

**V O L V O**



Volvo Excavators 14.7-16.7 t / 32,500-36,810 lb 120 hp

# **ECR145**

Volvo Construction Equipment

# ECR145

A short swing radius machine  
that delivers optimum results.



# Push the edge of efficiency

The ECR145 redefines what is possible from a short swing radius machine, with more comfort, more performance and more efficiency. With a bigger cab, increased fuel efficiency and improved lifting capacity, count on the ECR145 to deliver optimum results in short swing applications.



## Operator comfort

- Conventional type cab on a short swing radius machine
- 20% more cab space
- More precise controls
- Quieter cab
- Personalized settings for greater comfort



## Smart View with Obstacle Detection

- Increased safety onsite and for the operator
- Radar warns for items outside the screen
- HD screen
- Human identifying alarm separate from other obstacles



## Serviceability

- New right hand service access to upper platform
- Ground level access for service
- Grouped filters and lubrication points
- Quick and easy oil changes



## Fuel Efficiency

- New electric fan
- Reduce fuel
- Lower noise
- Easier maintenance



## Productivity

- Swing without obstruction- significant improvement in right hand visibility
- 5% more stability
- 11% increase in lifting capacity
- 5% more swing capacity
- 9% more tractive force
- Up to 12% more fuel efficient

# Volvo ECR145 in detail

## Engine

The next-generation Volvo diesel engine uses Volvo Advanced Combustion Technology (V-ACT) to deliver lower emissions, superior performance and fuel efficiency. The engine uses precise, high pressure fuel injectors, turbo charger and intercooler, and electronic engine controls to optimize machine performance.

**Air Filter:** 3-stage and precleaner

**Automatic Idling System:** Reduces engine speed to idle when the levers and pedals are not activated resulting in less fuel consumption and low cab noise levels.

Engine	Volvo	D4J
Max power at	r/min (r/s)	2,000 (33.3)
Net, ISO 9249/SAE J1349	kW (hp)	89 (119)
Gross, ISO 14396/SAE J1995	kW (hp)	90 (121)
Max torque	Nm (ft lbf)	566 (417)
at engine speed	r/min (r/s)	1,300 (21.7)
No. of cylinders		4
Displacement	l (in <sup>3</sup> )	4 (246)
Bore	mm (in)	101 (3.98)
Stroke	mm (in)	126 (4.96)

## Electrical system

High-capacity electrical system that is well protected. Waterproof double-lock harness plugs are used to secure corrosion-free connections. The main relays and solenoid valves are shielded to prevent damage. The master switch is standard. Contronics provides advanced monitoring of machine functions and important diagnostic information.

Voltage	V	24
Batteries	V	2x12
Battery capacity	Ah	100
Alternator	V/A	28 / 180
Start motor	V - kW	24-5.5

## Undercarriage and structures

The undercarriage has a robust X-shaped frame. Greased and sealed track chains are standard.

Track shoes		2 x 46
Link pitch	mm (in)	171 (6.73)
Shoe width, triple grouser	mm (in)	500/600/700/750 (20/24/28/30)
Shoe width, triple grouser (HD)	mm (in)	600/700 (24/28)
Shoe width, rubber shoe	mm (in)	500/600 (20/24)
Bottom rollers		2 x 7
Top rollers		2 x 1

## Swing system

The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and anti-rebound valve are standard.

Max. slew speed	r/min	12.7
Max. slew torque	kNm (ft lbf)	41.9 (30,904)

## Travel System

Each track is powered by an automatic two-speed shift travel motor. The track brakes are multi-disc, spring-applied and hydraulic released. The travel motor, brake and planetary gears are well protected within the track frame.

Max. drawbar pull	kN (lbf)	130 (29,170)
Max. travel speed (low)	km/h (mi/h)	3.2 (1.99)
Max. travel speed (high)	km/h (mi/h)	5.5 (3.42)
Gradeability	°	35

## Cab

The operator's cab has easy access via a wide door opening. The cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. These along with sound absorbing lining provide low noise levels. The cab has excellent all-round visibility. The front windshield can easily slide up into the ceiling, and the lower front glass can be removed and stored in the side door.

**Integrated air-conditioning and heating system:** The pressurized and filtered cab air is supplied by an automatically controlled fan. The air is distributed throughout the cab from 10 vents.

**Ergonomic operator's seat:** The adjustable seat and joystick console move independently to accommodate the operator. The seat has 12 different adjustments plus a seat belt for the operator's comfort and safety.

## Sound Level

Sound level in cab according to ISO 6396

L <sub>pA</sub>	dB	71
External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:2009		
L <sub>WA</sub>	dB	99

## Hydraulic system

The new electro-hydraulic system and new MCV (main control valve) use intelligent technology to control on-demand flow for high productivity, high-digging capacity and excellent fuel consumption.

The following important functions are included in the system:

**Summation system:** Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity

**Boom priority:** Gives priority to the boom operation for faster raising when loading or performing deep excavations.

**Arm priority:** Gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.

**Swing priority:** Gives priority to swing functions for faster simultaneous operations.

**Regeneration system:** Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.

**Auto Power boost:** All digging and lifting forces are increased.

**Auto warm up:** Hydraulic oil temperature can be set below the threshold that has been set.

**Creep mode:** Lower travel speed(10%~50% of 1st full speed) can be set by creep switch on.

**Holding valves:** Boom and arm holding valves prevent the digging equipment from creeping.

### Main pump: 2 x Variable displacement axial piston pumps

Maximum flow	l/min (gal/min)	2 x 130 (2 x 34.3)
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### Pilot pump: Gear pump

Maximum flow	l/min (gal/min)	1 x 18 (1 x 4.8)
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### Max. pressure

Implement	MPa (psi)	32.4 / 34.3 (4,690 / 4,980)
Travel circuit	MPa (psi)	34.3 (4,980)
Slew circuit	MPa (psi)	26.5 (3,840)
Pilot circuit	MPa (psi)	3.9 (570)

