



EUCLID

CH-120



EUC CH20

ENGINE

Make	Detroit Diesel	Cummins	Detroit Diesel
Model	16V-92T	VTA-1710-C	16V-71T
Type	2 Cycle	4 Cycle	2 Cycle
Aspiration	Turbo-Charged	Turbo-Charged	Turbo-Charged
Rated Output (SAE)	641 kW @ 2100 rpm 860 bhp	596 kW @ 2100 rpm 800 bhp	552 kW @ 2100 rpm 700 bhp
Flywheel Output (SAE)	610 kW @ 2100 rpm 818 bhp	562 kW @ 2100 rpm 755 bhp	483 kW @ 2100 rpm 646 bhp
Number Cylinders	16	12	16
Bore & Stroke	123mm x 127mm 4.84" x 5"	140mm x 152mm 5.5" x 6"	108mm x 127mm 4.25" x 5"
Displacement	24.1 litres 1472 in ³	28.0 litres 1710 in ³	18.6 litres 1136 in ³
Maximum Torque	3216 N•m @ 1400 rpm 2372 lb-ft	2983 N•m @ 1550 rpm 2200 lb-ft	2617 N•m @ 1600 rpm 1930 lb-ft
Starting	Air	Air	Air

Cummins VTA-1710-C also offered at 522 kW (700 bhp) rated output.

TRANSMISSION

Allison DP-8961 planetary type, full power shift with automatic shifting. Integral torque converter with automatic lock-up in all ranges and integral hydraulic retarder. Direct mounted, 6 forward speeds, 1 reverse.

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.

Ratios	Standard	Optional
Differential	3.73	3.15
Planetary	6.86	6.86
Total Reduction	25.59	21.61
Maximum Speeds	51.3 km/h 31.9 mph	60.7 km/h 37.7 mph

TRAILER

Euclid unitized trailer structure with large continuous box beam rails supporting side plates and doors, integral push block and trailer fenders. Top rail slope plates, doors and vertical impact plates are 552 N/mm² (80,000 psi) yield strength steel. All other plates are 310 N/mm² (45,000 psi) yield steel. In thicknesses of:

Sloped plates	6 mm (1/4")
Vertical sides	5 mm (3/16")
Front plates	13 mm (1/2")
Rear plates	10 mm (3/8")
Doors	6 mm (1/4")

CAPACITY

Struck (SAE)	104.2 m ³ (136.2 yd ³)
Heap 3:1	115.4 m ³ (151.0 yd ³)
Heap 2:1 (SAE)	121.6 m ³ (159.0 yd ³)

TIRES

Standard		Rim Width
Front	24.00-35 (36) E-3	432 mm (17")
Drive & Trail	24.00-49 (36) E-3	432 mm (17")
Optional		
Front	24.00-49	432 mm (17")
	21.00-49	432 mm (17")

Plus tire types, treads and ply ratings

TRACTOR FRAME

Box section main rails bridged by three cross members, front bumper and front suspension tube. Rail depth is constant taper rear to front 310 N/mm² (45,000 psi) yield strength steel. Two rear cross members are 655 N/mm² (95,000 psi) yield strength castings with integral suspension and drive axle mountings. Cross member to frame rail junctions use large radii to minimize stress.

HITCH

Euclid universal hitch with 343 mm (13.50") diameter king pin. Hitch assembly mounts to tractor frame through spherical bushings which eliminates twisting forces to the frame rails.

HYDRAULIC DOORS

Two double-acting cylinders mounted transversely at midsection of trailer doors offer controlled dumping up to maximum 1.52 m (5.0 ft) door opening. Doors mounted with parallel arms to provide high ground clearance in all positions. Control valve mounted on hydraulic tank.

System relief pressure	17 237 kPa	2,500 psi
Pump output		
@ 2,100 RPM	170.3 l/m	45 g/m
Reservoir capacity	149.9 litres	39.6 gal.

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STANDARD EQUIPMENT

General

Air cleaner
Air horns, dual
Exhaust muffler
Fenders, drive and trail axles
Mirrors, right and left
Mud flaps

Cab

Ash tray
Cab interior light
Cigar lighter
Hand control valve
for trail axle brakes
Heater and Defroster
Operator seat, adjustable

Gauges and Indicators

Air cleaner restriction
indicator light
Air start pressure gauge
Ammeter
Clutch pressure gauge
Converter lock-up
indicator light
Converter oil temp. gauge
Coolant temperature gauge
Engine oil pressure gauge
Gauge lights rheostat
High beam indicator light
Hydraulic filter restriction
indicator light

Vehicle Lights

Back-up light

Pressure reducing valve,
front brakes
Reverse alarm
Service desk, removable
Supplementary steering

Operator seat belt
Parking brake control
Passenger seat
Sun visor
Windshield washers
Windshield wipers

Parking brake applied
indicator light
Rear brake malfunction
indicator light
Service air pressure gauge
Speedometer
Steering filter restriction
indicator light
Tachometer and hourmeter
Wig-wag low air pressure
alarm

OPTIONAL EQUIPMENT

Air conditioning
Air dryer/after cooler
Alcohol vaporizer
Brake guards
Clearance lights
Cold starting aid
Differential ratio, 3.15:1
Doors open indicator
Fan guard
Fast fueling system
Grille guard
Guard rails
Hubodometer

Kim Hot Start
L&M (Mesabi) radiator
Lube system, automatic
Multifunction alarm systems
Passenger seat belt
Radiator shutters
Rock ejector bars
(drive and trail axles)
Roll guards
Tachograph
Thermatic fan
Turn signals

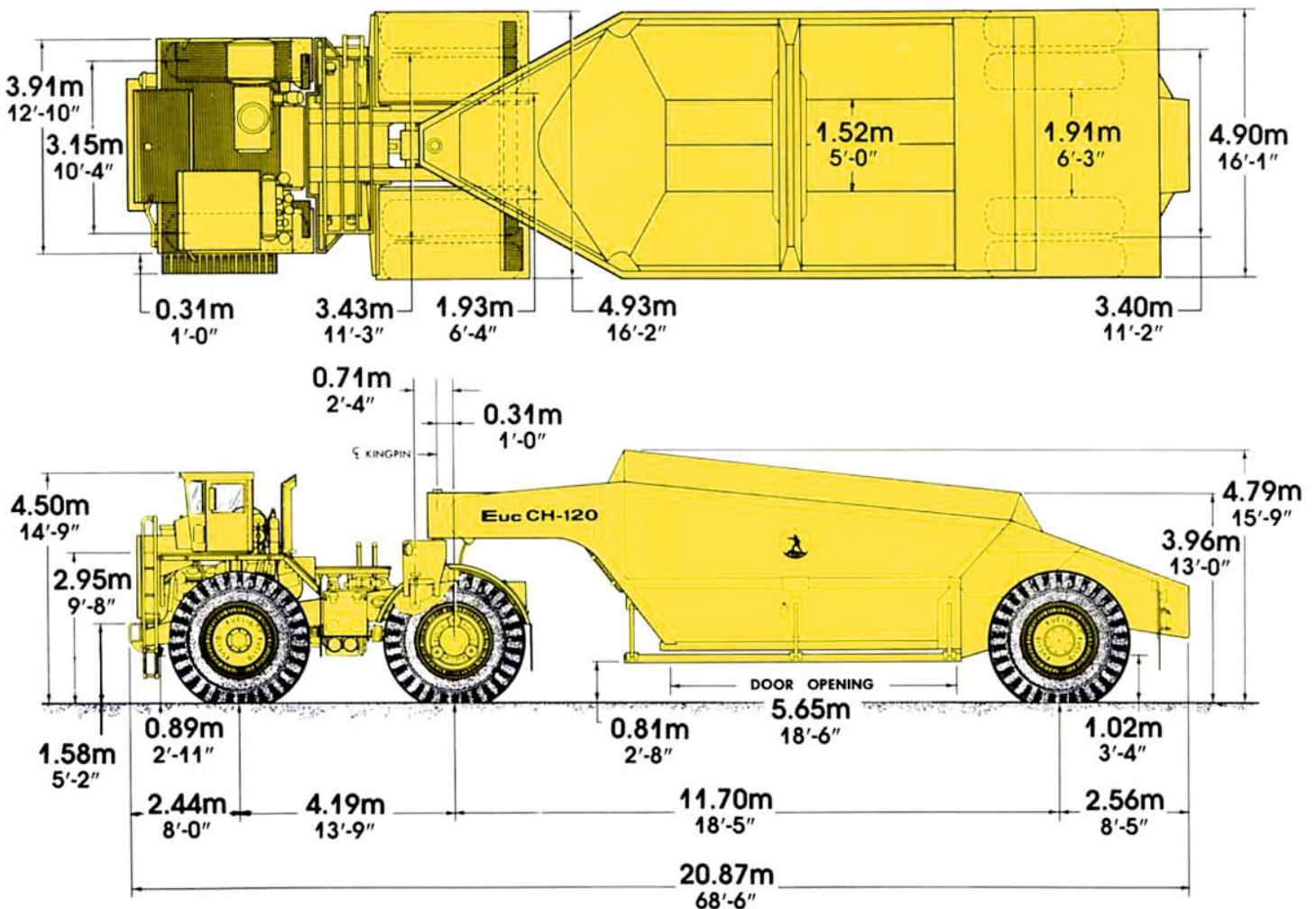
Standard and optional equipment may vary from country to country.

Special options provided on request. Consult Euclid Sales Engineering Department.

Product improvement is a continuing Euclid project. Therefore, all specifications are subject to change without notice.

Related Euclid Publications:

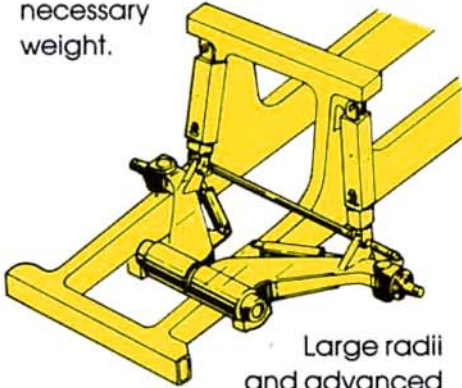
*Material Haul: Truck or Tractor/Trailer
*Euc CH-150 specification brochure
Call or write Euclid Sales Engineering



EUC CH-120

FRAME/ SUSPENSION SYSTEM

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. Ride struts are mounted with spherical bushings, eliminating extreme sidewall forces by insuring a purely axial input to the ride strut. The wide tract stance of the trailing arm design assures a more stable, comfortable ride.

TRAILER

The CH-120 trailer features unitized bent plate construction, providing maximum strength with minimum weight. Loading and hauling stresses are reduced through three large continuous box beams that span fore and aft at the top, middle and bottom of the side plates.

Smooth transitions from the hitch section through the main trailer body to the tail section assures ultimate fatigue strength and structural integrity.

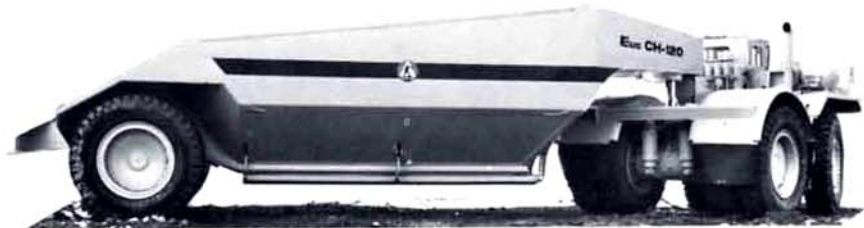
The doors are supported by three full length integral welded, continuous closed box beams for reinforcement and torsional resistance. An additional design feature in the door is the tapered cross section, which places the strongest part of the door along the hopper centerline where it's needed.

PERFORMANCE

The CH-120 features many top performance and production features. The customer can select the power train to meet actual haul requirements. High performance engines at 800 or 860 horsepower command the necessary power for steep grade applications. The power train is composed of the same rugged gearing and componentry used in severe mining applications on the Euclid R-85 rear dump hauler.

An integral hydraulic retarder allows for a controlled, safe descent on downhill hauls by providing a maximum retarding ability of 1,775 H.P. from the engine and transmission combination. Actuation of the service braking systems provides additional stopping ability.

Proper windrow sizing when stockpiling, or fast dump times when maximum production is required is insured through synchronized modulation of the door hydraulics. Collectively these features maximize hauler productivity and minimize cycle times and operating costs.



