

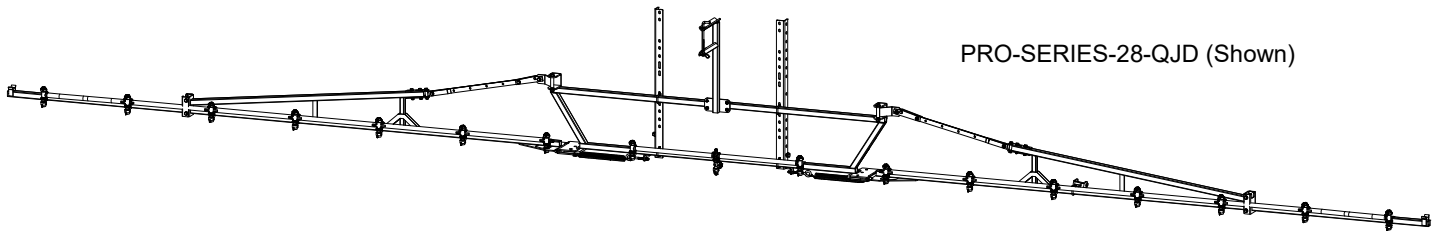
OWNER'S MANUAL

'PRO SERIES' BOOM ASSEMBLIES (with Quick-Jet 'Diaphragm' Nozzles)

Model:
PRO-SERIES-21-QJD
(5301356)
6-Row Boom Assembly

Model:
PRO-SERIES-28-QJD
(5301357)
8-Row Boom Assembly

Model:
PRO-SERIES-35-QJD
(5301358)
10-Row Boom Assembly



**BEFORE RETURNING THIS PRODUCT
FOR ANY REASON, PLEASE CALL
1-800-831-0027**

**IF YOU SHOULD HAVE A QUESTION OR
EXPERIENCE A PROBLEM WITH YOUR
FIMCO INDUSTRIES PRODUCT:
1-800-831-0027**

**BEFORE YOU CALL, PLEASE HAVE THE
FOLLOWING INFORMATION AVAILABLE:
SALES RECEIPT & MODEL NUMBER. IN MOST
CASES, A FIMCO INDUSTRIES EMPLOYEE CAN
RESOLVE THE PROBLEM OVER THE PHONE.**

- Model **PRO-SERIES-21-QJD** Boom Assembly (6 Row—21' Wide) (5301356)
- Model **PRO-SERIES-28-QJD** Boom Assembly (8 Row—28' Wide) (5301357)
- Model **PRO-SERIES-35-QJD** Boom Assembly (10 Row—35' Wide) (5301358)

General Information

Thank you for purchasing this product. The purpose of this manual is to assist you in operating and maintaining your boom assembly.



WARNING: To reduce the risk of injury, the user must read and understand the operator's manual before using this product.



WARNING: Cancer and Reproductive Harm
www.P65Warnings.ca.gov

**Retain a copy of your receipt for your unit,
as it will be required to validate any warranty service**
**Products are warranted against manufacturer or workmanship
defects for one year from date of purchase for home owner
usage and 90 days for commercial usage.**

For technical assistance, call: **TOLL FREE @ 1-800-831-0027**
Our Technical Support Representatives will be happy to help you.
To obtain prompt, efficient service, always remember to give the following information...

- Correct Part Description and/or part number
- Model #/Serial # of your sprayer

Part descriptions and numbers can be obtained from the illustrated parts list section(s) of this manual.

All Models:

- Adjustable Spacing Nozzles
- Height Adjustment
- 4-Way Hinge for Boom Protection
- Cross-Over ("X") Folding
- Tips/Caps/Strainers are Standard (Tips: 'AIXR' series) (Air Induction eXtended Range)
- Fits most FIMCO Carriers
- Square Boom Tube Construction
- Diaphragm Check Valve Nozzles



www.fimcoindustries.com

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Toll Free Phone: 800-831-0027 : Toll Free Fax: 800-494-0440

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Assembly

- Mount the upright angles to the inside of the mounts on the carrier, using the supplied bolts and nuts. Attach the backrack to the upright angles using the square U-bolts and nuts. NOTE: The back rack can be mounted in either a high or low position and the uprights can be adjusted for desired height.
- Loosen the eye-bolts and remove the hinge pins. Line up the outer booms and reassemble the hinge pin(s) through the outer boom yoke, the hinge casting and the spring connection. Tighten the eye-bolt until the spring is at the desired tension. Lock the eye-bolt in place with the inner whiz flange locknut.
- Bolt the outer booms [for the Pro-[28-QJ] & [35-QJ]] to the first outer boom(s) with the provided hardware.
- Attach the appropriate hose assemblies onto each of the three boom sections, the center section has (3) nozzles with "ELL" connectors on each end. Starting at the center, the nozzles should be placed about 20" apart.
- Join the designated feeder hose to each boom section and secure in place with hose clamps.

Fold Up Instructions

Use caution when folding booms. Do not force the pivot action. Remember that the entire sprayer may move unless it is anchored securely during the folding operation.

The 6 row boom assembly has only one outer boom section on each side, whereas the 8 and 10 row boom assemblies have two outer boom sections on each side. Therefore the 6 row boom will only fold, cross over, to the rear of the sprayer and against the center frame.

Pro-Series-21 Boom: begin with the right side outer boom. Pivot the entire outer boom assembly to the rear of the sprayer, cross over, and against the center frame. Repeat procedure with left side and secure in the boom retainer with D-Ring lock pin and boom stand. Use care when folding.

Pro-Series-28 & -35: remove one bolt in each of the outer boom connections. Fold the outer sections up and over. Replace bolts and nuts after folding, as to not lose. Repeat procedure as described in Pro-Series-21 above for folding remaining booms.