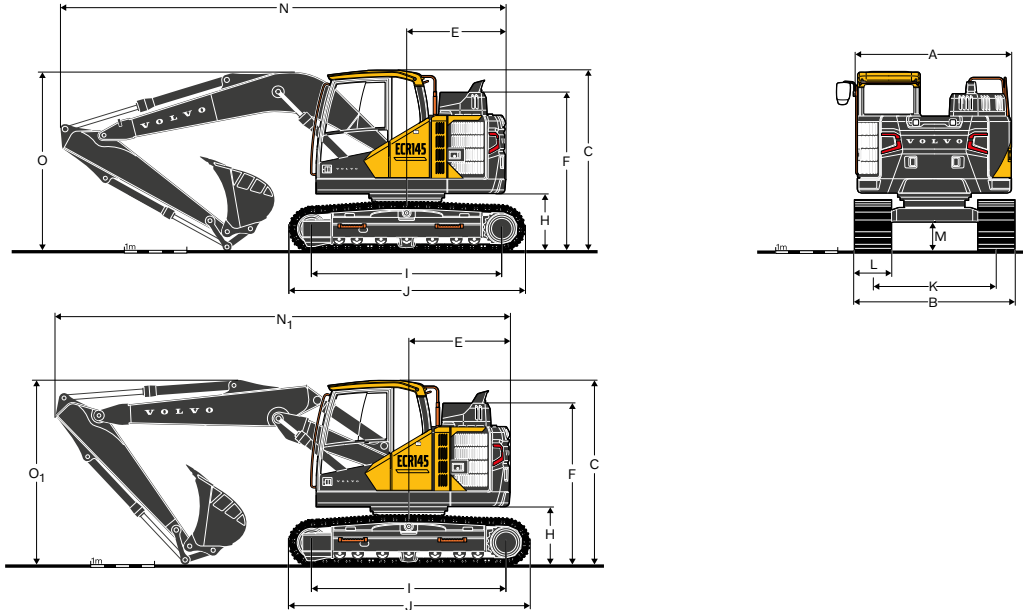
## Hydraulic Cylinders

Mono boom		2
Bore x Stroke	ø x mm (ø x in)	110 x 1 055 (4.3 x 41.5)
1st boom of 2-piece boom		1
Bore x Stroke	ø x mm (ø x in)	110 x 980 (4.3 x 38.6)
2nd boom of 2-piece boom		1
Bore x Stroke	ø x mm (ø x in)	160 x 765 (6.3 x 30.1)
Arm		1
Bore x Stroke	ø x mm (ø x in)	120 x 1 028 (4.7 x 40.5)
Bucket		1
Bore x Stroke	ø x mm (ø x in)	100 x 865 (3.9 x 34.1)

## Service Refill

Fuel tank	l (gal)	200 (53)
Hydraulic system, total	l (gal)	200 (53)
Hydraulic tank	l (gal)	74 (20)
Engine oil	l (gal)	15.5 (4)
Engine coolant	l (gal)	26 (7)
Slew reduction unit	l (gal)	4 (1.1)
Travel reduction unit	l (gal)	2 x 2.2 (2 x 0.6)

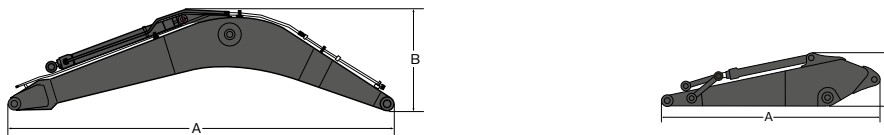
# Specifications



## DIMENSIONS

Description	Unit		ECR145F L						ECR145F LM					
			4.6 (15'4") mono or 4.72 (15'6") 2-piece						4.6 (15'4") mono or 4.72 (15'6") 2-piece					
Boom	m	ft in	2.1	6'11"	2.5	8'2"	3.0	9'10"	2.1	6'11"	2.5	8'2"	3.0	9'10"
A. Overall width of upper structure	mm	ft in	2,500	8'2"	2,500	8'2"	2,500	8'2"	2,500	8'2"	2,500	8'2"	2,500	8'2"
B. Overall width	mm	ft in	2,590	8'6"	2,590	8'6"	2,590	8'6"	2,690	8'10"	2,690	8'10"	2,690	8'10"
C. Overall height of cab	mm	ft in	2,895	9'6"	2,895	9'6"	2,895	9'6"	3,075	10'1"	3,075	10'1"	3,075	10'1"
D. Overall height of handrail	mm	ft in	2,798	9'2"	2,798	9'2"	2,798	9'2"	2,978	9'9"	2,978	9'9"	2,978	9'9"
E. Tail swing radius	mm	ft in	1,565	5'2"	1,565	5'2"	1,565	5'2"	1,565	5'2"	1,565	5'2"	1,565	5'2"
F. Overall height of engine hood	mm	ft in	2,533	8'4"	2,533	8'4"	2,533	8'4"	2,713	8'11"	2,714	8'11"	2,715	8'11"
G. Overall height of diffuser	mm	ft in	2,724	8'11"	2,724	8'11"	2,724	8'11"	2,904	9'6"	2,904	9'6"	2,904	9'6"
H. Counterweight clearance *	mm	ft in	4,380	14'4"	4,380	14'4"	4,380	14'4"	4,380	14'4"	4,380	14'4"	4,380	14'4"
I. Tumbler length	mm	ft in	3,040	10'0"	3,040	10'0"	3,040	10'0"	3,000	9'10"	3,000	9'10"	3,000	9'10"
J. Track length	mm	ft in	3,770	12'4"	3,770	12'4"	3,770	12'4"	3,790	12'5"	3,790	12'5"	3,790	12'5"
K. Track gauge	mm	ft in	1,990	6'6"	1,990	6'6"	1,990	6'6"	1,990	6'6"	1,990	6'6"	1,990	6'6"
L. Shoe width	mm	ft in	600	2'0"	600	2'0"	600	2'0"	700	2'4"	700	2'4"	700	2'4"
M. Min. ground clearance *	mm	ft in	901	2'11"	901	2'11"	901	2'11"	901	2'11"	901	2'11"	901	2'11"
N. Overall length	mm	ft in	7,471	24'6"	7,476	24'6"	7,416	24'4"	7,491	24'7"	7,491	24'7"	7,461	24'6"
N'. Overall length	mm	ft in	7,576	24'10"	7,541	24'9"	7,441	24'5"	7,596	24'11"	7,571	24'10"	7,201	23'8"
O. Overall height of boom	mm	ft in	2,760	9'1"	2,900	9'6"	3,250	10'8"	2,830	9'3"	2,970	9'9"	3,565	11'8"
O'. Overall height of boom	mm	ft in	2,710	8'11"	2,910	9'7"	3,470	11'5"	2,890	9'6"	2,950	9'8"	3,380	11'1"

