

E X C A V A T O R

590D





The hydraulic system is the brains behind combined-hydraulic-function-capability (C-H-F-C) — its automatic load-sensing system. C-H-F-C lets the 590D propel and raise the boom simultaneously without mistracking.

Turn every jobsite into an Enterprise Zone

There are lots of reasons why the 590D is the most popular machine in the 15- to 16- metric-ton class. Power-to-weight ratio. Reach. Transportability. Balance. Comfort. The list goes on and on.

But the reason most people relate to is that the 590D is a “money-maker.” The numbers pretty much say why: With over 21 feet (6.55 m) of digging depth, over 30 feet (9.19 m) of reach, more than 14,000 pounds (59 kN) of arm force and over 9,800 pounds (4452 kg) of lift, there aren’t many jobs the 590D can’t handle.

Add to this, full-service dealers with parts when and where you need them. Experienced technicians. And a warranty that’s second to none, and you’ll understand why the 590D is a package that’s hard to beat.



Fanggs® Teeth are featured on every bucket. Due to their unique profile, Fanggs teeth dig with 23 percent less effort, you get faster bucket fill and better bucket control.

Boom and arms have internal plates and gussets for additional strength. Two arms are available — 8-ft. 6-in. (2.6-m) and 10-ft. 2-in. (3.1-m). The longer arm gives you more digging depth and reach. The shorter arm gives you more breakout force and control.

Buckets feature heavy-duty reinforced beams, T-1 steel sidecutters, two-piece moldboard, and heavy-duty wear strips.



The "bent" front window gives excellent visibility to the trench. Dual rearview mirrors are standard. For maximum ventilation, push up the upper window, remove the lower window, open the roof vent, and slide open the left- and right- side windows.

The cab is roomy and isolation-mounted to reduce noise and vibration. The comfortable, cloth-covered seat is fully adjustable.



A bigger share of the base weight is in the counterweight, where it does the most good. This helps explain the 590D's superb balance.

Center struts are why the undercarriage is 40 percent stronger. The track chain is sealed for trouble-free performance and long life.



Gauges and controls are to your right. The monitor panel keeps you up-to-date on vital machine functions. Warning lights alert you to insufficient alternator charge, low engine-oil pressure, air filter restriction, high coolant temperature, and low fuel. A buzzer sounds if the coolant temperature gets too high or the engine oil pressure gets too low.



The open-center hydraulic system has cross-sensing regulators that automatically change hydraulic flow as conditions demand. The mode selector changes engine speed and pump flow to adjust performance.



Pilot controllers have been redesigned for precise metering and smooth operation.

Cool under fire

Nothing runs harder, smoother, and longer than a John Deere diesel engine. It's been that way since 1949 when the first engine came off the line, and it's still true today – over 3 million units later.

The 590D's turbocharged, 4-cylinder engine generates 95 horsepower (71 kW) at 2,100 rpm. And the miserly rate at which it consumes fuel – just 2 to 3.5 gallons per hour – will make it real popular with your accountant.

John Deere also tests each engine dynamically throughout its entire speed range and then tunes it to be a perfect match with the machine. That explains its incredibly consistent torque reserve – especially at lower speeds.



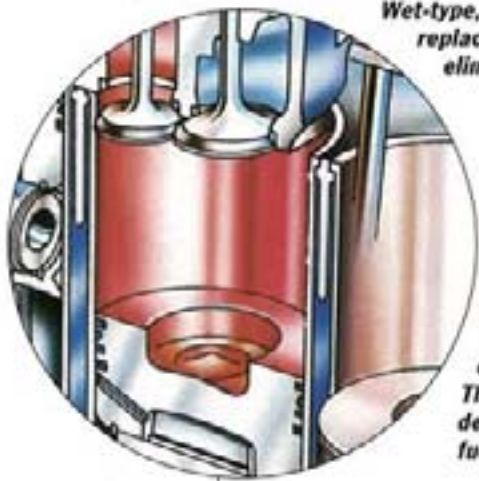
Jet-spray nozzles bathe the bottom sides of pistons with cooled oil for longer life.

Independent regulators on each pump increase or decrease hydraulic flow for faster cycle times when using multiple functions.



Dynamically balanced crankshaft is supported by seven main bearings for smoother operation. Journal surfaces are induction-hardened for longer wear.





Wet-type, individually replaceable cylinder liners eliminate hot spots.

High-ring pistons provide a high compression ratio and efficient combustion. Three low-friction rings deliver good oil control and fuel economy.




