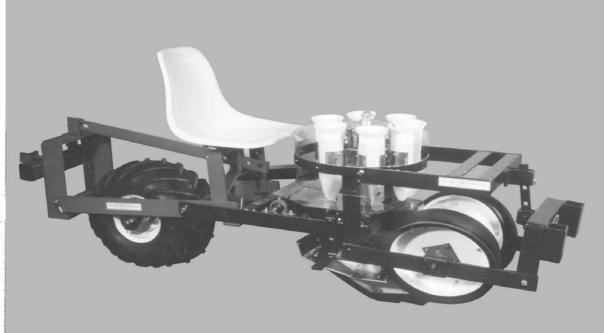


# **ROTARY-ONE** TRANSPLANTER

# ASSEMBLY & PARTS MANUAL



Literature No. 95025



This manual will instruct you on how to operate and service your transplanter safely and correctly. Failure to do so could result in equipment damage and/or a personal injury accident. PLEASE READ THIS MANUAL CAREFULLY.



This symbol is a safety alert symbol and requires your attention. BE ALERT, your safety is involved. The possibility of a serious bodily injury or death exists Carefully follow safety message instructions.



This machine is of customary U.S. measurement design. Use only tools of U.S. measurement. Metric or other tools that do not fit properly can slip and cause injury.

Use only Holland Transplanter approved replacement parts when making repairs. They can be obtained from Holland Transplanter Co. or from your

authorized Holland Transplanter dealer. Make sure you use only parts for your specific model.

Your model number for this machine is MODEL R-1 transplanter unit.

Warranty is provided for customers who operate and maintain their equipment as described in this manual Warranty registration is accomplished by completing and forwarding the WARRANTY REGISTRATION FORM along with a copy of the invoice to Holland Transplanter Company. It is your responsibility to insure that this is done. See complete warranty information on the last page of this manual.

The ROTARY-ONE is designed to plant greenhouse "cell" transplants. It can be used as a single, double or multi-row transplanter, providing the proper mounting bracket, framework and toolbars are utilized.

# ASSEMBLY INSTRUCTIONS

Because of shipping restraints, your ROTARY-ONE transplanter cannot be fully assembled when you receive it from the factory.

HITCH: Place the front drive wheel hitch in the planting unit and secure with the 7/8" drawbar. Attach the drive chain to the unit from the jackshaft sprocket to the drive wheel sprocket as shown on page 3. Attach the chain tightener spring to remove slack from the drive chain. Install the chain guard over the chain by slipping the slot in the front end of the guard over the drawbar shaft, between the frame and sprocket. The rear section of the guard fastens to the front bolt of the pillow block bearing of jack shaft.

SEAT: Insert 1/2" bolts through the seat brackets, then attach the seat brackets to the bottom of the seat. Mount the seat assembly to the rear arch of the drive wheel hitch. See drawing - page 3.

PLANT TRAYS: Mount the tray bracket clamps to the side or rear of the planting unit. Insert tray brackets

into the clamps. On side trays, add the support brackets to the tray brackets. Place the tray onto the tray bracket and secure in place.

WATER VALVE: Place the water valve assembly on the right side of the front hitch. Secure in place with the "U" bolt clamp provided. The flow control gate valve should be forward of the clamp and the shutoff ball valve behind. Place the hose under the deck shield and into the furrow opener. Attach the water feed hose to the gate valve and secure with hose clamp.

WATER BARREL: (Optional) When using a #39402 barrel mounting 3 point hitch, mount the barrel as shown. Note that the galvanized barrel liner must be used to support the poly barrel. Secure the barrel in place with the barrel straps.

MAINTENANCE: Lubricate grease fittings after every 10 hours of operation. Check all nuts & bolts for tightness prior to use. Flush dirt and soil off with water after each use.

## PLANT SPACING INFORMATION

This plant spacing chart lets you select the spacing you need for whichever crop you are planting. Spacing can be changed very easily by using a different combination of sprockets on the end of the jack shaft and/or on the end of the drive wheel (part no's 10380 thru 10385) which together work with one of three Roller Chain Sprockets\* (part no's 12078, 12079 or 12102). See drwg. on next page. Each Rotary One comes with a complete set of these cast iron sprockets. One each - 6, 7, 8, 9, 10 and 11 tooth sprockets.

#### Determining sprocket combinations needed.

The chart below shows how you can get the exact plant spacing to fit your crop.

Column A assumes the use of a #12079 14 tooth roller chain sprocket - Spacing availabe; from 10" to 35"

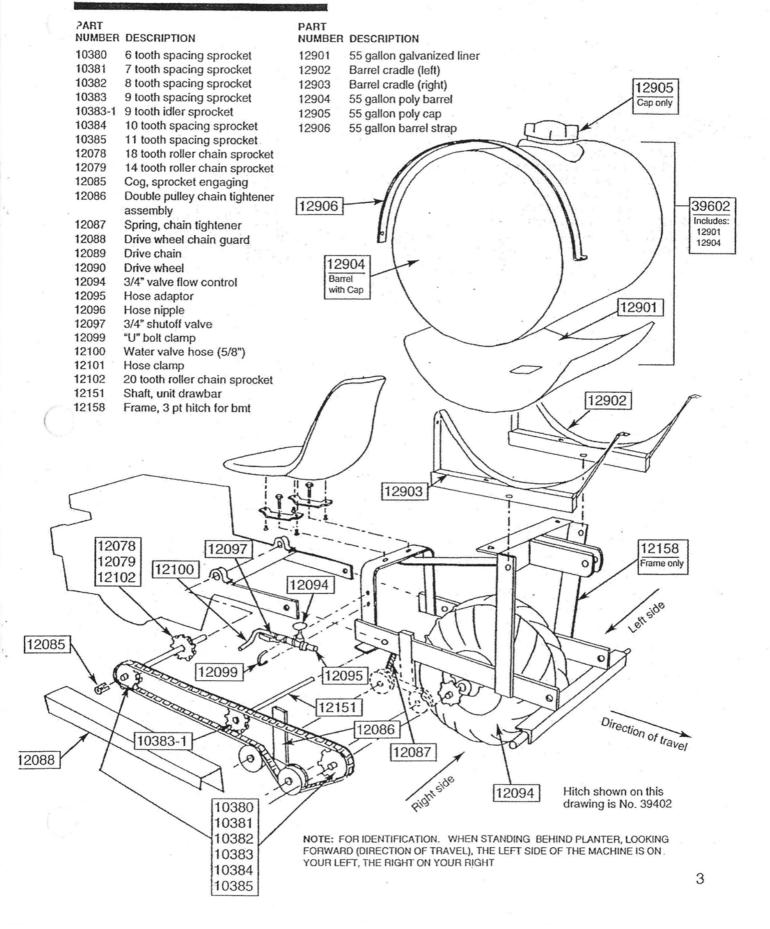
Column B assumes the use of a #12078 18 tooth roller chain sprocket - Spacing availabe; from 8" to 27" Column C assumes the use of a #12102 20 tooth roller chain sprocket - Spacing availabe; from 7" to 23"

