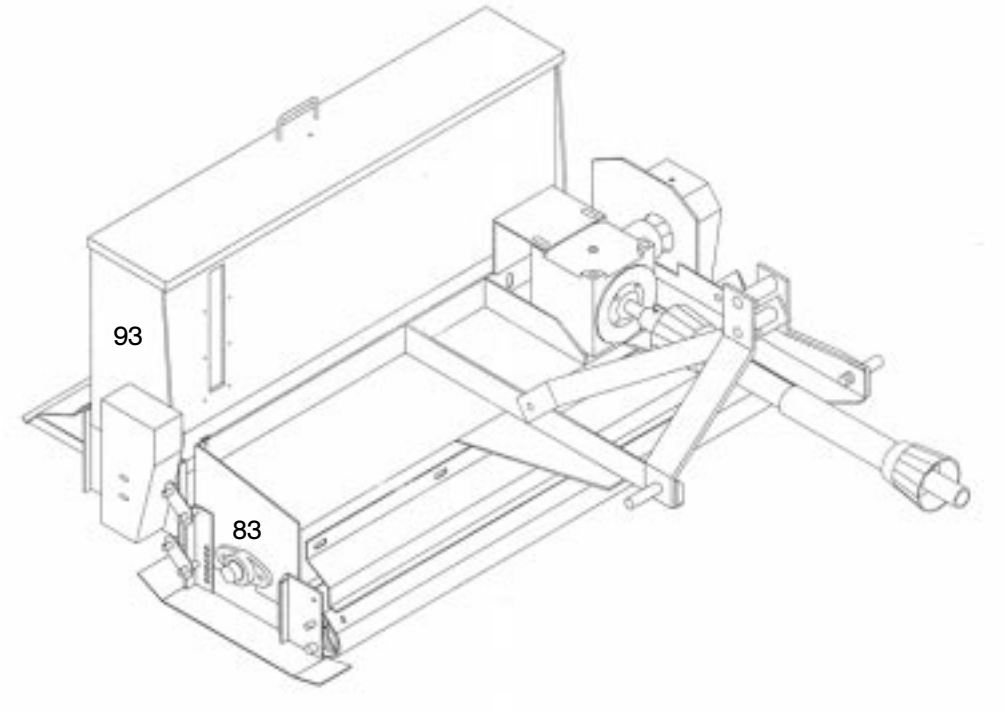
FORM NO. 3324–473

TORO®

MODEL NO. 44835–200000001 & UP

OPERATOR'S MANUAL

SEEDER 93



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FOREWORD

Thank you for buying a high quality Toro turf care product. To get the best performance from this machine, operate and maintain it according to the instructions in this manual.

Toro also wants to stress the importance of safety. You and anyone else using or maintaining this machine are strongly urged to read this manual, especially all the safety instructions.

DANGER, WARNING and CAUTION, used with the triangular safety alert symbol, highlight safety messages. Always read and understand these messages because they relate to personal injury and your safety.

If you ever need help or have questions about your new Toro turf care product, contact your local Authorized Toro Distributor. The Toro Distributor has a complete supply of replacement parts, a full line of accessories and a professional service staff to support you. Keep your Toro all Toro. Buy genuine Toro parts and accessories.

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SAFETY INSTRUCTIONS

The safety alert symbol means CAUTION, WARNING or DANGER — "personal safety instruction". Read and under stand the instruction because it has to do with safety. Failure to comply with the instruction may result in personal injury.

BEFORE OPERATING

1. Read and understand the contents of this manual before starting and operating the machine. Become familiar with all controls and know how to stop quickly. A free replacement manual is available by sending complete Model and Serial Number to:

The Toro Company
8111 Lyndale Ave. So.
Minneapolis, MN 55420

2. Do not allow children to operate the machine. Do not allow adults to operate the machine without proper instruction.

3. Never operate the machine while under the influence of drugs or alcohol.

4. Keep all shields and safety devices in place. If a shield, safety device or decal becomes damaged, malfunctioning or illegible, repair or replace it before operation is commenced. Also, tighten loose nuts, bolts to ensure machine is in safe operating condition. This includes all shields on the PTO.

5. Before each use, be sure all bolts and nuts are tight. Check the general condition of the PTO and chain.

6. Do not alter this equipment in any manner which may cause hazardous conditions.

WHILE OPERATING

DANGER

ROTATING BLADES, DISCS OR TINES CAN CAUSE SERIOUS INJURY

- Keep hands and feet out of blades, discs or tines while engine is running.
- Keep bystanders out of area of operation.
- Stop engine before servicing machine

7. Using the machine demands attention, and to prevent loss of control:

A. Operate only in daylight or when there is good artificial light.

B. Drive slowly.

C. Watch for hole or other hazards.

D. Look behind machine before backing up.

E. Do not drive close to a sand trap, ditch, creek or other hazard.

F. Reduce speed when making sharp turns and when turning on a hillside.

G. Avoid sudden stops and starts.

8. Operator must be skilled and trained in how to drive on hillsides. Failure to use caution on slopes or hills may cause loss of control possibly resulting in personal injury or death.

