

Link-Belt
EARTHMOVING • FORESTRY
MATERIAL HANDLING EQUIPMENT

225



Minimum Swing Radius

Operating Weight: 51,376 lbs (23 300 kg)

SAE Net Horsepower: 138 HP (103 kW)

Bucket Range: .65 - 1.20 yd³ (.50 - .92 m³)



LBX Company LLC

Operator's Control Station

Built for Tight Spaces

Confined space and restricted access don't necessarily mean limited productivity with the Link-Belt 225 Spin Ace minimum swing radius excavator. This machine opens opportunities to working within tight spaces while increasing the ability to maneuver safely and productively.

Low Noise Cab Design

Four silicon-filled isolation mounts "float" the entire cab above the vibration of an already quiet machine", greatly reducing operator fatigue. Large entry door and access width makes entering and exiting the cab a breeze.

Best Seat at the Site

The KAB 515 seat adjusts to your size for comfort. The semi-bucket seat provides firm support and comfort with armrests, adjustable suspension, adjustable lumbar support, and durable urethane cushions. The seat slides independently of the control consoles to assure optimal joystick positions at all times. The entire platform can then be moved forward or backward for best foot pedal positioning.



Exceptional Visibility

This cab provides great visibility. Even the sunroof is large. Safety glass windows encompass the entire cab. With built-in washer and intermittent speed control, the wiper keeps your windshield clear, whatever the condition outside.

Standard Equipment A/C and Heat

Exceptional heating/cooling capabilities, for optimum operator comfort.



One-Touch Decelerator

You can choose to use the one-touch idling switch located at the top of the right controller so that you are always in control of fuel consumption. This function returns the excavator to and from idle.

AM/FM Stereo Radio

Standard equipment.

Control Panel

Machine function switches are concentrated in a panel in clear view and easy reach of the operator.



Control Pattern Selector Valve (CPSV)

Standard equipment control pattern selector valve makes it easy to quickly switch between SAE and ISO patterns. Easy access under cab floor mat.



Control Pattern Selector Valve - located in the floor of the cab

Comfort Accessories

Convenient vents to direct air at face, easy to reach cup holder, ash tray, cigarette lighter, and 12 volt accessory jack for your phone, two-way radio, etc.



Engine



Isuzu Engines

Known for their long-life and dependability, Isuzu engines are also extremely quiet and reliable with advanced technologies for maximum power and fuel efficiency. This engine, and all Link-Belt Spin Ace engines, meet EPA requirements for Tier II compliance.

Engine Product Support

Isuzu North America offers 24-hour access to their full line of engine parts through 2 regional distribution centers, 27 Master Distributors and 690 Authorized Service Dealers.

Performance

Work Modes



The 225 Spin Ace features 2 work modes to match machine output to the job application.

Standard Mode: When joysticks remain neutral for 3 seconds, engine rpm's automatically drop from 2000 to 1800 rpm, helping to save fuel. When joysticks are re-engaged, engine rpm goes back to full throttle.

Economy Mode: At full throttle, the engine runs at 1800 rpm to conserve fuel.

Power-Up

On-demand trigger activated Power-Up provides a 9% boost in operating pressure for 8 seconds to overcome tough digging conditions and heavy loads.

2-Speed Boom and Arm

The 2-speed boom hoist and arm crowd/extend function provides the 225 Spin Ace with exceptional quickness and response for high-capacity cycle time production.

Attachment Cushion

A cushion valve built into the attachment circuit automatically helps eliminate the "tuning-fork" effect for smoother operating cycles and less bucket spillage.

Swing Cushion

A cushion valve built into the swing circuit provides smooth starts and stops with virtually no rebound effect at the end of the swing.

Regeneration System

When crowding the arm or booming down, oil can be regenerated in the arm and boom circuits to increase operational speed for faster cycle times.

Parallel Passages

Parallel passages in the main control valve allow hydraulic oil to circulate to all functions simultaneously for smooth multi-functioning response.

Undercarriage

MSR Undercarriage

Long LC undercarriages incorporate heavy duty excavator style components and improve both stability and ground bearing pressure. The modified X style carbody is integrally welded for maximum strength and durability. High torque compact final drives keep you going up steep grades and through deep mud.

Two-Speed Travel Motor

Offers smooth shifting and maximum torque when going up grades and making turns.

Track Rollers

Filled with synthetic oil to reduce heat build up and for long term reliability.

Strut Type Chain Links

There are no weak links in our chain. Struts reduce twisting and hold up to severe point loading when all of the machine weight is transferred through one roller.

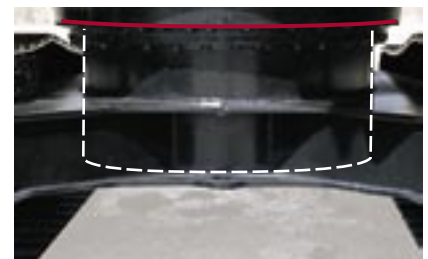
Track Adjustment

Adjustments are made easy with standard grease cylinder track adjusters and shock absorbing idler springs.

Side Frames

Incorporate a peaked saddle shape and large cut-outs on top for reduced dirt build-up.

Bearing Tub



Built into the "X" style carbody is the turntable bearing "tub" which extends down through the top plate and is welded to the bottom of the carbody as well as the top for increased strength and durability.

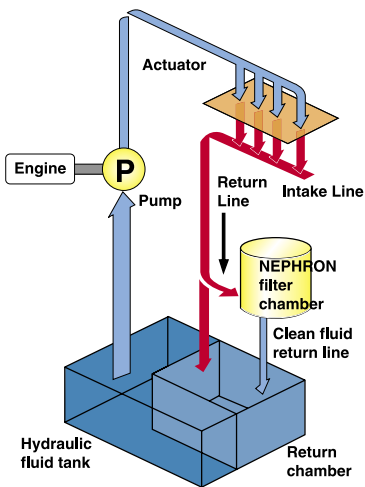
Reliability/Serviceability

Nephron® Filtration Extends the Service Life of the Hydraulic System

The Nephron® Filtration System eliminates contaminants of 1 micron or more in size. This significantly reduces hydraulic system breakdown and maintenance costs under normal usage. Less wear and tear on the hydraulic components means more years of reliable performance.

Nephron® Filter Advantages

1. Problems associated with hydraulic system contamination are substantially reduced. Machine down time and costs for repairing are saved as a consequence.
2. The interval of hydraulic oil replacement is extended to every 5000 hours.
3. The wear of hydraulic components is reduced, which lengthens the service life of the machine.

