

STATE OF MISSOURI

PERMIT BOOK



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: 122011-003

Project Number: 2011-09-045
Installation Number: 079-0004

Parent Company: Modine Manufacturing Company

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

Installation Name: Modine Manufacturing Company

Installation Address: 822 Industrial Drive, Trenton, MO 64683

Location Information: Grundy County, S9, T61N, R24W

Application for Authority to Construct was made for:
Installation of a robot welder and 3 fin machines types (a round roll, an Echo insert, and an Echo air fin). These are used to form fin components out of aluminum coil stock. 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.

DEC 5 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 these air contaminant sources. 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 these air contaminant sources.

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 sources(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
Grundy County, S9, T61N, R24W

1. **Operational Requirement**
Modine Manufacturing Company shall keep the lubricant solvents and cleaning solutions in sealed containers whenever the materials are not in use. Modine Manufacturing Company shall provide and maintain suitable, easily read, permanent markings on all lubricants, solvents and cleaning solution containers used with this equipment.
2. **Annual Volatile Organic Compound (VOC) Emission Limit**
 - A. Modine Manufacturing Company shall emit less than 250.0 tons of VOC in any 12-month period from the entire installation while operating at this site. This limit applies to the VOC emissions from all equipment/processes installed or permitted at Modine Manufacturing Company as of the issuance date of this permit.
 - B. Modine Manufacturing Company shall demonstrate compliance with Special Condition 2.A. using the VOC recordkeeping sheet found in their Intermediate Operating Permit (Permit # OP2007-069) or an equivalent approved by the Air Pollution Control Program.
3. **Record Keeping Requirement**
Modine Manufacturing Company shall maintain all records required by this permit for five years and make them available to any Missouri Department of Natural Resources personnel upon request.
4. **Reporting Requirement**
Modine Manufacturing Company shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2011-09-045
Installation ID Number: 079-0004
Permit Number:

Modine Manufacturing Company
822 Industrial Drive
Trenton, MO 64683

Complete: September 19, 2011

Parent Company:
Modine Manufacturing Company
1500 DeKoven Avenue
Racine, WI 53403

Grundy County, S9, T61N, R24W

REVIEW SUMMARY

- Modine Manufacturing Company has applied for authority to install a robot welder and three fin machine types, a round role, an echo insert, and an air fin. These are used to form fin components out of aluminum coil.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment but only in trace amounts less than the Screen Modeling Action Levels (SMAL)
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation. None of the currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment. Title 40, Part 63 Subpart XXXXXX—National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories does not apply based on the Standard Industrial Classification code used.
- No air pollution control equipment is being used in association with the new equipment.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of all pollutants are below de minimis levels.
- This installation is located in Grundy County, an attainment area for all criteria pollutants.
- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment.
- A revision to the Intermediate Operating Permit is required for this installation within 90 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Modine Manufacturing Company in Trenton, MO is a private company categorized under Heat Exchangers Manufacturers. Modine Manufacturing Company operates a radiator production facility in Trenton, Missouri (S9, T61N, R24W). The unconditioned potential emissions of volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) are greater than their respective major source thresholds for construction permitting and limited in their intermediate operating permit to 100 tons per year for VOC and 10.0 tons per year for individual HAPs, and 25.0 tons per year for combined HAPs. The following permits have been issued to Modine Manufacturing Company from the Air Pollution Control Program.

Table One: Construction Permits issued to County-Plant No.: 079-0004.

Permit Number	Description
0177-005	Soldering Dip Pots
0782-003-007	Hard Tube Mill
0384-004	Hard Tube Mill
0685-001	Production Line Modification
0986-010	Hard Tube Mill & Beta Welder
1086-007	Hard Tube Mill
1286-005	Beta-Weld Operation
0387-002	Beta-Weld Operation
0188-001	Welded Tube Mill
0388-005	Beta-Weld Machine
1191-015	Automatic Solder Pour Line Installation
0894-026	Nocolok Brazing Oven
1296-015	Aluminum Paint Booth
0997-030	Addition of One Aluminum Area Fin Machine and Two Aluminum Presses
0298-018	Spray Paint Booth
0398-003	One Aluminum Truck Radiator Fin Machine
0798-028	Beta-Weld Operation
1098-019	Oil Fogging Operating
0199-005	Two Seaming Stations and One Welding Station
0599-007	New Aluminum Fin Machine
1299-012	New Radiator Production Line
012000-018	Installation of a New Aluminum Fin Machine
082000-013	Installation of a Burn-Off Oven for Powder Paint Hooks
112003-004	Installation of a New Aluminum Fin Machine
082004-018	Installation of a New Aluminum Fin Machine
082005-009	Installation of New Fin Machine, Welding Operations, and Test Station.
072008-013	Installation of a New Radiator Core Builder with associated Fin Machine.
102009-009	Construct two new core assembly/fin machines.

