

**case**

MB 4/94 Unimog



94 HP (70 kW) MERCEDES-BENZ DIESEL ENGINE

Dependable, proven 346 in³ (5675 cm³) direct injection diesel, 6-cylinder Mercedes-Benz. Easy starting, high torque, low fuel consumption.

6-SPEED SYNCHROMESH TRANSMISSION

Shift up or down on-the-go for the best speed to match load. 4 reverse speeds.

OPTIONAL 8-SPEED TRANSMISSION WITH TORQUE CONVERTER

OPTIONAL 20-SPEED SYNCHROMESH TRANSMISSION

Provides optimum speed range selection. As low as .065 mph (0.1 km/h) to 46 mph (74.07 km/h).

HEAVY-DUTY SUSPENSION SYSTEM

4-wheel coil springs and telescoping shock absorbers provide off highway handling and operating comfort.

PORTAL-TYPE AXLES

Provide ground clearance for rough terrain travel and maintain low center of gravity.

SPECIAL FRAME DESIGN

Allows 20° torsional twisting for stability and ground contact in rough terrain applications.

FRONT, CENTER AND REAR MECHANICAL AND HYDRAULIC POWER OUTLETS

Manufactured by Daimler-Benz. Marketed, serviced, parts and attachments by J I Case Company, Racine, Wisconsin USA.

Unit shown is equipped with non-standard items.

J I Case

A Tenneco Company



Construction Equipment Division
700 State Street Racine, WI 53404 U.S.A.

MB 4/94 SPECIFICATIONS

ENGINE

Make	Mercedes-Benz
Model	OM 352
Displacement	346 in ³ (5675 cm ³)
Bore and stroke	3.813" × 5.031" (97 mm × 128 mm)
Number of cylinders	6
Compression ratio	17:1
Fuel	No. 2 diesel
Fuel supply	Bosch injection pump
Air cleaner	Dry type
Oil filter	Combination full and by-flow
Horsepower	
Gross rate	94 @ 2550 rpm (70 kW @ 2550 r/min)
SAE net*	80 @ 2550 rpm (60 kW @ 2550 r/min)
Max torque	191 ft-lbs @ 1600 rpm (259 Nm @ 1600 r/min)

*Net of engine when applied to this vehicle when equipped with operating accessories including oil, water and fuel pumps, alternator, air cleaner, fan and muffler. Corrected to 500 ft (152 m) altitude with .38 in (9.5 mm) Hg vapor pressure; 29.39 in (746 mm) Hg observed barometer and 85°F (29°C) air (per SAE J816a specifications).

POWER TRAIN

Standard transmission: 8 speeds forward, 4 speeds reverse. Fully synchronized to shift up or down on-the-go. Separate lever for forward and reverse shuttle shifting in lower range. Speeds are 20% faster in reverse.

Optional transmissions: 8-speed torque converter; 8 speeds forward, 4 speeds reverse. 20 speeds forward, 8 speeds reverse. Fully synchronized to shift up or down on-the-go. Speeds range from .085 mph to 46 mph (0.1 to 74.07 km/h). Separate lever controls, portal axles for two wheel drive or four wheel drive and front and rear axle differential lock. Four wheel drive and differential lock are engageable and disengageable on-the-go without clutching.

Standard clutch: Foot-operated, double dry plate 11" (279 mm) dia.

Optional clutch: Foot-operated, double clutch for 20-speed transmission.

Standard brakes: Four wheel internal expanding shoe and drum type brakes. Air over hydraulic actuated.

Optional brakes: Caliper disc brakes with sensitivity control.

Parking brake: Mechanical pull rod brake acting on rear wheels only.

ELECTRICAL SYSTEM

Battery	12V/110 amp/h.
Alternator: three-phase current	14V/55 amp (770 w)
Starter output	4 hp (4 ps)

CAPACITIES

	Quarts	Liters
Cooling system	25.368	24.0
Lubricants		
Engine (oil sump)	11.6	11.0
With oil filter	12.5	11.8
Air filter	1.9	1.8
Hydraulic system—oil tank	19	18.0
Steering gear housing	1	0.9
Power steering	2.11	2.0
Standard gearbox	6.34	6.0
Cascade gearbox	7.399	7.0
Front and rear axle housing, each	2.11	2.0
Wheel hub drive (4), each	0.5 pint	0.3
Brake fluid		
Braking system	1.33 pint	0.6
Clutch system	0.5 pint	0.2
Fuel		
Fuel tank	23.78 gals	90.0

OPERATIONAL DATA

Driving speeds with rated engine speed @ 2550 rpm and 14.5 × 20 tires.

8 × 4 Transmission - 8-speed torque converter

	Low Range		High Range		Reverse	
	mph	km/h	mph	km/h	mph	km/h
1st	3.0	4.83	9.7	15.62	3.8	6.12
2nd	5.4	8.7	17.5	28.18	6.8	10.95
3rd	8.2	13.2	26.5	42.67	10.3	16.59
4th	13.5	21.74	46.0	74.07	16.9	27.21

The 2 × 4 shift-plate comprises standard gearbox with 4 positions on the main lever plus an additional lever to give high and low ratios on these 4 gears.

20 × 8 Transmission

Standard gears	mph	km/h
Forward 1st	3.0	4.83
2nd	5.4	8.7
3rd	9.7	15.62
4th	17.5	28.18
5th	26.2	42.19
6th	46	74.07
Reverse 1st	3.8	6.12
2nd	6.8	10.95

Intermediate gears

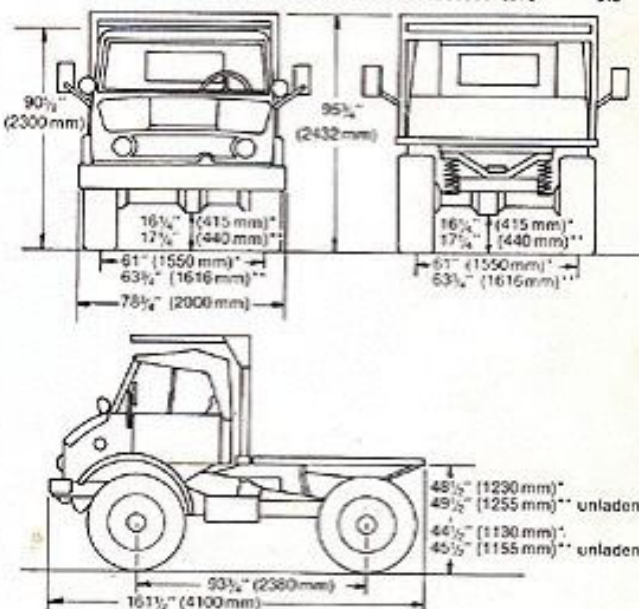
Forward 1st	2.4	3.86
2nd	4.3	6.92
3rd	7.7	12.4
4th	13.9	22.4
5th	21.0	33.8
6th	34.6	55.7
Reverse 1st	3.0	4.8
2nd	5.4	8.7

Crawler gears

Forward 1st	0.62	1.0
2nd	1.17	1.9
3rd	2.08	3.4
4th	3.76	6.1
Reverse 1st	0.80	1.3
2nd	1.45	2.3

Super crawler gears

Forward 1st	0.065	0.1
2nd	0.13	0.2
3rd	0.23	0.4
4th	0.41	0.7
Reverse 1st	0.09	0.1
2nd	0.16	0.3



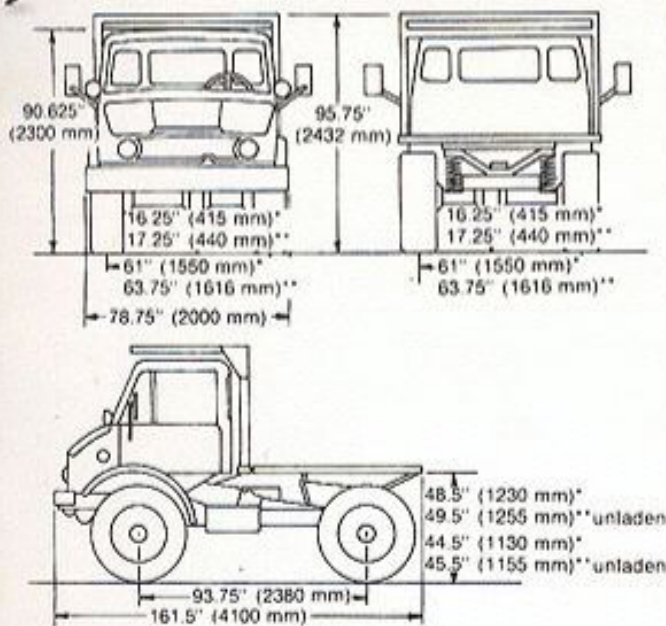
CANVAS HOOD CAB

*with 10.5 × 20 tires
**with 12.5 × 20 tires

Standard clutch: Foot-operated, double dry plate 11" (279 mm) dia.

Optional clutch: Foot-operated, double clutch for 20-speed

Forward 1st	0.065	0.1
2nd	0.13	0.2



STEEL CAB **with 14.5 x 20 tires

TRACTOR DIMENSIONS

Wheelbase	93.75" (2380 mm)
Min track turning circle dia	
— outer track	32'2.5" (9.8 m)
Min swept turning circle dia.....	35'9.5" (10.9 m)
Overall length	161.5" (4100 mm)
Overall width	78.75" (2000 mm)
Overall height (top of cab)	90.625" (2300 mm)
Overall height (top of ROPS)	
w/ 14.5 x 20 tires	95.75" (2432 mm)
Ground clearance	
under differential	17" (415 mm)
under axle	20.25" (515 mm)
Track widths	
with 10.5 x 20 tires.....	61.22" (1555 mm)
with 14.5 x 20 tires.....	64.13" (1629 mm)
with 12.5 x 20 tires.....	64.13" (1629 mm)

WEIGHT WITH TIRES

	10.5 x 20/10PR	12.5 x 20/10PR	14.5 x 20/10PR
Dead weight.....	7715 lbs (3500 kg)	7715 lbs (3500 kg)	7715 lbs (3500 kg)
Total max wt			
with attachments	13,000 lbs (5897 kg)	13,000 lbs (5897 kg)	13,000 lbs (5897 kg)
Perm. axle load,			
front and rear	7715 lbs (3500 kg)	7715 lbs (3500 kg)	7715 lbs (3500 kg)

(Note: Max weight of 13,000 lbs is based on an expected road speed of 46 mph — if vehicle exceeds 13,000 lbs the 46 mph speed may not be attained).

HYDRAULICS

Design Independent
 Oil pump..... Gear pump with needle roller bearings
 Pump delivery..... 11 gpm (40 lit/min)
 at 2550 rpm engine speed
 Operating pressure (max)..... 2550 r/min 2560 psi = (180 Bar)
 Controls 2 twin double acting control valves for alternate
 operation of hydraulic rams via front and rear hydraulic connections.
 Location of controls on steering column:
 Left hand lever — operation of front hydraulic rams
 Right hand lever — operation of rear hydraulic rams

HYDRAULIC SYSTEM (Auxiliary drive for high capacity hydraulic system)

Transmission hydraulic pump drive..... 1.36 differential
 Recommended operating psi..... 2000 (13 790 kPa)
 Maximum gpm pump capacity..... 20 (189.3 lit/min)
 Hydraulic horsepower available..... 70 (52.2 kW)
NOTE: As psi increases the gpm's available decrease and visa versa.

POWER TAKE-OFF

PTO, front and rear
 Splined shaft section..... 1.75" (44.45 mm)
 Two-speed..... 540/1000 rpm @
 2550 rpm for 8 and 20-speed transmissions
 Power output..... 1.75", 70 hp (52.2 kW)
 Front and rear pto require center pto
 Center pto..... Power take-off via chain and sprocket;
 speed and direction of rotation as per pto
 Three point hitch system
 Category..... I & II
 Hitch capacity..... 5510 lbs (2500 kg)

UNIMOG STANDARD EQUIPMENT

Dry type replaceable cartridge air filter. Anti-freeze solution to -20°F (-29°C). Portal type front and rear axles with differential locks that can be engaged and disengaged on the go. 55 amp alternator. 12V battery. Air-over-hydraulic 4-wheel expanding shoe brakes. Hand-operated parking brake. Folding canvas top cab with safety glass windshield. 2 cab doors. 2 cab seats. Double plate dry type clutch. 2 sealed beam headlights. Directional signals. 2 tail lights. Horn. Instruments: speedometer, engine oil pressure gauge, water temperature gauge, fuel level gauge, air pressure gauge. Power steering. Front protection plate. Windshield washer and 2 speed wiper. Foot and hand accelerator. Hourmeter. Start pilot. Rear mounting frame for Case attachments. 10.5 x 20 10PR tires. Heavy-duty main frame.

UNIMOG OPTIONAL EQUIPMENT

8-speed torque converter transmission. 20-speed transmission. Front, center and rear PTO (540/1000 rpm). All steel cab with safety glass windshield. Heater. Defroster. Sun visors. 14.5 x 20 tires with 11 x 20 rims. Fifth tire and rims for 10.5 x 20, 14.5 x 20 and 12.5 x 20 tires. Caliper disc brakes with automatic load sensing system. Double clutch for 20-speed transmission. 11 gpm hydraulic system and connections. Reinforced front springs. Front support for hydraulic lift cylinder. Rear axle stabilizer for high loads. Seat belts. Service kit. Tachometer. Transmission pump drive for high capacity hydraulics. Two additional headlights (working lights). Three-point hitch system. ROPS canopy with or without roof. Hydrostatic PTO. Air wiper. Heated windshield. Vertical exhaust. Sound suppression package.

Note: All specifications are stated in accordance with ICED Definitions of SAE Standards or Recommended Practices, where applicable.

IMPORTANT

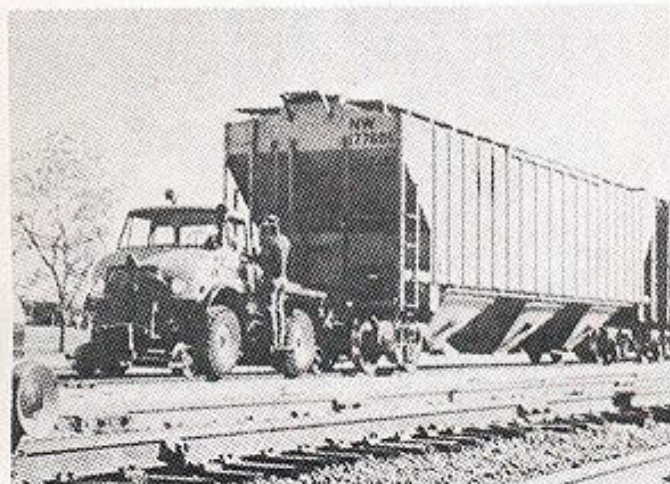
J I Case Company reserves the right to change these specifications without notice and without incurring any obligation relating to such changes.



Snow blowers/cutters: 650 to 3000 tons/hour.



Aircraft tow tractor (tug).



Rail car pull tractor — up to 300 tons.



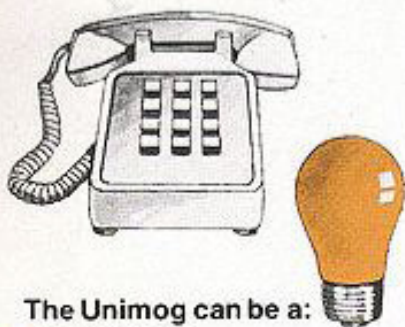
Four-wheel drive loader backhoe with dig depths to 15' (4572 mm).

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Sold and serviced by



The Unimog can be a rear-mounted cable layer with vibratory blade for clean cutting action and minimal soil disturbance. Buries up to 2" O.D. cable to 30" cover depth. Also handles multiple size cable, tubing and hose.



The Unimog can be a:

- cable layer
- pole setter
- trencher
- backfiller
- high lift
- mower
- snowplow
- tree transplanter
- pumper/fire pumper
- street cleaner
- front-end loader
- sand/salt spreader
- tree trimmer

Unimog Multi-Purpose

Above ground/underground versatility in a single machine

The Unimog system is an alternative to a number of single-purpose machines. Add up the cost of specialized equipment for installation and maintenance. It takes a big investment!

The Unimog system, capable of handling a wide variety of attachments, is centered around a 94 hp diesel powered, 4-wheel-drive tractor. An 8-speed synchromesh transmission is standard. A 20-speed transmission is optional. Both provide speeds up to 46 mph for travel between jobs.

Unimog also features independent wheel suspension, differential locks on both axles and a variety of pto and hydraulic outlet options to match attachment power requirements.

The Unimog system concept helps reduce capital investment. Availability

of front, center and rear pto's, plus front and rear hydraulic connections, permits mounting a variety of attachments for installation and maintenance operations. Interchangeability minimizes idle time, keeps equipment busy, and can eliminate need for separate costly and often idle single-purpose machines. The Unimog system's versatility can provide the productive edge that gets the most value out of your budget. It can minimize the need for contract services.

Quality manufacture — quality service. Unimog is manufactured by Mercedes-Benz and marketed in North America through J I Case Company. Sales, service and parts support is available through a nationwide network of Case Unimog dealers.

The Unimog can be a rear-mounted cable layer with vibratory blade for clean cutting action and minimal soil disturbance. Buries up to 2" O.D. cable to 30" cover depth. Also handles multiple size cable, tubing and hose.



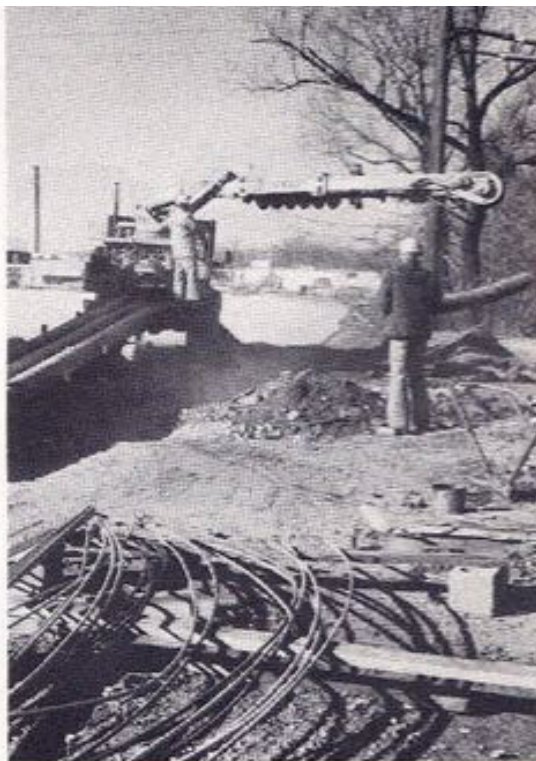
der trencher. Booms are available offering 7 different combinations of dig depth and trenching h. Hydraulic system controls raising, lowering.



ront-mounted backfill blade is operated raulically. Useful for backfilling trenches, ling and as a stabilizer for backhoe and crane rations.



The $\frac{3}{4}$ yd.³ loader can be installed/removed in minutes. Self-standing when not attached. 2645-lb. lift capacity to 8'2" height.



Digger/derrick has 8" to 24" augers for drilling utility pole holes. Derrick lifts up to 9000 lbs. for pulling or setting poles. Auxiliary power available for hydraulic compaction tools.

Utilities System



Case offers utilities a choice of 12' backhoe for use with Unimog, or 12' to 15' Extendahoe with hydraulic telescoping dipper. Both feature 190° foot swing with hydraulic swing cushioning.



Unimog rises to the occasion with this twin manbasket. Utility personnel have a working height of 45', with 360° rotating capability which can be controlled from either manbasket or from the ground.



Snow fighting attachments for the Unimog include cutters, both single chute (cover photo) and double blowers, V-plows; spring-loaded blades; and salt/sand spreaders (shown on blade-mounted unit above). Photos here illustrate Unimog system at work in Buffalo, N.Y., clearing away record snowfalls of winter, 1976-77.



Unimog Multi-Purpose

All-round versatility, year-round service

The Unimog can be a:

- cable layer
- post hole auger
- trencher
- backfiller
- mower
- snowplow
- tree transplanter
- fire pumper
- street cleaner
- front-end loader
- sand/salt spreader
- tree trimmer

The Unimog system offers public works authorities an ideal answer for meeting different year-round job needs. It is a practical alternative to separate single-purpose machines for helping to get the most out of today's tight operating budgets. It also enables you to have operation flexibility within your own organization.

The Unimog system is centered around a 94-hp diesel powered 4-wheel-drive tractor. It accommodates a wide variety of attachments for all-season working capability. During winter months the Unimog can be equipped with snow blowers, plows, salt and sand spreader. For the balance of the seasons it extends its versatility with other attachments — such as sweepers, mowers, trenchers, backhoes, digger/derrick and a front-end loader.

The Unimog includes an 8-speed synchromesh transmission as standard. A 20-speed transmission is optional. Both provide speeds up to 46 mph for travel between jobs. The Unimog also features independent wheel suspension, differential locks on both axles and a variety of pto and hydraulic outlet options to match attachment power requirements.

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Sickle bar, flail and rotary mowers make quick work of park and roadside maintenance. System shown has a reach of up to 23 ft. Also offers tree and brush trimming capability. Variety of pto and hydraulic options available to match power requirements for many mowers.



Front-mounted rotary brooms available with wire or polypropylene bristles. Mount in minutes. Designed for easy visibility and maneuverability. Choice of hydraulic or hydrostatic drive.

Ladder trencher. Booms are available offering 7 different combinations of dig depth and trenching width. Hydraulic system controls raising, lowering.



The $\frac{3}{4}$ yd.³ loader can be installed/removed in minutes. Self-standing when not attached. 2645-lb. lift capacity to 8'2" height.



Digger/derrick has 8" to 24" augers for drilling utility pole holes. Derrick lifts up to 9000 lbs. for pulling or setting poles. Auxiliary power available for hydraulic compaction tools.

Public Works System

Case serves public works needs with a choice of 12' backhoe for use with the Unimog, or 12' to 15' Extendahoe with hydraulic telescoping dipper. Both feature 190° foot swing with hydraulic swing cushioning.





Unimog can be equipped with snow blower or snow blade for clearing plant yards and parking lots. Blowers and "V" plows are also available for use on tracks.



Snow and ice control is facilitated with this salt and sand or cinder spreader.

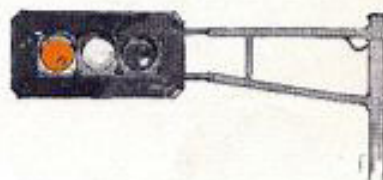


As a powerful prime mover, Unimog tows heavy industrial wagon trains in scrap, manufacturing and foundry operations.



A backfill blade is a useful attachment for leveling unpaved supply yards and maintaining gravel roads and parking lots.

Road 'N' Rail System



Sickle-bar, flail and rotary mowers are available for maintenance of industrial properties. A side-boom mower is shown for mowing slopes or rail right of way.

Heavy-duty crane mounted on Unimog is useful for on-loading and off-loading machinery, castings and other materials on rail flat cars, trucks and industrial wagons.

A front-mounted rotary broom makes quick work of cleanup chores in roads, yards, plant parking lots.

Front end loader functions as a multi-purpose clean-up machine.