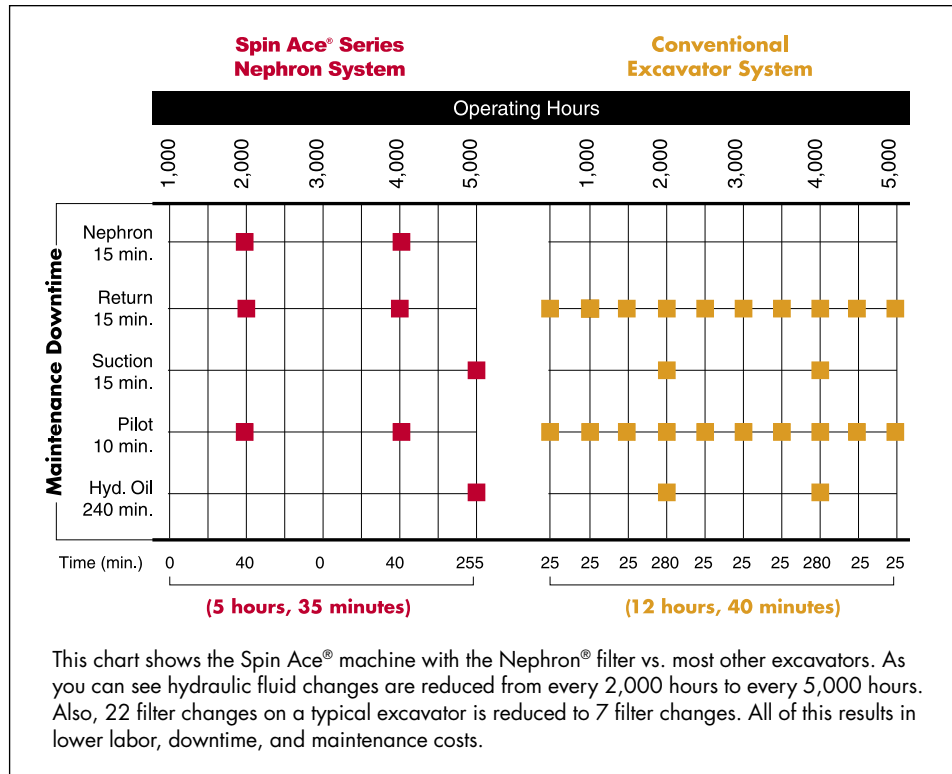


Hydraulic Fittings

"O" ring face seals are used as hydraulic connectors to assure tighter seals.

Air Conditioner Air Intake Filter

This filter lets in fresh clean air and is mounted on the outside of the cab, enabling easy cleaning and replacement.



Improved Pin and Bushing Life

Chrome plated boom foot and boom to arm pins mounted in graphite stratified brass bushings make a durable and long lasting connection at the two highest stress points on the attachment. This also makes it possible to extend the lubrication interval on this type of pin to once every 6 months or 1,000 hours of operation, whichever comes first.

- A. The surface of the bushing is stratified with a solid lubricant in hard brass to protect the parts from abrasion.
- B. The pin's surface is plate-processed to increase hardness and protect from abrasion
- C. The original dust seal is double-structured to keep out dust and dirt and protect from subsequent abrasion.



Improved pin and bushing design

Sealed Automotive Style Wiring Harness

Harnesses are sealed to eliminate dirt and moisture that can cause a circuit to short. Wiring is also color and number coded to make trouble shooting faster and easier.

Exceptional Customer/Product Support

Your investment in the Link-Belt Spin Ace® Series Excavator is always protected. LBX Distribution is located from coast to coast; you're never far from quality service professionals. "Level Two" support takes the form of experienced factory service advisors, on-call at a moment's notice. And to expedite parts, LBX utilizes the proven parts system e-Spin...an on-line, around the clock parts distribution solution. You can be assured that we have the parts when you need them.

Specifications

Engine

Isuzu BB-6BG1T water cooled, 4-cycle diesel, 6 cylinder, electronic engine control, 396 CID (6 494 cc), 4.13" (105 mm) bore x 4.92" (125 mm) stroke.

SAE net horsepower ... 138 HP (103 kW) @ 1,950 rpm
 Max. torque 388 ft.-lbs. (527 N-m) @ 1,600 rpm
 Starter 24V (4.5 kW)
 Alternator 50 amp
 Battery cold cranking amps 800
 Air cleaner Double element
 Governor Electronic

Fuel Usage*

Heavy 4.8 gph (18.1 l/hr)
 Average 4.0 gph (15.1 l/hr)
 Light 3.2 gph (12.1 l/hr)

*Fuel economy varies widely depending upon application. The "Heavy" category represents nearly continuous operation in tough digging applications. The "Light" category represents applications that utilize the machine about 50% of the time, in easier digging.

Hydraulic System

Two variable displacement axial piston pumps and one gear pump for pilot controls

Hydraulic Pumps

Two variable volume piston pumps provide power for attachment, swing and travel

Max. flow 2 x 50.2 gpm (2 x 190 l/min)
 Pilot pump max. flow 5.8 gpm (22.1 l/min)

Relief Valve Settings

Boom/arm/bucket 4,970 psi (350 kg/cm²)
 w/power up mode applied.. 5,410 psi (380 kg/cm²)
 Swing circuit 4,410 psi (310 kg/cm²)
 Travel circuit 4,970 psi (350 kg/cm²)

Hydraulic Cylinders

number of cylinders – bore x rod x stroke

Boom 2–4.9" x 3.5" x 50.5"
 (125 mm x 90 mm x 1 284 mm)
 Arm 1–5.3" x 3.7" x 58"
 (135 mm x 95 mm x 1 474 mm)
 Excavator Bucket 1–4.5" x 3.1" x 39.8"
 (115 mm x 80 mm x 1 012 mm)

Control Valve One 4-spool valve for left track travel, boom, bucket, and arm acceleration, and one 5-spool valve for right track travel, swing, boom acceleration, auxiliary spool, and arm.