\* Without shoe grouser

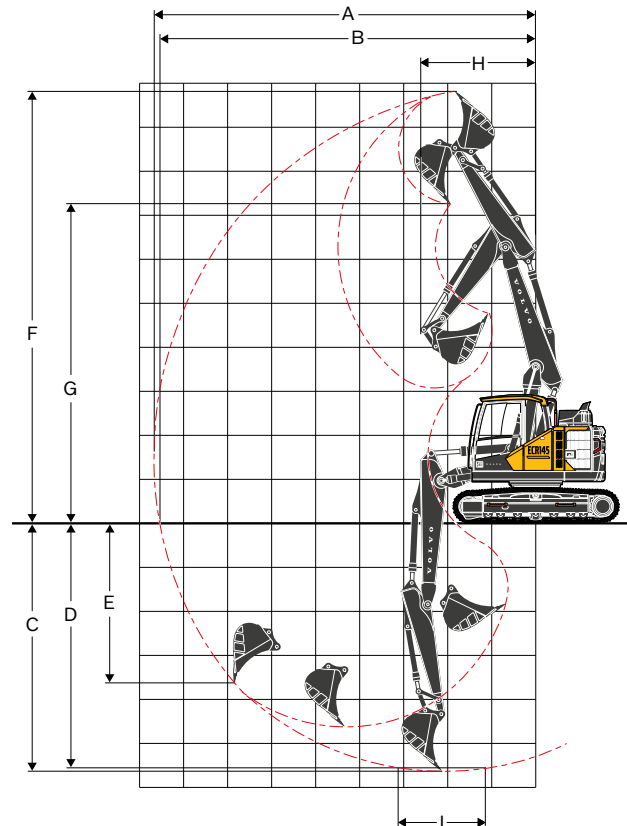
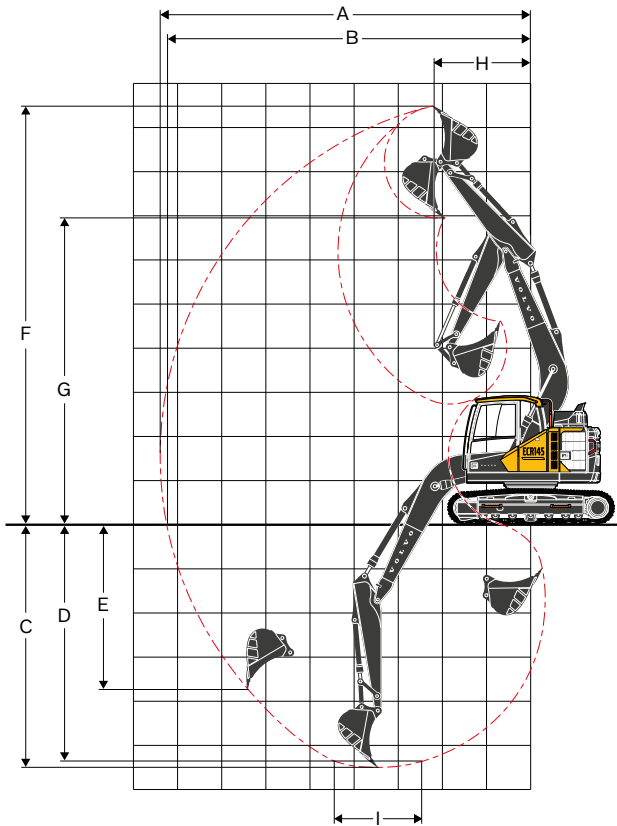


## DIMENSIONS

Boom				Arm											
Description	Unit		Mono		2-piece		Description	Unit							
Boom	m	ft in	4.60	15'1"	4.72	15'6"	Arm	m	ft in	2.1	6'11"	2.5	8'2"	3	9'10"
A (Length)	mm	ft in	4,770	15'8"	4,885	16'0"	A (Length)	mm	ft in	2,790	9'2"	3,195	10'6"	3,690	12'1"
B (Height)	mm	ft in	1,370	4'6"	1,135	3'9"	B (Height)	mm	ft in	650	2'2"	675	2'3"	750	2'6"
Width	mm	ft in	545	1'9"	545	1'9"	Width	mm	ft in	275	0'11"	275	0'11"	275	0'11"
Weight	kg	lb	1,130	2,490	1,450	3,200	Weight	kg	lb	560	1230	624	1,380	684	1,510

\* Includes cylinder, piping and pin, excludes boom cyl.pin

\*Includes cylinder, linkage and pin



**WORKING RANGE**

Description	Unit		ECR145F											
			4.6 (15'1") mono						4.72 (15'6") 2-piece					
Boom	m	ft in	2.1	6'11"	2.5	8'2"	3.0	9'10"	2.1	6'11"	2.5	8'2"	3.0	9'10"
A. Max. digging reach			mm	ft in	7,990	26'3"	8,360	27'5"	8,850	29'0"	8,220	27'0"	8,610	28'3"
B. Max. digging reach on ground	mm	ft in	7,840	25'9"	8,215	26'11"	8,720	28'7"	8,070	26'6"	8,465	27'9"	8,970	29'5"
C. Max. digging depth	mm	ft in	5,130	16'10"	5,530	18'2"	6,030	19'9"	5,235	17'2"	5,640	18'6"	6,145	20'2"
D. Max. digging depth (2.44 m / 8'0" level)	mm	ft in	4,880	16'0"	5,310	17'5"	5,850	19'2"	5,115	16'9"	5,525	18'2"	6,040	19'10"
E. Max. vertical wall digging depth	mm	ft in	3,954	13'0"	4,325	14'2"	4,855	15'11"	4,155	13'8"	4,523	14'10"	5,015	16'5"
F. Max. cutting height	mm	ft in	9,090	29'10"	9,415	30'11"	9,860	32'4"	9,380	30'9"	9,740	31'11"	10,205	33'6"
G. Max. dumping height	mm	ft in	6,550	21'6"	6,875	22'7"	7,310	24'0"	6,830	22'5"	7,190	23'7"	7,660	25'2"
H. Min. front swing radius	mm	ft in	1,929	6'4"	2,130	7'0"	2,505	8'3"	2,330	7'8"	2,590	8'6"	3,010	9'11"

**DIGGING FORCES WITH DIRECT FIT BUCKET**

Bucket radius		mm	ft in	1,275	4'2"	1,275	4'2"	1,275	4'2"	1,275	4'2"	1,275	4'2"	1,275	4'2"
Breakout force - bucket	Normal SAE J1179	kN	lbf	80.5	18,100	80.5	18,100	80.5	18,100	80.5	18,100	80.5	18,100	80.5	18,100
	Power boost SAE J1179	kN	lbf	85.4	19,200	85.4	19,200	85.4	19,200	85.4	19,200	85.4	19,200	85.4	19,200
	Normal ISO 6015	kN	lbf	91.1	20,480	91.1	20,480	91.1	20,480	91.1	20,480	91.1	20,480	91.1	20,480
Tearout force - dipper arm	Power boost ISO 6015	kN	lbf	96.6	21,720	96.6	21,720	96.6	21,720	96.6	21,720	96.6	21,720	96.6	21,720
	Normal SAE J1179	kN	lbf	69.5	15,620	62.1	13,960	55.3	12,430	69.5	15,620	62.1	13,960	55.3	12,430
	Power boost SAE J1179	kN	lbf	73.8	16,590	65.8	14,790	58.6	13,170	73.8	16,590	65.8	14,790	58.6	13,170
	Normal ISO 6015	kN	lbf	71.4	16,050	63.5	14,280	56.3	12,660	71.4	16,050	63.5	14,280	56.3	12,660
	Power boost ISO 6015	kN	lbf	75.8	17,040	67.3	15,130	59.8	13,440	75.8	17,040	67.3	15,130	59.8	13,440
Rotation angle, bucket		°		179		179		179		179		179		179	

