

Volvo Construction Equipment  
Building Tomorrow



# A45G FS

Volvo Articulated Haulers • 45.2 ton capacity • 479 hp





## 1966: DR 631 GRAVEL CHARLIE WORLD'S FIRST SERIES-MANUFACTURED ARTICULATED HAULER

By today's standards Gravel Charlie was not a big machine – but its impact on transport operations in the construction sector was massive.

- The world's first series manufactured articulated hauler
- Pioneering solutions including articulated steering, all-wheel drive and differential locks
- Unrivalled manoeuvrability in off-road conditions

GRAVEL CHARLIE MARKED THE BEGINNING OF SOMETHING NEW AND SOMETHING WHICH WOULD CHANGE THE CONSTRUCTION SECTOR FOREVER.

**25 000**  
ARTICULATED  
HAULERS PRODUCED  
BY VOLVO  
**1996**

**10 000**  
ARTICULATED  
HAULERS  
PRODUCED  
BY VOLVO  
**1981**



**A40**

**1995**  
A class bigger  
**36 t (72,000 lb)**

*A complete product range  
20 - 40 ton class*



**A25C**

**1993**  
First articulated hauler with low emission engine as standard



**5350**

**1979**  
"Terrain Express" expanded Volvo articulated hauler's global success  
**20 t (40,000 lb)**  
**50 kph (31 mph)**

- Constant 4-wheel drive
- Higher average speed in combination with higher load capacity = **improved profitability**
- Fully automatic transmission
- Unique suspension system allows high average speed
- Top class, roomy cab with low noise level



**DR 860**

**1967**  
Master of rough terrain: 3-axle machine with unique bogie concept, still going strong  
**15 t (30,000 lb)**  
**30 kph (18 mph)**



**DR 631  
GRAVEL CHARLIE**

**1966**  
World's first series-manufactured articulated hauler  
**10 t (20,000 lb)**  
**25 kph (15 mph)**



**A60H**

**2016**

Launching the world's largest articulated hauler.

**55 t (110,000 lb)**



**G-SERIES**

**2014**

Wet, cooled brakes on all models



**F-SERIES**

**2011**

Further improving ease of operation and environmental care

- Uptime
- Fuel efficiency
- Operator's choice



**E-SERIES  
A40E FS**

**2007**

World's first full suspension articulated hauler, boosting operator comfort and productivity

**39 t (78,000 lb)**



**D-SERIES**

**2000**

Built with the operator in focus

**37 t (74,000 lb)**

- Increased productivity
- Improved operator comfort
- Improved serviceability

**2001**

**BEST INDUSTRIAL DESIGN AWARD FOR D-SERIES DESIGN**



**2012**

**BEST INDUSTRIAL DESIGN AWARD FOR THE A40F DESIGN**



**2017**

**75 000**  
ARTICULATED HAULERS PRODUCED BY VOLVO

## 2016: VOLVO A60H THE BEST JUST GOT BIGGER



Built on the proven Volvo technology of articulated steering, all-wheel drive and differential locks, the Volvo A60H has evolved to be bigger and bolder!

- The largest true articulated hauler on the market
  - 55 t payload capacity
- Meeting a growing demand for larger, higher payload haulers

**BY EVOLVING OUR PRODUCT LINE-UP TO RESPOND TO CUSTOMER DEMANDS, THE VOLVO A60H CONTINUES OUR PROUD HERITAGE OF INNOVATION AND MARKET LEADERSHIP IN HAULER SOLUTIONS.**

# Bigger, stronger, faster

Get ready to work with the Volvo A45G Full Suspension articulated hauler. Designed for heavy-hauling in severe off-road operations, the machine offers continuous productivity, proven Volvo technology and impressive comfort, contributing to sustainable operations. Hauling is easier and more efficient.

## Comfort at speed

The built-in system monitors the hauler's wheel movements and stabilizes the machine based on ground conditions, delivering superior operator comfort.



