690C EXCAVATOR

Model shown may include options.

ENGINE PERFORMANCE

<table>
<thead>
<tr>
<th>Nm</th>
<th>lb-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>610</td>
<td>450</td>
</tr>
<tr>
<td>542</td>
<td>400</td>
</tr>
<tr>
<td>475</td>
<td>350</td>
</tr>
<tr>
<td>407</td>
<td>300</td>
</tr>
<tr>
<td>340</td>
<td>250</td>
</tr>
</tbody>
</table>

FEATURES

125-SAE-net-hp (93 kW) turbocharged John Deere diesel engine

21-ft. (6.40 m) digging depth

30-ft. (9.14 m) reach at ground level

Two-lever, all-hydraulic pilot control of boom, arm, bucket, and 360-degree continuous swing

Simultaneous operation of digging functions and propel

Track-type undercarriage with hydraulic track adjustment, sealed track chain and metal-faced seals for rollers and idlers

Two-speed propel with planetary gear reduction and automatically engaged multiple-wet-disk brakes

Large cab for improved operator comfort and visibility

Vandal protection—lockable cab and service doors

*Depending on operating variables
690C 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, those specifications are based on a unit with 36-in. (900 mm) bucket, 24-in. (600 mm) track shoes, full fuel tank, 172 lb. (80 kg) operator and standard equipment.

**Rated Power @ 1900 rpm:**
- SAE: 125 hp (93 kW)
- DIN 6270: 93 kW
- Gross: 134 hp (100 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 diesel fuel @ 30 API gravity. No derating is required up to 10,000 ft. (3000 m) altitude. Gross power is without cooling fan.

**Engine:** John Deere 6-466T
- Type: 4-stroke cycle, turbocharged diesel
- Bore and stroke: 4.56 x 4.75 in. (116 x 121 mm)
- No. of cylinders: 6
- Displacement: 666 cu. in. (10,438 L)
- Compression ratio: 14.9 to 1
- Maximum net torque @ 1300 rpm: 450 lb-ft (610Nm)
- Lubrication: Pressure system with full-flow filter
- Cooling fan: Suction type
- Air cleaner w/ restriction indicator and safety element: Dry
- Electrical system: 24-volt with 42-amp alternator
- Batteries (two 12-volt): Reserve capacity: 160 minutes

**Hydraulic System:** Open center
- Two open-center pumps mounted in tandem are coupled directly to the flywheel, through an isolator.
- Total rated pump flow: 84 gpm (5.30 L/s)
- System operating pressure: 2500 psi (17,238 kPa)
- Relief valves:
  - Boom (2): Rod, 3000 psi (20,685 kPa) (210.9 kg/cm²)
  - Head, 3750 psi (25,868 kPa) (283.6 kg/cm²)
  - Arm (2): 3000 psi (20,685 kPa) (210.9 kg/cm²)
  - Bucket (2): 3000 psi (20,685 kPa) (210.9 kg/cm²)
- Oil filtration:
  - One 4-micron full-flow return filter with bypass
  - One 40-micron pilot oil filter
- Oil cooler:
  - All brazed aluminum hydraulic oil cooler, mounted side by side with engine coolant radiator.
- Hydraulic connections:
  - Flat-face O-ring type

**Cylinders:**
- **Boom (2):**
  - Bore: 5.5 in. (127 mm)
  - Rod Diameter: 2.26 in. (57 mm)
  - Stroke: 43.75 in. (1111 mm)
- **Arm:**
  - Bore: 5.5 in. (140 mm)
  - Rod Diameter: 3.25 in. (83 mm)
  - Stroke: 63.19 in. (1605 mm)
- **Bucket:**
  - Bore: 5.5 in. (140 mm)
  - Rod Diameter: 3.25 in. (83 mm)
  - Stroke: 40.51 in. (1029 mm)

All cylinders have phenolic wear rings. Boom and arm cylinders have a built-in hydraulic cushion at each end of stroke. Bucket cylinder has hydraulic cushion at rod end. All cylinder rods are ground, heat treated, chrome plated and polished.

**Swing Mechanism:**
- Swing: 360 degrees; hydraulic motor with integral crossover reliefs and multiple reduction spur and planetary gearing.
- Swing brake: Hydraulically released, spring applied, multiple wet-disk
- Swing bearing: Single row ball with internal drive, induction hardened ring and pinion gears and 500-hour lubrication interval. In-cab fitting for swing bearing lubrication.

**Undercarriage:**
- Propel system (one for each track): High-torque, 2-speed hydraulic motors with planetary and spur gear reduction drives. Wet multiple-disk brakes automatically release while propelling, and apply when stationary. Independent drive to each track permits counterrotation.
- Undercarriage and track frame:
  - Each track frame is a formed, reinforced U-channel. A reinforced undercarriage frame joins the track frame to the swing bearing mount.
  - Narrow or wide undercarriage frames available.
- Track rollers and idlers:
  - Nine rollers and one 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.
- Track adjustment: Hydraulic

**Track Shoes:**
- **Width:**
  - 24 in. (600 mm) (standard)
  - 30 in. (750 mm) (optional)
- **Shoes:**
  - Trimmer: 6136 sq. in. (93578 cm²)
  - Triple: 7570 sq. in. (94844 cm²)
- **Ground Contact:**
  - Trimmer: 6.5 psi (44.8 kPa)
  - Triple: 5.3 psi (36.5 kPa)
- **Average Ground Pressure:**
  - Trimmer: 0.46 kg/cm²
  - Triple: 0.37 kg/cm²

**Cab:**
- Large, isolation-mounted, with sound-absorbing materials on ceiling and sidewalls. Safety glass windows. Front window can be stored overhead. Rear window, door, and roof hatch open for ventilation.

**Seat:**
- Deluxe, fully cushioned, vinyl covered, with adjustable backrest, headrest and padded fold-up armrests. Independent horizontal and vertical adjustments.

**Controls:**
- All hydraulic functions are pilot controlled for precise metering and low operator effort. Two levers control swing, boom, arm, and bucket functions. Right and left pedals control forward, reverse and counterrotation movements. All controls are deactivated by a lever on the left console.

**Boom and Arm:**

**Servicing and Vandal Protection:**
- Swingaway service doors expose built-in service platforms and handrails. Hinged hood provides easy access to engine and hydraulic systems. Built-in key locks secure cab and service access areas.

**Additional Standard Equipment:**
- **Cab:**
  - Heater, 13,500 BTU/hr (4 kW)
  - Interior light
  - Positive position hand throttle
  - Windshield wiper
  - Monitor system with alarm features:
    - Engine air cleaner restriction indicator light
    - Engine alternator charge indicator light
    - Engine coolant temperature warning light w/audible alarm
    - Engine oil pressure warning light w/audible alarm
  - Flow divider indicator light
  - Hydraulic oil filter restriction indicator light
  - Gauges:
    - Engine coolant temperature gauge
    - Fuel gauge
    - Hydraulic oil temperature gauge
    - Quartz hourmeter
  - Engine:
    - Full-flow oil filter
    - Dual dry-type air filter
    - Dual heavy-duty fuel filters
    - Low maintenance batteries
    - Underhood muffler
  - Frame:
    - Hinged engine cover
    - Built-in service platforms
    - 4280-lb. (1940 kg) counterweight
  - Undercarriage:
    - Propel motor shields
    - Pull loops
    - Single flange track rollers
    - Upper track slides

**Optional or Special Equipment:**
- **Cab:**
  - Air conditioner with integral heater
  - Air conditioner, 20,000 Btu/h (5.8 kW)
  - Heater, 40,000 Btu/hr (11.7 kW)
  - Alternate pilot control pattern
  - Window protection covers
  - Engine:
    - Either starting aid
    - Four-battery system with 320 minutes reserve capacity
  - Coolant heater
  - Frame:
    - Auxiliary counterweight system, 1100-lb. (500 kg) or 2200-lb. (1000 kg)
  - Front attachments:
    - Bucket linkage load lifting loop
    - Buckets and attachments
    - Bucket side cutters and teeth
    - Worklights—two boom-mounted
  - Undercarriage:
    - 30-in. (750 mm) triple semigrouser shoes
Operating Information:
Max. digging depth ........................................... 21 ft. (6.40 m)
Max. reach at ground level ................................ 30 ft. (9.14 m)
Max. dumping height ......................................... 15 ft. (4.57 m)
Gradability ...................................................... 76% (35°)
Swing speed ...................................................... 0-7.8 rpm
Travel speeds: Low range ...................................... 0 to 0.9 mph (1.5 km/h)
High range ...................................................... 0 to 1.8 mph (2.8 km/h)

Weights:
Operating weight (w/full fuel tank, operator,
and bucket) with:
24-in. (600 mm) triple grousers shoes ............ 39,935 lb (18,115 kg)
30-in. (750 mm) triple grousers shoes .......... 40,865 lb (18,550 kg)
Upperstructure (less front attachment and
undercarriage) ............................................ 15,530 lb (7,045 kg)
Undercarriage:
24-in. (600 mm) triple-grouser shoes ......... 17,020 lb (7,720 kg)
30-in. (750 mm) triple-grouser shoes ......... 17,980 lb (8,155 kg)
One-piece boom (with arm cylinder) .......... 3,350 lb (1,520 kg)
Arm, 108.14 in. (2.75 m) w/bucket cylinder
and linkage ............................................. 2,165 lb (980 kg)
Boom lift cylinders, total weight (2) ........... 515 lb (234 kg)
Main counterweight (2) .............................. 4,280 lb (1,940 kg)
Optional auxiliary counterweights (per set)
(Two sets available) .................................... 1,100 lb (500 kg)

Capacities:
Fuel tank ...................................................... 70 gal. (265 L)
Cooling system .............................................. 42 qt. (40 L)
Engine lubrication, including filter .......... 25 qt. (24 L)
Hydraulic system .......................................... 80 gal. (303 L)
Planetary propel drive (each) .................... 10 qt. (9.5 L)
Swing drive ................................................. 8 qt. (7.6 L)
Swing planetary drive ................................. 0.4 qt. (0.4 L)
# 690C EXCAVATOR LIFTING CAPACITIES

Ratings at bucket lift hook, machine 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. Add 8 percent to stability-limited capacities when optional 1100-lb. (500 kg) counterweight is used. Add 16 percent to stability-limited capacities when optional 2200-lb. (1000 kg) counterweight is used.

## BOOM lifting, over front or rear, arm holding

<table>
<thead>
<tr>
<th>Horizontal distance from centerline of rotation:</th>
<th>10 ft. (3.05 m)</th>
<th>15 ft. (4.57 m)</th>
<th>20 ft. (6.10 m)</th>
<th>25 ft. (7.62 m)</th>
<th>30 ft. (9.14 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 ft. (4.57 m)</td>
<td>6,460 (2930)</td>
<td>11,320 (5130)</td>
<td>14,830 (6730)</td>
<td>9,550 (4330)</td>
<td>9,230 (4190)</td>
</tr>
<tr>
<td>10 ft. (3.05 m)</td>
<td>9,440 (4280)</td>
<td>14,350 (6510)</td>
<td>14,270 (6470)</td>
<td>9,110 (4130)</td>
<td>9,210 (4180)</td>
</tr>
<tr>
<td>5 ft. (1.52 m)</td>
<td>11,160 (5180)</td>
<td>13,910 (6310)</td>
<td>10,400 (4720)</td>
<td>6,820 (3090)</td>
<td>6,720 (3050)</td>
</tr>
<tr>
<td>Ground level</td>
<td>17,160 (7780)</td>
<td>17,560 (7970)</td>
<td>10,330 (4690)</td>
<td>6,720 (3050)</td>
<td>6,810 (3090)</td>
</tr>
<tr>
<td>- 5 ft. (-1.52 m)</td>
<td>26,300 (11 930)</td>
<td>16,140 (7320)</td>
<td>10,380 (4710)</td>
<td>6,810 (3090)</td>
<td></td>
</tr>
<tr>
<td>- 10 ft. (-3.05 m)</td>
<td>20,900 (9480)</td>
<td>12,340 (5600)</td>
<td>7,820 (3550)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## ARM lifting, over front or rear, boom holding

<table>
<thead>
<tr>
<th>Horizontal distance from centerline of rotation:</th>
<th>10 ft. (3.05 m)</th>
<th>15 ft. (4.57 m)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>15 ft. (4.57 m)</td>
<td></td>
<td></td>
<td></td>
<td>4,710 (2140)</td>
<td></td>
</tr>
<tr>
<td>10 ft. (3.05 m)</td>
<td></td>
<td></td>
<td></td>
<td>9,360 (4230)</td>
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</tr>
<tr>
<td>5 ft. (1.52 m)</td>
<td></td>
<td></td>
<td></td>
<td>5,250 (2380)</td>
<td></td>
</tr>
<tr>
<td>Ground level</td>
<td></td>
<td></td>
<td></td>
<td>5,680 (2580)</td>
<td></td>
</tr>
<tr>
<td>- 5 ft. (-1.52 m)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 10 ft. (-3.05 m)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- 15 ft. (-4.57 m)</td>
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</tr>
</tbody>
</table>

## BOOM lifting, over the side, arm holding, upperstructure 90 degrees to tracks

<table>
<thead>
<tr>
<th>Horizontal distance from centerline of rotation:</th>
<th>10 ft. (3.05 m)</th>
<th>15 ft. (4.57 m)</th>
<th>20 ft. (6.10 m)</th>
<th>25 ft. (7.62 m)</th>
<th>30 ft. (9.14 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 ft. (4.57 m)</td>
<td>4,260 (1930)</td>
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<tr>
<td>10 ft. (3.05 m)</td>
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<tr>
<td>5 ft. (1.52 m)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Ground level</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- 5 ft. (-1.52 m)</td>
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<tr>
<td>- 10 ft. (-3.05 m)</td>
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<td></td>
</tr>
<tr>
<td>- 15 ft. (-4.57 m)</td>
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</tr>
</tbody>
</table>

## ARM lifting, over the side, boom holding, upperstructure 90 degrees to tracks

<table>
<thead>
<tr>
<th>Horizontal distance from centerline of rotation:</th>
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<tr>
<td>10 ft. (3.05 m)</td>
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<tr>
<td>Ground level</td>
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<td></td>
</tr>
<tr>
<td>- 15 ft. (-4.57 m)</td>
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<td></td>
</tr>
</tbody>
</table>
690C EXCAVATOR BUCKETS
Buckets: High-strength steel, ribbed and double plated bottom section, loading and power digging positions.

<table>
<thead>
<tr>
<th>Nominal Width</th>
<th>Bite Width</th>
<th>Capacity SAE (Heaped)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 in. (600 mm)</td>
<td>25.4 in. (645 mm)</td>
<td>0.56 cu. yd. (0.43 m³)</td>
<td>1000 lb. (455 kg)</td>
</tr>
<tr>
<td>30 in. (750 mm)</td>
<td>31.4 in. (798 mm)</td>
<td>0.75 cu. yd. (0.57 m³)</td>
<td>1100 lb. (500 kg)</td>
</tr>
<tr>
<td>36 in. (900 mm)</td>
<td>37.4 in. (950 mm)</td>
<td>0.88 cu. yd. (0.67 m³)</td>
<td>1200 lb. (545 kg)</td>
</tr>
<tr>
<td>48 in. (1250 mm)</td>
<td>49.4 in. (1250 mm)</td>
<td>1 cu. yd. (0.76 m³)</td>
<td>1200 lb. (545 kg)</td>
</tr>
<tr>
<td>60 in. (1520 mm)</td>
<td>60.0 in. (1520 mm)</td>
<td>1.38 cu. yd. (1.05 m³)</td>
<td>1200 lb. (545 kg)</td>
</tr>
</tbody>
</table>

**Heavy duty**

<table>
<thead>
<tr>
<th>Nominal Width</th>
<th>Bite Width</th>
<th>Capacity SAE (Heaped)</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 in. (600 mm)</td>
<td>26.0 in. (660 mm)</td>
<td>0.625 cu. yd. (0.48 m³)</td>
<td>1380 lb. (625 kg)</td>
</tr>
<tr>
<td>23 in. (740 mm)</td>
<td>31.0 in. (787 mm)</td>
<td>0.75 cu. yd. (0.57 m³)</td>
<td>1500 lb. (680 kg)</td>
</tr>
<tr>
<td>35 in. (890 mm)</td>
<td>37.0 in. (940 mm)</td>
<td>0.75 cu. yd. (0.57 m³)</td>
<td>1525 lb. (690 kg)</td>
</tr>
</tbody>
</table>

**BUCKET SELECTION CHART**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>Regular Duty</th>
<th>Heavy Duty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wood chips</td>
<td>5 cu. yd. (3.8 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Peat, dry</td>
<td>4.5 cu. yd. (3.4 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Peat, wet</td>
<td>3 cu. yd. (2.3 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Cinders</td>
<td>2.5 cu. yd. (1.9 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Topsoil</td>
<td>1.8 cu. yd. (1.4 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Earth, dry loam</td>
<td>1.38 cu. yd. (1.05 m³)</td>
<td>—</td>
</tr>
<tr>
<td>Sand, dry</td>
<td>1.38 cu. yd. (1.05 m³)</td>
<td>1 cu. yd. (0.8 m³)</td>
</tr>
<tr>
<td>Coal, natural bed</td>
<td>1.12 cu. yd. (0.9 m³)</td>
<td>1 cu. yd. (0.8 m³)</td>
</tr>
<tr>
<td>Earth, moist loam</td>
<td>1.12 cu. yd. (0.9 m³)</td>
<td>0.88 cu. yd. (0.7 m³)</td>
</tr>
<tr>
<td>Sand, gravel, dry</td>
<td>1.12 cu. yd. (0.9 m³)</td>
<td>0.88 cu. yd. (0.7 m³)</td>
</tr>
<tr>
<td>Sand, moist</td>
<td>1.12 cu. yd. (0.9 m³)</td>
<td>0.88 cu. yd. (0.7 m³)</td>
</tr>
<tr>
<td>Sand, wet</td>
<td>1 cu. yd. (0.8 m³)</td>
<td>0.75 cu. yd. (0.6 m³)</td>
</tr>
<tr>
<td>Shale</td>
<td>1 cu. yd. (0.8 m³)</td>
<td>0.75 cu. yd. (0.6 m³)</td>
</tr>
<tr>
<td>Limestone, broken</td>
<td>—</td>
<td>0.62 cu. yd. (0.5 m³)</td>
</tr>
<tr>
<td>Clay, wet</td>
<td>0.88 cu. yd. (0.7 m³)</td>
<td>0.62 cu. yd. (0.5 m³)</td>
</tr>
<tr>
<td>Rock, granite, blasted</td>
<td>—</td>
<td>0.62 cu. yd. (0.5 m³)</td>
</tr>
</tbody>
</table>

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