VOLUMATIC™ WATER REGULATOR

For Cage Systems - PDS™ and Manual Adjustment
Part Number 42400-11, 42400-12, 42400-14

Introduction

The Chore-Time VOLUMATIC™ regulator is designed to regulate water pressure for Chore-Time Layer and Brood Grow Nipple Watering Systems. There is a model for manual adjustment of the regulator and two (2) models for PDS™ controller adjustment.

Installation Guidelines

Each water pressure regulator is capable of supplying one tier (two lines) up to 600' *[182.8 m]*. Systems over 600' *[182.8 m]* require two regulators per tier (one per line).

Additionally, in MMB™ (Modular Manure Belt) Brood Grow installations using air drying tubes; two (2) regulators per tier must be used regardless of the cage row length. The air drying system components prevent water line connection from one side of the cage row to the other.

The regulator assemblies should be mounted on the side of the cage row. This location should be easily reachable from the aisle for adjustment purposes and should not interfere with other equipment (DBS system, manure belts, egg belts, belt take ups, feeding system etc.). The regulator assemblies should also be located so they are protected from damage, Installation of the regulator assemblies should not be attempted until the location of all other equipment is established.

The height of the stand tube/air breathers must also be taken into consideration when positioning the regulator assemblies. It is important to be able to maintain this height so the full operating range of the regulator can be utilized.

It is important to install the regulator in a way that will allow the assembly to be turned off the nipple pipe line. If removal is necessary the stand tube/air breather will need to be removed before turning the regulator off the nipple pipe line.

The regulator assemblies may be located in a variety of locations depending on the installation, operation and location of other equipment. Additional plumbing components may be required.

It is recommended to install the regulator assembly equal to or slightly higher than the nipple water line. Installing the regulator with this recommendation will aid in removal of unwanted air in the system.

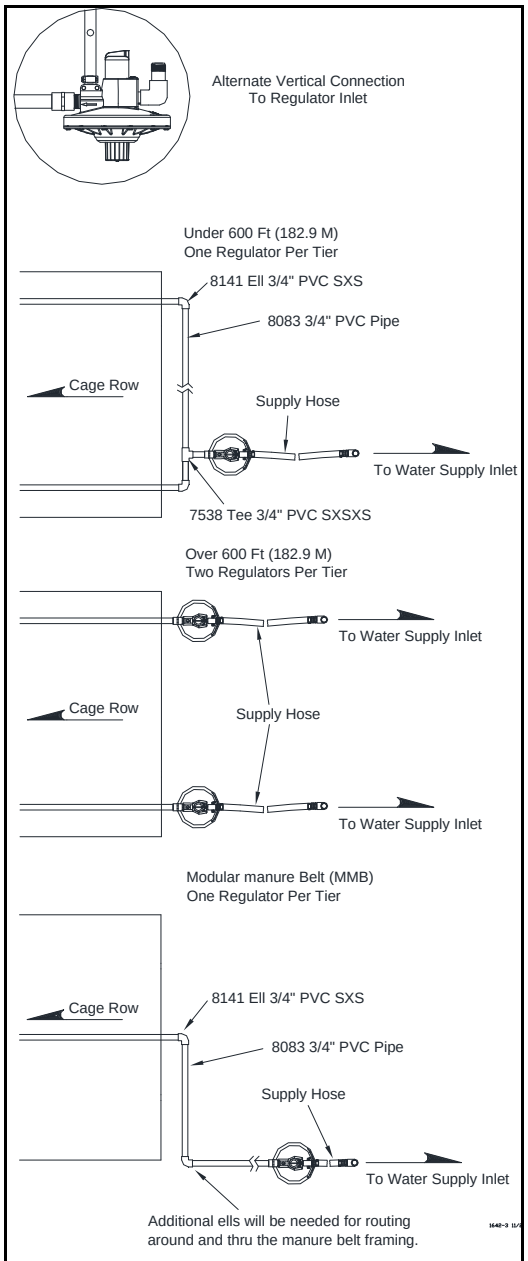

Figure 1. Regulator Installation

Single regulator installations (feeding two lines per tier) should be plumbed so the output from the regulator flows through the same number of restrictions (ells) to feed both lines. The same number of restrictions will assure equal volume of water to both lines. Equal volume of water is especially important in brood grow installations so the flush times (from one line to another) are close to the same.