## Build the best fleet

With shorter cycle times and non-stop production, you can reduce your fleet size while maintaining the same productivity levels as other haulers.



## Know no limits

The Full Suspension system provides ultimate operator comfort, which maximizes drivability in severe terrain and also reduces the level of maintenance required for haul roads on the jobsite.



## Maximize your investment

Optimize load cycles with the On-Board Weighing on the A45G FS. The award-winning system – standard on FS models – ensures every hauler shifts the optimum safe payload.





# MOVE MORE - FASTER

Increase productivity up to 25% with the A45G Full Suspension hauler from Volvo.



# PROVEN TECHNOLOGY

First launched in 2007, the A45G FS has been designed and built with Volvo Construction Equipment's outstanding experience and expertise.

# The future of technology

Built on the proven G-Series platform, the updated A45G FS features all the unique pioneering Volvo technology you'd expect from a Full Suspension hauler, plus a host of upgrades. Take your productivity to the next level thanks to technological advancements, including improved hydraulic cylinders, enhanced machine control software and upgrades throughout.

## Unique suspension

The front suspension provides superior operator comfort meanwhile, the rear suspension delivers greater comfort, for a smooth and productive ride.



## Comfortable front suspension

The unique front suspension is equipped with a set of accumulators and adapts to both payload and ground conditions, delivering unbeatable operator comfort.



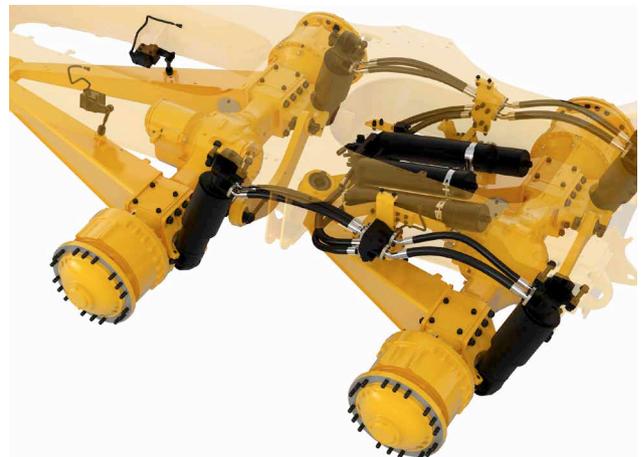
## Active leveling sensors

Six level sensors actively monitor the frame movement in relation to the axles and signal the hydraulic system to adjust the suspension, optimizing stability during travel.



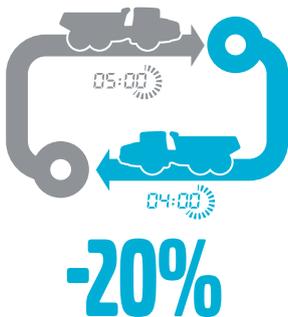
## Robust accumulators and intuitive cross flow

The A45G FS haulers rear suspension is equipped with two high pressure accumulators for loaded operations and two low pressure accumulators for unloaded operations. The cross flow between the hydraulic cylinders stabilize both trailer and tractor, this allows for higher average speeds over poor ground structures.



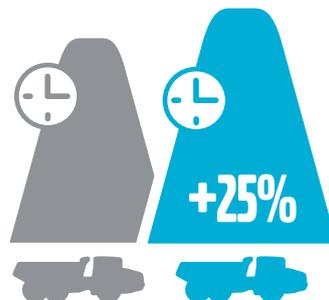
# Move more for less

The Volvo A45G FS is purpose-built to deliver reliability and performance that is second to none. When working in tough terrain, the A45G FS delivers superior productivity, travel speed and cycle times when compared to other haulers for an improved Total Cost of Ownership (TCO).



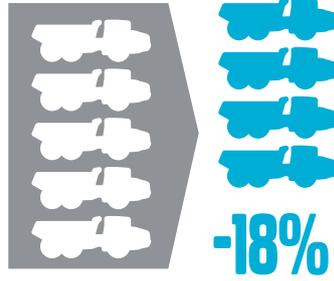
## Average cycle times

Due to the ability of the Full Suspension machine to drive faster over challenging terrain, cycle times are significantly reduced.



## Hauler productivity

Faster cycle times result in a 25% increase of hauler production per operating hour.

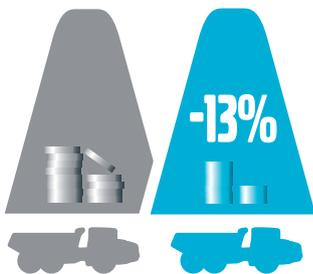


**Total fleet size**

By using Full Suspension haulers, you are able to reduce fleet size to move the same amount of material.

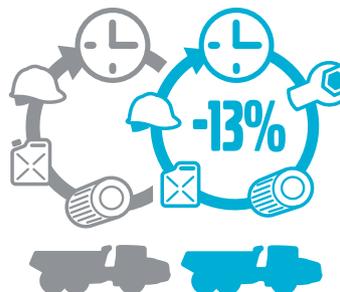


# PUT TO THE TEST



**Cost per ton**

Side-by-side study of an A45G compared to an A45G FS showed the A45G FS delivered a lower cost per ton.



**Cost of ownership**

With fewer machines, delivering faster cycle times, the fleet total cost of ownership is reduced by 13%.

# Volvo A45G FS in detail

## Engine

V-ACT, 16 liter, 6-cylinder straight VGT (Variable Geometry Turbocharged) diesel engine with 4 valves per cylinder, overhead camshaft and electronically controlled unit injectors. It has wet replaceable cylinder liners and replaceable valve guides and valve seats.

The engine has cooled EGR (Exhaust Gas Recirculation) and exhaust after treatment with EAT-Muffler (Exhaust After treatment) including DOC (Diesel Oxidation Catalyst), DPF (Diesel Particulate Filter) and SCR (Selective Catalytic Reduction) with an electronically controlled UDS (Urea Dosing System).

After treatment system features passive DPF regeneration with an AHI (After treatment Hydro carbon Injection) device as back up.

Engine model	Volvo	D16J
Max power - SAE J1995 Gross	kW (hp)	357 (479)
at engine speed	r/min (r/s)	1,800 (30)
Flywheel power - ISO 9249, SAE J1349 Net	kW (hp)	354 (475)
at engine speed	r/min (r/s)	1,800 (30)
Max torque - SAE J1995 Gross	Nm (ft lbf)	2,576 (1,900)
Max torque - ISO 9249, SAE J1349 Net	Nm (ft lbf)	2,551 (1,882)
at engine speed	r/min (r/s)	1,050 (17.5)
Displacement	l (in <sup>3</sup> )	16.1 (982)

## Electrical system

All cables, sockets and pins are identified. Cables are enclosed in plastic conduits and secured to main frame. Halogen lights. Prewired for options. Connectors meet IP67 standard for water-proofing as necessary.

Voltage	V	24
Battery	V	2x12
Battery capacity	Ah	2x225
Alternator	kW/A	3.396/120
Starter motor	kW	9

## Drivetrain

Torque converter with built-in lock-up function.

Transmission: Fully automatic Volvo PowerTronic planetary transmission with nine forward gears and three reverse gears. The transmission has the ability to skip gears for fast and accurate gear selection.

Dropbox: Volvo-developed, in-line design with high ground clearance and 100% longitudinal "dog clutch" type differential lock.

Axles: Heavy duty, purpose built Volvo design with fully floating axle shafts, planetary type hub reductions and 100% dog clutch type diff-lock.

Automatic traction control system (ATC).

Torque converter		2:1:1
Transmission	Volvo	PT 2529
Dropbox	Volvo	IL2 ATC
Axles	Volvo	ARB H40

## Brake system

Fully hydraulic, wet multiple disc brakes with enclosed, forced oil-cooled multiple discs on all wheels. Two circuit brake system. Complies with ISO 3450 at total machine weight.

Circuit division: One circuit for front axle and one for bogie axles.

Parking brake: Spring-applied disc brake acting on the trailer unit propeller shaft. When the parking brake is applied, the longitudinal differential locked.

Retarder: Service brake retarder function and Volvo Engine Brake (VEB).

## Steering System

Hydro-mechanical articulated steering, self compensating design.

Two double-acting steering cylinders.

Steering angle: 3,4 steering wheel turns lock-to-lock,  $\pm 45^\circ$ .

Steering system, including secondary steering fulfil ISO 5010.

## Chassis

Frames: box type, heavy duty. High strength steel, robot welded.

Rotating hitch: 100% maintenance free, fully sealed, with permanently greased tapered roller bearings.

## Cab

Mounted on rubber pads. Ergonomically designed. Easy entry and exit. Wide angle forward view.  
Operator centrally positioned above the front axle. Adjustable operators seat with retractable seat belt.  
Tilt/telescopic steering wheel. Ergonomically positioned controls. Filtered air. Optional climate control system.  
Operator communication system: Contronics.  
Large color display, user-friendly and easy-to-understand information, all vital machine functions are constantly monitored.  
Instructor seat with seat belt.  
Safety: ROPS/FOPS standards approved according to ISO3471, SAE J1040 / ISO3449, SAE J231.

Sound level in cab (ISO 6396) - LpA	dB(A)	72
External sound level (ISO 6395) - LwA	dB(A)	112

Internal sound level with sound kit: 70 dB(A)  
External sound level with sound kit: 110 dB(A)

## Suspension

Unique, full hydraulic, on all wheels with automatic leveling and stabilizer. Part of the machine's hydraulic system, uses the same hydraulic oil.

Hydraulic cylinders (struts), front/rear		2/4
Accumulators, oil-nitrogen, high pressure, front		2
Accumulators, oil-nitrogen, high/low pressure, rear		2/2
Levelling sensors		2+2+2

## Hydraulic system

Pumps: Four variable displacement piston pumps driven by the flywheel PTO.  
Two load-sensing used for steering and tipping and two electrical controlled used for fan, brake cooling and brake power supply.  
One ground-dependent piston pump for secondary steering mounted on the dropbox.  
Two return oil filters with magnetic cores provide effective oil filtration.

System max working pressure	MPa (psi)	26 (3,771)
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## Dumping System

Patented Load and Dump Brake.  
Dumping Cylinders: two single stage double acting cylinders.

Tipping angle	°	70
Tipping time with load	s	12
Lowering time	s	10

## Body

### Plate thickness

Front	mm (in)	8 (0.31)
Sides	mm (in)	11 (0.43)
Bottom	mm (in)	14 (0.55)
Chute	mm (in)	16 (0.63)

### Material

HB450 steel

Yield strength	N/mm <sup>2</sup> (psi)	1,150 (166,793)
Tensile strength	N/mm <sup>2</sup> (psi)	1,350 (195,801)

## Load Capacity

### Standard Body

Load capacity	kg (sh tn)	41,000 (45.2)
Body, struck	m <sup>3</sup> (yd <sup>3</sup> )	19.7 (25.8)
Body, heaped 2:1	m <sup>3</sup> (yd <sup>3</sup> )	25.1 (32.85)

### With overhung tailgate

Body, struck	m <sup>3</sup> (yd <sup>3</sup> )	20.2 (26.4)
Body, heaped 2:1	m <sup>3</sup> (yd <sup>3</sup> )	26.2 (34.3)

# Specifications

## REFILL CAPACITIES

Crankcase	l	gal	55	14.5
Fuel tank	l	gal	480	126.8
Cooling system	l	gal	49	12.9
Brake cooling system	l	gal	188	49.7
Transmission	l	gal	43	11.4
Dropbox	l	gal	9	2.4
Axles, front/bogie	l	gal	26/52	6.9/13.7
Hydraulic tank	l	gal	210	55.5
DEF	l	gal	39	10.3

## SPEED

Forward				
1		km/h	mph	5.8 3.6
2		km/h	mph	8.5 5.3
3		km/h	mph	10.4 6.5
4		km/h	mph	15 9.3
5		km/h	mph	21.6 13.4
6		km/h	mph	27.3 17.0
7		km/h	mph	36.1 22.4
8		km/h	mph	47.8 29.7
9		km/h	mph	57 35.4
Reverse				
1		km/h	mph	6.5 4.0
2		km/h	mph	9.4 5.8
3		km/h	mph	18 11.2

## OPERATING WEIGHT UNLOADED

		29.5R25*	
Tires			
Front	kg lb	17,000	37,479
Rear	kg lb	14,900	32,849
Total	kg lb	31,900	70,327
Payload	kg lb	41,000	90,389

Operating weight includes all fluids and operator

\*) A45G FS with tires 875/65R25, add 300 kg (660 lb)/axle

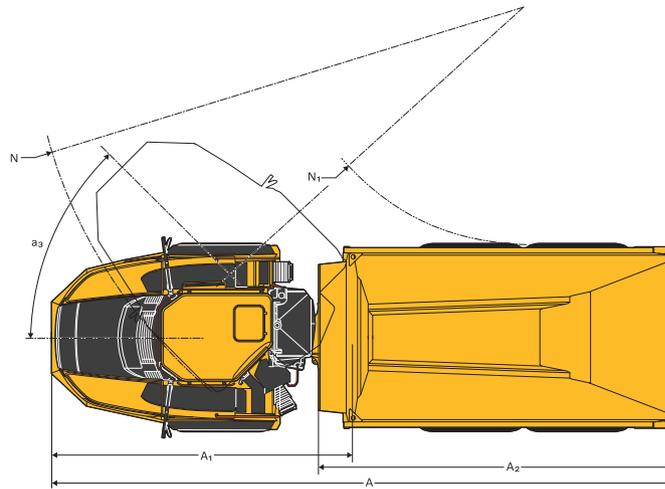
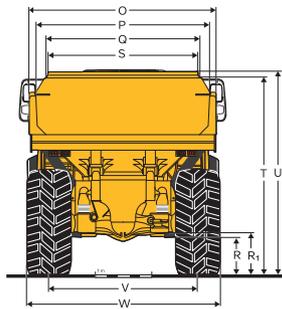
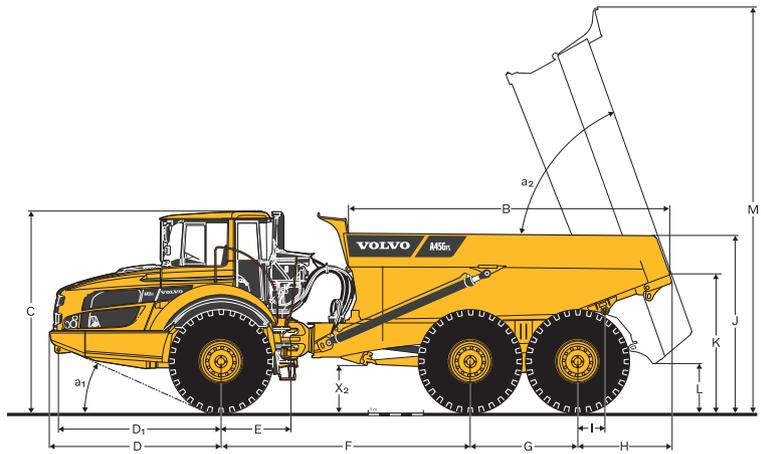
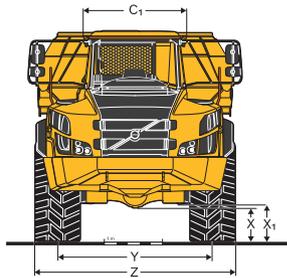
## TOTAL WEIGHT

		29.5R25*	
Tires			
Front	kg lb	21,150	46,628
Rear	kg lb	51,750	114,089
Total	kg lb	72,900	160,717

\*) A45G FS with tires 875/65R25, add 300 kg (660 lb)/axle

## GROUND PRESSURE

		29.5R25		875/65R25	
<b>Unloaded</b>					
Front	kPa psi	114	16.5	100	14.5
Rear	kPa psi	48	7.0	43	6.2
<b>Loaded</b>					
Front	kPa psi	143	20.7	125	18.1
Rear	kPa psi	174	25.2	152	22.0



**DIMENSIONS**

Pos	Unit		A45G FS	
A	mm	ft in	11 263	36'11"
A1	mm	ft in	5 476	18'
A2	mm	ft in	6 404	21'0"
B	mm	ft in	5 844	19'2"
C	mm	ft in	3 599	11'10"
C1	mm	ft in	1 772	5'10"
D	mm	ft in	3 100	10'2"
D1	mm	ft in	2 942	9'8"
E	mm	ft in	1 277	4'2"
F	mm	ft in	4 518	14'10"
G	mm	ft in	1 940	6'4"
H	mm	ft in	1 706	5'7"
I	mm	ft in	495	1'7"
J	mm	ft in	3 200	10'6"
K	mm	ft in	2 435	8'
L	mm	ft in	822	2'8"
M	mm	ft in	7 265	23'10"
N	mm	ft in	8 957	29'5"
N1	mm	ft in	4 327	14'2"

**DIMENSIONS**

Pos	Unit		A45G FS	
O	mm	ft in	3 430	11'3"
P	mm	ft in	3 118	10'3"
Q	mm	ft in	2 820	9'3"
R	mm	ft in	613	2'0"
R1	mm	ft in	640	2'1"
S	mm	ft in	2 651	8'8"
T	mm	ft in	3 427	11'3"
U	mm	ft in	3 546	11'8"
V	mm	ft in	2 636	8'8"
W	mm	ft in	3 403	11'2"
X	mm	ft in	553	1'10"
X1	mm	ft in	640	2'1"
X2	mm	ft in	788	2'7"
Y	mm	ft in	2 636	8'8"
Z	mm	ft in	3 403	12'
a1		°		25
a2		°		70
a3		°		45

A45G FS: Unloaded machine with 29.5R25 tires.

# Equipment

## STANDARD EQUIPMENT

### Engine

Direct injected, electronically controlled, turbocharged, intercooled  
 Grouped oil filters, for ease of change  
 Preheater for easier cold starts  
 VEB (exhaust retarder EPG + compression brake)

### Tires

29.5R25

### Drivetrain

6x4 and 6x6 automatically engaged drive modes  
 Dog clutch type 100% diff-locks in all axles  
 Full automatic transmission  
 Dropbox with longitudinal diff-lock  
 Torque converter with automatic lock-up

### Electrical system

120 A alternator  
 Battery disconnect switch  
 Co-pilot system  
 Haul assist on board weighing  
 Extra 24 V socket for lunch cooler

### Lights:

Back-up light  
 Brake lights  
 Cab lighting  
 Direction indicators  
 Headlights  
 Instrument lighting  
 Parking lights  
 Rear lights

### Brake system

Hill assist  
 Load & Dump Brake  
 Retarder pedal  
 Parking brake on propeller shaft  
 Two circuit, fully hydraulic, wet discs on all axles

### Body

Body prepared for exhaust heating and optional equipment

### Safety

Anti-slip steps and platforms  
 Dump body lock  
 Handrails on steps and platforms  
 Hazard lights  
 Horn  
 Protective grill for cab rear window  
 Rear-view mirrors  
 Retractable 3-inch safety belt  
 ROPS/ FOPS protected Care Cab  
 Secondary steering  
 Steering joint lock  
 Windshield washers

