

Euclid R85 B



MAXIMUM GMW
325,000 LBS. (147 400 KG)

PAYLOAD RANGE
85.0 TO 94.1 TONS
(77.1 TO 85.4 TONNES)

WET DISC BRAKE

COMMAND CAB II

ALL-HYDRAULIC BRAKING

COOLING CENTER:
SWINGOUT GRILL
AIR TO OIL TRANSMISSION
COOLER

HIGH HARDNESS,
HIGH STRENGTH STEEL
BODY

ATEC AUTOMATIC SHIFT
CONTROL

NEOCON SUSPENSION

SEPARATE HYDRAULIC
RESERVOIRS



VOLVO BM
MICHIGAN
EUCLID



ENGINE

Model Cummins KT38-C
 Type 4 Cycle
 Aspiration Turbocharged
 Rated Output (SAE) 925 bhp (690 kW @ 2100 rpm)
 Flywheel Output (SAE) 865 bhp (645 kW @ 2100 rpm)
 Number of Cylinders 12
 Bore & Stroke 6.25" x 6.25" (159mm x 159mm)
 Displacement 2300in³ (37.7 liters)
 Max. Torque 3020 lb-ft (4095 N-m @ 1300 rpm)
 Starting Electric



TRANSMISSION

Allison DP-8963, 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 Differential mph	(km/h)	3.15 Differential mph	(km/h)
1	4.24	5.78	(9.30)	6.84	(11.01)
2	2.32	10.56	(16.99)	12.51	(20.12)
3	1.69	14.50	(23.33)	17.17	(27.63)
4	1.31	18.71	(30.10)	22.15	(35.64)
5	1.00	24.50	(39.43)	29.02	(46.69)
6	0.73	33.57	(54.01)	39.75	(63.96)
R	5.75	4.26	(6.86)	5.05	(8.12)



DRIVE AXLE

Full floating axle shafts, double reduction provided by Euclid Model 2650 differential and single reduction planetary with balanced life gears in each wheel. Parallel link type mounting with "A"-frame top member which reduces "roll-steer" effect.

Ratios	Standard	Optional
Differential	3.73	3.15
Planetary	6.63	6.63
Total Reduction	24.73	20.88

Maximum Speeds

with 24.00-49 Tires	33.6 mph	39.8 mph
.....	(54.0 km/h)	(64.0 km/h)
with 27.00-49 Tires	36.6 mph	43.3 mph
.....	(58.9 km/h)	(69.7 km/h)



LOAD CAPACITY

	yd ³	(m ³)
Struck (SAE)	46.6	(35.6)
Heap 3:1	60.2	(46.0)
Heap 2:1	67.1	(51.3)
Payload	Ton	Tonne
From	85.4	(77.1)
Maximum	94.1	(85.3)

Based on material density, VME will size an optional body. Consult VME Market Support.



WEIGHTS

	lb	(kg)
Chassis with Hoists	106,150	(48 150)
Body	25,850	(11 700)
Net Machine Weight	132,000	(59 880)
Front Axle	61,400	(27 850)
Rear Axle	70,600	(32 050)
Maximum GMW with Selected Tires		
24.00-49(48)E-3		
Max. Gross Machine Weight	315,300	(143 020)
Net Machine Weight	132,000	(59 880)
24.00 R49 RL-3**		
Max. Gross Machine Weight	303,000	(137 440)
Net Machine Weight	133,450	(60 540)
27.00-49(42)E-4		
Max. Gross Machine Weight	325,000	(147 420)
Net Machine Weight	136,850	(62 080)
Maximum Payload	188,150	(85 340)
Loaded Weight Distribution		
Front - 33% Rear - 67%		
Machine weight based on 50% fuel		
Maximum gross machine weight not to exceed		
325,000 lbs. (147 420 kg) including options, fuel and payload.		

Options:

Body Liners, 400 BHN Steel, Complete: 3/8" (10mm) floor, 3/8" (10mm) corners, 1/4" (6mm) sides, front, end protection, 1/4" (6mm) canopy, 3/8" (10mm) top rails	9,020	(4 100)
Body Liners, 400 BHN Steel, Complete: 5/8" (16mm) floor, 5/8" (16mm) corners, 5/16" (8mm) sides, front, end protection, 1/4" (6mm) canopy, 3/8" (10mm) top rails	13,100	(5 900)
Tires: (set of 6)		
27.00-49(42)E-4	4,850	(2 200)
27.00-49(48)E-4	5,890	(2 672)
27.00 R49 RL-3**	5,890	(2 672)



TIRES

Standard - Front and Rear	Rim Width
Goodyear 24.00-49(48)E-3	17" (432mm)
Optional	
Goodyear 27.00-49(42)E-4	19.50" (495mm)
Plus optional Goodyear tire types, treads and ply ratings.	



STEERING

Closed center full time hydrostatic power steering system using two double-acting cylinders, piston type pump and brake/steering system reservoir. Accumulator provides supplementary steering in accordance with SAE J53, ISO 5010.

Steering Angle	38°
Turning Diameter (SAE)	74'4" (22.65m)
Steering Pump Output (@ 2,100 rpm)	24 g/m (91 l/m)
System Operating Pressure	2,500 psi (17 238 kPa)



AIR

Compressor	12.0 cfm	(5.66 l/s)
Service Air		
Pressure	125 psi	(862 kPa)
Reservoir Capacity	1.1 ft ³	(31.4 litres)



HYDRAULICS

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

Body Raise Time	13 sec.
Body Float Down Time	17 sec.
Brake Cooling Pump Output	120 g/m (455 l/m)
Hoist Pump Output	109 g/m (413 l/m)
System Relief Pressure	2,500 psi (17 238 kPa)



ALL -HYDRAULIC BRAKING

Service

All-hydraulic 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.

Front Axle - Dry Disc

BFGoodrich Model J6 wheel speed brakes.	
Disc Diameter Each (2 discs/axle)	40 in (101.6cm)
Lining Area Per Axle	640 in ² (4 129cm ²)
Brake Pressure (Max.)	2000 psi (13 790 kPa)

Rear Axle - Oil Cooled Wet Discs

Brake Surface Area Per Axle	12,282 in ² (79 243cm ²)
Brake Pressure (Max.)	1525 psi (10 515 kPa)

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 behind transmission. Automatically applied if air pressure is lost. Manually controlled from shift console.

Size	17.25" x 4" (438mm x 102mm)
Lining Area	190 in ² (1 226 cm ²)
Brake systems comply with SAE J1473 and ISO 3450.	

Retarder

Foot operated valve controls all-hydraulic actuation of oil-cooled wet disc brakes on rear axle. System provides constant speed control on downhill hauls.

Capacity (Continuous)	1275 bhp (950 kW)
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The Euclid R85 B is equipped with an all-hydraulic actuated braking system providing increased braking force and quick system response. The brake control valve is actuated directly at the brake pedal. The 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.



COMMAND CAB II

Structurally Sound. Command Cab II, 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 three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator's compartment.

Ease of Operation and Systems Monitoring.

A wrap-around style dashboard positions the controls within easy reach and visual contact. A full compliment of easy-to-read, color banded gauges with international symbols and



centrally positioned tachometer, speedometer and bank of warning lights provide the operator information required to safely pilot the machine.

Excellent Serviceability. A removable front closure allows easy access to electrical components, service brake valve, retarder valve, and washer bottle. All electrical junction points are located in the front compartment. The upper dash utilizes four (4) removable panels to house gauges and customer options, with each individually accessible.

Designed for Operator Comfort. Command Cab II standard equipment includes a six-way adjustable air seat, tilt steering wheel, filtered ventilation and a fully upholstered trainers seat that folds down to reveal a tray for lunch boxes and other gear.



SERVICE CAPACITIES

	gallons	(litres)
Crankcase (incl. filters)	37.0	(140.0)
Transmission (incl. filters)	26.0	(98.4)
Cooling System	71.0	(268.7)
Fuel Tank	265.0	(1003.0)
Hydraulic		
Hoist Tank	74.0	(280.0)
Steering Tank	30.0	(114.0)
Differential	39.0	(147.6)
Planetaries	36.0	(136.3)



FRAME

Formed rectangular rails with section height tapered from rear to front, bridged by four cross members, front bumper and front suspension tube. Cross member to frame junctions use large radii to minimize stress. Frame utilizes 45,000 psi (310 N/mm²) yield strength steel.

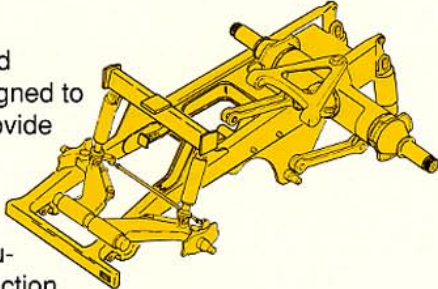


SUSPENSION

Front and Rear 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. The cast rear axle housing has a parallel link mounting with an A-Frame top member. Provides a reduced "roll-steer" effect which results in a more stabilized ride and contributes to lower overall frame stress levels. 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 formed rectangular 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.



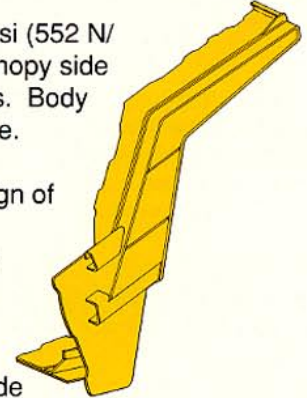
BODY

Flat chute type, sloped floor, continuously exhaust heated. High tensile strength 190,000 psi (1310 N/mm²) alloy steel 400 BHN used in thickness of:

Floor	5/8" (16mm)
Front	5/16" (8mm)
Sides	5/16" (8mm)
Canopy	3/16" (5mm)
Corner	7/16" (11mm)

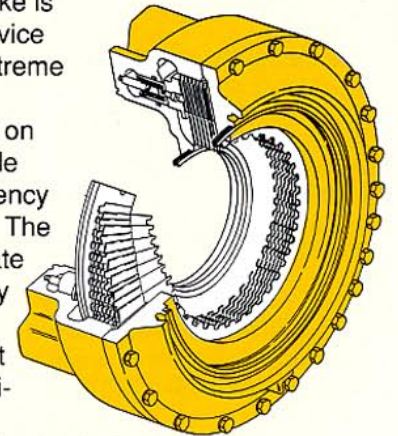
High yield strength 80,000 psi (552 N/mm²) alloy steel used for canopy side members and floor stiffeners. Body is rubber cushioned on frame.

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 floor stiffeners provide additional protection by minimizing distances between unsupported areas.



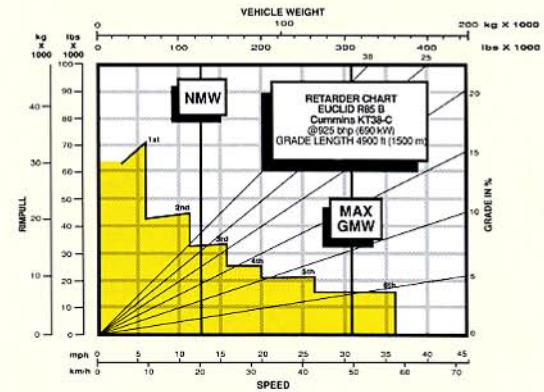
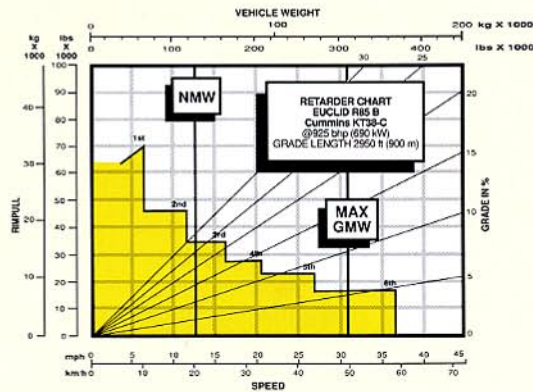
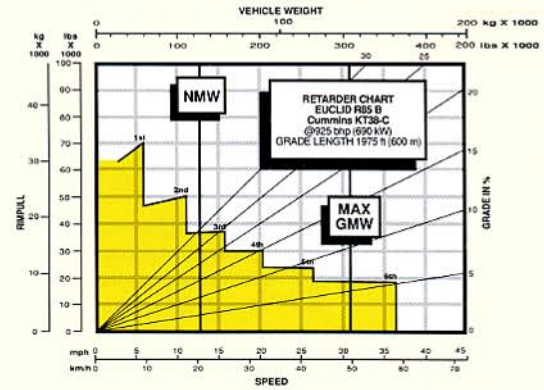
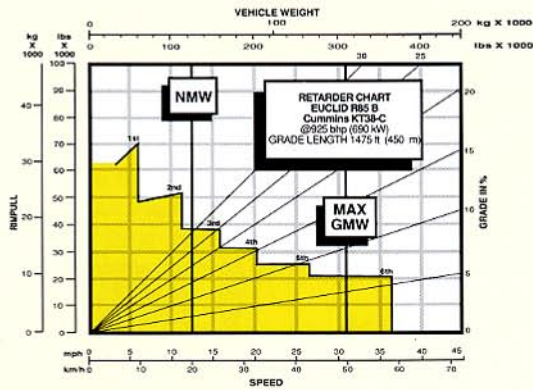
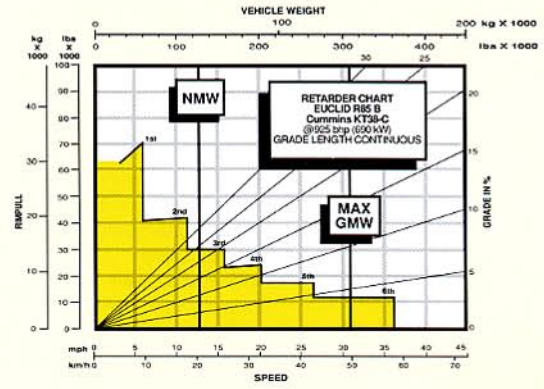
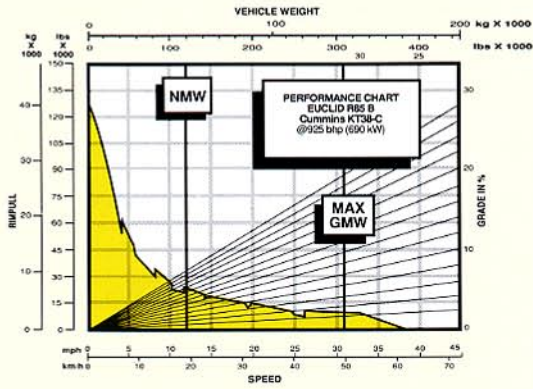
WET DISC BRAKE

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 and continuously oil-cooled. The sealed design protects against environmental contamination for prolonged service life. The wet disc brake is designed with automatic retraction and self-adjusting features to prevent drag and compensate for wear. Separate pedals activate the service braking and retarding functions.



ELECTRICAL

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



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. This publication does not necessarily reflect the standard version of the machine.

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