



# Euclid R50



**MAXIMUM GMW**  
90 000 kg (198,400 lbs.)

**PAYLOAD RANGE**  
44.7 TO 51.2 TONNES  
(49.3 TO 56.4 TONS)

**WET DISC BRAKES**

**TWO MAN INTEGRAL  
ROPS/FOPS CAB**

**HIGH HARDNESS,  
HIGH STRENGTH  
STEEL BODY**

**ATEC SHIFT CONTROLS**

**NEOCON SUSPENSION**

**TWO AVAILABLE  
DIFFERENTIAL RATIOS**

**SEPARATE HYDRAULIC  
RESERVOIRS FOR  
STEERING,  
BRAKE COOLING  
AND HOIST,  
TRANSMISSION**

# EUCLID





## ENGINES

	<b>Standard</b>	<b>Optional</b>
<b>Make</b>	<b>Cummins</b>	<b>Cummins</b>
Model .....	KTTA19-C	VTA28-C
Type .....	4 Cycle	4 Cycle
Aspiration .....	Turbocharged Aftercooled	Turbocharged Aftercooled
Rated Output (SAE @ 2100 rpm)....	504 kW (675 bhp)	504 kW (675 bhp)
Flywheel Output (SAE @ 2100 rpm)....	478 kW (641 bhp)	478 kW (641 bhp)
No. Cylinders.....	6	12
Bore & Stroke.....	159 mm x 159 mm (6 1/4" x 6 1/4")	140 mm x 152 mm (5 1/2" x 6")
Displacement .....	18.8 litres (1150 in <sup>3</sup> )	28.0 litres (1710 in <sup>3</sup> )
Max. Torque @ 1400 rpm .....	2698 N·m (1990 lb ft)	
@ 1300 rpm.....		2698 N·m (1990 lb ft)
Starting .....	Electric	Electric



## TRANSMISSION

Allison CLT-6062. Planetary type, full automatic shift. Integral torque converter with automatic lock-up to lock-up shifting in all ranges. Remote mounted, 6 forward speeds, 1 reverse. Allison Transmission Electronic Control (ATEC) shift system.

### Maximum Speeds @ 2100 RPM Governed Engine Speed

Range	Gear Ratio	Standard		Optional	
		3.73:1 Differential km/h (mph)	3.15:1 Differential km/h (mph)	3.15:1 Differential km/h (mph)	3.15:1 Differential km/h (mph)
1	4.00	9.08 (5.65)	10.76 (6.68)	10.76 (6.68)	10.76 (6.68)
2	2.68	13.56 (8.43)	16.05 (9.98)	16.05 (9.98)	16.05 (9.98)
3	2.01	18.08 (11.23)	21.40 (13.30)	21.40 (13.30)	21.40 (13.30)
4	1.35	26.91 (16.13)	31.81 (19.81)	31.81 (19.81)	31.81 (19.81)
5	1.00	36.33 (22.58)	34.02 (26.74)	34.02 (26.74)	34.02 (26.74)
6	0.67	54.23 (33.70)	64.21 (39.91)	64.21 (39.91)	64.21 (39.91)
R	5.12	7.10 (4.41)	8.40 (5.22)	8.40 (5.22)	8.40 (5.22)



## DRIVE AXLE

Full floating axle shafts, double reduction provided by Euclid Model 2350 differential and single reduction planetary with balanced life gears in each wheel.

	<b>Standard</b>	<b>Optional</b>
<b>Ratios</b>		
Differential .....	3.73:1	3.15:1
Planetary .....	5.80:1	5.80:1
Total Reduction .....	21.63:1	18.27:1
<b>Maximum Speeds</b>		
with 21.00-35 Tires.....	54.2 km/h (33.7 mph)	64.2 km/h (39.9 mph)
with 24.00-35 Tires.....	57.6 km/h (35.8 mph)	68.2 km/h (42.4 mph)



## TIRES

	<b>Rim Width</b>
<b>Standard - Front and Rear</b>	
Goodyear 21.00-35(32)E-3 .....	381mm (15")
<b>Optional - Front and Rear</b>	
Goodyear 24.00-35(36)E-3 .....	432 mm (17")

Plus optional Goodyear tire types, treads and ply ratings.



## ELECTRICAL

Twenty-four volt lighting and accessories system. 75 amp alternator with integral transistorized voltage regulator. Two 12 volt heavy duty batteries connected in series.



## LOAD CAPACITY

	<b>m<sup>3</sup></b>	<b>(yd<sup>3</sup>)</b>
Struck (SAE).....	23.6	(30.8)
Heap 3:1 .....	31.3	(41.0)
Heap 2:1 (SAE) .....	35.2	(46.0)
<b>Payload</b>	<b>Tonne</b>	<b>(Ton)</b>
Maximum .....	52.7	(58.0)



## WEIGHTS

	<b>kg</b>	<b>(lb)</b>
Chassis with Hoists .....	27 250	(60,075)
Body .....	11 275	(24,860)
*Net Machine Weight.....	38 526	(84,935)
Front Axle .....	18 285	(40,312)
Rear Axle.....	20 241	(44,632)
Maximum GMW with Selected Tires		
21.00-35(32)E-3		
Max. Gross Machine Weight .....	83 250	(183,540)
*Net Machine Weight.....	38 526	(84,935)
Maximum Payload.....	44 724	(98,605)
24.00-35(36)E-3		
Max. Gross Machine Weight .....	90 000	(198,400)
*Net Machine Weight.....	39 625	(87,357)
Maximum Payload.....	50 375	(111,043)
21.00-35(36)E-3		
Max. Gross Machine Weight .....	89 827	(198,030)
*Net Machine Weight.....	38 663	(85,235)
Maximum Payload.....	51 164	(112,795)
Machine weight based on 50% fuel		
Maximum gross machine weight not to exceed 90 000 kg (198,400 lbs) (including options, fuel and payload.)		

### Options/ \*Approximate change in net machine weight.

Body Liners, 400 BHN Steel, Complete: .....	3 098	(6,830)
10mm (3/8") floor		
6mm (1/4") sides, front and canopy		
10mm (3/8") top rails		
Body Liners, 400 BHN Steel, Complete: .....	4 014	(8,850)
13mm (1/2") floor,		
8mm (5/16") sides and front		
6mm (1/4") canopy		
10mm (3/8") top rail		
Tires, set of 6:		
21.00-35(36)E-4 .....	600	(1,310)
24.00-35(36)E-4 .....	1 720	(3,792)
Engine: Cummins VTA28-C .....	907	(2,000)



## STEERING

Closed-center hydraulic system with separate reservoir. Hydrostatic power steering using two double acting cylinders and independent gear pump. Supplementary steering provided by electric motor/pump in accordance with SAE J53 and ISO 5010.

Steering Angle .....	39°
Turning circle (SAE).....	18.7m (61'5")
Steering Pump Output (@ 2100 rpm).....	125 l/m (33 g/m)
System Relief Pressure .....	17 237 kPa (2500 psi)





## HYDRAULICS

Two (2) Euclid two-stage, double-acting cylinders, inverted and outboard mounted. Separate reservoir and independent tandem gear pump. Control valve mounted on reservoir.

Body Raise Time .....19 sec.  
 Brake Cooling Pump Output .....299 l/m (79 g/m)  
 Hoist Pump Output.....299 l/m (79 g/m)  
 System Relief Pressures.....17 237 kPa (2500 psi)



## AIR

Compressor.....6.2 l/s (13.2 cfm)

**Service Air**  
 Pressure .....860 kPa (125 psi)  
 Reservoir Capacity.....147 litres (5.2 ft<sup>3</sup>)

**Warning:** Wig-wag alarm in cab activated when pressure drops to 620 kPa (90 psi).



## BRAKES

### Service

Air/oil actuated front disc brakes with two calipers per front disc. Calipers are internally ported, each containing three pairs of opposing pistons. Rear brakes are oil-cooled wet discs. Provide stopping capability conforming to SAE J1473 and ISO 3450.

### Front Axle—BFGoodrich Dry Disc

Disc Diameter Each ..... 68.6 mm (27 in)  
 Lining Area Per Axle .....1 935 cm<sup>2</sup> (300 in<sup>2</sup>)  
 Brake Pressure (Max.) ..... 15 859 kPa (2300 psi)

### Rear Axle-VME Oil-Cooled Wet Disc

Brake Surface Area Per Axle .....49 758 cm<sup>2</sup> (7712 in<sup>2</sup>)  
 Brake Pressure (Max.) .....6 895 kPa (1000 psi)

### Secondary

Two independent circuits within the service brake system provide secondary stopping capability conforming to SAE J1473 and ISO 3450. System is manually or automatically applied to stop machine.

### Parking

Drum, two shoe internal expanding type mounted behind transmission. Spring applied, manually controlled from instrument panel. In accordance with SAE J1473 and ISO 3450.

Size.....305 mm x 127 mm (12" x 5")  
 Lining Area .....969 cm<sup>2</sup> (150 in<sup>2</sup>)

### Retarder

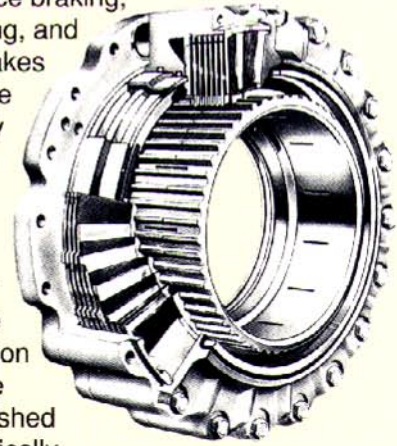
Foot operated valve controls air/oil actuation of oil-cooled wet disc brakes on rear axle.

Capacity (Continuous) .....522 kW (700 bhp)



## WET DISC BRAKE

The Euclid wet disc brake is engineered for long service life even in the most extreme environments. The wet disc brakes are located on the rear axle and provide service braking, emergency braking, and retarding. The brakes are of a multi-plate design, constantly oil-cooled. The sealed design protects against environmental contamination for prolonged service life. Both application and release of the brake is accomplished through a hydraulically controlled piston. This simplified system does not require springs or other mechanical components resulting in reduced maintenance.



As a service brake, it incorporates VME's philosophy of system separation; the service brake actuation is totally separate from the retarder actuation. Both service braking and retarder functions are accomplished utilizing separate pedals. This allows the operator to activate the brakes or the retarder without removing his hands from the steering wheel.

The R50 utilizes dry disc front brakes in conjunction with the wet disc rear brakes for proportioned braking action.



## FRAME

Box section main rails bridged by three cross members, front bumper and front suspension tube. Rail depth is constant taper rear to front. Two rear cross members are castings with integral body, suspension and drive axle mountings. Cross members to frame junctions use large radii to minimize stress. Frame utilizes 310 N/mm<sup>2</sup> (45,000 psi) yield strength alloy steel.



## STANDARD EQUIPMENT

### General

Air horns, dual	Mirrors, right and left
Allison Transmission Electronic Control (ATEC)	Mud flaps
Body down indicator, mechanical	Neocon suspension
Body prop cable	Operator arm guard
Canopy spill guard	Park brake interlock
Continuous heated body	Radiator grille guard
Electric start	Reverse alarm
Fan guard	Rock ejector bars
Hoist interlock	Steering tank sight gauge
Hoist tank sight gauge	Supplementary steering system, electric
	Tow hooks, front
	Transmission sight gauge

### Cab

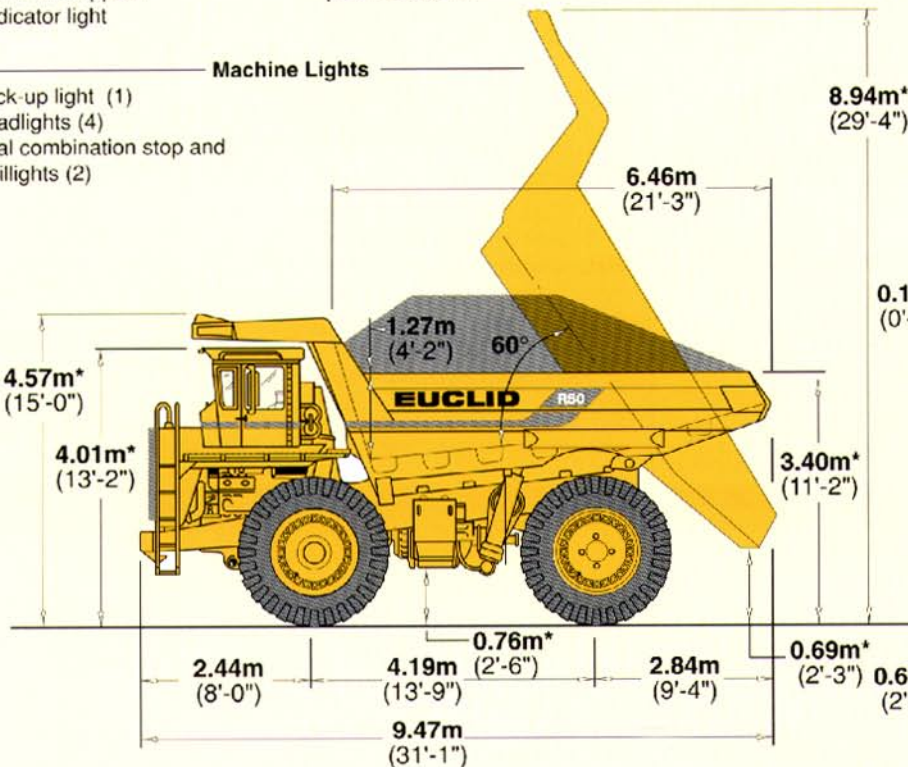
Acoustical lining	Rubber floor mat
Ash tray	Safety glass
Cab interior light	Sun visor
Cigar lighter	Tinted windshield
Heater and defroster	Trainer seat and belt
Integral ROPS/FOPS cab	Windshield washers
Operator seat, mechanical	Windshield wipers
Operator seat belt	

### Gauges and Indicators

Air cleaner restriction indicator light	Rear brake malfunction light
Ammeter	Retarder high oil temperature indicator light
ATEC malfunction indicator light	Service air pressure gauge
Clutch pressure gauge	Speedometer
Converter lock-up indicator light	Steering filter restriction indicator light
Converter oil temp. gauge	Steer system malfunction indicator light
Coolant temperature gauge	Tachometer and hourmeter
Engine oil pressure gauge	Transmission malfunction indicator light
Gauge lights with rheostat	Transmission filter restriction indicator light
High beam indicator light	Wig-wag low air pressure alarm
Hydraulic filter restriction indicator light	
Park brake applied indicator light	

### Machine Lights

Back-up light (1)
Headlights (4)
Dual combination stop and taillights (2)



## OPTIONAL EQUIPMENT

Air conditioning  
 Air dryer  
 Air suspension seat  
 Alarm system, multi-function (low oil pressure, high coolant temperature, low coolant level, high conv. temperature)  
 Body liner (400 BHN) plates  
 Cab sound suppression  
 Canopy spill guard extension  
 Cold starting aid  
 Cummins VTA28-C engine  
 Decals, French and German  
 Differential, 3.15 ratio  
 Engine heater (oil & coolant)  
 Extra reverse alarm  
 Fast fueling  
 French certified air tanks  
 Fuel gauge

German market equipment list (TBG)  
 Guard rails  
 Hoopsides (canvas)  
 Hoopsides (metal)  
 Hubodometer  
 Lube system, automatic  
 Lube system, centralized  
 Main battery switch  
 Metric speedometer  
 Muffler  
 No spin differential  
 Tachograph, 24 hour recording  
 Tires (size, type & rating)  
 Transmission guard  
 Turn signals & hazard flashers  
 Unit sound suppression

Standard and optional equipment may vary from country to country. Special options provided on request. Consult VME Market Support. Product improvement is a continuing VME project. Therefore, all specifications are subject to change without notice.

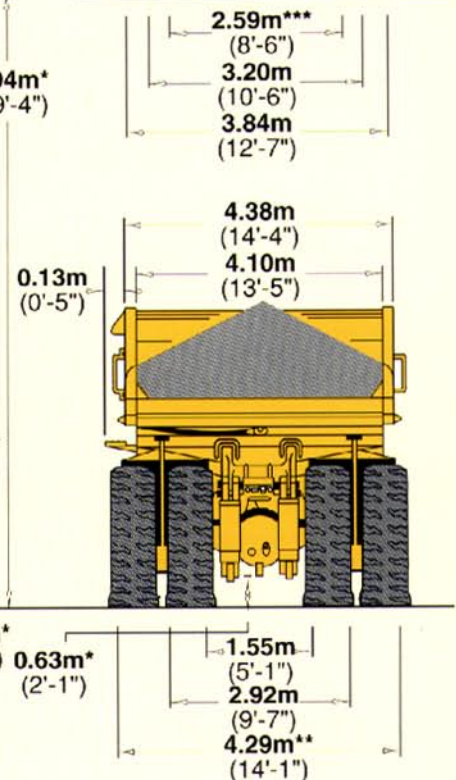
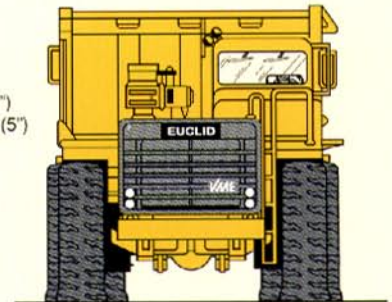
**Note:** Illustration may include optional equipment.

**Note:** Dimensions shown are for empty machine with 21.00-35 tires.

\*With 24.00-35 tires add .08m (3")

\*\*With 24.00-35 tires add 0.13m (5")

\*\*\*With 24.00-35 tires subtract 0.13m (5")







## SUSPENSION

### Front Suspension

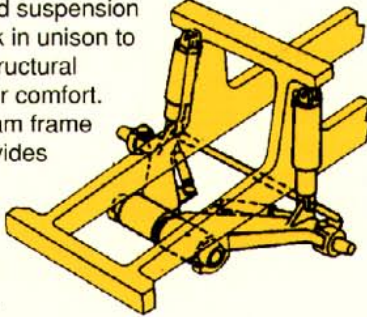
Independent trailing arm for each front wheel. Neocon struts containing energy absorbing gas and compressible Neocon-x fluid mounted between trailing arm and frame.

### Rear Suspension

"A" frame structure, integral with axle housing, links drive axle to frame at forward center point with pin and spherical bushing. Track rod provides rear link between frame and drive axle. Rear mounted Neocon struts suspend drive axle from frame. Neocon struts provide variable damping and rebound feature.

The Euclid frame and suspension are designed to work in unison to provide maximum structural integrity and operator comfort.

The tapered box beam frame rail construction provides superior resistance to bending and torsional loads while eliminating unnecessary weight.



VME achieves long frame fatigue life through proven design and manufacturing practices. Smooth frame transitions minimize stress concentrations and steel castings effectively distribute input loads. Frame life is further enhanced by utilizing fatigue resistant weld joints and locating welds in low stress areas. The unique trailing arm front suspension absorbs haul road input, minimizing suspension-induced frame twisting while providing independent tire action. Ride struts are mounted with spherical bushings, eliminating extreme sidewall forces by insuring a purely axial input to the ride strut. The wide track stance of the trailing arm design and long wheel base assure a more stable, comfortable ride. The suspension struts employ gas and Neocon-x fluid as the energy-absorbing media. This suspension continues to absorb energy when extreme dynamic loads are generated which significantly contributes to improved isolation of the operator and machine components.



## SERVICE CAPACITIES

	Litres (Gallons)	
Crankcase (incl. filters)		
Cummins KTTA19-C .....	60.6	(16.0)
Cummins VTA28-C.....	60.6	(16.0)
Transmission (incl. filters) .....	71.9	(19.0)
Cooling System		
Cummins KTTA19-C .....	189.3	(36.0)
Cummins VTA28-C .....	162.8	(43.0)
Fuel Tank .....	700.2	(185.0)
Hydraulic		
Hoist Tank .....	174.1	(46.0)
Steering Tank .....	98.4	(26.0)
Drive Axle .....	50.3	(13.3)



## BODY

Flat floor, sloped tailchute, continuously exhaust heated.

High tensile strength 1310 N/mm<sup>2</sup> (190,000 psi) alloy steel, 400 BHN used in thickness of:

	mm	(in)
Floor .....	20	(3/4)
Front.....	10	(3/8)
Sides .....	10	(3/8)
Canopy .....	10	(3/8)

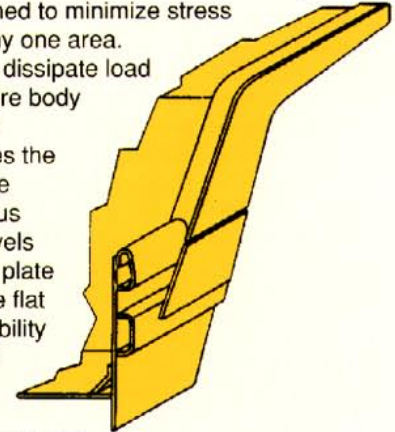
High yield strength 551 N/mm<sup>2</sup> (80,000 psi) alloy steel used for canopy side members, stiffeners: front, floor and side. Body is rubber cushioned on frame.

The horizontal stiffener design of the Euclid body is specifically designed to minimize stress concentrations in any one area.

Horizontal side rails dissipate load shocks over the entire body length.

The flat floor configuration enables the floor stiffeners to be uniformly spaced thus equalizing stress levels throughout the floor plate area. In addition, the flat floor increases durability and augments body liner installation.

The sloped floor profile provides a low center of gravity for maximum stability. Body lifting cut-outs on the underside of the top rails are provided to facilitate installation or removal of the body. The cut-outs are standardized to industry hook sizes.



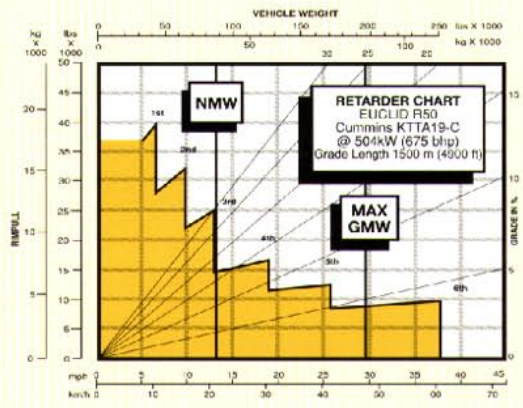
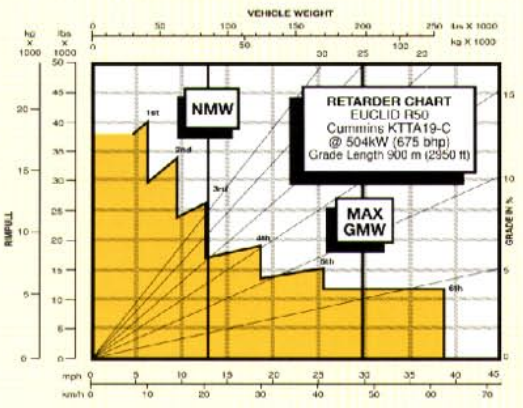
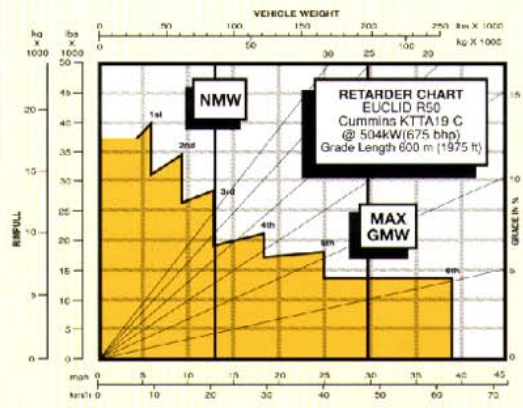
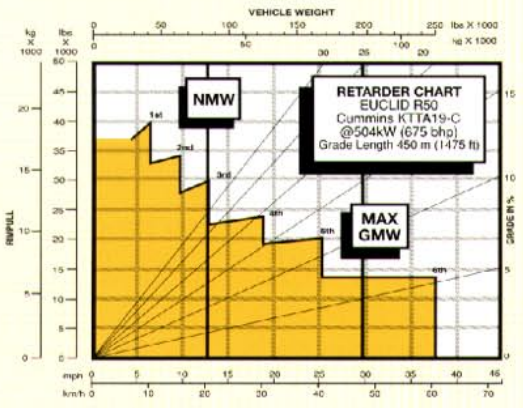
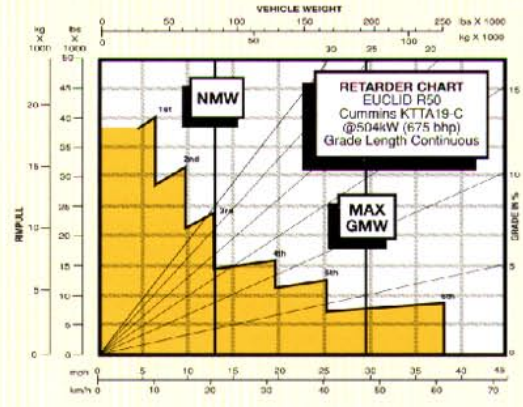
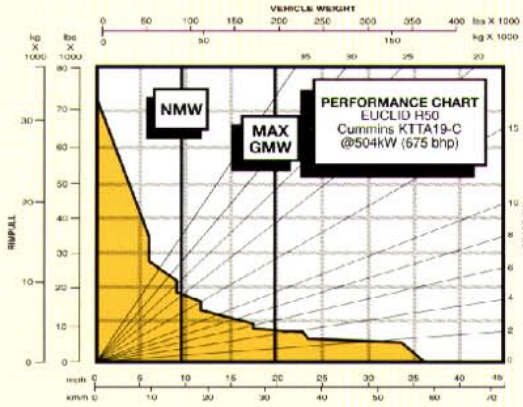
Additional features include a durable weld-on arm guard for operator safety and a weld-on exhaust collector box to eliminate a periodic service area.



## CAB ROPS/FOPS

VME designed 142 cm (56") wide all steel cab, offset to the left and three point rubber mounted to isolate the operator from vibration. Safety glass throughout, tinted windshield with 5° slant. Fully insulated for noise and temperature control. Fresh air pressurized, filtered ventilation. Ladder and catwalk entry. The R50 is designed and originally manufactured to meet OSHA sound limitations at the operator's station with windows and vents closed under normal conditions. Featuring an integral ROPS (Rollover Protective Structure) manufactured by VME in accordance with SAE J1040 and ISO 3471, FOPS SAE J231, ISO 3449. Operator and trainer seat belt in accordance with SAE J386 and ISO 6683.





## INSTRUCTIONS:

Diagonal lines represent total resistance (grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard tires and gearing unless otherwise stated.

1. Find the total resistance on diagonal lines on right-hand border of performance or retarder chart.
2. Follow the diagonal line downward and intersect the NMW or GMW weight line.
3. From intersection, read horizontally right or left to intersect the performance or retarder curve.
4. Read down for machine speed.

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.

## VME Industries North America

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