## STANDARD EQUIPMENT

Windshield wipers with interval function  
 Dump support system

### Comfort

ACC control panel  
 Ashtray  
 Cab heater with filtered fresh air and defroster  
 Can holder /storage tray  
 Cigarette lighter  
 Instructor seat with seat belt  
 Overhead console for radio  
 Sliding window  
 Space for lunch cooler  
 Storage box  
 Sun visor  
 Tilt/telescopic steering wheel  
 Tinted glass

### Operator information interface

Gauges:  
 Brake pressure  
 Fuel  
 Speedometer  
 Tachometer  
 Wet disc brakes cooling oil temperature

### Warning lights grouped and easy to read

Central warning (3 levels) for all vital functions

### Central positioned information display

Automatic pre-start checks  
 Clock  
 Hour meter  
 Operational information, easy-to-navigate menu  
 Troubleshooting diagnostics

### Exterior

Front mudguard wideners and rear mudflaps

### Service and maintenance

Electrical engine hood  
 Drainage hose  
 Machine Tracking Information System MATRIS  
 Service platform integrated in the front grill  
 Tool box

## OPTIONAL EQUIPMENT

### Engine

Air filter, heavy duty, EON  
 Engine heater, 240 V  
 Engine heater, diesel (Eberspächer)  
 Engine auto shutdown  
 Engine shutdown timer  
 External emergency engine stop  
 Fuel filter, extra  
 High engine idle speed

### Tires

875/65R25

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**OPTIONAL EQUIPMENT****Electrical system**

Headlights, LED  
Warning beacon, LED  
Working lights, halogen  
Working lights, LED  
Entrance light  
Anti-theft system (pin code)  
Rear view camera  
Reverse alarm  
CAN-BUS interface, extra

**Cab**

Noise reduction kit (fulfils 2000/14/EC)  
Anchorage, operator's manual  
Cab heating/ventilation timer  
Cable kit, for cab heater 240 V  
HEPA cab air filter  
Bluetooth radio kit  
Rear view mirrors, adjustable, el.heated  
Seat belt XXL, non-retractable  
Sun blinds, side windows  
Universal key  
Air suspended, heated, fully adjustable seat  
Armrest for operator seat  
Headrest for operator seat  
Low profile cab

**Body**

Body exhaust heating  
Front spillguard, extra  
Side extension, 200 mm / 7.9 in  
Side extension, light material

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**OPTIONAL EQUIPMENT**

Tailgate, overhung, wire-operated  
Tailgate, underhung  
Wear plates, 450 HB  
Underground body

**Safety**

Fire suppression system  
Warning triangle  
First aid kit and fire extinguisher  
Fire extinguisher  
Wheel chocks

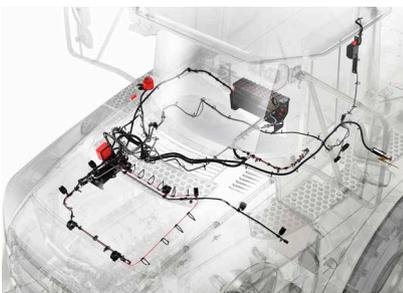
**Service and maintenance**

Lube system, standard machine  
Lube system, tailgate  
Lubrication hose, ground level greasing  
Tool kit

**Other**

Siberian kit -40°C  
On board weighing (OBW)  
Arctic oil kit  
CareTrack  
Fast fuelling system  
Jump start connector, NATO -type  
Frame extension

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**SELECTION OF VOLVO OPTIONAL EQUIPMENT****Fire suppression system****Entrance light****LED work lights****Fast fuelling system****Heavy-duty air filter****LED headlights**

Not all products are available in all markets. Under our policy of continuous improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

**VOLVO**

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