



case

780B Construction King[®]



111 (82.8 kW) NET FLYWHEEL HORSEPOWER

Case-built four cylinder 336 in³ (5506 cm³) high torque diesel.

FIELD PROVEN TRANSMISSION

Three speed powershift with power shuttle and torque converter.

CHOICE OF BACKHOES

18' (5.49 m) backhoe or 18'-22' (5.49 m-6.7 m) telescoping Extendahoe[®]. Over-center backhoe transport position for loading and roading stability.

6840 LB (3102 kg) LIFT CAPACITY LOADER

Powerful 12,500 lbs (55 610 N) breakout force, over 9'0" (2.74 m) dump clearance. Single lever controls bucket rollback, lift, dump, lower, float and 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 isolated to reduce noise and vibration. Sloping hood and grille and 4-way adjustable seat improves visibility and operator 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

780B Tractor

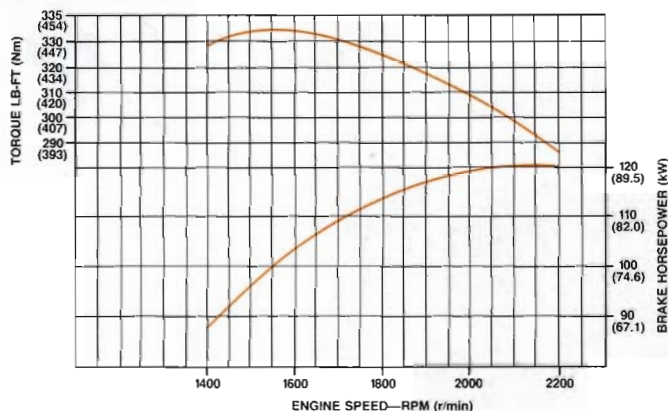
Construction King®

ENGINE

Make and model	Case A336BDT diesel
Type of fuel	No. 2 diesel
No. of cylinders	4
Bore and stroke	4.625" x 5" (117 mm x 127 mm)
Displacement	336 in ³ (5506 cm ³)
Compression ratio	15.8 to 1
Fuel induction	Open chamber-direct injection
Fuel supply	Injection pump
Air cleaner	Dry type — replacement element
Oil filter	Replaceable spin-on cartridge, full flow
Lubrication	Positive pressure
Cooling system	Pressurized — 7 psi (48 kPa)
Horsepower	
Gross (1)	120 @ 2200 rpm (89.5 kW @ 2200 r/min)
SAE Net (2)	111 @ 2200 rpm (82.8 kW @ 2200 r/min)
Max. torque ft-lb	
Gross (1)	333 @ 1500 rpm (451 Nm @ 1500 r/min)
SAE Net (2)	311 @ 1500 rpm (422 Nm @ 1500 r/min)

(1) Gross engine horsepower or torque at flywheel per SAE J270 specification.
 (2) Net engine horsepower or torque at flywheel per SAE J270 specification.

POWER CURVE



ELECTRICAL

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

POWER TRAIN

Transmission: 3 speed power shift with power shuttle and torque converter.

Torque converter: Single stage hydrokinetic type (2.85 to 1 ratio).

Reversing unit: Full power hydraulic clutches.

Brakes: Individual or simultaneous foot actuated, straight air. Brake can be operated with or without interrupting power flow to rear wheels. Automatic, spring applied, air released parking brakes utilizing main brake drums on axle.

Rear axle: Outboard planetary with torque proportioning differential.

AXLE RATINGS

FRONT	
Dynamic	68,000 lbs (30,845 kg)
Static	17,000 lbs (7,711 kg)

STEERING

Power steering	Hydrostatic
Hydraulic pump	Front mounted, positive displacement, gear type, pump
Pump capacity	26 gpm @ 2200 rpm @ 2000 psi 98 l/min @ 2200 r/min @ 13 790 kPa
Main relief setting	1750 psi (12 066 kPa)
Turning ratio (stop to stop)	3.6 turns
Steering cylinders (2)	2.12" dia x 7.5" stroke (54 mm dia x 191 mm stroke)
Double acting	

SERVICE CAPACITIES

	U.S.	Litres
Cooling system	9 gal	34.1
Fuel tank	33 gal	124.9
Engine oil		
w/filter	4 gal	15.1
w/o filter	3.75 gal	14.2
Transmission	4 gal	15.1
Rear axle		
pinion	2 gal	7.6
planetary (ea.)	2 qt	1.9
Hydraulic reservoir		
w/filter	18.9 gal	71.5

TRAVEL SPEEDS — MPH (km/h)

Engine at full throttle. 18.4 x 24, R4 rear tires.

	FIRST	SECOND	THIRD
Forward or	3.9 (6.3)	7.2 (11.6)	20.0 (32.2)
Reverse			

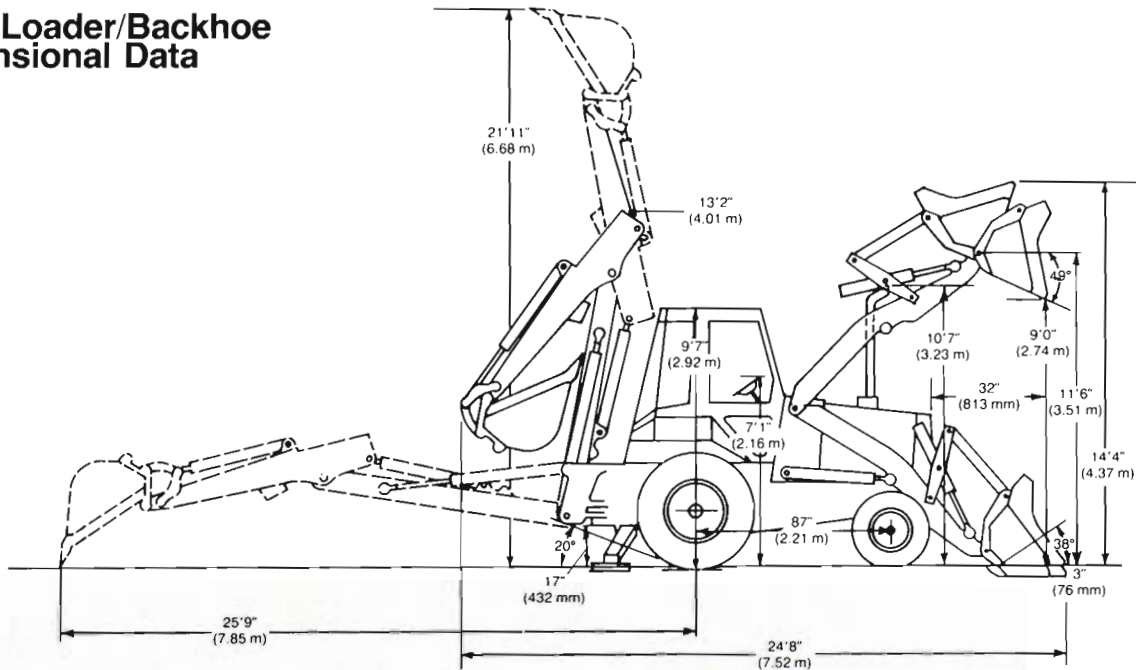
780B TIRES

	SIZE	PLY RATING	TREAD	PRESSURE PSI (kPa)
FRONT	14 x 17.5	10	F3	70 (483)
REAR	18.4 x 24	12	R4	32 (221)
	18.4 x 28	12	R4	32 (221)
	21L x 24	12	R4	30 (207)

TURNING CLEARANCE CIRCLE

Without brakes 40'8" (12.4 m)

780B Loader/Backhoe Dimensional Data



TRACTOR/LOADER/BACKHOE

Overall length — 1.75 yd ³ (1.34 m ³) bucket	24'8" (7.52 m)
Overall length — 4-in-1 bucket	25'0" (7.62 m)
Overall width	8'3" (2.51 m)
Height: to top of canopy	9'7" (2.92 m)
Height: to top of cab	9'7" (2.92 m)
Height: to top of exhaust stack	10' 7" (3.23 m)
Height: to top of steering wheel	7'1" (2.16 m)
Front wheel tread	6'6" (1.98 m)
Rear wheel tread	5'11" (1.80 m)
Wheel base	87" (2.21 m)

