

# Crawler Excavator

Variable displacement hydraulic system  
with closed-center load sensing  
Case-built, fuel-efficient engine  
Rugged, high-performance machine

# 1088



**Case**

**1088**

# Model 1088 Specifications

## Engine

Make and Model . . . . . Case 6T-590 turbocharged  
 Fuel . . . . . No. 2 diesel  
 No. of cylinders . . . . . 6  
 Bore and stroke . . . . . 4.01" x 4.72"  
 (102 mm x 120 mm)  
 Displacement . . . . . 359 in<sup>3</sup> (5883 cm<sup>3</sup>)  
 Fuel supply . . . . . Low pressure transfer pump  
 Fuel induction . . . . . Injectors (6)  
 Air cleaner . . . . . Dual stage dry-type  
 Oil filter . . . . . Renewable cartridge  
 Lubrication . . . . . Positive pressure  
 Cooling system . . . . . Pressurized radiator and lubricated bearing impeller pump

Horsepower  
 (1) Gross . . . . . 140 @ 2000 rpm  
 (104 kW @ 2000 r/min)  
 (2) SAE Net . . . . . 128 @ 2000 rpm  
 (95 kW @ 2000 r/min)

Torque, max. (SAE)  
 . . . . . 380 lb/ft @ 2000 rpm  
 (515 Nm @ 2000 r/min)

**NOTE:** Horsepower specifications are valid to 9843' (3000 m) elevation.

- (1) Gross engine horsepower or torque at flywheel per SAE Standard J1349.
- (2) Net engine horsepower or torque at flywheel per SAE Standard J1349.

## Electrical

Starting . . . . . 24-volt electric  
 Batteries (2) . . . . . 800 CCA @ 0°F  
 (-18°C) at 30 sec rate  
 Alternator . . . . . 45 amp

## Hydraulic System

**Pumps:** One variable displacement pump for attachment and travel circuits @ 68.6 gpm @ 2000 rpm (260 L/min @ 2000 r/min)  
 A tandem fixed displacement pump with one pump section for swing (14.8 gpm-56 L/min) and one pump section for servo circuits (6.3 gpm-24 L/min).

When the swing is not being used, combined flow of both main pumps provides maximum flow for travel of 83.4 gpm (316 L/min).

Relief valve pressure setting  
 Travel circuit . . . . . 5583 psi (38 493 kPa)  
 All other circuits . . . . . 5075 psi (34 991 kPa)

**Oil cooler:** Positive radiator-type hydraulic oil cooler.

**Control valves:** Parallel-type control valve banks with closed center for attachments and travel, and has "load sensing" built-in as a means of reducing hydraulic losses.

**Cylinders:** Double-acting hydraulic cylinders for hoist, crowd and tool.

Hoist (2) . . . . . 4.3" x 43.3"  
 (109 mm x 1.1 m)  
 Crowd . . . . . 4.9" x 53.9"  
 (124 mm x 1.37 m)  
 Tool . . . . . 4.3" x 43.3"  
 (109 mm x 1.1 m)

## Cylinder cycle time (full stroke):

Hoist  
 Extend . . . . . 6.3 sec  
 Retract . . . . . 3.9 sec

Crowd  
 Extend . . . . . 5.0 sec  
 Retract . . . . . 2.5 sec

Tool  
 Extend . . . . . 3.1 sec  
 Retract . . . . . 1.5 sec

**Swing system:** 360° continuous at 6.1 rpm. Hydraulic motor-driven reduction gear with automatic static brake. A mechanical lock is standard for positive swing lock when transporting.

**Final drives:** Sprocket drive by hydraulic motors. Planetary reduction gears. Automatic, hydraulic travel speed limiter. Automatic static braking system.

Track adjustment . . . . . Hydraulic  
 Tractive effort (Drawbar pull) . . . . . 40,942 lb  
 (18 571 kg)

## Crawler Undercarriage

Track Length . . . . . 14'5" (4.4 m)  
 gauge . . . . . 7'5" (2.3 m)  
 height . . . . . 2'8" (813 mm)  
 pad width . . . . . 28" (711 mm)  
 rollers (per side)  
 permanently sealed . . . . . 9  
 Top carrier rollers  
 (per side) . . . . . 2  
 Crawler track speed . . . . . 2.0 mph  
 (3.22 km/h)

\*Gradeability . . . . . 121%  
 Ground pressure w/28"  
 (711 mm) standard shoes . . . . . 5.34 psi  
 (36.82 kPa)

\*Gradeability is a measure of the tractive effort only and does not represent grades on which the machine can operate.

