



# Case

## 680G Construction King



### **80 SAE (59.31 kW) NET HORSEPOWER**

Case-built 336 in<sup>3</sup> (5506 cm<sup>3</sup>) high-torque diesel.

### **SYNCHRONIZED TRANSMISSION**

4-speed synchromesh transmission with full power shuttle and torque converter.

### **CHOICE OF BACKHOES**

16' (4877 mm) backhoe or 16'-20' (4877-6096 mm) telescoping Extendahoe. Over-center backhoe transport position for stability in loading and roading.

### **5,600 LB (2540 kg) LIFT CAPACITY LOADER**

Powerful 10,500 lb (46 706 N) breakout force, over 9'6" (2870 mm) dump clearance. Return-to-dig.

### **UNITIZED MAIN FRAME**

Absorbs heavy shock loads, maintains power train alignment, simplifies servicing.

### **COMPONENTIZED POWER TRAIN**

Permits servicing of individual components without disturbing rest of the drive line.

### **OPERATOR CONVENIENCE**

Roomy work platform, sloping hood and grille, and 4-way adjustable seat improve visibility and operating efficiency.

Unit shown is equipped with non-standard items.

## **J I Case**

A Tenneco Company

700 State Street Racine, WI 53404 U.S.A.



# SPECIFICATIONS

## 680G

### CONSTRUCTION KING

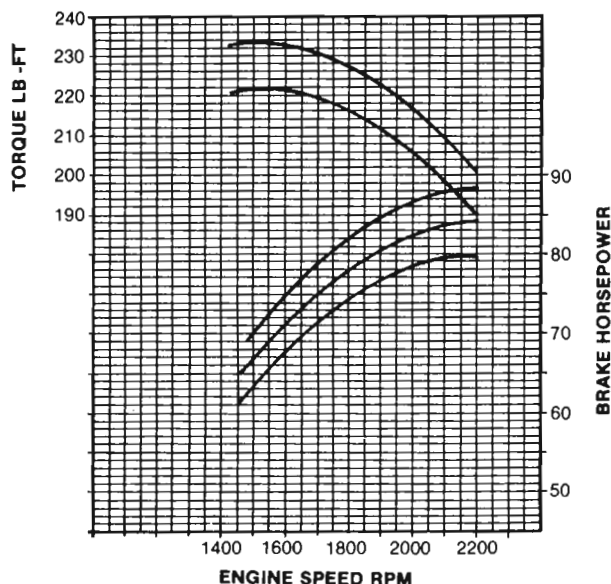
#### ENGINE

Make and model	Case A336BDC
Type of fuel	diesel, No. 2
Number of cylinders (valve-in-head)	4
Bore and stroke	4.625" × 5" (117 mm × 127 mm)
Displacement	336 in <sup>3</sup> (5506 cm <sup>3</sup> )
Electrical system	24 V
Batteries	(2) 12V
Alternator	40 Amp
Compression ratio	16.5 to 1
Fuel induction	open chamber—direct injection
Fuel supply	injection pump
Air cleaner	8" (203.2 mm) dry type
Oil filter, full-flow type	replaceable, spin-on cartridge
Lubrication	positive pressure
Cooling system—type	pressurized, 7 psi (48 kPa)
—pump	impeller
<b>Horsepower</b>	
(1) Mfg rated	88 hp @ 2200 rpm (65.65 kW @ 2200 r/min)
(2) SAE net	80 hp @ 2200 rpm (59.31 kW @ 2200 r/min)
<b>Maximum torque</b>	
(1) Mfg rated	233 lb-ft @ 1500 rpm (316 Nm @ 1500 r/min)
(2) SAE net	221 lb-ft @ 1500 rpm (299 Nm @ 1500 r/min)
<b>Torque at governed rpm</b>	
(1) Mfg rated	210 lb-ft @ 2200 rpm (284 Nm @ 2200 r/min)
(2) Net	190 lb-ft @ 2200 rpm (257 Nm @ 2200 r/min)

(1) Manufacturer's rating at flywheel when equipped with oil, water and fuel pumps. Fuel set at approximate mean delivery.