Oil Filtration

Nephron® filter 1 micron
 Return and pilot filters 10 micron
 Suction screen 105 micron

Cab and Controls

Cab mounted on 4 fluid filled mountings. Features include safety glass windows, sliding front window with auto-lock, windshield washer and wiper, heater, air-conditioner, AM/FM radio with auto tuner, floor mat, skylight window and right and rear side mirrors. KAB 515 operators seat with manual weight adjustment, seat height and tilt adjustment, adjustable headrest, backrest angle adjustment, adjustable pivoting arm rests and seat belt. Control Pattern Selector Valve. Reliable soft-touch switches.

Heater output 12,900 BTU/hr (3 250 kcal/hr)
 A/C output 13,490 BTU/hr (3 400 kcal/hr)
 Sound level (inside cab) 78 dB(A)
 Sound level (exterior) 103 dB(A)

Swing

Fixed displacement axial piston motor. Internal ring gear with grease cavity for swing pinion. Swing bearing is single-row shear type ball bearing. Swing cushion valve and dual stage relief valves for smooth swing deceleration and stops. Mechanical disc swing brake.

Swing speed 0–11.0 rpm
 Swing torque 48,740 ft.-lbs (66.1 kN•m)
 Tail swing 5' 6" (1.68 m)
 Overhang 3.35" (85 mm)

Undercarriage

X-style carbody is integrally welded for strength and durability. Grease cylinder track adjusters with shock absorbing springs. Undercarriage equipped with center track guides, sealed track, lubricated rollers and idlers. Three-bar grouser track shoes.

Carrier rollers 2 per side
 Track rollers 8 per side
 Track link pitch 7.48" (190 mm)
 Shoes 49 per side
 Shoe width 31.5" (800 mm)
 Ground pressure 5.22 psi (.37 kg/cm²)

Travel System

Variable displacement axial piston motor. Mechanical disc brake. All hydraulic components mounted within the width of side frame.

Max. travel speed 1.9/3.1 mph (3.1/5.0 km/h)
 Traction force 44,740 lbs. (199 kN)
 Gradeability 70%

Lubricant and Coolant Capacity

Hydraulic tank 31.7 gal. (120 liters)
 Hydraulic system 54 gal. (205 liters)
 Final drive (per side) 1.25 gal. (4.7 liters)
 Engine 6.4 gal. (24 liters)
 Fuel tank 70 gal. (265 liters)
 Cooling system 6.1 gal. (23 liters)

Attachment

Excavator Boom 18' 8" (5.70 m)
 Bucket digging force 29,224 lbs. (13,256 kg)

Available Arms

Digging Force*

- 9' 10" (3.0 m) 21,424 lbs. (9 718 kg)
 w/power up applied 23,380 lbs. (10 605 kg)
- 7' 10" (2.40 m) 25,850 lbs. (11 725 kg)
 w/power up applied 28,240 lbs. (12 810 kg)

*Digging forces will change with the addition of longer arms, thumbs, couplers and larger buckets.

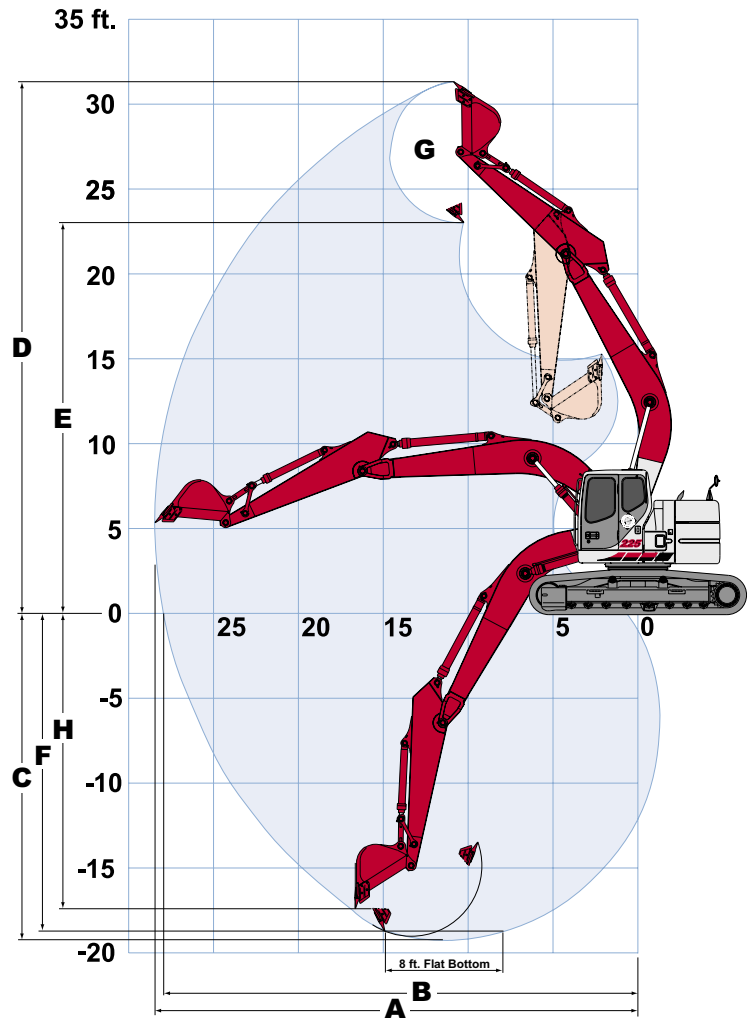
Operating Weight

Standard Excavator - Working weight with 31.5" (800 mm) shoes, 18' 8" (5.70 m) boom, 9' 10" (3.0 m) arm, 1,430 lb. (650 kg) bucket and 12,940 lb. (5 870 kg) cwt. ... 51,376 lbs. (23 300 kg)

Specifications

Working Ranges

Machine equipped with 18' 8" (5.70 m) boom.		7' 10" Arm (2.40 m)	9' 10" Arm (3.00 m)
A.	Max. digging radius	30' 9" (9.37 m)	32' 6" (9.91 m)
B.	Max. digging radius @ ground level	30' 1" (8.07 m)	31' 11" (9.73 m)
C.	Max. digging depth	20' 0" (6.10 m)	22' 0" (6.70 m)
D.	Max. digging height	34' 6" (10.52 m)	35' 10" (10.91 m)
E.	Max. dumping height	25' 0" (7.63 m)	26' 4" (8.02 m)
F.	Digging depth – 8' (2.44 m) level bottom	19' 4" (5.89 m)	21' 5" (6.52 m)
G.	Bucket wrist angle	177°	177°
H.	Max. vertical wall depth	18' 0" (5.48 m)	19' 11" (6.06 m)



Bucket Sizes

225 MSR

Bucket Type	Capacity	Width Outside Lip	Weight	# Teeth	Arm	Arm
					7' 10" (2.40 m)	9' 10" (3.0 m)
ESCO STDP	.65 yd ³ (.50 m ³)	24" (610 mm)	1,151 lb. (522 kg)	4	H	H
	.87 yd ³ (.67 m ³)	30" (762 mm)	1,265 lb. (574 kg)	4	H	H
	1.09 yd ³ (.83 m ³)	36" (914 mm)	1,433 lb. (650 kg)	5	H	H
	1.31 yd ³ (1.0 m ³)	42" (1 067 mm)	1,570 lb. (712 kg)	5	M	M
	1.53 yd ³ (1.17 m ³)	48" (1 219 mm)	1,687 lb. (765 kg)	5	M	L
ESCO HDP	.64 yd ³ (.49 m ³)	24" (610 mm)	1,392 lb. (631 kg)	3	H	H
	.85 yd ³ (.65 m ³)	30" (762 mm)	1,592 lb. (722 kg)	4	H	H
	1.07 yd ³ (.82 m ³)	36" (914 mm)	1,794 lb. (814 kg)	5	H	M
	1.29 yd ³ (.99 m ³)	42" (1 067 mm)	1,954 lb. (886 kg)	5	M	L
	1.51 yd ³ (1.15 m ³)	48" (1 219 mm)	2,114 lb. (959 kg)	5	L	L
ESCO XDP	.58 yd ³ (.44 m ³)	24" (610 mm)	1,736 lb. (787 kg)	3	H	H
	.78 yd ³ (.60 m ³)	30" (762 mm)	1,985 lb. (900 kg)	4	H	H
	.98 yd ³ (.75 m ³)	36" (914 mm)	2,175 lb. (987 kg)	4	H	M
	1.19 yd ³ (.91 m ³)	42" (1 067 mm)	2,423 lb. (1 099 kg)	5	M	L
	1.39 yd ³ (1.06 m ³)	48" (1 219 mm)	2,612 lb. (1 185 kg)	5	L	L
ESCO HDC	.55 yd ³ (.42 m ³)	24" (610 mm)	1,668 lb. (757 kg)	3	H	H
	.74 yd ³ (.57 m ³)	30" (762 mm)	1,954 lb. (886 kg)	4	H	H
	1.03 yd ³ (.79 m ³)	39" (991 mm)	2,274 lb. (1 031 kg)	5	H	M
ESCO DITCH	1.08 yd ³ (.83 m ³)	60" (1 524 mm)	1,470 lb. (667 kg)	0	H	H
	1.20 yd ³ (.92 m ³)	66" (1 676 mm)	1,557 lb. (706 kg)	0	H	M

Approval Code For Arm/Bucket Combinations:

H - Heavy material (up to 3,370 lbs./ yd³)

M - Medium material (up to 2,700 lbs./ yd³)

L - Light material (up to 2,020 lbs./ yd³)

N/A - Not applicable

Lifting Capacities 225 Spin Ace®

9' 10" (3.00 m) Arm

18' 8" (5.70 m) Boom and 1,414 lb. (641 kg) Bucket

Bucket Hook Height	Radius of Load									
	10' 0" (3.05 m)		15' 0" (4.57 m)		20' 0" (6.10 m)		25' 0" (7.62 m)		Cap. at Max. Reach	
	End	Side	End	Side	End	Side	End	Side	End	Side
+20' 0" (6.10 m)	lbs. kg				10,080* 4570*	10,080* 4570*			5,410* 2450*	5,410* 2450*
+15' 0" (4.57 m)	lbs. kg		12,790* 5800*	12,790* 5800*	11,180* 5070*	10,030* 4540	8,660* 3920*	6,810* 3080	5,440* 2460*	5,440* 2460*
+10' 0" (3.05 m)	lbs. kg	24,540* 11 130*	24,540* 11 130*	16,160* 7330*	14,950* 6780	12,740* 5770*	9,470* 4290	10,800* 4890	6,540* 2960	5,710* 2590*
+5' 0" (1.52 m)	lbs. kg	17,980* 8 150*	17,980* 8 150*	19,380* 8790*	13,710* 6210	14,320* 6490*	8,880* 4020	10,480* 4750	6,250* 2830	6,280* 2840*
Ground Line	lbs. kg	17,840* 8 090*	17,840* 8 090*	21,060* 9550*	12,930* 5860	14,450* 6550	8,440* 3820	10,220* 4630	6,020* 2730	7,270* 3290*
-5' 0" (1.52 m)	lbs. kg	23,780* 10 780*	23,780* 10 780*	20,930* 9490*	12,620* 5720	14,190* 6430	8,210* 3720	10,100* 4580	5,910* 2680	9,040* 4100*
-10' 0" (3.05 m)	lbs. kg	26,900* 12 200*	25,071* 11 370	19,000* 8610*	12,660* 5740	13,950* 6320*	8,220* 3720			11,360* 5150*
-15' 0" (4.57 m)	lbs. kg	20,300* 9 200	20,300* 9 200	14,670* 6 650	13,050* 5 910					11,170* 5 060

