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: 022016 - 010

Project Number: 2015-11-024 Installation Number: 159-0039

Parent Company: Gardner Denver, Inc.

Parent Company Address: 222 East Erie Street, Milwaukee, WI 53202

Installation Name: Gardner Denver, Inc. – Sedalia Plant

Installation Address: 305 North State Fair Boulevard, Sedalia, MO 65301

Location Information: Pettis County (S32, T46N, R21W)

Application for Authority to Construct was made for:

The use of alternative coatings in existing paint booths EP-27 & EP-28 and the construction of eight (8) new paint booths plus a curing oven. 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

 $\checkmark$ 

Prepared by Ryan Schott New Source Review Unit

this permit.

Director or Designee Department of Natural Resources FEB 1 9-2016

**Effective Date** 

#### 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 Department's Air Pollution Control Program of the anticipated date of startup 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 startup 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 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 <u>and</u> 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.

#### 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."

Gardner Denver, Inc. – Sedalia Plant Pettis County (S32, T46N, R21W)

- Paint Gun Usage Restriction Gardner Denver, Inc. – Sedalia Plant shall only use one (1) paint gun per booth at a time.
- 2. Capture Device Requirements Paint Booths and Exhaust Fans
  - A. Gardner Denver, Inc. Sedalia Plant shall capture emissions from EP-27, EP-28 & EP-100 through EP-107 using paint booths and exhaust fans.
  - B. All coatings shall be applied inside the booths and sprayed in a direction away from the inlet openings.
  - C. Negative pressure shall be demonstrated and recorded at all booth openings at least once every 24 hours using a visual indicator such as streamers, powder puff, smoke, or other method approved by the Air Pollution Control Program. 24 hour periods where spray coating is not applied shall be recorded.
  - D. Gardner Denver, Inc. Sedalia Plant shall operate the exhaust fans at all times when spray coating is being applied.
  - E. Gardner Denver, Inc. Sedalia Plant shall maintain an operating and maintenance log for the paint booths and exhaust fans, which shall include the following:
    - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
    - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 3. Control Device Requirement Paint Booth Filters
  - A. Gardner Denver, Inc. Sedalia Plant shall control emissions from EP-27, EP-28 & EP-100 through EP-107 using paint booth filters, as specified in the permit application.
  - B. The paint booth filters shall be operated and maintained in accordance with the manufacturer's specifications.

#### SPECIAL CONDITIONS:

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

- C. Replacement filters shall be kept on hand at all times. The filters shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).
- D. Gardner Denver, Inc. Sedalia Plant shall maintain a copy of the filter manufacturer's performance warranty on site.
- E. Gardner Denver, Inc. Sedalia Plant shall maintain an operating and maintenance log for the filters which shall include the following:
  - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
  - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- Fuel Requirement Curing Oven Gardner Denver, Inc. – Sedalia Plant shall burn exclusively natural gas in their curing oven (EP-108).
- 5. Record Keeping and Reporting Requirements
  - A. Gardner Denver, Inc. Sedalia Plant shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include SDS for all materials used.
  - B. Gardner Denver, Inc. Sedalia Plant shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

#### REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE SECTION (5) REVIEW Project Number: 2015-11-024 Installation ID Number: 159-0039 Permit Number:

Installation Address: Gardner Denver, Inc. – Sedalia Plant 305 North State Fair Boulevard Sedalia, MO 65301 Pettis County (S32, T46N, R21W) Parent Company: Gardner Denver, Inc. 222 East Erie Street Milwaukee, WI 53202

#### **REVIEW SUMMARY**

- Gardner Denver, Inc. Sedalia Plant has applied for authority to use alternative coatings in existing paint booths EP-27 & EP-28 and construct eight (8) new paint booths plus a curing oven.
- The application was deemed complete on November 30, 2015.
- HAP emissions are expected from the proposed equipment. HAPs of concern from this process include ethylbenzene, toluene, and xylene.
- 40 CFR Part 63, Subpart HHHHHH National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources and Subpart XXXXX – National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories apply to the facility.
- Paint booth filters are being used to control PM, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM, PM<sub>10</sub>, and PM<sub>2.5</sub> are conditioned below de minimis levels.
- This installation is located in Pettis 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.
- Emissions testing is not required for the equipment.
- Submittal of an amendment to your Basic Operating Permit is required within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

## INSTALLATION DESCRIPTION

Gardner Denver, Inc. – Sedalia Plant is a facility dedicated to the manufacturing of industrial air compressors and blowers. The main products include rotary screw air compressors, rotary impeller blowers, vacuum pumps, and reciprocating air compressors.

The primary raw material is steel casting from external foundries. This facility processes and machines the metal components used in the compressors and blowers using lathes, mills, and grinders. The precision machined components are then assembled into finished compressor and blower products. Finally, these products are tested, painted, and shipped to various locations, both domestic and international.

Gardner Denver, Inc. – Sedalia Plant currently operates under a basic operating permit (Project Number 2013-06-045) and is considered a de minimis source for construction permitting. The following New Source Review permits have been issued to Gardner Denver, Inc. – Sedalia Plant from the Air Pollution Control Program:

Table 1: Permit History

Permit Number	Description			
092013-001	Two burn-off ovens, a dry ice abrasive blasting booth, and a metal thermal spray booth			

#### PROJECT DESCRIPTION

Gardner Denver, Inc. – Sedalia Plant is proposing to use alternative coatings in existing paint booths EP-27 & EP-28 and construct eight (8) new paint booths plus a curing oven. The new coatings will have a higher VOC content than the existing paints used in EP-27 & EP-28, which currently require a long dry time, causing quality defects. EP-27 has the ability to coat up to 82,152 blower units per year, with each unit requiring approximately 0.031 gallons of paint. The coating with the highest VOC content has 4.24 pounds per gallon. EP-28 has the ability to coat up to 20,462 finished compressor units per year (18,182 compressors and 2,280 locomotive compressors per year). Each compressor requires approximately 0.205 gallons of paint, having a maximum VOC content of 3.14 pounds per gallon, and each locomotive compressor requires approximately 0.956 gallons of paint, having a maximum VOC content of 3.04 pounds per gallon.

The maximum design rate of the spray coating process is currently bottlenecked by the machining and assembly steps. Neither the use of alternative coatings nor the addition of any new equipment listed in this project will debottleneck any part of the process on an annual basis.

Gardner Denver, Inc. – Sedalia Plant plans to install four (4) new paint booths in the blower manufacturing process. EP-103 will be used to coat the 2 through 5 blower units. This line can produce up to 35,050 finished units per year. EP-104 will be used to coat mobile blower units. This line can produce up to 24,052 finished units per year. EP-105 will be used to coat the 6 through 8 blower units. This line can produce up to 19,366 finished units per year. EP-106 will be used to coat remanufactured blower units. This line can produce up to 3,684 finished units per year. As the four (4) new booths are installed and become operational, they will begin coating blower units, and the number of units coated in EP-27 will gradually be reduced until it is decommissioned.

Gardner Denver, Inc. – Sedalia Plant plans to install three (3) new paint booths in the compressor manufacturing process. EP-100 will be used to coat air compressor units 100 horsepower and above. This line can produce up to 7,973 finished units per year. EP-101 will be used to coat air compressor units less than 100 horsepower. This line can produce up to 10,209 finished units per year. EP-102 will be used to coat locomotive air compressor units. This line can produce up to 2,280 finished units per year. As these three (3) new booths are installed and become operational, they will begin coating compressor units, and the number of units coated in EP-28 will gradually be reduced until it is decommissioned.

Gardner Denver, Inc. – Sedalia Plant also plans to install one (1) other new paint booth, which will be used to Teflon coat rotors, cylinders, and head plates. EP-107 can produce up to 10,904 finished units per year, with each unit requiring approximately 0.015 gallons of coating, having a maximum VOC content of 6.86 pounds per gallon. This process line will include a 1.2 MMBtu/hr natural gas fired curing oven (EP-108). The following table provides a summary of all emission points affected by this project:

Emission Point	Description	Maximum Design Rate (units per year)	Status	
EP-27	Blower Paint Booth	82,152	Existing*	
EP-28	Compressor Paint Booth	20,462	Existing*	
EP-100	≥100hp Compressor Paint Booth	7,973	New (Replacement)	
EP-101	<100hp Compressor Paint Booth	10,209	New (Replacement)	
EP-102	Locomotive Compressor Paint Booth	2,280	New (Replacement)	
EP-103	2-5 Blower Paint Booth	35,050	New (Replacement)	
EP-104	Mobile Blower Paint Booth	24,052	New (Replacement)	
EP-105	6-8 Blower Paint Booth	19,366	New (Replacement)	
EP-106	Remanufactured Blower Paint Booth	3,684	New (Replacement)	
EP-107	Teflon Paint Booth	10,904	New	
EP-108	Curing Oven	10,904	New	

Table 2. Summary	y of Project	Emission	<b>Points</b>
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\*The two existing paint booths are to be replaced by the seven new blower/ compressor paint booths. All blower/ compressor spray coating will remain bottlenecked at the current maximum design rate.

