

Euclid R190



MAXIMUM GMW
683,000 LBS
(309 769 KG)

PAYLOAD RANGE
190 TO 209.5 TONS
(172.3 TO 190.0 TONNES)

ELECTRIC DRIVE
GE 788 WHEEL MOTOR
EXTENDED RANGE
ELECTRIC DYNAMIC
RETARDING

ALL-HYDRAULIC BRAKING

TWO MAN CAB

NEOCON SUSPENSION

SEPARATE HYDRAULIC
RESERVOIRS FOR
STEERING AND HOIST



VOLVO BM
MICHIGAN
EUCLID



ENGINES

Make	Cummins	Detroit Diesel
Model	KTTA50-C	16V-149TIB
Type	4 Cycle	2 Cycle
Aspiration	Turbocharged	Turbocharged
Rated Output		
(SAE)	*1800 bhp (1342 kW @ 1900 rpm)	*1800 bhp (1342 kW @ 1900 rpm)
Flywheel Output		
(SAE)	1650 bhp (1230 kW @ 1900 rpm)	1650 bhp (1230 kW @ 1900 rpm)
No. Cylinders	16	16
Bore & Stroke	6-1/4" x 6-1/4" (159mm x 159mm)	5-3/4" x 5-3/4" (146mm x 146mm)
Displacement	3067 in ³ (50.3 litres)	2384 in ³ (39.1 litres)
Max. Torque	5223 lb-ft (7082 N·m @ 1500 rpm)	5290 lb-ft (7172 N·m @ 1400 rpm)
Starting	Air	Air
*Optional	2,000 hp version of above	



ELECTRIC DRIVE

Controls
General Electric Statex SSL System.

Alternator
General Electric Model GTA-22F. Direct mounted to engine.

Wheel Motors
General Electric Model 788BS complete with planetary assembly in each rear wheel.

Ratio 26.08:1
Max Speed 32.7 mph (52.6 km/h)

Module Package
Radiator with fan, engine, alternator and blower mounted on sub frame within main frame.



TIRES

Standard - Front and Rear	Rim Width
Goodyear 36.00R51**RL-4H	26.0" (660 mm)
Optional - Front and Rear	
Goodyear 37.00R57**RL-4H	27.0" (686 mm)

Plus optional Goodyear tire types, treads, and ply ratings.



LOAD CAPACITY

	yd³	(m³)
Struck (SAE)	101.6	(77.7)
Heap 3:1	127.5	(97.5)
Heap 2:1 (SAE)	139.7	(106.8)

Based on material density, Euclid will size an optional larger or smaller body to assure 190 short tons (172 metric tonnes) capacity. Consult Euclid's Sales Engineering Department.



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.



HYDRAULICS

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

Body Raise Time 26 sec.
Hoist Pump Output (@ 1900 rpm) 134 g/m (507 l/m)
System Relief Pressure 2,750 psi (18 962 kPa)



WEIGHTS

	lb	(kg)
Chassis with Hoists	203,740	(94 416)
Body	48,500	(22 000)
Net Weight	252,240	(114 416)
Front Axle	116,340	(52 772)
Rear Axle	135,900	(61 644)
Payload	380,000	(172 368)
Gross Weight	632,240	(286 784)
Front Axle	208,640	(94 639)
Rear Axle	423,600	(192 145)
Maximum GMW:		
36.00R51	648,000	(293 895)
37.00R57	683,000	(309 769)
Options:	lb	(kg)
Body Liners, Complete:		
3/4" (19 mm) floor, 5/8" (16 mm) corners,		
3/8" (10 mm) sides, front and top rails,		
1/4" (6 mm) canopy	23,000	(10 433)
Tires:		
37.00R57**RL-4H	11,000	(4 990)

Note:
Maximum GMW is subject to G.E. approval for a given application.



