DRAMM

# COLDFOGGER™


# Owners Manual

## CF20-150

CF2--150MAN1
Printed in the U.S.A. Revised: 6/2011

# DRAMM COLDFOGGER™

Model: CF20-150
120 volt 60 HZ
10 AMP Single-Phase

_____
Serial Number

## Test Run & Final Inspection

_____ Date Passed Final Systems Test

By: _____

## Shipped To:

_____

_____

_____

_____

## Limited Warranty

Dramm Corporation warrants to the extent of the purchase price, that the Coldfogger will be free from defects in materials and workmanship to the original purchaser for a period of six months. Parts subject to wear are not covered under this limited warranty. Defects or damages due to the misuse, non-observance of safety standards, or non-observance of EPA chemical guidelines are not covered under this limited warranty. Please read and follow the instructions and heed warnings stated in the operating manual and on the Coldfogger.

Dramm Corporation makes no other further warranty, expressed or implied, and all other or further warranties, including any warranties of merchantability or fitness for a particular purpose are expressly excluded.

In no event shall Dramm Corporation be liable for loss of product, profit or any other special, incidental or consequential damages including, but not limited to, plant damage, property or persons.

This warranty begins on the date of original purchase. If warranty service is required, the equipment must be sent prepaid to:

Coldfogger Service
Dramm Corporation
2000 North 18th Street
Manitowoc, WI 54220

Dramm Corporation makes no warranty, expressed or implied, in regard to the efficacy of any pesticide or other chemical which may be applied using the Coldfogger.

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# WARNING

The Dramm CF20-150 Coldfogger operates at 2800 - 3000 PSI and applies toxic chemicals. Extreme caution must be used! Read all warnings. Serious injury or death can occur from misuse.

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• Do not operate machine without reading all warnings and instructions.

• Owners or Managers: It is your responsibility to inform and instruct any employee who uses this machine in regards to safety and operational procedures.

**When Spraying:**

• Do not place your hand or fingers into the spray pattern – vaccination or injection of toxic chemicals will occur.

• Never aim the spray at yourself or any person.

• Always increase the pressure slowly.

• Always decrease the pressure before shutdown.

• Always release (squeeze the spray gun trigger) the pressure on the spray gun before removing or before shutdown.

• The spray hose is a high pressure reinforced hose with special couplings. Do not bend the hose or drag it over sharp objects. If a leak develops do not use the hose or try to repair it. Send damaged hoses to the Dramm Corporation for inspection. No warranty will cover a hose if it has been bent, kinked, abused or dragged over sharp objects.

• When mixing and spraying, always wear protective clothing - Full face mask, spray suit, cap, hood, boots, and gloves.

• If machine is used for insecticide, fungicide, or disinfectants - **never** use it for vaccines or any other application. If purchased for vaccine application never use it for any other applications.

• Follow all E.P.A. guidelines for applying chemicals, and apply chemicals at the labeled rates.

• Ensure that the pump never exceeds the maximum operating pressure of 3200 PSI.

• Engage the safety lock on the spray gun when not spraying.

• When applying chemicals using the low volume method, (concentrated chemical solution) do not spray directly at plants.

• If injury occurs while spraying, see a doctor immediately with full labels of product being used. Do not treat as a minor injury!

• Check that all electrical connections and chemical piping connections are secure.

• Connect the electrical power cord to a grounded electrical outlet of the appropriate voltage and frequency.

• Keep all electrical connections away from liquids.

• Use only 12 gauge grounded extension cords. (Fifty foot maximum).

• Do not leave chemicals or water in the tank, pump, suction lines, or discharge hose.

• Before servicing, unplug the Coldfogger from the electrical source.

# How Does My Coldfogger Work?

The CF20-150 Coldfogger is designed to apply chemicals in greenhouses, nurseries, poultry barns, livestock barns, and buildings. It operates at an average pressure of 2800-3000 PSI producing a very small particle, 30-40µ (microns) average. It is designed to apply chemicals using the low-volume (LV) principle, but it can also be used to apply chemicals using the high volume (HV) principle. If you use the low volume method, application times will be approximately 10 times faster then under the high volume method. This machine is designed to apply insecticides, fungicides, growth retardants, disinfectants and vaccines. Do not use this machine to apply viscus materials such as shading compounds or paints.

Low Volume Method: The application of chemicals at the labeled rate prescribed for a given area, but diluted into greatly reduced amounts of water or diluents. Low volume application can only be accomplished with special equipment which produces very small spray particles.

High Volume Method: The application of chemicals at rates prescribed on the chemical label, diluted into the specified amount of water. Normally this is "X" ounces of chemical diluted into 100 gallons of water. Equipment which applies chemicals under the high volume principle, generally produce spray particles in the range of 100 to 150µ (microns) in diameter.

The CF20-150 Coldfogger operates from a 120 volt– 60HZ 60HZ single-phase electric motor which drives a hydraulic diaphragm pump. This hydraulic pump is designed to produce pressures up to 3200 PSI.

CAUTION: Do not operate at pressures over 3200 PSI and never force the Pressure Regulator beyond the stop position. The high performance pump produces an average discharge rate of 52 liters (13.6 gallons) per hour. The spray is propelled 20 to 25 feet. The machine is equipped with a 72 liter (20 gallon) tank. When applying 10 liters (2.63 gallons) per 10,000 square feet, you can treat 45,000 square feet in 45 minutes using the low volume method.


The motor has an 8.5 amp self-resetting thermal overload protection cut off. In the event of an overload, voltage drop, or over heating– the motor automatically shuts down. After a period of 3 - 4 minutes the pump can be turned on safely. The 18 foot main power cord is grounded. If you use extension cords, they should be #12 gauge grounded cords– and should not exceed 50 feet.

A high quality hydraulic oil (H32) is used in the machine. It should be changed after the first 100 hours of use. Thereafter it can be changed after every 500 hours of use, or every 6 months. See *Cleaning & Maintenance on page 13*.

A special discharge hose and spray gun have been chosen for the Coldfogger. Do not abuse, bend or drag hose over sharp objects. Do not try to repair discharge hoses or use them when a leak has developed. A filter is built into the gun to help prevent clogging. See *Cleaning & Maintenance on page 13* This should be removed and cleaned after every 10 to 20 hours of use. There is also a special filter built into the chemical tank. The tank and filter should be flushed or rinsed after every use.

# Greenhouse & Nursery Application Procedures

## TREATMENT AREA PRECAUTIONS

A. Secure the treatment area and post hazard signs *before* spraying. No humans or pets should be present.

B. Follow all EPA Guidelines regarding the application of chemicals.

C. Chemicals should only be applied by licensed applicators.

## GREENHOUSE & NURSERY APPLICATIONS

The Dramm Coldfogger produces an average droplet size of 40µ. As explained previously, the Coldfogger uses a reduced volume of water (diluent) to apply chemicals ( this means that the spray is highly concentrated). To apply-spray over and through the crop at distances greater than 7 feet, then down the aisle as you rotate your hand. The Coldfogger uses high pressure to produce small droplets. High spray velocities result, aiding the ability of the spray to rustle the plant canopy and reach the underside of the leaves. The small particles will allow excellent coverage at distances up to 25 feet from the gun. Different plants tolerate this velocity better than others. Use caution when first using the Coldfogger on a new crop. Determine the sensitivity to damage from this velocity before deciding on how closely you may spray the plants.**Do not spray plants to "Run-Off" or "Glisten"** under the low volume method of application. After spraying the plants, no visible residue should be seen on the foliage.

Growth regulator applications should be made at conventional high volume rates to avoid any miscalculations and over-application. Note - when applying B-9 the foliage should be wet.

## APPLICATION PROCEDURES

The Coldfogger is a low-volume applicator. The chemical solution will be highly concentrated and only 5 to 15 liters of solution will treat 10,000 square feet. We recommend a rate of 10 liters per 10,000 square feet (or 1 liter per 1,000 square feet for potted or bedding plants). Use more total solution for cut flowers, tomatoes,

## GREENHOUSE & NURSERY APPLICATIONS cont...

...anything with more plant mass. Similarly, less solution can be used for plugs and seedlings.

The Coldfogger will apply emulsifiable concentrate, wettable powder, and flowable chemical formulations.

## CHEMICAL DILUTION CALCULATION

You will apply chemical at labeled rates per square foot area, but with less water. To find the correct dosage of chemical for 10,000 square feet of treatment area multiply the labeled rate per 100 gallons by 0.4. *Example:*

***16 ounces X 0.4 = 6.4 ounces***

Mix this quantity of chemical into 10 liters of water and apply over 10,000 square feet. For easy reference, use the dilution rate chart on *page 9 fo*r the correct dosage.

Adjust the amounts of chemical and water for the exact amount of area you wish to treat. The example calculations above are for 10,000 square feet. This rate calculation is based on bedding and potted plants. In grower surveys, on average 40 gallons of spray solution was used to treat 10,000 square feet. For different crops this amount may vary greatly. Rose or tomato growers may use as much as 200 - 300 gallons on 10,000 square feet. You may need to adjust your spray solution accordingly.

## MIXING CHEMICALS & FILLING TANK

*FOR 10,000 SQUARE FEET*

Add 5 liters of clear water to the tank and start the agitator. Test your Coldfogger with clear water as described on *page 10*. Mix your chemical into the remaining 5 liters of water and pour through a 40 mesh strainer into the tank.

When using wettable powders make a "lump-free" paste, then slowly dilute it with the remaining 5 liters of water.

# Greenhouse & Nursery Application Procedures continued...

GREENHOUSE & NURSERY APPLICATIONS cont...

SPRAYING/ FOGGING

Position the Coldfogger in the main middle aisle. Proceed to the end of the bench. Begin to spray the crop. Move rapidly back to the Coldfogger while treating benches on both sides of the aisle. *See Figure 1.* The fog will travel 20 to 25 feet. Your walking speed should be adjusted to treat 1,000 square feet in 1 minute or 10,000 square feet in 10 minutes. It facilitates application if an extra person is used to reel up the hose as the applicator moves towards the sprayer.

Remember, *DO NOT* spray the plants too closely and *DO NOT* spray to "RUN OFF" or "GLISTEN".

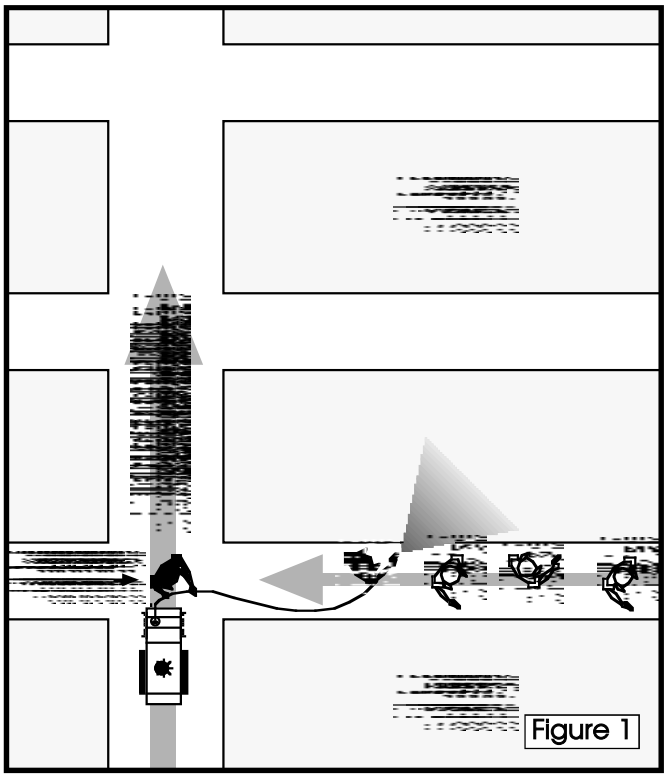


Figure 1

# Other Application Procedures

PEST CONTROL

This application requires direct spraying of target surfaces for only a short time. Walls, cracks, joints and corners can be sprayed directly from a distance of about 10 feet until a moist residue appears on the treatment surface.

VACCINES

Vaccines can be applied using conventional (HIGH VOLUME) rates. Do not spray animals directly. For effective applications– generate a larger spray droplet by using the 0.015" nozzle tip.

DISINFECTION

If the Coldfogger is being used to spray disinfectants, direct application is permitted. Spray directly into wall cracks, joints and in accessible corners until covered with a moist residue. Stand about 10 feet from the target. The larger 0.015" nozzle tip is recommended in order to obtain a moist, heavy spray.

# Coldfogger Dilution Rate Chart

**HOW TO USE THIS CHART: Refer to the selected chemicals labeled rate instructions. Find the rate recommended for 100 gallons of water and match that amount with the number in the left hand column of the chart. Then read across to the right side of the chart to find the proper chemical amount for use in the CF20-150 Coldfogger. If you are unable to make this calculation, please contact the Dramm Corporation at 1-(800)-258-0848 for assistance.**

| USE THIS AMOUNT OF CHEMICAL IN 100 GALLONS OF WATER AT THE LABELED RATE | 10 LITERS OF WATER AND FOG OVER 10,000 SQUARE FEET |
|---|---|
| 1.0 ounces | 0.4 ounces |
| 2.0 ounces | 0.8 ounces |
| 3.0 ounces | 1.2 ounces |
| 4.0 ounces | 1.6 ounces |
| 5.0 ounces | 2.0 ounces |
| 6.0 ounces | 2.4 ounces |
| 7.0 ounces | 2.8 ounces |
| 8.0 ounces | 3.2 ounces |
| 9.0 ounces | 3.6 ounces |
| 10.0 ounces | 4.0 ounces |
| 11.0 ounces | 4.4 ounces |
| 12.0 ounces | 4.8 ounces |
| 13.0 ounces | 5.2 ounces |
| 14.0 ounces | 5.6 ounces |
| 15.0 ounces | 6.0 ounces |
| 16.0 ounces | 6.4 ounces |
| 17.0 ounces | 6.8 ounces |
| 18.0 ounces | 7.2 ounces |
| 19.0 ounces | 7.6 ounces |
| 20.0 ounces | 8.0 ounces |
| 21.0 ounces | 8.4 ounces |
| 22.0 ounces | 8.8 ounces |
| 23.0 ounces | 9.2 ounces |
| 24.0 ounces | 9.6 ounces |
| 25.0 ounces | 10.0 ounces |
| 26.0 ounces | 10.4 ounces |
| 27.0 ounces | 10.8 ounces |
| 28.0 ounces | 11.2 ounces |
| 29.0 ounces | 11.6 ounces |
| 30.0 ounces | 12.0 ounces |
| 31.0 ounces | 12.4 ounces |
| 32.0 ounces | 12.8 ounces |

# Coldfogger Starting Procedures

## STARTING PROCEDURES

1. Plug the Coldfogger into a 120 volt 60 HZ grounded outlet.

2. Turn the power switch to the *AGITATION* position. *See Figure 2.*

3. Turn the Priming Valve counter-clockwise to the zero "0" marking.

4. Turn the Pressure Regulator counter-clockwise to the zero "0" marking.

5. Add clear water and proceed to steps 6 through 11– *testing* the Coldfogger with clear water.

6. Turn power switch to the *PUMP* position. *See Figure 2.*

7. Operate the machine for 2 minutes without pressure. This will vent the hydraulic system.

8. Turn the Pressure Regulator clockwise– this will prime the pump. Run for approximately 2 minutes– until the by-pass hose vibrates and the motor sound changes pitch.

9. Turn the Pressure Regulator counter-clockwise– or back to its' original position zero "0".

10. Close the Priming Valve by turning it clockwise. The unit is now ready to increase pressure.

11. *SLOWLY* turn the Pressure Regulator clockwise until the Pressure Gauge reads 3,000 PSI.

12. Spray with clear water to test the Coldfogger. Add the remaining water and chemical mix.

13. Commence to spray. Remember that the hose and some of the plumbing is filled with clear water from the test procedures. There is approximately 4 liters or 1 gallon to be fogged before the chemical solution is present.

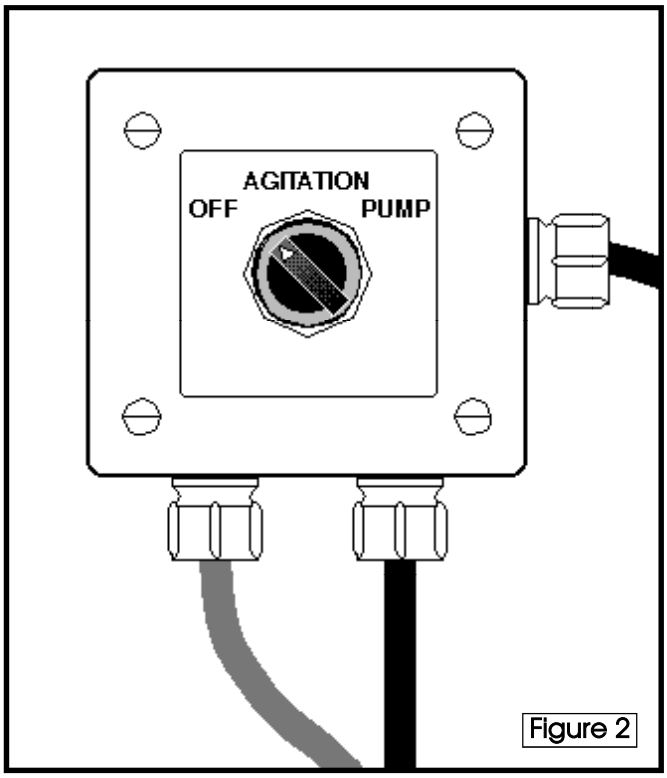


Figure 2

## FIRST TIME OPERATION AFTER A PERIOD OF NO USE

In situations where the Coldfogger has remained unused for a period of time, it may be necessary to plunge the intake valve. This may be done by removing the solution line and pushing the valve open several times with the eraser of a pencil or similar tool. Replace the solution line and proceed normally.

## STOPPING SPRAY – PUMP SHUT-DOWN

1. Release the spray gun trigger.

2. Lock the spray gun safety knob.

3. Turn the Pressure Regulator counterclockwise *(Item #4)* to the "0" setting.

4. Turn the Priming Valve counterclockwise *(Item #3)* to the "0" setting.

5. Turn Pressure Regulator clockwise again to drain solution from the pump.

6. After 1 minute turn the Pressure Regulator counterclockwise.

7. Turn the Power Switch to the "OFF" position. (*Pg.10, Fig.2*).

8. Unlock the spray gun and squeeze the trigger to relieve any remaining pressure.

9. Be sure to again lock the spray gun safety knob.

10. Wind up the discharge hose on the hose reel.

11. Rinse the solution tank, solution tank filter, discharge hose and spray gun with warm clear water. Drain the cleaning solution using the Drain Valve *(Pg.11, Fig.3, Item #7.* Dispose of the rinse water properly.

12. Coil up power cord.

## MAINTENANCE & CLEANING

13. Store the Coldfogger in a dry, dust-free location. Cover with plastic and keep from freezing temperatures.

***BEFORE SERVICING THE PUMP:***

1. Turn the power switch "OFF" and disconnect from the power source.

2. Relieve the pressure from the pump by rotating the Priming Valve counterclockwise.

3. Relieve pressure from the spray gun by squeezing the trigger.

4. Lock the spray gun safety knob.

**IMPORTANT**

AFTER THE FIRST USE IT IS NECESSARY TO TIGHTEN DOWN THE 4 CAP SCREWS ON THE PUMP HEAD. TORQUE THE PUMP HEAD DOWN DIAGONALLY WHEN THE PUMP IS COOL. TORQUE THE PUMP HEAD CAP SCREWS DOWN TO 50 NM (37 FT/LB).

## GENERAL

1. Because it is possible that air may enter the hydraulic system during transport, the system must be "vented" or operated without solution for a few minutes. The hydraulic system vents automatically when the pump motor is operated while the Priming Valve, (or Unloading Valve) and Pressure Regulator have been fully rotated counterclockwise. Follow standard operating procedures after venting the hydraulic system for 2 minutes.

2. The Intake Valve may stick and not allow the pump to prime. Prime the pump with the Push/Pull knob *(Pg. 11 Fig. 3 Item #10)* on rear of pump head. In the event that the pump does not prime, drain the solution tank of all material and remove the Hose Coupling at the pump head. The Hose Coupling secures the Suction Intake Tube to the Intake Valve. Push the Valve Spindle down with a small rod (located inside the Intake Valve). Turn the pump "ON" and pour a small amount of water into the Intake Valve. The pump should draw the water in. Reassemble the suction intake assembly and follow the *Coldfogger Starting Procedures on Page 10.*

3. Use the solution tank Drain Valve *(Pg.13, Item #49,* located under the Solution Tank, beside the Agitator. This grey valve drains the solution tank when the arrow on the lever points to the drain hose (turned clockwise). Drain the rinse water into a pail or 5 gallon bucket. Remember to close the Drain Valve (turned counterclockwise) before filling the Solution Tank with water and chemicals. *See Figure 4.*
Note: to drain, agitation pump must operate. This will also clean the agitation pump.

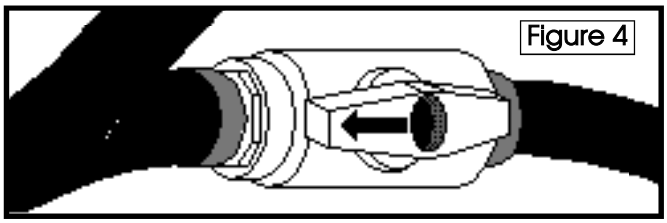


Figure 4

4. SPRAY GUN FILTER : Inside the spray gun is a cylinder filter or strainer that should be cleaned every 10 - 20 working hours. Use a stiff brush, never use a steel brush. If the spray gun filter gets dirty or worn it will not spray properly and should be cleaned or replaced.

5. SOLUTION TANK FILTER: Inside the solution tank is a suction filter that should be cleaned after every use with a stiff brush. When this filter becomes dirty the solution will not be able to be drawn solution into the pump and the unit will not spray.

HYDRAULIC SYSTEM

1. The hydraulic oil is subject to wear and aging, so it is necessary to change this oil at least once a year or after every 500 hours of operation. However, the first oil change must be carried out after the first 100 hours of operation. Change the oil while it is still warm.

2. Run the motor for about 30 seconds to remove the remaining oil.

3. Next, fill the gear box with a good quality hydraulic oil (H32).

4. Vent the hydraulic system by running the unit with no pressure for a few minutes to release any trapped air.

PUMP HEAD

1. The pump head must be replaced if the outlet valve seating is eroded or if erosion has effected the seating of the pump membrane assembly. Remove the pump head by remove the 4 cap screws. Torque down the pump head after servicing to 50 NM (37 Ft/Lb). Do this when the machine has cooled down.

2. The piston pump membrane assembly is separate from the pump head and the hydraulic housing and is held down by the 4 cap screws. Each time that the oil is changed the pump membrane should also be replaced to prevent any breakdown while spraying.

PRESSURE REGULATOR (PUMP HEAD)

1. If the pressure regulator is damaged, then it is generally beyond repair and a new Pressure Regulator should be installed.

SPRAY GUN

NEVER AIM THE SPRAY AT YOURSELF OR OTHER PEOPLE.

DURING WORK PAUSES LOCK THE SPRAY GUN SAFETY KNOB.

CALL A DOCTOR IMMEDIATELY UPON INJURY FROM THE SPRAY.

REMOVE THE SPRAY GUN FROM THE DISCHARGE HOSE BEFORE MAINTENANCE.

1. Flush the spray gun thoroughly after each use with warm water.

2. Inside the gun handle is a filter that should be cleaned regularly. Remove the hand guard and unscrew the spray gun handle. Pull out the filter, rinse the gun and clean the filter with a stiff brush (never use a steel brush).

3. Place the filter back into the gun with the filter hole visible at the top and screw the handle flush to the gun head. Replace the hand guard.

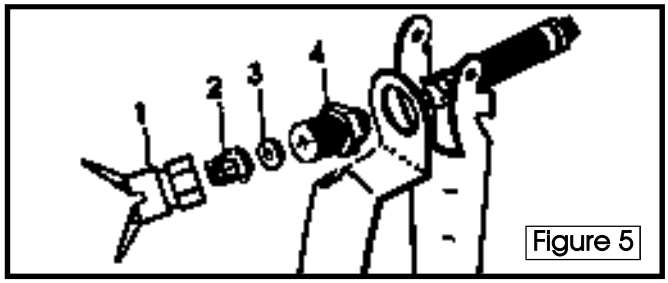
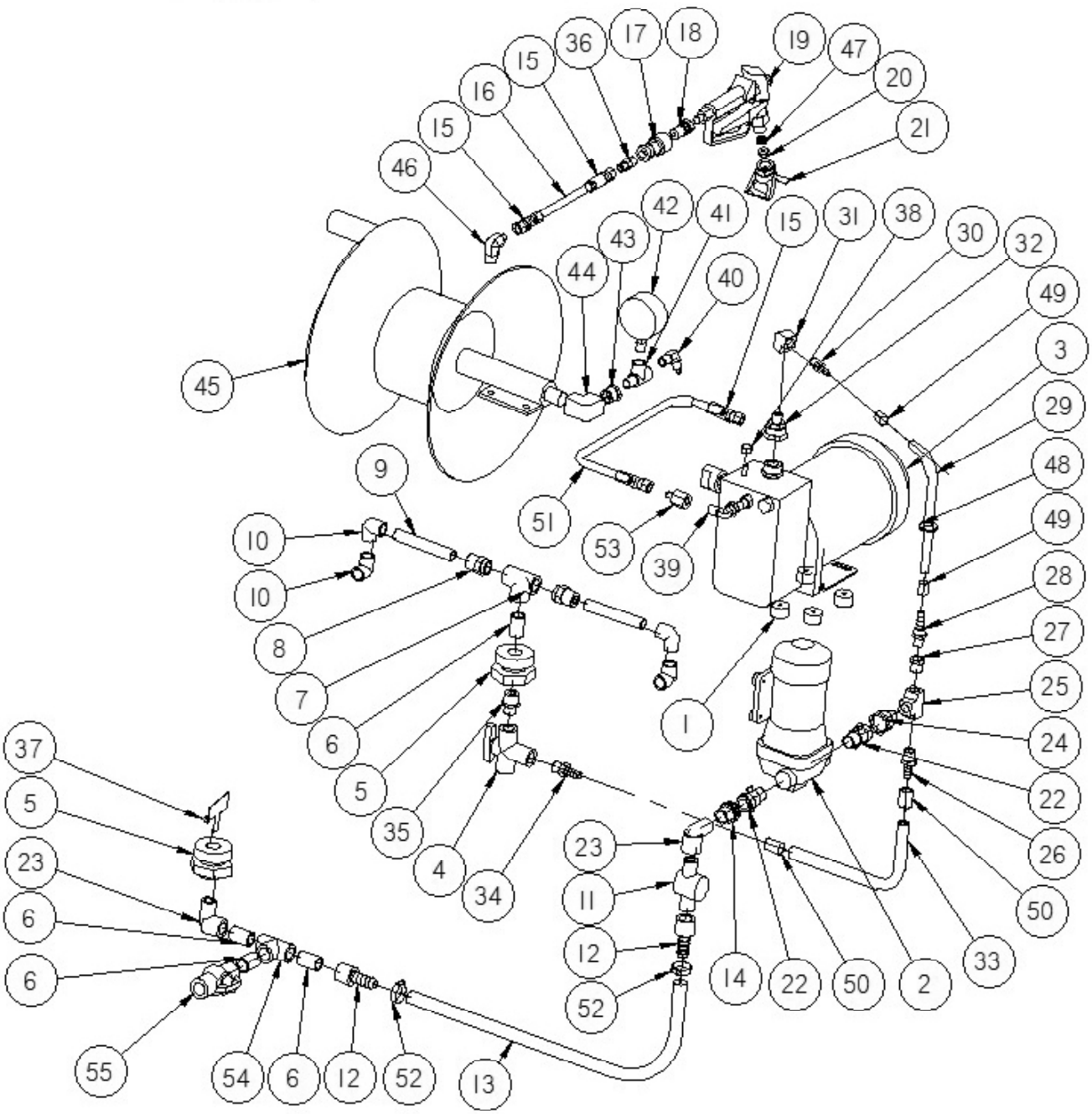


Figure 5

SPRAY GUN NOZZLE TIP ASSEMBLY

1. Unscrew and remove the Cap Nut (*Item# 1)*, place the Spray Tip *(Item #2)* into the Cap Nut and place the Nozzle Sealing *(Item #3)* in back of the jet. Screw the Cap Nut Assembly back onto the gun Screw Piece *(Item # 4)*. *See Figure 5.*

# Coldfogger Plumbing Assembly Diagram

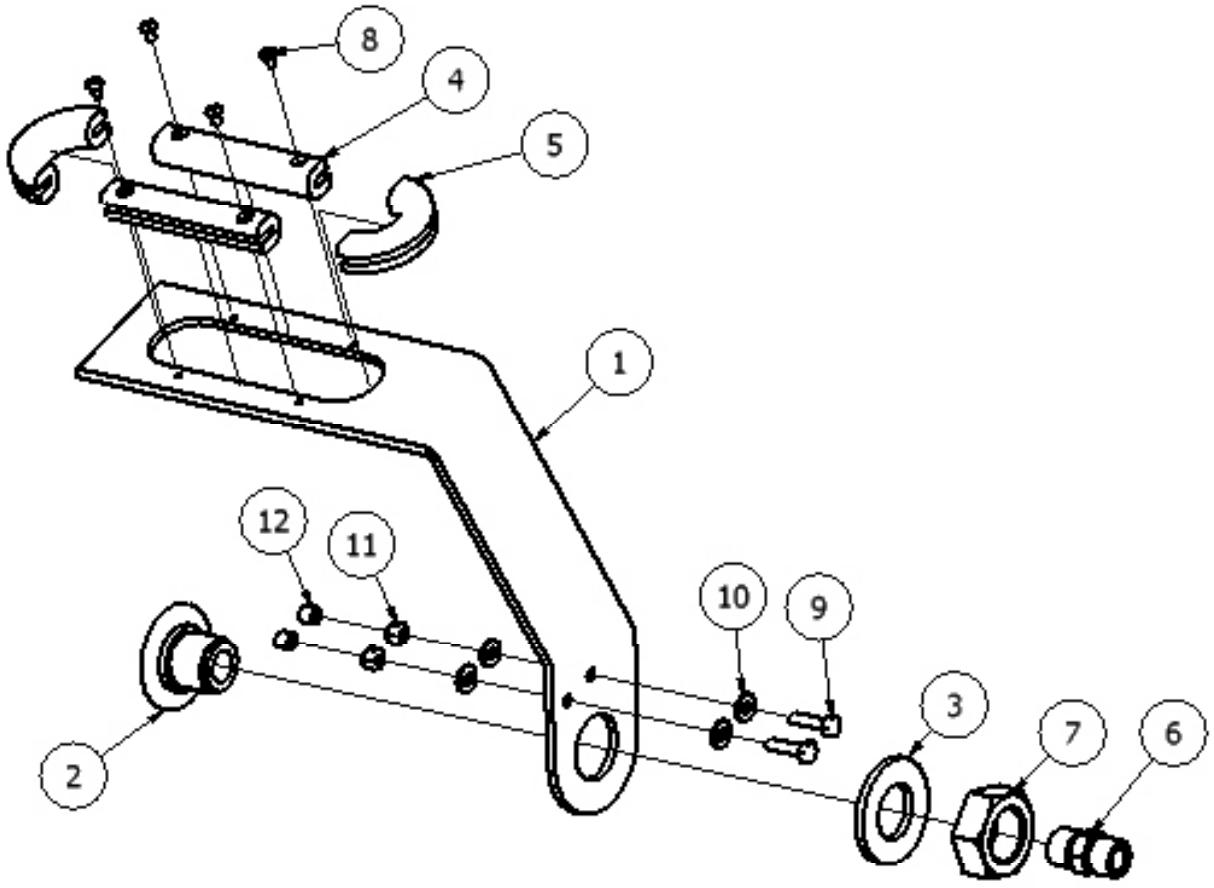


# Plumbing Parts List

| Item | Vendor # | Description | QTY | DRAMM # |
|---|---|---|---|---|
| 1 | 9540K34 | Bumper | 4 | 116001 |
| 2 | 4300-043 | FLOJET PUMP | 1 | 200200 |
| 3 | PS-200B | PUMP & MOTOR | 1 | PS-200B |
| 4 | 629-6F6F6F-B | VALVE 2 WAY 3/8 PT PVC | 1 | 230028 |
| 5 | 10025 | BULKHEAD FITTING 1/2 inch | 2 | 220500 |
| 6 | 43965 | NIPPLE CLOSE 1/2 CPVC | 4 | 220005 |
| 7 | 41561 | TEE 1/2 PT PVC | 1 | 220602 |
| 8 | 41734 | ADAPTER 1/2 PT x 1/2 CPVC | 2 | 220008 |
| 9 | 41732 | PIPE 1/2" CPVC | 2 | 100000 |
| 10 | 41736 | ELBOW 1/2" CPVC | 4 | 220106 |
| 11 | 14297 | FILTER HOUSING | 1 | 290004 |
| 12 | 1435-005 | BARB 1/2 x 1/2 FPT PVC | 2 | 220213 |
| 13 | 2T05R0812 | HOSE 1/2 ID Black | 1 | 250040 |
| 14 | 71938 | SWIVEL 3/4 FH TO 1/2 FPT | 1 | 220041 |
| 15 | 10655-4-3 | CRIMP COUPLING JIC 4-3 SWIVEL | 4 | 220900 |
| 16 | 540N-3-DRAMM | HOSE High Pressure 3/16 X 150 FT | 1 | 250003 |
| 17 | FD45-1005-0404 FQD | QUICK DISCONNECT FEMALE | 1 | 220301 |
| 18 | FD45-1004-0404 MQD | QUICK DISCONNECT MALE | 1 | 220300 |
| 19 | AL 2150 | SPRAY GUN | 1 | AL 2150 |
| 20 | 1304 | .013 X 4 SPRAY GUN TIP | 1 | 1304 |
| 21 | 220-255 | TIP GUARD | 1 | 220-255 |
| 22 | 20381-007 | GARDEN HOSE PORT | 2 | 220027 |
| 23 | M412-005 | ELBOW ST 1/2 PT PVC | 2 | 220110 |
| 24 | 70815T42 | ADAPTER GH SWIVEL x 3/8PT BR | 1 | 220030 |
| 25 | 42050 | TEE 3/8 BRASS | 1 | 220603 |
| 26 | 5346K31 | SWIVEL BARB 3/8 X 3/8 BR | 1 | 220217 |
| 27 | 41277 | BUSHING 3/8 MPT x 1/4 FPT Brass | 1 | 220001 |
| 28 | 5346K27 | SWIVEL BARB 1/4 X 1/4PT | 1 | 220216 |
| 29 | A478 | HOSE 1/4" ID X 17 1/2 LONG | 1 | 250001 |
| 30 | 42777 | BARB 1/4 x 1/4 PT BR | 1 | 220207 |
| 31 | 42068 | ELBOW 1/4 PT BR | 1 | 220103 |
| 32 | 70815T41 | ADAPTER GH SWIVEL x 1/4MPT BR | 1 | 220048 |
| 33 | 478-3/8 | HOSE 3/8" ID | 1 | 250002 |
| 34 | 5346K19 | BARB 3/8 x 3/8PT BR | 1 | 220218 |
| 35 | 48335K162 | REDUCER 1/2 X 3/8 NY | 1 | 220049 |
| 36 | 4-4FTX-S | Conn JICM x 1/4PT male | 1 | 220922 |
| 37 | D11305 | ANTI VORTEX BAFFLE | 1 | D11305 |
| 38 | 10350-02436 | WIDE BAND SPRING CLAMP | 1 | 220410 |
| 39 | 1501-04-04 | 1/4 SWIVEL ELBOW | 1 | 220120 |
| 40 | 4-4CTX | ELBOW 1/4 JIC x 1/4 NPT STz | 1 | 220962 |
| 41 | 50925K197 | TEE MALE RUN 1/4 ST | 1 | 220605 |
| 42 | 7221 | GAUGE - 0-6000 PSI | 1 | 260002 |
| 43 | 42060 | BUSHING 1/2 MPT x 1/4 FPT Brass | 1 | 220002 |
| 44 | 424270-131280 | ELBOW 1/2 PT Stz | 1 | 220114 |
| 45 | 4413 | HOSE REEL | 1 | 240003 |
| 46 | 4-6 CTX | ELBOW 1/4 JICM x 3/8 MPT STz | 1 | 220961 |
| 47 | AL 009900AV | WASHER GUN TIP | 1 | AL 009900AV |
| 48 | 9600K22 | GROMMET | 1 | 9600K22 |

| Item | Vendor # | Description | QTY | DRAMM # |
|---|---|---|---|---|
| 49 | FBL-525 | FERRULE | 2 | 220550 |
| 50 | 7FB-675-L | FERRULE | 2 | 220551 |
| 51 | 540N-3-DRAMM | HOSE High Pressure 3/16 X 19.5" LONG | 1 | 250003 |
| 52 | 62003 | CLAMP | 2 | 220403 |
| 53 | 4-4 GTX S | CONN JICM x 1/4 PTF ST | 1 | 220941 |
| 54 | 805-005 | TEE 1/2 FPT SCH 80 PVC | 1 | 220609 |
| 55 | T1-005W | 1/2 BALL VALVE | 1 | 230029 |

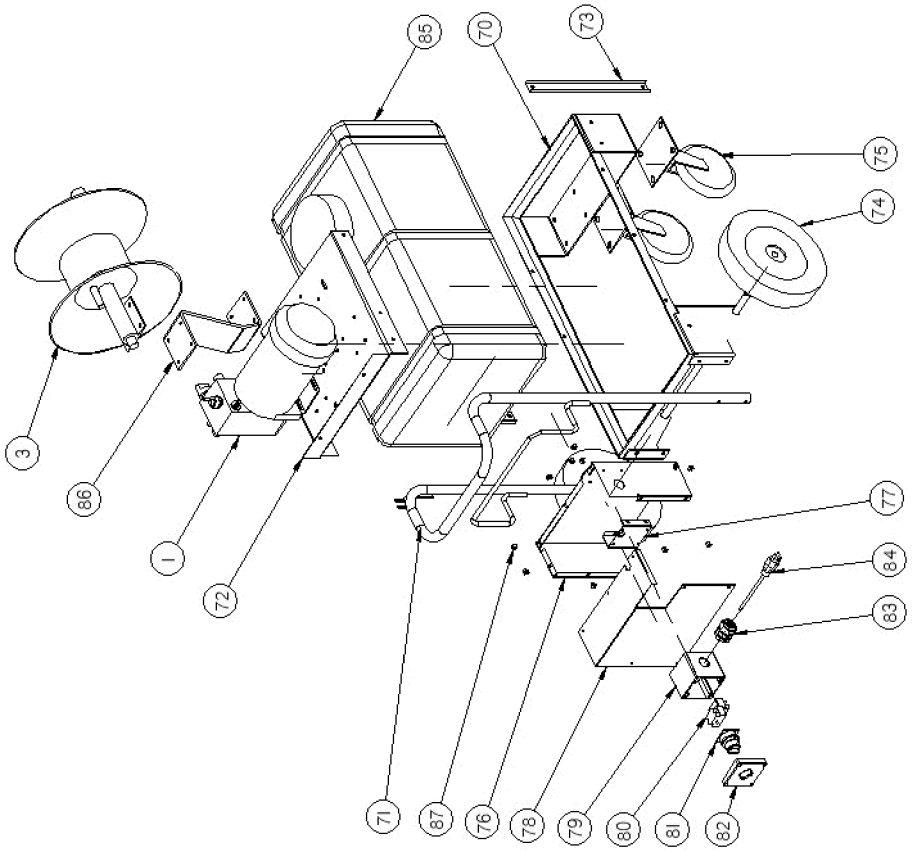
# Coldfogger Hose Real Guide Assembly Diagram




| Parts List | | | |
|---|---|---|---|
| ITEM | PART NO. | DESCRIPTION | QTY |
| 1 | D11893-4 | HOSE GUIDE PLATE | 1 |
| 2 | D11894-1 | HOSE GUIDE BEARING | 1 |
| 3 | D11895-1 | HOSE GUIDE WASHER | 1 |
| 4 | D11897 | HOSE SIDE GUIDE | 2 |
| 5 | D11898 | HOSE CORNER GUIDE | 2 |
| 6 | 220051 | NIPPLE HEX 1/2NPT | 1 |
| 7 | 110295 | NUT HEX JAM 1 1/4-12 STL | 1 |
| 8 | 110652 | OHMS 10-24 x 3/8 SST | 4 |
| 9 | 110004 | HHCS 1/4-20 x 1 | 2 |
| 10 | 110300 | WASHER FLAT 1/4 SAE | 4 |
| 11 | 110275 | NUT NYLOC 1/4-20 | 2 |
| 12 | D11914 | BUMPER THREAD - 1/4 | 2 |

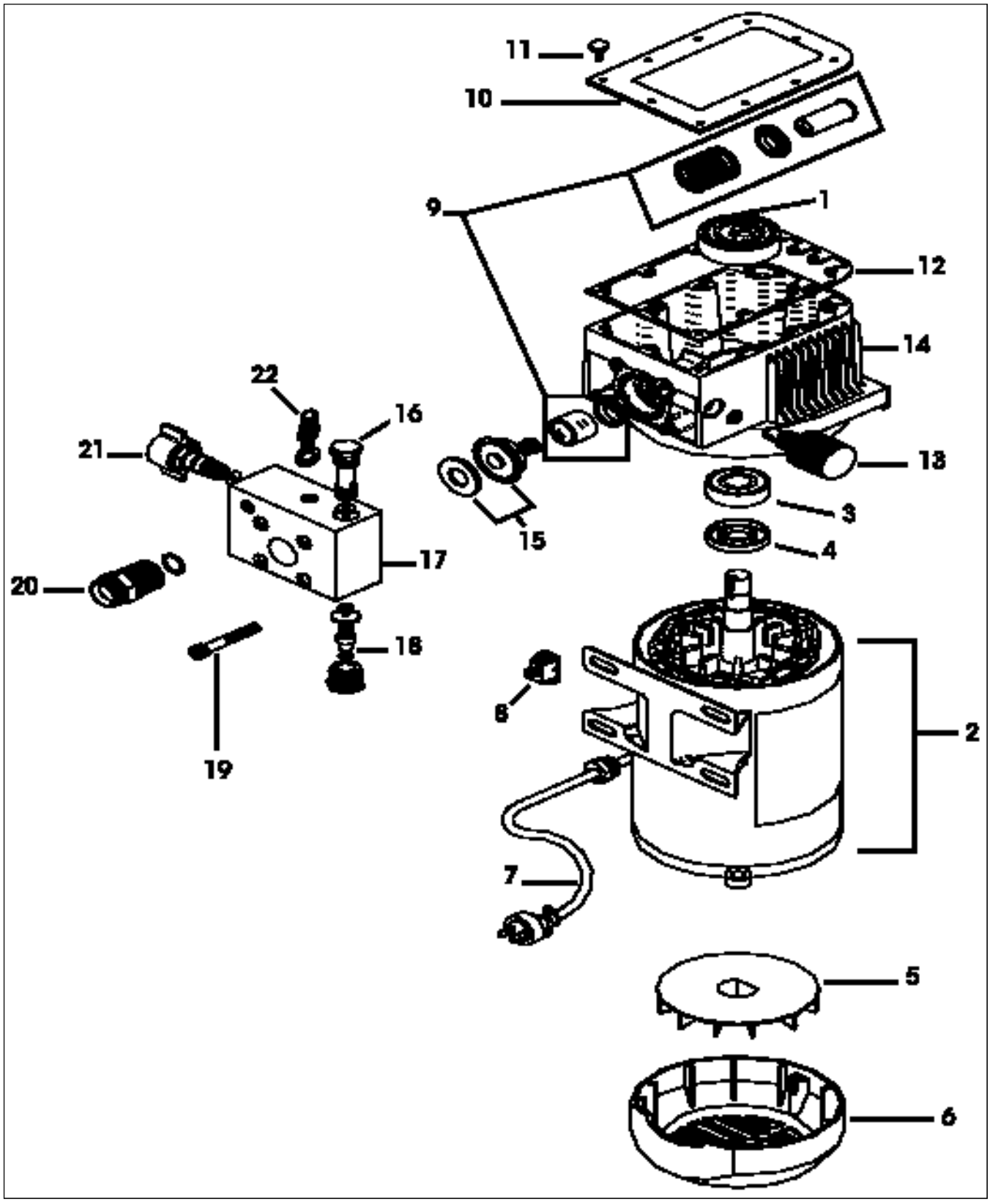
# Coldfogger Frame and Hose Reel Parts List

| Item | Vendor # | Description | QTY | DRAMM # |
|---|---|---|---|---|
| 1 | PS-200B | PUMP & MOTOR | 1 | PS-200B |
| 3 | 4413 | HOSE REEL | 1 | 240003 |
| 70 | DI1093A | MSO 20 FRAME | 1 | DI1093A |
| 71 | DI1096 | HANDLE ASSEMBLY | 1 | DI1096 |
| 72 | DI1717A | UNIVERSAL SHELF | 1 | DI1717A |
| 73 | DI1112I | SIDE LEG | 2 | DI1112I |
| 74 | SNI0275-OP | 10 X 2 WHEEL | 2 | 500006 |
| 75 | 1899041 | 6" CASTER | 2 | 500051 |
| 76 | DI1866A | BACK AND SIDES | 1 | DI1866A |
| 77 | DI1868 | SWITCH BRACKET | 1 | DI1868 |
| 78 | DI1867A | COVER - CF20 | 1 | DI1867A |
| 79 | Q-IPBPCD | ELECTRICAL BOX | 1 | 300102 |
| 80 | 900IKAI | SWITCH | 2 | 900IKAI |
| 81 | 900IKS42B | SELECTOR SWITCH | 1 | 900IKS42B |
| 82 | COVER | COVER FOR QIPBPCD BOX | 1 | QIPBPCD COVER |
| 83 | 7807K44 | 2 wire cord grip | 1 | 300504 |
| 84 | 174121813-12' | BELDON CORD SET | 1 | 300400 |
| 85 | SP0020-LC | 20 GALLON TANK | 1 | 610020 |
| 86 | DI1716A | Z BRACKET | 1 | DI1716B |
| 87 | 98550A475 | THREAD INSERT | 12 | 98550A475 |



SECTION 1 & 3

# Coldfogger Pump Casing & Mechanism Diagram



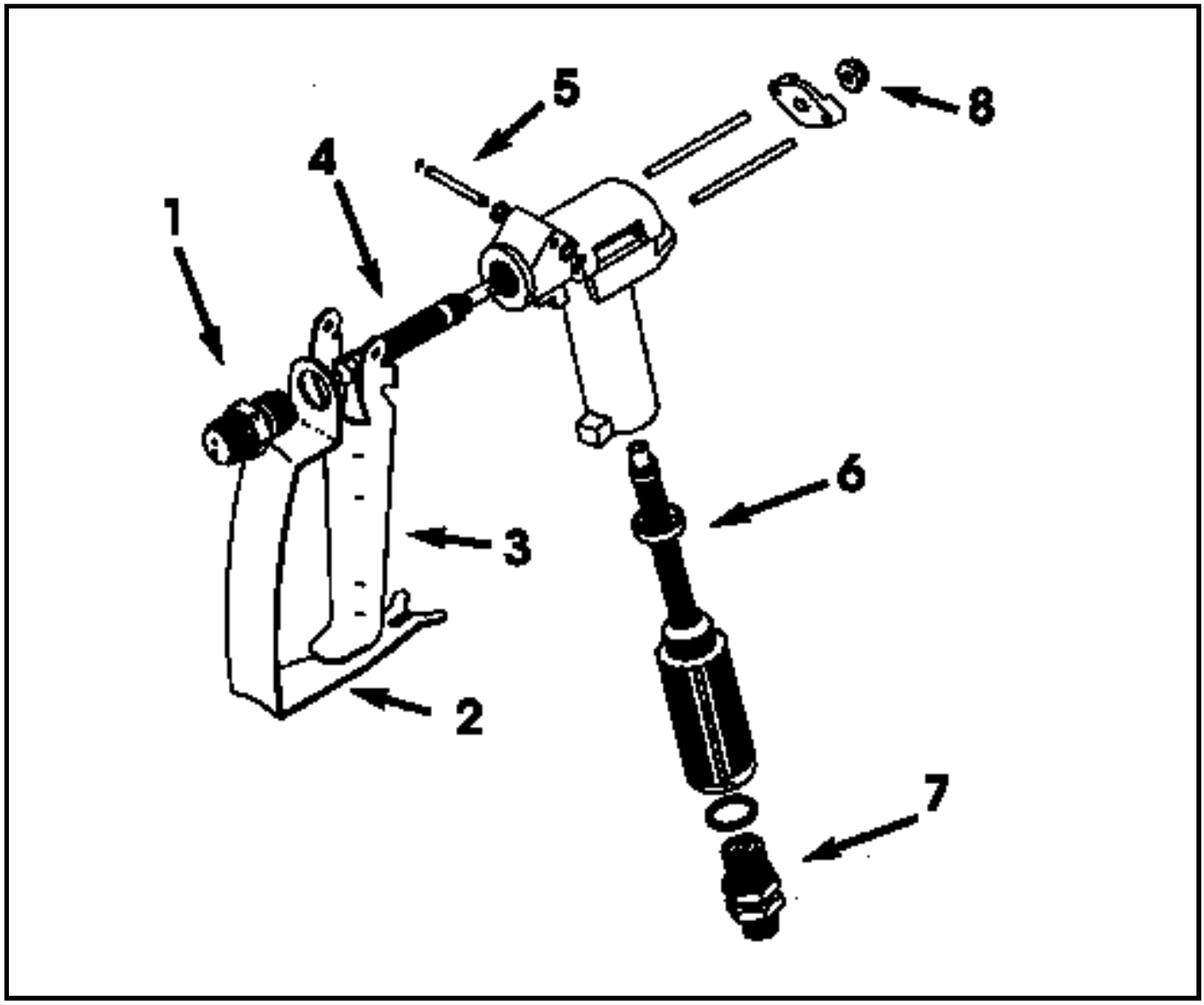
# Coldfogger Pump Casing & Mechanism Parts List