(2) Net of engine when applied to this vehicle when equipped with operating accessories including oil, water and fuel pumps, alternator, air cleaner, fan and muffler. Corrected to 500' (152.4 m) altitude with 38" (10 mm) Hg vapor pressure; 29.38" (746 mm) Hg observed barometer and 85°F (29°C) air per SAE J816a specifications.

### CASE MODEL 336 OPEN CHAMBER DIESEL TORQUE PERFORMANCE



#### POWER TRAIN

Transmission: 4-speed synchromesh with full power shuttle and torque converter.  
Torque converter: single stage, hydrokinetic type (2.23 to 1 ratio).  
Reversing unit: full power, hydraulic clutch.  
Rear axle: Outboard planetary with torque proportioning differential.  
Brakes: Individual or simultaneous foot actuated, straight air. Brakes can be operated with or without interrupting power flow to rear wheels. Cutout control located on dash. Automatic, spring applied, air released, parking brakes utilizing main brake drums on axle.

#### FRONT AXLE RATING

Dynamic ..... 60,000 lbs (27 216 kg)  
Static ..... 15,000 lbs (6803 kg)

#### STEERING

Power steering ..... hydrostatic  
Turning ratio (stop to stop) ..... 3.3 turns  
Steering flow divider  
Flow control capacity ..... 8 ± 1 gpm (30.28 ± 3.79 lit/min)  
Relief valve capacity ..... 1750 ± 50 psi (12 066 ± 345 kPa)  
Cylinders—two, double acting.. 2.12" dia × 7.5" stroke, 1.25" rod  
(54 mm dia × 191 mm stroke, 32 mm rod)

#### CAPACITIES

Cooling system ..... 8 gals (30.28 liters)  
Fuel tank ..... 30 gals (113.56 liters)  
Engine lubricating oil  
(without filter change) ..... 10 qts (9.46 liters)  
(with filter change) ..... 11 qts (10.41 liters)  
Transmission ..... 6.4 pts (3.0 liters)  
Shuttle ..... 12 qts (11.36 liters)  
Rear axle  
Pinion ..... 25 pts (12.78 liters)  
Planetary (each) ..... 3 pts (1.42 liters)  
Hydraulic reservoir (refill) ..... 13.8 gals (52.2 liters)

#### TRAVEL SPEEDS mph (km/h) of standard loader/backhoe (with 16.9 × 24 tires)

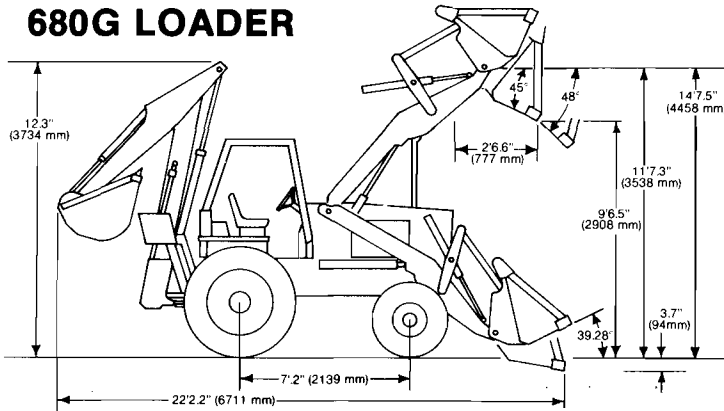
	1st	2nd	3rd	4th
Forward	3.8 mph	7.0 mph	12.4 mph	19.4 mph
or Reverse	(6.11 km/h)	(11.26 km/h)	(19.95 km/h)	(31.21 km/h)

#### 680G TIRES

Used on all machines

	Size	Ply Rating	Tread	PSI	kPa
<b>Front</b>					
Standard	11.00 × 16	12	F3	56	386.11
Optional	12.5L × 16	12	I1	52	358.53
	14L × 16.1	10	F3	40	275.79
	14.5/.75 × 16.1	10	F3	40	275.79
<b>Rear</b>					
<b>For unit with backhoe</b>					
Standard	16.9 × 24	10	R4	28	193.05
Optional	19.5L × 24	12	R4	30	206.84
	16.9 × 28	10	R4	28	193.05
<b>For unit with Extendahoe</b>					
Standard	16.9 × 24	10	R4	28	193.05
Optional	19.5L × 24	12	R4	30	206.84
	16.9 × 28	10	R4	28	193.05

# 680G LOADER



## DIMENSIONS

(Specifications for unit equipped with 11.00 × 16 front and 16.9 × 24 rear tires and 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) bucket)

Overall width	
At stabilizers, std. transport position	7'4 3" (2235 mm)
At stabilizer pad, reverse transport position	7'9" (2362 mm)
At rear wheels	7' (2121 mm)
Across front tires	7'0.8" (2154 mm)
Overall length	22'2" (6711 mm)
Wheelbase	7'2" (2139 mm)
Tread width	
Front	6'2" (1834 mm)
Rear	5'6" (1679 mm)
Overall height	
Top of exhaust stack	8'6" (2591 mm)
Top of ROPS cab	9'2.3" (2802 mm)
Top of ROPS canopy	8'11.6" (2733 mm)
Top of steering wheel	6'9.5" (2070 mm)
Overall operating height	14'7.5" (4458 mm)
Ground clearance	
Bottom of rear axle	1'3.2" (386 mm)
Bottom of front axle	1'1.7" (348 mm)
Bottom of swing tower	1'2.6" (345 mm)
Curb clearance circle (outside corner)	
Without brakes	34'7" (10 541 mm)
Overall height	
Top of backhoe (over-center)	12'3" (3734 mm)
Top of Extendahoe (over-center)	12'7" (3835 mm)

## OPERATIONAL DATA

(Specifications for unit equipped with 11.00 × 16 front and 16.9 × 24 rear tires and 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) bucket)

Lift capacity to full height	5600 lbs (2540 kg)
Bucket hinge pin @ full height	11'7.3" (3538 mm)
Maximum dump angle @ full height	48°
Dump clearance @ full height, 45° dump	9'6.5" (2908 mm)
Bucket rollback:	
At ground line	39.25°
Arm fully raised	65°
Digging depth:	
Below ground line—bucket flat	3.7" (94 mm)
Grading angle	Up to 108°
Reach:	
Bucket on ground	5'9.4" (1763 mm)
Dump reach (7' (2134 mm) height, 45° dump, from hood)	4'2.2" (1276 mm)
Reach from centerline of tire, 45° discharge—max distance (lift arm horiz.)	6'5.9" (1979 mm)
Reach from front of tractor, 45° discharge—max height	2'6.6" (777 mm)
Breakout force, maximum	10500 lbs (46.7 kN)
Cycle times @ 27.2 gpm (103 lit/min) pump:	
Raising time to full height (empty)	5.9 sec
Raising time to full height (loaded)	6.1 sec
Dumping time	1.5 sec
Lowering time (power down)	4.8 sec
Lowering time (float down)	3.9 sec
Rollback from full dump	2.3 sec

## LOADER BUCKET SIZE

### Capacities (SAE)

Type	Capacity Heaped		Capacity Struck		Overall Width		Weight	
	yd <sup>3</sup>	m <sup>3</sup>	yd <sup>3</sup>	m <sup>3</sup>	In	mm	lbs	kg
Std., GP	1.25	.97	1.02	.78	86	2184	806	336
Opt., GP	1.50	1.15	1.2	.92	96	2438	928	421
Opt., GP	1.75	1.34	1.45	1.11	96	2438	884	401
4-in-1	1.25	.97	.97	.74	86.4	2196	1120	508

## 4-IN-1 BUCKET OPERATIONAL AND DIMENSIONAL DATA

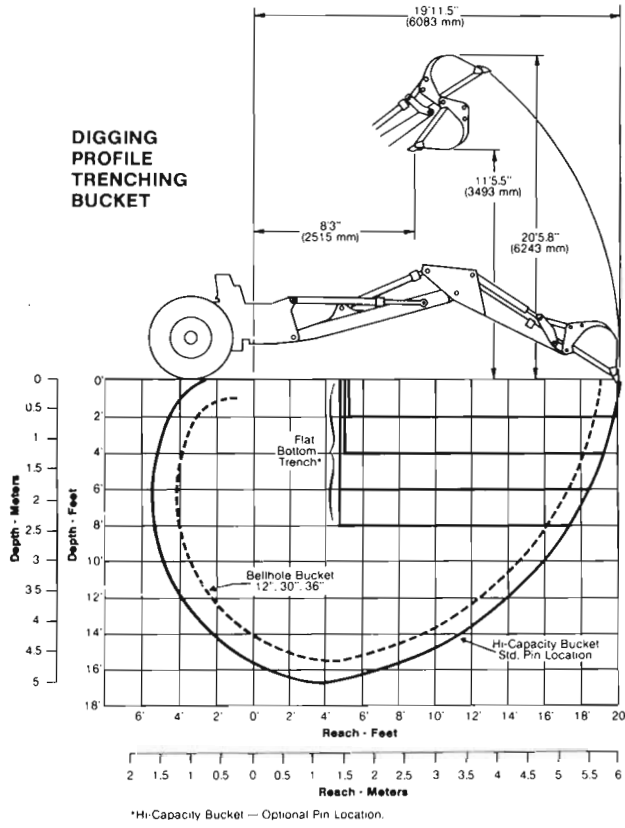
(Specifications for unit equipped with 11.00 × 16 front and 16.9 × 24 rear tires and 4-in-1 bucket)

Lift capacity to full height	5000 lbs (2268 kg)
Maximum dump angle @ full height	48°
Dump clearance @ full height, w/clam	10'6.6" (3216 mm)
Dump clearance @ full height, 45° bucket angle, clam closed	9'3.8" (2819 mm)
Bucket rollback @ ground line	39.3°
Digging depth:	
Below ground line—bucket flat	3.7" (94 mm)
Using clam	3'1.9" (963 mm)
Grading angle	Up to 106°
Reach (1/4 yd <sup>3</sup> bucket)	
Full height, 45° dump	2'10.1" (866 mm)
7' dump reach, 45°	4'3.8" (1316 mm)
Dozing depth	1.5" (38 mm)
Width of dozer cutting edge	6'11.1" (2112 mm)
Moldboard height	3'1.9" (963 mm)
Maximum clam opening	3'7" (1092 mm)
Breakout force, maximum	9200 lbs (40.9 kN)
Cycle times @ 27.2 gpm (103 lit/min) pump:	
Raising time to full height (empty)	5.9 sec
Raising time to full height (loaded)	6.1 sec
Dumping time	1.5 sec
Lowering time (power down)	4.8 sec
Lowering time (float down)	3.9 sec
Rollback from full dump	2.3 sec

## 680G LOADER HYDRAULIC SYSTEM

Hydraulic pump	Tandem, front-mounted, positive displacement, direct drive, gear type
Pump capacity	27.2 gpm @ 2350 rpm @ 2000 psi (103 lit/min @ 2350 r/min @ 13 790 kPa)
Loader pressure setting	2450 ± 50 psi (16 892 kPa ± 345 kPa)
Filtration	25 micron, full-flow, replaceable cartridge on return line.
Condition indicator gauge	for filter.
Loader control valves	Mono-cast, two spool, series-parallel type.
Dual lever control for lift and tilt	Lift lever has positive hold "float" position.
Loader cylinders:	
Lift (2)	3.5" dia × 31" stroke, 2" rod (89 mm dia × 787 mm stroke, 51 mm rod)
Bucket (2)	3" dia × 23.5625" stroke, 1.75" rod (76 mm dia × 598 mm stroke, 44 mm rod)
Clam, 4-in-1 only (2)	3" dia × 10.5" stroke, 1.5" rod (76 mm dia × 267 mm stroke, 38 mm rod)
Hydraulic lines	steel tubing with brazed or flared fittings and wire-braid, high-pressure hose with crimped, full-flow fittings.

# 16' (4877 mm) BACKHOE



## 680G CONSTRUCTION KING WITH LOADER AND 16' (4877 mm) BACKHOE OPERATIONAL DATA

- (Specifications for unit equipped with 11.00 × 16 front and 16.9 × 24 rear tires and 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) bucket)
- Digging depth—SAE ..... 16'9.35" (5114 mm)
  - Swing arc ..... 188.7°
  - Digging radius from swing pivot ..... 19'11.5" (6083 mm)
  - Reach from centerline, rear axle ..... 23'6.15" (7166 mm)
  - Bucket rotation ..... 158.5°
  - Loading height Δ ..... 11'5.5" (3493 mm)
  - Loading reach at full height Δ ..... 8'3" (2515 mm)
  - Stabilizer spread
    - Operating position (Std. pad position) ..... 10'7.3" (3233 mm)
    - Operating position (Rev. pad position) ..... 9'7" (2921 mm)
    - Transport (Std. pad position) ..... 7'4" (2235 mm)
    - Transport (Rev. pad position) ..... 7'8.9" (2360 mm)
  - Maximum slope on which backhoe will make vertical cut ..... 14°
  - Digging force
    - Bucket cylinder\* ..... 11,623 lbs (51.7 kN)
    - Dipper cylinder\* ..... 8425 lbs (37.5 kN)
  - Overall height
    - Maximum ..... 20'5.8" (6243 mm)
    - Angle of departure ..... 15°
- Δ Keeping boom vertical, dipper cylinder extended to some stroke and bucket @ 60° per SAE J49:  
 Loading height — 11'8.8" (3576 mm)  
 Loading reach — 4'8" (1422 mm)
- \*Relief pressure 2725 psi (no friction or pressure drop considered)

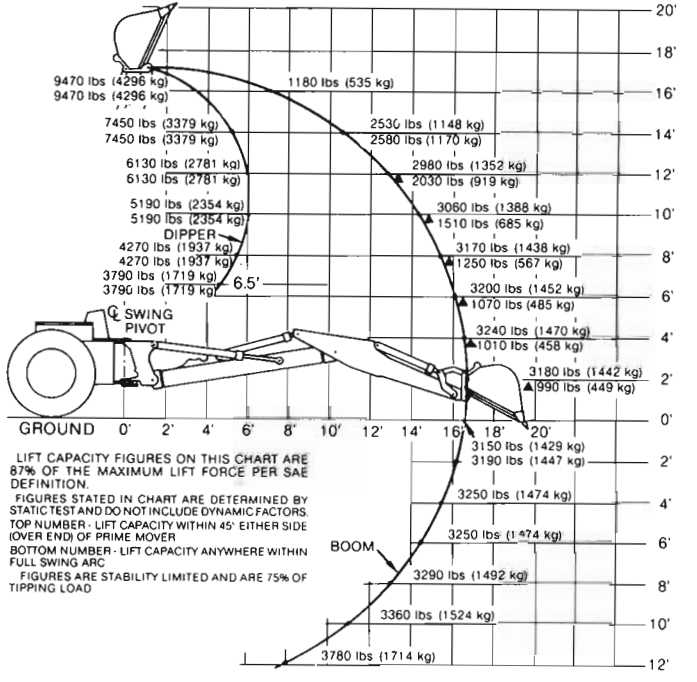
## 680G WITH 16' (4877 mm) BACKHOE APPROXIMATE SHIPPING WEIGHT

Tractor with loader and 16' (4877 mm) backhoe ..... 15,145 lbs (6870 kg)

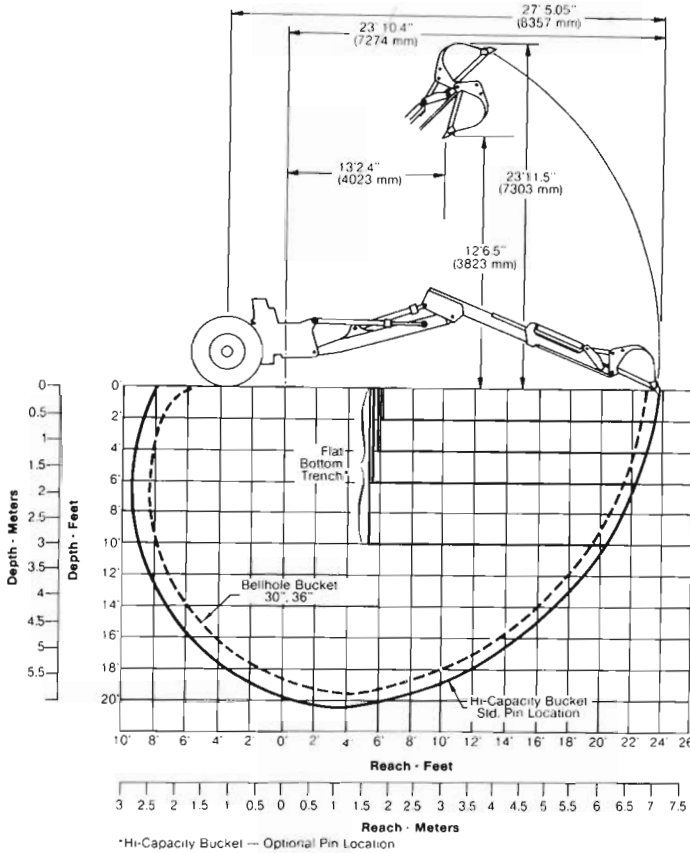
NOTE: Specifications taken with 24" (610 mm) Hi-Capacity trenching bucket, 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) loader bucket, 11.0 × 16, 12 ply (F3) multi-rib implement front tires, 16.9 × 24 (R4) rear tires, ROPS canopy and standard equipment unless otherwise specified.