WEIGHTS

	kg	lb
Tractor	30 780	67,850
Trailer	35 040	77,250
Net Weight	65 820	145,100
Front Axle	16 670	36,760
Drive Axle	25 100	55,340
Trail Axle	24 040	53,000
Payload	108 860	240,000
Gross Weight	174 680	385,100
Front Axle	25 530	56,290
Drive Axle	68 460	150,930
Trail Axle	80 690	177,880

SERVICE CAPACITIES

	litres	gal
Crankcase (incl. filters)		
Detroit Diesel	68.1	18.0
Cummins	79.5	21.0
Transmission (incl. filters)	113.6	30.0
Cooling System	219.5	58.0
Fuel Tank	1 003.0	265.0
Hydraulic		
Trailer Doors	147.6	39.0
Steering	98.4	26.0
Drive Axle	124.9	33.0

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CAB

Euclid designed 142 cm (56") wide all steel cab offset to the left and three point rubber mounted to isolate the operator from vibration. Safety glass throughout, tinted windshield with 5° slant. Fully insulated for noise and temperature control. Fresh air pressurized, ventilators seal out dust. Ladder and catwalk entry. The CH-120 is designed and originally manufactured to meet OSHA sound limitations at the operator's station with windows and vents closed under normal conditions.

SUSPENSION

Front

Independent trailing arm for each front wheel. Ride struts containing variable rate energy absorbing rubber elements are mounted between trailing arm and frame. Rebound feature included.

Drive

"A" frame structure integral with axle housing links drive axle to frame at forward center point with pin and spherical bushing. Track rod provides rear link between frame and drive axle. Rearward mounted ride cylinders containing variable rate energy absorbing rubber elements suspend drive axle from frame. Rebound feature included:

Maximum wheel oscillation 8°

Trailer

Free-floating, semi-elliptical leaf springs, thrust block mounted on dual rate spring pads. Eleven leaves 152 mm x 40 mm (6" x 1³/₈").

STEERING

Open-center hydraulic system with separate reservoir. Hydrostatic power steering using dual, double acting cylinders and independent gear pump. Supplementary steering is standard.

Steering Angle 41°

Turning Circle (SAE). 18.9 m (62'-0")

Steering Pump Output 94.6 l/m

(@ 2100 RPM). 25.0 g/m

System Relief Pressure 10 342 kPa

1,500 psi

Reservoir Capacity. 98.4 litres 26 gal

ELECTRICAL

Twenty-four volt lighting and accessories system. Fifty amp alternator with integral transistorized voltage regulator. Two 12 volt heavy duty batteries connected in series.

BRAKES

Service

Air/oil actuated, free floating, internal expanding two shoe type. Toggle switch on instrument panel activates pressure limiting valve for 50% brake reduction on front axle. Hand lever on steering column activates trailer axle brakes for loading or dumping.

Front Axle

Size 514 mm x 178 mm 20¹/₄" x 7"

Area 3 640 cm² 564 in²

Hydraulic Pressure (Max)
10 205 kPa 1,480 psi

Drive Axle

Size 762 mm x 254 mm 30" x 10"

Area 8 070 cm² 1,250 in²

Hydraulic Pressure (Max)
12 756 kPa 1,850 psi

Trailer Axle

Size 762 mm x 254 mm 30" x 10"

Area 8 070 cm² 1,250 in²

Hydraulic Pressure (Max)
12 756 kPa 1,850 psi

Total Area

Area 19 770 cm² 3,064 in²

Emergency

Two independent circuits within the service brake system provide emergency stopping capability conforming to SAE J1224. System is manually or automatically applied to stop vehicle within prescribed braking distance.

Parking

Drum, two shoe, internal expanding type mounted behind transmission around driveline. Automatically applied if air pressure is lost. Manually controlled from instrument panel.

Size 438 mm x 102 mm 17¹/₄" x 4"

Area 1 230 cm² 190 in²

Retarder

Foot operated valve controls oil flow into paddlewheel type retarder, integral with transmission housing. Provides constant speed control on downhill hauls. Retarder is automatically applied in the event air pressure is lost.