STEERING

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

Steering Angle 41°
Turning Diameter (SAE) 84 ft (25.6m)
Steering Pump Output (@ 1,900 rpm) 30 g/m (115 l/m)
Operating System Pressure 2,750 psi (18 790 kPa)



AIR

Compressor

Detroit Diesel	12.0 cfm	(5.7 l/s)
Cummins	13.0 cfm	(6.1 l/s)

Service Air

Pressure	125 psi	(860 kPa)
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Start System

Pressure	125 psi	(860 kPa)
Reservoir Capacity	20 ft ³	(566 litres)



SERVICE CAPACITIES

	gallons	litres
Crankcase (incl. filters)		
Cummins	56.6	(214.2)
Detroit Diesel	44.0	(166.5)
Cooling System	115.0	(435.3)
Fuel Tank	754.0	(2853.9)
Hydraulics		
Hoist Tank	133.2	(504.2)
Steering Tank	39.7	(150.3)
Wheel motors	14.0	(53.0)



BODY

Flat floor, sloped tailchute, continuously exhaust heated. High yield strength 100,000 psi (689 N/mm²) alloy steel used in thickness of:

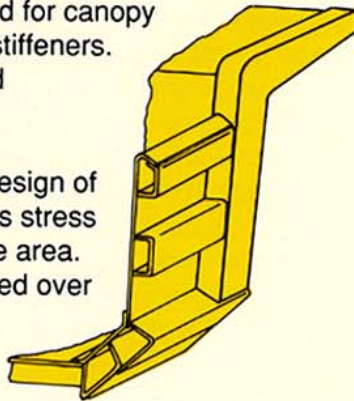
Floor	3/4" (19mm)
Front	3/8" (10mm)
Sides	3/8" (10mm)
Canopy	1/4" (6mm)

High yield strength 100,000 psi (689 N/mm²) 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

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



ALL-HYDRAULIC BRAKING

Service

All-hydraulic actuated. Three calipers per front disc, one caliper per rear disc. Calipers are internally ported, each containing three pairs of opposing pistons.

Front Axle

BFGoodrich Model J6 wheel speed brakes.

Disc Diameter Each (2 discs/axle)	42 in (106.7 cm)
Lining Area Per Axle	960 in ² (6 194 cm ²)
Brake Pressure (Max.)	2500 psi (17 237 kPa)

Rear Axle

BFGoodrich series "F" armature speed brakes.

Disc Diameter Each (4 discs/axle)	25 in (63.5 cm)
Lining Area Per Axle	480 in ² (3 097 cm ²)
Brake Pressure (Max.)	1300 psi (8 967 kPa)

Secondary

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

Parking

Spring-on, hydraulic-off brake heads provide parking capabilities in compliance with SAE J1224.

Retarder

Retardation on down grades achieved through D.C. wheel motors in conjunction with General Electric resistor grid package located on cab deck. Cooling for this grid package is achieved with forced air flow provided by dual blowers driven by a single electric motor. 3-step extended range retardation package is standard.

Maximum Dynamic Retarding with continuous rated blown grids	2800 bhp (2088 kW)
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The Euclid R190 is equipped with an all-hydraulic actuated braking system providing increased braking force and quick system response. A primary accumulator stores oil under sufficient pressure so that 100% braking pressure is always available.

The main valves in the all-hydraulic brake system are conveniently located at shoulder height on the forward left hand frame rail. The placement of this valve package enhances serviceability as all pressure checks and system troubleshooting can be made at this central location. Steel tubing is used to eliminate line swell and ruptures commonly associated with hose assemblies. Sheet metal guards protect the valve package and tubing.

The system is pressure proportioned, front to rear, for improved slippery road control. Three independent hydraulic circuits within the service braking system and dual secondary accumulators provide secondary stopping capability conforming to SAE J1224. The Euclid R190 has been designed with a simplified, easier to maintain brake system that provides superior stopping capability.

STANDARD EQUIPMENT

General

Air cleaner guards	Hoist kickout
Air horns, dual	Mirrors, right and left
Body down indicator, mechanical	Moisture ejector
Body prop cable	Mud flaps
Extended range dynamic retarding (3 steps)	Operator arm guard
Fan guard	Radiator grille guard
Fully hydraulic brake system	Retard speed control
Ground level air start charge line	Reverse alarm
Guard rails around platform	Rock ejector bars
	Supplementary steering system, accumulator
	Tow hooks, front

Cab

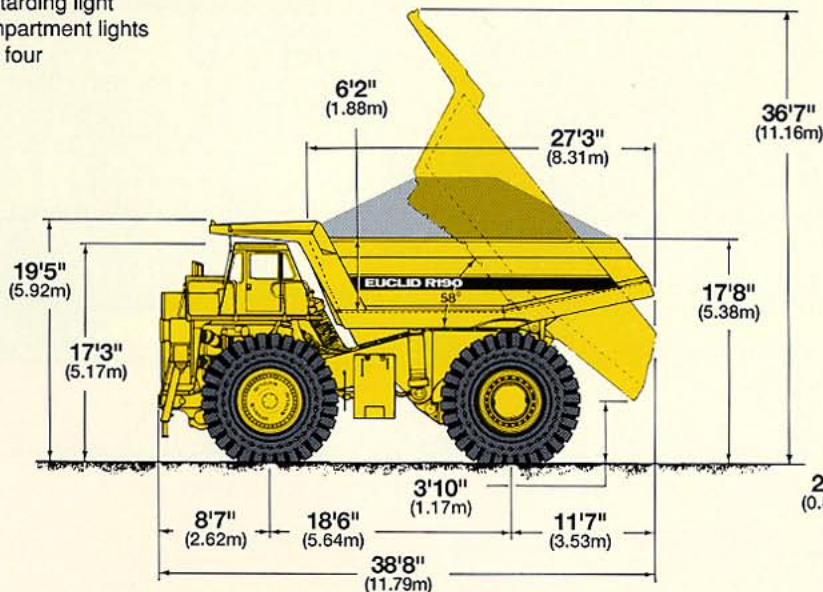
Ash tray	Passenger seat and belt
Cab interior light	Rubber floor mat
Cigar lighter	Sun visor
Emergency engine shutdown switch	Tilt steering wheel
Heater and defroster	Tinted glass, all windows
Load and hold switch	Windshield washer
Operator seat, air ride	Windshield wiper
Operator seat belt	

Gauges and Indicators

Air cleaner restriction gauge	Parking/Load and hold brake indicator light
Air start pressure gauge	Rear brake malfunction indicator light
Blower loss indicator light	Speedometer
Coolant temperature gauge	Steering filter restriction indicator light
Engine oil pressure gauge	Steering pressure gauge
Gauge lights rheostat	Steer system malfunction indicator light
Ground fault indicator light	Tachometer
High beam indicator light	Voltmeter
Hourmeter	
Hydraulic filter restriction indicator light	

Machine Lights

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

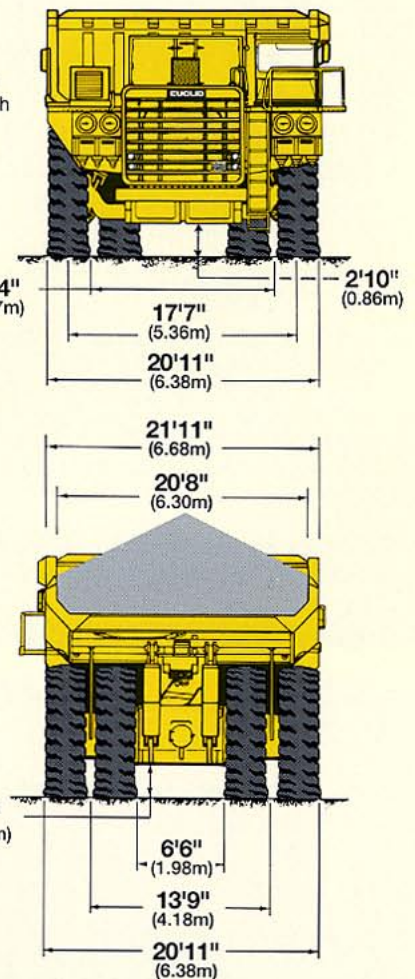


OPTIONAL EQUIPMENT

Air conditioning	Foreign language decals and name plates
Air dryer	Fuel gauge
Alternate air starter	Halogen headlights
Automatic lubrication system	Hubodometer (Metric or Imperial)
Battery isolation switch	Kim Hotstart
Body liner plates, std. and heavy duty	Manually actuated centralized lube
Buddy dump	Metric speedometer
Buddy steer	Multi-function engine & hydraulics system alarms (low oil pressure, low oil level, high coolant temperature, low coolant level, low hydraulic fluid level)
Centralized service panel fluids	On board load box
Cold starting aid	Propulsion interlock, body up
Engine access ladders	Radiator shutters
Engine coolant and oil heater (220 VAC)	Retard speed control
Extended range dynamic retarding (7 steps)	Reverse pedal configuration
Fast fueling system (Wiggins) on tank	Start interlock (maintenance)
Field repairable core radiator	Tachograph, 24 hr. recording
Fire protection systems (manually actuated with engine shutdown)	Top extensions

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

Note: Dimensions shown are for empty machine with 36.00-51 tires.



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.



SUSPENSION

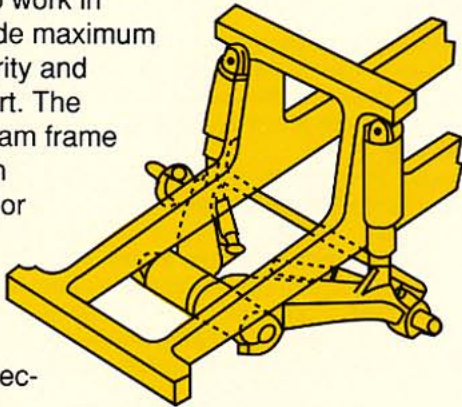
Front Suspension

Independent trailing arm for each front wheel. Suspension 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 stability between frame and drive axle. Rear mounted 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. Suspension struts are mounted with spherical bushings, eliminating extreme sidewall forces by insuring a purely axial input to the strut. The wide track stance of the trailing arm design assures a more stable, comfortable ride.

The suspension struts employ a unique liquid/gas configuration as the energy-absorbing medium.

Suspension struts are engineered to match the performance characteristics of each axle resulting in a system that provides vehicle stability, component protection, operator comfort and strut durability.



COMMAND CAB II

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. Exterior grab rails are standard.

Designed for Serviceability.

The easily removable front access panel reveals a main terminal contact strip, circuit breakers 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.

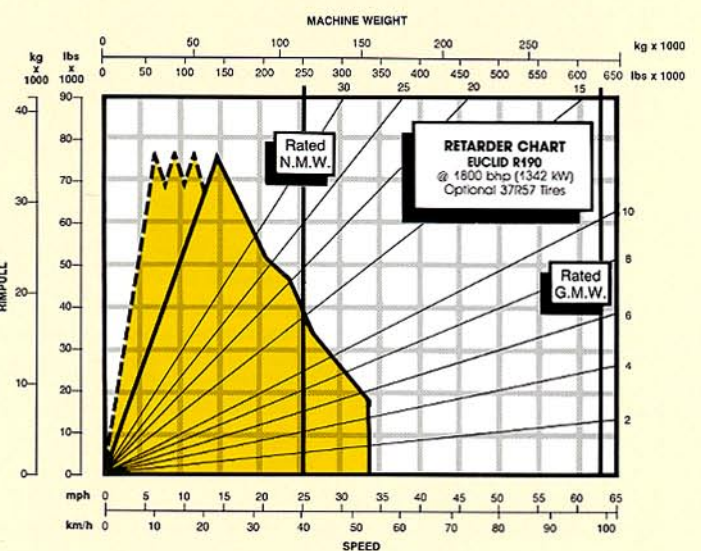
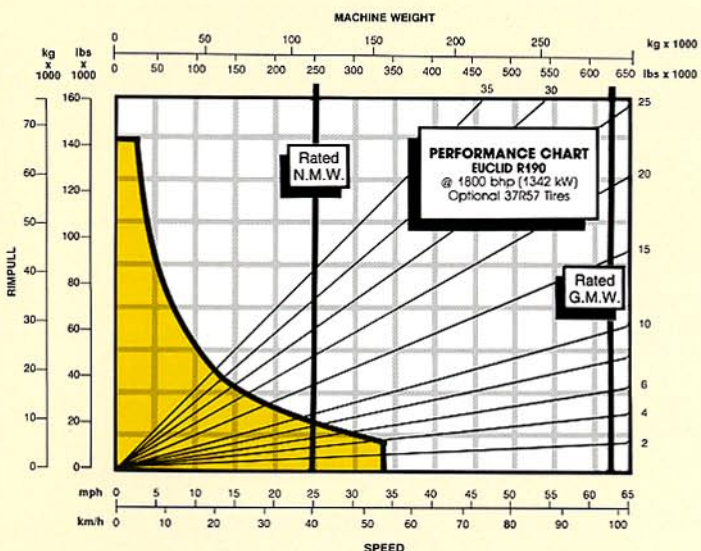
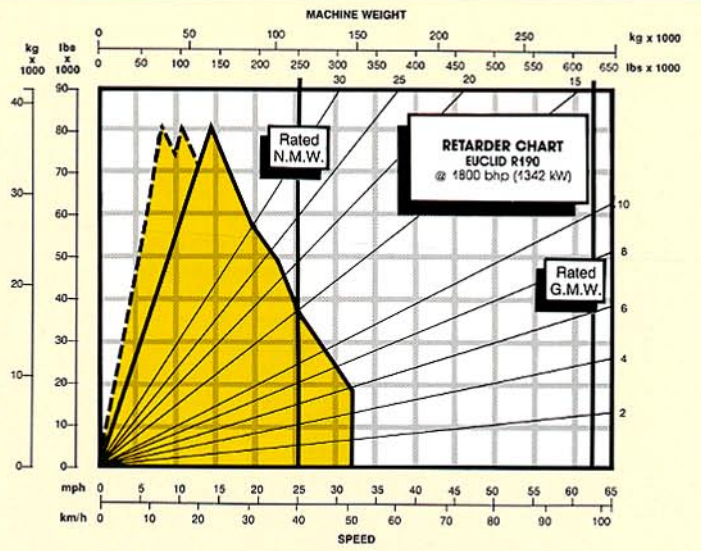
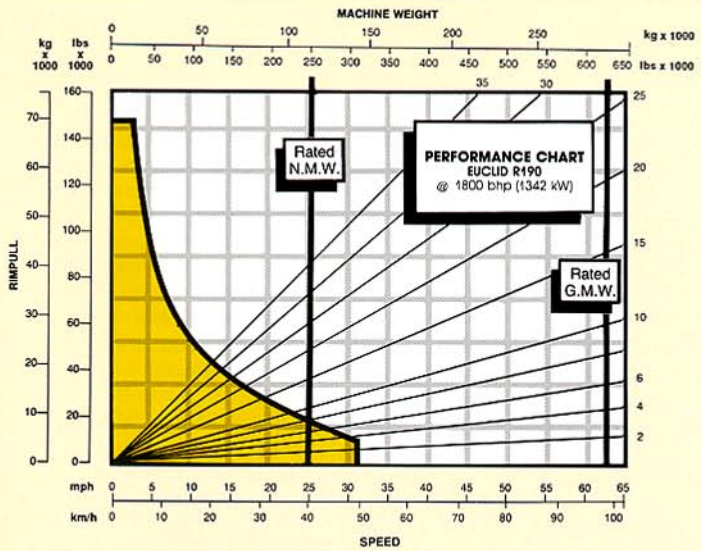


Arranged for Safety and Ease of Operation.

Generous use of glass provides maximum haul road visibility. A wraparound 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, warning lights and alarms for all major functions.

Unparalleled Operator Comfort and Convenience for Increased Productivity.

This ergonomically designed cab includes the Isringhausen six-way adjustable air seat, tilt steering wheel, in-dash duct work for filtered ventilation, insulated interior under the cab heading, and a tumblehome acoustical design for reduced interior sound levels which rival those found in better automobiles. The seat back on the fully upholstered trainer's seat folds down to serve as a tray at break time.



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: Dotted line on retarder chart represents optional extended range dynamic retarding. Units shown may include optional equipment.
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. This publication does not necessarily reflect the standard version of the machine.

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