VOLVO ARTICULATED HAULER

A30C

6x6

- Engine output SAE J1349:
  Net 213 kW (285 hp)
  Gross 216 kW (289 hp)
- Body volume:
  16.5 m³ (21.6 yd³)
- Load capacity:
  27 t (30 sh tn)
- Volvo low emission direct-injected, turbocharged, intercooled high performance diesel engine.
- Fully automatic powershift transmission, electronically controlled.
- Drop box with longitudinal differential lock.
- Hydraulic retarder as standard.
- Wide base tires 30/65R25 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.
- Low interior noise level
- Adjustable steering wheel
**ENGINE**


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

<table>
<thead>
<tr>
<th>Make</th>
<th>Volvo 10 TDSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>TD103 KBE</td>
</tr>
<tr>
<td>Max power at</td>
<td>36.7 r/min (2200 r/min)</td>
</tr>
<tr>
<td>SAE J1349 Gross</td>
<td>216 kW (289 hp)</td>
</tr>
<tr>
<td>Flywheel power at</td>
<td>36.7 r/min (2200 r/min)</td>
</tr>
<tr>
<td>SAE J1349 Net</td>
<td>213 kW (285 hp)</td>
</tr>
<tr>
<td>DIN 6271*</td>
<td>213 kW (285 hp)</td>
</tr>
<tr>
<td>Max torque at</td>
<td>16.9 r/min (956 r/min)</td>
</tr>
<tr>
<td>SAE J1349 Gross</td>
<td>1360 Nm (1007 lbf ft)</td>
</tr>
<tr>
<td>SAE J1349 Net</td>
<td>1360 Nm (1003 lbf ft)</td>
</tr>
<tr>
<td>DIN 6271**</td>
<td>1360 Nm (1003 lbf ft)</td>
</tr>
<tr>
<td>Displacement total</td>
<td>9.6 l (586 in³)</td>
</tr>
<tr>
<td>Bore</td>
<td>120 mm (4.7 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>140 mm (5.5 in)</td>
</tr>
<tr>
<td>Compression ratio</td>
<td>18:1</td>
</tr>
</tbody>
</table>

*) with fan at normal speed. With fan operating at full speed, the flywheel power is 199 kW (267 hp) which corresponds to DIN 70020.

**) with fan at normal speed. With fan operating at full speed, the maximum torque is 1190 Nm (878 lbf ft) which corresponds to DIN 70020.

**DRIVETRAIN**

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

Transmission: Electronically controlled, fully automatic planetary transmission with six gears forward and two in reverse.

Drop box: Volvo with single-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 | 2.38:1 |
| Transmission     | Volvo PT 1663 |
| Dropout          | Volvo FL 650B |
| Axles            | Volvo AH 63 |

Speeds with tires 30/65R25 and 23.5R25

| Forward | 8.2 km/h (5.1 mile/h) |
| 1       | 11.9 km/h (7.4 mile/h) |
| 2       | 17.5 km/h (10.9 mile/h) |
| 3       | 21.1 km/h (13.1 mile/h) |
| 4       | 31.1 km/h (19.3 mile/h) |
| 5       | 39.5 km/h (24.5 mile/h) |
| 6       | 52.3 km/h (32.7 mile/h) |

| Reverse | 7.6 km/h (4.7 mile/h) |
| 1       | 13.1 km/h (8.1 mile/h) |

**ELECTRICAL SYSTEM**

Voltage................. 24 V
Battery capacity........ 2x170 Ah
Alternator.............. 1.85 kW (80 A)
Starter motor........... 0.9 kW (3.8 hp)

**SERVICE CAPACITIES**

Crankcase.............. 23 l (6.1 US gal)
Fueeltank.............. 360 l (85.1 US gal)
Cooling system......... 42 l (11.1 US gal)
Transmission total.... 40 l (10.6 US gal)
Dropbox................ 6 l (1.6 US gal)
Front axle............. 29 l (7.7 US gal)
First bogie axle....... 30 l (7.9 US gal)
Second bogie axle..... 29 l (7.7 US gal)
Brake hydraulic........ 2 l (0.5 US gal)
Hydraulic system....... 194 l (51.3 US gal)
Hydraulic tank......... 150 l (39.6 US gal)

**SUSPENSION**

Volvo suspension system

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

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

Air-hydraulic disc brakes on all axles. Two circuits. Designed to comply with ISO 3450 and SAE J1473 at gross 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 grades up to 15%. When the parking brake is applied, the longitudinal differential is locked.

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

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

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

**HYDRAULIC SYSTEM**

**Pumps**: Four engine-dependent, variable piston pumps mounted on flywheel power take-offs.

Ground-dependent hydraulic pump for supplementary steering mounted on dropbox.

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

- Pump capacity per pump ... 109 l/min (28.8 US gpm)
- at shaft speed ... 36 r/s (2160 r/min)
- Working pressure ... 19 MPa (2758 psi)

**STEERING SYSTEM**

Hydromechanical articulated steering. 3,4 turns lock-to-lock.

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

**Supplementary steering**: Standard. 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 ... 14 s
- Lowering time ... 13 s
- Body, plate thickness
  - Front ... 8 mm (0.31 in)
  - Side ... 12 mm (0.47 in)
  - Bottom/chute ... 14 mm (0.55 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 30/65R25 tires
  - Front ... 11700 kg (25794 lb)
  - Rear ... 9800 kg (21605 lb)
  - Total ... 21500 kg (47399 lb)
- Payload ... 27000 kg (59524 lb)
- Total weight
  - Front ... 15450 kg (34061 lb)
  - Rear ... 33050 kg (72882 lb)
  - Total ... 48500 kg (108923 lb)

A30C equipped with 23.5R25 tires, 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>30/65R25</th>
<th>23.5R25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unloaded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>94 kPa  (13.6 psi)</td>
<td>112 kPa (16.2 psi)</td>
</tr>
<tr>
<td>Rear</td>
<td>40 kPa  (5.8 psi)</td>
<td>46 kPa (6.7 psi)</td>
</tr>
<tr>
<td>Loaded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Front</td>
<td>124 kPa (18.0 psi)</td>
<td>150 kPa (21.7 psi)</td>
</tr>
<tr>
<td>Rear</td>
<td>135 kPa (19.6 psi)</td>
<td>164 kPa (23.8 psi)</td>
</tr>
</tbody>
</table>

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 wheel.

Radio/Convenience 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.

**Trailer seat**: Standard

- Number of exits ... 2
- Internal sound level acc. to ISO 6394 and at max. speed ... 76 dB(A)
### Dimensions Volvo A30C 6x6 (Unloaded with 30/65R25 tires)

<table>
<thead>
<tr>
<th>A</th>
<th>10200 mm (33'6&quot;)</th>
<th>D</th>
<th>2770 mm (9'1&quot;)</th>
<th>N</th>
<th>8047 mm (26'5&quot;)</th>
<th>V</th>
<th>2216 mm (7'3&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A_1</td>
<td>4862 mm (15'11&quot;)</td>
<td>E</td>
<td>1210 mm (4')</td>
<td>N_1</td>
<td>4031 mm (13'2&quot;)</td>
<td>W</td>
<td>5980 mm (19'9&quot;)</td>
</tr>
<tr>
<td>A_2</td>
<td>5856 mm (19'3&quot;)</td>
<td>F</td>
<td>4173 mm (13'6&quot;)</td>
<td>O</td>
<td>2932 mm (9'7&quot;)</td>
<td>W_1</td>
<td>2820 mm (9'3&quot;)</td>
</tr>
<tr>
<td>B</td>
<td>5167 mm (16'11&quot;)</td>
<td>G</td>
<td>1670 mm (5'6&quot;)</td>
<td>P</td>
<td>2720 mm (8'11&quot;)</td>
<td>X</td>
<td>485 mm (1'7&quot;)</td>
</tr>
<tr>
<td>C</td>
<td>3410 mm (11'2&quot;)</td>
<td>H</td>
<td>1587 mm (5'2&quot;)</td>
<td>Q</td>
<td>2586 mm (8'6&quot;)</td>
<td>X_1</td>
<td>522 mm (1'8&quot;)</td>
</tr>
<tr>
<td>C_1</td>
<td>3302 mm (12'4&quot;)</td>
<td>I</td>
<td>430 mm (1'5&quot;)</td>
<td>R</td>
<td>550 mm (19&quot;)</td>
<td>X_2</td>
<td>670 mm (2'2&quot;)</td>
</tr>
<tr>
<td>C_2</td>
<td>3260 mm (10'8&quot;)</td>
<td>J</td>
<td>2834 mm (9'4&quot;)</td>
<td>R_1</td>
<td>567 mm (1'10&quot;)</td>
<td>Y</td>
<td>2216 mm (7'3&quot;)</td>
</tr>
<tr>
<td>C_3</td>
<td>1331 mm (4'4&quot;)</td>
<td>K</td>
<td>2180 mm (7'2&quot;)</td>
<td>S</td>
<td>1464 mm (4'10&quot;)</td>
<td>Z</td>
<td>5980 mm (19'9&quot;)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>L</td>
<td>594 mm (1'11&quot;)</td>
<td>T</td>
<td>810 mm (2'8&quot;)</td>
<td>Z_1</td>
<td>2820 mm (9'3&quot;)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M</td>
<td>6464 mm (21'4&quot;)</td>
<td>U</td>
<td>3305 mm (10'10&quot;)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* with 23.5R25 tires

### Load Capacity (Body volume according to SAE 2:1)

- **Load capacity** .................. 27000 kg (30 sh tn)
- **Body, struck** .................. 12.0 m³ (16.0 yd³)
- **heaped** .................. 16.5 m³ (21.6 yd³)

**With underhung tailgate (optional)**
- **Body, struck** .................. 13.2 m³ (17.3 yd³)
- **heaped** .................. 17.0 m³ (22.2 yd³)

**With over- and underhung tailgate (optional)**
- **Body, struck** .................. 13.2 m³ (17.3 yd³)
- **heaped** .................. 17.2 m³ (22.5 yd³)

**With wire operated overhung tailgate (optional)**
- **Body, struck** .................. 13.2 m³ (17.3 yd³)
- **heaped** .................. 17.2 m³ (22.5 yd³)
INSTRUCTIONS

Diagonal lines represent total resistance (grade % plus rolling resistance %).

Charts 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 the intersection until the new line intersects the rimpull or retardation curve.
D. Read down for vehicle speed.
STANDARD EQUIPMENT

Safety
- ROCPS cab
- Anti-slip material on fenders and hood
- 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
- Ergonomically designed and adjustable operator’s seat
- Extra seat for trainer
- Radio/Cartronic console in ceiling
- Sun visor
- Tinted glass

Engine
- Intercooler
- Low emission engine
- Oil drainage hose
- Preheating
- Turbocharger

Electric system
- Alternator
- Battery disconnect switch
- Electrical outlet
- Gauges for:
  - Air pressure
  - Engine temperature
  - Engine revs
  - Fuel
  - Hours
  - Transmission oil temperature
- Lights:
  - Headlights, main/dipped
  - Parking lights
  - Direction indicators
  - Rear lights
  - Back-up lights
  - Brake lights
  - Cab lighting
  - Instrument lighting
- Pilot lamps for:
  - Direction indicators
  - Bogie axles diff-lock
  - Front axle diff-lock
  - Longitudinal diff-lock
  - Lights
  - Main beam
  - Preheating

Warning lamps for:
- Air cleaner, engine
- Battery charging
- Body up
- Brake pressure
- Brake failure
- Coolant level
- Engine oil pressure
- Engine temperature
- Engine-dependent steering pump
- Ground-dependent steering pump
- Parking brake
- Transmission temperature
- Central warning:
  - Battery charging
  - Brake failure
  - Brake pressure (air)
  - Body up
  - Engine oil pressure
  - Engine overspeed
  - Malfunction in transmission
  - Steering function

Drive train
- Torque converter with automatic lock-up
- Automatic transmission
- Hydraulic variable retarder
- Drop box, single stage
- 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

Body
- Body with exhaust ducts

Tires
- 50/65R25

OPTIONAL EQUIPMENT

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

Engine
- Coolant filter
- Exhaust brake
- Oil bath air cleaner

Electrical system
- Work lights, roof mounted
- Rotating beacon with collapsible mount
- Headlights for left-hand traffic
- Air conditioning
- Airohced electrically heated operator’s seat
- Cartronic display
- Electrically heated rear view mirrors
- Radio
- Kit for radio installation

Safety
- Overhead guard, FOPS
- Fire extinguisher and first aid cushion

External
- Brake protection, front axle
- Mudguard wideners, front 2.98 m
- Rear mudflaps

Body
- Body heating
- Overhanging tailgate, wire
- Overhanging tailgate, link
- Underhanging tailgate
- Wear plates, separate delivery
- Upper side extensions, 200 mm
- Extra front sillguard

Other
- Synthetic hydraulic oil (biologically degradable)
- Towing hitch

Tires
- 23.6R25

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
Volvo Construction Equipment