AXLES
Front: Rockwell FF-931, 12,000 lbs (5443 kg)

Rear —

With International engine: Rockwell SLHD tandem, 34,000 lbs (15,422 kg), single reduction, straight line drive. Ratio 7.8:1. Total final reduction 118:1.

With GM engine: Rockwell SQHD tandem, 38,000 lbs (17,237 kg), single reduction, straight line drive. Ratio 7.8:1. Total final reduction: 91.2:1.

No-spin differential on forward-rear axle.

FRAME
Wide-flange beam, 12" (30 cm), 35 lb (15.9 kg).

SUSPENSION
Front: 14-leaf spring, 41-3/8" 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. Cam brakes on front.

Front drums: 16½" x 5" (419 mm x 127 mm)

Rear drums: 16½" x 7" (419 mm x 178 mm)

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

Thermostat-controlled automatic heated spitter valves on both air tanks.

12 cfm (5.7 L/sec) compressor

Optional: AC Wheel Lock Control anti-skid system, all wheels.

WHEELS
Cast spoke, with demountable rim

Optional: Disc, 10-stud, 11¼" (29 cm) bolt circle

TIRES
9:00 x 20 10-ply rating. Single front and dual rear, with highway tread.

Optional:
9:00 x 20 10-ply rating, mud and snow tread on rear.
10:00 x 20 12-ply rating, highway tread.
10:00 x 20 12-ply rating, mud and snow tread on rear.
15:00 x 22.5 16-ply rating, Super Single, single front and rear; highway tread on front, mud and snow tread on rear.

STEERING
Ross, integral hydraulic power steering.

ELECTRICAL SYSTEM
International engine — Electronic ignition system with transistorized voltage regulator. 12-volt, 60-amp alternator. Battery: SAE #30 CIM-425.

GM engine — 12-volt, 60-amp alternator with integral voltage regulator. Battery: SAE #8D CIM-900.

COOLING SYSTEM
Fin and tube type radiator, with fan shroud.

International engine: 5-blade 22" (56 cm) fan. Surge tank.

GM engine: 6-blade 22" (56 cm) fan.

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

AIR FILTER
Dry type

OIL FILTER
Full flow, replaceable element.

GOVERNOR
International engine: electronic

GM engine: mechanical

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

HYDRAULIC REMOTE CONTROL
Carrier powered by upperstructure engine through hydraulic motor and PTO attached to transmission. Propel and steering levers in upperstructure cab. Brakes set automatically with travel lever in neutral; emergency/parking brake controlled by push button. (Carrier engine off when hydraulic remote in use).

STANDARD EQUIPMENT (Undercarriage)
Sealed beam headlights, tail 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; voltmeter, tachometer, speedometer, odometer. Electric windshield wiper; windshield washer, West Coast mirrors, wheel and axle wrenches.

WEIGHT
Approximate working weight, upperstructure and undercarriage, 30" (76 cm) excavating bucket, full fuel tanks —

With Int'l undercarriage engine: 38,325 lbs (17,384 kg)

With GM undercarriage engine: 38,905 lbs (17,647 kg)

Includes 3200 lbs (1452 kg) counterweight.

ATTACHMENTS
8345-6002 30" (76 cm) Excavating bucket
8345-6003 24" (61 cm) Excavating bucket
8345-6006 36" (91 cm) Excavating bucket
8345-6005 30" (76 cm) Pavement removal bucket
8345-6018 60" (152 cm) Ditching bucket
8345-6019 66" (168 cm) Ditch cleaning bucket
8345-6015 Single-tooth ripper
8345-6004 8' (2.4 m) Grading blade
8345-5002 4' (1.2 m) Boom extension
8345-5008 Material unloading extension

Fluid capacities in U.S. gallons. Specifications subject to change without notice.

THE WARNER & SWASEY CO.
GRADALL DIVISION
NEW PHILADELPHIA OH 44663

Form No. 8004
(Replaces 7843)

2/80—15MC
Printed in U.S.A.

G-440

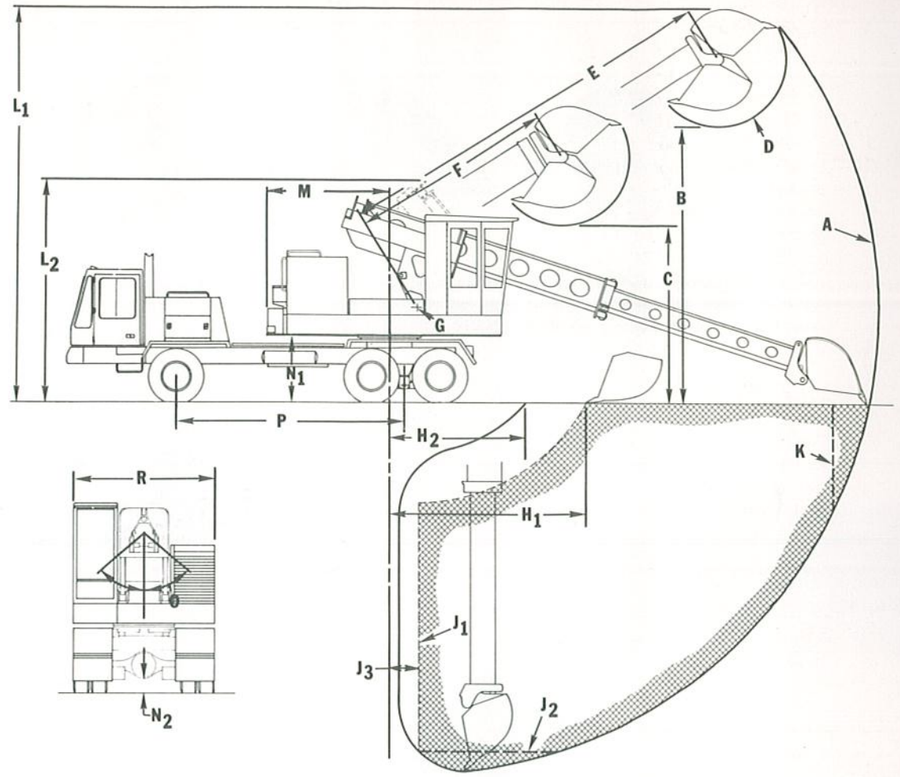
GRADALL® Hydraulic Excavator

WIDE FRAME UNDERCARRIAGE

Specifications, Operating Ranges

WARNER & SWASEY

Shown with 30" (76 cm) excavating bucket)



G-440 GRADALL RATED LIFT CAPACITY OVER END OR SIDE — Pounds (kg)

LOAD POINT HEIGHT		LOAD RADIUS					
		5' (1.5 m)	10' (3 m)	13'3" (4 m)	15' (4.6 m)	20' (6.1 m)	Maximum Radius
Above Ground Level	15' (4.6 m)				3350 (1520)	2150 (975)	1830 @ 21'9" (830) (6.6 m)
	10' (3 m)				4710 (2136)	2790 (1266)	1970 @ 23'5" (894) (7.1 m)
	Boom Level 8'3" (2.5 m)			Minimum Reach 6110 (2771)	4950 (2245)	2910 (1320)	1990 @ 23'8" (903) (7.2 m)
	5' (1.5 m)				5000 (2268)	2970 (1347)	2005 @ 23'11" (909) (7.3 m)
At Ground Level					4320 (1960)	2730 (1238)	2010 @ 23'3" (912) (7.1 m)
Below Ground Level	5' (1.5 m)		4865 (2207)		3405 (1544)	2285 (1036)	2035 @ 21'4" (923) (6.5 m)
	10' (3 m)	6280 (2849)	3770 (1710)		2645 (1200)		
	15' (4.6 m)	6055 (2747)	3100 (1406)				

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

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

The rated lift capacity is based on the machine being equipped with 3200 lb (1452 kg) counterweight and 8345-6002 30" (76 cm) excavating bucket weighing 620 lbs (281 kg). For other buckets, adjust the listed capacities as follows:
- 8345-6003 24" (61 cm) excavating — add 140 lbs (64 kg)
- 8345-6006 36" (91 cm) excavating — add 45 lbs (20 kg)
- 8345-6001 60" (152 cm) ditching — add 20 lbs (9 kg)
- 8345-6005 30" (76 cm) pavement removal — subtract 30 lbs (14 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.

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.

A — Maximum range
  Reach: 27'8" (8.4 m) at 5'5" (1.6 m) above ground level
  Surface reach: 27'1" (8.3 m)
  Digging depth: 20'8" (6.3 m)
B — Loading height, boom extended: 15'8" (4.8 m)
C — Loading height, boom retracted: 10'2" (3.1 m)
D — Bucket pivot: 170°
E — Boom length, extended: 22'2" (6.8 m)
F — Boom length, retracted: 11'8" (3.6 m)
G — Boom pivot point: 5'5" (1.6 m) above ground level, 1'6" (.5 m) forward from centerline of rotation.
H_1 — Minimum reach for surface clean-up, bucket level at ground line, boom retracted: 11'2" (3.4 m)
H_2 — Minimum surface reach, digging: 7'9" (2.4 m)
J_1 — Level cut range
J_2 — Maximum depth 8' (2.4 m) level cut: 19'5" (5.9 m)
J_3 — Minimum radius of level cut range: 2' (.6 m)
K — Maximum depth of vertical wall cut: 5'9" (1.8 m)
L_1 — Maximum working height: 22'5" (6.8 m)
L_2 — Maximum working height with bucket below ground level: 12'6" (3.8 m)
M — Tail swing: 7'4" (2.2 m)
N_1 — Upperstructure ground clearance: 3'10" (1.2 m)
N_2 — Carrier ground clearance: 10" (25.4 cm)
O — Boom tilt: 50° each way, total 100°
P — Wheelbase: 14'3" (4.3 m)
R — Overall width: 8' (2.4 m)

Boom raise and lower
  Above ground level . . . . . 32°
  Below ground level . . . . . 90°
  Total arc . . . . . 122°

Boom telescoping action: 10'6" (3.2 m)
Swing: continuous

With 4' boom extension and 30" excavating bucket —
Surface reach: 31'1" (9.5 m)
Digging depth: 24'8" (7.5 m)
Depth of 8' (2.4 m) level cut: 23'6" (7.2 m)
Loading height, boom extended: 17'10" (5.4 m)

TRAVEL POSITION
(Boom in Rack)

Overall length: 27'2" (8.3 m)
Overall width: 8' (2.4 m)
Overall height: 11'3" (3.4 m)

UPPERSTRUCTURE ENGINE

GM 3-53N diesel, 4-valve head, 2 cycle, 85 hp (63 kW) at 2500 rpm, 159.2 cid (2.6 L), 3-7/8" bore x 4-1/2" stroke (98 mm x 114 mm), 17:1 compression ratio, 198 ft-lbs (268 Nm) max torque at 1600 rpm, N45 injectors.

Fuel tank capacity: 60 gal (227 L)

Electric starter, 42 amp alternator, dry-type air cleaner, oil filter.

HYDRAULIC SYSTEM

Three-section tandem pump, flange-mounted to engine, 84 gpm (318 L/min) at 2500 rpm; single-section pump mounted on accessory pad of engine, 10 gpm (38 L/min) at 2500 rpm.

Five double-acting cylinders —
  2 boom hoist: 5" ID, 2-3/4" rod (127 mm x 70 mm)
  1 telescoping: 4-1/2" ID, 2-3/4" rod (114 mm x 70 mm)
  1 tool: 5" ID, 3" rod (127 mm x 76 mm)
  1 tilt: 4-1/2" ID, 2" rod (114 mm x 51 mm)

One 23 hp (17 kW) hydraulic motor, swing.

Operating pressures —
  Hoist and tilt: 2000 psi (13,790 kPa)
  Swing and tool: 2200 psi (15,169 kPa)
  Boom: 1350 psi (9308 kPa)
  Remote control: 2400 psi (16,548 kPa)

Oil capacity: reservoir 80 gal (303 L), system 115 gal (435 L). Visual oil level gauges on reservoir.

Filtration system, built into reservoir: 2 filter elements (15 micron) with visual indicators, strainer on by-pass; magnet cluster built into filter housing. Air filter on reservoir breather.

Fin and tube type oil cooler.

Pump relief valves on all circuits. Hose relief valves on all circuits except travel.

UPPERSTRUCTURE CAB

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

UPPERSTRUCTURE CONTROLS

3 levers, 2 pairs of pedals for all boom and upperstructure movements. Dead-man type are self-centering: when controls are released, power for movement disengages.

2 levers, propel and steer, for control of carrier from upperstructure cab.

Engine controls: key operated ignition/starter switch with indicator light, throttle. Gauges for engine temperature, oil pressure, air pressure; voltmeter, hour meter.

UNDERCARRIAGE

6x4

Wheelbase: 171" (4.3 m)

Frame width: 42" (107 cm)

Gross Vehicle Weight, axle rating —

With standard International gas engine:
46,000 lbs (20,866 kg)
Model designation: GW-464-44

With optional GM diesel engine:
50,000 lbs (22,680 kg)
Model designation: GW-504-44

UNDERCARRIAGE ENGINE

International MV446 gasoline, 235 net hp (175 kW) at 3600 rpm (operating), 446 cid (7.3 L), 4.125" bore x 4.18" stroke (105 mm x 106 mm), 8:1 compression ratio, 381 ft-lbs (517 Nm) net torque at 2600 rpm.

Optional engine: GM 6V-53T turbocharged diesel, 210 net hp (157 kW) at 2600 rpm (operating), 318 cid (5.2 L), 3-7/8" bore x 4½" stroke (98 mm x 114 mm), 18.7:1 compression ratio, 512 ft-lbs (694 Nm) net torque at 1800 rpm.

TRANSMISSION

With International engine: Spicer CM5052-C constant mesh main transmission, with 7231-D auxiliary.

Travel speed — mph (km/h):

Aux. Trans.	Main Transmission				
	1st	2nd	3rd	4th	5th
Low	4 (6)	6 (10)	10 (16)	17 (27)	25 (40)
Direct	8 (13)	12 (19)	21 (34)	37 (60)	53 (85)
Overdrive	9 (14)	14 (23)	25 (40)	43 (69)	62 (100)

With GM engine: Spicer CM6253-B constant mesh main transmission, with 7041 auxiliary.

Travel speed — mph (km/h):

Aux. Trans.	Main Transmission				
	1st	2nd	3rd	4th	5th
Low	3 (5)	5 (8)	9 (14)	16 (26)	24 (39)
2nd	6 (10)	10 (16)	18 (29)	32 (51)	46 (74)
Direct	8 (13)	13 (21)	22 (35)	38 (61)	56 (90)
Overdrive	9 (14)	15 (24)	26 (42)	46 (74)	67 (108)

CLUTCH

14" (36 cm) single plate.

UNIVERSAL JOINTS

Spicer needle bearing.