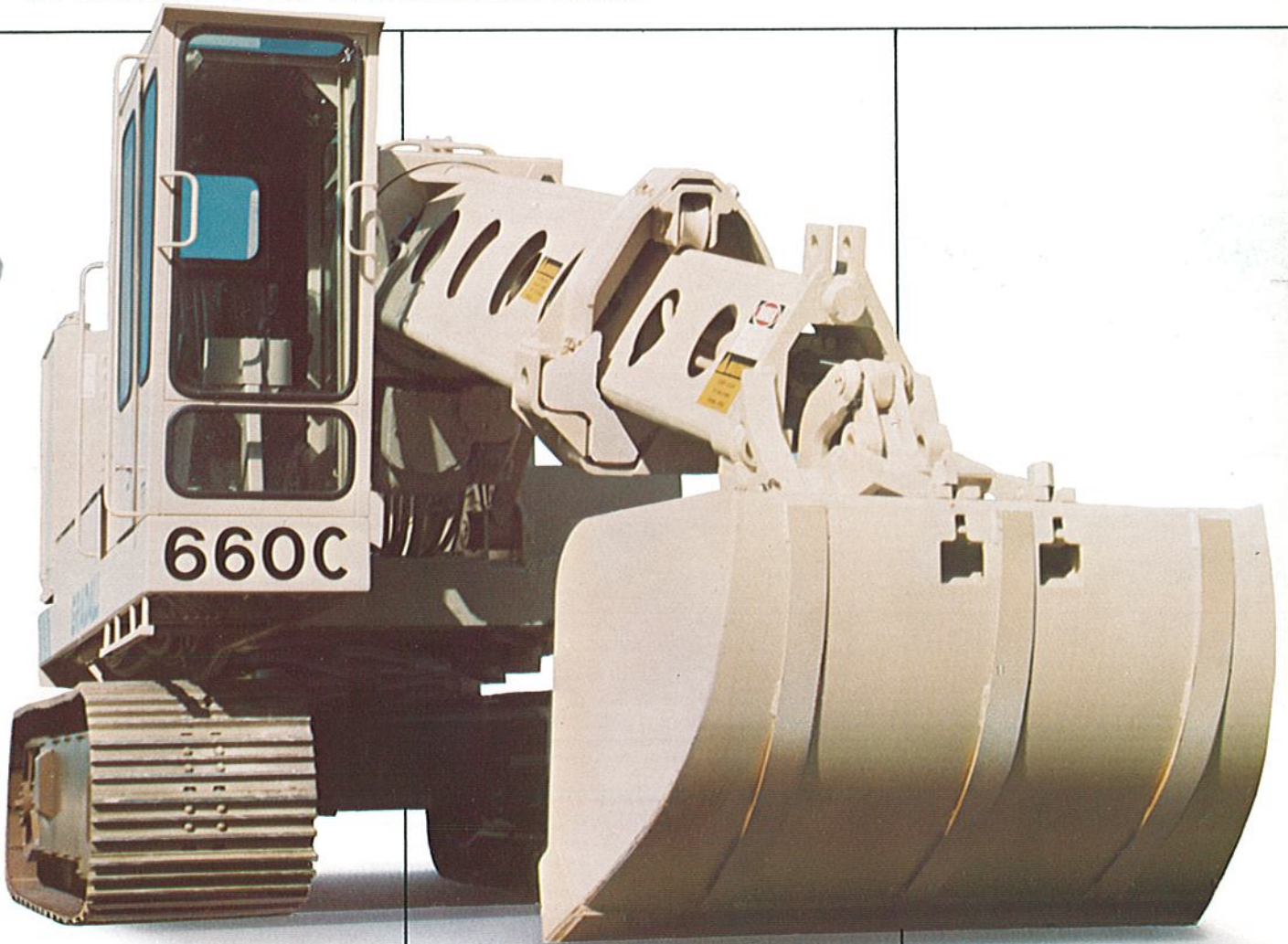


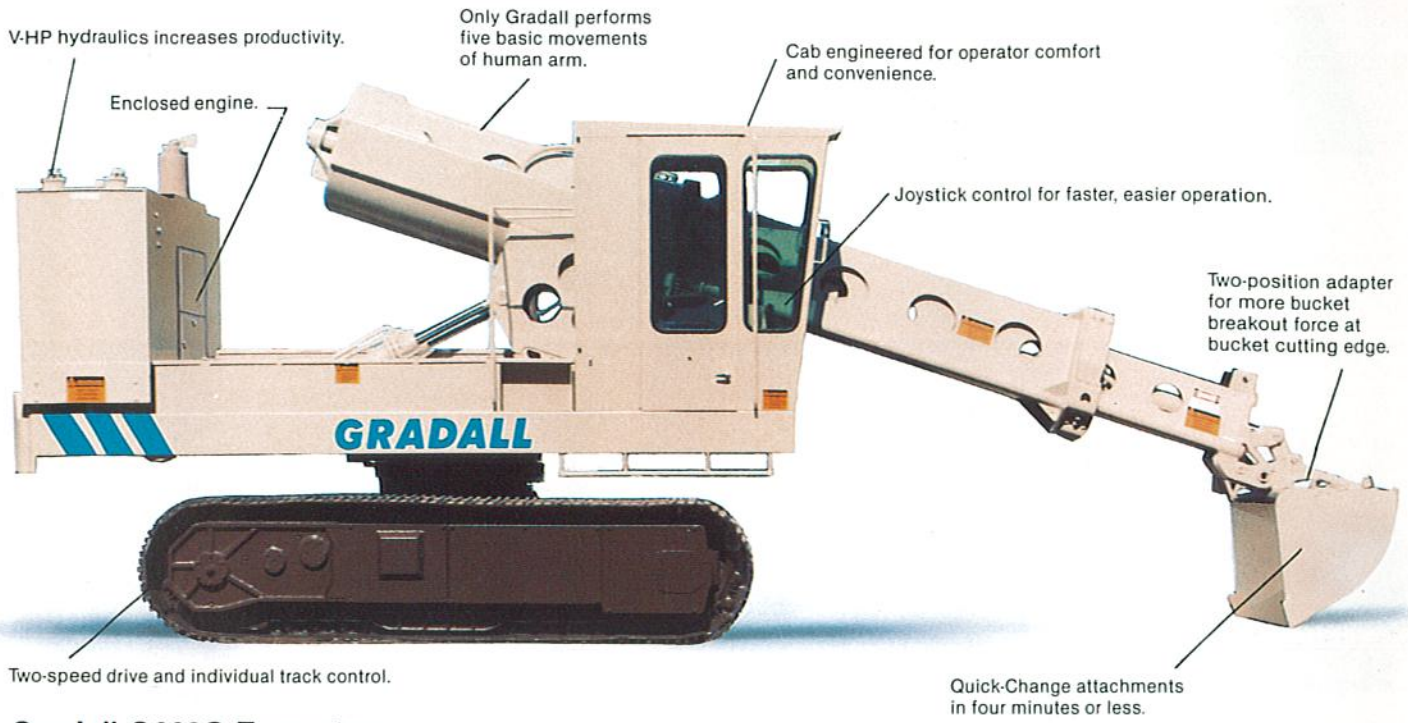


# G660C

CRAWLER  
SPECIFICATIONS  
OPERATING RANGES

## **GRADALL**<sup>®</sup> HYDRAULIC EXCAVATORS





## Gradall G660C Excavators

Featuring new V-HP hydraulics, the Gradall G660C Excavator sets new standards for versatility and efficiency. Productivity ratings and cycle times have been improved with higher volume V-HP pump, relief and control valves.



This versatile workhorse has long been known for its unique ability to perform the five basic movements of a human arm: telescoping boom reaches in and out . . . boom raises and lowers with ability to dig straight down . . . continuous swing . . . boom tilt . . . and bucket wrist action.

### Powerful tractor-type crawler undercarriage

Rugged and powerful, the two-speed tractor-type crawler undercarriage is built to take the punishment of tough conditions . . . rock, mud, sand. Individual track control, with counter-rotating tracks, provides full maneuverability in tight quarters. The automatic digging brake, spring set and hydraulically released, saves time on the job.

Two track adjustment cylinders provide quick adjustment for track tension. Four-spring recoils on each idler protects the track rail from breakage caused by rocks jamming in the track.

Other undercarriage features include sealed rollers with lifetime lubrication. Wide flange design forged rims and special heat treating combine to provide strong support for the weight of the machine and help withstand shock loads.

### Upperstructure designed for rugged durability and operating efficiency

The cab is engineered for operator convenience and comfort. New joystick controls provide for faster, easier operation. All controls and instruments are positioned for convenience and efficiency.

