

# Flue Gas Desulfurization

FORCED OXIDATION AIR BLOWERS



# Gardner Denver Solutions

FOR WET FLUE GAS DESULFURIZATION

## A Long History of Service to the Power Industry

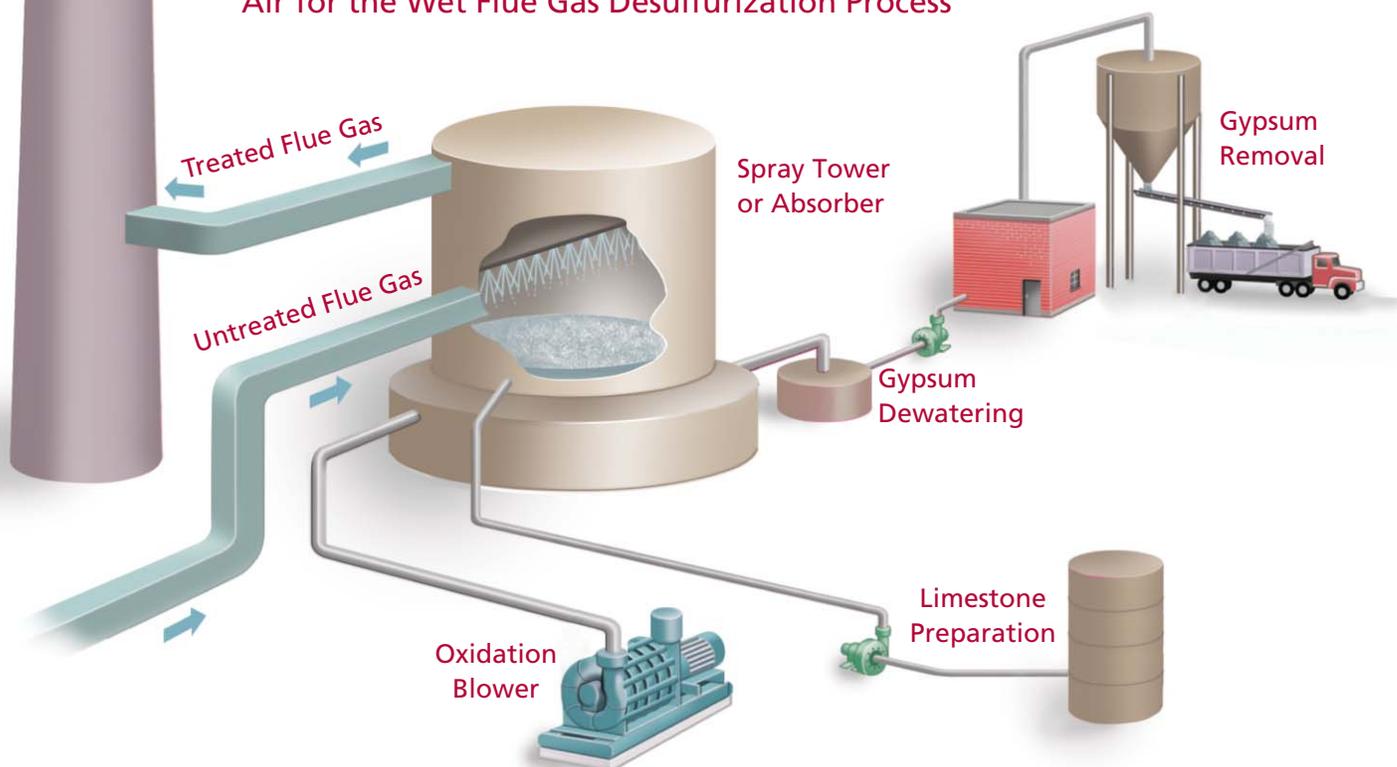
Gardner Denver has a long history of providing durable and cost-effective products to the Power Generation industry. Gardner Denver's powerful compressors provide pneumatic power along with Gardner Denver Nash liquid ring pumps used in condenser "hogging", turbine gland exhausting and vacuum deaeration. In addition, our Beliss & Morcom compressors cool generators, and Gardner Denver positive displacement blowers provide air for water box priming.

In the 1970's and 1980's, high-speed single stage blowers were the logical choice for flue gas desulfurization, but the two largest manufacturers of multistage centrifugal blowers, Lamson and Hoffman, began producing larger and larger blowers in those decades. By the early 1990's, these blowers began appearing where high-speed single stage blowers once dominated. In 1996,

Gardner Denver acquired Lamson and five years later, Hoffman. Today, Gardner Denver is clearly the leading manufacturer of multistage centrifugal blowers in the world.

Of the many processes used to remove sulfur dioxide from flue gas, many introduce air to accelerate oxidation in the spray tower or absorber. Over the last fifteen years, Gardner Denver's Lamson and Hoffman blowers have gained market acceptance in providing dependable air for this oxidation process. The initial expense is far less, and they are less complicated to operate, more reliable and require far less maintenance. Since most oxidation blowers are run at 100% capacity, the efficiencies of multistage and high-speed single stage blowers are comparable. Downtime is not an option in the power industry, making Gardner Denver's multistage centrifugals the logical choice.

## Hoffman & Lamson Multistage Centrifugal Blowers Provide Air for the Wet Flue Gas Desulfurization Process



# Multistage Centrifugal Blowers for Your Application

## Low Speed Operation

Less downtime than single stage units

## Simplicity

- Anti-friction bearings require no complicated lubrication system
- No gearbox required between motor and blower
- Fewer components mean maintenance savings
- Low Noise Compared to
- High Speed Units



## The Most Efficient Blower for Your FGD Application

Although Gardner Denver has the largest multistage centrifugal blower selection in the world with 22 models, the three largest are the primary ones used in Flue Gas Desulfurization projects. The multiple stages and impellers available allow our engineers to design the most efficient blower to meet your pressure and airflow requirements. Our blowers are tested and evaluated in our state-of-the-art facility for performance characteristics, noise level and vibration in accordance with ASME test code PTC-10, ISO and other international standards. Controls can be added to protect your blower by monitoring bearing temperature, vibration and surge, as well as to seamlessly integrate the blower's performance into your distributed control system. All models are equipped with Multiple Baffle Rings, which increase blower efficiency by reducing inlet passage losses. In addition, balance pistons compensate for the axial forces of the impellers on the inlet bearings, resulting in longer bearing life.

## Gardner Denver Performance Specifications @ 60HZ - 3550 RPM

MODEL	1870	2000	2400
<b>Blower Capacity</b>			
Maximum airflow (cfm)	15,000	24,000	41,000
Maximum airflow (m3/h)	25,500	40,800	68,000
Minimum airflow (cfm)	3,000	5,000	10,000
Minimum airflow (m3/h)	5,100	8,500	17,000
Maximum pressure (psig)	19	19	22
Maximum pressure (bar)	1.31	1.31	1.52
<b>Maximum Stages</b>			
<b>Design Benefits</b>			
Multiple baffle ring	Std.	Std.	Std.
Balance piston	Std.	Std.	Std.
Lubrication	Oil	Oil	Oil
Labyrinth seal	Std.	Std.	Std.
<b>Connections</b>			
Inlet (125# ANSI drilled)	20"	20"	24"
Outlet (125# ANSI drilled)	18"	18"	20"

# Service Programs and Genuine Gardner Denver Parts and Lubricants



## Preventative Maintenance Agreement/Warranty Renewal Program

Gardner Denver is the only centrifugal blower manufacturer to offer a comprehensive preventative maintenance program. Our skilled factory technicians qualify your blower annually and issue a new factory warranty. In addition to maintaining or repairing your blower at your facility, our technicians are available for maintenance personnel training and advice on system optimization. This on-site service means less downtime, and the annual cost is usually less than the cost of one emergency visit.

## Genuine Gardner Denver Parts and Lubricants

Quality parts can only provide years of service if they are properly lubricated. Gardner Denver's AEON CF-46 Lubricating Oil is specially formulated for thermal stability and exceptional oxidation resistance to endure high blower temperatures and to protect against corrosion.



# Gardner Denver

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Specifications subject to change without notice.  Please recycle after use.

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