

MQL

MINIMUM QUANTITY LUBRICATION.

DROPS INSTEAD OF LITRES!

The Allube Micro-lubrication Systems are designed for use primarily in the varied metal cutting and forming processes to enable the replacement of flood and water soluble coolants.

The lubrication system delivers a precise minimal quantity of lubricating oil droplets onto the cutting edge via individually adjustable pneumatic pumps. The result of this provides no misting effect into the atmosphere. No generation of friction/heat between the work surface and the tool cutting edge. The lubricating oil is consumed in the machining process.

Just a small quantity of oil does the job and it is naturally consumed in the cutting process, so there is no harmful misting or hazardous waste disposal to worry about. Resulting in higher productivity, since you do not spend time cleaning parts or **disposing of used coolants**.

They prevent heat build up and control heat distortion, so you get a truer cut and cleaner machine operation. Since tools and parts stay at room temperature during cutting operation, tool life is dramatically increased and maintenance and replacement costs are lower. Reduced handling and storage of hazardous materials, mean a safer, cleaner working environment. Clean-up is easy, using just soap and hot water (160° F / 70°c).

Advantages

- A cleaner safer working environment
- Higher productivity
- Increased tool life
- Better surface finish
- Cost reduction
- The ability to machine to higher tolerances
- Cutting Fluid consumption reduction 90% lower
- No coolant handling or disposal problems
- Dry chips (swarf)
- Less machine down time
- Increase productivity
- Short payback time

APPLICATIONS



Drilling



Tool & Cutter grinding



Rolling



Broaching



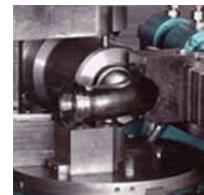
Bending



Gear Cutting



Punching



Pipes Bending



Belts & Coils



Stamping



Metal Spinning



Roll Forming



Chains



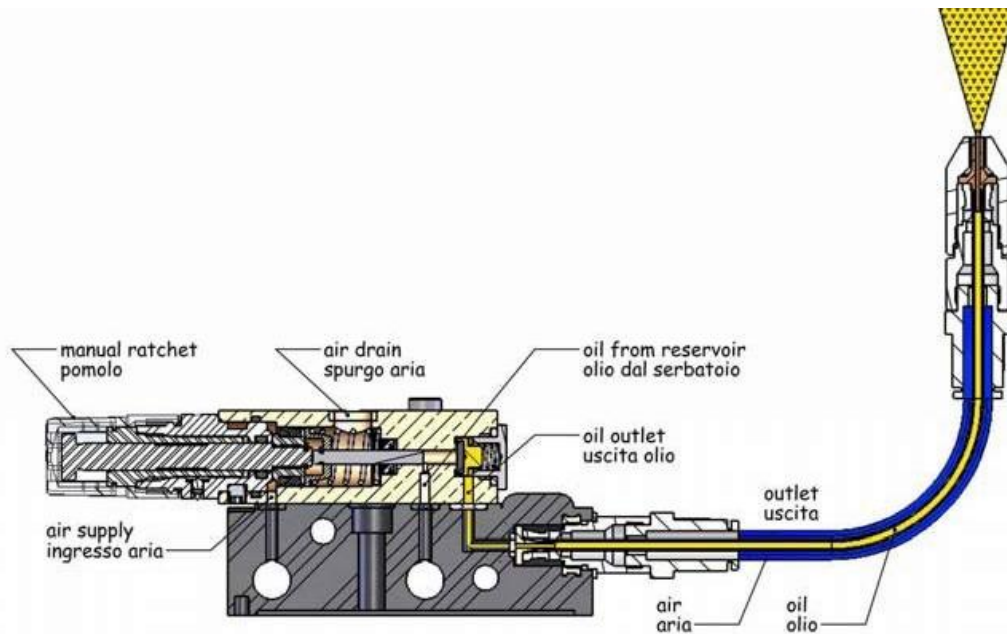
Mono & Bi-rails conveyors

THE UNIQUE ADVANTAGES OF LUBETOOL

- Lubetools regulate the lubricant supplied in exact quantities adjustable from 0mm³ to 41mm³ - no guesswork
- 100% pneumatically controlled positive displacement pumps
- Lubricant is carried by air, with pinpoint accuracy. Hazardous atomizing and 'mist' are eliminated.
- All pumps and nozzle operate independently for lubricant.
- Additional pumps can be added in the field. Just order a complete pump assembly.
- Minimal or no equipment modification required for system installation.
- A pneumatic timing device (frequency generator) with a control range.
- Easy lubricant and air flow adjustment.
- Durable reservoir.
- Standard hose length is 5m. Additional hose length available upon request.
- Multiple nozzle types available.

Working principle drops instead of litres!

An adjustable positive displacement metering pneumatic pump delivers a minimal quantity of lubricant along a capillary tube fitted inside the length of the air line to the nozzle head. At this point the lubricant droplet is introduced into the air stream and transported to the cutting edge. The lubricant forms a thin even coat on the cutting edge greatly reducing the frictional heat.



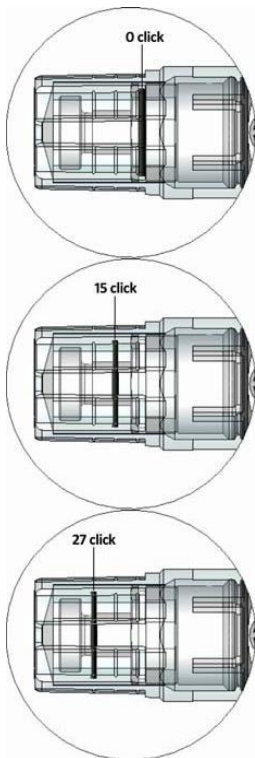
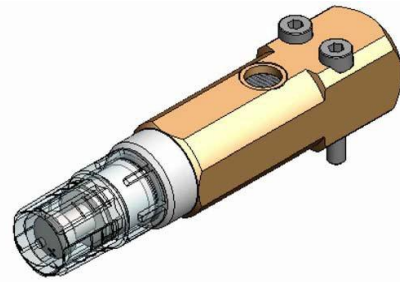
OPERATION

When the compressed air at a pressure of between 5 (75psi) and 10 (150psi) bar is passed to the pump, it acts on the top face of the piston. The piston then operates and a precise set amount of lubricant is delivered through the outlet to the delivery port and along the capillary tube. The air is then exhausted, the piston reseats under spring pressure and the metering chamber refills with lubricant. The pump is now reset for another delivery cycle. The strokes per minute can be adjusted between 3 each second to 1 each minute via the frequency generator but these can vary slightly due to the lubricant used and the air pressure.

The lubricant discharge can also be adjusted by means of the pumps manual ratchet adjuster to give a discharge rate of between 0mm³ and 41mm³ per stroke.

HOW TO ADJUST THE DISCHARGE PER STROKE

Turning the adjuster clockwise will decrease the pump discharge and turning the adjuster anti-clockwise will increase the pump discharge.



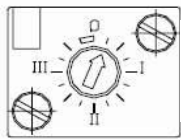
Increments	Discharge / Cycle
Click 0	39,00
Click 1	37,23
Click 2	35,47
Click 3	33,70
Click 4	31,93
Click 5	30,16
Click 6	28,40
Click 7	26,63
Click 8	24,86
Click 9	23,10
Click 10	21,33
Click 11	19,56
Click 12	17,79
Click 13	16,03
Click 14	14,26
Click 15	12,49
Click 16	10,73
Click 17	8,96
Click 18	7,19
Click 19	5,42
Click 20	3,66
Click 21	1,89
Click 22	0,12
Click 23	0,00
Click 24	0,00
Click 25	0,00
Click 26	0,00

HOW TO ADJUST THE FREQUENCY GENERATOR WITH AIR AT 6 BAR (90psi)

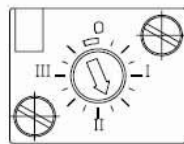
With the air pressure 5 bar (75psi) the values have to be increased of about 7%

With the air pressure 7 bar (105psi) the values have to be decreased of about 4%

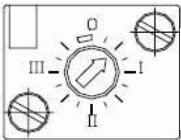
With the air pressure 8 bar (120psi) the values have to be decreased of about 8%



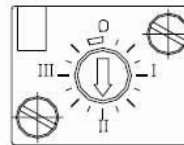
66 STROKES PER MINUTE



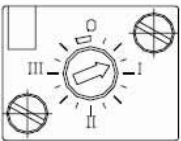
5 STROKES PER MINUTE



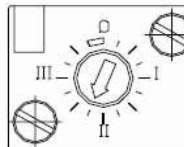
37 STROKES PER MINUTE



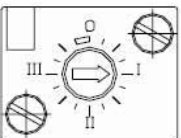
4 STROKES PER MINUTE



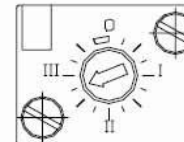
21 STROKES PER MINUTE



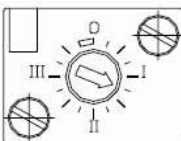
3 STROKES PER MINUTE



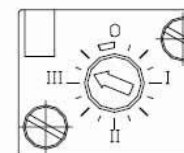
13 STROKES PER MINUTE



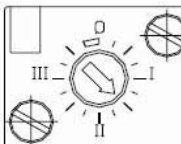
2 STROKES PER MINUTE



10 STROKES PER MINUTE



1 STROKE PER MINUTE



6 STROKES PER MINUTE