

PRECISION SPRAY LUBRICATION SYSTEMS



SOLUTIONS FOR METAL
FABRICATION & FORMING



Spraying Systems Co.[®]
Experts in Spray Technology



IMPROVE PERFORMANCE & LOWER COSTS WITH PRECISION SPRAY CONTROL

Whether you're looking to improve lubrication consistency, decrease lubricant waste, upgrade from manual application or roller/brush systems, we can help. We have a wide range of options to minimize scrap, increase production time, lower operating costs and decrease maintenance time.

AUTOJET® SPRAY LUBRICATION SYSTEM BENEFITS:

- Precision Spray Control (PSC) ensures uniform, consistent coverage even if line speeds vary
- Accurate spray placement with minimal overspray and misting means reduced lubricant consumption, decreased maintenance downtime and improved worker safety
- Automated on/off control eliminates drips and leaks that cause quality problems
- Choice of manual operation or automated control allows you to configure a system to match your exact performance requirements and budget
- Wide choice of hydraulic and pneumatic nozzles to accommodate high- and low-viscosity lubricants
- Optional spray headers ensure proper fluid delivery to the nozzles and trouble-free operation
- Local sales, service and support teams around the world provide quick and thorough assistance when and where you need it

AutoJet
TECHNOLOGIES

From *Spraying Systems Co.*



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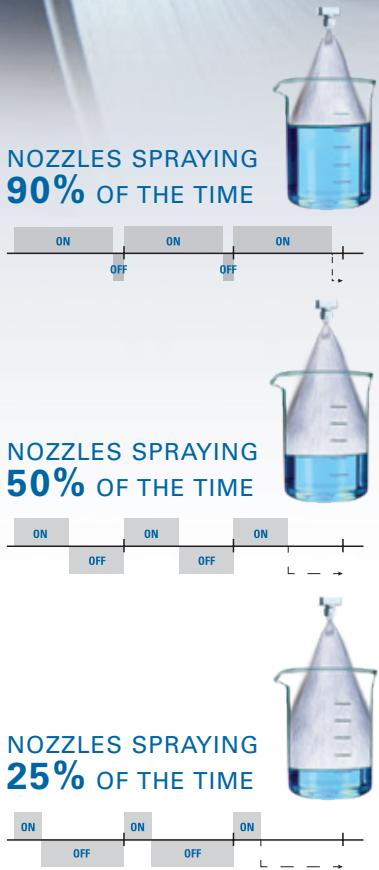
PRECISION SPRAY CONTROL – A SPRAYING SYSTEMS CO. EXCLUSIVE

In the pages that follow, you'll see that some of our systems reference Precision Spray Control (PSC). PSC can be achieved by using our PulsaJet® automatic nozzle and an AutoJet spray controller that offer many benefits.

PSC uses an AutoJet spray controller to turn electrically-actuated PulsaJet nozzles on and off very quickly to control flow rate. The cycling is so fast that the flow often appears to be constant. Flow rate changes are based on line speed and occur almost instantaneously to ensure the proper application rate.

PRECISION SPRAY CONTROL BENEFITS:

- Flow rate can be changed almost instantaneously
- High flow turndown ratios can be achieved at a single pressure
- Drop size and spray angle remain constant because pressure remains constant. Coverage is more consistent and uniform over a wide range of flow rates
- Relatively low flow rates can be generated without clogging. Hydraulic PulsaJet nozzles can replace air atomizing nozzles in many applications
- Lubricant consumption can be reduced



AUTOJET® MODEL 1750+ SPRAY CONTROL SYSTEM: AFFORDABLE & PRECISE SPRAY LUBRICATION

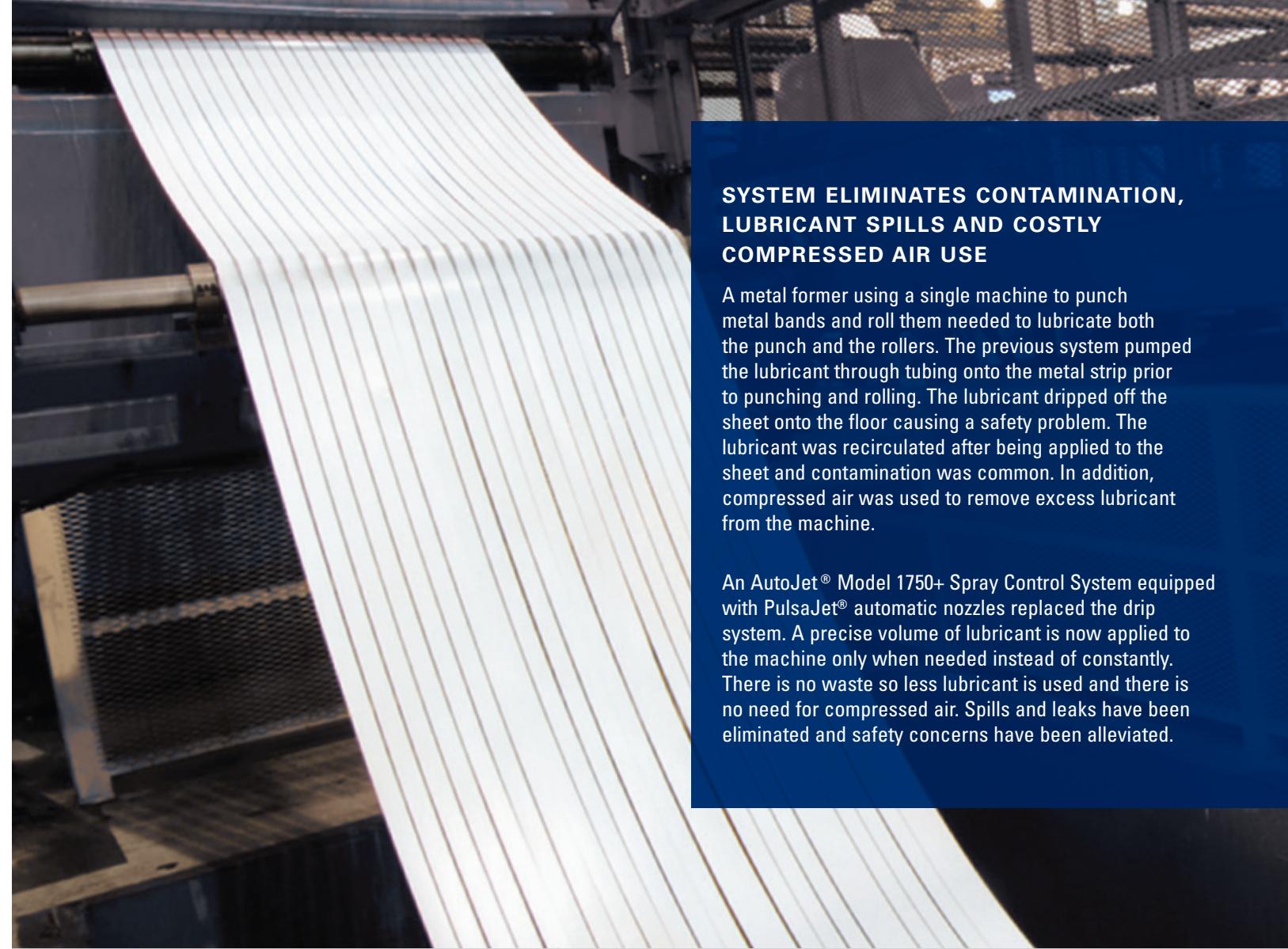
If you're manually applying lubricants or using a roller system, you can see dramatic improvements in precision and significant reductions in operating costs with our AutoJet Model 1750+ Spray Control System. In fact, you'll quickly recoup the cost of this economical system – many users report a payback period of just a few weeks.



SYSTEM OVERVIEW:

- Wide flow rate range; continuous or intermittent flow
- Wide choice of hydraulic or pneumatic automatic nozzles
- When used with PulsaJet® spray nozzles, precise application of lubricant on target is ensured even when line speeds vary. Plus, misting and overspray are eliminated
- Automated on/off control. Drips and leaks are eliminated and workers can be deployed to other tasks
- Compact – easy to add to existing operations
- System is ready-to-go out of the box – no set-up time
- Pump out of any container
- Lubricant can be recirculated from the system to the supply tank
- Use with lubricants up to 1,000cP





SYSTEM ELIMINATES CONTAMINATION, LUBRICANT SPILLS AND COSTLY COMPRESSED AIR USE

A metal former using a single machine to punch metal bands and roll them needed to lubricate both the punch and the rollers. The previous system pumped the lubricant through tubing onto the metal strip prior to punching and rolling. The lubricant dripped off the sheet onto the floor causing a safety problem. The lubricant was recirculated after being applied to the sheet and contamination was common. In addition, compressed air was used to remove excess lubricant from the machine.

An AutoJet® Model 1750+ Spray Control System equipped with PulsaJet® automatic nozzles replaced the drip system. A precise volume of lubricant is now applied to the machine only when needed instead of constantly. There is no waste so less lubricant is used and there is no need for compressed air. Spills and leaks have been eliminated and safety concerns have been alleviated.

IDEAL FOR:

- Die lubrication
- Mold release
- Strip lubrication prior to forming
- Stamping

SPECIFICATIONS:

Standard version supplied with one pump; can be supplied without pump and optional pressure tank or without liquid delivery system

Single zone operation

Up to 2,000 cycles per minute

Flow rate: Up to 2.0 gpm (7.6 lpm)

Liquid inlet pressure for one pump version: 5 psi (0.3 bar) for pumpless version; 100 psi (7 bar) max.

Liquid outlet pressure: 100 psi (7 bar) max.

Use with automatic spray nozzles. **See page 10 for details**



AUTOJET® MODEL 2150+ SPRAY CONTROL SYSTEM: PRECISE APPLICATION PLUS MORE CONTROL OPTIONS & OPERATING FLEXIBILITY

If your operating conditions change frequently or you're lubricating multiple parts, the AutoJet Model 2150+ Spray Control System, equipped with PulsaJet® automatic nozzles, is for you. It offers unmatched operating flexibility and precision so you can increase throughput, ensure quality and minimize labor. Payback is swift – one processor reports the system cost was recouped in two weeks and on-going monthly savings range between US\$20,000 to US\$30,000 through reduced product scrap, lubricant use and maintenance time to clean up excess oil.



SYSTEM OVERVIEW:

- Fast cycling ensures precision application even with low viscosity lubricants
- System accepts multiple incoming signals and makes automatic adjustments to ensure spray performance when needed to accommodate conditions such as changing line speeds
- Panel increases cycle speed and maximizes the spray pressure of PulsaJet nozzles
- Nozzles can spray at different application rates without affecting the spray pattern. Plus, low flow rates can be achieved without misting using hydraulic spray tips
- Eliminates striping
- Multiple timing modes
- High turndown ratio
- Plug and spray operation – software is easy to configure





METAL PRODUCER DECREASES LUBRICANT USE, ELIMINATES COMPRESSED AIR AND LOWERS EQUIPMENT COSTS WITH NEW LUBRICATION SYSTEM

Air atomizing nozzles were being used by a metal processor to apply small volumes of lubricant to both sides of metal sheets. The system provided the necessary lubrication but it was cumbersome and expensive to operate. A new multi-channel AutoJet® Model 2150+ Spray Control System using hydraulic PulsaJet® nozzles with a high turndown ratio improved operational efficiency and lowered operating costs. Compressed air use and misting were eliminated and the wider coverage of the PulsaJet nozzles reduced the number of nozzles needed by one-third. Zone control allows a change in flow rates in certain areas without changing the fluid pressure, drop size or shape of the spray.

IDEAL FOR:

- Strip and sheet lubrication
- Mixed parts lubrication
- Machine lubrication
- Stamping

SPECIFICATIONS:

Control panel; user provides liquid delivery system

Single zone operation is standard; multiple zone control optional

Cycle speed: Up to 15,000 cycles per minute

Liquid inlet pressure: 290 psi (20 bar) max.

Optional trigger, speed and pressure sensors

Use with up to 16 PulsaJet automatic nozzles

AUTOJET® MODEL L210 HYDRAULIC LUBRICATION SYSTEM: PRECISE, INTERMITTENT SPOT LUBRICATION

Minimize lubricant waste and the maintenance problems associated with roller systems or brush applicators with the AutoJet Model L210 Hydraulic Lubrication System. It provides consistent lubrication and excellent repeatability through precise indexing of pumps. The flow rate for each nozzle is adjusted independently so zone spraying for different targets is easily accomplished.



SYSTEM OVERVIEW:

- Intermittent hydraulic spraying
- Full flow filters ensure no contaminants enter pumps or nozzles
- Easy changeover between lubricants
- Containers are non-pressurized and can be filled during system operation
- Use with lubricants up to 60 cSt
- Self contained system can be set-up in minutes
- Recirculation of surplus and return flow

IDEAL FOR:

- Coil or spot lubrication on the feed end of the press or forming machine
- Lubricating press tools, drills and taps
- Stamping
- Forging
- Deep-drawing
- Roll forming





AUTO PARTS MANUFACTURER IMPROVES PRODUCT QUALITY WHILE REDUCING OIL CONSUMPTION BY 50%

Lubrication of metal feed stock with one of three different lubricants was challenging for one parts producer. A low viscosity emulsion used for stamping or cutting and two straight oils for deep-drawing operations were being applied with felt rollers. The process was messy, used too much oil and coverage was inconsistent.

Changing to the AutoJet® Model L210 Hydraulic Lubrication System with a coil lubricator solved all the production issues. The system is controlled centrally from the press and all the nozzles are housed in the coil lubricator. The system features oil circulation and filtration to ensure contaminant-free oil is returned to the correct supply tank. Scrap, due to inconsistent coverage, has been eliminated, oil consumption has been reduced by 50% and costly, wear-prone felt rollers are no longer used.

SPECIFICATIONS:

Expandable pump base unit: 0.5, 4.2 or 9.3 gallon (2, 16 or 35 liter) air-operated diaphragm pump

Reservoir: 0.5 gallon (2 liter), non-pressurized with up to two pumps; 4.2 gallon (16 liter), non-pressurized with up to eight pumps; 9.3 gallon (35 liter), single or dual non-pressurized with up to 16 pumps

Zone operation: Multiple; one zone per nozzle. Sixteen nozzle max.

Choice of UniJet® flat spray, solid stream, hollow cone, wide-angle hollow cone or full cone nozzles

Return line filter prevents contamination of the return flow

Flow rate: Up to 0.087 gpm (0.33 lpm) per pump; max. flow with 16 pumps 1.4 gpm (5.3 lpm)

Liquid output pressure: 500 psi (35 bar) max.

Optional additional solenoid valves to enable multiple triggering options

Optional timer and control unit

Optional coil lubricator, for placement between feeder and press, ensures lubrication is evenly distributed over the band. Excess oil is returned to supply container. Pneumatic lifting cylinders open coil lubricator for easy maintenance



ENSURE PERFORMANCE WITH SPRAY MANIFOLDS

A manifold designed specifically to work with the spray nozzles in your lubrication system will help optimize performance:

- Proper nozzle placement, position and spacing ensure adequate coverage of the target and minimize misting and overspray
- Streamlined tubing eliminates bends and kinks, ensures proper fluid flow to nozzles and simplifies maintenance
- Single source supply of manifolds and nozzles eliminates integration issues caused by working with multiple suppliers

THE INDUSTRY'S WIDEST SELECTION OF SPRAY NOZZLES FOR LUBRICATION

Choose from many different hydraulic and pneumatic nozzle options to obtain the exact performance required. Nozzles are available in a wide range of styles, sizes, capacities, cycle speeds and materials. Options include plate-mount designs, compact designs, models with clean-out and shut-off needles and more.

98250 SPRAY MANIFOLDS

This modular manifold is designed for our most widely used Pulsajet® automatic spray nozzles, the AA250AUH and AA10000AUH-03. The manifold features a compact design and sturdy aluminum construction and is available in a wide range of lengths and nozzle spacing options.

AIR ATOMIZING MANIFOLDS

For systems using air atomizing nozzles, a wide range of lengths and nozzle spacing options are available. Your local sales engineer will help with manifold selection.



AUTOJET® SYSTEMS	HYDRAULIC NOZZLE OPTIONS				PNEUMATIC NOZZLE OPTIONS				
	Pulsajet AA10000AUH	AA250AUH	UniJet®	JJAUH	JAU	JJAU	VAU	AA28JAU	AA29JAU
AutoJet Model 1750+ Spray Control System	•	•	•		•		•		
AutoJet Model 2150+ Spray Control System	•								
AutoJet Model L210 Hydraulic Lubrication System			•						



SPRAY LUBRICATION SYSTEM OPTIMIZATION TIPS

AN OPTIMIZED LUBRICATION SYSTEM
WILL YIELD THE FOLLOWING RESULTS:

- Efficient use of lubricant; waste will be minimal and less lubricant will be consumed
- Misting will be eliminated
- Lubricant will be placed directly on the target – even when spraying highly viscous fluids

SIMPLE TIPS THAT WILL ENSURE OPTIMAL
PERFORMANCE FROM YOUR SYSTEM:

- Match the flow rate of the nozzle with the lubricant being sprayed. A spray tip that works well for heavy viscosity lubricants will overspray by nearly 60% when used with a less viscous fluid
- Match the flow rate of the nozzle to the speed of your conveyor to minimize overspray. Or, use an electrically-actuated nozzle with a spray controller to achieve Precision Spray Control
- Keep spray height as low as possible to cover the target. To cover a wide target, use a wide-angle spray tip or use multiple nozzles. Do not increase nozzle distance from the target or excessive misting will occur. **See figure 1**
- When using multiple spray nozzles to cover a wide target, check the tip's spray pattern. Some spray tips must overlap the adjacent pattern by 20 to 30% to provide proper coverage
- Select a spray tip with a narrow angle to cover a narrow target. Do not rotate spray tips to cover a narrow target. This will increase lubricant use by 30 to 70%. **See figure 2**