7' 10" (2.40 m) Arm

18' 8" (5.70 m) Boom and 1,414 lb. (641 kg) Bucket

Bucket Hook Height	Radius of Load									
	10' 0" (3.05 m)		15' 0" (4.57 m)		20' 0" (6.10 m)		25' 0" (7.62 m)		Cap. at Max. Reach	
	End	Side	End	Side	End	Side	End	Side	End	Side
+20' 0" (6.10 m)	lbs. kg		12,240* 5 550*	12,240* 5 550*	11,400* 5 170*	10,220* 4 630			8,420* 3 810*	8,390* 3 800
+15' 0" (4.57 m)	lbs. kg	19,240* 8 720*	19,240* 8 720*	14,480* 6 560*	14,480* 6 560*	12,260* 5 560*	9,880* 4 480		8,520* 3 860*	6,840* 3 100
+10' 0" (3.05 m)	lbs. kg	26,900* 12 200*	26,900* 12 200*	17,730* 8 040*	14,590* 6 610	13,670* 6 200*	9,350* 4 240	10,750* 4 870	6,510* 2 950	9,050* 4 100*
+5' 0" (1.52 m)	lbs. kg			20,460* 9 280*	13,500* 6 120	14,880* 6 740	8,830* 4 000	10,490* 4 750	6,270* 2 840	9,690* 4 390
Ground Line	lbs. kg	16,470* 7 470*	16,470* 7 470*	21,410* 9 710*	12,920* 5 860	14,480* 6 560	8,470* 3 840	10,300* 4 670	6,100* 2 760	9,940* 4 500
-5' 0" (1.52 m)	lbs. kg	26,330* 11 940*	25,130* 11 390	20,540* 9 310*	12,760* 5 780	14,320* 6 490	8,340* 3 780			11,000* 4 980
-10' 0" (3.05 m)	lbs. kg	24,230* 10 990*	24,230* 10 990*	17,810* 8 070*	12,940* 5 860	12,950* 5 870*	8,470* 3 840			12,220* 5 540*
-15' 0" (4.57 m)	lbs. kg	16,380* 7 420*	16,380* 7 420*	11,960* 5 420*	11,960* 5 420*					11,350* 5 140*

Notes: Excavator lifting capacities

- Lifting capacities shown should not be exceeded. Weight of all lifting accessories must be deducted from the above lifting capacities.
- Lifting capacities are based on machine standing on firm, uniform supporting surface. User must make allowances for job conditions such as soft or uneven ground.
- Lifting capacities shown do not exceed 75% of minimum tipping loads or 87% of hydraulic capacities. Capacities marked with an asterisk (*) are limited by hydraulic capacities.
- Least stable position is over the side.
- Operator should be fully acquainted with the Operator's Manual & Operating Safety Booklet, furnished by LBX before operating the machine.
- Capacities apply only to the machine as originally manufactured and normally equipped by LBX Company, LLC.
- Lift capacity ratings are based on SAE J/ISO 10567, "Earthmoving Machinery – Hydraulic Excavators – Lift Capacity".



