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IMPORTANT SAFETY INSTRUCTIONS
READ AND FOLLOW ALL INSTRUCTIONS
SAVE THESE INSTRUCTIONS

1. SAFETY: When installing and using this electrical equipment, basic safety precautions should always be followed, including:

1.1 WARNING! To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

1.2 WARNING! Risk of electric shock.

Connect only to a grounding type receptacle protected by a ground-fault circuit interrupter (GFCI). Contact qualified electrician if you cannot verify that the receptacle is protected by a GFCI and that your installation meets local electrical codes, including grounding of water system components.

1.3 WARNING! Risk of electric shock.

Do not bury or modify the metering pump cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.

1.4 WARNING! Risk of electric shock.

On cord and plug-connected units, replace a damaged cord immediately.

1.5 WARNING! Risk of electric shock.

Do not use extension cord to connect unit to electrical supply; provide a properly located outlet.

1.6 WARNING! Risk of electric shock.

Do not install within an outer enclosure or beneath the skirt of a hot tub or spa unless so marked. All instructions must be in accordance with appropriate electrical codes.

1.7 WARNING! Risk of electric shock/pinching/chemical exposure.

Remove power sources or lockout circuit prior to performing maintenance on metering pump. Pumps are usually timer controlled and can start at any time.

1.8 WARNING! Risk of Chemical Overdose/Exposure.

Removing power from circulating pump must also remove power from the chemical injection pump. Provide a properly located outlet controlled by the circulating pump circuit.

1.9 WARNING! Risk of Chemical Overdose/Exposure.

Use a device such as a flow switch to shut off power from the from the chemical injection pump in the event of pool pump or circulation failure.

It is not safe to automatically dispense chemicals into a circulating system that is not running.

1.10 WARNING! Risk of Chemical Overdose/Exposure.

Minimize amount of chemical on site that is available to dispense.

Size the feeder and container to pool/spa capacity.

Dilute chemical for small bodies of water.

1.11 WARNING! Risk of Chemical Exposure.

Depressurize the system prior to connecting or disconnecting the metering pump.

1.12 CAUTION! Wear protective clothing, gloves and safety glasses at all times when working on or near the metering pump.

1.13 CAUTION! Install the metering pump and chemical containers in a ventilated secured location. Protect children, pets, and property from chemical hazards. Containment and/or wash down capability must be in accordance with local regulations and chemical suppliers' instructions.

1.14 CAUTION! Read and follow all instructions supplied with the chemical being fed. User is responsible for determining the compatibility of the chemical with the metering pump. Consult supplier of chemical if use and handling instructions are not available.

1.15 CAUTION! This pump is for use with permanently installed pools and may also be used with hot tubs and spas. Do not use with storable pools. A permanently installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storage **pool** is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

1.16 CAUTION! Service tubing regularly, e.g. when refilling chemical container. See OPERATION and MAINTENANCE sections for details.

2. Specifications

Power: 120 volt AC (corded) or 240 volt AC (conduit), 50/60 HZ, 2.5 amp (max.)

Pressure / suction: 30 psi max. dispense line pressure. RC503 maximum dispense line pressure is 25 psi. 18 foot max. inlet suction lift

Capacity: Estimated gallons per day

SETTING	ON	OFF	RC252	RC25/53	RC103	RC503
LO	4 SEC	9 MIN	0.01	0.10	0.34	1.00
2	1.5 MIN	7.5 MIN	0.18	1.20	3.72	8.88
3	3 MIN	6 MIN	0.33	3.60	10.8	24.0
4	4.5 MIN	4.5 MIN	0.50	6.00	19.4	40
5	6 MIN	3 MIN	0.66	8.40	25.2	53
6	7.5 MIN	1.5 MIN	0.78	11.0	33.4	67
HI	9 MIN	4 SEC	0.90	12.0	38	77

Capacity in this table is intended as a guide. Actual output may vary based on actual environment.

3. Installation

Tools required – Phillips screwdriver & adjustable wrench,
23/32" drill & 1/2" pipe tap (NPT) or 7/16" drill & 1/4 " pipe tap (NPT)

3.1 Install the ROLA-CHEM pump in an area protected from natural elements (sun, rain, freezing, etc.).
Environmental effects may increase required service and maintenance.
The inlet side of the pump must be above the incoming liquid and the chemical container. Flooded suction is not required or recommended.
Ensure that the tube can be routed without allowing it to kink.
Do not install directly above the chemical container or other equipment that can be damaged by chemicals. Wall mounting key slots are provided on the rear of the pump enclosure (6.25" apart for #10 screws).
Comply with local health codes. Cross connections must not allow undesired chemical treatment.

3.2 For chlorine pumps, undiluted swimming pool grade 15% maximum sodium hypochlorite may be used. For acid pumps, 32% maximum hydrochloric acid may be used. Black Norprene Pinch Tube is included for use with hydrochloric acid. See sizing for dilution.

3.3 Connect the injection fitting into the line to be treated. This should be after the heater. Use pipe tape to seal the pipe threads. Do not exceed pressure / suction specifications.

A check valve may be used at the point of injection to prevent backflow, then the tubing assembly can be disconnected at its connection to the check valve and it will not be necessary to plug the injection fitting hole.

For installation where pressure is greater than 20 psi, use a check valve as the injection fitting or in-line before injection fitting. One 3/8 barbed check valve and one 3/8 barbed inlet x 1/4 NPT (American National Standard Taper Pipe Thread) outlet check valve are included with standard pumps. Use tubing clamp over tube on barbed ends of fitting on outlet side of pump.

For low pressure applications, a brass injection fitting will fit a 1/2 NPT connector or a 1/2 NPT hole tapped into heavy gage pipe. Push the vinyl tube through the fitting until it hits the bottom of the pipe, then pull it back about 1/4 inch. This creates an outlet for chlorine away from the injector fitting and helps the injector fitting from becoming clogged.

For installations where a 1/4 NPT injection port connection is already available, a 1/4 NPT adapter with a tubing clamp is included in the literature kit.

CAUTION! Do not install injection fitting directly into copper lines (may cause corrosion and discoloring).

3.4 Place the suction tubing in the chemical container with the weight lying on its side. This will keep the end of the suction tubing off the bottom to allow for sediment.

3.5 Electrical hook-up must comply with Code, including safety devices. Voltage must be per the data plate.

CAUTION! Pump must be wired to prevent overdosing. Connect pump to turn off when circulating system is off. Connect pump power to a flow switch on the return piping (if circulation system stops, chemical pump must stop).

CAUTION! Pump must be turned off when backwashing filters.

4. Operation

4.1 Before placing the ROLA-CHEM pump in operation, lubricate the Pinch Tube with silicone lubricant (supplied in the literature kit) and install per Pinch Tube Assembly replacement instruction section 5.2. **NOTE:** Maintain lubrication on the Pinch Tube at all times. Intervals for applying lubrication vary with pump size, frequency of operation and pressures.

To access the Pinch Tube Assembly, remove the knob from the front of the pump housing. Rotate the housing cover counterclockwise and lift off the cover, or on the RC252 Models remove wing nuts and lift off the body half. Reverse steps to reassemble.

CAUTION! Remove power from pump when lubricating Pinch Tube. Do not remove Pinch Tube Assembly from pump housing while system is under pressure.

4.2 The three-way switch has TIMER, CONTINUOUS and OFF positions. For interrupting action, use the TIMER position and adjust the timer knob for the desired output. For use with a controller (and for continuous, non-stop chemical feeding) use the CONTINUOUS position.

TIMER reduces the output by interrupting the chemical feeding for the selected portion of its nine minute timing cycle (setting of 4 provides approximately 4.5 minutes on and 4.5 minutes off). The pump will feed at its maximum rate relative to operating conditions whenever it is feeding. Where an extremely accurate feeding setting is required, use a calibrated cylinder and a stopwatch to calculate the amount fed under actual operating conditions. Be sure to use full timer cycles when making the calculations. See rate chart for nominal feed rate settings.

CONTINUOUS runs the pump at maximum feed rate regardless of the timer knob position.

5. Maintenance

5.1 Preventive maintenance is the best defense against possible leaks. Inspect tubing frequently as stated in safety instructions and lubricate Pinch Tube often to maintain a coating of silicone grease. Pinch Tube is designed for minimum service life of 500 hours pump run time. However Pinch Tube life is affected by many factors such as system back pressure, environmental temperature, and the chemical being pumped. Replace the Tube Assembly when found to be deteriorating or at the start of a new season.

CAUTION! Both inlet and outlet connections may be under pressure. Depressurize the system prior to connecting or disconnecting the metering pump.

WARNING! Pump tubing may contain chemicals. Wear protective clothing, gloves and safety glasses at all times when working on or near the metering pump.

WARNING! Severe pinching of fingers can occur while installing Pinch Tube Assembly. Caution must be used to keep fingers away from rotating parts.

5.2 Pinch Tube Assembly replacement procedure

- 1) See OPERATION section 4.1 to access Pinch Tube Assembly.

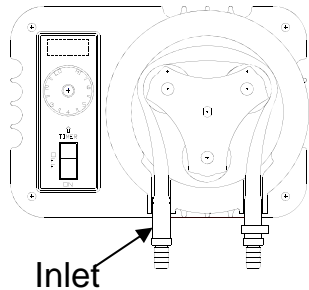


Figure 1

- 2) Jog switch intermittently between OFF and CONTINUOUS positions to move Roller to position as shown in Figure 1 then switch OFF. Roller will rotate clockwise when switch is in CONTINUOUS position.
- 3) Pull lower left end of Pinch Tube Assembly out of inlet port (as noted in Figure 1) and continue to pull away from Roller. Jog switch intermittently between OFF and CONTINUOUS positions to move Roller. Keep fingers away from rotating parts. Tube will be released as Roller rotates.

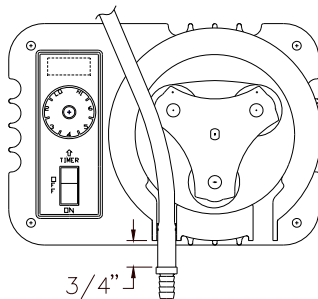


Figure 2

- 4) To install new Pinch Tube, Jog switch intermittently between OFF and CONTINUOUS positions to move Roller to position as shown in Figure 2 then switch OFF.
- 5) Lubricate Pinch Tube Assembly as noted in OPERATION section 4.1. Lay inlet end (without clamp) in inlet port on left with about 3/4" of Pinch Tube protruding from housing. See Figure 2.

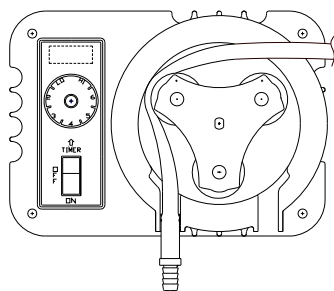


Figure 3

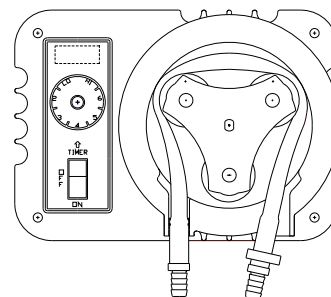


Figure 4

- 6) Jog switch intermittently between OFF and CONTINUOUS positions to rotate Roller assembly while guiding Pinch Tube Assembly into housing as shown in Figures 3 and 4 then switch OFF with roller in position as shown in Figure 4. Keep fingers away from rotating parts.

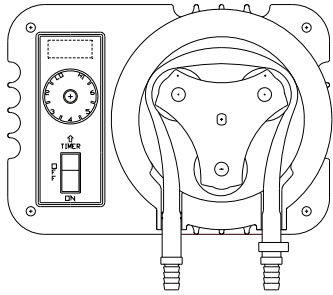


Figure 5

- 7) With switch OFF, lay Pinch Tube Assembly in outlet port as shown in Figure 5.
- 8) Reassemble housing cover.

5.3 Remove the Pinch Tube Assembly when the pump is not in use. Place the Pinch Tube Assembly in a clean poly bag when not in use. The pump shipping bag may be saved for this purpose. A Pinch Tube Assembly under light duty may last more than one season, but replacing the Pinch Tube Assembly may prevent damaging the pump or an unscheduled maintenance call.

