EUCLID

R-120E

GENERAL ELECTRIC DRIVE SYSTEM

EUC R-120E: G.E. DRIVE

ENGINES

Make	Detroit Diesel	Cummins
Model	12V-149TI	KTA-2300-C
Type	2 Cycle	4 Cycle
Aspiration	Turbo-Charged	Turbo-Charged
Rated Output (SAE)	@ 1900 rpm	@ 2100 rpm
	895 kW	895 kW
	(1200 bhp)	(1200 bhp)
Flywheel Output (SAE)	@ 1900 rpm	@ 2100 rpm
	783 kW	783 kW
	(1050 bhp)	(1050 bhp)
Number Cylinders	12	12
Bore & Stroke	146mm x 146mm	159mm x 159mm
	(5¾" x 5¾")	(6¼" x 6¼")
Displacement	29.3 litres	37.7 litres
	(1788 in³)	(2300 in³)
Maximum Torque	@ 1600 rpm	@ 1500 rpm
	4670 N•m	4475 N•m
	(3445 lb-ft)	(3300 lb-ft)
Starting	Air	Air

ELECTRIC DRIVE SYSTEM

Alternator
General Electric Model GTA25. Direct mounted to engine.

Rectifier
General Electric Model 17FM425. Three phase bridge type mounted within blower inlet ducts for cooling.

Wheel Motors
General Electric Model 773 traction motors with Euclid planetary drive in each rear wheel.

Tires	MAXIMUM SPEEDS STD. 31.80:1 RATIO km/h (mph)	OPT. 38.40:1 RATIO km/h (mph)
30.00-51	50.2 (31.2)	41.5 (25.8)
33.00-51 (option for GE773 only)	52.8 (32.8)	43.6 (27.1)

General Electric Model 772 or Model 776HS Deep Pit traction motors available as an option.

Module Package
Radiator with fan, engine, alternator and blower mounted on subframe available as an option.

TIRES

Standard	Rim Width
Front & Rear 30.00-51 (46PR)	559 mm (22.0")
Optional	
Front & Rear 33.00-51 (GE 773 motors only)	610 mm (24.0")

Plus tire types, treads and ply ratings

LOAD CAPACITY

	m³	(yd³)
Struck (SAE)	42.5	(55.6)
Heap 3:1	58.0	(75.9)
Heap 2:1 (SAE)	65.4	(85.5)
Euclid Field Heap	63.3	(82.8)

Optional bodies offered on request. Consult your nearest Euclid Distributor.

WEIGHTS

	kg	(lb)
Chassis with hoist	65 920	(145,330)
Body	15 540	(34,270)
Net Weight	81 460	(179,600)
Front Axle	38 660	(85,240)
Rear Axle	42 800	(94,360)
Payload	108 860	(240,000)
Gross Weight	190 320	(419,600)
Front Axle	60 620	(133,650)
Rear Axle	129 700	(285,950)
Options:		
Body Rock Liners, ⅜" floor, ¼" sides, front, canopy, ½" end protection	5 579	(12,300)
Tires:		
33.00-51 (50) E-4*	3 710	(8,178)

*Available with GE 773 wheel motors only.

STEERING

Closed center full time hydrostatic power steering system using two double acting cylinders, tie rod, piston type pump and combined brake/steering system reservoir. Accumulator provides supplementary steering.

Steering Angle	36°
Turning Circle (SAE)	26.7 m (87'7")
Steering Pump Output (@ 2100 rpm)	121 l/m (32 g/m)
System Relief Pressure	17 237 kPa (2500 psi)

HOIST

Two Euclid three-stage, double-acting cylinders, inverted and outboard mounted. Separate reservoir and independent gear pump. Control valve mounted on reservoir.

Body Raise Time	18 sec
Hoist Pump Output (@ 2100 rpm)	613.2 l/m (162 g/m)
System Relief Pressure	17 237 kPa (2500 psi)

ELECTRICAL

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

AIR

Compressor w/Detroit Diesel	5.7 l/s (12.0 cfm)
Compressor w/Cummins	6.2 l/s (13.2 cfm)
Service Air Pressure	860 kPa (125 psi)
Start System Pressure	860 kPa (125 psi)
Start System Reservoir Cap.	453 litres (16 ft³)

SERVICE CAPACITIES

	litres	(gallons)
Crankcase (incl. filters)		
Detroit Diesel	136.3	(36.0)
Cummins	151.4	(40.0)
Cooling System	359.6	(95.0)
Fuel Tank	1 930.4	(510.0)
Hoist Hydraulic Tank	504.2	(133.2)
Steering Hydraulic Tank	150.3	(39.7)
Drive Axle	37.9	(10.0)

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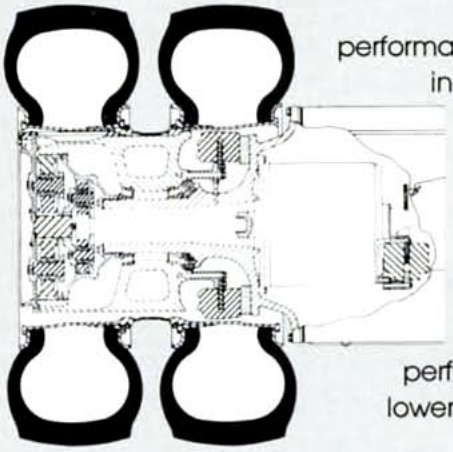
DRIVE AXLE

Euclid's drive axle is designed to reduce operating costs through simplified maintenance, high durability and increased performance. Mechanical components are separated from the GE 773 electric plug-in motor to simplify maintenance. Durability is insured with Euclid-designed heavy-duty planetaries, rugged spindles and full floating axle shafts. In addition, wheel speed brakes apply torque directly to the wheel, not through planetary gears as do armature speed brakes in conventional electric drives. Finally, performance is increased in a wide range of applications through optional tires and gear ratios. Less down time and greater performance means lower operating costs.



ALL HYDRAULIC BRAKING

Service
All hydraulic actuated.

Front Axle
B.F. Goodrich Model J6 wheel speed brakes.
(X2) Disc Diameter Each ..... 106.7 cm (42 in)
(X8) Lining Area Each ..... 516.0 cm² (80 in²)
Brake Pressure (Max.) .....17 237 kPa (2500 psi)
Each caliper has three pairs of opposing pistons.

Rear Axle
B.F. Goodrich Model J6 wheel speed brakes.
(X2) Disc Diameter Each ..... 106.7 cm (42 in)
(X8) Lining Area Each ..... 516.0 cm² (80 in²)
Brake Pressure (Max.) .....17 237 kPa (2500 psi)
Each caliper has three pairs of opposing pistons.

Emergency
Three independent hydraulic circuits within the service brake system provide emergency stopping capability conforming to SAE J1224. System is manually or automatically applied to stop vehicle within prescribed braking distance.

Parking
Spring on, hydraulic off actuated calipers operating on armature mounted discs. Calipers have dual opposing pistons. Parking calipers and discs are completely separate from service braking systems. System provides parking capabilities in compliance with J1224.

Retarder
Retardation on down grades achieved through traction motors in conjunction with General Electric resistor grid package mounted on forward deck. Cooling for resistor grid package is performed with forced air flow provided by an electric motor driven blower. Optional three step extended range retardation package is available for additional retarding capability at lower speeds.

Maximum Dynamic Retarding with continuous rated blown grids ..... 1 320 kW (1770 bhp)

Euclid's all-hydraulic brake actuation is designed for simplicity. Only about one-half of the number of components of a conventional air/oil system are required. Major valves and check points are grouped together to simplify maintenance. In addition, closed system hydraulics means no air lines which can freeze or clog with sludge.

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STANDARD EQUIPMENT

General

Air horns, dual
Body down indicator, mechanical
Body prop cable
Cast tow hooks
Fan guard
Guard rails
Mirrors, right and left
Moisture ejector
Mud flaps
Operator arm guard
Radiator grille guard
Reverse alarm
Rock ejector bars

Cab

Ash tray
Cab interior light
Cigar lighter
Emergency engine shutdown switch
Hand control valve for rear brakes
Heater and defroster
Operator seat, air ride
Operator seat belt
Passenger seat
Passenger seat belt
Rubber floor mat
Sun visor
Windshield washers
Windshield wipers

Gauges and Indicators

Air cleaner restriction gauge
Air start pressure gauge
Blower loss indicator light
Brake pad wear indicator
Coolant temperature gauge
Engine oil pressure gauge
Gauge lights rheostat
Ground fault indicator light
High beam indicator light
Hydraulic filter restriction indicator light
Parking/hand brake applied indicator light
Rear brake malfunction indicator light
Speedometer
Steering pressure gauge
Steer system malfunction indicator light
Tachometer and hourmeter
Voltmeter

Vehicle Lights

Back up light
Clearance lights
Dual combination stop and taillights
Dynamic retarding light
Engine compartment light
Headlights, four
Rear axle light
Turn signals

OPTIONAL EQUIPMENT

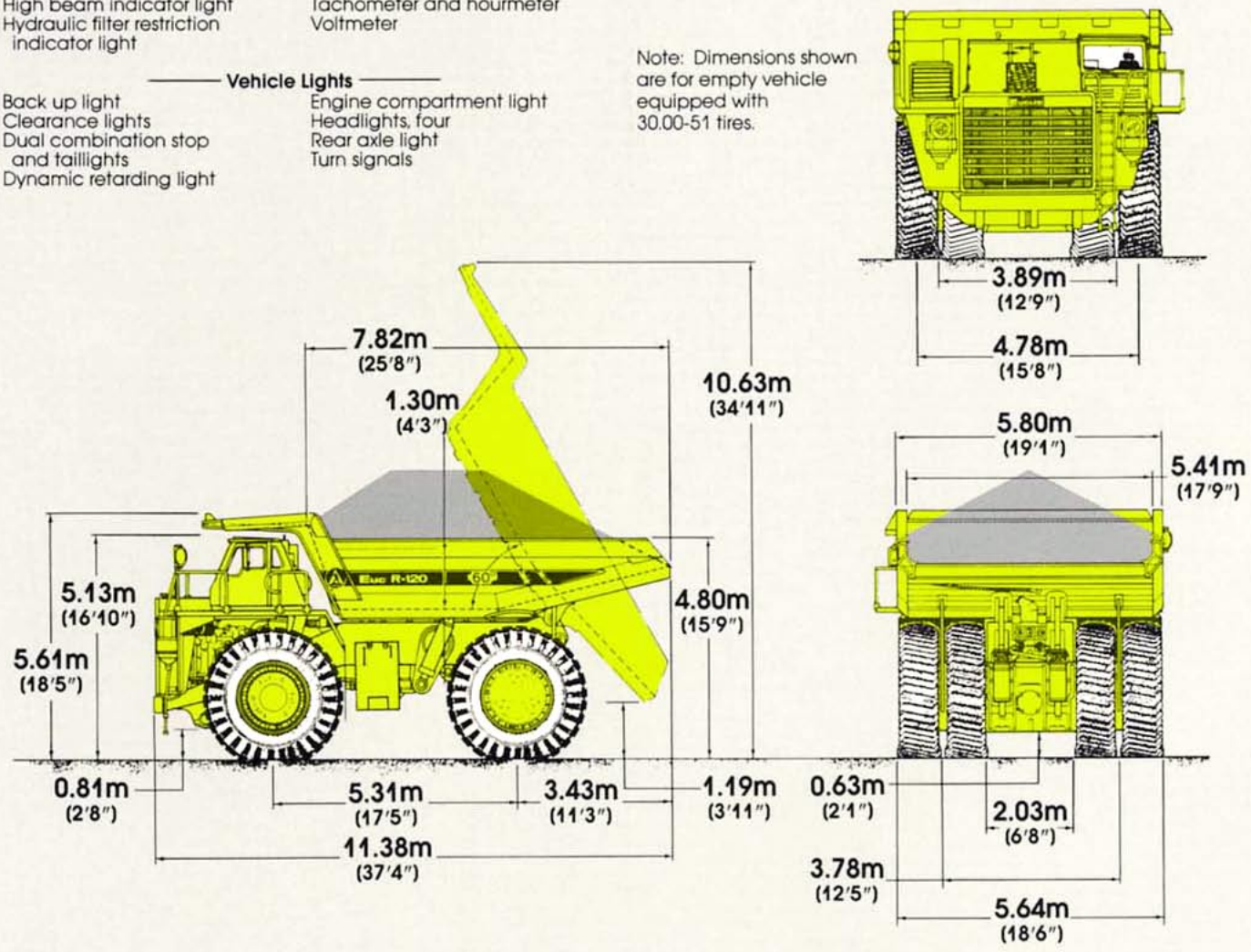
Air conditioning
Air dryer
Alcohol vaporizer
Automatic lube
Body rock liners
Body up propulsion interlock
Buddy dump
Centralized lube
Centralized service panel
Cold starting aid
Extended range dynamic retarding
Fast fueling system
Fire suppression system
Fuel gauge
Fuel tank 2 271 (600 gal.)
Ground level shut down
Hoist kickout
Hubodometer
Multifunction alarm systems
Radiator, replaceable tube
Radiator shutters
Radio
Right hand arm guard
Thermatic fan

