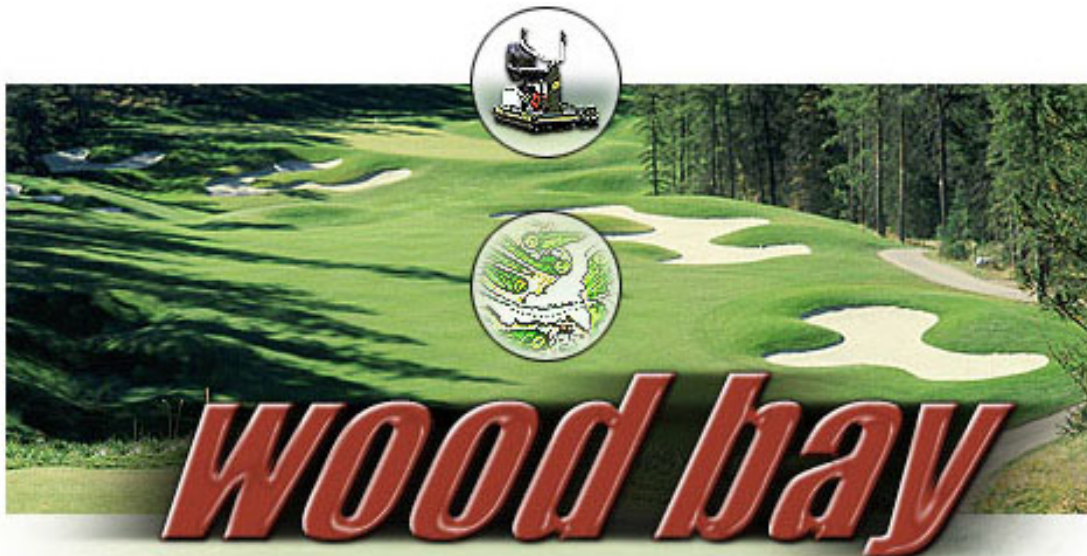


greensIRON **3000**

OPERATION, SERVICING & PARTS MANUAL



2005 Produced Exclusively by



PRESIDENT'S MESSAGE



On behalf of Wood Bay Turf Technologies and your local distributor of our products, thank you for purchasing a new **greensIRON 3000**. **You are rolling in the right direction!**

Introducing a **greensIRON** into your turf maintenance program will provide many important benefits. In creating the latest **greensIRON** our designers were thinking about you. We've met the challenge by working with superintendents, to smooth their green surfaces for putting, to increase green speed, to decrease mowing frequency, to repair the putting surface after aeration and/or top dressing and to allow an increase in mowing heights to reduce turf stress.

The **greensIRON** Turf Broom is a popular option for improving the putting surface after top dressing. It decreases labor costs and is one of numerous customer suggestions developed into solutions for **greensIRON** owners. The **greensIRON** Turf Ventilator has been introduced to let you improve air and water penetration into your greens without any interruption in their playability.

We urge you to read this manual carefully. The instructions and recommendations outlined will help assure safe and enjoyable use of this equipment.

Thank you for choosing the Turf Boss **greensIRON 3000**.

D. Lyall Adams
President

INTRODUCTION

The purpose of this manual is to provide you with reference information and assistance in setting up, adjusting and operating your **greensIRON 3000** in a safe, effective and efficient manner. It is intended for turf rollers with either a mechanical or a hydrostatic transmission. We hope that it will answer most of your immediate questions, but Wood Bay encourages you to contact your local distributor or Wood Bay's Technical Service Center on our toll free line (available in North America at 1-800-661-4942) for further assistance or clarification at any time.

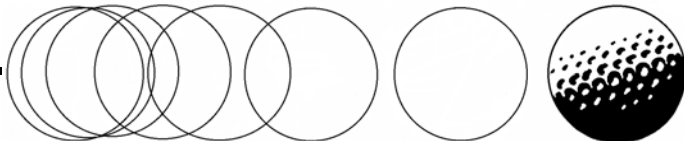
The manual alerts you to safety considerations, features of the **greensIRON**, operations, ironing techniques, adjustments, servicing, trouble shooting and parts identification. It also introduces current attachments and accessories that you may obtain to increase the benefits of turf rolling in maintaining and enhancing your greens, both in terms of turf health and putting performance for your golfers.

Please note that the information, illustrations and specifications contained in this manual are based on the latest product information available at the time of printing. Wood Bay Enterprises reserves the right to make changes at any time, without notice, in specifications and models and also to discontinue models. The right is also reserved to change any specifications or parts at any time without incurring any obligation to install the same equipment on models manufactured prior to the date of such change.

The illustrations used in this manual may not depict actual models or equipment and are intended as representative views for reference only.

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WARNINGS-SAFETY CONSIDERATIONS

PLEASE OBSERVE ALL WARNING STICKERS ON EQUIPMENT.

WARNING INDICATES A STRONG POSSIBILITY THAT EQUIPMENT DAMAGE OR PERSONAL INJURY COULD OCCUR WITH IMPROPER USE.

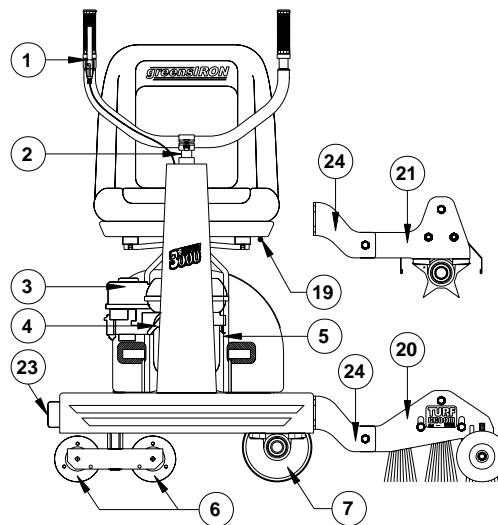
- * WARNING Ensure that the trailer is securely hitched to the transport vehicle before unloading or loading the *greensIRON*.
- * WARNING Keep all person(s) clear when towing unit because **TRAILER MAY BE WIDER THAN TOW VEHICLE.**
- * WARNING Know how to stop the engine quickly, and understand the operation of all controls. Never permit anyone to operate the *greensIRON* without proper instructions and training at low speeds.
- * WARNING Do not over fill the fuel tank. There should be no fuel in the filler neck. If any fuel is spilled, clean it up completely and allow petroleum vapor to dissipate before starting the engine. Refuel in a well-ventilated area with the engine stopped; do not smoke or allow flame or sparks in the area. Gasoline is highly flammable and explosive under certain conditions. Close the filler cap securely.
- * WARNING The exhaust muffler becomes hot during operation and remains hot for a period of time after stopping the engine. Be careful not to touch the exhaust muffler while it is hot.
- * WARNING Children or passengers must not be allowed to ride on the unit or trailer.
- * WARNING Be aware of and avoid severe grades and unusual undulations, as well as adjacent sand traps and water features.
- * WARNING Start and stop the engine from a seated position when possible, and ensure pedals are in the neutral position to avoid unexpected movement.
- * WARNING Be aware of the conditions you are operating under. The *greensIRON* may have less traction on wet turf, and on higher cut turf.
- * WARNING Ensure that the engine is shut off and disabled prior to servicing any component under the safety guards, transmission, engine coupler, or the engine itself.
- * WARNING Wear suitable protective clothing so as to prevent eye damage or hearing impairment.
- * WARNING Sudden release of a clutch pedal on a hydrostatic model will result in an immediate stop of the *greensIRON*...train at low speeds.

TO VALIDATE WARRANTY FILL OUT AND RETURN TO WOOD BAY ENTERPRISES THE SAFETY ACKNOWLEDGEMENT AND WARRANTY FORMS (see Pages 27).

MAJOR COMPONENT DESCRIPTIONS

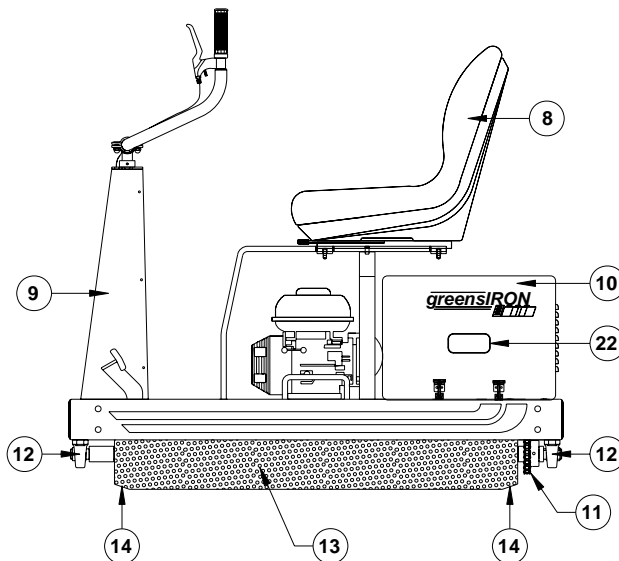
FRONT VIEW

- 1** Throttle Control (on mechanical transmission units only) c/w Soft Hand Grip
- 2** Steering System (adjustable)
- 3** Honda GX160 HX 5.5 hp Engine
- 4** Manual Recoil Starter
- 5** Engine Switch (ON/OFF) & Oil Alert Lamp
- 6** Steering Rollers (Tapered/Non-Ridging)
- 7** Drive Roller (Super Turf Trac Coating)



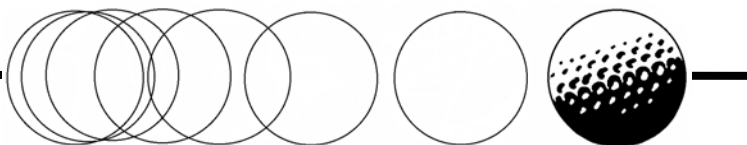
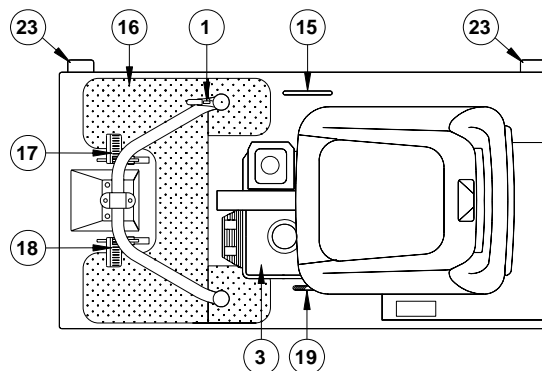
SIDE VIEW

- 8** High Back Seat c/w Drain Holes
- 9** Steering Column Cowling and Cover
- 10** Transmission Cover
- 11** Drive Chain and Sprocket
- 12** Drive Roller Bearings
- 13** Super Turf Trac covering (disperses water)
- 14** Roller End Tapered (Non-Ridging)



TOP VIEW

- 15** Roller-Trailer Locking Latch Bar
- 16** Non-Slip Deck Surface
- 17** Right Direction Pedal
- 18** Left Direction Pedal
- 19** Seat Adjustment Lever
- 20** Optional Turf Broom
- 21** Optional Turf Ventilator
- 22** Optional Lights
- 23** Bumper Pads
- 24** Accessories Attachment Bracket



SECTION 3

FEATURES

- ◆ Engineered for ease of operation from start to finish.
- ◆ Unique steering system allows operator to maneuver with ease over undulating terrain.
- ◆ High back padded seat with slide adjustment for maximum operator comfort and support.
- ◆ Optional, low maintenance SNPT mechanical transmission with external screw adjustable clutch bands.
- ◆ Optional, minimal maintenance and powerful Peerless 2100 Series hydrostatic transmission.
- ◆ Machined and tapered high carbon steel steering rollers give maximum durability and beautiful manicured greens.
- ◆ Super Turf Trac covered drive roller provides excellent traction and produces a soft touch effect to turf surfaces.
- ◆ Spin Eliminator with transmission sprocket on mechanical transmission units to facilitate start up without drive roller spinning.
- ◆ Finger tip throttle control on mechanical transmission units assists operator in making directional changes without removing hands from steering grips (not used on turf rollers with hydrostatic transmissions).
- ◆ Industrial bearings, with easy access to grease ports.
- ◆ Honda GX160 HX 5.5 hp engine.
- ◆ Transport trailer complete with extra long tailgate ramp for ease in drive off/on manoeuvres.
- ◆ Optional, side-loading trailer (special order).
- ◆ Multi-purpose trailer for day-to-day use; engineered for transport on the golf course.
- ◆ Easy access to mechanical and hydrostatic transmissions, including drive chain adjustments.
- ◆ Oil drain hose for convenient servicing of Honda motor.
- ◆ Optional 35 watt magneto operated lights.
- ◆ Optional Turf Broom attachment creates a perfect finish to greens after top dressing.
- ◆ Optional Turf Ventilator attachment for use on greens and tees.
- ◆ Warranty for one year on parts and labor.
- ◆ **IT'S ENGINEERED FOR DURABILITY; BUILT TO LAST.**

Having a greensIRON 3000 is rolling in the right direction!

SECTION 4

OPERATION

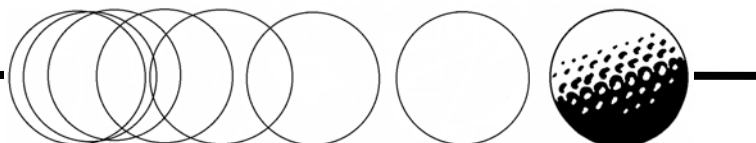
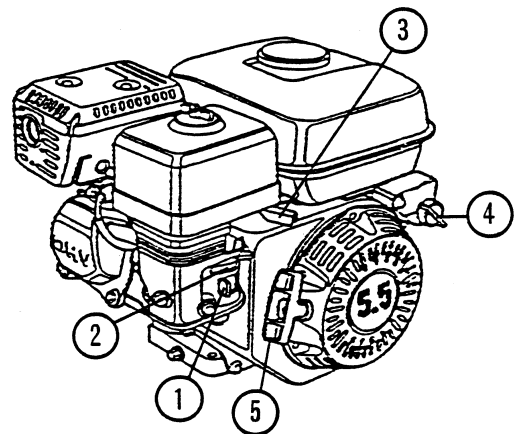
BEFORE STARTING YOUR *greensIRON* 3000 TURF ROLLER

- ✓ Refer to your Honda engine, and Snow-Nabstedt power transmission, owner's manuals for start up and break-in recommendations. For the Peerless 2100 Series hydrostatic transmission see Section 9.
- ✓ Check oil level in Honda engine and gearbox.
- ✓ Check for oil level in gearbox does not apply on *greensIRON* with hydrostatic transmission.
- ✓ Check oil type and level in SNPT transmission. Mechanical transmission may require minor adjustment to the clutch band adjustment screws after initial use. Peerless 2100 Series hydrostatic transmissions are enclosed units where fluid can not be replaced.
- ✓ Check fuel level (unleaded fuel is recommended).
- ✓ Check drive chain adjustment. Chain may require tightening after initial use. Lubricate chain frequently.
- ✓ Check on both sides of the unit to ensure there are no obstructions in either possible travel direction that could tear drive roller covering.

STARTING ENGINE

- ✓ Turn the fuel switch to the ON position.
- ✓ Turn the engine switch to the ON position.
- ✓ Engage the choke switch if required.
- ✓ Pull the starter recoil handle (it is recommended that the operator start the engine while seated on the *greensIRON*). Keep feet off clutch pedals.
- ✓ Once the engine is running, shut off the choke switch and adjust the throttle speed.
- ✓ Set the throttle speed, by compressing the throttle lever on units with the mechanical transmission, or manually with engine throttle lever for hydrostatic units.
- ✓ To shut down, turn the engine switch to OFF position, and shut OFF the fuel switch.

- 1 Fuel switch
- 2 Choke
- 3 Manual throttle lever
- 4 Engine switch
- 5 Pull start handle



PEDAL CONTROL (rollers with mechanical transmissions-motion control)

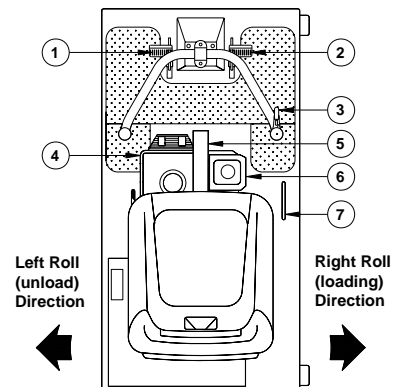
A new, durable mechanical transmission was introduced in 2003 making the *greensIRON* more responsive and easy to operate. The new SNPT transmission meets the needs of operators to manoeuvre across greens without having to press the directional pedal hard to maintain rolling motion. The *greensIRON* direction is controlled with the foot pedal, but requires less than three pounds of pressure to fully engage the transmission for the left or right motion control. When engaged, the operator applies steady foot pressure to maintain the direction of travel, and varies speed through the hand lever for the throttle. When approaching the edge of the green, the operator simply releases the throttle control, removes his/her foot from the directional pedal, and applies light pressure to opposite pedal to bring the turf roller to a stop. The operator can then start back in the opposite direction by pressing that pedal more firmly to engage the transmission while applying throttle.

- **DO NOT DEPRESS BOTH PEDALS AT THE SAME TIME** as clutch linkage damage will occur.
- Depress the pedal for desired direction of travel; left pedal for left travel; right pedal for right travel (reference to left and right side of the *greensIRON* is determined while seated on the unit looking forward). Pressing the pedal with moderate force will maintain motion in the chosen direction.
- Speed control is governed by employing the throttle lever on the right handle grip.
- To reduce ground speed and stop rolling in one direction, relax the throttle, remove the foot from the pedal controlling travel direction, and apply light pressure to the opposite pedal.
- For an **EMERGENCY** stop, release the throttle and disengage the direction-controlling foot pedal while depressing the opposite pedal abruptly. If the engine does not stop, turn the engine switch to “Off”. **DO NOT DRAG YOUR FEET ON THE GROUND AS A BRAKING DEVICE.**
- **EMERGENCY STOPS MAY RESULT IN BRUISING OF THE TURF.**
- When both pedals are released the transmission will be in neutral and free rolling can occur.
- To hold the *greensIRON* on flat or sloping ground, with the **ENGINE TURNED OFF**, one of the pedals can be pressed down. Remember to disengage pedal before trying to start the engine.

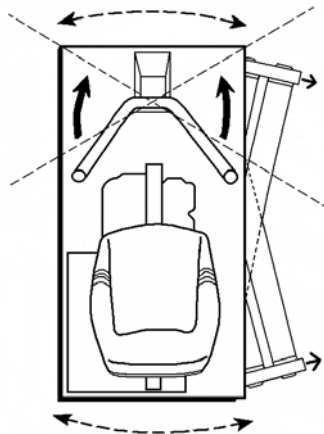
PEDAL CONTROL (rollers with hydrostatic transmissions)

- Depress the pedal smoothly and steadily for the desired direction of travel; left pedal for left travel; right pedal for right travel. To increase speed, press the pedal down further.
- When slowing or stopping *greensIRON*, ease back on the pedal. **CAUTION:** Sudden pedal release will result in an **ABRUPT** stop, which could bruise the green. The *greensIRON* will remain in a stationary position when pedals are in the neutral position.

