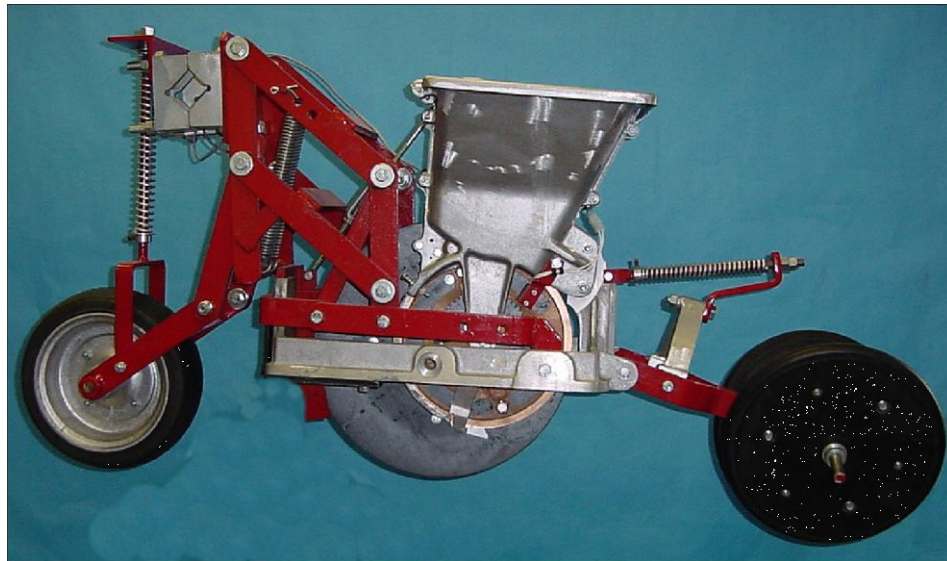


STARCO MANUFACTURING INC.

MILTON PRECISION
PLANTER

Starco
MFG. INC. 



OPERATOR'S MANUAL



MILTON PRECISION PLANTERS

OPERATOR'S MANUAL

PRODUCTION/SALES

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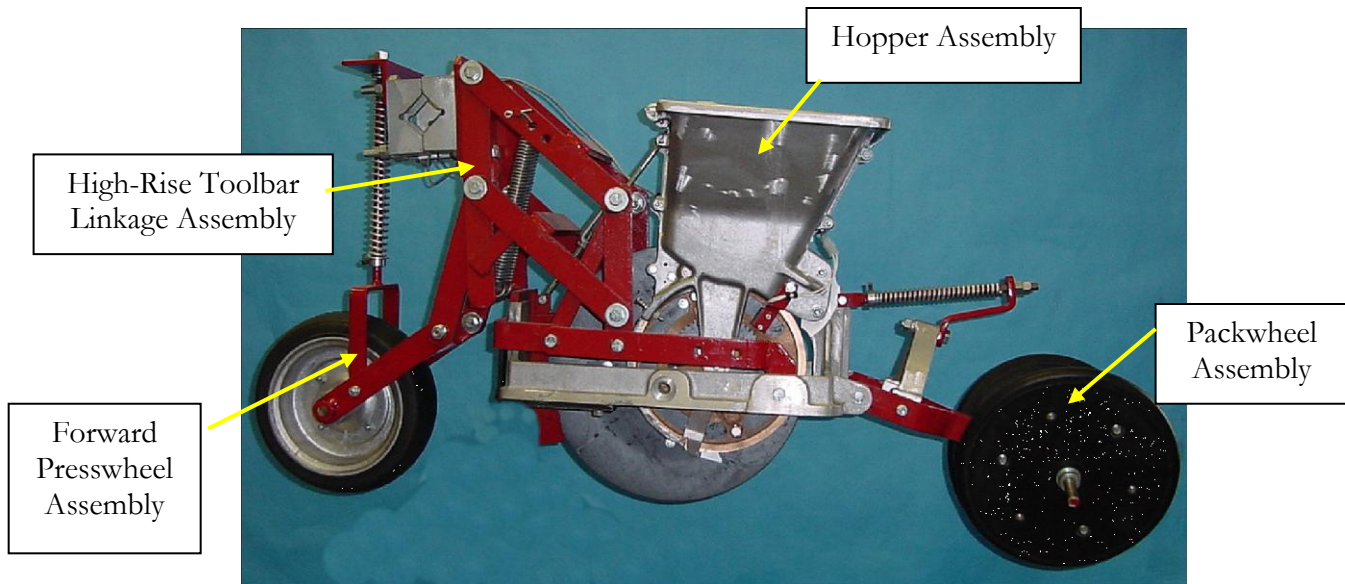
MILTON PRECISION PLANTER OPERATOR'S MANUAL

Thank you for purchasing Starco's Milton Precision Planter. This manual describes the various procedures needed to use and maintain the Milton Planter. Please read this manual thoroughly before operating the Milton Precision Planter.

Quick Check List

Periodically inspect your Planter.

- 1) At no time should the Planter Units be backed up when they are in the ground for planting. The Planters should be raised clear of the ground before backing up.
- 2) While planting periodically check to verify that all planters are planting properly.
- 3) Discs – when to replace them. When the discs are new they measure 14 5/8" in diameter. The Planter Frame to which the discs are attached is designed so that they come together at the bottom of the furrow. As discs wear down the planting accuracy begins to deteriorate. Starco does not recommend using discs that are less than 14 1/8" in diameter.
- 4) Depth Bands – periodically check planting depth. As the discs wear down the planting depth becomes shallower, it may become necessary to change depth bands to achieve the desired planting depth.
- 5) Bearings – periodically check the Hub Assembly Bearing and Packwheel bearings for wobble.
- 6) Seed Wheels
 - a) Periodically check the cells in the Seed Wheels for wear. As seed wheels wear the cells become oblong or enlarged. If the seed cells become too deformed an increase in seed cracking and doubles will be observed.
 - b) Periodically check Gear Rack for wear or damage. Make sure the gear mesh is correct (See Figure 17, page 10). If it is too tight or too loose it may bind and damage the Gear Rack and Planter.
 - c) Seed Wheels have a sealed bearing and require no maintenance.
- 7) Check the Seed Cut-off for wear. When adjusting or replacing the Flat Seed Cut-off be sure that the Cut-off rides just touching the Seed Wheel so the Seed Wheel turns freely. Adjust the Flat Seed Cut-off by using the set screw located in the insert (clockwise lowers cut-off, counterclockwise raises cut-off). Replace the Flat Seed Cut-off when it becomes irregularly worn. A badly worn Seed Cut-off can cause excessive seed cracking.
- 8) Downspout – The Downspout should ride flush against the Seed Wheel allowing the Seed Wheel to run free and easily. If it does not run freely check for pressure points.



