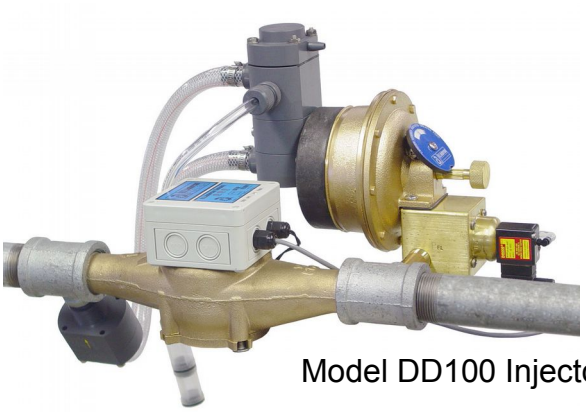


Model DD100 Injector

UNPACKING

Please open and inspect your package upon receipt. Your package was packed with great care and all the necessary packing materials to arrive to you undamaged. If you do find an item that is broken or damaged, you must contact the delivering carrier to report the claim.

Ratio Feeder®

DB & DD Series Injectors

GETTING TECHNICAL ASSISTANCE

The H.E. Anderson Company is dedicated to assisting our customers with installation and use of our products. Our technical staff are available each weekday from 8:30am to 4:30pm central time. You may call us toll free at **1-800-331-9620** from anywhere in the U.S.A. and Canada. If no one is available, we will promptly return your call.

Before you call, we suggest that you review this manual. You may find the answer to your question here. But even if you do not, reviewing the manual will help us to help you.

There is some information you should have available when you call. You should know the model and serial number of your control unit. Also, you should note the number of pumpers of each type, and their model numbers (found under the adjustment knob, stamped into the casting). We may not need all this information, but having it available at the start can sometimes save a lot of time and trouble for you.

If you need an additional owners manual for any H.E. Anderson Company product, please visit our website at http://heanderson.com/manuals.php

Record the information from your control panel below: (See Photo, Page 4)

Model # _____ Serial # _____ Feed Ratio 1:_____ Internal Switch Settings _____

H.E.Anderson
COMPANY
2100 Anderson Drive
Muskogee, OK 74402-2440
1-800-331-9620

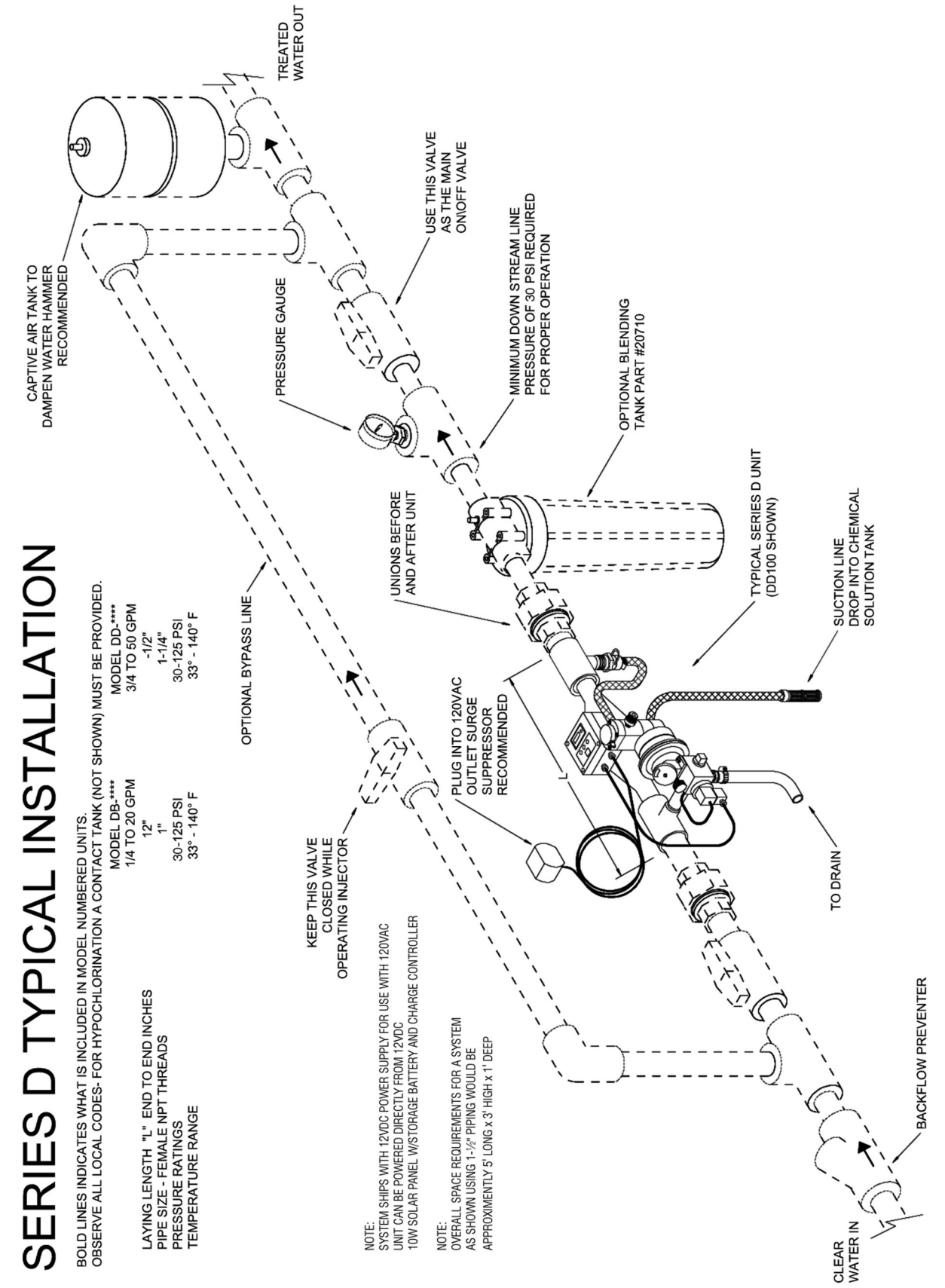
SERIES D TYPICAL INSTALLATION

BOLD LINES INDICATES WHAT IS INCLUDED IN MODEL NUMBERED UNITS.
OBSERVE ALL LOCAL CODES- FOR HYPOCHLORINATION A CONTACT TANK (NOT SHOWN) MUST BE PROVIDED.

	MODEL DB-****	MODEL DD-****
	1/4 TO 20 GPM	3/4 TO 50 GPM
LAYING LENGTH "L" END TO END INCHES	12"	-1/2"
PIPE SIZE - FEMALE NPT THREADS	1"	1-1/4"
PRESSURE RATINGS	30-125 PSI	30-125 PSI
TEMPERATURE RANGE	33° - 140° F	33° - 140° F

NOTE:
SYSTEM SHIPS WITH 12VDC POWER SUPPLY FOR USE WITH 120VAC
UNIT CAN BE POWERED DIRECTLY FROM 12VDC
10W SOLAR PANEL W/STORAGE BATTERY AND CHARGE CONTROLLER

NOTE:
OVERALL SPACE REQUIREMENTS FOR A SYSTEM
AS SHOWN USING 1-½" PIPING WOULD BE
APPROXIMENTLY 5' LONG x 3' HIGH x 1' DEEP



This manual covers the DD and DB Series injectors. We will refer to them simply as “injector” in this manual. Parts breakdowns are in the rear of this manual.

you should have received the following with your unit.

- DD/DB Injector(assembled).
- Check Valves & Injection Fitting.
- Foot Valve or Priming Stick.
- 8' Piece of Clear Tubing,1/2"
  or
  13' Piece of Black Tubing,3/8".
- 5' Piece of Red Hose,3/4".
- This Owners Manual.
- Pumper Manual for the pumper supplied with your unit.
- Pumper Calibration Manual.

If there are missing parts, please call your distributor.

Installation

Double check the direction of water flow when you install your injector.

The model DD has 1-1/4" NPT pipe connections. The model DB has 1" NPT pipe connections. You can adapt to other pipe sizes if needed We recommend that the injector be installed in a bypass to allow you to service it if the need arises.

The check valve(s) have a yellow arrow stamped on them. These arrows must point up when installed.

Refer to the the typical installation drawing (Page 4) and parts breakdown for your model for proper installation of chemical check valves and tubing.

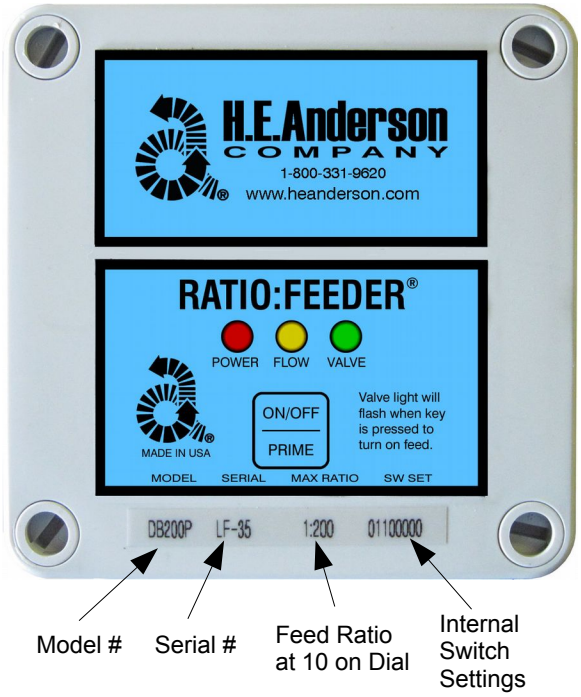
- Install the valve module or chemical check valves on the plastic pumphead.
- The foot valve or priming stick goes into the chemical tank.
- Connect a length of plastic tubing from the chemical tank to the lower hose barb or the lower check valve.
- Connect a short piece of tubing from the discharge valve or upper hose barb to the injection point fitting (IPF).
- Connect the 3/4" red hose to the hose barb on the bottom of the pilot valve. There will be waste water emitted from this hose during the pumping cycle. The volume discharged will be approximately three times that of chemical pumped. The water that is emitted is clear, untreated water. **This hose must vent to atmosphere and cannot be elevated or restricted.**

Initial System Check

Use a power surge protector to help prevent electrical surges from damaging the unit. Power surges, lightning, and other “acts of God” are not covered under the warranty.

The injector uses 12VDC power to operate. Do not run 120VAC directly into the unit. Always, use the supplied transformer when possible. Once you have applied power, we are ready for the initial system check.

- Apply power to your injector.
- Watch the lighted indicators located in the cover.
- The power light(red) should be on constantly.
- The flow light(yellow) should flash when there is water flowing.
- The cycle light(green) flashes when the injector makes a pumping cycle (depending on the volume of water flow, it may take several seconds for this light to flash).
- If the lights are not operating correctly, immediately unplug the unit and call your distributor or H.E. Anderson Co. to report the problem.



DB/DG Control Panel

Optional Flow Totalizer

The flow totalizer (optional) is a resettable counter for accumulating the water flow and is equipped with a 10 year battery to retain memory. The meter will accumulate flow even if injection is turned off.

The PRIME ON/OFF Switch

This button (see photo above) allows you to turn off the injection of chemical, but still record the flow if you have the optional counter/totalizer.

- **To turn the injection OFF**, press the button. Injection will stop.
- **To turn the injection ON**, press the button. The valve light will flash and the injector will make the first pumping stroke.
- **When priming the injector**, you can make repetitive pumping strokes by pressing the PRIME ON/OFF switch OFF and ON. Be sure to leave the unit on after priming.

NOTE: Priming is quicker and easier at a dial setting of 10.

You must have at least 30 psi of back pressure in order for the system to operate correctly.

Setting the Pumper

At a dial setting of 10, the feed ratio will be that shown on the control panel. (See Photo 1.) That is the maximum feed for your unit. If you wish to feed less, the feed dial may be set to a lower setting.

Example: If your injector chemical**:**water feed ratio at 10 is 1:200, at a setting of 5 it will feed half as much, which corresponds to a chemical**:**water feed ratio of 1:400.

Once your injector is set, it is fully operational.

Maintenance & Storage

Servicing the Pumper

Your injector normally requires very little maintenance.

For servicing and calibrating your pumper and chemical valves, refer to the separate pumper and pumper calibration manuals supplied with your unit. For pilot valve problems refer to the separate pilot valve manual. If you are unable to locate them, they are all available on our website at http://heanderson.com/manuals.php.

Storage

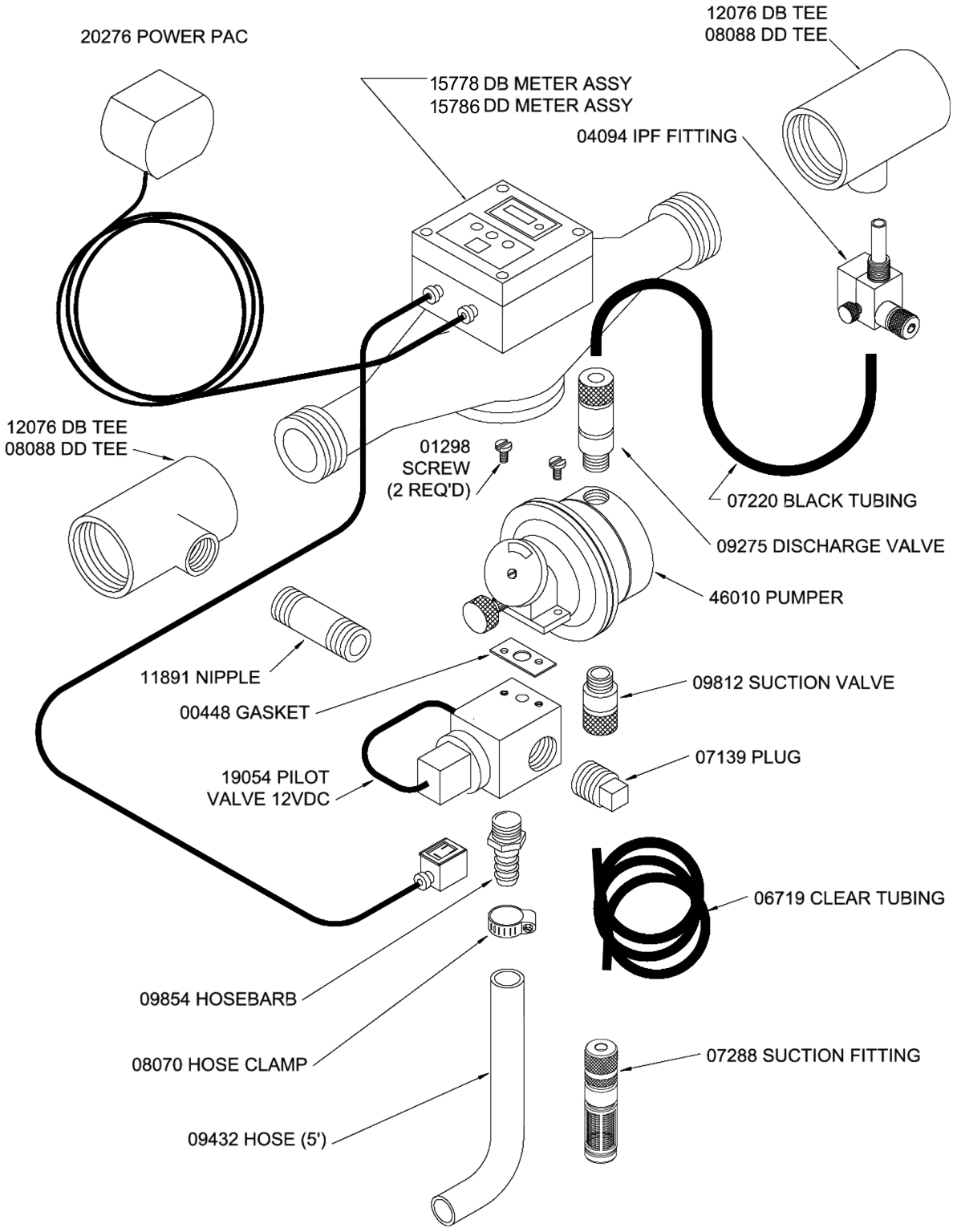
Warning! Your injector can be damaged if allowed to freeze. Freeze damage is not covered under warranty.

You should take the necessary precautions to protect the injector from freezing.

- If you remove your injector from the line for the winter, you should drain the water from it.
- You should also remove the pumper from the pilot valve and drain the water from it.

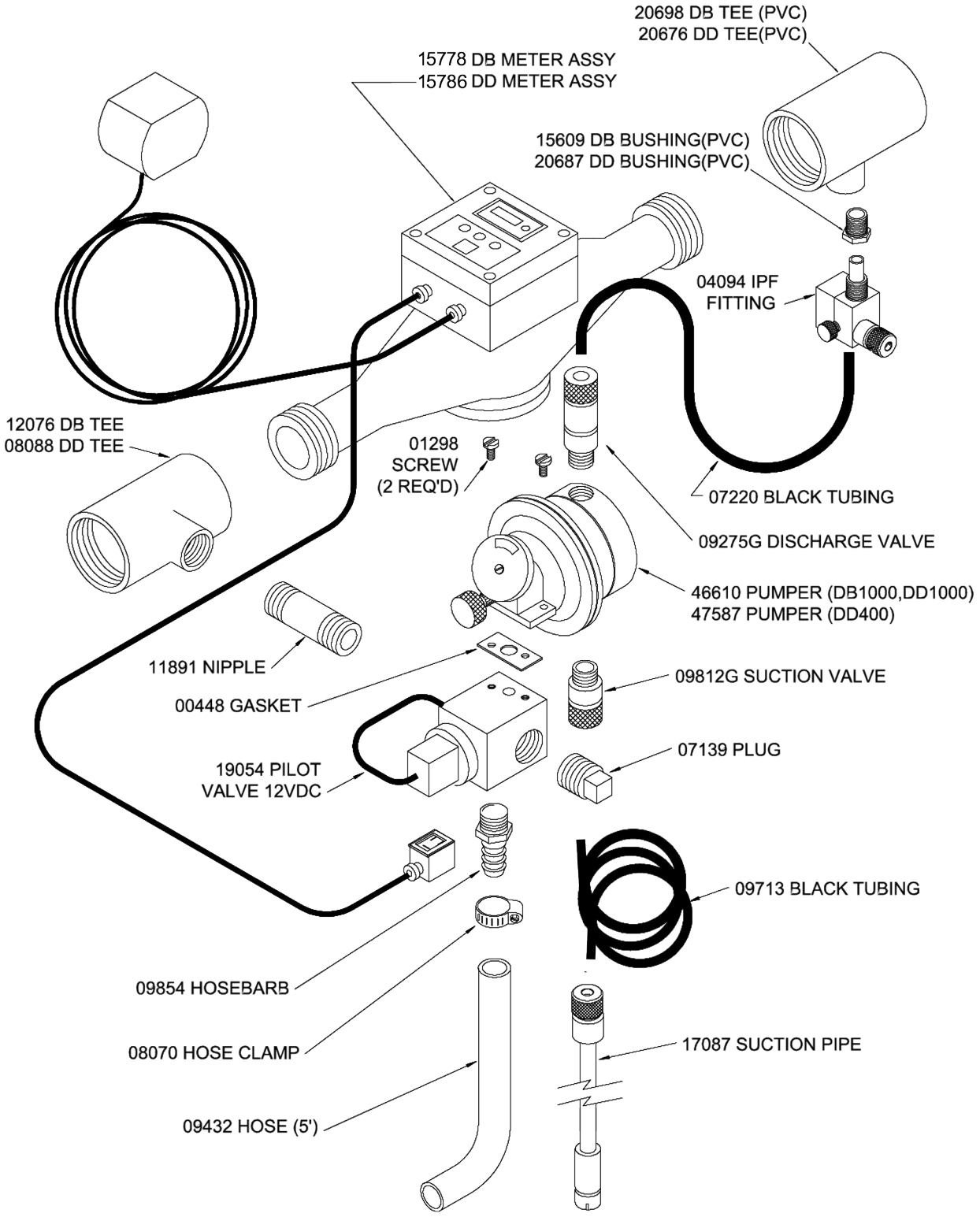
DB UNIT BREAKDOWN

MODELS DB100, DB200, & DB400



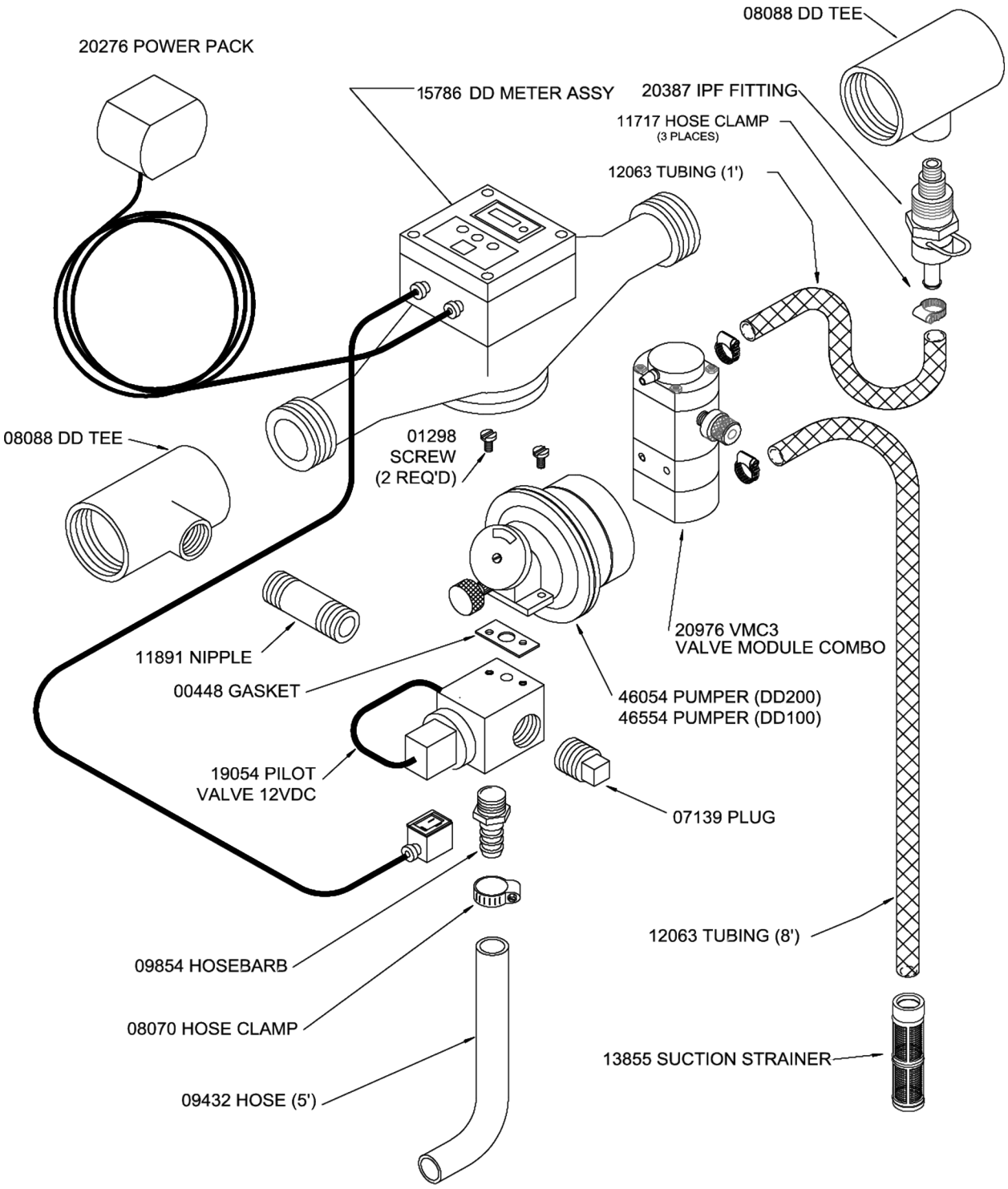
DB & DD UNIT BREAKDOWN

MODELS DB1000, DD400, & DD1000 (ACID UNITS)



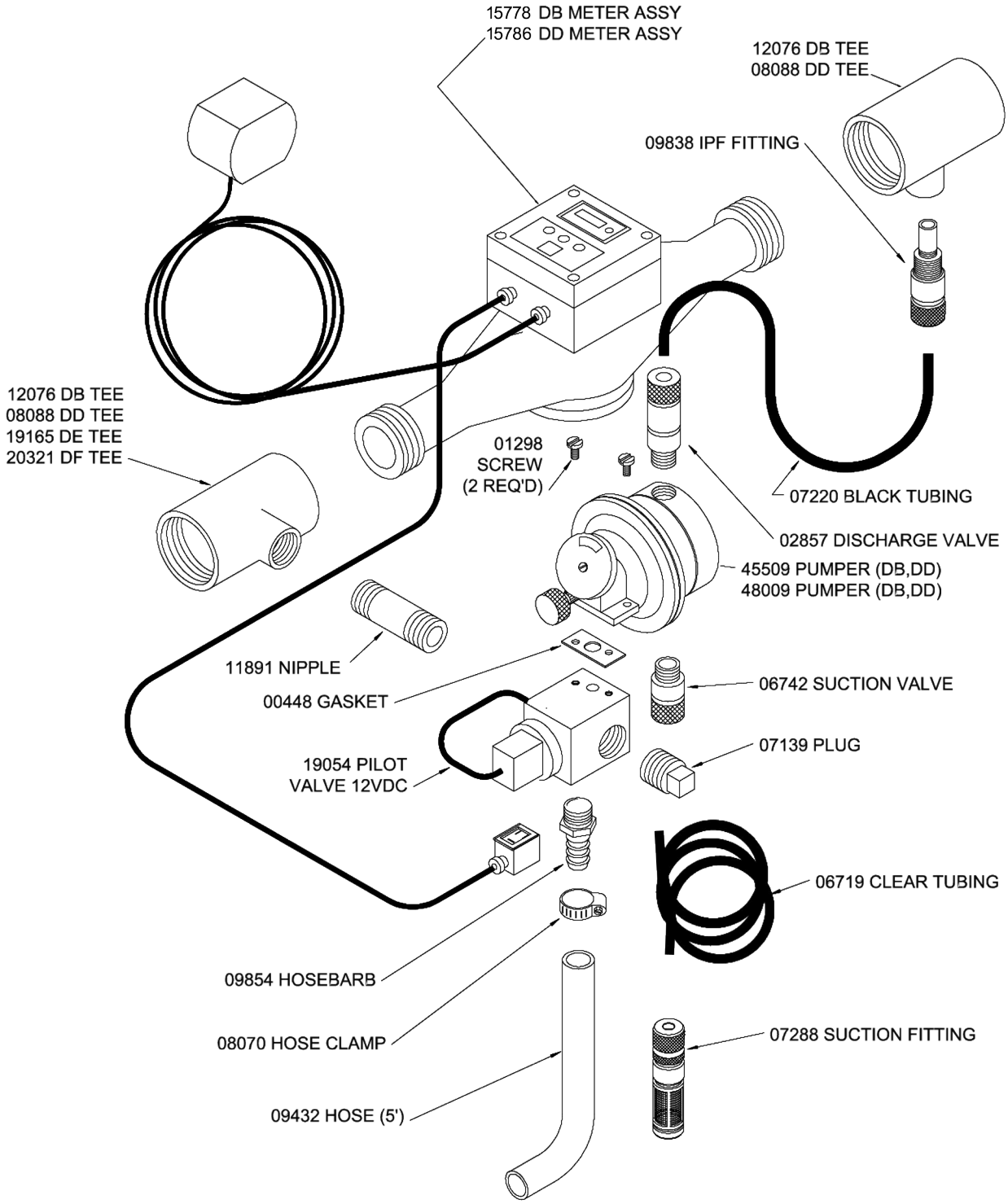
DD UNIT BREAKDOWN

MODELS DD100 & DD200

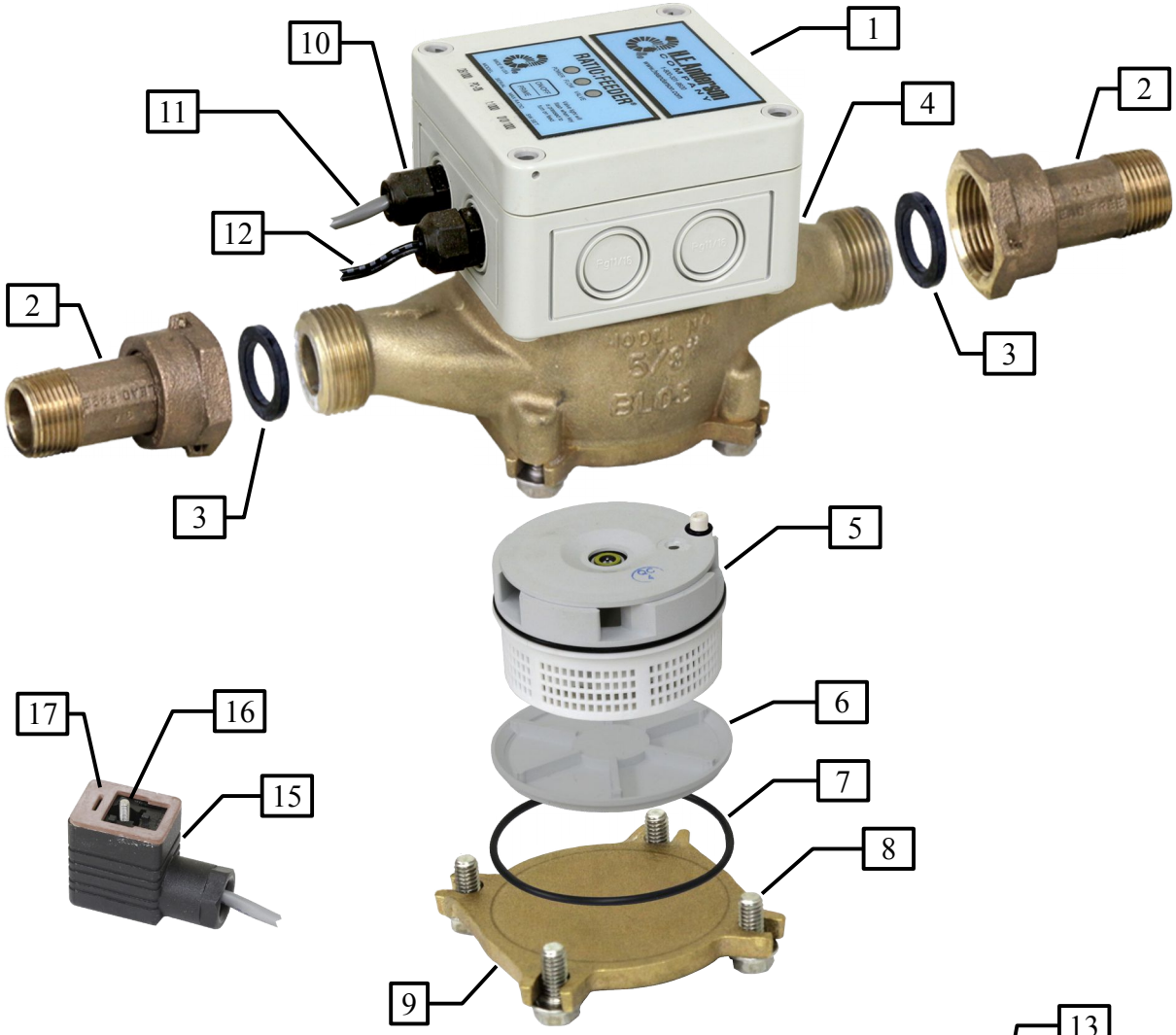


DB & DD HYPOCHLORINATOR UNIT BREAKDOWN

MODELS DB1200, DB1200LP, DD1200, & DD1200LP

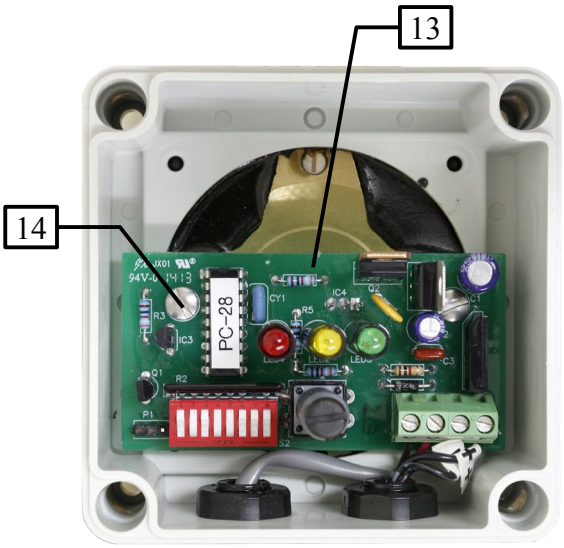


P/N 15778 DB JET METER PARTS



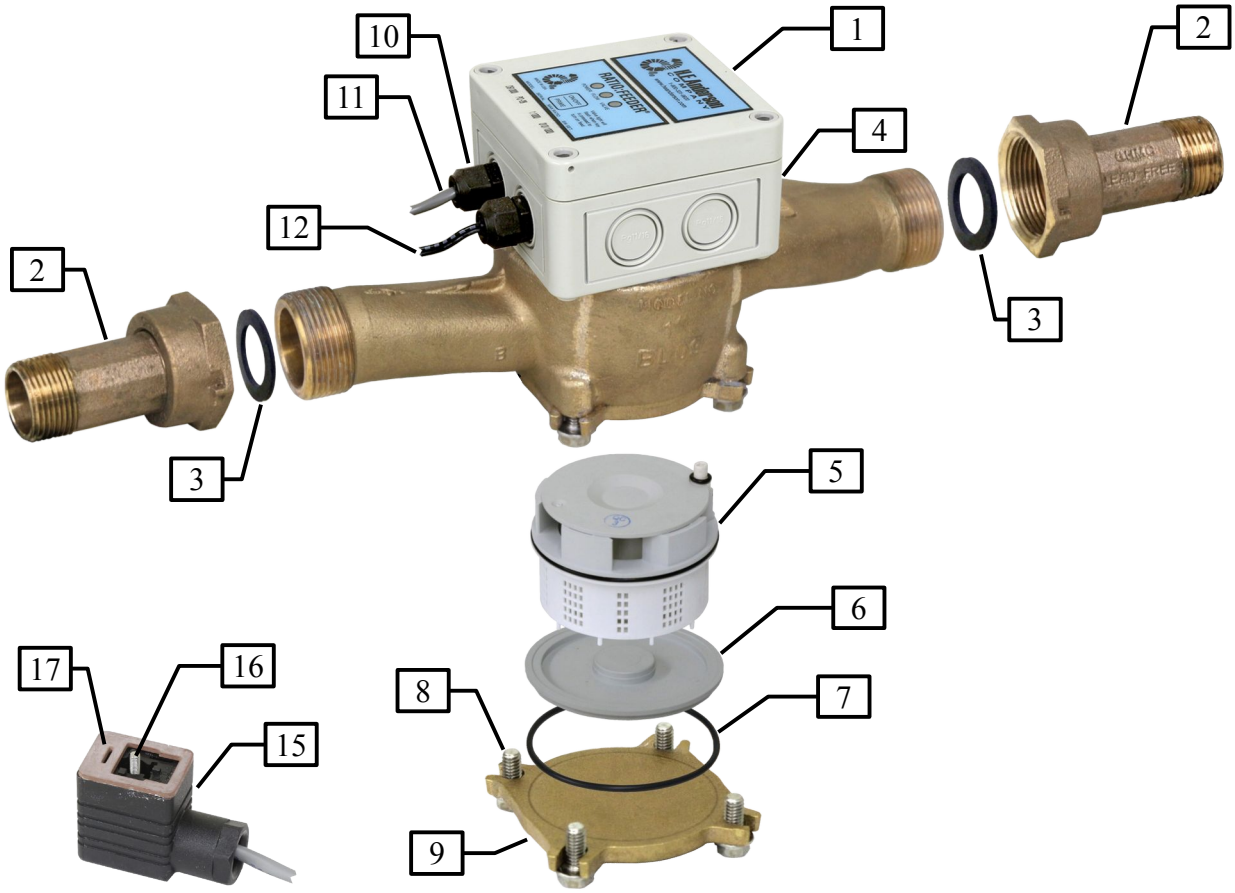
P/N 15786 1" 50 GPM JET METER PARTS

	P/N	Description	Qty.	
1	19150	Lid DB & DD Complete	1	EA
2	15372	Meter Coupling 1 Inch	2	EA
3	09738	Coupling Gasket 1"	2	EA
4	15760	Meter Only-M Jet 50	1	EA
5	21410	Meter-M 50 Chamber	1	EA
6	21452	Meter-M 50 Seal Plate	1	EA
7	21478	Meter-M 50 Seal Plt O-Ring	1	EA
8	21486	Meter-M 20 & 50 Bolt	1	EA
9	21501	Meter-M 50 Bottom	1	EA
10	11479	Strain Bushing For 1/2 Hole	2	EA
12	20276	Power Supply 12VDC (Not shown)	1	EA
13	14431	Cable	1½	FT
13	19845	PC Board Med & D 12VDC-Master	1	EA
14	03559	Screw 6-32x1/4	2	EA
15	19021	Terminal Blk Type A Valve	1	EA
16	19085	Screw For 19021 Cable Connect	1	EA
17	19110	Gasket For 19021 Cable Connec	1	EA



Shown with lid removed

P/N 15786 DD JET METER PARTS



P/N 15786 1" 50 GPM JET METER PARTS

	P/N	Description	Qty.	
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3	09738	Coupling Gasket 1"	2	EA
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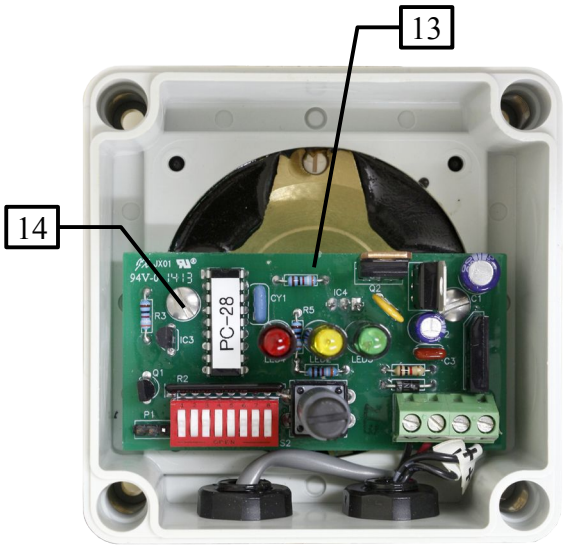
6	21452	Meter-M 50 Seal Plate	1	EA
7	21478	Meter-M 50 Seal Plt O-Ring	1	EA
8	21486	Meter-M 20 & 50 Bolt	1	EA
9	21501	Meter-M 50 Bottom	1	EA
10	11479	Strain Bushing For 1/2 Hole	2	EA
12	20276	Power Supply 12VDC (Not shown)	1	EA
13	14431	Cable	1½	FT
13	19845	PC Board Med & D 12VDC-Master	1	EA
14	03559	Screw 6-32x1/4	2	EA
15	19021	Terminal Blk Type A Valve	1	EA
16	19085	Screw For 19021 Cable Connect	1	EA
17	19110	Gasket For 19021 Cable Connec	1	EA



Shown with lid removed

POWER CONSUMPTION FOR D SERIES (ANDY AND ANDY JR)

MODEL	CURRENT	WATTAGE
DB100, 1000	338mA	4.06 W
DB200, 400	234mA	2.81 W
DB1200	95mA	1.07 W
DD100, 200, 400, 1000	338mA	4.06 W
DD1200	200mA	2.40 W

Power consumption is an average. Ratings based on a maximum flow rate of unit @ 12.4VDC.

QUICK FACTS FOR D SERIES (ANDY AND ANDY JR)

Andy (DD) models, ¾ to 50 GPM water flows.

Model	*Max Ratio*	*Min Ratio*	*Pumper Size*	*Gallons per Stroke*	*ml/ Stroke*	*strokes/min at max flow*
DD100	1:100	1:1000	H4-HD	1.06	40	47.3
DD200	1:200	1:2000	H2-HD	1.06	20	47.3
DD400	1:400	1:4000	A10-VCP	1.06	10	47.3
DD1000	1:1000	1:10000	A3-VCP	0.79	3	63.1
DD1200	1:1200	1:12000	P1-BA	3.17	10	15.8

Andy Jr (DB) models, ¼ to 20 GPM water flows.

Model	*Max Ratio*	*Min Ratio*	*Pumper Size*	*Gallons per Stroke*	*ml/ Stroke*	*strokes/min at max flow*
DB100	1:100	1:1000	P2-HC	0.53	20	37.7
DB200	1:200	1:2000	P1-HC	0.53	10	37.7
DB400	1:400	1:4000	A10-VCP	1.06	10	18.9
DB1000	1:1000	1:10000	A3-VCP	0.79	3	25.3
DB1200	1:1200	1:12000	P1-BA	3.17	10	6.3

RATIO:FEEDER® LIMITED WARRANTY

WHAT IS COVERED

The H.E. Anderson Company of Muskogee, Oklahoma, will make any necessary repairs and/or replace any parts of any Ratio:Feeder® product made necessary because of defects in materials or workmanship for fifteen months from date of manufacture. Warranty repairs and/or replacements will be performed without charge to the owner by H.E. Anderson Company within a reasonable time after prepaid delivery of the defective product to the H.E. Anderson Company, 2100 Anderson Drive, Muskogee, Oklahoma 74403.

WHAT IS NOT COVERED

This warranty specifically excludes failure of any parts or materials caused by chemical attack or damage caused by operation above rated capacity or pressure. Further, this warranty does not cover wear or failure caused by sand or other foreign materials which may be found in water that is passed through our products, or damage caused by freezing or exposure to water temperatures above 60 °C (140 °F).

This warranty does not cover damage caused by failure to follow prescribed installation instructions and limitations issued by H.E. Anderson Company. In addition, this warranty does not cover service adjustments, repairs, or replacements caused by misuse, negligence, alteration, accident, or lack of specified maintenance.

This warranty does not cover components used by, but not manufactured by H.E. Anderson Company, in the manufacture of our products except to the extent of said component manufacturer's warranty.

This warranty specifically excludes liability for consequential damages or for charges for labor or expense in making repairs or adjustments, or losses of time or inconvenience.

This warranty gives you specific legal rights and you may also have other legal rights which may vary from state to state. H.E. Anderson Company does not authorize any person to create for it any other obligation or liability in connection with these products. ANY IMPLIED WARRANTY APPLICABLE TO THESE PRODUCTS IS LIMITED TO THE DURATION OF THIS WARRANTY. H.E. Anderson Company shall not be liable for consequential damages resulting from breach of this written warranty.

NOTE: Some states do not allow limitation on how long an implied warranty will last or the exclusion of limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

WHAT TO DO IF THERE IS A QUESTION REGARDING WARRANTY

1) Promptly notify the consumer adviser at H.E. Anderson Company by telephone at 800-331-9620 or 918-687-4426.

2) Confirm the report in writing (or via FAX at 918-682-3342) to the H.E. Anderson Company, stating the circumstances surrounding the problem.

PURCHASER'S OBLIGATION

a) Purchaser must give H.E. Anderson Company immediate written notice on discovery of defect.

b) Purchaser must pay for shipment of the defective product to the H.E. Anderson Company, 2100 Anderson Drive, Muskogee, Oklahoma 74403.