# Euclid R60


*MAXIMUM GMW*
*96 000 KG (211,642 LBS)*

*HAULER CLASS*
*57 TONNES (63 TONS)*

*COMMAND CAB III*

*ALL-HYDRAULIC BRAKING*

*SWING-OUT GRILLE*

*CONTRONIC*
*MONITORING SYSTEM*

*AUTOMATIC*
*TRANSMISSION*
*TRIM BOOST SOFT SHIFT*
*TWO-SPEED REVERSE*

*ACCU-TRAC SUSPENSION*
*NEOCON STRUTS*

*LOW LOADING HEIGHT*

*TWO ENGINE CHOICES*
*RATED GROSS OUTPUT:*
*522 kW (700 bhp)*

*WET DISC BRAKES*

EUCLID

## ENGINE

| | Standard | Optional |
|---|---|---|
| **Make** | **Cummins** | **Cummins** |
| Model | KTTA19-C | VTA28-C |
| Type | 4 Cycle | 4 Cycle |
| Aspiration | Turbocharged/ Aftercooled | Turbocharged/ Aftercooled |
| Rated Output (SAE @ 2100 rpm) | kW **bhp** 522 **700** | kW **bhp** 522 **700** |
| Flywheel Output (SAE @ 2100 rpm) | kW **bhp** 498 **668** | kW **bhp** 495 **664** |
| No. Cylinders | 6 | 12 |
| Bore & Stroke | mm 159 x 159<br>**in 6 1/4 x 6 1/4** | mm 140 x 152<br>**in 5 1/2 x 6** |
| Displacement | liters **in³** 18,8 **1150** | liters **in³** 28,0 **1710** |
| Max. Torque | @ 1400 rpm<br>N•m **lb ft** 2730 **2014** | @ 1300 rpm<br>N•m **lb ft** 2739 **2020** |
| Torque Rise | **15%** | **30%** |
| Starting | Electric | Electric |

## TRANSMISSION

Allison CLT-6063, Remote-mounted, planetary type, with integral torque converter featuring automatic lockup in all ranges for improved fuel economy. Allison Transmission Electronic Control provides park brake interlock and hoist interlock as well as built in diagnostics. Trim Boost Soft Shift provides smooth shifting to help reduce operator fatigue. Six fully automatic forward speeds and two selectable reverse speeds to supply the operator with more flexibility in any application.

**Maximum Speeds @ 2100 rpm Governed Engine Speed with standard 24.00-35 tires**

| | | Standard | | Optional | |
|---|---|---|---|---|---|
| | Gear | 3.73:1 Differential | | 3.15:1 Differential | |
| Range | Ratio | km/h | mph | km/h | mph |
| 1 | 4.00 | 9,65 | **6.00** | 11,42 | **7.10** |
| 2 | 2.68 | 14,40 | **8.95** | 17,05 | **10.59** |
| 3 | 2.01 | 19,20 | **11.93** | 22,73 | **14.13** |
| 4 | 1.35 | 28,58 | **17.76** | 33,84 | **21.03** |
| 5 | 1.00 | 38,59 | **23.98** | 45,68 | **28.39** |
| 6 | 0.67 | 57,59 | **35.79** | 68,18 | **42.38** |
| R1 | 5.12 | 7,54 | **4.68** | 8,92 | **5.55** |
| R2 | 3.46 | 11,15 | **6.93** | 13,20 | **8.21** |

## 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, to maximize gear life.

| **Ratios** | **Standard** | **Optional** |
|---|---|---|
| Differential | 3.73:1 | 3.15:1 |
| Planetary | 5.80:1 | 5.80:1 |
| Total Reduction | 21.63:1 | 18.27:1 |
| **Maximum Speeds** | | |
| with 24.00-35 Tires | km/h 57,6<br>**mph 35.8** | km/h 68,2<br>**mph 42.4** |

## TIRES

| **Standard - Front and Rear** | **Rim Width** |
|---|---|
| Goodyear 24.00-35(36)E3 | mm **in** 432 **17** |

Optional tires, brands, treads and ply ratings available.

## ELECTRICAL SYSTEM

Twenty-four volt lighting and accessories system. 75 amp alternative with integral transistorized voltage regulator. Two 12 volt heavy duty batteries connected in series.
Standard CONTRONIC monitoring and central warning system with built-in diagnostics. An optional Liquid Crystal Display is available.

## LOAD CAPACITY

| | $m^3$ | $yd^3$ |
|---|---|---|
| Struck (SAE) | 25 | **33** |
| Heap 3:1 | 32 | **42** |
| Heap 2:1 (SAE) | 36 | **47** |

| **Payload** | Tonne | **Ton** |
|---|---|---|
| Maximum | 57,3 | **63.1** |

**Note:** Based on material density, Euclid will size an optional larger or smaller body to assure rated payload. Consult Euclid market support.

## WEIGHTS

| | kg | lb |
|---|---|---|
| Chassis & Hoist | 28 092 | **61,931** |
| Body | 10 626 | **23,425** |
| *Net Machine Weight | 38 718 | **85,356** |
| Maximum Payload | 57 283 | **126,286** |
| Maximum GMW with Std. Tires [24.00-35(36)E3] including options, 50% fuel, operator & Payload Not to Exceed | 96 000 | **211,642** |
| *Options/Approx. Change in Net Machine Weight: | | |
| Body Liners, 400 BHN Steel, Complete: (Light Duty) | 2 917 | **6,430** |
| Body Liners, 400 BHN Steel, Complete: (Heavy Duty) | 3 960 | **8,730** |
| Tires - Set of 6: | | |
| 24.00 - R35 RL-3 | 1154 | **2,544** |
| 24.00 - R35 RL-4 | 1072 | **2,364** |
| 24.00 - 35(36)E-4 | 621 | **1,368** |
| Engine: VTA28-C | 907 | **2,000** |

| **Weight Distribution** | **FRONT** | **REAR** |
|---|---|---|
| Empty | 49% | 51% |
| Loaded | 32% | 68% |

## STEERING SYSTEM

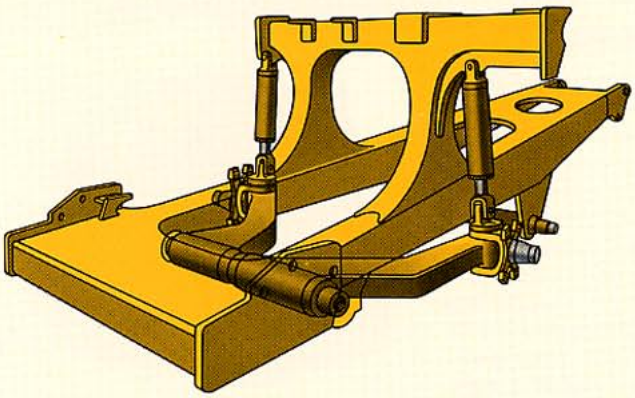
Closed-center, full-time hydrostatic power steering system using two double-acting cylinders, pressure limit w/unload piston pump and brake actuation/steering system reservoir. Accumulator provides supplementary steering in accordance with SAE J1511, ISO 5010. Tilt/telescopic steering wheel with 35° of tilt and 5715 mm **2 1/4"** telescopic travel.

| | | | | |
|---|---|---|---|---|
| Steering Angle | | | | **40°** |
| Turning Circle (SAE) | m | **ft in** | 19,11 | **62'8"** |
| Steering Pump Output (@ 2100 rpm) | l/m | **gpm** | 95,7 | **25** |
| System Pressure | kPa | **psi** | 18 961 | **27** |

## SUSPENSION

**Front and Rear Suspension**
For years, Euclid haulers have enjoyed an industry-wide reputation for superior suspension systems. That experience and knowledge has now been pushed to the next level, to develop the truly advanced ACCU-TRAC suspension for the R60. To make sure it was fine tuned to the limit, Lotus Engineering, a world leader in suspension design was contracted to review the entire system to assure optimized ride and handling performance.

The new ACCU-TRAC suspension system features independent trailing arms for each front wheel with NEOCON struts, containing energy absorbing gas and compressible Neocon-x fluid, mounted between the king pins and the frame. This arrangement allows a wider front track that provides a better ride, improved stability and a reduced turning circle. The rear axle housing has an A-frame mounting. The rear NEOCON struts are mounted in a more vertical position which allows a more pure axial loading and reduces the tractive and braking forces transmitted to the nose cone.



NEOCON struts outperform competitive strut designs by improving isolation, stability, and control. Improved isolation means reduced impact loading on the structural members of the machine and greater operator comfort, resulting in longer equipment life and increased productivity. Improved stability means more consistent dynamic response of the machine to fluctuating load energy, resulting in predictable machine performance. And improved control means better machine manueverability.

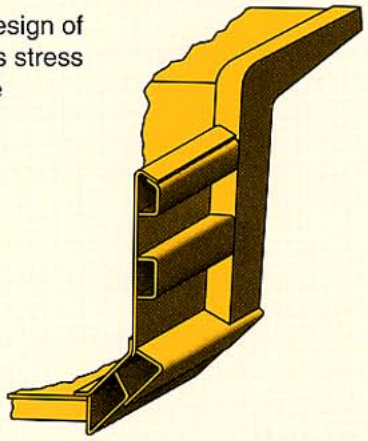
The Euclid frame and ACCU-TRAC suspension system are designed to work in unison to provide maximum structural integrity and operator comfort. The fabricated rectangular frame rail construction provides superior resistance to bending and torsional loads while eliminating unnecessary weight. The unique ACCU-TRAC independent trailing arm suspension absorbs haul road input, minimizing suspension-induced frame twisting while providing independent tire action. NEOCON ride struts are mounted with spherical bushings, eliminating extreme sidewall forces by ensuring a purely axial input to the ride strut. The wide track stance of the ACCU-TRAC suspension system and the long wheel base assure a more stable, comfortable ride.

## BODY

Flat chute type, sloped floor, continuously exhaust heated. High tensile strength 1310 N/mm$^2$ **190,000 psi** alloy steel 400 BHN used in thickness of:

| | mm | in |
|---|---|---|
| Floor | 18 | **11/16"** |
| Front | 10 | **3/8"** |
| Sides | 8 | **5/16"** |
| Canopy | 6 | **1/4"** |
| Optional Body Liners (Light Duty) | | |
| Floor & Top Rails | 10 | **3/8"** |
| Sides & Front | 6 | **1/4"** |
| Optional Body Liners (Heavy Duty) | | |
| Floor | 13 | **1/2"** |
| Sides & Front | 8 | **5/16"** |
| Top Rails | 10 | **3/8"** |

The horizontal stiffener design of the Euclid body minimizes stress concentrations in any one area. Load shocks are dissipated over the entire body length. The closely spaced floor stiffeners provide additional protection by minimizing distance between unsupported areas.



## SERVICE CAPACITIES

| | liters | 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 | **50.0** |
| Cummins VTA28-C | 208,2 | **55.0** |
| 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** |

## FRAME

Full fabricated box section main rails with section height tapered from rear to front. Wider at the rear to support the loads and narrower at the front to allow for engine accessibility. One piece top and bottom flanges that eliminate cross member tie in joints and provide a large exposed center area for access to major components. Large radii at frame junctions are blended and ground to minimize stress concentrations. Weld joints are oriented longitudinally to the principal flow of stress for greater durability and more strength. Frame utilizes 310 N/mm$^2$ **45,000 psi** yield strength alloy steel that is robotically welded to ensure high quality welds.

## HYDRAULIC SYSTEM

Two (2) Euclid two-stage cylinders, double-acting in second stage, internal cushion, inverted and outboard mounted. Separate Hoist/Brake Cooling reservoir and independent tandem gear pump. Control valve mounted on reservoir.

| | | | | |
|---|---|---|---|---|
| Body Raise Time | s | | 10.0 | |
| Body Float Down Time | s | | 14.0 | |
| Body Power Down Time | s | | 11.0 | |
| Brake Cooling Pump Output | l/m | **gpm** | 176 | **47** |
| Hoist Pump Output | l/m | **gpm** | 468 | **123** |
| System Relief Pressure | kPa | **psi** | 17 237 | **2500** |

## BRAKE SYSTEM

Brake system complies with SAE J1473 and ISO 3450.

All-hydraulic actuated braking system providing precise braking control and quick system response. The brake controller has a unique variable front to rear brake proportioning that maximizes the stopping performance under slippery road conditions without having to deactivate front brakes.

**Service**
All-hydraulic actuated front disc brakes and rear oil-cooled wet disc.

| | | | | |
|---|---|---|---|---|
| **Front Axle - Dry Disc** | | | | |
| Disc Diameter Each (2 discs/axle) | mm | **in** | 68,6 | **27** |
| Brake Surface Area | $cm^2$ | **$in^2$** | 4 129 | **640** |
| Lining Area Per Axle | $cm^2$ | **$in^2$** | 2 787 | **432** |
| Brake Pressure (Max.) | kPa | **psi** | 15 859 | **2300** |
| **Rear Axle - Oil-Cooled Wet Discs** | | | | |
| Brake Surface Area Per Axle | $cm^2$ | **$in^2$** | 49 758 | **7712** |
| (Optional Increased Capacity) | $cm^2$ | **$in^2$** | 61 500 | **9532** |
| Brake Pressure (Max.) | kPa | **psi** | 6 895 | **1000** |

**Secondary**
Two independent circuits within the service brake system provide back-up stopping capability. System is manually or automatically applied to stop machine within prescribed braking distance.

**Parking**
Drum, two shoe internal expanding type mounted on transmission output shaft. Controlled by a toggle switch on the dash. Automatically applied if brake hydraulic pressure is lost.

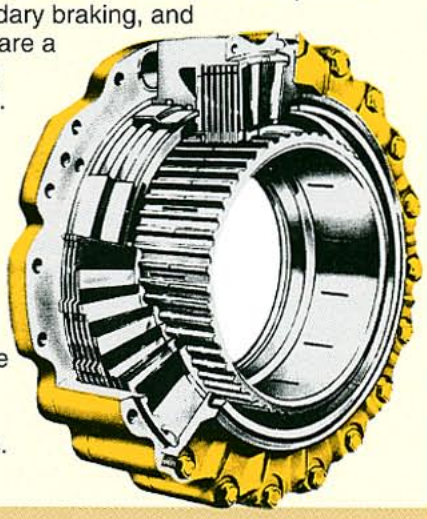
| | | | | |
|---|---|---|---|---|
| **Size** | mm | **in** | 305 x 127 | **12" x 5"** |

**Retarder**
Foot-operated valve controls all-hydraulic actuation of oil-cooled wet disc brakes on rear axle. System provides modulated pressure to rear brakes for constant speed control.

| | | |
|---|---|---|
| Capacity (with Std. KTTA19-C Engine) | | |
| (Std. Cooling) | kW | **hp** |
| Continuous | 526 | **706** |
| Intermittent | 1148 | **1540** |
| (Optional Cooling) | | |
| Continuous | 597 | **800** |
| Intermittent | 1208 | **1620** |
| Capacity (with Opt. VTA28-C Engine) | | |
| (Std. Cooling) | | |
| Continuous | 591 | **792** |
| Intermittent | 1215 | **1630** |
| (Optional Cooling) | | |
| Continuous | 661 | **886** |
| Intermittent | 1275 | **1710** |

## WET DISC BRAKE

The Euclid-designed 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, secondary braking, and retarding. The brakes are a multi-plate design, and continuously oil-cooled. The sealed design protects against environmental contamination for prolonged service life. The wet disc brake is designed with automatic retraction to prevent drag. Separate pedals activate the service braking and retarding functions.



## COMMAND CAB III

Command Cab III integral ROPS (Rollover Protection Structure) is standar in accordance with SAE J1040 (1988c) and dimensions comply with ISO 3471. Double wall construction of 11 gauge inner and outer steel panels, lends itself to a more structurally sound cab. Foam rubber lining material along with foam rubber-backed carpeting and multiple layered floor mat act to absorb sound and control interior temperature. A properly maintained cab from VME, tested with doors and windows closed per work cycle procedures in ANSI/SAE J1166 (1990), results in an operator sound exposure $L_{eq}$ (Equivalent Sound Level) of 79dB(A). A three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator compartment.

**Excellent Serviceability.** A removable front closure allows easy access to service brake valves and retarder valve. The upper dash utilizes four (4) removable panels that house gauges and customer options, each individually accessible. A removable closure located behind the seat provides easy access to the shifting control, CONTRONIC, and all electrical junction points.

**Comfort and Ease of Operation.** A wrap-around style dashboard positions controls within easy reach and visual contact. A full complement of easy-to-read gauges, CONTRONIC monitoring and warning system, a spacious environment, six-way adjustable mechanical seat, tilt/telescopic steering wheel, filtered ventilation, door locks, and a full size padded trainer seat, all contribute to operator safety and comfort.

# STANDARD EQUIPMENT

## General

- Accu-trac suspension system
- All hydraulic braking
- Automatic transmission shifting
- Body down indicator, mechanical
- Body prop cable
- Canopy spill guard
- Continuous heated body
- Cooling system sight gauge
- Cooling system surge tank
- Electric horns
- Electric start
- Fan gaurd
- Fenders
- Fixed steering stops
- Halogen lights
- Hoist interlock
- Hoist tank sight gauge
- Mirrors right and left
- Mud flaps
- Neocon suspension struts
- Park brake interlock
- Radiator grill guard
- Reverse alarm
- Rock ejector bars
- Steering accumulator
- Steering tank sight gauge
- Swing-out grille
- Tires, Goodyear-24.00-35(36)E3
- Tire guards, bolt-on
- Tow pins front/rear
- Transmission sight gauge
- Two-speed reverse

## Cab

- Acoustical lining
- Air filtration/replaceable element
- Ash tray
- Cab interior light
- Cigar lighter
- Door locks
- Full trainer seat
- Heater and defroster 26,000 Btu
- Integral ROPS/FOPS cab
- ISO driver envelope
- Modular instrumentation
- Mechanical, 6 position seat
- Quick connect test ports
- Roll down windows
- Rubber floor mat
- Safety glass
- Seat belts retractable
- Sun visor
- Tilt/telescopic steering
- Tinted glass all windows
- Trainer seat belt
- Windshield washer
- Windshield wiper

## Gauges and Indicators

- CONTRONIC monitoring and alarm system, multi-function indicator lights:
  - Air filter restriction
  - Alternator
  - Brake pressure
  - Central warning
  - Converter temperature
  - Cooling temperature
  - Engine oil pressure
  - High beam indicator
  - Hydraulic filter
  - Park brake applied
  - Retard oil temperature
  - Steering filter
  - Steering pressure
  - Steering temperature
  - Transmission oil pressure
  - Transmission filter
  - Turn signals/hazard
- Do not shift light
- Transmission malfunction light
- Gauges:
  - Brake temperature
  - Converter temperature
  - Coolant temperature
  - Hourmeter
  - Speedometer
  - Steering/brake pressure
  - Tachometer

## Machine Lights

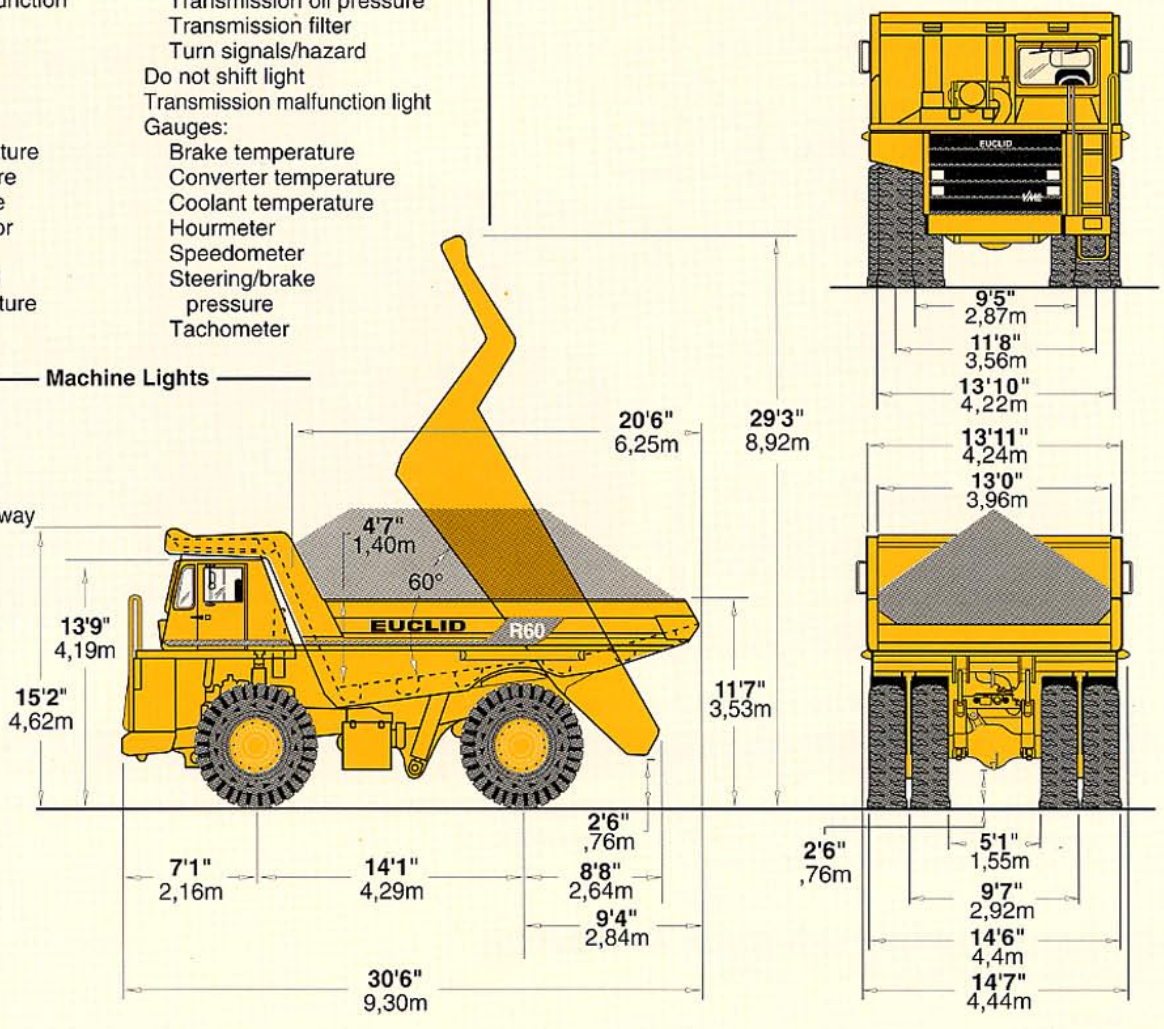
- Back-up light, (1)
- Clearance lights, (2)
- Stop & tail, (2)
- Head lights, (4)
- Turn signals and four-way flashers

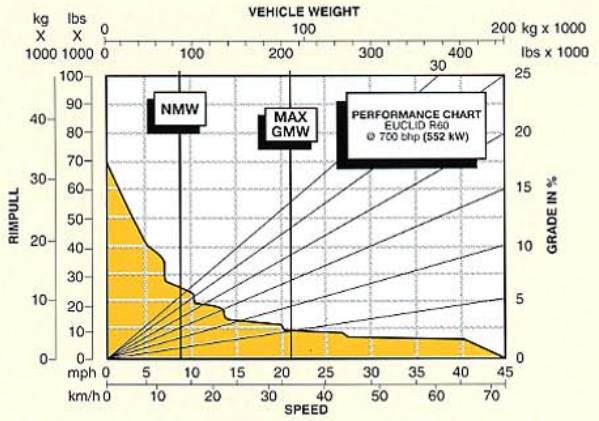
# OPTIONAL EQUIPMENT

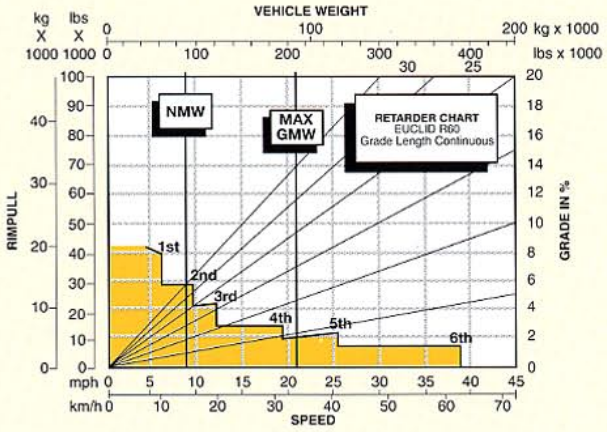
- Air conditioning
- Air suspension seat
- Active traction control (ATC)
- Body liners (400 BHN) plates STD and HD
- Body sideboard extensions
- Canopy spill guard extension
- Cold start aid
- CONTRONIC-liquid crystal display (fuel level, service intervals)
- Cummins VTA28-C engine
- Decals French, German & Spanish
- Differential, 3.15:1 ratio
- Differential, no-spin
- Engine heater (oil & coolant)
- Extra reverse alarm
- Fast coupling service center
- Fast fueling
- Front brake cut-off switch
- German market equipment
- Guard rails
- Haultronic-load monitoring system
- Hoist control, electronic
- Hoodsides (metal)
- Increased retarder cooling
- Increased capacity wet disc brakes
- Kim hotstart pre-heaters
- Lube system, automatic
- Lube system, centralized
- Main battery switch
- Muffler
- Radiator, premium core
- Radio & tape player
- Tires (size, type & rating)
- Transmission guard
- Transmission retarder
- Unit sound suppression
- 21.00-35 tires

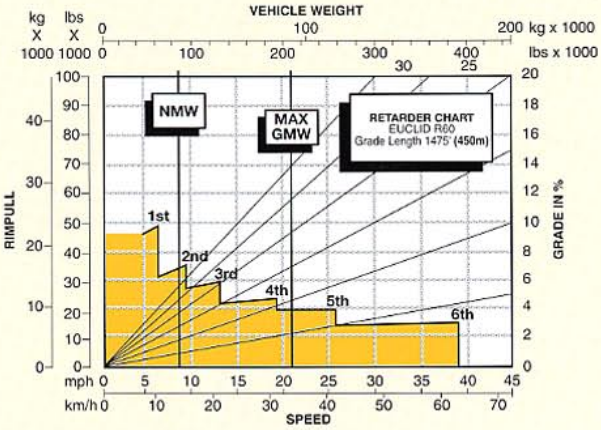
Standard and optional equipment may vary from country to country. Special options provided on request. Consult VME Market Support. Product improvement is a continuing VME project. Therefore, all specifications are subject to change without notice.

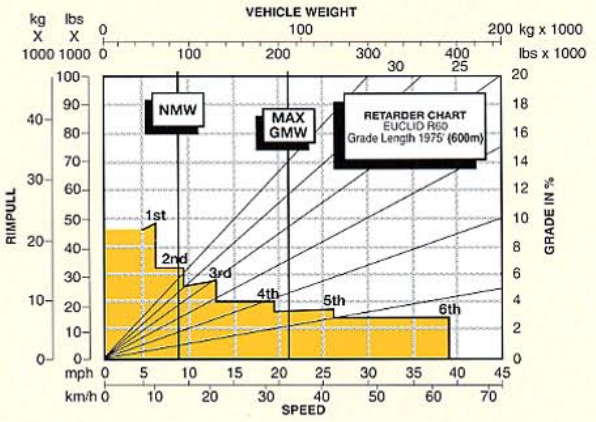
**Note:** Dimensions shown are for empty machine with 24.00-35 tires.

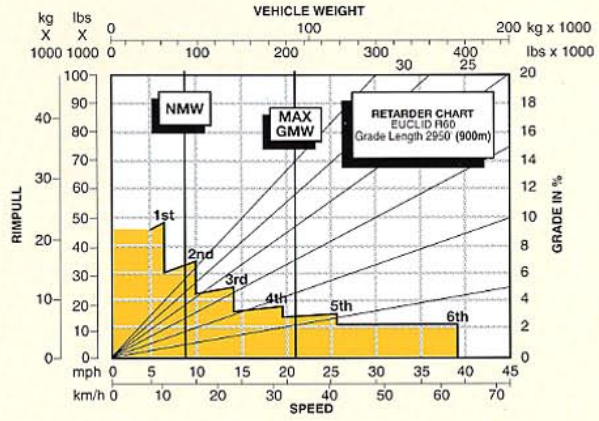


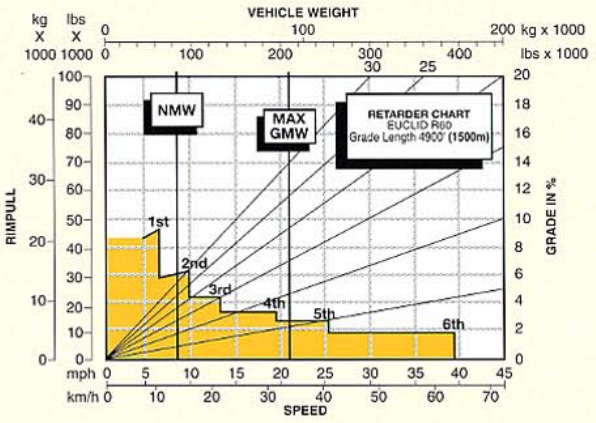



## INSTRUCTIONS:

**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.

**NOTE:** Photos and illustrations throughout may show optional equipment.

*Under our policy of continous 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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FORM NO. RH-647R1
DATE 9/93
Printed in U.S.A.