
	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 1 of 15	

1.0 Purpose

The purpose of this procedure is to outline the steps necessary to perform maintenance on the Dehumidification System on a periodic basis.

2.0 Scope

This procedure applies to the Dehumidification System at the Manufacturing Facility. This procedure shall be performed as needed or outlined in the procedure.

3.0 Responsibility

Maintenance Personnel

4.0 Safety Considerations

Safety glasses and appropriate safety apparel are to be worn at all times.



Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

5.0 Materials/Equipment

- Tools necessary for performing maintenance
- Lock
- Tag
- Lock out device

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 2 of 15	

6.0 Procedure

6 – MAINTENANCE

This section includes some suggested maintenance requirements for this unit. This information is offered as a guide, but your system may require more frequent maintenance. For example, if your unit is used in a very dusty atmosphere, you should change the air filters more often. Use these suggested schedules as a starting point, and modify them to suit your own installation.

Munters dehumidifiers are designed to be very rugged and reliable. In fact, they have the lightest maintenance requirements in the industry. However, this does not mean you can skip the maintenance completely. Poor maintenance can result in poor performance, increased downtime and additional operating costs.

Munters strongly recommends that you follow a comprehensive maintenance program. This program should include not only the dehumidifier, but any support systems involved in the dehumidification system.

At some installations, downtime can be very expensive. If you cannot afford possible downtime of a few days, then it is important to maintain an on-site inventory of spare parts. A listing of recommended spare parts is included in this manual.

6.1 QUICK MAINTENANCE CHECK

As the unit operates, make routine checks of these three basic functions:

- ☐ The process air flow and reactivation air flow should be checked to be sure they remain at design levels. If the air flows change, this can change the operation of the machine. A change in air flow may call for maintenance or troubleshooting. If the application changes, and this will result in different air flows, contact the Service Operations Department at Munters.
- ☐ Check the temperature at the reactivation outlet to be sure it remains near 120°F ±5°F, and always above 110°F. If the temperature drops below this level, check the section on Troubleshooting.
- ☐ The wheel must be rotating whenever the unit is operating.

6.2 SUGGESTED MAINTENANCE SCHEDULE

The following table lists the recommended maintenance schedule for this unit. For detailed instructions on each procedure, see the sections which follow.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.



GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Dehumidification System (asset tag 10121) Maintenance Procedures**

Number: **M13-PR-200-048**

Owner: **Robert Willis**

Revision: **0**

Effective Date: **09/16/2013**

Page: **3 of 15**



EVERY 30 DAYS (See Fig. 6-1)

<i>Check this</i>	<i>Location</i>
Clean the air filters. (See Sect. 6.5)	Inlet for reactivation air Inlet for process air (if equipped)
Inspect the seals around the HoneyCombe® wheel. (See Sect. 6.11)	Both faces of the HoneyCombe® wheel
Inspect the HoneyCombe® wheel. (See Sect. 6.7)	Behind access panel, center of unit
Check the temperature at the reactivation outlet (See Sect. 6.3)	Outlet for reactivation air
Check all ductwork. (See Sect. 6.4)	Inlet and outlet for process air Inlet and outlet for reactivation air
Large units only - Check the drive belt tension on the process air blower.	Behind long cover on process blower
Check the steam piping. (See Sect. 6.13)	Steam supply lines and steam coils

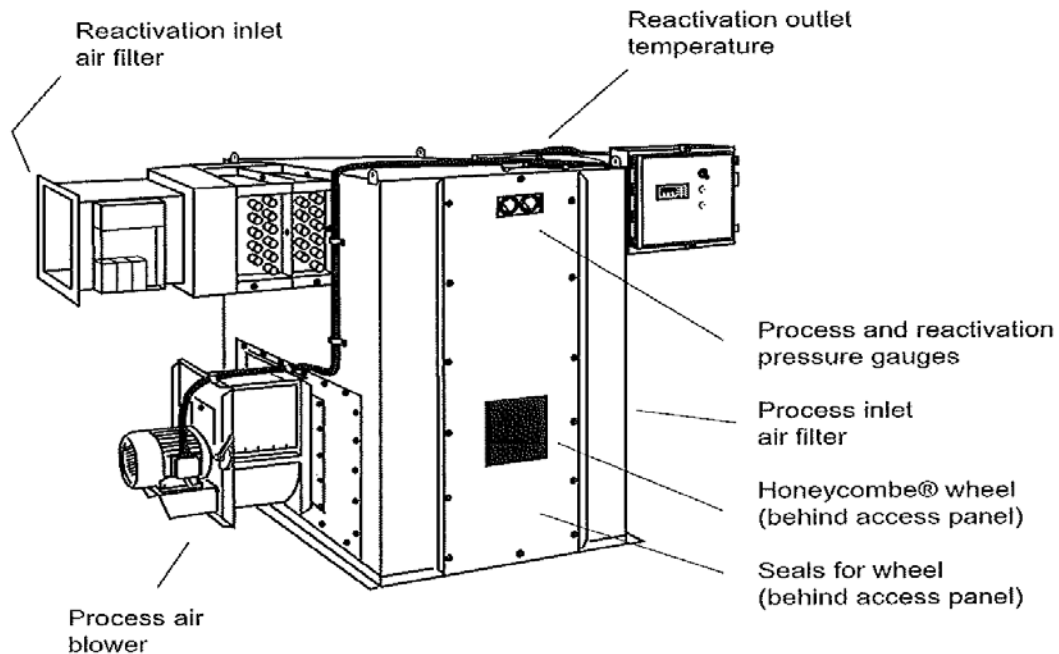


FIGURE 6-1
MAINTENANCE POINTS – EVERY 30 DAYS

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.



GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Dehumidification System (asset tag 10121) Maintenance Procedures**

Number: **M13-PR-200-048**

Owner: **Robert Willis**

Revision: **0**

Effective Date: **09/16/2013**

Page: **4 of 15**



ADDITIONAL MAINTENANCE, EVERY 60 DAYS (See Fig. 6-2)	
<i>Check this</i>	<i>Location</i>
Inspect the blower fans. (See Sect. 6.14)	Blower for process air Blower for reactivation air
Inspect the electronic controls. (See Sect. 6.16)	Cabinet behind control panel
Inspect the wheel drive motor and belt. (See Sect. 6.17)	Behind front access panel

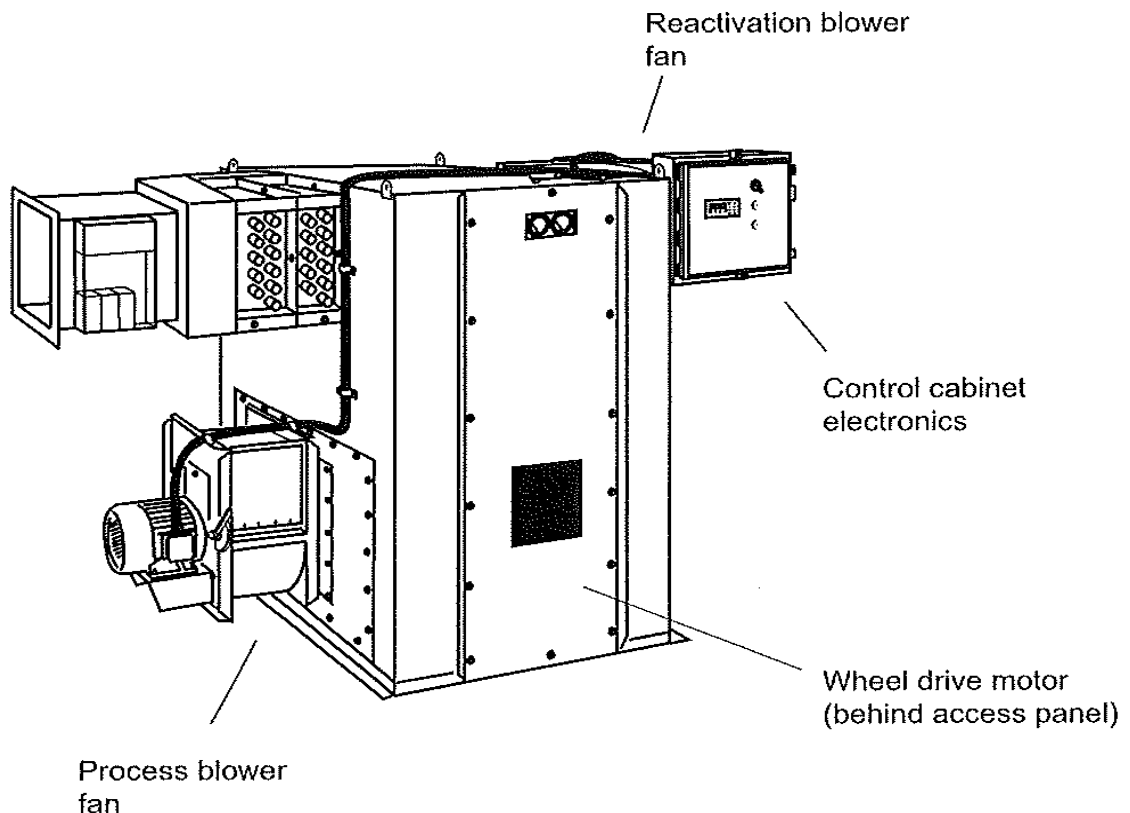




FIGURE 6-2
MAINTENANCE POINTS – EVERY 60 DAYS

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 5 of 15	

ADDITIONAL MAINTENANCE, EVERY 6 MONTHS

<i>Check this</i>	<i>Location</i>
Inspect the roller wheels. (See Sect. 6.15.)	Behind access panel, center of unit
Grease the bearings on the process air blower. (Texaco Molytex #2 E.P.)	Drive unit, behind access panel

ADDITIONAL MAINTENANCE, EVERY 12 MONTHS

<i>Check this</i>	<i>Location</i>
Change the oil in the bevel gear drive for the wheel. Use Mobil SHC629 synthetic oil (Munters P/N 16343)	Drive unit, behind access panel

6.3 CHECKING THE REACTIVATION OUTLET TEMPERATURE

After the unit has been operating for 30 minutes, the temperature at the outlet of the reactivation air stream should be about 120°F. Check this outlet temperature with a thermometer. It should be within $\pm 5^\circ\text{F}$. If the outlet temperature falls outside this range, see Section 7 on "Troubleshooting."

6.4 INSPECTING THE DUCTWORK

Check the ductwork for signs of air leaks or blockage. When the ducts run outdoors, rain hoods and bird screens should have been installed. Be sure the screens are not blocked.

Even small leaks in the ductwork can hurt the efficiency of the unit. Leaks in the reactivation outlet duct can be important, since the reactivation air is very damp. If this damp air leaks back into the conditioned space, this makes the unit work harder. If there are leaks in the process output duct, moisture from the process space can get into the process air stream. This can happen even though the moisture must move "upstream" against the flow of process air. Either condition can make the unit work harder than necessary.

Condensation may collect in the ductwork for the reactivation air stream. If condensation traps have been installed, be sure they are draining correctly.

6.5 CLEANING THE AIR FILTERS

This unit has an air filter at the intake for the reactivation air. See Fig. 6-1. (An additional filter should be added at the intake for the process air.) It is important to keep all of the air filters clean. If the filters become dirty, the efficiency of the unit will drop off. One symptom of this may be a decreased temperature reading at the outlet for the reactivation air stream. This condition can also cause an overheating fault.

1. Turn off the machine and allow it to cool before you change the filter.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.



GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Dehumidification System (asset tag 10121) Maintenance Procedures**

Number: **M13-PR-200-048**

Owner: **Robert Willis**

Revision: **0**

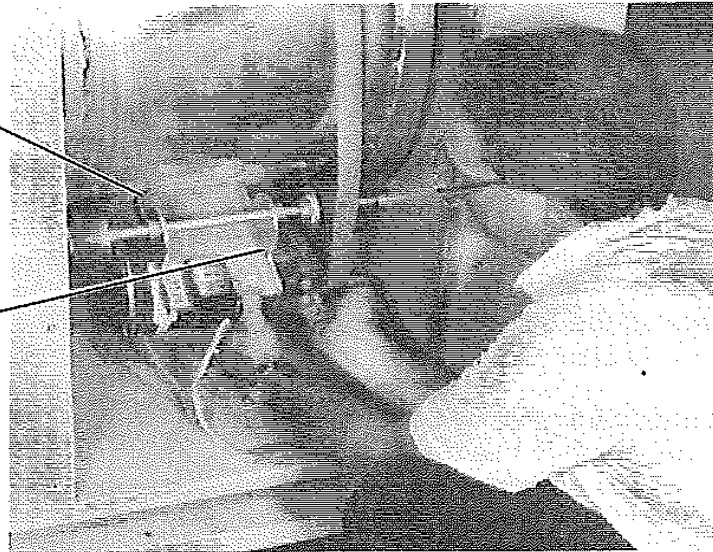
Effective Date: **09/16/2013**

Page: **6 of 15**

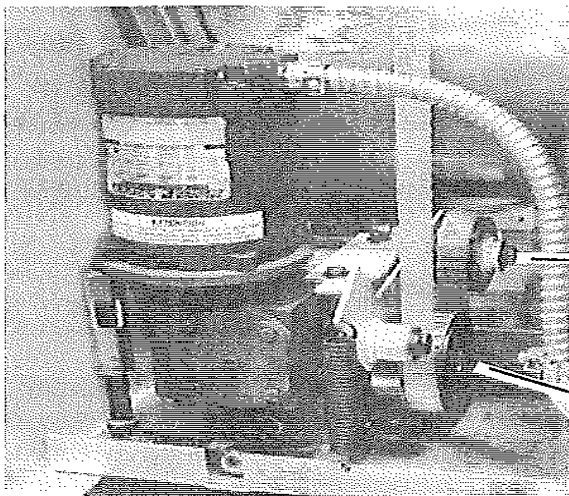


1-
Lift the pivot
assembly

2 -
Remove the
belt from the
drive pulley



DRIVE BELT MECHANISM FOR SMALLER UNITS



1 -
Press down on the idler
to loosen the belt

2 -
Remove the belt from
the drive pulley.

DRIVE BELT MECHANISM FOR LARGER UNITS

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.



GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Dehumidification System (asset tag 10121) Maintenance Procedures**

Number: **M13-PR-200-048**

Owner: **Robert Willis**

Revision: **0**

Effective Date: **09/16/2013**

Page: **7 of 15**



2. The filter at the intake for the reactivation air can be cleaned and reused. The filter is held in place by two screws. Remove the screws and lift the filter upward.
3. Wash the filter using mild soap and water. Allow the filter to air-dry, or use compressed air. When the filter is dry, reinstall it.

6.6 REMOVING AND REPLACING THE HONEYCOMBE® WHEEL

It is important to work carefully when removing and replacing the wheel. The Honey-Combe® section in the center of the wheel can be damaged if it is handled roughly.

1. Turn off the unit. Switch off the power supply to the unit and lock it out so that nobody else can turn it on by mistake.
2. Remove the access panel on the front of the unit. If you have space behind the rear panel, remove this panel also.
3. At the front of the machine, press down on the idler roller. See Fig. 6-3. This will release the tension on the drive belt. Remove the drive belt from the drive pulley.
4. Carefully rock the wheel back, so it is supported by the rear roller. Support the wheel with a block of wood, so that it cannot roll forward.



The wheel can be heavy, especially on a larger unit. If it is allowed to roll forward suddenly, you may be injured.

5. If you have the space, work from the rear of the unit. Remove the three braces which run across the wheel opening. Find a strong board which can be used as a ramp for the wheel. Set this in place at the rear of the machine.



Be sure the board is strong enough to support the wheel. Be sure the board is fitted firmly in place.

6. Now it is possible to remove the HoneyCombe® wheel. Roll the wheel out of the rear of the machine. You can use the drive belt as a handle.



Be careful to avoid damage to the seals. Until the wheel is clear of the seals, pull the wheel straight out of the machine. If you have room, place a helper on the opposite side of the machine to guide the wheel and push the seals back. Be especially careful when you replace the wheel.

The wheel assembly is heavy, particularly if it is wet. Use a helper when lifting the HoneyCombe® wheel. It is safe to roll the wheel.

7. To replace the wheel, reverse the steps listed above. It is easiest to work from the rear of the unit. Roll the new wheel carefully into position in the center of the machine.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.



GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Dehumidification System (asset tag 10121) Maintenance Procedures**

Number: **M13-PR-200-048**

Owner: **Robert Willis**

Revision: **0**

Effective Date: **09/16/2013**

Page: **8 of 15**



The wheel includes a metal cam. When viewed from the rear of the machine, this cam should be closest to the left side (process inlet) of the unit. When viewed from the front of the machine, the cam should be closest to the right side of the machine.

Work carefully so you do not damage the seals. Do not seat the wheel against the front roller yet.

8. Go to the front of the machine. Slip the end of the drive belt over the end of the shaft for the front wheels. Replace the right end of the shaft in the supporting hole. Move the left-hand collar into position and tighten the set screw. Allow a small amount of side-to-side play on the shaft.
9. Lift the front of the motor again, and place the drive belt over the drive pulley. Allow the drive motor to drop.

CAUTION

Be sure the drive belt is centered on the drive pulley. If the drive belt is off center, it will not provide full power to the HoneyCombe® wheel. This can cause the wheel to stall.

10. Replace the access panels. The unit is now ready to operate.
11. Make a quick check of the airflows and operating temperatures as the machine runs. The new wheel may behave slightly differently from the old one.

6.7 INSPECTING THE HONEYCOMBE® WHEEL

The HoneyCombe® wheel contains a lightweight framework which supports the desiccant chemical. This framework is manufactured in a shape which looks like the honeycomb in a bee hive. The honeycomb pattern includes many small air passages or "flutes" which run through the wheel. These passages are designed to allow air to flow across the desiccant chemical with the least amount of resistance.



Near the seam in the wheel housing there is some engraved text. The text includes the wheel serial number, the date of manufacture, and the manufacturing process used. The following table will help you to identify the type of desiccant chemical used in the wheel.

<i>Wheel Chemical</i>	<i>Color</i>	<i>Marking</i>
Lithium chloride	Gray or black	GFR
Silica gel	Orange/Rust	SI
Molecular sieve	Blue	MS
High performance	Green	HPX

The HoneyCombe® wheel will generally not foul or plug up unless one of the air streams has not been properly filtered. Plugging is most likely to happen when a unit must operate in a very dusty environment. Problems can be minimized by adding prefilters.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 9 of 15	

If the wheel becomes blocked, this will increase the pressure drop across the wheel for both the process and the reactivation air streams. We described how to check the pressure drop in Section 5 on "Installation."

To check for moisture damage and plugging, do the following:

1. Shut down the dehumidifier. Turn off and lock out the power to the unit to prevent someone else from starting it by mistake.
2. Remove the wheel as described in Section 6.6.
3. Check the faces of the HoneyCombe® wheel for signs of softening. Place the palm of your hand flat against the face of the wheel and apply moderate pressure. Run your hand over the entire face of the wheel on both sides. If you cannot flatten the ends of the flutes, then the wheel structure is sound. If some of the flutes deform, or the surface depresses under your palm, try the wheel drying procedure listed in Section 6.8. If, after the drying procedure the wheel is still soft, consult the Service Operations Department and/or the Parts Department at Munters.
4. Also check for damage to the ends of the flutes. This may indicate a problem with the alignment of the wheel. This type of problem is most likely if the support rollers have become worn or misadjusted. Be sure the ends of each roller shaft are pressed down completely in the supporting slots.

Small isolated areas of damage are usually caused by rough handling of the wheel. If the total area of damage is less than 10% of total wheel area, then no action is required. However, if the damaged area is large and equipment performance has deteriorated, the wheel should be replaced.



5. To check for plugging, use a "drop light" with a bulb of at least 60 watts or higher. Hold the light on the far side of the wheel, facing toward the wheel. The light should be four to six inches from the face of the wheel. By watching the near face of the wheel, you can tell if the wheel is plugged. Because the passages are very small, you won't be able to see the light directly. Instead, you should see the "glow" from the light. If any part of the wheel is plugged, you will see a dark area. Scan the entire area of the wheel. You should be able to see light at all points on the wheel. If you cannot see any light, or if some spots on the wheel are dark, the passages in the wheel are plugged. See the cleaning instructions in Section 6.9.

6.8 DRYING THE HONEYCOMBE® WHEEL

1. Turn off the power to the machine and open the cabinet behind the control panel. Remove the fuse for the process air blower. See the wiring diagram.
2. Operate the machine for 30 minutes. This will give the wheel a chance to get rid of moisture without receiving more moisture from the process air stream.
3. Replace the fuse and operate the machine normally.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 10 of 15	

6.9 CLEANING THE HONEYCOMBE® WHEEL

1. Remove the HoneyCombe® wheel by following the procedure listed earlier.
2. Vacuum both faces of the wheel. Use a "wet/dry" vacuum, and a "dusting brush" attachment with a soft bristle brush.
3. Vacuuming alone may not always remove the blockage. You can increase the force of the air by applying a stream of low-pressure compressed air to one side of the wheel while you vacuum the other. You must do this carefully so you do not damage the wheel. Use dry, oil-free compressed air of no more than 10 PSIG. Do not allow the air jet to come closer than 12" to the face of the wheel. The compressed air will work with the vacuum to clear the blockage.

CAUTION

Do not use high-pressure air to clean the wheel. Do not hold the air jet near the surface of the wheel. The honeycomb structure inside the wheel may be damaged.

Do not use any other procedure to clean the HoneyCombe® wheel. Do not wash the wheel with water or any solvent. You can easily damage the wheel, and make it necessary to buy a replacement. Wheels using lithium chloride (gray or black color wheel, code "GFR") may be cleaned and reimpregnated at the factory. Wheels using silica gel (orange or rust color wheel, code "SI") may be cleaned.

4. After cleaning, recheck the wheel using the drop light. If the blockage has been removed, reinstall the wheel. If the blockage is still extensive, consult the factory.

6.10 SAMPLING WHEEL CORE MATERIAL

Units with Lithium Chloride Wheel Only – (CODE GFR)



A lithium chloride wheel has a gray or black color, and is marked with the code letters "GFR." If you have inspected the wheel thoroughly as outlined above, and you still cannot find the cause of poor performance, it is possible to analyze the desiccant content within the HoneyCombe® wheel. Take samples of the core material and send them to Munters. The samples can be analyzed to determine the condition of the desiccant material in the wheel. If the condition of the honeycomb structure is good, it may be possible to reimpregnate or recharge the wheel. For details of the sampling procedure, contact Munters Service Operations.

6.11 INSPECTING THE SEALS

1. The seals are positioned against each face of the HoneyCombe® wheel. One seal is mounted on each side of the wheel. The standard high pressure seal has an outer layer of black Rulon®, with a red supporting material. The seal is held in place by aluminum pop-rivets.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 11 of 15	

2. Remove the front and rear access covers. Leave the HoneyCombe® wheel in place.
3. Check the clearance between each seal and the face of the wheel. Slide a business card or a feeler gauge of 0.030" between the face of the wheel and the seal face. Check all of the seal area on both sides of the wheel. At each point, you should feel a moderate drag or resistance as you slide the card or feeler.

If at any point on the seal you feel little or no resistance, replace the seals with new ones. See Section 6.12.

If you feel little or no drag on one side, and excessive drag on the other side, check the rollers which support the wheel. Look for wear on the roller bushings. See Section 6.15.

4. If the HoneyCombe® wheel is removed, you can inspect the surface of each seal. On the face of the seal (the portion that comes in contact with the HoneyCombe® wheel) is a black coating known as Rulon®, which is a Teflon® material. Inspect the upper surface of each seal for any signs of excess wear. If the red portion of the seal is visible through the black, the seal should be replaced.
5. If a seal is torn, you can make a temporary repair by using high temperature silicone caulking (such as GE RTV®). Bond the torn section back together. Avoid getting the silicone on the outer or wearing portion of the seal. This can cause excess drag. Plan to replace the damaged seal as soon as possible.

