

Wheel Loader

140 net horsepower (104.4 kW)

Buckets up to 3.25 yd³ (2.5 m³)

SAE breakout force 32,061 lbf (142 614 N)

721



Case

721

721 Basic Tractor

ENGINE

Make and model Case 6T-830 diesel
 Type of fuel No. 2 diesel
 No. of cylinders 6
 Bore and stroke 4.48" x 5.32"
 (114 mm x 135 mm)

Displacement 504 in³ (8269 cm³)
 Compression ratio 17.3 to 1
 Fuel pump Bosch A
 Fuel supply Injection pump
 Air cleaner Dry type elements
 with warning restriction indicator
 Oil filter Replaceable, spin-on full
 flow cartridge

Lubrication Positive pressure
 Cooling system Air, water w/lube
 oil cooler

Horsepower
 (1) Gross 157 @ 2100 rpm:
 (117.1 kW @ 2100 r/min)
 (2) SAE Net 140 @ 2100 rpm:
 (104.4 kW @ 2100 r/min)
 Governed Speed 2200 rpm
 Max. torque ft-lb
 (1) Gross 479 @ 1500 rpm:
 (649 Nm @ 1500 r/min)
 (2) SAE Net 458 @ 1500 rpm:
 (621 Nm @ 1500 r/min)

(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

System voltage 24 volts,
 negative ground
 Batteries (2) 12 volt, low maintenance
 600 cold cranking amps
 0°F (-18°C)
 Alternator 45 amp

TRAVEL SPEEDS — MPH (km/h)

Engine at full throttle—20.5 x 25 tires

	1st	2nd	3rd	4th
Forward	4.4 (7.08)	7.3 (11.7)	14.0 (22.5)	22.3 (35.9)
Reverse	4.4 (7.08)	7.3 (11.7)	14.0 (22.5)	—

POWER TRAIN

Transmission: 4 speeds forward, 3
 reverse powershift. Forward/reverse
 modulated clutching in 1st and 2nd gears.

Torque converter: Single stage integral
 with transmission. 2.86 to 1 stall ratio.

BRAKES

Air-over-hydraulic, 4-wheel disc. Two brake
 pedals, left pedal applies brakes and
 electrically neutralizes power flow to drive
 wheels. Right pedal applies brakes only.
 Two master cylinders for split front and
 rear system. Manually applied drum
 parking brake on transmission output
 shaft neutralizes power flow to drive
 wheels when engaged.

AXLES

Outboard planetary. Torque-proportioning
 differentials. Front axle fixed. Rear axle
 oscillates 24° total or 16.2" (411 mm) in each
 direction.

STEERING

Center pivot articulated design with hydrostatic
 power steering. Front and rear wheels always
 track. Two hydraulic cylinders controlled by
 a hydrostatic steering gear with relief and flow
 control valve.

Steering angle —

each direction from center 40°

Pump Transmission mounted, positive
 displacement, tandem gear-type

Pump capacity
 30.9 gpm @ 2200 rpm @ 2500 psi
 (117.0 L/min @ 2200 r/min @ 17 237 kPa)

System relief 2500 psi (17 237 kPa)

Steering cylinders, double acting
 (2) 3" dia x 17.43" stroke, 1.75" rod
 (76 mm dia x 443 mm stroke, 44 mm rod)

Turning ratio (stop to stop) 4 turns

Turning radius
 outside tires 17'2.5" (5.25 m)

LOADER HYDRAULIC SYSTEM

Cylinders: Double-acting, bolted gland, with
 hardened and chrome-plated rods.

Lift (2) 5" dia x 32.8" stroke, 3" rod
 (127 mm dia x 833 mm stroke, 76 mm rod)
 Tilt (1) 6.5" dia x 21.4" stroke, 3" rod
 (165 mm dia x 544 mm stroke, 76 mm rod)

Pump: Tandem, gear-type, engine-driven
 56.4 gpm @ 2200 rpm @ 2525 psi
 (213.4 L/min @ 2200 r/min @ 17 409 kPa)

Control valve: Sectional, open-center,
 series parallel circuit with low pressure
 regeneration for bucket dump.

