

OWNERS MANUAL

TRAILER MOUNTED SPRAYER

Since VAN'S EQUIPMENT'S beginnings we have used a generic owners manual. It was just to cotly to have printed and keep on hand owner manuals specific to each size and type sprayer we manufacture.

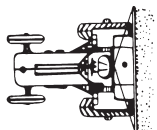
We now have the technology in house to create sprayer specific manuals and to print them only as needed. We think we have made a good beginning, but these manuals are still in the development stage. At this point we would appreciate the input of our end user customer and our dealers as to how we can make these manuals more usefull and user friendly.

This is the prototype manual . Please look over the manual and give us your input.

CALL VANS EQUIPMENT AT 1-800-765-1101 AND ASK FOR CRAIG

We appreciate your input on these manuals.

Thanks Vans Equipment



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EQUIPMENT COMPANY

P.O. BOX 3157 • 2169 SYLVESTER HIGHWAY • MOULTRIE, GEORGIA 31776-3157

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(229) 985-1101

VAN'S EQUIPMENT
BUILT FOR FARMING INTEGRITY

WHEN SELECTING EQUIPMENT FOR FARMING THE NAME VAN'S means availability, reliability, and proven superiority. Maintaining a close association with farming customers has resulted in equipment design and manufacturing philosophy that reflects the exacting requirements of our customers.

Van's Equipment Company, Inc. appreciates your purchase of a new spray unit. This unit, is designed to give years of service with proper care. The following pages will be helpful in set-up and maintenance of your new unit.

PLEASE READ THIS MANUAL CAREFULLY BEFORE INITIAL START-UP IS ATTEMPTED.

WE APPRECIATE YOU
AND YOUR BUSINESS

INDEX

PAGE NO.	DESCRIPTION
1.....	Model Description and Overview
2-6.....	Mounting and Assembly Instructions
7.....	Main Breakdown
8.....	Main Breakdown Material List
9.....	Economy Boom and Center Section
10.....	Heavy Duty Boom and Center Section
11.....	12 Row Boom and Center Section
12.....	Plumbing Breakdown 7560,BN1400,AA43LA-AL6,& AA17L
13.....	Breakdown Material List
14.....	Plumbing Breakdown RO-110,BN1400,AA43LA-AL6,& AA17L
15-16.....	Breakdown Material List
17.....	Plumbing Breakdown 7560, BN1400, AA6B
18.....	Breakdown Material List
19.....	AA17L Breakdown
20.....	Agitator Breakdown
21-22.....	Boominator Information
23.....	AA43L:A-AL6 Gun Breakdown
24.....	7560 Breakdown
25-26.....	RO-110 Breakdown
27.....	Trouble Shooting
28-29.....	Tip Information
30.....	AA6B Breakdown

TRAILER SPRAYER



Van's Trailer Mounted Hand Gun Sprayers are the choice of many professionals from all walks of life. They have found a place in the nursery industry, pest control industry, horticulture, as well as agriculture for uses ranging from weed control in the fence row and around out buildings to insect control for Cattle Ranchers. These machines are also well suited for washing down equipment and disinfecting livestock barns.

Standard Features Include:

- | | |
|-----------------------------------------------------------------------|------------------------------------------------------|
| 1) Polyethylene Tank | 4) Various Pump Choices Allow Pressure Up to 550 PSI |
| 2) Heavy Duty Trailer with Van's Exclusive 5 Year Structural Warranty | 5) Briggs & Stratton Engines |
| 3) New 11L-5B Rib Implement Tires | 6) Hose Rack and 50' Hose |

Option:	
1) Manual Hose Reel	Call for Price

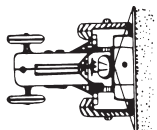
	3HP 6500	5HP 7560CR	3HP IOTA-17	5HP KAPPA-40	8HP KAPPA-55
110 GALLON	T11009	T11019	T11029	T11039	T1104
150 GALLON	T15010	T15020	T15030	T15040	T15050
200 GALLON	T20011	T20021	T20031	T20041	T20051
300 GALLON	T30012	T30022	T30032	T30042	T30052
500 GALLON	T50013	T50023	T50033	T50043	T50053

(PRICES SUBJECT TO CHANGE WITHOUT NOTICE)



CAUTION: Chemicals can be dangerous. Always follow instructions on the chemical container label. Improper selection or use of chemicals can cause serious injury to humans and the environment. Be Safe. Select the right chemical and handle it with care.

	ROLLER PUMP SPRAY GUN BOOMLESS	DIA. PUMP SPAY GUN BOOMLESS	ROLLER PUMP SPRAY GUN 6 ROW BOOM	ROLLER PUMP SPRAY GUN 8 ROW BOOM	DIA. PUMP SPRAY GUN 12 ROW BOOM QJ
300 GALLON	T30015	T30014	T30024	T30020	T30044qj
500 GALLON	T50015	T50014	T50024	T50020	T50044qj



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MOUNTING AND ASSEMBLY INSTRUCTION

FOR PTO ROLLER PUMPS:

IF YOU EVER INTEND TO USE ROUND-UP OR ANY SUCH CHEMICAL YOU MUST USE THE ROUND-UP READY PUMP.

Install the pump on the tractor PTO shaft and make sure that the pump you are using is recommended for PTO speed which you intend to use. If in doubt ask your dealer.

If your pump is equipped with a quick coupler, make sure that it is locked onto tractor PTO shaft and tighten set screw.

Fasten the stabilizer to a fixed point on the tractor so that pump will not rotate with shaft.

FOR PTO DRIVEN CENTRIFUGAL PUMPS:

Make sure pump is recommended for the PTO speed which you intend to use. If in doubt ask your dealer for assistance.

Slip the PTO coupler all the way up on the splined tractor shaft and tighten all set screws making sure the pump is properly centered on the shaft to eliminate wobble.

Make sure the outlet(discharge) port on the pump is mounted in the VERTICAL POSITION. If you are unable to mount the pump in this manner as is, the rear housing plate may be removed and rotated to a vertical position. This is necessary to insure proper priming of pump.

Fasten the stabilizer to a fixed point on the tractor so the pump will not rotate with shaft.

FOR HYDRAULIC DRIVEN CENTRIFUGAL PUMPS:

Mount a hydraulic centrifugal pump only after reading the complete instruction manual provided by pump manufacturer.

If you do not have this manual, ask your dealer for assistance.

A hydraulic motor driven centrifugal pump is extremely versatile in regard to where it may be mounted, however, one thing you must keep in mind is that the pump must be mounted at /or below liquid level of the tank.

IMPORTANT: Be sure to connect hydraulic hoses from the tractor outlet to the hydraulic motor inlet and the tractor return line to the outlet of the hydraulic motor. These hoses must be hooked correctly to

achieve the correct rotation on the pump and to prevent damage to the unit or system. Pump rotation is clockwise when facing the suction port of pump.

FOR DIAPHRAGM PUMPS:

Always mount pump with the oil sight tube in an upwards position. DO NOT OPERATE without safety shields in place.

BEFORE RUNNING THE PUMP:

- A. Be sure that oil is halfway up the sight tube. If necessary, fill to correct level with 20W-30W non detergent oil.
- B. Be sure the suction hose barb is tightly screwed onto the suction union.
- C. Do not restrict the pump on the suction side. Use a 2-braid suction hose of at least the same inside diameter as the pump ports—larger with long suction lines. Keep the line as short as possible. Avoid all unnecessary bends, elbows or kinks in hose. Make sure all connections are tight and do not leak air.
- D. Be sure to use line strainer with 20 mesh, this comes standard on any VAN,S sprayer with diaphragm pumps
- E. Be sure to check charge in pulsation damper. Damper should be charged with air to 20 % of operating pressure. Minimum charge should be 5 PSI.
- F. RUN THE PUMP AT ZERO PRESSURE for one minute to remove air from the system. Do not exceed the pump's recommended maximum speed and pressure. There will be no performance advantage and pump life will be reduced. Pumps run over recommended speed or pressure are not subject to warranty.
- G. MAINTENANCE:
 1. After use, flush pump with clean water.
 2. Change oil every 200 hours or at the end of every spray season. To drain oil from pump, remove the drain plug, (see manufacturers manual), and slowly turn pump shaft until all oil is drained. To fill pump with oil, slowly pour oil into sight tube while turning the pump shaft. Turning the pump shaft purges air out of the crankcase.
 3. For winter storage or if freezing conditions will be encountered, flush pump with 50/50 mixture of water and antifreeze.

NOTES TO REMEMBER FOR ALL PUMPS:

- A. Be sure to check all arrows on the pump that indicate proper rotation of pump.
- B. Be sure pump is correct for the PTO speed you intend to use.
- C. Be sure that the suction hose from tank to pump is as short as possible—cut if necessary—and be sure that hose is not kinked or collapsed—run it as straight as possible.
- D. Be sure that all hose clamps are tight and in place.
- E. **NEVER OPERATE ANY SPRAYER PUMP DRY**—Be sure pump is primed and supplied with liquid when it is operating. Damage will occur to the seals in a roller pump and also to the rollers. Damage will occur to seal of a centrifugal pump if operated dry.

When starting a new pump and every time it is operated thereafter, the pump should start displacing liquid within 18 seconds. If it does not, stop the pump and check all hoses, valves, and strainer between pump and tank.

BOOM ASSEMBLY AND SETUP:

The boom on the Trailer sprayers May Be detached from boom yoke, (See Drawings on Page 9, 10, & 11) for shipping, the chains are left connected. Reattached booms, with bolt If Necessary. Make Sure Tip bodies face to the rear of sprayer. Be sure Boom Feed Lines are correctly connected to control valve. You can determine this by operating sprayer with clean water and switching hoses if necessary.

BE SURE YOU DO NOT SWITCH ANY HOSES OTHER THAN FEED LINES. For sprayers with boomless nozzle attachment be sure the nozzle faces the rear of sprayer. Adjust booms to proper height for job you wish to do. If you are unable to determine what is correct for your job, please contact your local county agent or ask your vans dealer. In most cases nozzles are placed 19-20 inches above surface to be sprayed.

Be sure that your booms are level so that the nozzles on outer ends are exactly the same height as those in center.

Before going to the field look at each and every nozzle, make sure they are all the same size, and have tip strainers in place and are clean.

BEFORE GOING TO THE FIELD:

1. Look inside your new sprayer tank and make sure it is clean.
2. Fill tank about half full with clean water—DO NOT ADD ANY CHEMICALS.
3. Make sure all valves in the suction line on bottom of tank are full open.
4. Turn adjusting screw on pressure regulator valve in the counter-clockwise direction until it is almost all the way out.
5. Start pump slowly and increase speed of tractor to about 1200 RPM while checking to make sure liquid is passing through the pump and back into tank.
6. Turn adjusting screw on pressure regulator clockwise and increase pressure to approximately 10 PSI above the pressure you expect to use in field.
7. Open boom control valve and check all fittings for possible leaks. Check all hose connections and make sure all clamps are tight.
8. **MAKE SURE AT NO TIME WILL THE PRESSURE EXCEED THE CAPACITY OF THE PRESSURE GAUGE.**
9. Inspect the inside of your tank for good agitation while pump is in operation. Your VAN, S Sprayer gives full time agitation while pump is running. If you do not have good agitation, it is possible that some piece of foreign material can enter the system and clog agitator. Check if necessary by removing the agitator for inspection.

If the preceding steps have been followed properly and all corrective action necessary has been taken, you are now ready to calibrate your unit for field operation.

CALIBRATION:

It is necessary to calibrate your sprayer before beginning the spray job. We will not attempt here to give you a calibration procedure, however we suggest the section in the Spraying System catalog on calibration, your local or state pesticide manual, or calling your VAN's dealer. You can also look on page 11 of this manual for the application table for our standard tip, which unless you specified another tip, is a **TP8003 brass fan tip**.

No matter what method you use, or what you use, please remember the following points:

1. Always calibrate with clean water only.
2. Always calibrate under field conditions.
3. Never rely on a tractor speedometer for accuracy.
4. Make sure all nozzles are the same size, are spraying properly, and all strainers are clean.
5. Due to long boom lines, there can be a loss of pressure between pressure gauge and tips. It is usually normal to indicate a slightly higher reading on gauge, (approximately 5-8 PSI) than that indicated by application chart. For this reason calibrate your sprayer often.

CAUTIONS AND PRE-CAUTIONS, (PLEASE READ CAREFULLY)

If you have followed all the instructions up to this point, your new VAN'S SPRAYER is ready to go to work and do a good job. These last instructions can and will make your spraying job more pleasant.

