

PRO GRAIN

EQUIPMENT



PRO GRAIN BAGGER OPERATOR'S MANUAL

WARRANTY DURATION

Pro Grain Equipment (hereafter referred to as 'Pro Grain') products are designed to provide years of dependable service when proper use and maintenance is followed.

The Limited Warranty Period shall start on the date of delivery of the new Pro Grain product to the to the original customer.

Pro Grain provides a 2 year limited warranty on all bagger and extractor models, and a 1 year limited warranty on all transfer augers, transfer conveyors, and bagger attachments.

If any Pro Grain product is used as rental equipment or on a commercial basis, the warranty period extends for 30 days from the delivery date to the original customer.

WARRANTY LIMITATIONS

Machinery and / or attachment warranty covers defects in materials and workmanship. Machinery and / or attachment must be properly set up and operated in accordance with the recommendations set forth in the Pro Grain operator's manual as well as Pro Grain videos, brochures, or other operator training material found at www.prograinequip.com.

This Limited Warranty provides no coverage for common wear or maintenance items, product misuse, negligence, accident, environmental condition and/or contamination. Common wear items are excluded from warranty, as their life span is dependent on what material is being conveyed.

Common wear or maintenance items include but are not limited to;

- Auger tubes
- Auger flighting
- Auger flighting wear plates
- Conveyor belts
- Bearings
- Chain
- Brakes and brake pads
- Blade or knife parts

Items of product misuse, negligence, accident, environmental condition and/or contamination include but are not limited to;

- Lack of lubrication
- Striking foreign objects, physical abuse, or accidental impact
- Operating product beyond rated capacity or operating guidelines (such as speeds or pressures)
- Operating equipment in adverse environmental conditions
- Use of product in manner for which it was not designed or not intended
- Modification and alterations to design or components
- Removal of components

Tires are the warranty of the manufacturer of the tire.

WARRANTY REQUIREMENTS & COVERAGE

This warranty shall only apply to any machine or attachment which has or will be repaired at the Pro Grain factory, an authorized Pro Grain dealership, or through replacing them as Pro Grain shall elect.

All warranty claims and repairs must be approved by Pro Grain. A warranty registration form must be completed and returned to Pro Grain to start any warranty claim. Registration forms are available in the operator manual or on the company website www.prograinequip.com. Pro Grain may elect to have an area representative evaluate the condition of the machine before warranty is considered.

Warranty parts must be approved by Pro Grain prior to repair or replacement. Labor rate and time must be approved by Pro Grain prior to warranty repair. At Pro Grain's discretion, failed parts must be returned to the manufacturer. Shipping fees on parts are the responsibility of the customer. Warranty does not include freight or delivery charges incurred when returning machinery for servicing. Other charges such as dealer mileage, pick up / delivery fees, third party service calls are the responsibility of the customer.

If the product is sold by the first owner within the Limited Warranty Period, the warranty will transfer to the new owner provided written notice or warranty registration is provided to Pro Grain along with proof of original delivery and proof of sale to new owner.

EXCLUSION OF WARRANTY

Except as otherwise expressly stated herein, Pro Grain makes no representation or warranty of any kind, expressed or implied, and makes no warranty of merchantability in respect to its machinery and/or attachments and makes no warranty that its machinery and/or attachments are fit for any particular purpose other than that which is described in this manual.

Pro Grain shall not be liable for incidental or consequential damages for any breach of warranty, including but not limited to inconvenience, rental or re-placement equipment, loss of profits or other commercial loss. Upon purchase, the buyer assumes all liability, all personal injury and property damage resulting from the handling, possession or use of the goods by the buyer. No agent, employee, or representative of Pro Grain has any authority to bind Pro Grain to any affirmation, representation or warranty concerning its machinery and/or attachments except as specifically set forth here-in. Pro Grain reserves the rights to modify the warranty terms, product specifications, product designs, product operating procedure without previous notice and without obligation to the product already delivered.

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION

This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name _____

Dealer Name _____

Address _____

Address _____

City, State/Prov., Code _____

City, State/Prov., Code _____

Phone Number (____) _____

Grain Bagger Model _____

Serial Number _____

Delivery Date _____

DEALER INSPECTION REPORT

- _____ All Fasteners Tight
- _____ Auger Turns Freely
- _____ Conveyor Belt Aligned & Tensioned (if so equipped)
- _____ Conveyor/Auger Moves and Telescopes Freely
- _____ Appropriate Tire Pressure
- _____ Boom Turns Freely
- _____ Winch Raises and Lowers
- _____ Pan Moves Freely
- _____ Battery Charged

SAFETY

- _____ Safety Chain on Hitch
- _____ All Decals Installed
- _____ Guards and Shields Installed and Secured
- _____ Review Operating and Safety Instructions

I have thoroughly instructed the buyer on the above described equipment which review included the Operator's Manual content, equipment care, adjustments, safe operation and applicable warranty policy.

Date _____ Dealer's Rep. Signature _____

Signature _____

The above equipment and Operator's Manual have been received by me and I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Owner's Signature _____

Always give your dealer the serial number of your Pro Grain Equipment Ltd. Pro Grain Bagger, conveyor and hopper when ordering parts or requesting service or other information.

The serial number plates are located where indicated. Please mark the number in the space provided for easy reference.



Bagger Serial Number _____

Conveyor/Auger Serial Number _____

Hopper Serial Number _____



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Congratulations on your choice of a Pro Grain Equipment Ltd. Pro Grain Bagger to complement your grain storage operation. This equipment has been designed and manufactured to meet the need for the efficient loading of grain or pulse crops into plastic storage bags.

Safe, efficient and trouble free operation of your Pro Grain Bagger requires that you and anyone else who will be operating or maintaining the Pro Grain Bagger, read and understand the Safety, Operation, Maintenance and Troubleshooting information contained within the Operator's Manual.



This manual covers the Pro Grain Bagger made by Pro Grain Equipment Ltd. Use the Index or Table of Contents as a guide when searching for specific information.

Keep this manual handy for frequent reference and to pass on to new operators or owners. Call your Pro Grain Equipment Ltd. distributor or dealer if you need assistance, information or additional copies of the manual.

OPERATOR ORIENTATION - The directions left, right, front and rear, as mentioned throughout the manual, are as seen from the tractor driver's seat and facing in the direction of the travel.

If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your dealer or Pro Grain Equipment Ltd., Box 188, Colonsay, SK S0K 0Z0, Ph. 306-255-2112, Fax 306-255-2113.

SAFETY ALERT SYMBOL

This Safety Alert symbol means
ATTENTION! BECOME ALERT!
YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on your Pro Grain Equipment Ltd. Pro Grain Bagger and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill
Accidents Cost You Money
Accidents Can Be Avoided

SIGNAL WORDS:

Note the use of the signal words DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

- DANGER - Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.
- WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.
- CAUTION - Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.




If you have any questions not answered in this manual or require additional copies or the manual is damaged, please contact your distributor, dealer or Pro Grain Equipment Ltd., Box 188, Colonsay, SK S0K 0Z0, Ph. 306-255-2112, Fax 306-255-2113.

YOU are responsible for the SAFE operation and maintenance of your Pro Grain Equipment Ltd. Pro Grain Bagger. YOU must ensure that you and anyone else who is going to operate, maintain or work around the Bagger be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Pro Grain Bagger.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Pro Grain Bagger owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow them. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

2.1 GENERAL SAFETY

1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting or unplugging the Pro Grain Bagger. 
2. Only trained competent persons shall operate the Pro Grain Bagger. An untrained operator is not qualified to operate the machine.
3. Have a first-aid kit available for use should the need arise and know how to use it. 
4. Provide a fire extinguisher for use in case of an accident. Store in a highly visible place.
5. Do not allow children, spectators or bystanders within hazard area of machine.
6. Wear appropriate protective gear. This list includes but is not limited to:
 - A hard hat
 - Protective shoes with slip resistant soles
 - Protective goggles
 - Heavy gloves
 - Hearing protection
 - Respirator or filter mask
7. Place all controls in neutral or off, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
8. Review safety related items annually with all personnel who will be operating or maintaining the Pro Grain Bagger.

2.2 EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing a machine. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you, follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be operated in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.
3. Replace any safety sign or instruction sign that is not readable or is missing. Location of such safety signs is indicated in this manual.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while operating this equipment. Consult your doctor about operating this machine while taking prescription medications.
5. Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to operate or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.
6. Use a tractor equipped with a Roll Over Protective Structure (ROPS).
7. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with farm machinery and trained in this equipment's operations. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.
8. Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
9. Do not modify the equipment in any way. Unauthorized modification result in serious injury or death and may impair the function and life of the equipment.
10. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the auxiliary equipment and machine Manuals. Pay close attention to the Safety Signs affixed to the auxiliary equipment and the machine.

2.3 SAFETY TRAINING

1. Safety is a primary concern in the design and manufacture of our products. Unfortunately, our efforts to provide safe equipment can be wiped out by a single careless act of an operator or bystander.
2. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of this equipment.
3. It has been said, “The best safety feature is an informed, careful operator.” We ask you to be that kind of an operator. It is the operator’s responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Accidents can be avoided.
4. Working with unfamiliar equipment can lead to careless injuries. Read this manual, and the manual for your auxiliary equipment, before assembly or operating, to acquaint yourself with the machines. If this machine is used by any person other than yourself. It is the machine owner’s responsibility to make certain that the operator, prior to operating:
 - Reads and understands the operator’s manuals.
 - Is instructed in safe and proper use.
5. Know your controls and how to stop conveyors, PTO, hydraulic system and any other auxiliary equipment quickly in an emergency. Read this manual and the one provided with your other equipment.
6. Train all new personnel and review instructions frequently with existing



workers. Be certain only a properly trained and physically able person will operate the machinery. A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death. If the elderly are assisting with farm work, their physical limitations need to be recognized and accommodated.

2.4 SAFETY SIGNS

1. Keep safety signs clean and legible at all times.
2. Replace safety signs that are missing or have become illegible.
3. Replaced parts that displayed a safety sign should also display the current sign.
4. Safety signs displayed in Section 3 each have a part number in the lower right hand corner. Use this part number when ordering replacement parts.
5. Safety signs are available from your authorized Distributor or Dealer Parts Department or the factory.

How to Install Safety Signs:

- Be sure that the installation area is clean and dry.
- Be sure temperature is above 50° F (10° C).
- Determine exact position before you remove the backing paper. (See Section 3).
- Remove the smallest portion of the split backing paper.
- Align the sign over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the sign in place.
- Small air pockets can be pierced with a pin and smoothed out using the piece of sign backing paper.

2.5 PREPARATION

1. Never operate the Pro Grain Bagger and auxiliary equipment until you have read and completely understand this manual, the auxiliary equipment Operator's Manual, and each of the Safety Messages found on the safety signs on the tractor, bagger and auxiliary equipment.
2. Personal protection equipment including hard hat, safety glasses, safety shoes, and gloves are recommended during assembly, installation, operation, adjustment, maintaining, repairing, removal, or moving the implement. Do not allow long hair, loose fitting clothing or jewelry to be around equipment.
3. **PROLONGED EXPOSURE TO LOUD NOISE MAY CAUSE PERMANENT HEARING LOSS!** Motors or equipment attached can often be noisy enough to cause permanent, partial hearing loss. We recommend that you wear hearing protection on a full-time basis if the noise in the Operator's position exceeds 80 db. Noise over 85 db on a long-term basis can cause severe hearing loss. Noise over 90 db adjacent to the Operator over a long-term basis may cause permanent, total hearing loss. NOTE: Hearing loss from loud noise (from tractors, chain saws, radios, and other such sources close to the ear) is cumulative over a lifetime without hope of natural recovery.
4. Clear working area of debris, trash or hidden obstacles that might be hooked or snagged, causing injury, damage or tripping.
5. Operate only in daylight or good artificial light.
6. Be sure machine is properly pinned to the tractor, adjusted and in good operating condition.

7. Ensure that all safety shielding and safety signs are properly installed and in good condition.
8. Before starting, give the machine a "once over" for any loose bolts, worn parts, cracks, leaks, loose conveyor belts and make necessary repairs. Always follow maintenance instructions.

2.6 OPERATING SAFETY

1. Make sure that anyone who will be operating the Pro Grain Bagger or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual. Also read and follow the instructions in the manuals of other equipment in the system.
2. Keep all bystanders, especially children, away from the machine when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
3. Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before servicing the unit or working around loading/unloading equipment.
4. Place all controls in neutral or off, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
5. Keep working area clean and free of debris to prevent slipping or tripping.
6. Do not enter bag unless PTO and hydraulic hoses are disconnected and stowed.

7. Keep hands, feet, hair and clothing away from rotating flighting and moving parts. Keep others away.
8. Install and secure all guards before starting.
9. Keep all hydraulic components in good condition before operating.
10. Clear the area of bystanders before moving bag mounting cradle.
11. Fully retract conveyor to reduce footprint before storing.
12. Remove conveyor from auger tube and attach to rear hitch before transporting.
13. Review safety related items annually with all personnel who will operating, using or maintaining the Pro Grain Bagger.

2.7 MAINTENANCE SAFETY

1. Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
2. Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
3. Make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
4. Before working on this machine, shut off the engine, and remove the ignition keys.
5. Never work under equipment unless it is blocked securely.
6. Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.

7. Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
8. A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
9. Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
10. When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

2.8 LOCK-OUT TAG-OUT SAFETY

1. Establish a formal Lock-Out Tag-Out program for your operation.
2. Train all operators and service personnel before allowing them to work around the unloading system.
3. Provide tags on the machine and a sign-up sheet to record tag out details.

2.9 STORAGE SAFETY

1. Store the unit in an area away from human activity.
2. Do not permit children to play on or around the stored machine.
3. Store the unit in a dry, level area. Support the frame with planks if required.

2.10 TRANSPORT SAFETY

1. Comply with state and local laws governing safety and transporting of farm machinery on public roads.
2. Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
3. Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
4. Remove conveyors from auger tube and attach to rear hitch before transporting.
5. Be sure that the machine is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always attach a safety chain between the hitch and the towing vehicle.
6. Stay away from overhead power lines. Electrocutation can occur without direct contact.
7. Plan your route to avoid heavy traffic.
8. Do not drink and drive.
9. Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
10. Never allow riders on the hitch or frame when transporting.

2.11 HYDRAULIC SAFETY

1. Always place all tractor hydraulic controls in neutral before disconnecting from tractor or working on hydraulic system.

2. Make sure that all components in the hydraulic system are kept in good condition and are clean.
3. Replace any worn, cut, abraded, flattened or crimped hoses and steel lines.
4. Do not attempt any makeshift repairs to the hydraulic fittings or hoses by using tape, clamps or cements. The hydraulic system operates under extremely high-pressure. Such repairs will fail suddenly and create a hazardous and unsafe condition.
5. Wear proper hand and eye protection when searching for a high-pressure hydraulic leak. Use a piece of wood or cardboard as a backstop instead of hands to isolate and identify a leak.
6. If injured by a concentrated high-pressure stream of hydraulic fluid, seek medical attention immediately. Serious infection or toxic reaction can develop from hydraulic fluid piercing the skin surface.



2.12 TIRE SAFETY

1. Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion which may result in serious injury or death.
2. Do not attempt to mount a tire unless you have the proper equipment and experience to do the job.
3. Have a qualified tire dealer or repair service perform required tire maintenance.
4. When replacing worn tires, make sure they meet the original tire specifications. Never undersize.

2.13 DRIVELINE SAFETY

1. Do not allow children near equipment that is running or engaged.
2. Do not exceed 540 rpm PTO speed.
3. Disengage the PTO, move hydraulic lever out of detent, stop the tractor engine and remove the ignition key before making inspections or performing maintenance and repairs.
4. Lubricate the driveline as recommended in the Maintenance section.
5. Keep hoses, wiring, ropes, etc. from dangling too close to the driveline.
6. Install driveline and shields according to recommended lengths and attaching methods with recommended hardware. The driveline shield should rotate independently and telescope freely. The retaining chain must be secured to the implement safety shield.
7. Check the length of the telescoping members to insure the driveline will not bottom out or separate when operating.
8. Proper extended and collapsed lengths of the telescoping PTO shaft must be verified before first operation with each and every tractor. If the extended length of the PTO shaft is insufficient, it may become uncoupled during operation and cause serious injury or death from contact with uncontrolled flailing of PTO shaft assembly components.

2.14 BATTERY SAFETY

1. Keep all sparks and flames away from batteries, as gas given off by electrolyte is explosive.
2. Avoid contact with battery electrolyte: wash off any exposed electrolyte immediately.
3. Wear safety glasses when working near batteries.
4. Do not tip batteries more than 45° to avoid electrolyte loss.
5. To avoid injury from spark or short circuit, disconnect battery ground cable before servicing any part of electrical system.

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires your SAFETY AWARENESS in the following areas:

- That you familiarize yourself with the various Safety Signs
- The type of warning and the area.
- Particular function related to area.



A

B

C

CAUTION

- Read and understand Operator's Manual before starting.
- Place all controls in neutral, stop engine set park brake and wait for all moving parts to stop before servicing, adjusting, repairing or maintaining.
- Install and secure all guards and shields before starting.
- Keep hands, feet, hair and clothing away from moving parts. Keep others away.
- Do not enter bag conveyor unless PTO and hydraulic lines are disconnected.
- Stay away from rotating flying and moving parts. Keep others away.
- Clear the area of bystanders before moving bag mounting cradle.
- Fully retract conveyor to reduce footprint before storing.
- Remove conveyor from auger tube and attach to rear hitch before transporting.
- Keep hydraulic lines and fittings tight, in good condition and free of leaks.
- Review safety instructions annually.

AAW-10

WARNING

HIGH PRESSURE FLUID HAZARD
To prevent serious injury or death:

- Relieve pressure on system before repairing or adjusting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.

AAW-46

DANGER

ROTATING FLIGHTING HAZARD
KEEP AWAY

To prevent serious injury or death from rotating flying:

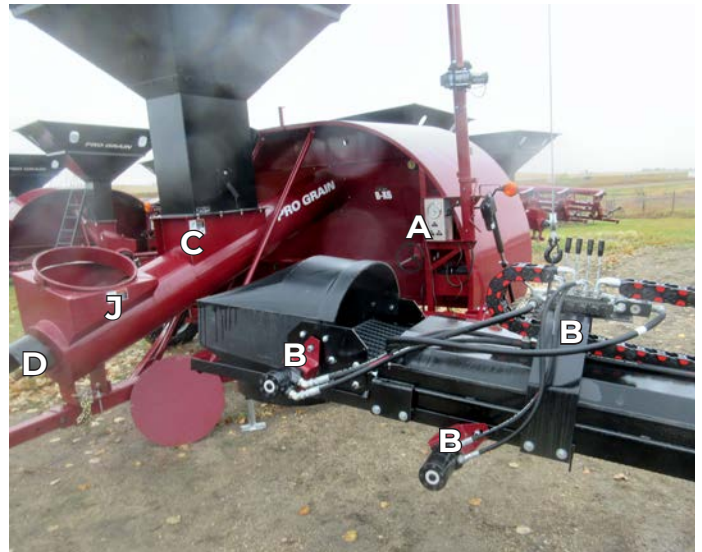
- Place all controls in neutral, stop engine, remove ignition key, set park brake and wait for all moving parts to stop before adjusting, servicing, repairing or maintaining.
- Do not enter bag or approach auger unless PTO and hydraulic lines are disconnected.
- Keep hands, feet, hair and clothing away from moving parts.

AAW-58

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires your SAFETY AWARENESS in the following areas:

- That you familiarize yourself with the various Safety Signs
- The type of warning and the area.
- Particular function related to area.



D

E

F

DANGER

**ROTATING DRIVELINE HAZARD
KEEP AWAY**

To prevent serious injury or death from rotating driveline:

- Keep all guards in place when operating.
- Operate only at 540 RPM.
- Keep hands, feet, hair and clothing away from moving parts.
- Keep U-joint angles equal and as small as possible.
- Do not exceed driveline manufacturer's recommended operating length.

AAW-57

WARNING

FALLING HAZARD

To prevent serious injury or death from falling:

- Use care when using steps, climbing ladders or working on a platform.
- Keep unauthorized people off machine.

AAW-54

DANGER

**ROTATING DRIVELINE HAZARD
CONTACT CAN CAUSE DEATH
KEEP AWAY!**

Do not operate without:

- All driveline, tractor and equipment shields in place.
- Drivelines securely attached at both ends.
- Driveline shields that turn freely on driveline.

AAW-12

REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.

The types of safety signs and locations on the equipment are shown in the illustration below. Good safety requires your SAFETY AWARENESS in the following areas:

- That you familiarize yourself with the various Safety Signs
- The type of warning and the area.
- Particular function related to area.



G



H



I



REMEMBER - If Safety Signs have been damaged, removed, become illegible or parts replaced without safety signs, new signs must be applied. New safety signs are available from your authorized dealer.



OPERATING SAFETY

- Make sure that anyone who will be operating the Pro Grain Bagger or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual. Also read and follow the instructions in the manuals of other equipment in the system.
- Keep all bystanders, especially children, away from the machine when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
- Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before servicing the unit or working around loading/unloading equipment.
- Place all controls in neutral or off, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Do not enter bag unless PTO and hydraulic hoses are disconnected and stowed.
- Keep hands, feet, hair and clothing away from rotating flighting and moving parts. Keep others away.
- Install and secure all guards before starting.
- Keep all hydraulic components in good condition before operating.
- Clear the area of bystanders before moving bag mounting cradle.
- Fully retract conveyor to reduce footprint before storing.
- Remove conveyor from auger tube and attach to rear hitch before transporting.
- Review safety related items annually with all personnel who will be operating, using or maintaining the Pro Grain Bagger.

4.1 TO THE NEW OPERATOR OR OWNER

The Pro Grain Bagger is designed to efficiently move grain or pulse crops into plastic storage bags. PTO and hydraulic power is provided by a tractor on the front of the machine. Be familiar with the machine before starting.

It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, and prudence of personnel involved in the operation, transport, maintenance and storage of equipment or in the use and maintenance of facilities.

Follow all safety instructions exactly. Safety is everyone's business. By following recommended procedures, a safe working environment is provided for the operator, bystanders and the area around the worksite. Untrained operators are not qualified to operate the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to operate the machine safely and how to set it to provide maximum efficiency. By following the operating instructions in conjunction with a good maintenance program, your Pro Grain Bagger will provide many years of service.

4.2 MACHINE COMPONENTS

The Pro Grain Equipment Ltd. Pro Grain Bagger is a machine designed to move material into a large plastic storage bag. It consists of an optional conveyor/auger that can be moved under a transport vehicle to move material into the discharge auger for moving into a bag.

The unit can be equipped with an optional large hopper on top for combines or grain carts to unload into. A center discharge auger powered by the tractor PTO moves the material from the conveyor/auger or hopper into the bag.

Pressurized oil from the tractor provides hydraulic power for the conveyor/auger.

The bagger is designed with a large tunnel frame on the rear of the machine for holding and metering out the bag as it is being filled. A moveable cradle on the rear frame can be moved up and down to assist in loading the bag over the tunnel frame.

Extra features include a grain sampling duct and wheel brakes to control the bag filling rate.

Hydraulic controls for the conveyor/auger are mounted on conveyor frame. A hand wheel for setting brake pressure and a pressure gauge are mounted on the control box. Switches for Bag Boom, Bag Pan and lights are mounted in the control box. A tethered winch control switch is plugged into the control box.

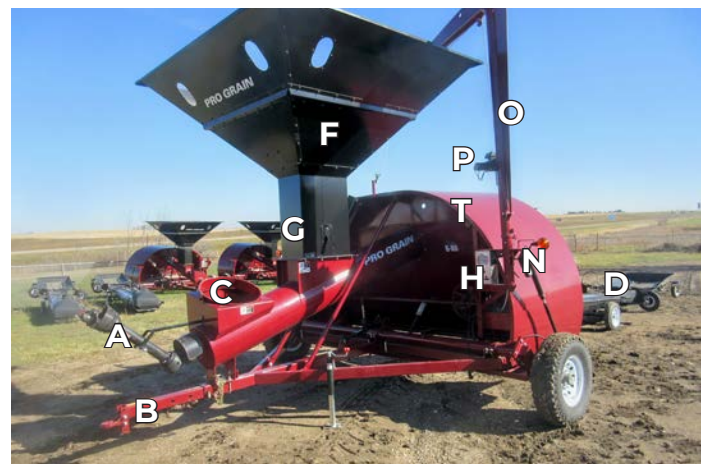
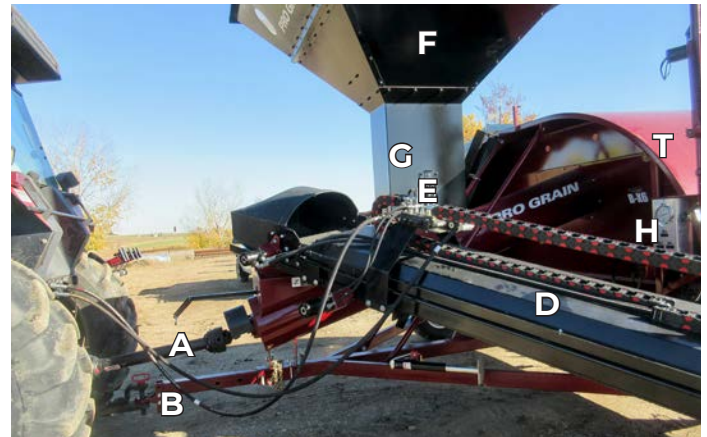
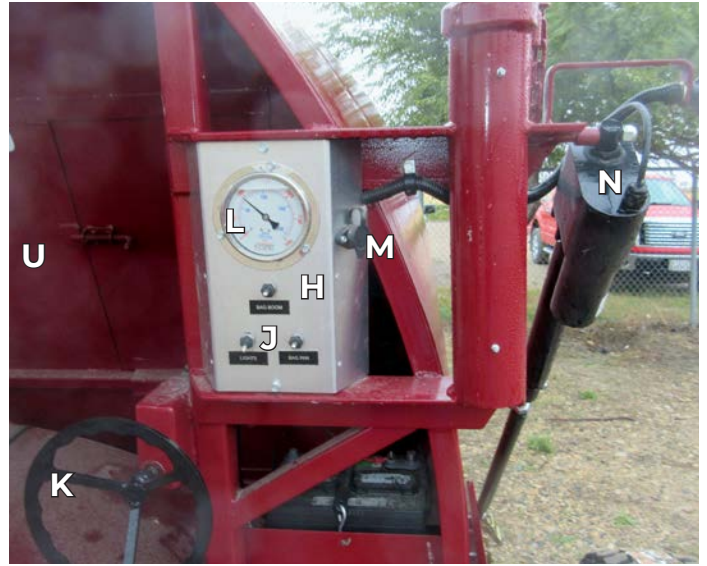


Fig. 1 MACHINE COMPONENTS

- A PTO Shaft
- B Hitch
- C Bottom Auger Intake
- D Conveyor
- E Conveyor Controls
- F Hopper
- G Hopper Intake
- H Control Box
- J Switches
- K Brake Pressure Hand Wheel
- L Pressure Gauge
- M Attachment Plug for Winch Remote
- N Pan Position Actuator
- O Boom
- P Boom Winch
- Q Cradle
- R Pan
- S Auger Discharge Flighting Wear Plates
- T Tunnel
- U Sight Panel (Transport)
- V Bag



4.3 PRE-OPERATION CHECKLIST

Efficient and safe operation of the Pro Grain Bagger requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator. It is important for both the personal safety and maintaining the good mechanical condition of the Pro Grain Bagger that this checklist is followed.

Before operating the Pro Grain Bagger and each time thereafter, the following areas should be checked off:

1. Service the machine per the schedule outlined in Section 5 Service and Maintenance.
2. Use only a tractor that provides oil at the required pressure and flow to operate the machine. Bagger needs one outlet with 82 lpm (22 gpm) at 2200 psi (11,000 kpa).
3. Check that all guards are installed, secured and functioning as intended. Do not operate with missing or damaged shields.
4. Check worksite. Clean up working area to prevent slipping or tripping.
5. Check the conveyor and discharge auger. Remove any twine, plastic or other material that has become entangled.
6. Check that all bearings turn freely. Replace any that are rough or seized.
7. Check for hydraulic leaks. Tighten any leaking fittings.
8. Check that the PTO and driveline shields turn freely and that the driveline can telescope easily.
9. Check flighting wear plate for excessive wear.

4.4 MACHINE BREAK-IN

Although there are no operational restrictions on the Pro Grain Bagger when used for the first time, it is recommended that the following mechanical items be checked:

A. Before starting work:

1. Read the Pro Grain Bagger Operator's Manual.

B. After operating or for the first 1/2 hour:

1. Re-torque all the fasteners and hardware.
2. Check that all safety signs are installed and legible. Apply new signs if required.
3. Check the conveyor belt tension and alignment (if so equipped). Tension or align as required.
4. Check that all guards are installed and working as intended.
5. Check that the PTO and driveline shields turn freely.
6. Check condition of driveline and auger bearings.
7. Check chain if equipped with chain drive.
8. Check the conveyor and discharge auger for entangled material. Remove any entangled material.
9. Check that switches on control box and tether function as required.
10. Lubricate all grease fittings.
11. Check charge in battery. Charge if low.

C. After operating for 5 hours and 10 hours:

1. Repeat items 1 through 10 above.
2. Then go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

4.5 CONTROLS

Before starting to operate the Pro Grain Bagger, all operators should familiarize themselves with the location and function of all controls.

1. Conveyor Controls:

If machine is equipped with a conveyor, the controls are mounted on top of the conveyor frame.

a. Conveyor Belt On/Off:

This 3 position valve in the circuit to the conveyor motor controls the flow of oil to the hydraulic drive motor. Pull the lever to run the conveyor belt in its operating direction. Move the lever to run the conveyor in the reverse direction. Move the lever into its center position to stop the belt.

b. Conveyor Telescoping:

This 3 position lever controls the flow of oil to the conveyor telescoping hydraulic motor. Pull and hold (this position is spring-loaded to center-neutral) to retract the frame. Push and hold (spring-loaded to center-neutral) to extend the frame. Release the lever and the frame will stop and stay in position.

c. Auger Angle:

This 3 position spring-loaded to center-neutral lever controls the flow of oil to the conveyor radial drive wheels. Pull and hold the lever to move the conveyor toward you (away from the frame). Push and hold to move the frame away from you (toward the frame). Release the lever and the drive wheels will stop moving.

d. Conveyor Drive Wheel Height:

This 3 position spring-loaded to center-neutral lever controls the flow of oil to the conveyor radial drive wheel height hydraulic cylinder. Pull and hold to raise the conveyor frame and hopper. Push and hold to lower the frame. Release the lever and the frame will stop moving up and down.

e. Conveyor Speed:

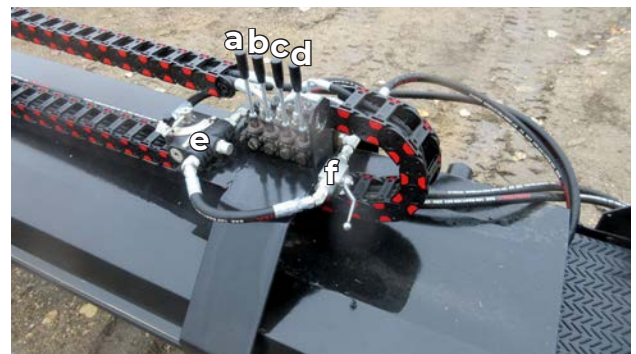
This standard flow divider is used to set and control the speed of all the machine hydraulic functions. Move the pointer to its '0' position to stop the functions. Move to its '10' position to run the functions at their maximum speed.

f. Hydraulic System On/Off Valve:

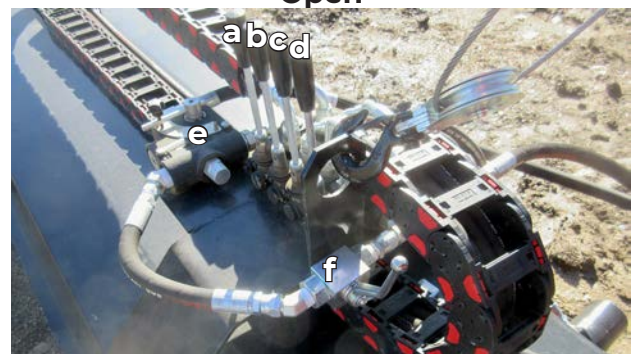
This valve is the master shut-off valve for the conveyor hydraulic system. Turn handle so it is parallel to the line to allow it to operate. Turn at a right angle to the line to stop the flow and stop the conveyor.



Valves



Open



Off

FIG. 2 CONVEYOR CONTROLS

2. Electric Switches for Bagger Controls:
The switches for mounting the bag are located in the control box at the left front corner of the frame where the operator can see what and how the cradle needs to move when mounting the bag.

a. Braking Pressure Gauge:
This gauge measures and displays the pressure in the braking system. Use it as a guide when setting or applying the braking load on the wheels during operation. Generally it is not recommended to set the pressure at more than 500 psi to minimize the chance of overloading the bag.

b. Winch Up/Down:
This 3 position spring-loaded to center-neutral switch controls power to the winch to move up or down. Push and hold the switch down to lower the winch. Raise and hold the switch up to raise the winch. Release it and the winch will stop moving.

c. Pan Position:
This 3 position spring-loaded to center-neutral controls the power to the pan position actuator. Move up and hold to lower the pan. Pull and hold to raise the pan. Release the switch and the pan will stop moving.

d. Lights:
This 2 position toggle switch controls the power to the working lights. Move the switch up to turn the lights on and down to turn off.

e. Winch Up/Down - Tether:
This 3 position spring-loaded to center-neutral rocker switch controls the power to the winch on the boom. Press the IN side to retract winch. Depress and hold the OUT side to extend the winch. Release the switch and the winch will stop.

f. Brake Application Hand Wheel:
This hand wheel sets and controls the amount of pressure in the braking system. Turn clockwise to increase the pressure and counterclockwise to reduce it. Increasing pressure will increase the braking load on each wheel.



Control Box



Tether

FIG. 3 ELECTRIC SWITCHES

3. Frame Angle Turnbuckle:

A turnbuckle is connected between the hitch and wheel mounting frame to change the angle and level the frame appropriate for the tractor. Extend the turnbuckle to lower the wheel frame and shorten to raise. Always set in the fully up position for transport.



FIG. 4 FRAME ANGLE TURNBUCKLE

4. Grain Sampling Port:

Each hopper is equipped with a convenient grain sampling system located on the bottom of the hopper tube. Hang the sample container on the hook, loosen wing nut and raise the gate to take the sample. Lower gate and tighten wing nut when sample taking is complete. Use the same time in a load to take a sample to give the most consistent results.



FIG. 5 GRAIN SAMPLING PORT

5. Winch Pulley Position:

Each boom is designed with a series of indents to hold the winch pulley when in operation. Use the outer indents when lifting lighter weights like the cradle and the inner indents for heavier weights like the conveyor.



FIG. 6 WINCH PULLEY POSITION

4.6 ATTACHING/UNHOOKING

The Pro Grain Bagger uses a tractor for operation and at times for moving or transporting. A truck can be used for transporting from location to location.

4.6.1 TRACTOR

When attaching the machine to a tractor, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. While backing up, align the hitch and drawbar.
4. Be sure the hitch dimension is set so the telescoping portion of the PTO shaft is in its centered position for operation.

5. Stop tractor, set park brake, remove ignition key and wait for all moving parts to stop before dismounting.



Long



Short

FIG. 7 HITCH DIMENSION

6. Use a drawbar pin with provisions for a mechanical retainer. Install the retainer.



Aligning



Pin/Retainer

FIG. 8 DRAWBAR PIN

7. Install the PTO driveline:

NOTE

Be sure the telescoping portion of the shaft is greased and free of dirt.

- a. Slide the collar lock on the yoke to retract the lock pin, align the splines and slide the yoke on the tractor PTO shaft.
- b. Release the sliding collar and make sure the lock pin secures the yoke on the tractor PTO shaft.
- c. Pull on the yoke to be sure the lock pin secures the yoke on the tractor PTO shaft.



FIG. 9 PTO SHAFT

8. Unpin, rotate and re-pin jack.
9. Back off brake pressure all the way using the hand wheel by turning it to the left.

NOTE

Check and verify that the plunger rod on master brake cylinder is loose and free to move.



FIG. 10 JACK



Positioning



Mounted

FIG. 11 CONVEYOR

10. Tractor can now be moved or transported as required. Refer to Transporting Section for more details.

11. For conveyor loading of machine, follow this procedure:
 - a. Move the conveyor up to the machine.
 - b. Swing the boom around and attach winch to lift loop on discharge end.
 - c. Attach conveyor discharge to auger intake.
 - d. Raise the conveyor and remove transport wheels.

12. Connect the Hydraulic System:

- a. Use a clean cloth or paper towel to clean the dirt and build-up from around the couplers and male tips.
- b. Insert the male tips into the couplers. Make sure they are locked in place.





Hose 1



Hose 2



Attached

FIG. 12 HYDRAULIC HOSES

c. Route the hoses away from moving parts. Be sure they do not drop to the ground or get pinched when operating.

d. Place tractor hydraulic circuit in detent and move the conveyor belt drive control lever toward you. If the conveyor belt moves toward the discharge, the hose circuit is correctly hooked up. If not, reverse the hoses.

13. Connect the wiring harness to the tractor if transporting on a public road. Be sure to secure to the hitch and provide sufficient slack when turning.

14. Safety Chain:
Attach the safety chain around the drawbar cage to prevent unexpected separation.

15. Reverse the above procedure when unhooking from tractor.

4.6.2 TRUCK

When attaching the machine to a truck, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Make sure there is enough room and clearance to safely back up to the machine.
3. Remove the tractor end of the PTO shaft and place in a secure location.
4. Slowly back the truck until the hitch and clevis are aligned.

IMPORTANT

Only use a 3/4 ton truck or larger to transport the machine on a public road.

- a. Install the drawbar pin through the hitch
- b. Install the retainer through the drawbar pin.



FIG. 13 ALIGNED



FIG. 14 SHAFT END



FIG. 15 DRAWBAR PIN

5. Cross the safety chains under the hitch when attaching to support the hitch in the event of failure and to prevent unexpected separation.



FIG. 16 SAFETY CHAINS

6. Connect the wiring harness for optional light bar or turn on optional flashing lights on bagger.
7. Route the harness across the hitch to prevent snagging. Be sure to provide slack for turning.
8. Retract the jack.
9. Pull anchor pin on jack and rotate to its storage position. Re-pin.



FIG. 17 JACK

10. Remove the rear view mirror panel in the tunnel frame and wing plates and place in truck. This will allow the driver to see behind the machine when transporting on the road.



Mounted



Removed

FIG. 18 REAR VIEW PANEL

11. Reverse the above procedure when unhooking from truck.

4.7 MOUNTING A BAG

The bag must be properly installed on the bagger in order for it to come off the tunnel during operation. Follow this procedure when installing the bag:

1. Clear the area of bystanders, especially small children.
2. When the bagger is new and has never been used before, the tunnel anchor harness must be installed on the bagger (on each side and top) before installing a bag. Attach harness by:

- a. Bring the harness from the accessory cart to the work area.



Lay-Out

- b. Attach the harnesses on each side of tunnel.



Left

Right

- c. Attach the anchor harness on top of the tunnel.

NOTE

These straps only have to be attached when the unit is new. They can remain attached when moving or when no bag is mounted.



Top

FIG. 19 ANCHOR HARNESSSES

- d. Move the straps off front of the tunnel while mounting bag.
- e. Remove the straps from the left side of the pan to use after bag is mounted.



FIG. 20 STRAPS

- 3. Move the cradle into position behind the tunnel



FIG. 21 CRADLE POSITIONED

- 4. Bring the bag to the working area:
 - a. Bring the bag box to the working area.



Truck

- b. Unload box next to cradle.



Unloaded

- c. Remove the cover, cut the corners of the box (avoid cutting the bag inside) and lay the sides flat on the ground.



Corners Cut

- d. Remove the plastic cover.

IMPORTANT

Be sure to orient the bag so that when the inside layer is pulled off the back, the white surface is to the outside. Position so the inside or outside can be pulled with the white side always to the outside.



Cover Opened

FIG. 22 BAG BOX

- 5. Move the pan into its fully down position.



FIG. 23 PAN DOWN (TYPICAL)

- 6. Prepare bag:

- a. Move ends of bag out.
- b. Extend bag out next to cradle.



Lay-Out



Extended

FIG. 24 BAG PREPARATION

- 7. Slide bag on cradle:

- a. Move top portion of the bag away from the cradle.
- b. Move the cradle over the bottom side of the bag.
- c. Slide the top of the bag over the top of the cradle.
- d. Connect the 2 straps around the top portion of cradle and bag to secure.

NOTE

Straps are part of cradle.

- b. Raise the cradle until it just clears the top of the tunnel.



Cradle on Bag



Attached



Bag on Cradle



Cradle



Straps Around Bag



Above Tunnel

FIG. 25 BAG ON CRADLE

- 8. Raise the cradle:
 - a. Use the winch control on the control panel or on the end of the tether to lower the winch to cradle and attach.



Side View

FIG. 26 RAISING CRADLE

9. Move bag around tunnel:
 - a. Raise cradle until it is above tunnel.
 - b. Slide bag around the sides of the tunnel and cradle over the top of tunnel.



Both Sides

FIG. 27 BAG AROUND TUNNEL

10. Each bag comes with a roll of tape in the bottom of the box to repair any rips, tears or holes in the bag that can occur. Use as required.



Above Tunnel

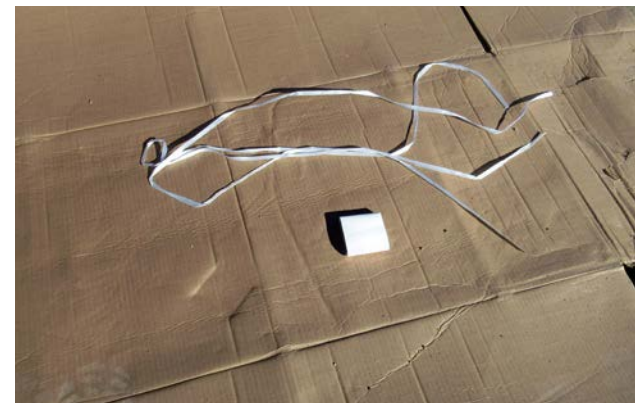


FIG. 28 ROLL OF TAPE



Right Side

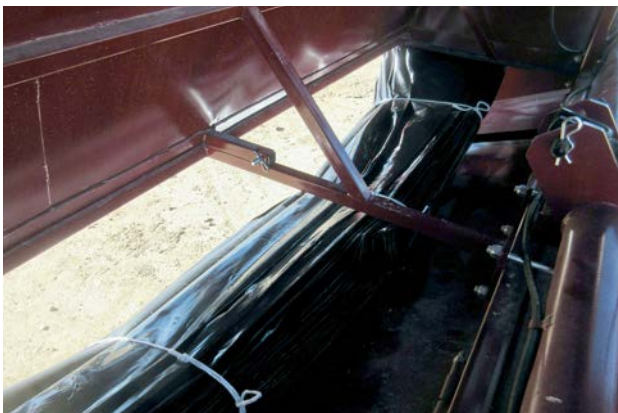
- 11. Slide the bag around the tunnel.
 - a. Sliding right side.
 - b. Sliding left side.
 - c. Pan.



Right Side



Left Side



Pan

FIG. 30 BAG FORWARD

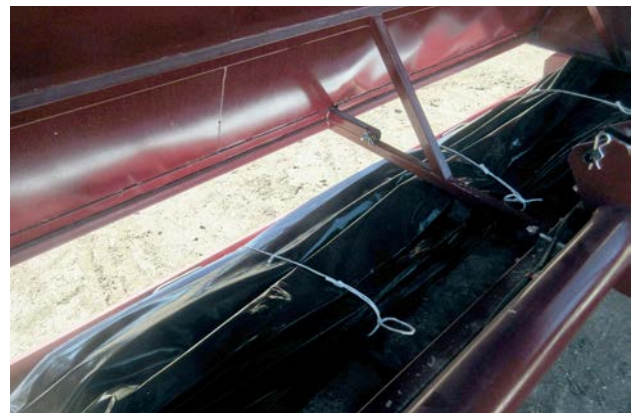
- 12. Move bag all the way to the front of the tunnel:
 - a. Right side.
 - b. Left side.
 - c. Pan.



Right Side



Left Side



Pan

FIG. 31 BAG ON FRONT OF TUNNEL

13. Raise the pan until there is about a 50 mm (2 inch) space between pan and frame.

NOTE

Clearance is pre-set at the factory but can be adjusted on bag pan arms.



FIG. 32 PAN POSITION

14. Remove straps holding bag on cradle.



Strap - Right



Right - Released



Left - Released

FIG. 33 REMOVING STRAPS

15. Remove twine holding bag together:

a. Center:

- Tied.
- Released.



Tied



Released

b. Right side.

c. Pan.



Right Side



Pan

FIG. 34 BAG TIES

16. Pull the inner layer of the bag out:

a. Inner layer.



Inner

b. Right side.



Pulled

FIG. 35 PULLING INNER LINER

17. Two straps are installed over the tunnel to hold and meter out the bag during operation. The straps are located on the end of the left side of pan. Both straps are designed with a loop on one end and flat on the other. Attach the loop end to the hook on the right side of frame and thread through the 3 straps on sides and top of tunnel.

- a. Straps are shipped in accessory box.
- b. Route loop end through hole in bottom of frame and attach to forward hook.



Front Strap

c. Repeat with rear strap.



Rear Strap

d. Thread straps through right side support strap.



Right Support

e. Repeat with top support strap.

IMPORTANT

Do not twist straps when installing them. They must remain flat.



Top

FIG. 36 BAG STRAPS

18. Install straps on the left side:

- a. Lay straps flat over tunnel.
- b. Thread straps through left support strap.
- c. Thread strap through hole in bottom of frame.
- d. Direct each strap into its ratchet jack on the bottom of the frame.



Support Strap



Ratchet

FIG. 37 LEFT SIDE STRAP

9. Raise the pan and use the ratchets to tighten straps. The straps should be tight enough to allow you to just slip your fingers under them. The forward straps hold the bag in position during operation and the rear one controls how fast the bag is pulled off the tunnel.



Fingers



Attached

FIG. 38 STRAP TENSION

20. Raise the bag lifters in the pan to tighten bag.



Left Side



Both

FIG. 39 BAG LIFTERS

21. Use the turnbuckle to set the height of the pan above the ground (Measured from the front part of the bag pan.):
 - a. Set 150-200 mm (6-8 inches) above the ground when bagging.



FIG. 40 TURNBUCKLE

4.8 MACHINE SET-UP FOR BAGGING

Although the machine is easy to use, the bagger must be set properly for the it to perform and provide maximum performance. When set properly, the bagger will fill several hundred feet of bag effectively and efficiently.

Follow this procedure when setting up the bag, bagger and working area:

1. Clear the area of bystanders, especially small children.
2. Select the location for the placement of the bag.

IMPORTANT

Select an area that has good drainage so rain or surface water will drain away from the storage area and where grain carts, combines or transport trucks have easy access to the work area and machine. The best results are obtained when you bag going downhill. This will minimize the chance of moisture running down into the bag.

3. Hook up a tractor to bagger.
4. Drive up to the work area and set the park brake. Stop tractor engine and remove ignition key before dismounting.

IMPORTANT

The location for the bag must have a reasonably smooth, even surface. Stiff crop residue such as corn plant stumps, canola stumps, etc. can puncture the bag at times. Be sure they are knocked down before starting. Punctures will allow moisture to enter the bag and lead to spoilage.



FIG. 41 BAGGER

5. Prepare the bagger:
 - a. Install the rear view mirror panel in the rear wall if it was removed for transport.



Removed



Installed

FIG. 42 MIRROR PANEL

- b. Use the turnbuckle to set the pan 150-200 mm (6-8 inches) above the ground.



FIG. 42 TURNBUCKLE

6. Pull the bag off the bagger:
 - a. Pull the bag out from under the straps around the tunnel.

IMPORTANT

The straps are designed to hold the bulk of the bag on the bagger while the inside layer of the bag next to the tunnel is pulled out and filled. Be sure the straps are set to allow this to happen.

- b. Pull each corner out.
- c. Pull bag evenly off the tunnel and pan.
- d. Pull until bag is 4 - 5 m (12 - 15 feet) off the machine.

NOTE

The top of the bag will need to be pulled off a little further so that the ends are even when laid on the ground.



Bag Stretching



Right Corner

FIG. 45 BAG STRETCHING

- c. Place one of the 2 x 4's under the bag about 0.5 m (1.5 feet) from the end.



Bottom 2 x 4



FIG. 44 BAG PULLING

7. Seal the end of the bag with 2, 10 - 12 foot (3 - 4 m) 2 x 4's or equivalent.
 - a. Stretch the end of the bag out.
 - b. Fold the corners over about 1 m (3 feet).

d. Fold corners over.



Corners Folded

e. Place the second 2 X 4 on top of the first one.



Second 2 x 4

f. Use 4 or 6 screws to hold the 2 x 4's together.



Securing

FIG. 46 BAG SEALING

8. Bag end:
a. Secure 2 x 4's together.



Pulling

b. Roll 2 x 4's under themselves 3 or 4 times.



Evenly

FIG. 47 BAG END

9. If required, move the conveyor into its working configuration:

a. Bring conveyor to bagger.



Conveyor

b. Attach winch to move conveyor into position.



Winch

c. Position conveyor discharge over auger intake.



Mounted

d. Raise conveyor and remove transport wheels.



Transport Wheels

e. Hook up tractor:

- Drawbar pin and PTO shaft to bagger.
- Hydraulic hoses to conveyor.
- Rotate and stow jack on bagger.



Tractor

FIG. 48 PREPARING CONVEYOR

4.9 OPERATING



OPERATING SAFETY

- Make sure that anyone who will be operating the Pro Grain Bagger or working on or around the unit reads and understands all the operating, maintenance and safety information in the operator's manual. Also read and follow the instructions in the manuals of other equipment in the system.
- Keep all bystanders, especially children, away from the machine when loading or unloading is being done, or when authorized personnel are carrying out maintenance work.
- Establish a lock-out tag-out policy for the work site. Be sure all personnel are trained in and follow all procedures. Lock-out tag-out all power sources before servicing the unit or working around loading/unloading equipment.
- Place all controls in neutral or off, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Keep working area clean and free of debris to prevent slipping or tripping.
- Do not enter bag unless PTO and hydraulic hoses are disconnected and stowed.
- Keep hands, feet, hair and clothing away from rotating, flying and moving parts. Keep others away.
- Install and secure all guards before starting.
- Keep all hydraulic components in good condition before operating.
- Clear the area of bystanders before moving bag mounting cradle.
- Fully retract conveyor to reduce footprint before storing.
- Remove conveyor from auger tube and attach to rear hitch before transporting.
- Review safety related items annually with all personnel who will be operating, using or maintaining the Pro Grain Bagger.

When using the Pro Grain Bagger, follow this procedure:

1. Clear the area of bystanders, especially small children, before starting.
2. Review the Pre-Operation Checklist (Section 4.4) before starting.
3. Keep all spectators and bystanders out of the working and machine area. Should anyone enter this area, stop immediately.
4. Check that the machine is positioned per Section 4.8 and the bag has been started.
5. Retract the conveyor to allow the truck to move into position.
6. Drive truck next to machine and stop.



FIG. 49 RETRACTED

7. Extend conveyor until hopper is under discharge.



FIG. 50 EXTENDED

8. Starting:
 - a. Start tractor and run at low idle.
 - b. Place tractor hydraulic circuit in detent. Engage the PTO.

IMPORTANT

Do not set park brake on tractor or leave the transmission in gear. Bagger must be able to move both the machine and the tractor during operation. Setting the park brake on the tractor will prevent this.

- d. Turn the conveyor on.
- e. Open the truck discharge slowly.
- f. Set the conveyor speed using the flow control on the hydraulic circuit.
- g. Increase engine speed to 1650-1700 RPM and conveyor speed if desired to increase capacity.

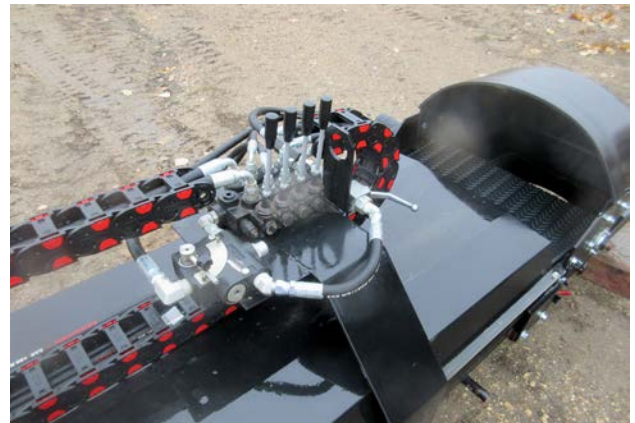


FIG. 51 CONTROLS

9. Stopping:
 - a. Close the truck discharge gate.
 - b. Run until the conveyor is empty.
 - c. Turn conveyor off.
 - d. Run until the discharge auger is empty.
 - e. Slow engine RPM to low idle.
 - f. Place hydraulic circuit and PTO in neutral and stop engine.



FIG. 52 CONVEYOR

10. Emergency Stopping:

Although conveyor and discharge auger should be emptied before shutting down, in an emergency situation stop engine to stop machine. Correct the emergency before resuming work.

11. Restarting (Unit Full):

When the machine is shut down inadvertently or for an emergency, the conveyor and discharge auger will still be full of grain or material. When restarting, the starting loads will be higher than normal. When restarting, follow this procedure:



FIG. 53 OPERATION (TYPICAL)

- a. Place all controls in neutral or OFF positions.
- b. Start the tractor and run PTO at low RPM.
- c. Run until discharge auger is empty.
- d. Place hydraulic circuit into its detent position.
- e. Set the engine RPM to midrange.
- f. Turn on conveyor drive and empty discharge.
- g. Proceed with the work.

IMPORTANT

If machine was shut down for an emergency, correct condition/situation before resuming work.

12. Loading:

The Pro Grain Bagger can be equipped with a large hopper that is used for combines or grain carts to unload into. The hopper's large size coupled with the high capacity discharge auger allows both combines and grain carts to unload at maximum speed.

a. When using the hopper, follow this procedure:

- Position combine or grain cart spouts over hopper.
- Start tractor engine and run at idle.
- Engage PTO and increase engine speed to rated RPM.
- Unload combine or grain cart.



FIG. 54 HOPPER (TYPICAL)

NOTE

Operator on combine or grain car needs to watch position of bagger as it moves as bag is filled. Move along with hopper.

- When hopper and discharge auger are empty, reduce engine speed to low idle and then turn PTO off.



FIG. 55 LOADING

b. When using the conveyor/auger, follow this procedure:

- Retract conveyor.
- Drive truck into position where conveyor/auger hopper can reach.
- Start tractor engine and run at idle.
- Engage PTO, place hydraulic system in detent and increase engine speed to rated RPM.
- Extend conveyor/auger under truck unloading chute.
- Start conveyor/auger and open truck unloading chute.
- Set conveyor or auger on an angle to allow hopper to move ahead as the bag fills while the conveyor/auger hopper remains under the truck unloading chute.

- Move conveyor as required to keep it under truck unloading chute as bagger moves away during operation.
- When truck compartment is empty, close it and move conveyor to next compartment to unload it.
- When truck, conveyor and discharge auger are empty, stop conveyor, reduce engine RPM, move hydraulic lever out of detent and turn off PTO.

c. Repeat above steps for the next load.

14. Maximum Capacity:

The Bagger is designed with a large capacity to handle any application. It is recommended that the PTO be run at rated engine speed and conveyor at steady speed to obtain maximum machine capacity. Observe the conveyor hopper and discharge hopper and keep them full.

- Use an engine speed of 1650-1700 RPM for the best results. Overspeeding will cause cavitation and reduce capacity.
- Use the sight glass windows in hopper to avoid over-filling to obtain maximum capacity.
- Conveyor speed should be set so that the grain comes off of left in an arc. Running too fast will cause grain leakage at the top of the conveyor.



Conveyor Hopper



FIG. 57 DRIVE WHEELS



Hopper Windows

FIG. 56 MAXIMUM CAPACITY

15. Movement:

The Bagger moves forward about 1 foot (300 mm) for every 50 bushels of grain placed in the 10 foot bag and 75 bushels for 12 foot bags. Move the conveyor hopper, transport truck, combine or grain cart along with Bagger during operation.

Lower conveyor swing drive wheels to the ground to move conveyor hopper from side-to-side under the truck discharge.

16. Wheel Brakes:

The Bagger is equipped with brakes on each wheel to retard/slow the turning of the wheels. Braking force is set or controlled by the brake pump wheel next to the control panel. Turn the wheel clockwise to increase the braking pressure and counterclockwise to lower it. Turn fully counter-clockwise to release the pressure in the brake system.

Monitor the pressure in the system with the gauge. Do not exceed 1000 psi in the system to prevent overloading and tearing the bag. Apply enough brake pressure to fill bag.

NOTE

Do not apply the brakes for the first 15 feet of the bag when starting the bag.

Monitor brake pressure for every load. Keep pressure constant to avoid overloading and tearing the bag. Adjust as the ambient temperature changes during the day.



a. Wheel b. Gauge

FIG. 58 WHEEL BRAKES

17. Shear Bolt:

The machine is designed with a shear bolt in the yoke on the PTO drive shaft to prevent damage to drive components should the machine encounter a shock or high load condition. Replace the shear bolt with genuine Pro Grain Equipment Ltd. replacement parts. Do not use a higher grade or strength bolt.

To reduce the chance of breaking the shear bolt:

- a. Operate at suggested RPM.
- b. Remove all obstructions when filling the bag.



FIG. 59 SHEAR BOLT

18. Unplugging:

- a. If discharge auger is plugged:

Option 1:

- Check brake pressure and back off if too high to allow machine to move.
- Start PTO slowly.



Access Hole

Option 2:

- Remove access cover at the bottom of tube and let material fall out.
- Replace cover when tube is empty and resume work.



Cover Replaced

FIG. 60 UNPLUGGING AUGER

- b. If conveyor is plugged:
 - Check belt tension.



FIG. 61 UNPLUGGING CONVEYOR

19. Grain Sampling:

The machine is equipped with a grain sampling system on the bottom of the hopper throat. Hang a pail under the sample gate. Adjust sample gate to match commodity.



FIG. 62 GRAIN SAMPLING

20. Bag Full:

Stop filling the bag when there is 4 - 5 m (12 - 15 feet) of empty bag remaining. Pull the remaining bag off the tunnel and spread the bag end out. Close/seal the end of the bag similar to how the initial end was sealed.

Fold the corners over 1 m (3 feet), place a 2 X 4 above and below the bag. Use screws to hold them together. Roll up to form a neat end.



FIG. 63 SEALING

21. Operating Hints:

- a. Set the harness tension so you can slide your fingers under the strap. This will allow the inner layer of bag to come off the tunnel when bagging and yet hold the outer layers in place during operation. Proper tension is critical to avoid grain leak.

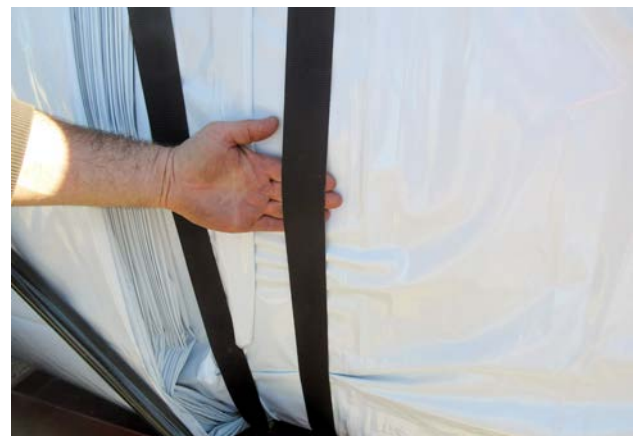


FIG. 64 TENSION

- b. Use the pressure in the braking system to control the speed of the machine during operation and how full the bag is while filling.



FIG. 65 BRAKING

- d. Lower swing drive wheels to the ground and use them to move the conveyor hopper forward and back as required when operating. Raise drive wheels when not being used.



Up



Down - Back



Up - Forward

FIG. 66 DRIVE WHEELS

- e. Raise swing drive wheel assembly when extending or retracting conveyor to move under or out from under transport truck. A set of sprockets under the conveyor frame mate with rows of chain to telescope conveyor.
- f. Combined with forward or back movement and extend or retract allows the operator to position the conveyor hopper where required when operating.



Extended



Retracted



Sprockets

FIG. 67 EXTEND/RETRACT

4.10 STORAGE



STORAGE SAFETY

- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Store the unit in a dry, level area. Support the frame with planks if required.

After the season's use, the machine should be thoroughly inspected and prepared for storage. Repair or replace any worn or damaged components to prevent any unnecessary down time at the start of next season. To insure a long, trouble free life, this procedure should be followed when preparing the unit for storage:

1. Clear the area of bystanders, especially small children.
2. Remove all residual material from the conveyor and auger tubes.
3. Thoroughly wash the entire machine using a pressure washer to remove all dirt, mud, debris or residue.
4. Inspect all moving or rotating parts to see if anything has become entangled in them. Remove the entangled material.
5. Lubricate all grease fittings to remove any moisture in the bearings.
6. Run the machine slowly for 1 minute to distribute lubricant to all surfaces.
7. Remove conveyor and store.
8. Remove PTO shaft and store in a secure location.



FIG. 68 CONVEYOR

9. Back off brake pressure.
10. Touch up all paint nicks and scratches to prevent rusting.



FIG. 69 BRAKES

11. Select an area that is dry, level and free of debris.
12. Store machine inside if possible.

13. Do not allow children to play on or around the stored machine.
14. Unhook from tractor or truck (See sections 4.6.1 or 4.6.2 respectively).



FIG. 70 STORED

4.11 TRANSPORTING



TRANSPORT SAFETY

- Comply with state and local laws governing safety and transporting of farm machinery on public roads.
- Check that all the lights, reflectors and other lighting requirements are installed and in good working condition.
- Do not exceed a safe travel speed. Slow down for rough terrain and when cornering.
- Remove conveyors from auger tube and attach to rear hitch before transporting.
- Be sure that the machine is hitched positively to the towing vehicle and a retainer is used through the drawbar pin. Always attach a safety chain between the hitch and the towing vehicle.
- Stay away from overhead power lines. Electrocutation can occur without direct contact.
- Plan your route to avoid heavy traffic.
- Do not drink and drive.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc. Watch for traffic when operating near or crossing roadways.
- Never allow riders on the hitch or frame when transporting.

Pro Grain Equipment Ltd. Pro Grain Baggers are designed to be easily and conveniently moved from location to location. When transporting, follow this procedure:

1. Clear the area of bystanders, especially small children before starting.
2. Be sure the Bagger is hitched securely to the tractor or truck. Always use a safety chain between the machine and the tow vehicle and a retainer on the drawbar pin. Attach wiring harness.
3. Keep to the right and yield the right-of-way to allow faster traffic to pass. Drive on the shoulder if permitted by law.
4. Install optional lighting bar or turn transport lights on.
5. Make sure all the lights and reflectors required by local highway and transport authorities are in place, clean, in good working order and clearly visible to all overtaking and on-coming traffic.
6. Remove conveyor from bagger and connect to hitch at the bottom of the tunnel or load on a truck.



Truck



Tractor

FIG. 71 TRANSPORT

7. Remove rear view mirror visibility panel from tunnel frame access panel if towing with a truck.



FIG. 72 PANEL

8. Release the wheel brakes all the way (Turn hand wheel counter-clockwise).



FIG. 73 WHEEL

9. Use ratchet on frame to lower wheel frame and raise machine.



FIG. 74 RATCHET

10. Do not allow riders on the machine or tractor.
11. Roll the end of the bag up with 2 x 4's and secure under strap if bag is attached around tunnel.
12. Always use a 3/4 ton or larger truck to provide sufficient control when transporting.



FIG. 75 BAG

13. Always use a pin with a retainer when attaching conveyor to the bagger for transporting.



FIG. 76 PIN/RETAINER



MAINTENANCE SAFETY

- Good maintenance is your responsibility. Poor maintenance is an invitation to trouble.
- Follow good shop practices.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.
- Make sure there is plenty of ventilation. Never operate the engine in a closed building. The exhaust fumes may cause asphyxiation.
- Before working on this machine, shut off the engine, and remove the ignition keys.
- Never work under equipment unless it is blocked securely.
- Always use personal protection devices such as eye, hand and hearing protectors, when performing any service or maintenance.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. The manufacturer will not be responsible for injuries or damages caused by use of unapproved parts and/or accessories.
- A fire extinguisher and first aid kit should be kept readily accessible while performing maintenance on this equipment.
- Periodically tighten all bolts, nuts and screws and check that all cotter pins are properly installed to ensure unit is in a safe condition.
- When completing a maintenance or service function, make sure all safety shields and devices are installed before placing unit in service.

5.1 SERVICE

5.1.1 FLUIDS AND LUBRICANTS

1. Grease:
Use an SAE multi-purpose high temperature grease with extreme pressure (EP) performance. Also acceptable is an SAE multi-purpose lithium based grease.
2. Storing Lubricants:
Your machine can operate at top efficiency only if clean lubricants are used. Use clean containers to handle all lubricants. Store them in an area protected from dust, moisture and other contaminants.
3. Brake Fluid:
Use a standard DOT 3 brake fluid for all operating conditions.

