

**VOLVO ARTICULATED HAULERS**

# **A25D 4X4**



**VOLVO**

# The perfect machine for mines, tunnels and quarries



## Outstanding turn radius and turn-around capacity

A prerequisite for operating in tunnels is a tight turn radius and the ability to turn around in narrow passages. The Volvo A25D 4x4 is uniquely equipped with turn-around wheels, making it possible to turn around the hauler in tunnels as narrow as 9,5 metres.

The machine is very maneuverable even without the turn-around wheels, due to the short wheel base which is 400 mm shorter than on the earlier model.

This gives exceptional mobility, making the A25D 4x4 a flexible all-round machine suitable for a wide range of applications.

Volvo's articulated haulers have once again proven their availability, flexibility and capacity when it comes to cost-effective hauling of earth and other materials. With articulated steering and the frame joint, they have often proved to be superior to other methods and vehicles in really tough off-road conditions. The new four-wheel A25D 4x4 combines the power, effectiveness and productivity of the larger haulers with outstanding maneuverability and mobility. A25D 4x4 is the perfect choice for underground operations, in narrow tunnels and in quarries.

## Short dump time

The new design makes the D-series an award-winner with its excellent combination of function and form.

The load body of the A25D 4x4 is of a completely new design, with flat bottom and no chute. Combined with low dump height, these features give the very short dump time.

Few articulated haulers on the market – if any – have the same short dump time; important seconds that add up to valuable and productive time over many long shifts.

## Better performance and higher productivity

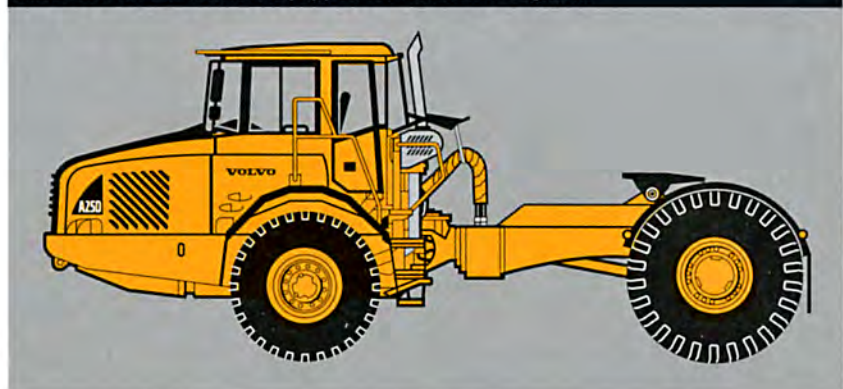
A25D 4x4's excellent maneuverability, short dump time and increased

payload combine to give 14% higher productivity than the earlier model A25C 4x4.

## A safe and comfortable workplace

Already in the 1960s, it was Volvo who developed and created the articulated hauler concept. Since then we've been the leaders in the market, not the least when it comes to safety and the operator's environment. Safety has characterized the development of the A25D 4x4, down to the last detail. The ergonomically designed, safe and comfortable operator's environment makes the operator effective, even during those long shifts.

A25D 4x4 with fifth wheel equipped for alternative segment



- High performance and productivity
- Volvo's unique hydromechanical self-compensating steering system
- Short dump time: 7 sec.
- Low sound level
- Wide door opening without threshold
- ROPS and FOPS is standard
- Flexible and maneuverable



# The A25D 4x4 in detail

## Service

The computerized information system monitors all fluid levels, minimizing daily and weekly service times.

Time to next service and the status of vital vehicle systems is shown to the operator on a display in the instrument panel.

**Service accessibility:** Fold-down front grill with access ladder to remote filter bank, located in front of engine.

Large, 90° opening hood for total engine access.

Remote drain hoses and swing-out radiator for easy cleaning.

## Fill capacities

|                          |       |
|--------------------------|-------|
| Crankcase.....           | 38 l  |
| Fuel tank.....           | 400 l |
| Cooling system .....     | 71 l  |
| Transmission total ..... | 41 l  |
| Dropbox.....             | 8,5 l |
| Front axle.....          | 38 l  |
| Rear axle.....           | 52 l  |
| Hydraulic tank.....      | 175 l |

## Engine

Volvo inline 6-cylinder, direct injected electronically controlled, turbocharged, inter-cooled 4-stroke low-emission diesel engine with wet replaceable cylinder liners.