Hydraulic lines: steel tubing with SAE
 fittings and wire-braid, high-pressure
 hose with swaged fittings.

Reservoir: Positive pressurized, inlet
 filtered hydraulic oil system sealed for dirt
 exclusion. All hydraulic oil passes through
 a 100 mesh screen.

System relief pressure 2525 psi
 (17 409 kPa)

Filtration: Two 10 micron, full flow spin-on
 elements on return line.

Hydraulic cycle time:

(Rated load in bucket)	Seconds
Raise	5.9
Dump	1.8
Lower (float down)	4.6
Total	12.3

SERVICE CAPACITIES

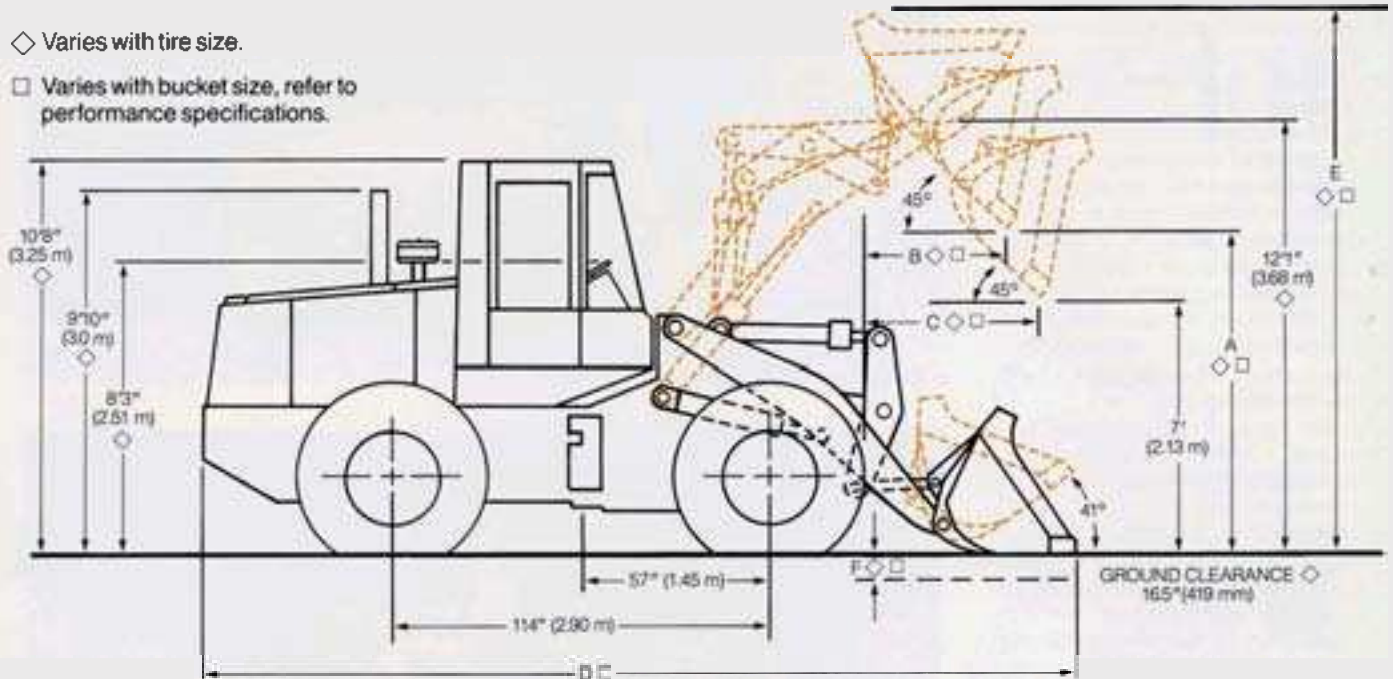
	U.S. Gals	Litres
Fuel tank	62	234.7
Hydraulic system - total	40.5	153.1
-reservoir	23.8	90.1
Transmission and torque converter	6.0	22.7
Engine crankcase (with filter)	5.9	22.4
Axles		
Front and rear		
Differential	3.6	13.6
Planetaries	0.9	3.4
Cooling system	8.5	32.1