9. If engine stalls or machine loses headway and cannot make it to the top of a slope, do not turn machine around. Always back slowly straight down the slope.

10. Do not carry passengers on the machine or tractor and keep everyone away from the areas of operation.

11. Before getting off the tractor seat:

A. Place the tractor in neutral position and put the engine in idle position.

B. Set the parking brake and disengage the PTO.

C. Shut the engine off and remove key from ignition switch. Wait for all movement to stop before getting off tractor seat.

12. ALWAYS follow all safety precautions in the tractor's operator manual pertaining to attachments.

MAINTENANCE

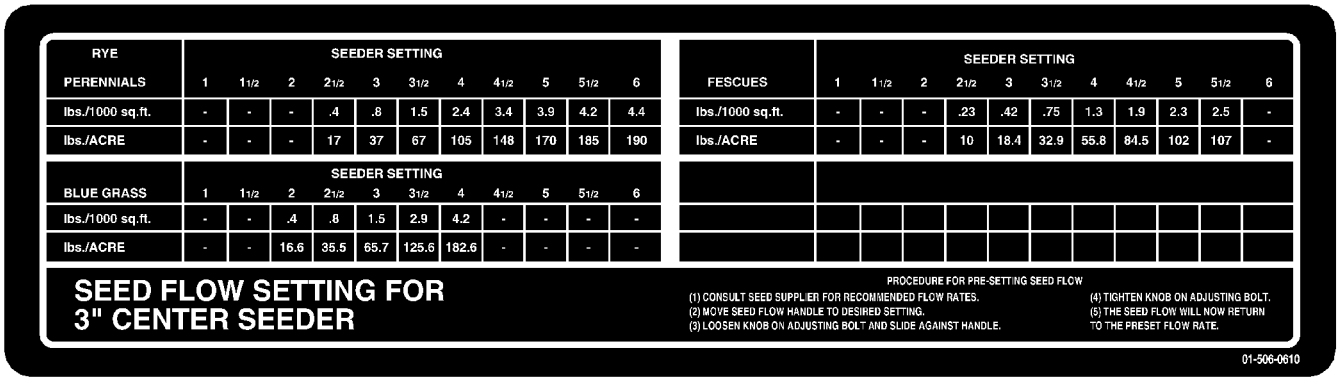
13. Remove the key from the tractor's ignition switch to prevent accidental starting of the engine when servicing, adjusting or storing the machine.

14. If major repairs are ever needed or assistance desired, contact an Authorized TORO Distributor.

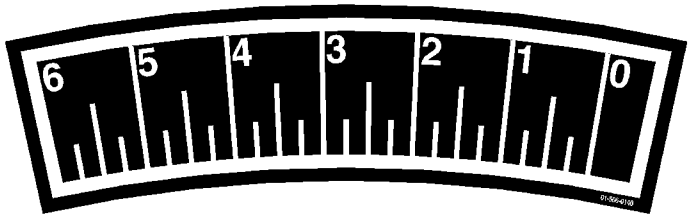
15. Make sure machine is in safe operating condition by keeping nuts, bolts and screws tight.

SAFETY AND INSTRUCTION DECALS

The following decals are installed on the machine. If any become damaged or illegible, replace it. The decal part number is listed below and in your parts catalog. Replacement can be ordered from your Authorized Toro Distributor.



ON SEED BOX
(Part No. 01–506–0610)



ALIGNED WITH POINTER (Seeder 93)
(Part No. 01–506–0140)



ON REAR GUARD
(Part No. 01–506–0340)



NEAR BEARINGS &
GREASE POINTS
(Part No. 58–6520)



ON SEED BOX LID
(Part No. 01–506–0100)



ON CHAIN GUARDS
(Part No. 01–506–0050)

SPECIFICATIONS

For use with Aerothatch 83, Model 44830

SEEDING WIDTH: Swath 48”

DRIVE: Ground power, chain connector to auger.

BEARINGS: Self sealed and greasable throughout.

SEED HOPPER: 100 lbs. capacity.

SEED AUGER: 4 paddle blades on auger shaft.

SEED TUBES: Delivers seed to 16 grooves.

FEED OPENINGS: Adjustable with remote control from tractor to apply the desired rate.

DIMENSIONS: Height – 33”
Length – 13”
Width – 56”

SHIPPING WEIGHT: 300 lbs.

Specifications and design subject to change without notice.

SET – UP INSTRUCTIONS

ATTACHING SEEDER TO AEROTHATCH (Fig. 1)

1. Remove the Seeder (A) from the skid.

2. Remove the Rear Guard from the Aerothatch. Store this guard to replace if the Seeder is taken off in the future.

IMPORTANT: This guard must be in place when using the 83 Aerothatch separately.

3. Position the Seeder so the attaching pins (E) are in line with the rear skids of the Aerothatch.

4. Attach the Seeder Box Mounts (C) and secure with the presto pins (D).

5. Attach the chain (B) of the Seeder to the Aerothatch (F). Adjust evenly for level transport. Secure with presto pins (D).

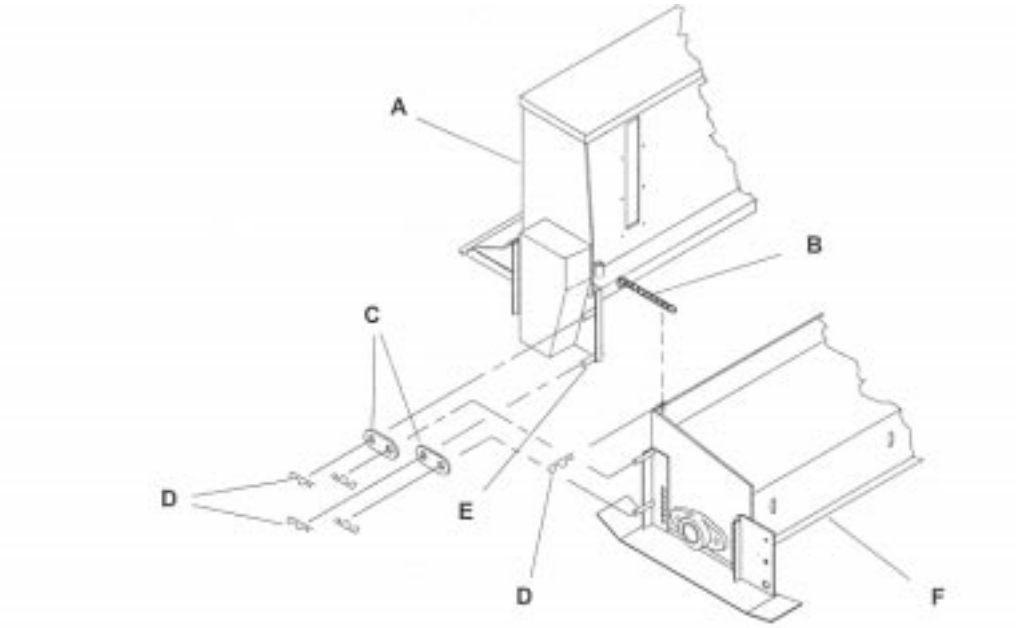


Figure 1

INSTALLING REMOTE SEED HANDLE (Fig. 2)

1. Attach the Rear Cable Bracket (Item 12 on illustrated parts list) to the cable and tighten nuts.

2. Attach the cable to the Seeder Handle. Fasten with the pin provided.

3. Slide the handle fully open and lock with knob. Close the cable until it is fully closed.

4. Install the Rear Cable Bracket (item 12) to the back as shown. Use fasteners shown on illustrated parts list and tighten.

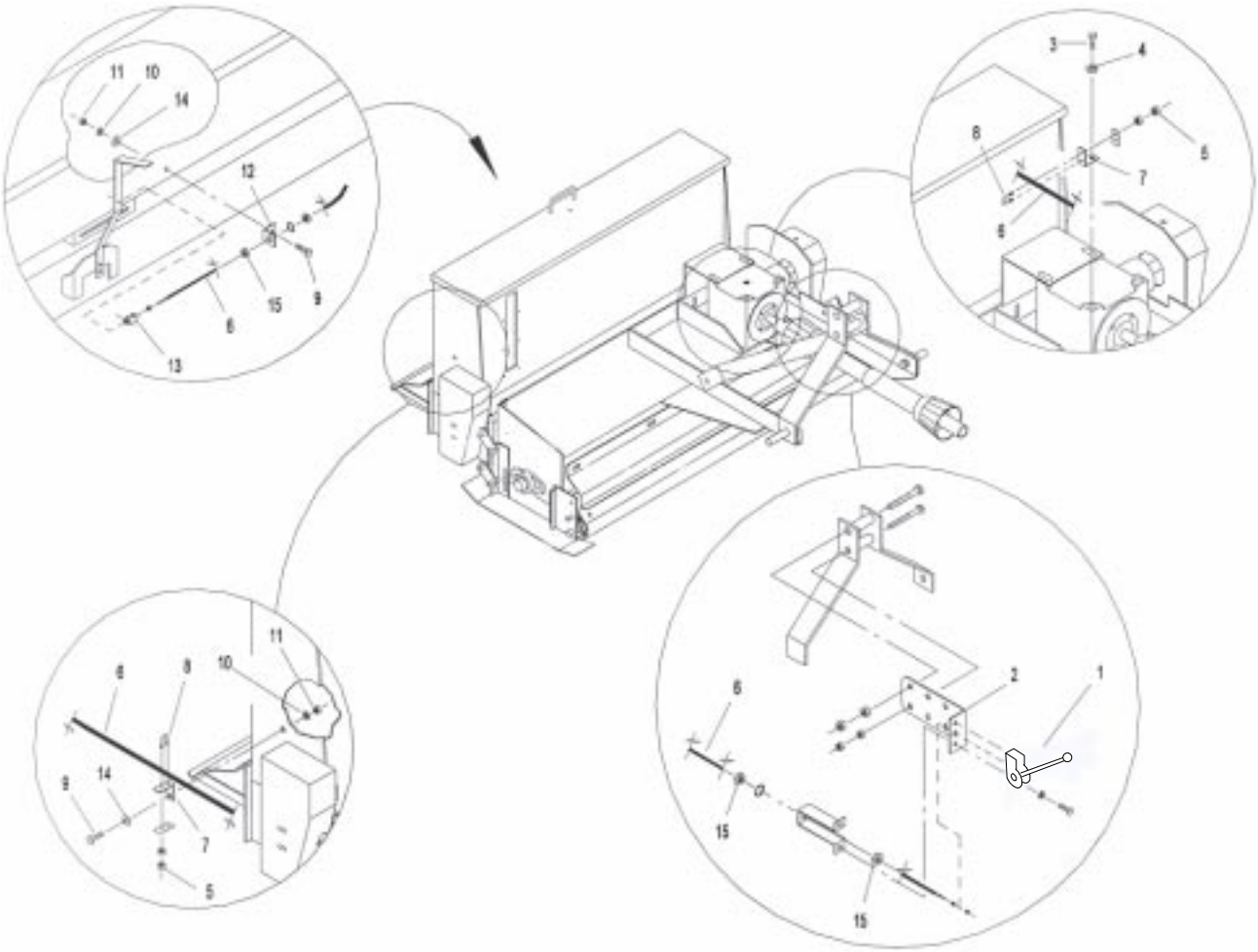
5. Install the Cable Bracket (Item 7) to the side of the Seed Box as shown in the illustrated parts list. Tightened fasteners.

