### **Snow Blowers**

AP-SBL2566, AP-SBL2574, & AP-SBL2584



## Kubota

#### 370-478MK Operator's Manual

Read the Operator's Manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!

Cover photo may show optional equipment not supplied with standard unit.

For an Operator's Manual and Decal Kit in French Language, please see your Kubota dealer.

#### **Machine Identification**

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you, or the dealer, have added Options not originally ordered with the machine, or removed Options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements provided in the Specifications & Capacities Section of this manual with the Option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Delivery Date	
First Operation	
Accessories	

#### **Dealer Contact Information**

Name:	
Street:	
City/State:	
Telephone:	
Email:	

#### California Proposition 65

**WARNING:** Handling passenger or off-highway motor vehicle parts can expose you to chemicals such as phthalates and lead, which can cause cancer and reproductive harm. To minimize exposure, service the vehicle in a well-ventilated area, wear gloves, and wash your hands. For more information see www.P65Warnings.ca.gov/motor-vehicle-parts.

### Kupota

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See previous page for Table of Contents.



#### Parts Manual QR Locator

The QR (Quick Reference) code on the left will take you to the Parts Manual for this equipment. Download the appropriate App on your smart phone, open the App, point your phone on the QR code and take a picture.



#### **Dealer QR Locator**

The QR code on the left will link you to available dealers for Kubota products. Refer to Parts Manual QR Locator on this page for detailed instructions.

### Listed below are common practices that may or may not be applicable to the products described in this manual.

#### Safety at All Times

Careful operation is your best assurance against an accident.

All operators, no matter how much experience they may have, should carefully read this manual and other related manuals before operating the power machine and this attachment.

- ▲ Thoroughly read and understand the "Safety Label" section. Read all instructions noted on them.
- ▲ Do not operate the equipment while under the influence of drugs or alcohol, as they impair your ability to safely and properly operate the equipment.
- ▲ Operator should be familiar with all functions of the tractor/skid steer and attachment and be able to handle emergencies quickly.
- ▲ Make sure all guards and shields appropriate for the operation are in place and secured before operating attachment.
- ▲ Keep all bystanders away from equipment and work area.
- ▲ Start tractor/skid steer from the driver's seat with steering levers and hydraulic controls in neutral.
- ▲ Operate tractor/skid steer and controls from the driver's seat only.
- ▲ Never dismount from a moving tractor/skid steer or leave machine unattended with engine running.
- ▲ Do not allow anyone to stand between the attachment and tractor/skid steer while connecting to the attachment.
- ▲ Keep hands, feet, and clothing away from power-driven parts.
- ▲ While transporting and operating equipment, watch out for objects overhead and along the sides such as fences, trees, buildings, wires, etc.
- ▲ Store attachment in an area where children normally do not play. When needed, secure attachment against falling with support blocks.





#### Look for the Safety Alert Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety and extra precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. 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 equipment.

#### **Be Aware of Signal Words**

A signal word designates a degree or level of hazard seriousness. They are:

- **DANGER:** Indicates a hazardous situation that, if not avoided, will result in death or serious injury.
- **A** WARNING: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.

A CAUTION: Indicates a hazardous situation that, if not avoided, may result in minor or moderate injury.

#### **Be Aware of Special Notices**

Special notices are intended to point out important and helpful information that should be followed. They are usually placed inside a box. They are:

IMPORTANT: Indicates that equipment or property damage could result if

instructions are not followed. **NOTE:** Indicates supplementary explanations that will be helpful when

UIE: Indicates supplementary explanations that will be helpful when using the equipment.

### Safety Precautions for Children

Tragedy can occur if the operator is not alert to the presence of children. Children generally are attracted to attachments and their work.

- Never assume children will remain where you last saw them.
- ▲ Keep children out of the work area and under the watchful eye of a responsible adult.
- ▲ Be alert and shut the attachment and skid steer/track loader down if children enter the work area.
- ▲ Never carry children on the power machine or attachment. There is not a safe place for them to ride. They may fall off and be run over or interfere with the control of the power machine.
- ▲ Never allow children to operate the power machine, even under adult supervision.
- Never allow children to play on the power machine or attachment.
- ▲ Use extra caution when backing up. Before the power machine starts to move, look down and behind to make sure the area is clear.

### Listed below are common practices that may or may not be applicable to the products described in this manual.

#### Dig Safe - Avoid Underground Utilities

- USA: Call 811 CAN: http://www.clickbeforeyoudig.com
- Always contact your local utility companies (electrical, telephone, gas, water, sewer, and others) before digging so that they may mark the location of any underground services in the area.
- Be sure to ask how close you can work to the marks they positioned.

# **811**

#### **Towing Safely**

- Comply with federal, state, and local laws.
- ▲ Use towing vehicle and trailer of adequate size and capacity. Secure equipment towed on a trailer with chocks, tie downs, and chains.
- ▲ IMPORTANT: Do not tow a load that is more than double the weight of the vehicle towing the load.
- ▲ Sudden braking can cause a towed trailer to swerve unexpectedly. Reduce speed if trailer is not equipped with brakes.

#### Transport Safely

- Comply with federal, state, and local laws.
- ▲ Avoid contact with any overhead utility lines or electrically charged conductors.
- ▲ Always drive with attachment on the end of the loader arms low to the ground.
- ▲ Follow recommendations in the power machine Operator's Manual when driving uphill or downhill and when parking on an incline.
- ▲ Never travel at a speed which does not allow adequate control of the load, steering, and stopping. Some rough terrains require a slower speed.



#### Tire Safety

Tire changing can be dangerous and must be performed by trained person



trained personnel using the correct tools and equipment.

- ▲ Always properly match the wheel size to the properly sized tire.
- ▲ Always maintain correct tire pressure. Do not inflate tires above recommended pressures shown in the Operator's Manual.
- ▲ When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side and NOT in front of or over the tire assembly. Use a safety cage if available.
- Securely support the attachment when changing a wheel.
- ▲ When removing and installing wheels, use wheel handling equipment adequate for the weight involved.
- ▲ Make sure wheel bolts have been tightened to the specified torque.

#### **Practice Safe Maintenance**

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- ▲ Understand procedure before doing work. Refer to the Operator's Manual for additional information.
- ▲ Work on a level surface in a clean dry area that is well-lit.
- ▲ Lower attachment to the ground and follow all shutdown procedures before leaving the operator's seat to perform maintenance.
- ▲ Do not work under any hydraulically supported equipment. It can settle, suddenly leak down, or be lowered accidentally. If it is necessary to work under the equipment, securely support it with stands or suitable blocking beforehand.
- ▲ Use properly grounded electrical outlets and tools.
- ▲ Use correct tools and equipment for the job that are in good condition.
- Allow equipment to cool before working on it.



- ▲ Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on equipment.
- Inspect all parts. Make certain that parts are in good condition & installed properly.
- ▲ Replace parts on this attachment with genuine Kubota parts only. Do not alter this attachment in a way which will adversely affect its performance.
- ▲ Do not grease or oil attachment while it is in operation.
- Remove buildup of grease, oil, or debris.
- Always make sure any material and waste products from the repair and maintenance of the attachment are properly collected and disposed.
- ▲ Remove all tools and unused parts before operation.





### Listed below are common practices that may or may not be applicable to the products described in this manual.

#### **Prepare for Emergencies**

- Be prepared if a fire starts.
- ▲ Keep a first aid kit and fire extinguisher handy.
- ▲ Keep emergency numbers for doctor, ambulance, hospital, and fire department near phone.



#### Wear Personal Protective Equipment (PPE)

- ▲ Wear protective clothing and equipment appropriate for the job such as safety shoes, safety, glasses, hard hat, dust mask, and ear plugs.
- ▲ Clothing should fit snug without fringes and pull strings to avoid entanglement with moving parts.
- ▲ Prolonged exposure to loud noise can cause hearing impairment or hearing loss. Wear suitable hearing protection such as earmuffs or earplugs.
- ▲ Operating a machine safely requires the operator's full attention. Avoid wearing headphones while operating equipment.



#### Avoid High Pressure Fluids

- ▲ Escaping fluid under pressure will penetrate the skin or eyes causing serious injury.
- ▲ Relieve all residual pressure before disconnecting hydraulic lines or performing work on the hydraulic system.
- ▲ Make sure all hydraulic fluid connections are properly tightened/torqued and all hydraulic hoses and lines are in good condition before applying pressure to the system.
- ▲ Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.
- ▲ Wear protective gloves and safety glasses or goggles when working with hydraulic systems.
- ▲ DO NOT DELAY. If an accident occurs, seek immediate emergency medical care or gangrene may result.

#### Use Safety Lights and Devices

- ▲ A slow moving power machine can create a hazard when driven on public roads. They are difficult to see, especially at night.
- ▲ Flashing warning lights and turn signals are recommended whenever driving on public roads.
- ▲ For tractors and other agriculture equipment, a Slow Moving Vehicle (SMV) sign is required when traveling on public roads.



#### **Use Seat Belt and ROPS**

- ▲ Land Pride recommends the use of a CAB or roll-over-protectivestructures (ROPS) and seat belt in almost all power machines. Combination of a CAB or ROPS and seat belt will reduce the risk of serious injury or death if the power machine should be upset.
- ▲ If ROPS is in the locked-up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.



#### Keep Riders Off Machinery

- ▲ Never carry riders on the power machine or attachment.
- ▲ Riders obstruct operator's view and interfere with the control of the power machine.
- Riders can be struck by objects or thrown from the equipment.
- Never use the power machine or attachment to lift or transport riders.



These are common practices that may or may not be applicable to the products described in this manual.

#### Avoid Crystalline Silica (Quartz) Dust

Because crystalline silica is a basic component of sand and granite, many activities at construction sites produce dust containing crystalline silica. Trenching, sawing, and boring of material containing crystalline silica can produce dust containing crystalline silica particles. This dust can cause serious injury to the lungs (silicosis).

There are guidelines which should be followed if crystalline silica (quartz) is present in the dust.



- ▲ Be aware of and follow OSHA (or other local, State, or Federal) guidelines for exposure to airborne crystalline silica.
- ▲ Know the work operations where exposure to crystalline silica may occur.
- Participate in air monitoring or training programs offered by the employer.
- ▲ Be aware of and use optional equipment controls such as water sprays, local exhaust ventilation, and enclosed cabs with positive pressure air conditioning if the machine has such equipment. Otherwise respirators shall be worn.
- ▲ Where respirators are required, wear a respirator approved for protection against crystalline silica containing dust. Do not alter respirator in any way. Workers who use tight-fitting respirators can not have beards/ mustaches which interfere with the respirator seal to the face.

- ▲ If possible, change into disposable or washable work clothes at the work site; shower and change into clean clothing before leaving the work site.
- ▲ Do not eat, drink, use tobacco products, or apply cosmetics in areas where there is dust containing crystalline silica.
- ▲ Store food, drink, and personal belongings away from the work area.
- ▲ Wash hands and face before eating, drinking, smoking, or applying cosmetics after leaving the exposure area.

#### Handle Chemicals Properly

- Protective clothing should be worn.
- ▲ Handle all chemicals with care.
- Follow instructions on container label.
- ▲ Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil, and property.
- ▲ Inhaling smoke from any type of chemical fire can be a serious health hazard.
- ▲ Store or dispose of unused chemicals as specified by the chemical manufacturer.



#### Tractor Shutdown & Storage

- Reduce engine speed and shut-off all power to the attachment.
- Park on solid, level ground and lower attachment to ground or onto support blocks.
- Put tractor in park or set park brake.
- Turn off engine and remove ignition key to prevent unauthorized starting.
- ▲ Relieve all hydraulic pressures.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and anti-slip surfaces when stepping on and off the tractor.



#### Skid Steer Shutdown And Storage

- Reduce engine speed and shut-off all power to the attachment.
- Park on solid, level ground and lower attachment until it is flat on the ground or support blocks.
- ▲ Turn off engine. Do not remove ignition key at this time.
- ▲ Turn ignition key to the "RUN" position. Relieve all hydraulic pressure by moving both joysticks.
- Turn ignition key to Off and remove to prevent unauthorized starting.
- If included, raise seat bar and move controls until both lock.
- ▲ Wait for all components to stop before leaving operator's seat.
- ▲ Use steps, grab-handles and anti-slip surfaces when stepping on and off the skid steer.



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#### Safety Labels

Your Snow Blower comes equipped with all safety labels in place. They are designed to help you safely operate your attachment. Read and follow their directions.

- 1. Keep all safety labels clean and legible.
- 2. Refer to this section for proper label placement. Replace all damaged or missing labels. Order new labels from your nearest Kubota dealer. To find your nearest dealer, visit our dealer locator at www.landpride.com.
- 3. Some new equipment installed during repair requires safety labels to be affixed to the replaced component as



specified by Kubota. When ordering new components make sure the correct safety labels are included in the request.

- 4. Refer to this section for proper label placement. To install new labels:
  - a. Clean surface area where label is to be placed.
  - b. Spray soapy water onto the cleaned area.
  - c. Peel backing from label and press label firmly onto the surface.
  - *d.* Squeeze out air bubbles with edge of a credit card or with a similar type of straight edge.