**Fan:** Hydrostatically driven, thermostatically controlled variable speed radiator fan consuming power only when needed.

**Engine brake:** Exhaust retarder.

|                                  |                        |
|----------------------------------|------------------------|
| Make, model.....                 | Volvo D10BACE2*        |
| Make, model .....                | Volvo D10BADE2**       |
| Max power at .....               | 33,3 r/s (2 000 r/min) |
| SAE J1995 Gross .....            | 228 kW (310 hp)        |
| Flywheel power at .....          | 33,3 r/s (2 000 r/min) |
| SAE J1349 Net, DIN 6271*** ..... | 227 kW (309 hp)        |
| Max torque at .....              | 22,5 r/s (1 350 r/min) |
| SAE J1995 Gross .....            | 1 375 Nm               |
| SAE J1349 Net, DIN 6271*** ..... | 1 365 Nm               |
| Displacement total .....         | 9,6 l                  |

\*) Meets US (EPA) step 2, California (CARB) step 2 and Europe (EU) step 2.

\*\*) Meets Europe (EU) step 2.

\*\*\*) with fan at normal speed.

With fan operating at full speed, the flywheel power is 214 kW (291 hp) and maximum torque is 1 276 Nm which corresponds to DIN 70020.

## 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 waterproofing as necessary.

|                       |                |
|-----------------------|----------------|
| Voltage .....         | 24 V           |
| Battery capacity..... | 2x170 Ah       |
| Alternator .....      | 1,54 kW (55 A) |
| Starter motor .....   | 6,6 kW (9 hp)  |



## Drivetrain

Volvo components, specifically designed for hauler applications.

**Torque converter:** Single-stage with free-wheeling stator and automatic lock-up on all gears.

**Transmission:** Fully automatic planetary transmission with six forward gears and two reverse gears, with a built-in variable hydraulic retarder.

**Dropbox:** Volvo design, single-stage.

**Axes:** Volvo design with fully floating axle shafts and planetary type hub reductions.

**Differential locks:** One longitudinal and two transverse with 100% lock-up function, operator selectable on the move.

**Configuration:** 4-wheel drive.

|                       |                       |
|-----------------------|-----------------------|
| Torque converter..... | 2,37:1                |
| Transmission.....     | Volvo PT 1560         |
| Dropbox.....          | IL 1                  |
| Axles.....            | Volvo AH 64 / AH 71 E |

## Speed:

|         |         |
|---------|---------|
| Forward |         |
| 1 ..... | 8 km/h  |
| 2 ..... | 12 km/h |
| 3 ..... | 22 km/h |
| 4 ..... | 31 km/h |
| 5 ..... | 40 km/h |
| 6 ..... | 53 km/h |
| Reverse |         |
| 1 ..... | 8 km/h  |
| 2 ..... | 13 km/h |

## Brake system

Dual circuit system with air-hydraulic disc brakes. Meets ISO 3450 and SAE J1473 at total machine weight.

**Service brakes:** Dry discs on all wheels.

**Circuit division:** One circuit for front axle and one for rear axle.

**Parking brake:** Spring-applied disc brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%. When the parking brake is applied, the longitudinal differential is locked.

**Compressor:** Gear-driven by engine transmission.

**Retarder:** Hydraulic, infinitely variable, integrated in transmission.

Total retarding capability including transmission retarder and exhaust retarder, see graph.

## Steering system

Hydromechanical self-compensating articulated steering for safe and accurate high-speed hauling. Fast acting, low effort steering with 3,4 turns lock-to-lock for slow speed maneuverability.

**Cylinders:** Two double-acting steering cylinders.

**Secondary steering:** Meets ISO 5010 at total machine weight.

**Steering angle:** ±45°

## Suspension

Volvo's unique maintenance-free 3-point suspension system. The front axle is suspended at three points, which results in independent movement needed in rough terrain.

