Gradall G660C Excavators

Featuring new hydraulic systems, the Gradall G660C Excavator sets new standards for versatility and efficiency. Productivity ratings and cycle times have been vastly improved with higher volume pumps, relief and control valves. The G660C offers a choice of approved diesel engines with constant mesh transmissions matched for efficient use of engine horsepower. It features hydraulic power steering, six-wheel air brakes, split-air system and equalizer beam rear suspension for sure-footed travel on off-road job sites.

On the job site, the undercarriage is remote controlled from the upper cab with one joystick and automatic braking. The undercarriage engine is off when the hydraulic remote is in use, saving fuel and prolonging carrier engine life. Upperstructure designed for rugged durability and operating efficiency

The upper 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 upper engine is enclosed. Cowl ing 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 engine, reservoir and pumps 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.

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 lift... and bucket wrist action.

Wide Frame Undercarriage designed for performance, serviceability, operator visibility and comfort

Available with 6x4 or 6x6 drive, the undercarriage has been designed by Gradall to match the strength and durability of the upperstructure. There's plenty of power for off-road operation with between-job mobility at highway speeds.

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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)
2750 lbs (1247 kg) w/GM-33T.

The rated lift capacity is based on machine equipped with 8365-6004 36° (91 cm) excavating bucket weighing 600 lbs (313 kg). For other buckets, adjust the listed capacities as follows:

8365-6005 24° (61 cm) excavating — add 190 lbs (66 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 (69 kg)
8365-6008 60° (152 cm) dishing — add 30 lbs (14 kg)
8365-6038 72° (183 cm) dishing — subtract 55 lbs (25 kg)
8365-6090 40° (102 cm) pavement removal — subtract 210 lbs (95 kg)

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.

OPERATING RANGES WITH BOOM EXTENSIONS

<table>
<thead>
<tr>
<th>Surface Reach</th>
<th>Extension &amp; 20’ (76 cm) Bucket</th>
<th>Extension &amp; 20’ (76 cm) Bucket</th>
<th>Extension &amp; 20’ (76 cm) Bucket</th>
<th>Extension &amp; 20’ (76 cm) Bucket</th>
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<tbody>
<tr>
<td>36° (102 cm)</td>
<td>36° (102 cm)</td>
<td>36° (102 cm)</td>
<td>36° (102 cm)</td>
<td>36° (102 cm)</td>
</tr>
<tr>
<td>Digging Depth</td>
<td>26° (6.7 m)</td>
<td>36° (9.1 m)</td>
<td>36° (9.1 m)</td>
<td>36° (9.1 m)</td>
</tr>
<tr>
<td>Depth of 8’ (2.4 m) Level Cut</td>
<td>25° (7.7 m)</td>
<td>25° (7.7 m)</td>
<td>25° (7.7 m)</td>
<td>25° (7.7 m)</td>
</tr>
<tr>
<td>Loading Height, Boom Extended</td>
<td>16° (4.8 m)</td>
<td>20° (5.9 m)</td>
<td>20° (5.9 m)</td>
<td>20° (5.9 m)</td>
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</tbody>
</table>

V-HP HYDRAULIC SYSTEM

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

Pressure-sensing unloading 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).

FIXED-FLOW HYDRAULIC SYSTEM (w/ GM-33T)

3-section tandem pump, flange-mounted to engine with clutch for cold-weather starting, 119 gpm (450 L/min) at 2500 rpm, 120°F (48.9°C).

Auxiliary pump, 13 gpm (49 L/min), mounted on engine.

Four double-acting cylinders:
- 2 boom hoists: 5° I.D., 2°/4° rod (127 mm x 70 mm), 45°/62° (1162 mm) stroke
- 1 tool: 5° I.D., 3° rod (127 mm x 76 mm), 15° (498 mm) stroke
- 1 telescoping: 4°/6° 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)

w/V-HP Hydraulics
- swing, 38 hp (29 kW); tilt, 42 hp (31 kW)
- w/Fixed-Flow Hydraulics

Operating pressures:
- Hiost: 2500 psi (17273 kPa) Boom: 1500 psi (10342 kPa)
- Tilt, Tool: 2750 psi (19061 kPa) Remote Control: 2000 psi (13788 kPa)
- Swing: 2500 psi (17273 kPa)
- Joysticks: 500 psi (3447 kPa)
- 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 (20 micron) with visual indicators, strain on by-pass; magnet clutters 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.
ATTACHMENTS

Buckets fabricated of steel plate, with high strength, low alloy cutting edges and wear strips. Standard attachments available for wide range of applications. Capacities shown are in struck cu. yd.

<table>
<thead>
<tr>
<th>Model</th>
<th>Size (in)</th>
<th>Capacity (cu. yd)</th>
<th>Capacity (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8365-6005 24&quot; (61 cm)</td>
<td>3/8</td>
<td>0.29</td>
<td></td>
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<tr>
<td>8365-6007 30&quot; (76 cm)</td>
<td>1/2</td>
<td>0.38</td>
<td></td>
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<tr>
<td>8365-6004 36&quot; (91 cm)</td>
<td>3/8</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>8365-6003 42&quot; (107 cm)</td>
<td>3/8</td>
<td>0.57</td>
<td></td>
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<tr>
<td>8365-6006 48&quot; (122 cm)</td>
<td>3/8</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>8365-6008 60&quot; (152 cm)</td>
<td>3/4</td>
<td>0.57</td>
<td></td>
</tr>
<tr>
<td>8365-6038 72&quot; (183 cm)</td>
<td>1</td>
<td>0.76</td>
<td></td>
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<tr>
<td>8365-6014 Industrial hook</td>
<td></td>
<td></td>
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<tr>
<td>8365-6010 8' (2.4 m) Grading blade</td>
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<tr>
<td>8665-6085 72&quot; (183 cm)</td>
<td>3/4</td>
<td>0.57</td>
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<tr>
<td>8665-6013 Single-tooth ripper</td>
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<tr>
<td>8665-5003 4' (1.2 m) Boom extension</td>
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<tr>
<td>8665-5010 6' (1.8 m) Boom extension</td>
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<tr>
<td>8665-5002 8' (2.4 m) Boom extension</td>
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<tr>
<td>8665-5004 12' (3.7 m) Tubular boom extension</td>
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</tbody>
</table>

TWO-POSITION BUCKET

A — Bucket open, lower pin position, for vertical walls or deep excavating. Bucket pivot 169°.
B — Bucket open, upper pin position, for most applications. Bucket pivot 148°.
C — Bucket closed, either pin position.

GRADALL
New Philadelphia, OH 44663
A — Maximum range
  Reach: 29'11" (9.1 m) at 5'6" (1.7 m)
  Above ground level
  Surface reach: 29'6" (9.0 m)
  Digging depth: 22'5" (6.8 m)
B — Loading height, boom extended: 16'3" (5.0 m)
C — Loading height, boom retracted: 10'4" (3.1 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: 5'4" (1.7 m) above ground level,
  2' (6 m) forward from centerline of rotation
H — Minimum reach for surface clean-up,
  Bucket level at ground line, boom
  retracted: 12' (3.7 m)
H1 — Minimum surface reach, digging: 8'9" (2.7 m)
J — Level cut range
J1 — Maximum depth for 8' (2.4 m) level cut:
  21'3" (6.5 m)
J2 — Minimum radius of level cut range:
  2'4" (0.7 m)
K — Maximum depth of vertical wall cut:
  6'8" (2.0 m)
L1 — Maximum working height: 23'2" (7.1 m)
L2 — Maximum working height with bucket
  below ground level: 13'1" (4.0 m)
M — Tail swing: 9'4" (2.8 m)
N1 — Upperstructure ground clearance: 3'11"
  (1.2 m)
N2 — Undercarriage ground clearance:
  10" (25.4 cm)
O — Boom tilt: 90° each way, total 180°

P — Wheelbase: 14'3" (4.3 m)
R — Overall width: 8' (2.4 m)

Boom raise and lower:
  Above ground level ..................... 30°
  Below ground level ................... 90°
  Total arc .......................... 120°

Boom telescoping action: 12' (3.7 m)
Swing: continuous
Rated bucket tangential force: 12,900 lb (57.4
  kN)
Rated telescoping boom crowd force: 15,980 lb
  (71.1 kN)

TRAVEL POSITION.
Boom in rack, without bucket —
  Overall length: Overall height:
  29'2" (8.9 m) 11'3" (3.4 m)
  Overall width: 8' (2.4 m)

WEIGHT
Approximate working weight, including 36" (91 cm) bucket,
  Fuel tanks half full —
  6 x 4: 43,250 lb (19,659 kg)
  6 x 6: 43,900 lb (19,954 kg)

Specifications subject to change without notice.
UPPERSTRUCTURE CAB
All-weather cab with tinted 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 hydraulic remote control of undercarriage travel, steering, and digging brakes.

Joysticks and rocker pedal are self-centering: when controls are released, power for movement disengages.

Pump selector valve (V-HP Hydraulics only). Emergency/parking brake control.

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

SWING
Swing speed: 7.5 rpm, 0 to 90° in 3.3 seconds (w/V-HP Hydraulics)
6.5 rpm, 0 to 90° in 3.5 seconds (w/ Fixed-Flow Hydraulics)

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

UNDERCARRIAGE
6 x 4 and 6 x 6
Wheel base: 171" (4.3 m)
Frame width: 42" (107 cm)
Gross Vehicle Weight: 6 x 4 52,000 lb. (23,578 kg), axle rating;
6 x 6 58,000 lb. (25,942 kg), axle rating.

UNDERCARRIAGE ENGINE — 6 x 4, 6 x 6
GM 8.2 L turbocharged diesel, liquid cooled, 4 cycle, 8 cylinder, 500 cid (8.2 L), 4.25" bore x 4.41" stroke (108 mm x 112 mm), 230 hp (172 kW) gross at 2800 rpm, 215 hp (160 kW) net at 2800 rpm, 570 ft-lbs (769 Nm) gross torque at 1700 rpm.

Electrical System — 6 x 4, 6 x 6
12 volt, 61 amp alternator with integral voltage regulator.

Battery: (3) SAE #27F CIM-525.

COOLING SYSTEM
Fin and tube type radiator, with fan shroud, 6 blade 24" (61 cm) fan.

FUEL SYSTEM — 50 gal (189 L) fuel tank, primary and secondary fuel filters.

AIR FILTER — Dry type.

OIL FILTER — Full flow, replacement element.

GOVERNOR — Mechanical.

TRANSMISSION —
6 x 4 With GM 8.2 L engine: Spicer CM6052-B constant mesh main transmission, with 7041 auxiliary.

Travel speed — mph (kph):

<table>
<thead>
<tr>
<th>Aux.</th>
<th>Main Transmission (6 x 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Low</td>
<td>3 (5)</td>
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<tr>
<td>2nd</td>
<td>5 (8)</td>
</tr>
<tr>
<td>Direct</td>
<td>6 (10)</td>
</tr>
<tr>
<td>Overdrive</td>
<td>7 (12)</td>
</tr>
</tbody>
</table>

6 x 6 With GM 8.2 L engine: Spicer CM6052-B constant mesh main transmission, with Rockwell T-226 transfer case.

Travel speed — mph (kph):

<table>
<thead>
<tr>
<th>Transfer Case</th>
<th>Main Transmission (6 x 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1</td>
</tr>
<tr>
<td>High</td>
<td>6 (9)</td>
</tr>
</tbody>
</table>

CLUTCH — 6 x 4, 6 x 6
14" (36 cm) single plate. Spicer needle bearing universal joints.

AXLES — (6 x 4)
Front: 6 x 4 Eaton EFA-12, 12,000 lb (6443 kg).

AXLES — (6 x 6)
Front: Spicer S-16000, 16,000 lb (7258 kg), single reduction, 7.17:1, ratio.
Rear: Rockwell SQ-100, 40,000 lb (18,144 kg), single reduction, straight line drive, ratio 7.17:1, total final reduction 130:1.
No-spin differential on forward-rear axle.

FRAME — Wide-flange beam, 12" (30.5 cm), 36 lb/ft (53.6 kg/m)

SUSPENSION
Front: 14 leaf spring, 41½" x 3" (105 cm x 7.6 cm)
Rear: Hendrickson equalizer beam, 8" (20 cm) oscillation.

BRAKES
Rockwell Cam-Master, spring set cam brakes on rear, 6 x 4 Cam brakes on front. 6 x 6 Wedge brakes on front.

Front drums: 16½" x 5" (419 mm x 127 mm) 6 x 4; 17¼" x 4" (438 mm x 102 mm) 6 x 6
Rear drums: 16½" x 7" (419 mm x 178 mm)

Spring brake system incorporates emergency and parking brakes on both rear axles.

Automatic air valves with thermostat-controlled heaters on both air tanks.

12 cfm (5.7 L/sec) compressor

WHEELS — 6 x 4 Cast spoke, with demountable rim 6 x 6 Disc, 10-stud, 11½" (29 cm) bolt circle

STEERING — Ross, integral hydraulic power steering

TIRES
Single front: 6 x 4, 15.00 x 22.5 14-ply rated, highway tread.
6 x 6, 15.00 x 22.5 16-ply rated, traction tread.
Dual rear: 6 x 4, 9.00 x 20 10-ply rated, highway tread.
6 x 6, 10.00 x 20 14-ply rated, traction tread.
Optional: 9.50 x 20 10-ply rated, traction tread, 6 x 4 (Front & Rear)
10.00 x 20 14-ply rated, traction tread, 6 x 4 (Front) 6 x 6 (Front)

UNDERCARRIAGE CAB
One-man, center-mounted, frame Bostrom T-bar seat, adjustable fore and aft. Tinted safety glass windows. Sliding windows left and right. Fresh air heater and defroster. Seat belt.

HYDRAULIC REMOTE CONTROL
Undercarriage powered by upperstructure engine through hydraulic motor and PTO attached to transmission. Propels and steering joysticks in upperstructure cab. Brakes set automatically with joystick in neutral.

Emergency/parking brake controlled by push button. (Undercarriage engine off when hydraulic remote in use).

Electrically-operated travel alarm mounted on undercarriage signals remote control movement in either direction, or reverse movement when powered by undercarriage engine. Meets SAE J-994b Type B classification.

STANDARD EQUIPMENT (Undercarriage)
Sealed beam headlight, turn signals, stop lights, identification light cluster on front and rear, directional lights, 4-way hazard lights, instrument lights. Gauges for oil pressure, water temperature, dual air tank pressures, fuel, volt meter, speedometer, odometer. Electric windshield wiper, windshield washer, wheel and axle wrenches. Wide-angle mirror system with plane and convex mirrors.

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

Windshield wiper/washer, upperstructure cab.

Heat resistant glass, upperstructure cab.

Fuel gauge, upperstructure engine, in upperstructure cab.

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

Pre-cleaner, upperstructure engine.

Vandalism protection kit: Lexan upperstructure cab window, metal window covers for undercarriage cab, locking bars for engine covers, locking cover on hydraulic reservoir, locking fuel cap, battery cover lock.

Other options include: Tachometer-undercarriage engine, spark arrestors, 90 amp alternator-upper, tool box-upper, tachometer-upper, revolving light on cab, engine start aid, tachometer-carrier, air dryer-carrier.