



**State of West Virginia
Request For Quotation
Construction**

Procurement Folder : 636978

Document Description : Addendum No.01-Compact Excavator-Watters Smith Memorial SP

Procurement Type : Agency Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version	Phase
2019-11-05	2019-11-12 13:30:00	ARFQ 0310 DNR2000000018	2	Final

SUBMIT RESPONSES TO:	VENDOR
BID RESPONSE DIVISION OF NATURAL RESOURCES PROPERTY & PROCUREMENT OFFICE 324 4TH AVE SOUTH CHARLESTON WV 25303-1228 US	Vendor Name, Address and Telephone RUDD EQUIPMENT COMPANY, INC. PO BOX 610 NITRO, WV 25143

FOR INFORMATION CONTACT THE
 James H Adkins
 (304) 558-3397
 jamie.h.adkins@wv.gov


Signature X  **FEIN #** 61-0445955 **DATE** 11/11/19

Exhibit A - Pricing Page
West Virginia Division of Natural Resources
Compact Excavator - Watters Smith Memorial State Park

Item	Description	Brand / Model	Quantity	Unit Price
1	Compact Excavator, Bobcat E32R or equal:	VOLVO EC35D	1	\$ 43,929



Authorized Signature

11/11/19

Date

ADDITIONAL INFORMATION:

Addendum

Addendum No. 01 is issued to publish and distribute the attached information to the Vendor Community.

INVOICE TO	SHIP TO
SUPERINTENDENT DIVISION OF NATURAL RESOURCES WATTERS SMITH MEMORIAL STATE PARK PO BOX 296 LOST CREEK WV26385-0296 US	SUPERINTENDENT DIVISION OF NATURAL RESOURCES WATTERS SMITH MEMORIAL STATE PARK 831 RR 3 LOST CREEK WV 26385 US

Line	Commodity Line Description	Qty	Unit Issue	Unit Price	Total Price
1	Compact Excavator	1.00000	EA	\$43,929	\$43,929

Commodity Code	Manufacturer	Model #	Specification
22101524	VOLVO	EC35D	COMPACT EXCAVATOR

Extended Description

Compact Excavator

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Technical Question Deadline at 9:00AM EDT	2019-10-29

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: ARFQ DNR20*18

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

<input checked="" type="checkbox"/>	Addendum No. 1	<input type="checkbox"/>	Addendum No. 6
<input type="checkbox"/>	Addendum No. 2	<input type="checkbox"/>	Addendum No. 7
<input type="checkbox"/>	Addendum No. 3	<input type="checkbox"/>	Addendum No. 8
<input type="checkbox"/>	Addendum No. 4	<input type="checkbox"/>	Addendum No. 9
<input type="checkbox"/>	Addendum No. 5	<input type="checkbox"/>	Addendum No. 10

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

RUDD EQUIPMENT COMPANY, INC.

Company

Authorized Signature

Date

NOTE: This addendum acknowledgment should be submitted with the bid to expedite document processing.

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.

RON JACOBS - SALESMAN
(Name, Title)
RON JACOBS - SALESMAN
(Printed Name and Title)
PO BOX 610, NITRO, WV 25143
(Address)
304-755-7788 304-755-7990
(Phone Number) / (Fax Number)
rjacobs@ruddequipment.com
(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

RUDD EQUIPMENT COMPANY, INC.
(Company)

(Authorized Signature) (Representative Name, Title)

RON JACOBS - SALESMAN
(Printed Name and Title of Authorized Representative)
11/11/19
(Date)
304-755-7788 304-755-7990
(Phone Number) (Fax Number)



**State of West Virginia
Request For Quotation
Construction**

Procurement Folder : 636978

Document Description : Compact Excavator - Watters Smith Memorial State Park

Procurement Type : Agency Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version	Phase
2019-10-18	2019-11-07 13:30:00	ARFQ 0310 DNR2000000018	1	Final

SUBMIT RESPONSES TO:	VENDOR
BID RESPONSE DIVISION OF NATURAL RESOURCES PROPERTY & PROCUREMENT OFFICE 324 4TH AVE SOUTH CHARLESTON WV 25303-1228 US	Vendor Name, Address and Telephone RUDD EQUIPMENT COMPANY, INC. PO BOX 610 NITRO, WV 25143

FOR INFORMATION CONTACT THE
 James H Adkins
 (304) 558-3397
 jamie.h.adkins@wv.gov

Signature X  **FEIN #** 61-0445955 **DATE** 11/11/19

ADDITIONAL INFORMATION:

The West Virginia Division of Natural Resources is soliciting bids to establish a contract for the purchase of a compact excavator to be used at Watters Smith Memorial State Park.

INVOICE TO		SHIP TO	
SUPERINTENDENT DIVISION OF NATURAL RESOURCES WATTERS SMITH MEMORIAL STATE PARK PO BOX 296		SUPERINTENDENT DIVISION OF NATURAL RESOURCES WATTERS SMITH MEMORIAL STATE PARK 831 RR 3	
LOST CREEK	WV26385-0296	LOST CREEK	WV 26385
US		US	

Line	Commodity Line Description	Qty	Unit Issue	Unit Price	Total Price
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Commodity Code	Manufacturer	Model #	Specification
22101524	VOLVO	EC35D	COMPACT EXCAVATOR

Extended Description
Compact Excavator

SCHEDULE OF EVENTS

Line	Event	Event Date
1	Technical Question Deadline at 9:00AM EDT	2019-10-29

DNR200000018	Document Phase Final	Document Description Compact Excavator - Watters Smith Memorial State Park	Page 3 of 3
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ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Rudd Equipment

Authorized Signature: [Signature] Date: 11/12/19

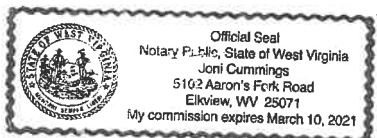
State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 12 day of November, 2019.

My Commission expires March 10, 2021.

AFFIX SEAL HERE



NOTARY PUBLIC

[Signature]



EC35D

Volvo Compact Excavators 3.5 t / 7,780 lb 24.8 hp



Perform with precision

The EC35D features a comfortable cab and easy-to-use controls for high performance and precise operation. With its excellent hydraulic performance and easy serviceability you can do more for less in all applications.

Optimized efficiency

For lower costs, increased productivity and maximum uptime a number of efficient features combine on the EC35D. ECO mode allows you to choose the right machine setting for the job at hand for impressive fuel efficiency. Robust design and quality digging equipment delivers durability and long term machine value. Auto idle and auto engine shut down reduce noise disturbance, fuel consumption, maintenance costs and slow down depreciation of your machine.



Superior serviceability

The EC35D is built to ensure servicing is safe, quick and easy, featuring easy service access with wide-opening hoods, centralized lubrication and ground-level greasing points. The patented multifunction transparent hydraulic filter and extended greasing intervals of 50 hours, enhance machine availability and uptime.



Hydraulics in harmony

The machine's state-of-the-art hydraulic system is perfectly matched to the premium Volvo engine delivering high performance and smooth operation. Intuitive fingertip controls enhance ease of operation, reduce fatigue and improve fluency. Adjust hydraulic flows in each direction from inside the cab for ultimate precision and versatility.



Performance and precision

Increase your power and precision in all applications with the EC35D. The machine's outstanding lifting capacity and digging force deliver extra productivity and faster cycle times. Impressive tractive force and superior blade design delivers an increased performance when dozing. The float function, compatible with the angle blade, achieves a precise finish in grading applications.





OPERATOR ENVIRONMENT



Operate in a best-in-class cab for superior operator comfort and less fatigue. The EC35D is equipped with a spacious operator environment offering excellent all-around visibility and an adjustable suspended seat and console. Most machine functions and settings can be quickly accessed through keypad and monitor for maximum control of your machine.



BUILT READY



Get the most out of your machine. The EC35D is a perfect match with Volvo attachments allowing you to change hydraulic settings directly and easily from the keypad. For increased versatility and uptime, Volvo has a durable range of attachments so you can access more applications and effectively perform a variety of jobs.

More than a machine

Tailored to your business and operations, choose from a wide range of Volvo attachments and Customer Solutions to improve your performance, productivity and versatility. Volvo offers a complete range of robust attachments for all working conditions and can offer a long-term partnership, protect your revenue and provide a full range of services using Genuine Volvo parts, delivered by passionate people.

Quick Couplers

The mechanical and hydraulic universal quick couplers allow attachments to be changed quickly and efficiently. The hydraulic quick coupler's design allows it to be used for matched Volvo attachments as well as a broad range of offerings from different brands.



