

# ***EH 4500***

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**Nominal Payload with Standard Equipment**  
254 tonnes (280 tons)

**Maximum GMW with Standard Tires**  
480 362 kg (1 059 000 lb)

**Engine**  
Detroit Diesel 16V-4000  
Rated Power 2014 kW (2700 HP)  
Cummins QSK60-L is available as an option.



# Engineered for Performance, Designed for Comfort, and Built to Last.

Hitachi EH4500-2 is designed with the same reliability as Hitachi's world leading Hydraulic Excavators.

## AC Drive Proven Performance & Economic Advantages

Hitachi adopted Siemens AC drives make your hauler a more valuable asset in your mining operation. Better performance, higher availability, and significant reductions in maintenance and operating costs -result in a lower cost per tonne and a higher return on your investment.

## High-Powered Engine

You can choose the Detroit Diesel w/DDEC IV engine, model 16V-4000 with 2 014 kW and 10 930 N·m torque or the Cummins QSK60-L engine with 2 014 kW and 10 630 N·m torque as an option.

## Long Frame Life

A fabricated box section and rectangular frame rail construction provides superior resistance to bending and torsional loads. One-piece top and bottom flanges eliminate cross tie member tie-in joints and provide a larger exposed center area for access to major components. There are no castings in the frame assembly.

## Tough Body

The Hitachi horizontal stiffener design minimizes stress concentrations, by dissipating load shocks over the entire body length. Closely spaced stiffeners provide additional protection by minimizing distances between unsupported areas.



Well Matched: EH4500-2 & Excavators

Excavator	EX3600-5		EX5500-5		EX8000
	LD	BH	LD	BH	LD
Bucket	21.0 m <sup>3</sup> (27.5 yd <sup>3</sup> )	22.0 m <sup>3</sup> (28.8 yd <sup>3</sup> )	27.0 m <sup>3</sup> (35.5 yd <sup>3</sup> )	29.0 m <sup>3</sup> (38.0 yd <sup>3</sup> )	40.0 m <sup>3</sup> (52.3 yd <sup>3</sup> )
Passes	7	6 or 7	5	5	3

LD: Loading shovel      BH: Backhoe

# Specifications: EH4500-2



## ENGINE

### Standard

Model	Detroit Diesel w/DDEC IV 16V-4000
Type	4 Cycle
Aspiration	Turbocharged & low temperature aftercooled
Emission Certification	U.S. EPA Tier 1

Gross Power @ 1900 min <sup>-1</sup> (rpm) (SAE J1995)	2 014 kW (2 700 HP)
Net power @ 1900 min <sup>-1</sup> (rpm) (SAE J1349)	1 939 kW (2 600 HP)
Maximum Torque @ 1 500 min <sup>-1</sup> (rpm)	10 930 N·m (1 115 kgf·m, 8 062 lbf·ft)
No. Cylinders	16
Bore & Stroke	165 x 190 mm (6.5 in x 7.48 in)
Displacement	65 L (3 967 in <sup>3</sup> )
Starting	24 Volt Electric

### Optional

Model	Cummins QSK60-L
Type	4 Cycle
Aspiration	Two-stage turbocharged intercooled & low temperature aftercooled
Emission Certification	U.S. EPA Tier 1

Rated Power @ 1900 min <sup>-1</sup> (rpm) (SAE J1995)	2 014 kW (2 700 HP)
Net power @ 1900 min <sup>-1</sup> (rpm) (SAE J1349)	1 920 kW (2 575 HP)
Maximum Torque @ 1 500 min <sup>-1</sup> (rpm)	10 630 N·m (1 084 kgf·m, 7 840 lbf·ft)
No. Cylinders	16
Bore & Stroke	159 x 190 mm (6.26 in x 7.48 in)
Displacement	60.2 L (3 674 in <sup>3</sup> )
Starting	24 Volt Electric



## ELECTRIC DRIVE

### Controls and Alternator

Hitachi AC drive technology uses Siemens controls and proven GTO inverter phase modules. Dynamic retarding capacity to zero speed using solid state technology. Alternator direct mounted to engine.

