

W14B FEATURES

ROTARY



MODEL W14B

Wheel Loader

90 Net Horsepower (67.1 kW)

Buckets up to 1.75 yd³ (1.34 m³)

SAE Breakout force 15,000 lbf (66 723 N)



W14B BASIC TRACTOR

ENGINE

Make and model Case 6590
 Type of fuel No. 1 or 2 diesel
 No. of cylinders 6
 Bore and stroke 4.02" x 4.72"
 (102 mm x 120 mm)
 Displacement 359 in³ (5883 cm³)
 Compression ratio 17.5 to 1
 Fuel induction Open chamber,
 direct injection
 Fuel supply Injection pump
 Air cleaner Dry type—
 replaceable elements
 Oil filter Replaceable, spin on full
 flow cartridge
 Lubrication Positive pressure
 Cooling system Air, water w/lube
 oil cooler

Horsepower

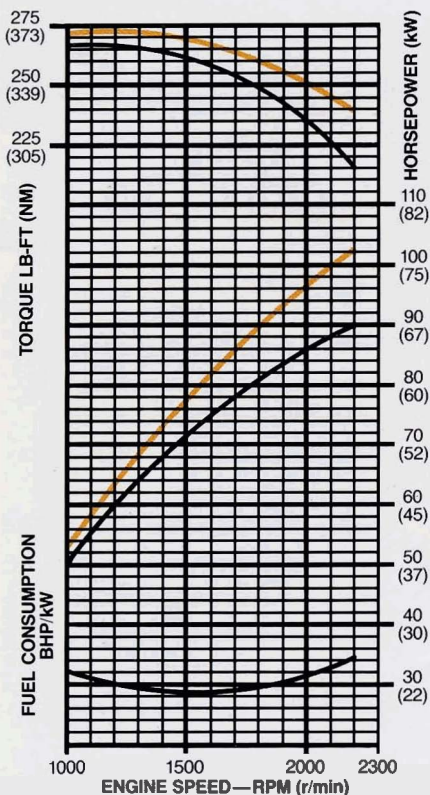
- (1) Gross 101 @ 2200 rpm
 (75.3 kW @ 2200 r/min)
 (2) SAE Net 90 @ 2200 rpm
 (67.1 kW @ 2200 r/min)

Max. torque ft-lb

- (1) Gross 273 @ 1200 rpm
 (370.1 Nm @ 1200 r/min)
 (2) SAE Net 265 @ 1200 rpm
 (359.3 Nm @ 1200 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

POWER CURVE



GROSS ENGINE PERFORMANCE
NET ENGINE PERFORMANCE

ELECTRICAL

System voltage 24 volts,
 negative ground
 Battery 2-12 volt, low maintenance,
 600 cold cranking amps
 @ 0°F (-18C)
 Alternator 40 amp

TRAVEL SPEEDS—MPH (km/h)

Engine at full throttle. 15.5 x 25 tires

	1st	2nd	3rd
Forward	4.4 (7.08)	8.5 (13.68)	21.6 (34.76)
Reverse	4.4 (7.08)	8.5 (13.68)	21.6 (34.76)

POWER TRAIN

Transmission: 3 speeds forward, 3 reverse powershift. Modulated clutching.

Torque converter: Single stage integral with transmission 2.85 to 1.0 stall ratio.

BRAKES

Air over hydraulic, 4 wheel, caliper disc. Single pedal actuation. Spring applied, air release mechanical parking brake with automatic activation if air pressure drops below effective operating level.

AXLES

Outboard planetary. Torque proportioning differentials. Front axle fixed. Rear axle oscillates 24° total.

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
 23.4 gpm @ 2200 rpm @ 2000 psi
 (88.6 lit/min @ 2200 r/min @ 13 790 kPa)
 System relief
 pressure 2000 psi (13 790 kPa)
 Steering cylinders, double acting.
 (2) 2.5" dia x 18.3" stroke x 1.5" rod
 (63 mm dia x 465 mm stroke x 38 mm rod)
 Turning ratio
 (stop to stop) 4.75 turns
 Turning circle
 outside tires 32'8" (10.0 m)

LOADER HYDRAULIC SYSTEM

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

- Lift (2) 4.5" dia x 25.4" stroke
 (114.3 mm dia x 645.2 mm stroke)
 Bucket (2) 3.5" dia x 30.5" stroke
 (88.9 mm dia x 774.7 mm stroke)

Pump: Dual-stage, gear-type, engine-driven. 37.5 gpm @ 2200 rpm @ 2300 psi (142 lit/min @ 2200 r/min @ 15 847 kPa)

Control valve: Open-center, series parallel circuit.