6. Route the Cable to the Cable Bracket and install using the ”U” clamp. Tighten nuts.

7. Install the Cable Bracket (Item 7) to the corner of the gearbox as shown in the parts list.

8. Route Cable to the Cable Bracket and install. See parts lists.

9. Attach the Handle Mount Plate (Item 2) on top of the 3 point hitch arms using the existing bolts and nuts. Set in one of the three positions that is most comfortable to the operator. Tighten hardware. Figure 2



Ref. No.	Part No.	Description	No. Used
1	01-359-0250	Remote Handle	1
*	01-359-0360	Adapter - Clevis	1
2	93-004-0861	Handle Mount Plate	1
3	325-4	Capscrew - Hex Hd.	1
4	3253-7	Lock Washer	1
5	3217-5	Hex Nut	4
6	01-359-0230	Cable Assembly	1
7	93-004-0851	Cable Bracket	2

Ref. No.	Part No.	Description	No. Used
8	01-170-0040	Cable Bracket w/nuts	2
9	323-6	Capscrew - Hex Hd.	2
10	3253-5	Lock Washer	2
11	3217-7	Hex Nut	2
12	93-004-0841	Rear Cable Bracket	1
13	01-359-0240	Cable Clevis	1
14	3256-4	Flat Washer	2
15	3220-2	Jam Nut	3

DETERMINING SEED FLOW SETTINGS

DANGER

ROTATING AUGER WILL CAUSE SERIOUS INJURY

- Never put hands or feet inside the seed box while engine is running.

The Aeroseeder 93 is designed to plant 16 rows of seed, spaced 3" apart, 1/2" to 2" below the surface. Each swath of the seeder can be calculated at 48".

For any calculation involving seed, the weight and size of individual seed must be taken into account. For instance, the approximate number of seed per pound for these varieties of seed are as follows:

RYE ..... 235,000/LB.

BLUEGRASS ..... 1,800,000/LB.

FESCUE ..... 515,000/LB.

Also the sizes of the seed vary greatly. To allow for the differences of size and weight of different varieties of seed, a study of seed flow rates for TORO SEEDERS was made. Data was collected and used to tabulate the following charts.

RYE PERENNIALS	SEEDER SETTING 1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
lbs./1000 sq.ft.	-	-	-	.4	.8	1.5	2.4	3.4	3.9	4.2	4.4
lbs./ACRE	-	-	-	17	37	67	105	148	170	185	190

BLUE GRASS	SEEDER SETTING 1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
lbs./1000 sq.ft.	-	-	.4	.8	1.5	2.9	4.2	-	-	-	-
lbs./ACRE	-	-	16.6	35.5	65.7	125.6	182.6	-	-	-	-

FESCUES	SEEDER SETTING 1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2	6
lbs./1000 sq.ft.	-	-	-	.23	.42	.75	1.3	1.9	2.3	2.5	-
lbs./ACRE	-	-	-	10	18.4	32.9	55.8	84.5	102	107	-

SEED FLOW SETTING FOR 3" CENTER SEEDER

PROCEDURE FOR PRE-SETTING SEED FLOW

(1) CONSULT SEED SUPPLIER FOR RECOMMENDED FLOW RATES.
(2) MOVE SEED FLOW HANDLE TO DESIRED SETTING.
(3) LOOSEN KNOB ON ADJUSTING BOLT AND SLIDE AGAINST HANDLE.
(4) TIGHTEN KNOB ON ADJUSTING BOLT.
(5) THE SEED FLOW WILL NOW RETURN TO THE PRESET FLOW RATE.

