

# PULL TYPE OWNERS MANUAL

## 300 AND 500 GALLON PULL TYPE SPRAYER

**12,16,18,20, ROW**

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

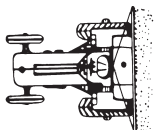
We now have the technology in house to create sprayer specific manuals and to print them only as needed. We think we have made a good beginning, but these manuals are still in the development stage. At this point we would appreciate the input of our end user customer and our dealers as to how we can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



**van's**

**EQUIPMENT COMPANY**

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

*We Appreciate You and Your Business!*

(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

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# MODEL OVERVIEW and DESCRIPTION

## 300 AND 500 GALLON PULL TYPE SPRAYER



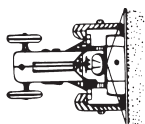
	300 GAL. WITH 5 ROLLER	300 GAL. WITH DIAPHRAGM	500 GAL. WITH 5 ROLLER	500 GAL. WITH DIAPHRAGM
12 ROW NYLON	P30024	P30044	P50024	P50044
12 ROW BRASS	P30024A	P30044A	P50024A	P50044A
12 ROW QUICK JET	P30024QJ	P30044QJ	P50024QJ	P50044QJ

The Van's Pull Type Sprayer line is famous throughout the southeast. They are available in 300 and 500 gallon sizes with accessories for every spraying job. Our superior design will give you many years of dependable service. Ask your neighbor about his Van's Pull Type Sprayer.

Options:	Part No.
1) Hand Gun and Hose Rack	H11F
2) Boomless Nozzle	BNN
3) Stainless Steel Sparger Tube	ST
5) Electric Boom Control	V2500-3 REMCOR
6) Center Section Jack Lift	JL
7) Electric Boom Control - 18 Row	V1999 REMCOR

**Standard Features include:**

- |   |   |
|---|---|
| 1) 300 or 500 Gallon Polyethylene Tank                              | 6) Heavy Duty Structural Steel Frame with 5 Year Warranty |
| 2) 12 Row, Front Mounted, Breakaway, Hydraulic Folding Boom         | 7) Variable Height Boom 66" Maximum                       |
| 3) All Booms Have Variable Spacing Nozzles for Different Row Widths | 8) Variable Spacing Axle 60" - 76"                        |
| 4) New 11L-15 Rib Implement Tires                                   | 9) 30" Ground Clearance at Axle                           |
| 5) Full Set 8003 Tips, Cap & Strainers                              | 10) Easy Access Step and Hand Rail                        |
|   | 11) Fully Assembled & Factory Tested                      |



# van's

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## **MOUNTING AND ASSEMBLY INSTRUCTION**

### **FOR 3 POINT HITCH SPRAYERS 200 AND 300 GALLON 12 ROW**

Mount the sprayer on tractor and use top link to level frame. Use the lift arm adjustments to level tank and frame laterally. Install lift arm stabilizer to eliminate side sway. Attach the pump to tractor.

#### **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 200 and 300 gallon 12 row sprayers are detached from boom yoke, (item 20 page 8), for shipping, the chains, (item 14 page 8), are left connected. Reattached booms, with bolt, (item 21 page 8), and nut, (item 19 page 8), if necessary. Make sure the tip bodies face to the rear of sprayer. Be sure boom feed line hoses are correctly connected to control valve. You can determine this by operating sprayer with clear water, and switching hoses if necessary. **BE SURE YOU DO NOT SWITCH ANY HOSES OTHER THAN BOOM FEED LINES.**

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**

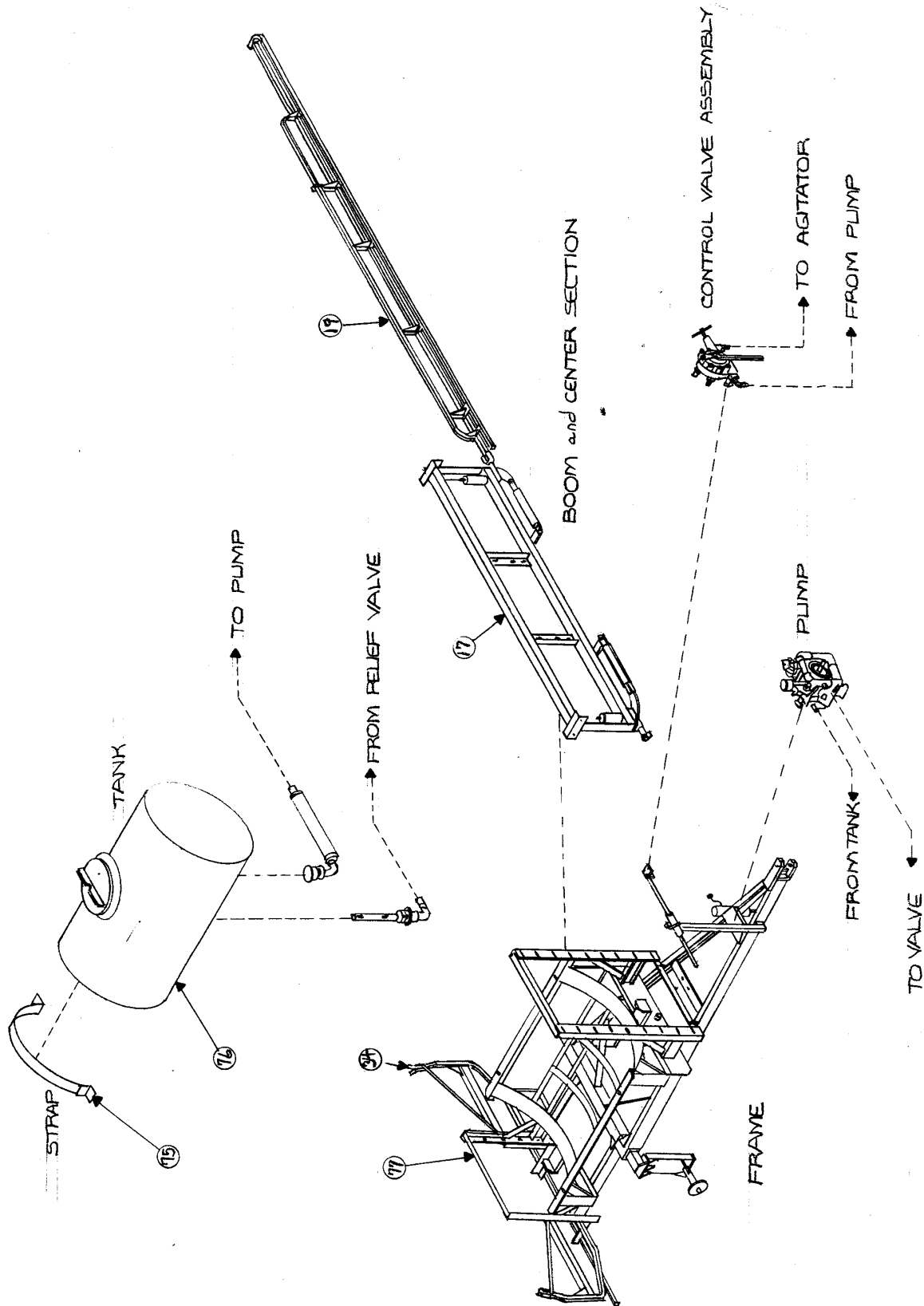
The least expensive thing you can do to prolong your new sprayers life is to keep it clean. Please follow these simple instruction after spraying job is done.

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.

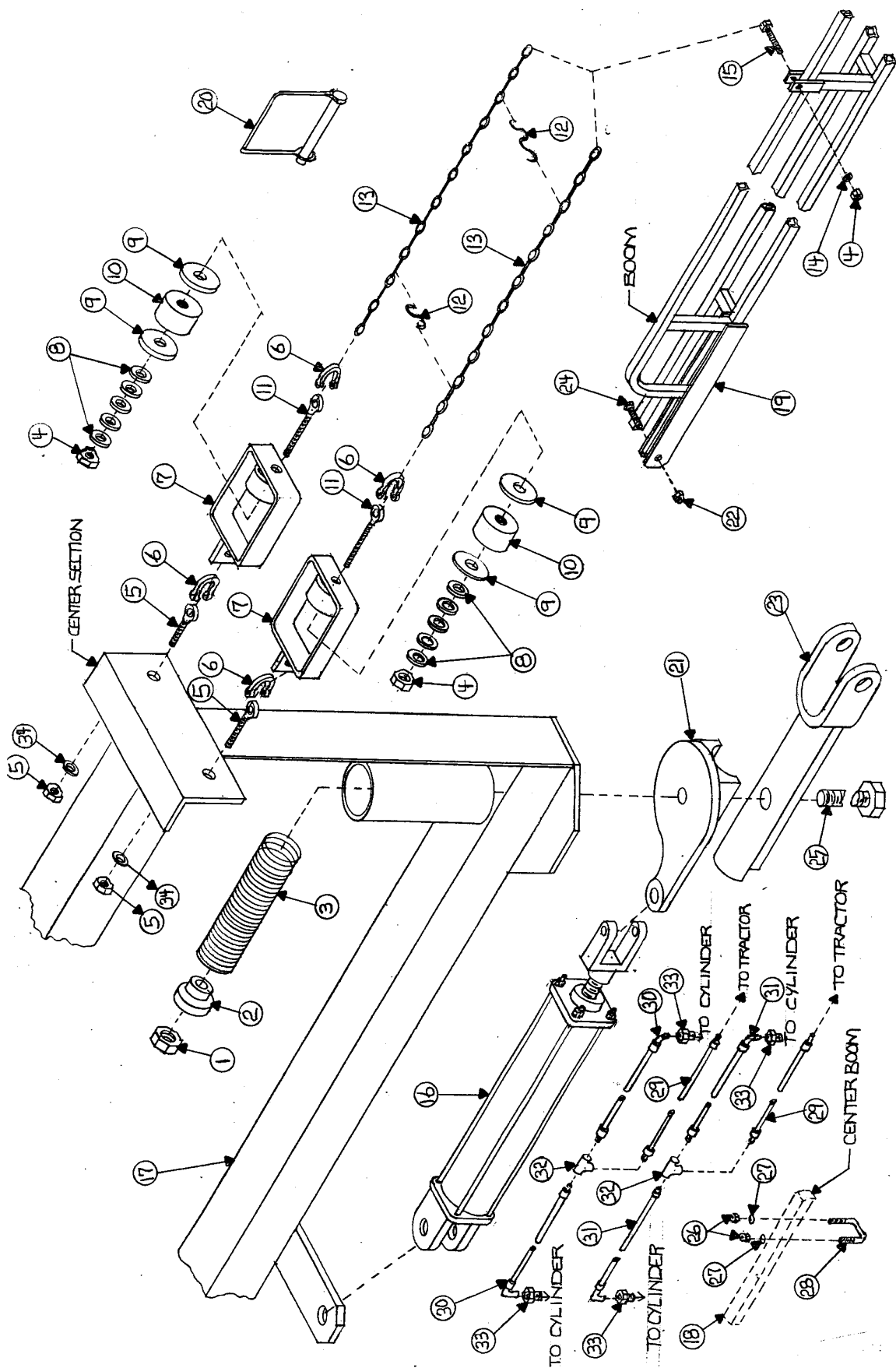
## TROUBLE SHOOTING THE SPRAYER

<b>PROBLEM</b>	<b>PROBABLE CAUSE</b>	<b>POSSIBLE REMEDY</b>
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
	Suction line kinked or clogged	Remove suction line and clean-check tank and strainer
	Air leak in suction hose	Replace hose
Pressure gauge fluctuates excessively	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 worn and clearances too great	Replace or repair pump
Pump does not draw water	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

