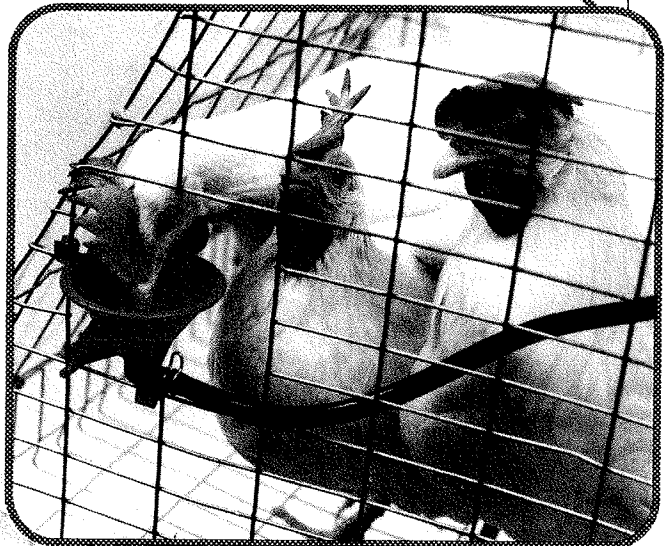


CHORE-TIME

Cage Watering Systems

Operator's Manual

Installation • Operation • Parts Lists



WARRANTY INFORMATION

Chore-Time Equipment warrants each new product manufactured by it to be free from defects in material or workmanship for one year from the date of initial installation by the original purchaser. If such a defect is found by Chore-Time to exist within the one year period, Chore-Time will, at its option, (a) repair or replace such product free of charge, F.O.B. the factory of manufacture, or (b) refund to the original purchaser the original purchase price, in lieu of such repair or replacement.

Additional extended warranties are herewith provided to the original purchaser as follows:

1. RLX Fans, less motors, for three years from date of installation.
2. Poultry feeder pans that become unusable within five years from date of installation. Warranty prorated after three years usage.
- *3. Rotating centerless augers, excluding applications involving High Moisture Corn (exceeding 18%), for ten years from date of installation. Applications involving High Moisture Corn are subject to a one year warranty.
4. Chore-Time manufactured roll-formed steel auger tubes for ten years from date of installation.
5. Laying cages that become unusable within ten years. Warranty prorated after three years usage.
- *6. ULTRAFLO® Auger and ULTRAFLO® Feed Trough (except ULTRAFLO® Trough Liners) are warranted for a period of five (5) years from date of original purchase against repeated breakage of the auger or wear-through of the feed trough.

Conditions and limitations:

1. The product must be installed and operated in accordance with instructions published by Chore-Time or warranty will be void.
2. Warranty is void if all components of a system are not supplied by Chore-Time.
3. This product must be purchased from and installed by an authorized Chore-Time dealer or certified representative thereof, or the warranty will be void.
4. Malfunctions or failure resulting from misuse, abuse, negligence, alteration, accident, or lack of proper maintenance shall not be considered defects under this warranty.
5. This warranty applies only to systems for the care of poultry and livestock. Other applications in industry or commerce are not covered by this warranty.

Chore-Time shall not be liable for any consequential or special damage which any purchaser may suffer or claim to have suffered 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.

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 AS TO MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE SOLD AND DESCRIPTION OR QUALITY OF THE PRODUCT FURNISHED HEREUNDER.

Any exceptions to this warranty must be authorized in writing by an officer of the company. Chore-Time reserves the right to change models and specifications at any time without notice or obligation to improve previous models.

*See separate "WARRANTY ADDITION" as to these products

**CHORE-TIME EQUIPMENT, A Division of CTB, Inc.
P.O. Box 2000, Milford, Indiana 46542-2000 U.S.A.**

Please fill in the following information about your Chore-Time Cage Watering System. Keep this manual in a clean, dry place for future reference.

Distributor's Name _____

Distributor's Address _____

Distributor's Phone _____ **Date of Purchase** _____

System Specifications _____

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Please read the installation instructions in this manual prior to beginning the installation. This manual is designed to give necessary information on the installation, operation, and maintenance of the watering system.

||||| This bar denotes changes made to this instruction since the last printing. It will appear in the left or right hand border, near the revised information.

Prior to Installation

Chore-Time recommends taking time to lay out the sections of water pipe and other large components prior to beginning each installation step. Hardware, tools, and small components (valves, etc.) may be conveniently carried in a carpenter's apron. This way they will be at hand when needed.

It is extremely important to maintain good water quality with any cage watering system. Good water quality maximizes performance and life of the equipment while minimizing maintenance and repair.

Pump the well for two days prior to hookup of the system to clear sand, mud, and 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.

Incoming pressure must be 40 p.s.i. (275 kPa) or higher for use with Chore-Time equipment.

Incoming water supply should be at least 1" (25 mm) diameter incoming line (preferably PVC) from a single well. If there are two or more supply wells, the incoming line should be larger. Also, depending on the distance from the control panel to the well(s), larger lines may be necessary.

Installation procedures will vary depending on such things as the model of cup used, the type of cage, the type of house, whether it's a new or existing cage system, and many other factors.

However, installation of Chore-Time Cage watering Systems can be broken down into the following general steps:

1. Control Panel installation
2. Installation of the supply line and Cage Manifold.
3. Installation of the water lines.
4. Installation of the Cups and miscellaneous accessories.

The first two steps are nearly the same for all cage systems. Differences for each cage system will be pointed out in the installation procedure.

Detailed instructions for the installation of the water lines, cups, and miscellaneous accessories are broken into sections that deal with each particular type of installation.

Repair parts information for Chore-Time Cage Watering Systems is available on pages 20 through 29. Keep this manual after installation for repair information. Also, the Maintenance and Operation Guidelines and the Troubleshooting Guide can be used as aids in managing and operating the system.



Control Panel Installation

Install the Control Panel on a Wall or partition where can be conveniently adjusted and serviced, but where it will not interfere with other equipment. The Control Panel can accommodate up to 45,000 birds. Chore-Time recommends one control panel per cage row to allow the best management of the system.

An incoming water pressure, between 40 p.s.i. (275 kPa) minimum and 125 p.s.i. (860 kPa) maximum, is recommended for use with the control panel.

A minimum of 1" (25 mm) diameter PVC pipe is recommended for incoming line from a single well. For additional wells, galvanized pipe, or unusually long runs, larger diameter line is recommended.

REMEMBER: For every 28" (711 mm) change in height, water pressure fluctuates 1 p.s.i. (48 kPa). If the panel must be mounted at a different height than the waterer lines, this factor must be considered when setting operating pressures at the control panel.

8072 Control Panel

The 8072 Deluxe Control Panel has the filter and pressure regulating functions combined in one control panel. See Figure 1.

The control panel should be installed within two feet (610 mm) of the height of the center of the cage bank, if possible. This will help eliminate unwanted pressure gains or losses and will give the most accurate pressure readings between the control panel and the cage waterer lines.

9075 Filter Control Panel

The 9075 Filter Control Panel is used where it is desirable to separate the filtering and pressure regulating functions. See Figure 2. The 9042 Regulator and Gauge Control is required with the 9075 Filter Control Panel to provide the pressure regulating function.

9042 Regulator and Gauge Control

Use as many 9042 Regulator and Gauge Controls as required—usually one per cage row. See Figure 3.

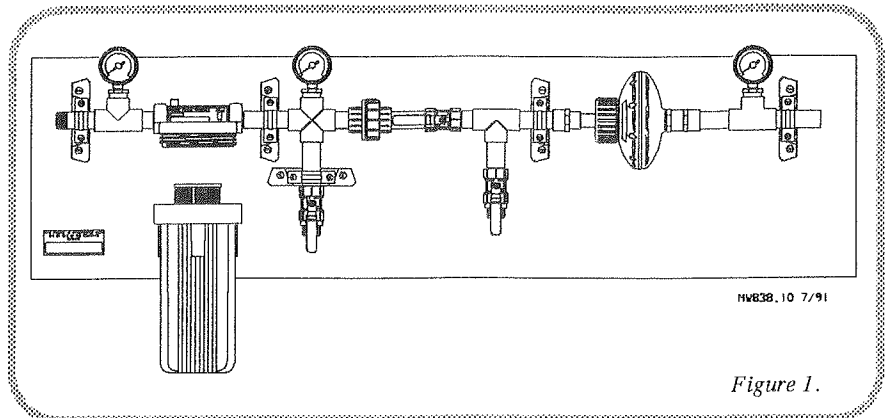


Figure 1.

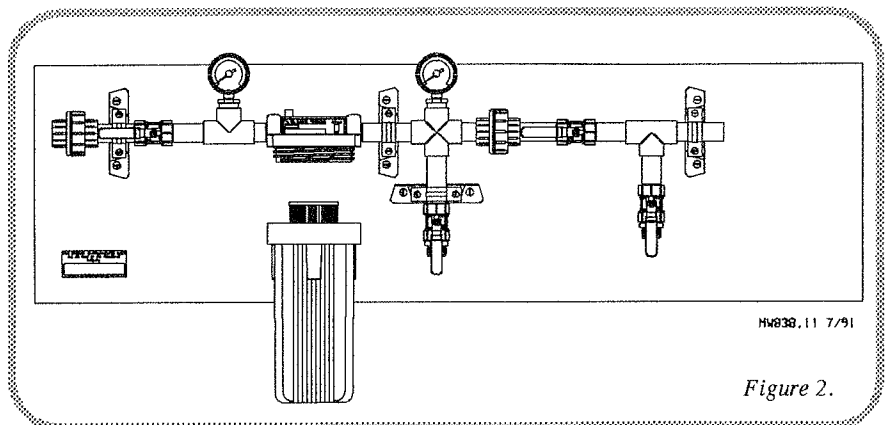


Figure 2.

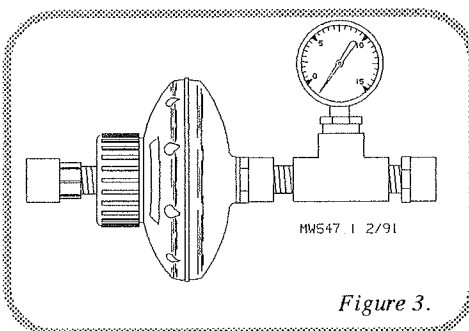


Figure 3.

Failure to use Pipe Cutters to assemble Chore-Time Cage Watering Systems will void the warranty.

Install Supply Lines from the Control Panel to Manifolds

Install the incoming water line from the control panel to the cage manifold at or near the bottom of the cage bank. It is possible to route the line above, higher than the cages, but if this is done, keep the control panel 6 ft. (1.8 m) or more from the floor level. 3/4" PVC pipe, elbows, and couplers are supplied to run a supply line to each manifold.

At least one section of water line should be installed for each cage line before installing the Cage Manifold.

Cage Manifold Installation

The "trunk" portion of the manifold can be installed anywhere at the end of the cage bank, but installation in the center of the cage bank as shown in Figures 4 is the most common. The manifold may be installed directly against the end of the cage bank if it does not interfere with the Dropping Board Scrapers, End Framing, etc. Some installations may require the 'trunk' being installed several inches from the end of the cages.

Follow the instructions for safe use and handling of PVC cement and dry fit all parts before cementing.

NOTE: A valve must be installed in the line BEFORE any cage lines are supplied with water. This valve will enable the water supply to be shut off for an entire cage row.

Install a valve at the beginning of each water line, this allows each line to be shut off individually. If optional gauges are to be used on each line, install as shown.

A pressure gauge is supplied with the system. Locate the gauge where it can be read conveniently. In multi-level cage systems, locate the gauge on one of the middle cage lines to give the most accurate pressure reading for all cage waterer lines.

NOTE; Extra 1/2" ells are supplied with the kit. In some installations they may be necessary. Cut short sections of the 1/2" pipe and use the ells if necessary to change height of the manifold around existing cage equipment and accessories (i.e. feeders, egg gathering equipment, dropping board scrapers).

NOTE; The manifold kit contains extra valves. These are to be used at the far end of the waterer lines so the lines can be drained. These valves are to be installed after the waterer lines are installed.

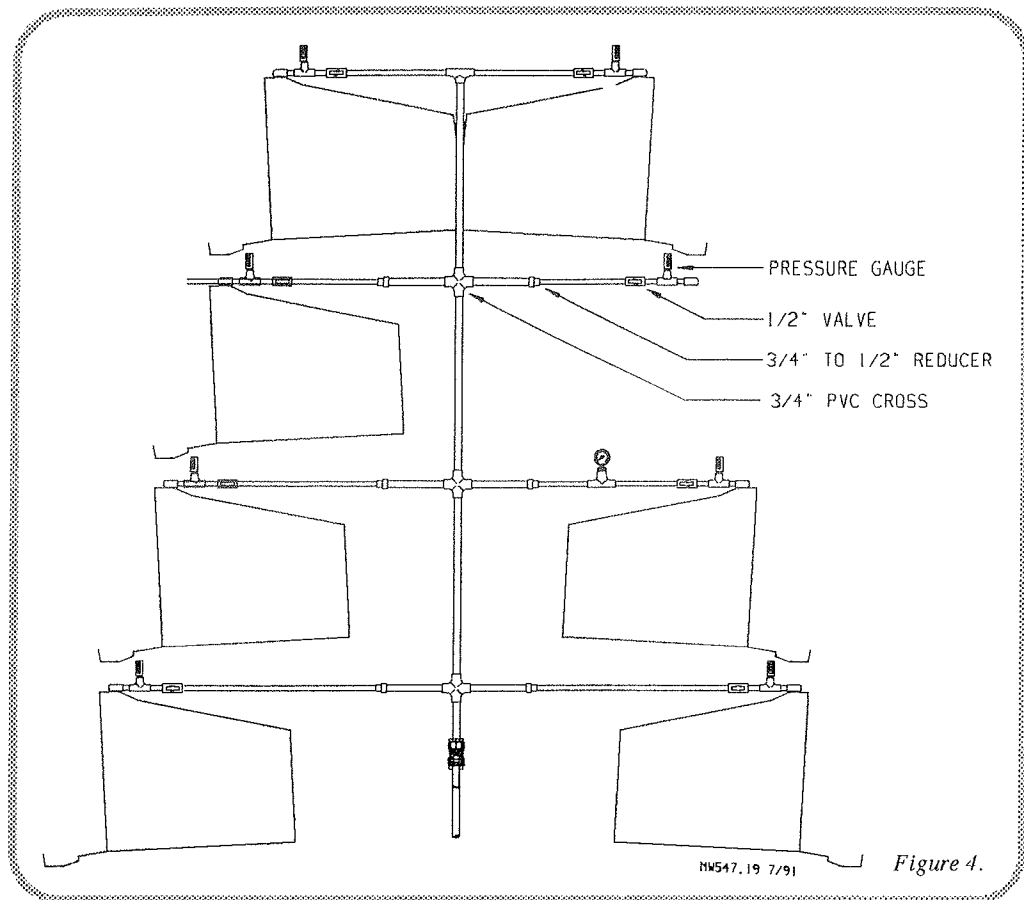
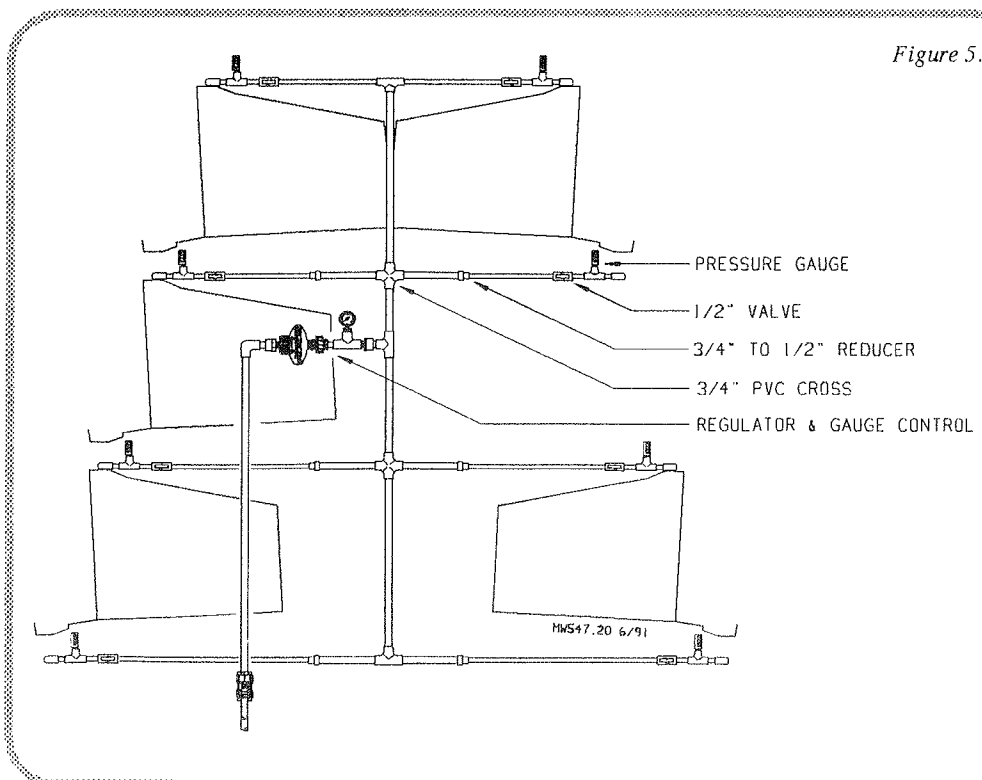
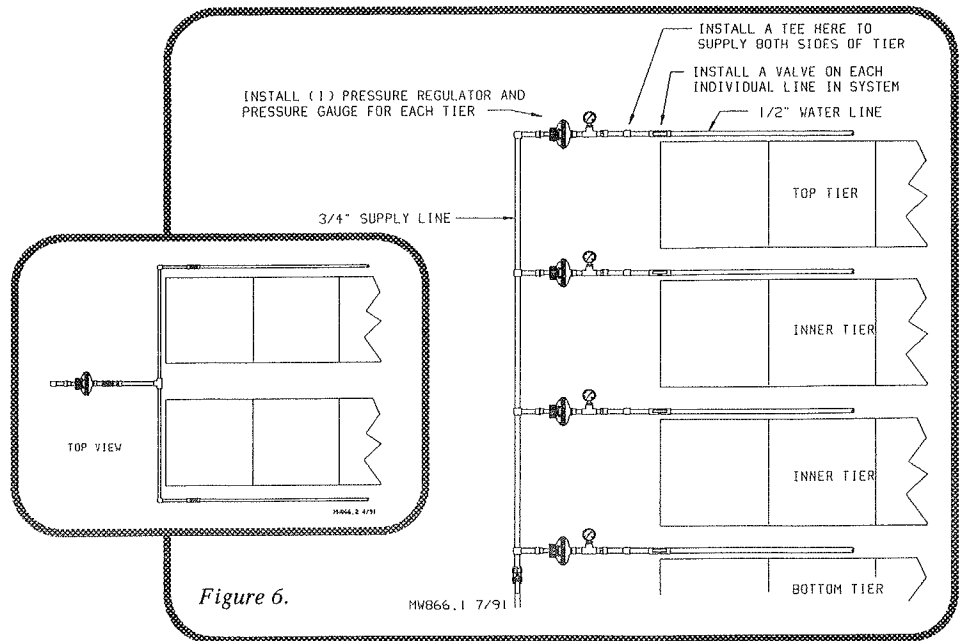