- 1 Left drive direction control pedal
- 2 Right drive direction control pedal
- 3 Throttle control lever (on mechanical units only)
- 4 Engine switch (ON/OFF) and oil alert
- 5 Pull starter handle
- 6 Fuel switch and choke lever
- 7 Roller-trailer locking latch bar



STEERING



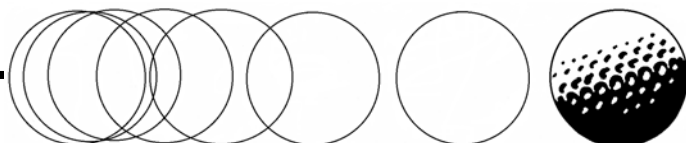
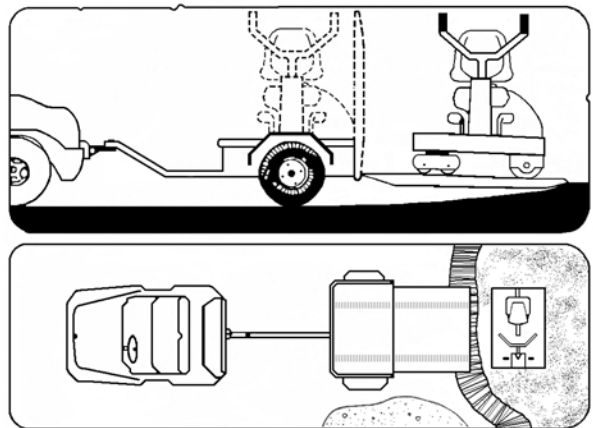
Pushing the left handle bar away from the operator will pivot the front of the steering rollers out. This will cause the *greensIRON* to commence a turn to the right when rolling in that direction, or to the left when rolling in that direction.

Pushing the right handle bar away from the operator will pivot the back of the steering rollers out. This will cause the *greensIRON* to commence a turn to the left when rolling to the right, or to the right when rolling to the left.

Avoid over steering to prevent the possibility of turf damage.

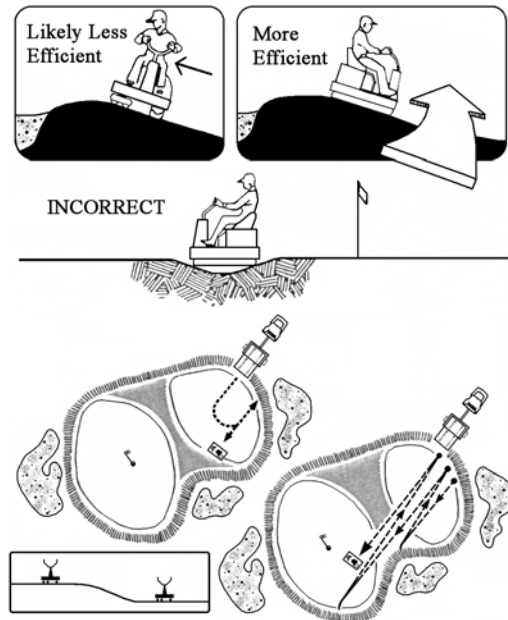
LOADING AND UNLOADING

- Ensure the transport trailer is securely hitched to the pulling vehicle and the *greensIRON* locking latch is engaged before transporting equipment to the green.
- Transport the *greensIRON* to the green to be ironed, and back the trailer unit towards the green so that when the tailgate is lowered it will rest evenly at the collar edge. **DO NOT BACK THE TRAILER ON TO THE GREEN.**
- For side-loading units, transport the *greensIRON* to the collar of the green to be ironed, and stop at a distance where the gate can be lowered to rest evenly at the collar edge. **DO NOT DRIVE TRAILER ON TO THE GREEN.**
- Start the engine, release the *greensIRON* locking latch, depress the left pedal and drive the unit down the ramp onto the green. **FOR SAFETY REASONS DO NOT OVER ACCELERATE WHEN LOADING OR UNLOADING.**
- To reload the unit, reverse the above procedures aligning loading markings on the *greensIRON* with centerline on trailer. The *greensIRON* can only be loaded and secured on the trailer from the operator's right hand side. The non-slip coating on the tailgate ramp and trailer deck provide additional traction when loading. Line up the *greensIRON* with the trailer and drive the unit on to the tailgate. Do not over accelerate, and stop gently. Once the *greensIRON* is in place, engage the locking latch to prevent roller movement during transportation. Shut off the engine and fuel switches, and close tailgate.



IRONING TECHNIQUES & PRACTICES

- **DO NOT REFUEL *greensIRON* WHILE ON THE GREEN SURFACE.**
- **DO NOT DRIVE TRAILER ON GREENS OR TEES.**
- Ensure transport trailer is always securely hitched to the transport vehicle during loading and unloading.
- **DO NOT LEAVE *greensIRON* SITTING ON THE GREEN SURFACE.**
- Always have the *greensIRON* in motion when undertaking turning manoeuvres.
- Most efficient ironing pattern likely will be to travel across a steep sloping green at a slight angle. The ironing pattern should always allow the operator to face oncoming play.
- Maximum ironing performance is gained by keeping the left side of the *greensIRON* on the most prominent downhill side of a slope.
- Prevent creasing, marking or ridging. Adjust the ironing pattern to accommodate any sharp undulations in green surface.
- Be aware of bunkers, steep drops or water features adjacent to greens.
- The preferred ironing effect is obtained at a travel speed of 1000 sq. ft. per min. (5-7 mph).
- Iron green in the direction that allows the Turf Broom to contact top dressing before the rollers.



SECTION 5

SERVICING

PRIOR TO WORKING ON YOUR *greensIRON 3000*, SHUT OFF ENGINE.

CAUTION: GASOLINE AND OIL SPILLED OR TRACKED ON TO TURF SURFACE MAY CAUSE SEVERE DAMAGE.

ENGINE AND GEAR REDUCTION BOX

- Refer to your Honda owner's manual.

TRANSMISSION

- Refer to your Snow-Nabstedt or your Peerless 2100 Series hydrostatic transmission owner's manual.

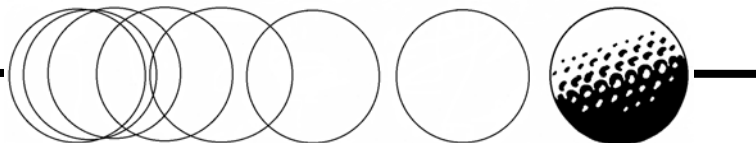
SPIN ELIMINATOR AND DRIVE CHAIN ADJUSTMENT



The spin eliminator on units with mechanical transmissions works like the clutch on a car with a manual transmission. When the transmission output shaft starts turning the clutch initially slips and then engages as pressure builds up. The *greensIRON* will begin to move while the clutch is slipping. As the engine rpm's increase with more throttle applied, the friction pads grip the sprocket tighter and the *greensIRON* moves faster. As the *greensIRON* reaches full speed slippage in the clutch is eliminated. The amount of slippage allowed is controlled by tightening or loosening the large nut on the end of the Slip Eliminator. Tightening the nut applies more pressure to the friction pads, providing for a more aggressive start up of the *greensIRON*. Torque on the spin eliminator has been preset at the SNPT plant to between 25 and 28 foot pounds. In general, more aggressive settings can be used on drier and more level greens, but when morning rolling commences

while dew is still on the turf, a less aggressive setting may be beneficial. At very high torque levels, the unit will act more like a solid sprocket.

- **WARNING:** Before opening transmission cover, ensure engine is shut off.
- **WARNING:** The needle bearing inside the spin eliminator should be oiled periodically with SAE 30 oil, but must **NEVER** be greased. Grease will destroy the friction capability of the pads.
- As necessary, release bolts on the idler sprocket and apply pressure to move it in the direction needed to increase or reduce the chain tension. The chain should have a 3/8" to 1/2" deflection on the bottom under normal operating conditions.
- If it is no longer possible to tighten the chain as needed, remove a half link or a full link to shorten the chain. The chain should then be adjusted as outlined above.
- Lubricate the chain only with spray on Chain Lube. This must be done regularly to ensure that the chain does not become dry and stretch.

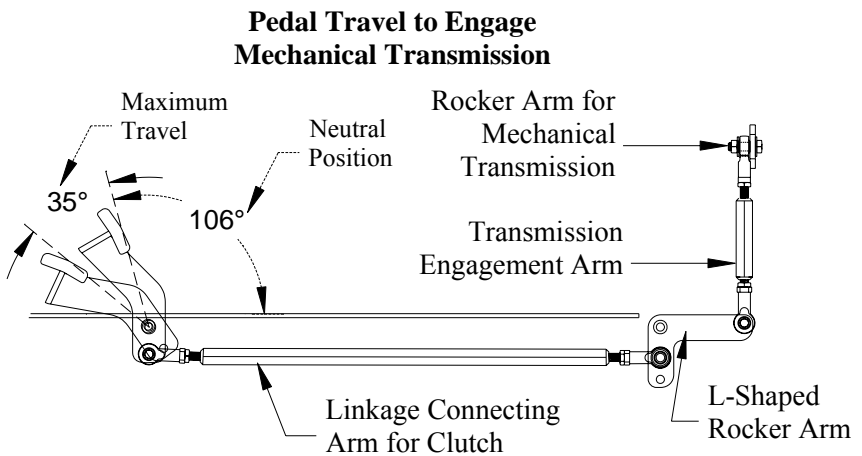


CLUTCH ADJUSTMENT (rollers with mechanical transmissions)

- Refer to your Snow-Nabstedt power transmission owner's manual.
- When adjusting the transmission clutch (brake) bands, adjust the clutch band adjustment bolt on the opposite side of the transmission from the direction you wish to travel.
- The left and right clutches are adjusted externally by increasing or decreasing band tension on the 3/4 inch screw bolts which project from both sides of the transmission block. Adjust one clutch at a time to increase or decrease the pedal pressure needed to engage the transmission for the travel direction.
- Check the *greensIRON* clutch settings with the engine running and the machine situated on flat ground. Test the feel of the ease or difficulty of engaging the pedals. If it feels too difficult to depress the pedals to start the machine moving, the band adjustment bolts need to be backed off slightly, and vice versa.
- Further clutch band adjustments may be desirable based on particular green conditions.
- Pedals only engage the transmission, and full engagement will have been achieved when a pedal is fully depressed. The throttle controls the speed, and when the machine is moving, pressing harder on a pedal **WILL NOT** increase the speed of the *greensIRON*.
- Preference in pedal adjustment may vary from operator to operator, and this can be altered through the clutch linkages as described below.

PEDAL, LINKAGE, CLUTCH ROCKER ARM ADJUSTMENT (rollers with mechanical transmissions)

- A pedal, when depressed for normal travel in a given direction should be set so it will not "bottom out".
- Attempts to depress a pedal beyond the normal operating position may cause damage to the clutch linkage assembly.
- In the neutral position, the transmission rocker arm will be parallel with the deck.



- The L-shaped rocker arms at the pivot points control the stroke (movement) for the pedals and the transmission rocker arm. Maximum stroke required is about one and three-quarter (1-3/4") inches, or about 20° of rotation for the rocker arm, to be fully engaged. Clutch linkages are set at the manufacturing plant, but wear and operator preferences may result in a need for minor adjustment.
- Final length adjustments can be made by turning either of the rod end connectors onward or offward. To make this adjustment, disconnect the engagement arm from the transmission rocker arm, turn back the jam nuts on one or both ends, then turn the engagement rod into or out of the rod end bases as desired. Complete adjustment by tightening the jam nuts and reconnecting the transmission rocker arm.

SECTION 5 (con't)

- When adjusting rod ends, ensure they are disconnected and free to turn. Do not twist a rod end against a jam nut as this may cause damage to the rod end, rocker arm or engagement arm.
- Once the linkages are set to the operator's desired position, the only other adjustments needed over time should be to the amount of tension set in the clutch (brake) bands for which the large bolts are provided on the left and right sides of the SNPT transmission.
- The operator should not feel that a clutch pedal is too hard or too easy to press down to engage the transmission and have the **greensIRON** commence travel in either direction. The amount of pressure needed should be comfortable for the operator to hold a pedal down through the length of time of travel in either direction while rolling a green.
- The ease of movement required to depress a pedal may be adjusted by tightening or loosening the Nylock nuts at the L-shaped rocker arm.

Pedal adjustment for units with a hydrostatic transmission is covered in Section 9, **greensIRON 3000** with Hydrostatic Transmission, on page 21.

THROTTLE LEVER (rollers with mechanical transmissions)

- Adjust cable tension at the carburetor so that maximum throttle position is attained when the hand lever is fully compressed. When hand lever is not compressed, the throttle should be in the idle position. Always adjust the final throttle cable tension with the cable adjustment screw located at the hand lever.

GREASE FITTINGS

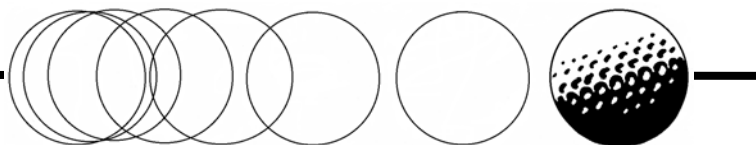
- All bearings on the **greensIRON** have been pre-packed with grease. If necessary the nine (9) bearings should only be greased sparingly.

STEERING ROLLERS AND HANDLE BARS

- Check periodically for correct steering roller/handle bar alignment.
- Steering rollers must be aligned parallel with the right deck edge. The handle bar in driving position must be at right angles (90°) to the steering rollers. The handle bar alignment can be adjusted by increasing or decreasing the length of the steering rod arm connector assembly under the deck. Making an adjustment requires disconnecting at least one rod end, releasing the jam nut, and turning the rod end toward or away from the other rod end on the connector assembly.

ROLLERS

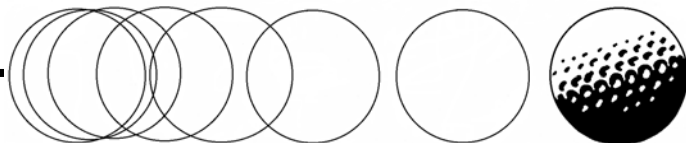
- Inspect the rollers for any dirt or grass clippings and clean them prior to traveling on the green.



TROUBLE SHOOTING

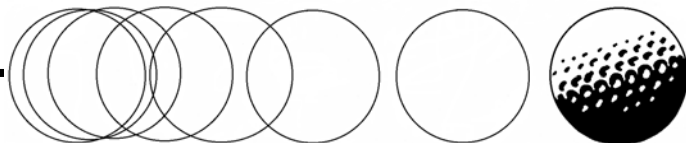
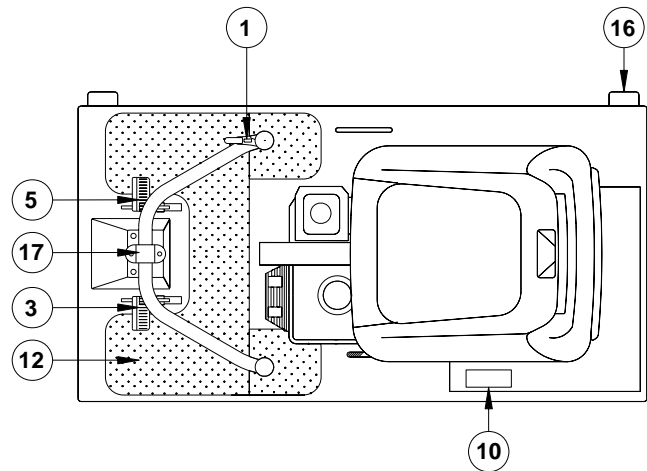
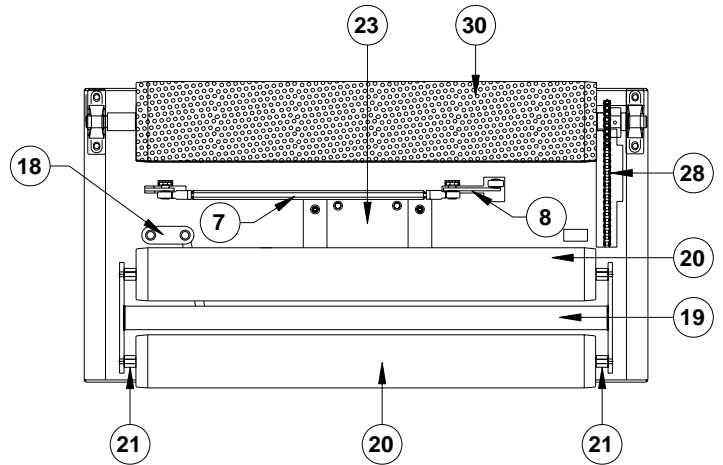
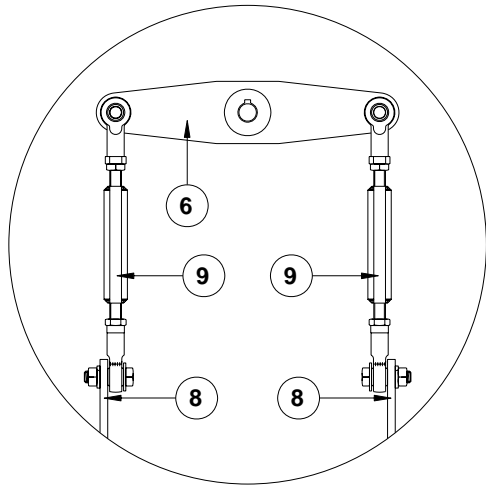
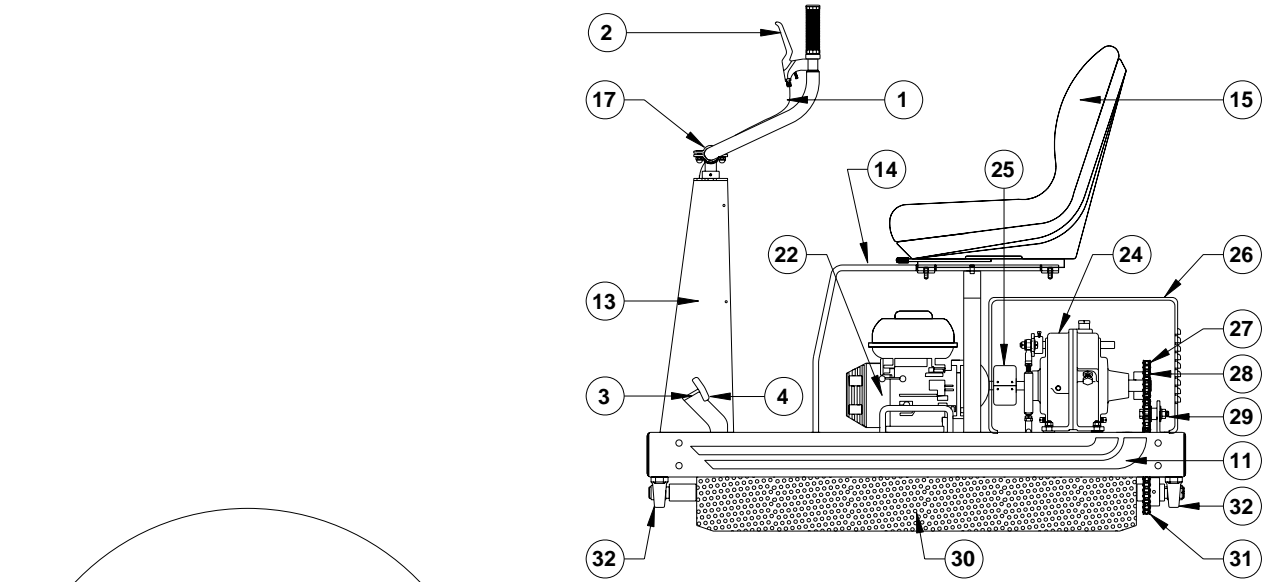
TROUBLE SHOOTING SUGGESTIONS		
SYMPTOM	PROBABLE CAUSE	SOLUTION
Engine runs rough.	Choke on. Dirty air filter. Intermittent spark. Improper fuel mixture.	Switch off choke. Clean or replace filter. Clean or replace spark plug. Readjust—see engine manual.
Engine cuts out when changing throttle speed.	Oil level low. Fuel level low.	Fill to correct level—see engine manual. Fill fuel tank.
No movement left or right when pedals are depressed.	Chain is broken. Clutch band needs adjusting [on mechanical transmission units only].	Replace chain. Adjust as explained in Section 5. Increase tension on both clutch bands until desired movement is obtained.
Jerky motion or chain is jumping.	Not enough tension in chain.	Adjust chain tension as explained in Section 5.
Pedal movement is either too free or is difficult to depress.	Tension on Nylock nuts for the linkage arms may need adjustment.	Adjust tension on Nylock nuts until a comfortable pedal motion is obtained.
Rattling, grinding type of noise from under deck when turf roller is moving.	Chain may be loose. A bearing may be failing. Bolts may be loose on moving parts.	If chain is rubbing deck, ensure it is tightened and properly aligned. Lift greensIRON and hand turn rollers to check for noise; grease and/or replace bearings as needed. Check and tighten bolts as needed on: <ul style="list-style-type: none"> • Drive roller pillow blocks • Pedal linkages • Steering roller end bolts / housings • Stopper bolts on top of steering frame
greensIRONs with mechanical SNPT transmissions:		
Roller continues traveling after release of pedals to neutral position.	Clutch bands need adjusting on the transmission.	Release tension on clutch band that controls direction of continued travel. Reset clutch from zero position. See SNPT manual and Section 5.

TROUBLE SHOOTING SUGGESTIONS		
SYMPTOM	PROBABLE CAUSE	SOLUTION
Engine drags down in power when pedal is depressed.	Clutch band needs adjusting.	Release tension on clutch band opposite from the one that controls direction of travel when the engine started to stall.
A pedal “bottoms out” against the deck during its forward travel stroke. A pedal strikes the deck during its backward travel stroke.	Clutch linkage needs adjusting.	Refer to diagrams under Section 5 Servicing Pedal, Linkage, Clutch Rocker Arm. The problem lies with the opposite pedal linkage. It most likely requires an increase in travel stroke at the clutch rocker arm.
A pedal when depressed engages the mechanical transmission but the other pedal shows no response (no movement).	Clutch band needs adjusting. Vertical linkage is too short.	Increase the tension on the opposite clutch band. Turn the adjustment bolt 1/8 to 1/4 turn per adjustment. With the engine turned off, disconnect the opposite vertical linkage. Push pedal down to transmission engagement position. Turn rod end out until it lines up with the bolt hole in the rocker arm.
With pedal depressed and throttle open, roller needs to be manually pushed to start moving.	With mechanical transmission, tension is too low in Spin Eliminator.	Tighten the large nut on the end of the unit to increase tension. Check condition of friction pads and replace if needed.
Pressing a pedal aggressively engages the drive roller immediately.	Spin eliminator is set too tight.	Loosen the setscrew in the locking nut and turn the nut back 1/4 turn. Test the roller start up and adjust further if necessary before retightening the set screw.
Pedals engage the transmission too easily.	Clutch bands need adjustment.	Increase the tension in the clutch bands by a 1/8 adjustment turn and test. Repeat until about 3 pounds of pressure is needed to engage the transmission for both directions of travel.
When a pedal is in the engaged position, it is difficult to disengage (by pressing the opposite pedal).	Clutch bands need adjustment.	Decrease the tension in the clutch bands by a 1/8 adjustment turn and test. Repeat until only light pressure on the opposite pedal will release the engaged pedal.



TROUBLE SHOOTING SUGGESTIONS		
SYMPTOM	PROBABLE CAUSE	SOLUTION
<i>greensIRONs</i> with Peerless 2100 Series hydrostatic transmissions:		
Roller continues traveling after release of pedals to neutral position.	The connection to rocker arm needs adjustment to balance the return distance for both sides.	See Section 9, page 23, adjusting for roller creep
With pedal depressed and throttle open, roller needs to be pushed to start moving.	Belt drive slipping on hydrostatic transmission.	Loosen idler pulley and push in to tighten so belt will not slip.
Transmission is running extra hot, shortly after starting it up.	Peerless 2100 series transmission is worn out and failing.	Obtain and install replacement transmission (35 H06 9852).

PART ILLUSTRATIONS (rollers with mechanical transmission)



SECTION 8**greensIRON 3000 PARTS LIST (rollers with mechanical transmission)**

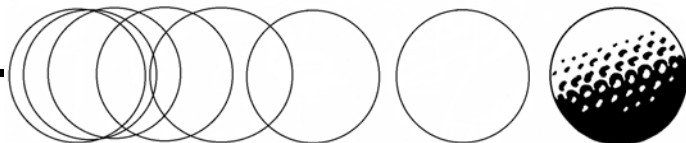
Note: Parts marked with a “” are the same for rollers with both types of transmission.

ITEM	DESCRIPTION	QUANTITY	PART NUMBER
Throttle Components—Section B			
1	Throttle Cable Assembly	1	35 B02 5010
	Grommet, Rubber 1/4" ID for 3/8" Hole	3	WB 6010
2	Lever for Hand Control	1	WB 6020
Clutch Components—Section C			
3	<input type="checkbox"/> Clutch Pedal Arm—Left	1	35 C01 1050
4	<input type="checkbox"/> Pedal Pad	1	WB 6140
5	<input type="checkbox"/> Clutch Pedal Arm—Right	1	35 C02 106
	<input type="checkbox"/> Pedal Pad	1	WB 6140
6	Transmission Rocker Arm	1	35 C10 1100
	5/32" Woodruf Key (Up to Serial # WB3981081)	1	WB 6890
	3/16" Woodruf Key (From Serial # WB3981082 onwards)	1	WB 6995
7	<input type="checkbox"/> Linkage Connecting Arm for Clutch, with Rod Ends	2	35 C16 1480
8	<input type="checkbox"/> L-Shaped Rocker Arm	2	35 C17 1150
9	Transmission Engagement Arm (Vertical), with Rod Ends	2	35 C18 1490
Body Components—Section D			
	<input type="checkbox"/> Body Assembly—as welded	1	30 D01 1200
10	<input type="checkbox"/> Serial Number Plate (under cowling)	1	30 D02 5400
	<input type="checkbox"/> Caution Decal Package (not shown)	1	30 D02 5200
	<input type="checkbox"/> Identification Decal Package (not shown)	1	30 D02 5220
11	<input type="checkbox"/> Striping Decal Package	1	30 D02 5260
12	<input type="checkbox"/> Non-Skid Deck Surface—Safety Walk	1	35 D10 1550
13	<input type="checkbox"/> Steering Column Cover	1	35 D20 1270
	<input type="checkbox"/> Screw, Self Drilling/Tapping #14	6	WB 8910
	<input type="checkbox"/> Cover Plate for Steering Column	1	35 D21 1280
14	<input type="checkbox"/> Supporting Tilt Frame for Seat	1	35 D30 1290
15	<input type="checkbox"/> Seat with adjustable mounting	1	35 D40 5520
16	<input type="checkbox"/> Rubber Bumper/Scuff Pad	2	WB 6150
Steering Column Components—Section E			
17	<input type="checkbox"/> Handle Bar Assembly, Complete with Clamp and 5/16" countersunk bolts with acorn nuts (2)	1	35 E01 1300
	<input type="checkbox"/> Hand Grips	2	WB 6910
18	<input type="checkbox"/> Steering Arm for Under Deck (welded)	1	35 E06 1340
	<input type="checkbox"/> Steering Rod Arm Connector Assembly	1	35 E10 1360
	<input type="checkbox"/> Bearing & Housing, Top--1"	1	WB 7350
	<input type="checkbox"/> Bearing & Housing, Bottom	1	WB 7340

SECTION 8 (con't)

Note: Parts marked with a “■” are the same for rollers with both types of transmission.

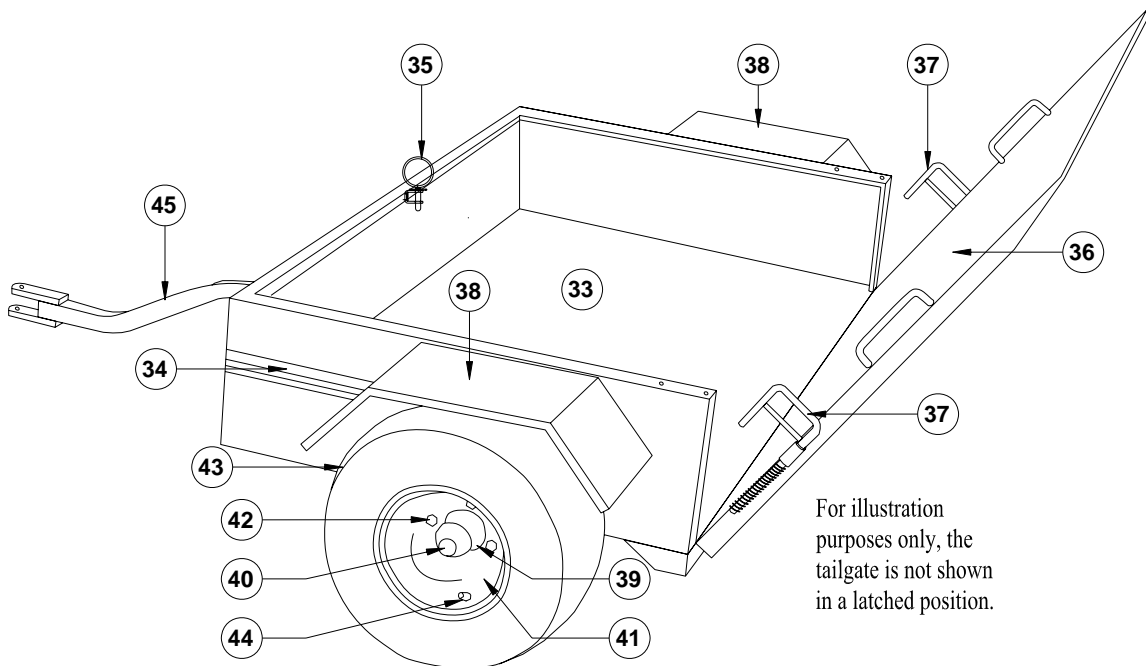
ITEM	DESCRIPTION	QUANTITY	PART NUMBER
Steering Roller Components—Section F			
19	■ Steering Roller Frame—3000	1	30 F01 1600
	■ Snap Ring (1.0")	1	WB 7400
20	■ Steering Roller—3'	2	30 F12 1610
21	■ Bearing and Flanges (From Serial # WB3991149 onwards)	4	Flanges WB 7370
		4	Bearings WB 7410
	■ Stub Axle Shaft for Bearing	4	35 F15 1670
	■ Bolts (3/8" x 1 1/4" with lock washers), for Stub Axle (From Serial # WB3991149 onwards)	4	Bolts WB 8116
		4	Washers WB 8730
Engine Components—Section G			
22	Honda 5.5 hp GX160HX 6:1 Reduction	1	35 G01 6300
	Throttle Cable Sheath Holder	1	35 G01 6320
	Throttle Return Spring	1	35 G01 6330
	Throttle Cable Holding Clamp	1	35 G01 6340
23	■ Vibration Mount Welded Assembly	1	35 G01 1242
	■ Vibration Dampers for Engine Mount	4	35 G01 6015
	■ Oil Drain Assembly (Complete)	1	35 G02 2990
Transmission Components—Section H			
24	SNPT 5101B-19 Transmission c/w 3/16" Woodruff Keyway (Refer to the SNPT manual for identification of parts)	1	35 H01 9010
25	Coupling and Cover Assembly	1	35 H01 6850
26	Transmission Cover, Plastic Molded Assembly - M	1	30 H02 5730
	■ Rubber Catch Assembly	2	WB 6990
	■ Rivet, Pop (Steel)—1/8" x 1/2"	8	WB 8900
Main Drive Components—Section L			
27	Slip Eliminator and Sprocket Assembly	1	35 H01 9440
28	Chain, Drive (#50 chain)	1	35 L03 7930
29	■ Chain Tensioning Assembly	1	35 L04 2080
	■ Chain Adjuster Bracket	1	35 L05 2030
	Idler Sprocket (Tensioner) for Chain #50	1	35 L06 7760
Drive Roller Components—Section M			
30	■ Drive Roller, Super Turf Trac Coated Assembly	1	30 M01 2500
	■ Spacer, Inner, Sprocket End 1" ID x 1-1/2" OD x 5/8"	1	35 M09 2520
	■ Spacer, Outer, Sprocket End 1" ID x 1-1/2" OD x 1/4"	1	35 M10 2530
	■ Spacer, Off Side End, 1" ID x 1-1/2" OD x 2-1/4"	1	35 M11 2540
31	Sprocket Assembly for Drive Roller	1	35 M12 2600
32	■ Bearing & Housing	2	WB 7360



SECTION 8 (con't)

Note: Parts marked with a “ □ ” are the same for rollers with both types of transmission.

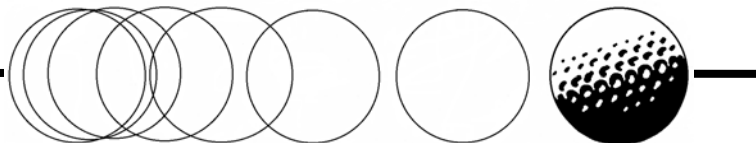
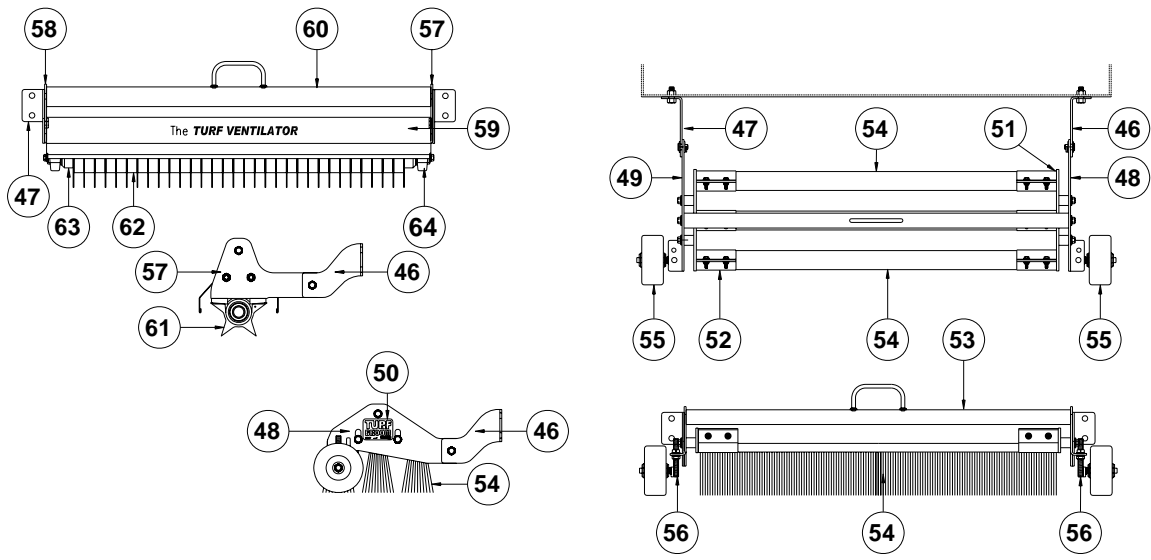
ITEM	DESCRIPTION	QUANTITY	PART NUMBER
Trailer Components—Section N			
33	<ul style="list-style-type: none"> ▣ Body Assembly, Complete, with weather guard coating ▣ Caution Decal Package—Trailer ▣ Identification Decal Package—Trailer 	1	30 N01 1755
34	▣ Striping Decal Package—Trailer	1	30 N01 5280
35	▣ Safety Latch Locking Pin with chain	1	30 N20 2070
36	▣ Tail Gate Assembly, Complete, with weather guard surface	1	30 N22 1775
37	<ul style="list-style-type: none"> ▣ Tail Gate Latch Assembly ▣ Hinge Pin Assembly for Tail Gate—not shown 	2	30 N27 1785
38	<ul style="list-style-type: none"> ▣ Fender Welded Assembly ▣ Axle Support with Spindle—not shown 	2	30 N31 1790
39	▣ Hub	2	WB 6710
40	▣ Cap, Dust (Bearing)	2	WB 6740
41	▣ Rim	2	WB 6830
42	▣ Wheel Nut, Lug Type	8	WB 8587
43	▣ Tire	2	30 N50 6780
44	▣ Valve Stem	2	WB 6800
45	▣ Tow Bar Welded Assembly	1	30 N60 1880

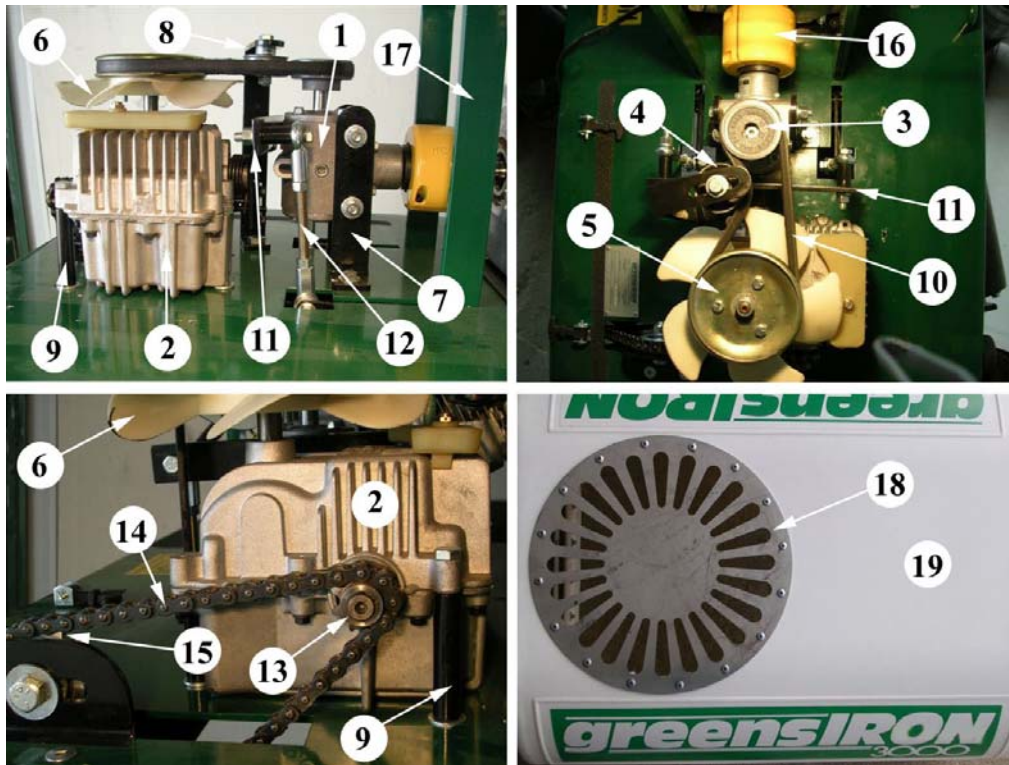


SECTION 8 (con't)

Note: Parts marked with a “ □ ” are the same for rollers with both types of transmission.

ITEM	DESCRIPTION	QUANTITY	PART NUMBER
Turf Broom Components—Section T			
46	□ Support Bracket—Right	1	30 V02 2680
47	□ Support Bracket—Left	1	30 V02 2690
48	□ End Bracket—Right, with decal	1	30 T08 5940
49	□ End Bracket—Left, with decal	1	30 T08 5950
50	□ Identification Decal Package	1	30 T08 5250
51	□ Main Clamp Fixture	2	30 T09 5930
52	□ Movable Clamp Plate	6	30 T12 5960
53	□ Turf Broom Weight Bar Assembly	1	30 T22 5880
54	□ Broom—2” x 3 feet	3	30 T13 6290
55	□ Wheel, caster with bearing	2	30 T08 6600
56	□ Broom Height Adjuster—Right and Left	2	30 T08 5620
Turf Ventilator Components—Section V			
46	□ Support Bracket—Right	1	30 V02 2680
47	□ Support Bracket—Left	1	30 V02 2690
57	□ Ventilator End—Right	1	30 V03 2700
58	□ Ventilator End—Left	1	30 V03 2710
59	□ Ventilator Guard Cover, with decal	1	30 V04 2730
60	□ Weight Bar and Handle Assembly	1	30 V05 2740
	□ Shaft for Ventilator (Hexagonal)—not illustrated	1	30 V06 2750
61	□ Turf Venting Blades (DB0R09)	30	30 V06 2760
62	□ Spacers Between Blades	29	30 V06 2770
63	□ Spacers, Nylon for Outside Ends	2	30 V06 2780
64	□ Pillow Block Bearing and Housing (2 Bolt)	2	WB 7360



greensIRON 3000 with HYDROSTATIC TRANSMISSION

ITEM	DESCRIPTION	QUANTITY	PART NUMBER
1	Gearbox, Right Angle, Von Rudin 15	1	35 H06 9850
2	Hydrostatic Transmission, Peerless 2100 Series	1	35 H06 9852
3	Pulley for Right Angle Gearbox	1	35 H06 9861
4	Idler Pulley for Hydrostatic Transmission Drive	1	35 H06 7365
5	Pulley for Hydrostatic Transmission	1	35 H06 9862
6	Fan for Hydrostatic Transmission	1	35 H06 9863
7	Mounting Bracket for Right Angle Gearbox	2	35 H06 2061
8	Support Bracket for Idler Pulley	1	35 H06 2062
9	Support Sleeve 2 3/8" for Hydrostatic Transmission	2	35 H06 2063
	Support Sleeve 3" for Hydrostatic Transmission	1	35 H06 2064
10	Drive Belt for Hydrostatic Transmission	1	35 H06 7825
11	Rocker Arm for Hydrostatic Transmission	1	35 C10 1095
12	Transmission Engagement Arm (Vertical)—P	2	35 C18 1495
13	Transmission Sprocket for Hydrostatic—P	1	35 L02 7545
14	Chain, Drive #40 for Hydrostatic—P	1	35 L03 7845
15	Idler Sprocket for #40 Chain	1	35 L06 7690
	Chain Adjuster Bracket—Formed, Slotted	1	35 L05 2030
16	Chain Coupler and Cover Assembly	1	35 H01 6850
	Honda 5.5 h.p. GX160K1QX -- 1:1	1	35 G01 6310
17	Seat Support Frame, Back	1	35 D35 3440
18	Louvre for top of Transmission Cover—Hydro P	1	35 H02 5775
19	Transmission Cover Assembly 3000—Hydro P	1	30 H02 2125

HYDROSTATIC TRANSMISSION OPERATION

Introduction:

The Peerless 2100 Series hydrostatic transmission on your new *greensIRON* provides a quick, powerful and quiet operation. It has been checked and adjusted at the factory to ensure it operates effectively, and that the clutch pedals return to their neutral (i.e., full stop) position when released. Thus, when the engine is running, even at full throttle with no operator pressure on either pedal, the *greensIRON* will not move in either direction. Both the Right Angle Gearbox (35 H06 9850) and the Peerless 2100 Series Hydrostatic Transmission (35 H06 9852) are closed systems with fluid contents that are preset by the original equipment manufacturers so there are no fluids to be checked or adjusted.

Getting Started:

When initially operating a *greensIRON* with a Peerless 2100 Series hydrostatic transmission, it is important to get comfortable with the controls and the "feel" of the turf roller. This can be readily done under relatively low-speed conditions on fairly level greens. Since the speed of the engine determines the amount of torque delivered through the hydrostatic transmission, Wood Bay recommends that all operators set the engine speed to less than one-half throttle until they are used to the controls for steering, starting off, stopping and changing direction. A lower throttle setting will limit the maximum rate at which the turf roller will travel in a given direction when the pedal is fully depressed. When the operator has become accomplished with the *greensIRON* controls, the throttle can be set full open to increase speed and reduce the time needed for rolling your greens.

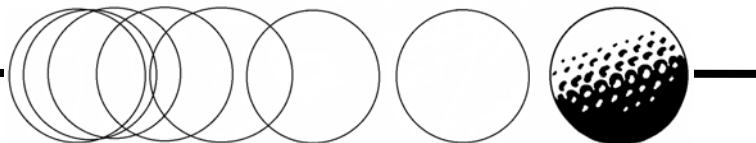
WARNING: Do not jam a pedal down hard and fast to get the turf roller moving. This could result in a **very rapid** start, and may cause the drive roller to spin and damage the green. Smooth, steady starts and stops, effected through foot pedal control, will give the best turf rolling results possible for the golf course.

Monitoring the Hydrostatic Transmission Performance:

Since the right angle gearbox and the hydrostatic transmission are both closed systems, a key item to monitor regarding transmission performance is tension in the belt drive. When the *greensIRON* is worked hard the drive belt can stretch and begin to slip. The hardest working conditions occur on greens with significant slopes and when the operator uses the turf broom and turf ventilator attachments. Under these special conditions, it is recommended that the belt tension be checked each time the *greensIRON* is used. If excess slack is observed in the belt (over 1/2 inch play between the pulley on the right angle gear drive and the pulley on the transmission) the tension should be increased by adjusting the idler pulley.

Another item to monitor closely is the cleanliness of the fan and cooling fins. The transmission may be cleaned with a pressure washer, but the input and output shaft seals are **never to be sprayed directly**. Direct pressure wash spraying can damage the seals and cause the Peerless 2100 Series transmission to leak. Such damage will not be covered under warranty and can be repaired only by replacing the transmission.

Both the Right Angle Gearbox and the Peerless 2100 Series transmission are closed systems that cannot be adjusted by the operator. Both of these units are designed to perform continuously under high speed operating conditions. However, if poor power performance or unusual noises are detected during operations, either or both of these components may be starting to fail and to be in need of replacement.



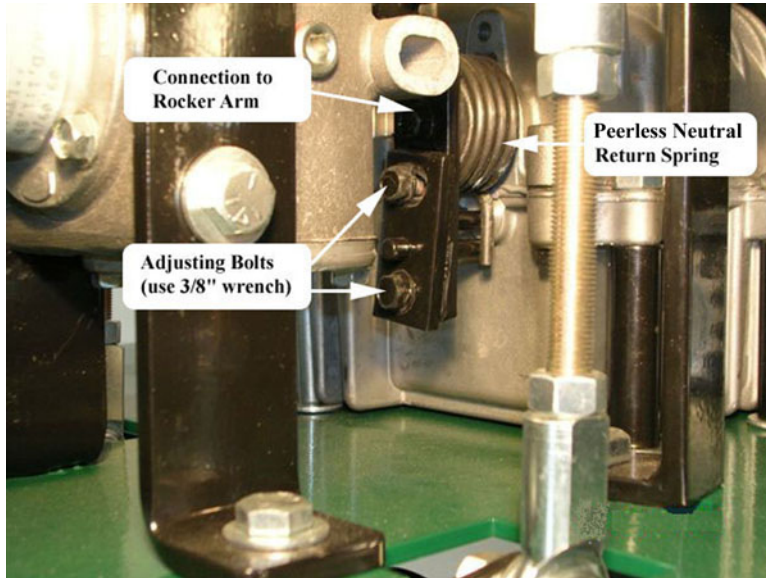
SECTION 9 (con't)

Care of the Drive Chain:

The chain should be retensioned and lubricated regularly. It should be checked both before and after each day of usage. Lubricate the chain each time with a spray on Chain Lube to ensure it does not become dry and to avoid the possibility of oil or grease splatter on the turf. If the chain is allowed to become dry, it can stretch very quickly, and then quick changes in the direction of rolling may snap and break the joining link.

Adjusting for Roller Creep:

In the event that the *greensIRON* creeps in one direction when the clutch pedals are in neutral position, it is necessary to adjust the neutral setting for the pedals. This adjustment must be made through the adjusting bolts on the connection to the rocker arm. Loosen the bolts so the return spring can bring the connecting arm back to neutral (i.e. full stop on the hydrostatic output shaft) when the pedals are released. The bolts can then be tightened again to ensure the neutral setting is fixed.



Test the new setting for creep, and repeat the above procedure if the condition continues.

Warranty

greensIRON 3000

WARRANTY is provided as part of Wood Bay's support program for customers who operate and maintain their equipment as described in this manual and other enclosed owner's manuals.

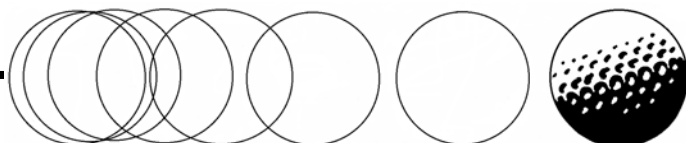
This warranty provides you with the assurance that Wood Bay will back this product where defects appear within the warranty period. Should the product be abused or modified to change its performance from original factory specifications, the warranty will become void.

If you have any questions.....

Turf Boss Distributors are very interested in your complete satisfaction with the performance of your *greensIRON 3000*. In the event of a warranty or related servicing matter, we encourage you to contact your local distributor as soon as possible. Should the warranty or servicing problem not be resolved to your satisfaction, submit the matter to:

Wood Bay Enterprises

**Toll free: 1-800-661-4942 (In USA and Canada)
Or call: 1-780-468-4378.**



SECTION 10 (con't)

A. GENERAL PROVISIONS

For the first twelve (12) months after the date of purchase, the manufacturer will repair or replace, as it elects, any part(s) defective in material or workmanship (except those specified in Sections B and C below) of a new **greensIRON 3000** Turf Roller and/or Turf Broom and/or Turf Ventilator (the "Product"), as delivered to the original retail purchaser. This warranty applies only to purchases from authorized distributors and extends only to the original retail purchaser of the product.

The performance of this warranty is dependant on receipt by Wood Bay Enterprises Inc. or Wood Bay Consulting Group Limited (hereinafter referred to as the "manufacturer") of the warranty registration card from the original retail purchaser.

B. ITEMS WARRANTED SEPARATELY

This warranty does not apply to the Honda Engine, the Snow-Nabstedt Transmission, the Peerless 2100 Series hydrostatic pump, or the Von Rubin Right Angle Gearbox, which are covered by separate written warranties.

C. ITEMS NOT COVERED

The manufacturer is not responsible for the following:

1. Premium charged for overtime labor requested by the purchaser.
2. Transportation to and from the distributor's office or service calls made by the distributor.
3. Used products.
4. Modification of any component or part of the product not supplied by the manufacturer or not performed on by the manufacturer or by an authorized distributor.
5. Depreciation or damage caused by normal wear, lack of reasonable and proper maintenance, failure to follow operating instructions, misuse, lack of proper protection during storage, or accident.
6. Normal maintenance and replacement of maintenance wear items, such as oil, filters, chain, bearings, cables, spark plugs and tires.

D. PARTS REPLACED UNDER WARRANTY

Only new or remanufactured parts or components, furnished or approved by the manufacturer, will be used to repair the product.

E. SECURING WARRANTY SERVICE

To obtain performance of this warranty, the original retail purchaser must request warranty service from an authorized distributor. Present evidence that corresponds with the warranty registration card on date of delivery, and inform the distributor in what way the purchaser believes the product to be defective.

F. NO IMPLIED WARRANTY OR OTHER REPRESENTATION

Where permitted by law, neither the manufacturer nor any company affiliated with the manufacturer makes warranties, representations or promises as to the quality, performance or freedom from defect of the product covered by this warranty. **NO IMPLIED WARRANTY OF MERCHANTABILITY OF FITNESS IS MADE.**

G. LIMITATION OF PURCHASER'S REMEDIES

Where permitted by law, the purchaser's only remedies in connection with the breach or performance of any warranty on the product, are those set forth on this page. In no event will the distributor, manufacturer or any company affiliated with the manufacturer be liable for incidental or consequential damages, including but not limited to loss of profit, rental of substitute equipment or other commercial loss.

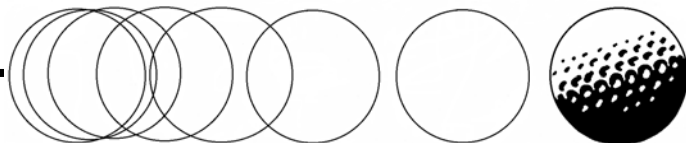
H. NO SUBDISTRIBUTOR OR DISTRIBUTOR WARRANTY

The selling distributor makes no warranty of its own on any item warranted by the manufacturer and makes no warranty on any other item unless it delivers to the purchaser a separate written certificate specifically warranting the item. **THE DISTRIBUTOR HAS NO AUTHORITY TO MAKE ANY REPRESENTATION OR PROMISE ON BEHALF OF THE MANUFACTURER, OR TO MODIFY THE TERMS OR LIMITATIONS OF THIS WARRANTY IN ANY PART.**

CUSTOMER RECORD COPIES TO REMAIN IN MANUAL

WARRANTY REGISTRATION DETAILS (Please print clearly)			
Purchase Date:	_____		
Owner:	_____		
Address:	_____		
City:	State/Province:	Code:	
_____	_____	_____	
Model No.:	Serial No.:		
_____	_____		
Engine No.:	Transmission No.:		
_____	_____		
Selling Distributor:	_____		
Pre-Delivery Certification:	_____		
	(Distributor Signature)		
			Customer Copy

SAFETY ACKNOWLEDGEMENT	
I, _____ acknowledge reading all pertinent safety and operational information enclosed and that the distributor has advised me of the locations and the reasons for all safety emblems on the machine. The distributor has also advised me on the safe operating procedures for the <i>greensIRON 3000</i> . This information will be made available to all other operators of the <i>greensIRON 3000</i> .	
_____	Date: _____
(Superintendent)	
	Customer Copy



SECTION 10 (con't)

DISTRIBUTOR COPY TO BE COMPLETED AND REMOVED AT POINT OF SALE

WARRANTY REGISTRATION DETAILS (Please print clearly)		
Purchase Date:	_____	
Owner:	_____	
Address:	_____	
City:	State/Province: _____	Code: _____
Model No.:	Serial No.:	_____
Engine No.:	Transmission No.:	_____
Selling Distributor:	_____	
Pre-Delivery Certification:	_____	Distributor Copy
	(Distributor Signature)	

WOOD BAY COPY TO BE COMPLETED, REMOVED AND FORWARDED TO:

Wood Bay Turf Technologies
A Division of Wood Bay Consulting Group Limited
202, 8704 – 51 Avenue
Edmonton, Alberta T6E 5E8

WARRANTY REGISTRATION DETAILS (Please print clearly)		
Purchase Date:	_____	
Owner:	_____	
Address:	_____	
City:	State/Province: _____	Code: _____
Model No.:	Serial No.:	_____
Engine No.:	Transmission No.:	_____
Selling Distributor:	_____	
Pre-Delivery Certification:	_____	Wood Bay Copy
	(Distributor Signature)	

SAFETY ACKNOWLEDGEMENT	
<p>I, _____ acknowledge reading all pertinent safety and operational information enclosed and that the distributor has advised me of the locations and the reasons for all safety emblems on the machine. The distributor has also advised me on the safe operating procedures for the <i>greensIRON 3000</i>. This information will be made available to all other operators of the <i>greensIRON 3000</i>.</p>	
_____	Date: _____
(Superintendent)	
	Wood Bay Copy



greensIRON **3000**

EXCLUSIVELY DISTRIBUTED BY:



Turf Technoloaies

FOR LOCAL SALES & SERVICE INFORMATION CALL:

202, 8704 – 51 Ave.
Edmonton, Alberta
Canada T6E 5E8

Toll Free: 1-800-661-4942

