VOLVO ARTICULATED HAULER

A25C

6x6

- Engine output SAE J1349:
  Net 187 kW 251 hp
  Gross 190 kW 255 hp

- Body volume:
  13,5 m³ 17.7 yd³

- Load capacity:
  22.5 t 25 sh tn

- Volvo High-performance, low-emission direct-injected, intercooled, turbocharged diesel engine as standard.

- Electronically controlled, fully automatic power-shift transmission.

- Variable hydraulic retarder as standard.

- Dropbox with longitudinal diff. lock and high and low gear ranges.

- 100% lock-up diff. locks.
  One longitudinal and three transverse diff. locks.

- Volvo rough terrain suspension, high ground clearance and individually oscillating bogie and front axles.

- Load and dump brake.

- Low interior noise level.

- Adjustable steering wheel.

VOLVO
**Engine**

Volvo 6-cylinder, in-line, turbocharged, direct-injected, intercooled, 4-cycle low-emission diesel engine with overhead valves and wet replaceable cylinder linings. Meets USA (EPA) and California off-road regulation 1996.

Fan: Hydrostatic-driven, thermostatically controlled radiator fan, consuming power only when needed.

- **Make**: Volvo
- **Model**: TD73 KCE
- **Max power at**
  - SAE J1349 Gross: 190 kW, 255 hp
  - SAE J1349 Net: 187 kW, 251 hp
  - DIN 6271*: 187 kW, 251 hp
- **Flywheel power at**
  - SAE J1349 Gross: 20 t/s, 1200 rpm
  - SAE J1349 Net: 1909 Nm, 804 lbf ft
  - DIN 6271: 1080 Nm, 796 lbf ft
- **Max torque at**
  - SAE J1349 Gross: 104,8 mm, 4.125 in
  - Bore: 104,8 mm, 4.125 in
  - Stroke: 130 mm, 5.12 in
- **Compression ratio**: 17,7:1

* with fan at normal speed. With fan operating at full speed, the flywheel power is 174 kW 233 hp, which corresponds to DIN 70020.

** with fan at normal speed. With fan operating at full speed, the maximum torque is 970 Nm 715 lbf ft, which corresponds to DIN 70020.

**Electrical System**

- **Voltage**: 24 V
- **Battery capacity**: 2x135 Ah
- **Alternator**: 1,65 kW, 60 A
- **Starter motor**: 5 kW, 6.7 hp

**Service Capacities**

- **Crankcase**: 24 l
- **Cooling system, exchange**: 37 l
- **Cooling system, total**: 40 l
- **Transmission**: 16 l
- **Dropbox**: 6 l
- **Front axle**: 27 l
- **First bogie axle**: 28 l
- **Second bogie axle**: 27 l
- **Brake hydraulic**: 2 l
- **Hydraulic tank**: 155 l
- **Hydraulic system**: 180 l
- **Fuel tank**: 280 l

- **6.3 US gal**
- **9.8 US gal**
- **10.6 US gal**
- **4.2 US gal**
- **1.6 US gal**
- **7.1 US gal**
- **7.4 US gal**
- **7.1 US gal**
- **0.5 US gal**
- **41 US gal**
- **47.6 US gal**
- **74.0 US gal**

**Suspension**

Volvo suspension system. Totally maintenance-free.

**Front axle**: Two rubber springs with bottoming absorption on each side. Stabilizer. Two shock absorbers on each side. The front axle is suspended at three points, allowing oscillation in rough terrain.

**Bogie**: Volvo's unique rough terrain bogie, which permits individual oscillation between the axes.

**Drivetrain**

- **Torque converter**: Single stage with free-wheeling stator and automatic lock-up in all ranges.
- **Transmission**: Electronically controlled, fully automatic planetary transmission with five gears forward and one in reverse.
- **Dropbox**: Volvo with 2-stage design, power takeoff and differential locking.
- **Axles**: Volvo, 6-wheel drive. All axles have transverse diff-locks with 100% locking capability and fully floating axe shafts with planetary type hub reductions.
- **Differential locks**: One longitudinal and three transverse. All with 100% locking capability.

- **Torque converter**: 2:4:1
- **Transmission**: Volvo PT 1051 (5HP 500)
- **Dropbox**: Volvo FL 652
- **Axles**: Volvo AH 54

**Speeds**

- **Low gear forward**
  - 1: 6 km/h, 3.7 mph
  - 2: 10 km/h, 5.6 mph
  - 3: 17 km/h, 10.6 mph
  - 4: 24 km/h, 14.9 mph
  - 5: 34 km/h, 21.1 mph

- **High gear forward**
  - 1: 9 km/h, 5.6 mph
  - 2: 15 km/h, 9.3 mph
  - 3: 26 km/h, 16.2 mph
  - 4: 37 km/h, 23.0 mph
  - 5: 52 km/h, 32.3 mph

- **Low gear reverse**
  - 1: 7 km/h, 4.3 mph

- **High gear reverse**
  - 1: 11 km/h, 6.8 mph
BRAKE SYSTEM

Dual circuit system with air-hydraulic disc brakes on both axles. Designed to comply with ISO 3450 and SAE J1473 at total machine weight.

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

Parking brake: Spring-applied, air-released 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.

Load and dump brake: With the engine running, the service brake on the bogie axles is applied together with the parking brake.

Compressor: Gear-driven by engine transmission.

Transmission retarder: Hydraulic, integrated in transmission as standard. Infinently variable with the retarder pedal or full effect applied via the service brake pedal.

For retarding capability including hydraulic transmission retarder, exhaust retarder and engine. See graph on page 4.

STEERING SYSTEM

Hydromechanical articulated steering. 3.4 lock-to-lock turns.

Cylinders: Two double-acting steering cylinders.

Supplementary steering: Standard. Designed to comply with ISO 5010 standard at total machine weight.

Steering angle: ± 45°

BODY

Body: Hardened and tempered steel body with high-impact strength.

Cylinders: Two single-stage double-acting hoist cylinders.

Tipping angle ............... 70°
Tipping time with load ........ 15 s
Lowering time ............... 12 s
Body, plate thickness
Front 8 mm 5/16 in
Sides 12 mm 1/2 in
Bottom/chute 14 mm 9/16 in
Yield strength ............... 1000 N/mm² 145,000 psi
Tensile strength ............. 1250 N/mm² 181,000 psi
Hardness min. ............... 360 – 440 HB

WEIGHTS

Operating weight includes all fluids and operator.

Operating weight:
Front 9040 kg 19,930 lb
Rear 8730 kg 19,246 lb
Total 17770 kg 39,176 lb
Payload ..................... 22500 kg 49,803 lb
Total weight
Front 11500 kg 25,353 lb
Rear 28770 kg 63,426 lb
Total 40270 kg 88,779 lb

GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

Unloaded
Front 91 kPa 13.2 psi
Rear 44 kPa 6.4 psi

Loaded
Front 116 kPa 16.8 psi
Rear 145 kPa 21.0 psi

HYDRAULIC SYSTEM

Pumps: Three engine-dependent, variable piston pumps mounted on flywheel power takeoffs. One unused power takeoff available. Ground-dependent piston pump for supplementary steering mounted on dropbox.

Filter: Filtration of oil through two paper filters with magnetic cores.

Pump capacity per
pump at shaft speed .......... 34 l/s 2040 rpm
engine dependent 100 l/min 26.4 US gpm
ground dependent 118 l/min 31.2 US gpm
Working pressure .......... 19.5 MPa 2830 psi

CAB

Volvo cab, tested and approved according to
ROPS standard ISO 3471 and SAE J1040/APR 88,
FOPS standard ISO 3449 and SAE J231.

Mounted on rubber pads which effectively reduce vibrations.
Adjustable steering wheel.
Radio/Conrotic console in ceiling.

Heater and defroster: Filtered air and pressurized cab.

Three-speed fan.

Operator’s seat: Ergonomically designed adjustable seat with air suspension, electric heating, flameproof upholstery and retractable seat belt.

Trainer’s seat: Standard, with seat belt and back rest

Number of exits ............... 2

Internal sound level acc. to
ISO 6394 at max. speed .... 78 dB (A)
INSTRUCTIONS

Diagonal lines represent total resistance (grade % plus rolling resistance %).
Chart based on 0% rolling resistance, standard tires and gearing, unless otherwise stated.
In the retardation chart, the diagonal lines represent the “total resistance” as well (here in downhill grades it is the total extra pushing force), which is the grade in % minus the rolling resistance in %.

A. Find the diagonal line with the appropriate total resistance on the right-hand edge of the chart.
B. Follow the diagonal line downward until it intersects the actual machine weight line, NMW or GMW.
C. Draw a new line horizontally to the left from the point of intersection until the new line intersects the rimpull or retardation curve.
D. Read down for vehicle speed.
DIMENSIONS Volvo A25C 6x6 (unloaded)

LOAD CAPACITY (Body volumes according to SAE 2:1)

US body load capacity ........ 22,500 kg 25 sh tn
Body, struck ................... 10.6 m³ 13.9 yd³
heaped .......................... 13.5 m³ 17.7 yd³
STANDARD EQUIPMENT

Safety
ROPS/FOPS cab
Anti-slip material on hood and fenders
Hazard flashers
Horn
Protective grille for rear window
Rearrow mirrors
Reverse alarm
Secondary steering
Speedometer, electric
Steering joint locking assembly
Driver's seat with seat belt and backrest
Windshield wipers with interval
Windshield washers

Comfort
Adjustable steering wheel
Ashtray
Cab heater with filtered fresh air and defroster
Cigarette lighter
Cup holder
Conronic information display
Ergonomically designed and adjustable operator's seat with air suspension, electric heating and retractable seat belt
Radio/Conronic console in ceiling
Sun visor
Tinted glass

Engine
Exhaust retarder
Intercooler
Low-emission engine
Oil drainage hose
Preheating coil
Turbocharger

Electric system
Alternator
Battery disconnect switch
Electrical outlet 24V
Lights:
• Headlights, high/low beam
• Parking lights
• Turn signals
• Rear lights
• Brake lights
• Reverse lights
• Cab lighting
• Instrument lighting
• Control panel lighting
Gauges for:
• Air pressure
• Engine temperature
• Engine rpm
• Fuel
• Hours
• Transmission oil temperature
Pilot lamps for:
• Turn signals
• Front axle diff. lock
• Longitudinal diff. lock
• Lights
• High beam
• Preheating coil
• High/low gear
• Exhaust retarder
• Service brake

Warning lamps for:
• Air cleaner, engine
• Battery charging
• Body up
• Brake hydraulics
• Brake air pressure
• Coolant level
• Engine oil pressure
• Engine overspeed
• Engine temperature
• Engine-dependent steering pump
• Ground-dependent steering pump
• Hydraulic oil level
• Parking brake
• Transmission oil temperature
Central warning for:
• Air cleaner, engine
• Battery charging
• Brake hydraulics
• Brake air pressure
• Engine oil pressure
• Engine overspeed
• Engine temperature
• Hydraulic oil level
• Steering function
• Transmission oil temperature

Drivetrain
Torque converter with automatic lock-up
Fully automatic transmission
Hydraulic, variable transmission retarder
Dropbox, high/low range
Longitudinal differential lock
Differential lock front axle
Differential lock first bogie axle
Differential lock second bogie axle

Brakes
Two circuits
Air-hydraulic disc brakes
Brake shields
Load and dump brake
Parking brake
Retarder activation in brake pedal

External
Rear mudflaps
Mudguard wideners, front

Body
Body with exhaust ducts

Tires
23.5 R 25

OPTIONAL EQUIPMENT

Service and maintenance
Toolbox
Central lubrication

Engine
Coolant filter
Engine coolant pre-heater, 120 V
Oil-bath air cleaner
Extra fuel filters

Electrical
Work lights, roof-mounted

Cab
Air-conditioning (22 200 BTU)
Electrically heated rearview mirrors
Kit for radio installation

External
Towing hitch

Body
Body heating
Extra front spill guard
Overhung tailgate, wire-operated
Rock liner

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

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