## Service Capacities

	U.S. Gal	Litres
Fuel tank . . . . .	87.1	330
Hydraulic system (complete) . . . . .	55.4	210
Hydraulic reservoir . . . . .	34.3	130
Drive transmissions . . . . .	2 qts	2
Engine crankcase (w/filter and oil heater) . . . . .	3.8	14

## Weights

\*Operating . . . . . 45,157 lb (20 483 kg)  
 Counterweight . . . . . 9,921 lb (4500 kg)  
 \*Note: Unit equipped with 45" (1.14 m) bucket, 9'2"  
 (2.79 m) dipperstick, 17'8" (5.38 m) boom, 28" (711 mm)  
 shoes, and counterweight.

## Breakout Force

Dipper cylinders  
 7'3" (2.21 m) dipper . . . . . 22,542 lb  
 (100 272 N)  
 9'2" (2.79 m) dipper . . . . . 19,317 lb  
 (85 926 N)  
 Bucket . . . . . 28,962 lb  
 (128 829 N)

## Standard Equipment

Cab-fully enclosed • Roof hatch • Tinted windows • Adjustable deluxe bucket seats with arm rests • Engine warning instrument • Engine hourmeter • Two-speed windshield wiper • Hydraulic assist operator controls • Crawler-tractor type undercarriage • Track drives, fully enclosed, independently controlled, counter-rotation • 28" (711 mm) triple bar track shoes • Automatic sealed track drive brakes • Permanently sealed track rollers and front idlers • 24-volt electrical system • 17'8" (5.38 m) boom and 7'3" (2.21 m) dipperstick less bucket • Central boom lubrication system • Cab heater • Work lights • Track guides • Anti-drift valve on hoist cylinder.

## Buckets

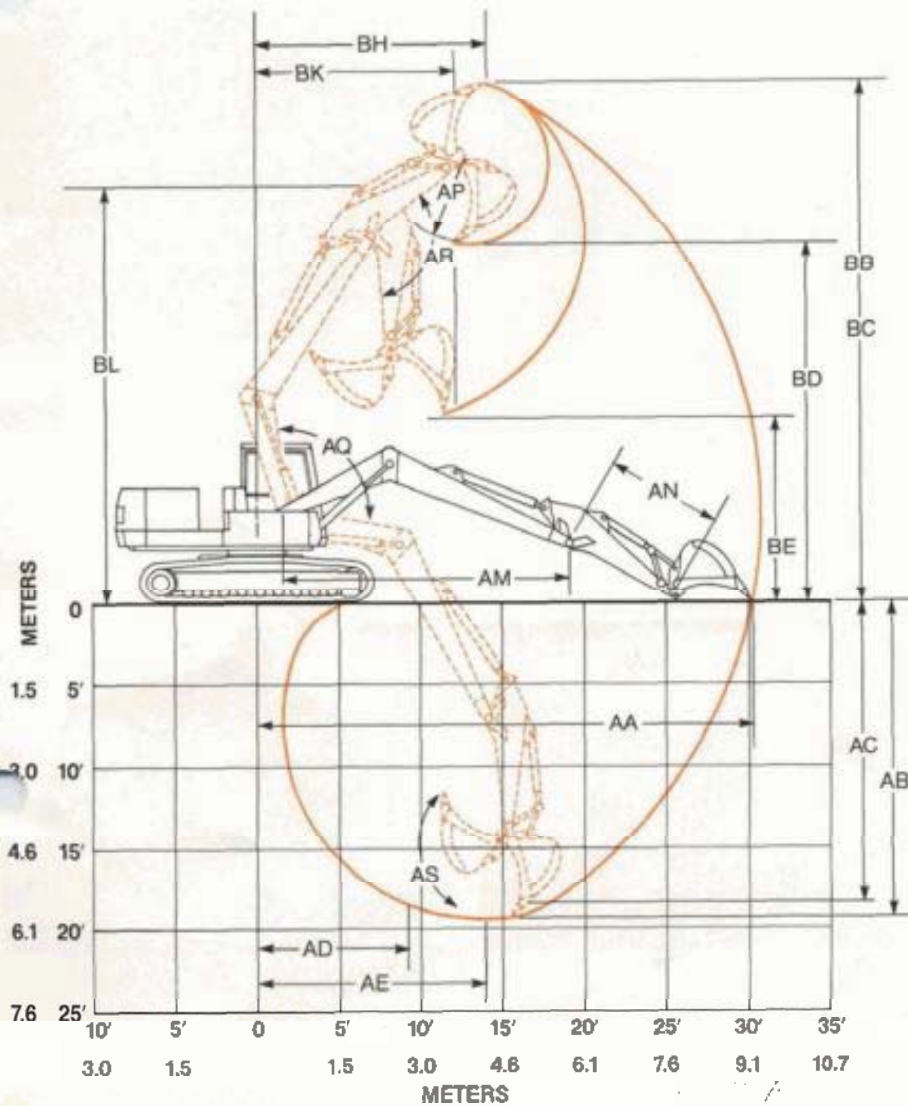
(Backhoe without sidecutters)