5.1.2 GREASING

Use the Maintenance Checklist provided to keep a record of all scheduled maintenance.

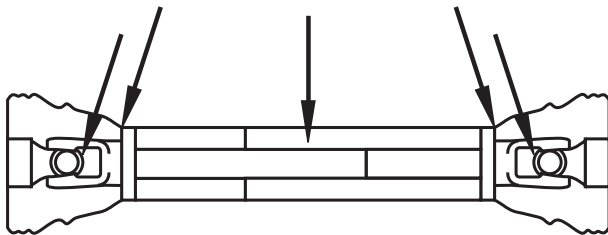
1. Use a hand-held grease gun for all greasing.
2. Wipe grease fitting with a clean cloth before greasing, to avoid injecting dirt and grit.
3. Replace and repair broken fittings immediately.
4. If fittings will not take grease, remove and clean thoroughly. Also clean lubricant passageway. Replace fitting if necessary.

5.1.3 SERVICING INTERVALS

The period recommended is based on normal operating conditions. Severe or unusual conditions may require more frequent lubrication or oil changes.

10 Hours, Daily or Every 5 Bags

1. Grease PTO driveline.



Schematic



Shaft

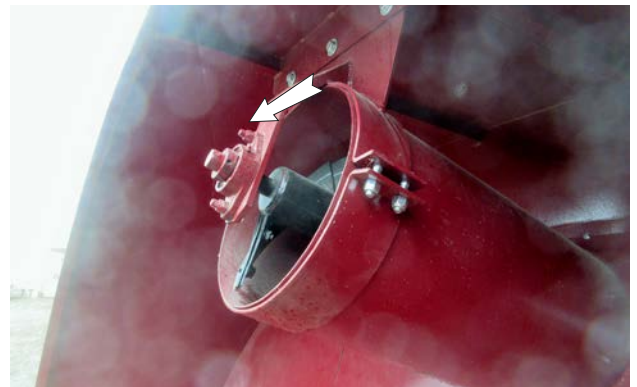
FIG. 77 PTO SHAFT

2. Lubricate unloading auger bearings.
 - a. Input end.



Drive End

- b. Discharge bearing.



Discharge End

FIG. 78 UNLOADING AUGER BEARINGS

3. Grease conveyor castor wheels.



FIG. 79 CASTOR WHEELS

40 Hours, Weekly or 50 Bags

1. Grease the telescoping section of the PTO shaft.



FIG. 80 TELESCOPING SECTION (TYPICAL)

2. Check conveyor belt alignment. Adjust if the belt is rubbing against either side.



FIG. 81 BELT ALIGNMENT

3. Grease conveyor extend/retract drive shaft bearings.



FIG. 82 EXTEND/RETRACT SHAFT

Annually

1. Check condition of flashing in the conveyor hopper. Replace if worn or losing grain.



FIG. 83 FLASHING

2. Check condition of discharge flighting. Replace wear plate if wear insert has worn through and wearing on base flighting.

3. Check condition of brake fluid.



FIG. 84 WEAR INSERT

4. Clean machine:
 - a. Bagger.



Bagger

- b. Conveyor.



Conveyor

FIG. 85 CLEAN MACHINES

5.2 MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years and trouble-free operation.

5.2.1 DRIVELINE MAINTENANCE

The PTO driveline is designed to telescope to allow for dimensional changes as the machine goes through its operational range. A tubular guard encloses the driving components and is designed to turn relative to the driving components. The driveline should telescope easily and the guard turn freely on the shaft at all times. Annual disassembly, cleaning and lubrication is recommended to insure that all components function as intended. Disassemble and clean driveline if the guards do not turn freely or if shaft doesn't telescope easily. To maintain the driveline, follow this procedure:

1. Remove the driveline from the machine.
2. Pull driveline apart.



Driveline



Apart

FIG. 86 PTO DRIVELINE (TYPICAL)

3. Use a screwdriver to flip the red lock tab on the bell on male end of driveline.



Tab



Flipped

FIG. 87 LOCK TABS

4. Slide white tab over to release bell.



Tab



Tab Slid Over

FIG. 88 WHITE TAB



Removed

FIG. 90 TUBE GUARD

5. Slide bell off the end of yoke and end of shaft.

7. Use a cloth and solvent to remove all the old grease from the bearing and groove.



FIG. 89 BELL



FIG. 91 CLEANING

6. Spread the white bearing ring to release tube guard and remove from shaft.

8. Clean the male portion of the shaft.



Bearing Rings



FIG. 92 CLEAN SHAFT

9. Apply a layer of fresh grease to the bearing and groove.



FIG. 93 GREASE BEARING

11. Slide the white tab over to release the bell.



FIG. 95 WHITE TAB

10. Use a screwdriver to flip the red lock tab on bell on female end of the driveline.



Red Tab

12. Remove bell from bearing.



FIG. 96 BEARING



Flipped

FIG. 94 RED LOCK TAB

13. Release tube guard:

- a. Spread the ends of the white plastic bearing to release bearing.



Bearing

b. Remove bearing.



Removed

FIG. 97 BEARING

14. Use rag, paper towel or solvent to clean bearing and groove.



FIG. 98 CLEANING

15. Grease bearing and groove.



FIG. 99 BEARING AND GROOVE

16. Slide the guard and bell back around bearing.



FIG. 100 BELL

17. Slide white tabs into their locked position.



FIG. 101 WHITE TABS

18. Flip red tab into its locked position.



FIG. 102 RED TAB

19. Grease the male telescoping section of the shaft.



FIG. 103 TELESCOPING SECTION

c. Flip red tab into its locked position.



Red Tab

FIG. 104 GUARD ASSEMBLY

20. Assemble guard:

a. Slide bell and tube guard over male shaft.



Tube Guard

21. Check the indexing tabs on the male portion of the shaft and insert into female section.



Male

b. Slide white tabs into locked position.



White Tab



Female



Assembled

FIG. 105 INDEXING

22. Check that each guard turns freely on the shaft.
23. Rotate guard until greasing access hole exposes grease fitting.
24. Grease fitting.



FIG. 106 GREASE FITTING

25. Check the driveline telescopes freely.
26. Replace any components that are damaged or worn.
27. Install driveline on machine.

5.2.2 CONVEYOR BELT TENSION AND ALIGNMENT

A flat belt conveys grain from the truck to discharge auger. It must be kept properly

tensioned to obtain the expected performance and life.

To check the tension and alignment, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Turn machine off, stop engine, remove ignition key and place in pocket and wait for all moving parts to stop.
3. The belt should not slip at any time during operation.
4. If the belt slips it needs to be tightened.
5. To adjust belt tension:
 - a. Loosen jam nuts on position bolts.
 - b. Use the position bolt to move the bearing to the required position to set belt tension.
 - c. Check belt alignment.
 - d. Tighten jam nuts to their specified torque.
6. To replace belt:
 - a. Move end roller to its loosest position.
 - b. Remove lower cover over belt.
 - c. Move belt splice into opening and remove rod.
 - d. Connect replacement belt to old belt.
 - e. Pull the old belt out and it will thread the new one into position.

- f. Move end rollers into their required position and set tension.
- g. Tighten roller bearing mounting bolts to their specified torque.
- h. Check frequently during the first ten hours and set belt tension as required.

- 7. Check the belt alignment by observing the end of the hopper roller. The belt should run in the center of the roller and not contact the sides. Adjust the bearings on ends of the roller to set alignment.



Motor Roller



Overlap



Hopper

FIG. 107 ROLLER ADJUSTMENT



FIG. 108 ALIGNMENT

5.2.3 SHEAR BOLT

A shear pin is provided at the PTO shaft input yoke to protect the drive system during an overload.

To change the shear pin, follow this procedure:

1. Clear the area of bystanders, especially small children.
2. Place all controls in neutral or off, stop engine, set park brake, remove ignition key and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
3. Remove the PTO shaft from the tractor.
4. Turn PTO shaft by hand to locate and align the shear bolt holes.
5. Carefully remove remaining shear bolts using hammer and drift if necessary. Be careful not to enlarge the hole.

NOTE

Inspect shear bolt mounting components to verify that the holes are not enlarged. If deformed in any way, replace yoke.



End



Side

FIG. 109 SHEAR BOLT

6. Install the new shear bolts and tighten to their specified torque. Do not over-tighten.

IMPORTANT

All shear bolts must be 1/2" x 1 1/4" Grade 5 to provide the required protection.

Always use a locknut or double nut on the bolts to insure the required clamping force is maintained across the shear plane in the yoke. Always check the integrity of the shear bolt holes when replacing bolts. When holes are enlarged, replace yoke.

7. Always keep replacement bolts on hand for ready access when needed.
8. Reconnect driveline.

5.2.4 DISCHARGE AUGER WEAR PLATE

The end of each discharge auger is equipped with wear plate that will wear over time. Dirt, sand and abrasive dust will wear the plate. Replace the plate when the plate has worn to the main flighting.

To replace wear plate, follow this procedure:

1. Stop tractor engine, set park brake, remove ignition key and wait for all moving parts to stop.
2. Remove PTO shaft from tractor.
3. Remove 3 plate mounting bolts and remove plate.
4. Replace wear plate and reinstall mounting bolts.
5. Tighten mounting bolts to their specified torque.

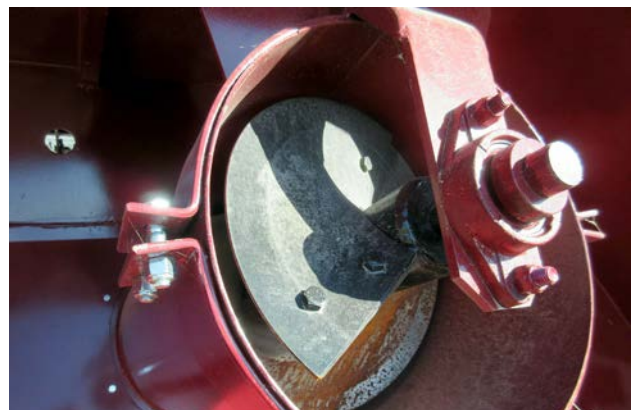


FIG. 110 WEAR PLATE

The Bagger is shipped from the factory in a partially disassembled configuration that allows for easy moving in a minimum space. Always use tools, equipment and forklifts of appropriate size and capacity for the job. Always use two people when lifting, moving and assembling the machine.

When the machine is shipped, follow this procedure when preparing for the customer:

1. Move the machine to an open space that allows access to the machine from all sides.
2. Clear the area of bystanders, especially small children.

NOTE

The Bagger can be used with a hopper for filling from a grain cart, combine or conveyor or auger for filling with a truck.



FIG. 111 SHIPPING (HOPPER)

3. Auxiliary components are strapped into the frame on top of the pan



FIG. 112 AUXILIARY COMPONENTS

4. Cut or remove their anchor straps and lay out.
5. Un-pin and remove shipping configuration.



Shipping

6. Place in working position and pin with retainer.



Working



Position

FIG. 113 HITCH

7. Bring the boom to the machine (it is not attached to the frame for shipping).
8. Install the boom:
 - a. Use a crane, hoist or forklift to raise the boom.



Raising



Wiring Harness

- b. Thread the end of the wiring harness into the top of the tube.
- c. Route it through the tube and out the bottom.



Threaded

FIG. 114 BOOM

- d. Lower boom down until it is fully inserted into the tube.
- e. Remove lifting system.



FIG. 115 BOOM INSTALLED

- 9. Use the handle to turn the boom to the required position.



Handle

- a. Turn to the locking position.



Turned

- b. Install the lock pin.



Pinned

FIG. 116 BOOM LOCK

- 10. Attach boom wiring harness to control box:

- a. Grasp the plug on the end of the wiring harness.



Plug

- b. Insert into terminal on the bottom of the control box.



Terminal

- c. Allow the harness to hang freely so boom can turn without pulling on wiring harness.



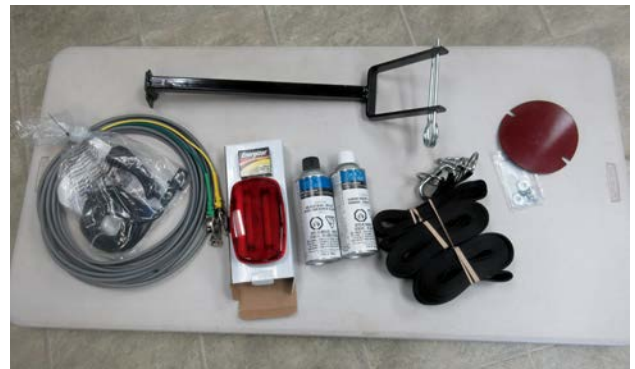
Installed

FIG. 117 WIRING HARNESS

- e. Touch-up spray paint.
- f. Magnetic lights (conveyor only).
- g. Winch operation tether.
- h. Battery charging tethers.



Carton



Lay-Out

FIG. 118 ACCESSORY CARTON

- 11. Bring the accessory carton to the work/assembly area and open it:
- 12. Lay out the components:
 - a. PTO shaft support.
 - b. Drain cover.
 - c. Drain cover fasteners.
 - d. Bag anchoring straps.

- 13. Install the winch control tether to control box terminal.



Plug



Installed

FIG. 119 WINCH TETHER

14. Remove cover over auger and lay to one side with mounting fasteners if using the conveyor to feed the machine.

15. Install the PTO support and drain cover.

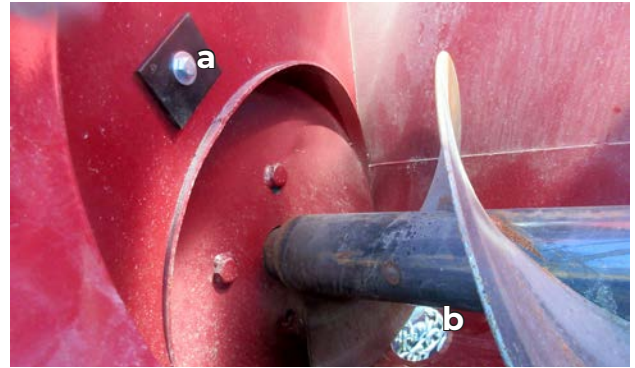
- a. PTO support mount.
- b. Drain cover hole.
- c. Tighten fasteners to their specified torque.



FIG. 120 COVER



Cover Removed



Bottom End

FIG. 121 AUGER

16. Attach PTO shaft.



FIG. 122 PTO SHAFT

17. Install PTO shaft support and place shaft in support.



FIG. 123 PTO SUPPORT

18. Move the winch position pulley anchor to its appropriate position. Use the 500 lb. setting position for cradle moving operations. Use the 1000 lb. setting position for conveyor moving operation.



FIG. 124 WINCH

19. Move the conveyor up to the bagger.



FIG. 125 CONVEYOR

20. Remove boom lock pin and swing boom around to bring hook next to lifting loop on conveyor.

NOTE

Be sure pulley anchor is placed in 1000 lb. position.

21. Use the winch control on the end of the tether to raise the conveyor.



Lifting Loop



Raising

FIG. 126 LIFTING CONVEYOR

22. Maneuver conveyor discharge over the auger opening and lower into position.



Moving



Lowered



Anchor Pins Removed



Installed

FIG. 127 CONVEYOR INSTALLATION

- c. Lower spring frame and pull out of slot.
- d. Move out of the working area and store in a secure location. Keep mounting fasteners with transport assembly.



Removed

FIG. 128 TRANSPORT WHEEL FRAME

23. Remove transport wheel frame:

- a. Raise conveyor frame to take load off of wheels.



Pins

- b. Remove anchor pins and retainers on both sides.

The Pro Grain Equipment Ltd. Pro Grain Bagger uses a series of belts and augers to gather, raise and discharge grain into a storage bag. It is a simple and reliable system that requires minimal maintenance.

In the following section, we have listed many of the problems, causes and solutions to the problems that you may encounter.

If you encounter a problem that is difficult to solve, even after having read through this trouble shooting section, please call your local Pro Grain Equipment Ltd. dealer or distributor. Before you call, please have this Operator's Manual and the serial number from your machine ready.

PROBLEM	CAUSE	SOLUTION
Discharge auger will not run.	Not turned ON.	Engage PTO clutch.
	Failed PTO clutch.	Replace PTO clutch on tractor.
	Shear bolt failed.	Replace shear bolt.
		Reduce load on machine to prevent shear bolt failure. Remove obstructions from work area before starting
Conveyor will not run.	Tractor hydraulics OFF.	Place tractor hydraulics in detent.
	Conveyor hydraulics OFF.	Turn hydraulics ON. Place machine hydraulics in detent.
	Hydraulic flow too high.	Turn flow down on tractor.
Low capacity.	Reduce PTO speed.	Reduce PTO speed to 1800 RPM maximum.
		Increase engine RPM to increase hydraulic flow or open flow divider.

8.1 MECHANICAL

Parameter	Model			
	BX-6	B-2010	B-2010N	B-2012
Width (feet)	14' 3"	14' 3"	12' 1"	14' 6"
Length - No Hitch (feet)	13' 2"	13' 2"	13' 7"	15' 9"
Height (feet)	13' 2"	13' 3"	13' 3"	13' 2"
Weight (lbs.)	2,820	3,625	3,650	4,620
PTO (RPM)	540	540	540	540
HP required	80	100	100	120
Main Auger Size (inches)	16"	20"	20"	20"
Capacity (bushels per hour)	24,000	32,000	32,000	32,000
Bag Size (feet)	10'	10'	10'	12'

Auger/Conveyor Options

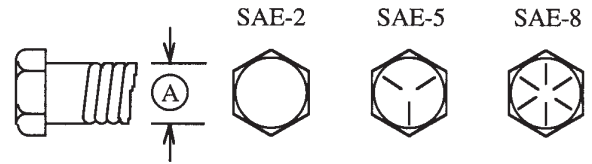
Auger/Telescoping Range (feet)	9'	9'	9'	9'
Auger/Radial Range (feet)	15'	15'	15'	15'
Conveyor Capacity (bushels per hour)	6,000	6,000	6,000	6,000
Auger Capacity (Bushels per hour)	11,500	11,500	11,500	11,500
Swing Auger Drive	Hydraulic	Hydraulic	Hydraulic	Hydraulic
Hydraulics: Conveyor (GPM)	15@2,200 psi	15@2,200 psi	15@2,200 psi	15@2,200 psi
Hydraulics: Auger (GPM)	22@2,200 psi	22@2,200 psi	22@2,200 psi	22@2,200 psi

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

8.2 BOLT TORQUE

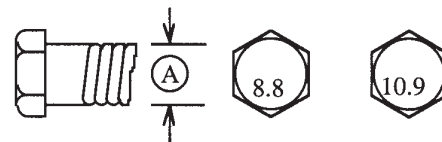
CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and capscrews. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.



ENGLISH TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*					
	SAE 2 (N.m) (lb-ft)		SAE 5 (N.m) (lb-ft)		SAE 8 (N.m) (lb-ft)	
1/4"	8	6	12	9	17	12
5/16"	13	10	25	19	36	27
3/8"	27	20	45	33	63	45
7/16"	41	30	72	53	100	75
1/2"	61	45	110	80	155	115
9/16"	95	60	155	115	220	165
5/8"	128	95	215	160	305	220
3/4"	225	165	390	290	540	400
7/8"	230	170	570	420	880	650
1"	345	225	850	630	1320	970



Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or capscrews unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

* Torque value for bolts and capscrews are identified by their head markings.

METRIC TORQUE SPECIFICATIONS

Bolt Diameter "A"	Bolt Torque*			
	8.8 (N.m) (lb-ft)		10.9 (N.m) (lb-ft)	
M3	.5	.4	1.8	1.3
M4	3	2.2	4.5	3.3
M5	6	4	9	7
M6	10	7	15	11
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	225	166	310	229
M20	435	321	610	450
M24	750	553	1050	774
M30	1495	1103	2100	1550
M36	2600	1917	3675	2710

8.3 HYDRAULIC FITTING TORQUE

TIGHTENING FLARE TYPE TUBE FITTINGS *

1. Check flare and flare seat for defects that might cause leakage.
2. Align tube with fitting before tightening.
3. Lubricate connection and hand tighten swivel nut until snug.
4. To prevent twisting the tube(s), use two wrenches. Place one wrench on the connector body and with the second tighten the swivel nut to the torque shown.

* The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Value* (N.m) (lb-ft)		Recommended Turns To Tighten (After Finger Tightening) (Flats) (Turn)	
3/16	7/16	8	6	1	1/6
1/4	9/16	12	9	1	1/6
5/16	5/8	16	12	1	1/6
3/8	11/16	24	18	1	1/6
1/2	7/8	46	34	1	1/6
5/8	1	62	46	1	1/6
3/4	1-1/4	102	75	3/4	1/8
7/8	1-3/8	122	90	3/4	1/8

TIGHTENING O-RING FITTINGS *

1. Inspect O-ring and seat for dirt or obvious defects.
2. On angle fittings, back the lock nut off until washer bottoms out at top of groove.
3. Hand tighten fitting until back-up washer or washer face (if straight fitting) bottoms on face and O-ring is seated.
4. Position angle fittings by unscrewing no more than one turn.
5. Tighten straight fittings to torque shown.
6. Tighten while holding body of fitting with a wrench.

* The torque values shown are based on lubricated connections as in reassembly.

Tube Size OD (in.)	Nut Size Across Flats (in.)	Torque Value* (N.m) (lb-ft)		Recommended Turns To Tighten (After Finger Tightening) (Flats) (Turn)	
3/8	1/2	8	6	2	1/3
7/16	9/16	12	9	2	1/3
1/2	5/8	16	12	2	1/3
9/16	11/16	24	18	2	1/3
3/4	7/8	46	34	2	1/3
7/8	1	62	46	1-1/2	1/4
1-1/16	1-1/4	102	75	1	1/6
1-3/16	1-3/8	122	90	1	1/6
1-5/16	1-1/2	142	105	3/4	1/8
1-5/8	1-7/8	190	140	3/4	1/8
1-7/8	2-1/8	217	160	1/2	1/12



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