Hydraulic lines: Steel tubing with brazed 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 one ten micron filter, furnishing clean oil to all components of the hydraulic system.

System relief pressure 2300 psi
 (15 847 kPa)

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

Hydraulic cycle time:

(Rated load in bucket)	Seconds
Raise.....	5.5
Lower (float down).....	4.5
Dump.....	1.8
Total.....	10.8

SERVICE CAPACITIES

	U.S. Gals	Litres
Fuel tank.....	38	144
Hydraulic system.....	26.5	100
Transmission and torque converter.....	5.5	21
Engine crankcase (with filter).....	4	15
Axles		
Front		
Differential.....	1	3.8
Planetaries.....	0.3	1.1
Rear		
Differential.....	1.2	4.5
Planetaries.....	0.2	0.8
Cooling system.....	6	23

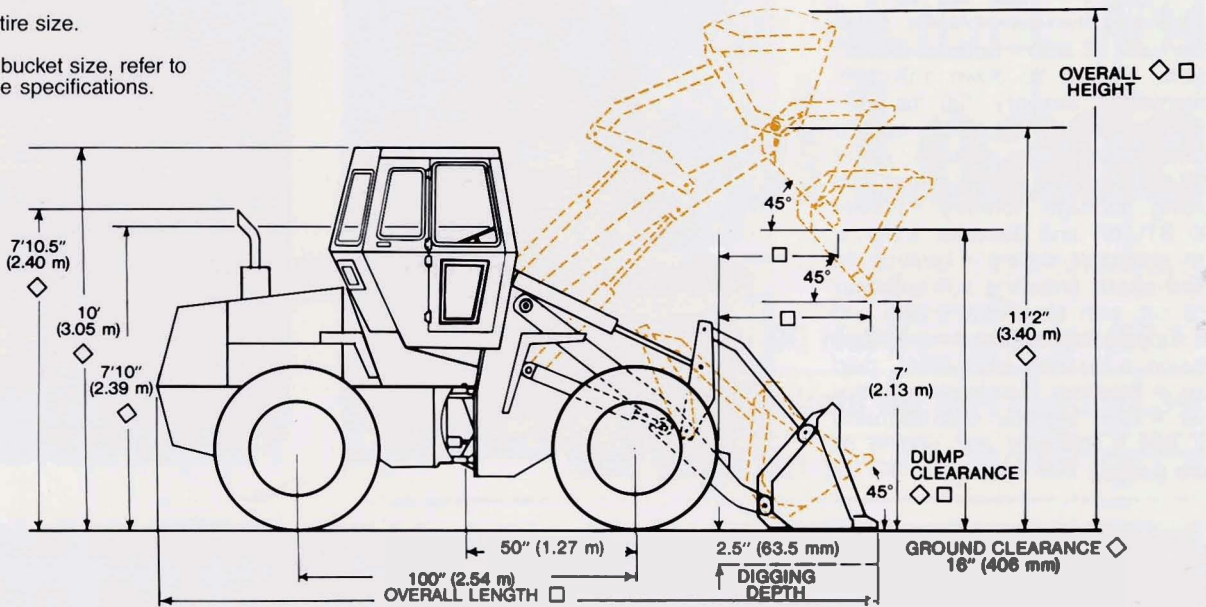
STANDARD EQUIPMENT

Air cleaner, two element, dry type • Air horn • Alternator with voltage regulator • Anti-freeze to -40°F (-40°C) • Batteries • Brakes, air over hydraulic, caliper disc • Brakes, parking • Bucket height kickout, automatic, adjustable • Bucket position indicator • Counterweight - 720 lbs (327 kg) • Differentials, torque proportioning • Drawbar • Fan, pusher • Gauges (air pressure, converter oil temperature, engine water temperature, fuel level, tachometer, hourmeter) • Lights, halogen front and rear flood • Light, tail and stop • Return-to-dig mechanism, automatic • ROPS canopy • Sealed loader linkage • Seatbelt • Start, 24 volt • Steering, hydrostatic • Transmission, powershift • Warning lights (alternator, clutch pressure, engine oil pressure, parking brake).

PERFORMANCE DATA

◇ Varies with tire size.

□ Varies with bucket size, refer to performance specifications.



PERFORMANCE SPECIFICATIONS — Loader ratings are governed by SAE J732 AND 742

	GENERAL PURPOSE		4-IN-1®
BUCKET CAPACITY			
Rated (nominal capacity)	1.14 m ³	1.75 yd ³ (1.33 m ³)	1.25 yd ³ (0.97 m ³)
Struck	1.29 yd ³ (1.0 m ³)	1.45 (1.1 m ³)	0.97 yd ³ (0.74 m ³)
Cutting edge width	89" (2.26 m)	89" (2.26 m)	85" (2.16 m)
Weight	977 lbs (443 kg)	1040 lbs (472 kg)	1380 lbs (626 kg)
Dump Clearance @ 45° Dump — Height	8'11" (2.72 m)	8'11" (2.72 m)	8'10" (2.69 m)
Bucket Reach @ Full Height & 45° Dump	2'9" (838 mm)	2'9" (838 mm)	2'9" (838 mm)
Bucket Reach @ 13 m Clearance & 45° Dump	4'2" (1.27 m)	4'2" (1.27 m)	4'2" (1.27 m)
Loader Clearance Circle — Bucket in Carry Position	32'8" (10.0 m)	32'8" (10.0 m)	32'4" (9.9 m)
Overall Length	19'6" (5.94 m)	19'6" (5.94 m)	19'5.5" (5.93 m)
Overall Height	14'4" (4.37 m)	14'11.5" (4.56 m)	14'5.5" (4.41 m)
SAE Breakout Force	15,500 lbf (68 975 N)	15,500 lbf (68 975 N)	15,300 lbf (68 058 N)
SAE Tipping Load,* Straight	13,491 lbs (6119 kg)	13,429 lbs (6091 kg)	13,281 lbs (6024 kg)
35° Turn	12,026 lbs (5455 kg)	11,967 lbs (5428 kg)	11,836 lbs (5369 kg)
40° Turn	11,543 lbs (5236 kg)	11,482 lbs (5208 kg)	11,345 lbs (5146 kg)
Operating Load*	5,772 lbs (2618 kg)	5,741 lbs (2604 kg)	5,672 lbs (2573 kg)
Rated Load**	5,100 lbs (2313 kg)	5,100 lbs (2313 kg)	5,100 lbs (2313 kg)
Hydraulic Lifting Capacity @ Full Height*	8,000 lbs (3629 kg)	7,940 lbs (3602 kg)	7,717 lbs (3500 kg)
SAE Operating Weight*	17,507 lbs (7941 kg)	17,570 lbs (7970 kg)	17,909 lbs (8123 kg)

*For select items, add to or deduct from the machine operating weight and tipping loads as given in the chart on the following page. All dimensions and specifications based upon unit with 17.5 x 25, L2, 12 PR tires, with standard and auxiliary counterweights, ROPS cab, fenders, fully serviced and with 175 lb (79 kg) operator.

**Continuous loads exceeding specified rated load can affect service life of machine.

OPERATING DIMENSIONS

Tire Options	15.5 x 25, L2/L3	15.5 x 25, XRAT 1*	16.9 x 24, R4	17.5 x 25, L2/L3	17.5 x 25, XRAT 1*
Tread	68" (1.73 m)	68" (1.73 m)	67" (1.70 m)	70" (1.78 m)	70" (1.78 m)
Width over tires	85" (2.16 m)	83" (2.11 m)	84" (2.13 m)	89" (2.26 m)	91" (2.31 m)
Change in vertical dimensions	-1.75" (44.4 mm)	-2.5" (63.5 mm)	-2.0" (50.8 mm)	None	-0.25" (6.4 mm)