	SAE	SAE	Weight
*Width	Heaped	Struck	
24"	.60 yd <sup>3</sup>	.50 yd <sup>3</sup>	1200 lb
(0.61 m)	(0.46 m <sup>3</sup> )	(0.38 m <sup>3</sup> )	(544 kg)
30"	.81 yd <sup>3</sup>	.65 yd <sup>3</sup>	1300 lb
(0.76 m)	(0.62 m <sup>3</sup> )	(0.50 m <sup>3</sup> )	(590 kg)
35"	.95 yd <sup>3</sup>	.75 yd <sup>3</sup>	1470 lb
(0.89 m)	(0.73 m <sup>3</sup> )	(0.57 m <sup>3</sup> )	(667 kg)
42"	1.23 yd <sup>3</sup>	.80 yd <sup>3</sup>	1590 lb
(1.07 m)	(0.94 m <sup>3</sup> )	(0.61 m <sup>3</sup> )	(721 kg)
45"	1.37 yd <sup>3</sup>	.95 yd <sup>3</sup>	1650 lb
(1.14 m)	(1.05 m <sup>3</sup> )	(0.73 m <sup>3</sup> )	(748 kg)
49"	1.52 yd <sup>3</sup>	1.05 yd <sup>3</sup>	1810 lb
(1.24 m)	(1.16 m <sup>3</sup> )	(0.80 m <sup>3</sup> )	(821 kg)
55"	1.74 yd <sup>3</sup>	1.29 yd <sup>3</sup>	1920 lb
(1.4 m)	(1.33 m <sup>3</sup> )	(0.99 m <sup>3</sup> )	(871 kg)

## Optional Equipment

9'2" (2.79 m) dipperstick • Auxiliary hydraulic group (one function) • Quick-latch • Wrist-O-Twist® with quick-latch.

# Operating Data — 7'3" (2.21 m) Dipper



## Performance Specifications

- AA Maximum reach at grade level . . . . . 30'1" (9.17 m)
- AB Maximum digging depth . . . . . 19'5" (5.92 m)
- AC Maximum depth for 8' (2.44 m) level cut . . . . . 18'6" (5.64 m)
- AD Minimum radius of 8' (2.44 m) level cut at depth AC . . . . . 9'5" (2.87 m)
- AE Radius of maximum digging depth . . . . . 13'11" (4.24 m)
- AM Main boom length . . . . . 17'8" (5.38 m)
- AN Dipperstick length . . . . . 7'3" (2.21 m)
- AP Bucket teeth radius . . . . . 5'0" (1.52 m)
- AQ Boom pivot angle . . . . . 117° 58'
- AR Dipperstick pivot angle . . . . . 119° 04'
- AS Bucket pivot angle . . . . . 178° 57'
- BB Maximum height of working equipment . . . . . 31'8" (9.65 m)
- BC Maximum bucket teeth height . . . . . 31'8" (9.65 m)
- BD Minimum clearance of bucket teeth with bucket pivot at maximum height . . . . . 21'9" (6.63 m)
- BE Minimum clearance of fully curled bucket at maximum boom height . . . . . 13'1" (3.99 m)
- BH Radius of bucket teeth at maximum height . . . . . 13'11" (4.24 m)
- BK Maximum working equipment radius with boom at maximum height with arm fully retracted . . . . . 12'6" (3.81 m)
- BL Maximum height of working equipment with arm retracted . . . . . 24'11" (7.59 m)