STANDARD EQUIPMENT

Air cleaner, two element dry type • Alternator
 with voltage regulator • Antifreeze to -34°F
 (-36°C) • Articulation lock • Axles, four wheel
 drive with torque proportioning • Backup
 alarm • Batteries, two 12 volt • Brake, parking
 • Brakes, four wheel disc • Bucket position
 indicator • Systems Monitor, four level warning
 • Differentials, torque proportioning • Engine
 side doors • Engine, industrial diesel • Fan
 guard • Fan, pusher • Fuel filter, dual • Fuse
 and circuit breaker (automatic) protected
 24 volt electrical circuits • Gauges, (LCD type):
 engine coolant temperature, fuel level • Grab
 handles • Horn • Hour meter • Hydraulic oil
 cooler • Hydraulics, two spool • Lights, 2 front
 & 2 rear halogen floods, 2 rear stop • Loader
 controls, hydraulic servo type with detent
 activation switch • Loader linkage, sealed •
 ROPS canopy • Rear fenders • Return to dig,
 automatic • Seat, bucket type • Seatbelt,
 2" (51 mm) anticreep • Starter, electric •
 Steering column, tilting • Transmission
 disconnect switch • Transmission oil cooler
 • Transmission, electric powershift • Warning
 lights (LED type): alternator, engine oil
 pressure, air pressure, work lights, air filter
 restriction, hydraulic filter restriction, hydraulic
 temperature, transmission temperature,
 parking brake function.

Performance Data

- ◇ Varies with tire size.
- Varies with bucket size, refer to performance specifications.



PERFORMANCE SPECIFICATIONS — Loader ratings are measured in accordance with SAE J732c and J742b except where noted.

Bucket type Bucket configuration		General Purpose						Loose Material		4-in-1 [®]
		Bucket only	Bucket w/ teeth	Bucket w/ 3-pc. edge	Bucket only	Bucket w/ teeth	Bucket w/ 3-pc. edge	Bucket only	Bucket w/ 3-pc. edge	Bucket only
SAE heaped capacity	yd ³ (m ³)	2.50 (1.91)	2.50 (1.91)	2.60 (1.99)	2.75 (2.10)	2.75 (2.10)	2.80 (2.14)	3.25 (2.48)	3.30 (2.52)	2.50 (1.91)
SAE struck capacity	yd ³ (m ³)	2.15 (1.64)	2.15 (1.64)	2.21 (1.69)	2.35 (1.80)	2.35 (1.80)	2.38 (1.82)	2.80 (2.14)	2.86 (2.19)	2.08 (1.57)
Bucket width	in (m)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)	102 (2.59)
Bucket weight	lb (kg)	2155 (977)	2441 (1107)	2779 (1261)	2215 (1005)	2501 (1134)	2839 (1288)	2340 (1061)	2964 (1344)	2950 (1338)
A - Dump clearance @ 45° full height	ft. in (m)	9'5" (2.87)	9' (2.74)	9'3" (2.82)	9'4" (2.84)	8'10" (2.69)	9'2" (2.79)	9' (2.74)	8'10" (2.69)	9'4" (2.84)
B - Bucket reach @ 45° dump, full height	ft. in (m)	3'2" (0.98)	3'2" (0.98)	3'3" (0.99)	3'4" (1.02)	3'4" (1.02)	3'5" (1.04)	3'6" (1.12)	3'9" (1.14)	3' (0.91)
C - Bucket reach @ 45° dump, 7' (2.13 m) height	ft. in (m)	4'10" (1.47)	4'10" (1.47)	4'9" (1.45)	4'11" (1.50)	4'11" (1.50)	4'10" (1.47)	5'1" (1.55)	5' (1.52)	4'7" (1.40)
D - Overall length	ft. in (m)	22'5" (6.83)	23'2" (7.06)	22'7" (6.88)	22'7" (6.88)	23'4" (7.11)	22'9" (6.93)	23'1" (7.04)	23'3" (7.09)	22'5" (6.83)
E - Overall height	ft. in (m)	16'2" (4.93)	16'2" (4.93)	16'2" (4.93)	16'3" (4.95)	16'3" (4.95)	16'3" (4.95)	16'8" (5.08)	16'8" (5.08)	15'9" (4.8)
F - Digging depth	in (mm)	2.8 (71)	2.8 (71)	4.1 (104)	2.8 (71)	2.8 (71)	4.1 (104)	2.8 (71)	4.1 (104)	5.7 (145)
Loader clearance circle, bucket at carry	ft. in (m)	37'5" (11.40)	37'9" (11.51)	37'6" (11.43)	37'6" (11.43)	37'10" (11.53)	37'7" (11.48)	37'9" (11.51)	37'10" (11.53)	37'6" (11.43)
SAE breakout force	lbf (N)	32,061 (142,614)	31,743 (141,200)	30,024 (133,553)	30,239 (134,510)	29,932 (133,144)	28,357 (126,138)	25,976 (115,547)	24,421 (108,630)	31,920 (141,987)
SAE tipping load, straight*	lb (kg)	25,172 (11,418)	24,800 (11,249)	23,944 (10,861)	24,718 (11,212)	24,348 (11,044)	23,756 (10,776)	24,155 (10,957)	23,203 (10,525)	23,731 (10,764)
40° turn*	lb (kg)	20,155 (9142)	19,788 (8976)	19,002 (8619)	19,840 (8999)	19,385 (8793)	18,829 (8541)	19,336 (8771)	18,331 (8315)	18,812 (8533)
Operating load*	lb (kg)	10,078 (4571)	9894 (4488)	9501 (4310)	9920 (4500)	9692 (4398)	9414 (4270)	9668 (4385)	9165 (4157)	9406 (4268)
SAE operating weight	lb (kg)	28,829 (13,077)	29,115 (13,206)	29,453 (13,360)	28,889 (13,104)	29,175 (13,234)	29,513 (13,387)	29,014 (13,161)	29,638 (13,444)	29,624 (13,437)

