



OPERATOR AND PARTS MANUAL

Commercial Snowblower

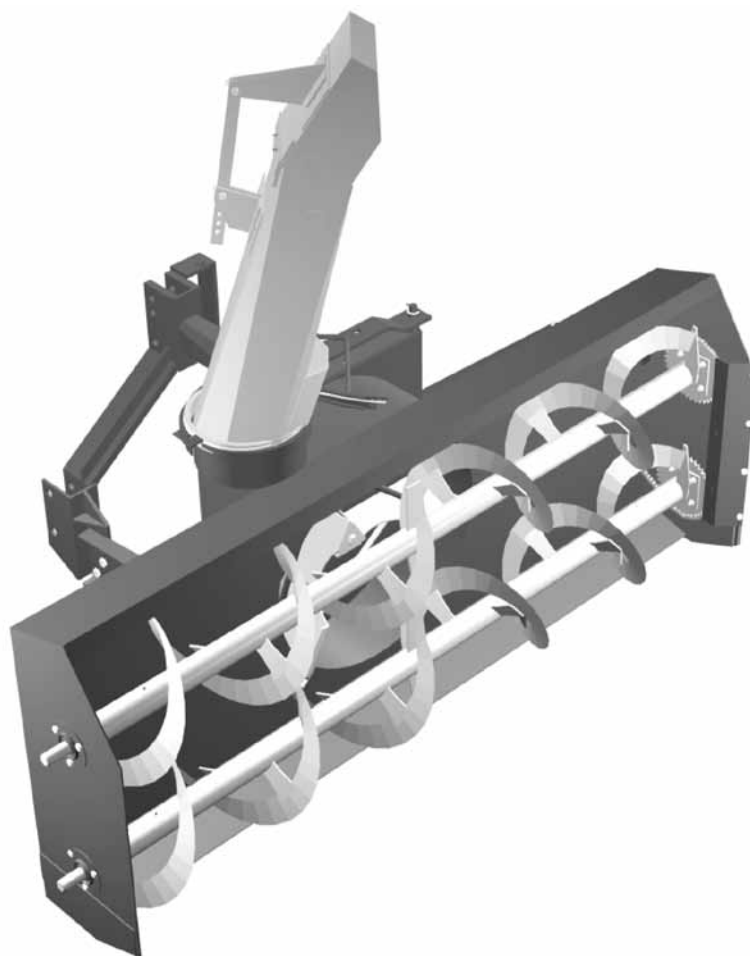


Table of Contents

Introduction	4
Safety.....	5
• Safety	5
General Safety.....	6
Start-up Safety	6
• Operation Safety	6
• Transport Safety	7
• Service and Maintenance Safety	7
• Storage Safety.....	7
• Safety Signs	8
• Safety Sign Installation	8
Assembly.....	10
• Assembly Instructions.....	10
Start up.....	13
• Hydraulic Control Block.....	13
Operation	14
• Theory of Operation	14
Specifications.....	18
Maintenance	20
• Hydraulic Snowblower Wiring Schematic X2572.....	20
• Troubleshooting	21
Bolt Torque	22
Parts Drawings.....	24
• Snowblower - 22" Housing Drawings	24
• Snowblower Parts List.....	26
• Hydraulic Control Block Drawing.....	30
• Hydraulic Control Block Parts List.....	31
Warranty.....	32

Manufacturer’s statement: for technical reasons Buhler Industries Inc. reserves the right to modify machinery design and specifications provided herein without any preliminary notice. Information provided herein is of descriptive nature. Performance quality may depend on soil fertility, applied agricultural techniques, weather conditions and other factors.

Introduction

For more than a generation, Allied has been building the most popular Snowblowers used on farms, airports, and municipalities throughout the North American snow-belt. Now, all that experience brings you the rugged commercial blowers to handle more demanding snow clearing jobs.

These hydraulically driven blowers are offered in 60", 66", 74" and 84" sizes and four series. Oil flow ranges from 13 to 32 gallon per minute, with 2000 P.S.I. to ensure there is a model to match the horsepower of your machine. A hydraulic motor engages a direct ring gear for smooth, positive rotation of the chute.

The Allied Commercial Blower is totally operated by hydraulics – fan, auger, chute rotator and deflector. The key to efficient snow blowing is the design of the fan and housing. Four blades with tight clearance at the circumference and a replaceable UHMW liner makes this an excellent design. The heart and soul of these hydraulic Snowblower is the load sensing manifold which keeps all four functions operating efficiently, even as the snow gets deeper and more packed. One set of remotes is all you need. Adjustment ports allow you to fine tune the flow and route of oil to ensure that the primary oil supply goes to the fan and auger, secondarily to the chute rotator and deflector. A cushioning feature in the valve body softens the speed of the rotation when it reaches the end of its rotating arc. The remote in-cab control allows the operator to divert oil flow to the chute controls. This 3-point hitch, TO driven blower is build with the same durable strength and features of the front mounted hydraulic models shown here. Equipped with the same chute rotator as the hydraulically driven models, it also features a telescopic hitch, replaceable cutting edge, adjustable skid shoes, 4 blade fan, and replaceable UHMW poly liner in the fan housing and spout.

Keep this manual handy for frequent reference. All new operators or owners must review the manual before using the equipment and at least annually thereafter. Contact your Allied Dealer if you need assistance, information, or additional copies of the manual. Visit our website at www.buhlerindustries.com for a complete list of dealers in your area.

The directions left, right, front and rear, as mentioned throughout this manual, are as seen facing in the direction of travel of the implement.

Safety

Safety Instructions

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

The alert symbol is used throughout this manual. It indicates attention is required and identifies hazards. Follow the recommended precautions.



The safety alert symbol means...
ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



CAUTION

The caution symbol indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



WARNING

The Warning Symbol indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.



DANGER

The Danger Symbol indicates an imminently hazardous situation that, if not avoided will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

General Safety Instructions

- Have a first-aid kit available for use and know how to use it.
- Have a fire extinguisher available, stored in a highly visible location, and know how to use it.
- Wear appropriate protective gear. This list may include but is not limited to:
 - hard hat
 - protective shoes with slip resistant soles
 - protective glasses or goggles
 - heavy gloves
 - wet weather gear
 - hearing protection
 - respirator or filter mask
- Read and understand the Operator's Manual and all safety signs before operating, servicing, adjusting, repairing, or unplugging the equipment.
- Do not attempt any unauthorized modifications to your Farm King product as this could affect function or safety, and could affect the life of the equipment.
- Never start or operate the snowblower except from the operator's station on the power unit.
- Inspect and clean the working area before operating.
- Keep hands, feet, clothing, and hair away from moving parts.
- Ensure bystanders are clear of the area before operating.

Start-Up Safety

- Do not let inexperienced operators or children run this equipment.
- Place all tractor and machine controls in neutral before starting.
- Operate only with ROPS and seatbelt equipped tractors.
- Do not operate inside a building unless there is adequate ventilation.
- Ensure all shields are in place and in good condition before operating.
- Stay clear of PTO shaft and machine when engaging PTO.

Operation Safety

- Do not permit riders.
- Do not wear loose fitting clothing during operation.
- Stay clear of snowblower augers.
- Stay clear of snowblower discharge chute. Rocks or debris can be picked up and thrown.

Transport Safety

- Review Transport Safety instructions in tractor manual before moving.
- Check with local authorities regarding transport on public roads. Obey all applicable laws and regulations.
- Make sure the SMV (Slow Moving Vehicle) emblem and all the lights and reflectors that are required by the local highway and transport authorities are in place, are clean, and can be seen clearly by all overtaking and oncoming traffic.
- Never have the equipment in operation during transport.
- Always travel at a safe speed.

Service and Maintenance Safety

- Stop engine, set brake, remove ignition key, and wait for all moving parts to stop before servicing, adjusting, repairing, or unplugging.
- Support the equipment with blocks or safety stands before working beneath it.
- Follow good shop practices including:
 - keep service area clean and dry
 - be sure electrical outlets and tools are properly grounded
 - use adequate light for the job.
- Use only tools, jacks, and hoists of sufficient capacity for the job.
- Replace and secure all shields removed during servicing before operating.
- Use heavy leather gloves to handle sharp objects.
- Check hydraulics regularly for leaks. Use cardboard to look for leaks, and use hand and eye protection.
- Relieve pressure on hydraulic system before repairing or adjusting.
- Failure to follow proper procedures when mounting a tire on a wheel or rim can produce an explosion, which may result in serious injury or death.

Storage Safety

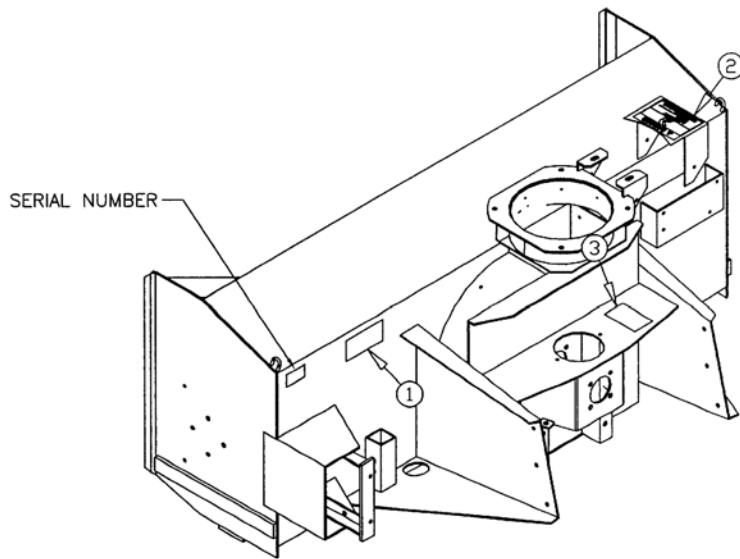
- Store the unit in an area away from human activity.
- Do not permit children to play on or around the stored machine.
- Support the frame on stands and blocks to provide a secure base.

Safety Signs

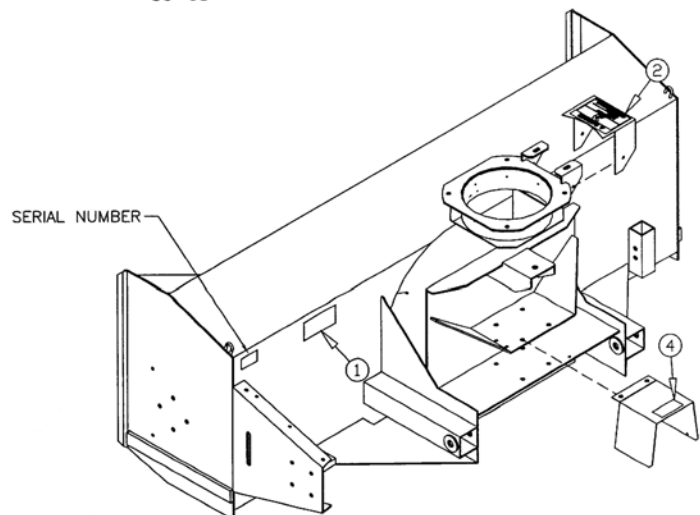
- The following illustration shows the approximate location and detail of safety signs.
- Keep all safety signs clean and legible and replace any that are damaged or missing.
- When original parts are replaced, any safety signs affixed to those parts should be replaced as well. Replacement safety signs are available from your local dealer.

Installation

- To install safety signs, ensure the installation area is clean and dry. Decide on the exact position before you remove the backing paper. Remove the smallest portion of the split backing paper and align over the specified area. Carefully press in place.
- Slowly peel back the remaining paper and smooth the remaining portion in place. Small air pockets can be pierced with a pin and smoothed out.
- Replace safety signs immediately should they become damaged, torn or illegible. Obtain replacements from your authorized dealer using the part numbers shown.



SC-08



SC-09


CAUTION

1. Keep all shields in place.
2. Disengage all power when servicing or unplugging machine.
3. Keep hands and clothing away from all moving parts.

963206

1

DANGER



PINCH POINT HAZARD

- Keep hands out of discharge chute.
- Keep others away.
- Stop engine, remove key and wait for all moving parts to stop before unplugging.

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN SERIOUS INJURY OR DEATH

906474

3

WARNING

CHECK PTO SHAFT LENGTH BEFORE RAISING OR LOWERING IMPLEMENT. SHAFT MUST NOT BOTTOM OR SEPERATE (SEE MANUAL)

108431

4

WARNING




HIGH PRESSURE FLUID HAZARD

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

FAILURE TO FOLLOW THESE INSTRUCTIONS WILL RESULT IN SERIOUS INJURY OR DEATH.

906475

2

Assembly Instructions

1. Spout assembly for all snowblowers:

Remove two of the grooved spout rollers to mount the discharge spout. Replace the two rollers to hold spout in place. Install the 2-1/2" x 8" cylinder on the spout using the pins supplied.

2. Hydraulic drive:

The 80" long hydraulic lines (#14) for the spout deflector cylinder should be connected to the two ports on the hydraulic block labeled C1 and C2. The 30" long lines (#15) from the spout control motor connect to the two ports labeled M1 and M2 on the hydraulic block. The 3/4" diameter x 84" main lines (#21) connect to the implement. **NOTE:** The customer must supply the appropriate tips to connect the main lines to the implement. A two-piece wiring harness is supplied with all hydraulic snowblowers. The 45" part of the harness (#6) is mounted on the snowblower. One end of this wire connects to the control block. The plug end mounts on a bracket welded to the top edge of the quick hitch. The 155" part (#1) of the harness with the switch is connected to the plug on the harness mounted on the snowblower. A switch mounted in the cab controls the spout and the deflector. The alligator clips attach to the battery which acts as a power source. A schematic of the wiring harness is included in this manual.

3. PTO drive:

Slide the two hitch adaptor weldments (#17) into the sleeves on the body. These tubes are adjustable to three different positions. The correct position for each individual tractor will be determined when mounting the snowblower on the tractor (see section on mounting blower on tractor). Start with the tubes pulled out to the last hole. Connect to the snowblower using pins (#71) and lynch pins (#73).

Mount the hitch Weldment (#7) to the body. The top arm of the hitch bolts on top of the bracket on the body using a 3/4" x 1-5/8" bolt, lock washer and hex nut. The bottom of the hitch bolts to the outside of the two hitch adaptors using 5/8" x 1-3/4" hex bolts, flat washers, lock washers and hex nuts.

Connect two 108" hoses (#76) to the hydraulic spout control motor and two 108" hoses (#76) to the cylinder on the discharge spout. Connect these hoses to the tractor after mounting the snowblower on the tractor.

Mounting blower on tractor

The pins supplied with the snowblower are for a category 2 quick hitch. The quick coupling hitch has two holes both at the top of the hitch and at each lift arm. When using a quick coupler, the pins must be in the inside set of holes. Use the outside set of holes with a standard three-point hitch.

Using tape or a bright colored marking pen, mark on the outer shields the position where the shaft is completely pushed together and the position where you have a 4" overlap. Watch these marks when moving the blower through all possible operating angles to see that the PTO shaft stays within this range.

With the engine on the tractor shut off, attach the PTO shaft. The tractor end has a standard 6-spline end with a spring loaded locking collar. The snowblower end has a clamp-style yoke with a 3/8" key way. Slide the yoke onto the gearbox shaft with the 3/8" key (#67) supplied.

Lock the yoke in place with the 1/2" x 3" bolt (#39) and lock nut (#40) fitted through the groove in the gearbox shaft. After tightening the bolt, insert and tighten the 3/8" socket set screw (#74) supplied.

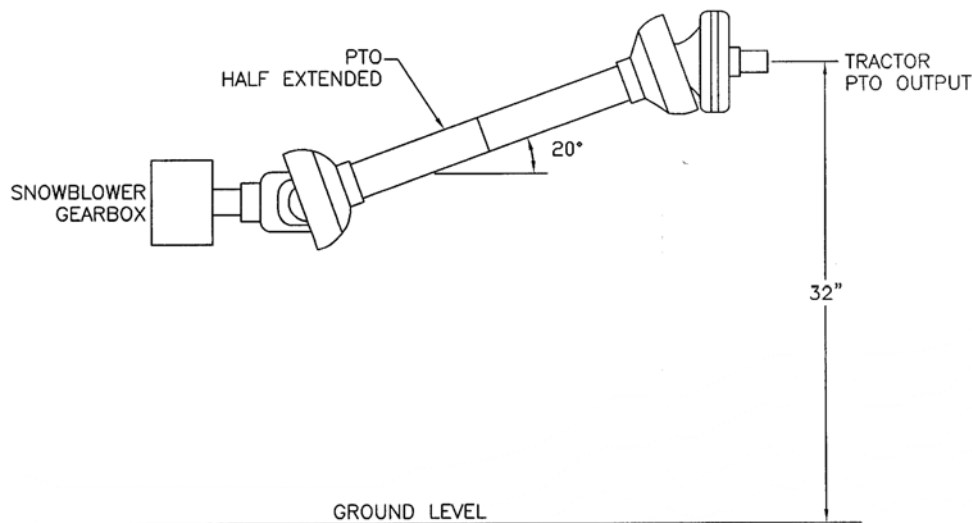


CAUTION

Always check to see that both ends of the PTO shaft are securely attached every time the Snowblower is used. This should always be done with the tractor engine off.

Check that the PTO shaft does not bottom or separate with the blower in the extreme high and low positions. A longer optional PTO shaft is available if the standard shaft is too short. Check for free movement of all parts in various raised positions; particularly the PTO shaft.

NOTE: Excessive U-joint wear and shear pin failure may result if the tractor PTO angle exceeds 20°. The drawing below gives an approximate way to check this angle. With the PTO half extended, the tractor output should not be over 32 inches high. Use 34 inches if the PTO is nearly compressed.



SC-11

4. PTO Shield:

All PTO snowblowers are supplied with a PTO shield (#18). To install, remove the two rear bolts at the top of the gearbox (#34). Bolt the PTO shield to the gearbox by the hinges using these same bolts. A utility spring (#68) keeps the shield in place. Hook one end of the spring in the hole in the shield and the other end to the hole in the brace under the gearbox.

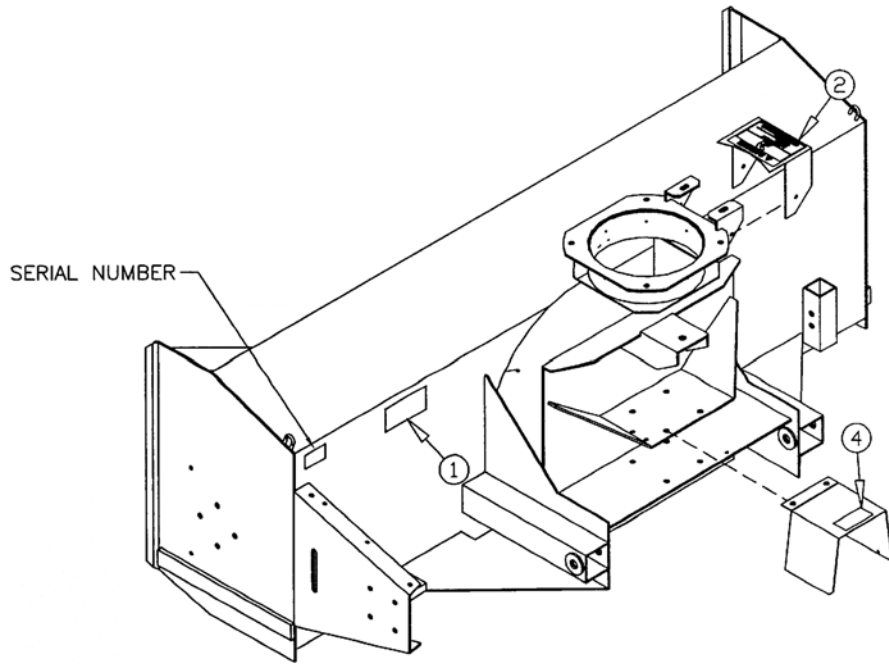


CAUTION

Do not run the snowblower without this shield in place.

5. Refilling gearbox with oil:

If the gearbox requires refilling with oil because of repairs to the gearbox, add oil to the level shown in drawing. Check the level regularly using the plug in the lid. The correct level is even with the bottom of the plug.



SC-09

Start-up

Hydraulic Control Block

Non-stalling fan feature:

The hydraulic snowblower has a unique modulating element that keeps the blower fan from stalling in an overloaded condition. This is accomplished by starving the hydraulic flow to the front auger motor (which then stops feeding the fan) and diverts all of the flow (and energy) to the main fan motor. As the fan clears itself, and the pressure drops, the auger again begins feeding according to load. When the system is set up properly the fan motor should not stall or plug up.

Modulating Element Setup:

For optimum performance the modulating element (#4) must be adjusted to match the system pressure of the tractor being used. The factory setting is for a 2800-3000 psi system. If your system is less, you should make adjustments accordingly. For adjustment:

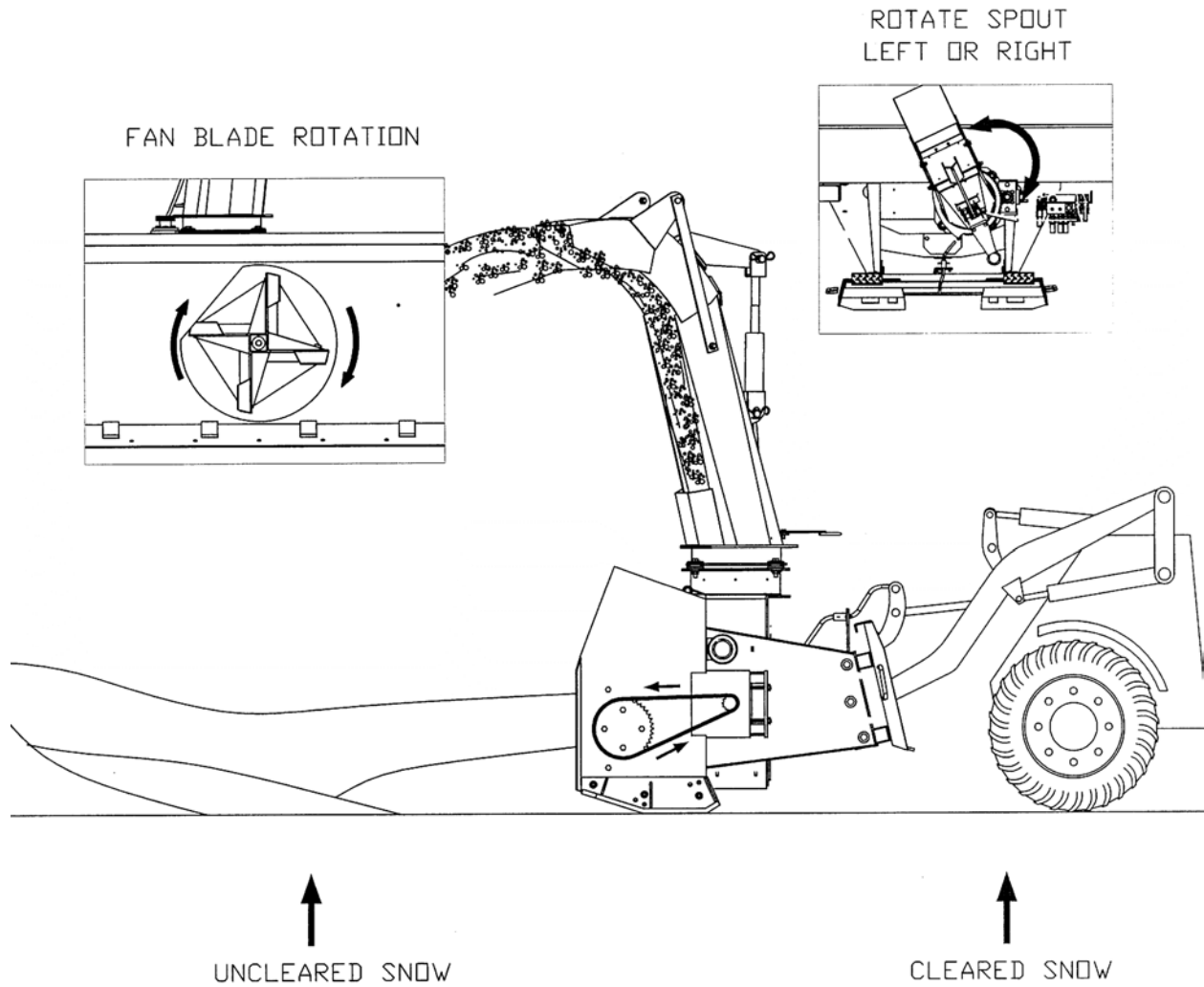
- Loosen the lock nut (on the modulating valve (#4) and back off the adjusting screw till the screw turns freely by hand, and then turn it in till you feel the screw making contact with the pressure spring. One turn sets the pressure up by about 600 psi.
 - For 2100 psi turn the screw in 3-1/2 turns.
 - For 2400 psi, turn in 4 turns
 - For 2700 psi, turn in 4-1/2 turns
 - For 3000 psi, turn in 5 turns

If the fan stalls (in an over load condition), the (#4) element is set too high. If the Auger slows and stops too soon, it is set too low. Once it is set it should not need to be adjusted any more.

Since there are a number of unknown variables that are unique to almost every situation, it is difficult to give an exact setting for a particular model. The variables are: hose size and length, type and size of quick couplers, etc.

Operation Instructions

Theory of Operation



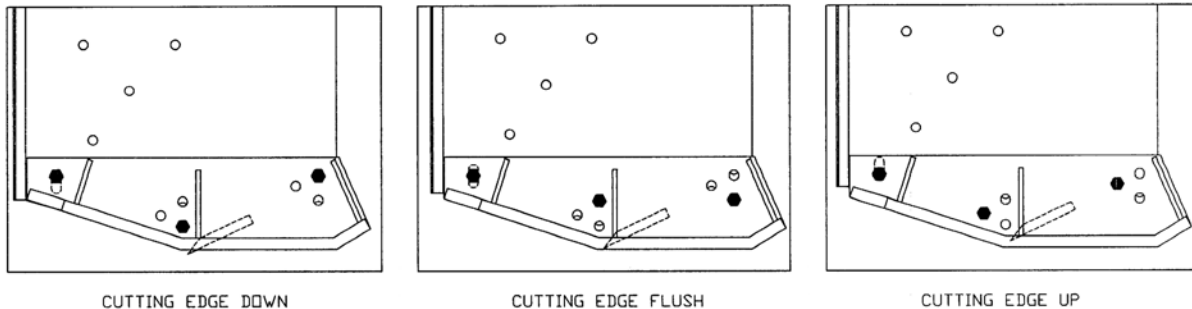
SB-16

1. Hydraulic drive:

All snowblower hydraulic blocks are set at the factory for a 2800 - 3000 psi system. Refer to the section on the hydraulic control block if your system does not fall into this range.

2. All:

Depth of the cut can be partially controlled by tilting the snowblower forward or backward.




SC-15

66" Only:

Depth of cut can be controlled by bolting the skid shoe in one of the following positions.

3. PTO Drive:

Adjust the top link of the tractor hitch so the snowblower is just slightly tilted back when resting on the ground.

	<p>CAUTION Excessive backward tilt may cause the "U" joints to flutter resulting in PTO shear bolt failure.</p>
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4. PTO Drive:

The inside holes on the hitch are spaced to fit a category 2 quick hitch using the pins supplied. The hitch will also fit category 2 three point arms or category 3 if you add bushings.

5. PTO Drive:

Adjust the lower link sway chains or blocks on the tractor to restrict movement of the blower when operating.

6. All:

All snowblowers have a hydraulic control spout and spout deflector. Refer to the hydraulic control block section. The pressure to the chute control is regulated by the two torque limit controls (#13b and #13c). Each controls the hydraulic pressure in one direction. They are set at the factory to about 2-1/2 turns. If the pressure is too low, the chute won't turn. If the pressure is too high you could damage the teeth on the spout control ring. To adjust the pressure, you loosen the lock nut on the modulating valve and back off the adjusting screw till the screw turns freely by hand. Turn the screw in till you feel it making contact and turn in 2-1/2 turns. Start with this setting to do any fine adjustment if necessary. Pressure should not go over 1000 psi.

The deflector cylinder pressure is regulated by no-load control (#13a). It is set at the factory to about 2 turns. If pressure is too low it will not operate. Excess heat will be generated if it is set too high. Adjust if necessary as per previous paragraph. Operating pressure should be about 700 psi.

7. All:

Run the snowblower at low rpm to check operation before blowing snow.

8. PTO Drive:

The blower has three shear bolts to protect the tractor and blower in case a large object enters the blower. PTO shear bolt – two 5/16" x 1" (grade 8); auger shear bolt – 5/16" x 1-1/4" (grade 5). Shear bolts should be fastened with a lock nut or two jam nuts. These bolts must be tight to prevent wear of the bolts and bolt holes.

9. PTO Drive:

Never run PTO at over 600 rpm.

10. All: Chain tension on auger chain should be set at 3/8" to 1/2" slack.

11. Lubrication for PTO drive:

- PTO shaft universal joints and square shaft slide should be periodically lubricated with a grease gun.
- Use any 80-90 gear oil or multigrade with 80 minimum in the gearbox up to the level plug height.

12. Lubrication for all:

- The gear teeth on the chute control should be periodically lubricated with gun grease.
- Regularly oiling the chain will significantly increase the life of the chain.

13. All:

Periodically check all bolts for tightness. The bolt holding on the fan and the bearing bolts are of particular importance.

14. All:

Always shut off snowblower for servicing or unplugging. Disengage hydraulics or PTO shaft.

15. PTO drive:

Check the shear sprocket at the beginning of every season to make sure it will spin freely. Clean to loosen if necessary.

16. All:

When replacing bearings or tightening a loose bearing collar, always tighten collar in the direction of shaft rotation using a center punch or a similar tool.

17. Hydraulic drive:

**CAUTION**

The locking pins must extend through the holes in the attachment when mounting the snowblower to an implement. Levers must be fully down and locked. Failure to secure pins can allow attachment to come off and cause injury or death.

Specifications

Model	B6022HSB-1 B6022HSB-2 B6022HSB-3	B6622HSB-1 B6622HSB-2 B6622HSB-3	B7422HSB-1 B7422HSB-2 B7422HSB-3 B7422HSB-4	B7424HSB-3 B7424HSB-4	B8424HSB-2 B8424HSB-3	B84SB (PTO Drive)
Cutting Width	60"	66"	74"	74"	84"	84"
Cutting Height	28"	30"	30"	30"	30"	30"
Fan Housing	Replaceable UHMW Liner	Replaceable UHMW Liner	Replaceable UHMW Liner	Replaceable UHMW Liner	Replaceable UHMW Liner	Replaceable UHMW Liner
Fan	4-Blade	4-Blade	4-Blade	4-Blade	4-Blade	4-Blade
Fan Diameter	21.5"	21.5"	21.5"	23.5"	23.5"	23.5"
Fan Depth	7.5"	7.5"	7.5"	7.5"	7.5"	7.5"
Auger Diameter	20"	20"	20"	20"	20"	20"
Auger Center Diameter	3" OD x .250 Wall	3" OD x .250 Wall	3" OD x .250 Wall	3" OD x .250 Wall	3" OD x .250 Wall	3" OD x .250 Wall
Auger Thickness	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"
Drive Fan	Hyd w/ #80 Chain	Hyd w/ #80 Chain	Hyd w/ #80 Chain	Hyd w/ #80 Chain	Hyd w/ #80 Chain	PTO Gearbox
Drive Auger	Hyd w/ #60H Chain	Hyd w/ #60H Chain	Hyd w/ #60H Chain	Hyd w/ #60H Chain	Hyd w/ #60H Chain	#60H Chain
Body Housing	10 ga	7 ga	10 ga	10 ga	7 ga	7 ga
Hitch Type	Skid Steer-fixed	Skid Steer-fixed	Skid Steer-fixed	Skid Steer-fixed	Skid Steer-fixed	Cat. 3-3pt
Hitch Adjustment	No	No	No	No	No	3 position

Model	B6022HSB-1 B6022HSB-2 B6022HSB-3	B6622HSB-1 B6622HSB-2 B6622HSB-3	B7422HSB-1 B7422HSB-2 B7422HSB-3 B7422HSB-4	B7424HSB-3 B7424HSB-4	B8424HSB-2 B8424HSB-3	B84SB (PTO Drive)
Chute Rotator	Hydraulic 230	Hydraulic 230	Hydraulic 230	Hydraulic 230	Hydraulic 230	Hydraulic 230
Chute Deflector	Hyd.	Hyd.	Hyd.	Hyd.	Hyd.	Hyd.
Cutting Edge	1/2" x 4" Beveled Replaceable	1/2" x 4" Beveled Replaceable	1/2" x 4" Beveled Replaceable	1/2" x 4" Beveled Replaceable	1/2" x 4" Beveled Replaceable	1/2" x 4" Beveled Replaceable
Skid Shoes	Cup Type – Adjustable	Slide Mount Fixed	Cup Type – Adjustable	Cup Type – Adjustable	Cup Type – Adjustable	Cup Type – Adjustable
Truckloading Spout	Optional	Optional	Optional	Optional	Optional	Optional
System Controls & Drive	Hyd. Load Sensing Block flow adjustable	Hyd. Load Sensing Block flow adjustable	Hyd. Load Sensing Block flow adjustable	Hyd. Load Sensing Block flow adjustable	Hyd. Load Sensing Block flow adjustable	Hyd. Load Sensing Block flow adjustable
Hyd. Req'ments	13-26 gpm 2000 psi Min.	13-26 gpm 2000 psi Min.	13-32 gpm 2000 psi Min.	20-32 gpm 2000 psi Min.	20-32 gpm 2000 psi Min.	10 gpm 1000 psi Min.
Approx. Weight	1070 lbs	1260 lbs	1178 lbs	1193 lbs	1209 lbs	1307 lbs

Hydraulic Snowblower Fan RPM to GPM Rating

Series I - 13-17 gpm 2000 psi min. (6.2 cu.in/rev)

Series II - 16-22 gpm 2000 psi min. (8 cu.in/rev)

Series III - 20-26 gpm 200 psi min. (9.6 cu.in/rev)

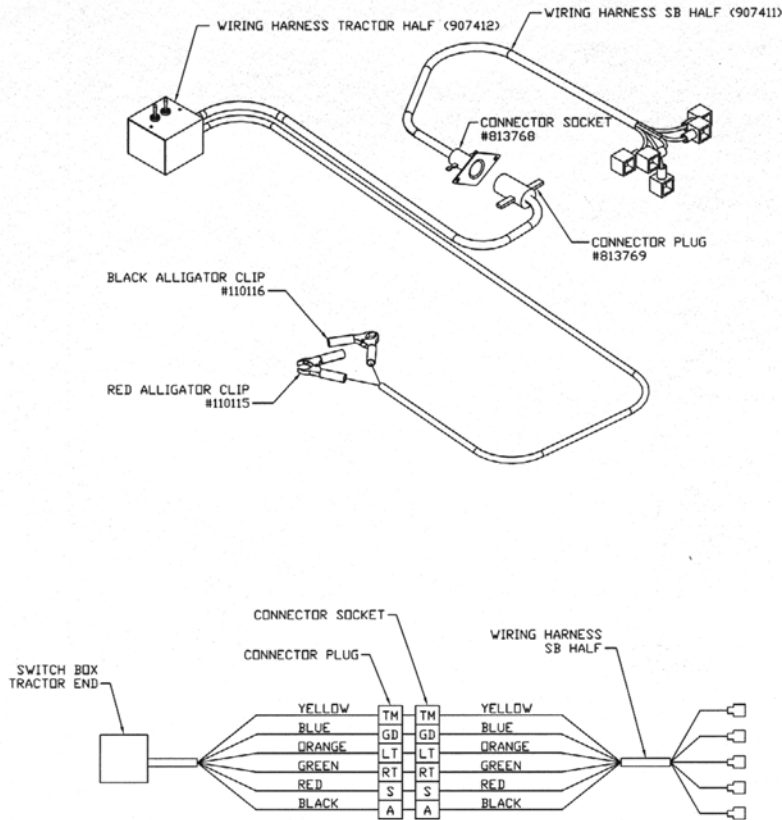
Series IV - 24-32 gpm 2000 psi min (11.9 cu.in/rev)

$\text{gpm} \times \text{psi} = \text{hp}$

1714

Maintenance

Hydraulic Snowblower Wiring Schematic X2572



Category	Motor cu/in/rev	GPM	Motor RPM	HP @ 2000 psi	HP @ 3000 psi	Shaft Type Flange Mtg.	Eaton Motor Part #'s	Part #
Group 1	6.2	12	447	12	18	1.25" Str.	1-1/16-12 ORB	905623
		16	596	16	24	2 bolt	104-1062	
Group 2	8	17	491	17	25	1.25" Str.	1/16-12 ORB	905694
		20	578	20	29	2 bolt	104-1063	
Group 3	9.6	20	481	20	29	1.25" Str.	1-1/16-12 ORB	905695
		24	578	24	35	2 bolt	104-1064	
Group 4	11.91	21	408	21	31	1.25" Str.	1-1/16-12 ORB	905624
		28	544	28	41	1.25" Str.	104-1065	
Spout Motor 146-1028-002								905625

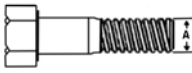



Troubleshooting

Symptom	Probable Cause	Remedy
D1 - Nothing works	<ul style="list-style-type: none"> - Hydraulic valve not engaged - 1 or more quick couplers not completely engaged - Defective quick coupler Hydraulic pump low on fluid 	<ul style="list-style-type: none"> - Engage to full detent - Fully engage all couplers Replace defective quick couplers - Top up fluid level
D2 - Auger rotates backwards, and fan does not rotate D3 - Fan turns too slow	<ul style="list-style-type: none"> - Main valve is in reverse - Quick couplers are connected backwards Inadequate hydraulic flow for this motor size - Wrong motor for your system 	<ul style="list-style-type: none"> - Reverse valve direction - Switch hose connections to the machine - Check the gpm of your system - Contact your dealer
D4 - Fan motor stalls	<ul style="list-style-type: none"> - Valve #4 (fig 1) set too high 	<ul style="list-style-type: none"> - See modulating element set up
D5 - Auger motor slows or stalls too quickly	<ul style="list-style-type: none"> - Valve #4 (fig 1) set too low 	<ul style="list-style-type: none"> - See modulating element set up
D6 - Fan and auger work but chute controls do not work properly	<ul style="list-style-type: none"> - Electrical connections to battery - Breaker is tripped - Connector from sw to block not contacting - Connection is no-load valve #6 (fig 1) is not making - Diodes in switchbox are defective - Solenoid valve spool is stuck 	<ul style="list-style-type: none"> - Ensure that the clamps are making proper connection - Reset breaker Ensure the connector is fully engaged. Check for broken wires. - Check all items in D6 - Check for voltage through diodes. - Replace #8a or #8b solenoid cartridge
D7 - Chute controls do not work properly in no-load conditions	<ul style="list-style-type: none"> - The no-load pressurizing valve #14a (fig 1) set too low - Electrical: Switch, harness, connectors, coil 10a, diodes - Polarity of the system is reversed - Diodes in switchbox defective - Defective coil #10a (fig 1) - Defective valve #6 (fig 1) 	<ul style="list-style-type: none"> - Back of the adjuster-screw till it rotates freely by hand. Then turn until you feel it contacting the spring. Then turn 2 turns. - Check the no-load circuit #5 (fig 2) - Red alligator clip must be on the positive terminal - Replace defective diodes - Replace coil - Replace valve
D8 - Chute rotation seems to lack power to turn.	<ul style="list-style-type: none"> - The no-load pressurizing valve #14a (fig 1) set too low - Valve #14b or #14c set too low 	<ul style="list-style-type: none"> - Back of the adjuster-screw till it rotates freely by hand. Then turn until you feel it contacting the spring. Then turn 2 turns.

Bolt Torque

Checking Bolt Torque

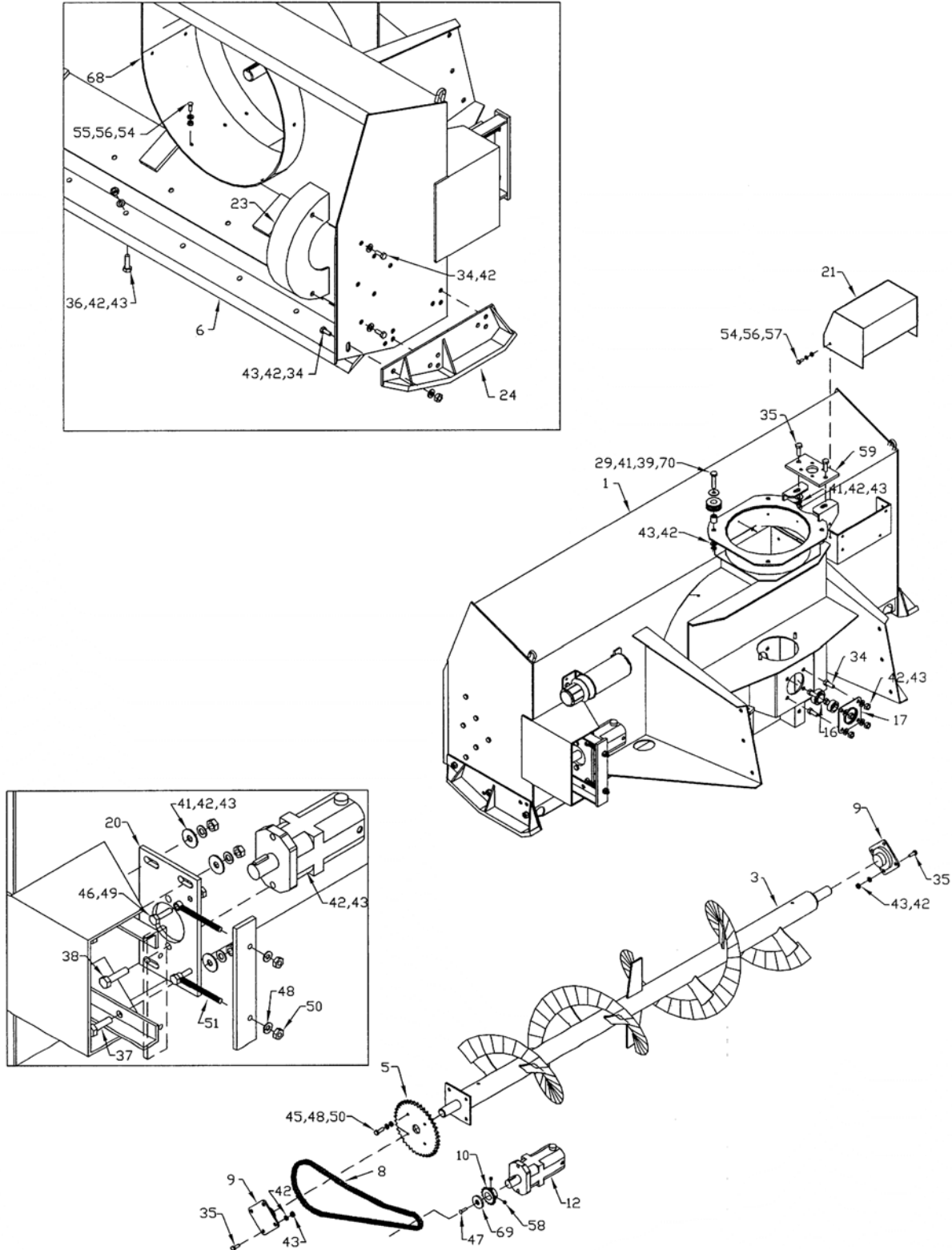
The tables shown below give correct torque values for various bolts and hex bolts. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt.

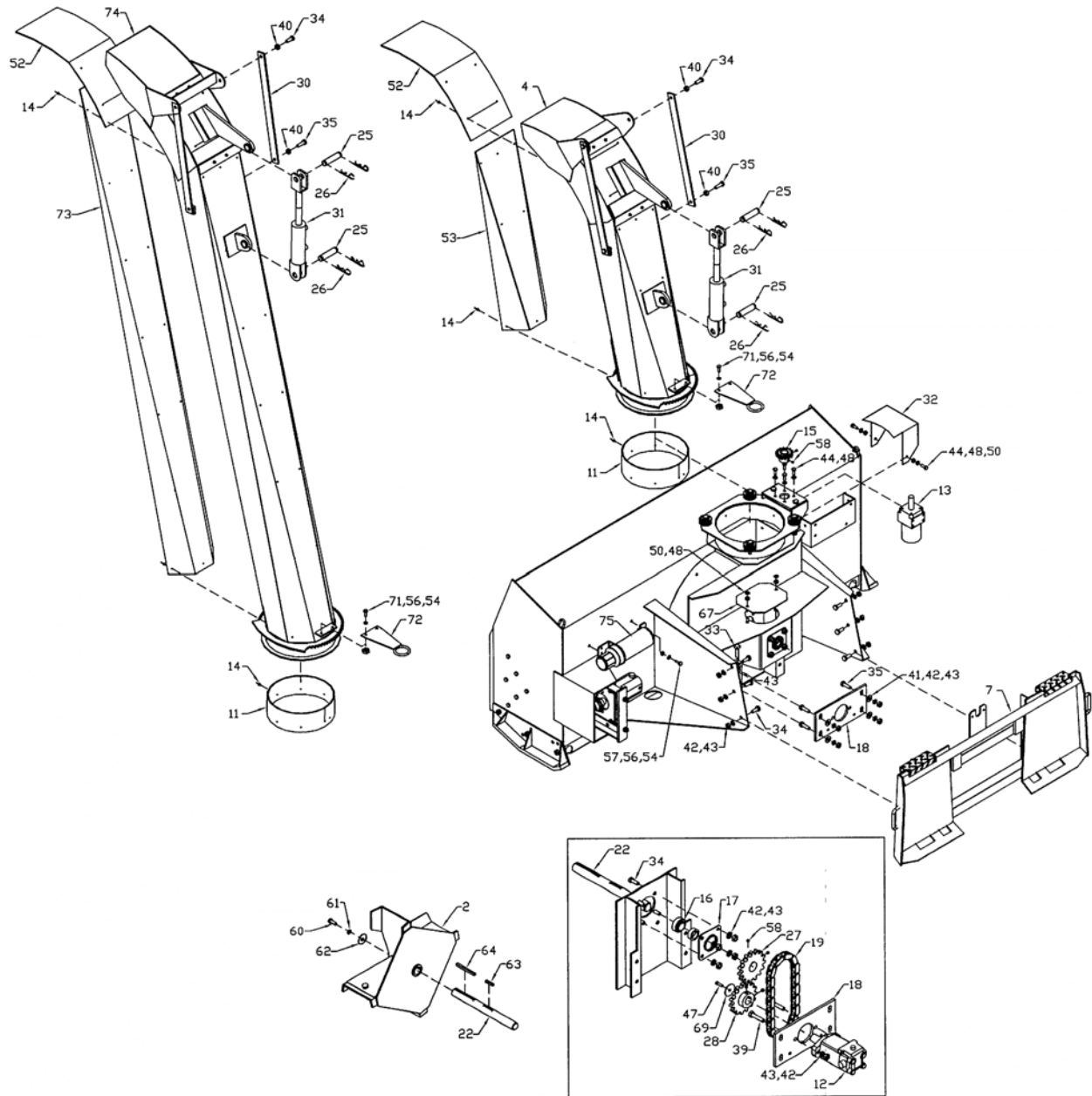
Bolt Torque*						
						
Bolt Diameter	Grade 2 Bolts		Grade 5 Bolts		Grade 8 Bolts	
(inches)	SAE 2		SAE 5		SAE 8	
"A"	(lb-ft)	(N.m)	(lb-ft)	(N.m)	(lb-ft)	(N.m)
0.25 (1/4)	6	8	9	12	12	17
0.313 (5/16)	10	13	19	25	27	36
0.375 (3/8)	20	27	33	45	45	63
0.438 (7/16)	30	42	53	72	75	100
0.5 (1/2)	45	61	80	110	115	155
0.563 (9/16)	70	95	115	155	165	220
0.625 (5/8)	95	128	160	215	220	305
.75 (3/4)	165	225	290	390	400	540
0.875 (7/8)	170	230	420	570	650	880
1	225	345	630	850	970	1320

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

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

Snowblower - 22" Housing Drawing





SC-03

When Ordering Parts

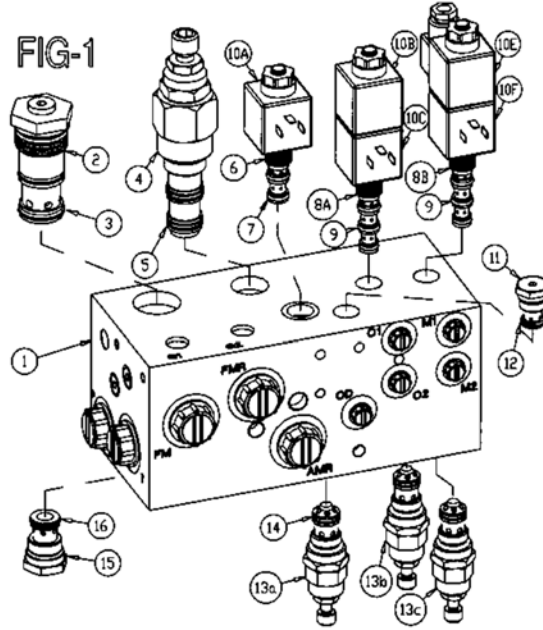
Always give your dealer the Model, Color and Serial Number of your machine to assist them in ordering and obtaining the correct parts. Use the exploded view and tabular listing of the area of interest to exactly identify the required part.

Item	Part Number	Description
1	909863	Main Body Weldment - 74"
	909590	Main Body Weldment - 66"
	909853	Main Body Weldment - 60"
2	905226	Fan Weldment - 22"
3	905206	Auger Weldment - 74"
	909606	Auger Weldment - 66"
	905210	Auger Weldment - 60"
4	905550	Spout Weldment
5	909608	48 Tooth Sprocket #60, 1-3/8" Bore
6	909887	Cutting Edge (74")
	909592	Cutting Edge (66")
	909856	Cutting Edge (60")
7	905291	Adaptor
8	909678	Roller Chain (#60H x 76 Links w/ Connector)
9	965426	1-3/8" Housing w/ Bearing
	965430	1-3/8" Bearing w/ Stainless Steel Lock
10	906322	Auger Sprocket 15T #60 (1-1/4" Bore) (Series 1 - 3)
	906323	Auger Sprocket 15T #60 (1-1/2" Bore) (Series 4)
11	906332	Spout Liner
12	905623	Fan Motor - 2 Hole (Series 1)
	905694	Fan Motor - 2 Hole (Series 2)
	905695	Fan Motor - 2 Hole (Series 3)
	905624	Fan Motor - 4 Hole (Series 4)
13	906335	Spout Motor
14	967440	Pop Rivet SD68BSLF
15	905241	Spout Gear Weldment
16	968627	1-1/2" Bearing w/ Collar
17	967260	1-1/2" Bearing Flange (Set)
18	902869	Fan Motor Mount Plate (Series 1-3)
	905289	Fan Motor Mount Plate (Series 4)
19	905362	Roller Chain (#80H x 30 Links w/ Connector)
20	905299	Auger Motor Mount Plate (Series 1-3)
	905528	Auger Motor Mount Plate (Series 4)
21	906311	Hydraulic Box Shield Weldment
22	905224	Fan Shaft 1-1/2" x 15-1/4"
23	909593	Chain Cover

Item	Part Number	Description
24	909594	Skid Plate Weldment Left Hand
	909610	Skid Plate Weldment Right Hand
25	103753	Cylinder Clevis Pin 1" x 4"
26	12779	Hair Pin Clip #9 Western Wire
27	960719	Sprocket 15T, #80, 1-1/2" Bore
28	905309	Sprocket 15T, #80, 1-1/4" Bore (Series 1-3)
	960719	Sprocket 15T, #80, 1-1/2" Bore (Series 4)
29	909430	Spout Roller
30	905181	Spout Link 22"
31	24981	Cylinder 2-1/2" Dia x 8"
32	905554	Spout Sprocket Cover
33	906660	1/2" x 2" Sq Hd Set Screw
34	81620	1/2" x 1-1/4" Hex Bolt
35	84277	1/2" x 1-1/2" Hex Bolt
36	909821	1/2" x 2" Flat Head Bolt
37	87553	1/2" x 1-3/4" Hex Bolt
38	87553	1/2" x 1-3/4" Hex Bolt (pl) (Series 1-3)
	81624	1/2" x 2-1/4" Hex Bolt (pl) (Series 4)
40	812364	1/2" Lock Nut
41	81638	1/2" BS Flat Washer Std
42	81637	1/2" Lock Washer
43	81636	1/2" Hex Nut
44	86170	3/8" x 1" Hex Bolt
45	86171	3/8" x 1-1/4" Hex Bolt
46	811792	3/8" x 1-1/2" Hex Bolt
47	967431	3/8" x 1" Flat Bolt (skt)
48	81593	3/8" Lock Washer
49	812363	3/8" Lock Nut
50	81592	3/8" Hex Nut
51	905543	3/8" x 4" Auger Chain Bolt Weldment
52	905648	Spout Liner Middle
53	905647	Spout Liner Bottom
54	81568	5/16" Hex Nut
55	906393	5/16" x 3/4" Fl Hd Bolt (skt)
56	81569	5/16" Lock Washer
57	81549	5/16" x 3/4" Hex Bolt
58	988999	3/8" x 3/8" Socket Set Screw
59	902874	Spout Motor Mount Plate
60	84268	5/8" x 1-1/2" Hex Bolt
61	81677	5/8" Lock Washer
62	81678	5/8" BS Flat Washer Standard

Item	Part Number	Description
63	965821	3/8" x 1-3/4" Key
64	905310	3/8" x 4-1/2" Key
67	905278	Cover Plate
68	905336	Fan Housing Liner 68"
69	906348	Motor Washer 13/32" hole x 2" OD
70	906574	Bronze Bushing 7/8" OD x 1"
71	812026	5/16" x 1" Hex Bolt (pl)
72	907590	Spout Hose Holder
73	908966	Spout Liner Bottom (truckloader)
74	907689	Spout Weldment (truckloader)
75	909277	Manual Holder

Hydraulic Control Block Drawing



SC-10

Item	Part Number	Description
1	905669	Main Block
2	813922	Logic Element
3	X2732	Element Seal Kit
4	813923	Control Valve
5	X2733	Seal Kit
6	813924	No-Load Valve
7	X2734	Seal Kit
8ab	813925	Chute Cont. Valves
9	X2735	Seal Kit
10a	813926	No-Load Press. Coil
10bc	813926	Chute Up Down Coil
10ef	813926	Chute Left Right Coil
11	813929	Check Valve
12	X2736	Seal Kit
13a	813930	No-Load Control
13bc	813930	Torque Limit Control
14	X2737	Seal Kit
15	813931	Check Valve
16	X2745	Seal Kit

Allied by Farm King Limited Warranty

This document limits your warranty rights.

Base Limited Warranty

Buhler Industries Inc. provides this warranty only to original retail purchasers of its product. Buhler Industries Inc. warrants to such purchasers that all Buhler Industries Inc. manufactured parts and components used and serviced as provided for in the Operator's Manual shall be free from defects in materials and workmanship for a period following delivery to the original retail purchaser of 12 months (80 days for commercial applications). This limited warranty applies only to those parts and components manufactured by Buhler Industries Inc. Parts and components manufactured by others are subject to their manufacturer's warranties, if any.

Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Buhler Industries Inc. reserves the right to either inspect the product at the buyer's location or have it returned to the factory for inspection. Parts must be returned through the selling representative and the buyer must prepay transportation charges.

Buhler Industries Inc. will not be responsible for repairs or replacements that are necessitated, in whole or part, by the use of parts not manufactured by or obtained from Buhler Industries Inc. Under no circumstances are component parts warranted against normal wear and tear. There is no warranty on product pump seals, product pump bearings, rubber product hoses, pressure gauges, or other components that require replacement as part of normal maintenance. Also: Buckets and Bucket Tines carry no warranty, Bent Spears carry no warranty, Snowblower Fan Shafts carry no warranty, Mower Blades carry no warranty, Portable Auger Parts Have Two (2) Year Warranty, Loader Parts Have Two (2) Year Warranty. The purchaser is solely responsible for determining suitability of goods sold. This warranty is expressly in lieu of all other warranties expressed or implied. Buhler Industries Inc. will in no event be liable for any incidental or consequential damages whatsoever. Nor for any sum in excess of the price received for the goods for which liability is claimed.

Repair Parts Limited Warranty

Buhler Industries Inc. warrants Farm King replacement parts purchased after the expiration of the Buhler Industries Inc. Limited Warranty, and used and serviced as provided for in the Operator's Manual, to be free from defects in materials or workmanship for a period of thirty (30) days from the invoice date for the parts. Buhler Industries Inc. will fulfill this limited warranty by, at its option, repairing or replacing any covered part that is defective or is the result of improper workmanship, provided that the part is returned to Buhler Industries Inc. within thirty (30) days of the date that such defect or improper workmanship is, or should have been, discovered. Such parts must be shipped to Buhler Industries Inc. at the purchaser's expense.

What is Not Covered

Under no circumstances does this limited warranty cover any components or parts that have been subject to the following: negligence; alteration or modification not approved by Buhler Industries Inc.; misuse; improper storage; lack of reasonable and proper maintenance, service, or repair; normal wear; damage from failure to follow operating instructions; accident; and/or repairs that have been made with parts other than those manufactured, supplied, and or authorized by Buhler Industries Inc.

Authorized Dealer and Labor Costs

Repairs eligible for labor under this limited warranty must be made by Buhler Industries Inc. or an authorized Farm King dealer. Buhler Industries Inc. retains the exclusive discretion to determine whether it will pay labor costs for warranty repairs or replacements, and the amount of such costs that it will pay and the time in which the repairs will be made. If Buhler Industries Inc. determines that it will pay labor costs for warranty work, it will do so by issuing a credit to the dealer's or distributor's account. Buhler Industries Inc. will not approve or pay invoices sent for repairs that Buhler Industries Inc. has not previously approved. Warranty service does not extend the original term of this limited warranty.

Warranty Requirements

To be covered by warranty, each Farm King new product must be registered with Buhler Industries Inc. within thirty (30) days of delivery to original retail purchaser. If the customer decides to purchase replacement components before the warranty disposition of such components is determined, Buhler Industries Inc. will bill the customer for such components and then credit the replacement invoice for those components later determined to be covered by this limited warranty. Any such replacement components that are determined not be covered by this limited warranty will be subject to the terms of the invoice and shall be paid for by the purchaser.

Warranty Claims:

Warranty requests must be prepared on Buhler Industries Inc. Warranty Claim Forms with all requested information properly completed. Warranty Claims must be submitted within a thirty (30) day period from date of failure repair.

Warranty Labor:

Any labor subject to warranty must be authorized by Buhler Industries Inc. The labor rate for replacing defective parts, where applicable, will be credited at 100% of the dealer's posted shop rate.

Exclusive Effect of Warranty and Limitation of Liability

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY WARRANTIES, REPRESENTATIONS, OR PROMISES, EXPRESS OR IMPLIED, AS TO THE QUALITY, PERFORMANCE, OR FREEDOM FROM DEFECT OF THE COMPONENTS AND PARTS COVERED BY THIS WARRANTY AND NOT SPECIFICALLY PROVIDED FOR HEREIN.

TO THE EXTENT PERMITTED BY LAW, BUHLER INDUSTRIES INC. DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ON ITS PRODUCTS COVERED HEREIN, AND DISCLAIMS ANY RELIANCE BY THE PURCHASER ON BUHLER INDUSTRIES INC.'S SKILL OR JUDGMENT TO SELECT OR FURNISH GOODS FOR ANY PARTICULAR PURPOSE. THE PURCHASER'S ONLY AND EXCLUSIVE REMEDIES IN CONNECTION WITH THE BREACH OR PERFORMANCE OF ANY WARRANTY ON PRODUCTS MANUFACTURED BY BUHLER INDUSTRIES INC. ARE THOSE SET FORTH HEREIN. IN NO EVENT SHALL BUHLER INDUSTRIES INC. BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BY WAY OF EXAMPLE ONLY AND NOT LIMITATION, LOSS OF CROPS, LOSS OF PROFITS OR REVENUE, OTHER COMMERCIAL LOSSES, INCONVENIENCE, OR COST OF REPLACEMENT OF RENTAL EQUIPMENT). IN NO EVENT SHALL FARM KING'S CONTRACT OR WARRANTY LIABILITY EXCEED THE PURCHASE PRICE OF THE PRODUCT.

(Note that some provinces or states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusion may not apply to you.) This warranty gives you specific legal rights and you may also have other rights, which vary from province to province or state to state.

Buhler Industries Inc. neither assumes nor authorizes any person or entity, including its selling representatives, to assume any other obligations or liability in connections with the sale of covered equipment, or to make any other warranties, representations, or promises, express or implied, as to the quality, performance, or freedom from defect of the components and parts covered herein. No one is authorized to alter, modify, or enlarge this limited warranty, or its exclusions, limitations and reservations.

Corrections of defects and improper workmanship in the manner, and for the applicable time periods, provided for herein shall constitute fulfillment of all responsibilities of Buhler Industries Inc. to the purchaser, and Buhler Industries Inc. shall not be liable in negligence, contract, or on any other basis with respect to the subject equipment.

This limited warranty is subject to any existing conditions of supply which may directly affect Buhler Industries Inc.'s ability to obtain materials or manufacture replacement parts.

Buhler Industries Inc. reserves the right to make improvements in design or changes in specifications to its products at anytime, without incurring any obligation to owners of units previously sold.

Government Legislation:

Warranty terms and conditions are subject to provincial or state legislation.

Important Note: This warranty does not apply to rentals.

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