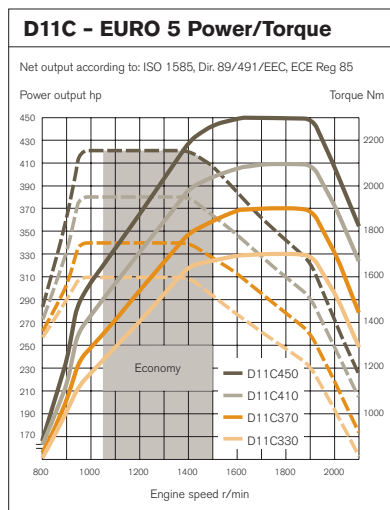


VOLVO FM



ENGINE

ENGINE D11C - EURO 5



D11C330

Max output at 1600-1900 r/min 243 kW

Max torque at 950-1400 r/min 1600 Nm

D11C370

Max output at 1600-1900 r/min 272 kW

Max torque at 950-1400 r/min 1750 Nm

D11C410

Max output at 1600-1900 r/min 302 kW

Max torque at 950-1400 r/min 1950 Nm

D11C450

Max output at 1600-1900 r/min 332 kW

Max torque at 950-1400 r/min 2150 Nm

D11C

No. of cylinders 6

Displacement 10.8 dm³

Stroke 152 mm

Bore 123 mm

Compression ratio 17.1:1

Economy rev range 1050-1500 r/min

Exhaust braking effect (2400 r/min) 160 kW

Effect - VEB (2400 r/min) 290 kW

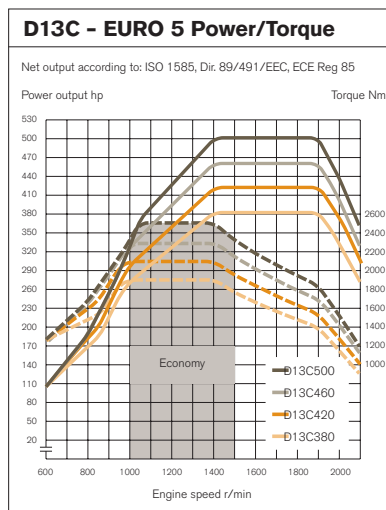
VEB available as an option

Oil filters, no. 2 full-flow, 1 bypass

Oil change volume, incl. filters approx. 36 l

Cooling system, total volume approx. 36 l

ENGINE D13C - EURO 5



Engine-mounted PTO: Maximum power output with vehicle at a standstill 1000 Nm and while on the move 650 Nm.

Oil change interval: Up to 100,000 km, or once a year, with VDS4.

