

# PERMIT BOOK

STATE OF MISSOURI



## DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

### PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 102011-007

Project Number: 2011-07-014  
Installation Number: 051-0032

Parent Company: Modine Manufacturing Company

Parent Company Address: 1500 DeKoven Ave, Racine, WI 53403

Installation Name: Modine Manufacturing Company

Installation Address: 1502 South Country Club Drive, Jefferson City, MO  
65109

Location Information: Cole County, S18, T44, R12

Application for Authority to Construct was made for:  
Addition of one solder dip pot and two brazing booths. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

OCT 11 2011

EFFECTIVE DATE

  
DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

**You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review.** In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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## SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

Modine Manufacturing Company  
Cole County, S18, T44, R12

1. Control Device Requirement-Dust Collector
  - A. Modine Manufacturing Company shall control emissions from the solder dip pot (EP# 104) using a dust collector as specified in the permit application.
  - B. The dust collector shall be operated and maintained in accordance with the manufacturer's specifications. The dust collector shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them.
  - C. Replacement filters for the dust collector shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
  - D. Modine Manufacturing Company shall ensure that the dust collector maintains a sufficient pressure drop through the dust collector by equipping the dust collector with a pressure drop alarm. The pressure drop alarm shall be maintained at the appropriate set point to ensure the dust collector is operating within the design conditions specified by the manufacturer's performance warranty. The pressure drop alarm shall be checked once per week to verify that it is operating properly.
  - E. Modine Manufacturing Company shall maintain an operating and maintenance log for the dust collector which shall include the following:
    - 1) Incidents of malfunction or tripping of the pressure drop alarm, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities including pressure drop alarm checks, with inspection schedule, repair actions, and replacements, etc.
2. Record Keeping Requirement

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**SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

Modine Manufacturing Company shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

Mr. Edward Besaw  
Corp EH&S Engineer  
Modine Manufacturing Company  
1500 DeKoven Ave.  
Racine, WI 53403

RE: New Source Review Permit - Project Number: 2011-07-014  
Installation ID: 051-0032

Dear Mr. Besaw:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

Modine Manufacturing Company (Modine) is seeking authority to add one electrically heated solder dip pot (EP# 104) and two brazing booths (EP# 105) at their Jefferson City facility. This equipment is being transferred from their Washington, Iowa facility. A description of the equipment to be added and a review of the potential emissions associated with the equipment are further explained below.

#### The Solder Dip Pot (EP# 104)

The electrically heated solder dip pot is used to apply lead-based solder to the tube and header joints of radiator units. Emissions from this process are lead and particulates which will be vented from the solder dip pot to an existing dust collector (Control Device # 21-1). The minimum cycle time of soldering is assumed to be a 3 minute per unit (i.e. 20 units soldered per hour). Modine estimated solder consumption based on historical data. The unit previously processed 35 units per week in a 4-hour time span. This resulted in the use of 862 pounds of solder per year. Based on these usage rates, the maximum estimated solder consumption is 10 pounds per hour (i.e. solder consumption of 0.5 pound used per unit).

The potential emissions associated with the solder dip pot are primarily lead and particulate. Modine used stack testing conducted at their LaPorte, Indiana facility in October 1991, to estimate lead and particulate emissions from the soldering process. Testing showed emission factors of 24 pounds of particulate per ton of solder and 0.9 pounds of lead per ton of solder. The existing dust collector achieves a 99% control efficiency.

#### Two Braze Booths (EP# 105)

The braze booths are used to bond various subassembly components together. Emissions associated with the braze booths are particulate in nature. Modine estimated the brazer filler usage based on historical data. The actual throughput was estimated to be 603 pound of brazer filler per year with estimated actual operation of 360 hours per year. This resulted in maximum hourly design rate per booth of 1.675 pounds of wire consumed per hour. Modine used stack testing conducted at their Washington, Iowa facility in

March of 1991 to estimate the particulate emissions associated with the brazing booth. Testing showed an emission factor of 0.053 pounds of particulate emitted per pound of wire. Emissions will be vented outside the building utilizing an existing stack. No control device is used to control emissions from the braze booths.

Project Summary:

The controlled and uncontrolled potential emissions for this project are stated in Table 1. Because the uncontrolled potential lead emissions exceed the Screening Model Action Level (SMAL) for lead, a permit is required. However, since controlled lead amounts are well below the SMAL, the only requirements for this permit pertain to the use of the dust collector to control emissions from the solder dip pot.

Table 1: Potential to Emit (PTE) of the Project (tpy)

Pollutant	Regulatory <i>De Minimis</i> Levels <sup>1</sup>	Uncontrolled PTE		Controlled PTE	
		Solder Dip Pot (EP# 104)	Two Brazing Booths (EP# 105)	Solder Dip Pot (EP# 104)	Two Brazing Booths (EP# 105)
PM <sub>10</sub>	15.0	0.53	0.79	0.0053	0.79
Lead	0.6 / 0.01	0.020	N/A	0.0002	N/A

<sup>1</sup>The first regulatory level listed for the lead is the de minimis level for lead. The second level represents the Screening Model Action Level (SMAL).

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating 10 CSR 10-6.400 *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.045 *Open Burning Requirements*, 10 CSR 10-6.165 *Restriction of Emission of Odors*, and 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*.

A copy of this letter should be kept with the unit and made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this determination, please contact Susan Heckenkamp at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or telephone (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
Permits Section Chief

KBH:shl

c: Northeast Regional Office  
PAMS File: 2011-07-014

Permit Number: