Euclid R90C

INCREASED MAXIMUM GMW 160,613 KG (354,086 LBS)

WET DISC BRAKES

1,050 HP ENGINE

TWO MAN INTEGRAL ROPS/FOPS CAB

COMMAND CAB III

CONTRONIC II MONITORING SYSTEM

E4 RADIAL TIRES

ALL-HYDRAULIC BRAKING

DRY DISC PARK BRAKE

AIR TO OIL TRANSMISSION COOLER

TRANSMISSION GUARD

EUCLID

ENGINE

Make	**Cummins**			
Model	KTA38-C			
Type	4 Cycle			
Aspiration	Turbocharged/Aftercooled			
Rated Output				
(SAE @ 2100 rpm)	kW	**bhp**	783	**1,050**
Flywheel Output				
(SAE @ 2100 rpm)	kW	**bhp**	732	**982**
No. Cylinders			12	
Bore & Stroke	mm		159 x 159	
	in		**6 1/4 x 6 1/4**	
Displacement	liters	**in³**	37,7	**2,300**
Max. Torque				
@1300 rpm	N•m	**lb ft**	4 630	**3,415**
Torque Rise			30%	
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 Commercial Electronic Control provides park brake interlock and hoist interlock as well as built in diagnostics. Air to oil transmission cooler eliminates potential cross contamination.

Maximum Speeds @ Governed Engine Speed with standard 27.00R49(**)E4 tires

Range	Gear Ratio	km/h	mph
1	4.24	9,6	**6.0**
2	2.32	17,5	**10.9**
3	1.69	24,0	**14.9**
4	1.31	31,0	**19.3**
5	1.00	40,6	**25.3**
6	0.73	56,3	**35.0**
R	5.75	7,1	**4.4**

DRIVE AXLE

Full floating axle shafts, double reduction provided by Euclid Model 2653 differential and single reduction planetary with balanced life gears in each wheel. Cyclo-palloid style hard cut ring and pinion sets with new, higher capacity planetary and differential bearings are provided to handle the increased payload. The parallel link mounting with an "A"-frame top member reduces "roll-steer" effect.

Ratios	**Standard**	
Differential	3.73:1	
Planetary	6.63:1	
Total Reduction	24.73:1	
Maximum Speed		
with 27.00R49(**)E4 Tires	km/h	56,3
	mph	**35.0**

TIRES

Standard - Front and Rear	**Rim Width**			
27.00R49(**)E4 Radial	mm	**in**	495	**19.5**

Optional tire types, treads and ply ratings available.

ELECTRICAL SYSTEM

Twenty-four volt lighting and accessories system. 100 amp alternator with integral transistorized voltage regulator. Four 900 amp, cold cranking, 12-volt, maintenance-free, heavy-duty batteries connected in series/parallel. Standard CONTRONIC II monitoring and central warning system with built-in diagnostics and a standard Liquid Crystal Display (LCD) in the cab.

LOAD CAPACITY

Load Capacity from 52,8 m³ **(69.0 yd³)** to 57,3 m³ **(75.0 yd³)**

Load Capacity	m³	**yd³**
Struck (SAE)	35,7	**46.7**
Heap 3:1	47,0	**61.5**
Heap 2:1 (SAE)	52,8	**69.0**
Load Capacity		
Struck (SAE)	38,2	**50.0**
Heap 3:1	51,2	**67.0**
Heap 2:1 (SAE)	57,3	**75.0**
	Tonne	**Ton**
*Payload Range depending on optional equipment	84,1 to 90,7	**92.8 to 100**

Note: Based on material density, Euclid will size an optional larger or smaller body to assure rated payload. Consult Euclid Market Support.

WEIGHTS

Weights Reflect 57,3 m³ **75.0 yd³** Body

	kg	**lb**
Chassis & Hoists	55 157	**121,599**
Body	14 736	**32,487**
Net Machine Weight	69 893	**154,086**
Maximum Payload	90 718	**200,000**
Maximum GMW with Standard Tires Including Options, 50% Fuel, Operator & Payload Not to Exceed	160 613	**354,086**

***Major Options**

Approximate change in Net Machine Weight:

Regular Duty Body Liners - 400 BHN Steel	4 241	**9,350**
Heavy Duty Body Liners - 400 BHN Steel	6 554	**14,450**
52,7 m³ **69.0 yd³ Body	(-3 823)	**(-5,000)**

Weight Distribution	Front	Rear
Empty	49%	51%
Loaded	33%	67%

STEERING SYSTEM

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 J1511, ISO 5010.

Steering Angle			38°	
Turning Diameter (SAE)	m	**ft**	23,93	**78.5**
Steering Pump Output (@ 2100 rpm)	l/m	**gpm**	91	**24**
System Operating Pressure	kPa	**psi**	18 962	**2,750**

STANDARD EQUIPMENT

General

- Air conditioning
- Air to oil transmission cooler
- All-hydraulic braking
- Automatic transmission shifting
- Body down indicator, mechanical
- Body prop cable
- Body up and down cushioning
- Body up speed restriction w/light
- Canopy spill guard
- Continuous heated body
- Cooling system sight gauge
- Cooling system surge tank
- Dagger clamps (rear wheels)
- Driveline guard, front
- Electric horns
- Electric start
- Electronic hoist
- Engine belt protection
- Fan guard
- Fenders
- Fixed steering stops
- Fuel tank sight gauge
- Guard rails
- Halogen headlights
- Hoist interlock
- Hoist tank sight gauges
- ISO decals
- LED taillights
- Load/dump brake
- Mirrors (front)
- Mirrors right and left, hand adjustable
- Mud flaps-extended
- NEOCON suspension struts
- Operator arm guard
- Park brake, dry disc
- Park brake interlock
- Radiator grill guard
- Radiator, premium core
- Reverse alarm
- Rock ejector bars
- Steering accumulator
- Steering tank sight gauge
- Swing-out grille
- Tires 27.00R49(**)E4
- Tow points, front
- Transmission guard
- Transmission sight gauge
- Wet disc brake wear indicators

Cab

- Acoustical lining
- Air filtration/replaceable element
- Ash tray
- Cab interior light
- Cigar lighter, 12-volt
- Door locks
- Foot rest (left and right)
- Heater and defroster 7.6 kW 26,000 btu
- Integral ROPS/FOPS cab
- ISO driver envelope
- Liquid Crystal Display* (CONTRONIC II)
  - Clutch pressure
  - Distance traveled
  - Engine oil pressure
  - Fuel gauge
  - Gear selection
  - Integrated transmission diagnostics
  - Load counter
- Service intervals, job site adjustable
- Total engine hours
- Total idle hours
- Voltmeter
- Modular instrumentation
- Quick connect test ports
- Roll down windows
- Rubber floor mat
- Safety glass
- Seat belts, retractable (operator and trainer)
- Seat, mechanical 6 position
- Sun visor
- Tilt/telescopic steering wheel
- Tinted glass all windows
- Trainer seat
- Windshield washer
- Windshield wiper, intermittent
- 12-volt 50 amp circuit
- 12-volt accessory connection

Gauges and Indicators

CONTRONIC II monitoring and alarm system, multi-function indicator lights:

- Air filter restriction
- Alternator
- Body up
- Brake pressure
- Central warning
- Converter temperature
- Cooling temperature
- Do not shift
- Engine oil pressure
- High beam indicator
- Hydraulic filter
- Parking brake applied
- Retard oil temperature
- Steering filter
- Steering pressure
- Steering temperature
- Transmission filter
- Transmission oil pressure
- Turn signals/hazard
- Transmission malfunction

Gauges:

- Brake temperature
- Converter temperature
- Coolant temperature
- Hour meter
- Speedometer
- Steering/brake pressure
- Tachometer

Machine Lights

- Back-up lights (2)
- Clearance lights (4)
- Dual combination stop and taillights (LED) (2)
- Headlights (4)
- Turn signals and four-way flashers

OPTIONAL EQUIPMENT

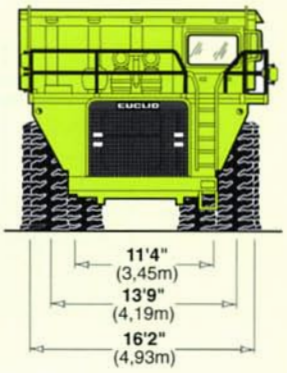
- ACTIVE TRACTION CONTROL (ATC) w/ELECTRONIC DOWNHILL SPEED CONTROL (EDSC)
- Additional halogen headlights
- Air suspension seat
- Body liners (400 BHN) plates, regular and heavy duty
- Canopy spill guard extension
- Cold starting aid
- Engine compartment lights
- Engine, ground level shut-off
- Engine heater (oil & coolant)
- Extra reverse alarm
- Fast fueling, fuel only
- Fast coupling service center
- Field replaceable tube radiator
- Front brake cut-off switch
- Fuel tank, high capacity
- HAULTRONIC II LOAD MONITORING SYSTEM
- Heavy-duty retarder cooling
- High intensity headlights (HID)
- Hoodsides (rubber)
- Lube system, automatic
- Lube system, centralized
- Muffler, deck mounted
- Radio & tape player
- Starter lockout switch
- Tires (size, type & rating)
- Unit sound suppression

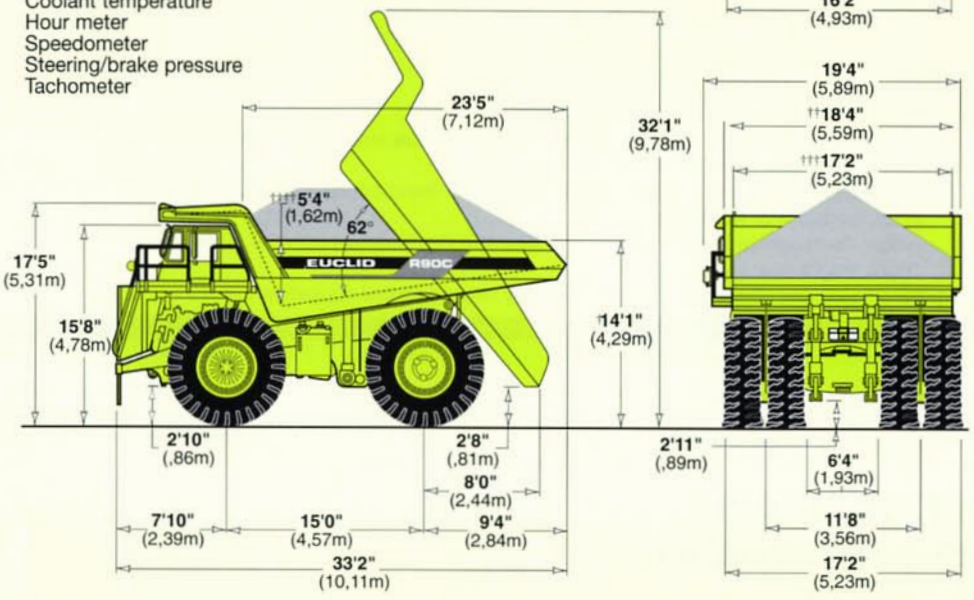
Standard and optional equipment may vary from country to country. Special options provided on request. Consult Euclid Market Support.

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

Note: Dimensions shown are for empty machine with 57,3 m³ **75.0 yd³** body and 27.00R49(**)E4 tires.

†4,27m **14'0"** – 52,8 m³ **69 yd³** Body
††5,26m **17'3"** – 52,8 m³ **69 yd³** Body
†††4,90m **16'1"** – 52,8 m³ **69 yd³** Body
††††1,60m **5'3"** – 52,8 m³ **69 yd³** Body



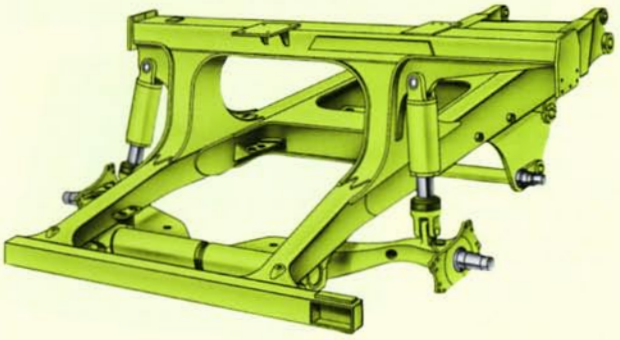


SUSPENSION

Front Suspension
Independent trailing arm for each front wheel. NEOCON struts containing energy-absorbing gas and environmentally friendly compressible NEOCON-E™ fluid mounted between trailing arm and frame.

Rear Suspension
The cast rear axle housing has a parallel link mounting with an A-Frame top member. This provides a reduced "roll-steer" effect which results in a more stabilized ride and contributes to lower overall frame stress levels. Outboard-mounted NEOCON struts suspend drive axle from frame. NEOCON struts provide variable damping and rebound feature.

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 ensuring 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-E™ 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.



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. Euclid 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.

BODY

Flat chute type, sloped floor, continuously exhaust heated. High tensile strength 400 BHN abrasion resistant alloy steel is used in thickness of:

	mm	in
Floor	19	**3/4"**
Front	8	**5/16"**
Sides	8	**5/16"**
Canopy	5	**3/16"**
Corner	11	**7/16"**
Optional Body Liners (Regular Duty)		
Floor, Corners & Top Rails	10	**3/8"**
Sides, Front, End Protection	6	**1/4"**
Optional Body Liners (Heavy Duty)		
Floor & Corners	16	**5/8"**
Top Rails	10	**3/8"**
Sides, Front & End Protection, Canopy	8	**5/16"**

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.

SERVICE CAPACITIES

	liters	gallons
Accumulator	37,9	**10.0**
Crankcase (incl. filters)	140,0	**37.0**
Transmission (incl. filters)	98,4	**26.0**
Cooling System	268,7	**71.0**
Fuel Tank	1003,0	**265.0**
Hydraulic		
Hoist Tank	318,0	**84.0**
Steering Tank	117,0	**31.0**
Differential	147,6	**39.0**
Planetaries	136,3	**36.0**
Windshield washer	7,6	**2.0**

FRAME

Formed rectangular rails with section height tapered from rear to front, bridged by five cross members, front bumper and front suspension tube. Cross member to frame junctions use large radii to minimize stress. Frame utilizes 345 MPa **50,000 psi** yield strength steel.

HYDRAULIC SYSTEM

Two (2) Euclid two-stage cylinders, double-acting in second stage, internal dampened (extend and retract) inverted and outboard-mounted. Separate Hoist/Brake Cooling reservoir and independent tandem gear pump. Electronically operated control valve. Hoist lever can be mounted on left or right of seat. Equipped with body up speed restriction.

Body Raise Time (Loaded)	s		12	
Body Float Down Time	s		14	
Brake Cooling Pump Output (@ 2100 rpm)	l/m	**gpm**	459,0	**121.3**
Hoist Pump Output (@ 2100 rpm)	l/m	**gpm**	449,0	**118.4**
System Relief Pressure	kPa	**psi**	20 684	**3,000**

BRAKE SYSTEM

Brake systems meet or surpass SAE J1473 and ISO 3450, as well as Alberta and British Columbia regulations.

Service
Service brakes are all hydraulically actuated. Front disc brakes have two calipers per disc that are internally ported, each containing three pairs of opposing pistons. Rear brakes are oil-cooled wet discs.

Front Axle - Dry Disc				
Disc Diameter Each (2 discs/axle)	cm	**in**	101,6	**40**
Brake Surface Area Per Axle	cm^2	**in^2**	14 194	**2,200**
Lining Area Per Axle	cm^2	**in^2**	4 129	**640**
Brake Pressure (Max.)	kPa	**psi**	13 790	**2,000**

Rear Axle - Oil-Cooled Wet Discs				
Brake Swept Area Per Axle	cm^2	**in^2**	79 282	**12,288**
Brake Pressure (Max.)	kPa	**psi**	10 515	**1,525**

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
Dry disc mounted on differential input shaft. Two heads, 90° apart, self adjusting and spring applied, hydraulic release. Controlled by a toggle switch on the dash or automatically applied if brake hydraulic pressure is lost.

Size (Diameter)	mm	**in**	685,8	**27**

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)	kW	**bhp**	969	**1,300**
Capacity (Intermittent)	kW	**bhp**	1805	**2,420**

The Euclid R90C is equipped with an all-hydraulic actuated braking system providing precise braking control 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 and accounts for weight transfer without having to deactivate front brakes.

WET DISC BRAKE

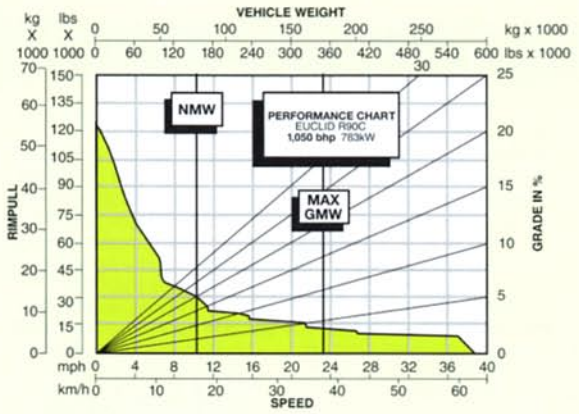
The Euclid wet disc brake is engineered for long service life even in the most extreme environments. The wet disc brakes are located on the rear axle and provide service braking, secondary braking and retarding. The brakes are of a multi-plate design and continuously oil-cooled. The sealed design protects 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 to help the operator keep both hands on the steering wheel.

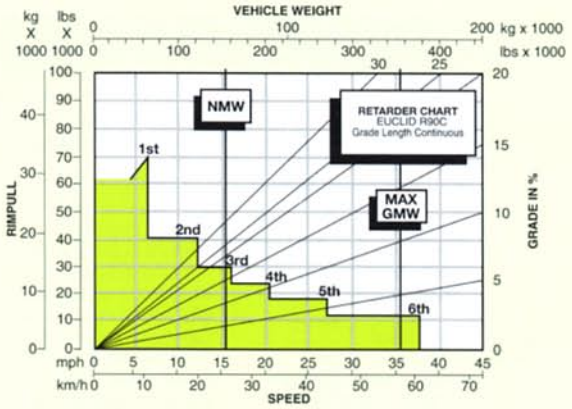
COMMAND CAB III

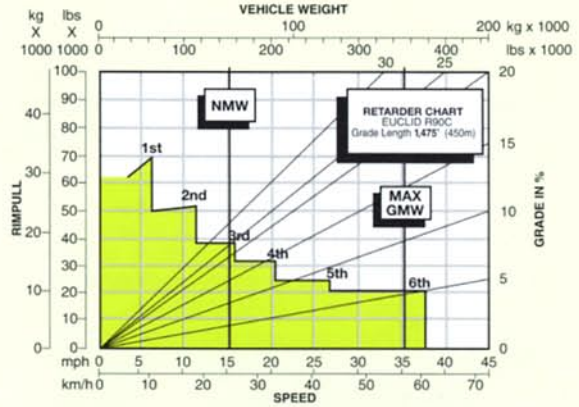
Command Cab III integral ROPS (Rollover Protection Structure) is standard in accordance with SAE J1040 (1994) and ISO 3471. Internal dimensions comply with SAE J154 (1992) and ISO 3411 for superior ergonomics. Double wall construction of 11 gauge inner and outer steel panels, lends itself to a more structurally 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, with doors and windows closed per work cycle procedures in SAE J1166 (1990), provides an operator sound exposure L_{eq} (Equivalent Sound Level) of 81.0db(a). A three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator compartment.

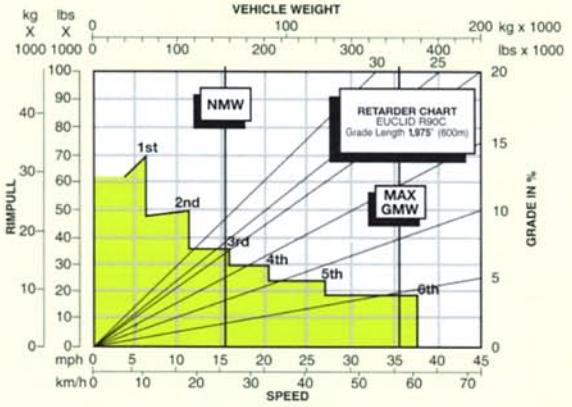
Excellent Serviceability. A removable front closure allows easy access to service brake valves and retarder valve. The upper dash utilizes four (4) removable panels that house gauges and customer options, each individually accessible. A removable closure located behind the seat provides easy access to the shifting control, CONTRONIC, and all electrical junction points. Electrical quick disconnects provide ease of serviceability.

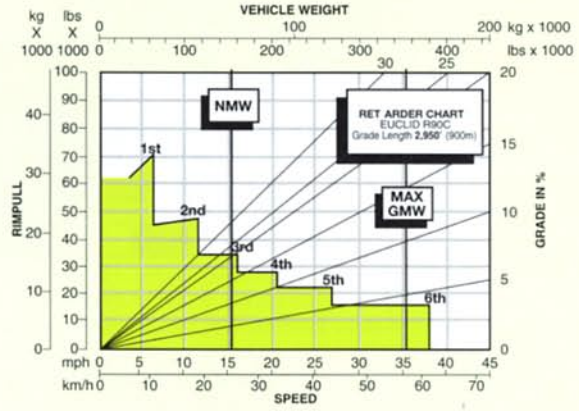
Comfort and Ease of Operation. A wrap-around style dashboard positions controls within easy reach and visual contact. A full complement of easy-to-read gauges, CONTRONIC II monitoring with Liquid Crystal Display (LCD) and warning system, a spacious environment, six-way adjustable mechanical seat, tilt/telescopic steering wheel, filtered ventilation, door locks, and a full size padded trainer seat, all contribute to operator convenience and comfort.

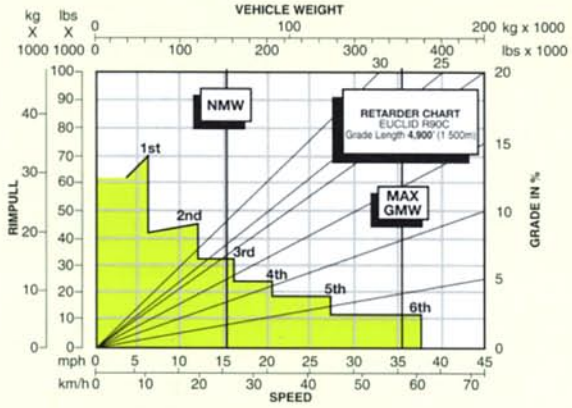












INSTRUCTIONS:

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.

EUCLID-HITACHI Heavy Equipment, Inc. is a joint venture corporation between Volvo Construction Equipment Corporation and Hitachi Construction Machinery Co., Ltd.

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