

Automated Lubrication Looks Good On Paper

The problem: Champion International Corporation's paper mill at Lufkin, TX, had too much unplanned downtime and lost production.

The plant's four massive paper machines churn out new product around the clock. Lufkin's maintenance crews kept everything running as efficiently as possible. They consistently followed an exact manual lubrication timetable for more than 100 critical bearings on each machine. But despite everyone's best efforts, problems persisted. "Grease breaks" on one machine and a couch roll bearing that failed regularly on another led to costly repairs and lost production. There were also safety concerns, because workers had to lubricate high-speed machines while they were operating.

The solution: Champion solved its problems with one automated product—custom-designed Lincoln Industrial Centro-Matic lubrication systems. "We've had significant savings with each of the Centro-Matic systems we've had installed," says Will Cox, Lufkin's Mechanical Supervisor.



TOM BERRY, WILL COX, GLENN COOK AND PAUL MACHAC WITH CHAMPION'S MILL IN LUFKIN, TX, STAND BY THE LINCOLN INDUSTRIAL CENTRO-MATIC® SYSTEM.

"We've had significant savings with each of the Centro-Matic® systems we've had installed."

"And the savings have been across the board—an increase in production, a decrease in maintenance costs, plus improved safety conditions. We've even seen savings from reduced lubricant use."

The bottom line: The Centro-Matic system that solved Lufkin's grease break problem paid for itself in just over a year. The Centro-Matic that's kept the troublesome couch roll bearing in perfect condition for over two years returned its investment in less than six months.



How grease breaks and downtime were tearing into Champion's paper production

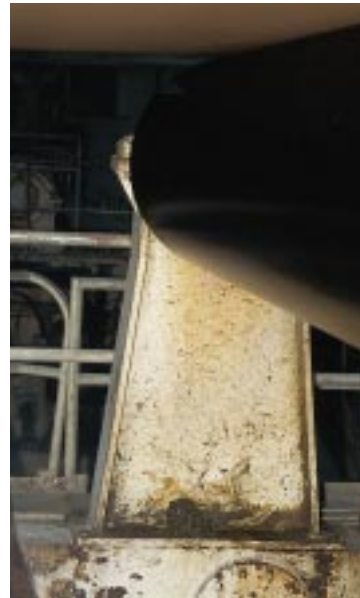
Champion's Lufkin mill produces approximately 1,300 tons of catalog paper, newsprint and recycled paper every day in an environment that's gritty and caustic. Operating temperatures exceed 120°F and a constant cloud of corrosive moisture rises from the wet-end of each machine. But with hundreds of millions of dollars invested in machinery, Champion can't afford to let harsh conditions lead to unplanned downtime—and a serious impact on production levels.

Before Centro-Matic, the plant's "oilers" manually lubricated hundreds of points on its four paper machines, greasing each bearing as often as three times a week. Because oilers worked in close quarters with machines making up to 4,000 feet of paper per minute, safety was also a concern. But Lufkin's immediate problems were grease breaks and a balky couch roll bearing.

Manual lubrication of high-speed machines leads inevitably to an ongoing cycle of under- and over-lubrication—and premature bearing wear in both cases. And because bearings squeeze out excess lubricant, it can fall onto paper as it's formed, causing



OVER LUBRICATION RESULTS IN EXCESS GREASE ESCAPING FROM THE BEARING. AFTER TIME, THIS GREASE CAN FALL ONTO THE PAPER MACHINE, CAUSING A "GREASE BREAK."



LINCOLN INDUSTRIAL'S CENTRO-MATIC® HANDLES THE PULP AND PAPER INDUSTRY'S DEMANDING ENVIRONMENT.



“Every time the bearing went out, it cost us thousands.”

“grease breaks.” The breaks not only mean lost production, they require workers to remove paper from machines while they’re running. Lufkin was expending considerable resources to correct a long-term grease break problem on the company’s nearly 60-year-old light-weight catalog paper machine.

Champion’s crew was also having a problem with the couch roll bearing on a newer machine.

“Every time the bearing went out,” says Maintenance Engineer Paul Machac, “it cost us thousands. Our options were to

completely redesign the couch roll or improve its grease lubrication method.”

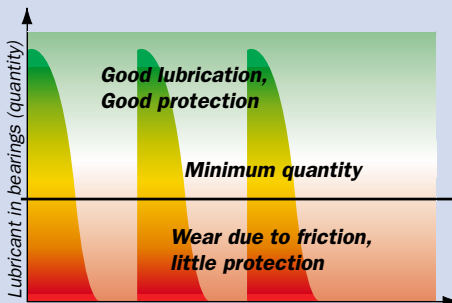
Machac, Cox and Champion Maintenance Superintendent Glenn Cook began looking at automated lubrication to solve their problems.



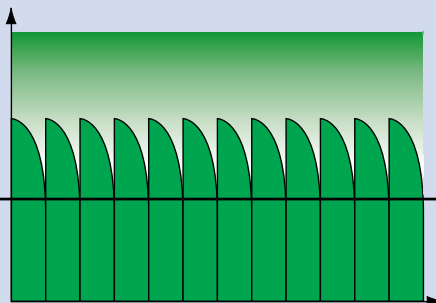
THE NUMBER ONE PAPER MACHINE HAS BEEN IN CONSTANT SERVICE AT THE LUFKIN MILL SINCE 1939—ALMOST 60 YEARS.

COMPARISON MANUAL/AUTOMATIC LUBRICATION

Manual Lubrication



Automatic Lubrication



Automatic centralized lubrication offers:

- Increased profits
- Longer maintenance intervals
- Lower repair/spare part costs
- Improved operating/readiness times
- Decreased lubricant consumption
- Significant contributions to the environment
- Positive lubrication

Teamwork leads to lubrication solutions

The solutions to Champion's lubrication problems involved more than the right system.

Solutions emerged from the value-added "team approach" Lincoln Industrial and its distributors believe in and practice.

"It's interesting how the whole thing came together," Machac observes. "Doug Bell of Applied

Energy (Lincoln's distributor to Champion) had been calling us for a long time. He was servicing the filtration system for the oil lubrication system on the dry end of our machines when he started working with us to come up with solutions for our wet-end problems."

Bell called in Ray Dolan, a Lincoln Industrial District Sales



Manager, to work on the team with Champion's people. "The Lincoln Industrial team helped us look at all of the options available to us," Paul says. "They truly became partners in the process, with the primary objective of finding how they could help Champion save money and increase productivity."

The clincher for Champion was seeing Matti Lopponen, Lincoln Industrial's Specialist for the Pulp and Paper Industry, give a presentation at a maintenance conference in Atlanta. "We knew then just how committed Lincoln Industrial was to working with our industry," Cook explains.

RAY DOLAN LENDS A HAND WITH INSPECTION.



"We knew then just how committed Lincoln Industrial was to working with the pulp and paper industry."

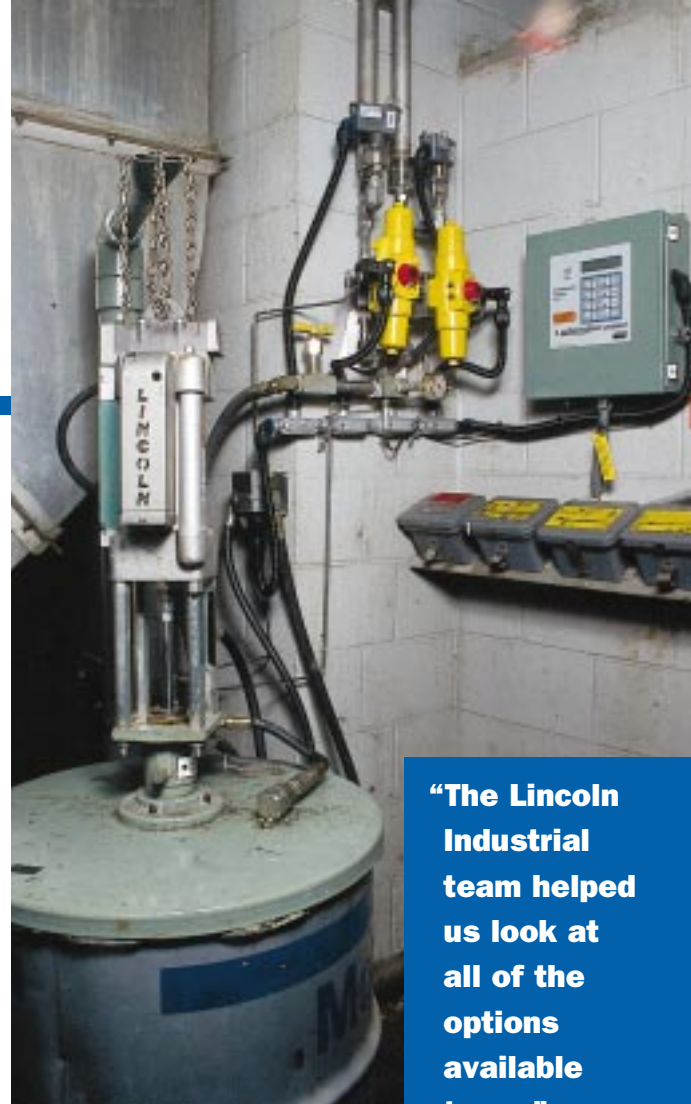
Custom designed Centro-Matic® systems are installed

Once Champion decided to try the Centro-Matic grease lubrication system, Lincoln's team helped set up an installation timetable for Lufkin. The priority was machine #1, the plant's oldest and most critical. "By installing Centro-Matic on number one," explains Cook, "we figured we could check it out, see its effects on grease breaks, and make a final determination on a schedule for the rest of the machines."

But #2's couch roll bearing became a much more pressing problem. "In terms of potential cost savings," says Machac, "we began looking at a system for number two. It's our fastest machine, nearly twice the speed of number one. So we decided to move on it, too."

Lincoln's experienced installers had no problem taking on the additional machine, installing both Centro-Matic systems in May, 1996. The system on

machine #1—a pumping station, controller, injectors and piping—lubricates each bearing once every hour. Machine #2 has a state-of-the-art System Sentry II controller servicing two zones, the couch roll bearing every 15 minutes and the machine's other bearings once each hour. After seeing Centro-Matic's performance on #1 and #2, Champion will complete installation of systems on machines #3 and #4 in 1998.



"The Lincoln Industrial team helped us look at all of the options available to us."

JUST A FEW OTHERS USING CENTRO-MATIC® AND OTHER LINCOLN INDUSTRIAL LUBRICATING SYSTEMS

- **KIMBERLY-CLARK**
- **MACMILLAN PACKAGING**
- **WILLAMETTE INDUSTRIES**
- **GEORGIA-PACIFIC**
- **FRASER PAPER**
- **FORT JAMES**
- **SOMERSET FIBER**
- **SONOCO PRODUCTS**
- **BEAR ISLAND PAPER**

- INTERNATIONAL:**
- **HAINDL PAPIER, GERMANY**
 - **SCA, SWEDEN**
 - **ENSO, FINLAND**
 - **BALAKHNA PULP & PAPERBOARD COMBINE, RUSSIA**
 - **ITC BHADRACHALAM, INDIA**
 - **GENTING SANYEN INDUSTRIAL, MALAYSIA**

MAIN LUBRICANT LINES
ARE EQUIPPED WITH QUICK
DISCONNECT FITTINGS TO
ALLOW FOR EASIER
MACHINE MAINTENANCE.

Eliminating grease breaks and reducing downtime

Champion is very satisfied with its Lincoln Industrial Centro-Matic® systems. There's less downtime now because the grease breaks that plagued machine #1 have been virtually eliminated. And #2's couch roll bearing continues to work smoothly. Before Centro-Matic, inspections of wet-end bearings found traces of water. There's no water present now because Centro-Matic's optimum-level lubrication keeps water and contaminants out.

"At Champion, the Lincoln Industrial Centro-Matic systems have already paid for themselves," notes Machac. "Based on how often we had to change the couch roll bearing before, the Centro-Matic system on machine number two paid for itself in less than six months. We've had substantial savings, dropping from the major costs we had each year to a couple of barrels of grease."



RAY DOLAN AND DOUG BELL LOOK OVER THE #2 COUCH ROLL BEARING AFTER INSPECTION.



“At Champion, the Centro-Matic® systems have already paid for themselves.”

After 18 months with no problems, the Champion people decided to inspect the couch roll bearing to check on Centro-Matic’s performance for themselves. “There was nothing wrong,” says Machac. “The bearing

was great! Properly lubricated, water-free, looking good. We just put the darned thing back together and it’s already been running another six months without incident.”



CENTRO-MATIC® INJECTORS CONTINUE TO OPERATE IN HARSH CONDITIONS.



TOM BARRY (LEFT), A STRONG SUPPORTER OF AUTOMATED LUBRICATION, RECEIVES A TRAINING REVIEW.

“We’ve had substantial savings, dropping from the major costs we had each year to a couple of barrels of grease.”

Just one more satisfied Lincoln Industrial customer

“Centro-Matic® never gets tired,” says Champion Maintenance Engineer Paul Machac. “If it’s hot, it doesn’t mind. If it’s cold, it doesn’t mind. If there’s water coming down everywhere, it doesn’t mind. Centro-Matic doesn’t get sick. It’s always on time. It’s always going to get the grease to the bearing. It’s the wave of the future. I’m convinced of it.”

Centro-Matic is the wave of the future because Lincoln Industrial has a long tradition of providing innovative lubrication solutions like the one detailed in the preceding pages. It’s a tradition that not only helps the pulp and paper industry, but many more, including:

- construction
- steel
- cement
- chemical
- glass
- trucking
- agriculture
- utilities
- mining
- food and beverage
- auto manufacturing



CHAMPION PERSONNEL INSTALLED SYSTEMS FOR MACHINES #3 AND #4 IN 1998.

Lincoln Industrial’s lubrication solutions range from general lubrication equipment to a complete line of automated systems (Centro-Matic®, Helios®, Duo-Matic™, Modular Lube®, Quicklub®), from pumps (PileDriver® III, PowerMaster® III) that can handle the toughest applications to precision oil lubrication systems (ORSCO)—and more. In fact, many OEMs insist on building Lincoln Industrial systems into their products at the factory. Lincoln Industrial backs everything with a

CHAMPION IS CONSIDERING ADDITIONAL LINCOLN INDUSTRIAL APPLICATIONS AT LUFKIN, INCLUDING VEHICLE AND MACHINERY SYSTEMS FOR THE PLANT’S WOOD YARD AND PULP AREA.

After this publication was produced, the Lufkin mill was acquired by Donohue Industries, Inc.

strong commitment to R&D, ISO 9001-manufacturing, and an industry-leading global network of distributors.

