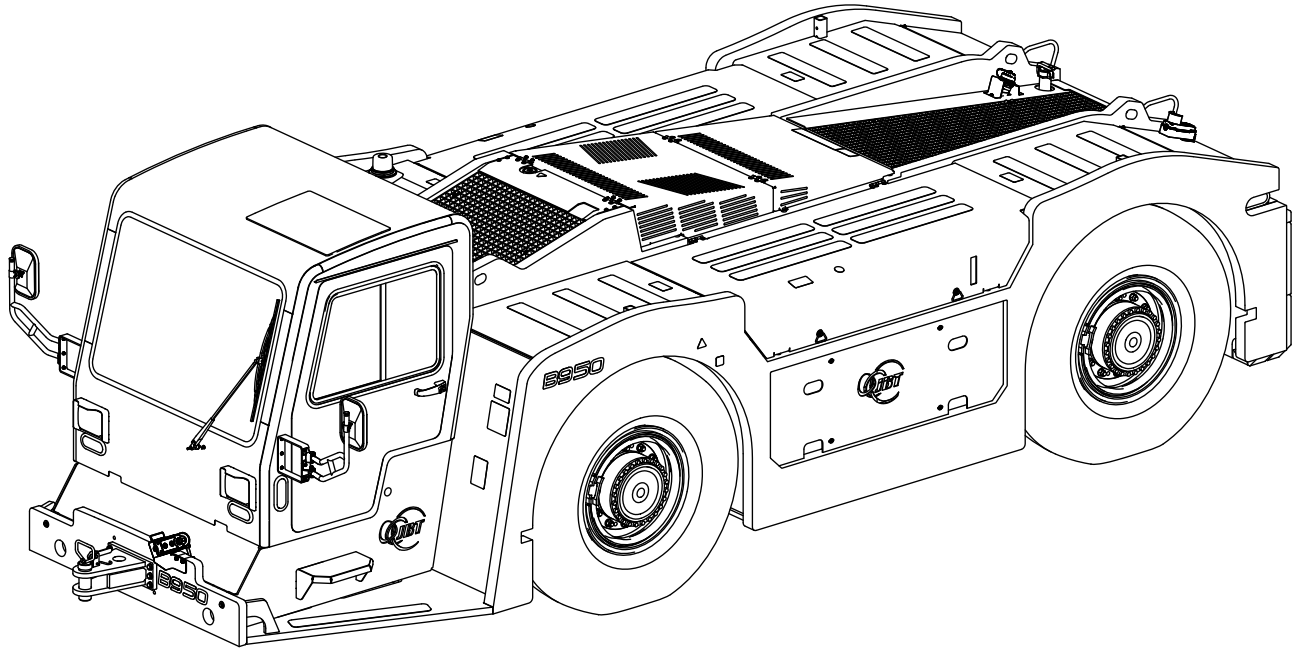
B950

Aircraft Tow Tractor



Technical Specification

OSHKOSH™
AEROTECH

MERCURY
GROUND SUPPORT EQUIPMENT

B950

Technical Specification

Version 2
Edition 4

This technical specification supersedes all editions and revisions prior to:

July 2024
English Language

For use with equipment serial numbers
B95023001 and subsequent

This technical specification includes the following options:
Cummins Diesel Tier 3, Tier 4F, and Stage V
Two-wheel Steering (2WS)

Oshkosh AeroTech, Ground Support Equipment
Oshkosh AeroTech, LLC
7300 Presidents Drive
Orlando, Florida 32809 USA
+1-407-851-3377 Telephone
+1-407-850-4221 Fax

CONFIDENTIAL

THIS PAGE INTENTIONALLY LEFT BLANK

TECHNICAL SPECIFICATION

TABLE OF CONTENTS

Section 1. Description

Section 2. Specifications

THIS PAGE INTENTIONALLY LEFT BLANK

Section 1. Description

1. GENERAL

NOTE: REFER TO CHAPTER 1, SECTION 3 FOR EMERGENCY PROCEDURES.

The B950, Aircraft Tow Tractor is a four-wheel drive vehicle with standard four-wheel steer, designed for aircraft pushing and towing. The vehicle is powered by a diesel engine coupled to a transmission which is connected to the front and rear axles through drive shafts.

2. MAIN COMPONENTS

A. CHASSIS

The chassis is constructed of welded steel with access to engine, transmission, hydraulic and electrical service compartments through hoods and covers.

NOTE: REFER TO CHAPTER 1, SECTION 4, “SPECIFICATIONS” FOR VEHICLE AND BALLAST WEIGHT, DIMENSIONS AND OTHER VEHICLE INFORMATION.

B. POWER UNIT - DIESEL ENGINE

The engine is a turbocharged four-stroke, six-cylinder, liquid-cooled diesel engine. Engine speed is controlled by an accelerator pedal located at the right side of the cab console.

(1) Fuel System - The fuel tank is filled from the rear, at the right side of the tractor. Fuel flows through a fuel and water separator before entering fuel pump, then forced through the fuel filter and into the fuel injector pump.

(2) Cooling System - The cooling system uses a heat radiator with coolant and forced air. Proper operating temperature is maintained by a thermostat regulating the coolant flow through the radiator. The air is forced by a belt-driven fan at the front of the engine and through radiator cores.

(3) Air Intake - Heavy particles in the air are trapped and removed when the incoming air is filtered through the element before it enters the turbo compressor.

(4) Exhaust System - Exhaust from the engine flows to the outside of the vehicle through a muffler on Tier 3 engines or after-treatment device for Tier 4 engines.

C. TRANSMISSION

The transmission is a six-speed forward and three-speed reverse, with down-shift inhibit and parking brake interlock functions. Forward motion, reverse motion and speeds are controlled through the use of an electronic shifter and associated solenoid actuators. Shifting is accomplished by actuating the shifter handle to the selected gear and drive position, and located to the left of the steering column in the driver’s cab.

The shifter must be in the neutral position to start the engine. Also, the parking brake interlock provides an alarm which sounds when the park brake is applied and the operator moves the shifter out of neutral.

D. AXLES AND WHEEL ASSEMBLIES

The vehicle is standard equipped with full-time four-wheel drive and four-wheel steering, providing three steering modes. An optional two-wheel steering system is available, restricting steering to the two front wheels only. Refer to Chapter 1, Section 2, “Operation” for description of steering modes.

E. STEERING SYSTEM

The steering is provided by a valve actuated by the steering wheel and assisted by hydraulic pressure provided by the hydraulic services pump, which provides continuous flow to the steering control unit. The vehicle is standard equipped with four-wheel steering.

F. HYDRAULIC SYSTEM

The hydraulic system is an open center circuit that converts power from the engine through the services pump.

The hydraulic system includes two pressure accumulators to provide braking pressure to the vehicle, either loaded or unloaded, in case of hydraulic pressure or pump failure. The hydraulic pressure in these accumulators is maintained by the services pump.

G. BRAKE SYSTEMS

(1) Service Brakes - A foot pedal operates a dual brake hydraulic valve that actuates on the brake calipers at the wheel ends of both axles.

(2) Back-up Accumulators - If normal hydraulic flow for the brake system is interrupted, hydraulic pressure stored in the accumulators provide braking power. The number of applications is limited.

(3) Parking Brake - Actuated by a foot-pedal and a hand-release puller located inside the driver’s cab. It consists of a dry disc integrated with the transmission rear output.