The engine is fully enclosed. Cowling provides engine protection and reduces noise. Controlled air flow dissipates excess heat for efficient engine and pump operation. Cool air is drawn through oil cooler and radiator, around reservoir and pump to pick up heat, then forced out bottom of engine compartment.

An improved valve system handles high oil volume for a fast operating cycle. Built-in relief valves are easy to remove for service. Test ports provide for quick and easy pressure testing. A complete hydraulic filter system, including a by-pass indicator visible from the cab, protects against dirt and foreign particles in the oil. Sight gauges show reservoir oil level at a glance.

Telescoping and tool cylinders of the all-hydraulic telescoping boom are well protected, yet easily accessible for routine maintenance.



The bucket adapter, incorporating four-bar linkage, is mounted on the boom. Double wedge T-bolts facilitate quick-changing of attachments. And, the selection of attachments provides the versatility to keep the G660C on the job . . . excavating, trenching, ditching, sloping, loading, unloading, dredging, ripping, breaking, demolishing, material handling, grading, finishing and cleaning up.

## RATED LIFT CAPACITY OVER END OR SIDE — Lb. (kg)

All loads shown are limited by hydraulic lift capacity rather than stability.

Loads are in compliance with SAE Standard J-1097. They do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.

Counterweight: 2400 lbs (1089 kg)  
The rated lift capacity is based on the machine equipped with 8365-6004 36" (91 cm) excavating bucket weighing 690 lbs (313 kg). For other buckets, adjust the listed capacities as follows:

8365-6005 24" (61 cm) excavating — add 190 lbs (86 kg)

8365-6007 30" (76 cm) excavating — add 70 lbs (32 kg)

8365-6003 42" (107 cm) excavating — subtract 70 lbs (32 kg)

8365-6006 48" (122 cm) excavating — subtract 130 lbs (59 kg)

8365-6008 60" (152 cm) ditching — add 30 lbs (14 kg)

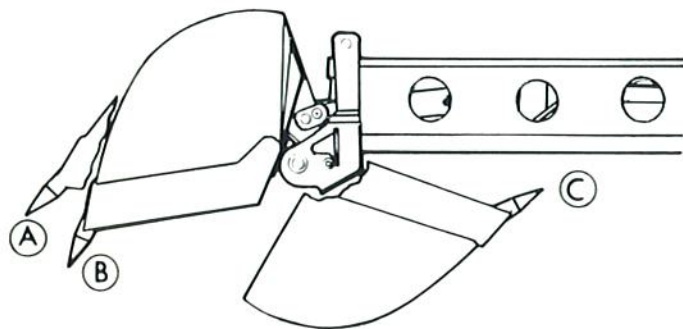
8365-6009 40" (102 cm) pavement removal — subtract 210 lbs (95 kg)

LOAD POINT HEIGHT		LOAD RADIUS						
		5' (1.5 m)	10' (3 m)	14'½" (4.3 m)	15' (4.6 m)	20' (6.1 m)	25' (7.6 m)	Maximum Radius
Above Ground Level	15' (4.6 m)				4664 (2115)	3237 (1468)		
	10' (3 m)				6918 (3137)	4292 (1946)	2756 (1250)	2585 @ 25'8" (1172) (7.8 m)
	Boom Level 7'6" (2.3 m)			Minimum Reach 8262 (3747)	7467 (3386)	4554 (2065)	2908 (1319)	2641 @ 26'1" (1198) (8 m)
	5' (1.5 m)				7637 (3463)	4686 (2125)	3004 (1362)	2690 @ 26'3" (1220) (8 m)
At Ground Level					6793 (3081)	4430 (2009)	2924 (1326)	2748 @ 25'8" (1246) (7.8 m)
Below Ground Level	5' (1.5 m)		7810 (3542)		5527 (2507)	3842 (1742)		
	10' (3 m)	11,150 (5057)	6279 (2848)		4469 (2027)	3209 (1455)		
	15' (4.6 m)	11,080 (5025)	5369 (2435)		3692 (1674)			

The load point is located on the bucket pivot point, including loads listed for maximum radius. Do not attempt to gain additional radius by wrapping the load line around the back of the bucket.

Do not attempt to lift or hold any load greater than these rated values at specified load radii and heights. The weight of slings and any auxiliary lifting devices must be deducted from the rated load to determine the net load that may be lifted.

