

## HE120A,B By-Pass Drum Humidifier

### PRODUCT DATA



### FEATURES/BENEFITS

- Can be installed in a furnace room without a drain.
- Capable of humidifying a large area.
- Small footprint, light weight and reversible components allow easy mounting on either warm air supply or return air duct of any forced air furnace.
- Minimal amount of water and electricity needed for operation, saving the homeowner money.
- Unique snap-lock fittings and reversible components allow quick installation and maintenance.
- Interior components designed for easy clean up or replacement.
- Durable thermoplastic cabinet resists rust, corrosion and warpage.
- Includes easy-to-use humidity control that mounts on the wall or duct for more installation flexibility.
- Perfect Climate Comfort Center™ control can be installed to replace both the thermostat and humidity control for improved aesthetics and convenience.
- Optional Automatic Flushing Timer can be used to reduce the frequency of maintenance. A drain is required if the timer is installed.

### APPLICATION

The HE120A,B By-Pass Drum Humidifier uses the warm air furnace blower to provide humidification for the whole house. The HE120A,B works with virtually any Honeywell humidity control, but use the Honeywell Perfect Climate Comfort Center™ control for optimal performance.

### Contents

Application .....	1
Features/Benefits .....	1
Specifications .....	2
Ordering Information .....	2
Installation .....	3
Wiring .....	4
Operating the Humidifier .....	4
Operation .....	5
Maintenance .....	5
Checkout Procedure .....	6
Troubleshooting .....	6
Replacement Parts .....	7



## SPECIFICATIONS

### Capacity:

At 120°F (49°C) plenum temperature and 0.20 static pressure drop across supply and return:  
17 gallons per day (gpd) or 64 liters per day (lpd).

### Humidified Area:

For precise sizing and product selection, use Honeywell's HumidiCalc™ humidifier sizing software. If unavailable, refer to Table 1.

**Table 1. Size Of Area That Can Be Humidified.**

House Description	Air Changes Per Hour	Area (up to)	
		Sq ft	Sq m
Loose	Two	1,845	171
Average	One	2,575	239
Tight	One-half	4,045	376

### Drum Motor:

24 Vac, 3W, 1 rpm, bi-directional.

### Plenum Opening Dimensions (Height x Width):

6-5/8 in. x 8-1/2 in. (168 mm x 216 mm).

### By-Pass Duct Opening (Diameter):

6 in. (152 mm).

### Dimensions:

Refer to Fig. 1.

### Testing Standard:

Air Conditioning and Refrigeration Institute: Standard 610.

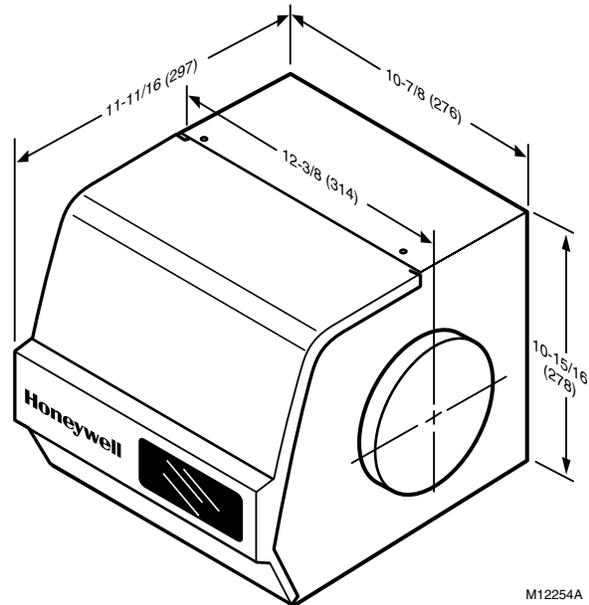
### Models:

HE120A Tradeline® By-Pass Drum Humidifier package includes:

- mounting template and hardware,
- self-piercing saddle valve,
- 24 Vac transformer and wire,
- by-pass tubing,
- summer shut-off damper,
- H908A Convertible Humidity Control.

HE120 B Tradeline® By-Pass Drum Humidifier package includes:

- mounting template and hardware,
- self-piercing saddle valve,
- 24 Vac transformer and wire,
- by-pass tubing,
- summer shut-off damper,
- H1008A Automatic Humidity Control with HumidiCalc+™ Software.



M12254A

**Fig. 1. HE120A,B Dimensions in in. (mm).**

### Accessories:

- C7089H Outdoor Temperature Sensor.
- H1008A Automatic Humidity Control with HumidiCalc+™ Software (software calculates dewpoint to prevent moisture condensation).
- H908A Convertible Humidity Control.
- HC40 Automatic Humidifier Flushing Timer.
- HumidiCalc™ Humidifier Sizing Software (software calculates required humidifier capacity for application).
- PC8900 Perfect Climate Comfort Center™ Control.

## ORDERING INFORMATION

When purchasing replacement and modernization products from your TRADELINE® wholesaler or distributor, refer to the TRADELINE® Catalog or price sheets for complete ordering number.

If you have additional questions, need further information, or would like to comment on our products or services, please write or phone:

1. Your local Home and Building Control Sales Office (check white pages of your phone directory).
2. Home and Building Control Customer Logistics  
Honeywell Inc., 1985 Douglas Drive North  
Minneapolis, Minnesota 55422-4386

In Canada—Honeywell Limited/Honeywell Limitée, 35 Dynamic Drive, Scarborough, Ontario M1V 4Z9.

International Sales and Service Offices in all principal cities of the world. Manufacturing in Australia, Canada, Finland, France, Germany, Japan, Mexico, Netherlands, Spain, Taiwan, United Kingdom, U.S.A.

## INSTALLATION

### WARNING

**Electrocution and Chemical Hazard.**

**Can cause death or blindness.**

Do not cut or drill into any air conditioning line or electrical accessory.

### CAUTION

**Freezing Water Hazard.**

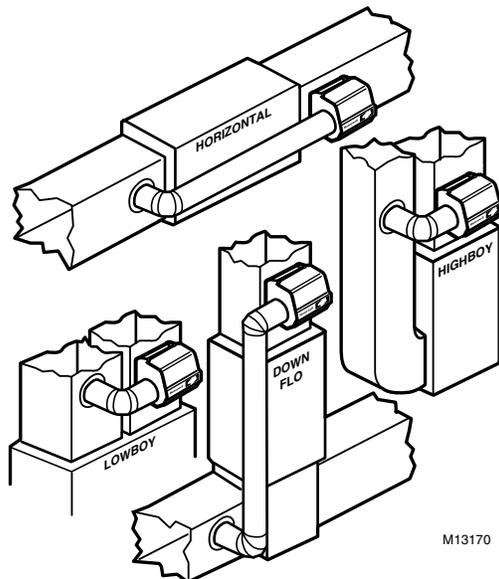
**Can result in water damage to property.**

Locate the humidifier where the ambient temperature is between 32°F and 180°F (0°C and 82°C).

#### IMPORTANT

*To assure optimal product performance, be sure the template is level before marking location.*

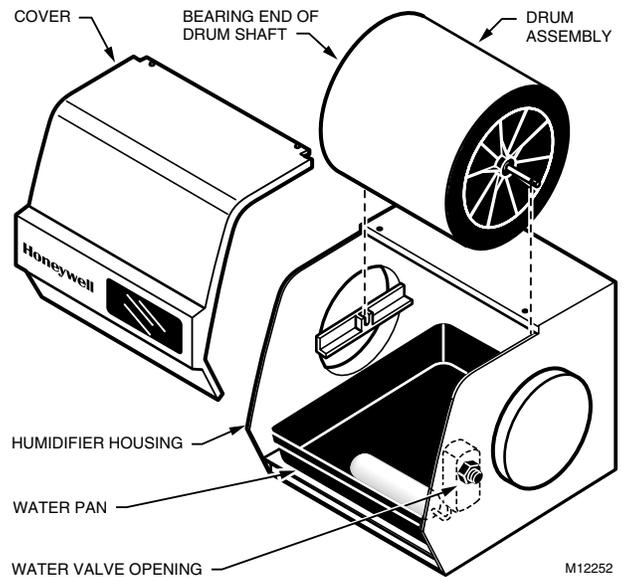
1. Determine the best location for the humidifier and draw a level line on the duct. See Fig. 2 for humidifier components.



M13170

**Fig. 2. Typical humidifier installation locations.**

2. Tape the template in position and trace around it.
3. Remove the template and carefully cut the rectangular opening.
4. Position the humidifier housing (See Fig. 3.) over the hole (be sure it is level) and mark the five mounting holes.
5. Set the cabinet aside and drill the five 7/64 in. (3 mm) mounting holes.
6. Start the three 3/4 in. (19 mm) sheet metal screws in the top holes.
7. Place the humidifier housing over the screws, level the housing and tighten the three screws.
8. Use two 1/2 in. (13 mm) screws to secure the humidifier housing at the bottom.



M12252

**Fig. 3. Humidifier components.**

9. On the inside of the humidifier housing where the by-pass tube connects, snap the bearing bracket into place with the U shape of the bracket pointing up.
10. Snap the motor plate into place on the opposite side of the humidifier housing.

NOTE: Be sure the motor coupling is positioned toward the top.

11. Place the lead wires through the hole in the bottom of the motor cover and snap the cover in place.
12. Cut an opening for the 6 in. (152 mm) collar in the selected by-pass location.

NOTE: Be sure to install a duct damper for summer shutoff if there is air conditioning.

13. Install the 6 in. (152 mm) collar.
14. Use sheet metal screws to connect the by-pass tubing from the collar to the humidifier.
15. Seal the connections with duct tape.
16. Insert the drain fitting in the bottom of the humidifier housing.

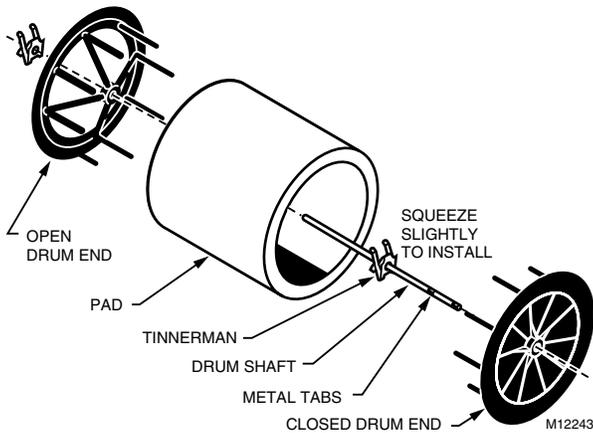
NOTE: Be sure the overflow tube is positioned toward the front and on the same side as the by-pass tubing.

17. Place the water pan in the humidifier housing so the overflow tube is above the previously installed drain fitting.

NOTE: Be sure the tubing does not touch hot surfaces and sharp edges.

18. Attach a 3/8 in. (10 mm) ID tubing to the drain fitting and route downward to a suitable drain or catch basin.
19. Screw the float onto the float valve assembly.

20. Attach the float valve to the humidifier housing on the same side as the motor.
21. Insert the valve hole plug in the double D hole on the opposite side of the valve.
22. Assemble the drum and humidifier pad. See Fig. 4.



**Fig. 4. Assembling drum and humidifier pad.**

23. Insert the drum assembly into the motor coupling end and snap into the bearing end.
24. Install the saddle valve (using the instructions on the saddle valve bag) on the nearest cold water pipe.
25. Connect the copper tubing and route to the humidifier.
26. Connect the copper tubing to the humidifier valve and finger tighten.
27. Use a wrench to turn the nut one and one-half turns more.
28. Turn the water on at the saddle valve and adjust the water level to 1-3/8 in. deep.

**NOTE:** Turn the valve adjustment screw (located on the water valve inside the humidifier) clockwise to lower and counterclockwise to raise.

## WIRING

### CAUTION

**Electrical Shock Hazard.**

**Can shock or burn out equipment.**

- Disconnect power supply before installing or servicing.
- To prevent premature transformer burnout on multispeed blower applications, do not wire the high voltage side of the transformer to the same power source that services the furnace blower.

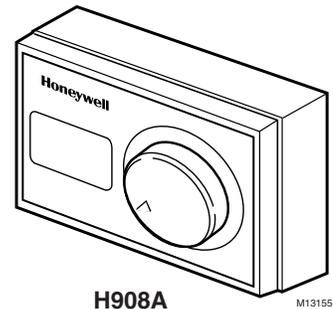
All wiring must comply with applicable local codes, ordinances and regulations.

1. Mount the transformer in a convenient location.
2. Connect the wires to the 120V side of the transformer.
3. Wire the drum motor, transformer and humidity control.

Refer to the humidity control installation instructions for mounting and wiring information.

## OPERATING THE HUMIDIFIER

The HE120A humidifier is controlled by the H908A Humidity Control that is installed either on an interior wall in the living area or on the return air duct. Choose the setting using the combination relative humidity/outdoor temperature setting scale on your humidity control. Match the dial setting to the outdoor temperature for optimizing the humidity level while reducing the moisture condensation on your windows. Table 2 can also be used to adjust the humidity control to the recommended setting.



**H908A**

M13155

**Table 2. Recommended Humidity Control Settings.**

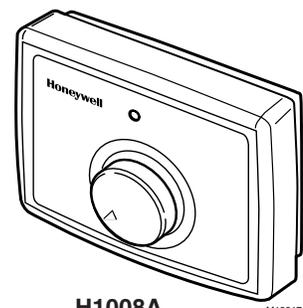
At Outside Temperature	Recommended Setting	At Outside Temperature	Recommended Setting
-20°F (-29°C)	15	+10°F (-12°C)	30
-10°F (-23°C)	20	+20°F (-7°C)	35
0°F (-18°C)	25	Above 20°F (-7°C)	40

**NOTE:** As the outside temperature drops, the recommended setting is lowered to accommodate the effects of dewpoint. These settings should reduce the accumulation of moisture and ice on the windows and in other areas of the house.

Some indoor activities such as cooking, showering and clothes drying can cause excessive levels of humidity and start the accumulation of moisture on the windows.

**NOTE:** If this condition persists for more than a few hours, set the humidity control to the lowest setting to turn off the humidifier. If the condition does not improve, ventilate your home to remove the moisture.

Your Honeywell HE120B Humidifier is controlled by the Honeywell H1008 Automatic Humidity Control with HumidiCalc+™ Software. The automatic humidity control is mounted in the return air duct where it can be exposed to the air stream of the return air. The HumidiCalc+™ Software inside your automatic humidity control is designed to automatically adjust



**H1008A**

M12817

the humidity level based on indoor temperature and humidity, inferred or measured outdoor temperature, and the setting of the frost factor dial. The frost factor allows for variations in furnace size, window insulation and average daily climate temperature.

The Automatic Humidity Control with HumidiCalc+™ Software requires an initial adjustment period. Set the frost factor dial on 5 and use Table 3 to adjust the frost factor—only one setting at a time—increasing the dial setting if you feel you need more humidity, or reducing the setting if you see moisture on the inside of your windows. For more precise humidity adjustment, set the frost factor between dial settings. Allow two days for the humidity level to subside before making further adjustments. Once you have tuned in the proper setting, you should never have to adjust it again. HumidiCalc+™ Software takes over and makes any future adjustments caused by varying outdoor temperatures, thus reducing moisture build-up on windows while maintaining the optimal humidity level.

**Table 3. Recommended Frost Factor Settings.**

Humidity Level	Recommended Adjustment
Insufficient humidity	Increase the frost factor dial by one setting
Condensation on windows	Decrease the frost factor dial by one setting

## OPERATION

The HE120A,B humidifier uses the principle that vapor (evaporated water) is created when warm air blows over a water soaked area. As the vapor circulates, the relative humidity rises.

The humidity control monitors the relative humidity and activates the humidifier accordingly. The humidifier has a water supply that disburses water over a humidifier pad. The warm dry air from the furnace passes over the humidifier pad and picks up the moist air to circulate it through the house.

Humidified air feels warmer and more comfortable so the homeowner may be able to lower the thermostat heating setpoint and save money on heating fuel bills. The end result is that the humidifier gives the homeowner a comfortable environment that is also energy efficient.

## MAINTENANCE

A regular maintenance program prolongs the life of the humidifier and provides a more comfortable environment. Frequency of cleaning depends on the condition of the water. You can use either hard or soft water in the humidifier, but hard water mineral deposits are more difficult to clean than soft water deposits.

## Every 1 to 3 Months (Depending on Water Quality)

### CAUTION

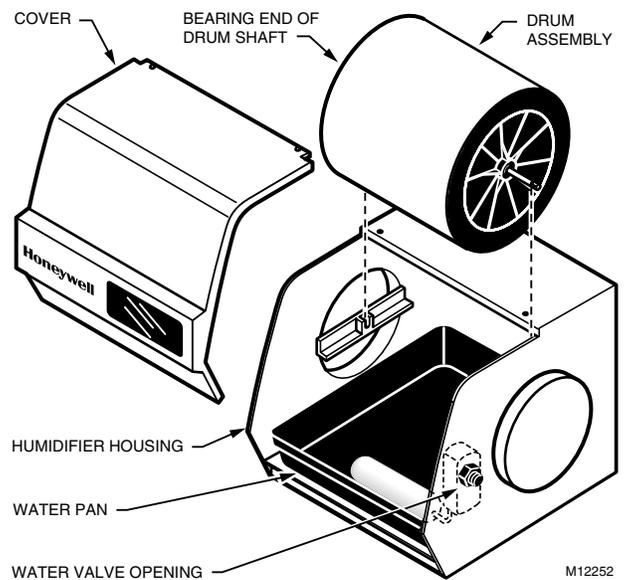
**Voltage Hazard.**  
**Can cause electrical shock and equipment damage.**  
Disconnect power supply before installing or servicing.

### IMPORTANT

*Never oil any part of the humidifier.*

Use the following procedure to clean the humidifier:

1. Disconnect the power and turn off the humidifier water supply.
2. Remove the humidifier cover by lifting up the bottom of the cover. See Fig. 5.



**Fig. 5. Location of humidifier parts.**

3. Lift up the drum shaft from the bearing end and slide it out of the motor coupling to remove the drum assembly.

**NOTE:** You will encounter some resistance and hear an audible click when removing the drum shaft.

4. Remove the drum from the assembly.
5. Grasp the rubber valve seat between thumb and forefinger and lift it upward to remove the valve seat from the valve. (The seat is located inside the humidifier housing at the water valve opening.)
6. Raise up the float and remove the water pan.
7. Refer to Fig. 6 to disassemble the drum.
8. Clean all humidifier parts in a 50 percent solution of vinegar (or a humidifier cleaner) and water. Soak overnight to remove stubborn deposits.

**NOTE:** Replace humidifier pad yearly. The actual frequency depends on the quality of the water used.

- After the humidifier components are clean, reassemble the humidifier by reversing the order of steps 1 through 7.

NOTE: To be sure that the drum shaft is completely seated, listen for the click.

- Verify the humidifier operation by following the steps in the Checkout Procedure section.

### End of Humidification Season

The humidifier should be cleaned and shut off at the end of the heating season. Use the Every 1 to 3 Months section, steps 1 through 9, to shut down for the season.

**IMPORTANT**

*Be sure the humidifier power is off and the humidifier is empty.*

### Vacation

When you leave on vacation, turn off the humidifier water supply and your humidity control. When you return, turn on the humidifier water supply and reset your humidity control.

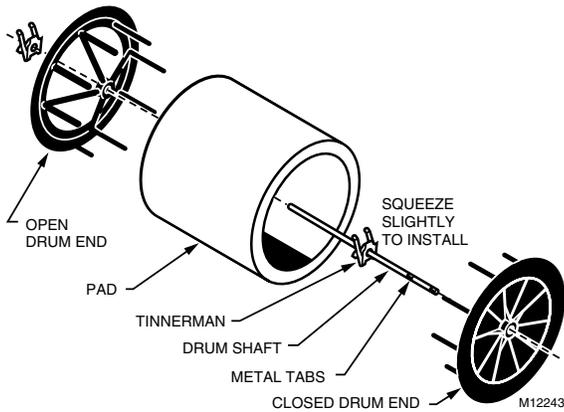


Fig. 6. Drum assembly parts.

## CHECKOUT PROCEDURE

After winter startup or maintenance, use the following procedure to check the humidifier operation:

- Turn on the humidifier power and water supply.
- Check the water level in the humidifier water pan; water level setting should be 1-3/8 in. deep. Turn the valve adjustment screw (located on the water valve inside the humidifier) clockwise to lower the water level and counterclockwise to raise it.
- Turn the H908A Convertible Humidity Control to the highest setting or the H1008A Automatic Humidity Control to the Test position, and set the thermostat to 10°F (6°C) above the room temperature.

NOTE: The H1008A Automatic Humidity Control stays in the test mode for thirty minutes. After thirty minutes, the control automatically resets to the maximum frost factor setting. If system checkout has not been completed in thirty minutes, the test mode can be extended by turning the dial back to one of the dial settings and then returning it to the test mode.

- Check that the humidifier pad is rotating.
- Reset the thermostat and the Convertible Humidity Control to a comfortable setting, or the Automatic Humidity Control to the desired frost factor setting, for automatic operation.

## TROUBLESHOOTING

Refer to Table 4 for troubleshooting procedures.

Table 4. Troubleshooting Procedures.

Problem	What To Look For	What To Do
Low humidity	Furnace blower not operating.	<ul style="list-style-type: none"> <li>Reset circuit breaker or check for blown fuse.</li> <li>Check that the furnace power is on.</li> <li>Check all external wiring connections.</li> <li>Check the humidity control setting.</li> <li>Call a professional heating contractor.</li> </ul>
	Rapid air changes. Drafts (cold air is dry and is an added load to the humidifier).	<ul style="list-style-type: none"> <li>Keep doors and windows closed.</li> <li>Close fireplace damper when not in use.</li> <li>Keep exhaust fan running time to a minimum.</li> <li>Seal around doors and windows.</li> </ul>
High humidity	Condensation on walls.	<ul style="list-style-type: none"> <li>Turn off humidity control and water until condensation is completely evaporated.</li> </ul>
	Heavy condensation on windows.	<ul style="list-style-type: none"> <li>Turn humidity control down low enough to eliminate condensation caused by moisture from bathing, mopping, cooking, etc. If moisture persists, more ventilation is needed.</li> </ul>

# REPLACEMENT PARTS

Refer to Fig. 7 and Table 5 when ordering replacement parts.

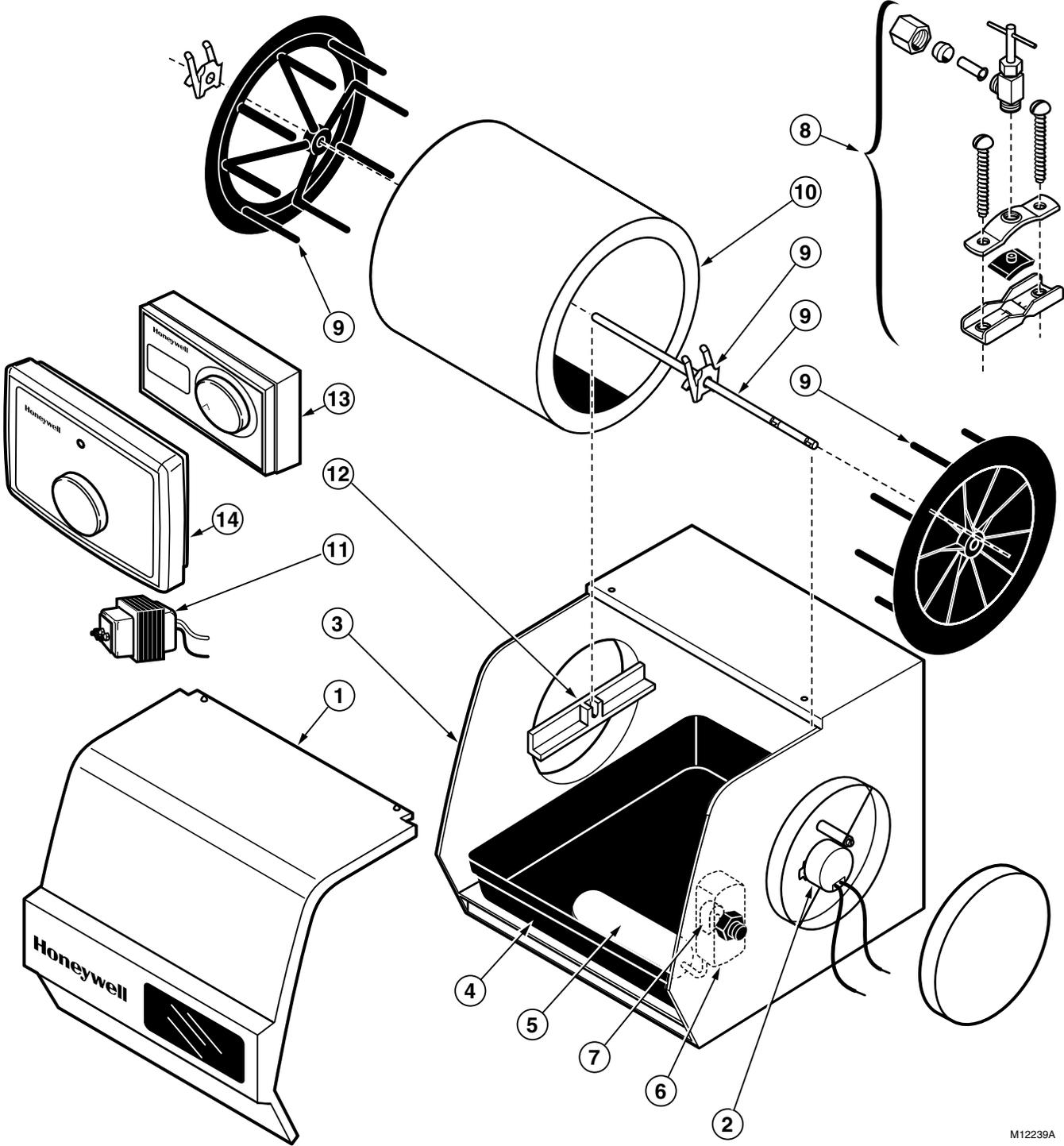


Fig. 7. Exploded view of humidifier parts.

M12239A

Table 5. List Of Replacement Parts For HE120 Humidifier.

Exploded View Number	Description	HE120 Part Number
1	Cover Assembly	32000131-001
2	24 Vac motor	32000132-001
3	Humidifier housing	32000133-001
4	Water pan	32000134-001
5	Float for valve	32000135-001
6	Float valve	32000136-001
7	Valve seat	32000137-001
8	Saddle valve assembly	32001616-001
9	Drum assembly	32000141-001
10	Humidifier pad (includes clips)	32000146-001
11	Transformer (10 VA)	32001652-001
12	Bearing bracket	32000147-001
13	Convertible Humidity Control	H908A1003
14	Automatic Humidity Control	H1008A1008
—	Current Sensing Relay	32001754-001

**Home and Building Control**

Honeywell Inc.  
Honeywell Plaza  
P.O. Box 524  
Minneapolis MN 55408-0524

**Honeywell Latin American Region**

480 Sawgrass Corporate Parkway  
Suite 200  
Sunrise FL 33325

**Home and Building Control**

Honeywell Limited-Honeywell Limitée  
155 Gordon Baker Road  
North York, Ontario  
M2H 3N7

**Honeywell Europe S.A.**

3 Avenue du Bourget  
1140 Brussels  
Belgium

**Honeywell Asia Pacific Inc.**

Room 3213-3225  
Sun Hung Kai Centre  
No. 30 Harbour Road  
Wanchai  
Hong Kong

**Honeywell**