5.4 Crystal buildup is seldom a problem with ROLA-CHEM pumps. However, it may be necessary to flush the pump tubing. Use plain water or a weak solution of muriatic acid (1/2 pint muriatic acid to one gallon of water).

WARNING! Always add acid to water. Never add water to acid. (e.g. fill container with one gallon of water then add 1/2 pint of acid) Wear protective clothing, gloves and safety glasses.

Additional preventative maintenance may be required in harsh environments. Strong chemicals and chemical vapors may cause corrosion of metal components. Inspect pumps for corrosion to exposed metal components. For pumps utilizing timer functions, replacement of the timer/pot assembly is recommended after five years.

6. Chemical Feed Pump Size Guide

WARNING! Failure to use proper size feeder may result in injury.

Pump size must be in compliance with local health codes. When in doubt about pump size or if different brand feed pumps are used, consult your supplier or ROLA-CHEM.

NOTE: ORP/pH controllers will not function properly with an over or undersized feeder.

SPA <u>Capacity (Gallons)</u>	POOL <u>(Capacity, Gallons)</u>	CHLORINE PUMP	ACID PUMP
500-2,500	2,500-5,000	RC 252 (0.9 GPD)	SEE NOTE*
2,500-25,000	5,000-65,000	RC 25/53 (12GPD)	SEE NOTE*
	65,000-200,000**	RC 103 (38 GPD)	RC 25/53 (12 GPD)
	180,000-400,000**	RC 503 (77 GPD)	RC 25/53 (12 GPD)

Sizing chart is only a guide and is based on ROLA-CHEM or equivalent pumps using 10.5% sodium hypochlorite (chlorine) or 20-32% hydrochloric acid (muriatic acid).

*Consider diluting chemicals for small bodies of water. Required pump size may vary when diluting chemicals. Size pumps based on dilution ratio and available pump sizes. Typical dilution ratios for muriatic acid range from 4:1 to 9:1. When feeding acid diluted 9:1, the acid pump may be the same size as the chlorine pump.

WARNING! Always add acid to the water. Never add water to acid. (e.g. fill tank with four gallons of water then add one gallon of acid) Wear protective clothing, gloves, and safety glasses.

**RC 103 pumps have been used on pools up to 240,000 gallons (RC 503 pumps to 500,000 gallons).

7. Troubleshooting Pump Problems

Issue	Cause	Action
Pump does not operate, no noise, no motion.	Power	Check power source, switches, circuit box, ground fault tripping, etc.
Pump will not shut off with switch in TIMER position.	Switch or timer	Check switch continuity and replace if faulty. If switch has no continuity in off position and pump will not shut off, replace timer.
Pump motor turning but no movement in roller assembly.	Motor gearbox	Replace motor.
Short Pinch Tube life.	Worn or loose components	Replace worn roller assembly or gearbox assembly and secure pump housing and cover.
	Lubrication	Lubricate Pinch Tube more frequently.
	High System pressure	Check that system pressure is 30 psi max. (RC503 25 psi max.).
	Discoloration	Tubing discoloration does not affect performance. Tubing can be replaced if desired.
Pump rotating but not pumping fluid.	Pinch Tube Assembly	Replace Pinch Tube Assembly.
	Roller assembly	Replace roller assembly.
	Motor bearings	Replace motor.
Pump motor starts and stops with switch in CONTINUOUS position.	High temperatures	Check fan and replace if damaged. Improve ventilation to pump.
	Switch	Replace switch.

8. Parts List

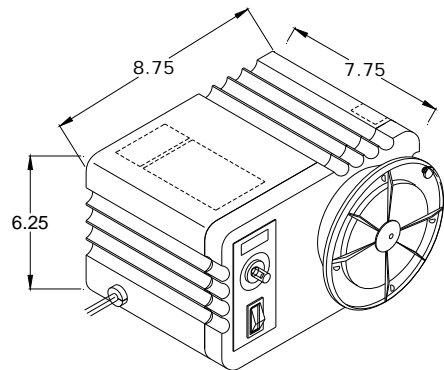
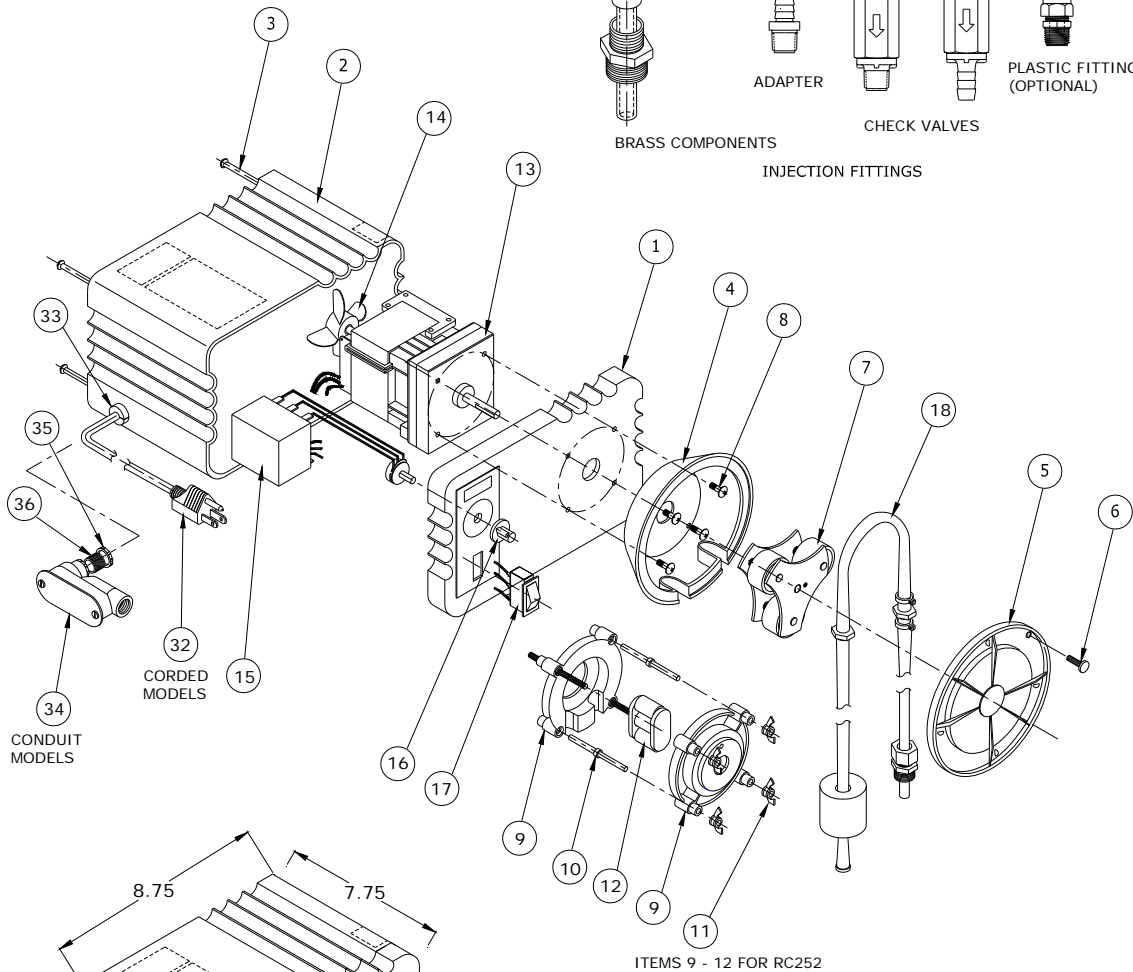
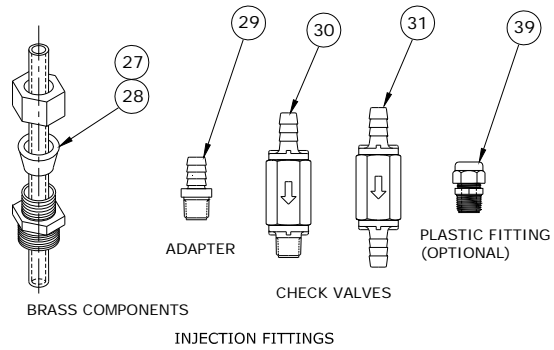
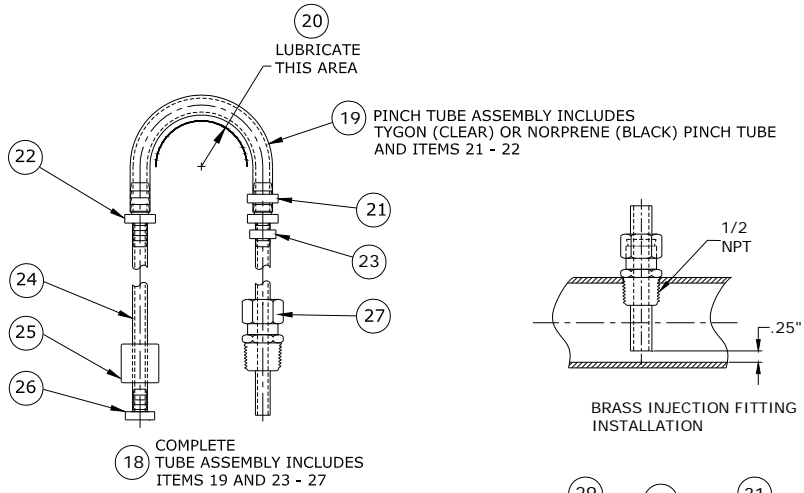
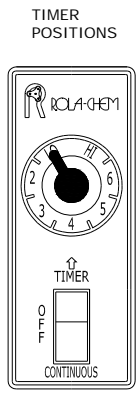
ITEM	PART No.	DESCRIPTION	MODEL			
			RC252	RC25/53	RC103	RC503
1	527255	ENCLOSURE COVER NS	X	X	X	X
2	527251	ENCLOSURE BODY NS	X	X	X	X
3	525253	SCREW 10-24 x 4-1/2 PPH STL ZP	X	X	X	X
4	521752	HOUSING, BODY		X	X	X
5	521751	HOUSING, COVER		X	X	X
6	523408	KNOB, LOCK ASSY		X	X	X
7	523400	ROLLER, TRI NS-ASSY (3 ROLLER)		X	X	X
8	525233	SCREW 10-24 x 3/4 PTH SST		X	X	X
9	521225	HOUSING, PUMP	X			
10	525004	BRASS STUD 10-32	X			
11	525140	WING NUT 10-32	X			
12	523332	ROLLER, 2 INCH H-BLOCK	X			
13	521058	GEAR MOTOR, 1 RPM, 120V	120 V			
	521094	GEAR MOTOR, 1 RPM, 240V	240 V			
	521805	GEAR MOTOR, 4 RPM, 120V		120V		
	521806	GEAR MOTOR, 4 RPM, 240V		240V		
	521316	GEAR MOTOR, 16 RPM, 120V			120V	
	521317	GEAR MOTOR, 16 RPM, 240V			240V	
	524756	GEAR MOTOR, 30 RPM, 120V				120V
	524755	GEAR MOTOR, 30 RPM, 240V				240V
14	524752	FAN, 2.5 INCH	X	X	X	X
15	524065	TIMER/POT ASSY 120 V		ALL 120 V PUMPS		
	524066	TIMER/POT ASSY 240 V		ALL 240 V PUMPS		
16	521154	KNOB, TIMER	X	X	X	X
17	524711	SWITCH ASSY, 3 WAY	X	X	X	X
18	523252	TUBE ASSY-TYGON/VINYL 8 INCH	NOTE A	X		
	523118	TUBE ASSY-TYGON/VINYL 13.5 INCH	NOTE A		X	X
	523414	TUBE ASSY-NORPRENE/VINYL 8 INCH	NOTE A	X		
	523140	TUBE ASSY-NORPRENE/VINYL 13.5 INCH	NOTE A		X	X
19	523250	TYGON PINCH TUBE ASSY-8 INCH	NOTE B	X		
	523115	TYGON PINCH TUBE ASSY-13.5 INCH	NOTE B		X	X
	523251	NORPRENE PINCH TUBE ASSY-8 INCH	NOTE B	X		
	523114	NORPRENE PINCH TUBE ASSY-13.5 INCH	NOTE B		X	X
20	523102	LUBRICANT, E-Z GLIDE, 3GRAM	X	X	X	X
21	525114	CLAMP, HOSE #8 (LARGE)	X	X	X	X
22	520111	FITTING, HOSE CONNECTOR, 3/8 BARB	X	X	X	X
23	520110	CLAMP, HOSE #6 (SMALL)	X	X	X	X
24	520120	TUBING, VINYL .31 x .44 x 66 INCH	X	X	X	X
	520116	TUBING, VINYL .31 x .44 x 100 FOOT (OPTIONAL)				
25	523110	WEIGHT, HOSE 7/16	X	X	X	X
26	520112	RETAINER-HOSE WEIGHT	X	X	X	X
27	527158	BRASS INJECTION FITTING, 1/2" MNPT	X	X	X	X
28	525113	SEAL, INJECTION FITTING (SPARE)	X	X	X	X
29	520113	ADAPTER, PP1/4MNPT x 3/8 BARB	X	X	X	X
30	521170	CHECK VALVE, PVC, 3/8 BARB x 1/4 NPT	X	X	X	X
31	521160	CHECK VALVE, PVC, 3/8 x 3/8 BARB	X	X	X	X
32	524155	POWER CORD, 18-3SJT, 120V		PUMP-CORDED, 120 V		
	524156	POWER CORD, 18-3SJT, 240V		PUMP-CORDED, 240 V		
33	524090	STRAIN RELIEF		CORDED PUMPS		
34	524115	J-BOX				
35	524135	LOCK NUT, STEEL 1/2		CONDUIT MODELS		
36	524110	NIPPLE, 1/2 x 1				
37	525214	GROUND SCREW #8, GREEN	X	X	X	X
38	8110030	LOCK WASHER (GROUND SCREW)	X	X	X	X
39	527159	FITTING, INJECTION-8M,NYLON (OPTIONAL)				

NOTE A: COMPLETE TUBE ASSEMBLY

ITEM 18 INCLUDES: PINCH TUBE ASSEMBLY (ITEM 19) AND ITEMS 23 THRU 27

NOTE B: PINCH TUBE ASSEMBLY

ITEM 19 INCLUDES: TYGON (OR NORPRENE) PINCH TUBE, CLAMP (ITEM 21) AND FITTING (ITEM 22)



(37) (38) GROUND SCREW & LOCK WASHER (NOT SHOWN) ARE FOR FASTENING GROUND WIRE TO BACK OF MOTOR

9. Warranty and Service

Limited Warranty:

ROLA-CHEM warrants the original purchaser that this unit is free from manufacturing defects in material and workmanship from the date of the original purchase for one (1) year.

If this unit fails within the one (1) year period, it will be repaired or replaced (ROLA-CHEM's option) at no charge, when returned to ROLA-CHEM with proof of purchase receipt. This warranty does not apply to any product damage caused by improper use, accident, misuse, improper line voltage, fire, flood, lightning, earthquake, other acts of nature, or if product was altered or opened by anyone other than qualified ROLA-CHEM personnel.

All expendable items (tubing, etc.) are not covered under this warranty.

ROLA-CHEM, under no circumstances, shall be liable for any consequential damages directly or indirectly caused by this unit. Please observe all rules and regulations required by state and local regulations, building codes, health codes, OSHA, etc.

Service Procedure: For operation assistance in the United States please call: (800) 549-4473, Monday through Friday 8:00 am-5:00 pm Central Time or email: info@rola-chem.com. Have model number and serial number available.

ROLA-CHEM has specialized knowledge and equipment to test and diagnose your product. Contact our service personnel as noted above for assistance. If you are directed to ship the product to ROLA-CHEM and given an RGA#, please note RGA# on the package and ship freight pre-paid to:

ROLA-CHEM CORPORATION
5858 Centerville Road
St. Paul, MN 55127-6804

www.rola-chem.com