



1837-1987

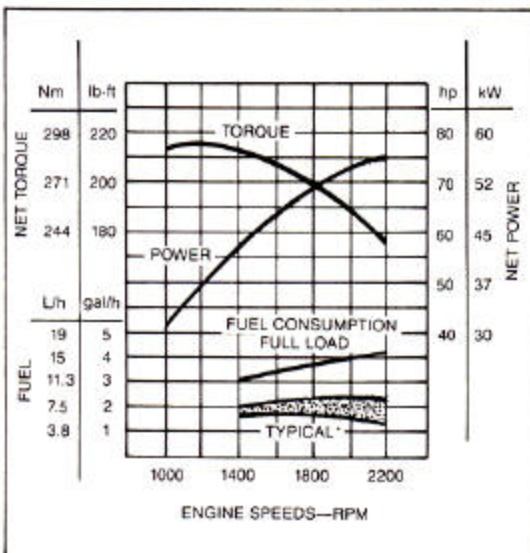
150

490D EXCAVATOR



Model shown may include options.

ENGINE PERFORMANCE



*Depending on operating variables

FEATURES

75 SAE net hp (56 kW)

26,546 lb. (12 041 kg) standard operating weight

19 ft. 9 in. (6.02 m) maximum digging depth

28 ft. 8 in. (8.74 m) maximum reach at ground level

Advanced high-efficiency variable-flow hydraulic system provides exceptional digging performance, function control and fuel economy

Extra-wide, high-visibility cab enhances operator comfort and productivity

Excavator track-type undercarriage with sealed chain and hydraulic track adjustment

Precision low-effort direct-acting controls for boom, arm, bucket, travel and 360-degree continuous swing

Straight tracking, even while swinging or lifting

490D 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 with 20-in. (500 mm) triple grouser shoes, 8 ft. 2 in. (2.5 m) arm and 35-in. (890 mm) 5/8 cu. yd. (1.6 m³) bucket, full fuel tank and 175-lb. (80 kg) operator.

	SAE	DIN 6270
Rated Power @ 2200 rpm		
Net	75 hp (56 kW)	56 kW
Gross	80 hp (60 kW)	

Net engine power is with standard equipment including air cleaner, exhaust system, alternator, and cooling fan, at standard conditions per SAE J1349 and DIN 6270 using No. 2-D fuel @ 35 AFI gravity. No derating is required up to 5000 feet (1500 m) altitude. Gross power is without cooling fan.

Engine: John Deere 4-276D

Type	4-stroke cycle, naturally aspirated diesel	
Bore and stroke	4.19 x 5.00 in. (106.5 x 127 mm)	
No. of cylinders	4	
Displacement	276 cu. in. (4.524 L)	
Compression ratio	17.8 to 1	
Maximum net torque @ 1200	215 lb-ft (292 Nm) (29.1)	
Lubrication	Pressure system w/full flow filter	
Cooling fan	Suction	
Air cleaner w/restriction indicator and safety element	Dry	
Electrical system	24-volt w/alternator	
Batteries (two 12-volt)	Reserve capacity: 180 minutes	

Hydraulic System: Open-center

Two variable-displacement axial-piston pumps and two control valves (5- and 4-spool) provide independent and combined operation of all functions. The 5-spool control valve has one spool for an auxiliary attachment function.

Main pumps	2 variable-displacement axial-piston	
Pressure setting	4620 psi (31 850 kPa) (325 kg/cm ²)	
Max. oil flow	2 x 31.7 gpm (2 x 120 L/min)	
Pilot pump	Gear	
Pressure setting	570 psi (3930 kPa) (40 kg/cm ²)	
Max. oil flow	6.0 gpm (22 L/min)	
System relief valves operating pressure:		
Travel	4620 psi (31 850 kPa) (325 kg/cm ²)	
Front end	4050 psi (27 920 kPa) (285 kg/cm ²)	
Circuit relief valves:		
Boom	4270 psi (29 440 kPa) (300 kg/cm ²)	
Arm	4270 psi (29 440 kPa) (300 kg/cm ²)	
Bucket	4270 psi (29 440 kPa) (300 kg/cm ²)	
Cross-over relief valves:		
Travel	4690 psi (32 340 kPa) (330 kg/cm ²)	
Swing	3700 psi (25 510 kPa) (260 kg/cm ²)	
Oil filtration:		
One suction filter		
One 10-micron full-flow return filter w/bypass		

Cylinders:	Bore	Rod Diameter	Stroke
Boom (2)	4.1 in. (105 mm)	3 in. (75 mm)	43.3 in. (1100 mm)
Arm (1)	4.5 in. (115 mm)	3.1 in. (80 mm)	46.1 in. (1170 mm)
Bucket (1)	3.7 in. (95 mm)	2.6 in. (65 mm)	39.2 in. (995 mm)

Arm cylinder has built-in hydraulic cushion at each end of stroke.
Boom cylinder has hydraulic cushion on rod end.
All cylinder rods are ground, heat-treated, chrome-plated and polished.

Swing Mechanism:

Swing speed	0-12.3 rpm
Swing brake	Automatic, hydraulic lock
Turntable bearing	Single-row, shear-type ball bearing with induction-hardened, lubricated internal gear and pinion, 500-hour lubrication interval.

Undercarriage:

Excavator track-type undercarriage with heavy-duty frame and all-welded, stress-relieved structure. Side frames welded to track frame. Permanently lubricated track rollers, idlers and sprockets with floating seals.

Propel motors (one for each track) Axial-piston hydraulic motors with planetary drives. Multiple-disk brakes automatically release while propelling and apply when stationary. Independent drive to each track permits counterrotation.

Tracks:

Track chain	Sealed
Track adjustment	Hydraulic with shock absorbing recoil springs

Track Rollers and Shoes (each side):

One upper roller, seven lower rollers. Forty-three track shoes. Track shoes induction-hardened rolled alloy. Heat-treated connecting pins.

Track Shoes:		Average Ground Contact	Average Ground Pressure
Width	Shoes		
20 in. (500 mm) (standard)	Triple grousers	4690 sq. in. (30 240 cm ²)	5.66 psi (39 kPa) (0.40 kg/cm ²)
28 in. (700 mm) (optional)	Triple grousers	6564 sq. in. (42 350 cm ²)	4.15 psi (28.7 kPa) (0.29 kg/cm ²)

Cab:

Independent, isolation mounted and sound protected with tinted safety glass windows. Front window can be stored overhead. Side windows slide open for ventilation. Hydraulic system lockout for safety during operator entry and exit from the cab. Centralized monitoring alarm system.

Seat:

Fully adjustable deluxe reclining seat with armrests.

Controls:

All hydraulic functions are controlled by low-effort hydraulic pilot controls. Two short levers control swing, boom, arm and bucket functions. Right and left pedals control forward, reverse and track counterrotation.

Boom and Arm:

Welded, low-stress, full box-section design. Centralized lubrication system.

Servicing and Vandal Protection:

Non-slip steps and handrails allow for easier servicing and maintenance. Easily accessible engine and hydraulic system covers. Machine covers, fuel cap and cab door have built-in locks.

Additional Standard Equipment:

Cab:

- Automatic idle mode selection:
- Digging mode selection — three modes
- Travel mode selection — two modes
- Front windshield wiper
- Horn
- Interior light
- Positive position hand throttle
- Monitor package with alarm system:
 - Air cleaner restriction warning light
 - Alternator charge indicator light
 - Automatic idle indicator light
 - Engine coolant level light
 - Engine coolant temperature gauge
 - Engine coolant temperature warning light w/alarm buzzer
 - Engine oil pressure warning light w/warning buzzer
 - Fuel gauge
 - Hydraulic oil level light
 - Low fuel level indicator light
 - Quartz hourmeter
 - Work lights on indicator
 - 13,500 Btu/hr (4.1 kW) heater

Engine:

- Cold weather (ether) starting aid
- Dual dry-type air filters
- Full-flow oil filter w/bypass
- Isolation mounted engine
- Oil cooler
- Single heavy-duty fuel filter

Frame:

- 4850 lb. (2200 kg) counterweight
- Fully enclosed swing gears
- Vandal protection—lockable service doors and fuel filler cap

Front Attachment:

- Bucket clearance adjusting mechanism
- Centralized lubrication system
- Dirt seals on all bucket pins

Undercarriage:

- Propel motor and hydraulic line shields
- Single flange lower track rollers

Work lights:

- One mounted on frame
- One mounted on boom

Optional or Special Equipment:

Cab:

- 19,000 Btu/hr (5.6 kW) heater
- 40,000 Btu/hr (11.7 kW) heater
- Window vandal protection

Front Attachment:

- 98-in. (2.5 m) standard arm
- 118-in. (3.0 m) long arm

Undercarriage:

- 28-in. (700 mm) triple-grouser shoes
- 20-in. (500 mm) triple-grouser shoes

490D EXCAVATOR LIFT CAPACITIES

98-in. (2.5 m) STANDARD ARM

Ratings at bucket lift hook, machine equipped with 20-in. (500 mm) shoes, $\frac{3}{4}$ cu. yd. (.5 m³) PCSA heaped bucket weighing 860 lb. (390 kg) and standard counterweight, situated on firm, level, uniform supporting surface. Boldface type indicates hydraulic-limited capacities, lightface type indicates stability-limited capacities, in lb. (kg). Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.

LIFTING OVER FRONT OR REAR

Horizontal distance from centerline of rotation:	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)
15 ft. (4.57 m)				5032 (2283)	
10 ft. (3.05 m)		7807 (3541)	6704 (3041)	5714 (2592)	
5 ft. (1.52 m)			8629 (3914)	5446 (2470)	3740 (1697)
Ground level			8178 (3710)	5223 (2369)	
- 5 ft. (- 1.52 m)		6704 (3041)	8033 (3644)	5124 (2324)	
- 10 ft. (- 3.05 m)	7886 (3577)	6039 (2739)	8118 (3682)	5212 (2364)	

LIFTING OVER SIDE OR 360 DEGREES

Horizontal distance from centerline of rotation:	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)
15 ft. (4.57 m)				4372 (1983)	
10 ft. (3.05 m)		7807 (3541)	6704 (3041)	4197 (1904)	
5 ft. (1.52 m)			6182 (2804)	3946 (1790)	2673 (1213)
Ground level			5773 (2619)	3737 (1695)	
- 5 ft. (- 1.52 m)		6704 (3041)	5642 (2560)	3645 (1653)	
- 10 ft. (- 3.05 m)	7886 (3577)	6039 (2739)	5719 (2594)	3727 (1690)	

490D EXCAVATOR LIFT CAPACITIES

118-in. (3.0 m) OPTIONAL ARM

Ratings at bucket lift hook, machine equipped with 20-in. (500 mm) shoes, $\frac{3}{4}$ cu. yd. (.5 m³) PCSA heaped bucket weighing 705 lb. (320 kg) and standard counterweight, situated on firm, level, uniform supporting surface. Boldface type indicates hydraulic-limited capacities, lightface type indicates stability-limited capacities, in lb. (kg). Figures do not exceed 87 percent of hydraulic capacities or 75 percent of weight needed to tip machine.

LIFTING OVER FRONT OR REAR

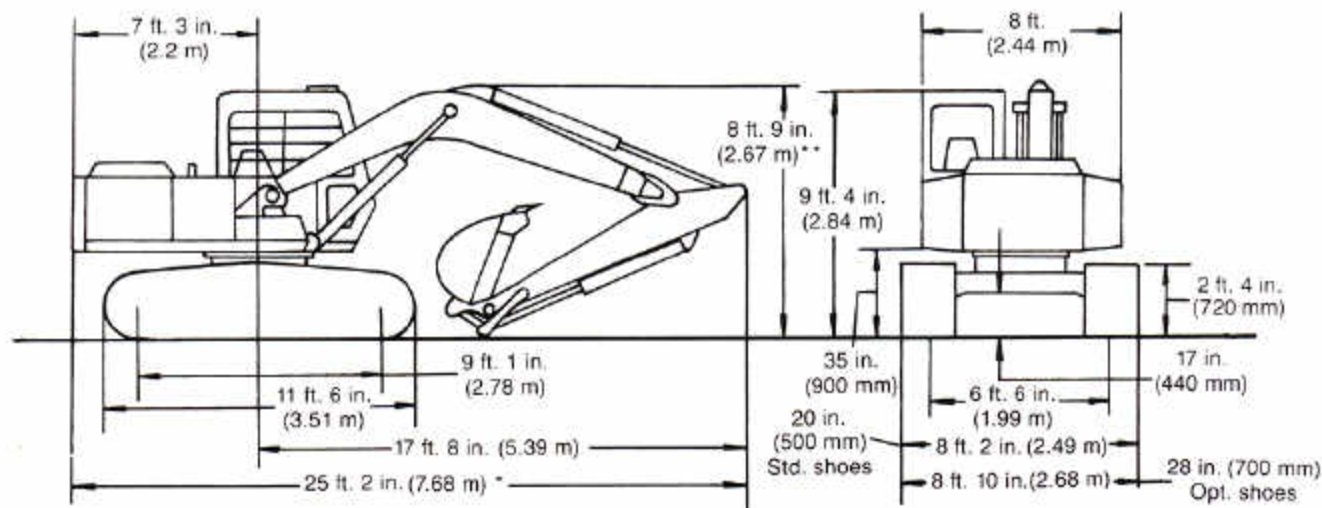
Horizontal distance from centerline of rotation:	5 ft. (1.52 m)	10 ft. (3.05 m)	15 ft. (4.57 m)	20 ft. (6.10 m)	25 ft. (7.62 m)
20 ft. (7.62 m)				3658 (1659)	
15 ft. (4.57 m)				4532 (2056)	
10 ft. (3.05 m)			5280 (2395)	5350 (2427)	3840 (1742)
5 ft. (1.52 m)			8480 (3847)	5534 (2510)	3797 (1722)
Ground level		6713 (3045)	8268 (3914)	5273 (2392)	3683 (1671)
- 5 ft. (- 1.52 m)	5195 (2356)	6796 (3083)	8034 (3644)	5129 (2327)	
- 10 ft. (- 3.05 m)	8453 (3834)	6350 (2880)	8049 (3651)	5143 (2333)	
- 15 ft. (- 4.57 m)		9641 (4373)	8215 (3726)		

LIFTING OVER SIDE OR 360 DEGREES

Horizontal distance from centerline of rotation:	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)
20 ft. (6.10 m)				3658 (1659)	
15 ft. (4.57 m)				4495 (2039)	
10 ft. (3.05 m)			5280 (2395)	4301 (1951)	2838 (1287)
5 ft. (1.52 m)			6350 (2880)	4027 (1827)	2727 (1237)
Ground level		6713 (3045)	5854 (2655)	3783 (1716)	2618 (1188)
- 5 ft. (- 1.52 m)	5195 (2356)	6796 (3083)	5642 (2559)	3648 (1655)	
- 10 ft. (- 3.05 m)	8453 (3834)	6350 (2880)	5655 (2565)	3662 (1661)	
- 15 ft. (- 4.57 m)		9641 (4373)	5911 (2681)		

490D EXCAVATOR SPECIFICATIONS

Specifications shown are for machine equipped with 98 in. (2.5 m) arm.



*With 118-in. (3.0 m) arm, 25 ft. 3 in. (7.69 m)
 **With 118-in. (3.0 m) arm, 8 ft. 10 in. (2.68 m); Arm cylinder pinned to arm transport position.

Weights:	lb.	kg
Operating weight w/full fuel tank, operator, standard 20-in. (500 mm) triple grouser shoes, 8 ft. 2 in. (2.5 m) arm, and 35-in. (890 mm) 5/8 cu. yd. (.5 m ³) bucket	26,546	12 041
Upperstructure with full fuel tank and counterweight less all front attachments	12,604	5717
Undercarriage with 28-in. (700 mm) triple grouser shoes	9,105	4130
With 32-in. (800 mm) triple grouser shoes	9,833	4460
Boom, one-piece, with two boom cylinders and arm cylinder	2,635	1195
Arm, 98-in. (2.5 m) with bucket cylinder and linkage	1,168	530
Arm, 118-in. (3.0 m) with bucket cylinder and linkage	1,323	600
Boom cylinders (2) total weight without pins	518	235
Arm cylinder without pins	353	160
Bucket cylinder without pins and linkage	198	90
Counterweight	4,850	2200

Capacities:	U.S.	Liters
Fuel tank	66 gal.	250
Cooling system	19 qt.	18
Engine lubrication w/filter	14 qt.	13
Hydraulic system	34 gal.	129
Hydraulic reservoir	19 gal.	72
Planetary propel drive (each side)	3.7 qt.	3.5
Swing drive	3.4 qt.	3.2

	Arm	
	98 in. (2.5 m)	118 in. (3.0 m)
Arm force	11,950 lb. (53 kN) (5420 kg)	10,625 lb. (47 kN) (4820 kg)
Lifting capacity over front or rear @ ground level		
20 ft. (6.1 m) reach	5223 lb. (2369 kg)	5273 lb. (2392 kg)
A Max. digging reach	27 ft. 1 in. (8.25 m)	28 ft. 8 in. (8.74 m)
A' Max. digging reach @ ground level	26 ft. 7 in. (8.11 m)	28 ft. 3 in. (8.61 m)
B Max. digging depth	18 ft. 1 in. (5.52 m)	19 ft. 9 in. (6.02 m)
B' Max. digging depth @ 8 ft. (2.44 m) flat bottom	17 ft. 5 in. (5.30 m)	19 ft. 2 in. (5.84 m)
C Max. cutting height	27 ft. 8 in. (8.43 m)	28 ft. 10 in. (8.78 m)
D Max. dumping height	19 ft. 10 in. (6.03 m)	20 ft. 11 in. (6.38 m)
E Min. swing radius	8 ft. 1 in. (2.47 m)	8 ft. 8 in. (2.64 m)
F Max. vertical wall	15 ft. 11 in. (4.86 m)	17 ft. 6 in. (5.33 m)

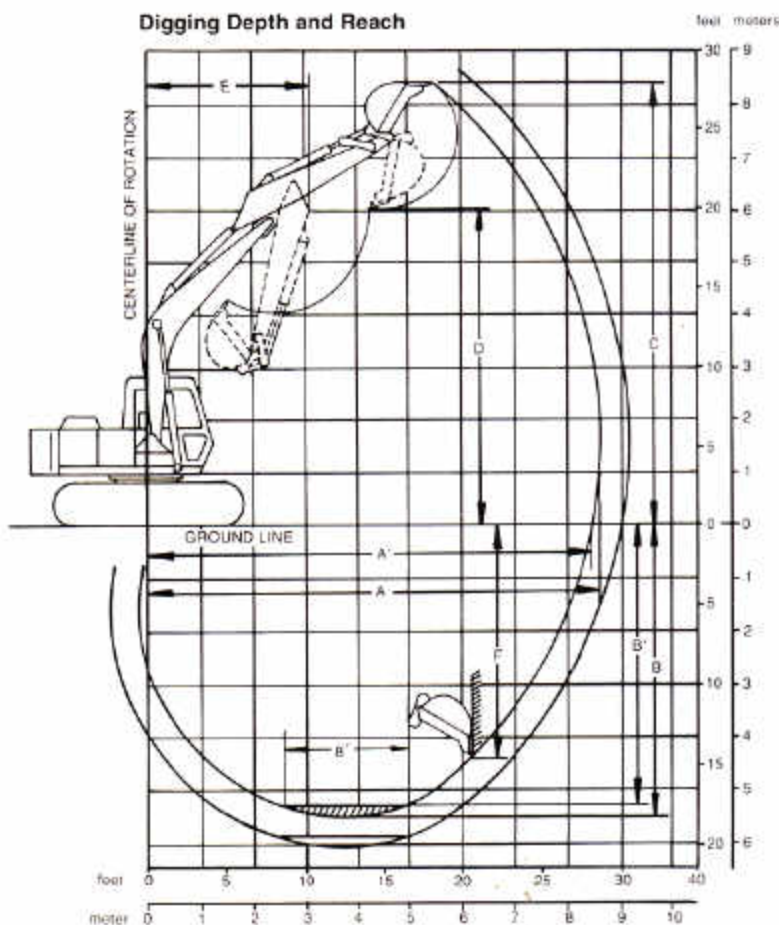
Operating Information:

Gradability	70% (35 deg.)
Swing speed	12.3 rpm
Tail swing	7 ft. 3 in. (2.2 m)
Infinite variable travel speed, forward and reverse	0-2.55 mph (0-4.1 km/h)
Drawbar pull	18,300 lb. (81.4 kN)

Bucket Digging Force: (Tangential Penetrating Force) SAE Heaped

Regular Duty	
1/2 cu. yd. (.4 m ³)	16,425 lb. (73 kN)
5/8 cu. yd. (.5 m ³)	16,425 lb. (73 kN)

Digging Depth and Reach



490D EXCAVATOR

BUCKETS

Without Side Cutters	Bite Width		SAE (Heaped)	CECE (Heaped)	Weight	Recommendation	
		With Side Cutters or Shrouds*				98-in. (2.5 m) Arm	118-in. (3.0 m) Arm
Regular duty							
28 in. (720 mm)	33 in. (840 mm)		½ cu. yd. (.4 m ³)	(.35 m ³)	705 lb. (320 kg)	○	○
35 in. (900 mm)	40 in. (1015 mm)		⅝ cu. yd. (.5 m ³)	(.45 m ³)	860 lb. (390 kg)	○	□
Heavy duty							
26 in. (660 mm)	26 in. (660 mm)*		.50 cu. yd. (.4 m ³)		1220 lb. (553 kg)		
31 in. (790 mm)	31 in. (790 mm)*		.63 cu. yd. (.5 m ³)		1260 lb. (572 kg)		
37 in. (940 mm)	37 in. (940 mm)*		.75 cu. yd. (.6 m ³)		1290 lb. (585 kg)		

○: Suitable for materials with density of 3370 lb/cu. yd. (2000 kg/m³) or less

□: Suitable for materials with density of 2700 lb/cu. yd. (1600 kg/m³) or less

BUCKET SELECTION CHART Maximum Recommended Bucket Size**

lb/yd	kg/m	Material	98-in. (2.5 m) Arm		118-in. (3.0 m) Arm	
			Regular Duty	Heavy Duty	Regular Duty	Heavy Duty
700	420	Wood chips	3½ yd ³ (2.6 m ³)	—	3¼ yd ³ (2.5 m ³)	—
810	480	Peat, dry	3 yd ³ (2.3 m ³)	—	2¾ yd ³ (2.1 m ³)	—
1242	740	Peat, wet	2 yd ³ (1.5 m ³)	—	1¾ yd ³ (1.3 m ³)	—
1450	860	Cinders	1⅝ yd ³ (1.2 m ³)	—	1½ yd ³ (1.1 m ³)	—
2300	1360	Topsoil	1 yd ³ (.8 m ³)	—	1 yd ³ (.8 m ³)	—
2300	1360	Coal, natural bed	1 yd ³ (.8 m ³)	—	1 yd ³ (.8 m ³)	—
2600	1540	Earth, dry loam	⅞ yd ³ (.7 m ³)	¾ yd ³ (.6 m ³)	⅞ yd ³ (.7 m ³)	⅝ yd ³ (.5 m ³)
2700	1600	Sand, dry	⅞ yd ³ (.7 m ³)	¾ yd ³ (.6 m ³)	¾ yd ³ (.6 m ³)	⅝ yd ³ (.5 m ³)
3200	1900	Earth, moist loam	¾ yd ³ (.6 m ³)	⅝ yd ³ (.5 m ³)	⅝ yd ³ (.5 m ³)	⅝ yd ³ (.5 m ³)
3250	1930	Sand, gravel, dry	¾ yd ³ (.6 m ³)	⅝ yd ³ (.5 m ³)	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)
3300	1960	Sand, moist	¾ yd ³ (.6 m ³)	⅝ yd ³ (.5 m ³)	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)
3500	2080	Sand, wet	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)
3500	2080	Shale	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)
3600	2100	Clay, wet	⅝ yd ³ (.5 m ³)	½ yd ³ (.4 m ³)	⅝ yd ³ (.5 m ³)	¾ yd ³ (.3 m ³)
4200	2490	Limestone, broken	½ yd ³ (.4 m ³)	¾ yd ³ (.3 m ³)	½ yd ³ (.4 m ³)	¾ yd ³ (.3 m ³)
4600	2730	Rock, granite, blasted	½ yd ³ (.4 m ³)	¾ yd ³ (.3 m ³)	½ yd ³ (.4 m ³)	¾ yd ³ (.3 m ³)

**Contact your John Deere dealer for optimum bucket and attachment selection. The use of larger than recommended bucket should be carefully analyzed for digging force and load capacity. Bucket capacity indicated is SAE heaped.