PERFORMANCE DATA

Selected Items	Operating Weight Adjustments		Tipping Load Adjustments			
			Straight		40° Turn	
	lbs	kg	lbs	kg	lbs	kg
15.5 x 25, L2, 10PR	-452	-205	-289	-131	-243	-110
▲15.5 x 25, L2, 10PR w/75% CaCl ₂	-272	-123	-422	-192	-298	-135
15.5 x 25, L2, 12PR	-444	-202	-284	-129	-238	-108
▲15.5 x 25, L2, 12PR w/75% CaCl ₂	-264	-120	-417	-189	-298	-135
15.5 x 25, L3, 12PR	-348	-158	-222	-101	-188	-85
▲15.5 x 25, L3, 12PR w/75% CaCl ₂	-168	-76	-397	-180	-285	-129
15.5 x 25, XRAT 1*	-284	-129	-182	-83	-153	-69
▲15.5 x 25, XRAT 1* w/75% CaCl ₂	-18	-8	-245	-111	-157	-71
16.9 x 24, R4, 10PR	-788	-358	-504	-229	-421	-191
▲16.9 x 24, R4, 10PR w/75% CaCl ₂	-348	-158	-340	-154	-262	-119
17.5 x 25, L2, 12PR	0	0	0	0	0	0
▲17.5 x 25, L2, 12PR w/75% CaCl ₂	+574	+261	+333	+151	+323	+147
17.5 x 25, L3, 12PR	+104	+47	+66	+30	+56	+25
▲17.5 x 25, L3, 12PR w/75% CaCl ₂	+678	+308	+398	+181	+378	+172
17.5 x 25, XRAT 1*	+304	+138	+194	+88	+163	+74
▲17.5 x 25, XRAT 1* w/75% CaCl ₂	+784	+356	+404	+183	+381	+173
With ROPS Canopy ILO cab	-257	-117	-207	-94	-199	-90
Without fenders	-160	-73	-89	-40	-80	-36
Without auxiliary counterweight	-720	-327	-1340	-608	-1083	-491
Without standard or auxiliary cwt.	-1440	-654	-2684	-2289	-2174	-987
With bucket teeth	+125	+57	-149	-68	-148	-67

▲NOTE: Tires which are ballasted with CaCl₂ do not include the 720 lb (327 kg) auxiliary counterweight. When the standard counterweight is installed, either the auxiliary counterweight or tire ballast, but not both, may be used.

4-IN-1 BUCKET SPECIFICATIONS

Reach @ 45° dump angle, 7'0"
(2.13 m) clearance, 4'2" (1.29 m)

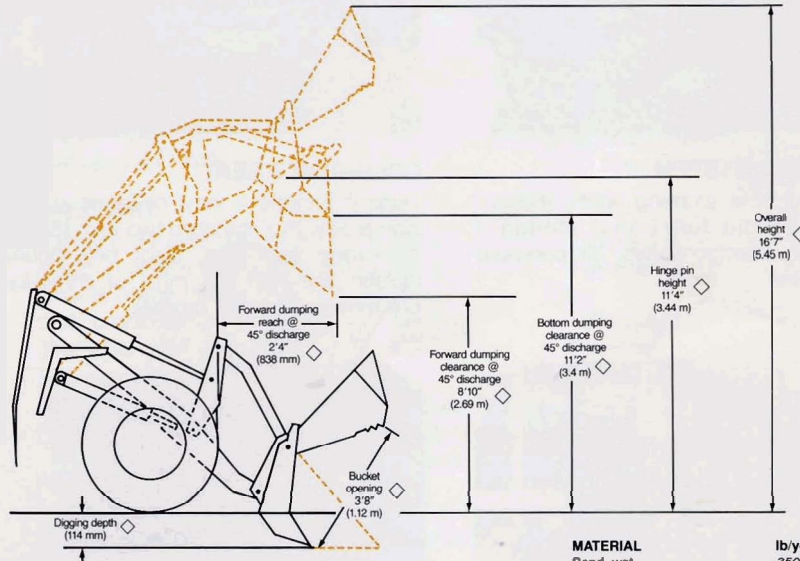
Tilt back @ ground level, 41°

Closure force, clamp to cutting edge, 9410 lb (4268 kg)

Weight, 1380 lb (626 kg)

