



# **OPERATING MANUAL**

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**MODEL 1670**  
**WATER WHEEL TRANSPLANTER**

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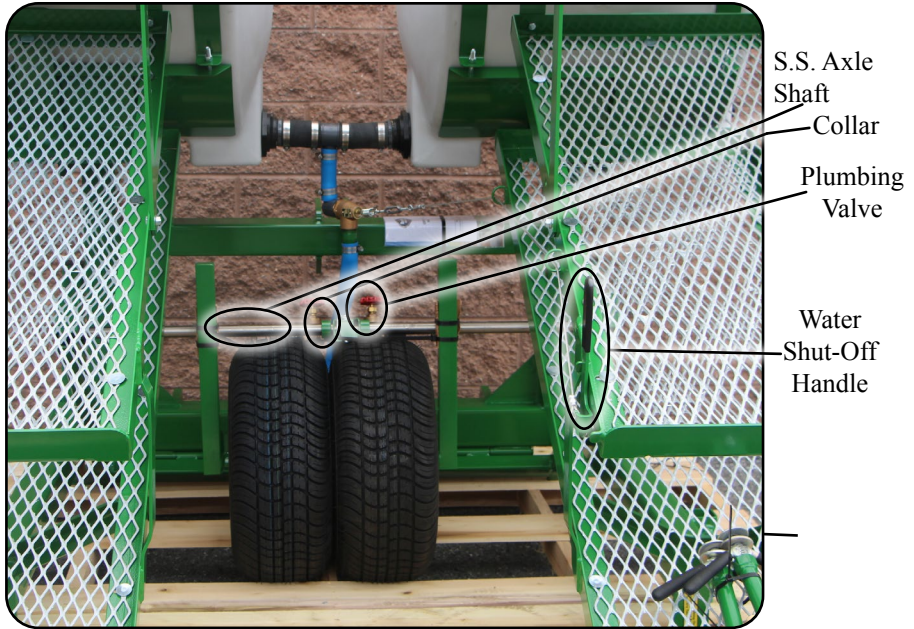
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# !! Safety First !!

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- ⚠ No riders beyond the speed of 3 MPH. Be sure you read and understand all the precautions.
- ⚠ Keep people away when lifting and lowering the machine.
- ⚠ Be careful when turning around; machine is 8' long.
- ⚠ Do not crawl under the machine when lifted.
- ⚠ Do not adjust the machine when it is moving.
- ⚠ Do not stand on the machine.
- ⚠ Do not sit on machine except on designated seat.
- ⚠ Do not add chemicals to water tank unless planters wear hand protection.
- ⚠ Planter operators must keep their feet on foot rest when planting.
- ⚠ Tractor operator is responsible for extra worker(s) around machine.
- ⚠ Rain-Flo Irrigation is not responsible for accidents if any should occur.

# PLANTING WHEEL ADJUSTMENTS



**(S.S. Axle Shaft)** To hold planting wheels and plumbing.

**(Collars-2)** To hold position of plumbing valves.

**(Plumbing Valves)** To adjust water flow.

**(Water Shut-Off Handle)** To shut off water supply.

One to four planting wheels can be used at a time; standard is one or two wheels. When using only one wheel, slide plumbing to one side of wheel and keep one plumbing valve closed. Planting wheels are set in position with one bolt in center of wheel and can be moved sideways on the axle shaft.

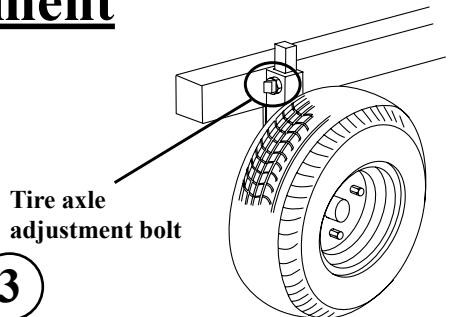
Planting wheels will flex up and down over uneven terrain.

**Caution;** Make sure planting wheels are not puncturing drip tape underneath plastic.

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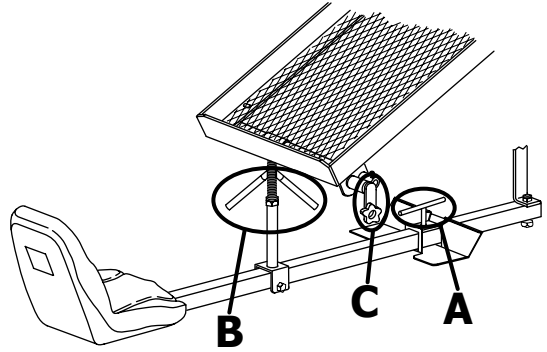
## Tire Axle Adjustment

Tire axles need to be adjusted for high beds, and if more planting leg room is desired, shorten top link and lower tire axles.



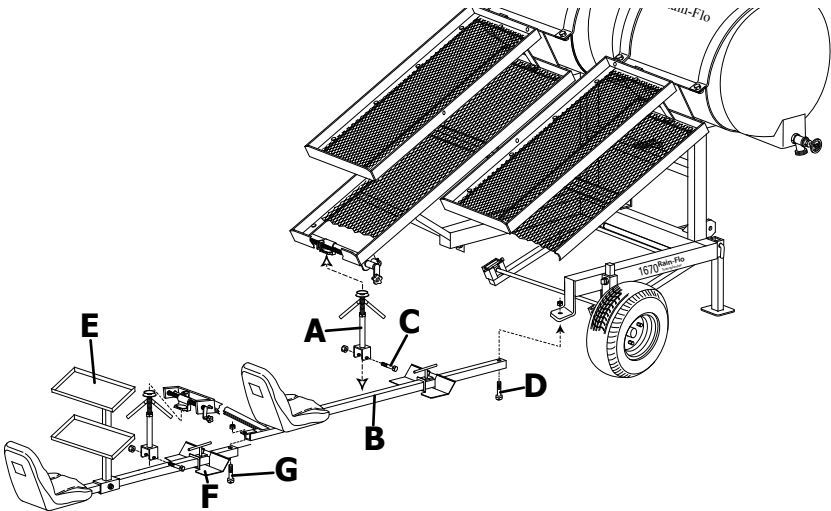
3

# SEAT ADJUSTMENTS



To adjust foot rest, loosen tee handle(A) and slide foot rest to desired place. Turn handles(B) to adjust seat height and handle(C) to adjust seat's "left-to-right" position for maximum comfort.

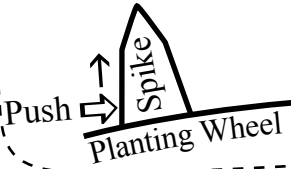
## INSTALLING 3RD AND/OR 4TH SEATS



Seat with heavy bar needs to be mounted toward the front and the seat with light bar to the back. Remove 1st and 2nd seats if they are already on the planter and install the 3rd and/or 4th seats by sliding seat adjuster(A) onto seat mounting bar(B) and fasten it with bolt and nut(C). Also bolt end of seat mounting bar(B) onto frame with bolt and nut(D). Slide trays(E) and seat adjuster(F) onto 1st and 2nd seats and fasten it with bolt and nut(G) onto already installed 3rd and/or 4th seats as shown above.

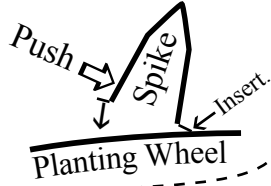
# OPTIONAL SUPER WHEEL

## Removing Spike.



The super wheel is a very universal planting wheel. Spike size and spacing can be changed as preferred. A rubber grommet is used to close unused holes.

## Installing Spike.

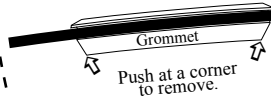


Note; lock pin is used in heavy or rocky soil conditions to avoid spike detaching.

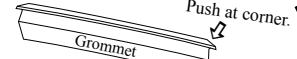
## Installing lock pin.



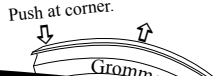
How grommet should look when installed.



step 1.  
How to install grommet.



step 2.  
How to install grommet.

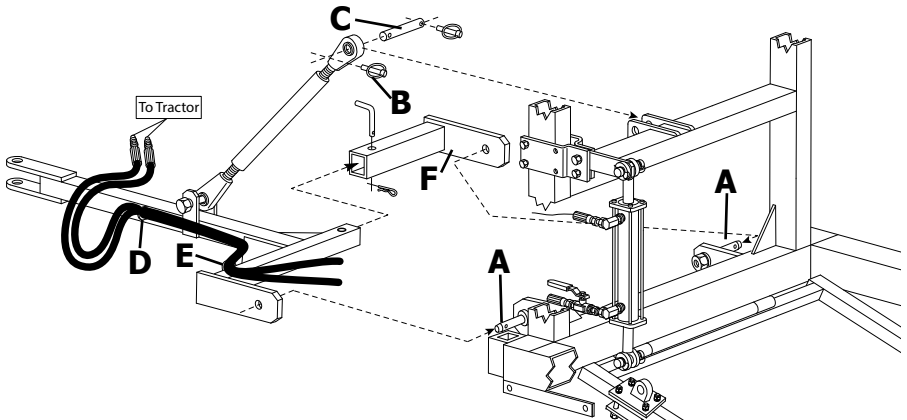


step 3.  
How to install grommet.

Firmly push down.

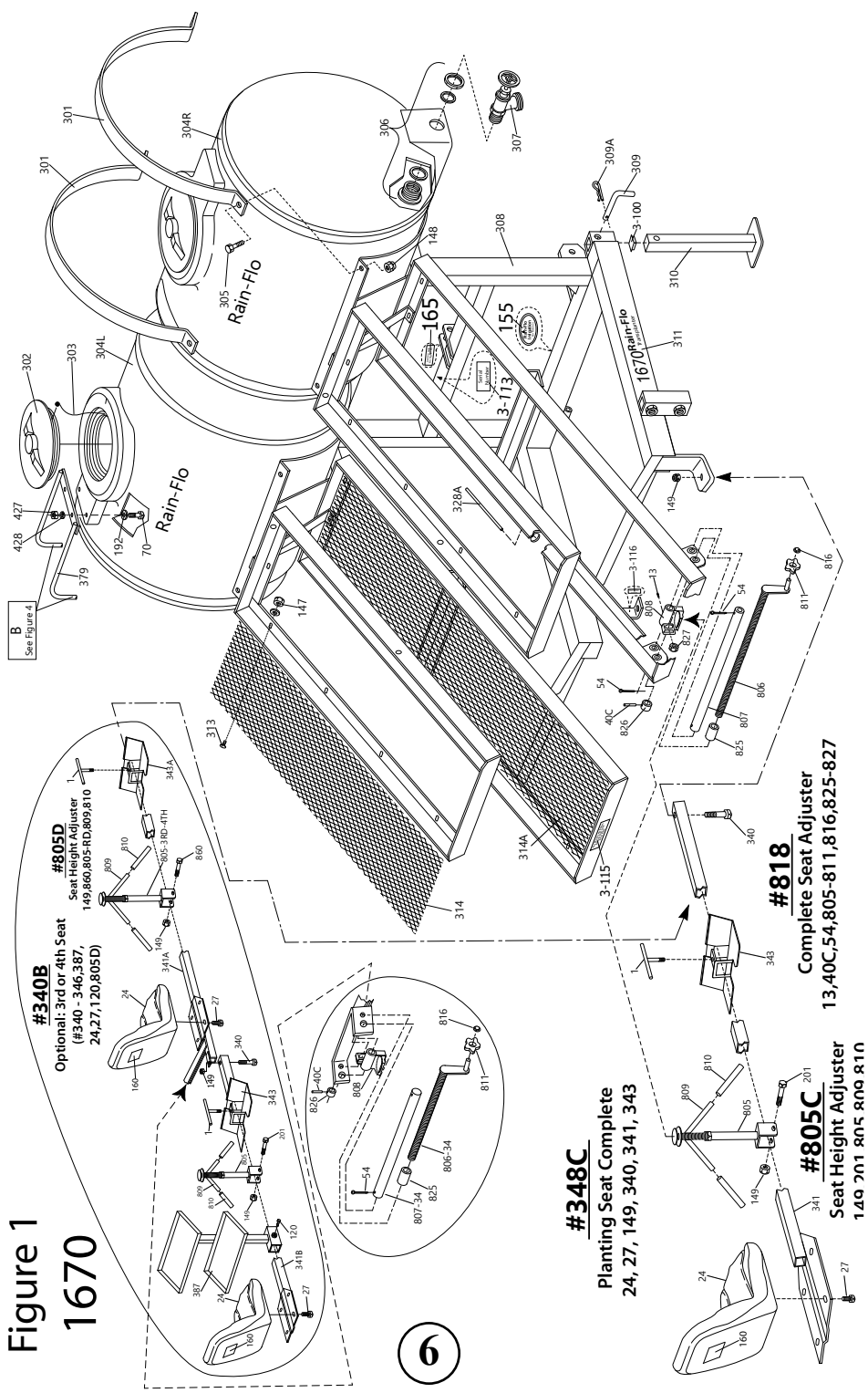


# OPTIONAL TRAILER COMBINATION



- (1) Install draw bar tongue by sliding onto the lifting pins(A).
- (2) Unsnap lynch pins(B), remove top link pin(C) and install as shown above.
- (3) Slide hydraulic hoses through loops(D) and(E).
- (4) Slide hitch bracket(F) onto lifting pin and over hitch tubing. Insert pin.

**Figure 1**  
**1670**



**#348C**  
Planting Seat Complete  
24, 27, 149, 340, 341, 343

**#818**  
Complete Seat Adjuster  
13, 40C, 54, 805-811, 816, 825-827

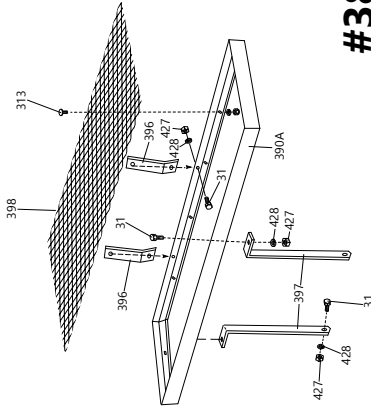
**#805C**  
Seat Height Adjuster  
149, 701, 805, 809, 810

**#340B**  
Optional: 3rd or 4th Seat  
(#340 - 346, 387, 24, 27, 120, 805D)

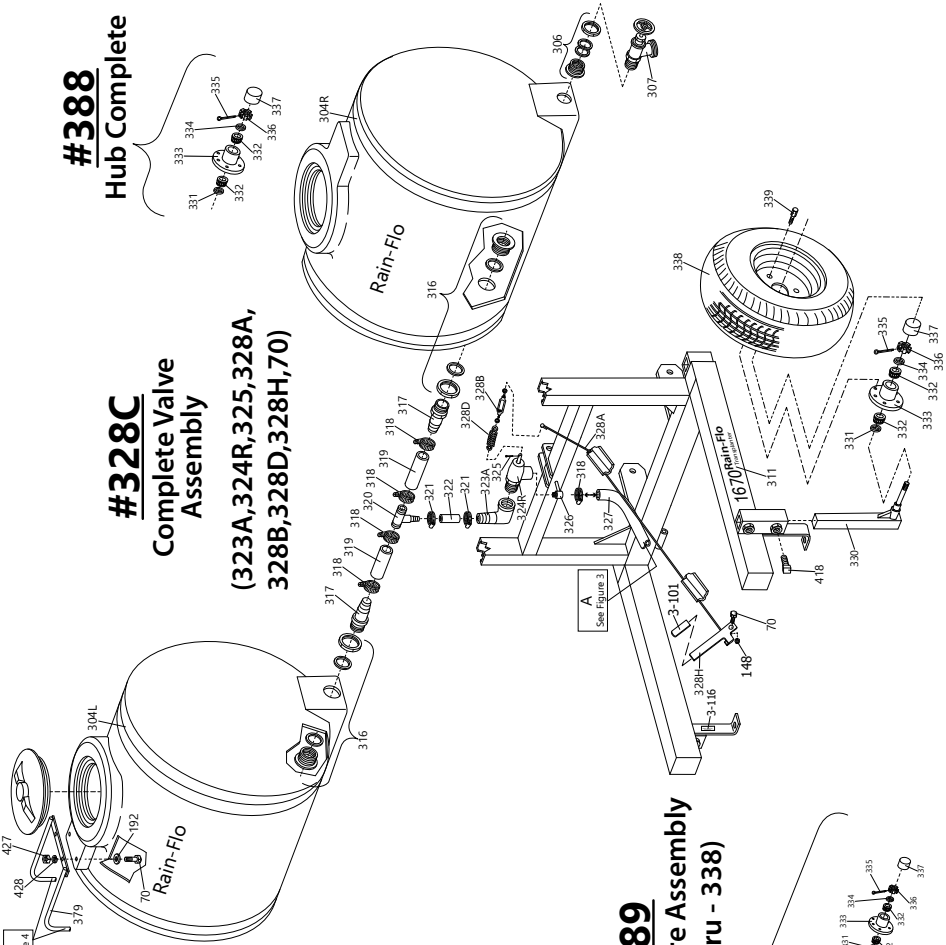
**#805D**  
Seat Height Adjuster  
149, 800, 805-RD, 809, 810

Figure 2  
1670

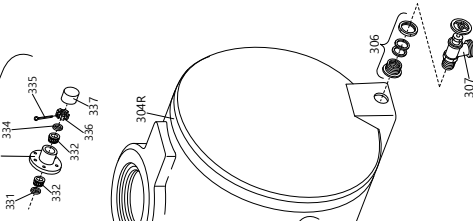
**#390**  
Top Tray Complete  
(31,313,396,397,398)



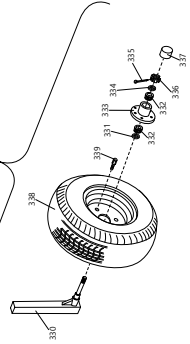
**#328C**  
Complete Valve  
Assembly  
(323A,324R,325,328A,  
328B,328D,328H,70)



**#388**  
Hub Complete



**#389**  
Complete Tire Assembly  
(330 - Thru - 338)









# Model 1670 Transplanter

| ITEM #            | DESCRIPTION                                  |
|-------------------|--|
| 1.....(2).....    | Tee handle                                   |
| 5.....(2).....    | 3/8" x 3/4" sq. head lock bolt               |
| 7.....            | 1" SAE flat washer                           |
| 13.....(2).....   | 1/4" NFT straight grease zert                |
| 24.....(2).....   | Cushion seat                                 |
| 27.....(8).....   | 5/16" x 1/2" seat bolt                       |
| 31.....(6).....   | 3/8" x 1" bolt                               |
| 40C.....(2).....  | 1/4" x 1" roll pin                           |
| 54.....(6).....   | 1/8" cotter pin                              |
| 70.....(3).....   | 3/8" x 1/4" bolt                             |
| 120.....          | 1/2" x 1/2" bolt                             |
| 146.....(4).....  | 1/2" hex nut                                 |
| 147.....(50)..... | 1/4" nylon lock nut                          |
| 148.....(9).....  | 3/8" nylon lock nut                          |
| 149.....(5).....  | 1/2" nylon lock nut                          |
| 155.....          | Rain-Flo oval logo                           |
| 160.....(2).....  | Important notice label on seat               |
| 165.....          | Use top hole for higher lift label           |
| 190.....(4).....  | 1/2" locking washer                          |
| 192.....(2).....  | 3/8" flat washer                             |
| 201.....          | 1/2" x 3/4" bolt                             |
| 301.....(4).....  | Saddle band                                  |
| 302.....(2).....  | Tank lid                                     |
| 303.....(2).....  | Rubber lid holder                            |
| 304L.....         | 80 Gal. Rain-Flo tank with tank adapter      |
| 304R.....         | 80 Gal. Rain-Flo tank with valve in end      |
| 305.....          | 3/8" x 2/4" bolt                             |
| 306.....          | 3/4" tank adapter                            |
| 307.....          | 3/4" drain valve                             |
| 308.....          | Frame  |
| 309.....(2).....  | Removal pin                                  |
| 309A.....(2)..... | Removal safety pin                           |
| 310.....(2).....  | Support stand                                |
| 311.....(2).....  | Model No. label                              |
| 312.....          | Seat adjusting labels                        |
| 313.....(50)..... | 1/4" x 3/4" elevator bolt                    |
| 314.....(2).....  | Top expanded metal                           |
| 314A.....(2)..... | Bottom expanded metal                        |
| 316.....(2).....  | 2" tank adapter                              |
| 317.....(2).....  | 2" insert male adapter                       |
| 318.....(5).....  | 2" hose clamps                               |
| 319.....(2).....  | 2" hose extension                            |
| 320.....          | 2" x 2" x 1" tee                             |
| 321.....(2).....  | 1" hose clamps                               |
| 322.....          | 1" x 5" hose extension                       |
| 323A.....         | 1" insert x female ell                       |
| 324R.....         | 1" Planter Valve, [New Style For Cable Pull] |
| 325.....          | 1/16" x 3/4" cotter pin                      |
| 326.....          | Weld-on male adapter                         |
| 327.....          | 1" x 34" hose extension                      |
| 327 A.....        | 3rd and 4th wheel plumbing                   |
| 328A.....         | On-off valve cable                           |

# Model 1670 Transplanter

| ITEM #            | DESCRIPTION                               |
|-------------------|---|
| 328B.....         | Cable adjustment turn buckle              |
| 328C.....         | Complete valve assembly                   |
| 328D.....         | Valve spring                              |
| 328H.....         | Water shut off handle                     |
| 330.....(2).....  | Adjusting axle stem                       |
| 331.....(2).....  | Seal                                      |
| 332.....(4).....  | Tapered bearing                           |
| 333.....(2).....  | Metal hub                                 |
| 334.....(2).....  | SAE washer                                |
| 335.....(2).....  | Cotter pin                                |
| 336.....(2).....  | Fine thread lock nut                      |
| 337.....(2).....  | Cap                                       |
| 338.....(2).....  | 20.5 x 8.0 - 10 tire wheel                |
| 339.....(10)..... | Lug bolt                                  |
| 340.....(4).....  | 1/2" x 3 1/2" bolt                        |
| 340A.....         | 1/2" x 4" bolt                            |
| 340B.....         | Optional 3rd or 4th seat complete w/ tray |
| 341.....(2).....  | Seat mounting bar                         |
| 341A.....         | Optional 3rd or 4th seat bracket only     |
| 342.....          | Seat adjustment mounting                  |
| 343.....(2).....  | Foot rest                                 |
| 343A.....         | Foot rest for 3rd or 4th seat             |
| 345.....(2).....  | Height adjusting wheel                    |
| 346.....(2).....  | Custom washer                             |
| 348C.....         | Cushion seat and bar complete             |
| 350.....          | Yoke hinge pin                            |
| 351.....          | Wheel mounting yoke                       |
| 351A.....         | Wheel mounting yoke complete              |
| 352.....(2).....  | Bushing locking pin                       |
| 353.....(2).....  | Safety pin                                |
| 354.....(2).....  | UHMW block bushing                        |
| 355.....          | Planting wheel (specify spacing & spike)  |
| 356.....(2).....  | Plumbing collar                           |
| 358.....          | Snap pin                                  |
| 359.....          | 1" x 45 1/4" S.S. shaft                   |
| 360.....          | 3/8" x 1" sq. head lock bolt              |
| 361.....          | Two valve plumbing assembly               |
| 361A.....         | Two valve plumbing tee adapter only       |
| 362.....          | Top link                                  |
| 363.....          | Top link pin                              |
| 364.....(2).....  | Lynch pin                                 |
| 366.....          | Tongue bracket                            |
| 367.....(4).....  | 1/2" x 4 3/4" bolt                        |
| 368.....          | Cylinder mount, left side (from back)     |
| 369.....          | 1/2" x 2 3/4" bolt                        |
| 370.....          | 3/4" x 3" bolt                            |
| 371.....          | Cylinder hinge plate                      |
| 372.....(2).....  | Hinge plate spacer                        |
| 373.....          | Cylinder mount, right side (from back)    |
| 374.....(4).....  | Cylinder snap pin                         |
| 375.....(2).....  | Cylinder attach pin                       |
| 376.....(2).....  | Flow restricted fitting                   |

# *Model 1670 Transplanter*

**ITEM #**

**DESCRIPTION**

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|                     |   |
|---------------------|---|
| 377.....            | Hydraulic cylinder                                  |
| 379.....            | Ladder  |
| 379A..... (3).....  | Ladder step traction tape                           |
| 379C.....           | Side Ladder Complete                                |
| 380..... (2).....   | Cat II lift pin                                     |
| 381.....            | 3/8" nipple   |
| 382.....            | 3/8" Hyd. ball valve                                |
| 383.....            | 1" x 5" bolt  |
| 384.....            | Draw bar tongue                                     |
| 384A.....           | Trailer combination complete                        |
| 385.....            | 3/8" x 8' 3" Hyd. hose                              |
| 386.....            | 3/8" x 8' 10" Hyd. hose                             |
| 387.....            | 3rd and 4th seat top tray                           |
| 388..... (2).....   | Hub complete  |
| 389..... (2).....   | Tire assembly complete                              |
| 390.....            | Top tray complete (with brackets)                   |
| 390A.....           | Top tray bracket only                               |
| 391.....            | Weld-on wheel spikes                                |
| 392.....            | Snap-on wheel spikes                                |
| 393.....            | Cylinder yoke bracket                               |
| 394..... (4).....   | Cylinder yoke bracket plate                         |
| 396..... (2).....   | Top tray front bolt-on plate                        |
| 397..... (2).....   | Top tray bolt-on plate                              |
| 398.....            | Expanded metal                                      |
| 406.....            | 3/4" lock nut                                       |
| 418..... (4).....   | 5/8" x 1 1/2" set screw                             |
| 427..... (10).....  | 3/8" nut  |
| 428..... (10).....  | 3/8" lock nut                                       |
| 480.....            | 1" lock nut   |
| 3-100..... (2)..... | Rubber stand cap                                    |
| 3-101.....          | Water shut off handle rubber grip                   |
| 3-113.....          | Serial number label                                 |
| 3-115..... (2)..... | For more leg room label                             |
| 3-116..... (2)..... | Bolt seat tubing on bottom label                    |
| 3-117.....          | Close valve when transporting label                 |
| 805..... (2).....   | Seat adjuster bottom tube assembly                  |
| 805-3rd-4th.....    | Seat adjuster bottom tube assembly for 3rd/4th seat |
| 805C.....           | Seat adjuster assembly complete                     |
| 805D.....           | 3RD or 4TH seat adjuster assembly complete          |
| 806..... (2).....   | Threaded rod with hand crank                        |
| 807..... (2).....   | Seat adjustment 1" rod                              |
| 808..... (2).....   | Seat adjustment hanger                              |
| 809..... (2).....   | Seat adjuster upright threaded rod                  |
| 810..... (4).....   | Seat adjuster handle rubber grip                    |
| 811..... (2).....   | Seat adjuster side knob                             |
| 816..... (2).....   | Seat adjuster side knob cap                         |
| 818.....            | Seat adjuster complete                              |
| 826..... (2).....   | Adjuster threaded rod collar w/roll pin             |
| 827..... (2).....   | 3/4" x 6" Acme thread nut                           |
| 842..... (3).....   | 3/4" male adp MPT x Insert                          |
| 843..... (2).....   | 3/4" brass gate valve                               |
| 844..... (2).....   | 3/4" short YB nipple                                |
| 860.....            | 1/2" x 3 3/4" bolt                                  |

# Features

- Capability of 8” to 36” Row Spacing and One to Four Planting Wheels. (Standard)
- Four Slanted Galvanized Expanded Metal Trays
- Specialty Designed Tanks so Tractor Operator Can See People Planting; Making it Easier to Communicate
- More Water Capacity, Two 80 Gallon Tanks (Total 160 Gallons)
- Quick Change Water Wheel Setup
- Easy Seat Adjustment for Comfort and Foot Rest Adjustment
- Large Tires with Highway Bearings
- Will Plant 60” Row Centers Minimum
- Side Walve for Washing Hands
- Quality Powder Coated Paint

# Options

- \*Optional Super Wheel (Spike Changes too Many Sizes & Spacings)
- \*Optional Side Ladder
- \*Optional Top Tray
- \*Optional 3rd & 4th Seat with Trays
- \*Optional Trailer/3-Point Combination

# Warranty

All Rain-Flo Water Wheel Transplanters have a two year warranty against defects in material and workmanship.

If any part found defective, return the defective part with Serial No. of the machine. If Rain-Flo finds it defective, it will be replaced or repaired at no charge.

Call Customer Service at (717) 445-3000.

# Helpful Tips

For best crop stand, planting operators should firmly press plants into water-filled hole. If plenty of water is used, potted plants will be sealed and do not need to be covered with soil.

When using starter fertilizer, it needs to be agitated. Fertilizer is heavier than water and will settle to the bottom of the tank, resulting in possibly burning or killing the first couple hundred plants.

For faster planting, operators may put one tray of plants on their lap.

If soil does not paste to planting wheel, this machine can also be used on bare soil.

## TROUBLESHOOTING

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1. **PROBLEM:** Planter is used on bare soil, and soil tends to paste onto planting wheel.

**SOLUTION:** \*Soil is too wet or wheel needs to be cleaned or repainted.

2. **PROBLEM:** Not enough leg room.

**SOLUTION:** \*Adjust foot rest. See Page 4.  
\*Adjust top link and axle. See Page 3.

3. **PROBLEM:** Tractor can't lift planter.

**SOLUTION:** \*Optional trailer hitch available. See Pages 5 & 9  
\*Keep less water in tanks.

**~ 2021 Edition ~**

**Rain-Flo Irrigation  
(717) 445-3000**