



## ENGINE

Model	Isuzu AP-4LE2X
Emissions Certification	Tier 4 Final
Fuel	Requires ultra low-sulfur fuel B5 biodiesel tolerant
Type	Water-cooled, 4-cycle, high pressure common rail system. Turbo-charged w/ air cooled intercooler, DOC system
Cylinders	4-cylinder in-line
Displacement	133 in <sup>3</sup> (2.2 L)
Bore/Stroke	3.35 x 3.78 in (85 x 96 mm)
Fuel injection	Direct injection – electronic
Fuel filter	Replaceable, full flow spin-on cartridge
Air filter	Dry type element w/ warning restriction indicator
Oil filter	Replaceable, full flow spin-on cartridge
Engine gradeability:	
Side-to-side	35°
Fore and aft	35°
Net horsepower – SAE J1349 @ 2000 RPM:	53.6 hp (40 kW)
Net max. torque – SAE J1349 @ 1800 RPM:	142 lb-ft (193 N-m)
Cooling operating range:	109.4° to -13° F (43° to -25° C)
Oil	Requires low-ash oil CJ-4

## DRIVETRAIN

Travel control	Dual stage relief/ counter balance design
Brakes	Mechanical disc
Service brakes	SAHR disc – each motor
Two speed travel:	
Max. high speed	3.2 mph (5.1 kph)
Max. low speed	2.0 mph (3.2 kph)
Automatic downshift	
Drawbar pull	13,400 lb (59.5 kN)
Gradeability	70% – 35° Slope

## ELECTRICAL

Voltage	24 Volts
Alternator rating	50 amp
Batteries	2 x 12 Volt
Battery reserve capacity	64 Ah/5 hour
Work lights	24 Volt
1 boom	70 watt
1 upper	70 watt

## OPERATOR ENVIRONMENT

FOPS Level 1 cab top guard; Pressurized cab; One-touch lock front window; AC/heat/defrost w/ auto climate control; 6 watt interior dome light; Mechanical-suspension cloth seat; Adjustable armrest; Low-effort joystick controls; Controls pre-wired for auxiliary; Blade control lever; AM/FM radio w/ antenna and 2 speakers; Anti-theft start code system; Rubber floor mat; 12-volt electric socket; 24-volt cigarette lighter; External rear view mirrors; Windshield wiper/washer; Cup holder; Storage compartments; Travel alarm w/ cancel switch; One key start and lock-up; Built-in full-color LCD monitor; Safety glass for all windows; Polycarbonate roof hatch and sun shade.

Air conditioner output	13,492 BTU/hr
Heater output	12,897 BTU/hr
Sound level inside cab – ISO6395	73.0 dBA

## ATTACHMENT

Boom	12 ft 4 in (3 750 mm)
Arm option:	
Standard	5 ft 7 in (1 690 mm)
Bucket digging force	12,800 lbf (56.9 kN)

## OPERATING WEIGHT

Operating weight	17,400 lb (7 900 kg)
w/ shoes	1 ft 6 in (450 mm)
w/ boom	12 ft 4 in (3 750 mm)
w/ arm	5 ft 7 in (1 690 mm)
w/ bucket	463 lb (210 kg)
w/ dozer blade	7 ft 7 in (2 320 mm)
w/ counterweight	2,140 lb (970 kg)

NOTE: W/ operator/full fuel/standard equipment.

## DOZER BLADE

Blade width	91.3 in (2 320 mm)
Blade height	17.7 in (450 mm)
Max. lift above ground level	17.3 in (440 mm)
Max. drop below ground	11.0 in (280 mm)

## GROUND PRESSURE

@ Standard operating weight 5.1 psi (0.35 bar)  
w/ 17.7 in (450 mm) triple semi-grouser shoes

## HYDRAULICS

System design	Open center
Main pumps	Two variable displacement/ axial piston
Max. rated flow per pump:	19.5 gpm (74 L/min)
Max. rated flow total:	39.1 gpm (148 L/min)
System pressures:	
Boom, arm and bucket	4,260 psi (294 bar)
Travel circuits	4,260 psi (294 bar)
Swing circuit	3,280 psi (226 bar)
Pilot pump	1 x gear design
Max. capacity	4.8 gpm (18 L/min)
Blade pump	1 x gear design
Max. flow	9.4 gpm (35.4 L/min)
Controls	w/ boom/arm holding valve
Right track travel, bucket, boom and arm acceleration.	Four-spool section
Left track travel, auxiliary, swing, boom acceleration and arm.	Five-spool section
Work mode selections	SP: Speed Priority H: Heavy-Duty A: Automatic
Swing motor	Fixed displacement axial piston
Swing final drive	Planetary gear reduction
Travel motor	Two-speed independent travel/axial piston

