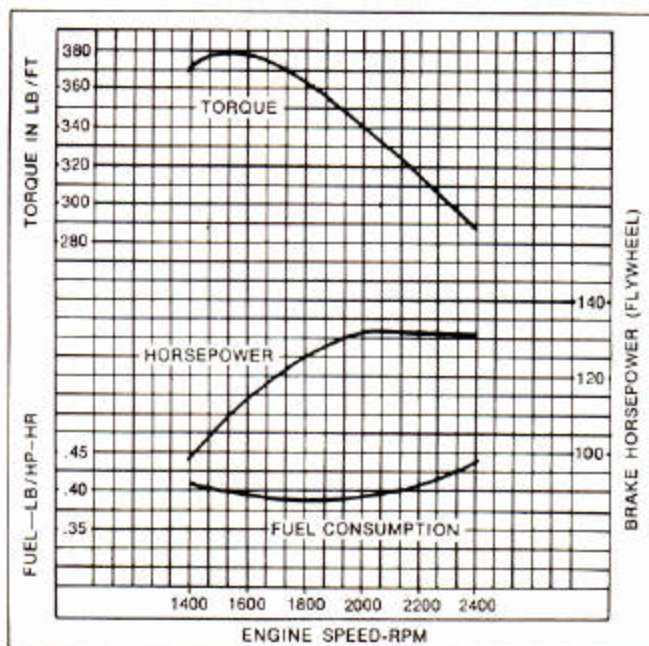




# JD690-B EXCAVATOR



## ENGINE PERFORMANCE



## FEATURES

- 131 SAE net hp (97.7 kW) turbocharged John Deere diesel
- 21-ft. (6.40 m) digging depth
- 30-ft. (9.14 m) reach at ground level
- Two lever, all-hydraulic control of boom, crowd, bucket, and 360-degree continuous swing
- Simultaneous operation of digging functions and propel
- Track-type tractor undercarriage with metal-faced seals for rollers and idlers
- Two-speed propel
- Standard and wide-gauge models
- Hydraulic track adjustment
- Hydrostatic drive with independent propel motors for counterrotation
- Planetary gear reduction with multiple wet-disk brakes
- Vandal protection

# JD690-B EXCAVATOR SPECIFICATIONS



(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with PCSA and SAE Standards. Except where otherwise noted, these specifications are based on a unit equipped with 36-in. (914mm) bucket and standard equipment.)

<b>Power (at 2400 engine rpm):</b>	<b>SAE</b>	<b>DIN</b>
Gross .....	141 hp (105.1 kW)	
Net .....	131 hp (97.7 kW)	133 PS

Net engine flywheel power is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. The gross engine power is without fan. Power ratings are under SAE standard conditions of 500-ft. altitude and 85°F. temperature, and DIN 5270 conditions (non-corrected). No derating is required up to 10,000 ft. (3000 m) altitude.

**Engine:** John Deere turbocharged diesel, vertical 6-cylinder, valve-in-head, 4 stroke cycle.

Bore and stroke .....	4.25 × 4.75 in. (108 × 121 mm)
Piston displacement .....	404 cu. in. (6.621 L)
Compression ratio .....	15.5 to 1
Maximum torque @ 1500 rpm .....	376 lb-ft (510 Nm) (52 kg-m)
NACC or AMA (U.S. Tax) horsepower .....	43.3
Lubrication .....	Pressure system w/full-flow filter
Cooling .....	Pressurized w/thermostat and fixed bypass
Fan .....	Suction
Air cleaner w/restriction indicator .....	Dry
Electrical system .....	12-volt w/alternator
Batteries (2) 6-volt .....	Reserve capacity: 420 minutes

## Hydraulic System:

Two open-center pumps mounted in tandem are coupled directly to the flywheel. Total flow is 84 gpm (5.30 L/s) at rated engine rpm. System operating pressure is 2500 psi (17 238 kPa) (175.7 kg/cm<sup>2</sup>).

**Relief valves:**

Boom (2) .....	3000 psi (20 685 kPa) (210.9 kg/cm <sup>2</sup> )
	3750 psi (25 856 kPa) (263.6 kg/cm <sup>2</sup> )
Crowd (2) .....	3000 psi (20 685 kPa) (210.9 kg/cm <sup>2</sup> )
Bucket (2) .....	3000 psi (20 685 kPa) (210.9 kg/cm <sup>2</sup> )
Oil filtration .....	Two 10-micron filters in return lines

<b>Cylinders:</b>	<b>Bore</b>	<b>Rod Diameter</b>
Boom (2) .....	5 in. (127 mm)	2.75 in. (70 mm)
Crowd and bucket .....	5.5 in. (140 mm)	3.25 in. (83 mm)

All cylinders have phenolic wear rings. Boom and crowd cylinders have a built-in hydraulic cushion at each end of the stroke. Bucket cylinder has hydraulic cushion at rod end. Full-frontal hydraulic oil cooler is in front of engine coolant radiator.

## Operating Information:

Swing speed .....	7 rpm
Digging depth .....	21 ft. (6.40 m)
Reach at ground level from center of rotation .....	30 ft. (9.14 m)
Dumping height .....	15 ft. (4.57 m)
<b>Bucket tangential digging force:</b>	
24, 30, or 36 in. (610, 762 or 914 mm) bucket .....	25,780 lb. (115.55 kN) (11 694 kg)
48 in. (1.22 m) bucket .....	30,945 lb. (138.70 kN) (14 037 kg)
60 in. (1.52 m) bucket .....	33,981 lb. (152.31 kN) (15 414 kg)
<b>24 or 29 in. (610 or 737 mm) rock bucket .....</b>	<b>26,695 lb. (119.65 kN) (12 109 kg)</b>
35 in. (889 mm) rock bucket .....	29,210 lb. (130.93 kN) (13 250 kg)
<b>Arm digging force:</b>	
24, 30, or 36 in. (610, 762 or 914 mm) bucket .....	13,290 lb. (59.57 kN) (6028 kg)
48 in. (1.22 m) bucket .....	14,065 lb. (63.04 kN) (6380 kg)
60 in. (1.52 m) bucket .....	14,465 lb. (64.84 kN) (6561 kg)
24 or 29 in. (610 or 737 mm) rock bucket .....	13,475 lb. (60.40 kN) (6112 kg)
35 in. (889 mm) rock bucket .....	13,880 lb. (62.21 kN) (6269 kg)
Gradability .....	70 percent
Travel (2 speed) .....	0 to 0.9 mph (1.45 km/h) 0 to 1.7 mph (2.74 km/h)

## Swing Mechanism:

Swing .....	360-degree, continuous
Turntable bearing .....	Single row, ball, internal drive
Lubricated case-hardened ring and pinion gears.	

## Undercarriage:

Propel motors (one for each track) ..... High-torque 2-speed hydraulic motors with planetary drives. Wet multiple-disk brakes automatically release while propelling, and apply when stationary. Independent drive to each track permits counter-rotation.

**Undercarriage, car body, and track frame** ..... Each track frame is a formed, reinforced U-channel. Track frames are joined by reinforced boxed car body with swing bearing mount.

## Track Rollers and Idlers:

9 rollers and 1 idler per track. All rollers and idlers have metal-faced seals. Idlers have heavy-duty spring recoil mechanisms. Through-hardened steel slides support and guide upper track.

<b>Track Shoes:</b>	<b>Ground Contact</b>	<b>Ground Pressure</b>
<b>Width</b>	<b>Shoes</b>	
24 in. (609 mm) Triple semigrousers	6136 sq. in. (39 577 cm <sup>2</sup> )	6.5 psi (44.8 kPa) (0.46 kg/cm <sup>2</sup> )
30 in. (762 mm) Triple (optional) semigrousers	7670 sq. in. (49 472 cm <sup>2</sup> )	5.2 psi (35.8 kPa) (0.37 kg/cm <sup>2</sup> )
Track adjustment .....		Hydraulic

## Cab:

Steel, with urethane sound-proofing on ceiling and cushioned neoprene floor mat. Safety glass on all sides and top. Front and rear windows open. Front window is removable.

## Seat:

Fully-adjustable, foam-rubber cushioned seat.

## Controls:

Two-lever for boom, crowd, bucket, and swing. Right and left pedals control forward and rearward movement of right and left tracks respectively.

## Boom and Dipperstick:

Tapered box construction with heat-treated steel bushings. Machined and bored after welding for accurate alignment.

## Servicing and Vandal Protection:

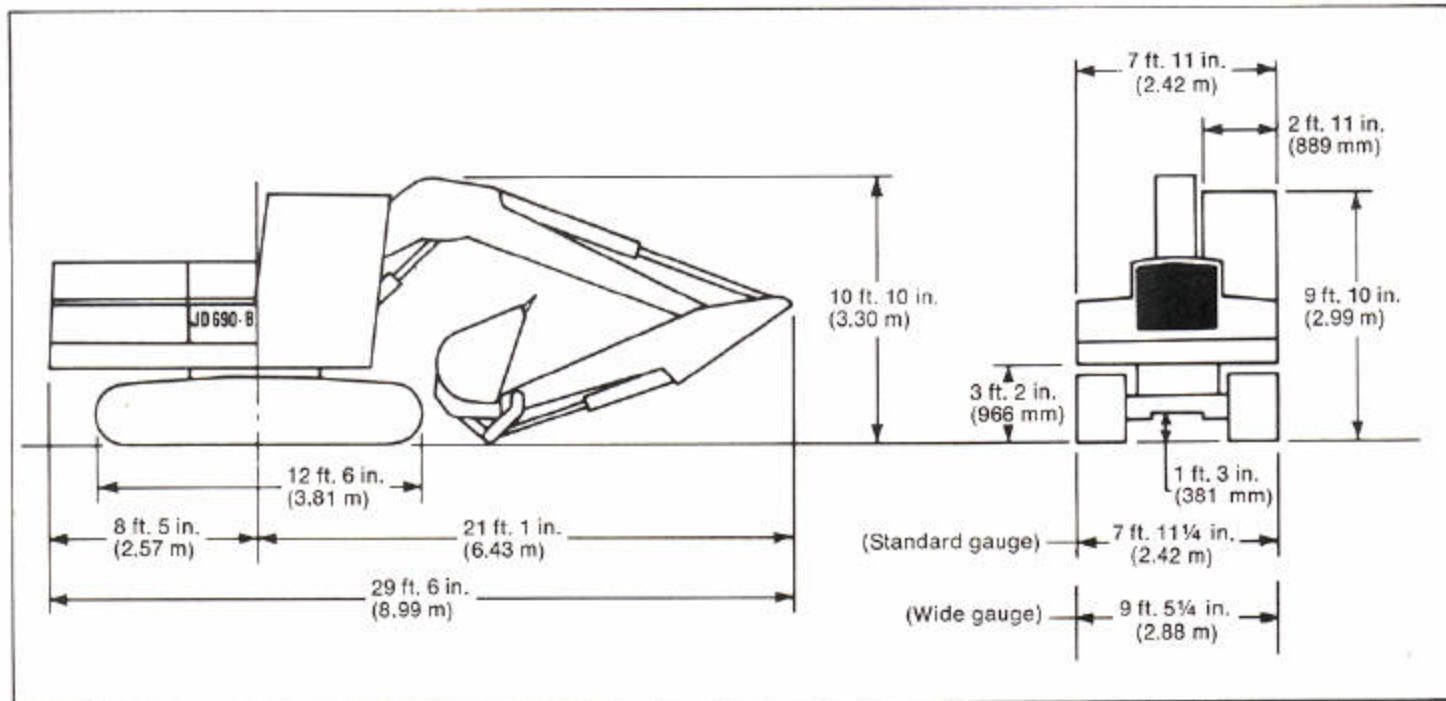
Swingaway service doors expose built-in platforms for easy access to engine and hydraulic systems. Crank-operated bolts secure service doors. Cab and access covers to fuel tank, radiator, and air filters lock with switch key.

<b>Capacities:</b>	<b>U.S.</b>	<b>Imp.</b>	<b>Liters</b>
Fuel tank .....	60 gal.	50.0 gal.	227.1
Cooling system .....	11.25 gal.	9.4 gal.	42.6
Engine lubrication .....	18 qt.	15.0 qt.	17.0
Engine lubrication, including filter .....	20 qt.	16.7 qt.	18.9
Hydraulic system .....	80 gal.	66.7 gal.	302.8
Planetary propel drive .....	10 qt.	8.3 qt.	9.4
Swing drive .....	8 qt.	6.7 qt.	7.5

## Additional Standard Equipment:

- Electric hourmeter
- Alternator charge indicator light
- Hydraulic oil filter pressure warning light
- Engine coolant temp. gauge
- Fuel gauge
- Hydraulic oil temp. gauge
- Engine oil pressure gauge
- Key switch
- Ether starting aid
- Horn
- Deluxe seat
- Positive-position hand throttle
- Counterweight, center, 290 lb. (131 kg)
- Counterweight 4330 lb. (1964 kg)
- Cab heater

# JD690-B EXCAVATOR SPECIFICATIONS



**Buckets:** High-strength steel, ribbed and plated bottom section

Nominal	Bite Width	SAE	Capacity	Struck	Weight
24 in. (610 mm)	25.4 in. (645 mm)	$\frac{9}{16}$ cu. yd. (0.43 m <sup>3</sup> )	$\frac{1}{2}$ cu. yd. (0.38 m <sup>3</sup> )	1000 lb. (454 kg)	
30 in. (762 mm)	31.4 in. (798 mm)	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	1100 lb. (500 kg)	
36 in. (914 mm)	37.4 in. (950 mm)	$\frac{7}{8}$ cu. yd. (0.67 m <sup>3</sup> )	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	1200 lb. (544 kg)	
48 in. (1.22 m)	49.4 in. (1.25 m)	1 cu. yd. (0.76 m <sup>3</sup> )	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	1200 lb. (544 kg)	
60 in. (1.52 m)	60.0 in. (1.52 m)	$1\frac{1}{8}$ cu. yd. (1.05 m <sup>3</sup> )	$\frac{7}{8}$ cu. yd. (0.67 m <sup>3</sup> )	1200 lb. (544 kg)	
24 in. (610 mm) rock	26.0 in. (660 mm)	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	$\frac{1}{2}$ cu. yd. (0.38 m <sup>3</sup> )	1380 lb. (626 kg)	
29 in. (737 mm) rock	31.0 in. (787 mm)	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	1500 lb. (680 kg)	
35 in. (889 mm) rock	37.0 in. (940 mm)	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	1525 lb. (692 kg)	

**ADCO™ Buckets:** Specially designed for rock, frost, and other tough digging conditions

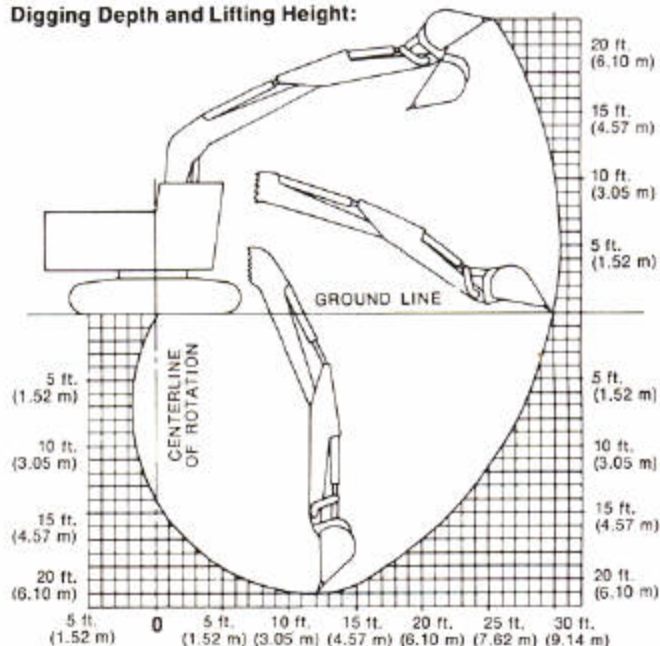
Nominal Width	Struck Capacity	Weight
26 in. (660 mm)	$\frac{9}{16}$ cu. yd. (0.43 m <sup>3</sup> )	1098 lb. (498 kg)
28 in. (711 mm)	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	1285 lb. (583 kg)
36 in. (914 mm)	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	1343 lb. (609 kg)
26 in. (660 mm)	$\frac{9}{16}$ cu. yd. (0.43 m <sup>3</sup> )	1256 lb. (570 kg)
28 in. (711 mm)	$\frac{5}{8}$ cu. yd. (0.48 m <sup>3</sup> )	1316 lb. (597 kg)
36 in. (914 mm)	$\frac{3}{4}$ cu. yd. (0.57 m <sup>3</sup> )	1596 lb. (724 kg)

Weights:	lb.	kg.
Operating weight, excavator less bucket:		
Standard gauge	38,300	17 373
Wide gauge	38,700	17 554
Upper structure (without boom and undercarriage)	12,470	5656
Undercarriage: 24 in. (609 mm) shoes	15,850	7190
30 in. (762 mm) shoes	16,030	7271
Boom less cylinder	2,500	1134
Dipperstick less cylinder, 108.14 in. (2.75 m)	1,440	653
Boom cylinder (2)	510	231
Dipperstick cylinder	470	213
Bucket cylinder plus linkage	650	295
Counterweight	4,330	1964
Counterweight, optional	2,000	907

### Special Equipment:

- Side cutter attachments for rock bucket
- 500 lb. (227 kg) ripper tooth
- 2000 lb. (907 kg) counterweight
- 30 in. (762 mm) triple semigrouser shoes
- Track guides
- Window protection kit
- Air conditioner
- Double flanged rollers

### Digging Depth and Lifting Height:



## JD690-B EXCAVATOR

**Lifting Capacity Ratings at bucket lift hook, machine situated on firm, level, uniform supporting surface. Total load includes weight of cables, hooks, etc. Bold face type indicates hydraulic-limited capacities. Light face type indicates stability-limited capacities. Add 15 percent to stability-limited capacities when optional 2000 lb. counterweight is used.**

**BOOM: Fore-and-Aft; figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.**

Horizontal distance from centerline of rotation:	10 ft. (3.05 m)	15 ft. (4.57 m)	20 ft. (6.10 m)	25 ft. (7.62 m)	30 ft. (9.14 m)
15 ft. (4.57 m)				<b>4,260 lb. (1934 kg)</b>	
10 ft. (3.05 m)			<b>5,360 lb. (2433 kg)</b>	<b>4,710 lb. (2138 kg)</b>	
5 ft. (1.52 m)		<b>9,230 lb. (4190 kg)</b>	<b>6,390 lb. (2901 kg)</b>	<b>5,250 lb. (2384 kg)</b>	<b>4,210 lb. (1911 kg)</b>
Ground level	<b>13,910 lb. (6315 kg)</b>	<b>10,630 lb. (4826 kg)</b>	<b>7,260 lb. (3296 kg)</b>	<b>5,680 lb. (2579 kg)</b>	
-5 ft. (-1.52 m)	<b>17,560 lb. (7972 kg)</b>	<b>10,970 lb. (4980 kg)</b>	<b>7,700 lb. (3496 kg)</b>	<b>5,810 lb. (2638 kg)</b>	
-10 ft. (-3.05 m)	<b>16,140 lb. (7328 kg)</b>	<b>10,380 lb. (4713 kg)</b>	<b>7,360 lb. (3341 kg)</b>		
-15 ft. (-4.57 m)	<b>12,340 lb. (5602 kg)</b>	<b>7,820 lb. (3550 kg)</b>			

**CROWD: Fore-and-Aft; figures w/boom holding do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.**

Horizontal distance from centerline of rotation:	10 ft. (3.05 m)	15 ft. (4.57 m)	20 ft. (6.10 m)	25 ft. (7.62 m)	30 ft. (9.14 m)
15 ft. (4.57 m)				<b>6,460 lb. (2933 kg)</b>	
10 ft. (3.05 m)			<b>9,440 lb. (4286 kg)</b>	<b>7,070 lb. (3210 kg)</b>	
5 ft. (1.52 m)		<b>14,830 lb. (6734 kg)</b>	<b>9,550 lb. (4336 kg)</b>	<b>6,770 lb. (3047 kg)</b>	<b>3,320 lb. (1507 kg)</b>
Ground level	<b>11,320 lb. (5139 kg)</b>	<b>14,350 lb. (6516 kg)</b>	<b>9,230 lb. (4191 kg)</b>	<b>6,590 lb. (2992 kg)</b>	
-5 ft. (-1.52 m)	<b>17,160 lb. (7791 kg)</b>	<b>14,270 lb. (6480 kg)</b>	<b>9,110 lb. (4137 kg)</b>	<b>6,530 lb. (2965 kg)</b>	
-10 ft. (-3.05 m)	<b>25,300 lb. (11 940 kg)</b>	<b>14,460 lb. (6566 kg)</b>	<b>9,210 lb. (4128 kg)</b>		
-15 ft. (-4.57 m)	<b>20,900 lb. (9489 kg)</b>	<b>13,520 lb. (6138 kg)</b>			

**OVER THE SIDE: Standard gauge, house 90 degrees to tracks.**

**Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.**

Horizontal distance from centerline of rotation:	10 ft. (3.05 m)	15 ft. (4.57 m)	20 ft. (6.10 m)	25 ft. (7.62 m)	30 ft. (9.14 m)
15 ft. (4.57 m)				<b>4,260 lb. (1934 kg)</b>	
10 ft. (3.05 m)			<b>5,680 lb. (2579 kg)</b>	<b>4,130 lb. (1873 kg)</b>	
5 ft. (1.52 m)		<b>8,260 lb. (3750 kg)</b>	<b>5,490 lb. (2493 kg)</b>	<b>3,860 lb. (1752 kg)</b>	<b>2,840 lb. (1289 kg)</b>
Ground level	<b>13,910 lb. (6315 kg)</b>	<b>7,850 lb. (3564 kg)</b>	<b>5,190 lb. (2356 kg)</b>	<b>3,700 lb. (1680 kg)</b>	
-5 ft. (-1.52 m)	<b>14,610 lb. (6633 kg)</b>	<b>7,790 lb. (3537 kg)</b>	<b>5,090 lb. (2311 kg)</b>	<b>3,640 lb. (1653 kg)</b>	
-10 ft. (-3.05 m)	<b>15,020 lb. (6819 kg)</b>	<b>7,940 lb. (3605 kg)</b>	<b>5,180 lb. (2352 kg)</b>		
-15 ft. (-4.57 m)	<b>15,760 lb. (7155 kg)</b>	<b>8,380 lb. (3805 kg)</b>			

**OVER THE SIDE: Wide gauge, house 90 degrees to tracks.**

**Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.**

Horizontal distance from centerline of rotation:	10 ft. (3.05 m)	15 ft. (4.57 m)	20 ft. (6.10 m)	25 ft. (7.62 m)	30 ft. (9.14 m)
15 ft. (4.57 m)				<b>5,470 lb. (2483 kg)</b>	
10 ft. (3.05 m)			<b>7,340 lb. (3332 kg)</b>	<b>5,340 lb. (2425 kg)</b>	
5 ft. (1.52 m)		<b>10,830 lb. (4917 kg)</b>	<b>7,130 lb. (3234 kg)</b>	<b>5,060 lb. (2297 kg)</b>	<b>3,780 lb. (1716 kg)</b>
Ground level	<b>13,910 lb. (6315 kg)</b>	<b>10,400 lb. (4722 kg)</b>	<b>6,820 lb. (3096 kg)</b>	<b>4,890 lb. (2220 kg)</b>	
-5 ft. (-1.52 m)	<b>17,560 lb. (7972 kg)</b>	<b>10,330 lb. (4690 kg)</b>	<b>6,720 lb. (3051 kg)</b>	<b>4,830 lb. (2193 kg)</b>	
-10 ft. (-3.05 m)	<b>20,570 lb. (9339 kg)</b>	<b>10,500 lb. (4767 kg)</b>	<b>6,810 lb. (3092 kg)</b>		
-15 ft. (-4.57 m)	<b>20,900 lb. (9489 kg)</b>	<b>10,960 lb. (4976 kg)</b>			