

V O L V O



Volvo Articulated Haulers 45.0 t/ 99,210 lb 35 mph 516 hp

A50

Volvo Construction Equipment

A50

With a new 99,210 lb (45-tonne) payload, the all-new A50 Volvo Articulated Hauler takes the proven full suspension concept to the next level.



Proven full hydraulic suspension concept



- Faster cycle times
- More productivity
- Reduction in fleet size
- Reduction in cost per tonne and cost of ownership



99,210 lb (45 t) payload

- 10% more productivity compared to previous generation A45GFS
- 8% more fuel efficiency compared to previous generation A45GFS
- New Volvo drivetrain
- Reinforced axles

A class of its own

The A50 takes the proven Volvo full suspension concept to new heights with a 45-tonne payload, adding a completely new class of machine to the Volvo Articulated Hauler range. When working over rough terrain such as quarries, mines and large constructions sites, look no further than the A50 for faster cycle times, optimum efficiency and superior operator comfort.



Intuitive in-cab interface

- All essential in-cab information conveniently displayed on just two screens
- Interactive, integrated Volvo Co-Pilot display
- Dynamic instrument cluster in-front of steering wheel



A new level in operator comfort

- Easy access/egress
- Direct field of vision which exceeds industry standards
- Lighting and cameras
- Enhanced storage options
- Easy cleaning



Unbeatable off-road performance

- Volvo Automatic Traction control (ATC) with Terrain Memory
- Automatic drive combinations including 6x6 and 6x4
- Hydro-mechanical steering
- Downhill speed control
- Dynamic and predictive gear selection
- Superior tipping stability



5% reduction in service costs

- 250-hour greasing intervals
- 1,000-hour engine service intervals
- Industry leading service access
- Remote monitoring and service alerts
- Enhanced electrical service center
- Service contracts



Haulers and beyond

- Haul Assist with On-Board Weighing
- Connected Map and Performance Indicator
- Future proofed software architecture
- Connected to Uptime
- Operator Training Program
- Service contracts
- Optimal pass-matching with Volvo loading tools

Intuitive operator interface

Operators can stay in-the-know and focussed on the task at hand thanks to all essential in-cab information conveniently displayed on just two screens. The interactive, integrated Volvo Co-Pilot display offers easy control over essential functions like radio, camera settings, climate control, and machine status. This is combined with the dynamic instrument cluster, positioned in front of the steering wheel, which provides essential vehicle data at a glance.

New Volvo transmission

Unlock full power in all gears thanks to the new Volvo transmission and axles for more power and productivity in your daily operations. With the new Volvo drivetrain, Volvo DNA runs throughout the entire machine resulting in more fuel efficiency, more productivity and Volvo-renowned quality and reliability.

Updated full hydraulic suspension

With extended axle distance, better dynamics and improved geometry, the A50 can manage an increased 99,210 lb (45-tonne) payload, all while maintaining a comfortable ride and putting less stress on the components, for greater durability and longevity.

Proven full suspension concept

When compared to an equivalent standard suspension machine, the full suspension concept offers a dramatic improvement in cycle times. Faster cycle times result in an increase of hauler production per operating hour, as well as the possibility of a reduction in fleet size and reduction in cost per tonne and cost of ownership. What's more the A50 delivers 10% more productivity when compared to the previous generation A45GFS.

99,210 lb (45 t) payload

Make your operation more productive than ever before with a new 99,210 lb (45-tonne) payload. The new Volvo transmission and reinforced axles take the already outstanding levels of productivity you expect from a Volvo articulated hauler to new heights.



5% reduction in service costs

Reduce service costs by up to 6% over 12,000-hours of operation thanks to simplified servicing, longer change intervals and easy component access. Benefit from industry leading greasing intervals of 250 hours for maximum uptime, along with Volvo Engine Oil and High Performance Filters which offer 1,000 hour engine service intervals.

Unbeatable off-road performance

The A50 delivers unbeatable off-road performance in its class with features including the proven Volvo drivetrain, automatic drive combinations (including 100% differential locks), all-terrain bogie and hydro-mechanical steering for unmatched traction, stability and precision control. With Volvo Dynamic Drive, dynamic and predictive gear selection adapts to the operating conditions at hand, for improved comfort and fuel efficiency.



Volvo A50 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)	385 (516)
at engine speed	r/min (r/s)	1,900 (31.7)
Max torque - SAE J1995 Gross	Nm (ft lbf)	2,750 (2,028)
at engine speed	r/min (r/s)	1,100 (18.3)
Displacement	l (in³)	16.1 (982)

Electrical system

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

Voltage	V	24
Battery	V	2 x 12
Battery capacity	Ah	2 x 225
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		2,0:1
Transmission	Volvo	PT 3209
Dropbox	Volvo	IL2 ATC
Axles	Volvo	ARB50

Brake system

Fully hydraulic, wet multiple disc brakes with enclosed, forced oil-cooled 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 fulfills 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. Unobstructed wide angle forward view. Operator centrally positioned above the front axle. ergonomically positioned controls.

Electronic controlled climate unit with automatic controlled temperature and functionality with high thermal comfort and clean air.

The controls, switches, and instruments in the cab of the hauler machine are designed with a strong focus on ergonomics and the appropriateness of information content for the operator. These elements are strategically placed to provide operators with intuitive access to critical functions while minimizing distractions. Ergonomics play a pivotal role in the design, ensuring that controls are within easy reach and that their layout minimizes operator fatigue during long shifts. The primary 8" display, positioned directly in front of the operator, serves as a central hub for monitoring vital machine functions, displaying information in a clear and organized manner. The 12" secondary display complements this by enhancing situational awareness. The information presented on these displays is carefully curated to deliver the most pertinent data, alerts, and notifications, enabling operators to make informed decisions swiftly and accurately.

Safety: ROPS/FOPS standards approved according to ISO3471, SAE J1040 / ISO3449, SAE J231.

Sound level in cab (ISO 6396) - L _{PA}	dB	72
External sound level (ISO 6395) - L _{WA}	dB	112

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

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



Hydraulic system

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)	28 (4,061)
Full suspension system max pressure	MPa (psi)	14 (2,031)

Dumping System

Patented Load and Dump Brake.

Dumping Cylinders: two single stage double acting cylinders.

Tipping angle	°	69
Tipping time with load	s	12
Lowering time	s	10

Body

Plate thickness

Front	mm (in)	8 (0.32)
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 ² (psi)	1,150 (166,793)
Tensile strength	N/mm ² (psi)	1,350 (195,801)

Load Capacity

Standard Body

Load capacity	kg (sh tn)	45,000 (49.6)
Body, struck	m ³ (yd ³)	21.5 (28.1)
Body, heaped 2:1	m ³ (yd ³)	27.8 (36.4)

With overhung tailgate

Body, struck	m ³ (yd ³)	22.1 (28.9)
Body, heaped 2:1	m ³ (yd ³)	29.2 (38.2)

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



Specifications

REFILL CAPACITIES				
			A50J	
Crankcase	l	gal	54	14.3
Fuel tank	l	gal	563	149
Cooling system	l	gal	55	14.5
Brake cooling system	l	gal	133	35.1
Transmission	l	gal	50	13.2
Dropbox	l	gal	9	2.4
Axles, front/bogie	l	gal	26/53	6.9/14.0
Hydraulic tank	l	gal	199	52.6
DEF	l	gal	53	14.0

