OPERATOR'S MANUAL

SNOWBLOWER

SB2164 SB2176

Serial # XFSB21X100058 and up

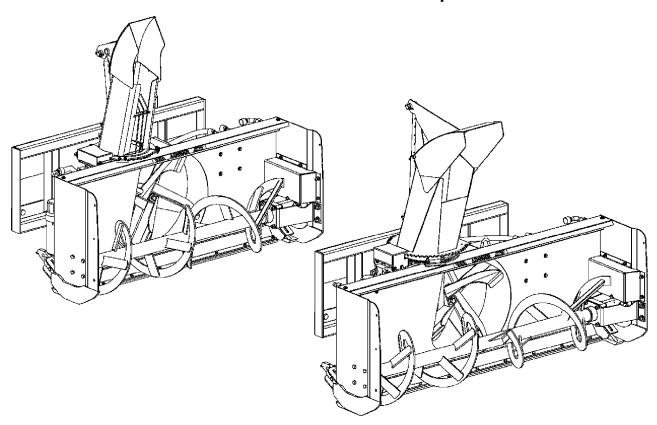




TABLE CONTENT

SPÉCIFICATIONS	3
INTRODUCTION – TO THE PURCHASER	4
SAFETY PRECAUTIONS	5-11
Before Operation	5
Notice	6
The Snowblower	6
Before Operation	6
Snowblower Operation	7
The Tractor	8
General Information	8
Operating the Tractor	
During Operation	
Maintenance	
Transport	
Storage	
•	
DECALS	
ASSEMBLY	
Snowblower Assembly	13
Installation of the Chute for SB2176	13-14
for SB2164	15-16
Installation of the Snowblower	16
Installation of the Hydraulic Hoses	17
Installation of the Electrical Wiring	
•	0038)18-22 DF0039 and 5RDF0038)23-28
Installation of the Switchbox 5RD669285 - Option	29
Installation of Hydraulic Deflector 5RDF0025 or 5RDF0027	
Installation of the Tractor side 132" Harness (5RDF0038)	- Tractor with Cabin34-35
	- TRACTOR WITHOUT CABIN 36-38
Installation of the Drift Cutters 5RDF0026 - Option	39
Removing the Snowblower	40

TABLE CONTENT

OPERATION	41-42
Optimum Performances	41
General Preparation	41
Operating Controls	41
Manual Deflector Adjustment	41
Hydraulic Deflector Adjustment	41
Hydraulic Rotation Adjustment	41
Ground Speed	42
Skid Shoe Adjustment	42
Snow Removal Methods	43
MAINTENANCE	44-53
Maintenance	44
Storage	44
Hydraulic Oil	44
Lubrication	45
Regular Inspections	45
Troubleshooting	46-47
Instruction For Valves Adjustment	48-51
Hydraulic Diagram	52
Electrical Diagram	53
TORQUE SPECIFICATION TABLE	54-56

SPECIFICATIONS

Features and Specifications	SB2164	SB2176
Working Width	64"	76"
Transport Width	70"	88"
Working Height	27"	27"
Length	39"	39"
Single/Dual Auger	Single	Single
Auger Diameter	15"	15"
Auger Flighting Thickness	5/16"	5/16"
Impeller Diameter	24"	24"
Impeller Width	7"	8 1/2"
Impeller Shaft Diameter	1 1/4"	1 1/4"
Number of Impeller blades	4	4
Impeller RPM	680	580
Auger RPM	200	185
Skid Shoe	Adjustable 6 positions	Adjustable 6 positions
Skid Shoe Material	High carbon steel	High carbon steel
End Plate Thickness	3/16"	3/16"
Back Plate Thickness	11ga	11ga
Impeller Housing Thickness	11ga	11ga
Impeller Blade Thickness	1/4"	1/4"
Side Panel Bottom Thickness	1/2"	1/2"
Cutting Edge	Replaceable	Replaceable
Cutting Edge Dimension	3/8" x 2"	3/8" x 2"
Chute Base	Standard	Standard
Parking Stand	Standard	Standard
Loader Compatibility	Current JD 300 Series Loader Carriers	Current JD 400 Series Loader Carriers
Flow / Pressure	12 to 18 gpm @ 2700 psi	18 to 23 gpm @ 3000 psi
Oil Cooler	Standard	Standard
V.A.C. System	Standard	Standard
Fan Drive	89 cc/rev. Hydraulic Motor	127 cc/rev. Hydraulic Motor
Auger Drive	293 cc/rev. Hydraulic Motor	409 cc/rev. Hydraulic Motor
Relief Valve Protection	Fan, Auger & Rotation Motor	Fan, Auger & Rotation Motor
Main Hydraulic Hoses	3/4"	3/4"
Operating Weight (lbs)-hyd. rot. & deflector	N/A	760
Shipping Weight (lbs)	N/A	1060
Approx. Set-up Time	2 to 3 hours (including hydraulic pump)	2 to 3 hours (including hydraulic pump)
Chute Deflector Adjustment (standard)	Manual	Manual
Chute Deflector Adjustment (option)	Hydraulic - cylinder (2"x6") including hoses and tips	Hydraulic - cylinder (2"x8") including hoses and tips
Chute Rotation (standard)	Hydraulic – hydraulic motor with electro-hydraulic valve	Hydraulic – hydraulic motor with electro- hydraulic valve
Chute	Two-part	Two-part
Drift Cutters	Option	Option

INTRODUCTION

IMPORTANT NOTICE

Frontier loader mounted hydraulic snowblowers are calibrated and tested at the plant in order to ensure the best possible performance. The calibration of these snowblowers requires the proper equipment and a certain expertise.

Any partial modification or adjustment made on the snowblower without the written consent of the manufacturer will automatically void the snowblower warranty.

The adjustments of the hydraulic components must never be modified. A breaking in period is necessary before the snowblower is operated at full capacity. See the "Operation" section for more details.

The Frontier loader mounted hydraulic snowblowers is designed to blow snow and not to push snow. Any use resembling a snow pusher will automatically void the snowblower warranty

TO THE PURCHASER

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. **Read and understand this manual before operation.**

This manual has been prepared to assist the owner and operators in the safe operation and suitable maintenance of the implements. The information was applicable to products at the time of manufacture and does not include modifications made afterwards.

Read and understand this operator's manual before attempting to put an implement into service. Familiarize yourself with the operating instructions and all the safety recommendations contained in this manual and those labeled on the implements and on the tractor. Follow the safety recommendations and make sure that those with whom you work follow them.

Illustrations

The illustrations may not necessarily reproduce the full detail and the exact shape of the parts or depict the actual models, but are intended for reference only

Direction Reference

Right Hand and Left Hand are determined by those seen by the operator sitting on the tractor.



The Dealer is responsible for warranty registration of the unit you have purchased. To assist your dealer in handling your needs, please record hereafter the model number and serial number of your implement and tractor. It is also advisable to supply them to your insurance company. It will be helpful in the event that an implement or tractor is lost or stolen.

MODEL:	
SERIAL NUMBER :	
DATE OF PURCHASE :	

SAFETY PRECAUTIONS



SAFETY FIRST

This symbol, the industry's "Safety Alert Symbol", is used throughout this manual and on labels on the machine itself to warn of the possibility of personal injury. Read these instructions carefully. It is essential that you read the instructions and safety regulations before you attempt to assemble or use this unit.

A DANGER:

Indicates an immediate hazardous situation which, if not avoided, will

result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, could

result in death or serious injury.

A CAUTION:

Indicates a potentially hazardous situation which, if not avoided, may

result in minor or moderate injury.

IMPORTANT: Indicates that equipment or property damage could result if instructions

are not followed.

NOTE: Gives helpful information.

All products are designed to give safe, dependable service if they are operated and maintained according to instructions. Read and understand this manual before operation. It is the owner's responsibility to be certain anyone operating this product reads this manual, and all other applicable manuals, to become familiar with this equipment and all safety precautions. Failure to do so could result in serious personal injury or equipment damage. If you have any questions, consult your dealer.

BEFORE OPERATION

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are generally attracted to machines and the work being done. Never assume children will remain where you last saw them.

- 1. Keep children out of the operating area and under the watchful eye of another responsible adult.
- 2. Be alert and turn machine off if children enter the work area.
- 3. Before and when backing, look behind for small children.
- 4. Never carry children while operating the machine. They may fall off and be seriously injured or interfere with the safe operation of the machine.
- 5. Never allow children to play on the machine or attachment even when they are turned off.
- 6. Never allow children to operate the machine even under adult supervision.
- 7. Use extra care when approaching blind corners, shrubs, trees, or other obstructions that might hide children from sight.

NOTICE

A safe operator is the best assurance against accidents. All operators, no matter how experienced they may be, should read this operator's manual and all other related manuals before attempting to operate the equipment. Please read the following section and pay particular attention to all safety recommendations contained in this manual and those labeled on the equipment and on the tractor.

THE SNOWBLOWER

Before Operation

- Read and understand this operator's manual and the tractor operator's manual. Know how to operate all controls and how to stop the unit and disengage the controls quickly.
- 2. Never wear loose, torn, or bulky clothing around the tractor and the snowblower. It may catch on moving parts or controls, causing injury.
- 3. Before and during the snow season, thoroughly inspect the area where the equipment is to be used and remove all objects that may be thrown or cause damage to the equipment.
- **4.** Set transmission to neutral and disengage clutch, if equipped, before starting the engine.
- **5.** Do not operate equipment in wintertime without wearing adequate winter garments and protective clothing.

- 6. Never attempt to make any adjustments while engine is running. Read this manual carefully to acquaint yourself with the equipment as well as the tractor operator's manual. Working with unfamiliar equipment can lead to accidents. Be thoroughly familiar with the controls and proper use of the equipment.
- **7.** Keep all safety guards in place and verify hardware for proper tightening.
- **8.** Check for moving parts excessive wear regularly. Replace worn parts with genuine parts.
- Replace all missing, illegible, or damaged safety and warning decals. See list of decals in operator's manual.
- **10.** Keep safety decals clean of dirt and grime.
- 11. Do not modify or alter this equipment or any of its components or any equipment function without first consulting your dealer.
- 12. The use of rear counterweights is recommended. Weights provide the necessary balance to improve stability, traction and steering. Use only those recommended by your dealer. Please refer to tractor's operator's manual for proper ballasting information.

OM 0393SB-A 6

Snowblower Operation

- 1. Before leaving the tractor unattended, take all possible precautions. Park the tractor/snowblower on level ground, place the transmission in neutral, set the parking brake, disengage the equipment drive, lower the equipment to the ground, place all levers including auxiliary control levers in neutral, shut off the engine and remove the ignition key.
- **2.** Before starting the tractor/ snowblower, remove any ice that has accumulated in the auger/fan.
- Prior to operation, clear work area of all objects that can be picked up and thrown. Mark all curbs, pipes, etc. that cannot be moved.
- **4.** Be sure the PTO switch/lever is in OFF position before starting engine.
- Exercise extreme caution when operating on or crossing a gravel drive, walks, or roads. Stay alert for hidden hazards or traffic.
- **6.** Do not carry passengers.
- **7.** Adjust collector-housing height to clear gravel or crushed rock surface.
- **8.** Keep clear of rotating parts. Do not put hands or feet under, or into snowblower with engine running.
- 9. Park the tractor/snowblower on level ground, place the transmission in neutral, set the parking brake, disengage the equipment drive, lower the equipment to the ground, place all control levers in neutral, shut off the engine, remove the ignition key and allow the rotating parts to stop BEFORE unclogging the collector/fan housing or chute, and making any repairs, adjustments or inspections. Use only a 36" long piece of wood to unclog blower.

- **10.** If the snowblower starts to vibrate abnormally, disengage the equipment drive, stop the engine immediately and check for cause. Excessive vibration is generally a sign of trouble.
- 11. Do not run the engine indoors except when starting engine and transporting attachment in or out of building. Carbon monoxide gas is colorless, odorless and deadly.
- **12.** Do not attempt to operate on steep slopes. If operating on slopes is necessary, exercise extreme caution when changing direction.
- **13.** Never operate snowblower without guards, and other safety protective devices in place.
- **14.** Keep clear of chute discharge. This chute has the capability of throwing objects at far distances.
- 15. Do not direct discharge at bystanders or animals. Ejected objects may cause injury and never operate snowblower near glass enclosures, automobiles, window wells, embankments, etc., without proper adjustment of snow discharge angle.
- **16.** Never operate machine at high transport speeds on a slippery surface.
- 17. Use extra caution when backing up.
- **18.** Disengage power to auger/fan when transporting or when not in use.
- **19.** Never operate the snowblower without good visibility and lighting.
- 20. Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable noises.
- 21. Never allow anyone near the work area.

THE TRACTOR

General Information

- 1. Read the operator's manual carefully before using tractor. Lack of operating knowledge can lead to accidents.
- Do not permit anyone but the operator to ride on the tractor. There is no safe place for passengers.

Operating the Tractor

- 1. Never run the tractor engine in a closed building without adequate ventilation, as the exhaust fumes are very dangerous.
- 2. Adopt safe driving practice. If so equipped, keep the brake pedals latched together at all times unless independent braking is required. Never use independent braking during transport.
- **3.** Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure.
- Reduce speed prior to turns to avoid the risk of overturning. Keep speed to a minimum.
- Always keep the tractor in gear to provide engine braking when going downhill. Do not coast.
- **6.** Never allow an open flame near the fuel tank or battery.
- 7. Park the tractor/snowblower on level ground, place the transmission in neutral, set the parking brake, disengage the equipment drive, lower the equipment to the ground, place all levers including auxiliary control levers in neutral, shut off the engine and remove the ignition key BEFORE leaving the tractor.
- 8. Never park the tractor on a steep slope.
- **9.** Do not attempt to operate on steep slopes. Avoid sudden uphill turns on steep slopes.
- **10.** Handle fuel with care, as it is highly flammable.
- 11. Use approved fuel container.

- **12.** Never add fuel to a running engine or a hot engine.
- **13.** Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace fuel cap securely and wipe up spilled fuel.
- 14. Never allow anyone to operate the snowblower until they have read the manual completely and are thoroughly familiar with basic tractor and snowblower operation.
- 15. Make sure the tractor is counterweighted as recommended by your dealer. Weights provide the necessary balance to improve stability, traction and steering. Please refer to tractor's operator's manual for proper ballasting information.
- **16.** Always make sure all snowblower components are properly installed and securely fastened BEFORE operation.
- **17.** Never attempt to start the engine and/or engage snowblower drive while standing beside the tractor.
- **18.** Always start the engine from the operator's seat with all the transmission lever(s) and snowblower drive lever in neutral.
- 19. DO NOT bypass the safety system by shorting across the terminals of the starter motor to start the engine. This may cause the tractor to move suddenly.
- **20.** If the safety start system does not work, consult your dealer immediately.

During Operation

- Do not allow passengers on the tractor/snowblower at any time. There is no safe place for passengers on this equipment. The operator MUST sit in the tractor seat.
- Eye and hearing protection is recommended when operating the snowblower.
- **3.** Operate only during daylight hours, or when the area is well lit with bright artificial light.
- 4. Park the tractor/snowblower on level ground, place the transmission in neutral, set the parking brake, disengage the PTO, lower the equipment to the ground, place all control levers in neutral, shut off the engine and remove the ignition key BEFORE leaving the operator's seat.
- Inspect the snowblower after striking any foreign object to assure that all snowblower parts are safe and secure and not damaged.
- **6.** Be especially observant of the operating area and terrain. Watch for holes, rocks, or other hidden hazards. ALWAYS inspect the area prior to operating snowblower.
- **7.** DO NOT operate snowblower near the edge of drop-offs or banks.
- **8.** DO NOT operate snowblower on steep slopes as overturn may result.
- **9.** Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.
- 10.Drive tractor backwards up steeper slopes with blower off. Operate blower as you travel down the slope.
- **11.**Slow down before you change directions on any slope.
- **12.**Use wheel weights on your tractor to increase stability on slopes.
- **13.**Never stand alongside of the unit while the engine is running.

Roll-Over Protective Structure (ROPS) (If so equipped)

- DO NOT weld, drill or alter the ROPS. Damaged ROPS must not be straightened or used. If damage does occur, consult your dealer.
- 2. If the ROPS is lowered or removed from the tractor for any reason, it must be erected and/or refitted immediately. Original bolts or equivalent replacements must be used and tightened to the correct torque.
- **3.** Your dealer does not recommend usage of tractor with ROPS removed.
- **4.** If a fold-down ROPS is used, the ROPS can be folded down for storage, but it must be pinned in the upright position prior to operation.
- 5. Seat belt usage: With ROPS installed on the tractor it is imperative that the seat belt be installed, used and correctly adjusted, at all times. DO NOT use a seat belt if operating without ROPS.
- **6.** Additional safety equipment: A fire extinguisher and first aid kit should be kept readily accessible.

MAINTENANCE

ALWAYS USE GENUINE PARTS WHEN REPLACEMENT PARTS ARE REQUIRED

- **1.** Keep the tractor and snowblower properly maintained.
- 2. Park the tractor/snowblower on level ground, place the transmission in neutral, set the parking brake, disengage the equipment drive, lower the equipment to the ground, place all control levers in neutral, shut off the engine and remove the ignition key and allow the rotating parts to stop BEFORE making any snowblower adjustments.
- 3. To avoid injury, do not adjust, unclog or service the snowblower with the tractor engine running. Make sure rotating components have completely stopped before leaving the operator's seat.
- 4. Keep the tractor/snowblower clean. Snow and ice build-up can lead to malfunction or personal injury from thawing and refreezing in garage.
- **5.** Always wear eye protection when cleaning or servicing the snowblower.
- 6. Service the unit in safety: DO NOT service the tractor while the engine is running or hot, or if the unit is in motion. Always lower snowblower to the ground. If necessary to service unit with blower raised, securely support with stands or suitable blocking before working underneath. Do not rely on hydraulically supported devices for your safety. They can settle suddenly, leak down, or be accidentally lowered.
- 7. Do not attempt to service machine, clear obstructions or unplug blockages with the engine running. Always shut off engine and allow all motion to cease.
- **8.** The manufacturer will not claim responsibility for fitment of unapproved parts and/or accessories and any damages as a result of their use.
- **9.** Make sure all shields and guards are securely in place following all service, cleaning, or repair work.

