

ENGINE

John Deere engineered and manufactured. Replaceable wet type cylinder liners provide superior heat dissipation, longer life. High strength alloy heads have replaceable valve seat inserts. The forged steel, 5-main bearing crankshaft is statically and dynamically balanced for smooth operation. Cast aluminum pistons provide good heat transfer and pistons are sprayed with cooling oil for longer life.

Engine: John Deere 4045T

Rated power @ 2200 rpm	90 SAE net hp (67 kW)
	95 SAE gross hp (71 kW)
Turbocharger	standard
Cylinders	4
Displacement	276 cu. in. (4.524 L)
Fuel consumption, typical	1.6 to 2.6 gal/hr (6.0 to 9.8 L/h)
Torque rise, standard	25% at 1300 rpm, 268 lb-ft (363 Nm)
Lubrication	Pressure system w/full flow filter and cooler
Air cleaner	Dual stage dry type with safety element and precleaner
Electrical system	12 volt
Alternator	65 amps

TRANSMISSION

John Deere designed and built 4-speed helical gear, synchronized, collar shift transmission with hydraulic reverser. Uses single stage, dual phase 11-inch (280 mm) torque converter with 2.23:1 stall ratio.

TRAVEL SPEEDS

	Gear	Forward		Reverse	
		mph	(km/h)	mph	(km/h)
With standard 19.5L-24 rear and 11L-16 front tires	1	3.2	5.2	3.7	6.0
	2	5.5	8.8	6.4	10.3
	3	11.7	18.8	13.6	21.9
	4	21.4	34.4	24.8	40.0
With MFWD and required 21L-24 rear and 12.00- 16.5 front tires	1	3.3	5.3	3.8	6.1
	2	5.7	9.2	6.6	10.6
	3	12.1	19.5	14.0	22.5
	4	22.1	35.6	25.6	41.2

FINAL DRIVES

Heavy-duty, inboard mounted planetary type. Evenly distributes axle shock loads over three gears that run in a cooling oil bath.

BRAKES

Hydraulic wet disk brakes are mounted inboard and are pressure cooled and lubricated. They're self-adjusting, self-equalizing, require no periodic service. Individual pedals allow them to be applied together or separately. Parking/emergency brake is an independent system that uses a mechanical V-groove band on differential ring gear.

STEERING

Hydrostatic power steering gives superior control at all speeds. Excellent steering torque allows easy maneuvering with heavy loads.

Non-powered axle	
Curb turning radius with brakes	11 ft. 7 in. (3.53 m)
without brakes	13 ft. 5 in. (4.10 m)
Bucket clearance circle with brakes	33 ft. 6 in. (10.22 m)
without brakes	37 ft. 3 in. (11.34 m)
Steering wheel turns, stop to stop	2.2 to 2.9
Mechanical-front-wheel drive	
Curb turning radius with brakes	11 ft. 7 in. (3.53 m)
without brakes	13 ft. 8 in. (4.17 m)
Bucket clearance circle with brakes	31 ft. 6 in. (9.59 m)
without brakes	35 ft. 8 in. (10.88 m)
Steering wheel turns, stop to stop	2.3 to 2.8
Axle oscillation stop to stop, both axles	22 degrees

Axle ratings:	Static	Dynamic	SAEJ43
Front	56,000 lb. (25 500 kg)	56,000 lb. (25 500 kg)	11,790 lb. (5347 kg)
Rear	51,000 lb. (23 200 kg)	68,000 lb. (30 900 kg)	16,150 lb. (7342 kg)

HYDRAULICS

System	closed center
Pressure, main relief	2755 psi (19 000 kPa) (193.7 kg/cm ²)
Pump	radial pistons
Flow at 2500 rpm	35 gpm (133 L/min)
Filter, return oil	10 micron, spin-on replaceable element

TIRES

Front	Rear
11L-16, 12 PR, F3	19.5L-24, 10 PR, R4
11L-16, 12 PR, F3	19.5L-24, 12 PR, R4
w/calcium chloride	
14.5/75-16.1, 10 PR, F3	21L-24, 10 PR, R4
14.5/75-16.1, 10 PR, F3	
w/calcium chloride	
With mechanical-front-wheel drive	
12.00-16.5, 8 PR, lug tread	21L-24, 10 PR, R4
14-17.5, 8 PR	18.4-28L, 12 PR, R4

CAPACITIES

Fuel tank	38 gal. (144 L)
Engine coolant	17 qt. (16 L)
Engine oil including filter	9 qt. (8.5 L)
Torque converter and reverser system	14 qt. (13 L)
Transaxle and hydraulic system	21 gal. (79 L)

