VOLVO ARTICULATED HAULER

A25C TWIN STEER

- 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 low emission** direct-injected, turbocharged, intercooled high performance diesel engine.
- **Volvo Venturi scrubber** exhaust gas treatment system.
- **Fully automatic powershift transmission**, electronically controlled.
- **Drop box with longitudinal differential lock** and high and low gear ranges.
- **Hydraulic retarder** as standard.
- **100% lock-up** differential locks. One longitudinal and three transverse diff-locks.
- **Front axle with three-point suspension** and effective shock absorption.
- **Volvo terrain bogie**, individually oscillating axles and high ground clearance.
- **Twin steering** allows operator to drive the machine positioned in both directions.
- **Load and dump brake.**
- **Low interior noise level.**
- **Adjustable steering level.**
DRIVETRAIN

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

**Transmission:** Electronically controlled, fully automatic planetary transmission with 5 gears forward and 1 in reverse.

**Drop box:** Volvo with 2-stage design, power take-off and differential with lock-up function.

**Axles:** Volvo. 6-wheel drive. All axles have transversal diff-locks with 100% lock-up and fully floating axle shafts with planetary type hub reductions.

**Differential locks:** One longitudinal and three transverse. All with 100% lock-up.

- Torque converter: 2.4:1
- Transmission: Volvo PT 1051 (5HP 500)
- Drop box: Volvo FL 652
- Axles: Volvo AH 54

### Speeds with tires

<table>
<thead>
<tr>
<th></th>
<th>20.5R25</th>
<th>23.5R25</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Forward</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low gear 1</td>
<td>6 km/h (4 mile/h)</td>
<td>7 km/h (4 mile/h)</td>
</tr>
<tr>
<td>Low gear 2</td>
<td>10 km/h (6 mile/h)</td>
<td>12 km/h (7 mile/h)</td>
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<tr>
<td>Low gear 3</td>
<td>18 km/h (11 mile/h)</td>
<td>21 km/h (13 mile/h)</td>
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<tr>
<td>Low gear 4</td>
<td>27 km/h (17 mile/h)</td>
<td>30 km/h (19 mile/h)</td>
</tr>
<tr>
<td><strong>High gear</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High gear 1</td>
<td>9 km/h (6 mile/h)</td>
<td>11 km/h (7 mile/h)</td>
</tr>
<tr>
<td>High gear 2</td>
<td>16 km/h (10 mile/h)</td>
<td>18 km/h (11 mile/h)</td>
</tr>
<tr>
<td>High gear 3</td>
<td>27 km/h (17 mile/h)</td>
<td>32 km/h (20 mile/h)</td>
</tr>
<tr>
<td>High gear 4</td>
<td>42 km/h (26 mile/h)</td>
<td>46 km/h (29 mile/h)</td>
</tr>
</tbody>
</table>

| **Reverse** |         |         |
| Low gear 1 | 7 km/h (4 mile/h) | 9 km/h (6 mile/h) |
| High gear 1 | 12 km/h (7 mile/h) | 14 km/h (9 mile/h) |

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 88/77/EEC 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:** 40 r/s (2400 r/min) 
**SAE J1349 Gross:** 190 kW (255 hp) 
**Flywheel power at:** 40 r/s (2400 r/min) 
**SAE J1349 Net:** 187 kW (251 hp) 
**DIN 6271:** 187 kW (251 hp) 
**Max torque at:** 20 r/s (1200 r/min) 
**SAE J1349 Gross:** 1090 Nm (804 lbf ft) 
**SAE J1349 Net:** 1080 Nm (796 lbf ft) 
**DIN 6271:** 1080 Nm (796 lbf ft) 
**Displacement total:** 6.73 l (411 in³) 
**Bore:** 105 mm (4.1 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 (6.3 US gal) 
- Fuel tank: 280 l (74.0 US gal) 
- Cooling system: 37 l (9.8 US gal) 
- Transmission total: 16 l (4.2 US gal) 
- Drop box: 6 l (1.6 US gal) 
- Front axle: 27 l (7.1 US gal) 
- First bogie axle: 28 l (7.4 US gal) 
- Second bogie axle: 27 l (7.1 US gal) 
- Brake hydraulics: 2 l (0.5 US gal) 
- Hydraulic system: 180 l (47.6 US gal) 
- Hydraulic tank: 155 l (41 US gal) 
- Exhaust gas cleaning tanks: 342 l (90.3 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, which results in oscillating needed in rough terrain.

**Bogie:** Volvo's unique terrain bogie, which permits individual oscillation between the axles.
**BRAKE SYSTEM**

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

**Circuit Division:** One circuit 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.

**Exhaust brake:** Standard.

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

For retarding capability incl. retarder, exhaust brake and engine, see graph on page 4.

**TWIN STEERING SYSTEM**

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

Double command system with two steering wheels allows operator to rotate the operator seat and drive the machine positioned in both directions.

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

**Supplementary steering:** Complies 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 (0.31 in)
- Sides: 12 mm (0.47 in)
- Bottom: 14 mm (0.55 in)
- Chute: 22 mm (0.87 in)

**Yield strength . . . . . . . . . . . . 1000 N/mm² (145000 psi)**

**Tensile strength . . . . . . . . . . . . 1250 N/mm² (181000 psi)**

**Hardness min. . . . . . . . . . . . . 360–440 HB**

**WEIGHTS**

Operating weight includes all fluids and operator.

**Standard machine.**

Operating weight with 23.5R25 tires:

- Front: 9290 kg (20480 lb)
- Rear: 8980 kg (19800 lb)
- Total: 18270 kg (40280 lb)

Payload . . . . . . . . . . . . . . . . . . 22500 kg (49600 lb)

Total weight

- Front: 11750 kg (25900 lb)
- Rear: 29020 kg (63980 lb)
- Total: 40770 kg (89880 lb)

A25C with 20.5R25 tyres, subtract 200 kg (440 lb) per axle.

**GROUND PRESSURE**

At 15% sinkage of unloaded radius and specified weights.

<table>
<thead>
<tr>
<th>With tires</th>
<th>20.5R25</th>
<th>23.5R25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unloaded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>114 kPa (17 psi)</td>
<td>94 kPa (14 psi)</td>
</tr>
<tr>
<td>Rear</td>
<td>54 kPa (8 psi)</td>
<td>46 kPa (7 psi)</td>
</tr>
<tr>
<td>Loaded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>145 kPa (21 psi)</td>
<td>119 kPa (17 psi)</td>
</tr>
<tr>
<td>Rear</td>
<td>180 kPa (26 psi)</td>
<td>147 kPa (21 psi)</td>
</tr>
</tbody>
</table>

**HYDRAULIC SYSTEM**

**Pumps:** Three engine-dependent, variable piston pumps mounted on flywheel power take-offs. One unused power take-off available.

Ground-dependent hydraulic pump for supplementary steering mounted on the drop box.

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

- Pump capacity per pump
  - at shaft speed: 34 r/s (2040 r/min)
  - 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/APR88. Mounted on rubber pads which effectively reduce vibrations. Adjustable steering wheels, accelerator and brake control in both directions.

Radio/Conronic console in ceiling.

**Heater and defroster:** Filtered air and pressurized cab. Three speed fan.

**Operator’s seat:** Ergonomically designed and adjustable operator’s seat with flameproof upholstery. Retractable seat belt.

**Trainer seat:** Option.

- Number of exits: 2
- Internal sound level, according to ISO 6394 and at max speed: 78 dB (A)
INSTRUCTIONS
Diagonal lines represent total resistance (grade % plus rolling resistance %).
Charts based on 0% rolling resistance, standard tyres 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.

RIMPULL
1. Rimpull in kp (lbf)
2. Speed in km/h (mile/h)
3. Machine weight in kg (lb)
4. Grade in % plus rolling resistance in %.

RETARDATION PERFORMANCE
1. Braking effort in kp (lbf)
2. Speed in km/h (mile/h)
3. Machine weight in kg (lb)
4. Grade in % - rolling resistance in %
### DIMENSIONS Volvo A25C 6x6 (unloaded with 23.5R25 tires)

<table>
<thead>
<tr>
<th>A</th>
<th>9675 mm (31'9&quot;)</th>
<th>E</th>
<th>1200 mm (3'1&quot;&quot;)</th>
<th>N</th>
<th>7850 mm (25'9&quot;)</th>
<th>V</th>
<th>2150 mm (7'6&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A₁</td>
<td>4495 mm (14'9&quot;)</td>
<td>F</td>
<td>4165 mm (13'8&quot;)</td>
<td>N₁</td>
<td>4250 mm (13'11&quot;)</td>
<td>W</td>
<td>2795 mm (9'2&quot;)</td>
</tr>
<tr>
<td>A₂</td>
<td>5710 mm (18'9&quot;)</td>
<td>G</td>
<td>1670 mm (5'6&quot;)</td>
<td>O</td>
<td>2500 mm (8'2&quot;)</td>
<td>X</td>
<td>480 mm (1'7&quot;)</td>
</tr>
<tr>
<td>B</td>
<td>5000 mm (16'5&quot;)</td>
<td>H</td>
<td>1425 mm (4'8&quot;)</td>
<td>P</td>
<td>2300 mm (7'7&quot;)</td>
<td>X₁</td>
<td>610 mm (2'1&quot;)</td>
</tr>
<tr>
<td>C₁</td>
<td>3210 mm (10'6&quot;)</td>
<td>H₁</td>
<td>385 mm (1'3&quot;)</td>
<td>Q</td>
<td>2100 mm (6'11&quot;)</td>
<td>X₂</td>
<td>660 mm (2'2&quot;)</td>
</tr>
<tr>
<td>C₂</td>
<td>1320 mm (4'4&quot;)</td>
<td>J</td>
<td>2780 mm (9'1&quot;)</td>
<td>R</td>
<td>520 mm (1'8&quot;)</td>
<td>Y</td>
<td>2150 mm (7'6&quot;)</td>
</tr>
<tr>
<td>C₃</td>
<td>5271 mm (17'9&quot;)</td>
<td>K</td>
<td>2150 mm (7'1&quot;)</td>
<td>R₁</td>
<td>620 mm (2')</td>
<td>Z</td>
<td>2795 mm (9'2&quot;)</td>
</tr>
<tr>
<td>D</td>
<td>2415 mm (7'11&quot;)</td>
<td>L</td>
<td>640 mm (21&quot;)</td>
<td>S</td>
<td>1340 mm (4'5&quot;)</td>
<td>a₁</td>
<td>26°</td>
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<tr>
<td></td>
<td></td>
<td>M</td>
<td>6400 mm (21&quot;)</td>
<td>T</td>
<td>710 mm (2'4&quot;)</td>
<td>a₂</td>
<td>70°</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>U</td>
<td>2995 mm (9'10&quot;)</td>
<td>a₃</td>
<td>45°</td>
</tr>
</tbody>
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<td>X</td>
<td>420 mm (1'5&quot;)</td>
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<td>B</td>
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<td>P</td>
<td>2300 mm (7'7&quot;)</td>
<td>X₁</td>
<td>550 mm (1'10&quot;)</td>
</tr>
<tr>
<td>C₁</td>
<td>3150 mm (10'4&quot;)</td>
<td>H₁</td>
<td>385 mm (1'3&quot;)</td>
<td>Q</td>
<td>2100 mm (6'11&quot;)</td>
<td>X₂</td>
<td>600 mm (2')</td>
</tr>
<tr>
<td>C₂</td>
<td>1320 mm (4'4&quot;)</td>
<td>J</td>
<td>2720 mm (8'1&quot;)</td>
<td>R</td>
<td>460 mm (1'6&quot;)</td>
<td>Y</td>
<td>1930 mm (6'4&quot;)</td>
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<tr>
<td>C₃</td>
<td>3271 mm (11'7&quot;)</td>
<td>K</td>
<td>2090 mm (6'10&quot;)</td>
<td>R₁</td>
<td>560 mm (1'10&quot;)</td>
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<td>2490 mm (8'2&quot;)</td>
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<td>D</td>
<td>2415 mm (7'11&quot;)</td>
<td>L</td>
<td>580 mm (1'1&quot;)</td>
<td>S</td>
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<td>a₁</td>
<td>24.5°</td>
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<td></td>
<td></td>
<td>M</td>
<td>6350 mm (20'10&quot;)</td>
<td>T</td>
<td>710 mm (2'4&quot;)</td>
<td>a₂</td>
<td>70°</td>
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<tr>
<td></td>
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<td></td>
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<td>U</td>
<td>2945 mm (9'8&quot;)</td>
<td>a₃</td>
<td>45°</td>
</tr>
</tbody>
</table>

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

- **Load capacity**: 22 500 kg (25 sh tn)
- **Body, struck**: 10.6 m³ (13.9 yd³)
  - heaped: 13.5 m³ (17.7 yd³)
- **With underhung tailgate (optional)**
  - **Body, struck**: 11.1 m³ (14.5 yd³)
  - heaped: 13.8 m³ (18.0 yd³)
## STANDARD EQUIPMENT

### Safety
- ROPS cab
- FOPS over head guard
- Anti-slip material on hood and fenders
- Ergonomically designed, rotatable and adjustable operator's seat with retractable seat belt
- Hazard flashers
- Horn
- Protective grille for rear window
- Rear-view mirrors
- Seat belt
- Secondary steering
- Speedometer
- Steering joint locking assembly
- Windshield wipers with interval
- Windshield washers

### Comfort
- Adjustable steering wheel
- Ashtray
- Cab heater with filtered fresh air and defroster
- Cigarette lighter
- Cup holder
- Radio/Contronic console in ceiling
- Sun-visor
- Tinted glass

### Engine
- Exhaust brake
- Volvo Venturi scrubber exhaust gas treatment system
- Intercooler
- Low emission engine
- Oil drainage hose
- Preheating
- Turbocharger

### Electrical System
- Alternator
- Battery disconnect switch
- Electrical outlet
- Gauges for:
  - Air pressure
  - Engine temperature
  - Engine revolutions
  - Fuel
  - Hours
  - Transmission oil temperature
  - Headlights, main/dipped
  - Parking lights
  - Direction indicators
  - Rear lights
  - Back-up lights
  - Brake lights
  - Cab lighting
  - Instrument lighting
  - Control panel lighting
  - Pilot lamps for:
    - Exhaust brake
    - Direction indicators
    - Front axle diff-lock
    - Longitudinal diff-lock
    - Lights
    - Main beam
    - Preheating
    - High/low gear

### Drivetrain
- Torque converter with automatic lock-up
- Automatic transmission
- Hydraulic variable retarder
- Drop box with high/low gear
- Longitudinal diff-lock
- Differential lock front axle
- Differential lock first bogie axle
- Differential lock second bogie axle

### Brakes
- Air/hydraulic disc brakes
- Two circuits
- Parking brake on all wheels
- Retarder activation in brake pedal
- Load and dump brake

### Body
- Body heating
- Body with exhaust ducts and wear plate on the chute

### Tires
23.5R25

### Service and Maintenance
- Tool kit with tyre inflation unit
- Tool box
- Central lubrication

### Engine
- Extra fuel filter
- Oil-bath air cleaner
- Coolant filter

### Electrical
- Work lights, roof mounted
- Rotating beacon with collapsible mount
- Side direction indicators
- Headlights for left-hand traffic

### Cab
- Air conditioning
- Airsuspended electrically heated operator's seat
- Contronic display
- Electrically heated rear-view mirrors
- Extra seat for trainer
- Radio
- Kit for radio installation
- Speedometer, miles
- Tachograph (Europe)

### Safety
- Fire-extinguisher and first aid cushion

### External
- Brake protection, front axle
- Mudguard wideners, front, 2.7 m
- Rear mudflaps, 2.7 m
- Side flaps over Venturi scrubber

### Optional Equipment

### Body
- O verhung tailgate, wire
- O verhung tailgate, link
- Underhung tailgate
- Wear plates, separate delivery
- Upper side extensions, 200 mm
- Extra front spill guard

### Tyres
20.5R25

### Other
- Synthetic hydraulic oil (biologically degradeable)
- Towing hitch

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.