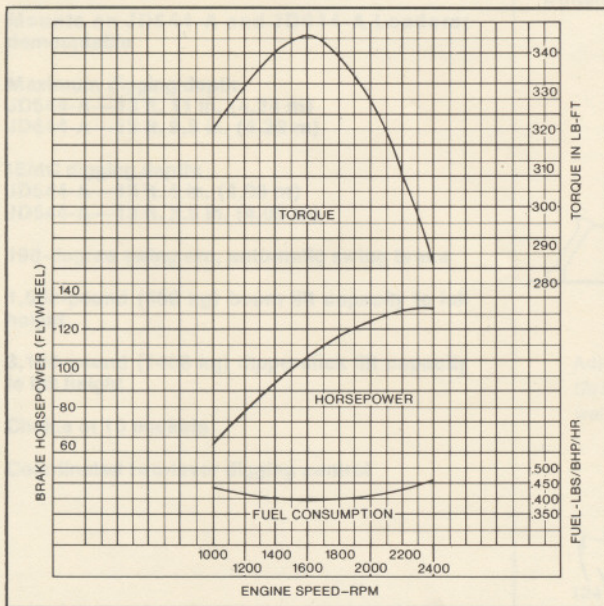




JD690-A EXCAVATOR



ENGINE PERFORMANCE



Curves shown are for an engine complete with fuel system, water pump, lubricating pump, air cleaner, alternator, fan and muffler.

Data shows performance observed at 29.38 in. of barometric pressure (500 ft.) and 85° F. air temperature.

FEATURES

21 ft. (6,40 m) digging depth

30 ft. (9,14 m) reach at ground level

Roomy cab in command-post position

John Deere two lever, all-hydraulic control of boom, crowd, bucket, and 360-degree continuous swing

Simultaneous operation of digging functions and propel

Turbo-built and turbo-charged John Deere Diesel develops 131 net engine flywheel horsepower (133 PS)

84 gpm (318 lpm) hydraulic capacity

Hydraulic cushioning in boom and crowd cylinders

Heavily built crawler mount w/widespread cross tubes, large diameter track rollers and pins, self-cleaning sprockets and idlers, stainless steel adjusting screws for track-propel chain tension and track tension

Vandal protection



JD690-A EXCAVATOR SPECIFICATIONS

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

Horsepower (at 2,400 engine rpm):	SAE	PS
Gross	141	143
Net	131	133

Net engine flywheel horsepower is for an engine equipped with fan, air cleaner, water pump, lubricating oil pump, fuel pump, alternator, and muffler. The gross engine horsepower is without fan. Gross and net flywheel horsepower ratings are under SAE standard conditions of 500-ft. altitude and 85°F. temperature and DIN 70 020 (non-corrected). Engine maintains rated horsepower up to 10,000 feet (3,000 m) altitude.

Engine: John Deere Diesel, vertical 6-cylinder, valve-in-head, 4 stroke cycle—turbo-built with turbocharger
 Bore and stroke 4.25 x 4.75 in. (108 x 121 mm)
 Piston displacement 404 cu. in. (6620 cm³)
 Compression ratio 16.5 to 1
 Governed speed range 800-2,600 rpm
 Maximum torque @ 1,600 rpm 345 lb-ft (47.7 kg-m)
 NACC or AMA (U.S. Tax) horsepower 43.3
 Lubrication Pressure system with full-flow filter
 Cooling Pressurized with thermostat and fixed bypass
 Fan Blower-type
 Air cleaner Dry-type, dual element with restriction indicator
 Electrical and starting system 12-volt with alternator

Hydraulic System:

Two open-center pumps mounted in tandem are coupled directly to the flywheel. Total flow is 84 gpm (318 lpm) at 2,400 engine rpm. Operating pressure is 2,500 psi (175.7 kg/cm²). For easier cold-weather starting, a pump disconnect permits cranking the engine without rotating the pump shaft.

When propelling, the first pump provides 42 gpm (159 lpm) to drive the right track and the second pump provides 42 gpm (159 lpm) to drive the left track. When digging, total flow of 84 gpm (318 lpm) from both pumps is used to operate boom, crowd and bucket cylinders, and swing. To operate propel and digging functions at the same time, two hydraulic flow dividers are used to split the total 84 gpm (318 lpm) oil flow between the two functions.

