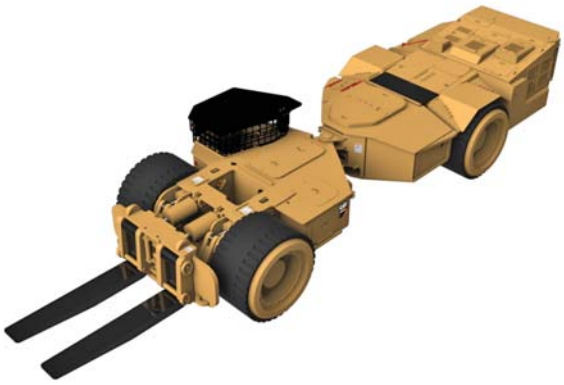

Cat®
SH650 D

Roof Support Carrier

Specifications

Dimensions (approximate)		
Length		
Length less load lifting and battery lift forks	9601 mm	31 ft 6 in
Length with 2133 mm (84-in) lifting fork	11 734 mm	38 ft 6 in
Length with lift plate attachment	12 192 mm	40 ft 0 in
Overall width		
With attachments and 48-in tires	2997 mm	9 ft 10 in
With attachments and 54-in tires	3022 mm	9 ft 11 in
Wheelbase	5155 mm	16 ft 11 in
Empty weights	45 359 kg	100,000 lb
Cab height (with 508 mm [20-in] cab) (lower cab heights available on request)		
With 48-in tires	1727 mm	68 in
With 54-in tires	1778 mm	70 in
Chassis height (nominal)		
With 48-in tires	1219 mm	48 in
With 54-in tires	1270 mm	50 in
Ground clearance (nominal) (please reference sales drawing for ground clearance profile)		
With 48-in tires	406 mm	16 in
With 54-in tires	482 mm	19 in
Inside turn radius	4140 mm	13 ft 7 in
Outside turn radius	7213 mm	23 ft 8 in
Steering articulation	100° total	
Frame oscillation	± 20°	
Tram speed (calculated based on 4% rolling resistance)		
With Cummins C8.3 Engine 138 kW (185 hp)		
Level and empty on 0% grade	13.7 km/h	8.5 mph
Level and loaded on 0% grade	6.7 km/h	4.15 mph
With Cummins C8.3 Engine 179 kW (240 hp)		
Level and empty on 0% grade	16.3 km/h	10.1 mph
Level and loaded on 0% grade	8.1 km/h	5.03 mph

Lift and Carry Capacity		
Without ballast	45 tonnes	50 tons
Capacities based on 54 × 26 solid tire	at 1575 mm	at 62 in

Drive Train

Power Pack

One, 179 kW (240 hp), Cummins with DST Scrubber, MSHA Par 7E-A Approved; consisting of
- Charge Air Cooler
- DST Catalyst
- Water Cooled Exhaust Manifold and turbocharger
- Intake System with intake flapper valve shutdown
- DST Safety System
- DST Flameproof Alternator
- DST Air start package including: air starter, starter oil injector, water separator, pilot valve and operator control valves.

Note: Initial machine will be equipped with the C8.3 138 kW (185 hp); however all cooling and emissions control components will be sized for the 179 kW (240 hp) engine.

Transmission

Six speed, power shift Clark 32000 transmission with 7C input and dual 8.5C outputs. Isolator mounted with dipstick fill.

External shell type, water to oil, shell cooler.

Cooling System

Four and one-half fins per inch, 20.68 MPa (3,000 psi) pressure wash capable, brass tubed, cooling system. Heavy Duty DST cooling system with 179 kW (240 hp) capability.

Drive Lines

7 and 8.5 Series shaft with 76.2 mm (3 in) slip joints.

Axles

Front and rear rigid mounted outboard planetary axles with wet disc spring applied, hydraulically released brakes.

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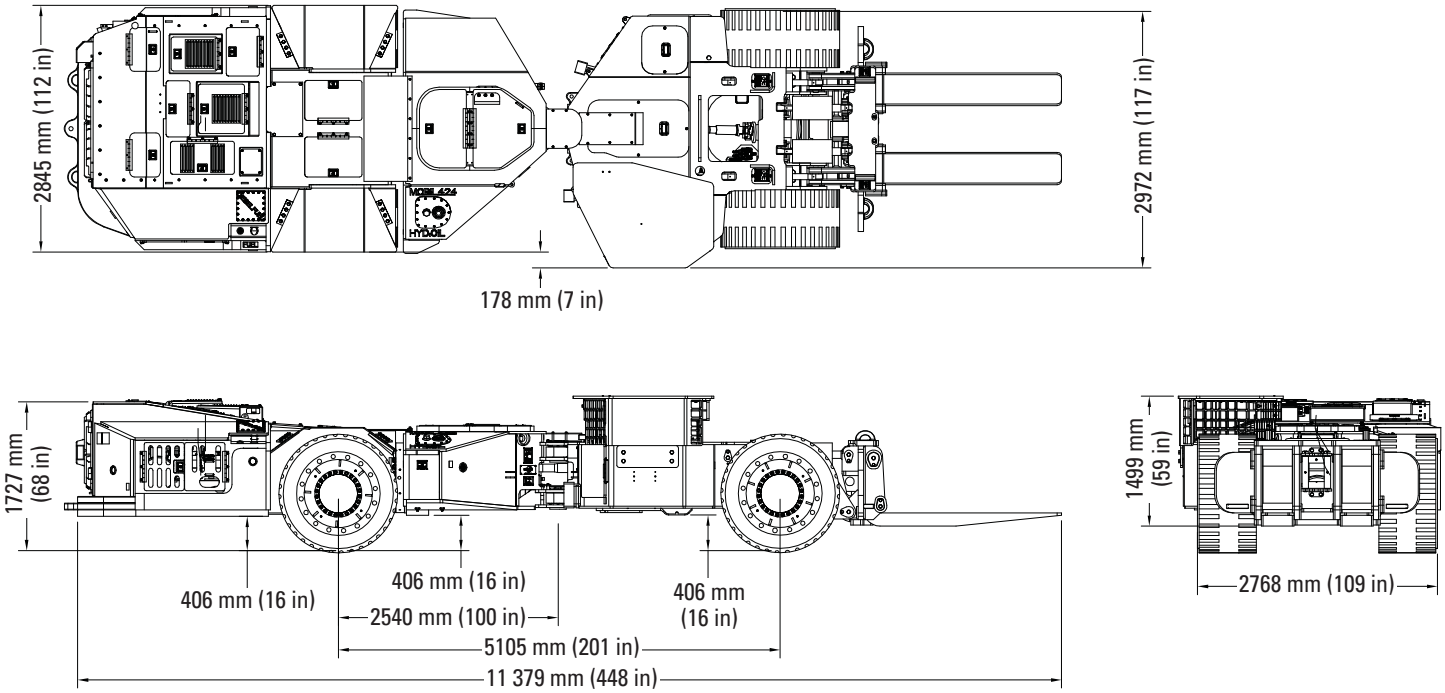

Shown with 54" tires

**Detailed GA drawings available for specific dimensions and component locations*

Brakes

Service

Demodulating/Failsafe parking and service brakes with cooling circuit.

Left foot-pedal actuated wet disc brakes at all four wheels.

Hydraulic power is supplied through a one gallon accumulator and is monitored by a charging/unloading valve.

Accumulator is not permitted to fall below a certain residual pressure to assure this continued availability.

A dash mounted monitoring gauge keeps the operator constantly informed of the accumulator's status.

Automatic Emergency/Park Brake Release.

Hand Pump

Floor mounted hand pump located to the right of operator. Activating this pump enables the operator to release the brake without power on the unit for towing a disabled vehicle.

Hydraulics

Pump Motor

Converter mounted, variable displacement, pressure compensated pump, 120.37 L/min (31.8 gal/min).

Pump Filtration

Standard – Three pressure filters; one 5 micron filter on the main hydraulic circuit, one 5 micron filter on the accumulator circuit, and one 5 micron filter on the pilot valve circuit.

One remote mounted 5 micron return filter.

Hydraulics (continued)

Reservoir

A 189 L (50 gal) capacity reservoir equipped with a spin-on filter/breather, an end mounted magnetic drain plug, and a clean out plate to permit access to suction in-line strainer and cleaning and draining without removing from the machine.

An oil level sight gauge is located on the side of the tank and is easily visible.

Use Mobil Type 424 Hydraulic Oil.

Reservoir Fill System

Venturi Jet refill system located on opposite side from operator on the middle frame that allows refilling of reservoir through the return line oil filter that is located in the top of the oil reservoir.

Hydraulic PTO

Two (2) quick coupler connections, 17.58 MPa (2,550 psi) maximum recommended operating pressure.

Tilt Lift Cylinder

Two (2) 241 mm (9 1/2 in) bore, double acting cylinders with load locking valves mounted on both the up and down functions.

Bell-Crank Lift Cylinder

Two (2) 203 mm (8 in) bore, double acting cylinders with load locking valves mounted on both the up and down functions.

Steering Cylinder

Two (2) 152 mm (6 in) bore, double acting cylinders with dual relief setting at 15.86 MPa (2,300 psi).

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Dual Lift System

Standard Load Lift Face Plate

A combination bell-crank arm and bell-crank lifting cylinder for vertical lifting and tilting cylinders for tilt lifting of a universal load lift frame that is provided as standard equipment.

Heavy duty forged alloy steel forks, 152 mm × 356 mm × 2134 mm (6 in × 14 in × 84 in), are standard for 45 tonnes (50 ton) lift capability.

Winch

A fully hydraulic operated, 31 751 kg (70,000 lb) winch, with two speed pay in/out.

Winch Cable Assembly

The standard winch cable is 25.4 mm (1 in) diameter, 6 × 37, IWRC, EIPS, class bright cable equipped with a swaged-on thimble, connecting link and swivel hook.

Tri-Section Frame

The tri-section frame design featuring multiple plate, modular construction for maximum strength and structural integrity and the design produces a maximum of stability while maneuvering with a heavy load.

All high stressed areas are manufactured with T1 steel.

Center Section

Center section is designed with hardened 102 mm (4 in) diameter pivot pins and spherical bearings to provide maximum load transfer and long component life.

Entire center section area manufactured with T1 steel.

Oscillation Section

An 813 mm (32 in) diameter bearing with 44 mm (1 3/4 in) diameter rolling elements provides 20 degrees of oscillation.

Operator's Compartment

1. Side Egress Access
2. LH Transmission Range Selection
3. RH Transmission Range Selection
4. RH Lighting Selection
5. Right Foot Accelerator Pedal
6. Park Brake Set/Release
7. Warning Horn
8. Park Brake Override
9. Valve Bank Hydraulic Functions:
   - Steering
   - Bucket
   - Bucket Eject
   - Winch/Power Take Off
10. System Pressure Gauge
11. Accumulator Pressure Gauge
12. Engine Temperature
13. Converter Temperature
14. Low Oil Engine Shutdown
15. Intake Restriction Gauge
16. Engine Oil Pressure
17. Park Brake Release Pressure Gauge
18. One LinkOne CD which includes all above manuals in electronic format

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Hydraulic Installation (Standard)

JIC fittings with high pressure hosing; MSHA 2G flame resistant approved.

Cab Option

Manual Adjustable 508 mm (20 in) Cab Assembly – MSHA certified cab, formed support plate, access handles, completely enclosed grid and dual corner opening doors.

Cab is manually adjustable.

Hydraulically Adjustable 508 mm (20 in) Cab Assembly – MSHA certified cab, formed support plate, access handles, completely enclosed grid and dual corner opening doors.

Addition of 7th main control valve section and additional operators control valve included.

Fixed height 508 mm (20 in) Cab Assembly – MSHA certified cab, formed support plate, access handles, completely enclosed grid and dual corner opening doors.

Fire Suppression

Automatic/Manual with linear detection wire.

Also one 22.7 kg (20 lb) Class 10A60B: Hand held unit located in the operators pit.

Lighting System

DST MSHA approved lighting package

Four MSHA approved head lights

Lift Attachments

Fork Assembly

2134 mm (84 in) Overall Length – set of 2134 mm (84 in) overall length up-set forged forks designed to lift and carry 45 tonnes at 1575 mm (50 tons at 62 in) from the load lift plate mounted to the machine.

Quick Attach Lift Plate

2134 mm (84 in) (Fork Assembly Required) – designed to lift and carry 45 tonnes at 1575 mm (50 tons at 62 in) from the face of the load lift frame. The plate mounts directly to the 2134 mm (84 in) forks through two parallel pockets and is held in place with two drop pins chained to the lift plate.