From the first free audit, when Lincoln Industrial shows customers how to save money with improved lubrication practices, to creating a team that custom-designs the right system

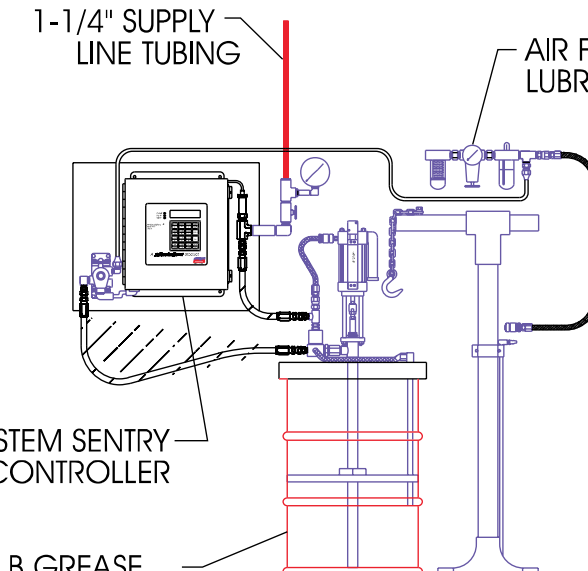
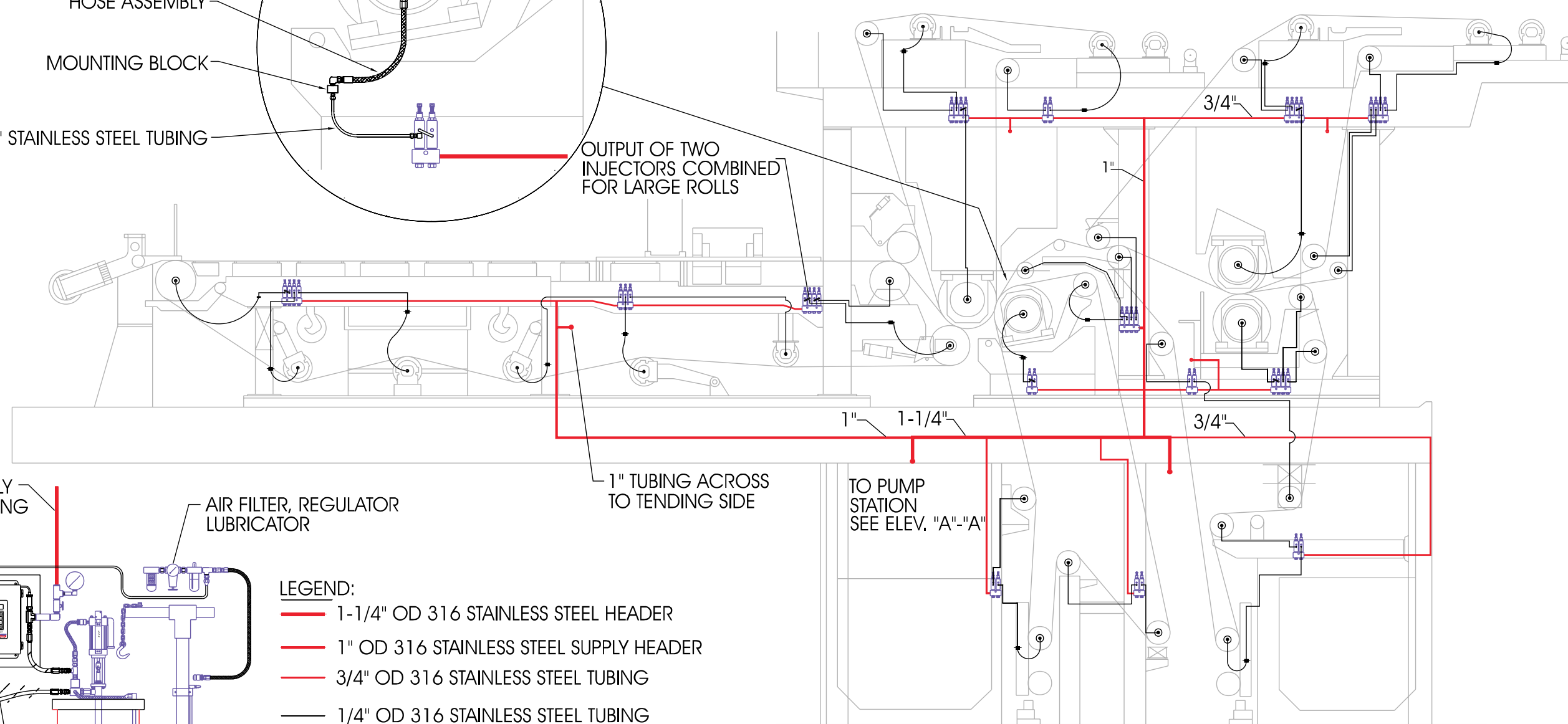
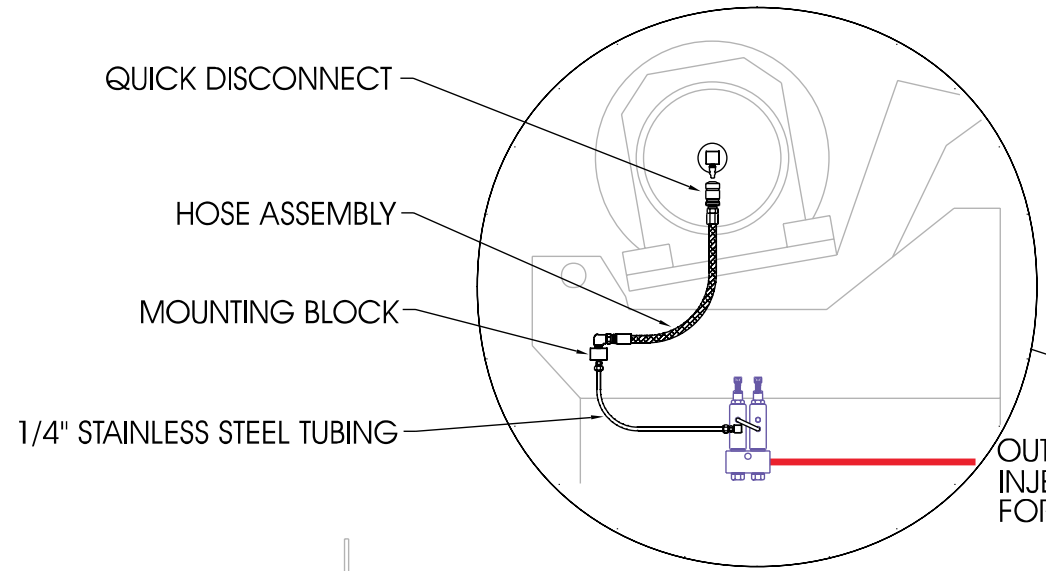
(and trains maintenance personnel in its proper care), Lincoln Industrial creates one thing—satisfied customers.