* For selected items, add to or deduct from the machine operating weight and tipping loads as given on the following page. Spec Loader is a fully serviced unit that includes all standard equipment, 20.5 x 25, L2, 12PR tires, ROPS cab with heater, auxiliary counterweight and a 175 lb (79 kg) operator.

OPERATING DIMENSIONS

Tire Options	17.5 x 25	20.5 x 25
Tread	78.1" (1.98 m)	78.1" (1.98 m)
Width over tires	97" (2.46 m)	99.8" (2.53 m)
Change in vertical dimensions	-2.38" (60 mm)	None
Change in horizontal dimensions (B and C)	+2.9" (74 mm)	None

Performance Data

Selected Items	Operating Weight Adjustments		Tipping load Adjustments			
			Straight		40° Turn	
	lbs	kg	lbs	kg	lbs	kg
17.5 x 25, L2, 12PR	-748	-339	-725	-329	-830	-376
▲ 17.5 x 25, L2, 12PR w/75% CaCl ₂	-454	-206	-610	-277	-266	-121
17.5 x 25, L3, 12PR	-616	-279	-276	-125	-174	-79
▲ 17.5 x 25, L3, 12PR w/75% CaCl ₂	-322	-146	-396	-167	-162	-73
17.5 x R25, XRAT 1*	-452	-205	-124	-56	-7	-3
▲ 17.5 x R25, XRAT 1* w/75% CaCl ₂	+2	+1	+14	+6	+163	+74
17.5 x R25, XGLAT 1*	-580	-263	-212	-96	-79	-36
▲ 17.5 x R25, XGLAT 1* w/75% CaCl ₂	-126	-57	-73	-33	+151	+68
20.5 x 25, L2, 12PR	0	0	0	0	0	0
▲ 20.5 x 25, L2, 12PR w/75% CaCl ₂	+934	+424	+779	+353	+712	+323
20.5 x 25, L3, 12PR	+372	+169	+393	+178	+357	+162
▲ 20.5 x 25, L3, 12PR w/75% CaCl ₂	+934	+424	+667	+303	+654	+297
20.5 x R25, XRAT 1*	+356	+161	+382	+173	+348	+158
▲ 20.5 x R25, XRAT 1* w/75% CaCl ₂	+1088	+494	+893	+405	+840	+381
20.5 x R25, XGLAT 1*	+66	+30	+180	+82	+181	+82
▲ 20.5 x R25, XGLAT 1* w/75% CaCl ₂	+1088	+494	+1098	+498	+1010	+458
20.5 x 25, L2, 16PR	+336	+152	+276	+125	+266	+121
▲ 20.5 x 25, L2, 16PR w/75% CaCl ₂	+1101	+499	+1071	+486	+993	+450
Without auxiliary counterweight	-1000	-454	-1918	-870	-1507	-684
Without front fenders	-92	-42	-27	-12	-24	-11
ROPS canopy	-295	-134	-266	-121	-234	-106

