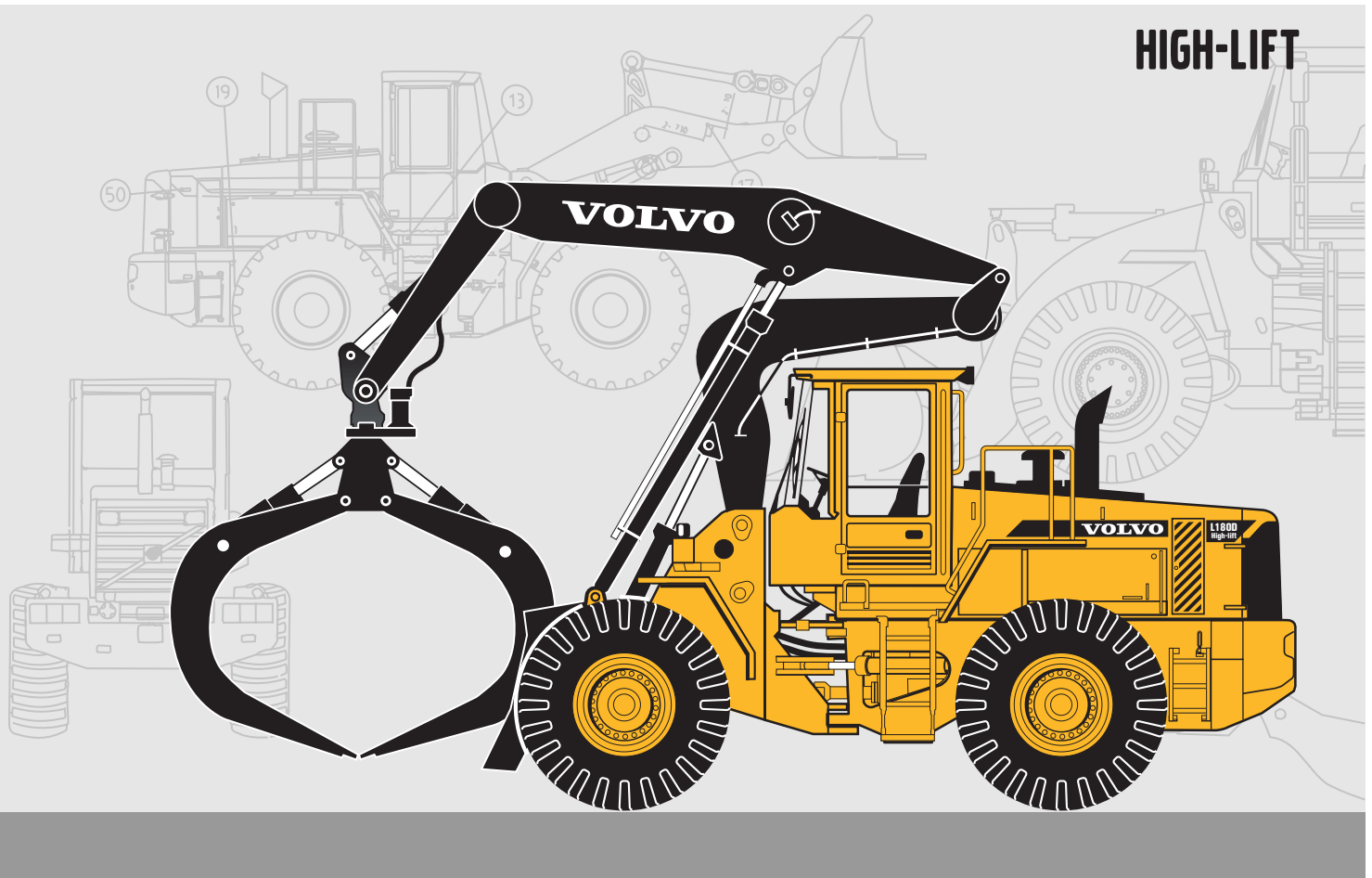


# VOLVO WHEEL LOADER

# L180D

HIGH-LIFT



- **Powerful lift-arm system with high lift and long reach gives:**
  - fast and effective loading and unloading
  - higher stacks
  - more efficient turnover of stored timber
- **Grapples suited to various types of work**
- **Grapples: 2,3-4,8 m<sup>2</sup>**
- **Rotating grapple, 360 °**
- **Operating weight: 34,0 ton**
- **Volvo high performance low emission engine**
  - with excellent low rpm performance
  - meets all known exhaust emission regulations for off road machines until 2002
  - hydrostatically driven, cooling fan
- **Volvo transmission with APS II**
  - 2nd generation of Automatic Power Shift with mode selector
  - optimizes the performance
- **Wet disc brakes**
  - Fully sealed oil-circulation cooled outboard mounted
- **Care Cab II** – pressurized cab with high comfort and safety
- **Contronic II** monitoring system
- **Load-sensing** steering system
- **Pilot-operated working hydraulics**

**VOLVO**



## SERVICE

The Contronic II monitoring system provides information on schedules service intervals and machine condition. Minimizes time required for troubleshooting.

**Service accessibility:** Large, easy-to-open engine access doors with gas struts. Hinged radiator grill and radiator. Long lubrication and oil-change intervals. Central lubrication system.

Refill capacities

Fuel tank .....	318 l	Transmission .....	38 l
Engine coolant .....	80 l	Engine oil .....	34 l
Hydraulic tank .....	165 l	Axle front/rear .....	55/54 l



## ENGINE

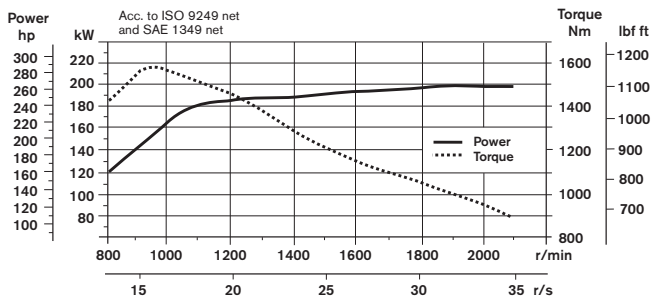
Engine delivers high torque and quick response at low rpm even under full load. The machine can work at low engine speeds, which contributes to good fuel economy, less noise, less wear and longer life.