## Lift Efforts

7'3" (2.21 m) Dipperstick

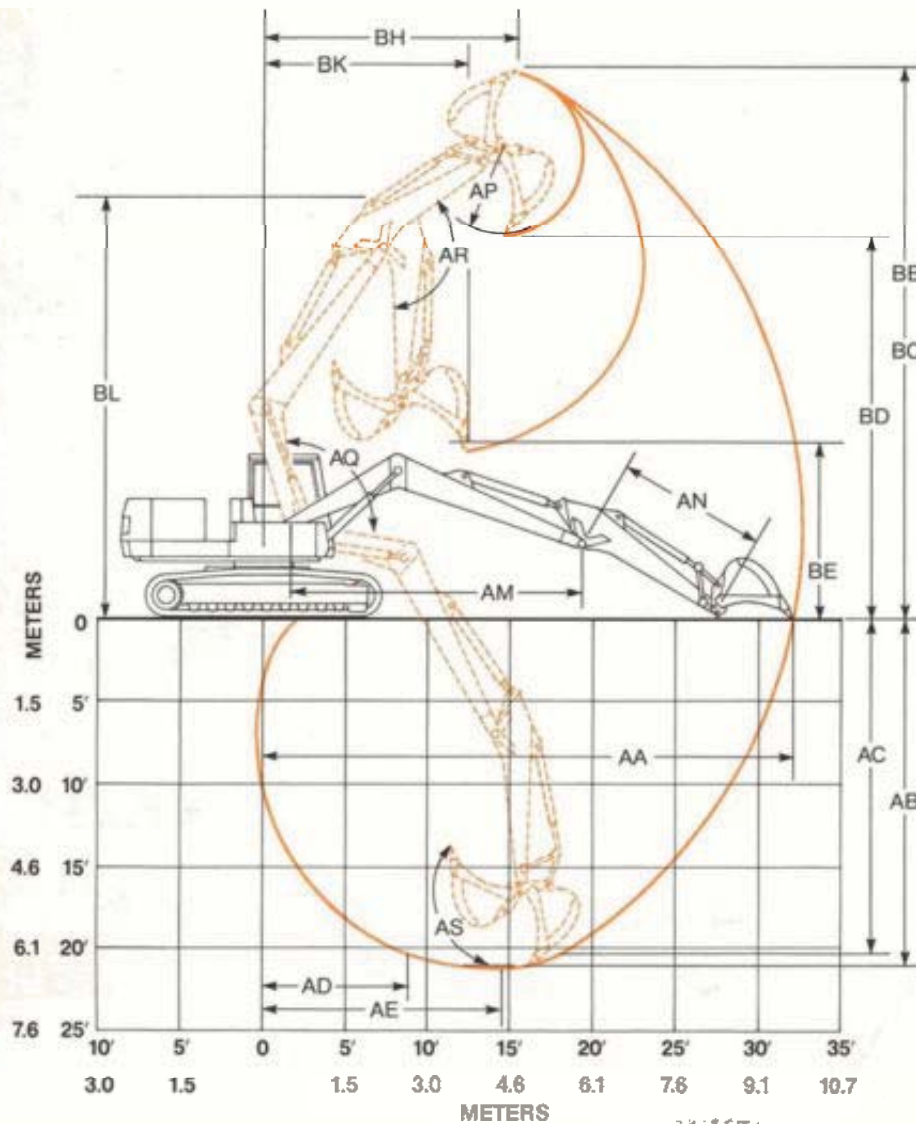
Above & Below Groundline Dimensions	Distance from centerline of rotation							
	10' (3.05 m)		15' (4.57 m)		20' (6.10 m)		25' (7.62 m)	
	Side	End	Side	End	Side	End	Side	End
+ 10' (3.05 m)	—	—	*12,448 lb (5646 kg)	*12,448 lb (5646 kg)	8,493 lb (3852 kg)	*8,999 lb (4082 kg)	—	—
Ground line 0	—	—	12,026 lb (5455 kg)	*15,162 lb (6877 kg)	7,737 lb (3509 kg)	*10,460 lb (4745 kg)	5,419 lb (2458 kg)	*7,713 lb (3499 kg)
+10' (3.05 m)	*14,908 lb (6762 kg)	*14,908 lb (6762 kg)	*11,578 lb (5252 kg)	*11,578 lb (5252 kg)	7,762 lb (3521 kg)	*8,036 lb (3645 kg)	—	—

