

Euclid R40



MAXIMUM GMW
68,040 KG (150,000 LBS)

PAYLOAD CAPACITY
37.3 TONNES (41.1 TONS)

CUMMINS QUANTUM ENGINE
525 HORSEPOWER
EMISSION CERTIFIED

COMMAND CAB III

ALL-HYDRAULIC BRAKING
WET DISC BRAKES

SWING-OUT GRILLE

CONTRONIC
MONITORING SYSTEM

AUTOMATIC TRANSMISSION
TRIM BOOST SOFT SHIFT
TWO-SPEED REVERSE

ACCU-TRAC SUSPENSION
NEOCON STRUTS

LOW LOADING HEIGHT

RADIAL TIRES

EUCLID



ENGINE

Make	Cummins			
Model	QTA19C-525E			
Type	4 Cycle			
Aspiration	Turbocharged/Aftercooled			
Rated Output (SAE @ 2100 rpm)	kW	bhp	392	525
Flywheel Output (SAE @ 2100 rpm)	kW	bhp	362	486
No. Cylinders	6			
Bore and Stroke	mm 159 x 159 6 1/4" x 6 1/4"			
Displacement	liters	in ³	18,9	1,150
Max. Torque @ 1300 rpm	N•m	ft lb	2,407	1 775
Torque Rise Starting	30% Electric			



TRANSMISSION

Allison CLT-5963. Planetary type, full automatic shifting. Integral torque converter, with automatic lock-up in all ranges. Remote mounted. 6 forward speeds, 2 reverse. Allison Transmission Electronic Control shift system.

Maximum Speeds @ governed engine speed

Gear	Ratio	Standard 3.13:1 Diff.		Optional 2.81:1 Diff.	
		km/h	mph	km/h	mph
1	4.00	10,83	6.73	12,07	7.05
2	2.68	16,17	10.05	18,02	11.20
3	2.01	21,57	13.40	24,03	14.93
4	1.35	32,11	19.95	35,76	22.22
5	1.00	43,36	26.94	48,28	30.00
6	0.67	64,70	40.20	72,02	44.75
R1	5.12	8,47	5.26	9,43	5.86
R2	3.46	12,52	7.78	13,95	8.67



DRIVE AXLE

Full floating axle shafts, reduction provided by Euclid Model 2052 differential and single reduction planetary with balanced life gearing in each wheel to maximize gear life.

Optional Active Traction Control (ATC) available.

Ratios	Standard	Optional
Differential	3.13:1	2.81:1
Planetary	5.25:1	5.25:1
Total Reduction	16.43:1	14.75:1



TIRES

Standard - Front and Rear		Rim Width
18.00R33(**) E3	mm	in 330 13
Optional tires, brands and treads available.		



ELECTRICAL SYSTEM

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.

Standard CONTRONIC monitoring and central warning system with built-in diagnostics. An optional Liquid Crystal Display is available.



LOAD CAPACITY

Struck (SAE)	m ³	yd ³
Heap 3:1	17,0	22.2
Heap 2:1 (SAE)	21,6	28.2
	23,9	31.2

Payload	Tonne	Ton
Maximum	37,3	41.1

Based on material density, Euclid will size an optional body.



WEIGHTS

	kg	lb
Chassis with Hoists	23 104	50,935
Body	7 666	16,900
*Net Machine Weight	30 769	67,835
Payload	37 269	82,165
Maximum Gross Machine Weight	68 039	150,000

Weight Distribution	FRONT	REAR
Empty	50.1%	49.9%
Loaded	33.0%	67.0%

*Options/Approximate Change in

Net Machine Weight:

Body Liners, Complete	kg	lb	2 188	4,824
Floor	mm	in	10	3/8"
Side, front, corners, end protection	mm	in	6	1/4"
Top rails	mm	in	10	3/8"



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 J53, ISO 1766. Tilt/telescopic steering wheel with 35 degrees of tilt and 2.25" (5715 mm) telescopic travel.

Steering Angle				39°
Turning Diameter (SAE)	m	ft	16,15	53.0
Steering Pump Output	l/m	gpm	95,7	25.3
Operating System Pressure	kPa	psi	18 961	2,750



HYDRAULIC SYSTEM

Two Euclid two-stage, double-acting cylinders, with cushioning in retraction, inverted and outboard-mounted. Separate Hoist/Brake Cooling reservoir and independent tandem gear pump. Control valve mounted on reservoir.

Body Raise Time	s		11.2	
Brake Cooling Pump Output (@ 2100 rpm)	l/m	g/m	200,3	52.9
Hoist Pump Output (@ 2100 rpm)	l/m	g/m	301,4	79.6
System Relief Pressure	kPa	psi	17 237	2500



BRAKING SYSTEM

Brake system complies ISO 1768.

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 - Carlisle M6 Dry Discs

Disc Diameter Each (2 discs/axle)	cm	in	67,3	26.5
Brake Surface Area	cm ²	in ²	4 129	640
Lining Area Per Axle	cm ²	in ²	1 394	216
Brake Pressure (Max.)	kPa	psi	15 859	2,300

Rear Axle - Oil-Cooled Wet Discs

Brake Surface Area Per Axle	cm ²	in ²	37 318	5,784
Brake Pressure (Max.)	kPa	psi	6 895	1,000

Optional Increased Capacity

Brake Surface Area Per Axle			49 758	7,712
Brake Pressure (Max.)			6 895	1,000

Secondary

Two independent circuits within the service brake system provide back-up stopping capability. System is manually or automatically applied to stop machine within a 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"
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Retarder

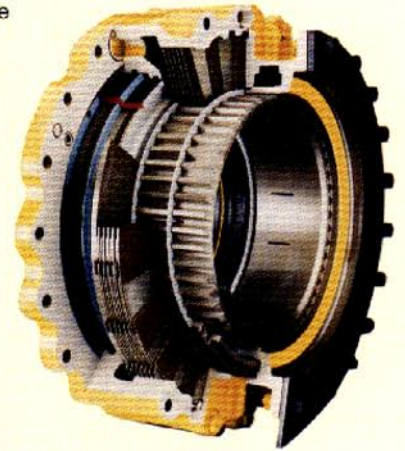
Foot operated valve controls all-hydraulic actuation of oil-cooled wet disc brakes on rear axle. System provides modulated pressure to rear brakes for constant speed control.

Capacity		kW		hp
Continuous		484		649
Intermittent		969		1300



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 standard 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 Euclid, 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 79 dB(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	Hoist interlock
All hydraulic braking	Hoist tank sight gauge
Automatic transmission shifting	Mirrors right and left
Body down indicator, mechanical	Mud flaps
Body down speed restriction	Neocon suspension struts
Body prop pins	Park brake interlock
Canopy spill guard	Radiator grill guard
Continuous heated body	Reverse alarm
Electric horns	Rock ejector bars
Electric start	Steering accumulator
Electronic engine controls	Steering tank sight gauge
Fan guard	Swing-out grille
Fenders	Tires 18.00R33(**) E3
Fixed steering stops	Tow pins, front/rear
Halogen lights	Transmission sight gauge
	Two-speed reverse

Cab

Acoustical lining	Integrated transmission diagnostics
Air filtration/replaceable element	Load counter
Ash tray	Service intervals
Cab interior light	Throttle position
Cigar lighter	Total engine hours
Door locks	Total idle hours
Full trainer seat	Voltmeter
Heater and defroster, 26,000 Btu	Modular instrumentation
Integral ROPS/FOPS cab	Mechanical suspension,
ISO driver envelope	6 position seat
Liquid Crystal Display* (CONTRONIC)	Quick connect test ports
Boost pressure	Roll down windows
Clutch pressure	Rubber floor mat
Distance traveled	Safety glass
Engine oil pressure	Seat belts retractable
Fuel gauge	Sun visor
Fuel pressure	Tilt/telescopic steering
Gear selection	Tinted glass, all windows
Injector timing rail-pressure	Trainer seat belt
Intake manifold temperature	12 volt 30 amp circuit
Integrated engine diagnostics	Windshield washer
	Windshield wiper

Gauges and Indicators

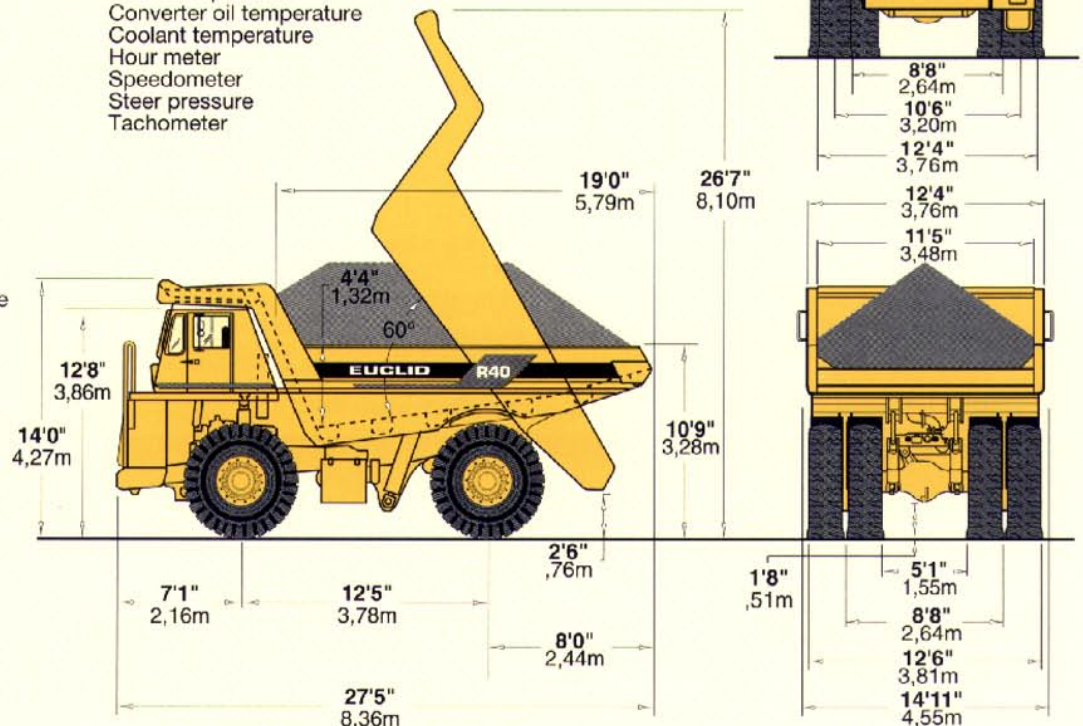
Air cleaner restriction	Alternator
Brake system low pressure	Clutch low pressure
Converter temperature	Coolant level
Coolant temperature	Engine oil pressure
Engine service	Engine shutdown
High beam	Hydraulic filter restriction
Parking brake applied	Retarder temperature
Steer system filter restriction	Steer system high/low pressure
Steer temperature	Transmission filter restriction
Transmission malfunction	Turn signals/hazard

Gauges:

Brake temperature
Converter oil temperature
Coolant temperature
Hour meter
Speedometer
Steer 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	Hoodsides (rubber)
Air suspension seat	Kim hotstart pre-heaters
Active traction control (ATC)	Lube system, automatic
Body liners (400 BHN) plates	Lube system, centralized
Body sideboard extensions	Main battery switch
Canopy spill guard extension	Muffler, deck mounted
Cold start aid	Radiator shutters
Decals, French, German & Spanish	Radiator, field replaceable
Differential, 2.81:1 ratio	Radio & tape player
Engine compartment lights	Start lockout switch
Engine heater (oil & coolant)	Tires, (type & rating)
Extra reverse alarm	Transmission guard
Fast coupling service center	Transmission retarder
Fast fueling	Unit sound suppression
Front brake cut-off switch	
Guard rails	

* English, French, German, Spanish, and Swedish Language selectable.

Standard and optional equipment may vary from country to country. Special options provided on request. Consult Euclid Market Support.

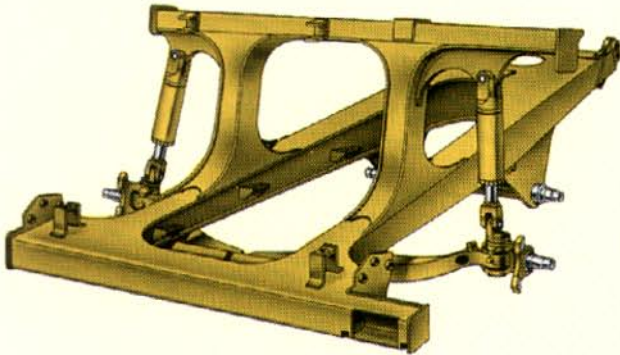


SUSPENSION

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 R40. Lotus Engineering, a world leader in suspension design, reviewed 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 for purer 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 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. Improved control means better machine maneuverability.

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 insuring 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.



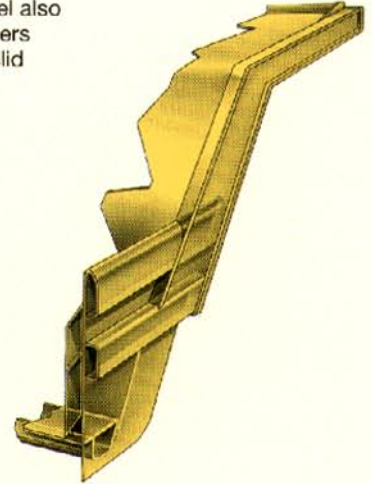
BODY

Body is flat chute type, sloped floor, rubber cushioned, continuously exhaust heated. High tensile strength 400 BHN alloy steel used.

Thicknesses

	mm	in
Floor	18	11/16"
Front	10	3/8"
Sides	8	5/16"
Canopy	6	1/4"

High yield strength alloy steel also used for canopy side members and floor stiffeners. The Euclid horizontal stiffener design minimizes stress concentrations. Load shocks are dissipated over the entire body length. Closely spaced stiffeners provide additional protection by minimizing distances between unsupported areas.