| # | DESCRIPTION | PART # | QTY. |
|---|---|---|---|
| 1 | Eccentric/Bearing | AL116201AJ | 1 |
| 2 | Motor (120V, 60HZ) | MC014301AJ | 1 |
| | (240V, 60HZ) | MC014402AJ | |
| 3 | Bearing with eccentric oil seal | AL045503AV | 1 |
| 5 | Fan | AL101500AV | 1 |
| 6 | Fan shroud | AL072700AV | 1 |
| 7 | Cord | AL173000AV | 1 |
| 8 | Switch | AL172900AV | 1 |
| 9 | Piston kit | AL131501SV | 1 |
| 10 | Faceplate | AL045101AV | 1 |
| 11 | Faceplate screws | HP007118AV | 8 |
| 12 | Faceplate gasket | AL013702AV | 1 |
| 13 | Pressure valve | AL131401SV | 1 |
| 14 | Replacement housing | AL133501SV | 1 |
| 15 | Diaphragm | AL125900SV | 1 |
| 16 | Outlet valve | AL129600SV | 1 |
| 17 | Replacement block (120V, 60HZ) | | 1 |
| | (240V, /60HZ) | | |
| 18 | Prime button | AL159500SV | 1 |
| 19 | Block bolts | ST070820AV | 4 |
| 20 | Inlet Valve (120V, 60HZ) | AL134400SV | 1 |
| | (240V, 60HZ) | AL134801SV | |
| 21 | Prime/Spray valve | AL132100SV | 1 |
| 22 | Hose adapter | AL147400SV | 1 |

SECTION 8

# Coldfogger Spray Gun Parts List & Diagram

| ITEM # | PART # | COMPONENT # | DESCRIPTION | QUANTITY |
|---|---|---|---|---|
| -- | AL245020LX | -- | Metal Spray Gun (Complete) | 1 |
| 1 | AL083000AV | | Gun diffuser | 1 |
| 2 | AL083700AV | | Trigger guard | 1 |
| 3 | AL083900AV | | Trigger | 1 |
| 4 | AL083800AV | | Ball, valve & plunger assembly | 1 |
| 5 | AL085800AV | | Trigger pin | 1 |
| 6 | AL086101AV | | Gun filter (100 mesh) | 1 |
| 7 | AL081300AV | | Gun swivel | 1 |
| 8 | AL083300AV | | Valve stem nut (3 pack) | 1 |



# Coldfogger CF20-150 Specifications

## Technical Data

| | |
|---|---|
| Spray Droplet Size: | 40µ (micron) average diameter (30 -60 micron spectrum) |
| Standard Nozzle Size: | 0.013" (optional 0.015") |
| Spray Pattern: | 4 inch fan pattern |
| Operating Pressure: | 2,800 - 3,000 PSI |
| Discharge Hose Burst Pressure: | 9,000 PSI |
| Discharge Hose Length: | 150 feet |
| Output Rate: | 1 liter (0.26 gallons) per minute 3,000 psi |
| Solution Tank Volume: | 45.6 liters (12 gallons) |
| Power Requirements: | 120 volt 60 HZ Auto 10 amp |
| Overload Protection: | Thermal overload / Auto reset |
| Shipping Weight: | 255 lbs |
| Dimensions: | Width: 21 inches<br>Length: 39 inches<br>Height: 43 inches |

## Standard equipment:

* Thermal overload protection
* High pressure hand held spray gun with filter
* Solution tank suction filter
* Solution tank agitator
* Solution tank drain valve
* 150 foot high pressure discharge hose
* Quick disconnect fitting on discharge hose for spray gun
* Discharge hose reel with manual crank and hose guide
* Power switch for agitator and pump motors
* Mounted on a sturdy steel frame

# Troubleshooting 1 of 3

| PROBLEM | CAUSE | REMEDY |
|---|---|---|
| Low spray pressure | Worn spray tip | Replace spray tip |
| Pump motor and agitator do not start. | No power or incorrect voltage. | Connect to 120 volt 60 Hz power source (10 amp fuse). |
| | Thermal overload has tripped. | Auto reset - Wait for unit to cool off for restart |
| | Clogged suction filter in solution tank. | Clean or replace. |
| | Suction hose not secured tightly to pump head. | Clean wing nut coupling and tighten or replace wing nut coupling gasket. |
| Agitator works, but pump motor only hums. | Closed or defective primer valve. | Open, clean or replace the primer valve. |
| | Hydraulic oil level too low. | Top off the oil level in the pump housing. |
| | Clogged intake valve (the valve inside the inlet passage can be pushed down with care). | Unscrew wing nut coupling, turn the pressure regulator clockwise and fill the inlet passage with water. Then push down the intake valve spindle with a rod until the intake valve opens (an audible change will be heard). |
| | Unit draws in air and not solution. | Check that all hoses are tight and not leaking. |
| | Damaged intake valve. | Replace the intake valve. |
| | Spray solution is too thick. | Dilute the spraying solution. |
| | Open or defective pressure regulator allows solution back into the solution tank. | Close or replace the pressure regulator. |

| PROBLEM | CAUSE | REMEDY |
|---|---|---|
| Unit fails to draw solution. Pump draws in solution, but no pressure is created. | Hydraulic oil level is low. | Top off the hydraulic oil. |
| | Air is in the hydraulic system. | Vent the hydraulic system. |
| | Too much foam in the solution tank. Spray solution is too thick. | Use an anti-foaming agent and dilute the spraying solution. |
| | No nozzle tip in the spray gun. | Insert a nozzle tip. |
| | Orifice diameter is the nozzle tip is clogged or worn. | Clean or replace nozzle tip. |
| | Clogged suction filter. | Clean or replace the suction filter. |
| | Spray gun filter is clogged. | Clean or replace the spray gun filter. |
| Pump draws in the solution, pressure builds up, but when the spray gun is opened the pressure drops. | Spray solution is too thick. | Dilute the spraying solution. |
| Solution runs back into the tank when spray gun is closed. | Air is trapped in the suction line. | Clean and tighten the wing nut coupling and wing nut gasket. |
| | Loose or defective pressure regulator. | Tighten or replace the pressure regulator. |
| Oil leaking between the pump head and housing. | Pump head bolts are loose. | Torque down pump head bolts with allen wrench. |
| | Defective pump membrane. | Replace. |
| Unit shakes, motor does not run. | Defective hydraulic control. | Qualified service is required. Contact Dramm Corporation service department at 1-800-258-0848. |

| PROBLEM | CAUSE | REMEDY |
|---|---|---|
| Leaking nozzle tip on the spray gun. | Damaged needle and valve seat. | Service the spray gun.<br><br>Pull the trigger and let it snap out a few times. |
| Spray gun keeps on spraying when the trigger is released. | Loose the retainer screw.<br><br>Damaged plastic gasket. | Tighten retainer screw.<br><br>Replace gasket. |
| Unit fails to draw solution. Pump draws in solution, but no pressure is created. | Defective pressure regulator.<br><br>Leaking intake valve. | Replace the pressure regulator.<br><br>Service or replace the valve. |

# Notes

# Notes

## Notes

DRAMM

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