### Wheel Motors

Hitachi AC drive technology, developed in conjunction with Siemens, provides superior performance with higher top speeds, better gradeability and stronger retardation. Brushless operation reduces maintenance and running costs. Long life to overhaul means less downtime and reduced running costs.

	Standard	Optional
Planetary Ratio	35.816:1	40.789:1
Maximum Speed	66.9 km/h (41.6 mph)	56.2 km/h (34.9 mph)



## AC WHEEL MOTOR

Hitachi's Double Path Epicyclic Planetary Design provides high efficiency and easy maintenance. Allowing 1st (outer) planet carrier to travel at wheel speed provides lower operating temperatures - longer lubricant life, better component life. Increased 2nd (inner) planetary gears, from 3 to 4, produce higher reliability.



## TIRES

**Standard - Front and Rear**  
50/90R57(\*\*) E4 Radial

**Rim Width**  
863.6 mm (34 in)

**Optional - Front and Rear**  
50/80R57(\*\*) E4 Radial

**Rim Width**  
863.6 mm (34 in)

Certain job conditions may require higher TKPH(TMPH) in order to maintain maximum production. Hitachi recommends evaluating the job conditions and consulting the tire manufacturer to make proper tire selection. Optional rims available.



## ELECTRICAL SYSTEM

Twenty-four volt system. 260-ampere battery charger. Eight 12-volt, heavy-duty batteries connected in series.



## BODY CAPACITY

	m <sup>3</sup> (yd <sup>3</sup> )
Struck (SAE)	108 (142)
Heap 3:1	143 (187)
Heap 2:1 (SAE)	159 (208)

This body is for 50/90R57 tires use only. Body capacity and payload subject to change based on customer specific material density and application.



## STEERING SYSTEM

Flow-amplified, closed-center hydrostatic power steering system using two double-acting cylinders with pressure unloading type compensated piston pump and a brake actuation/steering system reservoir. Dual-Hitachi accumulators provide supplementary steering in accordance with J/ISO 5010 and constant steering rate under all conditions. A Tilt/telescopic steering wheel with 35 degrees of tilt and 57.15 mm (2.25") telescopic travel is standard.

Steering Angle	40°
Turning Diameter (SAE)	29.8 m (97'8" in)
Steering Pump Output (@ 1900 min <sup>-1</sup> (rpm))	249.0 L/min (65.8 gpm)
System Pressure	20 685 kPa (3 000 psi)
Filtration - pressure line	
Beta 6 ratio = 200	



## WEIGHTS

### With Standard 50/90 R57 Tires

	Detroit Diesel		Cummins	
	kg	(lb)	kg	(lb)
Chassis with Hoist	156 783	(345 548)	163 137	(349 471)
Body	41 358	(91 179)	41 358	(91 179)
Net Machine Weight	198 096	(436 727)	199 878	(440 650)
Empty Axle Weights				
Front Axle	99 453	(219 256)	101 053	(222 779)
Rear Axle	98 643	(217 471)	98 826	(217 870)

Maximum GMW 480 362 (1 059 000) 480 362 (1 059 000)  
Including Options, 50% Fuel, Operator & Payload Not to Exceed

Weights given are for standard options, standard body and tires. Net machine weight changes will directly effect the payload. Material density will determine body design/volume figures.

Load Weight Distribution  
Front - 33-34% Rear - 66-67%

Payload with Standard Equipment  
282 tonnes (311 tons)

**Note:** Nominal Payload on front cover shows 90% of Payload with Standard Equipment.

### With Optional 50/80 R57 Tires

	Detroit Diesel		Cummins	
	kg	(lb)	kg	(lb)
Chassis with Hoist	148 017	(326 322)	149 512	(329 617)
Body	31 996	(70 540)	31 996	(70 540)
Net Machine Weight	180 014	(396 862)	181 508	(400 157)
Empty Axle Weights				
Front Axle	90 391	(199 278)	90 611	(199 764)
Rear Axle	89 623	(197 584)	90 897	(200 393)

Maximum GMW 435 456 (960 000) 435 456 (960 000)  
Including Options, 50% Fuel, Operator & Payload Not to Exceed

Weights given are for standard options, 50/80R57 tires with respective body. Net machine weight changes will directly effect the payload. Material density will determine body design/volume figures.

Load Weight Distribution  
Front - 34% Rear - 66%

**Notes:** Maximum GMW subject to Hitachi approval for a given application.  
Approximate Net Machine Weight with options fitted.



## HYDRAULIC SYSTEM

Two (2) Hitachi three-stage, double-acting cylinders with cushioning in retraction, containing dual rod seals and urethane energized scrapers, inverted and outboard mounted. Separate reservoir and tandem gear pump connects with a four position electronic pilot controlled hoist valve. Electric controller is mounted to operator's seat.

Body Raise Time	22 s
Body Down Time	24 s
Hoist Pump Output Total (@ 1900 min <sup>-1</sup> (rpm))	969 L/min (256 gpm)
System Relief Pressure	21 030 kPa (3 050 psi)
Filtration - pressure line	
Beta 6 ratio = 200	



## BRAKE SYSTEM

Brake systems meet or surpass SAE J/ISO 3450.

### Service

All-hydraulic actuated braking system provides precise braking control and quick system response. The system is pressure proportioned, front to rear, for improved slippery road control.

The Hitachi 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 and secondary braking functions. The brakes are of a multi-plate design and continuously oil-cooled.

### Front Axle - Dry Disc

Disc Diameter Each (2 discs/axle)	121.3 cm	(47.75 in)
Brake Surface Area Per Axle	17 032 cm <sup>2</sup>	(2 640 in <sup>2</sup> )
Lining Area Per Axle	6 194 cm <sup>2</sup>	(960 in <sup>2</sup> )
Brake Pressure (Max.)	20 700 kPa	(3 000 psi)

### Rear Axle - Oil-Cooled Wet Disc

Brake Surface Area Per Axle	180 741 cm <sup>2</sup>	(28 015 in <sup>2</sup> )
Brake Pressure (Max.)	15 860 kPa	(2 300 psi)

### Secondary

Dual independent hydraulic circuits within the service brake system provide fully modulated reserve braking capability. Both front dry disc and rear wet disc are automatically applied when loss of pressure is detected.

### Parking

Four spring on, hydraulic off armature disc brake heads provide parking capabilities. The braking system complies with J/ISO 3450.

### Retarder

Superior retardation to zero speed on grades is achieved through AC wheel motors in conjunction with the Siemens resistor grid package. A recessed grid box, located on the service deck, enhances operator visibility. Cooling for the grid package is achieved with forced air flow provided by a blower driven by a single electric motor.

Maximum dynamic retarding with continuous rated blown grids:  
Standard 3 508 kW (4 704 HP)

### Load/Dump Brake Apply

Through activation of a switch by the operator, a solenoid is energized, sending full brake pressure to apply the rear Wet Disc brakes. For use during the load and dump cycles.

# Specifications: EH4500-2



## COMMAND CAB III

### Integral ROPS/FOPS

Command Cab III integral ROPS (Rollover Protective Structure) is standard in accordance with J/ISO 3471.



Double wall construction of 11 gauge inner and outer steel panels produces 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 Hitachi, tested with doors and windows closed per work cycle procedures in SAE J1166, results in an operator sound exposure Leq (Equivalent Sound Level) of 81 dB(A). A three-point rubber iso-mount arrangement to the deck surface minimizes vibration to the operator compartment.

### Monitoring System

CONTRONIC II monitors and diagnoses all onboard systems including Siemens drive system and engine. Data links offer complete integration, while a single multi-language Liquid Crystal Display (LCD) clearly details machine functions. Downtime is minimized with faster and more reliable troubleshooting and analysis.