#### 848-840C

Danger: Hands in Chute 2-Places: On both sides of chute







#### 818-132C

Danger: Thrown Object Hazard 2-Places



#### HIGH-PRESSURE FLUID HAZARD To prevent serious injury or death •Relieve pressure on hydraulic system before servicing or disconnecting hoses. •Wear proper hand and eye protection when searching for leaks. Do not use fingers to check for leaks; use wood or cardboard.

Keep all components in good repair.

#### 70659

#### 818-831C

Warning: High Pressure Fluid Hazard Used only with hydraulic motor and hydraulic cylinders.

### <u>Kupota</u>





**838-293C** Warning: Read Operator's Manual







#### 818-634C

Danger: Rotating Auger 2-Places



**858-148C** Warning: Pinch Point Hazard

Kubota welcomes you to the growing family of new product owners. This Snow Blower has been designed with care and built by skilled workers using quality materials. Proper assembly, maintenance, and safe operating practices will help you get years of satisfactory use from this attachment.

#### Application

Kubota offers the SBL2566, SBL2574, and SBL2584 Series of Snow Blowers ranging from 66" (1.68 m) up to 84" (2.13 m) in width. They are designed with a skid steer mounting plate for attaching to skid steers. The SBL2566 can also be attached to a tractor front loader with Kubota's 3-point hydraulic reservoir system (HRS) or equivalent system mounted on the back. These Snow Blowers are designed to remove snow from parking lots, farm yards, feed lots, driveways, walking paths, and sidewalks in municipal and commercial areas.

The unique patent-pending level run indicator provides for the operator a clear, visible indication that the Snow Blower is operating level. The auger, impeller, and chute rotation are powered with individual hydraulic motors. Adjustable skid shoes mounted on both sides can be adjusted to carry the Snow Blower above hard surfaces, loose gravel, and rocks to help increase the life of the unit.

See "**Specifications & Capacities**" on page 44 and "**Features & Benefits**" on page 45 for additional information and performance enhancing options.

#### **Using This Manual**

- This Operator's Manual is designed to help familiarize you with safety, assembly, operation, adjustments, troubleshooting, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.
- The information contained within this manual was current at the time of printing. Some parts may change slightly to assure you of the best performance.
- To order a new Operator's or Parts Manual, contact your authorized dealer. Manuals can also be downloaded, free-of-charge, from our website at www.landpride.com

#### Terminology

"Right" or "Left" as used in this manual is determined by the direction the operator faces while sitting looking forward in the operator's seat unless otherwise stated.

#### **Owner Assistance**

The dealer should complete the Online Warranty Registration at the time of purchase. This information is necessary to provide you with quality customer service.

The parts on your Snow Blower have been specially designed by Kubota/Land Pride and should only be replaced with genuine Kubota parts. Contact a Kubota dealer if customer service or repair parts are required. Your Kubota dealer has trained personnel, repair parts, and equipment needed to service the attachment.

#### Serial Number

For quick reference and prompt service, record model and serial number on the inside cover page and again on the warranty page. Always provide model number and serial number when ordering parts and in all correspondences with your Kubota dealer. For location of your serial number plate, see Figure 1.



Serial Number Plate Location Figure 1

#### **Further Assistance**

Your Kubota dealer wants you to be satisfied with your new machine. After having carefully read these instructions, you will realize that much of the routine maintenance can be done by yourself. If for any reason you do not understand any part of this manual or are not satisfied with the service received, the following actions are suggested:

- 1. Discuss any problems you have with your attachment with your dealership service personnel so they can address the problem.
- 2. If you are still not satisfied, seek out the owner or general manager of the dealership, explain the question/problem, and request assistance.
- 3. For further assistance write to:

Kubota by Land Pride - Service Department

#### **1525 East North Street** P.O. Box 5060 Salina, Ks. 67402-5060

E-mail address lpservice@landpride.com

### <u>Kinpota</u>

#### **Skid Steer/Tractor Requirements**

The SBL2566, SBL2574, & SBL2584 Snow Blowers are designed to attach to skid steers. The SBL2566 can also be attach to a tractor loader with a 3-point mounted hydraulic reservoir system (HRS) mounted on the back. The skid steer and/or tractor/HRS must meet the following minimum requirements:

#### **SAE Lift Capacity**

1200 lbs (544.3 kg)

#### **Hitch Type**

Skid steer/loader plate

#### **Hydraulic Pressure Rating**

2500 - 3500 psi (17.2 - 24.1 mPa)

#### Low Volume Motors & Hoses

12 - 19 gpm (45.4 - 71.9 lpm)

#### **Medium Volume Motor & Hoses**

20 - 26 gpm (75.7 - 98.4 lpm)

#### **High Volume Motor & Hoses**

27 - 33 gpm (102.2 - 124.9 lpm)

#### **Hydraulic Hoses**

2 - Hydraulic outlets

#### **Case Drain Hose**

1 - Hydraulic outlet

#### **Skid Steer Weight**

See warning below



#### To avoid serious injury or death:

Lightweight power machines may need weight added to the rear to maintain steering control and prevent forward and/or side tipping. Consult your power machine Operator's Manual to determine proper weight requirements and maximum limitations.

**IMPORTANT:** The skid steer or tractor mounted hydraulic reservoir system must be equipped with a case drain system.

#### **Torque Requirements**

Refer to **"Torque Values Chart"** on page 47 to determine correct torque values for common bolts.

#### Loading & Unloading

#### Refer to Figure 1-1:

There are two lifting holes (one on each end panel). Use these holes to attach lift chains during loading/unloading and while installing skid shoes in assembly & set-up.



Lift Points Figure 1-1



Outer Skid Shoe Assembly (Right-Hand Shown) Figure 1-2

#### **Optional Outer Skid Shoes**

#### Refer to Figure 1-2:

- 1. Attach outer right-hand skid shoe (#1) to the righthand side panel with 1/2"-13 x 1 1/4" GR5 carriage bolts (#2) and hex flange locknuts (#3) using the bottom square holes as shown.
- 2. Tighten hex flange locknuts (#3) to the correct torque.
- 3. Repeat steps 1 & 2 for the left-hand side.



Inner Skid Shoe Assembly (Left-Hand Shown) Figure 1-3

#### **Optional Inner Skid Shoes**

#### Refer to Figure 1-3:

- Attach skid shoe mount (#2) to the back, left side of the Snow Blower with 1/2"-13 x 1 1/2" GR5 bolts (#3) and hex flange locknuts (#4). Tighten hex flange locknuts to the correct torque.
- 2. Attach inner skid shoe (#1) to skid shoe mount (#2) with bent pin (#6) as shown. Secure bent pin with hairpin cotter (#5).
- 3. Repeat steps 1 & 2 for the back, right side of the Snow Blower.

#### SBL2566 Chute Assembly

#### Refer to Figure 1-4:

1. Remove hex nuts (#8), spring lock washers (#9), hex head bolts (#7), bearing strap (#2A), and chute bearings (#4). Keep hardware for reuse.

**IMPORTANT:** Position chute (#1) facing straight forward to the front as shown in Figure 1-4 before sliding base of chute over bearing ring (#10).

- 2. With discharge chute (#1) facing straight forward. Slide base of chute over UHMW chute bearing ring (#10) until base of chute is fully under chute rotational stop (#5), bearing strap (#2B), and engaged with sprocket (#3).
- 3. Reattach bearing strap (#2A) to snow blower housing with existing 3/8"-16 x 1 1/2" GR5 bolts (#7), chute bearings (#4), lock washers (#9), and nuts (#8). Tighten nuts (#8) to the correct torque.
- 4. Verify stop bolts (#6) are at the back as shown.

#### SBL2574 & SBL2584 Chute Assembly

#### Refer to Figure 1-5:

- 1. Remove hex nuts (#10), spring lock washers (#12), hex head bolts (#7), and rotational stop (#6). Keep hardware for reuse.
- 2. Remove hex nuts (#11), spring lock washers (#13),

hex head bolts (#9), bearing strap (#2A), and chute bearings (#5). Keep hardware for reuse.

**IMPORTANT:** Position chute (#1) facing straight forward to the front as shown in Figure 1-5 before sliding base of chute over bearing ring (#14).

- With discharge chute (#1) facing forward as shown. Slide base of chute over UHMW chute bearing ring (#14) until base of chute is fully under remaining bearing straps (#2B & #2C) and engaged with sprocket (#4).
- Reattach bearing strap (#2A) to snow blower housing with existing 3/8"-16 x 1 1/2" GR5 bolts (#9), chute bearings (#5), lock washers (#13), and nuts (#11). Tighten nuts (#11) to the correct torque.
- Reattach rotational stop (#6) to Snow Blower housing with existing 1/4"-20 x 3/4" GR5 bolts (#7), rotational stop (#6), lock washers (#12) and hex nuts (#10). Tighten nuts (#10) to the correct torque.

#### Refer to Figure 1-6:

 Verify stop bolts (#8A & #8B) are left of rotational stop (#6) as shown. Tighten hex bolts (#7) to the correct torque.

#### Spout Deflector, Hydraulic Cylinder

#### Refer to Figure 1-7 & Figure 1-8:

- 1. Route hydraulic hoses (#3 & #4) through hose guides (#6 & #7).
- 2. Tie hoses (#3 & #4) together below hose guide (#7) with cable tie (#8) in the locations shown.

#### Refer to Figure 1-9:

- Screw o-ring end of 9/16" elbows (#2A & #2B) into cylinder ports on hydraulic cylinder (#1). Do not tighten elbows at this time.
- 4. Screw 1/4" x 45" (1.14 m) short hydraulic hose (#3) to elbow (#2B) until tight.
- 5. Screw 1/4" x 55" (1.40 m) long hydraulic hose (#4) to elbow (#2A) until tight.
- 6. Tighten elbows (#2A & #2B) to hydraulic cylinder (#1) until tight.



SBL2566 Chute Assembly Figure 1-4

### <u>Kupota</u>





SBL2574 & SBL2584 Rotational Stop Bar Set-up Figure 1-6



Figure 1-7



Hydraulic Hose Hook-up (Spout Deflector to Solenoid) Figure 1-8



Hydraulic Cylinder Assembly For Spout Deflector Figure 1-9

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### Kinpota

#### Quick Coupler Set-up

#### Refer to Figure 1-10

Two high pressure hydraulic outlets are required for attaching hydraulic hoses (#7 & #8) and a third outlet is required for attaching case drain line (#9).

NOTE: How to identify hydraulic lines (#7, #8, & #9):

- Hydraulic pressure line (#7) attaches to port (#1) located on right-hand side of impeller motor.
- Hydraulic return line (#8) attaches to tee (#3) located beneath impeller motor.
- Case drain line (#9) attaches to port (#2) located on top of impeller motor.
- 1. Thread hydraulic hoses (#7, #8, & #9) through holes on the left-hand side of Snow Blower frame. Holes not shown in illustration.
- 2. Continue threading hoses through hose loop (#10).

#### Refer to Figure 1-11

**NOTE:** Flat face couplers (#11 & #12) and adapters (#13) are optional. They can be purchased from your local Kubota dealer. See "**Flat Face Couplers**" on page 17 for detailed information and Kubota's part number.

- 3. Consult your skid steer Operator's Manual or Auxiliary Hydraulic Reservoir Manual to determine which line on your machine is under pressure when locked for continuous operation.
- 4. If installing optional large flat face couplers, skip to step 5 below. If installing optional small flat face couplers, screw adapters (#13) to small flat face couplers (#11 & #12) until tight.
- 5. Remove plastic cap from hydraulic line (#7).
- 6. Select couplers (#11 or #12) that will mate with your machine's coupling that is under pressure and attach that coupling to hydraulic line (#7) and tighten.
- 7. Remove plastic cap from hydraulic line (#8) and screw remaining coupler to line (#8) until tight.

**NOTE:** Coupler (#6) is optional. It can be purchased from your local Kubota dealer. See "**Case Drain Coupler & Cable Ties**" on page 17 for detailed information and Kubota's part number.

- If customer chooses to screw case drain line (#9) directly to the tank/sump, then skip step 9 and go to "Snow Blower Hook-up" on page 13.
- 9. If attaching optional coupler (#6) to case drain line (#9):
  - a. Remove plastic cap from case drain line (#9).
  - b. Wrap teflon tape around the pipe threads on the end of the case drain line.
  - c. Screw optional coupler (#6) on tight.



Hydraulic Hose Layout (View Without Hitch Plate) Figure 1-10



Quick Disconnect Coupling Set-up Figure 1-11

#### **Snow Blower Hook-up**

Refer to Figure 2-1:

#### 

To avoid serious injury or death:

A crushing hazard exists when connecting and disconnecting the attachment. Do not allow anyone to stand between attachment and power machine while approaching or backing away from the attachment. Do not operate hydraulic controls while someone is near the power machine and/or attachment.

**A** WARNING

To avoid serious injury or death:

Check hitch fit-up frequently. An improper fit-up can cause the attachment to come loose from the loader hitch plate and fall.

**NOTE:** The Snow Blowers are designed for skid steers and tractors with front mounted loaders.

#### Refer to Figure 2-1:

- 1. Check for and remove debris in the hitch point areas before hooking-up to Snow Blower.
- 2. Raise lock pins on loader hitch for hook-up.
- 3. Drive skid steer or tractor slowly to the Snow Blower hitch making sure hitch plate on the skid steer/tractor is parallel with the Snow Blower's top angle bars.
- 4. Rotate top of skid steer/tractor tilt arms slightly forward.
- 5. Position top of skid steer/tractor hitch plate under the top angled bars and slowly raise loader hitch plate up until hitch plate is seated under the top angle bars.
- 6. Rotate top of skid steer/tractor tilt arms back until Snow Blower makes full contact with face of hitch plate.
- 7. Push lock pins on the loader hitch down. Make sure lock pins go through bottom slots in the Snow Blower hitch and handles are fully locked down.

**IMPORTANT:** Set loader arms to float before operating attachment. The skid shoes can have increased wear if loader arms are rigid.

8. Set loader arms to float.



Hook-up to Snow Blower Figure 2-1

### Hydraulic Hose Hook-up



To avoid serious injury or death:

Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. DO NOT DELAY.

**IMPORTANT:** Collect and dispose of all oil spills and leaks in a safe manner that meets the local

**IMPORTANT:** Hose routing is the responsibility of the owner/operator. Pinched and/or stretched hoses are not covered under the warranty.

**IMPORTANT:** Make sure coupler fittings on the hydraulic hoses and power machine are clean before connecting them together.

#### Refer to Figure 2-4 on page 15:

Two high pressure hydraulic outlets are required for the hydraulic motor and one outlet for the case drain.

1. Route hydraulic hoses along the most convenient path to access your skid steer or tractor mounted hydraulic reservoir couplings.

**NOTE:** If attaching to a Kubota skid steer or track loader, route hydraulic hoses through Kubota's Hose Stay as shown in Figure 2-2. Purchase **Hose Stay #S6763** through your nearest Kubota dealer. Refer to your power machine Operator's Manual for more instructions.



Kubota Hose Stay Figure 2-2

- Clean quick connect couplers of dirt and connect couplers (#1 & #2) to the skid steer or to the tractor mounted hydraulic reservoir. Make sure quick connect couplers have fully engaged. If they have not, check the following:
  - a. Make sure couplers are same size and type.
  - b. Make sure hydraulic pressure has been released.
- 3. If case drain line is fitted with the optional coupler, then connect that coupler (#3) to the tank/sump coupler and skip to step 5 below.
- 4. If screwing case drain line directly to the tank/sump:
  - a. Remove plastic cap and wrap teflon tape around pipe threads on end of case drain line (#3).
  - b. Screw case drain line (#3) to your equipment's tank/sump port until tight. All required adapter fittings are supplied by customer.
- 5. Turn auxiliary hydraulics on to check impeller rotation. The impeller should rotate counterclockwise viewed from the operator's seat and clockwise viewed facing impeller and auger from the front. If impeller rotates incorrectly, switch male and female couplers on hoses (#1 & #2) and reconnect hoses.
- 6. Cable ties to be added at end of solenoid hook-up.

#### Solenoid Hook-up

Refer to Figure 2-3 on page 15:

There are six optional wiring harnesses (#4). All six connect to solenoids (#1 & #2) but each connect differently to the skid steer, track loader, or tractor. See **"Electrical Control Harness"** on page 19 for detailed descriptions of each harness.

- If control harness (#4) is one of the two SVL harness, refer to hook-up instructions included with the harness. For additional help, see you nearest Kubota dealer.
- If control harness (#4) has a round 14 pin connector, attach the connector to the 14 pin connector on the end of the loader arm and then continue with step 2 on page 15.
- If control harness (#4) has a toggle switch controller, start with step 1 below.
- 1. There are three control harnesses (#4) with a toggle switch controller.
  - Attach "Control Harness with Deutsch 2 Pin Plug (Accessory)" to a skid steer or track loader using instructions on page 20.
  - Attach "Control Harness with Eyelets (Accessory)" to a skid steer or track loader using instructions on page 23.
  - Attach "Tractor Control Harness with Eyelets (Accessory)" to a tractor with a front loader using instructions on page 29.



Quick Disconnect Coupling Set-up Figure 2-3

- 2. Route wire harness (#4) in Figure 2-3 and Figure 2-4 along side hydraulic hoses to solenoids (#1 & #2). Do not secure wire harness (#4) with cable ties at this time.
- At solenoid (#1), attach brown banded connector (#1B) to brown wire connector (#3B) and white banded connector (#1W) to white wire connector (#3W).
- 4. At solenoid (#2), attach red banded connector (#2R) to red wire connector (#3R) and green banded connector (#2G) to green wire connector (#3G).
- 5. Sit in the skid steer or tractor seat, fasten seat belt, start unit, turn auxiliary hydraulics "on", and position loader arms fully down.
- At the control box, push on the "Tilt Up/Down" toggle switch to tilt deflector spout up and pull toggle switch to tilt deflector spout down. Watch spout to make sure it moves in the proper direction.
- 7. At the control box, push on the "**Rotate Left/Right**" toggle switch to rotate chute to the left and pull toggle switch to rotate chute to the right. Watch chute to make sure it rotates in the proper direction.
- 8. Shut skid steer/tractor down and make any needed adjustments to the solenoid connections as follows:
  - If spout tilts opposite of what it should, change green wire connector (#3G) with red wire connector (#3R) at solenoid (#2).
  - If chute rotates in the opposite of what it should, change brown wire connector (#3B) with white wire connector (#3W) at solenoid (#1).



Hydraulic Hoses, Wire Harness & Cable Ties Figure 2-4

#### Refer to Figure 2-4:

9. Adjust path of hydraulic hoses (#1, #2, #3) and wire harness (#4) to suit and secure with cable ties (#5) as needed.

#### **Check Equipment Clearances**

It is important to check clearance before putting the Snow Blower into operation. Make sure hydraulic hoses and wiring harness are long enough and won't become pinched or entangled in the equipment. Also, make sure Snow Blower does not come in contact with tractor frame and tires by carefully going through its full range of motions.

- 1. Visually inspect hydraulic hoses for possible pinch points and shortness. If needed, make hose adjustments before putting equipment into service.
- Visually inspect wiring harness for possible pinch points and shortness. If needed, make adjustments to the wiring harness before putting equipment into service.

**IMPORTANT:** Make sure hydraulic hoses and wiring harness are long enough and properly secured so that they do not become stretched or pinched through their full range of motions.

- 3. If necessary, have someone stand nearby that can motion for the operator to stop if a problem develops while completing steps 4-6 below.
- 4. Start skid steer/tractor and raise loader arms high enough to tilt hitch plate fully down without Snow Blower making contact with the ground.
- 5. Fully extend and retract hydraulic cylinders on the end of the skid steer/tractor loader arms while watching for interferences between skid steer/tractor and Snow Blower frame.
- 6. Raise skid steer/tractor loader arms fully up and repeat steps 4-5 above.

#### **Unhooking The Snow Blower**

Refer to Figure 2-5:

- 1. See "Long-Term Storage" on page 43 before parking Snow Blower for long periods.
- 1. Park skid steer/tractor on a flat, level, solid surface, and lower Snow Blower onto the surface.
- 2. Place transmission in park, set park brake, shut power equipment off, and remove switch key.
- 3. With Snow Blower resting on the ground, release all hydraulic system pressure before dismounting skid steer or tractor. See Skid Steer Operator's Manual for instructions on how to release skid steer hydraulic system pressure.
- 4. Disconnect solenoid wire harness (#4) from the front of the loader arm. Do not disconnect harness from the solenoids.

- 5. Disconnect hydraulic hoses (#1, #2, & #3) from skid steer or tractor mounted hydraulic reservoir.
- 6. Store hydraulic hoses and wire harness on the Snow Blower frame to keep dirt away from the couplings and electrical connector.
- 7. Raise lock pins on loader hitch. If lock pins are activated from the operator's seat, return to the skid steer/tractor to raise lock pins.
- 8. From the operator's seat, tilt top of loader hitch slightly forward towards the Snow Blower.
- 9. Slowly lower skid steer/tractor hitch plate until top angle bars and hitch plate have separated.
- 10. Back skid steer/tractor slowly away from the Snow Blower while making sure it does not interfere with the equipment.



Hook-up to Snow Blower Figure 2-5

#### Section 3: Options & Accessories



Motor Assembly Figure 3-1

#### **Motor Assembly**

Refer to Figure 3-1:

Motor Bundle 12-19 gpm (45.4-71.9 lpm) . . 370-528A Motor Bundle 20-26 gpm (75.7-98.4 lpm) . . 370-529A Motor Bundle 27-33 gpm (102.2-124.9 lpm) 370-530A

Three impeller motor assembly options are available to meet your hydraulic flow requirements. They are interchangeable and do not require adapter kits. Compare your motor's gpm rating located on an attached decal with the gpm ratings above.

If your Snow Blower's impeller motor is not compatible with your skid steer or tractor, you should replace it with one of the above assemblies that is compatible.

#### **Flat Face Couplers**

Refer to Figure 3-2:

The following flat face hydraulic couplers are available.

#### Case Drain Coupler & Cable Ties

#### Refer to Figure 3-3:







Figure 3-3

### Kupota





#### **Outer Skid Shoes**

#### Refer to Figure 3-4:

Outer skid shoes are mounted on the outside of the side panels and are adjustable by unbolting them and reattaching them at a different height.

370-451KSBL2566 SKID SHOE BUNDLE370-438KSBL2574 & SBL2584 SKID SHOE

370-438K SBL2574 & SBL2584 SKID SHOE BUNDLE



Inner Skid Shoes Figure 3-5

#### **Inner Skid Shoes**

#### Refer to Figure 3-5:

Inner skid shoes are mounted behind the Snow Blower and are adjustable vertically by pulling a bent pin and moving the skid shoes up or down.

#### 370-440K SKID SHOE BUNDLE

#### Section 3: Options & Accessories

#### **Electrical Control Harness**

Kubota offers two controllers for operating the Snow Blower when attached to a Kubota compact track loader or skid steer loader. See your nearest Kubota dealer to purchase one of these control harness and for installation instructions.

- Part No. V0511-97010 SVL Electrical connector (2 functions)
- Part No. W/G S6699 - SVL Multifunction handle (7 functions.)

Kubota offers four other electrical control harness for operating the Snow Blower. If not purchased with the Snow Blower, one may be purchased from your nearest Kubota dealer. Installation instructions are provided on the pages noted in the list below.

- Part No. 370-336A - Control harness with a Deutsch 14 pin 2 function power plug. Refer to "Control Harness with Deutsch 14 Pin Plug (Standard)" below.
- Part No. 370-434A - Control harness with a Deutsch 2 pin power plug and a toggle switch controller. Refer to "Control Harness with Deutsch 2 Pin Plug (Accessory)" on page 20.
- Part No. 370-134A - Skid steer/track loader control harness with 2 eyelets for connecting to a 12 volt power source and a toggle switch controller. Refer to "Control Harness with Eyelets (Accessory)" on page 23.
- Part No. 370-133A - Tractor electrical control harness with 2 eyelets for connecting to a 12 volt power source and a toggle switch controller. Refer to "Tractor Control Harness with Eyelets (Accessory)" on page 29.

### Control Harness with Deutsch 14 Pin Plug (Standard)

#### Refer to Figure 3-6:

#### 370-336A Deutsch HD30 14 Pin 2 Function

One 14 pin wiring harness is available. It attaches to the Snow Blower solenoids and to the skid steer's 14 pin coupler. Included with the wiring harness are 3 cable ties.

This harness will work with the following skid steers:

- Bobcat with 14 pin coupler
- GEHL with 14 pin coupler
- Kubota with 14 pin coupler
- Komatsu with 14 pin coupler
- Mustang with 14 pin coupler
- Takeuchi with 14 pin coupler
- Volvo with 14 pin coupler



Deutsch HGD30 14 Pin 2 Function Wiring Harness Figure 3-6

It will also work with the following skid steers by reversing the red and green wires at the solenoid:

- Case-Post 9/1/01 with 14 pin coupler
- Case-400 Series with 14 pin coupler
- New Holland with 14 pin coupler





#### Control Harness with Deutsch 2 Pin Plug (Accessory)

Refer to Figure 3-7:

#### 370-434A CTL Skid Steer Control Harness

This harness is used with skid steers and track loaders that have the Deutsch 2 pin coupler but does not have the Deutsch HD30 14 pin coupler. It consist of the following:

#### Refer to Figure 3-8:

• One end of power cord (#1) attaches Deutsch 2 pin plug (#1) to Kubota's CTL male plug (A) located behind the driver's seat.

#### Refer to Figure 3-7:

- Opposite end of power cord (#1): Attaches to control box (#2).
- Control box (#2): Mounts in a convenient location for the operator to access from the operator's seat.
- Wire harness (#3): Attaches to control box (#2) and runs from the control box to the loader arm.
- Wiring harness (#4): Attaches to wire harness (#3) at the loader arm and at the solenoids on the Snow Blower.
- Cable ties (#5): For securing wire harnesses (#1, #3, & #4) to the skid steer and Snow Blower.

#### Refer to Figure 3-9:

• 10 amp Fuse (B): Fuse (B) is supplied by customer. Install 10 amp fuse (B) in Kubota's fuse box slot #17 labeled "Electrical Outlet-2".



Kubota

Kubota Power Connection (Located Behind Drive Seat) Figure 3-8



Installation of 10 amp Fuse Figure 3-9

### <u>Kinpota</u>

#### **Initial Preparations**

A detailed listing of parts for this accessory kit is provided on page 20. Use this list to identify components during assembly and as a checklist to inventory parts received. Please contact your local Kubota dealer for missing parts.

Before dismounting, shut power machine down following "Power Machine Shutdown Procedure" on page 36.

#### Mount Control Box (#2) in Cab

#### Refer to Figure 3-10 & Figure 3-7 on page 20:

- 1. Locate control box (#2) inside the cab in an area where the box is easy to access and operate.
- 2. Fasten control box (#2) to that location with hardware furnished by the customer.
- 3. Plug 11'-0" long wire harness (#3) and 5'-0" long power cord (#1) to control box (#2).

#### **Connect to Power**

#### Refer to Figure 3-7 & Figure 3-8 on page 20:

- 4. Plug opposite end of power cord (#1) to Kubota's 2-pin Deutsch plug "A" located behind driver's seat.
- 5. Make sure power cord (#1) is placed in an out-of-the-way area to prevent operator entanglement with the cord.
- 6. Add zip ties (#5) to power cord (#1) as needed.

#### Refer to Figure 3-9 on page 20:

 Fuse "B" is supplied by customer. Install 10 amp fuse "B" in Kubota's fuse box slot #17 labeled "Electrical Outlet-2".

#### Route Wire Harness (#3)

Refer to Figure 3-7 on page 20 and Figure 3-11:

#### 

To avoid serious injury or death:

Do not go near or under raised loader arms without first securing loader arms in the raised position with an approved lift-arm support.

**IMPORTANT:** Make sure wire harness does not become entangled, stretched, or kinked while loader arms are being raised and lowered.

- 1. Route wire harness (#3) from control box (#2) to the loader arm with quick release couplings in such a way that the front cab door can be shut and latched.
- 2. Attach end of wire harness (#3) near the quick release hydraulic couplings on the loader arm with zip tie (#5).
- 3. Make sure wire harness (#3) is placed in an out-of-the-way area inside the cab to prevent operator entanglement with harness.



Mount Control Box Figure 3-10

- 4. Also, make sure harness does not become entangled, stretched, or kinked while loader arms are being raised and lowered.
- 5. Secure wire harness (#3) as needed with zip ties (#5).



Attach Cable to Hydraulic Coupling Lines Figure 3-11

### Kupota



Attach Solenoid Harness to Skid Steer Harness Figure 3-12

#### Hook-up Solenoid Harness (#4)

#### Refer to Figure 3-7 on page 20 & Figure 3-12:

- If not already connected, connect attachment's hydraulic hoses to the quick release couplings on the loader arm. Refer to "Hydraulic Hose Hook-up" in the attachment Operator's Manual for detailed instructions.
- 2. Connect 8'-11" long solenoid harness (#4) to wire harness (#3).
- 3. Zip tie wire harness (#3) along one of he hydraulic hoses to the attachment's solenoid.
- 4. Coil excess solenoid harness (#4) up and zip tie coil to the attachment. Leave enough harness to reach the solenoids.



Solenoid Wires Figure 3-13

#### Refer to Figure 3-13:

- 5. Refer to "**Solenoid Hook-up**" instructions in the attachment Operator's Manual and below:
  - a. Locate solenoid on the attachment that controls the motor on the Snow Blower for rotating the spout left and right. Attach brown wire connector and white wire connector to that solenoid.
  - b. Locate solenoid on the attachment that controls the cylinder on the Snow Blower for tilting the discharge chute up and down. Attach green wire connector and red wire connector to that solenoid.
  - c. Return to the skid steer and operate tilt switch and rotate switch to verify they are functioning as desired.
  - d. If either of the switches operated the cylinder or motor in the opposite direction desired, turn off engine, raise seat bar if included, move skid steer controls until they lock, and remove switch key before dismounting to make changes to the solenoid connections.
  - e. If tilt cylinder operates in the opposite direction desired, switch green wire connector with red wire connector.
  - f. If the motor operates in the opposite direction desired, switch brown wire connector with white wire connector.





**Toggle Switch Control Harness For Skid Steers** 

Figure 3-14

### Control Harness with Eyelets (Accessory)

#### Refer to Figure 3-14:

#### 370-134A Battery Connect Harness With Switch

This harness is used with skid steers and track loaders that do not have a Deutsch 2 pin coupler or a Deutsch HD30 14 pin coupler. The wire harness connects directly to a 12 volt power source. It consist of the following:

- Power cord (#3): Eyelet end attaches to the power machine's 12 volt power source and the opposite end attaches to control box (#6).
- Control box (#6): Mounts in a convenient location for the operator to access from the operator's seat.
- Wire harness (#2): Attaches to Control box (#6) and is routed to the power machine's engine room.
- Wiring harness (#1): Attaches to wire harness (#2) in the engine room and travels along the loader arm to the front of the power machine.
- Wire harness (#4): Attaches to wire harness (#1) and connects to the snowblower solenoids.
- Cable ties (#5): Secures harnesses (#1, #2, #3, & #4) to the power machine and Snow Blower.

#### **Initial Preparations**

A detailed listing of parts for this accessory kit is provided in Figure 3-14. Use this list to identify components during assembly and to inventory parts received. Please contact your local Kubota dealer for missing parts.

Before dismounting, shut power machine down following "Power Machine Shutdown Procedure" on page 36.

### Route Harness (#1) Along The Loader Arm *Refer to Figure 3-15:*

**IMPORTANT:** Make sure wiring harness (#1) does not become entangled, stretched, or kinked while loader arms are being raised and lowered.

Wire harness (#1) starts at the front of the loader arm and runs along the loader arm to the engine room.

1. Attach female end of wire harness (#1) at the front of the loader arm and near the hydraulic couplings with cable ties (#5).



Attach Cable to Hydraulic Coupling Lines Figure 3-15

### Kupota



Attach Wire Harness Along Loader Arm To Pivot Point Figure 3-16

Refer to Figure 3-16:



To avoid serious injury or death:

Do not go near or under raised loader arms without first securing loader arms in the raised position with an approved lift-arm support.

**IMPORTANT:** Make sure wiring harness (#1) does not become entangled, stretched, or kinked while loader arms are being raised and lowered.

2. Continue routing wire harness (#1) along the loader arm while frequently attaching it to the hydraulic lines and mounting brackets with cable ties (#5). If necessary, add additional cable ties to prevent harness from becoming slack and catching on objects as loader arm is raised and lowered.

#### Refer to Figure 3-17:

- 3. Raise loader arm up to access area below the loader arm pivot point.
- 4. Before continuing, secure loader arm in the raised position with support stop "A" provided with the skid steer.
- 5. Continue routing wire harness (#1) below the loader arm pivot point while frequently attaching the harness to hydraulic lines and mounting brackets with cable ties (#5). Make certain the harness is not slack and will not catch on objects as the loader arm is raised and lowered.



Attach Wire Harness Below Pivot Point Figure 3-17



Attach Wire Harness Prior to Entering Engine Room Figure 3-128

### Rout Harness (#1) into The Engine Room *Refer to Figure 3-128:*

6. At the bottom of the vertical run and just before crossing over into the engine room, attach wire harness (#1) to hydraulic hoses or mounting bracket with cable tie (#5). Again, make sure harness is snug and cannot catch on objects, stretch, or pull apart as loader arm is operated.



Pass Wire Harness (#1) into the Engine Room Figure 3-19

#### Refer to Figure 3-19:

7. Terminate male end of wire harness (#1) in the engine room.

**NOTE:** Wire harness (#2) will be routed to the same location and connected to wire harness (#1) later.



Thread Wiring Harness (#2) & Power Cord (#3) Thru Cab Figure 3-20

#### Route Harnesses (#2 & #3) Out the Cab Refer to Figure 3-20 & Figure 3-21:

Wire harness (#2) and power cord (#3) start in the cab and run through the cab housing to the engine room.

- Locate inside the cab best location to route wire harness (#2) and power cord (#3) through the cab housing. Illustration shown in Figure 3-20 utilizes existing wire harness hole and rubber grommet "B". Actual location will vary from skid steer to skid steer.
- 2. Remove rubber grommet "B" from wire harness hole and thread female end of wire harness (#2) and eyelet end of power cord (#3) through grommet. See Figure 3-21 for illustration of wire harness and power cord protruding through grommet beneath the cab.
- 3. Replace grommet "B" in wire harness hole.

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Route Wiring Harness (#2) & Power Cord (#3) Beneath Cab Figure 3-21

#### Refer to Figure 3-21:

- 4. Raise cab up and lock into position to access area beneath the cab.
- 5. Pull enough wire harness (#2) through rubber grommet "B" to reach wire harness (#1) shown in the engine room in Figure 3-19.
- 6. **DO NOT** attach wire harness (#2) & power cord (#3) with a cable tie (#5) until routing is completed.



Thread Wiring Harness (#2) Along Firewall Figure 3-22

#### Route Harness (#2) to Engine Room Refer to Figure 3-22:

- 1. Thread wire harness (#2) thru hydraulic hoses along engine fire wall to the left-hand side of the skid steer.
- 2. Continue to thread wire harness (#2) rearward along the left side of the skid steer into the engine room.



Connect Wire Harness (#2) to Wire Harness (#1) Figure 3-23

#### Refer to Figure 3-23:

- Inside the engine room, loop excess harness (#2) around power cords and/or hydraulic hoses close to connection with wire harness (#1). See loop "A"
- 4. Connect wire harness (#2) to wire harness (#1).
- 5. Attach wire harness (#2) to the skid steer frame or other suitable tie off point close to the connection of wire harnesses (#1 & #2) with a cable tie (#5).
- 6. Add any other required cable ties (#5) to contain wire harness (#2) in the engine room. No additional ties were required in this situation as the weaving through the hoses contained the harness.

### <u>Kupota</u>

#### Route Power Cord (#3) to Engine Room

#### Refer to Figure 3-21 on page 26:

- 1. Pull enough power cord (#3) through rubber grommet "B" to reach the skid steer battery.
- 2. **DO NOT** attach wire harness (#2) & power cord (#3) with cable tie (#5) until routing for both is completed.
- 3. **Refer to Figure 3-25:** Disconnect negative ( ) black power cord from battery post.
- 4. **Refer to Figure 3-24 on page 27:** Attach positive ( + ) red wire eyelet to the battery's positive ( + ) post and tighten fastener hardware.
- 5. **Refer to Figure 3-25:** Attach negative ( ) black wire eyelet and negative ( ) black power cord to the battery's negative ( ) post and tighten.

#### Refer to Figure 3-21 on page 26:

**IMPORTANT:** Make sure harnesses (#2 & #3) will not stretch or kink as the cab is raised and lowered or become entangled with moving components in the engine room. Add cable ties (#5) as needed.

- 6. Attach wire harness (#2) and power cord (#3) with a cable tie (#5) near the area where the harnesses exit through the cab as shown in Figure 3-21 on page 26.
- 7. Add any other required cable ties (#5) to contain wire harness (#2 & #3) under the cab. No additional ties were required in this situation as the weaving through the hoses contained the harness.

#### Mount Control Box (#6) in Cab

#### Refer to Figure 3-26:

- 1. Locate inside the cab where control box (#6) can be mounted that is easy to access and operate.
- 2. Fasten control box (#6) to that area with hardware furnished by the customer.
- 3. Plug wire harness (#2) and power cord (#3) to control box (#6).
- 4. Make sure all wiring harness inside the cab are placed in an out-of-the-way area to prevent entanglement with cords.



Battery's Positive ( + ) Post Connection Figure 3-24



Battery's Negative ( - ) Post Connection Figure 3-25



Mount Control Box Figure 3-26

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#### Section 3: Options & Accessories

### Kupota

#### Hook-up Solenoid Harness (#4)

#### Refer to Figure 3-27:

- 1. At the front of the loader arm, connect solenoid harness (#4) to wire harness (#1).
- 2. Locate the solenoid that will operate the (up/down) tilt cylinder and attach green wire and red wire connectors in Figure 3-28 to that solenoid.
- 3. Locate the solenoid that will operate the (left/right) rotate cylinder or motor and attach brown wire and white wire connectors in Figure 3-28 to that solenoid.
- 4. Operate tilt switch. Change green wire connector with red wire connector if tilt cylinder operates in the opposite direction desired.
- 5. Operate rotate switch. Change brown wire connector with white wire connector if unit rotates in the opposite direction desired.



Attach Solenoid Harness to Skid Steer Harness Figure 3-27



Attach Solenoid Wires to Equipment Figure 3-28





### Tractor Control Harness with Eyelets (Accessory)

#### Refer to Figure 3-4:

#### 370-133A Control Harness Tractor

This harness is used only with Snow Blowers mounted on the tractor's front loader arms and consist of the following:

- Power cord (#1): Attaches to tractor battery and control box (#2).
- Control box (#2): Mounts in a convenient location for the operator to access from the seat. See also Figure 4-1 on page 31.
- Wire harness (#3): Attaches to control box (#2) and terminates at the front of one of the loader arms.
- Wiring harness (#4): Attaches to wire harness (#3) and solenoids at the Snow Blower.
- Cable ties (#5): For securing wire harnesses (#1, #3, & #4) to the tractor loader and Snow Blower.

#### Installation Instructions for Tractor Harness

 Before doing anything, determine the path power cord (#1) will travel from tractor battery to control box (#2), location of control box (#2), and path wire harness (#3) will travel from the control box to the front end of the loader arm. Make sure the control box is mounted in an area where the operator can operate the toggle switches easily from the tractor seat. Method of mounting the control box is to be determined by the customer.

- 2. Disconnect negative ( ) black power cord from its battery post.
- 3. Attach positive (+) red wire eyelet on end of power harness (#1) to the battery's positive (+) post and tighten fastener hardware.
- 4. Attach negative (-) black wire eyelet on end of power harness (#1) and negative (-) black power cord to the battery's negative (-) post and tighten.
- 5. Route power cord (#1) from the battery to the predetermined location of control box (#2).
- 6. Mount toggle switch control box (#2) to the tractor using hardware furnished by customer.
- 7. Plug power cord (#1) and wire harness (#3) to control box (#2).
- 8. Route wire harness (#3) to the front end of one of the loader arms.
- 9. Make any final adjustments to wire harness (#3) and power cord (#1). Make sure wire harness (#4) can reach from the solenoids on the Snow Blower to the connector on wire harness (#3).
- 10. Secure power cord (#1) and wire harness (#3) with cable ties (#5).
- 11. Connect 6 pin connector on wire harness (#4) to wire harness (#3).
- 12. Continue with step 2 under "**Solenoid Hook-up**" on page 14.



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### <u>Kupota</u>

### Discharge Chute & Spout Deflector

To avoid serious injury or death: Keep people and animals away while operating the Snow Blower. Never throw snow toward people, animals, or operator. The Snow Blower is capable of picking up solid objects and discharging them at high speeds.

### 

To avoid serious injury or death: Never operate Snow Blower if its discharge chute can be rotated to throw snow toward the operator. If the chute can be rotated toward the operator, shutdown the Snow Blower and adjust or repair chute rotation stop before putting the Snow Blower back into service.

**IMPORTANT:** Never operate Snow Blower with chute throwing snow toward property such as vehicles, buildings, trailers etc. that can be scratched, dented or broken by thrown projectiles.

**IMPORTANT:** Adjustment screws on hydraulic motor are preset at the factory. Do not change factory settings. Changing factory settings can cause structural damage to the Snow Blower.



Control Switches for Chute Rotation & Spout Deflector Figure 4-1

#### Spout Deflector Adjustment

#### Refer to Figure 4-1:

The end of the spout can be angled up or down to direct blown snow close or far away.

- 1. Stop skid steer/tractor and place in park before adjusting spout deflector.
- Push on "Tilt Up/Down" toggle switch to tilt deflector spout up and pull toggle switch to tilt deflector spout down.
- 3. Resume snow blowing once new angle is set.



Chute Rotation Gear Adjustment Figure 4-2

#### Chute Rotation Gear Alignment Refer to Figure 4-2:

**NOTE:** Gear guard (#4) is shown removed for clarity only. This adjustment can be made without removing the gear guard. Should the guard be removed, make certain gear guard (#4) is replaced before putting the Snow Blower back into service.

- 1. Stop skid steer/tractor, place in park, shut engine off and remove switch key.
- 2. Loosen all three hex head bolts (#6). Do not remove.
- 3. Move hydraulic motor mount (#3) as needed until drive gear (#2) has full tooth engagement with driven gear (#1).
- 4. Hold hydraulic motor mount (#3) in this position and tighten all three 3/8"-16 GR5 hex head bolts (#6) to the correct torque.

If removed, be sure to replace gear guard (#4) with existing 10-24 pan screws (#5), star washer (#7), and flat washer (#8). Tighten pan screws (#5).

#### **Chute Rotation Adjustment**

#### Refer to Figure 4-1:

- 1. Stop skid steer/tractor and place in park before adjusting chute rotation angle.
- 2. Push on "**Rotate Left/Right**" toggle switch to rotate chute to the left and pull toggle switch to rotate chute to the right.
- 3. Resume snow blowing once new chute angle is set.





Outer Skid Shoe Assembly Figure 4-3

#### **Outer Skid Shoe Adjustment**

Refer to Figure 4-3:

**IMPORTANT:** Surfaces with gravel or crushed rock will require setting the skid shoes to carry the Snow Blower higher than when on hard flat surfaces such as asphalt and concrete. Never set Snow Blower so low as to pick-up gravel and/or rock.

- 1. Park on a level solid surface, place skid steer/tractor in park, and lower both ends of grader blade (#1) onto support blocks (#5) that are capable of holding skid shoes (#2) off the ground several inches.
- 2. Shut skid steer/tractor engine off and remove switch key.
- 3. On the right-hand side, remove hex flange lock nuts (#4) and carriage bolts (#3).
- 4. Adjust skid shoe (#2) up to set grader blade closer to the ground and down to set grader blade farther away from the ground.
- Reinsert existing 1/2"-13 GR5 carriage bolts (#3) into the square holes "A" that line up with Snow Blower frame. Secure carriage bolts (#3) with hex flange locknuts (#4).
- 6. Tighten hex flange locknuts (#4) to the correct torque.
- 7. Repeat steps 3-6 for the left-hand side.



Inner Skid Shoe Assembly Figure 4-4

#### **Inner Skid Shoe Adjustment**

Refer to Figure 4-4:

**IMPORTANT:** Surfaces with gravel or crushed rock will require setting the skid shoes to carry the Snow Blower higher than when on hard flat surfaces such as asphalt and concrete. Never set Snow Blower so low as to pick-up gravel and/or rock.

- 1. Park on a level solid surface, place skid steer/tractor in park, and lower both ends of grader blade onto support blocks or jack stands that are capable of holding inner skid shoes (#1) off the ground 3 or 4 inches.
- 2. Shut skid steer/tractor engine off and remove switch key.
- 3. On the left-hand side, remove hairpin cotter (#2) and bent pin (#3).
- 4. Adjust skid shoe (#1) up to set grader blade closer to the ground and down to set grader blade farther away from the ground.
- 5. Reinsert existing bent pin (#3) and secure with hairpin cotter (#2).
- 6. Repeat steps 3-5 for the right-hand side.


Impeller & Auger Speed Figure 4-5

#### Auger Speed

#### Refer to Figure 4-5:

The auger speed can be changed to customer preference.

- 1. Park on a level solid surface, place skid steer/tractor in park or set park brake, disengage hydraulics if skid steer mounted or power take-off if tractor mounted, lower loader arms and Snow Blower fully down, shut engine off, remove switch key, and wait for impeller and auger to come to a complete stop before dismounting from skid steer/tractor.
- 1. Loosen knob (#3) on flow control valve (#1).
- 2. Rotate knob (#3) to a higher number on the gradient scale (#2) to decrease auger speed and to a lower number to increase auger speed.
- 3. Tighten knob (#3) to keep it from moving.



Reading Level Run Indicator Figure 4-6

#### Level Run Indicator Adjustment Refer to Figure 4-6:

**IMPORTANT:** In order for the level run indicator to be adjusted accurately, the skid steer or tractor with attached Snow Blower must be parked on ground that is flat and level.

- 1. Park skid steer/tractor on flat level ground.
- 2. Lower lift arms to put attachment flat on the ground.
- 3. Make any tilt adjustments as necessary to position top of Snow Blower side plate parallel and level with the ground. If necessary, a level (#4) can be used as shown.
- 4. Turn off engine, engage park brake, and remove key to prevent unauthorized starting before dismounting from skid steer or tractor.
- 5. If included, raise seat bar and move controls until both lock.
- 6. Loosen hex flange locknuts (#2) and adjust level run indicator (#3) until indicator arrow (#1) points to "LEVEL RUN".
- 7. Hold level run indicator (#3) in this position and tighten hex flange locknuts (#2) to the correct torque.

**NOTE:** The level run indicator should not need readjusting unless indicator has been forcibly moved, mounting hardware has come loose, or a different skid steer is hitched to the Snow Blower.

8. Repeat steps 1-7 if attaching Snow Blower to a different skid steer.

#### Introduction

Hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training involved in the operation, transport, storage, and maintenance of the Snow Blower. Therefore, it is absolutely essential that no one operates the Snow Blower unless they have read, fully understood, and are totally familiar with the Operator's Manual. Make sure the operator has paid particular attention to:

- Important Safety Information, page 1
- Section 1: Assembly & Set-up, page 9
- Section 2: Equipment Hook-up & Unhook, page 13
- Section 4: Adjustments, page 31
- Section 5: Operating Instructions, page 34
- Section 6: Maintenance & Lubrication, page 40

The following inspection should be performed before using the Snow Blower.

#### **Operating Checklist**

 Chook	Ref.
Check	nel.
Make sure all guards and shields are in place. Refer to "Important Safety Information".	1
Read and follow hook-up & preparation instructions. Refer to "Snow Blower Hook-up".	13
Make all required adjustments. Refer to "Section 4: Adjustments".	31
Read and follow all operating procedures. Refer to "Section 5: Operating Instructions".	34
Read and follow all maintenance instructions. Refer to "Section 6: Maintenance & Lubrication".	40
Make sure there are no hydraulic leaks. Refer to "Avoid High Pressure Fluids Hazard".	3
Lubricate Snow Blower as needed. Refer to "Lubrication".	43
Check Snow Blower initially and periodically for loose bolts and pins. Refer to "Torque Values Chart".	47

#### **General Safety Information**

### 

To avoid serious injury or death:

- All guards and shields must be installed and in good working condition while operating the attachment.
- The operator of this attachment must know how to control the power machine with attachment and how to stop them quickly in an emergency.

- Always operate Snow Blower with tractor flashing lights turned on. Always comply with all federal, state, and local laws.
- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.
- Keep children, people, and animals away from the tractor and Snow Blower while unit is operating. They can become entangled in the Snow Blower or ran over by the tractor and/or Snow Blower.
- Keep people and animals away while operating the Snow Blower. Never throw snow toward people, animals, or operator. The Snow Blower is capable of picking up solid objects and discharging them at high speeds.
- Shutdown the power machine and wait for all rotating/ moving components to stop before dismounting to unplug the snow blower, make adjustments, performing maintenance, clean the snow blower, etc.
- Never put hands or feet in the chute. Do not unclog discharge chute while Snow Blower is running. Shutdown the Snow Blower and power machine and wait for all components to come to a complete stop before exit the power machine.
- *Keep hands, feet, hair, and clothing away from rotating auger. Do not remove or modify any guards.*
- Do not drive up to anyone or an animal in front of a fixed object such as a wall or bench. Never assume that the power machine will stop in time.

### A WARNING

To avoid serious injury or death:

- Always shut power machine down following the "Shutdown Procedure" provided in this manual before leaving the operator's station.
- Never make contact with underground utilities such as electrical power lines, gas lines, phone lines, etc. They can cause serious injury or death from electrocution, explosion, or fire. Always call 811 (USA) or local utility companies before digging so that they can mark the location of underground services in the area. For contact information, see Dig Safe in the "Important Safety Information" starting on page 1.
- Always be aware of pedestrians and vehicle traffic. Move snow during low-traffic hours. Adjust chute to correct trajectory due to wind that will not create a driving hazard for all other vehicles.
- Never carry riders on the implement or power machine. Riders can obstruct the operator's view, interfere with controls, be pinched by moving components, become entangled in rotating components, struck by objects, thrown about, fall off and be run over, etc.
- Do not travel across an incline where equipment could slip or roll-over. Consult the Operator's Manual for acceptable inclines the power machine is capable of crossing.

#### Section 5: Operating Instructions

## <u>Kupota</u>

- Make certain the attachment is resting on the ground and all hydraulic pressure is relieved before disconnecting hydraulic fittings from the power machine.
- Allow only persons to operate this attachment who have fully read and comprehended this manual, and who have been properly trained in the safe operation of this attachment. Serious injury or death can result from failure to read, understand, and follow instructions provided in this manual.
- Hydraulic fluid under high pressure will penetrate the skin or eyes causing serious injury. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Use a piece of cardboard or wood, rather than hands, when searching for leaks. If an accident occurs, seek immediate emergency medical care or gangrene may result. DO NOT DELAY.
- Operate only power machines equipped with a certified Roll-Over Protective Structure (ROPS) and seat belt. Keep folding ROPS in the "locked up" position when appropriate. If ROPS is in the locked up position, fasten seat belt snugly and securely to help protect against serious injury or death from falling and machine overturn.
- Always dress to stay warm in cold weather. Never allow body or extremities to become too cold. Use a cab to provide protection against the cold. Go inside a heated area to warm-up when getting too cold.
- Always travel removing snow at a speed that allows the operator to be in control at all times and always be ready to make emergency stops. Snow removal speed will vary depending on depth of snow, snow moisture, and how tight the snow is compacted.
- Beware of obstacles along side the power machine and attachment while making turns. Never swing attachment into fire hydrants, mailboxes, buildings, vehicles, fences, trees, or other standing obstacles.
- Clear area to be worked of debris and other unforeseen removable objects before blowing snow. Mark any potential hazards that cannot be removed such as tree stumps, posts, rocks, holes, drop-offs, etc. with a visible flag. The Snow Blower is capable of throwing solid objects, (including ice), at high speeds causing property damage and serious bodily injuries, or death to animals and people.
- Do not remove snow from an icy surface unless skid steer or tractor is properly equipped for working on such a surface. Always proceed with caution when traveling on ice. An icy surface covered with snow will result in loss of traction and steering control.
- Dress properly for the job. Do not wear loose fitting clothing or clothing with pull strings. Keep long hair tucked in. Clothing and hair can become entangled in rotating components. Wear footwear that will improve footing on slippery surfaces.
- Do not operate Snow Blower with auger flighting or impeller blades that are broken or bent making contact with the housing. Broken or bent flighting and blades can break loose at high speeds.

- Never run gravel, crushed rock, or other solid objects through the Snow Blower. Doing so will damage the Snow Blower. The Snow Blower is also capable of throwing solid objects at high speeds causing property damage and injury or death to animals and people.
- Perform scheduled maintenance. Check for loose hardware, missing parts, broken parts, structural cracks, and excessive wear. Make repairs before putting the attachment back into service.
- If required, use backup alarm to warn others you are backing up. Always comply with all federal, state,'sand local laws.
- Keep body, body extremities, loose clothing, pull strings, etc. away from pinch points such as rotating, extending, and/or retracting components. Secure pinch point areas to ensure they will not move before working on or near them.
- Never operate Snow Blower without good visibility and light. Use a skid steer or tractor equipped with a cab to keep snow from being blown by wind into the operator's face.
- Never pile snow where it obstructs visibility of traffic. Never pile snow near fire hydrants, mailboxes, water drains, shut-off valves, electrical boxes, handicap parking areas, etc. Always comply with all federal, state, and local laws pertaining to snow removal.
- Never remove snow that has been plowed. Plowed snow contains foreign particles such as dirt and rocks that can damage the unit and cause serious bodily injury or death.
- Clear area to be worked of debris and other unforeseen removable objects before blowing snow. Mark any potential hazards that cannot be removed such as tree stumps, posts, rocks, holes, drop-offs, etc. with a visible flag. The Snow Blower is capable of throwing solid objects, (including ice), at high speeds causing property damage and serious bodily injuries, or death to animals and people.
- Check hitch fit-up frequently. An improper fit-up can cause the attachment to come loose from the loader hitch plate and fall.
- Do not use this attachment to lift the front or back of the power machine off the ground. Doing so can damage the attachment, power machine, and/or cause serious injury or death.
- Do not use this attachment to pull and/or pry objects out of the ground or for digging into the ground. It is not properly designed or guarded for this use.
- Do not use this attachment to lift, carry, push or tow other equipment or objects. It is not properly designed or guarded for this use. The operator could lose control resulting in equipment damage and/or tipping hazard.
- Do not alter attachment or replace parts on the attachment with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the attachment. Replace parts only with genuine OEM parts.
- Do not exceed Snow Blower specifications for maximum hydraulic pressure and flow ratings. Personal injury and/or Snow Blower damage can occur.

## Kupota

**IMPORTANT:** Never operate Snow Blower with chute throwing snow toward property such as vehicles, buildings, trailers etc. that can be scratched, dented or broken by thrown projectiles.

**IMPORTANT:** Do not use Snow Blower as a Box Scraper or to blow other materials. Doing so can break the auger, impeller, and cause structural damage to the unit.

**NOTE:** Always check with local codes to know where snow can be legally piled. Never pile snow on someone else's property, streets, or sidewalks.

#### **Power Machine Shutdown Procedure**

The following are basic power machine shutdown procedures. Follow these procedures and any additional shutdown procedures provided in your power machine Operator's Manual before leaving the operator's seat.

- 1. Reduce engine speed and shut-off all power to the attachment.
- 2. Park on solid, level ground and lower attachment until it is flat on the ground or on non-concrete support blocks.

#### Skid Steer and Track Loader

- a. Turn off engine. Do not remove ignition key at this time.
- b. Turn ignition key to the "RUN" position. Relieve all hydraulic pressure by moving both joysticks.
- c. Turn ignition key off and remove to prevent unauthorized starting.
- d. If included, raise seat bar and move controls until both lock.

#### Tractor

- a. Put tractor in park or set park brake.
- b. Turn off engine, and remove ignition key to prevent unauthorized starting.
- c. Relieve all hydraulic pressures.
- 3. Wait for all components to come to a complete stop before leaving the operator's seat.
- 4. Use steps, grab-handles, and anti-slip surfaces when stepping on and off the power machine.



Safety Steps Figure 5-1

#### Mount & Dismount Skid Steer Refer to Figure 5-1:



To avoid serious injury or death:

Use steps, grab-handles, and anti-slip surfaces on the power machine and attachment to get on and off the power machine. Using unapproved stepping surfaces and/or handholds can result in a falling hazard.

#### Inspection

Make the following inspections with Snow Blower resting on the ground while attached to a skid steer or tractor. Place skid steer/tractor in park or set park brake, disengage hydraulics, disengage power take-off if tractor mounted, lower loader arms fully down, remove switch key and make sure impeller and auger have come to a complete stop before dismounting skid steer or tractor:

- 1. Complete Operating Checklist table provided above.
- 2. Inspect skid steer/tractor safety equipment. Make sure it is in good working condition and that all safety alert decals are visible and readable. Replace all missing and unreadable safety decals.
- Inspect hitch hook-up. Make sure skid steer or tractor hitch is secured under the Snow Blower's top angle bars, lock pins extend fully through bottom slots in Snow Blower hitch, and handles are locked down.
- 4. Inspect wiring harness and connection points before starting the machine. Make sure wire harness and connections are not pinched, frayed, or broken and that they will not come in contact with moving parts.
- 5. Inspect hydraulic hoses, fittings, and valves before starting the machine. Make sure hoses are not pinched, kinked, twisted, or frayed and that they will not come in contact with moving parts.

- 6. Inspect auger flighting and impeller.
  - a. Check for and remove foreign objects wrapped around auger and impeller.
  - b. Check for bent, broken, and extreme wear. Repair or replace auger and impeller as required.
- 7. Inspect skid shoes.
  - a. Check for wear. Replace skid shoes as needed. See "**Outer Skid Shoe Option**" on page 42 for replacement instructions.
  - b. Check adjustment height. Refer to "Outer Skid Shoe Adjustment" or "Inner Skid Shoe Adjustment" on page 32.

#### **Operating Safety Check**

The remaining inspections are made with the skid steer or tractor engine running.

- 1. Start skid steer or tractor and set throttle to idle or slightly above idle.
- 2. Operate hydraulic controls to verify control lever movements function properly and equipment movements are correct.
- 3. Shut skid steer or tractor down properly and make necessary changes to the controls before continuing.
- 4. Operate Snow Blower loader arms through their full range of movements to check for clearances. Refer to "Check Equipment Clearances" on page 15.

## 

#### To avoid serious injury or death:

Shutdown the power machine immediately if auger or impeller makes contact with Snow Blower housing. Wait for impeller and auger to come to a complete stop before dismounting from skid steer or tractor to check for probable causes. Make necessary repairs before continuing on.

- 5. With skid steer throttle set to idle or slightly above idle, slowly engage hydraulics to the Snow Blower.
- 6. Once Snow Blower is running smoothly, increase impeller and auger speed. Disengage hydraulics immediately if any unusual sound or vibration is noticed.
  - a. Shut skid steer or tractor down properly and investigate cause of noise.
  - b. Make repairs before putting Snow Blower back into service.
- 7. Shut Snow Blower down after it has been operating smoothly at full speed for several minutes.
- 8. This completes the operational safety checks.

#### Transporting



To avoid serious injury or death:

Keep attachment, loader arms, and/or load away from overhead electrical power lines. Place an orange warning sign under overhead lines indicating type of danger above.

### 

To avoid serious injury or death:

- Always transport loads as close to the ground as possible without hitting objects. A load carried high could shift causing the load to fall, tipping of the machine, and/or loss of control.
- Always travel straight up and straight down inclines. Never make turns on the incline.
- Transporting loads across inclines, over ramps, on bumpy, soft, or slippery surfaces reduces machine stability and lift capacity. Transporting and lifting loads under these conditions is extremely dangerous. Follow all transport instructions in your power machine Operator's Manual.
- When traveling on public roadways, travel in such a way that faster moving vehicles may pass safely. Use hazard lights, clean reflectors, and a slow moving vehicle sign that is visible from the back to warn operators in other vehicles of your presence. Always comply with all federal, state, and local laws.
- Select a safe ground speed that will allow adequate control of steering and stopping. Never exceed 20 mph (32 km/h) with attached equipment. Rough terrain requires a slower speed.
- *Reduce ground speed when turning and leave enough clearance to avoid making contact with obstacles such as buildings, trees, fences, etc.*
- Select a safe ground speed that will allow adequate control of steering and stopping. Never exceed 20 mph (32 km/h) with attached equipment. Rough terrain requires a slower speed.



Reading Level Run Indicator Figure 5-2

### Leveling The Snow Blower

#### Refer to Figure 5-2:

The level run indicator (#2) helps the operator to verify the Snow Blower is operating parallel to the ground.

**NOTE:** Most tractor loaders have a leveling rod that can be used in lieu of the level run indicator. Refer to your tractor loader manual to properly adjust the leveling rod. Leveling rod must be adjusted to operate the Snow Blower parallel to the ground.

**IMPORTANT:** The level run indicator must be adjusted correctly before using it. Refer to "**Level Run Indicator Adjustment**" on page 33.

- 1. Stop skid steer/tractor on a flat level surface and lower loader arms until Snow Blower is close to ground.
- Extend or retract hydraulic cylinders on the end of the skid steer/tractor loader arms until the indicator arrow (#1) points to "LEVEL RUN".
- Lower Snow Blower until it is resting on its skid shoes and make any final adjustments necessary to make sure the indicator arrow (#1) still points to "LEVEL RUN".

**IMPORTANT:** The indicator arrow (#1) should point to "LEVEL RUN" when parked on flat level ground and Snow Blower is sitting on the ground. It is normal for the indicator arrow to move from "LEVEL RUN" during operation. **DO NOT** readjust hitch angle. Doing so can cause the auger to contact the ground and damage it.

- 4. Once set, **DO NOT** change position of the hydraulic cylinders on the end of the skid steer/tractor loader arms. See important note above.
- 5. Repeat steps 1-4 if skid shoes are readjusted or if hydraulic cylinders on end of skid steer/tractor loader arms have been moved.

#### **General Operating Instructions**

It is important that you familiarize yourself with the Operator's Manual, properly attach the Snow Blower to your skid steer or tractor front loader, completed the operating checklist and pre-operating safety check before running the operational safety check.

You will want to park on a flat level surface and level your Snow Blower to operate parallel to the ground before making any operational safety checks or removing snow. If you have not leveled the Snow Blower, please complete this procedure before continuing.

If you detect a malfunction in either your Snow Blower or skid steer/tractor during the operational safety check, immediately shut skid steer or tractor off, remove switch key, and make all necessary repairs and adjustments before continuing.

Before starting the skid steer or tractor, make sure your machine is in park or in neutral and the park brake is set. Turn hydraulic function off. If Snow Blower is tractor mounted and powered by a rear mounted Hydraulic Reservoir System (HRS), disengage tractor power takeoff to the HRS.

**IMPORTANT:** Set loader arms to float before operating attachment. The skid shoes can have increased wear if loader arms are rigid.

With your Snow Blower resting on the ground and loader arms set to float, start your skid steer or tractor and set engine throttle speed at a low idle. Engage power take-off if tractor mounted with a rear mounted HRS. Turn hydraulics to the Snow Blower on. If everything is running smoothly at a low idle, slowly increase skid steer/tractor engine rpm until the Snow Blower reaches full operating speed. If everything is still running smoothly, return engine to low idle, turn hydraulic function to off, and when applicable, disengage power take-off.

You should now be ready to transport to your snow blowing site at a safe ground speed. On roadways transport in such a manner that faster moving vehicles can easily see you and pass you safely. Reduce your speed when traveling over rough and hilly terrain. Avoid quick or sharp steering corrections. Take extra care to ensure that the Snow Blower doesn't come into contact with obstacles such as trees, buildings, or fences. Use accessory lights and appropriate reflective devices to provide adequate warning to pedestrians and other vehicle operators when traveling on public roads and in the dark of night. Comply with all local, state, and federal laws.

#### Section 5: Operating Instructions

## <u>Kupota</u>

It is important that you know the area where snow is to be removed and what lies beneath the snow. If possible, survey the area ahead of the snow. Remove all possible obstructions and mark any obstructions that cannot be removed with flags that project above the snow. If you are unfamiliar with the area, ask someone who can identify hidden obstructions so that you can mark them with a flag. Flag manholes, water meters, gas meters, culvert edges, fire hydrants, stumps, and other obstructions that are not easily seen. It really pays to inspect a new area and to develop a safe plan before moving snow.

Determine how close to the ground the Snow Blower can be operated. Set skid shoes to hold the Snow Blower off the ground at a predetermined height. Surfaces with gravel or crushed rock will require a higher setting than hard flat surfaces such as asphalt and concrete. Never set Snow Blower so low as to pick-up gravel and/or rock.

Determine wind direction and devise a removal plan that will allow wind to carry blown snow away from the operator. Snow discharged out the Snow Blower and blown back at you will obstruct your view and can totally block your vision of work.

Determine direction to blow snow that will not create a driving hazard for other vehicles and rotate chute to blow snow in that direction. To minimize work, do not blow snow over an area that has already been cleared of snow and never rotate chute to blow snow toward the skid steer/tractor and/or operator as hard objects can be thrown from the discharge chute.

Set spout deflector angle. The angle will vary depending on how far snow is to be blown, how light and fluffy the snow is, and how wet and heavy it is.

Some adjustments to the chute rotation, spout deflector angle, and skid shoe height may be necessary after traveling a few feet. If you need to get off the skid steer or tractor to make adjustments, you must stop your machine, turn hydraulic functions off, disengage power take-off when applicable, place skid steer/tractor in park or in neutral with park brake set, shut engine off, remove switch key, and wait for all components to come to a complete stop before dismounting your skid steer/tractor.

It is now time to position your Snow Blower at your starting point. Once there, stop traveling and lower Snow Blower down onto its skid shoes.

Set throttle at an idle speed, engage power take-off if tractor mounted, and turn hydraulic function on. Listen for unusual clicking or knocking sounds as the auger and impeller start rotating. If everything sounds fine increase engine speed to a recommended operating speed. If an unusual sound is heard, shut your machine down immediately, investigate the cause, and make necessary repairs before continuing. Start traveling forward while blowing snow. Always blow snow while traveling at a speed that will allow you to be in control at all times. Change speed if travel speed is too fast. Only change to a higher speed if you are certain it will be safe. The heavier and deeper the snow the slower you will need to travel. If your unit is tractor mounted and powered with a rear mount HRS, maintain recommended power take-off speed and use a lower gear selection to maintain proper travel speed. If your unit is skid steer mounted, you should set your high/low gear selection in the low range and vary your engine speed to maintain proper travel speed.

Do not use rear view mirrors to view direction of travel while backing up. Instead, turn your head to look where you are traveling. It is very important that you get a full field of view to prevent an accident.

If attachment is to be operated in reverse, make sure visibility to the rear of the power unit is appropriate for the attachment.

Beware of obstacles along side your machine while making turns traveling forward and backing-up. Never swing the Snow Blower into fire hydrants, mailboxes, buildings, vehicles, fences, trees, or other standing obstacles. Shift to a lower gear when possible and travel very slow when in a tight situation to allow time to react. Stop your skid steer or tractor before hitting an obstacle.

Once you have reached end of travel, stop your skid steer or tractor, raise the Snow Blower up, and return to the front of your work to make another run at blowing snow. It is not necessary to disengage hydraulics while returning to the front of your work.

Once at the front, line up your Snow Blower with your next starting point, lower unit down onto its skid shoes until all pressure is off the loader arms, and begin traveling forward blowing snow.

With a little practice you will be pleased with what you and your Kubota Snow Blower can do. Whether you are done blowing snow, need to take a break, or just need to make a few adjustments to the Snow Blower, remember to always do the following:

- Reduce engine rpm
- Shut hydraulic functions off
- Disengage power take-off if tractor mounted
- Stop on level ground and set park brake
- Turn off the engine and remove the key
- Stay on the tractor until the Snow Blower auger and rotor have come to a complete stop.

## <u>Kinpota</u>

#### **General Maintenance Information**

Proper servicing and adjustments are key to the long life of any equipment. With careful inspection and routine maintenance, you can avoid costly downtime and repair.

The parts on your Snow Blower have been specially designed and should only be replaced with genuine Kubota parts. Do not alter the Snow Blower in a way which will adversely affect its performance.

Check all bolts after using the unit for several hours to be sure they are tight. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your nearest Kubota dealer.

## 

To avoid serious injury or death:

Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.

### **A** WARNING

To avoid serious injury or death:

- Allow only persons to perform maintenance on this attachment who have been properly trained in the safe operation of this attachment.
- Before any maintenance is performed, lower attachment to ground, shut engine off, and remove ignition key. Do not attempt to perform maintenance with power machine running.
- *Make sure controls are all in the neutral position or park before starting the power machine.*
- Do not alter attachment or replace parts on the attachment with other brands. Other brands may not fit properly or meet OEM (Original Equipment Manufacturer) specifications. They can weaken the integrity and impair the safety, function, performance, and life of the attachment. Replace parts only with genuine OEM parts.

#### Tractor/Skid Steer Hydraulic System

One of the most important things you can do to prevent hydraulic system problems is ensure that your hydraulic oil remains free of dirt and contamination.

Use a clean cloth to wipe hose couplings before attaching them to your machine and replace hydraulic filter elements at the prescribed intervals. These simple steps will go a long way to prevent control valve and hydraulic cylinder problems.



Inspect & Replace Grader Blade as Needed Figure 6-1

#### Inspect & Replace Grader Blade

Refer to Figure 6-1:

#### Grader Blade Part Numbers

#### # Part No. Part Description

- 1. 802-206C PLOW 5/8"-11 x 1 3/4" GR5
- 2. 803-263C NUT HEX FLANGE LOCK 5/8"-11 PLT
- 3. 820-042C SBL2566: GRADER BLADE 1/2" x 6" x 65 1/2"
- 3. 820-477C SBL2574: GRADER BLADE 1/2" x 6" x 73 1/2"
- 3. 820-046C SBL2584: GRADER BLADE 1/2" x 6" x 83 1/2"

**NOTE:** When front edge of grader blade (#3) is worn excessively, it can be rotated 180<sup>o</sup> and reused to extend its wear life.

Inspect cutting edge of grader blade and plow bolts for wear. Make sure grader blade is rotated or replaced before auger housing becomes exposed to wear. Rotate grader blade 180° or replace as needed.

- 1. Remove hex flange locknuts (#2), plow bolts (#1), and grader blade (#3).
- Attach new or rotated grader blade (#3) to bottom of Snow Blower frame with existing/new plow bolts (#1) and hex flange locknuts (#2).
- 3. Tighten locknuts to the correct torque.

## <u>Kinpota</u>

#### Auger & Impeller Inspection

#### Refer to Figure 6-2:

- 1. Remove flanged locknuts (#3), 2" wrench (#1), and impeller shaft shield (#2).
- 2. Check 2"-12 UNF impeller jam nut (#4) for tightness. If loose, tighten jam nut with wrench (#1).
- 3. When finished, secure wrench (#1) and impeller shaft shield (#2) to the Snow Blower housing with flange locknuts (#3).



Impeller Inspection Figure 6-2

#### Refer to Figure 6-3:

- 4. Check impellers (#1) for wear, structural cracks, and breakage. Repair or replace impeller before it causes structural damage to Snow Blower housing.
- 5. Check for bent impeller blades (#1) that are making contact or are about to make contact with Snow Blower housing. Repair or replace impeller before it causes structural damage to Snow Blower housing.
- Check auger flighting (#3) and auger paddles (#2) for wear, structural cracks, bending, and breakage.
  Repair or replace auger before components breakoff and are sent into the impeller or through the air.
- 7. Check end bearing (#5) for wear. Replace bearings that are worn excessively.
- 8. Lubricate bearings as required. See lubrication schedule for "Auger Flange Bearing" on page 43.
- 9. Check bearing mounting bolts (#4) for tightness. Make certain they are tightened to the correct torque.

#### **Motor Mount Inspection**

#### Refer to Figure 6-4:

Check motor mounting bolts (#2 & #5) for tightness. If needed, tighten bolts as follows:

- 1. Remove hex locknuts (#4), bolts (#3), & motor cover (#1).
- 2. Tighten bolts (#2) to the correct torque as needed.
- 3. Access bolts (#5) through the auger end tube slots and tighten to the correct torque.
- 4. Reattach motor cover (#1) with existing bolts (#3) and hex locknuts (#4). Tighten hex locknuts to the correct torque.



Auger & Impeller Inspection Figure 6-3



Motor Mount Inspection Figure 6-4

## Kupota



Outer Skid Shoe Replacement Figure 6-5

#### **Outer Skid Shoe Option**

Refer to Figure 6-5:

Outer Skid Shoe Part Numbers								
Part No.	Part No. Part Description							
370-436H 370-437H 370-449H 370-450H	OUTER RIGHT-HAND SKID SHOE SBL66 OUTER LEFT-HAND SKID SHOE SBL66 OUTER RIGHT-HAND SKID SHOE SBL74/84 OUTER LEFT-HAND SKID SHOE SBL74/84							

Inspect outer skid shoes for wear and replace as needed.

- Park on a level solid surface, place skid steer/tractor in park or neutral with park brake set, lower Snow Blower until it is approximately 6" (15.2 cm) above ground, disengage hydraulics, and wait for all components to stop rotating before dismounting skid steer/tractor.
- Place 1 1/2" to 3" (3.8 to 7.6 cm) thick support block(s) (#5) under the grader blade (#1) near the right-hand and left-hand skid shoes (#2).
- 3. Return to the skid steer/tractor and lower the Snow Blower onto the support blocks (#5), shut engine off and remove switch key. Wait for all components to stop rotating before dismounting skid steer/tractor.
- 4. Count & record number of square holes "A" from top down to the holes carriage bolts (#3) are located.
- 5. Remove hex nuts (#4), carriage bolts (#3), and righthand skid shoe (#2). Discard skid shoe and save hardware for reattachment of new skid shoe.
- 6. Using the recorded number in step 4 above, insert 1/2"-13 x 1 1/4" GR5 carriage bolts (#3) through square holes "A" in skid shoe (#2) and the Snow Blower side panel. Secure carriage bolts with hex flange locknuts (#4).
- 7. Tighten locknuts (#4) to the correct torque.
- 8. Repeat steps 4 to 7 above for left-hand skid shoe.
- 9. If skid shoes need readjusting, refer to "Outer Skid Shoe Adjustment" on page 32.



Outer Skid Shoe Assembly Figure 6-6

#### **Inner Skid Shoe Option**

Refer to Figure 6-6:

Inner Skid Shoe Part Numbers								
Part No.Part Description								
370-439H	INNER SKID SHOE							

Inspect inner skid shoes for wear and replace as needed.

- Park on a level solid surface, place skid steer/tractor in park, and lower both ends of grader blade onto support blocks or jack stands that are, at a minimum, 8 1/2" (21.6 cm) high.
- 2. Shut skid steer/tractor engine off and remove ignition key.
- 3. On the left-hand side, remove hairpin cotter (#2), bent pin (#3), and inner skid shoe (#1).
- 4. Reinsert new inner skid shoe (#1).
- 5. Insert bent pin (#3) through the same holes in the skid shoe mount and new skid shoe that it was removed from.
- 6. Secure bent pin with hairpin cotter (#2).
- 7. Repeat steps 3 & 4 for the right-hand side.
- 8. If skid shoes need readjusting, refer to "Inner Skid Shoe Adjustment" on page 32.

#### Long-Term Storage

Clean, inspect, service, and make necessary repairs to the Snow Blower when parking it for long periods and when parking it at the end of a working season. This will help ensure the Snow Blower is ready for field use the next time you hook-up to it.

### **A** DANGER

To avoid serious injury or death:

- Always disconnect driveline from the tractor before servicing the drivetrain and components powered by the drivetrain. A person can become entangled in the drivetrain if the tractor is started and the power take-off is engaged.
- Always secure equipment with solid, non-concrete supports before working under it. Never go under equipment supported by concrete blocks or hydraulics. Concrete can break, hydraulic lines can burst, and/or hydraulic controls can be actuated even when power to the hydraulics is off.
- 1. Clean off any dirt and grease that may have accumulated on the Snow Blower and moving parts, and then wash surface thoroughly with a garden hose.
- 2. Check impeller, auger, wear bars, and skid shoes for wear and breaks. Repair or replace if necessary. See **"Auger & Impeller Inspection"** on page 41.
- 3. Inspect for loose, damaged, or worn parts. Make adjustments, repairs, and/or replace as needed.
- 4. Repaint parts where paint is worn or scratched to prevent rust. Ask your Kubota dealer for touch-up paint. Paint is available in aerosol can, quarts, and gallon sizes. See chart on the right side of this page.

#### Touch-Up Paint

Part No.	Part Description
821-070C	Gloss black enamel spray can
821-070CTU	Gloss black enamel bottle with brush
821-070CQT	Gloss black enamel quart
821-070CGL	Gloss black enamel gallon

- 5. Replace all damaged or missing decals.
- 6. Lubricate as noted under "Lubrication" on page 43.
- 7. Apply a coating of oil to the areas without paint due to high wear to minimize oxidation.
- 8. Store Snow Blower on a level surface in a clean, dry place. Inside storage will reduce maintenance and make for a longer Snow Blower life.
- 9. Follow all "**Unhooking The Snow Blower**" instructions on page 16 when disconnecting Snow Blower from skid steer/tractor.

#### Lubrication







43

#### Auger Flange Bearing

1 - Zerk: Left Side

Type of Lubrication: Multi-purpose Grease

Quantity = As needed

#### **SBL25 Series Snow Blowers**

Specifications & Capacities										
		SBL2566	SBL2574	SBL2584						
Working Width	in (m)	66 (1.68)	74 (1.88)	84 (2.13)						
Overall Width	in (m)	71 1/2 (1.82)	79 1/2 (2.02)	89 1/2 (2.27)						
Weight with outside skid shoes, case drain line, couplings, & hydraulic motor	lbs (kg)	816 (370)	938 (426)	988 (448)						
Drive and Control System		Hydraulic motors with electric over hydraulic								
Hydraulic Requirements: Low Volume Motor Option Medium Volume Motor Option High Volume Motor Option	gpm (Lpm)	12-19 (45.4-71.9) 20-26 (75.7-98.4) 27-33 (102.2-124.9)								
Hydraulic Pressure Rating	psi (mPA)	2500-3500 (17.2-24.1)								
Hitch		Skid steer/loader mounting plate								
Main Housing Material	ga (mm)	10 (3.4)								
Side Plate Material	in (mm)	3/16 (5)								
Chute Opening at the Base	in (cm)	8 (20.3) 10 (25.4)								
Impeller Housing Depth	in (cm)	6 (15.2) 8 (20.3)								
Impeller Diameter	in (cm)	20 (50.8) 24 (61)								
Number of Impeller Blades		4								
Auger Diameter	in (cm)	14 (35.6) 16 (40.6)								
Number of Auger Paddles		4								
Cutting edge		Bolt-on, reversible, and replaceable full-length cutting edge								
Skid Shoes		Bolt-on, adjustable & replaceable								
Chute Rotation		220 Degrees (Hydraulically driven sprocket)								
Spout Deflector		Hydraulic operation								
Spout Deflector Cylinder	in (cm)	Double acting 2 x 4 x 1 1/2 (5.1 x 10.2 x 3.8) rod								



#### **SBL25 Series Snow Blowers**

Features	Benefits							
Large main housing	Ability to handle large drifts.							
Large impeller diameter	The ability to move and throw material farther.							
Level run indicator (Patent-Pending)	Operator can visually verify the Snow Blower is properly leveled before each use. Protects against tilting the auger into concrete/paved surfaces.							
Hydraulically operated deflector spout	Allows operator to change end of spout up or down from the seat to direct blown snow up close or far away.							
Hydraulically operated chute rotation with sprocket drive	Allows operator to change direction of snow discharge from the seat. Sprocket drive is built to last.							
Bolt-on reversible and replaceable cutting edge	Improves service life of Snow Blower by protecting the unit from bottom wear and absorbing some of the shock when hitting solid objects. The blade can be rotated 180° double its life and can be replaced when both edges are worn out.							
Greasable auger end bearing	Less drag on the power train and extends life of unit.							
Sprocket driven chute rotator	Allows operator to change chute rotation angle within a 220° discharge pattern.							
3/8" Auger Flighting	Stands up to sever use.							
	Options							
Quality hydraulic motor available in low, medium, or high volume flow	Provides long life, durable construction. Three flow options allows this Snow Blower to fit many skid steer/tractors.							
Bolted-on outer skid shoes	Supports cutting edge above paved, gravel, and rocky surfaces. They are adjustable and replaceable.							
Inner skid shoes secured with a bent pin.	Supports cutting edge above paved, gravel, and rocky surfaces. Bent pin makes it easy to change skid shoe height and replace.							



#### **Troubleshooting Chart**

Problem	Cause	Solution				
	Obstacles are entangled in auger and/or blower	Shut Snow Blower down and manually clear				
	housing.	auger and impeller housing.				
	Impeller jam nut is loose.	Tighten impeller jam nut.				
	Quick couplings did not engage.	Reconnect quick couplings to skid steer.				
	Hydraulic system is not engaged.	Engage hydraulic system.				
Auger and/or impeller	Hydraulic flow from skid steer or tractor rear mounted hydraulic reservoir is inadequate.	Check hydraulic flow at the Snow Blower.				
stalls (will not turn)	Skid steer or tractor rear mounted hydraulic	Add hydraulic oil to skid steer or tractor rear				
	reservoir is low on hydraulic fluid.	mounted hydraulic reservoir.				
	Hydraulic hose has a break.	Replace hydraulic hose.				
	Hydraulic hose has an obstruction.	Remove obstruction or replace hose.				
	Hydraulic line is pinched.	Fix pinched line.				
	Hydraulic lines have air in them.	Engage hydraulics to Snow Blower until air is purged from hydraulic lines.				
Bottom of auger housing is wearing.	Grader blade is worn.	Reverse or replace grader blade.				
	Ice build-up around base of discharge chute.	Remove ice.				
Discharge chute won't	Wire harness connections are loose.	Reconnect wire harness connections.				
rotate	Solenoid is not operating properly.	Have solenoid inspected and repaired.				
	Hydraulics problems	Refer to hydraulic problems for: "Auger and/or impeller stalls"				
Discharge chute is	Ground speed is too fast.	Decrease ground speed.				
plugging	Auger motor speed is too fast.	Decrease motor speed at the flow control valve.				
Discharge chute throws snow at the operator	Rotational stop bolts are on the wrong side of the rotational stop.	Remove rotational stop. Rotate chute to throw snow straight forward. Reattach rotational stop.				
Discharge spout does not throw snow the preferred distance	Discharge spout is set at the wrong angle.	Extend hydraulic cylinder to shorten throwing distance. Retract hydraulic cylinder to lengthen throwing distance.				
Impollar is throwing small	Not enough snow to fill the impeller.	This is normal when clearing snow fall that is not very deep.				
Impeller is throwing small amounts of snow	Auger motor speed is too slow.	Increase motor speed at the flow control valve.				
	Ground speed is too slow.	Increase ground speed.				
Hydraulic motor is leaking oil	Hydraulic motor seals are blown.	Have the hydraulic motor with leaky seals repaired.				
Skid shoes are wearing too	Loader arms are not set to float.	Set loader arms in float position.				
fast	Snow Blower is not parallel to ground.	Level the Snow Blower.				
Snow Blower makes	Impeller jam nut is loose.	Tighten impeller jam nut.				
intermittent clicking noise	Auger flighting is bent or broken.	Repair or replace damaged auger.				
	Impeller blades are bent or broken.	Repair or replace damaged impeller blades.				
	Auger is contacting the ground.	Adjust Snow Blower to operate level. (Parallel with the ground.)				
	Blowing dirty snow or refrozen melted snow.	Blow only clean fresh snow.				
Snow Blower makes excessive noises or	Picking up road gravel and/or crushed rock.	Lower skid shoes to carry grader blade above road gravel and crushed rock.				
vibrates excessively	Obstacles are entangled in auger and/or impeller housing.	Shut Snow Blower down and manually clear auger and/or impeller housing.				
	End bearing is worn or damaged.	Replace end bearing.				
	Auger is bent or broken.	Repair or replace damaged auger.				
	Impeller blades are bent or broken.	Repair or replace damaged blades.				
Snow is left on the ground	Skid shoes are set too low.	Raise skid shoes up.				

Torque Values Chart for Common Bolt Sizes														
	Bolt Head Identification						Π	Bolt Head Identification						
Bolt Size (inches)	Gra	de 2	Gra	de 5	Grade 8		Bolt Size (Metric)		5.8 Class 5.8		(8.8) Class 8.8		(10.9) Class 10.9	
in-tpi <sup>1</sup>	N · m <sup>2</sup>	ft-lb <sup>3</sup>	N ⋅ m	ft-lb	N · m	ft-lb		mm x pitch <sup>4</sup>	N·m	ft-lb	N ⋅ m	ft-lb	N ⋅ m	ft-lb
1/4" - 20	7.4	5.6	11	8	16	12		M 5 X 0.8	4	3	6	5	9	7
1/4" - 28	8.5	6	13	10	18	14		M 6 X 1	7	5	11	8	15	11
5/16" - 18	15	11	24	17	33	25		M 8 X 1.25	17	12	26	19	36	27
5/16" - 24	17	13	26	19	37	27		M 8 X 1	18	13	28	21	39	29
3/8" - 16	27	20	42	31	59	44		M10 X 1.5	33	24	52	39	72	53
3/8" - 24	31	22	47	35	67	49		M10 X 0.75	39	29	61	45	85	62
7/16" - 14	43	32	67	49	95	70		M12 X 1.75	58	42	91	67	125	93
7/16" - 20	49	36	75	55	105	78		M12 X 1.5	60	44	95	70	130	97
1/2" - 13	66	49	105	76	145	105		M12 X 1	90	66	105	77	145	105
1/2" - 20	75	55	115	85	165	120		M14 X 2	92	68	145	105	200	150
9/16" - 12	95	70	150	110	210	155		M14 X 1.5	99	73	155	115	215	160
9/16" - 18	105	79	165	120	235	170		M16 X 2	145	105	225	165	315	230
5/8" - 11	130	97	205	150	285	210		M16 X 1.5	155	115	240	180	335	245
5/8" - 18	150	110	230	170	325	240		M18 X 2.5	195	145	310	230	405	300
3/4" - 10	235	170	360	265	510	375		M18 X 1.5	220	165	350	260	485	355
3/4" - 16	260	190	405	295	570	420		M20 X 2.5	280	205	440	325	610	450
7/8" - 9	225	165	585	430	820	605		M20 X 1.5	310	230	650	480	900	665
7/8" - 14	250	185	640	475	905	670		M24 X 3	480	355	760	560	1050	780
1" - 8	340	250	875	645	1230	910		M24 X 2	525	390	830	610	1150	845
1" - 12	370	275	955	705	1350	995		M30 X 3.5	960	705	1510	1120	2100	1550
1-1/8" - 7	480	355	1080	795	1750	1290		M30 X 2	1060	785	1680	1240	2320	1710
1-1/8" - 12	540	395	1210	890	1960	1440		M36 X 3.5	1730	1270	2650	1950	3660	2700
1-1/4" - 7	680	500	1520	1120	2460	1820		M36 X 2	1880	1380	2960	2190	4100	3220
1-1/4" - 12	750	555	1680	1240	2730	2010		<sup>1</sup> in-tpi = nomin	al threa	d diame	ter in ind	ches-thr	eads pe	r inch
1-3/8" - 6	890	655	1990	1470	3230	2380		<sup>2</sup> N⋅m = newtor	n-meters	6				
1-3/8" - 12	1010	745	2270	1670	3680	2710		<sup>3</sup> ft-lb= foot pou	unds					
1-1/2" - 6	1180	870	2640	1950	4290	3160		$^4$ mm x pitch =		thread	diamete	r in milli	meters x	thread
1-1/2" - 12	1330	980	2970	2190	4820	3560	pitch							
Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above. All locknuts or lubricated fasteners: Use 75% of torque value. (i.e. 1/2"-13 GR5 = 76 ft-lb; 75% of 76 or .75 x 76 = 57 ft-lb)														

#### Warranty

Land Pride warrants to the original purchaser that this Land Pride product will be free from defects in material and workmanship beginning on the date of purchase by the end user according to the following schedule when used as intended and under normal service and conditions for personal use.

Overall Unit: One year Parts and Labor

#### Auger, Impeller, Wear Bars & Skid Shoes: Considered wear items

This Warranty is limited to the repair or replacement of any defective part by Land Pride and the installation by the dealer of any such replacement part, and does not cover common wear items. Land Pride reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

This Warranty does not apply to any part or product which in Land Pride's judgment shall have been misused or damaged by accident or lack of normal maintenance or care, or which has been repaired or altered in a way which adversely affects its performance or reliability, or which has been used for a purpose for which the product is not designed. Misuse also specifically includes failure to properly maintain oil levels, grease points, and driveline shafts.

Claims under this Warranty should be made to the dealer which originally sold the product and all warranty adjustments must be made through an authorized Land Pride dealer. Land Pride reserves the right to make changes in materials or design of the product at any time without notice.

This Warranty shall not be interpreted to render Land Pride liable for damages of any kind, direct, consequential, or contingent to property. Furthermore, Land Pride shall not be liable for damages resulting from any cause beyond its reasonable control. This Warranty does not extend to loss of crops, any expense or loss for labor, supplies, rental machinery or for any other reason.

No other warranty of any kind whatsoever, express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This Warranty is not valid unless registered with Land Pride within 30 days from the date of original purchase.

**IMPORTANT:** The Online Warranty Registration should be completed by the dealer at the time of purchase. This information is necessary to provide you with quality customer service.

Model Number

#### Serial Number \_\_\_\_\_

#### Legal Disclaimer

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