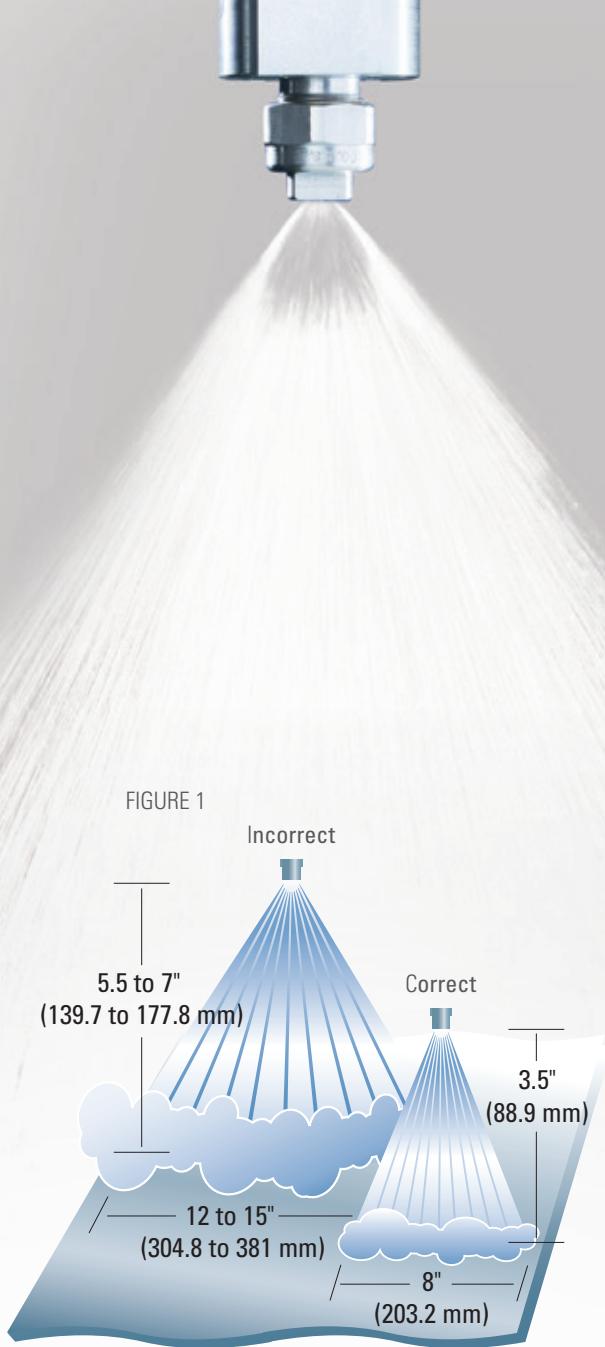


FIGURE 1

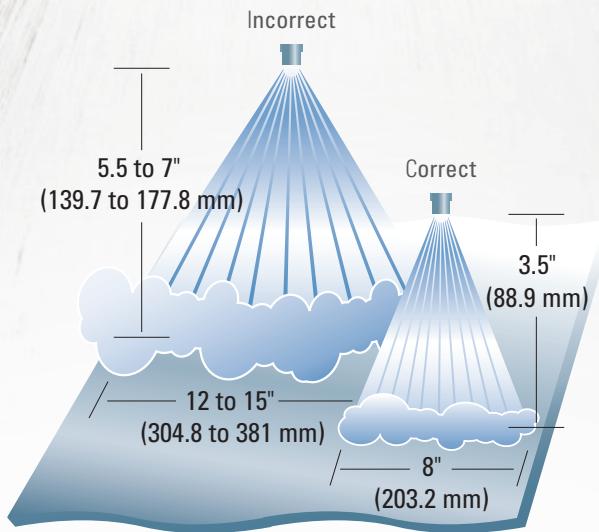
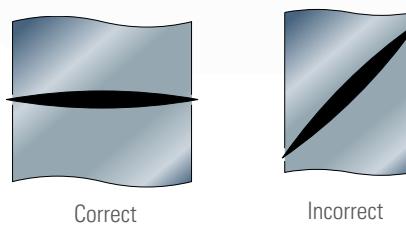


FIGURE 2





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Bulletin No. 685B Printed in the U.S.A. ©Spraying Systems Co. 2023