## 680G BACKHOE HYDRAULIC SYSTEM

- Hydraulic pumps ..... Tandem, front mounted, positive displacement, direct drive, gear type
- Pump capacities ..... 27.2 gpm @ 2350 rpm @ 2000 psi (103 lit/min @ 2350 r/min @ 13 790 kPa), 17.8 gpm @ 2350 rpm @ 2000 psi (67.4 lit/min @ 2350 r/min @ 13 790 kPa)
- Control valve relief pressure setting ..... 2775 ± 50 psi (19 078 kPa ± 345 kPa)
- System capacity (including cylinder fill):
  - With backhoe ..... 35.0 gals (132.5 lit)
  - With Extendahoe ..... 36.5 gals (138.2 lit)
- Filtration: 25 micron, full flow replaceable cartridge on return line. Condition indicator gauge for filter.
- Backhoe control valves: Case built, low effort dual system valves with open center parallel circuit multi-section. Foot swing controls. Hydraulic cushion stops.
- Hydraulic lines: steel tubing with brazed or flared fittings and wire-braid, high-pressure hose with crimped, full-flow fittings.



# 16' TO 20' (4877 - 6096 mm) EXTENDAHOE



Transport Height .....	12'7"
	(3835 mm)
Overall height	
Maximum dipper extended .....	23'11.5"
	(7303 mm)
Overall length .....	22'9"
	(6934 mm)

\*Relief pressure 2725 psi (no friction or pressure drop considered).

NOTE: Specifications taken with 24" (610 mm) Hi-Capacity trenching bucket, 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) loader bucket, 11.0 x 16, 12 ply (F3) multi-rib implement front tires, 16.9 x 24 (R4) rear tires, ROPS canopy, 660 lb (299.4 kg) counterweight, Extendahoe and standard equipment unless otherwise specified.

## HYDRAULIC EXTENDAHOE APPROXIMATE OPERATING WEIGHTS

Tractor with loader and Extendahoe .....	17,040 lbs (7589 kg)
4' (1219 mm) Extendahoe only (field installed) ...	902 lbs (409 kg)
Front counterweight for Extendahoe .....	660 lbs (299 kg)

## BACKHOE HYDRAULIC SYSTEM

See standard 16' (4877 mm) backhoe section for details.

## BACKHOE CYLINDERS

Boom (2) .....	4" dia x 41.19" stroke, 2.25" rod
	(102 mm dia x 1046 mm stroke, 57 mm rod)
Dipper (1) .....	4.5" dia x 39.81" stroke, 2.5" rod
	(114 mm dia x 1011 mm stroke, 64 mm rod)
Bucket (1) .....	4" dia x 27.25" stroke, 2.25" rod
	(101 mm dia x 692 mm stroke, 57 mm rod)
Swing (2) .....	4" dia x 11.12" stroke, 2" rod
	(102 mm dia x 282 mm stroke, 51 mm rod)
Stabilizer (2) .....	4.5" dia x 22.35" stroke, 2" rod
	(114 mm dia x 568 mm stroke, 51 mm rod)
Dipper Extension (1) .....	3" dia x 48" stroke, 1.5" rod
	(76 mm dia x 1219 mm stroke, 38 mm rod)

## HYDRAULIC EXTENDAHOE OPERATIONAL DATA

	Retracted	Extended
Digging depth—SAE .....	16'9.3"	20'9.8"
	(5113 mm)	(6345 mm)
Swing arc .....	188.7°	188.7°
Digging radius from swing pivot .....	19'11.5"	23'10.4"
	(6083 mm)	(7274 mm)
Reach from centerline, rear axle .....	23'6.15"	27'5.05"
	(7166 mm)	(8357 mm)
Bucket rotation .....	142°	142°
Loading height .....	11'5.5"	12'6.5"
	(3493 mm)	(3823 mm)
Loading reach at full height .....	8'3"	13'2.4"
	(2515 mm)	(4023 mm)
Stabilizer spread		
Operating position		
(Std. pad position) .....	10'7.3"	10'7.3"
	(3233 mm)	(3233 mm)
Operating position		
(Reverse pad position) .....	9'7"	9'7"
	(2921 mm)	(2921 mm)
Transport (Std. pad position) .....	7'4"	7'4"
	(2235 mm)	(2235 mm)
Transport (Reverse pad position) .....	7'8.9"	7'8.9"
	(2360 mm)	(2360 mm)
Maximum slope on which backhoe will make vertical cut .....	14°	14°
Digging force		
Bucket cylinder* .....	10,982 lbs	10,982 lbs
	(48.8 kN)	(48.8 kN)
Dipper cylinder* .....	8425 lbs	3898 lbs
	(37.5 kN)	(17.3 kN)

## BACKHOE BUCKETS

Width	Type		Weight	
	In	mm	lbs	kg
12	305	Trenching*	205	93
18	457	Trenching	260	118
24	610	Hi-Capacity	405	183
30	762	Hi-Capacity	467	212
36	914	Hi-Capacity	505	229
12	305	Bellhole*	134	60
16	406	Bellhole	170	77
30	762	Bellhole	236	107
36	914	Bellhole	263	119
24	610	Heavy Duty	475	216
30	762	Heavy Duty	525	238

\*16' (4877 mm) Backhoe only.



## STANDARD EQUIPMENT

Alternator and voltage regulator maintenance free batteries, electric starter, two front headlights, two rear flood lights, two tail lights and stop light combination, ignition start switch, suction fan, dry type air cleaner, air cleaner restriction indicator, muffler, full flow hydraulic system filters and cooler, shuttle transmission, transmission oil cooler, air brakes with dual pedals, hydrostatic steering, parking brake, industrial diesel engine, full complement of instruments, include conv-oil temp, air pressure, engine water temp, tachometer, fuel level indicator, engine oil pressure, fenders, tool box, return-to-dig, and anti-rollback features. Hydraulic oil level sight gauge. Lift arm safety strut.

## OPTIONAL EQUIPMENT

Tractor accessories: cold start aid, anti-freeze to  $-40^{\circ}\text{F}$  ( $-40^{\circ}\text{C}$ ), electric fuel pump, spark arresting muffler, engine side panels, lock-up kit, electric horn, emergency flashers and turn signals, backup alarm, wide choice of tires (front and rear), special paint. ROPS cab with seat belt, heater and front window defroster. Loader accessories: loader buckets—1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) 86" wide (2184 mm), 1.50 yd<sup>3</sup> (1.15 m<sup>3</sup>) 96" wide (2438 mm), 1.75 yd<sup>3</sup> (1.34 m<sup>3</sup>) 96" wide (2438 mm), 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) 4-in-1 85" wide (2159 mm), 8 teeth for 1.25 yd<sup>3</sup> (.97 m<sup>3</sup>) bucket, 7 teeth for 4-in-1 bucket, hydraulics for 4-in-1 bucket. Backhoe accessories: 20' (6096 mm) Extendahoe ILO 16' (4877 mm), backhoe buckets—12 and 18" (305 - 457 mm) trenching, 24, 30, 36" high capacity (610, 762, 914 mm), 24" and 30" (610 and 762 mm) H.D. rock buckets, 12, 16, 30, 36" (305, 406, 762, and 914 mm) bellholes, ripper tooth frost point, dual lever swing controls, dipper light, flat cemetery stabilizer pads, heavy duty rubber pads, 660 lb (299 kg) front counterweight.

Note: All specifications are stated in accordance with ICED Definitions or SAE Standards or Recommended Practices, where applicable.

### Important

J I Case Company reserves the right to change these specifications without notice and without incurring any obligation relating to such changes.

**Sold and serviced by:**