1.75 yd³ (1.34 m³) BUCKET

Overall height, maximum	14'4" (4.37 m)
Digging depth below ground — bucket flat	3" (76 mm)
Height to bucket hinge pin	11'6" (3.51 m)
Dump angle at full height	49°
Dump clearance full height 49° dump	9'0" (2.74 m)
Dump reach at full height 49° dump	32" (813 mm)
Bucket rollback at ground line	38°

4-in-1* BUCKET

Digging depth below ground — bucket flat	7.5" (191 mm)
Height to bucket hinge pin	11'6" (3.51 m)
Dump angle at full height	48°
Dump clearance at full height	
45° dump — clam	7'8" (2.35 m)
45° dump — bucket	9'0" (2.75 m)
Dump reach at full height 48° dump	36" (914 mm)
Bucket rollback at ground line	58°

BACKHOE

	18' (5.49 m)	EXTENDAHOE	
		RETRACTED	EXTENDED
Overall height, maximum	21'11" (6.68 m)	22'6" (6.86 m)	26'0" (7.92 m)
Transport height	13'2" (4.01 m)	13'1" (3.98 m)	13'1" (3.98 m)
Overall reach			
from rear axle			
centerline	25'9" (7.85 m)	25'8" (7.82 m)	29'4" (8.94 m)
Ground clearance at backhoe main frame	17" (432 mm)	17" (432 mm)	17" (432 mm)
Angle of departure	20°	20°	20°

NOTE: Specifications taken with 14 x 17.5 front tires. 18.4 x 24, rear tires, ROPS cab. 18' (5.49 m) backhoe with 24" (610 mm) heavy duty trenching bucket, loader with 96" (2.44 m) general purpose bucket and standard equipment unless otherwise specified.



780B Loader

HYDRAULIC SYSTEM

Hydraulic pump: Transmission mounted, positive displacement; gear type pump.

Pump capacity: 29.5 gpm @ 2200 rpm @ 2000 psi
(112 l/min @ 2200 r/min @ 13 790 kPa).

Control valve main relief pressure: 2650 psi (18 271 kPa).

Filtration: 10 micron, full flow replaceable cartridge on return line. Condition indicator light for filter.

Loader control valve: Mono cast two or three spool. Single lever control for lift and tilt. Extra lever for 4-in-1 bucket. Lift lever has positive hold "float" position and "return-to-dig" feature.

Hydraulic lines: Steel tubing with brazed or flared fittings and wire braid, high pressure hose with crimped, full flow fittings.

Loader cylinders:

Lift (2)	4" dia x 30" stroke, 2.25 rod (102 mm dia x 762 mm stroke, 57 mm rod)
Tilt (2)	3.5" dia x 23.4" stroke, 2.0" rod (89 mm dia x 594 mm stroke, 51 mm rod)
Clam (2)	4.62" dia x 10" stroke, 2.0" rod (117 mm dia x 254 mm stroke, 51 mm rod)

LOADER BUCKET SIZES (Capacities SAE)

WIDTH		TYPE	HEAPED		STRUCK	
In	m		yd ³	m ³	yd ³	m ³
96	2.44	General Purpose	1.75	1.34	1.44	1.10
96	2.44	4-in-1	1.75	1.34	1.37	1.05

OPERATIONAL DATA (General Purpose Bucket)

Lift capacity to full height	6840 lbs (3103 kg)
Height to bucket hinge pin-raised	11'6" (3.51 m)
Bucket rollback at ground line	38°
Breakout force	12,500 lbs (55 600 N)
Dump angle at full height	49°
Grading angle	116°
Digging depth below ground line—bucket flat	3" (76 mm)
Dump clearance at full height 49° dump	9'0" (2.74 m)
Dump reach at full height 49° dump	32" (813 mm)
Reach — bucket on ground	4'10" (1.47 m)
Raising time to full height	6.6 sec
Bucket dumping time	1.7 sec
Lowering time, power down	4.7 sec
Return-to-dig	2.6 sec