Specifications

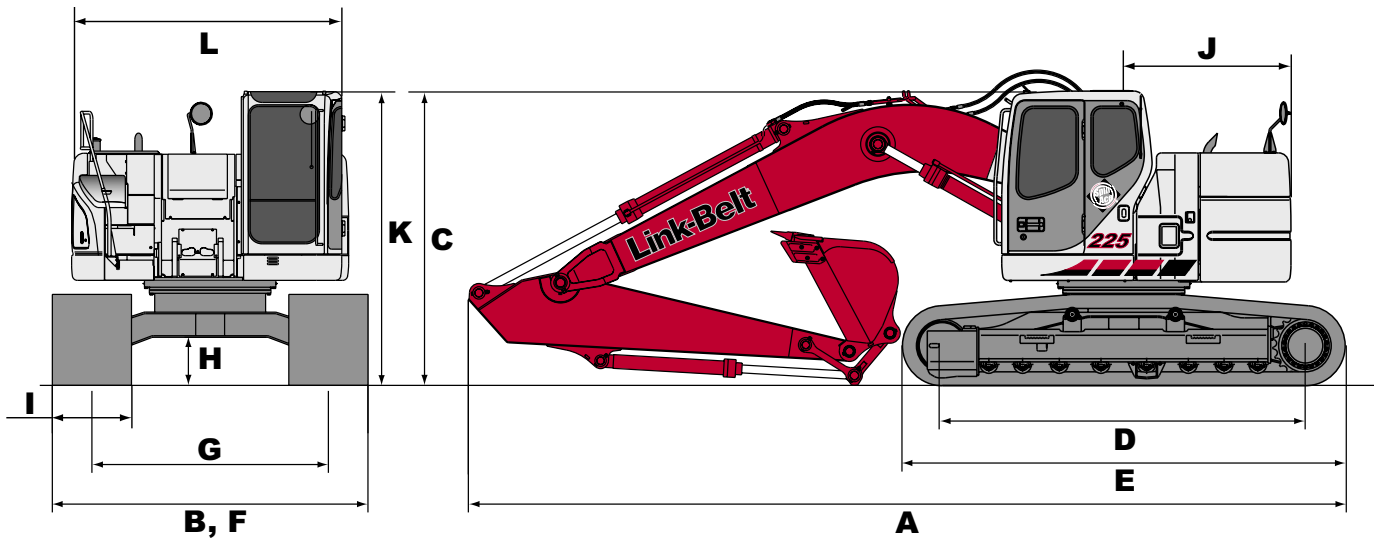
Dimensions

Dimensions - 9' 10" (3.0 m) arm

A.	Overall length.....	29' 0" (8.85 m)
B.	Overall width.....	10' 6" (3.19 m)
C.	Overall height.....	10' 6" (3.19 m)
D.	Distance between sprocket and idler	12' 0" (3.66 m)
E.	Overall length of crawler	14' 8" (4.46 m)
F.	Overall width of crawler with std. shoe..	10' 6" (3.19 m)
G.	Track gauge	7' 10" (2.39 m)
H.	Min. ground clearance	1' 6" (460 mm)
I.	Shoe width	31.5" (800 mm)
J.	Tail swing radius	5' 6" (1.68 m)
K.	Cab height	9' 9" (2.97 m)
L.	Overall width of upperstructure	9' 2" (2.80 m)

Dimensions - 7' 10" (2.4 m) arm

A.	Overall length.....	29' 4" (8.93 m)
C.	Overall height.....	10' 8" (3.24 m)



Standard Equipment

- Two selectable working modes (Normal and Economy)
- Control Pattern Selector Valve
- One-touch decelerator
- Power-Up (trigger activated)
- Integral cylinder cushioning
- Cushioned attachment
- Swing cushion valve
- Auxiliary valve spool
- Travel alarm
- Auto power swing
- Two speed travel w/auto shift
- Nephron® hydraulic filtration system
- Low noise/low vibration cab floating on 4 fluid filled mounts
- Sliding/reclining, suspension cloth upholstered seat with adjustable arm rests and lumbar support, seat belt
- Analog gauge package
- Heater and air conditioner
- Rear view mirrors
- Two work lights, cab and boom
- Horn, interior lighting, AM/FM STEREO radio, clock, floor mat, cigarette lighter
- 12 volt accessory outlet for cell phones/audio extras
- Safety glass windows with windshield wiper and washer
- Gate lock lever (hydraulic lockout device)
- Vandalism locks
- Common key for cab & house doors, engine hood, and fuel cap
- Upper and lower undercovers
- Chrome plated boom foot pin with brass bushing
- Chrome plated boom to arm connection pin with brass bushing
- 31.5" (800 mm) 3-bar grouser shoes
- 12,940 lb. (5 870 kg) Counterweight

Options

- Arms -
 - 9' 10" (3.0 m)
 - 7' 10" (2.4 m)
- 27.5" (700 mm) 3-bar grouser shoes
- Auxiliary Hydraulics
 - Single Acting
 - Multi-Function
 - Thumb
- Hose Burst Check Valves
- Couplers (field install)
 - Hendrix Hydraulic Coupler
 - Esco Multi-Pin Grabber
- Thumbs (field install)
 - Esco Universal rigid
 - Esco Hydraulic non-link
 - Esco Hydraulic non-link (for coupler)
 - Esco Hydraulic link