Free-breathing cross-flow cylinder head, specially shaped pistons, and contoured valves increase intake and exhaust flows for maximum power output and top fuel efficiency.

The altitude-compensating turbocharger packs in extra air to squeeze more power from every drop of fuel.

One-piece, cast-iron block provides rugged reliability. Integral engine balance shafts provide smooth-running, low-vibration performance.

RE



Large, reinforced doors on both sides give you easy access to pumps, checkpoints, fillers, and other maintenance areas.

Upper and lower seals protect the swing bearing from contaminants. That's why you have to grease the bearing only every 500 hours—instead of every 250 hours as with many other excavators.

Platforms with conveniently placed handrails and skid-resistant footing surfaces make it easier to service components that can't be reached from the ground.

Every day, both our reputations are on the line

A jobsite is the loneliest place in the world when your machine goes down. That's when you find out if the people you bought it from have answers ... or just excuses. John Deere's commitment to product support starts with building machines that stand up to the daily grind of the construction business. Machines that are both easy to maintain and service.

But the key element in our "uptime formula" is your full-service John Deere dealer. He has the parts, tools, and the technical talent to come to your jobsite and deal with problems. Fast.

Issues like parts availability are things you and your dealer should discuss "up front." It won't take long for you to realize that protecting a reputation is something that both of you have in common.

Overhauls on many competitive machines are an expensive, week-long ordeal because the engine has to be "pulled" to be worked on. But John Deere engines, with their replaceable cylinder liners, can be fixed in-frame in a couple of days.



Remote lube bank lets you easily grease difficult to reach pivot points.



Easy-to-read sight gauges make it easy to check hydraulic fluid and fuel levels from the ground.

You've got the power and the reach ... now all you need is the right tool!

No doubt about it, attachments are what's happening in the construction business. A quick look around will tell you why — competition. In fact, many equipment owners are finding it hard to stay busy without them.

In many ways, the 590D is an ideal match for many hydraulic attachments. It's the right size and has plenty of reach to excel in many lucrative niche markets. That's why an investment in a quick-coupler and a hydraulic hammer or a grapple makes so much sense.

Sit down and discuss it with your John Deere dealer. He can show you how attachments will make staying busy the least of your worries.



Asphalt cutter



Barrel grapple



Ditch forming bucket



Twin head blender



Bucket clamp



Clamshell bucket



Demolition grapple



Clearing grapple



Hydraulic hammer



Lift hooks



Clearing rake



Ripper tooth



Ditch cleaning bucket



Muck bucket



Side tilting bucket

ENGINE**5900**

Type	John Deere 4276T with altitude-compensating turbocharger
Rated power	95 SAE net hp (71 kW) / 100 SAE gross hp (75 kW) @ 2,100 rpm
Cylinders	4
Displacement	276 cu. in. (4,524 L)
Maximum net torque	284 lb.-ft. (385 Nm) @ 1,300 rpm
Fuel consumption, typical	2 to 3.5 gal./hr. (7.5 to 13 L/h)
Cooling fan	suction type
Electrical system	24 volt with 42-amp alternator
Batteries (two 12 volt)	reserve capacity: 180 min.

HYDRAULIC SYSTEM

Main pumps	2 variable-displacement axial-piston open center
Maximum rated flow	2 x 41.7 gpm (2 x 158 L/min.)
Pressure setting	5,050 psi (34 800 kPa)
Pilot pump	one gear
Maximum rated flow	5.7 gpm (21 L/min.)
Pressure setting	570 psi (3930 kPa)
System operating pressure	
Travel circuits	5,050 psi (34 800 kPa)
Front-end circuits	4,050 psi (27 920 kPa)
Circuit relief valves	
Boom circuits	4,270 psi (29 440 kPa)
Arm circuits	4,270 psi (29 440 kPa)
Bucket head circuit	4,270 psi (29 440 kPa)
Bucket rod circuit	4,770 psi (32 890 kPa)
Cross-over relief valves	
Travel circuits	5,120 psi (35 300 kPa)
Swing circuits	3,555 psi (24 510 kPa)
Oil filtration	one 10-micron full-flow return filter with by-pass one suction filter

CYLINDERS

Boom (2)	
Bore	4.53 in. (115 mm)
Rod diameter	3.15 in. (80 mm)
Stroke	46.85 in. (1190 mm)
Arm (1)	
Bore	4.72 in. (120 mm)
Rod diameter	3.35 in. (85 mm)
Stroke	52.95 in. (1345 mm)
Bucket (1)	
Bore	4.53 in. (115 mm)
Rod diameter	3.15 in. (80 mm)
Stroke	36.22 in. (920 mm)

SWING MECHANISM

Swing speed	0-13.5 rpm
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UNDERCARRIAGE

Carrier rollers (per side)	2
Track rollers (per side)	7
Idlers (per side)	1
Shoes, triple semi-grouser (per side)	45
Track guides	front and center
Track adjustment	hydraulic
Travel speed	
Low	0-2.4 mph (0-3.9 km/h)
High	0-3.0 mph (0-4.8 km/h)
Drawbar pull	22,500 lb. (100 kN)
Tractive gradability (limited by the off-level capacity of the engine)	100% (45 deg.)

GROUND PRESSURE DATA

Average ground pressure	
20-in. (500 mm) triple semi-grouser shoes	6.68 psi (46.0 kPa); recommended for rocky terrain and stumps
28-in. (700 mm) triple semi-grouser shoes	4.90 psi (33.8 kPa); recommended for general/soft terrain

CAPACITIES

Fuel tank	66 gal. (250 L)
Cooling system	22 qt. (21 L)
Engine lubrication, including filter	3.5 gal. (13 L)
Hydraulic system	42.3 gal. (160 L)
Hydraulic reservoir	22.5 gal. (85 L)
Planetary propel drive (each)	1.1 gal. (4 L)
Swing drive	1.3 gal. (5 L)

OPERATING WEIGHTS

5900

With full fuel tank; 175-lb. (79 kg) operator; optional 28-in. (700 mm) triple semi-grouser shoes; 10 ft. 2 in. (3.1 m) arm; and 36-in. (925 mm) 0.82 cu. yd. (0.55 m³) bucket

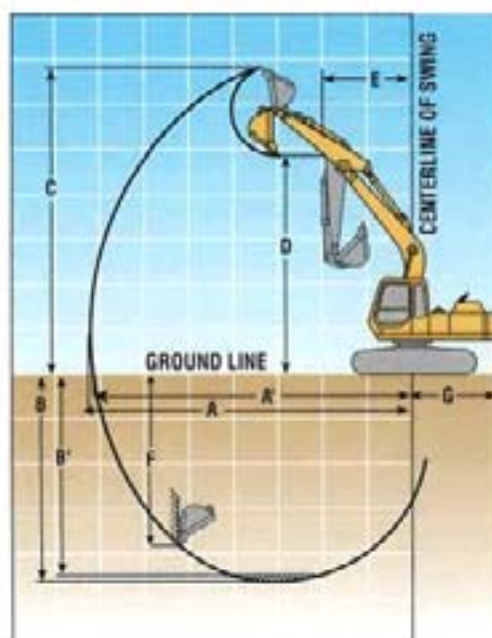
.....	33,180 lb. (15,050 kg)
Undercarriage equipped with	
20-in. (500 mm) triple semi-grouser shoes	11,067 lb. (5020 kg)
28-in. (700 mm) triple semi-grouser shoes	11,950 lb. (5420 kg)

COMPONENT WEIGHTS

Upperstructure with full fuel tank and counterweight (less all front attachments)	14,310 lb. (6490 kg)
One-piece boom (with two boom cylinders and arm cylinder)	3,450 lb. (1566 kg)
Arm with bucket cylinder and linkage	
8 ft. 6 in. (2.6 m)	1,620 lb. (735 kg)
10 ft. 2 in. (3.1 m)	1,810 lb. (820 kg)
Boom lift cylinders (2) total weight with pins	675 lb. (306 kg)
Arm cylinder without pins	425 lb. (192 kg)
Bucket cylinder without pins and linkage	250 lb. (114 kg)
Counterweight	5,950 lb. (2700 kg)

