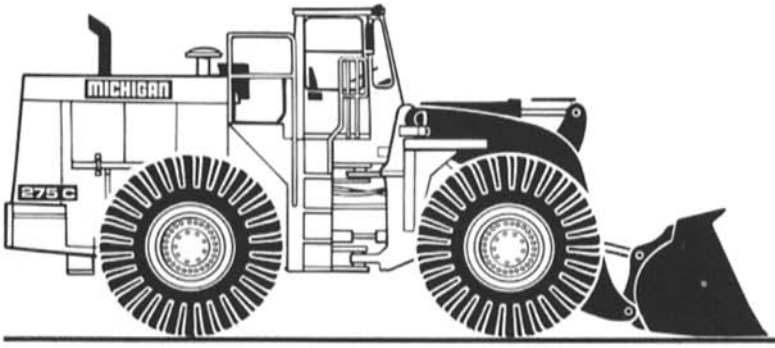
MICHIGAN

275 C

MICHIGAN 275C - RELIABLE, HIGH-PRODUCTIVE

The Michigan 275C is a powerful, high-production loader for varying and exacting demands on the truly big job sites. The machine is built with long experience from the manufacture of heavy machines and is therefore reliable while incorporating state-of-the-art technology.
The Michigan 275C weighs about 40 tonnes and works with buckets of between 5,0 and 5,4 m^3. The 275C can load up to 50-tonne trucks and the choice between two different boom lengths enables the 275C to match existing truck fleets or other operations.

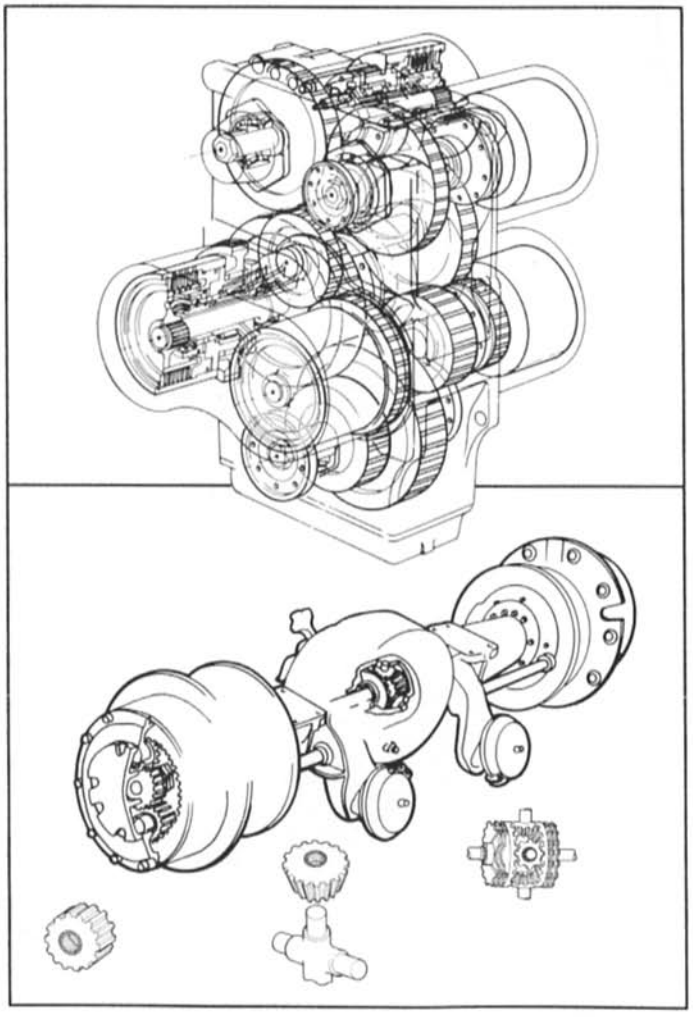
Productivity is kept high through the load-sensing hydraulic system. It only takes as much engine power as is needed at different points in the work cycle. The result is low fuel consumption and ample rimpull when required. Exclusive for Michigan are the limited slip differentials, which give proportionately higher torque to the wheels with the best traction. The qualified work done by the 275C is controlled by the operator from a roomy and comfortable ROPS cab with very well-arranged instrumentation and controls.



DRIVETRAIN

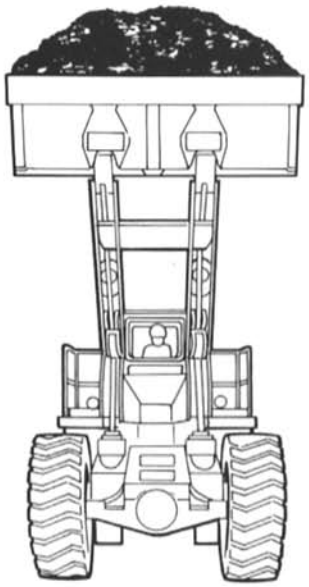
TRANSMISSION - easy-to-operate, uncomplicated and reliable

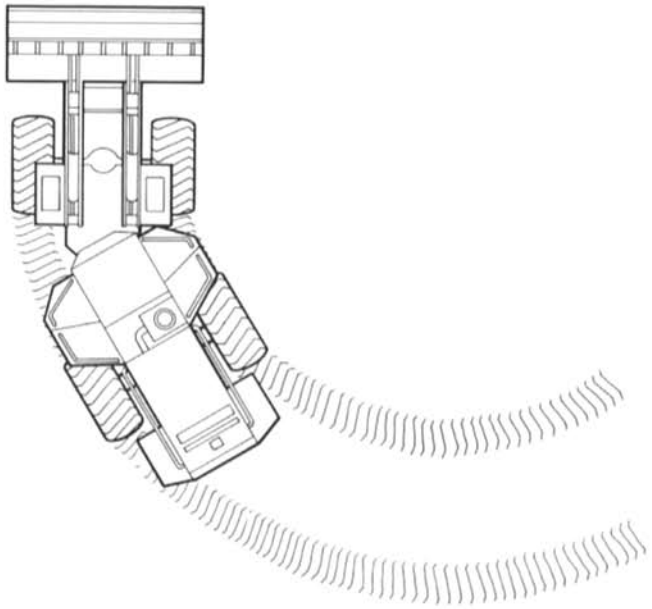
- Full directional clutch modulation for smooth shifting forward/reverse - fast work cycles
- Uncomplicated design - reliable and easy to maintain
- Easily accessible clutch packs (without removing transmission)



AXLES - strong and proven

- Single-piece cast-steel housing for maximum strength
- Planetary gear drives with needle bearings minimize friction and thereby wear
- Limited slip differentials on both front and rear axles provide optimum tractive effort and longer tire life





LOADER UNIT - built for tough duty

- Rugged double-plate construction provides maximum rigidity and excellent protection of hydraulic cylinders
- Cross-tube location near bucket provides even load distribution and optimum visibility
- Symmetric construction provides optimal utilization of hydraulic forces and minimum torsional stress on the lift-arms

HYDRAULICS - reliable and responsive

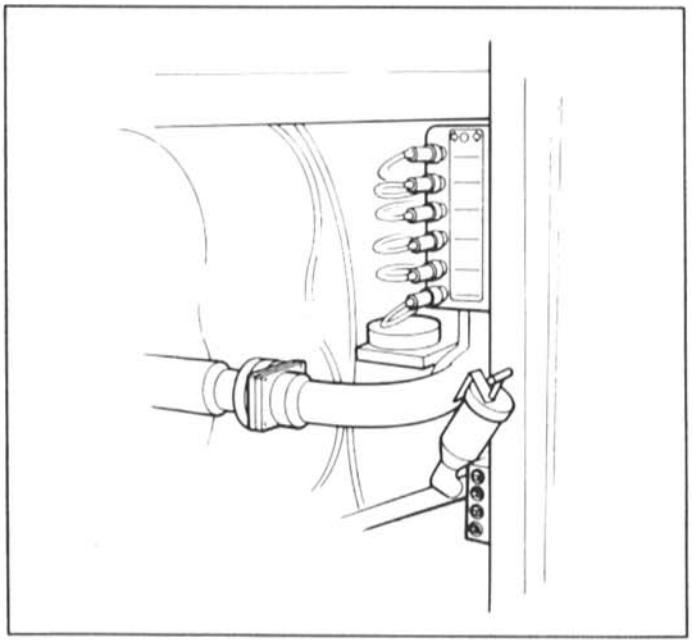
- Four high-capacity pumps produce fast acting hydraulics
- High-efficiency filtration for long component life
- Pressure and flow regulation provides optimum distribution of hydraulic power to each function, as demanded

CAB - quiet and comfortable

- Ergonomically designed controls permit precision operation without fatigue
- Sound-insulated ROPS cab - safe and comfortable

SERVICEABILITY

- Central extended lube nipples permit convenient service of otherwise hard-to-get-at lube points
- Quick-connect hydraulic test ports
- Easily-readable oil levels



ENGINE

Cummins, direct-injected, turbocharged engine.

Make		Cummins	
Model		KT 19C	
Gross. rating at	rps (rpm)	35	(2100)
SAE J1349	kW (hp)	298	(400)
Flywheel rating at	rps (rpm)	35	(2100)
SAE J1349	kW (hp)	268	(360)
DIN 70020	kW (hp)	265	(356)
Max. torque at	rps (rpm)	25	(1500)
SAE J1349	Nm (lbf ft)	1830	(1350)
DIN 70020	Nm (lbf ft)	1738	(1281)
Number of cylinders		6	
Displacement, total	l (in^3)	18,8	(1150)
Bore	mm (in)	158,8	(6,25)
Stroke	mm (in)	158,8	(6,25)

NOTE:

Max. rating - Max. rating from 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 SYSTEM

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

Voltage	V	24
Alternator	A	100

DRIVETRAIN

Torque converter: Clark high-efficiency single-stage.

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

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

Differential: Clark limited slip differentials in front and rear axles.

Hub reductions: Clark planetary drives with low-friction roller bearings in each wheel.

Tires: Alternative tires available for different applications.

Torque converter		3,05:1	
Speeds forward/reverse			
1	km/h (mph)	6,8	(4,2)
2	km/h (mph)	11,9	(7,4)
3	km/h (mph)	20,1	(12,5)
4	km/h (mph)	34,6	(21,5)
With tires		29.5-29 (22PR) L-4	
Rear axle oscillation	± °	12	
Vertical wheel travel	mm (in)	558	(22,0)

BRAKES

(SAE J1152) (ISO 3450)

Service brakes: Hydraulic dry disc brakes with two calipers per wheel. Application of left pedal also neutralizes transmission in forward only.

Secondary system: Dual-circuit, axle-by-axle system. Manually actuated by service brake pedal. Audible and visual alarms.

Parking brake: Dry disc brake mounted on front axle input shaft. Spring-on, hydraulic-off actuated by lever on instrument panel. Transmission interlock applies service brakes to prevent moving machine when parking brake is applied.

Pump: Piston pump, pressure-compensated.

Filtration: Full-flow filtration, 10-micron filter.

Pump	MPa (psi)	20,7	(3000)
Service brake, disc diameter	mm (in)	541,5	(22,5)
thickness	mm (in)	15,88	(6,25)
Parking brake, disc diameter	mm (in)	457,2	(18,0)
thickness	mm (in)	12,7	(0,50)

STEERING SYSTEM

Articulated frame with full hydraulic power steering.
Speed sensor in steer pump provides responsive steering control at all engine rpm.

Pump: Tandem gear-type pump mounted on torque converter.

System supply: The system is fed from the front section of the steer pump.

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

Steering cylinders, number		2	
Bore	mm (in)	114,3	(4,5)
Stroke	mm (in)	431,8	(17,0)
Relief pressure	MPa (psi)	19,32	(2800)
Output	l/min	211	
	(US gal/min)		(55,8)
at	MPa (psi)	6,9	(1000)
and engine speed	rps (rpm)	35	(2100)

CAB

ROPS cab (SAE J1040, ISO 2471) Sound-insulated lining. Floor mats. Two lockable doors. Sliding self-locking windows. Tinted safety glass.

Heater and defroster: Heating element with filtered fresh air and 3-speed fan plus defroster for front and side windows.

Operator's seat: Adjustable suspension seat with seat belt (SAE J386).

HYDRAULIC SYSTEM

Closed and pressurized power-sensing, demand-type system with a sturdy plate-steel reservoir. Access hole in tank for easy cleaning. In-tank magnet provides extra protection.

Pump: Tandem gear-type pump mounted on torque converter.

System supply: The system output is combined flow; front and rear sections of main hydraulic pump and rear section of steering pump.

Valve: Split spool valve with built-in pressure relief valve, actuated by remote mounted pilot valve. Mounted on front frame for easy access.

Lift function: The valve has four positions: Raise, hold, lower and float. Automatic electric kickout adjustable for any position between maximum reach and full lift height.

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

Cylinders: Double-acting

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

Relief pressure	MPa (psi)	17,24	(2500)
Output, total	l/min	635	
	(US gal/min)		(167,7)
at	MPa (psi)	6,9	(1000)
and engine speed	rps (rpm)	35	(2100)
Lift cylinders, number		2	
Bore	mm (in)	228,6	(9,0)
Stroke	mm (in)	1140,5	(44,9)
Tilt cylinders, number		2	
Bore	mm (in)	177,8	(7,0)
Stroke	mm (in)	647,7	(25,5)
Raising time (with load)	s	10,0	
Dumping time (with load)	s	2,1	
Lowering time (empty)	s	6,0	
Total cycle time	s	18,1	

SERVICE REFILL CAPACITIES

Crankcase	l (US gal)	41,6	(11,0)
Fuel tank	l (US gal)	586,5	(155)
Cooling system	l (US gal)	98,4	(26,0)
Transmission, total	l (US gal)	72,0	(19)
Differentials (each)	l (US gal)	60,5	(16,0)
Hubs (each)	l (US gal)	9,5	(2,5)
Hydraulic system, total	l (US gal)	617,0	(163,0)
Hydraulic tank	l (US gal)	515,0	(136)
Propshaft midmount	l (US gal)	5,3	(1,4)

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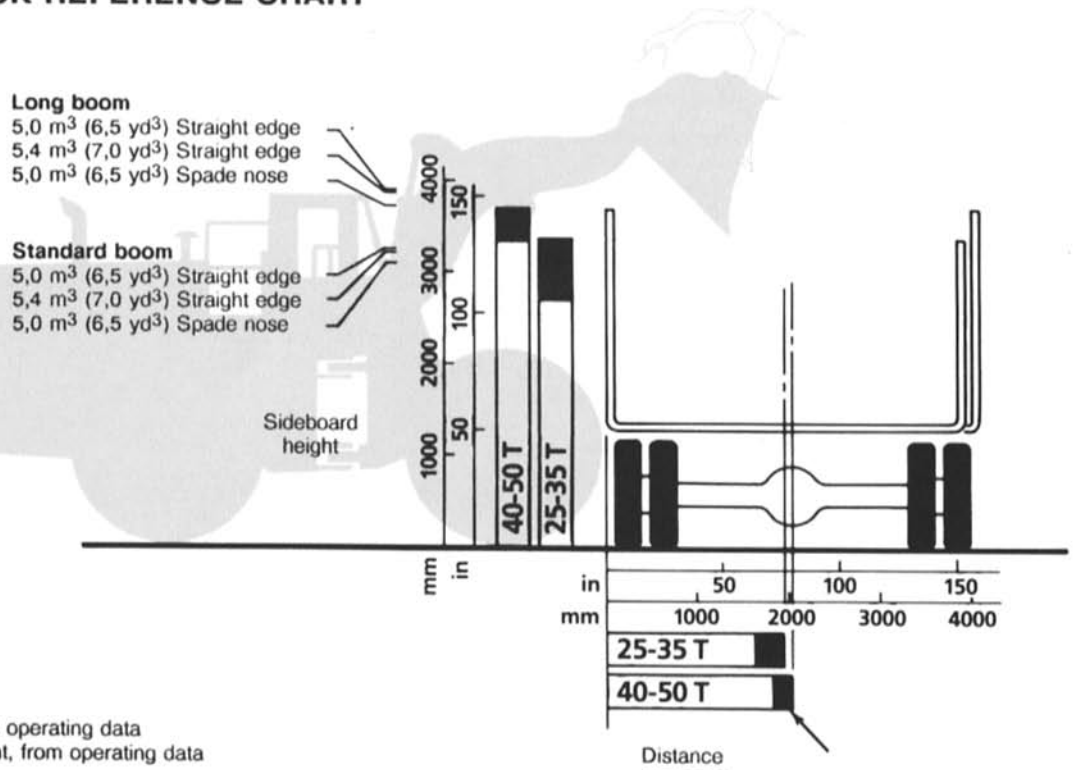
SUPPLEMENTARY OPERATING DATA		Change in operating weight	Change in static tipping load at full turn	
			Long Boom	Standard Boom
Alternative tires:				
29.5-29 22PR (L-2)	kg (lb)	-1107 (-2440)	-576 (-1269)	-714 (-1574)
29.5-29 22PR (L-3)	kg (lb)	-740 (-1632)	-385 (-849)	-477 (-1052)
29.5-29 22PR (L-5)	kg (lb)	755 (1664)	392 (866)	485 (1070)
29.5-29 XRA* Radial	kg (lb)	-1012 (-2232)	-526 (-1159)	-653 (-1440)
29.5-29 XRD1A* Radial	kg (lb)	-345 (-760)	-179 (-395)	-222 (-490)
Optional counterweight	kg (lb)	1458 (3215)	2730 (6018)	3102 (6838)
ROPS canopy (in lieu of ROPS cab)	kg (lb)	-286 (-630)	-172 (-380)	-218 (-480)
Air conditioning	kg (lb)	45 (100)	41 (90)	41 (90)
Front fenders	kg (lb)	204 (450)	41 (90)	54 (120)
Secondary steer kit	kg (lb)	45 (100)	68 (150)	68 (68)

BOOM / TRUCK REFERENCE CHART



INSTRUCTIONS

1. Identify truck size
2. Select bucket
3. Check reach, from operating data
4. Check dump height, from operating data

NOTE: This chart is designed to provide you with a quick reference for selection of proper boom to math truck requirements. Be sure to check operating data for exact dimensions when making final selection.

Black area represents manufacturer variance

STANDARD EQUIPMENT

Safety and comfort

ROPS Cab (SAE J1040) (ISO 3471)
Sound-insulated lining
Lockable doors with self-locking sliding glass windows
Door hold open struts (2)
Cab heating with filtered fresh air intake and defroster
Floor mats
Interior lighting, red and white
Tinted safety glass
Windshield wipers, front and rear
Windshield washer, front and rear
Exterior rearview mirrors (2)
Adjustable suspension seat
Seat belt (SAE J386)
Cab access steps and handrails on both sides (SAE J185)
Drawbar with pin
Hood side panels
Lifting lugs
Working lights (150 W), 4 front, 2 rear
Safety start
Exterior rearview mirrors
Secondary brake system
Service platforms
Vandalism lock, provisions for:
batteries
engine coolant
fuel
hydraulic fluid
transmission fluid
Drive shaft guard (converter to transmission)
Steering frame lock

Engine & electrical system

Instruments/gauges
Pilot lamp for air filter
Engine coolant temperature gauge
Engine oil pressure gauge
Hour meter
Hydraulic oil level sight indicator
Torque converter oil temperature gauge
Transmission oil level
Voltmeter
Warning lamps/audible alarm:
Horn
Parking brake
Brake pump differential pressure
Brake system, front
Brake system, rear
Reverse alarm (SAE J994)
Alternator (100 A)
Quick start, engine
Battery disconnect, lockable
Cold start aid, ether

Drivetrain

Clark Limited Slip Differentials on front and rear axles
Transmission declutch
Transmission modulation

Hydraulic system

Long or standard boom
Automatic boom kickout
Automatic bucket positioner
Quick-connect hydraulic test ports
Hydraulic oil cooler, oil to air

ATTACHMENTS

BUCKETS

Long Boom		**Standard Boom**	
Straight edge rock bucket	5,0 m^3 (6,5 yd^3)	Straight edge rock bucket	5,0 m^3 (6,5 yd^3)
Spade nose rock bucket	5,0 m^3 (6,5 yd^3)	Spade nose rock bucket	5,0 m^3 (6,5 yd^3)
General purpose bucket	5,4 m^3 (7,0 yd^3)	General purpose bucket	5,4 m^3 (7,0 yd^3)

OPTIONAL EQUIPMENT *(standard on certain markets)*

Service and maintenance equipment
Service center (Wiggins) engine oil, engine coolant, hydraulic fluid, transmission fluid

Engine equipment
Radiator sand grid
Coupler, fast fuel (Wiggins)
Engine oil evacuation (Wiggins)

Electrical equipment
Warning system AID, high water temperature, low oil pressure
Lights, work (2) 150 W
Beacon light kit

Cab equipment
Air conditioning
ROPS canopy (SAE J1040) (ISO 3471)

Hydraulic equipment
3rd hydraulic control, piping and controls (standard boom only)
Hydraulic fluid evacuation (Wiggins)

Exterior equipment
Counterweight

Protective equipment
Belly guards, front frame
Belly guards, rear frame
Grille guard
Light guard, rear
Windshield guard
Fenders, front
Belly plate kit
Bottom transmission guard

Other equipment
Secondary steering kit, electric
Acostical panels

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