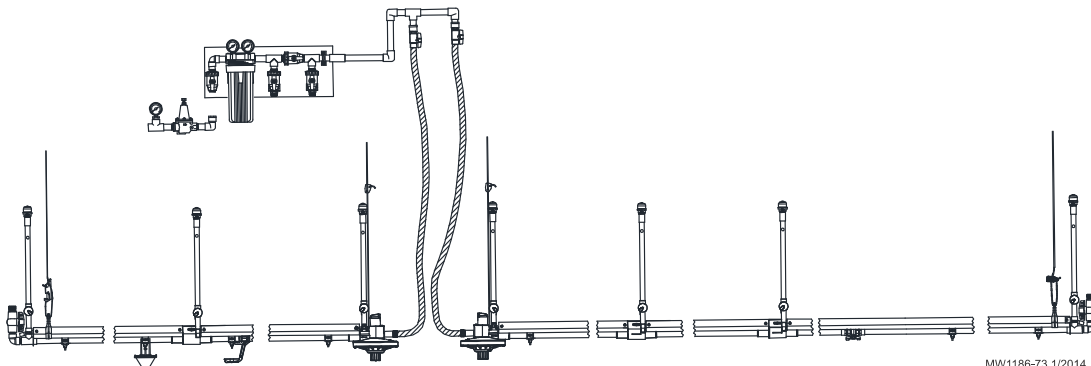


STEADI-FLOW[®] RELIA-FLOW[®] and ADVANTI-FLOW[®] Nipple Drinking System



Contact your nearby Chore-Time distributor or representative for additional parts and information

CTB, Inc.

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Limited Warranty

Chore-Time Group, a division of CTB, Inc. (“Chore-Time”) warrants new CHORE-TIME STEADI-FLOW®, RELIA-FLOW®, and ADVANTI-FLOW® Nipple Drinker products manufactured by Chore-Time to be free from defects in material or workmanship under normal usage and conditions, for One (1) year from the date of installation by the original purchaser (“Warranty”). If such a defect is determined by Chore-Time to exist within the applicable period, Chore-Time will, at its option, (a) repair the Product or Component Part free of charge, F.O.B. the factory of manufacture or (b) replace the Product or Component Part free of charge, F.O.B. the factory of manufacture. This Warranty is not transferable, and applies only to the original purchaser of the Product.

CONDITIONS AND LIMITATIONS

THIS WARRANTY CONSTITUTES CHORE-TIME’S ENTIRE AND SOLE WARRANTY AND CHORE-TIME EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, INCLUDING, BUT NOT LIMITED TO, EXPRESS AND IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSES. CHORE-TIME shall not be liable for any direct, indirect, incidental, consequential or special damages which any purchaser may suffer or claim to suffer as a result of any defect in the Product. Consequential or Special Damages as used herein include, but are not limited to, lost or damaged products or goods, costs of transportation, lost sales, lost orders, lost income, increased overhead, labor and incidental costs, and operational inefficiencies. *Some jurisdictions prohibit limitations on implied warranties and/or the exclusion or limitation of such damages, so these limitations and exclusions may not apply to you. This warranty gives the original purchaser specific legal rights. You may also have other rights based upon your specific jurisdiction.*

Compliance with federal, state and local rules which apply to the location, installation and use of the Product are the responsibility of the original purchaser, and CHORE-TIME shall not be liable for any damages which may result from non-compliance with such rules.

The following circumstances shall render this Warranty void:

- Modifications made to the Product not specifically delineated in the Product manual.
- Product not installed and/or operated in accordance with the instructions published by the CHORE-TIME.
- All components of the Product are not original equipment supplied by CHORE-TIME.
- Product was not purchased from and/or installed by a CHORE-TIME authorized distributor or certified representative.
- Product experienced malfunction or failure resulting from misuse, abuse, mismanagement, negligence, alteration, accident, or lack of proper maintenance, or from lightning strikes, electrical power surges or interruption of electricity.
- Product experienced corrosion, material deterioration and/or equipment malfunction caused by or consistent with the application of chemicals, minerals, sediments or other foreign elements.
- Product was used for any purpose other than for the care of poultry and livestock.

The Warranty and Extended Warranty may only be modified in writing by an officer of CHORE-TIME. CHORE-TIME shall have no obligation or responsibility for any representations or warranties made by or on behalf of any distributor, dealer, agent or certified representative.

Effective: April, 2014

Contents

Topic	Page
Limited Warranty	2
About This Manual	5
Safety Information	5
Safety Instructions	6
Follow Safety Instructions	6
Decal Descriptions	6
Planning	7
Incoming Pressure	7
Filtration.....	7
House Layouts	7
Nipple Drinker Configurations	10
Manufacturer's Recommendations: Birds per Nipple	11
Optional Slope Compensator	11
Installation	11
Tools Needed	11
.....	11
Filter Control Panel Installation.....	12
Water Meter Installation	13
PDS Control Installation	15
Suspension System Installation	16
Install Water Line.....	18
ADVANTI-FLOW® Cup Installation.....	20
Mid-Line Stand Tube/Mid-line Shutoff w/ Stand Tube.....	21
Mid-Line Shutoff (No Stand Tube)	21
Optional Slope Compensator:	22
Outlet Assembly.....	22
Optional Supplemental Drinker Attachment	23
Regulator Assembly - VOLUMATIC™	24
Anti-Roost Installation.....	26
Incoming Water System.....	27
Installing the Flush System	28
Operational Guidelines	29
Broilers and Breeders.....	30
Turkeys.....	31
Flush Guide	32
Water Consumption Guide.....	33
Guide to Cleaning Water Lines	34
During Flock	34
After Administering Vitamins, Medication or other Chemicals	34
Between Flocks	35
Water Quality	36
Hardness.....	36
Iron	36
Iron Bacteria.....	36
Water PH	36
Aggressiveness/Corrosion	36
Taste and Odor.....	36
Hydrogen Sulfide.....	36

Contents - continued

Topic	Page
Sand, Silt or Sediment	36
Troubleshooting	37
Parts Listing	38
Filter Control Panel (9275, 9275-1)	38
Flushable Filter Control Panel	39
Step Regulator & Gauge Module Kit (35308)	40
Stand Tube Outlet Assembly	40
Stand Tube Assembly (54517-X)	41
VOLUMATIC™ Regulator Assembly (55476-X)	42
Part Numbers	43
Volumatic Regulator Hardware Package (56233-X)	44
Anti-roost system Parts Package	45
Anti-roost Wire	45
Poultry Trainers	45
STEADI-FLOW® and RELIA-FLOW® Nipple Line Assembly and Components	46
Part Numbers	47
ADVANTI-FLOW® Nipple Line Assembly and Components	48
Slope Compensator Assembly (54036-XX) & (54037-X) Slope Compensator Repair Kit	49
Mid Line Stand Tube Assembly (52273-X)	50
Miscellaneous Kits and Components	51
Suspension System Components:	54

About This Manual

The intent of this manual is to help you in two ways. One is to follow step-by-step in the order of assembly of your product. The other way is for easy reference if you have questions in a particular area.

Important: Read ALL instructions carefully before starting construction.

Important: Pay particular attention to all SAFETY information.

- *Metric measurements are shown in millimeters and in brackets, unless otherwise specified. “” equals inches and “'” equals feet in English measurements.*

Examples:

1" [25.4]

4' [1 219]

- Optional equipment contains necessary instructions for assembly or operation.
- Very small numbers near an illustration (*i.e.*, 1257-48) are identification of the graphic, not a part number.

Note: The original, authoritative version of this manual is the English version produced by CTB, Inc. or any of its subsidiaries or divisions, (hereafter collectively referred to as "CTB"). Subsequent changes to any manual made by any third party have not been reviewed nor authenticated by CTB. Such changes may include, but are not limited to, translation into languages other than English, and additions to or deletions from the original content. CTB disclaims responsibility for any and all damages, injuries, warranty claims and/or any other claims associated with such changes, inasmuch as such changes result in content that is different from the authoritative CTB-published English version of the manual. For current product installation and operation information, please contact the customer service and/or technical service departments of the appropriate CTB subsidiary or division. Should you observe any questionable content in any manual, please notify CTB immediately in writing to: CTB Legal Department, P.O. Box 2000, Milford, IN 46542-2000 USA.

Safety Information

Caution, Warning and Danger Decals have been placed on the equipment to warn of potentially dangerous situations. Care should be taken to keep this information intact and easy to read at all times. Replace missing or damaged safety decals immediately.

Using the equipment for purposes other than specified in this manual may cause personal injury and/or damage to the equipment.

Safety–Alert Symbol



This is a safety–alert symbol. When you see this symbol on your equipment, be alert to the potential for personal injury. This equipment is designed to be installed and operated as safely as possible...however, hazards do exist.

Understanding Signal Words

Signal words are used in conjunction with the safety–alert symbol to identify the severity of the warning.



DANGER indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



CAUTION indicates a hazardous situation which, if not avoided, **MAY** result in minor or moderate injury.

Safety Instructions

Follow Safety Instructions

Carefully read all safety messages in this manual and on your equipment safety signs. Follow recommended precautions and safe operating practices.

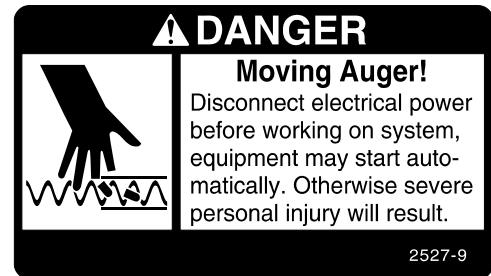
Keep safety signs in good condition. Replace missing or damaged safety signs.

Decal Descriptions

DANGER: Moving Auger

This decal is placed on the Panel Weldment.

Severe personal injury will result, if the electrical power is not disconnected, prior to servicing the equipment.



DANGER: Electrical Hazard

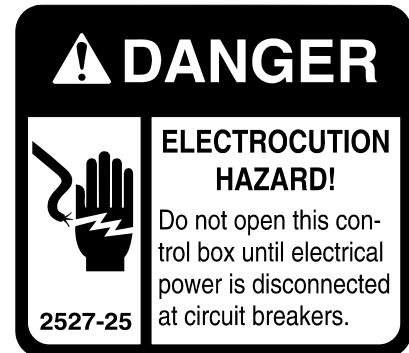
Disconnect electrical power before inspecting or servicing equipment unless maintenance instructions specifically state otherwise.

Ground all electrical equipment for safety.

All electrical wiring must be done by a qualified electrician in accordance with local and national electric codes.

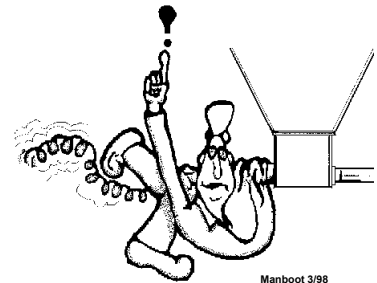
Ground all non-current carrying metal parts to guard against electrical shock.

With the exception of motor overload protection, electrical disconnects and over current protection are not supplied with the equipment.



CAUTION:

Use caution when working with the Auger—springing Auger may cause personal injury.



Planning

Incoming Pressure

	Filter Control Panels		Volumatic Regulators
Part Number	36802-1	9275/36802-2	55476-X
Incoming Pressure	3-11 psi	11-35 psi*	3-35 psi*
	*For incoming pressure between 35 and 125 psi use the 35308 pressure step down assembly with the filter control panel.		

A good starting point for incoming pressure is 25 psi [172 kPa]. Optimal system life is achieved by finding the lowest pressure that provides adequate flow during flush.

CHORE-TIME recommends a minimum incoming water pressure of 3 psi [21 kPa] for gravity feed systems. The tank should be 8' [2.4m] above the Nipple Line.

For every 28" [711 mm] of water column, water pressure increases one pound. Measure the operating pressure at bottom of the water pipe.

Incoming water supply should be at least a 1" [25 mm] diameter incoming line (preferably PVC) from a single well. Other factors such as: multiple wells, the distance from the well(s), and the needs of other equipment which requires water could demand larger lines.

Note: All pressure settings are to be made when no water is flowing.

Filtration

Good water quality maximizes performance of the equipment, minimizes maintenance and repair, and increases the life of the system.

Pump the well prior to hookup of the system to clear sand, mud, or debris. CHORE-TIME recommends a water test by a reputable water treatment company in the area. Water treatment and/or extra filtration may be required, depending on the water test results.

A minimum of 1, 140 mesh (105 microns) filter is recommended. For systems with high sand/silt levels a secondary, more aggressive 1250 mesh (10 micron) or 635 mesh (20 micron), filter should be placed down stream of the 140 mesh filter.

House Layouts

- Line length 500' [152 meters] max. Split line into two halves for longer barns.
- For gravity feed systems, lines should be 250' [76 m] max.
- Keep Lines level. **"Suspension System Installation" on page 16.**
- For breeders, place the water line INSIDE The ULTRAFLO® Breeder Feeder Loop.
- For a pan feeder system, place the water line within three feet [1m] of the feed line.
- For pullets, it is ideal to place water lines on either side of the feed lines within 3 ft. [1m].
- In areas where house temperature will reach 100°F (40°C) for sustained periods and no evaporative cooling or tunnel ventilation is used, an anti-roost system is needed.

RELIA-FLOW® and STEADI-FLOW®

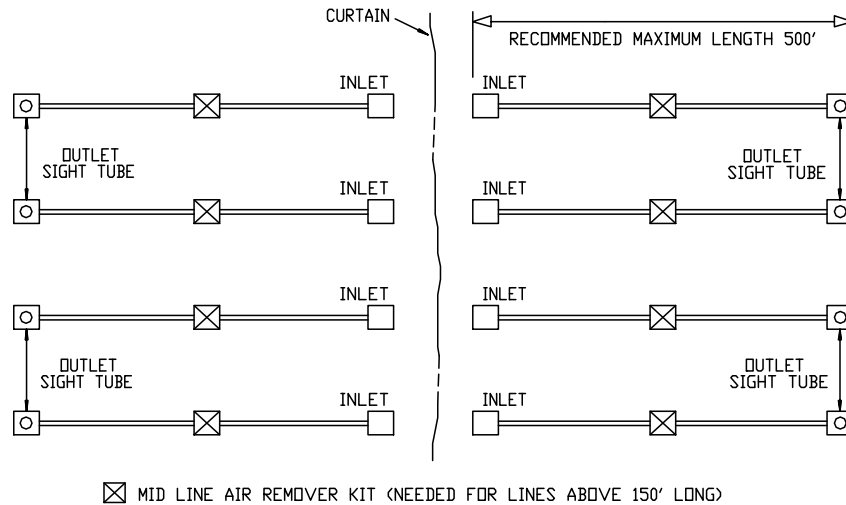


Figure 1. Preferred Layout for RELIA-FLOW® and STEADI-FLOW®

Alternate Layout #1

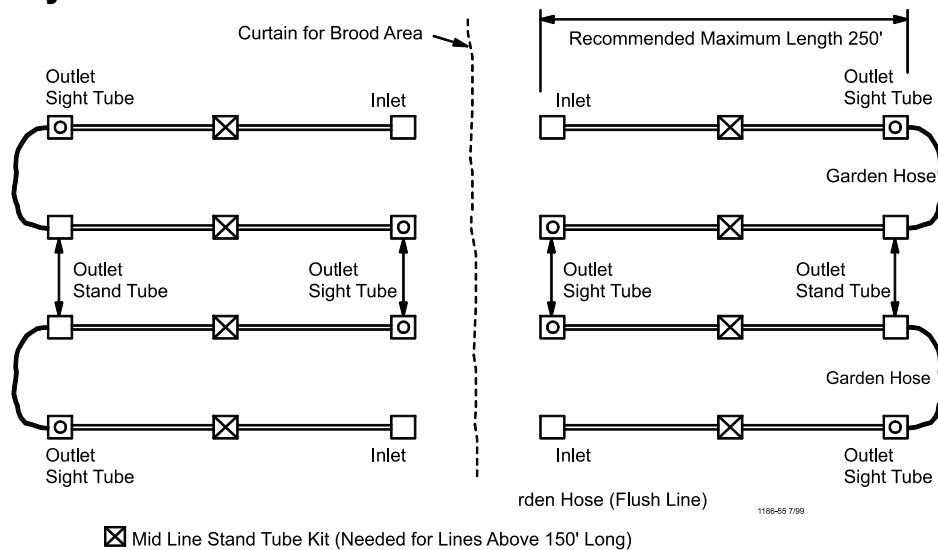


Figure 2. Alternate Layout for RELIA-FLOW[®] and STEADI-FLOW[®]

Alternate Layout #2

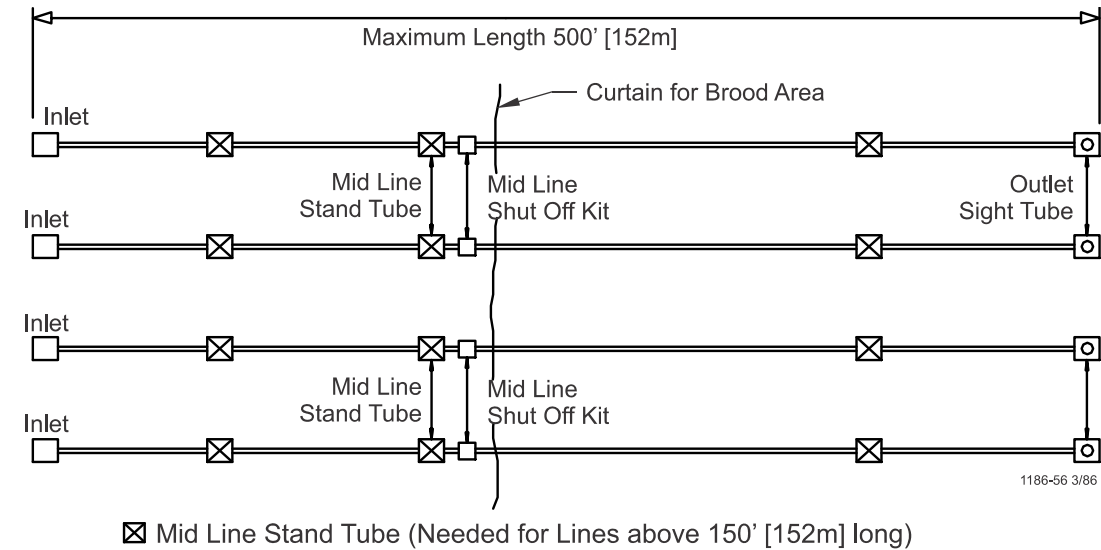


Figure 3.Alternate Layout #2 for RELIA-FLOW® and STEADI-FLOW®

ADVANTI-FLOW® Preferred Layouts

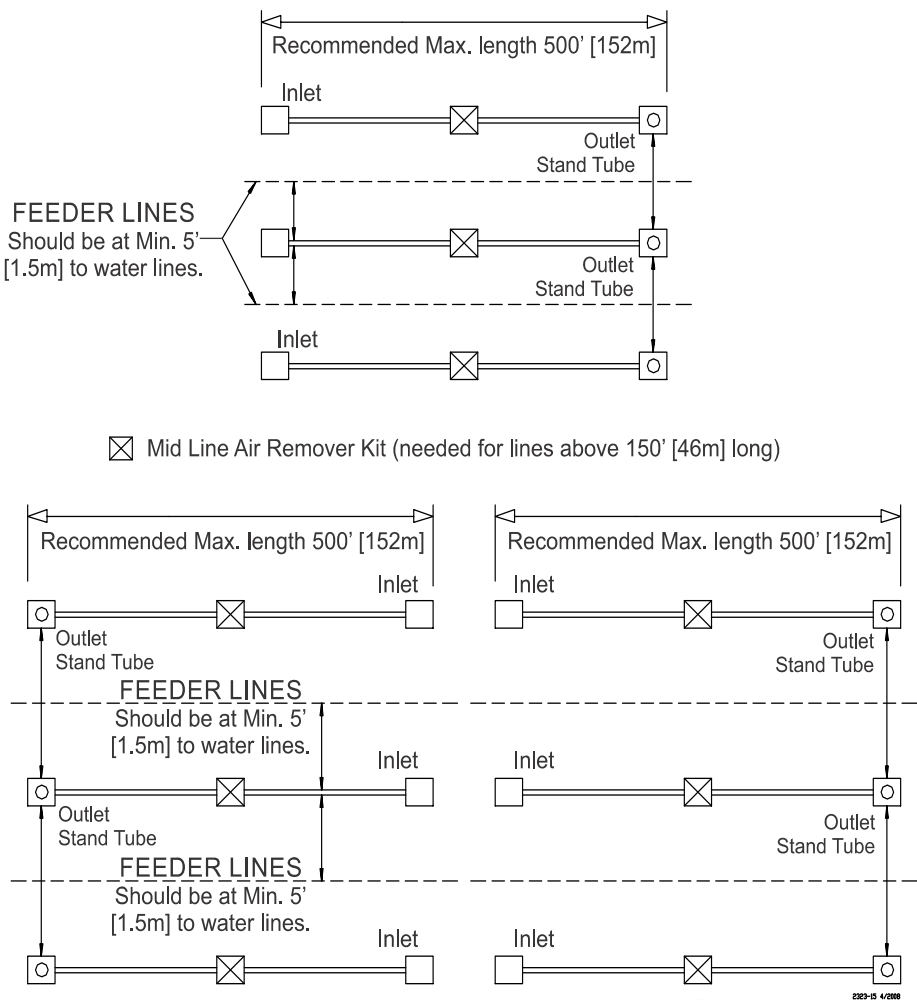
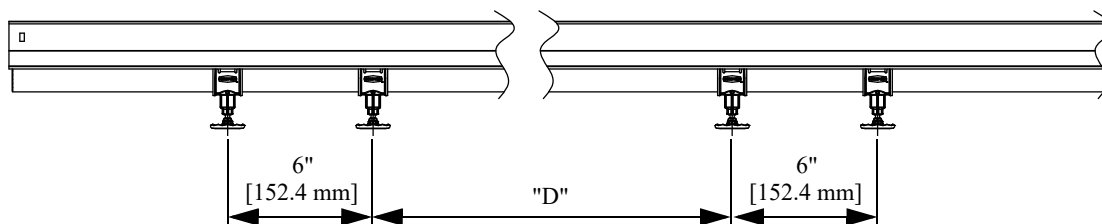


Figure 4.Preferred Layouts for ADVANTI-FLOW®

Nipple Drinker Configurations

The CHORE-TIME nipple drinker is available with nipples spaced 6" [150 mm], 8" [200 mm], 10" [250 mm], 12" [300 mm], 15" [380 mm], 20" [508 mm], or 24" [610 mm] on the 10' [3 m] pipe.



ADVANTI-FLOW		STEADI-FLOW & RELIA-FLOW	
Number of Nipples	Spacing "D"	Number of Nipples	Spacing "D"
6	34" [863.6 mm]	5	24" [610 mm]
8	24" [609.6 mm]	6	20" [508 mm]
10	18" [457.2 mm]	8	15" [381 mm]
12	14" [355.6 mm]	10	12" [305 mm]
--	--	12	10" [254 mm]
--	--	15	8" [203 mm]
--	--	20	6" [152 mm]

Figure 5.Nipple Spacing

The CHORE-TIME nipple drinker is available with the standard support channel for broiler applications and heavy support channel for pullets and breeders. See Figure 6. and Figure 7.

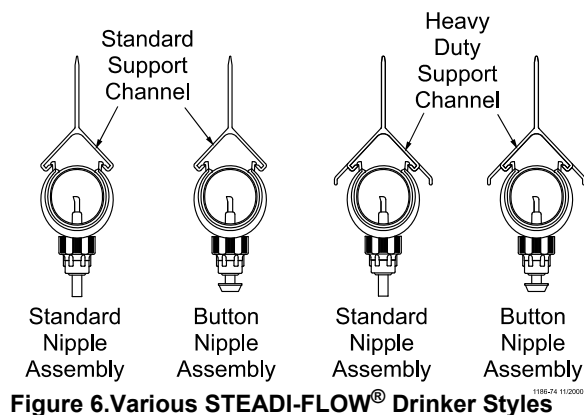


Figure 6.Variety STEADI-FLOW® Drinker Styles

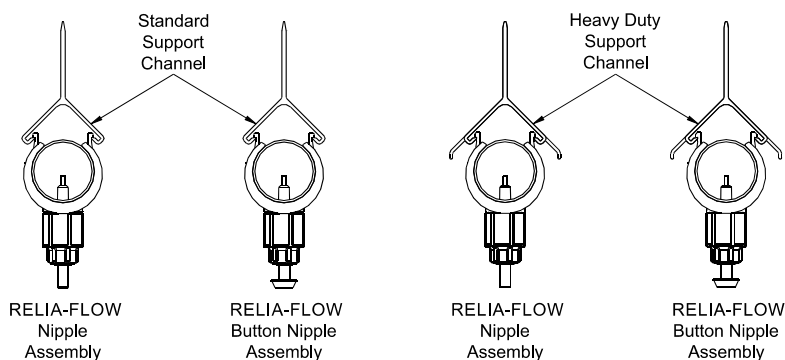


Figure 7.Variety RELIA-FLOW® Drinker Styles

Manufacturer's Recommendations: Birds per Nipple

Type	Recommended Number birds per Nipple	Recommended Options
Broiler	30 for day old chicks 10-15 for grow-out	Standard channel-Standard Flow (Button options) or Standard channel-Hi Flow w/catch cup (Button options)
Breeder	8-10 for hot to warm climates 10-12 for warm to cool climates	Heavy Duty channel-standard-flow or Heavy Duty channel High Flow w/catch cup (Hot climates Only)
Pullets	16-24 for day-old chicks 8-12 for grow out	Standard channel-Standard Flow
Poult	10-15 for 0-6 weeks old 10-15 after brooding	6 wks or less-Standard channel-Standard flow 7-9 wks-Heavy Duty channel (Hi Flow w/Buttons recommended)

Optional Slope Compensator

See “Optional Slope Compensator:” on page 22 for info on how to plan and install Slope Compensators.

Installation

Tools Needed

Regular Screwdriver	Bolt Cutters or Hack Saw
Locking Pliers	PVC Cleaning Solvent
File	Electrical Drill and Drill Bits
Saw to cut PVC Tubes	Another Person to help
Screw-Hook Driver	

Filter Control Panel Installation

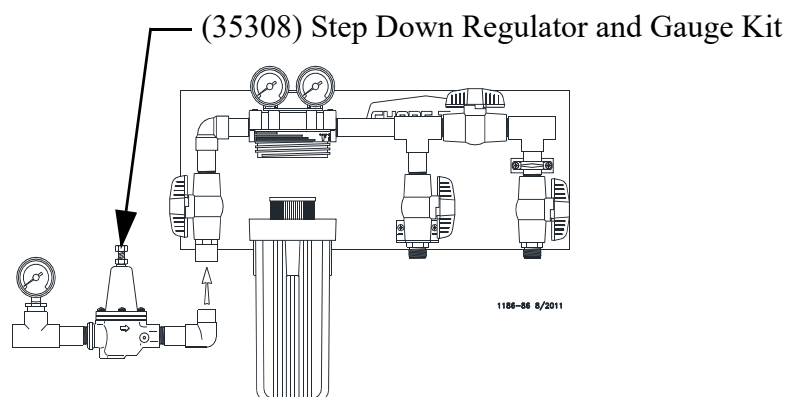
The filter control panel is used to remove foreign material from the incoming water, and, if necessary, add medication to the water. The flushable versions feature a filter that may be flushed to extend filter life.

The step down regulator and gauge assembly is used to reduce the water pressure supplying the filter control panel. The filter control panel and step down regulator should be installed in a convenient location where incoming and outgoing water supply lines can be easily run. The control panel must be out of the reach of birds.

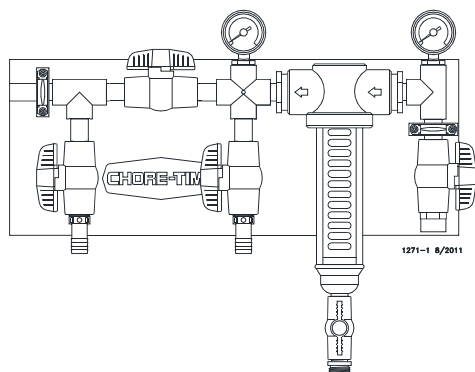
The filter control panel is shipped secured to a mounting board. The mounting board and filter control panel should be secured to wall or post using lag bolts (not supplied).

The step down regulator and gauge assembly is shipped un-assembled. Assemble the step down regulator and gauge assembly components as specified in the instruction (MW1052) shipped with the kit.

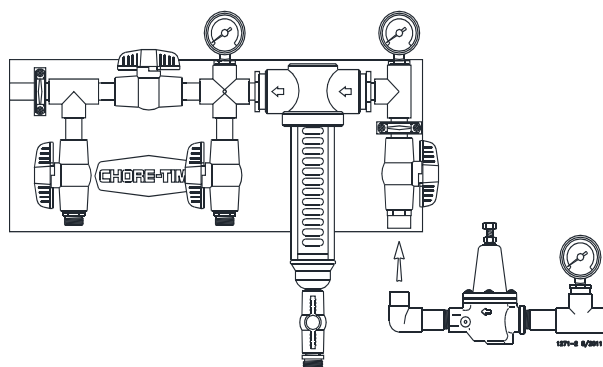
Connect the step down regulator and gauge assembly to the filter control panel, as shown in **Figure 8**.



Standard Control Panel
Part Number 9275
(11+ p.s.i. [75.8+ kPa])



Low Pressure Control Panel
Part Number 36802-1
(5-10 p.s.i. [34.5 - 69.0 kPa])



High Pressure Control Panel
Part Number 36802-2
(11+ p.s.i. [75.8+ kPa])

Figure 8. Optional Control Panels

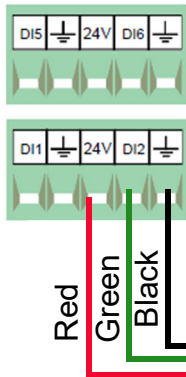
Water Meter Installation

Badger® Water Meter Installation Wiring

When connecting to the Chore-Tronics® control, proper polarity must be maintained. The Green lead is connected to the DI (digital input) of your choice, and the black lead is connected to the ground terminal of the chosen DI. The Red power connection will extend battery life of the Water Meter if used.

The distance from the Controller can be long, if using twisted pair wire (20 ga. Minimum). If interference causes high counts, then a filtration capacitor (54001) will be needed.

Chore-Tronics® Control
DI of your choice



Badger®
Water Meter



Figure 9. Water Meter Wiring

Mounting

The Badger® Water Meter will have longest life if installed horizontally with the head up. Refer to the Badger® installation manual for more information. If installed otherwise, wear will accelerate. If mounted vertically, water must flow up for an accurate reading. Install the Water Meter 1' [30.5 cm] downstream from filters.

Shorter Life!

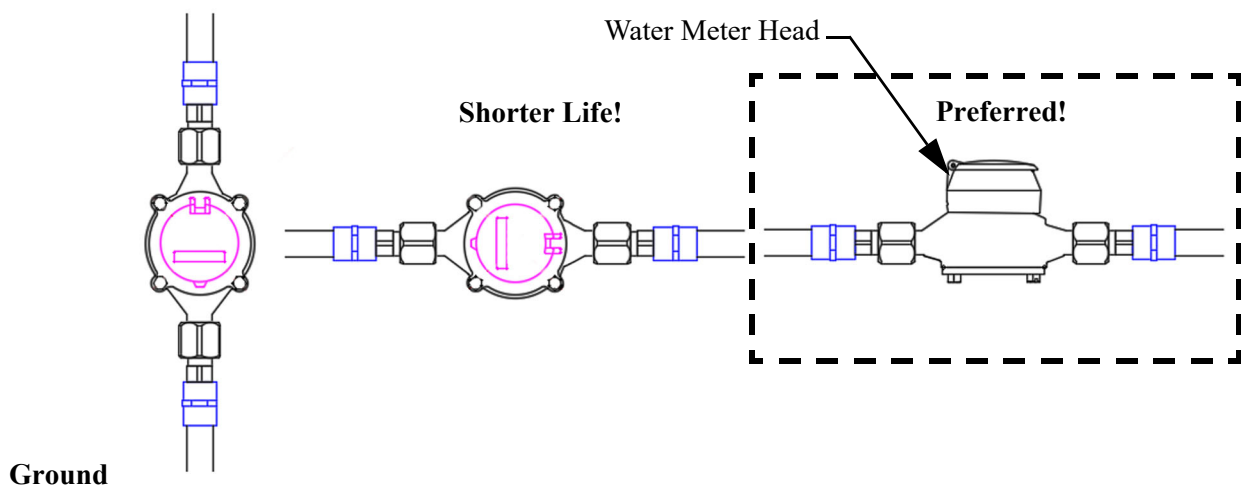


Figure 10. Water Meter Mounting

Water Meter Start Up

Attention! Air and debris in the supply line must be removed before pressurizing the meter.

Procedure

If the Water Meter is located close to the Filter Panel- Valves #1 and #2 can be opened to remove any air and debris from the upstream piping to the inlet point of the Meter. After flushing, valve #2 can be closed and the Meter can be installed. Once installed, valve #2 must be opened **very slowly** to fill the downstream line and pressurize the Meter without damaging it.

If the water meter is not located close to the Filter Panel- another optional valve can be installed close to the Meter. Follow the instructions above using Optional Valve and Valve #2.

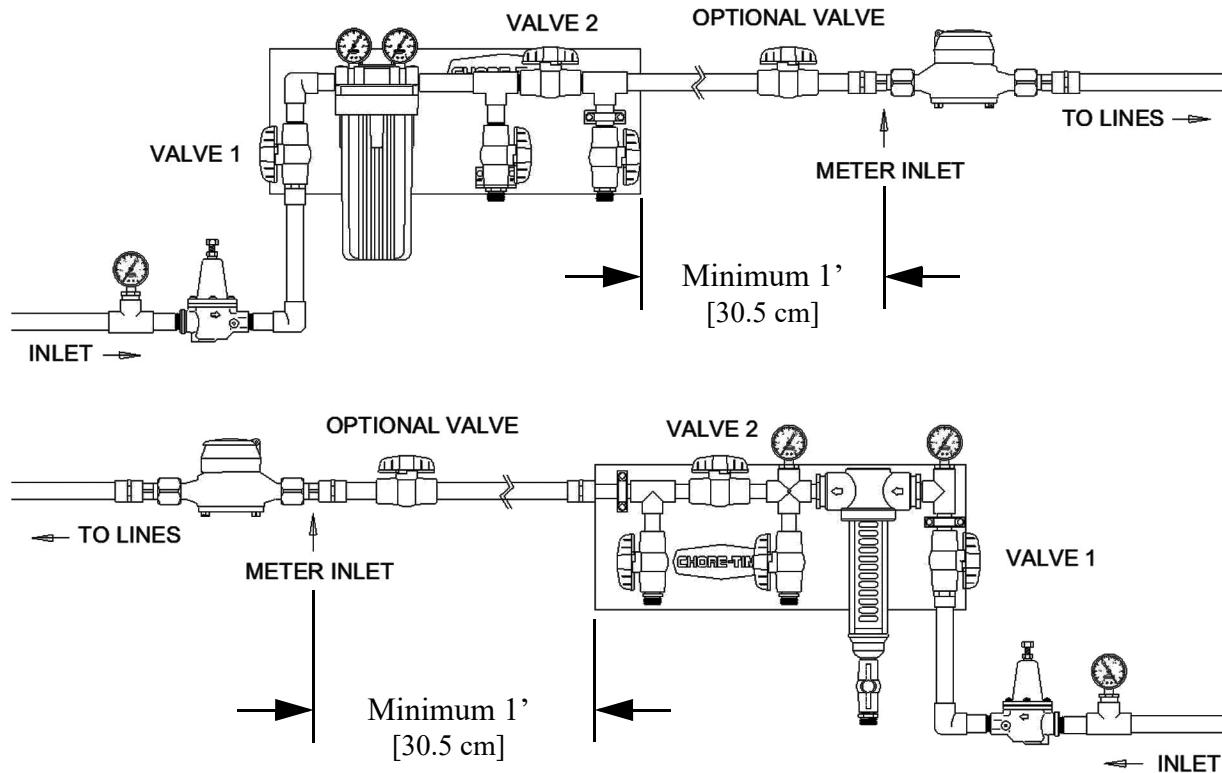


Figure 11. Water Meter Start Up

High Flow Alarm

See the Chore-Tronics® Manual (MT2398) for High Flow Rate Alarm information.

Low Pressure Alarm

See MT2398 manual for Low Pressure Switch (46597) information. Place the Low Pressure Switch in the Control Room, after the Step Down Regulator.

PDS Control Installation

The PDS™ (Pneumatic Distribution System) control provides a central place to flush watering lines and regulate the water column height.

Each station is capable of controlling up to 2 individual Chore-Time regulators. For example an 8 station control can regulate and flush up to 16 individual regulators.

For more information, refer to the PDS™ Control Manual (p/n MW2467)

Chore-Time offers two different PDS™ Controls.

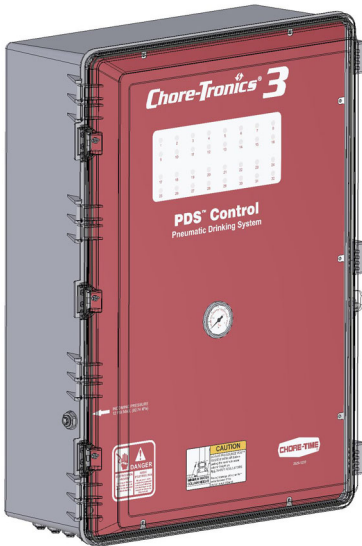
Standard PDS™ Control



- 1. Change pressure in all lines or flush all lines from one location
- 2. Automatically flush up to four times per day.
- 3. Manually flush from one location.

Part Number	Number of stations
52430-4	4
52430-8	8

Chore-Tronics® 3 PDS™ Control



- 1. Adjust pressure in all lines from Chore-Tronics 3 Control.
- 2. Automatically flush an infinite number of times per day.
- 3. Automatic water column compensation as birds drink.
- 4. Water Column will rise with age of birds.
- 5. Manually flush from Chore-Tronics 3 Control.

Part Number	Number of stations
56039-4	4
56039-8	8
56039-16	16
56039-32	32

Suspension System Installation

1. Determine where the water line is to be installed. Mark a straight line on the ceiling or rafters using string or chalk line, or winch cable temporarily attached with staples or nails.
2. For installations using wood trusses, the standard screw hook or the optional ceiling hook may be used to hold the pulley assemblies. For installations using steel trusses, the ceiling hooks are available to hold the pulley assemblies. Install hooks 8' [2.4 m] apart for heavy channel water lines and 10' [3 m] apart for standard channel.

Screw hook installations:

Screw the threads all the way in to prevent bending. The opening of the hooks **must** point away from the direction the cable pulls. See **Figure 12**

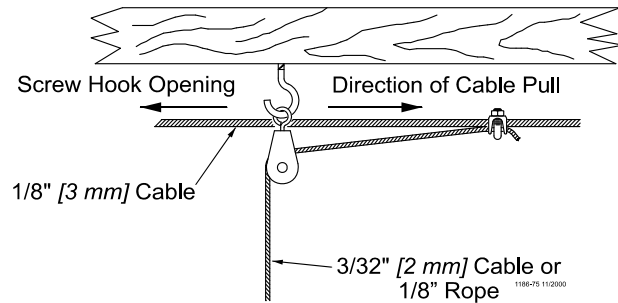


Figure 12. Screw Hook Installation

Ceiling hook installations:

Secure with bolts, self-tapping screws, or weld in place as shown in **Figure 13**. The ceiling hooks may be welded in place, if desired, instead of bolting. The opening of the hooks **must** point away from the direction of cable pulls.

Note: The maximum distance the water line can be raised is equal to the distance of cable travel. (See **Figure 14**).

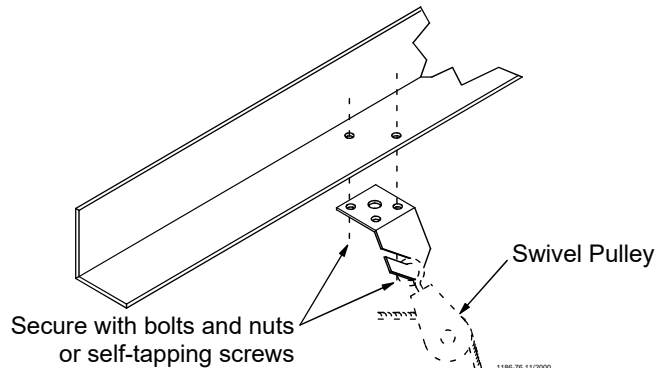


Figure 13. Ceiling Hook Installation

3. Install the pulley assemblies as shown in **Figure 14**.

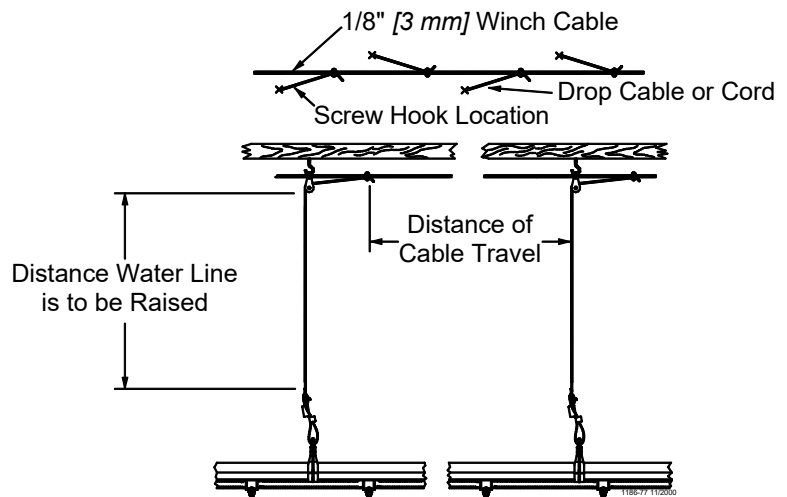


Figure 14. Offset the Screw/Ceiling Hooks

4. Mount the split drum winch as shown in **Figure 15**. Mount the winch to the ceiling or on a 2 x 8" [50 x 200 mm] board spanning at least two rafters for support. Use at least (4) 1/4" lag screws (not supplied) to secure winch to support. For systems less than 150' [46 m], the manual winch may be used in place of the split drum winch.
5. Bolt the winch to the bracket, as shown in **Figure 15**.