D13C380

Max output at 1400-1900 r/min 280 kW

Max torque at 1000-1400 r/min 1900 Nm

D13C420

Max output at 1400-1900 r/min 309 kW

Max torque at 1000-1400 r/min 2100 Nm

D13C460

Max output at 1400-1900 r/min 338 kW

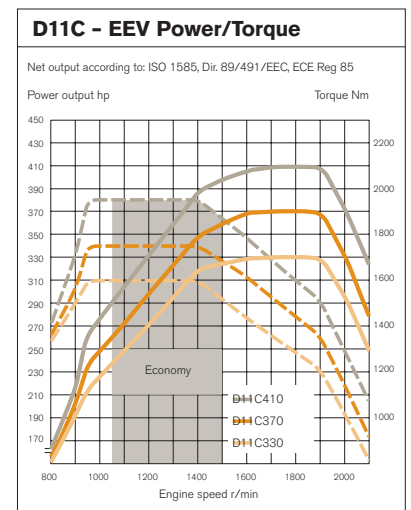
Max torque at 1000-1400 r/min 2300 Nm

D13C500

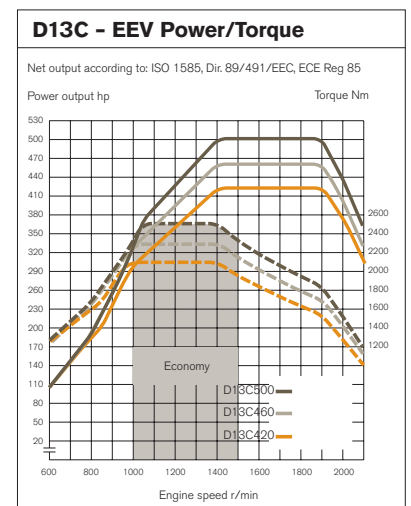
Max output at 1400-1900 r/min 368 kW

Max torque at 1050-1400 r/min 2500 Nm

ENGINE D11C - EEV



ENGINE D13C - EEV



D13C

No. of cylinders	6
Displacement	12.8 dm ³
Stroke	158 mm
Bore	131 mm
Compression ratio	17.8:1
Economy rev range	1000-1500 r/min
Exhaust braking effect (2300 r/min)	185 kW
Effect – VEB (2300 r/min)	300 kW
VEB available as an option on the D13C380 and D13C420	
Effect – VEB ⁺ (2300 r/min)	375 kW
VEB ⁺ available as an option on all D13C engines	
Oil filters, no.	2 full-flow, 1 bypass
Oil change volume, incl. filters	approx. 33 l
Cooling system, total volume	approx. 38 l

Engine-mounted PTO: Maximum power output with vehicle at a standstill 1000 Nm and while on the move 650 Nm.
Ratio 1.26:1.

Oil change interval: Up to 100,000 km, or once a year, with VDS4.

Engine D13C

The 13-litre engine has the power you need to maintain a steady cruising speed even with high combination weights on hilly roads.

The long stroke provides massive power from low revs. The power is delivered quickly. At 800 r/min, no less than 60% of torque is available within just one second. The engine's high torque means it is possible to fit rear axles with a selection of fast ratios – without raising engine revs. This has a positive effect on fuel consumption.

The D13C is available with power outputs of 380, 420, 460 and 500 hp for Euro 5. In addition, the engine is available in an EEV (Enhanced Environmental friendly Vehicles) version producing 420, 460 and 500 hp, with even lower emissions of smoke and particulates.

Engine D11C

The torque curve is flat and the power is on tap throughout the rev range.

The D11C has the same ratio between stroke and bore as its successful bigger brother, the D13C. This is one of the secrets behind its driveability and sheer pulling power. The power take-off is located at the rear of the engine, linked to the flywheel. The power is thus provided without any need for complex gears. Maximum output is a generous 1000 Nm.

For Euro 5, the engine is available with power outputs of 330, 370, 410 and 450 hp. The D11C is also certified according to EEV with power outputs of 330, 370 and 410 hp.

TRANSMISSION

VOLVO FM

Manual gearboxes

Cable operation – with separate cables for longitudinal and lateral movement – provides short lever throw and distinct gear positions. Patented synchromesh with servo function means low gearchanging forces. The gearboxes can be factory-fitted with power take-off, compact retarder, emergency power steering pump, oil cooler and oil temperature sensor.

VT2009B: 9-speed range-change gearbox. 2 reverse gears. Max torque is 2000 Nm.

VT2214B: 14-speed splitter and range-change gearbox. 4 reverse gears. Top gear is a direct ratio. Max torque is 2200 Nm.

VTO2214B: 14-speed splitter and range-change gearbox. 4 reverse gears. Top gear is an overdrive ratio. Max torque is 2200 Nm.

VT2514B: 14-speed splitter and range-change gearbox. 4 reverse gears. Top gear is a direct ratio. Max torque is 2500 Nm.

VTO2514B: 14-speed splitter and range-change gearbox. 4 reverse gears. Top gear is an overdrive ratio. Max torque is 2500 Nm.

Clutches

CS38B-O: Drag-type single-plate clutch.

CS43B-OR: Drag-type single-plate clutch with reinforced linings.

CD38B-O: Drag-type twin-plate clutch.

CD40B-O: Drag-type twin-plate clutch.

The clutch linings in the O models are free from asbestos and lead (O – Organic).

The OR variant features reinforced linings (R – Reinforced).

Powertronic

Fully automatic planetary transmission with torque converter. Changes without any disruption in power delivery. Powertronic can be factory-fitted with a power take-off, integrated retarder, emergency power steering pump and oil cooler.

PT2106: 6-speed and dimensioned for engine torque of 2100 Nm.

PT2606: 6-speed and dimensioned for engine torque of 2600 Nm.

Powertronic, integrated driving programs

Economy – For optimal fuel economy. Gearchanges take place at the most economical revs.

Performance – Used when there is a need for added engine power output. Changes up at higher engine revs

I-SHIFT

Splitter and range-change transmission with automatic gearchanging system. I-Shift can be equipped from the factory with a power take-off, compact retarder, emergency power steering pump and oil cooler.

