

ENGINE

It's John Deere-engineered and manufactured. Replaceable wet-type cylinder liners are spun cast and machined for uniform wall thickness to assure even heat dissipation. Piston spray cooling contributes to long component life. A dynamically balanced crankshaft assures smooth operation. Turbocharged for maximum performance.

Engine: John Deere 6068T

Rated power at 2000 rpm.....130 SAE net hp (97 kW)
.....140 SAE gross hp (105 kW)

Cylinders6
Displacement414 cu. in. (6.785 L)
Maximum net torque at 1300 rpm424 lb-ft (575 Nm)
Fuel consumption, typical3 to 5 gal./hr. (11 to 19 L/h)
Cooling fan suction type
Electrical system24-volt with 45-amp (1260 W) alternator
Batteries (two 12 volt)reserve capacity: 160 min.

HYDRAULIC SYSTEM

Sophisticated, yet simple; state-of-the-art, yet easy to operate. You get the best of both worlds with the 690E's hydraulic system. This closed center system uses two axial piston pumps. A microprocessor ties the system with the engine to allow the operator to tailor hydraulic performance to particular job situations. A soft touch keypad control to the operator's right allows the desired performance to be tuned in with the touch of a button or two. This load sensing, variable flow system delivers smooth response even when the operator uses more than one function at the same time. The operator is in complete control at all times and can override any of the preset hydraulic modes or engine settings with the simple touch of a button.

Main pumps2 variable-displacement axial-piston
Minimum flow2 x 2.6 gpm (2 x 10 L/min.)
Maximum rated flow2 x 50 gpm (2 x 189 L/min.)
Pilot pumpone gear
Maximum rated flow9.5 gpm (36 L/min.)
Pressure setting400 psi (2758 kPa)
System operating pressure:
Implement circuits5000 psi (34 500 kPa)
Travel circuits5000 psi (34 500 kPa)
Swing circuits4060 psi (28 000 kPa)
Power boost5500 psi (37 900 kPa)
Oil filtration:
One 4-micron full flow return filter with bypass
One 40-micron pilot oil filter
Oil cooler:
Braze aluminum, mounted beside engine coolant radiator

Cylinders	Bore	Rod Diameter	Stroke
Boom (2).....	4.72 in. (120 mm)	3.35 in. (85 mm)	48.1 in. (1221 mm)
Arm (1).....	5.12 in. (130 mm)	3.74 in. (95 mm)	58.1 in. (1475 mm)
Bucket (1).....	4.33 in. (110 mm)	2.95 in. (75 mm)	41.73 in. (1060 mm)

SWING MECHANISM

Multiple planetary gearing is driven by an axial-piston, high-torque hydraulic motor. Ring and pinion gears are induction hardened for long life. The multiple, wet-disk swing brake is spring applied, hydraulically released. The single row ball bearing swing bearing is sealed top and bottom.

Swing speed0-10 rpm; adjustable to 13 rpm

UNDERCARRIAGE

Heavy-duty rollers combined with 7.5 in. (190 mm) pitch chain are designed to stand up to the side-to-side stress of excavator work. A standard center track guide is provided. Two extra track guides can be added as an option. The box-sectioned X-shaped center frame joins the track frame to the swing bearing mount. Track frames are welded to eliminate the need for periodic tightening. Each is topped by a reinforced V-channel to help prevent mud buildup.

Carrier rollers (per side)2
Track rollers (per side)9
Idlers (per side).....1
Shoes, triple semigrouser (per side).....49
Track guidesfront and center
Track adjustmenthydraulic
Travel speedLow Medium High
mph 1.3 1.8 3.5
km/h (2.1) (2.9) (5.6)
Drawbar pull40,300 lb. (179.3 kN)
Gradability100% (45 deg.)

