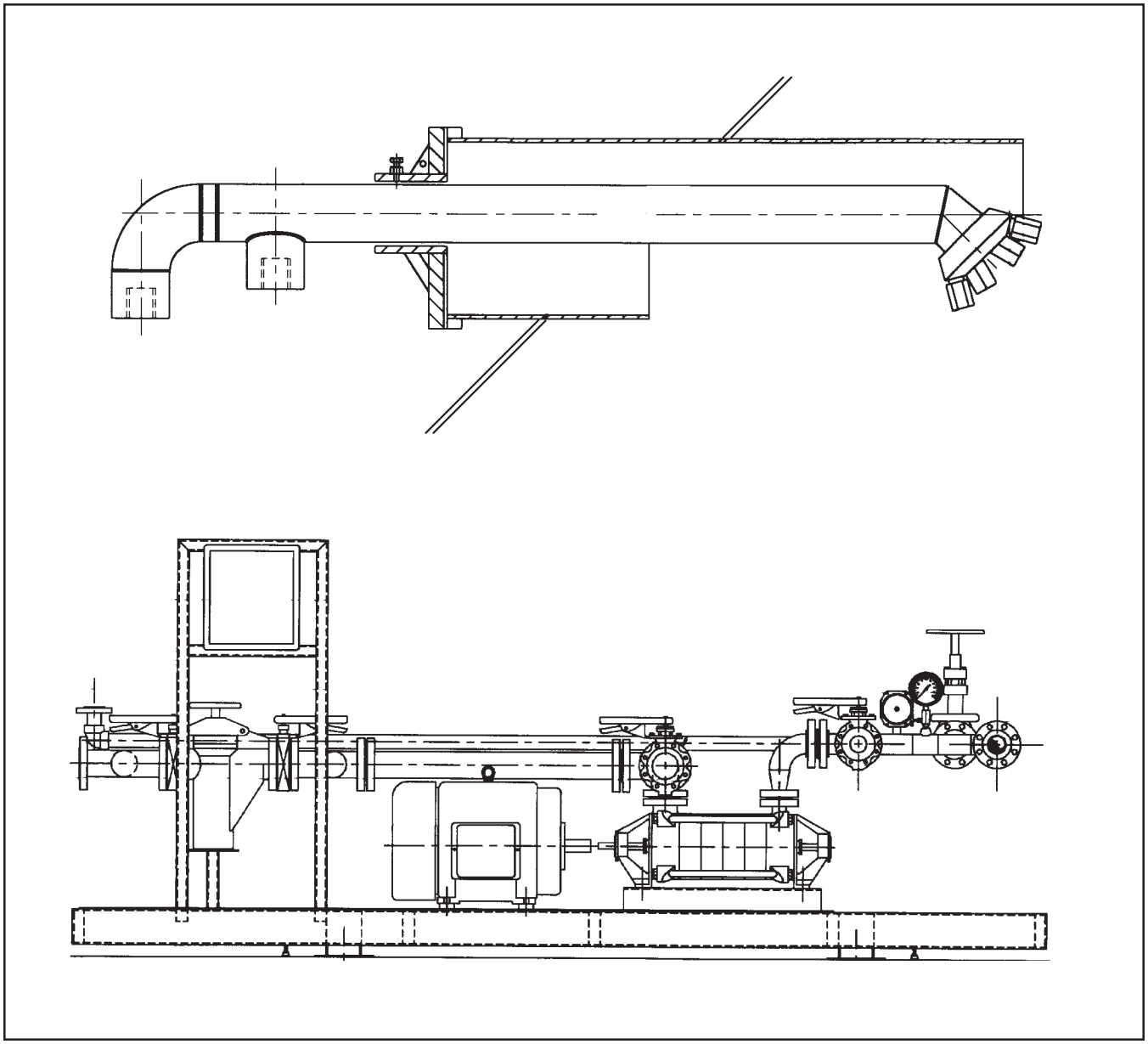
Lechler SpillBack Hydraulic Gas Conditioning System

A complete closed-loop gas conditioning lance and control system for maximum particulate removal efficiency



Lechler has been a pioneer in nozzles for gas cooling and conditioning technology, and now the circle is closed with the addition of a new pump and control skid. Using process information provided by temperature sensors, the system analyzes the data and strategically modulates the sprays to provide the optimum outlet temperature and humidity.

Effective gas conditioning helps particulate removal processes such as electrostatic precipitators or bag houses by controlling the gas temperature and reducing the gas volume. ESP's run more efficiently with proper humidity and bag houses can use inexpensive low temperature bags when gasses are cooled sufficiently. Existing towers and ducts can handle higher production levels with the reduced volumes that cooling bring.

It's all in the control

The best gas conditioning lance system won't do the job unless it is modulated properly to follow changes in temperature and operating levels.

- If the spray doesn't increase to compensate for rising production levels and temperatures, ESP efficiency goes down or you can burn the bags.

- If the spray doesn't decrease when kiln throughput is reduced, the duct walls can get wet and accumulate scale.

A responsive system follows changing production levels, startups, shutdowns and even upset conditions. You always get the right amount of cooling for the optimum temperature at the outlet.

How it all works

SpillBack nozzles are ideal for gas conditioning applications because they produce a consistent and predictable droplet spectrum over a broad range of operating levels. Using an internal bypass system, SpillBack lances can spray over a 10:1 flow range allowing just the right amount of cooling with total evaporation.

The pump and control skid draws water from the break tank and feeds the lances via a multi-stage centrifugal pump at about 500 psi. The control system constantly monitors the water levels and pressures through the system to ensure all operations are working as required.

When the water reaches the lances, it can either exit as spray through the orifice into the tower, or divert to the return line in the nozzle. The water that goes into the return line is controlled by an electronically actuated valve on the control skid. This is the heart of the system as it regulates the return line and therefore the spray out the nozzles. When additional cooling is required, it closes. When less cooling is required, it opens to allow more water to bypass where it returns to the break tank for recirculation.

The whole system is regulated by a PLC that makes all the functions operate and can provide data and alarms to your control room. Should the system go down, all process can run manually to make sure you don't lose any production time.

Each system is different

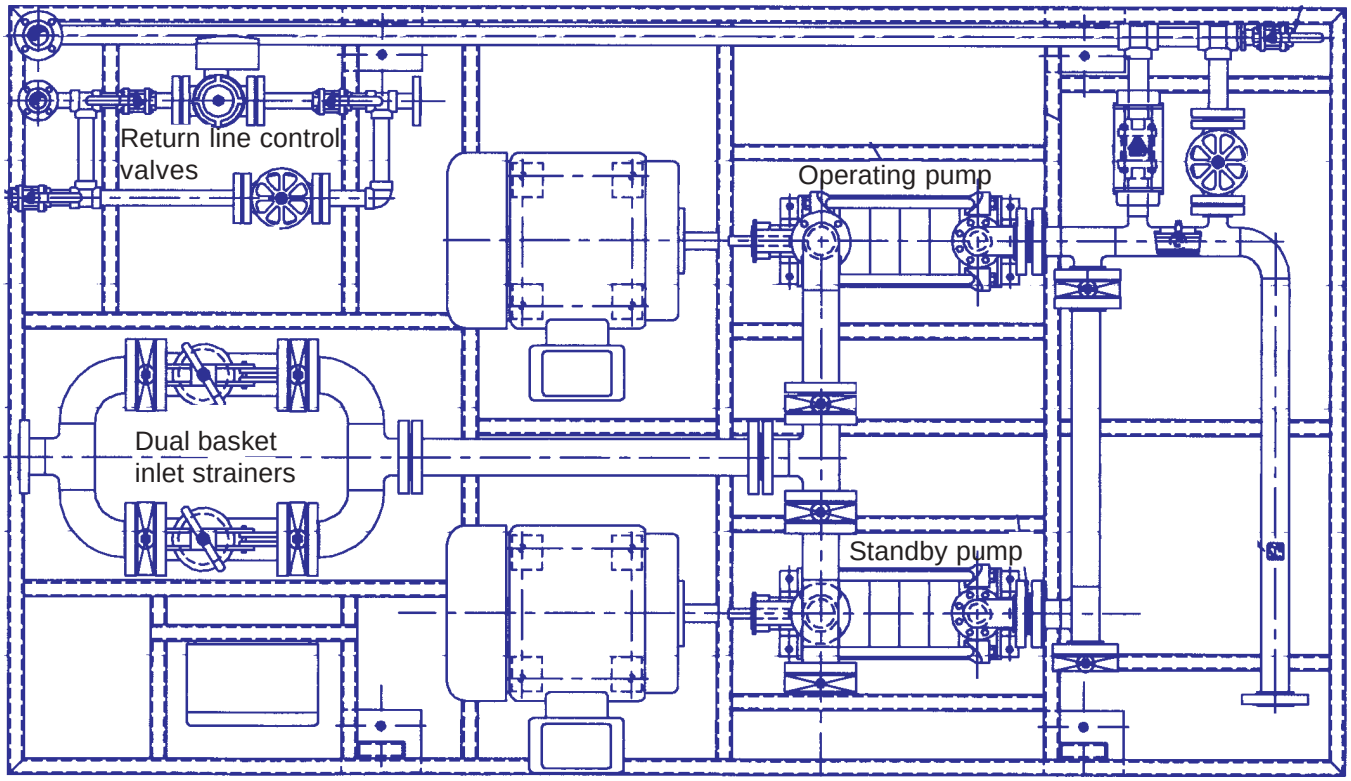
Since every plant and application is unique, each gas conditioning system is tailored specifically to the installation. We can analyze your specific requirements and make a recommendation with no cost or obligation.

In some cases where the temperature reduction is very high or there is little duct or tower space, a SpillBack system may not be able to do the job. In those cases Lechler offers air atomizing gas conditioning lances using SuperSonic nozzles. These produce finer droplets which can do the job in the severest cases or where space is at a premium. If this approach is the only alternative, we will make that recommendation.

Start with some information

The back page of this brochure asks a few questions about your specific installation. Spend a few minutes to fill it out and fax it back to us so we can begin the process. A little time now could save you operating costs and even help increase production levels. There's nothing to lose.

A typical SpillBack control skid



Features of Lechler's control skid

Lechler's SpillBack control skid has many features to ensure accurate, reliable performance with minimal maintenance.

- All water drawn into the system passes through strainers to remove any debris that could cause a clog. A sensor warns when the operating strainer is filling up and needs to be switched.
- Two pumps set up in parallel allow for quick change over when it's time for maintenance.
- When less water is needed at the lances, a high pressure bypass opens to keep the pump's output pressure in the most desirable range.
- The return line, which modulates the spray of the lances, is regulated by an electronically controlled valve with manual backup.
- The system sounds alarms for upset conditions:
  - Filled strainer restricting flow
  - Low water level in break tank
  - Excessive pressure at pump outlet
  - High pressure bypass open
  - Outlet temperature out of range
  - Control valve at end of range
- All processes run using interactive touch-screens for menu driven operations, system conditions and diagnostics.
- Any processes can run manually if required.
- All connections to your control room are designed to interface with your operating systems for seamless communications.
- Selections of major components such as the electric motors or even PLC can frequently be adapted to be compatible with operating practices within your plant environment.

Is a Lechler SpillBack gas conditioning system right for your facility and pollution control needs? You can begin making the right decision simply by picking up the phone. Call 1-800-777-2926 and ask for a member of the chemical processing team. Let us help you improve your air pollution control and cut operating costs.

Let us configure a system for you.
No cost, no obligation. Just send some data:

Company _____ Your name _____

Address _____ Title _____

City _____ Phone _____

State, Zip _____ Fax _____

Please describe your installation and process:

(Circle the appropriate unit of measure for each item)

Flow rate of gas: _____ Lb/hour M^3/minute

Vessel Pressure _____ PSI Bar

Gas Temp. Inlet _____ °F °C

Desired Temp. Outlet _____ °F °C

Vessel Dim., Diam x Length _____ Feet M

Cooling Length _____ Feet M

Direction of Gas Flow _____

Spray Direction Co-, Counter-, Cross-Current

We use a Baghouse E.S.P. built by _____

Fill in as much information as possible and fax it back to us at 1-800-444-7069. Or, call and tell us about your installation.

Call us at 1-800-777-2926, press 0 and ask for the Chemical Process Team!
Call today, there's no cost or obligation.

ISO 9001 Certified

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