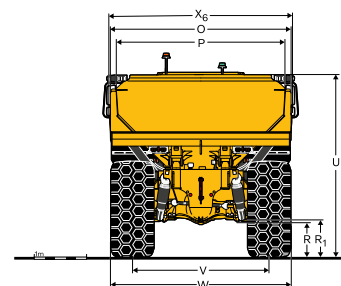
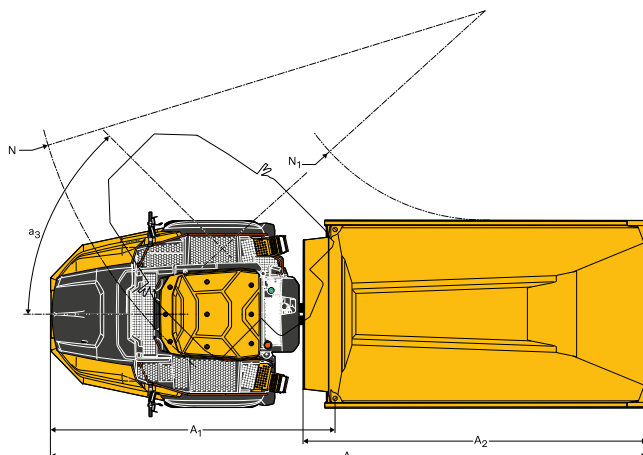
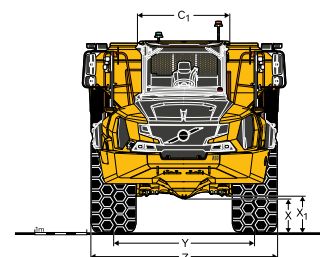
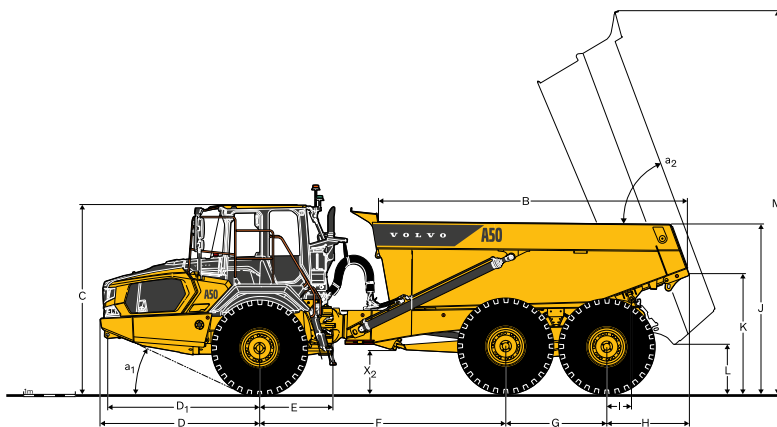
SPEED				
			A50J	
Forward				
1	km/h	mph	6.2	3.85
2	km/h	mph	8.6	5.34
3	km/h	mph	12.5	7.77
4	km/h	mph	17.0	10.6
5	km/h	mph	21.5	13.4
6	km/h	mph	26.7	16.6
7	km/h	mph	36.0	22.4
8	km/h	mph	46.4	28.8
9	km/h	mph	57.0	35.4
Reverse				
1	km/h	mph	6.0	3.73
2	km/h	mph	8.2	5.1
3	km/h	mph	16.3	10.1

OPERATING WEIGHT UNLOADED				
			A50J	
Tires			875/65R29	
Front	kg	lb	17,430	38,427
Rear	kg	lb	16,170	35,649
Total	kg	lb	33,600	74,075
Payload	kg	lb	45,000	99,208

Operating weight includes all fluids and operator

TOTAL WEIGHT				
			A50J	
Tires			875/65R29	
Front	kg	lb	23,310	51,390
Rear	kg	lb	55,280	121,872
Total	kg	lb	78,590	173,261

GROUND PRESSURE				
			A50J	
Tires			875/65R29	
Unloaded				
Front	kPa	psi	103	14.9
Rear	kPa	psi	48	7.0
Loaded				
Front	kPa	psi	138	20.0
Rear	kPa	psi	163	23.6



DIMENSIONS				
Pos	Unit		A50J	
A	mm	ft in	11,399	37'5"
A ₁	mm	ft in	5,429	17'10"
A ₂	mm	ft in	6,558	21'6"
B	mm	ft in	5,998	19'8"
C	mm	ft in	3,624	11'11"
C ₁	mm	ft in	1,819	6'0"
D	mm	ft in	3,084	10'1"
D ₁	mm	ft in	2,941	9'8"
E	mm	ft in	1,277	4'2"
F	mm	ft in	4,768	15'8"
G	mm	ft in	1,940	6'4"
H	mm	ft in	1,609	5'3"
I	mm	ft in	494	1'7"
J	mm	ft in	3,249	10'8"
K	mm	ft in	2,426	8'0"
L	mm	ft in	944	3'1"
M	mm	ft in	7,525	24'8"
N	mm	ft in	9,394	30'10"
N ₁	mm	ft in	4,480	14'8"
O	mm	ft in	3,581	11'9"

DIMENSIONS				
Pos	Unit		A50J	
P	mm	ft in	3,375	11'1"
Q	mm	ft in	3,093	10'2"
R	mm	ft in	627	2'1"
R ₁	mm	ft in	645	2'1"
S	mm	ft in	2,845	9'4"
T	mm	ft in	3,441	11'3"
U	mm	ft in	3,572	11'9"
V	mm	ft in	2,710	8'11"
W	mm	ft in	3,570	11'9"
X	mm	ft in	578	1'11"
X ₁	mm	ft in	663	2'2"
X ₂	mm	ft in	815	2'8"
Y	mm	ft in	2,710	8'11"
Z	mm	ft in	3,570	11'9"
a ₁	°		25.5	
a ₂	°		69	
a ₃	°		45	

A50J: Unloaded machine with 875/65R29 tires.

Equipment

STANDARD EQUIPMENT

Cab/Operator environment

Operator seat with head restraint (air suspended and heated)
Electronic Climate Control
Cup holder / storage tray
Cell phone holder
Instructor seat with seat belt
Overhead console for CC Radio, Tachograph, etc.
Air suspended / heated operator seat
Sliding window
Cooled / Heated storage box
Front sun visor
Tilt/telescopic steering wheel
Loud speakers (4)
Dynamic instrument cluster and integrated Co-Pilot
Automatic pre-start checks
Troubleshooting diagnostics

Engine

Preheater for easier cold starts
VEB (exhaust retarder EPG + compression brake)

Wheels and tires

875/65R29

Electric powertrain

6x4 and 6x6 Automatic Traction Control (ATC)
Dog clutch type 100% diff-locks in all axles
Cruise Control
Dropbox with longitudinal diff-lock
Torque converter with automatic lock-up in all gears
Long haul kit, dropbox cooling

Electrical system

Battery disconnect switch
Electrical Interface
Charging studs
Power outlets
USB-C 2.0 (2)
USB-A 3.0 (1)
24V (2)
Exterior and Interior lights (all LED)

Suspension

Hydraulic front & rear suspension

Brake system

Two circuit, fully hydraulic, wet discs on all axles (externally cooled)
Down Hill Speed Control
Hill assist
Load & Dump Brake
Retarder pedal
Parking brake on propeller shaft

STANDARD EQUIPMENT

Dumping System

Body prepared for exhaust heating and optional equipment
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Safety

Anti-slip steps and platforms with handrails
Dump body lock
Steering joint lock
Harness anchor points
Rear-view mirrors
Retractable 3-inch 2-point safety belt
ROPS / FOPS protected Care Cab
Secondary steering
Dump support system
Positioning indicators (front and rear)
Entrance camera

Service and Maintenance

Grouped service points and filters
Electrical fuel priming pump
Prepared for fast fueling equipment
Ambient and service lights (LED)
Electrical engine hood
Belly plate with integrated service hatches
Drainage hoses
Tool box
Front service ladder

OPTIONAL EQUIPMENT
Engine
Air filter, heavy duty
Engine heater, electric
Engine heater, diesel
Engine shutdown timer
External emergency engine stop
Operator Environment
Noise reduction kit (fulfils 2000/14/EC)
Anchorage, operator's manual
Cab heating / ventilation timer
Cable kit, for cab heater
Cab air filter (Asbestos dust protection)
Cab air filter (Carbon)
Rear view mirrors, adjustable, el.heated
Sun blinds, side windows
Universal key
Premium operator seat with head restraint (air suspended, cooled / heated), 2-point belt
Premium operator seat with head restraint (air suspended, cooled / heated), 3-point belt
Armrest for operator seat
Hands-free microphone
Radio AM / FM / DAB
Drivetrain
Speed limiter (25/30 km/h (15/19 mph))
Electrical system
Warning beacon, LED
Seatbelt indicator, external
Working lights front and rear, LED
Rear view camera
Front view camera
Reverse alarm
Tire Pressure Monitoring System

OPTIONAL EQUIPMENT
Dumping System
Body exhaust heating
Front spillguard, extra
Side extension, 200 mm (7.9 in)
Side extension, 400 mm (15.8 in)
Side extension, light material
Tailgate, overhung, wire-operated
Tailgate, overhung, linkage-operated
Tailgate, underhung
Wear plates, 450 HB
Wear plates heavy duty, 450 HB
Safety and security
Fire suppression system
Fire extinguisher, external
Wheel chocks
Service and maintenance
Auto Lube system
Centralized greasing
Tool kit
Other
Arctic oil kit
Fast fuelling system
Jump start connector, ISO-type

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