Relief valves:

Boom (2) ... 3,000 psi (210.9 kg/cm²) and 3,750 psi (263.7 kg/cm²)
 Crowd (2) 3,000 psi (210.9 kg/cm²)
 Bucket (2) 3,000 psi (210.9 kg/cm²)
 Oil filtration Three 10-micron filters used in return lines
 Hydraulic swing motor 7 rpm

Cylinders:	Bore	Rod Diameter
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. Full-frontal hydraulic oil cooler, located in front of engine coolant radiator.

Operating Information:

Digging depth (w/ teeth) 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)

Digging force:

24, 30 or 36 in. (610, 762 or 914 mm)
 bucket 23,000 lb. (10433 kg)
 48 in. (1,22 m), 60 in. (1,52 m) bucket. . . 27,000 lb. (12247 kg)
 24 or 29 in. (610 or 737 mm) rock
 bucket 23,500 lb. (10659 kg)
 33 in. (838 mm) rock bucket 25,700 lb. (11658 kg)
 35 in. (889 mm) rock bucket 26,000 lb. (11793 kg)
 Gradability 50 percent
 Travel speed 0 to 1.2 mph (1.9 km/h)

Width:	Struck Capacity
24 in. (610 mm) bucket	1/2 cu. yd. (0.38 m ³)
30 in. (762 mm) bucket	5/8 cu. yd. (0.48 m ³)
36 in. (914 mm) bucket	3/4 cu. yd. (0.57 m ³)
48 in. (1,22 m) bucket	11/16 cu. yd. (0.53 m ³)
60 in. (1,52 m) bucket	7/8 cu. yd. (0.67 m ³)
24 in. (610 mm) rock bucket	1/2 cu. yd. (0.38 m ³)
29 in. (737 mm) rock bucket	5/8 cu. yd. (0.48 m ³)
33 in. (838 mm) rock bucket	5/8 cu. yd. (0.48 m ³)
35 in. (889 mm) rock bucket	5/8 cu. yd. (0.48 m ³)

Swing Mechanism:

Swing 360-degree, continuous
 Turntable bearings Single row, ball-type
 Ring gear and pinion gear are case hardened, run in lubricant protected from dust and dirt.

Undercarriage:

Propel motors (one for each track) ... High-torque, radial, 5-piston hydraulic motors with gear-reduction drives to chain sprockets. Low-rpm radial motors also hydraulically stop and hold the unit, act as brakes. Independent drive to each track permits counter-rotation to turn excavator in small area. Drive-chain links and track pins are hardened.

Undercarriage, car body, and track frame ... Heavy-duty weldment with each track frame fabricated of two channel frames boxed at each end. Track frames are joined by boxed and reinforced car body with swing bearing mount.

Track Rollers and Idlers:

Hardened in areas subject to wear. Special seals are used to retain the lubricant and exclude dust and dirt.

Track Shoes and Pins:

Track pins ... 1.25 in. (32 mm) dia., 2 for each shoe, disperse load over greater area for less stress.
 Track shoes ... 24 in. (610 mm), standard. Abrasion-resistant alloy-steel casting.
 Ground contact area ... 5,995 sq. in. (38679 cm²) with 6.1 psi (0.429 kg/cm²) ground pressure.
 Track and propel-chain tension adjustment ... Mechanical with stainless-steel adjusting screws.
 Sprockets Self-cleaning

House Frame:

Massive steel weldment with 1.5-in. (38 mm) thick steel platform and 3 x 7-in. (76 x 178 mm) solid steel bars joined by 1-in. (25 mm) and .5-in. (12.7 mm) crossmembers. The 1.5-in. (38 mm) steel member supports swing assembly and bearing. Platform mounts for boom-pivot and boom-cylinder are fabricated of 1-in. (25 mm) plates, boxed and reinforced by .5-in. (12.7 mm) steel. Built-in counterweights bolt to underside of frame.

Engine is mounted on .5-in. (12.7 mm) angled and gusseted mounts and is located at the rear center between the house frame steel bars.

