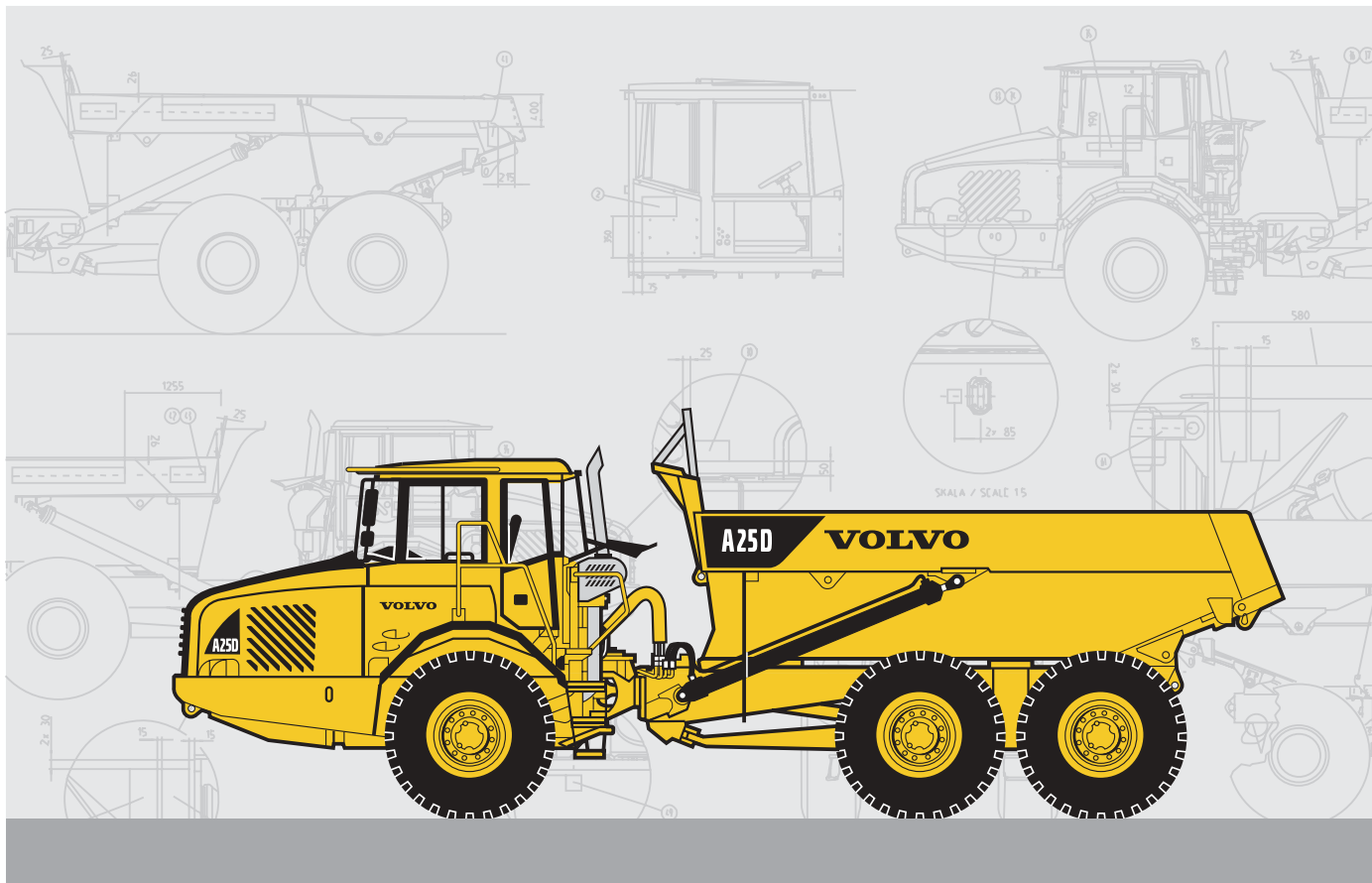


PRODUCT MANUAL

# A25D A30D



**VOLVO**



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# Introduction



This product manual presents the A25D and A30D from the perspective of customer profitability requirements such as function and productivity, availability, operator efficiency, operating and capital costs.

## Components of profitability

**PRODUCTIVITY** is the volume or mass that is handled per hour, day or year.

**AVAILABILITY** is the % of total utilization compared to scheduled operating time.

**OPERATOR EFFICIENCY** refers to the importance of the design of the operator's station, controls and systems that make it possible to maintain high productivity.

**OPERATING COSTS** are the running costs for fuel, servicing, tire wear, etc.

**CAPITAL COSTS** are interest, payments and depreciation losses.

## Weight and measures

The following factors are given in order to facilitate any necessary calculations. Standard International (SI) units are used throughout the manual and a comma (,) is used to indicate decimals. (US units use a point (.) to indicate decimals.)

1mm	=	0.03937 in
1 m	=	3.281 ft. = 39.37 in
1 kg	=	2.205 lbs
1 t	=	1000 kg = 2205 lbs
1 kN	=	102 kp = 224.8 lbf
1m <sup>2</sup>	=	10.76 ft. <sup>2</sup>
1m <sup>3</sup>	=	1.308 yd <sup>3</sup>
1 dm <sup>3</sup>	=	1 liter (l) = 61.02 in <sup>3</sup>
1 dm <sup>3</sup> /min	=	1 l/min = 0.2642 US gal/min (gpm)
1 t/m <sup>3</sup>	=	1.686 lbs/yd <sup>3</sup>
1 kW	=	1,360 hk = 1.34 hp
1 km/h	=	0.6214 mile/h (mph)
1 MPa	=	10 bar = 10,20 kp/cm <sup>2</sup> = 145 lbf/in <sup>2</sup>
1 kp	=	2.205 lbf
1 Nm	=	0.7376 lbf ft

# Introduction

## Volvo A25D and A30D - Completes the New Generation Articulated Haulers

Volvo A25D and A30D are flexible high production machines for all types of work in the 25–30 ton class. They are the smallest models in the Volvo Articulated Hauler range. The machines are built with Volvo-made components and feature very high-productivity, comfort and safety.

The well-established 25-ton hauler dominates the market, mainly due to the flexibility, all-round performance and ease of moving between sites. The A30D in the expanding 30-ton class features even higher productivity, without any noticeable effect on flexibility and all-round performance. The combination of these features is vital for future construction projects.

The new 25 and 30-ton models from Volvo are once again way ahead of the competition when it comes to production, operating costs and safety.



Specifications	A25D	A30D
<b>Engine</b>	Volvo D10B ACE2	Volvo D10B AAE2
Max. power (SAE J1349 Net)	227 kW (304 hp)	241 kW (323 hp)
Max. torque (SAE J1349 Net)	1365 Nm (1007 lbf ft)	1410 Nm (1040 lbf ft)
<b>Drivetrain</b>		
Drive combinations	6x4/6x6	6x4/6x6
Differential locks, all axles (lock-up)	100%	100%
Max. speed	53 km/h (33 mph)	55 km/h (34 mph)
<b>Load capacity</b>		
SAE 2:1 heaped	15 m <sup>3</sup> (19.6 yd <sup>3</sup> )	17.5 m <sup>3</sup> (22.9 yd <sup>3</sup> )
Payload	24 000 kg (52 911 lbs)	28 000 kg (61 729 lbs)
<b>Net machine weight</b>	21 560kg (47 532 lbs)	23 060kg (50 839 lbs)
<b>Ground pressure (loaded) with Std. tires</b>		
Front/ rear	144 kPa (20.9 psi)/ 159 kPa (23.1 psi)	121 kPa (17.5 psi)/ 146 kPa (21.2 psi)

# Introduction

## Product Features

- 1. Volvo Drivetrain**  
Correctly matched Volvo-designed components, specifically developed for hauler applications.
- 2. Planetary Transmission**  
Fully automatic planetary transmission with low power losses and long service life.
- 3. Dropbox**  
Single speed in-line dropbox with 100% differential lock between tractor and load unit, can be engaged on the move.
- 4. 100% Differential locks**  
Differential locks give superior off-road mobility. Can be engaged on the move. Conventional differential action when no locks are needed.
- 5. 6x4 or 6x6 and Five Operating Modes**  
One optimized drive combination for every type of operating condition. 6x6 only when required saving fuel and tires.
- 6. Excellent Operator Environment**  
Operator positioned above the front axle and in the center of the machine, together with the new spacious, ergonomic and comfortable cab, contributes to high-productivity from the beginning to the end of the shift.
- 7. Rotating Hitch**  
The combination of the rotating hitch and articulated steering provides good traction, off-road mobility and less stress on the frames in tough applications. The high-hitch position improves stability.
- 8. Three-Point Suspension**  
The maintenance-free, three-point mounting allows independent wheel movement for high-speed hauling over uneven terrain.
- 9. Volvo Rough Terrain Bogie**  
The maintenance-free A-frame and bogie beam design allows independent wheel movement, maintaining good ground contact for superior off-road performance.
- 10. Volvo's Unique Self-Compensating Hydro-Mechanical Steering**  
Articulated steering gives good maneuverability and a small turning radius for excellent off-road mobility. The self-compensating hydro-mechanical steering provides safe high-speed operation and steering accuracy.
- 11. Volvo Retardation System**  
Provides safe downhill hauls without using the service brakes. Easy and comfortable to use loaded or empty.
- 12. Power and Control Dumping System**  
Powerful dumping system with good dumping angle and high ground clearance permits dumping in all operating conditions.
- 13. State of the Art Hydraulic System**  
Variable displacement piston pumps consume power only as required, reducing power losses, fuel consumption and heat production.
- 14. High-Capacity Cooling system**  
Power and fuel saving, hydraulically driven, variable speed fan.
- 15. Designed for Serviceability**  
No daily or weekly service needed and times between service intervals have been extended, doubled in many cases.



# Introduction

## Customer Benefits

Product Feature	Advantage	Customer Benefit	Page
1. Volvo Drivetrain	<ul style="list-style-type: none"> <li>Total Design control</li> <li>Matched components</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	33
2. Planetary Transmission	<ul style="list-style-type: none"> <li>Low power losses</li> <li>Long service life</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	39
3. Dropbox	<ul style="list-style-type: none"> <li>Purpose-built, allows high ground clearance</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Long service life</li> </ul>	40
4. 100% Differential locks	<ul style="list-style-type: none"> <li>Manually controlled dog-clutch design enhances maneuverability</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low repair cost</li> <li>Low fuel cost</li> </ul>	41
5. 6x4 or 6x6 and Five Operating Modes	<ul style="list-style-type: none"> <li>Efficient operation in all ground conditions</li> <li>Reduced component wear</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	42
6. Excellent Operator Environment	<ul style="list-style-type: none"> <li>Central operator position enhances comfort and visibility</li> <li>Controls and information system designed for safe and efficient operation.</li> <li>Excellent work environment</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> </ul>	14
7. Rotating Hitch	<ul style="list-style-type: none"> <li>High position of rotating hitch enhances stability, mobility and good traction in rough terrain.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> </ul>	24
8. Three-Point Suspension	<ul style="list-style-type: none"> <li>Fully mechanical, maintenance-free, three-point design allows high-speed hauling in uneven terrain.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	25
9. Volvo Rough Terrain Bogie	<ul style="list-style-type: none"> <li>Individual wheel movement provides excellent traction and allows the body to stay level.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> </ul>	27
10. Volvo's Unique Self-Compensating Hydro-Mechanical Steering	<ul style="list-style-type: none"> <li>Powerful and accurate steering gives a smooth and steady automotive-type feel.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> </ul>	28
11. Volvo Retardation System	<ul style="list-style-type: none"> <li>High power/torque at all speeds</li> <li>Easy operation</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	47
12. Power and Control Dumping System	<ul style="list-style-type: none"> <li>Body design in combination with powerful and efficient dumping hydraulics gives short dump cycle times.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> </ul>	30
13. State-of-the-Art Hydraulic System	<ul style="list-style-type: none"> <li>Closed center system featuring variable displacement piston pumps minimize power losses and fuel consumption.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	53
14. High Capacity Cooling System	<ul style="list-style-type: none"> <li>The multiple sensor controlled, hydraulically driven, variable speed fan operates optimally according to existing cooling demands.</li> </ul>	<ul style="list-style-type: none"> <li>High productivity</li> <li>Low operating cost</li> </ul>	54
15. Designed for Serviceability	<ul style="list-style-type: none"> <li>No daily or weekly maintenance and extended service intervals in combination with the Operator Communication System increases time for productive work.</li> </ul>	<ul style="list-style-type: none"> <li>High availability</li> <li>Low operating cost</li> </ul>	58



# Introduction

## The Flexible Volvo Articulated Hauler

Due to excellent off-road characteristics, the A25D and A30D can be used in a wide range of applications. Low ground pressure, 6-wheel drive and differential locks in combination with high efficiency/ton all contribute to unique flexibility.

### Season extenders

The Volvo hauler provides higher all-year utilization compared to scrapers.

When compared to scrapers, rigid haulers or construction trucks, the artic hauler/excavator combination allows for high productivity regardless of ground conditions and weather, extending the operating season. This gives a lower total cost and a lower cost per cubic yard since downtime is reduced to a minimum, while maintaining high productivity.

## Applications

### Construction

The A25D and A30D are flexible machines that are easy to transport between different work sites. This feature, combined with outstanding off-road performance, makes the A25D and A30D perfect for starting up jobs (virgin ground), ground preparation, and road construction jobs, etc.

### Land reclamation

The A25D and A30D are perfect for small and medium-sized land reclamation jobs in soft ground conditions. It's sometimes difficult to use big excavators on soft ground, and that's where the A30D with low-profile tires is a perfect match even for big land reclamation projects.

### Quarries, sand and gravel operations

A25D and A30D are suitable in small and medium-sized applications where narrower, lower and flexible machines are needed. When it comes to replacing other hauling equipment in quarries such as small rigid trucks and conventional trucks, the A25D and A30D are the obvious choice.

Outstanding flexibility enables the end-user to use the A25D and A30D in several phases of production:

- Removing top soil (overburden)
- Transport to crusher (face to crusher)
- Transport of processed material (crusher to stockpile)
- Reclamation

### Big projects

The A25D and A30D are extremely suitable for starting up big projects. Normally, overburden has to be removed in tight areas and roads have to be built for bigger equipment in extensive projects like dams, ports, power plants, etc. This is where the A25D and A30D are perfect with their unique flexibility and outstanding off-road performance.





# Introduction

## Loading

The A25D and A30D are agile and easily maneuvered into the right loading position due to the articulated steering combined with good rearward visibility. Good off-road mobility makes it possible to get the load in all situations. The wide body is easy to load with excavators and wheel loaders. The symmetrical design spreads the load evenly in the body. The spill guard on the body protects the tractor unit. In addition, the A25D and A30D match very well with medium-sized loading equipment that's easily moved from one site to another. This makes the hydraulic excavator-artic hauler combination a system which provides a low total cost for short-term earthmoving jobs.



## Matching

Achieving high productivity with the A25D and A30D requires well-matched loading equipment. Excavators should give a full load in 3-5 buckets or 1.5 minutes. To reach nominal capacity in 3-5 passes, the haulers should be matched with 2.5-6.0m<sup>3</sup> (3.2-7.8 yd<sup>3</sup>) loading tools.



## Transport

### Rough terrain

This is where you really see the benefits of the A25D and A30D. You can always take the shortest route, regardless of weather and ground surface conditions, resulting in higher productivity and all-year machine utilization.



### Average speed

The well-matched drivetrain provides high top speed and excellent performance on steep uphill and downhill grades. This, together with the very effective suspension system and superior operator comfort, allows high average speeds on all types of haul roads.

## Dumping

Differential locks on all axles and low ground pressure reduce the risk of getting stuck and allows the load to be dumped at the right place without the assistance of crawler dozers. The high position of the dump joint and the design of the body makes it easy to see into a hopper, dump over an edge and to dump in a pile. The haulers also feature a short dump time, large dump angle and the patented Volvo "Load & Dump" Brake to further enhance high productivity.



# Introduction

## Productivity

The A25D and A30D have a well-matched drivetrain with a direct-injected, turbocharged, Volvo low-emission diesel engine with intercooler. The fully automatic transmission permits maximum utilization of engine power. Differential locks with 100% locking capability on all drive axles, as well as on the longitudinal differential, give very good traction and excellent off-road mobility even in extremely tough conditions.



## Maneuverability

### Articulated steering

The powerful self-compensating, hydro-mechanical steering is the secret behind the machine's directional stability and ground-hugging agility.



### Front axle

The A25D and A30D have rubber springs and shock absorbers on the front axle. This permits high-speed hauls with maximum comfort. The three-point suspension enables the wheels to "walk over" obstacles, without the entire tractor oscillating. The suspension is maintenance-free, there are no grease fittings.



### Hitch

The 360° rotating hitch enables the tractor unit to oscillate independently of the load unit, eliminating frame twist. This lets the wheels "walk over" all obstacles in the terrain, while maintaining ground contact at all times.



### Bogie

The Volvo bogie with high ground clearance and independent axle suspension provides up to  $\pm 250$  mm (10 in) of independent wheel movement. This gives the machine a smooth, "floating" ride. The body is kept horizontal regardless of ground conditions, resulting in less spillage. The bogie is maintenance-free.





# Introduction

## Operator environment

The role of the operator in the productivity of an Articulated Hauler cannot be emphasized enough. Volvo has always actively researched and developed not only the ergonomics of the operator's position, but also the adjustment and control systems that influence operator productivity.

In the new cab, the operator works in a comfortable, well-designed and safe environment.

- Central operator position
- Safe entry and exit, no threshold, wide-door opening
- Low internal sound level
- Wide field of vision with large glass areas
- Easy communication, all important information is in front of the operator.



## Environment

- Load-sensing hydraulic system contributes to low fuel consumption.
- Air-conditioning system uses CFC-free refrigerant
- Biologically degradable oil can be used in the hydraulic system.
- Improved interior and exterior sound levels
- More than 95% of the material in the A25D-A30D is recyclable.
- Low emissions for lower environmental impact, the engines meet Step 2 emission regulations.
- The crankcase breather air passes through an oil separator. It separates oil particles from the air and returns the oil to the engine
- Easier service access, less spill
- Less maintenance material/oils and filters



## Safety

- The cab is tested and approved according to ROPS/FOPS standards.
- The retractable seat belt is mounted directly on the operator's seat, easy-to-use.
- Easy-to-understand early warning system
- Cab and hood design improves overall visibility.
- Accurate and comfortable steering
- The new projection headlights use the latest reflector technology available. High light output contributes to better utilization of the hauler, even in difficult visual conditions.
- Volvo A25D-A30D have steps and service platforms that are provided with anti-slip surfaces and handrails.

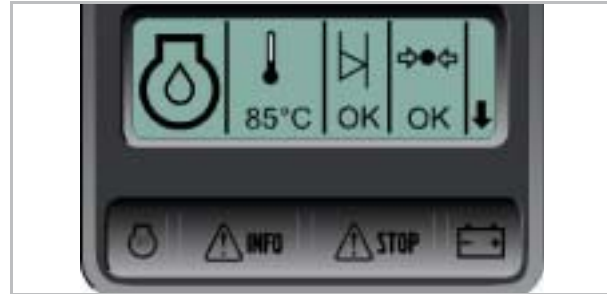


# Introduction

## Availability

### Planned downtime

The A25D and A30D are designed to give the customer maximum performance and reliability. There is no daily or weekly maintenance and the on-board Operator Communication System takes care of all necessary checks of fluid levels and reminds the operator of the next scheduled service via the display in the main instrument panel.



### Service-friendly

Safety handrails and anti-slip step surfaces are provided where checks are performed and a wide opening engine hood provides easy access to the engine compartment.



### Oil filter panel

All engine oil, fuel and coolant filters are located in front of the engine, easily accessed via the new swing-down front grill.

A drain hose that fits all drain points (engine oil and transmission oil) is stored in the front grill. All drain points are relocated for easy access without opening any panels or hoods.



### Unplanned downtime

A high degree of commonality in components, spare parts, accessories and tools is an important advantage, especially if the machine fleet contains a number of Volvo machines.

Troubleshooting is made easier with the Operator Communication System that displays and stores the system's information.

## **Economy**

### **Operating costs**

Low operating costs result from systematic development of engine technology, transmission, and retarding systems for maximum efficiency. The Operator Communication System ensures that all systems and components function properly, even in the toughest operating conditions. Long service and lubrication intervals contribute to low-maintenance costs.

### **Capital costs**

Volvo has extensive experience in manufacturing construction machinery. Volvo products are always at the forefront of technological development and have long productive lives. A worldwide network of Volvo sales companies and dealers provide sales, service and parts support no matter how remote the jobsite.

# Cab & Operator Communication



## Cab

The operator's position above the front axle and in the center of the machine, together with the new spacious and comfortable cab, contributes to low operator fatigue and high productivity from the beginning to the end of the shift.

Excellent visibility increases safety and reduces the risk of vehicle damage. Controls and information systems are ergonomically designed and easy to understand. This gives the operator quick feedback, which results in safer operation.

All this adds up to an operator with total control of the hauler, and that is the foundation of high long-term productivity, safe operation, low operating costs, and high resale value.

### Advantages

- Approved ROPS/FOPS cab
- Central operator position
- Easy entry and exit due to wide door opening. No threshold makes it easy to clean.
- Low internal sound level, ISO 6396 - 74 dB(A)
- Wide field of vision with large glass areas
- Easy communication, all important information is in front of the operator. Central warning system is standard.
- Well-placed controls, comfortable operator's seat and tilt/telescopic steering wheel
- Effective ventilation system with filtered air
- Storage compartments
- Spacious, comfortable and easy to clean

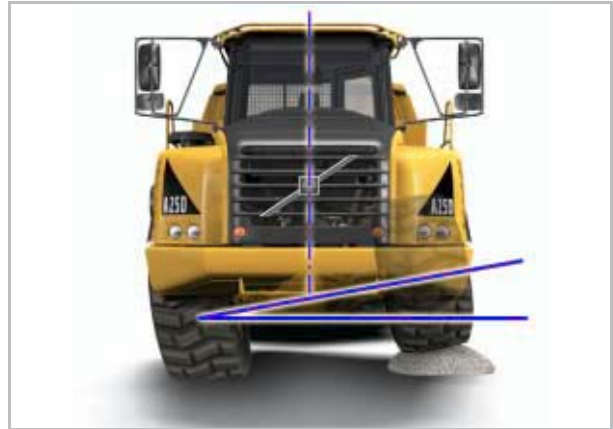


# Cab & Operator Communication

## Operator's environment

### Operator's position

Positioning the operator above the front axle and in the center of the machine provides minimized operator motion in all operating conditions, increasing productivity, comfort and vehicle control.



### Spacious state-of-the-art cab

The new cab is very spacious with room for storing personal items. There is a lockable storage compartment in the overhead console and a large compartment, with two cup holders, in the right operator panel.

The cab floor has no projections or sharp edges. A wide door opening without threshold makes it easy to enter and clean the cab.

The air-suspended and optional heated operator's seat features an automatic weight adjustment and a wide range of adjustments to suit any individual taste.

The cab is also equipped with sturdy handles on both sides of the operator which are useful in heavy off-road operation.

The steering wheel both tilts and telescopes.



### Heating/cooling box

Below the instructor's seat, there is a space for a cooling or heating box together with a 24V power outlet. When the instructor's seat backrest is folded down, it can be used as a table.



### Controls

The pedals are ergonomically positioned for efficient operation both on and off-road.

All controls and switches are ergonomically positioned for safer and faster work cycles.



# Cab & Operator Communication

## Climate control system

The high-capacity heating and ventilation system provides effective ventilation and excellent comfort. Separate defroster vents keep the side and front windows clear.

Well-placed controls allow infinite adjustment of heated/cooled air mix. Air vents are located at floor, mid and roof levels to ensure an even temperature in the cab. Air-conditioning is optional.

The cab air supply is cleaned using replaceable filters which, in combination with the pressurized cab, keep dust and other particles out. The filtered air passes through the climate control system with which the operator controls the temperature.



## Easy entry

The handrails and non-slip steps are slightly angled towards the vehicle for safe and comfortable entry and exit.



## Instructor's seat (optional)

The instructor's seat is strategically positioned with access to all controls needed for safe operator training. The instructor has a good overall view of what the operator does to simplify training. The instructor's seat has a retractable seat belt.



## Low noise level

The cab has very good sound insulation (ISO 6396 - 74 dB(A)) and is isolated from the frame by rubber pads that dampen noise and vibration.



# Cab & Operator Communication

## Visibility



Good overall visibility is essential for safe hauler operation. The rounded and sloped hood together with large, well-positioned and easily adjusted rearview mirrors give very good overall visibility. The main rearview mirrors are useful in getting an overall rear view, whereas the lower, small wide-angle mirrors are useful for placing the bogie wheels when backing up.

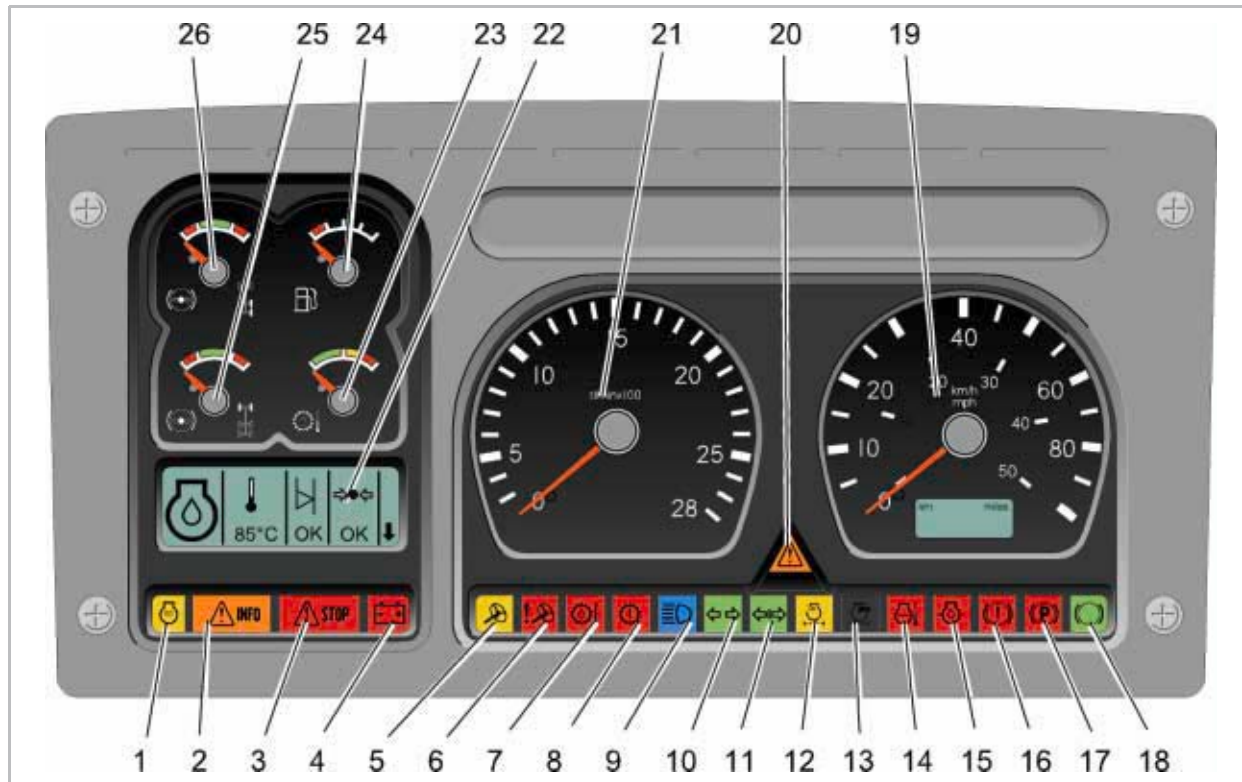
Large windows with small corner posts reduce blind spots and, together with good visibility, gives the operator a good "feel" for the vehicle dimensions which reduces machine and tire damage.





# Cab & Operator Communication

## Instruments and Controls



All important information is clearly presented on the front instrument panel. Instruments are visible at a glance. The haulers are standard-equipped with an integrated Operator Communication System.

### Main Instrument Panel

- |   |  |
|---|--|
| 1 -Engine preheating, amber                   | 14 -Engine coolant temperature, red                  |
| 2 -Central warning light, amber               | 15 -Engine oil pressure, red                         |
| 3 -Central warning light, red                 | 16 -Brake system malfunction, red                    |
| 4 -Battery charging, red                      | 17 -Parking brake, red                               |
| 5 -Secondary steering system, amber           | 18 -Service brakes applied, green                    |
| 6 -Primary steering system, red               | 19 -Speedometer, odometer                            |
| 7 -Transmission oil temperature, red          | 20 -Central warning light, amber                     |
| 8 -Transmission malfunction, red              | 21 -Tachometer                                       |
| 9 -High beams, blue                           | 22 -Operator Communication System display            |
| 10 -Direction indicators, tractor unit, green | 23 -Transmission/retarder oil temperature            |
| 11 -Direction indicators, load unit, green    | 24 -Fuel gauge                                       |
| 12 -Air filter, engine, amber                 | 25 -Brake circuit, system air pressure, load unit    |
| 13 -Not used                                  | 26 -Brake circuit, system air pressure, tractor unit |

# Cab & Operator Communication

## Controls



### Steering Column

- 27 -Headlight high/low beam switch, horn, direction indicators, windshield wiper and washer
- 28 -Steering wheel adjustment, lock lever

### Left Instrument Panel

- 29 -Dimmer, instrument lighting
- 30 -Headlights, switch
- 31 -Front work lights, switch\*
- 32 -Rear work lights, switch\*
- 33 -Keypad for Operator Communication System display
- 34 -Dimmer, main instrument lighting

### Indicator, Right Instrument Panel

- 35 -Door open, red
- 36 -Raised dump body, red
- 37 -Central warning, red
- 38 -Seat belt reminder, red
- 39 -"Load & Dump" Brake, amber
- 40 -Differential lock indicator

### Right Instrument Panel

- 41 -Engine emergency stop
- 42 -Cigarette lighter, 24V
- 43 -Starter key
- 46 -Engine high idle speed control, switch\*
- 47 -Electrically heated seat, switch\*
- 48 -Electrically heated rearview mirrors, switch\*
- 49 -Rotating beacon, switch\*

- 50 -Hazard flashers, switch

- 51 -Engine shut-down timer, switch\*

### Climate Control System

- 53 -Air-conditioning, switch\*
- 54 -Air distribution control
- 55 -Fresh air control
- 56 -Temperature control
- 57 -Fan control

### Control Panel

- 59 -Retarder in service brake pedal, switch
- 60 -Exhaust retarder in released accelerator, switch
- 61 -Gearshift inhibitor, switch
- 62 -Gearshift lever
- 63 -Dump lever
- 64 -Dump lever lock-out
- 65 -"Load & Dump" Brake, switch
- 66 -Parking brake lever
- 67 -Longitudinal differential lock and 6x6, switch
- 68 -Transverse differential lock, front axle, switch

### Pedals

- 73 -Accelerator pedal
- 74 -Brake pedal
- 75 -All differential locks and 6-wheel drive, foot control
- 76 -Retarder pedal

\*) Optional equipment

# Cab & Operator Communication

## Volvo CE Operator Communication System (OCS)

The Operator Communication System includes control lights, operator display, amber and red central warning lights as well as a buzzer. These indicators are easy to understand and are used to alert the operator of malfunctions or warnings at different levels of importance.

The Operator Communication System continuously provides valuable information about the various machine systems. It generates an early warning if something is abnormal or if the operator handles the machine incorrectly.

It's easy to navigate between different screens and functions using the keypad.

Examples of information that the system provides:

### Safety alerts/functions:

- Operating without seat belt
- Operating with cab door open
- Operating with raised body
- Engine overspeed
- Low brake system pressure
- Low steering system pressure
- Reminder to use "float position" for dump lever during transport

### Work cycle information (after reset to zero)

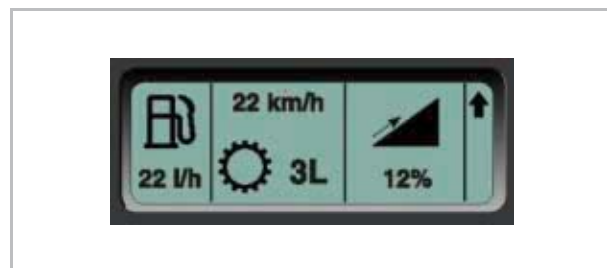
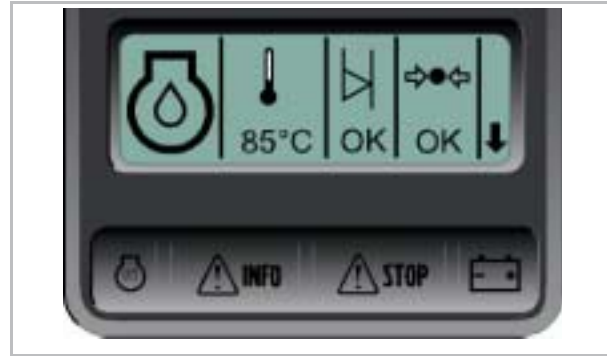
- Operating time
- Accumulated fuel consumption
- Cycle counter
- Travel distance

### Operating information

- Instantaneous fuel consumption
- Vehicle speed
- Current gear, lock-up/converter mode
- Longitudinal angle of vehicle in %
- Activated drive combination (differential locks)
- Activated "Load & Dump" Brake

### General information/warnings

- Automatic pre-start checks
- Fluid levels, temperatures and pressures
- Filter status for air, transmission oil and fuel filters
- Voltage
- Active error code
- Next service interval and time to service
- Time (clock)
- Ambient temperature





# Cab & Operator Communication

## Lighting

### Effective lighting

Powerful lights provide effective lighting both in front of and behind the machine. High-efficiency halogen lights provide constant light intensity over their entire life.

Rear and front-facing work lights make it easier to maneuver to the correct position (optional equipment).

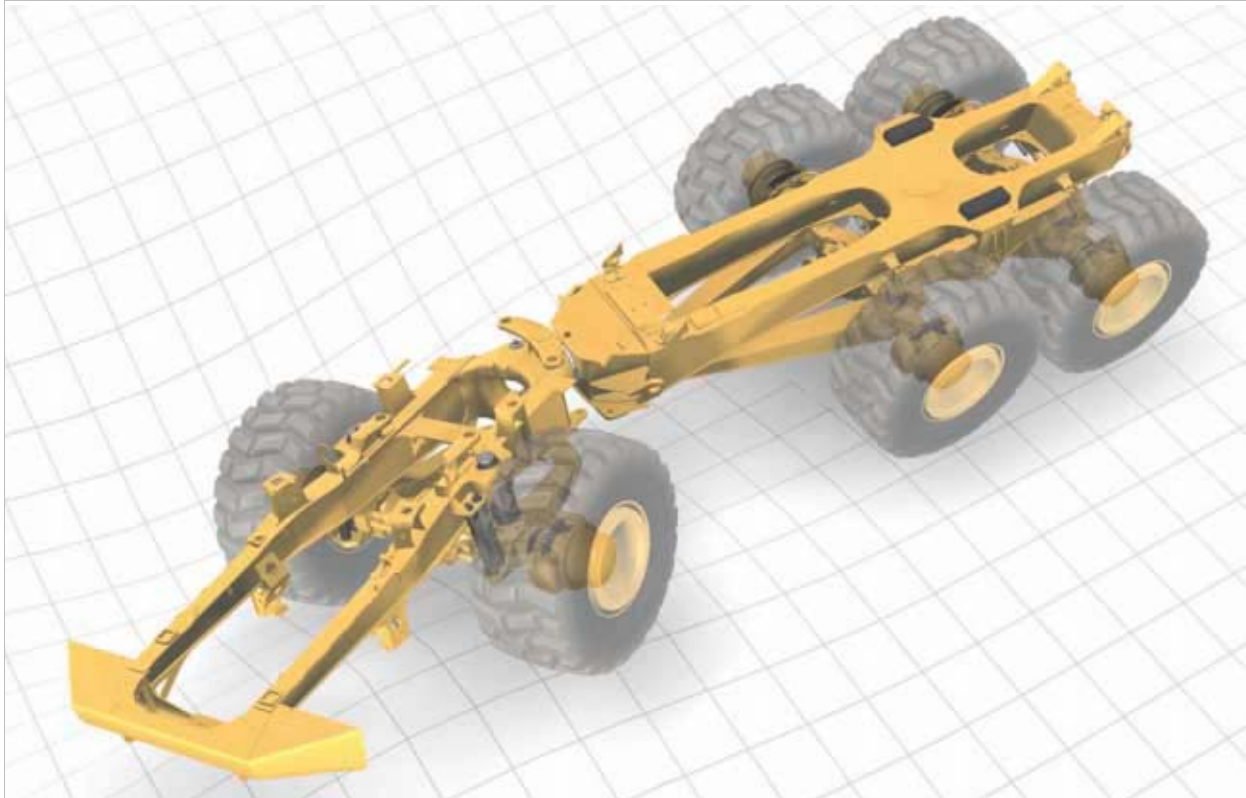


### Rear lights

Rear lights with light-emitting diodes mounted in heavy-duty protective housings that are unaffected by shock, provide long service life.



# Chassis



**The chassis system consists of the frame, hitch, steering and suspension.**

These components work together to form the basis of a true off-road hauler. Heavy-duty front and rear frames are joined by the rotating hitch to eliminate frame twist and to ensure good ground contact. Self-compensating hydro-mechanical articulated steering provides steering accuracy in high-speed operations as well as rough terrain mobility. Operator comfort for high average speeds is maximized by the three-point suspension concept with independent wheel movement.

**Advantages**

- Rotating hitch gives superb off-road mobility and eliminates frame twist.
- The combination of the hitch and articulated steering provides good traction and off-road mobility in demanding applications.
- Heavy-duty frame designed for severe off-road operations.
- High hitch placement maximizes stability and ground clearance.
- Permanent greased hitch bearings eliminate all service, leaving more time for production and reducing operating cost.

# Frame

## Heavy-duty frames designed for severe off-road operations.

Unlike conventional rigid trucks, the hitch minimizes torsional stress which eliminates frame twist. Therefore, our manufactured frame can be made of high-strength steel with high torsional rigidity for reduced weight and high strength.

The A25D and A30D feature a new frame design optimized for robot welding, resulting in higher production quality and longer service life.



## Front Frame

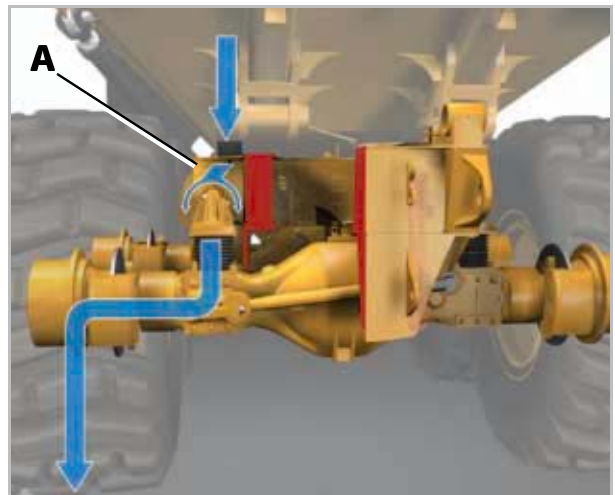
The front frame is built with brackets to secure electrical wiring and hydraulic lines for trouble-free operation.

The cab is mounted on four optimally positioned frame brackets that prevent frame vibrations from reaching the cab frame structure.

## Rear Frame

The heavy-duty trailer frame carries the weight of the loaded body.

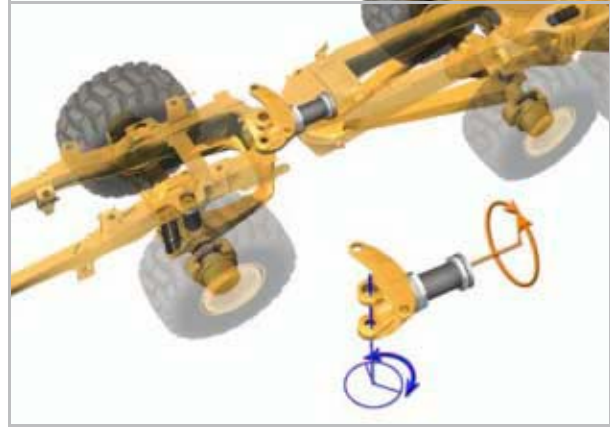
Unmatched trailer frame design with **straddle mounted bogie beam (A)** reduces stresses on frame rail distributing the load evenly to the bogie axles.



# Hitch

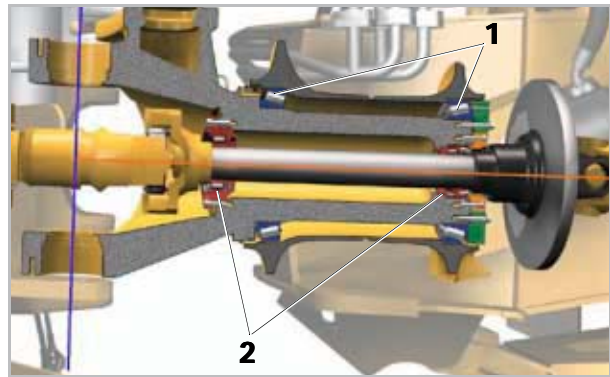
## Superb off-road mobility

The 360° rotating hitch allows independent movement of the tractor unit and the load unit, eliminating frame twist. This independent movement provides the required flexibility which allows the wheels to maintain good ground contact in rough off-road conditions.



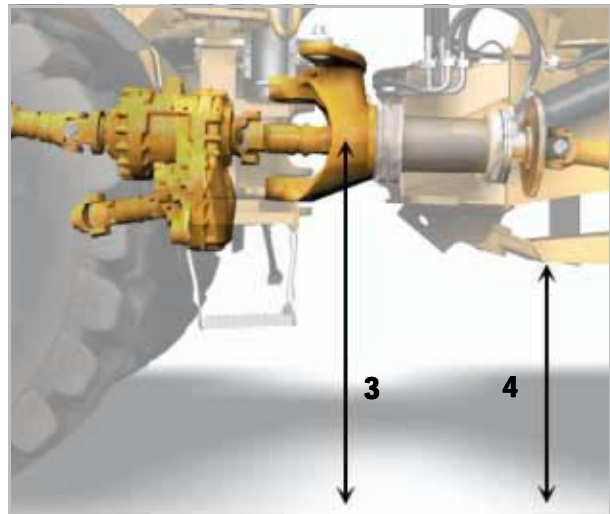
## No service needed

The hitch has permanent greased tapered roller bearings (1). The intermediate shaft has permanent greased bearings (2). These features eliminate service, leave more time for production and reduce operating costs.



## Placement of hitch

Stability is crucial to an articulated hauler. The high placement of the hitch (3) close to the load unit's center of gravity maximizes stability. This is a requirement when tackling off-road conditions and for high-speed hauling. An additional benefit is the high clearance (4) under the hitch.



## Good traction in all off-road conditions

The hitch allows maximum utilization of the articulated steering system's power and maneuverability.





# Suspension



## Three-point mounted axles Simple design – low maintenance

The front axle is suspended at three points for independent wheel movement. The suspension consists of components such as rubber springs, shock absorbers and cross stays – all maintenance-free. This permits high average speeds in rough terrain with maintained operator comfort and less strain on the equipment.

### Advantages – front suspension

- Three-point mounting allows independent wheel movement for high-speed hauling in rough terrain.
- High operator comfort reduces fatigue for high daily production.
- Simple design, 100% maintenance-free system for low operating costs.

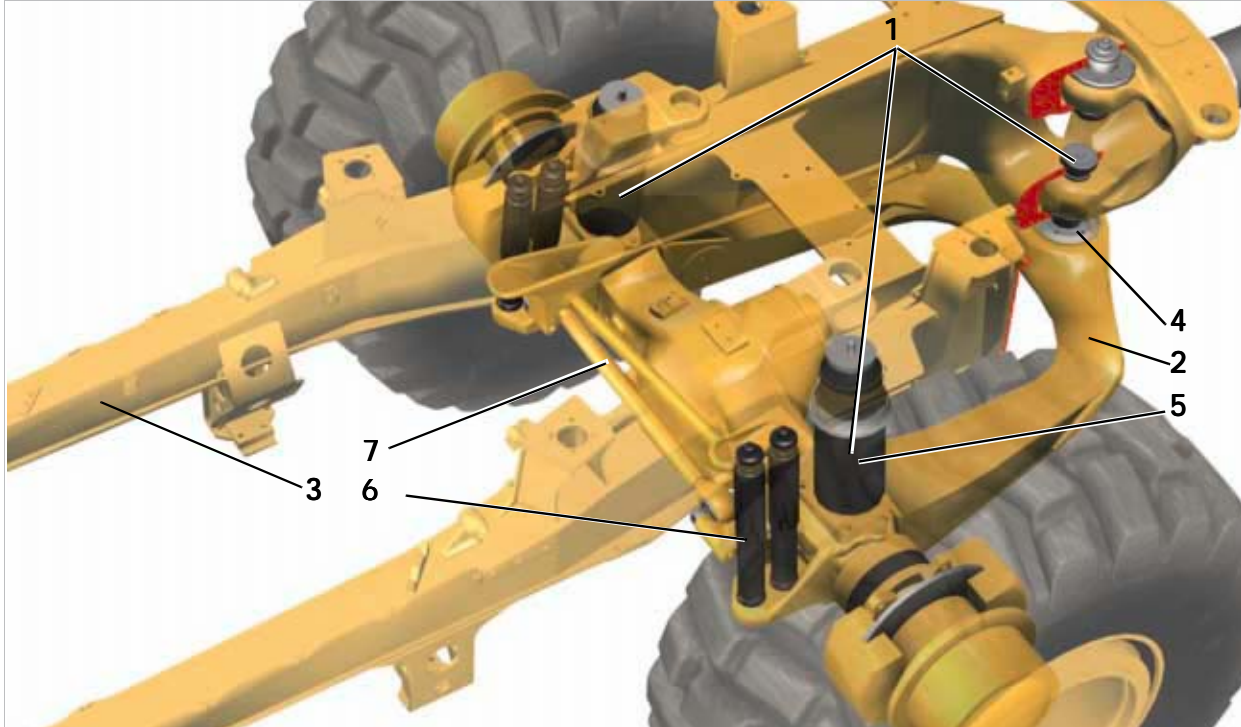
Each bogie axle is suspended at three points. This allows each pair of wheels to move independently, and the body remains level in rough terrain. Compared to other solutions, three-point suspension makes it easier for each pair of wheels to move independently and results in less strain on the frame.

### Advantages – bogie beam suspension

- The unique bogie beam design with long suspension travel allows independent wheel movement, maintaining good ground contact for superior off-road performance.
- 100% maintenance-free design with long component life for greater uptime and reduced maintenance costs.
- A smooth floating ride for high operator comfort reduces cycle times and improves productivity.
- The independent wheel movement keeps the body level and material stays in the body.

# Suspension

## Front Axle Suspension



### Simple design – no maintenance

The front axle is mounted at **three points (1)**, which provides independent wheel movement.

The front suspension consists of an **A-frame (2)** fitted to the **frame structure (3)** by a **spherical rubber bushing (4)**, **hollow rubber springs (5)**, **shock absorbers (6)**, and a **cross stay (7)**. Long component life and a suspension that requires no regular maintenance contribute to increased uptime.

**A-Frame (2)** absorbs the acceleration and braking forces from the front axle. It also provides independent wheel movement.

The maintenance-free **hollow rubber springs (5)** contribute to high operator comfort and long service life.

Four progressive **shock absorbers (6)** with end-stroke damping further enhance the off-road traction and comfort provided by the three-point suspension.

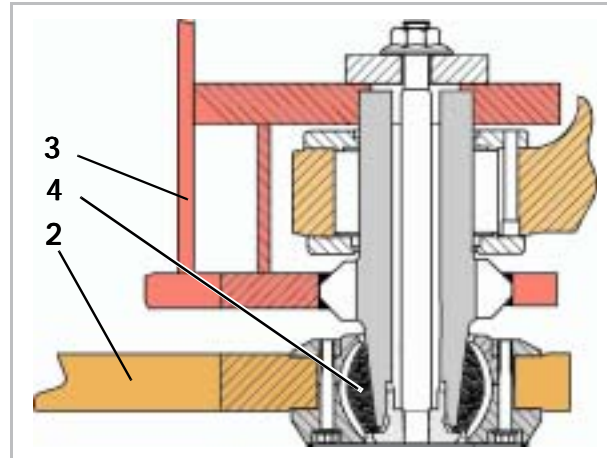
A **cross stay (7)** absorbs the lateral forces from the front axle and provides excellent stability and accurate steering.

### High average speeds

Production is heavily influenced by operator comfort. Independent wheel movement and a shock-absorbing suspension contribute to high operator comfort. As a result, the hauler can maintain higher average speeds in rough conditions for greater productivity.

### Low operating costs

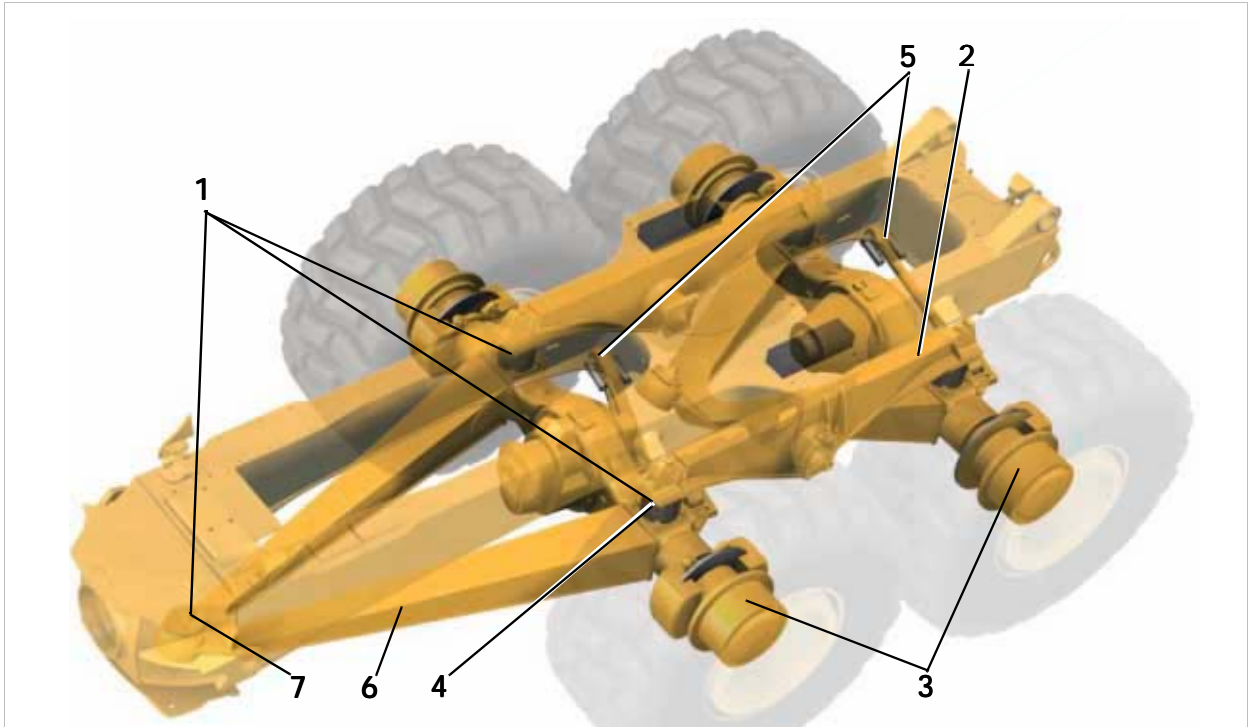
In contrast to pneumatic or oil/nitrogen suspensions, rubber springs require virtually no maintenance, reducing total operating costs.





# Suspension

## Rear Axle Suspension



### 3-Point bogie beam rear suspension

The Volvo hauler's superior off-road performance is the result of the **unique 3-point bogie beam design (1)**, allowing the rear wheels to move independently in order to maintain good ground contact and vehicle stability.

### Maintenance-free

The Volvo bogie beam design is constructed using simple and functional mechanical parts. A straddle mounted **bogie beam (2)** on each side connects the two rigid oscillating **axles (3)**. Flexible **rubber pads (4)** (bogie blocks) connect the axles and bogie beams. **Cross stays (5)**, linking the bogie axle and the frame, absorb lateral forces. **A-frames (6)** with **rubber bushings (7)** further control axle movement by absorbing the acceleration and braking forces. Rubber connections and a durable rugged design equal a long life, maintenance-free suspension with high productivity.

### Short cycle times

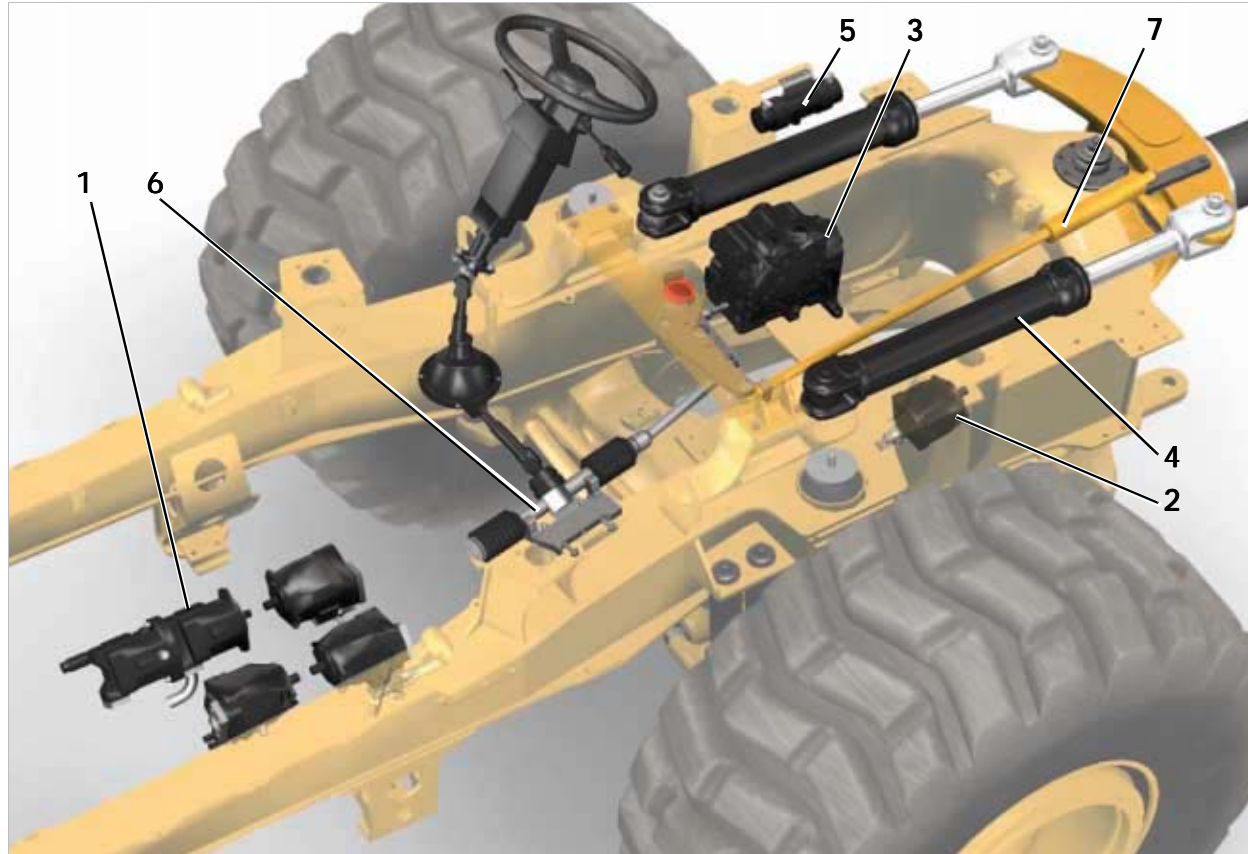
The bogie design with its long suspension travel and high ground clearance gives the load unit a smooth, "floating" ride while maintaining ground contact for excellent traction at all times. A smooth ride translates to operator comfort, which reduces cycle times and increases productivity.

### Stability

The long suspension travel and independent wheel movement provided by the bogie beam system allows the body to stay level while the hauler travels over large bumps and ruts. This long suspension travel not only maximizes load unit stability but also keeps the load in the body when traveling over rough surfaces.



# Steering System



**Volvo's articulated steering system is a true self-compensating hydro-mechanical design, which provides a very good "feel" for the road.**

A steering system that maintains its controllability and precision throughout the life of the hauler is essential not only to maximize production, but also for safe, high-speed operation. Volvo has accomplished this with its unique self-compensating, hydro-mechanical steering system.

The steering system is supplied with oil from **variable displacement piston pumps (1)** and a **ground dependent pump (2)**. The **steering valve (3)** controls oil supply to the **steering cylinders (4)**, and a **damping valve (5)** ensures that impacts and jolts are not transmitted to the steering wheel.

The **rack & pinion (6)**, together with the mechanical steering linkage, ensures that the steering angle is always proportional to the number of turns of the steering wheel.

A mechanical **feedback rod (7)**, connected to the hitch at one end and the steering valve at the other, acts to center the steering valve after any steering movement, providing a smooth, accurate and steady automotive-type feel to the steering system.

## Advantages - steering system

- Unique self-compensating, hydro-mechanical steering system for safe high-speed operating accuracy.
- Articulated steering with good maneuverability and a small turning radius for excellent off-road mobility.
- Hydro-mechanical steering provides a very good feel for the road.
- Variable displacement piston pumps conserve power and reduce fuel consumption.
- Hydraulic damping minimizes impact and jolts to the steering wheel and operator.
- Secondary steering is standard.
- Reliable malfunction indication to ensure safety.

# Steering System

## Easy and comfortable steering

Hydro-mechanical steering makes the machine easy to steer, even at low engine speeds and in tough operating conditions. Hydraulic damping ensures that impacts and jolts are not transmitted to the steering wheel and operator.

Variable displacement piston pumps provide flow on demand only, conserving power and reducing fuel consumption. Steering is fast and precise with a low effort for safe operation at all speeds.

## Superb directional stability due to mechanical feedback

A feedback rod (1) from the load unit communicates with the steering valve and neutralizes shock loads caused by negative steering forces that would otherwise affect the steering angle. There is no need for the operator to compensate with the steering wheel when operating over ruts or bumps. This assures high-speed directional stability even on rough ground. The steering angle is proportional to the number of turns of the steering wheel, regardless of the steering or engine speed, providing a smooth and steady automotive-type feel.

## Secondary steering

Secondary steering is standard. A **ground dependent pump (A)** mounted on the dropbox works in parallel with the engine-driven pumps when the hauler is moving. This means that the hauler can be steered safely even if the engine should fail.

## Malfunction indication

If a malfunction occurs in the steering system, the Operator Communication System provides warnings via **warning lights (1 & 2)**, the **Central warning light (3)**, operator display and the buzzer all depending on the level of malfunction.





# Body & Dump System

## Load Unit



### Hoist cylinders and body

Quick dumping time is not the only factor that should be considered when assessing the load unit. To maximize productivity and to reduce costs, Volvo haulers have heavy-duty bodies with a shape that accepts any loading tool. The body hinge position and dump clearance allow the material to eject out and away from the machine, and the hydraulic power and control can handle all dumping situations. The Volvo "Load & Dump" Brake improves efficiency and safety while giving the operator better working conditions.

### Short cycle times

Two single stage, double-acting hoist cylinders provide fast dump cycle times (12 seconds up, 9 seconds down) to maximize productivity. A dumping angle of 70°, smooth welds, and a body shaped to promote easy material release minimizes sticking of material.

### Easy to load

The design of the body simplifies loading, using virtually any loading tool, and no special loading considerations need to be taken into account.

### Heavy-duty construction

The body is made of high-impact strength Hardox 450 steel with heavy-gauge plates. The heavy-gauge plates and rugged design are suitable for most applications except for extremely severe conditions where optional (8 mm - 5/16) body liner plates should be used.



#### Plate thickness:

- front 8 mm (5/16 in)
- side 12 mm (1/2 in)
- bottom 14 mm (9/16 in)
- chute 14 mm (9/16 in)

### Advantages – load unit

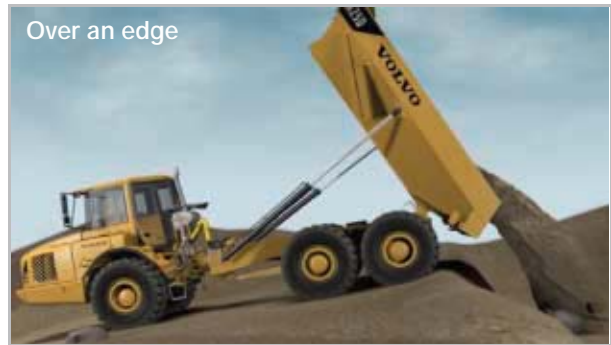
- Body design and effective hoist cylinder system give short dump cycle times.
- Volvo "Load & Dump" function reduces operator fatigue and maximizes productivity.
- Optional exhaust heating reduces the risk of material freezing or sticking to the body.
- Rugged design handles most loading conditions without the need for liner plates.
- A 70° dumping angle, smooth welds and a body designed to promote release of the load and to reduce sticking.
- Dumping hydraulics with power and control for all applications.
- High body hinge placement and high dump clearance to maximize productivity.
- Body designed to accept all loading tools.
- For optimal safety, the dump lever returns automatically to the hold position if the operator leaves the seat or stops the engine.

# Body & Dump System

## Efficient Load Placement

### Over an edge

The **high placement of the body hinge (B)** and the distance between the **rear bogie axle and the chute (D)** gives productivity advantages at the dumping site. When dumping over an edge, the operator can safely back up close to the edge and still have the load eject out past the edge. The **high-dump clearance (C)** with the body raised and the material ejecting away from the hauler doesn't allow build-up of material at the dump site edge. This high-dump clearance with the body raised also keeps the load tightly packed, making better use of the dumping area.



### Into a hopper

Due to the great distance between the **rear bogie axle and the chute (D)** when the load body is raised, no material is spilled outside the hopper. The good **ground clearance with raised load body (C)** also makes it possible to drive the machine away from the hopper with the body up, thereby not preventing other machines from backing up to the hopper.



### Stockpile

Due to the **large dumping angle (A)** and the powerful dumping force, it is possible to dump on very steep uphill grades without the material remaining in the body. Further, the distance between the **rear bogie axle and the chute (D)** also helps to dump the load over the highest point on the pile.



### Body heating

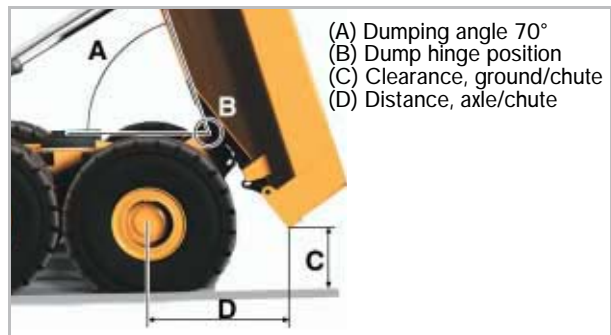
The body is standard-equipped with ductwork for exhaust heating. An optional piping kit routes exhaust from the muffler to the body ductwork, reducing the risk of material freezing or sticking in the body.

### Power and control

Dumping hydraulics must also be evaluated. We have developed a dumping system that has the power and control to tackle all circumstances. Whether it's dumping up or down a slope or lowering the body with a load, Volvo has the power and control.

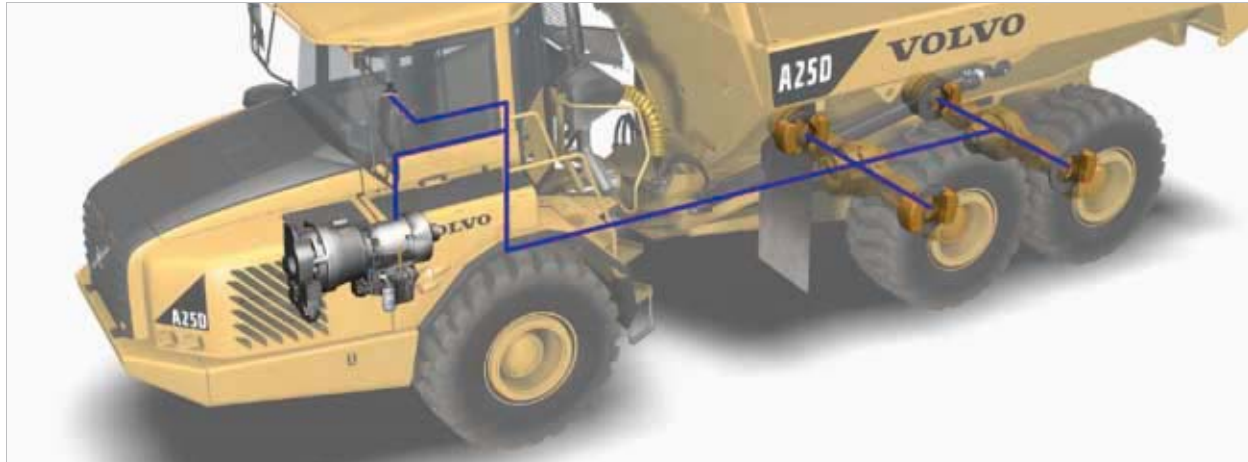
### Safety

With safety in mind, Volvo developed the new dump lever. Whenever the operator leaves the seat or turns off the engine, the lever returns to the hold position. When the dump lever is put in the hold position, the body will stop.



# Body & Dump System

## “Load & Dump” Function



Volvo has developed a “Load & Dump” function to reduce operator movements and to enhance productivity. When the articulated hauler is in position for loading or dumping, the operator presses a button which results in automatic application of the trailer brakes and shifting of the transmission to neutral. This improves efficiency and safety while giving the operator better working conditions. Wear on the brakes and drivetrain is also minimized.

After the hauler has been loaded or unloaded, the operator selects a gear and the “Load & Dump” brake system switches off and releases the trailer brakes.

### Loading

#### Reversing into the loading area (1).

In position for loading, the operator pushes the “Load & Dump” button (2), resulting in automatic application of the load unit brakes and shifting of the transmission into neutral. When loading has been completed, moving the gearshift lever from Reverse through neutral to Drive (A) will release the brakes and engage the new gear.

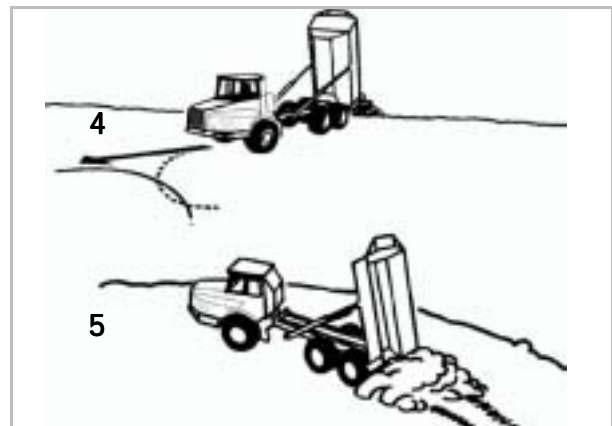
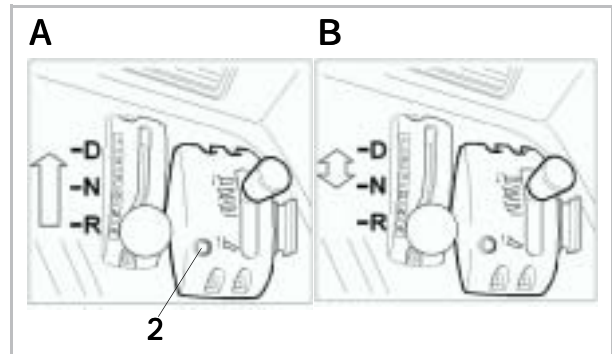
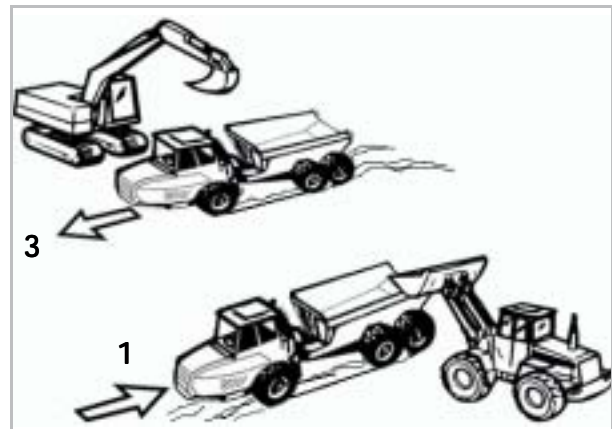
When entering the loading area driving forward (3), the procedure is the same. However, when loading has been completed, moving the gearshift lever from Drive to Neutral and then back to Drive (B) will release the brakes and engage the new gear.

### Dumping

#### Reversing into the dumping area (4).

In position for dumping, the operator pushes the “Load & Dump” button (2). To dump the load, the dump lever is moved to the dumping position. When dumping has been completed, the dump lever is moved back to the float or power-down position and moving the gearshift lever from Reverse through neutral to Drive (A) will release the brakes and engage the new gear.

When entering the dumping area driving forward (5), the procedure is the same. However, when dumping has been completed, the dump lever is moved back to the float position and moving the gearshift lever from Drive to Neutral and then back to Drive (B) will release the brakes and engage the new gear.







**Volvo has decades of experience in designing and manufacturing engines, transmissions and axles.**

This means that today's Volvo articulated haulers feature excellent utilization of engine power and torque for maximum rimpull and low-power losses in all operating conditions. This gives high productivity, good fuel economy and extended component life.

#### **Engine**

Well-known, widely accepted and efficient Volvo diesel engines are built to meet the demands of an articulated hauler.

#### **Transmission**

Fully-automatic Volvo PowerTronic planetary transmission, with six forward gears and two reverse gears. Designed for long service life.

#### **Dropbox**

Volvo-designed specifically for articulated haulers, gives high-ground clearance at the articulation joint.

#### **Axles**

Volvo-designed axles are matched to the other drivetrain components for optimal performance.

#### **Tires**

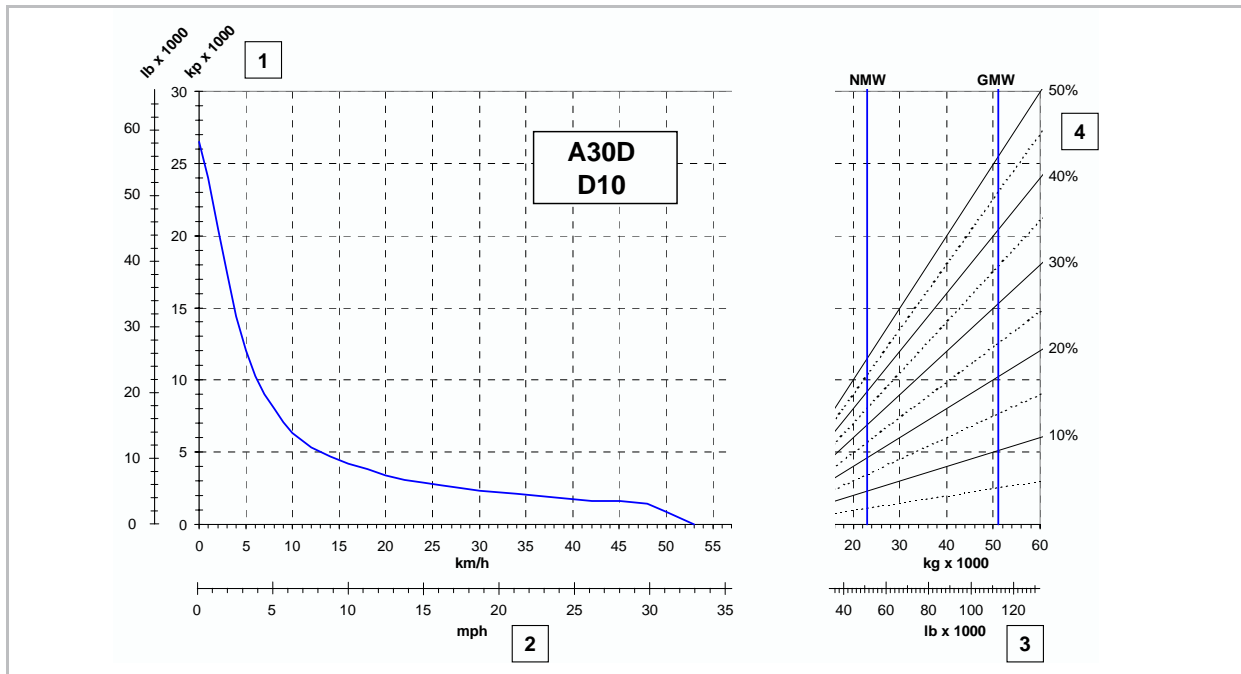
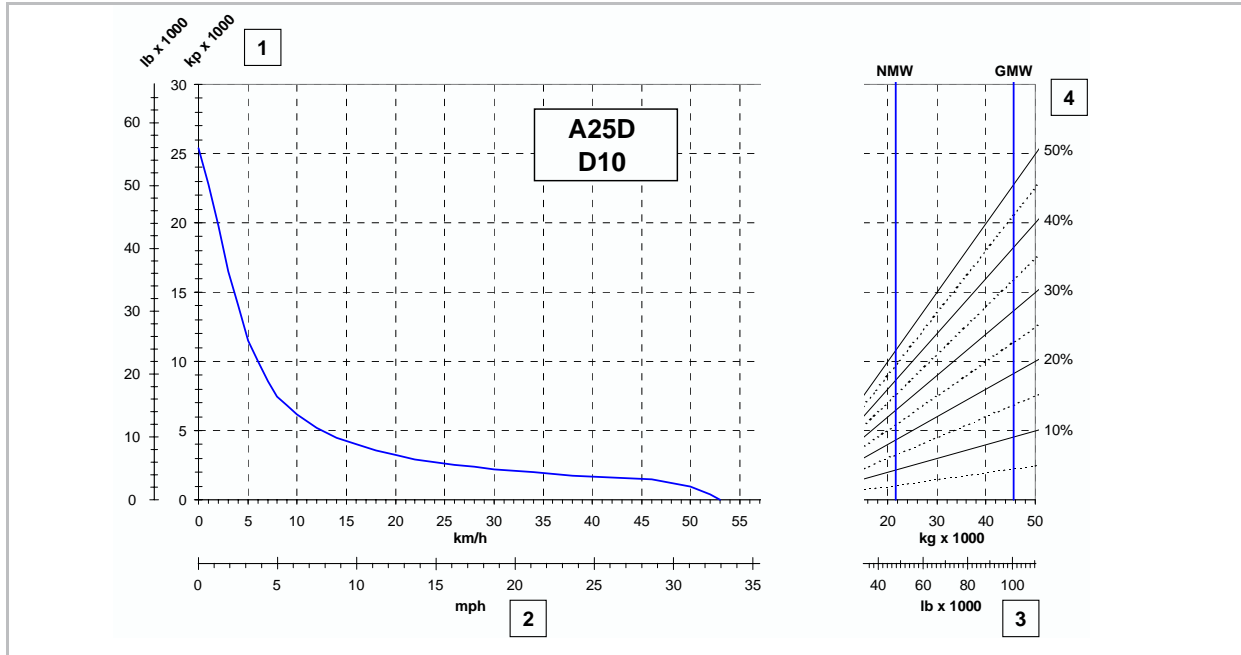
Important part of the drivetrain and the articulated hauler concept for ride comfort, handling and traction performance. Volvo offers a large selection of tires suitable for all operating conditions and applications.

#### **Advantages**

- Correctly matched Volvo-designed components specifically developed for hauler applications give high-performance and low operating costs.
- Automatic gearshifts with unsurpassed comfort and performance eliminate operator fatigue and maintain high productivity.
- Heavy-duty components for long service life and high reliability.

# Drivetrain

## Rimpull



### Instructions

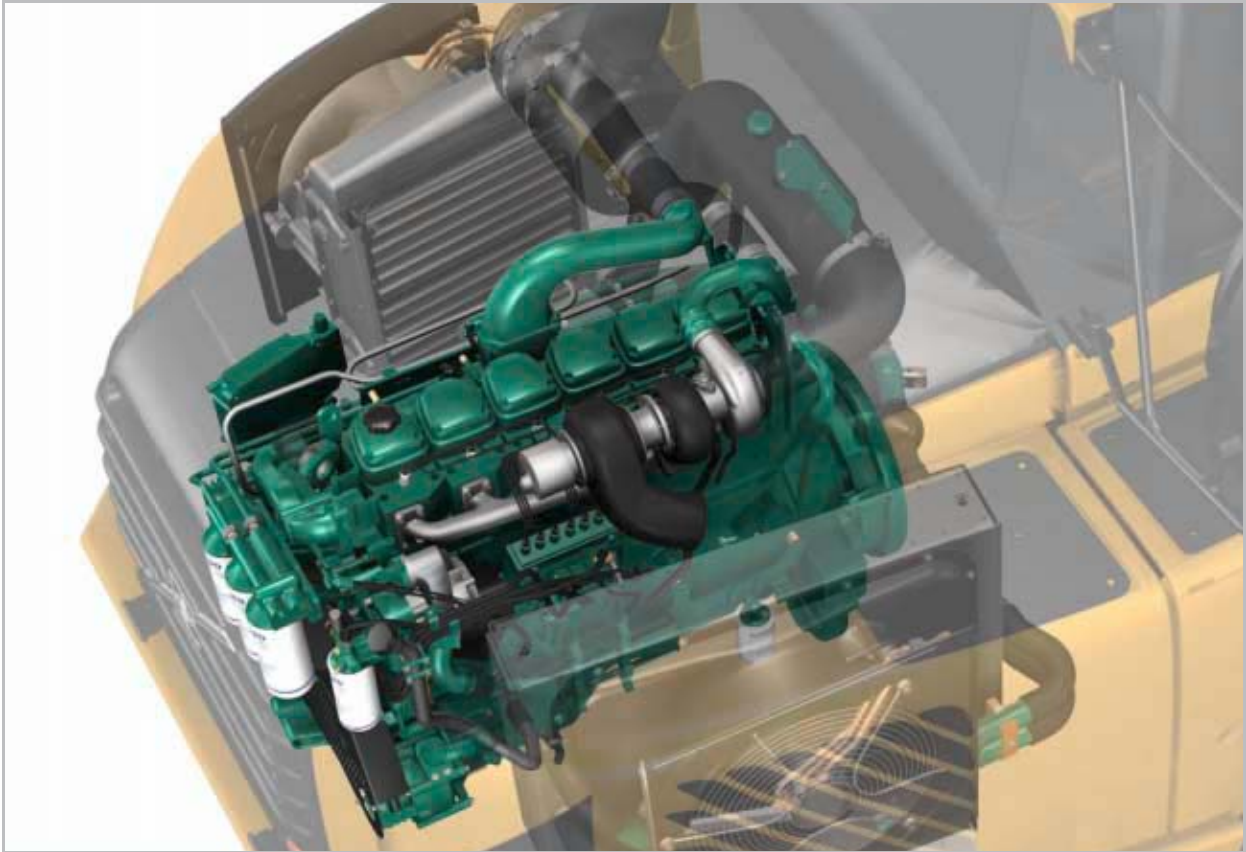
Diagonal lines represent total resistance (grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires and gearing, unless otherwise stated.

- Find the diagonal line with the appropriate total resistance on the right edge of the chart.
- Follow the diagonal line downward until it intersects the actual line for machine weight, NMW or GMW.
- Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.
- Read down for vehicle speed.

### RIMPULL

- Rimpull in kp lbf
- Speed in km/h mph
- Machine weight in kg lbs
- Grade in % + rolling resistance in %.

## Engine



Volvo haulers are equipped with well-known, widely accepted and efficient Volvo diesel engines, built to meet the demands of an articulated hauler.

### High-performance, fuel efficient Volvo engine

The A25D and A30D are equipped with the Volvo D10B engine, a six-cylinder in-line, direct-injected, turbo-charged low-emission diesel engine with intercooler. Fuel injection is electronically controlled for low emissions and high performance.

The engine is characterized by a high torque rise which provides high torque at low engine speeds. This means that the engine responds quickly when accelerating from low engine speed. This is required for confronting the high total rolling resistance when operating on soft ground, on steep grades and in rough terrain.

The engines have high power to maintain a high average speed throughout the entire work cycle.

Combined with a low maximum engine speed, this gives high productivity, low fuel consumption, less noise, reduced wear and longer service life due to the fact that the main part of all operation takes place at relatively low engine speeds.

The engine complies with the following off-road emission regulations (market dependent):

- Europe (EU) step 2 (all versions)
- USA (EPA) step 2 (NAFTA version only)
- California (CARB) step 2 (NAFTA version only)

D10B ACE2 (A25D) and D10B AAE2 (A30D) are NAFTA versions,

D10B ADE2 (A25D) and D10B ABE2 (A30D) are only certified for the EU.

### Advantages

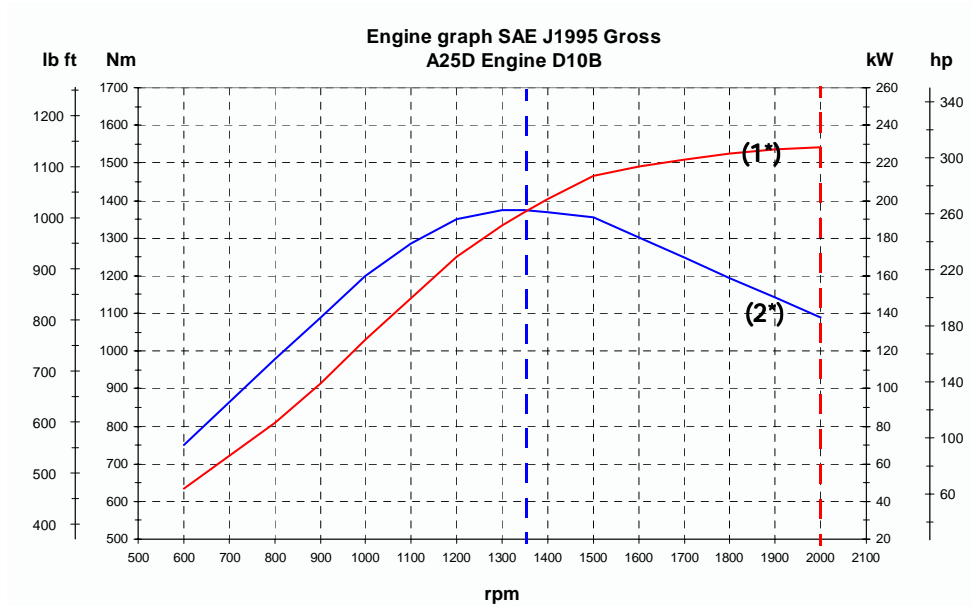
- Low emissions for lower environmental impact.
- Meets EU, EPA and CARB step 2 emission regulations (market dependent).
- Power and torque curves designed for hauler applications.

### Technical features

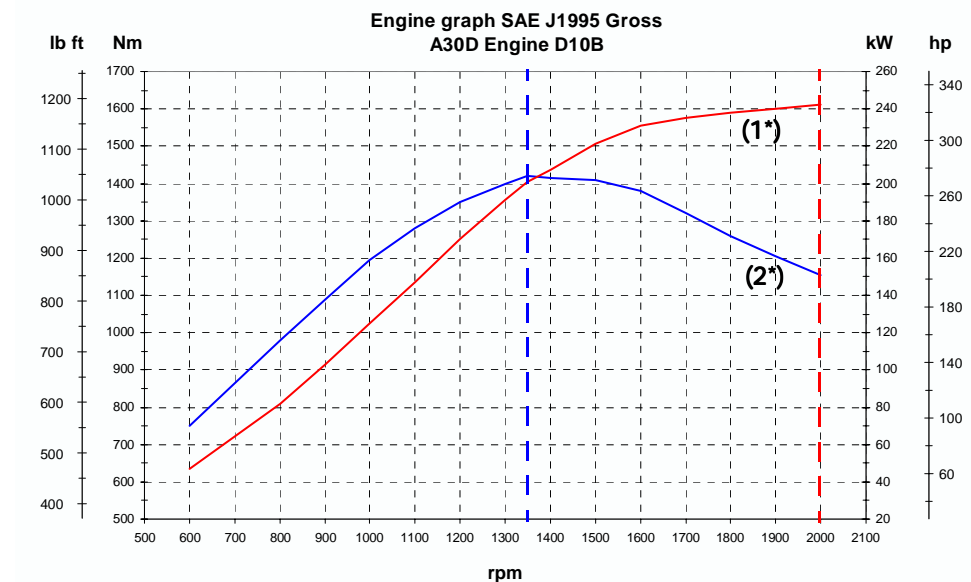
- Wet replaceable cylinder liners for more efficient heat dissipation and simple overhauls.
- Hydraulic fan with variable control provides constant operating temperatures in all operating conditions.
- Water trap and fuel filter effectively remove impurities from the fuel.

# Engine

## Power & Torque



<b>A25D engine</b>		Max. torque at	22 r/s (1350 rpm)
Make, model	Volvo D10B ACE2/ADE2	SAE J1995 Gross	1375 Nm (1014 lbf ft) <b>2*</b>
Max. power at	33 r/s (1998 rpm)	SAE J1349 Net	1365 Nm (1007 lbf ft)
SAE J1995 Gross	228 kW (306 hp) <b>1*</b>	Displacement	9,6 l (586 in <sup>3</sup> )
Flywheel power at	33 r/s (1998 rpm)		
SAE J1349 Net	227 kW (304 hp)		



<b>A30D engine</b>		Max. torque at	22 r/s (1350 rpm)
Make, model	Volvo D10B AAE2/ABE2	SAE J1995 Gross	1420 Nm (1047 lbf ft) <b>2*</b>
Max. power at	33 r/s (1998 rpm)	SAE J1349 Net	1410 Nm (1040 lbf ft)
SAE J1995 Gross	242 kW (324 hp) <b>1*</b>	Displacement	9,6 l (586 in <sup>3</sup> )
Flywheel power at	33 r/s (1998 rpm)		
SAE J1349 Net	241 kW (323 hp)		

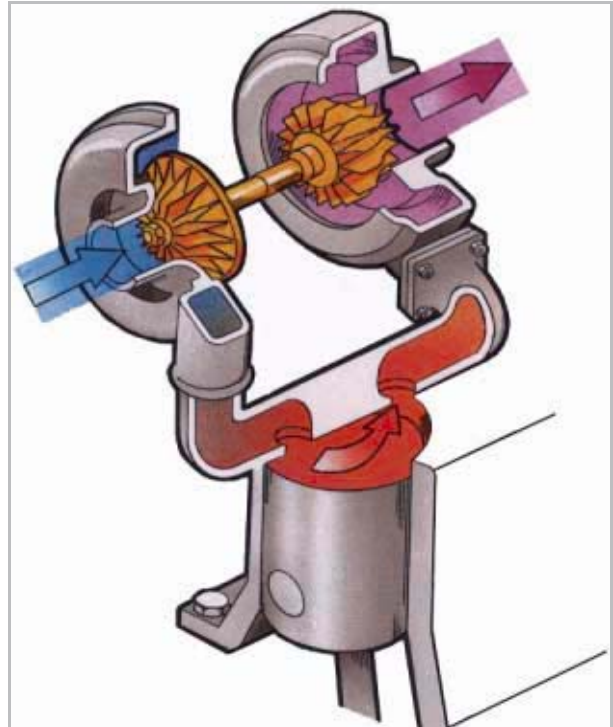


## Turbocharging

In 1954, Volvo was the first manufacturer in the world to introduce mass-produced turbocharged engines for trucks. Since then, development of these engines has continuously resulted in Volvo engines with very high power in relation to cylinder displacement.

Turbocharging and intercooling technologies combined with electronically controlled direct-injection give increased engine power/torque, improved fuel economy and reduced emissions of atmospheric pollutants. This is one of Volvo's core values, environmental care.

The turbo recovers otherwise unused energy in the engine's exhaust system, which gives an increase in total efficiency. The exhaust gases drive a high-speed turbine. It is directly connected to a compressor, which in turn forces larger air volumes (oxygen) into the cylinders. This gives more efficient combustion and more engine power, without increasing engine displacement.



## Intercooler

Intercooling improves the engine's power, torque, fuel economy and also gives lower emission values.

The turbocharger increases the air temperature. If the air is cooled after the turbo, its volume is reduced and more air (oxygen) enters the cylinders.

A25D and A30D are equipped with an air-to-air intercooler that effectively lowers the temperature of the air after the turbo. The hydraulically driven intercooler cooling fan adjusts the cooling effect to match operating conditions in order to ensure optimized combustion and lower emissions.



# Engine

## Air cleaning

Effective air cleaning improves the reliability and service life of the engine. Air cleaning is performed in two stages. Both filters are easily serviced without opening any covers or hoods.

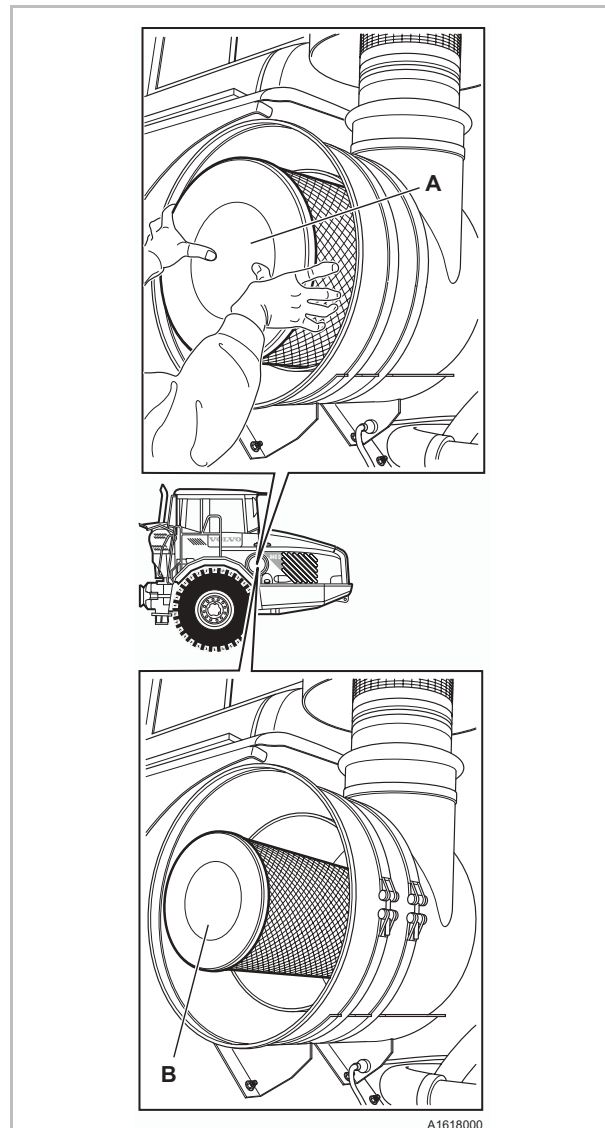


### The first stage is the main filter (A)

The main filter is a paper filter that can be cleaned and reused. This means that replacement is only necessary at long intervals.

### The second stage is a safety filter (B)

The safety filter is normally not active in the cleaning process. If the main filter is damaged and lets impurities through, they are trapped by the safety filter. Should this happen, the operator is notified by the operator information system long before engine damage can occur.



# Transmission

## Volvo PowerTronic

Volvo A25D and A30D are equipped with fully automatic Volvo PT 1560 planetary transmissions, with six forward gears and two reverse gears.

Six forward gears optimize rimpull over the whole speed range for high performance and production. Two reverse gears provide high rimpull and high speed in reverse.

A torque converter with lock-up is mounted between the engine and transmission. Rugged, heavy-duty planetary gears and clutch plates in the transmissions are designed for long service life.

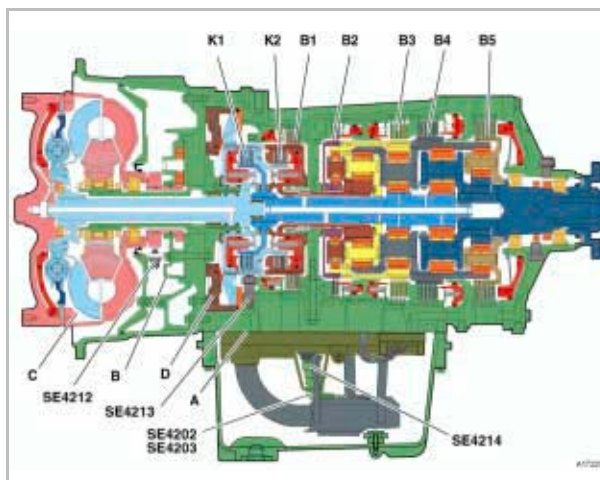
## Torque converter (C)

The torque converter features a built-in lock-up function. Torque amplification or speed difference between engine and transmission is only needed at the beginning of acceleration or when operating very slowly in rough off-road conditions. In all other operating conditions, a direct link, lock-up, is desirable between the engine and transmission to reduce power losses and fuel consumption. Automatic control of lock-up in combination with a well-matched torque converter gives optimized acceleration and low power losses as well as reduced fuel consumption.

## Automatic shift

Automatic gearshifting makes the operator's work much easier and the operator can concentrate on the job instead of shifting gears. This eliminates operator fatigue and increases safety and productivity. At the same time, the integrated transmission protection reduces the risk of operator error.

A computer (ECU) controls shifting and lock-up functions according to operating conditions. The right gear will always be engaged which gives faster work cycles and lower fuel consumption.



## Advantages

- Planetary transmission with low power losses and long service life.
- Fully automatic transmission is easy on the operator and gives increased productivity.
- Transmission protection functions increase safety and reduce the risk of operator error for longer transmission service life.
- Torque converter with lock-up for fast acceleration, low power losses and better fuel economy.

# Dropbox

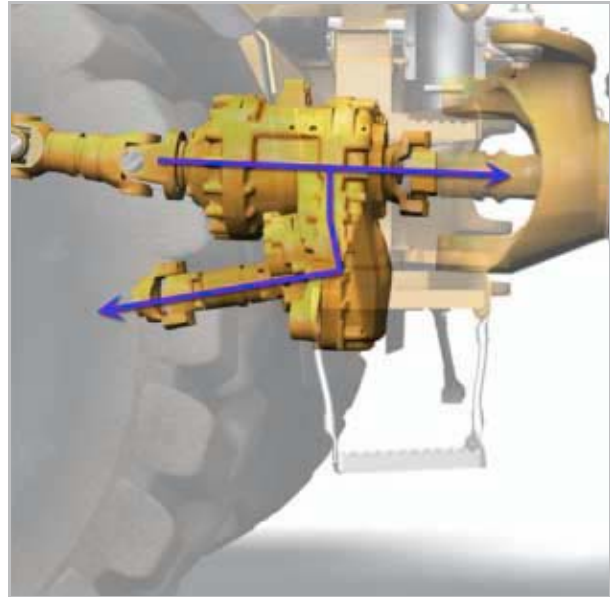
## Purpose-Built Dropbox

The dropbox in A25D and A30D is specifically designed for articulated haulers.

A Volvo dropbox provides higher ground clearance at the hitch since the output shaft for the bogie axle drive is placed higher than the output shaft to the front axle.

## In-line dropbox

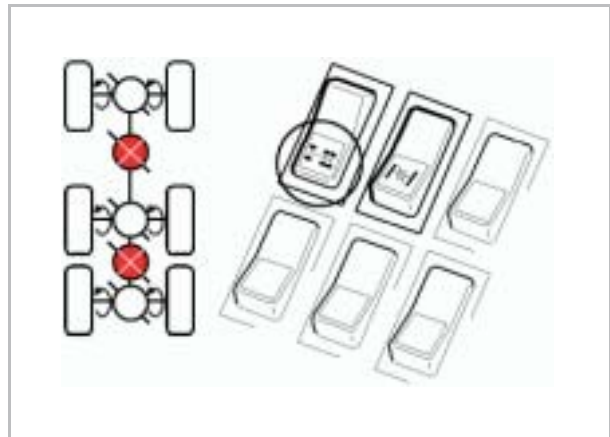
The dropbox has an in-line design with fewer gear wheels reducing power losses and fuel consumption



## Longitudinal differential

The longitudinal differential, located in the dropbox, permits the wheels on the front axle and bogie axles to rotate at different speeds. This means reduced power losses, reduced tire wear, smaller turning radius and better fuel economy.

The longitudinal differential is controlled by the operator, and it can be engaged or disengaged on the move so that the tractive force is distributed evenly to all drive axles. Activation also engages the third axle drive on the rear bogie axle (6x6). This gives significant improvement of the machine's traction and off-road performance.



## Advantages

- Design that permits high ground clearance at hitch.
- In-line dropbox reduces power losses and fuel consumption.
- Longitudinal differential reduces power losses, tire wear and fuel consumption.
- Longitudinal differential lock improves traction and off-road performance.
- Longitudinal differential lock can be engaged or disengaged on the move.



## Heavy-duty Volvo Axles

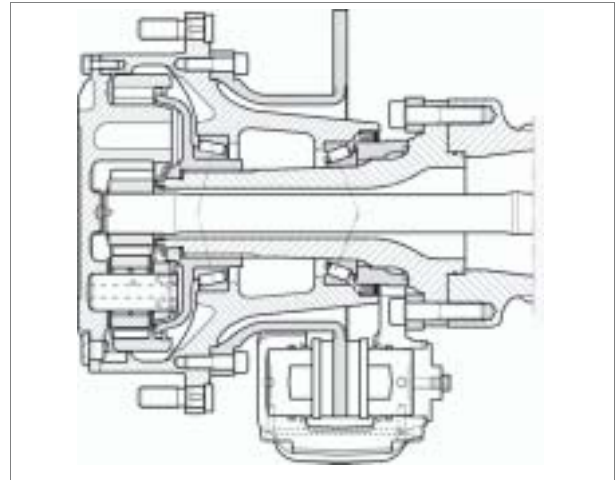
The Volvo-designed axles on the A25D and A30D are matched to the other components in the drivetrain for optimal performance. The axles are designed for use of optional wheel equipment recommended by Volvo, such as 65 profile tires.

### Fully-floating drive shafts

All working stresses are absorbed by the rigid cast axle housing. The drive shafts transfer only the torque, for maximum durability.

### Heavy-duty hub reductions

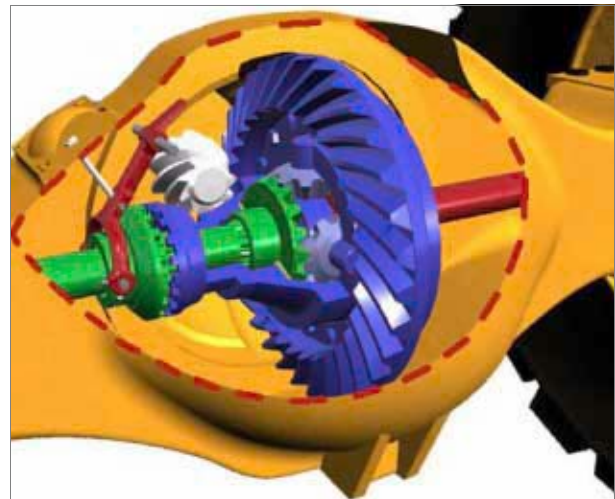
Proper gearing at the wheels reduces stress on the universal joints and drive shafts. This means that the dimensions and weight of these components can be minimized. The hub reductions are easily accessed for service and repair without removing the wheels.



### Differentials

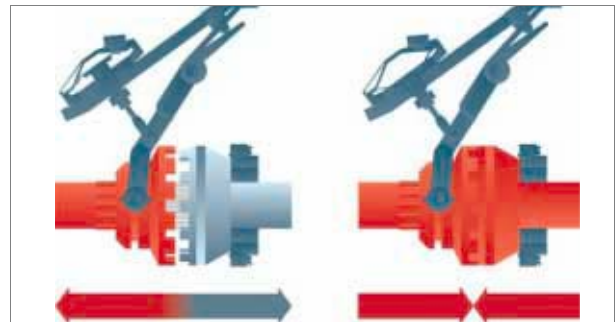
Each drive axle has a differential that permits the wheels to rotate at different speeds, which is essential for good cornering characteristics.

When locked, off-road performance improves and rimpull can be fully utilized on the wheel with the best traction.



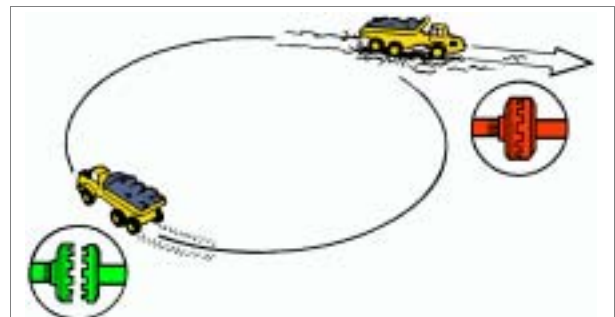
### Volvo 100% differential lock

All axles have 100% lockable differential locks of a dog-clutch design that physically lock the drive shafts together. The operator controls the differential locks that can be engaged and disengaged on the move.



### Advantages

- Heavy-duty axle housings for long service life.
- Fully-floating drive shafts increase reliability.
- Heavy-duty hub reductions ensure long service life for other drivetrain components.
- 100% lockable differentials give superior off-road mobility performance.
- Differential locks can be engaged and disengaged on the move.



# Drive Combinations

## 6x4 & 6x6

The A25D and A30D offer a choice between 4- and 6-wheel drive (6x4 and 6x6). 4-wheel drive is used in good operating conditions and results in less tire wear, less drivetrain wear and reduced fuel consumption. 6-wheel drive is used in tough operating conditions and on steep grades.

6-wheel drive and all differential locks can be engaged on the move without stopping the hauler, which means higher productivity and lower operating costs since the operator can always choose the optimal drive combination for the existing operating conditions.

### Five operating modes

The A25D and A30D are equipped with transverse differential locks on all axles, a longitudinal differential lock in the dropbox and a 6x6 lock in the front bogie axle

#### 1. 6x4, all differential locks disengaged

4-wheel drive is used in good operating conditions and results in less tire wear and reduced fuel consumption. This is the most frequently used drive combination.

#### 2. 6x6 with longitudinal differential lock in the dropbox

- Climbing grades.
  - Rough terrain.
  - Slippery underfoot conditions.
  - Downhill operation (automatic engagement when retarder pedal is pressed).
- This is the second most used drive combination.

#### 3. Transverse differential lock on front axle only

The front axle's differential lock may be engaged independently of the other differential locks and is used on slippery surfaces to enhance steering ability or together with 6-wheel drive on soft ground.

#### 4. 6x6 with longitudinal differential lock in the dropbox and transverse differential lock on front axle engaged

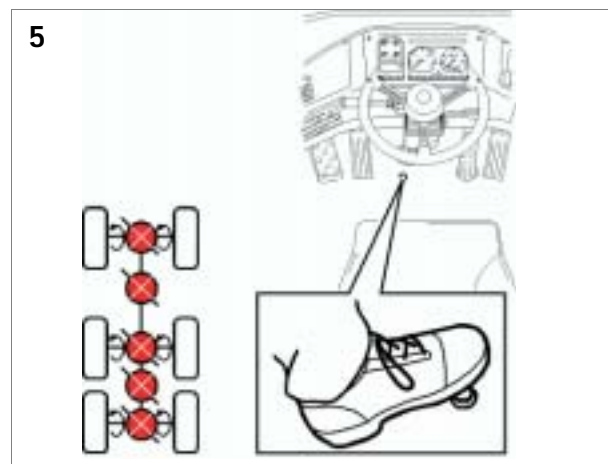
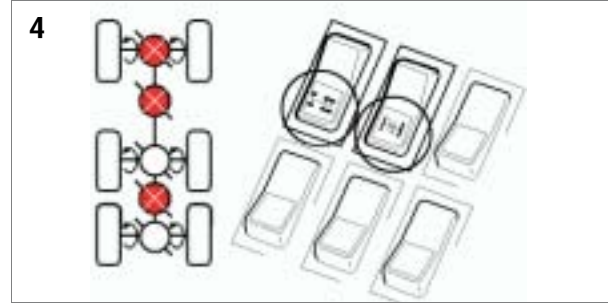
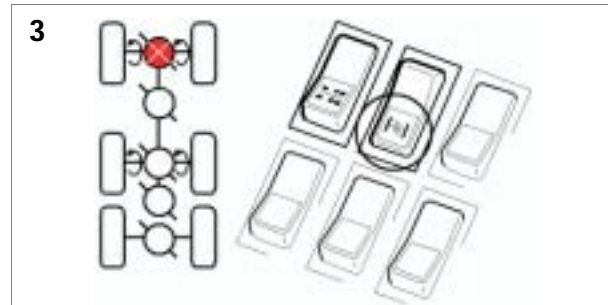
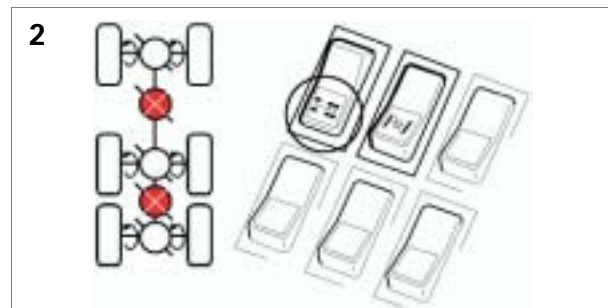
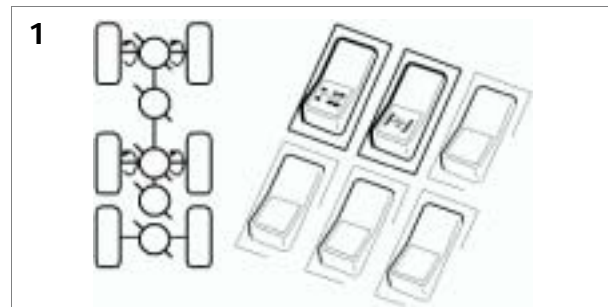
- Increases steering ability on slippery surfaces.
- Makes it easier to run the machine out of deep ruts.
- May be necessary in certain dumping situations, for example, dumping up a grade and in slippery conditions.

#### 5. 6x6, all differential locks engaged

Used in extremely tough operating conditions or as an extra traction boost if there is risk of getting stuck.

### Advantages

- 4-wheel drive for less tire wear, less drivetrain wear and reduced fuel consumption.
- One optimized drive combination for every type of operating condition.
- All drive combinations can be activated on the move.



## Tires are an important part of the drive-train and the articulated hauler concept.

The tire has to perform a variety of tasks and these tasks change during a work cycle and in different operating conditions.

Examples of these tasks are:

- Being capable of carrying the total hauler weight
- Provide good rimpull (traction) and be self-cleaning
- Reject heat generated during long, high speed hauls
- Have good protection against tire cuts
- Provide a comfortable ride
- Provide low ground pressure
- Provide good stability and long service life

To be able to handle these tasks, the A25D is standard-equipped with wide base tires and the A30D is standard-equipped with low-profile tires. Most of the tires are available in two classes, E2/3 tires for normal applications (general purpose tires) and E4 tires for more demanding applications, for example, where better cut protection is needed.

### E2/3 Wide base

80% profile tire with standard tread depth (100-125%). A general purpose tire suitable for almost all articulated hauler applications.

- Good self-cleaning and traction
- High average speeds (TMPH index)
- Long tread life

### E4 Wide base

80% profile tire with deeper tread (150%), suitable for work sites with relatively well-maintained haul roads and abrasive environments, i.e. gravel pits and quarries.

- Good cut protection
- Good comfort
- Extra long tread life

### 65-series (low-profile)

65% profile is wider than 80% profile but with the same diameter, suitable for almost all articulated hauler applications. 65 profile tires give:

- Lower ground pressure
- Improved flotation
- Increased stability
- Long tread life
- Better comfort

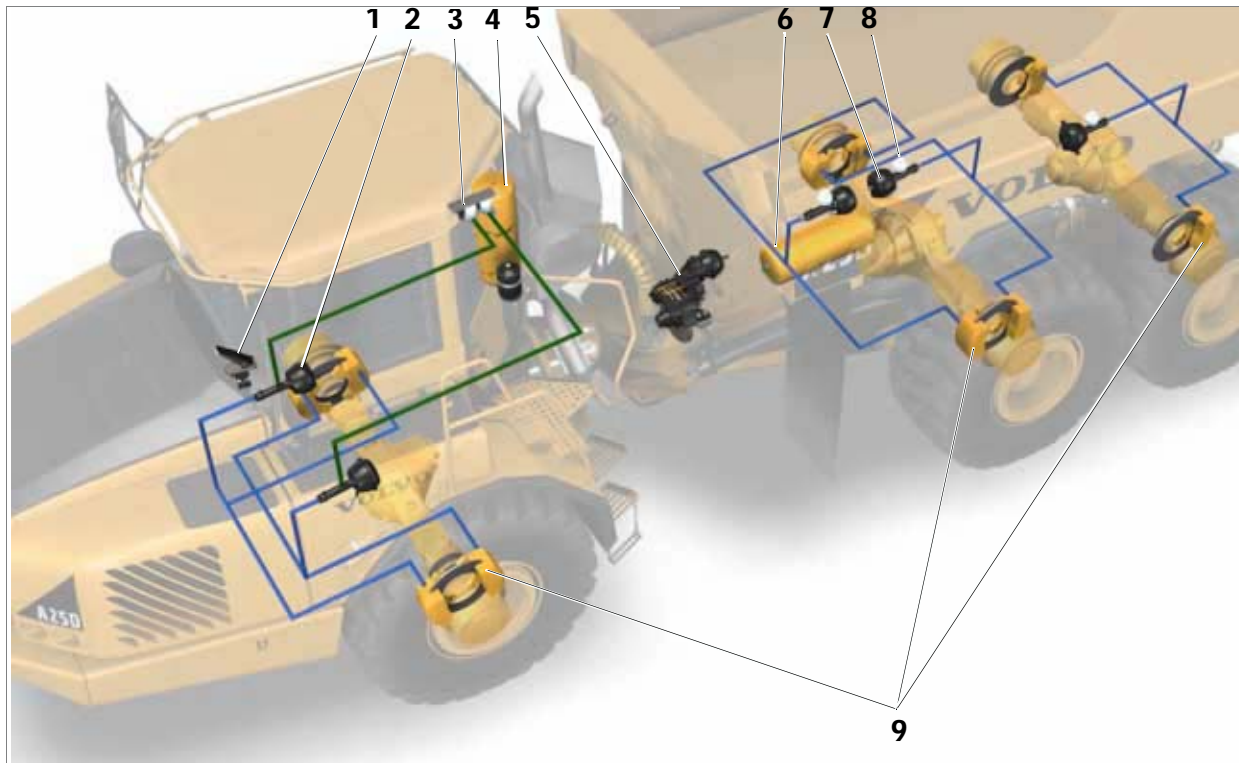
### Advantages

- Large and wide tires for good comfort, low ground pressure and excellent off-road mobility.
- Radial tires give long service life and low hourly cost.
- Large selection of tires suitable for all operating conditions and applications.



# Brake System

## Hydraulic Brake System



**Volvo pays considerable attention to safety and the A25D and A30D fulfill all known brake standards for off-road machinery.**

**A25D and A30D** are both equipped with dual-circuit air over hydraulic dry disc brakes on all wheels for good brake performance, long service life and wide safety margins.

### Advantages

- Well-protected components.
- Automatically applied secondary brake if brake pressure fails.
- Maintenance-friendly system.

- 1 -Service brake pedal
- 2 -Brake boosters, front axle brakes
- 3 -Brake fluid reservoirs, front axle brakes
- 4 -Air tank, front axle circuit
- 5 -Parking brake
- 6 -Air tank, rear axle circuit
- 7 -Brake boosters, rear axle brakes
- 8 -Brake fluid reservoirs
- 9 -Brake calipers



# Brake System

## Dual-circuit, air over hydraulic disc brakes

On both A25D and A30D, an engine-driven air compressor delivers operating pressure to the brake system.

Brake boosters convert the compressed air into hydraulic pressure that operates the dry disc brakes. As back-up, there are accumulators (air tanks) that provide brake system pressure if the engine or compressor should fail.

The system is divided into two independent circuits, one for the tractor unit and one for the load unit. If one circuit fails, braking capacity always remains in the other circuit. The brake system meets the requirements according to ISO 3450.

## Brakes, A25D and A30D

The dry disc brakes are well-protected and have a better self-cleaning function than drum brakes when operating in tough conditions. The disc brakes have a long service life, and act on all wheels to give smooth and comfortable braking.

## Reliable, well-protected system

Well-protected locations of air tanks, brake boosters, hoses and pipes give a safe system with few vulnerable points.



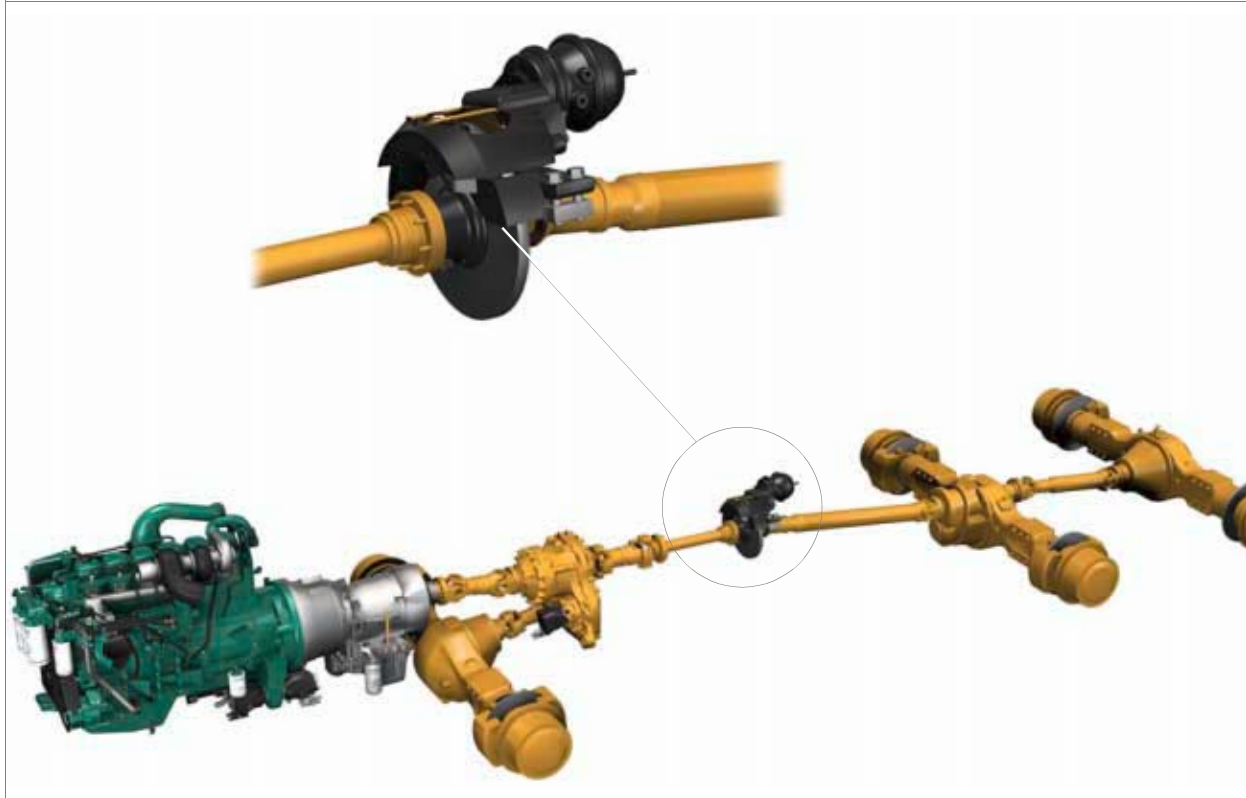
## Brake system/ malfunction indication

The warning light (1) and the operator's display (2) on the instrument panel provide reliable warning if a malfunction occurs in the brake system. Pressure gauges (3) for both circuits provide continuous information about the system air pressure. If the pressure drops, the operator communication system informs the operator via the display, central warning lights and buzzer.



# Brake System

## Parking Brake



### Dependable design

The parking brake on the A25D and A30D is an air-released, spring-applied disc brake on the propeller shaft behind the hitch. The longitudinal differential lock is always activated together with the parking brake to achieve braking effect on two axles. The parking brake can hold a loaded machine on grades up to 18%.

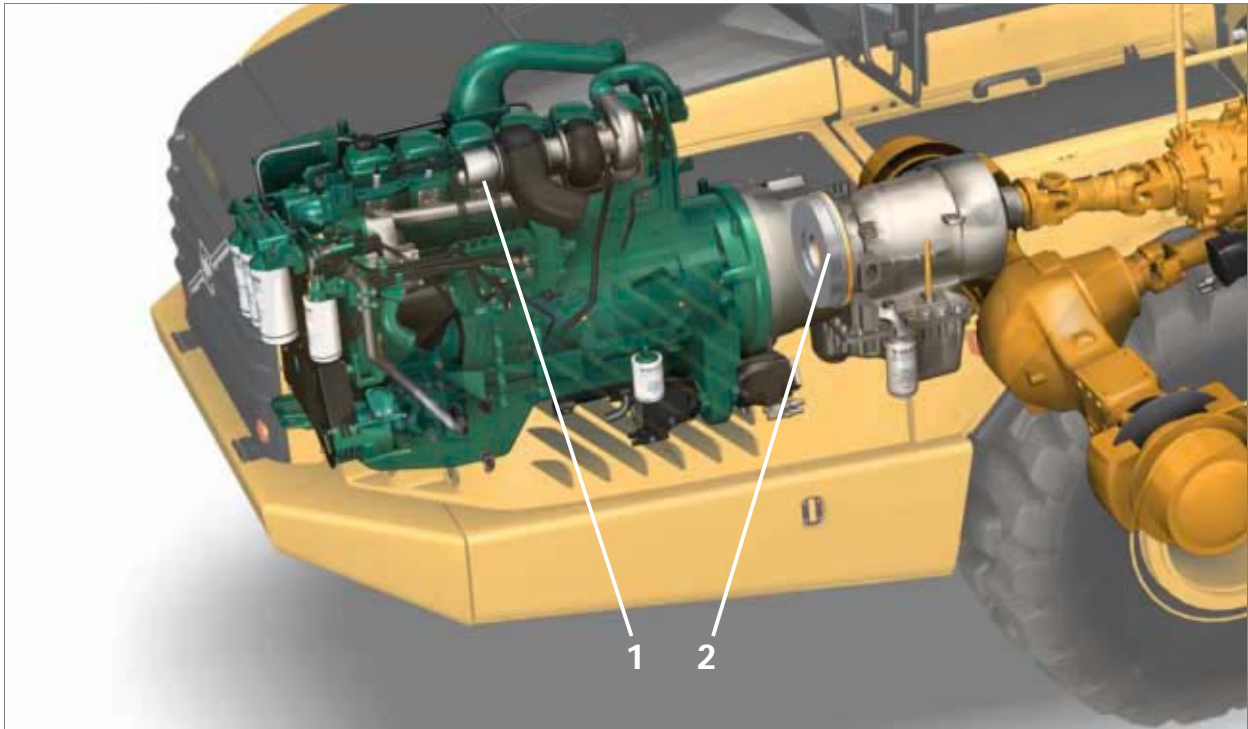


### Emergency brake

The parking brake is applied automatically if the brake pressure fails simultaneously in both circuits or if the key switch is turned off.



# Retardation Systems



**A25D and A30D are equipped with two retardation systems, the exhaust retarder and a hydraulic retarder built into the transmission.**

These systems provide fast and safe downhill hauls without using the service brakes, which gives higher productivity, reduced brake wear and lower operating costs. If the cycle is planned, the retardation systems can provide all the needed speed control during the whole work cycle, operating downhill, slowing down before curves, etc.

## **Exhaust retarder and retarder**

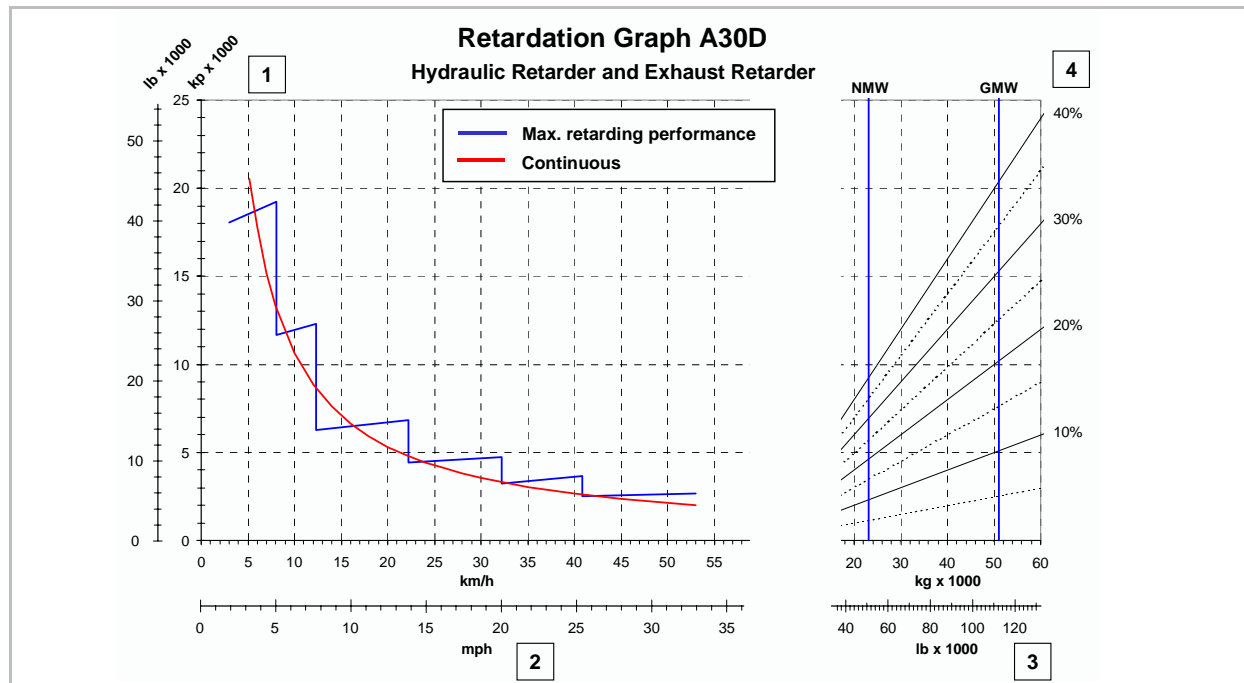
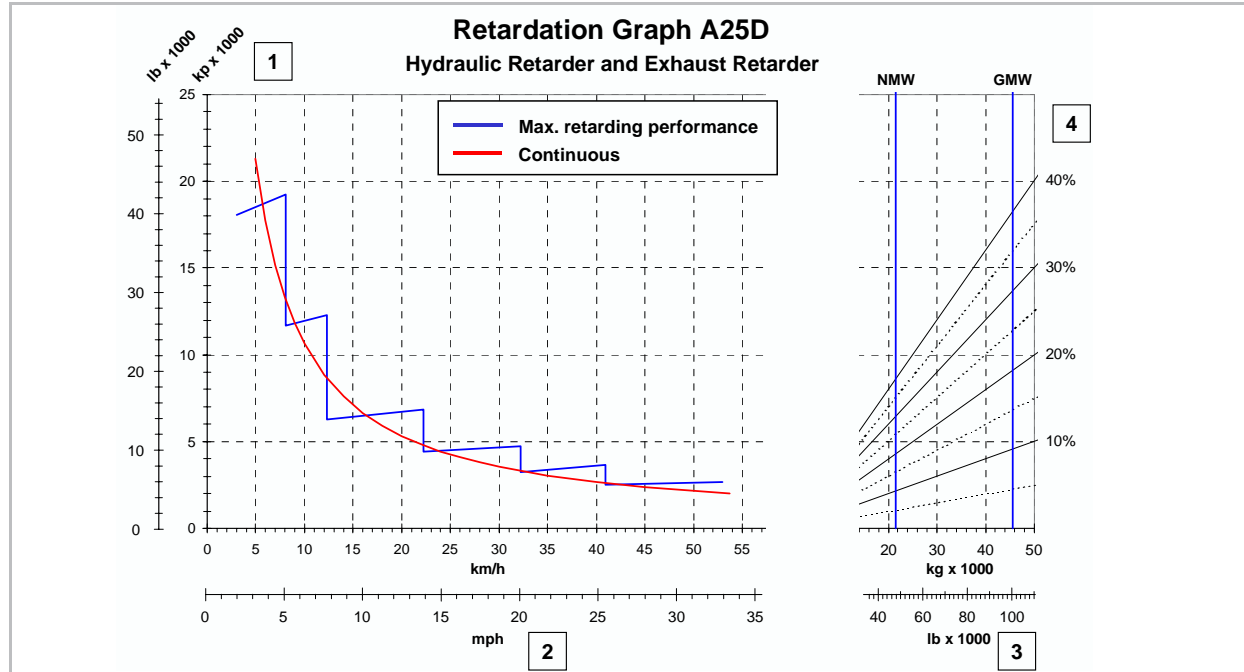
- 1 -Exhaust retarder
- 2 -Hydraulic transmission retarder

### **Advantages**

- Variable hydraulic retarder and exhaust retarder are standard
- Less service brake wear
- Higher productivity through higher availability
- Lower operating cost
- Easy and comfortable to use loaded or empty

# Retardation Systems

## Retardation Graphs



### INSTRUCTIONS

Diagonal lines represent the "total resistance" (here in downhill grades it is the total extra pushing force), which is the grade in % minus the rolling resistance in %. Charts based on 0% rolling resistance, standard tires and gearing, unless otherwise stated.

- Find the diagonal line with the appropriate total resistance on the right edge of the chart.
- Follow the diagonal line downward until it intersects the actual line for machine weight, NMW or GMW.
- Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.
- Read down for vehicle speed.

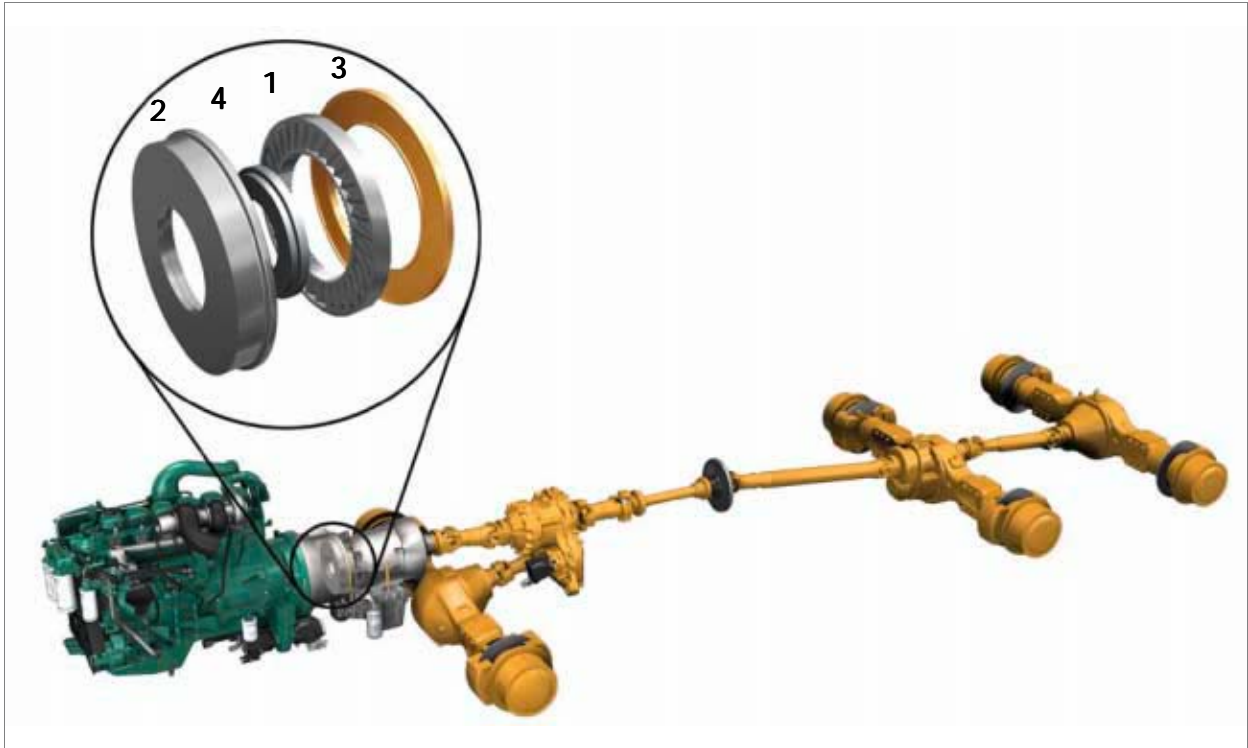
### RETARDATION

- Brake force in kp lbf
- Speed in km/h mph
- Machine weight in kg lbs
- Grade in % + rolling resistance in %.



# Retardation Systems

## Retarder



### Function principle

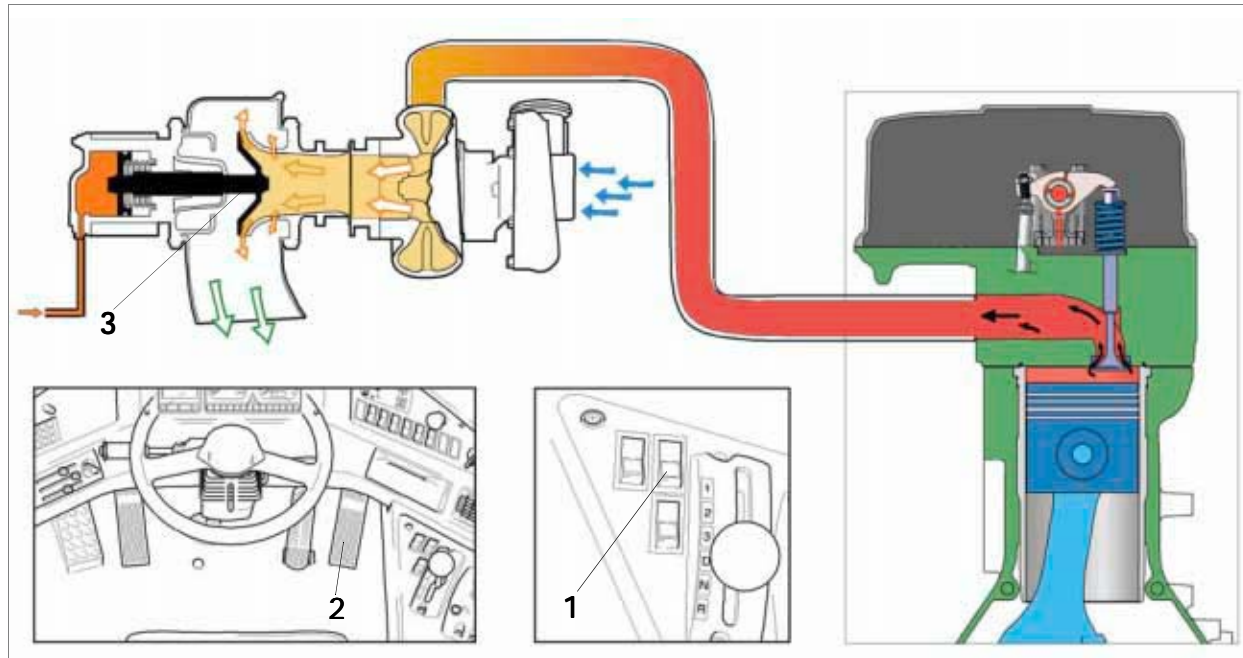
A25D and A30D have a variable hydraulic retarder, built into the transmission. The retarder consists of a pump impeller, called the **rotor (1)**, a turbine impeller, called the **stator (2)** and the **back-up bearing (3)**.

The rotor is driven by the vehicle's motion whereas the stator is bolted to the transmission housing and is stationary.

When the retarder is activated using the retarder pedal, the **piston (4)** seals off the oil space between the rotor and the stator. The trapped oil is set in motion by the rotor and is pressed against the stator. Since the stator is stationary, the oil flow is retarded and consequently brakes the rotor, and the vehicle. The heat that is generated in the oil by the braking force is effectively absorbed by the hauler's cooling system, which means that the retarder is constantly usable.

# Retardation Systems

## Exhaust Retarder



### Exhaust retarder, EPG

Activating the switch (1) automatically engages the exhaust retarder when the accelerator pedal (2) is released. An air pressure is directed to the EPG (3). The braking effect is achieved during the exhaust stroke as the EPG restricts the exhaust flow and creates a pressure between the piston and the EPG valve.

# Retardation Systems

## Retarder and Exhaust Retarder Activation

### Easy to use

Exhaust retarder and retarder should be used to control speed in all operating situations (except emergencies when service brakes should be used) to minimize service brake wear and for smooth and safe hauling.

The retarder and exhaust retarder can be activated in different ways: with the separate **retarder pedal (C)** or by incorporating automatic retarder action in the service brake function or/and exhaust retarder in the accelerator pedal.



### Retarder pedal

The retardation force is modulated to make it possible for the operator to optimize use of retardation force based on different operating conditions.

At the beginning of pedal application, the exhaust retarder is activated to give a quick braking response and then the variable retarder function is added together with the exhaust retarder until maximum retardation force is reached when the pedal bottoms.

This is a very comfortable and effective operating mode that gives higher productivity and less service brake wear.

### Exhaust retarder in accelerator pedal

Exhaust retarder action is applied when the accelerator is completely released if the **switch for exhaust retarder (1)** is activated.



### Retarder in service brake pedal

A greater braking force is applied at the beginning of the brake pedal application if the **switch (2)** incorporating retarder activation in the service brake pedal is on. The retarder remains activated for as long as the service brake pedal is applied.

An **indicator light (3)** on the instrument panel is activated when the service brakes are applied. This makes it possible for the operator to minimize the use of the service brakes when **switch (2)** is activated and retarder action is incorporated in the service brake pedal.

### Retardation capacity

Exhaust retarder and the hydraulic transmission retarder with continuous cooling give the A25D and A30D excellent retardation performance without using the service brakes. The graph on page 48 shows the highest possible continuous retardation without using the service brakes or overheating the cooling system.



# Main Systems



High quality and efficiency, hydraulic system with low power consumption. Gear-driven air compressor with low maintenance requirements. Well-protected electrical systems for a long trouble-free life. Multi-circuit and multi-sensing cooling system with variable fan speed for maximized cooling with low-power consumption.

## Advantages – hydraulic system

- State-of-the-art design and reliable components give high-reliability and long life.
- Variable displacement piston pumps consume power only as required, thereby reducing power losses and fuel consumption.
- Return oil filters with magnetic core ensure a clean and trouble-free system.
- Simplified pressure checks to maximize uptime.
- Electronic monitoring.

## Advantages – air system

- Long life with simple maintenance requirements.
- Air dryer is standard, reduces maintenance and increases uptime.

## Advantages – cooling system

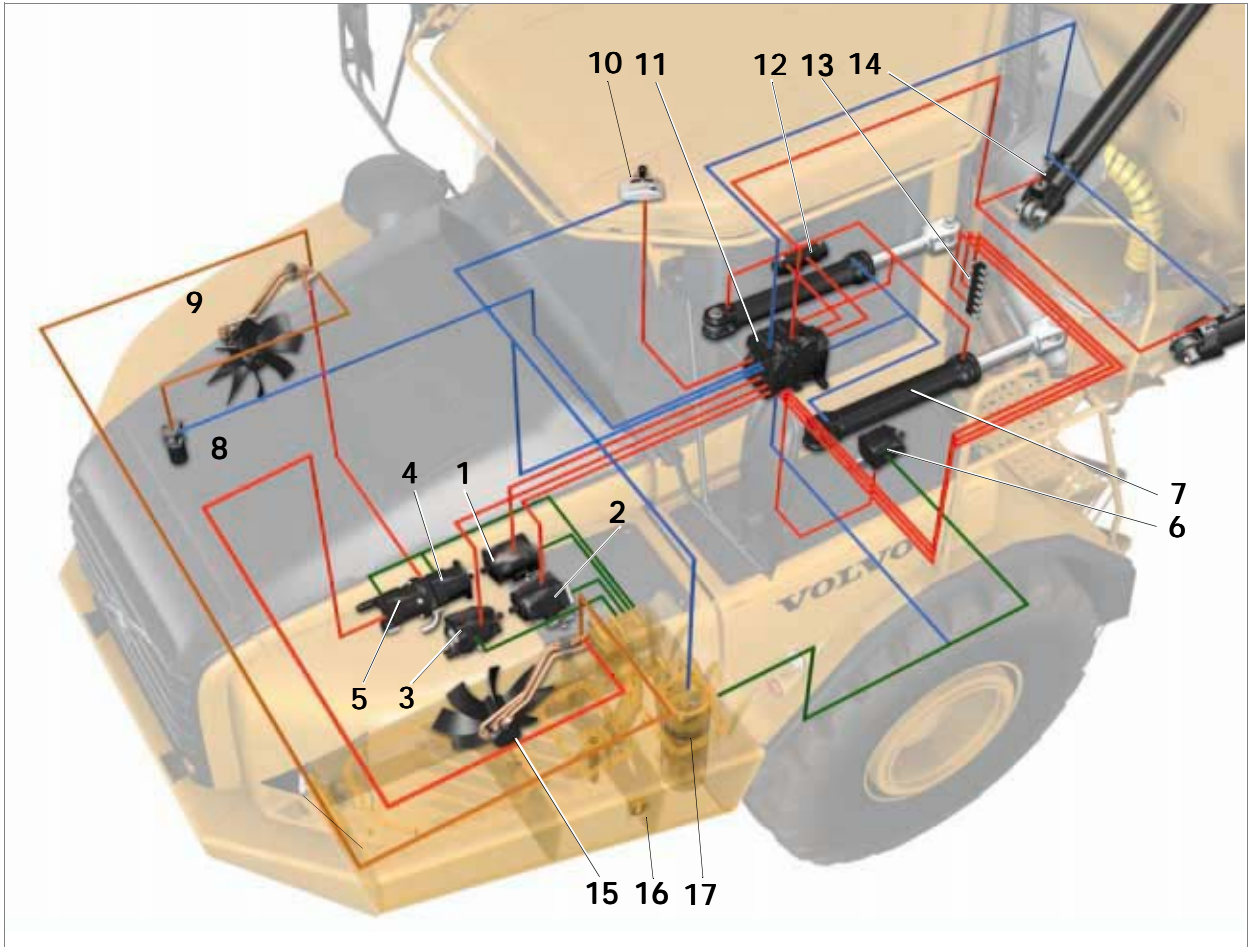
- Power and fuel saving, hydraulically driven variable speed fan.
- Multi-circuit/multi-sensor cooling system for rapid response cooling.
- Swing-out radiator simplifies service and maximizes uptime.
- High capacity, effective cooling in all operating conditions.

## Advantages – electrical system

- Central distribution box with all vital components for easy service.
- Cables and connections identified to simplify troubleshooting and repair.
- Connections protected from dirt and moisture, cabling in plastic conduits, and well-protected batteries for long-life and trouble-free system.
- Easily accessed battery disconnect switch makes servicing easy and safe.
- Effective lighting.



# Hydraulic System



## Efficient hydraulic system

Designed using strong and reliable components, the hydraulic system offers high efficiency, very high reliability and a long service life. A closed center system with variable displacement piston pumps only consumes power when it is needed to minimize power losses and fuel consumption.

## Hydraulic pumps

The A25D and A30D have five engine dependent variable displacement piston pumps. Three pumps work together to provide steering and dumping functions, while the others power the cooling fans.

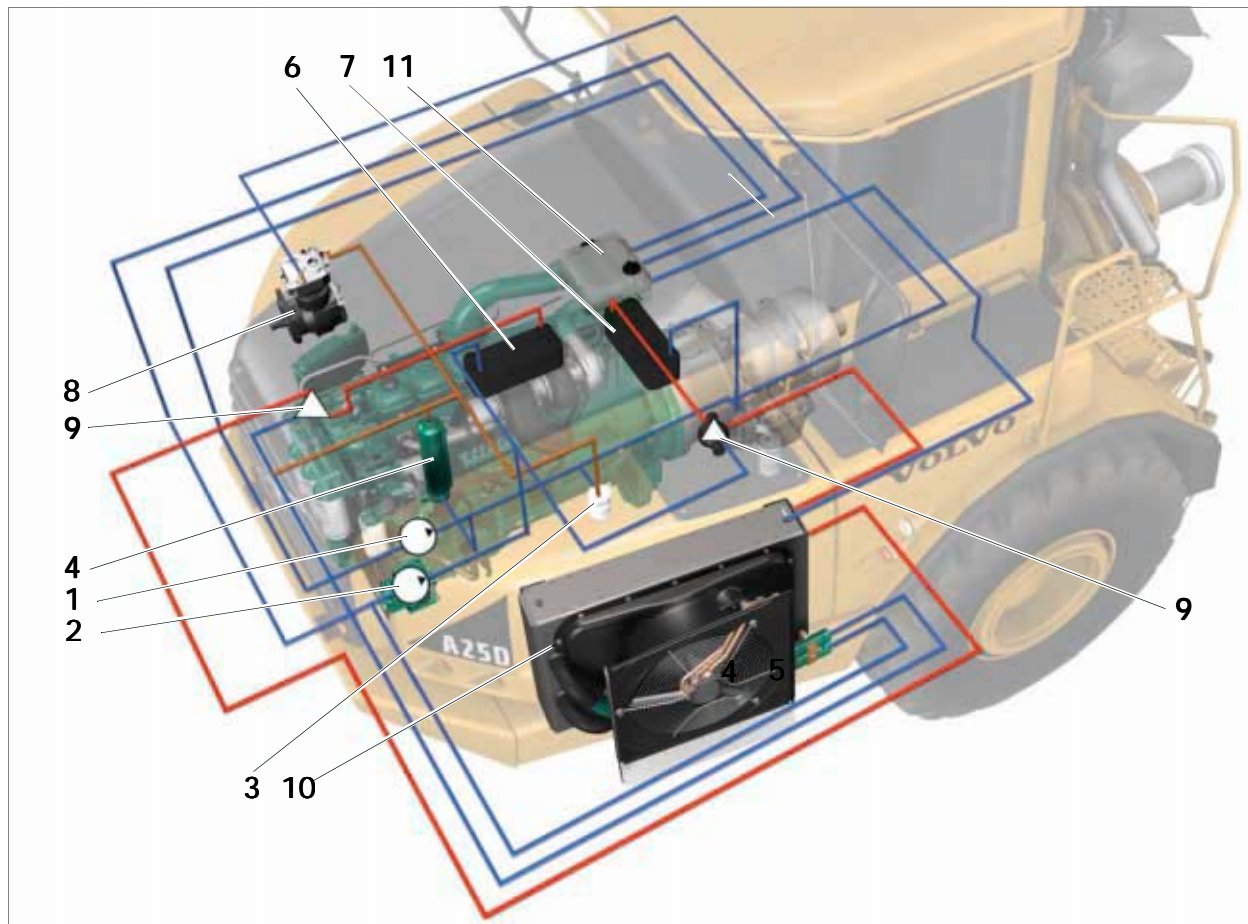
There is also a ground dependent pump for secondary steering. Pressure and flow vary automatically as needed. Circulation losses and heat generation are negligible.

## Service and cleaning

A return oil filter with magnetic core provides effective oil filtration. Remote pressure checks are simplified with quick-couplings throughout the hydraulic system.

- 1 -Hydraulic pump, steering/dumping
- 2 -Hydraulic pump, steering/dumping
- 3 -Hydraulic pump, steering/dumping
- 4 -Hydraulic pump, intercooler fan motor
- 5 -Hydraulic pump, engine radiator fan motor
- 6 -Hydraulic pump, ground dependent, steering
- 7 -Steering cylinder
- 8 -Filter, coolant fan motor/Ground dependent pump
- 9 -Intercooler fan motor
- 10 -Dump lever
- 11 -Steering/dumping valve
- 12 -Steering system damping valve
- 13 -Hydraulic pressure quick-coupling block
- 14 -Hoist cylinder
- 15 -Engine radiator fan motor
- 16 -Hydraulic oil tank
- 17 -Hydraulic oil return filter

# Cooling System



## Hydraulically powered cooling fan

The cooling fan is hydraulically driven with variable speeds based on cooling demands. The fan is side-mounted and can be swung out for service. The system responds quickly to the cooling needs of the:

- Engine
- Retarder
- Torque converter

## Primary and secondary circuit

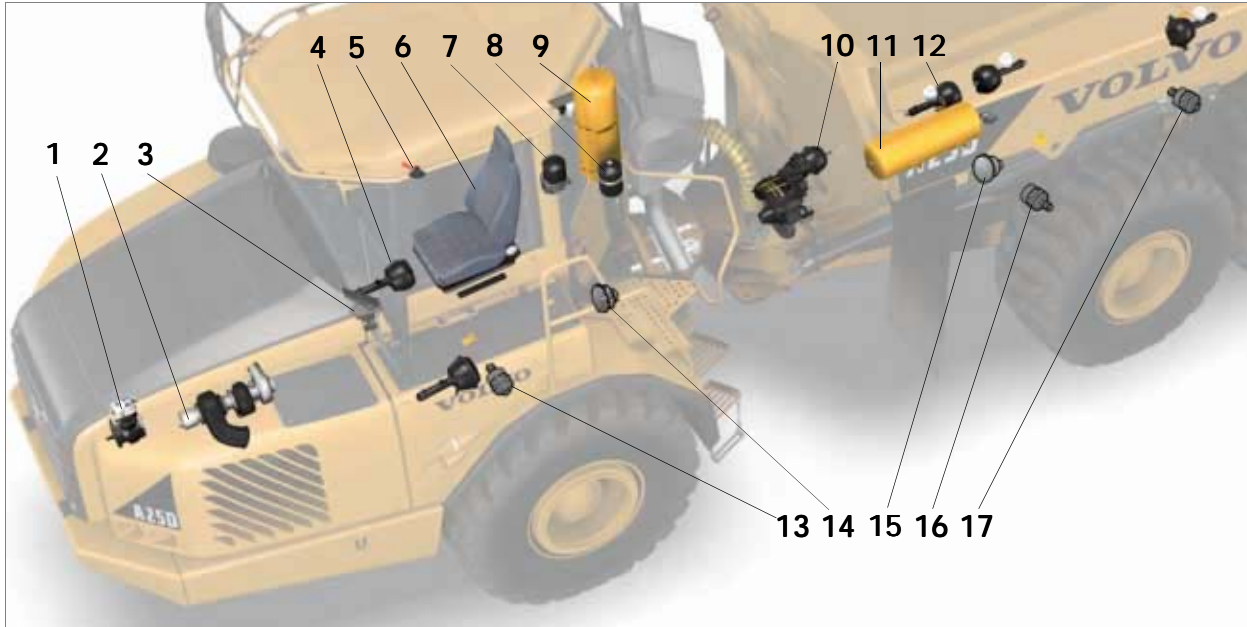
The cooling system is divided into primary and secondary cooling circuits. The primary circuit cools the engine and retarder, and also supplies air compressor and engine oil cooling, as well as circulating coolant through the coolant filter and cab heater. The secondary circuit includes the torque converter.

## Electronically controlled temperature

An ECU receives input from two temperature sensors and continuously controls the speed of the cooling fan. With two cooling circuits and sensors, the system reacts quickly to cooling needs. The fan rotates at reduced speeds most of the time, consuming less power, reducing fuel consumption and noise, leaving more power available for productive work.

- 1 -Coolant pump, primary circuit
- 2 -Coolant pump, secondary circuit
- 3 -Coolant filter
- 4 -Engine oil cooler
- 5 -Thermostat, secondary circuit
- 6 -Retarder cooler
- 7 -Converter cooler
- 8 -Compressor
- 9 -Thermostat, primary circuit
- 10 -Radiator
- 11 -Expansion tank

# Air System



## Simple and reliable system

Using an air system offers advantages as it has a simpler design compared to the design of a hydraulic system. The air system does not use return lines when activating functions. This gives a reliable system with fewer components.

A gear-driven, piston air compressor supplies air for the exhaust retarder, differential locks, 6-wheel drive, horn, operator's seat, parking brake and service brakes.

The air compressor has a liquid-cooled head, air-cooled block, and lubrication from the engine. An air dryer reduces need for maintenance as there's no longer a need for any anti-freeze fluid.

- 1 -Compressor
- 2 -Exhaust retarder
- 3 -Service brake pedal
- 4 -Service brake booster
- 5 -Parking brake lever
- 6 -Air suspended operator's seat
- 7 -Air dryer
- 8 -Air tank
- 9 -Air tank
- 10 -Parking brake
- 11 -Air tank
- 12 -Service brake booster
- 13 -Front axle, transverse differential lock
- 14 -Longitudinal differential lock
- 15 -6x6 lock
- 16 -Front bogie axle, transverse differential lock
- 17 -Rear bogie axle, transverse differential lock



# Electrical System

## 24 Volt system

The 24V, 1540W/55A alternator provides adequate charging, even at low engine speeds. Two 12V 170 Ah batteries, connected in series, are easily accessed and well-protected in a sealed compartment away from heat sources.



## Well-protected, high-quality wiring

All electrical wires are well-protected from wear and exposure. Strong and flexible plastic conduits protect cables and wires. Connections are sealed against dirt and moisture, and waterproof connectors meet tough IP67 DIN standards. Protective conduits are firmly connected to the main structure to avoid vibration damage.



## Effective lighting

Powerful lights provide effective lighting both in front of and behind the machine. The new projection headlights use the latest reflector technology available. High light output contributes to better utilization of the hauler, even in difficult visual conditions. High-efficiency halogen lights provide constant light intensity over their entire life.



## Easy access electrical distribution box

Spade type fuses and common relays are grouped in the distribution box located inside the cab. Each wire, splice socket and connection pin is systematically marked to make troubleshooting easier.



## Battery disconnect

The battery disconnect switch is located on the cab access ladder. This makes service and maintenance work both safe and simple, and also prevents discharge of the batteries if the machine is parked for an extended period of time.





# Electrical System

## Possibilities with New Technology

The use of new technology in the electronic system for the A25D and A30D gives great possibilities to increase the vehicle's level of intelligence.

The machine can be adapted to the user's wishes using the **Software Options**, and the operator can receive continuous information about machine status. The improved diagnostic possibility means easier, faster and safer troubleshooting

## VCADS Pro

Beginning with the articulated hauler D-series, Volvo CE will start to use the Volvo common aftermarket tool VCADS Pro. VCADS Pro is an abbreviation of Volvo Computer Aided Diagnostic System Professional.

Volvo Truck has been using VCADS since 1993. VCADS Pro is used by Volvo Trucks, Volvo Bus and, also within Volvo CE.

VCADS Pro is a tool for the service mechanic. It consists of a heavy-duty, rugged portable computer with VCADS Pro software.

### Main features

VCADS Pro has two main features, software programming and test/diagnosis.

- The software programming module is used to upgrade/replace the software in the machine's electronic control units (ECUs).

- The test module consists of several separate tests that the mechanic can use when troubleshooting the machine. An example of a test is the cylinder compression test. When performing a cylinder compression test, VCADS Pro interacts with the Engine ECU. It takes about five minutes to perform his operation. A traditional compression test on a D10B engine takes approximately seven hours. This is a good example of how we can use the machine's increasing level of intelligence to reduce service downtime.

### Service and programming socket

The Contronic service socket and PC service socket are connected to the information bus and are used for communicating with external equipment.

VCADS Pro, the PC-tool used for:

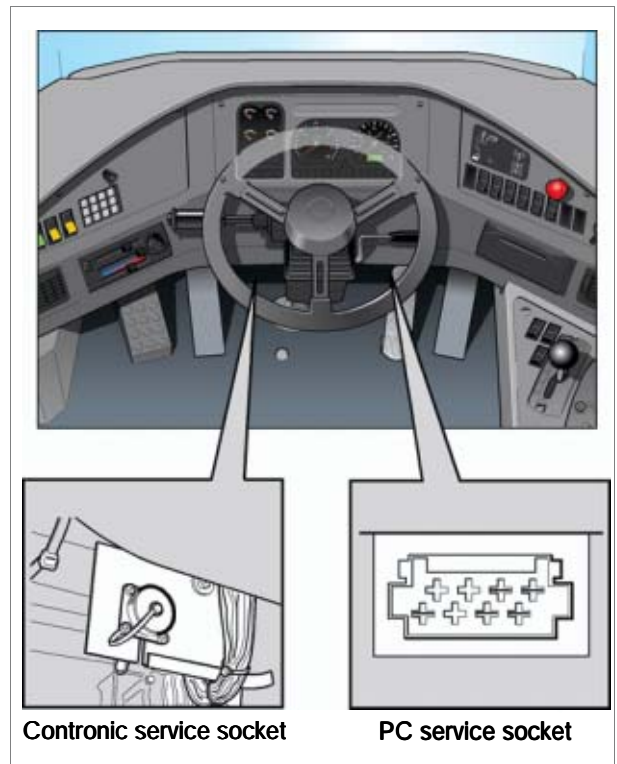
- Programming control units
- Downloading vehicle parameters
- Reading error codes
- Testing and checking functions/components

Contronic service display unit is used for:

- Reading error codes
- Setting certain customer parameters
- Showing machine information/status of engine, transmission, dropbox and hydraulics
- Showing software (program) version in control unit
- Showing status of inputs and outputs on control units

## SOFTWARE OPTIONS

- BODY UP (HOLD GEAR)
- ENGINE SHUT DOWN TIMER
- ENGINE HIGH IDLE SPEED CONTROL
- EXTERNAL ENGINE STOP
- EXTERNAL CENTRAL WARNING
- EXTERNAL BUZZER
- ANTI-THEFT PROTECTION (PIN CODE)



# Service

## Designed for Serviceability

### More time for production

The A25D and A30D are designed for easy service and maintenance, ensuring maximum time for productive work with minimum downtime.

### Commonality

A high degree of commonality in components, spare parts, accessories and tools is an important advantage, particularly if the machine fleet contains a number of Volvo machines.



### Normal service will not be resumed

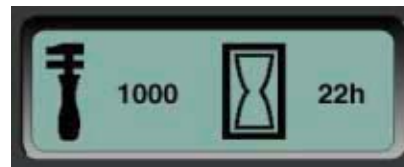
The A25D and A30D haulers have NO daily or weekly grease points. Steering cylinder and steering joint bearings as well as the hitch bearings are greased for life.

Few and easily accessed grease fittings, 90° tilt-up hood, swing-down front grill and longer service intervals all contribute to simple maintenance.



### Lower maintenance costs with the Volvo CE Operator Communication System (OCS)

More effective monitoring with OCS can give higher availability. The cab display provides clear information when it's time for any periodic service.



### Quick level checks – on the instrument panel

The Volvo A25D and A30D are equipped with electronic level checks for engine oil, transmission oil, hydraulic oil and radiator coolant. All level checks are performed automatically. A warning is shown on the display only if a value deviates from normal.



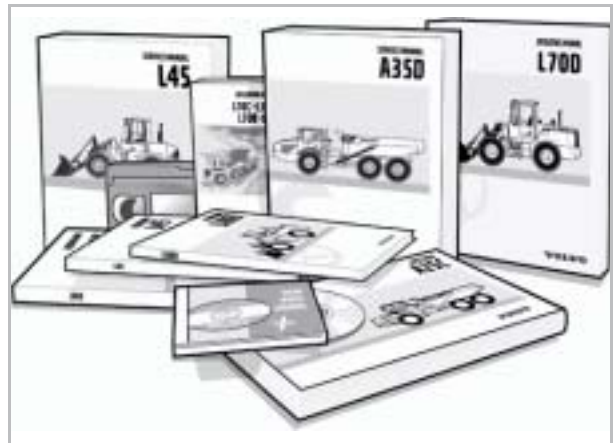
## Matris – a system for analysis

Operational data from the ECU can be transferred to a PC equipped with the Matris software. Matris is PC-based system for analysis of the information from the vehicle ECU. This information is good guidance for both service personnel and customers as it shows how the machine operates in a certain application. The information is shown graphically on the PC screen. Of course, deviations from normal values can also indicate that something needs to be adapted for the application in question.



## Quality extends beyond the machine itself

The Volvo haulers come with detailed and understandable service and spare parts manuals. There is also comprehensive information and training materials dealing with all aspects of machine use.



# Service

## Service and Maintenance Intervals

### 10 h

Warning lights, function	Check
Brake function	Check

### 50 h

9 -Brake system, fluid	Check level
------------------------	-------------

### 250 h

4 -Belts, tension	Check
6 -Propeller shafts	Grease
7 -Dumping/tailgate	Grease
8 -Hoist cylinder bearings	Grease
1 -Fuel system water trap	Drain

### 500 h

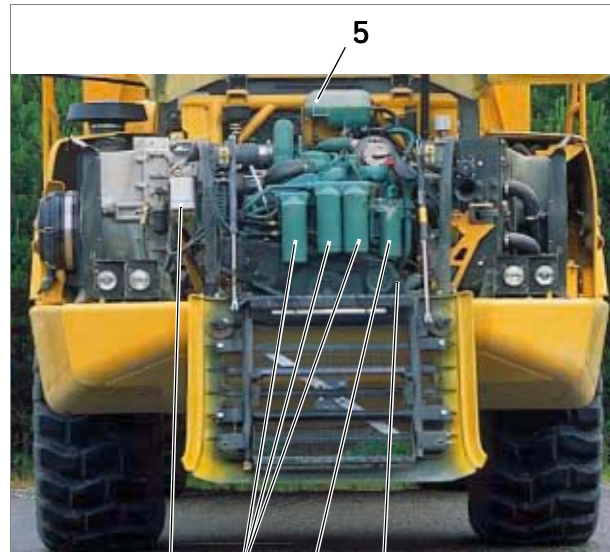
10 -Axle oil	Check level
Propeller shafts	Grease
Brake pads	Check
5 -Anti-freeze	Check
Tire pressure	Check
2 -Engine oil/filter	Change
Fuel tank	Drain
Steering joint	Check clearance

### 1000 h

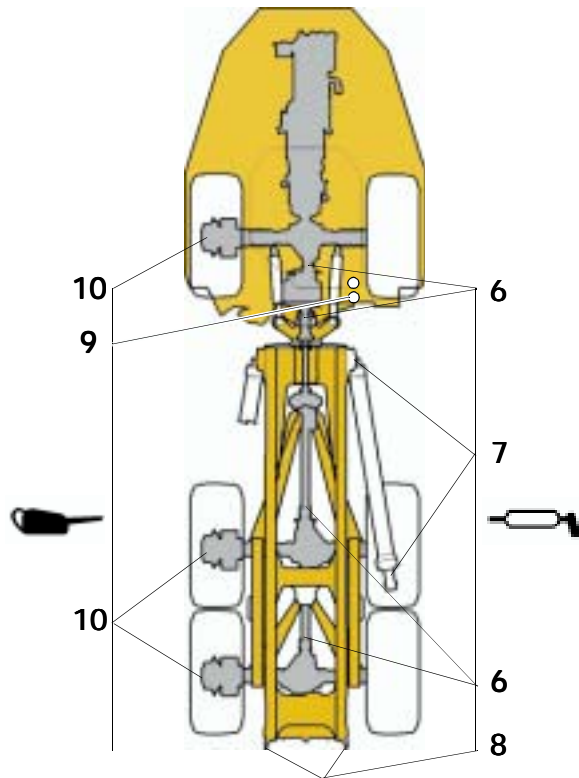
Parking brake, pads	Check
Dumping joint	Check clearance
Transmission oil/filter	Change
3 -Fuel, filter	Change
1 -Water trap, filter	Change
Coolant filters	Change
Breather filters, drivetrain	Change
Air dryer, cartridge	Change
Air cleaner, main filter	Change

### 2000 h

Engine, valve clearance	Check
5 -Engine coolant	Change
Hitch joint	Check clearance
Dropbox/axles, oil	Change
Hydraulic filters/oil	Change
Dropbox/PTO, strainer	Clean
9 -Brake system, fluid	Change
Oil-bath air cleaner, filter	Change
Air cleaner, filter	Change



1 2 3 4 5



See the Operator's Manual for detailed service and maintenance instructions.



# Optional Equipment

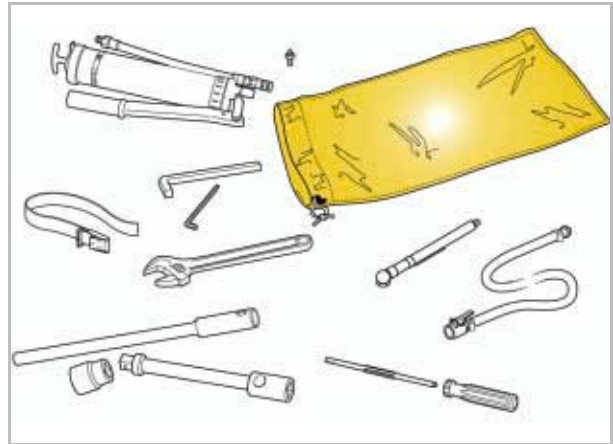
## Service/Maintenance

### Tool kit

Simplifies daily maintenance and service.

The tool kit contains:

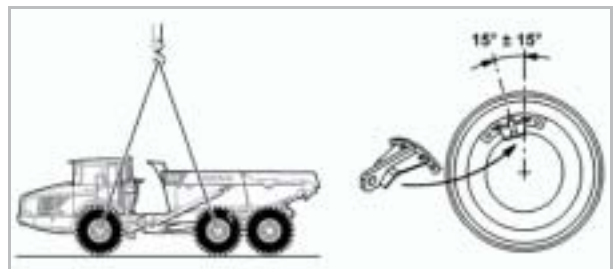
- tool bag
- grease gun
- Allen wrench
- socket wrench
- box end wrench
- screwdriver
- air pressure gauge
- tire inflation hose



### Lifting tool kit

Simplifies lifting of machine.

Applied on the wheels of the front axle and first bogie axle using special wheel nuts.



### Electric hood opening

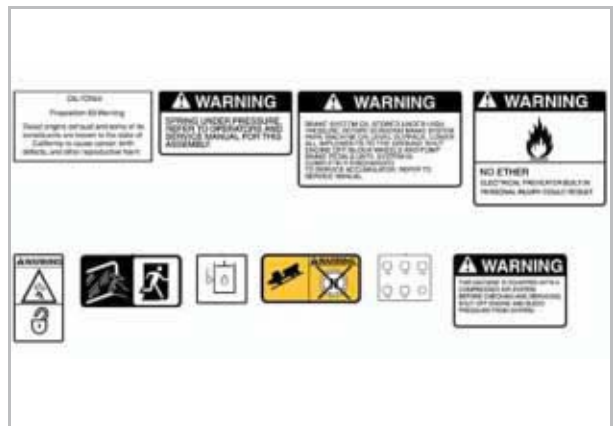
Makes hood opening easier and faster.

An electric pump opens the hood in addition to the hand-operated pump.



### Decal kit, US (NAFTA)

Decal kit supplement to fulfill legal requirements on the US (NAFTA) market.



# Optional Equipment

## Engine Equipment

### Air cleaner, heavy-duty, oil-bath type

Increases functional reliability in extremely dusty conditions.

### Air cleaner, heavy-duty , dry type (EON)

Increases functional reliability in extremely dusty conditions. Consists of an EON-type filter with high-cleaning ability.

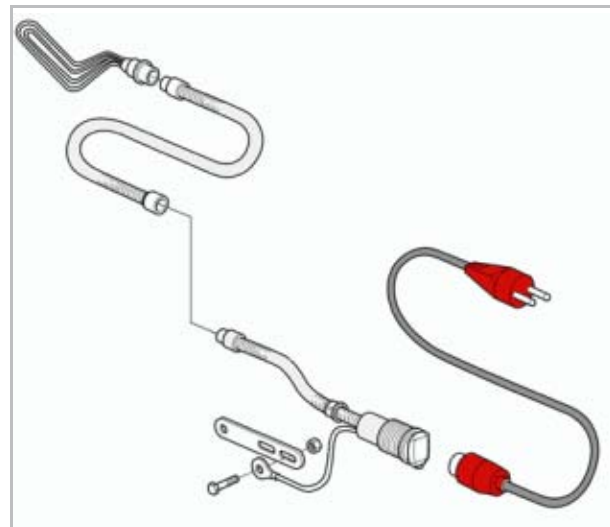
### Engine coolant preheater, electrical

Facilitates starting at low temperatures. Increases engine life.

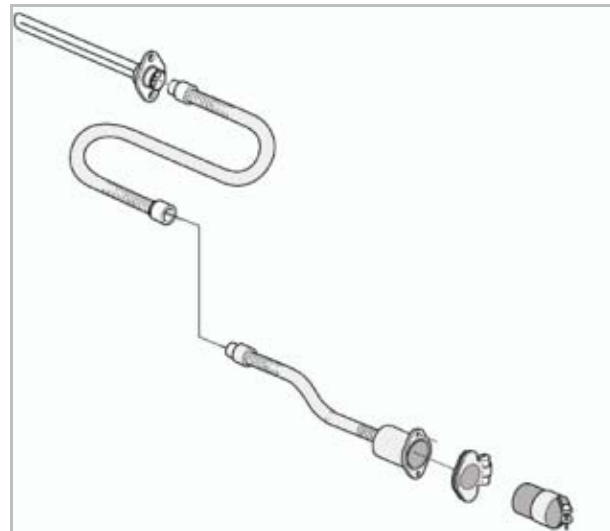
Heating coil that heats the engine coolant, mounted on the engine block.

Available in three different versions:

- 240V Europe



- 240V North America
- 120V North America



# Optional Equipment

## External engine emergency stop

External engine stop, easily accessed, mounted on the left fender. To facilitate quick engine shut-down in case of emergency.

## Engine shut-down timer

Delayed engine shut-down, easily activated with a switch on the instrument panel. The delay timer is set with the Operator Communication System.

When the function is activated and the ignition key is in OFF position, the engine runs for the selected time (pre-set to three minutes) and then shuts down.

This gives the turbocharger time to cool down and ensures lubrication of the turbo, while the operator locks the machine, etc.



## Engine high-idle speed control

Changes the engine's low-idle speed with a switch on the instrument panel. The low idle speed is set via the Operator Communication System.

This facilitates stationary work with attached equipment powered by the engine PTO, such as winches or additional electrical equipment.

Not usable while operating the machine.



## Electrical Equipment

### Back-up (reverse) alarm (smart alarm)

Audible warning signal when reversing the machine. Activated when reverse gear is selected. Self-adjusting sound level.

# Optional Equipment

## Rear vision system

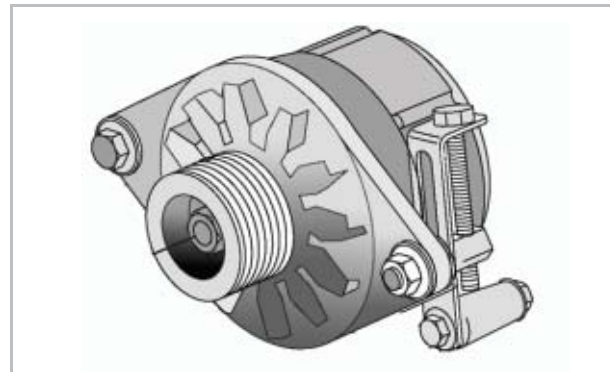
For safe and easy reversing.

The operator can see behind the machine with a video camera attached near the body dump hinge and a TV-monitor located in the overhead console. Cable kit included.



## Alternator, heavy-duty, 80A

Covered alternator with higher capacity for hard climate and working conditions.



## Rotating beacon

Rotating beacon with amber light. Equipment consists of beacon, switch, etc.

Increases safety for the operator and others when the machine is working close to traffic. The beacon can be lowered when not in use. There is no increase in total height for transport.

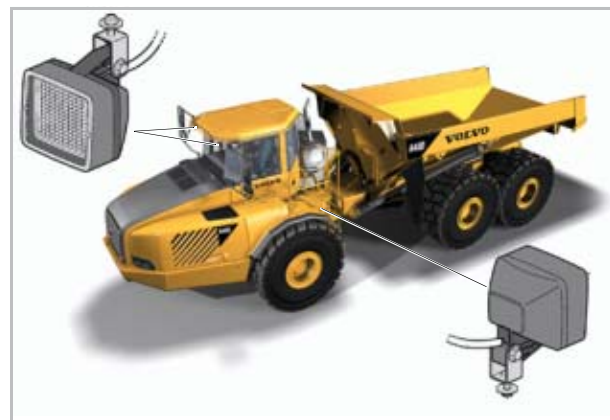


## Work lights, roof-mounted

Two halogen lights mounted on the top front corners of the cab are well-protected.

## Rear work lights, fender-mounted

Two halogen lights mounted facing the rear on the cab fenders.





# Optional Equipment

## Headlights for left-hand traffic

Asymmetrical headlights for left-hand traffic.



## Anti-theft protection

A four-digit code must be entered via the Operator Communication System to enable engine start.

The anti-theft protection may be deactivated and the code may be changed with a Volvo service tool.

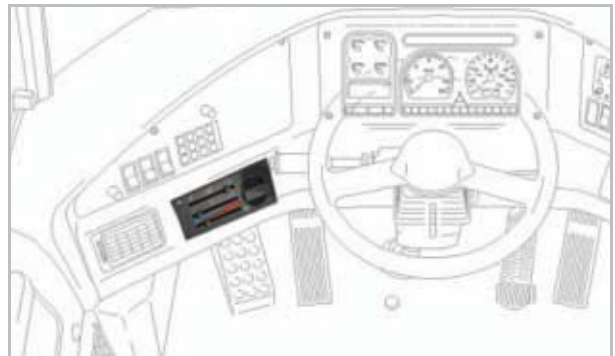


## Cab Equipment

### Air-conditioning

The operator determines the working climate. The temperature is infinitely adjustable with a mix of warm outside air and cooled cab air.

The equipment consists of cooling core, compressor, condenser, dryer, pressure monitor, hoses, etc.



### Radio installation kit

Voltage converter and wiring harness for radio and 12V outlet. Additional voltage converter for memory function in radio.

The kit consists of two loudspeakers, aerial, voltage converter and wiring harness.

# Optional Equipment

## Volvo radio

Volvo stereo (2x8 Watt) radio/cassette deck with anti-theft device (code lock).

The radio has three wavelength bands; U (FM), M and L, with programmable pre-settings. Automatic or manual frequency search, auto-loudness and controls for bass, treble and balance.

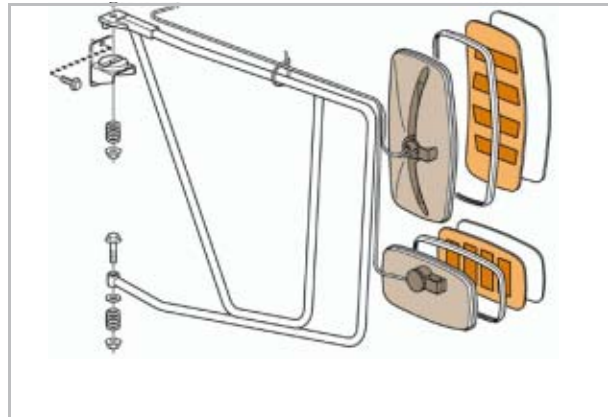
The cassette deck has fast forward and rewind as well as auto-reverse function.

(\* Must be combined with radio installation kit)

## Electrically heated rearview mirrors

Keeps the rearview mirrors free from mist and ice in damp or cold weather and when working underground.

The rearview mirror's glass is equipped with a heating coil on the back. A switch and control light are located on the instrument panel.



## Operator's seat, air suspended, electrically heated

For enhanced operator comfort.

## Operator's seat armrests

Armrests for enhanced operator comfort.

## Head restraint, operator's seat

Head restraint for enhanced operator comfort.



## Instructor's seat with seat belt

For enhanced instructor comfort and safety.



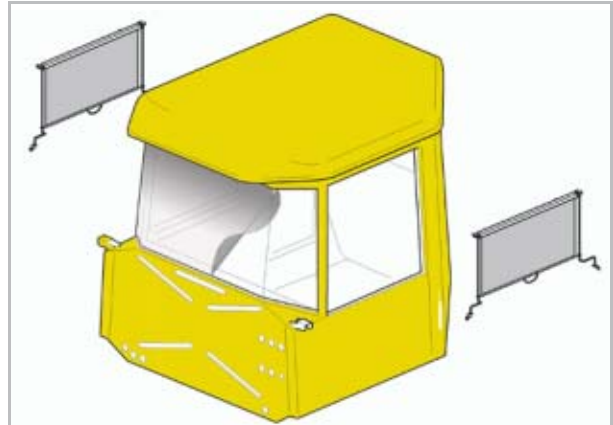
# Optional Equipment

## Sun shades, side windows

Two sun shades of the same type as on front window. Fits the forward side windows.

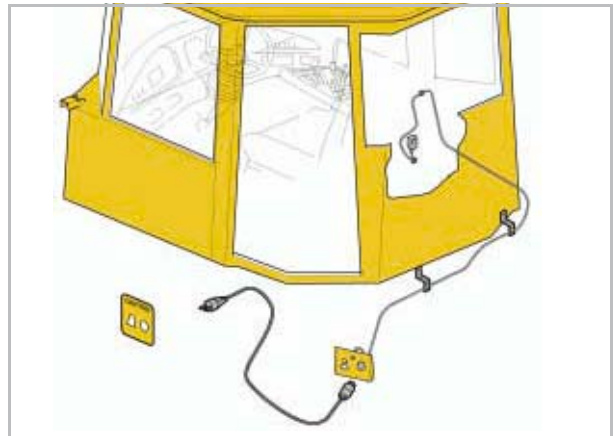
## Sun screen

A film applied to the cab windows. Reduces the sun's heat radiation into the cab by approximately 30%.



## Cab heater electrical outlet

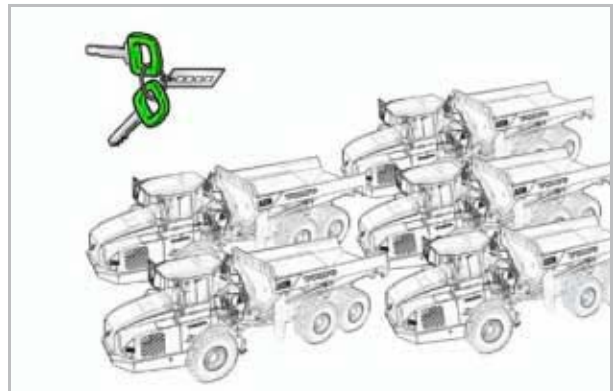
Cable with outlet, for cab heater.  
Available in 2 versions:  
240V for Europe  
120V for North America



## "One key" lock combination

When ordering machines with "one key" locks, all machines get the same key combination. This means that all machines can be started or locked with one set of keys.

**Note.** This is **NOT** a "master key." It can only be used on machines ordered with this option. Some insurance companies do not approve the use of "one key" locks!



## Body Equipment

### Standard body

Made of Hardox 400 steel.

Weight:

A25D: 3 540 kg (7 800 lbs)

A30D: 3 860 kg (8 510 lbs)

# Optional Equipment

## Wear plates (rock liners)

To extend body service life when hauling rock fill.

Made of 8 mm (5/16 in.) thick Hardox 450 steel.

Weight:

A25D: 950 kg (2 100 lbs).

A30D: 1 060 kg (2 340 lbs).

## Upper side extensions, 200 mm (8 in)

Make it possible to use maximum load capacity also when transporting light material.

Only to be used for materials that give maximum allowed load.

Heaped body volume (SAE 2:1):

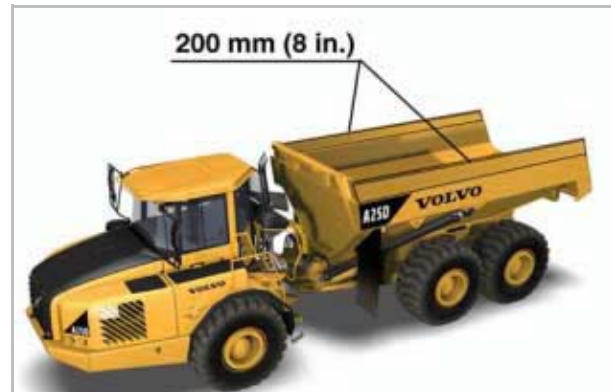
A25D: 16.8 m<sup>3</sup> (22.0 yd<sup>3</sup>)

A30D: 19.5 m<sup>3</sup> (25.5 yd<sup>3</sup>)

Weight:

A25D: 330 kg (730 lbs).

A30D: 340 kg (750 lbs)



## Underhung tailgate

Reduces spill when hauling, especially on steep grades.

Heaped body volume (SAE 2:1)

A25D: 15.3 m<sup>3</sup> (20.0 yd<sup>3</sup>)

A30D: 18.0 m<sup>3</sup> (23.5 yd<sup>3</sup>)

Weight:

A25D: 320 kg (710 lbs)

A30D: 330 kg (730 lbs)

## Overhung tailgate, wire-operated

Reduces spill when hauling, especially on steep grades. Designed for hauling gravel, sand and liquid masses with a density that will not give more than the allowed maximum load with a full body.

The gate is wire-operated, which gives a large opening.

Heaped body volume (SAE 2:1):

A25D: 15.6 m<sup>3</sup> (20.4 yd<sup>3</sup>)

A30D: 18.1 m<sup>3</sup> (23.7 yd<sup>3</sup>)

Weight:

A25D: 940 kg (2 070 lbs)

A30D: 970 kg (2 140 lbs)

(\* Cannot be combined with anti-skid chains)





# Optional Equipment

## Overhung tailgate, linkage-operated, A25D only

Reduces spill when hauling, especially on steep grades. Designed for hauling gravel, sand and liquid masses with a density that will not give more than the allowed maximum load with a full body.

Gives a small opening. Should not be used for transporting large rocks or boulders.

(\* Must be combined with underhung tailgate)

Heaped body volume (SAE 2:1):

A25D: 15.6 m<sup>3</sup> (20.4 yd<sup>3</sup>)

A30D: 18.1 m<sup>3</sup> (23.7 yd<sup>3</sup>)

Weight:

A25D: 940 kg (2 070 lbs)

A30D: 970 kg (2 140 lbs)

## Exhaust heating of body

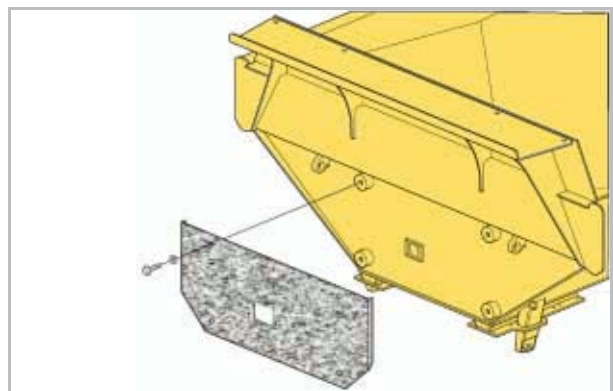
Reduces the risk of material freezing or sticking to the body.

The exhaust gases are routed along the bottom of the body via a flexible hose at the hitch and exit at the rear of the body.



## Heat shield, body front wall

Protects the front wall around the exhaust inlet when equipped with exhaust heating.



# Optional Equipment

## Extra front spillguard

Reduces spill from careless loading and when hauling on steep downhill grades.

The spillguard folds into the body when not in use (bolt-mounted).

Weight:

A25D: 170 kg (370 lbs)

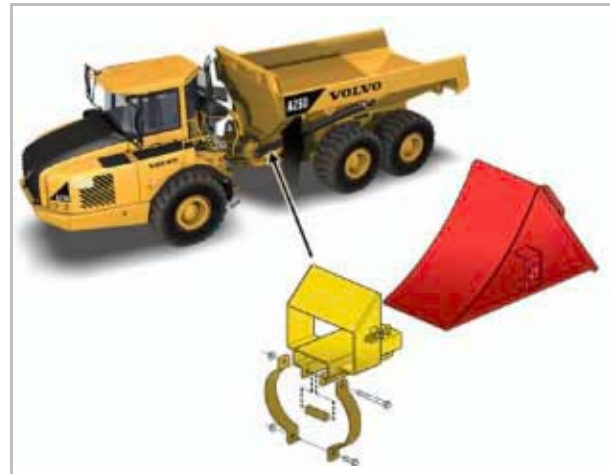
A30D: 180 kg (400 lbs)



## External Equipment

### Wheel blocks

Used to block the wheels when parking on slopes or during service work on the machine.



### Front mudguard wideners (A)

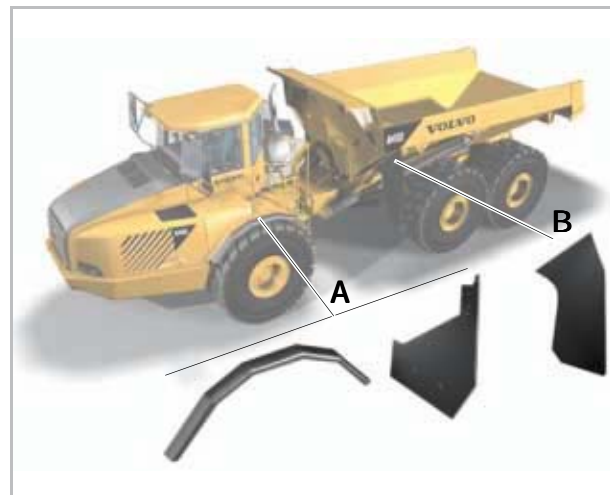
Reduces splash on side windows and rearview mirrors. Should be used together with low-profile tires.

Made of rubber.

### Rear mudflaps in front of bogie, off-road type (B)

Reduces dirt splash on footsteps, rear cab wall and side windows when operating in off-road conditions.

Made of plastic material.

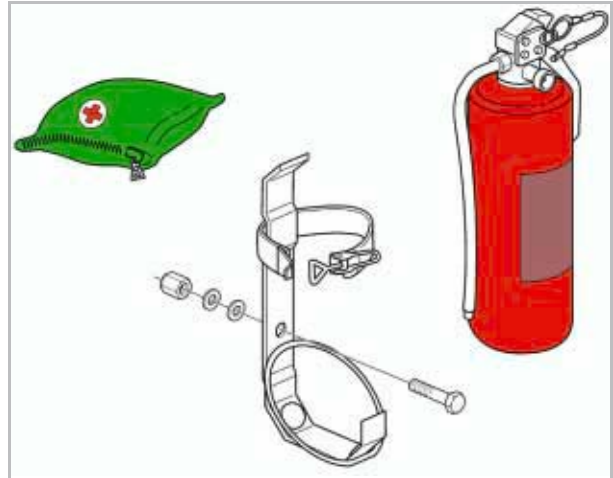


# Optional Equipment

## Other Equipment

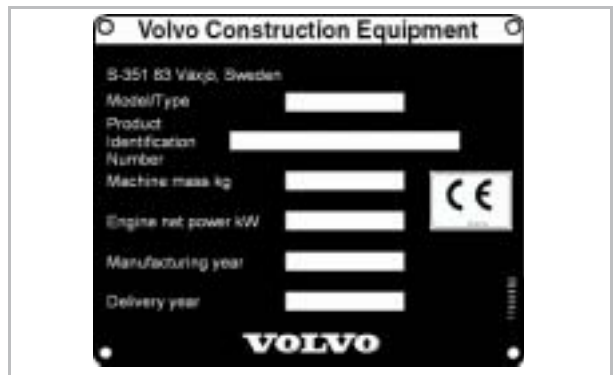
### Safety kit

Powder-type fire extinguisher (of Swedish standard type) and a First Aid Kit stored in a bag.



### CE-marking

Decal and certificate that certifies the machine according to the European Community Machine Directive (98/37/EEC).



### Hydraulic oil, biologically degradable

Hydraulic oil is replaced by a biologically degradable oil (ester fluid).



### Arctic climate kit

Gives the machine better capacity to operate in extremely cold climates.

Consists of:

- Low temperature resistant hydraulic hoses
- Low temperature resistant accumulators
- Cold climate oils in the engine, transmission, dropbox and axles as well as the hydraulic system
- Lubricant for cold climates

# Wheel Equipment

## Bridgestone

### VLT

General purpose tire, optimized for soft ground.

- Good self-cleaning and traction
- Manage high average speeds (TKPH/TMPH index)
- Deep tread gives long service life

### VLT is also available in low profile

Low-profile tires have the following features:

- Lower ground pressure
- Improved flotation
- Increased stability
- Longer tread life
- Better comfort

### VLT-S

Optimized for hard and abrasive ground.

- Good cut protection
- Good comfort
- Extra long tread life due to deeper tread

VLT



VLT-S



## GoodYear

### RL-2+

General purpose tire, optimized for soft ground.

- Good self-cleaning and traction
- Manage high average speeds (TKPH/TMPH index)
- Deep treads give long service life

### RL-2+ is also available in low profile

Low-profile tires have the following features:

- Lower ground pressure
- Improved flotation
- Increased stability
- Longer tread life
- Better comfort

### GP4B

Optimized for hard and abrasive ground.

- Good cut protection
- Good comfort
- Extra long tread life due to deeper tread

RL-2+



GP4B





# Wheel Equipment

## Michelin

### XADN

General purpose tire, optimized for soft ground.

- Good self-cleaning and traction
- Manage high average speeds (TKPH/TMPH index)
- Deep treads give long service life

### XADN is also available in low profile, XAD65-1

Low-profile tires have the following features:

- Lower ground pressure
- Improved flotation
- Increased stability
- Longer tread life
- Better comfort

### XADT

Optimized for hard and abrasive ground.

- Good cut protection
- Good comfort
- Extra long tread life due to deeper tread

XADN



XADT



XAD65-1





*Under our policy of continuous product development and 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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