- **10.** Do not modify or alter this equipment or any of its components or operating functions. If you have questions concerning modifications, consult with your dealer.
- **11.** Do not operate a unit, which is defective or has missing parts. Make sure that all recommended maintenance procedures are completed before operating the unit.
- **12.** Check all controls regularly and adjust where necessary. Make sure that the brakes are evenly adjusted.
- Periodically check all nuts and bolts for tightness, especially wheel hub and rim nuts.
- **14.** Snowblower fan and auger must be checked for tightness. Remove any twine, wire, etc. that may have wrapped on the fan or the auger.
- 15. To avoid serious personal injury: Escaping hydraulic/diesel fluid under pressure can penetrate the skin causing serious injury. Do not use your hands to check for leaks. Use a piece of cardboard or paper to search for leaks.
- 16. Stop engine and relieve pressure before connecting or disconnecting lines. Tighten all connections before starting engine or pressurizing lines.

OM 0393SB-A 10

TRANSPORT

- 1. When driving the tractor and equipment on the road or highway under 25 mph, at night or during the day, use flashing amber warning lights and the Slow Moving Vehicle ("SMV") identification emblem.
- 2. Check local traffic codes that may apply to unit usage on public roads and highways in your area. The use of flashing amber lights is acceptable in most localities. However, some localities may prohibit their use.
- **3.** Always disengage equipment drive prior to transporting unit.

STORAGE

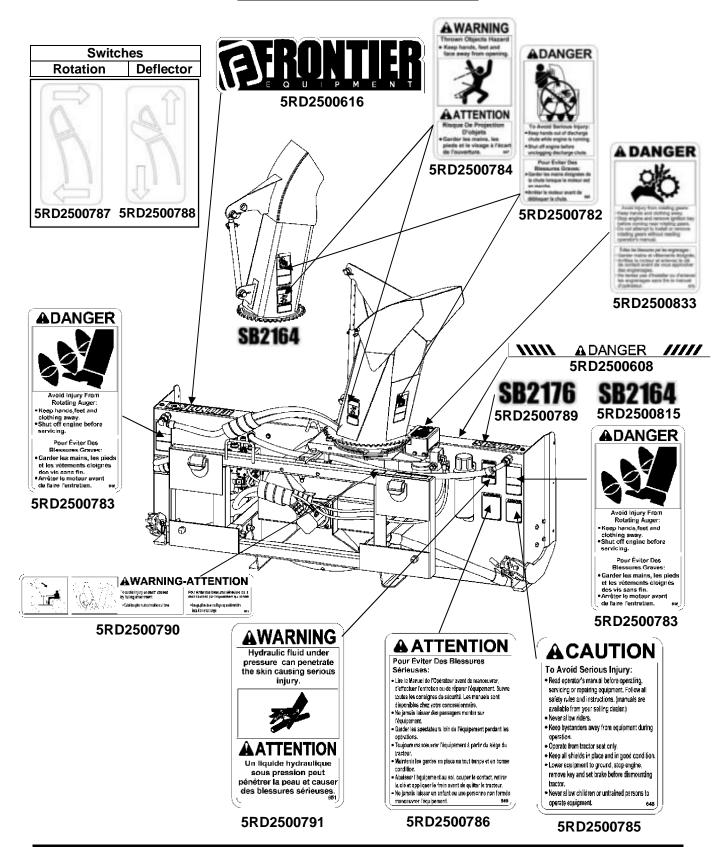
Before storing the snowblower, certain precautions should be taken to protect it from deterioration.

- 1. Clean the snowblower thoroughly.
- 2. Make all the necessary repairs.
- 3. Replace all safety signs that are damaged, lost, or otherwise become illegible. If a part to be replaced has a sign on it, obtain a new safety sign from your dealer and install it in the same place as on the removed part.
- **4.** Repaint all parts from which paint has worn or peeled.
- **5.** Lubricate the snowblower as instructed under "Lubrication" section.
- **6.** When the snowblower is dry, oil all moving parts. Apply oil liberally to all surfaces to protect against rust.
- 7. Store in a dry place.

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DECALS

Replace immediately if damaged



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