Floor of engine service area is safety steel plate.

Fuel tank is mounted forward of the engine.

Hydraulic reservoir is located on platform to right of engine.

Two 6-volt batteries are mounted in series on platform near hydraulic reservoir.

Cab:

Steel with .5-in. (12.7 mm) urethane sound-proofing on ceiling and cushioned neoprene floor mat. Safety glass on all sides and top. Front of cab slopes forward at top for good operator visibility. Front and rear windows open. Cab is 2 ft. 10 in. (864 mm) wide, with a standup height of 5 ft. 5.375 in. (1,66 m). Front window is removable.

Seat:

Posture-designed, foam-rubber cushioned seat adjustable for operator weight and size.

Controls:

Two-lever for boom, crowd, bucket, and swing. Right and left pedals control forward and rearward movement of right and left tracks respectively. Throttle control is friction-type, push-pull rod and cable. Flow divider control knob is push-pull type with indicator light.

Instruments: World-wide recognition symbols are used.

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Boom and Dipperstick:

Tapered box-type construction with heat-treated steel bushings and cast-steel sections at pivot points. Machined and bored after welding for accurate alignment.

Boom-to-frame pivot pins are 3 in. (76 mm) dia. Boom-to-dipperstick pin is 2.75 in. (70 mm) dia. Bucket pins are 2.5 in. (64 mm) dia. Bucket pins are greased for easy removal.

Bucket Construction:

Heavy-duty steel construction with ribbed and plated bottom section. Leading and side cutting edges of alloy steel. Forged steel teeth have replaceable points. Contoured for easy filling without voids, and for complete dumping.

Servicing and Vandal Protection:

Swingaway service doors expose built-in platforms that permit immediate access to engine and hydraulic systems for routine maintenance. Crank-operated bolts secure the service doors and help discourage vandalism. In addition, cab and access covers to fuel tank, radiator, and air filters may be locked with the accessory key.

Capacities:

	U.S.	Liters
Fuel tank	60 gal.	227,1
Cooling system	11.25 gal.	42,6
Engine lubrication, including filter	15 qt.	14,2
Hydraulic system	80 gal.	302,8
Track-drive gear box (each)	4.5 qt.	4,3
Swing-gear box	7.5 qt.	7,1

Operating Weight (approx.):

Excavator less bucket 36,100 lb. (16375 kg)

Shipping Weight (approx.):

24 in. (610 mm) bucket	1,000 lb. (454 kg)
30 in. (762 mm) bucket	1,100 lb. (499 kg)
36 in. (914 mm) bucket	1,200 lb. (544 kg)
48 in. (1,22 m) bucket	1,200 lb. (544 kg)
60 in. (1,52 m) bucket	1,050 lb. (476 kg)
24 in. (610 mm) rock bucket	1,375 lb. (624 kg)
29 in. (737 mm) rock bucket	1,500 lb. (680 kg)
33 in. (838 mm) rock bucket	1,475 lb. (669 kg)
35 in. (889 mm) rock bucket	1,525 lb. (692 kg)

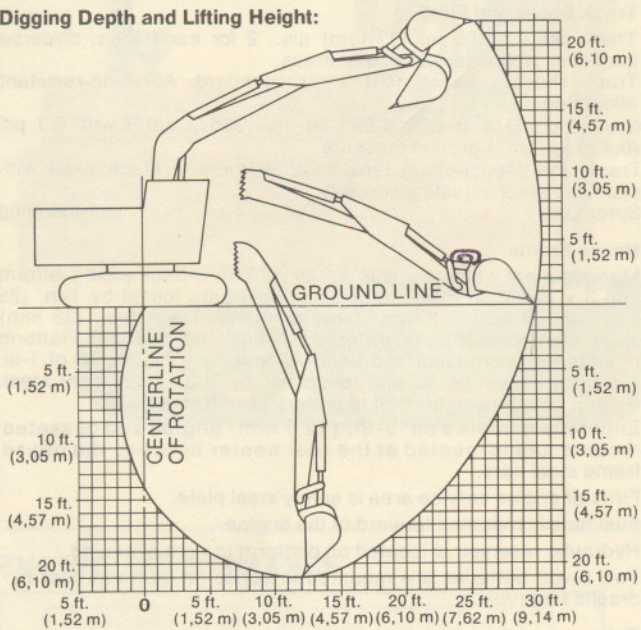
Standard Equipment:

