

Volvo Construction Equipment
Building Tomorrow



LC450H

Volvo Landfill Compactors 40.8 t / 90,000 lb 416 hp



PURPOSE-BUILT FOR WASTE



Introducing the LC450H, the first purpose-built landfill compactor from Volvo. Built on decades of experience in providing solutions to the waste and recycling industry, we have combined our expertise to work in partnership with Terra Compactor Wheel Corp., a leading manufacturer of landfill compaction wheels, cleats, rolling wire guards, and machine parts.

Through our range of products and services, including articulated haulers, wheel loaders, excavators and attachments, we have long been committed to producing machines which are up to the challenges of waste applications. In the LC450H we have created a landfill compactor designed to deliver outstanding performance and maximum uptime in the toughest environments.



“Over the years, our waste and recycling customers have said they’d like us to bring the reliability and productivity that our machines are known for to a purpose-built landfill compactor. Landfill conditions are typically rugged and demanding on machines.”

We designed the LC450H to withstand the rigors of this type of work, fitting it with durable wear parts, heavy-duty guarding and an efficient powertrain.”

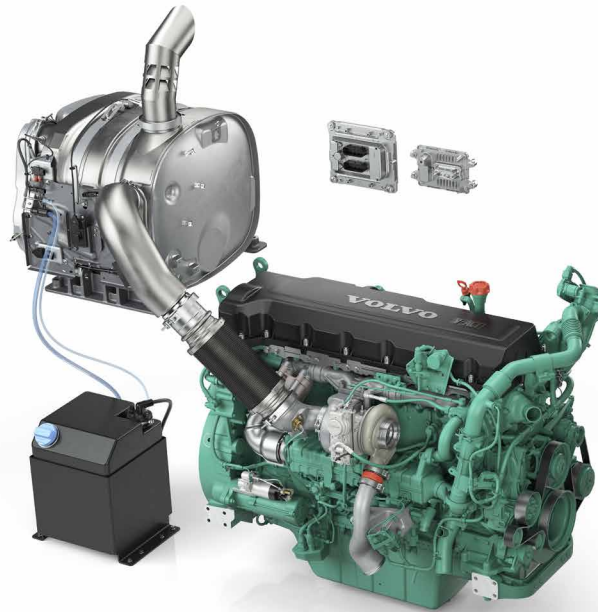
Mark DeBrosse, Product Manager at Volvo Construction Equipment.

Unrivalled performance

With a powerful engine that works in harmony with the axles and the transmission, the LC450H delivers an unrivalled level of performance. With superior traction, high ground clearance and a choice of blade, the specialized landfill compactor is the perfect partner in waste applications.

Power up, fuel down

The 90,000lb LC450H is powered by a 416 horsepower Volvo D13J Tier 4 Final engine, featuring passive and automatic regeneration. The engine and axles work in perfect harmony with the HTL310 transmission with lock-up converter, delivering high torque output and excellent fuel efficiency.



Choice of blade

The LC450H can be equipped with a Terra semi-U or straight blade, allowing operators to select the option which best fits their needs.





UP TO THE CHALLENGE

The LC450H makes easy work of difficult conditions. A 100% dog clutch differential lock in the front, and limited slip at the rear, contribute towards outstanding machine traction. With a 24 inch ground clearance, the LC450H can easily travel across high obstacles.



KEEPING YOU SAFE

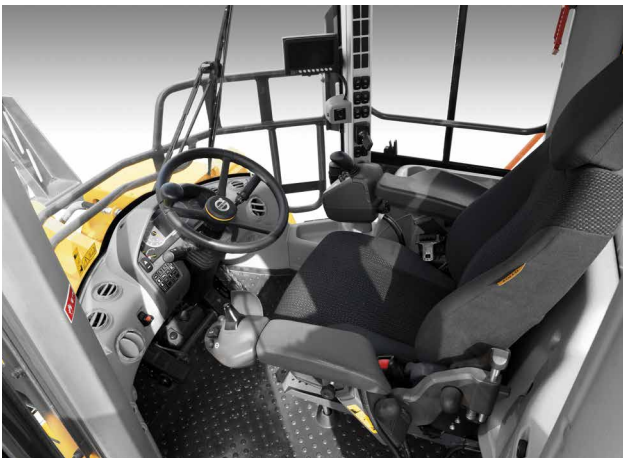
Operators can feel safe thanks to the ROPS/FOPS protected cab and windshield guard, and breathe easy thanks to the RESPA cab filtration system, including a powered pre-cleaner, filter and pressurizer in one unit.

The operator's choice

When an operator enters the LC450H, they are stepping inside the industry-leading Volvo cab, boasting a range of features to keep operators safe, comfortable and working at their best.

Comfortably productive

To reduce fatigue and improve productivity, Comfort Drive Control lets operators steer the machine from a small lever. The machine's single lever blade control, with integrated forward/neutral/reverse, gives the operator the choice to control the transmission with their left or right hand.



Easy cab access

Climb into the LC450H with ease, with high-visibility steps and handrails supporting convenient entry and egress to the machine.



All-around visibility

The LC450H is equipped with a range of features to give the operator a clear and unobstructed view of the worksite. A rear-view camera, electronically adjusted heated external rear-view mirrors, and LED work lights to the front, rear and side, all contribute towards excellent visibility.



Durable by design

When working in tough environments you need a machine that is up to the challenge. Built to last, with a durable design and extensive protection to the machine and engine, you can count on the LC450H to succeed in waste applications.

Keep on rolling

For durability you can depend on, the LC450H is supplied with wheels from Terra Compactor Wheel Corp. as standard. The wheels are equipped with a weld-on rolling wire guard, designed to prevent wire from wrapping around the axles and damaging the seals. A 1.25 inch-thick wheel wrapper with horizontal and vertical hardfacing on the edges provides further machine strength and protection. The wheels feature 8.5 inch-tall cleats with hardfacing on the tips, with the option of two-cleat patterns and three-cleat configurations.



Engine protection

Reduce engine wear with the air pre-cleaner, engine intake and delayed engine shutdown. The new delayed engine shutdown helps to reduce component wear by turning off the machine once the turbo-charger has cooled down to the appropriate temperature. This intelligent function can be scheduled by the operator to activate automatically.





HEAVY-DUTY GUARDING

Maximize performance and minimize machine wear with extensive protection throughout the LC450H, including radiator grill guard, center pin guard, swing down belly pans, front and rear differential guards, and axle seal guards. Two striker bars cover both the front and rear wheels to keep potentially damaging material away from the machine.

Take on the tough stuff

UNRIVALLED PERFORMANCE

- Volvo D13J Tier 4 final engine
- HTL310 transmission with lock-up converter
- Lock-up differential: dog clutch front and limited slip rear
- 24 inch ground clearance
- Terra compactor blade: straight or semi U

DURABLE BY DESIGN

- Guarding on radiator grill, center pin, swing down belly guards, front and rear differentials and axle seal
- Striker bars cover front and rear wheels
- Delayed engine shutdown
- Air pre-cleaner, engine intake



SAFETY FIRST

- ROPS/FOPS cab, fitted with windshield guard
- RESPA air filter
- Rear-view camera
- LED work lights, front, rear and side
- Rotating beacon
- Fire Suppression System

COMFORT AND CONVENIENCE

- Easy cab access
- Comfort Drive Control: lever steering
- Electronically adjusted/heated external rear view mirrors
- Single lever blade control



SIMPLE SERVICING

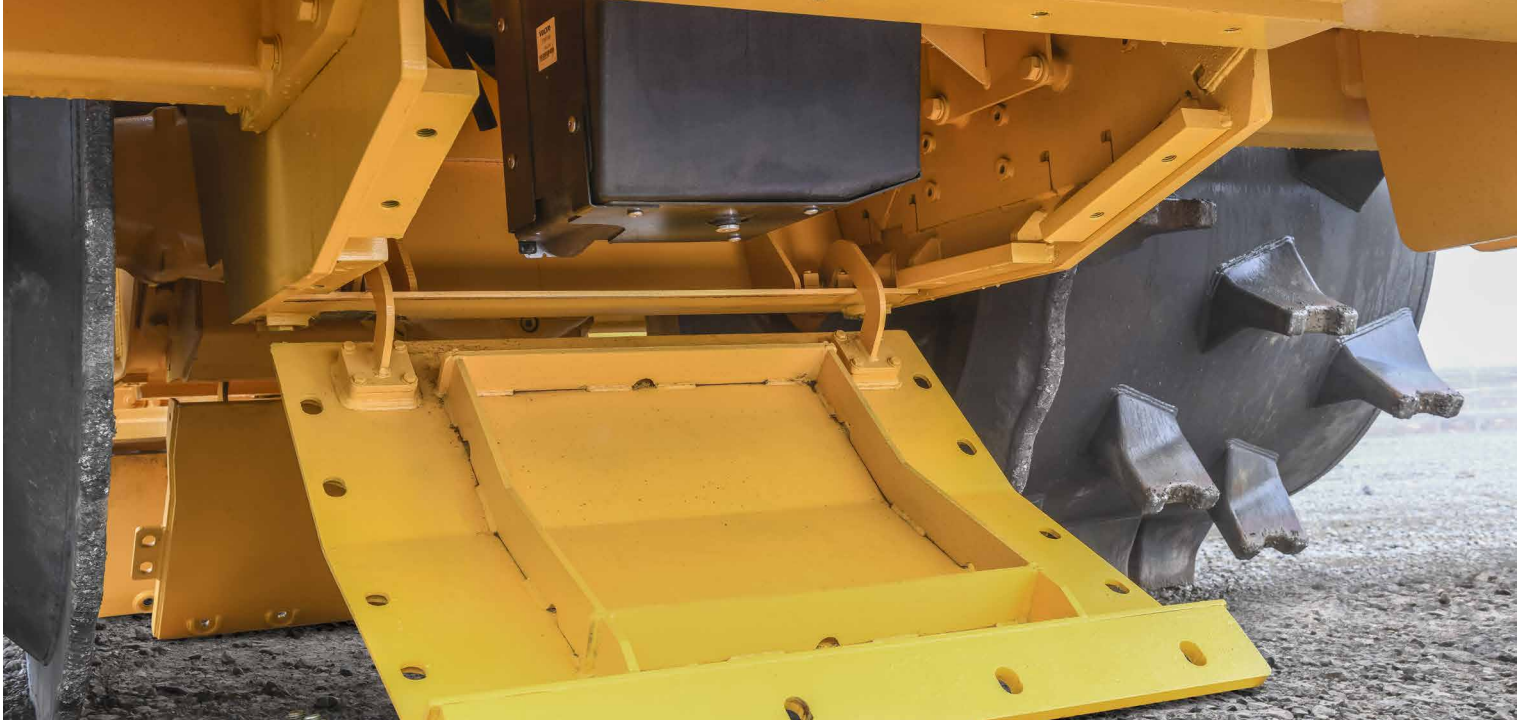
- Grouped filters, ground-level access to major components
- Swing down belly guards
- Tilting cab to 30° or 70°
- Electronically-operated engine hood
- Maintenance-free rear axle trunnion
- Passive and automatic regeneration

TERRA WHEELS: KEEP ON ROLLING

- Weld-on rolling wire guard
- 1.25 inch-thick wheel wrapper
- 8.5 inch tall cleats, three cleat configurations and two cleat patterns
 - o Terra Twist Torque, High-Density Traction or a combination of both
 - o Standard or inverted chevron pattern

NON-STOP SUPPORT

- 24-hour parts delivery guarantee
- Certified technicians
- ActiveCare Direct
- Customer Support Agreements
- Financial Services



INDUSTRY-LEADING SERVICEABILITY

For simple serviceability, the Volvo cab can be tilted to either a 30° or 70° angle, and the engine hood is operated electronically. Swing down belly guards to the front, center and rear, further support convenient servicing.

Simple servicing

Regular service and maintenance is a vital part of keeping your machine in top condition and performing at its best. The LC450H is designed to make servicing simple, supporting quick and easy maintenance to keep uptime to a maximum.

Unrestricted access

Complete routine checks with speed and ease, from the ground level or machine platform. Grouped filters are accessed by removable side panels, and the remote oil drain also provides easy maintenance access. The engine oil check and fill are accessed without needing to remove any panels.



Maintenance-free components

Minimize machine downtime and increase components life thanks to maintenance-free rear axle trunnion bearings.