#### EMISSIONS/CONTROLS EVALUATION

VOC and HAP emissions from spray coating were calculated using a mass balance approach. The maximum volatile percentage and HAP percentage of each of the spray components were multiplied by their respective densities and the maximum design rate of the process to obtain a maximum VOC/ HAP usage rate. It was assumed that the individual spray components which resulted in the highest overall emissions were exclusively used to coat the units in their respective booths. It was assumed that 100% of all VOCs and volatile HAPs are emitted.

Because EP-100 through EP-106 are gradually replacing EP-27 & EP-28, there may be a time when some of the blower/ compressor units are coated in the new booths and some are still coated in the old booths. The machining and assembly steps will still act as a bottleneck for all blower/ compressor spray coating, so the same total number of units can be painted in all the booths; however, due to differences in spray coating constituents used in the existing booths versus the new booths, the emission rates of some pollutants may change. Potential emissions from EP-27 & EP-28 are expected to be less than de minimis levels for VOCs and HAPs. Potential emissions from EP-100 through EP-106 (plus EP-107 & EP-108) are also expected to be less than de minimis levels for VOCs and HAPs. Therefore, it can be safely assumed that coating the same total number of blower/ compressor units in any combination of new and old paint booths will not cause an exceedance of the de minimis levels for VOCs or HAPs.

Particulate emissions from spray coating were also calculated using a mass balance approach. The highest theoretical solids content of each spray component was multiplied by its respective density, a solids transfer efficiency of 50% for the spray guns, and the maximum design rate of the process. It was assumed that the individual spray components which resulted in the highest overall emissions were exclusively used to coat the units in their respective booths. It was assumed that all particulate matter is PM<sub>2.5</sub>. All spray coating operations in this permit (EP-27, EP-28 & EP-100 through EP-107) will be enclosed in booths equipped with exhaust fans, rated with a capture efficiency of 95% and equipped with paint booth filters, rated with a control efficiency of 99%.

Potential emissions from the 1.2 MMBtu/hr natural gas fired curing oven (EP-108) were calculated using emission factors obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition, Section 1.4 *Natural Gas Combustion* (July 1998).

The following table provides an emissions summary for this project. Existing potential emissions were taken from the previous construction permit (092013-001). Existing actual emissions were taken from the installation's 2014 EIQ. Conditioned potential emissions of the application represent the potential of the new equipment at the end result of this project (EP-100 through EP-108), assuming continuous operation (8,760 hours per year) at the maximum design rate and considering control devices.

Pollutant	Regulatory <i>De Minimis</i> Levels / SMAL	Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Conditioned Potential Emissions of the Application	New Installation Conditioned Potential
PM	25.0	N/D	N/D	0.98	N/D
PM <sub>10</sub>	15.0	N/D	0.23	0.98	N/D
PM <sub>2.5</sub>	10.0	N/D	0.23	0.98	N/D
SO <sub>x</sub>	40.0	0.055	N/D	N/A	0.055
NO <sub>x</sub>	40.0	9.05	0.06	0.52	9.57
VOC	40.0	56.57	7.45	15.20	71.77
CO	100.0	7.60	0.05	0.43	8.03
Chromium (VI)	10.0 / 0.002	<0.002	N/D	N/A	<0.002
Chromium Compounds	10.0 / 5.0	0.117	N/D	N/A	0.117
Cobalt Compounds	10.0 / 0.1	0.003	N/D	N/A	0.003
Ethylbenzene	10.0 / 10	N/A	N/D	2.37	2.37
Toluene	10.0 / 10	N/A	N/D	0.22	0.22
Xylene	10.0 / 10	N/A	N/D	9.73	9.73
Total HAPs	25.0	1.11	N/D	12.08	13.19

Table 3: Emissions Summary (tons per year)

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

## 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 PM,  $PM_{10}$ , and  $PM_{2.5}$  are conditioned below de minimis levels.

### APPLICABLE REQUIREMENTS

Gardner Denver, Inc. – Sedalia Plant 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
  - Per 10 CSR 10-6.110(4)(B)2.B(II) and (4)(B)2.C(II) a full EIQ is required for the first full calendar year the equipment (or modifications) approved by this permit are in operation.
- 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

#### SPECIFIC REQUIREMENTS

- Restriction of Particulate Matter Emissions From Fuel Burning Equipment Used for Indirect Heating, 10 CSR 10-6.405
- Maximum Achievable Control Technology Regulations, 10 CSR 10-6.075
  - 40 CFR Part 63, Subpart HHHHHH National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources
  - 40 CFR Part 63, Subpart XXXXX National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories

### 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*, it is recommended that this permit be granted with special conditions.

#### PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

• The Application for Authority to Construct form, dated November 6, 2015, received November 10, 2015, designating Gardner Denver, Inc. as the owner and operator of the installation.

# **APPENDIX A**

#### **Abbreviations and Acronyms**

% ..... percent °F ..... degrees Fahrenheit acfm ...... actual cubic feet per minute **BACT** ..... Best Available Control Technology **BMPs** ..... Best Management Practices Btu..... British thermal unit CAM ...... Compliance Assurance Monitoring CAS...... Chemical Abstracts Service **CEMS**..... Continuous Emission Monitor System CFR ...... Code of Federal Regulations CO ..... carbon monoxide CO<sub>2</sub>..... carbon dioxide CO2e..... carbon dioxide equivalent COMS..... Continuous Opacity Monitoring System CSR...... Code of State Regulations dscf ...... dry standard cubic feet EIQ ...... Emission Inventory Questionnaire **EP**..... Emission Point EPA ...... Environmental Protection Agency EU..... Emission Unit fps ..... feet per second ft ..... feet GACT ..... Generally Available Control Technology GHG ...... Greenhouse Gas gpm...... gallons per minute gr..... grains GWP...... Global Warming Potential HAP...... Hazardous Air Pollutant hr ..... hour hp ..... horsepower Ib ..... pound lbs/hr..... pounds per hour **MACT** ..... Maximum Achievable Control Technology µg/m<sup>3</sup>..... micrograms per cubic meter

m/s ..... meters per second Mgal ...... 1,000 gallons MW ..... megawatt MHDR ..... maximum hourly design rate MMBtu.... Million British thermal units **MMCF**..... million cubic feet MSDS ..... Material Safety Data Sheet NAAQS... National Ambient Air Quality Standards **NESHAPs** National Emissions Standards for Hazardous Air Pollutants NO<sub>x</sub>..... nitrogen oxides **NSPS**..... New Source Performance Standards NSR ...... New Source Review PM ..... particulate matter PM<sub>2.5</sub>..... particulate matter less than 2.5 microns in aerodynamic diameter PM<sub>10</sub>..... particulate matter less than 10 microns in aerodynamic diameter **ppm**..... parts per million **PSD**..... Prevention of Significant Deterioration PTE..... potential to emit **RACT**..... Reasonable Available Control Technology RAL ...... Risk Assessment Level SCC ...... Source Classification Code scfm ...... standard cubic feet per minute SDS ...... Safety Data Sheet SIC...... Standard Industrial Classification **SIP**...... State Implementation Plan **SMAL** ..... Screening Model Action Levels SO<sub>x</sub> ..... sulfur oxides SO<sub>2</sub>..... sulfur dioxide tph ..... tons per hour tpy ..... tons per year VMT ...... vehicle miles traveled **VOC**...... Volatile Organic Compound

Mr. Stephen McClure Environmental & Safety Director Gardner Denver, Inc. – Sedalia Plant 1800 Gardner Expressway Quincy, IL 62305

RE: New Source Review Permit - Project Number: 2015-11-024

Dear Mr. McClure:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 Administrative Hearing Commission, Truman State Office Building, Jefferson City, Missouri 65102,: www.oa.mo.gov/ahc. If you have questions regarding this permit contact Ryan Schott, at the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp New Source Review Unit Chief

SH:rsl

Enclosures

c: Kansas City Regional Office PAMS File: 2015-11-024 Permit Number: