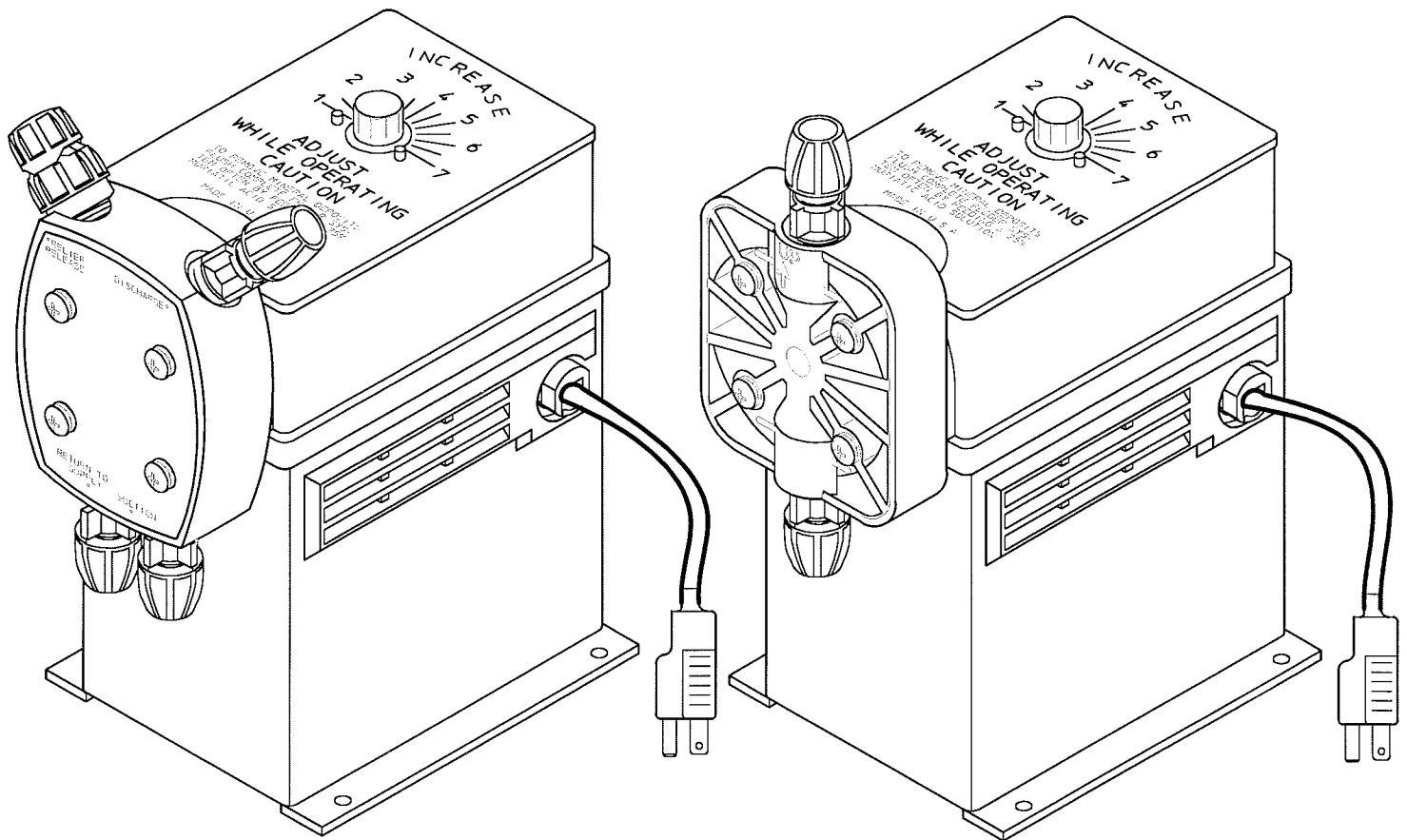


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# STINGRAY SERIES

## Installation, Operation and Maintenance Manual

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**CHEMICAL SOLUTION FEED PUMPS**

**READ ALL WARNINGS CAREFULLY BEFORE INSTALLING PUMP**

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# Stingray Series Chemical Solution Feed Pumps

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### **DANGER**

**When using chemical feed pumps, basic safety precautions should always be followed to reduce risk of fire, electrical shock, and Personal injury. Failure to follow these instructions could result in DEATH or SERIOUS INJURY.**

## SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS PRIOR TO USE

- \*\*\*  **DANGER** : Secure chemicals & metering pumps, making them inaccessible to children & pets.
- \*\*\* **DO NOT PUMP FLAMMABLE LIQUIDS.**
- \*\*\* To reduce the risk of electrical shock before maintenance, repair, or moving pump-disconnect power.
- \*\*\* Do not cut the plug or ground lug off the electrical cord. Consult a licensed electrician for proper installation.
- \*\*  **WARNING** : Always wear protective clothing, including gloves and safety eye protection, when working on or near chemical metering pumps, consult chemical manufacture for protective equipment recommendations.
- \*\* Inspect tubing regularly for cracking or deterioration and replace as necessary. **(Always wear protective clothing and safety eye protection when inspecting tubing.)**
- \*\* If the pump is exposed to direct sunlight, use a U.V. resistant tubing.
- \*\* Follow directions and warnings provided with the chemical from the chemical manufacturer. The user is responsible for determining the chemical compatibility with the chemical feed pump.
- \*\* Make sure the voltage on the pump name tag matches the installation voltage.
- \*\* Consult with local health officials and qualified water conditioning specialists when treating potable water.
- \*\* Always depressurize system and drain the chemical prior to installation or maintenance.
- \*\* If the injection point is lower than the chemical tank and pump, install an antisiphon valve.
- \*\* **DO NOT MODIFY PUMP**, as this poses a potentially dangerous situation and voids the warranty.
- \*  **CAUTION** : All pumps are factory tested with water. Remove tubing and thoroughly dry if the chemical being pumped will react with water(for example: sulfuric acid).
- \* Only **finger** tighten plastic connections **(Do not use a wrench)**.
- \* Consult licensed plumber and electrician before installation to be sure to conform to local codes.
- \* **NOTE:** For accurate volume output, the pump **must be calibrated** under **all** operating conditions.

## INTRODUCTION

The Stingray Series are diaphragm-type metering pumps. A fluid is pumped from a chemical storage tank to the point of injection by the pulsing action of the diaphragm. The three check valves (top and bottom of pump head, and strainer assembly) keep the fluid flowing toward the point of discharge. To insure the solution being pumped can only go forward, it is important that all check valves provide a positive, non-leaking back flow prevention.

The wetted end (those parts that contact the solution being pumped) is constructed of PVC, Teflon, Viton and polyethylene; resistant to handle most chemicals. **CHECK WITH YOUR CHEMICAL SUPPLIER FOR COMPATIBILITY WITH THE WETTED END MATERIALS PRIOR TO PUMPING.**

## MANUFACTURER'S PRODUCT WARRANTY

The manufacturer warrants its equipment of its manufacture to be free of defects in material or workmanship. Liability under this policy extends for eighteen (18) months from the date of purchase or (1) year from date of installation or whichever comes first. The manufacturer's liability is limited to repair or replacement of any device or part which is returned, prepaid to the factory and which is proven defective upon examination. This warranty does not include installation or repair cost and in no event shall the manufacturer's liability exceed its selling price of such part.

The manufacturer disclaims all liability for damage to its products through improper installation, maintenance, use or attempts to operate such products beyond their functional capacity, intentionally or otherwise, or any unauthorized repair. Replaceable elastomeric parts are expendable and are not covered by any warranty either expressed or implied. The manufacturer is not responsible for consequential or other damages, injuries or expense incurred through use of its products.

The above warranty is in lieu of any other warranty, either expressed or implied. The manufacturer makes no warranty of fitness or merchantability. No agent of ours is authorized to make any warranty other than the above.

## UNPACKING THE PUMP

Check all equipment for completeness against the order and for any evidence of shipping damage. Shortages or damages should be reported immediately to the carrier and to the seller of the equipment. The carton should contain (See Figure "A"): METERING PUMP, STIFF WHITE DISCHARGE AND FLEXIBLE CLEAR SUCTION TUBING, FOOT VALVE/STRAINER AS'Y. WITH TUBE WEIGHT, AUTO CLEAN INJECTION VALVE AS'Y., ONE INSTRUCTION BOOK, that you are now reading.

Each Stingray series chemical feeder has been tested to meet prescribed specifications and certain Safety standards. However, a few precautionary notes should be adhered to at all times. **THOROUGHLY READ ALL CAUTIONS PRIOR TO INSTALLING METERING PUMP.**

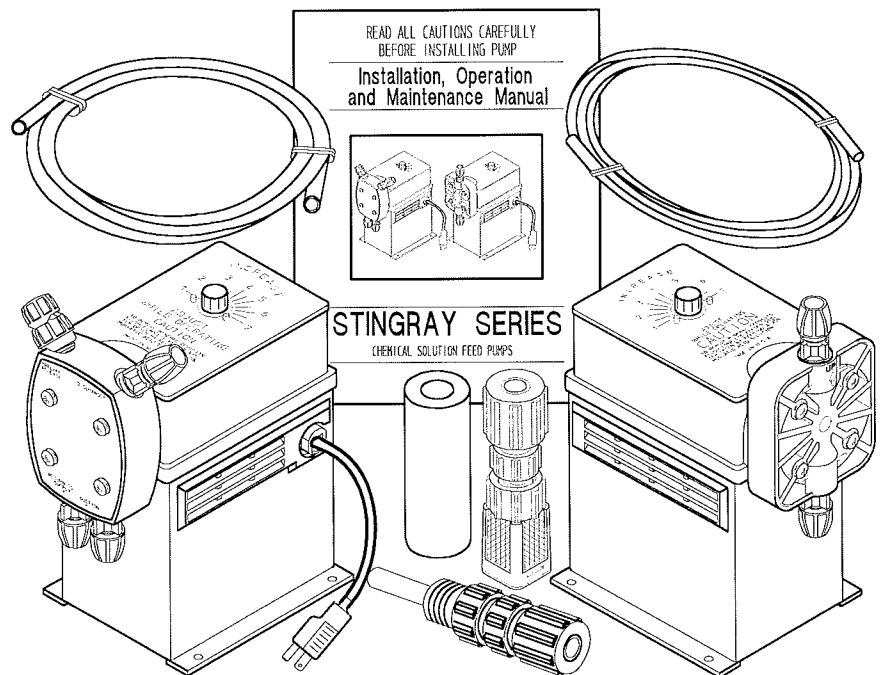


Figure "A"

# INSTALLATION

## Selecting a Location

When determining where to locate the chemical feeder, all of the following should be considered: the proper electrical power source should be closely available. See the data plate, on the feeder for requirements. There should be adequate ventilation to exhaust chemical fumes and for cooling of the motor. The location should be free of abrasive dust and dirt that could collect on or within the feeder, or in the chemical container. Locate for ease of accessibility when refilling chemical container and for maintainance. All chemical carrying tubing should be kept at a minimum length. Locate where least susceptible to accidental damage.

**⚠ CAUTION** : BE SURE SYSTEM PRESSURE DOES NOT EXCEED THE CHEMICAL FEEDER RATING.

**⚠ WARNING** : PROTECT TUBING CARRYING CHEMICAL FROM SUNLIGHT. PROTECTIVE BLACK DISCHARGE TUBING IS AVAILABLE - CONSULT FACTORY OR DISTRIBUTOR. FOR OUTDOOR INSTALLATIONS, PROTECT PUMP AND TUBING FROM WEATHER. LOCATE TUBING IN AN AREA LEAST SUSCEPTIBLE TO DAMAGE FROM DANGEROUS CHEMICALS DUE TO LEAKS THAT COULD DEVELOP.

**⚠ WARNING** : PROTECT THE PUMP AND CHEMICALS FROM FREEZING TEMPERATURES.

## WIRING

Electrical connections: the voltage, frequency and amperage requirements are listed on the feeder data plate. All connections must be made in accordance with local electrical wiring codes. Consult a qualified electrician for all external wiring. The chemical feeder can be connected in the following manners:

**MANUAL OPERATION:** The feeder power cord is equipped with the proper plug for the required voltage. Plug the unit into the nearest outlet.

**SIMULTANEOUS OPERATION WITH ANOTHER PUMP OR SYSTEM:** Connect the chemical feeder into an outlet CONTROLLED BY the other pump or systems electrical circuits.

**CONTROL BY PERCENTAGE TIMER:** Plug the chemical feeder electrical cord into outlet on timer. **⚠ CAUTION** : BE SURE CHEMICAL FEEDER IS PROPERLY GROUNDED TO ASSURE SAFE OPERATION.

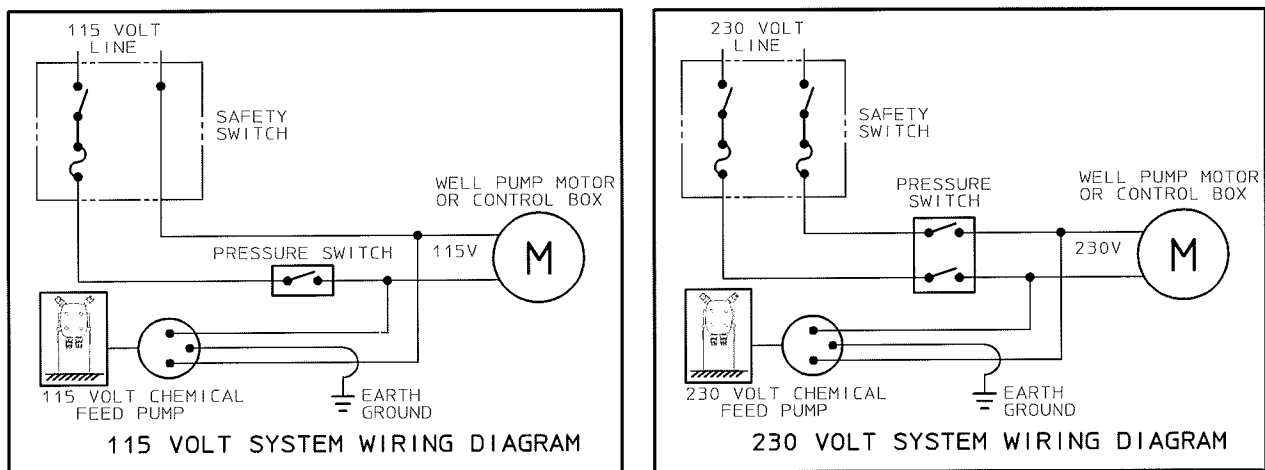


Figure "B"

## MOUNTING

Typical mounting arrangements are shown in Figure-“D1” and “D2”.

**Important: Injection point must be higher than the top of the solution supply tank to prohibit gravity feeding, unless suitable back pressure is always present at the injection point.**

1. For wall or shelf mounting, refer to Figure-“D1”. Connect suction tubing to suction valve of chemical Suction valve is located on the bottom of the head. Tubing should be long enough so that the foot valve/strainer assembly hangs about 1-2in.(2-5cm) above the bottom of chemical tank. To keep chemical from being contaminated, the tank should have a cover.
2. Flooded suction mounting(installing the pump at the base of the chemical storage tank) Figure-“D2” is the most trouble free type of the installation and is recommended for very low output requirements. Since the Suction tubing is filled with chemical, priming is accomplished quickly and the chance of losing prime is reduced.

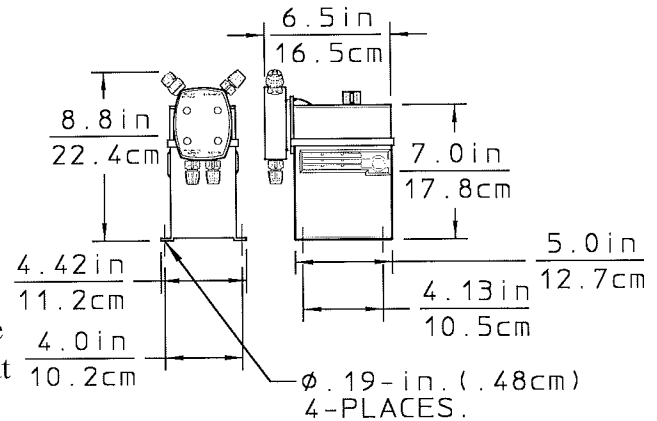


Figure "C"

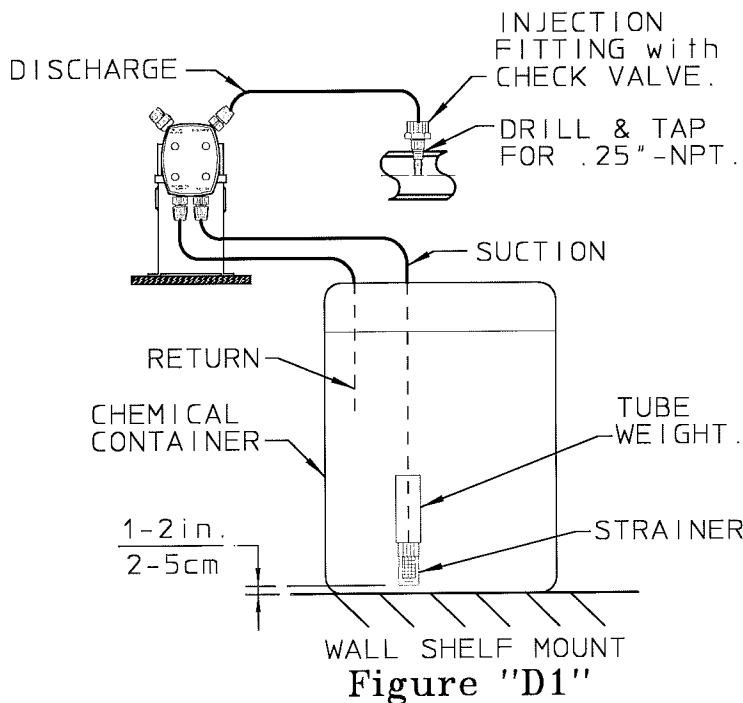


Figure "D1"

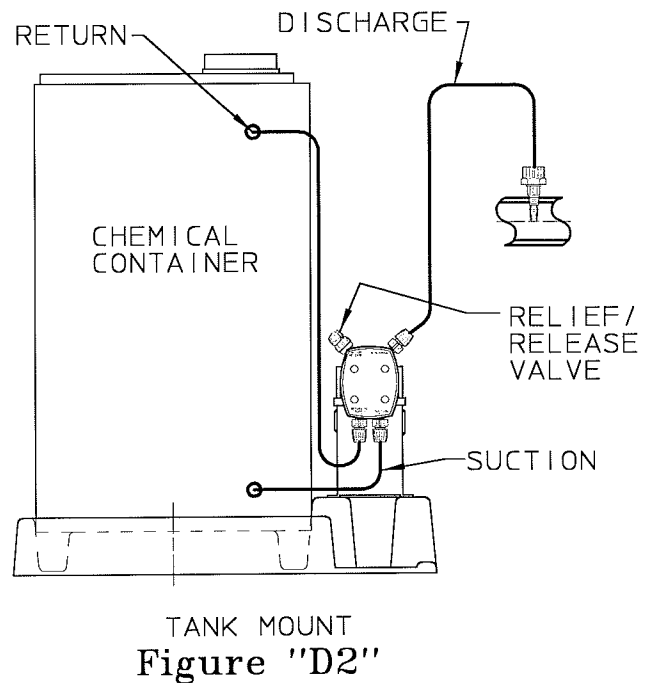


Figure "D2"

Pumps carrying the “ETL” sanitation(tested to NSF standard-50) marks are listed for swimming pools, spas and hot tubs, and when proper materials are selected are capable of handling but not limited to the following chemical solutions:

- |                            |                        |
|----------------------------|------------------------|
| 12% ALUMINUM SULPHATE,     | 5% SODIUM CARBONATE,   |
| 2 % CALCIUM HYPOCHLORITE,  | 10% SODIUM HYDROXIDE,  |
| 12.5% SODIUM HYPOCHLORITE, | 10% HYDROCHLORIC ACID. |

## PIPING

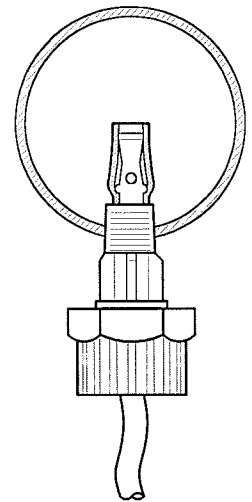
1. Place the chemical feeder in the installation location on a suitable flat surface. **THE PUMP HEAD MUST BE IN A FULLY UPRIGHT POSITION.**
2. Referring to the installation diagram, attach the foot valve strainer to the length of tubing provided. To attach, remove compression nut from strainer and slide weight and nut over tubing. Immerse end of tubing into warm water. This will allow it to accept the tapered form of the fitting. Slide tubing on to the strainer and secure with the compression nut. On socket type strainer, fully insert end of tubing into strainer socket.
3. Run tubing from the foot valve strainer to the feeder "SUCTION" fitting. Cut tubing at the length needed to hold foot valve strainer off of bottom of chemical tank 1-2in.(2-5cm) as shown. Connect tubing to feeder using same procedure as in step #2.
4. On pumps with three port heads, cut length of tubing long enough to reach from feeder "RETURN TO SUPPLY" fitting to inside the chemical tank so that it cannot accidentally fall out. Connect tubing to feeder using same procedure as in step #2.

**⚠ CAUTION** : REMOVE PRESSURE FROM THE SYSTEM BEFORE INSTALLING THE INJECTION FITTING.

5. Install the auto-clean injection point fitting: taking into consideration the length of the remaining, select the location for the injection fitting. DO NOT install in "dead ended" pipes or in deeply recessed tees. The tip of the injection fitting must not extend past the center line of the pipe see Figure 'D'. The injection point fitting has .25in.-NPT threads. If a like fitting is not available, drill a .31in(7.8mm)-diameter hole and carefully thread with a .25in.-N.P.T. tap. DO NOT TAP TOO DEEPLY. Install the injection fitting using a PVC thread sealant approved for potable water. **⚠ CAUTION** : DO NOT REMOVE THE PLASTIC SLEEVE FROM THE TIP OF THE INJECTION FITTING. IT IS A WORKING PART.

USE AN ANTI-SIPHON VALVE IN THE DISCHARGE LINE whenever the fluid pressure in the discharge line is below atmospheric pressure. This can occur if the injection point is on the suction side of a water pump or against a "negative" head such as when feeding down into a well.

6. Run tubing from the feeder "DISCHARGE" fitting to the injection point fitting. To connect tubing to the injection fitting, loosen the nut a few turns. With the end of the tubing cut square, push into the fitting until it bottoms out. Tighten the nut firmly, **BY HAND ONLY.**
7. Support all tubing in some manner so that the weight of chemical in tubing cannot cause it to kink or bend.
8. **TO PRIME PUMPS WITH 3-PORT HEADS:** Turn and relief -release valve knob clockwise to open (raised) position. Plug in the feeder power cord. Turn the adjustment knob to setting 7. Chemical will be drawn into the head and returned to the chemical tank via the return line. Turn the relief-release valve knob clockwise to the closed(lower) position to close. The feeder is now primed and will feed to the discharge line.



**FIGURE "E"**

**TO PRIME PUMPS WITH 2-PORT HEADS:** plug in the feeder power cord, turn the adjustment knob to setting 7.

**WET PRIME:** If the pump does not readily prime it may be necessary to wet the valves feeding a liquid into the suction valve and out of the discharge valve. If the water is compatible with the chemical being fed, water may be used to wet the valve. If water can't be used, only a safe-to-handle chemical should be used for wetting valves. Wetting the valves may be accomplished by using a suction line filled with liquid, holding the end of the line 3-4ft.(.9-1.2m) above the pump and turning the pump "ON" until a constant stream of liquid flows from the discharge valve.

**CAUTION** : Dangerous chemicals should only be handled by a qualified technician.

9. **FEED RATE ADJUSTMENT:** refer to the feed rate charts on the back page to determine the feed rate setting required. To adjust the rate (BE SURE FEEDER IS OPERATING) simply turn the adjustment knob to the required setting.

**CONTROL:** The feed rate is adjustable and is set with the control knob located on top of the feeder, see Figure-"F".

**WARNING** : NEVER ATTEMPT TO TURN THE KNOB WHEN THE FEEDER IS NOT OPERATING OR DAMAGE WILL RESULT.

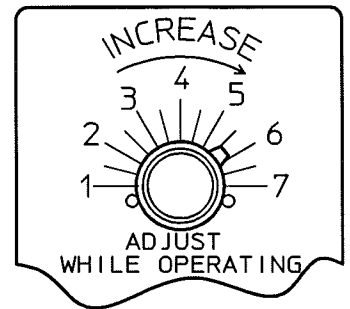


FIGURE "F"

## MAINTENANCE

### DRIVE MECHANISM INSPECTION, REPAIRS AND LUBRICATION:

Disconnect the electrical power cord at the wall outlet and depressurize discharge line. Loosen set screw in feed rate adjustment knob and remove knob, release lock tab at rear of top cover by pushing inward and remove the top cover. Check drive mechanism for binding, loose, worn, missing, deformed or broken parts. Repair or replace as necessary. If any parts require replacement, the feed rate control must be readjusted as follows:

1. Loosen the adjustment plate holding screw.
2. Plug in the power cord and operate motor until the blockdrive is in the extreme rear position. Disconnect power cord.
3. Rotate the shaft assembly until the flat position on the cam is bearing on the drive plate.
4. Tighten the adjustment plate holding screw while holding the flat of the cam against the drive plate.

Semi-annually, the entire mechanism should be lubricated with premium grease. Clean all surfaces showing signs of corrosion.

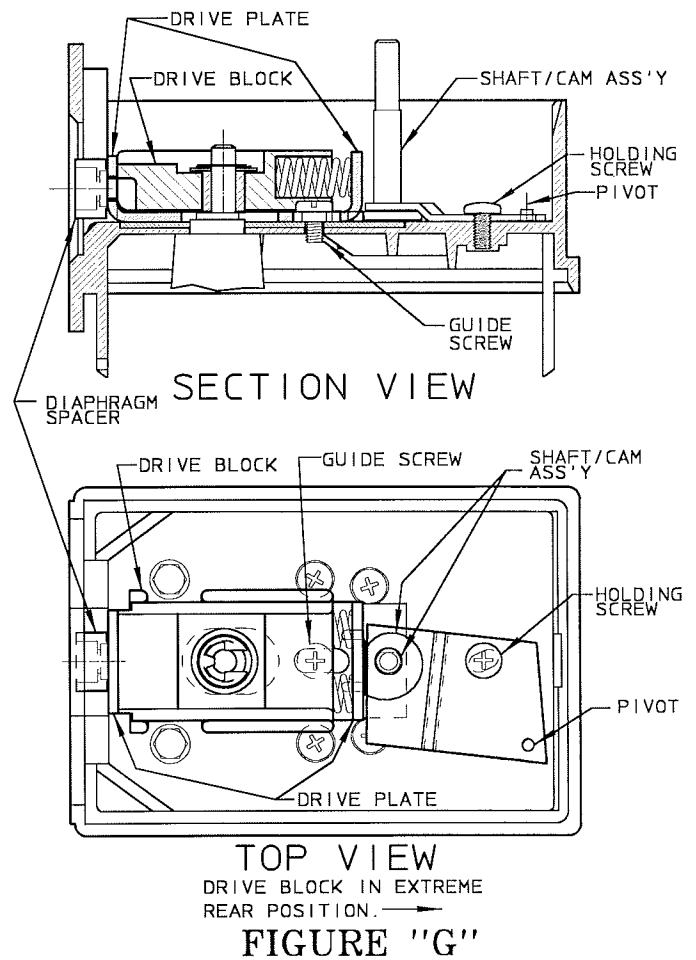


FIGURE "G"



**LUBRICATING OF THE GEARMOTOR:** Semi-annually, place a few drops of light oil on the rear motor bearing (located behind fan). Unplug the power cord at the wall outlet and depressurize discharge line, then remove the feeder base to obtain access to the gear motor. The motor gear box is permanently lubricated.

**DIAPHRAGM INSPECTION AND REPLACEMENT:** Before performing this maintenance, be sure to flush the head. Unplug the feeder power cord. Remove four screws securing feeder head. Inspect the diaphragm for cracking, softening and blistering. Unscrew and discard diaphragm (and the back-up gasket) if worn or deteriorated.

Lightly lubricate the stud on the new diaphragm. Thread diaphragm into drive plate until spacer touches the drive plate. Continue turning diaphragm clockwise until the four holes align with screw holes on feeder. Lightly lubricate four head screws and re-install the head. Tighten screws using 1-2-3-4 tightening pattern.

**ELECTRICAL REPAIR**(motor does not operate): First check to see if the power cord is disconnected, and the correct voltage is supplied to the pump.

**⚠ CAUTION** : **DISCONNECT ELECTRICAL CORD WHEN MAKING THE FOLLOWING CHECKS. Be sure to flush the head of chemicals if tubing must be disconnected.**

Remove the feeder base and rotate the gearmotor by hand to be sure binding motor parts are not giving false indication of electrical failure. Using an ohmmeter check continuity across the cord set or input leads. The ohmmeter reading must be between 4-100 ohms. If the reading is higher, check for an open wire or high resistance in the cord set or input leads, wire nut connections and motor coil should give a readable resistance (4-100 ohms). If the reading is lower, check for short circuits in all components.

## PERIODIC MAINTENANCE

**MISCELLANEOUS MAINTENANCE:** Frequent lime fouling of tubing, fitting, head and injection point may occur when using some chemicals. With the feeder operating, use the following procedure to clean a lime-fouled system.

1. Dilute one(1) ounce of muriatic acid in seven(7) ounces of water.
2. Remove the foot strainer from the storage tank.
3. Feed a few tablespoonfuls of plain water through the feeder. Then feed all of the acid solution.
4. Feed a few more tablespoons of plain water and replace the foot strainer into the storage tank.
5. Open faucet in the water line closest to the injection point to dilute or discharge acid in the water system.

**⚠ CAUTION** : If cartridge valves are removed for cleaning or replacement, the arrow on the valve must point in the direction of fluid flow (see Figure-“D1”) Return and discharge valves are not the same as the suction valve. Clear or transparent plastic tubing should be replaced at least every three months if exposed to the sun. Replace tubing yearly if feeder is installed indoors.

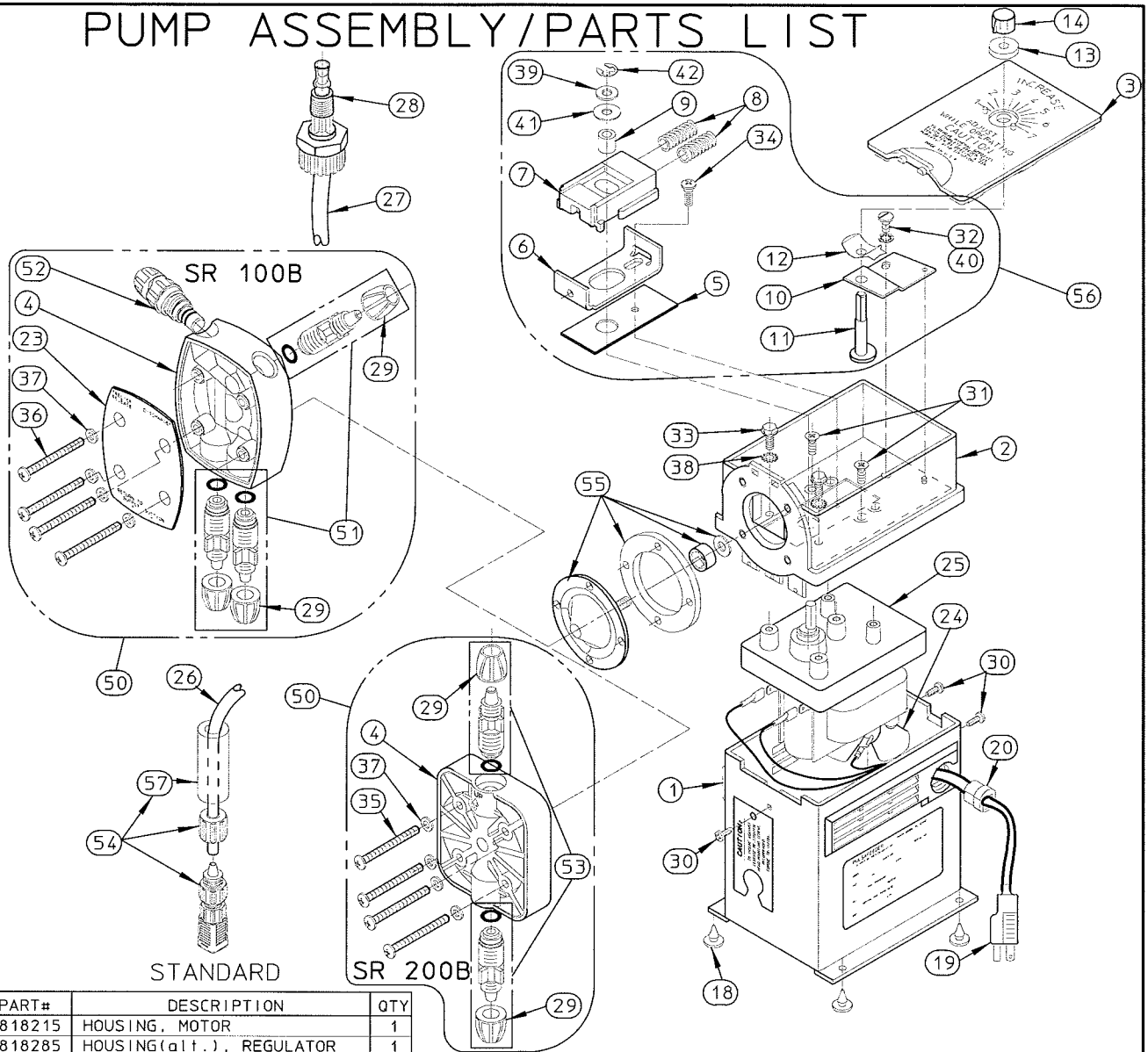
Inspect the chemical system weekly for any signs of leakage. If leaking occurs at tubing connections, tighten fitting compression nut finger-tight. If leakage continues, remove pressure from the system, disconnect tubing, trim ends square, and reconnect.

To avoid excessive precipitation in valves, prepare or dilute high pH solutions (sodium hypochlorite, soda ash, etc.), with either de-ionized, distilled, or soft water, in that order of preference.

Precipitates or other chemical reactions cause injection points to clog. If the type of chemical being fed



# PUMP ASSEMBLY/PARTS LIST



ITEM	PART#	DESCRIPTION	QTY
1	U0818215	HOUSING, MOTOR	1
2	U0818285	HOUSING(alt.), REGULATOR	1
3	U0818227	HOUSING, COVER REGULATOR	1
4	U0812318	HEAD, SR-100B	1
	U0811279	HEAD, SR-200B	1
5	U0818257	PLATE, WEAR SR	1
6	U0818148	DRIVE, PLATE	1
7	U0818143	BLOCK, DRIVE	1
8	U0812915	SPRING, COMPRESSION	2
9	U0812814	BEARING, NEEDLE	1
10	U0818339	PLATE, ADJUSTMENT	1
11	U0818340	CAM SHAFT AS'Y	1
12	U0810545	SPRING, CLUTCH	1
13	U0818258	BUSHING, KNOB CNTRL.SHAFT	1
14	U0818256	KNOB, CONTROL	1
18	U0818379	FOOT, RUBBER	4
19	24820	CORD AS'Y, 115v/6ft/18-3 PWR	1
	24821	CORD AS'Y, 230v/6ft/18-3 PWR	1
20	L9900700-000	STRAIN RELIEF	1
23	U0811861	COVER, SR-100B	1
24	U0818564	FAN, (5/10-rpm MOTORS)	1
	U0818565	FAN, (25, 50 & 75-rpm MOTORS)	1
25	U0818406	MOTOR, 5-rpm/120v/60Hz	1
	U0818407	MOTOR, 5-rpm/240v/50-60Hz	1
	U0818408	MOTOR, 10-rpm/120v/60Hz	1
	U0818409	MOTOR, 10-rpm/240v/50-60Hz	1
	U0818410	MOTOR, 25-rpm/120v/60Hz	1
	U0818411	MOTOR, 25-rpm/240v/50-60Hz	1
	U0818412	MOTOR, 50-rpm/120v/60Hz	1
	U0818413	MOTOR, 50-rpm/240v/50-60Hz	1
	U0818414	MOTOR, 75-rpm/120v/60Hz	1
	U0818415	MOTOR, 75-rpm/240v/50-60Hz	1

ITEM	PART#	DESCRIPTION	QTY
26	J41424	TUBING(PE), SUCT/RETURN 4-ft	1
27	41403	TUBING(PE), DISCHARGE 8-ft.	1
28	U8800606	INJECTION(PVC) FITTING AS'Y	1
29	U0814211	NUT(PVC-WHT), COMPRESSION	2-3
30	U0900857	SCREW, #6-20 x .38 PHP	3
31	U0818317	SCREW, #10-24 x .5 FHP	2
32	U0436748	SCREW, #10-32 x .38 PHS	1
33	U9006056	SCREW, #10-32 x .5 HWH	2
34	U0817888	SCREW, #10-24 x .56 SHLD PHP	1
35	U0813501	SCREW, #10-32 x 1.50 PHP	4
36	U0810036	SCREW, #10-32 x 1.75 PHP	4
37	L9801300-188	WASHER, #10-FLAT	4
38	U0811297	WASHER, #10-LOCK EXT.	2
39	U0812896	WASHER(FIBER), .261"	2
40	U0813533	WASHER, #10-LOCK	1
41	U0818376	WASHER, .25in.-FLAT	1
42	U0900173	RING, RETAINING	1
50	U8800452	HEAD AS'Y SR-100B(VITON)	1
	U8800703	HEAD AS'Y SR-200B(VITON)	1
51	U8800554	.38"-TUBE VALVE KIT VITON SR 100B	1
52	U8800525	PLUNGER KIT(VITON), SR-100B	1
53	U8800704	.38"-TUBE VALVE KIT VITON SR 200B	1
54	U8800456*	STRAINER .38"-TUBE VITON(350u)	1
55	U8800470	DIAPHRAGM KIT	1
56	U8800656	DRIVE BLOCK KIT	1
57	L9906700-000	STRAINER WEIGHT	REF

\* = INCLUDED WEIGHT (ITEM #57).

U0818282  
29-G-04

# FEED RATE CHART

EACH SETTING PROVIDES A DIFFERENT 'GALLON PER DAY' (GPD) CHEMICAL OUTPUT, DEPENDING ON THE PRESSURE OF THE SYSTEM BEING FED. THIS CHART SHOWS 'GPD' OUTPUT BASED ON FEEDING A CHEMICAL WITH THE VISCOSITY OF ONE(1) CENTIPOISE. REFERENCE INFO: 1-GALLON = 3.758-LITERS.

		FEED RATE SETTING												
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
PRESSURE (P.S.I.)	0	3.5	4.0	4.5	4.9	5.3	5.7	6.1	6.5	6.9	7.2	7.5	7.8	8.0
	25	3.0	3.5	3.9	4.3	4.7	5.1	5.5	5.9	6.3	6.7	7.0	7.3	7.5
	50	2.6	3.0	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.5	6.8	7.0
	75	2.3	2.7	3.1	3.5	3.9	4.3	4.7	5.1	5.5	5.8	6.1	6.3	6.5
	100	2.0	2.4	2.8	3.2	3.6	4.0	4.4	4.8	5.2	5.5	5.8	6.0	6.2
SR-110 & SR-210	0	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0
	25	4.4	5.0	5.6	6.2	6.8	7.3	7.8	8.3	8.8	9.3	9.8	10.2	10.5
	50	4.0	4.6	5.2	5.8	6.4	7.0	7.5	8.0	8.5	9.0	9.4	9.7	9.9
	75	3.0	3.6	4.2	4.8	5.4	5.9	6.4	6.9	7.4	7.9	8.4	8.8	9.0
	100	2.6	3.2	3.8	4.4	5.0	5.5	6.0	6.5	7.0	7.4	7.7	8.0	8.2
SR-125 & SR-225	0	12.5	15.0	18.0	19.0	21.0	22.0	23.5	25.0	26.5	27.5	28.5	29.5	30.0
	25	11.0	13.0	15.0	17.0	19.0	21.0	22.5	24.0	25.5	26.5	27.0	28.5	29.0
	50	9.5	11.0	12.5	14.0	15.5	17.5	19.0	21.0	22.5	24.0	25.0	26.0	27.0
	75	8.0	9.0	10.0	12.0	14.0	15.5	17.5	19.0	20.5	21.5	23.0	24.0	25.0
	100	6.0	7.5	9.0	10.0	12.0	13.0	15.0	16.5	18.5	19.5	21.0	22.0	23.0
SR-150 & SR-250	0	30.0	33.0	36.0	39.5	43.0	46.0	49.5	53.0	56.0	57.5	59.0	59.5	60.0
	25	27.0	30.5	34.0	37.5	41.0	44.0	47.0	50.0	53.0	55.0	57.0	58.0	59.0
	50	25.0	28.5	32.0	35.0	38.0	41.0	44.0	46.5	49.0	51.5	54.0	55.0	56.0
	75	22.0	25.5	29.0	32.0	35.0	37.5	40.5	42.5	45.0	47.5	50.0	51.5	53.0
	100	16.0	18.5	21.5	24.5	27.0	30.0	33.0	36.0	39.0	41.5	44.0	46.5	49.0
SR-175 & SR-275	0	35.0	44.0	52.0	59.0	64.0	69.5	72.5	77.0	81.0	84.5	88.0	89.5	90.0
	20	33.0	39.0	44.0	49.0	54.0	59.0	64.0	68.5	73.0	77.0	81.0	82.5	84.0
	40	29.5	35.0	39.0	44.0	49.0	53.5	58.0	62.0	66.0	70.0	74.0	75.5	77.0
	60	27.0	32.0	37.0	42.0	47.0	51.5	56.0	60.0	64.0	68.0	72.0	73.5	75.0

NOTES: 1. PUMP IS RATED AT MAXIMUM OUTPUT AT 0-P.S.I..  
 2. FOR ACCURATE VOLUME OUTPUT, PUMP MUST BE CALIBRATED UNDER ALL OPERATING CONDITIONS.

U0818282,  
REV: G04.

# STINGRAY, ELECTRO MECHANICAL TIMER INSTRUCTION SHEET 24-Hour or 7-Day Models

READ ALL WARNINGS & CAUTIONS CAREFULLY BEFORE  
INSTALLING PUMP

Consult Main Manual for Specific Model Installation and Operation Sections

## SETTING THE TIMER

Connect the feeder cord set to a compatible electrical source.



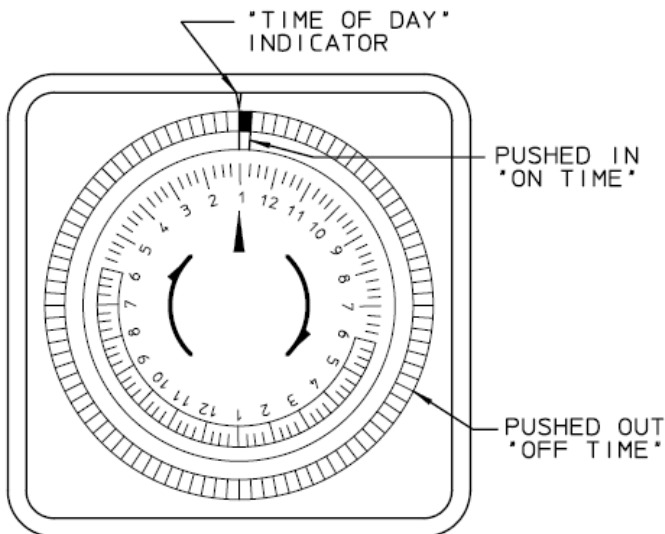
PUMP MAY FEED IF ANY TIMER TABS ARE IN THEIR INWARD POSITION.

### 24-HOUR TIMER

1. Rotate dial clockwise until correct "time of day" is aligned with time of day indicator.
2. 24-hour program provides 96-settings in 15-minute increments.
3. Push one tab in towards the center for each 15-minute "on" time.
4. Divide G.P.D. (Gallons per Day) rating of pump by 96 to determine feed for each 15-minutes of operation. Use adjustment knob and/or dilute chemical if less feed is required.

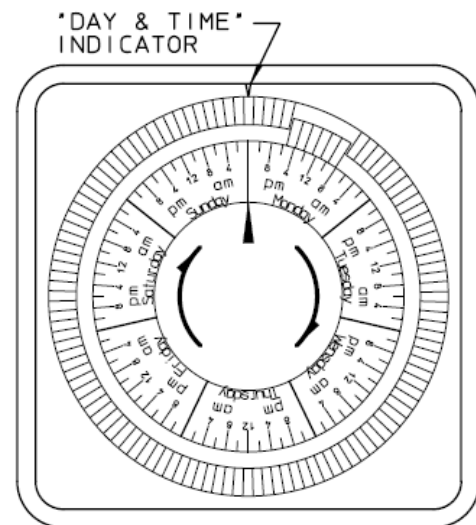
### 7-DAY TIMER

1. Rotate dial clockwise until correct "day and time" is aligned with time indicator.
2. 7-day program provides 84-settings in 2-hour increments.
3. Push one tab in towards the center for each 2-hour "on" time.
4. Divide G.P.D. rating of pump by 12 to determine feed for each 2-hours of operation. Use adjustment knob and/or dilute chemical if less feed is required.



24-HOUR MODEL TIMER

NOTE SOME MODELS HAVE HOURS  
MARKED 1 thru 24.

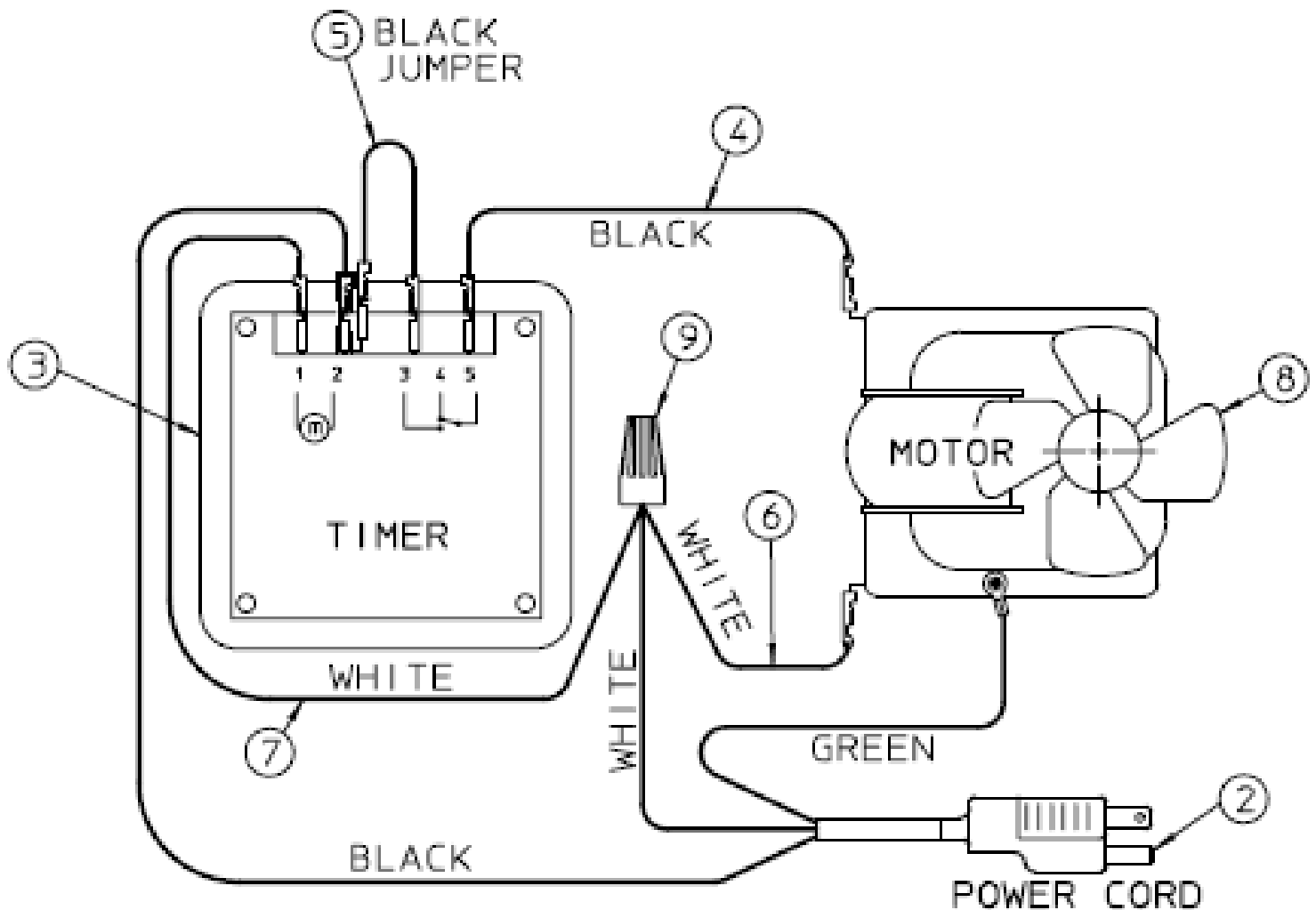


7-DAY MODEL TIMER

**TO PRIME PUMP**, Open release valve on pump head if available, push tabs adjacent to the time indicator towards the center, then set adjustment knob to highest feed position. After the pump is primed, reset the adjustment knob and release valve then timer tabs

# WIRING DIAGRAM

## STINGRAY w/ TIMER



ADDENDUM PARTS LIST for STINGRAY w/ TIMER			
ITEM	PART #	DESCRIPTION	QTY
* 1	U0818390	HOUSING, ALT. MOTOR	1
2	U0818559	CORD, POWER	1
3	U0817952	TIMER, 24-HOUR 120vAC	1
	U0818385	TIMER, 7-DAY 120vAC	
4	U0819189	LEAD ASY, 7'-BLACK	1
5	U0818388	LEAD ASY, 3'-JUMPER BLACK	1
6	U0818387	LEAD ASY, 6'-WHITE	1
7	U0818556	LEAD ASY, 3.5'-WHITE	1
8	U0818568	FAN, MOTOR	1
9	U0501653	NUT, SOLDERLESS WIRE	1

\* = NOT SHOWN.