# Euclid R170


***MAXIMUM GMW***
***615,000 lbs.***
***(279 210 kg)***

***PAYLOAD RANGE***
***170.0 TO 190.0 TONS***
***(154.2 TO 172.4 TONNES)***

***ELECTRIC DRIVE***
***GE 776 WHEEL MOTOR***

***EXTENDED RANGE ELECTRIC DYNAMIC RETARDING***

***ALL HYDRAULIC BRAKING***

***TWO MAN CAB***

***NEOCON SUSPENSION***

***SEPARATE HYDRAULIC RESERVOIRS FOR STEERING AND HOIST***

EUCLID

## ENGINES

| Make | Cummins | Detroit Diesel |
|---|---|---|
| Model | KTA50-C | 16V-149TIB |
| Type | 4 Cycle | 2 Cycle |
| Aspiration | Turbocharged | Turbocharged |
| Rated Output (SAE) | 1600 bhp (1193 kW @ 1900 rpm) | 1600 bhp (1193 kW @1900 rpm) |
| Flywheel Output (SAE) | 1519 bhp (1133 kW @ 1900 rpm) | 1492 bhp (1113 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 in³ (50.3 litres) | 2384 in³ (39.1 litres) |
| Max. Torque | 4400 lb-ft (5966 N•m @ 1500 rpm) | 4804 lb-ft (6514 N•m @ 1600 rpm) |
| Starting | Air | Air |
| *Optional | 1800 bhp (1342 kW @ 1900 rpm) | 1800 bhp (1342 kW @ 1900 rpm) |

## ELECTRIC DRIVE

**Controls**
General Electric Statex SSL System.
**Alternator**
General Electric Model GTA-22H. Direct mounted to engine.
**Wheel Motors - Standard**
General Electric Model 776KS complete with planetary assembly in each rear wheel.
Ratio ..... 28.85:1
Max. Speed ..... 34.4 mph (55.4 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 36.00-51(50)E-4 | 26.0" (660mm) |
| **Optional - Front and Rear** | |
| Goodyear 36.00R51**RL-4H | 26.0" (660mm) |

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

## LOAD CAPACITY

| | yd³ | (m³) |
|---|---|---|
| Struck (SAE) | 89.5 | (68.4) |
| Heap 3:1 | 115.1 | (88.0) |
| Heap 2:1 (SAE) | 126.9 | (97.0) |

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

## 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. Direct operating control valve mounted on reservoir.

| | |
|---|---|
| Body Raise Time | 25 sec. |
| Body Float Down Time | 20 sec. |
| Hoist Pump Output (@ 1900 rpm) | 134 g/m (507 l/m) |
| System Relief Pressure | 2,500 psi (17 238 kPa) |

## WEIGHTS

| | lb | (kg) |
|---|---|---|
| Chassis with Hoists | 188,070 | (85 308) |
| Body | 45,650 | (20 707) |
| Net Machine Weight | 233,720 | (106 015) |
| Front Axle | 115,294 | (52 297) |
| Rear Axle | 118,426 | (53 718) |
| Payload | 340,000 | (154 224) |
| Maximum Payload with Optional Tires | 381,280 | (172 949) |
| 36.00-51(50)E-4 | | |
| Max. Gross Machine Weight | 576,150 | (261 342) |
| Maximum Payload | 342,430 | (155 326) |
| 36.00R51**RL-4H | | |
| Max. Gross Machine Weight* | 615,000 | (278 964) |
| Maximum Payload | 381,280 | (172 949) |

Loaded Weight Distribution
Front - 33% Rear - 67%
Machine weight based on 50% fuel
* Maximum gross machine weight plus fuel and payload not to exceed (including options) ..... 615,000 (278 964)

**Options:**

| | | |
|---|---|---|
| Body Liners, Complete: 3/4" (19mm) floor, 5/8" (16mm) corners, 3/8" (10mm) sides, front and top rails, 1/4" (6mm) canopy | 21,900 | (9 934) |
| **Tires (set of 6):** | | **Option/Add Wt.** |
| 36.00-51(58) E-4 | 2,796 | (1 268) |
| 36.00R51**RL-4H | 1,356 | (615) |

*Max. GMW 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 and I.S.O. 5010.

| | | |
|---|---|---|
| Steering Angle | 41° | |
| Turning Diameter (SAE) | 84 ft | ( 25.6m) |
| Steering Pump Output (@ 2100 rpm) | 33 g/m | (126 l/m) |
| Operating System Pressure | 2,500 psi | (17 238 kPa) |

## STANDARD EQUIPMENT

### General

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

### Cab

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

### Gauges and Indicators

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

*Includes audible alarm

### Machine Lights

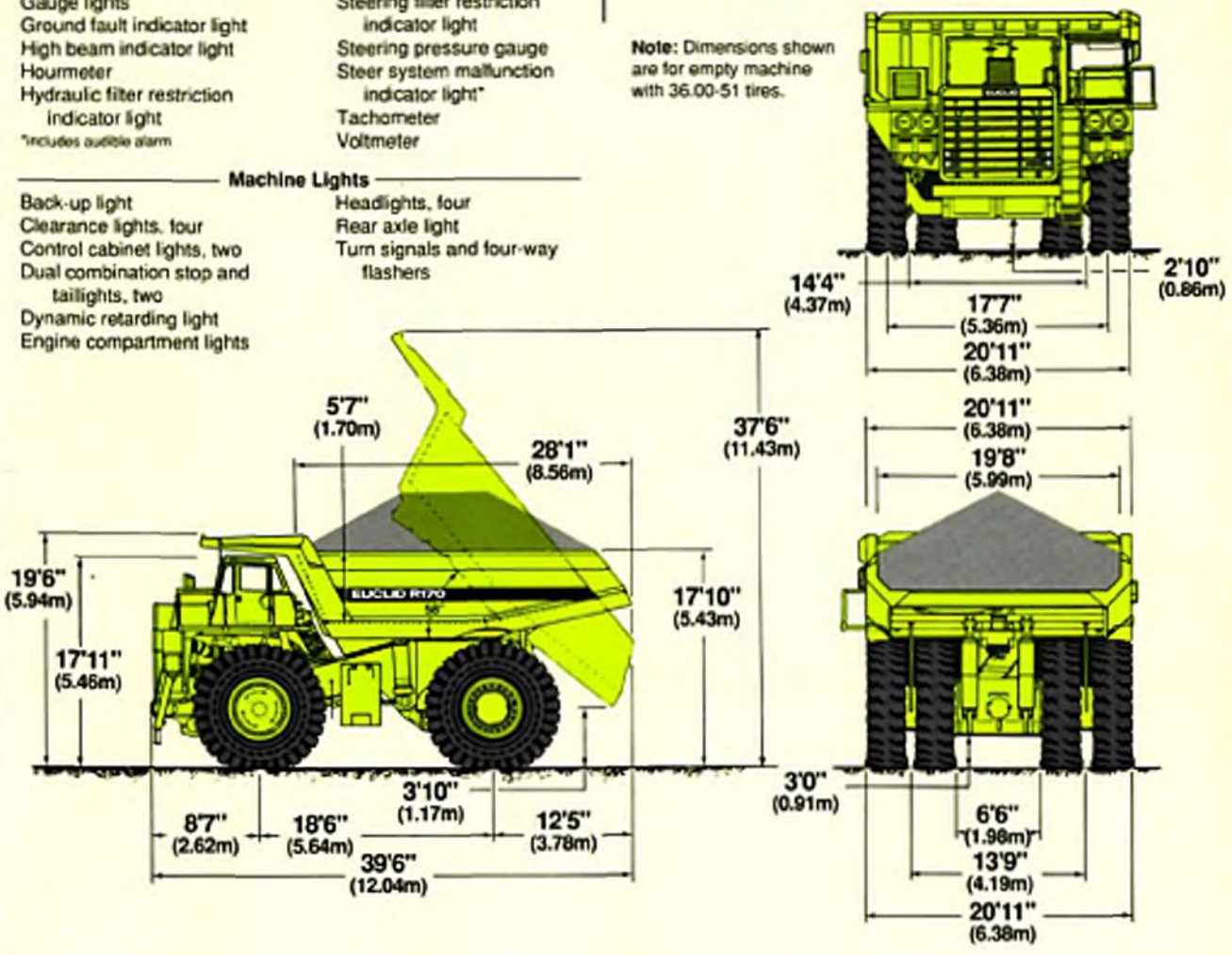
- Back-up light
- Clearance lights, four
- Control cabinet lights, two
- Dual combination stop and taillights, two
- Dynamic retarding light
- Engine compartment lights
- Headlights, four
- Rear axle light
- Turn signals and four-way flashers

## OPTIONAL EQUIPMENT

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

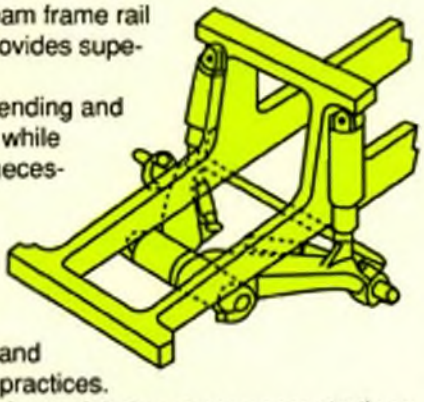


## SUSPENSION

**Front Suspension**
Independent trailing arm for each front wheel. Neocon struts containing energy-absorbing gas and compressible neocon-x fluid are mounted between trailing arm and frame. Variable damping and 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 neocon struts containing energy-absorbing gas and compressible neocon-x fluid suspend drive axle from frame.
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. Euclid achieves long frame fatigue life through proven design and manufacturing practices.



Smooth transistions 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. 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 and long wheelbase 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.

## COMMAND CAB II

**Structurally Sound.**
Command Cab II, doublewall 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, brake master cylinder, retarder valve and washer bottle. All electrical junction points are located in the front compartment. The filter is located to the side of the cab and servicing requires the removal of only two bolts. The upper dash utilizes four (4) removable panels to house gauges and customer options. Each panel is individually removed from inside the cab and only those requiring service need to be removed.

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

## AIR

**Compressor**

| | | |
|---|---|---|
| Detroit Diesel | 12.0 cfm | ( 5.7 l/s) |
| Cummins | 30.0 cfm | (14.2 l/s) |
| **Service Air** | | |
| Pressure | 125 psi | (860 kPa) |
| **Start System** | | |
| Pressure | 125 psi | (860 kPa) |
| Reservoir Capacity | 20 ft³ | (566 litres) |

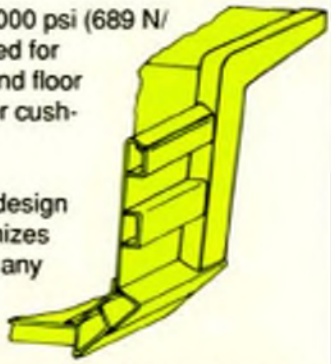
## SERVICE CAPACITIES

| | gallons | (litres) |
|---|---|---|
| Crankcase (incl. filters) | | |
| Cummins | 46.0 | (193.0) |
| Detroit Diesel | 41.0 | (151 .4) |
| Cooling System | 115.0 | (435.3) |
| Fuel Tank | 510.0 | (1 930.4) |
| Hydraulics | | |
| Hoist Tank | 133.0 | (503.0) |
| Steering Tank | 40.0 | (151 .0) |
| GE776 wheel motors | 10.0 | (37.8) |

## BODY

Flat floor, sloped tailchute, continuously exhaust heated. High yield strength 100,000 psi (690 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 ( 106.7cm) |
| Lining Area Per Axle | 960 in² (6 194 cm²) |
| Brake Pressure (Max.) | 2500 psi (17 238 kPa) |

**Rear Axle - Standard GE 776 wheel motors**
BFGoodrich series "F" armature speed brakes

| | |
|---|---|
| Disc Diameter Each (4 discs/axle) | 20.1 in (51.1 cm) |
| Lining Area Per Axle | 376 in² (2 426 cm²) |
| Brake Pressure (Max.) | 1300 psi (8 964 kPa) |

**Secondary**
Three independent hydraulic circuits within the service brake system provide secondary stopping capability. System is manually or automatically applied to stop vehicle within prescribed braking distance.

**Parking**
Spring-on, hydraulic-off brake heads provide parking capabilities. Brake systems comply with SAE 1473 and I.S.O. 3450.

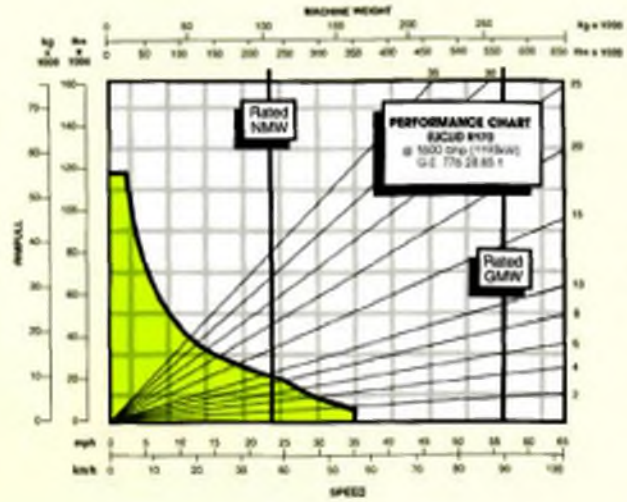
**Retarder**
Retardation on down grades achieved through D.C. wheel motors in conjunction with General Electric resistor grid package located on cab deck. Cooling for this grid package is achieved with forced air flow provided by dual blowers driven by a single electric motor. 3-step extended range retardation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

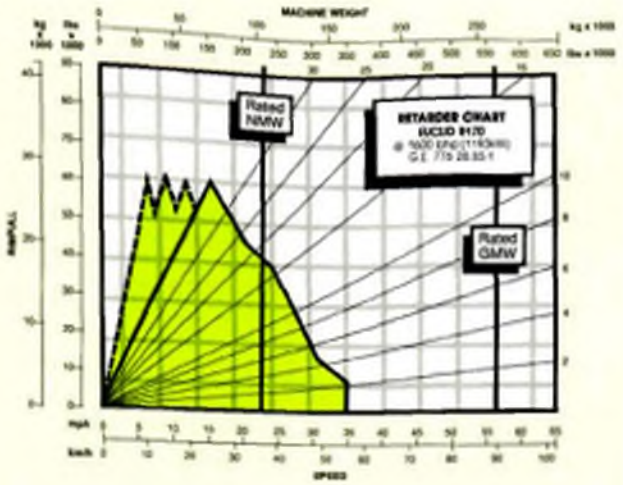
| | |
|---|---|
| Maximum Dynamic Retarding with continuous rated blown grids | 2700 bhp (2013 kW) |

The Euclid R170 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. The Euclid R170 has been designed with a simplified, easier to maintain brake system that provides superior stopping performance.




## 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.



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