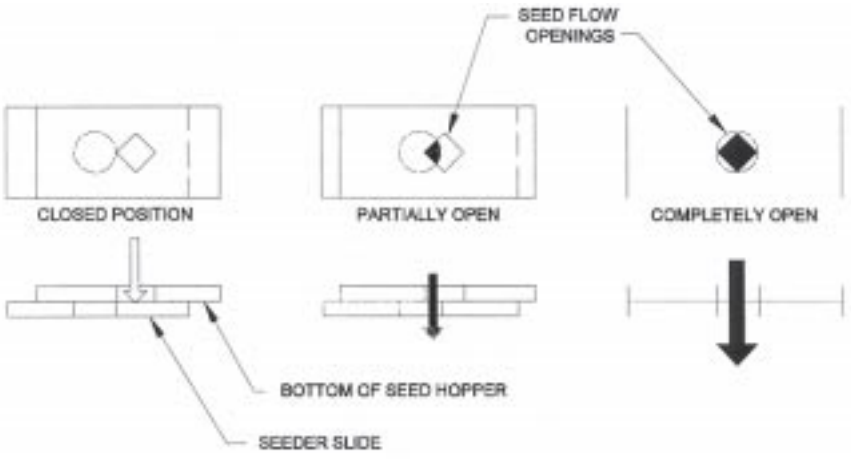
01-506-0610

The data shown in the charts is provided only as a guide. It is advisable to experiment to find the setting and seed quantity based on your machine and your variety or mixture of seed.

If you are using a mixture, the relative seed size of the different grasses should be taken into account.

Generally speaking, it is best to adjust the opening for the largest size seed. If guess work is involved, it is best to over–seed slightly than to under–seed.

The rate of seed that will flow is determined by the position of the holes in the bottom of the seeder box to the holes in the seeder slide. Below are simplified drawings to illustrate how this mechanism works.



DETERMINING SEED FLOW SETTINGS

SETTING SEED FLOW (Fig. 3)

1. Move the seed flow handle (A) to desired setting.

2. Loosen the black knob (B) and slide against handle.

3. Tighten knob.

4. When the remote handle is in the "OFF" position the handle (A) should stop against the bolt (C). In the "ON" position the handle will move against the black knob to allow the desired setting.

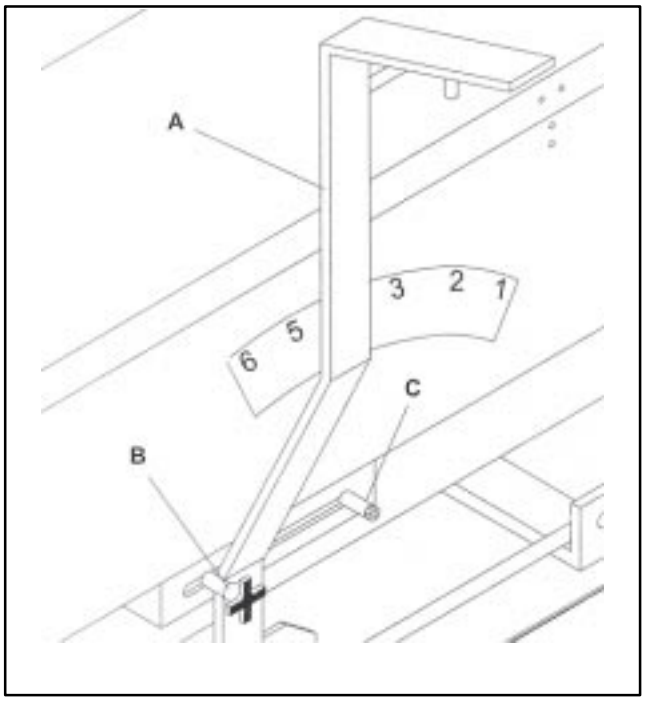


Figure 3

CALCULATING LBS. OF SEED NEEDED FOR 1000 SQ. FT.

Area In Terms Of Square Ft. Method:

To calculate seed quantities needed for an area, a proportion is set up using the information from the charts:

EXAMPLE:

An area of land 200' x 75' is to be seeded in Fescue at a setting of 5.

1. Determine the area in square feet:

   200' x 75' = 15,000 sq. ft.

2. Refer to charts (column titled Lbs/1,000 Sq. Ft.)

   Fescue: 2.3 lbs. for 1,000 sq. ft. at a setting of 5.

3. Set up a proportion:

   2.3 lbs./1,000 sq. ft. = x lbs./15,000 sq. ft.

4. Cross multiply:

   (2.3 lbs.) x (15,000 sq. ft.) = (x lbs.)x(1,000sq. ft.)

   36,000 sq. ft./1,000 sq. ft. = (x lbs.)

   36 lbs. = x

CALCULATING LBS. OF SEED NEEDED – ACRES METHOD

Area In Terms Of Acres Method:

If you know the area to be seeded in terms of acres or fractions of an acre, it is a simple matter to find the number of pounds required.

EXAMPLE:

5 – 1/2 acres to be planted in Bluegrass at a setting of 4.

1. Refer to charts (column titled Lbs./Acre)

   Bluegrass: 182.6 lbs./acre at a setting of 4.

   5.5 acres x 182.6lbs. = 1004.3 lbs. TOTAL

NOTE: A large area in terms of square feet can be converted to acres by dividing by 43,560 (the number of square feet in an acre).

OPERATING INSTRUCTIONS

IMPORTANT: The maximum PTO speed is 540 RPM. Do not operate at a faster speed because the blades, sprockets, gearbox and PTO will be damaged.

1. Start tractor engine and run at a low RPM. Using the tractor's hydraulics raise the Aerothatch high enough to clear the ground.

2. With the tractor engine at idle, engage PTO and gradually increase PTO speed to 540 RPM.

3. Select tractor forward speed.

4. With tractor moving forward at 3 to 5 MPH, gradually lower the unit to cutting position.

5. If seeding, turn the remote handle to the "ON" position.

IMPORTANT: NEVER engage the PTO with the blades in the ground because the blades, chain, sprockets and PTO will be damaged.

6. Always operate in a straight line. NEVER attempt to make turns with the unit in the cutting position.

7. When making turns, raise the unit high enough to clear the ground.

8. If extremely dry or hard soil is encountered, tractor speed and/or blade cutting depth should be reduced.

IMPORTANT: 3 MPH is the recommended operating speed. 5 MPH can be used if thatching depths are shallow (1/4" to 1") or if the soil is loose and free of compaction.

LUBRICATION

BEARINGS (Fig. 4)

The Seeder 93 has four self sealing bearings that must be lubricated with a No. 2 Lithium based grease.

IMPORTANT: Lubricate the bearings after every 40 hours of operation to maintain a slight leakage on the seals. Too much grease can cause overheating.

DRIVE CHAIN (Fig. 4)

1. There is a drive chain on the disc shaft on the Seeder 93. Always maintain a heavy coat of grease on the drive chains.

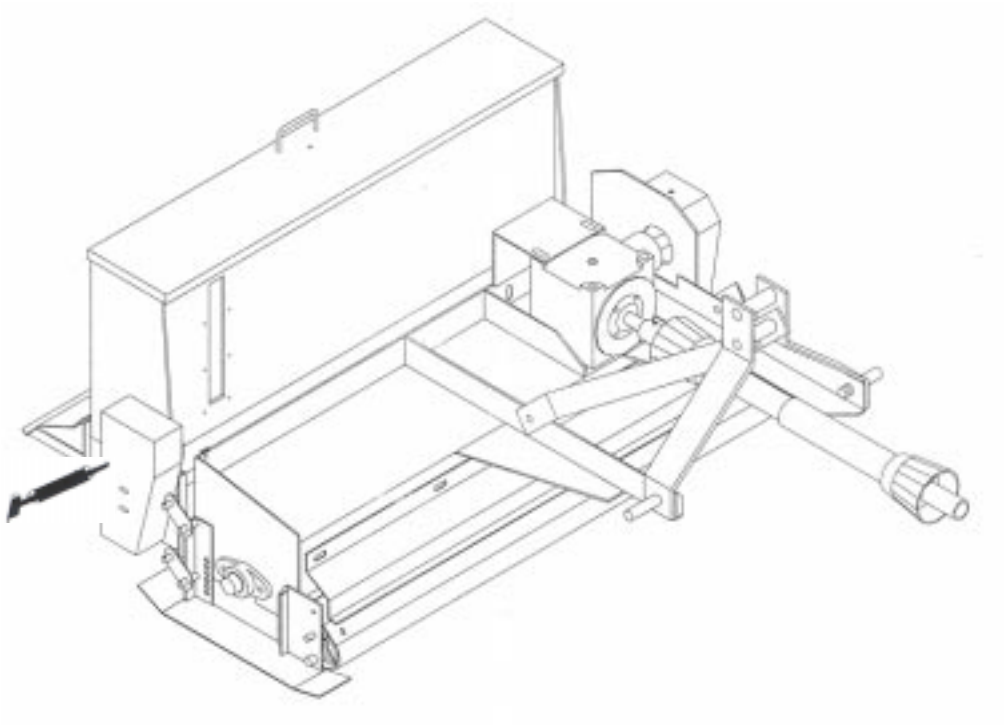


Figure 4

BLADE/DISC ALIGNMENT (Fig. 5–6)

When replacing the blade or disc shaft, use the dimensions shown in figure 5 to keep the disc shaft in line with the blade shaft.

This is very important when seeding, allowing the seed to fall into the blade groove for maximum germination.

When aligning the two shafts, it is much easier to try and line the blade shaft up with the disc shaft.

The left and right skids, on the 83 Aerothatch, can also be shimmed to shift the 93 Seeder to align with thatcher blades.

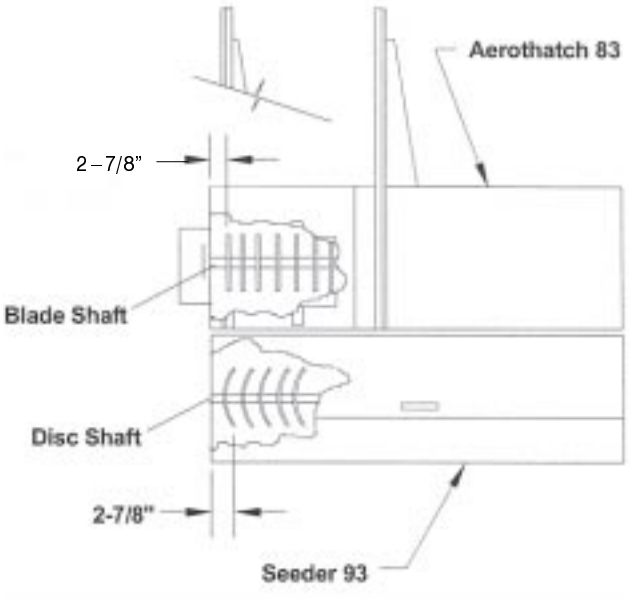


Figure 5

There should be a gap of .25" between seed tube and disc (Fig. 6). Scraper should be positioned against disc.

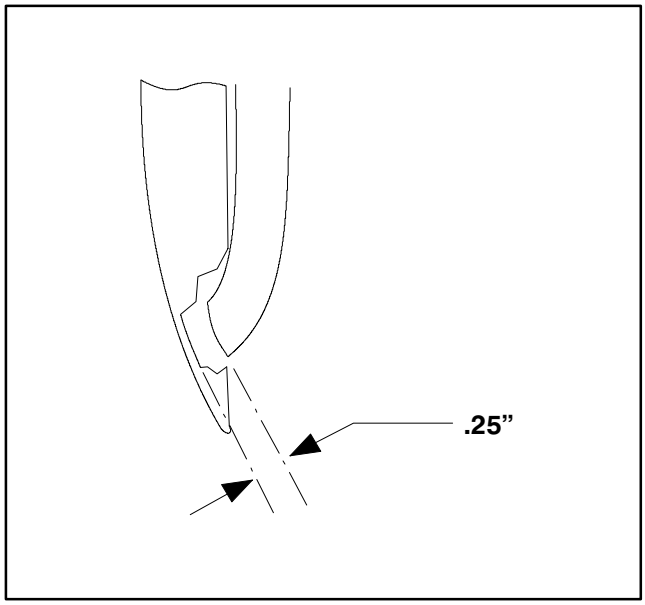


Figure 6

TROUBLE SHOOTING

CONDITION	CAUSE	CORRECTION
SEEDER SHAFT NOT TURNING	• Broken chain. • Loose chain. • Check if sprocket turns with shaft, a key may be sheared on sprocket.	• Replace chain • Slide bearing on seed shaft upward to tighten, downward if tension is too tight. • Replace key.
DISC SHAFT NOT TURNING	• Hand turn disc shaft if possible. Check agitator shaft, may be clogged causing disc to lockup. • Check the seeder tubes, they may be rubbing and binding on the disc. • Check the bearings, they may be froze up or pitted.	• Unclog the seed shaft. • Loosen bolts for seed tubes. Keeping the center in the same position, rotate the tube until it no longer hits. • Replace the bearings.
SEED NOT DROPPING	• Make sure the handle is turned on. • When moving the handle, make sure slide is moving with the handle. • Rotate the seeder disc shaft by hand. Make sure agitator shaft is turning, seed may be clogged.	• Move handle to desired setting. • Linkage rod may need to be adjusted. • Clean out clogged seed.
SEED NOT DROPPING IN BLADE OR DISC SLOT	• Disc may not be lined up with blade shaft. • Check to see if the angle on seed tube is close enough to the disc to follow the curve. The end may be too far away. • May be too much play back and forth between the two units.	• Adjust blade/disc alignment. • Loosen bolts for seed tubes. Keeping the center in the same position, rotate the tube until the end is inside the arc of the disc but not hitting. • When lifted up off the ground, manually move the 93 side to side, there should be no more than 3/8” play. Then check the mounts that mount the two units together, the holes may be worn causing too much play. Replace the mounts if necessary.