HAULTRONIC II load weighing system offers benefits such as better equipment utilization on the jobsite, accurate unit and fleet production results, and benchmark unit statistics against fleet results. Cycle time, distance and cycle count can all be measured and recorded to further improve job productivity. HAULTRONIC II is fully integrated with CONTRONIC II vehicle monitoring system and display interface, avoiding potential failure or error common in aftermarket systems.

### Excellent Serviceability

A removable front closure allows easy access to the service brake valve and heater connections. 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 II, 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 II monitoring and warning system, a spacious environment, six-way adjustable air seat, tilt/telescopic steering wheel, filtered ventilation, door locks, and a full size trainer seat, all contribute to operator safety and comfort.



## SUSPENSION

### Front and Rear Suspension

For years, Hitachi 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 EH4500-2.

The new ACCU-TRAC suspension system features independent trailing arms for each front wheel with NEOCON struts, containing energy absorbing gas and compressible NEOCON-E™ 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 NEOCON struts are mounted in a more vertical position which allows a more pure axial loading and reduces the tractive and braking forces transmitted to the nose cone.

Hitachi NEOCON struts outperform competitive strut designs by improving isolation, stability, and control. Improved isolation means reduced impact loading on the structural members of the machine and greater operator comfort, resulting in longer equipment life and productivity. Improved stability means more consistent dynamic response of the machine to fluctuating load energy, resulting in predictable machine performance. Improved control also means better machine maneuverability.

The Hitachi 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 ensuring 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.



## FRAME

Full fabricated box section main rails with section height tapered from rear to front. 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 minimize stress concentrations. Welded joints are oriented longitudinally to the principal flow of stress for greater durability and more strength. Frame utilizes 345 N/mm<sup>2</sup> (50 000 psi) yield strength alloy steel that is robotically welded to ensure high quality welds. Superior design, robot welding and ultrasonic testing using state-of-the-art technology produces "Euc Tough" frames that minimize castings and vertical welds to better accept all stresses. Zero plug-in joints ensure maximum frame strength.



## BODY

Flat chute type, sloped floor, continuously exhaust-heated. Extended canopy protects service deck area. High tensile strength 400 BHN abrasion resistant alloy steel is used in thicknesses of:

	mm	(in)
Floor	19	(0.75)
Front	10	(0.39)
Sides	10	(0.39)
Canopy	6	(0.25)
Corners	13	(0.50)



High strength 690 N/mm<sup>2</sup> (100 000 psi) alloy steel is also used for the canopy side members and floor stiffeners. The body is rubber cushioned on the frame.

**Note:** This body is for 50/90R57 tires use only.



## SERVICE CAPACITIES

	L	(US gal)
Accumulator	76.0	(20.0)
Crankcase (includes filters)		
Detroit Diesel16V-4000	242.0	(64.0)
Cummins QSK60-L	265.0	(70.0)
Cooling System		
Detroit Diesel16V-4000	697.0	(184.0)
Cummins QSK60-L	643.0	(170.0)
Fuel Tank	3 785	(1 000)
Hydraulics		
Hoist System	965.0	(255.0)
Steering System	291.0	(77.0)
Hitachi Planetary Drives	223.0	(59.0)
Front Wheels	27.0	(7.0)
Windshield Washer	7.6	(2.0)

# Equipment & Dimensions: EH4500-2

## STANDARD EQUIPMENT

### GENERAL

Access ladders  
Air conditioning  
Air cleaner protection  
All-hydraulic braking  
Automatic lubrication system  
Battery box, on deck  
Battery isolation switch  
Body down indicator, mechanical  
Body prop pins  
Centralized service panel  
Continuous heated body  
Cruise control, propel/retard  
Electric horn, dual  
Electronic hoist control  
Electric start  
Engine access ladders (2)  
Engine self load test  
Extended body canopy  
Fan guard  
Fast fueling system, on tank  
Fuel gauge on tank  
Grease points for wheel Motor Bearings  
Ground level engine shutdown switch  
Guard rails around platform  
HAULTRONIC II load weighing system  
HID headlights  
Hoist kickout  
Ladder lights  
Mirrors, right and left  
Mud flaps  
Neocon suspension struts  
Operator arm and grid box guards  
Propulsion interlock, body up  
Radiator grille guard  
Retarder grid package, 16 elements  
Reverse alarm  
Rock ejector bars  
Supplementary steering system, accumulator  
Thermatic fan  
Tires, 50/90 R57(\*\*)E4  
Tow hooks, front and rear  
Two-speed overspeed setting  
Wiggins fast fueling

