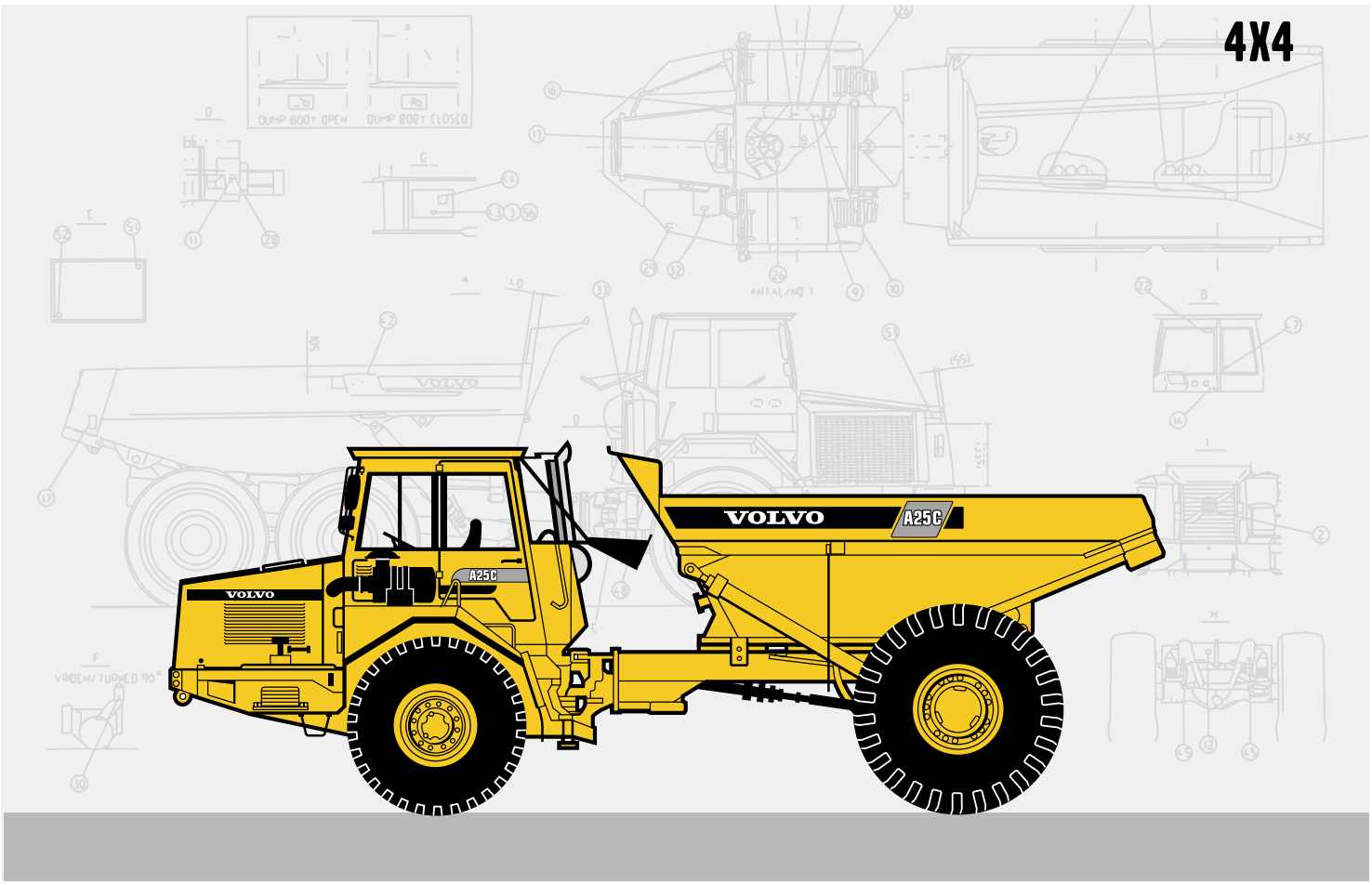
VOLVO ARTICULATED HAULER

A25C

4X4



- Engine output SAE J1349:
  Net 187 kW (251 hp)
  Gross 190 kW (255 hp)
- Body volume:
  13,0 m³ (17.0 yd³)
- Load capacity:
  22,5 t (25 sh tn)

- Volvo low emission direct-injected, turbocharged, inter-cooled high performance diesel engine.
- 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 two transverse diff locks.
- Front axle with 3-point suspension and effective shock absorption.
- Load and dump brake.
- Low interior noise level.
- Adjustable steering wheel.

VOLVO

ENGINE

Volvo 6-cylinder, in-line, direct-injected, turbocharged, 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 tourqe at	20 tr/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 in^3)
Bore	105 mm (4.1 in)
Stroke	130 mm (5.1 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 tourqe is 970 Nm, 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)
Rear axle	48 l (12.7 US gal)
Brake hydraulics	2 l (0.5 US gal)
Hydraulic system	180 l (42.3 US gal)
Hydraulic tank	155 l (38.3 US gal)

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. 4-wheel drive. Both axles have transversal diff-locks with 100% lock-up and fully floating axle shafts with planetary type hub reductions.

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

Torque converter	2.4:1
Transmission	Volvo PT 1051 (5HP 500)
Dropbox	Volvo FL 652
Axles	Volvo AH 54/AH 71

Speeds

Low gear, forward	
1	6 km/h (3.7 mile/h)
2	10 km/h (5.6 mile/h)
3	17 km/h (10.6 mile/h)
4	24 km/h (14.9 mile/h)
5	34 km/h (21.1 mile/h)
High gear, forward	
1	9 km/h (5.6 mile/h)
2	15 km/h (9.3 mile/h)
3	26 km/h (16.2 mile/h)
4	37 km/h (23.0 mile/h)
5	52 km/h (32.3 mile/h)
Low gear, reverse	
1	7 km/h (4.3 mile/h)
High gear, reverse	
1	11 km/h (6.8 mile/h)

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.

Rear axle: No suspension.

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 rear axle.

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.

Load and dump brake: With the engine running, the service brake on the rear axle 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.

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 SAEJ1040/APR88.
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 and adjustable operator´s seat with flameproof upholstery. Retractable seat belt

Trainer seat: Option.

Number of exits	2
Internal sound level acc. to ISO 6394 and at max. speed	78 dB (A)

STEERING SYSTEM

Hydromechanical articulated steering with mechanical feed-back. 3,4 lock-to-lock turns.

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	12 s
Lowering time	10 s
Body, plate thickness	
Front	18 mm (0.70 in)
Sides	20 mm (0.79 in)
Bottom	20 mm (0.79 in)
Chute	24 mm (0.94 in)
Yield strength	1000 N/mm^2 (145000 psi)
Tensile strength	1250 N/mm^2 (181000 psi)
Hardness min.	360–440 HB

WEIGHTS

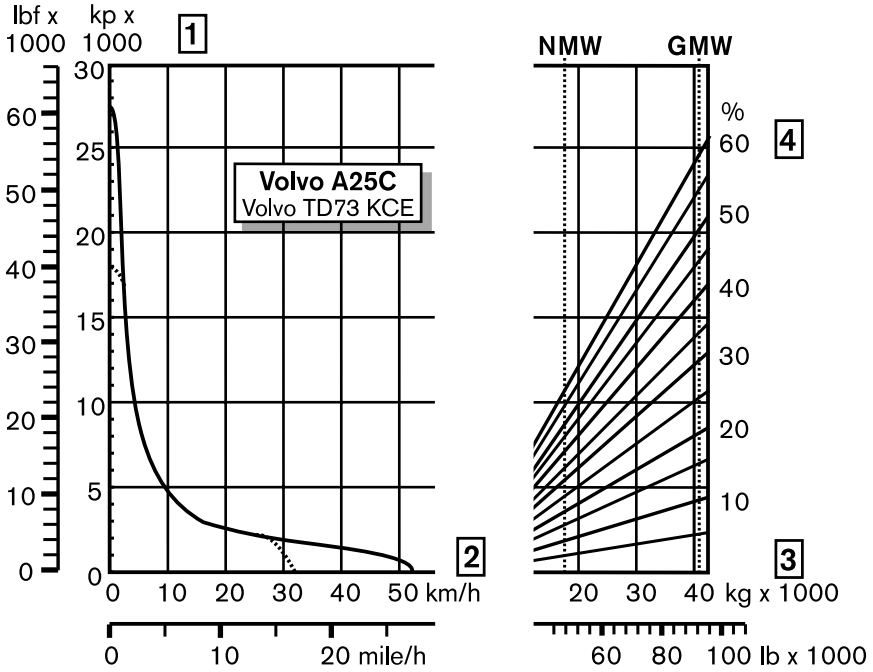
Operating weight includes all fluids and operator.
Standard machine.

Operating weight	
Front	9150 kg (20172 lb)
Rear	6620 kg (14595 lb)
Total	15770 kg (34767 lb)
Payload	22500 kg (49603 lb)
Total weight	
Front	12550 kg (27668 lb)
Rear	25720 kg (56702 lb)
Total	38270 kg (84370 lb)

GROUND PRESSURE

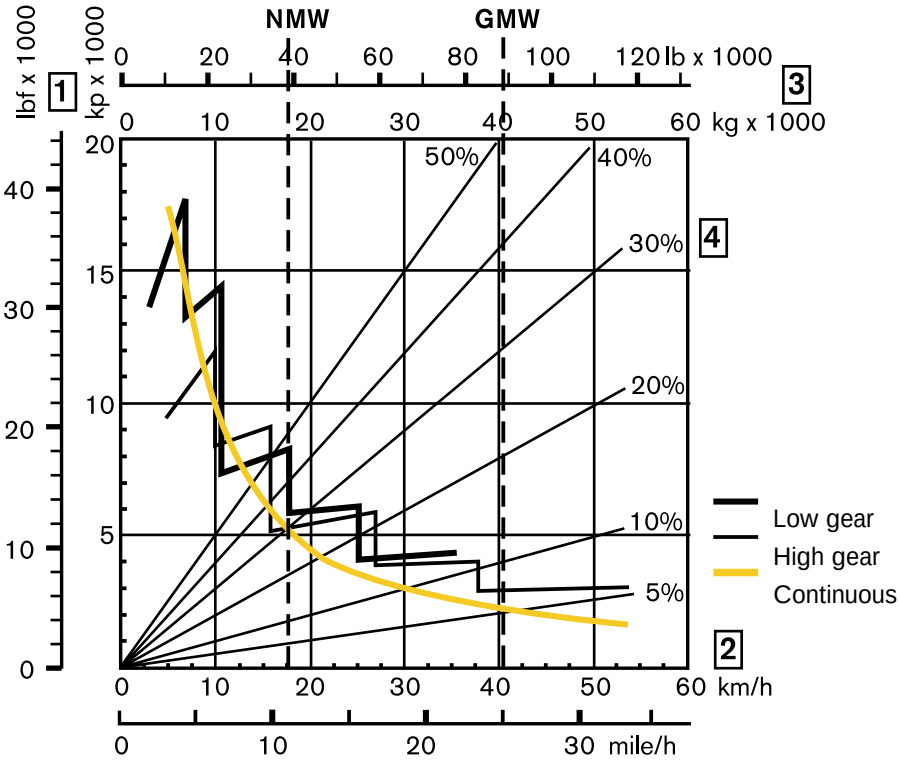
At 15% sinkage of unloaded radius and specified weights.

Unloaded	
Front	95 kPa (13.8 psi)
Rear	47 kPa (6.8 psi)
Loaded	
Front	131 kPa (19.0 psi)
Rear	183 kPa (26.5 psi)



RIMPULL

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



RETARDATION PERFORMANCE

(Exhaust brake + retarder)

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 %

INSTRUCTIONS

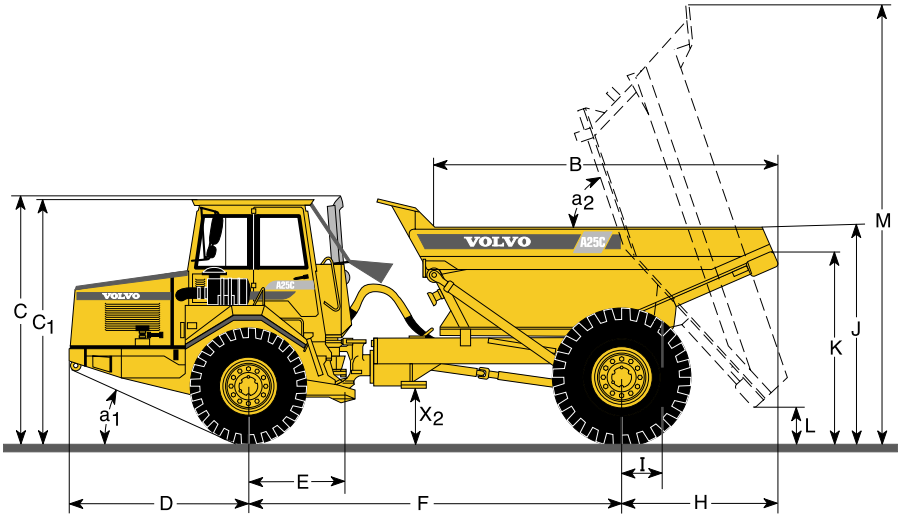
Diagonal lines represent total resistance (grade % plus rolling resistance %).

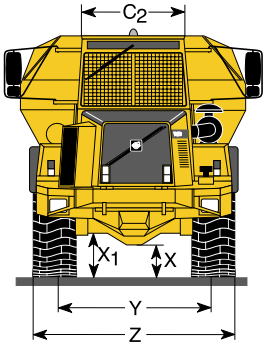
Charts based on 0% rolling resistance, standard tyres and gearing, unless otherwise stated.

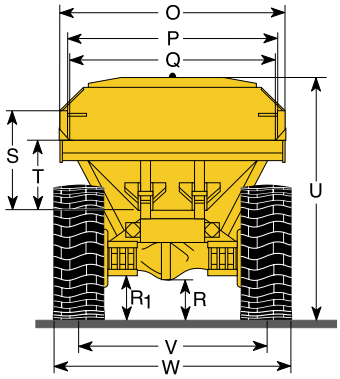
In the retardation chart the diagonal lines represent the "total resistance" as well (here in downhill grades it is the total extra pushing force), which is the grade in % minus the rolling resistance in %.

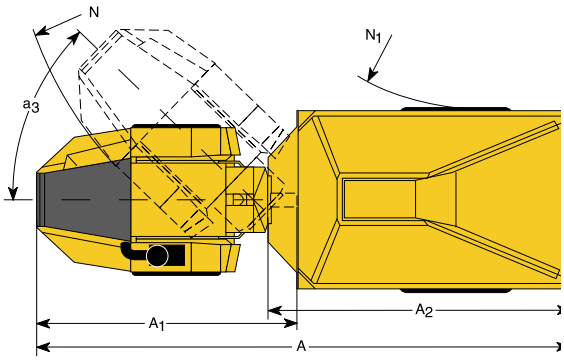
A. Find the diagonal line with the appropriate total resistance on the right-hand edge of the chart.
B. Follow the diagonal line downward until it intersects the actual machine weight line, NMW or GMW.
C. Draw a new line horizontally to the left from the point of intersection until the new line intersects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

DIMENSIONS Volvo A25C 4x4 (unloaded)



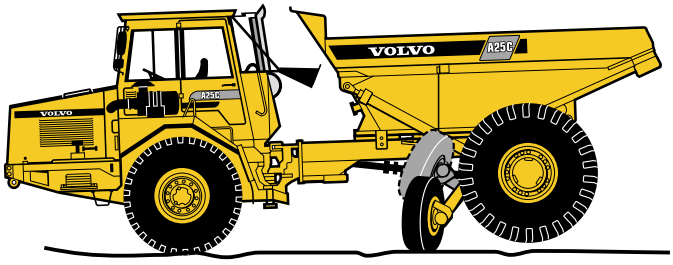


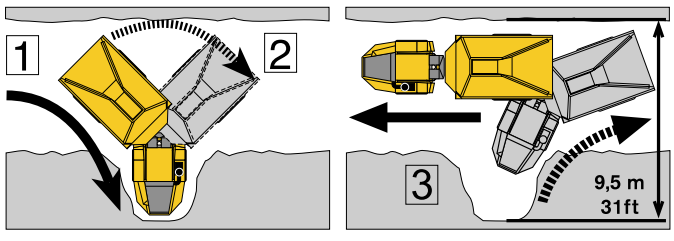




A	8955 mm (29'5")	F	4650 mm (15'3")	O	2980 mm (9'9")	W	3180 mm (10'5")
A_1	4495 mm (14'9")	H	1890 mm (6'2")	P	2800 mm (9'2")	X	480 mm (1'7")
A_2	4985 mm (16'4")	I	590 mm (1'11")	Q	2680 mm (8'9")	X_1	610 mm (2')
B	4500 mm (14'9")	J	2730 mm (8'11")	R	555 mm (1'10")	X_2	770 mm (2'6")
C	3285 mm (10'9")	K	2335 mm (7'8")	R_1	695 mm (2'3")	Y	2150 mm (7'1")
C_1	3210 mm (10'6")	L	650 mm (2'2")	S	1405 mm (4'7")	Z	2795 mm (9'2")
C_2	1320 mm (4'4")	M	5700 mm (18'5")	T	1030 mm (3'5")	a_1	26°
D	2415 mm (7'11")	N	7500 mm (24'7")	U	3165 mm (10'5")	a_2	70°
E	1200 mm (3'11")	N_1	3550 mm (11'8")	V	2370 mm (7'9")	a_3	45°

A25C 4x4 Turn Around (Optional)





Turn-around system. Turns 180° in 25 seconds.
A width of just 9.5 m (31 ft) is needed to turn the machine 180° in a 3-step operation. The turn-around system is hydraulically operated from the driver's seat and raises the unloaded trailer unit, thus enabling the steering hydraulics to swing the trailer through 90°.

1. Drive up to the turning point, steer the tractor unit fully to one side and engage the brakes.
2. Raise the trailer unit and steer the maximum 90°.
3. Lower the trailer and reverse away from the turning point.

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

Load capacity.	22 500 kg (25 sh tn)
Body, struck.	10,1 m³ (13.2 yd³)
heaped	13,0 m³ (17.0 yd³)

STANDARD EQUIPMENT

Safety
ROPS cab
Anti-slip material on hood and fenders
Ergonomically designed and ajustable operator´s seat with retractable seat belts
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
Cup holder
Cigarette lighter
Ergonomically designed and adjustable operator´s seat
Radio/Contronic console in ceiling
Sun-visor
Tinted glass

Engine
Exhaust brake
Intercooler
Low emission engine
Oil drainage hose
Preheating
Turbocharger

Electrical system
Alternator
Battery disconnect switch
Electrical outlet
Gauges for:
• Brake pressure
• Engine temperature
• Engine revolutions
• Fuel
• Hours
• Transmission oil temperature
Lights:
• 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
• Service brake engaged

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

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 rear axle

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

Body
Body with exhaust ducts and wear plates

Tyres
Front: 23.5R25
Rear: 29.5R25

OPTIONAL EQUIPMENT

Service and maintenance
Tool kit with tyre inflation unit
Tool box
Central lubrication

Engine
Coolant filter
Extra fuel filter
Oil-bath air cleaner

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
Speedometer, miles
Radio
Kit for radio installation

Safety
Overhead guard, FOPS
Fire extinguisher and first aid cushion

External
Brake protection, front axle
Mudguard wideners, front, 2,7 m
Rear mudflaps, 3,2 m
Turn-around system

Body
Body heating

Other
Exhaust gas cleaning with water
Synthetic hydraulic oil (biologically degradeable)
Towing hitch

Under our policy of continual product improvement, we reserve the right to chaqnge specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

VOLVO

Volvo Construction Equipment Group

Ref. No 21 3 669 4088
Printed in Sweden 98.10-2
Volvo Växjö

English
ART