

*Steam System and
Dryer Section Optimization
Services*

Improve your Efficiency!

Deublin, the proven leader in steam joint and siphon technology, now provides comprehensive services for steam systems and dryer section optimization.

Improve Dryer Section Efficiency and Your Bottom Line

The dryer section is the largest consumer of steam energy in a paper machine, typically accounting for 55% of the total machine energy cost. Consequently, the dryer section has the greatest influence on the economic viability of the entire process. An optimized steam and condensate system increases production capability and improves machine efficiency, leading to lower drying costs and increased profits.

Optimizing dryer performance and steam utilization offers the greatest potential for improving the bottom line.

Deublin now provides comprehensive services from equipment supply, system design and integration, installation, to diagnostics and troubleshooting. Deublin Steam Systems can help to pump new life into your paper operations – from the head box to the calender!



Take control of dryer section profitability. Let Deublin boost drying efficiency by upgrading the dryer section of your paper machine and optimizing your steam and condensate system.

Enhance your Productivity!

Dryer Section Improvement

Opportunity

Most older paper machines, and even many newer ones, have steam systems that can be optimized to eliminate steam loss and improve sheet quality.

- Eliminate Flooding
- Reduce High Differential Pressures
- Eliminate Steam Venting
- Eliminate Sheet Picking
- Maximize Siphon Reliability
- Maximize Seal Service Life
- Reduce High Motive Steam Usage
- Increase Drying Capacity
- Increase System Flexibility
- Improve Sheet Moisture Profile

Separators:

High efficiency separators remove condensate from the blow-through steam, minimizing condensate carryover. This eliminates erosion of system components and increases heat transfer.

Thermocompressor:

Correctly sized thermocompressors minimize motive steam usage and maintain the differential pressure set point under all machine operating conditions.

Turbulence Bars:

Turbulence bars disrupt rimming condensate to improve heat transfer and moisture profile. Deublin bars eliminate failures due to buckling, fretting and excessive wear.

Steam Joints and Siphons:

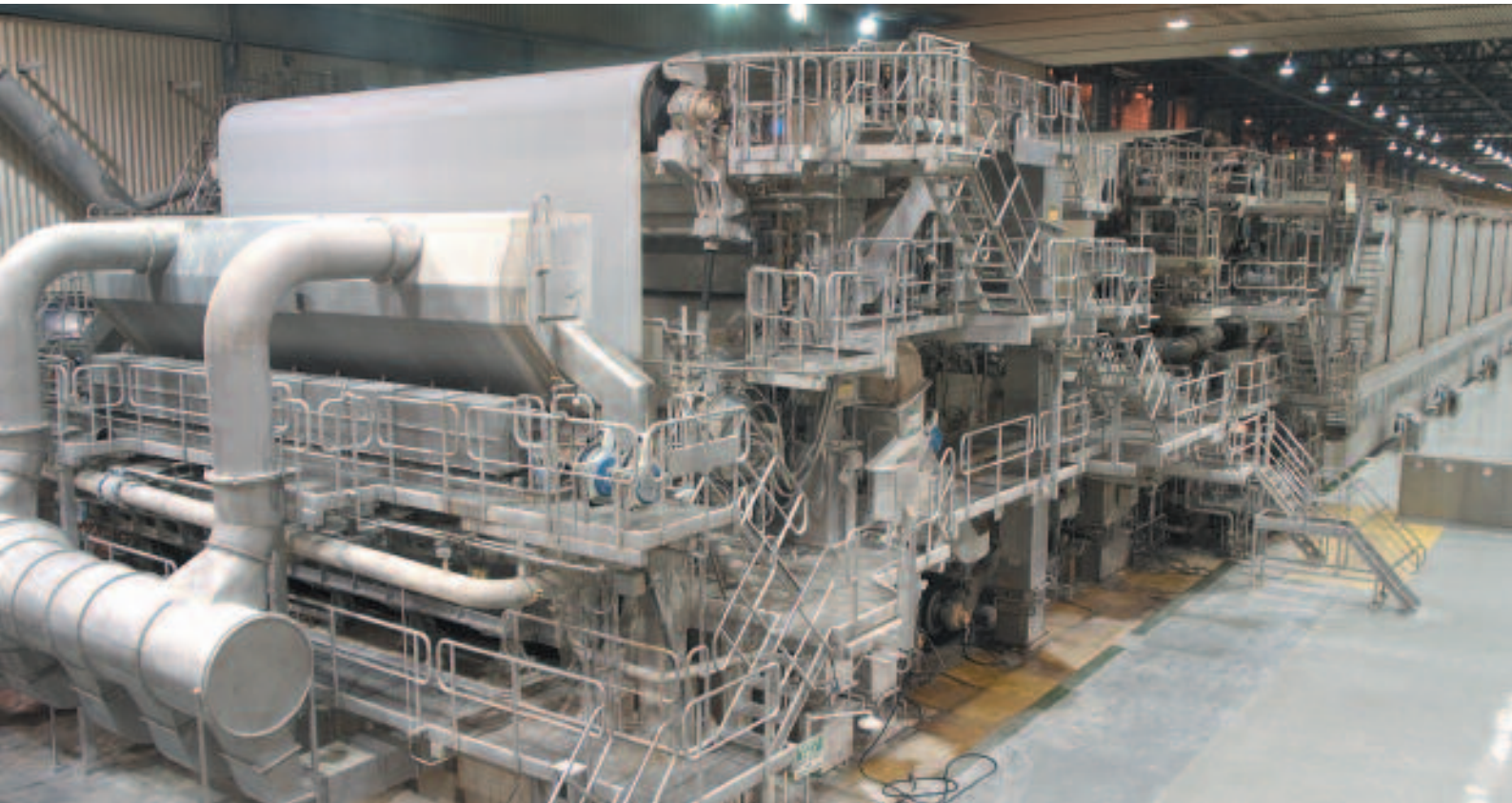
Whether stationary or rotating, Deublin siphons efficiently remove condensate from dryer cylinders under all machine operating conditions.



Your Single Source for Engineered and High-Performance Components

In addition to our advanced optimization services, Deublin also manufactures much of the equipment required for dryer optimization. Proven over many years of reliable performance, components are custom configured for your precise needs:

- *Thermocompressors*
- *Separators*
- *Valves*
- *Controls*
- *Steam joints*
- *Siphons*
- *Turbulence bars*
- *Hot oil joints for soft nip calenders*
- *Water unions for press rolls*
- *Large water unions for calender stacks*



Why Invest in Optimizing Your Existing Dryer section?

- ✓ *Operational improvements. Free your operators to make paper instead of dealing with steam system deficiencies.*
- ✓ *Cost reduction. Reduce requirements for energy-intensive steam by improving system efficiency and eliminating venting.*
- ✓ *Reduced downtime. Eliminate flooding, reduce the operational impact of sheet breaks, and improve mechanical reliability of equipment.*
- ✓ *Improve product quality and reduce sheet picking. Improve drying uniformity.*

Increase your Profitability!

Optimization Solutions for Steam Systems and Dryer Sections

Deublin optimization services offer the means to improve dryer performance.

First, we perform a complete system assessment of your dryer section to determine how your dryer system is designed, built and operates under a variety of conditions.

Then, we apply customer-specific optimizations, ranging from complete, new systems to minor rebuilds and supplemental components, as needed, to improve your process, energy efficiency, productivity and product quality.



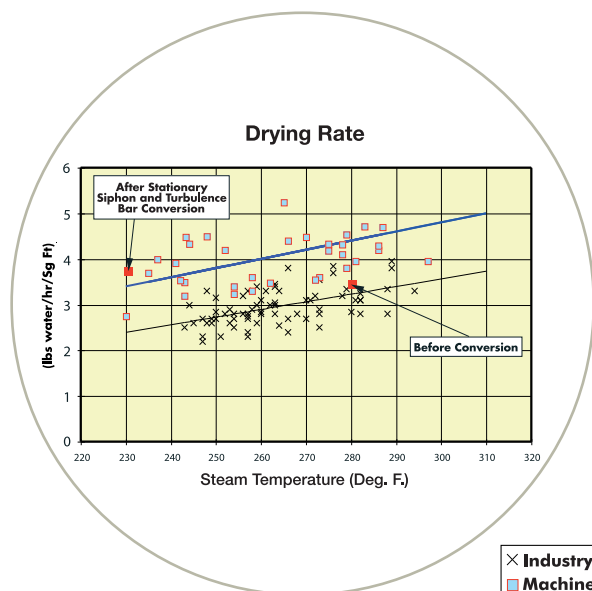
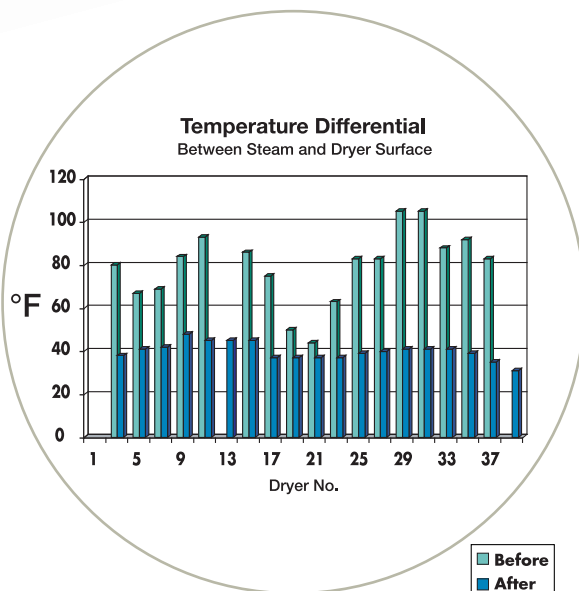
For example, saving a modest 10,000 lbs/hour of steam in leaks and venting will save over \$250,000 annually.

Based on the paper grade, raw material, steam supply constraints and operating speed, Deublin engineers can design and integrate both existing and new components to properly size piping and equipment to meet specific operating objectives.

Deublin Steam System dryer optimization services also include:

- Machine Audit
- System Design
- Installation and Integration
- Troubleshooting and Routine Service
- Diagnostics
- Report
- Equipment Supply
- Operator Training

Typical Performance Improvements of a Newsprint Paper Machine after Deublin services are as follows:



Deublin offers comprehensive on-site training, field service and installation services.



In addition, Deublin offers an annual dryer optimization seminar. Typically, the seminar attracts approximately 100 paper industry machine superintendents, operators, process and maintenance engineers covering all aspects of dryer optimization. Case studies are presented by Mill personnel with before and after data.



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