AT2412D

12-speed with direct top gear. Dimensioned for engine torque of 2400 Nm and general GCW approval for 44 tonnes.

AT2612D

12-speed with direct top gear. Dimensioned for engine torque of 2600 Nm and general GCW approval for 60 tonnes.

ATO2612D

12-speed with overdrive top gear. Dimensioned for engine torque of 2600 Nm and general GCW approval for 60 tonnes.

I-Shift Program packages				
FUNCTIONS	BASIC	DISTRIBUTION & CONSTRUCTION	LONG HAUL & FUEL ECONOMY	HEAVY GCM CONTROL ¹⁾
Basic Shift Strategy	o	o	o	o
Performance Shift	o	o	o	o
Basic Gear Selection Adjustment	o	o	o	o
Gearbox Oil Temperature Monitor	o	o	o	o
Enhanced Shift Strategy		o	o	o
Launch Control		o	o	o
I-Roll			o	o
Smart Cruise Control			o	o
Heavy Duty GCM Control				o
Available options:				
Enhanced PTO Functions	o	o	o	o
Enhanced Gear Selection Adjustment, incl. Kickdown		o	o	o
Enhanced performance – Bad roads		o	o	o
¹⁾ Only AT2612D				

REAR AXLES / POWER TAKE-OFFS

VOLVO FM

Single-reduction rear axles

RSS1344C: Solo axle with single reduction of hypoid type. Max torque 2600 Nm. Max axle load 13 tonnes. Max gross combination weight 44 tonnes.

RS1356SV: Solo axle with single reduction of hypoid type. Max torque 2400/2800 Nm. Max axle load 13 tonnes. Max gross combination weight 56/44 tonnes.

RTS2370A: Tandem axle with single reduction of hypoid type. Max torque 3150 Nm. Max bogie load 23 tonnes. Max gross combination weight 70 tonnes.

Hub-reduction rear axles

RS1370HV: Solo axle with conical spiral-cut gears and hub reduction. Max torque 3150 Nm. Max axle load 13 tonnes. Max gross combination weight 70 tonnes.

RT2610HV: Tandem axle with conical spiral-cut gears and hub reduction. Max torque 3150 Nm. Max bogie load 26 tonnes. Max gross combination weight 100 tonnes.

RT3210HV: Tandem axle with conical spiral-cut gears and hub reduction. Max torque 3150 Nm. Max bogie load 32 tonnes. Max gross combination weight 100 tonnes.

Power take-offs

There is a wide variety of clutch-independent and clutch-dependent power take-offs for powering superstructure equipment.

Clutch-independent power take-offs

PTOENG-R: Direct-mounted at the rear of the engine for direct drive of a hydraulic pump.

PTPT-D/F: Intended for Powertronic and driven directly by the engine via the torque converter casing. DIN coupling or connecting flange coupling.

PTO-FLY: This power take-off is fitted between the engine and gearbox and is driven via the engine's crankshaft.

Clutch-dependent power take-off

PTR-FL/FH: Connecting flange coupling and low-rev or high-rev configuration.

PTR-D / PTR-DM / PTR-DH

Low-/medium-/high-rev with DIN coupling for direct connection of a hydraulic pump.

PTRD-F: High-rev with connecting flange coupling for direct-fitted propshaft.

PTRD-D: High-rev with dual drive. DIN coupling front and rear for direct connection of hydraulic pumps.

PTRD-D1: High-rev with dual drive. Connecting flange coupling rear and DIN coupling front.

PTRD-D2: High-rev with dual drive rear and single drive front. Two connecting flange couplings rear and one DIN coupling front.

REAR AXLES: RATIOS	RSS1344C	RS1356SV	RTS2370A	RS1370HV	RT2610HV	RT3210HV
	2.64:1	2.50:1	2.43:1	3.46:1	3.33:1	3.33:1
	2.85:1	2.79:1	2.57:1	3.61:1	3.46:1	3.46:1
	3.08:1	3.10:1	2.83:1	3.76:1	3.61:1	3.61:1
	3.36:1	3.44:1	3.09:1	4.12:1	3.76:1	3.76:1
	3.70:1	3.67:1	3.40:1	4.55:1	3.97:1	3.97:1
	4.11:1		3.78:1	5.41:1	4.12:1	4.12:1
	4.63:1		4.13:1		4.55:1	4.55:1
	5.29:1		4.50:1		5.41:1	5.41:1
			5.14:1			7.21:1
			5.67:1			
			6.17:1			

DRIVELINE

VOLVO FM

ENGINE		D11C330	D11C370	D11C410	D11C450	D13C380	D13C420	D13C460	D13C500
MANUAL GEARBOX	VT2009B	o	o	o	o	o			
	VT2214B	o	o	o	o	o	o		
	VT02214B	o	o	o	o	o	o		
	VT2514B				o		o	o	o
	VT02514B				o		o	o	o
I-SHIFT	AT2412D	o	o	o	o	o	o	o	
	AT2612D	o	o	o	o	o	o	o	o
	ATO2612D	o	o	o	o	o	o	o	o
POWERTRONIC	PT2106	o	o	o	o				
	PT2606					o	o	o	o
SINGLE REDUCTION	RSS1344C	o	o	o	o	o	o	o	o
	RS1356SV	o	o	o	o	o	o	o	o
	RTS2370A	o	o	o	o	o	o	o	o
HUB REDUCTION	RS1370HV	o	o	o	o	o	o	o	o
	RT2610HV	o	o	o	o	o	o	o	o
	RT3210HV	o	o	o	o	o	o	o	o

CHASSIS

VOLVO FM

Chassis heights

X-Low	approx. 810 mm
Low	approx. 850 mm
Medium	approx. 900 mm
High	approx. 1000 mm

Towbars

Centrally mounted, semi-undermounted, undermounted and special undermounted towbars for trailers with centre axles.

Towbars can be fitted at 25 mm intervals.

Fifth wheels

Certified installation allows up to 36 tonne loads. An ISO fifth wheel with L-profile beams at different heights. A flange-mounted fifth wheel is a low-weight variant since it does not need a mounting plate. The height of the fifth wheel above the chassis is only about 140 mm.

Fuel tanks

Aluminium or steel tanks ranging in volume from 150 to 870 litres. Maximum fuel volume with multiple tanks is 1480 litres for a 4x2 tractor.

AdBlue tanks

Plastic or stainless steel. Volumes from 36 to 125 litres.

Front axles

FA-LOW: low front axle for extra-low, low and medium chassis heights, axle load up to 8 tonnes.

FA-HIGH: high front axle for high chassis heights, axle load up to 9 tonnes.

Dual front axles – FA-HIGH: available in 8x2 and 8x4 configuration, axle load up to 18 tonnes.

Front axle loads

Tractor: 7.1, 7.5, 8, 8.5, 9 tonnes.

Rigid: 7.1, 7.5, 8, 8.5, 9 tonnes.

Rigid – dual front axles: 8x2, 8x4: 16 and 18 tonnes.

Tag/pusher axles

Available in three configurations – fixed with single or twin wheels, passively steered or actively steered. Pusher axle – Available in fixed and actively steered variants for both tractors and rigids.

Rear axle suspension

RAD-L90: 4x2 leaf-sprung S-parabolic, axle load 13 tonnes. For single and hub reduction.

RAD-A4: 4x2 air-suspended, axle load 11.5/13 tonnes. For single and hub reduction.

Bogie

RADT-AR: 6x2/8x2, leaf-sprung parabolic with fixed tag axle, bogie load 19/21 tonnes. For single and hub reduction.

RADT-A8: 6x2/8x2, air-suspended with fixed, passively or actively steered tag axle, bogie load 18/19/20.5 tonnes. For single and hub reduction.

RADD-BR: 6x4/8x4, leaf-sprung parabolic, bogie load 21 tonnes. For single and hub reduction.

RADD-TR1: 6x4/8x4, leaf-sprung parabolic/ conventional, bogie load 23/26 tonnes. For single and hub reduction.

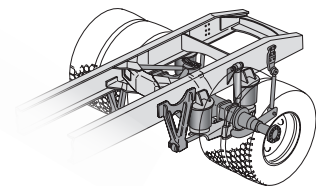
RADD-TR2: 6x4/8x4, leaf-sprung conventional, bogie load 26/32 tonnes. For hub reduction.

RADD-A8: 6x4/8x4, air-suspended, bogie load 21/23/26 tonnes. For single and hub reduction.

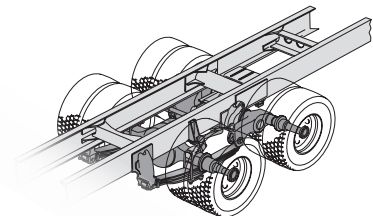
RAPD-A6: 6x2, air-suspended with fixed or actively steered pusher axle, bogie load 18/19 tonnes. For single and hub reduction.