**Front axle:** One hollow rubber spring on each side. A cross stay provides the stability. Two shock absorbers on each side.

**Rear axle:** No suspension

## Cab

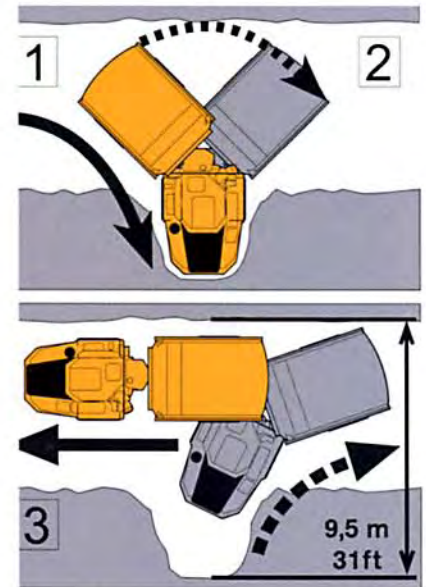
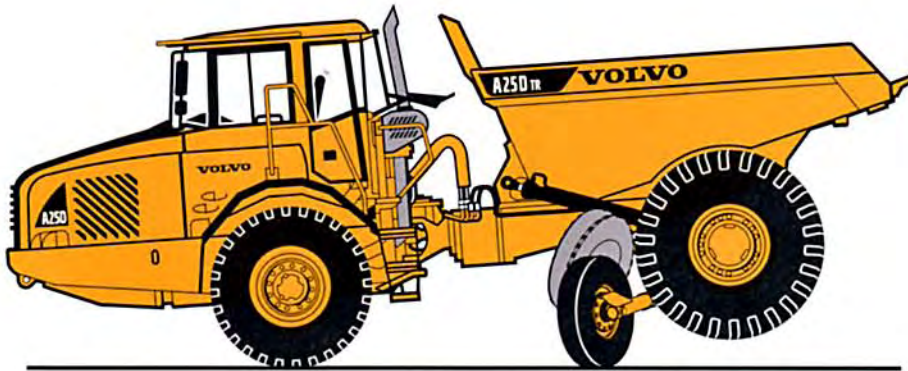
Volvo cab, ergonomically designed for high operator comfort and excellent visibility. Wide threshold-free door opening and ergonomic cab entrance. Insulating rubber pads to reduce vibrations. Tilt/ telescopic steering wheel. Overhead console for radio and storage. Dash-mounted Operator's Communication System. Storage bins.

**Standard:** ROPS/FOPS tested and approved. (ISO 3471, SAE J1040) / (ISO 3449, SAE J231) standards.

**Heater and defroster:** Filtered fresh air, four-speed fan and pressurized cab to maintain a clean operating environment. Multi-level air outlets and separate defroster vents for all windows.

**Operator's seat:** Adjustable operator's seat with flameproof upholstery. Retractable seat belt.

Sound level in cab, ISO 6396 74 dB (A)



**A25D 4x4 Turn-Around (Optional)**

Turn-around system. Turns 180° in 25 seconds. A width of only 9,5 m (31 ft) is needed to turn the machine 180° in a 3-step operation. The turn-around system is hydraulically operated from the operator's seat and raises the unloaded trailer unit, thus enabling the steering hydraulics to swing the trailer through 90°.

1. Drive up to the turning point, steer the tractor unit fully to one side and engage the brakes.
2. Raise the trailer unit and steer the maximum 90°.
3. Lower the trailer and reverse away from the turning point.