Volvo LC450H in detail

Engine

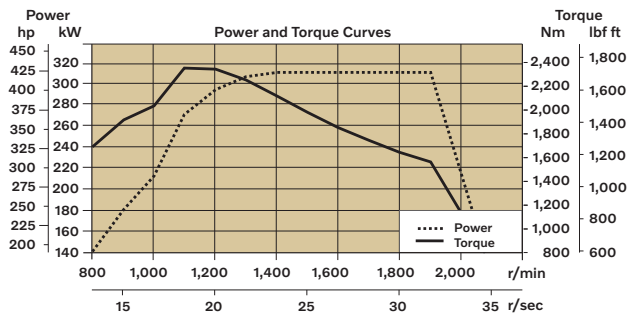
V-ACT Stage IV/Tier 4F 13 liter, 6-cylinder straight turbocharged diesel engine with 4 valves per cylinder, overhead camshaft and electronically controlled unit injectors. The engine has wet replaceable cylinder liners and replaceable valve guides and valve seats.

The throttle applications is transmitted electrically from the throttle pedal or the hand throttle.

Air Cleaning: 2 stages.

Cooling system: Hydrostatic, electronically controlled fan and intercooler of the air-to-air type.

Engine		Volvo	D13J
Max. power at	r/min (r/s)	1,500 (25)	
SAE J1995 gross	kW (hp)	310 (416)	
ISO 9249, SAE J1349 net	kW (hp)	309 (414)	
Max. torque at	r/min (r/s)	1,100 (18.3)	
SAE J1995 gross	Nm (ft lbf)	2,343 (1,728)	
ISO 9249, SAE J1349 net	Nm (ft lbf)	2,328 (1,717)	
Displacement	l (in ³)	12.8 (782)	



Electrical System

Central warning system: Contrinsic electrical system with central warning light and buzzer for following functions: - Serious engine fault - Low steering system pressure - Over speed warning engine - Interruption in communication (computer fault)

Central warning light and buzzer with the gear engaged for the following functions: - Low engine oil pressure - High engine oil temperature - High charge air temperature - Low coolant level - High coolant temperature - High crank case pressure - Low transmission oil pressure - High transmission oil temperature - Low brake pressure - Engaged parking brake - Fault on brake charging - Low hydraulic oil level - High hydraulic oil temperature - Overspeeding in Engaged gear - High brake cooling oil temperature front and rear axles.

Voltage	V	24
Batteries	V	2 x 12
Battery capacity	Ah	2 x 170
Cold cranking capacity, approx	A	1000
Alternator rating	W/A	2,280/80
Starter motor output	kW	7

Hydraulic System

System supply: One main load-sensing axial piston pump with variable displacement. The steering system always has priority.

Valve: Double-acting single spool valve controlled by a single spool pilot valve.

Filter: Full flow filtration through 10 micron (absolute) filter cartridge.

Blade Lift System

Lift function: The valve has three positions; raise, hold and lower position.

Lift cylinder double acting		1
Cylinder bore diameter	mm (in)	120 (4.7)
Piston rod diameter	mm (in)	80 (3.1)
Stroke	mm (in)	1065 (41.9)

Working pressure maximum for pump for steering-, brake-, pilot- and working hydraulic system

Flow at engine speed	l/min (gal/min)	202 (53.4)
	MPa (psi)	10 (1,450)
	r/min (r/s)	1,900 (31.6)

Cycle times from ground level

Lift	s	3
Lower	s	2
Total cycle time	s	5

Blade Capacity

Semi-U	m ³ (yd ³)	16.3 (21.3)
Straight	m ³ (yd ³)	14.9 (19.5)

Blade Weights

Semi-U	kg (lb)	3,350 (7,380)
Straight	kg (lb)	3,340 (7,360)

Steering System

Steering system: Load-sensing, hydrostatic articulated steering.

Steering cylinders: Two double-acting cylinders.

Cylinder bore	mm (in)	90 (3.5)
Rod diameter	mm (in)	60 (2.4)
Stroke	mm (in)	525 (20.7)
Working pressure	MPa (psi)	26 (3770)
Maximum flow	l/min (gal/min)	202 (53.4)
Maximum articulation	±	° 37

Pilot system

working pressure	MPa (psi)	3.2 - 4.0 (465 - 580)
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Auxiliary Brake and cooling fan pump

Type	Gear	
Working pressure maximum	MPa (psi)	25.0 ± 0.5 (3,625 ± 75)
Flow at engine speed	l/min (gal/min)	83 (21.9)
	MPa (psi)	10 (1,450)
	r/min (r/s)	1,900 (31.6)

Drivetrain

Torque converter: Single-stage.

Transmission: Volvo countershaft transmission with single lever control. Fast and smooth fully automatic shifting of gears 1 - 2 with Pulse Width Modulation (PWM) valve. Torque converter with lockup.

Axles: Volvo fully floating axle shafts with planetary hub reductions and nodular iron axle housing.

Fixed front axle and oscillating rear axle. 100% differential lock on the front axle with limited slip rear. Axle oil cooling with filter.

Transmission	Volvo	HTL310
Torque multiplication, stall ratio		2.02:1

Maximum speed, forward/reverse

1st gear	km/h (mi/h)	6.7/6.6 (4.2 / 4.1)
2nd gear	km/h (mi/h)	9.6/9.6 (6.0 / 6.0)

Front axle/rear axle AWB 50B / 41

Rear axle oscillation ± ° 5

Ground clearance mm (in) 605 (24)

Brake System

Service brake: Volvo dual-circuit system with nitrogen-charged accumulators.

Outboard-mounted fully hydraulic operated, fully sealed oil circulation-cooled wet disc brakes.

Parking brake: Dry disc brake. Applied by spring force, electro-hydraulic release with a switch on the instrument panel.

Secondary brake: Dual brake circuits with rechargeable accumulators. One circuit for the parking brake fulfills all safety requirements.

Standard: The brake system complies with the requirements of ISO 3450.

Number of brake discs per wheel front/rear 2 - 1

Accumulators	l (gal)	2 x 1.0 + 1 x 0.5 (2 x 0.26 + 1 x 0.13)
Accumulators for parking brake	l (gal)	1 x 0.5 (1 x 0.13)

Wheel Dimensions

Drum Diameter (OD)	mm (in)	1562 (61.5)
Drum Width	mm (in)	1207 (47.5)
Overall Diameter 8.5" Cleat	mm (in)	1994 (78.5)
Width over wheels	mm (ft in)	4007 (13' 1.75")

Inverted Chevron Pattern

Cleats Per Wheel		30
Weight Twist Torque Cleats	kg (lb)	3,300 (7,250)
Weight HDT Cleats	kg (lb)	3,235 (7,130)
Weight Combination Twist Torque (18) & HDT (12) Cleats	kg (lb)	3,265 (7,200)

Standard Chevron Pattern

Cleats Per Wheel		28
Weight Twist Torque Cleats	kg (lb)	3,245 (7,160)
Weight HDT Cleats	kg (lb)	3,200 (7,050)
Weight Combination Twist Torque (14) & HDT (14) Cleats	kg (lb)	3,220 (7,100)

Cab

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

Heater and defroster: Heater coil with filtered fresh air and fan with auto and 11 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 and floor. The forces from the retractable seatbelt are absorbed by the seat rails.

Standard: The cab is tested and approved according to ROPS (ISO 3471), FOPS (ISO 3449).

The cab meets with requirements according to ISO 6055 (Operator overhead protection - Industrial trucks) and SAE J386 ("Operator Restraint System").

Refrigerant of the type R134a is used when this machine is equipped with air conditioning. Contains fluorinated greenhouse gas R134a, Global Warming Potential 1.430 t CO₂-eq

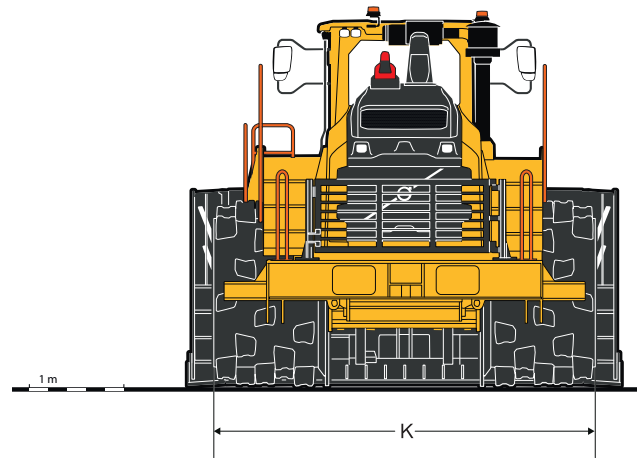
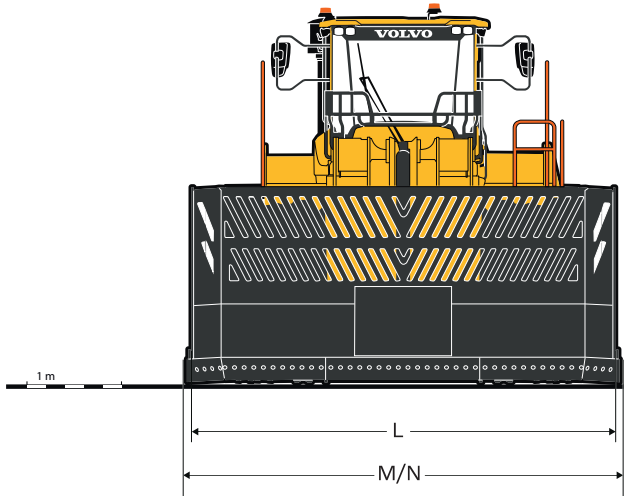
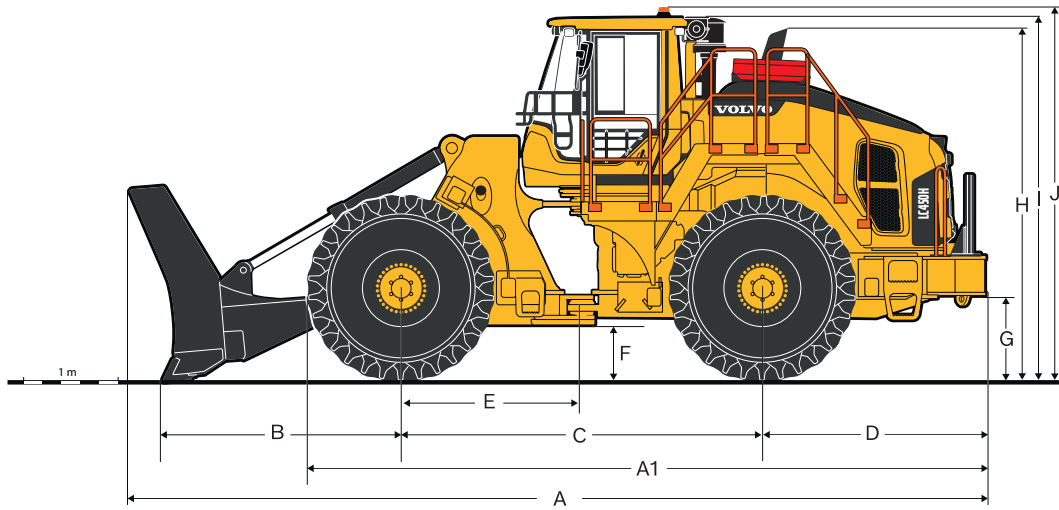
Ventilation	m ³ /min (yd ³ /min)	9 (11.8)
Heating capacity	kW	16
Air conditioning	kW	7.5

Service Refill

Service accessibility: Large, easy-to-open hood covering whole engine department, electrically operated. Fluid filters and component breather air filters promote long service intervals. Possibility to monitor, log and analyze data to facilitate troubleshooting.

Fuel tank	l (gal)	731 (193)
DEF/AdBlue® tank	l (gal)	80 (21.1)
Engine coolant	l (gal)	55 (14.5)
Hydraulic oil tank	l (gal)	226 (59.7)
Transmission oil	l (gal)	48 (12.7)
Engine oil	l (gal)	50 (13.2)
Axle oil front	l (gal)	78 (20.6)
Axle oil rear	l (gal)	80 (21.1)

Specifications



DIMENSIONS

Description	mm	ft in
A	9,000	29'6"
A1	7,135	23'5"
B	2,505	8'3"
C	3,800	12'6"
D	2,345	7'8"
E	1,900	6'3"
F	605	2'0"
G	915	3'0"
H	3,720	12'3"
I	3,845	12'7"
J	3,990	13'1"
K	4,010	13'2"
L	4,570	15'
M	4,550	14'11"
N	4,665	15'0"

Maximum Operating Weight (equipped with semi-U blade, 30 Twist Torque cleat and inverted chevron pattern): 40 800 kg (90,000 lb)

Equipment

STANDARD EQUIPMENT
Engine
Engine D13 Tier 4f US
Exhaust after treatment system
Preheating of induction air
Fuel fill strainer
Fuel pre filter with water trap, Fuel Filter
Fuel Heater
Crankcase breather oil trap
Exhaust heat insulation
Exterior radiator air intake protection
Hand throttle control
Engine auto shutdown
Air precleaner, Turbo II
Engine block heater, 120 V
Radiator , corr prot
Max. fan speed, hot climate
Reversing Fan
Electrical
24 V, pre wired for optional accessories
Alternator 24 V/ 80 A
Battery disconnect switch with lock out tag out
Fuel gauge
Hour meter
Electric horn
Instrument cluster:
Fuel level
Transmission temperature
Coolant temperature
Instrument lighting
Work Lights CAB, LED, Dual front & rear
Automatic activation of rear work lights when reversing
Work lights cab, LED, 4 front, 3 rear
Work lights engine hood, LED, 2 rear
Warning beacon, flashing strobe light, main switch operated
Radio Bluetooth/USB/AUX no CD
LH Radio mounting kit including 20 amp converter, speakers & 12v outlet
Seat belt indicator external green beacon light
Contronic monitoring system
Monitoring and logging of machine data
Contronic display
Fuel consumption
Ambient temperature
Clock
Test function for warning and indicator lights
Warning and indicator lights:
Battery charging
Parking brake
Warning and display message:
Regeneration
Engine coolant temperature
Charge air temperature
Engine oil temperature
Engine oil pressure
Transmission oil temperature
Transmission oil pressure
Hydraulic oil temperature
Brake pressure
Parking brake applied
Brake charging
Axle oil temperature
Steering pressure
Crankcase pressure
Level warnings:
Fuel level
Engine oil level
Engine coolant level
Transmission oil level
Hydraulic oil level
Washer fluid level
Engine torque reduction in case of malfunction
indication:
High engine coolant temperature
High engine oil temperature
Low engine oil pressure
High crankcase pressure
High charge air temperature
Engine shutdown to idle in case of malfunction indication:
High transmission oil temperature
Slip in transmission clutches
Keypad, background lit
Start interlock when gear is engaged

STANDARD EQUIPMENT
Drivetrain
Automatic Power Shift
Fully automatic gearshifting, with lock-up torque converter
Speed limiter (6 mph)
PWM controlled gearshifting
Forward and reverse switch by hydraulic lever console
Indicator glass for transmission oil level
Differentials: Front, 100% hydraulic diff lock, limited slip rear axle
Axle oil coolers
Brake system
Dual brake circuits
Dual brake pedals
Secondary brake system
Parking brake, electrical hydraulic
Brake wear indicators
Cab
ROPS (ISO 3471), FOPS (ISO 3449)
Tilttable Cab
Unive Key US, Remote door open
Acoustic inner lining
Ashtray
Cigarette lighter, 24 V power outlet
Lockable door
Cab heating with fresh air inlet and defroster
Automatic heat control
Air conditioning w/ corrosion prot. condenser & ACC (auto climate control)
Fresh air inlet with two filters
Respa cab air filtration system - for very dusty environments
Floor mat
Interior lights
Interior mirror on the left, rear view camera color, LCD monitor on right
Dual exterior rear view mirrors, electrically adjustable, heated
Sliding window in door, right side
Tinted safety glass
Adjustable steering wheel
Steering knob
Single lever hydraulic control
Comfort Drive Contr, CDC, el-hydr (Joystick Steering)
Operator's seat, Volvo, air suspended, HD for CDC
Retractable seat belt (SAE J386)
Storage compartment
Document pocket
Sun visor
Sun blinds front and rear window
Beverage holder
Lunch box holder
Anchorage manual
Back up alarm
Windshield washer front and rear
Interval function for front and rear wipers
Decals, English/Spanish
Hydraulic system
Main valve, double acting single spool
Variable displacement axial piston pump for:
Working hydraulics, steering, brake system, and cooling fan
Electro-hydraulic servo control
Electric lever lock
Double acting hydraulic cylinders
Indicator glass for hydraulic oil level
Hydraulic oil cooler
Service and maintenance
Engine oil remote drain and fill
Lubrication manifolds, ground accessible
Pressure check connections: transmission and hydraulic, quick connects
Tool box, lockable
Oil sampling ports
Cleaner kit, Air blow gun
CareTrack 6 yr subscription
CareTrack, 3G + GSM/Satellite capable
Jump start connector, NATO-Type
External equipment
Fire supression system
Viscous cab mounts
Rubber engine and transmission mounts
Easy to open engine hood
Frame, joint lock
Vandalism lock prepared for:
Engine compartment
Radiator grille

STANDARD EQUIPMENT**Special Applications Solutions (SAS) Supplied Standard Specifications**

SAS supplied speciality built rear bumper, fender and steps left and right
SAS supplied striker bars 4 front 4 rear
SAS supplied radiator guard
SAS supplied windshield guard
SAS supplied guarding engine, transmission, center hinge, under cab, front frame, front and rear axle, front and rear differential
SAS supplied front and rear axle seal guards
SAS supplied hand railings, grab rails
SAS Supplied bull dozer arrangement
SAS Terra supplied wheels with rolling wire guard

OPTIONAL EQUIPMENT

Delete Fire suppression system
Premium Deluxe ISRI Seat
SAS Terra supplied blade
Straight blade
Semi u-blade
SAS Terra supplied cleat pattern
Inverted or standard chevron pattern
SAS Terra supplied cleats
8.5" HDT or twist torque or combination

SELECTION OF VOLVO OPTIONAL EQUIPMENT

Terra Twist Torque cleats

With extended puncture points, the right and left handed cleats create a twisting action which punctures and tightens the waste at the wrapper surface, resulting in superior compaction and stability.

Pictured with inverted chevron pattern

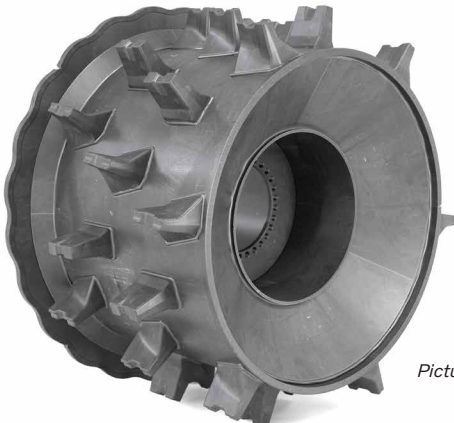
Cleats are equally spaced across the wheel wrapper allowing for consistent compaction.
Recommended for Municipal Solid Waste (MSW) and Construction and Debris (C&D) sites.

Terra High-Density Traction cleats

With a wide top cutting surface, the blunt design provides excellent penetration, crushing and shredding of materials for maximum compaction.

Pictured with standard chevron pattern

Design allows more wrapper space between rows of cleats for superior self-cleaning.
Suitable for MSW, sludge, clay or sticky adhesive type materials.
Recommended for C&D sites.

Terra Twist Torque and High-Density Traction combo

Pictured with inverted chevron pattern

PUT WASTE IN ITS PLACE



Put waste in its place with a full line of Volvo products, purpose-built for waste and recycling.



Waste transfer

In demanding environments, Volvo machines offer industry-leading safety and productivity for both the operator and machine. All components are designed as one unit, to protect the operator and move more material.

Material recycling

When working in a material recovery facility, operator comfort, control and visibility are key requirements for an efficient handling and sorting machine. Volvo machines deliver on all three.

Organic recycling

The recycling rate of green and organic waste is increasing sharply. When working in environments with difficult atmospheric conditions, such as composting facilities, the industry-leading Volvo cab keeps operators comfortable, alert and working their best.

Construction and demolition waste

An extensive range of Volvo machines and attachments can support in the recovery of valuable components from construction and demolition waste, reducing landfill costs and environmental impact.

Energy recovery

Durable Volvo machines are the perfect choice to handle both incoming resource and bottom ash end-product at Waste to Energy facilities, and used to optimize landfill sites for methane recovery.

Landfill

Our equipment range can be utilized or adapted to handle all operational requirements in the construction, maintenance and eventual decommissioning of sanitary landfills.

Scrap handling

Volvo machines combined with specialist attachments to sort and recover ferrous and non-ferrous metals, can handle all types of scrap metal with ease.

VOLVO

Volvo Construction Equipment

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