Advanced attachment solutions

The machine is compatible with a range of hydraulic attachments, including thumb, breaker and tiltable ditching bucket for more advanced and specialist applications. Available from the factory or aftermarket, do not hesitate to contact your local Volvo dealer and benefit from leading expertise and advanced attachment solutions.



Dealer support

For less downtime and expert care, Volvo proactively respond to your requirements faster and fully support your service and maintenance needs through its local workshops and on-site service vans. Your attentive Volvo dealer offers professional expertise and preventative maintenance solutions to keep you working and ensure more uptime.



Genuine Volvo Parts

Our attention to detail is what makes us stand out and our leading parts availability ensures maximum uptime of your machine. For a long life, parts are extensively tested and approved because every part is vital for machine longevity and uptime.



Perform with precision

Automatic engine shutdown

This function automatically turns the engine off to reduce fuel consumption and cut engine operating hours when the machine is inactive for a pre-set amount of time.

Automatic travel speed

Automatic two speed travel allows the operator to continually drive the machine at high speed. Speed is automatically reduced when traction is needed.

Ultimate lifting capacity

Excellent stability and outstanding hydraulics ensure the machines are capable of lifting heavy loads.

50 hour greasing interval

The greasing interval is 50 hours – therefore there is no need to re-grease between jobs.

BUILT READY



Volvo's durable attachments have been purpose-built to deliver maximum productivity and long service life in combination with Volvo machines

In-track boom swing

The swing post and cylinder stay within the tracks when in an offset position, avoiding the risk of damage to your machine when working alongside obstacles.



Anti-theft system

To reduce the risk of theft, a code can be entered through the keypad to start the machine. It can be changed via the machine management system.

OPERATOR ENVIRONMENT



The industry-leading, spacious Volvo FOPS1 on top, TOPS and ROPS cab boasts all around visibility, ergonomically positioned controls and excellent vibration and noise insulation.

Suspended seat and console

The multi-adjustable seat and console are mounted on the same suspension and therefore move together – providing excellent shock and vibration absorption.

Patented hydraulic filter

Filtration occurs when the tank is filled or topped up and before the oil returns via the drain lines. The transparent bowl enables easy oil level and contamination checks.

Service access

The side position of the engine together with two, wide-opening hoods ensures safe and easy access to all components and service check points from ground level.

ECO mode

By simply pressing a button, the unique Volvo ECO mode reduces fuel consumption by up to 10%.

Customer Solutions

Volvo provides the right solutions throughout the entire life cycle of your machine to lower total cost of ownership.



Volvo EC35D in detail

Engine		
Engine		Volvo D17A
Max. power at	r/min (r/s)	2,200 (36.7)
Gross	kW (hp)	18.5 (24.8)
Max. torque	Nm (ft lbf)	97 (71.6)
at engine speed	r/min	1,600
No. of cylinders		3
Displacement	cm ³ (in ³)	1,647 (100.5)
Bore	mm (in)	87 (3.4)
Stroke	mm (in)	92.4 (3.6)
Compression ratio		20.5
Electrical System		
Voltage	V	12
Battery	V	1 x 12
Battery capacity	Ah	74
Alternator	V/Ah	12/60
Swing system		
Max. slew speed	r/min	9
Max. slew torque	daNm (ft lbf)	710 (5,237)
Undercarriage		
Rubber track width	mm (in)	300 (11.8)
Steel track width	mm (in)	300 (11.8)
Bottom/top rollers per side		4/1
Track tension		
Blade (width x height)	mm (in)	1,780 x 368 (70.1 x 14.5)
Digging Performances		
Standard bucket width (blade, W/O side cutter)	mm (in)	600 (23.6)
Standard bucket mass	kg (lb)	90 (198)
Standard bucket rated capacity	l (ft ³)	114 (4)
Bucket rotation		199
Bucket breakout force (ISO)	daN (lbf)	3,289 (7,394)
Short arm tearout force (ISO)	daN (lbf)	2,371 (5,330)
With short arm	mm (ft in)	1,400 (4'7")
Long arm tearout force (ISO)	daN (lbf)	2,060 (4,631)
With long arm	mm (ft in)	1,700 (5'7")

Weight and Ground Pressure		
Operating weight according to ISO 6016	kg (lb)	3,530 (7,782)
Ground pressure (cab)	kPa (psi)	32.8 (4.8)
Ground pressure (canopy)	kPa (psi)	31.5 (4.6)
Transport weight	kg (lb)	3,455 (7,617)
With heated cab		
With direct-fit bucket		
With rubber tracks	mm (in)	300 (11.8)
With short arm	mm (in)	1,400 (55)
With fuel tank capacity	%	100
With thumb	+kg (+lb)	64 (141)
With canopy	-kg (-lb)	135 (298)
With extra counterweight	+kg (+lb)	170 (375)
With long arm	+kg (+lb)	15 (33.1)
With steel tracks	+kg (+lb)	130 (287)
Steel tracks	mm (in)	300 (12)
Hydraulic system		
Pump type		Variable displacement piston pump
Maximum system flow	l/min (gal/min)	103 (27.2)
Maximum flow for accessories	l/min (gal/min)	65 (17.2)
Maximum pressure for accessories	MPa (psi)	22 (3,191)
Maximum flow for 2nd accessory circuit (option)	l/min (gal/min)	23 (6.1)
Maximum operating pressure	MPa (psi)	24 (3,481)
Travel System		
Max. drawbar pull	daN (lbf)	3,100 (6,969)
Max. travel speed low	km/h (mi/h)	2.7 (1.7)
Max. travel speed high	km/h (mi/h)	4.5 (2.8)
Gradeability		20
Service Refill		
Fuel tank	l (gal)	64 (16.9)
Hydraulic system, total	l (gal)	62 (16.3)
Hydraulic tank	l (gal)	32 (8.5)
Engine oil	l (gal)	7 (1.8)
Engine coolant	l (gal)	7 (1.8)
Travel reduction unit	l (gal)	2 x 0.7 (2 x 0.185)
Sound Level		
Interior sound level according to ISO 6396		
L _{pa}	dB	78
External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:2009		
L _{WA}	dB	94

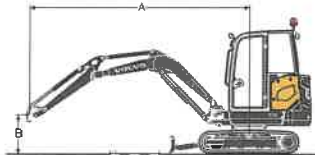
LIFTING CAPACITY EC35D

These capacities are given for a machine equipped with a cabin, 300 mm (1 ft) rubber tracks and without a bucket or quick-coupler.

The below values are in compliance with ISO standard 10567. They do not exceed 75% of the tipping load or 87% of the hydraulic limit with the machine on firm level ground.

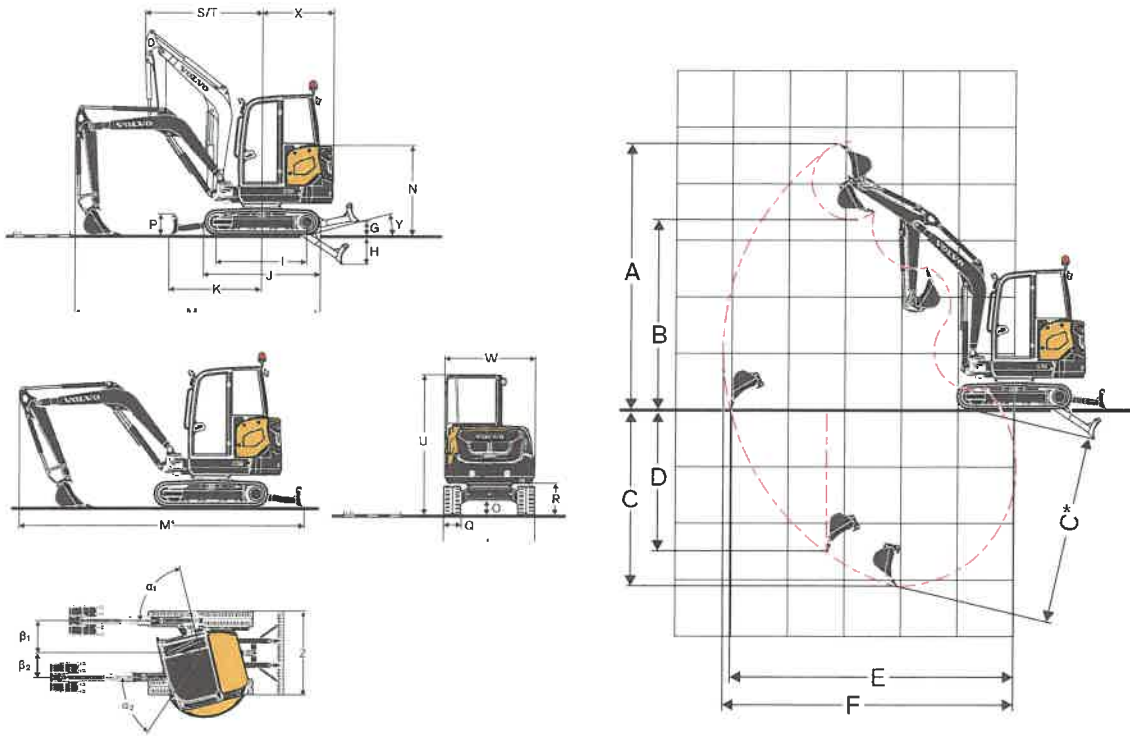
Loads marked with an asterisk (*) are limited by machine's hydraulic lifting capacity rather than tipping load.