In layer systems the connection between the regulator and the water supply inlet is made with a 3/4" *[1.91 cm]* flexible hose assembly. This hose connects between the regulator and the water supply. The hose and connectors must be of high quality and rated for the incoming water pressure.

In brood grow systems use the provided 5/8" x 36" *[1.59 x 91.4 cm]* regulator inlet supply hose. This hose connects between the regulator and the water supply.

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Regulator Assembly/Installation

- **Do not overtighten fittings when assembling threaded connections!**
- **Do not allow excess glue to run into the regulator!**
- **Apply thread sealant tape or thread sealing compound to all threaded connections (except hose threads) before installation.**

NOTICE **Use only thread sealant tape or compound approved for ABS plastics on the regulator fittings.**

Failure to do so could result in damage to the regulator and will void the warranty.

Line Connection Components Installation

1. Install the female adapter onto the 3/4" *[1.91 cm]* threaded outlet.
2. If the inlet connection is to be straight in, glue the male hose adapter onto the regulator inlet.
3. If the inlet connection is to be from the top or either side, glue the male hose adapter on to the reducing ell.
4. Once glue is set, glue the 1/2" *[1.27 cm]* slip end of the ell onto the regulator inlet in the desired direction.

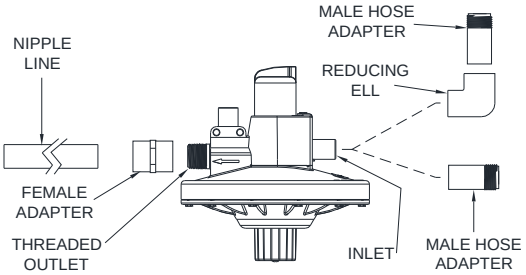


Figure 2. Water Line Connection

Stand Tube assembly and installation

1. Place one o-ring below the top barb and one between the lower two barbs.
2. Lubricate o-rings with water or soapy water. **DO NOT USE PETROLEUM BASED LUBRICANTS!**
3. Push the stand tube assembly over the lubricated o-rings until it hits the top of the regulator. Make sure the o-rings are positioned properly.
4. Locate the tube clamp over both o-rings and tighten. **DO NOT locate the clamp below the o-rings!** Make sure the stand tube is secure but do not overtighten the clamp.

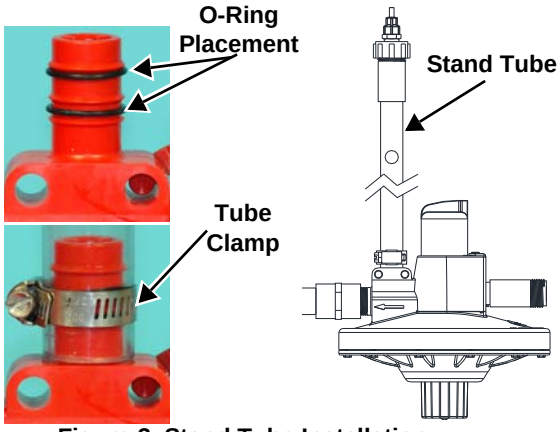


Figure 3. Stand Tube Installation

Water Supply Connection

After the regulator assembly is attached to the nipple line connect the regulator assembly to the water supply.

1. Brood grow systems use a 5/8" *[1.59 cm]* flexible hose to make the connection to the water supply inlet. This is a pre-assembled hose assembly.
2. Layer systems use a 3/4" *[1.91 cm]* flexible hose assembly to make the connection to the water supply inlet. This hose assembly is constructed at the installation site.
   - Cut the 3/4" *[1.91 cm]* hose to the proper length.
   - Slip the hose clamps on the hose.
   - Push the 3/4" *[1.91 cm]* female swivel fitting into each end of the hose and tighten the hose clamps.