CAUTION: All rated loads are based on the machine being level on a firm supporting surface. For safe working loads, the user is expected to make due allowance for his particular job conditions, such as soft or uneven ground, out of level conditions, side loads, hazardous conditions, experience of personnel, etc. The operator and other personnel should fully acquaint themselves with the Operator's Manual furnished by the manufacturer before operating this machine, and rules for safe operation of equipment should be adhered to at all times.



### TWO-POSITION BUCKET

- A — Bucket open, lower pin position, for vertical walls or deep excavating. Bucket pivot 165°.
- B — Bucket open, upper pin position, for most applications. Bucket pivot 148°.
- C — Bucket closed, either pin position.

### OPERATING RANGES WITH BOOM EXTENSIONS

	4' (1.2 m) Extension & 30" (76 cm) Bucket	6' (1.8 m) Extension & 30" (76 cm) Bucket
Surface Reach	33'6" (10.2 m)	35'6" (10.8 m)
Digging Depth	27'3" (8.3 m)	29'3" (8.9 m)
Depth of 8' (2.4 m) level cut	26'1" (8 m)	28'3" (8.6 m)
Loading Height, boom extended	17'5" (5.3 m)	18'5" (5.6 m)

	8' (2.4 m) Extension & 30" (76 cm) Bucket	8' (2.4 m) Extension & Grading Blade
Surface Reach	37'6" (11.4 m)	36'3" (11 m)
Digging Depth	31'3" (9.5 m)	
Depth of 8' (2.4 m) level cut	30'3" (9.2 m)	
Loading Height, boom extended	19'5" (5.9 m)	

## ATTACHMENTS

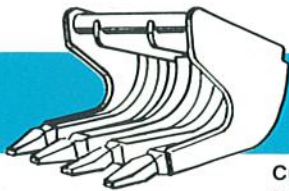
Buckets fabricated of steel plate, with high strength, low alloy cutting edges and wear strips. Standard attachments available for wide range of applications.



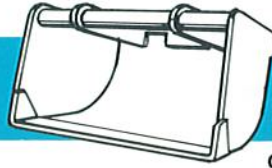
	Cu.	yd.	m <sup>3</sup>
8365-6005 24" (61 cm) Excavating bucket	3/8		.29
8365-6007 30" (76 cm) Excavating bucket	1/2		.38
8365-6004 36" (91 cm) Excavating bucket	5/8		.48
8365-6003 42" (107 cm) Excavating bucket	3/4		.57
8365-6006 48" (122 cm) Excavating bucket	7/8		.67



	Cu.	yd.	m <sup>3</sup>
8365-6012 15" (38 cm) Trenching bucket	1/7		.11
8365-6011 21" (53 cm) Trenching bucket	1/5		.15



	Cu.	yd.	m <sup>3</sup>
8365-6009 40" (102 cm) Pavement removal bucket	1/2		.38



	Cu.	yd.	m <sup>3</sup>
8365-6008 60" (152 cm) Ditching bucket	3/4		.57
8365-6038 72" (183 cm) Ditching bucket	7/8		.76



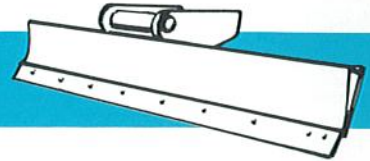
	Cu.	yd.	m <sup>3</sup>
Dredging bucket 8665-6085 72" (183 cm)	3/4		.57



8365-6013 Single-tooth ripper



8365-6014 Industrial hook



8365-6010 8' (2.4 m) Grading blade



8665-5003 4' (1.2 m) Boom extension

8665-5010 6' (1.8 m) Boom extension

8665-5002 8' (2.4 m) Boom extension

8665-5004 12' (3.7 m)  
Tubular boom extension

# GRADALL®

New Philadelphia, OH 44663

## UPPERSTRUCTURE ENGINE

GM 4-71N diesel, with blower, liquid cooled, 2 cycle, 4 cylinder, 284 cid (4.7 L) 4 1/4" bore x 5" stroke (108 mm x 127 mm), 18.7:1 compression ratio. 160 hp (119 kW) gross at 2300 rpm, 145 hp (108 kW) net at 2300 rpm. 400 ft-lb (542 Nm) maximum torque at 1600 rpm.