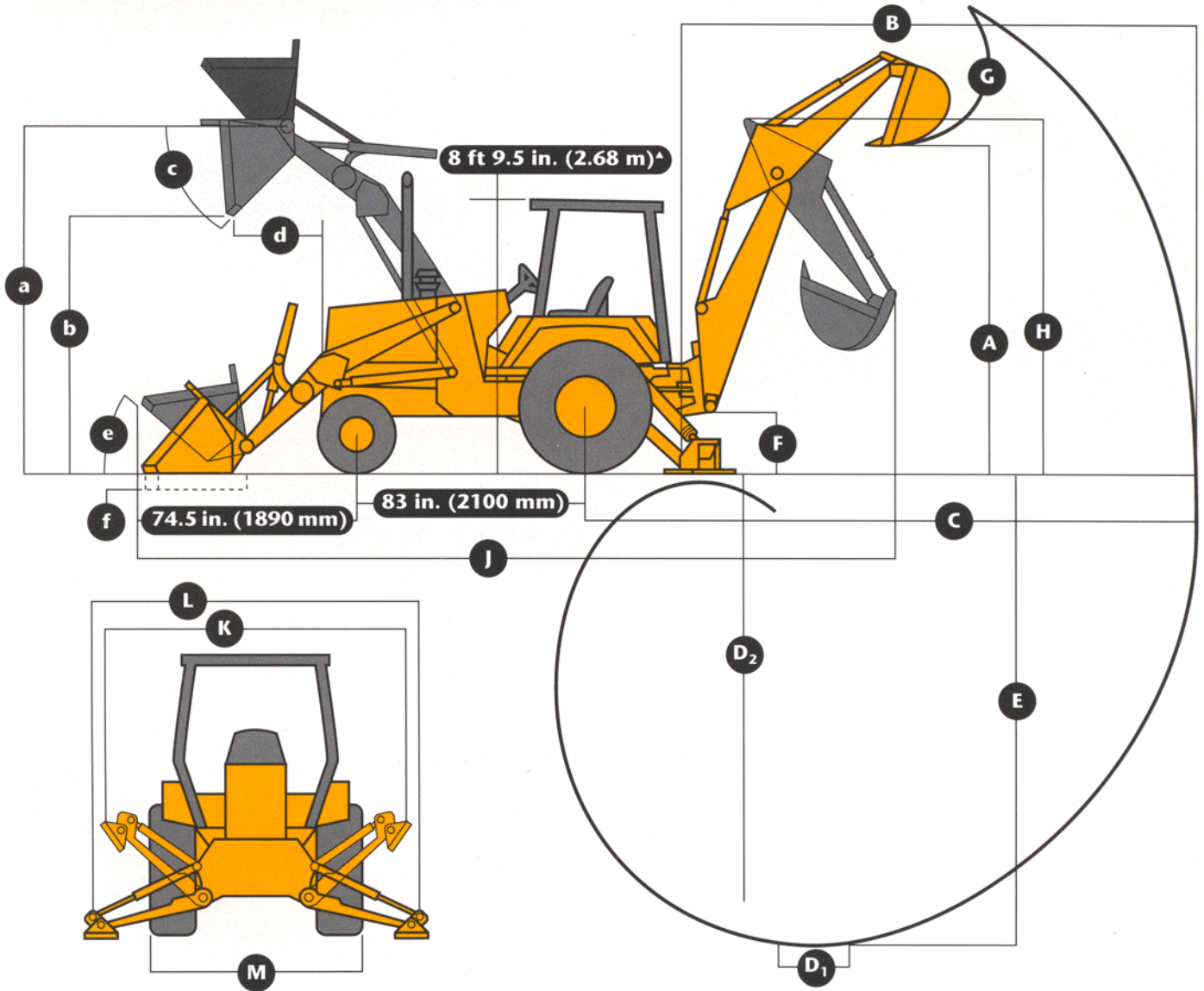
OPERATING WEIGHTS

510C	15,400 lb. (7000 kg)
cab adds	450 lb. (204 kg)
mechanical-front-wheel drive adds	245 lb. (111 kg)
extendable dipperstick with required counterweight adds	1182 lb. (536 kg)
optional front counterweighting adds	250 lb. (113 kg)
reversible stabilizer pads add	120 lb. (54 kg)

See backhoe and loader performance data for bucket weights

DIMENSIONS

See loader performance (a-f)



▲ ROPS and Cab

Key:

A. Loading height, truck loading position	13 ft. (3.96 m)
B. Reach from center of swing mast	19 ft. 11 in. (6.07 m)
C. Reach from center of rear axle	23 ft. 8 in. (7.21 m)
D. Digging depth (SAE):	
(1) 2-ft. (610 mm) flat bottom	16 ft. 4 in. (4.98 m)
(2) 8-ft. (2440 mm) flat bottom	15 ft. 4 in. (4.67 m)
E. Maximum digging depth	16 ft. 5 in. (5.00 m)
F. Ground clearance, minimum	23 ft. 4 in. (7.11 m)
G. Bucket rotation	160 or 180 deg.
H. Transport height	12 ft. 1 in. (3.68 m)
J. Overall length, transport	23 ft. 4 in. (7.11 m)
K. Stabilizer width—transport	7 ft. 8 in. (2.34 m)
L. Stabilizer spread—operating	9 ft. 10 in. (3.00 m)
M. Overall width (less loader bucket)	86 in. (2185 mm)

Backhoe* w/Long Dipperstick

11,000 lb. (48.9 kN)	11,000 lb. (48.9 kN)
(4990 kg)	(4990 kg)
7600 lb. (33.8 kN)	8100 lb. (36.0 kN)
(3450 kg)	(3675 kg)
180 deg.	180 deg.
Two levers	Two levers
8 or 17 deg. rollback	8 or 17 deg. rollback
14.5 deg.	14.5 deg.
5400 lb. (2450 kg)	5400 lb. (2450 kg)
13 deg.	13 deg.

Backhoe* w/Short Dipperstick

12 ft. 4 in. (3.76 m)	12 ft. 4 in. (3.76 m)	12 ft. 4 in. (3.76 m)	12 ft. 4 in. (3.76 m)
19 ft. 3 in. (5.87 m)	19 ft. 3 in. (5.87 m)	19 ft. 3 in. (5.87 m)	19 ft. 3 in. (5.87 m)
23 ft. (7.01 m)	23 ft. (7.01 m)	23 ft. (7.01 m)	23 ft. (7.01 m)
15 ft. 8 in. (4.78 m)	15 ft. 8 in. (4.78 m)	15 ft. 8 in. (4.78 m)	15 ft. 8 in. (4.78 m)
14 ft. 8 in. (4.47 m)	14 ft. 8 in. (4.47 m)	14 ft. 8 in. (4.47 m)	14 ft. 8 in. (4.47 m)
15 ft. 9 in. (4.80 m)	15 ft. 9 in. (4.80 m)	15 ft. 9 in. (4.80 m)	15 ft. 9 in. (4.80 m)
13 in. (330 mm)	13 in. (330 mm)	13 in. (330 mm)	13 in. (330 mm)
160 or 180 deg.	160 or 180 deg.	160 or 180 deg.	160 or 180 deg.
12 ft. 1 in. (3.68 m)	12 ft. 1 in. (3.68 m)	12 ft. 8 in. (3.86 m)	12 ft. 8 in. (3.86 m)
22 ft. 11 in. (6.99 m)	22 ft. 11 in. (6.99 m)	23 ft. (7.01 m)	23 ft. (7.01 m)
7 ft. 8 in. (2.34 m)	7 ft. 8 in. (2.34 m)	7 ft. 8 in. (2.34 m)	7 ft. 8 in. (2.34 m)
9 ft. 10 in. (3.00 m)	9 ft. 10 in. (3.00 m)	9 ft. 10 in. (3.00 m)	9 ft. 10 in. (3.00 m)
86 in. (2185 mm)	86 in. (2185 mm)	86 in. (2185 mm)	86 in. (2185 mm)

Extendable Dipperstick

Retracted	Extended
12 ft. 4 in. (3.76 m)	15 ft. 3 in. (4.65 m)
19 ft. 3 in. (5.87 m)	23 ft. 11 in. (7.29 m)
23 ft. (7.01 m)	27 ft. 8 in. (8.43 m)
15 ft. 8 in. (4.78 m)	20 ft. 7 in. (6.27 m)
14 ft. 8 in. (4.47 m)	19 ft. 10 in. (6.05 m)
15 ft. 9 in. (4.80 m)	20 ft. 8 in. (6.30 m)
13 in. (330 mm)	13 in. (330 mm)
160 or 180 deg.	160 or 180 deg.
12 ft. 8 in. (3.86 m)	12 ft. 8 in. (3.86 m)
23 ft. (7.01 m)	23 ft. (7.01 m)
7 ft. 8 in. (2.34 m)	7 ft. 8 in. (2.34 m)
9 ft. 10 in. (3.00 m)	9 ft. 10 in. (3.00 m)
86 in. (2185 mm)	86 in. (2185 mm)

Digging force, bucket cylinder (power dig position)	11,000 lb. (48.9 kN) (4990 kg)	11,000 lb. (48.9 kN) (4990 kg)	11,000 lb. (48.9 kN) (4990 kg)	11,000 lb. (48.9 kN) (4990 kg)
Digging force, crowd cylinder	7600 lb. (33.8 kN) (3450 kg)	8100 lb. (36.0 kN) (3675 kg)	8100 lb. (36.0 kN) (3675 kg)	5300 lb. (23.6 kN) (2405 kg)
Swing arc	180 deg.	180 deg.	180 deg.	180 deg.
Operator control	Two levers	Two levers	Right foot treadle	Right foot treadle
Bucket positions	8 or 17 deg. rollback	8 or 17 deg. rollback	8 or 18 deg. rollback	12 or 21 deg. rollback
Stabilizer angle rearward	14.5 deg.	14.5 deg.	14.5 deg.	14.5 deg.
Lifting capacity, maximum, boom at 65 deg.	5400 lb. (2450 kg)	5400 lb. (2450 kg)	5300 lb. (2400 kg)	2400 lb. (1090 kg)
Leveling angle	13 deg.	13 deg.	13 deg.	13 deg.

*Backhoe specifications are with 24-in. x 8.8 cu. ft. (610 mm x 0.25 m³) bucket.