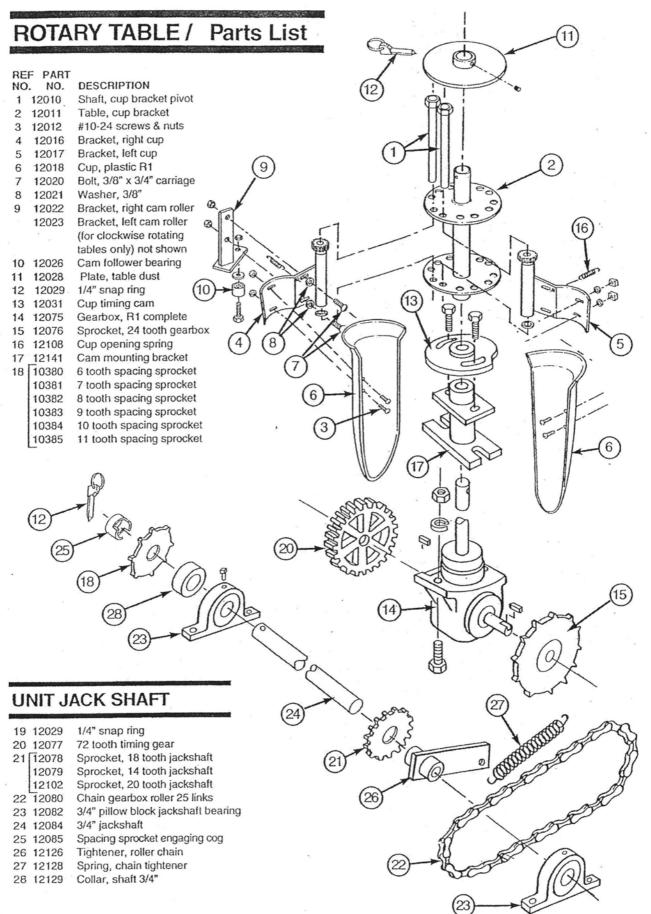
Example: Using a 12079 14 tooth roller chain sprocket on the jackshaft, a 9 tooth sprocket on the end of that jackshaft and an 8 tooth sprocket on the end of the drive wheel axle = 21" plant spacing.

SPACING MAY VARY SLIGHTLY DUE TO SOIL CONDITIONS OR AIR PRESSURE IN THE DRIVE WHEEL. INCREASED AIR PRESURE WILL INCREASE SLIGHTLY THE DISTANCE BETWEEN PLANTS

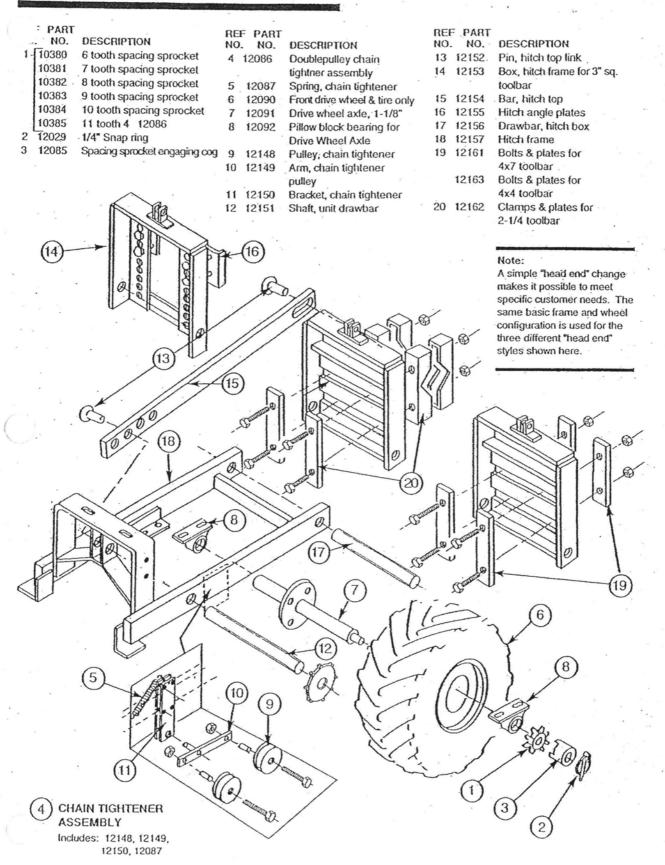
		SPROCKET ON END OF DRIVE WHEEL AXLE																	
HAFT			OOTROCK B			TOOT ROCK <b>B</b>			ROCK B		_	TOOTI ROCK B			TOOT ROCK B			TOOT ROCK B	
CKSH	6 teeth	19"	15"	12"	16"	13"	11"	14"	11"	9"	13"	10"	8"	11"	9"	8"	10"	8"	7"
OF JA	7 teeth	22"	17"	15"	19"	15"	12"	17"	13"	11"	15"	11"	10"	13"	10"	9"	12"	9"	8"
END	8 teeth	25"	20"	17"	22"	17"	14"	19"	15"	12"	17"	13"	11"	15"	12"	10"	14"	11"	9"
T ON	9 teeth	29"	22"	19"	24"	19"	16"	21"	17"	14"	19"	15"	13"	17"	13"	11"	16"	12"	10"
CKE	10 teeth	32"	24"	21"	27"	21"	18"	24"	18"	16"	21"	16"	14"	19"	15"	12"	17"	13"	11"
SPRC	11 teeth	35"	27"	23"	30"	23"	20"	26"	20"	17"	23"	18"	15"	21"	16"	14"	19"	15"	13"

## **MAJOR COMPONENTS**



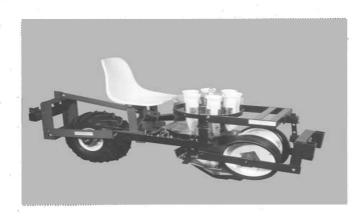


## HITCH ASSEMBLY / Parts List



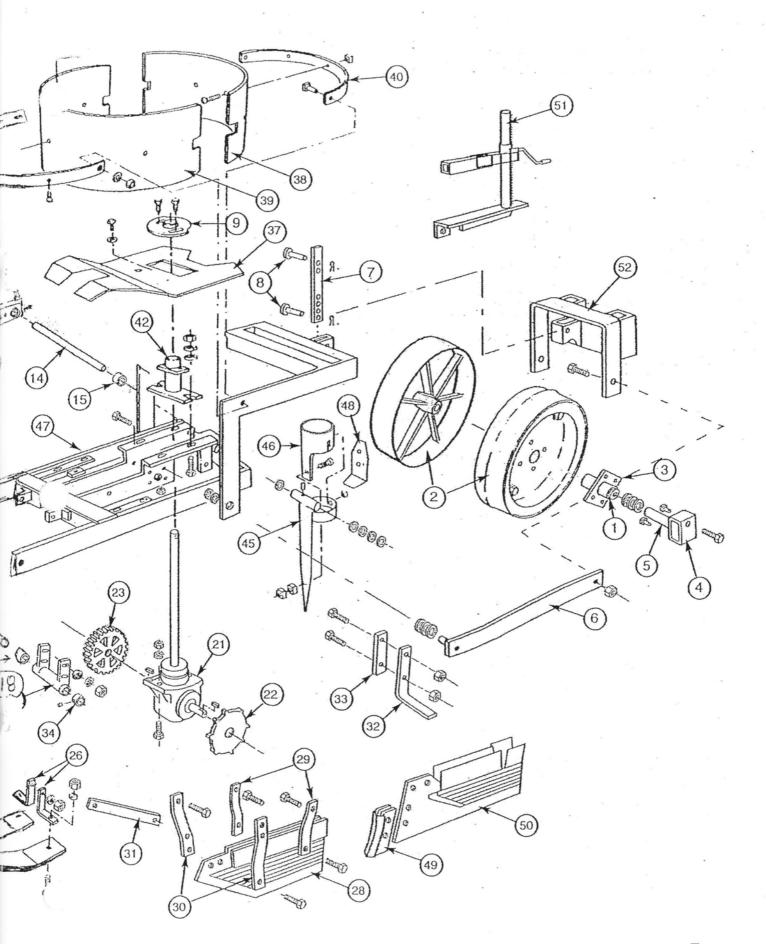
# BASIC PLANTING UNIT / Parts List

REE	PART		REF	PART				
NO.	NO.	DESCRIPTION	NO.	NO.	DESCRIPTION			1./
1	10138	Bearing for packing wheel and	29	12119	Brace, rear furrow opener (pr.)			N
•		coulter blade	30	12120	Brace, front furrow opener (pr.)			a la
2	12001	Wheel, packing w/ rubber tire	31	12121	Brace, furrow opener			0
-	12024	Steel packing wheel			diagonal			
3	12002	Hub, pack wheel w/ bearing	32	12124	Footrest, R-1			(41)
4	12004	Bracket, pack wheel axle	33	12125	Plate, footrest backing			0
5	12005	Axle, packing wheel	34	12127	Collar, timing gear shaft 1/2"	y t		
6	12006	Arm, packing wheel side pivot	35	12132	Front link, timing / ejector			
.7	12008	Bar, packing wheel vertical depth	36	12133	Rear link (tube)			
8	12009	Pin, vertical depth bar	37	12136	Plastic deck shield			13
9	12031	Cup timing cam	38	12137	Windshield, rear			1000
10	12043	15" coulter blade with hub	39	12138	Windshield, front			· Q.
	12044	16" waffle coulter blade with hub	40	12139	Bracket, rear windshield			- 17
	12045	15" blade only	41	12140	Bracket, front windshield			
	12046	16" blade only	42	12141	Cam mounting bracket			/
11	12047	Brace for 15" coulter blade (pair)	43	12142	Spacer, timing gear shaft			(m) (1
• • •	12048	Brace for 16" waffle blade (pair)	44	12143	Linkage spring			. (1) (1
12	12049	Hub for 15" coulter	45	12144	Ejector tube frame			
	12051	Hub for 16" walfle blade	46	12145	Plastic ejector tube			(44)
13	12050	Sleeve bearing for hub	47	12200	Frame, Rotary-ONE main			
14	12057	Shaft, ejector pivot	48	12025	Plant deflector		. (36)	
15	12058	Ejector shaft bearing	49	12040	Chisel point tooth	(35	1	Y STOR
16	12135	Ejector shaft arm	50	12122	Blunt point furrow opening shoe	00	(	A STATE OF THE PARTY OF THE PAR
17	12134	Ejector lever	51	12033	Depth control hand crank		1 - 000	
18	12062	Timing gear bracket 1/2"	52	12007	Arch, packing wheel rear	(A)	TIME .	100
19	12064	Bearing for timing gear shaft 1/2"				<b>V</b>	L	
20	12066	12 tooth timing gear 1/2" shaft			<b>\</b>			0
21	12075	Gearbox R-1 complete						•
22	12076	Sprocket, 24 tooth gearbox						5.
23	12077	72 tooth timing gear			- 6		66	
24	12104	Shoe sled .			Q I''		(25)	(Ram
25	12110	Shield, timing gear			11 11			13000
-	10110	Description of desire			17 11 1		1	0 80



26 12116 Brace, rear sled (pair)

27 12117 Brace, front sled (pair) 28 12118 Furrow opener, w/poly sides



# TROUBLE SHOOTING CHART

PROBLEM	CAUSE	REMEDY					
Plants leaning forward - in direction of travel	Ejector pushing plants out of shoe too quickly - not allowing plants to drop to bottom of shoe	Delay timing of Ejector. (Adjustment 4)  Move Timing Cam clockwise (Adjustment 2)					
	Cups opening too late, not allowing plant to drop to bottom of shoe.						
Plants leaning away from planter - away from	Ejector pushing plants out of shoe too late - plants starting to fall over.	Move Timing Gear Counterclockwise (Adjustment 4)					
direction of travel							
Plants being buried	Ejector not pushing plants out of shoe quick enough - plant falling over.	Move Timing Gear Counterclockwise (Adjustment 4)					
Plants being planted to shallow	Packing wheels set too deep.	Lower rear packing wheel arch - use 1 or 2 holes lower in vertical bar. (Adjustment 5)					
	Plants not dropping from cups into ejector. Wet foliage sticking to inside of cups.	Let plants foliage dry out.					
	Plants laying across the top of ejector, preventing plants from dropping to bottom of shoe	Remove plant or debris from top of ejector.					
Plants being planted to deep	Packing wheels set too shallow.	Raise rear packing wheel arch - Use 1 or 2 holes higher in vertical bar. (Adjustment 5)					
	Plants not dropping from cups into ejector. Wet foliage sticking to inside of cups.	Let plants foliage dryout.					
Plants being planted shallow or plants not being packed properly	Transplanter riding on furrow opening shoe.	Check soil to see if it is tilled to depth furrow opening shoe must penetrate. This can easily be done by inserting your hand down into the furrow just planted. If hand does not go in to depth of planting desired, the transplanter is riding on the bottom of the furrow opening shoe. This condition does not allow the weight of the transplanter to ride on the packing wheels which needs the weight to pack the soil around the root ball of the plants - Rework soil to a deeper depth.					
Plants not being packed properly	Transplanter unit not floating.	Check front of planting unit/hitch. There must be clearance between lift tab of hitch and bottom of uniframe whene planting					
	Packing wheels too wide apart.	Remove "spacer" washers from hubs of packing wheels. Move wheels closer together, replacing washers as necessary.					

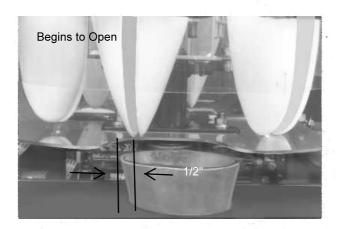
### **ADJUSTMENTS & TIMING**

The two items that will give you more accurate spacing and trouble free planting are the <a href="ITMING">TIMING</a> CAM of the Rotating Cups, and the <a href="ITMING GEARS">TIMING GEARS</a> of the ejector. They control the opening of the cups and the ejecting of the plant into the furrow. The plant cup must open at the correct location to allow the plant to drop to the BOTTOM of the furrow opening shoe. The ejector then pushes the plant into the furrow (a split second AFTER the plant hits the BOTTOM of the shoe).

Both of these items are set at the factory and should allow the planter to plant well in all conditions. If your planter should get out of adjustment or you want to "fine tune" it, the following steps will explain the HOW TO DO IT.

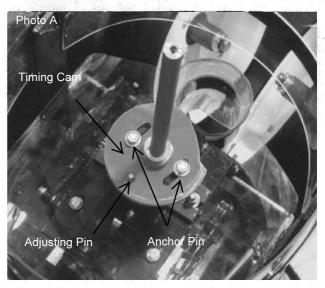
#### ROTARY CUP - Correct location when the cup begins to open.

The Rotary Cup Timing Cam (12031) is located directly below the revolving cup table. (see Rotary Table-page 4) As the cup table revolves, the Cam Roller follows the outside surface of the Timing Cam. The Cam Roller keeps the cups closed, and the springs between the cups open them. When the Cam Roller comes to the indent of the Timing Cam, the roller goes into the indent allowing the springs to open the cup. The correct location for the cup AS IT BEGINS TO OPEN is when the bottom of the two halves is 1/2" inside the top edge of the ejector tube.



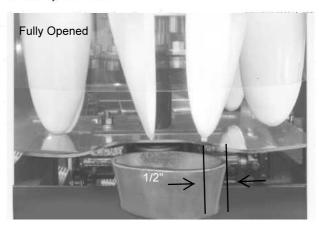
#### 2.) ADJUSTING THE TIMING CAM

The Revolving Cup Table does not have to be removed to be adjusted. Loosen the two 3/8" Anchor Bolts. With a flat bar, or screw driver, "TAP" the Adjusting Pin. (photo A) CLOCKWISE / TO OPEN THE CUPS SOONER COUNTER-CLOCKWISE / TO DELAY THE OPENING. Adjustment should be no more than 1/8 to 1/4". Retighten Anchor Bolts.



#### EJECTOR - Correct location of cup when fully opened.

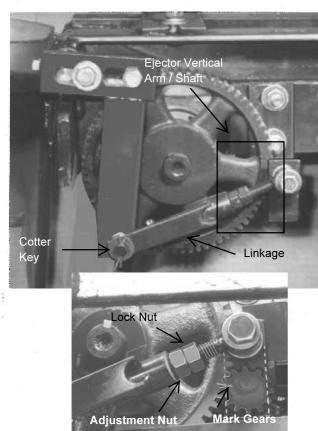
The Plant Ejector is located on the side of the machine. It is designed to push the plant out of the furrow opening shoe IMMEDIATELY AFTER the plant drops to the bottom of the shoe. The time it takes the plant cup to open fully, coincides with the time it takes a plant to drop, out of the cup, to the bottom of the furrow opening shoe. When the cups are fully open, the forward cup half should be 1/2" from the right edge of the ejector tube.



(continued)

#### ADJUSTMENTS & TIMING - cont.

At the same time the Rotary Cup is at its widest opening, the ejector arm (located on the right side of the transplanter below the main frame next to the furrow opening shoe) should be in a vertical position. (photo B)



#### 4.) ADJUSTING TIMING OF THE EJECTOR

To adjust the timing, you must change the timing gear (12131), located behind the ejector arm. This gear and arm are welded together on a round shaft. 1.) Remove the soil (protection) shield. 2.) Locate ejector arm/shaft. (photo B) On the opposite end of the arm/shaft is a collar. Loosen and remove the collar. 3.) Remove the cotter key from the left end of the linkage between the lever of ejector tube and the ejector arm. (See photos above) Locate where the 12 and 72 tooth gears mesh together. 4.) Mark across two engaged teeth for reference later. 5.) Pull the ejector arm toward you about 1/2", or until the two gears are dis-engaged.

6.) ROTATE THE SMALL 12 TOOTH GEAR ONE TOOTH CLOCKWISE - TO DELAY THE PLANT EJECTION.

ROTATE ONE TOOTH COUNTER-CLOCKWISE TO SPEED UP EJECTION PROCESS.

7.) Push gear back into position, replace collar on shaft and tighten, replace cotter key, replace soil shield. 8.) Check for clearance between soil shield and ejector arm, to avoid any drag or scraping.

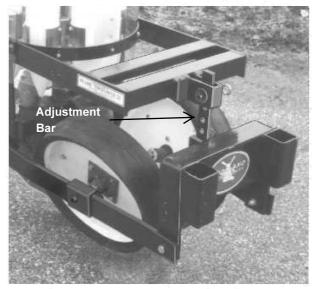
#### 5.) PACKING WHEEL ADJUSTMENTS

The packing wheels on the Rotary One are adjustable, which makes it possible to accommodate the different conditions caused by differing soil textures and/or moisture content.

The different adjustments include:

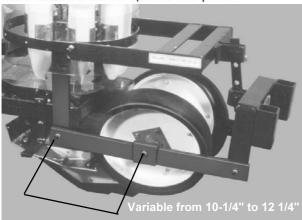
- A. Depth control
- B. Front to rear adjustment
- C. Width between wheels
- D. Toe in and out
- E. Slant in or out

A. The vertical height of the packing wheels in relation to the furrow opener controls the depth of planting. This is changed by placing the pins in the desired hole in the perforated adjustment bar at the rear of the planter. If the optional depth crank screw is installed the planting depth is controlled by cranking the jack handle which raises or lowers the entire packing wheels assembly.



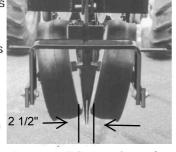
To plant deeper, remove either pin, raise the entire rear section of the packing wheel assembly - replace pin.

B. The packing wheels may be adjusted forward or rearward according to the soil flow. A 3/8 inch bolt with locking nut on the outside of each axle bracket holds the packing wheel axle in place. Loosen the locking bolt and the packing wheels can be moved forward or rearward to control the merge point of the soil behind the furrow opener. See photo.



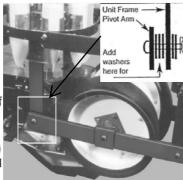
When set to its minimum (10-1/4") the packing wheels will create more of a side "in" action on the soil being pushed around the plant.

C. The packing wheels slant inward. The distance between the bottom of the wheels is set at the factory at approximately 2-1/2". This may be adjusted by moving spacing washers on either side of the packing wheel



hub on the axle. Depending on soil flow and consistancy, distance between the packing wheels may control the amount of soil packed around the plants.

D. The "Toe out" of the packing wheels may be adjusted by placing 8 spacing washers on the outside of the main frame on the front of the packing wheel pivot arm. This enables the packing wheels to be spread apart on the front



end to gather in soil that may have been pushed outside the normal width of the packing wheels.

E. The angle which the packing wheels lean out at the top is adjusted by the 2 square head set screws on the inside of the packing wheel axle brackets. The farther the wheel leans out at the top, more packing pressure is applied to the outside of the packing

## SOME GENERAL PLANTING SUGGESTIONS

After your transplanter is hitched to your tractor, place water in the barrel and plants on the tray stands and you should be ready to plant. The operator simply pulls one or more plants from the tray and drops one into each cup as the cup table revolves. Some operators prefer to take two or three plants with each hand and then drop one per cup. Strill, others like to take a hand full of plants (6 to 10) with one hand and then sort and drop the plants with the other hand. Whichever method you prefer, after a short period of time of getting used to this new transplanter you should be able to plant between 60 to 80 plants per minute. Your field should be well prepared, plowed and disced to a depth of 6". We do not recommend roto-tilling the soil as generally roto-tilling is only 3 to 5" deep and leaves the soil too fine, loose with no body. If the soil is to loose, the packing wheels tend to push the loose soil forward instead of packing the soil properly around the plants.

When you start to plant, go a few feet, then stop with the planter still in the ground. The planting unit should be running fairly level and there should be between 1/2 to 1" clearance between the lift bar of the hitch and the bottom of the unit frame. This distance allows the unit to float. If your planting unit is not floating, lengthen the top link of the hitch or of the 3 pt hitch on your tractor, to get this clearance needed for your planter to float...

## LIMITED WARRENTY

HOLLAND TRANSPLANTERS COMPANY'S (herein referred to as the Company) responsibility will be limited to the substitution of the acknowledged defective merchandise to the same place of delivery as the previous one was supplied.

- 1. The Company warrants its machines and related accessories to be free from defects in material and workmanship, for a period of six (6) months from the date of invoice to the first registered owner with the exclusion of shear pins, oil, grease, tires, hydraulic hoses and cylinders. Labor will be reimbursed at \$15.00 per hour based on the Company's time schedule.
- 2. Rental: If the machine is used for rental purposes, the warranty period is limited to thirty (30) days from date of invoice and does not cover any labor charges incurred.
- 3. Registration: In order to qualify for coverage on this limited warranty, the product and name of the original purchaser must be registered with the Company by mailing a completed Warranty Registration card along with a copy of the dealer's invoice to the Company within thirty (30) days after the date of delivery.
- 4. Service: Warranty service must be performed by a dealer authorized by the Company. If the warranty request is approved, the owner shall pay only for labor beyond the rate allowed, for overtime labor, and for any mileage charge for transporting the equipment to and from the dealer's shop. Time required for replacement of oil, grease and to remove excessive dirt from the machine is not subject to reimbursement by the company. The owner is required to clean the machine before presenting it to the dealer for service work. The machine must be delivered within thirty (30) days after failure to be eligible for warranty consideration.
- 5. Accidents and Normal Maintenance: This warranty covers defective material and workmanship. It does not cover depreciation or damage caused by normal wear, accidents,

- improper maintenance, improper protection or improper use. The cost of normal maintenance and related labor will be the owners.
- 6. Warranty termination: All obligations of the Company under this warranty shall be terminated if: a) Proper service and operation as outlined in the Owner's Manual are not followed. b) The machine is modified or altered in any way not approved by the Company. c) The Company does not receive a copy of the invoice and registration card within thirty (30) days from delivery date. d) The Company has not been paid in full for the machine.
- 7. Implied warranty: Neither the Company nor any company affiliated with the Company makes any warranties, expressed or implied, as to the quality, performance or application of its products other than those set forth herein.
- 8. Remedies exclusive: The only remedies the purchaser has in connection with the breach, or performance of any warranty on the Company's machine are those set forth herein. In no event will the dealer, the Company, or any company affiliated with the Company be liable for: a) Injuries or damages of any kind, direct, consequential or contingent to person or property. b) Any expenses incurred by the owner to repair, replace or rework any allegedly defective item. c) Any loss, cost or damages (including loss of profits; loss of crops; loss because of delay in field operations; any expense or loss incurred for labor, supplies, rental; liabilities of owner to third parties; and all other damages, losses, liabilities for any other reasons) whether direct or indirect, and whether or not resulting from the Company as a result of the failure of the equipment delivered.
- 9. The Company's liability shall be limited to the replacement or refund of the purchase price of the product. The limited warranty stated herein gives the owner specific rights along with other rights which may vary from State to State. All implied warranties are expressly disclaimed subsequent to the terms of this warranty.



#### HOLLAND TRANSPLANTER CO.

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