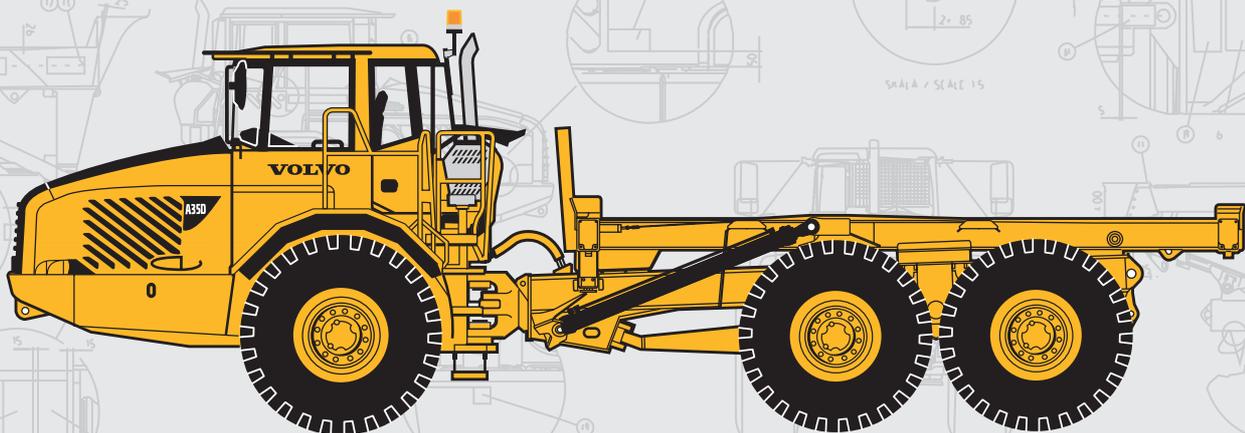


## VOLVO ARTICULATED HAULER

# A350

## CONTAINER HAULER



- **Engine output:**  
SAE J1995, Gross 289 kW (393 hp)  
SAE J1349, Net 285 kW (389 hp)
- **Load capacity:**  
32,5 t
- **Designed to handle 20 ft ISO container.**
- **Dumping angle 49°.**
- **Cab operated container lock.**
- **Volvo cab**, designed for high operator visibility, ergonomics and comfort.
- **Reduced maintenance time**, no daily or weekly grease points.
- **Electronic Operator's Communication System**
- **Volvo high performance – low emission**, electronically controlled direct injected, turbocharged, intercooled diesel engine.
- **Fully automatic planetary transmission**, electronically controlled.
- **Hydraulic retarder** integral in transmission.
- **Dropbox with longitudinal differential lock**
- **100% lock-up differentials.** One longitudinal and three transverse differential locks.
- **Front axle with three-point suspension.**
- **Volvo terrain bogie**, individually oscillating axles and high ground clearance.
- **Volvo Load & Dump Brake.**

# VOLVO

# The A35D Container Hauler in detail

## Service

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

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

**Service accessibility:** Fold-down front grill with access ladder to remote filter bank, located in front of engine. Large, 90° opening hood for total engine access. Remote drain hoses and swing-out radiator for easy cleaning.

## Fill capacities

Crankcase.....	50 l
Fuel tank .....	480 l
Cooling system .....	117 l
Transmission total .....	48,5 l
Dropbox.....	10,5 l
Per axle .....	48 l
Hydraulic tank .....	250 l

## Engine

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

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

**Engine brake:** VEB (Volvo Engine Brake) includes compression and exhaust brake.

Make, model .....	Volvo D12C ABE2*
Make, model .....	Volvo D12C ADE2**
Max power at .....	30 r/s (1 800 r/min)
SAE J1995 Gross .....	289 kW (393 hp)
Flywheel power at .....	30 r/s (1 800 r/min)
SAE J1349 Net, DIN 6271*** .....	285 kW (388 hp)
Max torque at .....	20 r/s (1 200 r/min)
SAE J1995 Gross .....	1 950 Nm
SAE J1349 Net, DIN 6271*** .....	1 915 Nm
Displacement total .....	12 l

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

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

\*\*\*) With fan operating at full speed, the flywheel power is 277 kW (377 hp) and maximum torque is 1 860 Nm which corresponds to DIN 70020.

The D12C engine is emission certified as a Family Engine with the following output data:

Rated power at .....	31,7 r/s (1 900 rpm)
SAE J1995 Gross .....	280 kW (381 hp)
Max torque at.....	20 r/s (1 200 r/min)
SAE J1995 Gross .....	2100 Nm

## Electrical system

All cables, sockets and pins are identified. Cables are enclosed in plastic conduits and secured to main frame.

Halogen lights. Prewired for options.

Connectors meet IP67 standard for waterproofing as necessary.

Voltage .....	24 V
Battery capacity .....	2x170 Ah
Alternator .....	1,54 kW (55 A)
Starter motor .....	7,2 kW (10 hp)

## Drivetrain

Volvo components, specifically designed for hauler applications.

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

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

**Dropbox:** Volvo design with high and low function, power take-off and differential with 100% lock-up function. Separate dropbox oil cooling.

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

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

**Configuration:** 6x4 or 6x6 drive, operator selectable on the move.

Torque converter.....	1,95:1
Transmission, Volvo .....	PT 1862
Dropbox, Volvo .....	FL 992
Axles, Volvo .....	AH 64

## Speed:

Low gear forward	
1 .....	5 km/h
2 .....	8 km/h
3 .....	15 km/h
4 .....	21 km/h
5 .....	27 km/h
6 .....	35 km/h

High gear forward	
1 .....	9 km/h
2 .....	13 km/h
3 .....	23 km/h
4 .....	34 km/h
5 .....	43 km/h
6 .....	56 km/h

Low gear reverse	
1 .....	5 km/h
2 .....	9 km/h

High gear reverse	
1 .....	8 km/h
2 .....	14 km/h

## Brake system

Fully hydraulic brakes on all axles. Two circuits. Well protected components.

Meets ISO 3450 and SAE J1473 at total machine weight.

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

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

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

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

**Retarder:** Hydraulic, infinitely variable, integrated in transmission. Total retarding capability including transmission retarder and exhaust retarder, see graph.

**Volvo Engine Brake:** Standard. Operator selectable application together with service brakes or when accelerator pedal is released. Always engaged together with retarder. Total retarding capability including transmission retarder and engine brake, VEB, see graph.

## Steering system

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

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

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

**Steering angle:** ±45°

## Suspension

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

**Front axle:** The front suspension consists of one rubber spring, a stabilizer and three shock absorbers on each side.

**Bogie:** Volvo's unique terrain bogie permits long suspension travel and independent wheel movement, keeps the body level, retaining the load.

## Cab

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

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

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

**Operator's seat:** Fully adjustable, mechanically or air suspended operator's seat with flameproof upholstery. Retractable seat belt.

**Trainer seat:** Standard, with seat belt and back rest.

**Sound level in cab:** ISO 6396 .. 72 dB (A) at max. speed..... 76 dB (A)

Weights		Ground Pressure			Load Capacity	
Operating weight includes all fluids and operator.		At 15% sinkage of unloaded radius and specified weights.			Total weight including container.	
	<b>A35D</b>		<b>A35D</b>			<b>A35D</b>
<b>Tires</b>	26.5 R25	<b>Tires</b>	23.5R25	775/65R29		
<b>Operating weight unloaded</b>		<b>Unloaded</b>			<b>ISO Container 20ft</b>	
Front	15 120 kg	Front	128 kPa	107 kPa	Load capacity	32 500 kg
Rear	10 830 kg	Rear	46 kPa	38 kPa		
Total	25 950 kg	<b>Loaded</b>				
Payload	32 500 kg	Front	139 kPa	116 kPa		
<b>Total weight</b>		Rear	178 kPa	148 kPa		
Front	16 440 kg					
Rear	42 000 kg					
Total	58 440 kg					
*) A35D with tires 775/65R29, add 100 kg/ axle						

### Hydraulic system

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

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

**Filtration:** Through two fibreglass filters with magnetic cores.

### Pump capacity per pump:

Engine-dependent ..... 143 l/min  
 Ground-dependent ..... 202 l/min  
 at shaft speed ..... 47,5 r/s (2 850 r/min)  
 Working pressure ..... 25 MPa

### Container frame

Each corner of the container frame is equipped with air operated container locks that are maneuvered from the cab.

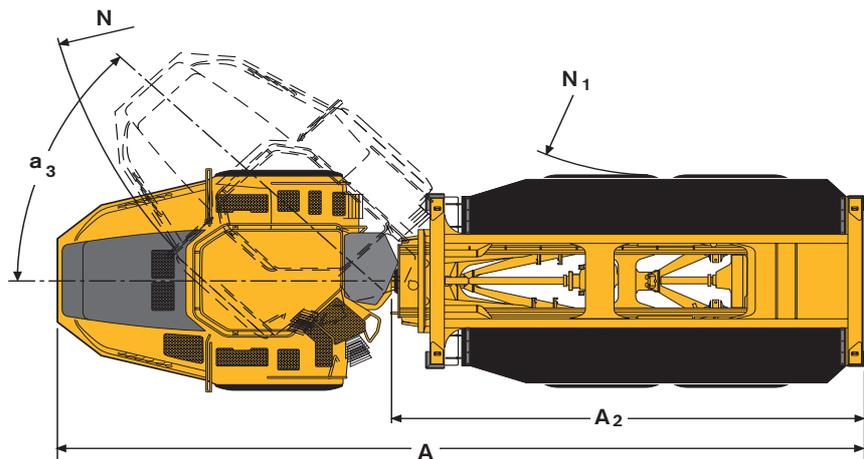
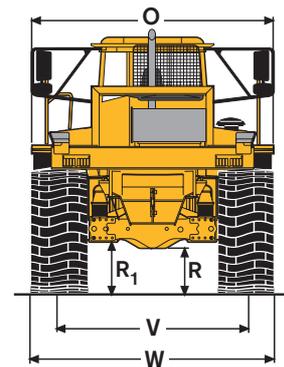
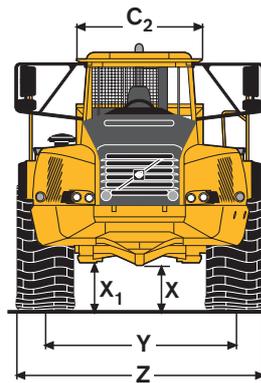
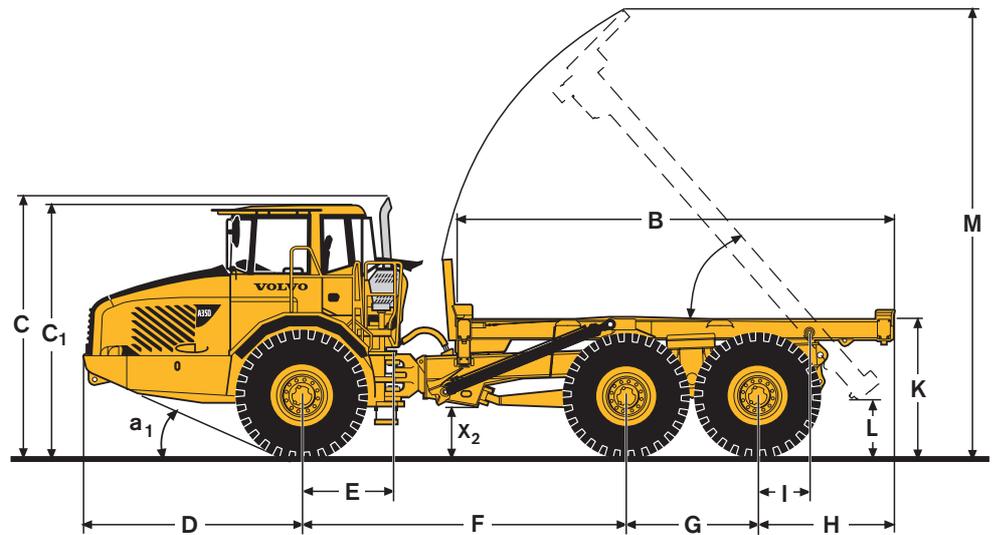
**Dump Cylinders:** Two single-stage double-acting cylinders.

Tipping angle ..... 49°  
 Tipping time with load ..... 8 s  
 Lowering time ..... 6 s

# Specifications A35D Container Hauler

Pos	Metric (mm)	
	A35D	
A	11 167	
A <sub>2</sub>	6 224	
B	5 527	
C	3 681	
C <sub>1</sub>	3 560	
C <sub>2</sub>	1 768	
D	3 101	
E	1 276	
F	4 501	
G	1 820	
H	1 757	
I	728	
K	2 302	
L	915	
M	7 242	
N	8 720	
N <sub>1</sub>	4 397	
O	3 103	
R	584	
R <sub>1</sub>	670	
U	3 528	
V	2 515	
V*	2 625	
W	3 208	
W*	3 410	
X	572	
X <sub>1</sub>	606	
X <sub>2</sub>	720	
Y	2 515	
Y*	2 625	
Z	3 208	
Z*	3 410	
a <sub>1</sub>	23°	
a <sub>2</sub>	49°	
a <sub>3</sub>	45°	

\*) with optional 775/65R29 tires



## STANDARD EQUIPMENT

### Safety

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

### Comfort

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

### Engine

Direct injected, electronically controlled  
Volvo Engine Brake, VEB  
Turbocharged  
Intercooler, air-to-air cooler  
Remote oil filters, for ease of access  
Remote oil drain plug and hose  
Preheater for easier cold starts  
Coolant filter

### Electrical system

Alternator, 55 A  
Battery disconnect switch  
Electrical outlets, 24V in cab  
Lights:  
• Headlights  
• Parking lights  
• Direction indicators  
• Rear lights  
• Back-up lights  
• Brake lights  
• Cab lighting  
• Instrument lighting  
Pilot lights for all switches

### Operator information interface

Gauges:  
• Speedometer  
• Tachometer  
• Brake pressure  
• Fuel  
• Transmission oil temperature  
  
Warning lights grouped and easy to read  
Central warning (3 levels) for all vital functions

Central positioned information display:  
• Automatic pre-start checks  
• Operation information, easy-to-find menu  
• Troubleshooting diagnostics  
• Hour meter  
• Clock  
• Machine settings

### Drivetrain

Automatic transmission  
Torque converter with automatic lock-up  
Variable hydraulic transmission retarder  
Dropbox with high/low range  
6x4 or 6x6 operator selectable drive modes  
100% longitudinal differential lock  
100% differential locks in all axles

### Brakes

Two circuit, fully hydraulic disc brakes on all axles.  
Volvo Engine Brake (VEB) activation in brake pedal  
Parking brake on prop shaft

### Container frame

Container frame for 20' ISO container with remote controlled container locks  
Headboard for container frame  
Container corner guidings  
Sidemounted dumping cylinders  
Tail light mounted in the back of the container frame  
Roof mounted beacon (red) indicating "container lock open"  
Hydraulic lock to prevent dumping container if not all container locks are engaged

### Tires

26,5R25

### Other

Air drier  
Tool box

## OPTIONAL EQUIPMENT

### Safety

Fire-extinguisher and first aid kit

### Service and maintenance

Tool kit with tire inflation unit  
Electrical hood opening

### Engine

Extra air cleaner, heavy-duty  
Extra air cleaner, oil bath type  
External emergency stop  
Delayed engine stop  
Engine coolant pre-heater (120V or 240V)  
Engine and cab heater, diesel \*\*  
Fast fuel filling system  
Precleaner (Sy-klone) \*\*

### Electrical

Work lights, roof mounted  
Work lights, rear-facing, fender-mounted  
Rotating beacon, collapsible mount  
Rotating beacon at rear end \*\*  
Back-up alarm  
Rear vision system  
Anti-theft system (prevents engine start)  
Headlights for left-hand traffic  
Alternator, heavy-duty 80 A  
Battery charger \*\*  
Jump start connection, NATO \*\*  
Back up light, extra \*\*  
Cab heater, electrical \*\*  
Hazard light when reversing \*\*

Side mounted position lights on container frame \*\*  
Voltage converter 24V to 12V, 20 amp \*\*  
Rear Vision system, color (Intec) \*\*  
Battery main switch located in cab \*\*

### Cab

Heated, mechanically or air suspended, fully adjustable operator's seat  
Seat cover \*\*  
Instructor seat with seat belt  
Electrically heated rear-view mirrors  
Air conditioning  
Radio installation kit  
Radio  
Cable kit for cab heater (120V or 240V)  
Window tint film  
Precleaner (Sy-klone) \*\*

### Brakes

Fully hydraulic, forced oil-cooled wet disc brakes  
Brake guards

### Container frame

Dumping angle limitation (hydraulic) \*\*  
Unlocking mechanism for tailgate (air) including controls \*\*  
Side inclination angle indicator for rear frame \*\*

### Tires

775/65R29

### External

Mudguard wideners (for 775/65R29 tires)  
Rear mudflaps and rubber guards over bogie \*\*  
Belly plates for trailer A-stay \*\*

### Other

Synthetic hydraulic oil (biologically degradable)  
Arctic oil kit

(\*\* Special Optional Equipment)

*Under our policy of continual product 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**

**Construction Equipment**

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