\*Indicates Tip

**Note:** Lifting capacities based on unit with 28" (711 mm) shoes, 17'8" (5.38 m) boom, 7'3" (2.21 m) dipperstick and 45" (1.14 m), 1 1/2 yd<sup>3</sup> (1.05 m<sup>3</sup>) SAE heaped bucket. All specifications comply with SAE J1097. Rated loads do not exceed 87% of hydraulic capacity nor 75% of stability



# Operating Data—9'2" (2.79 m) Dipper



## Performance Specifications

- AA Maximum reach at grade level . . . . . 31'11" (9.73 m)
- AB Maximum digging depth . . . . . 21'4" (6.50 m)
- AC Maximum depth for 8' (2.44 m) level cut . . . . . 20'7" (6.27 m)
- AD Minimum radius of 8' (2.44 m) level cut at depth AC . . . . . 9'5" (2.87 m)
- AE Radius of maximum digging depth . . . . . 13'11" (4.24 m)
- AM Main boom length . . . . . 17'8" (5.38 m)
- AN Dipperstick length . . . . . 9'2" (2.79 m)
- AP Bucket teeth radius . . . . . 5'0" (1.52 m)
- AQ Boom pivot angle . . . . . 117° 58'
- AR Dipperstick pivot angle . . . . . 119° 04'
- AS Bucket pivot angle . . . . . 171° 32'
- BB Maximum height of working equipment . . . . . 32'10" (10.01 m)
- BC Maximum bucket teeth height . . . . . 32'10" (10.01 m)
- BD Minimum clearance of bucket teeth with bucket pivot at maximum height . . . . . 23'0" (7.01 m)
- BE Minimum clearance of fully curled bucket at maximum boom height . . . . . 11'0" (3.35 m)
- BH Radius of bucket teeth at maximum height . . . . . 15'6" (4.72 m)
- BK Maximum working equipment radius with boom at maximum height with arm fully retracted . . . . . 12'6" (3.81 m)
- BL Maximum height of working equipment with arm retracted . . . . . 24'11" (7.59 m)