Altitude limit 1500' (457 m). De-rate approximately 1.8%/1000' (305 m) above 1500' (457 m).

Maximum slope: 60%

12V electric starter, 12V 55 amp alternator, dry type air cleaner with service indicator, oil filter.

Fuel tank capacity: 60 gal (227 L)

Oil capacity: 20 qt (19 L)

Cooling system capacity: 7.5 gal (28.4 L)

**Optional:** Deutz F6L413FR diesel, natural aspirated, 4 cycle, air cooled, 6 cylinder, 580 cid (9.5 L), 4.9" bore x 5.1" stroke (124 mm x 130 mm), 18:1 compression ratio. 158 hp (118 kW) gross at 2300 rpm, 143 hp (107 kW) net at 2300 rpm. 450 ft-lb (610 Nm) maximum torque at 1600 rpm.

Altitude limit 3000' (914 m). De-rate approximately 3.5%/1000' (305 m) above 3000' (914 m).

Maximum slope: 41%

12V electric starter, 12V 33 amp alternator, dry type air cleaner with service indicator, oil filter

Fuel tank capacity: 60 gal (227 L)

Oil capacity: 20 qt (19 L)

## V-HP HYDRAULIC SYSTEM

Two gear-type pumps (one 3-section, one 2-section) on gear box, mounted on engine, with clutch for cold-weather starting.

Pressure-sensing unloader valve built into each pump to produce variable-flow output: minimum 102 gpm (386 L/min), maximum 150 gpm (563 L/min) total at 2300 rpm, 120° F (48.9° C).

Auxiliary pump, 5 gpm (19 L/min), mounted on engine.

Four double-acting cylinders—

2 boom hoist: 5" I.D., 2 3/4" rod (127 mm x 70 mm), 45 3/4" (1162 mm) stroke

1 tool: 5" I.D., 3" rod (127 mm x 76 mm), 19 3/4" (498 mm) stroke

1 telescoping: 4 3/4" I.D., 3" rod (121 mm x 76 mm), 12' (3.7 m) stroke

Two hydraulic motors: swing, 44 hp (33 kW); tilt, 48 hp (36 kW).

Operating pressures—

Hoist: 2500 psi (172.4 bar)

Tilt, tool: 2750 psi (189.6 bar)

Swing: 2500 psi (172.4 bar)

Boom: 1500 psi (103.4 bar)

Crawl: 2200 psi (151.6 bar)

Joysticks: 500 psi (34.4 bar)

Oil capacity: reservoir 100 gal (379 L), system 120 gal (454 L).

Visual oil level gauges on reservoir.

Filtration system, built into reservoir: six filter elements (10 micron) with visual indicators, strainer on by-pass; magnet clusters built into filter housings; air filter on reservoir breather.

Fin and tube type oil cooler, with relief valve.

Pump relief valves on all circuits. Hose relief valves on hoist, telescope, swing, travel, and tool circuits.

## CAB

All-weather cab with safety-glass windows, skylight, acoustical treatment, heater and defroster. Front window removable, stored in cab.

## CONTROLS

Two joysticks (hoist & bucket, telescope & swing), one rocker pedal (tilt) control upperstructure. Joysticks mounted on movable console, adjustable for individual operator convenience.

One joystick on fixed console for crawler operation.

Pump selector valve, foot selector for travel speed. Joysticks and rocker pedal are self-centering: when controls are released, power for movement disengages.

Engine controls: key-operated ignition/starter switch with key-on warning light, throttle. Oil pressure and water temperature gauges, voltmeter, hour meter.

## SWING

Swing speed: 7.5 rpm. 0 to 90° in 3 seconds.

Swing brake: automatic swing parking brake, spring set, hydraulic release. Dynamic braking provided by hydraulic system.

## CRAWLER

Tractor-type crawler with triple-grouser pads. Automatic digging brake, spring set, hydraulic release. Lifetime lubricated sealed rollers, hydraulic track adjustment. Track guides.

Track length: 12' (3.7 m)

Pad width: 24" (61 cm) or 30" (76 cm)

Overall width: 9'2" (2.8 m), either pad size

Ground clearance: 15" (38 cm)

## DRIVE

Two-section hydraulic motor, 73 hp (54 kW), powers each track; all-gear drive.

