



DCY

Refuge Plus Seed Delivery

OPERATOR'S MANUAL Refuge Plus Seed Delivery OMA88830 ISSUE G9 (ENGLISH)

CALIFORNIA

Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.

If this product contains a gasoline engine:

WARNING

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

The State of California requires the above two warnings.

John Deere Seeding Group
North American Edition
LITHO IN U.S.A.



OMA88830

Introduction

Foreword

READ THIS MANUAL carefully to learn how to operate and service your machine correctly. Failure to do so could result in personal injury or equipment damage. This manual and safety signs on your machine may also be available in other languages. (See your John Deere dealer to order.)

THIS MANUAL SHOULD BE CONSIDERED a permanent part of your machine and should remain with the machine when you sell it.

MEASUREMENTS in this manual are given in both metric and customary U.S. unit equivalents. Use only correct replacement parts and fasteners. Metric and inch fasteners may require a specific metric or inch wrench.

RIGHT-HAND AND LEFT-HAND sides are determined by facing in the direction the implement will travel when going forward.

WRITE PRODUCT IDENTIFICATION NUMBERS (P.I.N.) in the Specification section. Accurately record all the numbers to help in tracing the machine should it be stolen. Your dealer also needs these numbers when you order parts. File the identification numbers in a secure place off the machine.

WARRANTY is provided as part of John Deere's support program for customers who operate and maintain their equipment as described in this manual. The warranty is explained on the warranty certificate or statement which you should have received from your dealer.

This warranty provides you the assurance that John Deere will back its products where defects appear within the warranty period. In some circumstances, John Deere also provides field improvements, often without charge to the customer, even if the product is out of warranty. Should the equipment be abused, or modified to change its performance beyond the original factory specifications, the warranty will become void and field improvements may be denied. Setting fuel delivery above specifications or otherwise overpowering machines will result in such action.

If you are not the original owner of this machine, it is in your interest to contact your local John Deere dealer to inform them of this unit's serial number. This will help John Deere notify you of any issues or product improvements.

DX,IFC2A -19-03APR09-1/1

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Original Instructions. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.

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Identification Views

Identification Views



A56392 —UN—02JUN05

1770NT With Pesticide Shown



A56393 —UN—02JUN05

1790 Shown



A57015 —UN—24AUG05

DB90 Shown

OUO6045,0000665 -19-01SEP05-1/1

Safety

Recognize Safety Information

This is a safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

Follow recommended precautions and safe operating practices.



TS1389 —UN—07DEC88

DX,ALERT -19-29SEP98-1/1

Understand Signal Words

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

▲ DANGER

▲ WARNING

▲ CAUTION

TS187 —19—30SEP88

DX,SIGNAL -19-03MAR93-1/1

Follow Safety Instructions

Carefully read all safety messages in this manual and on your machine safety signs. Keep safety signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your John Deere dealer.

There can be additional safety information contained on parts and components sourced from suppliers that is not reproduced in this operator's manual.

Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.

Keep your machine in proper working condition. Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.



TS201 —UN—23AUG88

If you do not understand any part of this manual and need assistance, contact your John Deere dealer.

DX,READ -19-16JUN09-1/1

Operating

Service and Troubleshooting

See Machines Operators manual for all service and troubleshooting procedures for the Refuge Plus System.

OUO6045,0000677 -19-09APR08-1/1

Overview

Operational Overview

Refuge Plus is a 25 bushel optional third tank for the Central Commodity System that provides increased versatility and productivity to the planting operation.

Refuge Plus offers a solution for refuge management compliance issues associated with Bt, or Biotech, corn production. The addition of the third tank allows customers to plant the required refuge, non-Bt corn, while maintaining the high productivity of the Central Commodity System. Bt corn is placed in the two larger CCS tanks to supply 80%

of the seed to the planter. Non-Bt corn is placed in the third, or Refuge Plus tank to supply 20% of the seed, the typical required refuge for planting biotech corn.

The Refuge Plus option also makes planting seed corn much easier. The Refuge Plus tank is used to supply the male seed and the two larger CCS tanks to supply female seed. Delivery hoses are then routed from each tank to the desired row units.

Refuge Plus can also be used for extra seed carrying capacity when planting other CCS approved crops.

OUO6045,0000668 -19-27APR09-1/1

Preparing Tractor

Preparing Tractor

Weighting Front End

Install the proper amount of weight on the front of tractor as recommended in your tractor operator's manual.

The figures in the following table are Implement Code Additions for Refuge Plus and Pesticide. Consult planter OM for base Implement Codes in Weighting Front End in Preparing Tractor section.

Machine	Option	Implement Code (55 Series Tractors)	Implement Code (7000/8000 Series tractors)	Additional Hitch Weight Added
1770NT 12R30	Refuge Plus	0	0	247 kg (545 lb.)
	568 L (150 gal.) Pesticide Tank	34	33	305 kg (673 lb.)
1770NT 16R30	Refuge Plus	28	27	257 kg (566 lb.)
	1136 L (300 gal.) Pesticide Tank	61	58	551 kg (1215 lb.)
1770NT 24R30	Refuge Plus	16	15	140 kg (300 lb.)
	1136 L (300 gal.) Pesticide Tank	46	44	410 kg (900 lb.)
1790 23/24R15	Refuge Plus	35	33	313 kg (689 lb.)
	568 (150 gal.) Pesticide Tank	41	39	367 kg (810 lb.)
1790 24R20	Refuge Plus	24	23	219 kg (483 lb.)
	(4) 265 L (70 gal.) Pesticide Tanks	69	66	625 kg (1379 lb.)
1790 31/32R15	Refuge Plus	24	23	219 kg (483 lb.)
	(4) 265 L (70 gal.) Pesticide Tanks	69	66	625 kg (1379 lb.)

OUC6045,00006B1 -19-09APR08-1/1

Cut and Splice Seed Delivery Hose

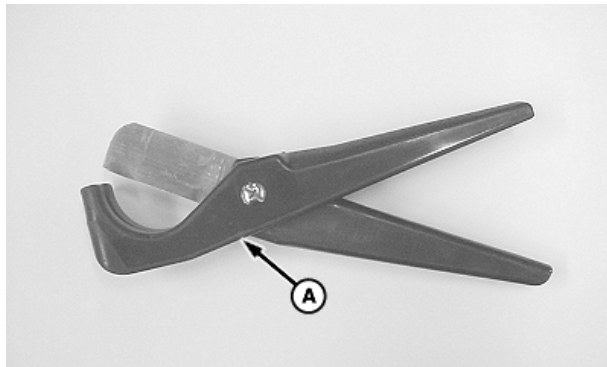
Cut and Splice Existing Seed Delivery Hoses

1. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.

NOTE: Hose cutter (A) is available at most local hardware supply stores.

2. Use hose cutters (A) to cut hose in desired location.

A—Hose Cutter



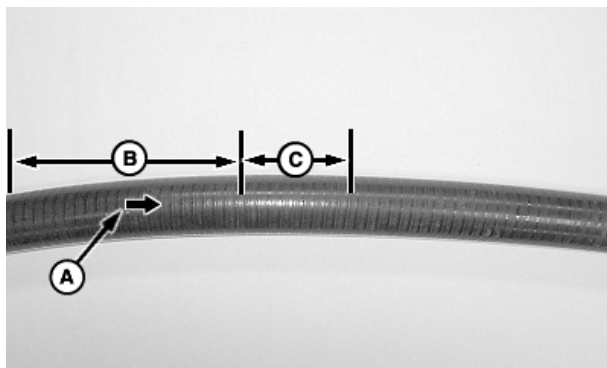
A56470—UN—15JUN05

OUC6045,0000666 -19-09APR08-1/5

3. Measure stated distance from nozzle (B) and cut hose.
4. Measure 57 mm (2.25 in.) (C) on hose going to row unit, cut, and discard this piece of hose.
5. Clean inside of hoses of any residue of talc and dirt.

A—Direction of Flow
B—Measured Stated Distance
From Nozzle

C—Cut and Discard 57 mm
(2.25 in.)



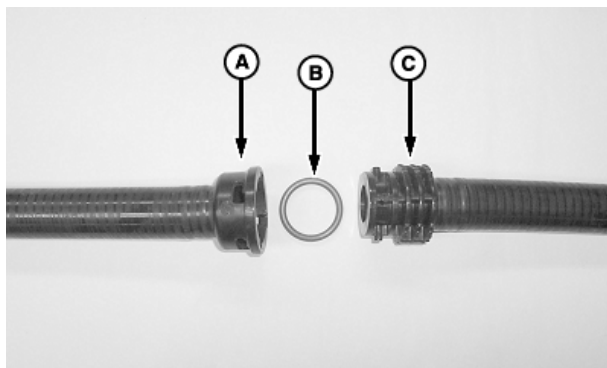
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OUC6045,0000666 -19-09APR08-2/5

6. Using liquid soap, install A75169 female coupler (A) in hose attached to CCS tank.
7. Install A55042 O-ring (B) in female coupler.
8. Using liquid soap, install A79209 male coupler (C) in hose going to row unit.

A—Female Coupler (A75169)
B—O-ring (A55042)

C—Male Coupler (A79209)



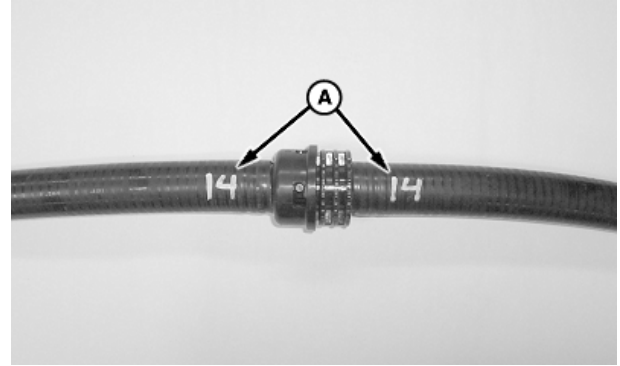
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OUC6045,0000666 -19-09APR08-3/5

NOTE: A paint pen is the recommended way to mark hoses with row numbers for future reference.

9. Mark both ends of cut hose with row number (A) using a paint pen.
10. Connect quick couplers on cut hose and then proceed to next hose.
11. For new hoses that are attached to Refuge Plus tank, measure and cut hoses to lengths specified. Install female coupler and O-ring to one end of each hose.
12. Mark both ends of each hose with row number, shown in chart, for future reference.
13. Connect hoses to Refuge Plus tank at specified nozzles.
14. Route and connect each hose from Refuge Plus tank to desired row unit hose or row unit using quick couplers.



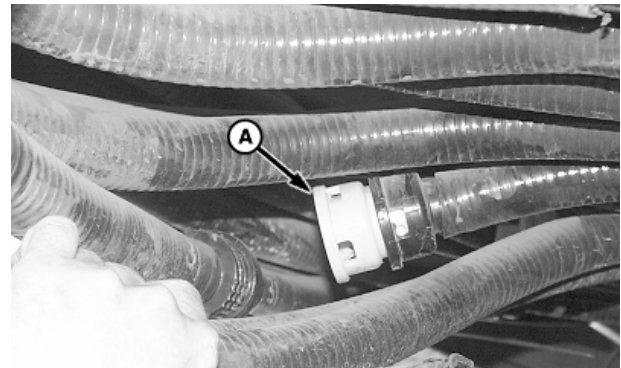
A—Row Number

A56886 —UN—02AUG05

OUO6045,0000666 -19-09APR08-4/5

15. Install a yellow cap A72750 (A) on each hose that is not going to be used.
16. Fold and unfold machine to ensure that hoses are routed correctly.

A—Yellow Cap (A72750)

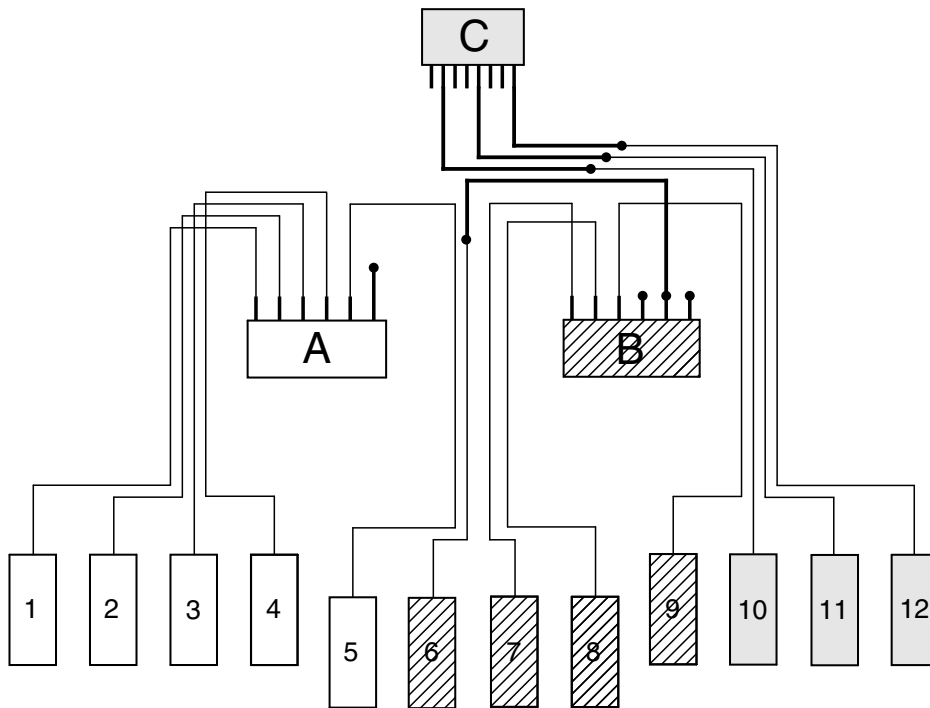


A56490 —UN—22JUN05

OUO6045,0000666 -19-09APR08-5/5

1770NT 12-Row 76 cm (30 in.) Hose Routing

Refuge Planting Diagram



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
6	965 mm (38 in.)
10	154 mm (6 in.)
11	154 mm (6 in.)
12	154 mm (6 in.)

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OOU6045,000067B -19-27APR09-1/4

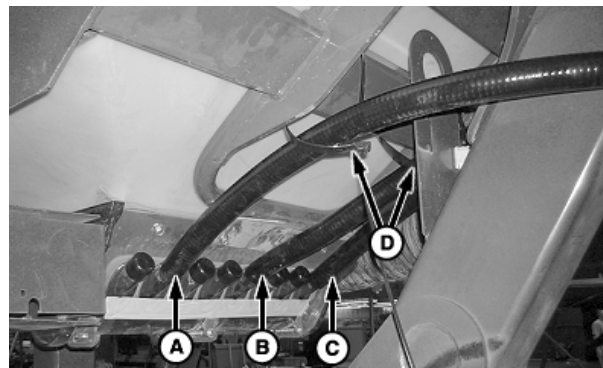
A56446—UN—31AUG05

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Hose Length
10	2515 mm (99 in.)
11	2565 mm (101 in.)
12	2616 mm (103 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—C) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hose for row 10 to left-hand side of support and hoses for row 11 and 12 to right-hand side of support.
10. Secure hoses to Refuge Plus tank support using tie straps (D).
11. Cut bulk hose to extend row 6 to nozzle 11. See following chart for length.

Row Number	Length
6	1499 mm (59 in.)



A—Row 10
B—Row 11

C—Row 12
D—Tie Strap (2 used)

12. Install a female coupler to one end and a male coupler to opposite end of hose.
13. Install an O-ring in female coupler.
14. Mark both ends of hose with row number, shown in chart, for future reference.

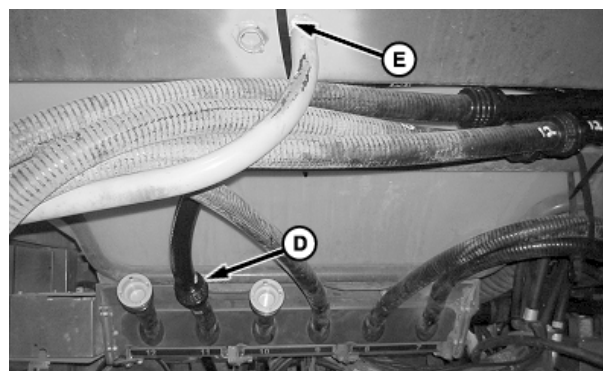
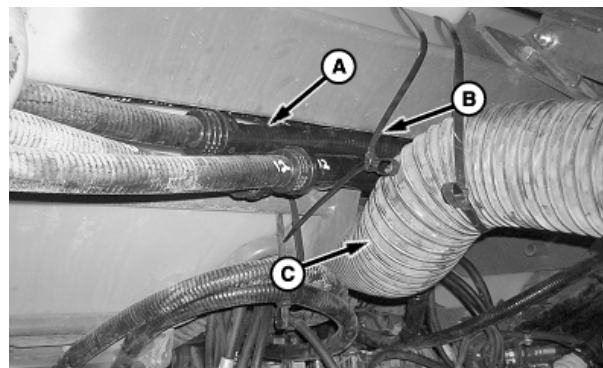
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OUO6045,000067B -19-27APR09-2/4

15. Route all hoses (A) from Refuge Plus tank, over 154 mm (6 in.) air hose (C) and below right-hand tank frame.
16. Disconnect quick couplers on rows 6, 10, 11 and 12. Install yellow caps on tank side of hoses 6, 10 and 12.
17. Connect Refuge Plus hoses to row unit hoses (A) 10, 11 and 12 in location shown.
18. Connect extension hose (D) to nozzle 11, route hose behind tank support and over 154 mm (6 in.) air hose.
19. Secure extension hose to CCS tank support using tie strap (E).
20. Secure all hoses to CCS tank support using tie strap (B).

A—Hoses
B—Tie Strap
C—154 mm (6 in.) Air Hose

D—Extension Hose, Nozzle 11 to Row 6
E—Tie Strap



A56827 —UN—21JUL05

A56828 —UN—21JUL05

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OUO6045,000067B -19-27APR09-3/4

NOTE: Ensure that extension hose is routed over 154 mm (6 in.) air hose.

21. Connect extension hose from nozzle 11 to row 6 (A) in location shown.
22. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
23. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.

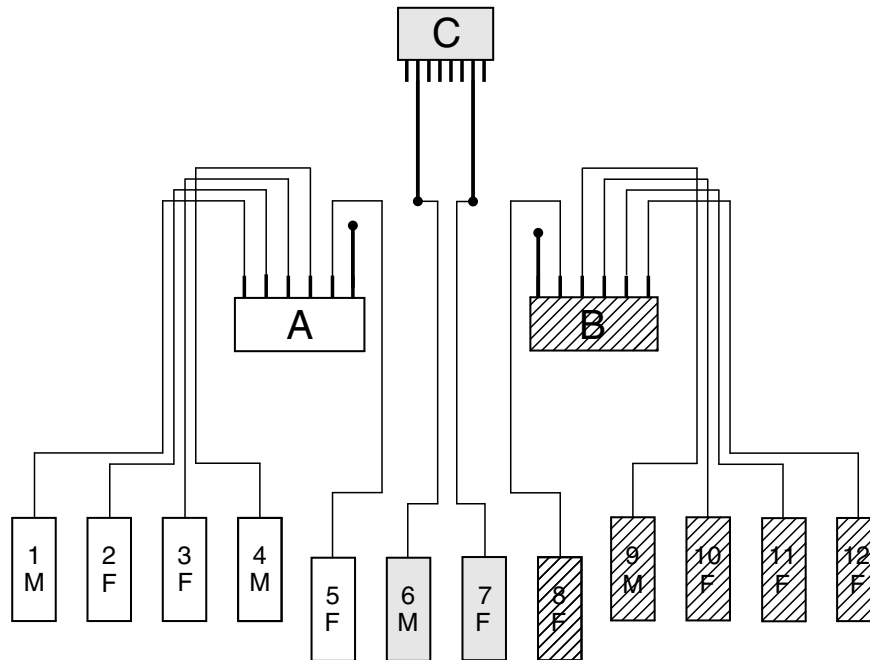


A—Nozzle 11 to Row 6

A56721 —UN—07JUL05

OUO6045,000067B -19-27APR09-4/4

Extra Capacity Center Planting Diagram



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus as extra capacity to center rows. Follow remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
6	965 mm (38 in.)
7	965 mm (38 in.)

A56469 —UN—02AUG05

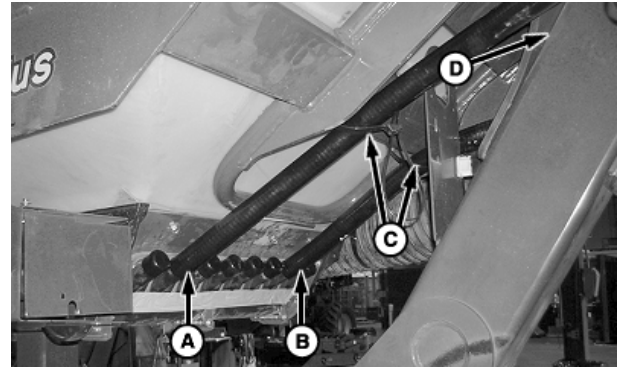
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OUO6045,000067C -19-27APR09-1/3

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
6	1016 mm (40 in.)
7	1016 mm (40 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A and B) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hose for row 6 to left-hand side of support (D) and hose for row 7 to right-hand side of support.
10. Secure hoses to Refuge Plus tank support using tie straps (C).
11. Disconnect quick couplers on nozzles 6 and 7 coming from CCS tank. Install yellow caps on tank side of hoses 6 and 7.



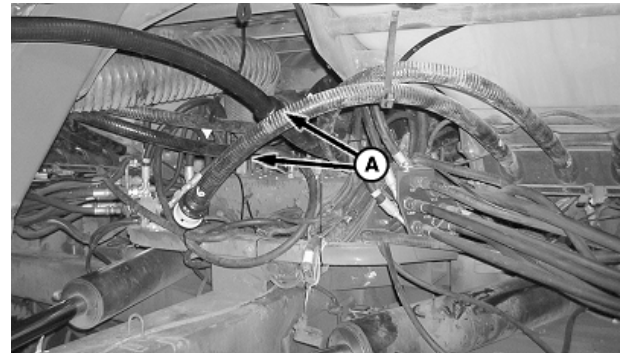
A—Row 6
B—Row 7

C—Tie Strap (2 used)
D—Support

A56679 —UN—01AUG05

OUO6045,000067C -19-27APR09-2/3

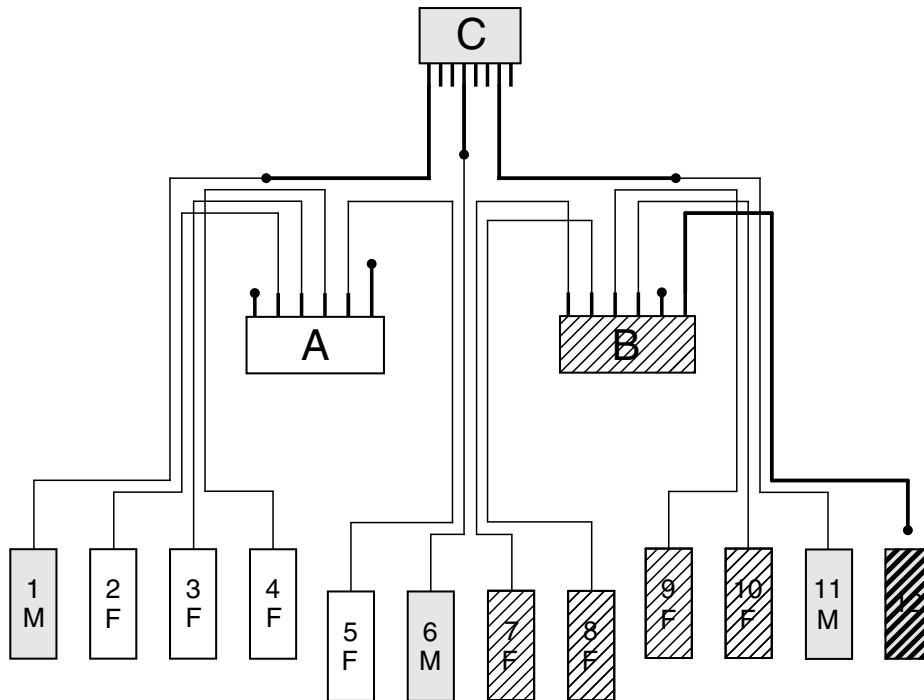
12. Route hoses from refuge tank to hoses going to rows units as shown. Connect hoses in location (A).
13. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
14. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A—Location

A56680 —UN—07JUL05

OUO6045,000067C -19-27APR09-3/3

1-4-1-4 Seed Corn Planting Diagram**A—Left-Hand CCS Tank****B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Row 12 is not used in this configuration. Disconnect and cap vacuum hose on this row.
3. Disconnect the CCS seed delivery hose at row 12 and install a yellow cap. Reconnect capped hose on inlet port of row unit.
4. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.

5. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
1	154 mm (6 in.)
6	965 mm (38 in.)
11	154 mm (6 in.)

A56443—UN—31AUG05

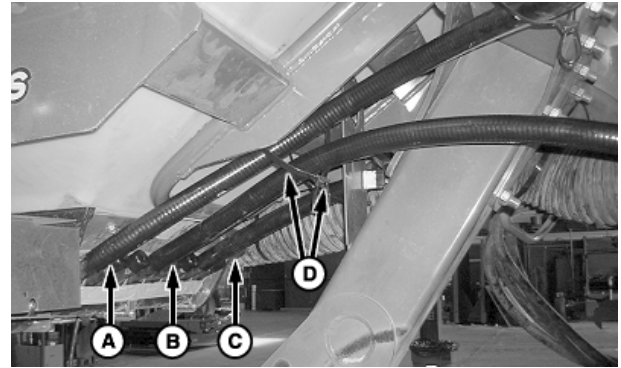
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OOU6045,0000683 -19-27APR09-1/4

6. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	1168 mm (46 in.)
6	1016 mm (40 in.)
11	1118 mm (44 in.)

7. Install a female coupler to one end of each hose.
8. Install an O-ring in each female coupler.
9. Mark both ends of each hose with row number, shown in chart, for future reference.
10. Remove vinyl caps and install hoses (A—C) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
11. Route hoses for row 1 and 6 to left-hand side of support and hose for row 11 to right-hand side of support.



A—Row 1
B—Row 6

C—Row 11
D—Tie Strap (2 used)

12. Secure hoses to Refuge Plus tank support using tie straps (D).

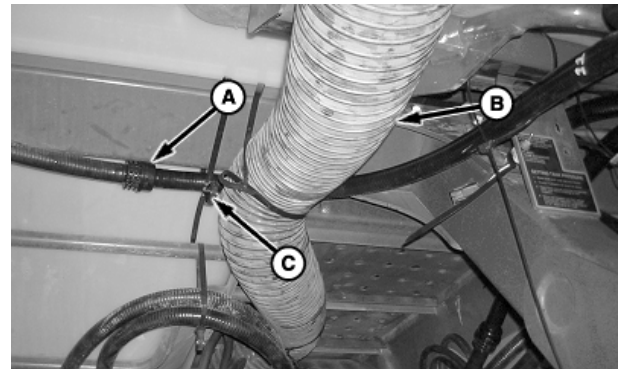
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A56722 —UN—01AUG05

13. Disconnect quick couplers on row nozzle hoses 1, 6 and 11. Install yellow caps on tank side of hoses 1, 6 and 11.
14. On right-hand side, route hose for row 11 from Refuge Plus tank over 154 mm (6 in.) air hose (B) and connect to row 11 hose (A).
15. Secure hose to tank support using tie strap (C).

A—Row 11
B—154 mm (6 in.) Air Hose

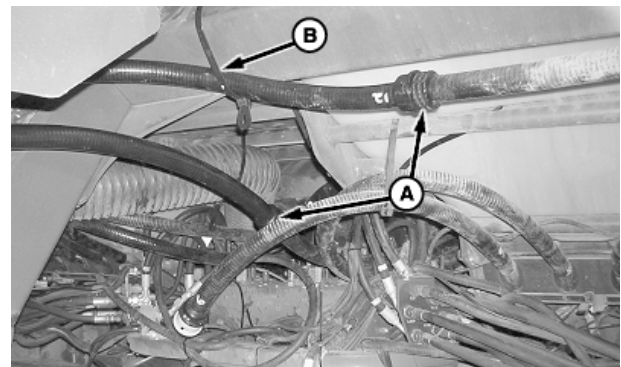
C—Tie Strap



OUO6045,0000683 -19-27APR09-3/4

A56688 —UN—01JUL05

16. On left-hand side, connect hoses for row 1 and 6 from Refuge Plus tank to row unit hoses in location (A).
17. Secure hose 1 to tank support using tie strap (B) as shown.
18. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
19. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



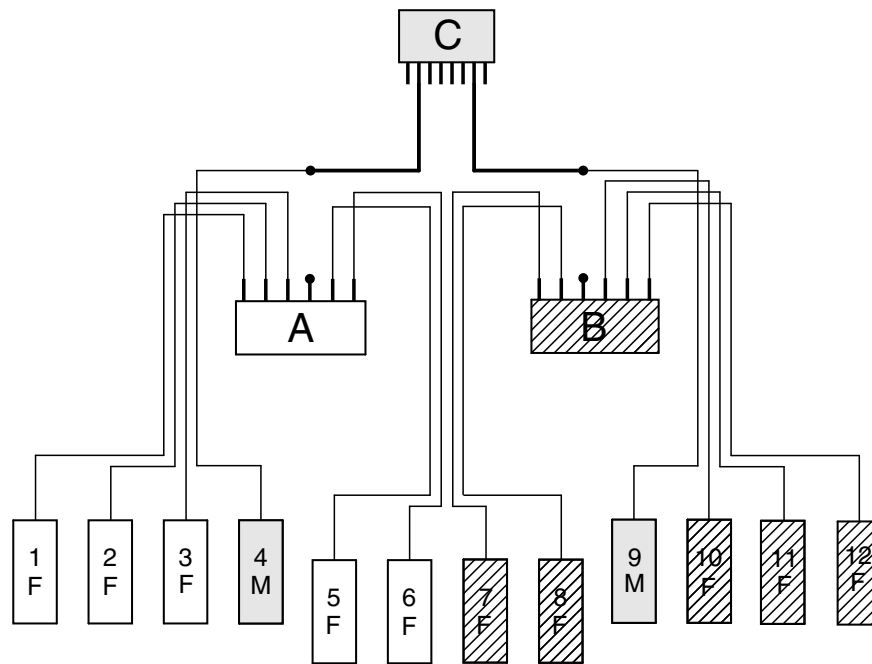
A—Location

B—Tie Strap

OUO6045,0000683 -19-27APR09-4/4

A56724 —UN—07JUL05

6-1-4-1 Seed Corn Planting Diagram



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 6-1-4-1 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.

3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
4	154 mm (6 in.)
9	154 mm (6 in.)

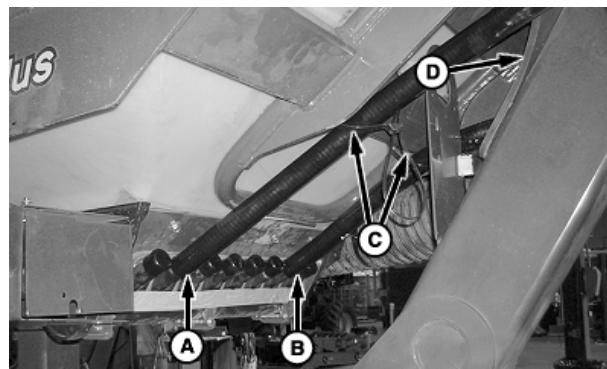
OUO6045,0000684 -19-27APR09-1/4

A56444 —UN—31AUG05

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
4	1118 mm (44 in.)
9	1118 mm (44 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A and B) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hose for row 4 to left-hand side of support (D) and hose for row 9 to right-hand side of support.
10. Secure hoses to Refuge Plus tank support using tie straps (C).

A—Row 4
B—Row 9C—Tie Strap (2 used)
D—Support

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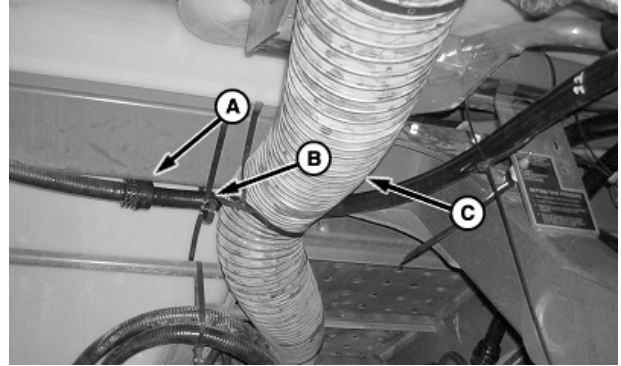
OUO6045,0000684 -19-27APR09-2/4

A56726 —UN—01AUG05

11. On right-hand side, route hose for row 9 over 154 mm (6 in.) air hose (C).
12. Disconnect row nozzles hoses 4 and 9 coming from CCS tanks. Install yellow caps on tank side of hoses 4 and 9.
13. Connect hose for row 9 from Refuge Plus tank to row unit hose in location (A).
14. Secure hose to CCS tank support using tie strap (B).

A—Location
B—Tie Strap

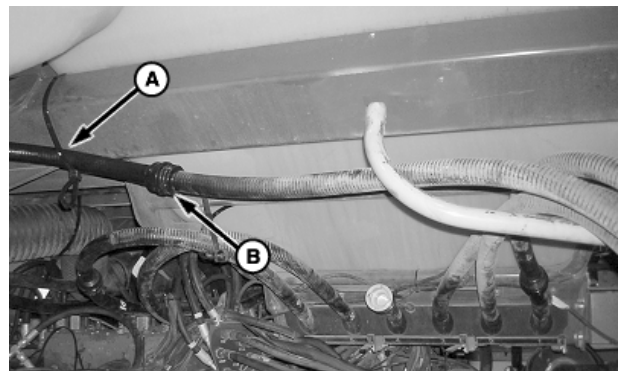
C—154 mm (6 in.) Air Hose



A56695 —UN—06JUL05

OUC6045,0000684 -19-27APR09-3/4

15. On left-hand side, route hose for row 4 to location (B) and connect to hose going to row unit.
16. Secure hose to CCS tank support using tie strap (A).
17. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
18. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A—Tie Strap

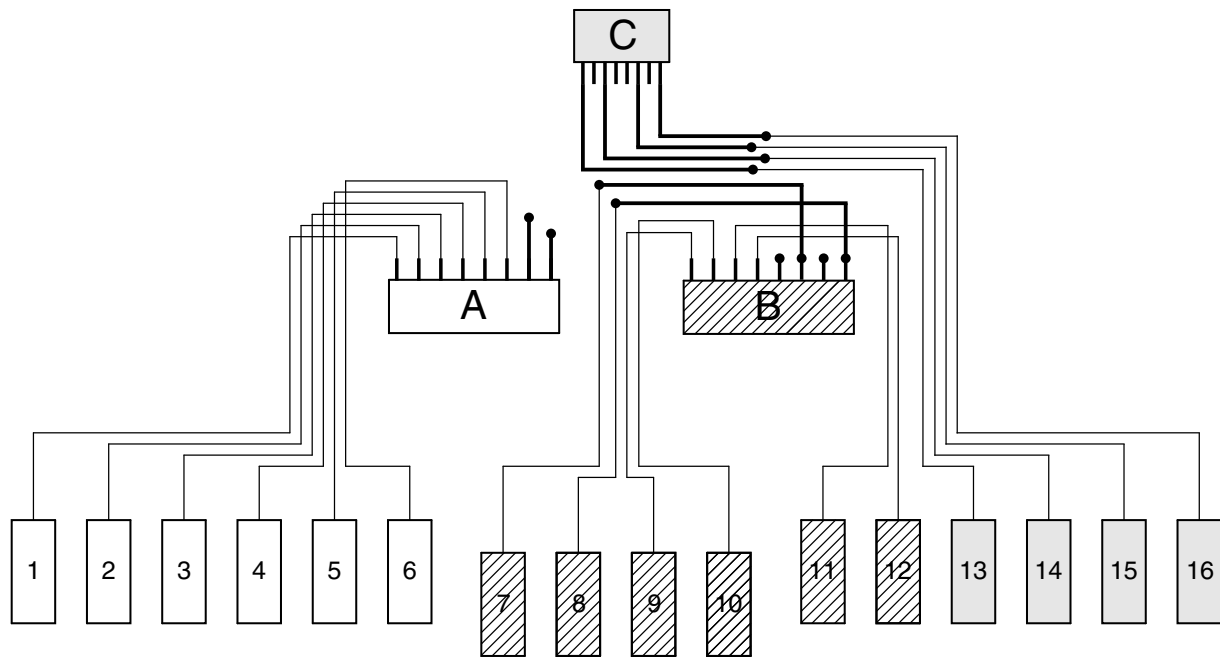
B—Location

A56696 —UN—06JUL05

OUC6045,0000684 -19-27APR09-4/4

1770NT 16-Row 76 cm (30 in.) Hose Routing

Refuge Planting Diagram



A56401 —UN—31AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for Refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
7	1016 mm (40 in.)
8	965 mm (38 in.)
13	154 mm (6 in.)
14	154 mm (6 in.)
15	154 mm (6 in.)
16	154 mm (6 in.)

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
13	1295 mm (51 in.)
14	1370 mm (54 in.)
15	1170 mm (46 in.)
16	1070 mm (42 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

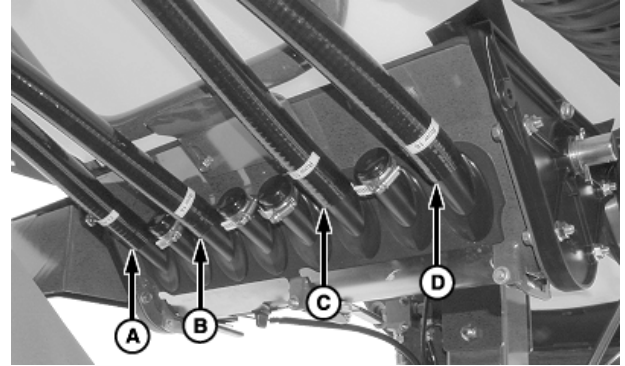
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8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—D) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 13
B—Row 14

C—Row 15
D—Row 16



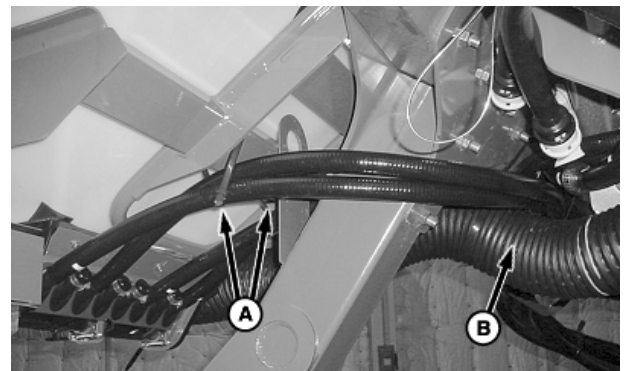
A56408 —UN—01AUG05

OUO6045,0000671 -19-27APR09-2/6

9. Route hoses for rows 13 and 14 to the left-hand side of tank support and hoses for rows 15 and 16 to right-hand side of support.
10. Route all hoses over 154 mm (6 in.) air hose (B).
11. Secure hoses to Refuge Plus tank support using tie straps (A) as shown.
12. Cut two extension hoses from bulk hose for row 7 and 8 as described in the following chart.

Row	Length
Row 7	1397 mm (55 in.)
Row 8	1473 mm (58 in.)

13. Install a female coupler to one end and a male coupler to opposite end of each hose.
14. Install an O-ring in each female coupler.
15. Mark both ends of each hose with row number, shown in chart, for future reference.



A56411 —UN—06JUN05

A—Tie Strap (2 used)

B—154 mm (6 in.) Air Hose

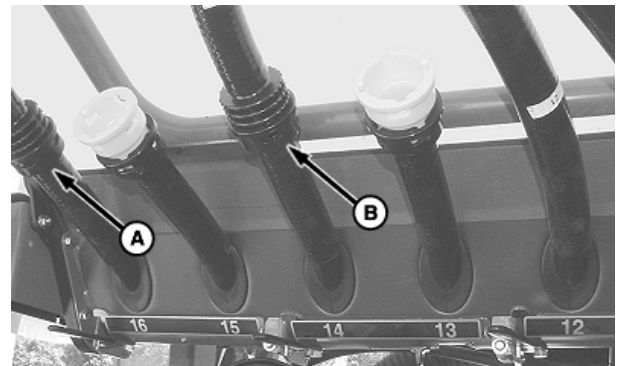
16. Disconnect row nozzles 7, 8, 13, 14, 15 and 16 coming from CCS tanks. Install yellow caps on tank side of hoses 7, 8, 13 and 15.

OUO6045,0000671 -19-27APR09-3/6

17. On nozzle numbers 14 and 16 on right-hand CCS tank, connect extension hose for row number 7 to nozzle 14 (A) and hose for row 8 to nozzle 16 (B).

A—Row 8 to Nozzle 16

B—Row 7 to Nozzle 14



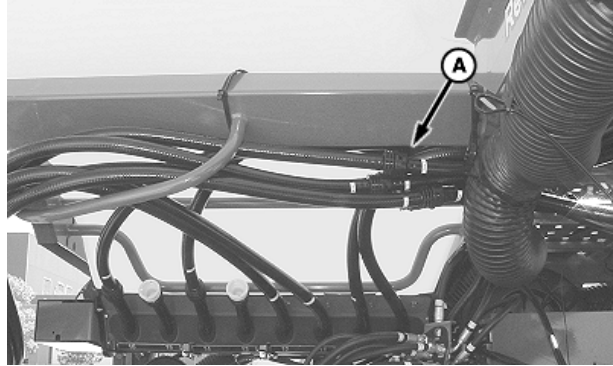
A56412 —UN—06JUN05

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OUO6045,0000671 -19-27APR09-4/6

18. Connect Refuge Plus hoses to row unit hoses (A) 13—16 in location shown.

A—Row Unit Hoses



A57030 —UN—30AUG05

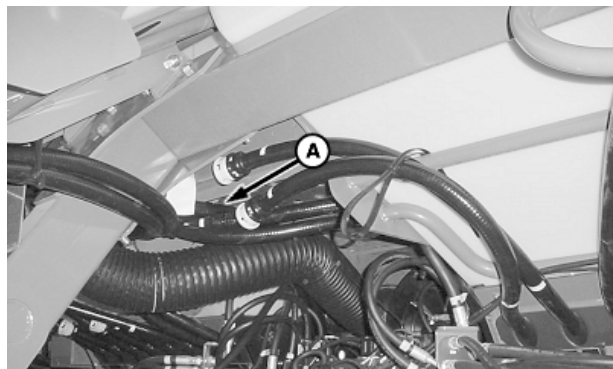
OUC6045,0000671 -19-27APR09-5/6

NOTE: Ensure that hoses are routed over 154 mm (6 in.) air hose.

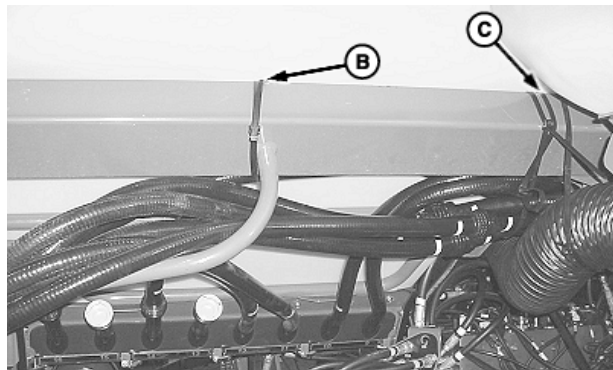
19. Route extension hoses behind right-hand CCS tank support and connect to hoses for row units 7 and 8 in location (A).
20. Secure extension hoses to CCS tank support using tie strap (B) as shown.
21. Secure all hoses to CCS tank support using tie strap (C) as shown.
22. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
23. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

A—Location
B—Tie Strap

C—Tie Strap

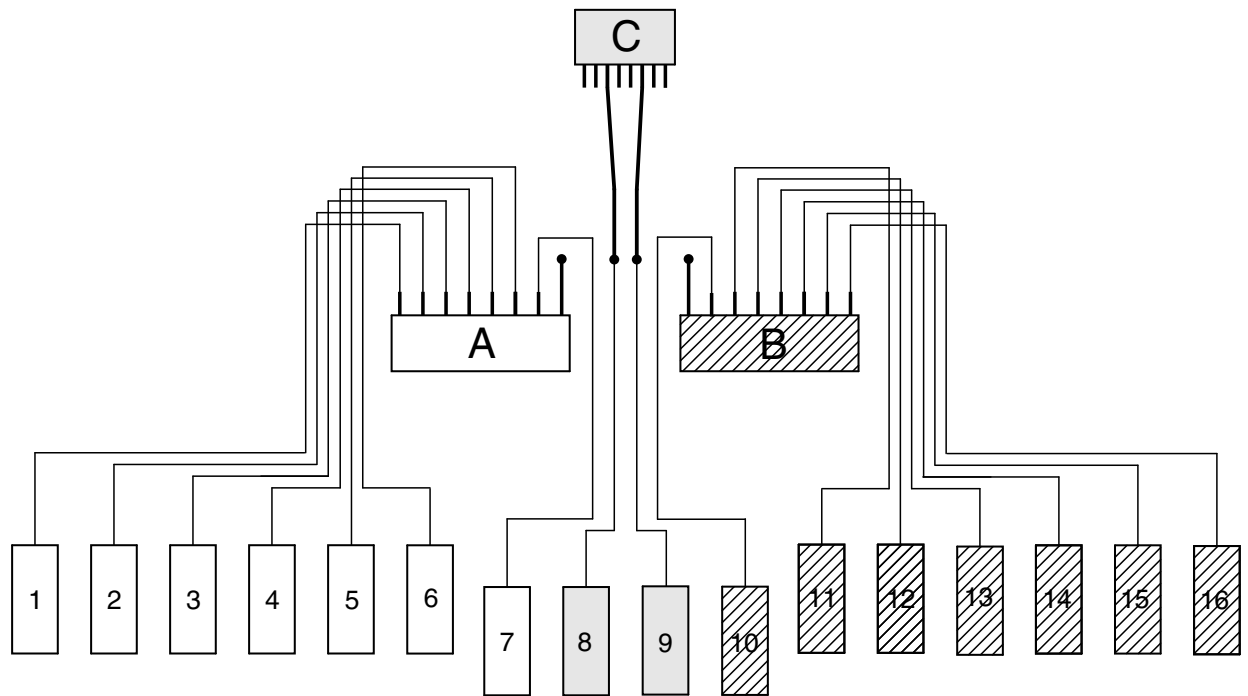


A57031 —UN—30AUG05



A57032 —UN—30AUG05

OUC6045,0000671 -19-27APR09-6/6

Extra Capacity Center Planting Diagram

A56445—UN—03AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for extra capacity to center rows. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
8	965 mm (38 in.)
9	965 mm (38 in.)

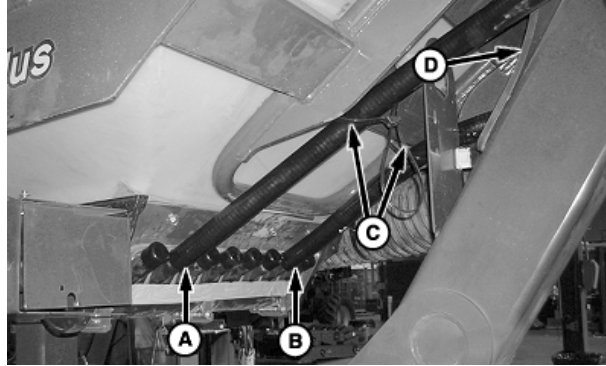
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OUO6045.0000678 -19-27APR09-1/3

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row	Length
8	1020 mm (40 in.)
9	1020 mm (40 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A and B) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hose for row 8 to left-hand side of support (D) and hose for row 9 to right-hand side of support.
10. Secure hoses to Refuge Plus tank support using tie straps (C) as shown.
11. Disconnect quick couplers on nozzles 8 and 9 coming from CCS tanks.



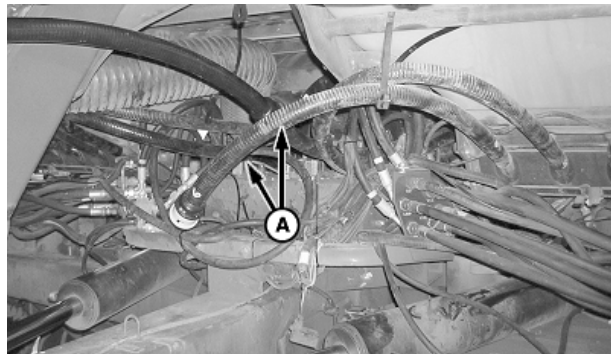
A—Row 8
B—Row 9

C—Tie Strap (2 used)
D—Support

12. Install yellow caps on tank side of hoses 8 and 9.

OUO6045,0000678 -19-27APR09-2/3

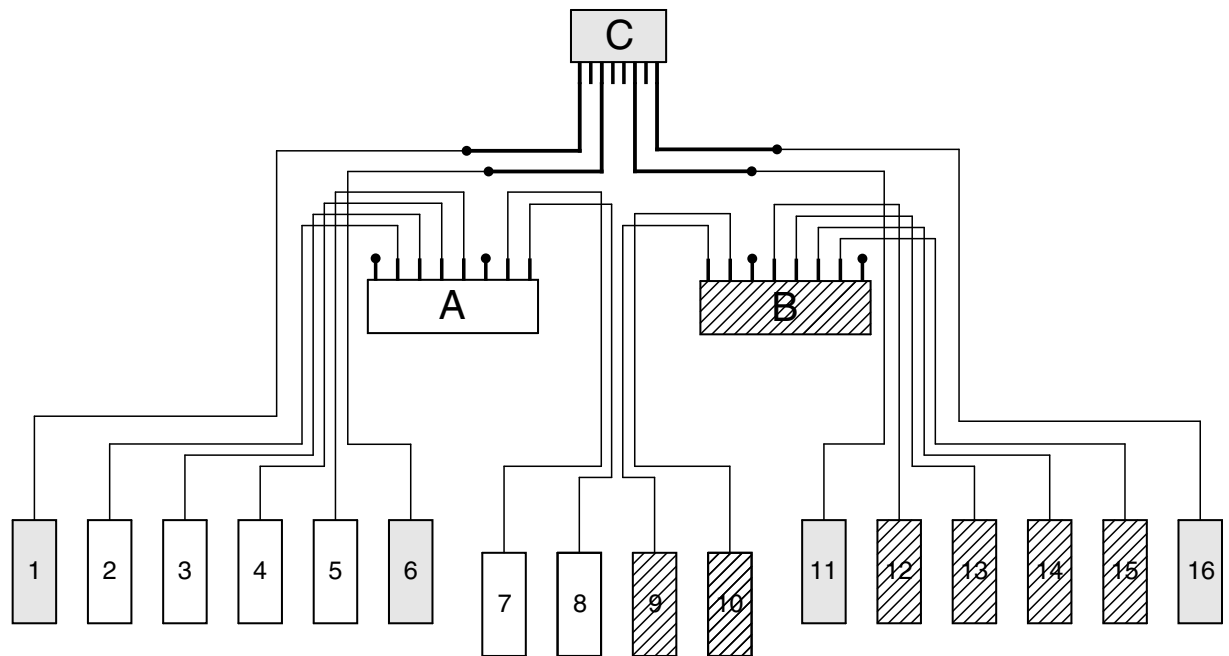
13. Connect hoses coming from Refuge Plus tank to rows 8 and 9 in location (A).
14. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
15. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A—Location

OUO6045,0000678 -19-27APR09-3/3

1-4-1-4 Seed Corn Planting Diagram



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

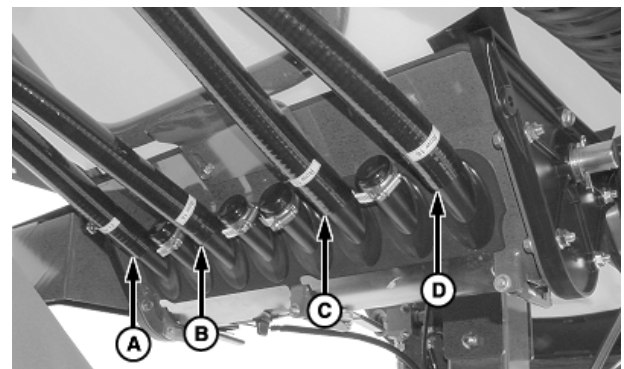
Nozzle Number	Distance From Nozzle
1	154 mm (6 in.)
6	154 mm (6 in.)
11	154 mm (6 in.)
16	154 mm (6 in.)

OUO6045,0000672 -19-09APR08-1/5

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	1194 mm (47 in.)
6	991 mm (39 in.)
11	991 mm (39 in.)
16	1194 mm (47 in.)

5. Install female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—D) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 1
B—Row 6C—Row 11
D—Row 16

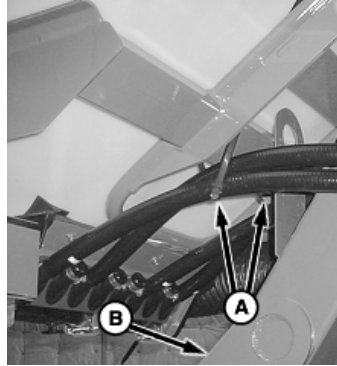
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OUO6045,0000672 -19-09APR08-2/5

9. Route hoses for rows 1 and 6 to left-hand side of support (B) and hoses for rows 11 and 16 to right-hand side of support (B).
10. Secure hoses to Refuge Plus tank support using tie straps (A) as shown.
11. Disconnect quick couplers on row nozzles 1, 6, 11 and 16. Install yellow caps on tank side of hoses 1, 6, 11 and 16.

A—Tie Strap (2 used)

B—Support



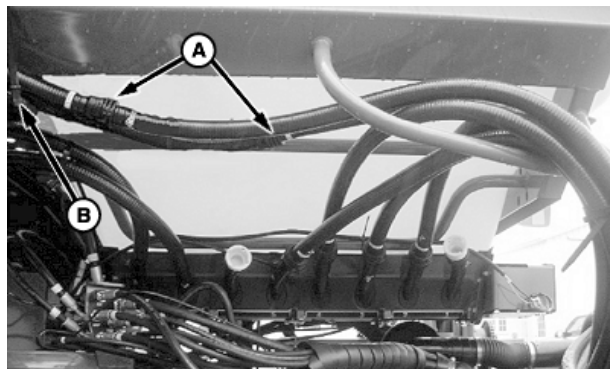
A57033 —UN—30AUG05

OUC6045,0000672 -19-09APR08-3/5

12. On left-hand side, connect hoses 1 and 6 from Refuge Plus tank to row unit hoses 1 and 6 in location (A).
13. Secure hoses to tank support using tie strap (B) as shown.

A—Location

B—Tie Strap



A56702 —UN—08JUL05

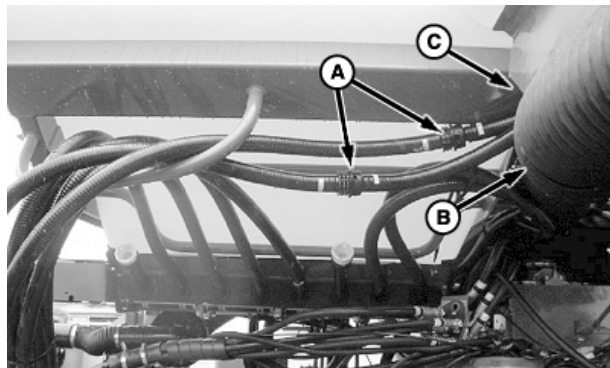
OUC6045,0000672 -19-09APR08-4/5

14. On right-hand side, route hoses for rows 11 and 16 from Refuge Plus tank over 154 mm (6 in.) air hose (B).
15. Connect hoses 11 and 16 from Refuge Plus tank to row unit hoses 11 and 16 at location (A).
16. Secure hoses to CCS tank support using tie strap (C).
17. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
18. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

A—Location

B—154 mm (6 in.) Air Hose

C—Tie Strap

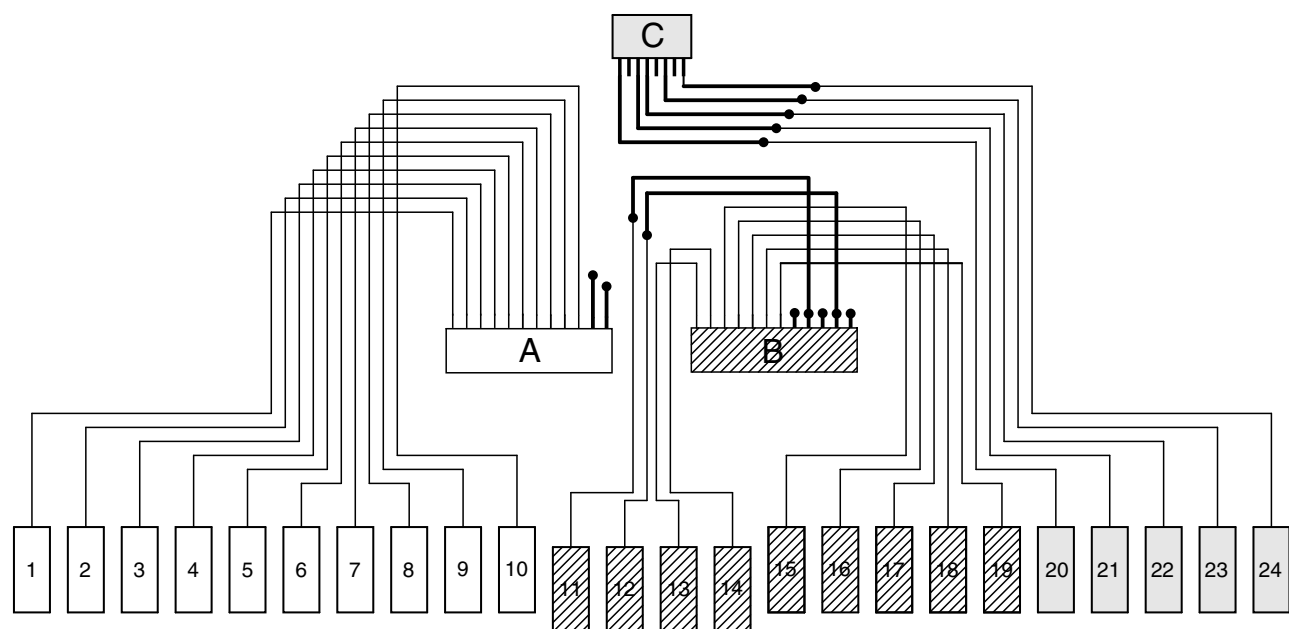


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OUC6045,0000672 -19-09APR08-5/5

1770NT 24-Row 76 cm (30 in.) Hose Routing

Refuge Planting Diagram



A56452 —UN—31AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

- 1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
- 2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
- 3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
11	660 mm (26 in.)
12	610 mm (24 in.)
20	154 mm (6 in.)
21	154 mm (6 in.)
22	154 mm (6 in.)
23	154 mm (6 in.)
24	154 mm (6 in.)

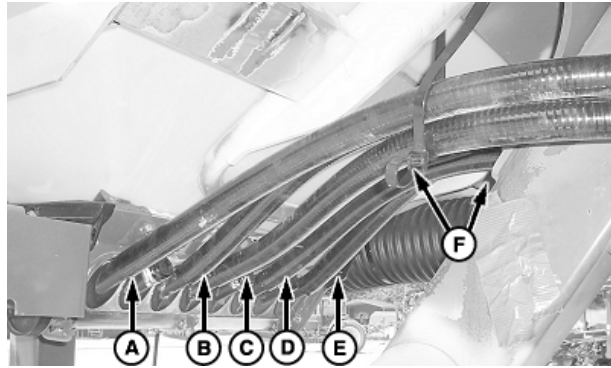
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4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Hose Length
20	1549 mm (61 in.)
21	1575 mm (62 in.)
22	1676 mm (66 in.)
23	1372 mm (54 in.)
24	1397 mm (55 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—E) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hoses for rows 20, 21 and 22 to left-hand side of CCS tank support and hoses for rows 23 and 24 to right-hand side of support.



A—Row 20
B—Row 21
C—Row 22

D—Row 23
E—Row 24
F—Tie Strap (2 used)

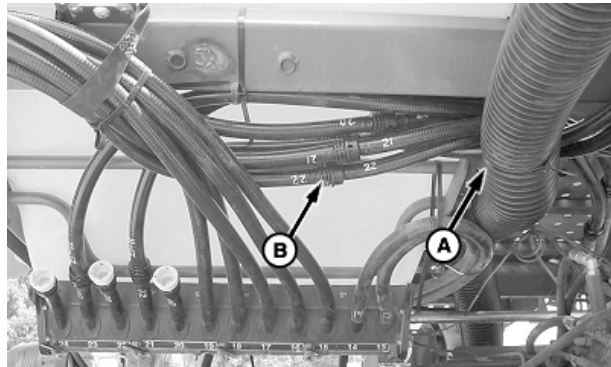
10. Secure hoses to Refuge Plus tank support using tie straps (F).

OUO6045,00006A3 -19-27APR09-2/5

11. Route all hoses to right-hand side and over 154 mm (6 in.) air hose (A).
12. Disconnect quick couplers on nozzles 20, 21, 22, 23 and 24.
13. Install yellow caps on tank side of hoses 20, 22 and 24.
14. Connect hoses from Refuge Plus tank to appropriate row unit hose in location (B).
15. Cut extension hoses from bulk hose for row 11 and 12 as described in the following chart.

Row Number	Length
11	1829 mm (72 in.)
12	1829 mm (72 in.)

16. Install a female coupler to one end and a male coupler to opposite end of each hose.
17. Install an O-ring in each female coupler.
18. Mark both ends of each hose with row number, shown in chart, for future reference.



A—154 mm (6 in.) Air Hose

B—Location

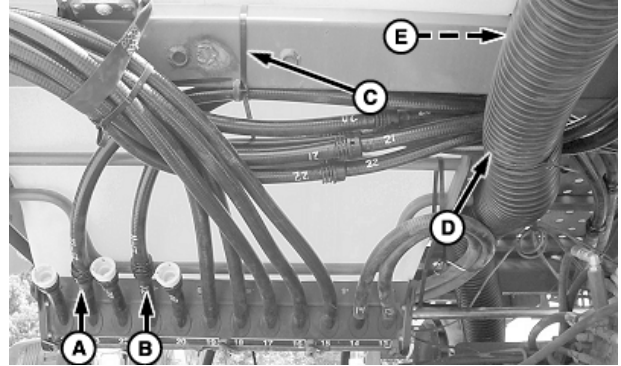
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19. Connect hose for row 12 (A) to nozzle 23 and hose for row 11 (B) to nozzle 21.
20. Route both hoses over 154 mm (6 in.) air hose (D) and secure extension hoses to CCS tank support using tie straps (C).
21. Secure all hoses going over 152 mm (6 in.) air hose (D) to CCS tank support using tie strap (E).
22. Disconnect quick couplers on nozzles 11 and 12. Install yellow caps on tank side of hoses 11 and 12.

A—Row 12 to Nozzle 23
B—Row 11 to Nozzle 21
C—Tie Strap

D—154 mm (6 in.) Air Hose
E—Tie Strap

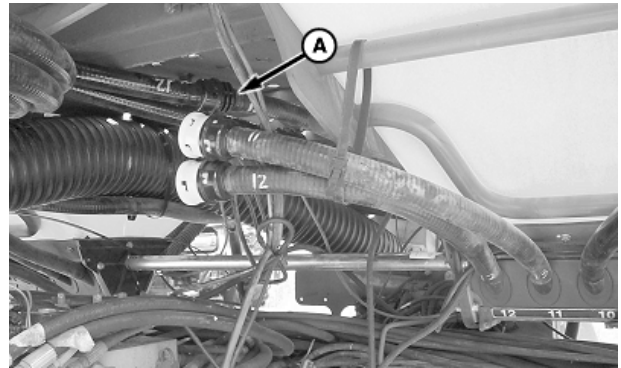


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23. Connect extension hoses from nozzle 21 and 23 to row unit hoses 11 and 12 in location (A).
24. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
25. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

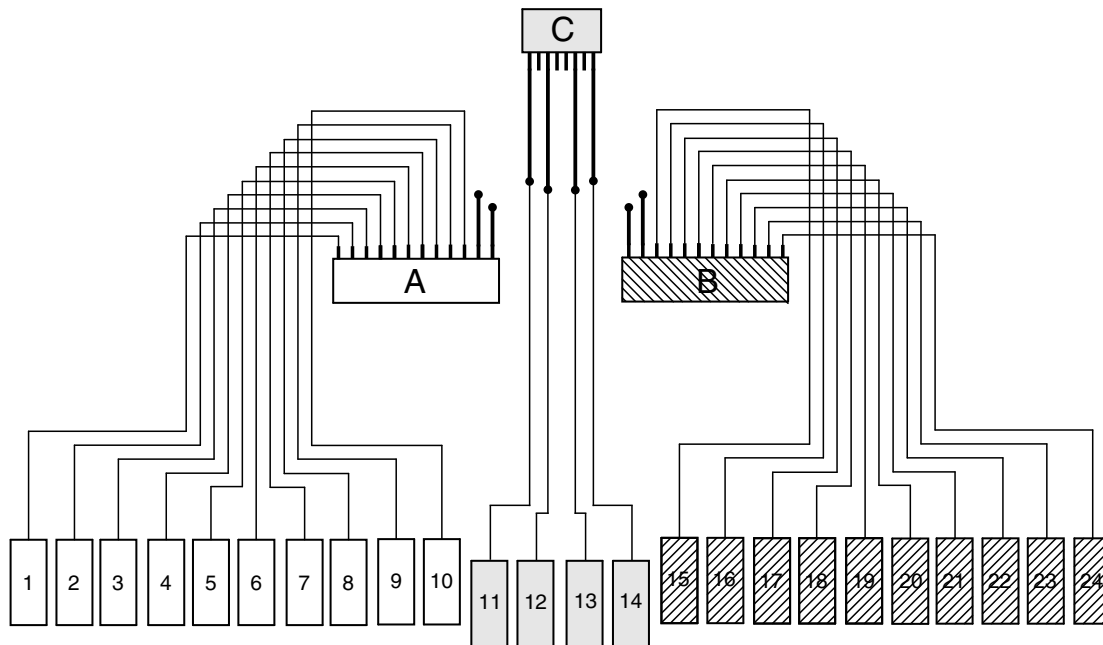
A—Location



A56910 —UN—04AUG05

OUO6045,00006A3 -19-27APR09-5/5

Extra Capacity Planting Diagram



A56451—UN—22AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
11	660 mm (26 in.)
12	610 mm (24 in.)
13	610 mm (24 in.)
14	660 mm (26 in.)

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Hose Length
11	1219 mm (48 in.)
12	1219 mm (48 in.)
13	1219 mm (48 in.)
14	1219 mm (48 in.)

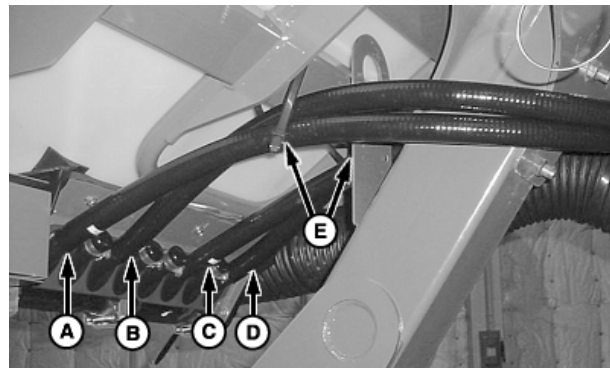
5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

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8. Remove vinyl caps and install hoses (A—D) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
9. Route hoses for row 11 and 12 to left-hand side of support and hoses for row 13 and 14 to right-hand side of support.
10. Secure hoses to Refuge Plus tank support using tie straps (E).

A—Row 11
B—Row 12
C—Row 13

D—Row 14
E—Tie Strap (2 used)



A56913—UN—04AUG05

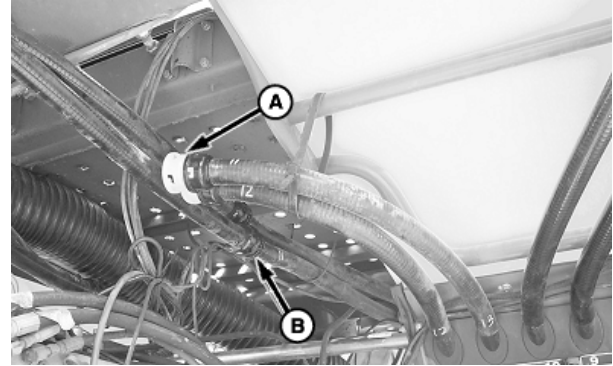
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OUO6045,00006A5 -19-27APR09-2/4

11. Disconnect quick couplers on nozzles 11 and 12 coming from CCS tank.
12. Install yellow caps (A) on tank side of hoses 11 and 12.
13. Connect hoses for row 11 and 12 coming from Refuge Plus tank to row unit hoses in location (B).

A—Yellow Cap (2 used)

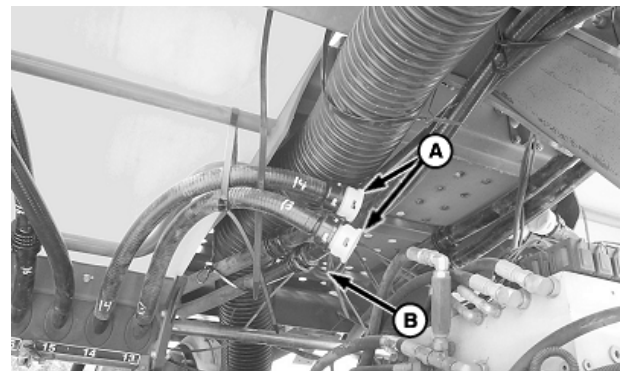
B—Location



A56914 —UN—30AUG05

OUC6045,00006A5 -19-27APR09-3/4

14. Disconnect quick couplers on nozzles 13 and 14.
15. Install yellow caps (A) on tank side of hoses 13 and 14.
16. Connect hoses for row 13 and 14 to row unit hoses in location (B).
17. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that the hoses are laying and moving properly.
18. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

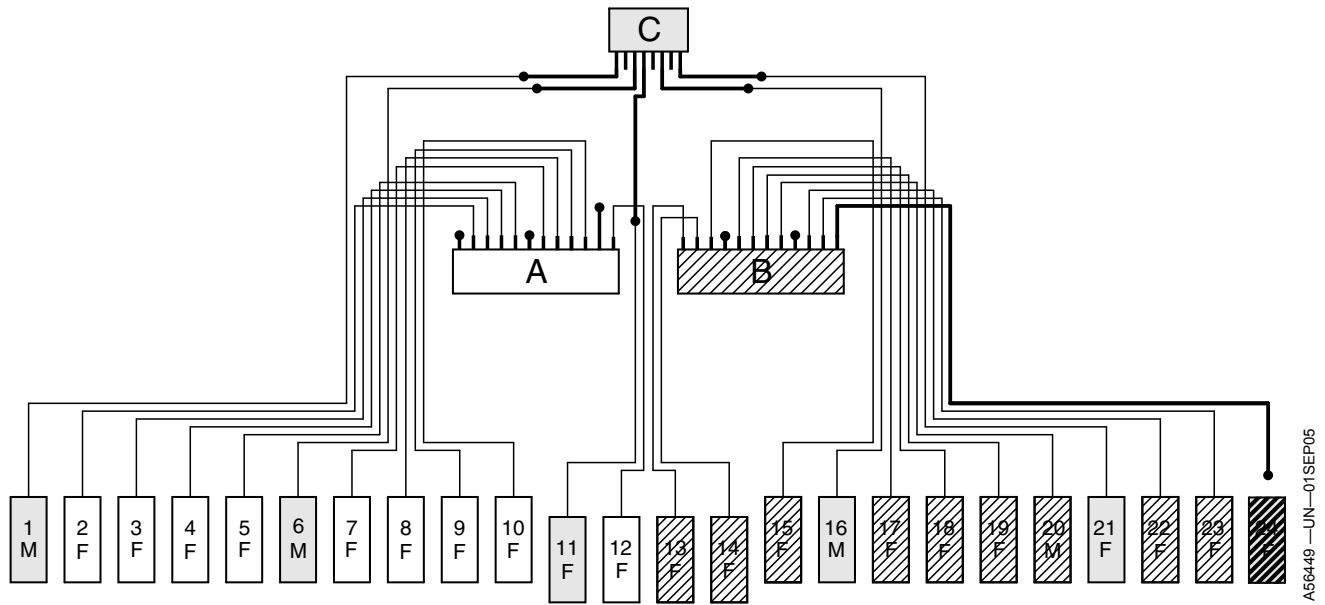


A—Yellow Cap (2 used)

B—Location

A56915 —UN—30AUG05

OUC6045,00006A5 -19-27APR09-4/4

1-4-1-4 Seed Corn Planting Diagram**A—Left-Hand CCS Tank****B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Row 24 is not used in this configuration. Disconnect seed meter drive, remove, and cap vacuum hose at row unit.
4. On row 24, remove CCS seed delivery hose and install a yellow cap on it. Reconnect capped hose on inlet port of row unit.

5. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
1	154 mm (6 in.)
6	154 mm (6 in.)
11	660 mm (26 in.)
16	154 mm (6 in.)
21	154 mm (6 in.)

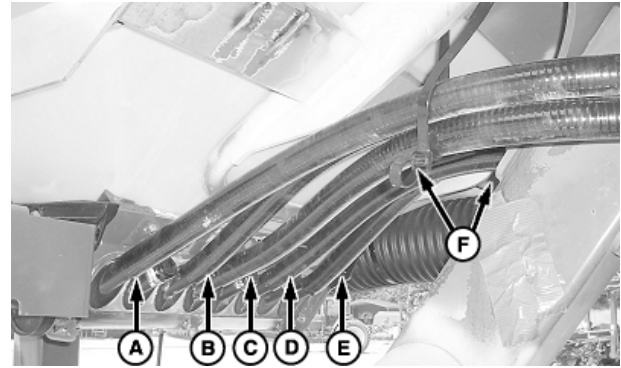
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6. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	1245 mm (49 in.)
6	1168 mm (46 in.)
11	1143 mm (45 in.)
16	1067 mm (42 in.)
21	1372 mm (54 in.)

7. Install a female coupler to one end of each hose.
8. Install an O-ring in each female coupler.
9. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.
10. Route hoses for row 1, 6 and 11 to left-hand side of support and hoses for row 16 and 21 to right-hand side of support.
11. Secure hoses to Refuge Plus tank support using tie straps (F).



A—Row 1
B—Row 6
C—Row 11

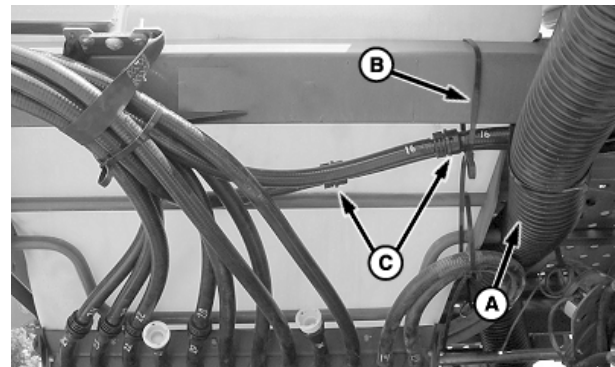
D—Row 16
E—Row 21
F—Tie Strap (2 used)

A56907 —UN—04AUG05

OUO6045.00006A4 -19-27APR09-2/5

12. On right-hand side, disconnect quick couplers on nozzles 16 and 21. Install yellow caps on tank side of hoses 16 and 21.
13. Route hoses for row 16 and 21 over 154 mm (6 in.) air hose (A).
14. Connect hoses for 16 and 21 from Refuge Plus tank to row unit hoses in location (C).
15. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—Location

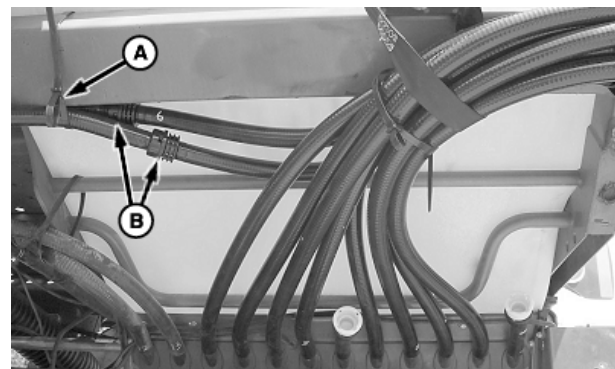


A56916 —UN—04AUG05

OUO6045.00006A4 -19-27APR09-3/5

16. On left-hand side, disconnect quick couplers on nozzles 1, 6 and 11. Install yellow caps on tank side of hoses 1, 6 and 11.
17. Connect hoses for row 1 and 6 from Refuge Plus tank to row unit hoses in location (B).
18. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—Location

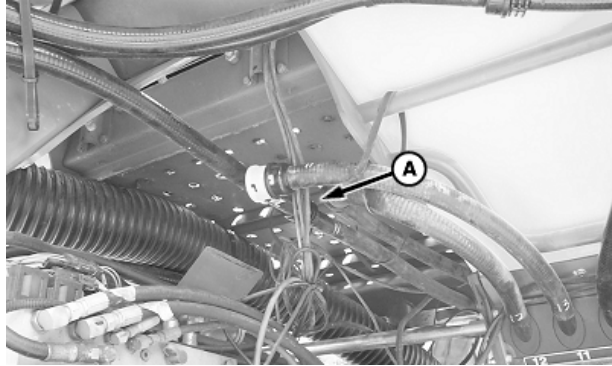


A56917 —UN—04AUG05

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OUO6045.00006A4 -19-27APR09-4/5

19. Connect row 11 hose (A) from Refuge Plus tank to row unit hose in location shown.
20. Carefully fold the machine the first time. Watch hoses between front of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
21. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



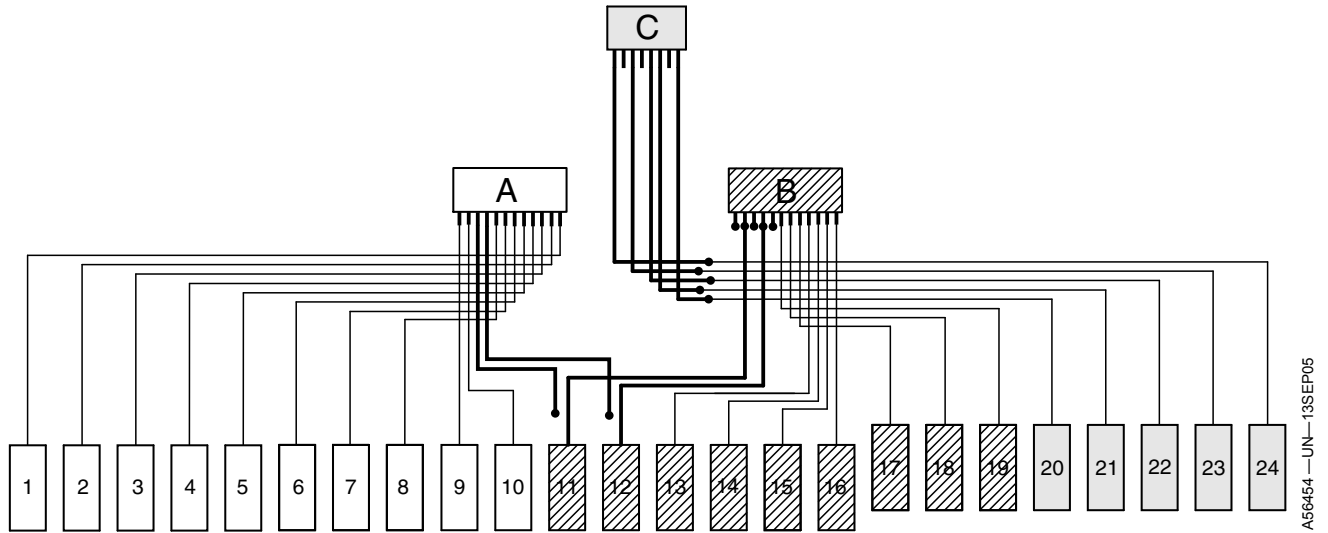
A56918 —UN—04AUG05

A—Row 11 Hose

OUO6045,00006A4 -19-27APR09-5/5

1790 Hose Routing

Refuge Planting Diagram 24-Row 51 cm (20 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

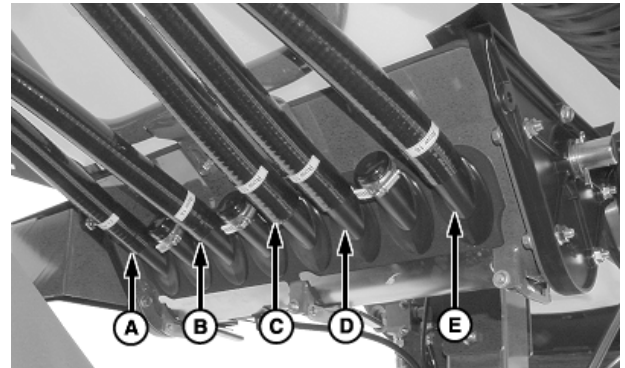
Row Number	Distance From Nozzle
20	154 mm (6 in.)
21	154 mm (6 in.)
22	154 mm (6 in.)
23	154 mm (6 in.)
24	154 mm (6 in.)

OUO6045,0000685 -19-27APR09-1/8

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
20	2515 mm (99 in.)
21	2565 mm (101 in.)
22	2616 mm (103 in.)
23	2591 mm (102 in.)
24	2565 mm (101 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 24
B—Row 23
C—Row 22

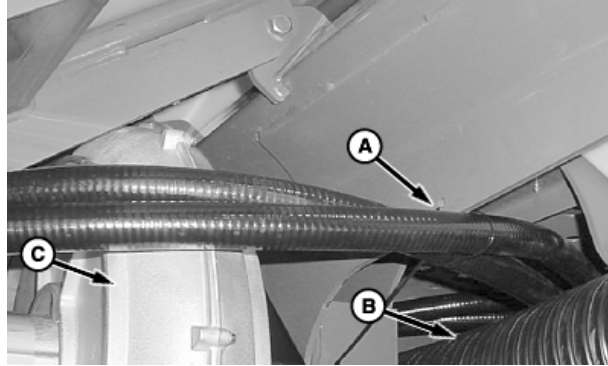
D—Row 21
E—Row 20

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OUO6045,0000685 -19-27APR09-2/8

9. On left-hand side, route hoses for rows 22, 23 and 24 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

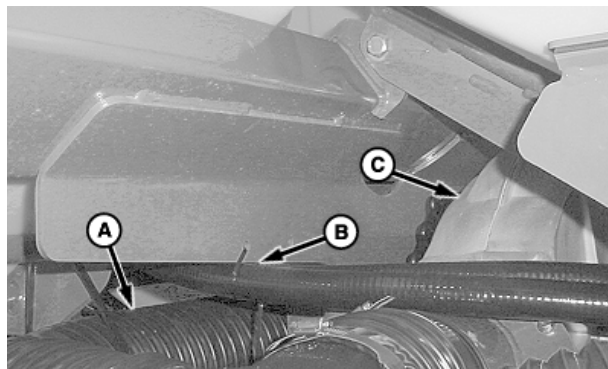


A56797—UN—15JUL05

OUO6045,0000685 -19-27APR09-3/8

11. On right-hand side, route hoses for rows 20 and 21 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

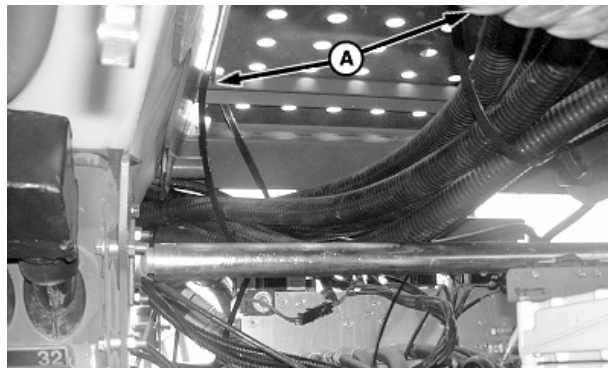


A56802—UN—15JUL05

OUO6045,0000685 -19-27APR09-4/8

13. Route all hoses toward rear of machine and loosely secure under platform using tie straps (A).
14. Disconnect quick couplers on row nozzles 20, 21, 22, 23 and 24.
15. Install yellow caps on tank side of hoses 20, 22 and 24.

A—Tie Strap (2 used)



A56739—UN—11JUL05

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OUO6045,0000685 -19-27APR09-5/8

16. Connect hoses from Refuge Plus to row unit hoses in location (B).

NOTE: Make sure that all slack is pulled into this location.

17. Secure hoses to 101 mm (4 in.) square tube using tie strap (A) as shown.

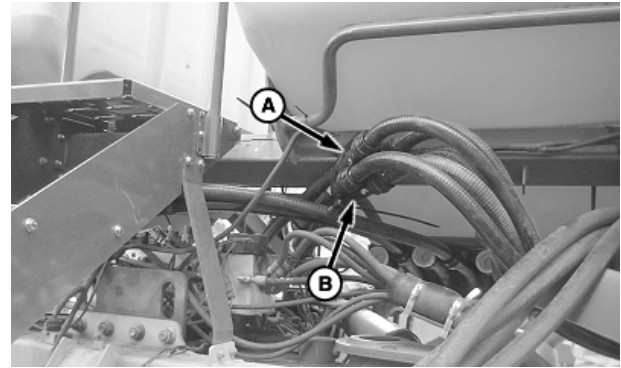
18. Disconnect hoses for rows 11 and 12 at the row units. Install yellow caps on the ends of each hose. Secure hoses to frame with tie straps to keep them from being damaged.

19. Cut two extension hoses from bulk hose for rows 11 and 12 as described in the following chart.

Row Number	Length
11	2845 mm (112 in.)
12	2692 mm (106 in.)

20. Install a female coupler to one end and a male coupler to opposite end of each hose.

21. Install an O-ring in each female coupler.



A—Tie Strap

B—Location

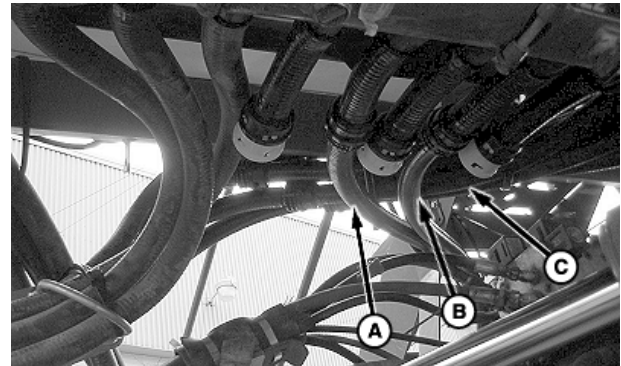
22. Mark both ends of each hose with row number, shown in chart, for future reference.

OUO6045.0000685 -19-27APR09-6/8

23. Route extension hoses under Refuge Plus hoses (C) and connect hose for row 11 (B) to tank nozzle 23 and row 12 (A) to nozzle 21 on right-hand CCS tank as shown.

A—Row 12
B—Row 11

C—Refuge Plus Hoses



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OUO6045.0000685 -19-27APR09-7/8

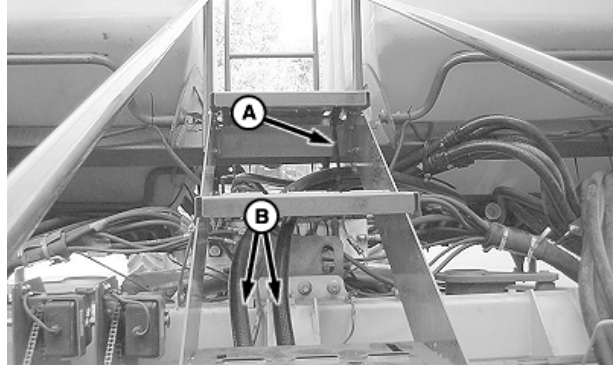
A56740 —UN—11JUL05

A56741 —UN—18AUG05

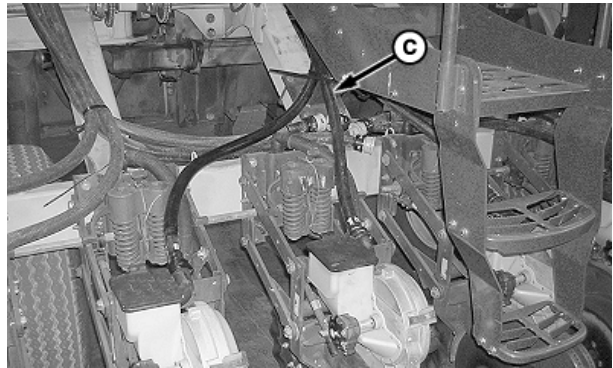
24. Route hoses (B) to row units as shown and secure under platform cross brace with tie strap (A).
25. Secure hoses to lower cross brace with tie strap (C).
26. Connect hoses to row units.
27. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
28. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

A—Tie Strap
B—Hoses

C—Tie Strap



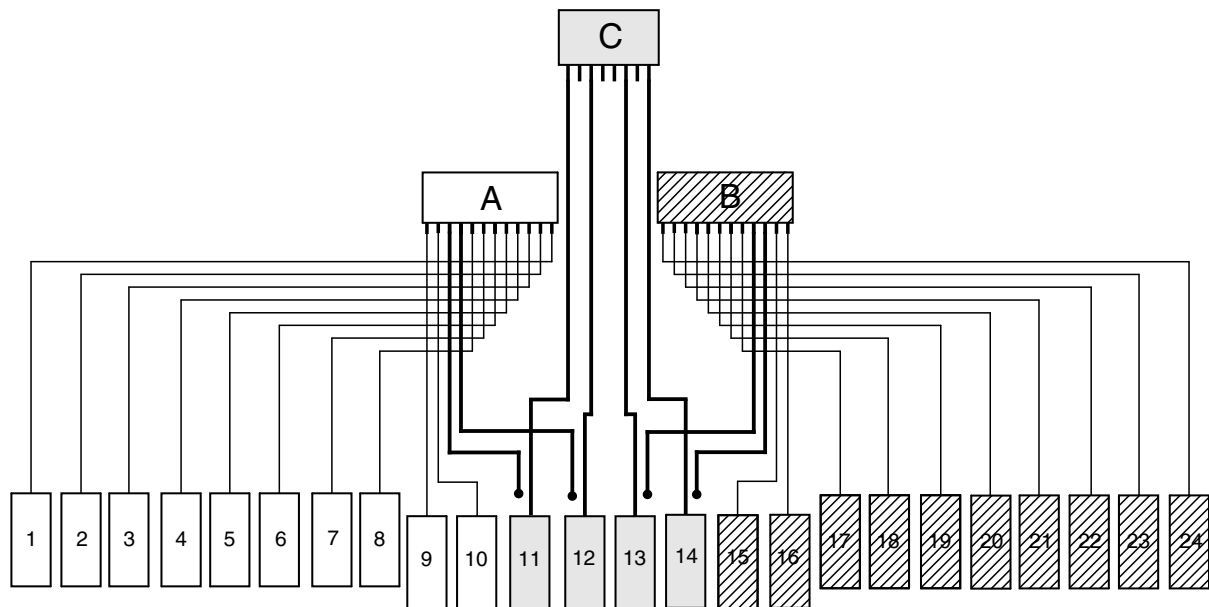
A56742 —UN—11JUL05



A56892 —UN—02AUG05

OUC6045,0000685 -19-27APR09-8/8

Extra Capacity Planting Diagram 24-Row 51 cm (20 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 11, 12, 13, and 14 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
11	4521 mm (178 in.)
12	4242 mm (167 in.)
13	4242 mm (167 in.)
14	4521 mm (178 in.)

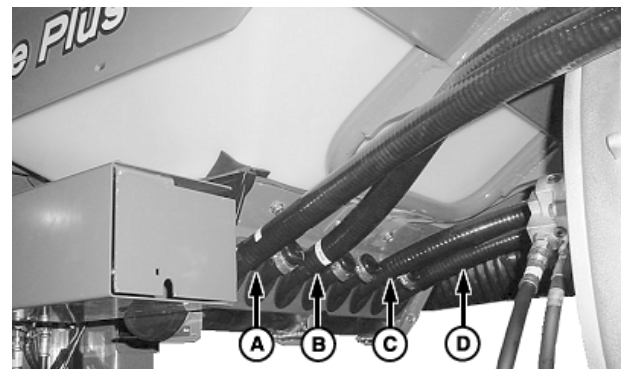
5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

OUO6045,0000686 -19-27APR09-1/7

8. Remove vinyl caps and install hoses (A—D) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.

A—Row 11
B—Row 12

C—Row 13
D—Row 14

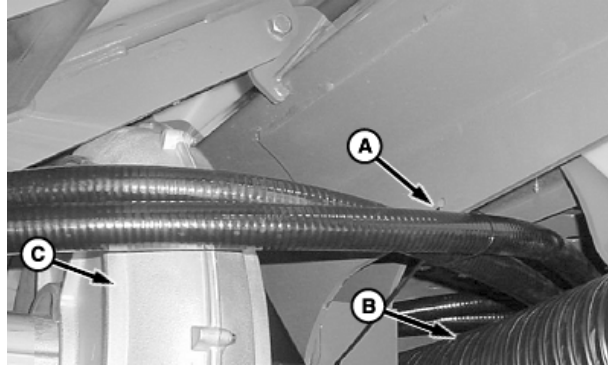


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OUO6045,0000686 -19-27APR09-2/7

9. On left-hand side, route hoses for rows 11 and 12 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

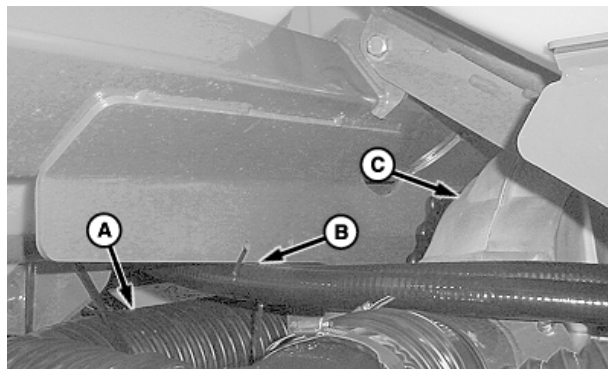


A56797—UN—15JUL05

OUO6045,0000686 -19-27APR09-3/7

11. On right-hand side, route hoses for rows 13 and 14 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

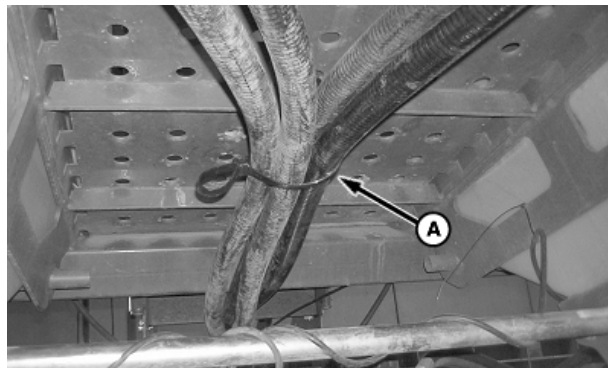


A56802—UN—15JUL05

OUO6045,0000686 -19-27APR09-4/7

13. Route hoses to rear of machine and loosely secure them to platform using tie strap (A).

A—Tie Strap



A56746—UN—11JUL05

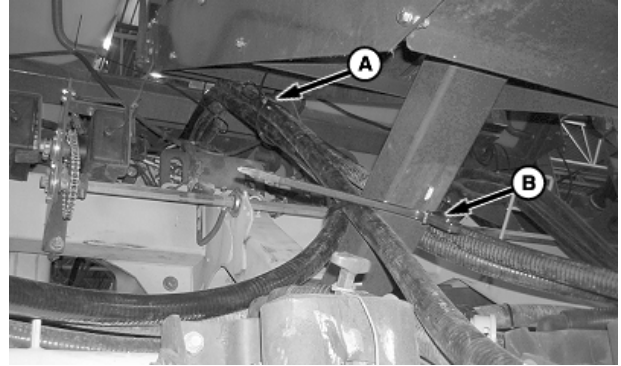
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OUO6045,0000686 -19-27APR09-5/7

14. Route hoses over valve block and secure them at the top stair brace with tie strap (A) and at lower stair brace with tie strap (B).

A—Tie Strap

B—Tie Strap

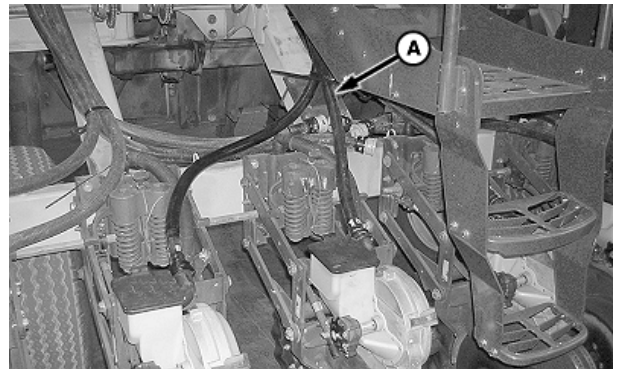


A57035 —UN—30AUG05

OUO6045,0000686 -19-27APR09-6/7

15. Route hoses (A) to appropriate row unit and connect.
16. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
17. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

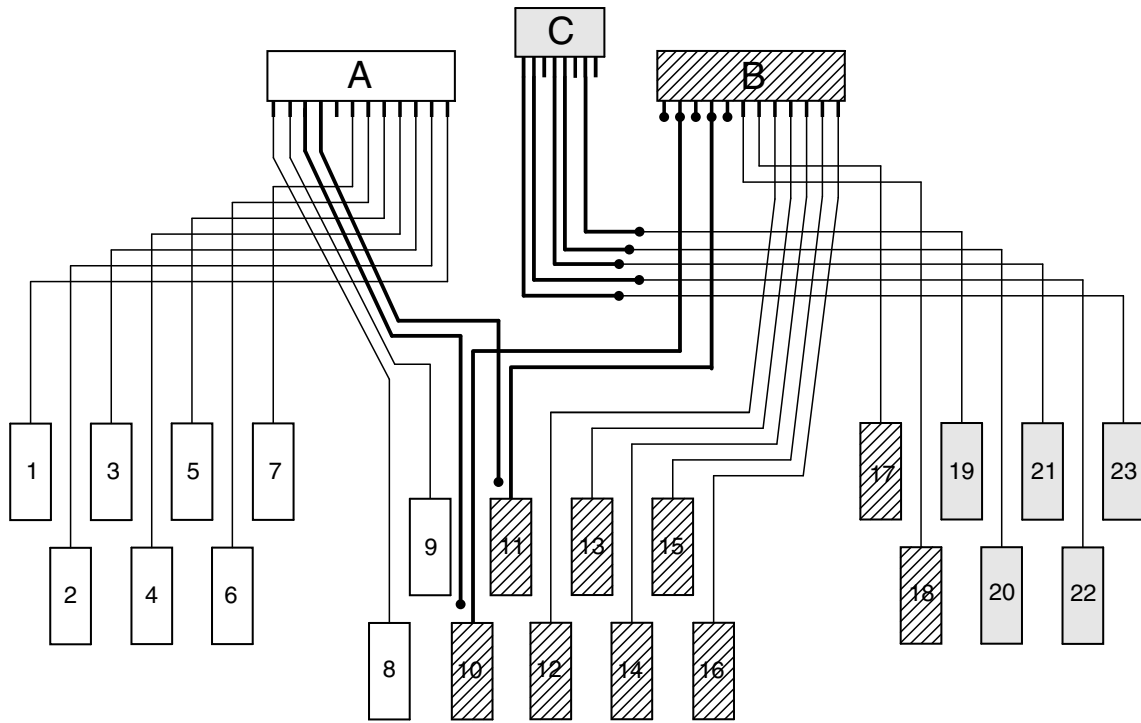
A—Hoses



A56748 —UN—11JUL05

OUO6045,0000686 -19-27APR09-7/7

Refuge Planting Diagram 23-Row 38 cm (15 in.)



A56458—UN—31AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for Refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
19	154 mm (6 in.)
20	154 mm (6 in.)
21	154 mm (6 in.)
22	154 mm (6 in.)
23	154 mm (6 in.)

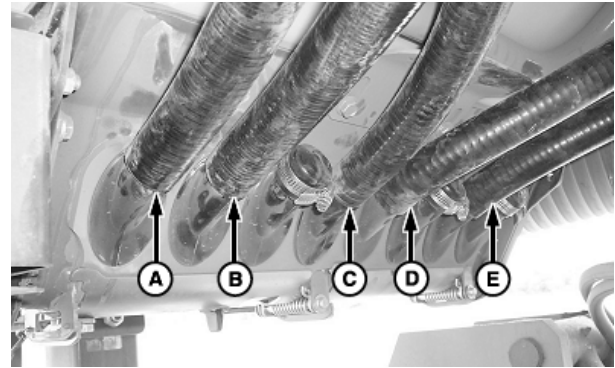
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OUO6045,000068A -19-27APR09-1/8

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
19	2591 mm (102 in.)
20	2565 mm (101 in.)
21	2591 mm (102 in.)
22	2667 mm (105 in.)
23	2515 mm (99 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 23
B—Row 22
C—Row 21

D—Row 20
E—Row 19

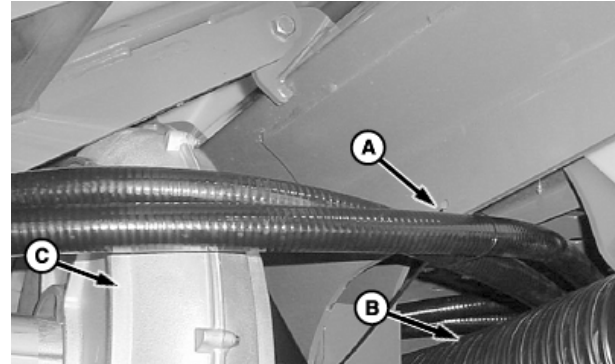
A57012 —UN—23AUG05

OUO6045,000068A -19-27APR09-2/8

9. On left-hand side, route hoses for rows 21, 22 and 23 to left of CCS fan (C) and over 154 mm (6 in.) air hose.
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



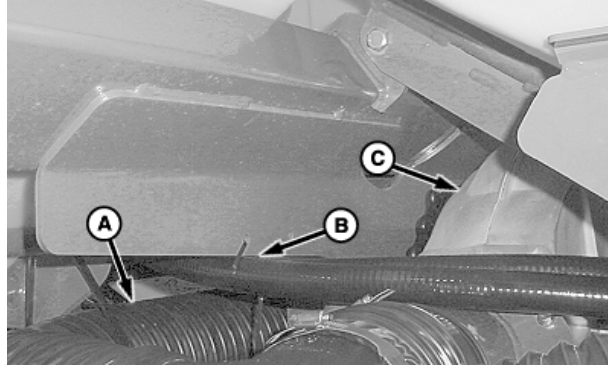
A56797 —UN—15JUL05

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OUO6045,000068A -19-27APR09-3/8

11. On right-hand side, route hoses for rows 19 and 20 to right of CCS fan (C) and over 154 mm (6 in.) air hoses.
12. Secure hoses to CCS tank support using tie strap (B).

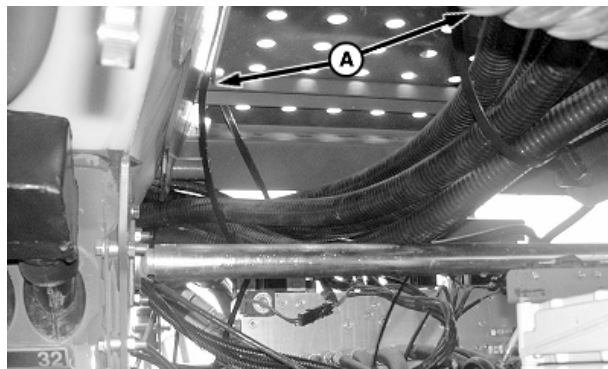
A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap



A56802—UN—15JUL05

OUC6045,000068A -19-27APR09-4/8

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).



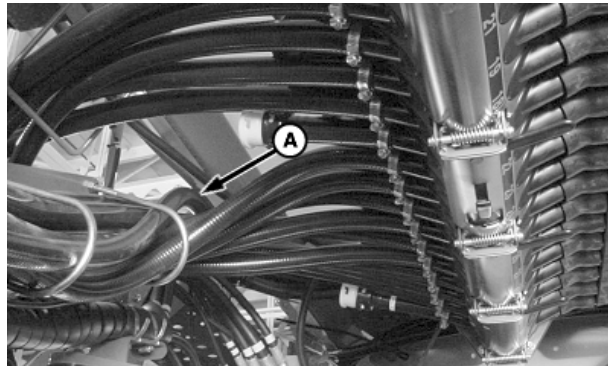
A56739—UN—11JUL05

OUC6045,000068A -19-27APR09-5/8

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

14. Route row unit hoses (A) over the top or to the back of existing hoses as shown.
15. Disconnect quick couplers on row nozzle 19, 20, 21, 22 and 23 coming from CCS tanks. Install yellow caps on tank side of hoses 19, 20 and 22.

A—Hoses



A56771—UN—13JUL05

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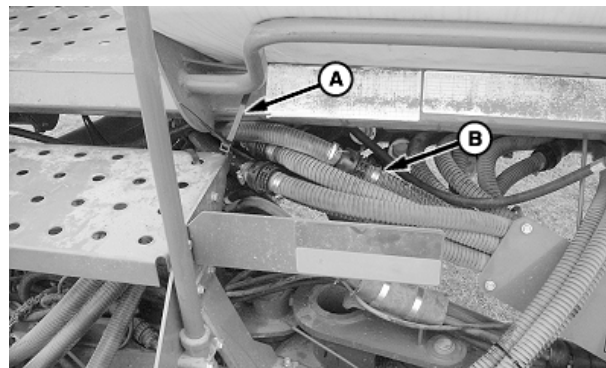
OUC6045,000068A -19-27APR09-6/8

NOTE: Pull all slack in hoses into this area.

16. On right-hand side of platform, connect Refuge Plus hoses to row unit hoses in location (B).
17. Secure hoses from Refuge Plus tank to CCS tank 101 mm (4 in.) square tube using tie strap (A).
18. Disconnect hoses for rows 10 and 11 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
19. Cut extension hoses from bulk hose for rows 11 and 12 as described in chart.

Row Number	Length
10	2845 mm (112 in.)
11	2108 mm (83 in.)

20. Install a female coupler to one end and a male coupler to opposite end of each hose.
21. Install an O-ring in each female coupler.



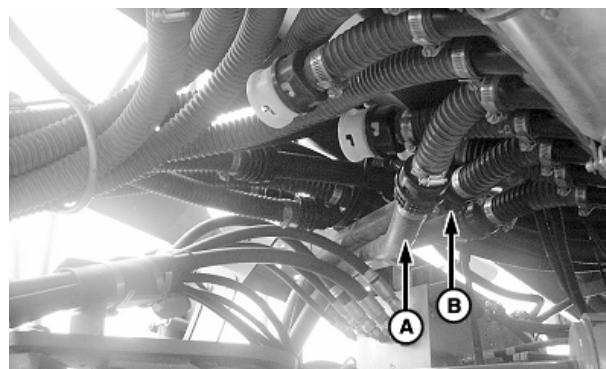
A—Location

B—Tie Strap

22. Mark both ends of each hose with row number, shown in chart, for future reference.

OUO6045,000068A -19-27APR09-7/8

23. Route hoses (A and B) for row 10 and 11 under hoses going to wing as shown.
24. Connect hose for row 11 (A) to nozzle 21 and hose for row 10 (B) to nozzle 23 on CCS tank as shown.
25. Route hoses to row units and connect.
26. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to sure that hoses are laying and moving properly.
27. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

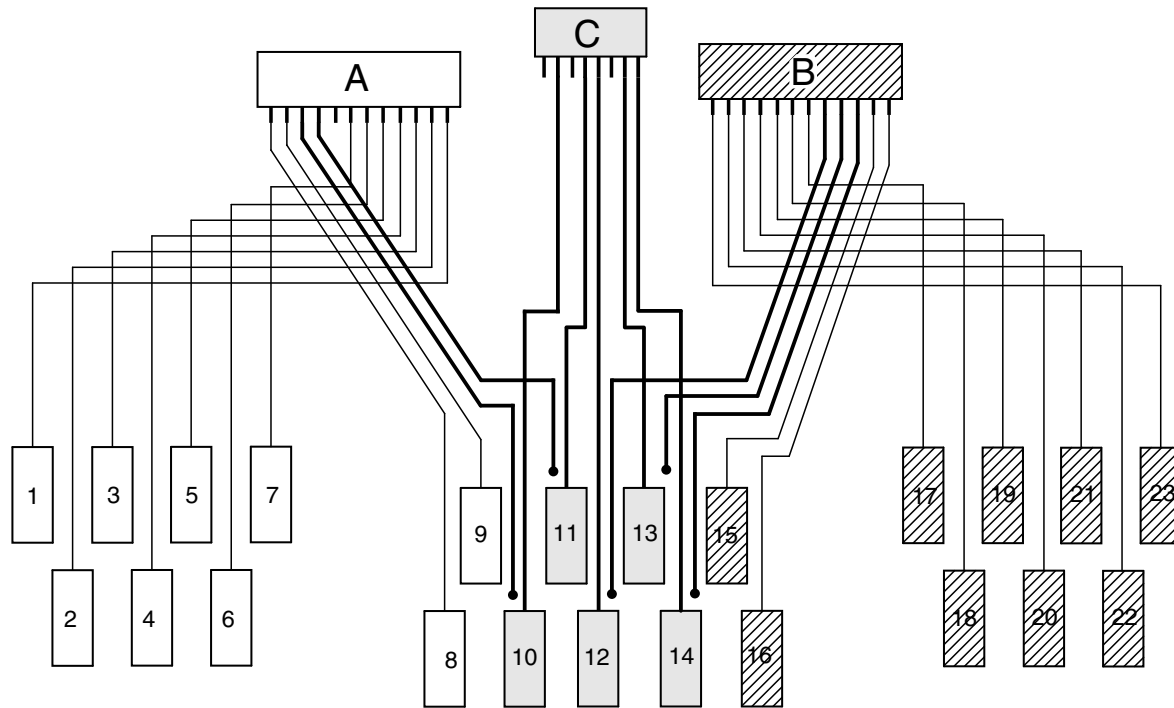


A—Row 11

B—Row 10

OUO6045,000068A -19-27APR09-8/8

Extra Capacity Center Planting Diagram 23-Row 38 cm (15 in.)



A56848—UN—17AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for extra capacity planting to center rows. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 10, 11, 12, 13 and 14 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
10	4420 mm (174 in.)
11	3454 mm (136 in.)
12	4166 mm (164 in.)
13	3454 mm (136 in.)
14	4318 mm (170 in.)

5. Install a female coupler in one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

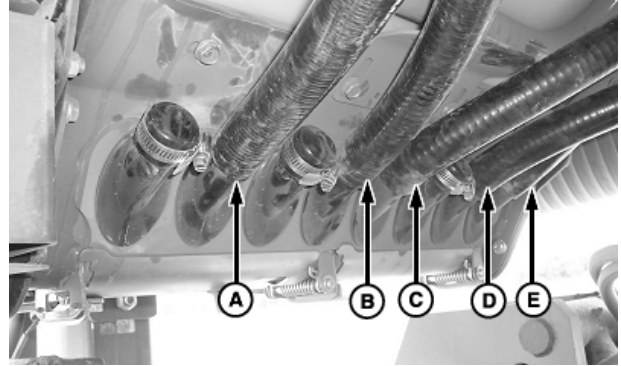
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OUO6045,0000687 -19-27APR09-1/7

8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 10
B—Row 11
C—Row 12

D—Row 13
E—Row 14



A56891 —UN—23AUG05

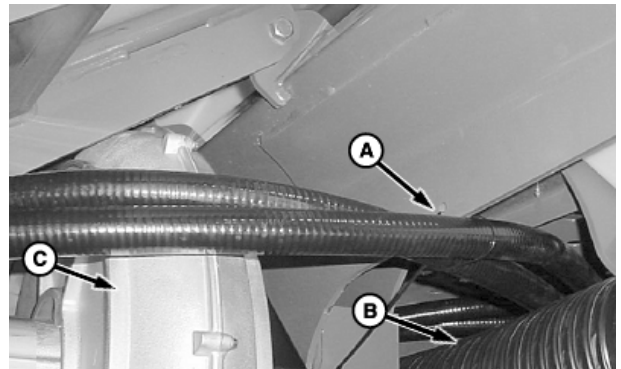
OUO6045,0000687 -19-27APR09-2/7

9. On left-hand side, route hoses for rows 10, 11 and 12 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).

10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797 —UN—15JUL05

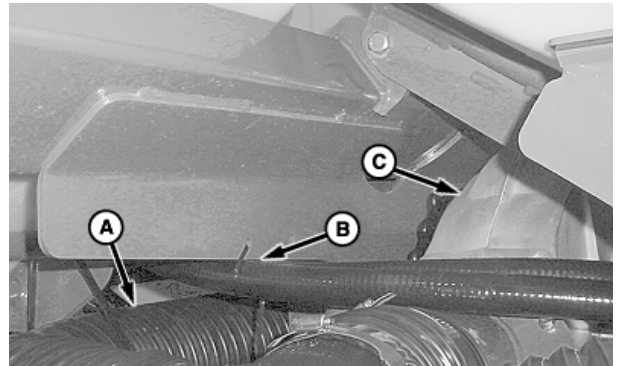
OUO6045,0000687 -19-27APR09-3/7

11. On right-hand side, route hoses for rows 13 and 14 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).

12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



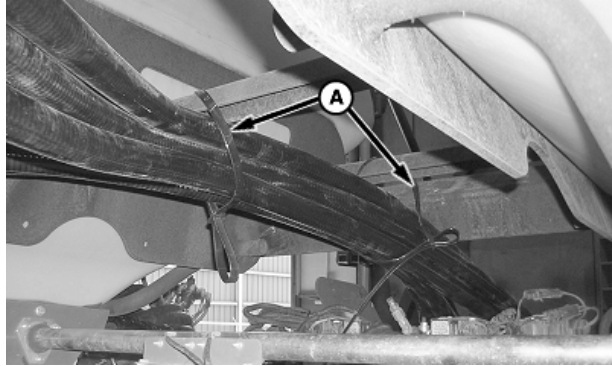
A56802 —UN—15JUL05

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OUO6045,0000687 -19-27APR09-4/7

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A) as shown.

A—Tie Strap (2 used)

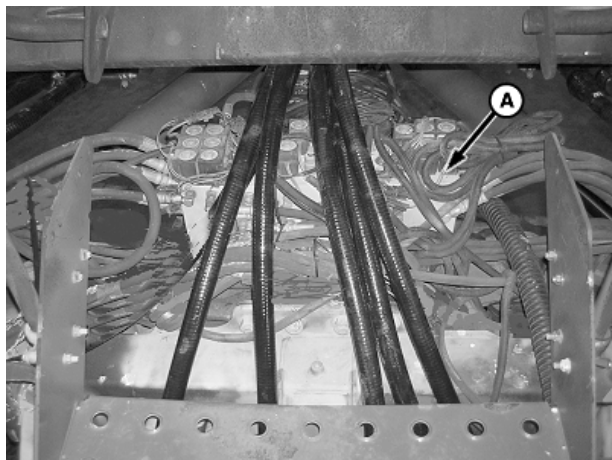


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OOU6045,0000687 -19-27APR09-5/7

14. Route hoses over valve block (A).

A—Valve Block

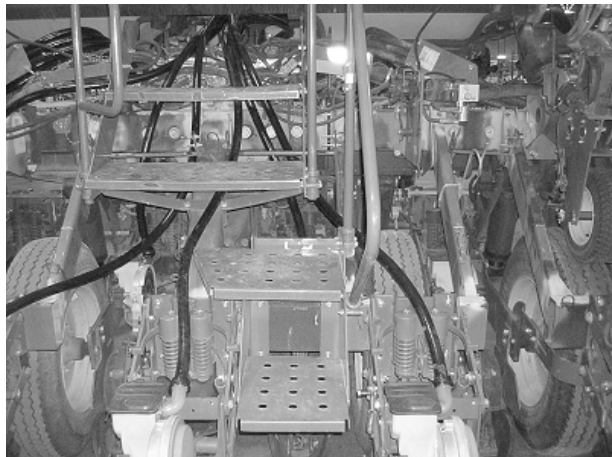


A56732—UN—03AUG05

Top Step Removed for Clarity

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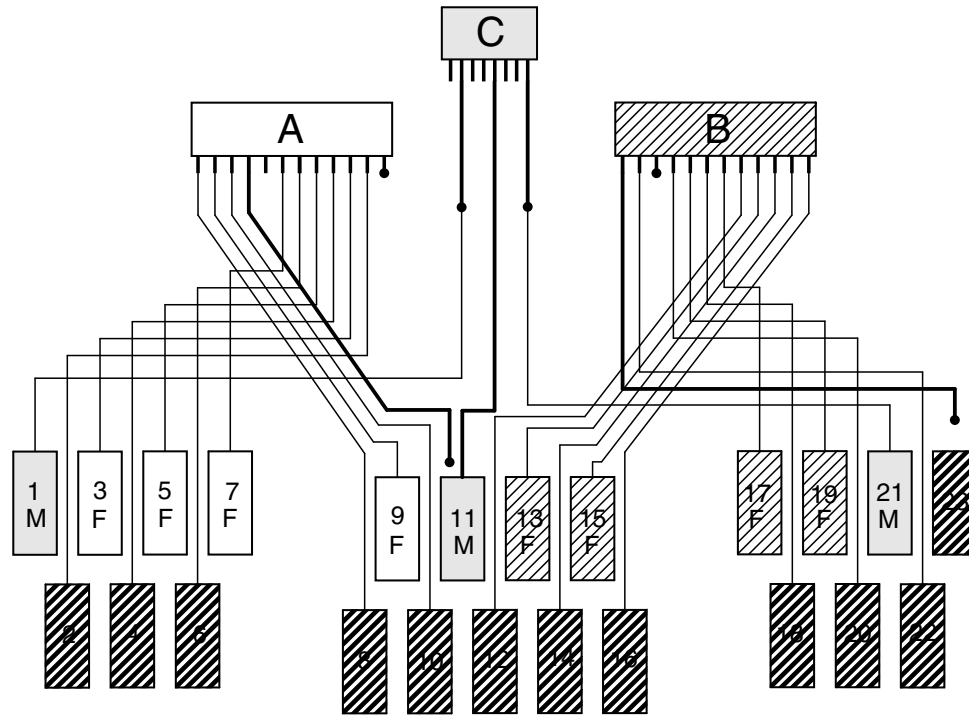
15. Route corresponding hoses from Refuge plus tank to corresponding row unit as shown.
16. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
17. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



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1-4-1-4 Seed Corn Planting Diagram 23-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Row 23 and the entire rear rank of rows are not used in this configuration. Rows must be locked out, vacuum hose disconnected and plugged and seed meter drive disconnected.
4. On row 23 and the entire rear rank of rows, disconnect CCS seed delivery hoses and install yellow caps on

them. Reconnect capped seed delivery hoses on inlet port of row units.

5. Disconnect the CCS hose at row 11 and install a yellow cap. Secure hose to frame with a tie to prevent damage to the hose.
6. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
1	154 mm (6 in.)
21	154 mm (6 in.)

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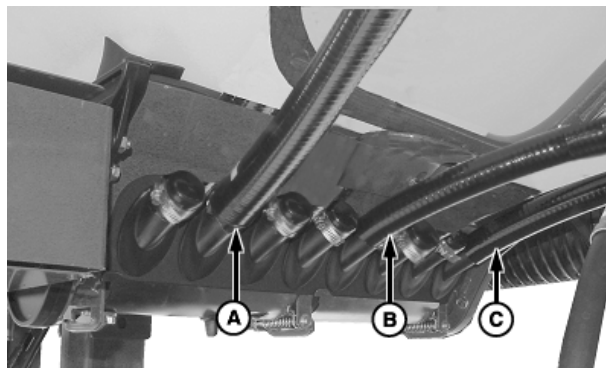
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7. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	2540 mm (100 in.)
11	3480 mm (137 in.)
21	2515 mm (99 in.)

8. Install a female coupler to one end of each hose.
9. Install an O-ring in each female coupler.
10. Mark both ends of each hose with row number, shown in chart, for future reference.
11. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—C) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 1
B—Row 11

C—Row 21

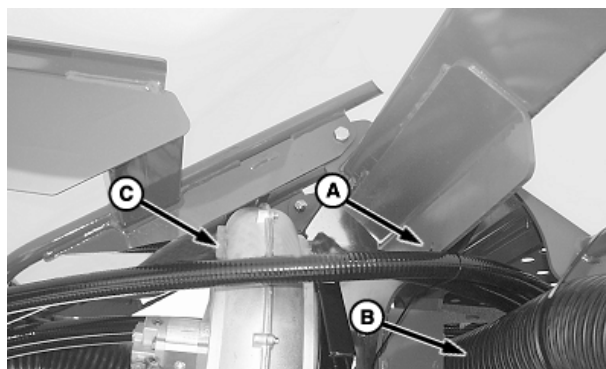
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12. Route hose for row 1 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
13. Secure hose to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



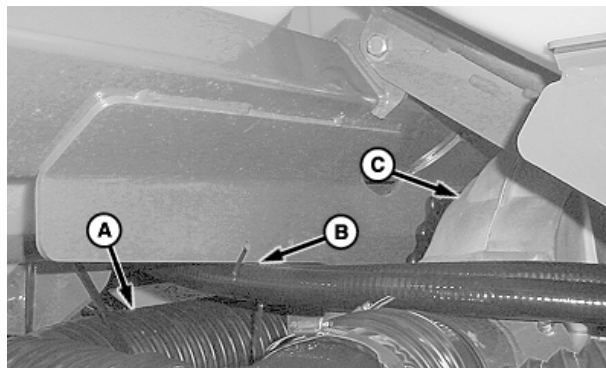
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14. Route hoses for row 11 and 21 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
15. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



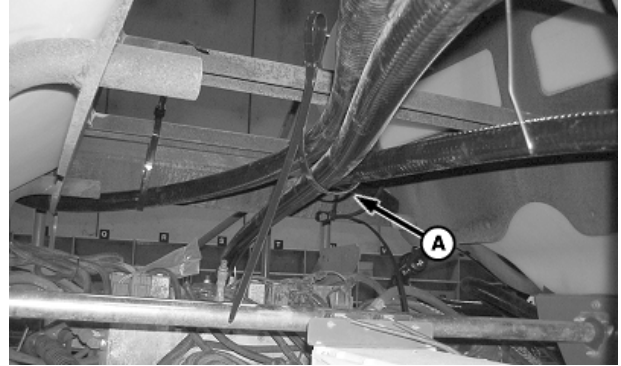
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OUO6045,0000689 -19-27APR09-4/10

16. Route hoses to rear of machine and secure hoses loosely under platform using tie strap (A).
17. Disconnect quick couplers on nozzles 1 and 21 coming from CCS tanks. Install yellow caps on tank side of hoses 1 and 21.

A—Tie Strap



A56764 —UN—13JUL05

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IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

18. Route row unit hose for row 1 (A) over top of existing row unit hoses as shown.

A—Row 1 Hose



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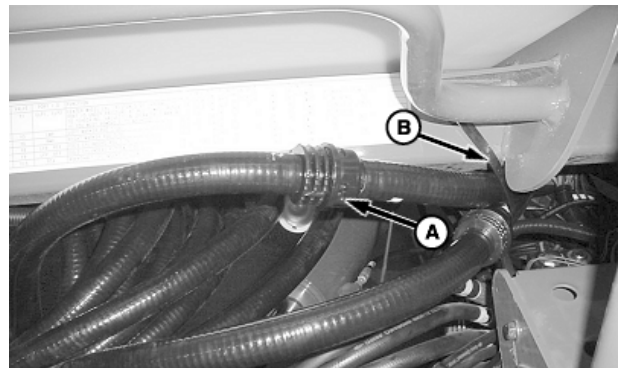
OOU6045,0000689 -19-27APR09-6/10

NOTE: Make sure all slack for row 1 is pulled into this area.

19. On left-hand side of platform, connect hose from Refuge Plus tank to row 1 (A) in location shown.
20. Secure hose to CCS tank 101 mm (4 in.) square tube support using tie strap (B).

A—Row 1

B—Tie Strap



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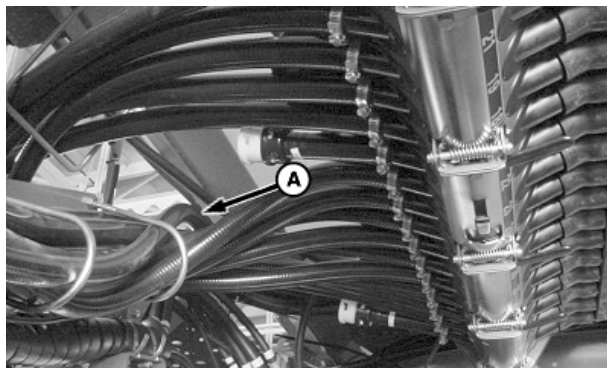
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IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

21. Route row unit hose for row 21 (A) over top of existing row unit hoses as shown.

A—Row 21 Hose



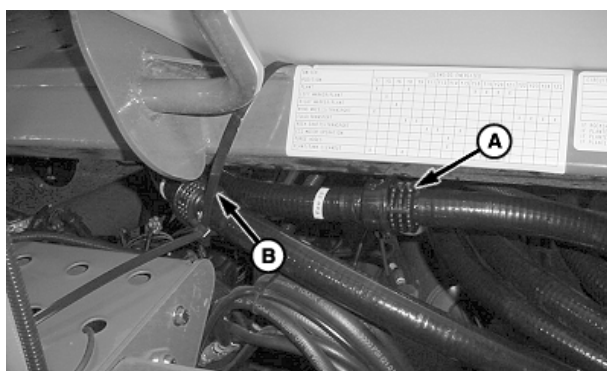
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22. On right-hand side of platform, connect hose from Refuge Plus tank to row 21 (A) in location shown.
23. Secure hose to CCS tank 101 mm (4 in.) square tube support using tie strap (B).

A—Row 21

B—Tie Strap

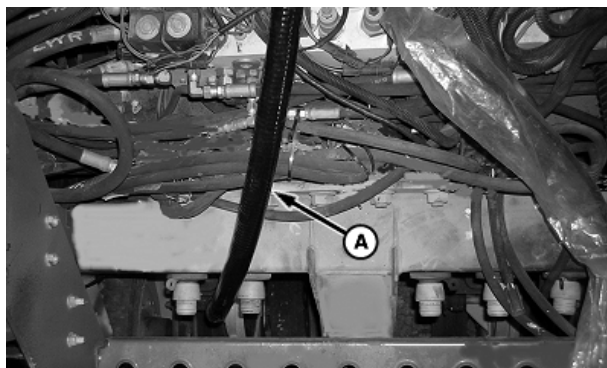


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24. Route hose for row 11 (A) over valve block and directly to row. Connect hose to row unit.
25. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
26. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

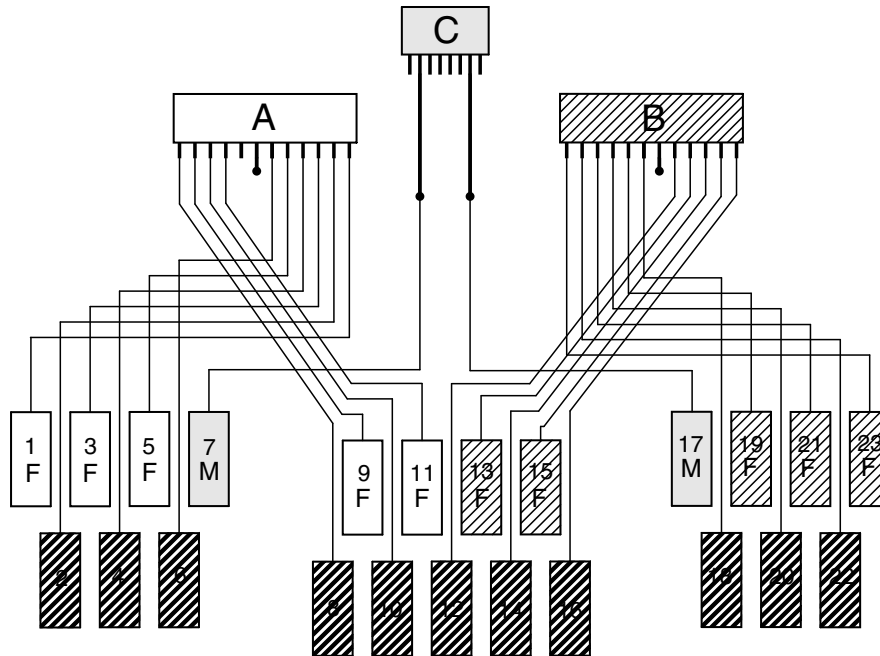
A—Row 11 Hose



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6-1-4-1 Seed Corn Planting Diagram 23-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 6-1-4-1 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
7	154 mm (6 in.)
17	154 mm (6 in.)

4. Cut hoses from bulk hose for the Refuge Plus tank as described in the following chart.

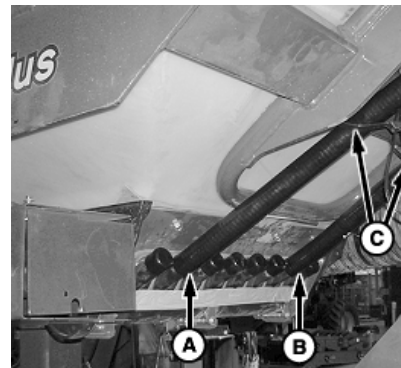
Row Number	Length
7	2692 mm (106 in.)
17	2692 mm (106 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A and B) as shown. Leave vinyl caps on nozzles that are not used.
9. Secure hoses to Refuge Plus tank support using tie straps (C).

A—Row 7
B—Row 17

C—Tie Strap (2 used)



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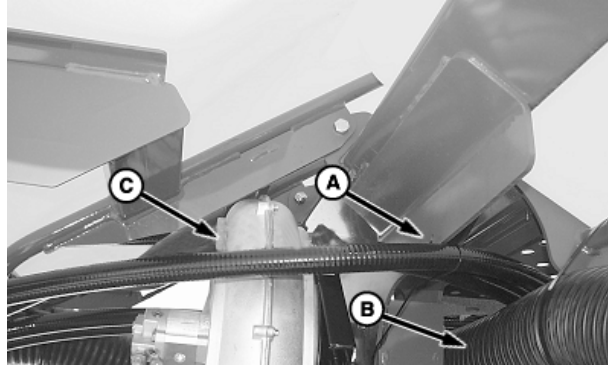
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10. On left-hand side, route hose for row 7 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
11. Secure hose to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

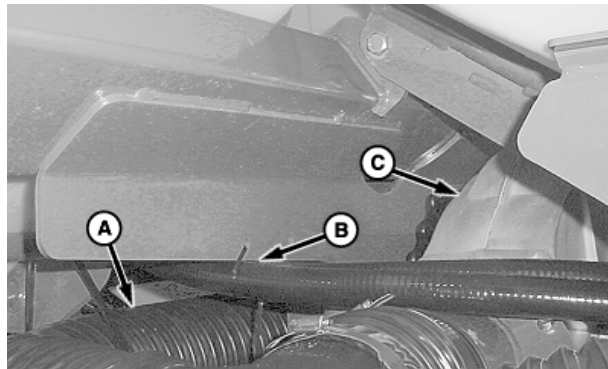


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OOU6045,0000688 -19-27APR09-3/9

12. On right-hand side, route hose for row 17 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
13. Secure hose to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

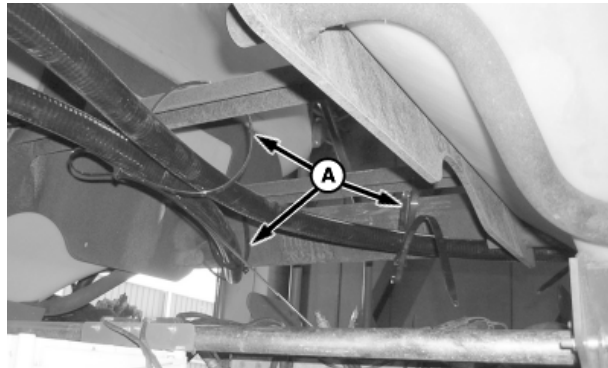


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14. Route hoses to rear of machine and loosely secure hoses to cross braces under platform using tie straps (A) as shown.
15. Disconnect quick couplers on nozzles 7 and 17 coming from CCS tanks. Install yellow caps on tank side of hoses 7 and 17.

A—Tie Strap (3 used)



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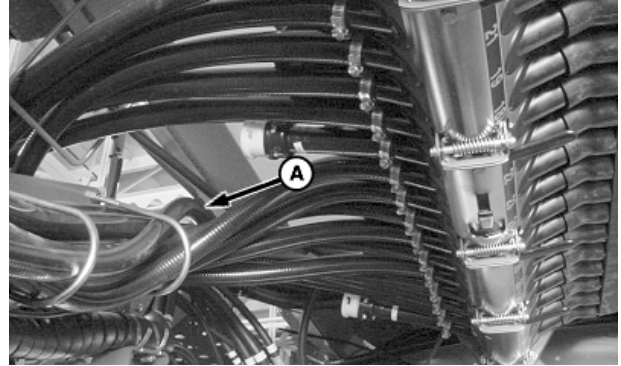
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IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

16. Route row unit hose for row 17 (A) over top of existing row unit hoses as shown.

A—Row 17



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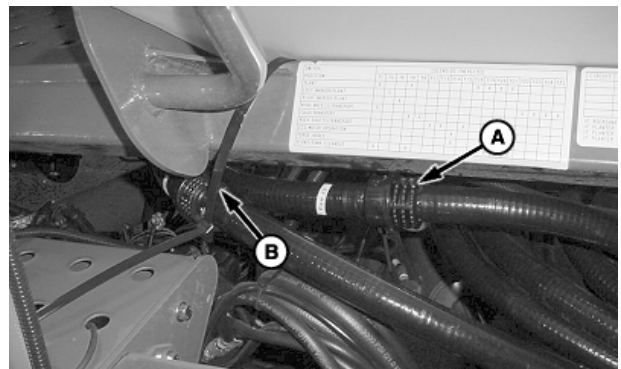
OUC6045,0000688 -19-27APR09-6/9

NOTE: Make sure all slack for row 17 is pulled in to this area.

17. On right-hand side of platform, connect hose for row 17 from Refuge Plus tank to row unit hose in location (A) as shown.
18. Secure hose to 101 mm (4 in.) square tube using tie strap (B) as shown.

A—Row 17

B—Tie Strap



A56754 —UN—11JUL05

OUC6045,0000688 -19-27APR09-7/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

19. Route row unit hose for row 7 (A) over top of existing row unit hoses as shown.

A—Row 7



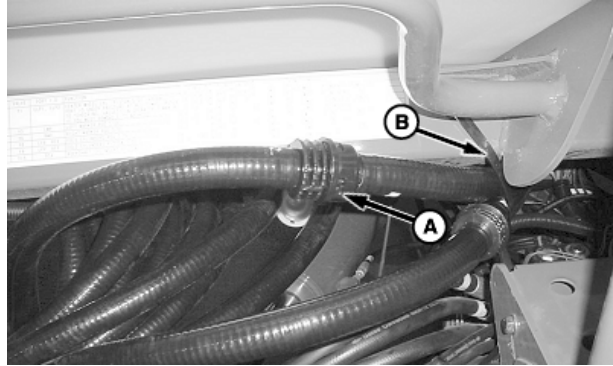
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NOTE: Make sure all slack for row 7 is pulled in to this area.

20. On left-hand side of platform, connect hose for row 7 (A) from Refuge Plus tank to row unit hose in location shown.
21. Secure hose to 101 mm (4 in.) square tube as shown, using tie strap (B).
22. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
23. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



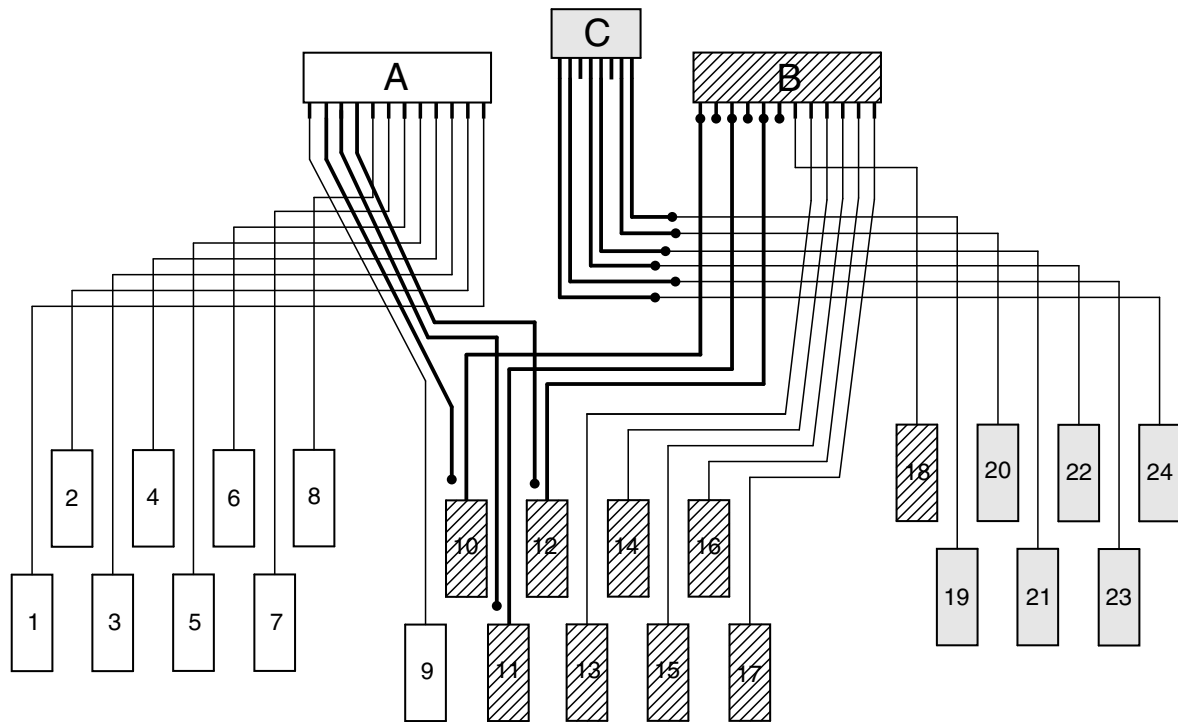
A—Row 7

B—Tie Strap

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Refuge Planting Diagram 24-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for Refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
19	154 mm (6 in.)
20	154 mm (6 in.)
21	154 mm (6 in.)
22	154 mm (6 in.)
23	154 mm (6 in.)
24	154 mm (6 in.)

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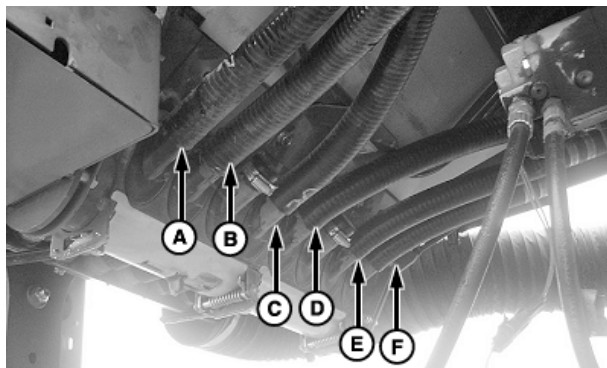
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4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
19	2667 mm (105 in.)
20	2591 mm (102 in.)
21	2565 mm (101 in.)
22	2591 mm (102 in.)
23	2667 mm (105 in.)
24	2515 mm (99 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—F) as shown. Leave vinyl caps on nozzles that are not used.



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A—Row 24
B—Row 23
C—Row 22

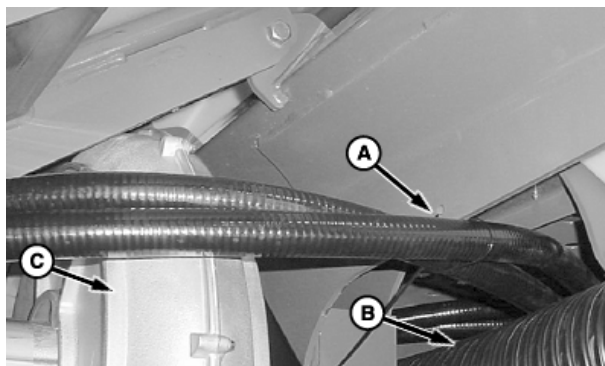
D—Row 21
E—Row 20
F—Row 19

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9. On left-hand side, route hoses for rows 22, 23 and 24 to left of CCS fan (C) and over 154 mm (6 in.) air hose.
10. Secure hoses to left-hand CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



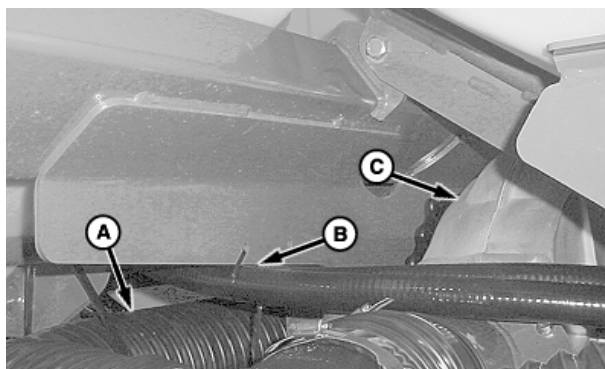
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OUO6045,00006A7 -19-27APR09-3/8

11. On right-hand side, route hoses for rows 19, 20 and 21 to right of CCS fan (C) and over 154 mm (6 in.) air hose.
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan

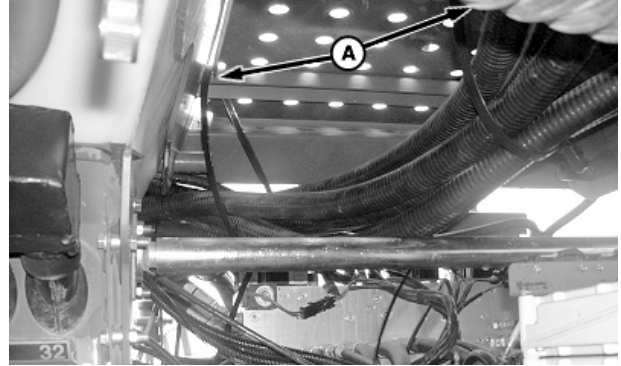


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13. Secure hoses loosely under platform using tie straps (A).
14. Disconnect quick couplers on row nozzle 19, 20, 21, 22, 23 and 24 coming from CCS tanks. Install yellow caps on tank side of hoses 19, 21 and 23.



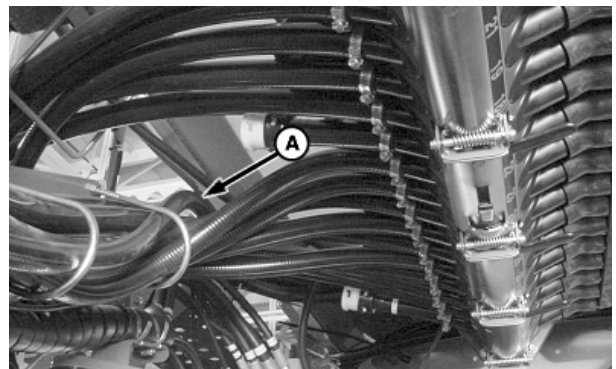
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IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

15. Route row unit hoses (A) over the top or to the back of existing hoses as shown.

A—Hoses



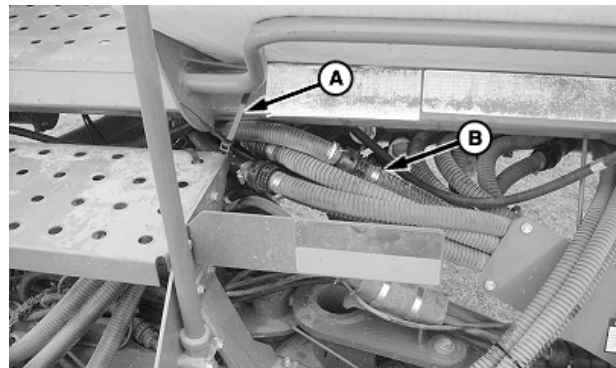
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NOTE: Pull all slack in hoses into this area.

16. On right-hand side of platform, connect Refuge Plus hoses to row unit hoses in location (B).
17. Secure hoses from Refuge Plus tank to CCS tank 101 mm (4 in.) square tube using tie strap (A).
18. Disconnect hoses for rows 10, 11 and 12 at the row units. Install yellow caps on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
19. Cut hoses from bulk hose for rows 10, 11 and 12 as described in chart.

Row Number	Length
10	2845 mm (112 in.)
11	2845 mm (112 in.)
12	2108 mm (83 in.)



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A—Location

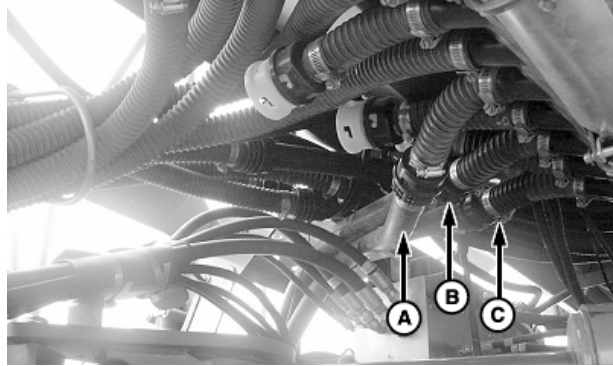
B—Tie Strap

20. Install a female coupler to one end and a male coupler to opposite end of each hose.
21. Install an O-ring in each female coupler.
22. Mark both ends of each hose with row number, shown in chart, for future reference.

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OUC6045,00006A7 -19-27APR09-7/8

23. Connect hose for row 10 to nozzle 24 (C), hose for row 11 to nozzle 22 (B) and hose for row 12 to nozzle 20 (A) on CCS tank as shown.
24. Route hoses (A —C) for row 10, 11 and 12 under hoses going to wing as shown and connect to row units.
25. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
26. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



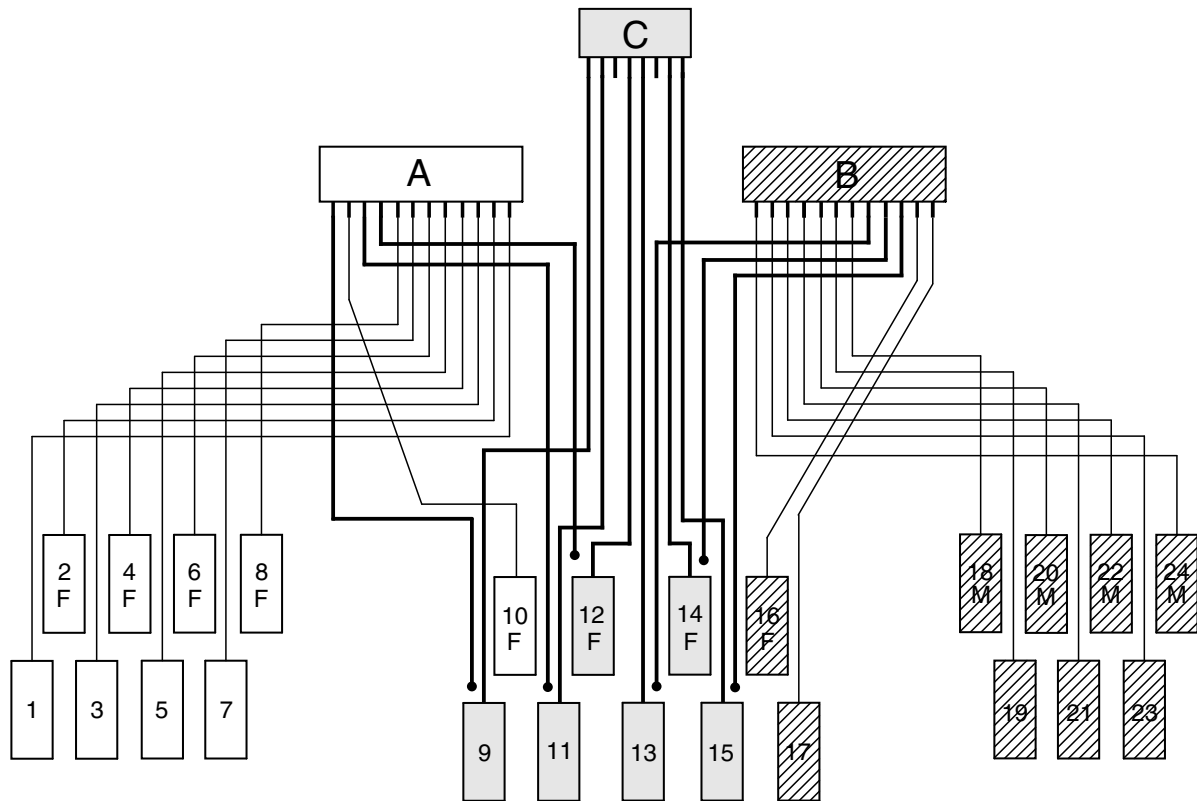
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A—Row 12
B—Row 11

C—Row 10

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Extra Capacity Center Planting Diagram 24-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center rows. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 9, 11, 12, 13, 14 and 15 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
9	4978 mm (196 in.)
11	4420 mm (174 in.)
12	3454 mm (136 in.)
13	4166 mm (164 in.)
14	3454 mm (136 in.)
15	4318 mm (170 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

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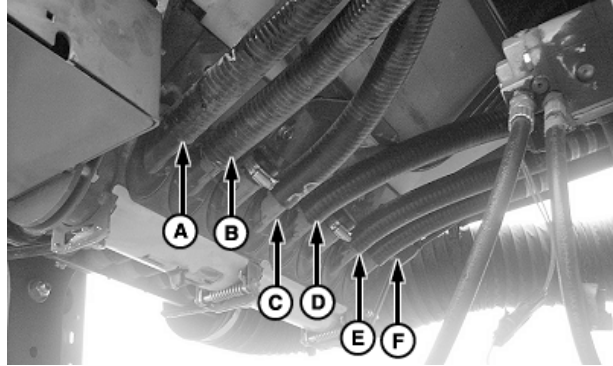
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8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—F) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 9
B—Row 11
C—Row 12

D—Row 13
E—Row 14
F—Row 15



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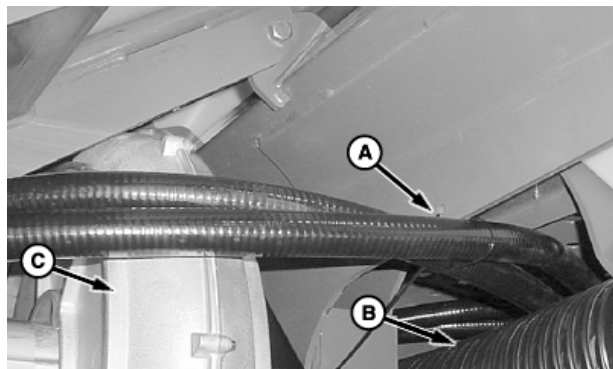
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9. On left-hand side, route hoses for rows 9, 11 and 12 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).

10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



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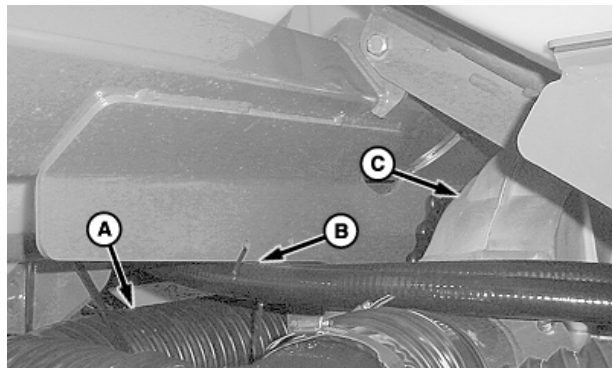
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11. On right-hand side, route hoses for rows 13, 14 and 15 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).

12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



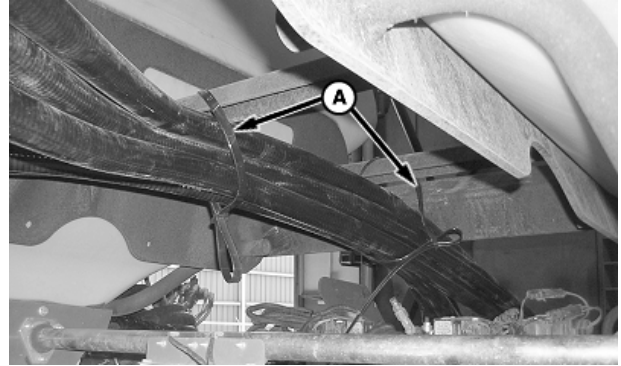
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13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).

A—Tie Strap (2 used)

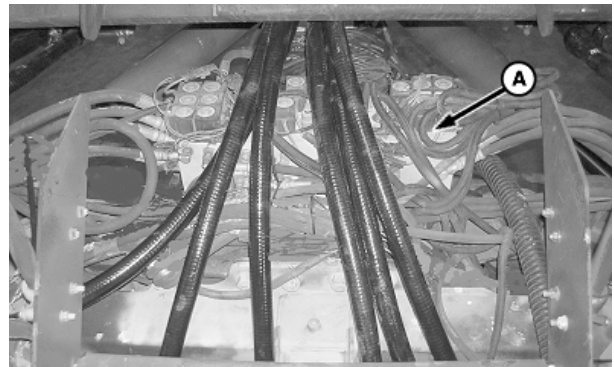


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14. Route hoses over valve block (A).

A—Valve Block

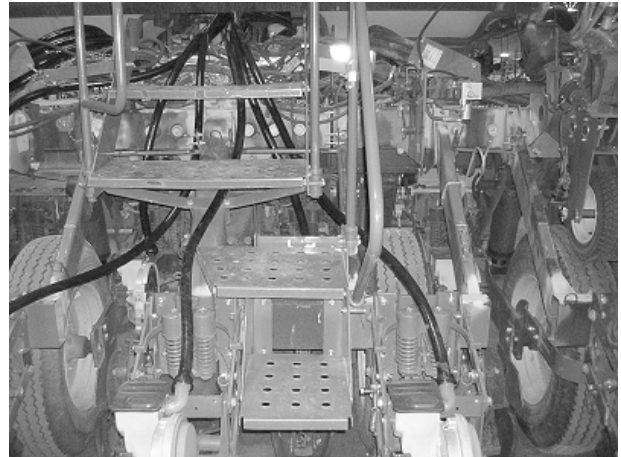


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Top Step Removed For Clarity

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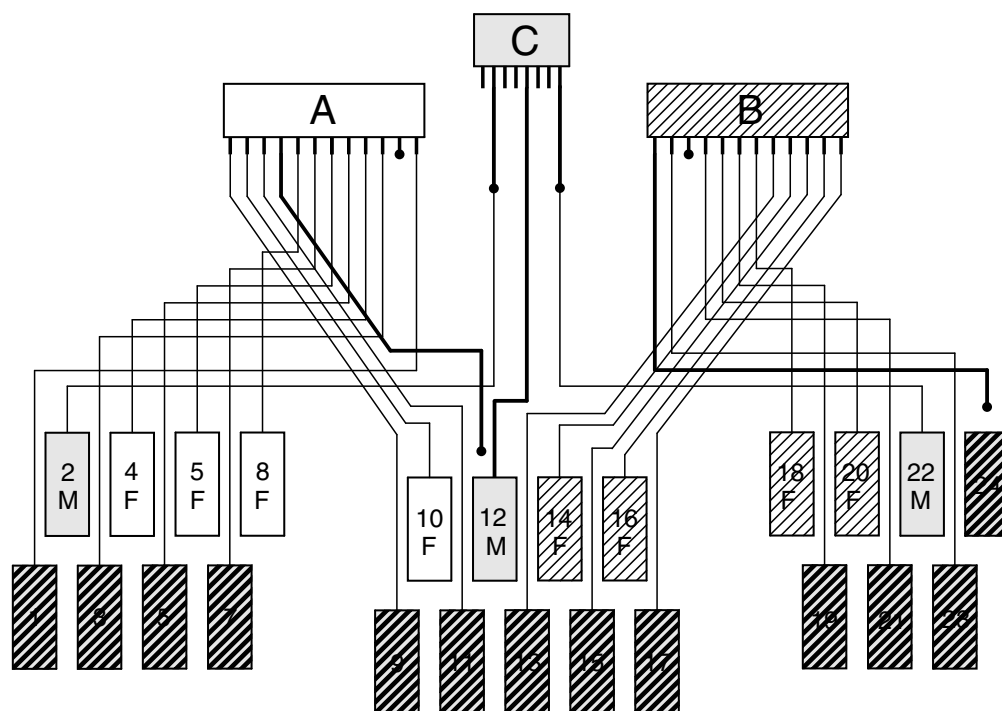
15. Route and connect corresponding hoses from Refuge plus tank to corresponding row unit as shown.
16. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
17. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



A56733 —UN—08JUL05

OUC6045,00006A8 -19-27APR09-7/7

1-4-1-4 Seed Corn Planting Diagram 24-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Row 24 and entire rear rank of rows are not used in this configuration. Rows must be locked out, vacuum hose disconnected and plugged and seed meter drive disconnected.
4. On row 24 and entire rear rank of rows, disconnect seed delivery hoses from row units. Install a yellow cap on each hose.

5. Reconnect capped hoses on inlet ports of row units.
6. Disconnect the CCS hose at row 12 and install a yellow cap. Secure hose to frame with a tie strap to prevent damage to the hose.
7. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
2	154 mm (6 in.)
22	154 mm (6 in.)

A56455—UN—31AUG05

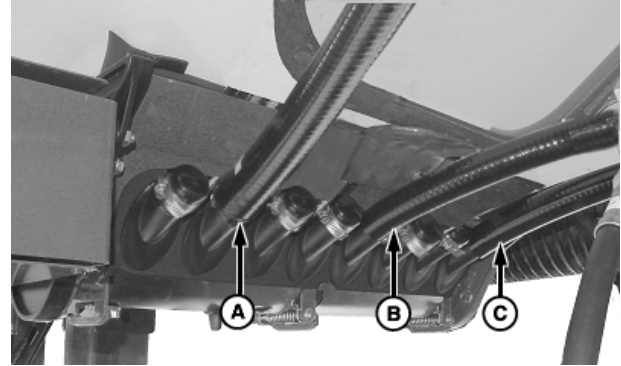
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OUO6045,00006A9 -19-27APR09-1/10

8. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
2	2540 mm (100 in.)
12	3480 mm (137 in.)
22	2515 mm (99 in.)

9. Install a female coupler to one end of each hose.
 10. Install an O-ring in each female coupler.
 11. Mark both ends of each hose with row number, shown in chart, for future reference.
 12. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—C) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 2
B—Row 12

C—Row 22

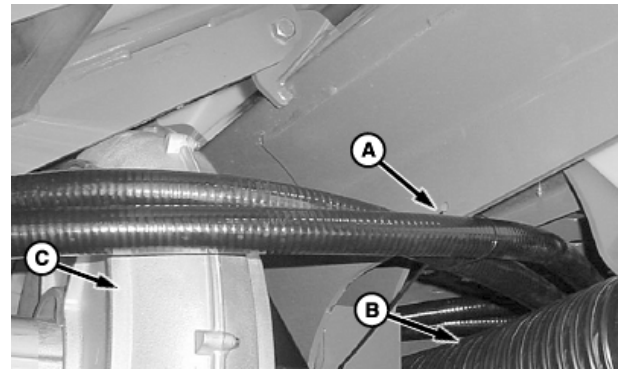
A56759 —UN—03AUG05

OUO6045,00006A9 -19-27APR09-2/10

13. Route hose for row 2 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
 14. Secure hose to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



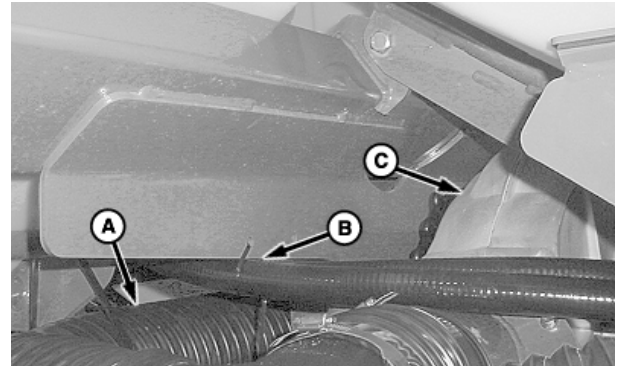
A56797 —UN—15JUL05

OUO6045,00006A9 -19-27APR09-3/10

15. Route hoses for row 12 and 22 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
 16. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



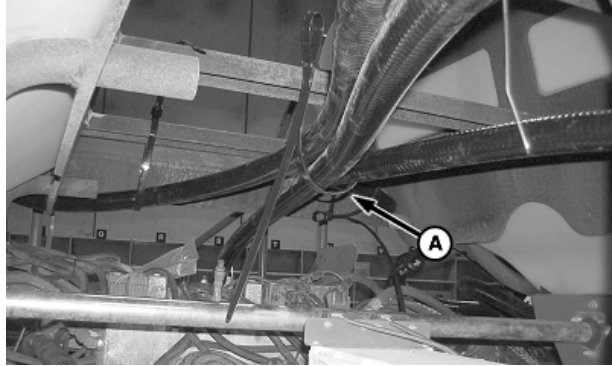
A56802 —UN—15JUL05

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OUO6045,00006A9 -19-27APR09-4/10

17. Secure hoses loosely under platform using tie strap (A).
18. Disconnect quick couplers on nozzles 2 and 22 coming from CCS tanks. Install yellow caps on tank side of hoses 2 and 22.

A—Tie Strap



A56764—UN—13JUL05

OUC6045,00006A9 -19-27APR09-5/10

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

19. Route row unit hose for row 2 (A) over top of existing row unit hoses as shown.

A—Row 2 Hose



A56756—UN—11JUL05

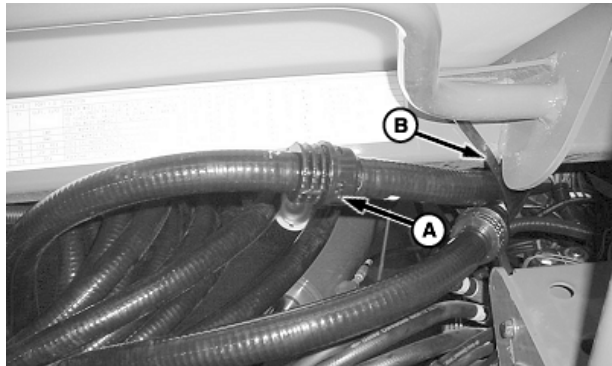
OUC6045,00006A9 -19-27APR09-6/10

NOTE: Make sure all slack for row 2 is pulled into this area.

20. On left-hand side of platform, connect hose from Refuge Plus tank to row 2 (A) in location shown.
21. Secure hose to CCS tank 101 mm (4 in.) square tube support using tie strap (B).

A—Row 2

B—Tie Strap



A56753—UN—11JUL05

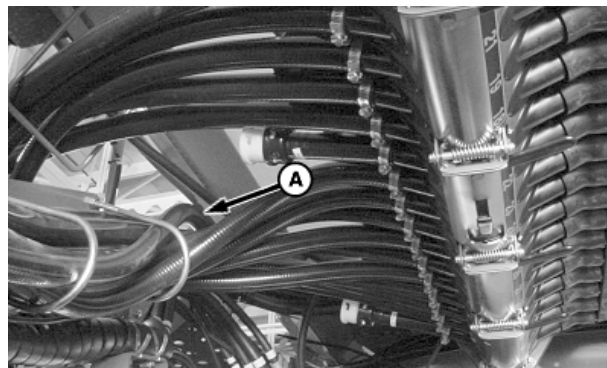
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OUC6045,00006A9 -19-27APR09-7/10

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

22. Route row unit hose for row 22 (A) over top of existing row unit hoses as shown.

A—Row 22 Hose



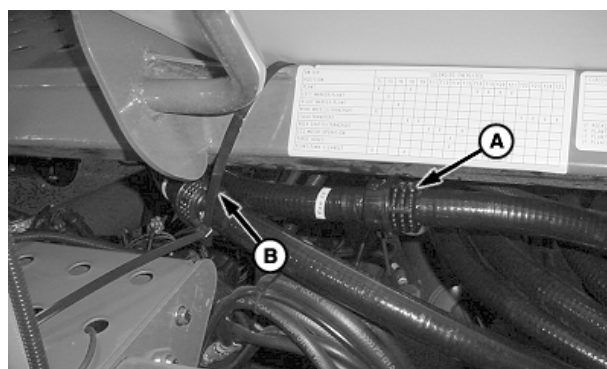
A56757 —UN—11JUL05

OUC6045,00006A9 -19-27APR09-8/10

23. On right-hand side of platform, connect hose from Refuge Plus tank to row 22 (A) in location shown.
24. Secure hose to CCS tank 101 mm (4 in.) square tube support using tie strap (B).

A—Row 22

B—Tie Strap

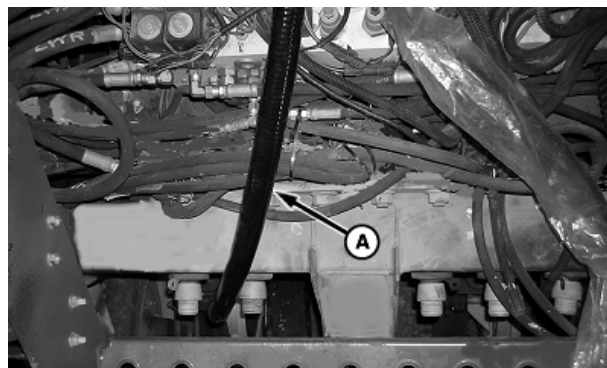


A56754 —UN—11JUL05

OUC6045,00006A9 -19-27APR09-9/10

25. Route hose for row 12 (A) over valve block and directly to row. Connect hose to row unit.
26. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
27. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

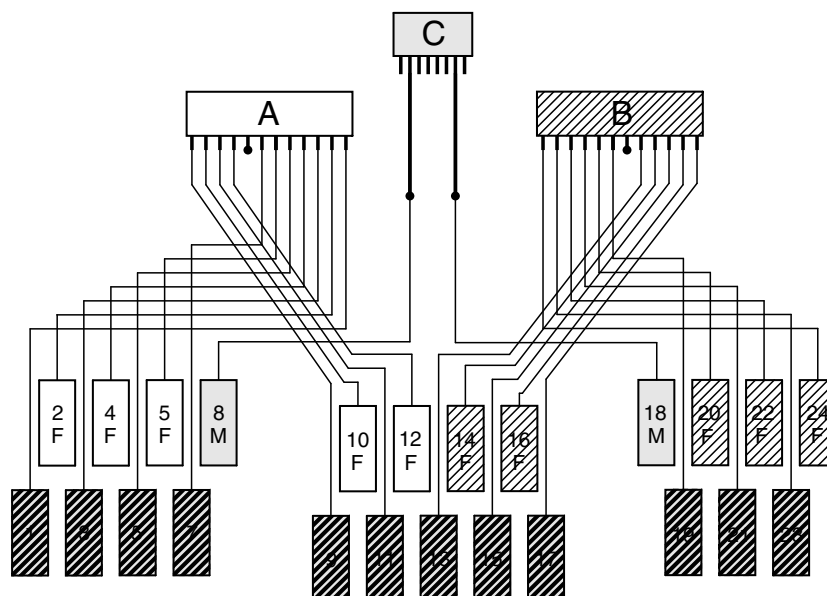
A—Row 12 Hose



A56765 —UN—13JUL05

OUC6045,00006A9 -19-27APR09-10/10

6-1-4-1 Seed Corn Planting Diagram 24-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 6-1-4-1 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance From Nozzle
8	154 mm (6 in.)
18	154 mm (6 in.)

4. Cut hoses from bulk hose for the Refuge Plus tank as described in the following chart.

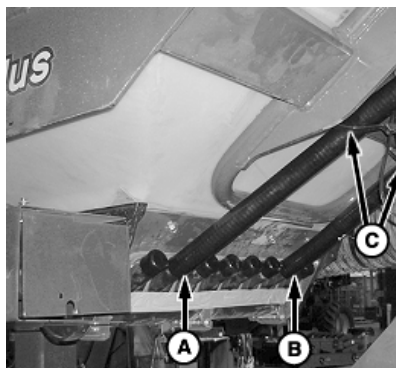
Row Number	Length
8	2692 mm (106 in.)
18	2692 mm (106 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A and B) as shown. Leave vinyl caps on nozzles that are not used.
9. Secure hoses (A and B) to Refuge Plus tank support using tie straps (C) as shown.

A—Row 8
B—Row 18

C—Tie Strap (2 used)



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OUO6045,00006AA -19-27APR09-1/9

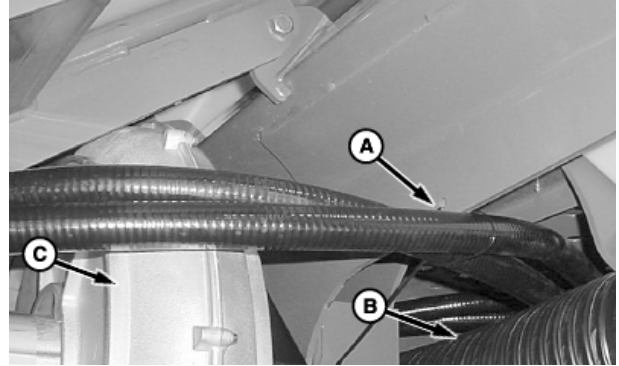
A56456—UN—31AUG05

A57036—UN—01SEP05

OUO6045,00006AA -19-27APR09-2/9

10. On left-hand side, route hose for row 8 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
11. Secure hose to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

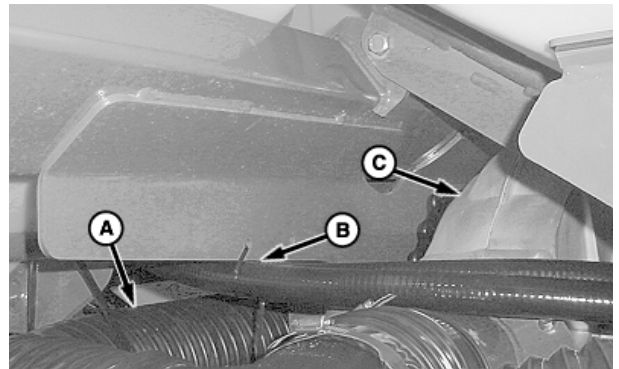


A56797 —UN—15JUL05

OUO6045,00006AA -19-27APR09-3/9

12. On right-hand side, route hose for row 18 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
13. Secure hose to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

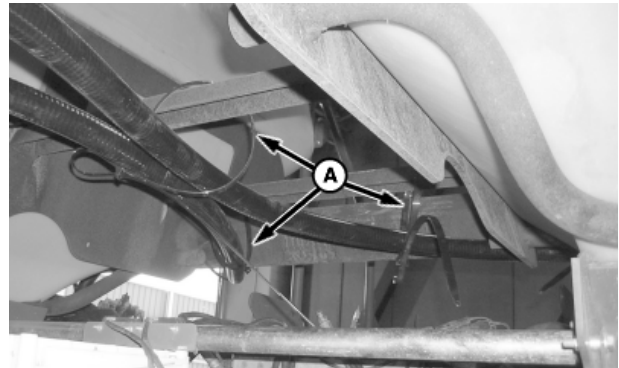


A56802 —UN—15JUL05

OUO6045,00006AA -19-27APR09-4/9

14. Loosely secure hoses to cross braces under platform using tie straps (A) as shown.
15. Disconnect quick couplers on nozzles 8 and 18 coming from CCS tanks. Install yellow caps on tank side of hoses 8 and 18.

A—Tie Strap (3 used)



A57037 —UN—01SEP05

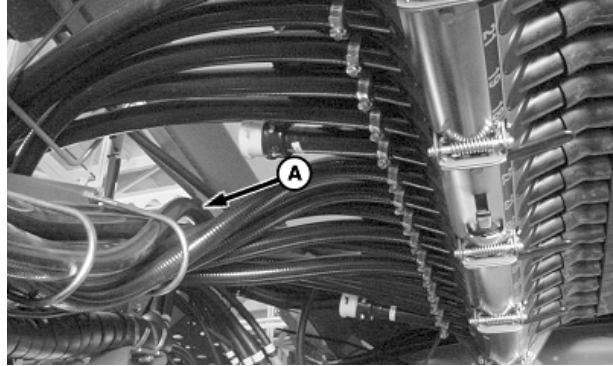
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OUO6045,00006AA -19-27APR09-5/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

16. Route row unit hose for row 18 (A) over top of existing row unit hoses as shown.

A—Row 18 Hose



A56757—UN—11JUL05

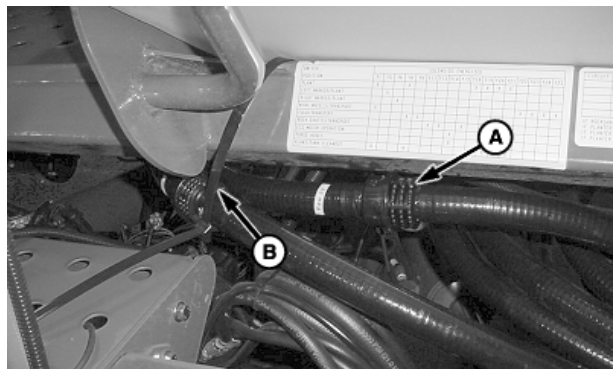
OUC6045,00006AA -19-27APR09-6/9

NOTE: Make sure that all slack is pulled in to this area.

17. On right-hand side of platform, connect hose for row 18 from Refuge Plus tank to row unit hose in location (A) as shown.
18. Secure hose to 101 mm (4 in.) square tube using tie strap (B) as shown.

A—Row 18 Connection Location

B—Tie Strap



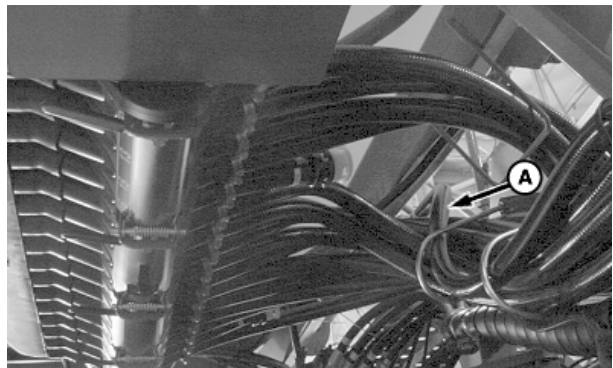
A56754—UN—11JUL05

OUC6045,00006AA -19-27APR09-7/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

19. Route row unit hose for row 8 (A) over top of existing row unit hoses as shown.

A—Row 8 Hose



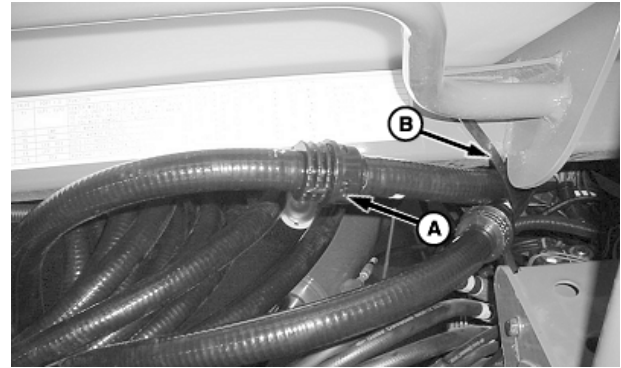
A56756—UN—11JUL05

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OUC6045,00006AA -19-27APR09-8/9

NOTE: Make sure that all slack is pulled in to this area.

20. On left-hand side of platform, connect hose for row 8 from Refuge Plus tank to row unit hose in location (A) shown.
21. Secure hose to 101 mm (4 in.) square tube as shown, using tie strap (B).
22. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
23. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.

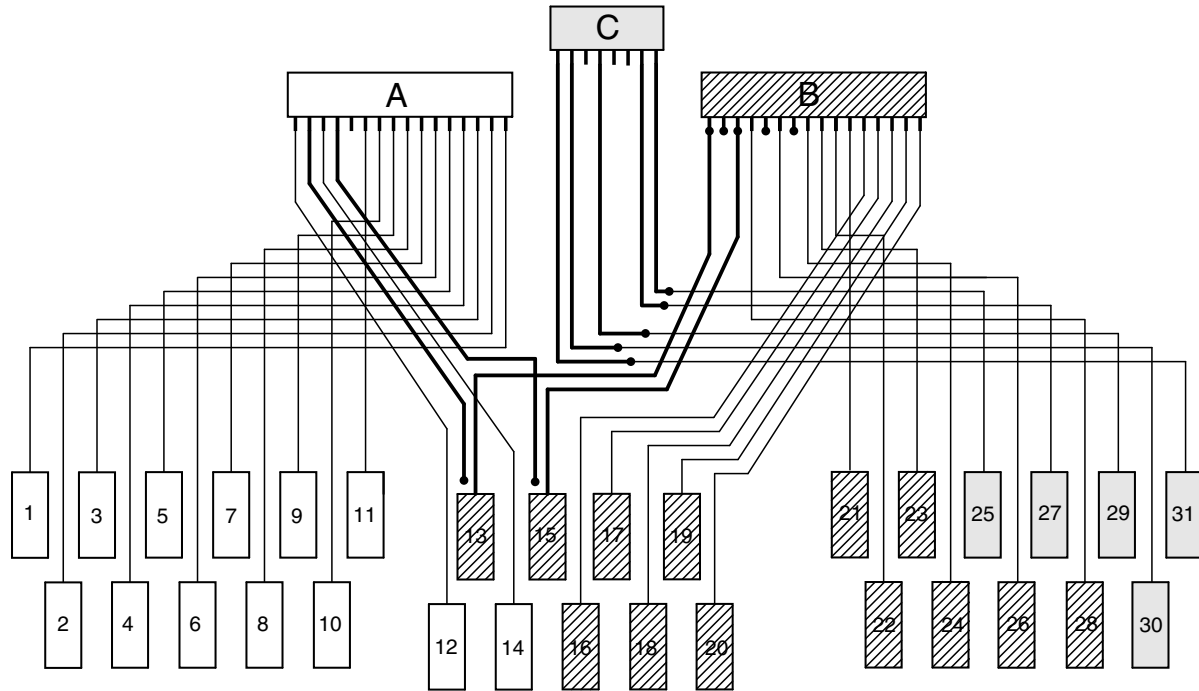


A—Row 8 Connection Location B—Tie Strap

A56753 —UN—11JUL05

OOU6045,00006AA -19-27APR09-9/9

Refuge Planting Diagram 31-Row 38 cm (15 in.)



A56921—UN—14SEP05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on the main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
25	154 mm (6 in.)
27	154 mm (6 in.)
29	154 mm (6 in.)
30	154 mm (6 in.)
31	154 mm (6 in.)

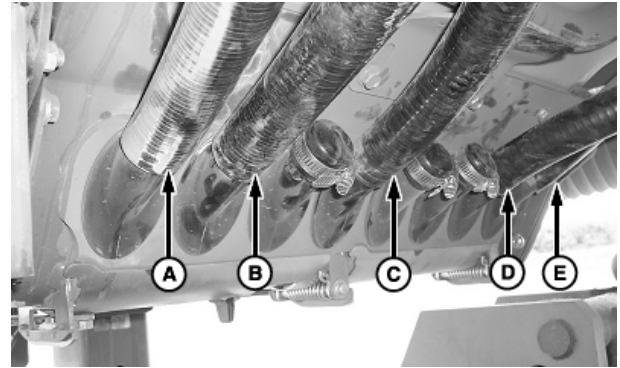
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OUO6045,000068D -19-27APR09-1/9

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
25	2337 mm (92 in.)
27	2540 mm (100 in.)
29	2464 mm (97 in.)
30	2438 mm (96 in.)
31	2337 mm (92 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 31
B—Row 30
C—Row 29

D—Row 27
E—Row 25

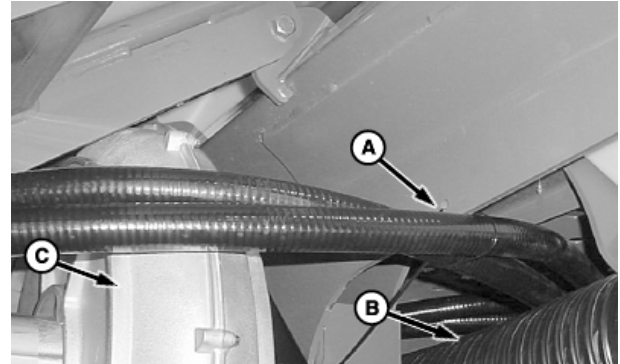
A56922 —UN—05AUG05

OUO6045,000068D -19-27APR09-2/9

9. On left-hand side, route hoses for row 29, 30 and 31 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797 —UN—15JUL05

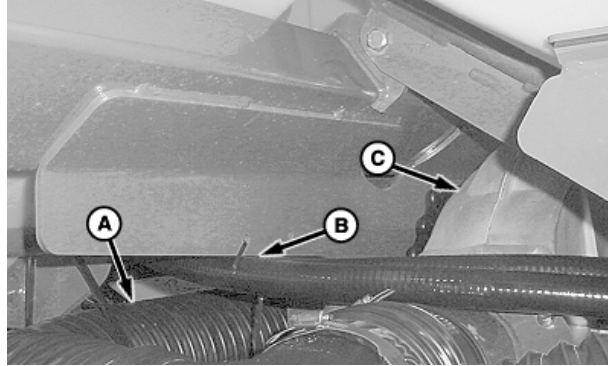
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OUO6045,000068D -19-27APR09-3/9

11. On right-hand side, route hoses for row 25 and 27 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).

12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap



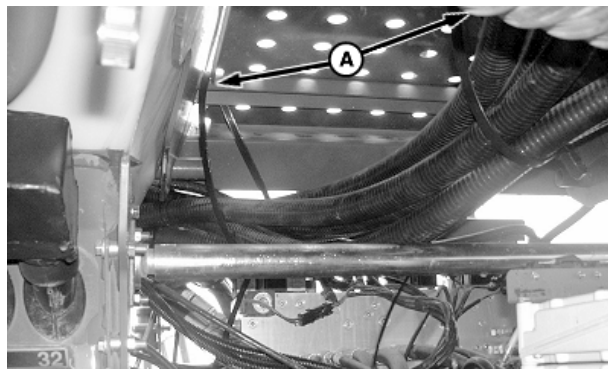
A56802—UN—15JUL05

OUC6045,000068D -19-27APR09-4/9

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).

14. Disconnect quick couplers on nozzles 25, 27, 29, 30 and 31 coming from CCS tanks. Install yellow caps on tank side of hoses 25, 27 and 30.

A—Tie Strap (2 used)



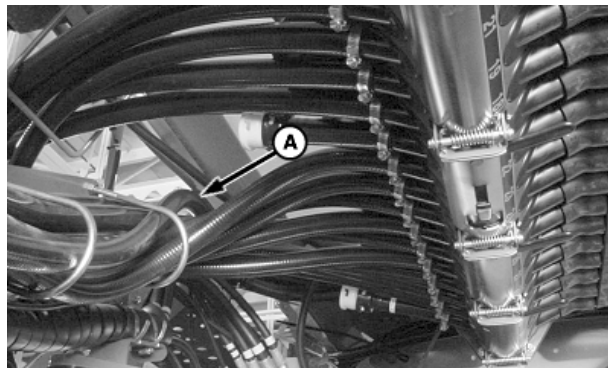
A56739—UN—11JUL05

OUC6045,000068D -19-27APR09-5/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

15. Route row unit hoses (A) over the top or to the back of existing hoses. Do not run underneath or they can rub on cylinder fold lug.

A—Hoses



A56771—UN—13JUL05

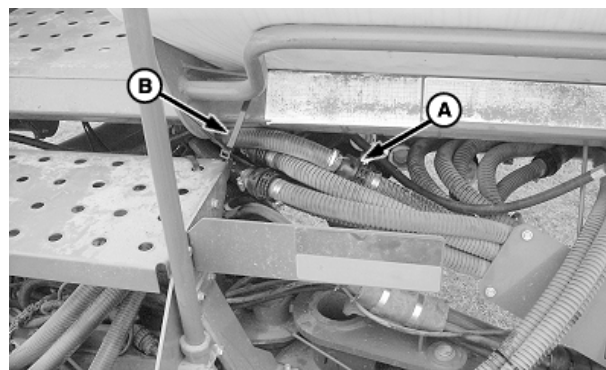
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OUC6045,000068D -19-27APR09-6/9

16. On right-hand side of platform, connect hoses (A) from Refuge Plus tank to row unit hoses in location shown.
17. Secure hoses to 101 mm (4 in.) square tube, using tie strap (B).
18. Disconnect hoses for rows 13 and 15 at the row units. Install yellow caps on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
19. Cut extension hoses from bulk hose for rows 13 and 15 as described in the following chart.

Row Number	Length
13	2845 mm (112 in.)
15	2108 mm (83 in.)

20. Install a female coupler on one end and a male coupler to opposite end of each hose.
21. Install an O-ring in each female coupler.



A—Hoses

B—Tie Strap

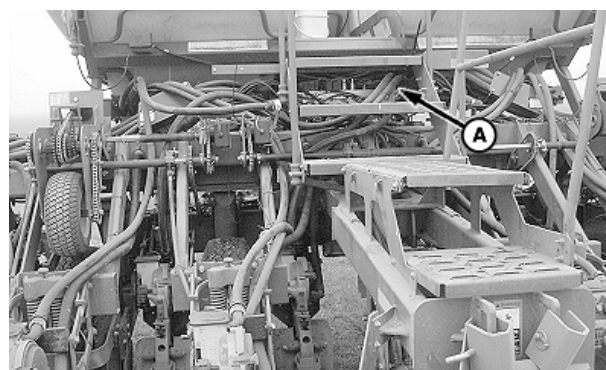
A56785 —UN—14JUL05

22. Mark both ends of each hose with row number, shown in chart, for future reference.

OUO6045,000068D -19-27APR09-7/9

23. Connect extension hoses (A) for rows 13 and 15 to row units and route to right-hand CCS tank.

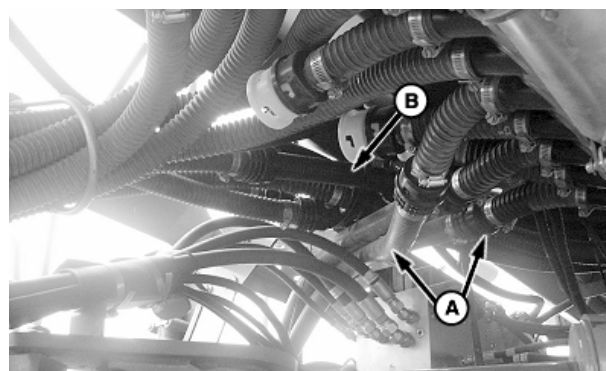
A—Hoses



A56772 —UN—13JUL05

OUO6045,000068D -19-27APR09-8/9

24. Route hoses (A) from row units 13 and 15 under hoses going to wing (B) and connect row 13 to nozzle 31 and row 15 to nozzle 29 on CCS tank.
25. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
26. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



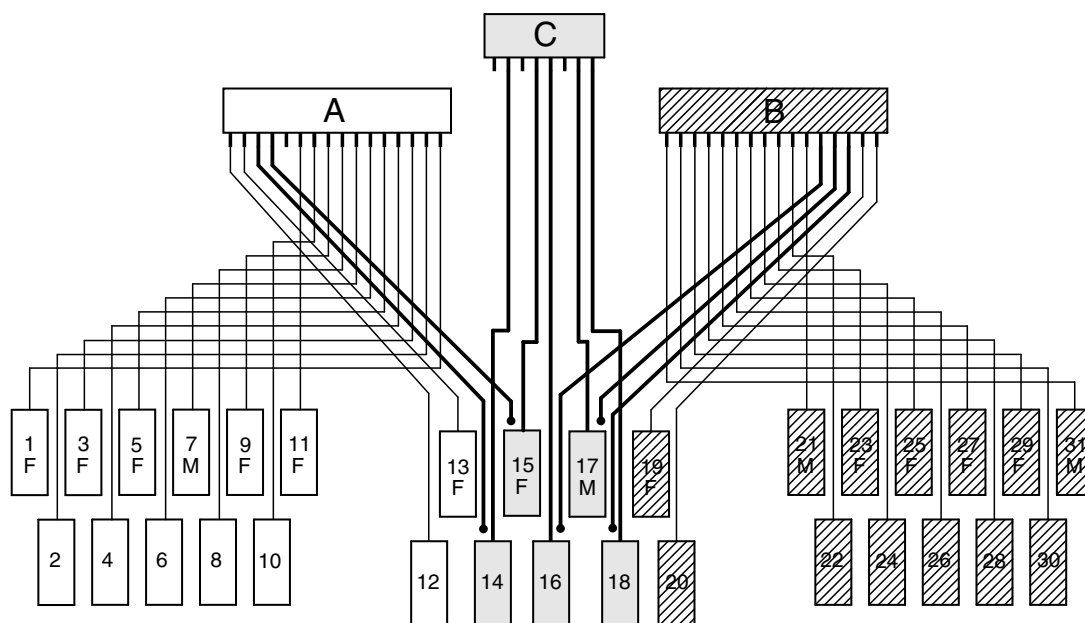
A—Hoses

B—Hoses

A56923 —UN—05AUG05

OUO6045,000068D -19-27APR09-9/9

Extra Capacity Center Planting Diagram 31-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 14, 15, 16, 17 and 18 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart:

Row Number	Length
14	4420 mm (174 in.)
15	3454 mm (136 in.)
16	4166 mm (164 in.)
17	3454 mm (136 in.)
18	4318 mm (170 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

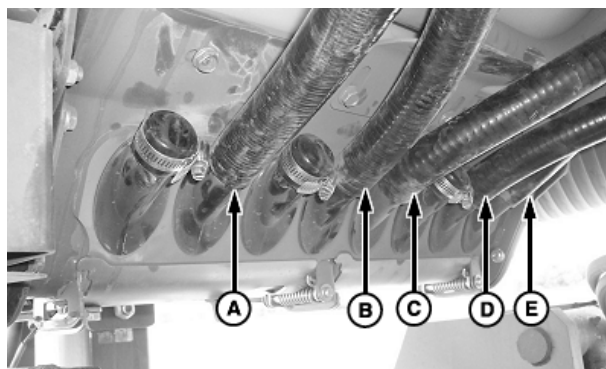
OUO6045,000068B -19-27APR09-1/7

A56924 —UN—19AUG05

8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—E) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 14
B—Row 15
C—Row 16

D—Row 17
E—Row 18



A56891 —UN—23AUG05

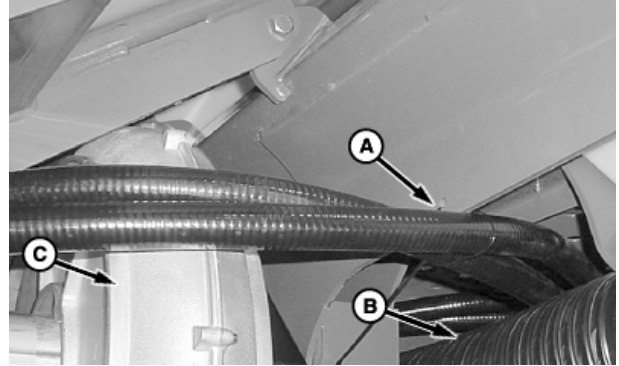
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OUO6045,000068B -19-27APR09-2/7

9. On left-hand side, route hoses for rows 14, 15 and 16 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



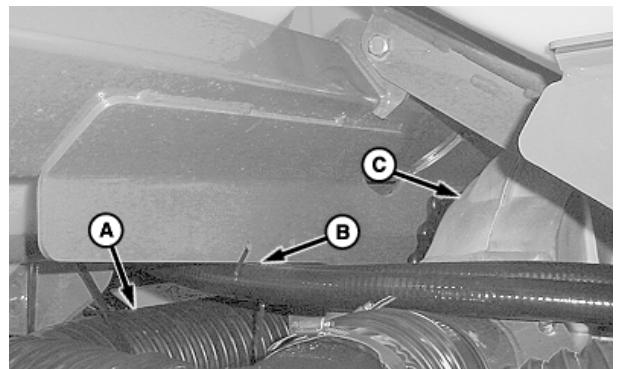
A56797 —UN—15JUL05

OUO6045,000068B -19-27APR09-3/7

11. On right-hand side, route hoses for rows 17 and 18 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan

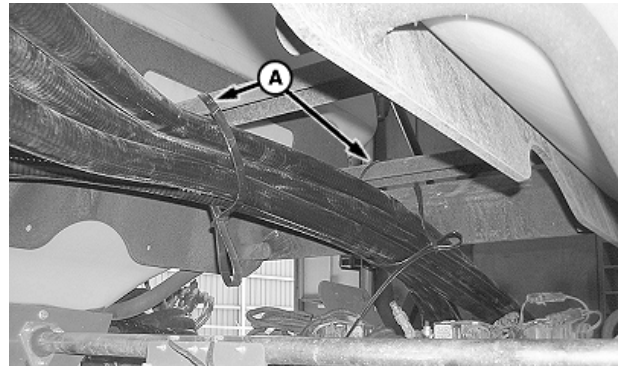


A56802 —UN—15JUL05

OUO6045,000068B -19-27APR09-4/7

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).

A—Tie Strap (2 used)



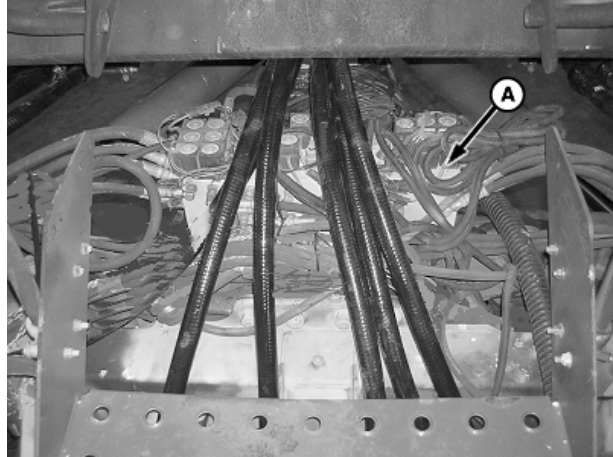
A56773 —UN—13JUL05

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OUO6045,000068B -19-27APR09-5/7

14. Route hoses over valve block (A).

A—Valve Block

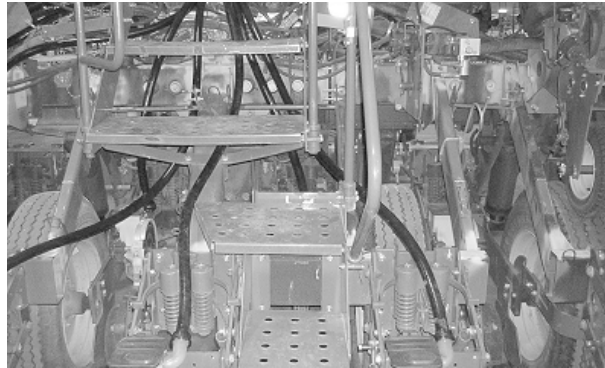


A56732 —UN—03AUG05

Top Step Removed For Clarity

OUC6045,000068B -19-27APR09-6/7

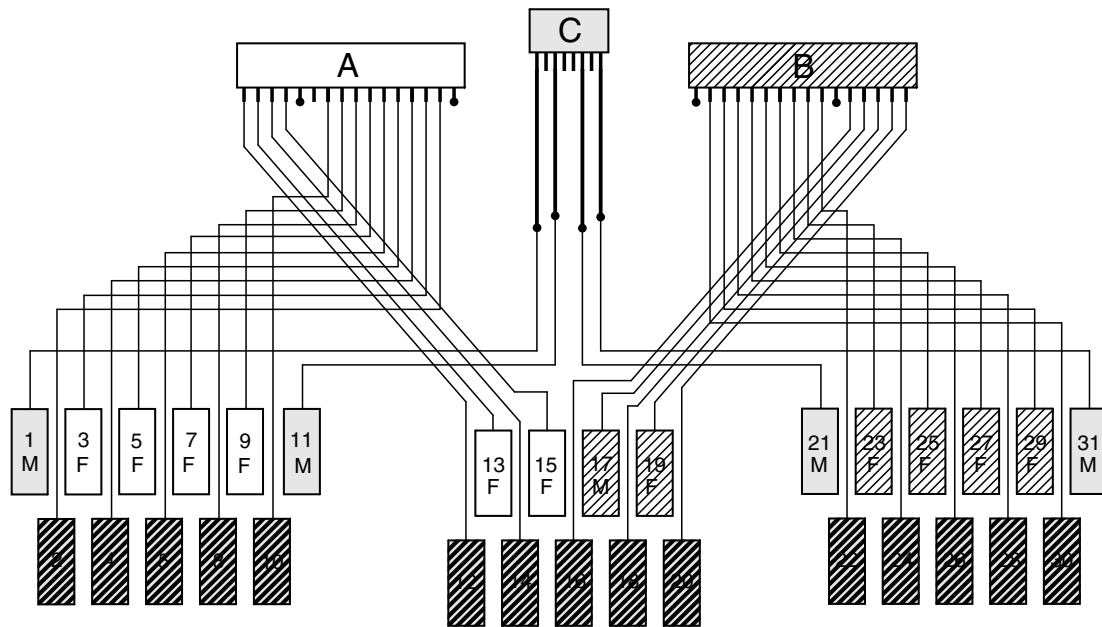
15. Connect corresponding hose from Refuge Plus tank to corresponding row unit.
16. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
17. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



A56775 —UN—13JUL05

OUC6045,000068B -19-27APR09-7/7

1-4-1-4 Seed Corn Planting Diagram 31-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

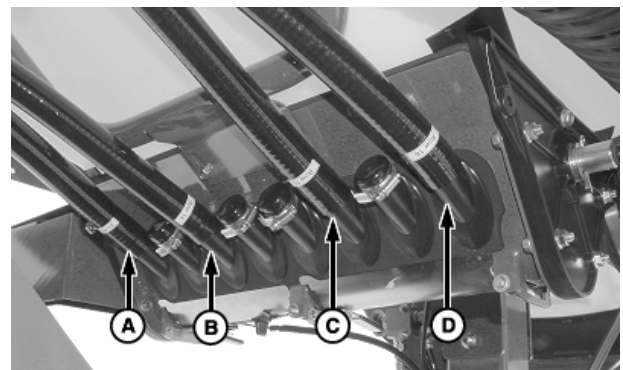
Row Number	Distance from Tank Nozzles
1	154 mm (6 in.)
11	154 mm (6 in.)
21	154 mm (6 in.)
31	154 mm (6 in.)

OUO6045,000068C -19-27APR09-1/9

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	2311 mm (91 in.)
11	2540 mm (100 in.)
21	2540 mm (100 in.)
31	2311 mm (91 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—D) as shown. Leave vinyl caps on nozzles that are not used.

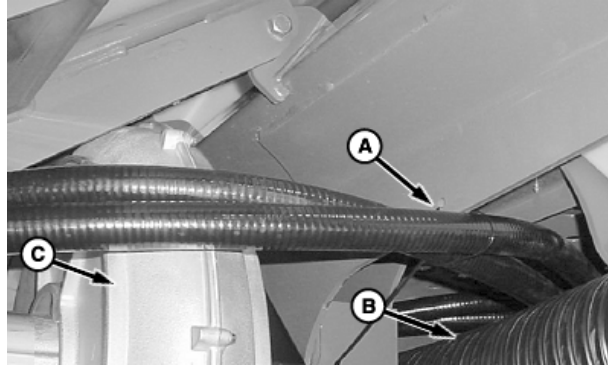
A—Row 1
B—Row 11C—Row 21
D—Row 31

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OUO6045,000068C -19-27APR09-2/9

9. On left-hand side, route hoses for row 1 and 11 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

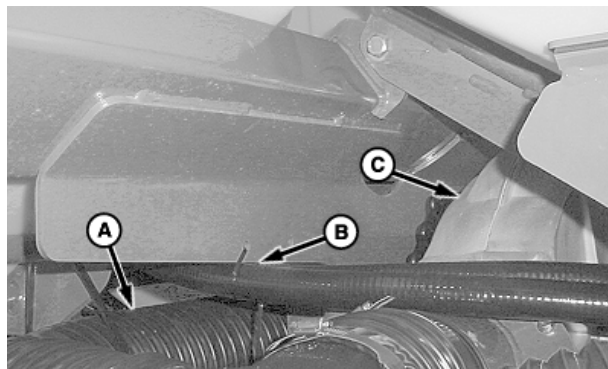


A56797—UN—15JUL05

OUC6045,000068C -19-27APR09-3/9

11. On right-hand side, route hoses for row 21 and 31 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

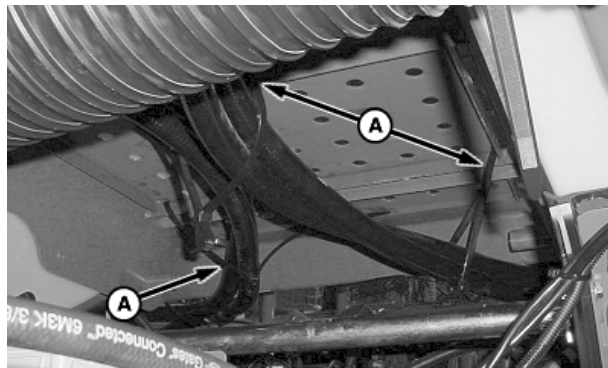


A56802—UN—15JUL05

OUC6045,000068C -19-27APR09-4/9

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).
14. Disconnect quick couplers on nozzles 1, 11, 21 and 31 coming from CCS tanks. Install yellow caps on tank side of hoses 1, 11, 21 and 31.

A—Tie Strap (3 used)



A56778—UN—30AUG05

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OUC6045,000068C -19-27APR09-5/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

15. Route row unit hoses for row 1 and 11 (A) over top of existing row unit hoses as shown.

A—Hoses



A56756 —UN—11JUL05

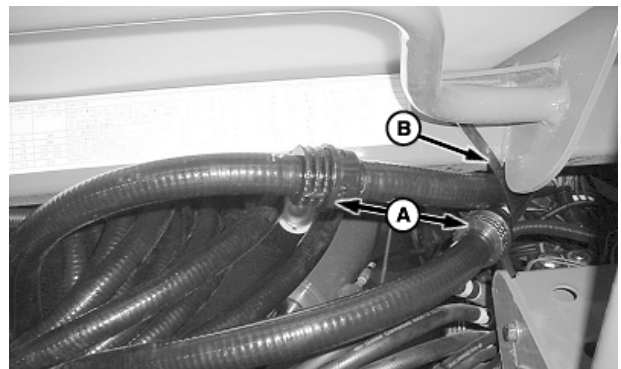
OUC6045,000068C -19-27APR09-6/9

16. On left-hand side of platform, connect hoses coming from Refuge Plus tank for row 1 and 11 (A) to row unit hoses in location shown.

17. Secure hoses to 101 mm (4 in.) square tube using tie strap (B).

A—Hoses

B—Tie Strap



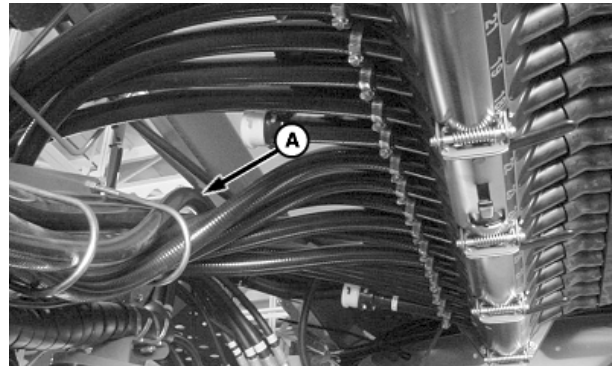
A56779 —UN—13JUL05

OUC6045,000068C -19-27APR09-7/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

18. Route row unit hoses for row 21 and 31 (A) over top of existing row unit hoses as shown.

A—Hoses

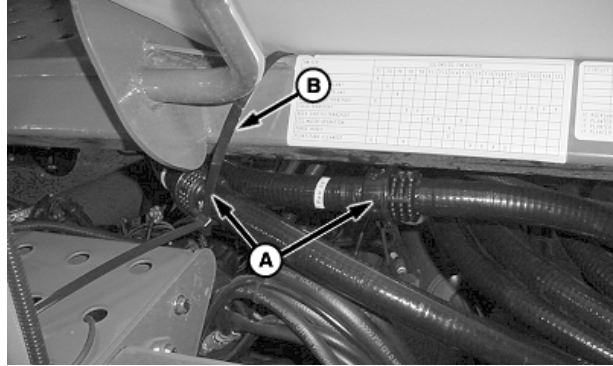


A56771 —UN—13JUL05

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OUC6045,000068C -19-27APR09-8/9

19. On right-hand side of platform, connect hoses coming from Refuge Plus tank for row 21 and 31 (A) to row unit hoses in location shown.
20. Secure hoses to 101 mm (4 in.) square tube using tie strap (B).
21. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
22. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



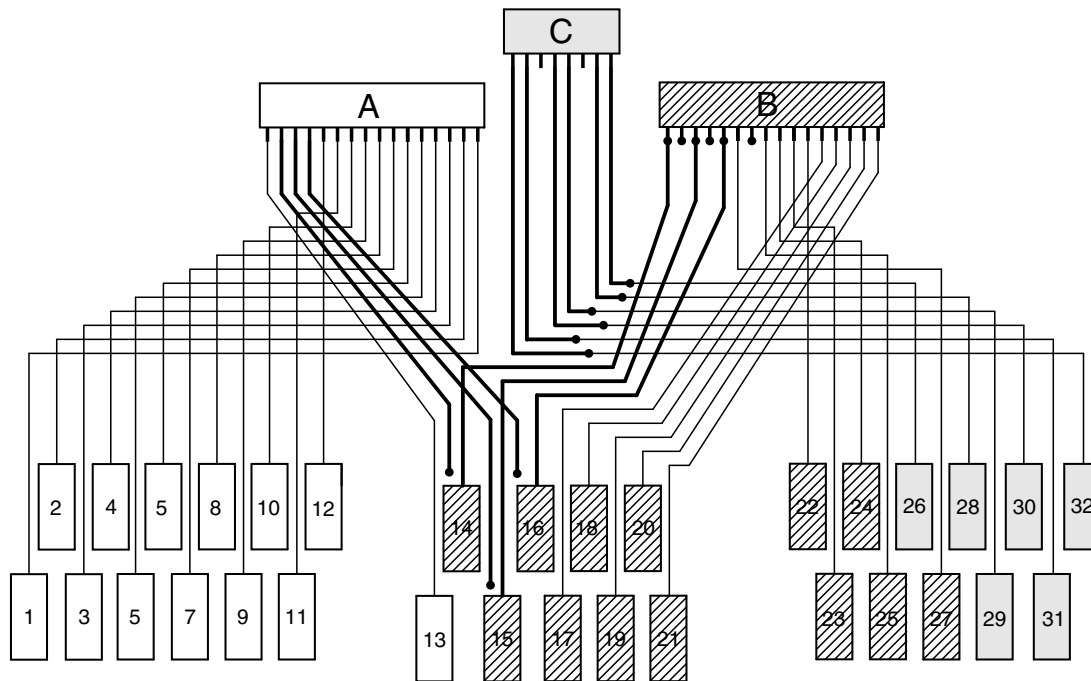
A—Hoses

B—Tie Strap

A56780 —UN—13JUL05

OUO6045,000068C -19-27APR09-9/9

Refuge Planting Diagram 32-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on the main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
26	154 mm (6 in.)
28	154 mm (6 in.)
29	154 mm (6 in.)
30	154 mm (6 in.)
31	154 mm (6 in.)
32	154 mm (6 in.)

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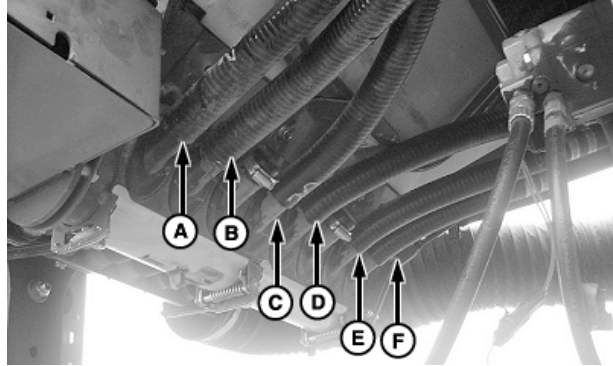
OUO6045,00006AC -19-27APR09-1/9

A56781—JUN—14SEP05

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
26	2337 mm (92 in.)
28	2540 mm (100 in.)
29	2464 mm (97 in.)
30	2464 mm (97 in.)
31	2438 mm (96 in.)
32	2337 mm (92 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—F) as shown. Leave vinyl caps on nozzles that are not used.



A56728—UN—03AUG05

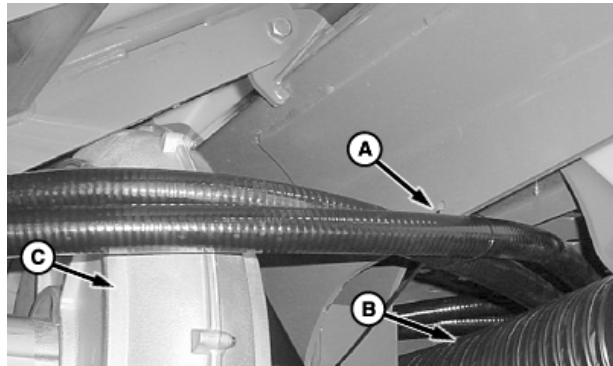
A—Row 32
B—Row 31
C—Row 30

D—Row 29
E—Row 28
F—Row 26

OUC6045,00006AC -19-27APR09-2/9

9. On left-hand side, route hoses for row 30, 31 and 32 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

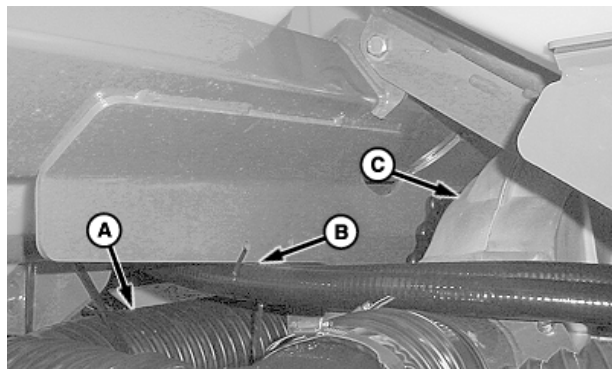


A56797—UN—15JUL05

OUC6045,00006AC -19-27APR09-3/9

11. On right-hand side, route hoses for row 26, 28 and 29 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan



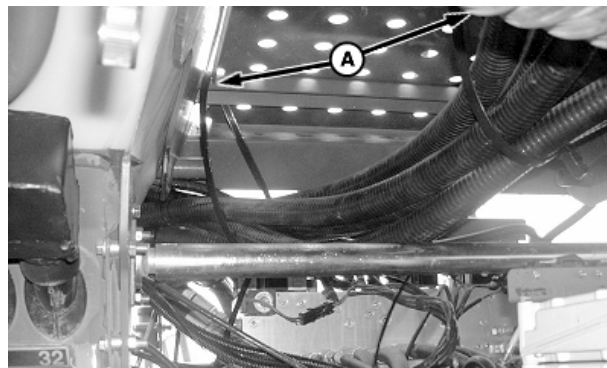
A56802—UN—15JUL05

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OUC6045,00006AC -19-27APR09-4/9

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).
14. Disconnect quick couplers on nozzles 26, 28, 29, 30, 31 and 32. Install yellow caps on tank side of hoses 26, 29 and 31.

A—Tie Strap (2 used)



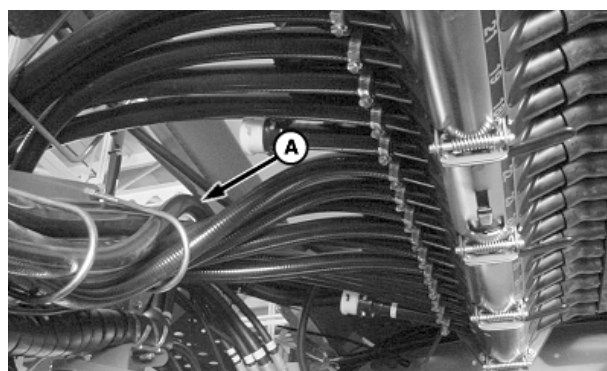
A56739 —UN—11JUL05

OUC6045,00006AC -19-27APR09-5/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

15. Route row unit hoses (A) over the top or to the back of existing hoses.

A—Hoses



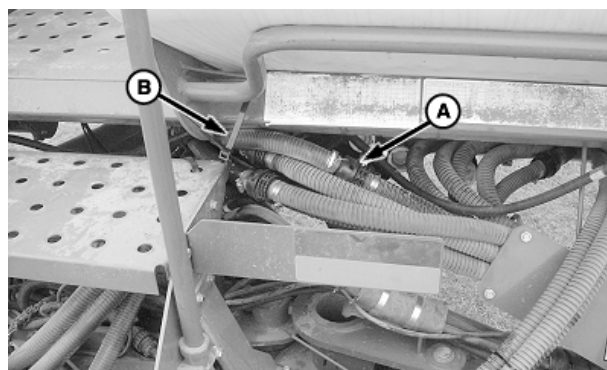
A56771 —UN—13JUL05

OUC6045,00006AC -19-27APR09-6/9

16. On right-hand side of platform, connect hoses (A) from Refuge Plus tank to row unit hoses in location shown.
17. Secure hoses to 101 mm (4 in.) square tube, using tie strap (B).
18. Disconnect hoses for rows 14, 15 and 16 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
19. Cut extension hoses from bulk hose for rows 14, 15 and 16 as described in the following chart.

Row Number	Length
14	2845 mm (112 in.)
15	2845 mm (112 in.)
16	2108 mm (83 in.)

20. Install a female coupler on one end and a male coupler to opposite end of each hose.
21. Install an O-ring in each female coupler.



A—Hoses

B—Tie Strap

A56785 —UN—14JUL05

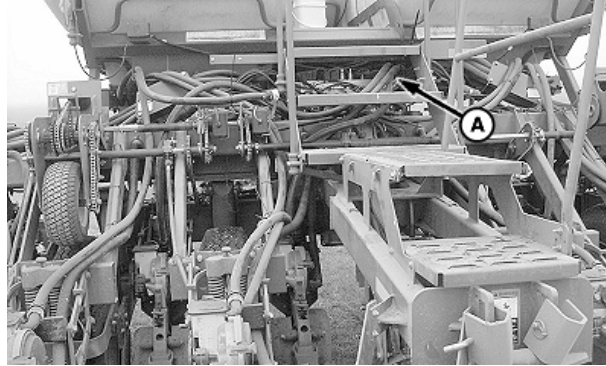
22. Mark both ends of each hose with row number, shown in chart, for future reference.

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OUC6045,00006AC -19-27APR09-7/9

23. Connect extension hoses (A) for rows 14, 15 and 16 to appropriate row units and route to right-hand CCS tank.

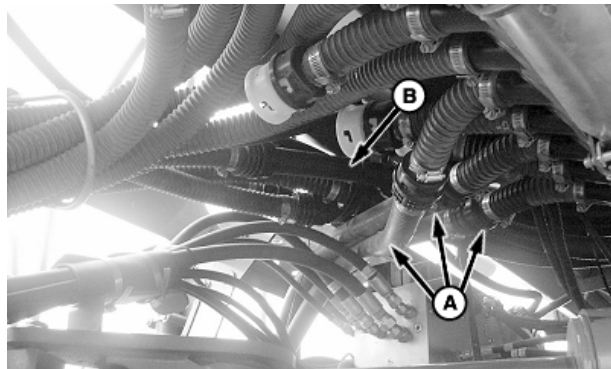
A—Hoses



A56772 —UN—13JUL05

OUC6045,00006AC -19-27APR09-8/9

24. Route extension hoses (A) from row units 14, 15 and 16 under hoses going to wing (B).
25. Connect hose from row 14 to nozzle 32, hose from row 15 to nozzle 30 and hose from row 16 to nozzle 28.
26. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
27. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



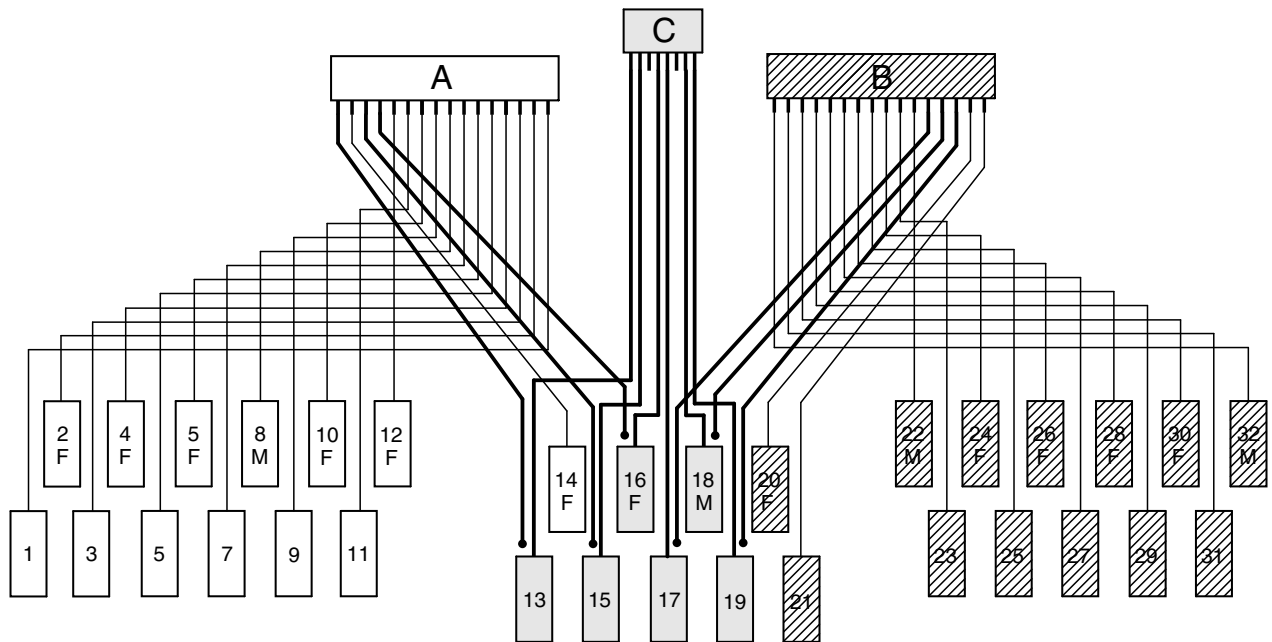
A56790 —UN—14JUL05

A—Hoses

B—Hoses

OUC6045,00006AC -19-27APR09-9/9

Extra Capacity Center Planting Diagram 32-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 13, 15, 16, 17, 18, and 19 at the row units. Install a yellow cap on the end of each hose. Secure hoses to frame with tie straps to keep them from being damaged.
4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
13	4978 mm (196 in.)
15	4420 mm (174 in.)
16	3454 mm (136 in.)
17	4166 mm (164 in.)
18	3454 mm (136 in.)
19	4318 mm (170 in.)

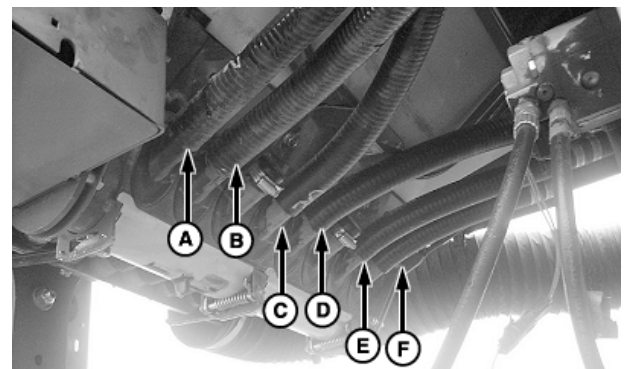
5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.

OUO6045,00006AB -19-27APR09-1/7

8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—F) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 13
B—Row 15
C—Row 16

D—Row 17
E—Row 18
F—Row 19

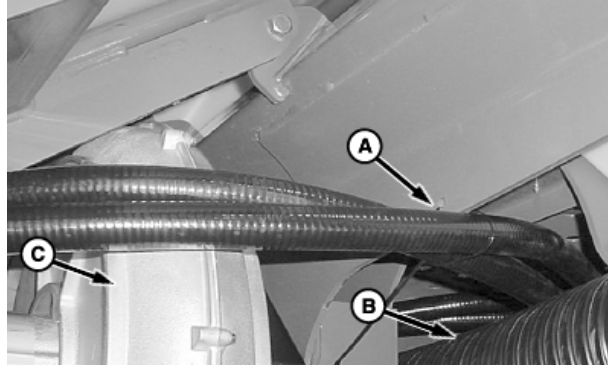


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OUO6045,00006AB -19-27APR09-2/7

9. On left-hand side, route hoses for rows 13, 15 and 16 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

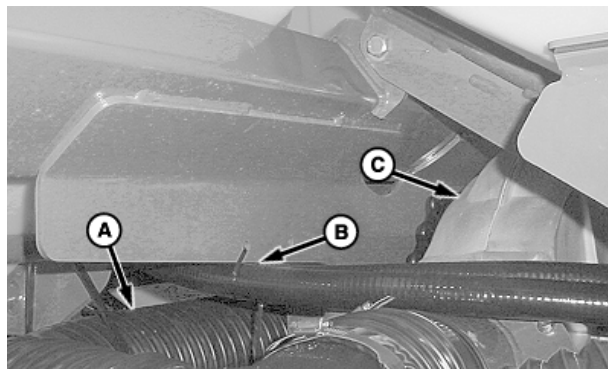


A56797—UN—15JUL05

OUC6045,00006AB -19-27APR09-3/7

11. On right-hand side, route hoses for rows 17, 18 and 19 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan

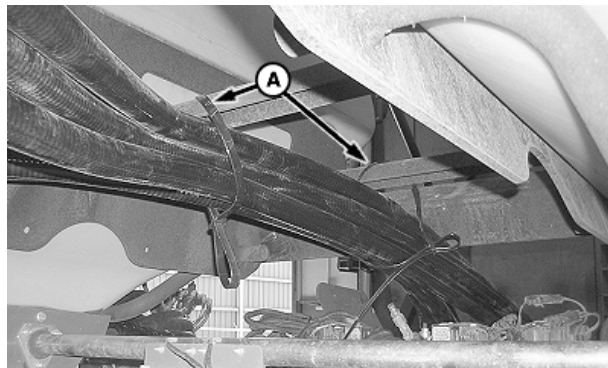


A56802—UN—15JUL05

OUC6045,00006AB -19-27APR09-4/7

13. Route hoses to rear of machine and secure hoses loosely under platform using tie straps (A).

A—Tie Strap (2 used)



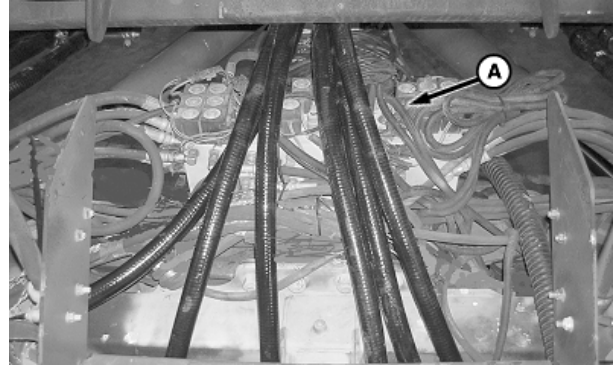
A56773—UN—13JUL05

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OUC6045,00006AB -19-27APR09-5/7

14. Route hoses over valve block (A).

A—Valve Block

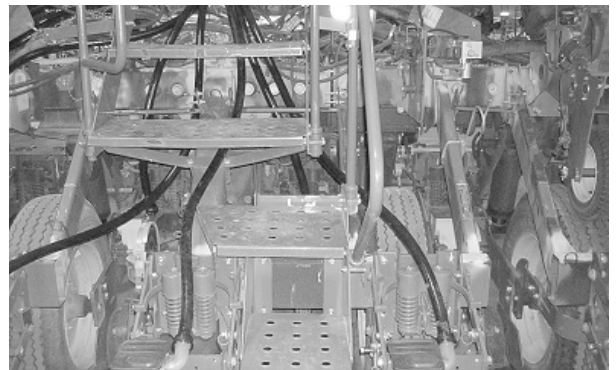


Top Step Removed For Clarity

OUO6045,00006AB -19-27APR09-6/7

A56774 —UN—13JUL05

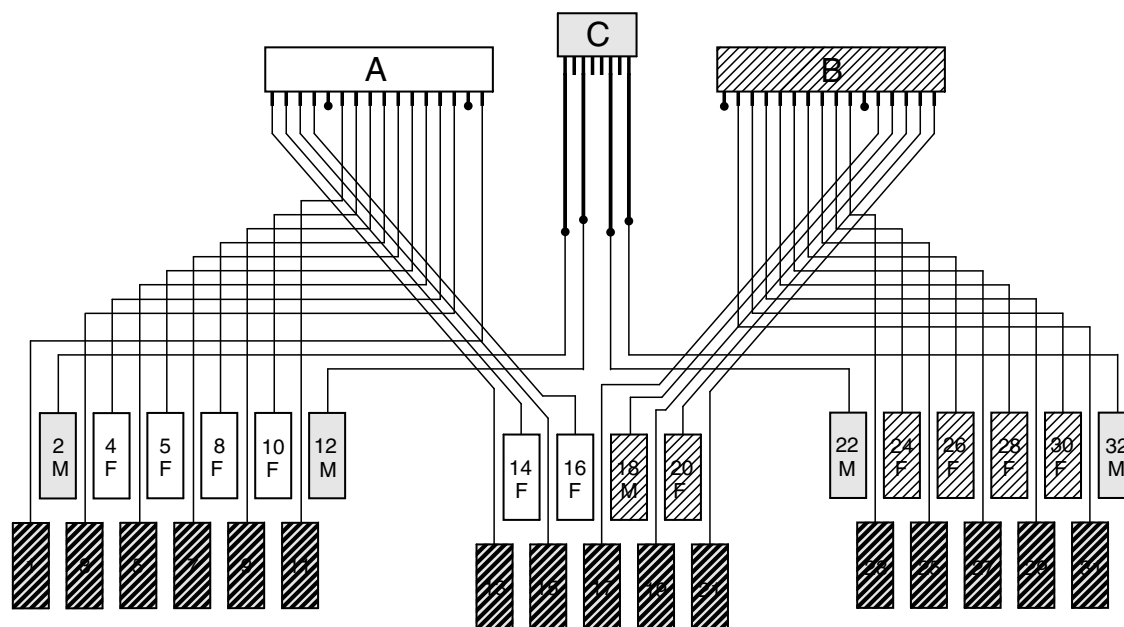
15. Connect corresponding hose from Refuge Plus tank to corresponding row unit.
16. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
17. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



OUO6045,00006AB -19-27APR09-7/7

A56775 —UN—13JUL05

1-4-1-4 Seed Corn Planting Diagram 32-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance from Tank Nozzles
2	154 mm (6 in.)
12	154 mm (6 in.)
22	154 mm (6 in.)
32	154 mm (6 in.)

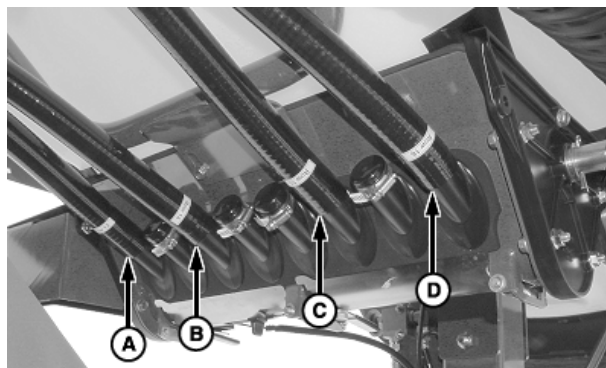
OUO6045.00006AD -19-27APR09-1/9

A56776 —UN—31AUG05

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
2	2311 mm (91 in.)
12	2540 mm (100 in.)
22	2540 mm (100 in.)
32	2311 mm (91 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—D) as shown. Leave vinyl caps on nozzles that are not used.

A—Row 2
B—Row 12C—Row 22
D—Row 32

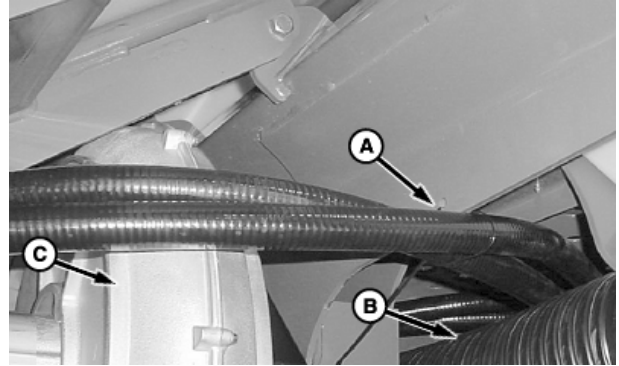
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OUO6045.00006AD -19-27APR09-2/9

A56408 —UN—01AUG05

9. On left-hand side, route hoses for row 2 and 12 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS support using tie strap (A).

A—Tie Strap C—CCS Fan
B—154 mm (6 in.) Air Hose

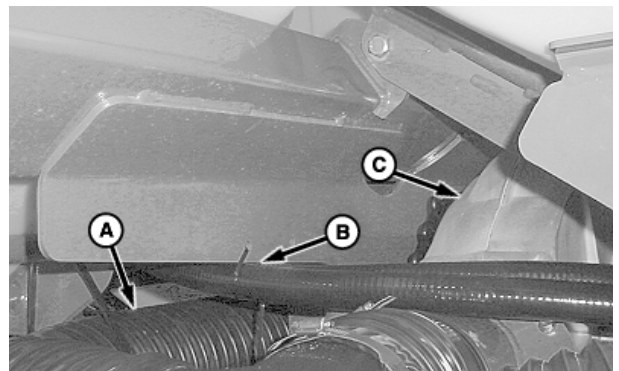


A56797 —UN—15JUL05

OUO6045,00006AD -19-27APR09-3/9

11. On right-hand side, route hoses for row 22 and 32 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap

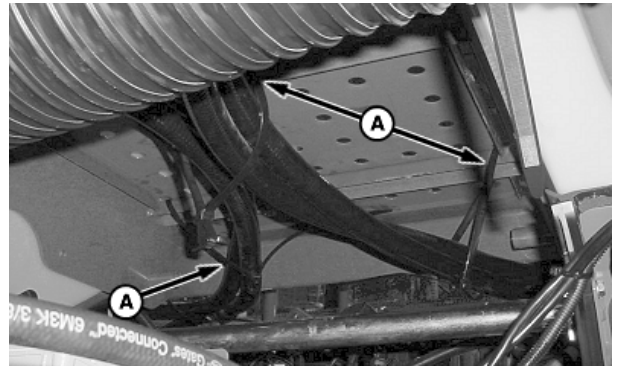


A56802 —UN—15JUL05

OUO6045,00006AD -19-27APR09-4/9

13. Secure hoses loosely under platform using tie straps (A).
14. Disconnect quick couplers on nozzles 2, 12, 22 and 32 coming from CCS tanks. Install yellow caps on tank side of hoses 2, 12, 22 and 32.

A—Tie Strap (3 used)



A56778 —UN—30AUG05

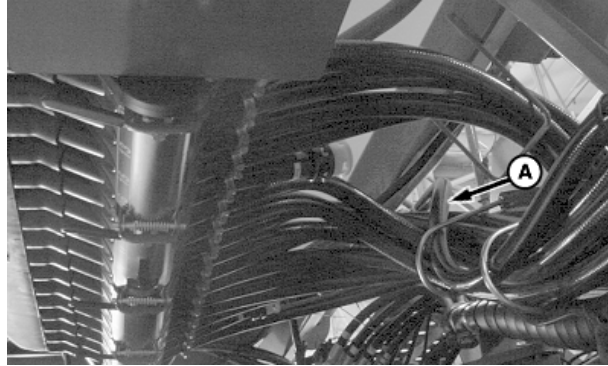
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OUO6045,00006AD -19-27APR09-5/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

15. Route row unit hoses for row 2 and 12 (A) over top of existing row unit hoses as shown.

A—Hoses



A56756 —UN—11JUL05

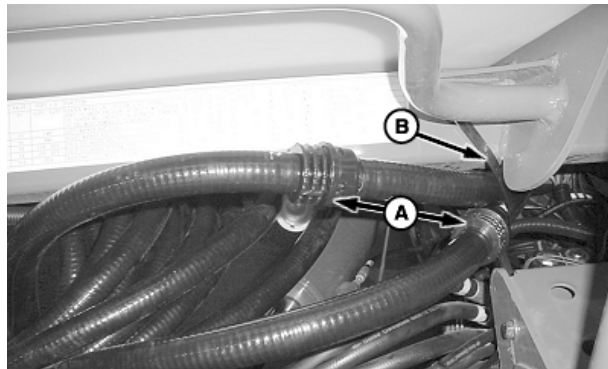
OOU6045,00006AD -19-27APR09-6/9

16. On left-hand side of platform, connect hoses (A) from Refuge Plus tank to row unit hoses 2 and 12 in location shown.

17. Secure hoses to 101 mm (4 in.) square tube using tie strap (B).

A—Hoses

B—Tie Strap



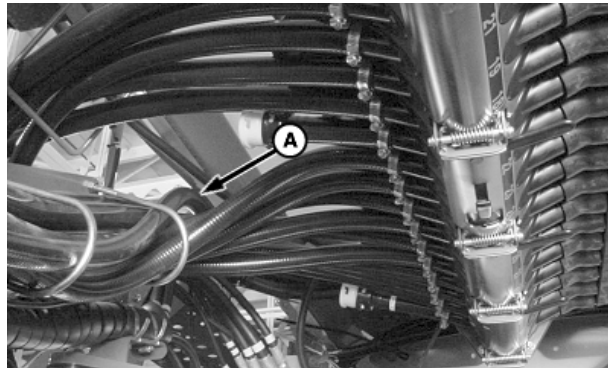
A56779 —UN—13JUL05

OOU6045,00006AD -19-27APR09-7/9

IMPORTANT: Hoses must be routed over or in back of existing hoses. Routing hoses under existing hoses will result in contact wear with the fold cylinder lugs.

18. Route row unit hoses for row 22 and 32 (A) over top of existing row unit hoses as shown.

A—Hoses

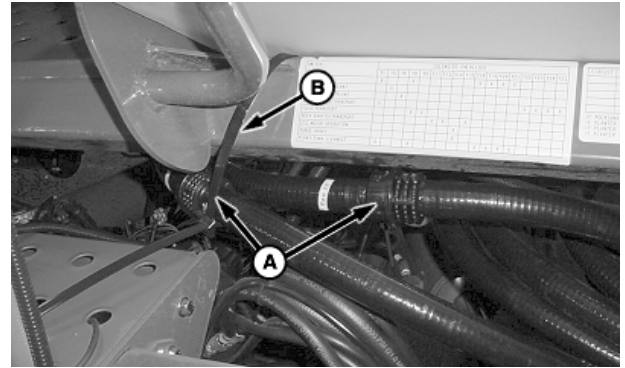


A56771 —UN—13JUL05

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OOU6045,00006AD -19-27APR09-8/9

19. On right-hand side of platform, connect hoses (A) from Refuge Plus tank to row unit hoses 22 and 32 in location shown.
20. Secure hoses to 101 mm (4 in.) square tube using tie strap (B).
21. Carefully fold the machine the first time. Watch hoses between rear of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that hoses are laying and moving properly.
22. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



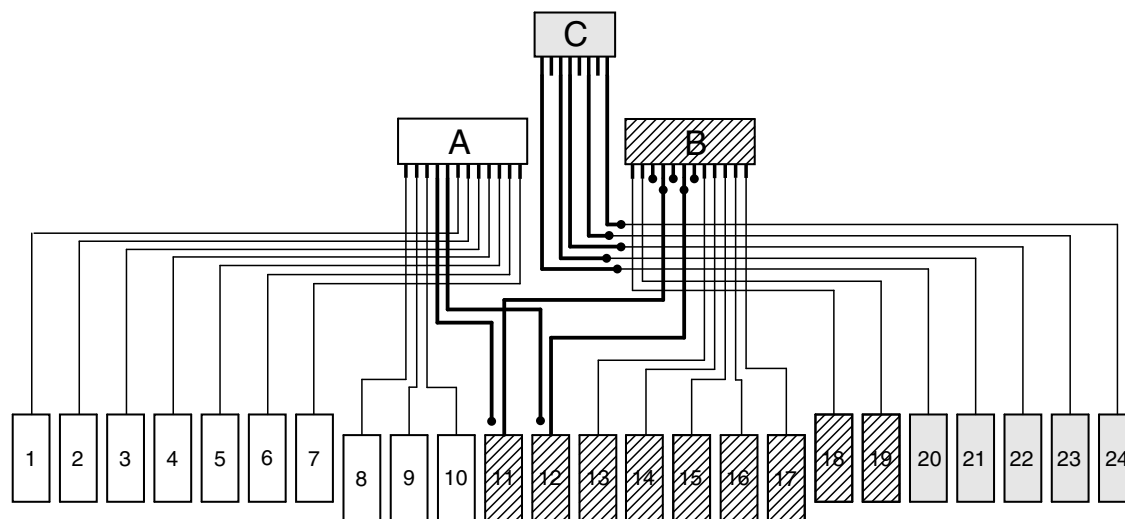
A—Hoses

B—Tie Strap

A56780 —UN—13JUL05

OUO6045,00006AD -19-27APR09-9/9

Refuge Planting Diagram DB44 24-Row 56 cm (22 in.)



A56934 —UN—31AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.

4. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

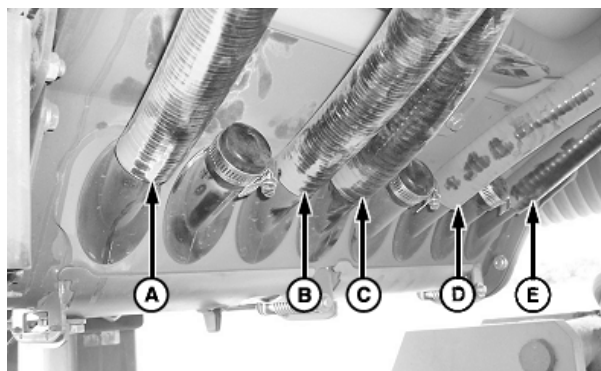
Row Number	Length
20	154 mm (6 in.)
21	154 mm (6 in.)
22	154 mm (6 in.)
23	154 mm (6 in.)
24	154 mm (6 in.)

OUO6045,000068E -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
20	2616 mm (103 in.)
21	2743 mm (108 in.)
22	2845 mm (112 in.)
23	2540 mm (100 in.)
24	2565 mm (101 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart, for future reference.
9. Remove vinyl caps and install hoses (A—E) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



**A—Row 20
B—Row 21
C—Row 22**

**D—Row 23
E—Row 24**

A56931 —UN—09AUG05

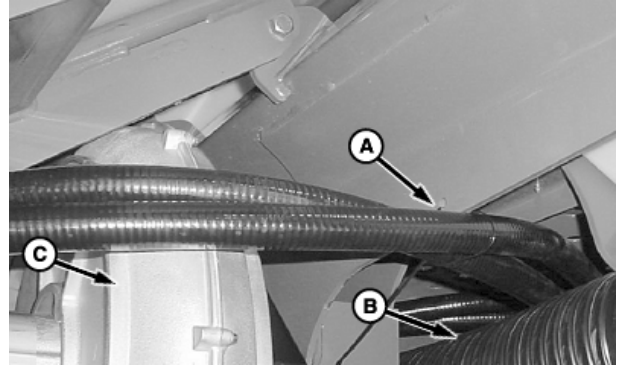
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OUO6045,000068E -19-27APR09-2/6

10. Route hoses for row 20, 21 and 22 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
11. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



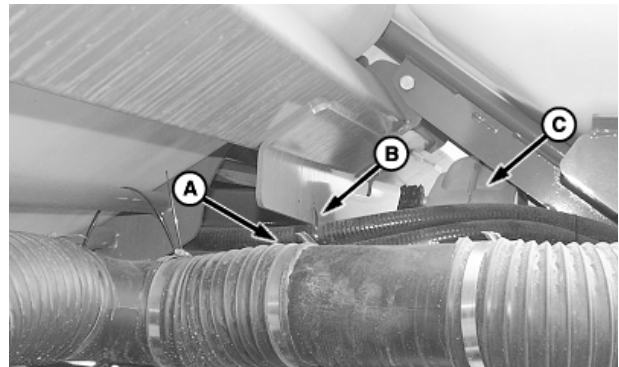
A56797 —UN—15JUL05

OUO6045,000068E -19-27APR09-3/6

12. Route hoses for row 23 and 24 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
13. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



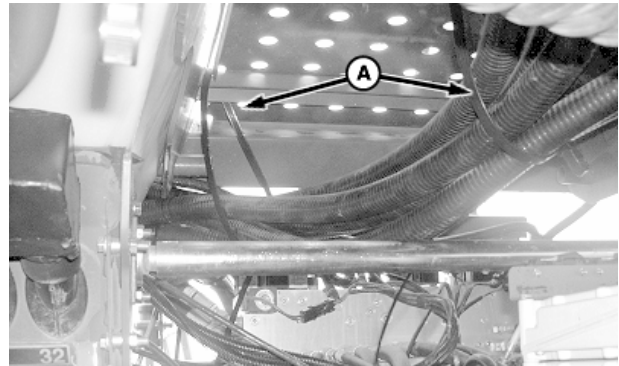
A56804 —UN—18JUL05

OUO6045,000068E -19-27APR09-4/6

14. Route all hoses toward rear of machine and loosely secure to cross braces under platform using tie straps (A).
15. Disconnect hose couplers on nozzles 20, 21, 22, 23 and 24. Install yellow caps on tank side of hoses 20, 22 and 24.
16. Connect hoses from Refuge Plus tank to row unit hoses.
17. Disconnect seed delivery hoses from rows 11 and 12. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.
18. Cut hoses from bulk hose for rows 11 and 12 as described in the following chart.

Row Number	Length
11	2286 mm (90 in.)
12	2184 mm (86 in.)

19. Install a female coupler to one end and male coupler to opposite end of each hose.



A56932 —UN—09AUG05

A—Tie Strap (2 used)

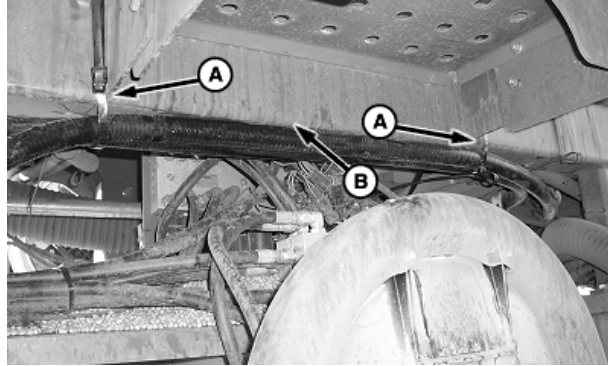
20. Install an O-ring in each female coupler.

21. Mark both ends of each hose with row number, shown in chart, for future reference.

Continued on next page

OUO6045,000068E -19-27APR09-5/6

22. Connect hose for row 11 to nozzle 21 and hose for row 12 to nozzle 23.
23. Secure hoses under 101 x 154 mm (4 x 6 in.) tube (B) using tie straps (A).
24. Route hoses to rows 11 and 12 and connect.
25. Carefully fold the machine the first time. Watch hoses between ends of CCS tanks and support bracket on the inner wings. Ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that the hoses are laying and moving properly.
26. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



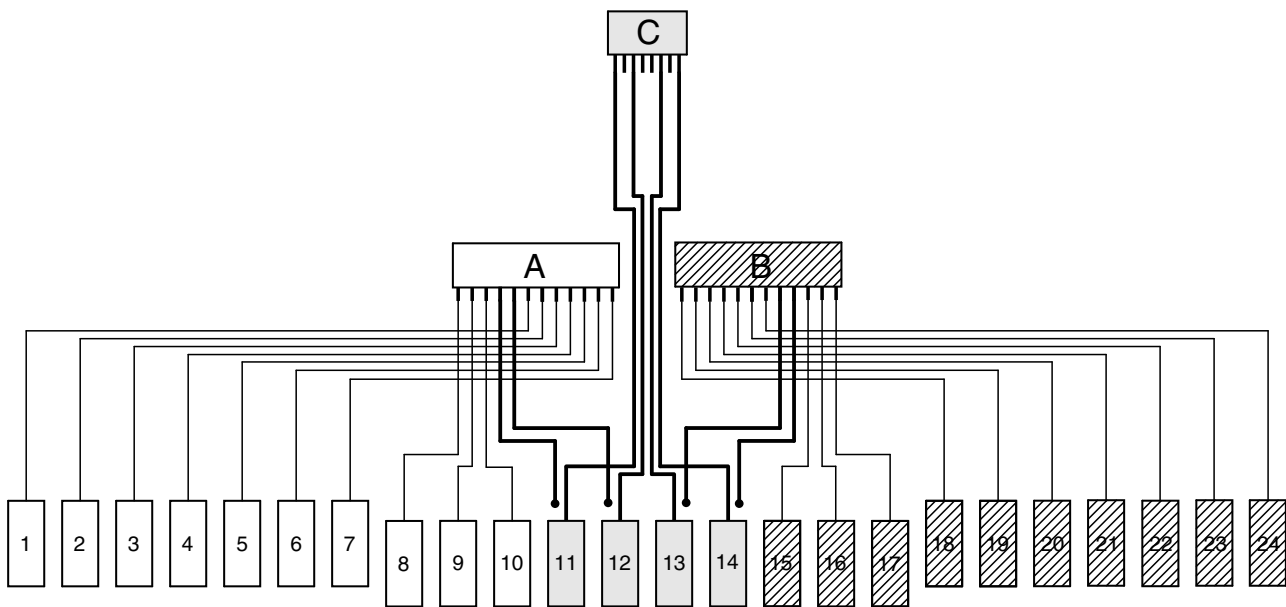
A56933 —UN—09AUG05

A—Tie Strap (2 used)

B—101 mm x 154 mm (4 x 6 in.)
Tube

OUO6045,000068E -19-27APR09-6/6

Extra Capacity Planting Diagram DB44 24-Row 56 cm (22 in.)



A56467 —UN—31AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses at rows 11, 12, 13 and 14. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

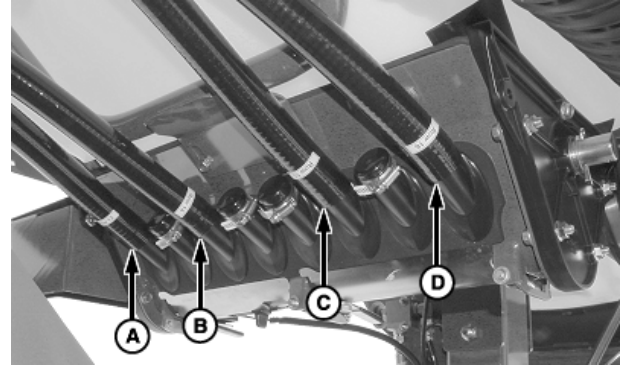
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OUO6045,000068F -19-27APR09-1/6

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
11	3302 mm (130 in.)
12	3251 mm (128 in.)
13	3251 mm (128 in.)
14	3302 mm (130 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—D) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 11
B—Row 12

C—Row 13
D—Row 14

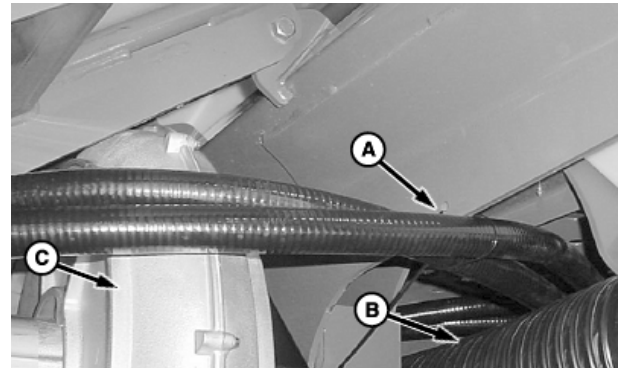
OUO6045,000068F -19-27APR09-2/6

A56408 —UN—01AUG05

9. Route hoses for row 11 and 12 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



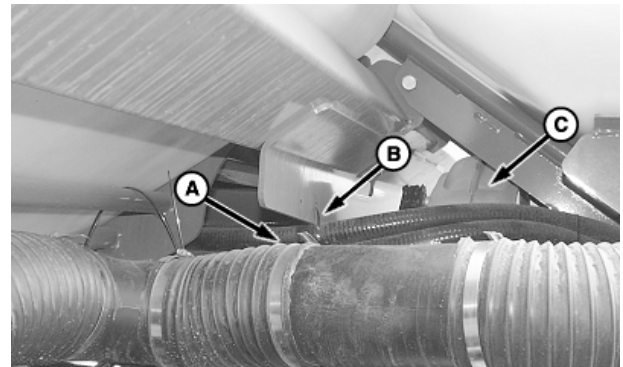
OUO6045,000068F -19-27APR09-3/6

A56797 —UN—15JUL05

11. Route hoses for row 13 and 14 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hose to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



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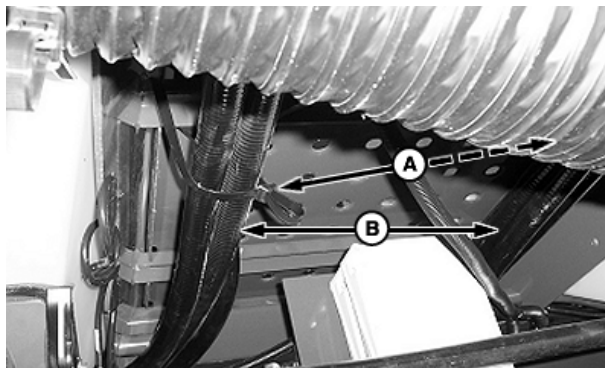
OUO6045,000068F -19-27APR09-4/6

A56804 —UN—18JUL05

13. Route hoses (B) to rear of machine and secure loosely under platform with tie strap (A). Hoses for rows 11 and 12 go under left side of platform. Hoses for rows 13 and 14 go under right side of platform.

A—Tie Strap (2 used)

B—Hoses



A57039—UN—31AUG05

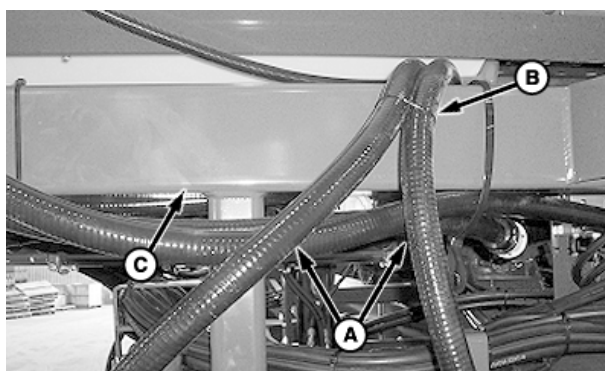
OUC6045,000068F -19-27APR09-5/6

14. Route hoses (A) for row 11 and 12 over 101 x 154 mm (4 x 6 in.) tube (C) and connect to row units. Tie hoses together using tie strap (B).

15. Repeat on opposite side of platform for rows 13 and 14.

16. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.

17. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



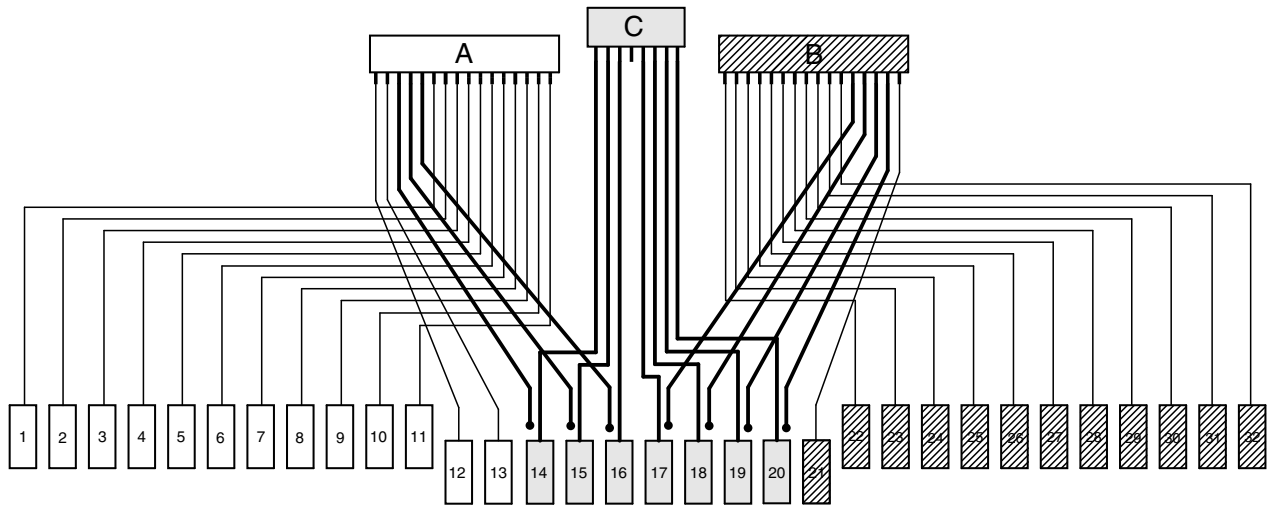
A57040—UN—31AUG05

A—Hoses
B—Tie Strap

C—101 x 154 mm (4 x 6 in.)
Tube

OUC6045,000068F -19-27APR09-6/6

Refuge Planting Diagram DB58 32-Row 56 cm (22 in.)



A56935 —UN—11AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

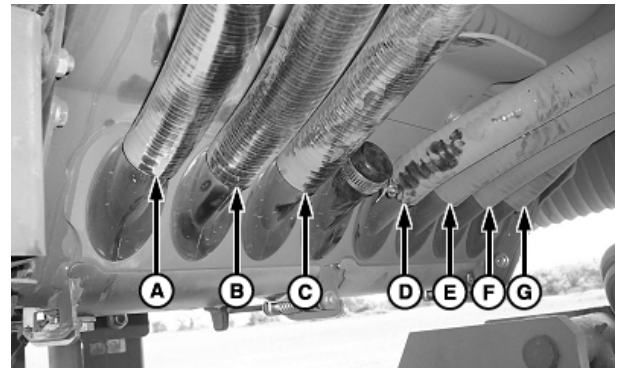
1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 14, 15, 16, 17, 18, 19 and 20. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

OUO6045,0000690 -19-27APR09-1/6

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
14	3607 mm (142 in.)
15	3302 mm (130 in.)
16	3251 mm (128 in.)
17	3251 mm (128 in.)
18	3302 mm (130 in.)
19	3607 mm (142 in.)
20	4115 mm (162 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—G) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 14
B—Row 15
C—Row 16
D—Row 17

E—Row 18
F—Row 19
G—Row 20

A56941 —UN—09AUG05

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OUO6045,0000690 -19-27APR09-2/6

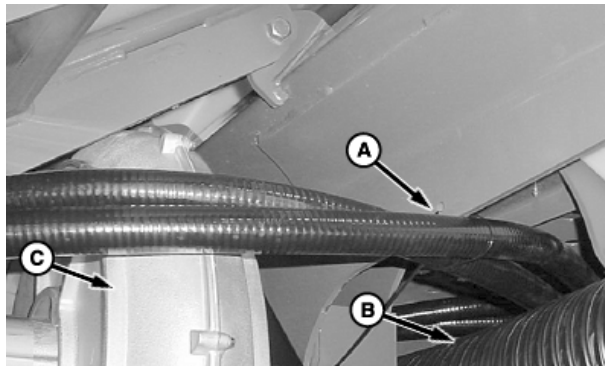
9. On left-hand side, route hoses for row 14, 15 and 16 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

10. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797—UN—15JUL05

OUC6045,0000690 -19-27APR09-3/6

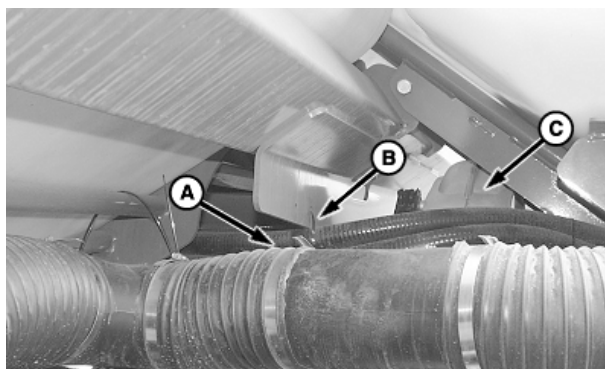
11. On right-hand side, route hoses for row 17, 18, 19 and 20 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

12. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose

B—Tie Strap

C—CCS Fan



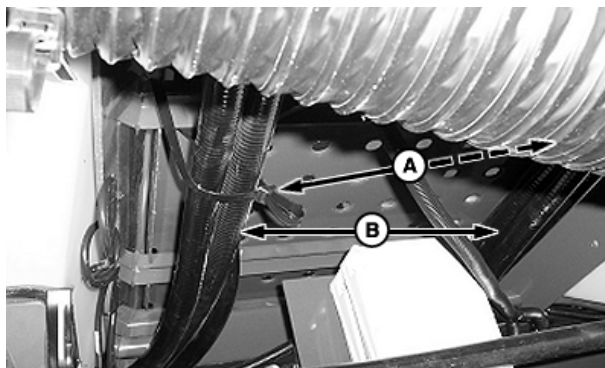
A56804—UN—18JUL05

OUC6045,0000690 -19-27APR09-4/6

13. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 14, 15 and 16 are routed under left side of platform. Hoses for rows 17, 18, 19 and 20 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses

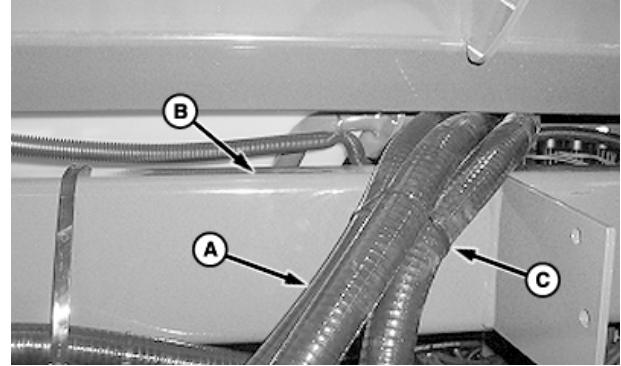


A57039—UN—31AUG05

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OUC6045,0000690 -19-27APR09-5/6

14. Route hoses for rows 14, 15 and 16 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
15. Repeat on opposite side for rows 17, 18, 19 and 20.
16. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
17. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



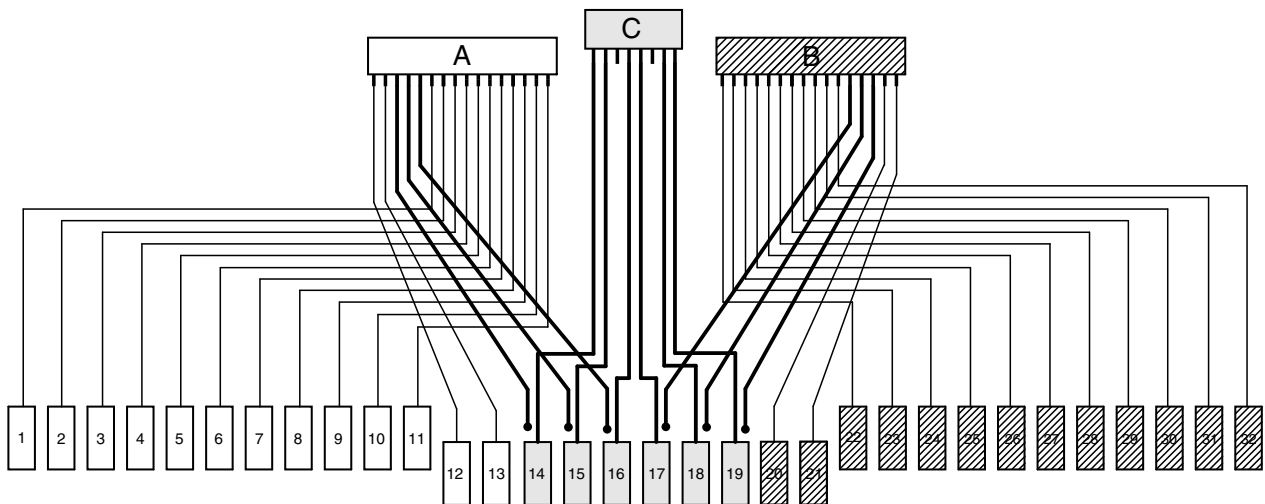
A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

A57041 —UN—31AUG05

OUO6045,0000690 -19-27APR09-6/6

Extra Capacity Planting Diagram DB58 32-Row 56 cm (22 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 14, 15, 16, 17, 18 and 19. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

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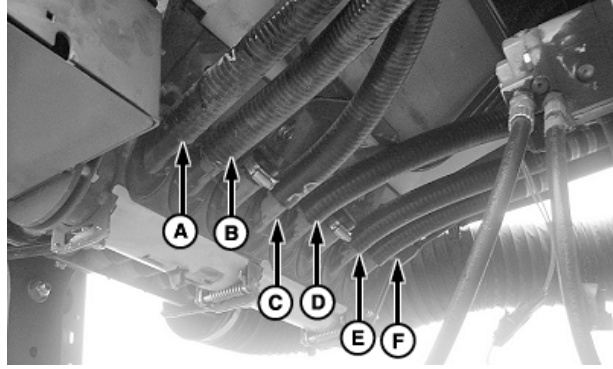
OUO6045,0000691 -19-27APR09-1/6

A56936 —UN—11AUG05

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
14	3607 mm (142 in.)
15	3302 mm (130 in.)
16	3251 mm (128 in.)
17	3251 mm (128 in.)
18	3302 mm (130 in.)
19	3607 mm (142 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A56728—UN—03AUG05

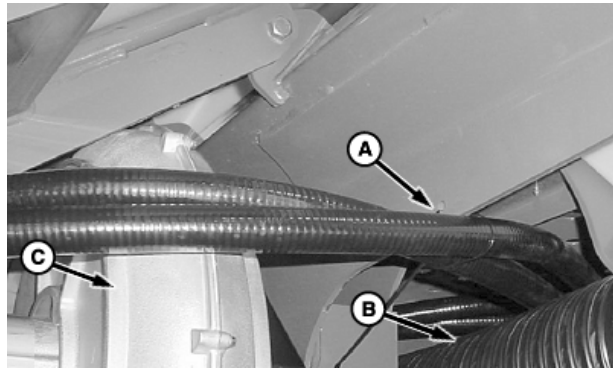
A—Row 14
B—Row 15
C—Row 16

D—Row 17
E—Row 18
F—Row 19

OUO6045,0000691 -19-27APR09-2/6

9. On left-hand side, route hoses for row 14, 15 and 16 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
10. Secure hoses to tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan

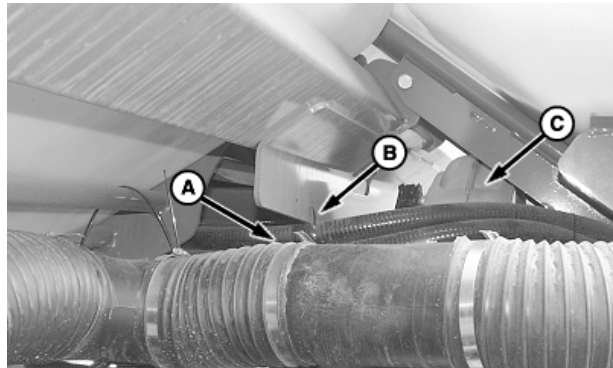


A56797—UN—15JUL05

OUO6045,0000691 -19-27APR09-3/6

11. On right-hand side, route hoses for row 17, 18 and 19 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan



A56804—UN—18JUL05

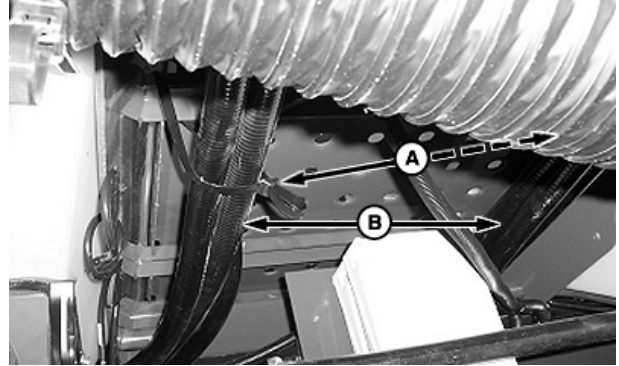
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OUO6045,0000691 -19-27APR09-4/6

13. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 14, 15 and 16 are routed under left side of platform. Hoses for rows 17, 18 and 19 are routed under right side of platform.

A—Tie Strap (2 used)

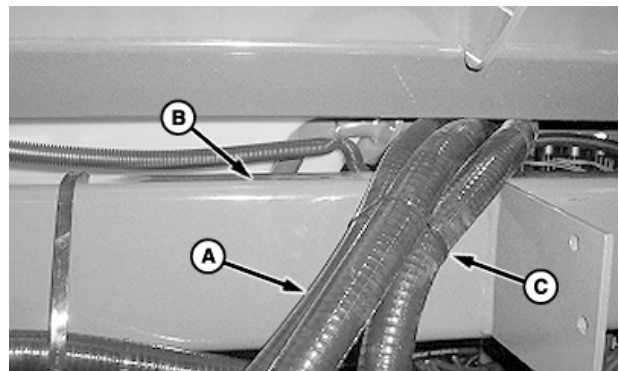
B—Hoses



A57039 —UN—31AUG05

OUO6045,0000691 -19-27APR09-5/6

14. Route hoses for rows 14, 15 and 16 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
15. Repeat on opposite side for rows 17, 18 and 19.
16. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
17. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



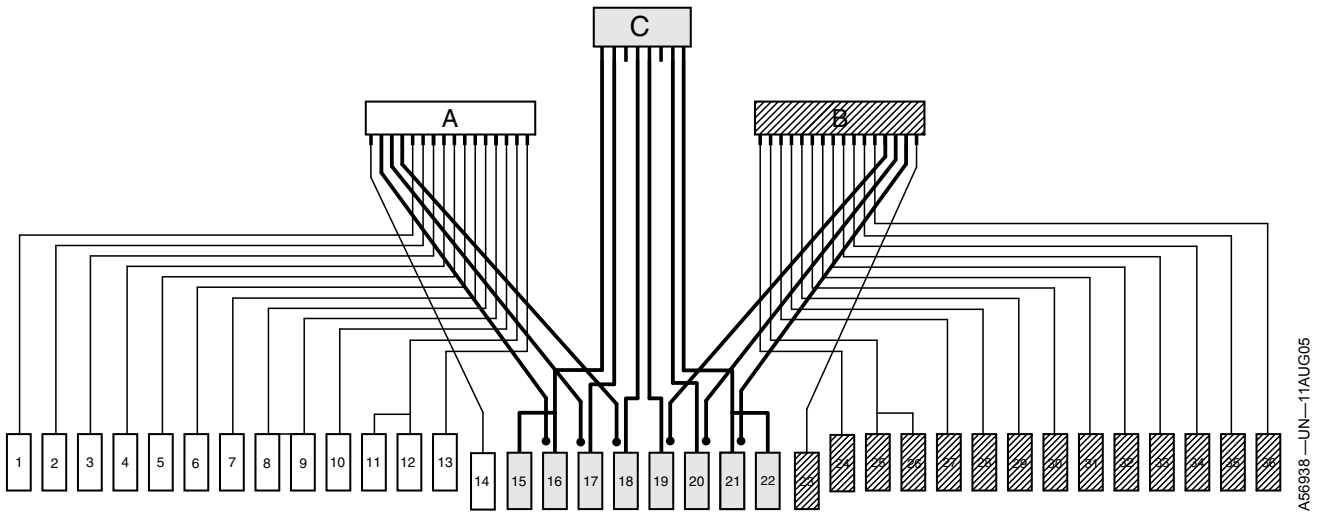
A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

A57041 —UN—31AUG05

OUO6045,0000691 -19-27APR09-6/6

Refuge Planting Diagram DB60 36-Row 51 cm (20 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 16, 17, 18, 19, 20 and 21. Install a yellow cap on each hose.

Secure hoses to frame using tie straps to keep them from being damaged.

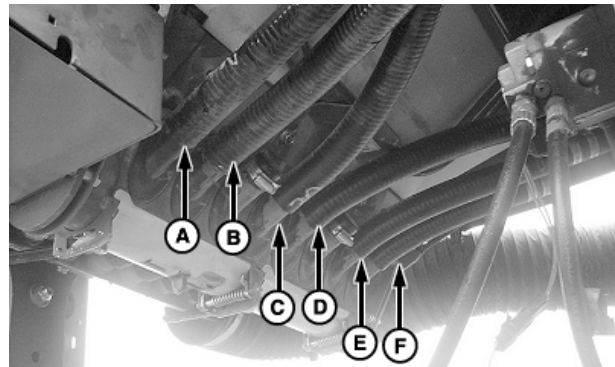
4. Leave jumper hoses from row 16 to row 15 and row 21 to row 22 connected.

OUO6045,0000695 -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
16	3480 mm (137 in.)
17	3251 mm (128 in.)
18	3251 mm (128 in.)
19	3251 mm (128 in.)
20	3251 mm (128 in.)
21	3480 mm (137 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart, for future reference.
9. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 16
B—Row 17
C—Row 18

D—Row 19
E—Row 20
F—Row 21

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OUO6045,0000695 -19-27APR09-2/6

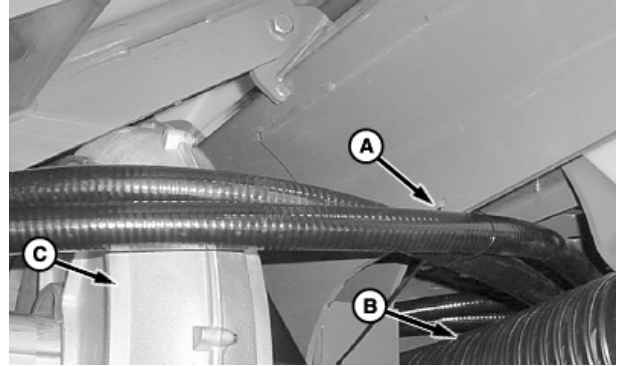
10. On left-hand side, route hoses for row 16, 17 and 18 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

11. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797 —UN—15JUL05

OUO6045,0000695 -19-27APR09-3/6

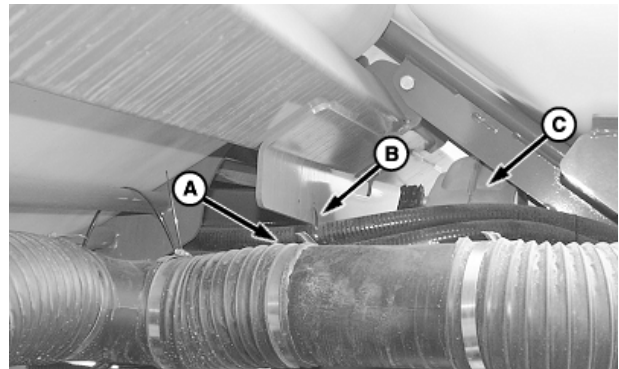
12. On right-hand side, route hoses for row 19, 20 and 21 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

13. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose

B—Tie Strap

C—CCS Fan



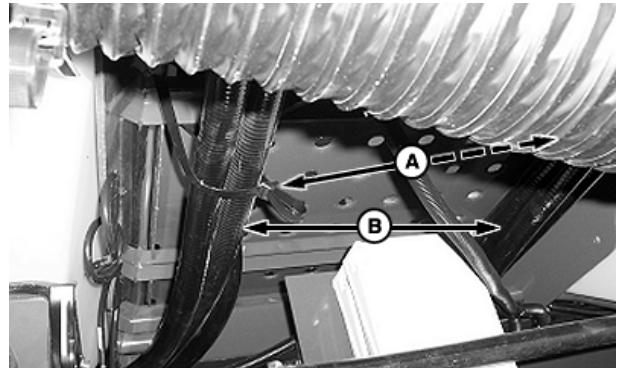
A56804 —UN—18JUL05

OUO6045,0000695 -19-27APR09-4/6

14. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 16, 17 and 18 are routed under left side of platform. Hoses for rows 19, 20 and 21 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses



A57039 —UN—31AUG05

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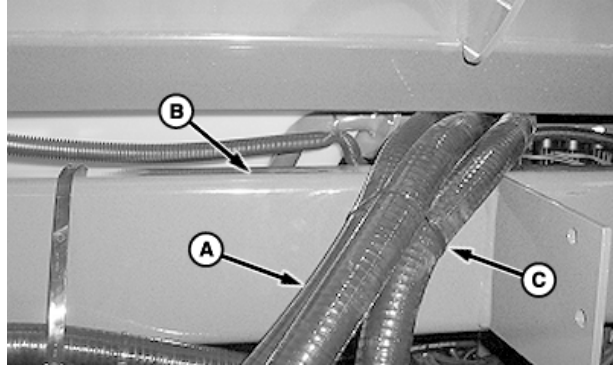
OUO6045,0000695 -19-27APR09-5/6

15. Route hoses for rows 16, 17 and 18 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).

16. Repeat on opposite side for rows 19, 20 and 21.

17. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.

18. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



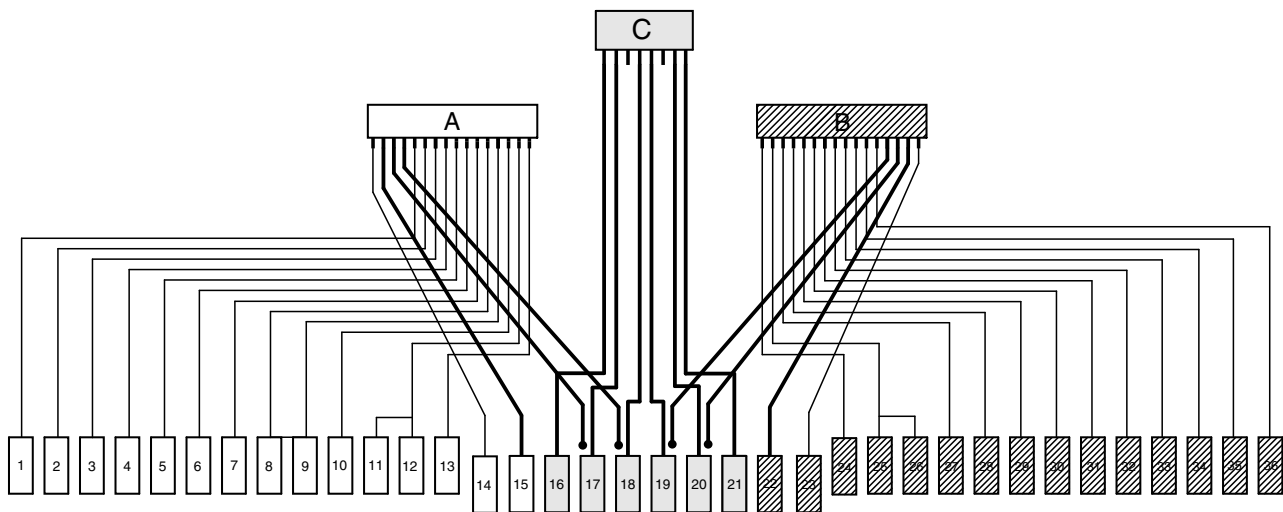
A57041—UN—31AUG05

A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

OUO6045,0000695 -19-27APR09-6/6

Extra Capacity Planting Diagram DB60 36-Row 51 cm (20 in.)



A56837—UN—11AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.

2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.

3. Remove jumper hoses from row 16 to row 15 and row 21 to row 22.

4. Move original hose from row 16 to row 15.

5. Move original hose from row 21 to row 22.

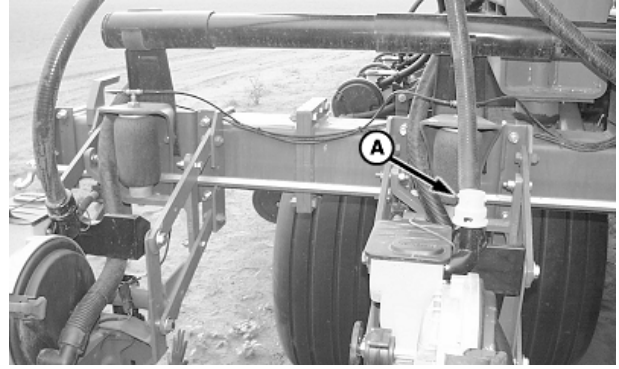
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OUO6045,00006AE -19-27APR09-1/7

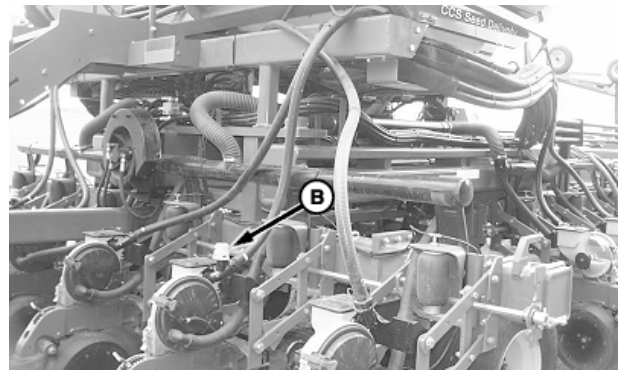
6. Install yellow caps with an O-ring on the vertical port of the inlet fitting on rows 16 (A) and 21 (B).
7. Disconnect seed delivery hoses from rows 17, 18, 19 and 20. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

A—Row 16

B—Row 21



A56812 —UN—19JUL05



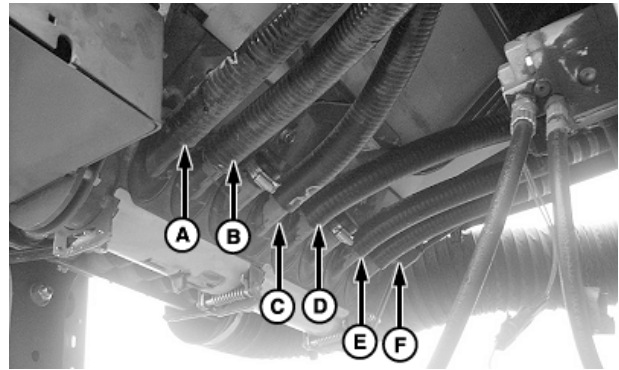
A56813 —UN—19JUL05

OUO6045,00006AE -19-27APR09-2/7

8. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
16	3480 mm (137 in.)
17	3251 mm (128 in.)
18	3251 mm (128 in.)
19	3251 mm (128 in.)
20	3251 mm (128 in.)
21	3480 mm (137 in.)

9. Install a female coupler to one end of each hose.
10. Install an O-ring in each female coupler.
11. Mark both ends of each hose with row number, shown in chart, for future reference.
12. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A56728 —UN—03AUG05

A—Row 16
B—Row 17
C—Row 18

D—Row 19
E—Row 20
F—Row 21

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OUO6045,00006AE -19-27APR09-3/7

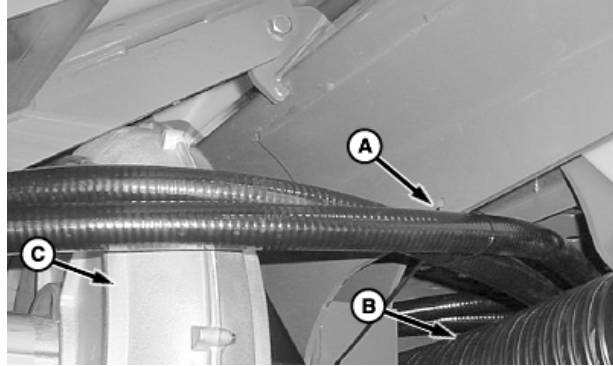
13. On left-hand side, route hoses for row 16, 17 and 18 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

14. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797—UN—15JUL05

OUC6045,00006AE -19-27APR09-4/7

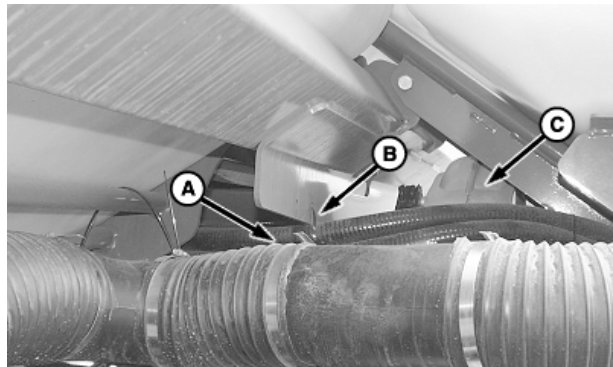
15. On right-hand side, route hoses for row 19, 20 and 21 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

16. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose

B—Tie Strap

C—CCS Fan



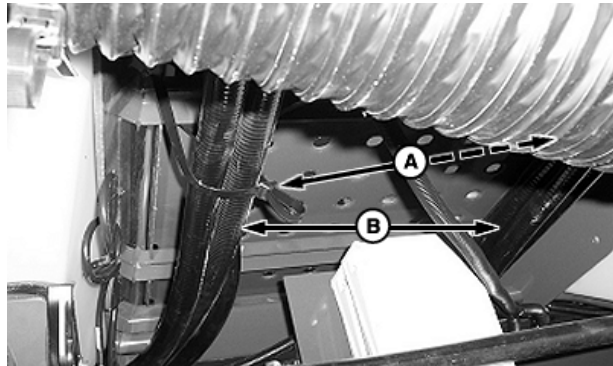
A56804—UN—18JUL05

OUC6045,00006AE -19-27APR09-5/7

17. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 16, 17 and 18 are routed under left side of platform. Hoses for rows 19, 20 and 21 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses

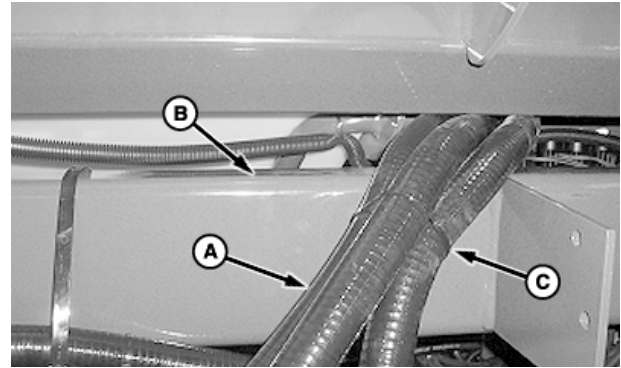


A57039—UN—31AUG05

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OUC6045,00006AE -19-27APR09-6/7

18. Route hoses for rows 16, 17 and 18 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
19. Repeat on opposite side for rows 19, 20 and 21.
20. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
21. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



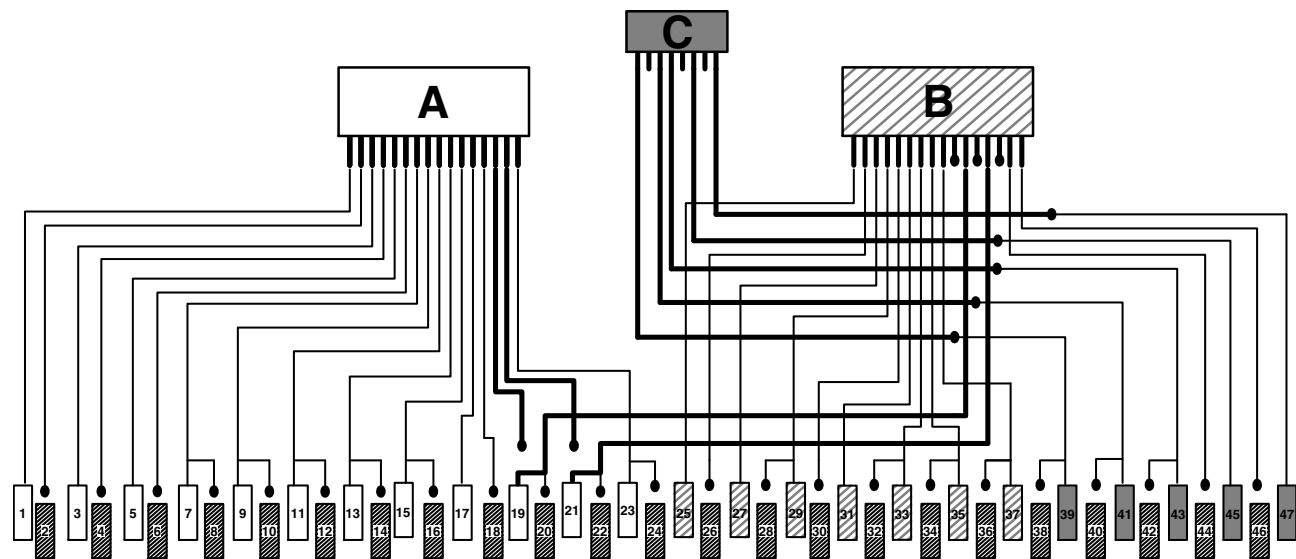
A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

OUO6045,00006AE -19-27APR09-7/7

A57041 —UN—31AUG05

Refuge Planting Diagram DB60 47-Row 38 cm (15 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.

In this configuration, rows 39, 41, 43, 44, and 47 are connected to the refuge tank. Rows 19 and 21 are disconnected from left CCS tank and connected to the right CCS tank so the two main tanks empty more evenly.

2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.

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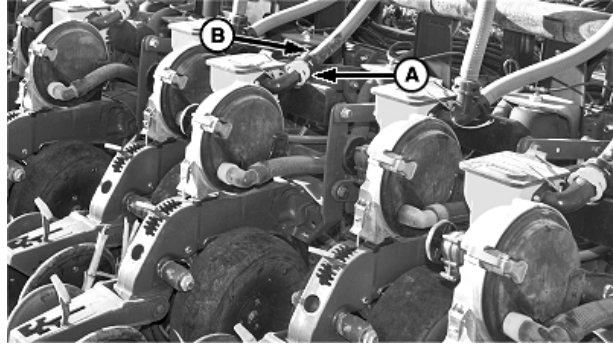
OUO6045,0000B23 -19-27APR09-1/7

A62071 —UN—04MAR08

4. Remove all jumper hoses (B) and seed delivery hoses going to rear rank row units. Install a yellow cap (A) with an O-ring on the vertical port of all rows as shown. Reconnect hoses to vertical port with yellow cap.

5. Cut and splice hoses on right-hand CCS tank as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
39	154 mm (6 in.)
41	154 mm (6 in.)
43	154 mm (6 in.)
44	154 mm (6 in.)
45	154 mm (6 in.)
46	154 mm (6 in.)



A—Yellow Cap

B—Jumper Hose

A62912 —UN—18JUL08

OUO6045,0000B23 -19-27APR09-2/7

6. Measure hose going to row 47 from the end of tank cradle (A) and cut and splice in location (B) as described in the following chart.

Row Number	Distance from End of tank Cradle
47	610 mm (24 in.)

A—Tank Cradle

B—Location



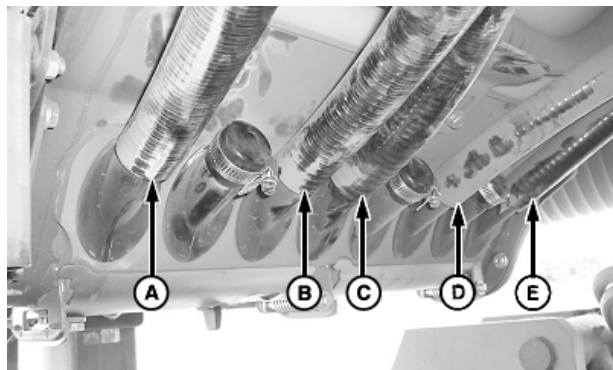
A62428 —UN—10APR08

OUO6045,0000B23 -19-27APR09-3/7

7. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
39	3480 mm (137 in.)
41	3251 mm (128 in.)
43	3251 mm (128 in.)
45	3251 mm (128 in.)
47	3251 mm (128 in.)

8. Install a female coupler to one end of each hose.
 9. Install an O-ring in each female coupler.
 10. Mark both ends of each hose with row number, shown in chart, for future reference.



A56931 —UN—09AUG05

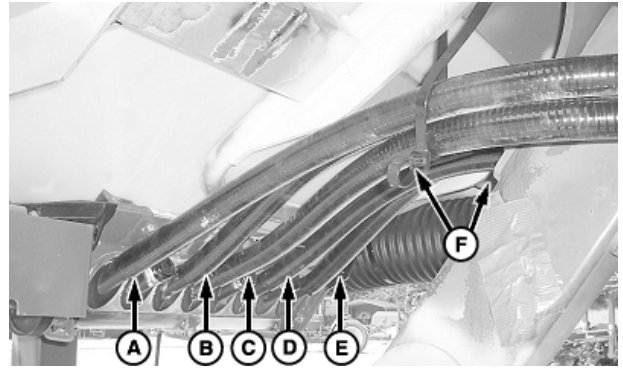
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OUO6045,0000B23 -19-27APR09-4/7

11. Remove vinyl caps and install hoses (A—E) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.
12. Secure hoses to Refuge Plus tank support using tie straps (F).

A—Row 39
B—Row 41
C—Row 43

D—Row 45
E—Row 47
F—Tie Strap (2 used)



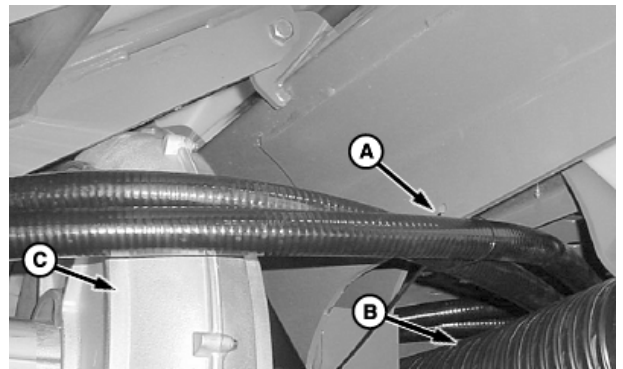
A56907 —UN—04AUG05

OUO6045,0000B23 -19-27APR09-5/7

13. Route hoses for rows, 39, 41, 43, 45, and 47 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
14. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797 —UN—15JUL05

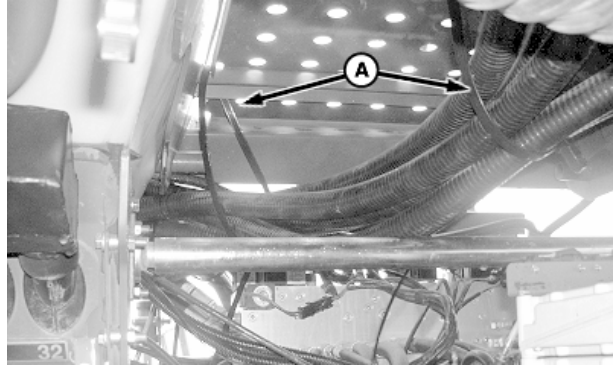
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OUO6045,0000B23 -19-27APR09-6/7

15. Route all hoses toward rear of machine and loosely secure to braces under platform using tie straps (A).
16. Disconnect hose couplers on right-hand main CCS tank nozzles 39, 41, 43, 45, and 47. Install yellow caps on tank side of those hoses.
17. Connect hoses from Refuge Plus tank to row unit hoses.
18. Cut hoses from bulk hose for right-hand CCS tank as described in the following chart.

Row Number	Length
19	4220 mm (166 in.)
21	4220 mm (166 in.)

19. Install a female coupler to one end and male coupler to opposite end of each hose.
20. Install an O-ring in each female coupler.
21. Mark both ends of hose with row number, shown in chart, for future reference.
22. Disconnect seed delivery hoses going to rows 19 and 21 from left-hand CCS tank. Install a yellow cap on each hose. Secure hoses to frame using tie bands to keep them from being damaged.
23. Connect assembled hose for row 19 to right-hand CCS tank manifold coupler for row 41.
24. Connect assembled hose for row 21 to right-hand CCS tank manifold coupler for row 43.
25. Route hoses for rows 19 and 21 to specified row unit and connect.
26. Carefully fold the machine the first time, watch hoses between ends of CCS tanks and support bracket on



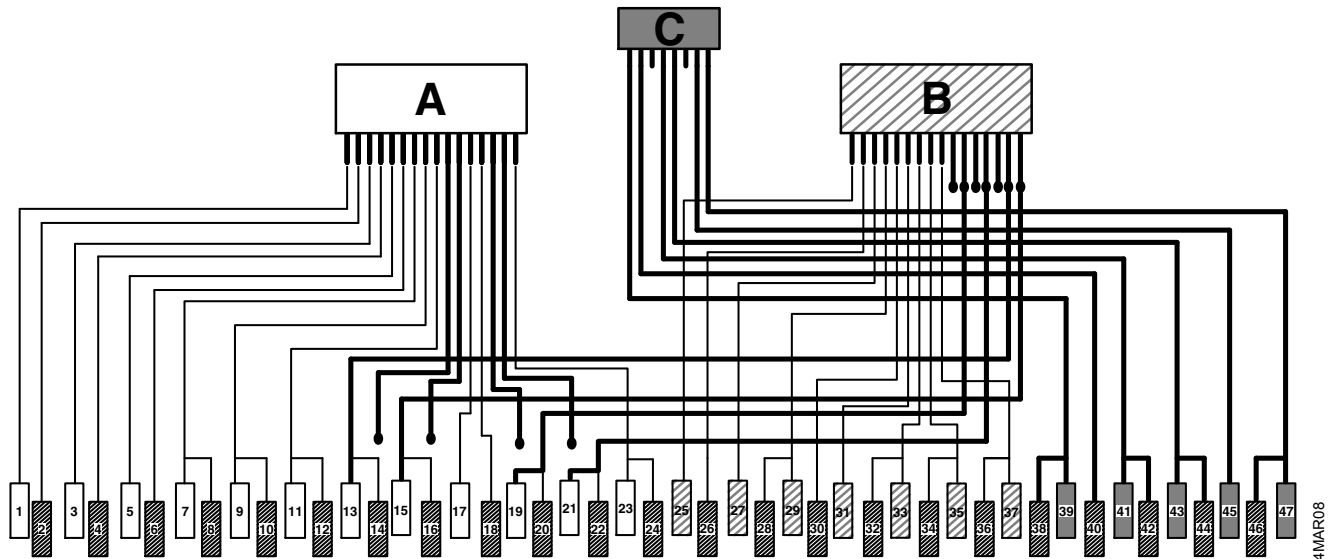
A56932—UN—09AUG05

A—Tie Strap (2 used)

- the inner wings. Ensure they do not become too tight or get crushed.
27. Cycle machine open and closed a few times with someone watching this area to verify that the hoses are laying and moving properly.
 28. There must not be peaks or valleys in any seed delivery hose when the machine is in the plant position. Hoses must gradually slope down to the row units.
 29. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.

OUO6045,0000B23 -19-27APR09-7/7

Extra Capacity Planting Diagram DB60 47-Row 38 cm (15 in.)



A62223—UN—14MAR08

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to right-hand wing. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.
4. Disconnect seed delivery hoses going to rows 13, 15, 19, and 21 at the row units. Install a yellow cap on each hose. Secure hoses to frame using tie bands to keep them from being damaged.

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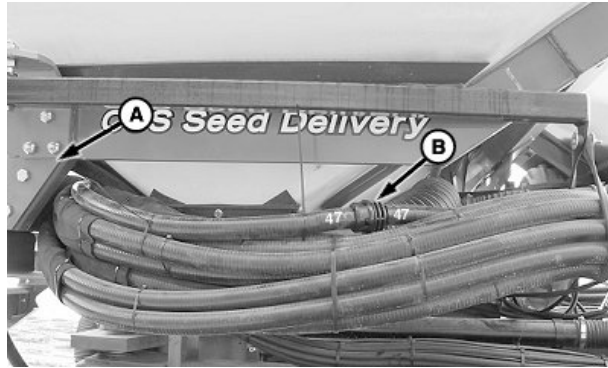
OUO6045,0000B24 -19-27APR09-1/7

5. Measure hose going to row 47 from the end of tank cradle (A) and cut and splice in location (B) as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance from End of tank Cradle
47	610 mm (24 in.)

6. Cut and splice hoses on right-hand CCS tank as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
39	154 mm (6 in.)
41	154 mm (6 in.)
43	154 mm (6 in.)
44	154 mm (6 in.)
45	154 mm (6 in.)
46	154 mm (6 in.)



A62428—UN—10APR08

A—Tank Cradle

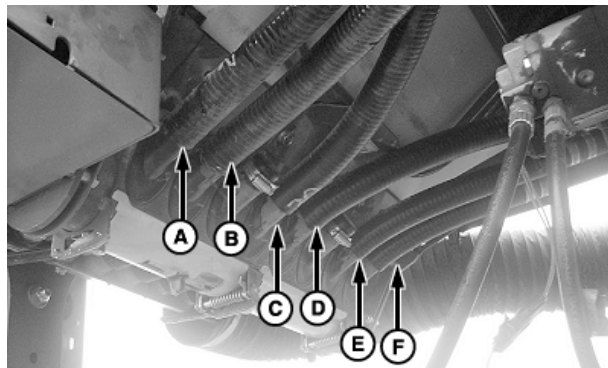
B—Location

OUO6045,0000B24 -19-27APR09-2/7

7. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
39	3607 mm (142 in.)
40	3302 mm (130 in.)
41	3251 mm (128 in.)
43	3251 mm (128 in.)
45	3302 mm (130 in.)
47	3607 mm (142 in.)

8. Install a female coupler to one end of each hose.
9. Install an O-ring in each female coupler.
10. Mark both ends of each hose with row number, shown in chart, for future reference.
11. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A56728—UN—03AUG05

A—Row 39
B—Row 40
C—Row 41

D—Row 43
E—Row 45
F—Row 47

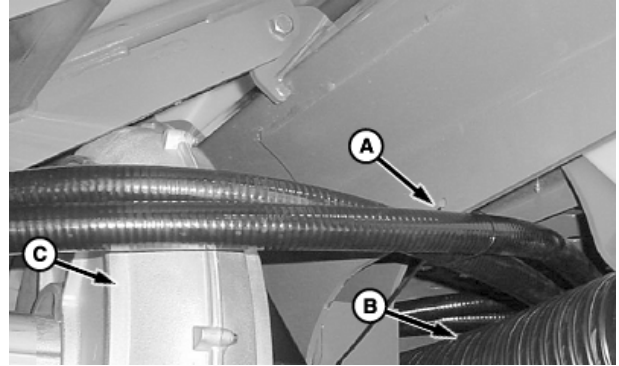
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OUO6045,0000B24 -19-27APR09-3/7

12. Route hoses for row 39, 40 and 41 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
13. Secure hoses to tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



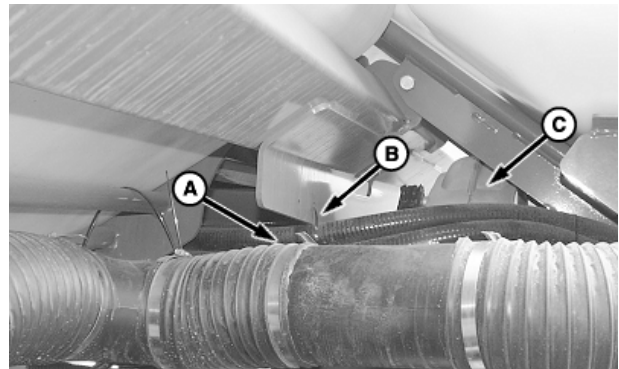
A56797 —UN—15JUL05

OUO6045,0000B24 -19-27APR09-4/7

14. Route hoses for row 43, 45 and 47 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
15. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



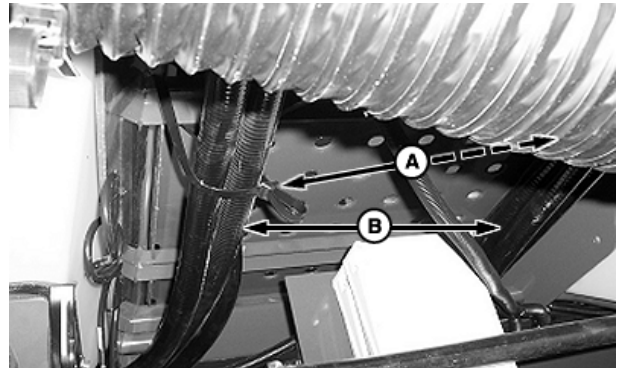
A56804 —UN—18JUL05

OUO6045,0000B24 -19-27APR09-5/7

16. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses are routed under right-side of platform.
17. Cut hoses from bulk hose for right-hand CCS tank as described in the following chart.

Row Number	Length
13	4220 mm (166 in.)
15	4220 mm (166 in.)
19	4220 mm (166 in.)
21	4220 mm (166 in.)

18. Install a female coupler to one end and male coupler to opposite end of each hose.
19. Install an O-ring in each female coupler.
20. Mark both ends of hose with row number, shown in chart, for future reference.
21. Connect assembled hoses to right-hand CCS tank manifold couplers as follows:
 - Row 13 to manifold coupler for row 46



A57039 —UN—31AUG05

A—Tie Strap (2 used)

B—Hoses

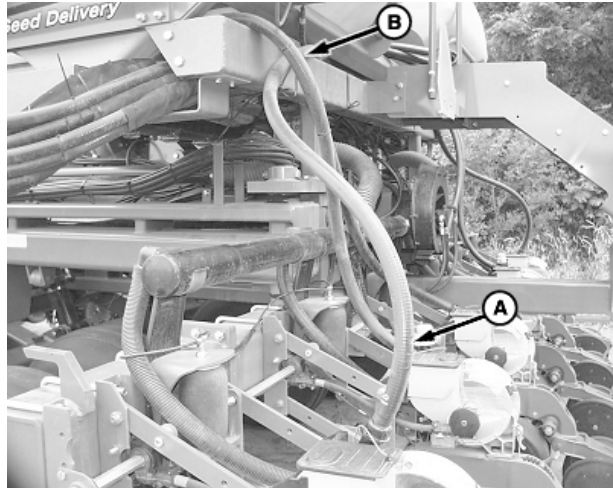
- Row 15 to manifold coupler for row 47
- Row 19 to manifold coupler for row 41
- Row 21 to manifold coupler for row 44

22. Route hoses to specified row unit and connect.

Continued on next page

OUO6045,0000B24 -19-27APR09-6/7

23. Route hoses for rows 19 and 21 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using a tie strap.
24. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
25. There must not be peaks or valleys in any seed delivery hose when the machine is in the plant position. Hoses must gradually slope down to the row units.
26. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



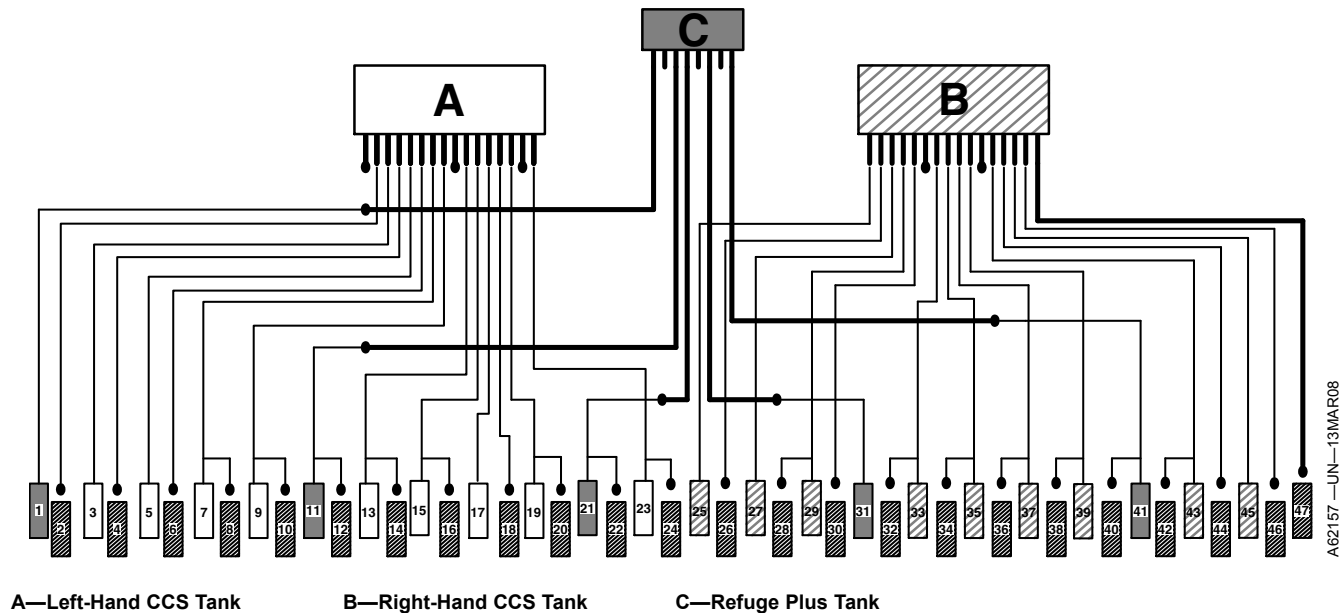
A56818 —UN—19JUL05

A—Hoses

B—101 mm (4 in.) Square Tube

OUO6045,0000B24 -19-27APR09-7/7

1-4-1-4 Seed Corn Planting Diagram DB60 47-Row 38 cm (15 in.)



A62157 —UN—13MAR08

1. This diagram shows the Refuge Plus System for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.

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OUO6045,0000005 -19-27APR09-1/9

4. Row 47 is not used in this configuration. Do the following:

- Disconnect CCS seed delivery hose at row 47 and install a yellow cap (A) on it. Reconnect hose to inlet port of row unit as shown.
- Disconnect vacuum hose and install yellow plug (B) and reconnect vacuum hose as shown.
- Disconnect seed meter drive at row unit by doing the following:
 - Rotate lock pin (A) 180 degrees until the "unlocked" symbol is on top.
 - Pull Pro-Shaft Drive cable (B) approximately 38 mm (1.5 in.) from gearbox housing (C).
 - Rotate lock pin (A) 180 degrees until the "locked" symbol is on top.
 - Move right-hand marker in by 76 cm (30 in.) when this configuration is used.

5. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

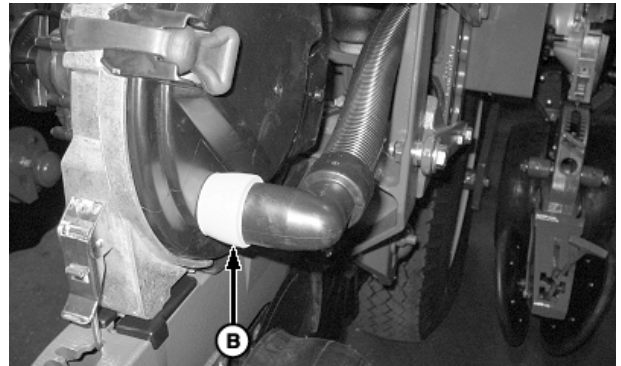
Row Number	Length
11	154 mm (6 in.)
21	154 mm (6 in.)
31	154 mm (6 in.)
41	154 mm (6 in.)

A—Lock Pin
B—Cable

C—Gearbox Housing



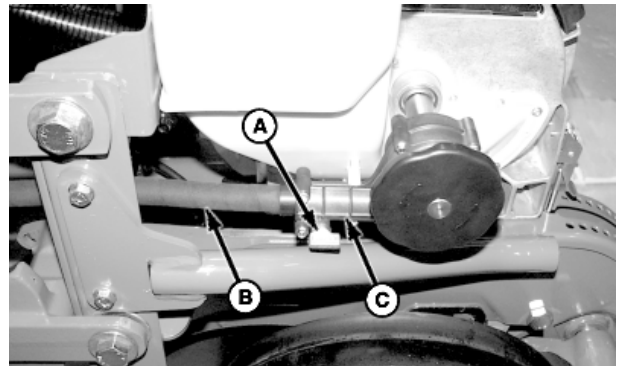
A62421 —UN—08APR08



A62422 —UN—10APR08

A—Yellow Cap

B—Yellow Plug



A49899 —UN—03DEC02

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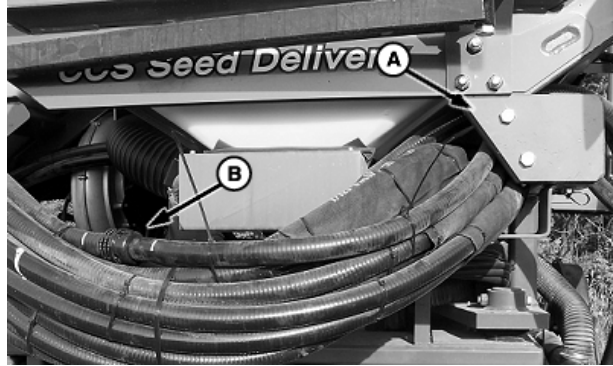
OUO6045,0000005 -19-27APR09-2/9

6. Measure distance from edge of tank cradle (A), cut and splice hoses in location (B) for row 1 as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
1	610 mm (24 in.)

A—Tank Cradle

B—Location



Tank Cradle and Row 1 Shown

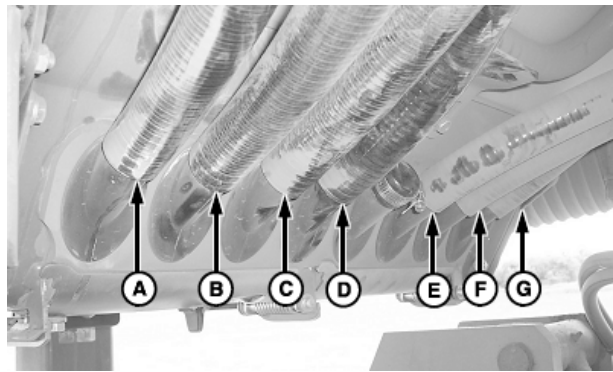
OUC6045,0000005 -19-27APR09-3/9

A56947—UN—15AUG05

7. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
1	3810 mm (150 in.)
11	2210 mm (87 in.)
21	2134 mm (84 in.)
31	2388 mm (94 in.)
41	3810 mm (150 in.)

8. Install a female coupler to one end of each hose.
 9. Install an O-ring in each female coupler.
 10. Mark both ends of each hose with row number, shown in chart, for future reference.



A—Row 1
 B—Row 11
 C—Row 21

D—Row 31
 E—Row 41
 F—Row 47

OUC6045,0000005 -19-27APR09-4/9

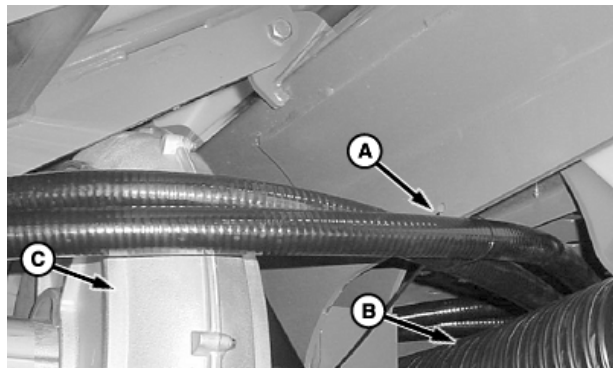
A57049—UN—01SEP05

11. Route hoses for row 1, 11 and 21 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
 12. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



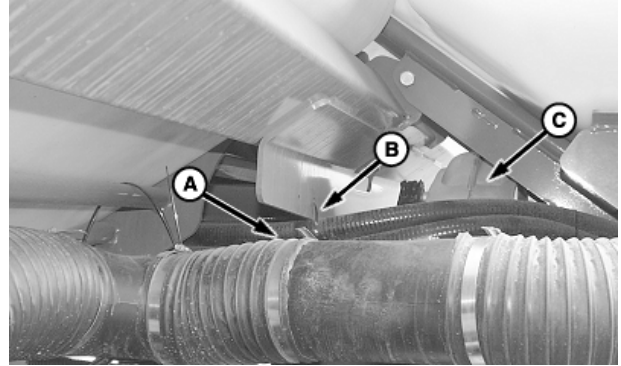
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OUC6045,0000005 -19-27APR09-5/9

A56797—UN—15JUL05

13. Route hoses for row 31 and 41 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
14. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap

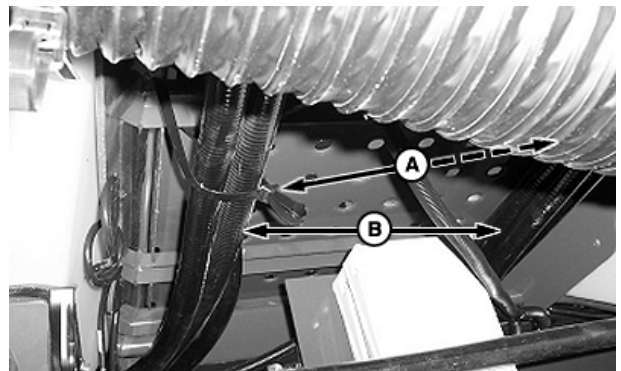


A56804 —UN—18JUL05

OUO6045,0000005 -19-27APR09-6/9

15. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 1, 11 and 21 are routed under left side of platform. Hoses for rows 31 and 41 are routed under right side of platform.
16. Disconnect quick couplers on nozzles for row 1, 11, 21, 31, and 41. Install yellow caps on tank side of hoses 1, 11, 21, 31 and 41.

A—Tie Strap (2 used) B—Hoses

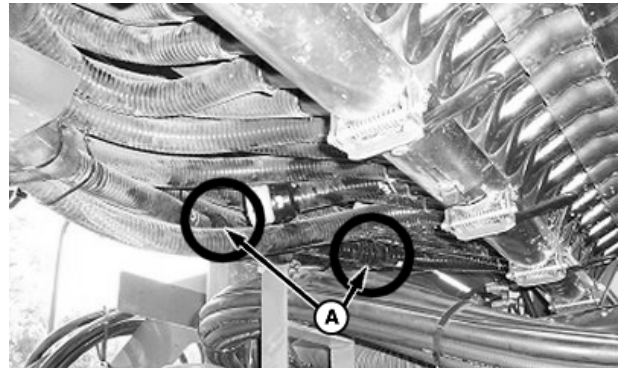


A57039 —UN—31AUG05

OUO6045,0000005 -19-27APR09-7/9

17. On right-hand side of platform, connect hoses for row 31 and 41 to row unit hoses in location (A) as shown.

A—Location

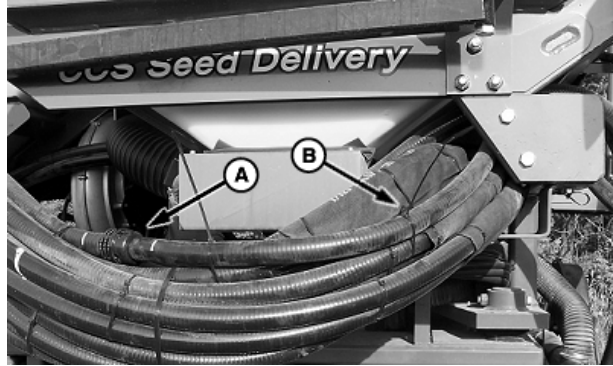


A62429 —UN—10APR08

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OUO6045,0000005 -19-27APR09-8/9

18. Route hose for row 1 (A) to left-hand side of CCS tank and connect to row unit hose in location shown.
19. Secure hose to other seed delivery hoses using tie strap (B).
20. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
21. There must not be peaks or valleys in any seed delivery hose when the machine is in the plant position. Hoses must gradually slope down to the row units.
22. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



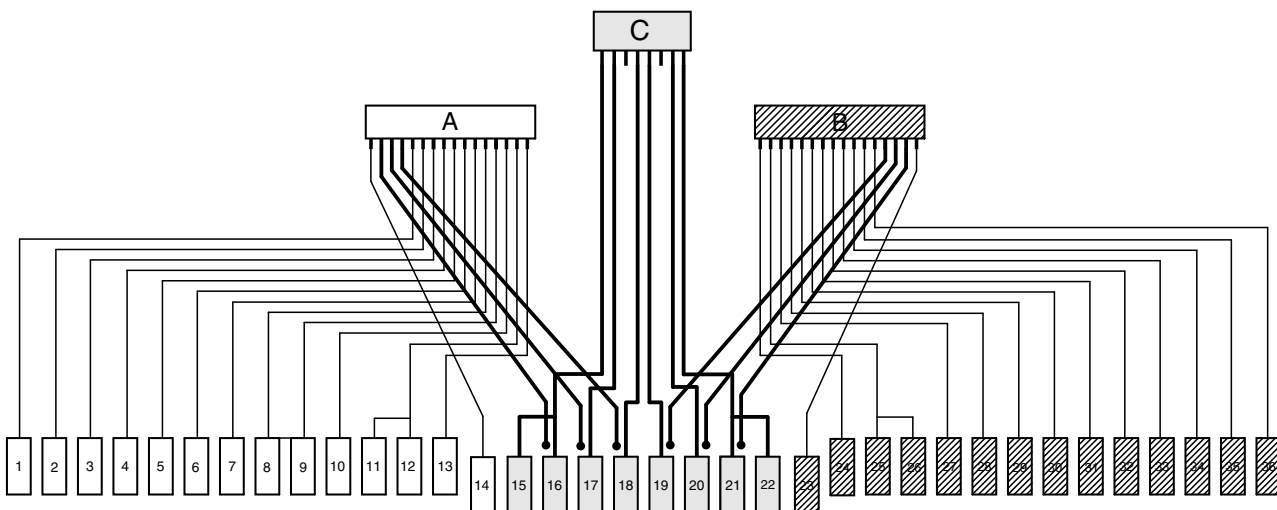
A—Row 1

B—Tie Strap

A56955 —UN—15AUG05

OUO6045,0000005 -19-27APR09-9/9

Refuge Planting Diagram DB66 36-Row 56 cm (22 in.)



A56938 —UN—11AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 16, 17, 18, 19, 20 and 21. Install a yellow cap on each hose.
4. Leave jumper hoses from row 16 to row 15 and row 21 to row 22 connected.

Secure hoses to frame using tie straps to keep them from being damaged.

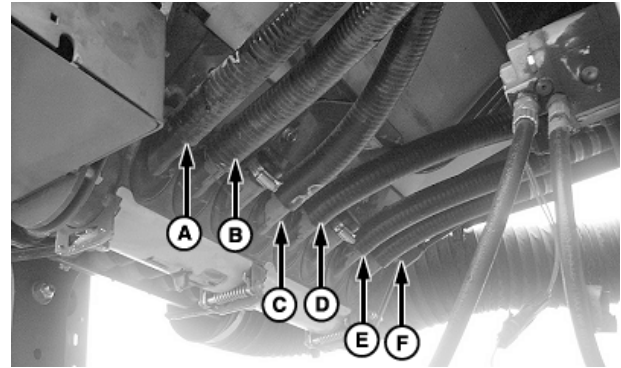
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OUO6045,0000697 -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
16	3607 mm (142 in.)
17	3302 mm (130 in.)
18	3251 mm (128 in.)
19	3251 mm (128 in.)
20	3302 mm (130 in.)
21	3607 mm (142 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart, for future reference.
9. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 16
B—Row 17
C—Row 18

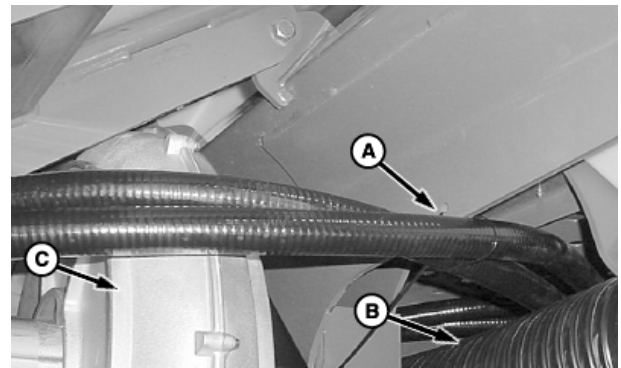
D—Row 19
E—Row 20
F—Row 21

A56728 —UN—03AUG05

OUO6045,0000697 -19-27APR09-2/6

10. On left-hand side, route hoses for row 16, 17 and 18 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
11. Secure hoses to tank support using tie strap (A).

A—Tie Strap C—CCS Fan
B—154 mm (6 in.) Air Hose

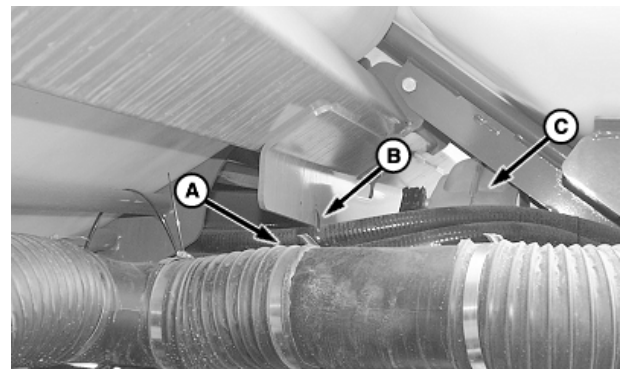


A56797 —UN—15JUL05

OUO6045,0000697 -19-27APR09-3/6

12. On right-hand side, route hoses for row 19, 20 and 21 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
13. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap



A56804 —UN—18JUL05

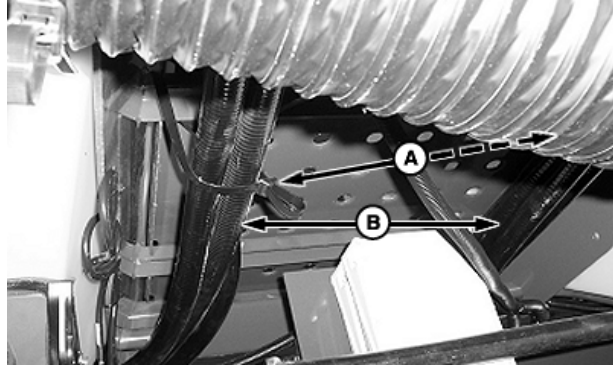
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OUO6045,0000697 -19-27APR09-4/6

14. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 16, 17 and 18 are routed under left side of platform. Hoses for rows 19, 20 and 21 are routed under right side of platform.

A—Tie Strap (2 used)

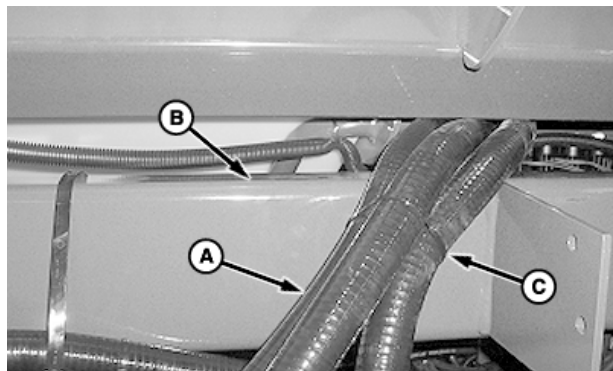
B—Hoses



A57039—UN—31AUG05

OUO6045,0000697 -19-27APR09-5/6

15. Route hoses for rows 16, 17 and 18 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
16. Repeat on opposite side for rows 19, 20 and 21.
17. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
18. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A—Hoses

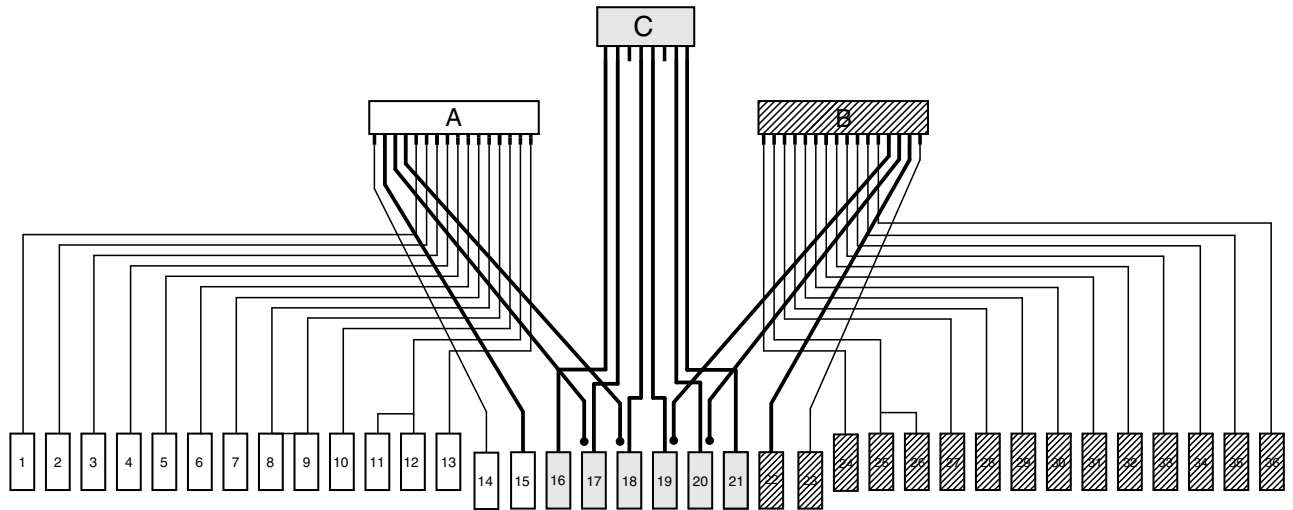
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

A57041—UN—31AUG05

OUO6045,0000697 -19-27APR09-6/6

Extra Capacity Planting Diagram DB66 36-Row 56 cm (22 in.)



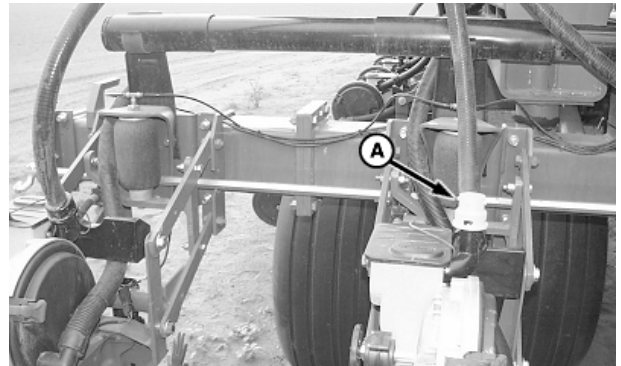
A56937—UN—11AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

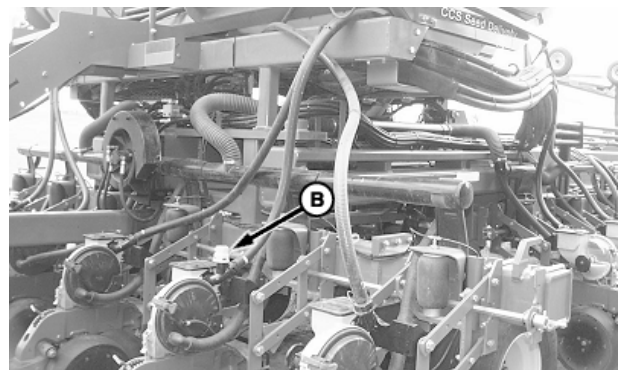
1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Remove jumper hoses from row 16 to row 15 and row 21 to row 22.
4. Move original hose from row 16 to row 15.
5. Move original hose from row 21 to row 22.

OUO6045,00006AF -19-27APR09-1/7

6. Install yellow caps with an O-ring on the vertical port of the inlet fitting on rows 16 (A) and 21 (B).
7. Disconnect seed delivery hoses from rows 16, 17, 18, 19, 20 and 21. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

A—Row 16**B—Row 21**

A56812—UN—19JUL05



A56813—UN—19JUL05

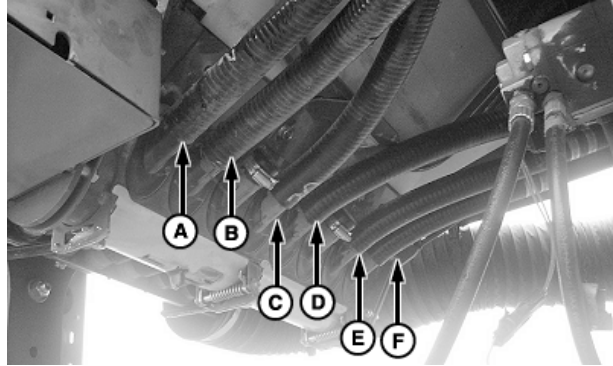
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OUO6045,00006AF -19-27APR09-2/7

8. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
16	3607 mm (142 in.)
17	3302 mm (130 in.)
18	3251 mm (128 in.)
19	3251 mm (128 in.)
20	3302 mm (130 in.)
21	3607 mm (142 in.)

9. Install a female coupler to one end of each hose.
10. Install an O-ring in each female coupler.
11. Mark both ends of each hose with row number, shown in chart, for future reference.
12. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A56728—UN—03AUG05

A—Row 16
B—Row 17
C—Row 18

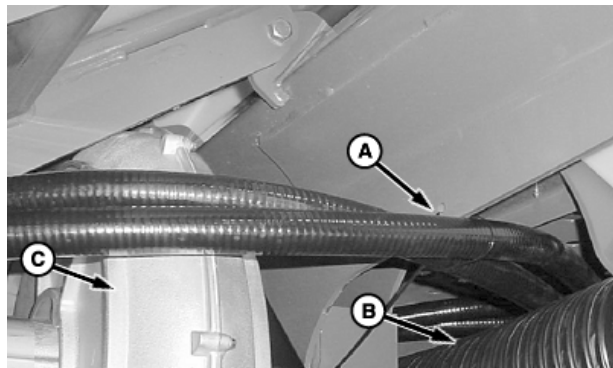
D—Row 19
E—Row 20
F—Row 21

OUO6045,00006AF -19-27APR09-3/7

13. On left-hand side, route hoses for row 14, 15 and 16 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

14. Secure hoses to tank support using tie strap (A).

A—Tie Strap C—CCS Fan
B—154 mm (6 in.) Air Hose



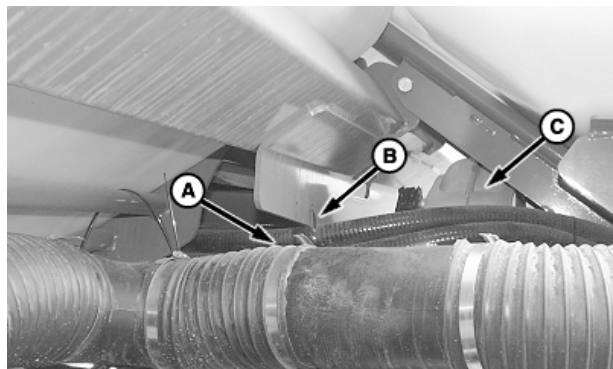
A56797—UN—15JUL05

OUO6045,00006AF -19-27APR09-4/7

15. On right-hand side, route hoses for row 17, 18 and 19 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

16. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap



A56804—UN—18JUL05

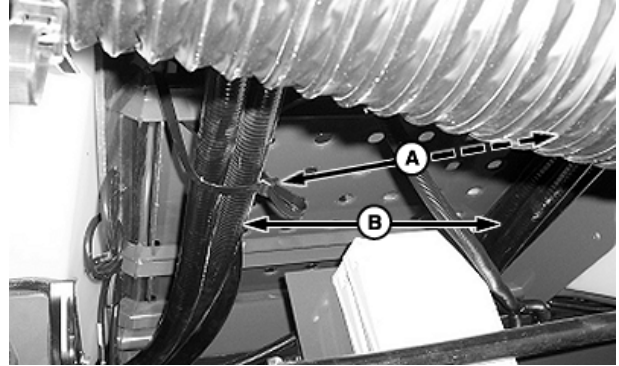
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OUO6045,00006AF -19-27APR09-5/7

17. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 16, 17 and 18 are routed under left side of platform. Hoses for rows 19, 20 and 21 are routed under right side of platform.

A—Tie Strap (2 used)

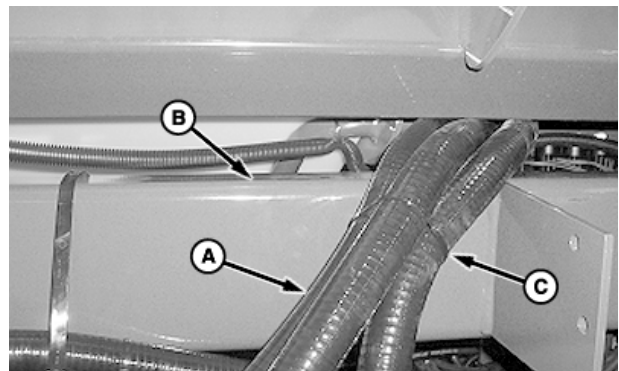
B—Hoses



A57039 —UN—31AUG05

OUO6045,00006AF -19-27APR09-6/7

18. Route hoses for rows 16, 17 and 18 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
19. Repeat on opposite side for rows 19, 20 and 21.
20. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
21. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A57041 —UN—31AUG05

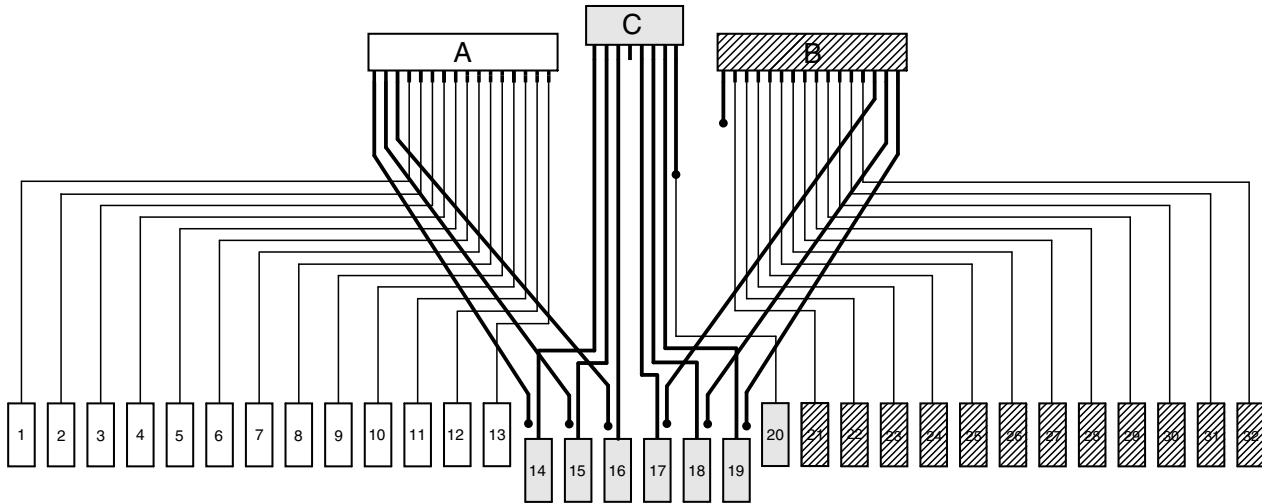
A—Hoses

B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

OUO6045,00006AF -19-27APR09-7/7

Refuge Planting Diagram DB80 32-Row 76 cm (30 in.)



A56939 —UN—11AUG05

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.
4. Disconnect seed delivery hoses from rows 14, 15, 16, 17, 18 and 19. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.
5. Cut and splice hose on main CCS tank as described in the following chart. See Cut and Splice Seed Delivery Hose section.

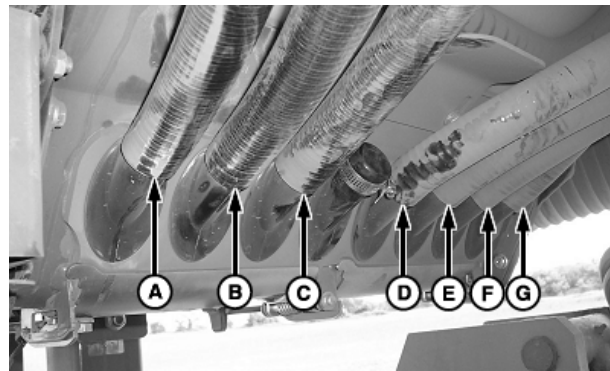
Row Number	Length
20	305 mm (12 in.)

OUO6045,0000692 -19-27APR09-1/7

6. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
14	4216 mm (166 in.)
15	3505 mm (138 in.)
16	3378 mm (133 in.)
17	3378 mm (133 in.)
18	3505 mm (138 in.)
19	4216 mm (166 in.)
20	2057 mm (81 in.)

7. Install a female coupler to one end of each hose.
8. Install an O-ring in each female coupler.
9. Mark both ends of each hose with row number, shown in chart, for future reference.
10. Remove vinyl caps and install hoses (A—G) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 14
B—Row 15
C—Row 16
D—Row 17

E—Row 18
F—Row 19
G—Row 20

A56941 —UN—09AUG05

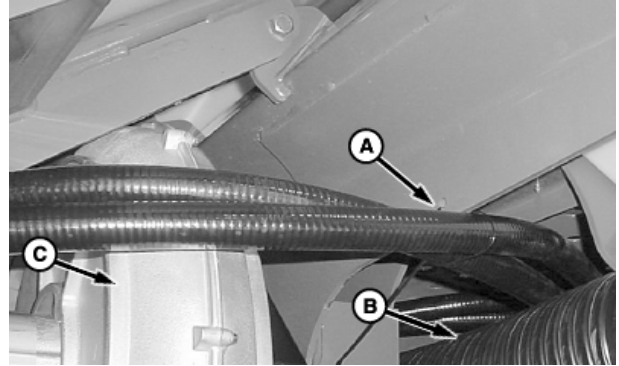
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OUO6045,0000692 -19-27APR09-2/7

11. On left-hand side, route hoses for row 14, 15 and 16 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).
12. Secure hoses to tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose

C—CCS Fan



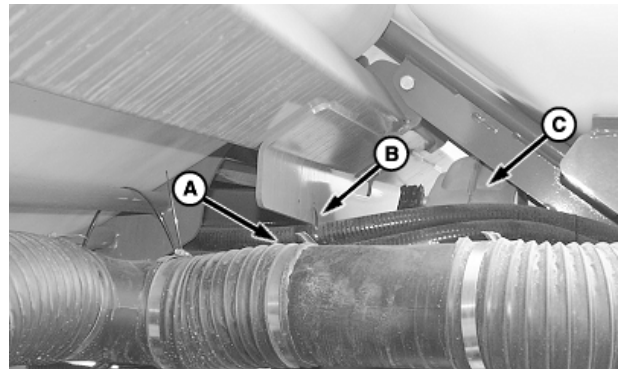
A56797 —UN—15JUL05

OUO6045,0000692 -19-27APR09-3/7

13. On right-hand side, route hoses for row 17, 18, 19 and 20 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
14. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



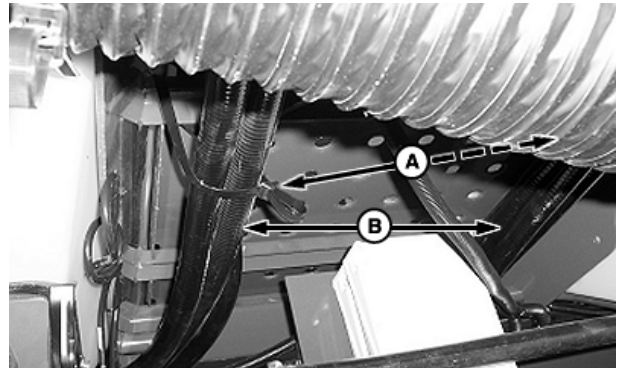
A56804 —UN—18JUL05

OUO6045,0000692 -19-27APR09-4/7

15. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 14, 15 and 16 are routed under left side of platform. Hoses for rows 17, 18, 19 and 20 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses



A57039 —UN—31AUG05

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OUO6045,0000692 -19-27APR09-5/7

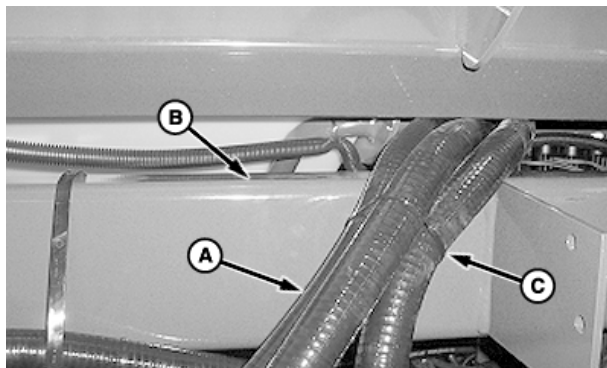
16. Route hoses for rows 14, 15 and 16 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).

17. Repeat on opposite side for rows 17, 18, 19 and 20.

A—Hoses

**B—101 x 154 mm (4 x 6 in.)
Tube**

C—Tie Strap

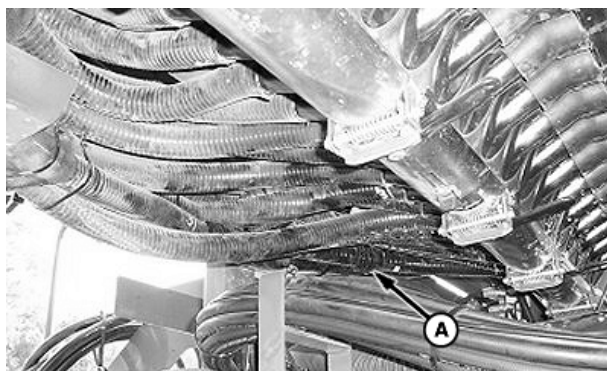


A57041—UN—31AUG05

OUO6045,0000692 -19-27APR09-6/7

18. On right-hand side of platform, connect hose for row 20 in location (A) as shown.
19. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
20. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.

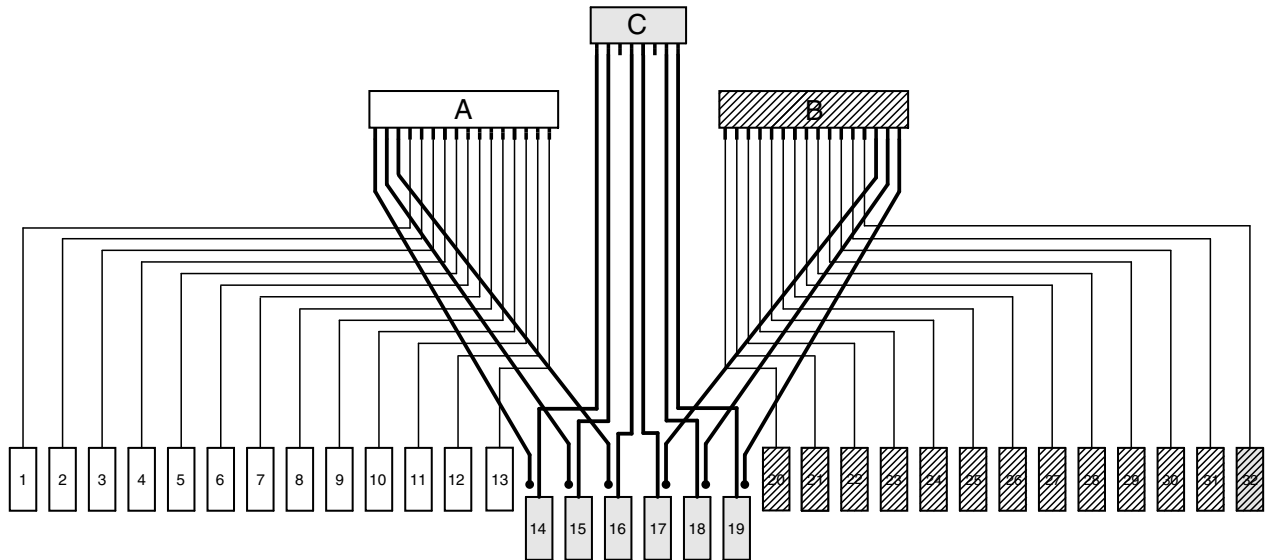
A—Location



A57042—UN—31AUG05

OUO6045,0000692 -19-27APR09-7/7

Extra Capacity Planting Diagram DB80 32-Row 76 cm (30 in.)



A56465—UN—11AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

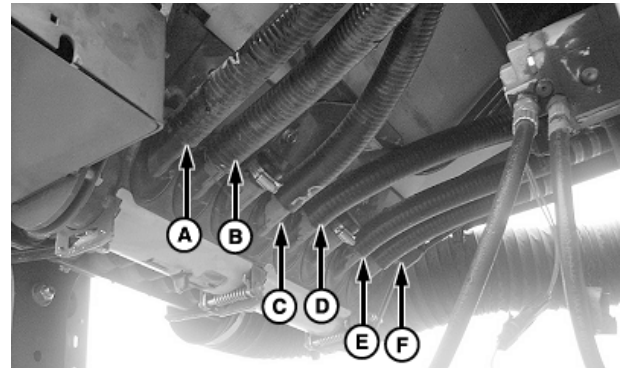
1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 14, 15, 16, 17, 18 and 19. Install a yellow cap on each hose. Secure hoses to frame using tie straps to keep them from being damaged.

OUO6045,0000694 -19-27APR09-1/6

4. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
14	4216 mm (166 in.)
15	3505 mm (138 in.)
16	3378 mm (133 in.)
17	3378 mm (133 in.)
18	3505 mm (138 in.)
19	4216 mm (166 in.)

5. Install a female coupler to one end of each hose.
6. Install an O-ring in each female coupler.
7. Mark both ends of each hose with row number, shown in chart, for future reference.
8. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not used.



A—Row 14
B—Row 15
C—Row 16

D—Row 17
E—Row 18
F—Row 19

A56728—UN—03AUG05

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OUO6045,0000694 -19-27APR09-2/6

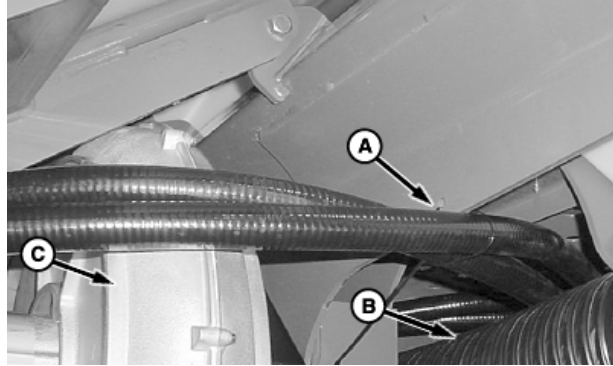
9. On left-hand side, route hoses for row 14, 15 and 16 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

10. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797—UN—15JUL05

OUC6045,0000694 -19-27APR09-3/6

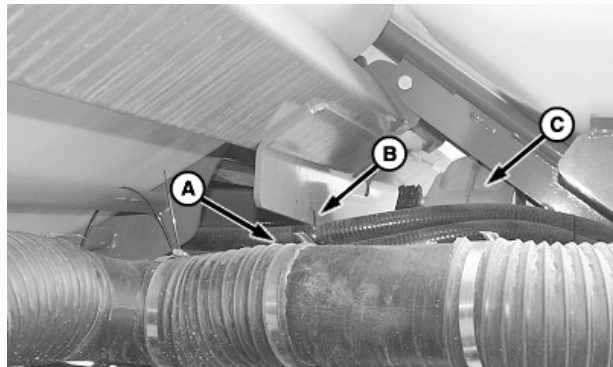
11. On right-hand side, route hoses for row 17, 18 and 19 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

12. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose

B—Tie Strap

C—CCS Fan



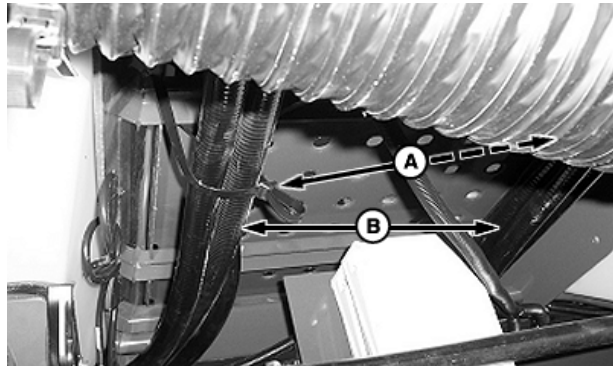
A56804—UN—18JUL05

OUC6045,0000694 -19-27APR09-4/6

13. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 14, 15 and 16 are routed under left side of platform. Hoses for rows 17, 18 and 19 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses

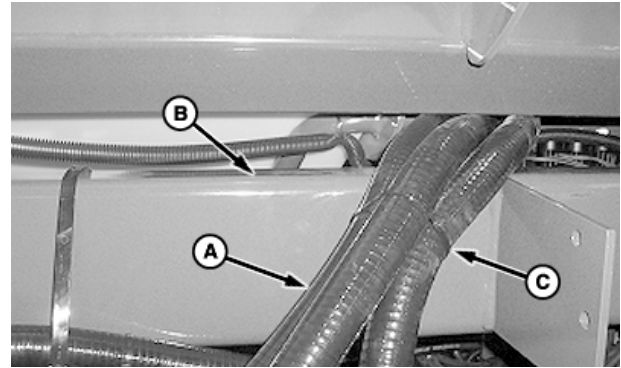


A57039—UN—31AUG05

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OUC6045,0000694 -19-27APR09-5/6

14. Route hoses for rows 14, 15 and 16 (A) over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
15. Repeat on opposite side for rows 17, 18 and 19.
16. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
17. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



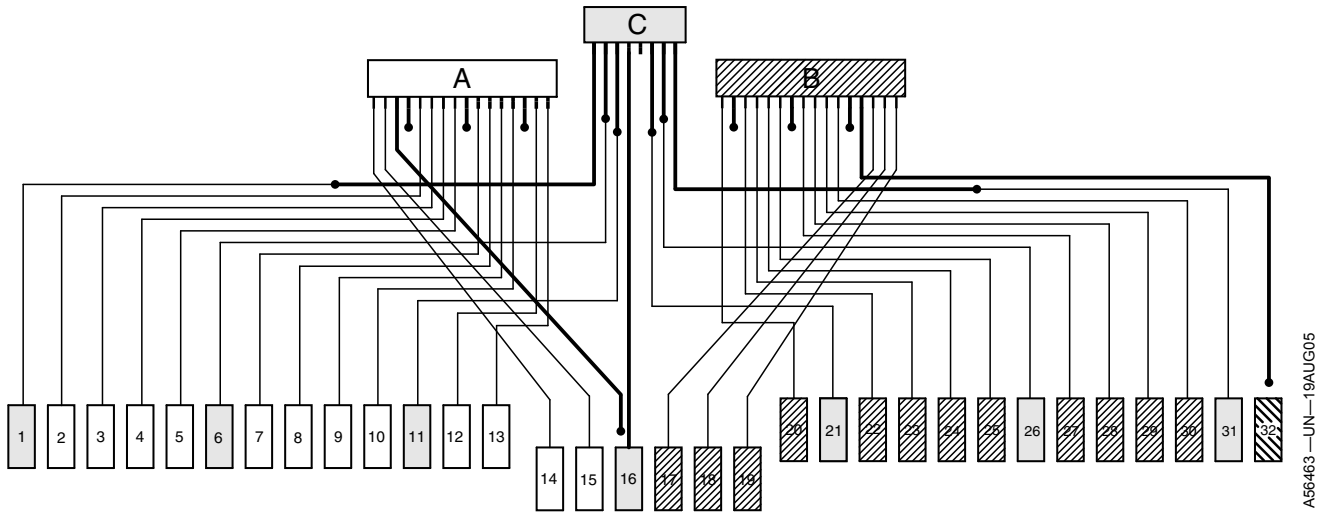
A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

A57041 —UN—31AUG05

OUO6045,0000694 -19-27APR09-6/6

1-4-1-4 Seed Corn Planting Diagram DB80 32-Row 76 cm (30 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. To ensure that the correct hose is cut and spliced, trace hose from row unit to CCS tank before cutting a seed delivery hose.
4. Disconnect CCS seed delivery hose at row 16 and install a yellow cap on hose. Secure hose to frame with a tie to prevent damage to the hose.
5. Row 32 is not used in this configuration. Disconnect CCS seed delivery hose at row and install a yellow cap

on it. Reconnect capped hose to inlet port of row unit. Disconnect seed meter drive at row unit. Disconnect and cap vacuum hose.

6. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Length
6	154 mm (6 in.)
11	154 mm (6 in.)
21	154 mm (6 in.)
26	154 mm (6 in.)

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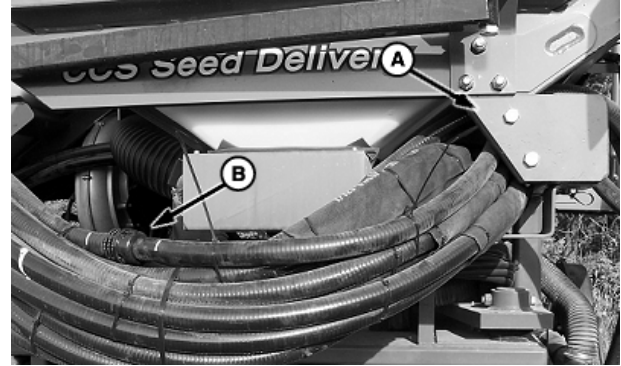
OUO6045,0000693 -19-27APR09-1/10

7. Measure distance from edge of tank cradle (A) and cut and splice hoses in location (B) for rows 1 and 31 as described in the following chart.

Row Number	Length
1	610 mm (24 in.)
31	610 mm (24 in.)

A—Tank Cradle

B—Location



Tank Cradle and Row 1 Shown



Tank Cradle and Row 31 Shown

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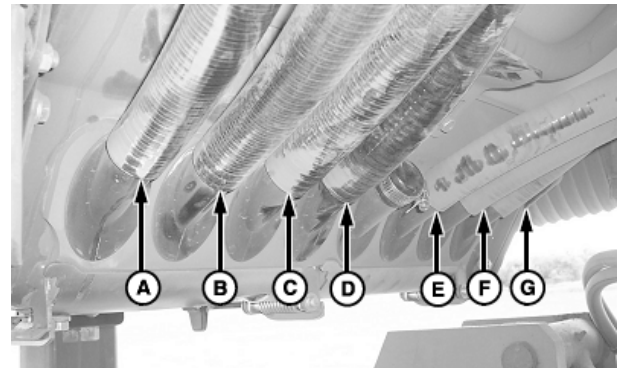
A56947 —UN—15AUG05

A56946 —UN—15AUG05

8. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
1	3810 mm (150 in.)
6	2464 mm (97 in.)
11	2210 mm (87 in.)
16	3378 mm (133 in.)
21	2134 mm (84 in.)
26	2388 mm (94 in.)
31	3810 mm (150 in.)

9. Install female coupler to one end of each hose.
 10. Install an O-ring in each female coupler.
 11. Mark both ends of each hose with row number, shown in chart, for future reference.
 12. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—G) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 1
 B—Row 6
 C—Row 11
 D—Row 16

E—Row 21
 F—Row 26
 G—Row 31

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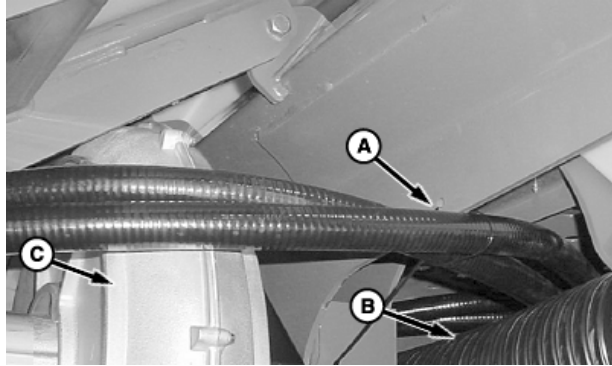
OUO6045,0000693 -19-27APR09-3/10

A57049 —UN—01SEP05

13. On left-hand side, route hoses for row 1, 6 and 11 to left-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (B).

14. Secure hoses to tank support using tie strap (A).

A—Tie Strap
B—154 mm (6 in.) Air Hose
C—CCS Fan



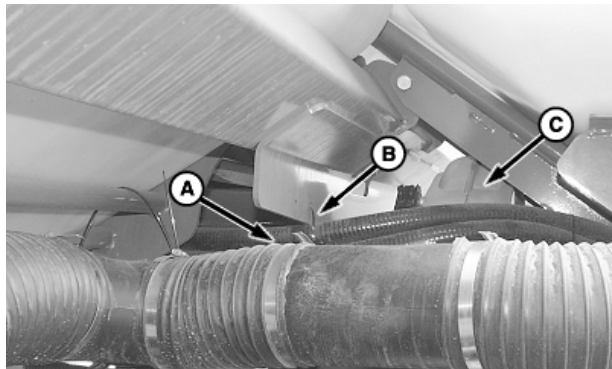
A56797—UN—15JUL05

OUO6045,0000693 -19-27APR09-4/10

15. On right-hand side, route hoses for row 16, 21, 26 and 31 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

16. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap
C—CCS Fan



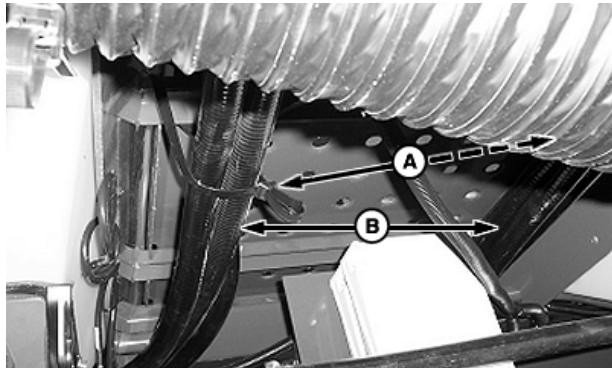
A56804—UN—18JUL05

OUO6045,0000693 -19-27APR09-5/10

17. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for rows 1, 6 and 11 are routed under left side of platform. Hoses for rows 16, 21, 26 and 31 are routed under right side of platform.

18. Disconnect quick couplers on nozzles for row 1, 6, 11, 21, 26 and 31. Install yellow caps on tank side of hoses 1, 6, 11, 21, 26 and 31.

A—Tie Strap (2 used)
B—Hoses



A57039—UN—31AUG05

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OUO6045,0000693 -19-27APR09-6/10

19. On right-hand side of platform, connect hoses for row 21 and 26 to row unit hoses in location (A) as shown.

A—Location

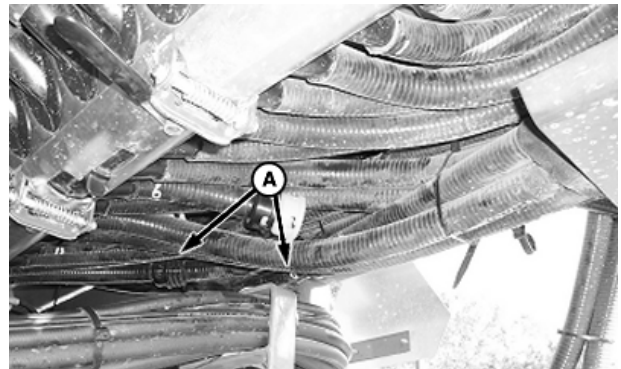


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OOU6045,0000693 -19-27APR09-7/10

20. On left-hand side of platform, connect hoses for row 6 and 11 to row unit hoses in location (A) as shown.

A—Location



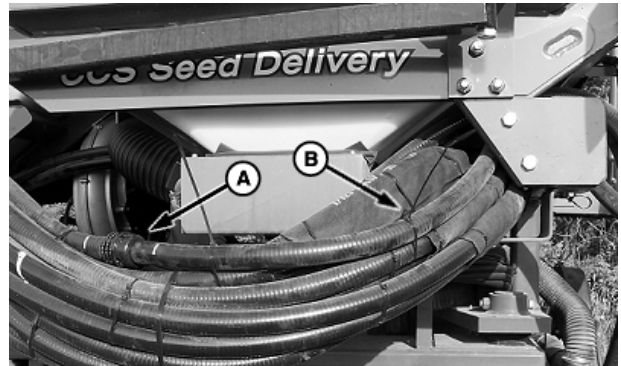
A57044 —UN—31AUG05

OOU6045,0000693 -19-27APR09-8/10

21. Route hose for row 1 (A) to left-hand side of CCS tank and connect to row unit hose in location shown.
22. Secure hose to other seed delivery hoses using tie strap (B).

A—Row 1

B—Tie Strap

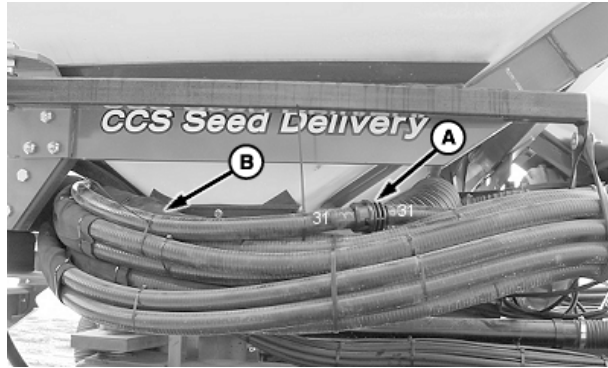


A56955 —UN—15AUG05

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OOU6045,0000693 -19-27APR09-9/10

23. Route hose for row 31 (A) to right-hand side of CCS tank and connect to row unit hose in location shown.
24. Secure hose to other seed delivery hoses using tie strap (B).
25. Route hose for row 16 directly to row unit and connect. Loosely secure hose under platform to platform brace using a tie strap.
26. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that the hoses are laying and moving properly.
27. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



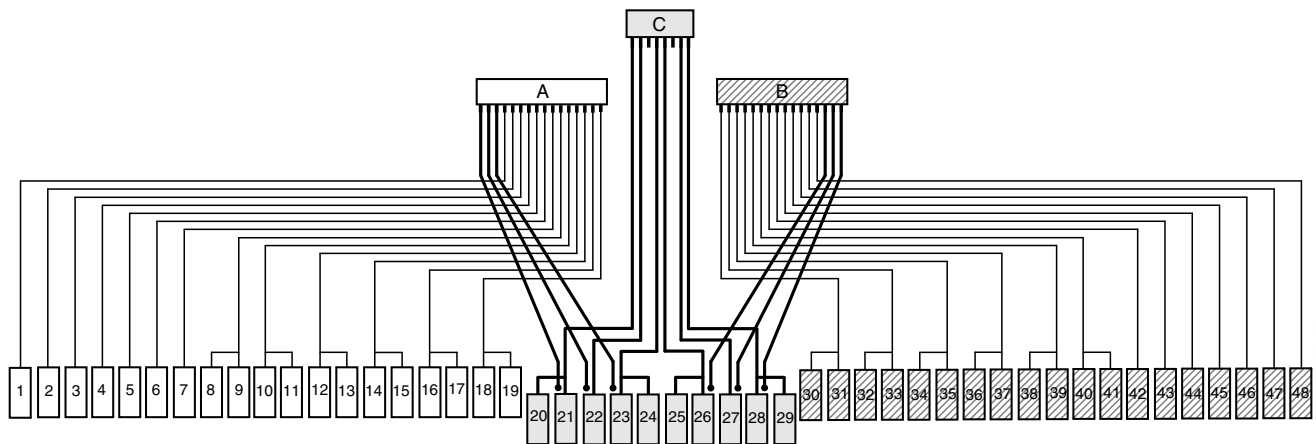
A—Row 31

B—Tie Strap

A56956—UN—15AUG05

OUO6045,0000693 -19-27APR09-10/10

Extra Capacity and Refuge Planting Diagram DB80 48-Row 51 cm (20 in.)



A58235—UN—06JUL06

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity and refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 21, 22, 23, 26, 27 and 28. Install a yellow cap on each hose.
4. Secure hoses to frame using tie straps to keep them from being damaged.
4. Leave jumper hoses from row 21 to 20, row 23 to 24, row 26 to 25 and row 28 to 29 connected.

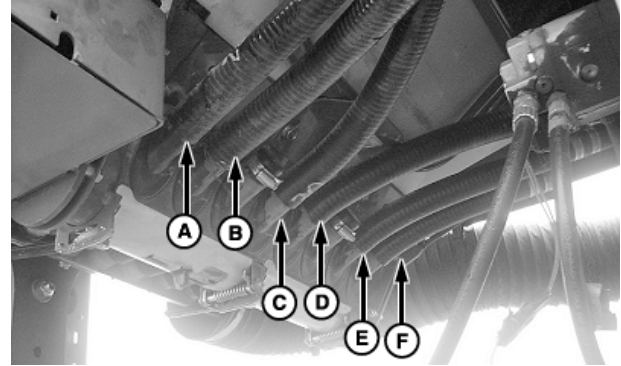
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OUO6045,00008DA -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
21	3988 mm (157 in.)
22	3759 mm (148 in.)
23	3759 mm (148 in.)
26	3759 mm (148 in.)
27	3759 mm (148 in.)
28	3988 mm (157 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart for future reference.
9. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not in use.



A—Row 21
B—Row 22
C—Row 23

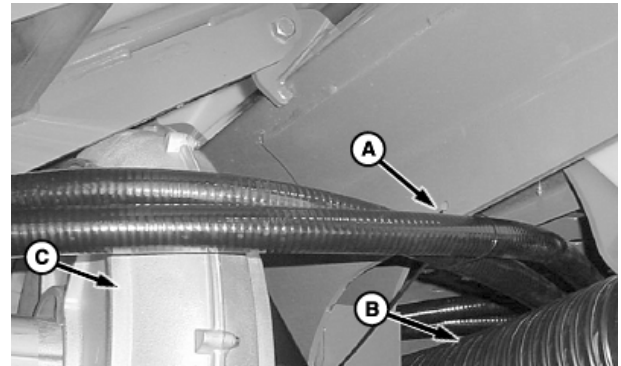
D—Row 26
E—Row 27
F—Row 28

A56728 —UN—03AUG05

OUO6045,00008DA -19-27APR09-2/6

10. On left-hand side, route hoses for row 21, 22 and 23 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).
11. Secure hoses to tank support using tie strap (A).

A—Tie Strap C—CCS Fan
B—154 mm (6 in.) Air Hose

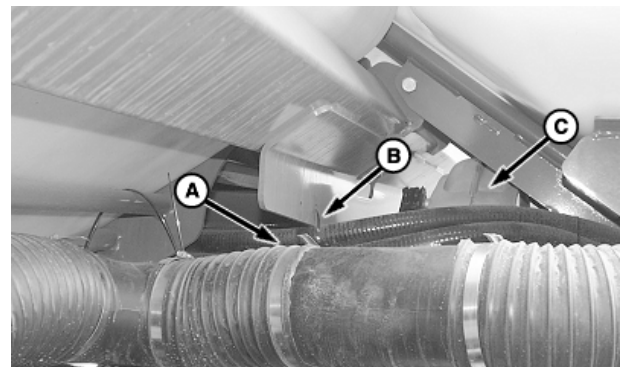


A56797 —UN—15JUL05

OUO6045,00008DA -19-27APR09-3/6

12. On right-hand side, route hoses for row 26, 27 and 28 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).
13. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose C—CCS Fan
B—Tie Strap



A56804 —UN—18JUL05

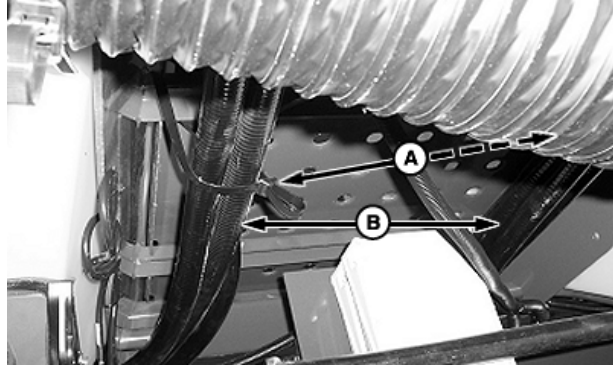
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OUO6045,00008DA -19-27APR09-4/6

14. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for row 21, 22 and 23 are routed under left side of platform. Hoses for row 26, 27 and 28 are routed under right side of platform.

A—Tie Strap (2 used)

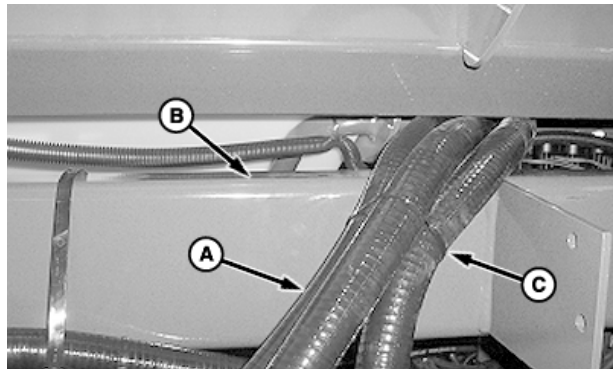
B—Hoses



A57039—UN—31AUG05

OUO6045,00008DA -19-27APR09-5/6

15. Route hose for row 21, 22 and 23 over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
16. Repeat on opposite side for rows 26, 27 and 28.
17. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that hoses are laying and moving properly.
18. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.



A—Hoses

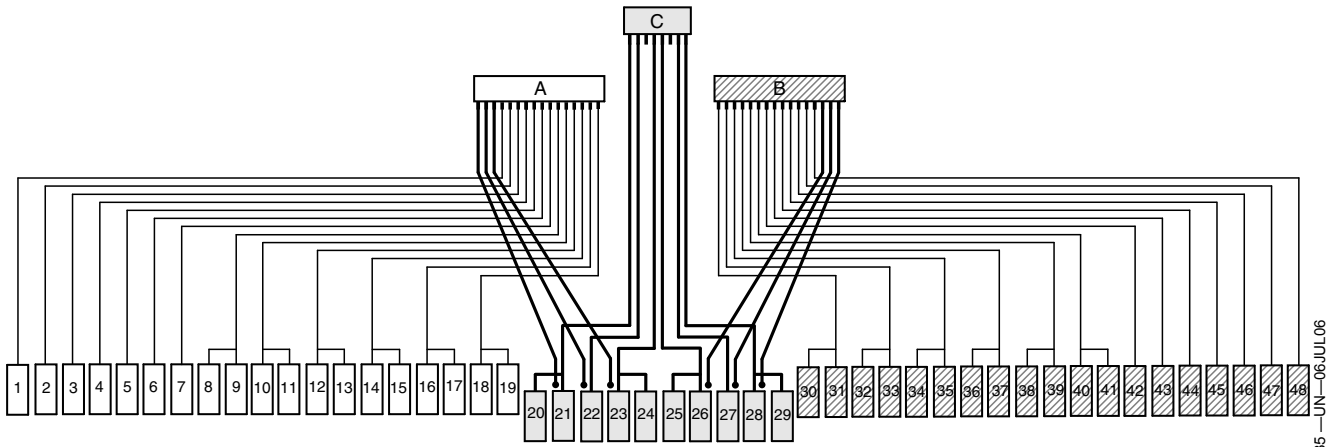
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

A57041—UN—31AUG05

OUO6045,00008DA -19-27APR09-6/6

Extra Capacity and Refuge Planting Diagram DB88 48-Row 56 cm (22 in.)



A58235—UN—06JUL06

A—Left-Hand CCS Tank**B—Right-Hand CCS Tank****C—Refuge Plus Tank**

1. This diagram shows the Refuge Plus System used for extra capacity and refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect seed delivery hoses from rows 21, 22, 23, 26, 27 and 28. Install a yellow cap on each hose.

Secure hoses to frame using tie straps to keep them from being damaged.

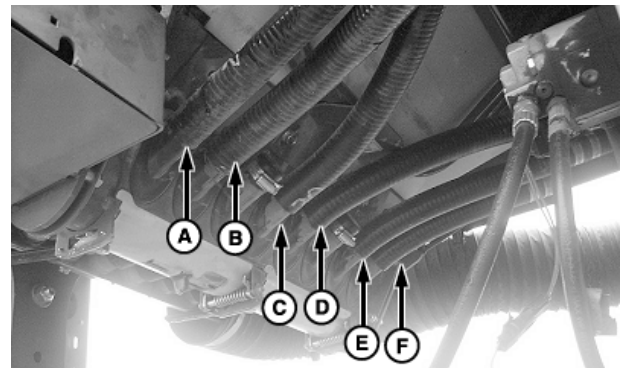
4. Leave jumper hoses from row 21 to 20, row 23 to 24, row 26 to 25 and row 28 to 29 connected.

OUO6045,00008DB -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
21	4166 mm (164 in.)
22	3861 mm (152 in.)
23	3810 mm (150 in.)
26	3810 mm (150 in.)
27	3861 mm (152 in.)
28	4166 mm (164 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart for future reference.
9. Remove vinyl caps and install hoses (A—F) to the Refuge Plus tank in the positions shown. Leave vinyl caps on nozzles that are not in use.



A56728—UN—03AUG05

A—Row 21
B—Row 22
C—Row 23

D—Row 26
E—Row 27
F—Row 28

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OUO6045,00008DB -19-27APR09-2/6

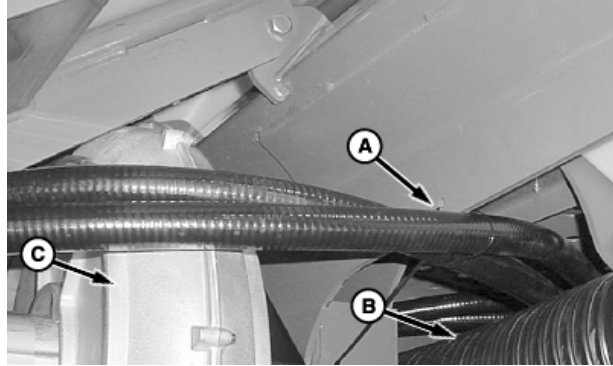
10. On left-hand side, route hoses for row 21, 22 and 23 to left of CCS fan (C) and over 154 mm (6 in.) air hose (B).

11. Secure hoses to tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose

C—CCS Fan



A56797—UN—15JUL05

OUO6045,00008DB -19-27APR09-3/6

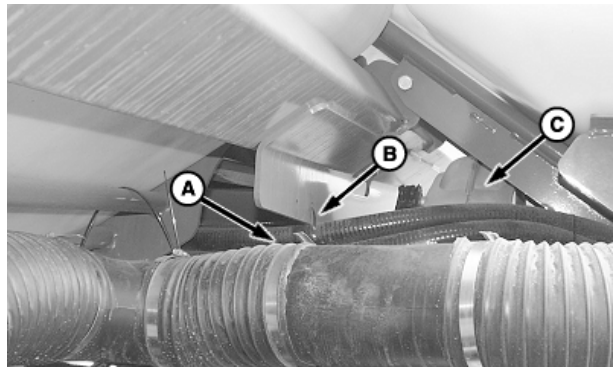
12. On right-hand side, route hoses for row 26, 27 and 28 to right-hand side of CCS fan (C) and over 154 mm (6 in.) air hose (A).

13. Secure hoses to tank support using tie strap (B).

A—154 mm (6 in.) Air Hose

B—Tie Strap

C—CCS Fan



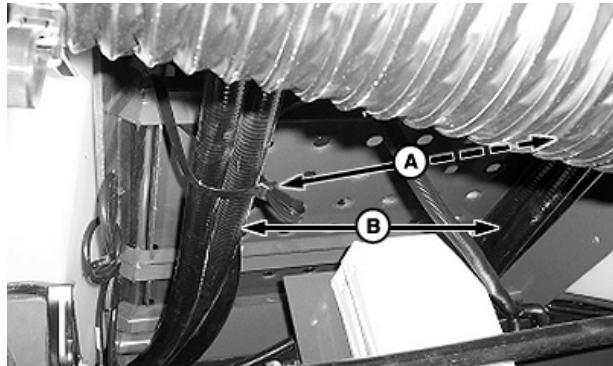
A56804—UN—18JUL05

OUO6045,00008DB -19-27APR09-4/6

14. Route hoses (B) to rear of machine and loosely secure under platform using tie straps (A). Hoses for row 21, 22 and 23 are routed under left side of platform. Hoses for row 26, 27 and 28 are routed under right side of platform.

A—Tie Strap (2 used)

B—Hoses

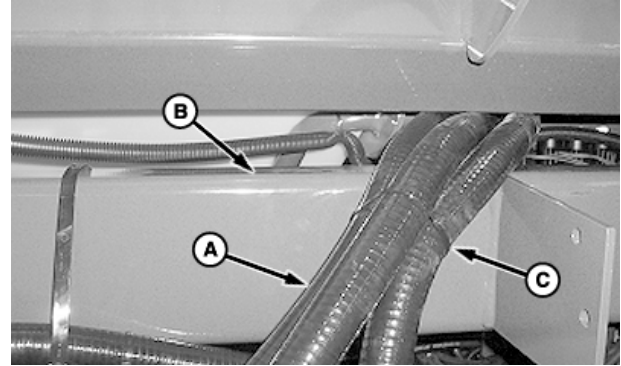


A57039—UN—31AUG05

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OUO6045,00008DB -19-27APR09-5/6

15. Route hose for row 21, 22 and 23 over 101 x 154 mm (4 x 6 in.) tube (B) and connect to row units. Tie hoses together using tie strap (C).
16. Repeat on opposite side for rows 26, 27 and 28.
17. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that hoses are laying and moving properly.
18. To change the hose routing back, remove the yellow caps. Disconnect the hoses at the quick couplers and reconnect them in their original position. Reinstall the yellow caps on the hoses coming from the Refuge Plus Tank.

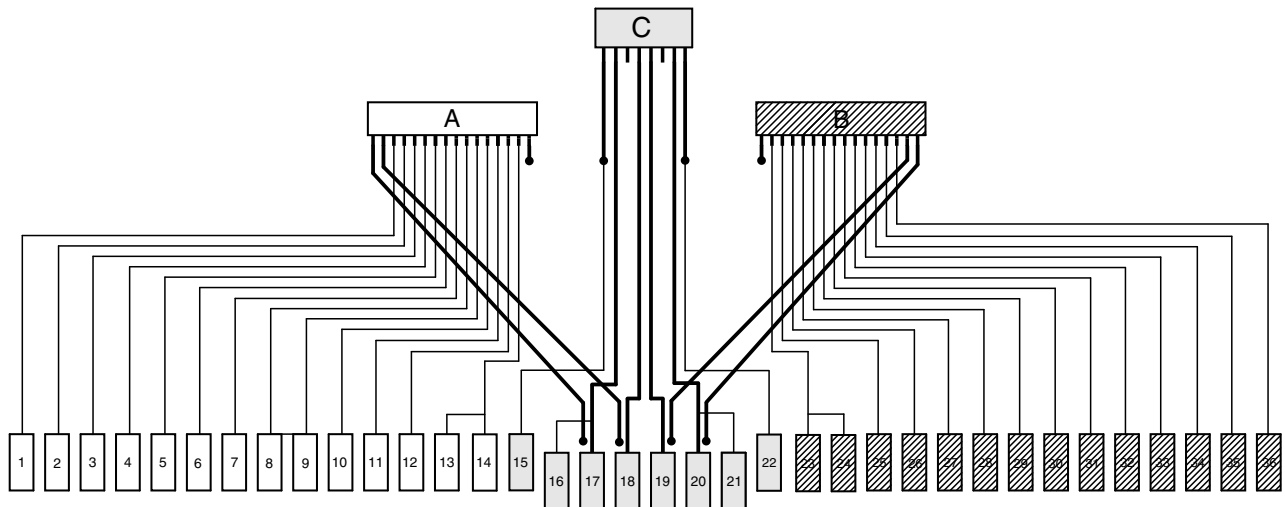


A—Hoses
B—101 x 154 mm (4 x 6 in.)
Tube

C—Tie Strap

OUO6045,00008DB -19-27APR09-6/6

Refuge Planting Diagram DB90 36-Row 76 cm (30 in.)



A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for strip refuge planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 17, 18, 19, and 20 at the row units. Install a yellow cap on each hose. Secure hoses to frame with tie straps to keep them from being damaged.

4. Leave jumper hoses from row 17 to row 16 and row 20 to row 21 connected.
5. Cut and splice hoses on main CCS tanks as described in the following chart. See Cut and Splice Seed Delivery Hose section.

Row Number	Distance from Nozzles
15	305 mm (12 in.)
22	305 mm (12 in.)

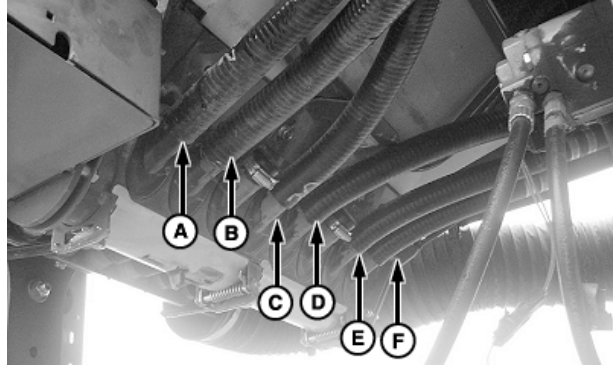
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OUO6045,00006A2 -19-27APR09-1/8

6. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
15	2060 mm (81 in.)
17	3505 mm (138 in.)
18	3380 mm (133 in.)
19	3380 mm (133 in.)
20	3505 mm (138 in.)
22	2060 mm (81 in.)

7. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (B—G) as shown. Leave vinyl caps on nozzles that are not used.



A56728—UN—03AUG05

A—Row 15
B—Row 17
C—Row 18

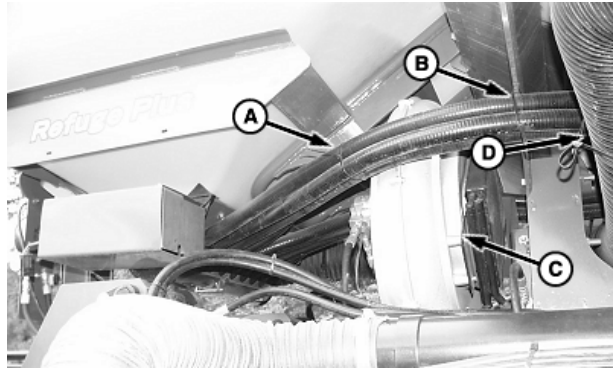
D—Row 19
E—Row 20
F—Row 22

OUO6045,00006A2 -19-27APR09-2/8

8. On left-hand side, route hoses for rows 15, 17 and 18 to left of CCS fan (C).
9. Secure hoses to CCS tank support using tie strap (B).
10. Tie all hoses together using tie strap (A).

A—Tie Strap
B—Tie Strap

C—CCS Fan



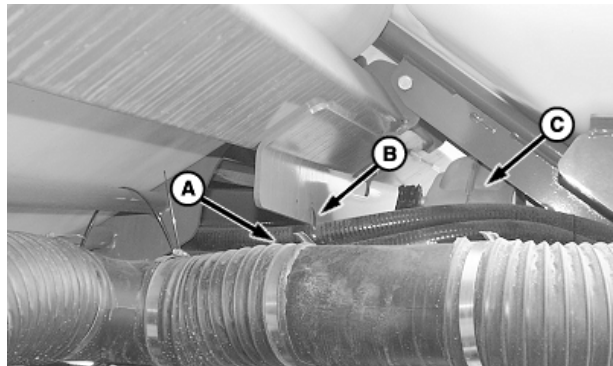
A56803—UN—16AUG05

OUO6045,00006A2 -19-27APR09-3/8

11. On right-hand side, route hoses for rows 19, 20 and 22 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).
12. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



A56804—UN—18JUL05

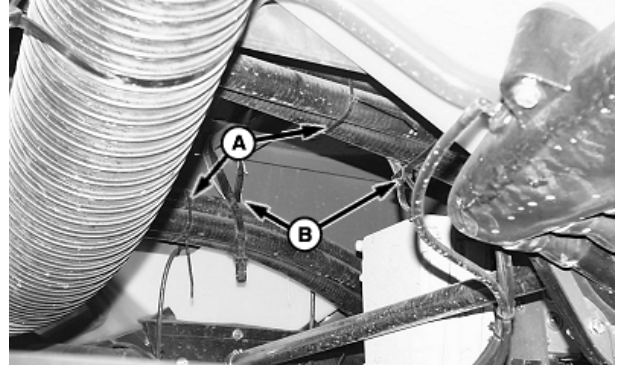
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OUO6045,00006A2 -19-27APR09-4/8

13. Route hoses to rear of machine and loosely secure hoses under platform using tie straps (B).
14. Tie hoses together using tie straps (A).

A—Tie Strap (2 used)

B—Tie Strap (2 used)



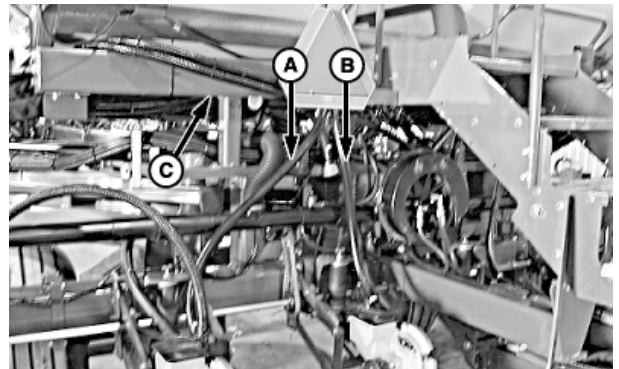
A56805 —UN—18JUL05

OUO6045,00006A2 -19-27APR09-5/8

15. On left-hand side of platform, route hoses for rows 17 and 18 (A and B) over 101 x 154 mm (4 x 6 in.) tube (C).
16. Connect hoses (A and B) to row units.
17. Repeat for rows 19 and 20 on right hand side of platform.
18. Disconnect quick couplers on nozzles 15 and 22. Install yellow caps on tank side of hoses 15 and 22.

A—Row 17
B—Row 18

C—101 x 154 mm (4 x 6 in.)
Tube



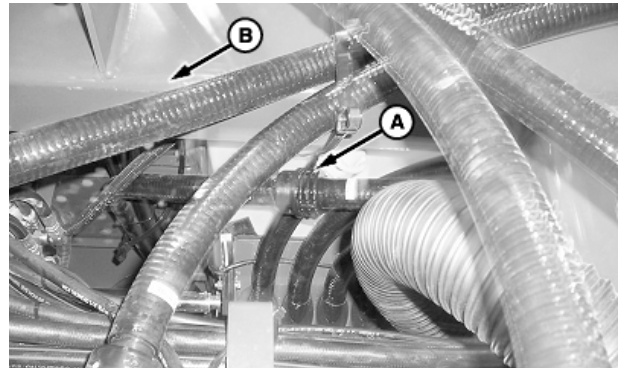
A56801 —UN—08SEP05

OUO6045,00006A2 -19-27APR09-6/8

19. On right-hand side of platform, connect hose for row 22 from Refuge Plus tank to row 22 hose in location (A), under 101 mm (4 in.) square tube (B).

A—Location

B—101 mm (4 in.) Square Tube

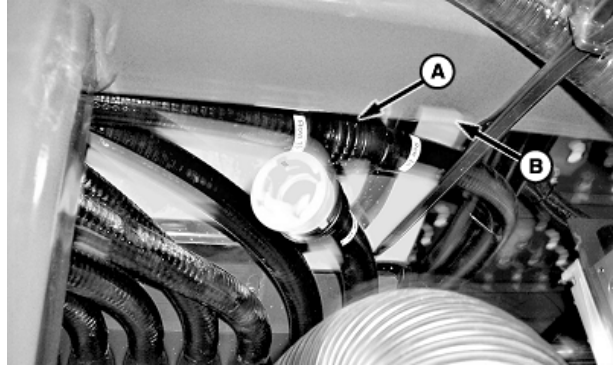


A56806 —UN—18JUL05

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OUO6045,00006A2 -19-27APR09-7/8

20. On left-hand side of platform, connect hose for row 15 from Refuge Plus tank to row 15 hose in location (A) under 101 mm (4 in.) square tube (B).
21. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that hoses are laying and moving properly.
22. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



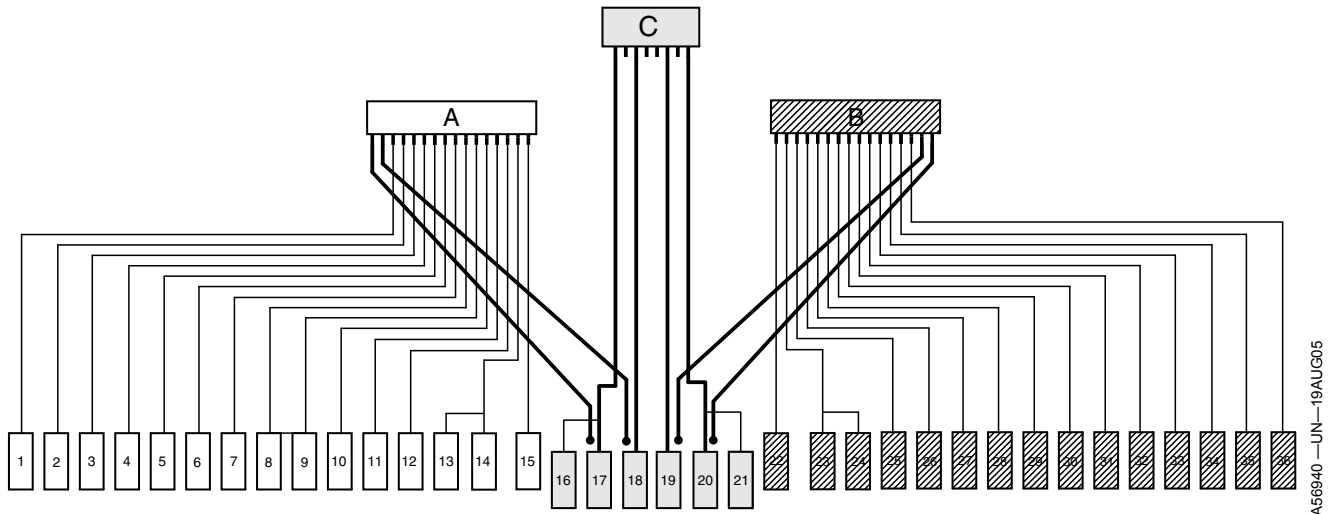
A56807—UN—18JUL05

A—Location

B—101 mm (4 in.) Square Tube

OUC6045,00006A2 -19-27APR09-8/8

Extra Capacity Center Planting Diagram DB90 36-Row 76 cm (30 in.)



A56940 —UN—19AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for extra capacity planting to center. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.
3. Disconnect hoses for rows 17, 18, 19, and 20 at the row units. Install a yellow cap on each hose. Secure

hoses to frame with tie straps to keep them from being damaged.

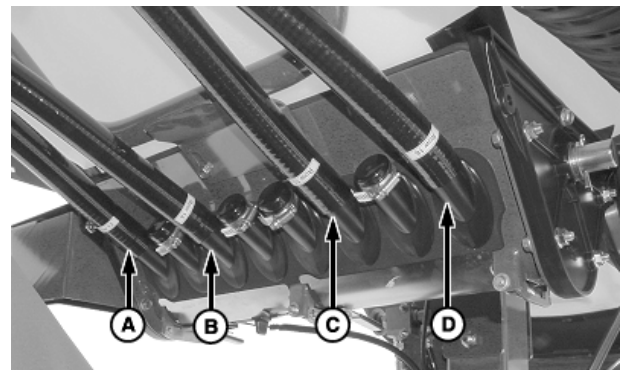
4. Leave jumper hoses from row 17 to row 16 and row 20 to row 21 connected.

OUO6045,0000699 -19-27APR09-1/6

5. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart.

Row Number	Length
17	3505 mm (138 in.)
18	3380 mm (133 in.)
19	3380 mm (133 in.)
20	3505 mm (138 in.)

6. Install a female coupler to one end of each hose.
7. Install an O-ring in each female coupler.
8. Mark both ends of each hose with row number, shown in chart, for future reference.
9. Remove vinyl caps from Refuge Plus tank nozzles and install hoses (A—D) as shown. Leave vinyl caps on nozzles that are not used.



A—Row 17
B—Row 18

C—Row 19
D—Row 20

A56777 —UN—16AUG05

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OUO6045,0000699 -19-27APR09-2/6

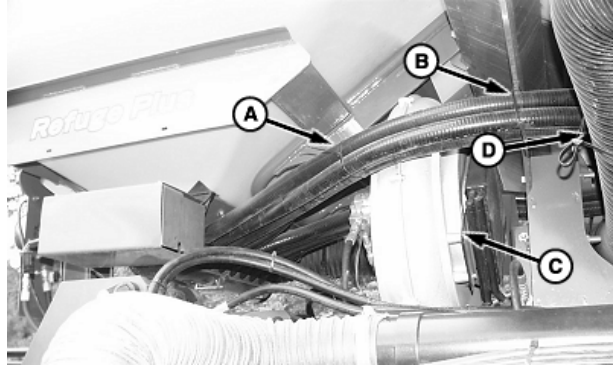
10. On left-hand side, route hoses for row 17 and 18 to left of CCS fan (C) and over 154 mm (6 in.) air hose (D).

11. Secure hoses to CCS tank support using tie strap (B).

12. Tie hoses together using tie strap (A).

A—Tie Strap
B—Tie Strap

C—CCS Fan
D—154 mm (6 in.) Air Hose



A56803 —UN—16AUG05

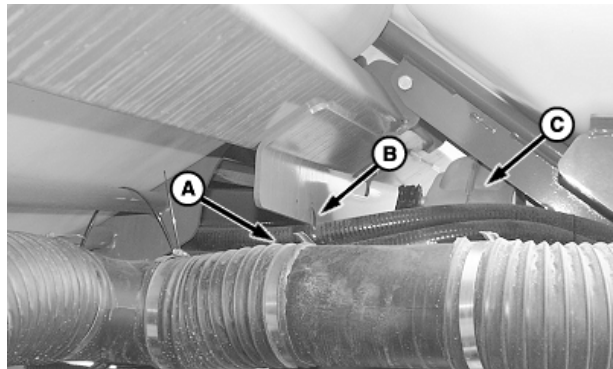
OUC6045,0000699 -19-27APR09-3/6

13. On right-hand side, route hoses for row 19 and 20 to right of CCS fan (C) and over 154 mm (6 in.) air hose (A).

14. Secure hoses to CCS tank support using tie strap (B).

A—154 mm (6 in.) Air Hose
B—Tie Strap

C—CCS Fan



A56804 —UN—18JUL05

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OUC6045,0000699 -19-27APR09-4/6

15. Route hoses under platform and secure to cross braces using tie straps (A and B).

A—Tie Strap (2 used)

B—Tie Strap (2 used)



A56800 —UN—15JUL05

Hoses On Left-Hand Side



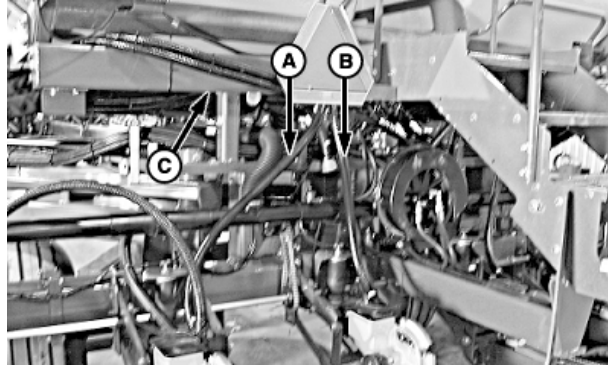
A56799 —UN—15JUL05

Hoses on Right-Hand Side

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OUO6045,0000699 -19-27APR09-5/6

16. On left-hand side, route hoses for row 17 and 18 (A and B) over 101 x 514 mm (4 x 6 in.) tube (C).
17. Repeat on right-hand side for row 19 and 20.
18. Connect hoses to row units.
19. Carefully fold the machine the first time. Watch hoses routed to center row units. Cycle machine up and down a few times with someone watching this area to verify that hoses are laying and moving properly.
20. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



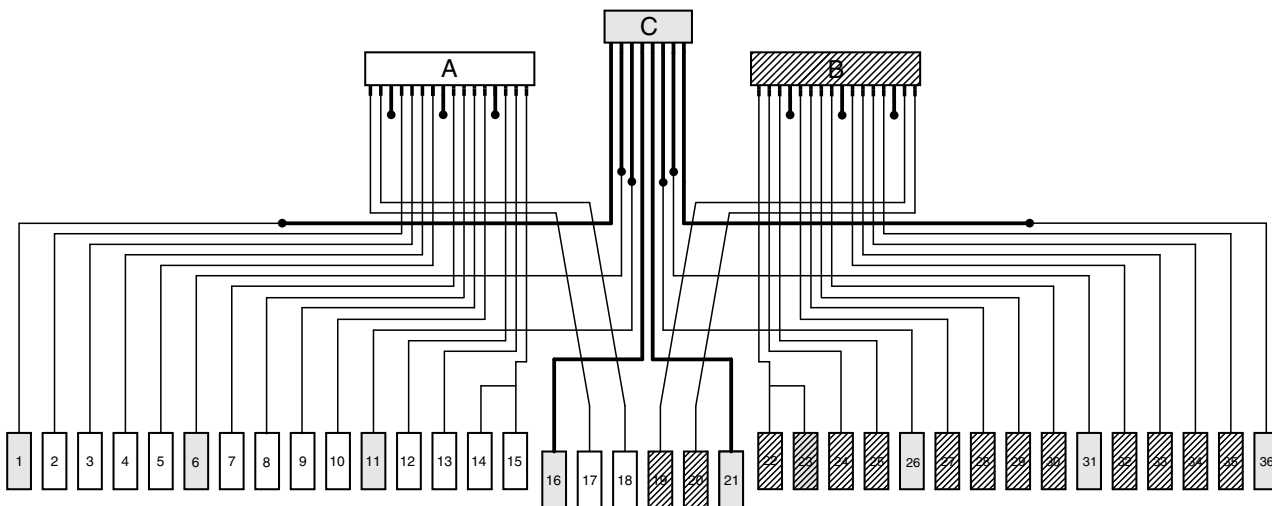
A56801—UN—08SEP05

A—Row 17
B—Row 18

C—101 x 154 mm (4 x 6 in.)
Tube

OUO6045,0000699 -19-27APR09-6/6

1-4-1-4 Seed Corn Planting Diagram DB90 36-Row 76 cm (30 in.)



A56480—UN—25AUG05

A—Left-Hand CCS Tank

B—Right-Hand CCS Tank

C—Refuge Plus Tank

1. This diagram shows the Refuge Plus System used for seed corn planting in a 1-4-1-4 pattern. Follow the remaining steps for cutting, splicing, and routing of hoses.
2. Unfold planter, install service locks on lift cylinders, lower planter onto service locks.

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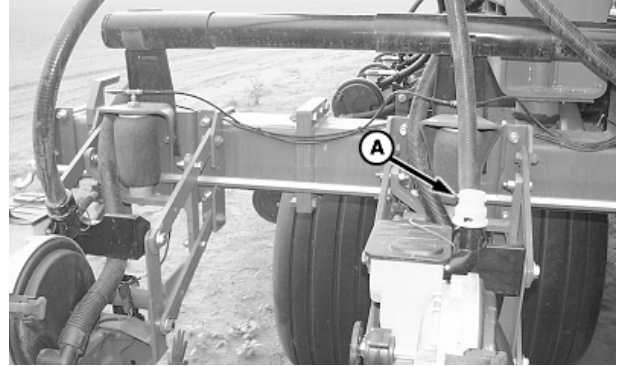
OUO6045,000069A -19-27APR09-1/12

3. Remove jumper hoses connecting rows 16 and 17 and rows 20 and 21. Install a yellow cap with an O-ring on the vertical port of the inlet fitting on rows 17 (A) and 20 (B).
4. Trace hoses from rows 1, 6, 11, 26, 31 and 36 from each row to the nozzle on the bottom of the tank that feeds it. Mark the hose at the nozzle with the row number.
5. Cut and splice hoses on main CCS tanks on rows 6, 11, 26, and 31 as described in the following chart. See Cut and Splice Seed Delivery Hose section.

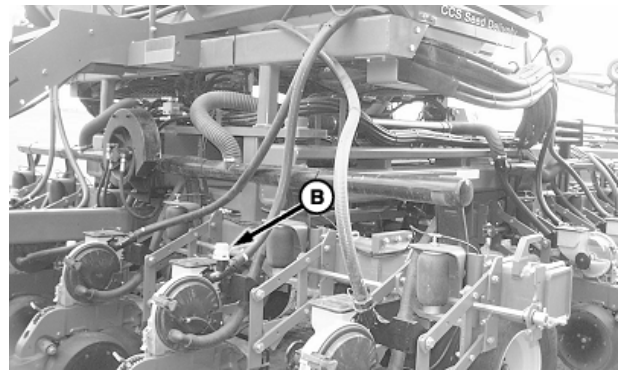
Row Number	Distance from Nozzle
6	154 mm (6 in.)
11	154 mm (6 in.)
26	154 mm (6 in.)
31	154 mm (6 in.)

A—Row 17

B—Row 20



A56812 —UN—19JUL05



A56813 —UN—19JUL05

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OUO6045,000069A -19-27APR09-2/12

6. Measure hoses going to rows 1 and 36 from the end of the tank cradle (A) and cut and splice in location (B) as described in the following chart.

Row Number	Distance from End of Tank Cradle
1	610 mm (24 in.)
36	610 mm (24 in.)

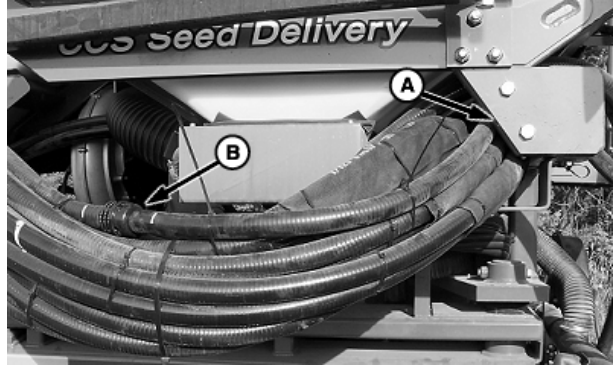
7. Cut hoses from bulk hose for Refuge Plus tank as described in the following chart:

Row Number	Length
1	3810 mm (150 in.)
6	2540 mm (100 in.)
11	2290 mm (90 in.)
16	4220 mm (166 in.)
21	4220 mm (166 in.)
26	2290 mm (90 in.)
31	2540 mm (100 in.)
36	3810 mm (150 in.)

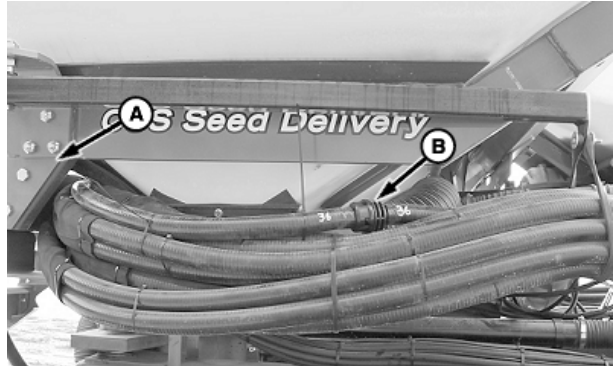
8. Install a female coupler to one end of each hose.
 9. Install an O-ring in each female coupler.
 10. Mark both ends of each hose with row number, shown in chart, for future reference.

A—Tank Cradle

B—Location



Row 1 Shown



Row 36 Shown

A56820—UN—19JUL05

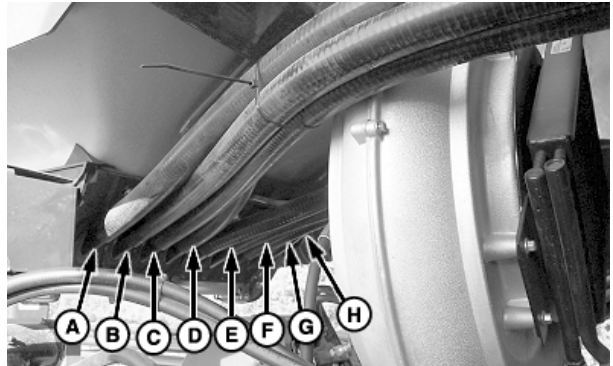
A56808—UN—18JUL05

OUC6045,000069A -19-27APR09-3/12

11. Remove vinyl caps and install hoses (A—H) to the Refuge Plus tank as shown.

A—Row 1
 B—Row 6
 C—Row 11
 D—Row 16

E—Row 21
 F—Row 26
 G—Row 31
 H—Row 36



A56810—UN—16AUG05

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OUC6045,000069A -19-27APR09-4/12

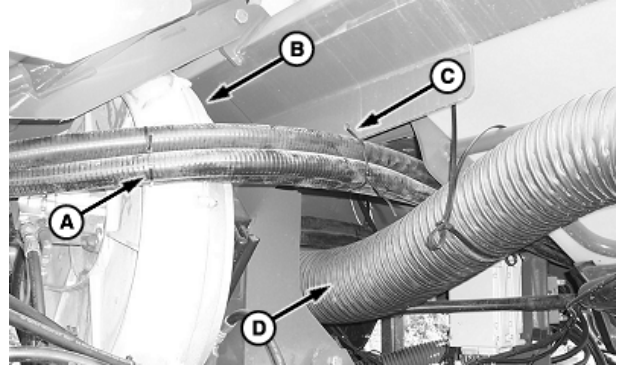
12. On left-hand side, route hoses for rows 1, 6, 11 and 16 to left side of CCS fan (B) and over 154 mm (6 in.) air hose (D).

13. Tie hoses together with tie strap (A).

14. Secure hoses to CCS tank support using tie strap (C).

A—Tie Strap
B—CCS Fan

C—Tie Strap
D—154 mm (6 in.) Air Hose



A56814 —UN—19JUL05

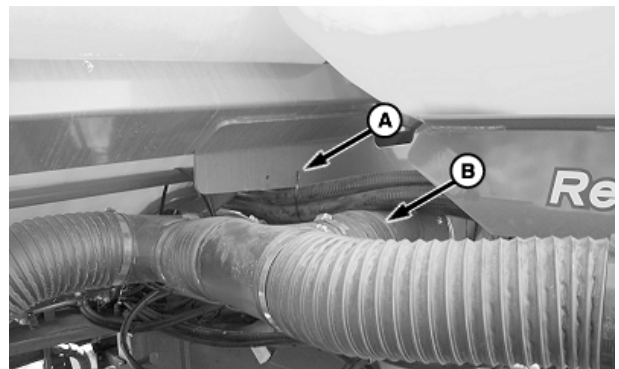
OUC6045,000069A -19-27APR09-5/12

15. On right-hand side, route hoses for rows 21, 26, 31 and 36 over 154 mm (6 in.) air hose (B).

16. Secure hoses to CCS tank support using tie strap (A).

A—Tie Strap

B—154 mm (6 in.) Air Hose



A56815 —UN—19JUL05

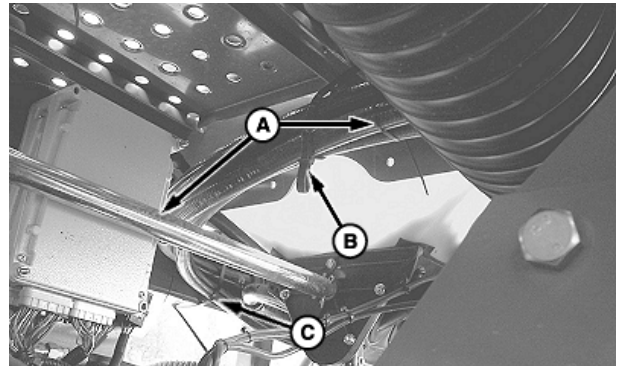
OUC6045,000069A -19-27APR09-6/12

17. Under platform on left-hand side, tie hoses together using tie straps (A).

18. Secure hoses loosely to cross brace using tie strap (B) and to 101 mm (4 in.) square tube using tie strap (C).

A—Tie Strap (2 used)
B—Tie Strap

C—Tie Strap



A56816 —UN—19JUL05

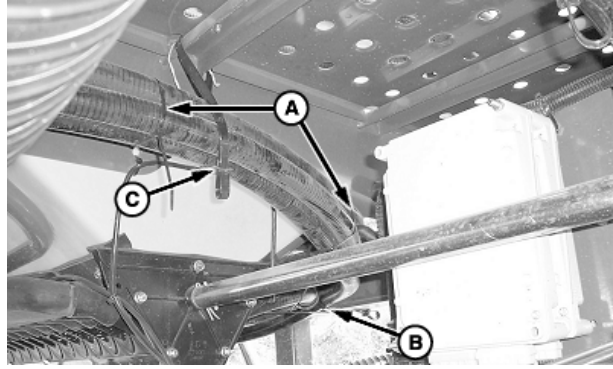
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OUC6045,000069A -19-27APR09-7/12

19. Under platform on right-hand side, tie hoses together using tie straps (A).
20. Secure hoses loosely to cross brace using tie strap (C) and to 101 mm (4 in.) square tube using tie strap (B).
21. Disconnect quick couplers on 1, 6, 11, 26, 31 and 36. Install yellow caps on tank side of hoses 1, 6, 11, 26, 31 and 36.
22. Connect hoses for rows 6, 11, 21 and 31 from Refuge Plus tank to appropriate row unit hose.

A—Tie Strap (2 used)
B—Tie Strap

C—Tie Strap

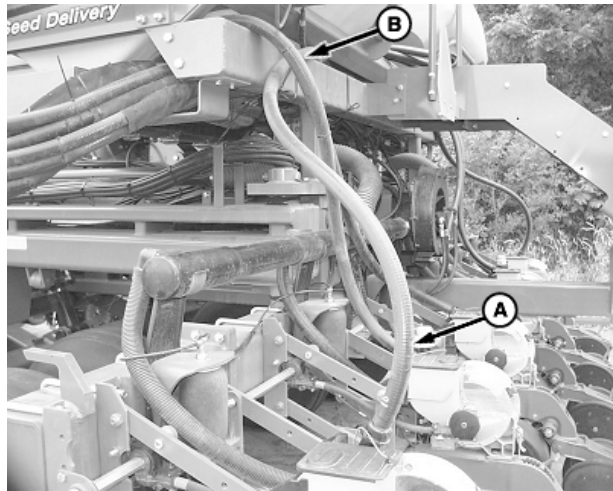


A56817—UN—19JUL05

OUC6045,000069A -19-27APR09-8/12

23. Route row 16 hose (A) as shown and connect to row unit.
24. Secure hose to 101 mm (4 in.) square tube using tie strap (B).

A—Row 16 Hose



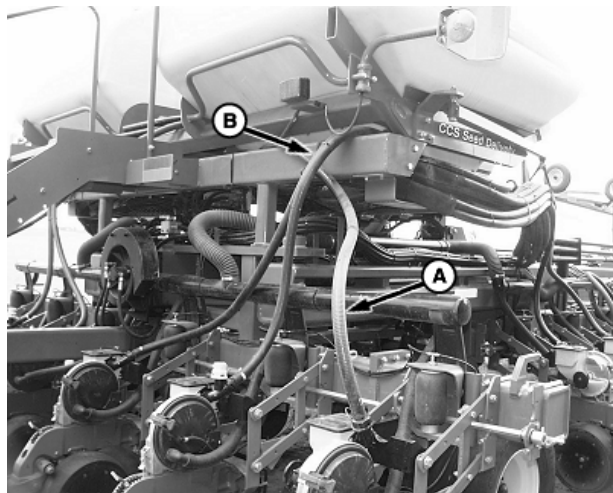
A56818—UN—19JUL05

OUC6045,000069A -19-27APR09-9/12

25. Route row 21 hose (A) as shown and connect to row unit.
26. Secure hose to 101 mm (4 in.) square tube using tie strap (B).

A—Row 21 Hose

B—Tie Strap



A56819—UN—19JUL05

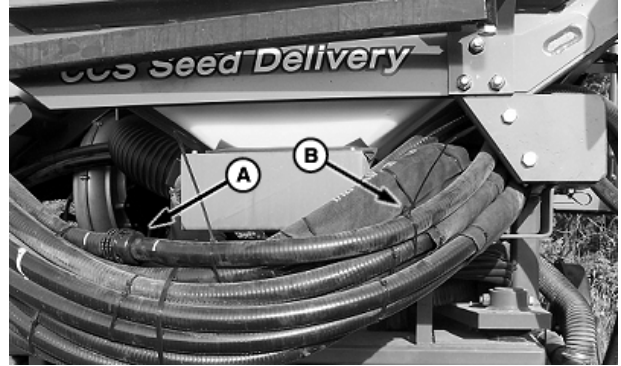
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OUC6045,000069A -19-27APR09-10/12

27. Route hose for row 1 (A) to left-hand side of CCS tank and connect to row unit hose in location shown.
28. Secure hose to other seed delivery hoses using tie strap (B).

A—Row 1

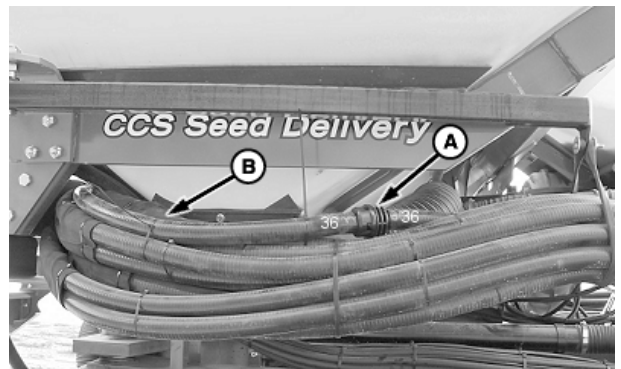
B—Tie Strap



A56955 —UN—15AUG05

OUO6045,000069A -19-27APR09-11/12

29. Route hose for row 36 (A) to right-hand side of CCS tank and connect in location shown.
30. Secure hose to other seed delivery hoses using tie strap (B).
31. Carefully fold the machine the first time. Watch hoses between ends of CCS tanks and support bracket on the inner wings to ensure they do not become too tight while folding or get crushed. Cycle machine open and closed a few times with someone watching this area to verify that the hoses are laying and moving properly.
32. To change hose routing back, remove yellow caps. Disconnect hoses at quick couplers and reconnect them in their original position. Reinstall yellow caps on hoses coming from Refuge Plus Tank.



A56962 —UN—16AUG05

A—Row 36

B—Tie Strap

OUO6045,000069A -19-27APR09-12/12

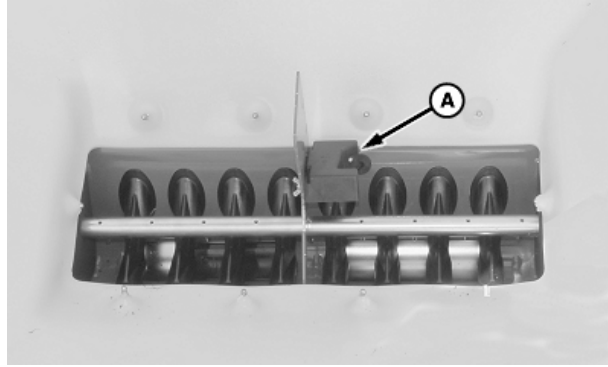
Service

Cleaning Tank Level Sensor

NOTE: Tank level sensor should be cleaned before filling. Even if the tank has not been used, dirt can collect on the sensor.

Clean tank level sensor (A) prior to filling Refuge Plus tank. Use stiff bristled 203 mm (8 in.) wide broom with a 1372 mm (4.5 ft) handle to clean sensor.

A—Tank Level Sensor



A56400—UN—02JUN05

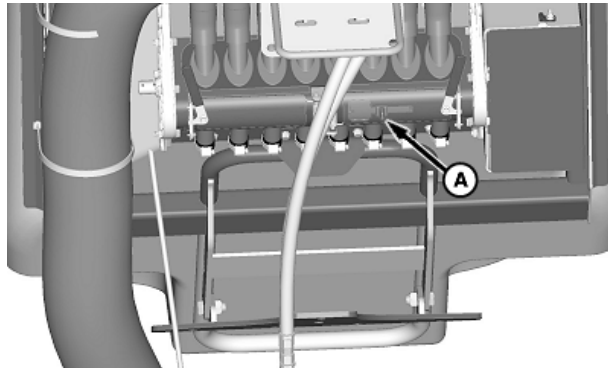
OOU6045,000069B -19-15SEP05-1/1

Partially Cleaning Out Refuge Plus Tank

To remove only a portion of seed from CCS tanks, there is a small variable cleanout door that can be opened or closed to control the amount of seed being removed.

Slide door (A) until desired amount of seed is coming out.

A—Door



A57045—UN—31AUG05

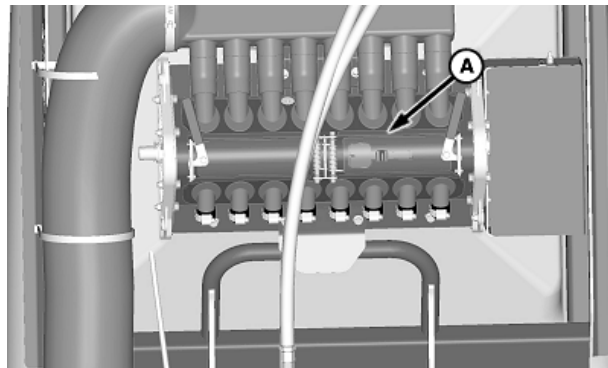
OOU6045,000069D -19-15SEP05-1/1

Cleaning Out Refuge Plus Tank

IMPORTANT: IMPORTANT: When cleaning tank for certified seed, remove all seed from tank with stiff bristled 1372 mm (4.5 ft) handle 203 mm (8 in.) wide broom.

1. Place a container under cleanout door to catch remaining seed from tank.
2. Open cleanout door (A) on bottom of Refuge Plus tank.
3. Close cleanout door.
4. Repeat on other cleanout door.

A—Cleanout Door



A57046—UN—31AUG05

OOU6045,000069C -19-15SEP05-1/1

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John Deere Service Literature Available

Technical Information

Technical information can be purchased from John Deere. Some of this information is available in electronic media, such as CD-ROM disks, and in printed form. There are many ways to order. Contact your John Deere dealer. Call **1-800-522-7448** to order using a credit card. Search online from <http://www.JohnDeere.com>. Please have available the model number, serial number, and name of the product.

Available information includes:

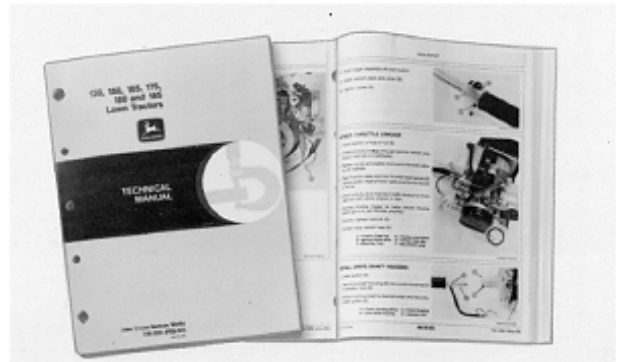
- **PARTS CATALOGS** list service parts available for your machine with exploded view illustrations to help you identify the correct parts. It is also useful in assembling and disassembling.
- **OPERATOR'S MANUALS** providing safety, operating, maintenance, and service information. These manuals and safety signs on your machine may also be available in other languages.
- **OPERATOR'S VIDEO TAPES** showing highlights of safety, operating, maintenance, and service information. These tapes may be available in multiple languages and formats.
- **TECHNICAL MANUALS** outlining service information for your machine. Included are specifications, illustrated assembly and disassembly procedures, hydraulic oil flow diagrams, and wiring diagrams. Some products have separate manuals for repair and diagnostic information. Some components, such as engines, are available in separate component technical manuals
- **FUNDAMENTAL MANUALS** detailing basic information regardless of manufacturer:
 - Agricultural Primer series covers technology in farming and ranching, featuring subjects like computers, the Internet, and precision farming.
 - Farm Business Management series examines "real-world" problems and offers practical solutions in the areas of marketing, financing, equipment selection, and compliance.
 - Fundamentals of Services manuals show you how to repair and maintain off-road equipment.
 - Fundamentals of Machine Operation manuals explain machine capacities and adjustments, how to improve machine performance, and how to eliminate unnecessary field operations.



TS189 —UN—17JAN89



TS191 —UN—02DEC88



TS224 —UN—17JAN89



TS1663 —UN—10OCT97

DX,SERVLIT -19-31,JUL03-1/1

John Deere Service Keeps You On The Job

John Deere Is At Your Service

CUSTOMER SATISFACTION is important to John Deere.

Our dealers strive to provide you with prompt, efficient parts and service:

- Maintenance and service parts to support your equipment.
- Trained service technicians and the necessary diagnostic and repair tools to service your equipment.



TS201 —UN—23AUG88

CUSTOMER SATISFACTION PROBLEM RESOLUTION PROCESS

Your John Deere dealer is dedicated to supporting your equipment and resolving any problem you may experience.

1. When contacting your dealer, be prepared with the following information:

- Machine model and product identification number
- Date of purchase

–Nature of problem

2. Discuss problem with dealer service manager.
3. If unable to resolve, explain problem to dealership manager and request assistance.
4. If you have a persistent problem your dealership is unable to resolve, ask your dealer to contact John Deere for assistance. Or contact the Ag Customer Assistance Center at 1-866-99DEERE (866-993-3373) or e-mail us at www.deere.com/en_US/ag/contactus/.

DX,IBC,2 -19-01MAR06-1/1