## Lift Efforts

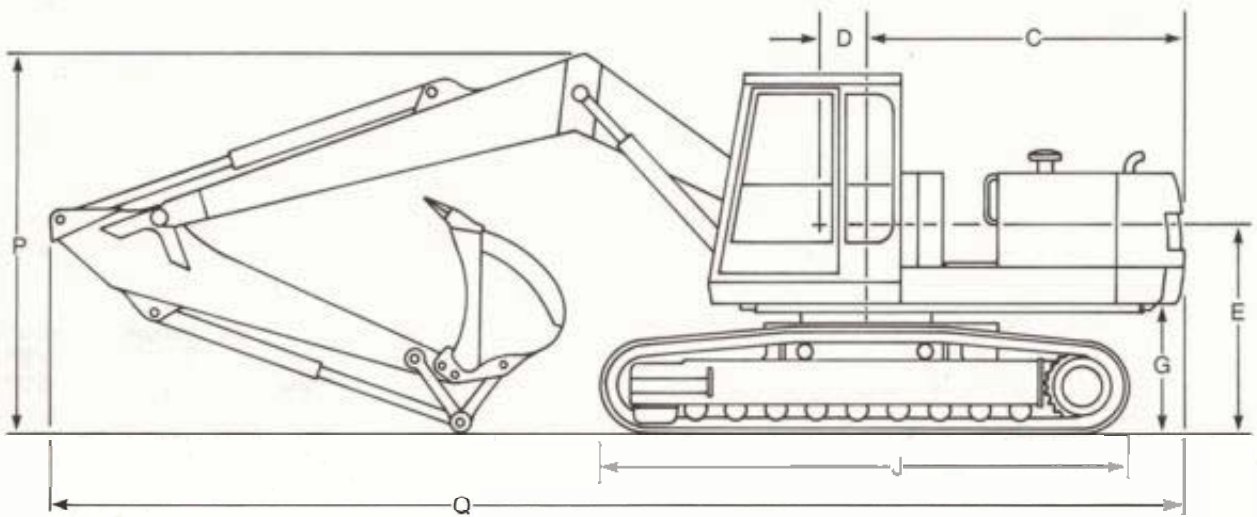
9'2" (2.79 m) Dipperstick

Above & Below Groundline Dimensions	Distance from centerline of rotation							
	10' (3.05 m)		15' (4.57 m)		20' (6.10 m)		25' (7.62 m)	
	Side	End	Side	End	Side	End	Side	End
+ 10' (3.05 m)	—	—	*11,101 lb (5035 kg)	*11,101 lb (5035 kg)	*8,250 lb (3742 kg)	*8,250 lb (3742 kg)	—	—
Ground line 0	—	—	12,095 lb (5486 kg)	*15,102 lb (6850 kg)	7,713 lb (3499 kg)	*10,224 lb (4638 kg)	5,358 lb (2430 kg)	*7,623 lb (3458 kg)
+10' (3.05 m)	—	—	11,929 lb (5411 kg)	*12,720 lb (5770 kg)	7,542 lb (3421 kg)	*8,904 lb (4039 kg)	—	—

\*Indicates Tip.

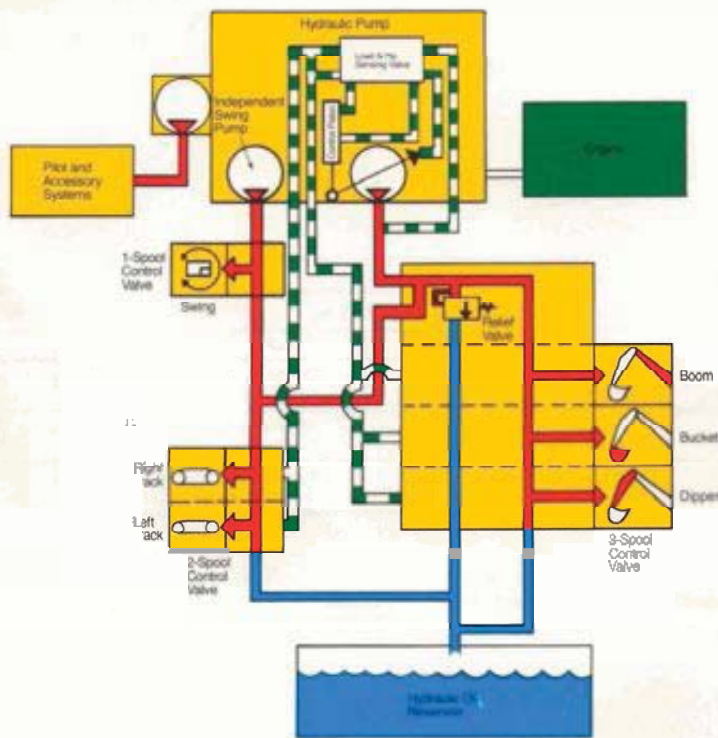
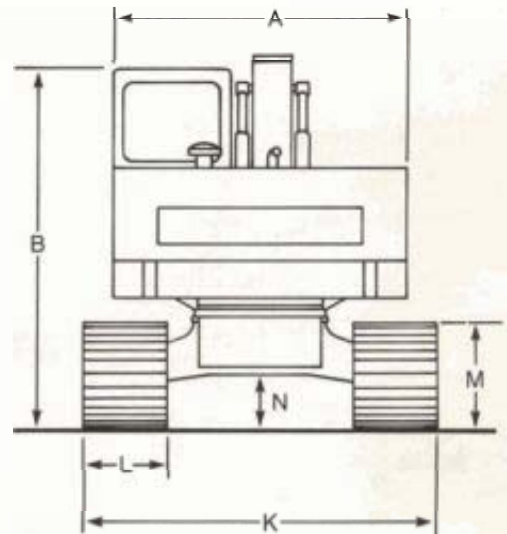
**Note:** Lifting capacities based on unit with 28" (711 mm) shoes, 17'8" (5.38 m) boom, 9'2" (2.79 m) dipperstick and 45" (1.14 m), 1 3/4 yd<sup>3</sup> (1.05 m<sup>3</sup>) SAE heaped bucket. All specifications comply with SAE J1097. Rated loads do not exceed 87% of hydraulic capacity nor 75% of stability.