- A. NEVER OPERATE SPRAYER WITHOUT PROPER SAFETY PRECAUTIONS.**
- B. ALWAYS FILL TANK AT LEAST HALF FULL AND HAVE PUMP OPERATING BEFORE ADDING CHEMICALS. IF YOU ARE USING WETTABLE POWDER, PRE-MIX IN A BUCKET OF WATER BEFORE ADDING TO TANK.**
- C. NEVER OPERATE PUMP AFTER TANK IS EMPTY-DO NOT OPERATE DRY.**
- D. ALWAYS ADJUST PRESSURE REGULATOR WITH SPRAYER IN OPERATION AND NEVER EXCEED THE CAPACITY OF THE GAUGE.**
- E. NEVER USE A METAL OBJECT TO CLEAN A NOZZLE, A TOOTHPICK, TOOTHBRUSH, MATCH, OR AIR WILL DO A BETTER AND SAFER JOB.**
- F. WHEN TRANSPORTING YOUR SPRAYER ON A ROAD OR HIGHWAY, BE SURE TO SECURE THE BOOMS IN THE BRACKETS PROVIDED FOR THIS PURPOSE. ALWAYS USE FLASHER LIGHTS OR OTHER DEVICES TO GIVE ADEQUATE WARNING TO OTHER VEHICLES.**
- G. REMEMBER-NOZZLES DO NOT CAUSE SPRAY PATTERN DISTORTION AND VARYING SPRAY VOLUME RATES. REPLACE NOZZLES AS OFTEN AS NEEDED TO ASSURE PROPER AND UNIFORM SPRAY COVERAGE AND RATES. CALIBRATE DAILY. STAINLESS STEEL NOZZLES PROVIDE THE MOST WEAR RESISTANCE WHEN COMPARED TO OTHER TIP MATERIAL.**
- H. ALWAYS USE CLEAN WATER AND CHECK STRAINER DAILY.**

- I. **CHECK AGITATION IN TANK FREQUENTLY—AT LEAST TWICE DAILY.**
- J. **KEEP ALL HOSES IN GOOD SHAPE – REPLACE WORN OR DAMAGED HOSE AS NEEDED-BE SURE SUCTION HOSE IS IN GOOD CONDITION.**
- K. **CLEAN UP WHEN JOB IS DONE.ALWAYS CLEAN SPRAYER AFTER EACH USE.**
- L. **NEVER CHANGE FROM ONE CHEMICAL TO ANOTHER WITHOUT THOROUGHLY CLEANING SPRAYER.**

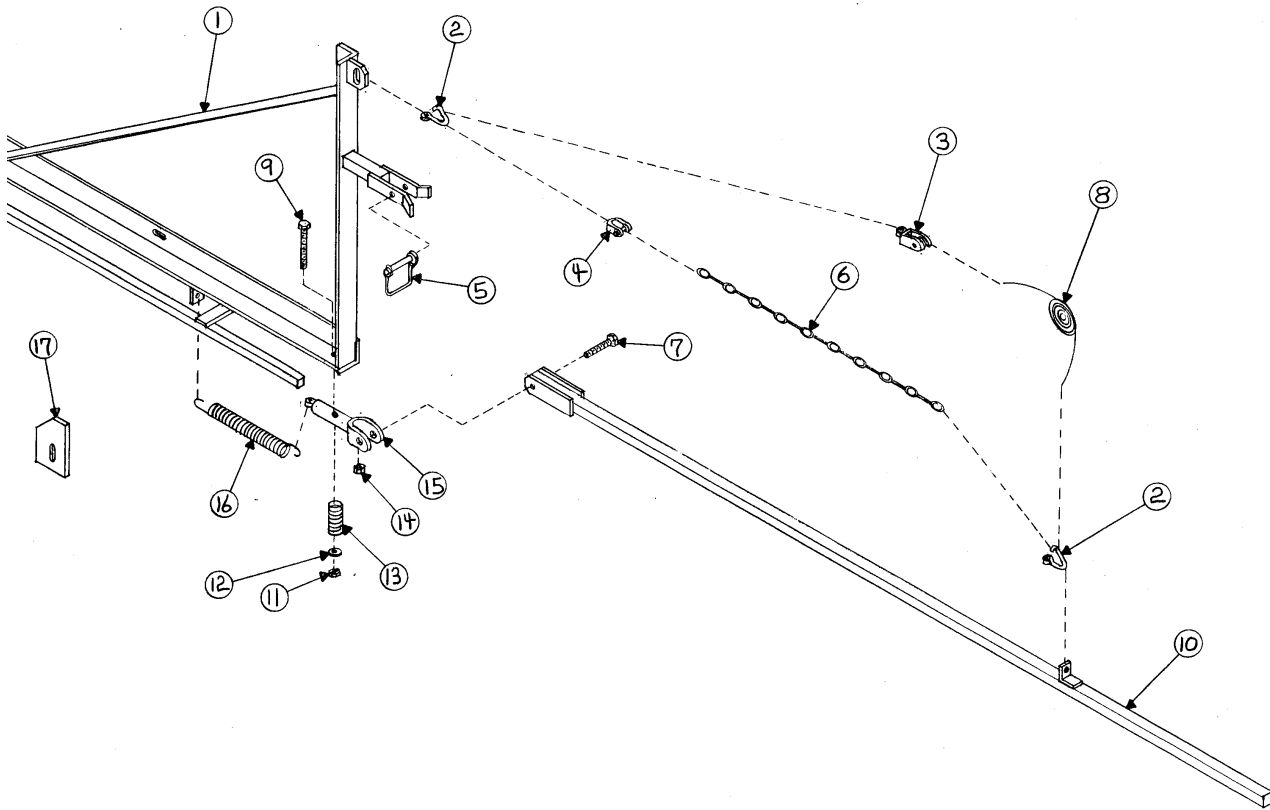
CLEANING- STORING-MAINTENANCE

The least expensive thing you can do to prolong your new sprayers life is to keep it clean. Please follow these simple instruction after spraying job is done.

1. Clean thoroughly-Remove any chemical residues from tank,pump,boom strainers,and nozzles by flushing completely the entire system with clean water and follow with a solution of approximately ONE QUART of household AMMONIA to25 gallons water.
2. Remove all nozzle tips and strainers from booms and clean thoroughly with a toothbrush or toothpick. Leave nozzle tip to soak in can of oil or diesel fuel.
3. DRAIN TANK COMPLETELY and leave it to dry outside. Make sure all chemical has been removed THIS IS VERY IMPORTANT WITH WETTABLE POWDERS.
4. Remove pump and make sure no liquid is left inside. Fill pump with radiator rust inhibitor and plug outlets keep inside during storage.
5. Drain complete system and fill with antifreeze during winter storage to prevent freezing.
6. Store complete sprayer in dry place out of weather. Keeping sprayer out sunlight will lessen the UV effects on tank.
7. Caution: Never change from one type of chemical to another without thoroughly cleaning sprayer.

ITEM NO.	DESCRIPTION	PART NO.
1	Trailer back boom	
	(A) 110 gallon round	T110
	(B) 150 gallon round	T150B
	(C) 200 gallon round	T2A
	(D) 300 gallon round	T300B
	(E) 500 gallon trailer	T500A
2	Trailer front boom	
	(A) 300 gallon oval	T3E
	(B) 500 gallon oval	T5B
3	Boominator mount	H15
4	Tank	
	(A) 110 gallon round 30" diameter	47368
	(B) 150 gallon round 32" diameter	47082
	(C) 200 gallon round 32" diameter	47068
	(D) 300 gallon round 38" diameter	47375
	(E) 500 gallon round 48" diameter	47330
	(F) 300 gallon oval	47349
	(G) 500 gallon oval	47346
5	Strap	
	(A) 110 ,150,200 gallon round	SP60
	(B) 300 gallon round	SP70
	(C) 500 gallon round	SP90
	(D) 300 gallon oval	SP60
	(E) 500 gallon oval	SP81
6	Center section 12 row 12 foot	B34A
7	Center section 12 row 8 foot	BO34
8	Center section 6 & 8 row heavy duty	B20
9	Center section 6 & 8 row standard	CS75

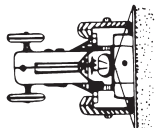
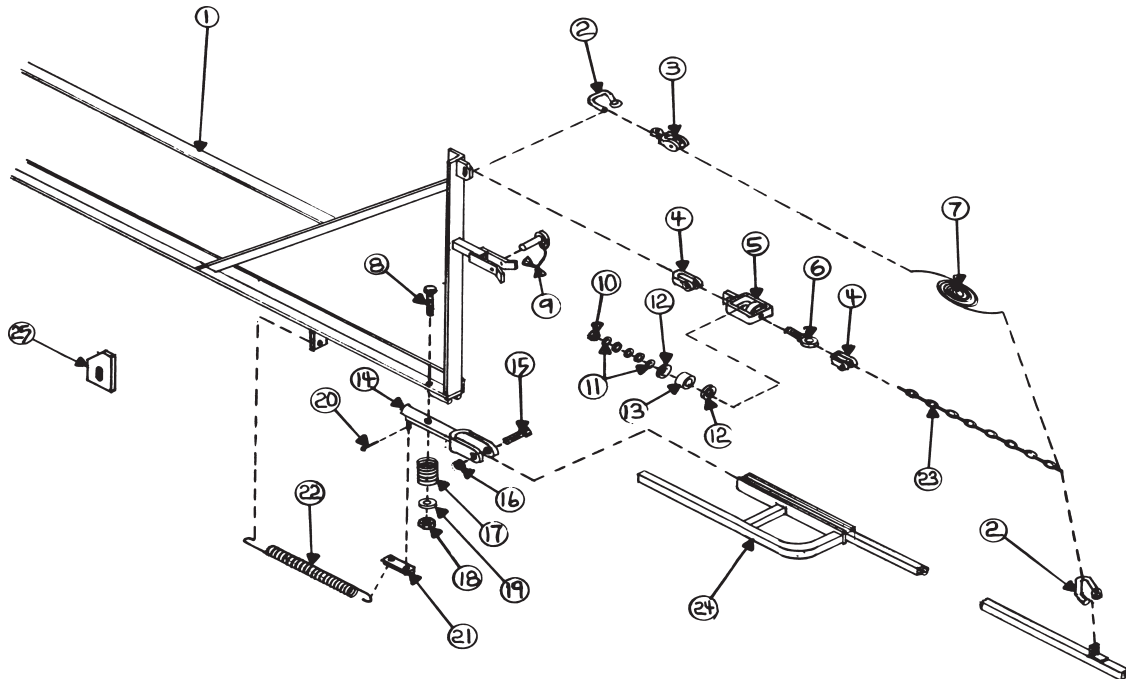
ECONOMY BOOM & CENTER SECTION



ITEM NO.	DESCRIPTION	PART NO.
1	Center Section	CS75
2	1/4" Cold Shut	14CDST
3	1 1/4" Single Eye Pully	87-209
4	Clevis Assembly	948
5	PTO Pin	OO276
6	3/16" Blue Chrome Chain	2116-503-04
7	Bolt 1/2" x 3"	CS12300C
8	1/4" Nylon Rope	8SP-1/4
9	Bolt 1/2" x 4 1/2"	CS12412C
10	6 Row Outer Boom,(1 Pair)	B8A
11	8 Row Outer Boom,(1 Pair)	B8B
12	Flat Washer 1/2"	FW12
13	Compression Spring	1 25
14	1/2" Lock Nut	HLN12C
15	Economy Boom Yoke	JD102
16	Tension Spring	75-7
17	Center Section Stabilizer Plate	CSSP

8 ROW HEAVY DUTY CENTER SECTION AND BOOM 200 and 300 Lift Type/300 and 500 Pull Type BREAKDOWN

REF. NO.	DESCRIPTION	PART NO.	QUANTITY	PRICE EA.
1	96" Heavy Duty C.S. (Frame Only)	B20	1	709.00
2	1/4" Cold Shut	14CDST	4	1.27
3	1 1/4" Single Eye Pulley	87-209	2	4.13
4	Clevis Assembly	00948	4	1.98
5	Boom Cushion Yoke	BCY	2	15.66
6	3/8" x 2 1/2" Eye Bolt	38212EB	2	15.31
7	1/4" Nylon Rope	8SP-1/4	11 FT.	2.64
8	3/4" x 5" Bolt	CS34500C	2	2.77
9	PTO Pin	00276	2	1.28
10	3/8" Hex Nut	HN38C	2	.09
11	3/8" Flat Washer	FW38	10	.10
12	3/8" Fender Washer	D36713	4	3.75
13	Shock Cushion	TRW82123	2	4.67
14	Boom Yoke	VV102S-HD	2	126.00
15	1/2" x 3" Bolt	CS12312C	2	1.16
16	1/2" Lock Nut	HLN12C	2	.45
17	Compression Spring	175-25	2	21.52
18	3/4" Hex Nut	HN34C	2	.53
19	3/4" Flat Washer	FW34	2	.36
20	3/16" x 1 1/4" Cotter Pin	316214	2	.28
21	Spring Adaptor	B20-5-8	2	3.36
22	Tension Spring	SP11	2	11.88
23	3/16" Blue Chrome Chain (Total Both Side)	2116-503-04	12 FT.	21.00
24	8 Row Outer Arm Left Side	B9L	1	131.00
24A	8 Row Outer Arm Right Side	B9R	1	131.00
25	Center Section Stabilizer Plate	CSSP	2	20.00



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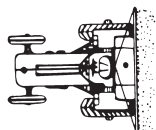
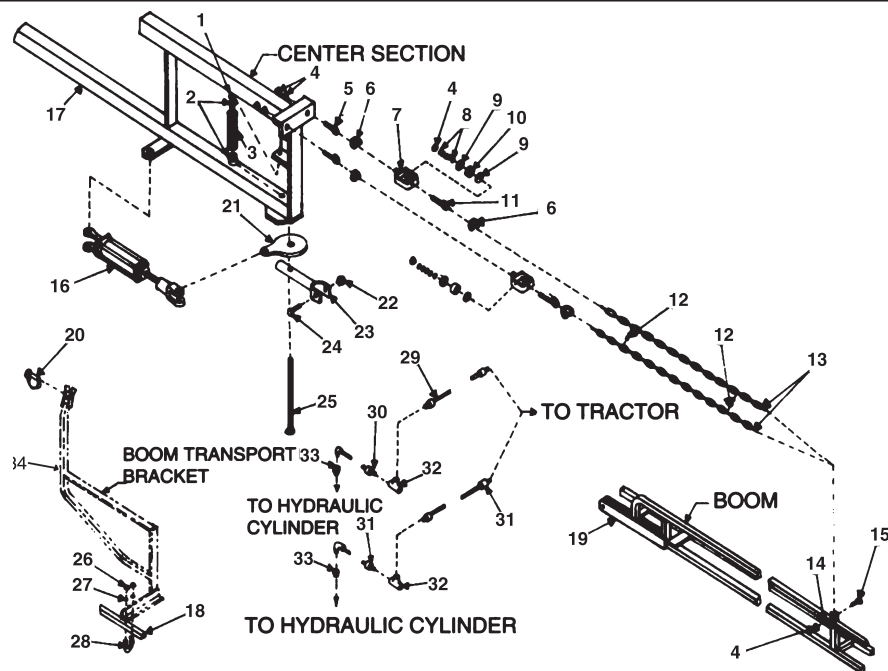
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12 ROW TRAILER CENTER SECTION BREAKDOWN

REF. NO.	DESCRIPTION	PART NO.	QUANTITY	PRICE EA.
1	3/4" Hex Nut	HN34C	2	.53
2	Spring Collar	TV103-D	4	9.64
3	Compression Spring	25-7HD	2	38.00
4	3/8" Hex Nut	HN38C	20	.09
5	1/2" x 1 1/2" Eye Bolt	12112EB	4	11.76
6	Clevis Assembly	G209	8	4.17
7	Boom Cushion Yoke	BCY	4	17.97
8	3/8" Flat Washer	FW38	20	.10
9	3/8" Fender Washer	D36713	8	3.75
10	Stock Cushion	TRW82123	4	4.67
11	3/8" x 2 1/2" Eye Bolt	38212EB	4	15.31
12	S Hook	SH218	6	1.10
13	3/16" Blue Chrome Chain(Total)	2116-503-04	42 FT.	89.04
14	3/8" Lock Washer	LW38	2	.07
15	3/8" x 2" Bolt	CS38200C	2	.32
16	Hydraulic Cylinder	638010	2	133.00
17	Center Section	CS34	1	1,297.00
18	Center Boom	DCB-A	1	40.00
19	Outer Boom (8 Row Right Side)	B9R	1	158.00
19A	Outer Boom (8 Row Left Side)	B9L	1	158.00
19B	Outer Boom (12 Row Right Side)	B1DR	1	309.00
19C	Outer Boom (12 Row Left Side)	B1DL	1	309.00
20	PTO Pin	00276	1	1.28
21	Cradle (Left)	TD91LS	1	112.00
21A	Cradle (Right)	TD91RS	1	112.00
22	1/2" Lock Nut	HLN12C	2	.45
23	Boom Yoke	VV102S-HD	2	167.00
24	1/2" x 3 1/2" Bolt	CS12312C	2	1.16
25	3/4" x 14" Bolt	CS341400C	2	21.78
26	5/16" Nut	HN516C	4	.06
27	5/16" Flat Washer	FW516	4	.06
28	5/16" x 2" Square U-Bolt	SQU516200	2	3.20
29	10 Ft. Hydraulic Hose	HY10	2	40.70
30	2 Ft. Hydraulic Hose	HY2-90	2	20.26
31	3 Ft. Hydraulic Hose	HY3-90	2	23.30
32	1/4" Galvanized Tee	GT1400	2	2.61
33	Restricted Orifice	50349	4	14.21
34	Transport Bracket	IY-172 (L&R)	1 EA	158.00



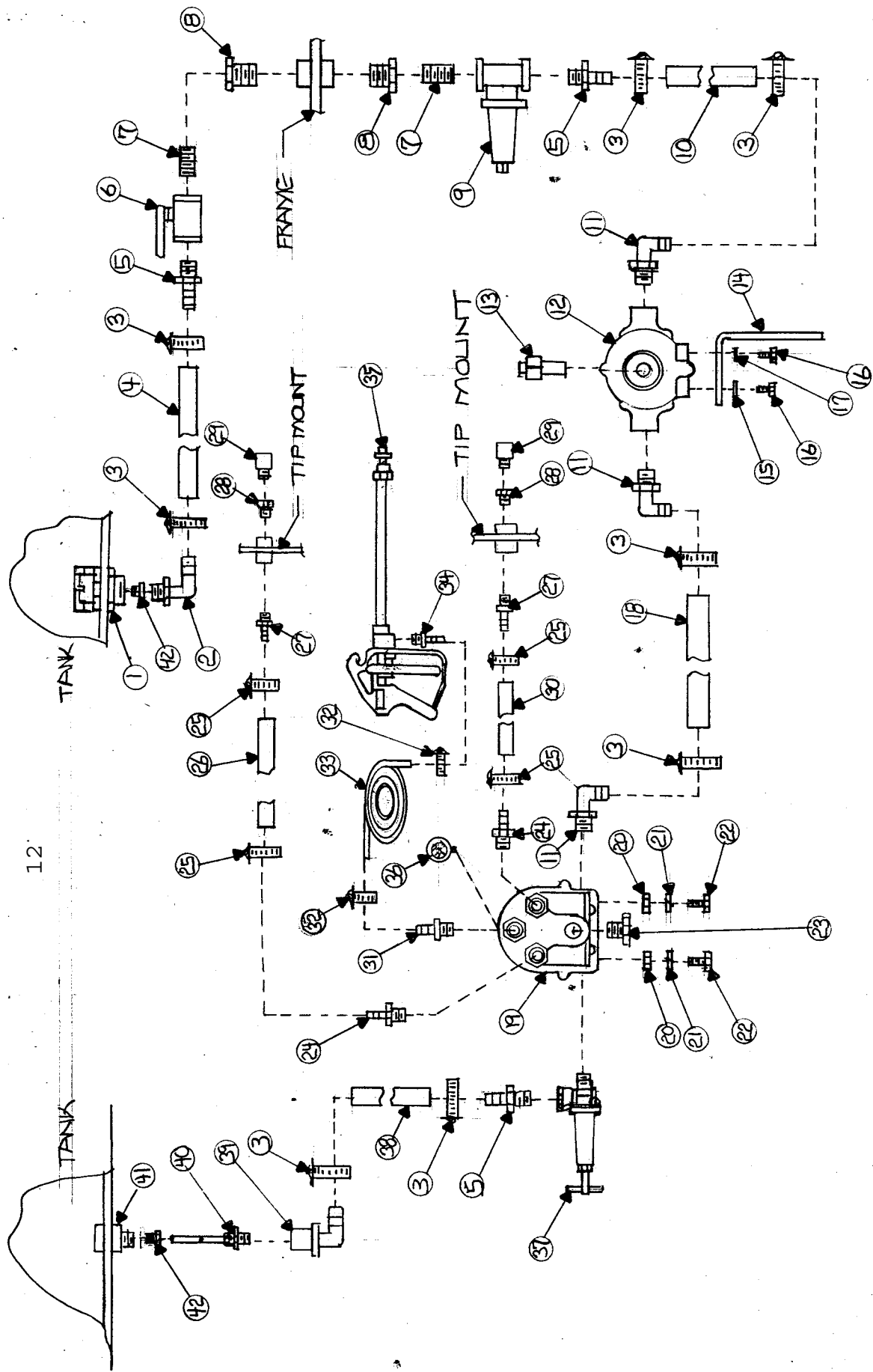
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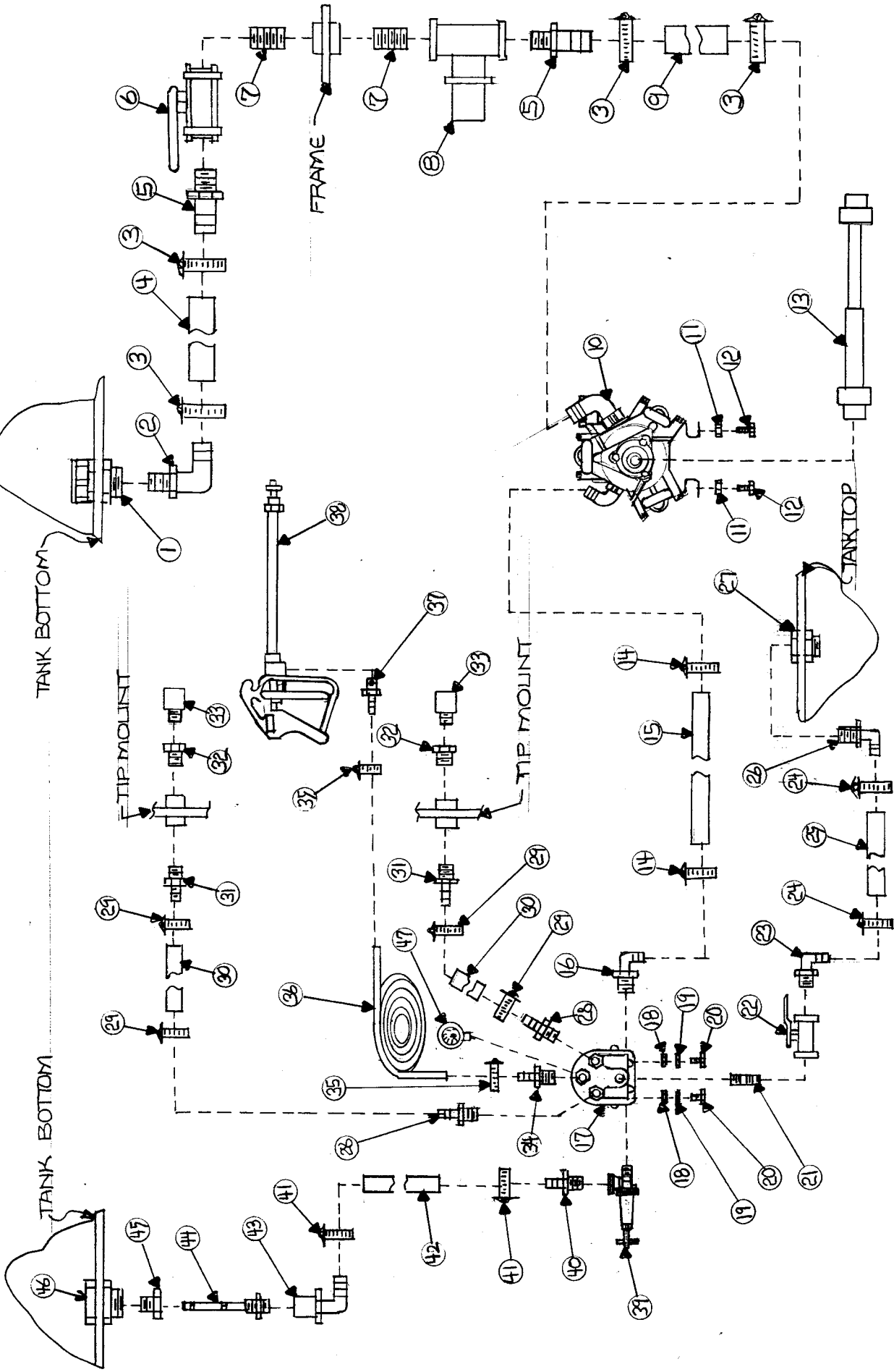
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TRAILER with BOOMINATORS and HAND GUN
(AA17L and 7560C)

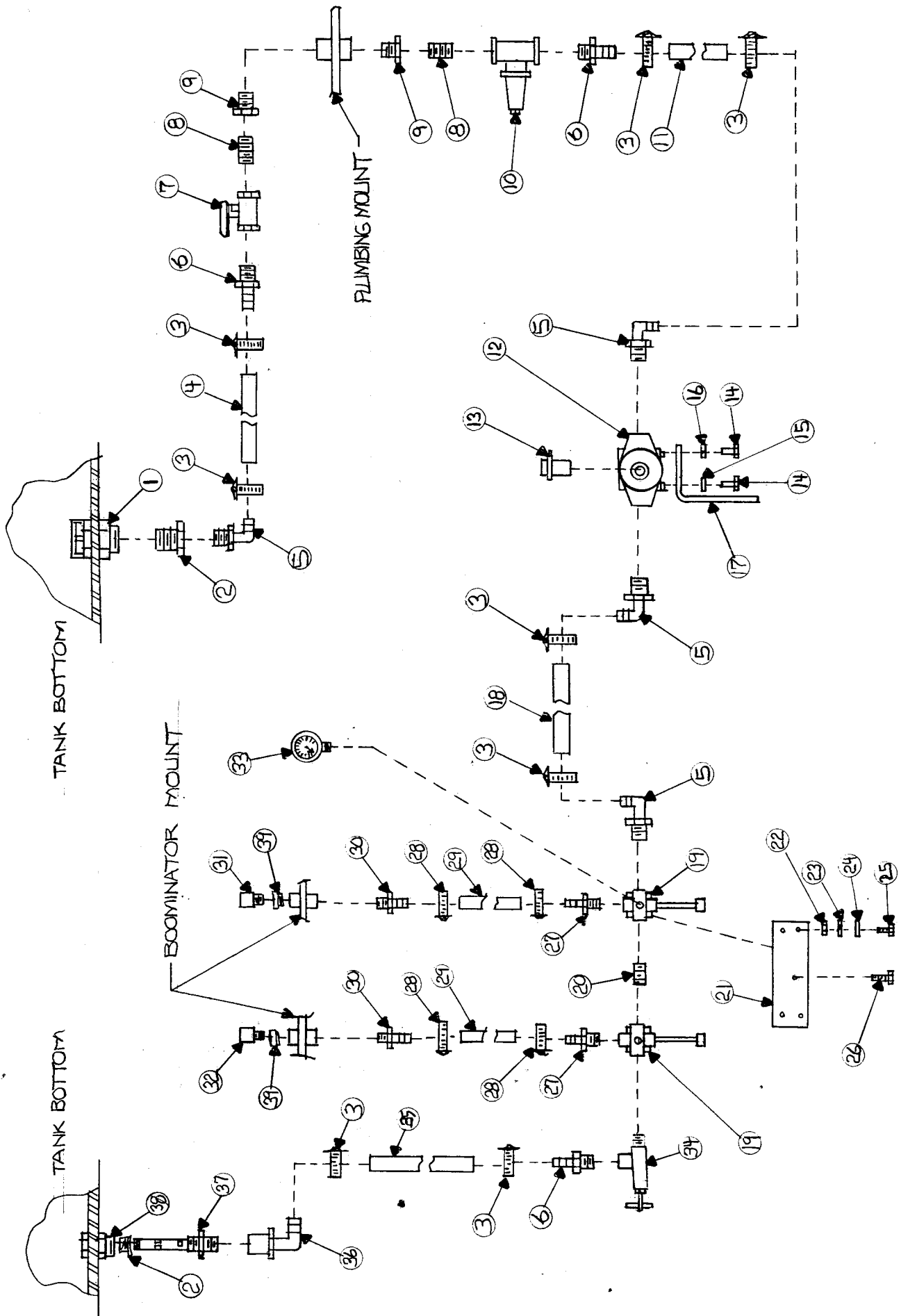
TRAILER with BOOMINATORS and HAND GUN 13
(AA17L and 7560C)