STORAGE

1. Thoroughly clean the Seeder.

2. Clean all remaining seed from inside the seed hopper.

3. Check all fasteners. Tighten as necessary.

4. Grease or oil all grease fittings and bearings. Wipe off excess lubricant.

5. Check the tension and condition of the drive chains. Adjust the tension if necessary and apply a heavy coat of grease to the chains.

IDENTIFICATION AND ORDERING

MODEL AND SERIAL NUMBERS

The SEEDER 93 has two identification numbers for each unit: a model and serial number. The numbers on the SEEDER 93 plate are stamped on a plate that is riveted to the top of the seed hopper. In any correspondence concerning the SEEDER, supply model and serial numbers to be sure that the correct information and replacement parts are obtained.

To order replacement parts from an authorized TORO Distributor, supply the following information:

1. Model and serial numbers of the machine.

2. Part number, description and quantity of parts desired.

Note: Do not order by reference number if a parts catalog is being used; use the part number.

NOTES

The Toro General Commercial Products Warranty

A Two-Year Limited Warranty

Conditions and Products Covered

The Toro Company and its affiliate, Toro Warranty Company, pursuant to an agreement between them, jointly warrant your 1996 or newer Toro Commercial Product ("Product") purchased after January 1, 1997, to be free from defects in materials or workmanship for two years or 1500 operational hours*, whichever occurs first. Where a warrantable condition exists, we will repair the Product at no cost to you including diagnosis, labor, parts, and transportation. This warranty begins on the date the Product is delivered to the original retail purchaser.

* Product equipped with hour meter

Instructions for Obtaining Warranty Service

You are responsible for notifying the Commercial Products Distributor or Authorized Commercial Products Dealer from whom you purchased the Product as soon as you believe a warrantable condition exists.

If you need help locating a Commercial Products Distributor or Authorized Dealer, or if you have questions regarding your warranty rights or responsibilities, you may contact us at:

Toro Commercial Products Service Department
Toro Warranty Company
8111 Lyndale Avenue South
Bloomington, MN 55420-1196
612-888-8801
800-982-2740
E-mail: commercial.service@toro.com

Owner Responsibilities

As the Product owner, you are responsible for required maintenance and adjustments stated in your operator's manual. Failure to perform required maintenance and adjustments can be grounds for disallowing a warranty claim.

Items and Conditions Not Covered

Not all product failures or malfunctions that occur during the warranty period are defects in materials or workmanship. This express warranty does not cover:

- Product failures which result from the use of non-Toro replacement parts, or from installation and use of add-on, modified, or unapproved accessories.
- Product failures which result from failure to perform required maintenance and/or adjustments.
- Product failures which result from operating the Product in an abusive, negligent or reckless manner.
- Parts subject to consumption through use unless found to be defective. Examples of parts which are consumed, or used up, during normal Product operation include, but are not limited to, blades, reels, bedknives, tines, spark plugs, castor wheels, tires, filters, belts, etc.
- Failures caused by outside influence. Items considered to be outside influence include, but are not limited to, weather, storage practices, contamination, use of unapproved coolants, lubricants, additives, or chemicals, etc.
- Normal "wear and tear" items. Normal "wear and tear" includes, but is not limited to, damage to seats due to wear or abrasion, worn painted surfaces, scratched decals or windows, etc.

Parts

Parts scheduled for replacement as required maintenance are warranted for the period of time up to the scheduled replacement time for that part.

Parts replaced under this warranty become the property of Toro. Toro will make the final decision whether to repair any existing part or assembly or replace it. Toro may use factory remanufactured parts rather than new parts for some warranty repairs.

General Conditions

Repair by an Authorized Toro Distributor or Dealer is your sole remedy under this warranty.

Neither The Toro Company nor Toro Warranty Company is liable for indirect, incidental or consequential damages in connection with the use of the Toro Products covered by this warranty, including any cost or expense of providing substitute equipment or service during reasonable periods of malfunction or non-use pending completion of repairs under this warranty. Except for the Emissions warranty referenced below, if applicable, there is no other express warranty. All implied warranties of merchantability and fitness for use are limited to the duration of this express warranty.

Some states do not allow exclusions of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Note regarding engine warranty: The Emissions Control System on your Product may be covered by a separate warranty meeting requirements established by the U.S. Environmental Protection Agency (EPA) and/or the California Air Resources Board (CARB). The hour limitations set forth above do not apply to the Emissions Control System Warranty. Refer to the Engine Emission Control Warranty Statement printed in your operator's manual or contained in the engine manufacturer's documentation for details.

Countries Other than the United States or Canada

Customers who have purchased Toro products exported from the United States or Canada should contact their Toro Distributor (Dealer) to obtain guarantee policies for your country, province, or state. If for any reason you are dissatisfied with your Distributor's service or have difficulty obtaining guarantee information, contact the Toro importer. If all other remedies fail, you may contact us at Toro Warranty Company.

Rev. 12/09/1999