6.12 CHANGING THE SEALS

1. Remove the HoneyCombe® wheel as outlined earlier.
2. Each seal is held in place by a series of clips. Slide the old seal out of the clips.
3. Fit the new seal into the same clips.

6.13 INSPECTING THE STEAM PIPING

1. Turn off the unit. Turn off the steam supply valve manually, and allow about two hours for the piping to cool.



The steam piping may be very hot. The pipes can hold the heat for a long time after the steam is turned off. When you turn off power to the HCD unit, this does not automatically turn off steam to the unit. The steam must be turned off using a manual valve. After you turn off the steam, allow at least two hours for the coils to cool down.



2. Check the coils for signs of leaks. Check the operation of the steam traps. Check the supply lines for scaling or leaks.



Do not continue to operate the unit until you have repaired all steam leaks. The moisture from even a small leak can quickly damage the HoneyCombe® wheel.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 12 of 15	

6.14 INSPECTING THE BLOWER FANS

1. Turn off the unit before you check the blower fans. After you turn the unit off, wait two minutes to allow the unit to stop operating.





The two blowers mounted on the HCD unit spin very quickly. Your hand may be badly hurt if you put it inside the blower while it is turning. Keep your hands away from the blowers while the unit is turned on. Turn off the power, using the disconnect or circuit breaker, before you inspect the fans. Follow standard lock-out tag-out procedures.

2. The blower for the process air is located in the lower left-hand part of the machine. Open the damper beside the blower motor. (If ductwork is connected, you may have to remove this temporarily.) Reach through the damper opening and touch the fan itself. The fan should spin easily.
3. The blower for the reactivation air is located in the upper right-hand part of the machine. Again, open the damper beside the blower motor to get access to the fan. (You may have to remove some of the ductwork to do this.)
4. If one of the fans is difficult to turn, or you notice a grinding or "gritty" feel, something is wrong. Check for anything which could be rubbing against the fan.
5. If this does not reveal the problem, remove the fan and motor. Be sure the power is off before you do this! The blower assembly for the reactivation air is mounted on a plate which is held in place by nine bolts. Remove the plate, then remove the assembly. Use an Allen wrench to loosen the fan, then remove it. This will allow access to the bolts which attach the motor to the plate.
6. The blower assembly for the process air is mounted on a plate which is held in place by eight bolts. Remove the plate, then remove the assembly. Use an Allen wrench to loosen the fan wheel hub, then remove it. This will allow access to the bolts which attach the motor to the plate.
7. Turn the motor shaft by hand to check the motor bearings. There should be no free play when you try to move the motor shaft side-to-side. A motor with stiff or gritty bearings must be replaced.
8. Check the blower blades for excessive dirt or corrosion. If dirt is attached to the blades, this can reduce the blower's performance. If any blades are broken or missing, this will cause an imbalance, and can damage the motor bearings.

6.15 INSPECTING THE ROLLER WHEELS

1. The HoneyCombe® wheel is supported on four wheels. See Fig. 6-3. Remove the front and rear access panels so you can reach the wheels.
2. Each pair of wheels is supported on a shaft. Each shaft is held in place by two collars. There should be a small side-to-side play on the shaft.

Controlled Document

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 13 of 15	

3. If the wheels become worn, excessive play may develop. This can cause uneven support of the HoneyCombe® wheel. Inspect the wheels and check for signs of wear. Replace them if necessary.
4. The wheel assemblies use greaseless bushings made of Delrin®. These bushings do not require lubrication.

CAUTION

Do not lubricate the bushings on the support wheels. The lubricant may damage the plastic material on the outer layer of each wheel.

6.16 INSPECTING THE ELECTRONIC CONTROLS

1. Turn off the power to the machine and lock it out before you open any of the electrical cabinets.
2. Open the cabinet behind the main control panel. Make a general check for possible problems – frayed wires, overheated parts, etc.

6.17 INSPECTING THE WHEEL DRIVE MOTOR AND BELT

1. The drive motor is located behind the front access panel.
2. Check the belt for signs of stiffness or cracking. Replace it if necessary. In order to do this, you must remove the wheel.
3. Fig. 6–3 shows how to disconnect the belt from the drive pulley. When the belt is disconnected, try to turn the drive pulley by hand. You should not be able to move the motor shaft side-to-side. There should not be any significant backlash between the drive gears. If you notice either condition, replace the motor.
4. If you replace the drive pulley, mount the pulley as close as possible to the body of the motor. This will reduce the side load on the shaft and bearings.
5. When replacing the drive belt, be sure the belt is centered on the drive pulley. If the belt is off-center, the pulley may not be able to provide enough drive to turn the wheel. This can cause the wheel to turn more slowly than it should.

6.18 CHECKING THE HUMIDISTAT



1. Start by adjusting the humidistat to the high end of the scale (close to 100% relative humidity). At this point, the humidistat should not be calling for drying. The contacts inside the humidistat should be open, and you should be able to measure 115V AC across the contacts.

WARNING

The contacts inside the humidistat carry 115V AC. This voltage and current can be dangerous. Don't work on the parts inside the humidistat unless you are a trained electrician.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 14 of 15	

- Next, adjust the humidistat to the low end of the scale (close to 10% or 20% relative humidity). Now the humidistat should be calling for drying, and the contacts inside the humidistat should be closed. You should see 0V across the contacts.
- You can also check the wiring between the humidistat and the unit. See the wiring diagram included in this manual. When the humidistat is not calling for dehumidification, you should see the full AC voltage across the contacts. When the humidistat does call for dehumidification, the voltage across the terminals should drop to 0V. (A 24V humidistat is an option. See the separate wiring diagram supplied with the unit.)

6.19 STORAGE AND LONG-TERM SHUT-DOWN

Turn off all energy inputs to the machine. Turn off all electrical power. Turn off the steam supply valves.

The desiccant in the HoneyCombe® wheel will continue to absorb some moisture after the dehumidifier is shut down. If the wheel is allowed to absorb too much moisture over a period of time, the wheel may not be able to perform normally when the unit is turned on again. A wheel which uses lithium chloride (gray or black color) is more likely to have this problem.

Air may continue to move through the system, even if the HCD unit is turned off. This is a more important problem if the system includes a separate fan or other air-moving device. If the fan is turned on, and the wheel inside the HCD unit is stopped, a section of the wheel may be exposed to a large amount of moisture.

It is best to remove the wheel from the HCD unit. This is not always possible, however. If the rest of the air-handling system will continue to be used, you may not be able to remove the wheel. With the wheel removed from the system, the back-pressure in the ductwork will change. Air from the process ducts will be able to escape to the reactivation ducts. Here are some possible ways of dealing with this situation:



If the rest of the system will not be used –

- If possible, remove the HoneyCombe® wheel. Wrap the wheel with strong plastic sheeting, seal with duct tape, and store the wheel separately.
- If this is not possible, seal the dehumidifier to prevent the open air from reaching the HoneyCombe® wheel. You can do this by fitting moisture barriers over the openings in the unit:
 - Process inlet
 - Process outlet
 - Reactivation inlet
 - Reactivation outlet

To make the moisture barriers, use strong plastic sheeting sealed with duct tape.

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.

	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Dehumidification System (asset tag 10121) Maintenance Procedures	Number: M13-PR-200-048	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 15 of 15	

If the rest of the system will be used –

Remove the wheel. Plug up the openings for the ductwork for the reactivation inlet and reactivation outlet – the points where these ducts exit the building.

It is also possible to set up the unit so that it operates periodically. This provides an automatic way of purging the wheel. Consult the factory for details.

7.0 Reference Documents

N/A

8.0 Change Information

New Document

Controlled Document

Only those quality documents viewed through the Giles Chemical electronic Documentation System are officially controlled. All other copies, whether viewed through another computer program or a printed version, are not controlled and, therefore, the Quality Unit at Giles assumes no responsibility for the accuracy of the document.