ITEM NO.	DESCRIPTION	PART NO.
1	Tank fitting 1 1/4" anti-vortex poly	63065
2	Elbow 3/4" mpt x barb 90 nylon	EL34
3	Hose clamp 3/4"	12H
4	Hose black ag. 3/4"	10031750
5	Hose shank 3/4" mpt x barb nylon	A34
6	Ball valve 3/4" fpt nyglass	3434NGF
7	Nipple 3/4" x close galvanized	GN341.5
8	Reducer bushing 1" mpt x 3/4" fpt galvanized	GB1034
9	Strainer 3/4" fpt 50 mesh nylon	AA126-ML-3-50
10	Hose black ag. 3/4"	10031750
11	Elbow 3/4" mpt x barb 90 nylon	EL34
12	Pump roller 8 roller 300 psi	7560C
13	Quick coupler 15/19"	1321-0007
14	Pump stabalizer (standard)	PS
15	Flat washer 5/16"	FW516
16	Bolt 5/16" x 3/4"	CS51634C
17	Lock washer 5/16"	LW516
18	Hose black ag. 3/4"	10031730
19	Control valve	AA17L
20	Nut 3/8"	HN38C
21	Lock washer 3/8"	LW38
22	Bolt 3/8" x 1 1/4"	CS38114C
23	Plug 3/4" nylon	F34
24	Hose shank 3/4" mpt x 1/2" barb nylon	A3412
25	Hose clamp 1/2"	8H
26	Hose black ag. 1/2"	10031730
27	Hose shank 3/8" mpt x 1/2" barb nylom	A3812
28	Reducer bushing 3/8" mpt x 1/4" fpt galvanized	GB3814
29	Boominator nozzle (left and right)	BN1400L&R
30	Hose black ag 1/2"	10031730
31	Hose shank 3/4" mpt x 3/8" barb nylon	A3438
32	Hose clamp 3/8"	6H
33	Hose black ag. 3/8"	10031720
34	Hose shank 1/2" mpt x 3/8" barb nylon	A1238
35	Spray gun	AA43LA-AL6
36	Pressure gauge 0-160 psi dry gauge	SG-160
37	Pressure relief valve	3/4/8460
38	Hose red ag. 1/2"	3204-0410
39	Elbow 3/4" mpt x 1/2" barb 90 nylon	EL3412
40	Jet agitator	3371-0019
41	Tank fitting 3/4" poly	60401
42	Reducer bushing 1 1/4" mpt x 3/4" fpt nylon	RB11434

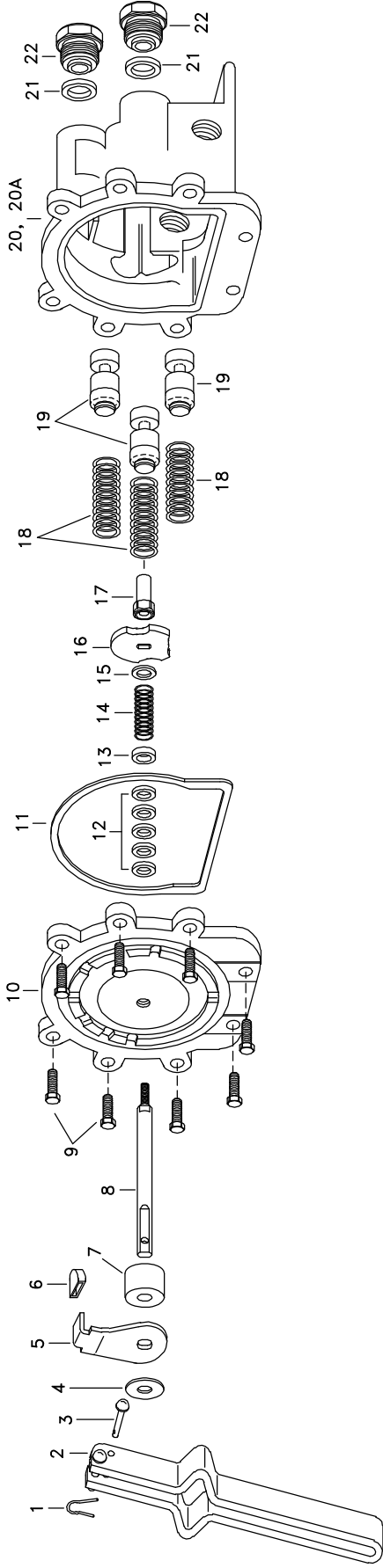


ITEM NO.	DESCRIPTION	PART NO.
1	Tank fitting 1 1/4" anti-vortex	63065
2	Elbow 1 1/4"mpt x 1 1/2" barb 90 nylon	EL114112
3	Hose clamp 1 1/2"	28H
4	Hose wire coil 1 1/2"	12003501
5	Hose shank 1 1/2"mpt x barb nylon	A112
6	Ball valve 1 1/2" fpt poly	V-150
7	Nipple 1 1/2" x close galvanized	GN1121.75
8	Strainer 1 1/2" fpt 20 mesh	3350-0112
9	Hose wire coil 1 1/2"	12003501
10	Pump diaphragm shaft drive	RO-106/C
11	Lock nut 7/16"	HLN716C
12	Bolt 7/16" x 1 1/4"	CS716114C
13	Drive shaft (standard)	7101061NN007007
14	Hose clamp 3/4"	12H
15	Hose black ag. 3/4"	10031750
16	Elbow 3/4"mpt x barb 90 nylon	EL34
17	Control valve	AA17L
18	Nut 3/8"	HN38C
19	Lock washer 3/8"	LW38
20	Bolt 3/8" x 1 1/4"	CS38114C
21	Nipple 3/4" x 5" galvanized	GN345
22	Ball valve 3/4" fpt brass	34BBV
23	Elbow 3/4"mpt x barb 90 nylon	EL34
24	Hose clamp 3/4"	12H
25	Hose red ag. 3/4"	3204-0420
26	Hose clamp 3/4"	12H
27	Tank fitting 3/4"	60401
28	Hose shank 3/4"mpt x 1/2" barb nylon	A3412
29	Hose clamp 1/2"	8H
30	Hose black ag. 1/2"	10031730
31	Hose shank 3/8"mpt x 1/2" barb nylon	A3812
32	Reducer bushing 3/8"mpt x 1/4"fpt Galvanized	GB3814
33	Boominator tips left and right	BN1400L&R
34	Hose shank 3/4"mpt x 3/8" barb nylon	A3438
35	Hose clamp 3/8"	6H
36	Hose black ag. 3/8"	10331720
37	Hose shank 1 1/2"mpt x 3/8" barb nylon	A1238
38	Hand gun	AA43LA-AL6
39	Pressure relief valve	8460 3/4
40	Hose shank 3/4"mpt x 1/2" barb nylon	A3412
41	Hose clamp 1/2"	8H
42	Hose red ag. 1/2"	3204-0410
43	Elbow 3/4"mpt x 1/2" barb 90 nylon	EL3412
44	Jet agitator	3371-0019
45	Reducer bushing 1 1/4"mpt x 3/4"fpt nylon	RB11434
46	Tank fitting 1 1/4"	67152

47	Pressure gauge 0-300 psi liquid filled	GG-300
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ITEM NO.	DESCRIPTION	PART NO.
1	Tank fitting 1 1/4" anti-vortex	67065
2	Reducer bushing 1 1/4"mpt x 3/4"fpt nylon	RB11434
3	Hose clamp 3/4"	12H
4	Hose black ag. 3/4"	10031750
5	Elbow 3/4"mpt x barb 90 nylon	EL34
6	Hose shank 3/4"mpt x barb nylon	A34
7	Ball valve 3/4" fpt nyglass	3434NGF
8	Nipple 3/4" x close galvanized	GN341.5
9	Reducer bushing 1 1/2"mpt x 3/4"fpt galvanized	GB11234
10	Strainer 3/4" fpt 50 mesh nylon	AA126-ML-3-50
11	Hose black ag. 3/4"	10031750
12	Pump 8 roller	7560C
13	Quick coupler	1321-0007
14	Bolt 5/16" x 3/4"	CS51634C
15	Flat washer 5/16"	FW516
16	Lock washer 5/16"	LW516
17	Pump stabilizer (standard)	PS
18	Hose black ag. 3/4"	10031750
19	Control valve	AA6B
20	Nipple 3/4" x close nylon	M34
21	Valve stand	VS6B
22	Nut 1/4:	HN14C
23	Lock washer 1/4"	LW14
24	Flat washer 1/4"	FW14
25	Bolt 1/4" x 1"	CS14100C
26	Bolt 1/4" x 1 1/4"	CS14114C
27	Hose shank 1/2"mpt x barb nylon	A12
28	Hose clamp 1/2"	8H
29	Hose black ag. 1/2"	10031730
30	Hose shank 3/8"mpt x 1/2" barb nylon	A3812
31	Boominator nozzle left	BN1400L
32	Boominator nozzle right	BN1400R
33	Pressure gauge 0-160psi dry	SG-160
34	Pressure relief valve	13895-6
35	Hose red ag. 1/2"	3204-0420
36	Elbow 3/4"fpt x barb 90 nylon	EL34F
37	Jet agitator	3371-0019
38	Tank fitting 1 1/4"	67114
39	Reducer bushing 3/8"mpt x 1/4"fpt galvanized	GB3814



ITEM	PART NO.	DESCRIPTION
*	CP8012-1/2-SS	1/16" x 1/2" Cotter Pin, Stainless Steel
*	CP6849-1-IZP	Handle and Rivet Sub-Asb., Steel, Zinc Plated and Stainless Steel
*	CP7206-IZP	Rivet, Steel, Zinc Plated
*	CP6976-IZP	Handle Washer, Steel, Zinc Plated
*	CP12128-IZP	Selector Shield, Steel, Zinc Plated
*	CP12127-CE	Selector Shield Tip, Celcon (Gray)
	CP12129-CE	Spacer, Celcon (Gray)
	CP6972-SS	Main Stem, Stainless Steel
*	CP20607-IZP	Hex Head Screw (1/4-20x3/4), Steel, Zinc Plated (8 Req'd)
*	CP12126-AL	Cover Plate, Aluminum
*	CP6975-BU	Gasket, Buna-N
*	CP5809-LEA	Packing, Thermo-Leather (5 Req'd)

ITEM	PART NO.	DESCRIPTION
	CP12130-SS	Packing Gland, Stainless Steel
	CP7254-SS	Main Spring, Stainless Steel
	CP7987-SS	Washer, Stainless Steel
	CP6971-AL	Selector Cam, Aluminum
	CP6973-SS	Guide Nut, Stainless Steel
	CP6959-SS	Valve Spring, Stainless Steel (3 Req'd)
	CP6956-CE	Valve Stem, Celcon (3 Req'd)
	CP6934-3/4-AL	Body, Aluminum (For AA17L)
	CP6934-13/4-AL	Body, Aluminum (For AA17Y)
	CP6958-POL	Seal Plate, Polyethylene (3 Req'd)
	CP7902-AL	Outlet Adapter, Aluminum (3 Req'd)
	No. AA17L, TeeValve Control Valve	
	No. AA17Y, TeeValve Control Valve	

* PK-AB17-KIT -Spare Parts Kit (Includes all items marked with *)

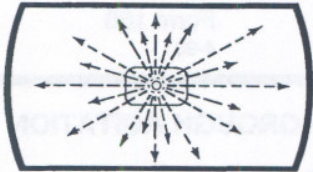
DESCRIPTION: AA17 TEEVALVE® CONTROL VALVE



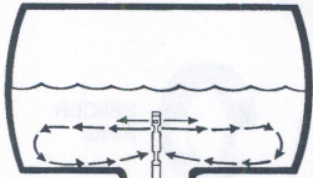
Rev. No. 4
 Ref.
 Parts List No.
PL 17
 SHEET OF

JET AGITATOR and VOLUME BOOSTER MODEL 3371-0019

The versatile Hypro, venturi type, 3371-0019 Jet Agitator adapts to your installation, fits directly into 3/4" NPT tank opening. Mounts vertically or horizontally. (For horizontal mounting, just remove end cap from agitator. The full flow is then directed across the tank.) The overlapping 4-port side outlet provides full 360° agitation for thorough mixing in the vertical position. Molded polypropylene construction provides rigidity and strength. Choice of four nozzles assures proper agitation for your spraying.