RADDT12: 8x4, air-suspended bogie with steered tag axle, bogie load 24/27/28.5/30.5/33.5 tonnes. For single and hub reduction.

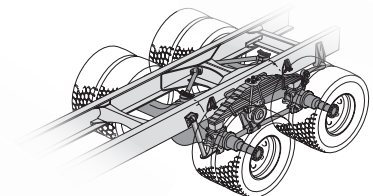
RAD-A4



RADT-AR



RADD-TR1



BRAKES

VOLVO FM

Volvo EBS disc brakes (Electronically controlled Brake System) are available with software packages Medium and High for rigids and tractors. ESP (Electronic Stability Program) is included in EBS High. ESP is available for tractors with 4x2, 6x2 and 6x4 drive, and for rigids with 4x2 RAD-A4 and 6x2 RADT-A8. In this way, Volvo offers ESP for virtually all ADR applications and EMS combinations. The brake range also includes Volvo's Z-cam drum brakes with ABS (Anti-lock Braking System).

EBS Program packages				
FUNCTIONS	EBS MED RIGID	EBS MED TRACTOR	EBS HIGH RIGID	EBS HIGH TRACTOR
ABS – Anti Lock Braking System	o	o	o	o
Brake Blending	o	o	o	o
Brake Temperature Warning	o	o	o	o
Diagnosis via TEA	o	o	o	o
Diff Lock Control	o	o	o	o
Diff Lock Syncro	o	o	o	o
Drag Torque Control	o	o	o	o
EBS Status Control	o	o	o	o
External Brake Demand	o	o	o	o
Hill Start Aid	o	o	o	o
Lining Wear Analysis	o	o	o	o
Lining Wear Control	o	o	o	o
Lining Wear Sensing	o	o	o	o
Panic Brake Assistance	o	o	o	o
Poor Brake Performance Warning	o	o	o	o
Traction Control System	o	o	o	o
Wheel Brake Monitoring	o	o	o	o
Coupling Force Control		o		o
Trailer brake		o		o
ESP – Electronic Stability Program			o	o

Hydraulic retarder

RET-TH: Gearbox-mounted compact retarder.

Max. braking effect with retarder (kW)

Engine	EPG	VEB	VEB+
D11C	600	730	
D13C	620	740	815

(In continuous use, braking effect is restricted as coolant and oil temperature rise.)

RET-TPT: Integrated primary retarder for Powertronic.

Max. braking effect with retarder (kW)

Engine	EPG
D11C	540
D13C	530

(In continuous use, braking effect is restricted as coolant and oil temperature rise.)

DRIVE / CHASSIS / WHEELBASE

VOLVO FM

Tractor

(dimensions in dm)



Rigid

(dimensions in dm)

[illegible]

RADT-AR	High		32		34					612	RADT-AR	High		34		37	39		43		46		49		52	56	60						
RADT-A8	High	30	32		34			37				RADT-A8	High			35	37	39		43		46	48	49		52	56	60					
	Med	30	32		34			37					Med			35	37	39		43		46	48	49		52	56	60					
	Low	30	32		34			37					Low			35	37	39		43		46	48	49		52	56	60					
RAPD-A6	Med								39		41		RAPD-A6	High						43		46		49		52	56	60					

RADD-BR	High	30	32			36			6x4	RADD-BR	High	32	34		37	39		43		46		49		52	56				
RADD-TR1	High	30	32		34	36				RADD-TR1	High	32	34		37	39		43		46		49		52	56				
RADD-TR2	High	30	32		34	36				RADD-TR2	High	32	34		37	39		43		46		49			56				
RADD-A8	High	30	32			36				RADD-A8	High	32	34		37	39		43		46		49		52	56				
											Med		34		37	39		43		46		49		52	56				
											Low				37	39		43		46		49		52	56				

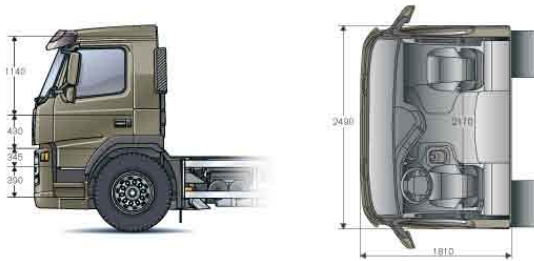
6W2	RADT-AR	High									51	56	60				
	RADT-A8	High					43	43,5	46		49	51	56	60			