### CAB

Acoustical lining  
Air filtration/replaceable element  
Air suspension seat, 6 position  
Ash tray  
Auxiliary outlet, 12 volt  
Cab interior light  
Cigar lighter  
Door locks  
Engine starter/shutdown switch  
Full trainer seat  
Heater and defroster 26,000 Btu  
Integral ROPS/FOPS cab  
ISO driver envelope

### GAUGES AND INDICATORS

Contronic II monitoring and alarm system, multi-function indicator lights: Rear Axle Oil Leak Indicator  
Air filter restriction  
Alternator  
Body up indicator  
Blower loss  
Brake supply pressure  
Central warning  
Engine oil pressure  
Engine coolant temperature  
High beam indicator  
Hoist filter restriction  
Hoist oil temperature  
Hoist supply pressure  
Parking brake applied  
Payload monitoring  
Steering filter restriction  
Steering oil temperature  
Traction system fault  
Turn signals/hazard  
Wheel motor temperature

### MACHINE LIGHTS

Back-up lights, (2)  
Clearance lights, LED (4)  
Dual combination stop and tail lights, LED (2)  
Dynamic retarding light, LED (1)  
Engine compartment lights, (2)  
HID headlights, (4)  
Payload monitoring lights, LED  
Rear axle light, (1)  
Turn signals and four-way flashers