**Engine:** High performance-low emission, 6-cylinder, in-line, direct-injected, turbocharged, intercooled 4-stroke diesel engine with wet replaceable cylinder liners.

**Air cleaning:** three-stage.

**Cooling system:** Hydrostatically driven fan with separate cooling for the intercooler circuit.

Engine .....	Volvo TD 122 KHE
Max power at .....	35 r/s (2100 r/min)
SAE J1995 gross .....	209 kW (284 hp)
ISO 9249, SAE J1349 net .....	206 kW (280 hp)
Max. torque at .....	15,0 r/s (900 r/min)
SAE J1995 gross .....	1580 Nm
ISO 9249, SAE J1349 net .....	1580 Nm
Displacement .....	12,0 l



## ELECTRICAL SYSTEM

Contronic II monitoring system with increased function control. Electrical system with circuit boards, well protected by fuses. The system is pre-wired for installation of optional equipment.

**Central warning lamp** for the following functions: Engine oil pressure, transmission oil pressure, transmission oil temperature, transmission oil filter, brake system pressure, steering pressure.

**Central warning lamp with buzzer** for the following functions: engine coolant temperature, overspeeding of engine/transmission, axle temperature, parking brake (if applied when operating), low brake pressure (when gear is engaged).

Voltage .....	24 V
Batteries .....	2x12 V
Battery capacity .....	2x140 Ah
Cold cranking capacity, ea .....	1050 A
Reserve capacity, ea .....	290 min
Alternator rating .....	1680 W / 60 A
Starter-motor output .....	6,6 kW (9,0 hp)



## DRIVETRAIN

Drivetrain and working hydraulics well-matched to each other. Dependable design. Quick acceleration boosts productivity. Volvo system-compatible design facilitates serviceing.

**Torque converter:** Single-stage.

**Transmission:** Volvo Automatic Power Shift transmission of countershaft type with single-lever control. Fast and smooth forward/reverse shifting.

**Shifting system:** Volvo Automatic Power Shift generation II with mode selector (APS II).

**Axles:** Volvo, fully floating axle shafts with planetary-type hub reductions. Cast-steel axle housing. Fixed front axle and oscillating rear axle. 100% differential lock on front axle.

Transmission .....	Volvo HT 220
Torque multiplication .....	2,27:1
Speeds, max forward/reverse	
1 .....	6,5 km/h
2 .....	12,1 km/h
3 .....	24,0 km/h
4 .....	35,1 km/h
Measured with tires .....	800/65 R29
Front axle and rear axle .....	Volvo / AWB 40
Oscillation, rear axle .....	± 15 °
Ground clearance at 15° oscillation .....	610 mm



## BRAKE SYSTEM

Simple, reliable system with few parts ensures high availability and safety. Self-adjusting internal oil circulation-cooled disc brakes give long service intervals.

**Service brakes:** Volvo, dual-circuit system with nitrogen-charged accumulators. Fully hydraulically operated enclosed internal oil circulation-cooled outboard mounted disc brakes. Transmission declutch during braking can be preselected by a switch on the instrument panel.

**Parking brake:** Enclosed wet multi-disc brake built into the transmission. Spring applied, electro-hydraulic released via a switch on the instrument panel. Applies automatically when the key is turned off.

**Secondary brake:** Dual - circuit system with rechargeable accumulators. One circuit or the parking brake fulfills the requirements. Brake performance test provided by the Contronic II system.

**Standards:** The brake system complies with the requirements of ISO 3450, SAE J1473

Number of discs/wheel .....	1
Accumulators, volume each .....	3x1,0 l

# GRAPPLES

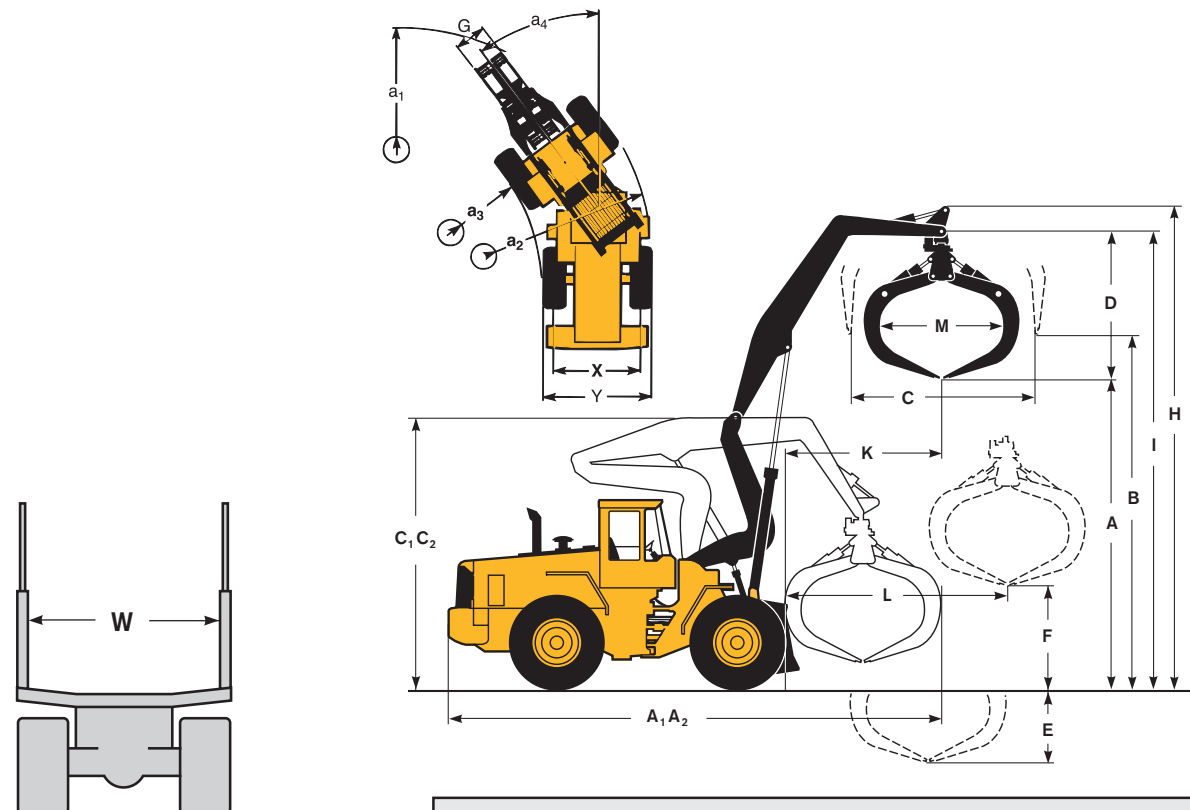
		TIMBER, 5 M LENGHT		TIMBER, 4 M LENGHT	PULP WOOD, 4 M LENGHT	
Tires, dim. 800/65 R29*						
Grip area	m <sup>2</sup>	3,2	3,2	3,5	3,8	3,8
Working load	kg	8600	8600	8600	8600	8600
Dimensions						
A	mm	5590	5590	5640	5140	5290
B	mm	6540	6540	6530	6300	6390
C	mm	3630	3630	3750	4500	4500
D	mm	2900	2900	2850	3350	3200
E	mm	1200	1200	1250	1670	1500
F	mm	2270	2270	2220	1820	1970
G	mm	1100	1100/900	1100	1100/900	900
M	mm	2400	2400	2550	2350	2350
Operating weight*)	kg	32890	33090	33390	33140	33240
Order No.		91852	91854/80230	80511	94463/93607	80582

\*) Including liquid in rear tires. Optional liquid in front tires increase the weight by 1830 kg. The log pusher increases the operating weight by 800 kg. Log pusher, order No. 80487

## OPERATIONAL DATA

Rotating grapple, 360°, 3,2 m<sup>2</sup>  
Tires dim. 800/65 R29\*

H	I	K	L	X	Y	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	a <sub>4</sub>
8860 mm	8490 mm	2750 mm	3950 mm	2280 mm	3120 mm	7530 mm	6780 mm	3830 mm	±37°



**Note:** At logloading of vehicle the loggrappels width (M-measure) should be 150 mm narrower compared to the distance between the "stakes" (W) on the vehicle.

A <sub>1</sub>	Grapple positioned lengthwise 3,5 m	9350 mm
	- with log pusher	9830 mm
A <sub>2</sub>	Grapple tilted forward	10520 mm
C <sub>1</sub>	Grapple positioned lengthwise	4900 mm
C <sub>2</sub>	Grapple tilted forward	4700 mm

## ALTERNATIVE EQUIPMENT\*)

Grapples		Shortwood (pulpwood)	Timber	Terminal handling	Unloading/ loading of vehicles	Unloading/ loading against wall	With hydraulic clamping arms	With triplex chain
91852	3,2 m <sup>2</sup>		X	X	X			X
91854/*80230	3,2 m <sup>2</sup>		X	X	X		X	
80511	3,5 m <sup>2</sup>		X	X	X		X	
94463/*93607	3,8 m <sup>2</sup>	X		X	X	X		X
*80582	3,8 m <sup>2</sup>	X		X		X	X	

\*) Width 900 mm. Other grapples 1100 mm wide.

(X) For low density of wood.

Note: Other grapples can be offered on request

## TIPPING LOAD



A <sup>1</sup> Tipping load straight machine, max height	11910 kg
A <sup>2</sup> Tipping load at full turn	10170 kg
B <sup>1</sup> Tipping load straight machine, max reach	11000 kg
B <sup>2</sup> Tipping load at full turn	9450 kg

		Empty machine in carry position		Rated load in carry position	
		Front	Rear	Front	Rear
Axle load	kg	12030	21060	26440	15250
Ground pressure	kg/ cm <sup>2</sup>	6,6	4,5	6,6	4,5



## STEERING SYSTEM

*Low-effort steering gives short work cycle times. Power-efficient system provides good fuel economy, good directional stability and smooth ride.*

**Steering system:** Load-sensing hydrostatic articulated steering with power boost.

**System supply:** The steering system is supplied from a separate steering pump.

**Pump:** Variable-flow axial piston pump mounted on a power take-off on the transmission.

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

Working pressure .....	21 MPa
Flow .....	116,6 l/min
Max. steering angle .....	± 37°



## CAB

*Care Cab II with wide door opening and comfortable instep. Inside of cab lined with noise-absorbent materials. Noise and vibration suppressing suspension. Good all-round visibility through large glass areas. Curved front windshield of green-tinted glass. Ergonomically positioned controls and instruments permit a comfortable operating position.*

**Instrumentation:** All important information is centrally located in the operator's field of vision. Display for Contronic II monitoring system.

**Heater and defroster:** Heater coil with filtered fresh air and fan with four speeds. Defroster vents for all window areas.

**Operator's seat:** Operator's seat with adjustable suspension and retractable seatbelt. The seat is mounted on a bracket on the rear cab wall. The forces from the retractable seatbelt are absorbed by the seat rails. Meets ISO/DIS 7096-1997.

**Standard:** The cab is tested and approved according to ROPS (ISO/CD 3471, SAE J1040), FOPS (3449, SAE J231), Overhead Guards (ISO 6055) and Operator Restraint System (SAE J386)

Emergency exits .....	2
Sound level in cab according to ISO 6396, SAE J2105 .....	LpA 77 dB (A)
With sound reduction kit .....	LpA 74 dB (A)
External sound level according to ISO 6395, SAE J2104 .....	LwA 110 dB (A)
External sound level with sound reduction kit .....	LwA 107 dB (A)
Ventilation .....	9 m <sup>3</sup> /min
Heating capacity .....	11 kW
Air conditioning (optional) .....	8 kW



## HYDRAULIC SYSTEM

*High pump capacity gives fast movements. Good control in all working positions, even when working with heavy loads. Precision manoeuvring of attachments.*

**Hydraulic system:** Open centre system with pilot-operated hydraulic valves.

**Pump:** One double vane pump mounted on a power take-off on the transmission.

**Pilot operation:** An electro-hydraulic servocontrol actuates the two control valves via a servo unit.

**Valves:** Two pilot-operated 3-spool control valves.

The main valve 1 governs: lift, tilt and grapple.

The main valve 2 governs: tilt grapple, rotator and pusher (extra equipment).

**Filter:** Full-flow filtration through 20 µm nominal filter cartridge.

Main pump	
Working pressure,	
circuit 1 .....	21 MPa
circuit 2 .....	16 MPa
Flow,	
circuit 1 .....	414 l/min
circuit 2 .....	92 l/min
at .....	10 MPa
and engine speed .....	36,7 r/s

Pilot pump	
Working pressure .....	3,0-4,5 MPa

Cycle times (without load)	
Lift .....	8,8 s
Lower .....	7,4 s
Tilt forward .....	2,9 s
Tilt backward .....	3,6 s
Grapple opening .....	2,2 s
Grapple closing .....	2,8 s



## LIFT-ARM SYSTEM

*A powerful high-lift arm system with high lift height and long reach. The various attachments can be manoeuvred over a large area from a stationary machine. Grapples suited to various types of work. Good stability while travelling under load permits high average speed.*

**Cylinders:** Double-acting.

## STANDARD EQUIPMENT

### Service and maintenance equipment

Tool box  
Central lubrication system

### Engine

Air cleaner, dry type,  
dual element, exhaust  
aspirated precleaner  
Coolant level, sight gauge  
Engine intake manifold  
preheater  
Muffler, spark arresting  
Dual fuel filter  
Watertrap

### Electrical System

24 V – prewired for optional  
accessories  
Alternator, 24 V / 60 A  
Battery disconnect switch  
Fuel gauge  
Engine coolant temperature  
Transmission oil temperature  
Hourmeter  
Horn, electric  
Speedometer  
Instrument panel with symbols  
Lights:  
• driving (2-Front), halogen with  
high/low beam  
• parking lights  
• stop/tail combination (2 rear)  
• turn signals with hazard  
• warning switch  
• working lights, halogen  
(2 front, 2 rear)  
• instrument lighting

### Contronic II Monitoring System, ECU Engine

Contronic "display"  
Shut down to idle function  
• high engine coolant temp  
• low engine oil pressure  
• high transm. oil temp  
Neutral start feature  
Brake test by contronic  
Test function for warning &  
monitoring lights  
Warning & monitoring lights:  
• engine oil pressure  
• engine coolant temperature  
• air cleaner restriction  
• alternator malfunction  
• working lights  
• high beam driving lights  
• direction indicator, hazard  
Central warning:  
• transmission oil pressure  
• transmission oil temperature  
• brake system pressure (buzzer)  
• steering pressure  
• axle oil temperature (buzzer)  
• transmission oil filter  
• overspeeding of engine/trans-  
mission (buzzer)  
• engine oil pressure  
• engine coolant temperature  
(buzzer)  
• Parking brake applied and  
transmission in forward or  
reverse (buzzer)

### Drivetrain

Transmission: modulated with  
single lever control, automatic power  
shift, and operator controlled  
de clutch  
Differentials:  
front 100%, hydraulic  
differential lock  
rear, conventional  
Tires 800/65 R29

### Brake System

Wet, internal oil circulation cooled  
disc brakes, 4-wheel, dual circuit  
Brake system, secondary  
Parking brake alarm  
External brake, oil cooling system

### Cab

ROPS (SAE J1040CC) (ISO 3471),  
FOPS (SAE J 231) (ISO 3449)  
Acoustical lining  
Ashtray  
Cigarette lighter  
Door lockable (left side access)  
Heater/defroster/pressurizer 11 kW  
37500 Btu/h with four speed  
blower fan  
Filtered air  
Floor mat  
Interior light  
Mirror rear view interior  
Mirrors rear view (2), exterior  
Openable window, right-hand side  
Windshield washer, front & rear

Safety glass, tinted  
Retractable seat belt (SAE J386)  
Seat, heated, ergonomically  
designed, suspension adjustable  
Storage compartment  
Sun visor  
Windshield wiper, front & rear  
Intermittent wiper, front  
Cab access steps and handrails  
Fenders, front & rear with anti-  
skid-tape

### Hydraulic System

Main valve 1, 3-spool  
Main valve 2, 3-spool  
Vane pumps  
Electro servo control

### External Equipment

Isolation mounts: cab, engine,  
gearbox  
Lifting lugs  
Tow hitch  
Side panels, engine hood  
Steering frame lock  
Vandalism lock, provision for:  
batteries, engine oil  
Mud guards  
Cross-beam

### Tires

800/65 R29

## OPTIONAL EQUIPMENT *(Standard on certain markets)*

### Service and maintenance equipment

Tool kit  
Refill pump, central lub.  
Wheel nut wrench kit

### Engine

Coolant filter  
Cold starting aid, engine  
coolant preheater (220 V/1500 W)  
Pre-cleaner, oil bath type  
Radiator, corrosion protected

### Electrical System

Reverse alarm (SAE J994)  
Attachment lights (halogen)  
Working lights front, extra (halogen)  
Working lights rear, extra (halogen)  
Rotating beacon, amber with  
collapsible mount  
Head lights assym. left  
Side marking lamp

### Cab

Installation kit for radio and  
power outlet 12V  
Hand throttle  
Sliding ventilation window  
Air conditioner

Dual service brake pedals  
Instructor seat  
Noise reduction kit, cab  
Adjustable steering wheel  
**Hydraulic System**  
Biodegradable hydraulic fluid  
Boom Suspension System

### External Equipment

Slow Moving Vehicle sign  
Covering mudguards

### Protective Equipment

Protective grille for front headlight  
Protective grille for rear working  
light  
Protective grille for rear light

### Other Equipment

Exterior sound reduction kit  
Comfort Drive Control (CDC)  
Fuel fill strainer  
Secondary steering  
Log pusher  
Rotator  
Lift cylinder guard

*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.*

# VOLVO

Volvo Construction Equipment

Ref. No. 21 3 669 2324 English  
Printed in Sweden 2001-05 2,0 WLO  
Volvo, Eskilstuna