

Premium Lubrication SOLUTIONS for Printing Industries



The Ultimate Lubricant

www.magnagroup.com

OPL 040 - English Version



About ITW

ITW (NYSE:ITW) is a Fortune 200 global multi-industrial manufacturing leader. The company's seven industry-leading segments leverage the unique ITW Business Model to drive solid growth with best-in-class margins and returns in markets where highly innovative, customer-focused solutions are required. ITW has nearly 50,000 dedicated colleagues in operations around the world who thrive in the company's unique decentralized and entrepreneurial culture. To learn more about the company and the ITW Business Model, visit www.itw.com.

To offer the best service to each market segment, ITW PP & F Korea Limited operates the following divisions that are branded uniquely for the most prominent recognition by users and customers:



OMEGA Ultimate Lubricants
Specializing in lubrication solutions - greases, oils and additives



MAGNA Welding Alloys
Specializing in gas and arc welding consumables for maintenance



CORIUM Industrial Chemicals
Specializing in industrial & commercial chemicals and adhesives



ZETALUBE Lubricants
A new lubricity dimension evolved from experience

We supply superior products that make maintenance:

- Faster
- Safer
- More reliable

Our products are engineered to:

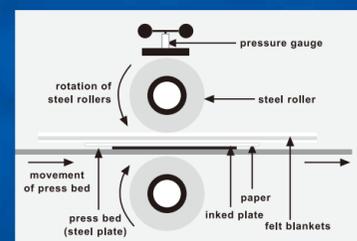
- Lower costs
- Reduce downtime
- Cut wastage



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The information contained in this publication supersedes all relevant information previously released and is to the best of our knowledge and accurate at the time of issue on June, 2016.

A basic program of press preventive maintenance should include:

■ **Lubricating the press.** The manual provided by the manufacturer normally explains all of the lubrication points that can be found on the machine. However, it is still advisable to thoroughly inspect the press for points that were or may have been overlooked in the manufacturer's manual. Omega Ultimate Lubricants offers a full range of high performance lubricants to service your every lubrication need.



■ **Cleaning the press is extremely important.** This means cleaning the press inside and out such as blankets, ink rollers, water system and interior unit framework. The delivery system, lead in/pipe rollers, unit exterior, folder, tension system and upper structure should also be kept clean as well. The cleaning not only keeps the print quality high; it also exposes defective and worn out components. The area around the press should be kept clean in order to improve safety near the machine. Corium Industrial Chemicals (another proud division of Magna Industrial) develops a series of powerful and safe specialty cleaning chemicals for the most efficient and cost-effective cleaning tasks.

■ **Ensuring that all settings or adjustments are to specification:** items include roller settings, impression settings or printing pressures, plate lockup assemblies, tension controls, side-lays, circumferential controls and folder adjustments.

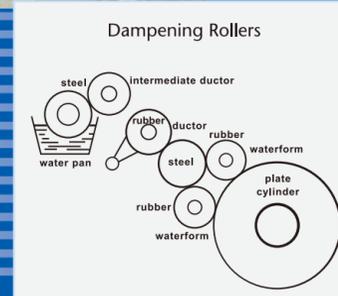
■ **Checking for loose or worn parts.** The machine should be checked on a regular basis for any component that may have discoloration, damage or wear.

■ **Monitoring the condition of the press** for heat, vibration, ink pressure, water pressure, air pressure and power consumption. Deadlines are very important and to many newspapers critical to their survival. Monitoring the condition of the machine and the materials supplied will reduce unexpected down time.

■ **Documentation is critical** in establishing and maintaining a good preventive maintenance program. Maintenance logs, maintenance check lists, and standard operating procedures must be used in order to maintain and improve the quality of the maintenance program. The documentation will also improve the communication between those doing the maintenance and those that need the work done.

■ **Maintenance logs** can be broken down into several areas such as unit logs, folder logs, blanket logs, roller logs, spray bar logs, ink rail logs and etc., so that component failure and material consumption can be tracked. Simply use a computer spreadsheet to make your life easier.

The preventive maintenance program will never work properly without a good preventive maintenance schedule. The preventive maintenance schedule should be broken into time periods that will keep the press in top printing condition.



At ITW PP & F Korea Limited we are fully committed to a proactive approach to safety, health, environment and product improvement. Our commitment is well reflected in:

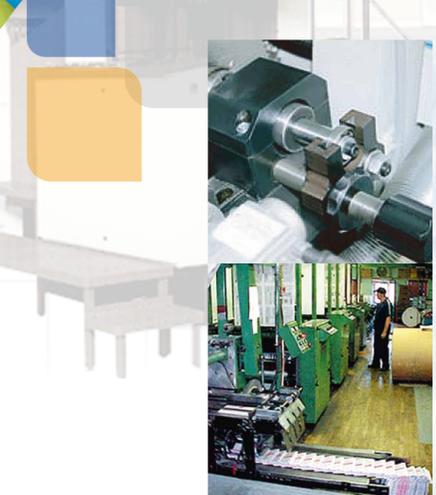
- Our continuous Research and Developments
- Our on-going in-house Training and our in-house Training Facilities
- Our comprehensive range of Quality Products
- Our many long-term Repeat Customers



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SOLUTIONS

for Printing Industries



Preventive maintenance in the printing industry, even though concerning critical assets worth over millions, is often overlooked or not taken as seriously as it should be.

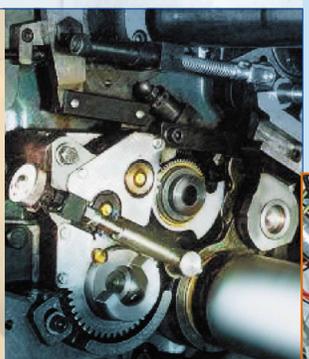
There may be pressrooms with glazed rollers that have durometer readings higher than 60 Shore hardness. In other pressrooms rollers are set and blankets are changed only when increasing the ink or water doesn't help any more.

Even with more convenient lubrication points provided by newer models of presses, technicians may still overlook the need to top up or oil change. Without a proper maintenance policy and schedule, the performance of presses would merely dependent on chance.

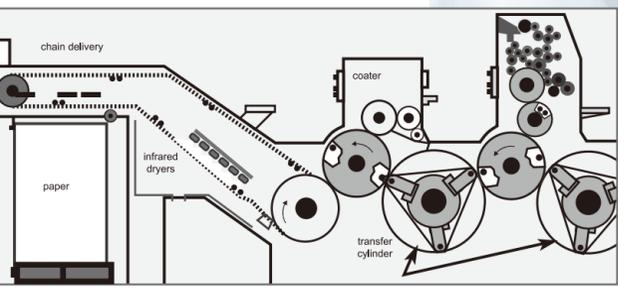
The cost of performing preventive maintenance can be significant but it can be recovered in reduced downtime, improved print quality and print waste savings.

However, it is worth the cost and time spent on preventive maintenance as far as the following proven benefits are concerned:

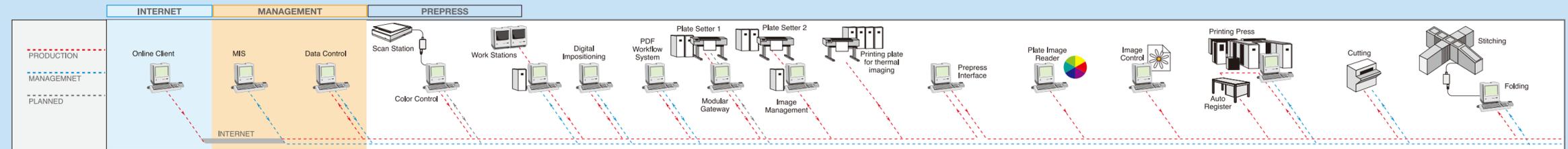
- Improve press performance
- Reduce unexpected downtime
- Reduce print waste
- Extend press lifespan
- Improve print quality
- Improve equipment reliability
- Reduce operational costs
- Improve ink and water balance
- Enhance skills of maintenance staff



Preventive maintenance, in particular lubrication and cleaning minimizes and at best eliminates poor ink and water balance - reducing a multitude of printing problems such as: scumming, weak solids, slow ink drying, set off, rub off, ink buildup on pipe rollers and folder components, fan out, excessive dot gain, tinting, toning, ink roller stripping, ink slinging, strike through, mottled solids, linting, plate wear, increased ink consumption, breakdown or even premature equipment worn out.



Typical Printing Workflow



PARTICULAR LUBRICATION POINTS ON PRINTING PRESSES	COMMON PROBLEMS	OMEGA SOLUTIONS	OMEGA ADVANTAGES
Enclosed gears, gear-drives, chains, etc.	Lack of multi-purpose and reliable central lubrication oil	Omega 690 Super EP Gear Oil	<ul style="list-style-type: none"> • Ideal for central lubrication, also suitable as running-in oil • Blended with EP additive for heavy-duty lubrication
<ul style="list-style-type: none"> • Air compressor • Cam and roller at pull rail • Gripper opening of register feed drum • Delivery chain • Bearing for distributor roller and cover of inking unit • Forwarding rollers, cam follower under manometer in sheet transport • Bearing for sheet joggers for gripper shaft • Suction head of feeder • Horizontal & vertical pressure spring circumferential register adjustment 	<p>Oxidation, formation of carbon deposits</p> <p>Oil foaming & varnish formation</p>	<p>Omega 613 Superior Air Compressor Oil</p> <p>Omega 615 Synthetic Air & Refrigeration Compressor Oil</p>	<ul style="list-style-type: none"> • Controls oxidation at elevated temperatures • Seals packing and pistons to prevent air leakage • Stops the formation of carbon deposits that act as a heat transfer medium • Provides up to ten times operating life of ordinary compressor oils used in rotary vane and rotary screw compressors • Suitable for use down to -40°C • Virtually eliminates oil foaming and varnish formation
All greasing points in presses, served by the centralized grease lubrication system	Staining risks against production	Omega 38 Crystal Clear FG Grease	<ul style="list-style-type: none"> • Colorless and odorless qualities prevent all staining risks on presses operation
	Shock loadings and high temperatures	Omega 77 EP Bearing & Chassis Grease	<ul style="list-style-type: none"> • For heavy-duty chassis points in both friction and anti-friction bearings • Withstands extreme shock loadings • Forms its own seal against water and outside temperatures and contaminants • High resistance to 'pounding out' excellent cohesive and EP properties
	Excessive shear pressures	Omega 85 "Shear Sensation Plus" All-Purpose Grease	<ul style="list-style-type: none"> • Unmatched shear strength and built-in temperature stability • Stays exactly without squeeze out, thinning or deforming • Matches every seal type
	Water washout of lubricants	Omega 51 Super Electric Motor Grease	<ul style="list-style-type: none"> • Water resistant, especially suitable for heavy-duty applications
<ul style="list-style-type: none"> • Bearings of gripper (pincer) shaft, gripper bar, dampening vibrator roller, inking vibrator roller, suction-wheel, grippers shaft (transfer drum), side guide shaft, chain sprocket, opening grippers through grease nipples • Pressure spring, gripper opening • Ink fountain plates, lever for gripper opening shaft and rollers • Cylinders surfaces of reversing cylinder (perfector) • Suction head, chain gripper bar to delivery board through grease nipples 			
Paper cutting machinery	Uneven pressures causing pre-mature wear	Omega 606 Multi-Grade Hydraulic Oil	<ul style="list-style-type: none"> • Stable adhesiveness, outstanding EP performance
Paper divider	Paper jams	Omega 608 Superior Chain and Way Lubricant	<ul style="list-style-type: none"> • Suppresses & minimizes deposits of plastics and carbon
All finest parts	Worn areas difficult to be reached by ordinary lubricants	Omega 904 Industrial Oil Concentrate	<ul style="list-style-type: none"> • Colorless, permeates and lubricates the most delicate parts
General internal parts	Breakdowns or deteriorated printing press performance caused by deposits	Omega 907 Engine & Compressor Flush	<ul style="list-style-type: none"> • Thoroughly and efficiently flushes & cleans old stains and deposits during oil change • Prevents contamination of newly added oil

PARTICULAR LUBRICATION POINTS ON PRINTING PRESSES	COMMON PROBLEMS	OMEGA SOLUTIONS	OMEGA ADVANTAGES
Centralized lubrication system	Chocking up & Clogging	Omega 907 Engine & Compressor Flush	<ul style="list-style-type: none"> • Flushing & removing chock up in the centralized lubrication system without any mechanical operation
Delivery chains of Roland and Heidelberg machines	High costs involved in frequent re-lubrication	Omega 585 Superior Food Machinery Oil	<ul style="list-style-type: none"> • Omega advanced additives chemistry outlasts and outperforms any ordinary pure grade oil
	Risks of scoring, cracking and breaking	Omega 608 Superior Chain and Way Lubricant	<ul style="list-style-type: none"> • Features extra high film strength to prevent chains from scoring, cracking and breaking • Excellent for slideways, high-speed chains, conveyors and hookways
	Oil foaming and oxidation of chains	Omega 670 Straight Mineral Gear Oil.	<ul style="list-style-type: none"> • Fortifies against foam and oxidation permitting high heat
	Premature machine breakdowns	Omega 904 Industrial Oil Concentrate	<ul style="list-style-type: none"> • Improves anti-wear performance • Designed specifically to improve operational efficiency for Heidelberg presses
	Parts difficult to be reached by lubrication or spraying out during high speeds	Omega 65 Long-Life Chain and Cable Grease	<ul style="list-style-type: none"> • Reduces maintenance cost and time for presses • Stabilizes lubricant viscosity at all temperatures, enhances lubricity • Penetrates inner parts of chains, cables and wire rope, replenishes unevenly lubricated areas • Remarkable tenacity prevents 'filing off'
Almost all greasing points & shafts	Consistent friction, heavy loads and shocks	Omega 77 EP Bearing & Chassis Grease	<ul style="list-style-type: none"> • For heavy-duty chassis points in both friction and anti-friction bearings • Withstands extreme shock loading • Forms seal against water and outside temperatures and contaminants • High resistance to 'pounding out' excellent cohesive and EP properties
Press engines	Excessive engine stress at machine startup	Omega 909 Super Engine Oil Additive	<ul style="list-style-type: none"> • Adds EP and adhesiveness to ordinary oil, suppresses the formation of carbon • Significantly extends oil change period • Offers superb lubrication protection to presses particularly at startups
Gaskets & seals	Oil leakages	Omega 917 "Seal Saver"	<ul style="list-style-type: none"> • Protects against seal deterioration - cuts costly repairs & downtime • Stops oil leakage and works while presses are in operation
Sophisticated printing presses such as Komori Lithrone 6 color printing machines	Gear stress and failures	Omega 690 Super EP Gear Oil	<ul style="list-style-type: none"> • High performance gear oils ensuring best lubricated parts protection

