



Michigan L480B



- *Engine output gross: SAE J1349 541 kW (725 hp)*
- *Operating weight: 81,4 t (179,480 lb)*
- *Buckets: 9,6 m³ (12.5 yd³)
The high capacity loader for the tough jobs*
- *Z-bar linkage
Powerful double-plate boom with:
-excellent breakout
-good forward visibility
-high lift height and long reach*
- *Direct-injected, turbocharged, aftercooled Cummins diesel*
- *Power shift transmission with single lever control*
- *Enclosed oil-cooled wet disc brakes*
- *Deluxe Cab with great comfort and safety*
- *Monitoring system for brakes and other functions*
- *Full hydraulic, flow amplified steering for low effort and precise control*
- *Pilot-operated, seat-mounted, fingertip hydraulic controls*

MICHIGAN



ENGINE

Direct-injected, turbocharged and after-cooled V-12, 4-cycle diesel.

Make Model		Cummins VTA-28C		
Max. rating* at	rps	rpm	35	2100
SAE J1349 (ISO 1585)	kW	hp	541	725
Flywheel rating** at	rps	rpm	35	2100
SAE J1349 (ISO 1585)	kW	hp	462	620
Max. torque at	rps	rpm	21,7	1300
SAE J1349 (ISO 1585)	N·m	lbf ft	3204	2363
Number of cylinders			12	
Displacement, total	l	in ³	28,0	1710
Bore	mm	in	140	5.50
Stroke	mm	in	152	6.00

Air cleaners (2)

1. Cyclone precleaner with automatic dust ejector.
2. Paper filter with restriction indicator.
3. Replaceable safety filter.

***Max. rating**-Rating of engine equipped only with components essential for engine function, such as injection pump, oil pump, and water pump.

****Flywheel rating**-Net rating measured with fan, intake and exhaust system, cooling system, and alternator mounted.



ELECTRICAL

The electrical system is well protected by circuit breakers and pre-wired for optional equipment.

Voltage	V	24
Alternator	A	100
Batteries (12 volt)		8
Battery capacity, total	CCA	2500
Cranking capacity, each	CCA	625



SERVICE REFILL CAPACITIES

Crankcase	l	US gal	102	27.0
Fuel tank (total)	l	US gal	1423	376
Fuel tank (usable)	l	US gal	1378	364
Cooling system	l	US gal	295	78.0
Transmission (total)	l	US gal	212	56.0
Wheel hubs, each	l	US gal	47,5	12.5
Differentials, each	l	US gal	115,5	30.5
Midmount bearing	l	US gal	4,7	1.25
Hydraulic system (total)	l	US gal	939	248
Hydraulic tank	l	US gal	568	150



DRIVETRAIN

Torque converter: Clark, high efficiency, single-stage, single-phase.

Transmission: Clark, countershaft-type powershift transmission with directional clutch modulation.

Axes: Clark, full-floating axle shafts with planetary-type hub reductions. Single-piece cast steel axle housing. Fixed front axle and oscillating rear axle.

Differentials: Clark, limited slip differentials in front and rear axles.

Hub reduction: Clark, planetary drive with low-friction roller bearings in each wheel hub.

Tires: Tubeless with nylon cord body. Optional tires available for specific applications.

Torque converter make, model	Clark, C16702-29
Torque multiplication	2.96:1
Transmission make, model	Clark, 8422 H-206
Speeds, forward/reverse	
1	km/h mph 6,3 3.9
2	km/h mph 11,1 6.9
3	km/h mph 18,8 11.7
4	km/h mph 32,0 19.9
Measured with tires	41.25/70-39 (34PR) L-5
Front axle make, model	Clark, 25D8860
Rear axle make, model	Clark, 25D7160
Rear axle oscillation, total	deg. 20
	mm in 533 21.0



BRAKES

The brake system meets requirements according to SAE J1152, ISO 3450.

Service brakes: Full hydraulic system with outboard mounted, oil cooled, wet disc brakes at each wheel.

Both pedals apply brakes and declutch transmission. A separate dash-mounted switch allows the operator to deactivate this declutch feature.

Secondary: Dual circuit axle-by-axle system. Actuated by service brake pedals. Audible and visual low pressure alarm. Dead engine braking capability provided by two nitrogen-charged accumulators.

Parking brake: Dry disc type mounted on front axle input shaft. Spring applied, hydraulically released; actuated by dash-mounted switch.

Transmission interlock applies service brakes if shifted into forward or reverse to prevent moving machine when parking brake is applied.

Pump: Piston type, pressure compensated.

Filtration: Full-flow, 10 micron filter.

Pressure setting	MPa	psi	20,7	3000
Service brake, disc dia.	mm	in	629	24.76
Parking brake, disc dia.	mm	in	508	20.0
thickness	mm	in	12,7	0.50



STEERING

Steering system meets requirements according to SAE J1511, ISO 5010.

Articulated frame: Full hydraulic flow amplified steering system with speed sensor hydraulics.

Pump: Tandem gear-type, mounted on the torque converter.

Supply system: The system is served by a steer pump and a switch pump below 29,2 rps (**1750 rpm**). A speed sensing demand valve begins to divert flow of the switch pump from the steering system to the main system at 19,2 rps (**1150 rpm**). This flow is totally diverted at 29,2 rps (**1750 rpm**), assuring adequate flow for steering at all engine speeds and maximum flow for boom and bucket operations above 29,2 rps (**1750 rpm**).

Cylinders: Two double-acting cushioned cylinders with chrome plated piston rods.

Steering cylinders, no.			2	
Bore	mm	in	152	6.00
Stroke	mm	in	605	23.8
Relief pressure	MPa	psi	17,2	2500
Steer pump output	l/min	US gal/min	341	90
at pressure	MPa	psi	6,9	1000
and engine speed	rps	rpm	35	2100
Switch pump output	l/min	US gal/min	341	90
at pressure	MPa	psi	6,9	1000
and engine speed	rps	rpm	35	2100
Articulation		±°		35



CAB

Cab: (non-ROPS) with two lockable doors. Sound insulating lining. Sliding self-locking windows. Tinted safety glass in all windows.

Canopy: ROPS/FOPS (SAE J1040, ISO 3471)

Heater/Defroster/Air Conditioner: Provides filtered (10 micron) fresh air and has a three-speed fan and a defroster for the front and side windows.

Heater	kW	Btu/h	13,2	45,000
Air conditioner	kW	Btu/h	6,3	21,500
Sound level in closed cab, max.		dB(A)		84

Operator's seat: Fully adjustable air suspension seat with seat belt (SAE J386).



HYDRAULICS

Closed and pressurized load-sensing system with a sturdy plate-steel tank. Hydraulic oil is fully filtered and cooled. An access hole is provided in the tank for easy cleaning. An in-tank magnet provides extra protection.

Pumps: Three gear-type pumps mounted on torque converter.

Supply system: Below 19,2 rps (**1150 rpm**), the system is supplied by two main pumps. Above 19,2 rps (**1150 rpm**), it is also supplied by the switch pump. (See steering supply system.)

Valve: Split-spool valve with built-in pressure relief valve. Actuated by a pilot valve, it is mounted on front frame for easy access.

Lift function: The valve has four positions: raise, hold, lower and float. An automatic kickout detent is adjustable for any position between maximum reach and full lift height during raise.

Tilt function: The valve has three positions: rollback, hold and dump. Automatic bucket positioner is adjustable to any desired loading angle during rollback.

Cylinders: Double-acting.

Filters: Full-flow 10 micron return filter (with four elements), located in hydraulic oil tank.

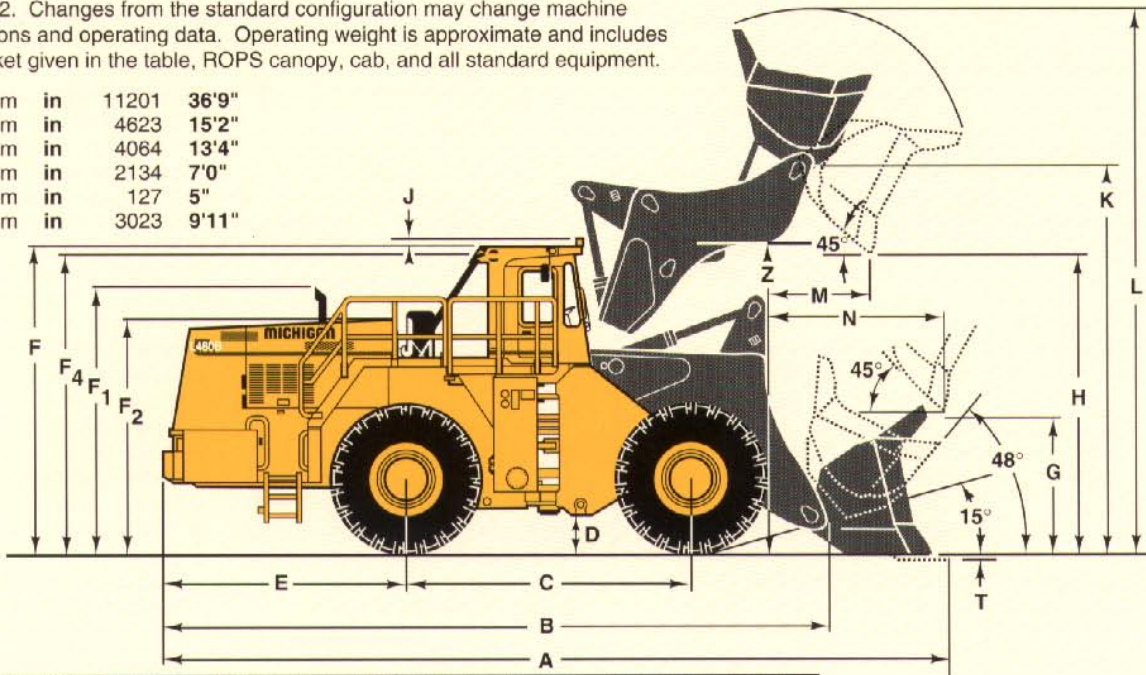
Relief pressure	MPa	psi	19,5	2825
Pump output, total	l/min	US gal/min	958	253
at pressure	MPa	psi	6,9	1000
and engine speed	rps	rpm	35	2100
Output, by pump				
Main No. One	l/min	US gal/min	341	90
Main No. Two	l/min	US gal/min	276	73
Switch Pump	l/min	US gal/min	341	90
Lift cylinders, no.			2	
Bore	mm	in	267	10.5
Stroke	mm	in	1483	58.4
Tilt cylinders, no.			2	
Bore	mm	in	267	10.5
Stroke	mm	in	848	33.4
Raising time (loaded)	s		11.4	
Dumping time (loaded)	s		4.0	
Lowering time (empty)	s		5.8	
Total cycle time	s		21.2	

OPERATIONAL DATA & DIMENSIONS-MICHIGAN L480B

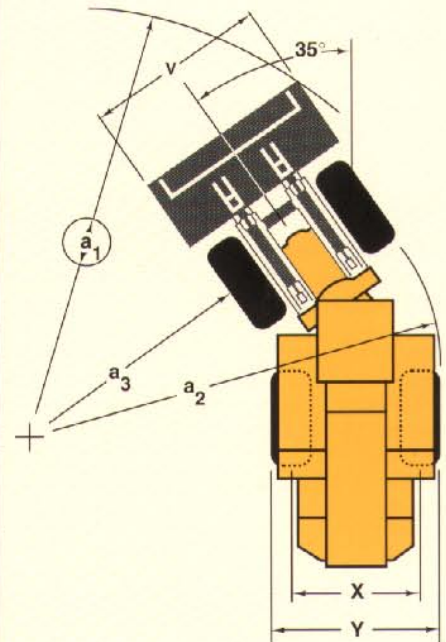
Tires: 41.25/70-39 (34PR) L-5

Wherever applicable, specifications are in accordance with SAE Standards J732 and J742. Changes from the standard configuration may change machine dimensions and operating data. Operating weight is approximate and includes the bucket given in the table, ROPS canopy, cab, and all standard equipment.

B	mm	in	11201	36'9"
C	mm	in	4623	15'2"
E	mm	in	4064	13'4"
G	mm	in	2134	7'0"
J	mm	in	127	5"
X	mm	in	3023	9'11"



BUCKET TYPE	Straight Edge Rock		Spade-Nose Rock	
	Volume, heaped	m ³	9,6	9,6
	yd ³	12.5	12.5	
struck	m ³	8,08	8,24	
	yd ³	10.57	10.78	
Bucket weight	kg	6668	6804	
	lb	14,700	15,000	
Static tipping load, straight	kg	49 090	48 950	
	lb	108,220	107,920	
full turn	kg	44 680	44 540	
	lb	98,500	98,200	
Breakout force	kN	631,6	556,0	
	lbf	142,000	125,000	
A △	mm	12 929	13 157	
	ft in	42'5"	43'2"	
H ⊖	mm	4724	4572	
	ft in	15'6"	15'0"	
L	mm	8738	8738	
	ft in	28'8"	28'8"	
M ⊕	mm	1854	2032	
	ft in	6'1"	6'8"	
N ⊕	mm	3023	3200	
	ft in	9'11"	10'6"	
T □	mm	99	99	
	ft in	3.9"	3.9"	
V	mm	4374	4374	
	ft in	14'4.2"	14'4.2"	
a ₁ Clearance circle (over bucket in carry position)	mm	20 777	20 777	
	ft in	68'2"	68'2"	
Operating weight	kg	81 270	81 410	
	lb	179,180	179,480	



- ⊕ Add 246 mm 9.7" for bucket teeth
- Add 66 mm 2.6" for bucket teeth
- △ Add 335 mm 13.2" for bucket teeth
- ⊖ Subtract 228 mm 9.0" for bucket teeth

DIMENSIONS AFFECTED BY TIRE SIZE

MACHINE DIMENSIONS			41.25/70-39 (34PR) L-5	41.25/70-39 (42PR) L-5	37.5-39 (44PR) L-5	37.5R39 XRD2AT★
D	mm	ft in	584 1'11"	584 1'11"	635 2'1"	584 1'11"
F	mm	ft in	4877 16'0"	4877 16'0"	4928 16'2"	4877 16'0"
F ₁	mm	ft in	4267 14'0"	4267 14'0"	4318 14'2"	4267 14'0"
F ₂	mm	ft in	3607 11'10"	3607 11'10"	3658 12'0"	3607 11'10"
F ₄	mm	ft in	4750 15'7"	4750 15'7"	4801 15'9"	4750 15'7"
H	mm	ft in	4724 15'6"	4724 15'6"	4775 15'8"	4724 15'6"
K	mm	ft in	6274 20'7"	6274 20'7"	6325 20'9"	6274 20'7"
L	mm	ft in	8738 28'8"	8738 28'8"	8788 28'10"	8738 28'8"
M	mm	ft in	1854 6'1"	1854 6'1"	1829 6'0"	1854 6'1"
N	mm	ft in	3023 9'11"	3023 9'11"	2997 9'10"	3023 9'11"
T	mm	ft in	99 3.9"	99 3.9"	48 1.9"	99 3.9"
Y	mm	ft in	4115 13'6"	4115 13'6"	3988 13'1"	4115 13'6"
Z	mm	ft in	5182 17'0"	5182 17'0"	5232 17'2"	5182 17'0"
a ₂	mm	ft in	9500 31'2"	9500 31'2"	9474 31'1"	9500 31'2"
a ₃	mm	ft in	5283 17'4"	5283 17'4"	5309 17'5"	5283 17'4"

SUPPLEMENTAL OPERATING DATA			Change in operating weight		Change in static tipping load straight		Change in static tipping load at full turn	
Air conditioner (removal)	kg	lb	-68	-150	-77	-170	-75	-165
Bucket points and adapters (57R)	kg	lb	479	1056	-540	-1190	-600	-1320
Bucket points and adapters (57ARL)	kg	lb	535	1180	-605	-1330	-670	-1470
Bucket points and adapters (57TF)	kg	lb	532	1172	-600	-1320	-660	-1460
Cab (removal)	kg	lb	-386	-850	-227	-610	-267	-590
Counterweight	kg	lb	1814	4000	3792	8360	3320	7320
Fenders, front	kg	lb	217	478	0	0	0	0
ROPS canopy (removal)	kg	lb	-1089	-2400	-816	-1800	-744	-1640
Secondary steering	kg	lb	54	120	77	170	73	160
3rd hydraulic control	kg	lb	136	300	0	0	0	0
Optional tires:								
41.25/70-39(34PR) L-5 STD.	kg	lb	0	0	0	0	0	0
41.25/70-39(42PR) L-5	kg	lb	438	960	292	640	269	590
37.5-39(44PR) L-5	kg	lb	100	220	65	142	62	136
37.5R39 XRD2AT★	kg	lb	-542	-1188	-365	-800	-328	-720

STANDARD EQUIPMENT

AIR CLEANERS (2), DRY TYPE, DUAL ELEMENT WITH EXHAUST ASPIRATED PRECLEANERS
 ALTERNATOR, 24V, 100A
 BATTERY DISCONNECT SWITCH, LOCKABLE
 BOOM & BUCKET CONTROL LEVERS, FINGERTIP
 BOOM & BUCKET LINKAGE, SEALED PINS
 BOOM KICKOUT, AUTOMATIC, ADJUSTABLE
 BRAKES, 4-WHEEL HYDRAULIC, WET DISC, LIQUID COOLED
 BRAKE SYSTEM, SECONDARY
 BUCKET LEVELER, AUTOMATIC
 CAB ACCESS STEPS & HANDRAILS (SAE J185)
 CAB (Non-ROPS):
 Acoustical Lining
 Doors (2); Lockable with Self-Locking, Sliding Glass Windows
 Door Hold-Open Struts (2)
 Electrical System: 24V, Circuit Breaker Protected, Prewired for Optional Accessories

Environmental Control:
 Air Conditioner, 6,3 kW (21,500 Btu/h)
 Heater/Defroster/Pressurizer, 13,2 kW (45,000 Btu/h)
 With Three-Speed Blower Fan, Filtered Air
 Floor Mat
 Interior Lights, Red & White
 Interior Rearview Mirror
 Safety Glass, Tinted
 Seat, Air Suspension, 6-Way Adjustable
 Seat Belt (SAE J386)
 Steering Wheel Spinner Knob
 Sun Visor
 Windshield Wiper & Washer, Front & Rear
 COLD START AID, ETHER INJECTION
 DIFFERENTIALS: LIMITED SLIP, FRONT & REAR
 DRAWBAR WITH PIN
 DRIVE SHAFT GUARD, Converter to Transmission
 FENDERS, REAR WITH STEPS
 GRILLE, REAR SWING-UP
 HYDRAULIC FLUID TO AIR COOLER
 HYDRAULIC PRESSURE TEST PORTS, QUICK CONNECT
 INSTRUMENTS/GAUGES:
 Air Cleaner Restriction

Indicator (2)
 Engine Coolant Temperature Gauge
 Engine Oil Pressure Gauge
 Fuel Gauges, Tank & Dash Mounted
 Hourmeter
 Sight Gauges:
 Hydraulic Fluid Level
 Transmission Fluid Level
 Transmission/Torque Converter Fluid Temperature Gauge
 Voltmeter
 ISOLATION MOUNTS:
 Cockpit, Engine, Radiator, Transmission
 LIFTING LUGS
 LIGHTS:
 Work (60W) Halogen, 5 Front, 2 Side, 2 Rear
 Stop & Tail Combination, 2 Rear
 LUBRICATION POINTS, MANIFOLD TYPE, GROUND LEVEL
 MIRRORS, REARVIEW (2), EXTERIOR
 NEUTRAL START FEATURE
 RADIATOR RECOVERY TANK

ROPS CANOPY (SAE J1040) (ISO 3471)
 SIDE PANELS, ENGINE HOOD, LOCKABLE
 STEERING FRAME LOCK
 TIRES: 41.25/70-39(34PR)L-5
 TRANSMISSION:
 Powershift, with Directional Clutch Modulation
 Declutch Pedal with Dash Mounted On/Off Switch
 Shift Control, Single Lever Electric
 VANDALISM LOCK, PROVISION FOR:
 Batteries, Engine Coolant, Fuel, Hydraulic Fluid, Transmission/Torque Converter Fluid
 WARNING ALARMS:
 Horn, Electric
 Reverse Alarm (SAE J994)
 WARNING & MONITORING LIGHTS:
 Air Conditioner Malfunction
 Brake Pump/Differential Pressure
 Brake System, Front
 Brake System, Rear
 Parking Brake Applied
 Transmission Filter Restriction

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Accessory Power Converter, 12V/6A
 Air Conditioner (Removal)
 Beacon, Rotating, Amber
 Bucket (See Operational Data)
 Points & Adapters
 Cutting Edge Wear Caps
 Cab (Removal)
 Counterweight, 1812 kg (4,000 lb)
 Engine Oil Fill & Evacuation (Wiggins)

Engine Preheater, Coolant & Oil (220V)
 Engine Shutdown to Idle Kit:
 High Coolant Temperature
 Low Engine Oil Pressure
 Engine Warning System:
 High Coolant Temperature
 Low Coolant Level
 Low Oil Pressure
 European Accessory Kit
 E.E.C. Sound Reduction Kit
 Fan, Sucker
 Fenders & Mud Flaps, Front

Fire Extinguisher
 Fuel, Fast Fill Coupler (Wiggins)
 Guards:
 Rear Light
 Transmission
 Hydraulic Fluid Fill & Evacuation (Wiggins)
 Lights, Work, 60W Halogen (2)
 Lubrication System:
 Automatic (Trabon)
 Single Point, Manual (Trabon)
 Radiator Sand Grid

ROPS Canopy (Removal)
 Secondary Steering (Electric)
 Tachometer
 Tiefbau Kit (for German Regulations)
 Transmission Fluid Fill & Evacuation (Wiggins)
 Tires:
 37.5-39(44PR)L-5
 37.5R39 XRD2AT★
 41.25/70-39(42PR)L-5

Under our policy of continuous product improvement, we reserve the right to change specifications and design without prior notice. The Illustrations do not necessarily show the standard version of the machine.

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