### HYDRAULIC CYLINDERS

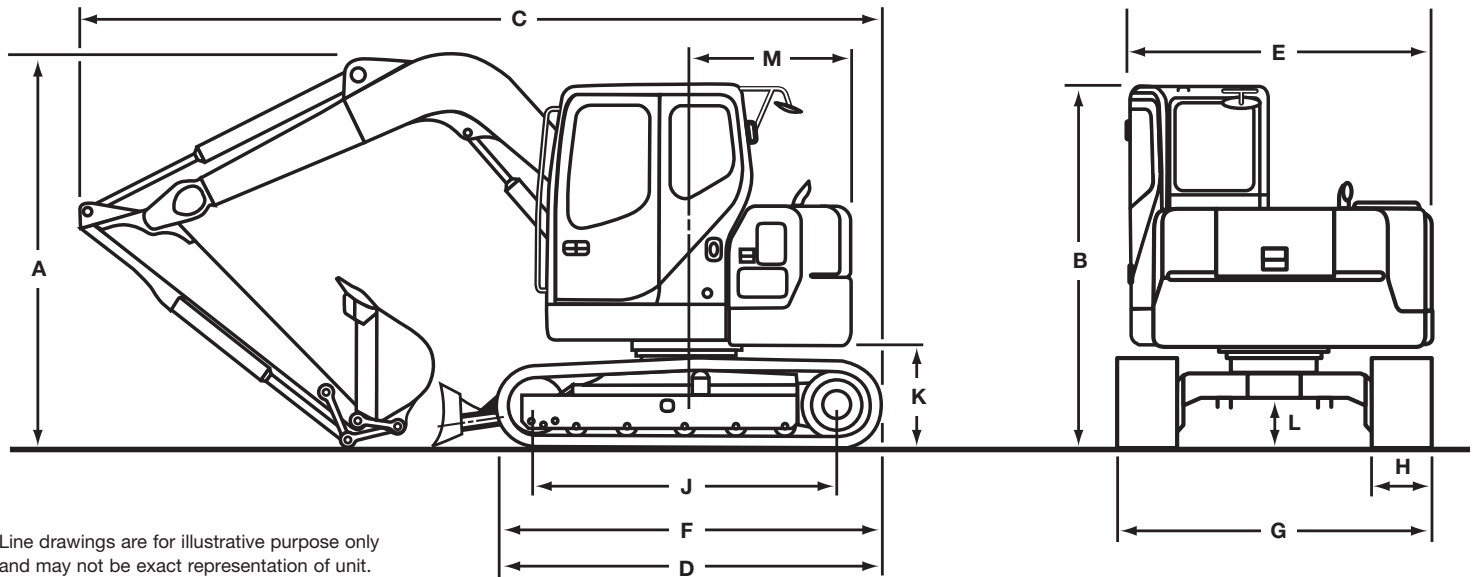
Boom cylinders	One (1)
Cylinder bore	4.5 in (115 mm)
Cylinder rod diameter	3.0 in (75 mm)
Cylinder stroke	33.5 in (850 mm)
Arm cylinder	One (1)
Cylinder bore	3.9 in (100 mm)
Cylinder rod diameter	2.6 in (65 mm)
Cylinder stroke	29.7 in (755 mm)
Bucket cylinder	One (1)
Cylinder bore	3.3 in (85 mm)
Cylinder rod diameter	2.2 in (55 mm)
Cylinder stroke	26.2 in (665 mm)
Blade cylinder	One (1)
Cylinder bore	4.3 in (110 mm)
Cylinder rod diameter	2.8 in (70 mm)
Cylinder stroke	7.1 in (180 mm)

### SERVICE CAPACITIES

Fuel tank	31.7 gal (120 L)
Hydraulic system	25.4 gal (96.3 L)
Hydraulic tank	13.5 gal (51 L)
Engine oil w/ filter	3 gal (11.5 L)
Final drive	0.3 gal (1.1 L)
Cooling system	3.2 gal (12.2 L)