Tip Selection

Important Note:

The tips supplied as standard with this boom assembly are number AIXR11003VP tips, when you refer to the spray tip rate chart found in this owner's manual, you will note that they have a GPA range of 10.7 to 17.8 GPA (Gallons Per Acre). This is tabulated at 5 MPH and from 15-40 psi and 20" nozzle spacing. These rates are based on water. Please read this tip selection section carefully before attempting to operate your boom assembly.

The selection of proper tips for the boom is determined by the gallon per acre (GPA) requirement, which is specified on the chemical label. The following characteristics also have a determining factor and must be considered:

- Speed of spraying (MPH)
- Boom nozzle spacing (specified in inches)
- Solution weight and conversion factor (CF)
- Gallons of solution to be sprayed per acre
- Spraying pressure

Useful Formulas:

GPM—Gallons Per Minute

GPA—Gallons Per Acre

MPH—Miles Per Hour

Calibration

Chemical labels may show application rates in gallons per acre, gallons per 1000 square feet or gallons per 100 square feet. You will note that the tip chart shows 2 of these rating systems.

Once you know how much you are going to spray, then determine (from the tip chart) the spraying pressure (PSI) and the spraying speed (MPH).

Determining the proper speed of the pulling vehicle can be done by marking off 100, 200 and 300 feet. The speed chart indicates the number of seconds it takes to travel the distances. Adjust the throttle until you travel the distances in the number of seconds indicated by the speed chart. Once you have reached the throttle setting needed, mark the throttle location, so you can stop and go again, returning to the same speed.

Tip No.	Pressure (psi)	Capacity (GPM)	Gallons Per Acre - Based on Water							
			1 MPH	2 MPH	3 MPH	4 MPH	5 MPH	6 MPH	8 MPH	
AIXR11003VP	15	.18	53.6	26.8	17.8	13.4	10.7	8.9	6.7	
	20	.21	62.4	31.2	20.8	15.6	12.5	10.4	7.8	
	30	.26	77.2	38.6	25.8	19.3	15.4	12.9	9.7	
	40	.30	88.0	44.0	29.8	22.0	17.8	14.9	11.1	
Tip No.	Pressure (psi)	Capacity (GPM)	Gallons Per 1000 Sq. Ft. - Based on Water							
			1 MPH	2 MPH	3 MPH	4 MPH	5 MPH	6 MPH	8 MPH	
AIXR11003VP	15	.18		.61	.41	.31	.24			
	20	.21		.71	.48	.36	.29			
	30	.26		.88	.59	.44	.35			
	40	.30		1.0	.68	.51	.41			

Speed in M.P.H. (Miles Per Hour)	Time Required in seconds to travel a distance of		
	100 Ft.	200 Ft.	300 Ft.
1.0	68 sec.	136 sec.	205 sec.
2.0	34	68	102
3.0	23	45	68
4.0	17	34	51
5.0	14	27	41
6.0	11	23	34
7.0	9.7	19	29
8.0	8.5	17	26
9.0	7.6	15	23
10.0	6.8	14	20

Add water and proper amount of chemical to the tank and drive to the starting place for spraying.

Testing the Sprayer

NOTE:

It is VERY important that you test your sprayer with plain water before actual spraying is attempted. This will enable you to familiarize yourself with the sprayer and check the sprayer for leaks, without the possibility of losing any expensive chemicals.

Add water to the tank and drive to the starting place for spraying. When you are ready to spray, turn the boom valve to the "on" position. This will start solution spraying from the tips of the boom. The pressure will decrease slightly when the boom is spraying. Adjust the pressure by turning the "ON/OFF" valve lever on the bypass line valves.

Read the operating instructions and initially begin spraying by closing your 'bypass' valve and opening the boom line valve. This will enable the air in the line to be eliminated (purged) through all the tips, while building pressure. When everything tests all right (no leaks and good pressure), add the desired chemicals to the mixture and water combination and start your spraying operation. Adjust the pressure and spray as you did in the testing procedure.

Conditions of weather and terrain must be considered when setting the sprayer. Do not spray on windy days. Protective clothing must be worn in some cases.

Be sure to read the chemical label(s) before application!!

Suggested Minimum Spray Heights

Nozzle Type	Nozzle Height			
	Spray Angle	20" Spacing	30" Spacing	40" Spacing
TeeJet (Flat Spray)	65°	22"-24"	33"-35"	NR*
TeeJet (XR TeeJet)	80°	17"-19"	26"-28"	NR*
TeeJet (XR TeeJet)	110°	12"-14"	16"-18"	NR*
FloodJet	120°	***	***	***

* Not Recommended

*** Wide angle spray tip is influenced by nozzle orientation.

The critical factor is to achieve a double spray pattern overlap.

Nozzle Spacing

If the nozzle spacing on your boom is different from those tabulated, multiply the tabulated GPA coverage by one of the following actors.

Where Tables are Based on 20" Nozzle Spacing									
Other Spacing	8"	10"	12"	14"	16"	18"	22"	24"	30"
Conversion Factor	2.5	2	1.67	1.43	1.25	1.11	.91	.83	.66
Where Tables are Based on 30" Nozzle Spacing									
Other Spacing	26"	28"	32"	34"	36"	38"	40"	42"	44"
Conversion Factor	1.15	1.07	.94	.88	.83	.79	.75	.71	.68
Where Tables are Based on 40" Nozzle Spacing									
Other Spacing	28"	30"	32"	34"	36"	38"	42"	44"	48"
Conversion Factor	1.43	1.33	1.25	1.18	1.11	1.05	.95	.91	.83

Spraying Solutions Other Than Water

Since all the tabulations are based on spraying water, which weights 8.34 lbs. per USA gallon, conversion factors must be used when spraying solutions which are heavier or lighter than water. To determine the proper size nozzle for the solution to be sprayed, first multiply the desired GPM or GPA of solution by the rate conversion factor. Then use the new converted GPM or GPA rate to select the proper size nozzle.