Standard and optional equipment may vary from country to country.

Special options list and other literature is available from your nearest Euclid Distributor.

Product improvement is a continuing Euclid project. Therefore, all specifications are subject to change without notice.

Note: Dimensions shown are for empty vehicle equipped with 30.00-51 tires.



Note: Illustration may include optional equipment.

The Euclid Field Heap illustrated in the side view above maintains a 2:1 heap ratio from the floor/tail chute junction to the peak of the load profile. The SAE 2:1 heap ratio is actually a 1:1 heap ratio from floor/tail junction to the top body edge, then switches to a 2:1 heap ratio to the load peak. The Euclid field heap is more representative of field loading practices and payload distribution. Euclid body capacity ratings are based on the field heap philosophy.

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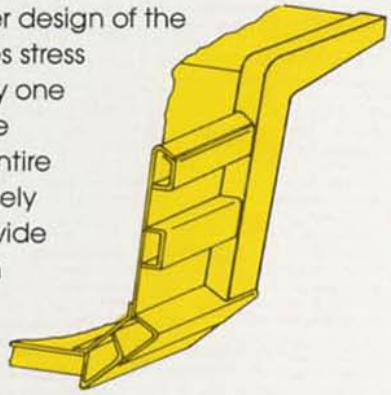
BODY

Chute type, horizontal floor, sloped tail, closed loop exhaust heated, all welded steel construction. High yield strength 689 N/mm² (100,000 psi) alloy steel used in thickness of:

Floor ..... 19 mm (¾")
Front ..... 10 mm (⅜")
Sides ..... 10 mm (⅜")
Canopy ..... 5 mm (3/16")

High yield strength 689 N/mm² (100,000 psi) alloy steel also used for canopy side members and floor stiffeners. Body is rubber cushioned on frame.

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 stiffeners provide additional protection by minimizing distances between unsupported areas.



FRAME/SUSPENSION

Frame
Box section main frame rails bridged by three crossmembers, front bumper and front suspension tube. Rails are constant taper, constructed of 689 N/mm² (100,000 psi) yield strength steel. Two rear crossmembers have integral suspension and drive axle mountings. Crossmember to frame rail junctions use large radii to minimize stress.

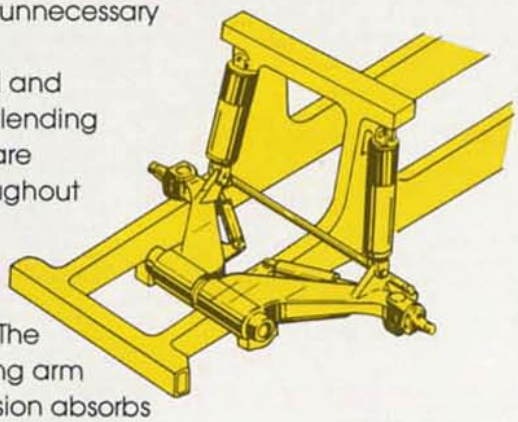
Front Suspension
Independent trailing arm for each front wheel. Ride cylinders containing energy-absorbing compressible fluid are mounted between trailing arm and frame. Rebound feature included.

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 lateral link between frame and drive axle. Rear mounted ride struts containing energy-absorbing compressible fluid suspend drive axle from frame. Integral rebound feature included.

Maximum wheel oscillation ..... 8°

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.

Large radii and advanced blending techniques are utilized throughout the frame, minimizing stress concentrations. 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 assures a more stable, comfortable ride.



COMMAND CAB

■ **Constructed for Maximum Durability.** The fully rigid structural steel cage is three-point rubber mounted for vibration isolation. Steel exterior and thick-walled, easy to clean ABS interior panels are attached. ■ **Designed for Serviceability.** The easily removable front access panel reveals a main terminal contact strip, circuit breaker and fluid reservoirs for master brake cylinder and windshield washer fluid. Accessibility to the gauge and indicator areas is provided by a top dashboard cover. ■ **Arranged for Safety and Ease of Operation.** Generous use of glass provides maximum haul road visibility. Exterior grab rails are standard. A wrap-around dashboard puts controls within reach and visual contact. The full complement of easy to read gauges with international markings are supplemented by a digital tachometer and speedometer, and warning lights and alarms for all major functions. ■ **Unparalleled Operator Comfort and Convenience for Increased Productivity.** This comfort designed cab includes the Isringhausen six-way adjustable air seat, tilt steering wheel, in-dash duct work for filtered ventilation, and a tumblehome acoustical design for reduced interior sound levels which rival those found in better automobiles. The seat back on the fully upholstered trainers seat folds down to serve as a tray at break time.

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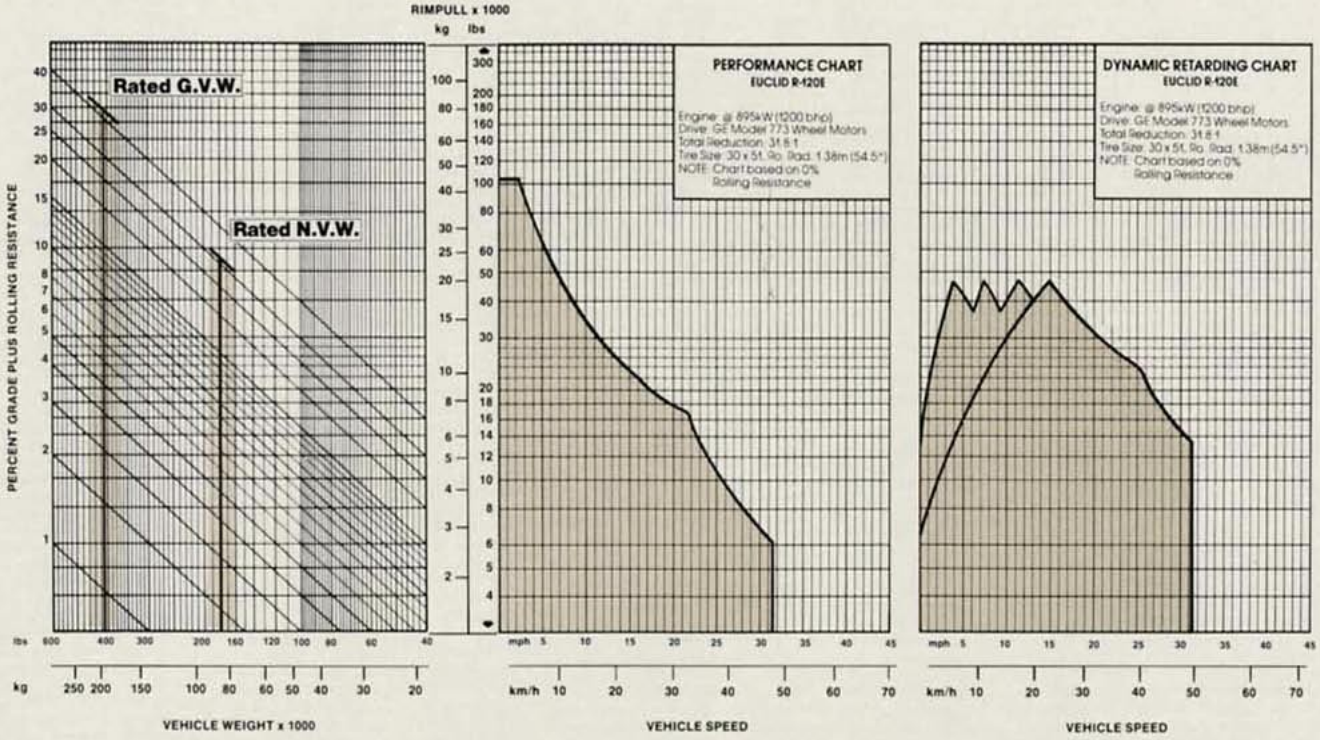

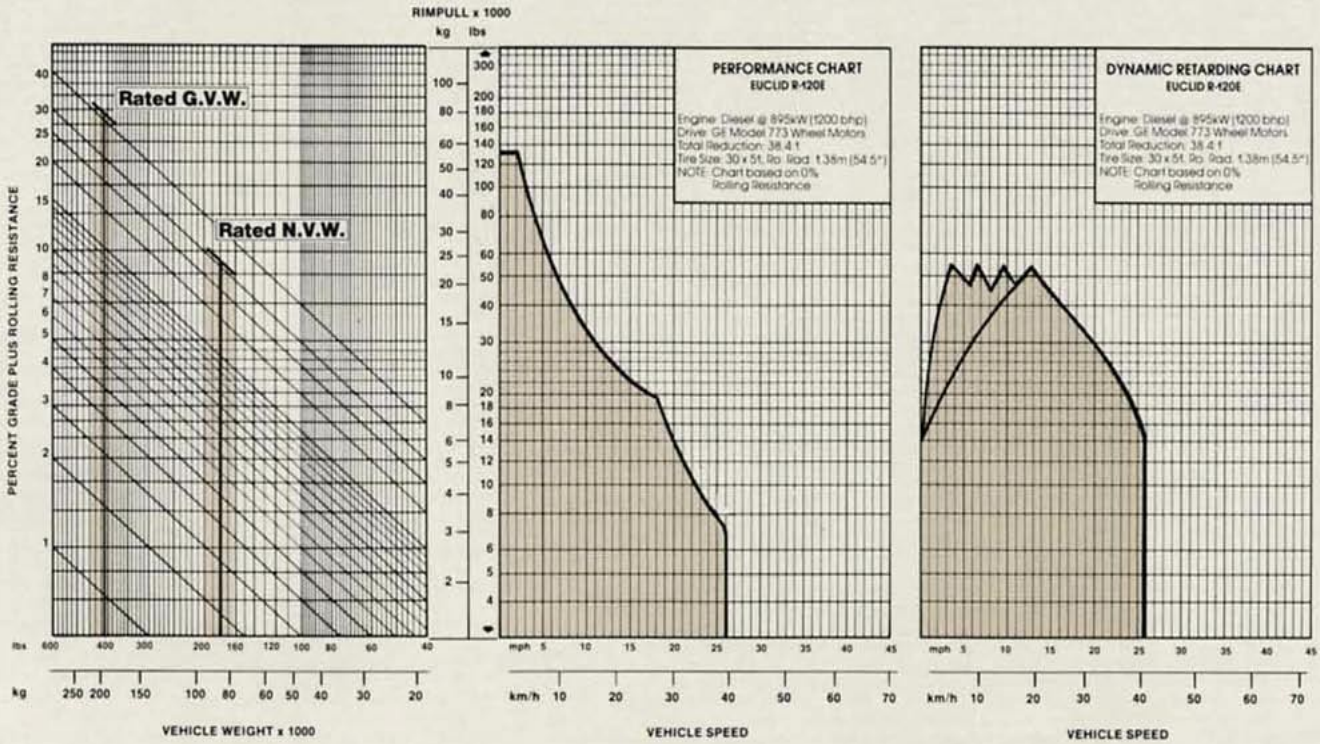

INSTRUCTIONS

1. FIND TOTAL RESISTANCE ON LEFT VERTICAL SCALE.
2. READ DOWN SLANTED LINE TO VEHICLE WEIGHT LINE.
3. FROM INTERSECTION READ HORIZONTALLY TO THE RIGHT TO INTERCEPTION WITH PERFORMANCE OR RETARDER CURVE.
4. READ DOWN FOR VEHICLE SPEED.

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