# Dimensional Data



## SAE Specifications

- A. Platform width . . . . . 8' (2.44 m)
- B. Maximum height of cab above grade . . . . . 10'0" (3.05 m)
- C. Swing clearance . . . . . 8'9" (2.67 m)
- D. Distance from boom base pin to axis of rotation . . . 1'8" (508 mm)
- E. Height of boom base pin above grade . . . . . 5'7" (1.70 m)
- G. Distance from bottom of counterweight to grade . . 3'4" (1.02 m)
- J. Overall length of track . . 14'5" (4.39 m)
- K. Overall width w/28" (711 mm) track shoes . . . 9'8" (2.95 m)
- L. Track shoe width . . . . . 28" (711 mm)
- M. Track height . . . . . 2'11" (889 mm)
- N. Underclearance . . . . . 1'6" (457 mm)
- P. Height-overall transport position:  
7'3" (2.21 m) stick . . . . . 10'4" (3.15 m)  
9'2" (2.79 m) stick . . . . . 10'6" (3.20 m)
- Q. Length-overall transport position:  
7'3" (2.21 m) stick . . . . . 31'1" (9.47 m)  
9'2" (2.79 m) stick . . . . . 31'1" (9.47 m)



## Closed-Center, Load-Sensing, Constant HP Hydraulic System

The load-sensing hydraulic system of the 1088 supplies hydraulic flow to meet the needs of various functions on demand, while maintaining constant, efficient engine speed. The unique, main component of the system is two concentric pumps within one housing. An outer, variable-displacement piston pump meters flow on demand to the boom, dipper, bucket, travel and auxiliary functions. This variable pump accommodates load demands by changing displacement. It can also go to zero stroke at maximum pressure to prevent energy loss over the relief valve. The inner pump is a fixed-displacement unit dedicated to the independent operation of the swing system. When swing is not being used, flow is diverted to tracks. As shown, a separate pump supplies the pilot and accessory systems. The result is hydraulic power when and where you need it for optimum productivity.





#### Fast, Simplified Servicing

All routine servicing can be done from groundline or from the service walkway behind the cab. A tilt-up door and removable side panel provide easy access to the engine.



#### Operator Comfort

Two power-assist control levers reduce operator fatigue. A deluxe suspension seat is adjustable to operator weight and height. Raising the left-hand console cuts oil flow to all hydraulic controls. . . . provides protection when operator leaves machine.



#### Powerful Final Drives

Low-torque, high-speed axial piston motors with triple planetary reduction gears supply power to the track drive sprockets. System includes an automatic speed limiter and disc brakes. Motors and tubelines are protected by compact design and guarding.



#### Easy Maintenance

Grouped tube fittings make routine maintenance fast and easy—reduce time required for lubrication.



#### Advanced Electronics

A compact instrument module incorporates the latest in printed circuit technology. Switches, lights and gauges are all located in a pedestal at the operator's fingertips.



#### High-Visibility Cab

An all-steel cab features a one-piece floor-to-ceiling windshield which easily slides open and stores in an up-and-over position. All windows are of generous size for visibility in all directions and are made of tinted safety glass.

**Sold and serviced by:**

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

**Important:** J I Case reserves the right to change these specifications without notice and without incurring any obligation relating to such change. Unit shown on front cover may be equipped with non-standard equipment.

**J I Case**  
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