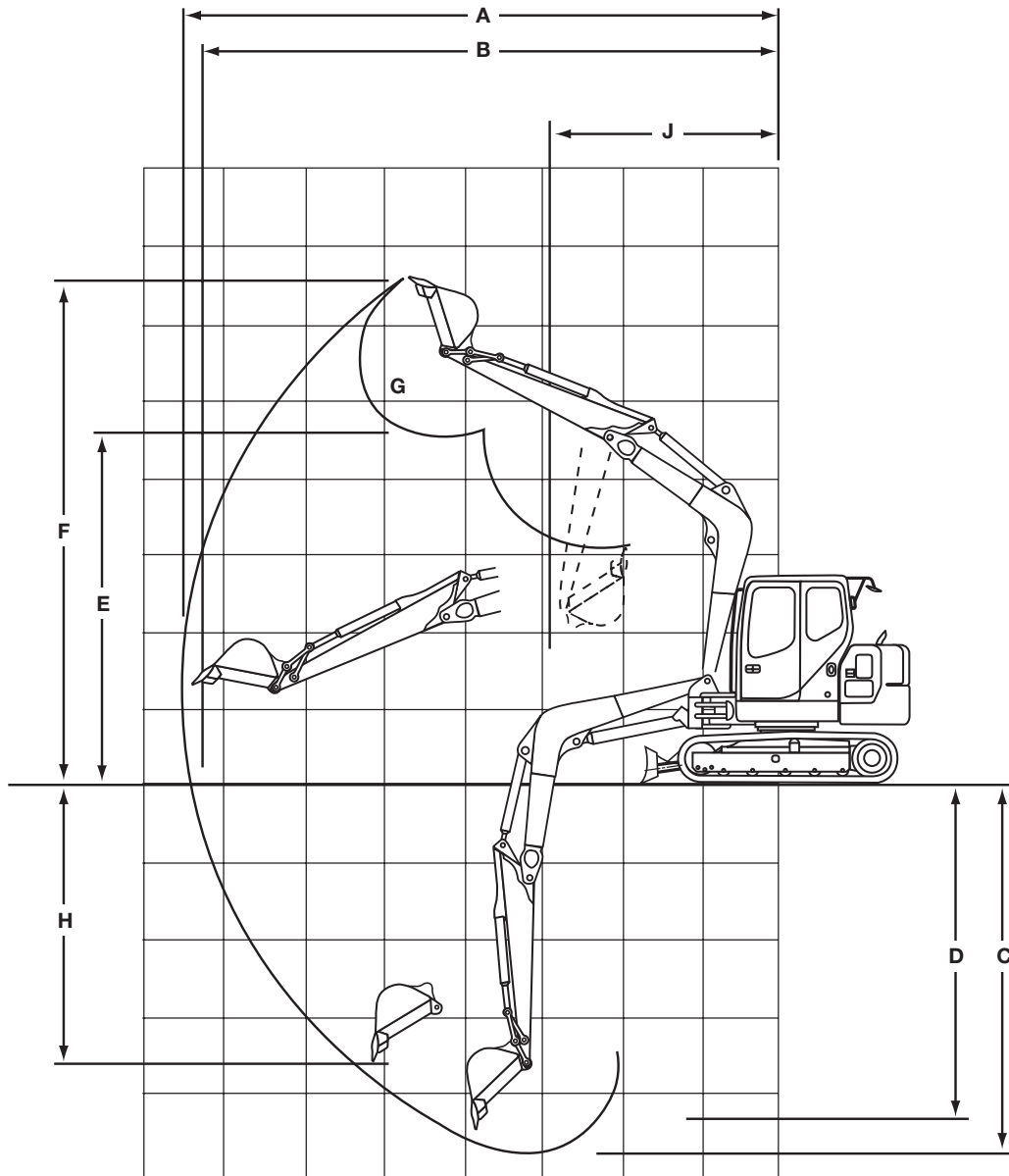
### OTHER SPECIFICATIONS

Swing speed	0 – 10.4 RPM
Swing torque	12,500 lb-ft (17 000 N-m)
Swing brake	Mechanical disc
Undercarriage:	
Length	9 ft 4 in (2 845 mm)
Track gauge	6 ft 2 in (1 870 mm)
Carrier rollers – each side	1
Track rollers – each side	5
Shoes – triple grouser – each side	39
Shoe width – std.	1 ft 6 in (450 mm)
Link pitch	6.1 in (154 mm)
Track:	
Chain	Grease lubricated/strutted
Guides	Single
Adjustment	Hydraulic



### DIMENSIONS

	5 ft 7 in (1.69 m) Arm	7 ft 2 in (2.19 m) Arm
A. Overall height with attachment	9 ft 1 in (2 760 mm)	9 ft 5 in (2 860 mm)
B. Cab height	9 ft 1 in (2 760 mm)	9 ft 1 in (2 760 mm)
C. Overall length with attachment	18 ft 11 in (5 755 mm)	20 ft 10 in (6 340 mm)
D. Overall length without attachment	11 ft 2 in (3 410 mm)	11 ft 2 in (3 410 mm)
E. Width of upper structure	7 ft 5 in (2 270 mm)	7 ft 5 in (2 270 mm)
F. Track overall length	9 ft 4 in (2 845 mm)	9 ft 4 in (2 845 mm)
G. Track overall width with 17.7 in (450 mm) shoes	7 ft 7 in (2 320 mm)	7 ft 7 in (2 320 mm)
H. Track shoe width	1 ft 6 in (450 mm)	1 ft 6 in (450 mm)
Track gauge	6 ft 2 in (1 870 mm)	6 ft 2 in (1 870 mm)
J. Center to center – idler to sprocket	7 ft 3 in (2 210 mm)	7 ft 3 in (2 210 mm)
K. Upper structure ground clearance	2 ft 6 in (750 mm)	2 ft 6 in (750 mm)
L. Minimum ground clearance	1 ft 2 in (360 mm)	1 ft 2 in (360 mm)
M. Rear tail swing radius	4 ft 3 in (1 290 mm)	4 ft 3 in (1 290 mm)
Dozer blade width	7 ft 7 in (2 320 mm)	7 ft 7 in (2 320 mm)
Dozer blade height	1 ft 6 in (450 mm)	1 ft 6 in (450 mm)



### PERFORMANCE SPECS

	5 ft 7 in (1.69 m) Arm	7 ft 2 in (2.19 m) Arm
A. Maximum dig radius	21 ft 0 in (6 410 mm)	22 ft 7 in (6 890 mm)
B. Dig radius at groundline	20 ft 7 in (6 270 mm)	22 ft 2 in (6 760 mm)
C. Maximum dig depth	13 ft 7 in (4 130 mm)	15 ft 2 in (4 630 mm)
D. Dig depth – 8 ft 0 in (2.44 m) level bottom	12 ft 6 in (3 800 mm)	14 ft 4 in (4 360 mm)
E. Dump height	17 ft 4 in (5 280 mm)	18 ft 7 in (5 670 mm)
F. Maximum reach height – maximum dig height	24 ft 2 in (7 370 mm)	25 ft 6 in (7 770 mm)
G. Bucket rotation	177°	177°
H. Maximum vertical wall dig depth	11 ft 11 in (3 640 mm)	13 ft 9 in (4 200 mm)
J. Minimum swing radius	4 ft 3 in (1 290 mm)	4 ft 3 in (1 290 mm)
Arm digging force	8,880 lb (39.5 kN)	7,600 lb (33.8 kN)
Bucket digging force*	12,800 lb (56.9 kN)	12,800 lb (56.9 kN)
Dozer blade cutting edge:		
Maximum height	1 ft 5 in (440 mm)	1 ft 5 in (440 mm)
Maximum depth	11 in (280 mm)	11 in (280 mm)

NOTE: \*Digging force ratings based on ISO6015.

**LIFT CAPACITIES**

**5 ft 7 in (1.69 m) Arm** Lift capacities using a 450 lb (204 kg) bucket, 2,138 lb (970 kg) counterweight with dozer blade on ground.

Load (Lift Point Height)	5 ft (1.5 m)		10 ft (3 m)		15 ft (4.5 m)		20 ft (6 m)		MAXIMUM REACH		
	END	SIDE	END	SIDE	END	SIDE	END	SIDE	@	END	SIDE
+20 ft (6 m)			3,750 lb (1 701 kg)	3,750 lb (1 701 kg)					12 ft 4 in (3.76 m)	2,700 lb (1 225 kg)	2,700 lb (1 225 kg)
+15 ft (4.5 m)			4,050 lb (1 837 kg)	4,050 lb (1 837 kg)	3,650 lb (1 656 kg)	3,450 lb (1 565 kg)			17 ft 4 in (5.28 m)	2,300 lb (1 043 kg)	2,300 lb (1 043 kg)
+10 ft (3 m)	8,300 lb (3 765 kg)	8,300 lb (3 765 kg)	5,500 lb (2 495 kg)	5,500 lb (2 495 kg)	4,150 lb (1 882 kg)	3,300 lb (1 497 kg)			19 ft 7 in (5.97 m)	2,250 lb (1 021 kg)	2,050 lb (930 kg)
+5 ft (1.5 m)			7,350 lb (3 334 kg)	5,950 lb (2 699 kg)	4,850 lb (2 200 kg)	3,100 lb (1 406 kg)	2,950 lb (1 338 kg)	1,900 lb (862 kg)	20 ft 2 in (6.15 m)	2,400 lb (1 089 kg)	1,900 lb (862 kg)
Groundline			8,000 lb (3 629 kg)	5,550 lb (2 517 kg)	5,050 lb (2 291 kg)	2,950 lb (1 338 kg)			19 ft 5 in (5.92 m)	2,750 lb (1 247 kg)	1,950 lb (885 kg)
-5 ft (-1.5 m)	8,250 lb (3 742 kg)	8,250 lb (3 742 kg)	7,450 lb (3 379 kg)	5,450 lb (2 472 kg)	4,700 lb (2 132 kg)	2,900 lb (1 315 kg)			17 ft 1 in (5.21 m)	3,600 lb (1 633 kg)	2,400 lb (1 089 kg)
-10 ft (-3 m)	8,600 lb (3 901 kg)	8,600 lb (3 901 kg)	5,150 lb (2 336 kg)	5,150 lb (2 336 kg)					12 ft 9 in (3.89 m)	3,400 lb (1 542 kg)	3,400 lb (1 542 kg)

**7 ft 2 in (2.19 m) Arm** Lift capacities using a 400 lb (181 kg) bucket, 2,138 lb (970 kg) counterweight with dozer blade on ground.

Load (Lift Point Height)	0 ft (0 m)		5 ft (1.5 m)		10 ft (3 m)		15 ft (4.5 m)		20 ft (6 m)		MAXIMUM REACH		
	END	SIDE	END	SIDE	END	SIDE	END	SIDE	END	SIDE	@	END	SIDE
+20 ft (6 m)					2,350 lb (1 066 kg)	2,350 lb (1 066 kg)					15 ft 0 in (4.57 m)	2,300 lb (1 043 kg)	2,300 lb (1 043 kg)
+15 ft (4.5 m)							3,500 lb (1 588 kg)	3,450 lb (1 565 kg)			19 ft 2 in (5.84 m)	2,000 lb (907 kg)	2,000 lb (907 kg)
+10 ft (3 m)					4,400 lb (1 996 kg)	4,400 lb (1 996 kg)	3,800 lb (1 724 kg)	3,400 lb (1 542 kg)	3,200 lb (1 451 kg)	2,050 lb (930 kg)	21 ft 3 in (6.48 m)	1,950 lb (885 kg)	1,800 lb (816 kg)
+5 ft (1.5 m)					6,750 lb (3 062 kg)	6,150 lb (2 790 kg)	4,600 lb (2 087 kg)	3,200 lb (1 451 kg)	3,550 lb (1 610 kg)	1,950 lb (885 kg)	21 ft 9 in (6.63 m)	2,050 lb (930 kg)	1,700 lb (771 kg)
Groundline			4,150 lb (1 882 kg)	4,150 lb (1 882 kg)	7,950 lb (3 606 kg)	5,600 lb (2 540 kg)	5,050 lb (2 291 kg)	3,000 lb (1 361 kg)	3,600 lb (1 633 kg)	1,900 lb (862 kg)	21 ft 0 in (6.40 m)	2,350 lb (1 066 kg)	1,750 lb (794 kg)
-5 ft (-1.5 m)	4,750 lb (2 155 kg)	4,750 lb (2 155 kg)	7,100 lb (3 221 kg)	7,100 lb (3 221 kg)	7,750 lb (3 515 kg)	5,450 lb (2 472 kg)	4,950 lb (2 245 kg)	2,900 lb (1 315 kg)			18 ft 11 in (5.77 m)	2,950 lb (1 338 kg)	2,050 lb (930 kg)
-10 ft (-3 m)			10,950 lb (4 967 kg)	10,950 lb (4 967 kg)	6,150 lb (2 790 kg)	5,500 lb (2 495 kg)	3,400 lb (1 542 kg)	2,900 lb (1 315 kg)			15 ft 0 in (4.57 m)	3,400 lb (1 542 kg)	2,900 lb (1 315 kg)