H. ELECTRICAL SYSTEM

Electrical current is supplied by two 12 VDC batteries to provide current to all electrical components. The electrical circuits are protected by fuses (standard) or circuit breakers (optional) housed in the main electrical panel, located on the right side of the vehicle, between the front and rear wheels. The circuit breakers, relays, and fuses assure proper operating sequences and provide overload protection.

Batteries are located next to the main electrical panel. Recharging current, to maintain the battery at full capacity, is supplied by a belt-driven alternator mounted on the engine. A NATO connector may be offered in addition to the battery disconnect switch.

Lighting

- *Driving Lights* - Headlights, parking lights, and turn signal lights.
- *Tail Lights* - Stop lights, reverse lights, and turn signal lights.

Among other components are the reverse drive alarm, horn, optional strobe or rotational beacon and working lights, and wipers and window defroster with enclosed cab.

I. CONTROLS AND INSTRUMENTS

Refer to Chapter 1, Section 2, “Operation” for instruments and control panels, driving controls, gauges and indicators.

Among the warning indicators are: engine oil pressure and coolant low levels, hydraulic oil low level and over temperature, and service brakes accumulators low pressure.

3. VEHICLE COMPONENTS LOCATION

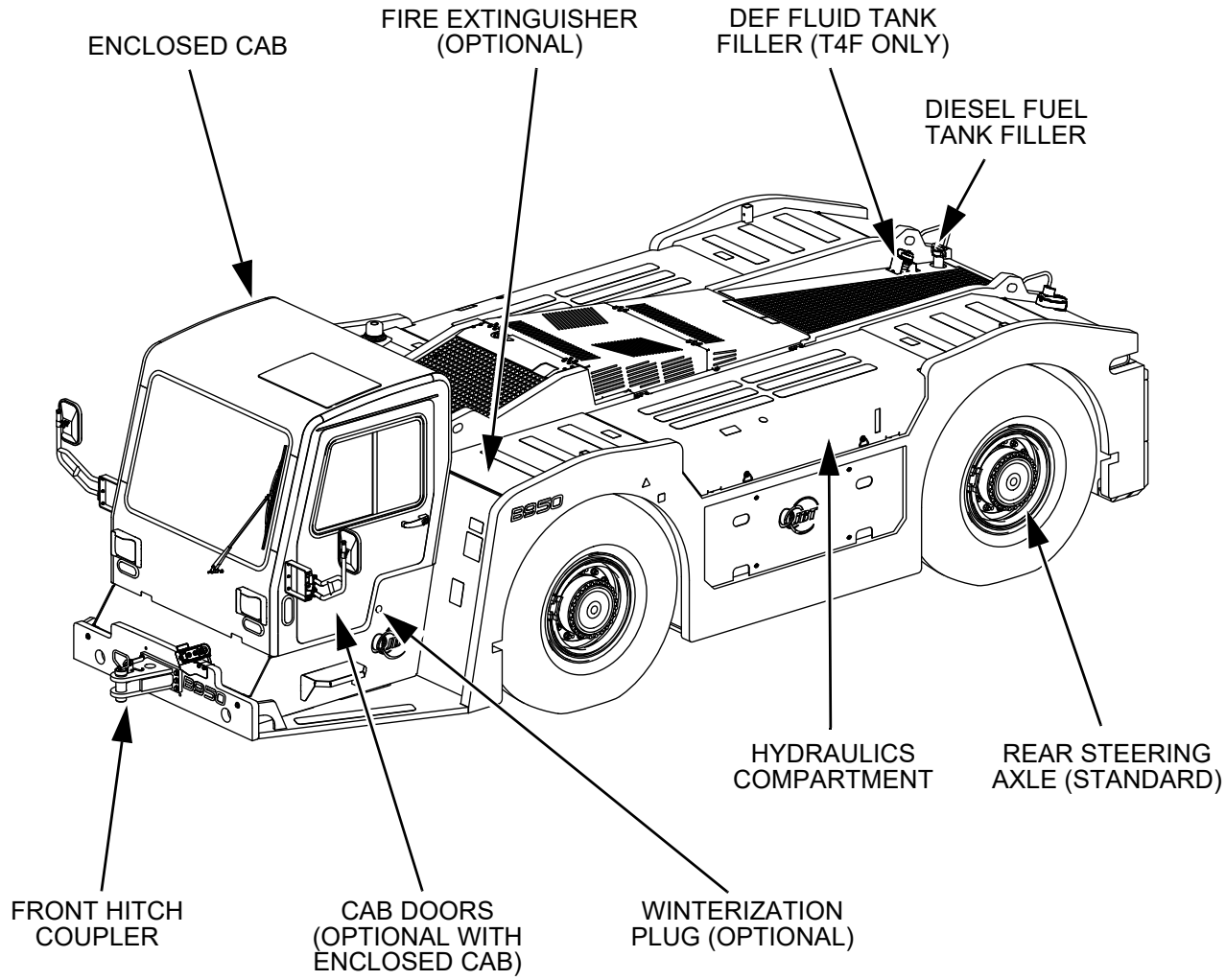


Figure 1
B950, AIRCRAFT TOW TRACTOR - LEFT FRONT VIEW

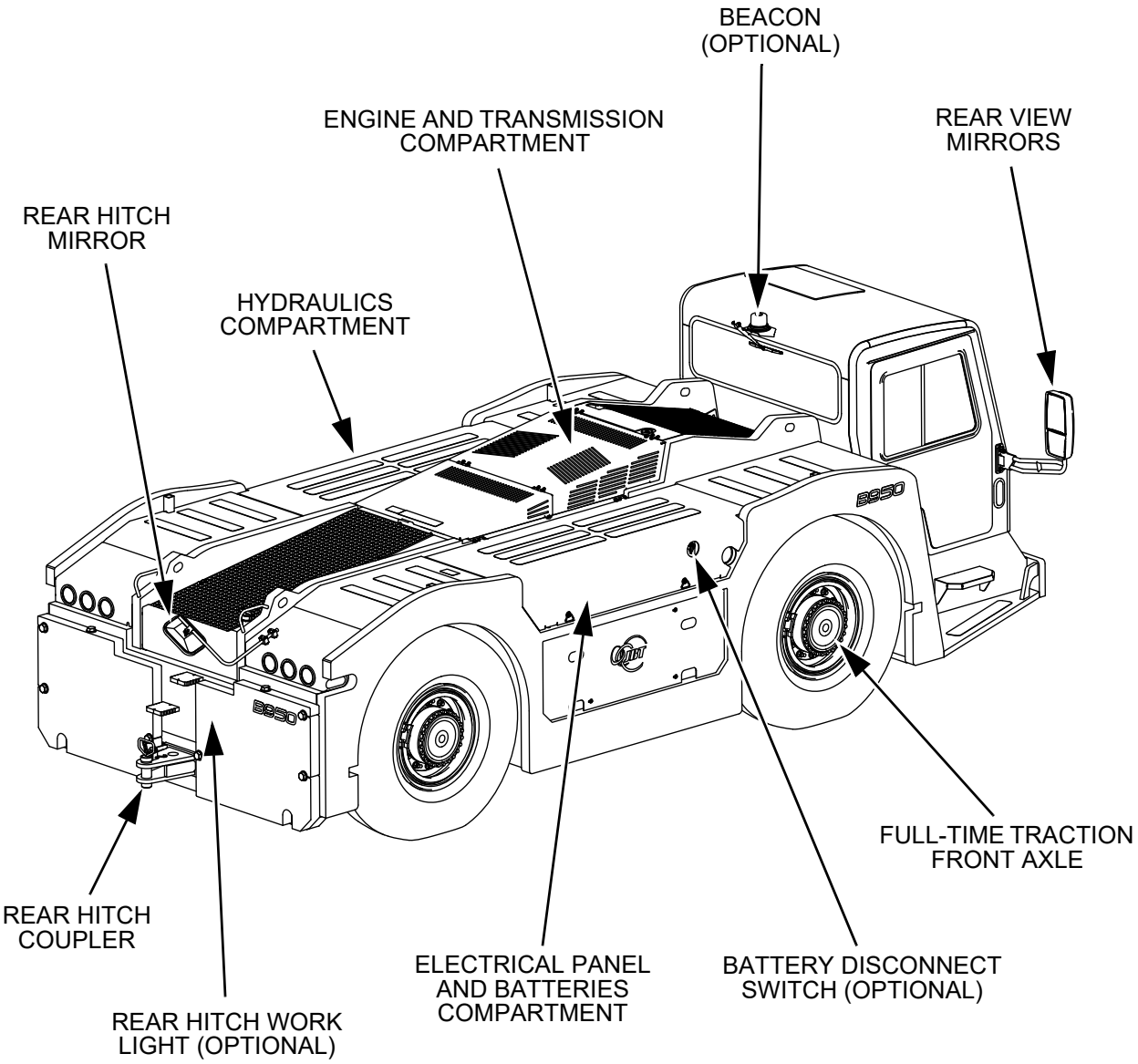


Figure 2
B950, AIRCRAFT TOW TRACTOR - RIGHT REAR VIEW

4. OPTIONAL FEATURES

General Options

- Ballast kits to decrease GVW and DBP
- Hitch coupler mirrors
- European Union (CE) requirement package
- Port Authority of New York and New Jersey (PANYNJ) “PONYA” requirement package
- Fire extinguishers (fender mounted) of 2.2 kg (5 lb.), 4.5 kg (10 lb.) or 9 kg (20 lb.)
- Intercom jacks and cable system
- Intercom with power box
- Power supply (12 VDC) for radio connection
- Winterization protection to -29 ºC (-20 ºF) or -40 ºC (-40 ºF) for 120 VAC or 240 VAC
- LED headlights
- Rotating or stroboscopic beacons activated with ignition switch ON
- Work lights for front and rear couplers
- Maintenance compartments lighting
- Guards for headlights and tail lights
- Keyed ignition switch
- Anderson jump start connector
- Automatic lubrication system
- Cab elevation system
- Integrated hydraulic jacking system
- Custom color scheme paint
- Spare tire wheel

Additional Cab Options

- Suspension seats for driver and passenger
- Non-suspension bench seat for passengers (with room for two passengers)
- Steel doors with sliding windows
- Vinyl doors with sliding windows
- Roof mounted beacon
- Rear window electric defroster
- Dual-level outside mirrors with convex section
- Dual-level outside mirrors, heated and powered
- Additional interior ventilation fan (mounted on upper right hand side corner of ceiling
- Cab insulation package
- Heater
- Air conditioning

THIS PAGE INTENTIONALLY LEFT BLANK

Section 2. Specifications

1. GENERAL

This vehicle specification outlines the product definition of the B950, Aircraft Tow Tractor offered by Oshkosh AeroTech, Ground Support Equipment.

Tractors in this line are equipped with diesel powered engines, power shift transmissions, and four wheel drive axles with rubber pneumatic tires.

The B950 tractor is capable of maneuvering aircraft under a wide range of climatic conditions.

NOTE: MAINTENANCE SPECIFICATIONS ARE CONTAINED IN CHAPTER 2, SECTION 4. ALL REFERENCES TO GALLONS ARE FOR U.S. GALLONS.

NOTE: VEHICLE SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE, DUE TO DESIGN IMPROVEMENTS AND CUSTOMERS' SPECIFIC REQUIREMENTS.

2. MODEL DEFINITION

Vehicle name:	B950, Aircraft Tow Tractor
Designation:	Aircraft Movement Equipment
Vehicle type:	B950 Tractor
Power unit:	Diesel (standard)
Maximum tow load:	Refer to GVW, DBP and Tow Loads in table below.

Gross Vehicle Weight (GVW): Maximum weight of the vehicle with full capacity fluids, driver, passenger and equipment options. The vehicle has a weight tolerance of ± 907 kg (± 2000 lb.).

Draw Bar Pull (DBP): Net force in kilograms-force or kilo-newtons (pounds-force) that the vehicle is capable of producing at the tow coupler under normal operation on dry level concrete with a coefficient of friction μ= 0.80. Refer to 'APPROXIMATE FRICTION COEFFICIENTS' within this section. Due to differences in gearing between forward and reverse, the draw bar pull in reverse is reduced by 5% in comparison with front operation mode.

Minimum Tow Load: Minimum aircraft weight that the tractor should handle to avoid damage to the nose landing gear. It is recommended to never tow an aircraft that is less than double the tractor weight.

Maximum Tow Load (MTL): Maximum aircraft weight that the tractor can handle in typical conditions, defined as 3.5% break away, 2% ramp slope, and friction coefficient μ = 0.57 (wet concrete).

TABLE 1 - GROSS VEHICLE WEIGHT AND DRAW BAR PULL

Option	GVW kg (lb.)	DBP Forward kgf / kN (lbf)	Aircraft Tow Load (Weight)	
			Minimum kg (lb.)	Maximum kg (lb.)
1	31 750 (70 000)	25 400 / 250 (56 000)	63 500 (140 000)	329 000 (725 300)
2	36 290 (80 000)	29 000 / 285 (64 000)	72 570 (160 000)	376 100 (829 200)
3	40 825 (90 000)	30 800 / 305 (68 000)	81 650 (180 000)	423 100 (932 800)
Standard	45 360 (100 000)	30 800 / 305 (68 000)	90 720 (200 000)	470 100 (1 036 400)

NOTE: ALL TRACTOR PERFORMANCE VALUES HAVE A TOLERANCE OF ± 3%.

3. AIRCRAFT COMPATIBILITY RANGE

The B950 has the capability of moving a wide range of aircraft. Performance of the vehicle is based upon operation at sea level conditions. The table below is for reference only and due to the wide variety of models and sub-models, some may not be listed.

This table is based on the B950 in the standard configuration. Lighter ballast options of the B950 tractor will have lower capabilities

TABLE 2 - B950 - AIRCRAFT COMPATIBILITY

Manufacturer	Aircraft Models
Airbus SAS	**A320**-100/200, **A321**-100/200, **A300**-600, **A310**-200, **A330**-300, **A340**-300/600, **A350**-800/900/1000, **A380***(*).
Aviastar-SP	An-124.
The Boeing Company	**727**-200, **757**-200/300, **707**, KC-135, **767**-300ER/400ER, **777**-200/300ER, **787**-8/9/10, C-17, **747**-400/8.
Lockheed Corporation	L-1011, C-5.
McDonnell Douglas	**DC**-8, **DC**-10-10/30, MD-11.
PJSC Voronezh	IL-96.
* Aircraft can only be handled under normal conditions which include wet concrete, but not snow. (*)May not be able to handle some aircraft sub-models.	

NOTE: AIRCRAFT LIGHTER THAN THE MODELS LISTED ON THIS TABLE MAY BE HANDLED BY THE B950 TRACTOR WITH ONE OF THE OPTIONS WITH REDUCED BALLASTS.

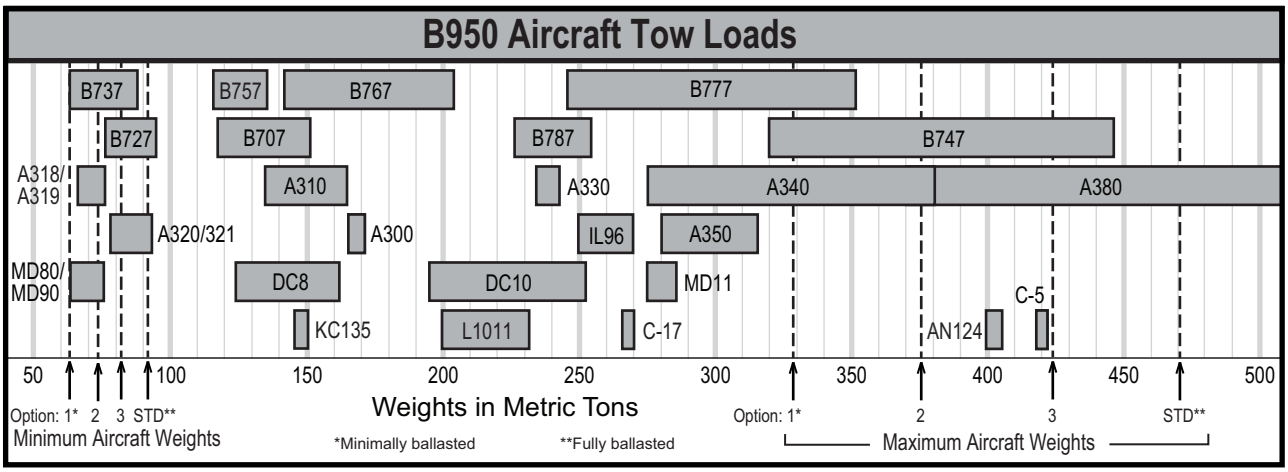


Figure 1
B950, AIRCRAFT TOW TRACTOR COMPATIBILITY CHART

TRACTIVE EFFORT VS. VEHICLE SPEED

CUMMINS QSB 6.7 T3, T4f - ZF 6WG190

45 300 kg GVW @ 0.80 COEFFICIENT OF FRICTION

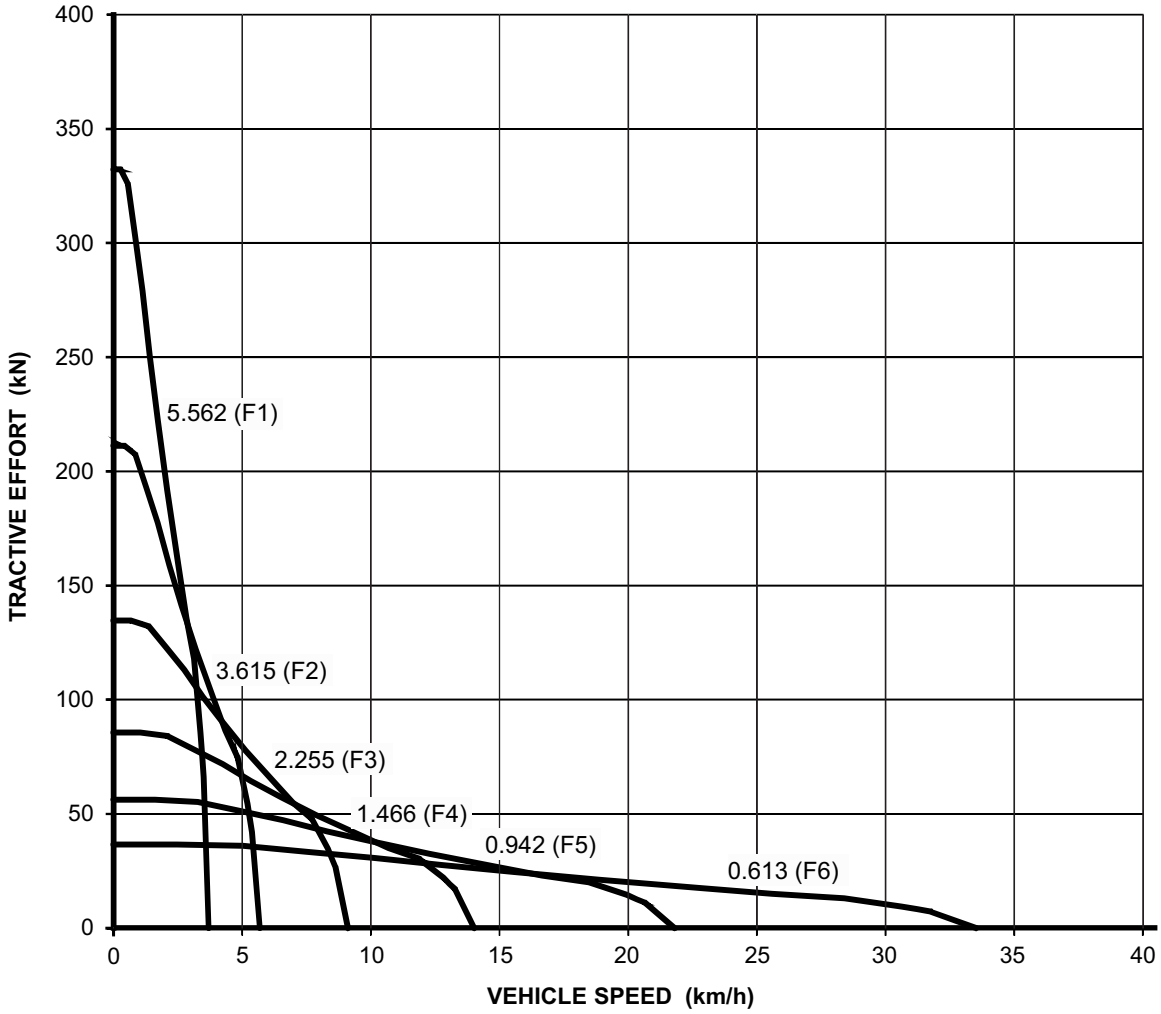


Figure 2
CUMMINS ENGINE - DRAWBAR PERFORMANCE (METRIC)

TRACTIVE EFFORT VS. VEHICLE SPEED

CUMMINS QSB 6.7 T3, T4f - ZF 6WG190

100 000 lb. GVW @ 0.80 COEFFICIENT OF FRICTION

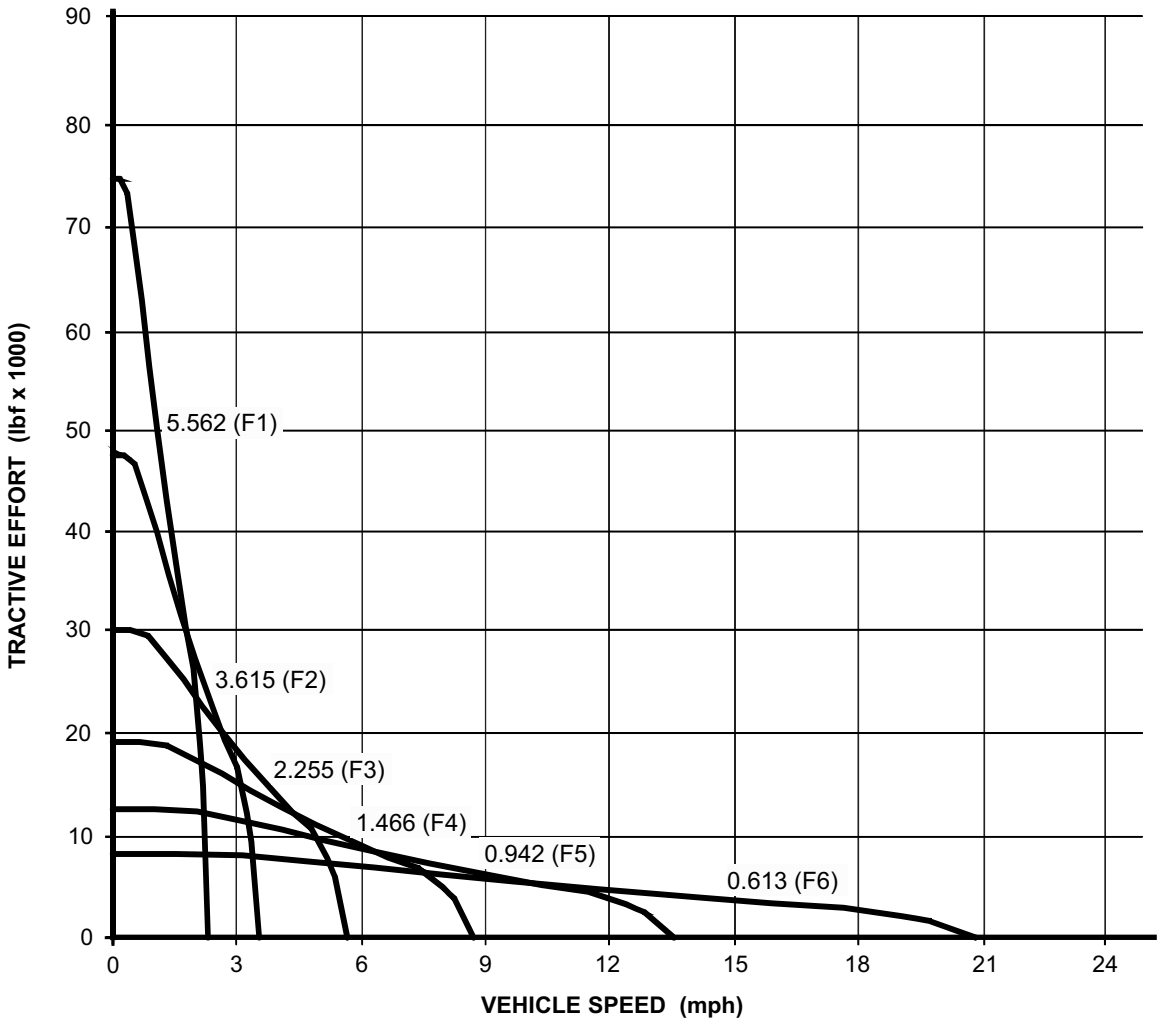


Figure 3
CUMMINS ENGINE - DRAWBAR PERFORMANCE (STANDARD)

4. DIMENSIONAL CHARACTERISTICS

A. GENERAL DIMENSIONS

Refer to Figure 4 and Figure 5.

Overall Length

- Standard unit with couplers . . . . . 7646 mm (301.0 in.)
- Standard unit without couplers . . . . . 6658 mm (270.0 in.)
- Unit with rear GPU frame (with couplers) . . . . . 9108 mm (358.6 in.)
- Unit with rear GPU frame (without couplers). . . . . 8320 mm (327.6 in.)

Overall Width

- Overall width (without mirrors) . . . . . 2692 mm (106.0 in.)
- Overall width (with mirrors) approx. . . . . 2898 mm (114.1 in.)

Overall Height

- Unit with open cab. . . . . 1813 mm (71.4 in.)
- Unit with fixed enclosed cab, no beacon . . . . . 2233 mm (87.9 in.)
- Unit with fixed enclosed cab and beacon . . . . . 2268 mm (89.3 in.)

Other Dimensions

- Hitch coupler length (front and rear) . . . . . 394 mm (15.5 in.)
- Wheelbase . . . . . 3378 mm (133.0 in.)
- Front and rear track width . . . . . 2270 mm (89.4 in.)
- Ground clearance (maximum). . . . . 214 mm (8.4 in.)

Elevated Enclosed Cab

- Overall height fully raised . . . . . 2359 mm (92.9 in.)
- Overall height fully lowered . . . . . 1902 mm (74.9 in.)

DIMENSIONS IN MILLIMETERS (INCHES)

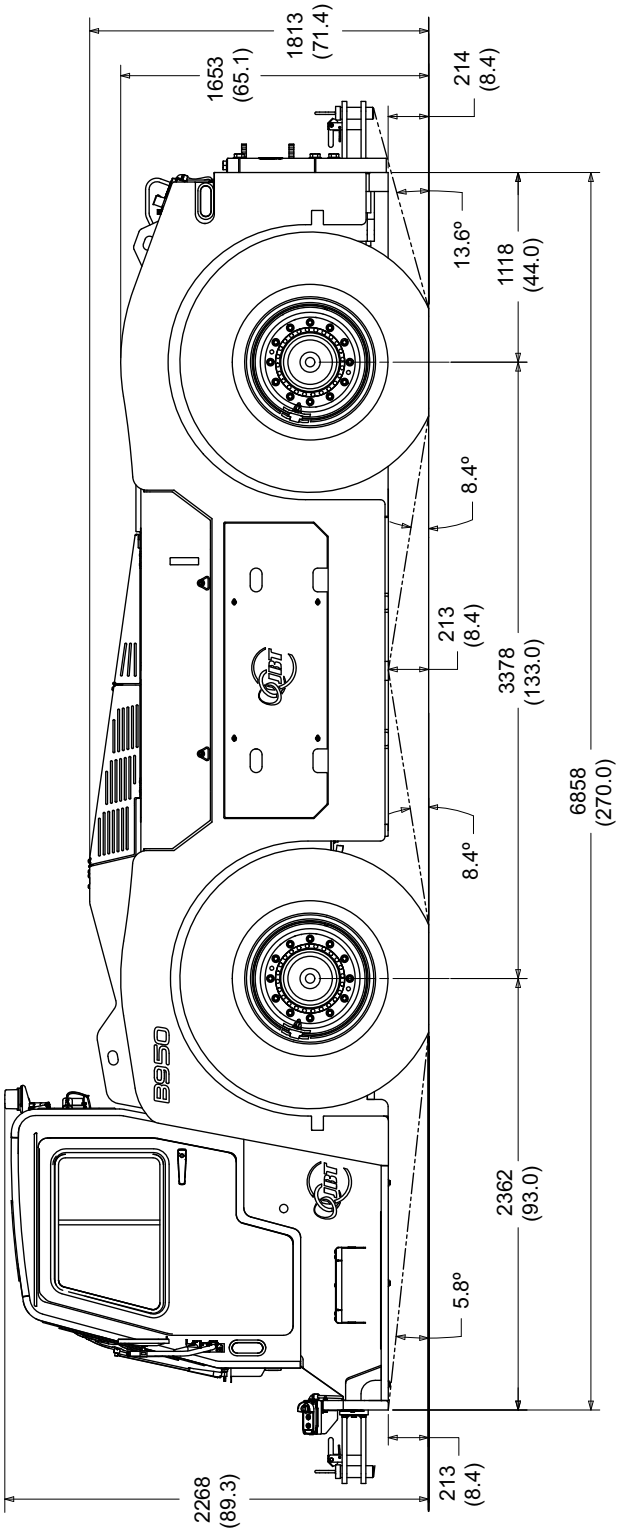
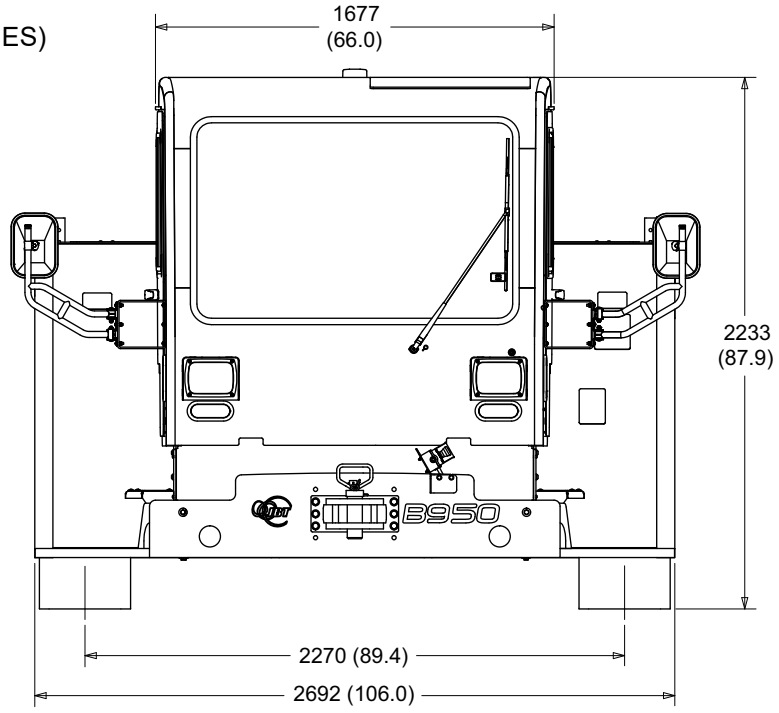


Figure 4
GENERAL DIMENSIONS - SIDE VIEW

NOTE: ALL DIMENSIONS ARE APPROXIMATE ONLY AND ARE SUBJECT TO MANUFACTURING VARIANCES.

DIMENSIONS IN
MILLIMETERS (INCHES)



NOTE: ALL DIMENSIONS ARE APPROXIMATE ONLY AND ARE SUBJECT TO MANUFACTURING VARIANCES.

Figure 5
GENERAL DIMENSIONS - FRONT VIEW

B. RAMP LOADING ANGLES

- Approach angle 5.8º
- Ramp break-over angle. 8.4º
- Departure angle (standard unit) 13.6º
- Departure angle (rear GPU frame) 5.6º

C. VEHICLE WEIGHTS

TABLE 3 - VEHICLE WEIGHTS

Weight	Minimum Ballast kg (lb.)	Partial Ballast kg (lb.)	Partial Ballast kg (lb.)	Standard Ballast kg (lb.)
Front axle	16 200 (35 700)	18 510 (40 800)	20 820 (45 900)	23 140 (51 000)
Rear axle	15 560 (34 300)	17 790 (39 200)	20 010 (44 100)	22 230 (49 000)
Total weight*	31 760 (70 000)	36 300 (80 000)	40 830 (90 000)	45 370 (100 000)
* Total weight will depend on ballast and options included in the vehicle. Refer to the identification placard for specific weights for your vehicle.				

D. VEHICLE VOLUME

- Total volume (open cab, no couplers) . . . . . 37.34 m^3 (1318 cu.ft.)
- Total volume (enclosed cab, no couplers) . . . . . 45.96 m^3 (1623 cu.ft.)
- Total volume (enclosed cab, GPU frame, no couplers) . . . . . 50.00 m^3 (1766 cu.ft.)

E. TURNING RADIUS - TWO-WHEEL STEERING (OPTIONAL)

- To vehicle front (out-most point, outside mirror). . . . . 9383 mm (369.4 in.)
- To vehicle front (bumper) . . . . . 9128 mm (359.4 in.)
- To front wheel (turning circle to center line) . . . . . 8134 mm (320.2 in.)
- To vehicle side (inside turning circle to side) . . . . . 4887 mm (192.4 in.)
- Maximum turning angle (inner front wheel) . . . . . 32.0º approx.
- Maximum turning angle (outer front wheel) . . . . . 20.5º approx.

F. TURNING RADIUS - FOUR-WHEEL STEERING (STANDARD)

- To vehicle front (out-most point, outside mirror). . . . . 6202 mm (244.2 in.)
- To vehicle front (bumper) . . . . . 5977 mm (235.3 in.)
- To front wheel (turning circle to center line) . . . . . 4981 mm (196.1 in.)
- To vehicle side (inside turning circle to side) . . . . . 2184 mm (86.0 in.)
- Maximum turning angle (inner front and rear wheels) . . . . . 32.0º approx.
- Maximum turning angle (outer front and rear wheels) . . . . . 20.5º approx.

G. VEHICLE SPEEDS

- Maximum vehicle forward speed (unloaded) . . . . . 28 km/h (17.4 mph)
- Maximum vehicle reverse speed (unloaded) . . . . . 22 km/h (13.5 mph)
- For maximum allowable wind speed (with aircraft), refer to aircraft manufacturer specifications and limitations.

H. HITCH COUPLERS

All dimensions to coupler center line, with a tolerance of ± 19 mm (± 0.75 in.) based on vehicle weight. Hitch couplers can be attached to the vehicle at three different mounting height points.

TABLE 4 - HITCH COUPLER TYPE AND DIMENSIONS

Hitch	Front and Rear Mount Points (at Center)		Clevis Opening	Pin Diameter
Single level	High Middle Low	451 mm (17.75 in.) 400 mm (15.75 in.) 349 mm (13.75 in.)	76.2 mm (3.00 in.)	63.5 mm (2.50 in.)

Refer to Chapter 4, **ILLUSTRATED PARTS LIST** for hitch couplers and pin diameters in accordance with customer specifications for the vehicle.

5. APPROXIMATE FRICTION COEFFICIENTS

A. SURFACES

- Concrete or asphalt (dry) . . . . . μ = 0.80
- Wet asphalt . . . . . μ = 0.75
- Wet concrete . . . . . μ = 0.57
- Snow with chains . . . . . μ = 0.45
- Hard snow . . . . . μ = 0.20
- Ice . . . . . μ = 0.05

NOTE: MULTIPLYING VEHICLE TOTAL WEIGHT BY THE FRICTION COEFFICIENT (μ) WILL GIVE NET STATIC DRAWBAR PULL FORCE AVAILABLE, UP TO THE MAXIMUM TRACTIVE EFFORT AVAILABLE FROM THE DRIVE SYSTEM.

NOTE: COEFFICIENTS OF FRICTION (μ) ARE ESTIMATED FOR TOW VEHICLES WITH RUBBER TIRES. DIFFERENT TIRE SPECIFICATIONS AND CHARACTERISTICS CAN PROVIDE DIFFERENT FRICTION COEFFICIENTS.

B. RUBBER TIRE TREAD

- Rubber tread thickness - Yokohama (standard) . . . . . 14 mm (0.56 in.) (new)
- Minimum admissible rubber tread . . . . . 6.0 mm (0.24 in.)

NOTE: FRICTION IN RUBBER TIRES IS DECREASED AS THE TIRE TREAD IS WORN. A TIRE TREAD BELOW THE MINIMUM ADMISSIBLE THICKNESS WILL PROVIDE SIGNIFICANTLY LESS FRICTION IN WET, SNOW OR ICE CONDITIONS.

6. ENGINE SPECIFICATIONS

TABLE 5 - ENGINE SPECIFICATIONS AND OPERATING RPM

Engine Model*	Low Idle High Idle	Peak Torque**	Rated Power**
Cummins Diesel QSB 6.7 6.7 L (409 cu.in.) EPA Tier 3, EU Stage IIIA	850 rpm 2500 rpm	990 N·m (730 lbf-ft.) @ 1400–1600 rpm	186 kW (250 hp) @ 2500 rpm
Cummins Diesel QSB 6.7 6.7 L (409 cu.in.) EPA Tier 4F, EU Stage IV	850 rpm 2500 rpm	990 N·m (730 lbf-ft.) @ 1400–1600 rpm	194 kW (260 hp) @ 2500 rpm
Cummins Diesel QSB 6.7 6.7 L (409 cu.in.) EU Stage V	850 rpm 2500 rpm	1152 N·m (850 lbf-ft.) @ 1500 rpm	209 kW (280 hp) @ 2000–2200 rpm

* All engines four-stroke turbocharged, direct injection, six cylinders in line, liquid cooling system, and variable displacement turbocharger. Tier 4F (Stage IV) and Stage V engines are equipped with a Diesel Exhaust Fluid system for active self-regeneration.

** Approximate information data. Refer to specific placard on the engine, and to the engine manual in Chapter 5, **MANUFACTURERS' APPENDICES** for additional information.

7. FUEL SPECIFICATIONS AND RECOMMENDATIONS

TABLE 6 - FUEL SPECIFICATIONS AND DESIGNATIONS

Fuel Type	Sulfur Contents	% By Mass	Fuel Designation	EPA Requirement
Non-road diesel	< 500 ppm	< 0.05%	Low Sulfur	Tier 2
Highway diesel				Tier 3
Non-road diesel	≤ 15 ppm	≤ 0.0015%	Ultra-Low Sulfur (ULSD)	Tier 3
Highway diesel				Tier 4
All diesel fuel				EU Stage V

CAUTION

WHEN USING DIESEL FUELS WITH SULFUR CONTENTS GREATER THAN 500 PPM (0.05% BY MASS) AND THE ENGINE EQUIPPED WITH AN EXTERNALLY COOLED EGR (TIER 3 ENGINES), LARGER FILTERS WITH TIGHTER MICRON FILTRATION MUST BE USED. CONSULT THE ENGINE MANUFACTURER FOR MODIFICATIONS NEEDED.

CAUTION

DO NOT USE DIESEL FUELS WITH SULFUR CONTENTS GREATER THAN 15 PPM (0.0015% BY MASS) IN EPA TIER 4 (EU STAGE IIIB AND IV) AND EU STAGE V ENGINES.

CAUTION

DO NOT USE JET A1 FUEL IN THIS VEHICLE. REFER TO ENGINE MANUFACTURER FOR SPECIFIC RECOMMENDATIONS.

8. FUEL SYSTEM

A. FUEL TYPE

Refer to 'FUEL SPECIFICATIONS AND RECOMMENDATIONS' and cautions above.

- Diesel fuel, Tier 3 (Stage IIIA) engines. . . . . ASTM D975-07, No. 1-D and No. 2-D
- Diesel fuel, Tier 4 and EU Stage V engines . . . . EN 590, DIN 51628, and ASTM D975 No. 1-D S15 and No. 2-D S15
- Turbine fuel* . . . . . JP-8 or Jet A1 (only if fuel lubricity is adequate; special filters required).

NOTE: *TURBINE FUEL IS NOT SUITED FOR TIER 4, EU STAGE V, OR LATER ENGINES.

- Diesel Exhaust Fluid (DEF) (Tier 4F and EU Stage V only) . . . . . ISO 22241 (AdBlue®)

B. FUEL TANK CAPACITY

- Diesel fuel (fill capacity. . . . . 151 L (40 gal.)
- Diesel Exhaust Fluid (DEF) (Tier 4F) . . . . . 19 L (5 gal.)
- Diesel Exhaust Fluid (DEF) (EU Stage V) . . . . . 38 L (10 gal.)

C. FILTER TYPE

- Primary filter (suction) . . . . . Cartridge type, fuel and water separator
- Secondary filter (pressure) . . . . . Canister type
- Heated fuel and water separator . . . . . Optional

NOTE: FUEL WAXING MAY OCCUR AT LOW TEMPERATURES, CLOGGING THE FUEL SYSTEM AND REDUCING THE ENGINE EFFICIENCY. IF THE AMBIENT TEMPERATURE IS LESS THAN 0 ºC (32 ºF), WINTER-GRADE FUEL (SUITABLE DOWN TO -23 ºC [-10 ºF]) SHOULD BE USED. FOR TEMPERATURES BELOW -9 ºC (16 ºF) REFER TO THE ENGINE OPERATION MANUAL IN CHAPTER 5.

9. TRANSMISSION

- Make . . . . . ZF Passau
- Type . . . . . Automatic power shift with lockable inter-axle differential
- Cooling system . . . . . Fan-cooled heat exchanger
- Shift control . . . . . Electric shifter with solenoids
- Speed gears . . . . . Six forward, three reverse

10. AXLES

- Four wheel drive (4WD) with front wheel steering (2WS) (optional), or four-wheel steering (4WS) (standard) axles
- Front axle with leaf spring suspension
- Rear axle with rigid mount

11. WHEELS AND TIRES

TABLE 7 - TIRE BRANDS AND CHARACTERISTICS

Brand		Front, Single (2 tires)	Rear, Single (2 tires)
Yokohama (Standard)	Type	Rubber pneumatic, diagonal (bias) ply	
	Model and size	Y573 IND-3 17.50 R25 (36PR)	
	Load range	11 340 kg (25 000 lb.) @ 30.6 km/h (19 mph)	
	Wheel assembly	629-8855-001	
	Tire number	629-8867-001	
	Wheel rim size	635 mm x 356 mm (25.00 in. x 14.00 in.), 12 bolt holes	
	Designation	Off-road tractor tire	

NOTE: TIRES MUST COMPLY WITH TIRE AND RIM ASSOCIATION REQUIREMENTS. ACTUAL LOADS WILL DIFFER FROM SIDE WALL LABELING. WHEN REPLACING TIRES, THE SAME APPROVED TIRE MODEL AND SIZE MUST BE USED.

12. HYDRAULIC SYSTEM

A. GENERAL

- Centralized hydraulic system with load sensing piston pump for steering, braking and options.

B. FILTERS

• Breather	Replaceable, furnished with water disposal element
• Pressure filter (optional)	Replaceable, 3-micron element
• Return filter	Replaceable, filter with 5 micron element

C. HOSE ASSEMBLIES

Pressure Hoses

• Diameter 6.4–12.7 mm (0.25–0.50 in.)	SAE 100R16, SAE standard J517
• Diameter 19–31.8 mm (0.75–1.25 in.)	SAE 100R12, SAE standard J517

Suction Hoses

• All diameters	SAE 100R4, SAE standard J517

D. OPERATING PRESSURES

NOTE: FOR OPERATING PRESSURES REFER TO CHAPTER 2, SECTION 4, “MAINTENANCE SPECIFICATIONS”.

13. STEERING SYSTEM

- Four wheel steering (4WS) system with centralized hydraulic operating steering control valve actuating twin cylinders mounted on front and rear axles.

14. ELECTRICAL SYSTEM

• Type	24 VDC negative ground
• Battery	Dual 12 VDC 950 CCA battery system in series (Group 31) top stud-type (T), 195 minutes reserve capacity

Wipers and Washers (Optional With Enclosed Cab)

• Windshield wiper blade	762 mm (30 in.)
• Rear window wiper blade	305 mm (12 in.)

15. ENVIRONMENTAL LIMITATIONS

A. OPERATING TEMPERATURES

TABLE 8 - AMBIENT START-UP CONDITIONS

Start-up Condition*	Ambient Temperature Range**	Recommendation
Normal	-29 ºC to +51 ºC (-20 ºF to +123 ºF)	Engine does not require assisted starts.
Extremely cold	Below -29 ºC (-20 ºF)	Requires optional cold weather package.
Extremely hot	Above 51 ºC (123 ºF)	Refer to engine manual for requirements.

* Outside the normal operating temperature range, consider the use of an environment package that corresponds to the extreme weather conditions in which the equipment will operate.

** Refer to Chapter 5, **MANUFACTURERS' APPENDICES** for engine operating temperature ranges and oil specifications, and related information for other components. Contact Oshkosh AeroTech, Ground Support Equipment for operating conditions in extreme weather.

B. WINTERIZATION OPTION

The B950 is designed with an engine that will start with no additional aids other than the standard grid heater set down to -18 ºC (0 ºF). The winterization option includes battery heaters, and immersion engine block heater which maintain functionality at a minimum of -40 ºC (-40 ºF).

16. OPERATOR'S VIBRATION AND SOUND LEVELS

A. SOUND LEVEL EMISSION DATA

TABLE 9 - SOUND EMISSION TEST RESULTS

Engine	Test	Exterior Test Results*	Operator's Seat
Cummins Diesel QSB 6.7 Tier 3	Standstill	TBD	TBD
	Driving		TBD
	Driver side	TBD	
	Passenger	TBD	
Cummins Diesel QSB 6.7 Tier 4F	Standstill	75.5 dBA	70.4 dBA
	Driving		80.8 dBA
	Driver side	78.8 dBA	
	Passenger	79.7 dBA	
Cummins Diesel QSB 6.7 Stage V	Standstill	TBD	TBD
	Driving		TBD
	Driver side	TBD	
	Passenger	TBD	
* Exterior tests at standstill performed at a distance of 1 meter.			

- Standard. . . . . EN 1915-4
- Driver or operator position . . . . . Sitting (inside main cab)
- Sound power tests . . . . . Driving (inside main cab)
- Tests uncertainty (K_{pA}) . . . . . 4 dBA
- Technical measures for noise reduction. . . . . Not applicable
- Possible ways to minimize noise exposure . . . . . Wear hearing protection

B. VIBRATION LEVEL DATA

- Standard. . . . . EN 1915-3
- Driver position . . . . . Sitting
- Vibration values . . . . . $A_{WZF} = 3.22\ m/s^2$
- Coefficient of variation . . . . . $C_V \leq 0.15$
- Technical measures for vibration reduction . . . . . Not applicable
- Possible ways to minimize vibration exposure. . . . . Not applicable

17. UNITS OF MEASUREMENT

Base and derived units of measurement used in this manual are in accordance to the International System of Units (SI) of the International Bureau of Weights and Measures (BIPM).

TABLE 10 - METRIC AND STANDARD UNITS AND CONVERSIONS

Metric to Standard						Standard to Metric					
mm	(millimeter)	x	0.039	=	**in.**	**in.**	(inch)	x	25.4	=	**mm**
m	(meter)	x	39.37	=	**in.**			x	0.0254	=	**m**
		x	3.281	=	**ft.**	**ft.**	(foot)	x	0.3048	=	**m**
		x	1.094	=	**yd.**	**yd.**	(yard)	x	0.914	=	**m**
km	(kilometer)	x	0.621	=	**mi.**	**mi.**	(mile)	x	1.609	=	**km**
km/h	(kilometers per hour)	x	0.621	=	**mph**	**mph**	(miles per hour)	x	1.609	=	**km/h**
m^2	(square meter)	x	10.764	=	**sq.ft.**	**sq.ft.**	(square foot)	x	0.093	=	**m^2**
m^3	(cubic meter)	x	35.315	=	**cu.ft.**	**cu.ft.**	(cubic foot)	x	0.028	=	**m^3**
L	(liter)	x	61.024	=	**cu.in.**	**cu.in.**	(cubic inch)	x	0.0164	=	**L**
		x	0.264	=	**gal.**	**gal.**	(gallon)	x	3.785	=	**L**
		x	1.057	=	**qt.**	**qt.**	(quart of a gallon)	x	0.946	=	**L**
		x	0.035	=	**cu.ft.**	**cu.ft.**	(cubic foot)	x	28.317	=	**L**
L/min.	(liters per minute)	x	0.264	=	**gpm**	**gpm**	(gallons per minute)	x	3.785	=	**L/min.**
kg	(kilogram)	x	2.205	=	**lb.**	**lb.**	(pound)	x	0.454	=	**kg**
t	(tonne) (metric ton)	x	2204.6	=	**lb.**			x	0.00045	=	**t**
		x	1.102	=	**tn**	**tn**	(ton) (short)	x	0.907	=	**t**
bar	(pressure)	x	14.504	=	**psi**	**psi**	(pounds per square inch)	x	0.069	=	**bar**
kPa	(kilo Pascal)	x	0.145	=	**psi**			x	6.895	=	**kPa**
N·m	(Newton·meter)	x	0.738	=	**lbf-ft.**	**lbf-ft.**	(foot-pound)	x	1.356	=	**N·m**
		x	8.851	=	**lbf-in.**	**lbf-in.**	(inch-pound)	x	0.113	=	**N·m**
N	(Newton)	x	0.225	=	**lbf**	**lbf**	(pound force)	x	4.448	=	**N**
kW	(kilowatt)	x	1.341	=	**hp**	**hp**	(horse power)	x	0.746	=	**kW**
ºC	(Celsius)	x	1.8 + 32	=	**ºF**	**ºF**	(Fahrenheit)	-	32 / 1.8	=	**ºC**
$ºC_d$	(temperature differential*)	x	1.8	=	**$ºF_d$**	**$ºF_d$**	(temperature differential*)	x	0.556	=	**$ºC_d$**

* Temperature differential refers to the difference between two temperature points as opposed to a specific temperature expressed in both ºC and ºF.

THIS PAGE INTENTIONALLY LEFT BLANK