OPERATING INFORMATION

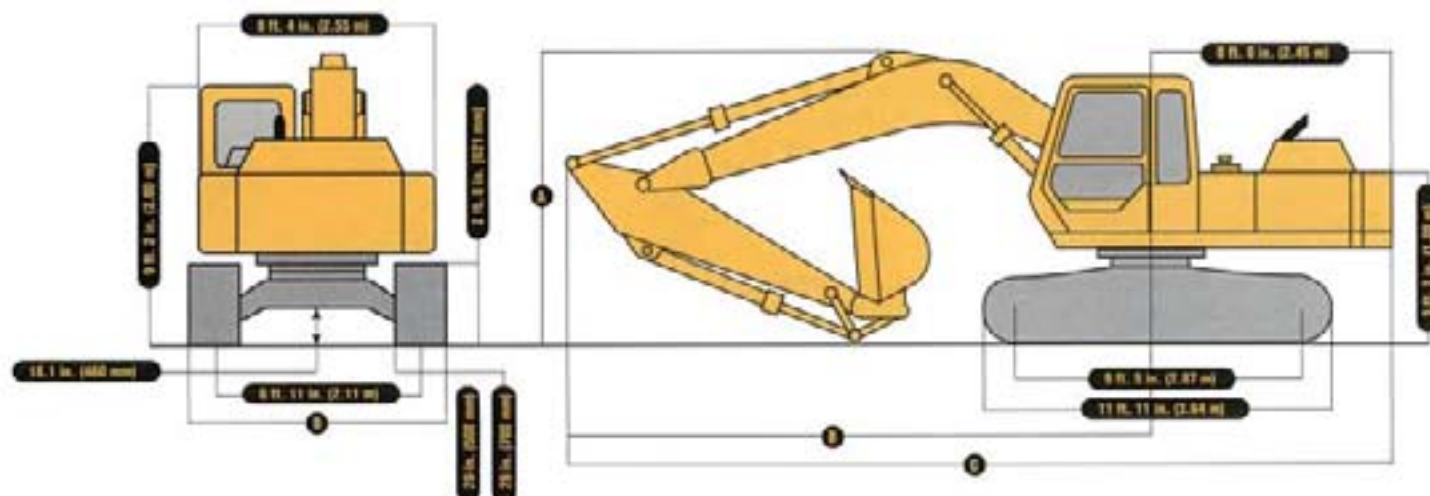
	Arm Length 8 ft. 6 in. (2.6 m)	Arm Length 10 ft. 2 in. (3.1 m)
Arm force	14,330 lb. (63.7 kN)	12,570 lb. (55.9 kN)
Lifting capacity over front or rear @ ground level		
20-ft. (6.1 m) reach	6,214 lb. (2818 kg)	6,186 lb. (2806 kg)
A Maximum reach	29 ft. 2 in. (8.9 m)	30 ft. 9 in. (9.36 m)
A' Maximum reach @ ground level	28 ft. 8 in. (8.73 m)	30 ft. 2 in. (9.19 m)
B Maximum digging depth	19 ft. 10 in. (6.05 m)	21 ft. 6 in. (6.55 m)
B' Maximum digging depth @ 8-ft. (2.44 m) flat bottom	19 ft. 1 in. (5.81 m)	20 ft. 10 in. (6.34 m)
C Maximum cutting height	28 ft. 1 in. (8.55 m)	28 ft. 10 in. (8.78 m)
D Maximum dumping height	19 ft. 0 in. (5.8 m)	19 ft. 9 in. (6.03 m)
E Minimum swing radius	10 ft. 3 in. (3.13 m)	10 ft. 3 in. (3.13 m)
F Maximum vertical wall	17 ft. 1 in. (5.21 m)	18 ft. 9 in. (5.71 m)
G Tail swing radius	8 ft. 0 in. (2.45 m)	8 ft. 0 in. (2.45 m)



DIMENSIONS

Note: Track-shoe lug height not included.

A With 8 ft. 6 in. (2.6 m) arm	9 ft. 2 in. (2.80 m)
With 10 ft. 2 in. (3.1 m) arm	9 ft. 10 in. (3.00 m)
B With 8 ft. 6 in. (2.6 m) arm	19 ft. 11 in. (6.05 m)
With 10 ft. 2 in. (3.1 m) arm	19 ft. 11 in. (6.05 m)
C With 8 ft. 6 in. (2.6 m) arm	27 ft. 11 in. (8.50 m)
With 10 ft. 2 in. (3.1 m) arm	27 ft. 11 in. (8.50 m)
D With 20-in. (500 mm) shoes	8 ft. 6 in. (2.60 m)
With 28-in. (700 mm) shoes	9 ft. 2 in. (2.80 m)



LIFT CAPACITIES

Bulldozer Hydraulic type indicates hydraulic-limited capacities; **lightface** type indicates stability-limited capacities, in lb. (kg). Ratings at bucket lift hook, machine equipped with 20-in. (500 mm) throat; 0.75-cu. yd. (0.6 m³) 41-in. (1045 mm) wide, 1,056-lb. (479 kg) bucket; and situated on firm, uniform supporting surface. Total load includes weight of cables, hook, etc. Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.