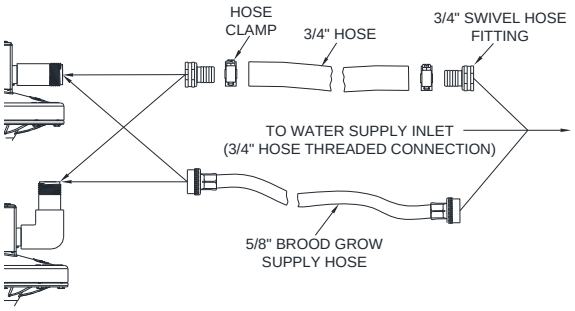


Figure 4. Water Supply Connection

Regulator Connection to Water Supply Inlet

1. Construct the water supply inlet tree using 3/4" *[1.91 cm]* pipe, 3/4" *[1.91 cm]* tees and 3/4" *[1.91 cm]* ells.
2. Thread a 3/4" *[1.91 cm]* male adapter into each tee and ell.
3. Connect the flexible hose assemblies to the 3/4" *[1.91 cm]* male adapters.
4. Install a 3/4" *[1.91 cm]* ball valve between the water supply and the water supply inlet tree in each cage row.

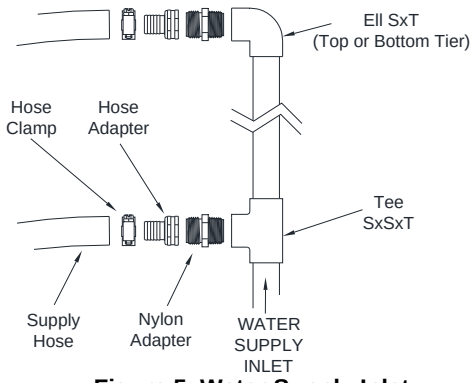


Figure 5. Water Supply Inlet

Regulator Operation

Controls

The VOLUMATIC™ water regulator can be shut off by turning the selector know clockwise until it strops. To turn on the regulator (normal operation) turn the selector to the center position. To put the regulator in flush mode, turn the selector knob counter-clockwise until it stops. To adjust the water column turn the adjustment knob on the bottom of the regulator clockwise (+) to increase the pressure and counter-clockwise (-) to decrease the pressure.

Caution: When using a hose end flush arrangement be sure the outlet valve at the end of the nipple line is open before flushing the regulator. Excessive back pressure can damage the regulator and other water line components.

Caution: When increasing the water column, as soon as resistance is noted, stop turning the manual adjustment knob or damage to the regulator will occur.

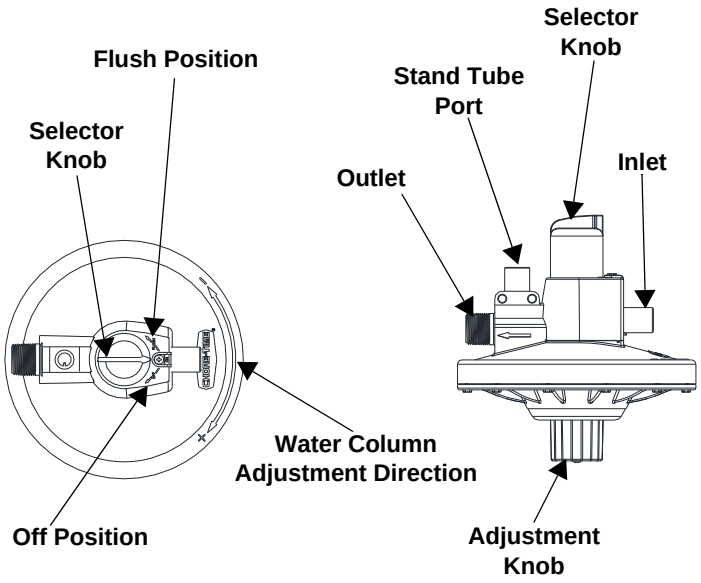


Figure 6. Watering Regulator

Operating Pressure

Optimum incoming pressure is 25 - 35 PSI *[172 - 241 kPa]*. Operation of the VOLUMATIC™ water regulator at higher pressures can shorten the life of the regulator components. For pressures higher than the recommended range a water pressure reducing valve must be installed on the inlet water supply.