Concepts
is a magazine for
Lincoln Industrial customers

**Please Direct Ideas,
Comments or Questions
to:**

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TYPICAL APPLICATION OF A LINCOLN INDUSTRIAL CENTRO-MATIC® AUTOMATED LUBRICATION SYSTEM ON THE WET END OF A FOURDRINIER PAPER MACHINE



- LEGEND:**
- 1-1/4" OD 316 STAINLESS STEEL HEADER
 - 1" OD 316 STAINLESS STEEL SUPPLY HEADER
 - 3/4" OD 316 STAINLESS STEEL TUBING
 - 1/4" OD 316 STAINLESS STEEL TUBING
 - ~ HOSE (LENGTHS OF HOSES MUST BE MEASURED AND CUT TO LENGTH AT MILL SITE)
 - MOUNTING BLOCK

DESIGNED BY	DATE
DRAWN BY RLB	DATE 07-08-98
CHECKED BY	DATE
APPROVED BY	DATE

NO	DATE	REVISION	BY	CHK	APPR



TITLE LINCOLN INDUSTRIAL CENTRO-MATIC LUBRICATION SYSTEM ON FOURDRINIER AND PRESS SECTION DRIVE SIDE		
LINCOLN JOB NO	CUSTOMER JOB NO	
SCALE	SHEET OF	REV
FILE	DWG NO	