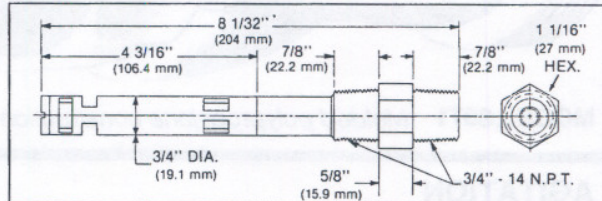
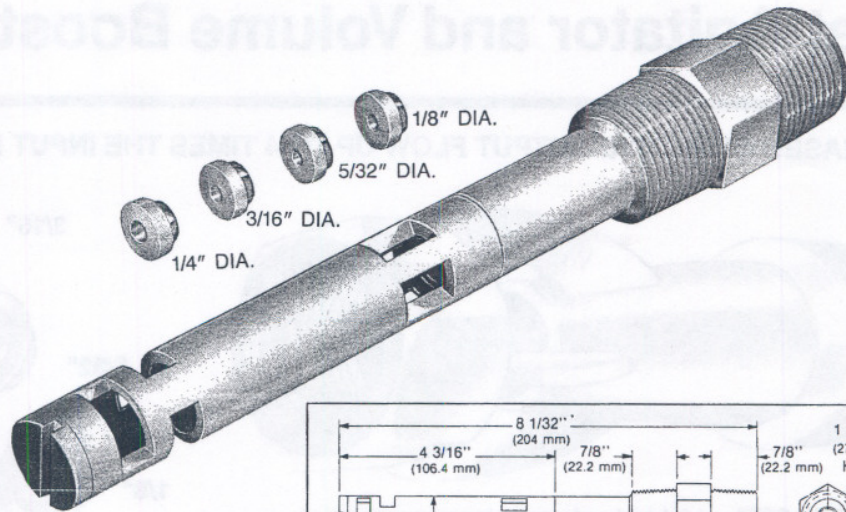
Vertical Mounting Top View



METAL COUPLING → AGITATION LINE

Use separate line for relief valve by-pass.

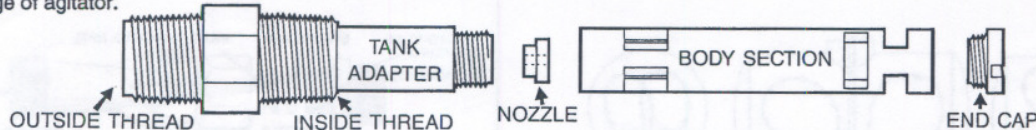
Vertical Mounting Side View



DIMENSIONS

ASSEMBLY INSTRUCTIONS

1. Agitator is packaged for shipment disassembled in a see-through plastic envelope. Select your nozzle size and assemble as shown on the sectional drawing. Insert small diameter of nozzle into tank adapter. Thread parts together in order shown. Note that body section end with vertical slots screws into tank adapter (other end is for cap).
2. Wrap teflon tape on the inside 3/4" NPT thread on agitator before installing to tank. This assures a tight seal and will prevent agitator from loosening because of vibration.
3. Apply teflon tape on the outside 3/4" NPT thread for agitator line and install a metal coupling. This will assure a tight seal and prevent breakage of agitator.



SELECTING THE PROPER NOZZLE FOR SPRAY TANK AGITATION

The right nozzle is the one which provides ample agitation to keep the wettable powders in suspension, but not too much as to cause foaming of spray material.

PERFORMANCE TABLE MODEL 3371-0019

Nozzle Diameter	Input to Agitator in GPM	Input to Agitator in L/min.	Agitator Pressure in PSI	Agitator Pressure in KPa	Agitator Output in GPM	Agitator Output in L/min.
1/8"	2.1	7.9	25	172.4	6	22.7
1/8"	2.9	11	50	344.7	8.8	33.3
1/8"	4.1	15.5	100	689.4	13.9	52.6
5/32"	3.1	11.7	25	172.4	7	26.5
5/32"	4.5	17	50	344.7	11.5	43.5
5/32"	5.8	22	100	689.4	16.2	61.3
3/16"	3.8	14.4	25	172.4	8.5	32.2
3/16"	5.9	22.3	50	344.7	12.8	48.4
3/16"	8.2	31	100	689.4	17.2	65.1
1/4"	5.9	22.3	25	172.4	11.9	45
1/4"	9.8	37.1	50	344.7	17.1	64.7
1/4"	13.5	51.1	100	689.4	20	75.7

All Regular Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

SPRAY NOZZLES REGULAR PATTERN

* Water was used for all calculations listed.

1400 RIGHT or LEFT	(1/4" MNPT)			SPEED (MPH)										
	PSI	GPM	SPRAY PATTERN	2	3	4	5	6	7	8	9	10	11	12
				GALLONS PER ACRE										
	20	1.7	17 ft.	25	17	12	10	8	7	6	5.5	5	4.5	4
	30	2.0	17 ft.	30	19	15	12	10	8	7	6.5	6	5	4.5
	40	2.5	17 ft.	36	24	18	15	12	10	9	8	7	6.5	6

Roadside Spray Nozzles

All Roadside Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed for right-hand mounting ONLY and provide a wide spray pattern without kickback under the nozzle.

These nozzles are designed for road-side and right-of-way spraying.

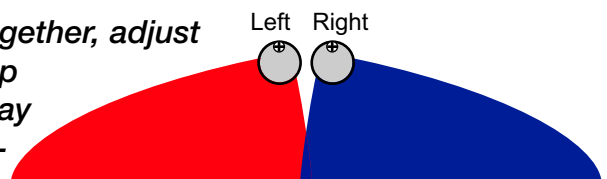
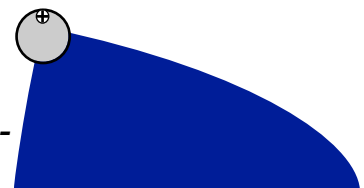


Regular Pattern Spray Nozzles

All Regular Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed for left-hand or right-hand mounting and provide a wide spray pattern with approximately 15° of kickback under the nozzle.

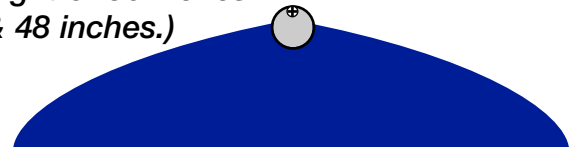
When using left-hand and right-hand nozzles together, adjust the nozzles to allow for enough kickback overlap between the nozzles to prevent streaking in spray coverage. Nozzles can be rotated to adjust distance of spray pattern outward or amount of kickback under the nozzle.



Full Pattern Spray Nozzles

All Full Pattern Spray Nozzles were tested at a height of 36 inches. (Recommended operating height is between 18 & 48 inches.)

These nozzles are designed to provide a full left-hand to right-hand spray pattern from a single centrally mounted nozzle.



Spraying Safety

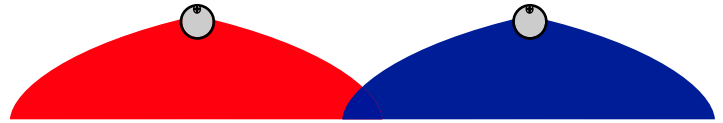
ALWAYS WEAR PROTECTIVE CLOTHING WHEN SPRAYING AND / OR HANDLING ANY AND ALL CHEMICALS.

Nozzle Height Adjustment

Nozzles can be used at various heights within the recommended range. However, this will affect the spray pattern width and the gallons per acre (GPA) applied. Refer to conversion formulas on page 11.

Multi-Pass Spraying

When multi-pass spraying, be sure to overlap the ends of spray patterns 12 - 16 inches to ensure even coverage.



Adverse Wind Conditions

With boomless spray nozzles, as with other spraying methods, high or gusty wind conditions can cause drifting or pattern movements, adversely affecting spray coverage. If this occurs, wait for more favorable conditions before continuing.

BOOMINATOR[®]
SPRAY NOZZLES
 CONVERSION FORMULAS

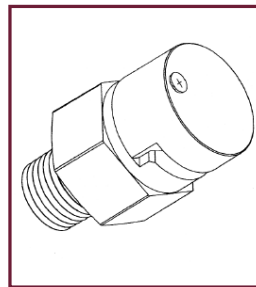
CONVERSION FORMULAS

Gallons per 1000 sq. ft. = $\frac{\text{GPM} \times 136}{\text{MPH} \times \text{Spray Width in Inches}}$

Gallons per Acre = $\frac{\text{GPM} \times 5940}{\text{MPH} \times \text{Spray width in Inches}}$



TOW BEHIND SPRAYER WITH FULL PATTERN BOOMINATOR[®] SPRAY NOZZLE



**YOU CAN TELL
 It's A
 BOOMINATOR[®]
 NOZZLE ON SIGHT**

Boominator's[®] unique round head shape lets you know it is a genuine Boominator[®] nozzle. It is also patented and with patents pending. Boominator[®].



ATV MOUNTED SPRAYER WITH 2 REGULAR PATTERN BOOMINATOR[®] NOZZLES



TRUCK MOUNTED SHORT PATTERN BOOMINATOR[®] SPRAY NOZZLES

FieldJet® Boomless Nozzles with Extra-Wide Flat Spray Projection

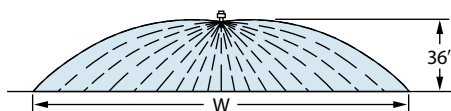


Type 1/4-KLC and Type 3/4-KLC
 1/4" NPT male and 3/4" NPT male
 pipe connections



The KLC FieldJet nozzle is typically used to spray areas not accessible with a boom sprayer. Its one-piece nozzle design projects spray to both sides to form a wide swath flat spray. The round orifice minimizes clogging. Uniformity across the swath is not as good as with a properly operated boom sprayer.* Available in brass or stainless steel.

*Uniformity can be optimized by double overlapping spray swaths on successive sprayer passes. Remember, this also doubles the application volume.



How to order:

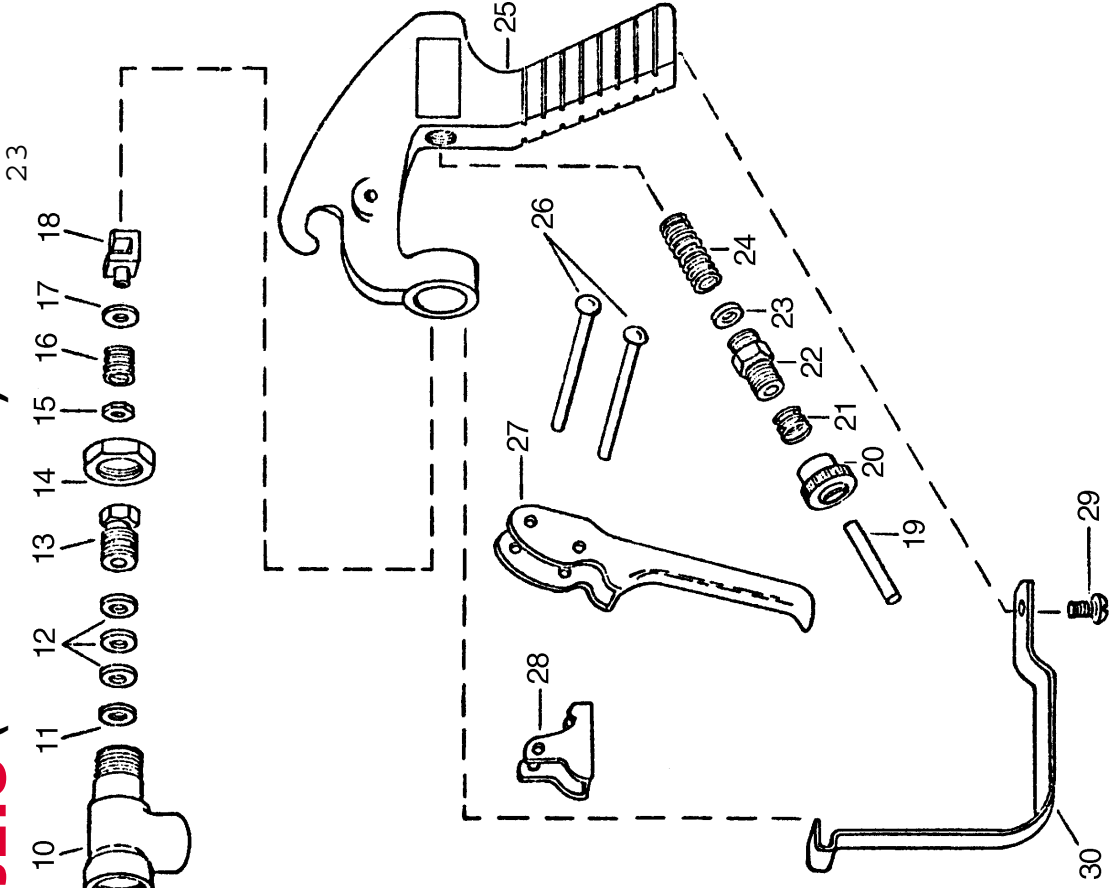
Specify part number and material.

Example: 1/4KLC-SS18 – Stainless Steel

NOZZLE	PIPE CONNECTION	PSI	CAPACITY ONE NOZZLE IN GPM	"W" IN FEET	GPA				GALLONS PER 1000 SQ. FT.			
					3 MPH	4 MPH	5 MPH	8 MPH	3 MPH	4 MPH	5 MPH	8 MPH
1/4-KLC-5	1/4"	20	0.71	17	6.9	5.2	4.1	2.6	.16	.12	.09	.06
		30	0.87	18	8.0	6.0	4.8	3.0	.18	.14	.11	.07
		40	1.00	21	7.9	5.9	4.7	2.9	.18	.13	.11	.07
1/4-KLC-9	1/4"	20	1.27	18	11.6	8.7	7.0	4.4	.27	.20	.16	.10
		30	1.56	19	13.5	10.2	8.1	5.1	.31	.23	.19	.12
		40	1.80	21	14.1	10.6	8.5	5.3	.32	.24	.19	.12
1/4-KLC-18	1/4"	20	2.55	20	21	15.8	12.6	7.9	.48	.36	.29	.18
		30	3.12	21	25	18.4	14.7	9.2	.56	.42	.34	.21
		40	3.60	22	27	20	16.2	10.1	.62	.46	.37	.23
1/4-KLC-36	1/4"	20	5.09	22	38	29	23	14.3	.87	.66	.52	.33
		30	6.24	24	43	32	26	16.1	.98	.74	.59	.37
		40	7.20	26	46	34	27	17.1	1.0	.78	.63	.39
3/4-KLC-50	3/4"	20	7.07	23	51	38	30	19.0	1.2	.87	.70	.44
		30	8.66	26	55	41	33	21	1.3	.94	.75	.47
		40	10.0	28	59	44	35	22	1.3	1.0	.81	.51
3/4-KLC-72	3/4"	20	10.2	25	67	50	40	25	1.5	1.2	.92	.58
		30	12.5	29	71	53	43	27	1.6	1.2	.98	.61
		40	14.4	31	77	57	46	29	1.8	1.3	1.1	.66
3/4-KLC-108	3/4"	20	15.3	28	90	68	54	34	2.1	1.5	1.2	.77
		30	18.7	33	94	70	56	35	2.1	1.6	1.3	.80
		40	21.6	36	99	74	59	37	2.3	1.7	1.4	.85

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). See pages 173–187 for useful formulas and information.

No. 43L & No. 43H GUNJETS (13" Extension)

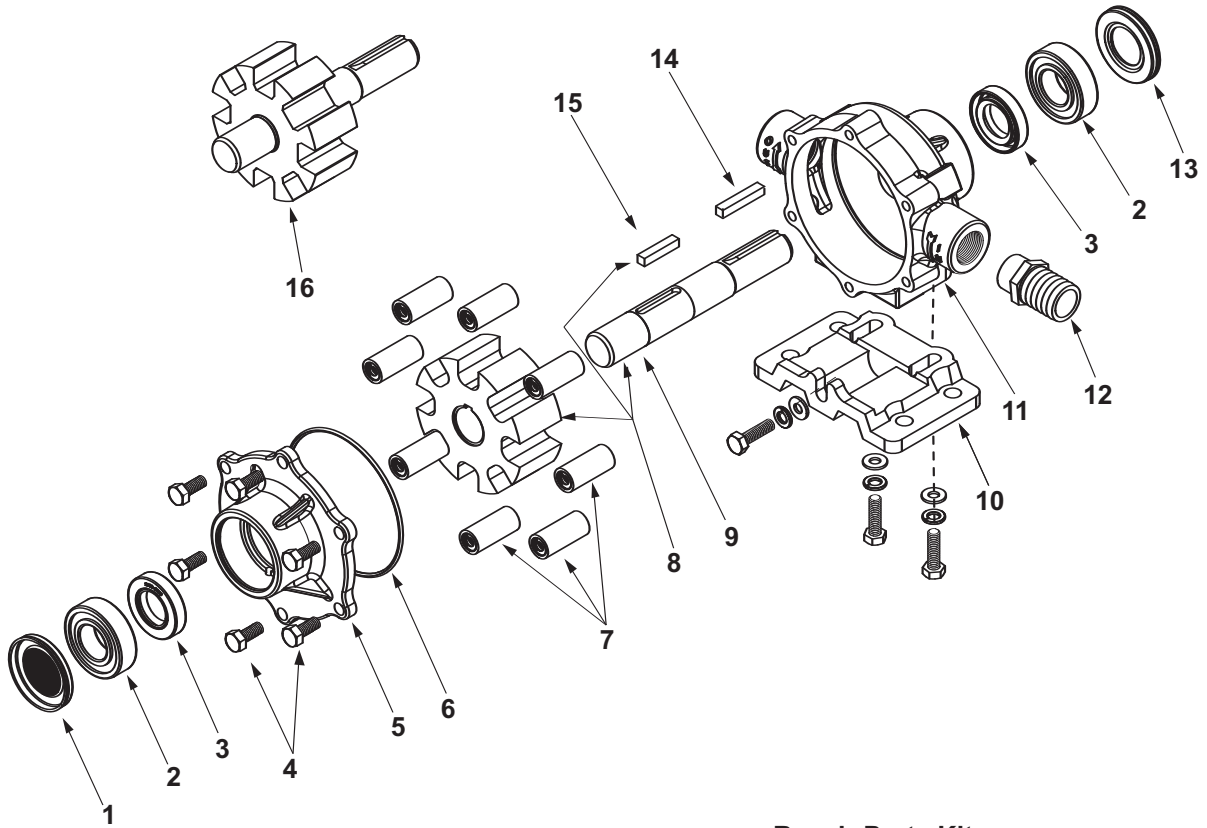


Item	Part No.	Description
1	Brass (#43-)	
2	Aluminum (#43-AL)	
3	1325-AL	Cap, Brass or Aluminum
4	D-**	Orifice disc, hardened stainless steel
5	4743-NY	Gasket, nylon
6	10566-AL	Nozzle housing, brass or aluminum
7	10565-AL	Seat plug, seat plate, washer & core subassy.
8	10571-AL	Guide vane, brass or aluminum
9	6943-AL	Gasket, aluminum (2 Req'd)
10	19238-416SS	Stem, type 416 stainless steel
11	6604-AL	Tubing, brass or aluminum
12	6492-AL	Inlet body, brass or aluminum
13	6601-302SS	Packing washer, type 302 stainless steel
14	6602-LEA	Packing, leather (3 Req'd) (Standard)
15	6602-TEF	Packing, teflon (3 Req'd) (Optional)
16	19237-AL	Packing screw, brass or aluminum
17	6599-IZP	Locknut, brass or steel-zinc plated
18	9641-INP	Stem nut, steel-nickel plated
19	6595-SS	Trigger stop spring, stainless steel
20	7991-IZP	Washer, steel-zinc plated
21	6597-INP	Trigger guide, steel-nickel plated
22	6591-SS	Spring stud, stainless steel
23	6589-IZP	Stop adj nut, steel-zinc plated
24	6594-SS	Spring for Stop adj nut, stainless steel
25	6588-IZP	Spring screw, steel-zinc plated
26	6592-302SS	Spring guide washer, type 302 stainless steel
27	6593-1-SS	Main spring, stainless steel (For #43L-)
28	6593-2-SS	Main spring, stainless steel (For #43H-)
29	14477-1-AL	Handle body, aluminum
30	7623-IZP	Rivet, steel-zinc plated (2 Req'd)
31	6509-INP	Trigger, steel-nickel plated
32	6510-INP	Trigger stop, steel-nickel plated
33	11757-INP	Screw, steel-nickel plated
34	13798-INP	Trigger Guard, steel-nickel plated
35	Gunjet No. 43L- Brass, complete, for pressures up to 200 PSI	
36	Gunjet No. 43L-AL- Aluminum, complete, for pressures up to 200 PSI	
37	Gunjet No. 43H- Brass, complete, for pressures from 200 to 800 PSI	
38	Gunjet No. 43H-AL- Aluminum, complete, for pressures from 200 to 800 PSI	
39	AB43-KIT Spare Parts Kit (Includes all items marked with *)	
40	AB43-AL-KIT Spare Parts Kit (Includes all items marked with *)	
41	ABCK43-KIT (Conversion kit for Adj. stem) - items 8, 13 & 15	
42	ABCK43-AL-KIT (Conversion Kit for Adj. Stem) - Items 8, 13 & 15	



**Specify Orifice Disk Size

Series 7560



Repair Parts Kits:

No. 3430-0381 Consists of (8) Ref. 7 Super Rollers, (1) Ref. 6 O-ring, and (2) Ref. 3 Viton seals

No. 3430-0167 Consists of (8) Ref. 7 Polypropylene Rollers, (1) Ref. 6 O-ring, and (2) Ref. 3 Viton seals

IMPORTANT:

When ordering parts, give PART NUMBER and PART DESCRIPTION. Reference Numbers are used ONLY to point out parts in the drawing and are NOT to be used as ordering numbers.

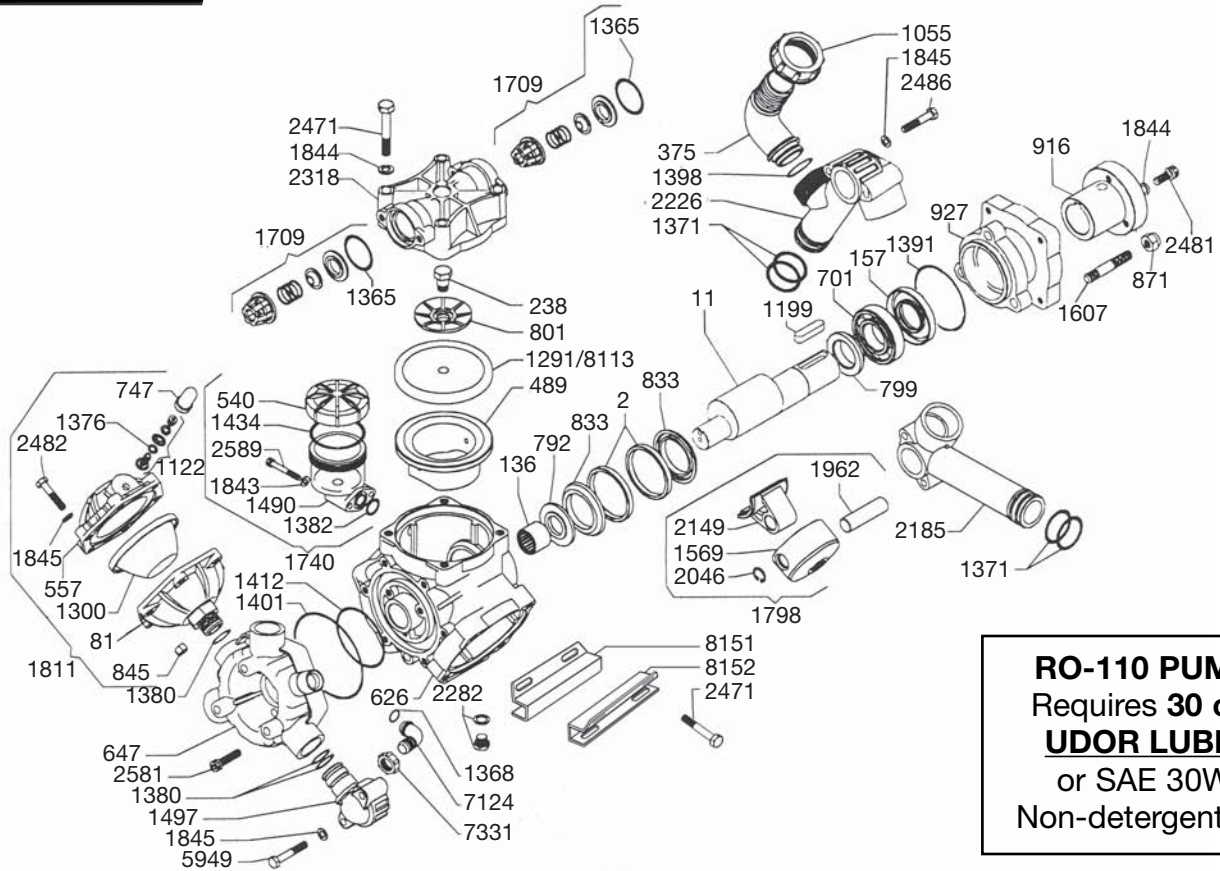
Ref. No.	Qty. Req'd.	Part Number	Description
1	1	2300-0020	Bearing Cover
2	2	2008-0001	Sealed Ball Bearing
3	2	2112-0003	Viton Seal (Standard)
3	2	2112-0001	Buna-N Seal (Optional)
4	6	2210-0004	Bolts
5	1	0204-7500C	Endplate (Cast Iron) with Seal
5	1	0204-7500N	Endplate (Ni-Resist) with Seal
5	1	0204-7500X	Endplate (SilverCast) with Seal
6	1	1720-0014	O-ring Gasket for Endplate
7	8	1005-0004	Super Roller (Standard)
7	8	1002-0004	Polypropylene Roller (Optional)
7	8	1052-0004	Buna-N Roller (Optional)
7	8	1055-0004	Teflon Roller (Optional)

Ref. No.	Qty. Req'd.	Part Number	Description
8	1	3430-0745	Rotor Assembly (Std. N & XL)
9	1	0510-7500	Shaft (416 Stainless)
10	1 kit	3420-0003	Base Kit - Sold Separately Includes: (1) Base, (3) Bolts and (3) Washers
11	1	0104-7500C	Body (Cast Iron) with Seal
11	1	0104-7500N	Body (Ni-Resist) with Seal
11	1	0104-7500X	Body (SilverCast) with Seal
12	1	2404-0052	1" Hose Barb
13	1	2300-0022	Shaft Bearing Cover
14	1	1610-0005	Key
15	1	1610-0059	Key (Stainless Steel)
16	1	0308-7560C	Rotor Assembly (Cast Iron only)



RO-110

Exploded View Diagram and Parts List



RO-110 PUMP
 Requires **30 oz.**
UDOR LUBE,
 or SAE 30W
 Non-detergent Oil

RO-110

REF#	PART#	DESCRIPTION	QTY	REF#	PART#	DESCRIPTION	QTY
2	0001.02	Retainer Ring	2	1398	1101.42	O-Ring	1
11	0002.60	Crank Shaft	1	1401	1101.58	O-Ring	1
81	0003.15	Accumulator	1	1412	1101.79	O-Ring	1
136	0006.07	Bearing	1	1434	1101.D1	O-Ring	1
157	0007.05	Seal	1	1490	1203.27	Oil Reservoir	1
238	0102.03	Diaphragm Bolt	3	1497	1203.36	Manifold Elbow	3
375	0202.78	Suction Elbow	1	1569	1205.06	Piston	3
489	0206.14	Piston Sleeve	3	1607	1206.22	Stud	3
540	0208.98	Oil Cap	1	1709	6006.08	Valve Assembly	6
557	0208.20	Accumulator Head	1	1740	6033.01	Oil Reservoir Assembly	1
626	0209.34	Crank Case	1	1798	6015.24	Piston Rod Assembly	3
647	0257.07	Discharge Manifold	1	1811	6031.09	Accumulator Assembly	1
701	0214.05	Bearing	1	1843	1403.07	Washer	2
747	0218.01	Air Valve Cap	1	1844	1403.09	Washer	9
792	0301.12	Washer	1	1845	1403.10	Washer	18
799	0301.24	Washer	1	1962	1502.01	Connecting Rod Pin	3
801	0301.07	Retainer Washer	3	2046	1506.02	Snap Ring	6
833	0302.52	Rod Spacer	2	2149	1519.16	Connecting Rod	3
845	0303.01	Nut	6	2185	1601.13	Suction Manifold	2
871	0304.04	Lock Nut	3	2226	1602.22	Suction Manifold	1
916	0501.62	Crank Shaft Flange	1	2282	1603.50	Drain Plug	1
927	0501.79	FLANGE	1	2318	1604.36	Head	3
1055	0604.50	Barb Nut	1	2471	1804.29	Bolt	12
1122	0608.16	Air Valve Assembly	1	2481	1804.07	Bolt	1
1199	0801.11	Key	1	2482	1804.09	Bolt	6
1291	0903.02	Diaphragm (BUNA-N, Optional)	3	2486	1804.79	Bolt	6
*1300	0903.14	Accumulator Diaphragm	1	2581	1805.03	Bolt	9
*1365	1101.01	O-Ring	6	2589	1805.31	Bolt	2
1368	1101.04	O-Ring	1	5949	1804.72	Bolt	6
1371	1101.07	O-Ring	6	7124	0253.05	Discharge Elbow	1
1376	1101.16	O-Ring	1	7331	0604.36	Discharge Nut	1
1380	1101.25	O-Ring	7	*8113	0903.34	Diaphragm (DESMOPAN, Standard)	3
1382	1101.29	O-Ring	1	8151	1202.63	Mounting Rail - Right Side	1
1391	1101.43	O-Ring	1	8152	1202.64	Mounting Rail - Left Side	1

* Parts Included in Diaphragm Repair Kit - #8700.04. (Also available in Buna-N - #8700.11.)



RO-110

Low Pressure Diaphragm Pump

RO-110 low pressure, 3-cylinder diaphragm pumps are excellent for various horticultural and agricultural spraying applications. Simplicity of design and common parts allow easy and affordable maintenance. A built-in pulsation dampener and mounting rails are standard.

The RO-110 has an anodized aluminum body, plasticized aluminum heads, glass-filled nylon manifolds and stainless steel liquid handling parts.

Several drive options are available, including:

Part Number	Description
4155.00	Hydraulic Motor Mounting Kit
5033.A4	Gear Reduction for 8-13 HP
7751.A3	1" Solid Keyed Shaft and Bolts
7753.A6*	1-3/8" 6-Spline Male Shaft & Bolts



For industrial uses and spraying applications not listed, please consult UDOR U.S.A.

*For ALL PTO Drive Applications, Safety Shield (Part #1219.25) is Recommended.

SPECIFICATIONS

Maximum Flow	29 GPM
Maximum Pressure.....	300 PSI
Maximum RPM	540 RPM
Maximum Temperature	140°F
Inlet Port (Hose Barb).....	1-1/2"
Outlet Port (Hose Barb)	3/4"
Dimensions	L-14" x W-11.5" x H-12"
Weight	45 lbs.
Diaphragm Material	
Standard.....	DESMOPAN
Optional	BUNA-N

NOTE - Protect pumps from freezing. If freezing conditions exist, flush pump and system with a 50/50 mixture of antifreeze and water.

PROBLEM	PROBABLE CAUSE	POSSIBLE REMEDY
Erratic pressure indication on pressure gauge	air leaking into suction line	Tighten all fittings and hoses between pump and tank
	Trash in control valve or pressure gauge	Remove and clean parts
Pressure gauge fluctuates excessively	Suction line kinked or clogged	Remove suction line and clean-check tank and strainer
	Air leak in suction hose	Replace hose
	Suction hose collapsed	Replace hose
	Pump is sucking in air through the suction line or air has not been entirely evacuated from strainer	Examine the suction hose and make sure it is firmly secured. Run the pump with outlet hose open to evacuate air from pump
Pump loses suction	Suction strainer clogged	Clean strainer and tank
	Air leak in suction hose	Replace hose
	Suction hose collapsed	Replace hose
	Pump air locked	Remove discharge line and pump liquid through pump
Pump does not draw water	Pump worn and clearances too great	Replace or repair pump
	Seals worn out or deteriorated	Replace pump seals
	One or more valves are seated improperly	Examine the valve seatings and clean them
	Suction line is plugged or collapsed clogged strainer	Examine suction line Clean strained
Noisy pump	Excessive pump speed	Slow the pump
	Air leak in suction line	Replace suction hose
	Partially clogged strainer	Clean strainer
Pump shows decreased capacity	Suction strainer clogged	Clean strainer
	Air leak in suction hose	Replace suction hose
	Moving parts worn	Replace worn parts
	Worn seal	Replace seal
	Pump roller stuck	Clean pump inside
	Pump operating too slow	Speed up pump
	Nozzles too large for capacity of pump	Use smaller nozzles or reduce number of nozzles on boom
Pump leaks	Worn out seal	Replace seal

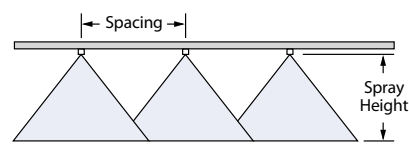
TeeJet® VisiFlo® Flat Spray Tips

Features:

- Tapered edge flat spray pattern for uniform coverage in broadcast spraying.
- VisiFlo color-coded version available in stainless steel, ceramic and polymer in 80° or 110° spray angles in selected sizes.
- Available in ceramic 80° capacities 01–20 and 110° capacities 01–015. See XR and XRC TeeJet® tips on pages 12 and 13 for larger capacities.
- Standard version (not color-coded) available in 15°, 25°, 40°, 50° and 65° spray angles in brass, stainless steel or hardened stainless steel.
- See page 39 for TeeJet even flat spray tips.
- Automatic spray alignment with 25612*-NYR Quick TeeJet® cap and gasket. Reference page 63 for more information.
- Automatic spray alignment for sizes 10 through 20 with 25610*-NYR Quick TeeJet cap and gasket. Reference page 63 for more information.



Tip	PSI	DROP SIZE	CAPACITY ONE NOZZLE IN GPM	CAPACITY ONE NOZZLE IN OZ./MIN.	20°										GALLONS PER 1000 SQ. FT.				
					GPA														
					4 MPH	5 MPH	6 MPH	8 MPH	10 MPH	12 MPH	15 MPH	20 MPH	2 MPH	3 MPH	4 MPH	5 MPH			
TP650050†	30		0.043	5.5	3.2	2.6	2.1	1.6	1.3	1.1	0.85	0.64	0.15	0.10	0.07	0.06			
TP800050†	35		0.047	6.0	3.5	2.8	2.3	1.7	1.4	1.2	0.93	0.70	0.16	0.11	0.08	0.06			
TP1100050†	40		0.050	6.4	3.7	3.0	2.5	1.9	1.5	1.2	0.99	0.74	0.17	0.11	0.09	0.07			
	50		0.056	7.2	4.2	3.3	2.8	2.1	1.7	1.4	1.1	0.83	0.19	0.13	0.10	0.08			
	60		0.061	7.8	4.5	3.6	3.0	2.3	1.8	1.5	1.2	0.91	0.21	0.14	0.10	0.08			
TP650067†	30		0.058	7.4	4.3	3.4	2.9	2.2	1.7	1.4	1.1	0.86	0.20	0.13	0.10	0.08			
TP800067†	35		0.063	8.1	4.7	3.7	3.1	2.3	1.9	1.6	1.2	0.94	0.21	0.14	0.11	0.09			
TP1100067†	40		0.067	8.6	5.0	4.0	3.3	2.5	2.0	1.7	1.3	0.99	0.23	0.15	0.11	0.09			
	50		0.075	9.6	5.6	4.5	3.7	2.8	2.2	1.9	1.5	1.1	0.26	0.17	0.13	0.10			
	60		0.082	10	6.1	4.9	4.1	3.0	2.4	2.0	1.6	1.2	0.28	0.19	0.14	0.11			
TP6501†	30	F	0.087	11	6.5	5.2	4.3	3.2	2.6	2.2	1.7	1.3	0.30	0.20	0.15	0.12			
TP8001	35	F	0.094	12	7.0	5.6	4.7	3.5	2.8	2.3	1.9	1.4	0.32	0.21	0.16	0.13			
TP11001	40	F	0.10	13	7.4	5.9	5.0	3.7	3.0	2.5	2.0	1.5	0.34	0.23	0.17	0.14			
	50	F	0.11	14	8.2	6.5	5.4	4.1	3.3	2.7	2.2	1.6	0.37	0.25	0.19	0.15			
	60	F	0.12	15	8.9	7.1	5.9	4.5	3.6	3.0	2.4	1.8	0.41	0.27	0.20	0.16			
TP65015†	30	F	0.13	17	9.7	7.7	6.4	4.8	3.9	3.2	2.6	1.9	0.44	0.29	0.22	0.18			
TP80015	35	F	0.14	18	10.4	8.3	6.9	5.2	4.2	3.5	2.8	2.1	0.48	0.32	0.24	0.19			
TP110015	40	F	0.15	19	11.1	8.9	7.4	5.6	4.5	3.7	3.0	2.2	0.51	0.34	0.26	0.20			
	50	F	0.17	22	12.6	10.1	8.4	6.3	5.0	4.2	3.4	2.5	0.58	0.39	0.29	0.23			
	60	F	0.18	23	13.4	10.7	8.9	6.7	5.3	4.5	3.6	2.7	0.61	0.41	0.31	0.24			
TP6502†	30	M	0.17	22	12.6	10.1	8.4	6.3	5.0	4.2	3.4	2.5	0.58	0.39	0.29	0.23			
TP8002	35	M	0.19	24	14.1	11.3	9.4	7.1	5.6	4.7	3.8	2.8	0.65	0.43	0.32	0.26			
TP11002	40	F	0.20	26	14.9	11.9	9.9	7.4	5.9	5.0	4.0	3.0	0.68	0.45	0.34	0.27			
	50	F	0.22	28	16.3	13.1	10.9	8.2	6.5	5.4	4.4	3.3	0.75	0.50	0.37	0.30			
	60	F	0.24	31	17.8	14.3	11.9	8.9	7.1	5.9	4.8	3.6	0.82	0.54	0.41	0.33			
TP6503†	30	M	0.26	33	19.3	15.4	12.9	9.7	7.7	6.4	5.1	3.9	0.88	0.59	0.44	0.35			
TP8003	35	M	0.28	36	21	16.6	13.9	10.4	8.3	6.9	5.5	4.2	0.95	0.63	0.48	0.38			
TP11003	40	M	0.30	38	22	17.8	14.9	11.1	8.9	7.4	5.9	4.5	1.0	0.68	0.51	0.41			
	50	M	0.34	44	25	20	16.8	12.6	10.1	8.4	6.7	5.0	1.2	0.77	0.58	0.46			
	60	F	0.37	47	27	22	18.3	13.7	11.0	9.2	7.3	5.5	1.3	0.84	0.63	0.50			
TP6504†	30	M	0.35	45	26	21	17.3	13.0	10.4	8.7	6.9	5.2	1.2	0.79	0.60	0.48			
TP8004	35	M	0.37	47	27	22	18.3	13.7	11.0	9.2	7.3	5.5	1.3	0.84	0.63	0.50			
TP11004	40	M	0.40	51	30	24	19.8	14.9	11.9	9.9	7.9	5.9	1.4	0.91	0.68	0.54			
	50	M	0.45	58	33	27	22	16.7	13.4	11.1	8.9	6.7	1.5	1.0	0.77	0.61			
	60	M	0.49	63	36	29	24	18.2	14.6	12.1	9.7	7.3	1.7	1.1	0.83	0.67			
TP6505†	30	C	0.43	55	32	26	21	16.0	12.8	10.6	8.5	6.4	1.5	0.97	0.73	0.58			
TP8005	35	M	0.47	60	35	28	23	17.4	14.0	11.6	9.3	7.0	1.6	1.1	0.80	0.64			
TP11005	40	M	0.50	64	37	30	25	18.6	14.9	12.4	9.9	7.4	1.7	1.1	0.85	0.68			
	50	M	0.56	72	42	33	28	21	16.6	13.9	11.1	8.3	1.9	1.3	0.95	0.76			
	60	M	0.61	78	45	36	30	23	18.1	15.1	12.1	9.1	2.1	1.4	1.0	0.83			
TP6506†	30	C	0.52	67	39	31	26	19.3	15.4	12.9	10.3	7.7	1.8	1.2	0.88	0.71			
TP8006	35	C	0.56	72	42	33	28	21	16.6	13.9	11.1	8.3	1.9	1.3	0.95	0.76			
TP11006	40	C	0.60	77	45	36	30	22	17.8	14.9	11.9	8.9	2.0	1.4	1.0	0.82			
	50	C	0.67	86	50	40	33	25	19.9	16.6	13.3	9.9	2.3	1.5	1.1	0.91			
	60	C	0.73	93	54	43	36	27	22	18.1	14.5	10.8	2.5	1.7	1.2	0.99			
TP6508†	30	C	0.69	88	51	41	34	26	20	17.1	13.7	10.2	2.3	1.6	1.2	0.94			
TP8008	35	C	0.75	96	56	45	37	28	22	18.6	14.9	11.1	2.6	1.7	1.3	1.0			
TP11008	40	C	0.80	102	59	48	40	30	24	19.8	15.8	11.9	2.7	1.8	1.4	1.1			
	50	C	0.89	114	66	53	44	33	26	22	17.6	13.2	3.0	2.0	1.5	1.2			
	60	M	0.98	125	73	58	49	36	29	24	19.4	14.6	3.3	2.2	1.7	1.3			
TP6510†	30		0.87	111	65	52	43	32	26	22	17.2	12.9	3.0	2.0	1.5	1.2			
TP8010†	35		0.94	120	70	56	47	35	28	23	18.6	14.0	3.2	2.1	1.6	1.3			
TP11010†	40		1.00	128	74	59	50	37	30	25	19.8	14.9	3.4	2.3	1.7	1.4			
	50		1.12	143	83	67	55	42	33	28	22	16.6	3.8	2.5	1.9	1.5			
	60		1.22	156	91	72	60	45	36	30	24	18.1	4.1	2.8	2.1	1.7			
TP6515†	30		1.30	166	97	77	64	48	39	32	26	19.3	4.4	2.9	2.2	1.8			
TP8015†	35		1.40	179	104	83	69	52	42	35	28	21	4.8	3.2	2.4	1.9			
TP11015†	40		1.50	192	111	89	74	56	45	37	30	22	5.1	3.4	2.6	2.0			
	50		1.68	215	125	100	83	62	50	42	33	25	5.7	3.8	2.9	2.3			
	60		1.84	236	137	109	91	68	55	46	36	27	6.3	4.2	3.1	2.5			
TP6520†	30		1.73	221	128	103	86	64	51	43	34	26	5.9	3.9	2.9	2.4			
TP8020†	35		1.87	239	139	111	93	69	56	46	37	28	6.4	4.2	3.2	2.5			
TP11020†	40		2.00	256	149	119	99	74	59	50	40	30	6.8	4.5	3.4	2.7			
	50		2.24	287	166	133	111	83	67	55	44	33	7.6	5.1	3.8	3.0			
	60		2.45	314	182	146	121	91	73	61	49	36	8.3	5.6	4.2	3.3			



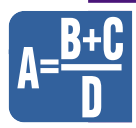
Optimum Spray Height	
65°	35"
80°	30"
110°	20"

See pages 173–187 for drop size classification, useful formulas and information.

- ### How to order:
- Specify tip number.
- Examples:
- TP8002VS – Stainless Steel with VisiFlo color-coding
 - TP11002VP – Polymer with VisiFlo color-coding
 - TP11001VK – Ceramic with VisiFlo polymer color-coding
 - TP11002-HSS – Hardened Stainless Steel
 - TP8002-SS – Stainless Steel
 - TP8002 – Brass

Note: Always double check your application rates. Tabulations are based on spraying water at 70°F (21°C). †Available in all brass, stainless steel and hardened stainless steel only.





Technical Information

Useful Formulas

$$\text{GPM (Per Nozzle)} = \frac{\text{GPA} \times \text{MPH} \times \text{W}}{5,940}$$

$$\text{GPM (Per Nozzle)} = \frac{\text{GAL}/1000\text{FT}^2 \times \text{MPH} \times \text{W}}{136}$$

$$\text{GPA} = \frac{5,940 \times \text{GPM (Per Nozzle)}}{\text{MPH} \times \text{W}}$$

$$\text{GAL}/1000\text{FT}^2 = \frac{136 \times \text{GPM (Per Nozzle)}}{\text{MPH} \times \text{W}}$$

GPM – Gallons Per Minute

GPA – Gallons Per Acre

GAL/1000FT² – Gallons Per 1000 Square Feet

MPH – Miles Per Hour

W – Nozzle spacing (in inches) for broadcast spraying

– Spray width (in inches) for single nozzle, band spraying or boomless spraying

– Row spacing (in inches) divided by the number of nozzles per row for directed spraying

Nozzle Spacing

If the nozzle spacing on your boom is different than those tabulated, multiply the tabulated GPA coverages by one of the following factors.

20"	
Other Spacing (Inches)	Conversion Factor
8	2.5
10	2
12	1.67
14	1.43
16	1.25
18	1.11
22	.91
24	.83
30	.66

Useful Formulas for Roadway Applications

$$\text{GPLM} = \frac{60 \times \text{GPM}}{\text{MPH}} \quad \text{GPM} = \frac{\text{GPLM} \times \text{MPH}}{60}$$

GPLM = Gallons Per Lane Mile

Note: GPLM is not a normal volume per unit area measurement. It is a volume per distance measurement. Increases or decreases in lane width (swath width) are not accommodated by these formulas.

Measuring Travel Speed

Measure a test course in the area to be sprayed or in an area with similar surface conditions. Minimum lengths of 100 and 200 feet are recommended for measuring speeds up to 5 and 10 MPH, respectively. Determine the time required to travel the test course. To help ensure accuracy, conduct the speed check with a partially loaded (about half full) sprayer and select the engine throttle setting and gear that will be used when spraying. Repeat the above process and average the times that were measured. Use the following equation or the table at right to determine ground speed.

$$\text{Speed (MPH)} = \frac{\text{Distance (FT)} \times 60}{\text{Time (seconds)} \times 88}$$

Speeds

Speed in MPH	Time Required in SECONDS to Travel a Distance of:		
	100 Feet	200 Feet	300 Feet
1.0	68	136	205
1.5	45	91	136
2.0	34	68	102
2.5	27	55	82
3.0	23	45	68
3.5	19	39	58
4.0	17	34	51
4.5	15	30	45
5.0	14	27	41
5.5	—	25	37
6.0	—	23	34
6.5	—	21	31
7.0	—	19	29
7.5	—	18	27
8.0	—	17	26
8.5	—	16	24
9.0	—	15	23

30"	
Other Spacing (Inches)	Conversion Factor
26	1.15
28	1.07
32	.94
34	.88
36	.83
38	.79
40	.75
42	.71
44	.68

40"	
Other Spacing (Inches)	Conversion Factor
28	1.43
30	1.33
32	1.25
34	1.18
36	1.11
38	1.05
42	.95
44	.91
48	.83

Miscellaneous Conversion Factors

One Acre = 43,560 Square Feet
 = 43.56 1000FT² Blocks
 = 0.405 Hectare

One Hectare = 2.471 Acres

One Gallon Per Acre

= 2.9 Fluid Ounces per 1000FT²
 = 9.35 Liters Per Hectare

One Gallon Per 1000FT² = 43.56 GPA

One Mile = 5,280 Feet
 = 1,610 Meters
 = 1.61 Kilometers

One Gallon = 128 Fluid Ounces
 = 8 Pints
 = 4 Quarts
 = 3.79 Liters
 = 0.83 Imperial Gallon



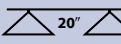
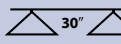
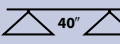
One Pound Per Square Inch

= 0.069 bar
 = 6.896 Kilopascals

One Mile Per Hour = 1.609 Kilometers Per Hour

Suggested Minimum Spray Heights

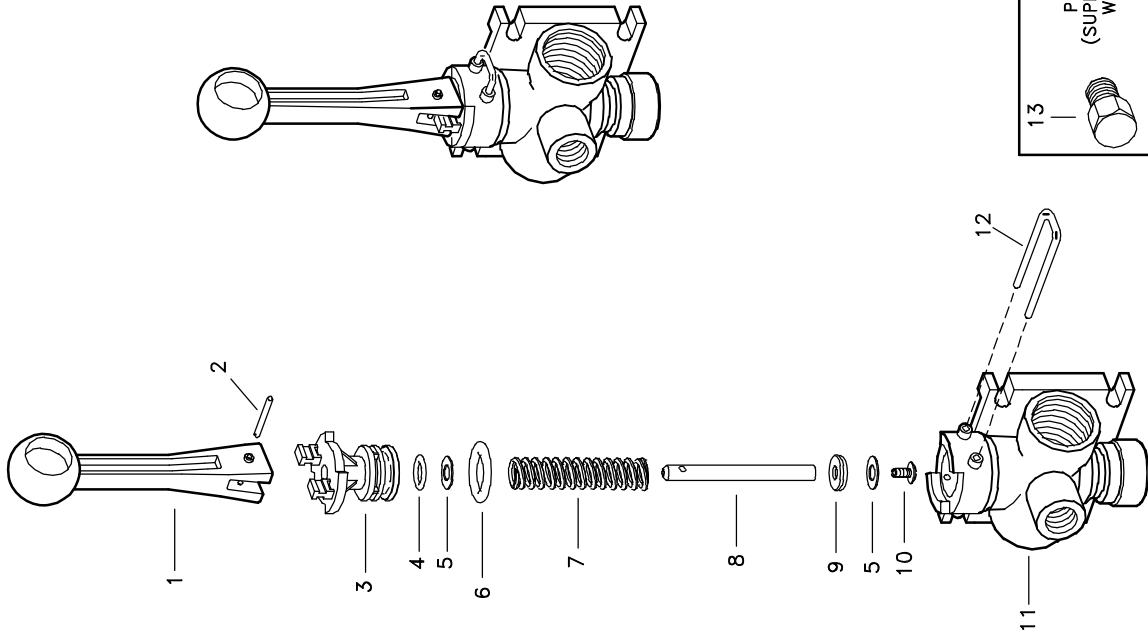
The nozzle height suggestions in the table below are based on the minimum overlap required to obtain uniform distribution. However, in many cases, typical height adjustments are based on a 1 to 1 nozzle spacing to height ratio. For example, 110° flat spray tips spaced 20 inches apart are commonly set 20 inches above the target.

	(Inches)			
				
TeeJet® Standard, TJ	65°	22–24"	33–35"	NR*
TeeJet, XR, TX, DG, TJ	80°	17–19"	26–28"	NR*
TeeJet, XR, DG, TT, TTI, TJ, DGTJ, AI, AI XR	110°	16–18"	20–22"	NR*
FullJet®	120°	10–18"***	14–18"***	14–18"***
FloodJet® TK, TF	120°	14–16"***	15–17"***	18–20"***

* Not recommended.

** Nozzle height based on 30° to 45° angle of orientation (see page 30 of catalog).

*** Wide angle spray tip height is influenced by nozzle orientation. The critical factor is to achieve a double spray pTtern overlap.



ITEM	PART NO.	DESCRIPTION
1	CP36301-NY	HANDLE, NYLON (GRAY)
2	CP36308-SS	GROOVE PIN, TYPE 303 STAINLESS STEEL
3	CP36302-PP	BODY INSERT, POLYPROPYLENE (BLACK)
4	CP7717-2/108-VI	O-RING, VITON
5	CP36307-PPB	WASHER, POLYPROPYLENE (BLACK) 2 REQ'D
6	CP7717-2/209-VI	O-RING, VITON
7	CP36306-302SS	SPRING, TYPE 302 STAINLESS STEEL
8	CP36304-SS	STEM, TYPE 303 STAINLESS STEEL
9	CP38726-VI	SHUT-OFF WASHER, VITON
10	CP38725-SS	PHILLIPS HEAD SCREW, TYPE 302 STAINLESS STEEL
11	CP36303-PP	BODY (NPT), POLYPROPYLENE (BLACK) (FOR MODEL AA6B)
	CPB36303-PP	BODY (BSPT), POLYPROPYLENE (BLACK) (FOR MODEL AAB6B)
12	CP36309-302SS	RETAINING CLIP, TYPE 302 STAINLESS STEEL
	8400-1/4-PPB	PIPE PLUG (NPT), POLYPROPYLENE (BLACK) (FOR MODEL AA6B)
13	B8400-1/4-PPB	PIPE PLUG (BSPT), POLYPROPYLENE (BLACK) (FOR MODEL AAB6B)
No. AA6B DIRECTOVALVE MANUAL CONTROL VALVE (NPT THREADS)		
No. AAB6B DIRECTOVALVE MANUAL CONTROL VALVE (BSPT THREADS)		
PK-AB6B-KIT SPARE PARTS KIT (INCLUDES ALL ITEMS MARKED WITH *)		



DESCRIPTION:
AA1B16B
DIRECTOVALVE®
MANUAL CONTROL VALVE
(NPT & BSPT VERSIONS)



Spraying Systems Co.
Spray Nozzles and Accessories
P.O. Box 7900 - Wheaton, IL 60189-7900

Parts List No.
PL 68
SHEET OF

Rev. No. 1
Ref.