PROJECT DESCRIPTION

This project is for the addition of three fin machines to their existing Metal Forming Operations (ID #88) and a robot welder (ID# 91). Aluminum radiator units produced at the Trenton facility basically consist of plastic tanks, aluminum headers, side pieces, tubes, and fins. Aluminum fin machines produce serpentine fin stock by bending aluminum coil stock in an "accordion" format. Generally, a fin machine consists of several lubricated round roll forming dies that continuously folds narrow thin gauge aluminum roll stock material into fin material that have a back and forth serpentine or accordion appearance. The fin material is then automatically cut into predetermined lengths for use in radiator core construction. The lubricant used in fin material production is classified as a vanishing oil type of lubricant that consists of petroleum oil and light petroleum solvent fraction components.

The maximum lubricant usage rates of the new fin machines are the following: 1) round roll fin machine = 0.188 gallons per hour, 2) echo insert fin machine = 0.125 gallons per hour, and 3) echo air fin machine = 0.125 gallons per hour. Lubricant usage was based on studies on comparable fin machines at the Trenton and Camdenon facilities. Maximum wire consumption is 0.0875 pounds of wire per part with a tack time of 3 minutes per part. This equates to approximately 1.75 pounds of wire consumed per hour.

Currently, Modine Manufacturing Company holds an Intermediate operating permit that limits the entire installation to less than 100 tons per year of VOC. This construction permit gives the installation a 250 ton per year VOC limit. By giving Modine Manufacturing Company a 250 ton per year limit in this permit, it allows Modine to relax their operating permit's limit of 100 tons per year and obtain a Part 70 operating permit without having to amend the construction permit.

EMISSIONS/CONTROLS EVALUATION

The emission factors used for the welder was obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 12.19, *Electric Arc Welding*, 1/95. The emission factor for welding is 0.02 pounds per pound of wire used.

The potential emissions for the fin machines (ID #88) is based on a mass balance approach. 100% of the VOCs contained in the oil lubricant are assumed to be emitted.

Potential emissions of the application represent the potential of the new equipment, assuming continuous operation (8760 hours per year). The existing actual emissions were taken from Modine Manufacturing Company's 2010 Emission Inventory Questionnaire (EIQ) submittal. The following table provides an emissions summary for this project.

Table Two: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions*	Existing Actual Emissions (2010 EIQ)	Potential Emissions of the Application (tons/year)	Installation Conditioned Potential
PM _{2.5}	10.0	N/D	0.32	0.15	N/D
PM ₁₀	15.0	54.95	1.61	0.15	N/D
SO _x	40.0	0.06	N/D	N/A	N/D
NO _x	40.0	13.0	3.47	N/A	N/D
VOC	40.0	<250.0	28.73	13.18	<250.0
CO	100.0	2.80	2.85	N/A	N/D
HAPs	10.0/25.0	<10.0/25.0	N/D	N/A	<10.0/25.0**

N/A = Not Applicable; N/D = Not Determined

* Existing potential emissions from permit 102009-009.

** The HAP limit was given in the operating permit.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutants are below de minimis levels.

APPLICABLE REQUIREMENTS

Modine Manufacturing Company shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Tim Hines
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated September 16, 2011, received September 19, 2011, designating Modine Manufacturing Company as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Northeast Regional Office Site Survey, dated October 11, 2011.

Mr. Tod Auseth
E H & S Engineer
Modine Manufacturing Company
822 Industrial Drive
Trenton, MO 64683

RE: New Source Review Permit - Project Number: 2011-09-045

Dear Mr. Auseth:

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, "Review of 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 amended 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.

If you have any questions regarding this permit, please do not hesitate to contact Timothy Paul Hines, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:tpl

Enclosures

c: Northeast Regional Office
PAMS File: 2011-09-045

Permit Number: