

VOLVO BM

A 25

4x4
INTERCOOLER



A25 4x4 – AGILE, HIGH-CAPACITY HAULER

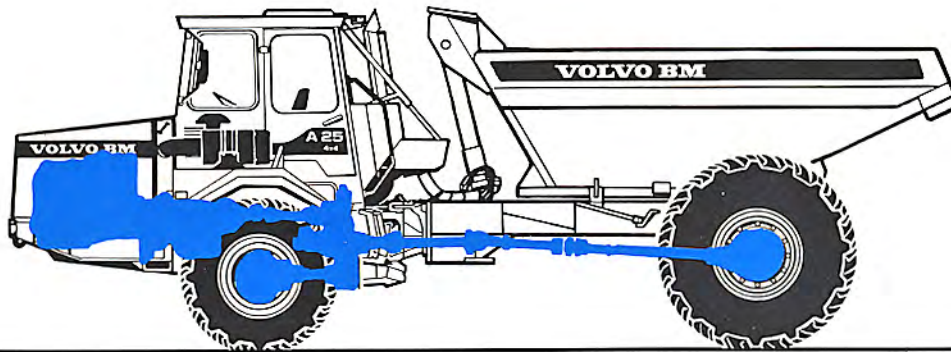
The Volvo BM A25 4x4 is a truly flexible 25 ton transport machine that is particularly well suited where the layout of the job site imposes high demands on agility and maneuverability.

Articulated steering, together with compact dimensions, make the A25 4x4 easy to drive at high average speeds, even on confined work sites.

Where optimum turnaround capability characteristics are required, in tunnels for example, the A25 4x4 can be equipped with a special turnaround system. This represents an entirely new technique for effective maneuvering of bulk haulage vehicles where the space is limited.

The Volvo BM A25 4x4 also has superb off-road characteristics thanks to the large wheels. It easily negotiates difficult terrain and the good weight distribution allows it to be driven back to the edge of the dumping area to spot loads with precision. Particular attention has been devoted to the operator's location.

An outstanding suspension system, low noise levels and attention to ergonomic principles in the design and location of controls and levers ensure the best possible conditions for effective operator performance.



DRIVE TRAIN

The power source in the A25 4x4 is a 6-cylinder Volvo turbodiesel that develops 180 kW (244 hp SAE). This is a modern, lightweight engine combining high power with low fuel consumption.

The drive train is composed of well-matched components for long term reliability. Power is transmitted to the 4 driving wheels via a fully automatic gearbox.

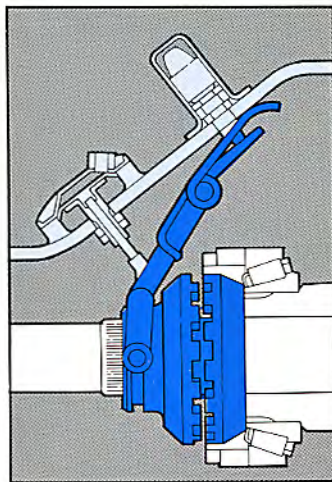
TURNAROUND SYSTEM (OPTIONAL)

Volvo BM has developed a completely new turnaround system specially for the A25 4x4. This consists of an A-frame equipped with wheels that is operated hydraulically from the cab. The operator can simply rotate the trailer unit a full 90° in less than 30 seconds.

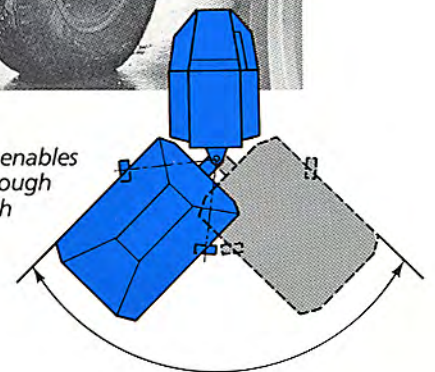
This turning system makes the A25 4x4 a highly effective vehicle for bulk haulage in confined spaces.

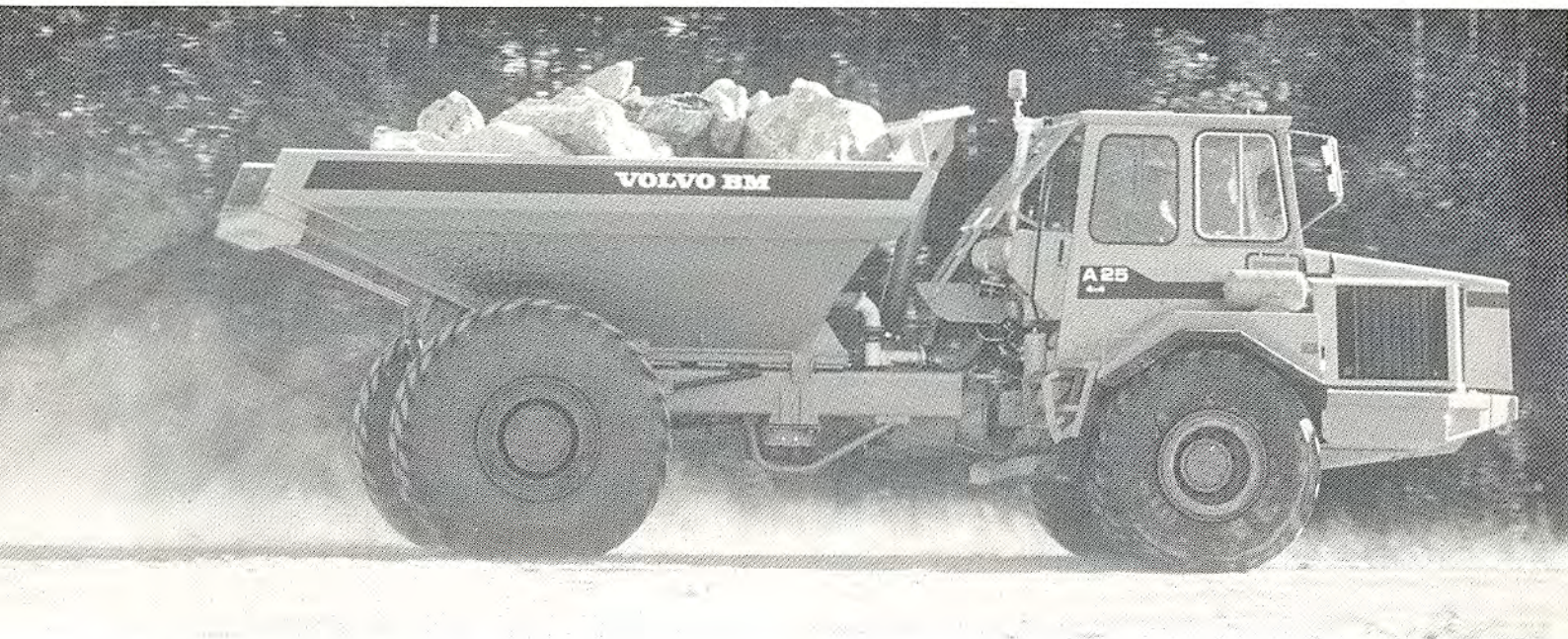
DIFFERENTIAL LOCKS FOR INCREASED OFF-ROAD MOBILITY

The A25 4x4 has operator selectable driving modes; 100% differential locks on both axles and longitudinal differential that can be engaged or disengaged on the go.



The turnaround system enables the A25 4x4 to turn through 180° with ease in a width of only 9,5 m (31' 2").





COMFORT AND SAFETY

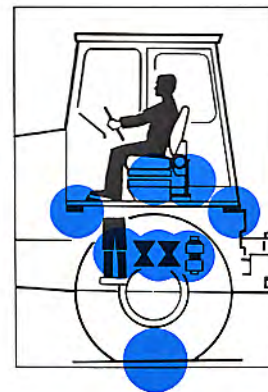
Because the A25 4x4 is designed for high-speed operation, the operator is comfortably seated, even during hard driving over bumpy surfaces. The cab is spacious with low noise levels and has well arranged controls and instrumentation for safe, effortless driving.

The cab is tested and ROPS/FOPS approved.

The dual-circuit brake system has disc brakes on all axles. This provides security during the hauling of big loads.

SUSPENSION

Tires, rubber suspension with shock absorbers, rubber cab mounting and the suspended operator's seat, all interact to give the A25 4x4 excellent driving characteristics. This suspension is also completely maintenance-free.



SIMPLE SERVICE

Simple, fast servicing procedures give you more productive operating hours from the machine and your operator. There are only a few easily accessible lube points which need daily attention and the hood can be tilted forward, completely exposing the engine compartment for routine checks and maintenance.



ENGINE

Volvo TD 71 K Intercooler: 6-cylinder-in-line, direct-injected, turbocharged, aftercooled, 4-cycle diesel with overhead valves and wet replaceable cylinder linings.

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

Max. rating at	rps	rpm	40	2400
SAE J1349 Gross	kW	hp	180	244
Flywheel rating at	rps	rpm	40	2400
SAE J1349 Net/ DIN 6271*	kW	hp	177	240
Max. torque at	rps	rpm	27	1600
SAE J1349 Gross	Nm	lbf ft	815	601
SAE J1349 Net/ DIN 6271**	Nm	lbf ft	800	590.1
Displacement, total	dm ³ , l	in ³	6,73	411
Bore	mm	in	104,77	4.125
Stroke	mm	in	130	5.12
Compression ratio			15.5:1	

*With fan at normal 20 rps (1200 rpm). With fan operating at 40 rps (2400 rpm) the flywheel power is 160 kW (218 hp) which corresponds to DIN 70020.

**With fan at normal 20 rps (1200 rpm). With fan operating at 40 rps (2400 rpm) the maximum torque is 710 Nm (524 lbf ft) which corresponds to DIN 70020.



ELECTRICAL SYSTEM

Voltage	V		24	
Battery capacity	Ah/No		135/2	
Generator rating	W/A		1540/55	
Starter motor power	kW	hp	5	6.8



BRAKE SYSTEM

Dual-circuit system with air over hydraulic, dry disc brakes, designed to comply with ISO 3450 and SAE J1473 at total weight 37800 kg (83,330 lb).

Secondary: Dual circuits, one for front axle and one for rear axle.

Parking brake: The parking brake is a spring actuated brake on the propeller shaft, designed to hold a loaded machine on a grade up to 18%.

Compressor: The air system is supplied by a gear driven compressor.

Exhaust retarder: As standard.

Retarder: Optional hydraulic transmission retarder.



DRIVETRAIN

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

Transmission: Planetary transmission, electronically controlled fully automatic gear-shifting.

Dropbox: Volvo BM dropbox of 2-stage design with power take-off and differential.

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

Axles: The driving axles are of Volvo BM design and have fully floating axle shafts with planetary gear type hub reduction.

Torque converter				2.4:1
Transmission				ZF 5 HP 500
Speeds				
Low gear, forward	1	km/h	mph	6 3.7
	2	km/h	mph	9 5.6
	3	km/h	mph	15 9.3
	4	km/h	mph	22 13.7
	5	km/h	mph	31 19.3
Low gear, reverse	1	km/h	mph	7 4.3
High gear, forward	1	km/h	mph	9 5.6
	2	km/h	mph	15 9.3
	3	km/h	mph	25 15.5
	4	km/h	mph	36 22.4
	5	km/h	mph	51 31.7
High gear, reverse	1	km/h	mph	11 6.8
Dropbox				FL 652
Front axle, type				AH 54 E
Rear axle, type				AH 71 B



TIRES

Tires, front, radials	23.5R25 ★
Tires, rear, radials	29.5R25 ★★



STEERING SYSTEM

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

Secondary steering: Secondary steering function as standard. Complies with ISO 5010 at total weight 37800 kg (83,330 lb).

Cylinders: Two double-acting cylinders.

Steering angle: ±45°.

Turning radius: 7500 mm (24'7").



SUSPENSION

VOLVO BM SUSPENSION SYSTEM

Front axle: Two rubber springs with bottoming absorption on either side, stabilizer bar and two shock absorbers on either side.



CAB

Volvo BM cab, tested and approved in accordance with ROPS standard ISO 3471/SAE J1040C and FOPS ISO 3449/SAE J231.

The cab is mounted on rubber pads, which reduce vibration of the operator's station.

Heater and defroster: Filtered air and pressurized cab.

Operator's seat: Operator's seat with flameproof upholstery. Extra seat for trainer.

Seat belts are provided on both seats.

Number of exits (includes door)		2
Noise level in cab	dB (A)	77



HYDRAULIC SYSTEM

Pump: Engine-dependent variable piston pumps mounted on flywheel power take-offs.

Three of four take-offs are used.

One ground-driven piston pump for secondary steering mounted on the dropbox.

Filtration: Filtration of oil through 2 paper and magnet filters.

*Pump 1, 2, 3

**Ground-driven hydraulic pump

Pump capacity	dm ³ , l/min	US gal/min	100*	26.4*
	dm ³ , l/min	US gal/min	118**	31.2**
at	rps	rpm	40	2400
Working pressure	MPa	psi	18,5*	2680*
	MPa	psi	18,5**	2680**



BODY

Cylinder: One 3-stage hoist cylinder with the top stage double-acting. Tipping stop built into the tipping cylinder.

Body: Body made of hardened-and-tempered steel with particularly high impact strength.

Tipping angle	deg.	65	
Tipping time with load	s	12	
Lowering time	s	22	
Body plate thickness	Front	mm in	10 0.39
	Bottom/sides	mm in	12 0.47
	Chute	mm in	16 0.63
	Body		
Yield strength	kp/mm ² psi	90 145,000	
Tensile strength	kp/mm ² psi	125 178,000	
Hardness min.	HB	360-440	



LOAD CAPACITY

Body volumes according to SAE 2:1.

Load capacity	kg	sh tons	22 500	25
Body volumes, struck	m ³	yd ³	10,1	13.2
	heaped	m ³	yd ³	13,0 17.0

Bodies with struck volumes of 10 m³ (13 yd³) or more, heaped volume is given to the nearest whole m³.

Struck volume is given in m³ (yd³) to one decimal place.



WEIGHTS

Service weight includes body with wear plates, oil, fuel and water.

Service weight				
Front	kg	lb	8850	19,510
Rear	kg	lb	6450	14,220
Total	kg	lb	15 300	33,730
Payload				
Total	kg	lb	22 500	49,610
Total weight				
Front	kg	lb	12 250	27,000
Rear	kg	lb	25 550	56,330
Total	kg	lb	37 800	83,330



GROUND PRESSURE

At 15% slump of unloaded diameter and specified weights. Cone penetrometer value at depth of 250 mm (9.8 in).

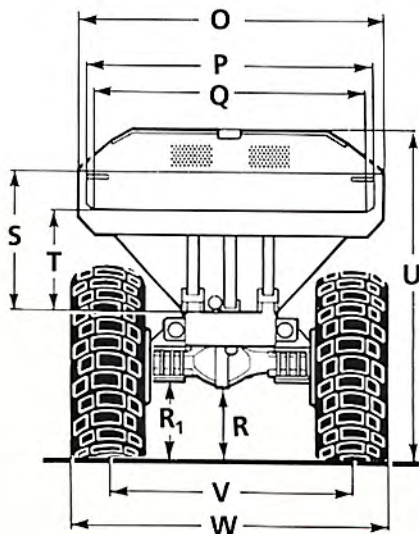
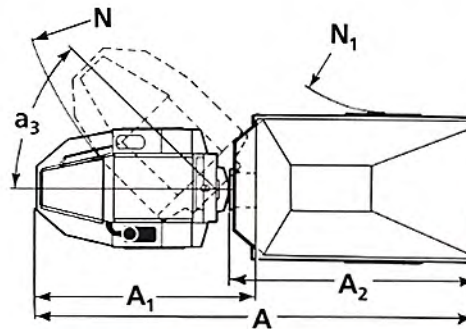
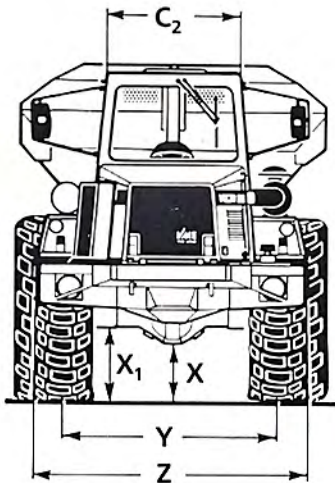
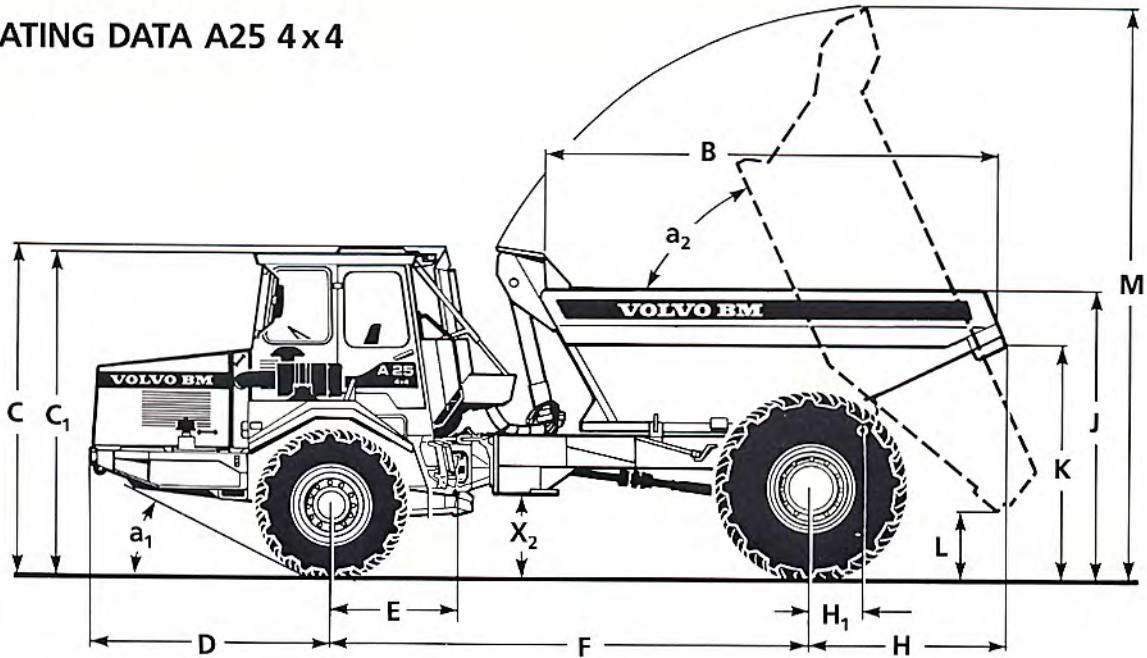
Unloaded				
Front	kPa	psi	95	13.8
Rear	kPa	psi	48	7.0
Loaded (rated load)				
Front	kPa	psi	131	19.0
Rear	kPa	psi	191	27.7
Cone penetrometer value			79	



SERVICE REFILL CAPACITIES

Crankcase	dm ³ , l	US gal	24	6.3
Fuel tank	dm ³ , l	US gal	280	74.0
Cooling system	dm ³ , l	US gal	30	8.0
Transmission, total	dm ³ , l	US gal	16	4.2
Dropbox	dm ³ , l	US gal	6	1.6
Front axle	dm ³ , l	US gal	35	9.2
Rear axle	dm ³ , l	US gal	47	12.4
Hydraulic system	dm ³ , l	US gal	160	42.3
Hydraulic tank	dm ³ , l	US gal	145	38.3

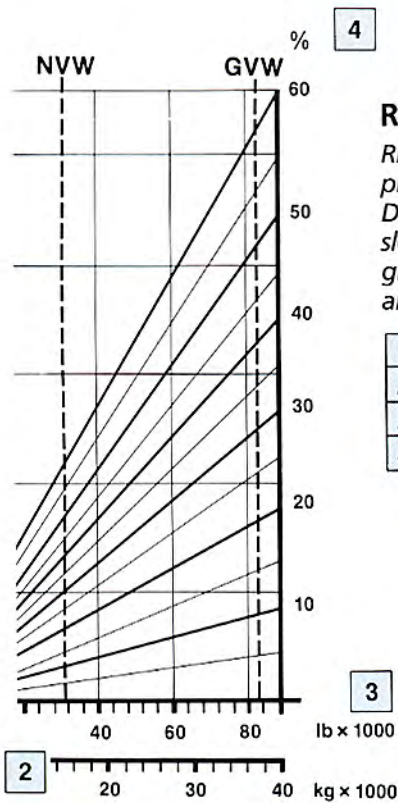
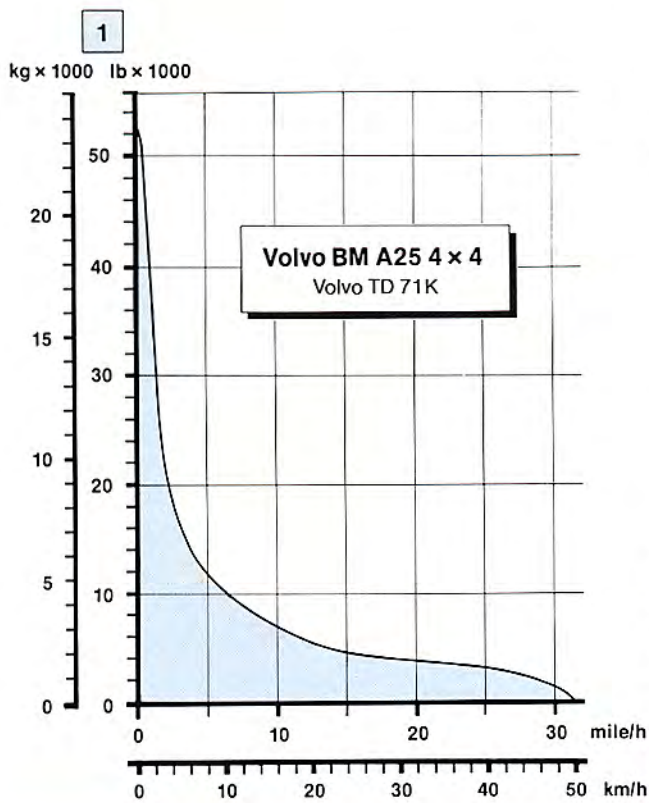
OPERATING DATA A25 4x4



MACHINE DIMENSIONS

A	mm ft in	8955	29'5"	O	mm ft in	2980	9'9"
A ₁	mm ft in	4495	14'9"	P	mm ft in	2800	9'2"
A ₂	mm ft in	4985	16'4"	Q	mm ft in	2680	8'10"
B	mm ft in	4500	14'9"	R	mm ft in	555	1'10"
C	mm ft in	3200	10'6"	R*	mm ft in	635	2'1"
C*	mm ft in	3240	10'8"	R ₁	mm ft in	695	2'3"
C ₁	mm ft in	3150	10'4"	S	mm ft in	1405	4'7"
C ₁ *	mm ft in	3190	10'6"	T	mm ft in	1030	3'5"
C ₂	mm ft in	1320	4'4"	U	mm ft in	3165	10'5"
D	mm ft in	2415	7'11"	U*	mm ft in	3245	10'8"
E	mm ft in	1200	3'11"	V	mm ft in	2370	7'9"
F	mm ft in	4650	15'3"	W	mm ft in	3180	10'5"
H	mm ft in	1890	6'2"	X	mm ft in	450	1'6"
H ₁	mm ft in	590	1'11"	X*	mm ft in	465	1'6"
J	mm ft in	2730	8'11"	X ₁	mm ft in	587	1'11"
J*	mm ft in	2810	9'3"	X ₂	mm ft in	770	2'6"
K	mm ft in	2355	7'9"	Y	mm ft in	2150	7'1"
K*	mm ft in	2435	8'0"	Z	mm ft in	2795	9'2"
L*	mm ft in	705	2'4"	a ₁	deg	26	
M*	mm ft in	5610	18'5"	a ₂	deg	65	
N	mm ft in	7500	24'7"	a ₃	deg	45	
N ₁	mm ft in	3550	11'8"				

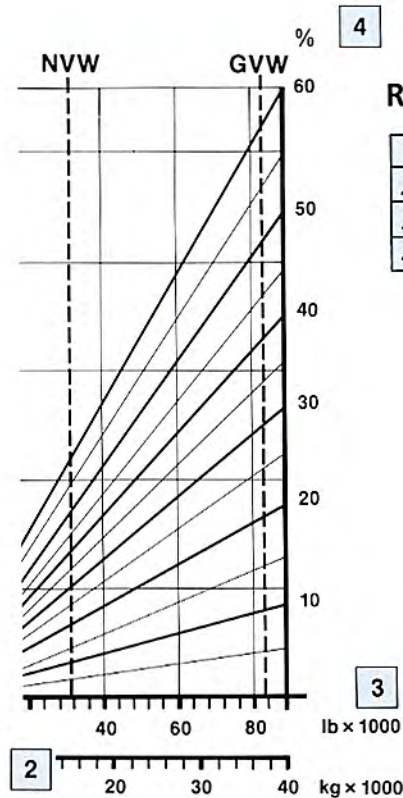
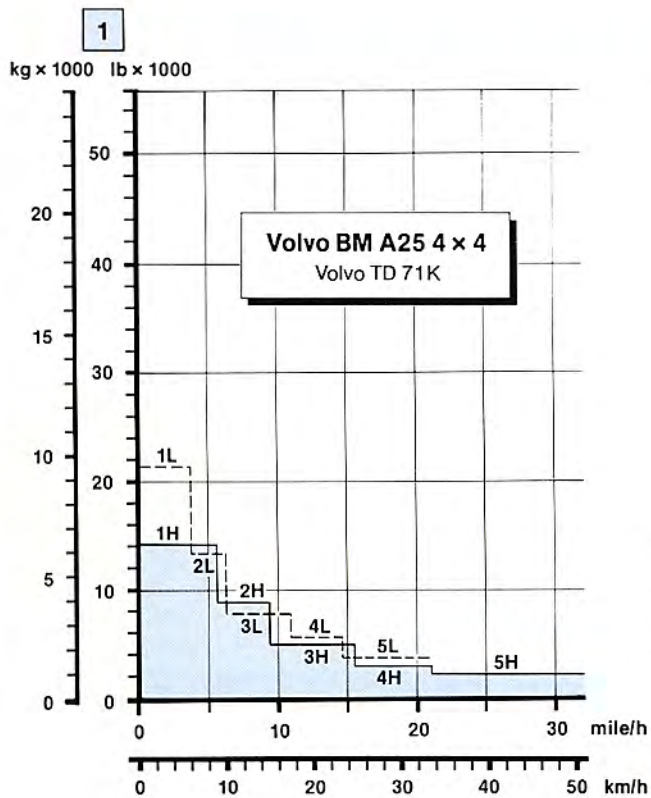
*Unloaded machine



RIMPULL

Rimpull graph based on practically measured values. Dumper weight and ground slope + rolling resistance gives rimpull requirement and speed.

- 1** Rimpull in kg/lbs.
- 2** Speed in km/h and mph
- 3** Dumper weight in kg-lb
- 4** Rolling resistance + grade resistance in %



RETARDATION

- 1** Braking effort in kg/lbs.
- 2** Speed in km/h and mph
- 3** Dumper weight in kg-lb
- 4** Rolling resistance + grade resistance in %

INSTRUCTIONS:

Diagonal lines represent total resistance (Grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires and gearing unless otherwise stated.

1. Find the total resistance on diagonal line on right hand border of performance or retarder chart.
2. Follow the diagonal line downward and intersect the NVW or GVW weight line.
3. From intersection, read horizontally left to intersect the performance or retarder curve.
4. Read down for vehicle speed.

STANDARD EQUIPMENT

AIR CLEANER, DRY TYPE,
DUAL ELEMENT
ALTERNATOR, 24V, 55 AMP
BATTERY DISCONNECT, LOCKABLE
BODY, DUCTED FOR EXHAUST GAS
BODY HOIST KICKOUT
BODY SUPPORT BRACKET
BRAKES: 4-WHEEL AIR OVER HYDRAULIC
DRY DISC, DUAL CIRCUIT SYSTEM
CAB: (ROPS/FOPS) (SAE J1040) (ISO 3471)
Acoustical Lining
Ash Tray and Cigar Lighter
Door, Lockable (Left Side Access)
Electrical System: 24V.
Circuit Breaker Protected,
Prewired for Optional Accessories
Environmental Control:
Heater/Defroster/Pressurizer
8,5 kW (29,000 Btu/h) with Three-
Speed Blower Fan, Filtered Air
Floor Mat, Rubber
Interior Light
Operator Seat; Suspension,
4-Way Adjustable
Operator Seat Belt (SAE J386)
Operator Station Noise Level 77 dB (A)
Trainer Seat, Fold-down Type
with Seat Belt
Rear Window, Grille Protected
Safety Glass, Tinted
Sun Visor
Windshield Washer & Wiper

COLD STARTING AIDS:
Engine Intake Manifold Preheater
Engine Fuel Mixture Enrichment
DIFFERENTIAL LOCKS, LONGITUDINAL
AND TRANSVERSAL
DOWNSHIFT INHIBITOR
EXHAUST RETARDER
FENDERS, FRONT
FUEL TANK, 74 Gal. (280 litres)
INSTRUMENTS/GAUGES, ILLUMINATED:
Brake Air Pressure Gauge
Engine Coolant Temperature Gauge
Fuel Gauge
Hourmeter
Speedometer
Tachometer
LIGHTS:
Back-up, (1) Rear
Driving, (2) Front with High Low Beam
Parking Lights
Stop and Tail Combination, (2) Rear
Turn Signals with Hazard Warning Switch
Work Lights, (2) Front
MIRRORS, REARVIEW (2), EXTERIOR
MUD FLAPS
NEUTRAL START FEATURE
SECONDARY STEERING, GROUND DRIVEN
SIGHT GAUGES:
Fuel Level
Drop Box Fluid Level
Hydraulic Fluid Level
STEERING FRAME LOCK

TIRES:
Front 23.5R25 XRA★ (Michelin)
Rear 29.5R25 XRB★★ (Michelin)
TOOL BOX
TOW HOOKS, FRONT
TRANSMISSION: FULLY AUTOMATIC,
WITH HIGH/LOW RANGE DROP BOX
10 SPEED FORWARD, 2 SPEED REVERSE
AUTOMATIC LOCK-UP IN ALL RANGES
WARNING ALARMS:
Horn, Electric
Reverse Alarm (SAE J994)
WARNING & MONITORING LIGHTS:
Central Warning Lamp:
Air Cleaner Restriction
Alternator Malfunction
Engine Overspeed/Freewheel
Brake System Air Pressure
Brake System Hydraulic Pressure
Engine Coolant Temperature
Engine Oil Pressure
Hydraulic Fluid Level
Steering System Malfunction
Transmission Fluid Temperature
Directional Indicators
Engine Intake Manifold Preheater
Exhaust Retarder Engaged
Ground Driven Pump Malfunction
High Beam Driving Lights
Longitudinal Differential Lock/
4-Wheel Drive
Parking Brake Applied
Transversal Differential Lock

OPTIONAL EQUIPMENT

Air conditioner
Body heating piping kit
Retarder, hydraulic transmission
Rotating beacon with
collapsible mount

Under our policy of continuous 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.

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