Load Point Height	5 ft. (1.52 m)		10 ft. (3.05 m)		15 ft. (4.57 m)		20 ft. (6.10 m)		25 ft. (7.62 m)		
	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	Over Front	Over Side	
With 8 ft. 6 in. (2.6 m) arm											
20 ft. (6.10 m)								4,859 (2204)	4,859 (2204)		
15 ft. (4.57 m)								6,067 (2752)	5,096 (2305)		
10 ft. (3.05 m)					8,786 (3971)	8,420 (3819)	6,925 (3141)	5,187 (2353)	4,622 (2096)	3,401 (1543)	
5 ft. (1.52 m)					10,364 (4701)	7,552 (3425)	6,526 (2960)	4,832 (2183)	4,456 (2021)	3,242 (1471)	
Ground Line					9,803 (4446)	7,040 (3193)	6,214 (2818)	4,519 (2050)	4,312 (1955)	3,104 (1408)	
-5 ft. (-1.52 m)			14,058 (6376)	13,541 (6143)	9,646 (4375)	6,897 (3128)	6,072 (2754)	4,386 (1990)			
-10 ft. (-3.05 m)	15,122 (6858)	15,122 (6858)	10,827 (4911)	10,827 (4911)	9,746 (4420)	6,988 (3170)	6,125 (2780)	4,436 (2012)			
-15 ft. (-4.57 m)			13,772 (6248)	13,772 (6248)	10,139 (4600)	7,346 (3333)					
With 10 ft. 2 in. (3.1 m) arm											
15 ft. (4.57 m)								5,200 (2359)	5,200 (2359)	3,896 (1767)	3,540 (1606)
10 ft. (3.05 m)					7,410 (3361)	7,410 (3361)	6,460 (2930)	5,249 (2361)	4,643 (2106)	3,412 (1548)	
5 ft. (1.52 m)					10,539 (4780)	7,696 (3491)	6,559 (2975)	4,833 (2192)	4,440 (2014)	3,219 (1460)	
Ground Line					9,816 (4452)	7,037 (3192)	6,186 (2806)	4,483 (2033)	4,255 (1930)	3,042 (1380)	
-5 ft. (-1.52 m)	5,752 (2609)	5,752 (2609)	11,907 (5400)	11,907 (5400)	9,533 (4324)	6,779 (3075)	5,980 (2712)	4,290 (1946)	4,155 (1885)	2,948 (1337)	
-10 ft. (-3.05 m)	12,861 (5834)	12,861 (5834)	10,488 (4757)	10,488 (4757)	9,551 (4332)	6,796 (3088)	5,965 (2705)	4,275 (1939)			
-15 ft. (-4.57 m)			13,068 (5928)	13,068 (5928)	9,836 (4462)	7,057 (3201)					

BUCKETS

A full line of buckets is offered to meet a wide variety of applications. The buckets have an adjustable bushing for side clearance, with the exception of the ditching bucket. Tooth selection includes either the John Deere Faragg[®] tooth or the ESCO Vertabok tooth. Replaceable cutting edges are available through John Deere parts. Optional side cutters add 4 inches (100 mm) to bucket widths.

Type Bucket	Bucket Width		Bucket Capacity*		Weight		Bucket Dig Force		Arm Dig Force 8 ft. 6 in. (2.6 m)		Arm Dig Force 10 ft. 2 in. (3.1 m)		Bucket Tip Radius		No. Teeth
	in.	mm	cu. yd.	m ³	lb.	kg	lb.	kN	lb.	kN	lb.	kN	in.	mm	
General-Purpose Plate Lip	24	600	0.50	0.38	899	407	21,660	96.3	15,005	66.7	13,095	58.2	50.5	1283	4
	30	750	0.64	0.49	1,068	484	21,660	96.3	15,005	66.7	13,095	58.2	50.5	1283	4
	36	900	0.78	0.60	1,096	497	21,660	96.3	15,005	66.7	13,095	58.2	50.5	1283	5
	41**	1045**	0.75	0.57	1,050	475	18,965	84.4	14,330	63.7	12,570	55.9	57.7	1465	5
	42	1067	0.92	0.70	1,253	568	21,660	96.3	15,005	66.7	13,095	58.2	50.5	1283	6
General-Purpose High Capacity	48	1220	1.06	0.81	1,379	634	21,660	96.3	15,005	66.7	13,095	58.2	50.5	1283	7
	24	600	0.59	0.45	1,106	501	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	4
	30	750	0.77	0.59	1,182	536	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	4
	36	900	0.95	0.73	1,401	635	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	5
Heavy-Duty Plate Lip	42	1067	1.12	0.86	1,590	721	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	5
	24	600	0.59	0.45	1,390	630	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	4
	30	750	0.77	0.59	1,481	671	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	4
	36	900	0.95	0.73	1,558	708	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	5
Ditching	42	1067	1.12	0.86	1,687	765	19,710	87.7	14,530	64.6	12,725	56.6	55.5	1410	5
	48	1220	0.74	0.57	948	384	29,565	131.5	16,460	73.2	14,205	63.2	37.0	940	0
	60	1500	0.90	0.69	959	435	29,565	131.5	16,460	73.2	14,205	63.2	37.0	940	0