Travel speed, on flat, level surface — mph (km/hr):

Speed Selector	Pump Flow	
	High	Low
High	2.2 (3.5)	1.3 (2.1)
Low	1.1 (1.8)	.65 (1.0)

Travel speed can be shifted while moving.

Gradeability: Low speed, 60%, limited by engine lubrication requirements; high speed, 37%, limited by drawbar pull.

Drawbar pull: 33,284 lb (148 kN) maximum.

## STEERING

Individual track control with single joystick. Tracks counter-rotate to pivot machine around on centerline.

## TRAVEL ALARM

Electrically operated travel alarm mounted in counterweight area signals crawler movement in either direction. Meets SAE J-994b Type B classification.

## WEIGHT

Approximate working weight, including 36" (91 cm) bucket, fuel tanks half full—

	24" (61 cm) Pads	30" (76 cm) Pads
Weight	44,937 lb 20,383 kg	45,837 lb 20,792 kg
Bearing Pressure	7.65 psi 53 kPa	6.23 psi 43 kPa

Above weights include 2400 lb (1089 kg) counterweight.

## OPTIONAL EQUIPMENT

Work lights: 2 floodlights on top of boom cradle, 1 floodlight and 1 spotlight on top of cab.

Windshield wiper.

Heat resistant glass.

Fuel gauge.

Engine alarms: lights and buzzer in cab, to warn of low oil pressure or high water temperature in engine.

Engine pre-cleaner.

Single-point lifting yoke.

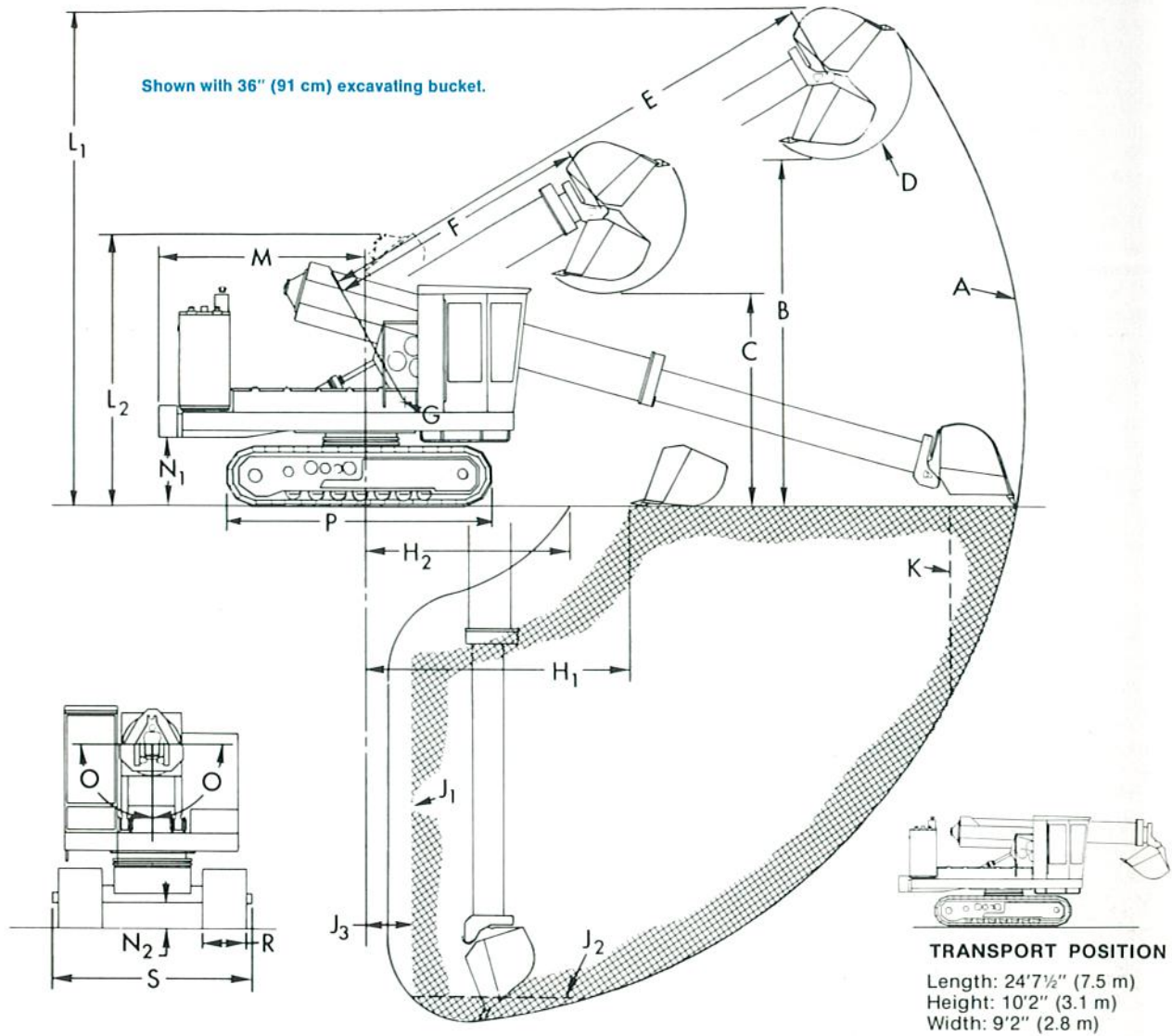
High boom cradle adapter: Raises boom pivot 4' (1.2 m) higher than standard, for increased above-ground reach as may be needed for certain industrial and mine scaling applications. Boom raise and lower with high cradle: 50° above level, 70° below level.

Vandalism protection kit: Lexan in cab windows, locking bars for engine covers, locking cover on hydraulic reservoir, locking fuel cap, battery cover lock.

Spark arrestor.

Fluid capacities in U.S. gallons.

Specifications subject to change without notice.



Shown with 36" (91 cm) excavating bucket.

**TRANSPORT POSITION**

Length: 24'7½" (7.5 m)  
 Height: 10'2" (3.1 m)  
 Width: 9'2" (2.8 m)

- A — Maximum range  
 Reach: 29'11" (9.1 m) at 4'11" (1.5 m) above ground level  
 Surface reach: 29'6" (9 m)  
 Digging depth: 23'3" (7.1 m)
- B — Loading height, boom extended: 15'5" (4.7 m)
- C — Loading height, boom retracted: 9'6" (2.9 m)
- D — Bucket pivot: 165°
- E — Boom length, extended: 24'1" (7.3 m)
- F — Boom length, retracted: 12'1" (3.7 m)
- G — Boom pivot point: 4'6" (1.4 m) above ground level, 2' (.6 m) forward from centerline of rotation
- H<sub>1</sub> — Minimum reach for surface clean-up, bucket level at ground line, boom retracted: 12'3" (3.7 m)
- H<sub>2</sub> — Minimum surface reach, digging: 9'7" (2.9 m)
- J<sub>1</sub> — Level cut range
- J<sub>2</sub> — Maximum depth for 8' (2.4 m) level cut: 22'1" (6.7 m)
- J<sub>3</sub> — Minimum radius of level cut range: 2'4" (.7 m)
- K — Maximum depth of vertical wall cut: 8'6" (2.6 m)
- L<sub>1</sub> — Maximum working height: 22'4" (6.8 m)
- L<sub>2</sub> — Maximum working height with bucket below ground level: 12'3" (3.7 m)
- M — Tail swing: 9'4" (2.8 m)
- N<sub>1</sub> — Upperstructure ground clearance: 3'1" (.9 m)
- N<sub>2</sub> — Crawler ground clearance: 15" (38 cm)
- O — Boom tilt: 90° each way, total 180°

- P — Crawler length: 12' (3.7 m)
- R — Pad width: 24" (61 cm) or 30" (76 cm)
- S — Overall width, either pad size: 9'2" (2.8 m)
- Boom raise and lower:
  - Above level . . . . . 30°
  - Below level . . . . . 90°
  - Total arc . . . . . 120°
- Boom telescoping action: 12' (3.7 m)
- Swing: continuous
- Rated bucket tangential force with 36" (91 cm) bucket: 12,900 lb (57.4 kN)
- Rated telescoping boom crowd force: 15,980 lb (71.1 kN)

**ABOVE-GROUND REACH**

From ground level to attachment pivot point, with boom full up and extended:

	Without Boom Extension	With 4' (1.2 m) Boom Extension	With 8' (2.4 m) Boom Extension
Standard Boom Cradle Mounting	19'6" (5.9 m)	21'6" (6.6 m)	23'6" (7.2 m)
With Optional High Cradle Adapter	29'2" (8.9 m)	32'3" (9.8 m)	35'4" (10.8 m)