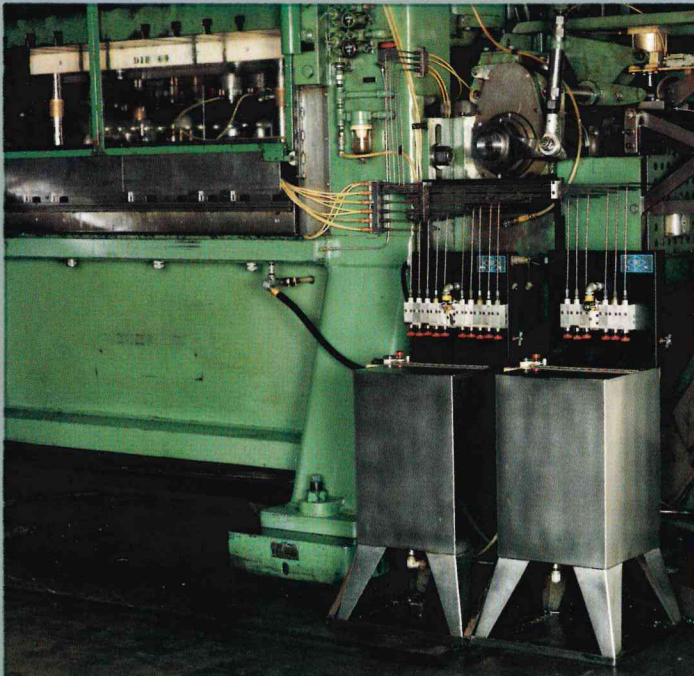
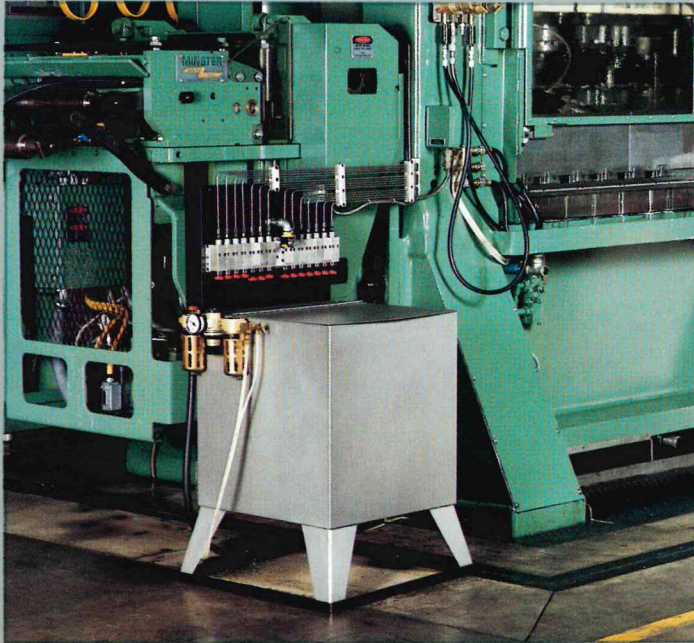