PDS™ - Pneumatic Drinking System Regulators

CAUTION **DO NOT FLUSH DRINKER LINES WITH PDS™ CONTROL UNLESS drinker lines are pressurized with water! Product damage may occur if this caution is not followed.**

When flushing the system make sure the outlet line is clear of restrictions. Excessive back pressure can damage the regulator.

The Chore-Time PDS Volumatic regulator is designed to maintain a “default” water pressure if air pressure is lost to the water regulator. The “default” water pressure will be the operating water column in the event of an air pressure loss to the PDS system.

The PDS regulator’s water column height is adjusted at the PDS control unit and therefore does not have a manual adjustment knob.

The 42400-12 regulator uses a diaphragm spring to provide a default water column height of approximately 3 to 4 inches *[7.6 to 10.2 cm]* This regulator is used for Chore-Time Brood Grow Nipple installations with the PDS system.

The 42400-14 regulator uses a diaphragm spring to provide a default water column height of approximately 6 to 8 inches *[17.8 to 20.3 cm]*.This regulator is used for Chore-Time Layer Nipple installations with the PDS system.

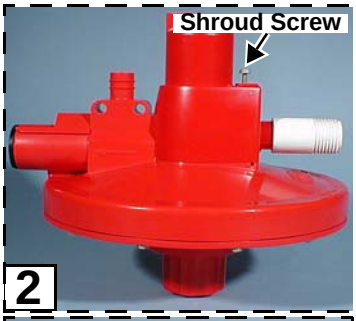
> **Note: Default water column values provided by the diaphragm springs are based on a normal 25-35 PSI *[172-241 kPa]* incoming water pressure.**

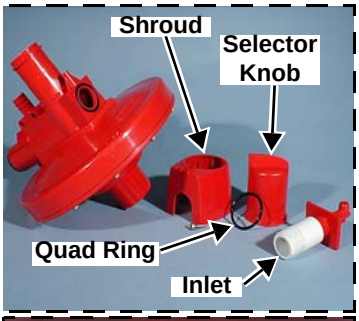
For more information on the PDS system, installation or operation, refer to the "12-32 Station PDS™ Control Manual(MW1812)."

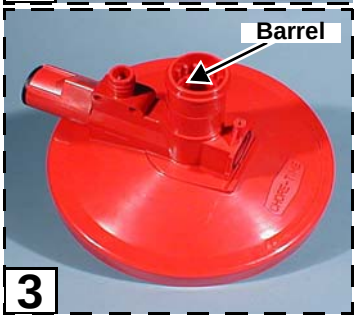
Regulator Seat Replacement

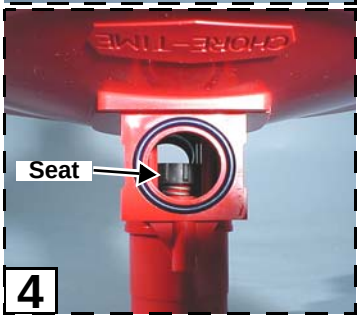
Follow the procedures below to replace the regulator seat.

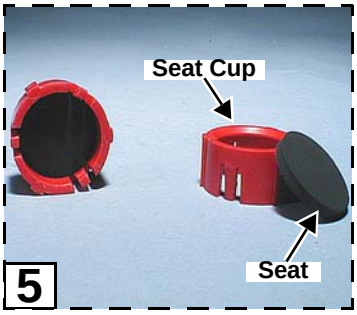
1. Shut off water to the regulator and remove it from the nipple line.
2. Remove the screw holding the shroud. Also remove the shroud, selector knob, quad ring, and inlet orifice.
3. Screw barrel all the way down.
4. Pry off seat and seat cup then remove from the regulator body.
5. Assemble new seat into seat cup. Seat face direction does not matter.
6. Use the Chore-Time seat installation tool to position the new seat assembly on top of the seat holder.
7. Press up on the seat holder and use the seat installation tool to push the new seat assembly onto the end of the seat holder until it snaps in place. Push only on the seat cup to prevent damage to the seat. Make sure the seat assembly is properly seated onto the seat holder.
8. Reassemble the regulator:
   - •Assemble quad ring on the housing shoulder. Turn the barrel up until it is flush with the top of the housing.The barrel **must be flush** with the top before replacing the selector knob or the regulator will not function properly.
   - •Replace the selector knob by lining up the wide tab in the barrel with the wide groove inside the selector knob.
   - •Make sure the o-ring is in place and reinstall the inlet into the regulator housing.
   - •Replace the shroud and shroud screw.
   - •The regulator is now ready to be put back into service.