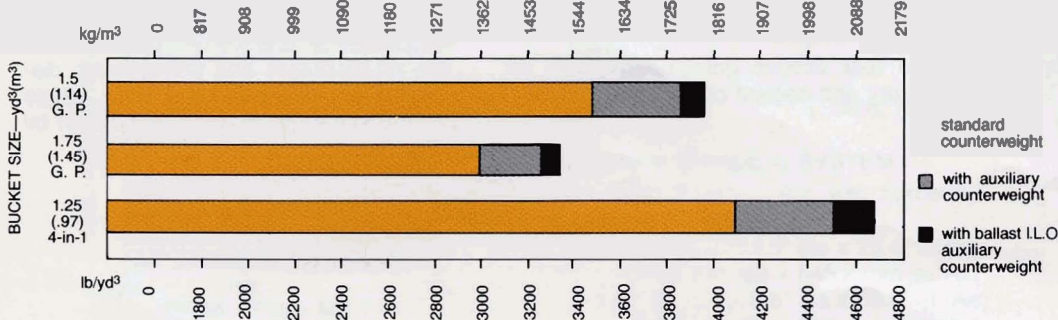
NOTE: SAE code adhered to, 17.5 x 25 L2, 12PR tires used.

◇ Varies with tire size - refer to performance specifications.



W14B BUCKET SELECTION CHART

Spec Loader includes all standard equipment, 17.5 x 25, L2 tires, 720 lb (327 kg) counterweight, ROPS cab, fenders, 175 lb (79 kg) operator, and fully serviced.



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	1920
Gravel, pit run		
(graveled sand)	3240	1920
Clay & gravel, wet	3085	1830
Slag, broken	2970	1760
Trap rock, broken	2950	1750
Sand & gravel, dry	2916	1730
Earth, soft loose mud	2916	1730
Gravel, dry, 1/4" x 2"	2835	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
Silage	865	513
Snow, wet	400	237
	600	356
	150	89
Snow, dry	400	237

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.

W14B FEATURES

PERFORMANCE DATA



LOADER CONTROL

Accomplished by low-effort, short-throw mechanical linkage controls. The two-lever control is standard, single lever optional with a hydraulic package available for both to add additional functions.



CONVENIENT CONTROLS

Loader controls, parking brake knob, start/stop key switch, lights, transmission disconnect and loader detent switches are located at comfortable arm's reach on the operator's right.



EASY OPERATION

Transmission controls are conveniently located and easily reachable from the steering wheel.



MONITORING SYSTEM

In-sight, out-front warning lights monitor critical machine functions; standard gauges show temperatures, air pressure and fuel level.



OPERATOR'S SEAT

Options include a vinyl or fabric suspension seat with a standard two-inch (51 mm) anti-creep seat belt. Seat belt options include two-inch (51 mm) or three-inch (76 mm) retractable models.



OPERATOR VISIBILITY

Tinted glass surrounds the operator and gives full-view visibility to the surrounding work area.



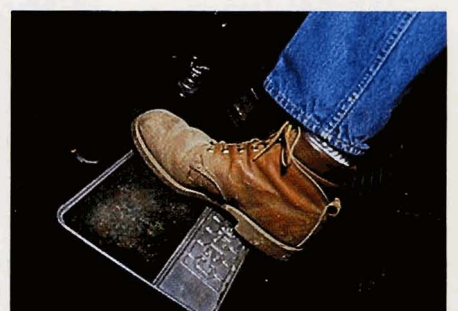
GROUNDLINE SERVICEABILITY

Begins with two-piece full-opening engine side panels, giving ample access to the engine compartment for oil checks, filter changes and engine inspection.



EASY ACCESS

The rear access grille opens wide for battery and coolant checks and fuel fill.



CONVENIENT BRAKING

The W14B brakes and transmission disconnect are operated by a wide, single pedal centrally located for easy reach by either foot.

EQUIPMENT DATA

PERFORMANCE DATA

OPTIONAL EQUIPMENT

Air conditioning, two ton • Alarm, back up • Alternator, 65 amp • Beacon, rotating • Brackets, lift and tie down • Buckets • Counterweight, auxiliary 720 lbs (327 kg) • Engine side panels • Fan, suction • Fenders • Forks, log • Forks, pallet • Fuel pump, electric • Guard, power train • Guarding package, forestry • Heater (36,000 BTU/hr) and defroster • Lights, halogen additional driving • Lock-up kit • Muffler, spark arresting • Precleaner • ROPS cab with air pressurization and sound suppression • Seat belt • Seat, suspension • Starting equipment, cold weather • Steering, auxiliary • Turbo-charger • Turn signals • Windshield wipers, rear • Voltmeter and engine oil pressure gauges.



Sold and serviced by:

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. Unit illustrated is equipped with non-standard items.

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