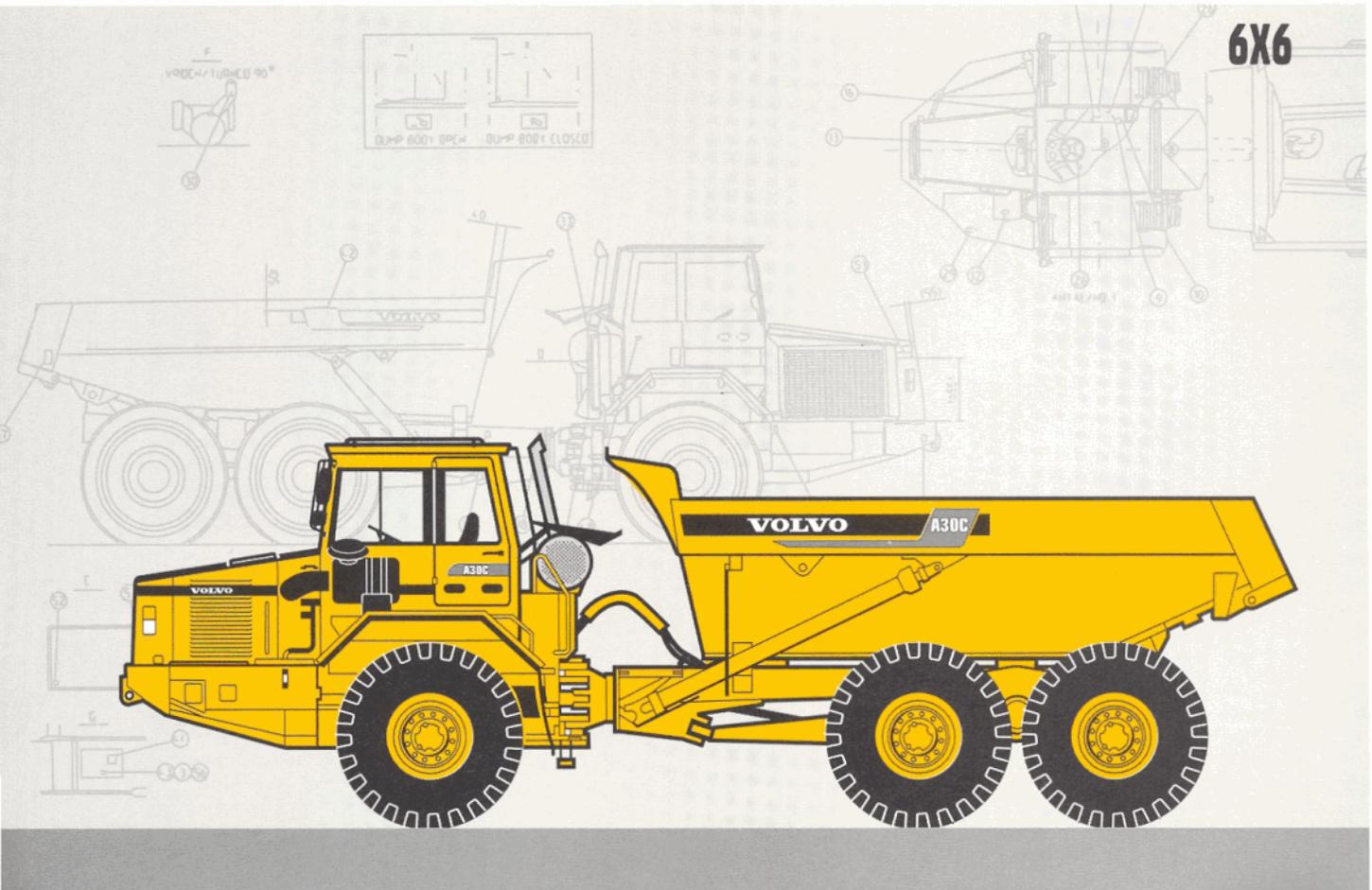


**VOLVO ARTICULATED HAULER**

# A30C



- **Engine output SAE J1349:**  
Net 213 kW 285 hp  
Gross 216 kW 289 hp
- **Body volume:**  
16,5 m<sup>3</sup> 21.6 yd<sup>3</sup>
- **Load capacity:**  
27 t 30 sh ton
- **Volvo High-performance, low-emission** direct-injected, inter-cooled, turbocharged engine as standard.
- **Electronically controlled, fully automatic powershift transmission.**
- **Variable hydraulic retarder** as standard.
- **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 axle.
- **Low interior noise level.**
- **Adjustable steering wheel.**

**VOLVO**



## ENGINE

Volvo 6-cylinder, in-line, direct-injected, turbocharged, inter-cooled 4-cycle low-emission diesel engine with overhead valves and wet replaceable cylinder linings. Meets USA (EPA), California off-road regulation 1996 and European off-road regulation 1997.

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

|                         |           |                           |
|-------------------------|-----------|---------------------------|
| Make.....               | Volvo     |                           |
| Model.....              | TD103 KBE |                           |
| Max power at.....       | 36,7 r/s  | <b>2200 rpm</b>           |
| SAE J1349 Gross.....    | 216 kW    | <b>289 hp</b>             |
| Flywheel power at.....  | 36,7 r/s  | <b>2200 rpm</b>           |
| SAE J1349 Net.....      | 213 kW    | <b>285 hp</b>             |
| DIN 6271*.....          | 213 kW    | <b>285 hp</b>             |
| Max torque at.....      | 16,6 r/s  | <b>996 rpm</b>            |
| SAE J1349 Gross.....    | 1365 Nm   | <b>1007 lbf ft</b>        |
| SAE J1349 Net.....      | 1360 Nm   | <b>1003 lbf ft</b>        |
| DIN6271**.....          | 1360 Nm   | <b>1003 lbf ft</b>        |
| Displacement total..... | 9,6 l     | <b>586 in<sup>3</sup></b> |
| Bore.....               | 120 mm    | <b>4.7 in</b>             |
| Stroke.....             | 140 mm    | <b>5.5 in</b>             |
| Compression ratio.....  | 18:1      |                           |

\* 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



## ELECTRICAL SYSTEM

|                       |          |               |
|-----------------------|----------|---------------|
| Voltage.....          | 24 V     |               |
| Battery capacity..... | 2x170 Ah |               |
| Alternator.....       | 1,68 kW  | <b>60 A</b>   |
| Starter motor.....    | 6,6 kW   | <b>8.8 hp</b> |



## SERVICE CAPACITIES

|                         |       |                    |
|-------------------------|-------|--------------------|
| Crankcase.....          | 23 l  | <b>6.1 US gal</b>  |
| Fuel tank.....          | 360 l | <b>95.1 US gal</b> |
| Cooling system.....     | 52 l  | <b>13.7 US gal</b> |
| Transmission total..... | 41 l  | <b>10.8 US gal</b> |
| Dropbox.....            | 6 l   | <b>1.6 US gal</b>  |
| Front axle.....         | 27 l  | <b>7.1 US gal</b>  |
| First bogie axle.....   | 28 l  | <b>7.4 US gal</b>  |
| Second bogie axle.....  | 27 l  | <b>7.1 US gal</b>  |
| Brake hydraulics.....   | 2 l   | <b>0.5 US gal</b>  |
| Hydraulic system.....   | 194 l | <b>51.3 US gal</b> |
| Hydraulic tank.....     | 175 l | <b>46.2 US gal</b> |



## DRIVETRAIN

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

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

**Drop box:** Volvo single-stage, power takeoff and 100% differential locking.

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

**Differential locks:** One longitudinal and three transverse. All with 100% locking capability.

|                       |               |
|-----------------------|---------------|
| Torque converter..... | 2.42:1        |
| Transmission.....     | Volvo PT 1663 |
| Dropbox.....          | Volvo FL 650B |
| Axles.....            | Volvo AH 63   |

### Speeds with tires 30/65 R 25 and 23.5 R 25

|         |           |                 |
|---------|-----------|-----------------|
| Forward |           |                 |
| 1       | 8,2 km/h  | <b>5.1 mph</b>  |
| 2       | 11,9 km/h | <b>7.4 mph</b>  |
| 3       | 21,5 km/h | <b>13.4 mph</b> |
| 4       | 31,1 km/h | <b>19.3 mph</b> |
| 5       | 39,5 km/h | <b>24.5 mph</b> |
| 6       | 52,3 km/h | <b>32.7 mph</b> |
| Reverse |           |                 |
| 1       | 7,6 km/h  | <b>4.7 mph</b>  |
| 2       | 13,1 km/h | <b>8.1 mph</b>  |



## 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 oscillation 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 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 as standard.

**Exhaust retarder:** Standard.

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



## HYDRAULIC SYSTEM

**Pumps:** Four engine-dependent, variable piston pumps mounted on flywheel power takeoffs. One ground-dependent hydraulic pump for supplementary steering mounted on drop box.

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

|   |           |                 |
|---|-----------|-----------------|
| Pump capacity per pump at shaft speed . . . . . | 36 r/s    | 2160 rpm        |
|   | 109 l/min | 28.8 US gal/min |
| Working pressure. . . . .                       | 19 MPa    | 2758 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/Contronic 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 and flameproof upholstery.

**Trainer's seat:** Standard.

|   |           |
|---|-----------|
| Number of exits . . . . .                                 | 2         |
| Internal sound level acc. to ISO 6394 at max. speed . . . | 76 dB (A) |



## STEERING SYSTEM

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

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

**Supplementary steering:** Standard. Complies with the 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      5/16 in                  |
| Side                             | 12 mm     1/2 in                   |
| Bottom/chute                     | 14 mm     9/16 in                  |
| Yield strength. . . . .          | 1000 N/mm <sup>2</sup> 145,000 psi |
| Tensile strength . . . . .       | 1250 N/mm <sup>2</sup> 181,000 psi |
| Hardness min. . . . .            | 360–440 HB                         |



## WEIGHTS

Operating weight includes all fluids and operator.

**Operating weight with tires 23.5 R 25**

|                   |          |            |
|-------------------|----------|------------|
| Front             | 11500 kg | 25,350 lb  |
| Rear              | 9400 kg  | 20,720 lb  |
| Total             | 20900 kg | 46,080 lb  |
| Payload . . . . . | 27000 kg | 59,520 lb  |
| Total weight      |          |            |
| Front             | 15250 kg | 33,620 lb  |
| Rear              | 32650 kg | 71,980 lb  |
| Total             | 47900 kg | 105,600 lb |

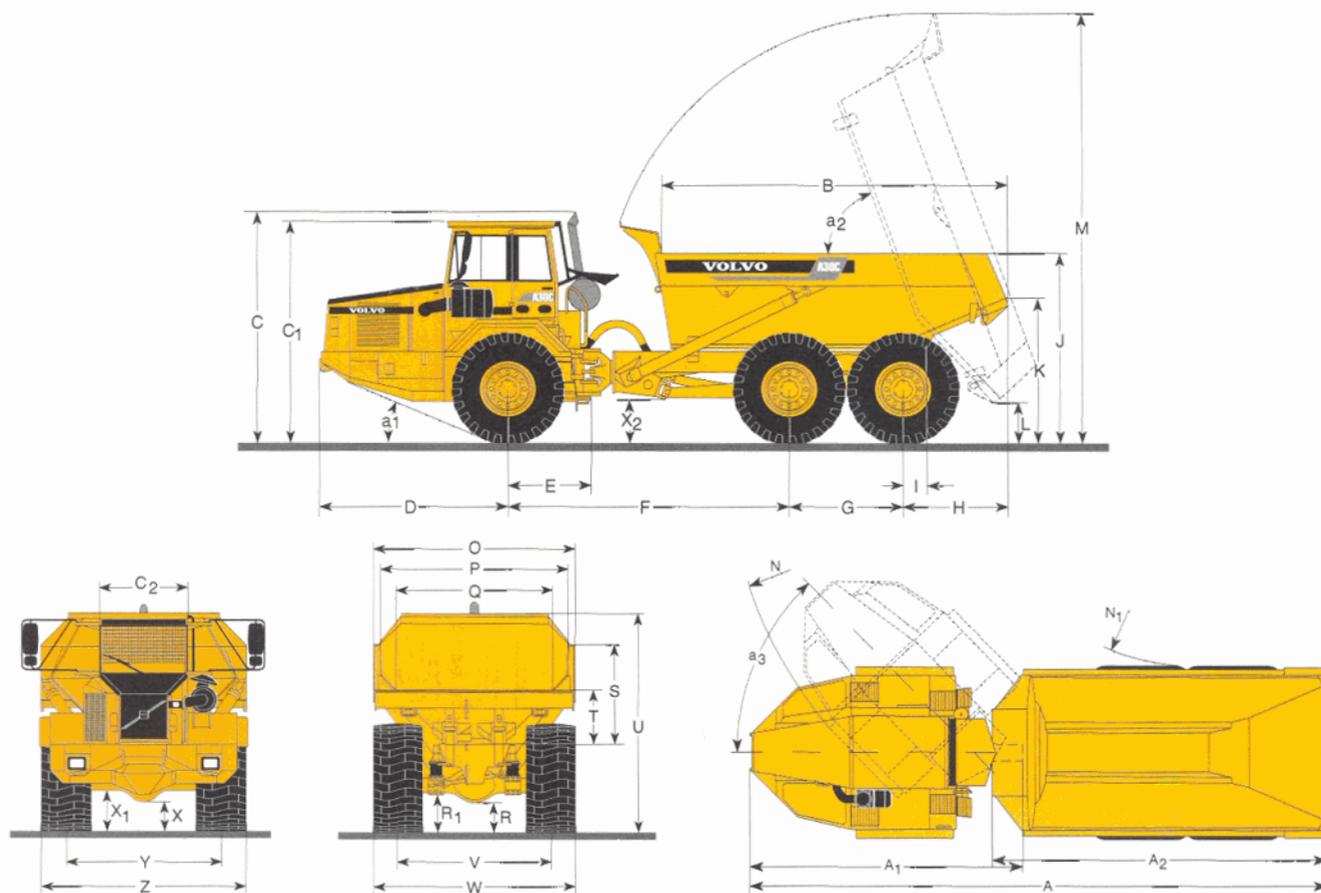
A30C equipped with 30/65 R 25 tires, add 200 kg 440 lb per axle.



## GROUND PRESSURE

At 15% sinkage of unloaded radius and specified weights.

|                    |                  |                   |
|--------------------|------------------|-------------------|
| <b>With tires:</b> | <b>23.5 R 25</b> | <b>30/65 R 25</b> |
| Unloaded           |                  |                   |
| Front              | 112 kPa 16.2 psi | 94 kPa 13.6 psi   |
| Rear               | 46 kPa 6.7 psi   | 40 kPa 5.8 psi    |
| Loaded             |                  |                   |
| Front              | 150 kPa 21.7 psi | 124 kPa 18.0 psi  |
| Rear               | 164 kPa 23.8 psi | 135 kPa 19.6 psi  |

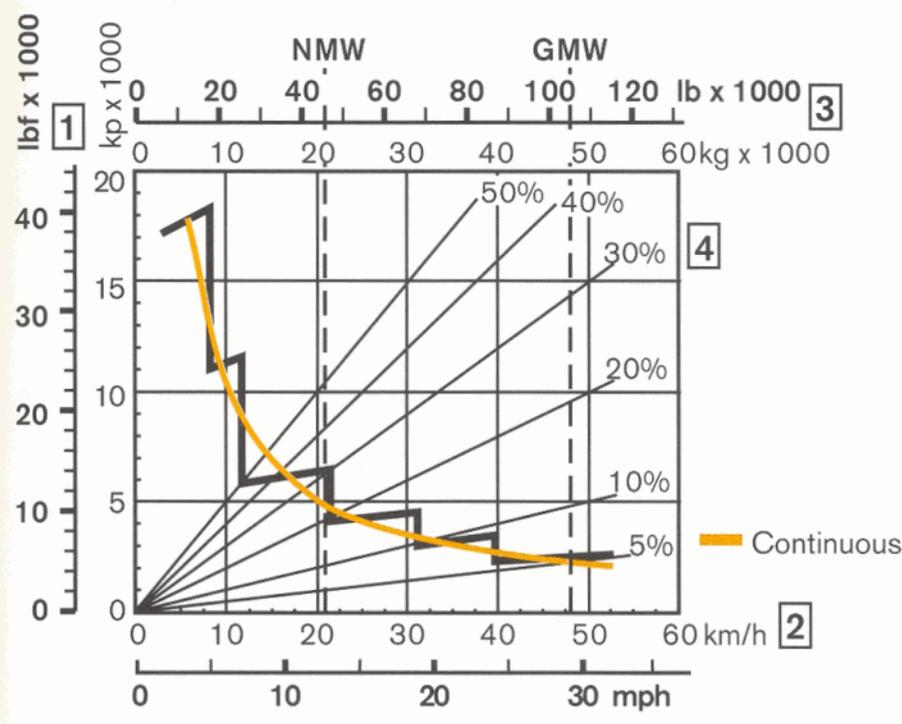
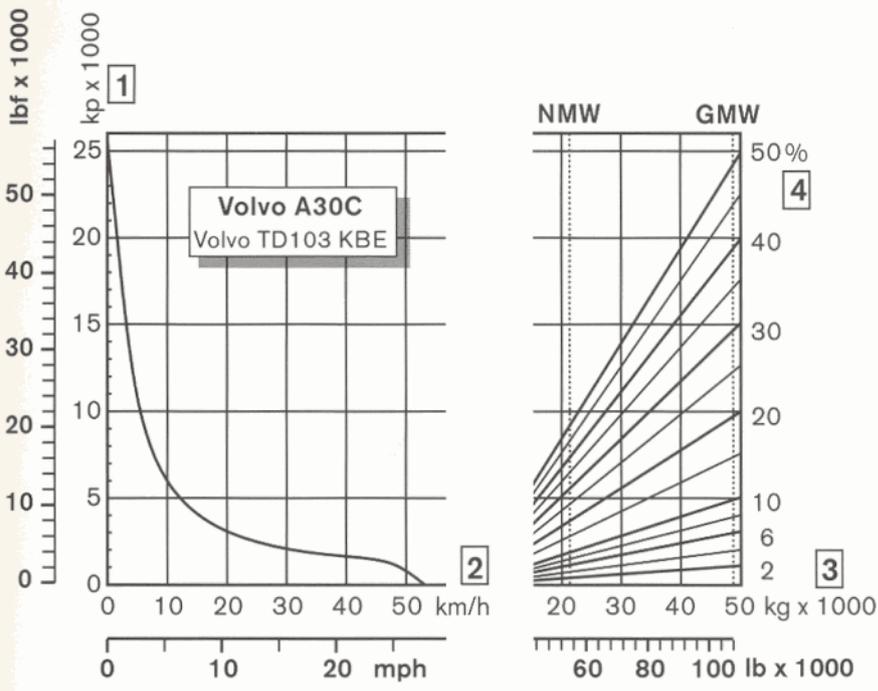


### DIMENSIONS Volvo A30C 6x6 (unloaded)

|   |          |        |    |         |       |    |         |        |    |         |      |
|---|----------|--------|----|---------|-------|----|---------|--------|----|---------|------|
| A   | 10200 mm | 33'6"  | F  | 4173 mm | 13'8" | O  | 2932 mm | 9'7"   | W  | 2820 mm | 9'3" |
| A1  | 4862 mm  | 15'11" | G  | 1670 mm | 5'6"  | P  | 2720 mm | 8'11"  | W* | 2980 mm | 9'9" |
| A2  | 5856 mm  | 19'3"  | H  | 1587 mm | 5'2"  | Q  | 2286 mm | 7'6"   | X  | 485 mm  | 1'7" |
| B   | 5167 mm  | 16'11" | I  | 430 mm  | 1'5"  | R  | 530 mm  | 1'9"   | X1 | 522 mm  | 1'8" |
| C   | 3410 mm  | 11'2"  | J  | 2834 mm | 9'4"  | R1 | 567 mm  | 1'10"  | X2 | 670 mm  | 2'2" |
| C1  | 3260 mm  | 10'8"  | K  | 2180 mm | 7'2"  | S  | 1464 mm | 4'10"  | Y  | 2216 mm | 7'3" |
| C2  | 1331 mm  | 4'4"   | L  | 594 mm  | 1'11" | T  | 810 mm  | 2'8"   | Z  | 2820 mm | 9'3" |
| D   | 2770 mm  | 9'1"   | M  | 6494 mm | 21'4" | U  | 3305 mm | 10'10" | Z* | 2980 mm | 9'9" |
| E   | 1210 mm  | 4'     | N  | 8047 mm | 26'5" | V  | 2216 mm | 7'3"   | a1 | 23°     |      |
| C*  | 3802 mm  | 12'6"  | N1 | 4021 mm | 13'2" |    |         |        | a2 | 70°     |      |
| with optional spill guard in upright position |          |        |    |         |       |    |         |        |    |         |      |
| * with tires 30/65 R 25                       |          |        |    |         |       |    |         |        |    |         |      |

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

|                                 |                     |                      |                                   |                     |                      |
|---------------------------------|---------------------|----------------------|-----------------------------------|---------------------|----------------------|
| US body load capacity . . . . . | 27000 kg            | 30 sh tn             | With overhung tailgate (optional) |                     |                      |
| Body, struck . . . . .          | 12,9 m <sup>3</sup> | 16.9 yd <sup>3</sup> | Body, struck . . . . .            | 13,2 m <sup>3</sup> | 17.3 yd <sup>3</sup> |
| heaped                          | 16,5m <sup>3</sup>  | 21.6 yd <sup>3</sup> | heaped                            | 17,2 m <sup>3</sup> | 22.5 yd <sup>3</sup> |



**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 %.

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

## STANDARD EQUIPMENT

### Safety and comfort

ROPS/FOPS cab  
 Anti-slip material on fenders and hood  
 Back-up warning alarm  
 Hazard flashers  
 Horn  
 Protective grille for rear window  
 Cab heater with filtered fresh air and defroster  
 Contronic information panel  
 Ergonomically designed and adjustable operator's seat with air suspension and electric heating  
 Trainer's seat  
 Windshield wipers with interval  
 Windshield washers  
 Rearview mirrors  
 Seat belt  
 Sun visor  
 Tinted glass  
 Cigarette lighter  
 Ashtray  
*Lights:*  
 • Headlights, high/low beam  
 • Parking lights  
 • Rear lights  
 • Turn signals  
 • Back-up lights  
 • Brake lights  
 • Cab lighting  
 • Instrument lighting

Adjustable steering wheel  
 Steering joint locking assembly  
 Radio/Contronic console in ceiling  
 Secondary steering  
 Speedometer

### Engine and electrical system

Low-emission engine  
 Turbocharger  
 Exhaust retarder  
 Intercooler  
 Oil drainage hose  
 Alternator  
 Preheating coil  
 Battery disconnect switch  
 Electrical outlet  
*Gauges for:*  
 • Air pressure  
 • Engine temperature  
 • Engine rpm  
 • Fuel  
 • Hours  
 • Transmission oil temperature  
*Pilot lamps for:*  
 • Battery charging  
 • Turn signals  
 • Bogie axles diff. lock  
 • Front axle diff. lock  
 • Longitudinal diff. lock  
 • Lights  
 • Main beam  
 • Preheating coil

### Warning lamps for:

- Air cleaner, engine
- Body up
- Brake pressure
- Brake failure
- Coolant level
- Engine oil pressure
- Engine temperature
- Engine-dependent steering pump
- Ground-dependent steering pump
- Parking brake
- Transmission malfunction

### Central warning for:

- Air pressure
- Battery charging
- Brake failure
- Body up
- Engine oil pressure
- Engine overspeed
- Engine temperature
- Steering function
- Transmission malfunction

### Drivetrain

Torque converter  
 Fully automatic transmission  
 Drop box, single stage  
 Automatic lock-up  
 Hydraulic retarder, variable  
 Longitudinal differential lock  
 Differential lock front axle  
 Differential lock first bogie axle  
 Differential lock second bogie axle

### External

Rear mudflaps  
 Mudguard wideners, front 9' 9"

### Body

Body with exhaust ducts

### Tires

23.5 R 25

## OPTIONAL EQUIPMENT

### Service and maintenance

Toolbox  
 Central lubrication

### Engine

Coolant filter  
 Oil-bath air cleaner  
 Engine coolant preheater, 120 V

### Electrical

Work lights, roof-mounted

### Cab

Air-conditioning  
 Electrically heated rearview mirrors  
 Kit for radio installation

### External

Fender wideners

### Body

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

### Tires

30/65 R 25

*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

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