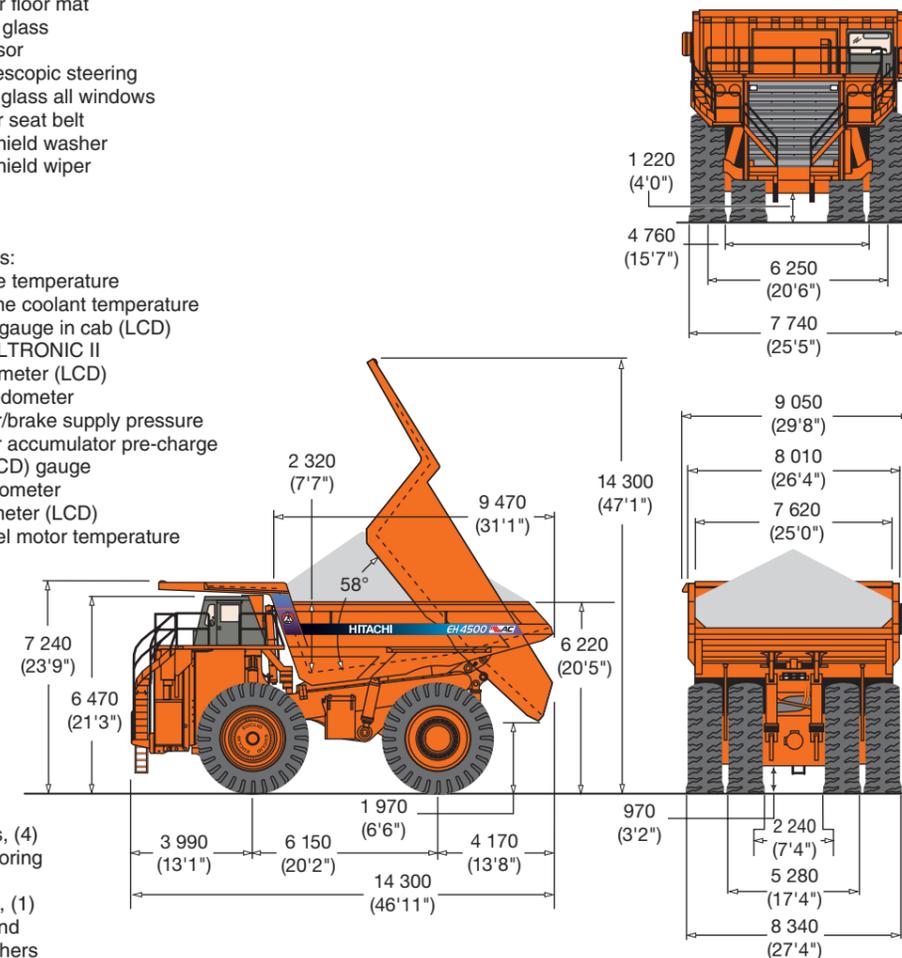
## OPTIONAL EQUIPMENT

Ansul centralized fire extinguishing system (12 nozzle)  
Auxiliary dump  
Auxiliary steer  
Body liners (400 BHN)  
Body side extensions  
Cab, acoustic package  
Canopy spillguard extension (12" total)  
Engine coolant and oil heater (220 V AC)  
Engine heater  
Keyless starter switch  
Kim Hotstart  
Loadweight display  
Mufflers  
Radiator shutters  
Tires (50/80R57)  
Trolley assist configuration

Standard and optional equipment may vary from country to country. Special options provided on request. All specifications are subject to change without notice.

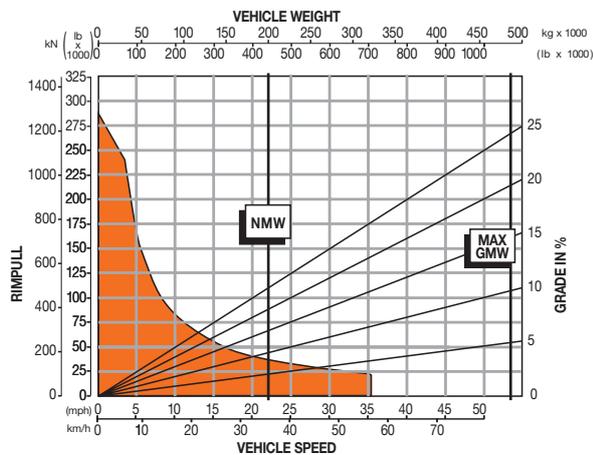
**Note:** Dimensions shown are for empty machine with 50/90 R57 tires.

unit:mm  
(ft in)

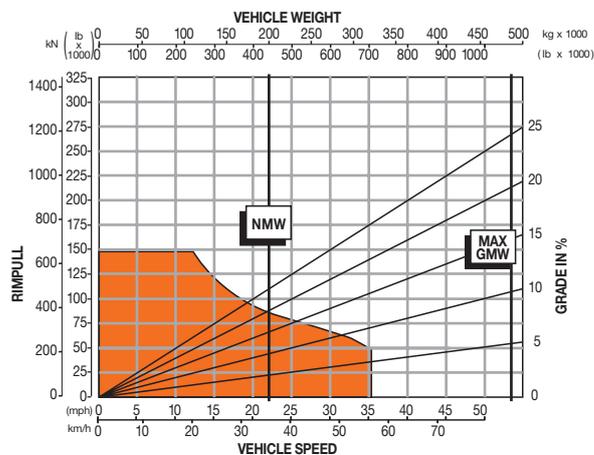


## Performance Data: EH4500-2

**RIMPULL CHART**



**RETARDER CHART**



### NOTES:

Diagonal lines represent total resistance (Grade % plus rolling resistance %). Charts based on 0% rolling resistance, standard power of engine, standard tires and gearing unless otherwise stated.

1. Find the total resistance on diagonal lines on right-hand border of rimpull 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 rimpull or retarder curve.
4. Read down for machine speed.

These specifications are subject to change without notice. Illustrations and photos show the standard models, and may or may not include optional equipment, accessories, and all standard equipment. Before use, read and understand Operator's Manual for proper operation.

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