OPERATIONAL DATA (4-in-1" Bucket)

Lift capacity to full height	6176 lbs (2801 kg)
Height to bucket hinge pin	11'6" (3.51 m)
Bucket rollback at ground line	57°
Breakout force	10,242 lbs (45 556 N)
Dump angle at full height	48°
Grading angle — clam closed	up to 97°
Digging depth below ground line — bucket flat	7.5" (191 mm)
Digging depth — using clam	51" (1.29 m)
Digging depth — clam open	6.5" (165 mm)
Dump clearance at full height	
45° dump — clam	7'8" (2.35 m)
45° dump — bucket	9'0" (2.75 m)
Dump reach at full height 45° dump	36" (917 mm)
Reach-bucket on ground	62" (1.58 m)
Raising time to full height	6.6 sec
Bucket dumping time	1.7 sec
Return-to-dig	2.6 sec
Width of dozer cutting edge	96" (2.44 m)
Maximum clam opening	46" (1.17 m)
Moldboard height	45" (1.14 m)



780B Backhoe

HYDRAULIC SYSTEM

Hydraulic pump: Positive displacement, gear type, pumps.

Pump capacity: 29.5 gpm @ 2200 rpm @ 2000 psi
 (112 l/min @ 2200 r/min @ 13 790 kPa)
 26.0 gpm @ 2200 rpm @ 2000 psi
 (98 l/min @ 2200 r/min @ 13 790 kPa)
 55.5 gpm combined @ 2200 rpm @ 2000 psi
 (210 l/min combined @ 2200 r/min @ 13 790 kPa).

Control valve main relief: 2850 psi (19 650 kPa).

Filtration: 10 micron, full flow replaceable cartridge on return line. Condition indicator light for filter.

Backhoe control valve: Sectional four spool valve — boom, dipper, bucket, and swing. Foot or optional hand swing. Regeneration and hydraulic cushioned swing stops. Monocast two spool stabilizer valve with pilot checks.

Hydraulic lines: Steel tubing with brazed or flared fittings and wire braid high pressure hose with crimped, full flow fittings.

Backhoe cylinders:

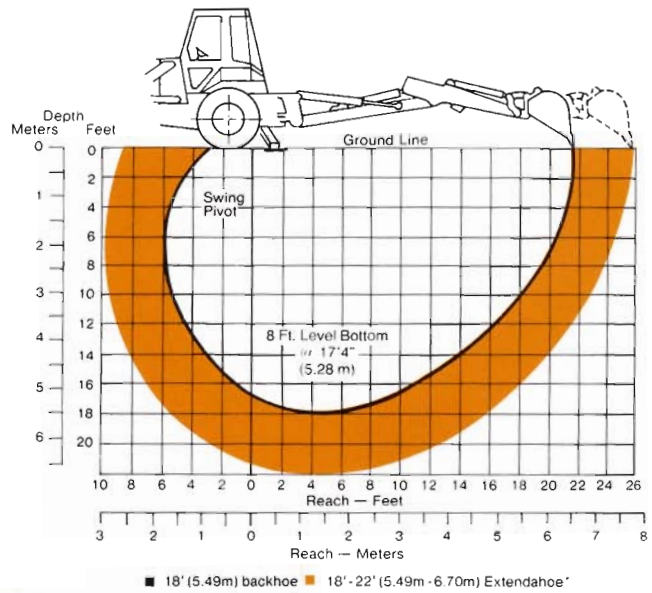
- Stabilizers (2) 4.5" dia x 28.5" stroke, 2.25" rod
(114 mm dia x 724 mm stroke, 57 mm rod)
- Swing (2) 4" dia x 14.8" stroke, 2" rod
(102 mm dia x 376 mm stroke, 51 mm rod)
- Boom (2) 4.5" dia x 44.6" stroke, 2.5" rod
(114 mm dia x 1.13 m stroke, 64 mm rod)
- Dipper (1) 5" dia x 45" stroke, 2.75" rod
(127 mm dia x 1.14 stroke, 70 mm rod)
- Bucket (1) 4.5" dia x 33" stroke, 2.5" rod
(114 mm dia x 838 mm stroke, 64 mm rod)
- Dipper extension (1) 3" dia x 48.5" stroke, 1.5" rod
(76 mm dia x 1.23 m stroke, 38 mm rod)

LIFT CAPACITY CHART — 18' (5.49 m) Backhoe*

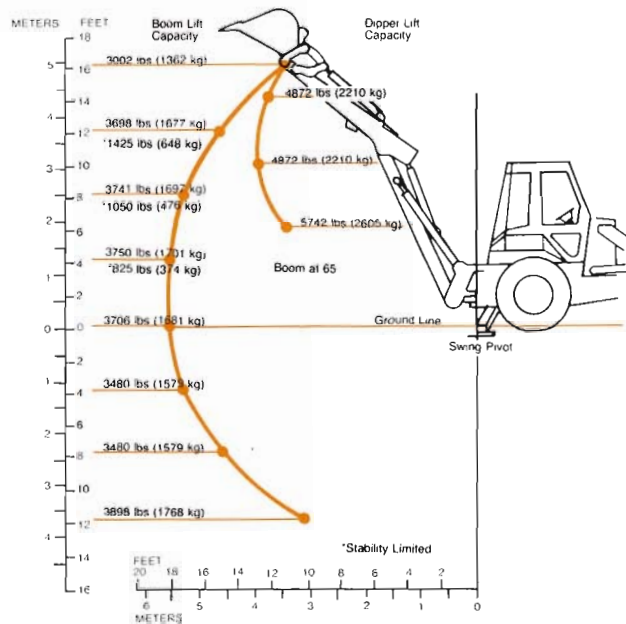
1. Lift capacity figures on this chart are 87% of the maximum lift force per SAE Definition J31 and J49 at 2850 psi (19 650 kPa) system relief pressure. (After S/N 9154195).
2. Top numbers/lift capacity within 45° either side of prime mover.
3. Bottom number/lift capacity anywhere within full swing arc.
4. *Figures are stability limited and 75% of tipping load.
5. Figures stated are determined by static tests and do not include dynamic factors.

*For Extendahoe lift capacities refer to operator's manual.

DIG DEPTH CHART



LIFT CAPACITY CHART — 18' (5.49 m) Backhoe*



OPERATIONAL DATA — 18' (5.49 m) Backhoe and 18'-22' (5.49 m-6.70 m) Extendahoe[®]

	18' (5.49 m) Backhoe	18'-22' (5.49 m-6.70 m) Extendahoe [®]	
		RETRACTED	EXTENDED
Digging depth — SAE	18'3" (5.56 m)	18'3" (5.56 m)	22'0" (6.70 m)
Overall reach from rear axle centerline	25'9" (7.85 m)	25'7" (7.80 m)	29'3" (8.92 m)
Digging radius from swing pivot	21'11" (6.68 m)	21'10" (6.65 m)	25'6" (7.77 m)
Loading height	11'4" (3.45 m)	12'5" (3.78 m)	14'6" (4.42 m)
Loading reach	9'10" (3.0 m)	8'4" (2.54 m)	11'7" (3.53 m)
Swing arc	180°	180°	180°
Bucket rotation #1 position	156°	151°	151°
#2 position	111°	111°	111°
Stabilizer spread — operating position	12'4" (3.76 m)	12'4" (3.76 m)	12'4" (3.76 m)
Stabilizer spread — transport position	8'0" (2.44 m)	8'0" (2.44 m)	8'0" (2.44 m)
Digging force, bucket cylinder, SAE	13,640 lbs (60 674 N)	13,742 lbs (61 127 N)	13,742 lbs (61 127 N)
Digging force, dipper cylinder, SAE	10,970 lbs (48 797 N)	11,095 lbs (49 353 N)	8,138 lbs (36 200 N)
Leveling angle (maximum slope on which backhoe will make vertical cut)	14°	14°	14°

Equipment Attachments

STANDARD EQUIPMENT

TRACTOR

Air cleaner, dry type with replaceable cartridge • Alternator and regulator • Antifreeze solution to -20° F (-29° C) • Axle (front), heavy-duty with 78" (1.98 m) fixed tread • Brakes, full air • Brake, parking, air • Electrical system, 24 volt • Engine, 111 hp (82.8 kW) Case A336BDT diesel • Fenders, rear • Floor plates • Gauges and Instruments: air cleaner restriction light, air pressure indicator, alternator charge warning light, clutch pressure light, condition light for loader and backhoe hydraulic system filter, converter temperature gauge, engine oil pressure warning light, engine water temperature gauge, fuel level gauge, hourmeter, parking brake light, tachometer • Headlights (two shock mounted), one rear working and one red tail • Instrument cluster, illuminated • Muffler, upright with deflector • Oil cooler, hydraulic • Oil filter, full flow • Transmission, 3-speed powershift • Radiator opening, lockable • ROPS canopy on isolated operator's compartment • Safety belt, seat mounted • Seat, Easy Ride with single lever turnaround adjustment • Side panels, full length of engine • Steering, hydrostatic • Throttle, hand and foot • Tires (front) 9.00 x 20 10PR • Tires (rear) 18.4 x 24, 12PR R4 • Toolbox • Wrapper, front

LOADER

All tractor standard equipment • Anti-rollback • Control, single lever • Hydraulic system, complete • Indicator, bucket level • Loader (less bucket) • Return-to-dig • Self-leveling • Support strut, lift arm

18' (5.49 m) BACKHOE

All tractor and loader standard equipment • Hydraulic system, complete, including three lever, footswing control • Overcenter backhoe (less bucket) • Stabilizers with two position cleated pads

18'-22' (5.49 m-6.70 m) EXTENDAHOE

All tractor, loader and backhoe equipment • Hydraulic telescoping extendahoe, accessory hydraulics

OPTIONAL EQUIPMENT

TRACTOR

Air conditioning • Alarm, backup • Anti-freeze to -40° F (-40° C) • Beacon, rotating • Floor mat • Full lockup package • Horn • Lights, combination tail, stop, directional and flasher with rear flood light • Muffler, spark arresting • Paint, special • ROPS cab with air filtration, defogger, heater and pressurization • Front and rear wipers, lights, working, directional, flashers • Seat, deluxe • Start kit, cold weather • Tires various sizes — see tractor section

LOADER

All tractor optional equipment • Accessory hydraulics • Bucket teeth • 96" (2.44 m) general purpose bucket • 96" (2.44 m) 4-in-1 bucket

BACKHOE

All tractor and loader optional equipment • Backhoe floor mat • Boom lockout • Dual lever backhoe controls • Street-cemetery stabilizer pads • 18" (457 mm), 24" (610 mm), 30" (714 mm) and 36" (914 mm) heavy-duty trenching buckets.

APPROXIMATE SHIPPING WEIGHTS

NOTE: Specifications taken with 14 x 17.5 front tires, 18.4 x 24 rear tires, ROPS canopy and standard equipment unless otherwise specified.

TRACTOR/LOADER/BACKHOE (Less Buckets)

18' (5.49 m) backhoe w/ROPS canopy	19,400 lbs (8800 kg)
18' (5.49 m) backhoe w/ROPS cab	19,886 lbs (9020 kg)
18'22' (5.49 m-6.70 m) Extendahoe®	20,092 lbs (9114 kg)
Air conditioning	add 30 lbs (14 kg)

LOADER BUCKETS (Optional)

96" (2.44 m) general purpose	1050 lbs (476 kg)
96" (2.44 m) 4-in-1	1950 lbs (885 kg)

BACKHOE BUCKETS (Optional)

18" (457 mm) heavy-duty	459 lbs (208 kg)
24" (610 mm) heavy-duty	633 lbs (287 kg)
30" (762 mm) heavy-duty	737 lbs (334 kg)
36" (914 mm) heavy-duty	836 lbs (379 kg)

Extendahoe, 4-in-1, and Construction King are trademarks of the J I Case Company.

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 change.

Sold and Serviced by: