



# **OPERATING MANUAL**

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**MODEL 2470**  
**RAISED BED PLASTIC MULCH LAYER**

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# **!! Safety First !!**

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- ⚠ No riders beyond the speed of 3 MPH. Make sure you read and understand all the precautions.
- ⚠ Keep people away when lifting and lowering the machine.
- ⚠ Be careful when turning around; machine is nearly 8' long.
- ⚠ Do not crawl under the machine when lifted.
- ⚠ Cover discs are sharp; stay clear.
- ⚠ Do not adjust the machine when it is moving.
- ⚠ Do not stand on machine.
- ⚠ Tractor operator is responsible for extra worker (s) around machine.
- ⚠ Rain-Flo Irrigation is not responsible for accidents if any should occur.

# Features

- Will Lay 4' Plastic, 30" Bed Top
- Adjustable 3" to 5" Bed Height
- Minimum Tractor Size of 40 HP w/ 4-Wheel Drive
- Adjustable Weight with Water Tank for Firmer Beds
- Extra Narrow Machine for High Tunnels
- On-the-Go Turnbuckle Cover Disk Adjustment
- Adjustable Tension Brake on Plastic Roll Carriers
- Replaceable, Reversible Plow Shares
- 3/8" & 1/2" UHMW Poly Lined Bed Press
- Category I and II 3-Point Hitch

# Options

- \* Single or Double Drip Attachment
- \* Center Fillers; To Help Fill Center of Bed

# Soil Preparation

- \* To build a uniform firm bed with no hollow spots, soil has to be prepared properly.
- \* All soils are different. Some (moist, sandy) soils make nicer square beds than others. You need to know what soil preparation works best with your soil.
- \* Machine performs the best if soil is plowed 6" to 8" deep.
- \* Soil should be harrowed or roto-tilled until free of sod lumps.
- \* Proper moisture in soil is important to form nice firm beds. For best results, soil should not be powder dry or in muddy condition.

# Getting Started

Before laying plastic, you may want to try out the machine by making beds only; to get the feel of the machine.

Adjust 3-point top link on tractor to level the machine.

Let the full weight of machine down and regulate amount of soil in front of the machine with length of the 3-point top link.

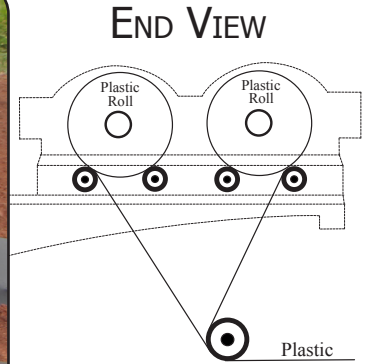
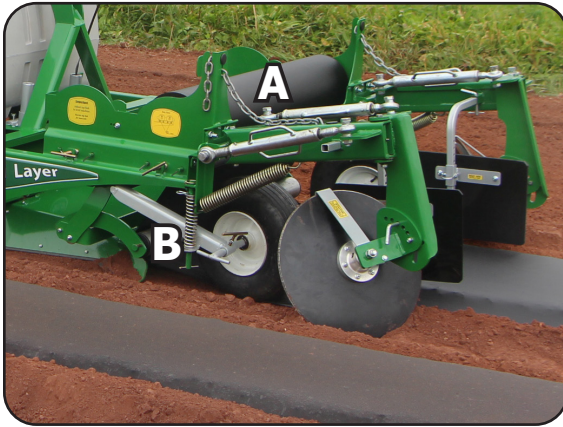
It is not necessary to pull more soil than needed to fill the bed. Pulling too much soil may cause tractor slippage, resulting side drifting.

To get higher, firmer bed, grower may want to pre-bed (make beds without laying plastic) then come back to lay plastic mulch. This will also help removing shallow spots in bed. Disk blades can be removed when making beds only.



# Installing Plastic Rolls

To install a plastic roll, place it on top of rollers(A). Pull end of plastic down in between rollers and underneath bottom roller(B). Secure plastic and drip tape at end of row. Only feed from one roll at a time.



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## Plastic Tension

Plastic rolls have a tension brake. *Just a slight tension is needed.*

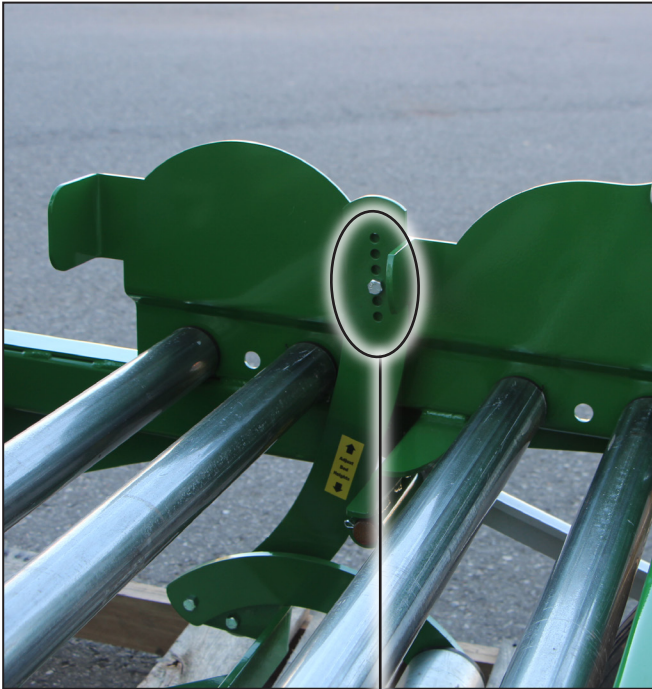
**Note;** Setting brake tension too tight may affect the performance of the machine and can cause plastic to pull out from under press tires.



Tension  
Brake  
Adjustment

# Bed Height Adjustment

Bed height is adjusted by lifting and lowering the bed press. Remove the bolt and nut shown below (on each side of the machine). Raising the bed is done by two people lifting the deck by hand, or by slowly driving forward with the 3-point hitch in down position; the soil will lift the bed press. To lower the bed, slowly lift 3-point hitch with the tractor to the desired height. Place the bolt and nut as before.



**Bed Height Adjustment**  
(Move up for higher bed; down for lower.)

Top Hole.....3" Bed  
Bottom Hole .....5" Bed

# Press Wheel Adjustment

Press wheels need to run at the bottom of the trench and not on the side to stretch the plastic properly. To adjust, loosen T-handle and make in or out changes as needed.

Tilt the front of the press wheel on an inward angle to stretch the plastic.

Use only high quality plastic to avoid straight line tear.



Adjustment  
Setting

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# Water Tank



The Mini Layer has a 50 gallon water tank for weight to make a firm bed. Add as much water (weight) as possible. The 3-point top link can be lengthened if pulling too much soil.



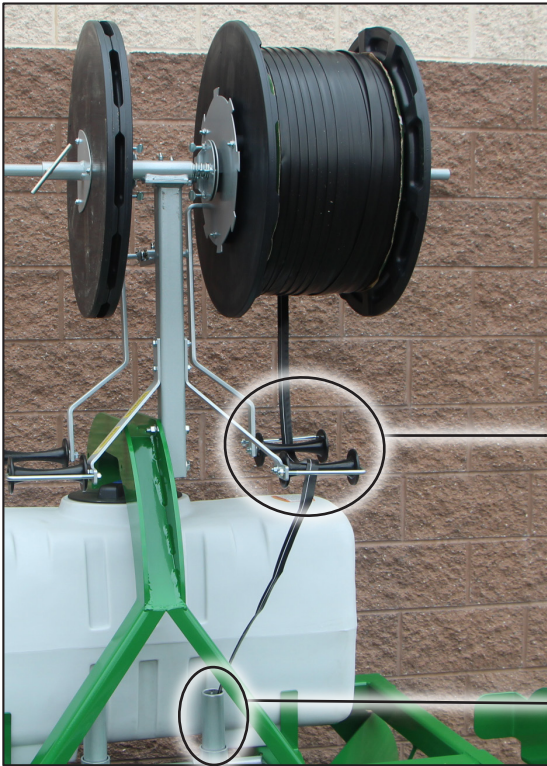
# Cover Disk Adjustments

Cover disks and dirt shields are marked right and left side (standing in back). Install shields as marked, with 'T' handle towards the center of the bed. Set disks on a 45 degree angle; make in or out adjustment as needed. For more or less coverage, tilt disk forward or backward as decal shows (pictured below).

In some sandy soils the disk blades can be laid in a flatter position and turned at a 45 degree angle. However, if it does not cover the plastic properly, the disks need to be set more upright or tilted back.



# Drip Irrigation Roll Carrier & Drip Tape Placement



**NOTICE:** Make sure drip roll is compressed firmly between plates for positive braking effect.

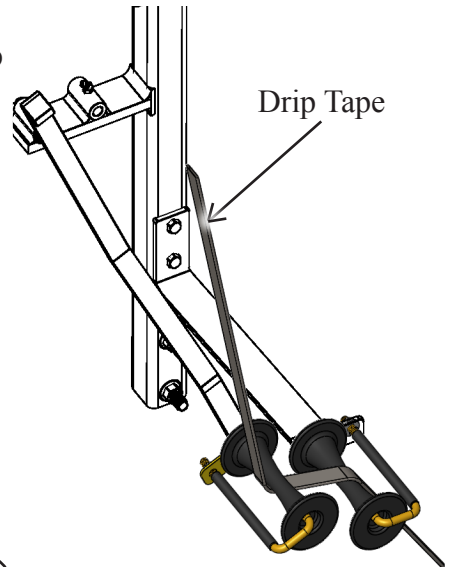
Guides / Rollers  
for Drip Line

Drip Line  
Down Pipe

Slide drip roll onto roll carrier rod so that drip emitters will be turned up toward plastic (for less clogging).

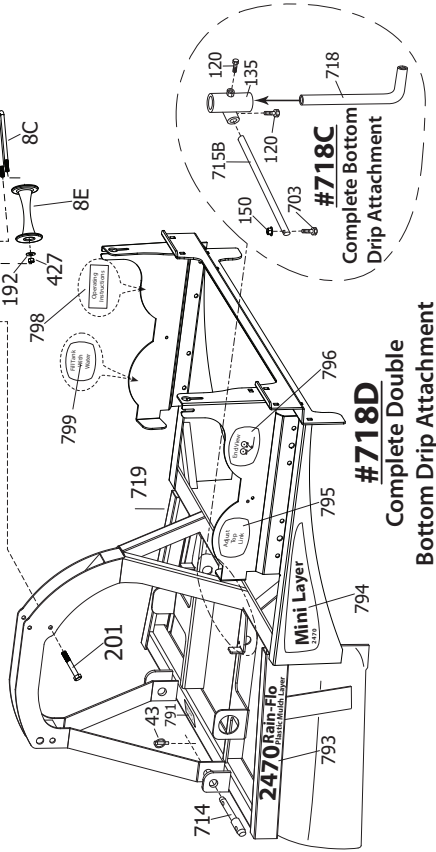
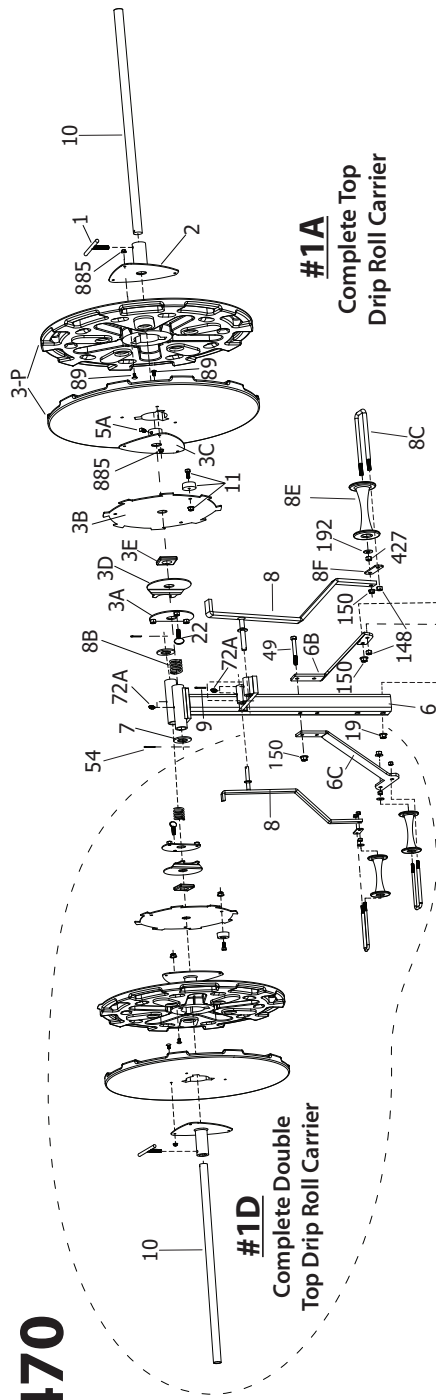
Feed drip tape through swing arm guide and stationary guide, (See sketch) and into the drip line down pipe.

To avoid damaging drip tape with the press pan, adjust down pipe to bury drip tape 1" to 2" in the bed.



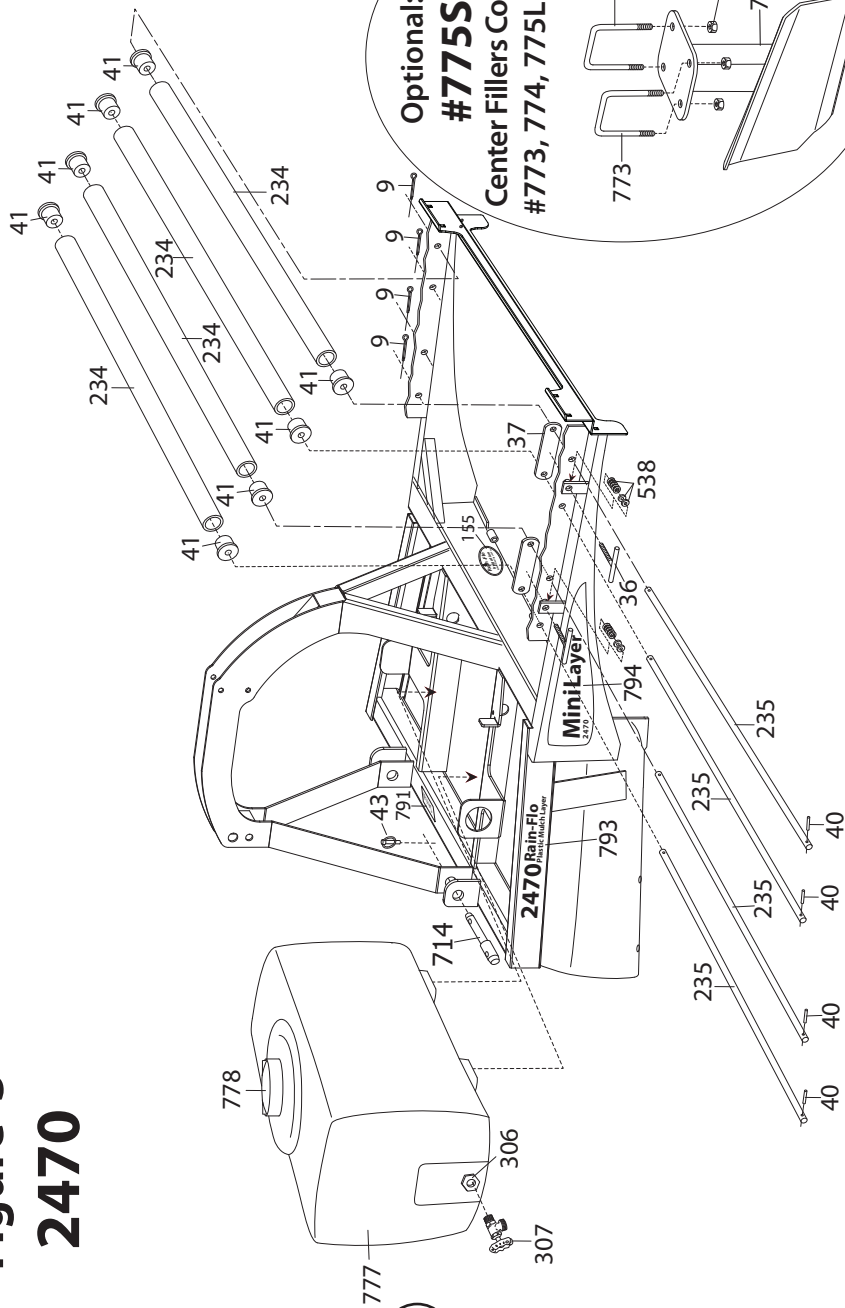
# Figure 1

# 2470

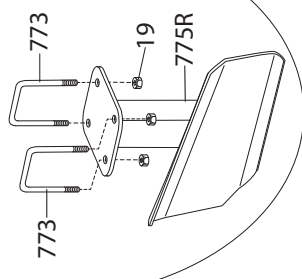




**Figure 3**  
**2470**



Optional:  
**#775S**  
Center Fillers Complete  
#773, 774, 775L & 775R





# MODEL 2470 MINI LAYER

ITEM #	DESCRIPTION
1.....(9)	Tee Handle
1A.....	Complete Single Top Drip Roll Carrier
1D.....	Complete Double Top Drip Roll Carrier
2.....	Roll Carrier Clamp
3A.....	Drip Attach Adjustable Brake Tension Plate
3B.....	Drip Attach Brake Plate
3C.....	Drip Attach -- Mounting for Brake Plate
3D.....	Drip Attach Brake Tension Plate Rotation Stop
3E.....	Drip Attach Teflon Brake Washer
3-P.....(2)	Drip Roll Side Plates
5A.....	$\frac{3}{8}$ " x $\frac{1}{2}$ " Set Screw
6.....	Drip Roll Carrier Frame (Single or Double)
6B.....	Drip Attach Arm to Guide Drip Tape
6C.....	Drip Attach Arm to Guide Drip Tape [Double Drip]
7.....	1" SAE Washer
8.....	Swing Arm
8B.....	Drip Attach Brake Tension Spring for 1" Rod
8C.....(2)	Drip Attach Arm U-Bolt $\frac{3}{8}$ " x 2" x $6\frac{1}{2}$ "
8E.....(2)	Drip Attach Arm Plastic Roller
8F.....	Drip Attach Arm U-Bolt Plate Only
9.....(7)	Cotter Pin [ $\frac{1}{8}$ "]
10.....	Drip Roll Shaft
11.....(3)	Rubber Brake Assembly
12BP.....(2)	$\frac{1}{2}$ " x $1\frac{1}{2}$ " Bent Pin
12SN.....(4)	$\frac{1}{2}$ " Zinc Stover Nut
13.....	Straight Grease Fitting
16.....(15)	$\frac{1}{4}$ " x $\frac{7}{8}$ " Bolt
17.....(4)	$\frac{5}{8}$ " x 2" Carriage Bolt
19.....(8)	$\frac{1}{2}$ " Flange Nut
20.....(3)	$5/16$ " x $\frac{5}{4}$ " Carriage Bolt
22.....(3)	$5/16$ " x 1" Thumb Screw
31.....(6)	$\frac{3}{8}$ " x 1" Bolt
34SN.....(6)	$\frac{3}{4}$ " Zinc Stover Nut
36.....(2)	Tension Tee Handle
37.....(2)	Tension Plate
38SN.....(2)	$\frac{3}{8}$ " Zinc Stover Nut
40.....(5)	$3/16$ " x 2" Roll Pin
40A.....(2)	$\frac{1}{4}$ " x 2" Roll Pin
41.....(8)	UHMW Bushing
42-70L.....	Left Side Press Wheel Arm
42-70R.....	Right Side Press Wheel Arm
42-70CL.....	Left Side Press Wheel Arm Complete
42-70CR.....	Right Side Press Wheel Arm Complete
47-70.....(2)	Chain Shackle Complete
48-70L.....	Left Side Cover Disk Support Arm
48-70R.....	Right Side Cover Disk Support Arm
48BB.....(2)	Back Disk Arm Bushing; $\frac{3}{4}$ " OD x $\frac{1}{2}$ " ID x $4\frac{1}{8}$ "
48BF.....(2)	Front Disk Arm Bushing; $\frac{3}{4}$ " OD x $\frac{1}{2}$ " ID x $4\frac{1}{4}$ "
48S.....(2)	$\frac{3}{4}$ " x $1\frac{3}{8}$ " Disk Arm Bolt Spacer
48S-70L.....	Left Side Disk Arm Swivel Knuckle
48S-70R.....	Right Side Disk Arm Swivel Knuckle
50.....(2)	Press Wheel Tire (#50 -thru- #54)
53.....(2)	Hub Cap
54.....(4)	Cotter Pin
57-70L.....	Left Side Disk Hub Mounting Bracket
57-70R.....	Right Side Disk Hub Mounting Bracket
58.....(4)	Cotter Pin
60-70A.....(2)	Dirt Shield Support Arm
61.....(2)	60" Disk Blade

# MODEL 2470 MINI LAYER

ITEM #	DESCRIPTION
61-70CL	Left Side Disk Assembly Complete
61-70CR	Right Side Disk Assembly Complete
62A.....(4)	205KR3 Bearing
62B.....(2)	Spacer
63-70.....(2)	Disk Dirt Scraper
63A.....(2)	3/4" Extension Tooth Lock Washer
65-70L	Left Side Hub Mounting Bracket
65-70R	Right Side Hub Mounting Bracket
65LB.....(2)	Large Disk Bracket Bushing; 1 1/8" OD x 3/4" ID x 7/16"
65SB.....(2)	Small Disk Bracket Bushing; 5/8" OD x 3/8" ID x 7/16"
66.....(2)	Dirt Shield
66-70CL	Left Side Dirt Shield Complete
66-70CR	Right Side Dirt Shield Complete
67.....(2)	Hub Center Bolt
68.....(12)	3/8" x 1 1/2" Button Socket Cap Bolt
69-70.....(2)	Dirt Shield Bracket
69A.....(2)	Dirt Shield Flat Plate Bracket
70.....(6)	3/8" x 1 1/4" Bolt
71.....(2)	6-Bolt Hub Complete
72.....(5)	1/4" x 90° Grease Fitting
72A.....(5)	1/4" x 45° Grease Fitting
74.....(2)	5/8" x 3 1/2" Bolt
76.....(2)	UHMW Bushing (Bottom Roller)
89.....(3)	1/4" x 3/4" Carriage Head Bolt
120.....(2)	1/2" x 1 1/2" Bolt
133.....(4)	3/8" x 1 1/2" Bolt
135.....(4)	Drip Pipe Holder Bracket
137.....(4)	3/8" x 1 1/4" Plow Shear Bolt
146.....(4)	1/2" Hex Nut
147.....(11)	1/4" Nylon Lock Nut
148.....(2)	3/8" Nylon Lock Nut
150.....(8)	3/8" Flange Nut
155.....(1)	Rain-Flo Oval Logo
157.....(2)	Disc Scraper Caution Label
162.....(2)	More Coverage Label
168.....(1)	Notice Label on Drip Attach
168A.....(1)	"Turn Drippers Up For Less Clogging" Label
169.....(1)	Direction Label for Drip Attach
169A.....(1)	Drip Attach Brake Adjustment Plate Label
172L.....(1)	Left Side Standing in Back Label for Disk
172R.....(1)	Right Side Standing in Back Label for Disk
173L.....(1)	Left Side Standing in Back Label for Dirt Shield
173R.....(1)	Right Side Standing in Back Label for Dirt Shield
175.....(2)	Feed Plastic Under Roller Label
185.....(2)	This Side Up Label
192.....(8)	3/8" Flat Washer
193.....(4)	1/2" Flat Washer
194.....(4)	5/8" Flat Washer
195.....(3)	5/16" Flange Nut
196.....(4)	3/8" Nylon Lock Nut
201.....(2)	1/2" x 3 1/4" Bolt
234.....(4)	Plastic Mulch Support Rolls
235.....(4)	Roll Holder Rod
306.....(1)	3/4" Tank Adapter
307.....(1)	Boiler Drain Valve
309A.....(2)	Safety Pin



# MODEL 2470 MINI LAYER

ITEM #	DESCRIPTION
334.....(2)	$\frac{3}{4}$ " SAE Flat Washer
358.....(2)	$\frac{3}{8}$ " x $1\frac{3}{4}$ " Snap Pin
370.....(6)	$\frac{3}{4}$ " x 3" Grade 5 Zinc Hex Bolt
381C.....(4)	$\frac{3}{8}$ " x 1" Grade 5 Zinc Carriage Bolt
406.....(2)	$\frac{3}{4}$ " Nylon Lock Nut
422.....(2)	$\frac{3}{4}$ " Hex Nut
423.....(2)	$\frac{3}{4}$ " Locking Washer
427.....(18)	$\frac{3}{8}$ " Hex Nut
428.....(18)	$\frac{3}{8}$ " Locking Washer
433.....(2)	$\frac{5}{8}$ " Hex Nut
538.....(2)	Tension Spring and Washers
703.....	$\frac{3}{8}$ " x 2" Hex Bolt
714.....(2)	2470 Category I & II Lift Pin
715.....	Bottom Drip Attach Rod
718.....	Drip Line Down Pipe
718C.....	Complete Single Bottom Drip Attachment
718D.....	Complete Double Bottom Drip Attachment
719.....	Model 2470 Frame Only
720-70L.....	Left Side Bed Height Adjuster
720-70R.....	Right Side Bed Height Adjuster
724.....(2)	Bottom Roller Flex Plate
725.....	Bottom Roller Mounting Rod
726.....	3" Galvanized Bottom Roller
726C.....	Bottom Roller Kit
728-70.....	Bed Press Only
729-70.....	Bed Press Top Teflon Only
729-70C.....	Complete Teflon Kit
731L.....	Left Side Teflon Only
731R.....	Right Side Teflon Only
733L.....	Left Side Plow Shear
733R.....	Right Side Plow Shear
733S.....	Plow Shear Set Complete
773.....	Center Filler 'U' Bolt
775L.....	Left Side Center Filler
775R.....	Right Side Center Filler
775S.....	Center Filler Set Complete
777.....	50 Gallon Water Tank
778.....	Tank Cap Only
780.....	Tank Holder Bracket
791.....	Serial Number Label
792.....(2)	Raised Bed Layer Side Label
793.....(2)	Rain-Flo Side Label
794.....(2)	Mini Layer Side Label
795.....	Top Link Instruction Label
796.....	Plastic Roll End View Label
797.....(2)	Bed Height Adjustment Label
798.....	Operating Instruction Label
799.....	Water Tank Instruction Label
3411.....(2)	$\frac{3}{4}$ " x 11" Gr. 5 Zinc Hex Bolt
12612.....(4)	$\frac{1}{2}$ " x $6\frac{1}{2}$ " Gr. 5 Zinc Hex Bolt
34214.....(2)	$\frac{3}{4}$ " x $3\frac{1}{4}$ " Gr. 5 Zinc Hex Bolt
38134.....(2)	$\frac{3}{8}$ " x $1\frac{3}{4}$ " Gr. 5 Zinc Hex Bolt
111386.....(4)	13" Turnbuckle; $1\frac{1}{8}$ " ACME Thread
BB-1.....(4)	Sealed Ball Bearing
PWS.....(2)	Press Wheel Spring
SWS.....(2)	Cover Disk Arm Spring

# Helpful Tips

- \*Adjust 3-point top link on tractor to level machine.
- \*Add water in tank for more soil and firmer bed.
- \*Periodically check for shallow spots in bed; hollow bed will effect planting and hinder plant growth.
- \*Two or more people are recommended when laying plastic mulch to maintain proper machine adjustments.
- \*A sizable tractor is needed for stability and lifting power. Minimum tractor size for Model 2470 is 40 HP, 4 wheel drive.
- \*This machine can also be used for a bedder only, (without laying plastic). The rear cover disks and tires can be removed for this application.
- \*Avoid over steering; rear cover disk will move far and cut into previously laid plastic. Careful steering will also provide more uniform coverage.
- \*Stretching plastic in length and side to side will help plastic from blowing off.

# Warranty

All Rain-Flo mulch layers have a two year warranty against defects in material or workmanship.

If any part is found defective, return the defective part with serial number 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

# TROUBLESHOOTING

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- 1. PROBLEM:** Machine tends to drift sideways causing press wheels to come off the plastic.

**SOLUTION:** \*Pull less soil by lengthening top link. Pull just enough soil to firmly fill the bed.  
\*Make sure sway bar is in place.  
\*Tractor may be too small.
  
- 2. PROBLEM:** Cover disk not getting enough soil to cover plastic.

**SOLUTION:** \*Tilt disk back to dig in more (Page 9).
  
- 3. PROBLEM:** Plastic not staying under press wheel.

**SOLUTION:** \*Tension too tight on plastic roll carrier.  
\*Angle press wheel toward bed.
  
- 4. PROBLEM:** Not firm beds and shallow spots in center.

**SOLUTION:** \*Add water in tank or shorten top link.  
\*Tractor's 3-point not low enough or draft control is lifting up.  
\*Soil not tilled deep enough.  
\*Install optional center filler on mulch layer.

**~2021 Edition~**

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