*All capacities are SAE heaped ratings.
**With side cutters.

BUCKET SELECTION CHART

Material (loose weight)	General-Purpose Bucket*	Heavy-Duty Bucket*
Wood chips - 700 lb./cu. yd. (420 kg/m ³)	4.00 cu. yd. (3.1 m ³)	—
Peat, dry - 750 lb./cu. yd. (440 kg/m ³)	3.50 cu. yd. (2.7 m ³)	—
Cinders - 950 lb./cu. yd. (560 kg/m ³)	2.50 cu. yd. (1.9 m ³)	—
Peat, wet - 1,170 lb./cu. yd. (690 kg/m ³)	2.25 cu. yd. (1.7 m ³)	—
Topsoil - 1,600 lb./cu. yd. (950 kg/m ³)	1.75 cu. yd. (1.3 m ³)	—
Coal - 1,780 lb./cu. yd. (1050 kg/m ³)	1.50 cu. yd. (1.1 m ³)	—
Caliche - 2,100 lb./cu. yd. (1250 kg/m ³)	0.88 to 1.12 cu. yd. (0.7 to 0.9 m ³)	0.75 to 1.00 cu. yd. (0.6 to 0.8 m ³)
Earth, loam - 2,100 lb./cu. yd. (1250 kg/m ³)	1.12 cu. yd. (0.9 m ³)	1.00 cu. yd. (0.8 m ³)
Shale - 2,250 lb./cu. yd. (1330 kg/m ³)	1.12 cu. yd. (0.9 m ³)	1.00 cu. yd. (0.8 m ³)
Sand, dry - 2,400 lb./cu. yd. (1420 kg/m ³)	1.12 cu. yd. (0.9 m ³)	1.00 cu. yd. (0.8 m ³)
Clay, dry - 2,500 lb./cu. yd. (1480 kg/m ³)	0.75 to 1.00 cu. yd. (0.6 to 0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Earth, dry - 2,550 lb./cu. yd. (1510 kg/m ³)	0.88 to 1.00 cu. yd. (0.7 to 0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Limestone, broken or crushed - 2,600 lb./cu. yd. (1540 kg/m ³)	0.75 to 1.00 cu. yd. (0.6 to 0.8 m ³)	0.63 to 0.88 cu. yd. (0.5 to 0.7 m ³)
Earth, wet - 2,700 lb./cu. yd. (1600 kg/m ³)	1.00 cu. yd. (0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Clay, wet - 2,800 lb./cu. yd. (1660 kg/m ³)	1.00 cu. yd. (0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Rock, granite, blasted and broken - 2,800 lb./cu. yd. (1660 kg/m ³)	0.88 to 1.12 cu. yd. (0.7 to 0.9 m ³)	0.75 to 1.00 cu. yd. (0.6 to 0.8 m ³)
Sand, moist - 2,850 lb./cu. yd. (1690 kg/m ³)	1.00 cu. yd. (0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Sand and gravel, dry - 2,900 lb./cu. yd. (1720 kg/m ³)	1.00 cu. yd. (0.8 m ³)	0.88 cu. yd. (0.7 m ³)
Sand, wet - 3,100 lb./cu. yd. (1840 kg/m ³)	0.88 cu. yd. (0.7 m ³)	0.75 cu. yd. (0.6 m ³)
Sand and gravel, wet - 3,400 lb./cu. yd. (2020 kg/m ³)	0.88 cu. yd. (0.7 m ³)	0.75 cu. yd. (0.6 m ³)

*Contact your John Deere dealer for optimum bucket and attachment selections. These recommendations are for general conditions and average use. Larger buckets may be possible when using light buckets, for flat and level operations, less compacted materials, and volume loading applications such as mass excavation applications in ideal conditions. Smaller buckets are recommended for adverse conditions such as off-level applications and uneven surfaces. Bucket capacity indicated is SAE heaped.