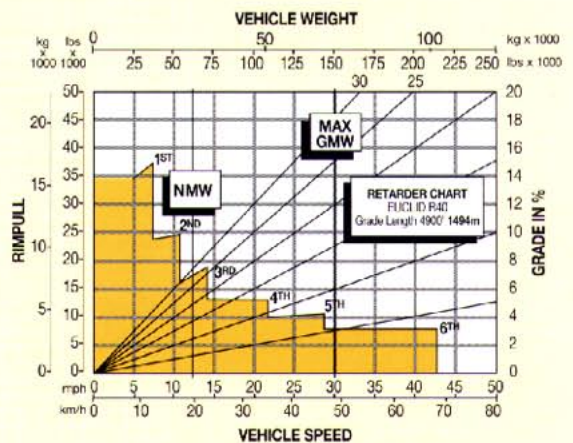
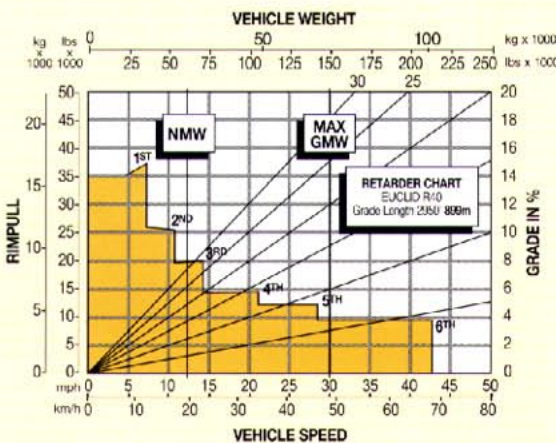
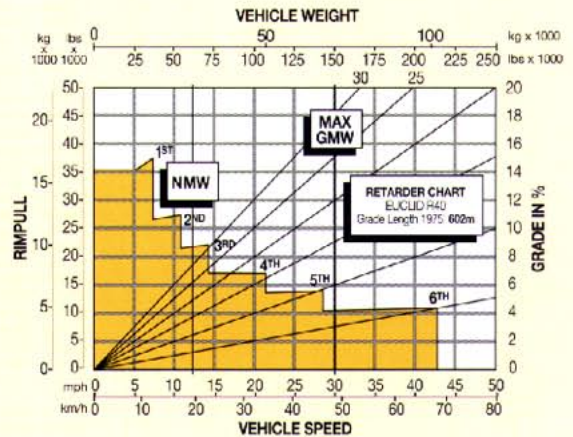
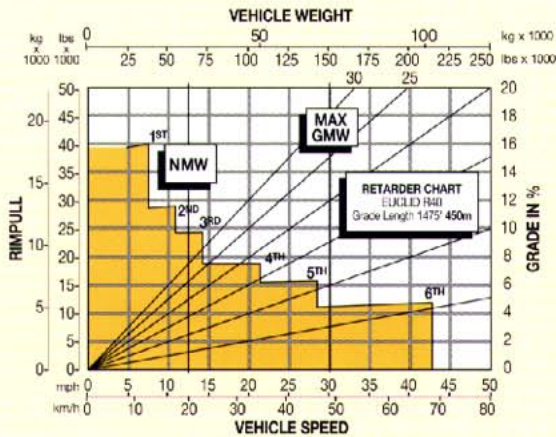
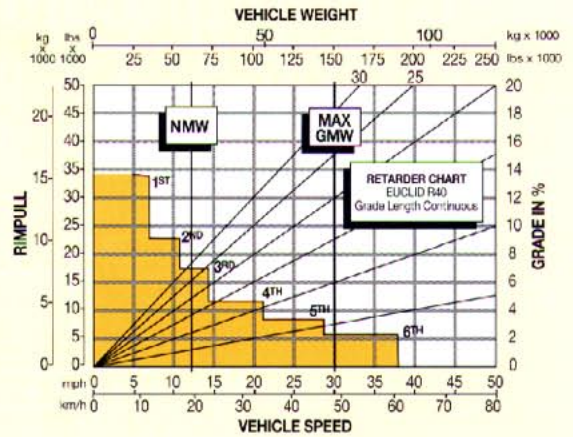
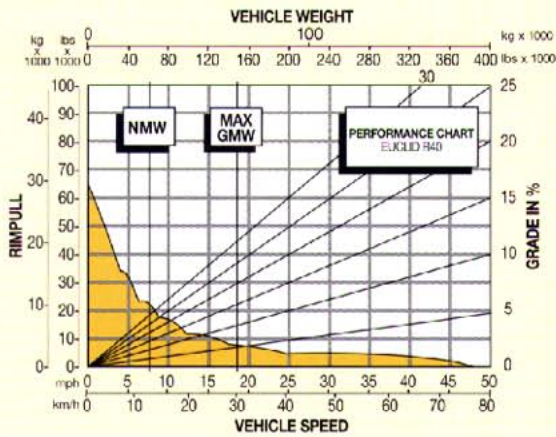
SERVICE CAPACITIES

	liters	gallons
Crankcase (includes filters)	151,4	40.0
Transmission	70,0	18.5
Cooling System	189,3	50.0
Fuel Tank	454,0	120.0
Hydraulics		
Hoist System Fill	265,0	70.0
Steering System Fill	113,0	30.0
Drive Axle	50,3	13.1
Hydraulic Brake System	70,0	18.5
Windshield Washers	5,7	1.5



FRAME

Full fabricated box section main rails with section height tapered from rear to front, being 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/mm² **45,000 psi** yield strength alloy steel that is robotically welded to ensure high quality welds.



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 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.

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