PTRD-D1)	T4-J1 (PTRD-D2)

Volvo T-Ride Suspension

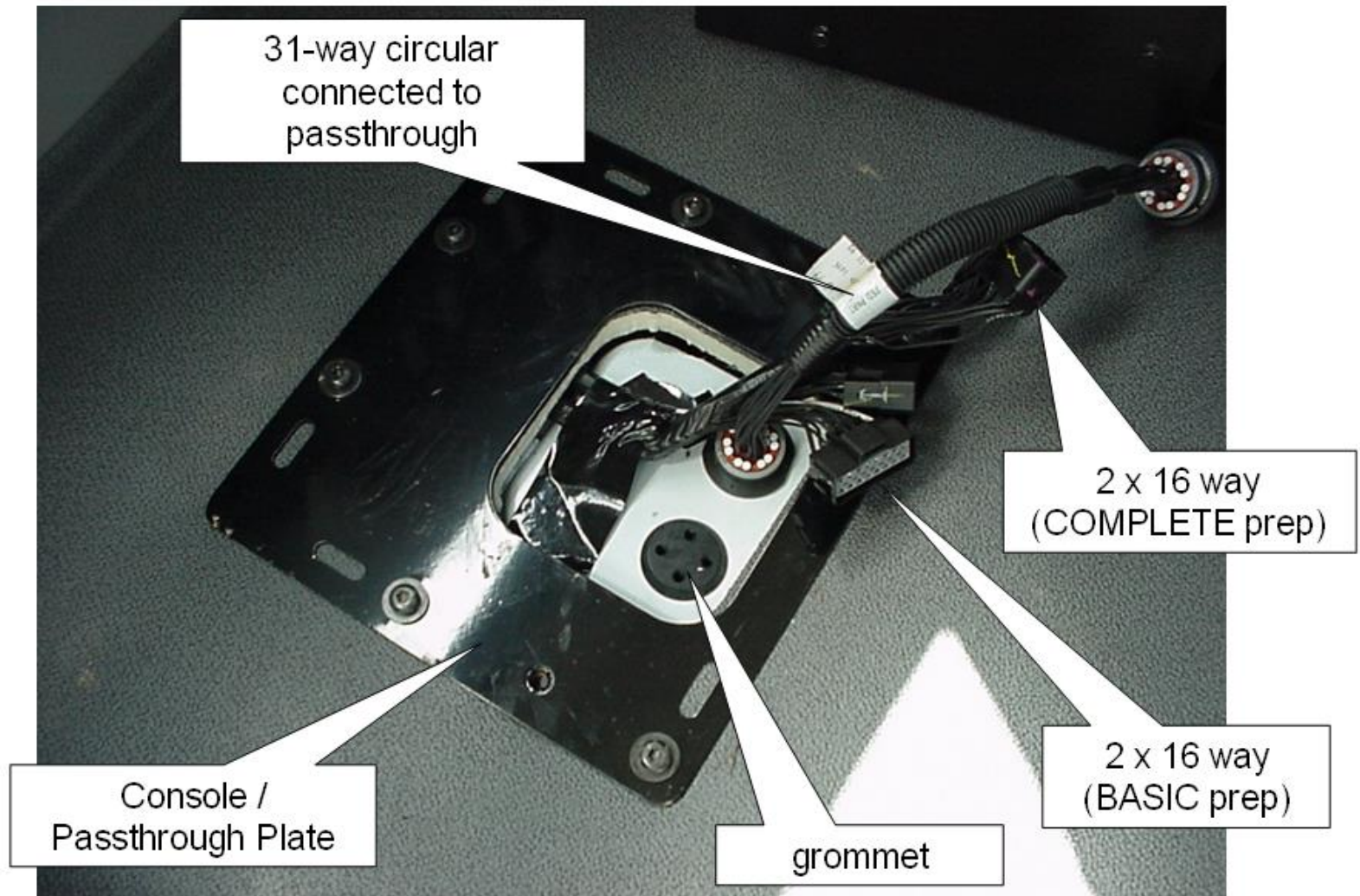
- 40k - 58k
- Extreme articulation - 17°
- All-wheel differential lock up



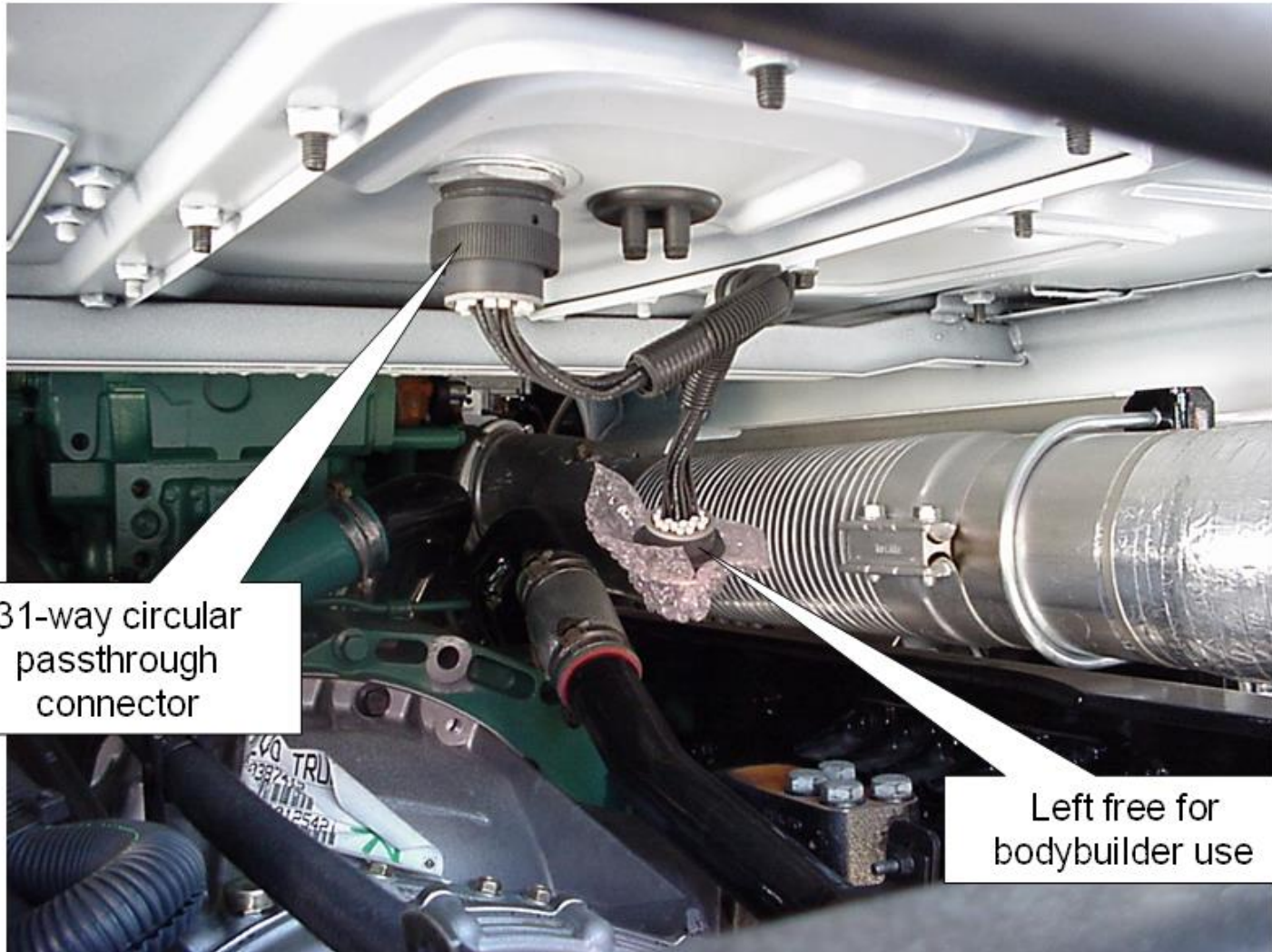
Clean Back of Cab Configuration



Body Builder Prep



Body Builder Prep



31-way circular
passthrough
connector

Left free for
bodybuilder use

Remote Diagnostics

A major service innovation from Volvo

1. Real Time Connected Vehicle
2. Real Operators Call for Resolution
3. We Explain the Options
4. We Schedule Support
5. We Measure Success
6. Standard on all
New Volvo Trucks



QR code reader



- Standard on all Volvo vehicles built after April 1, 2013
- Dealers and Customers can open repair orders right from the vehicle
- Provides quick and accurate check in with timestamp
- Can be performed from any smart device
- QR code can be generated for any asset in ASIST
- Allows inspections to be performed from vehicle using smart device
- Efficient, Consistent and Accurate check in throughout Volvo dealer network

Recap

- **Efficient**
- **Innovative**
- **Technological**
- **Durable**
- **Reliable**
- **Quality, Safety and Environmental Care**





Thank You

Questions?