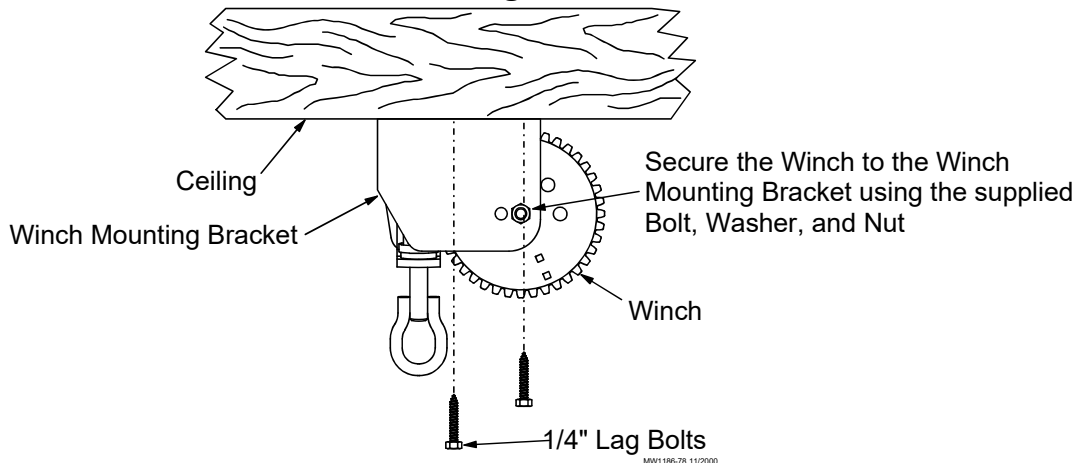


Figure 15. Winch Mounting

6. Attach one end of the 3/16" [4.8 mm] cable to the winch as shown in **Figure 16**. Unroll the cable along the length of the water line.

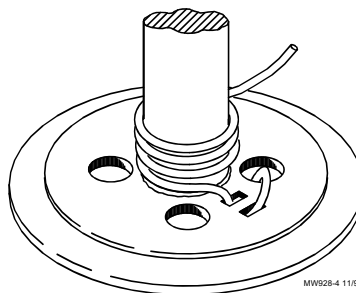


Figure 16. Cable Wrap on Drum

Install Water Line

1. Cut a section of the 3/32" [2.3 mm] cable or cord for each suspension drop. The cable or cord should be approximately three feet [91 cm] longer than the distance from the floor to the ceiling so that it can be attached at the top and bottom.
2. Route the cable or cord around the swivel pulley and attach to the main cable, using a clamp.
3. At the beginning and end of the system route the suspension cable through the top hole of the suspension hanger and around the Cable adjustment Hanger as shown in **Figure 17**. At all the other drops, use the Cord adjuster **as shown**.
4. Assemble the suspension hanger over the support channel at every suspension drop.

Helpful Hint: It may be necessary to fasten a weight to the end of the main cable to maintain tension while connecting the drop lines, etc.

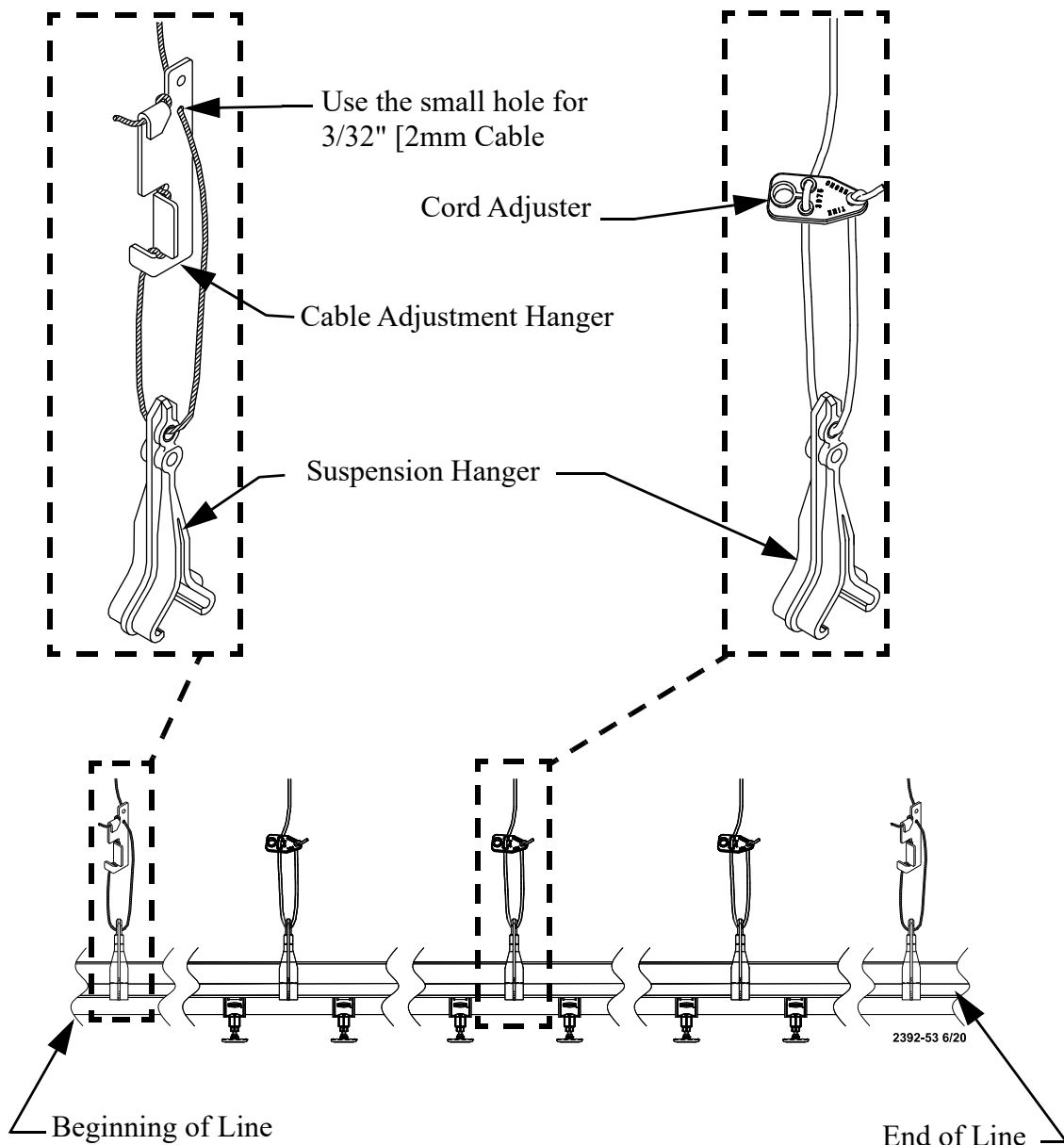


Figure 17. Suspend Water Lines

Lubrication for Couplers, Midline Air Removers, slope Compensators, and Regulators

Acceptable Lubrication:

- Plain water or light dish soap and water mixture.
- Silicone oil based Parker **Super** O-Lube (available through Chore-Time part number 45911).
Note: Very little (thin film) of this product is needed to provide necessary lubrication.

Unacceptable Lubrication:

- **DO NOT USE** petroleum based Parker O-Lube Product! Only the Parker Silicone oil based **Super** O-Lube is acceptable.
- **DO NOT USE** silicone spray! These may have petroleum based properties that may damage water line components.
- **DO NOT USE** any petroleum based product! This would include, but is not limited to, items such as Vaseline, WD 40, motor oil, etc.
- **DO NOT USE** vegetable or any other similar oil! This would include, but is not limited to, sunflower oil, peanut oil, coconut oil, linseed oil, corn oil, etc.

Important! Use of any lubricant during installation, other than those approved by Chore-Time, will void the manufactures warranty.

Coupler Assembly

Raise the suspension to a convenient working height. A nail apron may be used to carry hangers, connectors, expansion joints, keys, adjustment levelers, or cord adjusters.

1. Make sure the water pipes are fully inserted into the coupling assembly. (See Figure 18). See "Lubrication for Couplers" above.

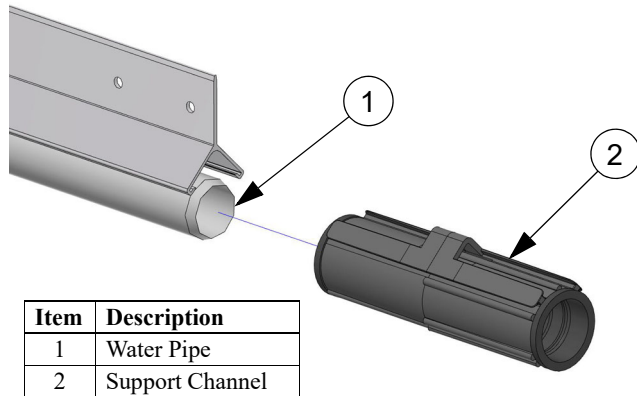


Figure 18. Coupling Liner Assembly Installation

2. Install a Channel Bracket with #10 hardware to fasten the Support Channels together. (See Figure 19).

Note: The support channels will be butted against each other when the coupling is properly installed.

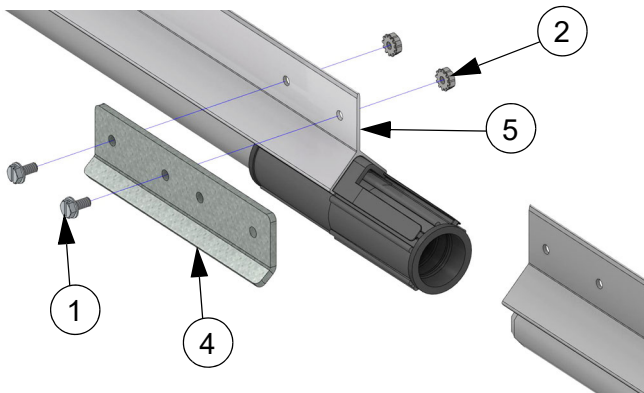


Figure 19. Securing the Water Line together

ADVANTI-FLOW® Cup Installation

1. Install the locator to the cup as shown, (See Figure 20).

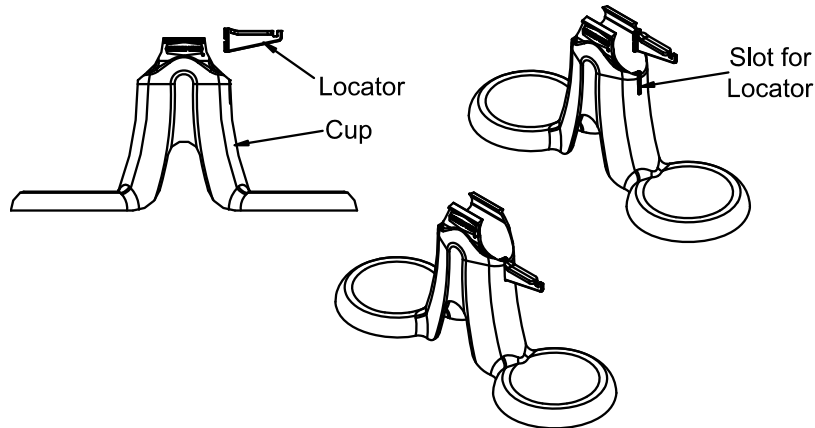


Figure 20. Advanti-Flow Cup Installation

2. Install cup and locator to the pipe assembly.
3. Turn pipe assembly over and install cup over the water pipe. The cup is to be located between a pair of saddle assemblies, (See Figure 21).

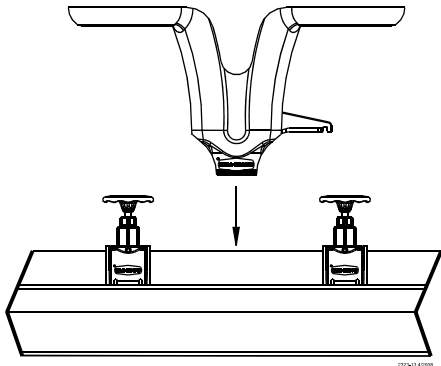


Figure 21. ADVANTI-FLOW Cup Installation

Mid-Line Stand Tube/Mid-line Shutoff w/ Stand Tube

One mid-line stand tube is required for every 150' [46 m] of nipple watering line, see **Figure 22**.

1. Insert the water pipe into the body.
2. The support channel will slide into the channels on the top of the body.
3. Secure the body to the support channel using the Mid-Line Bracket and the supplied 10-24 stainless steel screw and lock nut.
4. **Flexible Stand Tube**-Push the stand tube assembly on the mid line air remover or slope compensator vent tube and install the adjustable clamp.
Folding Stand Tube-Place provide O-ring and secure with an Adjustable Clamp.

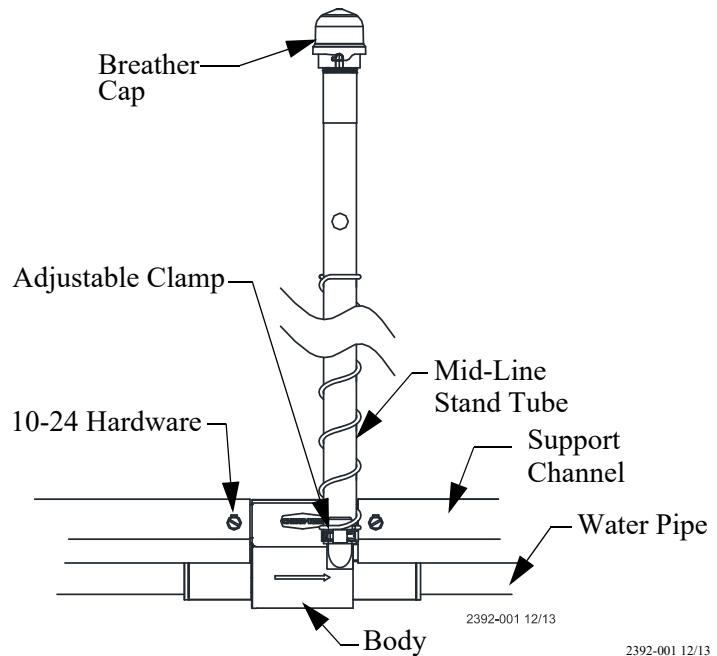


Figure 22. Mid Line Stand Tube Installation

Mid-Line Shutoff (No Stand Tube)

1. Install a mid line stand tube at the first joint before a mid line shut-off valve to insure proper air removal from the water line.
2. Use a flat screw driver to carefully pry 3 or 4 saddles away from the support channel. This will allow easy access to the water pipe for cutting.
3. Use PVC pipe cutters to cut a section out of the water pipe. See **Figure 23**. The shut-off valve may be used as a template to determine the required size of the cut.
4. Apply PVC cement to the couplers on the mid line shut-off valve assembly.
5. Install the mid line shut-off valve on the water line.
6. Reinstall the saddles previously loosened in the support channel.

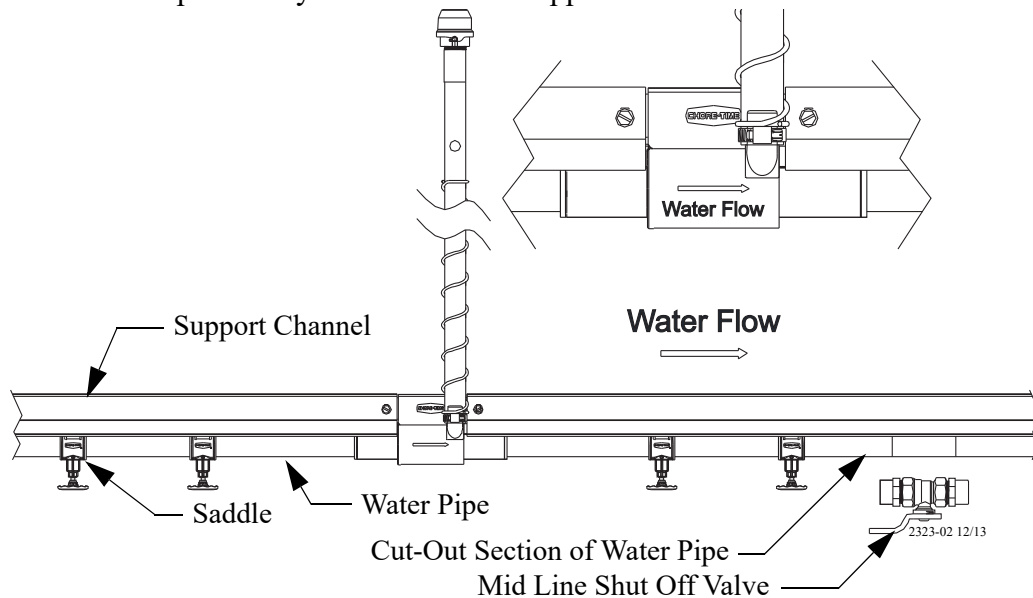


Figure 23. Mid Line Shut-Off Valve Installation

Optional Slope Compensator:

The slope compensator is a pressure compensator for houses that have a gradual slope over the length of the system.

- The inlet end of the slope compensator must be at the top of the slope. Arrow must point in direction of water flow. Do not attempt to push water uphill.
- The high differential Slope Compensator will absorb 7" [17.8 cm] of slope. The Low Differential (Low Dif.) Slope Compensator will absorb 4" [10.2 cm].
- The maximum number of Slope Compensator's used on any one water line is six.
- The maximum amount of slope over any water line is 28 inches [71 cm] of drop.

4" [10cm] Max. Slope (Low Diff. Slope Compensator)

7" [17.8cm] Max. Slope (High Diff. Slope Compensator)

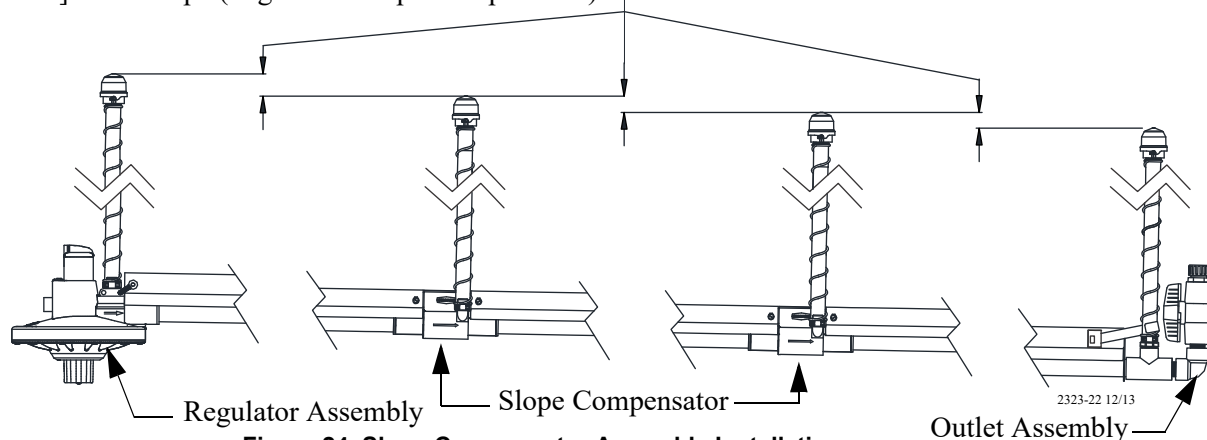


Figure 24. Slope Compensator Assembly Installation

Note: Slope Compensators may require higher Inlet pressures to maintain good flushing. Do Not exceed maximum Inlet pressure on [page 7](#).

Outlet Assembly

The outlet end must be located within 6" [152 mm] of a suspension drop line. This may require adding an additional suspension drop line or cutting the last section of water line to stop within 6" [152 mm] of an existing drop line.

Install the outlet assembly, as shown in [Figure 25](#).

1. Make sure the end of the water pipe is flush with the end of the support channel.
2. Make sure the hanger is properly oriented on the outlet assembly tee prior to securing the water line with PVC cement.
3. Secure the hanger to the support channel, as shown in [Figure 25](#). If the water line was shortened to terminate under a suspension drop line, it may be necessary to drill a hole in the support channel for the 10-24 stainless truss head screw and lock nut. The Stand Tube Bracket may be used as a template to determine proper hole location.
4. **Flexible Stand Tube-** Slide the Stand Tube onto the 1/2" Male Adapter and secure with an adjustable clamp.

Folding Stand Tube- Wrap threads of 1/2" male adapter on the stand tube assembly with sealant tape. Thread the stand tube assembly into the outlet tee.

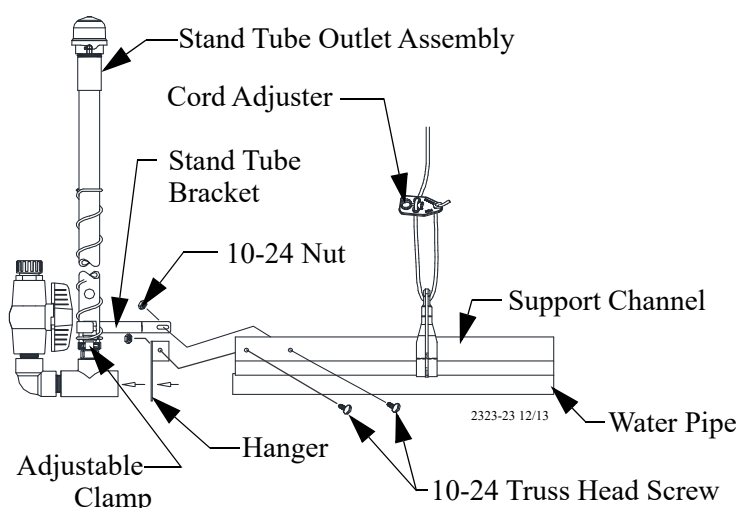


Figure 25. Outlet Assembly Installation

Notes: The Stand Tube Hanger prevents the water pipe from separating from the Channel.

The Stand Tube Bracket prevents the Water Line Pipe from sliding relative to the Channel.

Optional Supplemental Drinker Attachment

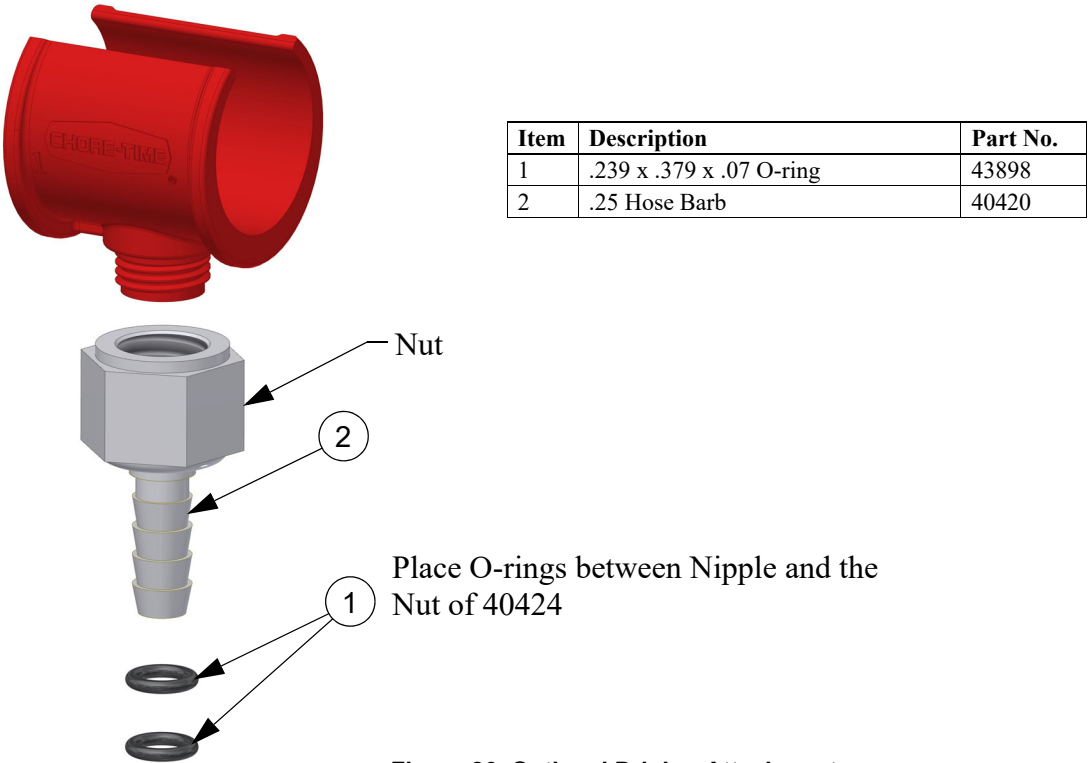


Figure 26. Optional Drinker Attachment

Regulator Assembly - VOLUMATIC™

Assemble and install the regulator assembly, as shown in **Figure 27**.

1. Glue the included NH male adapter fitting or optional street ell and HN male adapter fitting to the inlet. **Be careful not to get glue inside the regulator.**
2. Slide the outlet end over the watering pipe and into the end of the channel. It helps to lubricate the watering pipe. See **“Acceptable Lubrication:”** on page 19.
3. Slide the regulator bracket into the hole provided in the regulator and fasten into the hole provided in the channel with the included #10-24 x 5/8" hex washer head screw and #10-24 hex nut.
4. Assemble the stand tube and clamp to the regulator by sliding the tube over the barbs and tightening the adjustable clamp.

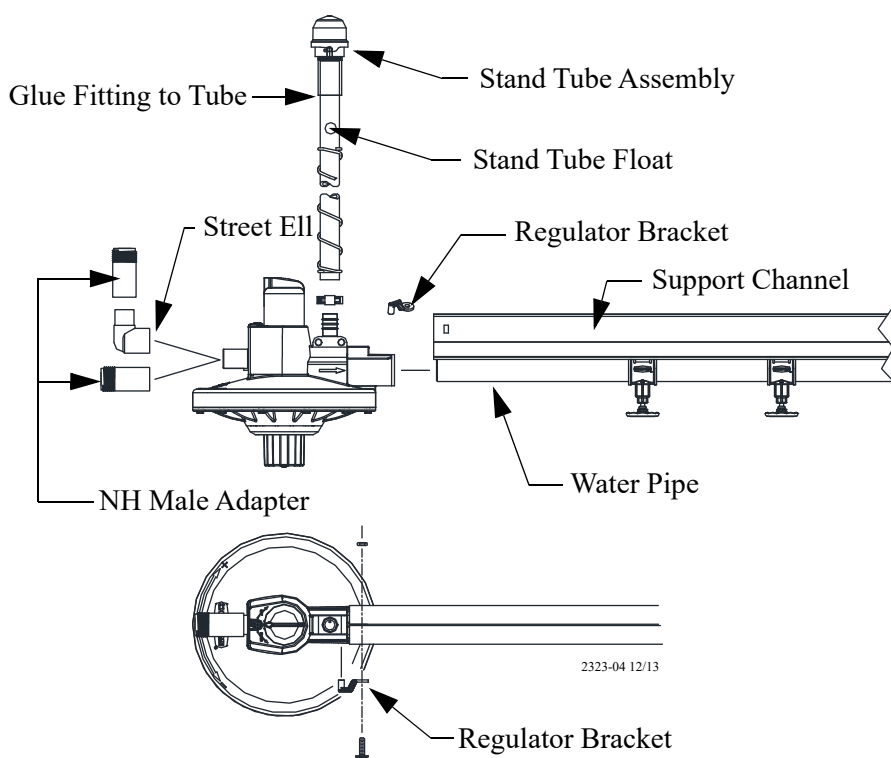


Figure 27. Regulator Assembly Components

VOLUMATIC™ Regulator Operation Guide

- Shut Off: Turn the selector knob clockwise until it stops.
- Turn On: Turn the selector knob until it points to the ON position.
- Flush: Turn the selector knob fully counter-clockwise until it stops.
- When flushing, make sure the outlet line is clear of restrictions. Excessive back pressure can damage the regulator.
- The water column is set by turning the adjustment knob on the bottom of the regulator in the direction shown on the regulator. (For Auto Adjust see **“PDS Control Installation”** on page 15).
- Adjust the operating pressure as recommended in the Nipple Waterer Quick Reference Sheet. See page 29.
Standard Regulator Maximum adjustment is 30" [76.2 cm].
K Spring Regulator Maximum adjustment is 80" [203.2 cm].
- If flush pressure is excessive (>15 psi), the regulator will relieve pressure to prevent damage further down the system. See **“Troubleshooting Guidelines”** on page 34. for more info.

Note: The static control room pressure setting will always result in a lower flush pressure.

Important: When increasing the water column, as soon as resistance is noticed, stop turning the manual adjustment knob or damage will occur.

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.

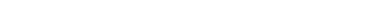
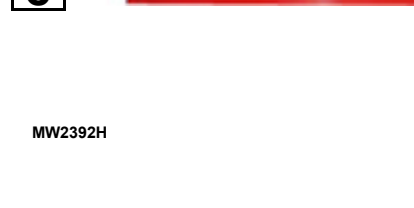
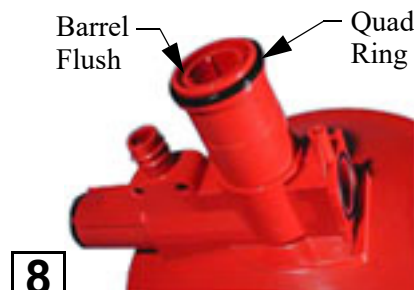
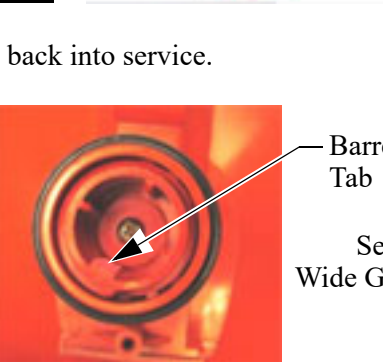
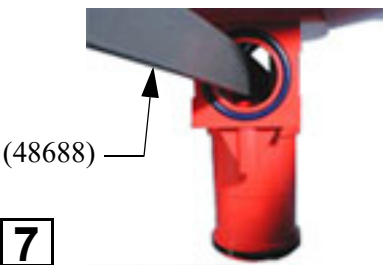
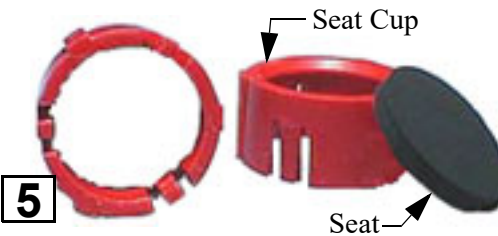
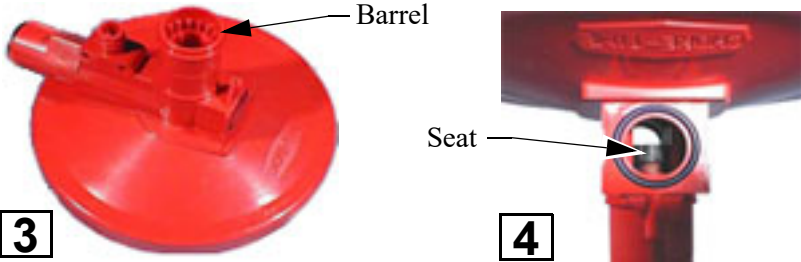
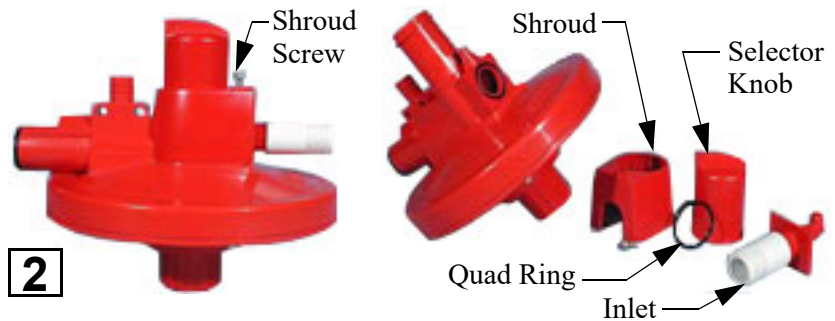
6. Use the Chore-Time seat installation tool to position the new seat assembly on top of the seat holder.

7. Press up on the seat holder and use the seat installation tool (48688) 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.
- Use Super o-lube (45911) to lube o-rings if needed.
- Replace the shroud and shroud screw.

- The regulator is now ready to be put back into service.



Anti-Roost Installation

The anti-roost system prevents the birds from setting on the water line. **Figure 28** shows an overview of the anti-roost system.

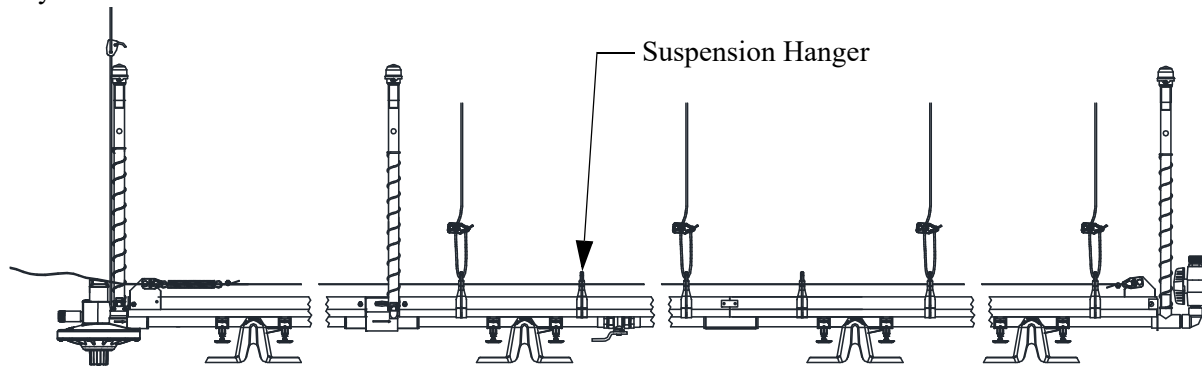


Figure 28. Anti-Roost System

2323-05 12/13

1. Make certain that an anchor plate with adjustment leveler is installed at the beginning and end of each anti-roost line. **See Figure 29.**
2. When an anti-roost system is to be installed the channel bracket must be used in place of the key to connect the channels together.
3. Install a suspension hanger every 24" [610 mm]
4. Beginning at the first suspension hanger, thread the training cable the full length of the anti-roost line. Allow approximately 24" [610 mm] extra and cut the cable.
5. Create a small loop with the cable and a cable clamp.
6. Connect the cable loop to the adjustment leveler/anchor plate.
7. Install a spring on the adjustment leveler/anchor plate near the inlet assembly.
8. Pull the cable taught and create a small loop with the cable and a cable clamp.
9. Connect the cable to the spring.
10. The spring should be stretched to an overall length of approximately 8" [203 mm]. Adjust as required.
11. Repeat the above procedure on each of the anti-roost lines.

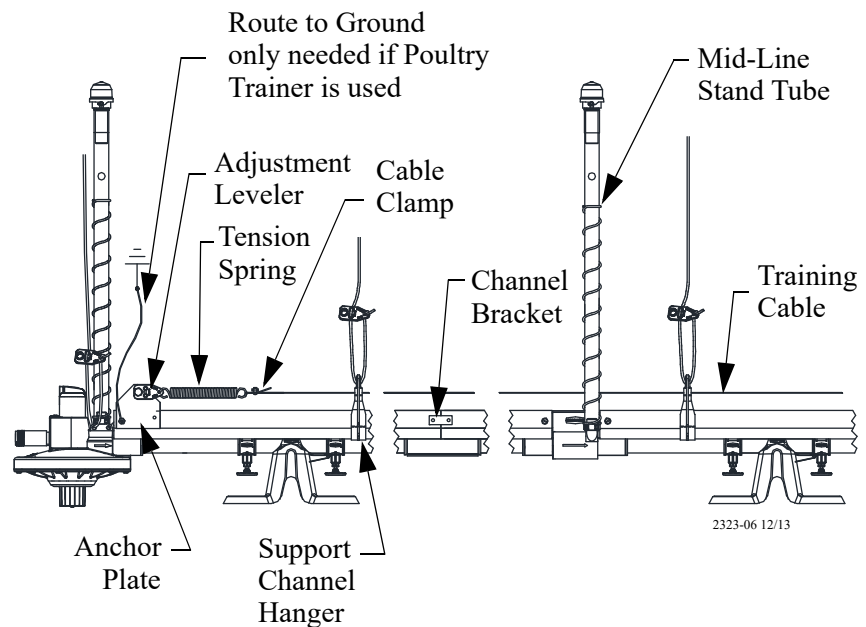


Figure 29. Anti-Roost Components

2323-06 12/13

Optional Equipment:

- Secure the poultry trainer to a wall or post near the water line. See “**Anti-roost system Parts Package**” on **page 45** for options.
- Chore-Time recommends wiring the poultry trainer into separate electrical circuit that can be switched at the door.
- Refer to the instructions supplied with the poultry trainer for wiring information.
- Note: Make sure that the support channel is attached to a ground (to insure proper operation of the poultry trainer). It will be necessary to install a jumper wire at stand tube, inlet assemblies, etc., to insure the ground circuit **See Figure 29.**

Incoming Water System

1. Install the Water shut-offs in the ceiling. Do not install the shut-offs at the Regulator. Installing the Shut-offs at the regulator adds to much weight at the regulator location. **See Figure 30** below.
2. Use some kind of Strain Relief on the hose connecting to the Regulator to prevent hose from being damaged.

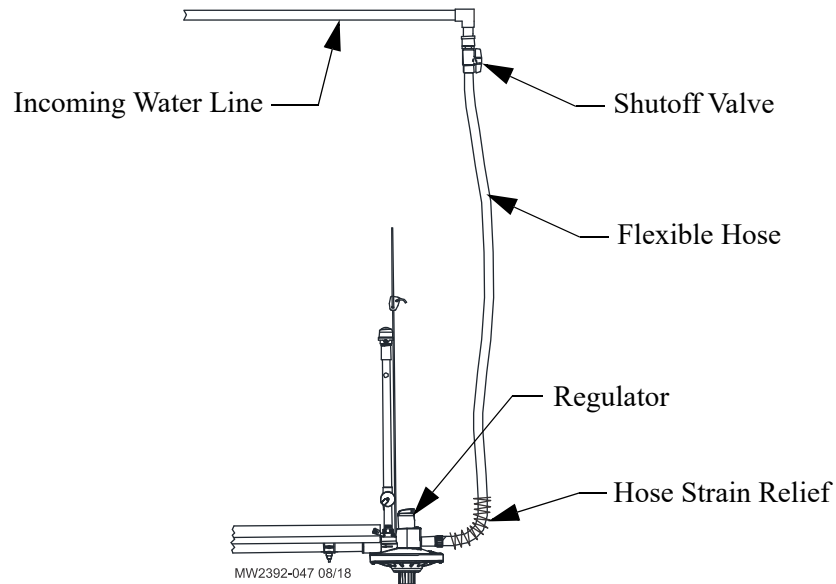


Figure 30. Incoming Water System

Installing the Flush System

The hose, PVC pipe and connections must be purchased locally. Install the flush components as shown in **Figure 31**.

1. Notice that the exit line must exit through the building wall at a minimum height of 72" [182.8 cm] above floor level.

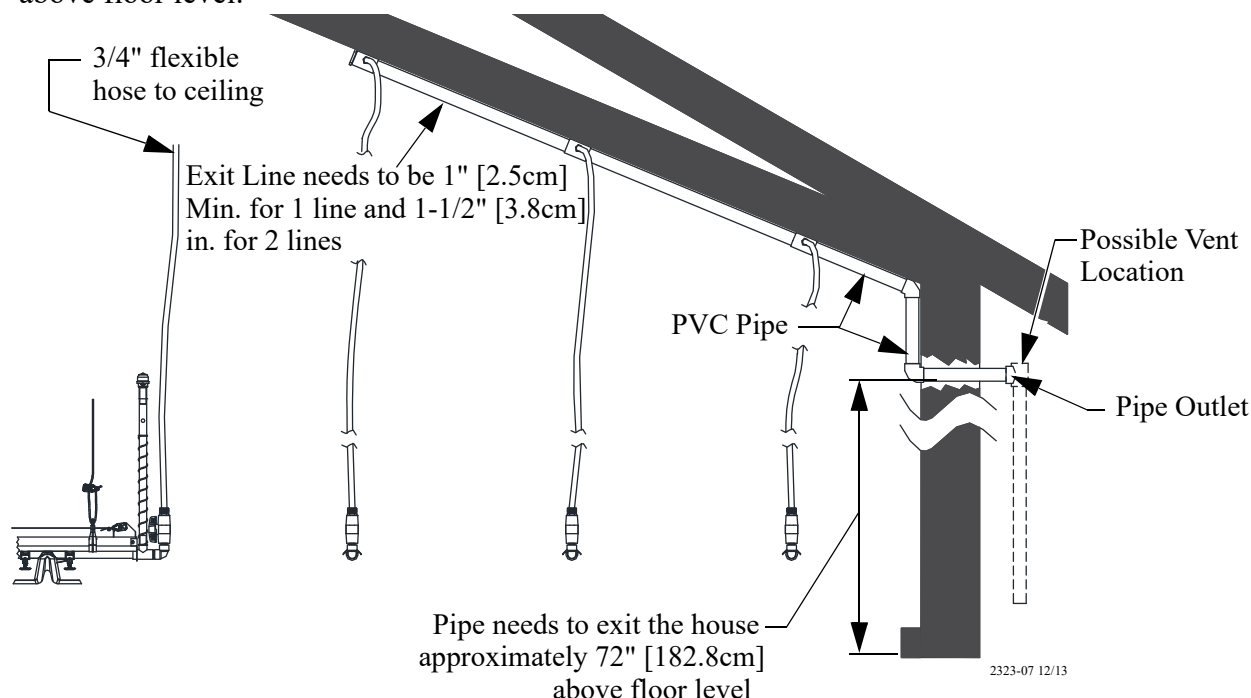


Figure 31. Flush System

2. The exit line needs to be 1" [2.5 cm] minimum for 1 flushing line. To connect multiple flushing lines together (as shown) the exit line needs to be 1 1/2" [3.8 cm] minimum for 2 flushing lines.
3. The exit line should be attached to the ceiling of the house and must exit out the side wall of the house. This line needs to be at an adequate height to allow clearance for any equipment used in the house. It may be necessary to route the exit line out both sides of the house to ensure water leaves the exit line.
4. Measure and cut the plumbing to the required lengths for your individual system.
5. The hose attached to the end of the watering line that extends up to the exit line is to be made of a flexible material.

Note: A siphon will be created during flush if the PVC pipe outlet is at or below the level of the top of the stand tube in the house at grow-out.

If it is not possible to have the pipe outlet above the top of the stand tube a vent must be installed. The vent must be above the top of the stand tube at all times during operation of the watering system.

Caution! When flushing, the nipple line outlets must be free of any restriction such as kinked hose, closed outlet valve, etc. Obstructions will result in excessive back pressure which can damage the regulators and other water line components.

Operational Guidelines

- The floor conditions are a good indication of excess water supply. If the floors are wet, the water column may be too high.
- Be cautious adjusting the water column aggressively during the first week, this could increase mortality by making the nipples trigger harder.
- The information provided is for reference only. It is up to the operator to use this guideline as a starting point to operate the system. Operator judgment of actual on site conditions may require modification to this management guideline.

Measure pressure from bottom of pipe.

Initial Startup Procedure

1. Set incoming water pressure per **“Incoming Pressure” on page 7.**
2. Level the shavings under the water line to eliminate high/low spots.
3. Adjust the inlet regulator pressure at line height to match the instructions on **page 30.**
4. Thoroughly flush the water lines per **“Flush Guide” on page 32.**
5. Check outlet assemblies and stand tubes to make sure water is passing throughout the system.

Bird Placement Procedure

1. Immediately before birds are housed, brush the nipples with a broom to form water droplets on the nipples.

Operation during bird growout

1. Floor conditions are a good indication of adequate or deficient water supply. If the floors are wet, the water column may be too high. If the floors are dry, the water column may be set to low.
2. If medication or other chemicals are added to the water, flush the lines immediately after use, then chlorinate per **“Water Consumption Guide” on page 33).**
3. Allow at least 24 hours before adding additional chemicals (such as iodine, citric acid, etc.) or vitamins to the water.

Maintenance between Flocks

1. Clean each line, per **page 35.**
2. Check pressure drop across water filter - clean or replace if necessary.
3. Check regulator, shut-off valves, stand tube(s), and coupling liner assemblies for proper operation.
4. Adjust the cable levelers so that the water lines are level.
5. Maintain house temperature above freezing or drain the lines thoroughly. Drain inlet regulator(s).
6. Inspect water filters. Pressure drop across filter of 5 psi or less during heavy drinking is acceptable.

Ammonia Litter Treatment

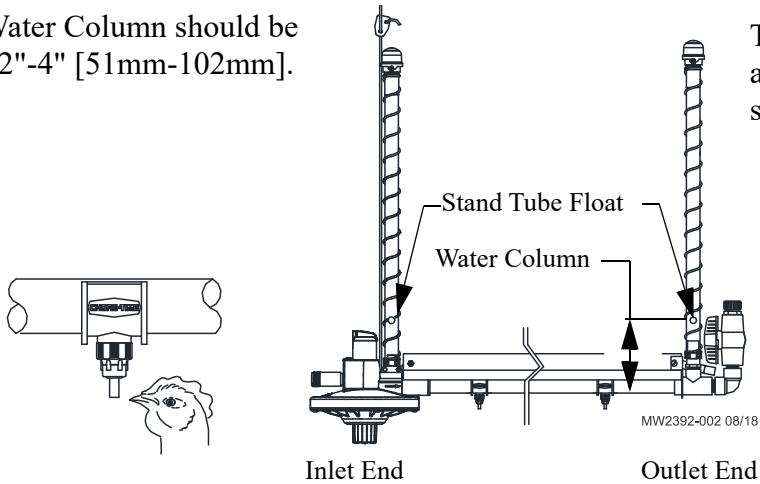
For Maximum service life do the following during application:

1. Ensure the lines are dry (No condensation due to flushing).
2. Raise lines.

Broilers and Breeders

1-3 days

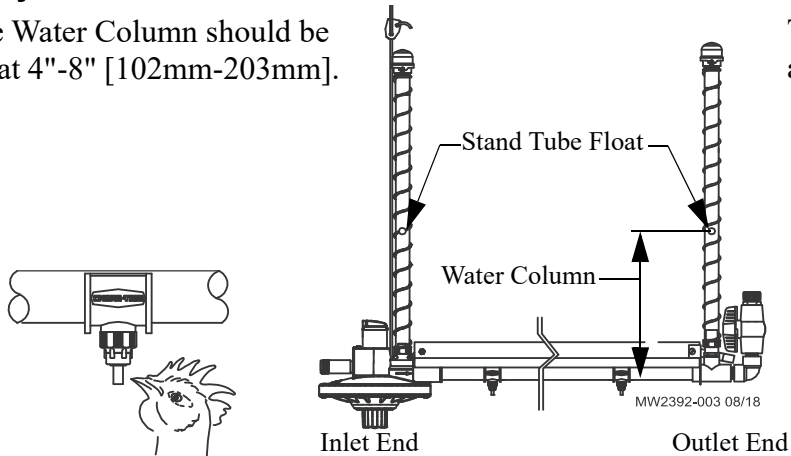
The Water Column should be set at 2"-4" [51mm-102mm].



The Water Column should be set at 2"-4" [51mm-102mm] as shown.

3-21 Days

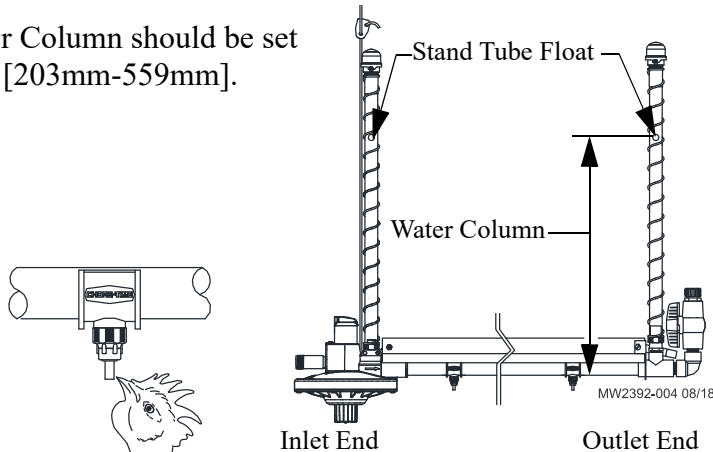
The Water Column should be set at 4"-8" [102mm-203mm].



The Water Column should be set at 8"-14" [203mm-355mm].

21 Days-Growout

The Water Column should be set at 8"-22" [203mm-559mm].



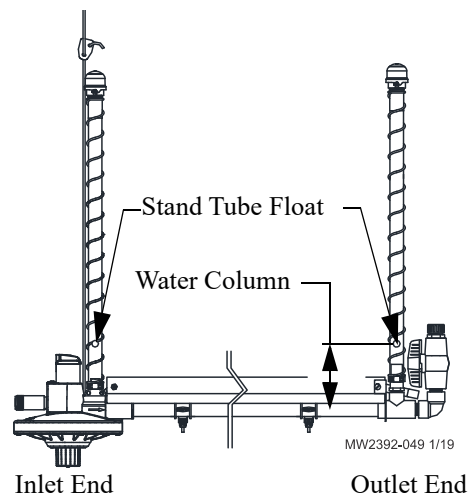
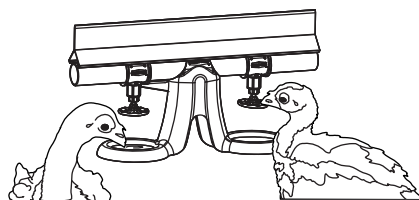
The Water Column should be set at 14"-22" [355mm-559mm].

Turkeys

- Water column height should be adjusted so water is present in the catch cups after one week, if the catch cups are empty the water column should be adjusted accordingly.
- Drinker height should be managed so the disc is below the beak **as shown below**. Birds should not have to bend over, or reach excessively to trigger the disc.

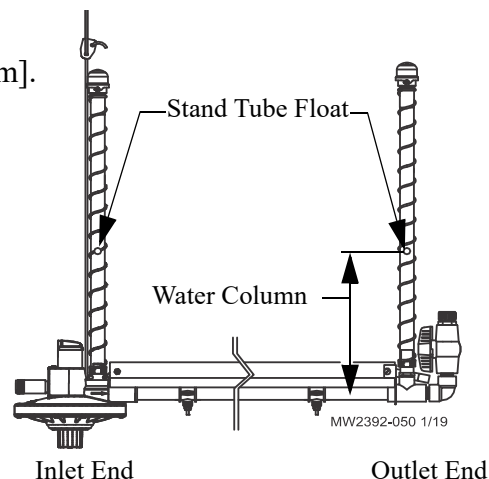
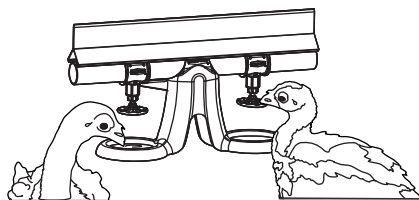
1-14 Days

The Water Column should be set at 3"-8" [7.6cm-20.3cm].



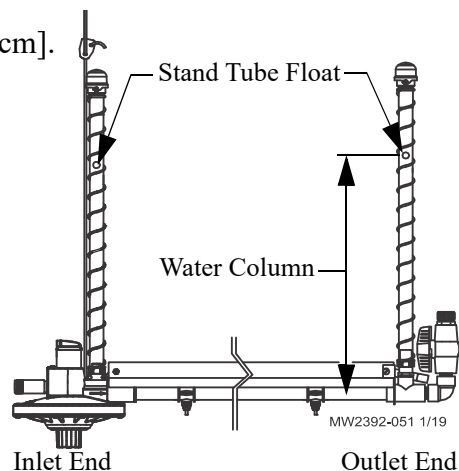
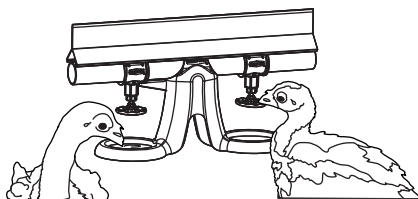
15-28 days

The Water Column should be set at 8"-12" [20.3cm-30.5cm].



29 Days-Growout

The Water Column should be set at 12"-20" [30.5cm-50.8cm].



Flush Guide

Water Line Length in Feet

Gallons per Minute Flow Rate	100'	200'	300'	400'	500'	600'	700'	800'
	1	3.4	6.8	10.2	13.6	17.0	20.4	23.8
	2	1.7	3.4	5.1	6.8	8.5	10.2	11.9
	3	1.1	2.3	3.4	4.5	5.7	6.8	7.9
	4	0.9	1.7	2.6	3.4	4.3	5.1	6.0
	5	0.7	1.4	2.0	2.7	3.4	4.1	4.8
	6	0.6	1.1	1.7	2.3	2.8	3.4	4.0
	7	0.5	1.0	1.5	1.9	2.4	2.9	3.4
	8	0.4	0.9	1.3	1.7	2.1	2.6	3.0
Estimated Flush Time in Minutes								
	Total Line Capacity 3.4 Gallons	Total Line Capacity 6.8 Gallons	Total Line Capacity 10.2 Gallons	Total Line Capacity 13.6 Gallons	Total Line Capacity 17.0 Gallons	Total Line Capacity 20.4 Gallons	Total Line Capacity 23.8 Gallons	Total Line Capacity 27.2 Gallons

Gallons of water in one foot of 3/4" Chore-Time water pipe=.034

Water Line Length in Meters

Liters Per Minute Flow Rate	30m	60m	90m	120m	150m	180m	210m	240m
	4	3.2	6.3	9.5	12.7	15.8	19.0	22.2
	6	2.1	4.2	6.3	8.4	10.6	12.7	14.8
	8	1.6	3.2	4.7	6.3	7.9	9.5	11.1
	10	1.3	2.5	3.8	5.1	6.3	7.6	8.9
	12	1.1	2.1	3.2	4.2	5.3	6.3	7.4
	14	0.9	1.8	2.7	3.6	4.5	5.4	6.3
	16	0.8	1.6	2.4	3.2	4.0	4.7	5.5
	18	0.7	1.4	2.1	2.8	3.5	4.2	4.9
	20	0.6	1.3	1.9	2.5	3.2	3.8	4.4
	22	0.6	1.2	1.7	2.3	2.9	3.5	4.0
	24	0.5	1.1	1.6	2.1	2.6	3.2	3.7
	26	0.5	1.0	1.5	1.9	2.4	2.9	3.4
	28	0.5	0.9	1.4	1.8	2.3	2.7	3.2
	30	0.4	0.8	1.3	1.7	2.1	2.5	3.0
Estimated Flush Time in Minutes								
	Total Line Capacity 12.7 Liters	Total Line Capacity 25.3 Liters	Total Line Capacity 38.0 Liters	Total Line Capacity 50.6 Liters	Total Line Capacity 63.3 Liters	Total Line Capacity 76.0 Liters	Total Line Capacity 88.6 Liters	Total Line Capacity 101.3 Liters

Liters of water in one meter of 3/4" (1.90 cm) Chore-Time water pipe=.422

- Estimated flush times above are to completely exchange the water in the pipe.
- The water line length must include the length of the supply line from the water source to completely exchange the water.
- The flush time to stimulate bird drinking may be less.
- Chore-Time recommends flushing no more than 2 lines at a time.

Water Consumption Guide

APPROXIMATE DAILY WATER CONSUMPTION GUIDE IN GALLONS PER 1000 BIRDS																		
Assuming outside temperature 70°F																		
AGE IN WEEKS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Broilers	18	35	50	64	76	84	91	97										
Broiler Breeders	10	18	22	28	31	34	35	36	40	43	44	45	46	49	50	51	53	
Layer Pullets	10	17	22	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
Turkey* Poults	10	20	34	45	63	78	95	112	128	144	158	172	185	194	203	209	240	240
20-40°F ^a temperature 42-50 gallons					41-60°F ^a temperature 50-58 gallons					61-80°F ^a temperature 58-70 gallons					81-100°F ^a temperature 70-116 gallons			
^a Large white turkeys																		

Guide to Cleaning Water Lines

Important: Chore-Time strongly recommends a regular cleaning program to eliminate water line contaminants.



Do not mix chemicals, cleaners, medication, or nutrients without a specific formula provided by a reputable company; Toxic gas, violent explosions, or bad bird health could result.

During Flock

The watering system should be cleaned once every two weeks during the production cycle using one of the following stock solutions.

1. Vinegar stock solution

- a) 64 fl. oz. (1893 ml.) white household vinegar + 64 fl oz. (1893 ml.) water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

2. Citric Acid stock solution

- a) 1 pack (205 gm) citric acid + 128 fl. oz. (3785 ml.) water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

Note: pH target during flock cleaning is between 6-8 pH.

Continually maintaining one of the two chemical concentrations below (Chlorine/Hydrogen Peroxide) will ensure sanitized water.

1. Chlorine (Maintain 3-5 ppm.)

- a) Stock Solution = 1 fl. oz. (30 ml) 5.25% Bleach with 1 gallon water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

2. Hydrogen Peroxide (Maintain 25-50 ppm)

- a) Stock Solution = 1 fl. oz. (30 ml) Hydrogen Peroxide with 1 gallon water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

After Administering Vitamins, Medication or other Chemicals

Chore-Time recommends flushing and sanitizing lines immediately after administering vitamins, medication or other chemicals. Failure to flush and sanitize can result in bacteria build-up which can reduce or prevent water flow.

Important! Do not exceed 5 PPM of Chlorine, or 50ppm of Hydrogen Peroxide in the line for extended periods of time or damage may occur.

Between Flocks

First: Acidify water to pH of 5 using one of the solutions below.

1. Vinegar stock solution

- a) 128 fl. oz. (3785 ml.) white household vinegar.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

2. Citric acid stock solution

- a) 4 pack (205 gm) citric acid + 128 fl. oz. (3785 ml.) water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

Second: Sanitize the water using one of the two solutions below.

1. Chlorine (Maintain 40 ppm for 4 hrs. Line must be rinsed after exposure). DO NOT exceed 4 hours of exposure.

- a) Stock Solution = 12 fl. oz. (30 ml.) 5-1/4% bleach (or similar source of 5-1/4% sodium hyper chlorite) + 128 fl. oz. (3785 ml.) water.
- b) Set the proportioner at 1 oz. of stock solution to 128 oz. (3785 ml.) water.

2. Hydrogen Peroxide (Maintain 3% Hydrogen Peroxide for 24 hours).

- a) Stock Solution = 3 gallons Hydrogen Peroxide to 97 gallons water.
- b) Directly inject stock (no proportioners).

Third: The watering system should be thoroughly drained in cold weather.

Tip: Use dye in stock solution to monitor when a treatment is fully in pipe and when it is fully flushed out.

Water Quality

Hardness

Hardness is the calcium and magnesium content of a water supply. These minerals are responsible for scaling that forms in hot water heaters, plumbing lines, humidifiers, dishwashers and all other water using appliances. Water containing hardness minerals are generally classified as:

Soft Water	0 - 1.0 GPG
Slightly Hard Water	1.1 - 3.5 GPG
Moderately Hard Water	3.6 - 7.0 GPG
Hard Water	7.1 - 10.5 GPG
Very Hard Water	10.6 GPG or greater

Iron

Iron, when present in amounts of 0.3 ppm or higher, can cause a yellow or rusty appearance in water. It can also cause staining of clothing and water fixtures. Iron can be found in two forms, clear (dissolved) or red (oxidized) water iron. Water refiners are capable of removing both types of iron. Higher amounts of iron may require further treatment.

Iron Bacteria

Iron bacteria can be found in water supplies containing clear water iron. The bacteria use the clear water iron as a source of energy, and at the same time, convert the iron to the red water state. These bacteria are not considered a health hazard, but can plug plumbing lines, fixtures and appliances. These bacteria also promote localized corrosion and impart a taste and/or color to water. Effective treatment requires shock chlorination of all plumbing lines prior to the installation of any equipment. This is followed by the installation of a chemical feed pump feeding chlorine to eliminate the bacteria, and a clarifying filter to remove the residue.

Water PH

The water acidity is measured and reported in terms of H units. Acid water causes staining of plumbing fixtures and corrosion of plumbing systems, which may necessitate expensive repairs. Target pH for drinking is between 6-8. A pH higher than 8 leads to a bitter taste. Even while cleaning, never allow the pH to get below 5 or damage to equipment may occur. **Be careful when using PWT (Poultry Water Treatment). Poorly mixed solution will lead to extremely low PH, resulting in damage to stainless steel components!**

Aggressiveness/Corrosion

Aggressiveness of water is measured by the Ryznar stability index (A calculation from several factors in a water supply). A stability index of 7.5 or higher indicates the water may be corrosive tendencies. This type of corrosion may attack plumbing and fixtures causing rusty or blue/green stains. The use of a phosphate crystal cartridge will help to eliminate this problem.

Taste and Odor

Objectionable tastes and/or odors can be dissolved minerals, gases, organic contamination, or from chlorination. Treatment requires the installation of taste and odor tank filter for the whole house or a taste and odor cartridge filter for individual faucets.

Hydrogen Sulfide

Hydrogen sulfide is a dissolved gas common in some water supplies. It is detected by a rotten egg taste and/or odor of the water. Proper treatment requires the installation of a chemical feed pump system feeding household chlorine bleach, followed by a sediment filter to remove the precipitation.

Sand, Silt or Sediment

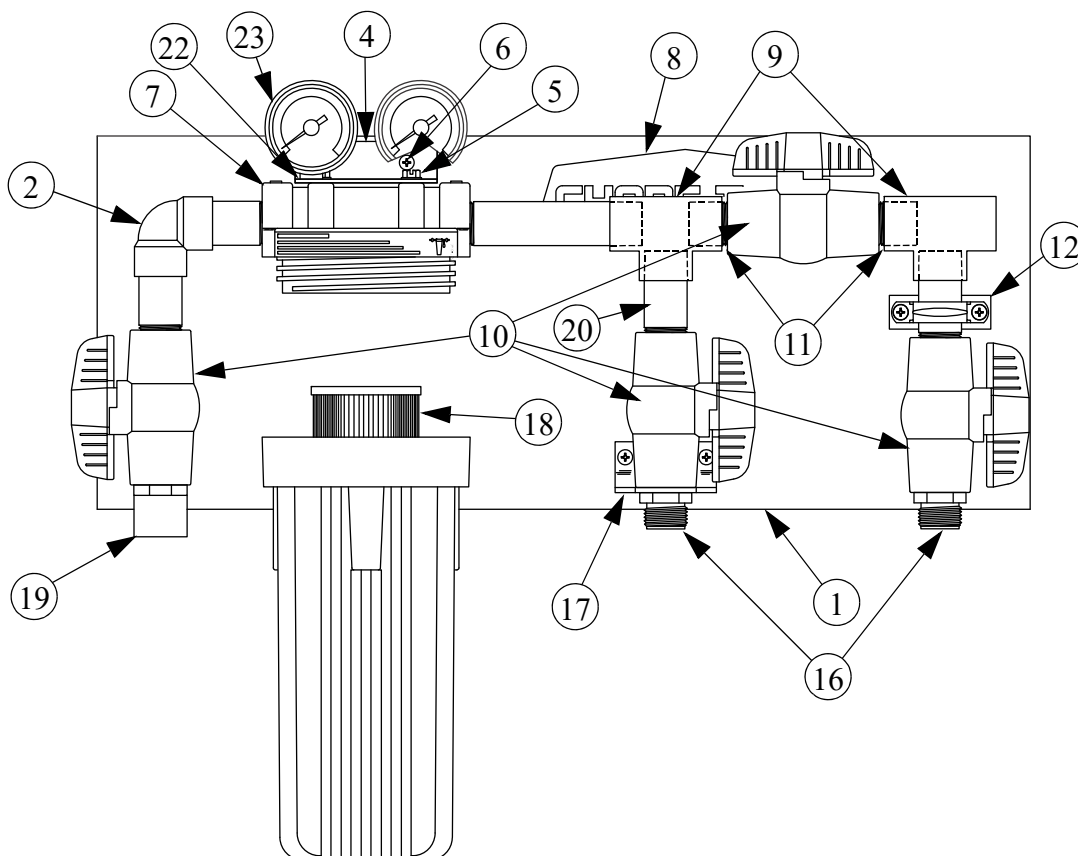
Sand, silt or sediments are found in many water supplies. It is usually detected by a cloudy or hazy appearance when the water is first drawn. Chore-Time recommends that all systems be installed with at least 1, 140 mesh Filter. In some cases a second more aggressive filter may be needed.

Troubleshooting

Problem	Cause	Solution
Nipples are leaking	Internal parts improperly assembled.	Disassemble and reassemble parts correctly.
	Foreign material preventing proper valve operation.	Trigger nipple a few times to see if leak stops. If leak persists, disassemble valve, clean, and reassemble. Replace valve components and saddle if leaks persist.
Leaking above cap assembly	Cap not properly tightened.	Tighten cap on saddle.
	Damaged saddle.	Replace saddle, nipple may not need to be replaced.
Leaking between saddle and PVC pipe	Damaged saddle.	Replace saddle, nipple may not need to be replaced.
Leaking at coupler liner assembly	Damaged (flexible) coupler liner or PVC coupler.	Replace coupler liner and/or PVC coupler.
Leaking or damaged inlet assembly	Damaged component or improperly glued component.	Replace damaged or defective component(s). It may be necessary to order a union to reconnect the Inlet components.
Catch Cups are Dry	Water Column is too low.	Increase water column height incrementally until desired water level is achieved.
	Nipples are obstructed or clogged due to build-up.	Clean with solution, See "Guide to Cleaning Water Lines" in manual MW2323.
Floors are wet under drinker line	Drinker line is too high or low.	Adjust drinker height to the recommended guidelines,
	Water column is too high.	Decrease water column height and increase ventilation and/or heat.
Poor Water Consumption	Drinker line is too high or low	Adjust drinker height to recommended management guidelines.
	Water column height too low	Increase water column height incrementally until desired water level is achieved.
	Nipples are obstructed or clogged due to build-up	Clean with solution, See "Guide to Cleaning Water Lines" in manual MW2323.
Feed accumulation in cup	Drinker lines too close to feeder lines	See planning the system for recommended distance.
	System height is too low	Raise the system to the recommended management guidelines.
Stand Tube not working properly	Depending on water quality and management techniques, the stand tube may require more frequent cleaning.	1. Remove hose cap on top of stand tube. 2. Use a brush (available through Chore-Time) to thoroughly clean the stand tube. 3. Clean and reassemble the components and check for proper water level.
Regulator Leaking around diameter.	Excess flush pressure. Excess incoming pressure. Loose mounting screws.	Remove restriction or obstruction in the Nipple such as a kinked hose or closed valve at the end of the line. Tighten Mounting Screws.

Parts Listing

Filter Control Panel (9275, 9275-1)

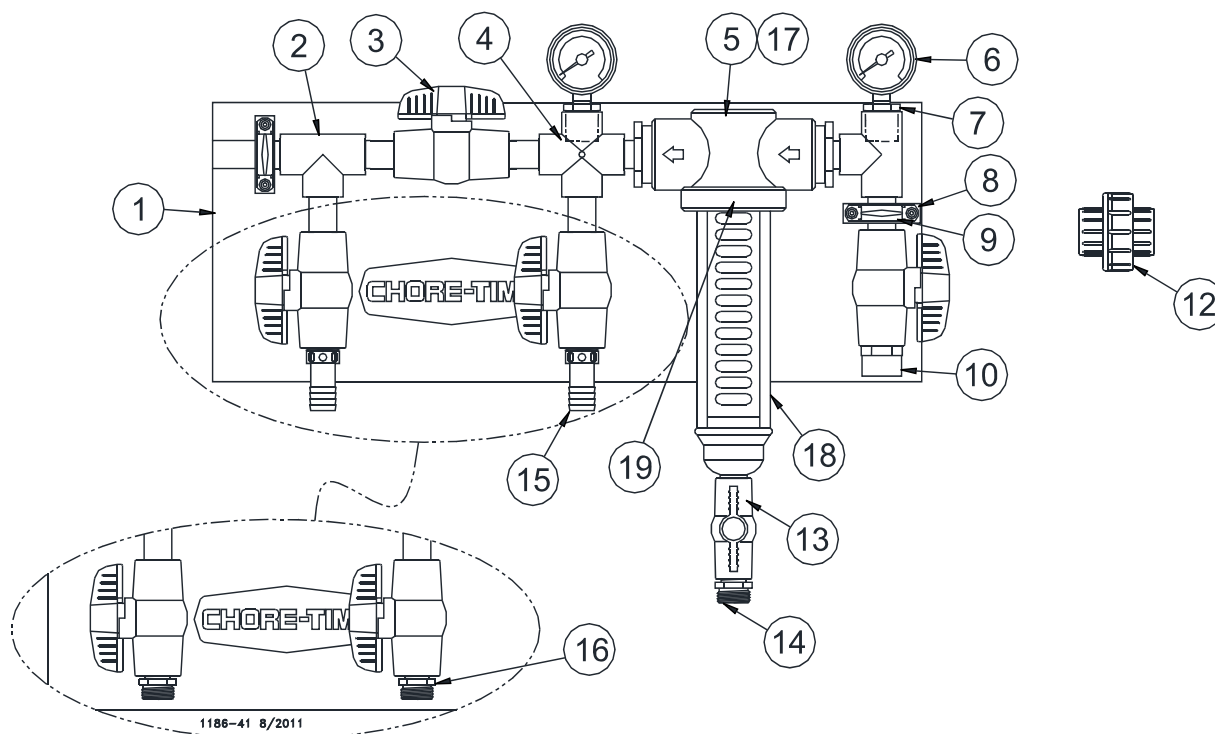


		9275 Opaque Filter Housing	9275-1 Clear Filter Housing
Item	Description	Part No.	
1	Mounting Board	35303	35303
2	3/4" PVC Ell	8141	8141
4	Filter Mounting Bracket	35302	35302
5	1/4-14 x 3/4 Sheet Metal Screw	35425	35425
6	#10-13 x 5/8 Phil Screw	35423	35423
7	Water Filter with Gauge Ports	35309	35309-1
8	Chore Time Decal	2525-4	2525-4
9	3/4" PVC Tee	7538	7538
10	3/4" Quarter Turn Valve	35781	35781
11	3/4 x 1.44 PVC Nipple	7531	7531
12	Standoff Block	35300	35300
14	Plastic Conduit Clamp	35301	35301
16	3/4" Nylon Adapter	7543	7543
17	Medicator Connector Brace	35307	35307
18	20 Micron Filter Cartridge (Standard)	7723	7723
	10 Micron Filter Cartridge (Optional)	13145	13145
19	3/4 PVC Adapter	9229	9229
20	3/4 x 2.50 PVC Nipple	7531-9	7531-9
21	3/4 x 5" PVC Nipple	7531-11	7531-11
22	3/4" Thrd. Adapter	7702	7702
23	High Press. Water Gauge	7191	7191

Flushable Filter Control Panel

Low Pressure: 36802-1 (Less than 11 psi)

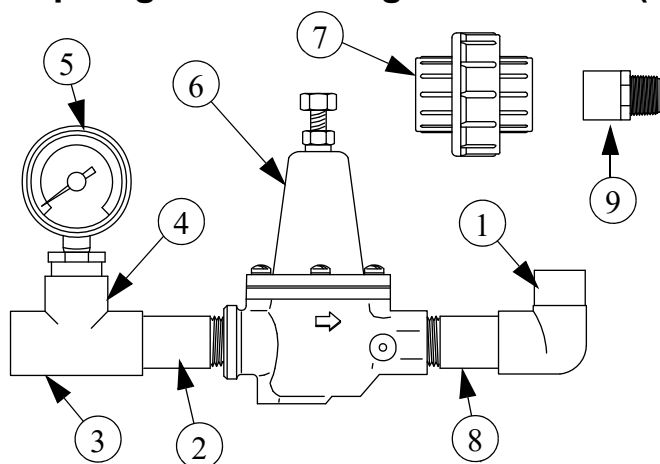
High Pressure: 36802-2 (Greater than 11 psi)

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These parts may be ordered separately, if needed.

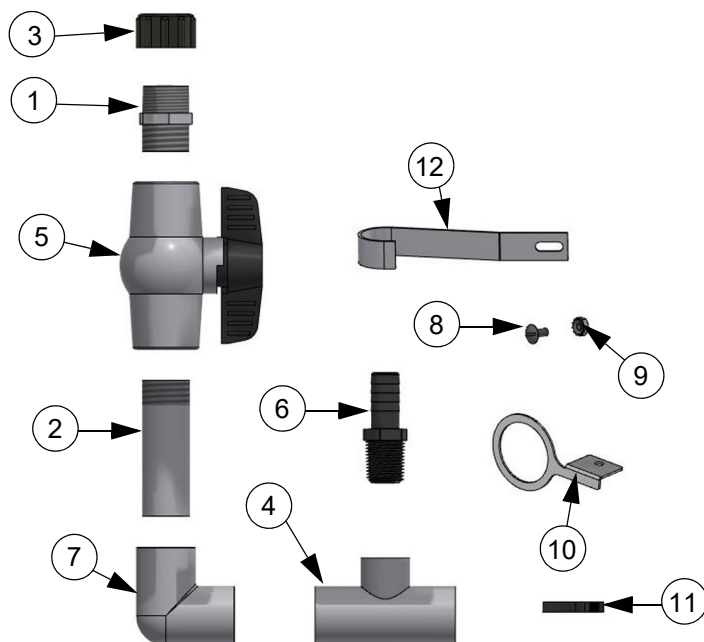
Description	Part No.
1/2 Pint PVC Cement	6303-3
Replacement 140 Mesh Filter	36809
Flush able Filter Assembly	36810

Step Regulator & Gauge Module Kit (35308)



Item	Description	Part No.
1	3/4" PVC Street Ell	30138
2	3/4" x 3" Threaded PVC Nipple	7531-1
3	3/4" PVC Tee	7538
4	3/4 x 1/4 Reducer Bushing	7789
5	High Press. Water Gauge	7191
6	Regulator	29951
7	3/4 PVC Union	8137
8	3/4" x 2.5" Threaded PVC Nipple	7531-9
9	Male PVC Adapter	34100

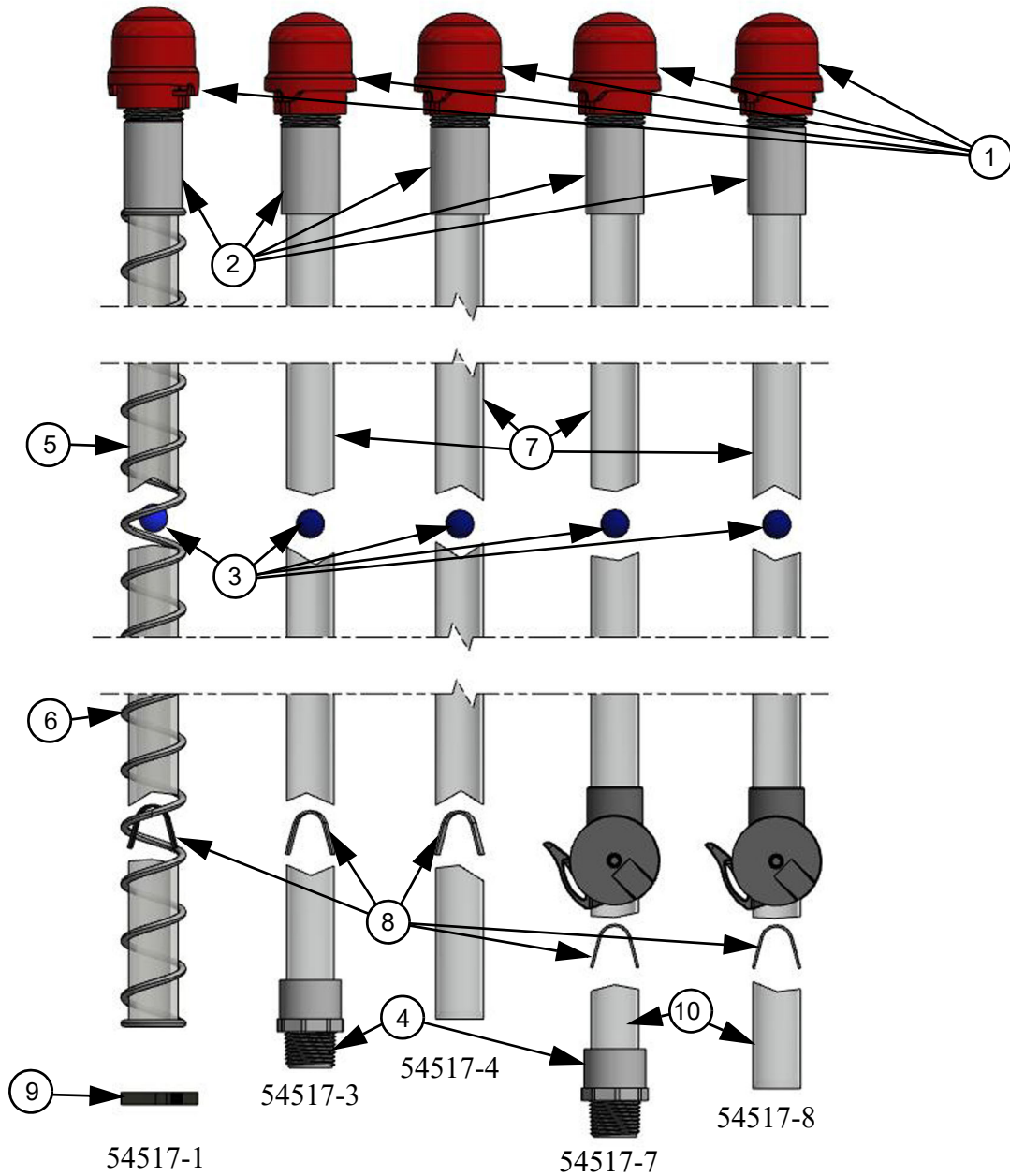
Stand Tube Outlet Assembly



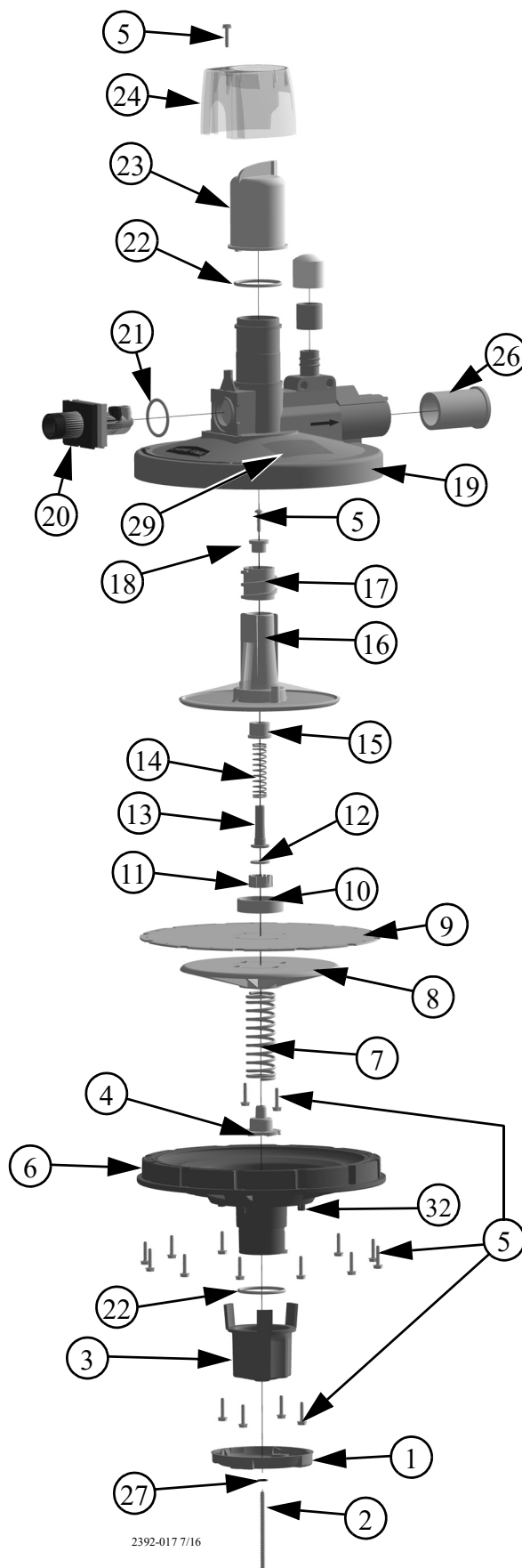
Item	Description	52275-2 Part No	52275-3 Part No	52275-4 Part No	52275-5 Part No	52275-6 Part No	52275-7 Part No
1	3/4" Nylon Adapter	7543	7543	7543	7543	7543	7543
2	3/4 x 2" Threaded PVC Pipe	7531-4	7531-4	7531-4	7531-4	7531-4	7531-4
3	Hose Cap (Washer Included)	9811	9811	9811	9811	9811	9811
4	Reducing Tee	34777	34777	34777	34777	34777	34777
5	3/4" Ball Valve	35781	35781	35781	35781	35781	35781
6	1/2 Insert Adapter	47881	47881	---	---	---	---
7	3/4" S x T Ell	7558	7558	7558	7558	7558	7558
8	10-24 x 3/8 Truss Head Screw	4422-2	4422-2	4422-2	4422-2	4422-2	4422-2
9	10-24 SS Kepnut	33926	33926	33926	33926	33926	33926
10	Hanger	35481	35481	35481	35481	35481	35481
11	Hose Clamp	54909	54909	---	---	---	---
12	Stand Tube Bracket	33900	33900	33900	33900	33900	33900
13*	Stand Tube Assembly	54517-1	54517-1	54517-7	54517-7	54517-3	54517-3

*See "Stand Tube Assembly (54517-X)" on page 41. for complete parts list.

Stand Tube Assembly (54517-X)



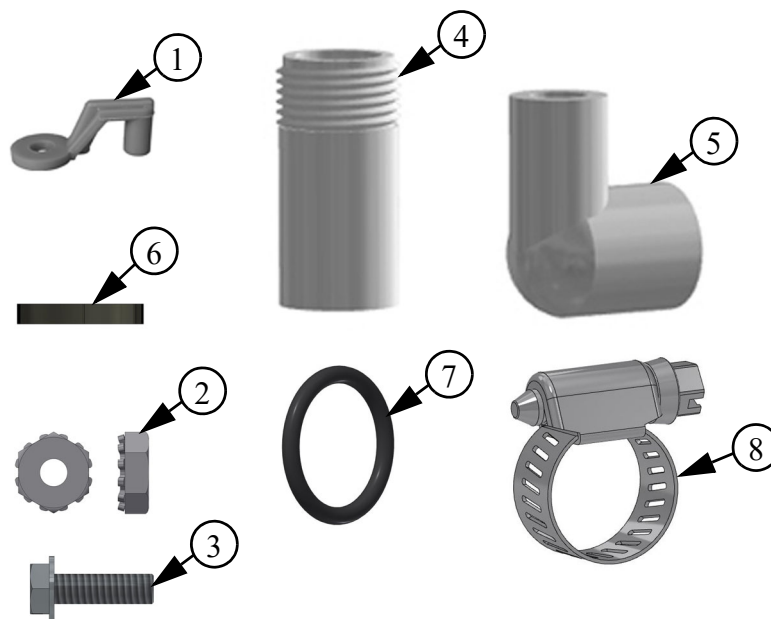
Item	Description	54517-1	54517-3	54517-4	54517-7	54517-8
		Part No				
1	Breather Cap Assembly	54606	54606	54606	54606	54606
2	3/4" NH Fitting	25098	25098	25098	25098	25098
3	Stand Tube Float Ball	37142	37142	37142	37142	37142
4	.50 MTXS Male Adapter	---	9067	---	9067	--
5	Flexible Tubing	36840-1	---	---	---	--
6	Spring	36839-1	---	---	---	--
7	.5 x 19.88 Clear PVC Pipe	---	38250-1	38250-1	---	--
	.5 x 16.00 Clear PVC Pipe	---	---	---	38250-3	38250-3
8	Rigid Ball Stop	54817	54817	54817	54817	54817
9	Adjustable Clamp	54909	---	---	---	---
10	.5 x 4.0 Clear PVC Pipe	---	---	---	38250-2	38250-2

VOLUMATIC™ Regulator Assembly (55476-X)

Part Numbers

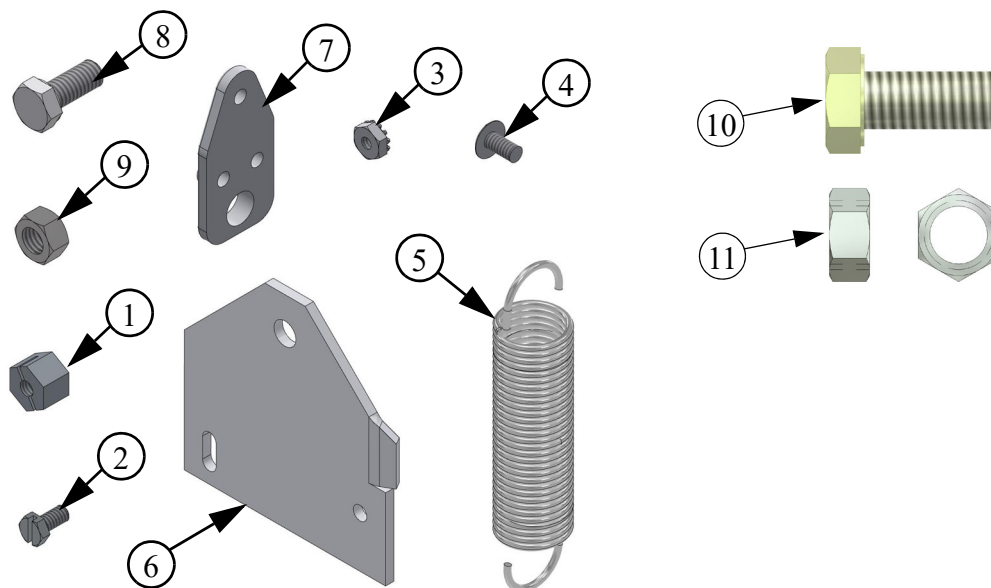
Item	Description	No Stand Tube 55476-1	W/ Folding Stand Tube 55476-2	W/ Flexible Stand Tube 55476-3	Kit with Poultry Trainer W/ Folding Stand Tube & Anti-Roost 55476-2T	Kit with Poultry Trainer Flexible Stand Tube & Anti-Roost 55476-3T
		Part No.	Part No.	Part No.	Part No.	Part No.
1	Knob Retainer	55477	55477	55477	55477	55477
2	#8-18 x 2-1/2" Screw	42387	42387	42387	42387	42387
3	Adjustment Knob	55478	55478	55478	55478	55478
4	Follower	42183	42183	42183	42183	42183
5	6-20x.625 Screw	44946	44946	44946	44946	44946
6	Bottom Regulator Half	55479-1	55479-1	55479-1	55479-1	55479-1
7	.78 x 2.8" Spring	42393	42393	42393	42393	42393
8	Diaphragm Plate	42182	42182	42182	42182	42182
9	Diaphragm	42181	42181	42181	42181	42181
10	Diaphragm Ctr Support	42186	42186	42186	42186	42186
11	Seat Cup	48199	48199	48199	48199	48199
12	Seat	48225	48225	48225	48225	48225
13	Seat Holder	42189	42189	42189	42189	42189
14	.780 x 2.8 Spring	42392	42392	42392	42392	42392
15	Seat Holder Sleeve	42187	42187	42187	42187	42187
16	Diaphragm Plate	42182	42182	42182	42182	42182
17	C'TWR Barrel	42172	42172	42172	42172	42172
18	Seat Holder Cap	42176	42176	42176	42176	42176
19	Regular Top Half	42174	42174	42174	42174	42174
20	Inlet Orifice	42190	42190	42190	42190	42190
21	O-Ring	29118	29118	29118	29118	29118
22	1.362x.103 O-Ring	42389	42389	42389	42389	42389
23	Selector Knob	42178	42178	42178	42178	42178
24	Shroud	42390	42390	42390	42390	42390
26	Half Liner	36501	36501	36501	36501	36501
27	-007 O-Ring	56172	56172	56172	56172	56172
29	Decal	2529-813	2529-813	2529-813	2529-813	2529-813
32	Plug	54319	54319	54319	54319	54319
33**	Flexible St. Tube Assy.	---	---	54517-1	---	54517-1
34**	Folding St. Tube Assy.	---	54517-8	---	54517-8	---
35*	Volumatic Regulator Hardware	56233-1	56233-2	56233-1	56233-2	56233-1
36***	Poultry Trainer Kit	---	---	---	44943	44943
*See "Volumatic Regulator Hardware Package (56233-X)" on page 44. for assembly break down. **See "Stand Tube Assembly (54517-X)" on page 41. for assembly break down. ***See "Anti-roost system Parts Package" on page 45.						

Volumatic Regulator Hardware Package (56233-X)



		56233-1	56233-2
Item	Description	Part No.	
1	Regulator Bracket	44866	44866
2	10-24 Stainless Kepnut	33926	33926
3	10-24 x .50 Screw	4416-12	4416-12
4	3/4 NH Fitting	25098	25098
5	1/2" Street Elbow	33895	33895
6	1-1/4 Nylon Clamp	54909	--
7	1/2 x 1/16 O-Ring	--	48325-1
8	Adjustable Clamp	--	7187

Anti-roost system Parts Package



Item	Description	34531-2	44943
		Part No.	
1	10-24 Slotted Nut	1840	1840
2	10-24 x .38 Screw	1951	1951
3	10-24 Nut	33926	--
4	10-24 x .5 Slotted Screw	4422-2	--
5	Spring	25353	--
6	Anchor Plate	42807	42807
7	Adjustment Leveler	3075	3075
8	5/16-18 Hex Nut	2145-1	2145-1
9	5-16-18 x .75 Bolt	4412-11	--
10	5/16-18 x .75 Bolt	--	2046
11	5/16-18 Hex Nut	--	2145

Anti-roost Wire

Description	Part No.
5000' [1524m] 1/16-1x7 Aircraft Cable	1922-5000

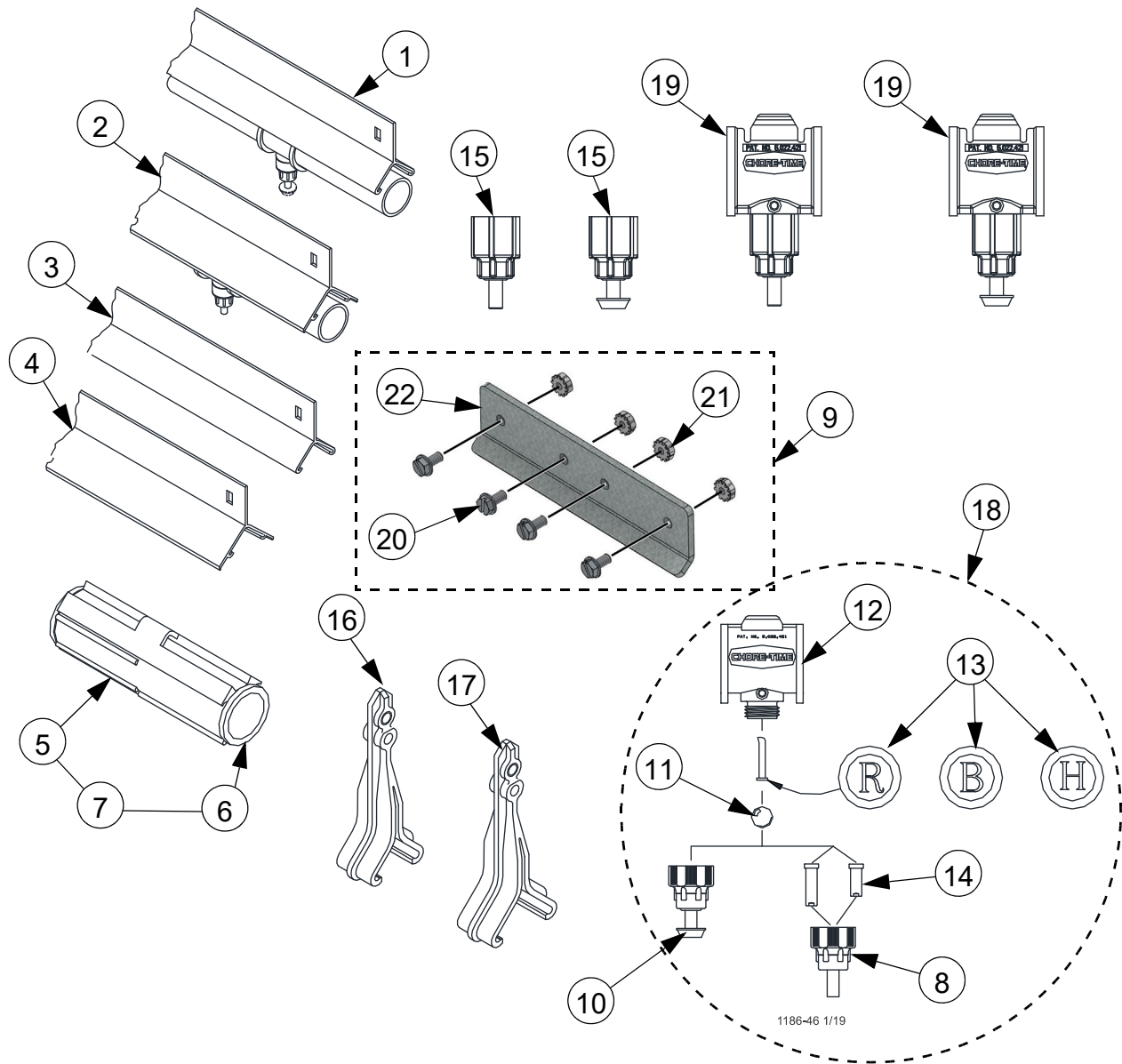
Poultry Trainers

Line Chargers

Part No.	Description	Voltage
29317	Line Mount Charger Assembly	120 V, 60 Hz
29341	Line Mount Charger Assembly	220 V, 50/60 Hz
29333	Wall Mount Poultry Trainer	120 V, 60 Hz
29325	Wall Mount Poultry Trainer	220 V, 50/60 Hz

Poultry Trainer Wire

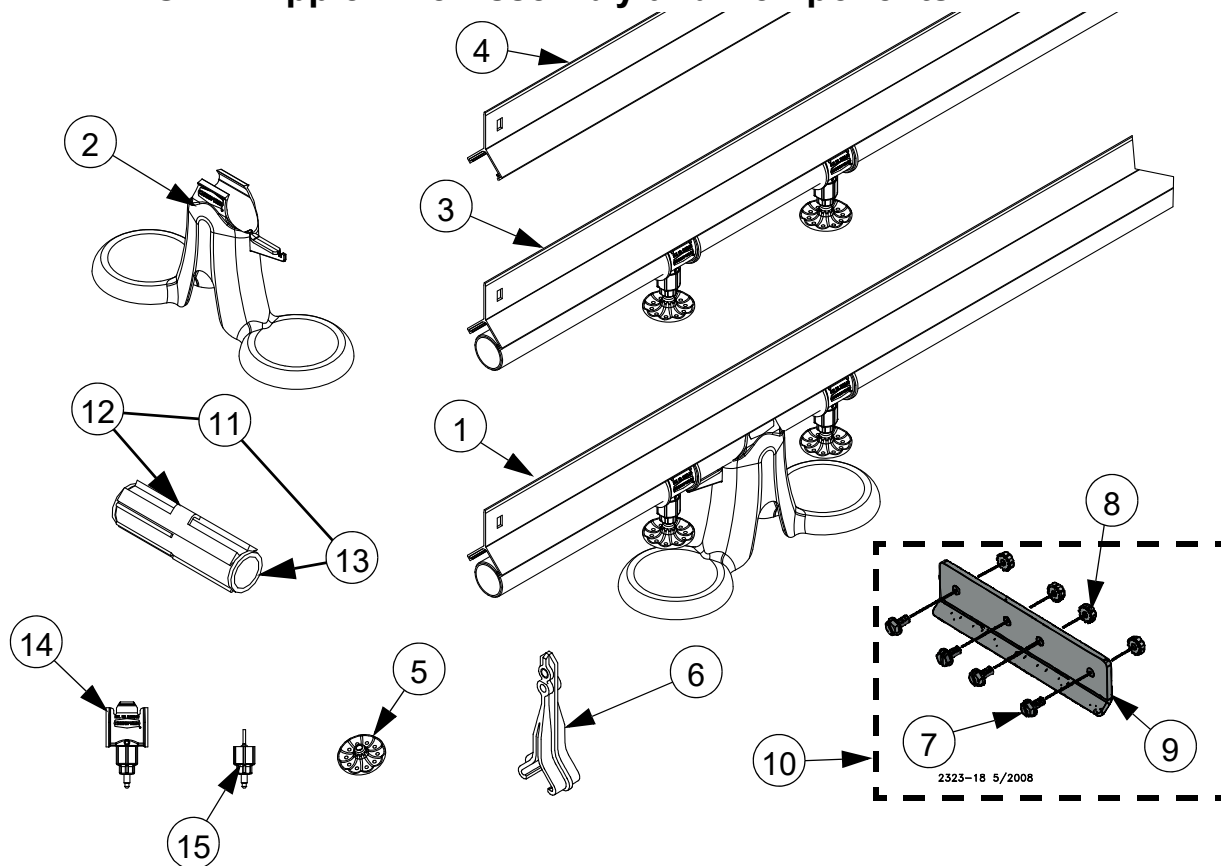
Part No.	Description
28994-330	16 Gauge High Voltage Wire (330' Spool)
28994-165	16 Gauge High Voltage Wire (165' Spool)

STEADI-FLOW® and RELIA-FLOW® Nipple Line Assembly and Components

Part Numbers

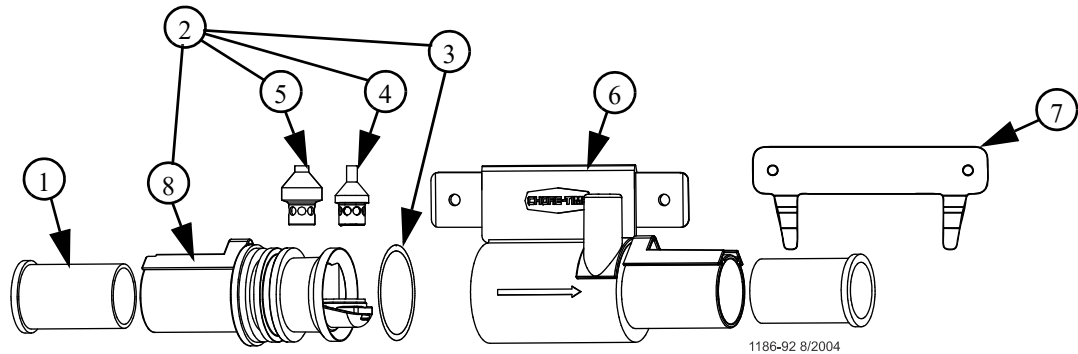
Item	Description	Standard Flow Pt #	High Flow Pt #	Regulated Flow Pt #	Lift Trigger Pt #
1	Standard Channel STEADI-FLOW® Drinker Assembly				
	6" [152 mm] spacing (20 nipples)	56065-34	---	---	---
	8" [203 mm] spacing (15 nipples)	56065-1	56065-14	56065-24	---
	10" [254 mm] spacing (12 nipples)	56065-2	56065-15	56065-25	---
	12" [305 mm] spacing (10 nipples)	56065-3	56065-16	---	---
	15" [381 mm] spacing (8 nipples)	56065-4	56065-17	---	---
	7" [178 mm] spacing (17 nipples)	56065-5	---	---	---
	6" [152 mm] spacing (20 button nipples)	56065-6	56065-13B	---	---
	8" [203 mm] spacing (15 button nipples)	56065-1B	56065-14B	---	---
	10" [254 mm] spacing (12 button nipples)	56065-2B	56065-15B	---	---
	12" [305 mm] spacing (10 button nipples)	56065-3B	---	---	---
	15" [381 mm] spacing (8 button nipples)	56065-4B	---	---	---
	Standard Channel RELIA-FLOW® Drinker Assembly				
	6" [152 mm] spacing (20 nipples)	56104-1	---	---	---
	8" [203 mm] spacing (15 nipples)	56104-2	---	56104-15	---
	10" [254 mm] spacing (12 nipples)	56104-3	56104-13	56104-16	---
	12" [305 mm] spacing (10 nipples)	56104-4	---	---	---
	15" [381 mm] spacing (8 nipples)	56104-5	---	---	---
	24" [610 mm] spacing (5 nipples)	---	56104-14	---	---
	6" [152 mm] spacing (20 button nipples)	56104-1B	---	---	---
2	Heavy Channel STEADI-FLOW® Drinker Assembly				
	6" [152 mm] spacing (20 nipples)	---	56065-18	---	---
	8" [203 mm] spacing (15 nipples)	56065-5	56065-19	---	56065-30
	10" [254 mm] spacing (12 nipples)	56065-6	56065-20	---	56065-31
	12" [305 mm] spacing (10 nipples)	56065-7	56065-21	---	56065-32
	15" [381 mm] spacing (8 nipples)	56065-8	56065-22	---	---
	20" [508 mm] spacing (6 nipples)	56065-9	56065-23	---	---
	24" [610 mm] spacing (5 nipples)	56065-10	---	---	---
	10" [254 mm] spacing (12 button nipples)	---	---	---	---
	Heavy Channel RELIA-FLOW® Drinker Assembly				
	6" [152 mm] spacing (20 nipples)	---	---	---	---
	8" [203 mm] spacing (15 nipples)	56104-6	---	---	56104-17
	10" [254 mm] spacing (12 nipples)	56104-7	---	---	56104-18
	12" [305 mm] spacing (10 nipples)	56104-8	---	---	---
	15" [381 mm] spacing (8 nipples)	---	---	---	---
	20" [508 mm] spacing (6 nipples)	56104-22	---	---	---
3	Support Channel (Standard)	56466-10	56466-10	56466-10	56466-10
4	Support Channel (Heavy)	56466-20	56466-20	56466-20	56466-20
5	PVC Coupling	34318	34318	34318	34318
6	Liner	34319	34319	34319	34319
7	Coupling Liner Assembly	35763	35763	35763	35763
8	Nipple Valve Assembly	56109-1	56109-1	56109-1	56109-1
9	Channel Bracket Kit	56381-40	56381-40	56381-40	56381-40
10	Trigger Button Cap Assembly	56109-1B	56109-1B	56109-1B	56109-1B
11	Stainless Steel Ball	29117	29117	29117	29117
12	Saddle Body	50804	50804	50804	50804
13	Flow Control Pin	34799	34889	36860	34799
14	Nipple Stem	29119	29119	29119	46470
15	RELIA-FLOW Valve Assembly	56458-1 & -1B	56458-1 & -1B	56458-1 & -1B	56458-1 & -1B
16	Support Channel Hanger (Standard)	33824-1	33824-1	33824-1	33824-1
17	Support Channel Hanger (Heavy)	33824-2	33824-2	33824-2	33824-2
18	STEADI-FLOW Saddle Assembly	56063-1 & -1B	56063-2 & -2B	56063-4 & -4B	50806-5
19	RELIA-FLOW Saddle Assembly	56064-1 & -1B	56064-2 & -2B	56064-4 & -4B	56064-5
20	#10-24 x 3/8" Hex Washer Head Screw	25124	25124	25124	25124
21	#10-24 Kepnut	27725	27725	27725	27725
22	Channel Bracket	56381	56381	56381	56381

ADVANTI-FLOW® Nipple Line Assembly and Components



Item	Description	Part No.	Item	Description	Part No.
1	ADVANTI-FLOW® Drinker Assy. w/Cups		4	Standard Support Channel	56466-10
	Std. Flow Std. Chnl. 40" Spacing w/Cups	51327-3	5	ADVANTI-FLOW® Disk	51266
	Std. Flow Std. Chnl. 30" Spacing w/Cups	51327-4	6	Support Channel Hanger	33824-1
	Std. Flow Std. Chnl. 24" Spacing w/Cups	51327-5	7	#10-24 x 3/8" Hex Washer Head Screw	25124
	Std. Flow Std. Chnl. 20" Spacing w/Cups	51327-6	8	#10-24 Kepnut	27725
	High Flow Std. Chnl. 40" Spacing w/Cups	51328-3	9	Channel Bracket	56381
	High Flow Std. Chnl. 30" Spacing w/Cups	51328-4	10	Channel Bracket Kit	56381-40
	High Flow Std. Chnl. 24" Spacing w/Cups	51328-5	11	Coupling Liner Assembly	35763
	High Flow Std. Chnl. 20" Spacing w/Cups	51328-6	12	PVC Coupling Body	34318
2	ADVANTI-FLOW® Cup Package	51326	13	Coupling Liner	34319
3	ADVANTI-FLOW® Drinker Assembly		14	ADVANTI-FLOW® High Flow Saddle Assy.	56064-20
	Standard Flow Std. Channel 40" Spacing	56286-2		ADVANTI-FLOW® Std. Flow Saddle Assy.	56064-21
	Standard Flow Std. Channel 30" Spacing	56286-4	15	ADVANTI-FLOW® High Flow Valve Assy.	56458-20
	Standard Flow Std. Channel 24" Spacing	56286-6		ADVANTI-FLOW® Standard Flow Valve Assy.	56458-21
	Standard Flow Std. Channel 20" Spacing	56286-8			
	High Flow Std. Channel 40" Spacing	56286-1			
	High Flow Std. Channel 30" Spacing	56286-3			
	High Flow Std. Channel 24" Spacing	56286-5			
	High Flow Std. Channel 20" Spacing	56286-7			

Slope Compensator Assembly (54036-XX) & (54037-X) Slope Compensator Repair Kit

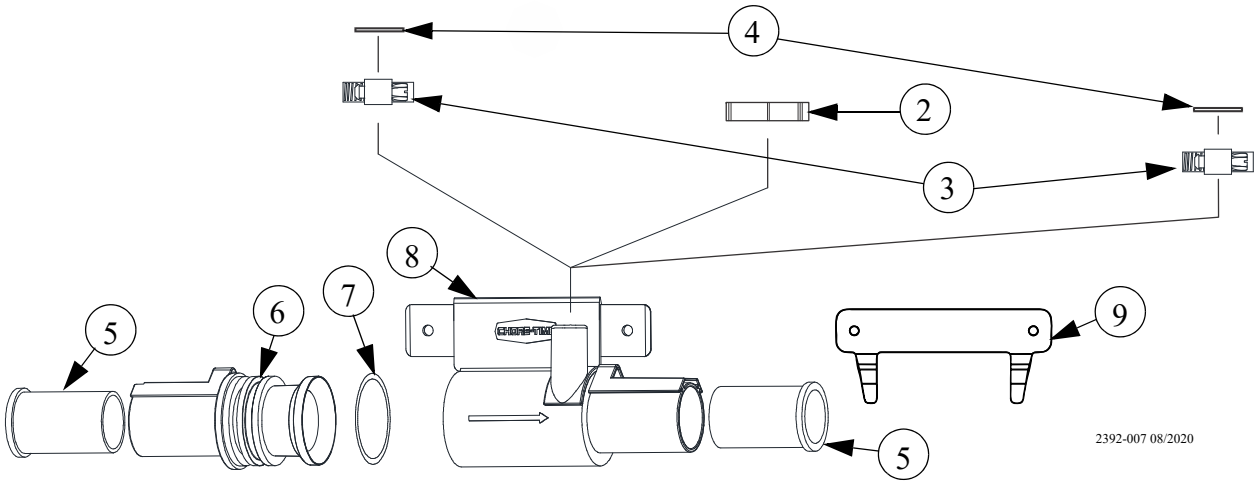


		54036-XX Slope Compensator Assembly					
		Low Dif 54036-1L	Hi Dif 54036-1H	Low Dif 54036-2L	Hi Dif 54036-2H	Low Dif 54036-4L	Hi Dif 54036-4H
Item	Description	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
1	Half Liner	36501	36501	36501	36501	36501	36501
2*	Inlet Assembly	54037-L	54037-H	54037-L	54037-H	54037-L	54037-H
3	O-Ring	44015	44015	44015	44015	44015	44015
4	Low Differential Plunger	46450	--	46450	--	46450	--
5	High Differential Plunger	--	46451	--	46451	--	46451
6	Compensator Outlet	40902-1	40902-1	40902-1	40902-1	40902-1	40902-1
7	Mid-line Bracket	56381-1	56381-1	56381-1	56381-1	56381-1	56381-1
9	Slope Compensator Holder	53625	53625	53625	53625	53625	53625
--	Stand Tube Assembly	54517-8	54517-8	54517-4	54517-4	54517-1	54517-1
--	Adjustable Hose Clamp	7187	7187	7187	7187	54909	54909
--	7/16 x 1/16 O-Ring	48325-1	48325-1	48325-1	48325-1	--	--

		*54037-X Slope Compensator Repair Kit		
		No Plunger 54037	Hi Dif 54037-H	Low Dif 54037-L
Item	Description	Part No.	Part No.	Part No.
3	O-Ring	44015	44015	44015
4	Low Differential Plunger	--	--	46450
5	High Differential Plunger	--	46451	--
8	Compensator Inlet	46464	46464	46464
9	Slope Compensator Holder	53625	53625	53625

MM/2392H

Mid Line Stand Tube Assembly (52273-X)



2392-007 08/2020

Item	Description	52273-4	52273-2	52273-1
		Part No.	Part No.	Part No.
1A *	Rigid Stand Tube Assy	---	54517-4	
1B *	Flexible Stand Tube Assy	54517-1	---	
1C *	Folding Stand Tube			54517-8
2	Nylon Clamp	54909	---	---
3	Adjustable Clamp	---	7187	7187
4	O-Ring	---	48325-1	48325-1
5	Half Liner	36501	36501	36501
6	Inlet Assembly	46464	46464	46464
7	O-Ring	44015	44015	44015
8	Compensator Outlet	40902-1	40902-1	40902-1
9	Mid-line Bracket	56381-1	56381-1	56381-1
--	Ground Wire	36500W	36500W	36500W
*See “Stand Tube Assembly (54517-X)” on page 41. for parts breakdown.				

Miscellaneous Kits and Components

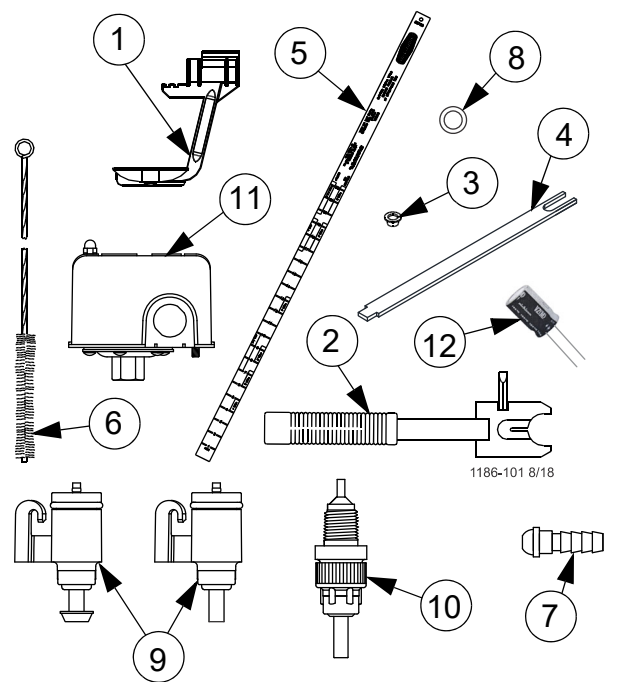


Diagram illustrating various miscellaneous kits and components, numbered 1 through 12:

- 1: Catch Cup
- 2: Assembly Tool
- 3: Cap Plug (qty of 100)
- 4: Regulator Seat Installation Tool
- 5: Broiler Management Stick
- 6: Pipe Brush
- 7: Barb Adapter
- 8: .239 x .379 x .07 O-Ring
- 9: J-Lock Replacement
- 10: 1/8" NPT Nipple Valve (Replacement)
- 11: Water Pressure Switch
- 12: 10UF 25V Capacitor

Additional components shown include a Super O-lube (labeled -) and a J-Lock Replacement (Button Trigger).

Item	Description	Part No.
1	Catch Cup	36591
2	Assembly Tool	41247
3	Cap Plug (qty of 100)	42679-100
4	Regulator Seat Installation Tool	48688
5	Broiler Management Stick	35750
6	Pipe Brush	29465
7	Barb Adapter	40420
8	.239 x .379 x .07 O-Ring	43898
9	J-Lock Replacement	49014-1
	J-Lock Replacement (Button Trigger)	49014-1B
10	1/8" NPT Nipple Valve (Replacement)	46787-1 46787-2
11	Water Pressure Switch	46597
12	10UF 25V Capacitor	54001
-	Super O-lube	45911

Nipple Waterer Mini Drinker: 35412

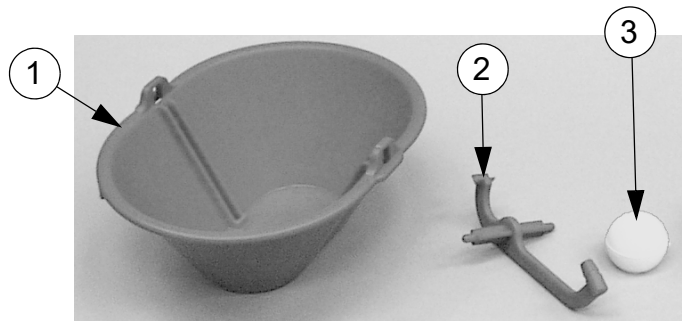


Image showing the Nipple Waterer Mini Drinker components, numbered 1 through 3:

- 1: Mini Drinker Bowl
- 2: Pivot Arm
- 3: Float Ball (small)

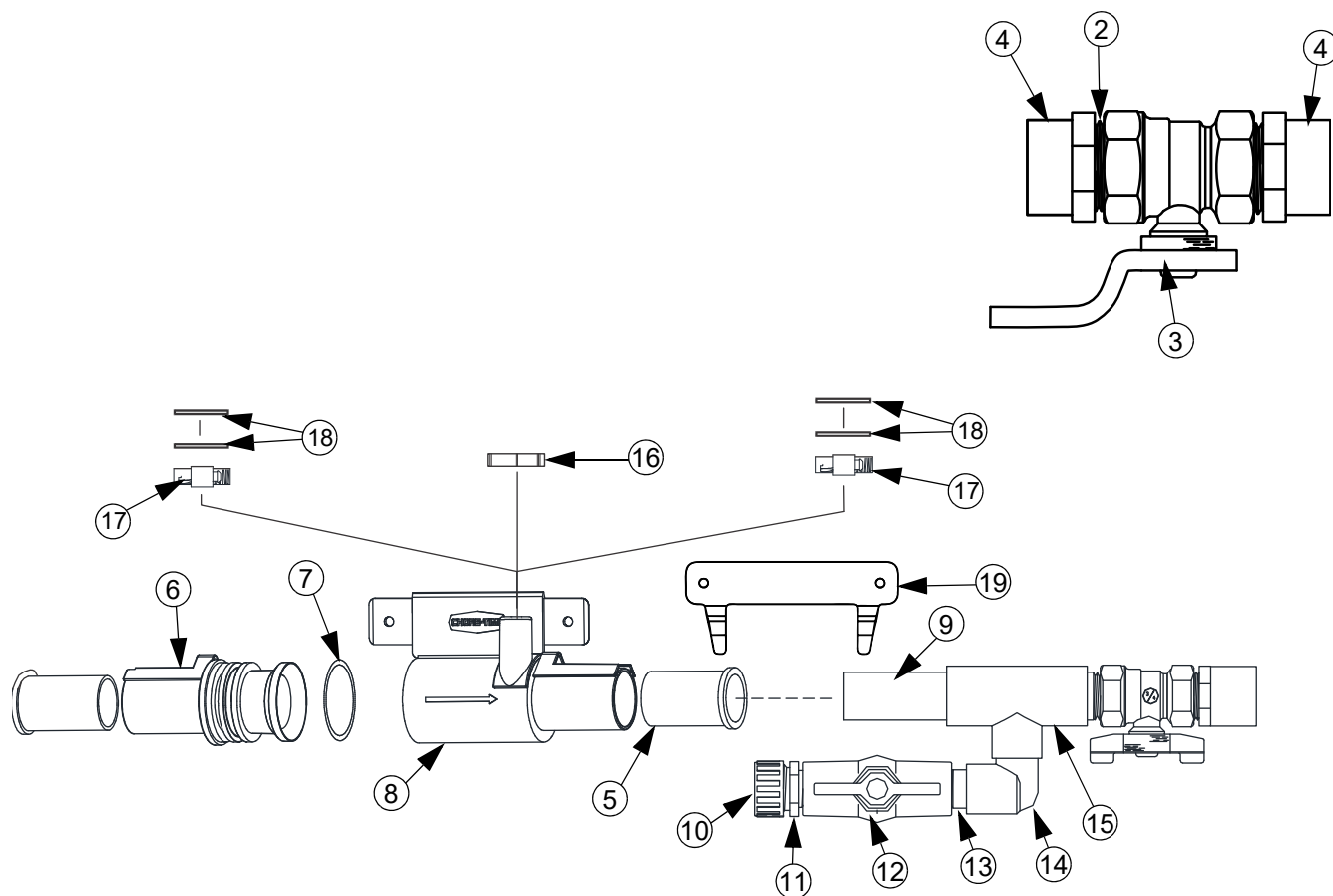
		35412
Item	Description	Part No.
1	Mini Drinker Bowl	34790
2	Pivot Arm	34791
3	Float Ball (small)	25026

Miscellaneous Hose Components

Description	Part No.
Female 3/4" Hose Coupling Kit	7812
3/4" NPT x 3/8" Hose Barb	37141
3/8" Nylon Hose Clamp	37144
3/4" Female Swivel Fitting	50401
Hose Clamp	7187
3/4" ID Rubber Hose	*47820-0

***47820-0 is available in lengths of 50', 100', 150' and 200'.**
The numbers following the dash represent the length of hose (47820-50 is 50' of hose).

Mid Line Shut-Off Kit with Flush



		34939-2	34939-4	34939-5
Item	Description	Part No	Part No	Part No
1A*	Rigid Stand Tube Assy	---	54517-4	---
1B*	Flexible Stand Tube Assy	54517-1	---	---
1C*	Folding Stand Tube	---	---	54517-8
2	3/4" Threaded PVC Pipe	7531-5	7531-5	7531-5
3	3/4" Ball Valve	29623	29623	29623
4	3/4" PVC Male Adapter	9229	9229	9229
5	Liner	36501	36501	36501
6	Inlet Assembly	46464	46464	46464
7	O-Ring	44015	44015	44015
8	Compensator Outlet	40902-1	40902-1	40902-1
9	3/4" x 3" PVC Pipe	9205-4	9205-4	9205-4
10	3/4" Hose Cap	9811	9811	9811
11	3/4" NH Nylon Adapter	29141	29141	29141
12	1/2" Ball Valve	34961	34961	34961
13	1/2" Threaded PVC Pipe	34960-1	34960-1	34960-1

		34939-2	34939-4	34939-5
Item	Description	Part No	Part No	Part No
14	1/2" Street S x S PVC Ell	33895	33895	33895
15	3/4 x 3/4 x 1/2" PVC Tee	7534	7534	7534
16	Nylon Clamp	54909	--	--
17	Adjustable Clamp	--	7187	7187
18	O-Ring	--	48325-1	48325-1
19	Mid-line Bracket	56381-1	56381-1	56381-1
--	Ground Jumper Wire	36500W	36500W	36500W

*See "Stand Tube Assembly (54517-X)" on page 41. for parts breakdown.

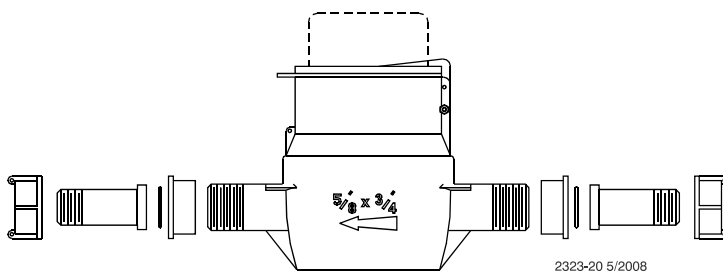
		29658
Item	Description	Part No
3	3/4" Quarter Turn Valve	29623
4	3/4" PVC Male Adapter	9229

Water Medicator

	41778-1 Chemilizer (1-100 Ratio)	40203 Dosmatic Adjustable Medicator
Description	Maintenance Part Numbers	
Replacement Pump	41827	--
Pump Rebuild	41829	--

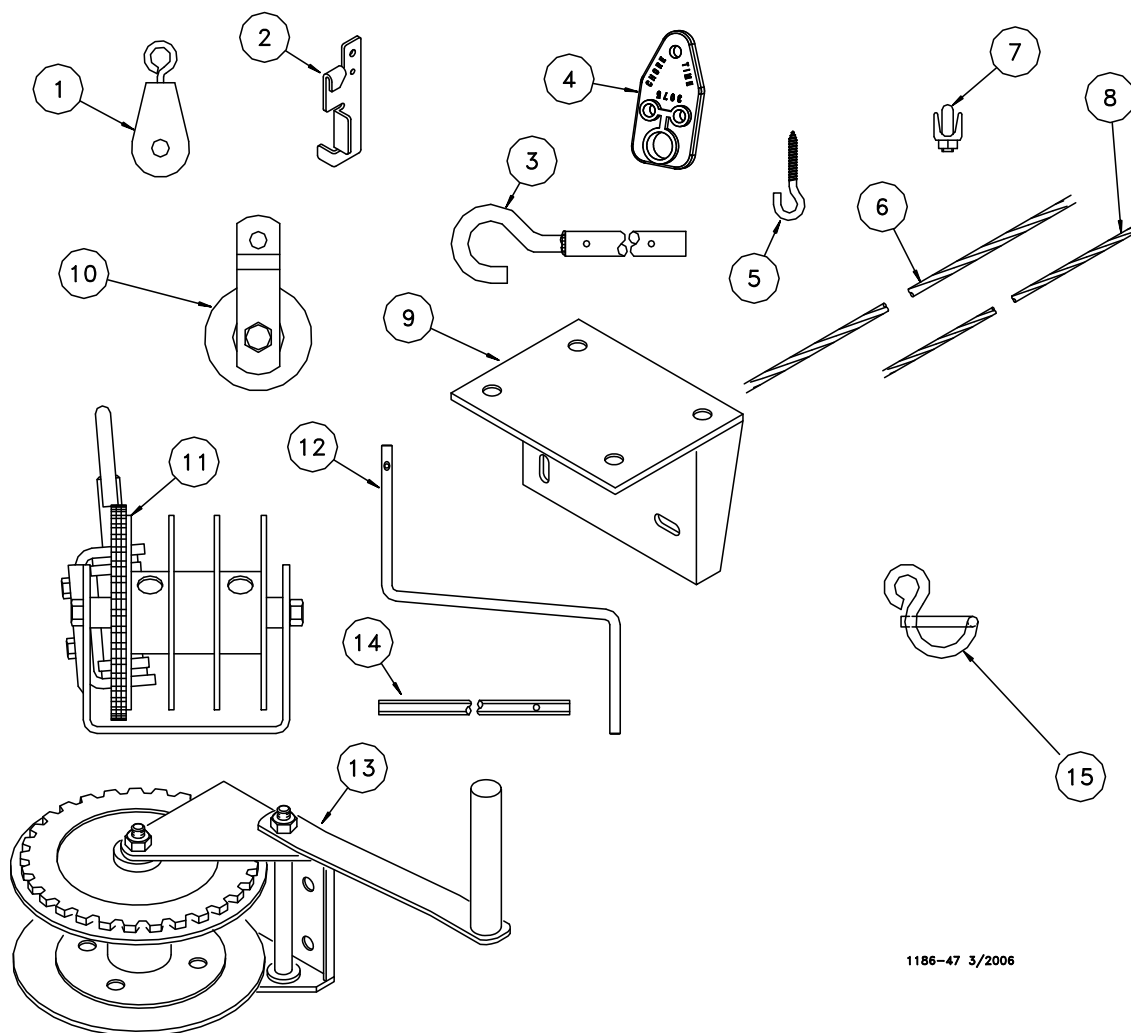
Water Meters

Important: Line must be flushed out before installing water meters. Bleed air out of the water line, running air through the water meter will damage it.



Description	Part No	Replacement Heads
3/4" Water Meter w/Pulse and Connectors (Gallon)	54579-GP	56425-GP
3/4" Water Meter w/Pulse (Liter)	54579-LP	56425-LP
3/4" Brass Water Meter (Liter)	E6900WM	56075

Suspension System Components:



1186-47 3/2006

Item	Description	Part No.
1	Pulley with Swivel Hook	44577
2	Cable Adjustment Leveler	14337
3	Winch Drive Tube (4 ft.)	2884-1
	Winch Drive Tube (8 ft.)	2884-2
4	Rope Adjustment Leveler	3075
5	Screw Hook (Standard)	1214
	Screw Hook (Large)	2041
6	1/8" Cable	27975
7	1/8" Cable Clamp	14898
8	3/32" Drop Cable	4973
9*	Winch Bracket with Hardware	1193
10	Pulley	44596
11	Split Drum Winch	29428
12	Handle Shank	2885
13**	Hand Winch	1212
14	Drill Adapter Shaft	2886
15	Winch Handle Pin	3761
--	1/8" Rope	9247
*Winch bracket to be used with hand winch only.		
**Hand winch is recommended for systems up to 150 ft [46 m] only.		

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Revisions to this Manual

Page No.	Description of Change	ECO
Various	Various updates to manual	34856



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