GENERAL INSTRUCTIONS

Your Milton Planters have been fully assembled at the factory and all that is required is to attach the Planters to your tool bar and level them. **Note:** Leveling required on the High-Rise Tool Bar Linkage only.

To Install

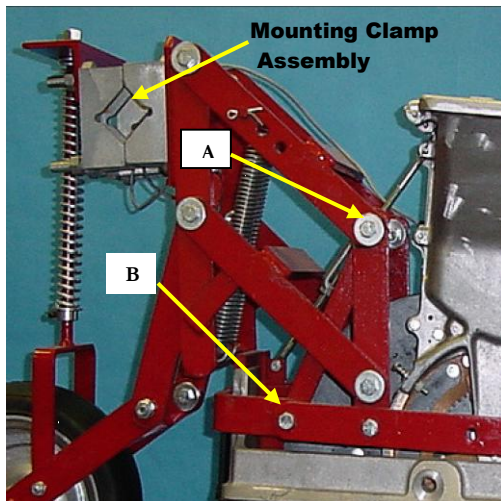


Figure 1 – High-Rise Toolbar Linkage

- 1) Remove the front half of the mounting clamp assembly from the Toolbar Linkage and install on the tool bar: tighten mounting clamps evenly. There should be the same amount of space between the top of the clamps as the bottom of the clamps.
- 2) With Planters installed lower tool bar and check that all Planter Hoppers are level with the ground.

To Level High-Rise Linkage

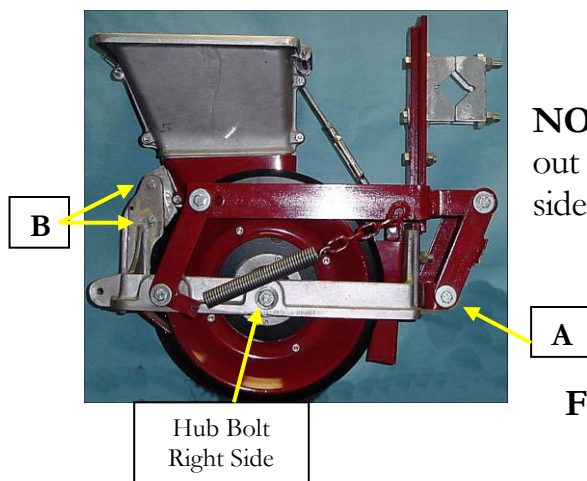
- A) Adjust the High-Rise Toolbar Linkage by loosening bolts A and B on both sides then re-tighten after level (**Figure 1**).

- B) Adjust the Spring-Flex Toolbar Linkage by loosening the front adjusting bolt "A" to level and re-tighten (**Figure 2**).

Opener Disc Removal

1) Spring-Flex and Milton "N" Toolbar Linkage (**Figure 2**)

- a) With the tool bar raised, position yourself to the rear of the Planter.
- b) Un-hook tension springs from either side (**Spring-Flex only**).
- c) If Depth Band Scrapers are used, loosen bolts that hold them in place and turn them out of the way.
- d) Remove the left side Hub bolt and remove the Opener Disc by lowering it.
- e) Loosen bolts (**Figure 2-B**). Hopper and Seed Wheel will disengage from the gear.
- f) Remove the right side Hub bolt and pull the Planter back away from the toolbar and lift the right Opener Disc upward and to the rear.
- g) When re-assembling the Planter (reverse order) **make sure** gear mesh is correct after tightening Hopper bolts (**Figure 2-B**) before installing the left Opener Disc.



NOTE: If disc assembly cannot be dropped down and out it may require unhooking tension springs from both sides and pulling the Planter back away from the tool bar.

Figure 2 – Spring-Flex Toolbar Linkage

2) High-Rise Toolbar Linkage (**Figure 1, page 3**)

- a) With the tool bar raised, stand behind the Planter, loosen bolts A and B (**Figure 1, page 3**) on both sides of the Planter.
- b) Tilt the rear of the Planter down as far as it will go.

- c) If Depth Band Scrapers are used loosen the bolts that hold them in place and turn them out of the way.
- d) Remove the left side Hub bolt and remove the Opener Disc by lowering it.
- e) Loosen bolts that hold the Hopper to the frame (**Figure 2-B, page 4**). The Seed Wheel will disengage from the gear.
- f) Remove the Hub bolt and lift the right side disc up and out.
- g) When reassembling the Planter (reverse order), **make sure** the gear mesh is correct after tightening the Hopper bolts before installing the left Opener Disc.

Note: If at any time the adjusting bolts on either linkage are loosened the units must be checked for level with the tool bar down.

Gear Drives

Important: Always try to use the maximum number of cells and the 8, 9, or 10 tooth gears. When using the 11 or 12-tooth gears, you may find it necessary to reduce your ground speed. Generally higher ground speeds may be achieved when the smaller gears are used. It is best to order Seed Wheels so that the 8, 9 or 10 tooth gear will give the desired spacing between seeds. Then if you should later wish to make the seeding rate either heavier or lighter, you need only to change the drive gear.

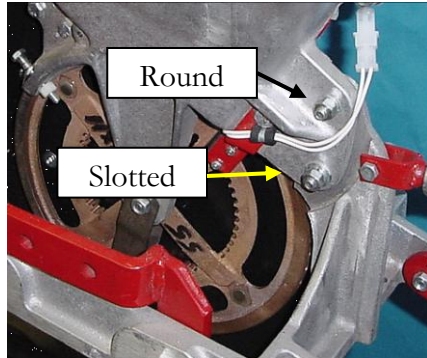
Example: If you desire 2" spacing now, but may later want 3" spacing, it is suggested you use either 140 cells with a 9 tooth gear or 120 cells with a 10 tooth gear for the initial 2" spacing. Later, simply change to a 6-tooth gear for 140 cells or a 7-tooth gear for 120 cells.

A greater number than 280 cells per Seed Wheel is possible depending on the size of the seed. More cells may be desirable and necessary for such crops as alfalfa, carrots, onions, parsley, etc.

See the seed spacing chart in the back of the manual.

To Change Drive Gears With Standard Hub

- 1) Remove both discs. See the Section on Opener Disc Removal on Page 4.
- 2) Change the gear in the right side disc.



- 3) Note that the Hopper has two holes where it bolts to the Planter frame. One hole is round; the other is slotted (**Figure 5**). Loosen these two bolts **but do not remove.**

Figure 5

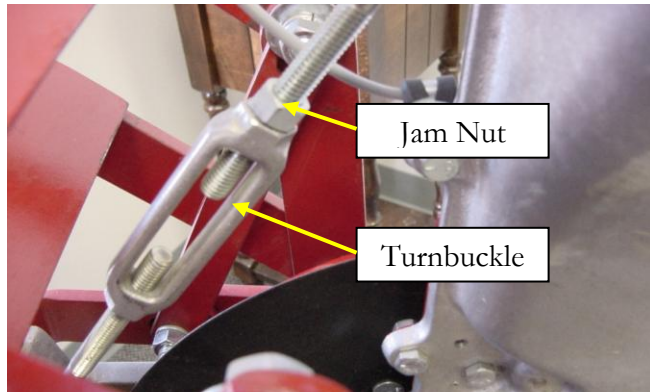


Figure 6

- 4) Loosen the jam nut on the turnbuckle (**Figure 6**).
- 5) To go from smaller to larger gears, **LENGTHEN** the turnbuckle. To go from large to smaller gears, **SHORTEN** the turnbuckle.
- 6) Replace the right side disc with the new gear; making sure that the gear is within the Seed Wheel gear rack.
- 7) Snug the bolt in the round hole of the Hopper where it bolts to the frame.
- 8) After the turnbuckle has been lengthened or shortened, depending on the size of the new gear, **make sure the gear meshes freely and does not bind when turning the disc.**
- 9) After the turnbuckle has been properly adjusted, firmly tighten the bolt in the slotted hole. Again, turn the disc to see that the gear mesh is correct and is not binding. Secure both bolts. Tighten the jam nut on the turnbuckle.
- 10) Replace the left side disc.

Hopper Removal With Quick Change Hub

- 1) Turn discs counter clockwise several times to disengage clutch- bearing before retracting gear.
- 2) Using a 1/2" wrench and socket loosen the two 5/16" bolts that hold the Hopper to the Frame located at the back of the Hopper (**Figure 7**). Retract Gear into Disc using the lever located on the Quick-Change Hub on the right side of the Frame. (place handle at 90°, Figure 8)



Figure 7

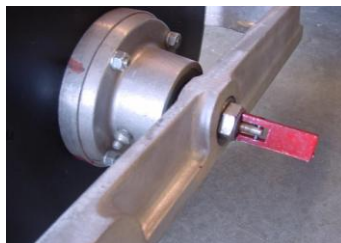


Figure 8

- 3) Remove hairpin and clevis pin that attaches the upper portion of the Self-Adjust Cylinder, or Turnbuckle to the Hopper (**Figure 9**). Cylinder will have light tension. Turnbuckle may require loosening of jamnut. Remove two bolts that hold the Hopper to the Frame (**Figure 7**). Hold onto the Hopper so that it does not drop between Opener Discs. Lift Hopper out of Frame and place on workbench with the Seed Wheel up to prevent damage to the Seed Wheel.

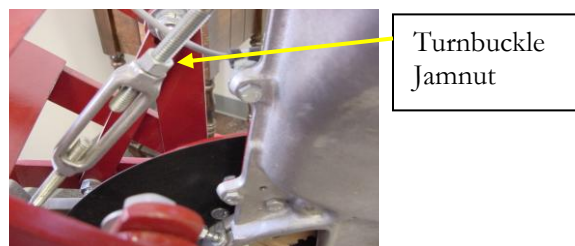
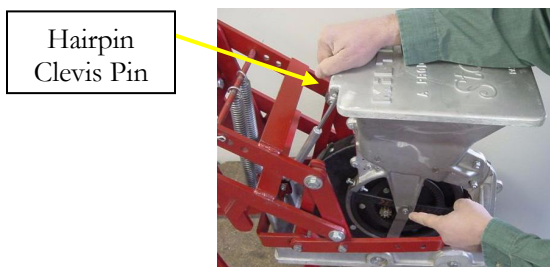
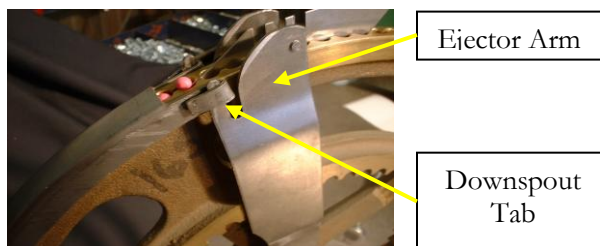
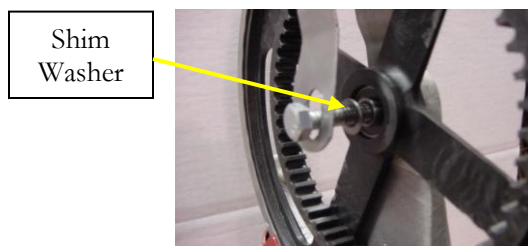


Figure 9

- 4) To remove Seed Wheel remove the 5/16" hex nut, shim washer and bolt (**Figure 10**) that hold the Seed Wheel and Ejector Arm to Hopper post. **NOTE: The Hopper post is threaded so the bolt will need to be screwed out.** Lift out Seed Wheel, Ejector Arm and Ejector Blade by rotating the Ejector Arm tabs out of the Downspout tabs.