PAX LUBE SYSTEMS



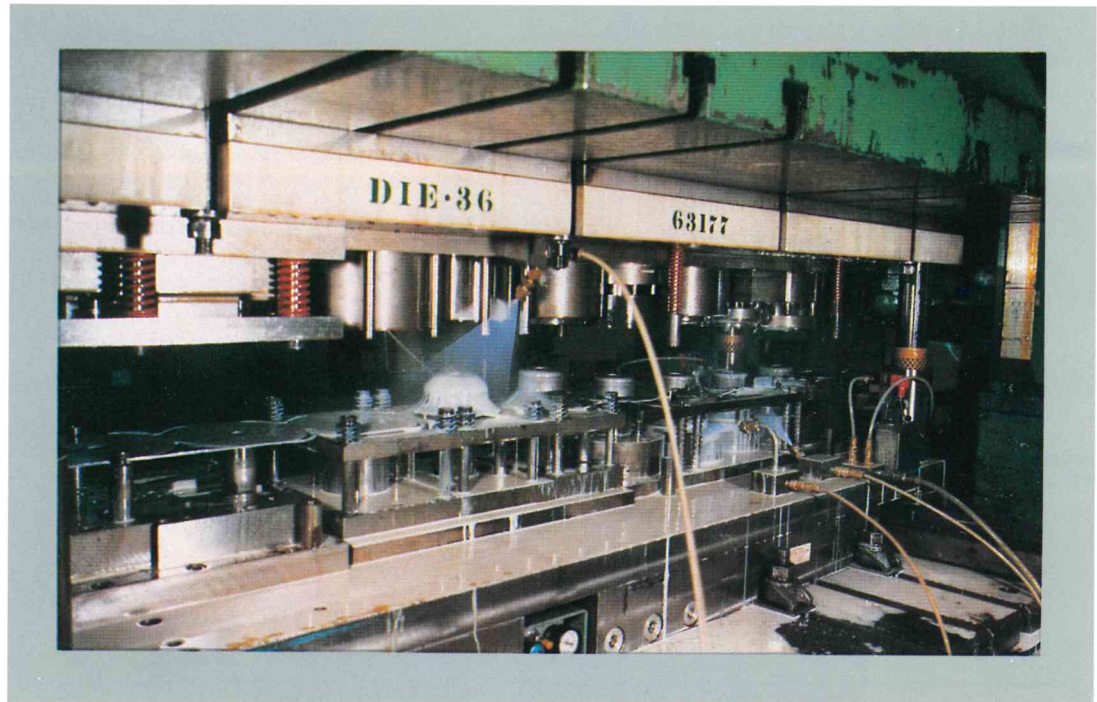
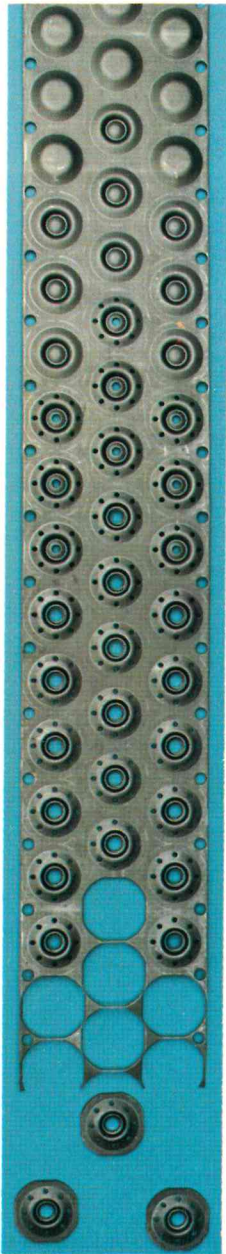
BETTER LUBRICATION



The Pax Lube System is designed to provide reliable, accurate, controlled lubrication to the required points . . . in the right amount.

The system was developed by people who produce high volume stampings. It was conceived because inadequate and imprecise lubrication was severely limiting the speed at which quality parts could be produced. Prototype units were applied to production stamping in the plant, and necessary refinements were made. The Pax Lube System not only solved lubrication problems, it increased productivity more than anyone had expected. It was obvious that others could benefit from the capabilities of an advanced lube system like this.

...AND THE MANY BENEFITS



Pax Lube Systems have proven themselves time and again by lowering costs and increasing productivity.

Increased Die Life

Lubricant can be delivered precisely to remote locations within the die, supplying exactly those points that require it. Die life has been increased by up to 100%.

Reduced Lubricant Consumption

By controlling the placement and flow of lubricant more accurately, less is required to do the same job. Cases have been documented which show up to three times the coverage with the same amount of lubricant.

Improved Part Quality

More precise placement of lubrication means better die performance and better parts.

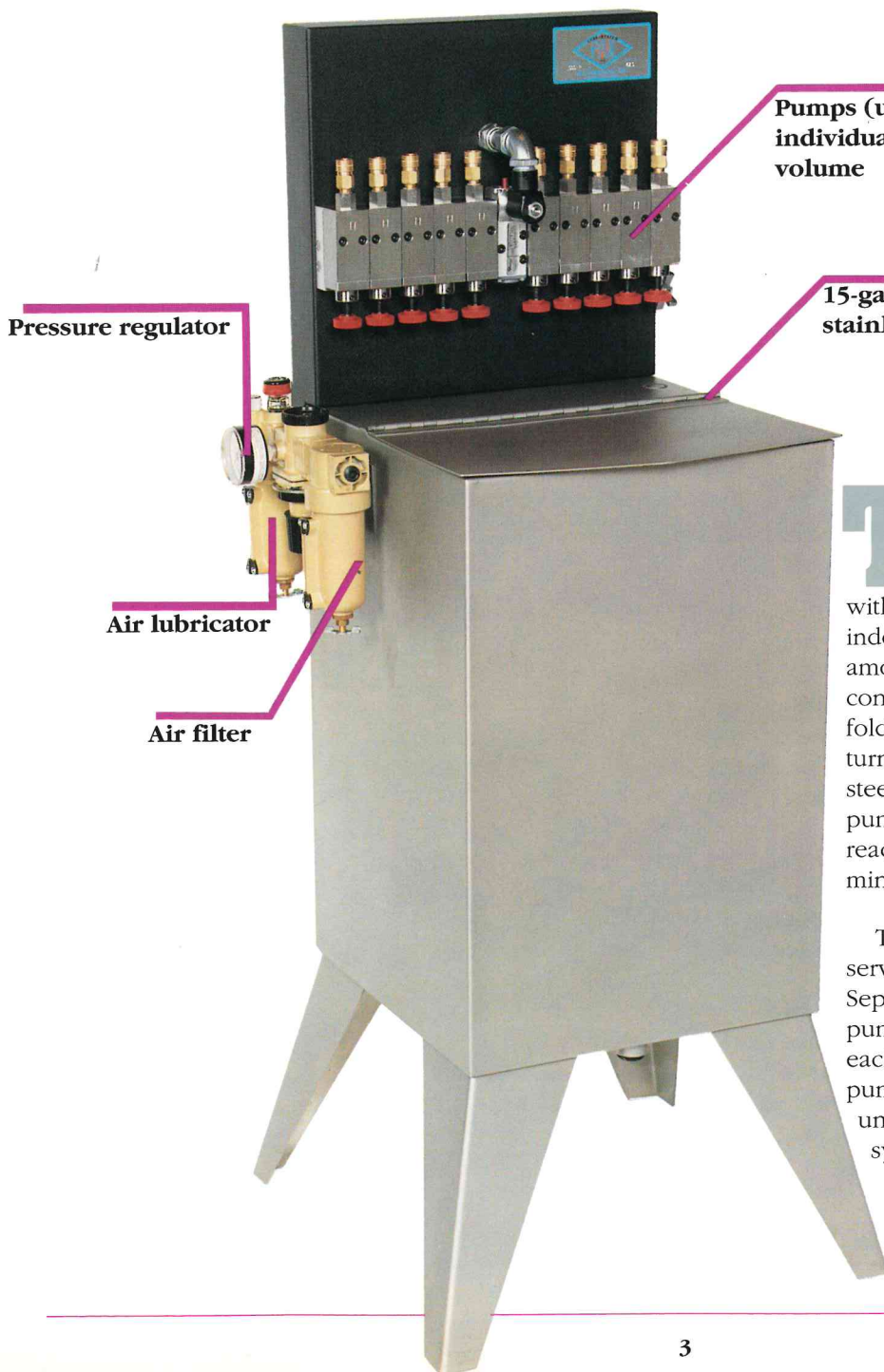
Increased Production Speed

Press speeds have been increased by as much as 50%.

Cleaner Work Area/Lower Maintenance Costs

With the airless spray of the Pax Lube System, misting and fogging of lubricant are eliminated.

MODELS



The Standard Pax System is a 15-gallon capacity unit and is available with up to ten individual pumps, each independently adjusted to send the desired amount of lubricant to each point. Unitized construction mounts all pumps on a manifold, along with the air valve which is, in turn, mounted on the 15-gallon, stainless steel reservoir. Placing the air valve and pump units on a common manifold reduces reaction time and air consumption to a minimum.

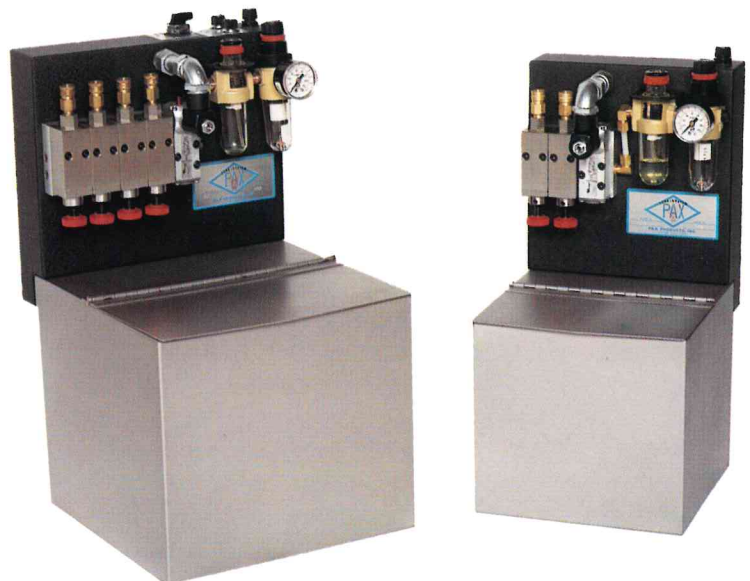
The Pax Dual-Unit has the ability to service two presses from the same reservoir. Separate electrical controls for each bank of pumps permits independent operation of each press. Units are available with two pumps or four pumps per side on 15 gallon units and up to six per side on 30 gallon systems.



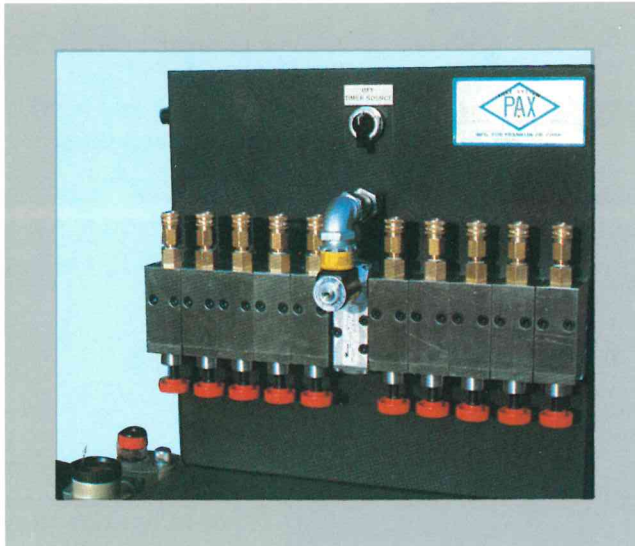
For high volume requirements, the 30-Gallon System provides a larger capacity stainless steel reservoir and provision for up to 14 individual pump units.

The 2 1/2-Gallon and 5-Gallon units are designed for high speed operations that require precise application of small amounts of lubricant. They offer portable convenience, with two individually-controlled pumps on the 2 1/2-Gallon and a choice of two or four pumps on the 5-Gallon. Both feature the same high quality design and construction as the larger Pax Systems.

An optional mounting bracket is available for these smaller units to allow press-mounting, getting the unit out of the way and off the floor. (Brackets on all presses with which systems are used allows the units to be conveniently moved from press to press.)



STANDARD FEATURES



Here's how the Pax pump works:

When the air solenoid valve is energized, air is directed to the upper manifold passage (1) causing the piston (2) to move down, thereby forming a vacuum in the chamber (3) which will unseat the check poppet (4) and permit lubricant to flow into the chamber (3) from reservoir tank.

De-energizing the solenoid valve allows air to flow into the bottom manifold passage (5). This air flow will cause the piston (2) to move upward and apply pressure to the lubricant in the chamber (3). This force seats the check poppet (4) and unseats the outlet check ball (6). The pressurized lubricant in the chamber can now flow out of the pump and apply pressure to the lubricant already in the spray line (7). This force displaces lubricant through the spray nozzles in the desired pattern.

The volume of lubricant is controlled by the adjustment screw (8) which is pictured in the maximum flow position. The sealed plunger (9) is attached to the adjustment screw (8). When the screw is turned clockwise, it will limit the stroke of the piston (2), thereby limiting the amount of lubricant in the chamber (3). This permits adjustment to achieve the exact volume of lubricant desired.

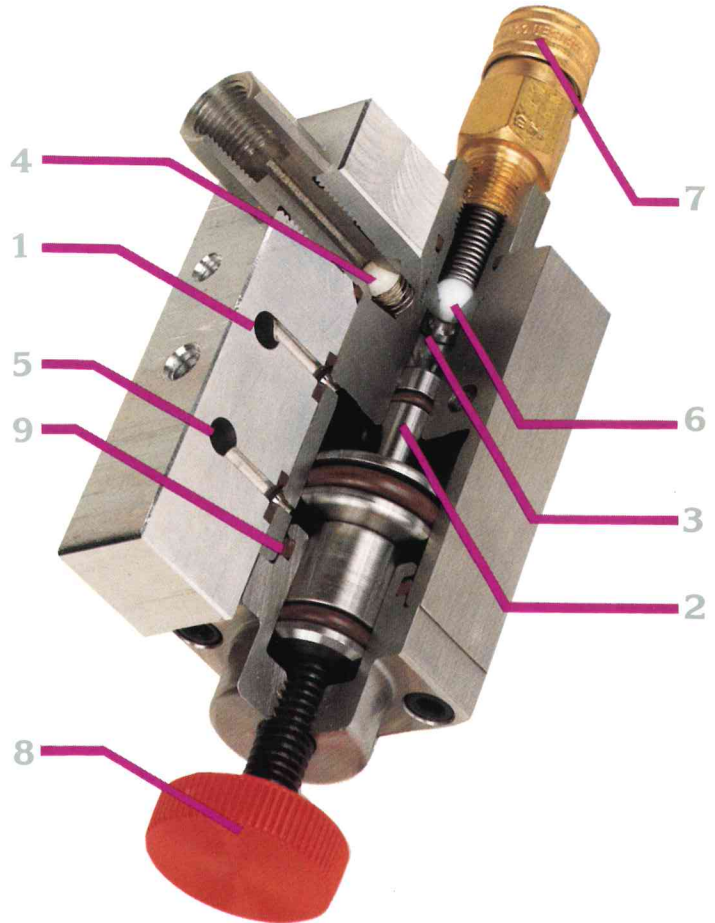
Each pump on the Pax Lube System can be individually adjusted to provide the desired amount of lubricant to each spray assembly. Since volume to each lubrication point can be adjusted, set-up can be tailored to fit each job precisely.

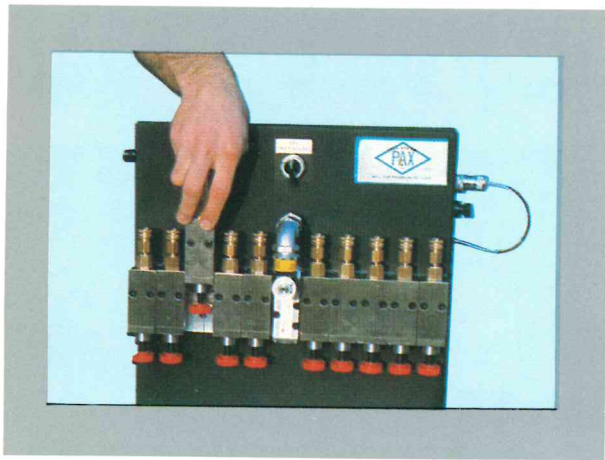
Reliable Performance

Designed, manufactured and tested by Pax Products, pumps provide reliability in a small package.

Airless Spray

The Pax Lube System should not be confused with mist spray systems . . . It is an airless spray. Air is used to operate a piston which pressurizes lubricant in the fluid chamber. This force displaces the lubricant through the spray nozzle in droplets which tend to stick to the surface upon which they impact.





Lubricants can be applied in controlled amounts to precise locations within a die . . . points that could not otherwise be properly lubricated. In most cases, heavy viscosity lubricants (which were thought to carry through multi-station tooling) can be replaced with water extendable or synthetic lubricants, which are more efficient coolants, more easily removed, and more economical.

By incorporating in-die lubrication with the Pax Lube System, you can increase productivity by being able to run at higher speeds with less downtime for die maintenance (polishing die sections, for example). Existing dies can be readily converted.

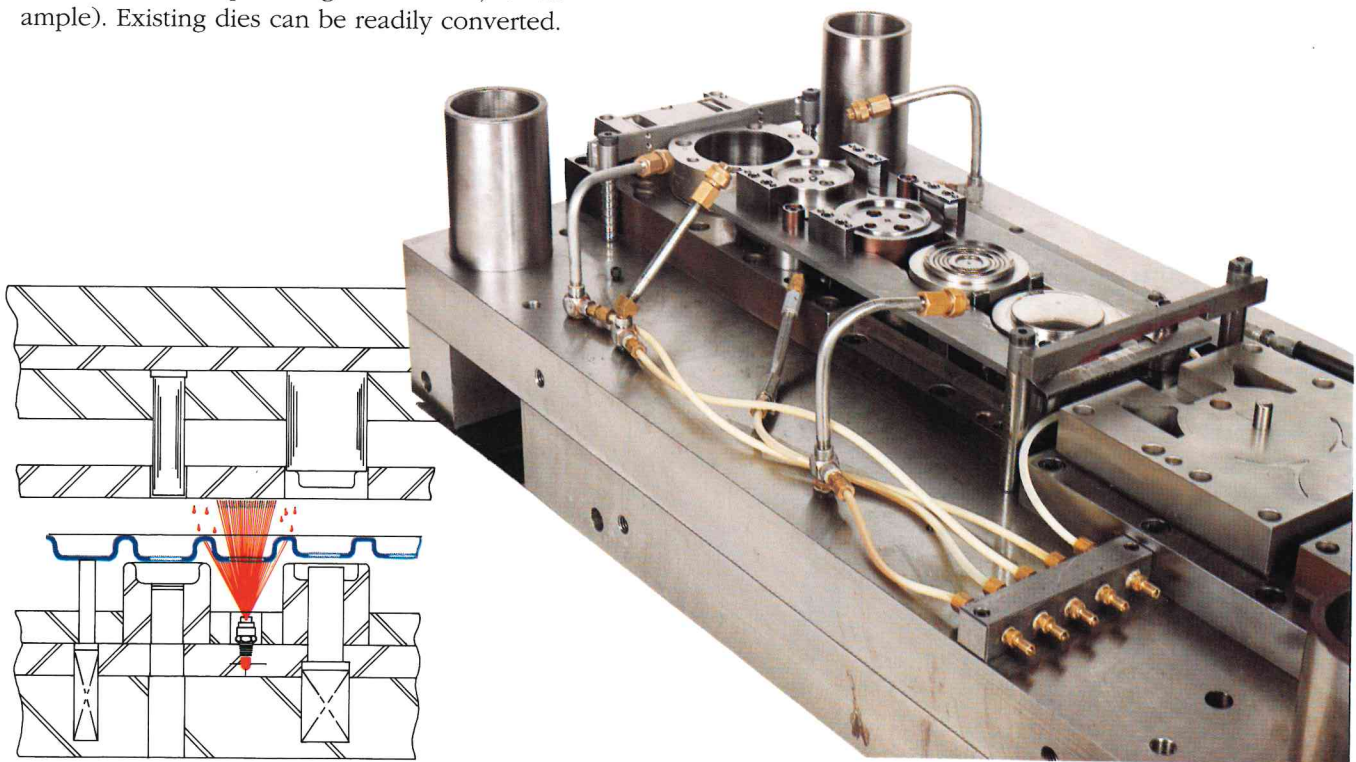
Because each pump is individually fed, replacement of one pump will not cause loss of prime in the other pumps. Each pump can be easily removed from the manifold by loosening two socket head cap screws. With this feature, a pump can be quickly replaced with a spare, reducing downtime to a minimum.

Self-Bleeding/Self-Priming Pumps

No downtime or complicated procedure is required to purge the system of air. There is also no need for a gravity feed . . . the reservoir can sit on the floor where it is easy to fill.

Simple Installation

With the unit being self-contained, all that is needed is an air line and an electrical impulse, which can normally be provided by the limit switch of the press control; by a cam-operated limit switch on the crankshaft or slide; or by using the Timer Option (See page 9.)



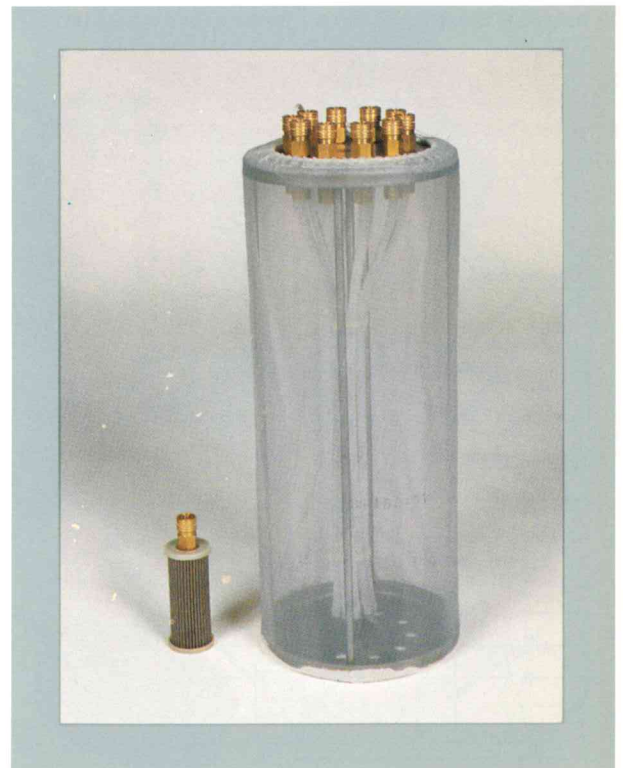
STANDARD FEATURES



Air supplied to operate the Pax Lube System is filtered to remove liquids and finer solid particles; regulated to allow for the adjustment of air pressure to the system; and lubricated to provide proper internal lubrication to the o-rings and seals of the solenoid valves and pumps.

Filter bags (at right) are available in 75 or 150 micron nylon and provide over 300 square inches of filtering surface to insure that no foreign material will enter the system and cause plugged spray nozzles. The 2 1/2 and 5 gallon units use individual 140 micron wire mesh filters (at left) which provide the same protection and are available as an option on larger units.

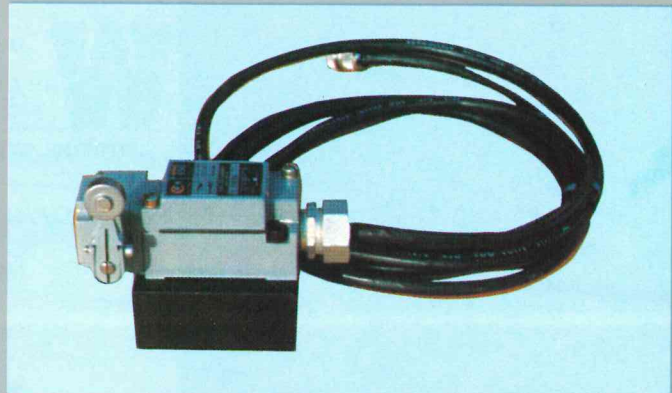
The excellent filtering system allows you to recapture and recycle lubricant. In addition to reducing overall lubricant consumption, it allows lubricant to be applied as generously as the job requires without waste.



OPTIONS



Magnetic Base Spray Assembly



Magnetic Base Limit Switch

The Pax Lube System is designed to use a signal obtained from the press to cycle the system. The source of this signal is normally hard wired from the press control into the lube system control. However, when the external source option is ordered, the signal to cycle the system is controlled by actuating a switch independent of the press control, such as a magnetic base limit switch. A receptacle and jumper plug are supplied with this option.

An air agitation system is available to eliminate separation of unstable lubricants in the reservoir.

Magnetic Base Limit Switch

This option allows the Pax Lube System to be easily moved from press to press, and the external signal to be conveniently changed.

Low Lube Level Control

A float switch in the lube system reservoir is connected to a relay in the system's electrical control. A set of contacts is provided on the relay so that it may be wired into the press STOP circuit in order to stop the press when lube level is low.

Magnetic Base Spray Assembly

This option allows portable, fast set-up of lubrication spray nozzles, making almost any application accessible. It features a 200+ lb. pull magnet base, a swivel clamp to adjust for height and spray angle, and stainless tubing connecting to the spray line.

Standard Spray Assembly

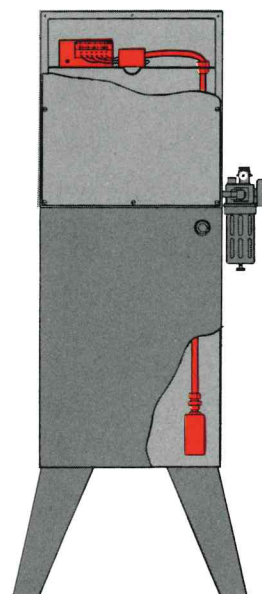
This assembly includes a spray nozzle, 8 feet of spray line, and a quick disconnect plug to connect to the pump. One is required for each pump in your system.

Manifold Cover Plates

Units may be purchased with the manifold housing arranged for future addition of more pump units. Manifold cover plates seal these areas until they are needed to accommodate additional pumps.

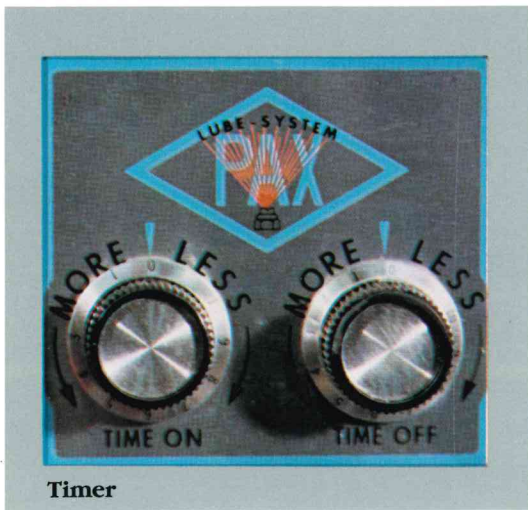
Manual Cycling

A hand-cycle pushbutton can be added to permit the system to be cycled manually.



Low Lube Level Control

OPTIONS



Timer

With the timer "ON," the system can be controlled to cycle up to 300 times per minute, independent of press stroking rate. This is especially helpful for:

- * Large stampings which require more than one shot of lubricant between strokes.
- * Very high speed production of small parts where the lubricant spray can cover more than one feed length per cycle.
- * Any operations that require automatic lubrication timing other than once per machine stroke.



A digital timer is also available.

The Programmable Counter allows cycling of the lube system at a rate of less than once per press stroke. This is especially helpful for small parts and short feed lengths where only a minimal amount of lubricant is required.

The following spray nozzles are typical examples. Other types are available upon request.



Programmable Counter

Jet Tip	Pattern Size	Distance From Tip	P.S.I.	
	110015	2" x 15"	6"	80
	80015	2" x 11"	6"	80
	50015	1.75" x 8"	6"	80
	25015	1.25" x 5"	6"	80
FLAT (FAN) SPRAY PATTERN				
	TG2	5.5"	6"	80
	TG1	5"	6"	80
	TG0.7	4"	6"	80
	TG0.5	3"	6"	80
	TG0.3	2"	6"	80
FULL CONE SPRAY PATTERN				

NOTE: Tests were performed with a low viscosity lubricant. Pattern will vary with increase in viscosity and surface tension of the lubricant.

SPECIFICATIONS

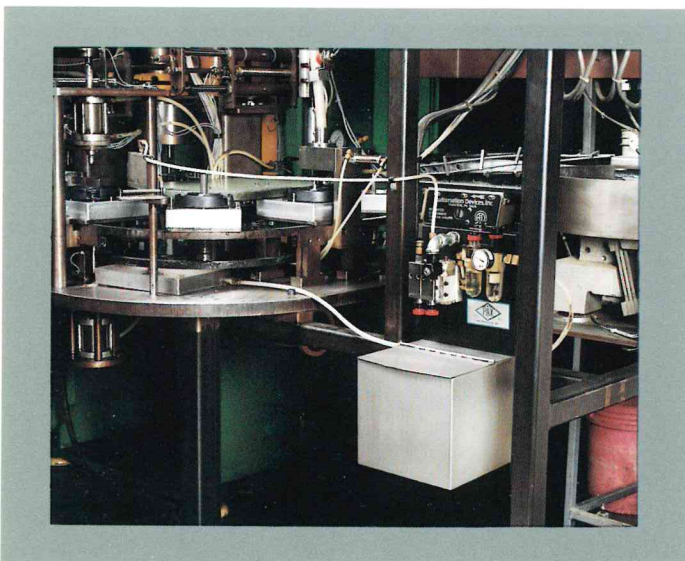
	15-GAL. UNIT	30 GAL. UNIT	5-GAL. UNIT	2-1/2 GAL. UNIT
RESERVOIR CAPACITY	15 GAL.	30 GAL.	5 GAL.	2-1/2 GAL.
NUMBER OF PUMPS * * * *	2,4,6,8,10	2,4,6,8,10,12,14	2,4	2
SIZE, W - L - H	18 x 18 x 44.5"	23 x 23 x 42.5"	11.5 x 13 x 19.5"	9 x 10.5 x 19"
*VOLTAGE	115 VAC, 60HZ	115 VAC, 60HZ	115 VAC, 60HZ	115 VAC, 60HZ
MIN. OPERATING AIR PRESSURE	35 PSI	35 PSI	35 PSI	35 PSI
MAX. OPERATING AIR PRESSURE	125 PSI	125 PSI	125 PSI	125 PSI
FUSED	1 AMP	1 AMP	1 AMP	1 AMP
* *MAX. CYCLES PER MINUTE AT FULL CAPACITY	350 CPM	350 CPM	350 CPM	350 CPM
MAX. AIR CONSUMPTION	.002 SCFM PER CYCLE x NUMBER OF PUMPS			
MAX. LUBRICANT CAPACITY (STD.)	.021 OZ. PER CYCLE x NUMBER OF PUMPS			
MAX. LUBRICANT CAPACITY * * * (HIGH VOLUME)	.042 OZ. PER CYCLE x NUMBER OF PUMPS			
APPROXIMATE WEIGHT	75 LBS.	94 LBS.	31 LBS.	25 LBS.

*OTHER VOLTAGES ARE AVAILABLE UPON REQUEST.

**SYSTEMS WILL OPERATE AT SPEEDS GREATER THAN 350 CPM WITH A SLIGHT REDUCTION IN CAPACITY.

***HIGH VOLUME PUMP IS FULLY INTERCHANGEABLE WITH STANDARD PUMP.

****DUAL UNITS ARE AVAILABLE IN 15-GAL. (2 OR 4 PUMPS) AND IN 30-GAL. (2, 4 OR 6 PUMPS)



Other Applications

Pax Lube Systems have been applied successfully in a variety of applications, including:

- * Applying lubricant to secondary stamping operations
- * Applying lubricant in assembly systems
- * Adding chemicals to water, in metered amounts, for vibratory finishing operations
- * Applying exact amounts of lubricant or coolant in machining operations

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