Maximum retarding output (includes engine friction) @ 2,250 rpm 1 324 kW 1,775 bhp

AIR SYSTEM

Service Air

Pressure 860 kPa (125 psi)

Reservoir Cap. 158.6 litres (5.6 ft³)

Start System

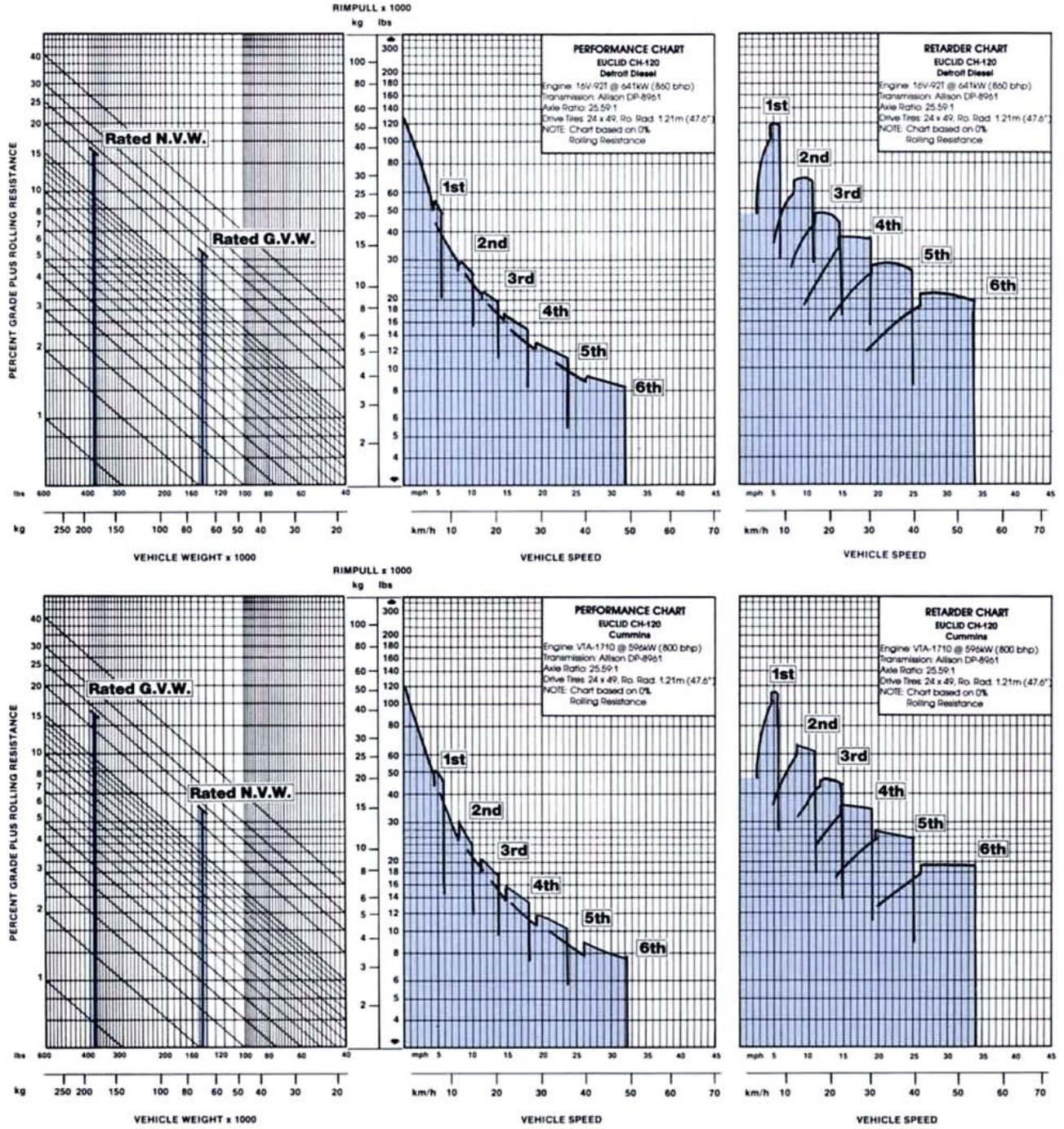
Pressure 860 kPa (125 psi)

Reservoir Cap. 356.8 litres (12.6 ft³)

Warning

Wig-wag alarm in cab activated when pressure drops to 620 kPa (90 psi)

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INSTRUCTIONS

1. FIND TOTAL RESISTANCE ON LEFT VERTICAL SCALE.
2. READ DOWN SLANTED LINE TO VEHICLE WEIGHT LINE.
3. FROM INTERSECTION READ HORIZONTALLY TO THE RIGHT TO INTERCEPTION WITH PERFORMANCE OR RETARDER CURVE.
4. READ DOWN FOR VEHICLE SPEED.



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