Ground Pressure Data:

Shoe Width/ Grouser	Average Ground Pressure	Recommended Application
26 in./triple (650 mm)	5.59 psi (38.5 kPa)	Rocky terrain and stumps
30 in./triple (750 mm)	4.92 psi (33.9 kPa)	General/soft terrain
32 in./triple (800 mm)	4.64 psi (31.9 kPa)	Extremely soft terrain
26 in./single (650 mm)	5.64 psi (38.8 kPa)	Slick underfoot

CAPACITIES

Fuel tank85 gal. (322 L)
Cooling system44 qt. (42 L)
Engine lubrication, including filter20 qt. (19 L)
Hydraulic system84 gal. (318 L)
Planetary propel drive (each)3.5 qt. (3.3 L)

OPERATING WEIGHTS

Weights: lb. kg
Operating weight with full fuel tank, 175-lb. (79 kg) operator, 42-in. (1067 mm) bucket, 9 ft. 6 in. (2.90 m) arm, 8200-lb. (3720 kg) counterweight:

690E-LC, 14 ft. 7 in. (4.45 m) undercarriage length with 7 ft. 10 in. (2.38 m) wide gauge
26-in. (650 mm) triple grouser shoes44,230 20 063
30-in. (750 mm) triple grouser shoes44,823 20 332
32-in. (800 mm) triple grouser shoes45,120 20 467
26-in. (650 mm) single grouser shoes44,610 20 239

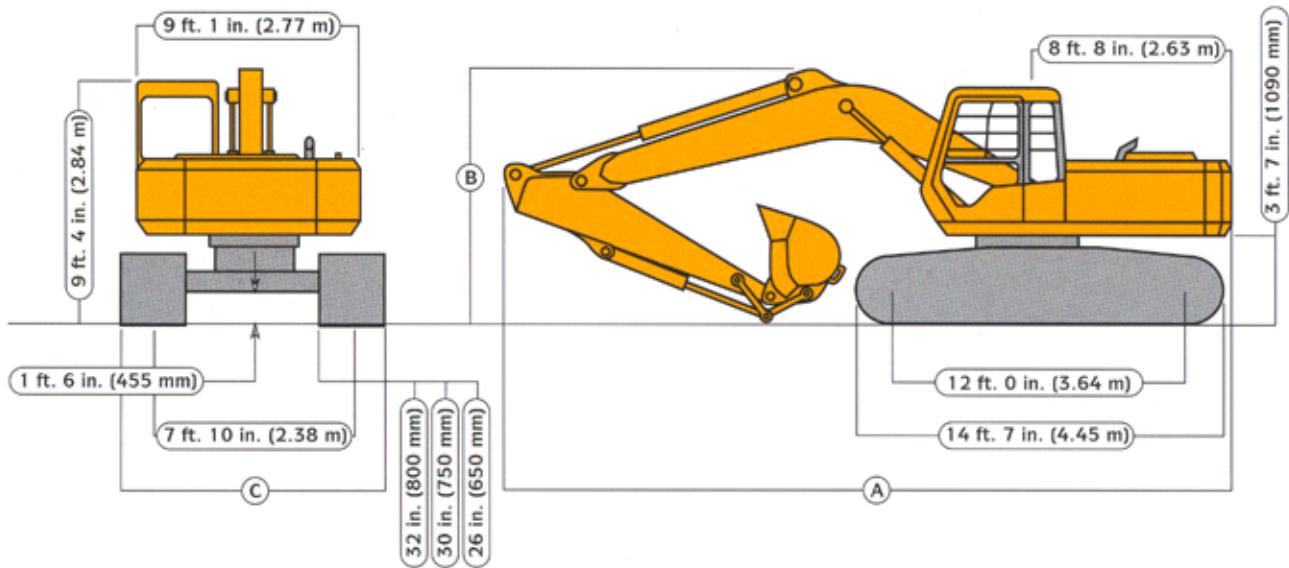
Component Weights:

Upperstructure (less front attachments, undercarriage and 8200-lb. [3720 kg] counterweight)10,727 4866
One-piece boom (with arm cylinder)3,510 1592
Arm, 9 ft. 6 in. (2.90 m) with bucket cylinder and linkage2,100 952
Arm, 7 ft. 3 in. (2.20 m) with bucket cylinder and linkage1,940 880
Boom lift cylinders (2) total weight800 360
Counterweight8,200 3720

Undercarriage:

Shoe width26 in. (650 mm) triple16,688 7570
30 in. (750 mm) triple17,283 7840
32 in. (800 mm) triple17,578 7973
26 in. (650 mm) single17,068 7742

DIMENSIONS



- A) With 7 ft. 3 in. (2.20 m) arm 31 ft. 1 in. (9.48 m)
 With 9 ft. 6 in. (2.90 m) arm 30 ft. 10 in. (9.41 m)
 B) With 7 ft. 3 in. (2.20 m) arm 9 ft. 6 in. (2.90 m)
 With 9 ft. 6 in. (2.90 m) arm 9 ft. 6 in. (2.90 m)

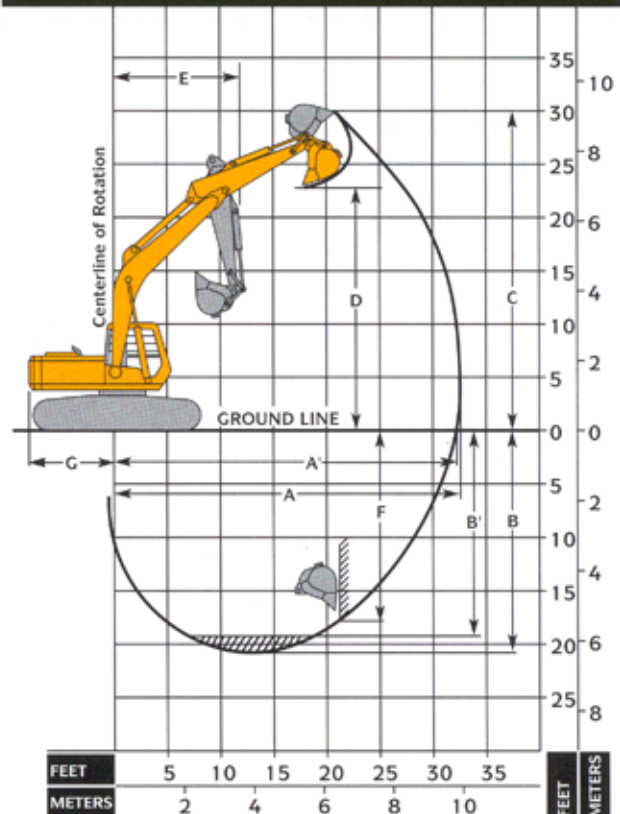
- C) With 26 in. (650 mm) shoes 9 ft. 11 in. (3.03 m)
 With 30 in. (750 mm) shoes 10 ft. 3 in. (3.13 m)
 With 32 in. (800 mm) shoes 10 ft. 5 in. (3.18 m)

OPERATING INFORMATION

	7 ft. 3 in. (2.20 m) Arm Length	9 ft. 6 in. (2.90 m) Arm Length
Arm force with 42-in. (1067 mm) general purpose bucket*	28,705 lb. (127.7 kN)	22,330 lb. (99.3 kN)
Bucket tangential force with 42-in. (1067 mm) general purpose bucket*	28,485 lb. (126.7 kN)	28,485 lb. (126.7 kN)
Lifting capacity over front @ ground level 20 ft. (6.1 m) reach	14,900 lb. (6760 kg)	14,300 lb. (6490 kg)
A Max. reach	30 ft. 3 in. (9.22 m)	32 ft. 5 in. (9.88 m)
A' Max. reach @ ground level	29 ft. 8 in. (9.04 m)	31 ft. 10 in. (9.70 m)
B Max. digging depth	19 ft. 4 in. (5.90 m)	21 ft. 8 in. (6.60 m)
B' Max. digging depth @ 8 ft. (2.44 m) flat bottom.....	18 ft. 7 in. (5.66 m)	21 ft. 0 in. (6.40 m)
C Max. cutting height	30 ft. 1 in. (9.17 m)	31 ft. 6 in. (9.60 m)
D Max. dumping height	21 ft. 3 in. (6.48 m)	22 ft. 6 in. (6.86 m)
E Min. swing radius	11 ft. 7 in. (3.53 m)	11 ft. 7 in. (3.53 m)
F Max. vertical wall	15 ft. 10 in. (4.83 m)	17 ft. 1 in. (5.21 m)
G Tail swing radius	9 ft. 0 in. (2.74 m)	9 ft. 0 in. (2.74 m)

*Maximum digging force with power boost











DIGGING DEPTH AND REACH













LIFT CAPACITIES

Ratings at bucket lift hook, machine equipped with 32 in. (800 mm) shoes, 1.06 cu. yd. (0.81 m³) 42 in. (1067 mm) wide bucket and situated on firm, uniform supporting surface. Total load includes weight of cables, hook, etc. **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.