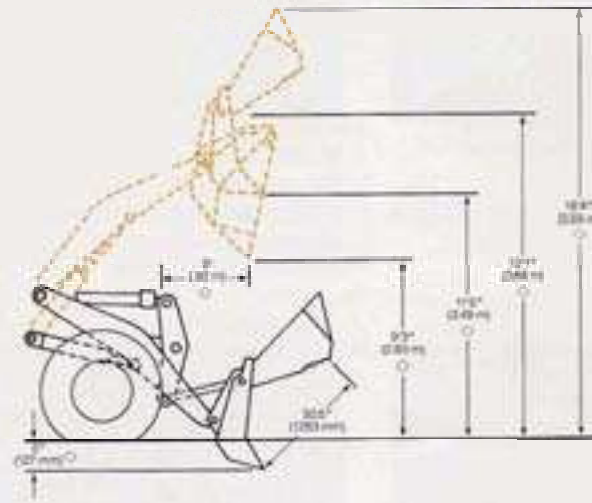
▲ Note: These tire adjustment values include rear tire ballast, but not the 1000-pound (454-kg) auxiliary counterweight. The use of rear tire ballast with the auxiliary counterweight option is neither recommended nor approved. Rear tire ballast involves filling the rear tires 75% full with a solution of 5 pounds (2.27 kg) of calcium chloride per 1 gallon (3.79 L) of water.

4-IN-1 BUCKET SPECIFICATIONS

Reach @ 45° dump angle, 7'0"
(2.13 m) clearance, 4'7" (1.40 m)

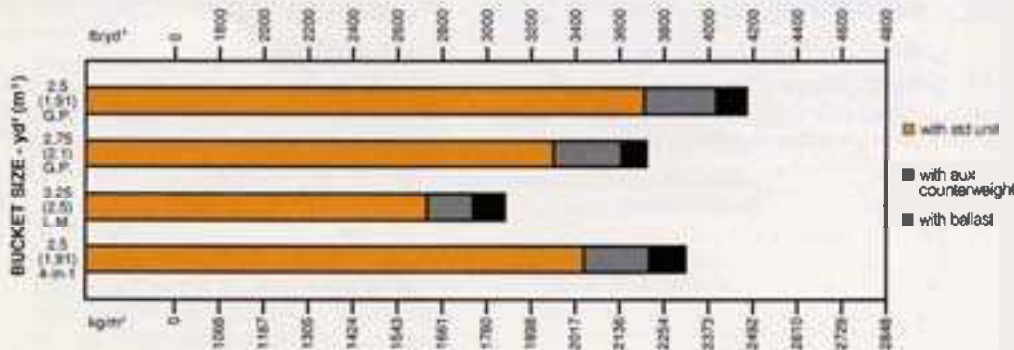
Tilt back @ ground level, 43.5°

Varies with tire size - refer to performance specifications.



721 BUCKET SELECTION CHART

Spec Loader is a fully serviced unit that includes all standard equipment, 20.5 x 25, L2 tires, ROPS cab, fenders, bucket as listed and a 175 lb (79 kg) operator.



MATERIAL	lb/yd³	kg/m³
Sand, wet	3500	2075
Sand & Gravel, wet	3375	2000
Gravel, wet 1/2" x 2"	3375	2000
Sand, slightly damp	3240	1820
Gravel, pit run (gravelled sand)	3240	1820
Clay & gravel, wet	3085	1830
Slag, broken	2970	1780
Traprock, broken	2965	1780
Sand & gravel, dry	2918	1730
Earth, soft loose mud	2918	1730
Gravel, dry, 1/2" x 2"	2820	1680
Granite, broken or crushed	2778	1645
Stone, crushed	2700	1600
Sand, dry loose	2700	1600
Gypsum, crushed	2700	1600
Gravel, sand & clay, loose	2700	1600
Earth, wet excavated	2700	1600
Clay & gravel, dry	2700	1600
Clay, wet lumps	2700	1600
Limestone, broken or crushed	2625	1555
Gravel, loose dry	2565	1520
Sandstone, broken	2550	1510
Earth, moist excavated	2430	1440
Earth, loam, dry excavated	2100	1245
Coal, anthracite, broken	1875	1100
Clay, dry excavated	1847	1095
Clay, dry lumps	1822	1080
Coal, bituminous, broken	1413	840
Garbage, wet	1350	801
Ashes	1100	653
Sludge	885	513
Snow, wet	600	357
Snow, dry	150	89

Bucket recommendations shown above are based on normal materials and average operating conditions. When selecting the proper bucket for a specific application other factors, such as loadability, material characteristics, terrain and other pertinent job conditions must also be considered.

721 Features



Z-BAR LINKAGE

A single, 6.5" (165 mm) diameter bucket cylinder operates through a massive, ductile iron bellcrank to deliver 32,061 lbf (142.6 kN) breakout force at the bucket.



BOLTED GLAND CYLINDERS

All loader cylinders are of bolted gland design for easy field serviceability. Sealed loader linkage pins and bushings increase lubrication intervals up to 100 hours.



HYDRAULIC-ASSIST CONTROLS

Fingertip operation is provided through five control lever options which are available for the 2, 3 or 4 spool sectional valves. Height control and return to travel are also available.



ELECTRIC POWER SHIFTING

A single lever, twist grip simplifies gear selection. This same lever also provides forward and reverse power shuttle.



ELECTRONIC MONITORING

Instrumentation includes multi-level visual and audible warnings of vital machine functions as well as non-vital service requirements and information notification.



COMFORT CAB

The optional ROPS cab features large areas of tinted safety glass for excellent visibility. A tilting steering column is standard. Brake pedals are suspended for easy operation.



ARTICULATION JOINT

In the joint area, hose routings are clean and easily accessible. Cylinders are mounted for easy accessibility. Drive shaft 'U' joints are lubed for life.



EASY SERVICEABILITY

Sight glasses show brake, hydraulics and transmission oil fluid levels. The sight glass allows warm and cold oil checks.



FAST ACCESS

The rear, swing-open grille provides access to batteries, radiator, oil cooler, fuel fill and coolant level reservoir. The back-up alarm and cold-start system are also located in this compartment.

Equipment Data

OPTIONAL EQUIPMENT

AM/FM stereo radio • Air Conditioning • Air dryer • Alternator, 65 amp • Anti-vandalism kit • Batteries, heavy-duty • Beacon, rotating • Bolt-on cutting edge • Brackets, lift and tie down • Bucket teeth • Buckets, general purpose, loose material, multi-purpose • Cold weather start aid • Counterweight, auxiliary rear (1000 lb-454 kg) • FACT coupler system male master • Fenders, front • Gauges: voltmeter, engine oil pressure, air pressure, transmission temperature • Height control and return to travel, automatic • Hydraulics, two spool w/two levers, two spool w/one lever, three spool w/three levers, three spool w/two levers, four spool w/two levers • Lights, auxiliary (2 front driving, 2 front working, 2 front parking, turn signals/flashers front and rear) • Precleaner • ROPS cab with following features: inside mirror, full view tinted glass, heater, pressurization, defogger, 3 speed blower, full ventilation windows, dome light, front wiper, full frame lockable door • Radiator sand screen • Seat, deluxe suspension type • Secondary steering • Special paint • Tires, radials and bias ply • Washer, front; wiper, rear • West coast mirrors • Windshield and wiper for canopy • 3" (76 mm) seat belt.



Sold and serviced by:

NOT ALL specifications are stated in accordance with 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. Unit illustrated is equipped with non-standard items.

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