Figures 10 & 11

When replacing the Seed Wheel make sure the Wheel Gear Rack is away from the Hopper post and reverse the procedure in step 4. The Ejector Blade should be set in the proper slot so that as the seed starts to clear the Downspout it is gently pushed up and totally ejected (**Figure 11**). **Caution:** There is a .020 shim washer between the Ejector Arm and Seed Wheel. Before tightening the 5/16" hex bolt and nut, check the Ejector Blade for approximately 1/32" movement up and down on the Seed Wheel. Tighten the 5/16" bolt and nut and rotate Seed Wheel to insure free-smooth rotation. Ejector Blade should not be tight, in the groove. **Do not over tighten the 5/16" Seed Plate bolt as thread damage can result.**

- 5) If you are not changing the Drive Gear re-install the Hopper Box by reversing the procedures in steps 1, 2 and 3 of this section, if you are changing the Drive Gear follow the procedure outlined in the next section.

To Change Drive Gears For Quick Change Hub

Drive Gear adjustment is required when a different size gear is installed.

Caution: Opener Discs are sharp. Use caution when working between discs.

- 1) To change the Drive Gear the Hopper Box must first be removed by following steps 1, 2 and 3 in the Removal of Hopper and Seed Wheel section. **Always rotate Opener Disc counter-clockwise at least one full turn before disengaging the Quick-Change Hub lever.** Gear removal is achieved by moving the Gear Retract Lever into the locked position (lever down) and holding the Retract Lever with your right hand, using pliers or channel locks, turn Gear counter clockwise to remove (**Figure 12**). Reverse procedure to install new Gear. **Do not over tighten gear.**
- 2) Reinstall the Hopper Box, **but do not tighten the Hopper mounting bolts.**

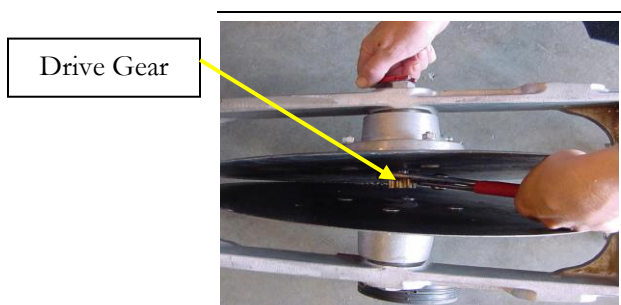


Figure 12

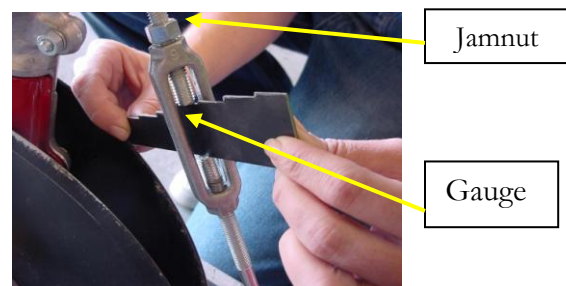


Figure 13

- 3) **For Planters with Turnbuckles:** Using a 9/16" wrench, loosen the 3/8" jamnut on Turnbuckle (**Figure 13**) using the Gear Gauge as a guide, open up the Turnbuckle by rotating the body until the Gear Gauge will fit between the spades in the Turnbuckle Body (**Figure 13**) at the 12-tooth mark with light pressure. Lightly tighten the two Hopper Box mounting bolts. Close the Turnbuckle by rotating the body until the spade bolt opening fits the Gear being used, the gauge should fit fairly tight between the spades. **Note: Turn the drive side Opener Disc occasionally while closing the Turnbuckle so the Gear will mesh with the Seed Plate gear rack.** Tighten the two 5/16" Hopper mounting bolts and nuts and re-check gear rack mesh for binding by rotating Opener Disc several times, re-adjusting if necessary. Tighten the 3/8" jam nut on the Turnbuckle.

For Planters with the Self Adjusting Cylinder: Replace the hopper and lightly tighten the two Hopper Box mounting bolts. Pull the Self Adjusting Cylinder shaft out, and reconnect with the clevis pin and hairpin. Gently, pull hopper back and extend self-adjusting cylinder – engage Quick-Change drive gear. Release hopper – self adjusting cylinder should pull hopper into gear (**Figure 15**). Rotate drive disc to insure wheel and gear mesh properly (**Figure 16**). See proper mesh (**Figure 17**). If mesh is too tight, slightly pull hopper back with one hand and rotate drive disc with other hand. When drive disc turns easy, tighten the two Hopper Box mounting bolts.



Figure 15



Figure 16

- 4) Check the gear mesh by rotating the drive side Opener Disc. If the Disc appears to bind re-adjust the mesh.

NOTE: IMPROPERLY ADJUSTED DRIVE GEAR WILL RESULT IN A DAMAGED SEED PLATE.

(read important notation on following page)

IMPORTANT: The gear should mesh so that there is a slight gap between the drive gear tooth and the Seed Wheel Gear Rack. This gap should be no greater than 1/32". (**Figure 17**). Turn the disc at least several complete revolutions to be sure the drive gear rides evenly in the gear rack. The correct setting of the drive gear in the Seed Wheel Gear Rack is **VERY IMPORTANT**. If it is meshed too tightly it can cock the Seed Wheel to one side or the other causing it to press against the other parts of the Planter. A poor adjustment of the Drive Gear can damage the Gear Rack and Drive Gear as well as cause excessive wear to other parts of the Planter.



Figure 17

Changing Single Piece Depth Bands

- 1) When changing from one size Depth Band to another, remove Opener Discs (See section on Opener Disc removal on Page 4). Remove the 1/4" hex nuts holding present bands.

NOTE: A special carriage bolt is used for both Hubs and Depth Bands. Over tightening will either distort the bolt head causing a clicking action or possibly bind the Planter causing damage. Over tightening can also cause warping of discs, leaving a gap at the seed drop point.

Changing Split Depth Bands

- 1) Remove the 1/4" hex nuts holding the depth band halves on the opener disc. Depth band halves can be easily removed. Each pan-head bolt should have a 1/4" hex nut remaining on disc. The 1/4" hex nut is used for a spacer. Do not remove.
- 2.) Split depth bands come in paired sets. Line up round i.d. hole with dimple on the correct split depth band. The remaining split depth band will fit the remaining two pan-head bolt pattern. Tighten 1/4" hex head nuts until the split depth bands meet the spacer nuts.

Depth bands come in sizes 1/2", 3/4", 1", 1 1/4", 1 1/2" and 2"

Hopper Removal

All maintenance can be done by leaving the Planter mounted on the tool bar.

THE FOLLOWING PROCEDURE APPLIES TO ALL MODELS OF THE MILTON PRECISION PLANTER.



- 1) Position yourself behind Planter.
- 2) Remove the hub bolt from the left side Opener Disc and lower **(Figure 2)**.
- 3) Remove the bolt and/or clevis from the upper end of the turnbuckle assembly where it is attached to the Hopper **(Figure 18)**.
- 4) Remove bolts from the Hopper mount **(Figure 5)**.
- 5) Lift the Hopper Assembly out and set the Hopper on the lid.

Figure 18

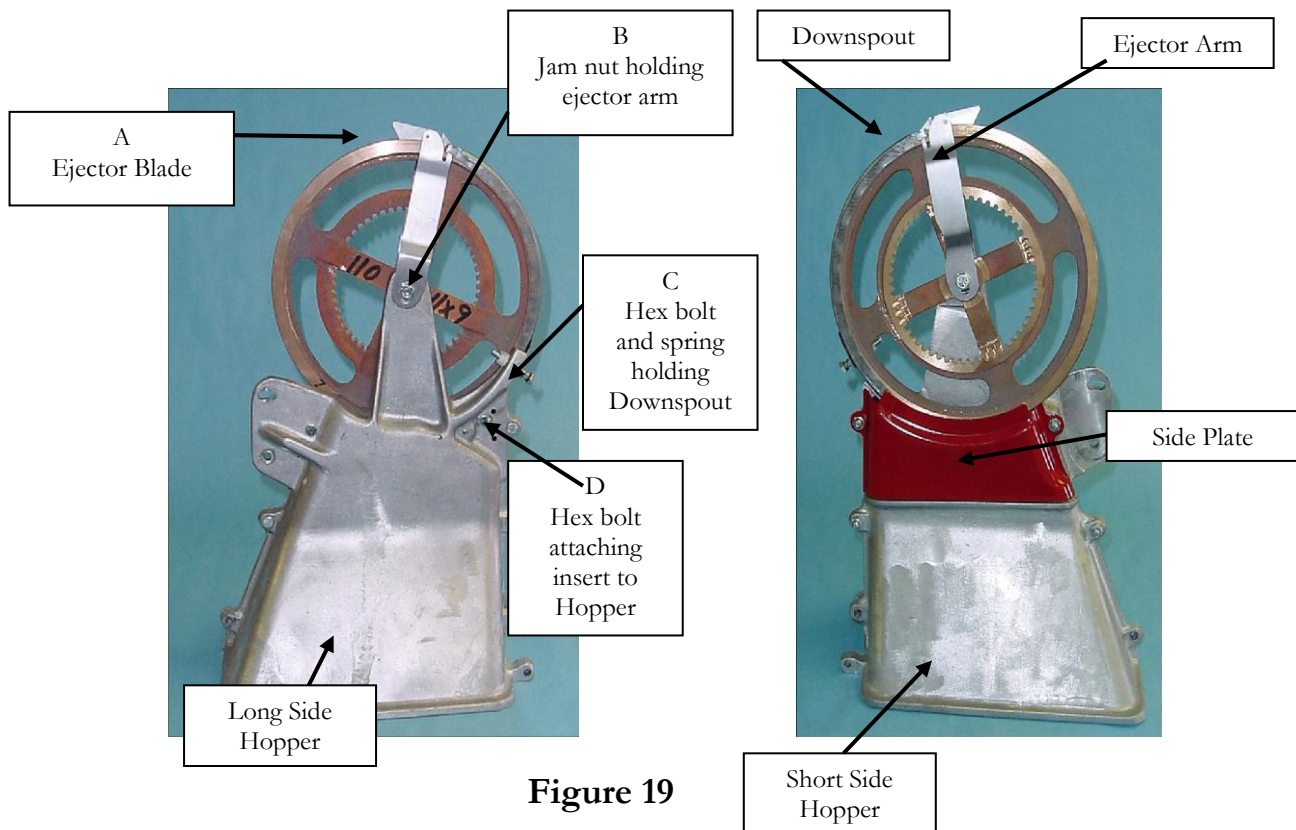


Figure 19

Changing From Small To Large Seed (Not available on the Milton "N")

Figure 20



The Hopper Insert (**Figure 20**) is to be removed when planting with large seed and should be done at the same time the Seed Wheel is changed.

To remove the Hopper Insert take out the two screws located on the side of the Hopper (**Figure 21**). Install the 1/2" flat head screw, flat washer and wiper into the slot in the bottom of the Hopper and tighten with a screwdriver (**Figure 22**). Install the Seed Wheel according to the operator's manual, see page 13. Check that the wiper does not rub on the Seed Wheel.

Note: It is recommended that the insert be installed in the hopper when planting with small seed. This allows for a smaller amount of seed to be used.



Figure 21



Figure 22

To Change The Seed Wheel

- 1) Remove the Hopper Assembly. **Caution:** Set the Hopper Assembly on its lid with the Seed Wheel up to prevent damage to the Seed Wheel.
- 2) Remove the Ejector Arm and Ejector Blade by removing the 5/16" nut, bolt and shim washer. **Caution:** The .020 shim washer is located between the Ejector Arm and the Seed Wheel.
- 3) Remove the Seed Wheel.

To Reinstall the Seed Wheel

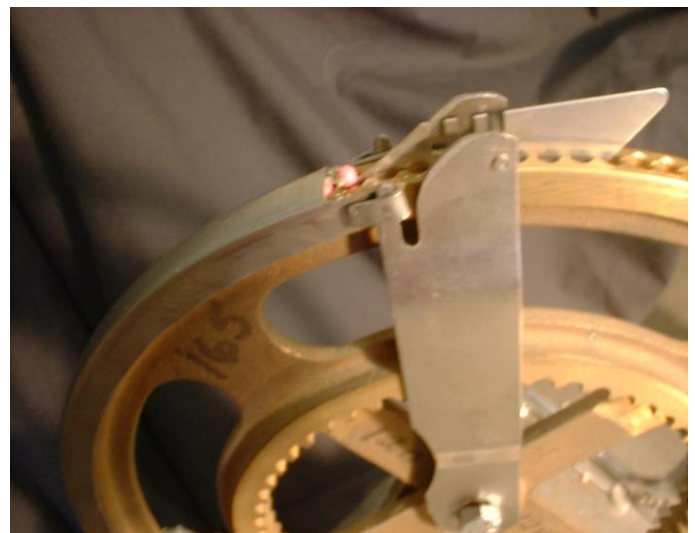
NOTE: It is recommended that the Hopper Side Plate remain in place while assembling the Seed Wheel to the Hopper.

- 1) Place the Seed Wheel in the opening between the Side Plate and the Hopper with spokes against the machined face of the Hopper, Gear Rack out.
- 2) Place the Ejector Blade in the Seed Wheel groove with the point toward the Downspout.
- 3) Insert the Ejector Arm Pin into the correct notch of the Ejector Blade. The Ejector Arm is then inserted into the hooked ends of the Downspout.

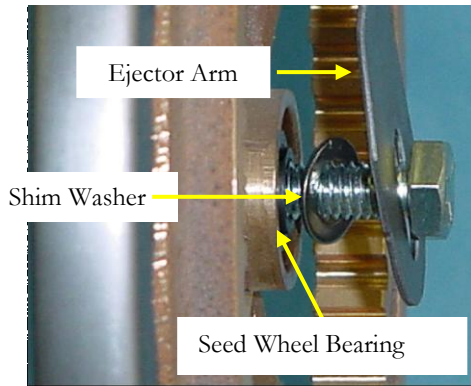
NOTE: The correct notch of the Ejector Blade is when only one cell of the Seed Wheel clears the Downspout and the blade starts pushing the seed out of the pocket. Too far under the Downspout will cause damage to the seed. Too far back will cause erratic spacing.



SEED WHEEL PROPERLY ADJUSTED



SEED WHEEL IMPROPERLY ADJUSTED

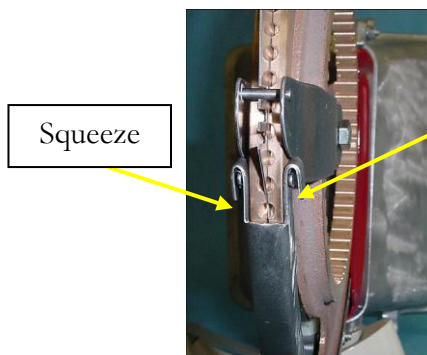


- 5) Place 5/16 x .020 shim washer between the Ejector Arm and the Seed Wheel Bearing. Insert the 5/16" x 1 1/4" hex bolt through the Ejector Arm and Seed Wheel and into the threaded Hopper. Hand tighten only at this time. Place the other arm over the bolt.

NOTE: If the Ejector Blade is too tight it can cause severe drag, which may damage the Seed Wheel. If the Ejector Blade is too loose, trash and seed may be forced under the blade and also cause Seed Wheel damage.



- 6) Pull the Ejector Arms back away from the end of the Downspout, keeping the arms as low as possible to hold the Ejector Blade in place. There should be approximately 1/32" up and down movement in the Ejector Blade.
- 7) Tighten the Seed Wheel bolt. Do not over tighten as to strip threads in the Hopper. Tighten the jam nut.
- 8) Squeeze hooked ends of the Downspout against the Ejector Arm so they are flush.



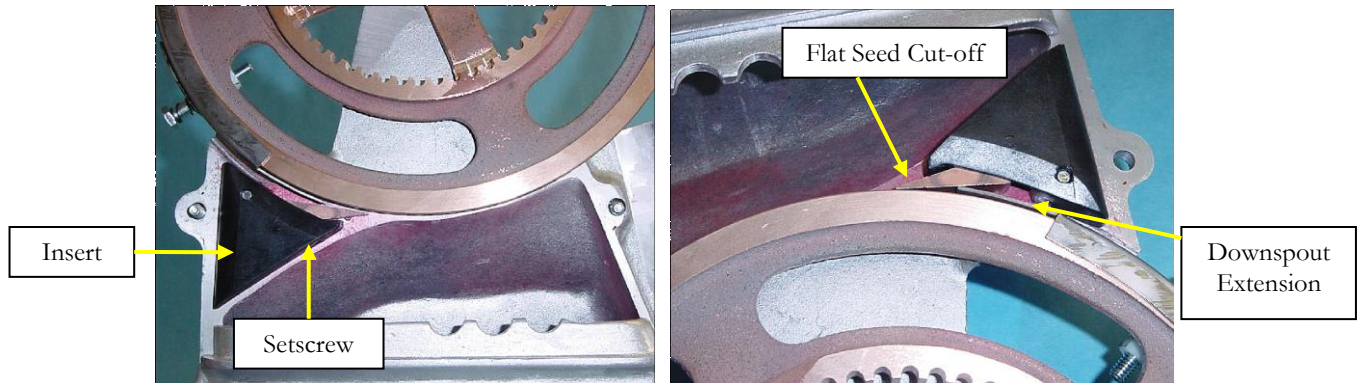
Squeeze

NOTE: THE SEED WHEEL SHOULD TURN FREE AND EASILY AT ALL TIMES.

Seed Wheel Without Grooves

Not all Seed Wheels are grooved: this is generally because of very small seed cell sizes. The procedure to be followed for the wheel removal and replacement is basically the same except the Ejector Blade is excluded.

Seed Cut-Offs



- 1) **ALL PLANTERS REQUIRE FLAT SEED CUT-OFFS.** The Flat Seed Cut-off is held just touching against the surface of the Seed Wheel by a setscrew. **IMPORTANT:** the setscrew is a self-locking type so that the Flat Seed Cut-off is held in place against the surface of the Seed Wheel without any pressure (**Figure 23**). Added pressure will bind the Seed Wheel. When changing the Seed Cut-off use the following procedure:
 - a) Remove the Hopper Assembly from the frame.
 - b) Remove the Hopper Side Plate.
 - c) Remove the bolt from the back of the Hopper running through the insert (**Figure 19-D**).
 - d) Remove the Insert Block. The Insert Block may become stuck in place. Should this happen, tap the pins that hold the Insert Block in place with a small punch. **NOTE:** These pins are formed into the Insert Block.
 - e) After the Insert Block is removed, the Seed Cut-off is simply pulled from the roll pin and the new Cut-off put in its same position. **NOTE:** See "Quick Checklist" as to when to replace the Seed Cut-offs.
 - f) Replace the Insert Block and re-adjust the setscrew: Clockwise to lower the cut-off, counter clockwise to raise the cut-off (**Figure 23**).
 - g) Check the Hopper Plate for excessive wear or grooving. Replace the Hopper Plate.



Figure
23



Downspout

The following procedure is used when replacing the Downspout:



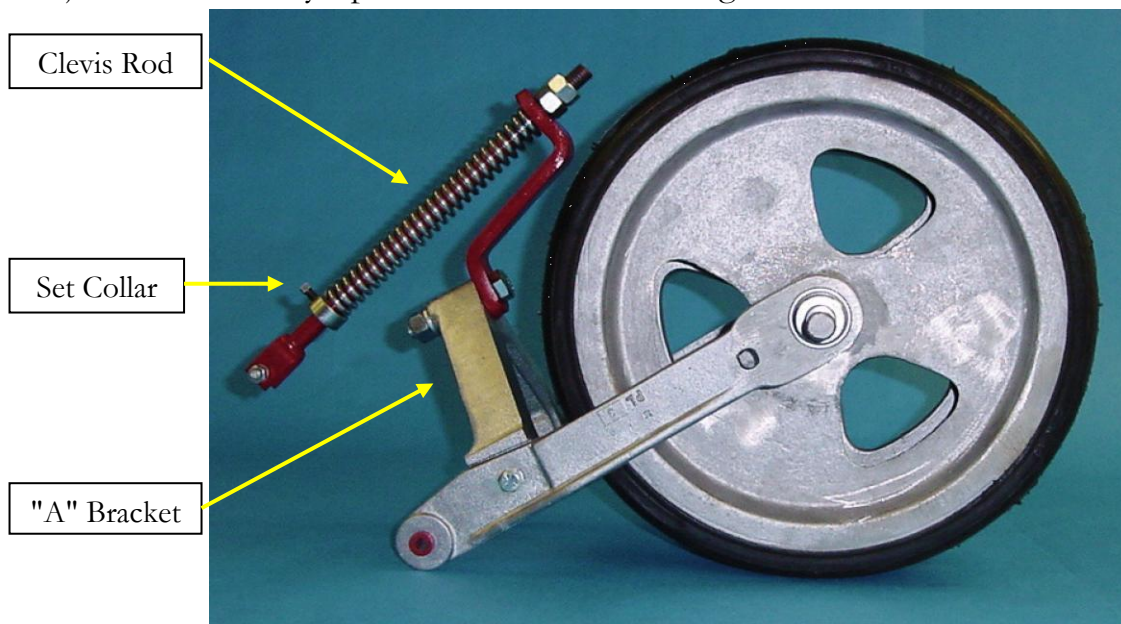
- 1) Remove the Hopper Assembly from the frame.
- 2) Remove the spring-loaded 1/4" bolt holding the Downspout to the Hopper (**Figure 19c**).
- 3) Loosen the jam nut and bolt holding the Seed Wheel, pry open the hooked ends of the Downspout and slip the Ejector Arm out of the hooks.
- 4) Install the Downspout so that the long extension slips under the Flat Seed Cut-off. Install the spring-loaded bolt and the nylon lock nut and tighten until the Downspout is flush with the Seed Wheel. Slip the Ejector Arm into the hooked ends then tighten. Turn the Seed Wheel several times to make sure the wheel turns free and easily. Too tight of a drag on the Seed Wheel could cause damage to the gear rack.

Packwheels

There are eight different Packwheels available for the Milton Planter. All Packwheels adjust for ground pressure in the same manner.

- 1) Firming pressure can be adjusted by either loosening the Set Collar on the Clevis Rod or by tightening the nuts on the clevis-adjusting bolt.

NOTE: When changing to a different size of Depth Bands, firming pressure may have to be re-adjusted. Too heavy a pressure could cause damage to either "A" bracket or Packwheels.

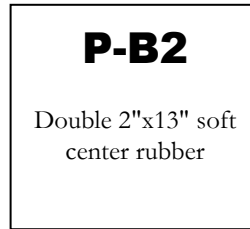


PACKWHEEL OPTIONS



P-B1

Single 2"x13" soft center rubber



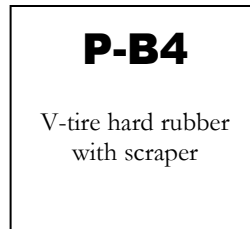
P-B2

Double 2"x13" soft center rubber



P-B3

Soil King 4"x10" zero pressure rubber



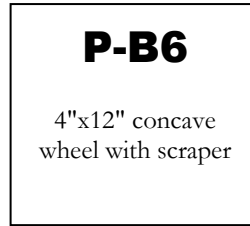
P-B4

V-tire hard rubber with scraper



P-B5

4"x10" wire mesh



P-B6

4"x12" concave wheel with scraper



P-B7

Angled packwheel w/2-1"x12" smooth crown wheels

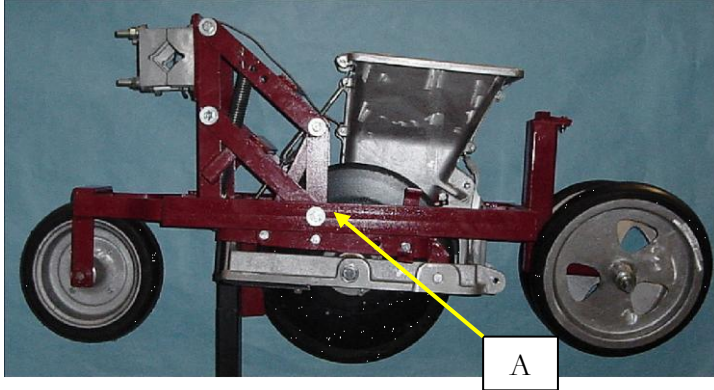


P-B8

Angled packwheel w/2-2"x13" smooth crown wheels



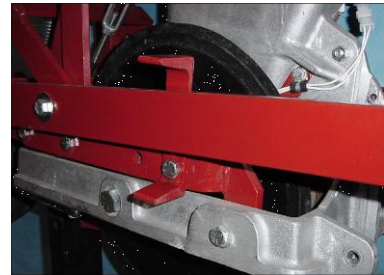
Depth Control Frame



The use of the Milton Depth Control Frame eliminates the need for Depth Bands. When installing the Depth Control Frame use the following steps:

1) When mounting Depth Control, release the Draw Bar spring tension.

2) Remove the lower hex bolts and bushings (A).



3) Slip the Depth Control Frame under the Planter into position. Replace bushings with the 7/16" x 9/16" bushing and the 7/16" x 2 1/2" bolts. Install C-stop to arm.

4) Reinstall springs. Lower the Planter to planting position. Remove the locking tab.

5) Set to the require planting depth.

6) Reinstall the locking tab.

NOTE: All depths are approximate. Planter Units should be checked in the field to insure proper planting depth.

OTHER STARCO OPTIONS

* Hopper Extension



Designed to increase seed capacity

* TracBands



designed for increased traction, 3/8" shallow planting depth
- durable, belted lug material



Milton Precision Planter Spacing

Schedule of seed spacing possible showing Seed Wheels with different number of cells and space range between seeds by using different drive gears.

-Spacing in inches between seeds-

Number of Cells	6 tooth gear	7 tooth gear	8 tooth gear	9 tooth gear	10 tooth gear	11 tooth gear	12 tooth gear
5	82 3/4	70 3/4	62	55 1/8	49 5/8	45 1/8	41 1/2
10	41 3/8	35 3/8	31	27 1/2	24 7/8	22 1/2	20 7/8
15	27 1/2	23 1/2	20 5/8	18 3/8	16 1/2	15	13 3/4
20	20 3/4	17 3/4	15 1/2	13 3/4	12 3/8	11 1/4	10 3/8
25	16 1/2	14 1/8	12 3/8	11	10	9	8 1/4
30	13 3/4	11 3/4	10 3/8	9 1/8	8 1/4	7 1/2	6 7/8
35	11 7/8	10 1/8	8 7/8	7 7/8	7 1/8	6 1/2	5 7/8
40	10 3/8	8 7/8	7 3/4	6 7/8	6 1/4	5 5/8	5 1/8
45	9 1/8	7 7/8	6 7/8	6 1/8	5 1/2	5	4 5/8
50	8 1/4	7	6 1/4	5 1/2	5	4 1/2	4 1/8
55	7 1/2	6 1/2	5 5/8	5	4 1/2	4 1/8	3 3/4
60	6 7/8	5 7/8	5 1/8	4 5/8	4 1/8	3 3/4	3 1/2
70	6	5	4 3/8	4	3 1/2	3 1/4	3
75	5 5/8	4 3/4	4 1/8	3 3/4	3 3/8	3 1/8	2 3/4
80	5 1/8	4 1/2	3 7/8	3 1/2	3 1/8	2 7/8	2 1/2
85	4 7/8	4 1/4	3 5/8	3 1/4	2 7/8	2 5/8	2 1/4
90	4 1/2	4	3 1/2	3	2 3/4	2 1/2	2 1/4
100	4 1/8	3 1/2	3 1/8	2 3/4	2 1/2	2 1/4	2
110	3 3/4	3 1/4	2 3/4	2 1/2	2 1/4	2	1 7/8
120	3 1/2	3	2 1/2	2 1/4	2	1 7/8	1 3/4
140	3	2 1/2	2 1/4	2	1 3/4	1 5/8	1 1/2
160	2 1/2	2 1/4	2	1 3/4	1 1/2	1 3/8	1 1/4
180	2 1/4	2	1 3/4	1 1/2	1 3/8	1 1/4	1 1/8
200	2	1 3/4	1 1/2	1 3/8	1 1/4	1 1/8	1
220	1 7/8	1 5/8	1 3/8	1 1/4	1 1/8	1	7/8
240	1 3/4	1 1/2	1 1/4	1 1/8	1	7/8	3/4
280	1 1/2	1 1/4	1 1/8	1	7/8	3/4	5/8
300	1 3/8	1 1/8	1	7/8	3/4	5/8	1/2
320	1 1/4	1	7/8	3/4	5/8	1/2	3/8
360	1	3/4	5/8	1/2	3/8	1/4	3/1

STARCO MFG. INC. – WARRANTY

WARRANTY. Subject to all of the terms stated herein, Starco Mfg. Inc. (the "Company") warrants those components of the Equipment, which are manufactured by it under normal use and service to be free during the warranty period from defects in material and workmanship. This warranty expires upon the occurrence of the earliest of any of the following: (i) Twelve (12) months after the date of delivery to its original user-purchaser; (ii) the Equipment is used for any purpose other than those purposes for which it was designed; (iii) the Equipment is repaired other than by the Company or is altered outside the Company's factory in any way so as in the Company's judgment to affect adversely its stability or reliability; or (iv) the Equipment components furnished by the Company but manufactured by others are warranted only to the extent of the original manufacturer's warranty of the Company. **THERE IS NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND NO WARRANTY AGAINST INFRINGEMENT AND THERE ARE NO OTHER WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE OF THIS CONTRACT.** No person is authorized to give any other warranties on the Company's behalf or to assume any other liability for the Company. Any additional representation or warranty made by the Purchaser shall be solely the responsibility of Purchaser. The Company reserves the right to make improvements in design or changes in specifications at any time, without incurring any obligation to owners of units previously sold.

REMEDIES. The Company's liability, whether in contract or in tort, arising out of warranties, representations, instructions or defects of any nature shall be limited to repairing or replacing, as the Company may elect, any Equipment part of the Company's manufacture which is returned, with transportation charges paid, to a Dealer of the Company authorized to handle Equipment and as to which examination discloses to the Company's satisfaction any defect in material or workmanship, provided this warranty has not expired before such part is so returned for repair or replacement. Purchaser shall bear all expenses of shipping any such part to and from the Dealer's place of business. Purchaser's remedy, as provided in this paragraph, is expressly agreed to be exclusive. In no event shall the Company be liable for injuries or damages of any kind or nature, direct, consequential, or contingent, to person or property. This warranty does not extend to loss crops, loss because of delay or loss incurred for labor, supplies and substitute machinery, rental or for any other reason. Purchaser agrees to pay all costs, including reasonable attorney fees and costs of litigation, which may be incurred by the Company to collect amounts owed by the Purchaser or to enforce any other rights of the Company.



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