8x4	RADD-BR	High						43	43,5	46		49	51		56			64		
	RADD-TR1	High						43	43,5	46		49	51		56					
	RADD-TR2	High						43	43,5	46		49	51		56					
	RADD-A8	High								46		49	51		56	60		64		
	RADDT12	High				37	39	41	43		46		49		52					
	Med					37	39	41	43		46		49		52					

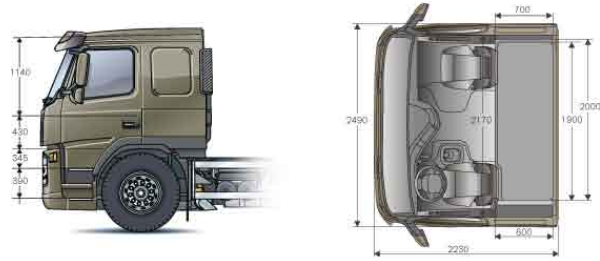
CAB RANGE

VOLVO FM

Day cab (L1EH1)



Sleeper cab (L2H1)



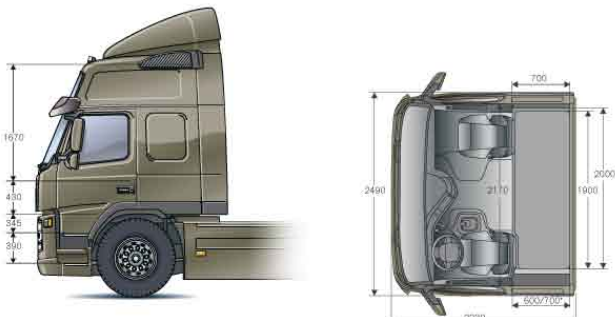
Low sleeper cab (L2H1-LOW)*



Globetrotter cab (L2H2)



Globetrotter cab LXL (L2H3)*



Crew-cab (L4H1)*



Day cab (L1EH1): Day cab with comfortable and ergonomic driver area. Interior height 157 cm, 114 cm above the engine compartment.

Sleeper cab (L2H1): Sleeper cab with comfortable overnight accommodation for one or two people. Interior height 157 cm, 114 cm above the engine compartment.

Low sleeper cab (L2H1-LOW): The low sleeper cab with lowered roof provides added load space above the cab. Interior height 147 cm, 104 cm above the engine compartment.

Globetrotter cab (L2H2): Globetrotter cab with comfortable overnight accommodation for up to two people. The Globetrotter cab offers extra storage space higher up. Interior height 196 cm, 153 cm above the engine compartment.

Globetrotter cab LXL (L2H3): Globetrotter LXL with comfortable overnight accommodation for up to two people. The Globetrotter cab offers extra storage space higher up. Interior height 210 cm, 167 cm above the engine compartment.

Crew-cab (L4H1): With 6 seats, the cab offers plenty of comfort for an entire work-crew. Interior height 156 cm, 113 cm above the engine compartment.

Four-point suspension: Coil springs with dampers, rear-only air suspension or all-round air suspension.

Airflow packages: Complete air deflector packages for the roof and sides, spoiler and chassis skirts. Aerodynamically designed wheel covers.

CAB RANGE CONT.

VOLVO FM

Cab height above ground

TRACTOR	HEIGHT MM (L1EH1)/DRIVE	CHASSIS HEIGHT	SUSPENSION	TYRES
	2850/4x2	High	Leaf/Air	315/80-R22,5
	2780/4x2	Med	Leaf/Air	315/70-R22,5
	2650/4x2	Low	Air/Air	315/60-R22,5
	2635/4x2	X-low	Air/Air	295/60-R22,5

RIGID	HEIGHT MM (L1EH1)/DRIVE	CHASSIS HEIGHT	SUSPENSION	TYRES
	2845/4x2	High	Air/Air	315/80-R22,5
	2760/6x2	Med	Air/Air	315/70-R22,5
	2680/6x2	Low	Air/Air	315/70-R22,5
	2870/6x2	High	Leaf/Leaf	315/80-R22,5
	2580/4x2	Low	Air/Air	315/60-R22,5
	2670/4x2	Med	Leaf/Air	315/60-R22,5

VOLVO

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