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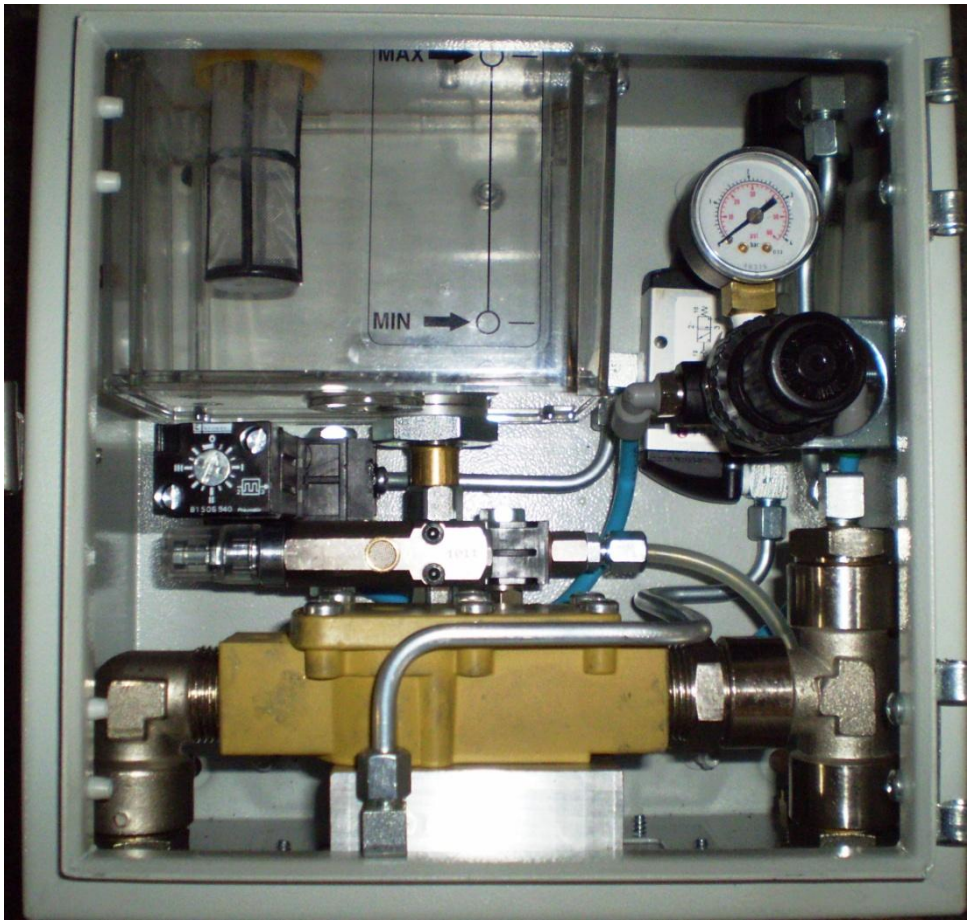
THROUGH TOOL LUBRICATORS.

CUTTING FLUID DISPENSERS FOR USE WITH AUTOMATIC PNEUMATIC DRILLING MACHINES (FDU UNITS).



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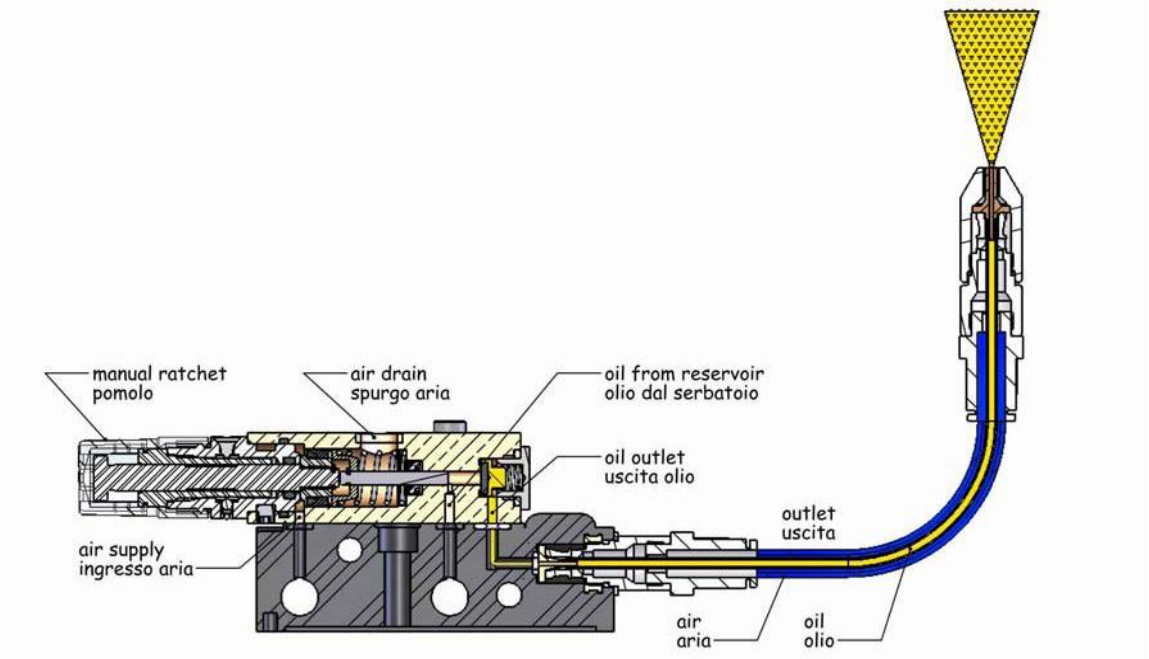
THROUGH-TOOL CUTTING FLUID DISPENSER (FDU).

OPERATING PRINCIPLES.

DROPS INSTEAD OF LITRES.

A fully adjustable positive displacement pump, delivers minute quantities of cutting fluid via the co-axial output hose to the cutting tool. The air flow enables the cutting fluid to disperse evenly through the cutting tool to the point of contact of the cutting head. The lubricant forms a thin even coating at the tool tip, which along with the air flow reduces the frictional heat at the point of contact.
The air pressure going to the tool tip, can be adjusted by means of the air pressure regulator, to ensure that 'mist' is not created, thus reducing the risk of over-spray and fume inhalation.
Direct mains air pressure (max 150 psi) acts upon the pneumatic pulse generator to ensure that the operating 'rate' of the pump remains constant.

POSITIVE DISPLACEMENT PNEUMATIC METERING PUMP.



OPERATING PRINCIPLES.

The drive of the unit is carried out by a simple action pneumatic piston, which is controlled by compressed air, with a pressure of between 5 bar (75 psi) to 10 bar (150 psi).
When the air is turned on, the piston moves forward and a measured amount of lubricant enters the discharge port. When the air shuts off the piston returns under spring pressure and the metering chamber re-fills with lubricant ready for the new stroke. The stroke of the piston and therefore the output volume is adjusted by means of the thumb bit knob.
The 'strokes per minute' is adjusted by means of the pulse generator and can be adjusted from 66 to 1 per minute.
A combination of the piston adjustment and the stroke rate, allows an infinitely variable series of adjustments to provide the exact quantity and pressure for the fluid delivery to the point of use.

NB:-The fluid feed line can be manually primed, prior to connection of the operating air. This is achieved by repeatedly depressing the oil flow adjuster. This effectively strokes the fluid pump, dispensing cutting fluid into the co-axial supply line. This should be repeated until cutting fluid is apparent at the tool connection coupling.

CO-AXIAL FEED LINE.

The fluid output is delivered via the 2.5mm internal hose, which is inside the 1/4" hydraulic hose.
The compressed air is delivered via the 1/4" hydraulic hose and mixes with the fluid at the tool coupling, before being transmitted to the cutting tip through the tool.

Please see the matrix below for details of all of the current system combinations available!

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Through Tool Cutting Fluid Dispensing Units.

Basic Operator Instruction .

1) Overview of the equipment.

- Concept! To improve the flow of cutting fluid to the tool. Enabling easy adjustment of the fluid flow with repeatable consistency.

- Application of cutting fluid at the tool face, is now carried out using an Allube lubricator, housed in a steel enclosure. This new lubricator is far more flexible than the old 'onboard' applicator. It allows the infinite adjustment of the oil pump 'stroke' and pulse rate; it now also allows the adjustment of 'air flow' and more importantly the air pressure at the cutting face of the tool. There may be some 'smoking' of the fluid as cutting temperatures rise, but this will not be fluid mist.

- Minimal hosing, to and from the FDU to reduce health and safety concerns, ONE hose in ONE hose out, principle. This with the 'split' connections at the tool, for air motor drive and cutting fluid application.

- This Through Tool fluid dispensing unit is completely pneumatically operated. It will not operate until air flows through the unit. The inclusion of an airflow 'sensor', within the unit, means that the lubricator does not activate, until signalled by the airflow sensor. It will stop dispensing, when the airflow ceases through the unit.

- Visual fluid level indication via the glazed door of the unit, with minimum safe level marked on the reservoir.

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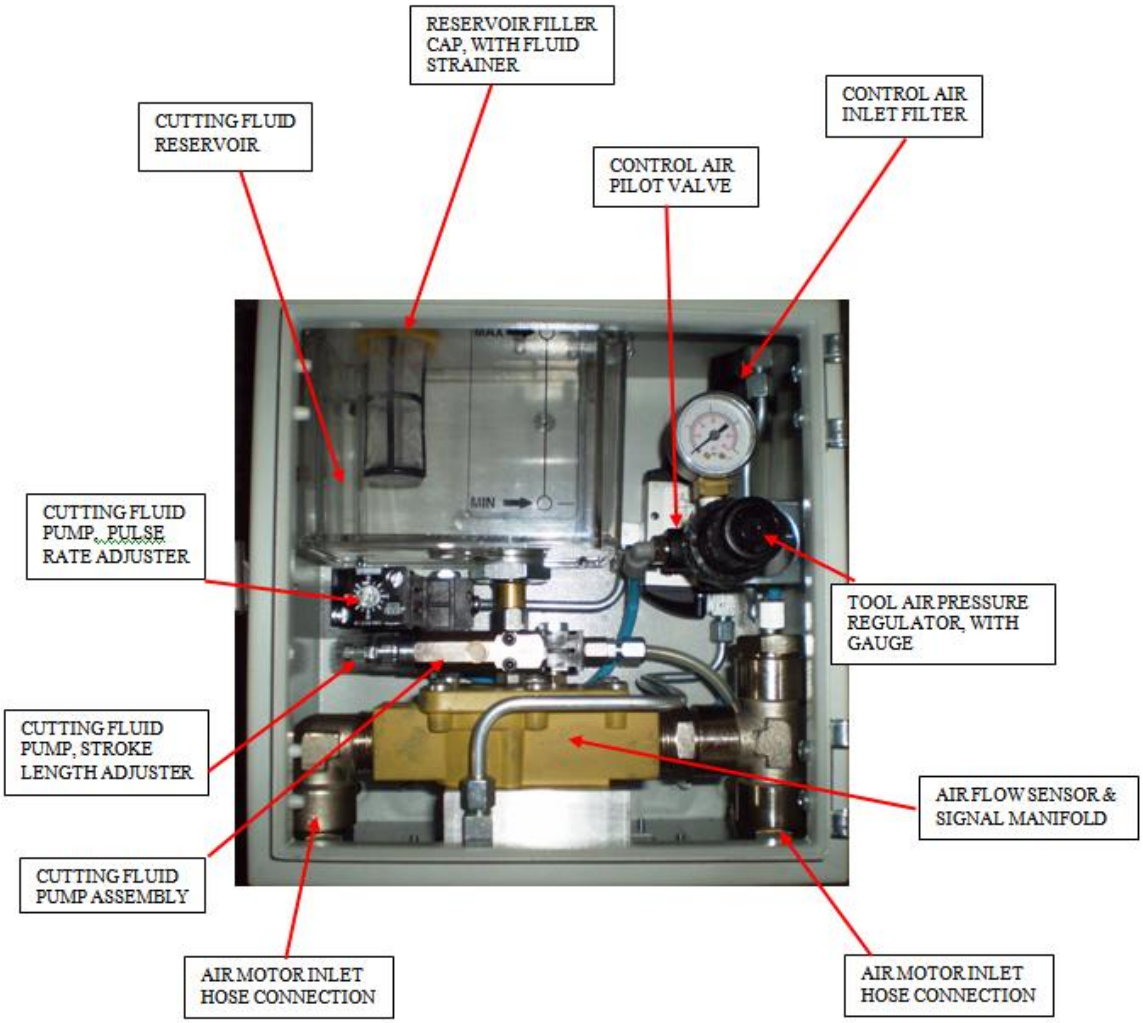
THROUGH-TOOL LUBRICATOR ASSEMBLY.



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ALLUBE CUTTING AND MOTOR OIL FLUID DISPENSERS.

MODEL IDENTIFICATION CHART.

EXAMPLES:

CFDU – 1 – 3 – 41 - A – 2 – R3 – B –T. (1)
FDU – 1 – 4 – 41 – B – 2 – 0 – N – F. (2)
MDU – 0 – 6 – 55 – 0 – 0 – 0 – N – F. (3)

BASIC UNIT TYPES:

CFDU: Combined Fluids dispenser,
FDU: Cutting fluid dispenser,
MDU: Motor oil dispenser,

NUMBER OF COOLANT PUMPS:

1: Single coolant pump,
2: Twin coolant pump,
4: Four coolant pumps,
8: Eight coolant pumps,
NB: Insert '0' for MDU units.

AIR MOTOR HOSE LENGTH:

3: 3m x 19mm blue PCX,
4: 4m x 19mm blue PCX,
5: 5m x 19mm blue PCX,
6: 6m x 19mm blue PCX,

TOOL AIR COUPLING:

41: CEJN 410 coupling,
42: CEJN 442 coupling,
55: CEJN 550 coupling,

COOLANT DELIVERY HOSE LENGTH:

A: 3.5m x 1/4" bore GP1 hose,
B: 4.5m x 1/4" bore GP1 hose,
C: 5.5m x 1/4" bore GP1 hose,
D: 6.5m x 1/4" bore GP1 hose,
NB: Insert '0' for MDU units.

TOOL COOLANT COUPLING:

1: ISO 'B; Brass coupling,
2: Series 50 Brass coupling,
NB: Insert '0' for MDU units.

CONTROL ACCESSORIES:

R3: Remote manual on/off button & 3m hose.
R4: Remote manual on/off button & 4m hose.
R5: Remote manual on/off button & 5m hose.
R6: Remote manual on/off button & 6m hose.
NB: Insert '0' for MDU units.

MOUNTING ACCESSORIES:

M: Magnetic rear mounts,
B: Wrap-around top bump stop cover.
N: None required.

ENCLOSURE DATACHABLE HOSES:

S1: Single detachable hose 1/4"hose only for FDU.
S2: Single detachable hose 3/4"hose only for MDU.
T: Twin detachable hoses for CFDU.
F: Fixed hose NON detachable.

Description of the above example part number created:

1) **CFDU-1-3-41-A-2-R3-B-T**
   Combined fluid dispenser with single coolant pump, 3 metre air motor hose with CEJN 410 tool coupling, 3.5 metre coolant delivery hose with a 50 series coolant tool connection, remote ON/OFF button with 3 metre extension hose, wrap-around bump stop and twin detachable outlet hoses.

2) **FDU-1-4-41-B-2-0-N-F**
   Fluid dispenser with single coolant pump, 4 metre air motor hose with CEJN 410 tool coupling, 4.5 metre coolant delivery hose with a 50 series coolant tool connection, no remote ON/OFF, no wrap-around bump stop and fixed outlet hoses.

3) **MDU-0-6-55-0-0-0-N-F**
   Motor oil dispenser with no coolant pump, 6 metre air motor hose with CEJN 550 tool coupling, no coolant hose and no coolant coupling, no remote ON/OFF button, no mounting accessories and fixed outlet hoses.