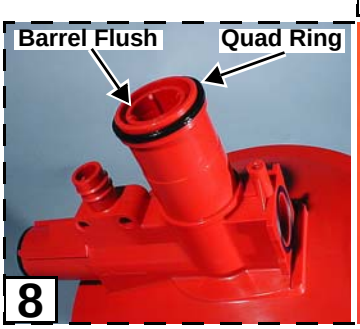


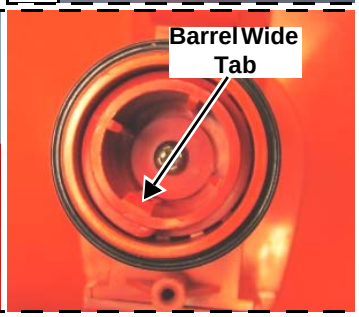


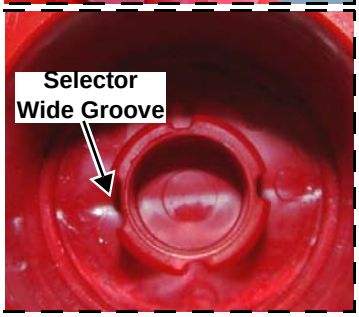






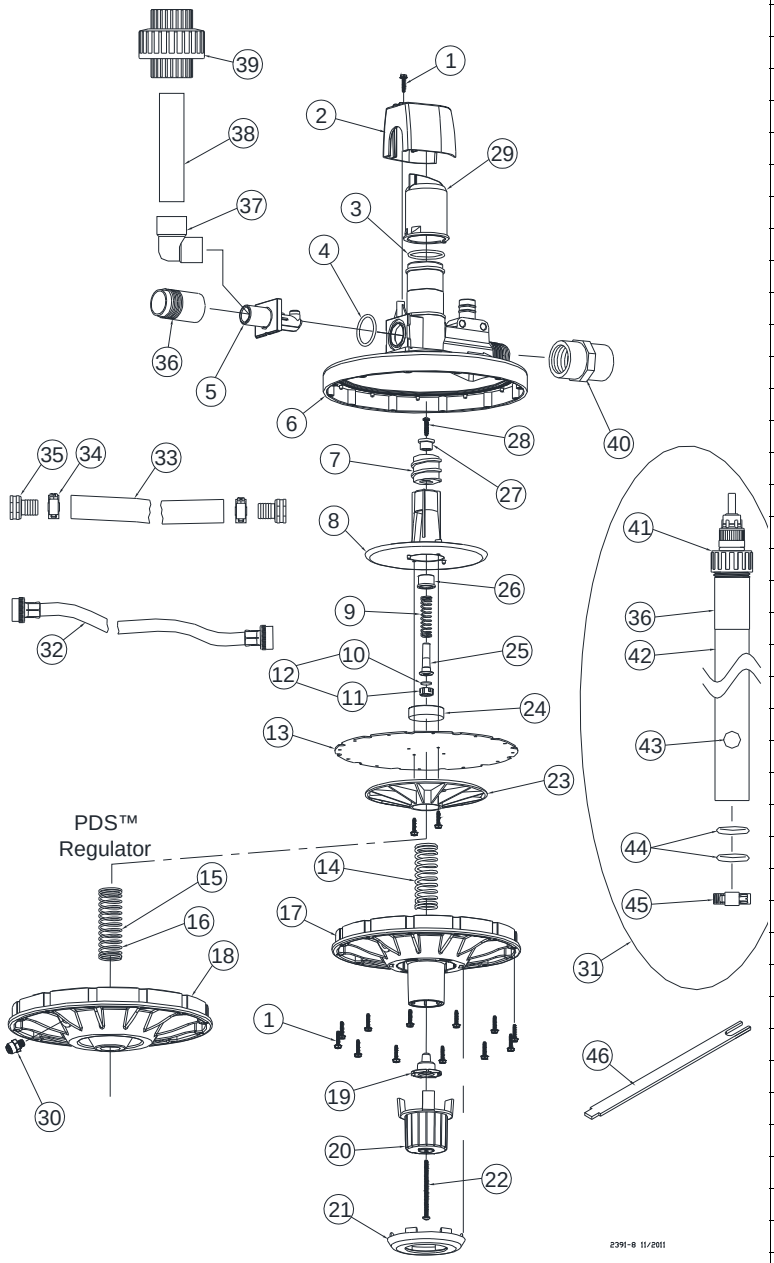






Parts Listing

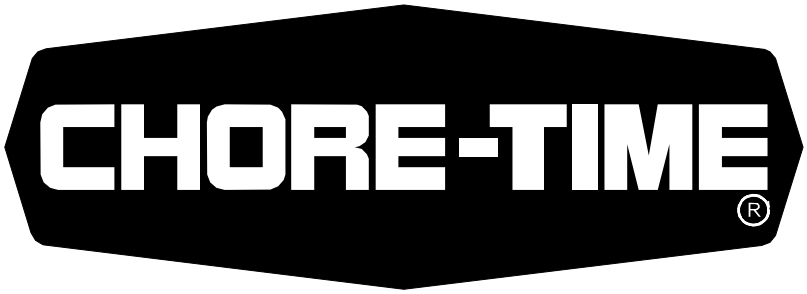
Volumatic™ Water Regulator For Cage Systems
PDS™ and Manual Adjustment
Part No. 42400-11, 42400-12, 42400-14



Item	Description	Part No.
1	#6-20 x 5/8 Hex Washer Head Screw	44946
2	Shroud	42390
3	O-Ring	42389
4	O-Ring	29118
5	Inlet Orifice	42190
6	Top Half Regulator	42174-1
7	Barrel	42172
8	Top Diaphragm Plate	42182
9	.375 ID x 1.75 Inch Spring	42392
10	Seat	48225
11	Seat Cup	48199
12	Seat Cup and Seat	42188
13	Diaphragm	42181
14	.78 ID x 2.80 Inch Spring (42400-11)	42393
15	.78 ID x 2.77 Inch Spring (42400-14)	42394
16	.78 ID x 3.76 Inch Spring (42400-12)	47685
17	Bottom Regulator Half (Man. Adjust)	42180
18	Bottom Regulator Half (PDS Adjust)	42179
19	Follower	42183
20	Adjustment Knob	42184
21	Knob Retainer	42173
