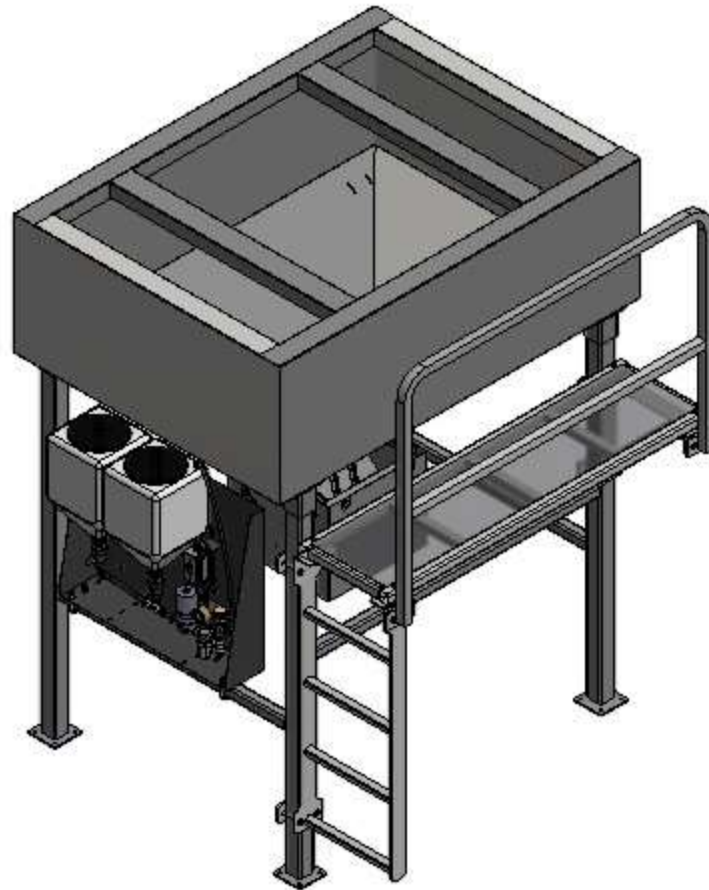
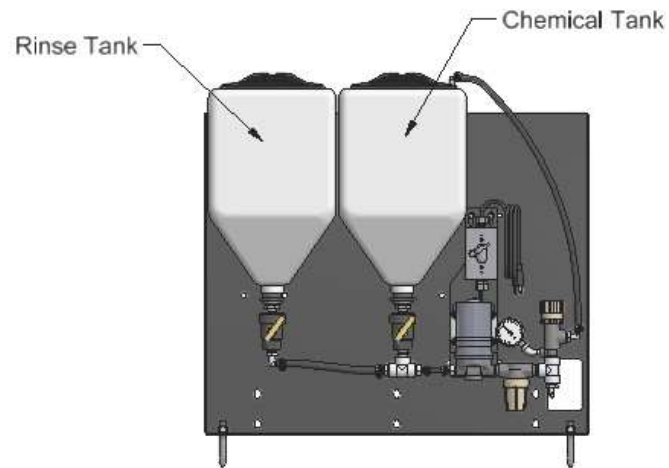


# INSTRUCTIONS FOR ASSEMBLY OF INOCULATION SYSTEM

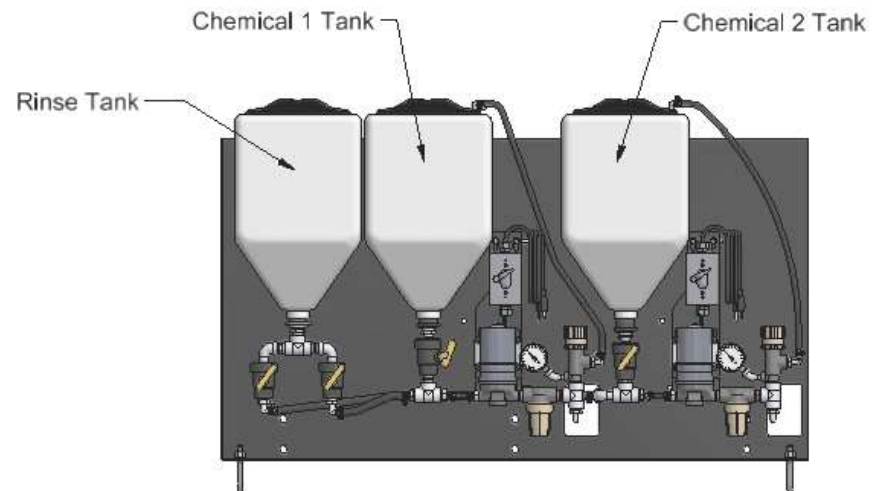
INCLUDES: SINGLE 50 BUSHEL HOPPER  
SPRAY BEAN LADDER  
SPRAY BEAN LADDER PLUMBING  
TWO TANK SINGLE CHEMICAL SYSTEM  
THREE TANK TWO CHEMICAL SYSTEM



### Two Tank Single Chemical Assembly



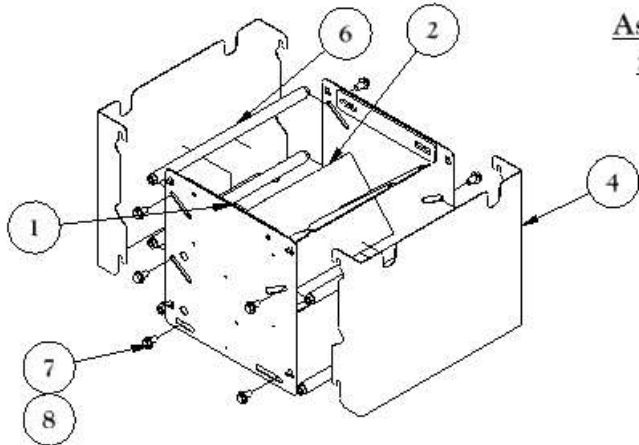
### Three Tank Two Chemical Assembly



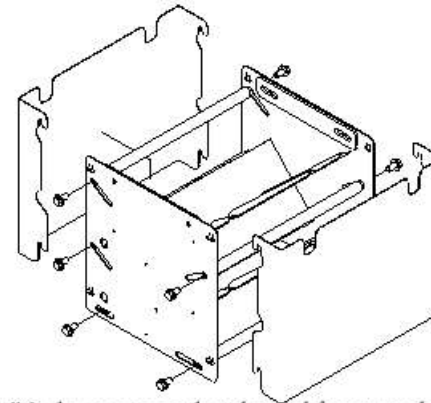
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Assembly Instructions for  
inoculator bean ladder

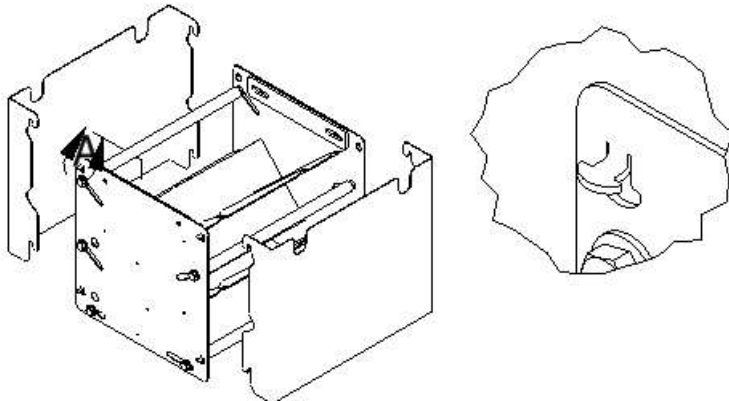


Step 1: Gather all parts for the spray bean ladder.

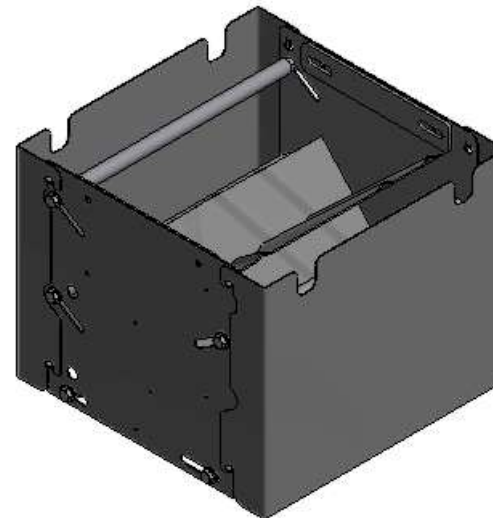


Step 2: Insert #6, the spray nozzle tube and fasten to the welded assembly using the #7, 1/2" x 1" hex bolt and #8, 1/2" flat washer. Repeat with the four other spray nozzle tubes. Notice the spray nozzle tube positions are adjustable. Begin with them all the way to the outside and then adjust for maximum coverage when using the spray tips.

**DETAIL A**



Step 3: Locate the 8 tabs located near the corners on the assembly as shown in Detail A. Bend the tabs up to 90 degrees as shown. The bent tabs are the mounts for the wind covers (#4).



Step 4: Place the wind covers (#4) over the bent tabs. The covers will remain in place and can be easily removed for service to the spray tips if needed.

The Inoculator Spray Ladder is Complete and can be mounted to your inoculation bin/stand.

Inoculator Spray Ladder Parts		
ITEM	QTY	PART NUMBER
1	1	13104 Spray bean ladder inoc welded assembly
2	3	13105 Bent Shelf inoc (with welded assembly)
4	2	13122 Wind Cover
6	5	13159 Spray Nozzle Tube w Nuts Asmbly
7	10	1/2 x 1" Hex Bolt
8	10	1/2 Flat Washer

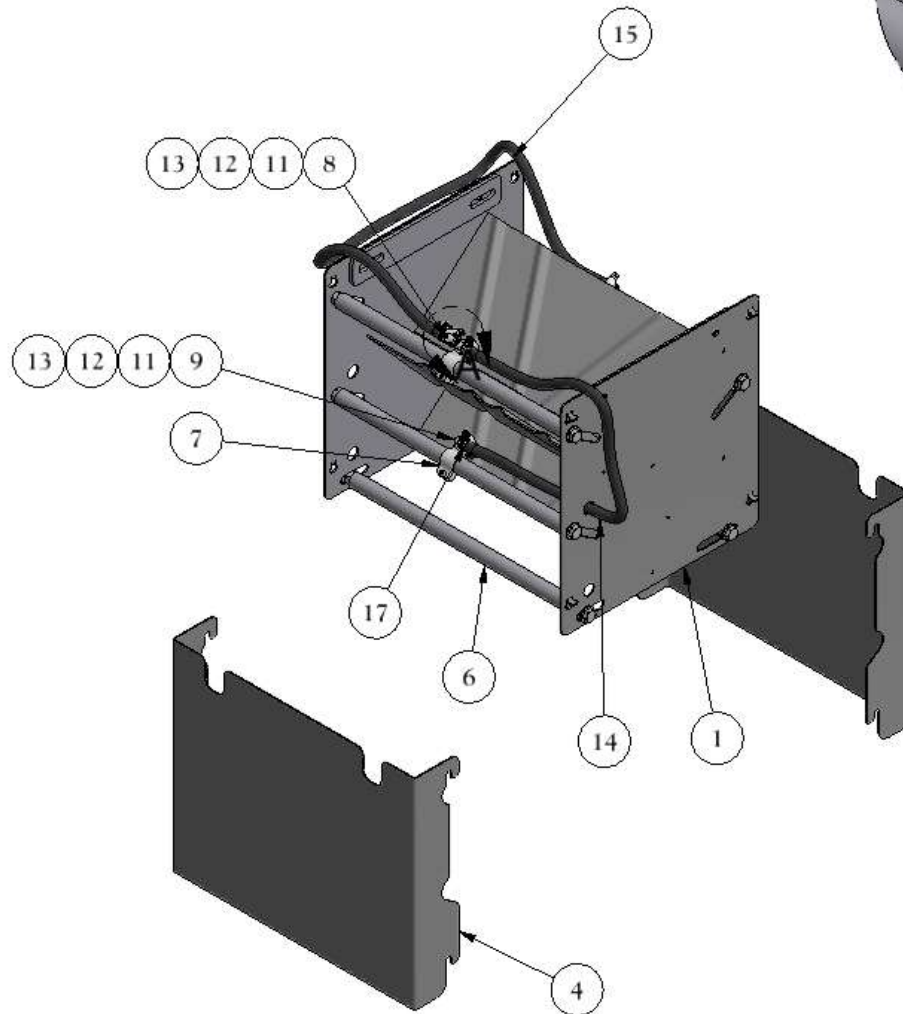
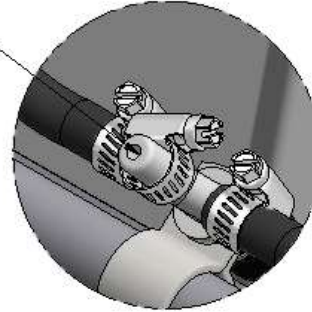
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## Single Chemical Two Tank Plumbing

### DETAIL A

Attach Supply Hose Here  
from pump



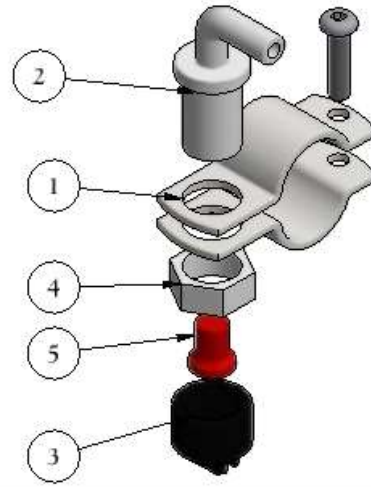
### Parts List

ITEM	QTY	PART NUMBER
1	1	13104 Spray bean ladder inoc sideplate
2	3	13105 Bent Shelf inoc
3	2	13107 Flat .25 x 2 Hopper Mount.ipt
4	2	13122 Wind Cover
5	1	13104 Spray bean ladder inoc sideplate_MIR
6	5	13159 Spray Nozzle Tube w Nuts Asmbly
7	3	Boom Clamp Assembly 3_4
8	1	3_8 Cross Nozzle Body
9	2	3_8 Elbow Nozzle Body
11	3	Nozzle Body Nut
12	3	Spray Cap with tip 11001VS XR Teejet (orange)
13	3	50 Mesh Check Valve Screen
14	1	Inoc hose 1
15	1	Inoc hose 2
17	5	Hose Clamp Size 16

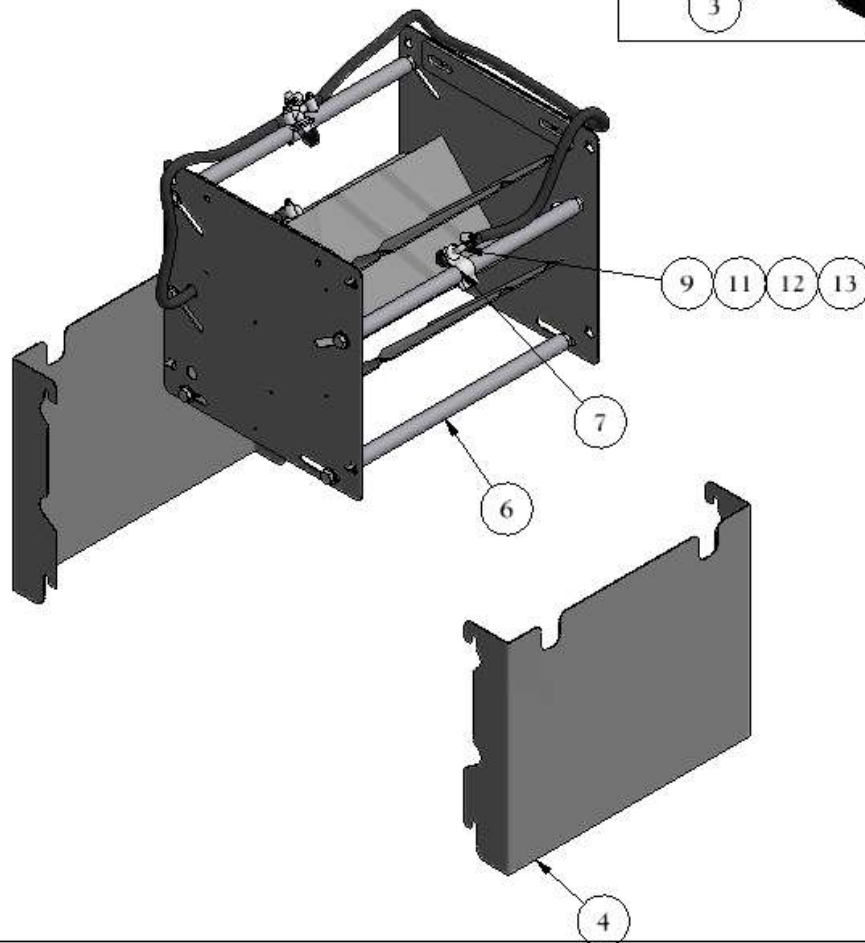
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## Single Chemical Two Tank Plumbing



Parts List		
ITEM	QTY	PART NUMBER
1	1	Boom Clamp Assembly 3_4
2	1	3_8 Elbow Nozzle Body
3	1	Spray Cap with 11001VS XR Tee Jet tip
4	1	Nozzle Body Nut
5	1	50 Mesh Check Valve Screen



### To Assemble the Two Tank Chemical Plumbing: 3 spray tips

1. Assemble the spray beam ladder (see direction sheet, leave wind covers off for now to make plumbing easier).
2. Adjust the spray nozzle tubes (6) out all the way
3. Mount the boom clamp (7) on the spray bar (see illustration).
4. Assemble the correct nozzle body in the boom clamp (11, 12, 13 , and correct nozzle body)
5. Adjust the desired angle of the nozzle body assembly to maximize coverage.
6. Tighten the nozzle body nut and the boom clamp fastener. The boom clamp assembly should now be tight against the spray nozzle tube.
7. Repeat steps 3-6 for the remaining nozzle bodies and boom clamps. Be sure to place the correct nozzle body in the correct location as per the picture to the left and previous page.
8. Route the 3/8" spray hose to connect all nozzle bodies to the nozzle body cross fitting. Use the 3/8" hose clamps to clamp the hose to the nozzle bodies. See the illustrations.
9. Attach the supply hose from the pump on the two tank single chemical assembly to the top fitting on the cross nozzle body fitting (see illustration).
10. Test the system with water to check for leaks and spray pattern. Repair any leaks and adjust spray tips to reach optimal pattern. Spray tip pattern can be adjusted by moving spray nozzle tubes in/out and adjusting the angle of the boom clamp/nozzle body assemblies.
11. Once adjustments have been made and/or repairs made, mount the wind covers (4).

Consult the chart for correct setting for flow with regards to seed flow.

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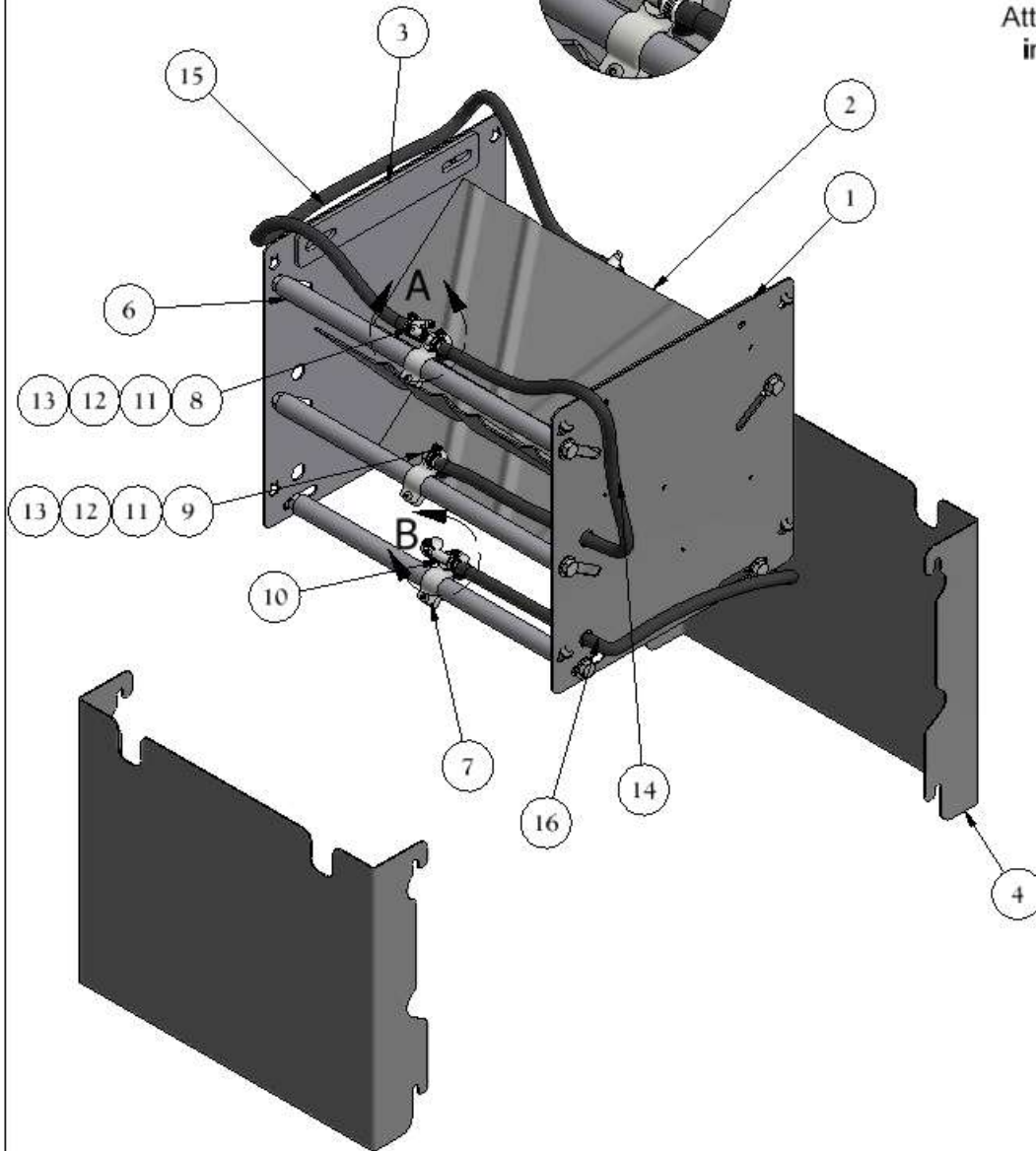
Attach supply hose from fungicide tank here  
3 nozzle circuit

**DETAIL A**

**TWO CHEMICAL THREE TANK PLUMBING**

Attach supply hose from inoculation tank here  
2 nozzle circuit

**DETAIL B**



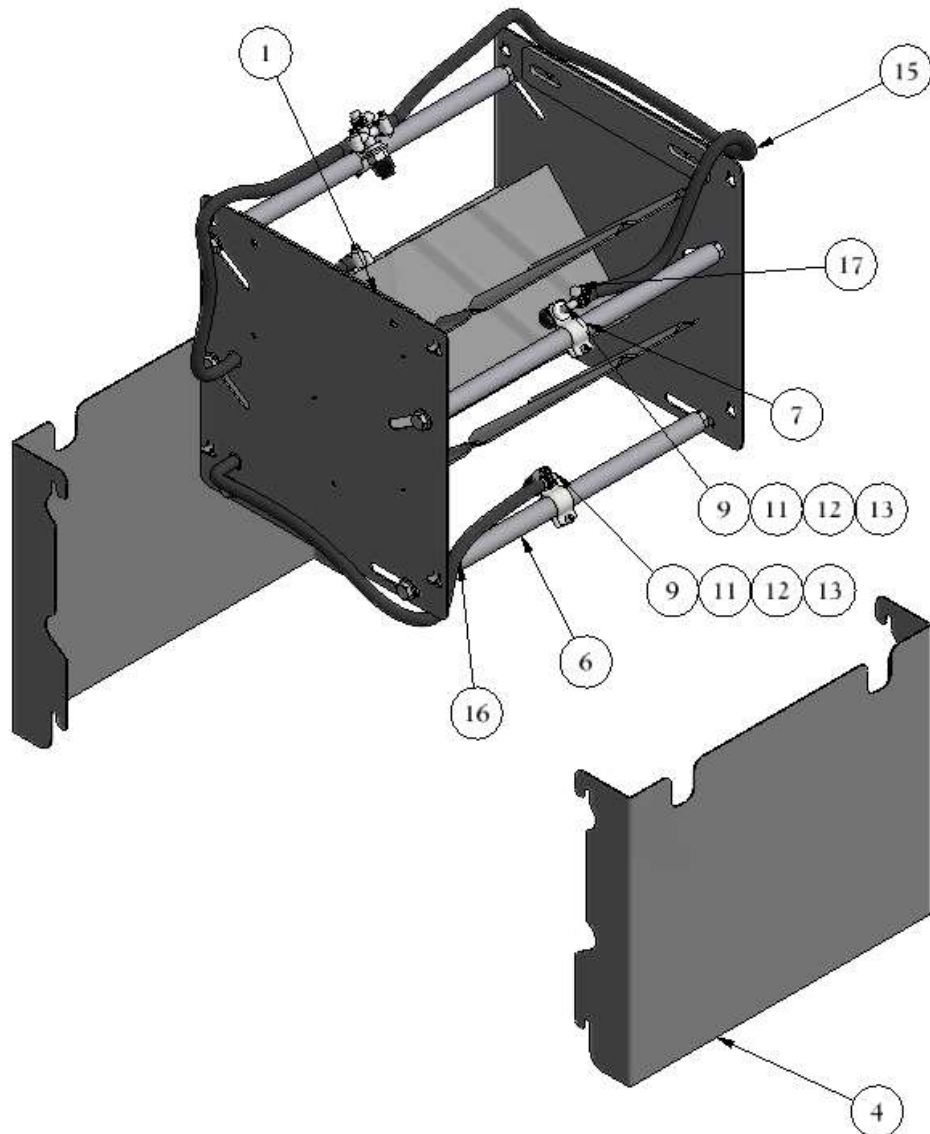
Fungicide will attach to the plumbing circuit with 3 nozzles.  
Inoculation will attach to the plumbing circuit with 2 nozzles.

Inoculation Spray Ladder Plumbing		
ITEM	QTY	PART NUMBER
1	1	13104 Spray bean ladder inoc sideplate
2	3	13105 Bent Shelf inoc
3	2	13107 Flat_25 x 2 Hopper Mount.ipt
4	2	13122 Wind Cover
5	1	13104 Spray bean ladder inoc sideplate_MIR
6	5	13159 Spray Nozzle Tube w Nuts Asmby
7	5	Boom Clamp Assembly 3_4
8	1	3_8 Cross Nozzle Body
9	3	3_8 Elbow Nozzle Body
10	1	3_8 Tee Nozzle Body
11	5	Nozzle Body Nut
12	5	Spray Cap with spray tip
13	5	50 Mesh Check Valve Screen
14	1	3/8" Spray Hose
15	1	3/8" Spray Hose
16	1	3/8" Spray Hose
17	8	3/8" Hose Clamp

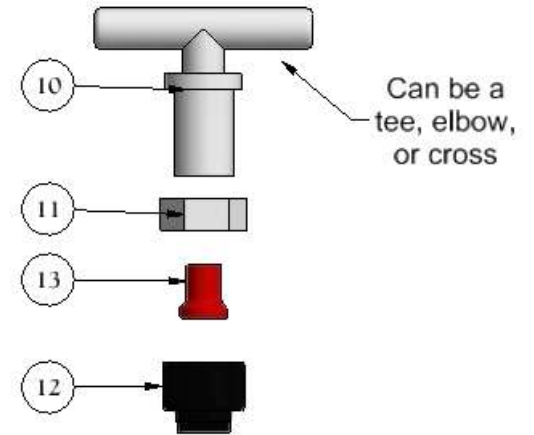
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## TWO CHEMICAL THREE TANK PLUMBING



### Nozzle Body Assembly



Spray Tip is Orange  
Tip Number: XR TEE JET 11001VS

### Inoculation Spray Ladder Plumbing

ITEM	QTY	PART NUMBER
1	1	13104 Spray bean ladder inoc sideplate
2	3	13105 Bent Shelf inoc
3	2	13107 Flat_25 x 2 Hopper Mount.ipt
4	2	13122 Wind Cover
5	1	13104 Spray bean ladder inoc sideplate_MIR
6	5	13159 Spray Nozzle Tube w Nuts Asmbly
7	5	Boom Clamp Assembly 3_4
8	1	3_8 Cross Nozzle Body
9	3	3_8 Elbow Nozzle Body
10	1	3_8 Tee Nozzle Body
11	5	Nozzle Body Nut
12	5	Spray Cap with spray tip
13	5	50 Mesh Check Valve Screen
14	1	3/8" Spray Hose
15	1	3/8" Spray Hose
16	1	3/8" Spray Hose
17	8	3/8" Hose Clamp

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### Assembly Instructions for the Two Chemical Three Tank Plumbing

Upon completion, a total of five spray tips will be mounted and two spray circuits will be completed. One circuit will have three spray tips and the second will have two spray tips.

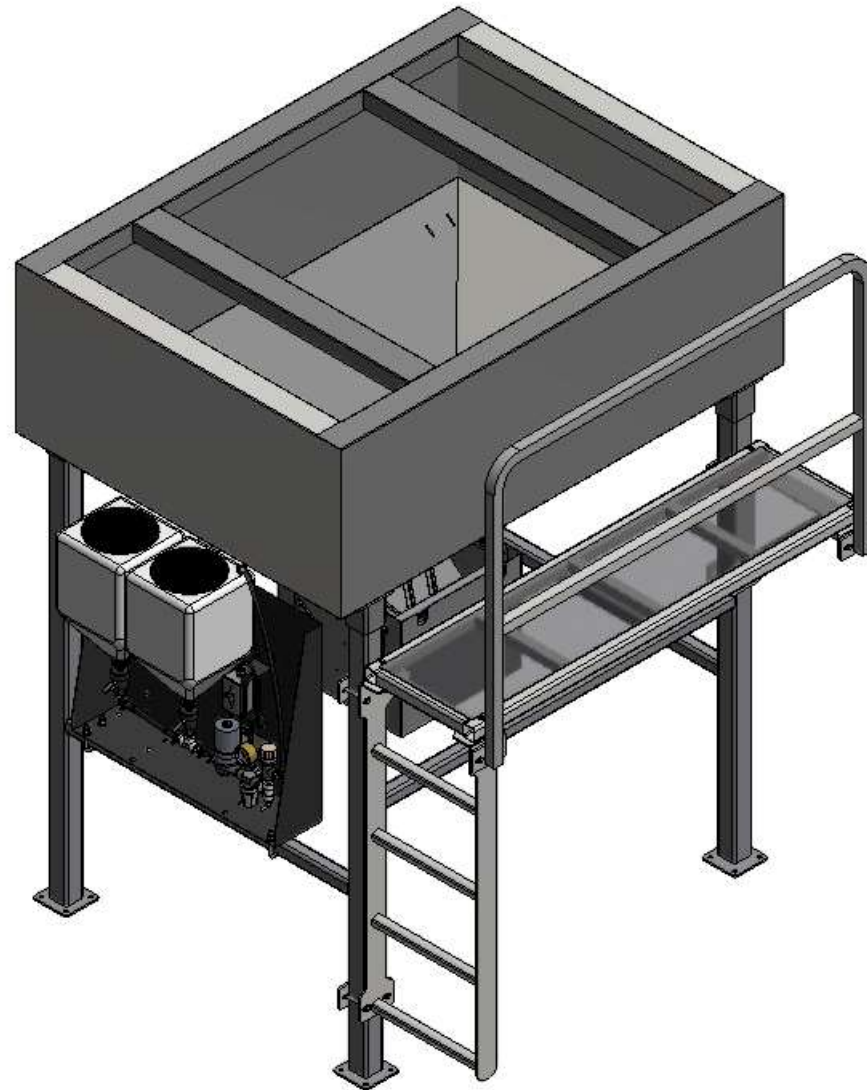
1. Assemble the spray bean ladder (see direction sheet). If spray bean ladder is assembled, remove the wind covers as this will aid in assembling the plumbing.
2. Adjust the spray nozzle tubes (6) out all the way.
3. Mount the boom clamp (7) on the spray bar (see illustration).
4. Assemble the correct nozzle body in the boom clamp (11, 12, 13).
5. Adjust the boom clamp assembly to the desired angle to maximize coverage.
6. Tighten the nozzle body nut and the boom clamp fastener. The boom clamp assembly should now be tight against the spray nozzle tube.
7. Repeat steps 3-6 for the remaining nozzle bodies and boom clamps. Be sure to mount the correct nozzle body in the correct location as per the illustration.
8. Route the 3/8" spray hose for circuit one. Begin at the nozzle body cross and route a hose to the opposite side to the nozzle body elbow. Next, begin back at the nozzle body cross and route the 3/8" hose to the nozzle body elbow that is below the nozzle body cross. See illustration. Use the 3/8" hose clamps to tighten the 3/8" hose onto the nozzle body assemblies. Circuit one should have three tips.
9. Route the 3/8" spray hose for circuit two. Begin at the nozzle body tee and route the hose to the opposite side to the nozzle body elbow. Use the 3/8" hose clamps to tighten the 3/8" hose to the nozzle bodies. Circuit two should have two tips (see illustrations). Circuit two should be located at the bottom of the spray bean ladder.
10. The bean spray ladder and two chemical three tank assemblies need to be mounted to the inoculation tank, please see instructions for mounting each.
11. Once the bean spray ladder and two chemical three tank assemblies are mounted, determine which tank will be for fungicide and which one will be for inoculant.
12. Connect the pump for the fungicide tank to the nozzle body cross using 3/8" hose and 3/8" hose clamps. The fungicide system should be connected to the three tip system (circuit one).
13. Connect the pump for the inoculant tank to the nozzle body tee using 3/8" hose and 3/8" hose clamps. The inoculant system should be connected to the two tip system at the bottom of the spray bean ladder.
14. Test the systems with water to test for leaks and to adjust the spray patterns for optimal coverage.
15. Once leaks have been fixed and adjustments are made, the system is ready for use.
16. Mount the wind covers back onto the spray bean ladder.

Consult chart for correct flow rate with seed flow.

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Assembly of the Hopper Inoculator and Inoculation System

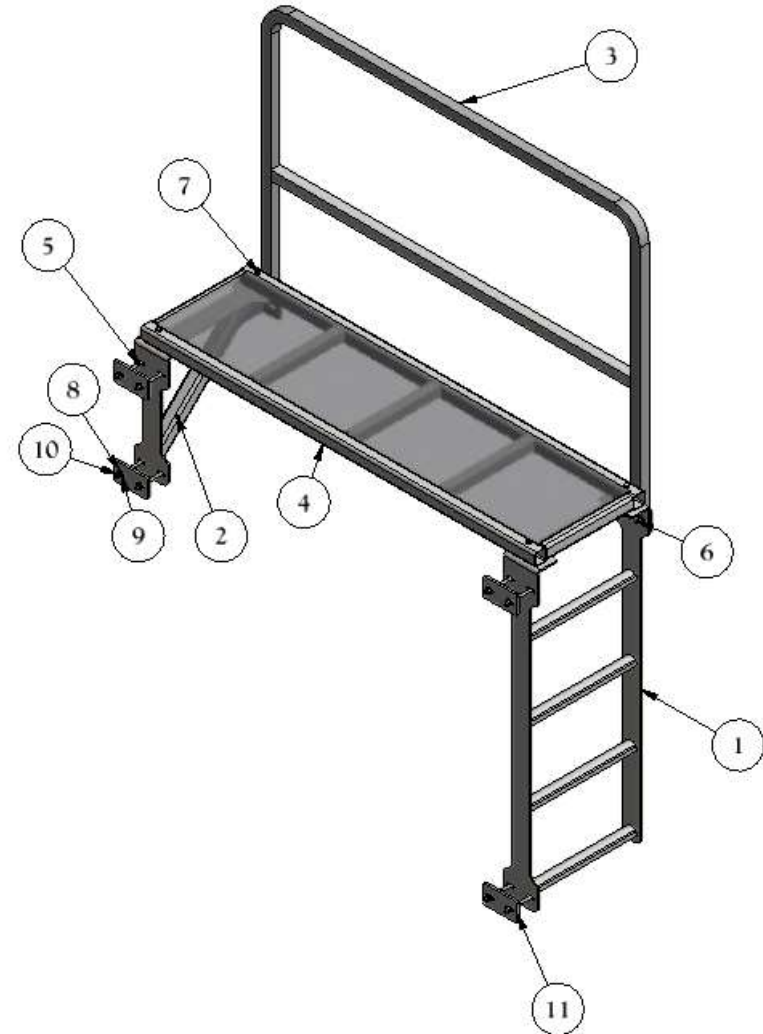
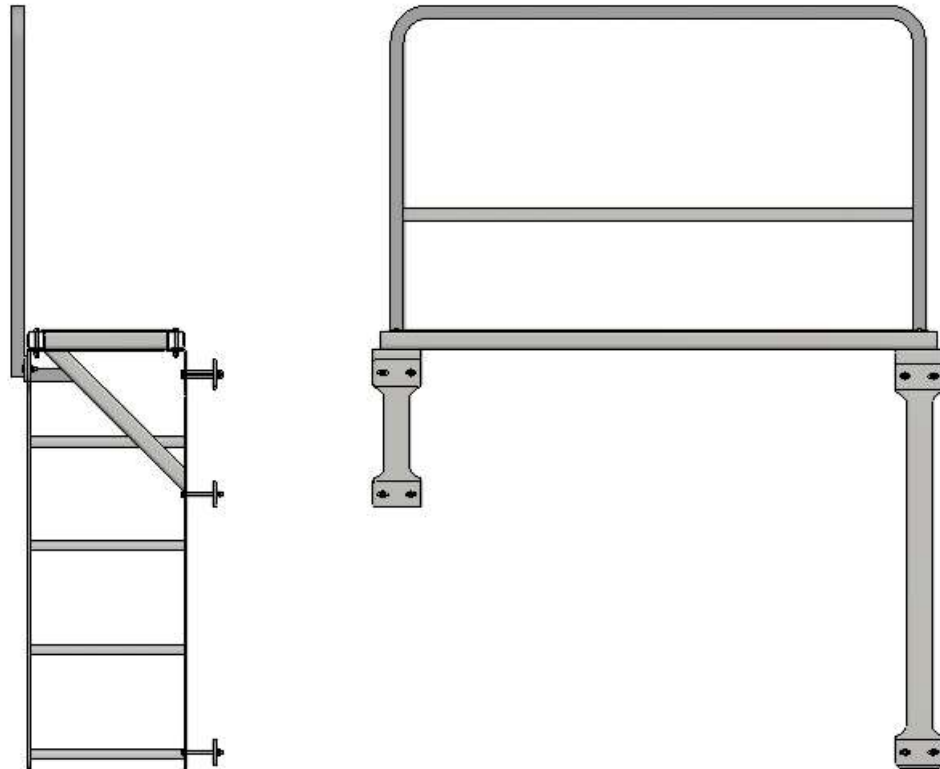


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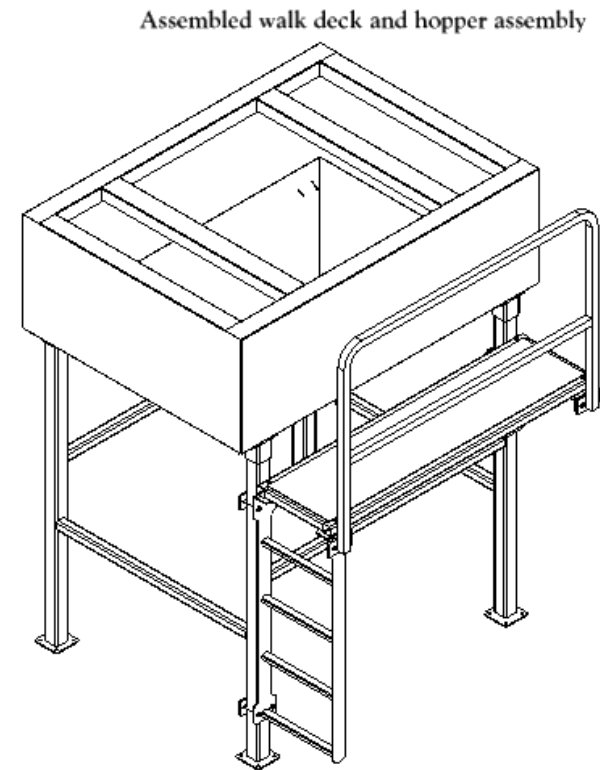
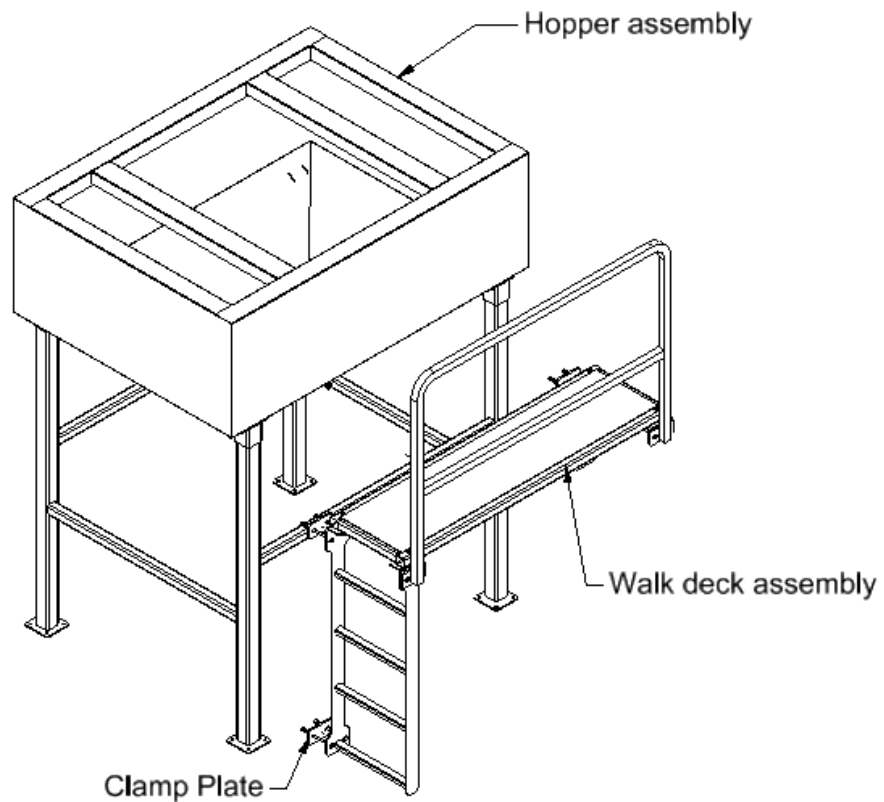
Parts List		
ITEM	QTY	FILE NAME
1	1	13153 Ladder 4 Rung.iam
2	1	13154 Walkway Brace.iam
3	1	13155 Handrail for 100 Bu Inoc.iam
4	1	13158 Walk Deck Asmbly.iam
5	8	3_8-4.5-UNC Hex Bolt
6	4	3_8-1.5-UNC Hex Bolt
7	4	3_8-3-UNC Hex Bolt
8	28	0.375 Flat Washer
9	16	0.375 Lock Washer
10	16	3_8 UNC Nut
11	4	Clamp Plate

Locate the walk deck (4) and the walkway brace (2). Connect as shown with 2, 3/8" x 3" hex bolt, lock washer, and nut (7). Locate the 4 rung ladder (1) and connect to the walk deck (4) with 2, 3/8" x 3" hex bolt, lock washer, and nut (7). Make sure parts are flush. Tighten fasteners. Next, locate the handrail (3) and attach to the walk deck (4) with 4, 3/8" x 1-1/2" hex bolt, flat washer, lock washer, and nut (6). Tighten fasteners. Locate the 4 clamp plates (11) and the 8, 3/8" x 4-1/2" hex bolts, flat washers, lock washers, and nuts (5). These will be used to connect the Catwalk ladder assembly to the hopper inoculator assembly.



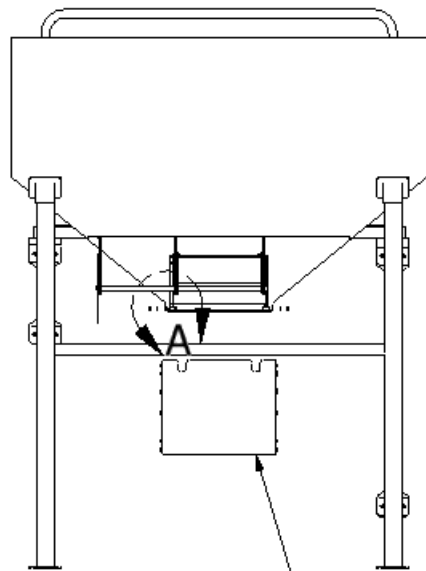
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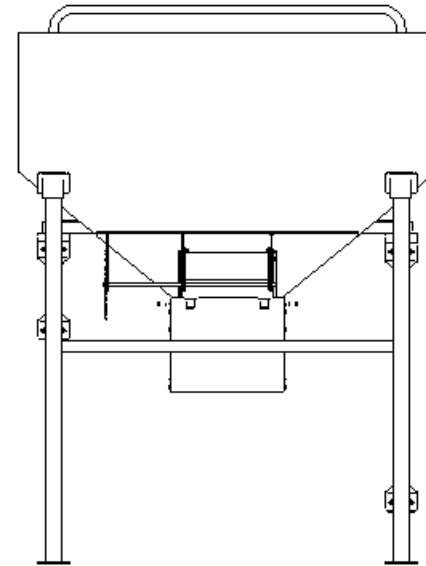
With the walk deck fully assembled, it is ready to be attached to the hopper assembly. Use the four clamp plates with the 8, 3/8" x 4-1/2" hex bolts, flat washers, lock washers and nuts to attach the walk deck to the hopper assembly. Once the walk deck is in place, tighten all fasteners.

Ladder shown unattached



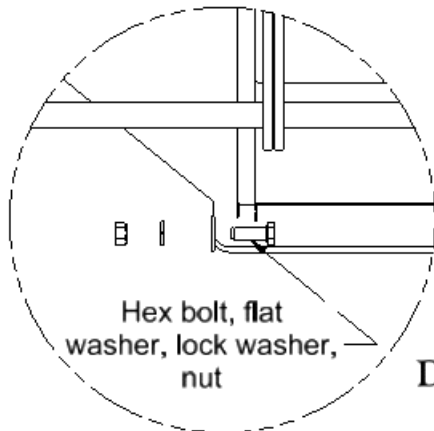
Inoculation Spray Ladder

Ladder Shown in place for attachment



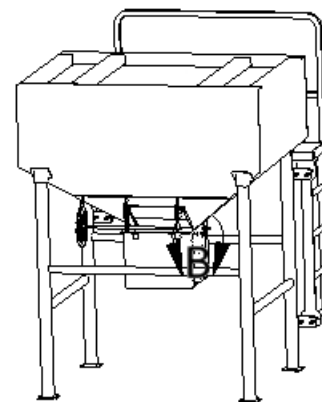
Mounting holes shown with bolts

Mounting holes located on opposite side as well.



Hex bolt, flat washer, lock washer, nut

DETAIL A

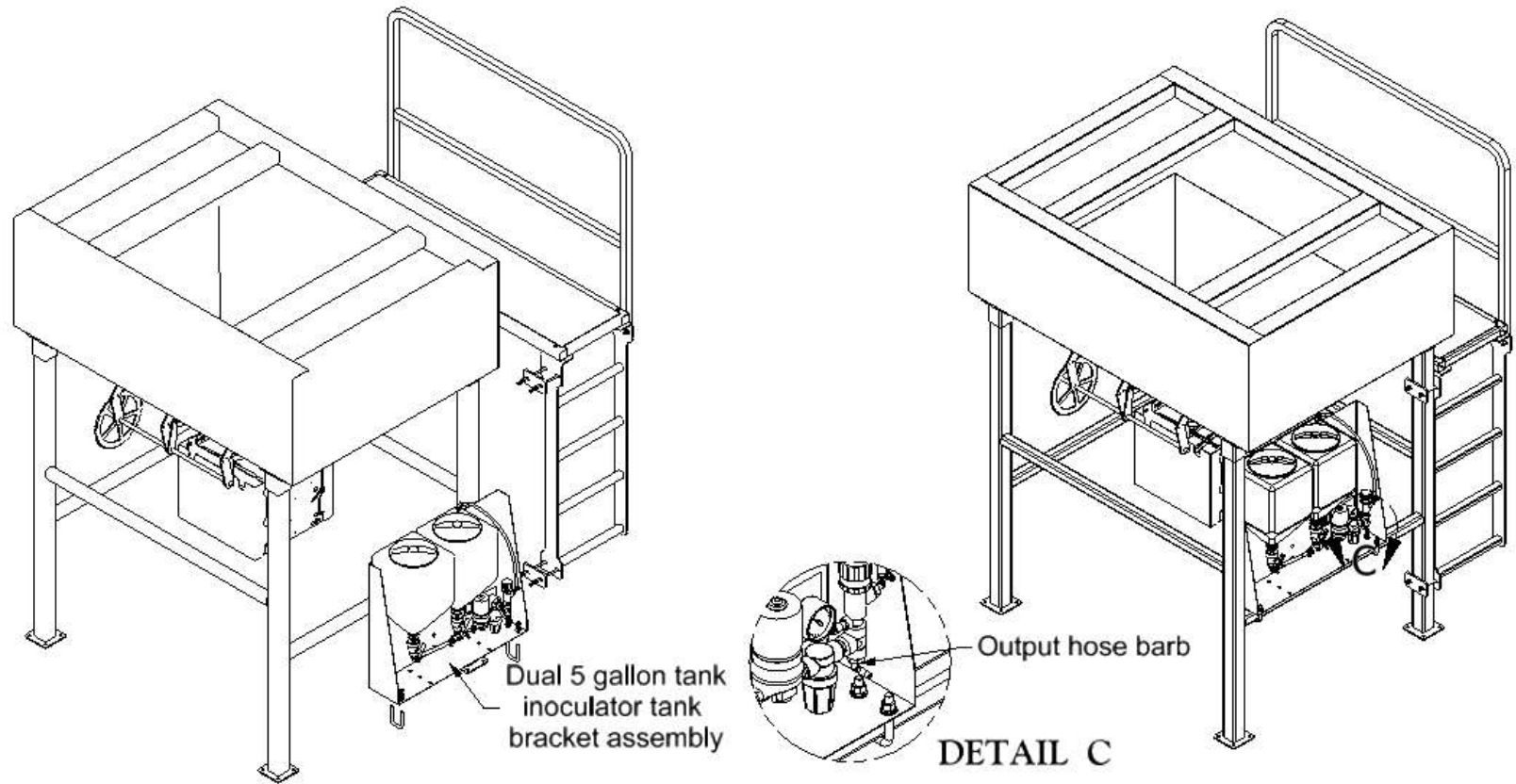


DETAIL B

Locate the Inoculation Spray Ladder assembly. To attach the spray ladder to the hopper, locate 4, 3/8" x 1" hex bolts, flat washers, lock washers, and nuts. Raise the spray ladder into place aligning the mounting holes next to the gate. Insert the 3/8" x 1" hex bolts into the holes with the flat washer on the inside. Use the lock washers and nuts to retain the bolt. Once all the hex bolts are in the correct attaching holes, tighten all fasteners. Inoculation spray ladder is now installed.

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Locate the dual 5 gallon tank inoculator tank bracket assembly. Next, locate the 2, 1/2" square bend u-bolts, flat washers, lock washers, and nuts. When all parts are located, place the dual 5 gallon tank inoculator bracket assembly on a lower cross beam on the opposite side of the gate adjustment wheel. Select the correct mounting holes in the base of the bracket assembly (please check that top of the tanks are not in contact with the hopper and also you have enough room to remove the lids). Use the 2, 1/2" square bend u-bolts to attach the bracket assembly to the 2 x 2 cross beam. Once the inoculator tank is placed, tighten all fasteners to retain the bracket assembly.

After the bracket assembly is in place, locate the output hose barb. Next, locate a 3/8" hose clamp and a length of 3/8" rubber hose. Place the rubber hose over the 3/8" hose barb. Use a 3/8" hose clamp to retain the hose on the hose barb. Locate the 3/8" cross fitting on the spray ladder assembly and attach the 3/8" rubber hose to the 3/8" hose barb on the cross fitting (be sure to route the hose so it is not in the way of any moving parts. Also, may need to trim the hose to the correct length). Retain the 3/8" rubber hose with a second 3/8" hose clamp.

The Hopper Unit and Inoculation system is assembled.

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To obtain the PSI needed to apply the right amount of chemical to the right amount of seed in the right amount of time you will need to follow these three simple steps.

**STEP 1 -- Determine Seed Flow Through Grain Gate**

Measure opening and set according to **Chart 1** for the **seed flow in units per minute** you desire. Run seed through system and adjust gate opening till you get the desired seed flow per minute.

**STEP 2 -- Determine Chemical Flow**

Pick the desired **application rate per unit** (**Chart 2**) as recommended by the chemical manufacturer and follow across to the **seed flow in units per minute** (from **Chart 1**) you have chosen -- follow down to the **Ounces need per minute** (**Chart 2**) to determine the ounces needed to apply the right amount of chemical per minute.

**STEP 3 -- Determine Pressure**

Now that you have **Ounces needed per minute** from (**Chart 2**) follow down **Chart 3** in either the **2 tip** or the **3 tip** column to that flow rate and follow across the the **PSI needed**

<b>Chart 1</b>						
Approximate opening size in grain gate	1/2 inch	5/8 inch	3/4 inch	7/8 inch	1 inch	1 1/8 inch
Approximate Seed flow in units per minute	5.000	6.000	7.000	8.000	9.000	10.000
minutes to do 50 units	10.000	8.333	7.143	6.250	5.556	5.000

<b>Chart 2</b>						
Application rate per unit as recommended by chemical manufacturer	Ounces needed per minute to get the rate desired					
	5.000	6.000	7.000	8.000	9.000	10.000
1.000	5.000	6.000	7.000	8.000	9.000	10.000
1.100	5.500	6.600	7.700	8.800	9.900	11.000
1.200	6.000	7.200	8.400	9.600	10.800	12.000
1.300	6.500	7.800	9.100	10.400	11.700	13.000
1.400	7.000	8.400	9.800	11.200	12.600	14.000
1.500	7.500	9.000	10.500	12.000	13.500	15.000
1.600	8.000	9.600	11.200	12.800	14.400	16.000
1.700	8.500	10.200	11.900	13.600	15.300	17.000
1.800	9.000	10.800	12.600	14.400	16.200	18.000
1.900	9.500	11.400	13.300	15.200	17.100	19.000
2.000	10.000	12.000	14.000	16.000	18.000	20.000
2.100	10.500	12.600	14.700	16.800	18.900	21.000
2.200	11.000	13.200	15.400	17.600	19.800	22.000
2.300	11.500	13.800	16.100	18.400	20.700	23.000
2.400	12.000	14.400	16.800	19.200	21.600	24.000
2.500	12.500	15.000	17.500	20.000	22.500	25.000
2.600	13.000	15.600	18.200	20.800	23.400	26.000
2.700	13.500	16.200	18.900	21.600	24.300	27.000
2.800	14.000	16.800	19.600	22.400	25.200	28.000
2.900	14.500	17.400	20.300	23.200	26.100	29.000
3.000	15.000	18.000	21.000	24.000	27.000	30.000
3.100	15.500	18.600	21.700	24.800	27.900	31.000
3.200	16.000	19.200	22.400	25.600	28.800	32.000
3.300	16.500	19.800	23.100	26.400	29.700	33.000
3.400	17.000	20.400	23.800	27.200	30.600	34.000
3.500	17.500	21.000	24.500	28.000	31.500	35.000
3.600	18.000	21.600	25.200	28.800	32.400	36.000
3.700	18.500	22.200	25.900	29.600	33.300	37.000
3.800	19.000	22.800	26.600	30.400	34.200	38.000
3.900	19.500	23.400	27.300	31.200	35.100	39.000
4.000	20.000	24.000	28.000	32.000	36.000	40.000
4.100	20.500	24.600	28.700	32.800	36.900	41.000
4.200	21.000	25.200	29.400	33.600	37.800	42.000
4.300	21.500	25.800	30.100	34.400	38.700	43.000
4.400	22.000	26.400	30.800	35.200	39.600	44.000
4.500	22.500	27.000	31.500	36.000	40.500	45.000
4.600	23.000	27.600	32.200	36.800	41.400	46.000
4.700	23.500	28.200	32.900	37.600	42.300	47.000
4.800	24.000	28.800	33.600	38.400	43.200	48.000
4.900	24.500	29.400	34.300	39.200	44.100	49.000
5.000	25.000	30.000	35.000	40.000	45.000	50.000

<b>Chart 3</b>		
<b>XR1101VS TEEJET TIP</b>		
OZPM	OZPM	PSI
2 TIPS	3 TIPS	needed
15.36	23.04	15
15.86	23.80	16
16.35	24.53	17
16.83	25.24	18
17.29	25.93	19
17.74	26.60	20
18.17	27.26	21
18.60	27.90	22
19.02	28.53	23
19.43	29.14	24
19.83	29.74	25
20.22	30.33	26
20.61	30.91	27
20.99	31.48	28
21.36	32.04	29
21.72	32.58	30
22.08	33.12	31
22.43	33.65	32
22.78	34.17	33
23.13	34.69	34
23.46	35.19	35
23.80	35.69	36
24.12	36.19	37
24.45	36.67	38
24.77	37.15	39
25.08	37.62	40
25.39	38.09	41
25.70	38.55	42
26.01	39.01	43
26.31	39.46	44
26.60	39.91	45
26.90	40.35	46
27.19	40.78	47
27.48	41.22	48
27.76	41.64	49
28.04	42.07	50
28.32	42.48	51
28.60	42.90	52
28.87	43.31	53
29.14	43.72	54
29.41	44.12	55
29.68	44.52	56
29.94	44.91	57
30.20	45.31	58
30.46	45.69	59
30.72	46.08	60