# Specifications

## MACHINE WEIGHTS AND GROUND PRESSURE

Description	Shoe width		Operating weight		Ground pressure		Operating weight		Ground pressure	
	mm	in	kg	lb	kPa	psi	kg	lb	kPa	psi
Triple grouser	500	20	14,740	32,500	44.1	6.40	15,823	34,890	47.1	6.83
	600	24	14,897	32,850	37.3	5.40	16,020	35,320	40.2	5.83
	750	30	15,313	33,760	30.4	4.41	16,395	36,150	32.4	4.69
Triple grouser(HD)	600	24	15,009	33,090	37.3	5.40	16,091	35,480	40.2	5.83
	700	28	15,109	33,320	32.4	4.69	16,191	35,700	34.3	4.98
Rubber	500	20	14,773	32,570	44.1	6.40	15,855	34,960	47.1	6.83
Add on Rubber	500	20	15,192	33,500	45.1	6.54	16,274	35,880	48.0	6.97
	600	24	15,468	34,110	38.2	5.55	16,550	36,490	41.2	5.97

			ECR145F L, 4.6 m (15'1") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,200 kg (7,060 lb) counterweight				ECR145F L with dozer blade, 4.6 m (15'1") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,200 kg (7,060 lb) counterweight			
Description	Shoe width		Operating weight		Ground pressure		Operating weight		Ground pressure	
	mm	in	kg	lb	kPa	psi	kg	lb	kPa	psi
Triple grouser	500	20	15,040	33,160	45.1	6.54	16,123	35,550	48.0	6.97
	600	24	15,238	33,600	38.2	5.55	16,320	35,990	40.2	5.83
	750	30	15,613	34,430	31.4	4.55	16,695	36,810	33.3	4.84
Triple grouser(HD)	600	24	15,309	33,760	38.2	5.55	16,391	36,140	40.2	5.83
	700	28	15,409	33,980	32.4	4.69	16,491	36,360	35.3	5.12
Rubber	500	20	15,073	33,240	45.1	6.54	16,155	35,620	48.0	6.97
Add on Rubber	500	20	15,492	34,160	46.1	6.68	16,574	36,550	49.0	7.11
	600	24	15,768	34,770	39.2	5.69	16,850	37,150	42.2	6.12

			ECR145F L, 4.6 m (15'1") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,500 kg (7,720 lb) counterweight				ECR145F L with dozer blade, 4.6 m (15'1") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,500 kg (7,720 lb) counterweight			
Description	Shoe width		Operating weight		Ground pressure		Operating weight		Ground pressure	
	mm	in	kg	lb	kPa	psi	kg	lb	kPa	psi
Triple grouser	500	20	15,135	33,370	45.1	6.54	16,123	35,550	48.0	6.97
	600	24	15,332	33,810	38.2	5.55	16,320	35,990	40.2	5.83
	750	30	15,707	34,630	31.4	4.55	16,695	36,810	33.3	4.84
Triple grouser(HD)	600	24	15,403	33,960	38.2	5.55	16,391	36,140	40.2	5.83
	700	28	15,504	34,190	33.3	4.84	16,491	36,360	35.3	5.12
Rubber	500	20	15,167	33,440	45.1	6.54	16,155	35,620	48.0	6.97
Add on Rubber	500	20	15,586	34,370	46.1	6.68	16,574	36,550	49.0	7.11
	600	24	15,862	34,980	39.2	5.69	16,850	37,150	42.2	6.12

			ECR145F L, 4.72 m (15'6") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,200 kg (7,060 lb) counterweight				ECR145F L with dozer blade, 4.72 m (15'6") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,200 kg (7,060 lb) counterweight			
Description	Shoe width		Operating weight		Ground pressure		Operating weight		Ground pressure	
	mm	in	kg	lb	kPa	psi	kg	lb	kPa	psi
Triple grouser	500	20	15,435	34,030	46.1	6.68	16,749	16,517	49.0	7.11
	600	24	15,632	34,470	39.2	5.69	17,018	16,714	41.2	5.97
	750	30	16,007	35,300	31.4	4.55	17,089	17,089	34.3	4.98
Triple grouser(HD)	600	24	15,703	34,630	39.2	5.69	16,785	16,785	41.2	5.97
	700	28	15,804	34,850	33.3	4.84	16,886	16,886	36.3	5.26
Rubber	500	20	15,467	34,110	46.1	6.68	16,650	16,550	49.0	7.11
Add on Rubber	500	20	15,886	35,030	47.1	6.83	16,833	16,968	51.0	7.40
	600	24	16,162	35,640	40.2	5.83	17,292	17,244	43.1	6.26

			ECR145F L, 4.72 m (15'6") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,500 kg (7,720 lb) counterweight				ECR145F L with dozer blade, 4.72 m (15'6") boom, 2.5 m (8'2") arm, 443 kg (977 lb) bucket, 3,500 kg (7,720 lb) counterweight			
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**BUCKET SELECTION GUIDE**