| Weights   |                               | Ground Pressure  |         | Load Capacity                    |                     |
|---|-------------------------------|--|---------|----------------------------------|---------------------|
| Operating weight includes all fluids and operator and tires |                               | At 15% sinkage of unloaded radius and specified weights. |         | Body volume according to SAE 2:1 |                     |
| <b>Tires</b>  | Front: 23,5R25, Rear: 29,5R25 | Front: 23,5R25, Rear: 29,5R25                            |         |                                  |                     |
| <b>Operating weight unloaded</b>                            |                               | <b>Unloaded</b>  |         |                                  |                     |
| Front   | 12 400 kg                     | Front  | 125 kPa | <b>Load capacity</b>             | 24 000 kg           |
| Rear  | 7 070 kg                      | Rear   | 49 kPa  | <b>Body, struck</b>              | 9,5 m <sup>3</sup>  |
| Total   | 19 470 kg                     | <b>Loaded</b>  |         | <b>Body, heaped</b>              | 13,0 m <sup>3</sup> |
| Payload   | 24 000 kg                     | Front  | 159 kPa |                                  |                     |
| <b>Total weight</b>   |                               | Rear   | 194 kPa |                                  |                     |
| Front   | 15 650 kg                     |  |         |                                  |                     |
| Rear  | 27 820 kg                     |  |         |                                  |                     |
| Total   | 43 470 kg                     |  |         |                                  |                     |

**Hydraulic system**

Load-sensing, variable displacement, piston pumps, consume power only when needed.

**Pumps:** Four engine-driven variable displacement load-sensing piston pumps driven by the flywheel PTO. One ground-dependent piston pump for secondary steering mounted on the dropbox.

**Filter:** One fibreglass filter with magnetic core.

**Pump capacity per pump:**

Engine-dependent ..... 140 l/min  
 Ground-dependent ..... 142 l/min  
 at shaft speed ..... 52,5 r/s (3 150 r/min)  
 Working pressure ..... 25 MPa

**Body**

**Load and dump brake:** With the engine running, the service brakes on the rear axle are applied and transmission is shifted to neutral.

**Body material:** Hardened and tempered steel body, flat plate design made of high-strength steel.

Front ..... 10 mm  
 Sides ..... 10 mm  
 Bottom ..... 16 mm  
 Yield strength ..... 900 N/mm<sup>2</sup>  
 Tensile strength ..... 1 250 N/mm<sup>2</sup>  
 Hardness min ..... 360 HB

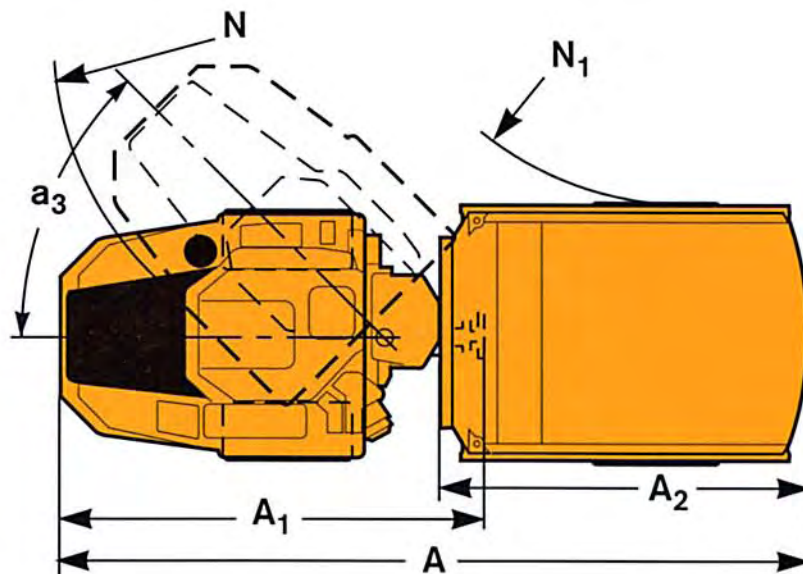
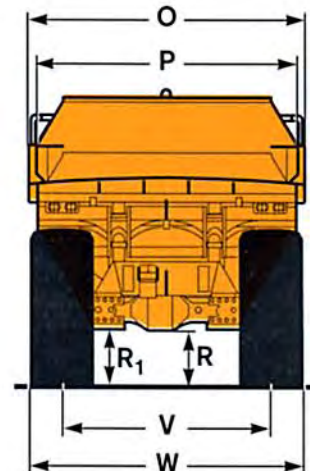
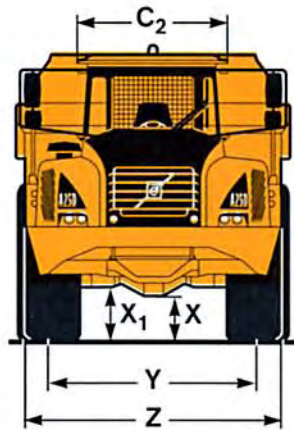
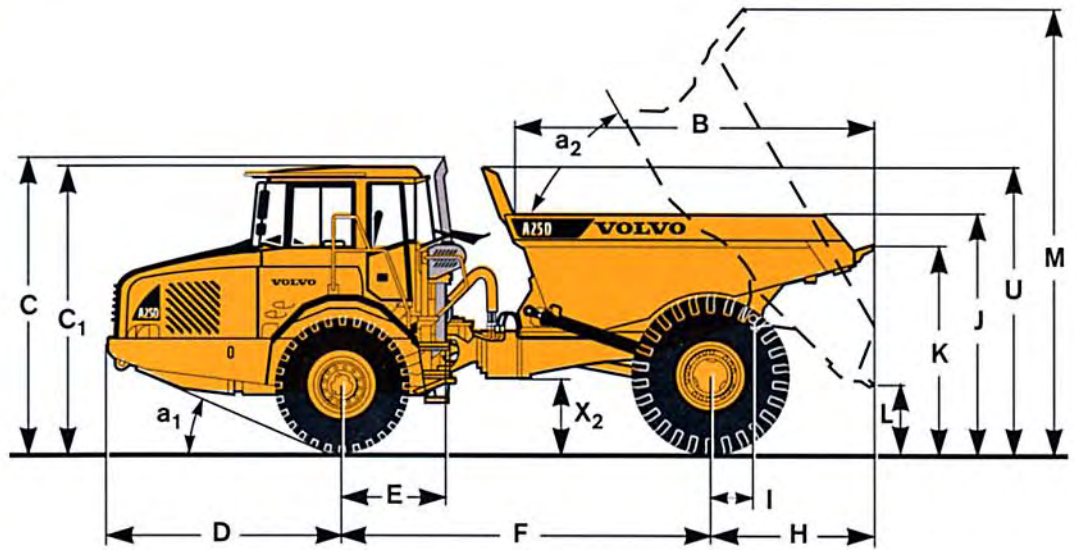
**Dump Cylinders:** Two single-stage double-acting cylinders.

Dumping angle ..... 59°  
 Dumping time with load ..... 7 s  
 Lowering time ..... 7 s

# Specifications

| Pos            | Metric   | Imp.   |
|----------------|----------|--------|
| A              | 8 939 mm | 29'4"  |
| A <sub>1</sub> | 4 954 mm | 16'3"  |
| A <sub>2</sub> | 4 558 mm | 14'11" |
| B              | 4 219 mm | 13'10" |
| C              | 3 470 mm | 11'5"  |
| C <sub>1</sub> | 3 332 mm | 10'11" |
| C <sub>2</sub> | 1 768 mm | 5'10"  |
| D              | 2 766 mm | 9'1"   |
| E              | 1 210 mm | 4'0"   |
| F              | 4 254 mm | 13'11" |
| H              | 1 919 mm | 6'4"   |
| I              | 495 mm   | 1'7"   |
| J              | 2 794 mm | 9'2"   |
| K              | 2 416 mm | 7'11"  |
| L              | 773 mm   | 2'6"   |
| M              | 5 176 mm | 17'0"  |
| N              | 7 092 mm | 23'3"  |
| N <sub>1</sub> | 3 197 mm | 10'6"  |
| O              | 3 130 mm | 10'3"  |
| P              | 2 930 mm | 9'7"   |
| R              | 637 mm   | 2'1"   |
| R <sub>1</sub> | 664 mm   | 2'2"   |
| U              | 3 317 mm | 10'11" |
| V              | 2 374 mm | 7'9"   |
| W              | 3 117 mm | 10'3"  |
| X              | 461 mm   | 1'6"   |
| X <sub>1</sub> | 585 mm   | 1'11"  |
| X <sub>2</sub> | 886 mm   | 2'11"  |
| Y              | 2 258 mm | 7'5"   |
| Z              | 2 859 mm | 9'5"   |
| a <sub>1</sub> | 23,1°    | 23.1°  |
| a <sub>2</sub> | 59°      | 59°    |
| a <sub>3</sub> | 45°      | 45°    |

Unloaded machine with 23,5R25 / 29,5R25 tires)



## STANDARD EQUIPMENT

### Safety

ROPS/ FOPS protected cab  
Service platform for ease of service  
Anti-slip material on hood and fenders  
Hazard lights  
Horn  
Protective grille for rear window  
Rear -view mirrors  
Retractable 3-inch safety belt  
Secondary steering  
Steering joint locking assembly  
Dump body lock  
Windshield wipers with interval function  
Windshield washers

### Comfort

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

### Engine

Direct injected, electronically controlled  
Turbocharged, intercooled  
Remote oil drain plug  
Remote oil filters, for ease of access  
Preheater for easier cold starts

### Electrical system

55 A alternator  
Battery disconnect switch  
Extra 24 V socket for lunch cooler  
Lights:

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

### Operator information interface

Gauges:

- Speedometer
- Tachometer
- Brake pressure
- Fuel
- Transmission oil temperature

Pilot lights for all switches  
Warning lights grouped and easy to read  
Central warning (3 levels) for all vital functions  
Central positioned information display:

- Automatic pre-start checks
- Operation information, easy-to-find menu
- Troubleshooting diagnostics
- Hour meter
- Clock
- Machine settings

### Drivetrain

Automatic transmission  
Torque converter with automatic lock-up  
Dropbox, single-stage  
Hydraulic variable retarder  
100% longitudinal differential lock  
100% differential locks in all axles

### Brakes

Air-hydraulic disc brakes  
Two circuit brake system  
Parking brake on prop shaft

### Body

Body prepared for exhaust heating  
Load and Dump brake

### Tires

Front: 23,5R25, Rear: 29,5R25

### Other

Air drier

## OPTIONAL EQUIPMENT

(Standard on certain markets)

### Safety

Fire-extinguisher and first aid kit

### Service and maintenance

Tool kit with tire inflation unit  
Electrical hood opening

### Engine

Extra air cleaner, heavy-duty  
Electric engine heater (120V or 240V)  
External emergency engine stop  
Delayed engine stop

### Electrical

Work lights, roof-mounted  
Work lights, rear-facing, fender-mounted  
Rotating beacon, collapsible mount  
Back-up alarm  
Rear vision system  
Anti-theft system (prevents engine start)  
Headlights for left-hand traffic  
Alternator, heavy-duty 80 A

### Cab

Air suspended, electrically heated operator's seat  
Instructor's seat with seat belt  
Electrically heated rear-view mirrors  
Air conditioning  
Radio installation kit  
Radio  
Cable kit for cab heater (120V or 240V)  
Window tint film

### Body

Body exhaust heating kit  
Wear plates

### External

Wheel block  
Additional front bumper (rubber)

### Other

Turn-around system, a width of only 9.5 m (31 ft) is needed to turn the machine  
Synthetic hydraulic oil (biologically degradable)  
Arctic oil kit  
Toolbox



## Technology on Human Terms

Volvo Construction Equipment is one of the world's leading manufacturers of construction machines, with a product range encompassing wheel loaders, excavators, articulated haulers, motor graders and more.

The tasks they face vary considerably, but they all share one vital feature: technology which helps man to perform better: safely, efficiently and with care of the environment. We refer to it as Technology on Human Terms.

The sheer width of the product range means it is always possible to choose exactly the right machine and attachment for the job. Each machine also comes with the quality, continuity and security which is represented by the

Volvo name. The strength of the service and parts organizations; the security of always having immediate access to leading-edge research and technical development are part of the Volvo name. A machine from Volvo meets the very highest demands in all kinds of jobs, under all conditions, the world over.

*Volvo Construction Equipment develops, manufactures and markets construction equipment. We are a Volvo company with production facilities on four continents and a market presence in over 100 countries.*

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# VOLVO

## Construction Equipment

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