- Electric hour meter
- Alternator charge indicator light
- Ether starting aid
- Engine coolant temp. gauge
- Fuel level gauge
- Hydraulic oil temp. gauge
- Hydraulic oil filter pressure warning light
- Engine oil pressure gauge
- Mechanical pump disconnect
- Key-switch safety start
- Panel light
- Horn
- Deluxe seat
- Positive position hand throttle
- Cab w/ soundproofing and cushioned neoprene floor mat
- Counterweight, center, 1,100 lb. (499 kg)
- Counterweights, side (2), 870 lb. (395 kg) each

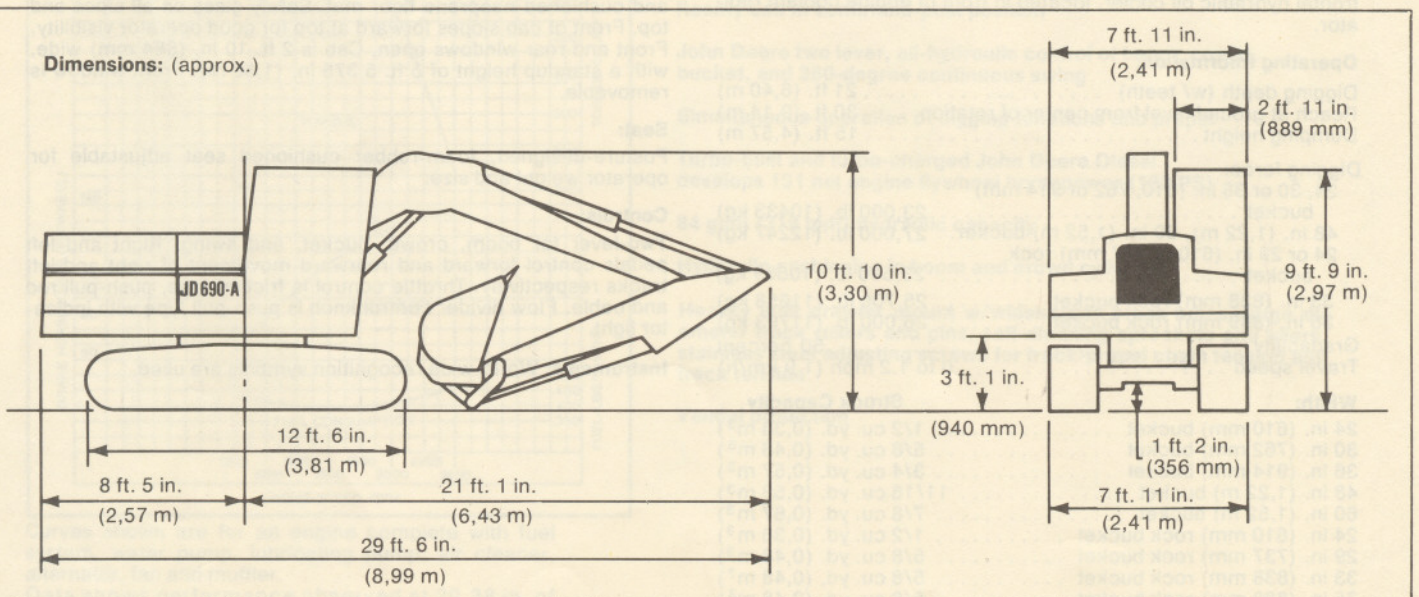
Special Equipment:

- Cab heater
- Side cutter attachments for rock bucket
- Engine coolant heater
- 500 lb. (227 kg) ripper tooth
- Tool box

Digging Depth and Lifting Height:



Dimensions: (approx.)



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BOOM LIFTING CAPACITIES, Fore-and-Aft:

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)				3,980 lb. (1805 kg)	
10 ft. (3,05 m)				4,500 lb. (2041 kg)	3,780 lb. (1715 kg)
5 ft. (1,52 m)	15,300 lb. (6940 kg)	8,560 lb. (3883 kg)	6,160 lb. (2794 kg)	5,130 lb. (2327 kg)	4,200 lb. (1905 kg)
Ground level	16,360 lb. (7421 kg)	10,440 lb. (4735 kg)	7,150 lb. (3243 kg)	5,690 lb. (2580 kg)	4,620 lb. (2096 kg)
-5 ft. (-1,52 m)	18,100 lb. (8210 kg)	11,190 lb. (5076 kg)	7,820 lb. (3547 kg)	5,960 lb. (2703 kg)	
-10 ft. (-3,05 m)	17,310 lb. (7852 kg)	10,980 lb. (4980 kg)	7,820 lb. (3547 kg)	5,820 lb. (2640 kg)	
-15 ft. (-4,57 m)	14,600 lb. (6622 kg)	9,390 lb. (4259 kg)	6,530 lb. (2962 kg)		

Above figures are boom lift force figures and do not exceed 87 percent of hydraulic capacities or 75 percent of total weight required to tip machine. Ratings are at the bucket lift hook. Machine

situated on firm, level, uniform supporting surface. Total load includes weight of cables, hooks, etc.

CROWD LIFTING CAPACITIES, Fore-and-Aft:

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)				5,230 lb. (2375 kg)	
10 ft. (3,05 m)				5,900 lb. (2600 kg)	4,380 lb. (1990 kg)
5 ft. (1,52 m)	18,600 lb. (8440 kg)	10,910 lb. (4950 kg)	7,960 lb. (3610 kg)	6,340 lb. (2880 kg)	4,790 lb. (2175 kg)
Ground level	16,360 lb. (7430 kg)	13,280 lb. (6030 kg)	8,710 lb. (3960 kg)	6,190 lb. (2810 kg)	4,680 lb. (2130 kg)
-5 ft. (-1,52 m)	20,330 lb. (9230 kg)	13,460 lb. (6120 kg)	8,540 lb. (3880 kg)	6,090 lb. (2770 kg)	
-10 ft. (-3,05 m)	21,810 lb. (9900 kg)	13,950 lb. (6330 kg)	8,560 lb. (3890 kg)	6,140 lb. (2790 kg)	
-15 ft. (-4,57 m)	18,480 lb. (8390 kg)	11,980 lb. (5440 kg)	8,420 lb. (3820 kg)		

Above figures are crowd or bucket cylinder lifting capacities with boom holding. Figures do not exceed 87 percent of hydraulic capacities or 75 percent of total weight required to tip machine.

Ratings are at the bucket lift hook. Machine situated on a firm, level, uniform supporting surface. Total load includes weight of cables, hooks, etc.

LIFTING CAPACITIES, Over the Side:

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)				3,530 lb. (1601 kg)	
10 ft. (3,05 m)				3,570 lb. (1619 kg)	2,520 lb. (1143 kg)
5 ft. (1,52 m)	13,000 lb. (5897 kg)	7,200 lb. (3266 kg)	4,740 lb. (2150 kg)	3,290 lb. (1492 kg)	2,390 lb. (1084 kg)
Ground level	12,150 lb. (5511 kg)	6,670 lb. (3025 kg)	4,400 lb. (1996 kg)	3,100 lb. (1406 kg)	2,280 lb. (1034 kg)
-5 ft. (-1,52 m)	12,190 lb. (5529 kg)	6,510 lb. (2953 kg)	4,250 lb. (1928 kg)	3,010 lb. (1365 kg)	
-10 ft. (-3,05 m)	12,490 lb. (5665 kg)	6,600 lb. (2994 kg)	4,270 lb. (1937 kg)	3,060 lb. (1388 kg)	
-15 ft. (-4,57 m)	13,080 lb. (5933 kg)	6,900 lb. (3130 kg)	4,510 lb. (2046 kg)		

Above figures are stability values and indicate stability limitations when house is 90 degrees to tracks. Figures represent 75 percent of total weight required to tip machine. Ratings are at the bucket

lift hook. Machine situated on a firm, level, uniform supporting surface. Total load includes weight of cables, hooks, etc.