Bucket type		Capacity		Cutting width		Weight		Teeth	ECR145F L, 600 mm (24 in) shoe, 3,200 kg (7,060 lb) counterweight, Dozer down					
									4.6 m (15'1") boom			4.72 m (15'6") 2-piece boom		
		L	yd <sup>3</sup>	mm	ft in	kg	lb	EA	2.1 m (6'11")	2.5 m (8'2")	3.0 m (9'10")	2.1 m (6'11")	2.5 m (8'2")	3.0 m (9'10")
Direct fit Buckets General purpose	Without Quick Coupler	250	0.33	450	17.6	293	647	3	C	C	C	C	C	C
		330	0.43	600	23.4	324	715	3	C	C	C	C	C	C
		420	0.55	750	29.3	355	783	3	C	C	C	C	C	C
		540	0.71	900	35.1	403	889	4	C	C	C	C	C	C
		660	0.86	1,050	41.0	443	977	4	C	C	C	C	C	B
		770	1.01	1,200	46.8	504	1,112	5	C	B	A	B	B	A
	U type quick coupler	250	0.33	450	17.6	293	647	3	C	C	C	C	C	C
		330	0.43	600	23.4	324	715	3	C	C	C	C	C	C
		420	0.55	750	29.3	355	783	3	C	C	C	C	C	C
		540	0.71	900	35.1	403	889	4	C	C	C	C	C	B
		660	0.86	1,050	41.0	443	977	4	C	B	B	C	B	A
		770	1.01	1,200	46.8	504	1,112	5	B	A	X	B	A	X
	S type quick coupler	240	0.31	500	19.7	252	556	3	C	C	C	C	C	C
		330	0.43	600	23.4	327	721	3	C	C	C	C	C	C
		420	0.55	750	29.3	357	788	3	C	C	C	C	C	C
		540	0.71	900	35.1	406	895	4	C	C	C	C	C	B
		660	0.86	1,050	41.0	446	983	4	C	B	B	C	B	A
		770	1.01	1,200	46.8	508	1,120	5	B	A	X	B	A	X
Bucket type		Capacity		Cutting width		Weight		Teeth	ECR145F L, 600 mm (24 in) shoe, 3,500 kg (7,720 lb) counterweight, Dozer down					
									4.6 m (15'1") boom			4.72 m (15'6") 2-piece boom		
		L	yd <sup>3</sup>	mm	ft in	kg	lb	EA	2.1 m (6'11")	2.5 m (8'2")	3.0 m (9'10")	2.1 m (6'11")	2.5 m (8'2")	3.0 m (9'10")
Direct fit Buckets General purpose	Without Quick Coupler	250	0.33	450	17.6	293	647	3	C	C	C	C	C	C
		330	0.43	600	23.4	324	715	3	C	C	C	C	C	C
		420	0.55	750	29.3	355	783	3	C	C	C	C	C	C
		540	0.71	900	35.1	403	889	4	C	C	C	C	C	C
		660	0.86	1,050	41.0	443	977	4	C	C	C	C	C	C
		770	1.01	1,200	46.8	504	1,112	5	C	C	B	C	B	A
	U type quick coupler	250	0.33	450	17.6	293	647	3	C	C	C	C	C	C
		330	0.43	600	23.4	324	715	3	C	C	C	C	C	C
		420	0.55	750	29.3	355	783	3	C	C	C	C	C	C
		540	0.71	900	35.1	403	889	4	C	C	C	C	C	C
		660	0.86	1,050	41.0	443	977	4	C	C	B	C	B	B
		770	1.01	1,200	46.8	504	1,112	5	B	B	A	B	A	X
	S type quick coupler	240	0.31	500	19.7	252	556	3	C	C	C	C	C	C
		330	0.43	600	23.4	327	721	3	C	C	C	C	C	C
		420	0.55	750	29.3	357	788	3	C	C	C	C	C	C
		540	0.71	900	35.1	406	895	4	C	C	C	C	C	C
		660	0.86	1,050	41.0	446	983	4	C	C	B	C	B	B
		770	1.01	1,200	46.8	508	1,120	5	B	B	X	B	B	X

**Maximum material density**  
D: 2,100 kg/m<sup>3</sup> (3,500 lb/yd<sup>3</sup>)  
C: 1,800 kg/m<sup>3</sup> (3,100 lb/yd<sup>3</sup>)  
B: 1,500 kg/m<sup>3</sup> (2,500 lb/yd<sup>3</sup>)  
A: 1,200 kg/m<sup>3</sup> (2,000 lb/yd<sup>3</sup>)  
X : Not recommended

Please consult with your Volvo dealer for the proper match of buckets and attachments to suit the application.  
The recommendations are given as a guide only, based on typical operation conditions.  
Bucket capacity based on ISO 7451, heaped material with a 1:1 angle of repose.

















## LIFTING CAPACITY ECR145F L

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting hook related to ground level	1.5 m (5")		3.0 m (10")		4.5 m (15")		6.0 m (20")		7.5 m (25")		Max.		
		Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	
Boom 4.6 m (15'1") Arm 2.5 m (8'2") Shoe 700 mm (28 in) Undercarriage LC Counterweight 3,500 kg (7,720 lb) Dozer with dozer blade down	7.5 m kg			*4,760	*4,760							*4,330	*4,330	3.63 m
	25 ft lb			*10,890	*10,890							*9,870	*9,870	11.2 ft
	6.0 m kg					*4,110	*4,110					*3,470	*3,460	5.44 m
	20 ft lb					*9,110	*9,110					*7,710	*7,710	17.6 ft
	4.5 m kg			*4,360	*4,360	*4,380	*4,380	*4,110	2,960			*3,240	2,650	6.41 m
	15 ft lb			*9,610	*9,610	*9,560	*9,560	*9,020	6,370			*7,150	5,900	20.9 ft
	3.0 m kg			*7,380	*7,380	*5,250	4,440	*4,380	2,890			*3,240	2,320	6.93 m
	10 ft lb			*15,820	*15,820	*11,370	9,570	*9,550	6,230			*7,150	5,130	22.7 ft
	1.5 m kg					*6,230	4,200	*4,760	2,790			*3,430	2,200	7.08 m
	5 ft lb					*13,500	9,070	*10,340	6,030			*7,570	4,850	23.2 ft
	0 m kg			*6,070	*6,070	*6,760	4,040	*4,960	2,710			*3,860	2,240	6.91 m
	0 ft lb			*14,120	*14,120	*14,660	8,710	*10,750	5,860			*8,520	4,940	22.7 ft
	-1.5 m kg	*4,680	*4,680	*9,700	7,360	*6,550	3,980	*4,660	2,690			*4,220	2,490	6.37 m
	-5 ft lb	*10,540	*10,540	*21,050	15,810	*14,180	8,580	*10,020	5,810			*9,300	5,510	20.9 ft
-3.0 m kg	*9,140	*9,140	*7,770	7,460	*5,350	4,020					*4,080	3,180	5.36 m	
-10 ft lb	*20,680	*20,680	*16,750	16,040	*11,440	8,680					*8,970	7,100	17.4 ft	
Boom 4.6 m (15'1") Arm 3.0 m (9'10") Shoe 500 mm (20 in) Undercarriage LC Counterweight 3,200 kg (7,060 lb) Dozer without dozer blade	7.5 m kg					*3,420	*3,420					*3,410	*3,410	4.50 m
	25 ft lb					*7,700	*7,700					*7,700	*7,700	14.2 ft
	6.0 m kg					*3,540	*3,540	*3,000	2,470			*2,870	2,430	6.05 m
	20 ft lb					*7,840	*7,840					*6,380	5,470	19.6 ft
	4.5 m kg					*3,860	*3,860	*3,730	2,470			*2,710	1,920	6.94 m
	15 ft lb					*8,430	*8,430	*8,200	5,300			*5,980	4,270	22.6 ft
	3.0 m kg			*5,650	*5,650	*4,760	3,710	*3,820	2,380			*2,710	1,680	7.41 m
	10 ft lb			*11,860	*11,860	*10,320	8,010	*8,220	5,130			*5,970	3,730	24.3 ft
	1.5 m kg					*5,780	3,460	*3,690	2,270	2,630	1,610	2,600	1,590	7.56 m
	5 ft lb					*12,430	7,460	*7,960	4,900			5,740	3,520	24.8 ft
	0 m kg			*6,630	5,900	*5,550	3,260	*3,590	2,170			2,650	1,610	7.39 m
	0 ft lb			*15,410	12,700	*11,930	7,020	*7,730	4,690			5,840	3,560	24.3 ft
	-1.5 m kg	*4,130	*4,130	*8,960	5,800	5,440	3,160	*3,530	2,120			2,910	1,760	6.89 m
	-5 ft lb	*9,290	*9,290	*20,600	12,470	11,700	6,820	*7,620	4,580			6,430	3,900	22.6 ft
-3.0 m kg	*7,560	*7,560	*8,600	5,860	5,450	3,170					3,580	2,160	5.98 m	
-10 ft lb	*17,070	*17,070	*18,560	12,600	11,720	6,840					7,980	4,820	19.5 ft	
-4.5 m kg			*5,450	*5,450							*3,430	*3,430	4.37 m	
-15 ft lb			*11,380	*11,380							*7,440	*7,440	14.0 ft	
Boom 4.6 m (15'1") Arm 3.0 m (9'10") Shoe 500 mm (20 in) Undercarriage LC Counterweight 3,200 kg (7,060 lb) Dozer with dozer blade up	7.5 m kg					*3,420	*3,420					*3,410	*3,410	4.50 m
	25 ft lb					*7,700	*7,700					*7,700	*7,700	14.2 ft
	6.0 m kg					*3,540	*3,540	*3,000	2,610			*2,870	2,570	6.05 m
	20 ft lb					*7,840	*7,840					*6,380	5,780	19.6 ft
	4.5 m kg					*3,860	*3,860	*3,730	2,610			*2,710	2,040	6.94 m
	15 ft lb					*8,430	*8,430	*8,200	5,610			*5,980	4,530	22.6 ft
	3.0 m kg			*5,650	*5,650	*4,760	3,920	*4,080	2,520			*2,710	1,790	7.41 m
	10 ft lb			*11,860	*11,860	*10,320	8,450	*8,880	5,440			*5,970	3,970	24.3 ft
	1.5 m kg					*5,860	3,660	*4,000	2,410	2,860	1,720	2,830	1,700	7.56 m
	5 ft lb					*12,690	7,900	*8,620	5,200			6,240	3,760	24.8 ft
	0 m kg			*6,630	6,260	6,010	3,460	*3,890	2,310			2,880	1,720	7.39 m
	0 ft lb			*15,410	13,480	12,920	7,460	*8,390	5,000			6,360	3,800	24.3 ft
	-1.5 m kg	*4,130	*4,130	*8,960	6,150	5,900	3,360	*3,840	2,260			3,160	1,880	6.89 m
	-5 ft lb	*9,290	*9,290	*20,600	13,250	12,690	7,260	*8,280	4,890			6,990	4,160	22.6 ft
-3.0 m kg	*7,560	*7,560	*8,600	6,220	*5,840	3,370					*3,880	2,310	5.98 m	
-10 ft lb	*17,070	*17,070	*18,560	13,380	*12,560	7,280					*8,550	5,140	19.5 ft	
-4.5 m kg			*5,450	*5,450							*3,430	*3,430	4.37 m	
-15 ft lb			*11,380	*11,380							*7,440	*7,440	14.0 ft	

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.

# Specifications

## LIFTING CAPACITY ECR145F L

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting hook related to ground level	1.5 m (5")		3.0 m (10")		4.5 m (15")		6.0 m (20")		7.5 m (25")		Max.		
		Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	
Boom 4.6 m (15'1") Arm 3.0 m (9'10") Shoe 500 mm (20 in) Undercarriage LC Counterweight 3,500 kg (7,720 lb) Dozer without dozer blade	7.5 m kg					*3,420	*3,420					*3,410	*3,410	4.50 m
	25 ft lb											*7,700	*7,700	14.2 ft
	6.0 m kg					*3,540	*3,540	*3,000	2,570			*2,870	2,530	6.05 m
	20 ft lb					*7,840	*7,840					*6,380	5,690	19.6 ft
	4.5 m kg					*3,860	*3,860	*3,730	2,570			*2,710	2,000	6.94 m
	15 ft lb					*8,430	*8,430	*8,200	5,520			*5,980	4,460	22.6 ft
	3.0 m kg			*5,650	*5,650	*4,760	3,860	3,950	2,480			*2,710	1,760	7.41 m
	10 ft lb			*11,860	*11,860	*10,320	8,320	8,500	5,350			*5,970	3,900	24.3 ft
	1.5 m kg					*5,860	3,600	3,830	2,370	2,730	1,690	*2,700	1,670	7.56 m
	5 ft lb					*12,690	7,770	8,240	5,110			*5,950	3,690	24.8 ft
	0 m kg			*6,630	6,160	5,740	3,400	3,720	2,270			*2,750	1,690	7.39 m
	0 ft lb			*15,410	13,250	12,360	7,340	8,020	4,910			*6,060	3,730	24.3 ft
	-1.5 m kg	*4,130	*4,130	*8,960	6,060	5,640	3,310	3,660	2,220			*3,020	1,850	6.89 m
	-5 ft lb	*9,290	*9,290	*20,600	13,020	12,130	7,130	7,900	4,800			*6,670	4,090	22.6 ft
	-3.0 m kg	*7,560	*7,560	*8,600	6,120	5,650	3,310					*3,720	2,260	5.98 m
-10 ft lb	*17,070	*17,070	*18,560	13,150	12,150	7,150					*8,280	5,040	19.5 ft	
-4.5 m kg			*5,450	*5,450							*3,430	*3,430	4.37 m	
-15 ft lb			*11,380	*11,380							*7,440	*7,440	14.0 ft	
Boom 4.6 m (15'1") Arm 3.0 m (9'10") Shoe 500 mm (20 in) Undercarriage LC Counterweight 3,500 kg (7,720 lb) Dozer with dozer blade up	7.5 m kg					*3,420	*3,420					*3,410	*3,410	4.50 m
	25 ft lb											*7,700	*7,700	14.2 ft
	6.0 m kg					*3,540	*3,540	*3,000	2,710			*2,870	2,670	6.05 m
	20 ft lb					*7,840	*7,840					*6,380	6,010	19.6 ft
	4.5 m kg					*3,860	*3,860	*3,730	2,710			*2,710	2,120	6.94 m
	15 ft lb					*8,430	*8,430	*8,200	5,830			*5,980	4,720	22.6 ft
	3.0 m kg			*5,650	*5,650	*4,760	4,060	*4,080	2,620			*2,710	1,870	7.41 m
	10 ft lb			*11,860	*11,860	*10,320	8,760	*8,890	5,660			*5,970	4,140	24.3 ft
	1.5 m kg					*5,860	3,800	4,130	2,510	2,960	1,800	*2,850	1,780	7.56 m
	5 ft lb					*12,690	8,210	8,910	5,420			*6,280	3,920	24.8 ft
	0 m kg			*6,630	6,520	6,210	3,600	4,030	2,410			*2,980	1,800	7.39 m
	0 ft lb			*15,410	14,030	13,350	7,770	8,680	5,210			*6,580	3,970	24.3 ft
	-1.5 m kg	*4,130	*4,130	*8,960	6,420	6,100	3,510	3,970	2,360			*3,270	1,970	6.89 m
	-5 ft lb	*9,290	*9,290	*20,600	13,800	13,120	7,570	8,560	5,110			*7,240	4,350	22.6 ft
	-3.0 m kg	*7,560	*7,560	*8,600	6,480	*5,840	3,520					*3,880	2,410	5.98 m
-10 ft lb	*17,070	*17,070	*18,560	13,930	*12,560	7,590					*8,550	5,360	19.5 ft	
-4.5 m kg			*5,450	*5,450							*3,430	*3,430	4.37 m	
-15 ft lb			*11,380	*11,380							*7,440	*7,440	14.0 ft	
Boom 4.6 m (15'1") Arm 3.0 m (9'10") Shoe 600 mm (24 in) Undercarriage LC Counterweight 3,200 kg (7,060 lb) Dozer without dozer blade	7.5 m kg					*3,420	*3,420					*3,410	*3,410	4.50 m
	25 ft lb											*7,700	*7,700	14.2 ft
	6.0 m kg					*3,540	*3,540	*3,000	2,500			*2,870	2,460	6.05 m
	20 ft lb					*7,840	*7,840					*6,380	5,540	19.6 ft
	4.5 m kg					*3,860	*3,860	*3,730	2,500			*2,710	1,950	6.94 m
	15 ft lb					*8,430	*8,430	*8,200	5,370			*5,980	4,330	22.6 ft
	3.0 m kg			*5,650	*5,650	*4,760	3,760	3,870	2,410			*2,710	1,710	7.41 m
	10 ft lb			*11,860	*11,860	*10,320	8,110	8,330	5,200			*5,970	3,790	24.3 ft
	1.5 m kg					*5,860	3,500	3,750	2,300	2,670	1,640	*2,640	1,620	7.56 m
	5 ft lb					*12,600	7,560	8,070	4,970			*5,820	3,570	24.8 ft
	0 m kg			*6,630	5,980	5,630	3,300	3,640	2,200			*2,690	1,640	7.39 m
	0 ft lb			*15,410	12,880	12,100	7,120	7,850	4,760			*5,930	3,610	24.3 ft
	-1.5 m kg	*4,130	*4,130	*8,960	5,880	5,520	3,210	3,580	2,150			*2,950	1,790	6.89 m
	-5 ft lb	*9,290	*9,290	*20,600	12,650	11,870	6,920	7,730	4,650			*6,530	3,960	22.6 ft
	-3.0 m kg	*7,560	*7,560	*8,600	5,940	5,530	3,220					*3,640	2,200	5.98 m
-10 ft lb	*17,070	*17,070	*18,560	12,780	11,900	6,940					*8,100	4,890	19.5 ft	
-4.5 m kg			*5,450	*5,450							*3,430	*3,430	4.37 m	
-15 ft lb			*11,380	*11,380							*7,440	*7,440	14.0 ft	

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.





























# Specifications

## LIFTING CAPACITY ECR145F L

Lifting capacity at the arm end without bucket.

For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick coupler from the following values.

	Lifting hook related to ground level	1.5 m (5")		3.0 m (10")		4.5 m (15")		6.0 m (20")		7.5 m (25")		Max.		
		Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	Along UC	Across UC	
Boom	7.5 m kg					*3,980	*3,980					*3,250	*3,250	4.92 m
	25 ft lb					*8,320	*8,320					*7,330	*7,330	15.6 ft
4.72 m 2pcs	6.0 m kg					*3,800	*3,800	*3,520	2,810			*2,700	*2,530	6.36 m
(15'6") 2pcs	20 ft lb					*8,460	*8,460	*7,240	6,030			*6,000	5,680	20.6 ft
Arm	4.5 m kg					*3,750	*3,750	*4,000	2,800			*2,500	2,050	7.21 m
	15 ft lb					*8,300	*8,300	*8,750	6,030			*5,510	4,560	23.6 ft
3.0 m (9'10")	3.0 m kg					*5,040	4,180	4,420	2,710	3,120	1,900	*2,450	1,830	7.67 m
	10 ft lb					*10,900	9,030	9,530	5,840	*5,850	4,080	*5,400	4,050	25.1 ft
Shoe	1.5 m kg					*6,440	3,910	4,290	2,590	3,080	1,860	*2,520	1,740	7.81 m
700 mm (28 in)	5 ft lb					*13,950	8,440	9,250	5,590	6,630	4,000	*5,540	3,850	25.6 ft
Undercarriage LC	0 m kg					6,430	3,700	4,180	2,490	3,040	1,820	*2,710	1,770	7.65 m
Counterweight	0 ft lb					13,830	7,990	9,010	5,370	*6,430	3,930	*5,970	3,910	25.1 ft
3,500 kg (7,720 lb)	-1.5 m kg			*7,490	6,610	*6,170	3,610	4,120	2,440			*3,040	1,930	7.17 m
	-5 ft lb			*17,240	14,210	*13,360	7,790	8,890	5,260			*6,690	4,270	23.5 ft
Dozer with dozer blade up	-3.0 m kg			*6,460	*6,460	*4,710	3,630	*2,980	2,470			*2,430	2,330	6.29 m
	-10 ft lb			*13,900	*13,900	*10,070	7,830	*6,040	5,350			*5,290	5,190	20.5 ft
Boom	7.5 m kg					*3,980	*3,980					*3,250	*3,250	4.92 m
	25 ft lb					*8,320	*8,320					*7,330	*7,330	15.6 ft
4.72 m 2pcs	6.0 m kg					*3,800	*3,800	*3,520	3,020			*2,700	*2,700	6.36 m
(15'6") 2pcs	20 ft lb					*8,460	*8,460	*7,240	6,470			*6,000	*6,000	20.6 ft
Arm	4.5 m kg					*3,750	*3,750	*4,000	3,010			*2,500	2,210	7.21 m
	15 ft lb					*8,300	*8,300	*8,750	6,470			*5,510	4,910	23.6 ft
3.0 m (9'10")	3.0 m kg					*5,040	4,500	*4,550	2,910	*3,150	2,050	*2,450	1,970	7.67 m
	10 ft lb					*10,900	9,720	*9,900	6,280	*5,850	4,400	*5,400	4,360	25.1 ft
Shoe	1.5 m kg					*6,440	4,220	*4,830	2,790	*3,790	2,010	*2,520	1,880	7.81 m
700 mm (28 in)	5 ft lb					*13,950	9,120	*10,480	6,020	*7,520	4,320	*5,540	4,160	25.6 ft
Undercarriage LC	0 m kg					*6,700	4,010	*4,870	2,690	*3,550	1,970	*2,710	1,920	7.65 m
Counterweight	0 ft lb					*14,530	8,660	*10,540	5,800	*6,430	4,250	*5,970	4,230	25.1 ft
3,500 kg (7,720 lb)	-1.5 m kg			*7,490	7,270	*6,170	3,920	*4,410	2,640			*3,040	2,090	7.17 m
	-5 ft lb			*17,240	15,610	*13,360	8,460	*9,490	5,690			*6,690	4,620	23.5 ft
Dozer with dozer blade down	-3.0 m kg			*6,460	*6,460	*4,710	3,940	*2,980	2,670			*2,430	*2,430	6.29 m
	-10 ft lb			*13,900	*13,900	*10,070	8,500	*6,040	5,780			*5,290	*5,290	20.5 ft

Notes: 1. Machine in "Fine Mode-F" (Power Boost) for lifting capacities. 2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards. 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load. 4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.





# Equipment

## Standard And Optional Equipment

• = Standard / o = Optional

### Engine

Turbocharged, 4 stroke diesel engine with water cooling, direct injection and charged air cooler that meets NA T4f requirements	•
Electric cooling fan with reversible function	•
Fuel shut off valve	•
Fuel filter and water separator	•
Engine block heater	o
Coolant heater by diesel	o
Automatic engine shutdown	o
Delayed engine Shutdown	o
Water separator with heater	o
Arctic regeneration	o
Oil sampling for engine oil	o

### Electric / electronic control system

Anti-theft with code lock system	•
Alternator, 180 A	•
Automatic idling system	•
Lock Out / Tag Out function on main battery switch	•
Standard light	•
Batteries, 2 x 12 V / 100 Ah	•
Start motor, 24 V / 5.5 kW	•
Basic light package	o
Advanced light package	o
Deluxe light package	o
Arm light	o
LH light	o

### Undercarriage and structures

3-point side access	•
Direct filling DEF(AdBlue) / Sight gauge and splash guard	•
Access way with handrail	•
Hydraulic track adjusters	•
Greased and sealed track link	•
500 / 600 / 700 / 750 mm (20 / 24 / 28 / 30 in) with triple grousers	o
600 / 700 mm (24 / 28 in) HD	o
500 / 600 mm (20 / 24 in) rubber pad & add on rubber pad	o
GP/HD under cover	o
GP/HD Belly cover	o
3,200 kg (7,060 lb) counterweight	•
3,500 kg (7,720 lb) counterweight	o
Dozer blade	o

## Standard And Optional Equipment

• = Standard / o = Optional

### Hydraulic system

EH(Electro-Hydraulic) control system	•
New work mode with 10 steps	•
Auto power boost	•
One touch power boost	•
Priority Adjustment	•
Boom down speed control	•
Shock reduction function	•
Hose rupture valve for boom	o
Hose rupture valve for arm	o
Joystick, Semi-long / 4 switch / 4 switch & 1 proportional / Simple L8 / L8	o
Hydraulic oil mineral 32 / 46 / 68	o
Longlife hyd oil mineral 32 / 46 / 68	o
Hydraulic oil bio 46	o
Pattern change	o
Boom float function	o
Straight travel pedal	o
Comfort driving control	o
Creep mode	o
Dedicated drain line	o
Variable X3 P-Q control	o

### Cab and interior

Keyless engine start and stop	•
8" HD display	•
ROPS certified cab	•
Tiltable left console	•
Digital hour meter	•
Various storage space with cool/heated	•
Wireless mobile charger with Kinematic sensor package option	o
1 piece wind shield cab	o
Cabin large mirror, Heated	o
Cabin large mirror	o
Basic / Premium / Deluxe seat	o
Seat belt, 2 inch 2 point / 3 inch 2 point	o
Climate control-HEPA filter	o
Radio with MP3/USB/Bluetooth	o
Front rain shield	o
Sun screen	o
Lower wiper	o
Sun shield, roof hatch	o
Foot rest, High mount	o
FOG (Falling Object Guard)	o
FOPS (Falling Object Protection Structure)	o
Safety net	o

<b>Standard And Optional Equipment</b>	
• = Standard / o = Optional	
<b>Digging equipment</b>	
4.6 m (15'1") mono boom	•
4.72 m (15'6") 2-piece boom	o
3.0 m (9'10") arm	•
2.1 m (6'11") / 2.5 m (8'2") arm	o
Linkage	•
Likage with lifting eye	o
<b>Machine controls</b>	
Kinematic sensor package	o
Volvo Co-Pilot 2nd display, 12.8" touchable Full HD	o
Dig Assist, Start	o
Dig Assist, 2D	o
Dig Assist, In-Field Design	o
Dig Assist, Topcon 3D-MC	o
Dig Assist, Trimble Earthworks	o
Dig Assist, Infield-Design Advanced	o
Dig Assist, On-Board Weighing	o
Volvo Active Control	o
Dig Assist, Boundary Limit	o
<b>Safety and security</b>	
Travel alarm, beep / white noise	o
Flashing beacon, LED	o
Green light beacon	o
Rear view camera	•
Side view camera	o
HD VSV (Volvo Smart View)	o
HD VSV with obstacle detection	o
Provision, HD VSV with obstacle detection	o
<b>Service and maintenance</b>	
Fuel filler pump	o
Jump start connector	o
Auto lubrication system	o
Tool kit	o

Not all products are available in all markets. Under our policy of continuous 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.

**V O L V O**