Example: Desired application rate is 20 GPA of 28% Nitrogen. Determine the correct nozzle size as follows:

$$\text{GPA (Solution)} \times \text{Conversion Factor} = \text{GPA}$$

$$20 \text{ GPA (28\%)} \times 1.13 = 22.6 \text{ GPA (Water)}$$

The applicator should choose a nozzle size that will supply 22.6 GPA of water at the desired pressure.

Weight of Solution	Specific Gravity	Conversion Factors
7.0 lbs. per gallon	.84	.92
8.0 lbs per gallon	.96	.98
8.934 lbs. per gallon (Water)	1.00	1.00
9.0 lbs per gallon	1.08	1.04
10.0 lbs. per gallon	1.20	1.10
10.65 lbs. per gallon (28% Nitrogen)	1.28	1.13
11.0 lbs. per gallon	1.32	1.15
12.0 lbs. per gallon	1.44	1.20
14.0 lbs. per gallon	1.68	1.30

Miscellaneous Conversion Factors

One Acre = 43,560 square feet = 0.405 Hectacre
 One Hectacre = 2.471 Acres
 One Gallon Per Acre = 9.35 Liters Per Hectacre
 One Mile = 5280 Feet = 1610 Meters = 1.61 Kilometers
 One Gallon = 128 Fluid Ounces = 8 Pints = 4 Quarts = 3.79 Liters = 0.83 Imperial Gallons
 One Pound Per Square Inch = 0.069 bar. = 6.895 Kilo-Pascals
 One Mile Per Hour = 1.609 Kilometers Per Hour

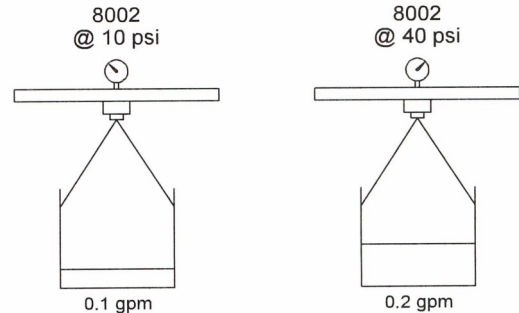
Based on the minimum overlap required to obtain uniform distribution with 110° tips and 20" spacing.
 Suggested Minimum Spray Height: 16"-18" above what is being sprayed (to plant, not ground).
 Optimum Spray Height: 20"

Flow Rate

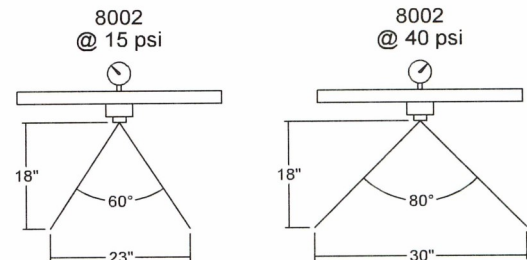
Nozzle flow rate varies with spraying pressure. In general, the relationship between GPM and pressure is as follows:

This equation is explained by the illustration below. Simply stated, to double the flow through a nozzle, the pressure be increased four times

Effect of Pressure on Volume



Effect of Pressure on Spray Angle



Higher pressure not only increases the flow rate of the nozzle, but it also influences the droplet size and the rate of orifice wear. As pressure is increased, the droplet size decreases and the rate of orifice wear is increased.

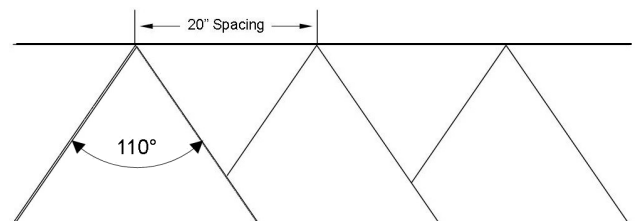
The values given in the tabulation section of this owner's manual indicate the most commonly used pressure ranges for the associated spray tips.

Spray Angle and Coverage

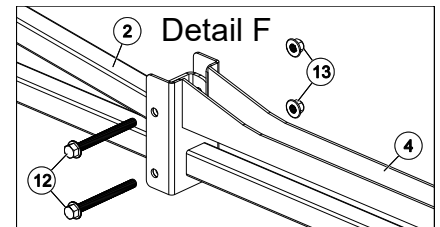
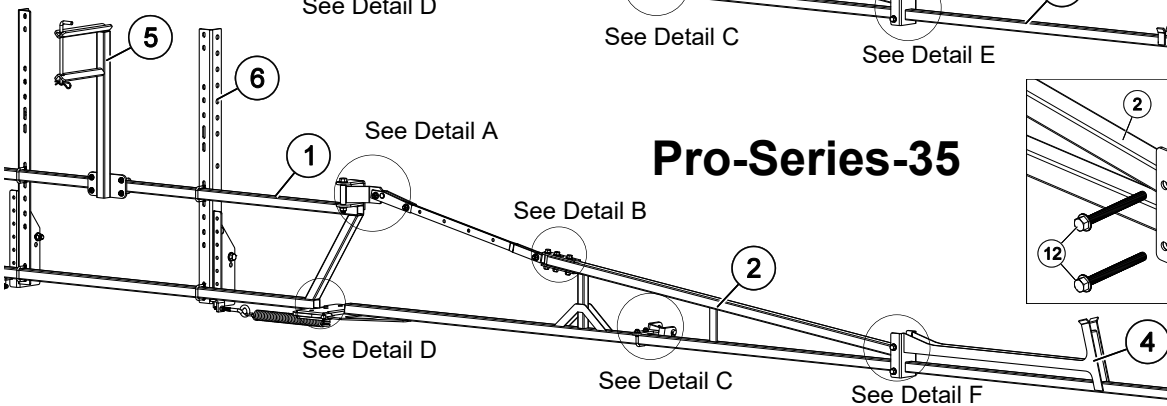
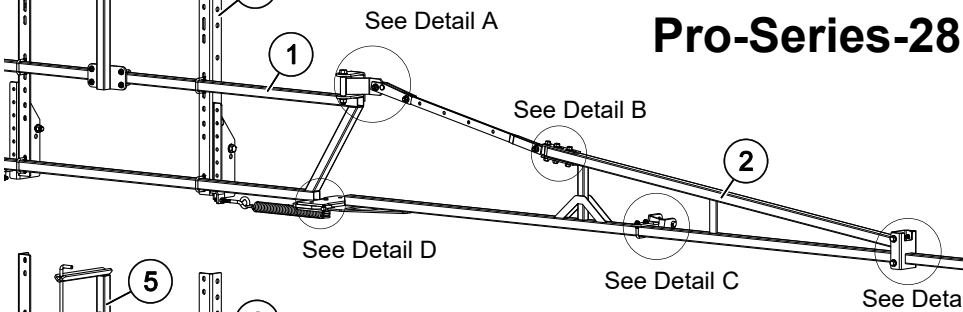
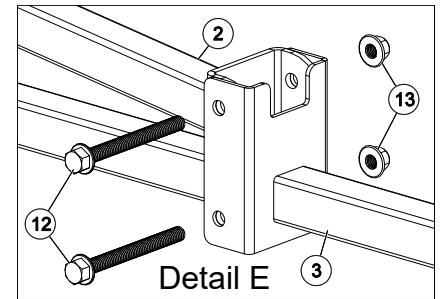
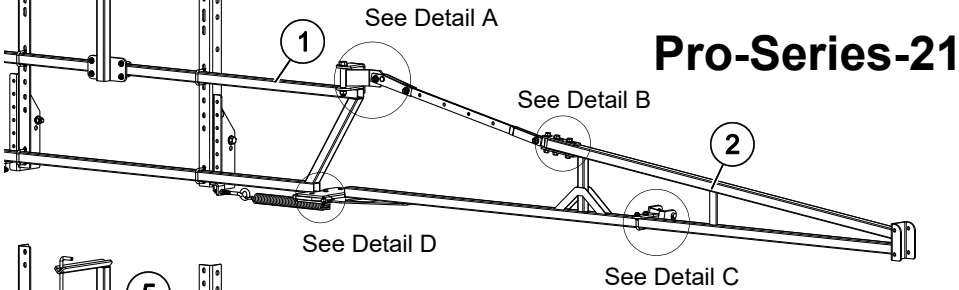
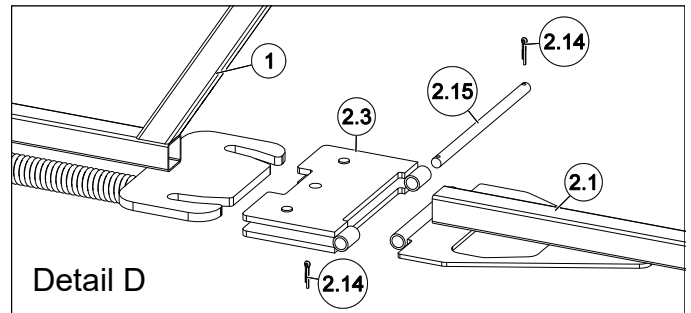
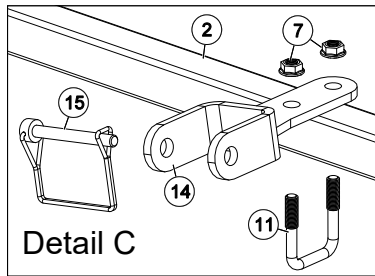
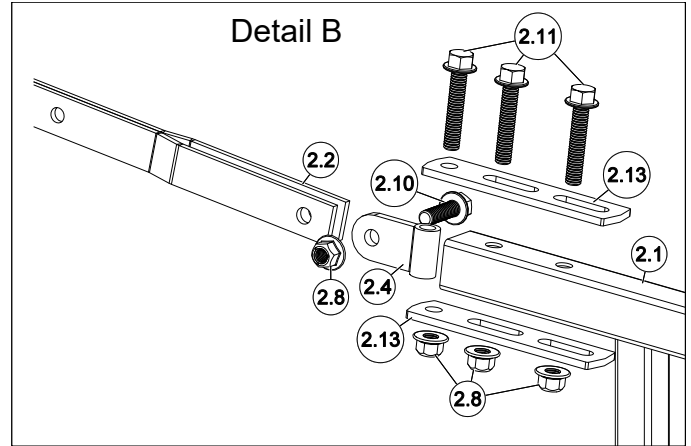
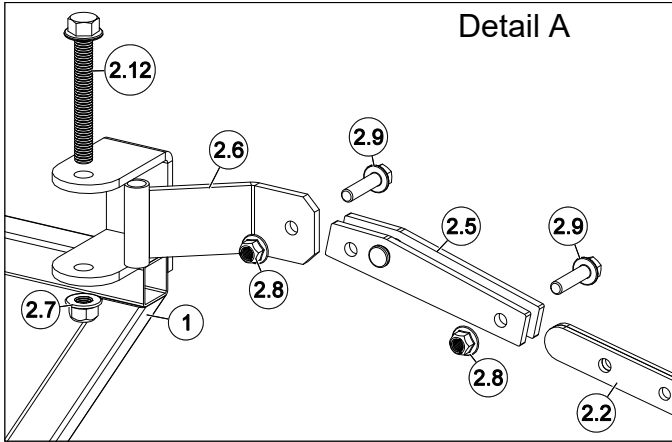
Depending on the nozzle type and size, the operating pressure can have a significant effect on spray angle and quality of spray distribution. As shown above for an 8002 flat spray tip, as an example, lowering the pressure results in a smaller spray angle and a significant reduction in spray coverage.

Tabulations for spray tips shown in this owner's manual are based on spraying water. Generally, liquids more viscous than water form relatively smaller spray angles. Whereas, liquids with surface tensions lower than water will produce wider spray angles. In situations where the uniformity of spray distribution is important, be careful to operate your spray tips within the proper pressure range.

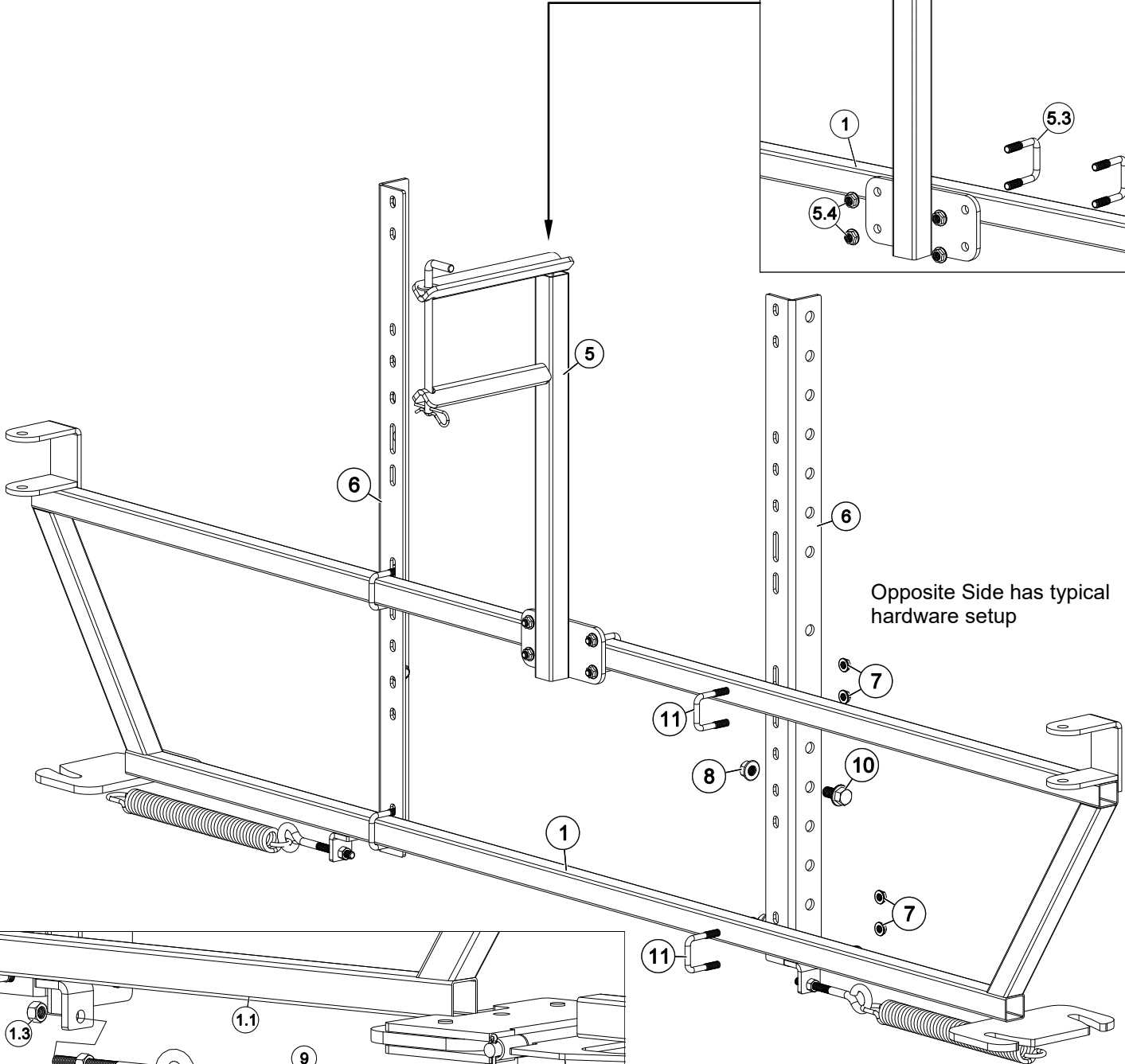
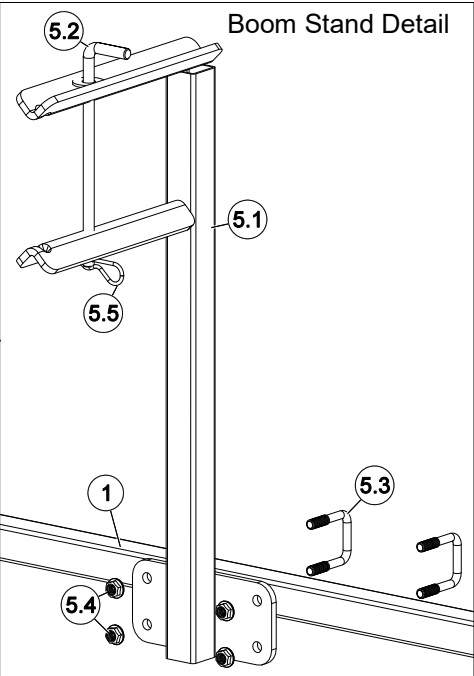
NOTE: Suggested minimum spray heights for broadcast spraying are based upon nozzles spraying water at the rated spray angle.



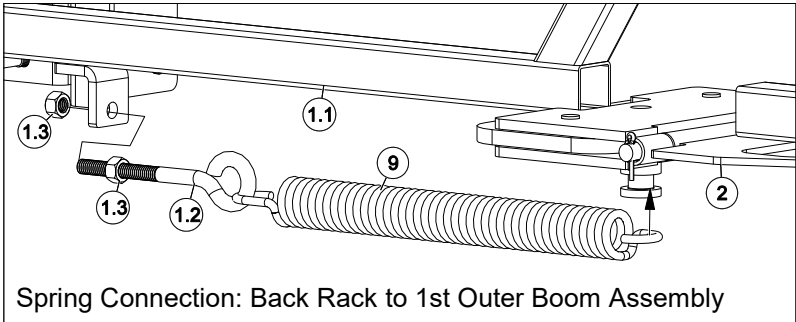
PRO-SERIES BOOMS (QJD) Breakdown



PRO-SERIES BOOMS (QJD) Back Rack Detail



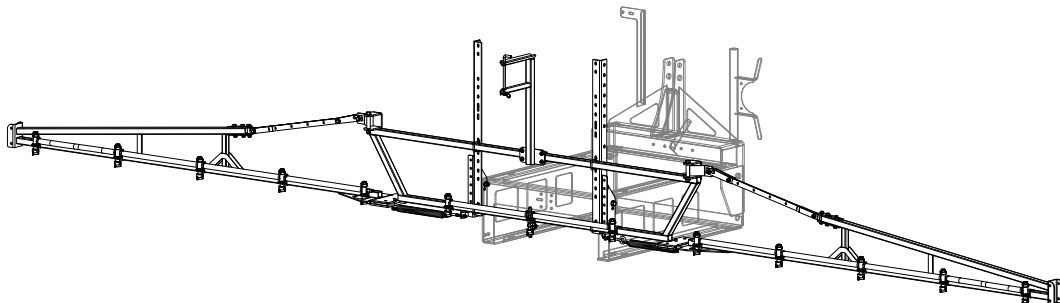
Opposite Side has typical hardware setup



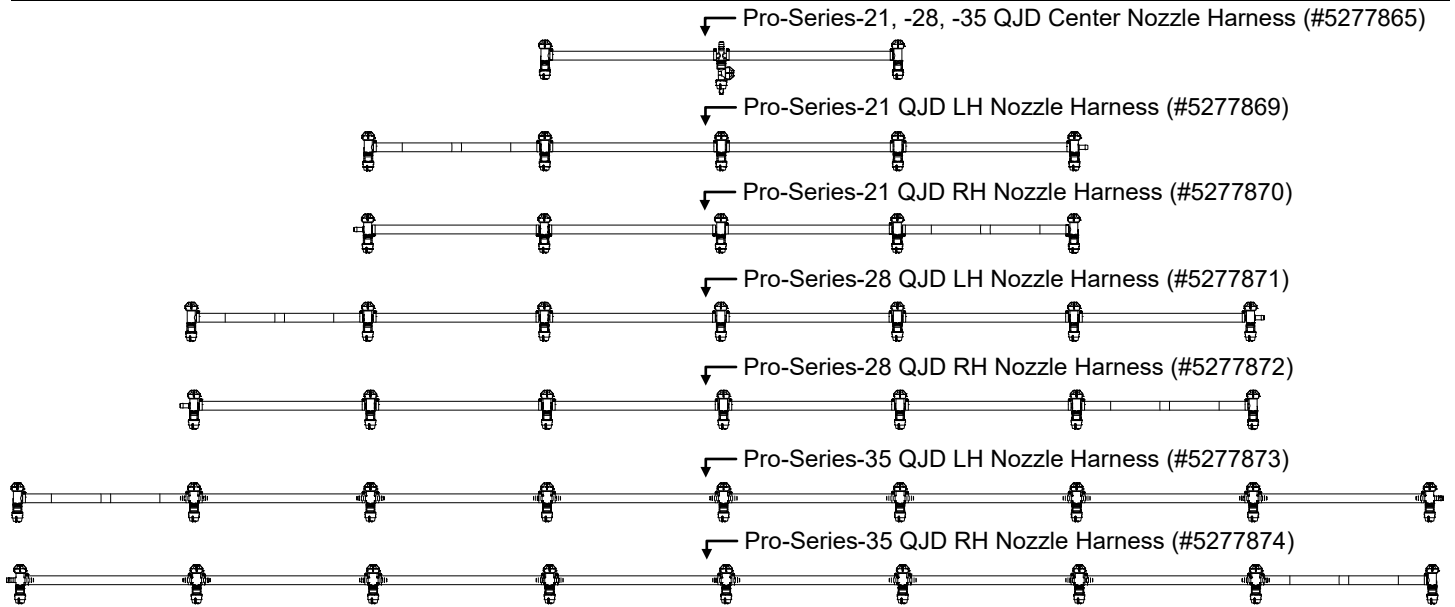
Spring Connection: Back Rack to 1st Outer Boom Assembly

PRO-SERIES BOOMS (QJD) Parts List

Ref. #	Part #	Description	Pro-Series-21-QJD	Pro-Series-28-QJD	Pro-Series-35-QJD
1	5275257	Center Frame Assembly	1	1	1
1.1	5274903	Boom Center Frame Weldment	1	1	1
1.2	5034107	3/8" x 4" Eyebolt, Turned, Zinc-Plated	2	2	2
1.3	5006054	3/8"-16 Hex Nut	4	4	4
2	5275255	1st Outer Boom Assembly	2	2	2
2,1	5274904	First Outer Boom	1	1	1
2,2	5274906	Boom Link Weldment	1	1	1
2,3	5274907	Hinge Plate Weldment	1	1	1
2,4	5274908	Pivot Weldment	1	1	1
2,5	5274909	Pivot Link Weldment	1	1	1
2,6	5274910	Upper Pivot Weldment	1	1	1
2,7	5006365	1/2-13nc Hex Flanged Toplock Nut Gr. 8	1	1	1
2,8	5006345	3/8-16nc Hex Flanged Toplock Nut Gr. 5	6	6	6
2,9	5034777	Fling HH Bolt 3/8-16 X 1 1/2"	2	2	2
2.10	5034592	H.H.C.S. Flanged 3/8"-16nc x 1 1/4" Long	1	1	1
2.11	5034665	H.H.C.S. Flanged 3/8"-16nc x 2" Long	3	3	3
2.12	5034701	H.H.C.S. Flanged 1/2"-13nc x 3 3/4" Long	1	1	1
2.13	5095165	Slide Tab	2	2	2
2.14	5101077	Cotter Pin, 1/8" x 1"	2	2	2
2.15	5101263	Hinge Pin	1	1	1
3	5274905	Outer Boom Weldment (28' Boom)	-	2	-
4	5274913	Outer Boom Weldment (35' Boom)	-	-	2
5	5275258	Pro Series Boom Stand	1	1	1
5.1	5274911	Boom Stand Weldment	1	1	1
5.2	5274961	Lock Pin Weldment	1	1	1
5.3	5034159	Square U-Bolt, 5/16" x 1 5/16" x 1 7/8"	2	2	2
5.4	5006307	5/16"-18 Hex Whiz (Flange) Locknut	4	4	4
5.5	5101065	#211 Hitch Pin Clip (Zinc Plated)	1	1	1
6	5022255	Boom Upright Angle	2	2	2
7	5006307	5/16"-18 Hex Whiz (Flange) Locknut	10	10	10
8	5006365	1/2-13nc Hex Flanged Toplock Nut Gr. 8	4	4	4
9	5019259	Boom Spring	2	2	2
10	5034691	H.H.C.S. Flanged 1/2"-13nc x 1 1/4" Long	4	4	4
11	5034159	Square U-Bolt, 5/16" x 1 5/16" x 1 7/8"	5	5	5
12	5034672	H.H.C.S. Flanged 3/8"-16nc x 3 3/4" Long	-	4	4
13	5006345	3/8-16nc Hex Flanged Toplock Nut Gr. 5	-	4	4
14	5278772	Boom Retainer Weldment	1	1	1
15	5101302	D-Ring Lock Pin, 5/16" Dia. x 2-3/4"	1	1	1
16	5277865	Center Nozzle Harness (Pro-Series-QJD)	1	1	1
17	5277869	LH Nozzle Harness (Pro-Series-21-QJD)	1	-	-
18	5277870	RH Nozzle Harness (Pro-Series-21-QJD)	1	-	-
19	5277871	LH Nozzle Harness (Pro-Series-28-QJD)	-	1	-
20	5277872	RH Nozzle Harness (Pro-Series-28-QJD)	-	1	-
21	5277873	LH Nozzle Harness (Pro-Series-35-QJD)	-	-	1
22	5277874	RH Nozzle Harness (Pro-Series-35-QJD)	-	-	1



PRO-SERIES-QJD Nozzle Harness Parts List



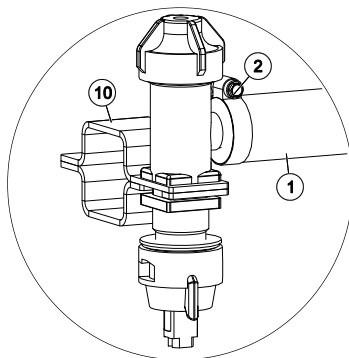
Ref. #	Part #	Description	Pro-Series-21-QJD	Pro-Series-28-QJD	Pro-Series-35-QJD
1	5020569	Hose, 1/2"-1 BRD. x 19-3/8"	10	14	18
2	5051114	Hose Clamp, 1/2"	20	28	36
3	5056086	Vari-Quick "End" Nozzle Assembly	4	4	4
4	5056089	Vari-Quick "Tee" Nozzle Assembly	8	12	16
5	5056075	Vari-Quick "Cross" Nozzle Assembly	1	1	1
6	5116019	Strainer, 50 Mesh (Blue)	13	17	21
7	5016157	Seat Washer (QJ Caps)	13	17	21
8	AIXR11003VP	Air-Induction XR Flat Spray Tip	13	17	21
9	5046217	QJ Cap Only (Blue)	13	17	21
10	5272165	Vari-Quick Clamp (1 1/4" Sq. Tube)	13	17	21

Typical Nozzle Assembly Configurations

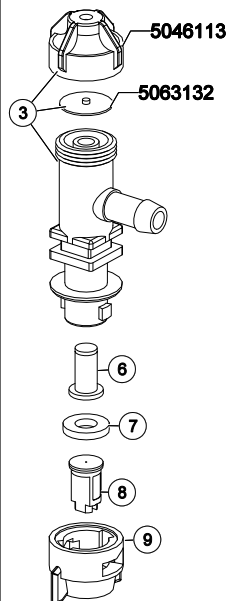
NOTES:

All hoses in this boom assembly are part #5020569 (Item 1)

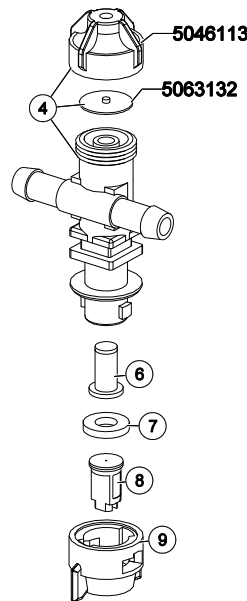
All hose clamps (2 per hose) are #5051114 (Item 2)



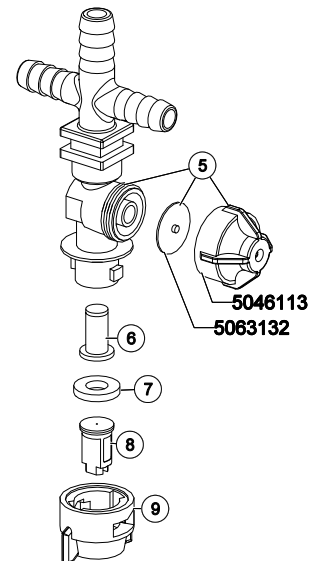
Elbow Assembly #5277717



Tee Assembly #5277718



Cross Assembly #5277719



The AIXR TeeJet Flat Spray Tip offers the benefits of obtaining excellent drift resistance without compromising spray coverage. Tips producing very coarse droplets do minimize drift but do not provide the same surface coverage as tips that produce smaller droplets. In some applications, inadequate coverage decreases the effectiveness of the applied chemicals.

AIXR Features and Benefits

- 110° wide, tapered flat spray angle with air induction technology for better drift management
- Made of 2-piece UHMWPE polymer construction which provides excellent chemical resistance, including acids, as well as exceptional wear life
- Compact size to prevent tip damage
- Removable pre-orifice
- Excellent for systemic products and drift management

Nozzle Assemblies consist of "Elbow", "Tee" & "Cross" style nozzles.

Assemblies include: Nozzle Body, Strainer, Seat Washer, AIXR11003VP Nozzles & Nozzle Cap

Warranty Info

LIMITED WARRANTY FOR NEW FIMCO, INC.

WHO MAY USE THIS LIMITED WARRANTY. This limited warranty (the "Limited Warranty") is provided by Fimco, Inc. to the original purchaser ("you") of the Equipment (as defined below) from Fimco, Inc. or one of Fimco, Inc.'s authorized dealers. This Limited Warranty does not apply to any subsequent owner or other transferee of the Equipment. THIS LIMITED WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

WHAT THIS LIMITED WARRANTY COVERS AND FOR HOW LONG. Fimco, Inc. warrants that any new Equipment will be free from defects in material and workmanship for a period of **one (1) year** (homeowner), **90 days** (commercial user), after delivery of the Equipment to you (the "Warranty Period"). The Warranty Period is not extended if Fimco, Inc. repairs or replaces the Equipment.

WHAT IS NOT COVERED BY THIS LIMITED WARRANTY. This Limited Warranty does not apply to: (1) used Equipment; (2) any Equipment that has been altered, changed, repaired or treated since its delivery to you, other than by Fimco, Inc. or its authorized dealers; (3) damage or depreciation due to normal wear and tear; (4) defects or damage due to failure to follow Fimco, Inc.'s operator's manual, specifications or other written instructions, or improper storage, operation, maintenance, application or installation of parts; (5) defects or damage due to misuse, accident or neglect, "acts of God" or other events beyond Fimco, Inc.'s reasonable control; (6) accessories, attachments, tools or parts that were not manufactured by Fimco, Inc., whether or not sold or operated with the Equipment; or (7) rubber parts, such as tires, hoses and grommets.

HOW TO OBTAIN WARRANTY SERVICE. To obtain warranty service under this Limited Warranty, you must (1) provide written notice to Fimco, Inc. of the defect during the Warranty Period and within **thirty (30) days** after the defect becomes apparent or the repair becomes necessary, at the following address: Fimco, Inc., 1000 Fimco Lane, North Sioux City, SD 57049; and (2) make the Equipment available to Fimco, Inc. or an authorized dealer within a reasonable period of time. For more information about this Limited Warranty, please call: **800-831-0027**

WHAT REMEDIES ARE AVAILABLE UNDER THIS LIMITED WARRANTY. If the conditions set forth above are fulfilled and the Equipment or any part thereof is found to be defective, Fimco, Inc. shall, at its own cost, and at its option, either repair or replace the defective Equipment or part. Fimco, Inc. will pay for shipping and handling fees to return the repaired or replacement Equipment or part to you.

LIMITATION OF IMPLIED WARRANTIES AND OTHER REMEDIES. THE REMEDIES DESCRIBED ABOVE ARE YOUR SOLE AND EXCLUSIVE REMEDIES, AND FIMCO, INC.'S SOLE LIABILITY, FOR ANY BREACH OF THIS LIMITED WARRANTY. TO THE EXTENT APPLICABLE, ANY IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED IN DURATION TO THE WARRANTY PERIOD, AND THE REMEDIES AVAILABLE FOR BREACH THEREOF SHALL BE LIMITED TO THE REMEDIES AVAILABLE UNDER THIS EXPRESS LIMITED WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. IN NO EVENT SHALL FIMCO, INC.'S LIABILITY UNDER THIS LIMITED WARRANTY EXCEED THE ACTUAL AMOUNT PAID BY YOU FOR THE DEFECTIVE EQUIPMENT, NOR SHALL FIMCO, INC. BE LIABLE, UNDER ANY CIRCUMSTANCES, FOR ANY CONSEQUENTIAL, INCIDENTAL, SPECIAL OR PUNITIVE DAMAGES OR LOSSES, WHETHER DIRECT OR INDIRECT. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.