



OPERATING MANUAL

MODEL 2470
RAISED BED PLASTIC MULCH LAYER

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!! Safety First !!

- ⚠ No riders on this machine. Operators need to 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 mold-board plowed 6" - 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.

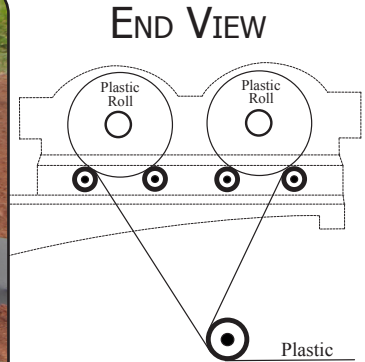
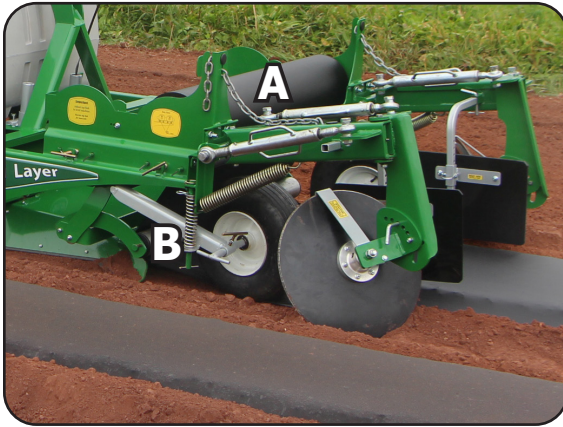
It is not necessary to pull more soil than needed to fill the bed. Pulling too much soil may cause tractor slippage, resulting side drifting.

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.



Plastic Tension

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

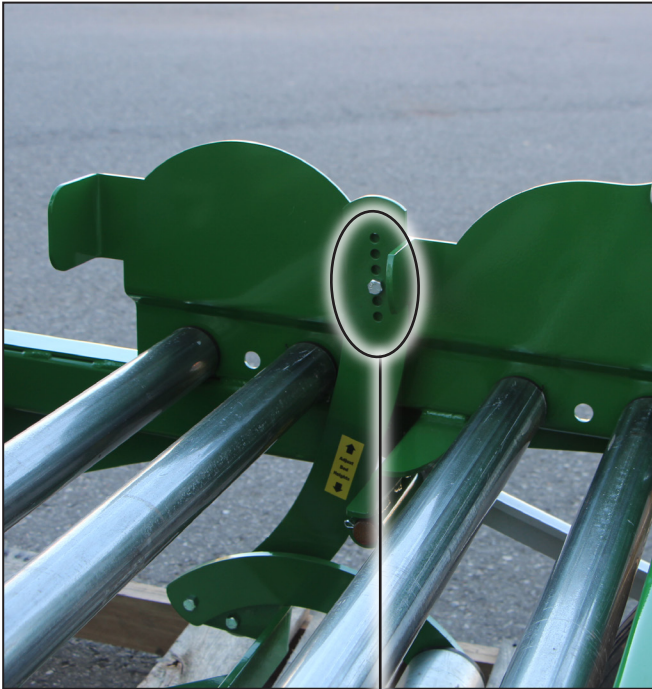
Note; Setting brake tension too tight may affect the performance of the machine and can cause plastic to pull out from under press tires.



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 Hole5" Bed

Press Wheel Adjustment

Press wheels need to run at the bottom of the trench and not on the side to hold the plastic mulch properly. To adjust, loosen T-handle and make left/right changes as needed.

Plastic cross tension is adjusted by the angle of the tire. Rotate the axle to adjust the front of the press wheel on an inward angle to stretch the plastic the preferred amount.

The spring provides down pressure on the press wheel and is important for laying at 2+ mph. Adjust the down pressure by using pin. Avoid excessive spring tension which can cause the plastic to tear. Spring can also be removed if always laying at slow speeds.

Use less cross tension when laying biodegradable plastic mulch.

Use only high quality plastic to avoid straight line tear.



Water Tank

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



Cover Disk Adjustments

Cover disks and dirt shields need to be adjusted according to soil type and conditions. Use inside turnbuckles to set disks on a 45-degree angle. Make left / right adjustment as needed using the outside turnbuckles. They can be adjusted on-the-go without stopping.

For more or less coverage, tilt disk forward or backward as decal shows (pictured at bottom). Springs can be hooked into different slots to adjust down pressure on the disks.

For heavy clay soil tilt disks upright and use more down pressure.

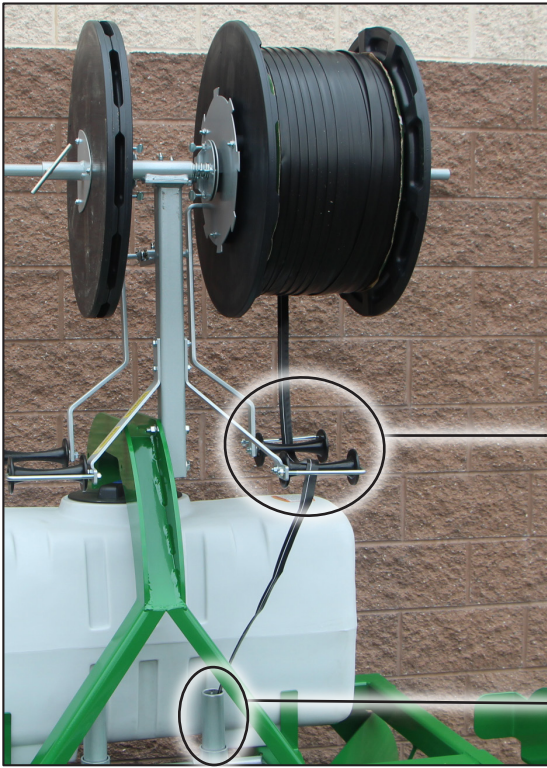
For sandy loam soil set disks flatter with less down pressure.



Note: To retain a firm pressed bed, avoid excessive down pressure on disks.



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.

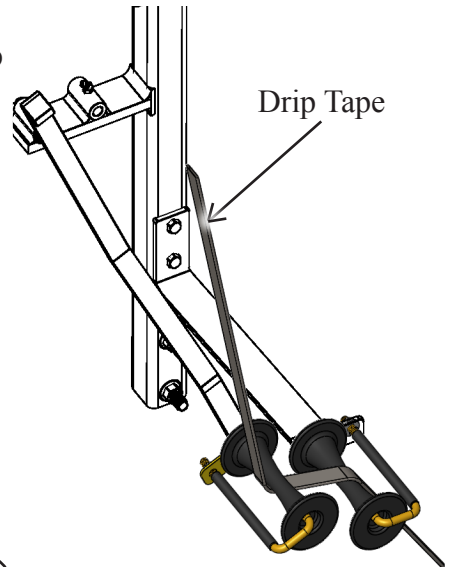


Figure 2

2470

#726C

Bottom Roller Kit

#724-726, 40, 40A, 54, 76, 133

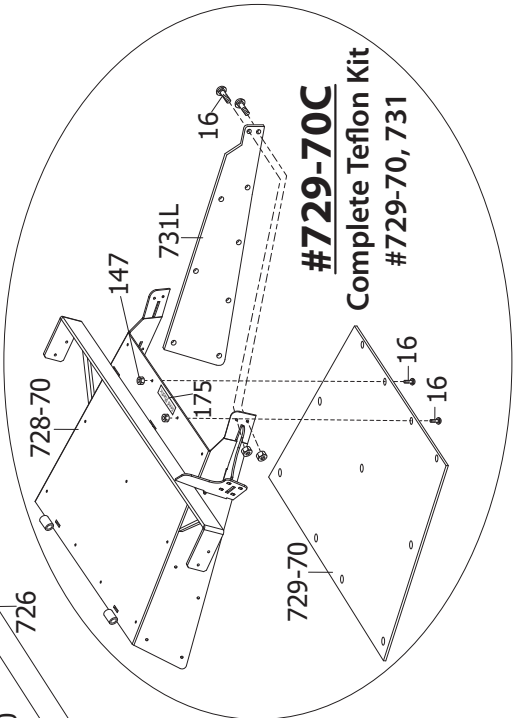
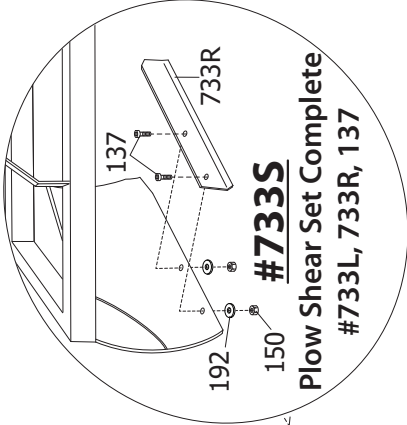
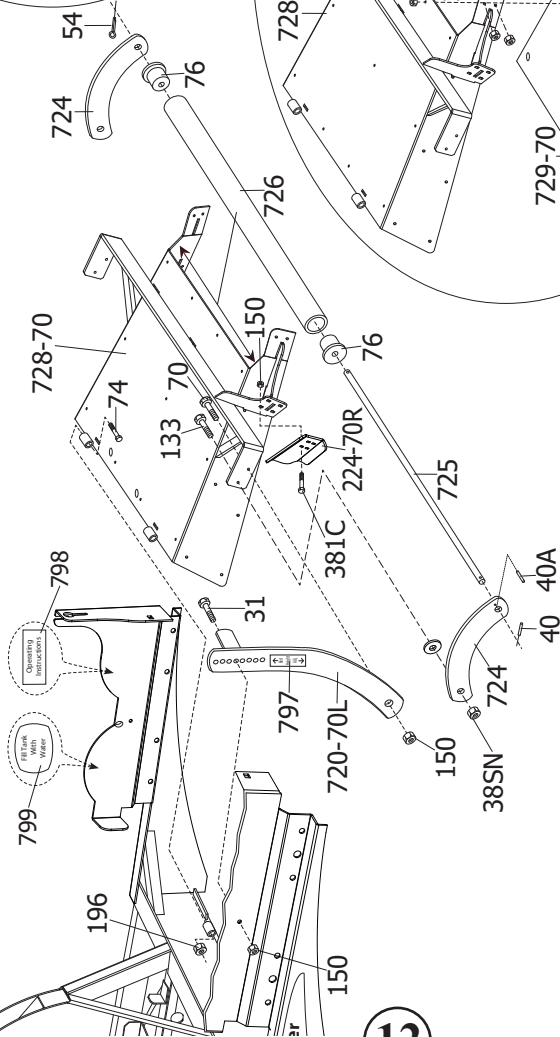
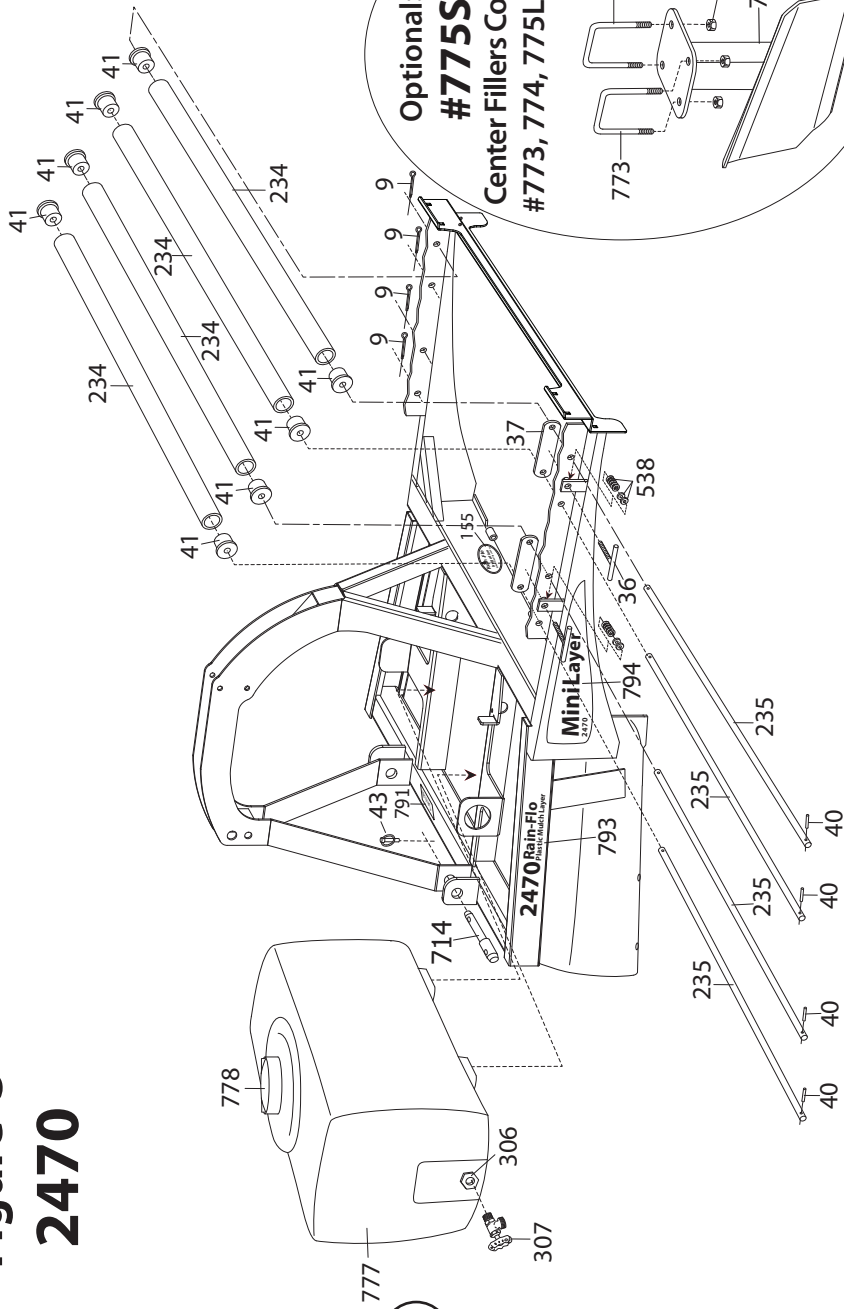


Figure 3
2470



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

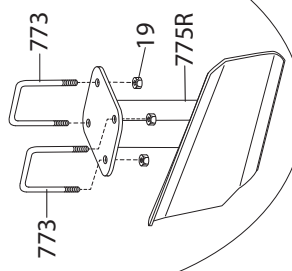
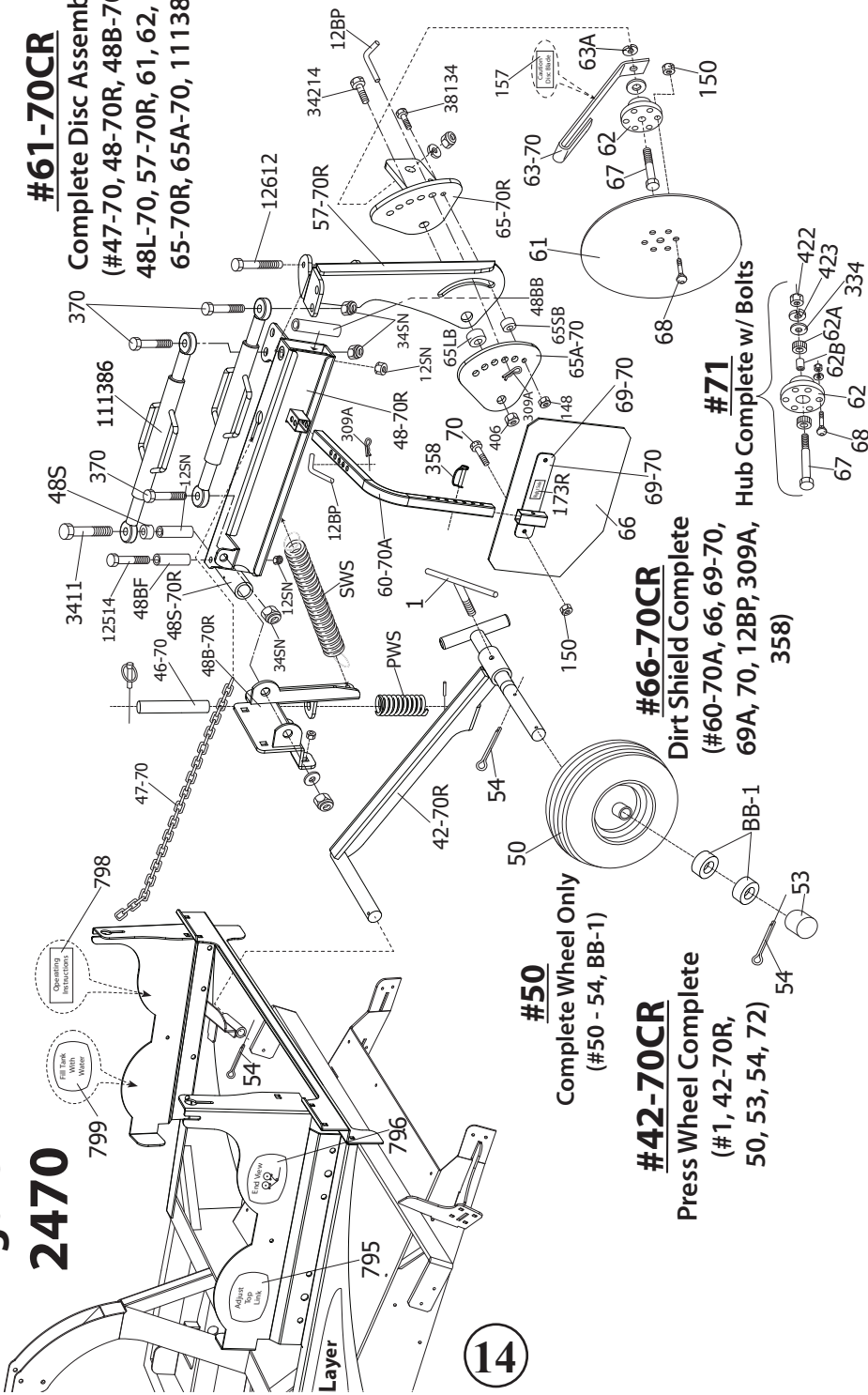


Figure 4

2470



#61-70CR

Complete Disc Assembly
(#47-70, 48-70R, 48B-70R, 48L-70, 57-70R, 61, 62, 63, 65-70R, 65A-70, 111386)

#71

Hub Complete w/ Bolts

#66-70CR

Dirt Shield Complete
(#60-70A, 66, 69-70, 69A, 70, 12BP, 309A, 358)

#50

Complete Wheel Only
(#50 - 54, BB-1)

#42-70CR

Press Wheel Complete
(#1, 42-70R, 50, 53, 54, 72)

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.....(4)	$\frac{1}{2}$ " 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
48SB.....(2)	Bushing For Swivel Bracket; $1\frac{1}{4}$ " OD x $\frac{3}{4}$ " ID x 5.97"
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

MODEL 2470 MINI LAYER

ITEM #	DESCRIPTION
61.....(2)	20" Disk Blade
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)	¾" Extension Tooth Lock Washer
65-70L.....	Left Side Hub Mounting Bracket
65-70R.....	Right Side Hub Mounting Bracket
65LB.....(2)	Large Disk Bracket Bushing; 1⅛" OD x ¾" ID x 7/16"
65SB.....(2)	Small Disk Bracket Bushing; ⅝" OD x ⅜" 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)	⅜" x 1½" Button Socket Cap Bolt
69-70.....(2)	Dirt Shield Bracket
69A.....(2)	Dirt Shield Flat Plate Bracket
70.....(6)	⅜" x 1¼" Bolt
71.....(2)	6-Bolt Hub Complete
72.....(5)	¼" x 90° Grease Fitting
72A.....	¼" x 45° Grease Fitting
74.....(2)	⅝" x 3½" Bolt
76.....(2)	UHMW Bushing (Bottom Roller)
89.....(3)	¼" x ¾" Carriage Head Bolt
120.....(2)	½" x 1½" Bolt
133.....(4)	⅜" x 1½" Bolt
135.....	Drip Pipe Holder Bracket
137.....(4)	⅜" x 1¼" Plow Shear Bolt
146.....(4)	½" Hex Nut
147.....(11)	¼" Nylon Lock Nut
148.....(2)	⅜" Nylon Lock Nut
150.....(8)	⅜" Flange Nut
155.....	Rain-Flo Oval Logo
157.....(2)	Disc Scraper Caution Label
162.....(2)	More Coverage Label
168.....	Notice Label on Drip Attach
168A.....	"Turn Drippers Up For Less Clogging" Label
169.....	Direction Label for Drip Attach
169A.....	Drip Attach Brake Adjustment Plate Label
172L.....	Left Side Standing in Back Label for Disk
172R.....	Right Side Standing in Back Label for Disk
173L.....	Left Side Standing in Back Label for Dirt Shield
173R.....	Right Side Standing in Back Label for Dirt Shield
175.....(2)	Feed Plastic Under Roller Label
185.....(2)	This Side Up Label
192.....(8)	⅜" Flat Washer
193.....(4)	½" Flat Washer
194.....(4)	⅜" Flat Washer
195.....(3)	5/16" Flange Nut
196.....(4)	⅝" Nylon Lock Nut
201.....(2)	½" x 3¼" Bolt
234.....(4)	Plastic Mulch Support Rolls
235.....(4)	Roll Holder Rod
306.....	¾" Tank Adapter
307.....	Boiler Drain Valve

MODEL 2470 MINI LAYER

ITEM #	DESCRIPTION
309A.....(4)	Safety Pin
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
12514.....(2)	$\frac{1}{2}$ " x $5\frac{1}{4}$ " 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

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

SOLUTION:

 - *Pull less soil soil by lengthening 3-point top link.
Pull just enough to fill the bed firm.
 - *Ensure the tractor's sway bars are locked.
 - *Tractor may be too small.

- 2. PROBLEM:** Cover disk not getting enough soil to cover plastic

SOLUTION:

 - *Tilt disks back to dig in more (Page 9).
 - *Increase down pressure on disks (Page 9).
 - *Soil not tilled deep enough.

- 3. PROBLEM:** Plastic not staying under press wheel.

SOLUTION:

 - *Tension is too tight on plastic roll carrier.
 - *Adjust angle of press wheels (Page 8)

- 4. PROBLEM:** Beds aren't firm and shallow spots in center.

SOLUTION:

 - *Adjust top link.
 - *Soil not tilled deep enough.
 - *Add water in tank for more weight.
 - *Tractor's 3-point not lowered completely or draft control lifting up.
 - *Install optional center fillers on mulch layer.

~2021 Edition~

Rain-Flo Irrigation
(717) 445-3000