# VOLVO D16

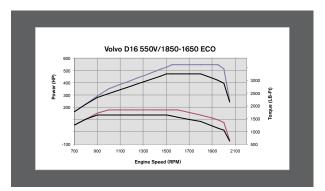




VOLVO POWER

## 550 Eco-Torque 1850 / 1650

All Volvo 2014 engines fully comply with the latest EPA mandates. This means all regulated pollutants have been reduced by 99% from untreated levels. Yet Volvo meets these demands with outstanding reliability and fuel economy. This is because we use a Selective Catalytic Reduction (SCR) system designed for the highest efficiency. Which allowed us to pursue a passive regeneration concept that uses NOx in place of diesel fuel to regenerate the soot, further reducing your cost of operation.



Advertised Power, HP	550
Peak Power, HP	575
Peak Torque, lb-ft@rpm	1850@1050
Governed rpm	2100
Recommended cruise speed range, rpm	1200-1500
Start engagement torque, lb-ft@rpm	850@800
Torque in low speed gears > 14:1, lb-ft	1650
Torque in higher speed gears <11:5, lb-ft	1850

SPECIFICATIONS					
Ratings:	Power: 550 HP Torque: 1650 - 1850 lb-ft				
Base Engine Configuration	4 cycle / Inline Six				
Emissions	SCR Selective Catalytic Reduction				
Aspiration	Sliding Nozzle Variable Geometry Turbocharger				
Cam / Valve Configuration	SOHC / 4 Valves per Cylinder				
Cylinder Head	One Piece Rigid Deck Cylinder Head				
Injection System	Dual Solenoid Electronic Unit Injection				
Fuel Injection Pressure, psi (bar)	35,000 (2,400)				
Electronic Management System	Volvo VECTRO				
Rating Uprateability	Software Only, Throughout Range				
Displacement, cu. in. (L)	984 (16.1)				
Compression Ratio	16.0:1				
Bore & Stroke, in. (mm)	5.67 x 6.5 (144 x 165)				
Cylinder Spacing, in. (mm)	7.32 (186)				
Full Dress Dry Weight, lb. (kg)	3134 (1422)				
Fuel and Lubrication:					
Fuel Specification	Ultra Low Sulfur Diesel, 15 ppm				
Fuel Filters	Primary plus Secondary				
Total Lube Oil Capacity, qts. (L)	44 (42)				
Oil Filtration	Two Full Flow, One Bypass				
Oil Drain Interval, Normal Service, miles (km)	35,000 (56,000)				
Oil Specification	Volvo VDS-4, SAE 10W-30				
FLOCS Oil Drain Kit	Optional				
Engine Equipment:					
Air Compressor, CFM	Two Cylinder, 31.8				
Retarder	I-VEB Volvo Engine Brake				
Engine Brake Rating at 2200 rpm	600 hp @ 2200 rpm				
Engine Brake Rating at 1500 rpm	420 hp @ 1500 rpm				
Engine Brake Weight, lbs. (kg)	25 (12)				
PTO Port for Live Rear PTO Pump or Shaft	Standard				
Preheater, Electrical	Optional				



### 550 Eco Torque 1850 / 1650



FEATURE	BENEFIT	
"No-Regen" DPF strategy, regenerating soot with only Passive (NO <sub>2</sub> -based) Regeneration; no 7 <sup>th</sup> injector fueling for regeneration	Eliminates Active (oxygen-based) DPF Regenerations and the diesel fuel usage they require, for lower cost of operation	
Available "Early Upshift" software encourages progressive shifting	Lower total engine revs; better fuel economy	
Available I-VEB engine brake—strongest in class engine brake at cruise rpm	Exceptional retardation at the rpm you drive	
Volvo D11, D13, D16 share common design philosophies throughout the family	More thorough component development assures better design and evaluation	
Eight headbolts around each piston; four bolts on each connecting rod	Higher number of bolts assures more even clamping and greater clamping force for longer design life	
Ultra-high 35,000 psi fuel injection pressure	Finer fuel atomization for cleaner burn, reduced emissions and better fuel economy	
Damper on camshaft	Reduced injection system generated torsional vibration and high frequency "buzz," for longer component life	
Precision-Flow Cooled Exhaust Gas Recirculation with Delta-P sensor for accurate EGR measurement	Together with accurate turbocharger and EGR valve, this closed-loop system is tuned to give just the EGR flow needed, no more, no less, for optimum fuel consumption	

#### **VOLVO ECO-TORQUE AND DUAL-TORQUE RATINGS**

Volvo's new Eco-Torque feature provides a new twist on encouraging fuel-economy driving. By switching to a lower torque curve in the top two gears, but allowing the higher torque curve during lug-back, Eco-Torque encourages low-rpm driving and provides a lower power level in non-demanding situations. But when conditions demand high torque at low rpm, the engine torque will switch up to the higher curve, in many cases allowing the hill to be topped in the highest gear.

Dual-Torque ratings have a similar dual personality, but serve a special purpose. They take advantage of several vendor transmissions that will allow a higher torque in the top two gears. This means that they must operate in their lower torque in the low gears.

	MAXIMUM FUEL ECONOMY	MAXIMUM PERFORMANCE	MAXIMUM Driveability	USE OF LOWER RATED TRANSMISSIONS	MAXIMUM Uprateability
BASE RATINGS	×	✓	✓	X	✓
ECO-TORQUE Ratings	/	×	<b>✓</b>	×	✓
DUAL-TORQUE Ratings	<b>✓</b>	×	×	1	X

#### HIGH-EFFICIENCY AFTERTREATMENT SYSTEM



Volvo's 2014 engines include high-efficiency aftertreatment systems that save you fuel and reduce maintenance.

For example, our SCR catalyst has a full 40" between the point of introduction of the Diesel Exhaust Fluid and where it meets the catalyst. This allows for the DEF to fully and completely convert to ammonia.

More importantly, our SCR catalyst has three bricks where others have two. This added capacity allows a greater catalyst efficiency, which enables our No-Regen strategy. We can adjust the EGR flow rate down while still eliminating all of the NOx in the catalyst. This allows us to deliver better fuel economy.

#### DI6 DRIVETRAIN RECOMMENDATIONS

It is critical to specify the truck properly to achieve maximum fuel economy and performance.

Ask your salesman to help you choose a rear axle ratio appropriate for your expected cruising speed and gross combination weight.

Volvo 2014 engines have been designed to achieve maximum fuel economy by cruising at low engine rpm. In D16 line haul specifications, the target is 1375 rpm at 65 mph.

For example, with 80K lbs GCW, 1850 lbs-ft torque, 295/75R22.5 drive tires and 0.74 top gear ratio, the 3.36:1 axle ratio would come closest to the 1375 rpm at 65 mph recommendation.

With 0.78 ratio transmission, you should use a 3.21:1 ratio for the same rpm at 65.

Never specify an EPA '10 Volvo engine for a cruise speed above 1600 rpm.

Volvo Trucks North America PO Box 26115 Greensboro NC 27402-6115 Volvo Trucks Canada 2100 Derry Road West, Suite 410 Mississauga, Optario I 5N 0R3

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