22	#8-18 x 2-1/2 Inch Screw	42387
23	Diaphragm Plate	42177
24	Diaphragm Center Support	42186
25	Seat Holder	42189
26	Seat Holder Sleeve	42187
27	Seat Holder Cap	42176
28	#6-20 x 5/8 Inch Screw	42386
29	Selector Knob	42178
30	Hose Barb (PDS Adjust)	50820
31	Stand Tube Assembly	52532-7
*32	5/8 x 36 Inch Supply Hose	50800-2
**33	3/4 Inch Supply Hose	47820-0
*34	Hose Clamp	7187
*35	3/4 Inch Female Fitting	50401
*36	NH 3/4 Inch Male Adapter Fitting	25098
*37	3/4 x 1/2 Inch S x S Elbow	8074
*38	3/4 Inch PVC SDR Pipe	8083-10
*39	3/4 Inch PVC S x S Union	8137
*40	3/4 Inch Female PVC S x FT Adapter	8160
*41	Breather Cap Assembly	45703
*42	Clear PVC 1/2 x 19 Inch Pipe	38250-1
*43	Blue Ball	37142
*44	O-Ring	48325
*45	Hose Clamp	49529
*46	Seat Installation Tool	48688

***Items must be ordered separately.**

****Item available in the following lengths; 47820-50 (50 Ft), 47820-100 (100 Ft), 47820-200 (200 Ft).**



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