Caution: In accordance with standard EN 474-5, the machine must be equipped to carry out handling operations. It is the operator's obligation to know and follow the applicable national and local safety regulations.



	Lifting point height (B) m (ft)	Lifting point radius (A)						Max. reach	Max. m (ft)	
		2.0 m (6.5 ft)		3.0 m (9.8 ft)		4.0 m (13.1 ft)				
Arm: 1,400 mm (4'7") + Dozer blade up	3 (9.8) kg (lb)									
	2 (6.5) kg (lb)			893* (1,969*)	893* (1,969*)	646 (1,424)	619 (1,365)	683 (1,506)	655 (1,444)	3.89 (12.8)
	1 (3.3) kg (lb)			955 (2,105)	908 (2,002)	626 (1,380)	600 (1,323)	533 (1,175)	512 (1,128)	4.46 (14.6)
	0 (0) kg (lb)	1,739 (3,834)	1,611 (3,552)	919 (2,026)	872 (1,922)	611 (1,347)	522 (1,151)	550 (1,213)	528 (1,164)	4.31 (14.1)
Arm: 1,400 mm (4'7") + Dozer blade down	-1 (-3.3) kg (lb)	1,746 (3,849)	1,618 (3,567)	911 (2,008)	865 (1,907)			642 (1,415)	614 (1,354)	3.85 (12.6)
	-2 (-6.5) kg (lb)	1,767 (3,940)	1,657 (3,653)					989 (2,180)	938 (2,068)	2.89 (9.5)
	3 (9.8) kg (lb)					665 (1,466)	638 (1,407)	608 (1,340)	583 (1,285)	4.22 (13.8)
	2 (6.5) kg (lb)			741* (1,634*)	741* (1,634*)	651 (1,435)	624 (1,376)	517 (1,140)	496 (1,093)	4.62 (15.2)
Arm: 1,700 mm (5'7") + Dozer blade up	1 (3.3) kg (lb)	1,807 (3,984)	1,675 (3,693)	956 (2,108)	908 (2,002)	625 (1,378)	599 (1,321)	486 (1,071)	466 (1,027)	4.74 (15.6)
	0 (0) kg (lb)	1,712 (3,774)	1,586 (3,497)	908 (2,002)	861 (1,898)	603 (1,329)	577 (1,272)	496 (1,093)	476 (1,049)	4.61 (15.1)
	-1 (-3.3) kg (lb)	1,705 (3,759)	1,579 (3,481)	891 (1,964)	845 (1,863)	596 (1,314)	571 (1,259)	562 (1,239)	539 (1,188)	4.19 (13.7)
	-2 (-6.5) kg (lb)	1,736 (3,827)	1,608 (3,545)	906 (1,997)	860 (1,896)			777 (1,713)	741 (1,634)	3.35 (11.0)
Arm: 1,400 mm (4'7") + Dozer blade down	3 (9.8) kg (lb)							786* (1,733*)	655 (1,444)	3.89 (12.8)
	2 (6.5) kg (lb)			893* (1,969*)	893* (1,969*)	827* (1,823*)	619 (1,365)	837* (1,845*)	546 (1,204)	4.33 (14.2)
	1 (3.3) kg (lb)			1,274* (2,809*)	908 (2,002)	958* (2,112*)	600 (1,323)	901* (1,986*)	512 (1,128)	4.46 (14.6)
	0 (0) kg (lb)	1,752* (3,862*)	1,611 (3,552)	1,540* (3,395*)	872 (1,922)	1,069* (2,357*)	522 (1,151)	982* (2,165*)	528 (1,164)	4.31 (14.1)
Arm: 1,700 mm (5'7") + Dozer blade down	-1 (-3.3) kg (lb)	2,735* (6,030*)	1,618 (3,567)	1,563* (3,446*)	865 (1,907)			1,088* (2,399*)	614 (1,354)	3.85 (12.6)
	-2 (-6.5) kg (lb)	2,098* (4,625*)	1,657 (3,653)					1,240* (2,734*)	938 (2,068)	2.89 (9.5)
	3 (9.8) kg (lb)					673* (1,484*)	638 (1,407)	713 (1,572*)	583 (1,285)	4.22 (13.8)
	2 (6.5) kg (lb)			741* (1,634*)	741* (1,634*)	734* (1,618*)	624 (1,376)	761* (1,678*)	496 (1,093)	4.62 (15.2)
Arm: 1,700 mm (5'7") + Dozer blade up	1 (3.3) kg (lb)	2,169* (4,782*)	1,675 (3,693)	1,138* (2,509*)	908 (2,002)	884* (1,949*)	599 (1,321)	819* (1,806*)	466 (1,027)	4.74 (15.6)
	0 (0) kg (lb)	1,839* (4,054*)	1,586 (3,497)	1,461* (3,221*)	861 (1,898)	1,025* (2,260*)	577 (1,272)	891* (1,964*)	476 (1,049)	4.61 (15.1)
	-1 (-3.3) kg (lb)	2,813* (6,202*)	1,579 (3,481)	1,565* (3,450*)	845 (1,863)	1,059* (2,335*)	571 (1,259)	987* (2,176*)	539 (1,188)	4.19 (13.7)
	-2 (-6.5) kg (lb)	2,359* (5,201*)	1,608 (3,545)	1,356* (2,989*)	860 (1,896)			1,121* (2,471*)	741 (1,634)	3.35 (11.0)

Specifications



DIMENSIONS

Description	Unit	EC35D	
Arm	mm (ft in)	1,400 (4'7")	1,700 (5'7")
A Maximum cutting height	mm (ft in)	4,690 (15'5")	4,853 (15'11")
B Maximum dump height	mm (ft in)	3,347 (11'0")	3,514 (11'6")
C Digging depth	mm (ft in)	3,131 (10'3")	3,431 (11'3")
C* Maximum digging depth	mm (ft in)	3,388 (11'1")	3,678 (12'1")
D Maximum vertical wall digging depth	mm (ft in)	2,521 (8'3")	2,814 (9'3")
E Maximum digging reach at ground level	mm (ft in)	5,031 (16'6")	5,320 (17'5")
F Maximum digging reach	mm (ft in)	5,153 (16'11")	5,434 (17'10")
G Highest position dozer blade	mm (ft in)		370 (1'3")
H Lowest position dozer blade	mm (ft in)		525 (1'9")
I Tumbler length	mm (ft in)		1,604 (5'3")
J Track length	mm (ft in)		2,055 (6'9")
K Dozer blade, maximum reach at ground level	mm (ft in)		1,648 (5'5")
L Overall width with 300 mm (1 ft) rubber tracks	mm (ft in)		1,780 (5'10")
M Overall length	mm (ft in)	4,620 (15'2")	4,475 (14'8")
M* Transport length	mm (ft in)	5,275 (17'4")	5,190 (17'0")
N Overall height of engine hood	mm (ft in)		1,573 (5'2")
O Minimum ground clearance	mm (ft in)		285 (0'11")
P Dozer blade height	mm (ft in)		368 (1'2")
Q Shoe width (rubber)	mm (ft in)		300 (1'0")
R Ground clearance to superstructure	mm (ft in)		557 (1'10")
S Front slew radius	mm (ft in)	2,079 (6'10")	2,094 (6'10")
T Front slew radius with maximum offset	mm (ft in)	1,660 (5'5")	1,680 (5'6")
U Overall height	mm (ft in)		2,481 (8'2")
W Overall width of superstructure	mm (ft in)		1,575 (5'2")
X Tail slew radius	mm (ft in)		1,265 (4'2")
X1 Additional counterweight overhang	mm (ft in)		85 (0'3")
Y Angle of approach	°		25
Z Dozer blade width	mm (ft in)		1,780 (5'10")
alpha1 Maximum boom swing angle to the left	°		76
beta1 Maximum boom offset to the right	mm (ft in)		627 (2'1")
alpha2 Maximum boom swing angle to the right	°		56
beta2 Maximum boom offset to the left	mm (ft in)		472 (1'7")

1: Option

Equipment

STANDARD EQUIPMENT

Engine

Low emission, direct injection, water-cooled, Voivo 3-cylinder diesel engine, meeting EPA Tier 4 environmental regulations.

Engine restart prevention system. Starter motor is protected against ignition when engine is already running.

Dry-type single element air filter.

Plastic fuel tank with drain plug.

Protective strainer on the fuel suction pipe inside the tank

Water separator.

Translucent fuel filter.

Electric/Electronic control system

Maintenance free battery.

IP67 protected electrical system and high quality connectors.

Removable battery cut-off switch.

In-cab 12V power socket.

Drivetrain

Axial piston hydraulic motors equipped with an epicyclic reduction gears.

Automatic two speed travel

Bottom flanged rollers lubricated for life.

Grease tensioning wheel lubricated for life.

Swing system

Radial piston hydraulic motor with direct engagement on the ball internal crown wheel (no reduction gears).

Integrated shockless valve.

Automatic multi-disc slew brake.

Centralized and remote lubrication of crown wheel & ball bearing.

Undercarriage

"X" shape, box welded fabricated frame with sloping side members.

2 Tie-down points on the dozer blade.

2 Tie-down points on the frame.

2 Integrated lifting points.

Sturdy removable protecting covers for track motors and slew system.

400HB weld-on edge on dozer blade

Hydraulic system

Large hinged and key-locked access panel.

Variable displacement, load-sensing piston pump.

Closed centre flow-sharing main control valve.

Cushoning on cylinders:

- Boom up

- Arm out

Patented filtering and filling element.

Single layer cooling system.

Double-acting hydraulic circuit for accessories.

Hammer / shear valve.

Plastic tank with drain plug.

Digging Equipment

Monobloc box welded boom.

Boom cylinder rod protection.

Integrated lifting point on the boom.

Monobloc box welded arm.

Long-life steel bushings.

Hardened, pre-lubricated and corrosion resistant pins.

50 hours greasing intervals.

Cab

FOPS on top level 1 (Falling Object Protective Structure).

TOPS (Tip-Over Protective Structure).

ROPS (Roll-Over Protective Structure).

Cushioned operator station.

Large door access.

Large and roomy uncluttered floor.

Gas-strut assisted front window opening.

Full opening front bay with in-cab storage for the front lower window.

Front windscreen wiper and washer nozzle.

Right hand side sliding window.

Heating systems.

Multiple adjustable air vents.

Filtered air inlet.

Cab inside light.

Seat-belt with warning indicator.

Two working lights on top front of the cab.

Canopy

FOPS level 1 on top (Falling Objects Protective Structure)

TOPS (Tip-Over Protective Structure)

ROPS (Roll-Over Protective Structure)

Cushioned operator station

Large and roomy uncluttered floor

Left hand-rail access

Seat-belt with warning indicator

STANDARD EQUIPMENT

Machine controls

Finger tip control for boom offset.

Finger tip control for auxiliary circuit.

Breaker toggle switch on right joystick

Automatic locking device for pilot controls and travel levers when the left console is raised.

Engine starting safety device: the left console must be raised to operate the starter.

Pressure accumulator to lower the equipment on the ground when the engine is switched off.

High torque / automatic two speed change over button on the keypad.

High speed toggle switch on the dozer blade lever.

Large travel pedals.

Instrumentation and monitoring

Water temperature and fuel level gauges.

Warning lights for hydraulic filter and air filter restriction.

Self-acting emergency engine shutdown. Prevents failures in case of coolant overheating or too low engine oil pressure.

Several warning lights, coupled to an audible signal, in the event of malfunction (overheating, drop in oil pressure, low battery voltage...)

Official approval

Machine conforming to European directive 2006/42/EC.

Noise emissions in the environment conforming to directive 2000/14/EC.

Hand Arm Vibrations - Whole Body Vibrations compliant with directive 2002/44/EC.

Electromagnetic compatibility (EMC) conforming to European directive 2004/108/EC and its amendments.

Object handling device conforming to EN 474-1 and EN 474-5 standards.

FOPS on top level 1 conforming to ISO 10262 standard.

TOPS conforming to ISO 12117 and EN 13531 standards.

ROPS conforming to ISO 3471-1 and / SAE J1040 standards.

EQUIPMENT

● = Standard
○ = Option

	Basic	Standard
Operator environment		
Canopy	○	○
Cab with heater	○	○
Cab with heater and air conditioning		○
Vinyl or textile seat, with mechanical suspension, low-back seat and 2" seat belt	○	○
Vinyl or textile seat, height adjustable, with mechanical suspension, high back and 2" or 3" retractable seat belt	○	○
Storage box	○	○
Cab roof		○
ISO / SAE control pattern change (in-cab electric switch)	○	○
Travel alarm	○	○
Radio preparation (cab)	●	●
Radio, AUX, USB, Bluetooth		○
Anti-theft device	○	○
Digital hourmeter	●	●
Extra hour meter (mechanical,)	○	○
Cupholder.		○
Machine exterior		
Right rearview mirror	●	●
Left rearview mirror	○	○
Protected worklight on the boom	○	○
Rear worklight	○	○
Rotating beacon	○	○
Choice of halogen or LED lights and beacon	○	○
Additional counterweight	○	○
Front canopy guard (OPG1)	○	○
Severe-duty guards for cab or canopy (OPG2, front and top)	○	○
Several level of paint customisation (RAL specifications) to match with your corporate identity	○	○
Digging equipment		
Short arm	○	○
Short arm + thumb bracket	○	○
Long arm	○	○
Long arm + thumb bracket	○	○

EQUIPMENT		
• = Standard ○ = Option		
	Basic	Standard
Undercarriage equipment		
300mm (1'0") rubber tracks	○	○
300mm (1'0") steel tracks	○	○
Standard dozer blade	•	○
Hydraulic angle blade		○
Hydraulic equipment		
Proportional finger tip control for boom offset		•
On / Off finger tip control for boom offset	•	
Proportional finger tip control for accessories		•
On / off finger tip control for accessories	•	
Accessory flow adjustment with 3 function oriented button and user-defined settings		•
Secondary relief valves for auxiliaries	•	•
Hydraulic drain for accessories		○
Breaker and clamshell auxiliaries		○
Second accessory circuit		○
Volvo Control System		○
Flat face hydraulic quick couplings	○	○
Single acting circuit for quick couplers	○	○
Double acting circuit for quick couplers	○	○
Boom and arm safety lifting valves with overload indicator	○	○
Boom, arm and dozer blade safety lifting valves with overload indicator	○	○
Float blade	•	•
Safety valve certification	○	○
Mineral hydraulic oil VG46	○	○
Bio hydraulic oil VG46 (PANOLIN®)	○	○
Mineral hydraulic oil VG68	○	○
Mineral hydraulic oil VG32	○	○
Bio hydraulic oil VG32 (PANOLIN®)	○	○

EQUIPMENT		
• = Standard ○ = Option		
	Basic	Standard
Engine		
Manual engine control	•	
Digital engine control with two preset engine speed buttons (user adjustable)		•
Engine auto idling with time adjustment		○
ECO mode		•
Engine auto shut-down with time adjustment		○
Dual stage air filter	○	○
Service and maintenance		
In-cab air filter clogg warning lamp	•	•
In-cab engine overheating warning indicator	•	•
Tool kit	○	○
Electronic service reminder		•
V-CADS pro		•
Telematics		
Care Track		○
Attachments		
Volvo quick coupler mechanical (pin-on)	○	○
Volvo hydraulic quick coupler (pin-on)	○	○
Extra pin kit	○	○
Thumb with short clamp (for direct fit bucket)	○	○
Thumb with long clamp (when using quick coupler)	○	○
A choice of fix or tiltable buckets (300mm / 52L up to 1300mm / 150L)	○	○
Bolt-on side cutters	○	○
Hydraulic breaker	○	○

SELECTION OF VOLVO OPTIONAL EQUIPMENT

Anti theft



Auto engine shutdown



Additional auxiliary piping



OPG



Air conditioning



Angle blade



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.

VOLVO

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