B1200 Push Back Tractor

DESCRIPTION & SPECIFICATION

Edition 2017

1. GENERAL DESCRIPTION

1.1 GENERAL

The B1200 Aircraft Push Back Tractor is a low profile, heavy duty, diesel powered, four wheel drive (4WD), four wheel steer (4WS) tractor designed for aircraft push backs and towing. It is capable of handling aircraft up to the B747 and A380.

The B1200 provides a lower Total Cost of Ownership (TCO) with a design that provides excellent operator visibility, ability to tow a broad range of aircraft, low maintenance driveline components and a simple, but robust design for an extended useful life.

1.2 PERFORMANCE

The B1200 delivers a lower TCO by providing features and benefits focused on the key components of TCO including:

Exceptional Safety:

- **Outstanding Visibility** – The B1200 has excellent front and rear visibility with sloped rear fenders, notched back design and a large front window that allows the operator to see the front and rear hitches from a seated position in the cab eliminating the need for cameras or lift cabs.
- **Back-up and Braking System** – In the unlikely event of engine or hydraulic failure back-up hydraulic pressure is made available by an on-board accumulator system to steer and stop the tractor safely. There are three levels of safety on the brake system including: a tandem service brake valve, a failsafe park brake and accumulator back-up. The B1200 also has an electric back-up system as standard equipment.
- **Ergonomic and Safe Operator Environment** – The tractor is equipped with ergonomic drive controls which allow precise drive control, for critical operations like connecting and disconnecting the tow bar. Other safety features include heavy duty bumpers and low noise levels.

Efficient Operation:

- **Highly Maneuverable** – The B1200 is a highly maneuverable tractor with a small footprint providing a tight turning radius especially with the 4 wheel steer.
- **Broad Towing Capability** – The B1200 is one of four models in the JBT conventional tractor product family that has the capability of covering the entire range of aircraft from A320/B737 models to B747's and A380's. This results in lower investment in specialty tractors with a limited range.
- **Highest Quality Components** – JBT's conventional tractor product line has modern, fuel efficient engines and drive trains with the highest quality components.

Easy Maintenance:

- **Excellent Engine Access** – The B1200 is designed for extended service intervals with easy access to all major components and filters located adjacent to access hatches.
- **Low Maintenance Driveline Components** – The driveline is designed with a safety margin and includes only the highest quality axles, transmissions and engines.
- **Weather Tight Electrical Boxes** – The wire harnesses are connectorized and modular, corrosion and water resistant and shielded where necessary.

Extended Reliability

- **Longer Life** – JBT conventional tractors are designed for a 20 year useful life with many in operation well beyond 20 years. They are made of heavy-duty steel plate with a high quality drive train. The tractors are subjected to high assembly and test standards including drawbar and brake testing.
- **High Quality Components** – Reliability is extended through the use of the highest quality axles, transmissions and engines.
- **Robust Design** – The robust design is proven to withstand ramp conditions. The design includes a ring of steel, flat glass in the cab, steel dashboard, oversized hinges, heavy hoods and hatches, etc.
- **Unparalleled Global Service Support** – JBT's vast aftermarket network provides global spare parts and field capability to extend the life its products.
- **Highest Quality Standards** – JBT manufacturing facilities in Orlando, Madrid and Juarez are ISO 9001 certified.

2. TECHNICAL SPECIFICATION

2.1 GENERAL

The B1200 Aircraft Push Back Tractor is a low profile, heavy duty, diesel powered, four wheel drive (4WD), four wheel steer (4WS) tractor for aircraft push backs and towing.

The B1200 is the largest conventional aircraft push back tractor offered by JBT and is capable of handling aircraft up to the B747 and A380.

2.2 APPLICABLE DOCUMENTS

The B1200 complies with the majority of the important specifications and requirements set forth in the following documents and publications.

Mandatory documents:

- Directive 2006/42/EC
- EN 1915-1 Aircraft GSE. Basic safety requirement.
- EN 1915-2 Aircraft GSE. Stability and strength requirements
- EN 1915-3 (Vibrations measurements method and reduction)
- EN 12312-7 Specific requirements for aircraft movement equipment

- OSHA: Occupational Safety and Health Standards
- SAE: Aerospace Cargo and Ground Equipment Handbook
- ARO: Aerospace Recommended Practice
- AIR: Aerospace Information Report
- ARP 1247B: General Requirements for Aerospace Ground Support Equipment
- AIR 1363: Four Wheel Drive Aircraft Tow Tractors – Factors for Design Consideration
- AIR 1375: Minimum Safety Requirement for Special Purpose Airline Ground Support Equipment
- ARP 1330A: Welding of Structures for Ground Support Equipment

2.3 AIRCRAFT COMPATIBILITY

The B1200 is recommended for use on the following aircraft models:

Aircraft Manufacturer	Aircraft Models								
Airbus	A300	A310	A319	A320	A321	A330	A340	A350	A380
Boeing	B727	B737	B757	B767	B747	B777	B787		
Bombardier	CS100	CS300							
Ilyushin	IL96								
McDonnell Douglas	DC8	DC10	MD11						
Tupolev	TU154	TU204							

2.4 WEIGHT AND DIMENSIONS

Gross Vehicle Weight: The B1200 is available in the following standard Gross Vehicle Weight (GVW) and Draw Bar Pull (DBP), with optional ballast kits shown:

	GVW	**DBP**
• Standard	36,300 kg (80,000 lb)	285 kN (64,000 lbf)
• Option 1	45,500 kg (100,000 lb)	320 kN (72,000 lbf)
• Option 2	49,900 kg (110,000 lb)	320 kN (72,000 lbf)
• Option 3	54,400 kg (120,000 lb)	320 kN (72,000 lbf)
• Option 4	61,200 kg (135,000 lb)	320 kN (72,000 lbf)

Overall Dimensions:

- Length (standard, with couplers) 8.26 m (325 in)
- Length (with GPU/rear operator controls) 8.89 m (350 in)
- Width (with mirrors) 3.32 m (131 in)
- Height (no cab or elevated cab – down) 1.75 m (59 in)
- Height (fixed cab or elevated cab – up) 2.24 m (88 in)
- Wheelbase 3.66 m (144 in)
- Ground clearance (to frame) 228 mm (9 in)

2.5 POWER UNIT

- Standard Engine: Cummins (QSC 8.3L), 215 kW (290 hp) Stage 3a/Tier 3
- Optional Engine: Cummins (QSB 6.7L), kW (hp) Stage 4/Tier 4f
- Fuel Tank Capacity 208 l (55 gal)

2.6 PERFORMANCE (Drive Speeds without Load)

- Maximum forward speed: 24 km/hr (15 mph)
- Maximum reverse speed: 10 km/hr (6 mph)

Turning Radius:

- Turning radius (outside – 2WS) 12.1 m (39 ft 10 in)
- Turning radius (outside – 4WS) 7.1 m (23 ft 3 in)

2.7 CAB

- All weather steel construction cab with flat safety glass
- Heater with front and rear defrosters
- Mirrors – interior, LHS, RHS, rear coupler
- Wipers and washers – (2) in front, (1) in rear, (1) for overhead window
- Interior lights
- Visors (2) – inside cab
- Interior ventilation fans (2) – mounted on dash
- Seats (2) – adjustable vinyl, suspension with retracting seat belts
- Air filter – charcoal type
- Insulated to meet EN 1915-4:2004 noise standards
- Doors – gas spring hold-open with non-locking handles
- Sliding side windows

2.8 CHASSIS

- Heavy duty, uni-welded steel body equipped with removable ballast located between front and rear wheels in the ballast compartment
- Equipped with a “notched’ rear plate to provide an open channel extending from behind the operator’s compartment to the rear of the tractor, known as the “notch-back” design.

2.9 TRANSMISSION

- ZF power shift with lockable inter-axle differential
- Six (6) speeds forward and two (2) speeds reverse with downshift inhibit

2.10 ELECTRICAL SYSTEM

- 24V negative ground system
- Two (2) 12V 950 CCA batteries with heavy duty starter and alternator
- Recessed lights including: LED brake/tail/indicator/reverse/side marker
- Sealed beam headlights

2.11 HYDRAULIC SYSTEM

- Centralized hydraulic system using an efficient load sensing piston pump for steering and braking
- Hydraulic tank capacity: 75l (20 gal)

2.12 STEERING SYSTEM

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

2.13 BRAKE SYSTEM

- Service brake is a hydraulic operated pressure modulated split system with four wheel twin caliper dry disc brakes.
- Braking systems are backed up with an accumulator and electric auxiliary pump.
- Parking brake is a failsafe spring applied hydraulic released (SAHR) caliper disc brakes mounted on front axle input pinion flange.

2.14 AXLES

- Kessler – 4 wheel drive (4WD)
- 4 wheel steer (4WS) with steer mode switch and position light
- Rigid mounted front axle
- Trunnion oscillating mounted rear axle

2.15 TIRES

- 16.00R25 radial front and rear tires

2.16 TOWING COUPLERS

- Step with 59 mm (2 5/16 in) pin – front and rear
- Mounting heights to center of hitch
    - Standard – 402 mm (15.8 in)
    - Optional – 351 mm (13.8 in) and 453 mm (17.8 in)

2.17 PAINT

- Exterior – one color polyurethane
- Interior of cab – black
- Couplers - red

2.18 OPERATING AND SAFETY MONITORING

The table below shows all of the operation and safety monitoring equipment available with the B1200

Operation and Safety Monitoring						
Monitored Conditions	**Location**	**Gauge**	**Warning Light**	**Audible Alarm**	**Engine Derate**	**Engine Shutdown**
Alternator Failure	Dash		X			
Back Up Alarm	Chassis			X		
Brake Pressure	Dash		X	X		
Check Engine - Warning	Dash		X			
Check Engine - Stop	Dash		X	X		X
Engine Coolant Level	Dash		X	X		X
Engine Coolant Temperature	Dash	X	X	X	X	X
Engine Oil Pressure	Dash	X	X	X	X	X
Fuel Level	Dash	X				
Fuel Level - Low	Dash		X			
Grid Heater - Wait to Start	Dash		X			
Hour Meter	Dash	X				
Hydraulic Oil Level	Tank	X				
Hydraulic Oil Temperature	Dash		X			
Park Brake	Dash		X			
Shift to Neutral	Dash			X		
Speedometer/Odometer	Dash	X				
Tachometer	Dash	X				
Transmission Oil Pressure	Dash	X				
Transmission Oil Temperature	Dash	X				
Voltmeter	Dash	X				

X = Standard Equipment and O = Optional Equipment

2.19 ADDITIONAL SAFETY FEATURES

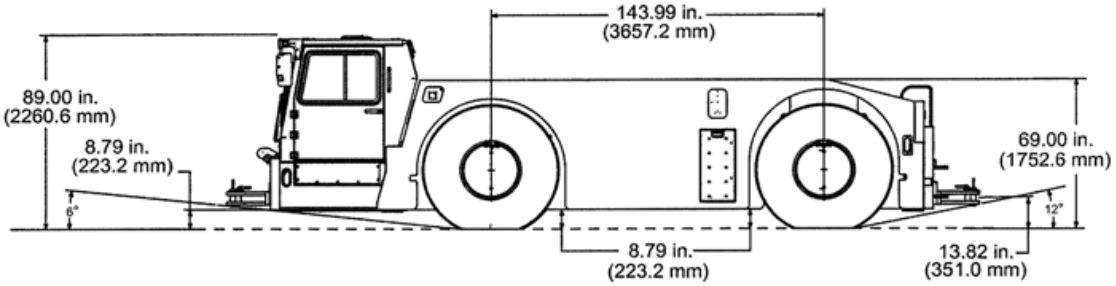
The table below shows additional safety feature available with the B1200.

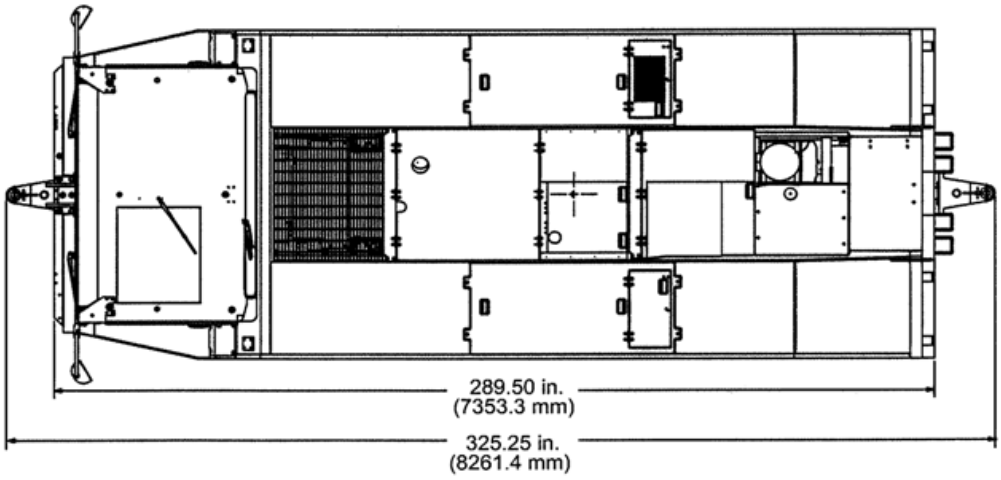
Operation and Safety Controls		
Emergency Stop Button	Dashboard	X
Switch - Emergency Hydraulic Pump	Dashboard	X
Switch - Engine Shutdown Override	Dashboard	X
Switch - Keyless Ignition Anti-Restart	Dashboard	X
Switch - Keyed Ignition Anti-Restart	Dashboard	O
Battery Disconnect	Chassis	X
Hand Pump - Park Brake Release	Chassis	X
X = Standard Equipment. O = Optional Equipment		

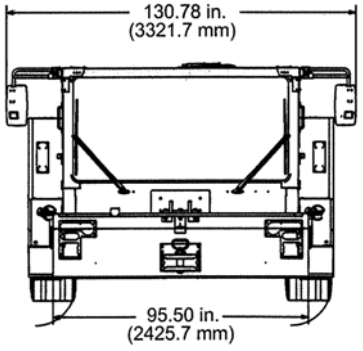
2.20 OPTIONAL FEATURES

- Variety of ballast kits to increase GVW and DBP
- Hydraulic powered retracting/elevating cab
- CE or PONYA requirement packages
- Open cab
- Fire extinguishers
- Intercom jacks and cable system
- Intercom with power box
- 12V power supply for radio
- Rear camera and monitoring system
- Rear GPU mounting platform
- Rear operators station
- Winterization protection
- Auto lubrication system for axles
- Integrated hydraulic powered jacking system
- Variety of beacon and work light options
- Guards for headlights and taillights
- Air conditioning
- Heated powered mirrors
- Keyed ignition switch

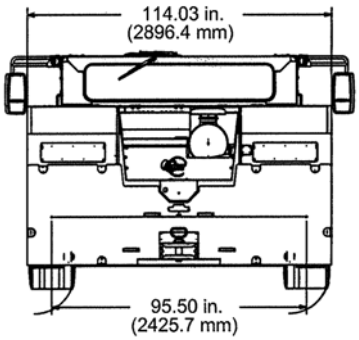
2.21 DIMENSIONAL LAYOUTS







FRONT VIEW



REAR VIEW