



Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

State of West Virginia  
 Request for Quotation  
 13 - Equipment

Proc Folder: 312401

Doc Description: ADDENDUM\_2: CLASS 310 HYDRAULIC TRACK EXCAVATOR

Proc Type: Central Master Agreement

Date Issued	Solicitation Closes	Solicitation No	Version
2017-04-27	2017-05-09 13:30:00	CRFQ 0803 DOT1700000076	3

**LOCATION**  
 BID CLERK  
 DEPARTMENT OF ADMINISTRATION  
 PURCHASING DIVISION  
 2019 WASHINGTON ST E  
 CHARLESTON WV 25305  
 US

**VENDOR**  
 Vendor Name, Address and Telephone Number:  
 West Virginia Tractor Company  
 P.O. Box 473  
 Charleston, WV 25322  
 304-346-5301

05/09/17 12:50:49  
 West Virginia Purchasing Division

**FOR INFORMATION CONTACT THE BUYER**  
 Mark A Atkins  
 (304) 558-2307  
 mark.a.atkins@wv.gov

Signature X *George Gray* FEIN # 550621655 DATE 5-5-2017

All offers subject to all terms and conditions contained in this solicitation

**ADDITIONAL INFORMATION**

ADDENDUM : Is issued for the following:

1. Correction of Error: Attachment of Pre-Bid sign in sheets inadvertently left off when publishing Addendum\_1 and re-publish the Vendor questions with agency responses.

NO OTHER CHANGES

BILL TO		SHIP TO	
DIVISION OF HIGHWAYS EQUIPMENT DIVISION RT 33 83 BRUSHY ROAD CROSSING, PO BOX 610 BUCKHANNON WV26201 US		DIVISION OF HIGHWAYS EQUIPMENT DIVISION 83 BRUSHY FORK RD CROSSING BUCKHANNON WV 26201 US	

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Total Price
1	Vendor shall use Exhibit_A Pricing Page for bid pricing.	0.00000	EA	\$133,333	\$1,999,995

Comm Code	Manufacturer	Specification	Model #
22101526	Hyundai	Attached	HX145LCRD

**Extended Description :**

OPEN END CONTRACT TO PROVIDE : CLASS 310 HYDRAULIC TRACK EXCAVATOR:

Note: Vendor shall use Exhibit\_A Pricing Page(s) for bid pricing.

If vendor is submitting a bid online, Vendor should enter \$0.00 in the Oasis commodity line. Vendor shall enter pricing into the Exhibit\_A Excel page and must attach with bid.  
See section 18 of Instructions to Bidders.

**SCHEDULED EVENT**

Line	Event	Event Date
1	Mandatory Pre-Bid Meeting:	2017-04-20
2	Technical Questions due by:	2017-04-24

**ADDENDUM ACKNOWLEDGEMENT FORM**  
**SOLICITATION NO.: CRFQ 0803 DOT1700000076**

**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:**

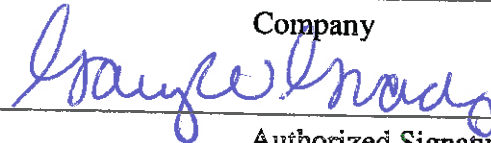
(Check the box next to each addendum received)

<input checked="" type="checkbox"/> Addendum No. 1	<input type="checkbox"/> Addendum No. 6
<input checked="" 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 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.

West Virginia Tractor Company

Company



Authorized Signature

5-5-2017

Date

**NOTE:** This addendum acknowledgement 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.

*Gary W. Grady*  
(Name, Title)  
Gary W. Grady, President  
Gary W. Grady, President  
(Printed Name and Title)  
P.O. Box 473 Charleston, WV 25322  
304-346-5301 304-346-5305  
(Address)  
304-346-5301 304-346-5305  
(Phone Number) / (Fax Number)  
wvtractor@msn.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.

West Virginia Tractor Company

West Virginia Tractor Company  
(Company)

*Gary W. Grady* PRES  
(Authorized Signature) (Representative Name, Title)

Gary W. Grady, President  
Gary W. Grady, President  
(Printed Name and Title of Authorized Representative)

5-5-2017  
(Date)

304-346-5301 304-346-5305  
(Phone Number) (Fax Number)

CRFQ 0803 DOT1700000076  
REQUEST FOR QUOTATION  
**CLASS 310 HYDRAULIC TRACK EXCAVATOR**

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cause for cancellation of the purchase order, and return of the delivered unit along with all associated equipment to the vendor at the vendor's expense.

**6.5 Condition of Unit(s) upon Delivery:** All units must arrive at the prescribed delivery point having been completely pre-serviced with oil, lubricants, and coolant. All prescribed precautions pertaining to first operations and break-in of the unit are to be posted conspicuously on the unit for ready observance by the operator.

**6.6 Delivery Point:** Delivery point of the completed representative unit will be the WVDOH, Equipment Division, 83 Brushy Fork Crossing, Buckhannon, WV 26201.

**7. MISCELLANEOUS:**

**7.1 No Substitutions:** Vendor shall supply only Contract Items submitted in response to RFQ unless a contract modification is approved in accordance with the provisions contained in this contract.

**7.2 Reports:** Vendor shall provide quarterly reports and annual summaries to the Agency showing the Agency's items purchased, quantities of items purchased, and total dollar value of the items purchased. Vendor shall also provide reports, upon request, showing the items purchased during the term of this Contract, the quantity purchased for each of those items, and the total value of purchases for each of those items. Failure to supply such reports may be grounds for cancellation of this Contract.

**7.3 Contract Manager:** During its performance of this Contract, Vendor must designate and maintain a primary contract manager responsible for overseeing Vendor's responsibilities under this Contract. The Contract manager must be available during normal business hours to address any customer service or other issues related to this Contract. Vendor should list its Contract manager and his or her contact information below.

**Contract Manager:** Gary W. Grady  
**Telephone Number:** 304-346-5301  
**Fax Number:** 304-346-5305  
**Email Address:** wvtractor@msn.com

**7.4 Operating and Service Manuals and Parts Lists:** An operator's manual must be included with each unit upon delivery. A "line sheet" (if applicable) and the "Equipment Preventative Maintenance Questionnaire", (Exhibit "B") must be with pilot unit upon delivery, Attn: Marcia Lee. There must be twelve (12) service/shop/maintenance manuals and fourteen (14) parts manuals; CD-ROM is preferred in lieu of parts manuals. Manuals shall be delivered upon completion of delivery of total units. Failure to do so will delay payment.

Exhibit A

**Pricing Page**

**CRFQ 0803 DOT1700000076**

<b>Item Number</b>	<b>Estimated Quantity</b>	<b>Unit of Measure</b>	<b>Description</b>	<b>Unit Price</b>	<b>Total</b>
1	15	Each	One complete unit: Hydraulic Track Excavator	\$133,333 -	\$1,999,995 -
				<b>Grand Total</b>	\$ -

Vendor shall list the year, make, and model of the unit being bid:

**Year:** 2017 or later as ordered

**Make:** Hyundai

**Model:** HX145LCRD

State of West Virginia  
**VENDOR PREFERENCE CERTIFICATE**

Certification and application is hereby made for Preference in accordance with **West Virginia Code**, §5A-3-37. (Does not apply to construction contracts). **West Virginia Code**, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the **West Virginia Code**. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Vendor Preference, if applicable.

1.  **Application is made for 2.5% vendor preference for the reason checked:**  
Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; **or**,  
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification;  
 Bidder is a resident vendor partnership, association, or corporation with at least eighty percent of ownership interest of bidder held by another entity that meets the applicable four year residency requirement; **or**,  
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; **or**,
2.  **Application is made for 2.5% vendor preference for the reason checked:**  
Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; **or**,
3.  **Application is made for 2.5% vendor preference for the reason checked:**  
Bidder is a nonresident vendor that employs a minimum of one hundred state residents, or a nonresident vendor which has an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia and employs a minimum of one hundred state residents, and for purposes of producing or distributing the commodities or completing the project which is the subject of the bidder's bid and continuously over the entire term of the project, on average at least seventy-five percent of the bidder's employees or the bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years and the vendor's bid; **or**,
4.  **Application is made for 5% vendor preference for the reason checked:**  
Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; **or**,
5.  **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**  
Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; **or**,
6.  **Application is made for 3.5% vendor preference who is a veteran for the reason checked:**  
Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.
7.  **Application is made for preference as a non-resident small, women- and minority-owned business, in accordance with West Virginia Code §5A-3-59 and West Virginia Code of State Rules.**  
Bidder has been or expects to be approved prior to contract award by the Purchasing Division as a certified small, women- and minority-owned business.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) rescind the contract or purchase order; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

**Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.**

Bidder: West Virginia Tractor Company

Signed: 

Date: 5-5-2017

Title: President

\*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.



STATE OF WEST VIRGINIA  
Purchasing Division

# PURCHASING AFFIDAVIT

**MANDATE:** 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 exceed 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 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: West Virginia Tractor Company

Authorized Signature: *Joseph Inady* Date: 5-5-2017

State of West Virginia

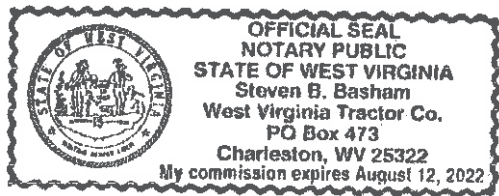
County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 5 day of May, 2017.

My Commission expires August 12, 2022.

AFFIX SEAL HERE

NOTARY PUBLIC *Steven B. Basham*



*Purchasing Affidavit (Revised 08/01/2015)*



# SPECIFICATIONS

## HX145LCR

Tier 4 Final Engine

**Net Power**  
SAE J1349 / 116 HP  
(87 kW) at 1,950 rpm

**Bucket Range**  
1.52- 1.85 m (0.68- 2.42 yd)  
**Standard Bucket**  
1.27 m (2.42 yd)

**Operating Weight**  
15,160 kg / 33,420 lb

ENGINE	
Make / Model	Perkins 1204F
Type	Water cooled, 4 cycle Diesel, 4-cylinders in line, direct injection, turbocharged charger and air cooled
Rated SAE horse power	119.5 (gross) 116.4 (net)
Max torque	124 HP (92.7 kW) / 1,950 rpm
Bore X stroke	54.0 kgf.m(391 lbf.ft) / 1,400 rpm
Piston displacement	105 x 127 mm (4.1" x 5.0")
Batteries	4,400cc (268.5 in <sup>3</sup> )
Starting motor	2 X 12V X 100AH
Alternator	24V- 4.5kW
	24V- 100Amp