 OVER FRONT  OVER SIDE

With 7 ft. 3 in. (2.20 m) arm, 8200 lb. (3720 kg) counterweight	Load Point Height	 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) 				
	25 ft. (7.62 m)									
	20 ft. (6.10 m)			6250 (2830)	6250 (2830)	5250 (2380)	5250 (2380)			
	15 ft. (4.57 m)		11,280 (5120)	11,280 (5120)	9690 (4400)	9690 (4400)	6850 (3110)	6850 (3110)	6610 (3000)	5330 (2420)
	10 ft. (3.05 m)		15,440 (7000)	15,440 (7000)	11,690 (5300)	9810 (4450)	9920 (4500)	6950 (3150)	7080 (3210)	5180 (2350)
	5 ft. (1.52 m)		18,560 (8420)	14,260 (6470)	13,700 (6220)	9280 (4210)	10,900 (4940)	6690 (3030)	7930 (3600)	5060 (2300)
	Ground Line	7680 (3480)	7680 (3480)	20,740 (9410)	13,710 (6220)	14,900 (6760)	8970 (4070)	11,600 (5260)	6510 (2950)	
	- 5 ft. (- 1.52 m)	13,450 (6100)	13,450 (6100)	14,800 (6710)	14,800 (6710)	15,000 (6800)	8910 (4040)	11,590 (5260)	6480 (2940)	
	- 10 ft. (- 3.05 m)	12,870 (5840)	12,870 (5840)	17,950 (8140)	13,990 (6340)	13,760 (6240)	9050 (4110)			
	- 15 ft. (- 4.57 m)	20,900 (9480)	20,900 (9480)	13,560 (6150)	13,560 (6150)					

With 9 ft. 6 in. (2.90 m) arm, 8200 lb. (3720 kg) counterweight	Load Point Height	 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) 					
	25 ft. (7.62 m)				4340 (1970)	4340 (1970)					
	20 ft. (6.10 m)				4640 (2110)	4640 (2110)	4230 (1920)	4230 (1920)			
	15 ft. (4.57 m)			8230 (3730)	8230 (3730)	7930 (3600)	7930 (3600)	4960 (2250)	4960 (2250)		
	10 ft. (3.05 m)	18,800 (8530)	18,800 (8530)	13,710 (6240)	13,710 (6240)	10,350 (4690)	10,350 (4690)	8930 (4050)	6900 (3130)	4950 (2240)	4950 (2240)
	5 ft. (1.52 m)	10,940 (4960)	10,940 (4960)	18,520 (8400)	14,190 (6440)	12,650 (5740)	9330 (4230)	10,110 (4580)	6610 (3000)	6380 (2890)	4870 (2210)
	Ground Line	7290 (3310)	7290 (3310)	17,150 (7780)	13,680 (6200)	14,300 (6490)	8930 (4050)	11,080 (5030)	6380 (2900)	5710 (2590)	4780 (2170)
	- 5 ft. (- 1.52 m)	11,860 (5380)	11,860 (5380)	17,470 (7930)	13,600 (6170)	14,920 (6770)	8770 (3980)	11,490 (5210)	6270 (2840)		
	- 10 ft. (- 3.05 m)	13,110 (5950)	13,110 (5950)	18,640 (8460)	13,740 (6230)	14,360 (6510)	8810 (4000)	10,830 (4910)	6330 (2870)		
	- 15 ft. (- 4.57 m)	17,640 (8000)	17,640 (8000)	16,050 (7280)	16,050 (7280)	11,870 (5380)	9080 (4120)				

BUCKETS

A full line of buckets is offered to meet a wide variety of applications. All capacities are SAE heaped* ratings. The buckets have an adjustable bushing feature for side clearance, with the exception of the ditching bucket. Tooth selection includes either the John Deere Fanggs®, Standard, Tiger, Twin Tiger, Abrasion panel or Flare, or the ESCO (Vertalok) Standard, Tiger, Twin Tiger or Flare tooth. Replaceable cutting edges are available through John Deere parts. Optional side cutters add 6 inches (150 mm) to bucket widths.

