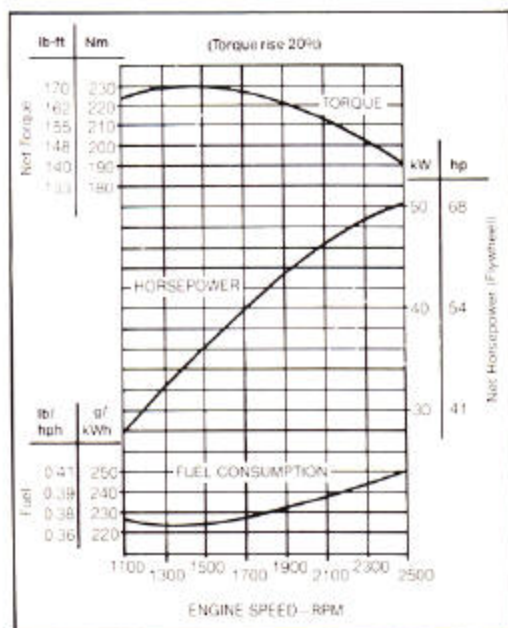




415B BACKHOE LOADER



ENGINE PERFORMANCE



FEATURES

- 48 kW (64 hp) SAE net
- 50 kW (68 hp) DIN 70020
- Backhoe digging depth 4.39 m (14 ft. 5 in.)
- Backhoe total sideshift 1270 mm (50 in.)
- Unitized frame
- Isolated engine and operator's station
- Walk-in front entry
- Designed for quietness
- Closed-centre hydraulic system
- Weight distributed for working stability
- Self-adjusting hydraulic wet-disc brakes
- Inboard planetary final drives
- Transaxle 1st and 2nd collar shift, 3rd and 4th synchronised
- Full power-shift reverser
- Torque converter
- Single-lever loader control

- Two-lever backhoe control
- Two-lever stabiliser control
- Multi-adjustable swing-around seat
- Hydrostatic power steering
- Soundproofed cab with integral ROPS/FOPS
- Vandal protection with built-in locks
- ADD VERSATILITY WITH:**
- Extendable dipperstick
- Mechanical front-wheel drive
- Multipurpose bucket

TED B. MILLER CO. INC.
Hwy 92 East
P.O. Box 460
Cedar Rapids, Nebr. 69341

415B BACKHOE LOADER SPECIFICATIONS

(Specifications and design subject to change without notice. Wherever applicable, specifications are in accordance with ICED and SAE Standards. Except where otherwise noted, these specifications are based on a standard machine equipped with 16.9-28 rear tyres, 10.5-18 front tyres, 1.0m³ (1.3 cu. yd) loader bucket, 610 mm (24 in.) standard duty backhoe bucket, ROPS/FOPS full fuel tank and 79 kg (175 lb.) operator.)

Engine: John Deere 4-cylinder diesel, 4-stroke cycle

Power at 2500 engine rpm	
Gross (SAE)	51 kW (68 hp)
Net SAE	48 kW (64 hp)
DIN (70020)	50 kW (68 hp)
Bore	106.5 mm (4.19 in.)
Stroke	110 mm (4.33 in.)
Displacement	3.92 L (239 cu. in.)
Compression ratio	17.8 to 1
Maximum torque at 1400 rpm	230 Nm (23.5 kg-m) (170 lb.-ft)
Main bearings	5
Lubrication	Pressure with full-flow filter and cooler
Cooling	Pressurized with thermostat and fixed bypass
Fan	Suction
Air cleaner	Dry
Electrical system	12 V with 65-amp alternator

Torque Converter:

Single stage, dual phase, overrunning stator, 280-mm (11-in.) diameter, stall ratio 2.8 to 1.

Reverser:

Modulated, full power shift with multiple wet-disc clutches. Reverser operating lever at left of steering wheel.

Transmission:

Three-speed transmission, TUV version. Synchronised shifts from first to second, second to third and from third to second.

		Travel Speeds	
		km/h	mph
Forward	1	5.5	3.4
	2	9.4	5.8
	3	20.2	12.6
Reverse	1	6.4	4.0
	2	11.0	6.8
	3	23.4	14.5

Transmission:

Four-speed transmission has manual shift with first and second speeds having sliding collar engagement and third and fourth speeds engaged with cone-type synchronizers. Single shift lever, floor mounted.

		Travel Speeds	
		km/h	mph
Forward	1	5.5	3.4
	2	9.4	5.8
	3	20.2	12.6
	4	36.9	22.9
Reverse	1	6.4	4.0
	2	11.0	6.8
	3	23.4	14.5
	4	42.8	26.6

Final Drives

Planetary, inboard

Mechanical Front-Wheel Drive:

Engaged on-the-go hydraulically. Offset axle. Automatic self-locking differential, limited-slip type.

Service Brakes:

Hydraulic, applied with separate pedals; hydraulically equalized when both pedals are depressed. Wet discs and facings are fully enclosed and self-adjusting.

Steering: Hydrostatic power

Steering, regular axle	
Turning radius (brake applied)	3.12 m (10 ft. 3 in.)
Clearance circle (brake applied)	9 m (29 ft. 6 in.)
Steering wheel turns, left to right	2.9
right to left	3.9

Mechanical front-wheel drive (engaged)

Turning radius (brake applied)	3.91 m (12 ft. 10 in.)
Clearance circle (brake applied)	9.3 m (30 ft. 6 in.)
Steering wheel turns, left to right	3.2
right to left	4.2

Hydraulic System: Closed-centre (variable flow, constant pressure)

Pressure	17 238 kPa (175.8 kg/cm ²) (2500 psi)
Pump	8 radial pistons, variable flow
Flow at 15 170 kPa (154.7 kg/cm ²) (2200 psi)	1.89 L/s (25 imp. gpm) (30 U.S. gpm)
Filter, return oil	10-micron, steel-enclosed, replaceable element
Screen, pressure oil	20/cm (50/in.) mesh

Hydraulic Cylinders:

	Bore	Stroke	Rod
Loader boom (2)	83 mm (3.25 in.)	762 mm (30.0 in.)	45 mm (1.75 in.)
Loader bucket (1)	89 mm (3.5 in.)	620 mm (24.4 in.)	45 mm (1.75 in.)
Backhoe boom (1)	114 mm (4.5 in.)	980 mm (38.5 in.)	57 mm (2.25 in.)
Backhoe crowd (1)	102 mm (4.0 in.)	840 mm (33.0 in.)	51 mm (2.0 in.)
Backhoe bucket (1)	89 mm (3.5 in.)	695 mm (27.4 in.)	64 mm (2.5 in.)
Backhoe swing (2)	102 mm (4.0 in.)	241 mm (9.5 in.)	51 mm (2.0 in.)
Backhoe extendable dipper (1)	64 mm (2.5 in.)	1220 mm (48 in.)	32 mm (1.25 in.)
Backhoe stabilisers (2)	102 mm (4.0 in.)	515 mm (20.3 in.)	51 mm (2.0 in.)
Steering regular axle (1)	51 mm (2.0 in.)	241 mm (9.5 in.)	25.5 mm (1.0 in.)

Tyres:

	Front: 10.5-18	Rear: 16.9-28
Wheel treads:		
Front		1730 mm (68 in.)
Rear		1780 mm (70 in.)
Wheelbase		2110 mm (83 in.)

Axle Ratings: (SAE J43)

Front	4080 kg (9,000 lb)
Rear	5685 kg (12,530 lb)

Capacities:

	L	Imp. Gal.	U.S. Gal.
Fuel tank	87.1	19.2	23
Engine coolant	16.1	3.5	4.25
Engine oil, including filter	8.5	1.9	2.25
Torque converter and reverser system	13.2	2.9	3.5
Transaxle and hydraulic system	72.0	15.8	19.0

SAE Operating Weight with Standard Axle with Cab

7255 kg (15,997 lb.)

SAE Operating Weight with Cab and MFWD

7780 kg (17,150 lb.)

Additional Standard Equipment:

- Backhoe transport lock
- Cab with:
 - Fabric-covered suspension swivel seat
 - Front defroster fan
 - Front and rear wipers
 - Integral ROPS/FOPS
 - Tachometer
 - Standard heater
- Differential lock, foot-engaged on-the-go
- Electric automatic destroke for hydraulic pump
- Electric combination tachometer/hourmeter
- Electric shut-off on diesel injection pump
- Emergency/park brake
- Emergency warning light
- Floor mat
- Foot and hand throttles
- Fuel tank contaminant sump with easy-access drain
- Gauges for:
 - Engine coolant temperature
 - Fuel tank level
 - Hydraulic/transmission oil temperature
- Horn
- Hydraulic lockouts for stabilisers
- Indicator lights:
 - Alternator
 - Engine oil pressure
 - Park brake
 - Turn signals
- Key-switch control for electrical circuits
- Lights, road operation and work site
- Loader bucket automatic hydraulic self-levelling
- Loader bucket level indicator
- Multiple-fuse-protected electrical system
- Oil-to-air cooler for hydraulic system and transaxle
- Oil-to-air cooler for torque converter and reverser
- Outside rear view mirrors
- Rear reflectors
- Restriction indicator for engine air cleaner
- Steps and handholds
- Sun visor
- Suspension swivel seat (vinyl covered with ROPS/FOPS)
- 12-volt maintenance-free battery

415B BACKHOE LOADER SPECIFICATIONS

Optional or Special Equipment:

Automatic return-to-dig
 Auxiliary bolt-on cutting edge for loader buckets
 Auxiliary hydraulic valves and circuits for loader and backhoe
 Backhoe load holding valves
 Bolt-on teeth for loader buckets
 Cold-weather starting aid, remote mounted
 Engine prefilter
 Extendable dipperstick for backhoe
 Front frame-mounted counterweight
 Heavy-duty battery package
 Mechanical front-wheel drive
 Rear defroster fan
 Rear-view mirror, inside-mounted
 ROPS/FOPS with roof and seat belt
 Rotating beacon light
 Standard or rubber covered (street pad) stabiliser pads
 Steering wheel spinner
 Toolbox
 Vandalism protection kit
 Wheel chock blocks

NOTE:

Standard, Special and Optional Equipment may vary according to country.

BACKHOE:

Operator control	Two levers
Sliding frame lock	One pedal
Digging depth (ICED):	
Maximum	4.39 m (14 ft. 5 in.)
610-mm (2 ft.) flat bottom	4.34 m (14 ft. 3 in.)
2440-mm (8 ft.) flat bottom	4.0 m (13 ft. 2 in.)
Swing arc	180 degrees
Lifting capacity:	
Boom lifting, dipper extended	907 kg (2000 lb)
Dipper lifting, boom at 65 degrees	1814 kg (4000 lb)
Digging force:	
Bucket cylinder in power dig position	45.4 kN (4625 kg) (10,200 lb)
Crowd cylinder	29.4 kN (2995 kg) (6,600 lb)
Reach:	
From centre of swing mast	5.34 m (17 ft. 6 in.)
From centre of rear axle	6.70 m (21 ft. 11 in.)
Loading height, truck loading position	3.20 m (10 ft. 6 in.)
Transport height	3.50 m (11 ft. 6 in.)
Bucket rotation	Adjustable for 123, 127 or 155 degrees
Bucket positions	12 or 20 degrees rollback or 6 degrees forward

Extendable Dipper Option:

Operator control	Right foot treadle
Digging depth, 610-mm (2 ft.) flat bottom:	
Extended	5.60 m (18 ft. 4 in.)
Retracted	4.40 m (14 ft. 5 in.)
Reach from centre of swing mast:	
Extended	6.55 m (21 ft. 6 in.)
Retracted	5.41 m (17 ft. 9 in.)
Loading height, truck loading position:	
Extended	4.00 m (13 ft. 1 in.)
Retracted	3.23 m (10 ft. 7 in.)
Digging force, crowd cylinder:	
Extended	19.4 kN (1980 kg) (4360 lb.)
Retracted	28.3 kN (2880 kg) (6360 lb.)

Stabilisers:

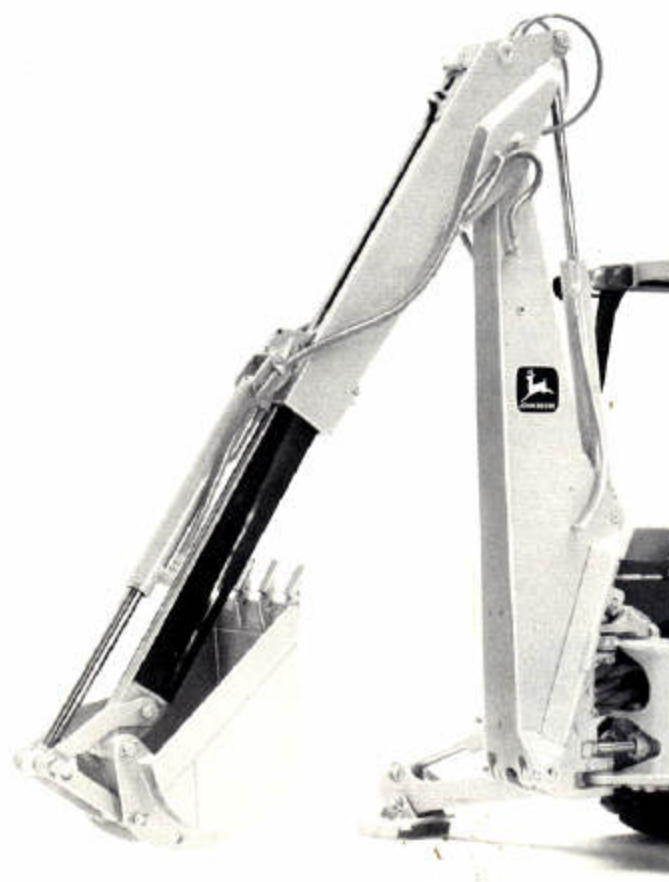
Operator control	Two levers
Transport width	2.29 m (7 ft. 6 in.)
Spread in operating position	1.93 m (6 ft. 4 in.)
Angle rearward	9 degrees

LOADER:

Operator control	Single lever
Rollback at ground level	40 degrees
Breakout force	34.7 kN (3540 kg) (7800 lb.)
Digging depth below ground, bucket level	50 mm (2 in.)
Lifting capacity, full height	2270 kg (5000 lb.)
Height to bucket hinge pin, max.	3.35 m (11 ft.)
Bucket dump angle, max.	50 degrees
Dump clearance, bucket at 45 degrees	2.74 m (9 ft.)
Reach at full height, bucket at 45 degrees	710 mm (28 in.)
Raising time to full height	4.4 sec.
Bucket dump time	1.0 sec.
Bucket lowering time (power down)	3.0 sec.

BUCKETS

	Width		Struck Capacity		Heaped Capacity	
	mm	in.	m ³	cu. ft.	m ³	cu. yd.
Loader:						
General Purpose	2340	92			0.76	1.0
General Purpose	2340	92			1.00	1.3
Multipurpose	2340	92			0.86	1.125
Backhoe:	mm	in.	m ³	cu. ft.	m ³	cu. ft.
Standard duty	305	12	0.07	2.6	0.08	3.0
	406	16	0.10	3.7	0.13	4.5
	457	18	0.12	4.2	0.14	5.1
	610	24	0.17	5.9	0.21	7.5
	762	30	0.21	7.5	0.28	10.0
	914	36	0.21	7.5	0.28	10.0



415B BACKHOE LOADER DIMENSIONS