HYDRAULIC SYSTEM	
<b>MAIN PUMP</b>	
Type	Variable displacement tandem axis piston pumps
Max flow	2 X 126.8L/min (33.5 US gpm)
Sub-pump for pilot circuit	Gear pump

Cross-sensing and fuel saving pump system

HYDRAULIC MOTORS	
Travel	Two speed axial pistons motor with brake valve and parking brake
Swing	Axial piston motor with automatic brake

RELIEF VALVE SETTING	
Implement circuits	350 kgf/cm <sup>2</sup> (4,980 psi)
Travel	350 kgf/cm <sup>2</sup> (4,980 psi)
Power boost (boom, arm, bucket)	380 kgf/cm <sup>2</sup> (5,410 psi)
Swing circuit	285 kgf/cm <sup>2</sup> (4,050 psi)
Pilot circuit	40 kgf/cm <sup>2</sup> (570 psi)
Service valve	Installed

HYDRAULIC CYLINDERS	
No. of cylinder bore X stroke	Boom: 2-105 X 1,105 mm (4.1" X 43.5")
	Arm: 1-115 X 1,138 mm (4.5" X 44.8")
	Bucket: 1-100 X 850 mm (3.9" X 33.1")
	Blade: 2-100 X 250 mm (3.9" X 9.8")
2 pcs	1st: 2-105 X 995 mm (4.1" X 39.2")
	2nd: 1-145 X 613 mm (5.7" X 24.1")

DRIVES & BRAKES	
Drive method	Fully hydrostatic type
Drive motor	Axial piston motor, in-shoe design
Reduction system	Planetary reduction gear
Max drawbar pull	12,000 kgf (26,455 lbf)
Max travel speed (high / low)	5.5 km/hr (3.4 mph) / 3.3 km/hr (2.1 mph)
Gradeability	35° (70%)
Parking brake	Multi wet disc

CONTROL	
Pilot pressure operated joysticks and pedals with detachable lever provide almost effortless and fatigueless operation.	
Pilot controls	Two joysticks with one safety lever (LH): Swing and arm, (RH): Boom and bucket(SO)
Traveling and steering	Two levers with pedals
Engine throttle	Electric, Dial type



### OPERATING WEIGHT (APPROXIMATE)

Operating weight, including 4,600mm (15' 1") boom, 2,500mm (8' 2") arm, SAE heaped 0.52m<sup>3</sup> (0.68 yd<sup>3</sup>) bucket, lubricant, coolant, full fuel tank, full hydraulic tank, and all standard equipment.

### OPERATING WEIGHT

Shoes	Operating weight		Ground pressure	
	Type	kg (lb)		
Triple grouser	600 (24")	HX145LCR	15,160 (33,420)	0.38 (5.40)
		HX145LCR (Dozer type)	15,960 (35,190)	0.40 (5.69)
	700 (28")	HX145LCR	15,370 (33,880)	0.33 (4.69)
		HX145LCR (Dozer type)	16,170 (35,650)	0.35 (4.98)

### SWING SYSTEM

Swing motor	Fixed displacement axial piston motor
Swing reduction	Planetary gear reduction
Swing bearing lubrication	Grease-bathed
Swing brake	Multi wet disc
Swing speed	11.2 rpm

### SERVICE REFILL CAPACITIES

	liter	US gal
Re-filling		
Fuel tank	265	70.0
Engine coolant	14.5	3.8
Engine oil	10.5	2.8
Swing device	3.5 (2.5)	0.9 (0.7)
Final drive (each)	2.3	0.6
Hydraulic system (including tank)	180	47.6
Hydraulic tank	96	25.4
DEF/AdBlue® tank	19	5.0

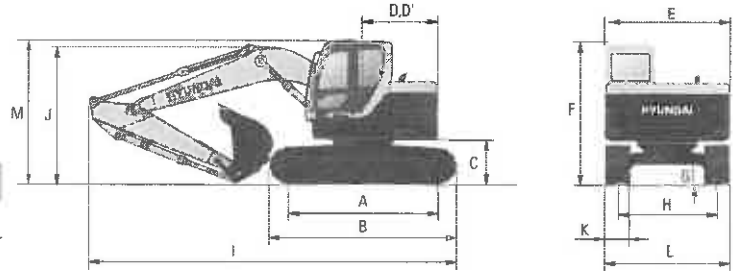
### UNDERCARRIAGE

The X-leg type center frame is integrally welded with reinforced box-section track frames. The undercarriage includes lubricated rollers, idlers, track adjusters with shock absorbing springs and sprockets, and a track chain with double or triple grouser shoes.

	X - leg type	
	HX145LCR	HX145CR
Center frame	X - leg type	
Track frame	Pentagonal box type	
No. of sprockets on each side	47 EA	45 EA
No. of carrier roller on each side	2 EA	2 EA
No. of track roller on each side	7 EA	7 EA
No. of idler guard on each side	1 EA	

# SPECIFICATIONS HX145LCR

Tier 4 Final Engine



## HX145LCR L DIMENSIONS

Unit: mm (inch)

4.6 m (15' 1") BOOM and 1.9 m (6' 0"), 2.1 m (6' 11"), 2.5 m (8' 2"), 3.0 m (9' 10") ARM

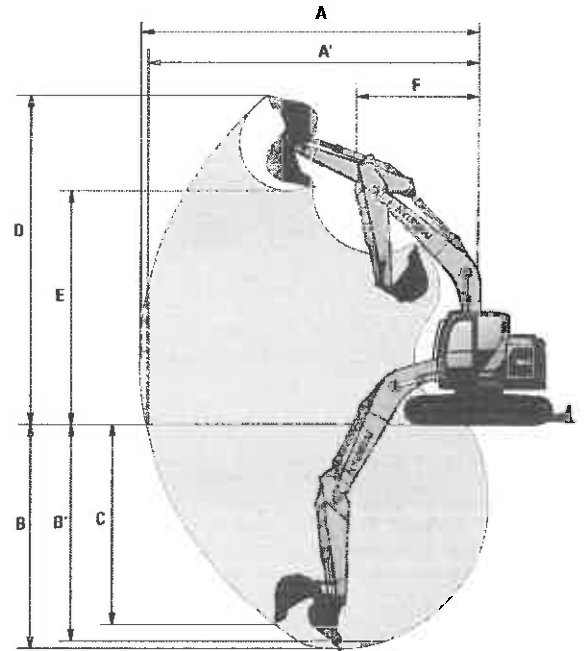
A	Tumbler distance	2,910 (9' 7")
B	Overall length of crawler	3,798 (12' 4")
C	Ground clearance of counterweight	930 (3' 1")
D	Tail swing radius	1,500 (4' 11")
D'	Rear-end length	1,500 (4' 11")
E	Overall width of upperstructure	2,500 (8' 2")
F	Overall height of cab	2,900 (9' 6")
G	Min. ground clearance	440 (1' 5")
H	Track gauge	2,000 (6' 7")
M	Overall height of quadrant	3,215 (10' 7")

Boom length:	4,600 (15' 1")			
Arm length:	1,900 (6' 3")	2,100 (6' 11")	2,500 (8' 2")	3,000 (9' 10")
I Overall length:	7,290 (23' 11")	7,310 (23' 12")	7,270 (23' 10")	7,210 (23' 8")
I Overall height of boom:	2,630 (8' 8")	2,710 (8' 11")	2,860 (9' 5")	3,210 (10' 6")
K Track shoe width:	500 (20")	600 (24")	700 (28")	
I Overall width:	2,500 (8' 2")	2,600 (8' 6")	2,700 (8' 10")	

## HX145LCR L WORKING RANGE

Unit: mm (inch)

Boom length:	4,600 (15' 1")			
Arm length:	1,900 (6' 3")	2,100 (6' 11")	2,500 (8' 2")	3,000 (9' 10")
A Max. digging reach:	7,730 (25' 4")	7,900 (25' 11")	8,310 (27' 3")	8,770 (28' 9")
A' Max. digging reach on ground:	7,580 (24' 10")	7,750 (25' 0")	8,170 (26' 10")	8,630 (28' 4")
B Max. digging depth:	4,890 (16' 1")	5,100 (16' 9")	5,500 (18' 1")	5,990 (19' 8")
B' Max. digging depth (8° level):	4,640 (15' 3")	4,870 (16' 0")	5,290 (17' 4")	5,810 (19' 1")
C Max. vertical wall digging depth:	4,400 (14' 5")	4,600 (15' 1")	5,000 (16' 5")	5,400 (17' 9")
D Max. digging height:	8,840 (29' 0")	8,970 (29' 5")	9,350 (30' 8")	9,730 (31' 11")
E Max. dumping height:	6,350 (20' 10")	6,470 (21' 3")	6,850 (22' 6")	7,230 (23' 9")
F Min. swing radius:	1,860 (6' 1")	2,030 (6' 8")	1,980 (6' 6")	2,260 (7' 5")



## ATTACHMENT

Booms and arms are welded, a low-stress, full-box section design. 4.6 m (15' 1"), 4.9 m (16' 1") boom and 1.9 m (6' 3"), 2.1 m (6' 11"), 2.5 m (8' 2"), 3.0 m (9' 10") arms are available.

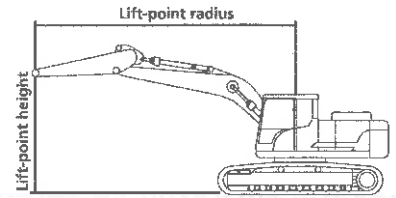
## DIGGING FORCE

Arm	Length	Weight	m/m (ft. m)		1,900 (6' 3")	2,100 (6' 11")	2,500 (8' 2")	3,000 (9' 10")	Remark
			kgf (lb)	kgf (lb)	560 (1,230)	590 (1,280)	610 (1,340)	670 (1,480)	
Bucket digging force	SAE	kgf	8,900 [9,660]	8,900 [9,660]	8,900 [9,660]	8,900 [9,660]			
		lbf	19,620 [21,300]	19,620 [21,300]	19,620 [21,300]	19,620 [21,300]			
	ISO	kgf	10,400 [11,290]	10,400 [11,290]	10,400 [11,290]	10,400 [11,290]			
		lbf	22,930 [24,890]	22,930 [24,890]	22,930 [24,890]	22,930 [24,890]			
Arm crowd force	SAE	kgf	7,800 [8,470]	7,500 [8,140]	6,400 [6,950]	5,700 [6,190]			
		lbf	17,200 [18,670]	16,530 [17,950]	14,110 [15,320]	12,570 [13,640]			
	ISO	kgf	8,200 [8,900]	7,900 [8,580]	6,700 [7,270]	5,900 [6,410]			
		lbf	18,080 [19,630]	17,420 [18,910]	14,770 [16,040]	13,010 [14,120]			

Note: Arm weight includes bucket cylinder, linkage, and pin

# SPECIFICATIONS HX145LCR

Tier 4 Final Engine



## Lifting Capacity

Boom: 4.6 m (15' 1")

Arm: 2.5 m (8' 2")

Bucket: 0.52 m<sup>3</sup> (0.68 yd<sup>3</sup>) SAE heaped

Shoe 600 mm (24") triple grouser, CWT 2,800 kg (6,170 lb)

Capacities based on North American Standard Configuration in accordance with ISO condition 2 standard.



Rating over-front



Rating over-side or 360 degree

Load point height (m / ft)	Load radius										At max reach			
	1.5 m (4.9 ft)		3.0 m (9.8 ft)		4.5 m (14.8 ft)		6.0 m (19.7 ft)		7.5 m (24.6 ft)		Capacity	Reach		
													m (ft)	
6.0 m (20 ft)	kg											*2,740	*2,740	4.4
	lb											*6,050	*6,050	(14.4)
6.0 m (20 ft)	kg					*3,690	*3,690					*2,260	*2,260	5.97
	lb					*8,130	*8,130					*4,980	*4,980	(19.6)
4.5 m (15 ft)	kg					*3,940	*3,940	*3,720	2,660			*2,100	2,090	6.87
	lb					*8,680	*8,680	*8,200	5,860			*4,630	4,610	(22.5)
3.0 m (10 ft)	kg					*5,860	*5,860	*4,700	4,060	*3,990	2,580	*2,080	1,830	7.36
	lb					*12,930	*12,930	*10,360	8,940	*8,810	5,680	*4,580	4,040	(24.1)
1.5 m (5 ft)	kg					*10,230	7,110	*6,660	3,790	*5,190	2,460	*2,260	1,740	7.52
	lb					*22,560	15,670	*14,690	8,350	*11,440	5,430	*4,980	3,830	(24.7)
Ground line	kg					*8,750	6,630	*7,390	3,570	*5,480	2,360	*2,370	1,750	7.37
	lb					*19,290	14,610	*16,280	7,880	*12,070	5,210	*5,220	3,860	(24.3)
-1.5 m (-5 ft)	kg	*4,900	*4,900	*9,260	6,500	*7,340	3,470	*5,310	2,310			*2,780	1,910	6.89
	lb	*10,800	*10,800	*20,420	14,330	*16,180	7,650	*11,710	5,090			*6,120	4,220	(22.6)
-3.0 m (-10 ft)	kg	*8,490	*8,490	*9,180	6,560	*6,320	3,480	*3,400	2,350			*3,380	2,340	6.01
	lb	*18,720	*18,720	*20,230	14,460	*13,940	7,660	*7,490	5,170			*7,440	5,160	(19.7)
-3.0 m (-10 ft)	kg			*5,590	*5,590							*3,260	*3,260	4.49
	lb			*12,320	*12,320							*7,190	*7,190	(14.7)

- NOTES:
- Lifting capacities are based on ISO 10567.
  - Lifting capacity of the Robex Series does not exceed 75% of tipping load with the machine on firm, level ground or 87% of full hydraulic capacity.
  - The Lift-point is bucket pivot mounting pin on the arm (without bucket mass).
  - (\*) indicates load limited by hydraulic capacity.



# SPECIFICATIONS

## HX145LCR

Tier 4 Final Engine

ENGINE	STD	OPT
Perkins 1204F Engine	•	
<b>HYDRAULIC SYSTEM</b>		
<b>Intelligent Power Control (IPC)</b>		
3-power mode, 2-work mode, user mode	•	
Variable Power Control	•	
Pump Flow Control	•	
<b>Attachment Mode Flow Control</b>	•	
Engine Auto idle	•	
Engine Auto Shutdown Control		•
Electronic Fan Control	•	
<b>CAB &amp; INTERIOR</b>		
<b>ISO Standard cabin</b>		
Rise-up type windshield wiper	•	
Radio / USB player	•	
Handsfree mobile phone system with USB	•	
12 volt power outlet (24V DC to 12V DC converter)	•	
Electric horn	•	
All-weather steel cab with 360° visibility	•	
Safety glass windows	•	
Sliding fold-in front window	•	
Sliding side window(LH)	•	
Lockable door	•	
Hot & cool box	•	
Storage compartment & Ashtray	•	
Transparent cabin roof-cover	•	
Sun visor	•	
<b>Door and cab locks, one key</b>	•	
Mechanical suspension seat with heater	•	
Pilot-operated slidable joystick	•	
Console box height adjust system	•	
<b>Automatic climate control</b>		
Air conditioner & heater	•	
Defroster	•	
Starting Aid (air grid heater) for cold weather	•	
<b>Centralized monitoring</b>		
8" LCD display	•	
Engine speed or Trip meter/Accel.	•	
Engine coolant temperature gauge	•	
Max power	•	
Low speed/High speed	•	
Auto idle	•	
Overload	•	
Check Engine	•	
Air cleaner clogging	•	
Indicators	•	
ECO Gauges	•	
Fuel level gauge	•	
Hyd. oil temperature gauge	•	
Warnings	•	
Communication error	•	
Low battery	•	
Clock	•	
Cabin lights	•	
Cabin front window rain guard		•

CAB & INTERIOR	STD	OPT
<b>Seat</b>		
Adjustable air suspension seat with heater	•	
<b>Cabin FOPS/POG (ISO/DIS 13262) Level 2</b>		
FOPS (Falling Object Protective Structure)-ISO 3,449 Level 2	•	
FOG (Falling Object Guard)		•
<b>Cabin ROPS (ISO 12117-2)</b>		
ROPS (Roll Over Protective Structure)	•	

SAFETY	STD	OPT
Battery master switch	•	
Rearview camera	•	
Four front working lights	•	
Travel alarm	•	
Rear work lamp	•	
Beacon lamp		•
Automatic swing brake	•	
Boom holding system	•	
Arm holding system	•	
Safety lock valve for boom cylinder with overload warning device		•
Safety lock valve for arm cylinder		•
Swing Lock System		•
Two outside rearview mirror	•	

OTHER	STD	OPT
<b>Booms</b>		
4.60 m, 15' 8"	•	
4.1 m, 13' 5"		
4.9 m, 16' 8"		
<b>Arms</b>		
2.1 m, 6' 11"		•
2.5 m, 8' 2"	•	
1.9 m, 6' 2"		•
3.0 m, 9' 8"		•
Removable clean-out dust net for cooler	•	
Removable reservoir tank	•	
Fuel pre-filter	•	
Self-diagnostics system	•	
Hi-mate (Remote Management System)		Mobile Satellite
Batteries (2 x 12V x 100 AH)	•	
Fuel filler pump (50 L/min)		•
Single-acting piping kit (breaker, etc.)		•
Double-acting piping kit (clamshell, etc.)	•	
Rotating Piping Kit		•
Quick coupler piping		•
Quick coupler		•
Accumulator for lowering work equipment	•	
Pattern change valve (2 patterns)	•	
Fine Swing Control System		•
Tool kit		•

UNDERCARRIAGE	STD	OPT
Lower frame under cover (Additional)		•
Lower frame under cover (Normal)	•	
<b>Track shoes</b>		
Triple grousers shoes (500mm, 20")		•
Triple grousers shoe (600 mm, 24")	•	
Triple grousers shoe (700 mm, 28")		•
Rubber pad (500 mm, 20")		•
Track pad (500 mm, 20")		•
Track pad (600 mm, 24")		•

\* Standard and optional equipment may vary. Contact your Hyundai dealer for more information. The machine may vary according to International standards.

\* The photos may include attachments and optional equipment that are not available in your area.

\* Materials and specifications are subject to change without advance notice.

\* All imperial measurements rounded off to the nearest pound or inch.

PLEASE CONTACT



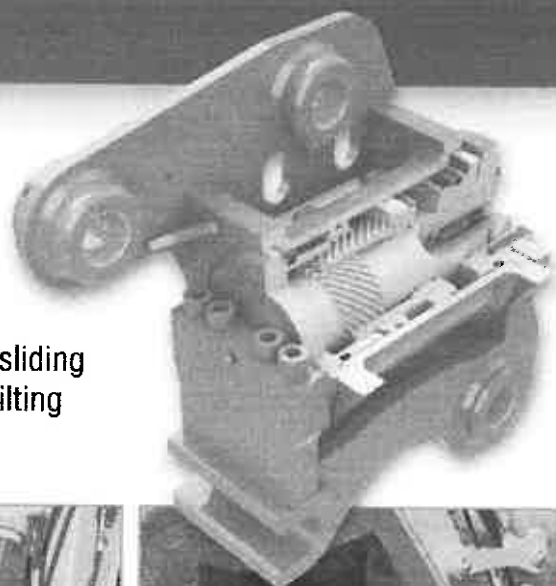
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# Perform Work Faster, Safer and Easier with PowerTilt®

Tilt any bucket or attachment up to 180° with our exclusive sliding spline technology. Increase productivity by 50% by simply tilting your attachment instead of moving the entire machine.



## Coupler Options

All PowerTilt models come with a standard half hitch coupler. Coupler options vary by model.



Standard pin-on



Hydraulic Pin Grab



Universal



Brand specific



Custom

Reference Guide	PT-6	PT-6W	PT-7	PT-8	PT-9	PT-10	PT-11	PT-12
Maximum Machine Weight (lb)	8,400	10,500	15,000	20,000	30,000	50,000	60,000	75,000
Approx. PowerTilt Weight (lb)	160	180	320	425	575	850	1,200	1,500
Total Tilt	180° *	180° *	180°	180°	134°	134°	134°	134°
Required Oil Flow (gpm)	.8 - 1.5	.9 - 1.5	1.5 - 3	3 - 5	6 - 7	6 - 8	8 - 11	9 - 13

Note: A two-way auxiliary hydraulic circuit is required for operation. \*Actual rotation may vary slightly.



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HA PTB/02.14





# Specialty Buckets And Attachments



**Trapezoidal Ditching Buckets**  
Compact Excavators • RTL Backhoes  
Large Excavators with Standard and Long Fronts



**Optional  
" Hole Packages " Available**

**Heavy Dirty Ditching Buckets**  
Compact Excavators • RTL Backhoes  
Large Excavators with Standard and Long Fronts  
Pin-on • CWP Deere-Hitachi Wedge-Lock QC  
QC27/30/33 Compact Quick-Couplers

**Exclusive " Double-Bottom Design " on RTL's  
and 14,000 lbs. to 120,000 lbs. Excavators  
Optional H. D. Reversible Bolt-on Cutting Edge**



**Heavy Duty Tilting Ditching Buckets**  
Excavators 10,000 lbs. - 60,000 lbs.  
**Mini Excavators • RTL Backhoes**  
45° Tilting Right - Left • 90 Degrees Total Oscillation  
Adjustable Flow-Control Valves with Central Check-Valve  
H. D. Reversible Bolt-on Cutting Edge



**Skeleton Ditching Buckets**  
Compact Excavators & RTL Backhoes  
Large Excavators with Standard & Long Fronts  
Standard 2" Tine Spacing • Optional Tine Spacing  
Optional H. D. Reversible Bolt-on Cutting Edge

*Superior Performance and Durability*

**TAG Manufacturing, Inc. • Chattanooga, TN**



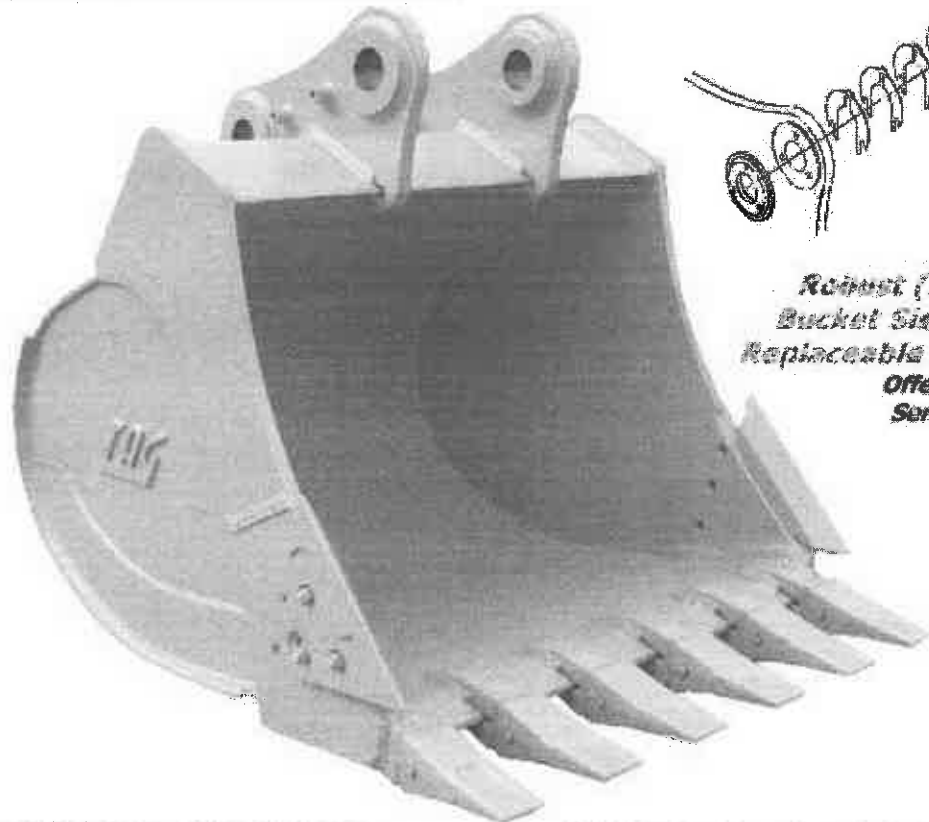


# High Performance Heavy-Duty Excavator Buckets

*TAG Buckets Deliver Quicker Loading Times and Greater Yardage on each Pass With Less Wear on the Bucket Because of the Dual Tapered and Double Radius Design*

**HP10  
Series**  
Both Heavy-Duty and Severe-Duty Buckets Share the Same Double-Bottom Design and Features

*Innovative Play-Adjustment Design  
Thumb-Tab "Horse-Shoe" Shims  
No Need to Remove Bucket to Make Adjustments, Eliminates "Top-Hat" Bushing Failures*



*Robust (2) Piece Bucket Sides With Replaceable Corners Offers Greater Serviceability*

*Clear Smooth Unobstructed Opening  
One-Piece Bucket Shell Increases the Ease of Loading and Unloading Improving Machine Production*

*Internal Triangle Reinforcements for Superior Strength Improves Ear Retention and Reduces Bucket Flexing and Twisting*

*Superior Performance and Durability*

TAG Manufacturing, Inc. • Chattanooga, TN





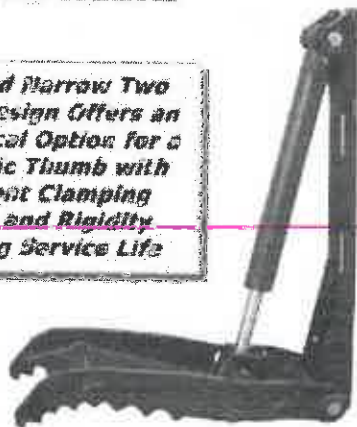


# Heavy Duty Thumbs Maximize Your Versatility

**Compact to Large Excavator Weld-on Hydraulic Thumbs**  
2,500 lbs. to 80,000 lbs.

Also Available for Rubber  
Tire Loader Backhoes

Standard Narrow Two  
Finger Design Offers an  
Economical Option for a  
Hydraulic Thumb with  
Excellent Clamping  
Forces and Rigidity  
For Long Service Life



Weld-on Hydraulic Thumb Rotation  
Approx. 120° Rotation

Not Recommended  
For Use With  
Quick-Couplers  
Extended Thumb  
May Interfere With  
the Boom

Optional (4) Finger  
Designs for  
Class 150-250  
Excavators



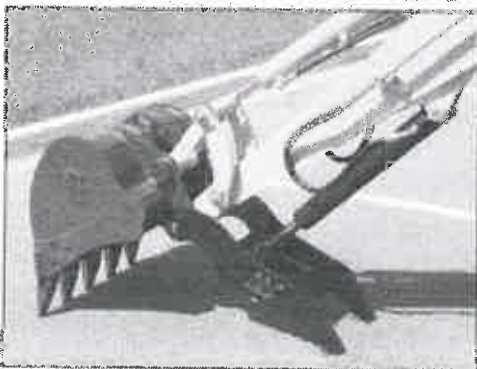
**Compact Excavator Main-Pin Hydraulic Thumbs**  
2,000 lbs. to 20,000 lbs.

Many Applications Are a Direct Fit and Work With Factory Brackets and Auxilliary Lines

Grosbeak  
Pivots Points



Broad Two Finger Design Offers  
Excellent Clamping Forces and  
Rigidity For Long Service Life



Thumb Bodies Are Extended  
for Quick-Couplers



All Hydraulic Thumbs Require Bi-directional Implement Circuit Relief Valves Set to a Maximum of 2,500 psi.  
For Proper Operation • TAG Thumbs are Designed to Work with TAG Buckets and TAG Grapple Rakes

*Superior Performance and Durability*



TAG Manufacturing, Inc. • Chattanooga, TN



# HYUNDAI HX145LCR

Precision  
Productivity  
Economy

Packed with features to make the operator more comfortable and productive, the 14.5-metric-ton HX145LCR delivers tremendous power and performance for a compact-radius machine. With a tail swing of less than 5 feet, this model is ideal for utility work and road construction in congested areas where operation is limited to a single lane.

Photo may include optional equipment.

## Everything you expect from Hyundai

- More standard features
- Proven quality
- Innovative technology
- Industry-leading warranty
- Excellent parts availability
- Strong dealer support





The 20.3 cm (8 in), touchscreen automotive-quality monitor with haptic remote control provides easy access to almost all systems and functions.



The AAVM option combines images from four external cameras to provide 360° virtual operating view.

# HYUNDAI HX145LCR

## GREATER PRODUCTIVITY, BETTER FUEL ECONOMY

New Tier 4 Final engine technologies, vertically stacked coolers and an efficient electronic fan clutch, plus many hydraulic system innovations, contribute to up to 5-percent greater productivity, with 10-percent greater fuel economy vs. previous models.

## ALL-AROUND VIEWING BOOSTS SAFETY

The optional Hyundai-exclusive AAVM, or All-Around View Monitoring system, gives the operator 360° virtual operating view. Displayed on the automotive-quality, 20.3 cm (8 in) monitor, AAVM helps make the new Hyundai HX series among the safest excavators to operate on any jobsite in North America.

## IMPROVED CAB DESIGN

The Hyundai HX145LCR excavator's redesigned cab optimizes space and operator convenience through enhanced climate-control, reduced in-cab sound level, heated operator's seat with standard air suspension and integrated console. Additional features include a Bluetooth audio system and Miracast wireless functionality for viewing a mobile device screen on the monitor.

## ENHANCED HYDRAULICS

The Hyundai HX145LCR features an improved hydraulic system with new options, including boom float mode for better control, and fine swing mode for improved control when swinging heavy loads. These machines deliver faster cycle times than previous models, computer-aided power optimization based on load demand, and selectable pump flow when working with various attachments. The multi-function hydraulic piping kit and controls that come standard on the machine allow greater attachment versatility.

### Key features:

- Perkins 1204F Tier 4 Final engine
- AAVM option
- Touchscreen color LCD monitor
- Tail swing radius of just 4' 11" (1,500 mm)
- Load-sensing hydraulic system
- Programmable user settings and attachment settings
- Air-ride seat standard
- Variable operating modes (P-S-E)
- Hi-Mate remote management system (3 years)
- 3-year, 3,000-hour standard warranty
- 5-year, 10,000-hour structural warranty

### Key specifications:

- Operating weight: 15,160 kg (33,420 lb)
- Net power: 92.7 kW (124 hp)
- Maximum dig depth: 5,990 mm (19' 8")
- Bucket digging force: 9,660 kgf (21,300 lbf)
- Arm crowd force: 6,190 kgf (13,640 lbf)

[www.hceamericas.com](http://www.hceamericas.com)

