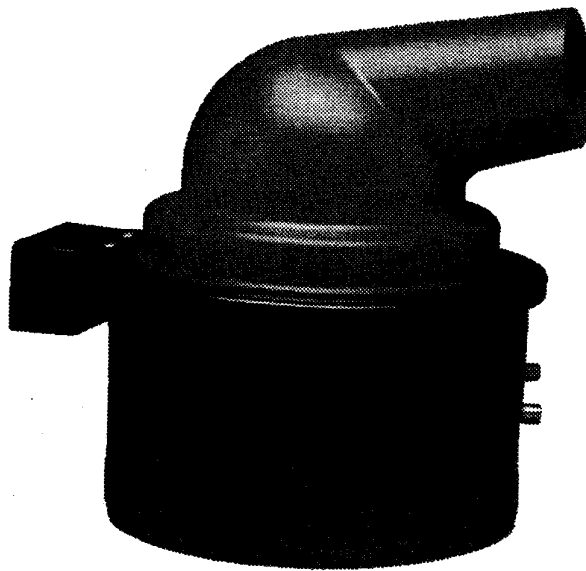


# 500/500U

## Free Standing Centrifugal Atomizer Humidifier



Manual for:  
Installation - Operation - Maintenance

Caution: Read installation and rules carefully for safe operation.  
Exercise the usual precautions when working with electricity

# **TRION**<sup>®</sup>

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**Congratulations on your purchase of a Trion 500 Series humidifier.**

**The 500 Series Humidification System incorporates all of the features necessary to provide proper humidity for your application. Included with this unit are all the components essential to a DO-IT-YOURSELF installation. To ensure proper humidity at all times, a wall mount humidistat, which automatically controls the proper level of humidity, is packaged with every model 500U system.**

# SPECIFICATIONS

	500/500U (500-2/500U-2)
Type of Unit	Centrifugal Atomizer
Mounting	Free Standing
GPD @ 140° F	6.0 maximum
GPD @ 120° F	6.0 maximum
GPD @ 100° F	6.0 maximum
Voltages	120V (240V)
Unit W x D x H	10½" diameter
Duct Opening W x H	3¾" diameter
Shipping Weight	11 lbs.
Standard Equipment	Self piercing saddle valve Wall/Duct Mount Humidistat (500U) 10' Plastic Tubing
Features	All brass valve assembly Operates on less current than a 100 watt light bulb 2 Year warranty Independent mounting bracket

# HUMIDIFICATION SYNOPSIS

There is not a single industry that cannot use humidification in some area of production, either for material or personnel benefit. Offices, hospitals, nursing homes, libraries, museums, furniture stores, bowling alleys, etc., all contain hygroscopic materials (wood, carpets, etc.) which can be damaged by dry air. Proper humidification protects these materials and also safeguard the comfort of personnel in these areas.

Set the humidistat at the proper Relative Humidity level for your application:

Industry	Degrees Fahrenheit	Relative Humidity
<b>Baking:</b>		
Cake mixing	70—75	65%
Crackers & biscuits	60—65	50%
Fermenting	75—80	70-75%
Flour storage	65—80	50—65%
Loaf cooling	70	60—70%
Make-up room	75—80	65-70%
Mixer-bread dough	75—80	40-50%
Proof box	90-95	80-90%
Yeast storage	32—45	60-75%
<b>Bowling Centers</b>	70	35-45%
<b>Cereal: packaging</b>	75—80	45-50%
<b>Confectionary:</b>		
Chocolate covering	62—65	50—65%
Centers for coating	80—85	40-50%
Hard candy	70-80	30-50%
Storage	60—68	50—65%
<b>Cork Processing</b>	80	45%
<b>Data Processing</b>	75	45-55%
<b>Electrical:</b>		
Mfg. cotton covered wire	60—80	60-70%
Storage - general	60—80	35-50%
<b>Food:</b>		
Apple storage	30-32	75—85%
Banana - ripening	68	90-95%
Banana - storage	60	85-90%
Citrus fruit - storage	60	85%
Egg storage	35-55	75—80%
Grain storage	60	30-45%
Meat—beef aging	40	80%
Mushroom - storage	32—35	80—85%
Mushroom - growing stages	Various	60—85%
Potato storage	40—60	85-90%
Produce	Various	70-95%
Sugar	80	30%
Tomato - storage	34	85%
Tomato - ripening	70	85%

<b>Greenhouses</b>	80	70—80%
<b>Hospitals:</b>		
Nurseries	75	50—65%
Operating room	75	55%
Patients' rooms	75	40-50%
<b>Laboratories</b>	As required	
<b>Leather:</b>		
Chrome tanned (drying)	120	45%
Vegetable tanned (drying)	70	75%
Storage	50—60	40-60%
<b>Libraries &amp; Museums</b>	70-80	40-50%
<b>Paint Application:</b>		
Air drying lacquers	70-90	60%
Air drying oil paint	60-90	60%
<b>Paper Products:</b>		
Binding	70	50—65%
Folding	75	50—65%
Printing	75—80	45-55%
Storage	75—80	40—60%
<b>Schools</b>	72	35—50%
<b>Textiles:</b>		
Cotton - carding	75—80	50-55%
Cotton - spinning	60—80	50-70%
Cotton - weaving	68—75	85%
Rayon - spinning	80	50—60%
Rayon—throwing	70	85%
Rayon	70	60%
Silk Processing	75—80	65-70%
Woolens - carding	80—85	65-70%
Woolens - spinning	80—85	50—60%
Woolens - weaving	80—85	60%
<b>Tobacco:</b>		
Cigar & cigarette	70-75	55—65%
Other processing & storage	75	70-75%
Casing room	90	88—95%
<b>Woodworking:</b>		
Finished products	65—70	35—40%
Gluing	70-75	40-50%
Manufacture	65—75	35—40%
Painting - lacquer (static control)	70-90	60%

- These are recommended settings. The actual level of Relative Humidity for the specific application may differ.
- The wall mount humidistat included with the model 500U has an accuracy of +/- 8° R.H.

Your centrifugal atomizer type humidifier operates on the principle of breaking down water droplets into a fine mist and atomizing the moisture into the air.

During the first couple of months, check the mineral build-up every month to establish the proper cleaning schedule. Clean the unit at the end of each month, or whenever mineral deposits appear to be impeding the discharge of the water mist.

# MAINTENANCE INSTRUCTIONS

Your humidifier is constructed from quality materials to assure superior performance during normal operation. The motor bearings are permanently lubricated and do not require oiling. The motor is also thermal overload protected against extreme conditions.

To clean the unit:

1. Disconnect the power to the humidifier.
2. Turn off the water supply from the saddle valve and remove water line from humidifier.
3. Remove the discharge dome by pressing in on the sides and lifting upward.
4. Lift the entire atomizing assembly from the water reservoir pan.
5. Remove the pump from the end of the impeller shaft. If the pump is stuck in the motor drive shaft, run hot water over the end of the shaft for a few seconds to loosen the pump. See photo for illustration.
6. Flush water through the impeller tube, ensuring that the six holes at the top of the impeller tube are open and clear of mineral deposits. A pipe cleaner works well for this cleaning operation.  
**NOTE:** The impeller tube and pump can become clogged by algae formations prevalent in certain water sources. The addition of 10 drops of Clorox bleach or Trion humidifier tables (which may be purchased from your local Trion dealer) to the water reservoir pan each week.
7. Replace the pump into the impeller shaft.
8. Carefully rotate the impeller to ensure it turns freely. Do not force the impeller shaft to turn or breakage could result.
9. With the atomizing assembly removed, clean the water reservoir pan thoroughly. We suggest either a water/white vinegar solution or Trion liquid humidifier cleaner.
10. Reconnect the water line and power to the humidifier and turn on the water supply from the saddle valve.

# INSTALLATION INSTRUCTIONS

## PHYSICAL INSTALLATION

Remember to select a location that is readily accessible for periodic inspection and cleaning of your humidifier.

Prior to installing this product...

1. Read the rules and instructions carefully to ensure safe operation. Failure to follow them could damage the product or cause a hazardous condition.
2. Check the ratings given on the product to make sure it is suitable for your application.
3. Carefully unpack the unit and check to ensure that no damage has resulted during the shipping process.
4. When locating the humidifier, the unit must be at least (5) feet above the floor. Failure to follow this direction could result in excessive condensation and/or over-spray under the discharge nozzle.

5. There should be no obstructions directly in the path of the discharge mist. Failure to follow this direction could result in decreased efficiency and/or unwanted condensation.
  6. Ensure that there is adequate air movement in the application. Failure to follow this direction could result in overspray or excessive condensation.
  7. Position the wire bracket to the wall and mark the screw hole locations. Attach the corners with (4)  $\frac{3}{4}$ " sheet metal screws provided. Move the side adjusting arms vertically until the shelf is level. Mark the location of the hole and use the (2)  $\frac{3}{4}$ " sheet metal screws to fasten the side arms securely.
  8. Carefully rotate the impeller by hand, making sure that it turns freely before mounting the unit in place.
  9. Mount the unit with the float & valve assembly connection positioned at the most convenient location that allows a minimum of obstructions due to traffic.
- 
10. Ensure that the reservoir feet do not rest on the wire bracket and that the reservoir is level when positioned on the bracket.
  11. Place the compression nut on one end of the water tubing, with the threads facing toward the tubing end.
  12. Slide the Delrin sleeve over the tubing with the thick end toward the nut.
  13. Press the insert into the water tubing. If the tubing is too small to allow the insert to enter, place the end of the tubing in hot water to soften the plastic. Place the insert against a flat surface and press the tubing onto the insert.
  14. Fasten the water line securely to the float & valve assembly. **NOTE:** Ensure that the float & valve assembly does not turn when tightening the compression nut.
  15. The float and valve assembly has already been factory adjusted to maintain 1 - 1  $\frac{1}{2}$ " of water in the water reservoir pan at normal water pressure. If necessary, bend the float arm to the required position to maintain the water level at other water pressures.



16. Before mounting the humidifier in its final position, carefully rotate the impeller assembly by hand to ensure it moves freely. Mount the humidifier with the float and valve assembly connection facing the most convenient location, but providing the least obstruction to traffic. Be sure that the water reservoir pan feet do not rest on the wire bracket and that the water reservoir pan is level.

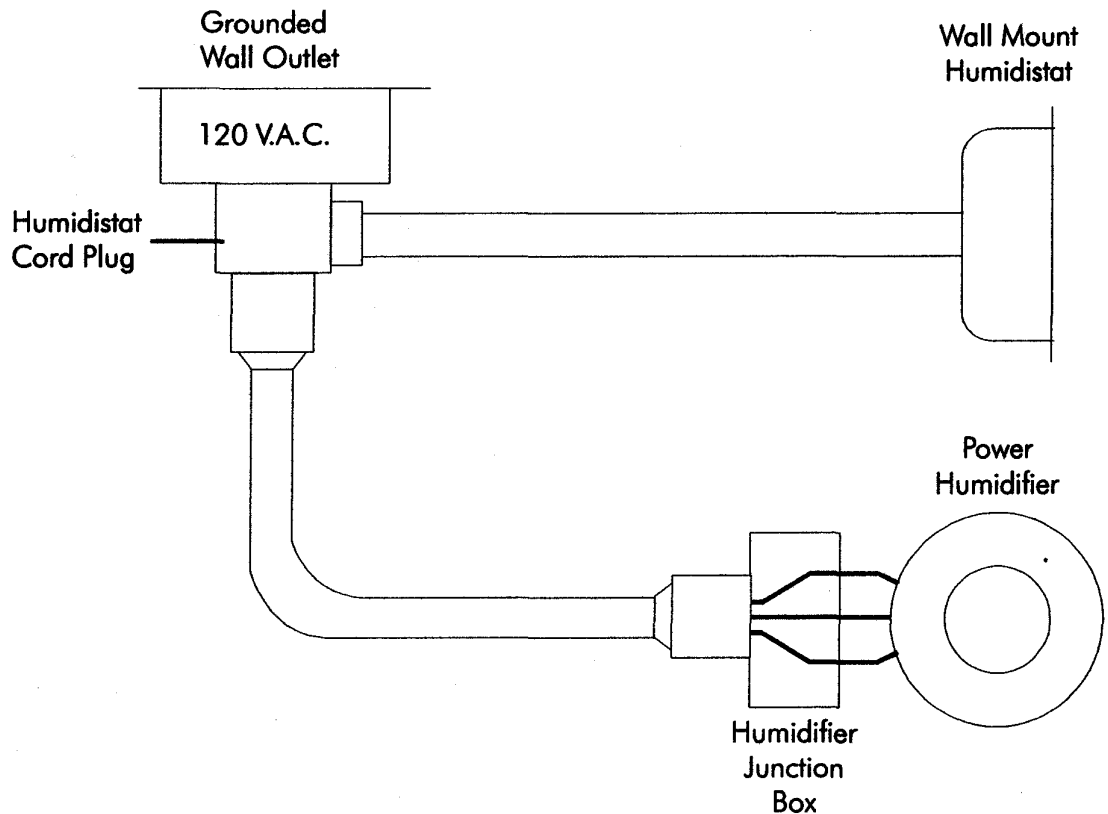
**IMPORTANT:**

In installations where accidental overflow could cause water damage, connect a hose from the overflow tube to a drain. Do not use a soldered joint because the overflow tube will become heated and warp the water reservoir pan.

# ELECTRICAL INSTALLATION

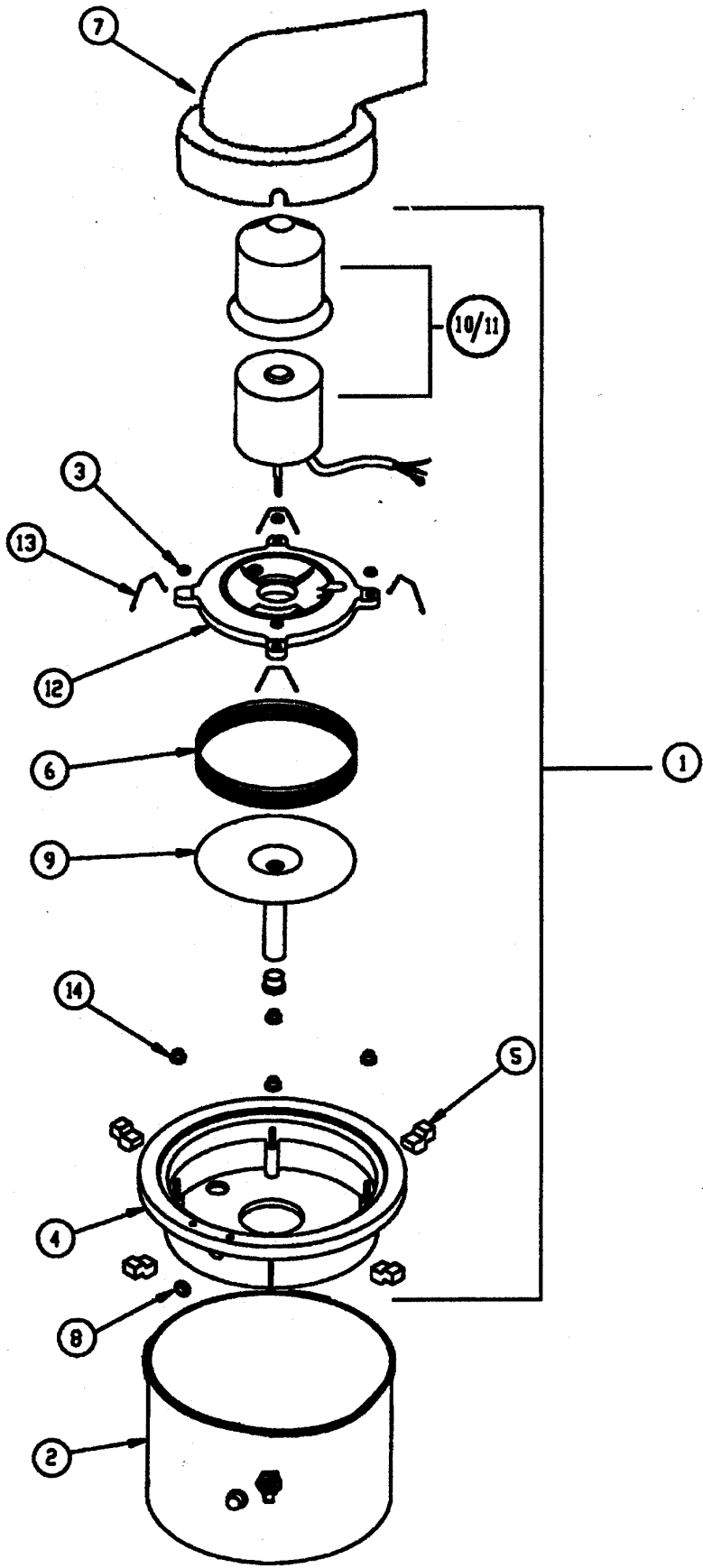
This humidifier is designed to be installed and operational right out of the box, with very little installation time involved.

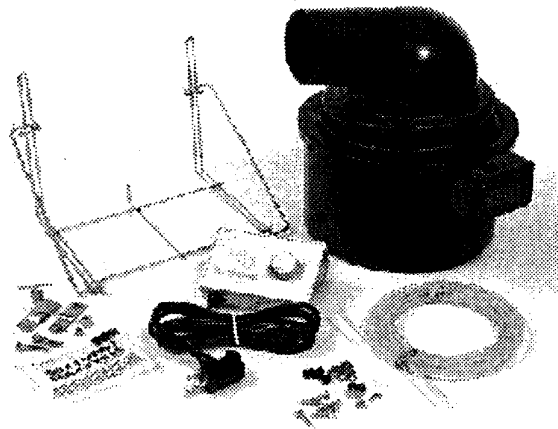
1. Plug the 3 prong grounded power cord from the humidistat into the 120V wall receptacle.
2. Plug the 3 prong grounded plug from the external power cord into the humidistat female receptacle and then wire the power cord into the junction box, making sure that you correctly wire the positive, negative & ground wires.
3. Turn the humidistat to the highest level (past 60%) and the humidifier should begin to run. The humidifier should stop when the humidistat is turned off.
4. Adjust the humidistat for the desired conditions (70% RH is recommended for humidior installations).



# TROUBLESHOOTING YOUR HUMIDIFIER

SYMPTOM	CHECKPOINTS
No Misting	<ul style="list-style-type: none"> <li>-Water supply</li> <li>-Humidistat setpoint</li> <li>-Wiring</li> <li>-Clean Diffusing Screen</li> <li>-Clean Impeller</li> </ul>
Too Much Mist	<ul style="list-style-type: none"> <li>-Adjust Float</li> <li>-Bend arm toward bottom of pan to lower water level</li> <li>-Adjust impeller</li> <li>-Loosen setscrew, push impeller toward motor, lighten setscrew (1/16" allen wrench)</li> </ul>
Center Pan Doesn't Sit Flush	<ul style="list-style-type: none"> <li>-Work the motor wire under the rim of center pan until it does sit level</li> <li>-4 center pan supports</li> <li>-Each should be located beside rib of center pan</li> </ul>
Motor Shut Down	<ul style="list-style-type: none"> <li>-Maintenance may be required</li> <li>-Wiring</li> </ul>
Dusting	<ul style="list-style-type: none"> <li>-Water high in mineral content</li> <li>-Install Prefilter</li> </ul>





Ref. #	Description	500	500U
1	Atomizing Assembly with Junction Box	154-3	154-3
2	Bottom Pan with Fittings	47B	47B
3	Brass Hex Nuts (6)	10-32	10-32
4	Center Pan	35	35
5	Center Pan Supports (4)	23	23
6	Diffusing Screen	45	45
7	Discharge Dome	40	40
8	Grommet	16	16
9	Impeller with Set Screw & Pump	D98A	D98A
10	Motor 120V with Motor Cover	30-310A	30-310A
11	Motor 220V with Motor Cover	30-2-310A	30-2-310A
12	Motor Base	34A	34A
13	Retainer Clips for Screen to Motor Base	19	19
14	Vibration Dampeners (4)	90	90
*	Wire Mounting Bracket	----	186
*	Belrin Sleeve [replaces 2411] (2)	----	EST-133
*	Float & Valve Assembly	92	92
*	Humidistat with 3-prong power cord	----	82-1A
*	Insert [replaces 2411] (2)	----	EST-133
*	Junction Box Assembly	178	178
*	Plastic Tubing ¼" O.D. 150psi (per foot)	----	2413A
*	3-prong, Grounded Power Cord 120V	----	G-113
*	Rubber End Bumper (3)	----	187
*	Saddle Valve (self-tapping)	IN-2ST	IN-2ST
*	Liquid Cleaner (½ gallon)	HHC-2	HHC-2
*	Freshener Tablets (12 pack)	HT	HT
*	Multivoltage Humidistat (hard wire)	826	826

Number in parentheses is total needed.

\* = part not shown

---- = part is not required in model 500

**ELECTRONIC AIR CLEANER AND HUMIDIFIER  
LIMITED TWO-YEAR WARRANTY**

This limited warranty covers Trion Residential Type Electronic Air Cleaners and Humidifiers, excluding duct work, wiring and installation. Trion, Inc. warrants that all new Trion Residential Type Electronic Air Cleaners and Humidifiers are free from defects in material and workmanship under normal, noncommercial use and service. Trion will remedy any such defects if they appear within 24 months from the date of original installation as evidenced by receipt of the warranty registration card, subject to the terms and conditions of this Limited Two-Year Warranty stated below:

1. THIS LIMITED TWO-YEAR WARRANTY IS GRANTED BY TRION INC., McNEILL ROAD, P.O. BOX 760, SANFORD, NORTH CAROLINA 27330.
2. This warranty shall extend only to any noncommercial owner who has purchased the residential electronic air cleaner or humidifier other than for purposes of resale.
3. The completion and return of the Warranty Registration Card is a condition precedent to warranty coverage and performance.
4. All components are covered by this limited warranty except expendable items, such as charcoal filters, disposable dirt holding pads, media evaporative pads, media filter pads and nozzles.
5. If within the warranty period any Trion residential electronic air cleaner or humidifier unit or related component requires service it must be performed by a competent heating and/or air conditioning contractor (preferably the installing contractor). Trion, Inc. will not pay shipping charges, or labor charges to remove or replace such defective parts or components. If the part or component is found by inspection to contain such defective material and workmanship it will be either repaired or exchanged free of charge at Trion's option, and returned freight collect.
6. In order to obtain the benefits of this limited two-year warranty, the owner must notify the dealer or distributor in writing of any defect within 30 days of its discovery. If after reasonable time you have not received an adequate response from the dealer or distributor, notify in writing Trion, Inc., McNeill Road, P.O. Box 760, Sanford, North Carolina 27330. Console or portable models of the electronic air cleaner or humidifier may be returned intact freight prepaid, but electronic air cleaners or humidifiers which have been installed or become part of real estate cannot be returned. Trion will receive, freight prepaid, only removable parts or components of such defective electronic air cleaners or humidifiers.
7. This limited warranty does not apply to any part or component that is: damaged in transit or when handling, has been subject to misuse, neglect or accident; has not been installed, operated and serviced according to Trion's instruction; has been operated beyond the factory rated capacity; or altered in any such way that its performance is affected. There is no warranty due to neglect, alteration or ordinary wear and tear. Trion's liability is limited to replacement of defective parts or components and does not include the payment of the cost of labor charges to remove or replace such defective components or parts.
8. Trion will not be responsible for loss of use of any product; loss of time, inconvenience, or any other indirect, incidental or consequential damages with respect to person or property, whether as a result of breach of warranty, neglect or otherwise. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE LIMITATION OR EXCLUSION IN THE PRECEDING SENTENCE MAY NOT APPLY TO YOU.
9. THIS WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.
10. Any warranty work will be performed within a reasonable time, usually within 120 days after notice of defect and delivery to the Trion factory, subject to delays beyond Trion's control.
11. Any warranty be Trion of merchantability, fitness for use or any other warranty (express, implied or statutory), representation or guarantee other than those set forth herein, shall expire at the expiration date of this express limited warranty. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE LIMITATION IN THE PRECEDING SENTENCE MAY NOT APPLY TO YOU.
12. Trion reserves the right to make changes in the design and material of its products without incurring any obligation to incorporate such changes in units completed on the effective date of such change.

**TRION** Inc.

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