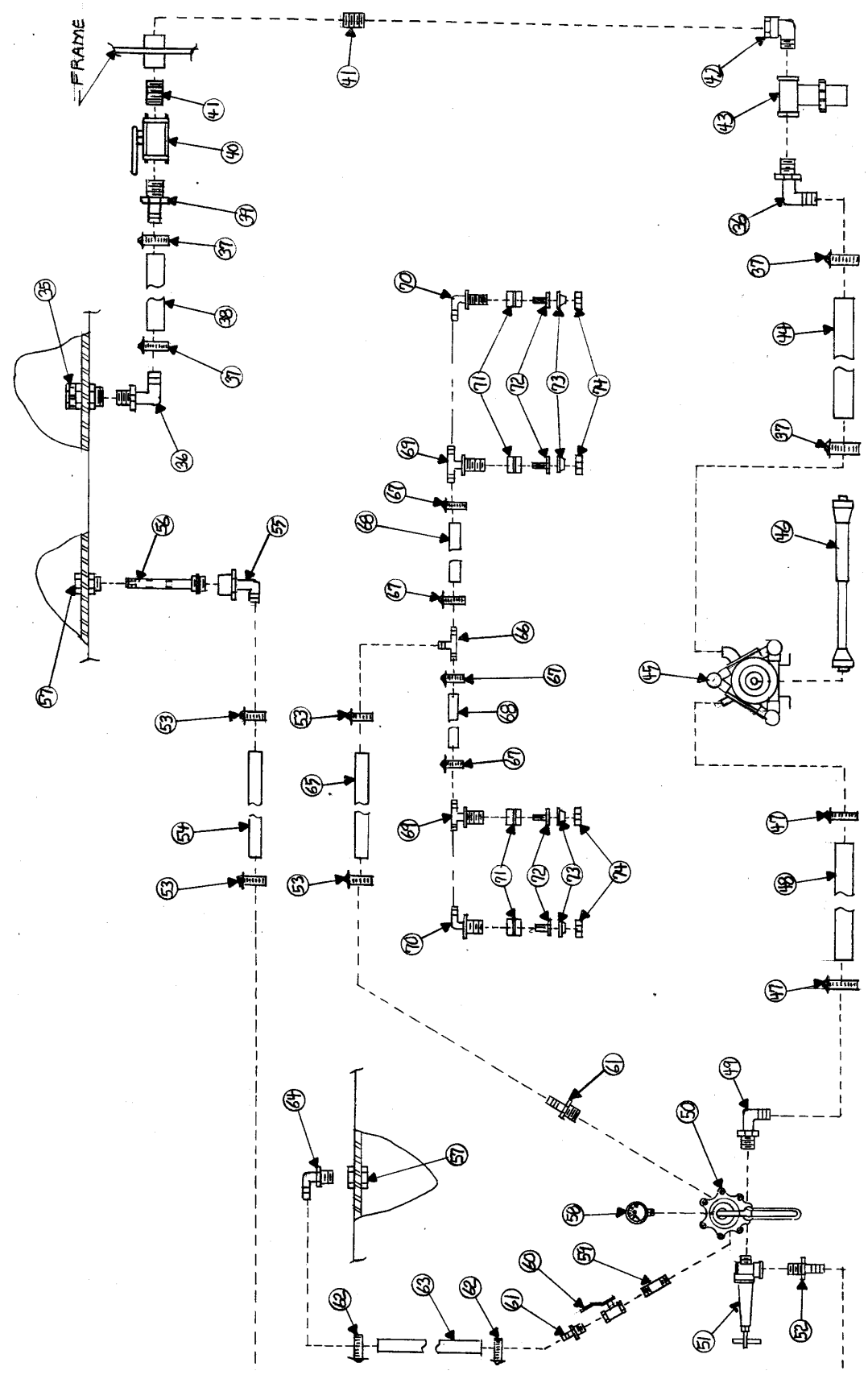
# MAIN BREAKDOWN



# BOOM and CENTER SECTION BREAKDOWN



# RO-110 or RO-160 MANUAL VALVE SHAFT DRIVE



## RO-110 or RO-160 MANUAL VALVE SHAFT DRIVE PARTS LIST

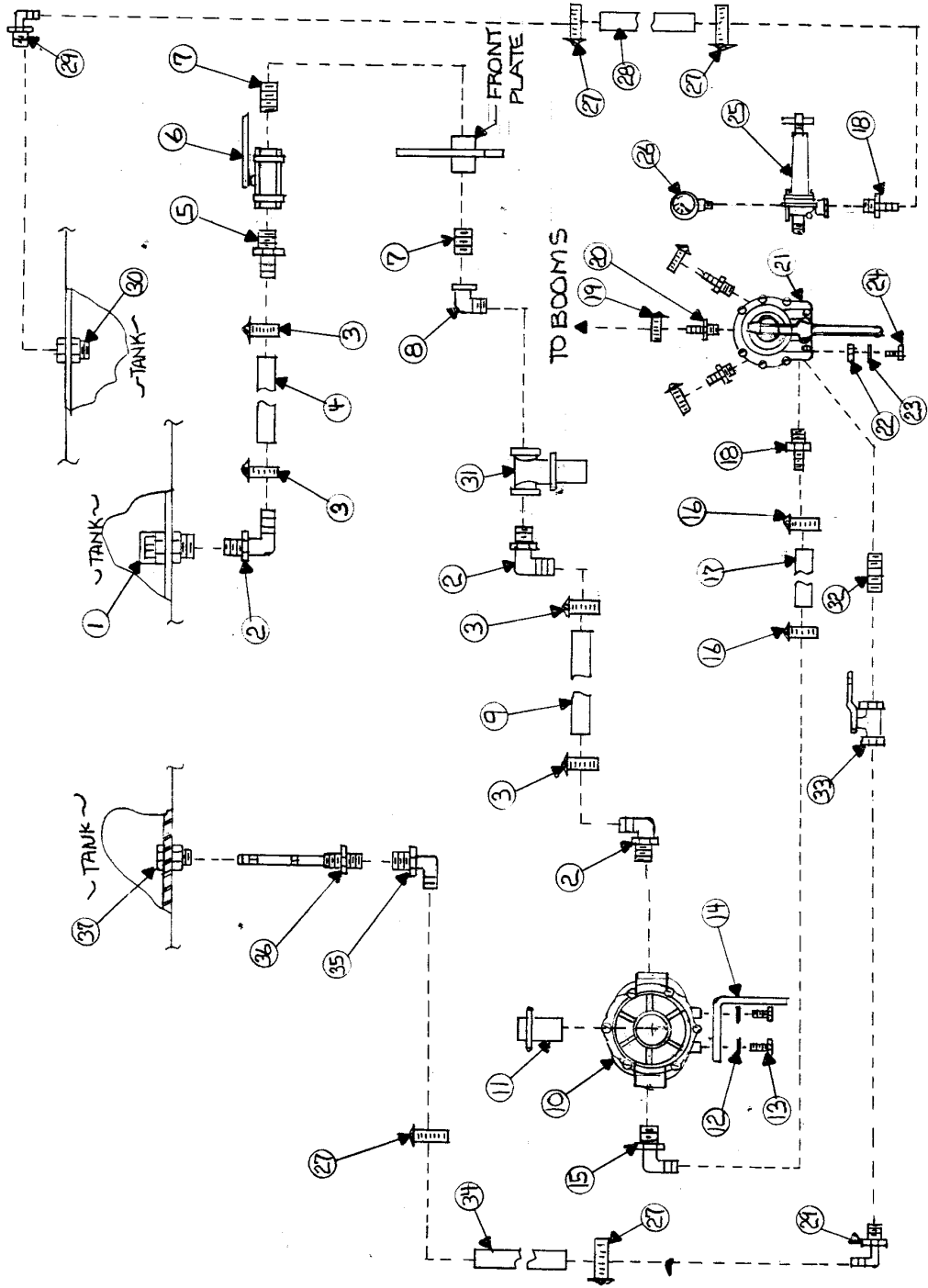
ITEM NO.	DESCRIPTION	PART NO.
1	Nut 3/4"	HN34C
2	Spring Collar	TV103-D
3	Compression Spring	25-7HD
4	Nut 3/8"	HN38C
5	Eye Bolt 1/2"x 1 1/2"	12112EB
6	Clevis Assembly	G209
7	Boom Cushion Yoke	BCY
8	Flat Washer 3/8"	FW38
9	Fender Washer 3/8"	D36713
10	Shock Cushion	TRW82123
11	Eye Bolt 3/8"x 2 1/2"	38212EB
12	S Hook	SH218
13	3/16" Blue Chrome Chain	2116-503-04
14	Lock Washer 3/8"	LW38
15	Bolt 3/8"x 2"	CS38200C
16	Hydraulic Cylinder	638010
17	Center Section	CS34
18	Center Boom	DCB-A
19	Outer Boom,(8 Row Left)	B9L
19A	Outer Boom,(8 Row Right)	B9R
19B	Outer Boom,(12 Row Left)	B1DL
19C	Outer Boom,(12 Row Right)	B1DR
19D	Outer Boom,(12 Row Extra Length,Onion Boom Left)	B1DAL
19E	Outer Boom,(12 Row Extra Length,Onion Boom Right)	B1DAR
20	PTO Pin	276
21	Cradle Plate Left	TD91LS
21A	Cradle Plate Right	TD91RS
22	Lock Nut 1/2"	HLN12C
23	Boom Yoke	VV102S-HD
24	Bolt 1/2"x 3 1/2"	CS12312C
25	Bolt 3/4"x 14"	CS341400C
26	Nut 5/16"	HN516C
27	Flat Washer 5/16"	FW516
28	U-Bolt 5/16"x 2"x	SQU516200
29	Hydraulic Hose 10 Ft.	HY10
30	Hydraulic Hose 2 Ft.	HY2-90
31	Hydraulic Hose 3 Ft.	HY3-90
32	Tee 1/4" Galvanized	GT1400
33	Restricted Orifice	50349
34	Transport Bracket,(Right & Left)	I-172L&R
35	Tank Fitting 1 1/4" Anti-Vortex	63065
36	Elbow 1 1/4"MPT x 1 1/2" Barb 90 Nylon	EL114112
37	Hose Clamp 1 1/2"	28H
38	Hose Wire Coil 1 1/2"	12003501
39	Hose Shank 1 1/2"MPTx Barb 90 Nylon	A112
40	Ball Valve 1 1/2" Poly	V-150



41	Nipple 1 1/2" Galvanized	GN1121.75
42	Street Elbow 1 1/2" FPT x 1 1/2" MPT	SE112
43	Strainer 1 1/2" 50 Mesh	3350-0112
44	Hose Wire Coil 1 1/2"	12003501
45	Pump Diaphragm	RO-110/C
46	Drive Shaft	7101061NN007007
47	Hose Clamp 1"	20H
48	Hose Black Ag. 1"	10031660
49	Elbow 1 "MPT x 1 " Barb 90 Nylon	EL100
50	Control Valve	AA17L
51	Pressure Relief Valve	84603/4
52	Hose Shank 3/4"MPTx 1/2" Barb 90 Nylon	EL3412
53	Hose Clamp 1/2"	8H
54	Hose Red Ag. 1/2"	3204-0410
55	Elbow 3/4"FPTx 1/2" Barb 90 Nylon	EL3412
56	Jet Agitator	3371-0019
57	Tank Fitting 3/4"	60401
58	Pressure Gauge 0-300 PSI Liquid Filled	GG-300
59	Nipple 3/4" x 3" Galvanized	GN343
60	Ball Valve 3/4" Brass	34BBV
61	Hose Shank 3/4"MPTx Barb Nylon	A34
62	Hose Clamp 3/4"	12H
63	Hose Red Ag. 3/4"	3204-0410
64	Elbow 3/4" MPTx Barb Nylon	EL34
65	Hose Black Ag. 1/2"	10031730
66	Tee Nylon 1/2"	T12
67	Hose Clamp 1/2"	8H
68	Hose Black Ag. 1/2"	10031730
69	Hose Connector ,Tee 1/2" Nylon	NTT12
69A	Hose Connector ,Tee 1/2" Brass	900.053
69B	Hose Connector,Tee 1/2" Quick Jet	22252-312-500-NYB
70	Hose Connector, Elbow 1/2" Nylon	NTL12
70A	Hose Connector, Elbow 1/2" Brass	900.052
70B	Hose Connector,Elbow 1/2" Quick Jet	22251-311-500-NYB
71	Boom Clamp 1" Square	AA111SQ-1
71A	Boom Clamp 1" Square Quick Jet	QJ111SQ-1
72	Tip Strainer	8079-PP-50
73	Tip Brass	TP8003
74	Tip Cap	CP8027-NYB
75	Tank Strap 300-38"	SP72
75A	Tank Strap 500-48"	Sp90
76	Tank 300-38"	47375
76A	Tank 500-48"	47330
77	Frame 300-38"	P300-2
77A	Frame 500-48"	P5002
77C	Leg Right Side with Stand	IY-117A
77D	Leg Left Side	IY-117

77E	Stand Only	SP-1
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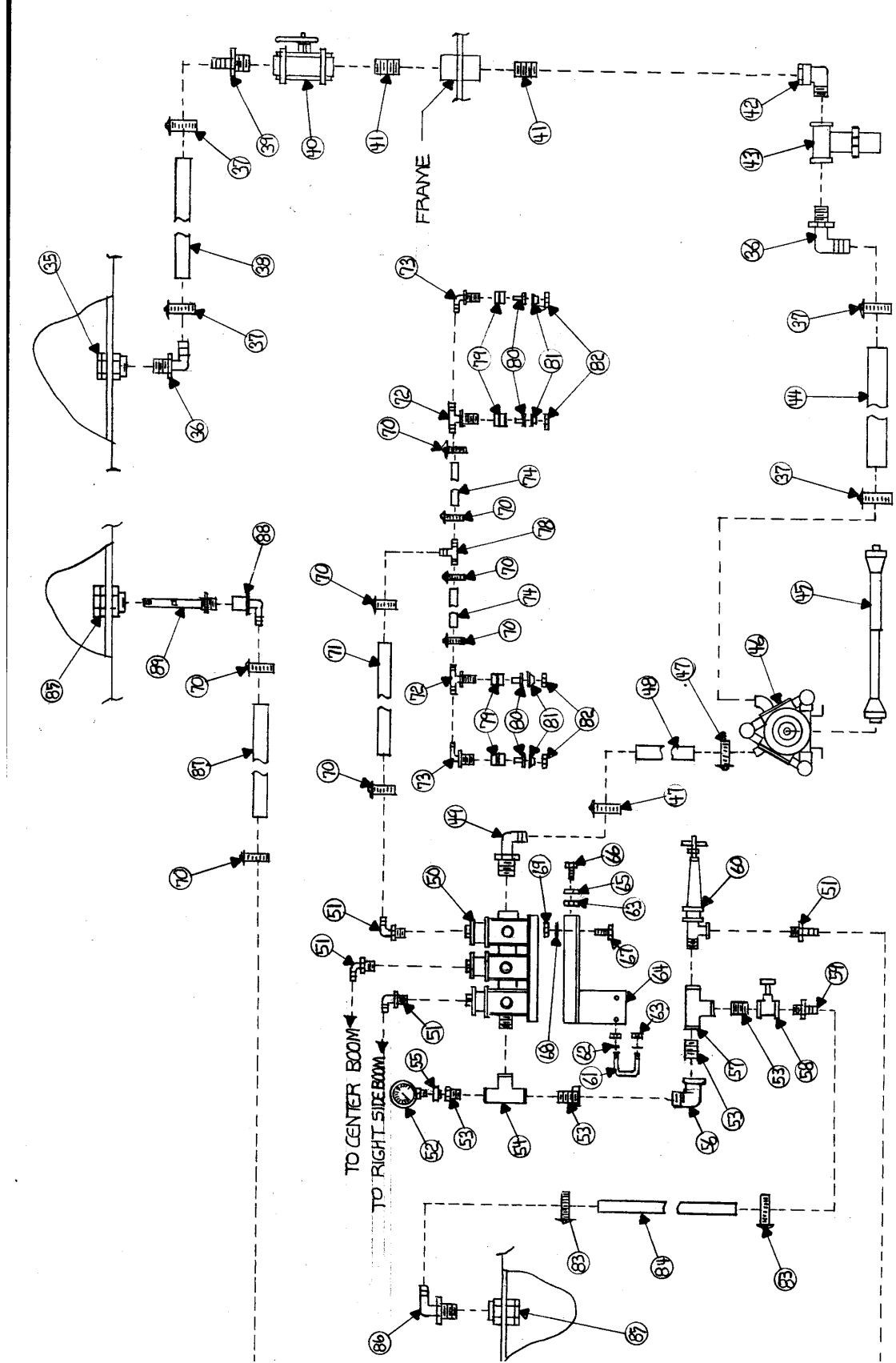
# 1502 MANUAL VALVE PTO DRIVE



# 1502 MANUAL VALVE PTO DRIVE PARTS LIST

<b>1502 PUMP MANUAL VALVE</b>		
<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>PART NO.</b>
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	Street Elbow 1 1/2"FPT x MPT Nylon	SE112
9	Hose Wire Coil 1 1/2"	12003501
10	Pump 6 Roller	1502C
11	Pump Coupler	114-1500
12	Lock Washer 3/8"	LW38
13	Bolt 3/8" x 3/4"	CS3834C
14	Pump Stabilizer	PS
15	Elbow 1 "MPT x Barb 90 Nylon	EL100
16	Hose Clamp 1"	20H
17	Hose Black Ag. 1"	10031660
18	Hose Shank 1" MPT x Barb Nylon	A100
19	Hose Clamp 3/4"	12H
20	Hose Shank 3/4"MPT x Barb Nylon	A34
21	Control Valve	AA17L
22	Nut 3/8"	HN38C
23	Lock Washer 3/8"	LW38
24	Bolt 3/8" x 1 1/4"	CS38114C
25	Pressure Relief Valve 3/4"	84603/4
26	Pressure Gauge 0-300 PSI Liquid Filled	GG-300
27	Hose Clamp 3/4"	12H
28	Hose Red Ag. 3/4"	3204-0420
29	Elbow 3/4"MPT x Barb 90 Nylon	EL34
30	Tank Fitting 3/4"	60401
31	N/A	N/A
32	Nipple 3/4"x 3" Galvanized	GN341.5
33	Ball Valve 3/4" Brass	34BBV
34	Hose Red Ag. 3/4"	3204-0420
35	Elbow 3/4 " FPT x Barb 90 Nylon	EL34F
36	Jet Agitator	3371-0019
37	Tank Fitting 3/4"	60401

# 12 ROW RO-110 ELECTRIC VALVE SHAFT DRIVE



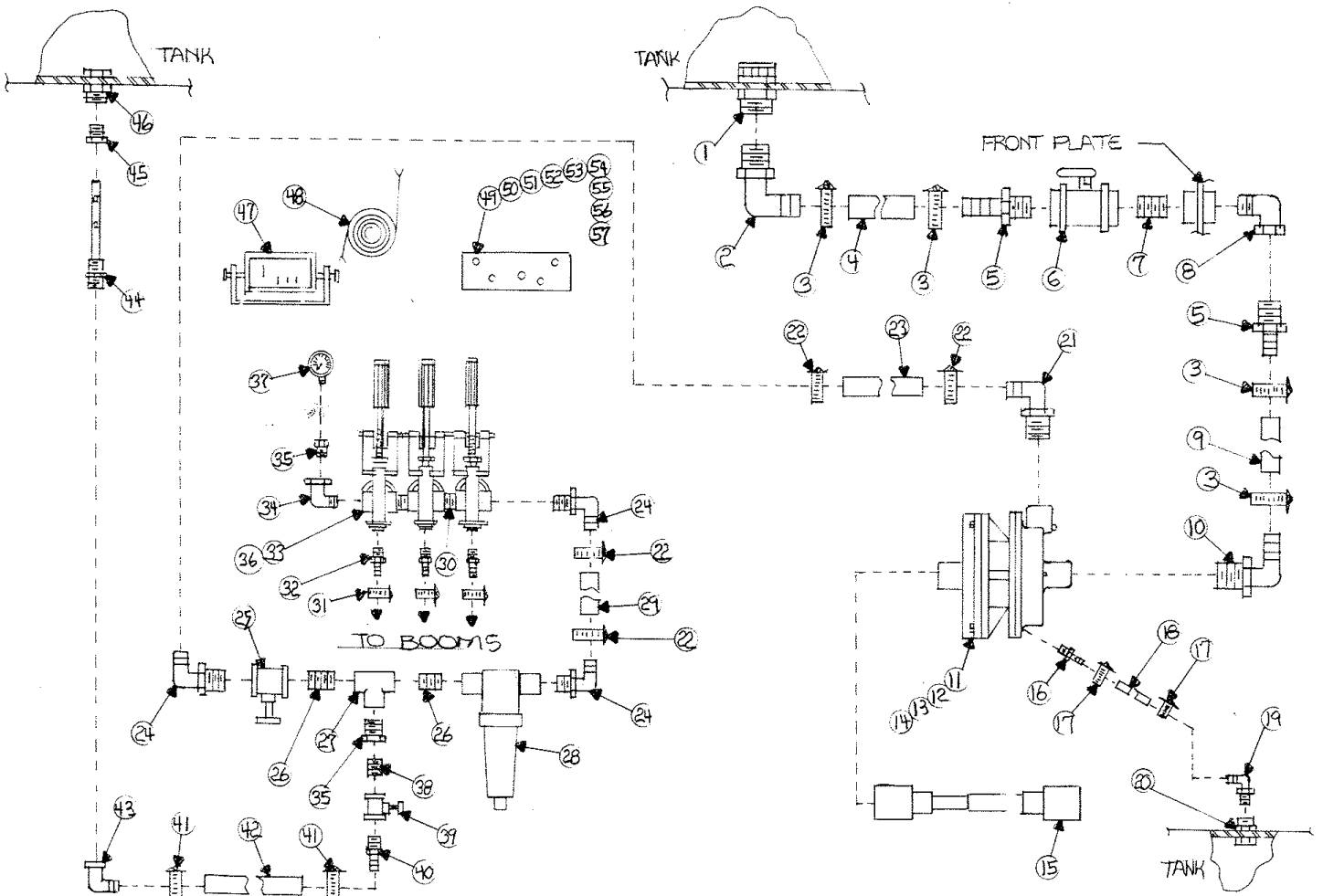
<b>12 ROW PULL TYPE RO-110/C 2500-3 SHAFT DRIVE</b>		
<b>ITEM NO.</b>	<b>DESCRIPTION</b>	<b>PART NO.</b>
35	Tank fitting 1 1/4" Anti-Vortex	63065
36	Elbow 1 1/4"MPT x 1 1/2" Barb 90 Nylon	EL114112
37	Hose Clamp 1 1/2"	28H
38	Hose Wire Coil 1 1/2"	12003501
39	Hose Shank 1 1/2"MPT x Barb Nylon	A112
40	Ball Valve 1 1/2" FPT Poly	V-150
41	Nipple 1 1/2" x Close Galvanized	GN1121.75
42	Street Elbow 1 1/2" MPT x FPT Nylon	SE112
43	Strainer 1 1/2" FPT 20 Mesh	3350-0112
44	Hose Wire Coil 1 1/2"	12003501
45	Drive Shaft Standard	7101061NN007007
46	Pump Diaphragm	RO-110/C
47	Hose Clamp 3/4"	12H
48	Hose Black Ag. 3/4"	10031750
49	Elbow 3/4"MPT Barb 90 Nylon	EL34
50	Control Valve Assembly	2502-3
51	Elbow 1/2"MPT x Barb 90 Nylon	EL12
52	Pressure Gauge 0-300 PSI Liquid Filled	GG-300
53	Reducer Bushing 1" MPT x 3/4" FPT Nylon	RB10034
54	Tee 1" FPT Nylon	TT100N
55	Reducer Bushing 3/4" MPT x 1/4" FPT Nylon	RB3414
56	Street Elbow 3/4" MPT x FPT Nylon	SE34
57	Tee 3/4" FPT Nylon	TT34
58	Gate Valve 3/4" Brass FPT	34BGV
59	Hose Shank 3/4"MPT x Barb Nylon	A34
60	Pressure Relief Valve 3/4" MPT	84603/4
61	U-Bolt 5/16"x 2"x 1 3/8	SQU516200
62	Flat Washer 5/16"	FW516
63	Nut 5/16"	HN516C
64	Valve Stand	VS2500-312
65	Lock Washer 5/16"	LW516
66	Bolt 5/16" x 3/4"	CS51634C
67	Bolt 3/8" x 1 1/4"	CS38114C
68	Lock Washer 3/8"	LW38
69	Nut 3/8"	HN38C
70	Hose Clamp 1/2"	8H
71	Hose Black Ag. 1/2"	10031730
72	Hose Connector, Tee 1/2" Nylon	NTT12
72A	Hose Connector, Tee 1/2" Brass	900.053
72B	Hose Connector, Tee 1/2" Quick Jet	22252-312-500-NYB
73	Hose Connector, Elbow 1/2" Nylon	NTL12
73A	Hose Connector, Elbow 1/2" Brass	900.052
73B	Hose Connector, Elbow 1/2" Quick Jet	22251-311-500-NYB
74	Hose Black Ag. 1/2"	10031730

75	N/A	N/A
76	N/A	N/A
77	N/A	N/A
78	Insert Tee 1/2" Nylon	T12
79	Boom Clamp 1",(Nylon and Brass)	AA111SQ-1
79A	Boom Clamp 1",(Quick Jet)	QJ111SQ-1
80	Tip Strainer 50 Mesh,(Nylon and Quick Jet)	8079-PP-50
80A	Tip Strainer 50 Mesh,(Brass)	5053-50-SS
81	Tip,(Standard)	TP8003
82	Tip Cap,( Nylon )	CP8079-NYB
82A	Tip Cap,( Brass )	CP1325
82B	Tip Cap,(Quick Jet )	25612-6-NYR
83	Hose Clamp 3/4"	12H
84	Hose Red Ag.3/4"	3204-0750
85	Tank Fitting 3/4"	60401
86	Elbow 3/4" MPT x Barb 90 Nylon	EL34
87	Hose Red Ag.1/2"	3204-0410
88	Elbow 3/4" FPT x 1/2" Barb 90 Nylon	EL3412F
89	Jet Agitator	3371-0019

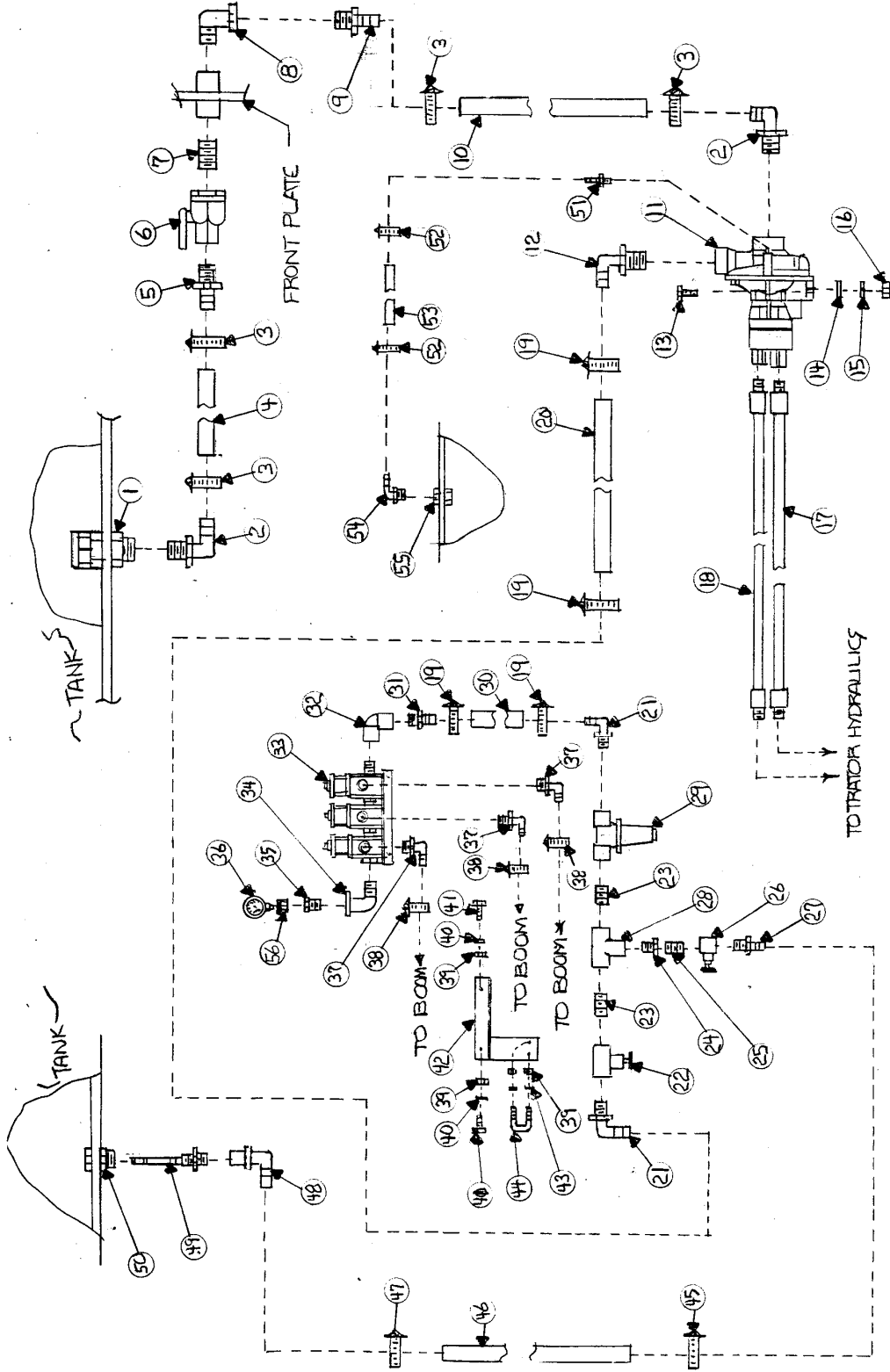


ITEM NO.	DESCRIPTION	PART NO.
1	Tank fitting 1 1/4" anti-vortex poly	63065
2	Elbow 1 1/4"mpt x 1 1/2" barb 90 nylon	EL114112
3	Hose clamp 1 1/2"	28H
4	Hose wire coil 1 1/2"	12003501
5	Hose shank 1 1/2" nylon	A112
6	Ball valve 1 1/2" fpt poly	V-150
7	Nipple 1 1/2" x close galvanized	GN1121.75
8	Street elbow 1 1/2" nylon	SE112
9	Hose wire coil 1 1/2"	12003501
10	Elbow 1 1/2"mpt x 1 1/2" barb 90 nylon	EL200
11	Pump centrifugal (540 pto)	9016C
11A	Pump centrifugal (1000 pto)	9018C
12	Bolt3/8" x 1"	CS38100C
13	Nut 3/8"	HN38C
14	Lock washer 3/8"	LW38
15	Drive shaft (540 pto)	71016NN007602
16	Drive shaft (1000 pto)	7101061UCR8602
17	Hose clamp 1/4"	M4P
18	Tube 1/4"	CALL
19	Elbow 1/2"mpt x 1/4" barb 90 nylon	EL1214
20	Tank fitting 1/2" poly	62834
21	Elbow 1 1/4"mpt x 1" barb 90 nylon	EL114112
22	Hose clamp 1"	20H
23	Hose black ag. 1"	10031660
24	Elbow 3/4"mpt x 1" barb 90 nylon	EL3410
25	Gate valve 1" brass	100BGV
26	Nipple 1" x close galvanized	GN1001.5
27	Tee 1" fpt nylon	TT100N
28	Strainer 1" fpt 50 mesh	AA126-ML-4-50
29	Hose black ag. 1"	10031660
30	Nipple 3/4"x close nylon	M34
31	Hose clamp 3/4"	12H
32	Hose shank 3/4" nylon	A34
33	Control valve	AA6B
34	Street elbow 3/4" nylon	SE34
35	Reducer bushing 3/4"mpt x 1/4"fpt nylon	RB3414
36	Electric control valve (optional)	1999-1
37	Pressure gauge 0-100psi liquid filled	GG-100
38	Nipple 3/4"x close galvanized	GN341.5
39	Gate valve 3/4" brass	34BGV
40	Hose shank 3/4" nylon	A34
41	Hose clamp 3/4"	12H
42	Hose red ag. 3/4"	3204-0420
43	Street elbow 3/4" nylon	SE34
44	Jet agitator	3371-0019
45	Reducer bushing 1 1/4"mpt x 3/4"fpt nylon	RB11434

46	Tank fitting 1 1/4" poly	67155
47	Control panel (optional)	2628
48	Wiring harness ( optional)	CALL
49	Valve stand	CALL
50	Bolt 3/8" x 1"	CS38100C
51	Bolt 3/8" x 1 1/4"	CS38114C
52	Lock washer 3/8"	LW38
53	Flat washer 3/8"	FW38
54	Nut 3/8"	HN38C
55	U-Bolt 5/16" x 2" square	SQU516200
56	Flat washer 5-16'	FW516
57	Nut 5/16"	HN516C



# 9303C-HM4 ELECTRIC VALVE

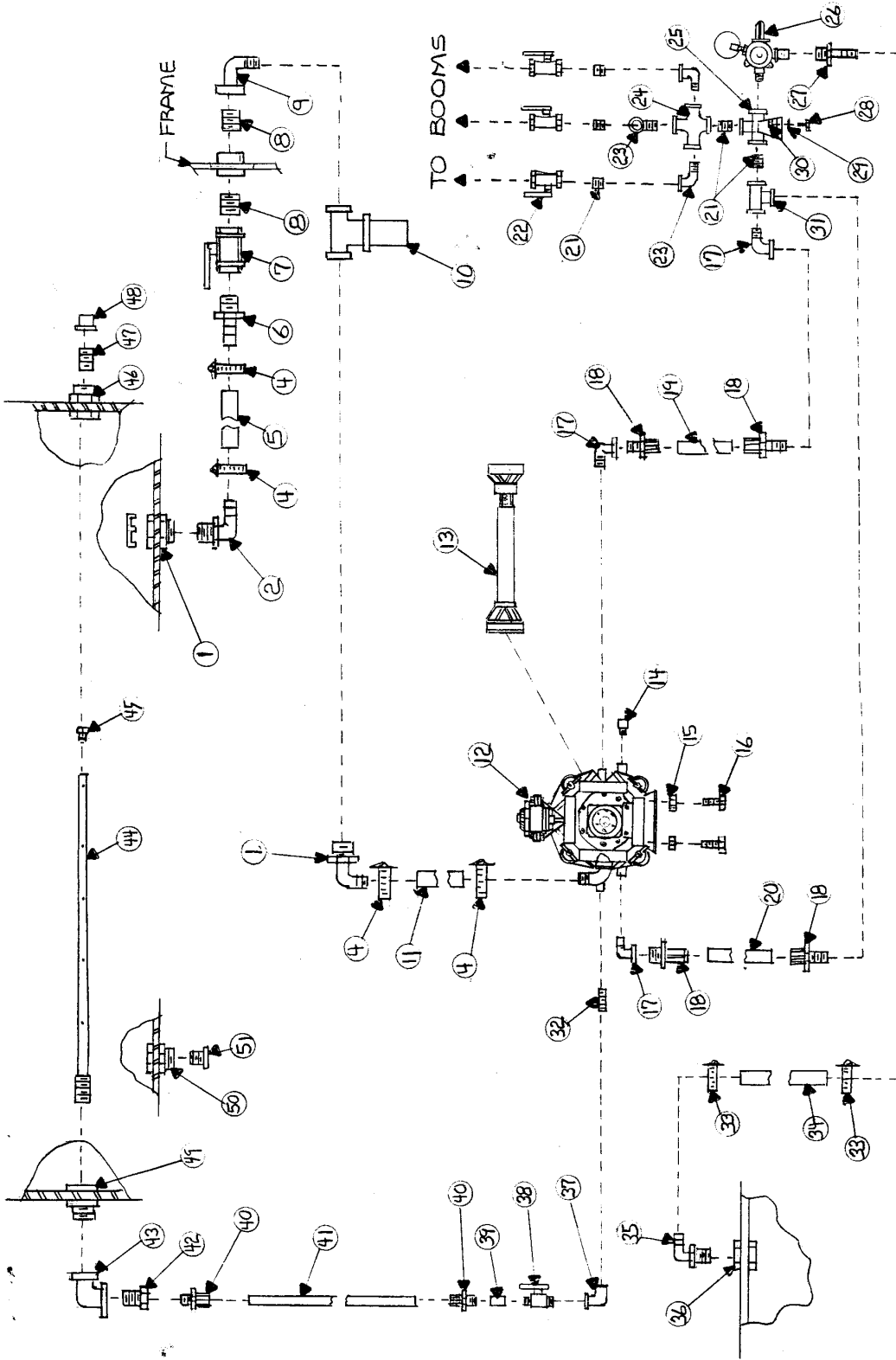


# 9303C-HM4 ELECTRIC VALVE PARTS LIST

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 1 1/2" Barb Nylon	A112
6	Ball Valve 1 1/2" Poly	V-150
7	Nipple 1 1/2"x Close Galvanized	GN1121.75
8	Street Elbow 1 1/2" Nylon	SE112
9	Hose Shank 1 1/2"MPT x 1 1/2" Barb Nylon	A112
10	Hose Wire Coil 1 1/2"	12003501
11	Pump Hydraulic Centrifugal	9303C-HM4
12	Elbow 1 1/4"MPT x 1" Barb 90 Nylon	EL114100
13	Bolt 3/8"x 1 1/2"	CS38112C
14	Flat Washer 3/8"	FW38
15	Lock Washer 3/8"	LW38
16	Nut 3/8"	HN38C
17	Hydraulic Hose Assembly	HY6.5-1/2
18	Hydraulic Hose Assembly	HY6.5-3/4
19	Hose Clamp 1"	20H
20	Hose Black Ag. 1"	10031660
21	Elbow 1"MPT x Barb 90 Nylon	EL100
22	Gate Valve 1" Brass	100BGV
23	Nipple 1"x Close Galvanized	GN1001
24	Reducer Bushing 1"MPT x 3/4" FPT Nylon	RB10034
25	Nipple 3/4"x Close Galvanized	GN341.5
26	Gate Valve 3/4" Brass	34BGV
27	Hose Shank 3/4"MPT x 3/4" Barb Nylon	A34
28	Tee 1" FPT Nylon	TT100N
29	Strainer 1" Nylon FPT	AA126-ML-4-50
30	Hose Black Ag. 1"	10031660
31	Hose Shank 1"MPT x 1" Barb Nylon	A100
32	Elbow 3/4" FPT Nylon	LL34
33	Control Valve,( Electric)	2502-3
34	Street Elbow 1" Nylon	SE100
35	Reducer Bushing 1"MPT x 3/4" FPT Nylon	RB10034
36	Pressure Gauge 0-100 PSI Liquid Filled	GG-100
37	Elbow 3/4" MPT x 1/2" Barb 90 Nylon	EL3412
38	Hose Clamp 1/2"	8H
39	Nut 5/16"	HN516C
40	Lock Washer 5/16"	LW516
41	Bolt 5/16"x 1"	CS516100C
42	Valve Stand	VS2500-3C
43	Flat Washer 5/16"	FW516
44	U-Bolt 5/16" x 2"x 3 1/4"	RU516300
45	Hose Clamp 3/4"	12H
46	Hose Red Ag. 3/4"	3204-0420

47	Hose Clamp 3/4"	12H
48	Elbow 3/4"FPTx Barb 90 Nylon	EL34F
49	Jet Agitator	3371-0019
50	Tank Fitting 3/4"	60401
51	Hose Shank 1/4" MPT x 1/8" Barb Brass	A1418B
52	Hose Clamp 1/4"	M4P
53	Hose 1/8"	Call
54	Elbow 1/2" MPT x 1/4" Barb 90 Nylon	EL1214
55	Tank Fitting 1/2"	67158
56	Reducer Bushing 3/4"MPT x 1/4" FPT Nylon	RB3414

# HIGH PRESSURE



# HIGH PRESSURE PARTS LIST

PULL TYPE HIGH PRESSURE		
ITEM NO.	DESCRIPTION	PART NO.
1	Tank Fitting 1 1/4" Anit-Vortex	63065
2	Elbow 1 1/4"MPT x 1 1/2" Barb 90 Nylon	EL114112
3	N/A	N/A
4	Hose Clamp 1 1/2"	28H
5	Hose Wire Coil 1 1/2"	12003501
6	Hose Shank 1 1/2" MPT x Barb Nylon	A112
7	Ball Valve FPT 1 1/2" Poly	V-150
8	Nipple 1 1/2" x Close Galvanized	GN1121.75
9	Street Elbow 1 1/2"FPT x MPT Nylon	SE112
10	Strainer 1 1/2" FPT 20 Mesh	3350-012
11	Hose Wire Coil 1 1/2"	12003501
12	Pump	Beta-150
13	Drive Shaft	7105061NN007007
14	Plug 3/8" Galvanized	GP3800
15	Lock Nut 7/16"	HLN716C
16	Bolt 7/16" x 1 1/4"	CS716114C
17	Street Elbow 3/4"FPT x MPT Galvanized	GSE3490
18	Hydraulic Fitting 3/4" MPT Swivel	HU1212MC
19	Hose 1/2" 800 PSI	12-Y-800
20	Hose 3/4" 800 PSI	34-Y-800
21	Nipple 3/4" x Close Galvanized	GN341.5
22	Ball Valve FPT 1/2" Brass	34BBV
23	Street Elbow 1/2" FPT x MPT Galvanized	GSE1290
24	Cross FPT 1/2" Galvanized	GCR1200
25	Tee FPT 3/4"x 3/4"x 1/2" Galvanized	GT343412
26	Relief Valve(Removed From Beta-150	6005.15
27	Hose Shank 3/4" MPT x Barb Nylon	A34
28	Bolt 3/8"x 1 1/4"	CS38114C
29	Lock Washer 3/8"	LW38
30	Nut 3/8"	HN38C
31	Tee FPT 3/4" Galvanized	GT3400
32	Nipple 3/8" x 2" Galvanized	GN382
33	Hose Clamp 3/4"	12H
34	Hose Red Ag. 3/4"	3204-0420
35	Elbow 3/4"MPT x Barb 90 Nylon	EL34
36	Tank Fitting 3/4"	60401
37	Elbow 3/8" 90 Galvanized	GEL3490
38	Ball Valve 1/2" Brass	12BBV
39	Coupling 1/2" Galvanized	GCP1200
40	Hydraulic Fitting 1/2" MPT Swivel	HU0808MC
41	Hose 1/2" 800 PSI	12-Y-800
42	Reducer Bushing 1 1/4"x 1/2" Galvanized	GB11412
43	Elbow 1 1/4" Galvanized	GEL11490
44	Sparge Tube	ST-500



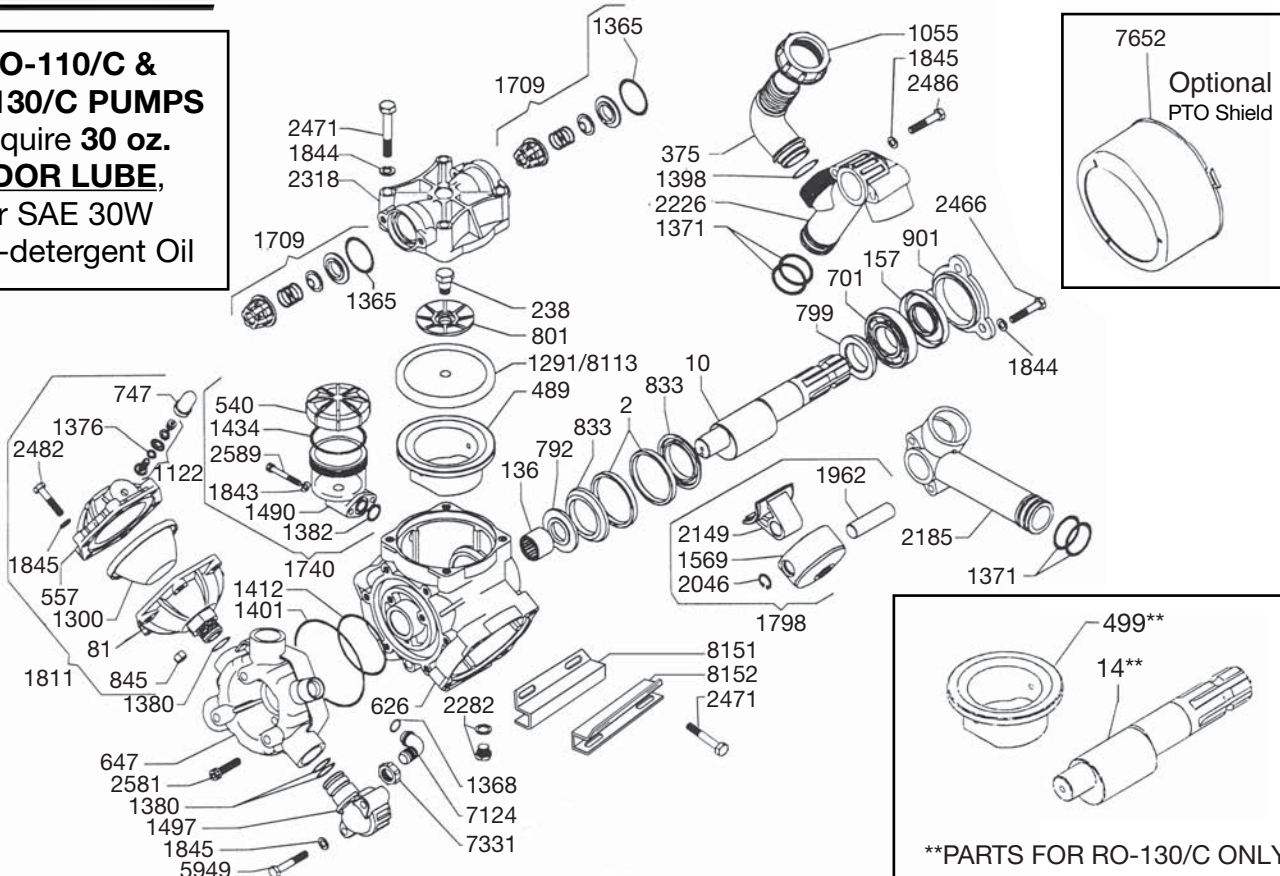
45	Plug 1/2" Stainless Steel	SSP1200
46	Tank Fitting 1 1/4"	67114
47	Nipple 1 1/4"x Close Stainless Steel	SSN1141.75
48	Cap PVC 1 1/4"	488-012
49	Tank Fitting 1 1/4"	67114
50	Tank Fitting 1 1/4"	67114
51	Plug 1 1/4" Nylon	F114



# RO-110/C & RO-130/C

## Exploded View Diagram and Parts List

**RO-110/C &  
RO-130/C PUMPS**  
Require **30 oz.**  
**UDOR LUBE,**  
or **SAE 30W**  
Non-detergent Oil



REF#	PART#	DESCRIPTION	QTY	REF#	PART#	DESCRIPTION	QTY
2	0001.02	Retainer Ring	2	1401	1101.58	O-Ring	1
10	0002.59	Crank Shaft	1	1412	1101.79	O-Ring	1
**14	0002.63	Crank Shaft (RO-130/C ONLY)	1	1434	1101.D1	O-Ring	1
81	0003.15	Accumulator	1	1490	1203.27	Oil Reservoir	1
136	0006.07	Bearing	1	1497	1203.36	Manifold Elbow	3
157	0007.05	Seal	1	1569	1205.06	Piston	3
238	0102.03	Diaphragm Bolt	3	1709	6006.08	Valve Assembly	6
375	0202.78	Suction Elbow	1	1740	6033.01	Oil Reservoir Assembly	1
489	0206.14	Piston Sleeve	3	1798	6015.24	Piston Rod Assembly	3
**499	0206.26	Piston Sleeve (RO-130/C ONLY)	3	1811	6031.09	Accumulator Assembly	1
540	0208.98	Oil Cap	1	1843	1403.07	Washer	2
557	0208.20	Accumulator Head	1	1844	1403.09	Washer	11
626	0209.34	Crank Case	1	1845	1403.10	Washer	18
647	0257.07	Discharge Manifold	1	1962	1502.01	Connecting Rod Pin	3
701	0214.05	Bearing	1	2046	1506.02	Snap Ring	6
747	0218.01	Air Valve Cap	1	2149	1519.16	Connecting Rod	3
792	0301.12	Washer	1	2185	1601.13	Suction Manifold	2
799	0301.24	Washer	1	2226	1602.22	Suction Manifold	1
801	0301.07	Retainer Washer	3	2282	1603.50	Drain Plug	1
833	0302.52	Rod Spacer	2	2318	1604.36	Head	3
845	0303.01	Nut	6	2466	1804.06	Bolt	3
901	0501.45	Flange	1	2471	1804.29	Bolt	12
1055	0604.50	Barb Nut	1	2482	1804.09	Bolt	6
1122	0608.16	Air Valve Assembly	1	2486	1804.79	Bolt	6
1291	0903.02	Diaphragm (BUNA-N, Optional)	3	2589	1805.31	Bolt	2
*1300	0903.14	Accumulator Diaphragm	1	2581	1805.03	Bolt	9
*1365	1101.01	O-Ring	6	5949	1804.72	Bolt	6
1368	1101.04	O-Ring	1	7124	0253.05	Discharge Elbow	1
1371	1101.07	O-Ring	6	7331	0604.36	Discharge Nut	1
1376	1101.16	O-Ring	1	7652	1219.25	PTO Safety Shield Optional	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
1398	1101.42	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.)

\*\* Parts for RO-130/C only



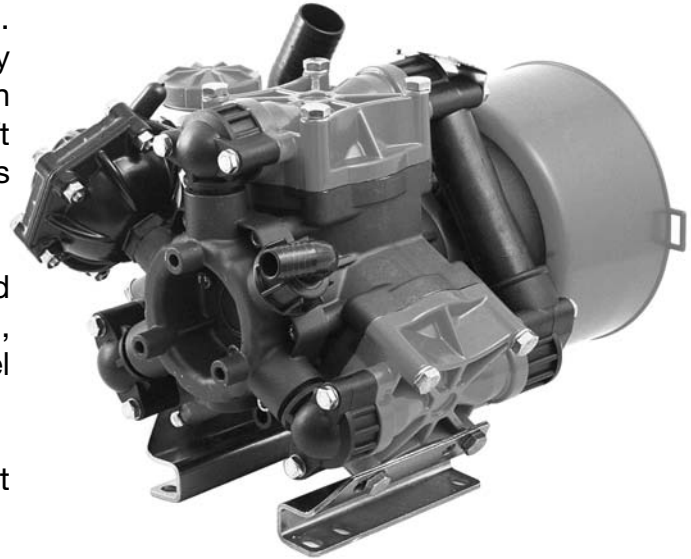
# RO-110/C & RO-130/C

## Low Pressure Diaphragm Pumps

RO-110/C and RO-130/C 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 1-3/8" male six-spline PTO shaft are standard. PTO safety shield part # 1219.25 is recommended.

The RO-110/C & RO-130/C have an anodized aluminum body, plasticized aluminum heads, glass-filled nylon manifolds and stainless steel liquid handling parts.

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



### SPECIFICATIONS

Maximum Flow	
RO-110/C .....	29 GPM
RO-130/C .....	35 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.

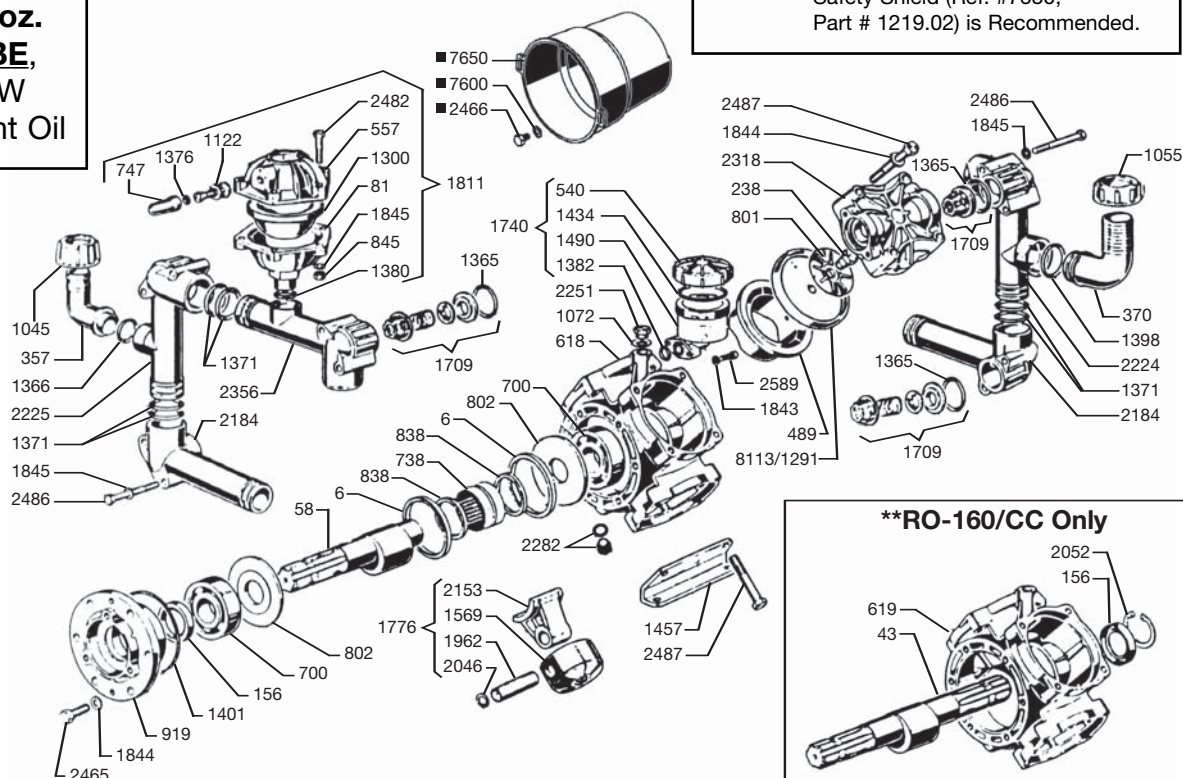


# RO-160/C – RO-160/CC

## Exploded View Diagram and Parts List

**RO-160 PUMPS**  
Require **44 oz.**  
**UDOR LUBE,**  
or SAE 30W  
Non-detergent Oil

■ **NOTE** - For ALL PTO Drive Applications,  
Safety Shield (Ref. #7650,  
Part # 1219.02) is Recommended.



REF#	PART#	DESCRIPTION	QTY	REF#	PART#	DESCRIPTION	QTY
6	0001.08	Retainer Ring	2	1398	1101.42	O-Ring	1
**43	0002.29	Crankshaft (RO-160/CC)	1	1401	1101.58	O-Ring	1
58	0002.46	Crankshaft (RO-160/C)	1	1434	1101.D1	O-Ring	1
81	0003.15	Pressure Accumulator	1	1457	1202.29	Mounting Rail	2
156	0007.02	Seal (Qty. 2 for RO-160/CC)	1	1490	1203.27	Oil Reservoir	1
238	0102.03	Diaphragm Bolt	4	1569	1205.06	Aluminum Piston	4
357	0202.18	Discharge Elbow	1	1709	6006.08	Valve Assembly	8
370	0202.78	Suction Elbow	1	1740	6033.01	Oil Reservoir Assembly	1
489	0206.14	Piston Sleeve	4	1776	6015.30	Piston & Rod Assembly	4
540	0208.98	Oil Reservoir Cap	1	1811	6031.09	Accumulator Assembly	1
557	0208.20	Accumulator Head	1	1843	1403.07	Washer	2
618	0209.25	Pump Body (RO-160/C)	1	1844	1403.09	Washer	18
**619	0209.26	Pump Body, T.S. (RO-160/CC)	1	1845	1403.10	Washer	22
700	0214.04	Ball Bearing	2	1962	1502.01	Connecting Rod Pin	4
738	0216.07	Roller Bearing	1	2046	1506.02	Snap Ring	8
747	0218.01	Air Valve Cap	1	**2052	1506.16	Snap Ring	1
801	0301.07	Retainer Washer	4	2153	1519.20	Connecting Rod	4
802	0301.28	Washer	2	2184	1601.12	Manifold	5
838	0302.59	Spacer Ring	2	2224	1602.20	Suction Manifold	1
845	0303.01	Hex Nut	6	2225	1602.21	Discharge Manifold	1
919	0501.67	Bearing Flange	1	2251	1603.02	Oil Plug	1
1045	0604.32	Barb Nut	1	2282	1603.50	Drain Plug	1
1055	0604.50	Barb Nut	1	2318	1604.36	Head	4
1072	0605.09	Aluminum Gasket	1	2356	1605.15	Discharge Manifold	1
1122	0608.16	Air valve Assembly	1	2465	1804.03	Bolt	6
1291	0903.02	Piston Diaphragm, BUNA-N Optional	4	■ 2466	1804.06	Bolt	3
*1300	0903.14	Accumulator Diaphragm	1	2482	1804.09	Bolt	6
*1365	1101.01	O-Ring	8	2486	1804.79	Bolt	16
1366	1101.02	O-Ring	1	2487	1804.25	Bolt	16
1371	1101.07	O-Ring	16	2589	1805.31	Bolt	2
1376	1101.16	O-Ring	1	■ 7600	1403.36	Washer	3
1380	1101.25	O-Ring	1	■ 7650	1219.02	PTO Safety Shield optional	1
1382	1101.29	O-Ring	1	*8113	0903.34	Piston Diaphragm, DESMOPAN Standard	4

\* Parts Included in Diaphragm Repair Kit - #8700.09. (Also available in BUNA-N - #8700.16.)



# RO-160/C – RO-160/CC

## Low Pressure Diaphragm Pumps

RO-160 low pressure diaphragm pumps are excellent for various horticultural and agricultural spraying applications. Simplicity of design and common parts allow easy and affordable maintenance.

Liquid handling parts are plasticized aluminum, glass-filled nylon and stainless steel. Built-in pulsation dampener is standard on all models.

Standard RO-160 comes with a 1-3/8" six-splined male PTO shaft. RO-160/CC comes with a dual 1-3/8" six-splined male PTO thru-shaft.

For industrial uses and spraying applications not listed, please consult UDOR U.S.A. For all PTO drive app. safety shield part # 1219.02 is recommended.

For Thrushaft protection, order part # 1219.15.



### SPECIFICATIONS

Maximum Flow .....	42 GPM
Maximum Pressure .....	300 PSI
Maximum Pump Speed .....	540 RPM
Maximum Temperature .....	140°F
Ports	
Inlet .....	1-1/2" Hose Barb
Discharge .....	1" Hose Barb
Dimensions .....	L-12" x W-15.5" x H-17"
Weight .....	56 lbs.
Diaphragm Material	
Standard .....	DESMOPAN
Optional .....	BUNA-N

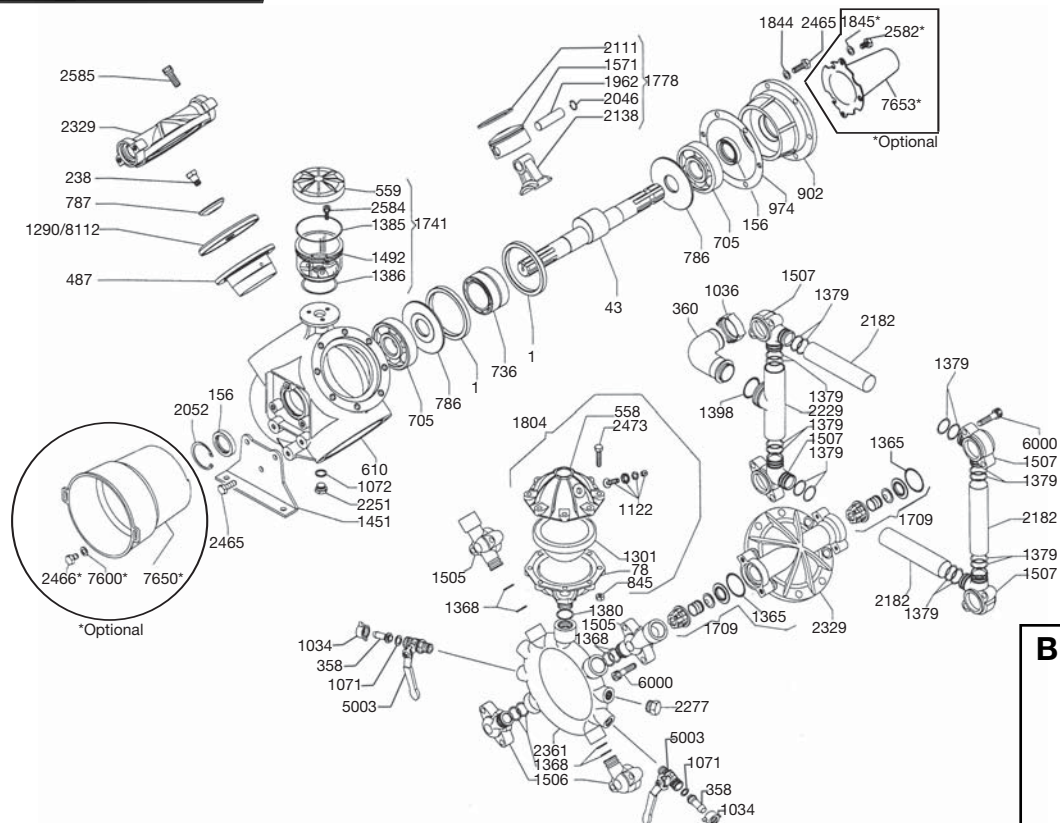
NOTE - Protect pumps from freezing. If freezing conditions exist, flush pump and system with a 50/50 mixture of antifreeze and water.





# BETA-150/CC

## Exploded View Diagram and Parts List



**BETA-150/CC PUMP**  
Requires **87 oz.**  
**UDOR LUBE,**  
or SAE 30W  
Non-detergent Oil

REF#	PART#	DESCRIPTION	QTY	REF#	PART#	DESCRIPTION	QTY
1	0001.01	Retainer ring	2	1505	1203.45	Discharge Elbow, 3/4" F	2
43	0002.29	Crank Shaft	1	1506	1203.46	Discharge Elbow	2
78	0003.10	Accumulator Body	1	1507	1203.54	Suction Elbow	4
156	0007.02	Crank Shaft Seal	2	1571	1205.08	Piston	4
238	0102.03	Diaphragm Bolt	4	1709	6006.08	Valve Assembly	8
358	0202.19	1/2" Barb	2	1741	6033.02	Oil Reservoir Kit	1
360	0202.84	Suction Hose Barb	1	1778	6015.01	Piston & Rod Assembly	4
487	0206.12	Piston Sleeve	4	1804	6031.02	Accumulator Assembly	1
558	0208.21	Accumulator Head	1	1844	1403.09	Washer	4
559	0208.22	Oil Reservoir Cap	1	*1845	1403.10	Washer	3
610	0209.17	Pump Body	1	1962	1502.01	Connecting Rod Pin	4
705	0214.11	Ball Bearing	2	2046	1506.02	Snap Ring	8
736	0216.02	Needle Bearing	1	2052	1506.16	Snap Ring	1
786	0301.02	Washer	2	2111	1509.05	Piston Ring	4
787	0301.03	Retainer Washer	4	2138	1519.03	Connecting Rod	4
845	0303.01	Nut	8	2182	1601.27	Suction Tube	3
902	0501.46	Flange	1	2229	1602.30	Suction Tube	1
974	0602.01	Gasket	1	2251	1603.02	Oil Plug	1
1034	0604.09	Barb Nut	2	2277	1603.34	Plug	1
1036	0604.48	Suction Nut	1	2329	1604.54	Head	4
1071	0605.05	Rubber Gasket	2	2361	1605.22	Discharge Manifold	1
1072	0605.09	Aluminum Gasket	1	2465	1804.03	Bolt	10
1122	0608.16	Air Valve Assembly	1	*2466	1804.06	Bolt	3
1290	0903.01	Diaphragm (BUNA-N, Optional)	4	2473	1804.54	Bolt	8
**1301	0903.16	Accumulator Diaphragm	1	*2582	1805.04	bolt	3
**1365	1101.01	O-Ring	8	2584	1805.06	Bolt	3
1368	1101.04	O-Ring	8	2585	1805.08	Bolt	32
1379	1101.31	O-Ring	16	5003	0608.46	Ball Valve (Right)	2
1380	1101.27	O-Ring	1	6000	1805.07	Bolt	16
1385	1101.32	O-Ring	1	*7600	1403.36	Washer	3
1386	1101.33	O-Ring	1	*7650	1219.02	PTO Safety Shield (optional)	1
1398	1101.42	O-Ring	1	*7653	1219.15	Shaft Protector Thru Shaft (optional)	1
1451	1202.14	Base Plate	2	*8112	0903.33	Diaphragm (DESMOPAN, Standard)	4
1492	1203.30	Oil Reservoir	1				

\* Parts Included in Diaphragm Repair Kit - #8700.07. (Also available in BUNA-N - #8700.18.)



# BETA-150/CC

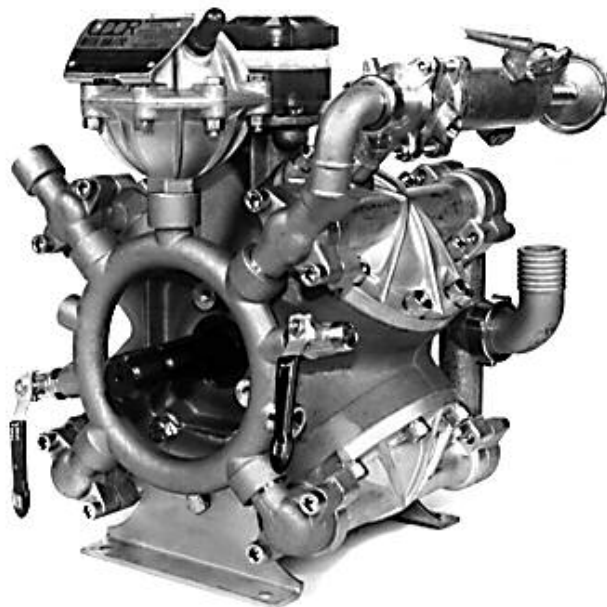
## High Pressure Diaphragm Pump

BETA-150/CC high pressure, high volume diaphragm pumps are excellent for various horticultural and agricultural spraying applications. Simplicity of design and common parts allow easy and affordable maintenance. Control valve, pulsation dampener and pressure gauge are standard.

The BETA-150/CC is constructed of aluminum, brass and stainless steel with brass and stainless steel liquid handling parts.

For industrial uses and spraying applications not listed, please consult UDOR U.S.A. For all PTO drive app. safety shield part # 1219.02 is recommended.

Splined Q-2 bushing for pulley drive is available upon request. For thru shaft protection part # 1219.15 is recommended.

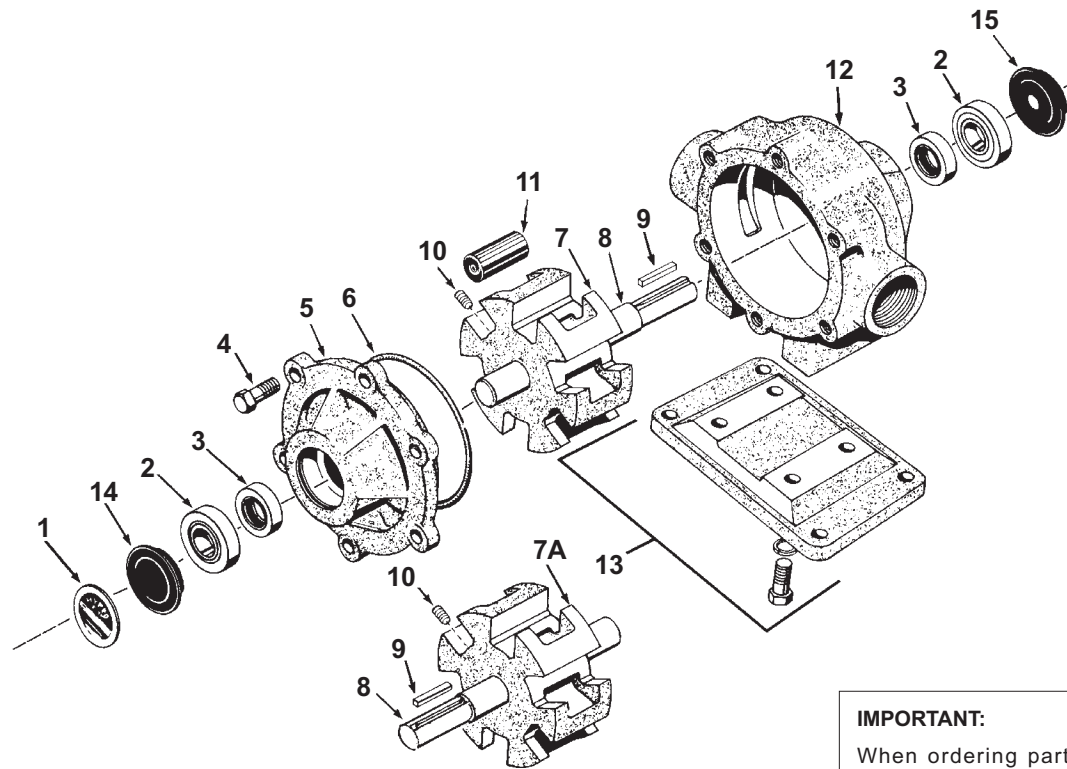


### SPECIFICATIONS

Maximum Flow .....	42 GPM
Maximum Pressure.....	700 PSI
Maximum RPM .....	540 RPM
Maximum Temperature .....	140°F
Inlet Port Hose Barb .....	1-1/2"
Outlet Ports	
Hose Barb (Ball Valve Controlled) .....	1/2" (2)
FNPT .....	3/4"
MNPT .....	3/4"
Bypass Hose Barb.....	1"
Dimensions.....	L-21.9" x W-15" x H-16.5"
Weight .....	130 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.

## Models 1500C, 1500N, and 1500XL



### 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	6031-0258	Name Plate (Specify Pump Model #)
2	2	2008-0001	Sealed Ball Bearing
3	2	2112-0001	Buna-N Seal (Standard)
3	2	2112-0003	Viton Seal (Optional) (Std. for SilverCast)
4	6	2210-0026	Bolt
5	1	0200-1500C	Endplate (Cast Iron) with Seal
5	1	0200-1500N	Endplate (Ni-Resist) with Seal
5	1	0200-1500X	Endplate (SilverCast) with Seal
6	1	1720-0003	O-ring Gasket for Endplate
7	1	0300-1502C	Rotor (Cast Iron) with shaft (Std. Rotation)
7	1	0300-1502N	Rotor (Ni-Resist) with shaft (Std. Rotation)
7	1	0300-1502X	Rotor (SilverCast) with shaft (Std. Rotation)
7A	1	0301-1502C	Rotor (Cast Iron) w/shaft (Reverse Rot.)
7A	1	0301-1502N	Rotor (Ni-Resist) w/shaft (Reverse Rot.)
7A	1	0301-1502X	Rotor (SilverCast) w/shaft (Reverse Rot.)
8	1	0500-1502	Shaft Only

Ref. No.	Qty. Req'd.	Part Number	Description
9	1	1610-0005	Key
10	1	2230-0018	Set Screw
10	1	2230-0034	Set Screw (SilverCast Only)
11	6	1005-0005	Super Roller (Standard)
11	6	1002-0005	Polypropylene Roller (Optional)
11	6	1055-0005	Teflon Roller (Optional)
12	1	0100-1500C	Body (Cast Iron) with Seal
12	1	0100-1500N	Body (Ni-Resist) with Seal
12	1	0100-1500X	Body (SilverCast) with Seal
13	1 kit	3420-0004	Base Kit — <b>Sold Separately</b> Includes: (1) Base, (4) Bolts and (4) Lockwashers
14	1	2300-0020	Bearing Cover
15	1	2300-0022	Shaft Bearing Cover

See Page 17 for the proper coupler or adapter.

**Repair Parts Kit No. 3430-0383 (Universal)** Consists of: (6) Ref. 12 Super Rollers, (2) Ref. 7 O-Ring Gaskets, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0388** Consists of: (6) Ref. 12 Super Rollers and (1) Ref. 7 O-Ring Gasket.

**Repair Parts Kit No. 3430-0386** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0387** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0162** Consists of: (6) Ref. 12 Polypropylene Rollers and (1) Ref. 7 O-Ring Gasket.

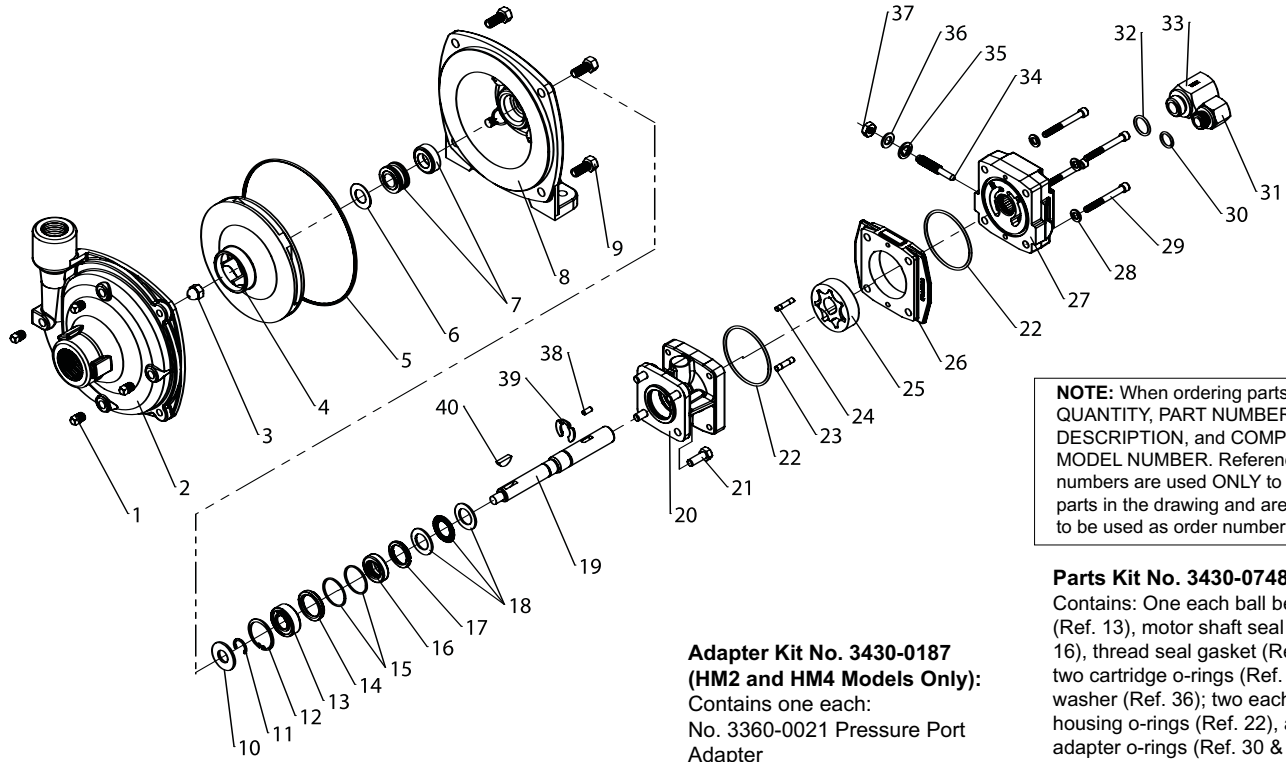
**Repair Parts Kit No. 3430-0204** Consists of: (6) Ref. 12 Teflon Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0164** Consists of: (6) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Viton Seals.

**Repair Parts Kit No. 3430-0163** Consists of: (6) Ref. 8 Polypropylene Rollers, (1) Ref. 7 O-Ring Gasket, and (2) Ref. 4 Buna-N Seals.

**Repair Parts Kit No. 3430-0406** Consists of: (6) Ref. 12 Super Rollers, (1) Ref. 7 O-Ring Gasket, (2) Ref. 4 Viton Seals and (2) Ref. 3 Sealed Ball Bearings.





**Repair Parts Kit No. 3430-0332**

Contains: One o-ring (Ref. 5), one rubber gasket (Ref. 6), and one mechanical seal (Ref. 7).

**Silicon Seal Kit No. 3430-0589**

Contains one each: 1720-0083 o-ring (Ref. 5) and mechanical seal (silicon carbide) (Ref.7).

**Adapter Kit No. 3430-0187 (HM2 and HM4 Models Only):**

Contains one each:  
 No. 3360-0021 Pressure Port Adapter  
 No. 3373-0020 (Size #1)  
 No. 3373-0021 (Size #2)  
 No. 3373-0022 (Size #3)  
 No. 1720-0108 Adapter O-ring and  
 No. 1720-0105 Orifice O-ring (Qty. 3)

**NOTE:** When ordering parts, give QUANTITY, PART NUMBER, DESCRIPTION, and COMPLETE MODEL NUMBER. Reference numbers are used ONLY to identify parts in the drawing and are NOT to be used as order numbers.

**Parts Kit No. 3430-0748**

Contains: One each ball bearing (Ref. 13), motor shaft seal (Ref. 16), thread seal gasket (Ref. 35), two cartridge o-rings (Ref. 15) and washer (Ref. 36); two each motor housing o-rings (Ref. 22), and port adapter o-rings (Ref. 30 & 32).

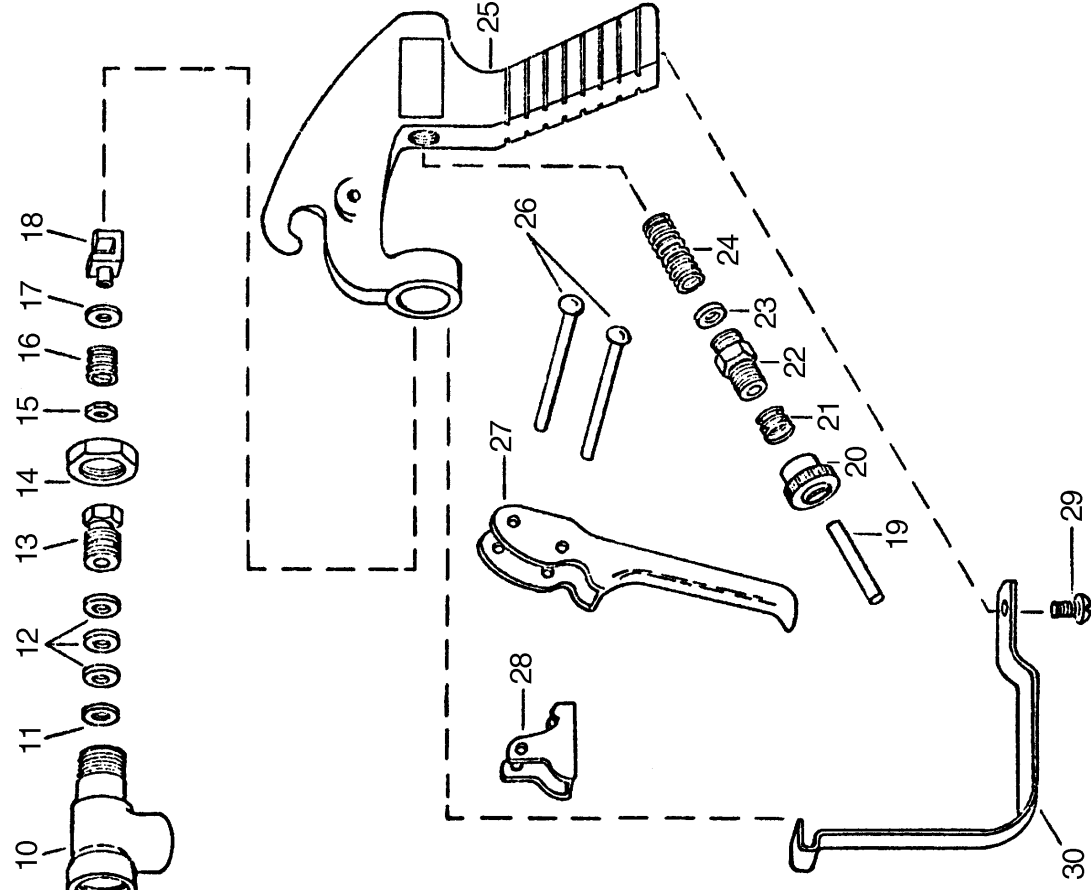
**Hydraulic Motor Part Nos.**

2500-0081C (HM1C Models)  
 2500-0082C (HM2C Models)  
 2500-0084C (HM4C Models)

Ref. No.	Qty. Req'd.	Part No.	Description
1	4	2406-0007	Drain/Vent Plug (9302C)
1	4	2406-0016	Drain/Vent Plug (9302S)
2	1	0150-9200C	Pump Casing (Model 9302C)
2A	1	0156-9200S	Pump Casing (Model 9302S)
3	1	2253-0002	Impeller Nut (9302C)
3	1	2253-0006	Impeller Nut (9302S)
4	1	0401-9100P	Impeller (Nylon Std. 9302C)
4	1	0402-9100P	Impeller (Polypropylene Optional) (Std 9302S)
5	1	1720-0083	O-ring
6	1	1700-0100	Gasket
7	1	2120-0009	Mechanical Seal (Viton/Ceramic) (Std 9302C)
7	1	3430-0589	Mechanical Seal (Silicon Carbide) (Std 9302S)
8	1	0750-9300C	Mounting Flange (9302C)
8	1	0756-9300S	Mounting Flange (9302S)
9	4	2210-0020	Hex Head Cap Screw (9302C)
9	4	2210-0125	Hex Head Cap Screw (9302S)
10	1	1410-0056	Slinger Ring
11	1	1810-0014	Snap Ring
12	1	1820-0013	Retaining Ring
13	1	2000-0010	Ball Bearing
14	1	1410-0131	Cartridge, Front
15	2	1720-0268	O-ring
16	1	2104-0010	Lip Seal
17	1	1410-0130	Seal Spacer
18	1	2029-0014	Thrust Bearing Assembly
19	1	0531-2500	Shaft (HM2C/HM4C)
19	1	0533-2500	Shaft (HM1C)
20	1	0150-2500C	Motor Body (includes needle bearing)
21	4	2210-0005	Hex Head Cap Screw

Ref. No.	Qty. Req'd.	Part No.	Description
22	2	1720-0110	O-ring
23	1	1600-0045	Dowel Pin (HM2C / HM4C)
23	1	1600-0044	Dowel Pin (HM1C)
24	1	1600-0042	Dowel Pin (HM2C / HM4C)
24	1	1600-0037	Dowel Pin (HM1C)
25	1	3900-0022	Gerotor (HM1C)
25	1	3900-0023	Gerotor (HM2C)
25	1	3900-0025	Gerotor (HM4C)
26	1	0701-2500C1	Gerotor Housing (HM2C Models) 1/4" wide
26	1	0700-2500C1	Gerotor Housing (HM1C Models) 1/2" wide
26	1	0703-2500C1	Gerotor Housing (HM4C Models) 5/16" wide
27	1	0254-2500C2	Motor End Plate (includes needle bearing)
28	4	2270-0039	Washer
29	4	2220-0045	Cap Screw (HM2C / HM4C Models)
29	4	2220-0021	Cap Screw (HM1C Models)
30	1	1720-0108	O-ring
31	1	3360-0021A	Pressure Port Adapter (includes o-ring)
32	1	1720-0262	O-ring
33	1	3320-0051A	Tank Port Adapter (includes o-ring)
34	1	3220-0029	Bypass Adjusting Screw
35	1	1700-0047	Gasket
36	1	2270-0027	Washer
37	1	2250-0038	Lock Nut
38	1	1610-0032	Roll Pin (HM2C / HM4C)
38	1	1610-0031	Roll Pin (HM1C)
39	1	1810-0026	Snap Ring
40	1	1610-0012	Woodruff Key (9302C)
40	1	04432	Woodruff Key (9302S)

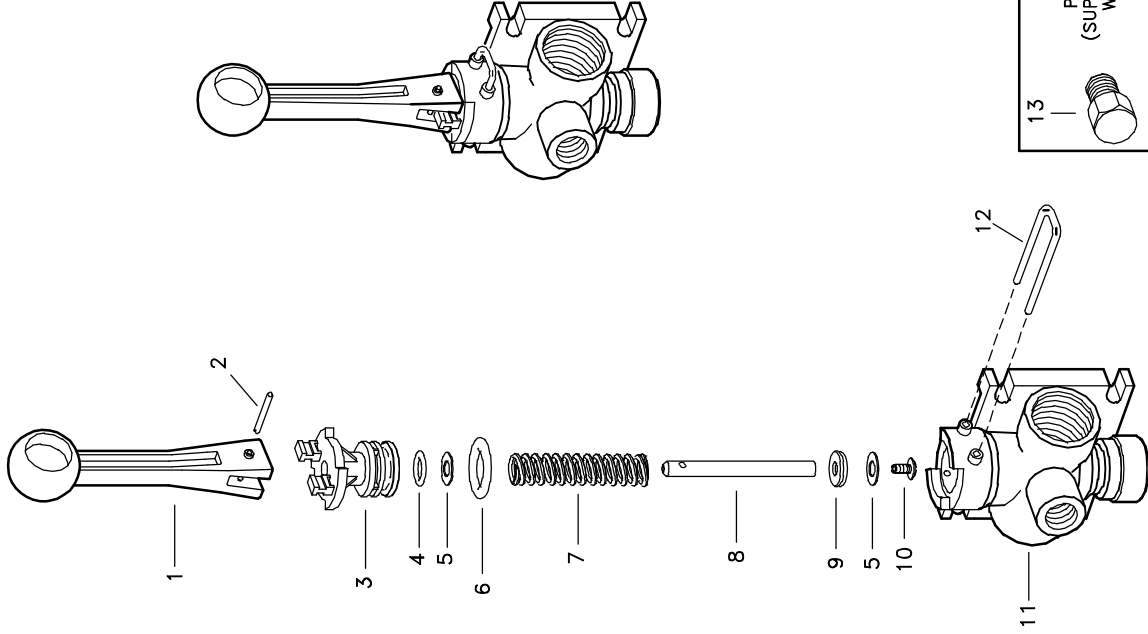
# No. 43L & No. 43H GUNJETS (13" Extension)



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



\*\*Specify Orifice Disk Size




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**

Rev. No. 1

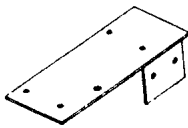
Ref. SHEET OF

**COMPONENT PARTS**

FOR PULL TYPE SPRAYERS

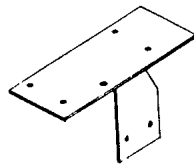
**1999 Electric Valve**

Roller/Diaphragm Pump



Part No. VS1999

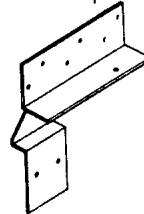
C-Pump



Part No. VS1999C

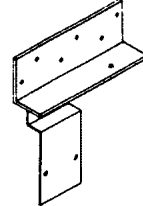
**2500 Electric Valve**

Roller/Diaphragm Pump



Part No. VS2500-3

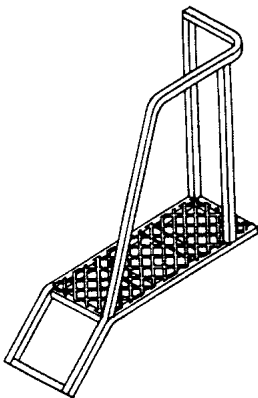
C-Pump



Part No. VS5200-3C

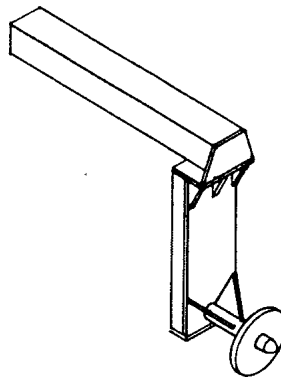
**PULL TYPE STAND**

Part No. SP1



**LEFT SIDE SPRAYER LEG**

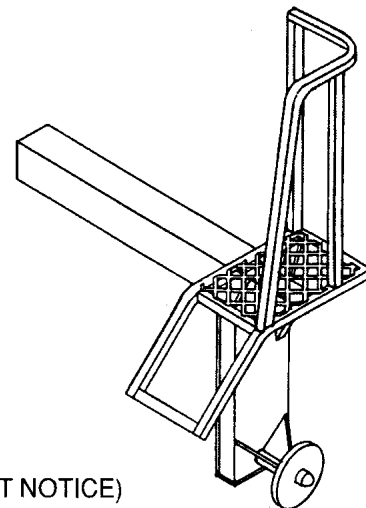
Part No. IY-117



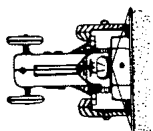
**RIGHT SIDE SPRAYER LEG**

(With Stand)

Part No. IY-117A



(PRICES SUBJECT TO CHANGE WITHOUT NOTICE)



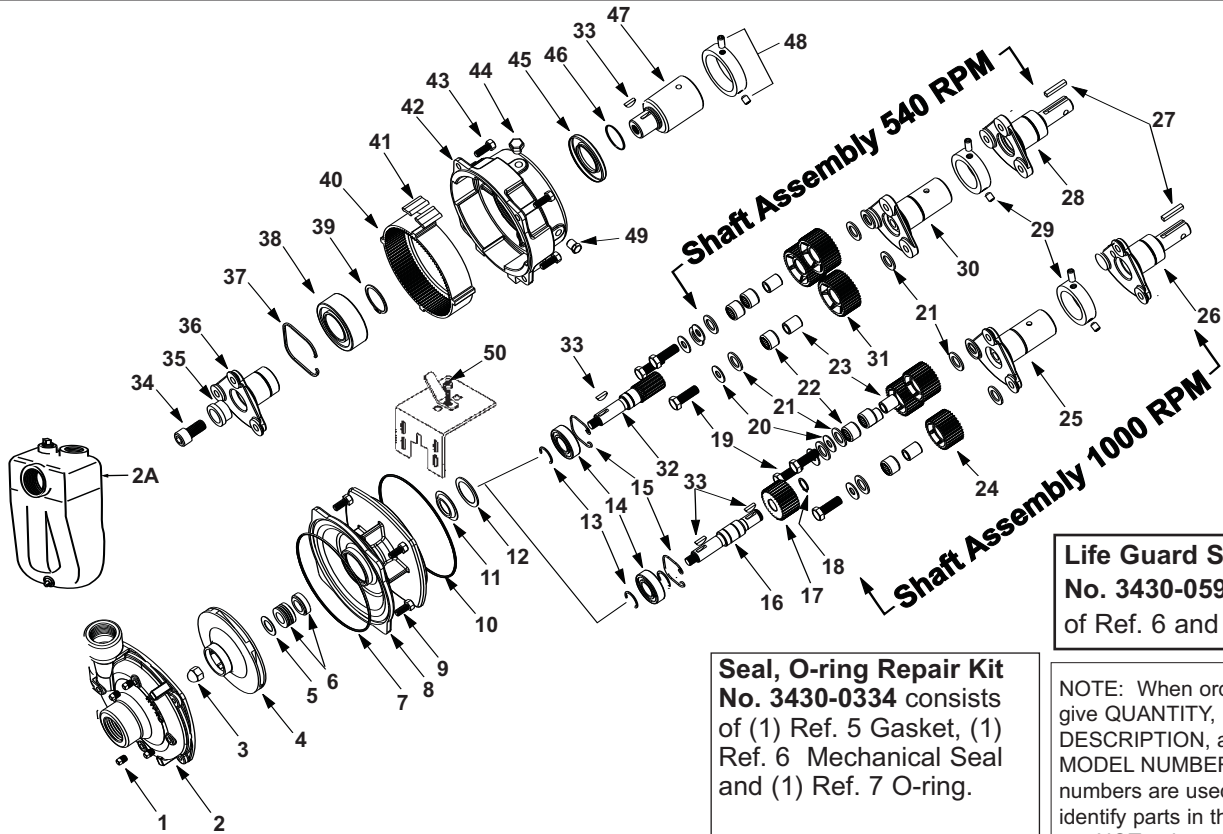
**var's**

**EQUIPMENT COMPANY**

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

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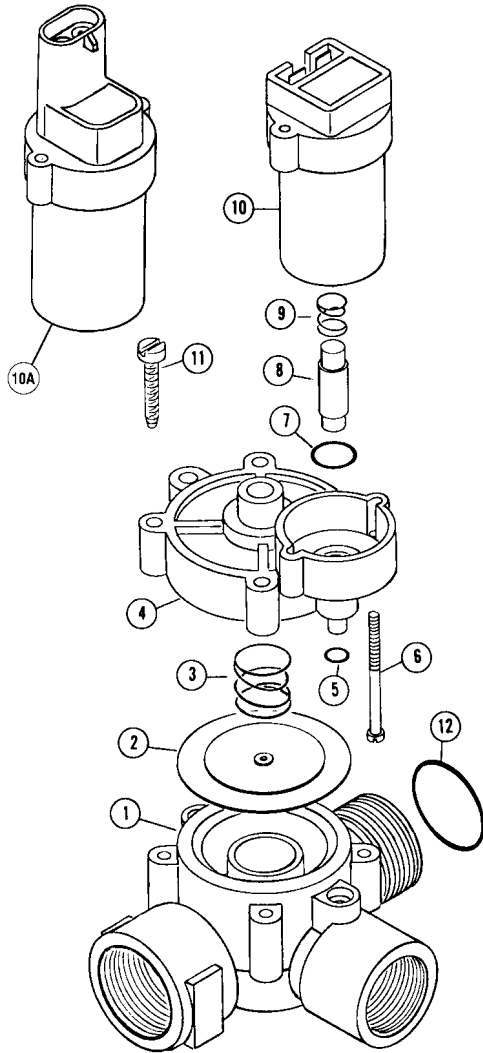


Ref. No.	Qty. Req'd.	Part No.	Description
1	4	2406-0007	Drain Plug
2	1	0150-9000C	Pump Casing (w / SS wear ring)
2A	1	3430-0480SP	Pump Casing (Self-Priming Units)
3	1	2253-0001	Impeller Nut
4	1	0400-9000P	Impeller (Nylon)
5	1	1700-0101	Gasket
6	1	2120-0010	Mechanical Seal (Optional Buna-N)
6	1	2120-0011	Mechanical Seal (Standard Viton)
7	1	1720-0083	O-ring
8	1	0752-9000C	Mounting Flange Adapter
9	4	2210-0020	Hex Head Capscrew
10	1	1720-0139	O-ring
11	1	2130-0018	Bearing Lip Seal
12	1	1700-0098	Gasket
13	*	1810-0013	Retaining Ring — (1) required for 540 rpm, (2) for 1-3/8" and (3) for 1-3/4" 1000 rpm
14	1	2008-0001	Ball Bearing
15	1	1820-0025	Retaining Ring
15	3	2210-0046	Capscrew
16	1	0500-9002	Impeller Shaft (1000 rpm)
17	1	3900-0013	Sun Gear (1000 rpm)
18	1	1810-0011	Retaining Ring (1000 rpm)
19	3	2210-0046	Hex Head Capscrew
20	3	2270-0003	Washer
21	6	2265-0003	Thrust Washer
22	3	2007-0052	Bearing (included with driver gear)
23	3	2007-0022	Bearing Inner Race
24	3	3900-0040	Driver Gear w/Bearing (1000 rpm) 32 teeth, Dia. 2.13"

Ref. No.	Qty. Req'd.	Part No.	Description
25	1	0562-9002D	Driver Hub (Model 9008C-O)
26	1	0501-9018D	Driver Hub (Model 9018C-O)
27	1	1610-0005	Key
28	1	0501-9016D	Driver Hub (Model 9016C-O)
29	1	3435-0058	Locking Collar Kit (hollow shaft)
30	1	0562-9000D	Driver Hub (Model 9006C-O)
31	3	3900-0039	Driver Gear w/Bearing (540 rpm) 39 teeth, Dia. 2.6"
32	1	3900-0010	Impeller Shaft/Pinion Gear (540 rpm)
33	**	1610-0012	Woodruff Key ** (1) req'd for 540 rpm, (2) req'd for 1000 rpm models.
34	1	2220-0035	Capscrew (Model 9028C)
35	1	2403-0012	Bushing (Model 9028C)
36	1	0501-9018D1	Driver Hub (Model 9028C)
37	1	1800-0014	Retaining Ring
38	1	2005-0002	Ball Bearing
39	1	1810-0001	Retaining Ring
40	1	3900-0009	Ring Gear
41	8	1450-0004	Cushion Bumper
42	1	0754-9000C	Gear Casing
43	4	2210-0026	Hex Head Capscrew
44	1	2404-0193	Breather Vent
45	1	2102-0025	Oil Seal
46	1	1720-0022	O-ring
47	1	0550-1322F4	Driver Hub (9028C) 1-3/4" Hub 20 Teeth
48	1	3430-0190	Locking Collar Kit (Model 9028C)
49	4	2406-0019	Oil Plug
50	1	1520-0034	Mounting Clip

# No. 1999A

Solenoid Valve - 18 GPM, 175 PSI, 12 Volt. DC.



## PARTS LIST

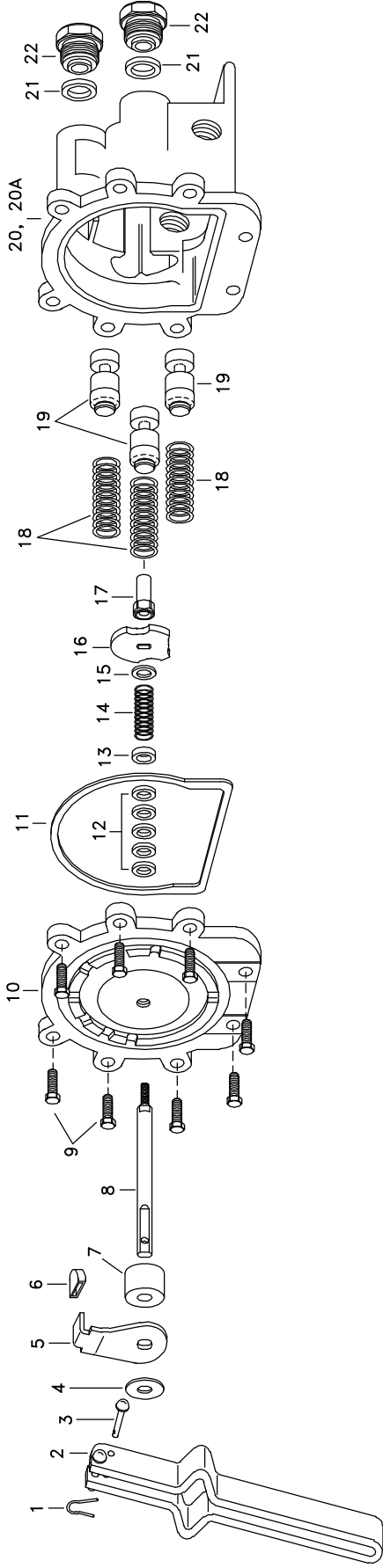
Ref.	Part No.	Description	No. Req.
1	1962	Valve Body.....	1
2	*1974	Viton Diaphragm Assembly, Standard ....	1
2	(1)2109	Aflas Diaphragm Assembly, Optional ....	1
3	(1)*1975	Spring .....	1
4	1963	Valve Cover .....	1
5	(1)*1976	Viton "O" Ring 010 .....	1
6		6-32 x 2 5/8 Screw w/Hex Nut .....	2
7	(1)*1977	Viton "O" Ring 014 .....	1
8	*2239	Plunger w/Viton Seat, Standard.....	1
8	(1)2240	Plunger w/Aflas Seat, Optional.....	1
9	(1)*1979	Plunger Spring .....	1
10	2515	Coil Assembly .....	1
10A	2520	Coil Assembly, Weather Pack .....	1
11		No. 8 x 1 1/2 Screw.....	4
12	2168	"O" Ring 022 .....	1
	2517	Viton Repair Kit – consists of items marked *	
	2518	Aflas Repair Kit – consists of items marked (1)	

## SPECIFICATIONS

- Valve Housing .....Glass Filled Nylon
- Wetted Metal Parts .....304 and 430 Stainless Steel
- Diaphragm, Seat and Seals.....Viton, Standard, Aflas, Optional
- Coil.....Epoxy Encapsulated
- Terminals.....1/4" Male Tabs or Weather Pack
- Voltage .....12 Volt. DC. (Other Available)
- Current.....1.1 AMP at 12 Volt.
- Pressure .....175 PSI Max., 10 PSI Min.
- Flow.....0-18 GPM 8 CV
- Actuating Pressure.....5 PSI

**TEXAS INDUSTRIAL REMCOR, INC.**

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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
13	CP12130-SS	Packing Gland, Stainless Steel
14	CP7254-SS	Main Spring, Stainless Steel
15	CP7987-SS	Washer, Stainless Steel
16	CP6971-AL	Selector Cam, Aluminum
17	CP6973-SS	Guide Nut, Stainless Steel
18	CP6959-SS	Valve Spring, Stainless Steel (3 Req'd)
19	CP6956-CE	Valve Stem, Celcon (3 Req'd)
20	CP6934-3/4-AL	Body, Aluminum (For AA17L)
20A	CP6934-13/4-AL	Body, Aluminum (For AA17Y)
21	CP6958-POL	Seal Plate, Polyethylene (3 Req'd)
22	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



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

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







# 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/1000FT<sup>2</sup> – 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 1000FT<sup>2</sup> Blocks  
= 0.405 Hectare

One Hectare = 2.471 Acres

One Gallon Per Acre

= 2.9 Fluid Ounces per 1000FT<sup>2</sup>  
= 9.35 Liters Per Hectare

One Gallon Per 1000FT<sup>2</sup> = 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.

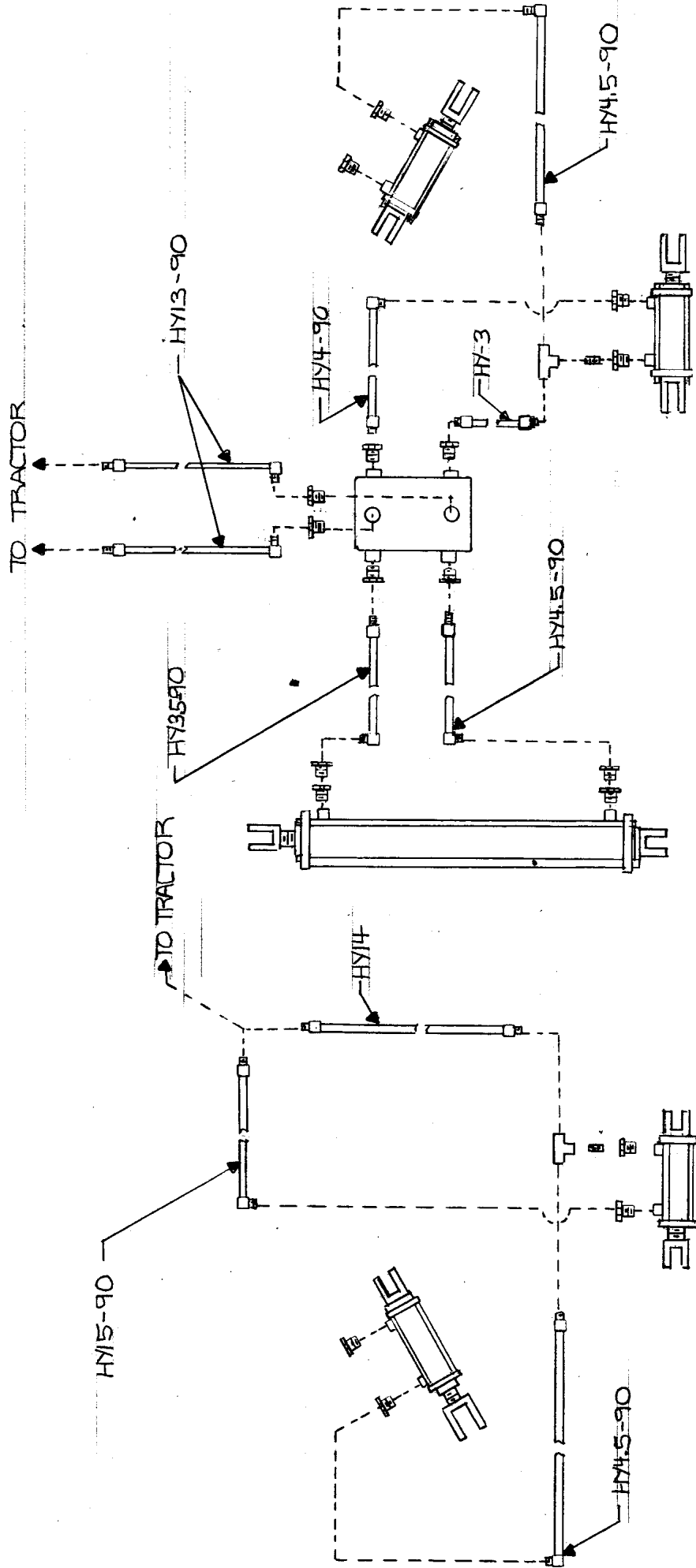
	(Inches)			
				
TeeJet® Standard, TJ	65°	22–24"	33–35"	NR*
TeeJet, XR, TX, DG, TJ	80°	17–19"	26–28"	NR*
TeeJet, XR, DG, TT, TTI, TJ, DGTJ, AI, AIXR	110°	16–18"	20–22"	NR*
FullJet®	120°	10–18"***	14–18"***	14–18"***
FloodJet® TK, TF	120°	14–16"***	15–17"***	18–20"***

\* Not recommended.

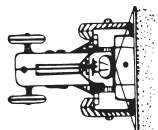
\*\* Nozzle height based on 30° to 45° angle of orientation (see page 30 of catalog).

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

# HYDRAULIC PLUMBING SCHEMATIC



## NOTES



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