**LIFT CAPACITIES**

**5 ft 7 in (1.69 m) Arm** Lift capacities using a 450 lb (204 kg) bucket, 2,138 lb (970 kg) counterweight operating with dozer blade off ground.

Load (Lift Point Height)	5 ft (1.5 m)		10 ft (3 m)		15 ft (4.5 m)		20 ft (6 m)		MAXIMUM REACH		
	END	SIDE	END	SIDE	END	SIDE	END	SIDE	@	END	SIDE
+20 ft (6 m)			3,750 lb (1 701 kg)	3,750 lb (1 701 kg)					12 ft 4 in (3.76 m)	2,700 lb (1 225 kg)	2,700 lb (1 225 kg)
+15 ft (4.5 m)			4,050 lb (1 837 kg)	4,050 lb (1 837 kg)	3,600 lb (1 633 kg)	3,300 lb (1 497 kg)			17 ft 4 in (5.28 m)	2,300 lb (1 043 kg)	2,300 lb (1 043 kg)
+10 ft (3 m)	8,300 lb (3 765 kg)	8,300 lb (3 765 kg)	5,500 lb (2 495 kg)	5,500 lb (2 495 kg)	3,500 lb (1 588 kg)	3,150 lb (1 429 kg)			19 ft 7 in (5.97 m)	2,150 lb (975 kg)	1,950 lb (885 kg)
+5 ft (1.5 m)			6,400 lb (2 903 kg)	5,700 lb (2 585 kg)	3,250 lb (1 474 kg)	2,950 lb (1 338 kg)	2,000 lb (907 kg)	1,850 lb (839 kg)	20 ft 2 in (6.15 m)	1,950 lb (885 kg)	1,800 lb (816 kg)
Groundline			5,950 lb (2 699 kg)	5,250 lb (2 381 kg)	3,100 lb (1 406 kg)	2,800 lb (1 270 kg)			19 ft 5 in (5.92 m)	2,050 lb (930 kg)	1,850 lb (839 kg)
-5 ft (-1.5 m)	8,250 lb (3 742 kg)	8,250 lb (3 742 kg)	5,850 lb (2 654 kg)	5,200 lb (2 359 kg)	3,050 lb (1 383 kg)	2,750 lb (1 247 kg)			17 ft 1 in (5.21 m)	2,500 lb (1 134 kg)	2,300 lb (1 043 kg)
-10 ft (-3 m)	8,600 lb (3 901 kg)	8,600 lb (3 901 kg)	5,150 lb (2 336 kg)	5,150 lb (2 336 kg)					12 ft 9 in (3.89 m)	3,400 lb (1 542 kg)	3,400 lb (1 542 kg)

**7 ft 2 in (2.19 m) Arm** Lift capacities using a 400 lb (181 kg) bucket, 2,138 lb (970 kg) counterweight operating with dozer blade off ground.

Load (Lift Point Height)	0 ft (0 m)		5 ft (1.5 m)		10 ft (3 m)		15 ft (4.5 m)		20 ft (6 m)		MAXIMUM REACH		
	END	SIDE	END	SIDE	END	SIDE	END	SIDE	END	SIDE	@	END	SIDE
+20 ft (6 m)					2,350 lb (1 066 kg)	2,350 lb (1 066 kg)					15 ft 0 in (4.57 m)	2,300 lb (1 043 kg)	2,300 lb (1 043 kg)
+15 ft (4.5 m)							3,500 lb (1 588 kg)	3,350 lb (1 520 kg)			19 ft 2 in (5.84 m)	2,000 lb (907 kg)	2,000 lb (907 kg)
+10 ft (3 m)					4,400 lb (1 996 kg)	4,400 lb (1 996 kg)	3,550 lb (1 610 kg)	3,250 lb (1 474 kg)	2,150 lb (975 kg)	1,950 lb (885 kg)	21 ft 3 in (6.48 m)	1,900 lb (862 kg)	1,750 lb (794 kg)
+5 ft (1.5 m)					6,500 lb (2 948 kg)	5,850 lb (2 654 kg)	3,350 lb (1 520 kg)	3,050 lb (1 383 kg)	2,050 lb (930 kg)	1,850 lb (839 kg)	21 ft 9 in (6.63 m)	1,750 lb (794 kg)	1,600 lb (726 kg)
Groundline			4,150 lb (1 882 kg)	4,150 lb (1 882 kg)	6,000 lb (2 722 kg)	5,350 lb (2 427 kg)	3,150 lb (1 429 kg)	2,850 lb (1 293 kg)	1,950 lb (885 kg)	1,800 lb (816 kg)	21 ft 0 in (6.40 m)	1,800 lb (816 kg)	1,650 lb (748 kg)
-5 ft (-1.5 m)	4,750 lb (2 155 kg)	4,750 lb (2 155 kg)	7,100 lb (3 221 kg)	7,100 lb (3 221 kg)	5,850 lb (2 654 kg)	5,150 lb (2 336 kg)	3,050 lb (1 383 kg)	2,750 lb (1 247 kg)			18 ft 11 in (5.77 m)	2,150 lb (975 kg)	1,950 lb (885 kg)
-10 ft (-3 m)			10,950 lb (4 967 kg)	10,950 lb (4 967 kg)	5,900 lb (2 676 kg)	5,250 lb (2 381 kg)	3,100 lb (1 406 kg)	2,800 lb (1 270 kg)			15 ft 0 in (4.57 m)	3,100 lb (1 406 kg)	2,800 lb (1 270 kg)

## STANDARD EQUIPMENT

### ENGINE

Isuzu four-cylinder turbo-charged diesel  
Tier 4 Final Certified  
Electronic fuel injection  
Neutral safety start  
Auto-engine warm up  
Glow-plug pre-heat  
One-touch idle  
Dual-stage fuel filtration  
Dual element air filter  
Remote oil filter  
Green plug oil drain  
500-hour engine oil change interval  
24 Volt system  
Color LCD monitor  
Auto idle shutdown system

### HYDRAULICS

ISO pattern controls  
5,000-hour hydraulic oil change interval  
1,000-hour hydraulic filter change interval  
Mechanical disc brakes  
Three (3) work mode settings

## OPTIONAL EQUIPMENT

### HYDRAULICS

Standard boom:  
Multi-function auxiliary hydraulics:  
Single acting  
Double acting  
Offset boom:  
Double acting hydraulics only

### UPPER STRUCTURE

Right and left side mirrors  
Viscous mounted cab – fluid  
Common key vandal locks  
Upper mounted work light – 70 watt  
Cab mounted work light – 70 watt  
Swivel guard belly pan

### ATTACHMENTS

Standard boom and arm:  
Boom – 12 ft 4 in (3.75 m)  
Arm – 5 ft 7 in (1.71 m)  
Offset boom and arm:  
Boom – 12 ft 9 in (3.89 m)  
Arm – 5 ft 9 in (1.75 m)  
Boom mounted work light – 70 watt  
Attachment cushion valve

### OPERATOR ENVIRONMENT

See page 1

### UNDERCARRIAGE

1 ft 6 in (450 mm) steel shoes, triple semi-grouser  
Full overlap turntable bearing tub  
Front track chain guides  
Hydraulic track adjustment  
X-pattern carbody

### FRONT DOZER BLADE

Hydraulically controlled front blade:  
7 ft 7 in (2.32 m) width  
1 ft 6 in (450 mm) height

### ATTACHMENTS

Arm for standard boom – 7 ft 2 in (2.19 m)  
Coupler/Case multi-pin grabber  
Heavy-duty bucket

### UNDERCARRIAGE

23.6 in (600 mm) steel shoes,  
triple semi-grouser\*  
1 ft 6 in (450 mm) rubber pads bolted to  
standard rail

\*Note: Blade will not fully cover 23.6" shoe

### OPERATOR ENVIRONMENT

Control pattern selector  
FOPS cab top guard – Level 2  
Front grill guard – 2 x 2 screen mesh  
Front rock guard:  
Vertical bars – fixed/one piece/OPG 2