Type Bucket	Bucket Width		Bucket Capacity*		Weight		Bucket Dig Force		Arm Dig Force 7 ft. 3 in. (2.2 m)		Arm Dig Force 9 ft. 6 in. (2.9 m)		Bucket Tip Radius		No. Teeth
	in.	mm	yd ³	m ³	lb.	kg	lb.	kN	lb.	kN	lb.	kN	in.	mm	
General Purpose Plate Lip	24	600	0.59	0.45	1106	502	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	30	750	0.77	0.59	1182	536	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	36	900	0.95	0.73	1401	635	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	5
	42	1067	1.12	0.86	1590	721	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	5
	48	1220	1.30	0.99	1673	759	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	6
General Purpose High Capacity	30	750	0.95	0.73	1391	631	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	4
	36	900	1.16	0.89	1451	658	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	5
	42	1067	1.38	1.06	1596	724	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	5
	48	1220	1.60	1.22	1785	809	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	6
Heavy Duty Plate Lip	24	600	0.59	0.45	1358	616	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	30	750	0.77	0.59	1447	656	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	36	900	0.95	0.73	1567	711	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	5
	42	1067	1.12	0.86	1676	760	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	5
	48	1220	1.30	0.99	1759	798	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	6
Heavy Duty High Capacity	24	600	0.73	0.56	1401	635	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	4
	30	750	0.95	0.73	1528	693	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	4
	36	900	1.16	0.89	1629	739	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	5
	42	1067	1.38	1.06	1701	771	27,490	122.3	28,305	125.9	22,070	98.2	57.5	1461	5
Severe Duty Cast Lip	24	600	0.59	0.45	1439	653	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	30	750	0.77	0.59	1551	703	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	36	900	0.95	0.73	1629	739	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	5
Severe Duty Plate Lip	30	750	0.77	0.59	1760	798	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
	36	900	0.95	0.73	1859	843	28,485	126.7	28,705	127.7	22,330	99.3	55.5	1410	4
Ditching	60	1500	0.90	0.69	1121	508	42,725	190.0	32,985	146.7	25,070	111.5	37.0	940	0
	72	1800	1.06	0.81	1244	564	42,725	190.0	32,985	146.7	25,070	111.5	37.0	940	0

*With side cutters.

BUCKET SELECTION CHART

RECOMMENDED BUCKET SIZE*

lb/yd ³	kg/m ³	MATERIAL (loose weight)	GENERAL PURPOSE BUCKET		HEAVY DUTY BUCKET	
			cu. yd.	m ³	cu. yd.	m ³
700	420	Wood chips	6.50	5.0	—	—
750	440	Peat, dry	5.50	4.2	—	—
950	560	Cinders	4.00	3.1	—	—
1170	690	Peat, wet	3.50	2.7	—	—
1600	950	Topsoil	2.50	1.9	—	—
1780	1050	Coal	2.25	1.7	—	—
2100	1250	Caliche	1.38-1.75	1.1-1.3	1.25-1.50	1.0-1.1
2100	1250	Earth, loam	1.75	1.3	1.50	1.1
2250	1330	Shale	1.75	1.3	1.50	1.1
2400	1420	Sand, dry	1.75	1.3	1.50	1.1
2500	1480	Clay, dry	1.12-1.50	0.9-1.1	1.38	1.1
2550	1510	Earth, dry	1.38-1.50	1.1	1.38	1.1
2600	1540	Limestone, broken or crushed	1.12-1.50	0.9-1.1	1.00-1.38	0.8-1.1
2700	1600	Earth, wet	1.50	1.1	1.38	1.1
2800	1660	Clay, wet	1.50	1.1	1.38	1.1
2800	1660	Rock, granite, blasted and broken	1.38-1.75	1.1-1.3	1.25-1.50	1.0-1.1
2850	1690	Sand, moist	1.50	1.1	1.38	1.1
2900	1720	Sand and gravel, dry	1.50	1.1	1.38	1.1
3100	1840	Sand, wet	1.38	1.1	1.25	1.0
3400	2020	Sand and gravel, wet	1.38	1.1	1.25	1.0

*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.