Figure 5.



For cage rows over 600' in length, install the manifold components as shown in Figure 6.

Notice the 3/4" supply line supplies the entire cage row, but water pressure for each line is adjustable using the Pressure Regulator. A 3/4x1/2x1/2 Tee must be located after pressure regulator and gauge to supply both sides of each tier. Install a valve on each water line, as shown in Figure 6..



Component Spacing Diagrams

Refer to the applicable system; Cage Cup • Cup-on-Pipe • Brood-Grow

CUP-ON-PIPE WATERING SYSTEM

FRONT OF HOUSE COUPLER COUPLER DOME AIR RISER COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.

CUP-ON-PIPE WATERING SYSTEM

SPOUT CUP SYSTEM

FRONT OF HOUSE COUPLER COUPLER DOME AIR RISER WITH EXTENSION PIPE COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EACH CUP AND DOME AIR RISER EXTENSION PIPE

CUP-ON-PIPE WATERING SYSTEM

WITH FRONT BRACKET

FRONT OF HOUSE COUPLER COUPLER DOME AIR RISER WITH EXTENSION PIPE COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.
LOCATE A FRONT CAGE BRACKET AT EACH CUP.

CUP-ON-PIPE WATERING SYSTEM

WITH 2" BACK-TO-BACK BRACKET

FRONT OF HOUSE COUPLER COUPLER DOME AIR RISER WITH EXTENSION PIPE COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.
LOCATE A 2" BACK-TO-BACK BRACKET AT EACH CUP.

CUP-ON-PIPE WATERING SYSTEM

WITH 4" BACK-TO-BACK BRACKET

FRONT OF HOUSE COUPLER COUPLER DOME AIR RISER WITH EXTENSION PIPE COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.
LOCATE A 4" BACK-TO-BACK BRACKET AT EACH CUP.

CAGE CUP WATERING SYSTEM

FRONT OF HOUSE COUPLER COUPLER SLIP CONNECTOR COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.

BROOD-GROW WATERING SYSTEM

MULTI-LEVEL

FRONT OF HOUSE COUPLER COUPLER SLIP CONNECTOR COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.
LOCATE AN EXTENSION RING AND FLOAT BALL AT EACH CUP.

BROOD-GROW WATERING SYSTEM

FLOW-THROUGH

FRONT OF HOUSE COUPLER COUPLER SLIP CONNECTOR COUPLER COUPLER SLIP CONNECTOR REPEAT TO END OF HOUSE

LOCATE A NYLON TIE AT EVERY OTHER PARTITION.
LOCATE AN EXTENSION RING AT EACH TOP LEVEL CUP.
LOCATE A FLOAT BALL AT EACH CUP.

Waterer Line Installation

Water line locations and specific installation instructions for each watering system are given in separate sections of this manual.

--See pages 9-10 for CHORE-TIME CAGE CUP SYSTEMS

--See pages 11-13 for CUP-ON-PIPE SYSTEMS

--See pages 14-18 for BROOD-GROW SYSTEMS

The following instructions are general installation instructions that apply to all systems.

Handle PVC waterer line carefully. Distribute waterer lines along each cage row and place in the approximate location where the line will be installed. Be careful when hauling the waterer lines to avoid damage.

1. Begin at the manifold end and position the pipe section so that the cup or hose barb will fall at the desired location.
2. Use nylon ties to attach the pipe to the cages as shown in Figure 7. Beginning at the manifold end of the cage row, use a nylon tie at every other cage partition. Nylon tie spacing can range from 32" (812 mm) for 16" cages to 48" (1.2 m) for 24" cages, depending on cage size.

NOTE: For 30" cages, install a tie at every partition. Do not exceed 48" (1.2 m) spacing between nylon ties. See page 7 for component spacing chart.

3. Beginning at the FIRST PIPE JOINT from the manifold end of the row, install a coupling as shown in Figure 8A. Apply PVC cement to the outside of the pipe and the inside of the coupling to be joined. See the directions on page 12 for instructions on proper use of PVC cement. BE SURE THE PIPE SECTIONS ARE JOINED SO THAT THE CUPS OR HOSE BARBS ALL POINT IN THE SAME DIRECTION.
4. At the SECOND PIPE JOINT from the manifold . . .
 - install a coupling on Chore-Time Cage Cup, Flow-Thru Brood-Grow, and Multi-Level Brood-Grow Systems. See Figure 8A.
 - install a Dome Air Riser on all Cup-on-Pipe Systems. See Figure 8B.

5. At the THIRD PIPE JOINT (60 ft. or 18.2 m) from the manifold, install a Slip Connector expansion joint as shown in Figure 9. The slip end of the connector should be closest to the manifold end of the house. Cement slip connector to the end of the pipe section joined, position the pipe section with cup locations properly placed in relation to the cages and hold the Slip Connector against the pipe already joined to the manifold end of the line. Use PVC pipe cutters and cut the end of the pipe section to the proper length as shown in Figure 9.

Continue down the cage line. Install a coupling, then either another coupling or a Dome Air Riser (depending on the system), then another Slip Connector (placing a Slip Connector at every third joint) along the entire length of the line until all pipe sections are joined.

Outlet Drain Installation

The Manifold Kit contains an outlet valve for each cage waterer line. This is used when flushing or draining lines during required maintenance of the system.

At the far end of the cage house--opposite the control panel and manifold end--install an outlet valve on each waterer line. Use the adapter supplied to install the 3/4" drain valve on the 1/2" PVC pipe as shown in Figure 10.

Use additional pipe and fittings if it is desirable to position the drain away from the end of the cages.

NOTE: Do not install the drain OVER, or IN FRONT OF, the cages.

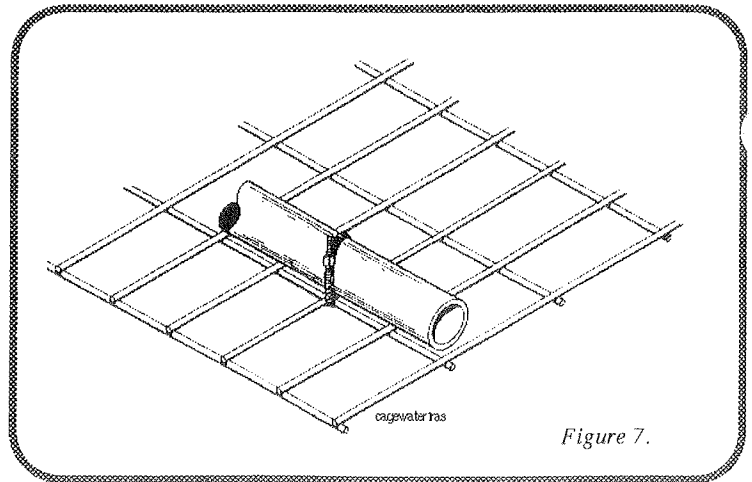


Figure 7.

Figure 8A. Install a coupling on Chore-Time Cage Cup, Flow-Thru Brood-Grow, and Multi-Level Brood-Grow Systems.

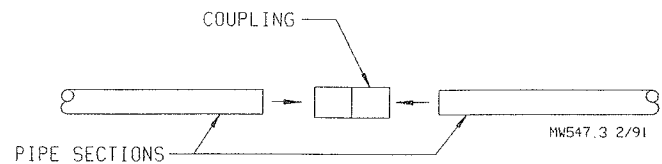


Figure 8B. Install a Dome Air Riser on Cup-on-Pipe Systems.

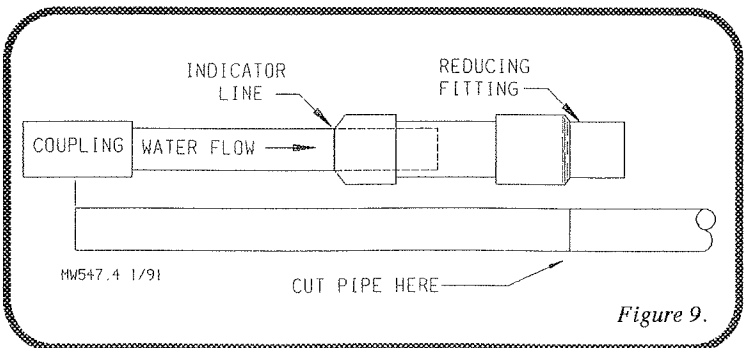
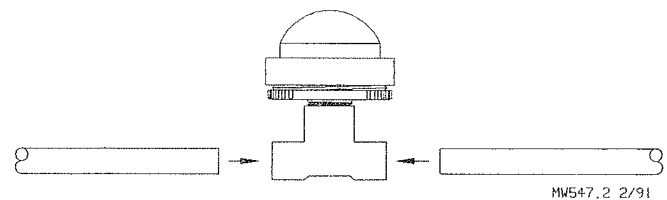


Figure 9.

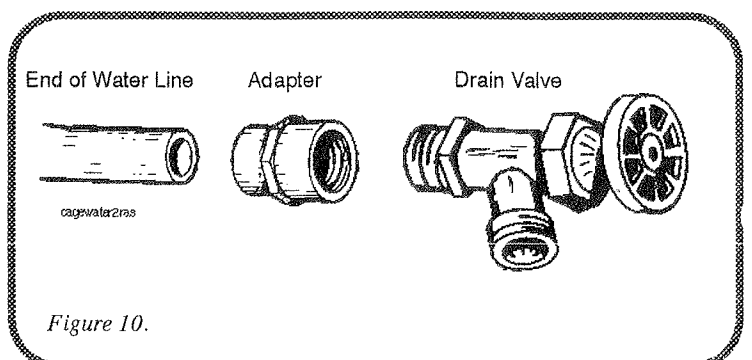
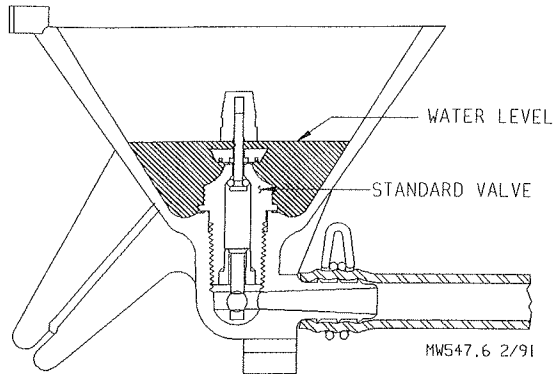


Figure 10.

Installation of the CHORE-TIME Cage Cup

CHORE-TIME CAGE CUP (NO SPOUT) USING STANDARD VALVE

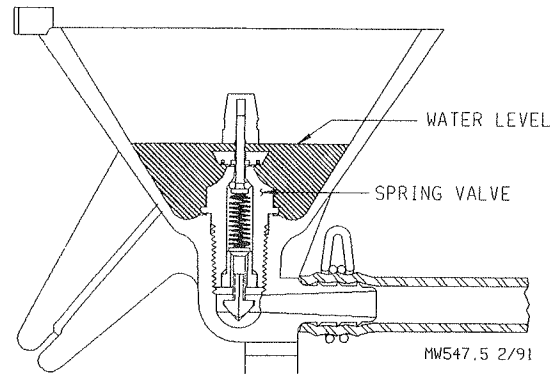


The Chore-Time Cage Cup System uses flexible hoses to connect the Cage Cup to the waterer line. This allows the Chore-Time Cage Cup to be used with many different cage systems. The system is available with waterer lines that have hose barb saddle assemblies at spacings corresponding to various cage width. Cups may be placed at every partition or at every other partition.

Although the cups may be located at various locations in the cage, they are required to be located out of direct exposure to falling manure and slightly away from the feeder trough. Several hose lengths are available to allow the cups to be positioned as needed.

Cups are available with and without spouts, using a standard valve or spring valve, in red color only. Use cups with spouts to direct water away from feed trough.

CHORE-TIME CAGE CUP (NO SPOUT) USING SPRING VALVE



Water Line Location

The waterer lines are normally placed on top of the cages, but may be placed in any convenient location, as long as the cup can still be installed in the desired location.

Cup Installation

1. Place the Cup and Hose Assembly into the cage partition opening as shown in Figure 11. Snap the cup into place as shown in Figure 12. If the cup has a spout, it should point away from feed trough.
2. Thread the hose through the partition as shown in Figure 13. This will prevent the birds from pulling the hose into the cage.
3. Slide the end of the hose over the hose barb on the pipe and secure with the hose clamp. See Figure 14.

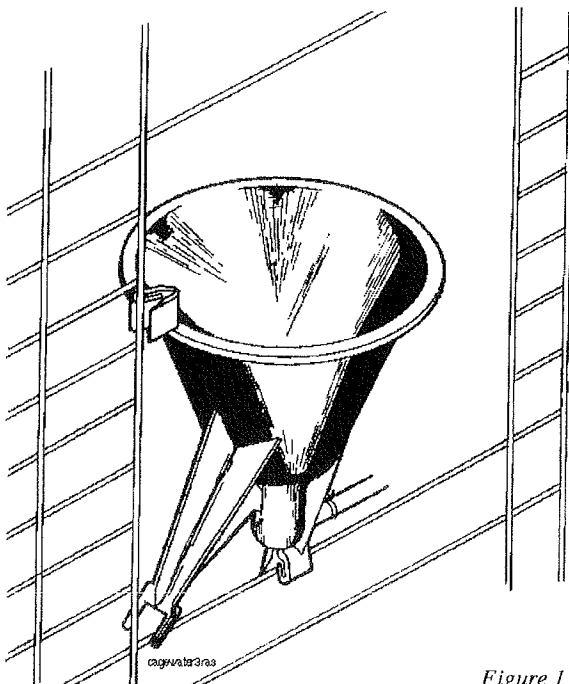


Figure 11.

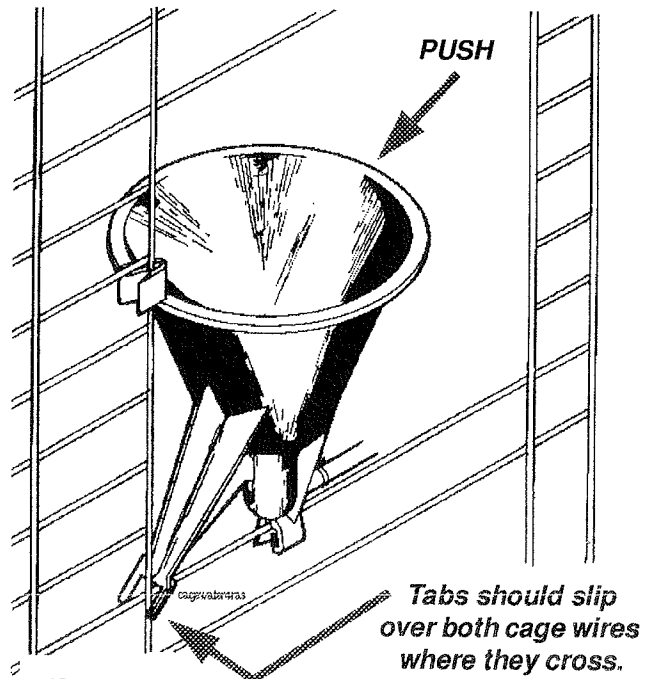


Figure 12.

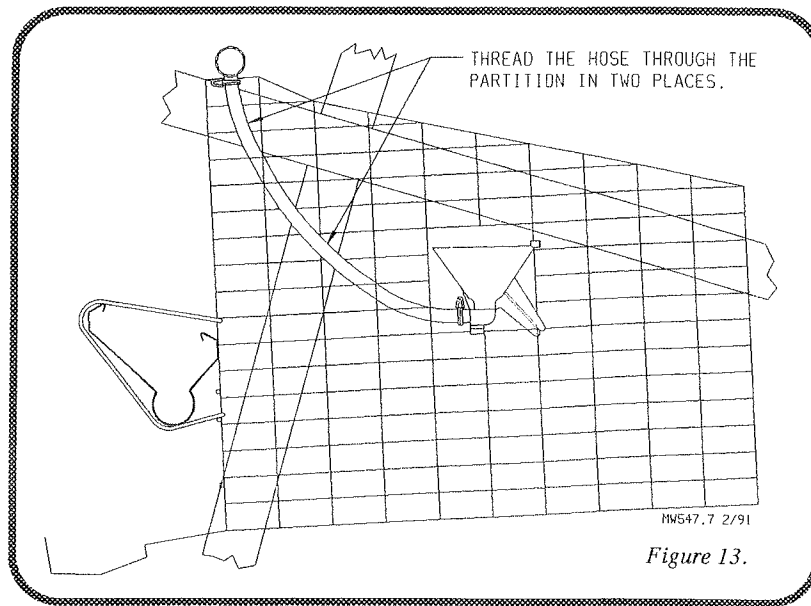
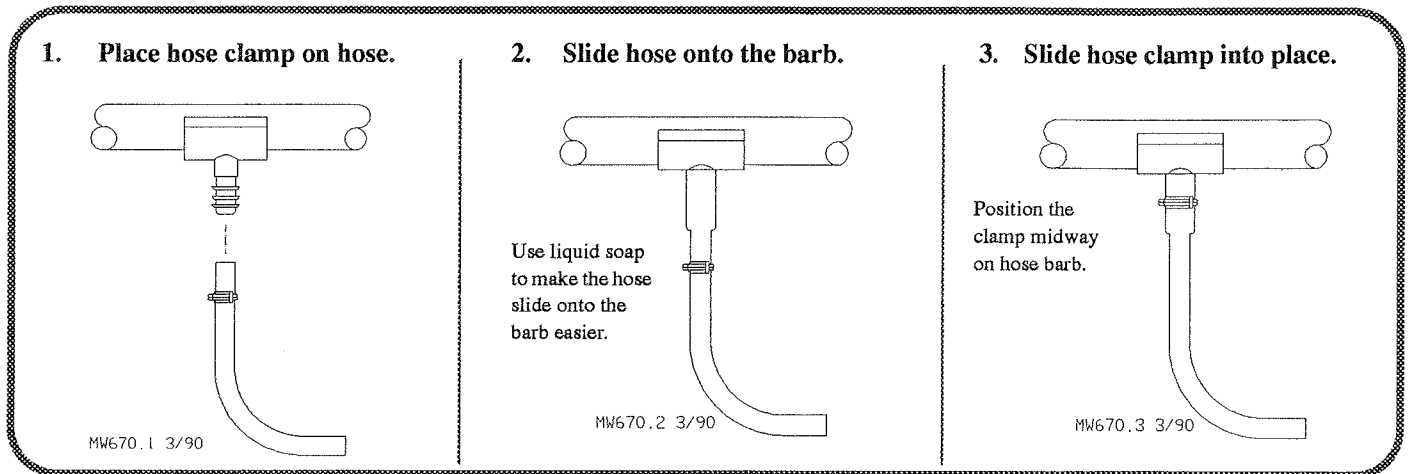
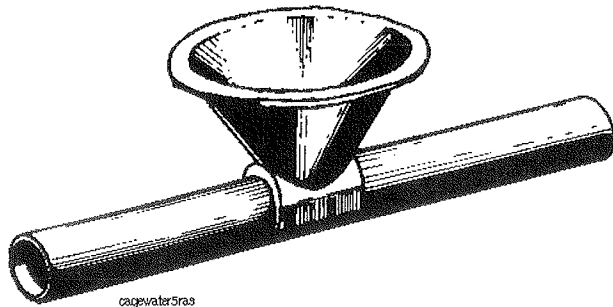


Figure 14.

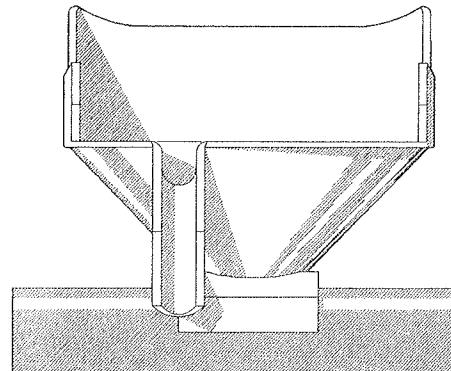


Installation of the Cup-on-Pipe Watering System

Cup-on-Pipe Waterer using a standard (no spout) Cup



Cup-on-Pipe Waterer using a Spout Cup



Several versions of the Cup-on-Pipe System are available. They include:

- Standard Cup-on-Pipe,
- Spout Cup-on-Pipe,
- Front Bracket,
- 2" Back-to-Back,
- 4" Back-to-Back.

NOTE: With all Cup-on-Pipe Systems, Chore-Time recommends using a coupler at the first two waterer line joint, a Dome Air Riser at the third, a coupler at the fourth and fifth joints, and a Slip Connector at the sixth. Repeat this sequence along the entire length of the line. Components will be properly spaced and will not interfere with installation or servicing of each other.

The standard Cup-on-Pipe is used primarily on "V"-backed cage systems or other cage systems where the pipe is directly supported by the cages and secured to the cages with nylon ties. On "V"-backed cage systems, the waterer line rests in the bottom of the "V". Each cup can supply four cages. The nylon ties are placed at every other partition.

The Spout Cup is used when the waterer line is to be placed along the feeder trough. The cup is located outside the cage with the spout facing toward the cage, not toward the feeder trough.

The Dome Air Risers are placed on 8.5" Extensions to locate them above the cage front. Use a nylon tie to fasten the Extension to the cage front. See Figure 15.

Place the cup between the cages so that it can supply two cages.

Fasten the waterer line to the horizontal cage front wire that is lower than the waterer line. This will keep the waterer line held securely against the trough. See Figure 16.

At the center of each pipe section, place a nylon tie around the cup and secure to a vertical cage wire to prevent the cup from tipping outwards. See Figure 17

Front Cage Bracket Systems

The Front Cage Bracket (see Figure 18) secures the waterer line to the cages and allows the cup to be located 2" (50 mm) outside of the cage --either in front or back of the cage. This model should be used where the cup will not be placed over a feeder. Each cup can supply two cages.

The bracket should be mounted 8-10" (200-250 mm) from the floor of the cage for easy cup access by the birds. Install the brackets 2" (50 mm) from the cage partition where the cup is to be located. The "V" in

Figure 15.

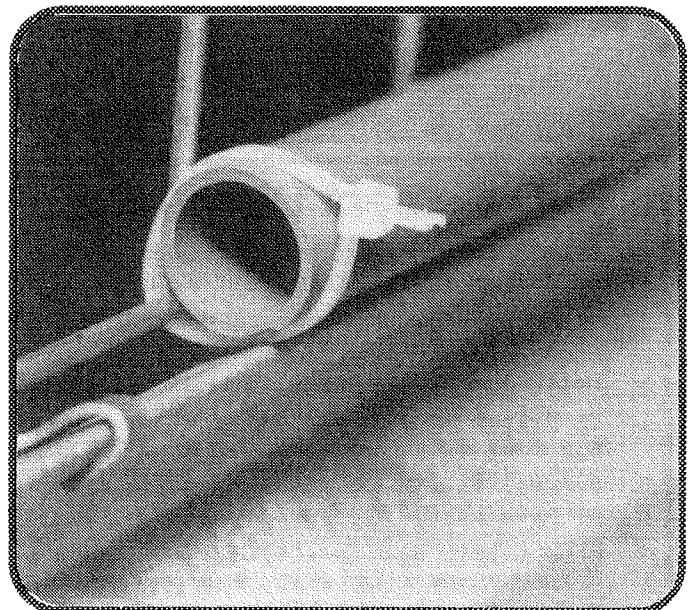
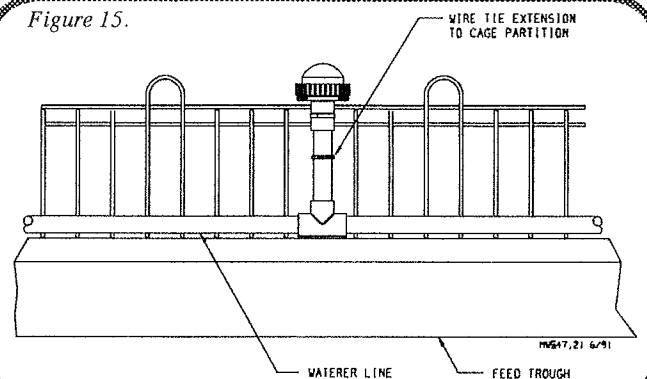
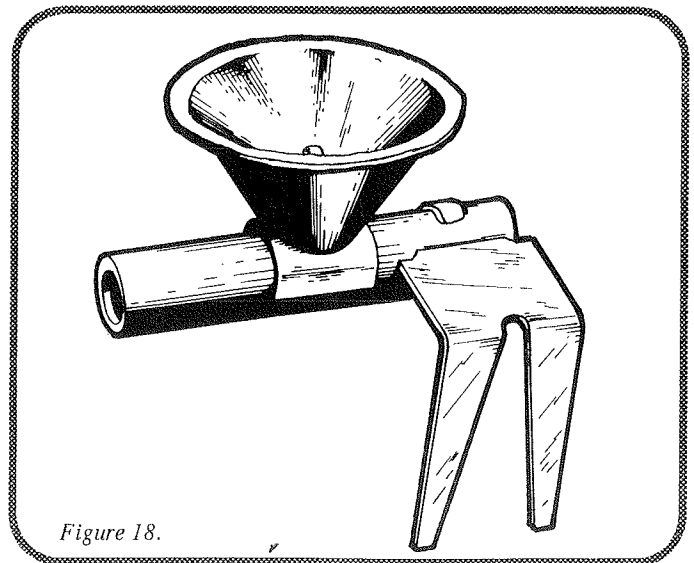
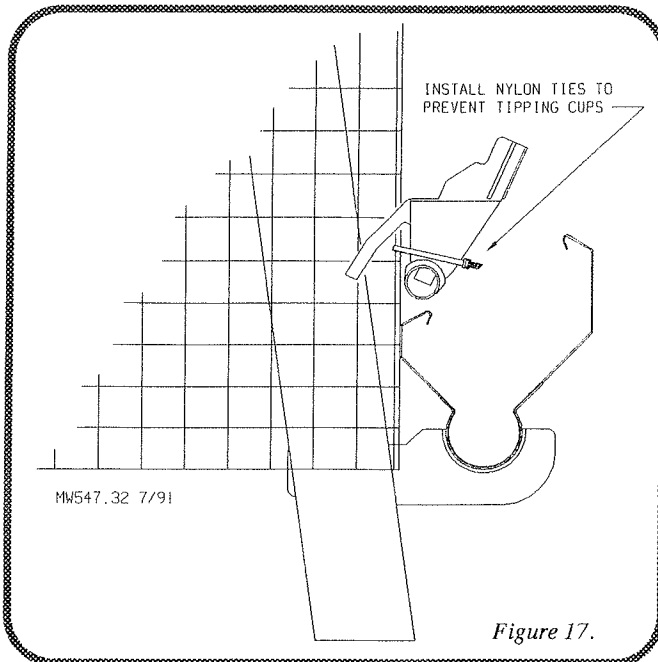


Figure 16.

the bracket will straddle a vertical cage wire. The two "legs" should be bent around the horizontal cage wire that is 2" (50 mm) below the top of the bracket. See Figure 19.

After the waterer line is placed in the bracket, the tab is bent closed over the pipe. DO NOT DISTORT THE PIPE WHEN CRIMPING THE TAB.



Back-to-Back Bracket System

The two Back-to-Back Brackets (see Figure 20) were designed to support the waterer line on cage systems where there is a gap between the cages.

The 2" Back-to-Back Bracket is used where there is a two inch (50 mm) gap between the cages.

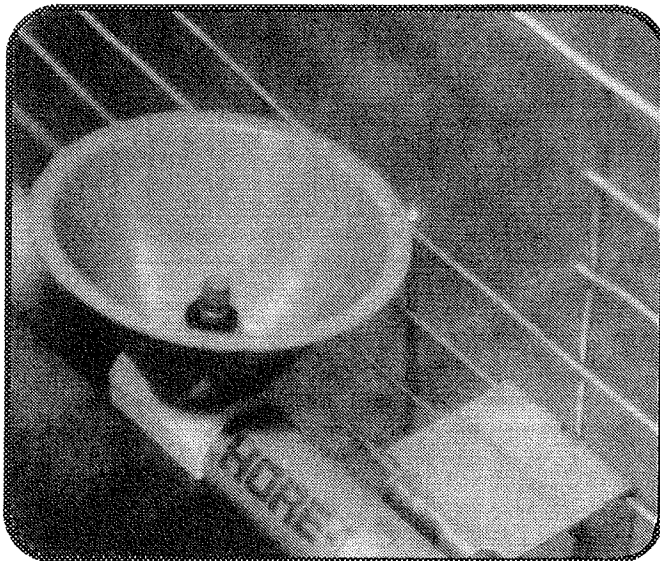
The 4" Back-to-Back Bracket is used where there is a four inch (100 mm) gap between the cages.

The Back-to-Back Brackets are fastened to the cages and the waterer line is secured to the brackets. Each cup can supply four cages. One Back-to-Back Bracket is required per cup.

Install the Back-to-Back Bracket 2" (50 mm) from the partition where the cup is to be located. Locate the bracket so that the lip of the cup is 8-10" (200-250 mm) from the floor of the cage for easy cup access by the birds.

1. Center the bracket as shown in Figure 21. Bend the outside tabs down around horizontal cage wires far enough so that the birds do not rub against them.
2. Lay the waterer line in the Back-to-Back Brackets and bend the tabs around the pipe.

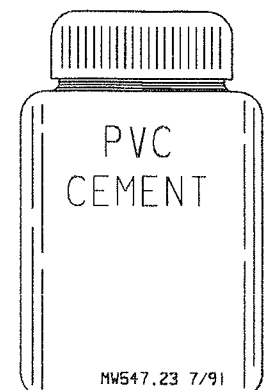
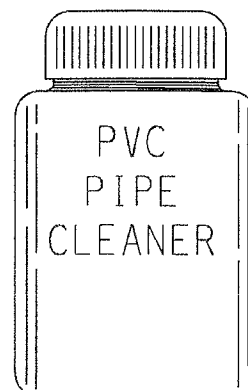
DO NOT DISTORT THE PIPE.



PVC Cement Directions

FOLLOW THE DIRECTIONS ON THE CONTAINER OF PVC CEMENT FOR SAFE HANDLING AND BEST RESULTS.

1. Be sure pipe is cut off squarely. USE PIPE CUTTERS ONLY. Failure to use pipe cutters voids the warranty.
Remove dirt and burrs from outside and inside of the pipe.
2. Dry fit all parts before cementing. Pipe should be fit into fittings without applying excess force.
3. Surfaces to be joined should be clean--free from dirt, oil, and grease. Use PVC Pipe Cleaner, as needed.
4. APPLY CEMENT TO BOTH SURFACES TO BE JOINED. Apply cement sparingly, but evenly over the entire surface, leave no bare spots. Use a PVC cement containing PVC resin (gray in color).
5. Quickly join the two PVC components, giving them a twisting motion to bring the joint into alignment as the parts are pushed together.
6. Keep light pressure on the joint for a few seconds to allow the joint to harden.



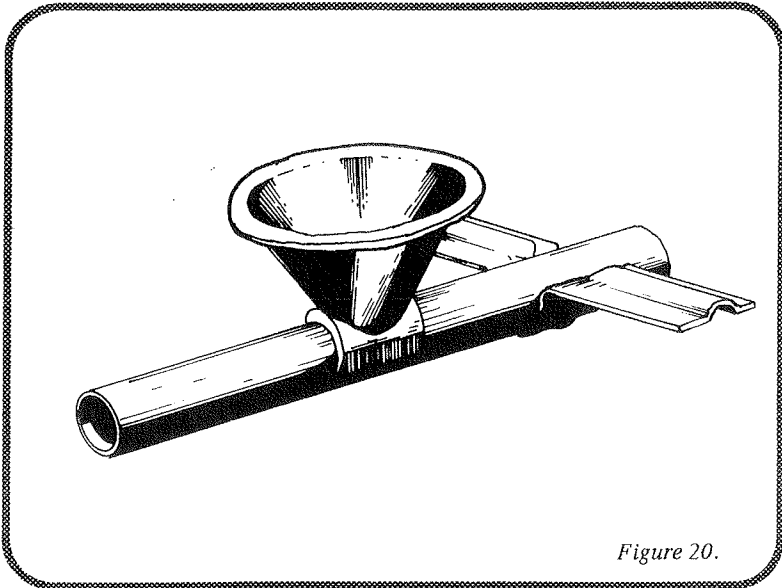


Figure 20.

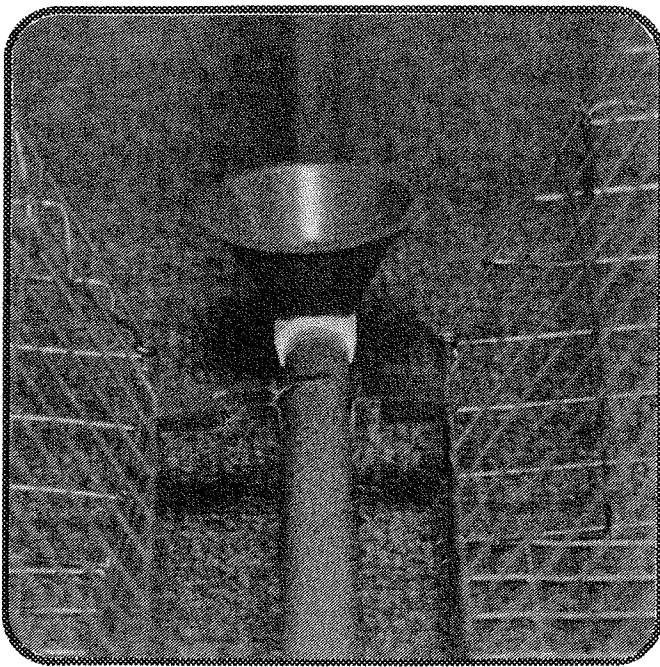


Figure 21.

Installation notes . . .

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Installation of the Brood-Grow Watering System

Chore-Time offers two types of watering systems for Brood-Grow cage systems. In both, the cup height may be adjusted as the birds grow. The Cup Assemblies slide in a one inch (25 mm) slot in the partitions. The slots have a plastic edge guard on both sides to make adjusting easier.

The Cup Assemblies may be installed at every other cage partition, giving each cage one cup, or they may be installed at every partition, giving each cage two cups. See Figure 22.

A Float Ball is used on birds up to 14 days of age to easily maintain the water level in the cups.

Flow Through Brood-Grow

The Flow Through Brood-Grow Watering System (see Figure 23) is designed for cage systems without dropping boards, that will allow the cups on each level to be directly over one another. It consists of one water supply line on top of the cages, with two-cup Cup Assemblies on each level. The Cup Assemblies are connected to each other and to the waster supply line with plastic hose. Water flows through the hose from the water supply line, down through each level. A wire connects each level so that all levels can be adjusted up or down at the same time.

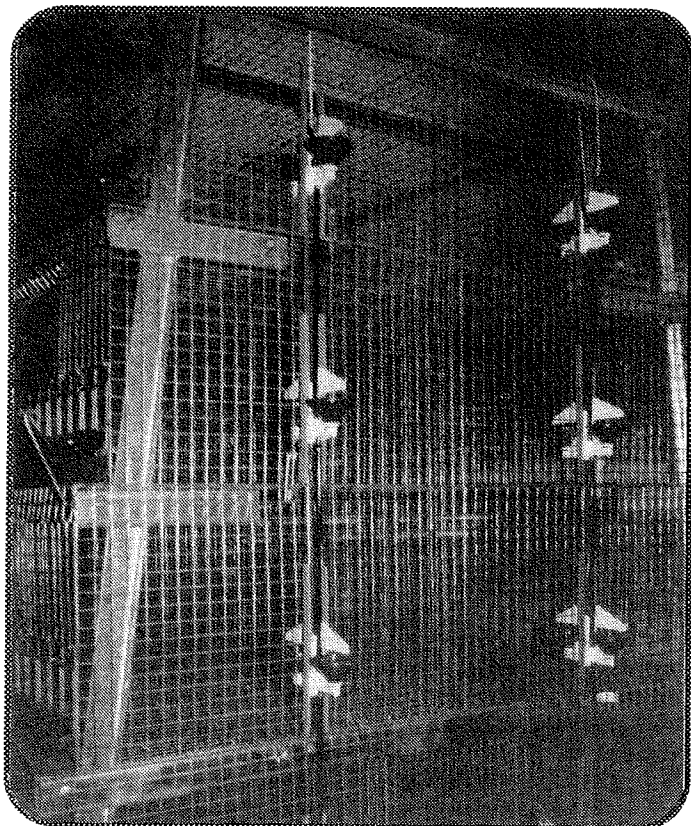


Figure 23.

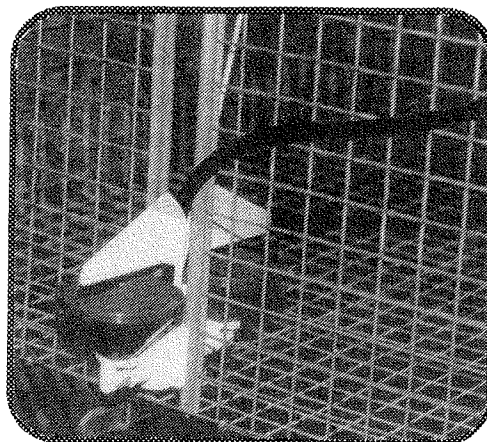


Figure 22.

Multi-Level Brood -Grow

The Multi-Level Brood-Grow Watering System (see Figure 24) is designed for cage systems where the cups cannot be placed directly over each other, or where there is an obstruction--such as dropping boards--that prevents the Flow Through system from being used. It consists of a water supply line on each level connected with plastic hoses to the Cup Assemblies on that level.

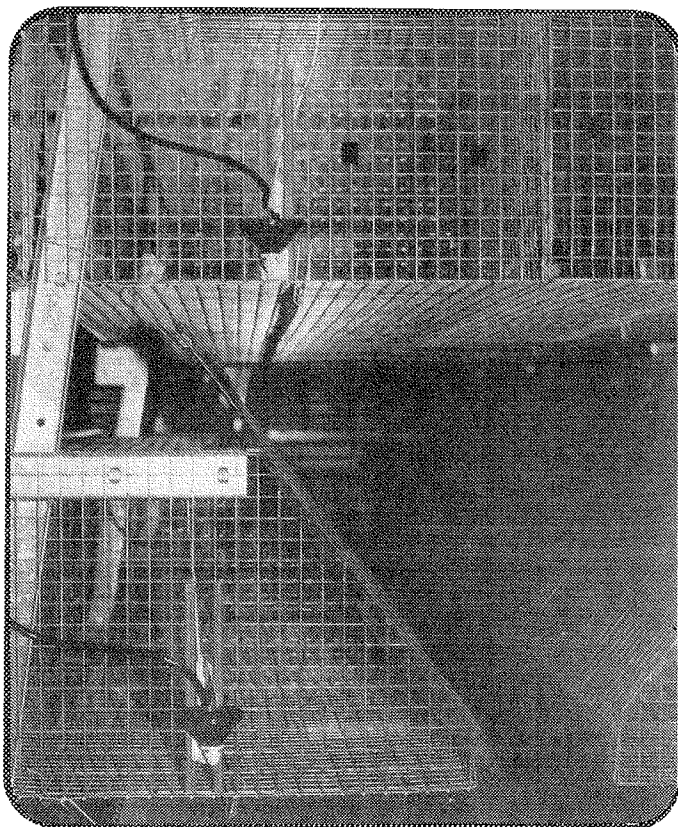


Figure 24.

Watering Installation Steps During Cage Assembly

The Edge Guards and the Litter Shields should be installed as the cages are being assembled. Edge Guards and Litter Shields are shown in Figure 25. Some installers also prefer to install the Cup Assemblies as cages are being assembled.

If the Cup Assemblies are not installed as the cages are built, they should be installed before the Cage Fronts are installed on the cages.

Edge Guard Installation

The Edge Guard is installed on each side of the waterer cutout, as shown in Figure 26. Make sure the Edge Guards are pushed all the way on.

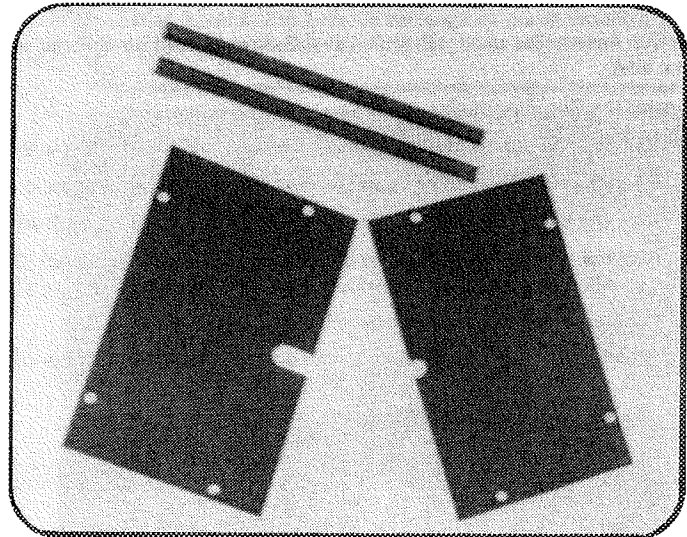


Figure 25.

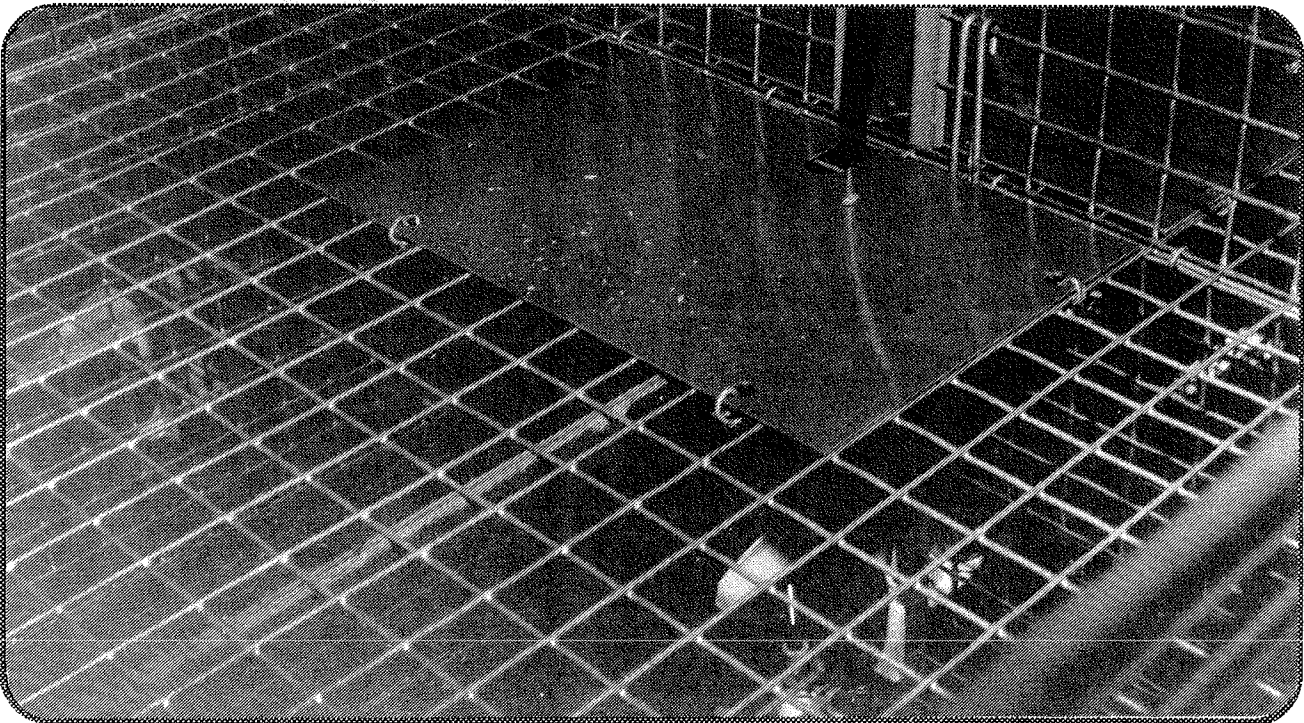
Litter Shield Installation

The Litter Shield is installed on the cage floor to prevent debris from falling into the water cups on the level below. A Litter Shield should be placed below each cup, on every level except the bottom level. Install the Litter Shield as shown in Figure 27.

NOTE: The Litter Shields have two different sized notches. The shield with the small notch fits on the wire side of the partition, and the shield with the large notch fits on the hose side of the partition.

Figure 26.

Figure 27.



Installation of Cup Assemblies

The Cup Assemblies are shipped complete with Cups, Hoses, and Hose Clamps, and Dividers that prevent the birds from sitting on the cups. There are four types of Cup Assemblies, one used for Multi-Level Systems and three used for Flow-Through Systems.

Multi-Level

The Cup Assemblies used with Multi-Level System is used on all levels and comes with an adjustment cord. It has one hose connection on the water inlet.

To install the Cup Assemblies;

1. Remove one cup by twisting counterclockwise and gently lifting at the same time.
2. Insert the Cup Assembly through the waterer cutout and snap the grooves in the sides over the Edge Guards. See Figure 28.
3. Slide the hose over the Hose Barb on the waterer line and clamp with the Hose Clamp. See Figure 14.
4. Ring the hose to the partition at one place, as shown in Figure 29. DO NOT CRUSH THE HOSE. Leave enough loose hose, between the Cup Assembly and the ring, to allow the Cup Assembly to be fully adjusted up or down.
5. Continue using the above steps to install Cups at all levels.

Refer to page 17, of this manual, for height adjusting procedure for the cups.

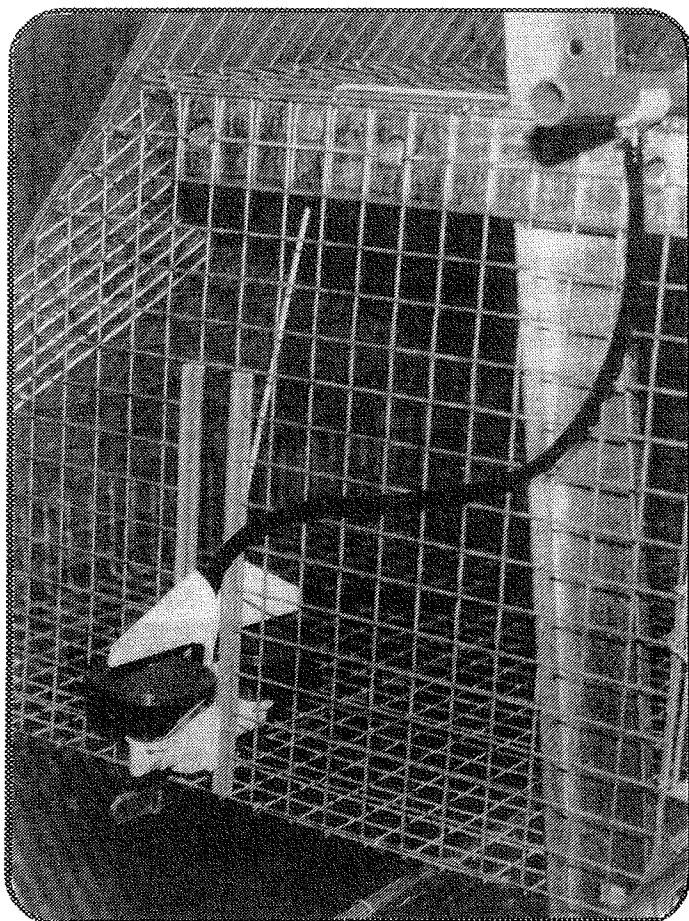


Figure 28.

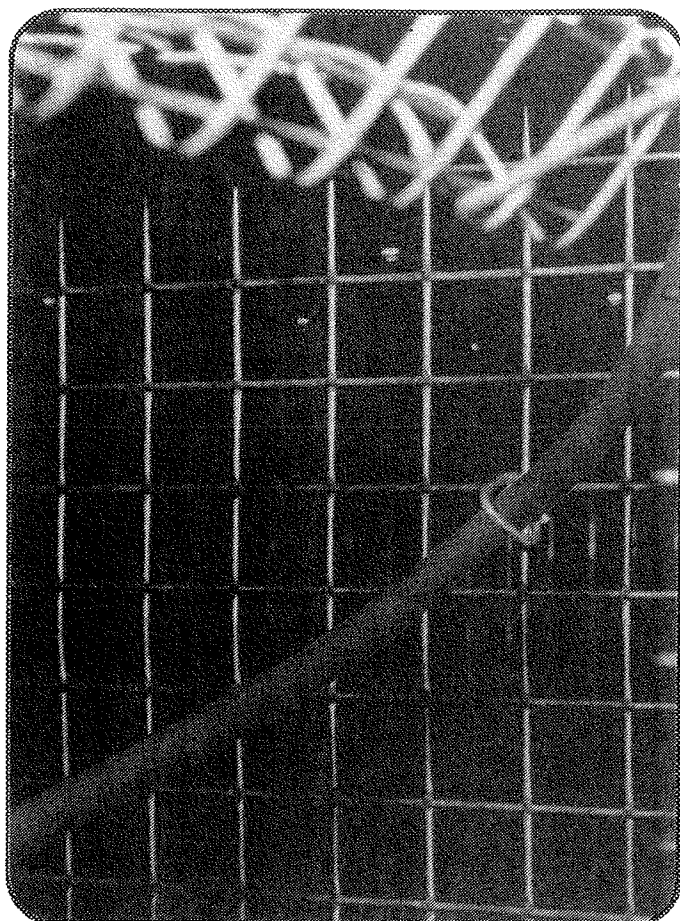


Figure 29.

Flow-Through

The Flow-Through System uses different Cup Assemblies for the top, middle, and bottom rows.

TOP LEVEL--This Cup Assembly has the adjusting cord and contains two hose connections, a water inlet and water outlet.

MIDDLE LEVELS--These Cup Assemblies have a water inlet and water outlet. They do not have an adjusting cord.

BOTTOM LEVELS--This Cup Assembly only has a water inlet and does not have an adjustment cord.

To install the Cup Assemblies:

1. Remove one Cup by twisting counterclockwise and gently lifting at the same time.
2. Insert the Cup Assembly through the waterer cutout and snap the grooves in the sides over the Edge Guards. See Figure 30. Be sure to install the required Cup Assembly on the correct level.
3. After all the Cup Assemblies have been installed, hook the Adjustment Cord Hook over a cage wire so that the Cup Assemblies are held about 2" (50 mm) above the cage floor.
4. Connect the hoses.
 - a. The hose on the bottom level Cup Assembly connects to the bottom hose barb on the middle level Cup Assembly.
 - b. The hose on the middle level Cup Assembly connects to the bottom hose barb on either, the next middle level Cup Assembly or the top Cup Assembly, depending on the number of levels.
 - c. The hose on the top level Cup Assembly is connected to the waterer line hose barb. Use pliers to slide the hose clamps on the hoses over the hose barbs. See Figure 14. **DO NOT PINCH THE HOSE.**
5. Use Hanger Wires to, connect the middle level Cup Assembly to the top level Cup Assembly, to connect the middle level Cup Assembly to each other, and to connect the bottom level Cup Assembly to the middle Cup Assembly. See Figure 31.
 - a. Hook the preformed loop end of the Hanger Wire through the lower Cup Assembly.
 - b. Thread the other end of the Hanger Wire through the cage bottom.
 - c. Hook the Hanger Wire in the hole provided on the Cup Assembly on the cage line above.
 - d. Close the loop after the Hanger Wire is installed.
6. The hose, that connects the top level Cup Assembly to the waterer line, should be fastened to the cage partition with a cage ring at one place as shown in Figure 29. **DO NOT CRUSH THE HOSE.** Leave enough loose hose, between the Cup Assembly and the ring, to allow the Cup Assembly to be fully adjusted up or down.

CHORE-TIME®

**Use only
CHORE-TIME
Replacement Parts.**

IMPORTANT

The hose barbs on the Cup Assemblies must be on the same side of the cage partitions on all levels, so that the hoses can be connected. Also, the cups should be installed with the hose barbs towards the back of the cage to make installing the Hanger Wires easier.



Figure 30.

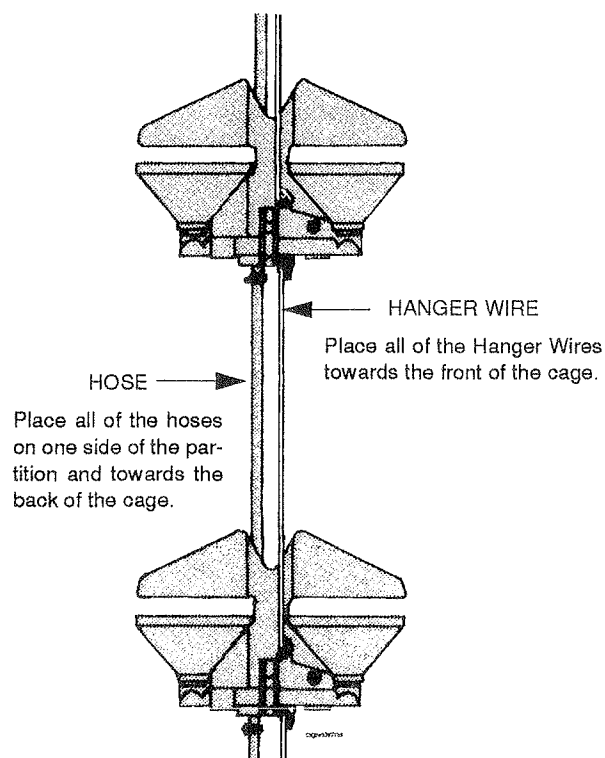


Figure 31.

Install Extension Plugs

Each Brood-Grow Waterer Assembly serves two cages. Since the Brood-Grow Waterer Assemblies consists of two connected cups, one cup will wind up outside of the cages at the ends of the cage rows. When this happens, remove the cup and O-Ring, then glue an Extension Plug in the O-Ring seat as shown in Figure 32.

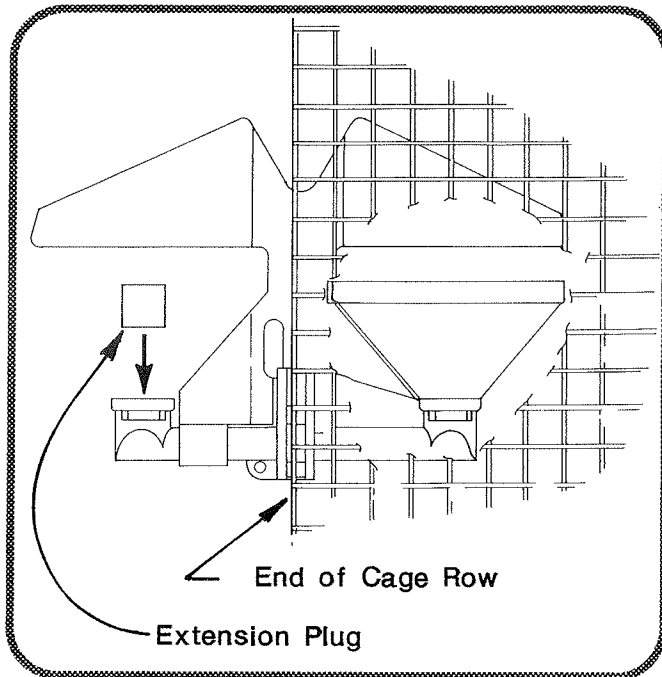


Figure 32.

Install Litter Covers--Optional

The 13319 Litter Covers are used to prevent accumulation of dust, feathers, etc., for cups that are not in use during the growing period. They are also used when the system is to set idle for an extended period of time. See Figure 33.

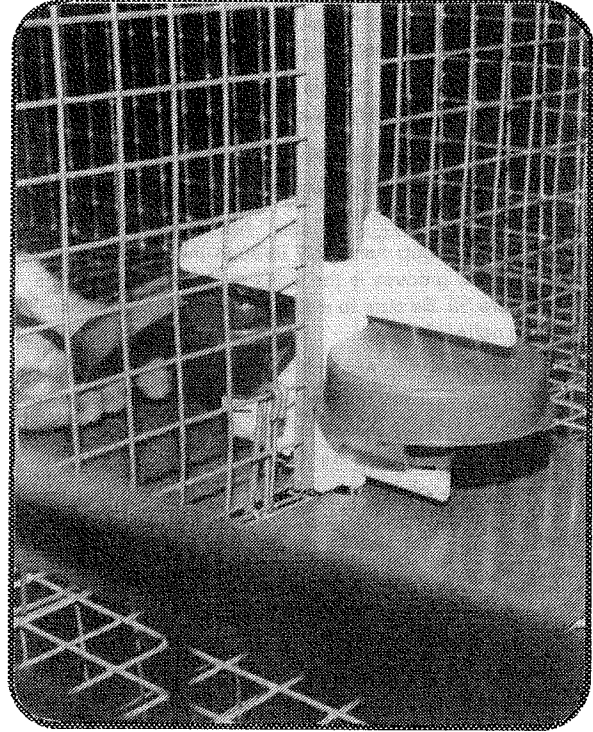


Figure 33.

Adjusting the Cup Height

Multi-Level

Multi-Level Cup Assemblies are adjusted individually by pulling up on the cord assembly or pushing down on the Cup Assembly. After the desired cup height is obtained, the S-Hook on the cord assembly is hooked over a cage wire to keep the Cup Assembly in place.

Flow-Through

Each set of connected Flow-Through Cup Assemblies are adjusted by pulling up on the cord assembly or pushing down on the bottom Cup Assembly in the set. **ONLY PUSH DOWN ON THE BOTTOM CUP ASSEMBLY.** Pushing down on any of the other Cup Assemblies can bend the Hanger Wires. After the desired cup height is obtained, the S-Hook on the cord assembly is hooked over a cage wire to keep the set of Cup Assemblies in place.

Before Turning On The Water

Post Installation Check List

- flush all lines at maximum pressure,
- be sure filters are installed correctly,
- check that Float Balls are installed in brooding area
- make sure that the cups sit upright,
- check for any leaking or dripping pipe connections,
- maintain house temperature above freezing or drain lines and cups completely.

Initial Start Up Procedure

- clean all dirt out of cups,
- flush all air out of lines,
- check for any leaking or dripping pipe connections,
- make sure that the filter contains a filter cartridge.

Recommendations and Guidelines for Operation

The Chore-Time Cage Watering System requires a minimum incoming water pressure of 40 p.s.i. (275 kPa) to the control panel regulators. THIS IS THE MINIMUM ALLOWABLE WATER PRESSURE. Recommended pressure is 40 to 60 p.s.i. (275 kPa to 413 kPa).

For best operation, set the pressure at the control panel according to the recommendations below. Check the pressure gauge at the manifold to see that this pressure is achieved at the cage bank. Elevation differences between the two locations may require adjustment of the control panel pressure setting to achieve the desired pressure at the cage waterer lines.

Brood-Grow Systems (standard valve)

WEEK 1 Start birds with Float Balls on all cups. Set pressure at 4-6 p.s.i. (27-41 kPa). Adjust as necessary. Generally, a higher pressure provides less water. Do not attempt to run below 2 p.s.i. (13 kPa). Cups should be adjusted completely down for easy access by the birds.

WEEK 2 Remove Float Balls at 7 to 10 days of age. Reduce pressure to 3-4 p.s.i. (20-34 kPa) for several days to allow easy triggering of the valves. Begin to raise the cups. Keep the lip of the cup even with the bird's neck.

WEEK 3 to full age Maintain proper water cup height throughout the grow-out. After 4 weeks, maintain water pressure at 6-8 p.s.i. (41-55 kPa).

Brood-Grow Systems (spring valve)

WEEK 1 Start birds with Float Balls on all cups. Set pressure at 2-3 p.s.i. (14-21 kPa). Adjust as necessary. Generally, a higher pressure provides less water. Do not attempt to run below 2 p.s.i. (14 kPa). Cups should be adjusted completely down for easy access by the birds.

WEEK 2 Remove Float Balls at 7 to 10 days of age. Maintain 2-3 p.s.i. (14-21 kPa) for several days to allow easy triggering of the valves. Begin to raise the cups. Keep the lip of the cup even with the bird's neck.

WEEK 3 to full age Maintain proper water cup height throughout the grow-out. After 4 weeks, maintain water pressure at 4-6 p.s.i. (28-41 kPa).

Layer Systems

Maintain water pressure at 6 to 8 p.s.i. (41-55 kPa). If a lower water level is desired, increase the water pressure slightly.

Water Quality

Water quality is very important for proper operation of the system. Consider the following:

HARDNESS (Calcium and Magnesium) above 14 GPG (grains per gallon) a water softener should be used.

PH under 6.5 a neutralizing filter is recommended.

IRON above 0.5 ppm (parts per million) should be treated with a water softener, a mechanical filtration system, or chlorination, depending on raw water hardness.

Precautions

1. Do not over chlorinate. The maximum concentration is 5 ppm for extended periods and 10 ppm for flushing only. Do not chlorinate 2 days before or after medication is used.

To Chlorinate: Mix a stock solution of 3/4 ounces of household chlorine bleach (5-1/4% Sodium Hypochlorite) per gallon of water or 5.9 ml of bleach per liter of water. Set the proportioner to dispense at a rate of one ounce per gallon or 7.8 ml per liter.

2. Some vitamins and medication are syrup type liquids or are sugar based. Avoid these types of compounds. These compounds may leave a slimy deposit on the valve seals preventing them from sealing properly. Flush line at high pressure (12 p.s.i. or 83 kPa) to remove deposits.
3. Some pumps and/or special purpose gas injectors may add excessive air to the water supply. For proper operation of the system in these cases, an Air Remover Kit is recommended to remove the excessive air from the system. Contact your local Chore-Time distributor.
4. Do not use ketones, amines, low molecular weight esters and ethers, nitro hydrocarbons, hot hydrofluoric or chlorosulfonic acids, Skydrol fluids vinegar, citric acid, alums and nitric acid.

FAILURE TO FOLLOW THESE PRECAUTIONS WILL VOID THE WARRANTY ON THE CHORE-TIME WATERING SYSTEM.

Cage Watering System Maintenance

General Maintenance

Chore-Time Cage Watering System components require very little maintenance; the various components are designed and molded from PVC plastic to provide maximum service with minimal maintenance. Routine maintenance, however, will help guarantee good service and prolong the life of the equipment.

When the system is new, monitor water pressure closely. This will be helpful in determining whether dirt particles, sand, or other particles are present in the water supply. It will also help determine frequency of filter cartridge cleaning and/or replacement.

Check the water filter periodically and clean as necessary. Use the pressure gauges on the control panel as guidelines. When the pressure drops across the filter, it's time to clean or replace the filter cartridge. It's a good idea to keep an extra filter cartridge on hand.

Chore-Time recommends a 20 micron cartridge. Replacement cartridges are available from Chore-Time under part number 7723.

While in operation, flush the water system thoroughly every 8 weeks (minimum) to remove algae or trash that builds up in the lines. NOTE THAT THIS IS MINIMUM! Some installations may require more frequent maintenance.

If algae growth becomes a problem, Chore-Time recommends use of a bleach solution. See "Recommendations and Guidelines" for additional details.

Walk the lines daily to monitor water level in cups. If adjustment is required, make the necessary pressure adjustments at the pressure regulator. To change the water level in the cups, increase the water pressure at the control panel, to lower the water level in the cups, decrease the water pressure at the control panel to raise the water level.

Also, spot check Dome Air Riser once per month (in systems equipped with this component) and replace diaphragms that are "ballooned" or stretched.

For additional information, see the Operator's Troubleshooting Guide" in this manual.

Maintenance Between Batches

Flush all air out of the lines.

Flush each line at full pressure for twenty minutes to remove deposits and sediments.

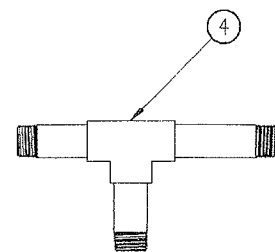
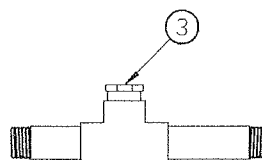
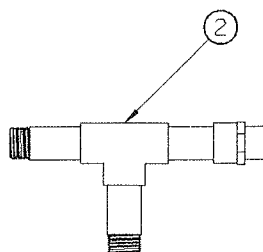
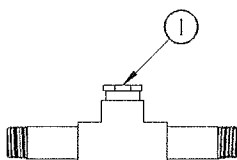
Check pressure drop across water filter and clean or replace if necessary.

Check pressure gauges, regulators, and shut off valves for proper operation.

Maintain house temperatures above freezing or drain lines and cups completely.

Repair Kits for Watering Manifolds

These repair kits are available for easy ordering and replacement of PVC sub-assemblies in the Chore-Time Control Panels. To replace, remove existing sub assembly at the threaded connections and replace with new components. Always use pipe joint compound or teflon tape at threaded joints.



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<u>Item</u>	<u>Description</u>	<u>Part No.</u>
1	Control Inlet Assembly	13067
2	Medicator Outlet Assembly	13070
3	Header Outlet Assembly	13071
4	Medicator Outlet Assembly (for 9275 Filter Control Panel)	13069

Note: These parts are cemented sub-assemblies. Replace the entire sub-assembly. Do not attempt to replace components.

Valve Repair

The following repair guidelines are given in case immediate field repair is necessary and replacement valves are not available.

IMPORTANT: Triggers must be placed on any valves serviced in the field after June 1, 1987.

-Triggers on valves manufactured prior to June 1, 1987 may pull off easily if reused.

-Triggers manufactured after June 1, 1987 must be destroyed to be removed without damaging the Valve Body or Seal.

Valve Disassembly--Prior to June 1, 1987

1. Using a pair of side cutters with the flat side against the Valve Body, gently squeeze the Deflector and Trigger off the "O" Ring Pin.
2. Use a pair of pliers to grip the Reverse Check Shaft. Pull the Reverse Check Shaft and Bottom Insert loose from the Valve Body. Be careful not to lose the "O" Ring Pin--it is small and easily misplaced.
3. Push the "O" Ring Pin out through the bottom of the Valve Body.

Valve Disassembly--After June 1, 1987

1. Using a pair of pliers, gently smash the trigger until it can be easily removed from the "O" Ring Pin.
2. Turn the Valve upside down on a wood surface and push down on the Valve Body so the "O" Ring Pin forces the Bottom Insert out. Be careful not to bend the "O" Ring Pin. For brass valves, use pliers on the Bottom Insert and twist out.
3. Push the "O" Ring Pin out through the bottom of the Valve Body. If using Spring Valves, be careful not to damage or loose the spring.

Inspecting the Parts

1. Inspect the "O" Ring for trash and any deformity; such as being flat, cut or fitting too loosely on the shaft. Replace if necessary.
2. If using Spring Valves, check for damaged springs and replace if necessary.
3. Check the inside of the Valve Body for trash and rinse with water.

Discoloration of the Reverse Check Shaft or "O" Ring Pin is an indication of poor water quality.

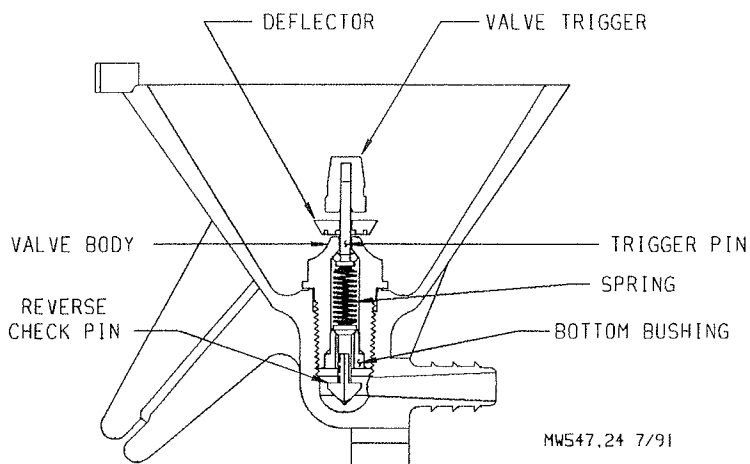
Valve Reassembly

1. Drop "O" Ring Pin into Valve Body.
2. Using the 13617 Valve Assembly Tool, position the Valve Body upright on the assembly tool with the "O" Ring Pin sticking out of the orifice.
3. Insert the Deflector and new trigger onto the "O" Ring Pin. Be sure that the cupped side of the Deflector faces down towards the Valve Body.
4. Holding the Trigger with the Trigger Assembly Tool, tap the trigger with a small hammer until the space between the Trigger and the Valve Body is approximately 1/14" (1.8 mm) with the "O" Ring Pin pulled tight. See Figure 36.
5. Reinstall spring (if used).
6. Assemble Reverse Check Pin and Bottom Busing. Press the Bottom Busing into the bottom of the Valve Body.

Chore-Time does not recommend servicing Valve Assemblies due to potential damage to valve components during valve disassembly and reassembly.

Chore-Time recommends replacing any malfunctioning valve that cannot be corrected by flushing the lines or triggering the valve.

Spring Valve Components



Standard Valve Components

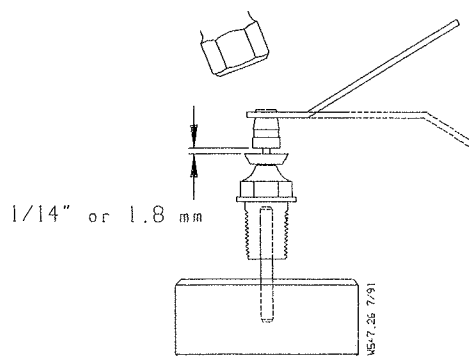
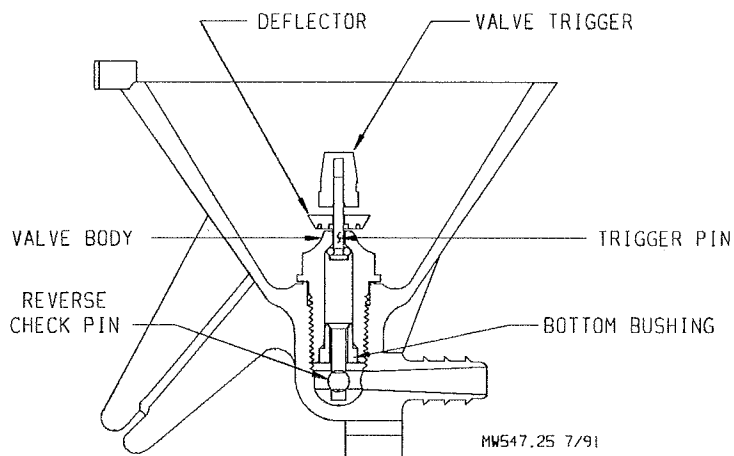
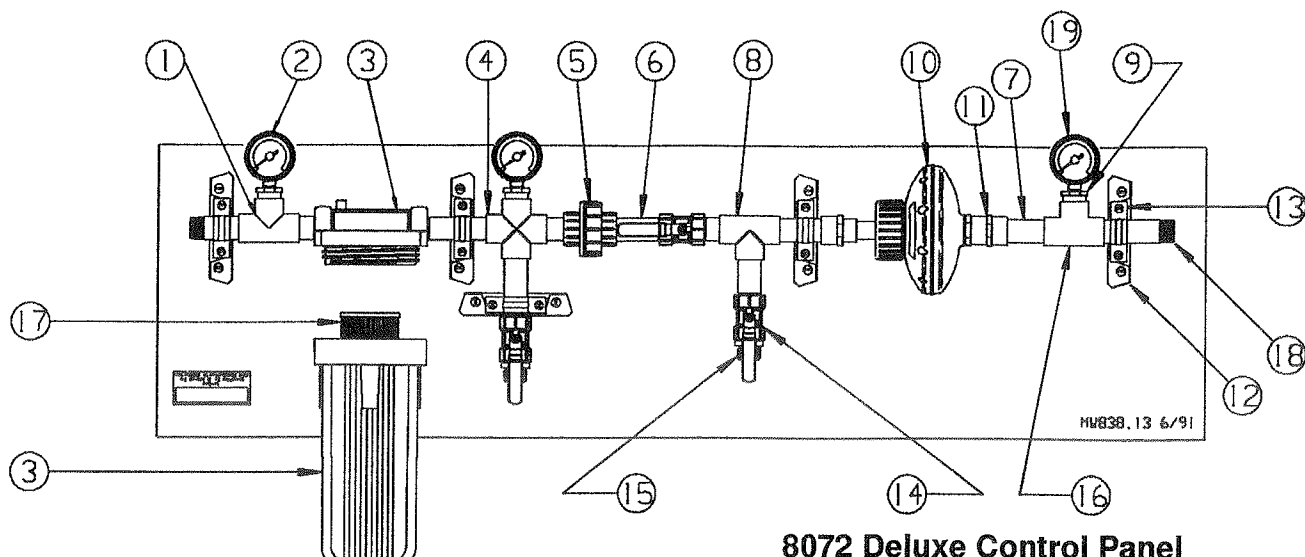


Figure 36.

Water Control Panels for Cage Watering

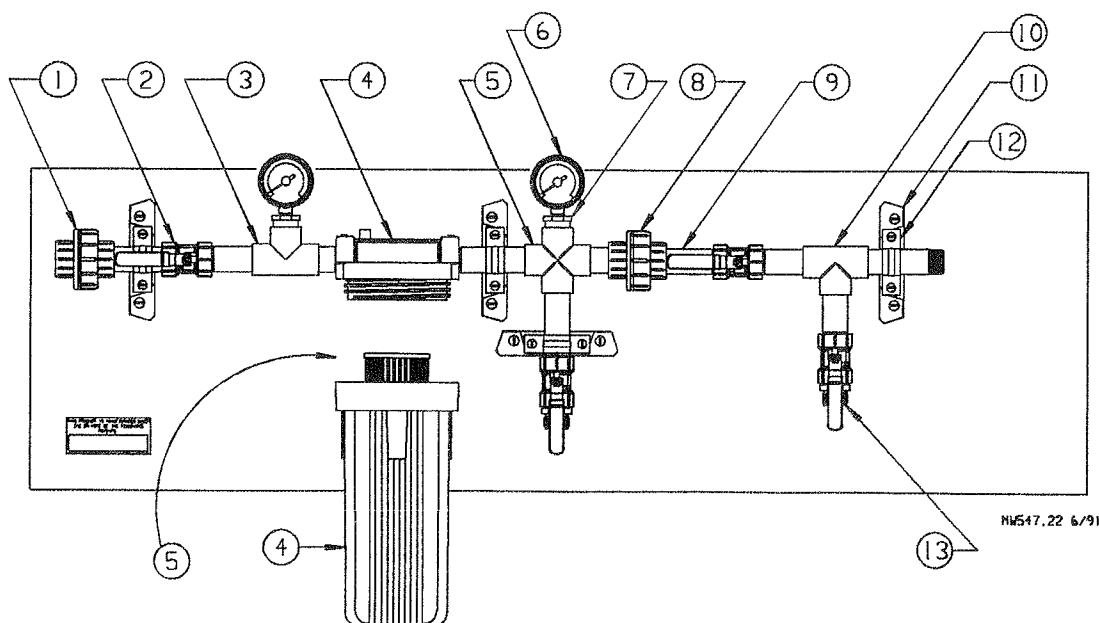


8072 Deluxe Control Panel

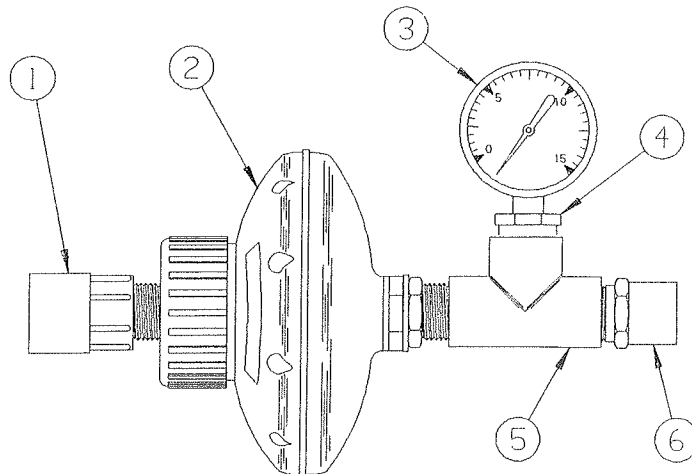
Key	Description	Part No.
1	Inlet Control Assembly	13067
2	High Pressure Gauge	7718
3	Water Filter	9760
4	Floor Outlet Assembly	13072
5	3/4" PVC Union	8137
6	3/4" PVC Nipple	7531-1
7	3/4" PVC Pipe	9205-4
8	Medicator Outlet for Regulator Ass'y	13070
9	3/4 x 1/4 PVC Adapter	7789
10	Pressure Regulator	13455
11	3/4" PVC Adapter	8180
12	Bracket	7525
13	Bracket (small)	7716
14	3/4" Butterfly Valve	25673
15	3/4" Nylon Adapter	7543
16	3/4" PVC Tee	7538
17	Filter Cartridge	7723
18	3/4" x 4" Th'd PVC Nipple	7531-2
19	Low Pressure Gauge	27722

9275 Filter Control Panel

Key	Description	Part No.
1	3/4" PVC Union	8137
2	3/4" Butterfly Valve	25673
3	Control Inlet Assembly	13067
4	Water Filter	9760
5	Floor Outlet Assembly	13072
6	High Pressure Water Gauge	7718
7	3/4 x 1/4 PVC Adapter	7789
8	3/4" PVC Union	8137
9	3/4" Threaded Nipple	7531-1
10	Medicator Outlet Assembly	13069
11	Bracket	7525
12	Clamp Bracket	7716
13	3/4" Nylon Adapter	7543



9042 Regulator and Gauge Control

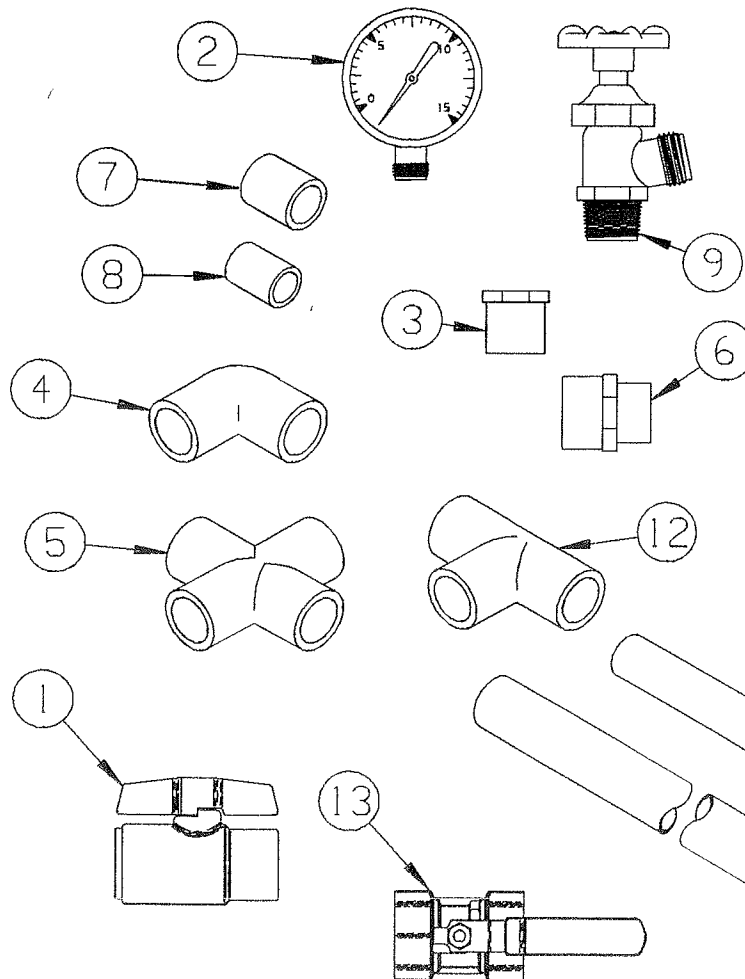


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The 9042 Regulator and Gauge Control Panel is used with the 9275 Filter Control Panel in installations where it is desirable to separate the Filter and Regulator functions. Install the Filter Control Panel on the incoming water supply, then install 9042 Regulator and Gauge Control Panels as desired--usually one panel per cage bank. The 9275 Filter Control Panel has a maximum capacity of 45,000 birds. Use as many 9042 Regulator and Gauge Controls as necessary per Filter Control Panel.

Key	Description	Part No.
1	1/2" x 3/4" Female Adapter	7539
2	Pressure Regulator	13455
3	Low Pressure Water Gauge	7717
4	3/4" x 1/4" Reducer Bushing	7786
5	3/4" PVC Tee	7541
6	3/4" PVC Male Adapter	9229

Inlet Manifold Kits for Cage Waterer Lines

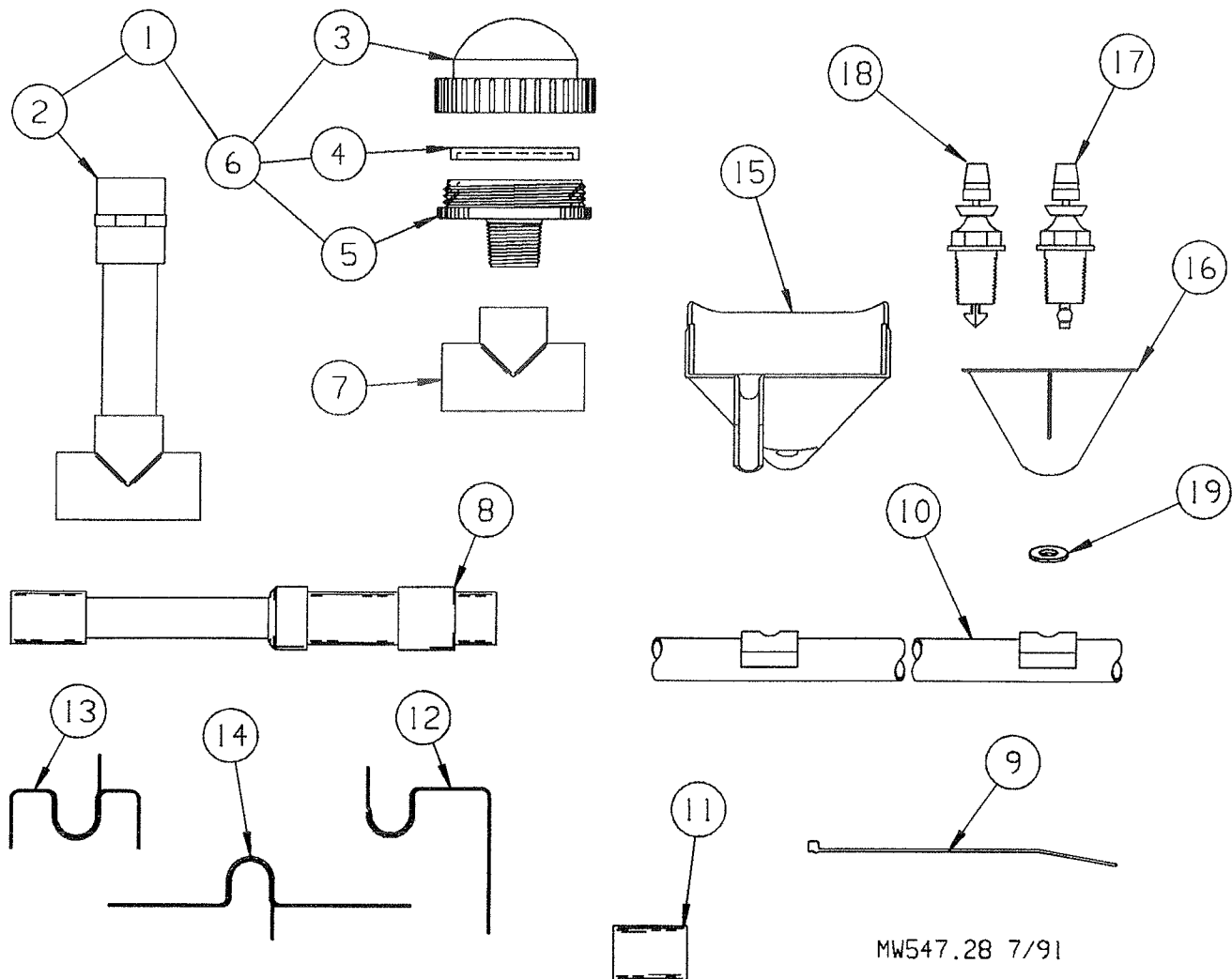


Key	Description	Part No.
1	1/2" PVC Ball Valve	9254
2*	Low Pressure Gauge	7717
3*	3/4" x 1/4" Reducer Bushing	7789
4	1/2" PVC Ell	9066
	3/4" PVC Ell	8141
5	3/4" PVC Cross	7536
6	3/4" x 1/2" Adapter	9062
7	3/4" PVC Coupler	7775
8	1/2" PVC Coupler	9065
9	Boiler Drain	9255
10	1/2" PVC Pipe (10 ft. section)	8083-10
11	3/4" PVC Pipe (10 ft. section)	7293-10
12*	3/4" PVC Tee	7538
13	3/4" Butterfly Valve	25673

*Items #2, #3, and #12 may be ordered as an assembly under Chore Time Part No. 9980 Low Press. Gauge Kit.

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Cup-on-Pipe Line Components



Key	Description	Part No.
1	Extension Assembly w/D.A.R.	13368
2	Extension Assembly	13372
3	Air Rise Dome	8152
4	Air Riser Diaphragm	8153
5	Air Riser Base	24488
6	Dome Air Riser Assembly	7719
7	1/2" PVC Tee	9070
8	Slip Connector	8062
9	Nylon Tie	6635
10	Pipe and Saddle Assembly	
	10 Foot Pipe, 12" Cup Spacing	13348-9
	10 Foot Pipe, 15" Cup Spacing	13348-10
	16 Foot Pipe, 16" Cup Spacing	13348-1
	16 Foot Pipe, 24" Cup Spacing	13348-3
	16 Foot Pipe, 32" Cup Spacing	13348-5
	16 Foot Pipe, 48" Cup Spacing	13348-8
	20 Foot Pipe, 20" Cup Spacing	13348-2
	20 Foot Pipe, 30" Cup Spacing	13348-4
	20 Foot Pipe, 40" Cup Spacing	13348-7
11	1/2" PVC Coupler	9065

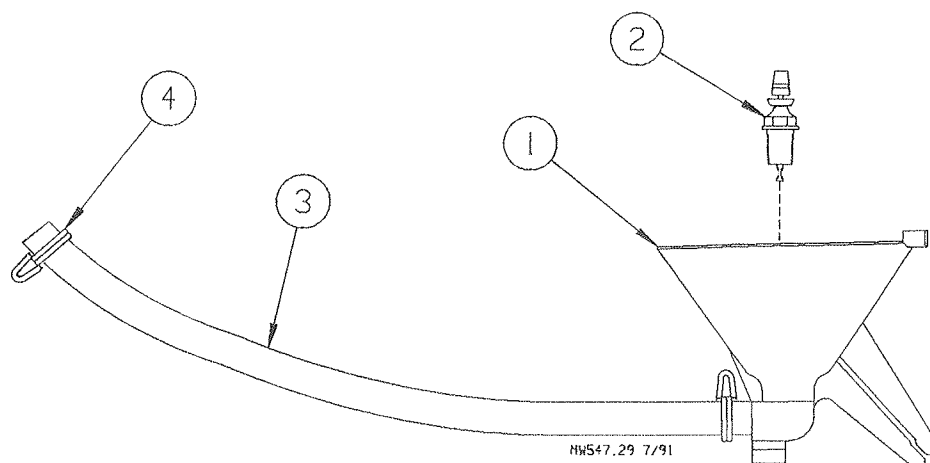
Key	Description	Part No.
12	Front Cage Bracket	9030
13	2" Back to Back Bracket	9028
14	4" Back to Back Bracket	9029
15	Spout Cup	9019
16	Standard Cup	7672
17	Valve Assembly	24035
18	Spring Valve Assembly	27721
19	Valve Gasket	7602

Complete Cup and Pipe Assembly

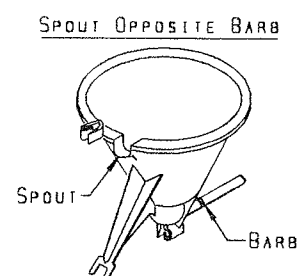
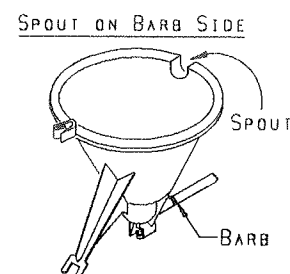
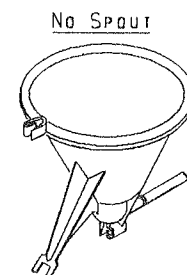
Cup Spacing	Standard Cup*	Spout Cup*
12"	9000-9	9001-8
16"	9000-1	9001-1
18"	9000-11	9001-10
20"	9000-2	9001-2
24"	9000-3	9001-3
30"	9000-4	9001-4
32"	9000-5	9001-5
40"	9000-7	9001-6
48"	9000-8	9001-7

*Add SV to any Cup and Pipe Assembly part number to order Spring Valve in place of standard valve.

Chore-Time Cage Cup Line Components



Key	Description	Part No.
1	Chore-Time Cage Cup	
	No Spout	14400-1
	Spout opposite barb side	14400-2
	Spout on barb side	14400-3
2	Valve Assembly	
	Standard	24035
	Spring	27721
3	Tubing & Clamp Assembly	
	6" Hose	14453-6
	8" Hose	14453-8
	10" Hose	14453-10
	13" Hose	14453-13
	15" Hose	14453-15
	18" Hose	14453-18
4	Clamp	9088-1



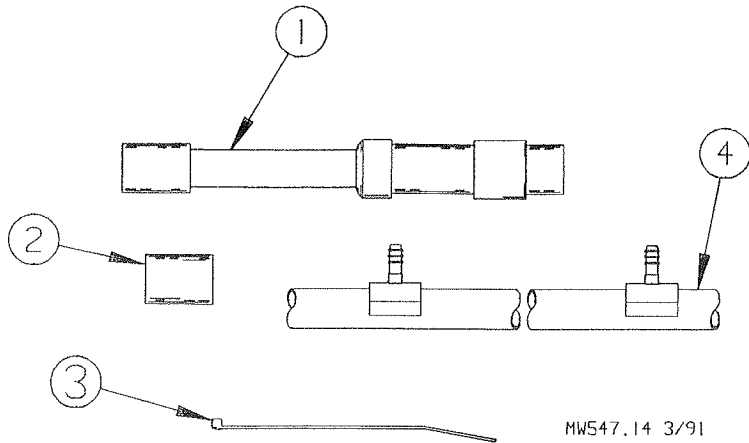
Cup Assemblies for repair or replacement

Cup and Tubing Assembly w/valve and hose	No Spout	Spout Opposite Barb	Spout Barb Side
6" hose	14402-6	14403-6	14404-6
8" Hose	14402-8	14403-8	14404-8
10" Hose	14402-10	14403-10	14404-10
13" Hose	14402-13	14403-13	14404-13
15" Hose	14402-15	14403-15	14404-15
18" Hose	14402-18	14403-18	14404-18
20" Hose	14402-20	14403-20	14404-20
Cup and Tubing w/hose, no valve			
6" hose	14766-6	14770-6	14768-6
8" Hose	14766-8	14770-8	14768-8
10" Hose	14766-10	14770-10	14768-10
13" Hose	14766-13	14770-13	14768-13
15" Hose	14766-15	14770-15	14768-15
18" Hose	14766-18	14770-18	14768-18
20" Hose	14766-20	14770-20	14768-20
Cup and Valve Assembly, no hose			
	14401-1	14401-2	14401-3

Note: To order with Spring Valves instead of standard valves, include add "SV" to the end of the part number. This applies only to assemblies shipped with valves (not 14766-0, 14770-0, or 14768-0).

Chore-Time Cage Cup Line Components

Key	Description	Part No.
1	Slip Connector	8062
2	1/2" PVC Coupler	9065
3	Nylon Tie	6635
4	Pipe and Saddle Assembly	
	12" Saddle Spacing	9750-11
	16" Saddle Spacing	9750-1
	20" Saddle Spacing	9750-3
	24" Saddle Spacing	9750-4
	30" Saddle Spacing	9750-5
	32" Saddle Spacing	9750-6
	40" Saddle Spacing	9750-8
	48" Saddle Spacing	9750-9
	60" Saddle Spacing	9750-10



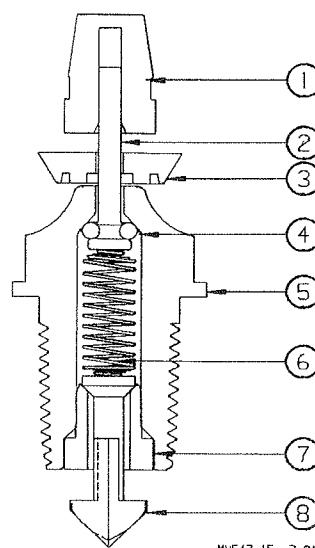
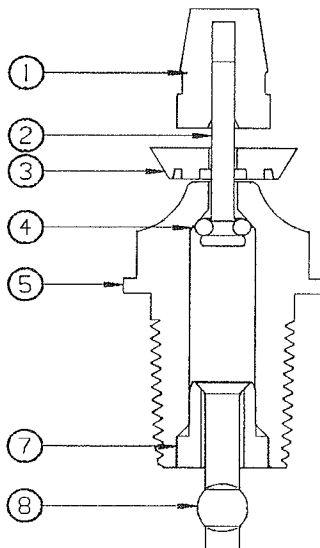
Chore-Time Cage Valves

Key	Description	Standard Part No.	Spring Part No.
1	Red Trigger	24109	24109
2*	Short Pin Assembly	14999	14999
3*	Deflector	7599	7599
4	O-Ring	24037	24037
5	Valve Body	25777-1	25777-3
6	Spring	----	25818
7	Bottom Insert	24597	24597
8	Reverse Check Pin	7596	25153

*These components may be ordered as an assembly as part number 24526.

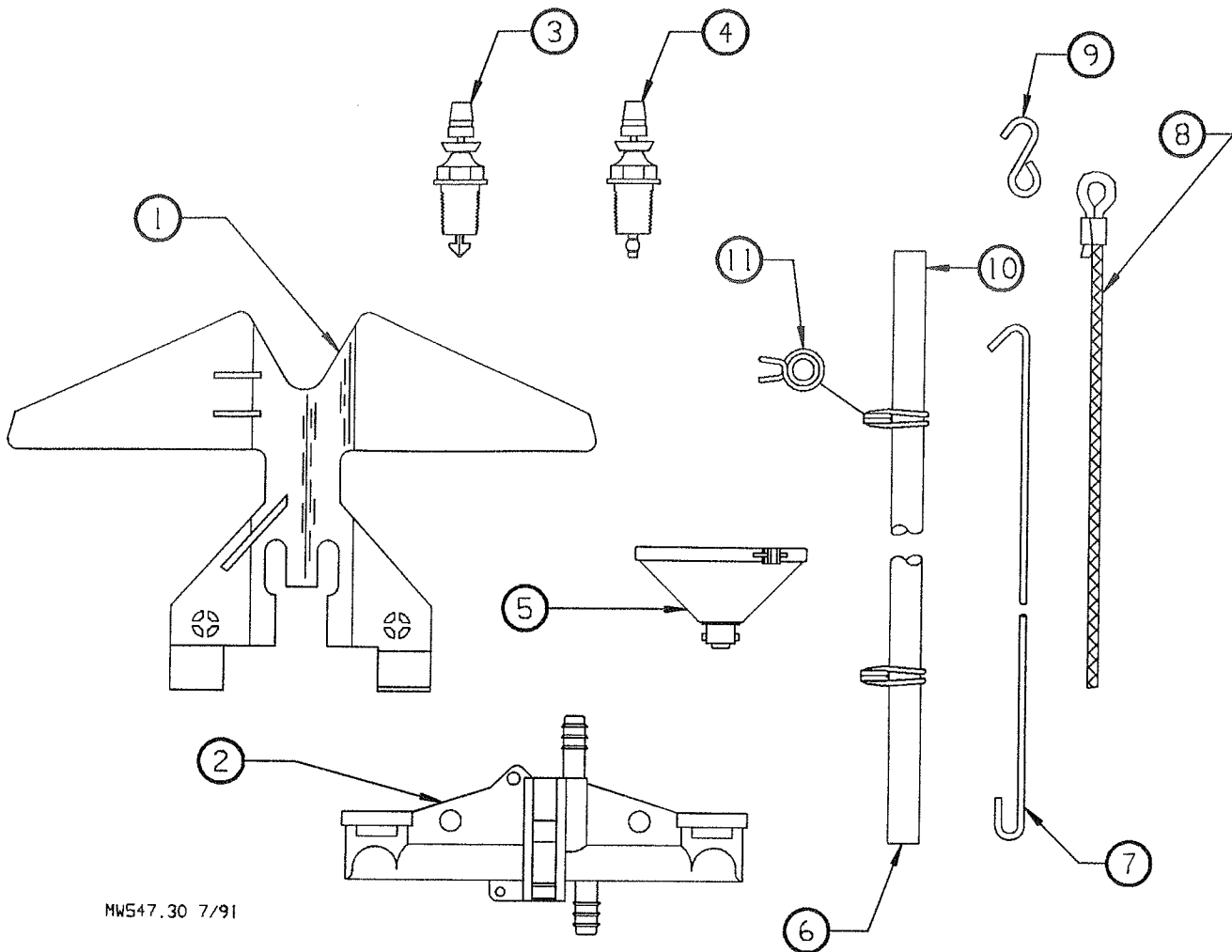
Standard Valve: 24035

Spring Valve: 27721



MW547.15 7.91

Chore-Time Brood-Grow Line Components

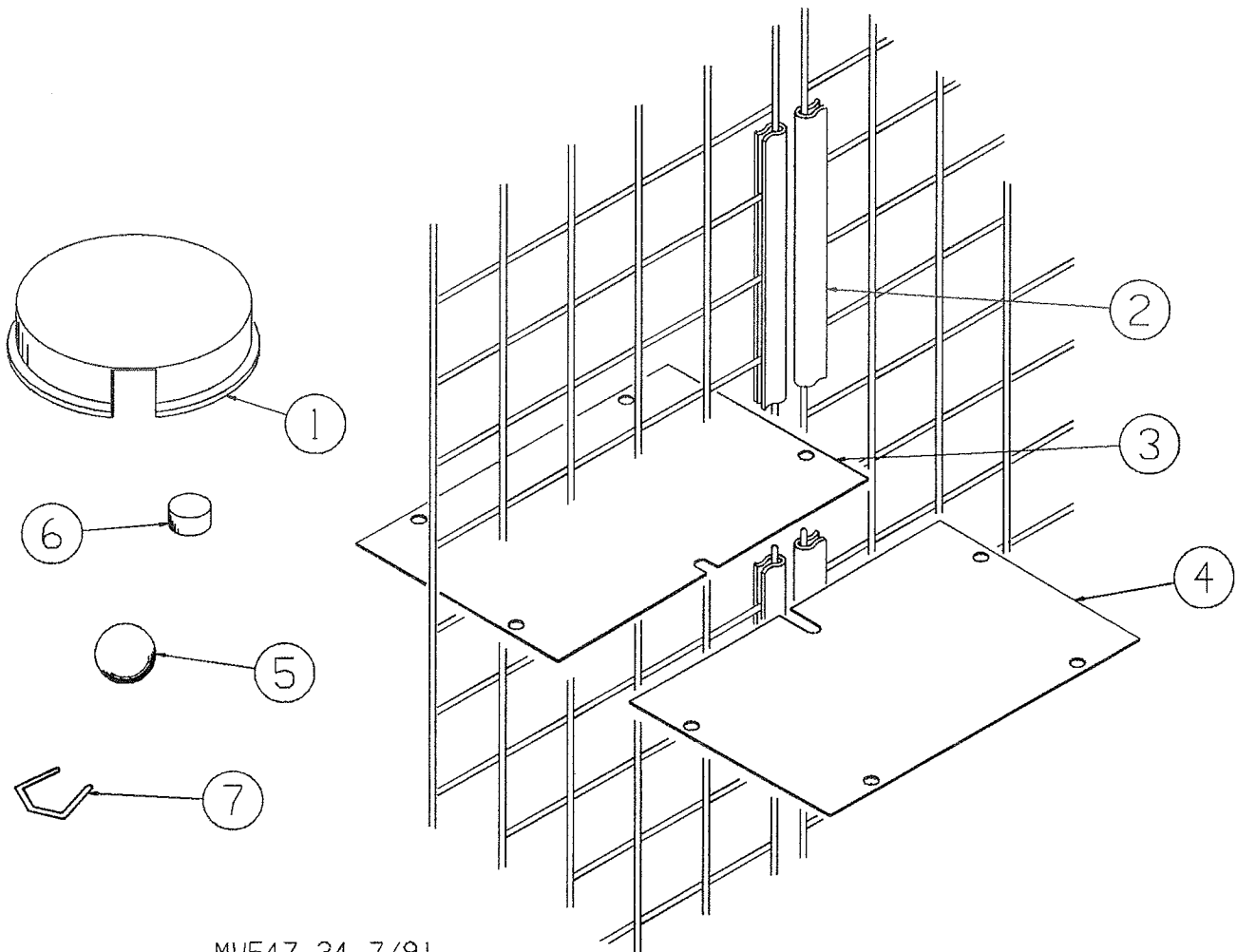


MW547.30 7/91

Key	Description	Part No.	Complete Brood-Grow Waterer Assembly	
1	Deflector	7675	<u>Top and Bottom Barb version:</u>	
2	Extension and O-Ring Assembly			
	Top and Bottom Barb version(shown)	13616	15" Tube without cord	14651-1
	Top Barb version only (not shown)	13615	13" Tube without cord	14651-2
	O-Ring	8598	18" Tube with cord	14651-3
3	Spring Valve	27721	20" Tube with cord	14651-4
4	Standard Valve	24035		
5	Twist Lock Cup	9260	<u>Top Barb version:</u>	
6	Tubing and Clamp Assembly			
	13" Hose	14453-13	15" Tube without cord	14652-1
	15" Hose	14455-15	13" Tube without cord	14652-2
	18" Hose	14455-18	20" Tube with cord	14652-3
	20" Hose	14455-20		
7*	Hanger			
	14" Cages	15558-1		
	16" Cages	15558-2		
8	Cord	14648		
	Ferrule (not included with 14648 Cord)	13401		
9	"S" Hook	9131		
10	Clamp	9088-1		

*Not included with Hanger Assemblies. Must be ordered separately

Chore-Time Brood-Grow Miscellaneous Components

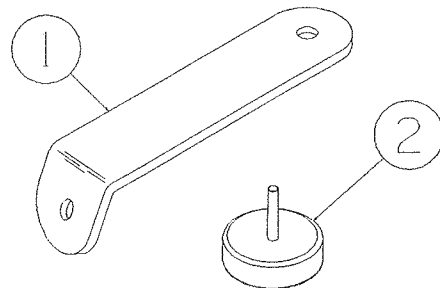


MW547.34 7/91

Key	Description	Part No.
1*	Cup Litter Cover	13319
2	Edge Guard	14647-1
3*	Litter Shield-hose side	14176
4*	Litter Shield-wire side	14175
5	Float Ball	24054
6	Extension Plug	13523
7	Extension Ring	9036

*Optional Items

Valve Repair Tools



MW547.35 7/91

Key	Description	Part No.
1	Trigger Assembly Tool	24623
2	Valve Assembly Tool	13617

Installation and Repair Parts for Optional Water Meters

CHORE-TIME offers two optional water meters for installations where it is desirable to monitor usage. Installations and parts information for each unit is shown below.

Install the Water Meter on the incoming line where it can be easily checked to monitor water usage. The Water Meter requires use of two brass water meter connectors. Order these components separately according to the following parts information. They are not supplied with the water meter.

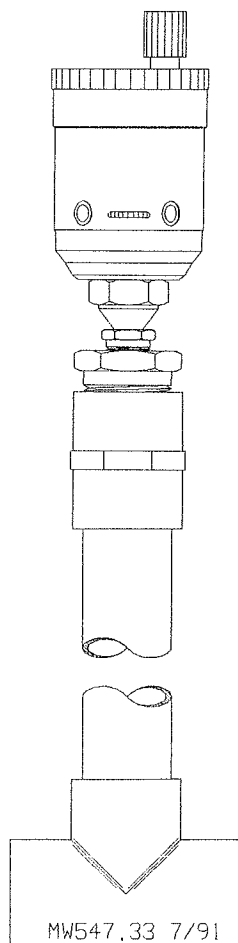
The water meter also requires two PVC couplers to install the meter in the incoming 3/4" (19 mm) PVC line. Use 3/4" (19 mm) Female Thread Adapter, Chore-Time part number 8160. Be sure to use teflon pipe tape at all threaded connections.

NOTE: Both Water Meters have an arrow on the outside of the casting. The water meter MUST be installed so that water flows through the unit in the direction indicated.

Installation for Optional 9051

Air Remover Kit

Note: The Air Remover may be installed in a 1/8" NPT threaded hole or installed on an extension pipe (as shown). If the extension pipe is not required, the Air Remover may be ordered under part no. 26151



13228 Water Meter and Connectors

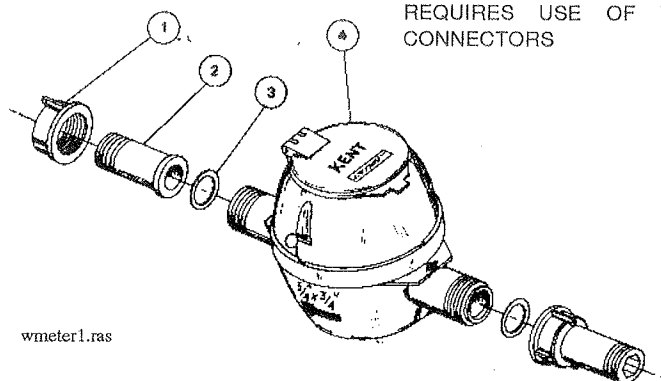
This unit displays water usage in U.S. gallons.

FOR PROPER OPERATION, THE WATER METER MUST BE INSTALLED WITH WATER FLOW IN THE DIRECTION SHOWN BY THE ARROW ON THE SIDE OF THE CASTING!

KEY	DESCRIPTION	PART NO.
1*	1-11 1/2" NPT Flanged Nut / 2 used	----
2*	3/4-14 NPT Nipple / 2 used	----
3*	"O" Ring / 2 used	----
4	3/4" Water Meter	13092

*Order Items 1, 2, & 3 under Chore-Time Part No. 13151.

NOTE: WATER METER
REQUIRES USE OF TWO
CONNECTORS



13227 Water Meter and Connectors

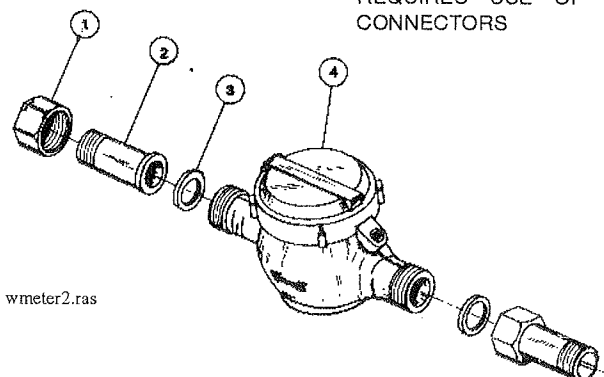
This unit is rated at 1300 gallon or 4920 liters per hour delivery and the digital counter displays usage in U.S. gallons.

FOR PROPER OPERATION, THE WATER METER MUST BE INSTALLED HORIZONTALLY, WITH THE HINGED LID UPWARD. WATER FLOW MUST BE IN THE DIRECTION SHOWN BY THE ARROW ON THE SIDE OF THE CASTING!

KEY	DESCRIPTION	PART NO.
1*	1-11 1/2" NPT Flanged Nut / 2 used	----
2*	3/4-14 NPT Nipple / 2 used	----
3*	"O" Ring / 2 used	----
4	3/4" Water Meter	2729

*Order Items 1, 2, & 3 under Chore-Time Part No. 9316.

NOTE: WATER METER
REQUIRES USE OF TWO
CONNECTORS



Trouble Shooting Guide

All cups running over. . .

- Check for pressure drop from water supply. Incoming pressure should be 40 to 40 p.s.i. (276 to 414 kPa).
- Water filter clogged.
- Check for proper pressure regulator setting.
- Check that control valves are fully opened.
- Supply hose pinched.

Sections of cups running over. . .

- Check for air in the line.

Individual cups running over. . .

- Usually trash in the valve. Trigger valve to flush particles out of valve. Replace valve if necessary.

Birds not getting enough water. . .

- Restricted flow.
- Pressure set too high on young birds.
- Waterer lines adjusted too high.

Contact your nearby Chore-Time distributor or representative for additional information or parts. Please have the following information available when you call.

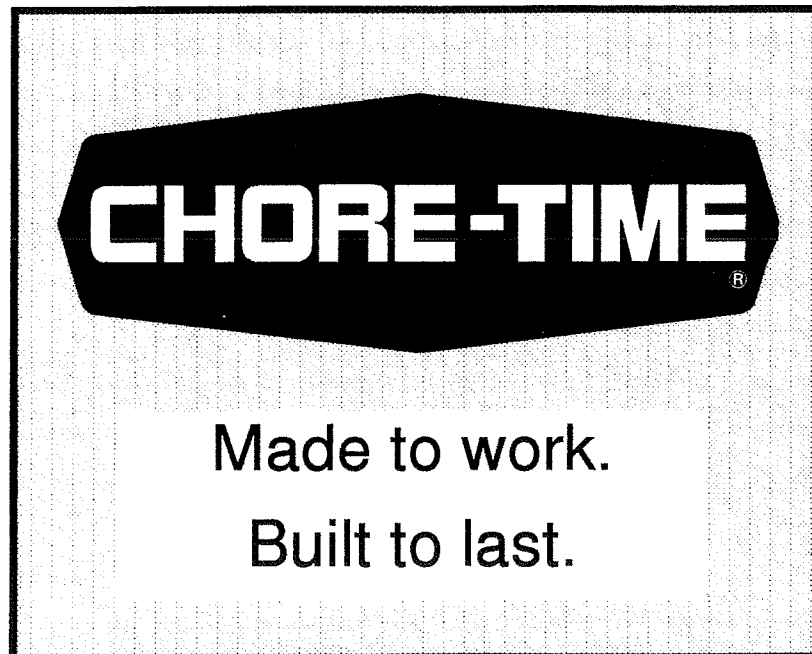
1. Year the system was purchased.
2. Line length and cup spacing.
3. Trigger length, color of valve components, and valve style (standard or spring).

Additional Operator Kits for cage watering systems may be ordered as Part No. 28751-1 (28751-1SV for Spring Valve systems).

Notes and reminders . . .

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

THANK-YOU
for purchasing a
Chore-Time
Cage Watering System.



Contact your nearby Chore-Time distributor or representative for additional parts and information.
Chore-Time Equipment, A Division of CTB, Inc.
P.O. Box 2000, Milford, Indiana 46542-2000 U.S.A.

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