

# **DROPS NOT LITERS!**

**MINIMAL  
LUBRICATION  
SYSTEMS**

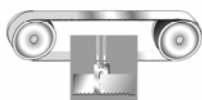
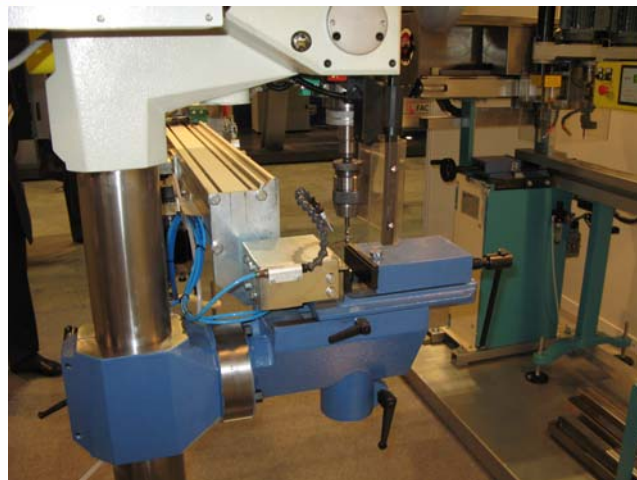
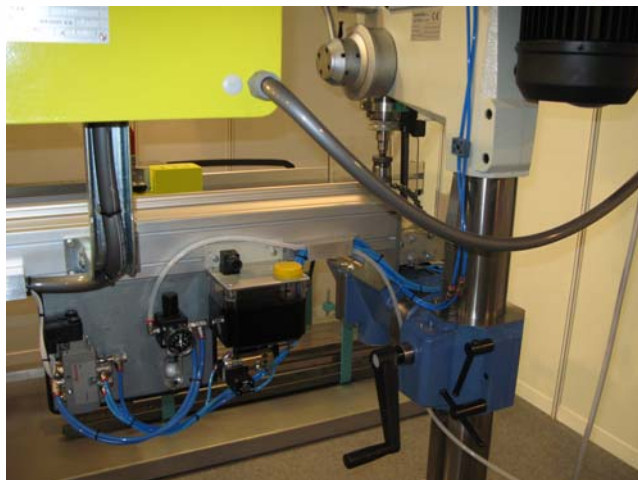


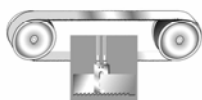
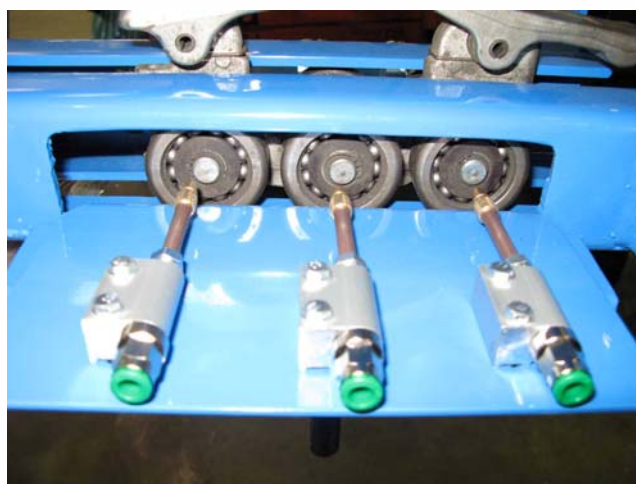
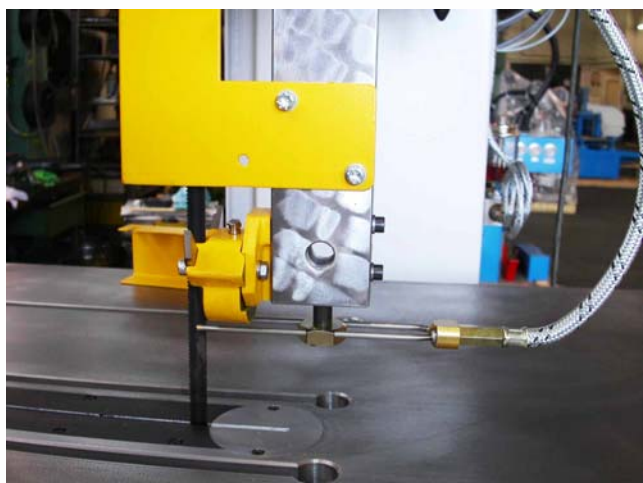
## **GOCCE NON LITRI!**



**IMPIANTI  
LUBRIFICAZIONE  
MINIMALE**









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### **INTRODUCTION**

THE ILC 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.

DUE TO THE WAY THE SYSTEMS DELIVER A PRECISE MINIMAL QUANTITY OF HEAVIER THAN AIR LUBRICATING OIL DROPLETS TO THE CUTTING EDGE VIA INDIVIDUALLY ADJUSTABLE PNEUMATIC PUMPS THERE IS NO MISTING EFFECT IN THE ATMOSPHERE. NO GENERATION OF FRICTION / HEAT BETWEEN THE WORK SURFACE AND THE TOOL CUTTING EDGE, AND THE LUBRICATING OIL IS CONSUMED IN THE MACHINING PROCESS. JUST A SMALL QUANTITY OF OIL DOES THE JOB AND HE IS NATURALLY CONSUMED IN THE CUTTING PROCESS, SO THERE IS NO HARMFUL MISTING OR HAZARDOUS WASTE DISPOSAL TO WORRY ABOUT AND THAT CAN MEAN 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 REDUCED. REDUCED HANDLING AND STORAGE OF HAZARDOUS MATERIALS MEANS A SAFER, CLEANER WORKING ENVIRONMENT. AND 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**

**LUBROREFRIGERANT CONSUMPTION REDUCTION 90% LOWER**

**NO COOLANT HANDLING OR DISPOSAL PROBLEMS**

**DRY CHIPS (SWarf)**

**LESS MACHINE DOWN TIME**

**INCREASED PRODUCTIVITY**

**SHORT PAY BACK TIME**



**APPLICATIONS**

PROVEN RESULTS IN THE FOLLOWING PRIMARY APPLICATIONS



*BAND SAWING*



*CIRCULAR SAWING*



*MILLING*



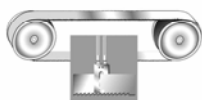
*ENGRAVING*



*TAPPING*



*BORING*





*DRILLING*



*BROACHING*



*TOOL AND CUTTER GRINDING*



*ROLLING*



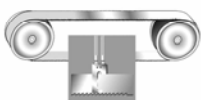
*GEAR CUTTING*



*BENDING*

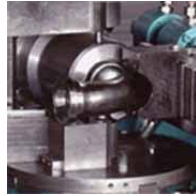


*PUNCHING*





*ROLLFORMING*



*PIPE BENDING*



*STAMPING*



*METAL SPINNING*



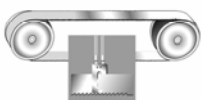
*BELTS AND COILS*



*MONO AND BI-RAILS CONVEYORS*



*CHAINS*

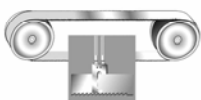




*FOOD MACHINERY*



*PROTECTIVE COATING SPRAY*





**THE UNIQUE ADVANTAGES OF LUBETOOL**

LUBETOOLS REGULATE THE LUBRICANT SUPPLIED IN EXACT QUANTITIES ADJUSTABLE FROM 0 MM<sup>3</sup> TO 41 MM<sup>3</sup> – 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 IS 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 5 M. ADDITIONAL HOSE LENGTH AVAILABLE UPON REQUEST.

MULTIPLE NOZZLE TYPES AVAILABLE.

**LUBETOOL WILL GET THE JOB DONE FOR YOU!**

*PRODUCTION RATES WILL INCREASE.*

*TOOL LIFE WILL IMPROVE.*

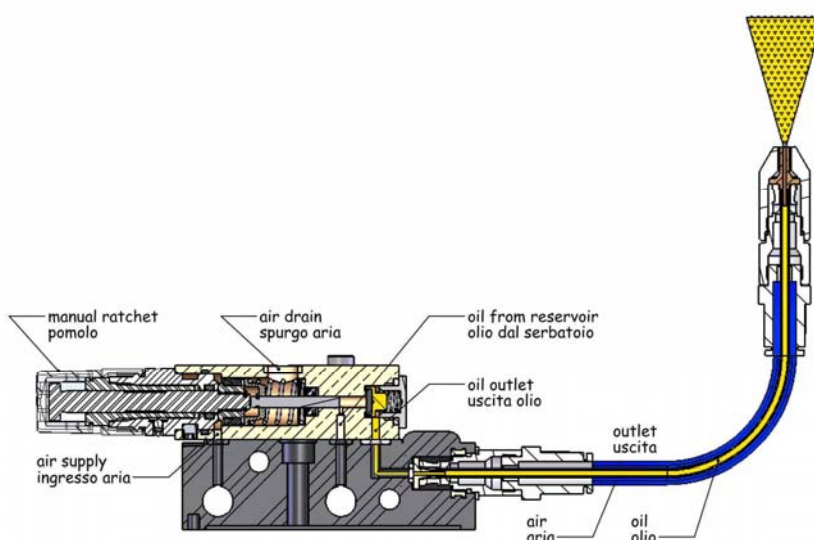
*HAZARDOUS AIRBORNE PARTICLES, WASTE DISPOSAL HASSLES AND PARTS CLEANING WILL BE ELIMINATED.*



**WORKING PRINCIPLE  
DROPS INSTEAD OF LITERS!**

AN ADJUSTABLE POSITIVE DISPLACEMENT METERING PNEUMATIC PUMP DELIVERS A MINIMAL QUANTITY OF LUBRICANT ALONG A CAPILLARY TUBE FITTED INSIDE 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.

**POSITIVE DISPLACEMENT METERING PNEUMATIC PUMP**



**OPERATION**

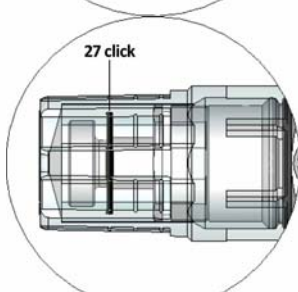
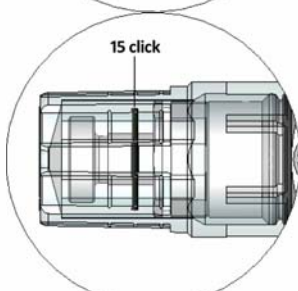
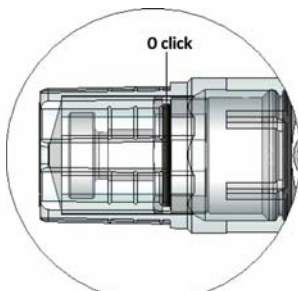
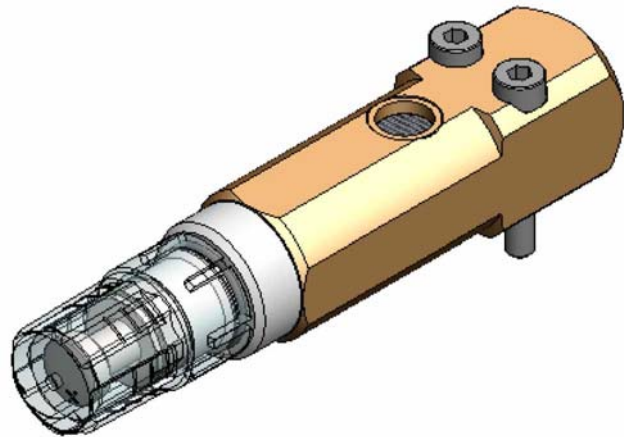
WHEN THE COMPRESSED AIR AT A PRESSURE OF BETWEEN 5 (75 PSI) AND 10 (150 PSI) BAR IS PASSED TO THE PUMP IT ACTS ON THE TOP FACE OF THE PISTON. THE PISTON THEN OPERATES AND A PRECISE SET AMOUNT OF LUBRICANT IS DELIVERED THROUGH THE OUTLET TO THE DELIVERY PORT AND ALONG THE CAPILLARY TUBE. THE AIR IS THEN EXHAUSTED THE PISTON RE-SEATS 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 BETWEEN 0 MM<sup>3</sup> AND 41 MM<sup>3</sup> PER STROKE.



**HOW TO ADJUST THE DISCHARGE PER STROKE**

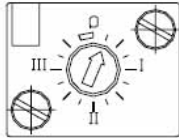
TURNING THE ADJUSTER CLOCKWISE WILL DECREASE THE PUMP DISCHARGE AND TURNING THE ADJUSTER COUNTER -CLOCKWISE WILL INCREASE THE PUMP DISCHARGE.



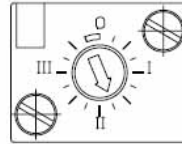
INCREMENTS	DISCHARGE / CYCLE
CLICK 0	39,00
CLICK 1	37,23
CLICK 2	35,47
CLICK 3	33,70
CLICK 4	31,93
CLICK 5	30,16
CLICK 6	28,40
CLICK 7	26,63
CLICK 8	24,86
CLICK 9	23,10
CLICK 10	21,33
CLICK 11	19,56
CLICK 12	17,79
CLICK 13	16,03
CLICK 14	14,26
CLICK 15	12,49
CLICK 16	10,73
CLICK 17	8,96
CLICK 18	7,19
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
CLICK 27	0,00



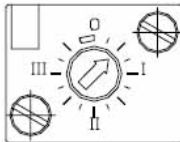
**HOW TO ADJUST THE FREQUENCY GENERATOR WITH AIR AT 6  
BAR (90 PSI)**



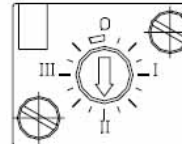
66 CICLI / MINUTO  
66 STROKES / MINUTE



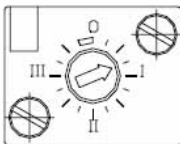
5 CICLI / MINUTO  
5 STROKES / MINUTE



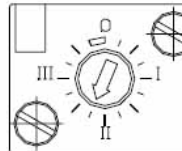
37 CICLI / MINUTO  
37 STROKES / MINUTE



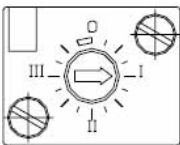
4 CICLI / MINUTO  
4 STROKES / MINUTE



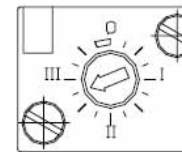
21 CICLI / MINUTO  
21 STROKES / MINUTE



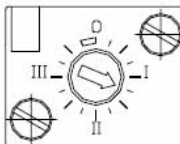
3 CICLI / MINUTO  
3 STROKES / MINUTE



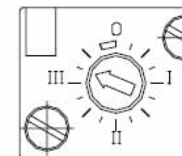
13 CICLI / MINUTO  
13 STROKES / MINUTE



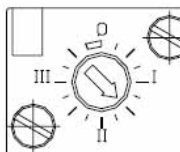
2 CICLI / MINUTO  
2 STROKES / MINUTE



10 CICLI / MINUTO  
10 STROKES / MINUTE



1 CICLO / MINUTO  
1 STROKE / MINUTE



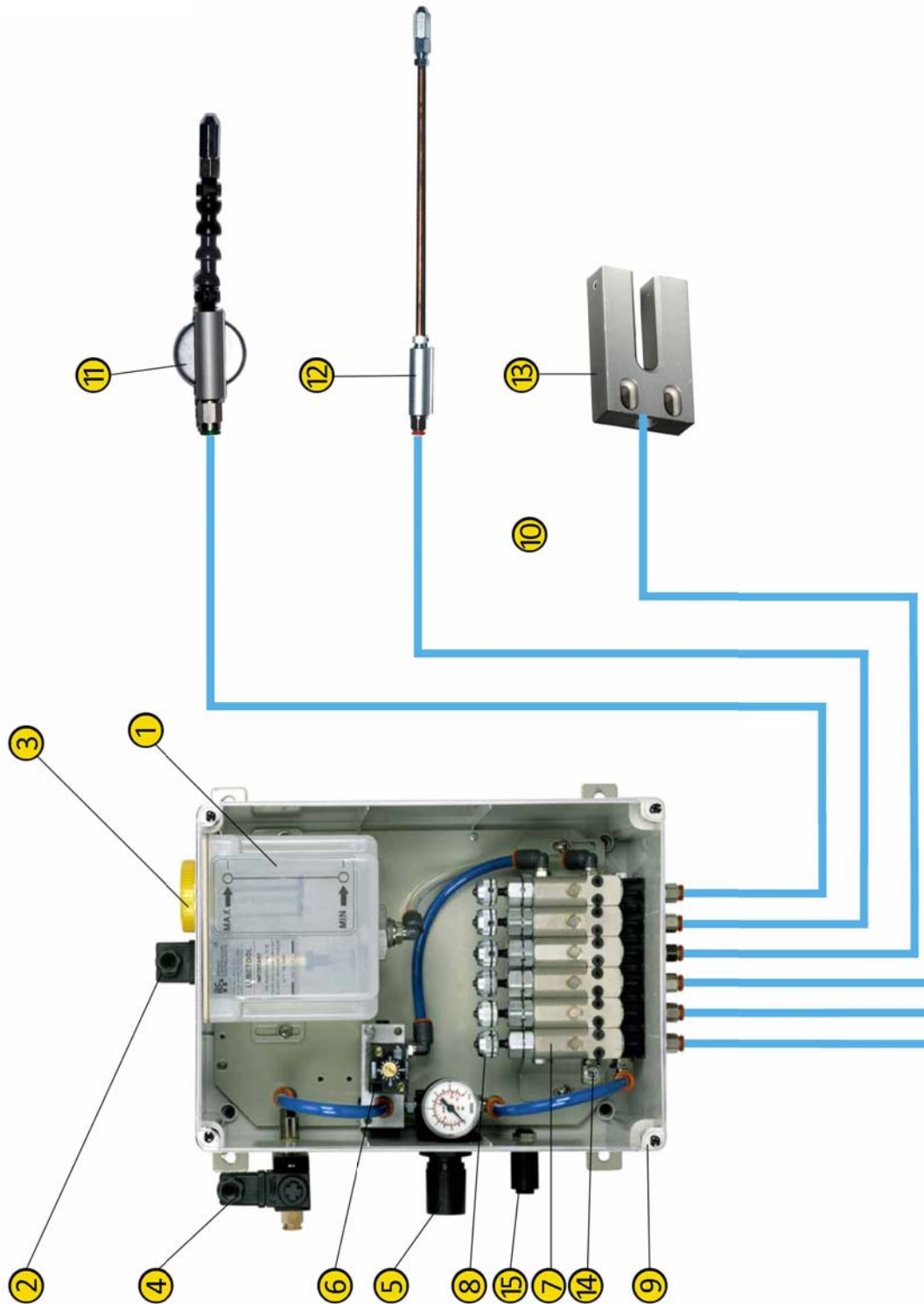
6 CICLI / MINUTO  
6 STROKES / MINUTE

WITH THE AIR PRESSURE 5 BAR (75 PSI) THE VALUES HAVE TO BE INCREASED OF ABOUT 7%

WITH THE AIR PRESSURE 7 BAR (105 PSI) THE VALUES HAVE TO BE DECREASED OF ABOUT 4%

WITH THE AIR PRESSURE 8 BAR (120 PSI) THE VALUES HAVE TO BE DECREASED OF ABOUT 8%







### INFORMATION AND OPERATING INSTRUCTIONS

**1. LIQUID RESERVOIR:** SEMITRANSSPARENT, NYLON IMPACT RESISTANT HAS A CAPACITY OF 1.2 L, 2.2 L OR 3.6 L

**2. LOW LEVEL SWITCH:** THE CONTACT CLOSE WHEN THE RESERVOIR IS EMPTY.

**3. FILLER CUP:** TO RE-FILL OIL IN THE RESERVOIR.

**4. AIR SUPPLY:** A SOLENOID VALVE WITH A COIL 24 V DC, 24 V AC, 115 V AC OR 230 V AC SUPPLY THE AIR IN THE SYSTEM. AIR PRESSURE SHOULD BE MIN 5 BAR (75 PSI) MAX 8 BAR (120 PSI). VERY IMPORTANT IS TO INSTALL A STANDARD PARTICLE FILTER (5 MICRON) TO ELIMINATE PARTICLES AND WATER FROM ENTERING THE SYSTEM. IF THERE IS PROBLEM WITH OIL IN THE AIR SYSTEM, WE SUGGEST RUNNING A COALESCING FILTER IN TANDEM WITH THE PARTICLE AIR FILTER.

**5. AIR REGULATOR WITH GAUGE:** THIS SWITCH ALLOWS THE FLOW OF AIR TO GO IN THE NOZZLES. TURN SWITCH CLOCKWISE TO TURN AIR ON, AND COUNTER-CLOCKWISE TO TURN AIR OFF. THE AIR PRESSURE HAS TO BE FROM 0.5 BAR (8 PSI) TO 3 BAR (45 PSI). WE SUGGEST 1.5 BAR (22 PSI).

**6. FREQUENCY GENERATOR:** THIS VALVE CONTROLS THE FREQUENCY AT WHICH THE PUMP CYCLE. TO INCREASE THE SPEED OF THE PUMPS, TURN SCREWDRIVER ADJUSTMENT COUNTER-CLOCKWISE.

**7. PNEUMATIC PUMP:** EACH STROKE GIVE AN EXACT AMOUNT OF OIL TO THE OUTLET.

**8. OIL FLOW ADJUSTMENT:** THE MANUAL RATCHETS REGULATE THE AMOUNT OF LUBRICANT THAT IS SUPPLIED WITH EACH STROKE OF THE PUMP (ADJUSTABLE FROM 0 MM<sup>3</sup> TO 41 MM<sup>3</sup> /STROKE).

**9. BOX:** DURABLE IMPACT-RESISTANT LOCKING PLASTIC BOX.

**10. COAXIAL FEEDING LINE:** TO SUPPLY OIL SEPARATE FROM AIR TO THE NOZZLE.

**11. LOC-LINE MAGNETIC BASE NOZZLE**

**12. STEEL FIXED BASE NOZZLE**

**13. SAW SADDLE NOZZLE**

**14. AIR DRAIN:** TO PURGE AIR FROM THE OIL SYSTEM

**15. STRAINER EXHAUST AIR**





**LUBETOOL UCGF, UCGF-SE, AGGF AND AGGF-SE WITH  
FREQUENCY GENERATOR**

THE INSIDE PNEUMATIC CIRCUIT GOES DIRECT TO THE AIR FEEDING LINES AND TO THE PUMPS (THROUGH THE FREQUENCY GENERATOR). WHEN THE SOLENOID VALVE IS ENERGIZED THE PUMPS CAN CYCLE (ADJUSTABLE WITH THE FREQUENCY GENERATOR) AND AIR IS SENT CONTINUOUSLY TO THE TOOL. THE SOLENOID VALVE HAS TO BE ENERGIZED BEFORE THE TOOL WILL BEGIN TO MACHINE AND SHUT DOWN WHEN THE TOOL WILL FINISH TO MACHINE.

**LUBETOOL UCSG, UCSG-SE, AGSG AND AGSG-SE WITHOUT  
FREQUENCY GENERATOR**

THE UCSG TYPES NEED AN EXTERNAL DRIVE TO ADJUST THE FREQUENCY AT WHICH THE PUMPS CYCLE. THE INSIDE PNEUMATIC CIRCUIT GOES DIRECT TO THE AIR FEEDING LINES AND TO THE PUMPS. WHEN THE SOLENOID VALVE IS ENERGIZED THE PUMPS CAN CYCLE 1 TIME AND AIR IS SENT CONTINUOUSLY TO THE TOOLS. TO HAVE ANOTHER PUMP CYCLE THE SOLENOID VALVE HAVE TO BE DEENERGIZED AND AFTER ENERGIZED (MINIMUM PAUSE TIME IS 0.5 SECONDS).

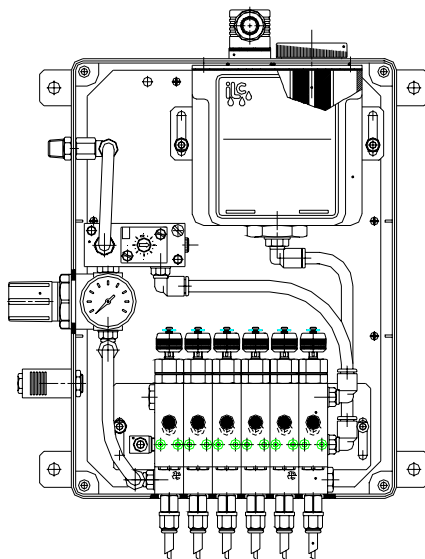
**FEATURES**

DISCHARGE	FROM 0 MM <sup>3</sup> TO 41 MM <sup>3</sup>
PUMPS	FROM 1 TO 6
SOLENOID VALVE	24 V DC – 24 V AC – 115 V AC – 230 V AC  FROM 3 /SECOND TO 1 / MINUTE
RESERVOIR	1.2 L
LUBRICANT	OIL MAX 800 cSt 40 °C
LOW LEVEL SWITCH	1 A 250 V AC – 220 V DC – 50 W
AIR PRESSURE	FROM 4 BAR TO 8 BAR
AIR CONSUMED AT 6 BAR/POINT	MIN: 60 L/M – MAX 100 L/M





**UCGF-SE**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

BOX ABS WITH TRANSPARENT FRONT DOOR

AIR REGULATOR + PRESSURE GAUGE

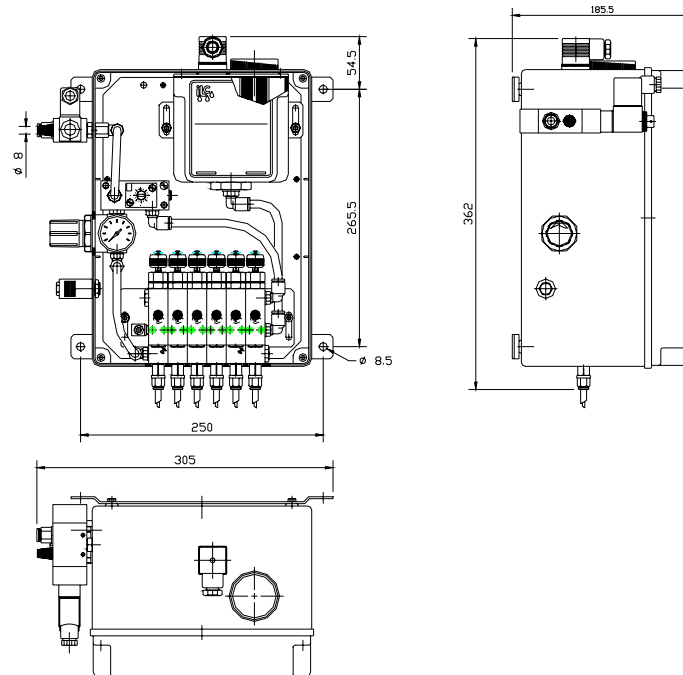
FREQUENCY GENERATOR

**ORDERING CODES**

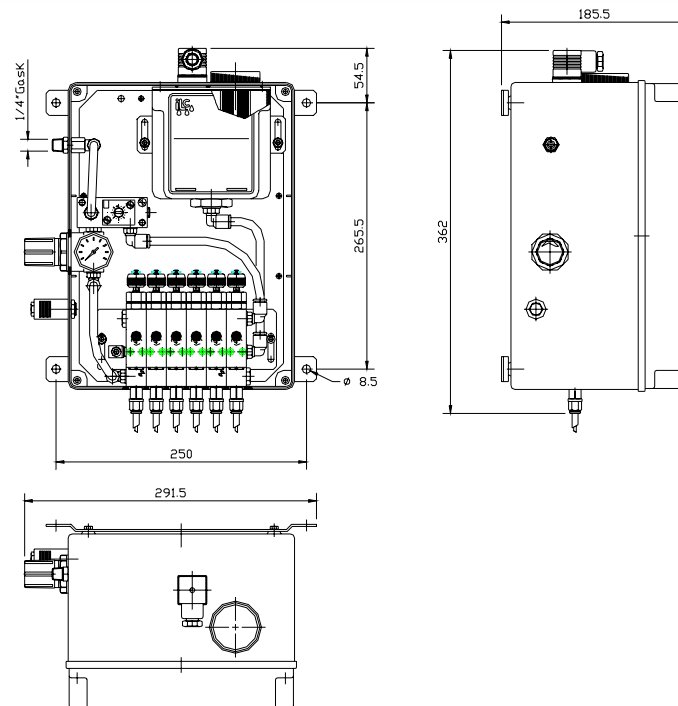
CODE	TYPE	NUMBER of PUMPS
70.009.0	UCGF – SE - 1	1
70.009.1	UCGF – SE - 2	2
70.009.2	UCGF – SE - 3	3
70.009.3	UCGF – SE - 4	4
70.009.4	UCGF – SE - 5	5
70.009.5	UCGF – SE - 6	6



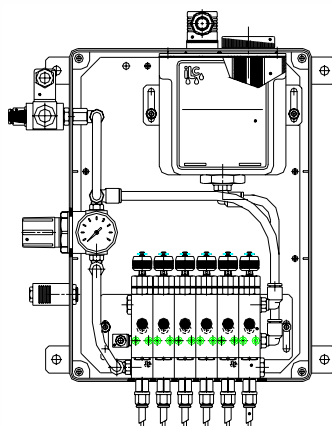
**OVERALL DIMENSION UCGF**



**OVERALL DIMENSION UCGF - SE**



**UCSG**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

BOX ABS WITH TRANSPARENT FRONT DOOR

SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC

THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE

70.001.0.24VDC

AIR REGULATOR + PRESSURE GAUGE

**ORDERING CODES**

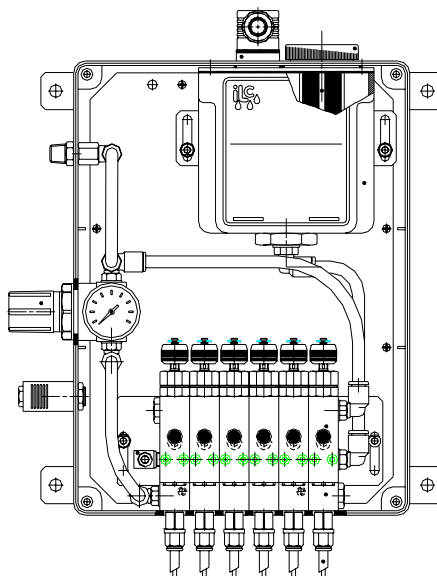
CODE	TYPE	NUMBER of PUMPS
70.001.0	UCSG - 1	1
70.001.1	UCSG – 2	2
70.001.2	UCSG – 3	3
70.001.3	UCSG – 4	4
70.001.4	UCSG – 5	5
70.001.5	UCSG - 6	6

**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**UCSG-SE**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

BOX ABS WITH TRANSPARENT FRONT DOOR

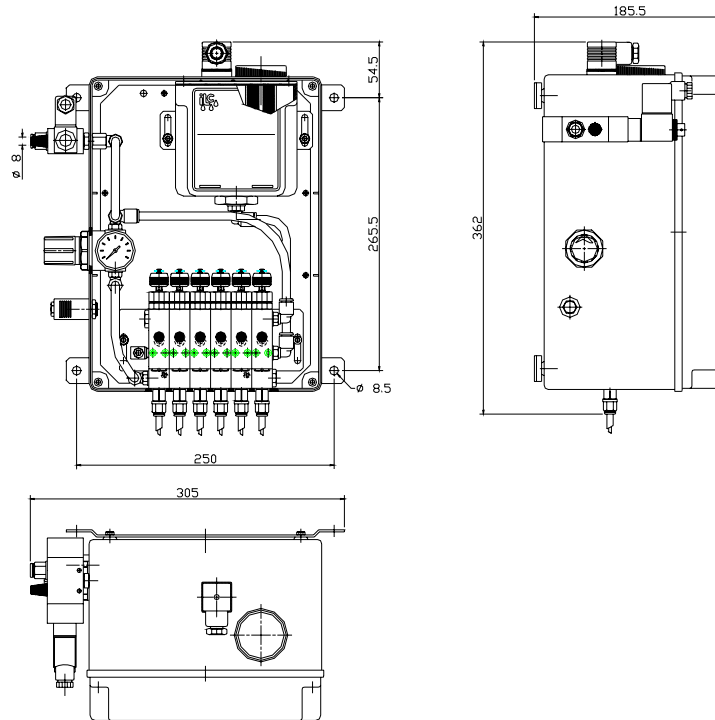
AIR REGULATOR + PRESSURE GAUGE

**ORDERING CODES**

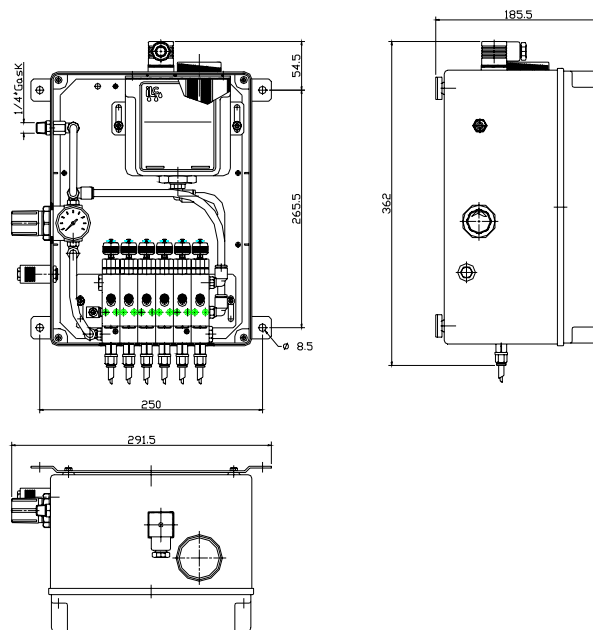
CODE	TYPE	NUMBER of PUMPS
70.010.0	UCSG – SE - 1	1
70.010.1	UCSG – SE - 2	2
70.010.2	UCSG – SE - 3	3
70.010.3	UCSG – SE - 4	4
70.010.4	UCSG – SE - 5	5
70.010.5	UCSG – SE - 6	6



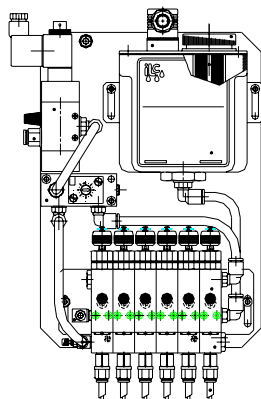
**OVERALL DIMENSION UCSG**



**OVERALL DIMENSION UCSG - SE**



# AGGF



## THE UNIT IS SUPPLIED COMPLETE OF:

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC  
THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE  
70.006.0.24VDC

AIR REGULATOR

FREQUENCY GENERATOR

## ORDERING CODES

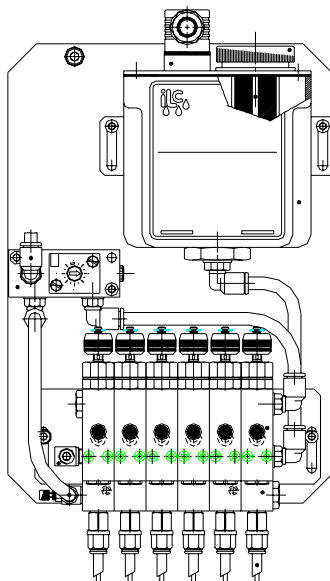
CODE	TYPE	NUMBER of PUMPS
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70.006.1	AGGF – 2	2
70.006.2	AGGF – 3	3
70.006.3	AGGF – 4	4
70.006.4	AGGF – 5	5
70.006.5	AGGF - 6	6

## CODES TO ORDER SOLENOID VALVE COILS

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**AGGF - SE**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

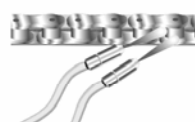
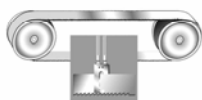
5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

AIR REGULATOR

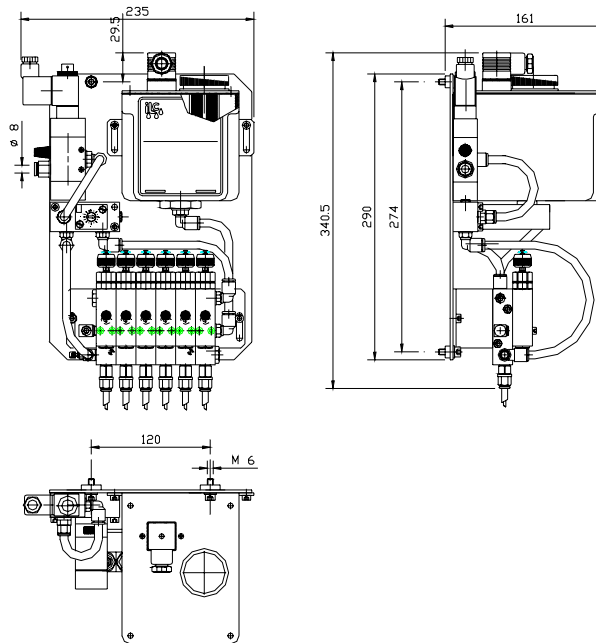
FREQUENCY GENERATOR

**ORDERING CODES**

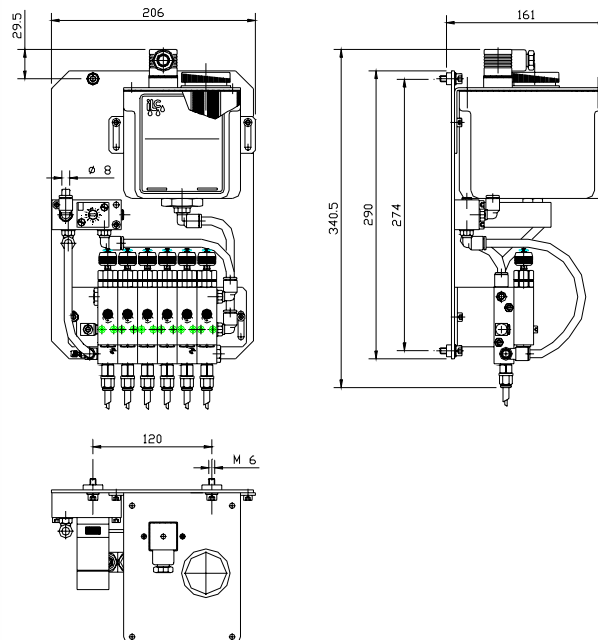
CODE	TYPE	NUMBER of PUMPS
70.002.0	AGGF – SE - 1	1
70.002.1	AGGF – SE - 2	2
70.002.2	AGGF – SE - 3	3
70.002.3	AGGF – SE - 4	4
70.002.4	AGGF – SE - 5	5
70.002.5	AGGF – SE - 6	6



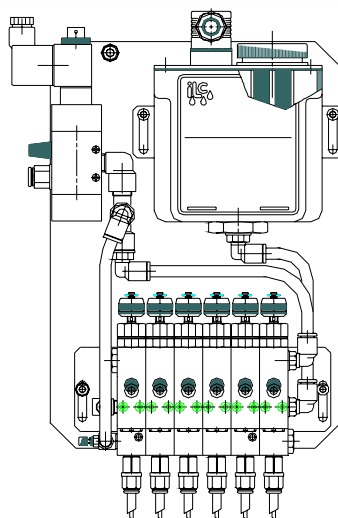
**OVERALL DIMENSION AGGF**



**OVERALL DIMENSION AGGF - SE**



**AGSG**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC  
THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE  
70.018.0.24VDC

**AIR REGULATOR**

**ORDERING CODES**

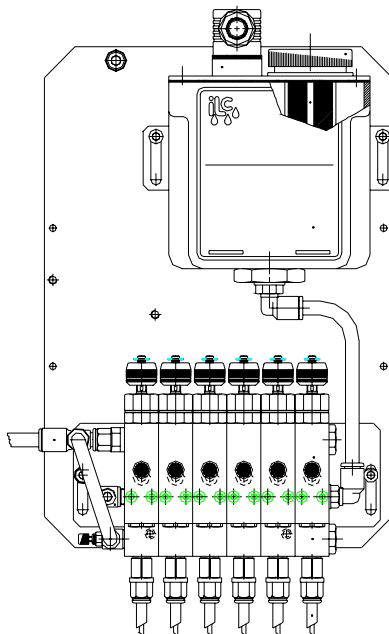
CODE	TYPE	NUMBER of PUMPS
70.018.0	AGSG – 1	1
70.018.1	AGSG – 2	2
70.018.2	AGSG – 3	3
70.018.3	AGSG – 4	4
70.018.4	AGSG – 5	5
70.018.5	AGSG – 6	6

**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**AGSG - SE**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 6

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

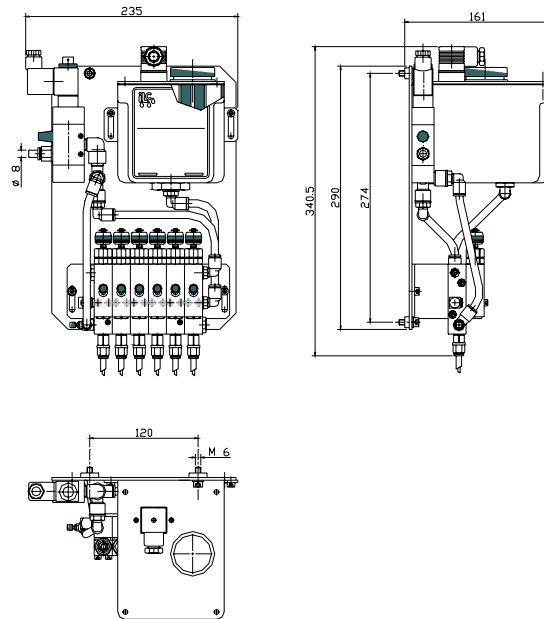
AIR REGULATOR

**ORDERING CODES**

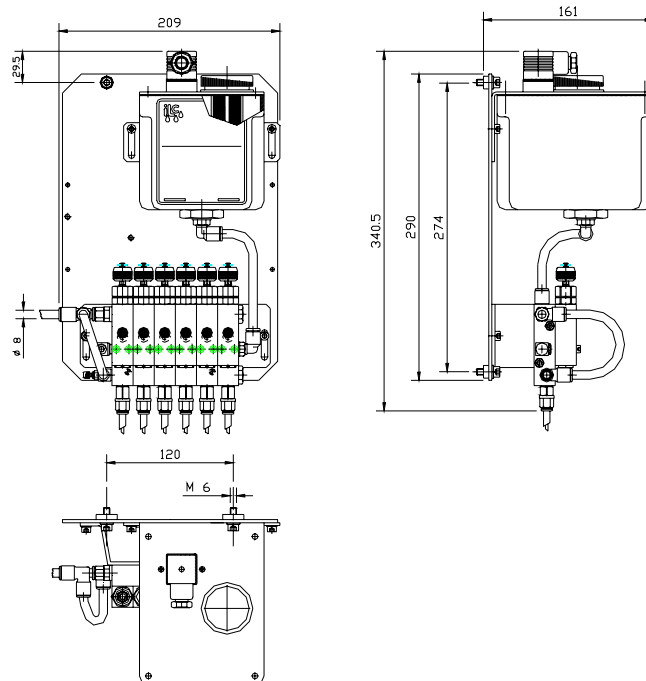
CODE	TYPE	NUMBER of PUMPS
70.003.0	AGSG – SE - 1	1
70.003.1	AGSG – SE - 2	2
70.003.2	AGSG – SE - 3	3
70.003.3	AGSG – SE - 4	4
70.003.4	AGSG – SE - 5	5
70.003.5	AGSG – SE - 6	6

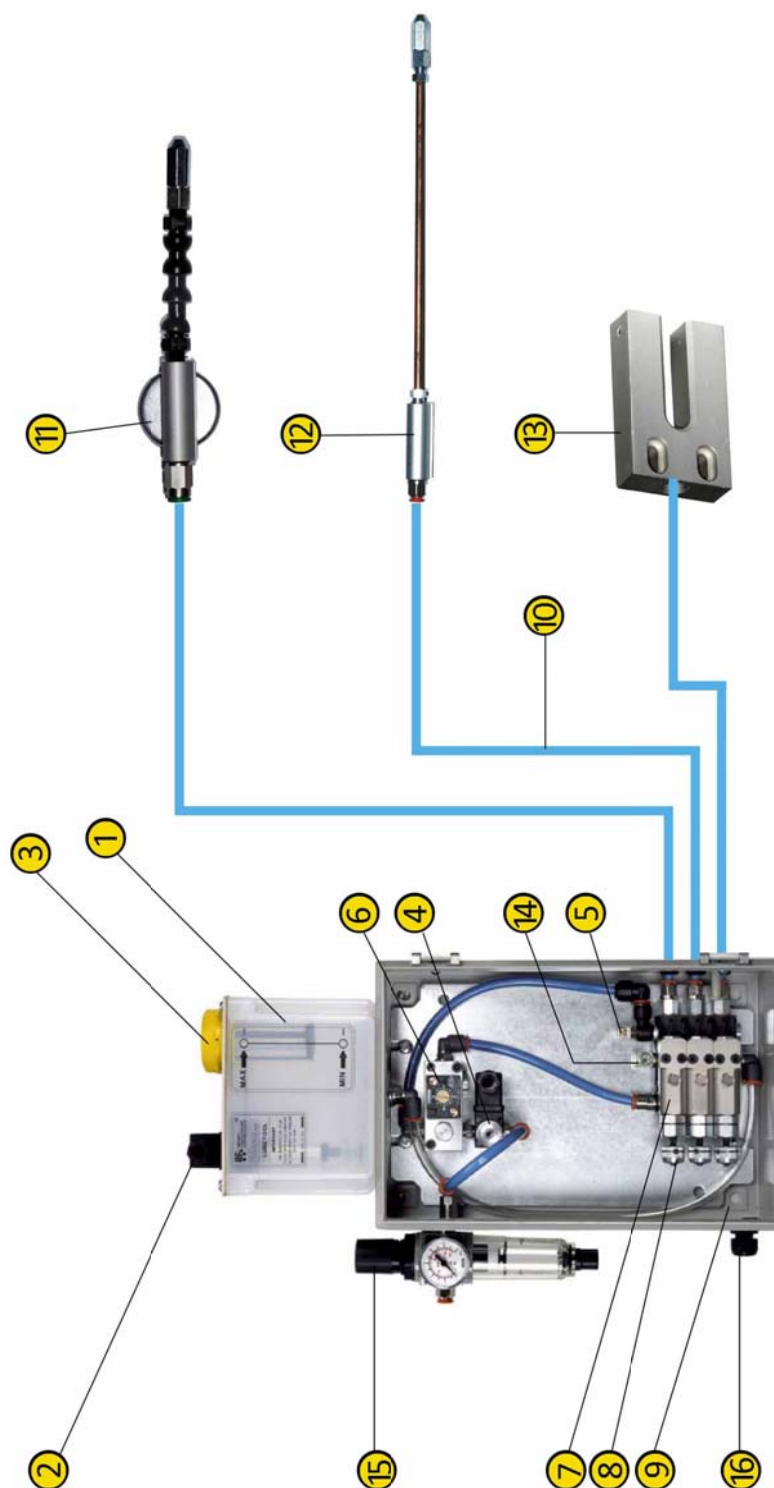


**OVERALL DIMENSION AGSG**



**OVERALL DIMENSION AGSG - SE**







#### INFORMATION AND OPERATING INSTRUCTIONS

**1. LIQUID RESERVOIR:** SEMITRANSSPARENT, NYLON IMPACT RESISTANT HAS A CAPACITY OF 1.2 L, 2.2 L OR 3.6 L

**2. LOW LEVEL SWITCH:** THE CONTACT CLOSE WHEN THE RESERVOIR IS EMPTY.

**3. FILLER CUP:** TO RE-FILL OIL IN THE RESERVOIR.

**4. AIR SUPPLY:** A SOLENOID VALVE WITH A COIL 24 V DC, 24 V AC, 115 V AC OR 230 V AC SUPPLY THE AIR IN THE SYSTEM. AIR PRESSURE SHOULD BE MIN 5 BAR (75 PSI) TO MAX 8 BAR (120 PSI). IT IS VERY IMPORTANT TO INSTALL A STANDARD PARTICLE FILTER (5 MICRON) TO ELIMINATE PARTICLES AND WATER FROM ENTERING THE SYSTEM. IF THERE IS PROBLEM WITH OIL IN THE AIR SYSTEM, WE SUGGEST RUNNING A COALESCING FILTER IN TANDEM WITH THE PARTICLE AIR FILTER.

**5. AIR REGULATOR:** THIS SWITCH ALLOWS THE FLOW OF AIR TO GO IN THE NOZZLES. TURN SWITCH CLOCKWISE TO TURN AIR ON, AND COUNTER-CLOCKWISE TO TURN AIR OFF. THE AIR PRESSURE HAS TO BE FROM 0.5 BAR (8 PSI) TO 3 BAR (45 PSI). WE SUGGEST 1.5 BAR (22 PSI).

**6. FREQUENCY GENERATOR:** THIS VALVE CONTROLS THE FREQUENCY AT WHICH THE PUMP CYCLE. TO INCREASE THE SPEED OF THE PUMPS, TURN SCREWDRIVER ADJUSTMENT COUNTER-CLOCKWISE.

**7. PNEUMATIC PUMP:** EACH STROKE GIVE AN EXACT AMOUNT OF OIL TO THE OUTLET.

**8. OIL FLOW ADJUSTMENT:** THE MANUAL RATCHETS REGULATE THE AMOUNT OF LUBRICANT THAT IS SUPPLIED WITH EACH STROKE OF THE PUMP (ADJUSTABLE FROM 0 MM<sup>3</sup> TO 41 MM<sup>3</sup> /STROKE).

**9. BOX:** DURABLE IMPACT-RESISTANT LOCKING METALLIC BOX.

**10. COAXIAL FEEDING LINE:** TO SUPPLY OIL SEPARATE FROM AIR TO THE NOZZLE.

**11. LOC-LINE MAGNETIC BASE NOZZLE**

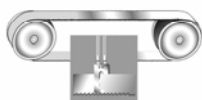
**12. STEEL FIXED BASE NOZZLE**

**13. SAW SADDLE NOZZLE**

**14. AIR DRAIN:** TO PURGE AIR FROM THE OIL SYSTEM

**15. PRESSURE REDUCER WITH GAUGE**

**16. CABLE GLAND**

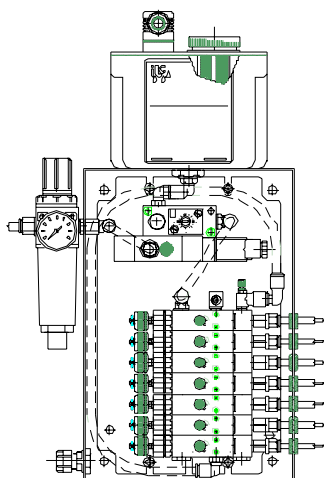


**LUBETOOL MC-EL-3P-4P-5P-6P-7P, MC-EL-3M-4M-5M-6M-7M,  
MC-EL-2P E MC-EL-2M**  
THEY ARE SUPPLIED COMPLETE OF METALLIC BOX

FEATURES	
DISCHARGE	FROM 0 MM <sup>3</sup> TO 41 MM <sup>3</sup>
PUMPS	FROM 1 TO 7
SOLENOID VALVE	24 V DC – 24 V AC – 115 V AC – 230 V AC
STROKES	FROM 3 /SECOND TO 1 / MINUTE
RESERVOIR	1.2 L, 2.2 L OR 3.6 L
LUBRICANT	OIL MAX 800 cSt 40 °C
LOW LEVEL SWITCH	1 A 250 V AC – 220 V DC – 50 W
AIR PRESSURE	FROM 4 BAR TO 8 BAR
AIR CONSUME AT 6 BAR/POINT	MIN: 60 L/M – MAX 100 L/M



**MC-EL-3P-4P-5P-6P-7P**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L OR 2.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

3 -4-5-6-7 PUMPS

5 M COAXIAL LINES FOR EACH OUTLET (6 MM – 2.5 MM)

METALLIC BOX

SOLENOID VALVE

AIR REGULATOR

FREQUENCY GENERATOR

AIR REDUCER + GAUGE

**ORDER ING CODES**

CODE	TYPE	CODE	TYPE
70.050.7	MC-EL-3P-1.2	70.050.7.SL	MC-EL-3P-1.2-SL
70.050.8	MC-EL-3P-2.2	70.050.8.SL	MC-EL-3P-2.2-SL
70.051.3	MC-EL-4P-1.2	70.051.3.SL	MC-EL-4P-1.2-SL
70.051.4	MC-EL-4P-2.2	70.051.4.SL	MC-EL-4P-2.2-SL
70.051.5	MC-EL-5P-1.2	70.051.5.SL	MC-EL-5P-1.2-SL
70.051.6	MC-EL-5P-2.2	70.051.6.SL	MC-EL-5P-2.2-SL
70.051.7	MC-EL-6P-1.2	70.051.7.SL	MC-EL-6P-1.2-SL
70.051.8	MC-EL-6P-2.2	70.051.8.SL	MC-EL-6P-2.2-SL
70.054.0	MC-EL-7P-1.2	70.054.0.SL	MC-EL-7P-1.2-SL
70.054.1	MC-EL-7P-2.2	70.054.1.SL	MC-EL-7P-2.2-SL
SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH			

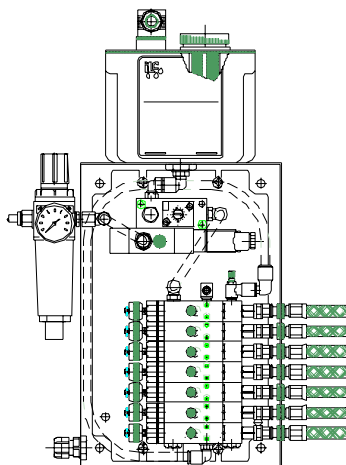
**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	16.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





**MC-EL-3M-4M-5M-6M-7M**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L OR 2.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

3-4-5-6-7 PUMPS

**COAXIAL FEEDING LINES (METALLIC COVERING) MUST BE ORDERED SEPARATELY WITH 8 MM TERMINAL. SEE PAGE 101**

METALLIC BOX

SOLENOID VALVE

AIR REGULATOR

FREQUENCY GENERATOR

AIR REDUCER + GAUGE

**ORDERING CODES**

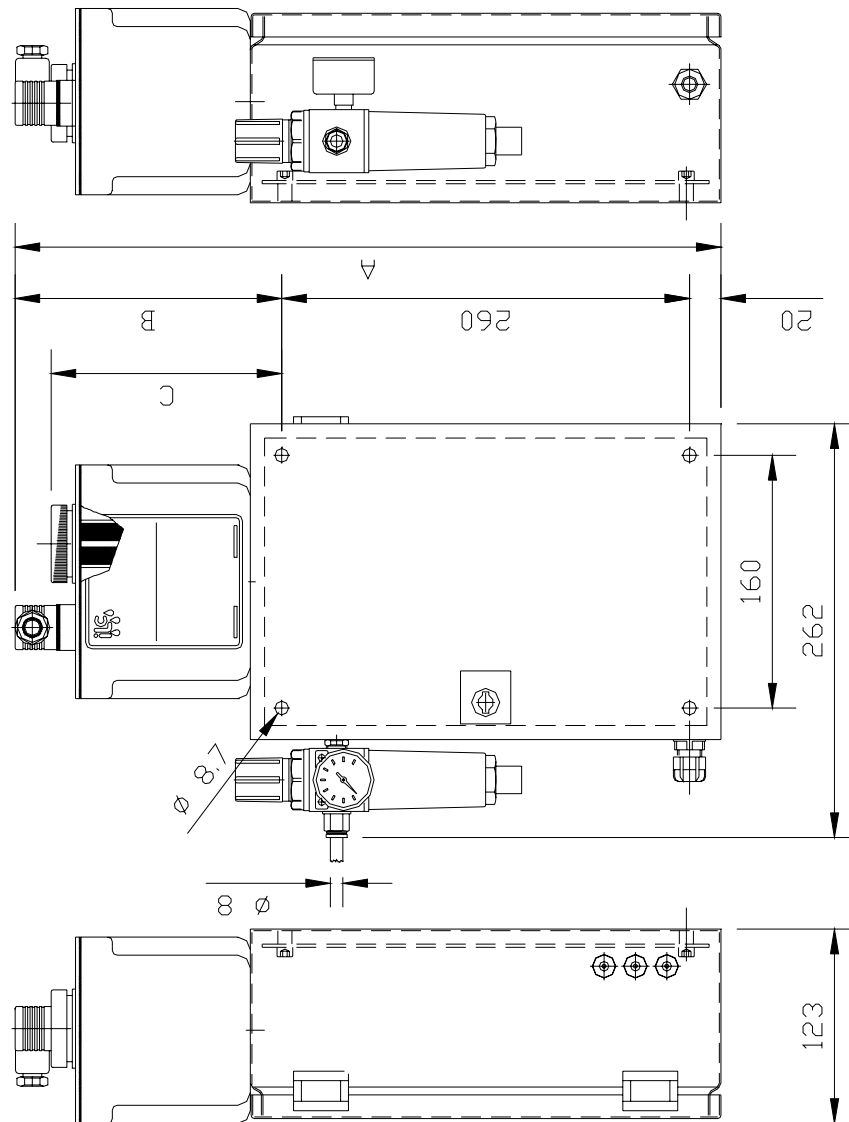
CODE	TYPE	CODE	TYPE
70.053.1	MC-EL-3M-1.2	70.053.1.SL	MC-EL-3M-1.2-SL
70.053.2	MC-EL-3M-2.2	70.053.2.SL	MC-EL-3M-2.2-SL
70.053.4	MC-EL-4M-1.2	70.053.4.SL	MC-EL-4M-1.2-SL
70.053.5	MC-EL-4M-2.2	70.053.5.SL	MC-EL-4M-2.2-SL
70.053.6	MC-EL-5M-1.2	70.053.6.SL	MC-EL-5M-1.2-SL
70.053.7	MC-EL-5M-2.2	70.053.7.SL	MC-EL-5M-2.2-SL
70.053.8	MC-EL-6M-1.2	70.053.8.SL	MC-EL-6M-1.2-SL
70.053.9	MC-EL-6M-2.2	70.053.9.SL	MC-EL-6M-2.2-SL
70.054.4	MC-EL-7M-1.2	70.054.4.SL	MC-EL-7M-1.2-SL
70.054.5	MC-EL-7M-2.2	70.054.5.SL	MC-EL-7M-2.2-SL
SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH			

**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



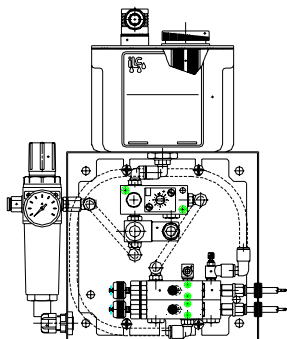
**OVERALL DIMENSION**



RESERVOIR	A	B	C
1.2 L	450	170	147
2.2 L	502	222	199



**MC-EL-2P**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L OR 2.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

METALLIC BOX

THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY  
CODE 14.660.0

AIR REGULATOR

AIR REDUCER + GAUGE

FREQUENCY GENERATOR

**ORDERING CODES**

CODE	TYPE	NUMBER of PUMPS
70.050.3	MC-EL-2P-1.2-1	1
70.050.4	MC-EL-2P-2.2-1	1
70.050.5	MC-EL-2P-1.2-2	2
70.050.6	MC-EL-2P-2.2-2	2
70.050.3.SL	MC-EL-2P-1.2-1-SL	1
70.050.4.SL	MC-EL-2P-2.2-1-SL	1
70.050.5.SL	MC-EL-2P-1.2-2-SL	2
70.050.6.SL	MC-EL-2P-2.2-2-SL	2
SL MEANS THAT THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH		

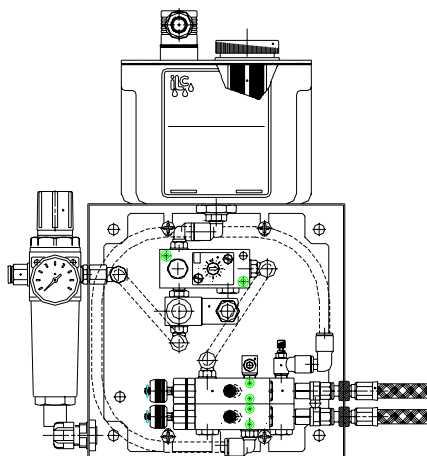
**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





**MC-EL-2M**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L OR 2.2 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

COAXIAL FEEDING LINES (METALLIC COVERING). MUST BE ORDERED SEPARATELY WITH 8 MM TERMINAL. SEE PAGE 101

METALLIC BOX

THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY

CODE 14.660.0

AIR REGULATOR

AIR REDUCER + GAUGE

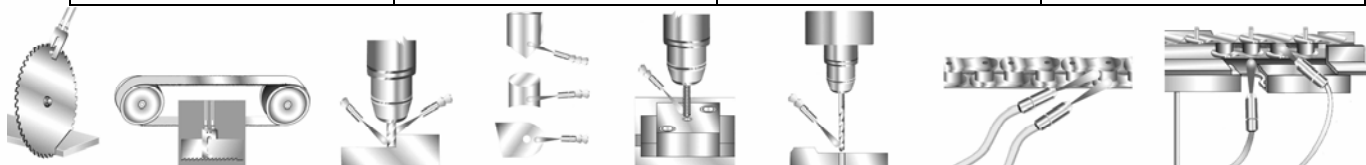
FREQUENCY GENERATOR

**ORDERING CODES**

CODE	TYPE	NUMBER of PUMPS
70.050.1	MC-EL-2M-1.2-1	1
70.051.1	MC-EL-2M-2.2-1	1
70.050.2	MC-EL-2M-1.2-2	2
70.051.2	MC-EL-2M-2.2-2	2
70.050.1.SL	MC-EL-2M-1.2-1-SL	1
70.051.1.SL	MC-EL-2M-2.2-1-SL	1
70.050.2.SL	MC-EL-2M-1.2-2-SL	2
70.051.2.SL	MC-EL-2M-2.2-2-SL	2
SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH		

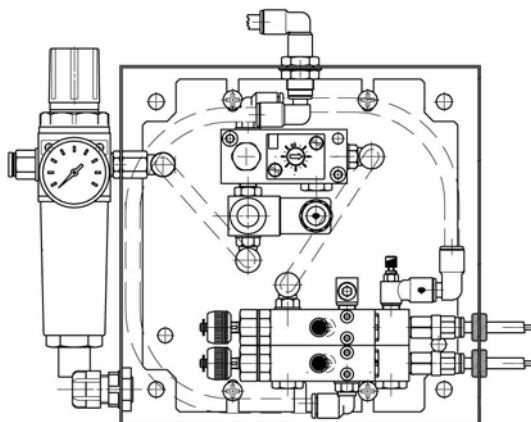
**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





**MC-EL-2P-SS**



**THE UNIT IS SUPPLIED COMPLETE OF:**

PUMPS FROM 1 TO 2

5M COAXIAL FEEDING LINES EVERY OUTLET (6 MM – 2.5 MM)

METALLIC BOX

THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY

CODE 14.660.0

AIR REGULATOR

AIR REDUCER + GAUGE

FREQUENCY GENERATOR

RESERVOIR HAS TO BE ORDERED SEPARATELY (SEE PAG. 88)

**ORDERING CODES**

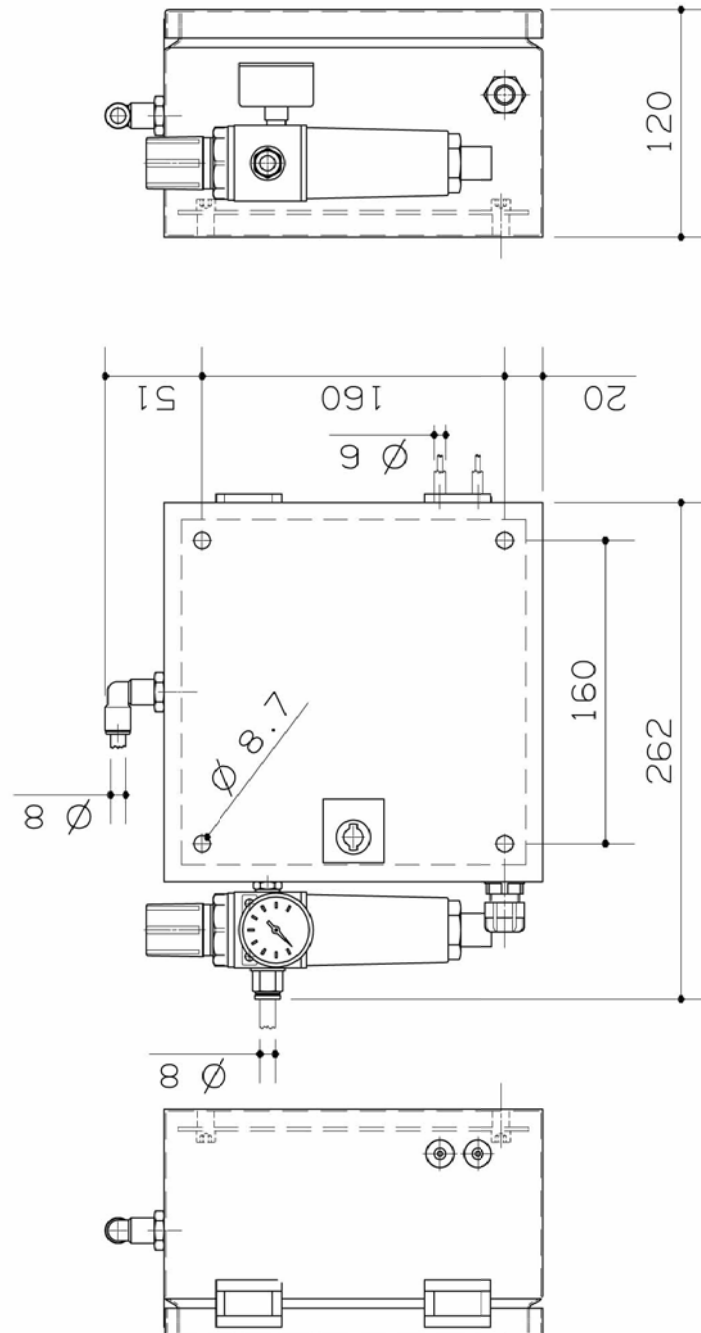
CODE	TYPE	NUMBER of PUMPS
70.719.1	MC-EL-1P-SS	1
70.718.6	MC-EL-2P-SS	2

**CODES TO ORDER SOLENOID VALVE COILS**

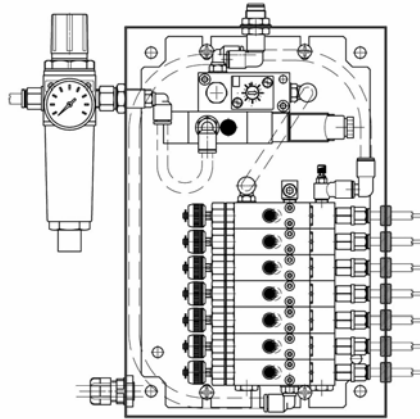
14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**OVERALL DIMENSION**



**MC-EL-3P-4P-5P-6P-7P**



**THE UNIT IS SUPPLIED COMPLETE OF:**

*PUMPS FROM 3 TO 7*

*5M COAXIAL FEEDING LINES EVERY OUTLET (6 MM – 2.5 MM)*

*METALLIC BOX*

*THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY*

*CODE 14.660.0*

*AIR REGULATOR*

*AIR REDUCER + GAUGE*

*FREQUENCY GENERATOR*

*RESERVOIR HAS TO BE ORDERED SEPARATELY (SEE PAG. 88)*

**ORDERING CODES**

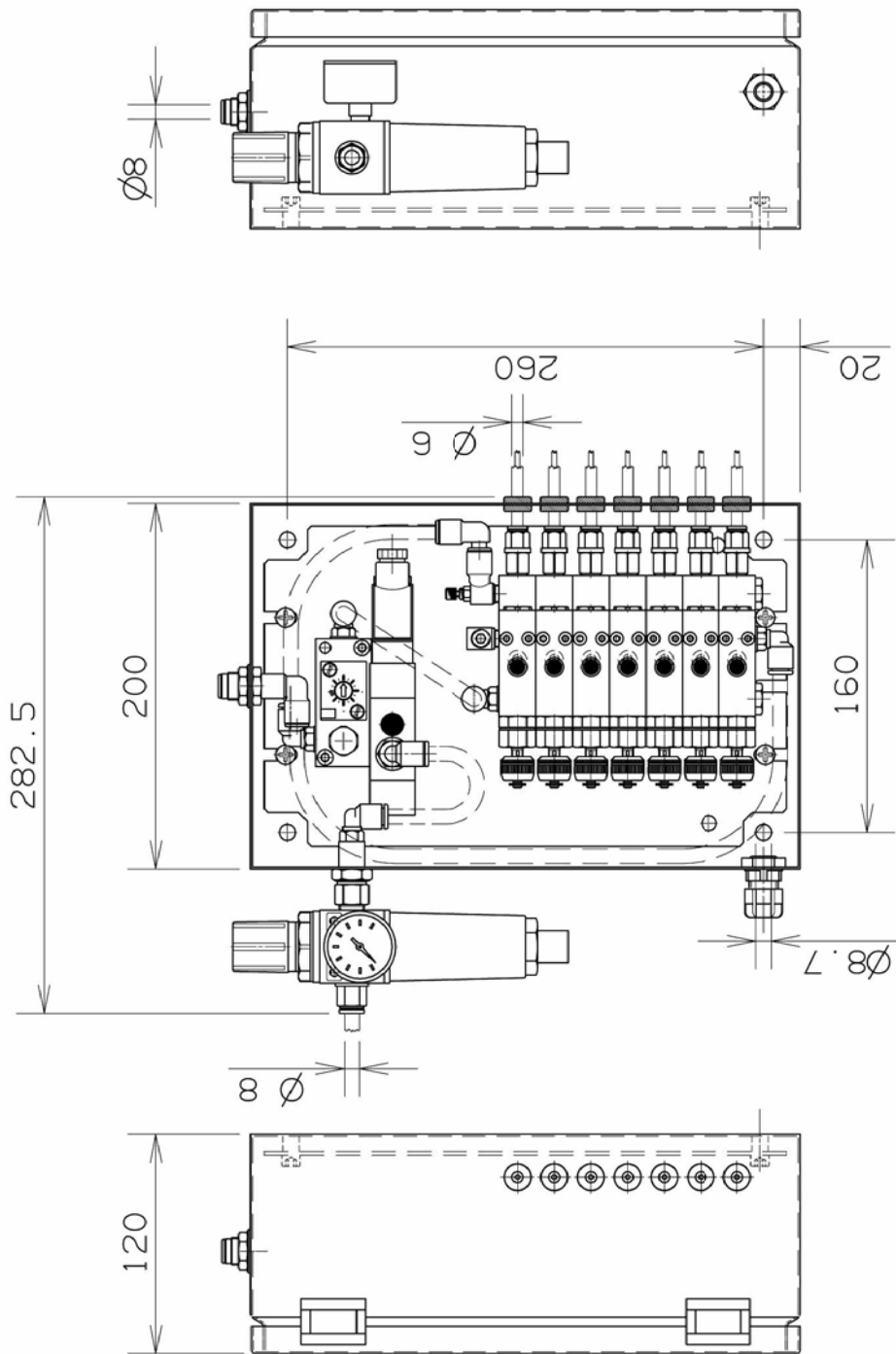
CODE	TYPE	NUMBER of PUMPS
70.705.3	MC-EL-3P	3
70.705.4	MC-EL-4P	4
70.705.5	MC-EL-5P	5
70.705.6	MC-EL-6P	6
70.705.7	MC-EL-7P	7

**CODES TO ORDER SOLENOID VALVE COILS**

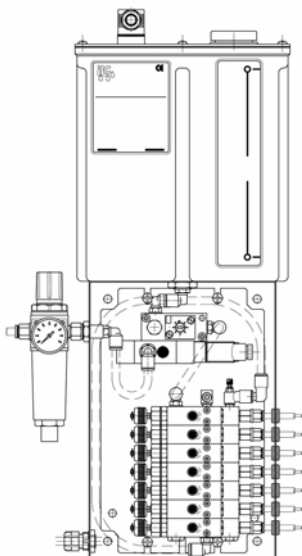
14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



### OVERALL DIMENSION



**MC-EL-6L-3P-4P-5P-6P-7P-8P**



**THE UNIT IS SUPPLIED COMPLETE OF:**

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 3 TO 8

5M COAXIAL FEEDING LINES EVERY OUTLET (6 MM – 2.5 MM)

METALLIC BOX

THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY

CODE 14.660.0

AIR REGULATOR

AIR REDUCER + GAUGE

FREQUENCY GENERATOR

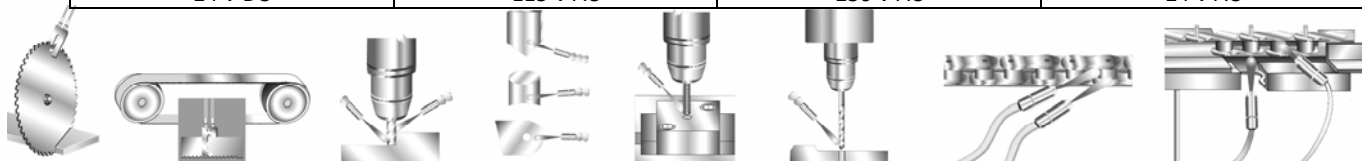
**ORDERING CODES**

CODE	TYPE	NUMBER of PUMPS	CODE	TYPE	NUMBER of PUMPS
70.704.3	MC-EL-6L-3P	3	70.704.3.SL	MC-EL-6L-3P-SL	3
70.704.4	MC-EL-6L-4P	4	70.704.4.SL	MC-EL-6L-4P-SL	4
70.704.5	MC-EL-6L-5P	5	70.704.5.SL	MC-EL-6L-5P-SL	5
70.704.6	MC-EL-6L-6P	6	70.704.6.SL	MC-EL-6L-6P-SL	6
70.704.7	MC-EL-6L-7P	7	70.704.7.SL	MC-EL-6L-7P-SL	7
70.730.7	MC-EL-6L-8P	8	70.730.7.SL	MC-EL-6L-8P-SL	8

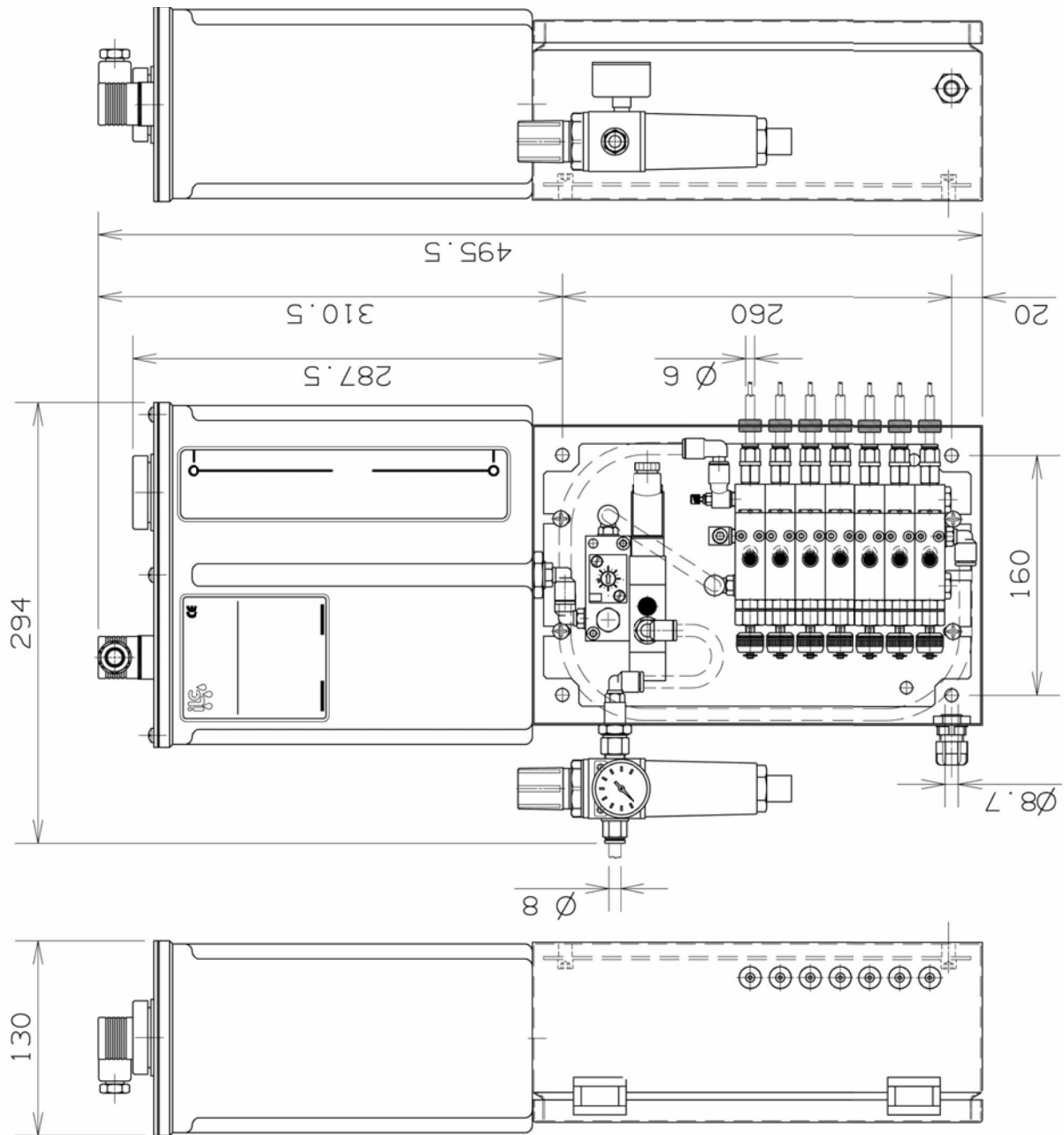
SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH

**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**OVERALL DIMENSION**



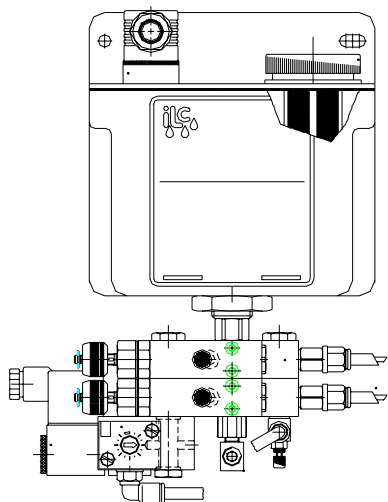
**LUBETOOL MINI-GF-EL, MINI-GF, MINI-SG-EL, MINI-SG, MINI-035-WFG E MINI-035-FG**

THEY ARE SUPPLIED WITHOUT BOX

FEATURES	
DISCHARGE	FROM 0 MM <sup>3</sup> TO 41 MM <sup>3</sup>
PUMPS	FROM 1 TO 2
SOLENOID VALVE	24 V DC – 24 V AC – 115 V AC – 230 V AC
STROKES	FROM 3 /SECOND TO 1 / MINUTE
RESERVOIR	0.5 L, 1.2 L, 2.2 L OR 3.6 L
LUBRICANT	OIL MAX 800 cSt 40 °C
LOW LEVEL SWITCH	1 A 250 V AC – 220 V DC – 50 W
AIR PRESSURE	FROM 4 BAR TO 8 BAR
AIR CONSUME AT 6 BAR/POINT	MIN: 60 L/M – MAX 100 L/M



**MINI-GF-EL**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L, 2.2 L OR 3.6 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC

THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE

70.015.0.24VDC

AIR REGULATOR

FREQUENCY GENERATOR

**CODES FOR ORDER**

CODE	TYPE	PUMPS NUMBER	CODE	TYPE	PUMPS NUMBER
70.015.0	MINI-GF-EL-1/1.2 L	1	70.015.0.SL	MINI-GF-EL-1/1.2 L-SL	1
70.020.0	MINI-GF-EL-2/1.2 L	2	70.020.0.SL	MINI-GF-EL-2/1.2 L-SL	2
70.015.1	MINI-GF-EL-1/2.2 L	1	70.015.1.SL	MINI-GF-EL-1/2.2 L-SL	1
70.020.1	MINI-GF-EL-2/2.2 L	2	70.020.1.SL	MINI-GF-EL-2/2.2 L-SL	2
70.015.2	MINI-GF-EL-1/3.6 L	1	70.015.2.SL	MINI-GF-EL-1/3.6 L-SL	1
70.020.2	MINI-GF-EL-2/3.6 L	2	70.020.2.SL	MINI-GF-EL-2/3.6 L-SL	2

SL: L'UNITA' E' FORNITA SENZA LIVELLO ELETTRICO

SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH

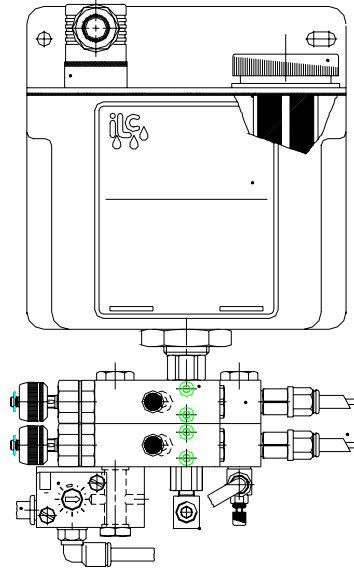
**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





**MINI-GF**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L, 2.2 L OR 3.6 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

AIR REGULATOR

FREQUENCY GENERATOR

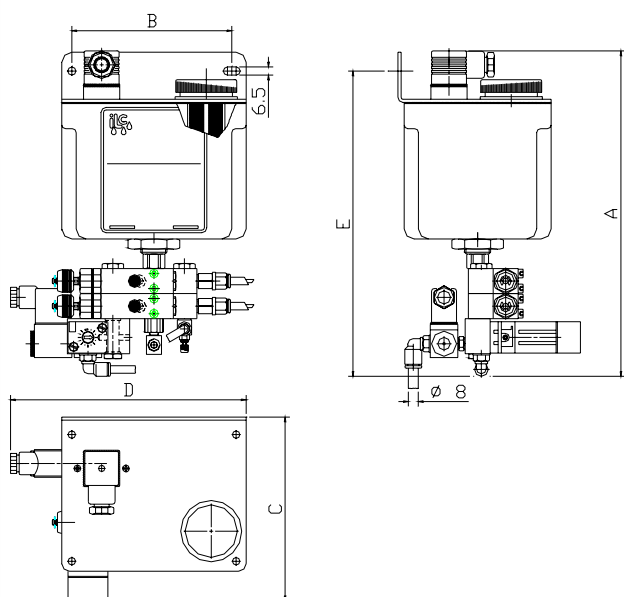
**CODES FOR ORDER**

CODE	TYPE	PUMPS NUMBER	CODE	TYPE	PUMPS NUMBER
70.004.0	MINI-GF-1/1.2 L	1	70.004.0.SL	MINI-GF-1/1.2 L-SL	1
70.004.1	MINI-GF-2/1.2 L	2	70.004.1.SL	MINI-GF-2/1.2 L-SL	2
70.004.2	MINI-GF-1/2.2 L	1	70.004.2.SL	MINI-GF-1/2.2 L-SL	1
70.004.3	MINI-GF-2/2.2 L	2	70.004.3.SL	MINI-GF-2/2.2 L-SL	2
70.004.4	MINI-GF-1/3.6 L	1	70.004.4.SL	MINI-GF-1/3.6 L-SL	1
70.004.5	MINI-GF-2/3.6 L	2	70.004.5.SL	MINI-GF-2/3.6 L-SL	2

SL MEANS THAT THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH

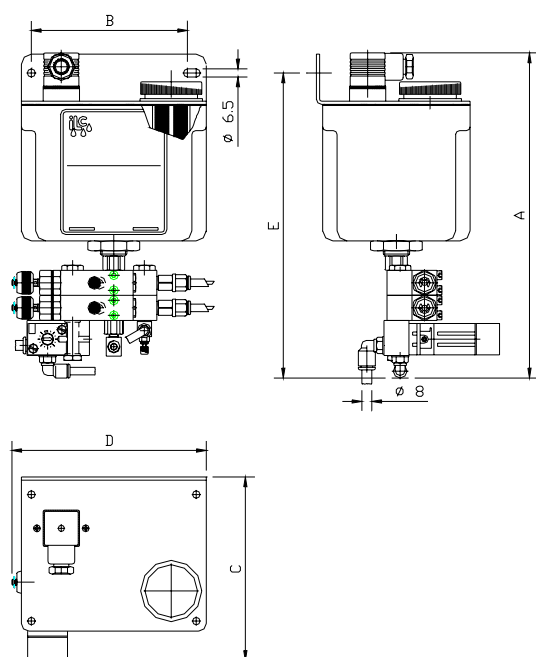


**OVERALL DIMENSION MINI-GF-EL**



PUMPS	RESERVOIR	A	B	C	D	E
1	1.2 L	240	129	146	190	224
2	1.2 L	260	129	146	190	244
1	2.2 L	292	129	146	190	276
2	2.2 L	312	129	146	190	296
1	3.6 L	287	173	153	230	271
2	3.6 L	307	173	153	230	291

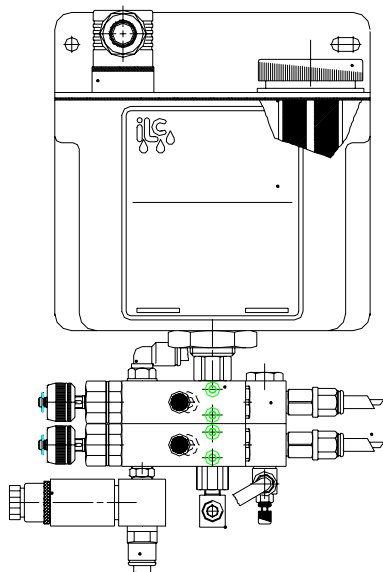
**OVERALL DIMENSION MINI-GF**



PUMPS	RESERVOIR	A	B	C	D	E
1	1.2 L	260	129	147	155	244
2	1.2 L	280	129	147	155	264
1	2.2 L	312	129	147	155	296
2	2.2 L	332	129	147	155	316
1	3.6 L	307	173	153	230	291
2	3.6 L	327	173	153	230	311



**MINI-SG-EL**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L, 2.2 L OR 3.6 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC

THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE

70.017.0.24VDC

AIR REGULATOR

**CODES FOR ORDER**

CODE	TYPE	PUMPS NUMBER	CODE	TYPE	PUMPS NUMBER
70.017.0	MINI-SG-EL-1/1.2 L	1	70.017.0.SL	MINI-SG-EL-1/1.2 L-SL	1
70.017.1	MINI-SG-EL-2/1.2 L	2	70.017.1.SL	MINI-SG-EL-2/1.2 L-SL	2
70.017.2	MINI-SG-EL-1/2.2 L	1	70.017.2.SL	MINI-SG-EL-1/2.2 L-SL	1
70.017.3	MINI-SG-EL-2/2.2 L	2	70.017.3.SL	MINI-SG-EL-2/2.2 L-SL	2
70.017.4	MINI-SG-EL-1/3.6 L	1	70.017.4.SL	MINI-SG-EL-1/3.6 L-SL	1
70.017.5	MINI-SG-EL-2/3.6 L	2	70.017.5.SL	MINI-SG-EL-2/3.6 L-SL	2

SL: THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH

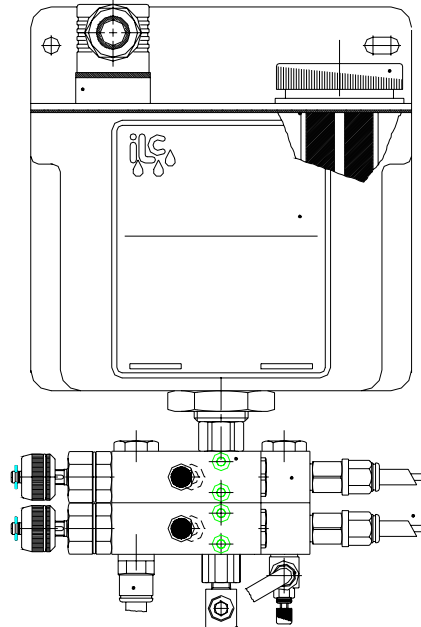
**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





**MINI-SG**



**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 1.2 L, 2.2 L OR 3.6 L

LOW LEVEL SWITCH: 1 A 250 V AC 200 V DC 50 W

PUMPS FROM 1 TO 2

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

AIR REGULATOR

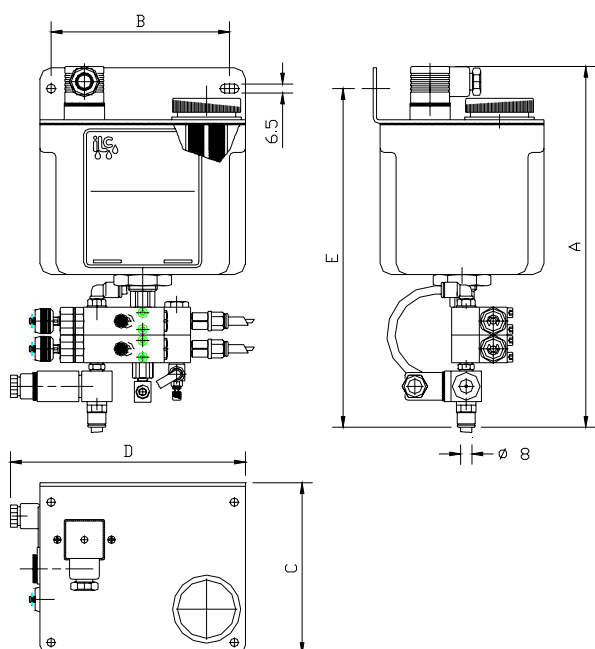
**CODES FOR ORDER**

CODE	TYPE	PUMPS NUMBER	CODE	TYPE	PUMPS NUMBER
70.005.0	MINI-SG-1/1.2 L	1	70.005.0.SL	MINI-SG-1/1.2 L-SL	1
70.005.1	MINI-SG-2/1.2 L	2	70.005.1.SL	MINI-SG-2/1.2 L-SL	2
70.005.2	MINI-SG-1/2.2 L	1	70.005.2.SL	MINI-SG-1/2.2 L-SL	1
70.005.3	MINI-SG-2/2.2 L	2	70.005.3.SL	MINI-SG-2/2.2 L-SL	2
70.005.4	MINI-SG-1/3.6 L	1	70.005.4.SL	MINI-SG-1/3.6 L-SL	1
70.005.5	MINI-SG-2/3.6 L	2	70.005.5.SL	MINI-SG-2/3.6 L-SL	2

SL MEANS THAT THE UNIT WILL BE DELIVERED WITHOUT LOW LEVEL SWITCH

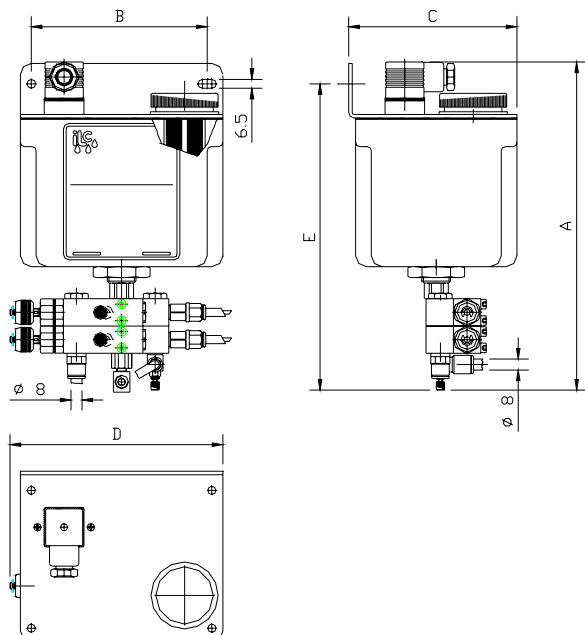


**OVERALL DIMENSION MINI-SG-EL**



PUMPS	RESERVOIR	A	B	C	D	E
1	1.2 L	240	129	123	170	224
2	1.2 L	260	129	123	170	244
1	2.2 L	292	129	123	170	276
2	2.2 L	312	129	123	170	296
1	3.6 L	287	173	135	230	271
2	3.6 L	307	173	135	230	291

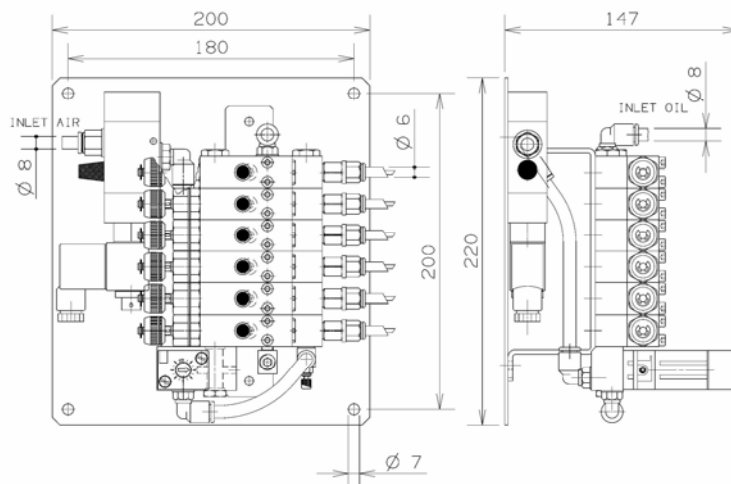
**OVERALL DIMENSION MINI-SG**



PUMPS	RESERVOIR	A	B	C	D	E
1	1.2 L	220	129	123	155	204
2	1.2 L	240	129	123	155	224
1	2.2 L	272	129	123	155	256
2	2.2 L	292	129	123	155	276
1	3.6 L	215	173	135	230	251
2	3.6 L	235	173	135	230	271



**MINI-GF-EL-SS**



**THE UNIT IS SUPPLIED COMPLETE OF:**

*PUMPS FROM 1 TO 2*

*5M COAXIAL FEEDING LINES EVERY OUTLET (6 MM – 2.5 MM)*

*THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY  
CODE 14.660.0*

*AIR REGULATOR*

*AIR REDUCER + GAUGE*

*FREQUENCY GENERATOR*

*RESERVOIR HAS TO BE ORDERED SEPARATELY (SEE PAG. 88)*

**CODES FOR ORDER**

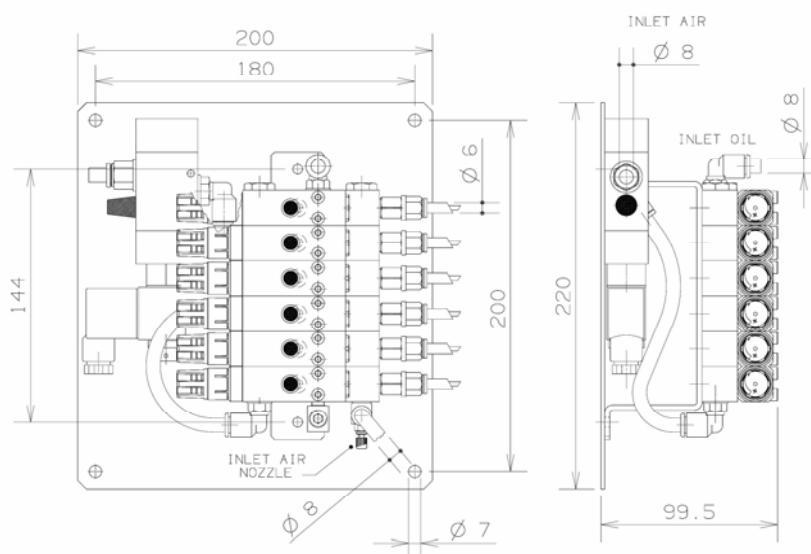
CODE	TYPE	PUMPS NUMBER
70.716.1	MINI-GF-EL-1P-SS	1
70.716.2	MINI-GF-EL-2P-SS	2
70.716.3	MINI-GF-EL-3P-SS	3
70.716.4	MINI-GF-EL-4P-SS	4
70.716.5	MINI-GF-EL-5P-SS	5
70.716.6	MINI-GF-EL-6P-SS	6

**CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**MINI-SG-EL-SS**



**THE UNIT IS SUPPLIED COMPLETE OF:**

**PUMPS FROM 1 TO 2**

**5M COAXIAL FEEDING LINES EVERY OUTLET (6 MM – 2.5 MM)**

**THE SOLENOID VALVE HAS TO BE ORDERED SEPARATELY**

**CODE 14.660.0**

**AIR REGULATOR**

**AIR REDUCER + GAUGE**

**RESERVOIR HAS TO BE ORDERED SEPARATELY (SEE PAG. 88)**

**CODES FOR ORDER**

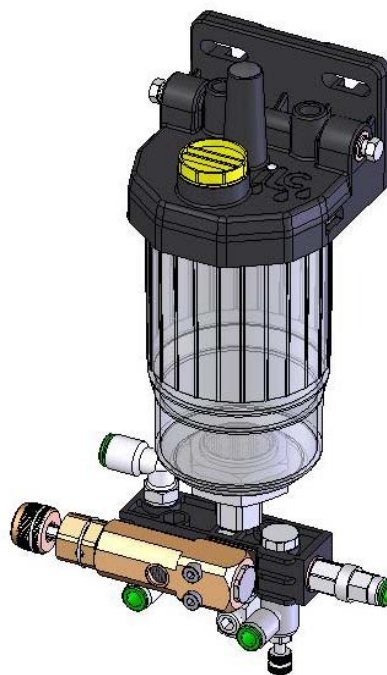
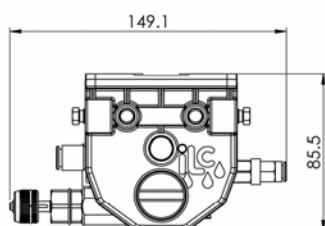
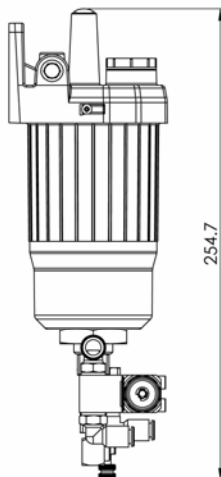
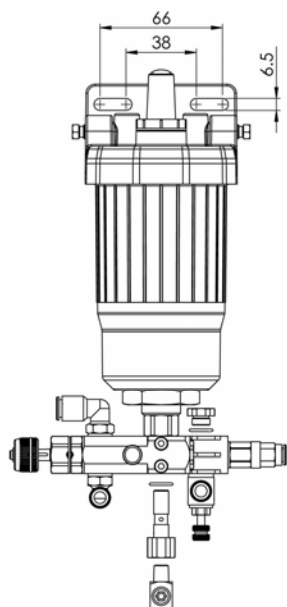
CODE	TYPE	PUMPS NUMBER
70.716.1.SG	MINI-SG-EL-1P-SS	1
70.716.2.SG	MINI-SG-EL-2P-SS	2
70.716.3.SG	MINI-SG-EL-3P-SS	3
70.716.4.SG	MINI-SG-EL-4P-SS	4
70.716.5.SG	MINI-SG-EL-5P-SS	5
70.716.6.SG	MINI-SG-EL-6P-SS	6

**CODICI PER ORDINARE BOBINE DELL'ELETTROVALVOLA – CODES TO ORDER SOLENOID VALVE COILS**

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



**MINI-035-WFG**



CODE

70.055.0

RESERVOIR 0.5 L

**THE UNIT IS SUPPLIED COMPLETE OF:**

RESERVOIR 0.5 L

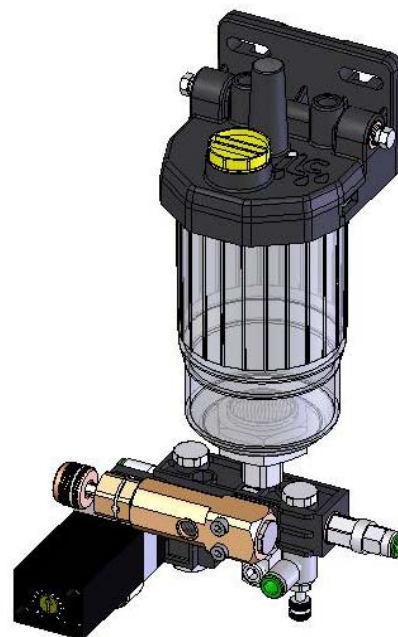
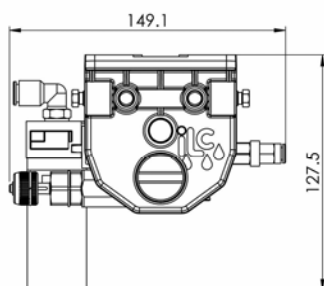
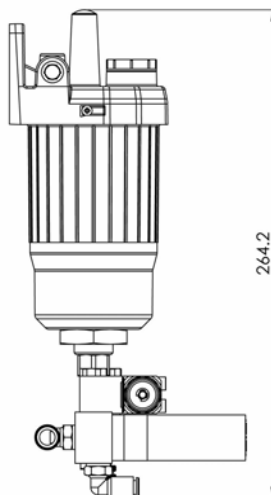
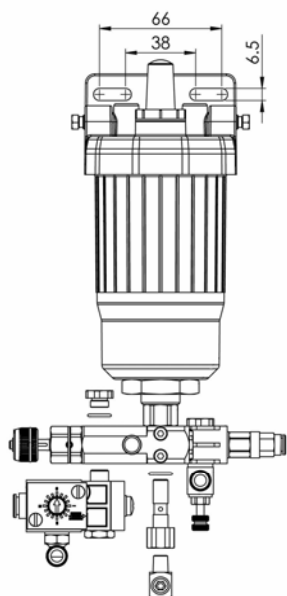
1 PUMP

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5  
MM)

AIR REGULATOR



**MINI-035-FG**



CODE

RESERVOIR 0.5 L

70.055.1

**THE UNIT IS SUPPLIED COMPLETE OF:**

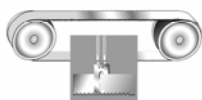
RESERVOIR 0.5 L

1 PUMP

5 M COAXIAL FEEDING LINES FOR EACH OUTLET (6 MM – 2.5 MM)

AIR REGULATOR

FREQUENCY GENERATOR





**LUBETOOL MIX**

THEY WERE DESIGNED TO LUBRICATE WITH TWO LIQUIDS

FEATURES	
DISCHARGE	FROM 0 MM <sup>3</sup> TO 41 MM <sup>3</sup>
PUMPS	FROM 3 TO 4
SOLENOID VALVE	24 V DC – 24 V AC – 115 V AC – 230 V AC
STROKES	FROM 3 /SECOND TO 1 / MINUTE
RESERVOIR	1.2 L, 2.2 L
LUBRICANT	OIL MAX 800 cSt 40 °C
LOW LEVEL SWITCH	1 A 250 V AC – 220 V DC – 50 W
AIR PRESSURE	FROM 4 BAR TO 8 BAR
AIR CONSUME AT 6 BAR/POINT	MIN: 60 L/M – MAX 100 L/M



**MIX WITH PLASTIC CONTAINER**

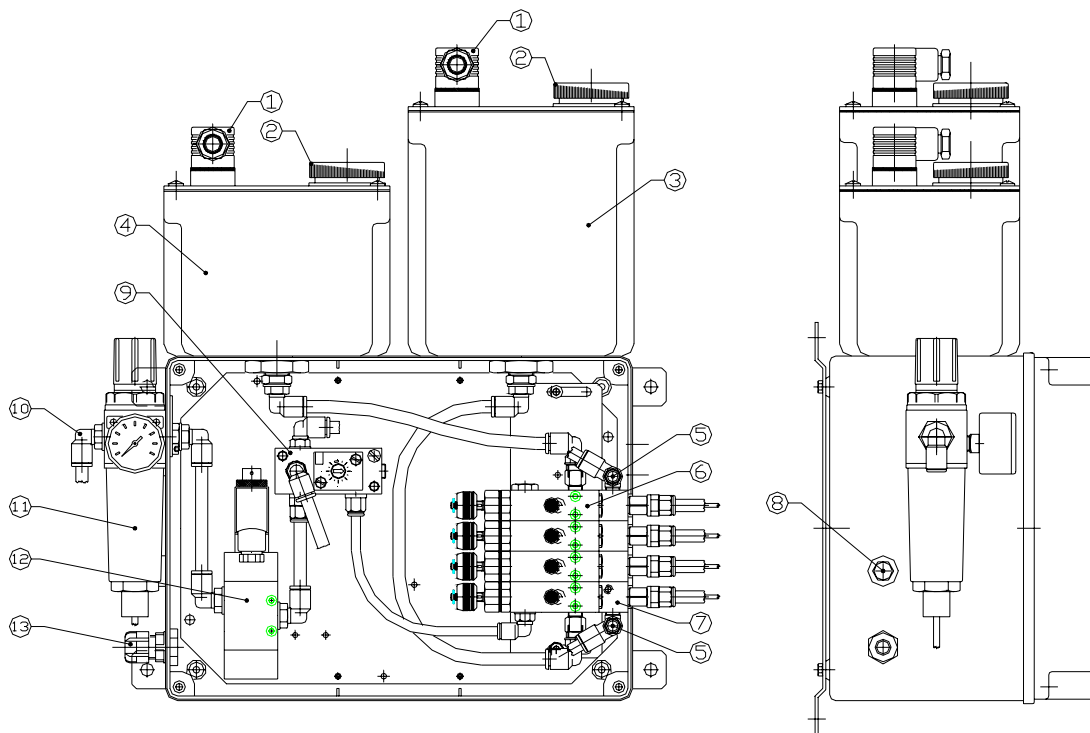
THIS SYSTEM IS USED IN CASE OF HIGH PRODUCTION, TO CUT HIGH DIAMETERS AND WHERE IS NECESSARY TO USE THE MICRO LUBRICATION TOGETHER WITH THE TRADITIONAL LUBRICATION.

A LINE SEND OIL TO BE SPRAYED FRONTALLY ON THE TEETH AND A SECOND LINE SEND EMULSION TO BE SPRAYED ON THE SIDES. AS A RESULT THERE IS AN HIGH CUT QUALITY AND A LONG LIFE TOOL.

THE UNIT NEED A UNIQUE DRIVE BECAUSE THE TWO LINES ARE WORKING IN THE SAME TIME AND THE TWO RESERVOIRS ARE SEPARATE.

THE STANDARD UNIT IS COMPLETE WITH 5 M COAXIAL HOSES.

ON REQUEST IT IS POSSIBLE TO HAVE DIFFERENT SOLUTION.



CODES FOR ORDER

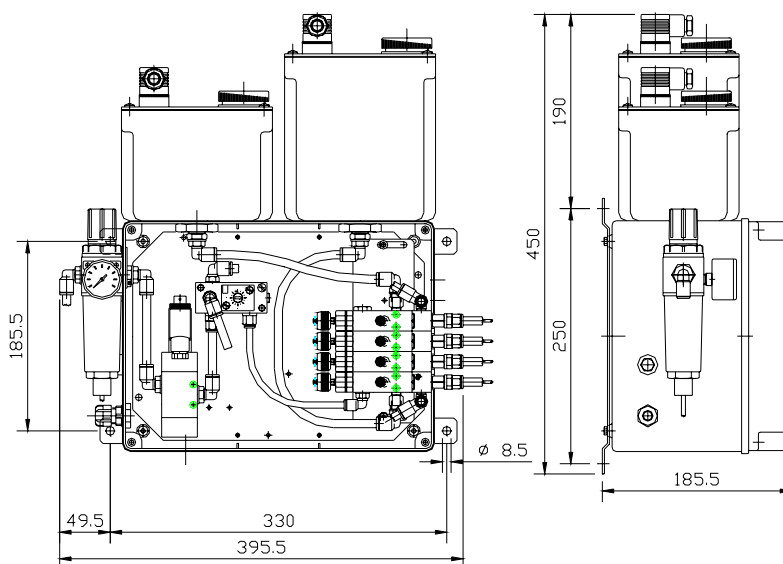
CODE	TYPE
70.060.3	MIX 1 (OIL) + 2 (EMULSION)
70.060.4	MIX 2 (OIL) + 2 (EMULSION)





	<b>THE UNIT IS SUPPLIED COMPLETE OF:</b>
1	LOW LEVEL SWITCHES
2	FILLER CUPS + STRAINER
3	RESERVOIR 2.2 L FOR EMULSION
4	RESERVOIR 1.2 L FOR OIL
5	AIR REGULATORS
6	3 OR 4 PUMPS
7	3 OR 4 PUMP BASES
8	STRAINER EXHAUST AIR
9	FREQUENCY GENERATOR
10	AIR INLET FITTINGS PUSH-IN 8 MM
11	PRESSURE REDUCER WITH GAUGE
12	SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE 70.060.3.24VDC
13	CABLE GLAND
	5 M COAXIAL HOSE FOR EACH OUTLET (6 MM –2.5 MM)

OVERALL DIMENSION



CODES TO ORDER SOLENOID VALVE COILS

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC



### MIX WITH METALLIC BOX

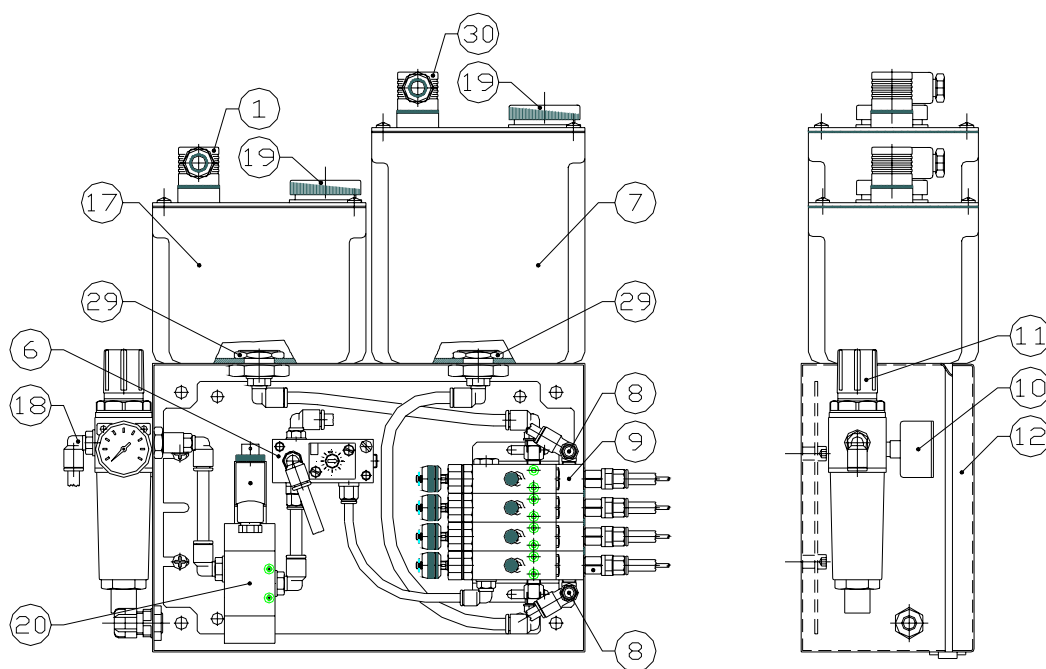
THIS SYSTEM IS USED IN CASE OF HIGH PRODUCTION, TO CUT HIGH DIAMETERS AND WHERE IS NECESSARY TO USE THE MICRO LUBRICATION TOGETHER WITH THE TRADITIONAL LUBRICATION.

A LINE SEND OIL TO BE SPRAYED FRONTALLY ON THE TEETH AND A SECOND LINE SEND EMULSION TO BE SPRAYED ON THE SIDES. AS A RESULT THERE IS AN HIGH CUT QUALITY AND A LONG LIFE TOOL.

THE UNIT NEED A UNIQUE DRIVE BECAUSE THE TWO LINES ARE WORKING IN THE SAME TIME AND THE TWO RESERVOIRS ARE SEPARATE.

THE STANDARD UNIT IS COMPLETE WITH 5 M COAXIAL HOSES.

ON REQUEST IT IS POSSIBLE TO HAVE DIFFERENT SOLUTION.



CODES FOR ORDER

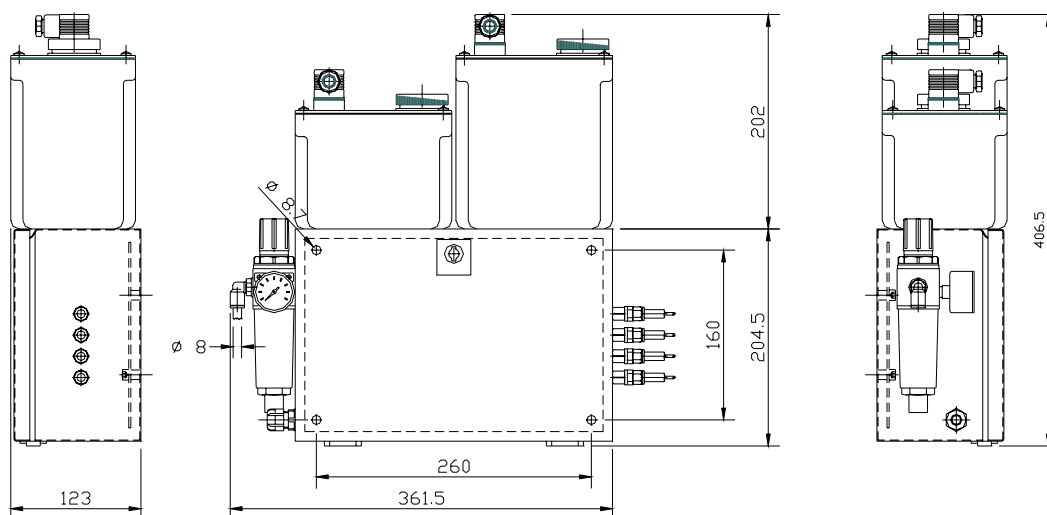
CODE	TYPE
70.071.2	MIX 1 (OIL) + 2 (EMULSION)
70.071.3	MIX 2 (OIL) + 2 (EMULSION)





	THE UNIT IS SUPPLIED COMPLETE OF:
1-30	LOW LEVEL SWITCHES
19	FILLER CUPS + STRAINER
7	2.2 L EMULSION RESERVOIR
17	1.2 L OIL RESERVOIR
12	METALLIC BOX
9	PUMPS + BASES
29	SUCTION STRAINER
8	AIR REGULATOR
6	FREQUENCY GENERATOR
18	AIR INLET FITTINGS PUSH-IN 8 MM
10-11	PRESSURE REDUCER WITH GAUGE
20	SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC THE VOLTAGE HAS TO BE ADD TO THE CODE. EXAMPLE 70.071.2.24VDC
	5 M COAXIAL HOSE FOR EACH OUTLET (6 MM – 2.5 MM)

OVERALL DIMENSION



CODES TO ORDER SOLENOID VALVE COILS

14.660.1.R	14.660.2.R	14.660.3.R	14.660.4.R
24 V DC	115 V AC	230 V AC	24 V AC





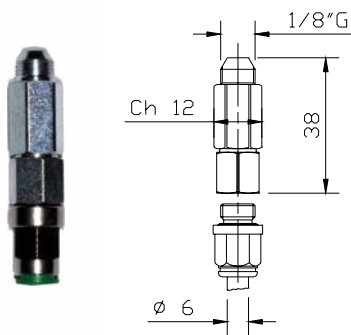


CODES FOR ORDER

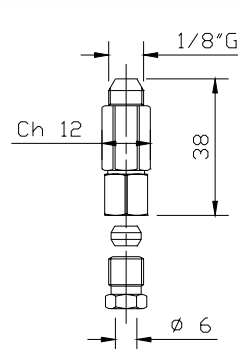
CODE	TYPE
70.100.0	LOC-LINE WITH FIXED BASE (6 MM)
70.100.2	LOC-LINE WITH MAGNETIC BASE (6 MM)
70.100.1	RIGID TUBE WITH FIXED BASE (6 MM)
70.100.3	RIGID TUBE WITH MAGNETIC BASE (6 MM)
70.101.0	LOC-LINE WITH FIXED BASE (8 MM)
70.101.2	LOC-LINE WITH MAGNETIC BASE (8 MM)
70.101.1	RIGID TUBE WITH FIXED BASE (8 MM)
70.101.3	RIGID TUBE WITH MAGNETIC BASE (8 MM)

THE CODE INCLUDES THE NOZZLE, THE STEEL  
OR THE LOC-LINE TUBE AND THE MAGNETIC OR FI  
XED BASE.

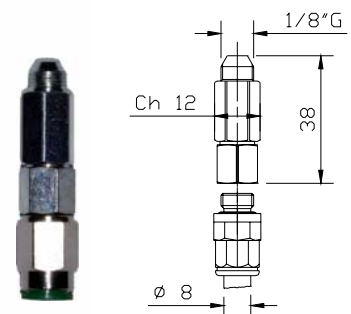
NOZZLE WITH HEAD THREAD 1/8" GAS



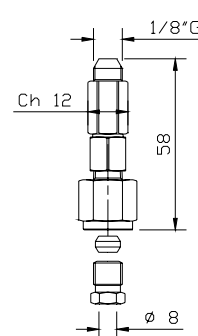
A70.093181



A70.093178



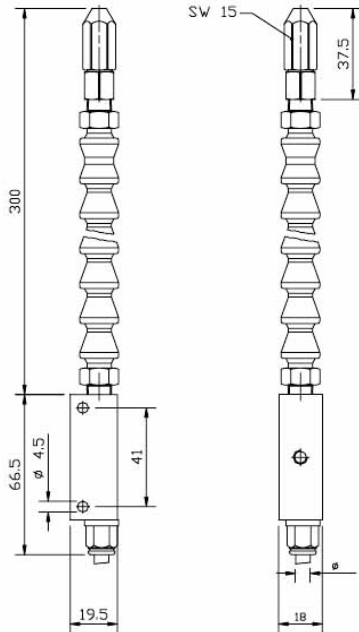
A70.093246



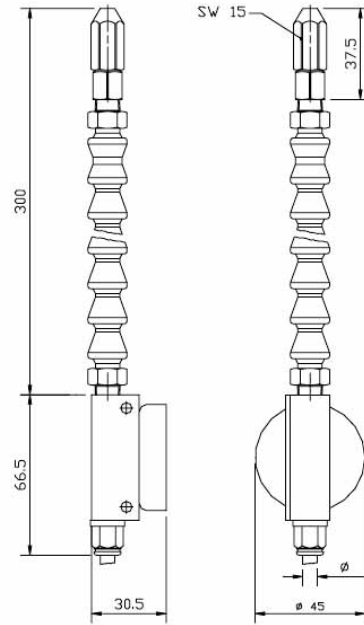
A70.093248



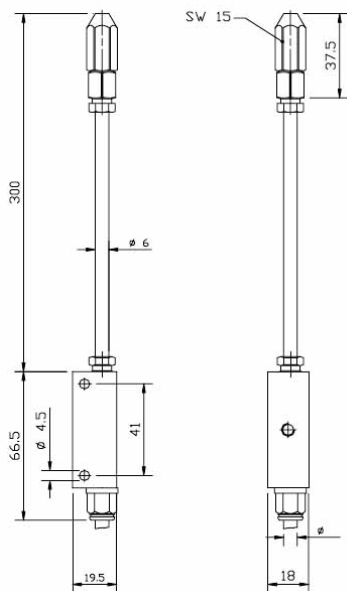
**END TUBES WITH NOZZLE  
OVERALL DIMENSION**



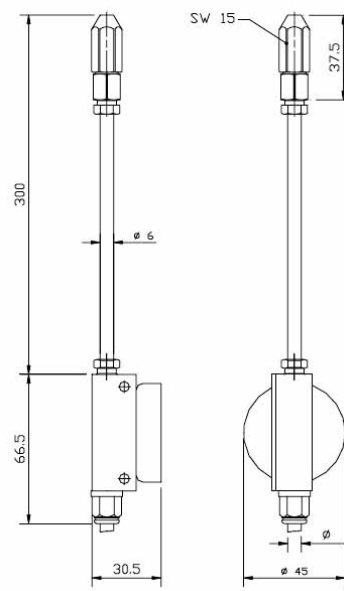
**70.100.0 (Ø6)  
70.101.0 (Ø8)**



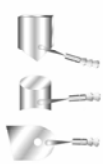
**70.100.2 (Ø6)  
70.101.2 (Ø8)**



**70.100.1 (Ø6)  
70.101.1 (Ø8)**

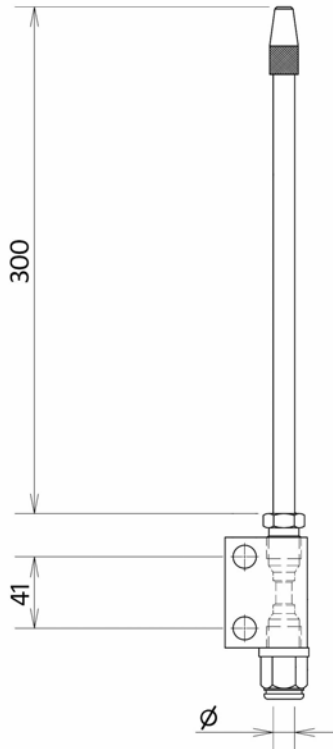


**70.100.3 (Ø6)  
70.101.3 (Ø8)**

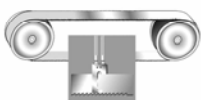




**END TUBES WITH DECABON NOZZLE  
OVERALL DIMENSION**



CODE	DECABON NOZZLE	Ø
70.118.2	WITH BLOCK + PUSH-IN FITTING	6 MM
70.118.3	WITH MAGNETIC BLOCK + PUSH-IN FITTING	6 MM
70.118.4	WITH BLOCK + PUSH-IN FITTING	8 MM
70.118.5	WITH MAGNETIC BLOCK + PUSH-IN FITTING	8 MM



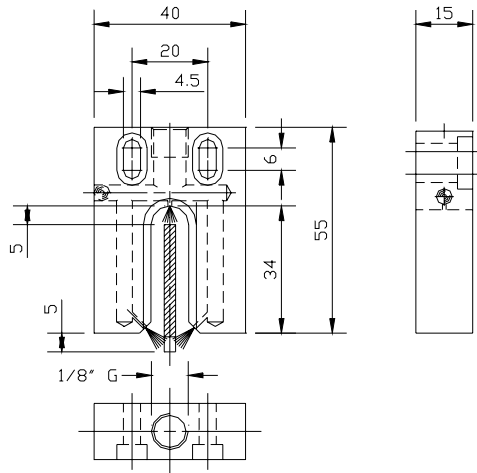
**SADDLE NOZZLE FOR HORIZONTAL BAND SAW**

**BLADE HEIGHT: FROM 6 MM TO 34 MM**

**LUBRICANT: OIL**

CODE	INLETS	OUTLETS
70.111.0	1	3

**OVERALL DIMENSION**

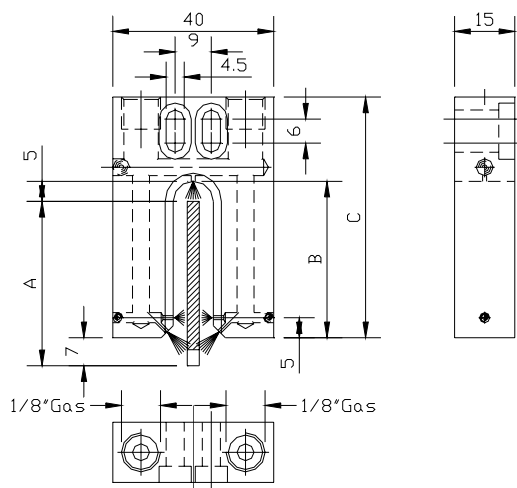


**BLADE HEIGHT: FROM 41 MM TO 80 MM**

**LUBRICANT: OIL**

CODE	INLETS	OUTLETS	BLADE	A	B	C
70.111.1	2	5	41	41	39	60
70.111.2	2	5	54	54	52	73
70.111.3	2	5	67	67	65	86
70.111.4	2	5	80	80	78	99

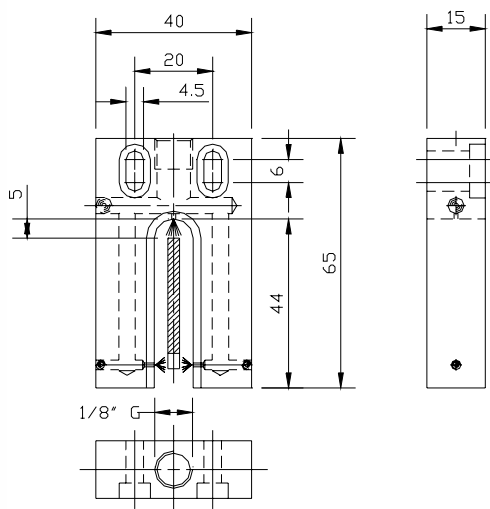
**OVERALL DIMENSION**



**SADDLE NOZZLE FOR VERTICAL BAND SAW**  
**BLADE HEIGHT: FROM 6 MM TO 34 MM**  
**LUBRICANT: OIL**

CODE	INLETS	OUTLETS
70.112.0	1	3

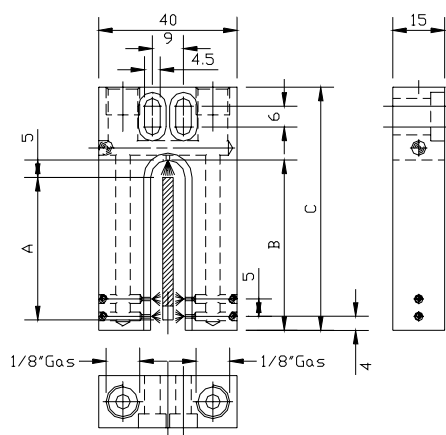
**OVERALL DIMENSION**



**BLADE HEIGHT: FROM 41 MM TO 80 MM**  
**LUBRICANT: OIL**

CODE	INLETS	OUTLETS	BLADE	A	B	C
70.112.1	2	5	41	41	49	70
70.112.2	2	5	54	54	62	83
70.112.3	2	5	67	67	75	96
70.112.4	2	5	80	80	88	109

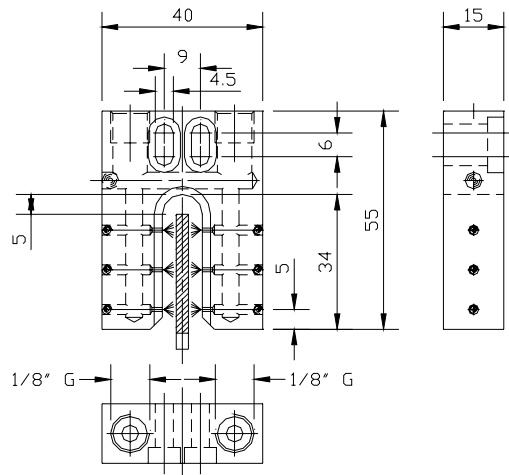
**OVERALL DIMENSION**



**SADDLE NOZZLE FOR HORIZONTAL BAND SAW**  
**BLADE HEIGHT: FROM 6 MM TO 34 MM**  
**LUBRICANT: EMULSION**

CODE	INLETS	OUTLETS
70.113.0	2	6

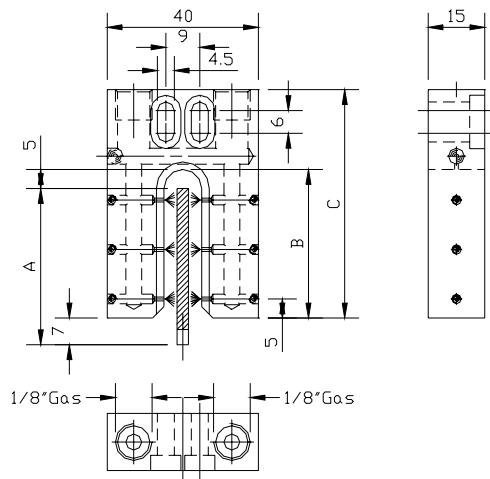
**OVERALL DIMENSION**



**BLADE HEIGHT: FROM 41 MM TO 80 MM**  
**LUBRICANT: EMULSION**

CODE	INLETS	OUTLETS	BLADE	A	B	C
70.113.1	2	6	41	41	39	60
70.113.2	2	8	54	54	52	73
70.113.3	2	10	67	67	65	86
70.113.4	2	12	80	80	78	99

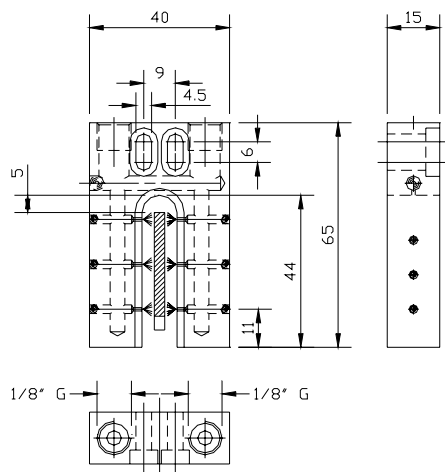
**OVERALL DIMENSION**



**SADDLE NOZZLE FOR VERTICAL BAND SAW**  
**BLADE HEIGHT: FROM 6 MM TO 34 MM**  
**LUBRICANT: EMULSION**

CODE	INLETS	OUTLETS
70.114.0	2	6

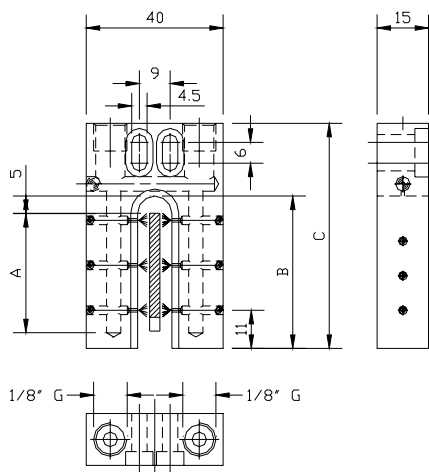
OVERALL DIMENSION



**BLADE HEIGHT: FROM 41 MM TO 80 MM**  
**LUBRICANT: EMULSION**

CODE	INLETS	OUTLETS	BLADE	A	B	C
70.114.1	2	6	41	41	49	70
70.114.2	2	8	54	54	62	83
70.114.3	2	10	67	67	75	96
70.114.4	2	12	80	80	88	109

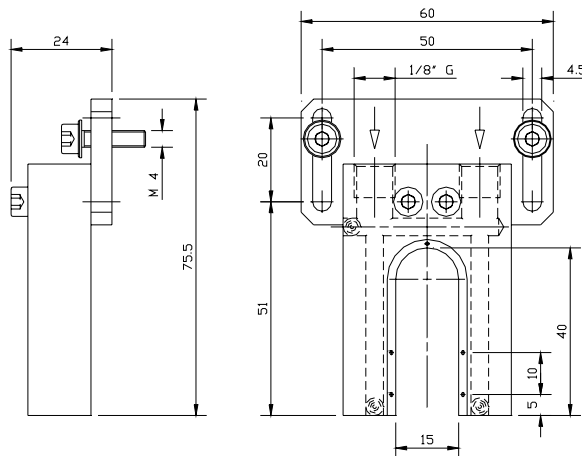
OVERALL DIMENSION



**SADDLE NOZZLE FOR CIRCULAR SAW  
LUBRICANT: OIL**

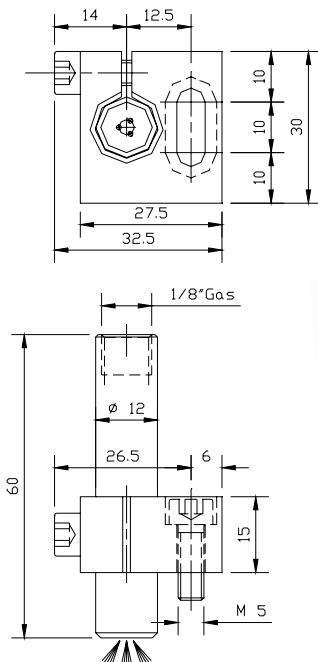
CODE	INLETS	OUTLETS
70.106.2	2	5

**OVERALL DIMENSION**

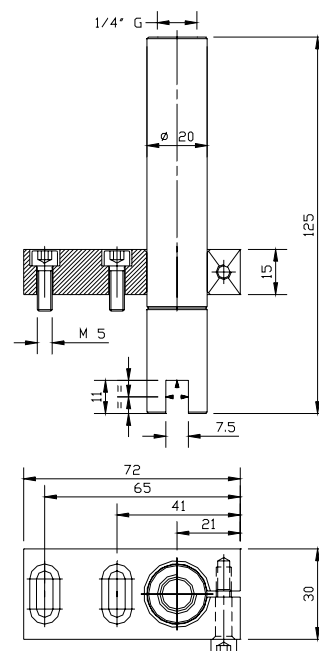


CODICE	INGRESSI	USCITE	CODICE	INGRESSI	USCITE
CODE	INLETS	OUTLETS	CODE	INLETS	OUTLETS
70.103.2	1	3	70.103.5	1	3

**DIMENSIONI D'INGOMBRO**



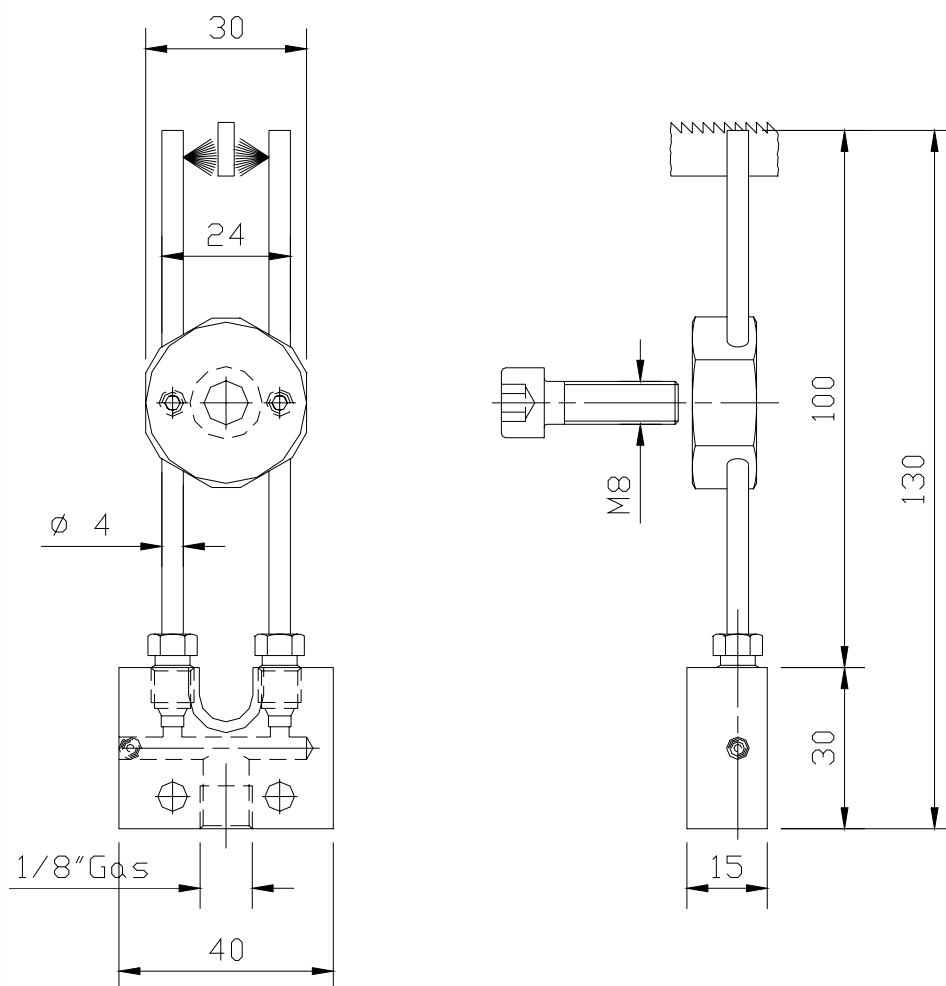
**OVERALL DIMENSION**





**SPECIAL NOZZLE FOR VERTICAL BLADE  
OVERALL DIMENSION**

CODE  
70.109.9

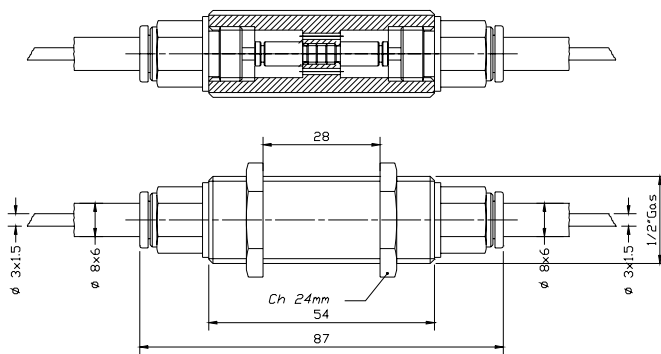


**PUSH-IN FITTINGS AND PLUG FOR SADDLE NOZZLE**

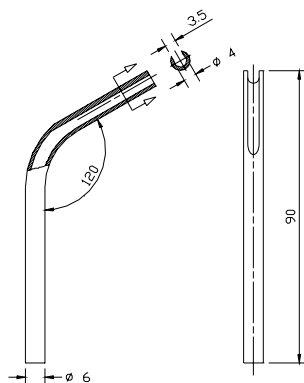


**BULKHEAD CONNECTION PUSH-IN FOR COAXIAL HOSES 8x4  
MM – 3x1.5 MM**

A70.093230



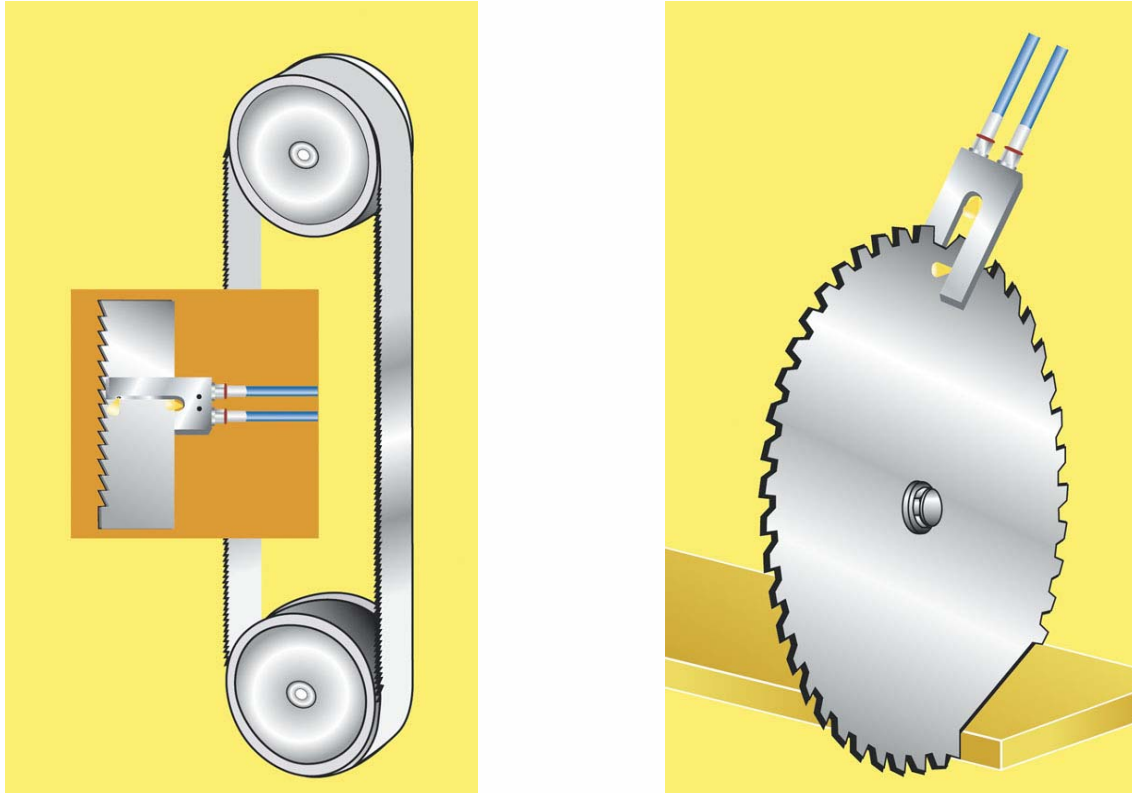
A70.093231



**APPLICATIONS**

REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

SEGATRICI CIRCOLARI  
CIRCULAR SAW MACHINES



THE NUMBER OF NOZZLE TO USE IS DEPENDING ON THE  
MATERIALS AND THE ART OF PROCESSING

GUIDE TO SELECT THE NOZZLE  
BAND SAW MACHINES

BLADE FROM 6 MM TO 34 MM	1 INLET – 3 OUTLETS
BLADE FROM 41 MM TO 80 MM	2 INLETS – 5 OUTLETS

GUIDE TO SELECT THE NOZZLE  
CIRCULAR SAW MACHINES

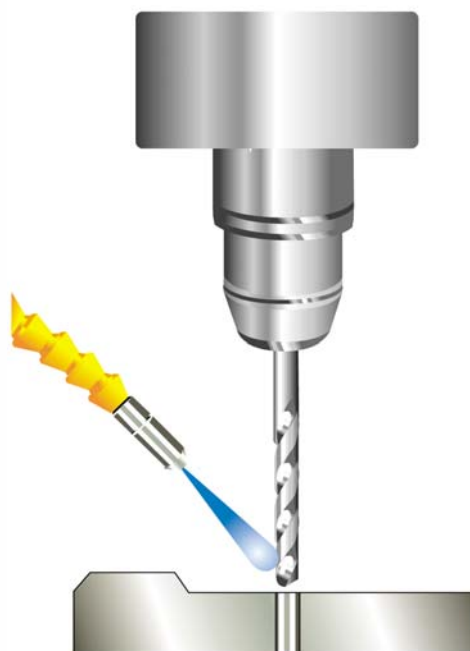
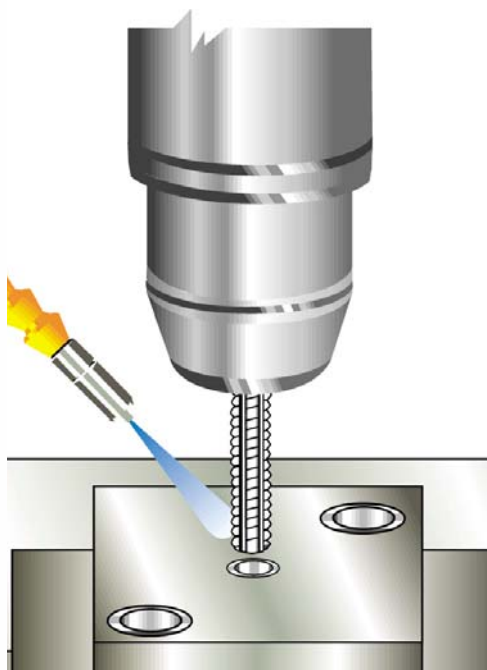
DISK FROM 175 MM TO 225 MM	1 INLET – 3 OUTLETS
DISK FROM 250 MM TO 400 MM	2 INLETS – 5 OUTLETS



**APPLICATIONS**

REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

FORATURA - ALESATURA  
DRILLING - BORING



THE NUMBER OF NOZZLE TO USE IS DEPENDING ON THE  
MATERIALS AND THE ART OF PROCESSING

GUIDE TO SELECT THE NOZZLE  
TAPPING

TOOL FROM 3 MM TO 10 MM	1 NOZZLE
TOOL FROM 11 MM TO 20 MM	2 NOZZLE
TOOL FROM 21 MM TO 40 MM	3 NOZZLE
TOOL FROM 41 MM TO 60 MM	4 NOZZLE

GUIDE TO SELECT THE NOZZLE  
DRILLING - BORING

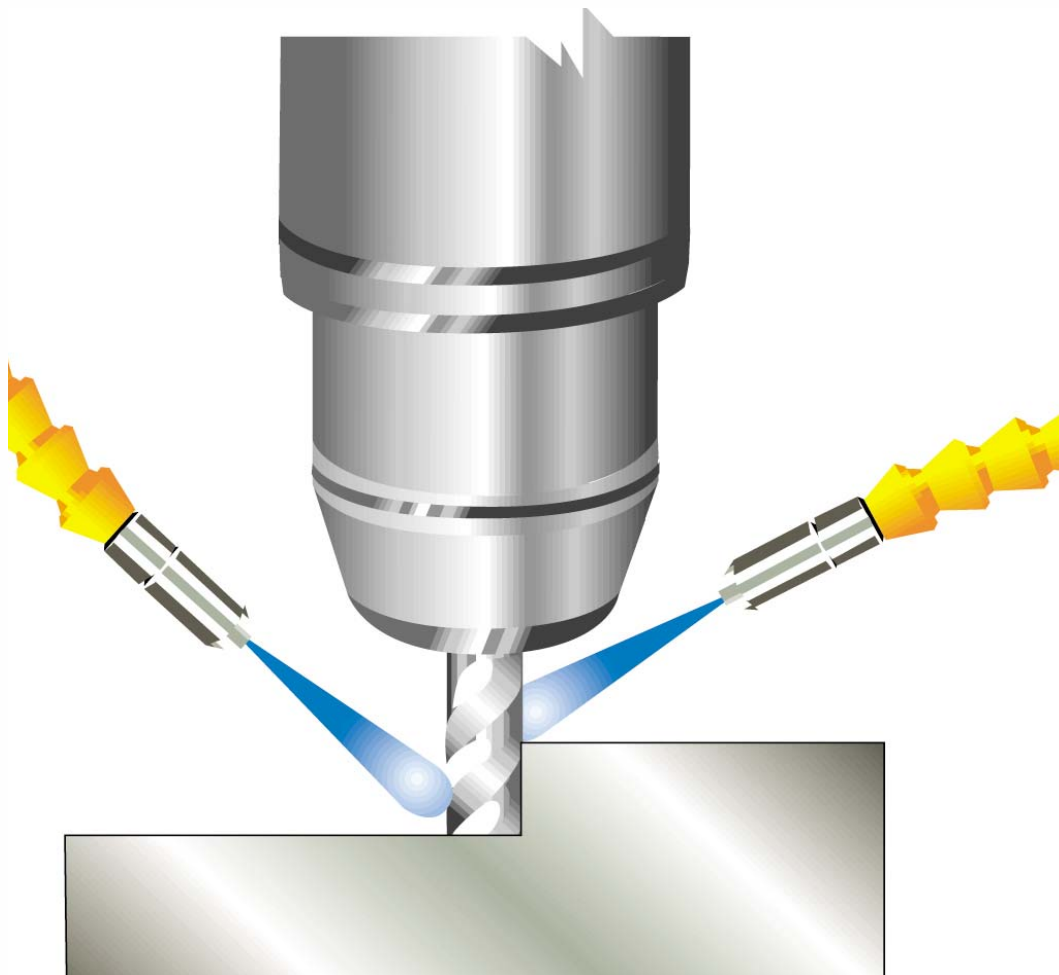
TOOL FROM 1 MM TO 12 MM	1 NOZZLE
TOOL FROM 13 MM TO 24 MM	2 NOZZLE
TOOL FROM 25 MM TO 48 MM	3 NOZZLE
TOOL FROM 49 MM TO 60 MM	4 NOZZLE



**APPLICATIONS**

REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

**MILLING - ENGRAVING**

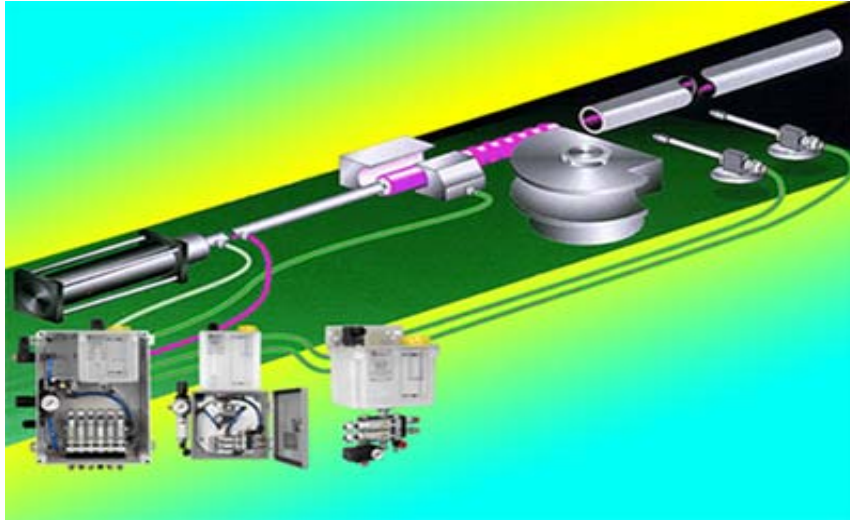


THE NUMBER OF NOZZLE TO USE IS DEPENDING ON THE MATERIALS AND THE ART OF PROCESSING

**GUIDE TO SELECT THE NOZZLE**

TOOL FROM 1 MM TO 12 MM	1 NOZZLE
TOOL FROM 13 MM TO 40 MM	2 NOZZLE
TOOL FROM 41 MM TO 100 MM	3 NOZZLE
TOOL FROM 101 MM TO 240 MM	4 NOZZLE





The **TUBE FORMING LUBRICATION SYSTEM** consists of many options, it depends on customer preferences.

Normally the mandrel is lubricated with higher oil volume and higher air pressure than the other points. The spray dispensed to each outlet is fully adjustable. The customer can have an air-oil combination or just oil.

We can set the system following customers need.

An exact adjustable amount of lubricant is sent to all points that have to be lubricate. The whole working environment remains clean.

#### **BENEFITS:**

*Positive lubricant injection*

*Automatic repeat cycling of lubricant metering pumps*

*Automatic cycling with machine*

*Various combination of outlets*

*Custom systems to meet customer's needs*

*Full adjustment of air and oil output at each lubrication point*

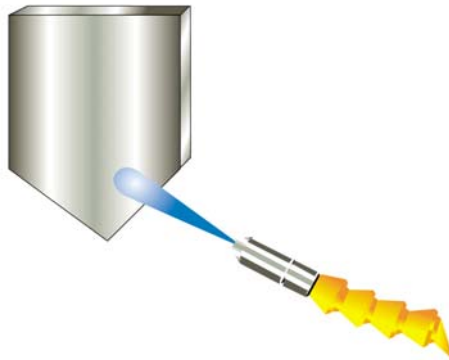


**APPLICATIONS**

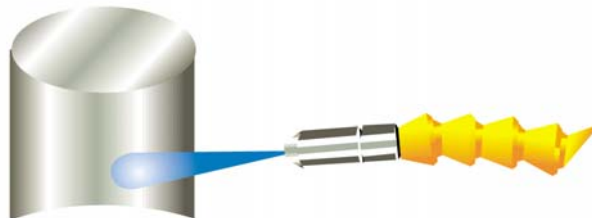
REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

**TUBE FABRICATION**

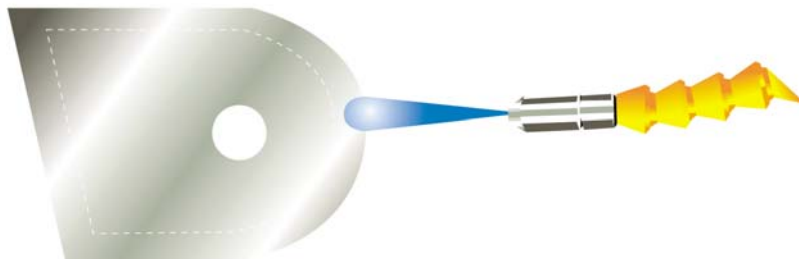
TRADITIONAL CUTTING  
ORBITAL CUTTING  
SHEARING  
TAGGING



PUNCHING  
DRILLING  
FACING  
FLARING



FORMING  
BENDING  
SHAPING



## **APPLICATIONS**

*REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES*

### *CHAINS – MONO AND BI-RAIL CONVEYORS*

*THE LUBRICATION ASSURES MAXIMUM CHAIN LIFE AND OPTIMUM CONVEYOR OPERATION.*

*THE SYSTEM DOES NOT CONTAMINATE THE TRANSPORTED MATERIALS WITH OIL DROPS.*

*THE SYSTEM DO NOT PRODUCE FOG OR DANGEROUS VAPOUR.*

*LAST GENERATION OIL CAN BE USED WITHOUT PROBLEMS.*

*THE CORRECT UNIT DEPENDS ON THE NUMBER OF POINTS HAVE TO BE LUBRICATE.*

*THE UNIT WILL BEGIN TO OPERATE BY MEAN OF AN INDUCTIVE SENSOR OR A MECHANICAL FEELER PIN OPERATED FROM THE CHAIN.*

*A SOLENOID VALVE OR A VALVE WILL OPEN AND WILL SEND THE AIR TO THE SYSTEM.*

*DURING THE WORKING TIME WILL BE POSSIBLE TO HAVE ONE SHOT OR MORE SHOTS DEPENDING ON THE CHAIN HAVE TO BE LUBRICATED.*

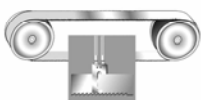
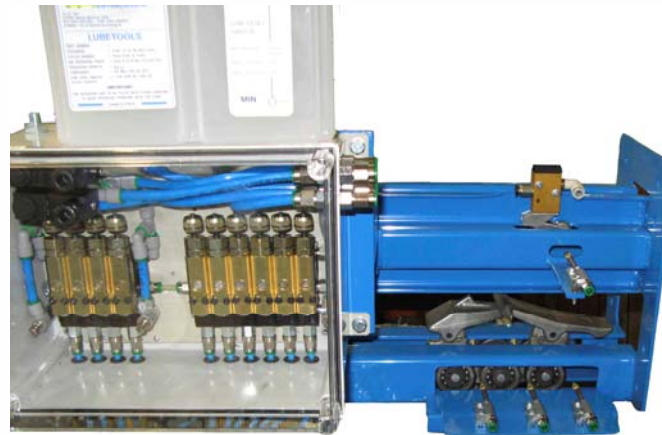
*THE TIME THAT THE INDUCTIVE SENSOR OR THE MECHANICAL FEELER PIN IS ACTIVATED FROM THE CHAIN. WILL BE THE WORKING TIME.*

*THE MORE USED NOZZLE IS WITH STEEL UBE BECAUSE HAS THE POSSIBILITY TO BE ADJUSTED WITHOUT BRACKET.*

*SOME TIME ARE USED THE NOZZLE WITH A THREADED FINAL PART. IN THIS CASE HAS TO BE USED BRACKETS WITH THREAD HOLES.*



CONVEYORS LUBRICATION SYSTEMS





**CONVEYORS LUBRICATION  
MONO AND BI RAIL SYSTEMS**

THIS SYSTEM IS DESIGNED TO LUBRICATE THE ROLLERS OF CONVEYORS WHILE THEY ARE IN OPERATION AND DELIVERS A METERED AMOUNT OF LUBRICANT INTO MOVING BEARING FITTINGS. THESE CUSTOM-ENGINEERED LUBRICATION SYSTEMS ARE PERFECT FOR APPLICATIONS EVEN IN HARSH OPERATING CONDITIONS. EACH CONVEYOR REQUIRES ONE UNIT FOR THE LEFT SIDE AND FOR THE RIGHT. THE SEQUENCE OF THE LUBRICATION EVENTS (EACH ROLLER OR EVERY OTHER ROLLER, ETC.) DEPENDS ON THE NUMBER OF ROLLERS, THE SPEED OF THE CONVEYOR OR ON THE DISTANCE BETWEEN THE ROLLERS.

**BENEFITS**

METERED APPLICATION OF LUBRICANT

WORKS ON MOVING PARTS WHICH CONSUMING TIME TO LUBRICATE MANUALLY

LUBRICATES WHILE THE CONVEYOR IS IN NORMAL OPERATION – NO LOST PRODUCTION TIME

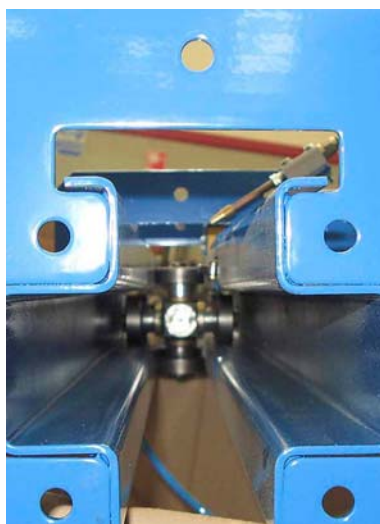
LUBRICATION EVEN UNDER HARSH OPERATION CONDITION

**FUNCTIONING**

SYSTEM IS FORMED BY A RESERVOIR WHICH SENDS OIL, BY GRAVITY, TO THE DISPENSING ROOMS OF THE PNEUMATIC MICROPUMPS. NECESSARY AIR FOR THE FUNCTIONING OF THE PUMPS AND THE OIL SPRAY IS SENT ON THE PASSAGE OF BEARINGS THAT POWER PNEUMATIC VALVES WITH MECHANICAL CONTROL OR INDUCTIVE SENSORS, SUITABLY POSITIONED ALONG RAILROAD.



**CONVEYORS LUBRICATION  
MONORAIL SYSTEMS**



**TYPICAL MONORAIL  
CONVEYOR SYSTEM**

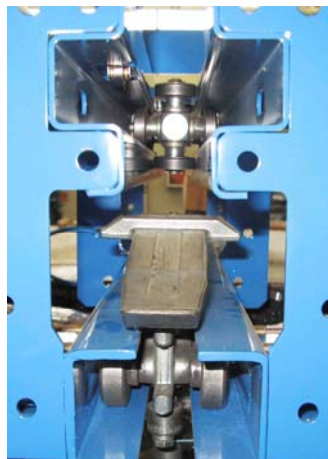
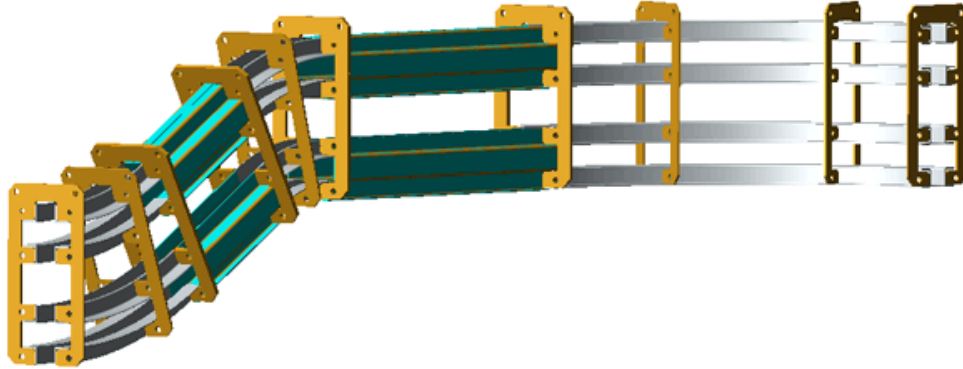
TYPICAL MONORAIL CONVEYOR SYSTEM IS COMPOSED BY:

- 1) 2 PNEUMATIC VALVES WITH MECHANICAL CONTROL  
OR 2 INDUCTIVE SENSORS
- 2) 4 MICROPUMPS DIVIDED IN TWO GROUPS OF 2
- 3) ONE 2.2 L RESERVOIR COMPLETE OF LUBRICANT LOW  
LEVEL SWITCH
- 4) 2 AIR REGULATORS
- 5) 4 NOZZLES

WE ARE STILL AVAILABLE FOR DESIGNING SYSTEMS ON  
SPECIFIC REQUEST OF CUSTOMER.



**CONVEYORS LUBRICATION  
BIRAIL SYSTEMS**



**TYPICAL BIRAIL  
CONVEYOR SYSTEM**

TYPICAL BIRAIL CONVEYOR SYSTEM IS COMPOSED BY:

- 1) 3 OR 4 PNEUMATIC VALVES WITH MECHANICAL CONTROL OR INDUCTIVE SENSORS
- 2) 10 OR MORE MICROPUMPS DIVIDED INTO TWO GROUPS OF 2 AND ONE OF 6
- 3) ONE 3,6L RESERVOIR COMPLETE OF LOW LEVEL SWITCH
- 4) 3 OR MORE AIR REGULATOR
- 5) 10 OR MORE NOZZLES

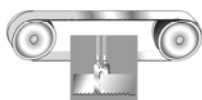
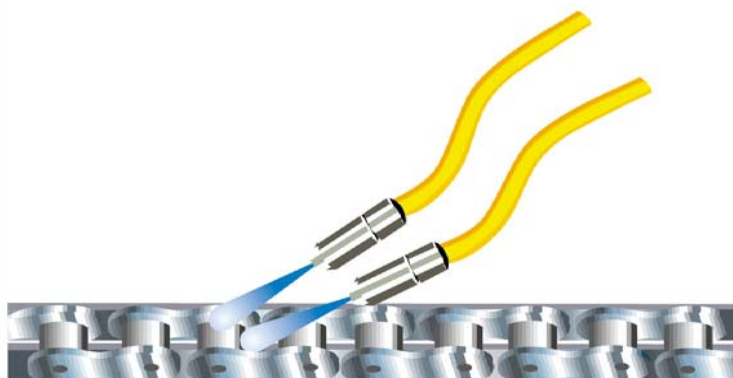
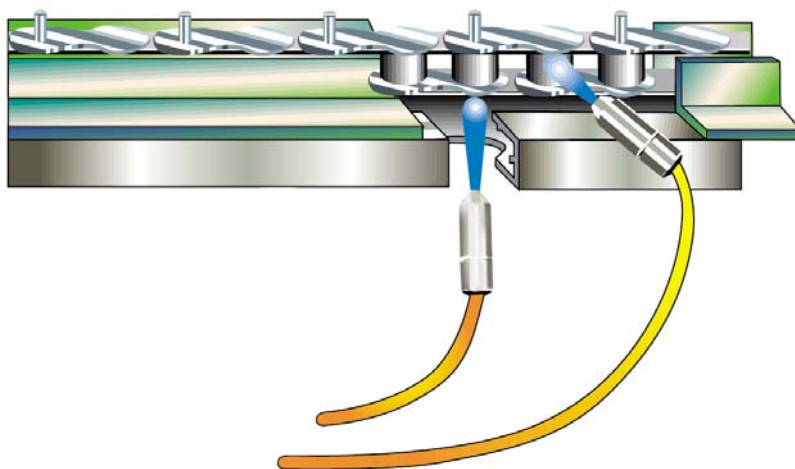
WE ARE STILL AVAILABLE FOR DESIGNING SYSTEMS ON SPECIFIC REQUEST OF CUSTOMER.



**APPLICATIONS**

REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

CHAINS – MONO AND BI-RAIL CONVEYORS



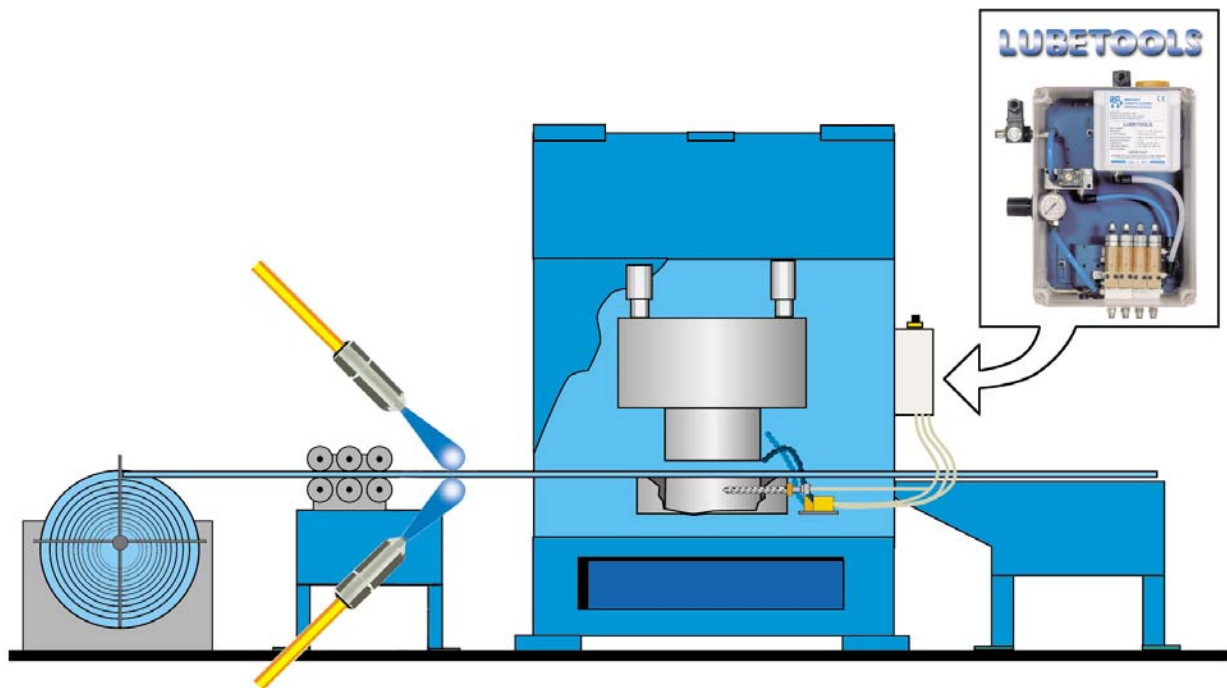
**APPLICATIONS**

REMEMBER MORE IS NOT BETTER AND USE DROPS NOT LITRES

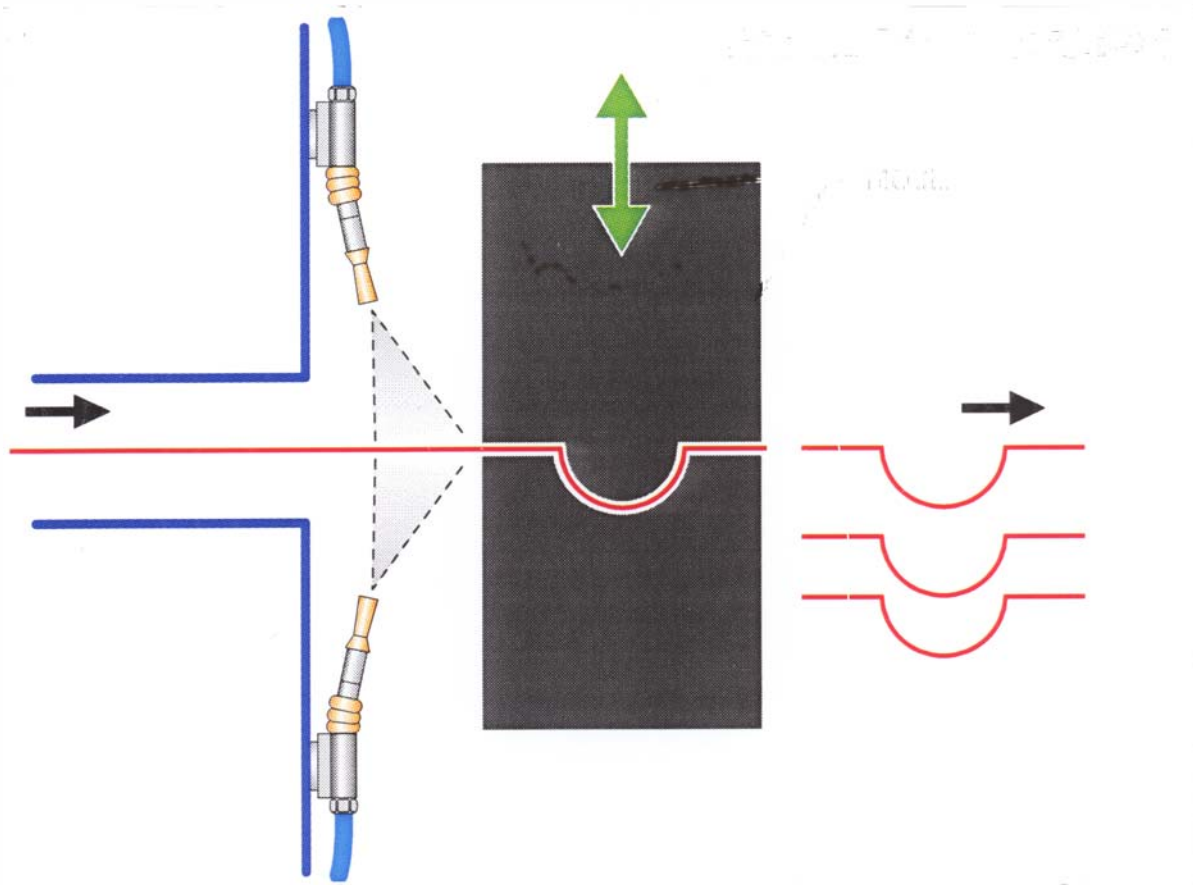
METAL

FORMING

LUBRICATION



**POSITIONING NOZZLE**



*SHEET DISTANCE 100-150 MM*

*DISTANCE FROM ANOTHER NOZZLE 100 MM*

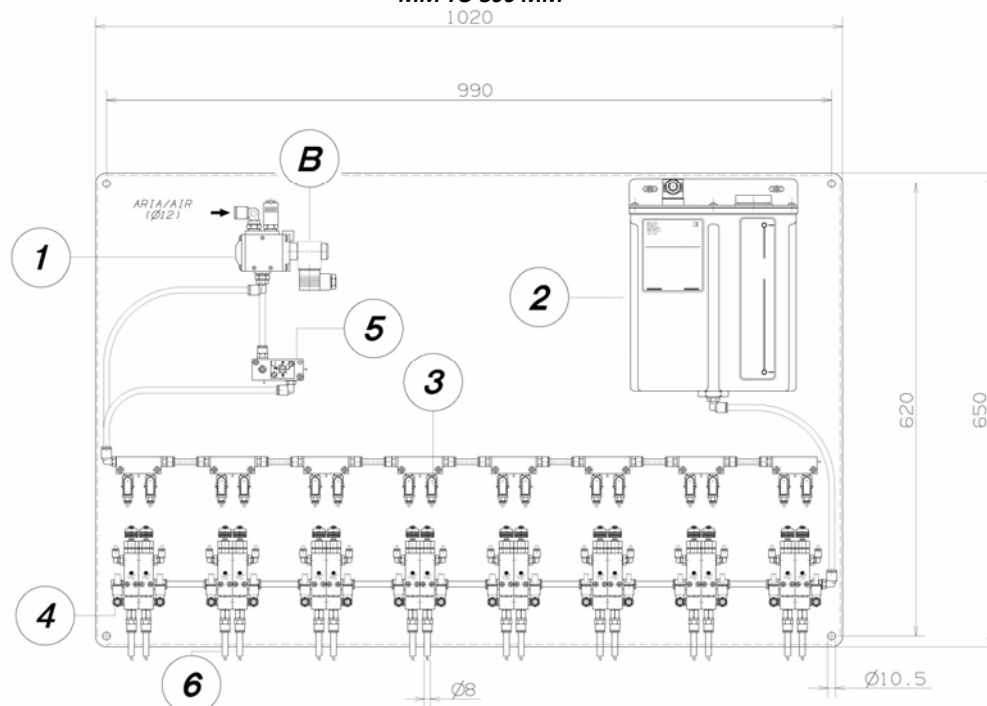
*45° ANGLE AS SHOW ON THE PICTURE*

*EACH NOZZLE COVER A SURFACE OF 100-120 MM*





**STRIP TOP AND BOTTOM LUBRICATION WITH WIDTH FROM 50  
MM TO 800 MM**



CODE	WAYS
70.712.1	8
70.071.4	10
70.722.1	12
70.723.8	14
70.073.4	16

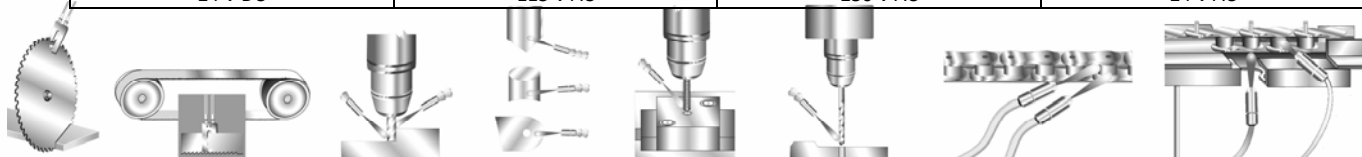
B	COIL
1	N. 2 SOLENOID VALVE 24 V DC – 24 V AC – 115 V AC OR 230 V AC FIRST TO DRIVE THE PUMPS/STROKES SECOND TO SEND AIR TO THE NOZZLE
2	6 L RESERVOIR COMPLETE OF LOW LEVEL SWITCH 1 A 250 V AC 200 V DC 50 W
3	AIR PUMP ON/OFF VALVE
4	NOZZLE AIR REGULATOR
5	FREQUENCY GENERATOR
6	5 M COAXIAL TUBE 8 MM

THE POINTS ARE INDEPENDENT AND CAN BE EXCLUDED CLOSING THE VALVE 3 AND THE CORRESPONDENT NOZZLE AIR REGULATOR.

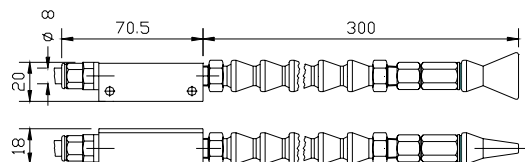
ON REQUEST IT IS POSSIBLE TO SUPPLY UNITS TO LUBRICATE STRIP WITH LOWER OR UPPER WIDTH.

**CODES TO ORDER SOLENOID VALVE 14.662.5 COILS**

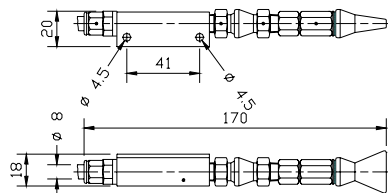
14.662.1.R	14.662.2.R	14.662.3.R	14.662.4.R
24 V DC	115 V AC	230 V AC	24 V AC



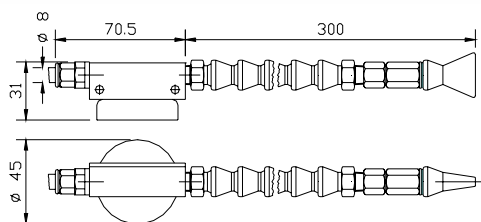
**FLAT NOZZLE  
FOR SLOW FEED**



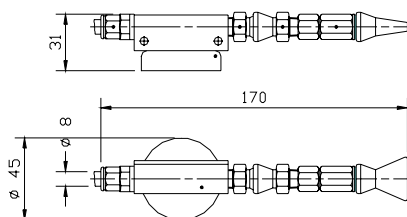
70.102.0



70.102.4



70.102.1

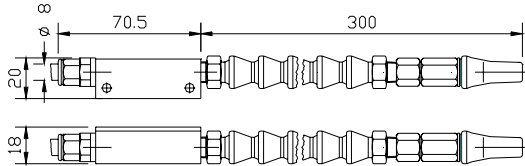


70.102.5

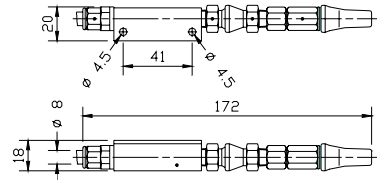
CODE	DESCRIPTION
70.102.0	LOC-LINE WITH FIXED BASE
70.102.1	LOC-LINE WITH MAGNETIC BASE
70.102.4	FIXED BASE
70.102.5	MAGNETIC BASE



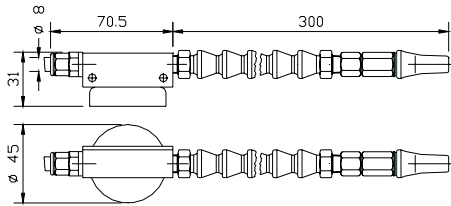
**CONE NOZZLE  
FOR HIGH FEED**



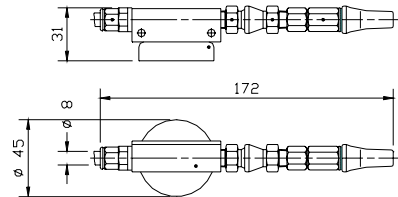
70.102.2



70.102.9



70.102.3



70.102.8

CODE	DESCRIPTION
70.102.2	LOC-LINE WITH FIXED BASE
70.102.3	LOC-LINE WITH MAGNETIC BASE
70.102.9	FIXED BASE
70.102.8	MAGNETIC BASE



### VEGETABLE OIL NATURAL – 77

#### INTEGRAL LUBRICANT OF NATURAL ORIGINS

ILC TECHNICAL DEPARTMENT HAS SET A SERIES OF LUBRICANT/COOLANT OF NATURAL ORIGINS CALLED NATURAL 77 SERIES, WITH THE PRECISE AIM OF IMPROVING DRAMATICALLY THE WORKING ENVIRONMENT CONDITIONS AND IN THE MEANWHILE TO SUPPLY CUTTING TOOLS PERFORMANCES HIGHER TO THAT ACHIEVABLE WITH THE USE OF TRADITIONAL CUTTING NEAT MINERAL OILS. NATURAL 77 SERIES IS WHOLLY FREE FROM ANY LUBRICANT MINERAL OIL AND IT IS COMPOSED TOTALLY BY SYNTHETIC ESTERS DERIVED FROM RAW MATERIALS OF NATURAL ORIGINS. ODOURLESS, LIGHT-COLOURED, THESE PRODUCTS ARE WHOLLY BIODEGRADABLE AND ABSOLUTELY NON-TOXIC, THE USE OF NATURAL 77 SERIES AVOIDS TOTALLY THE RISK DUE TO THE USE OF MINERAL OILS AND CONSEQUENTLY THE PERIODICAL MEDICAL VISIT.

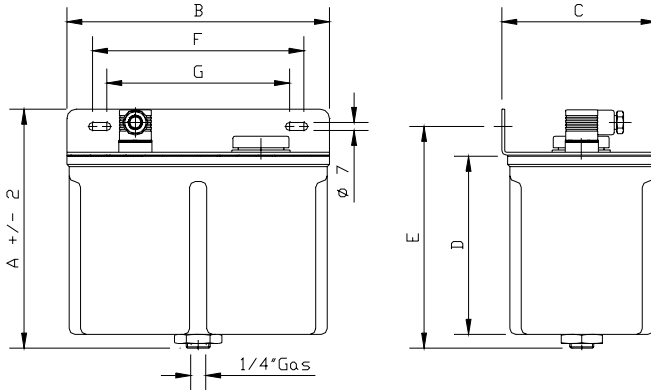
IN ADDITION, NATURAL 77 SERIES HAS AN EXCEPTIONAL LUBRICANT POWER COMBINED WITH EXTREME PRESSURE PREROGATIVES AND A GOOD COOLING ACTION WHICH KEEPS IT SUITABLE TO OBTAIN MAXIMAL RESULTS WITH STRONG FEEDS AND WITH THE TYPE OF WORKING TOOL, AVOIDING GASSINGS AND SEIZING-UP. NATURAL 77 SERIES HAS EVEN THE PREROGATIVE TO REDUCE SMOKES, HAS LOW VOLATILITY WHICH REDUCES NOTEWORTHY STEAM REDUCTION, SUCH AN EXCELLENT CHEMICAL STABILITY TO AVOID POLYMERISATION OR DEGRADATION OF THE USING PRODUCT; LAST, BUT NOT THE LEAST, NATURAL 77 HAS THE CHARACTERISTIC OF AUTO EXTINGUISHING IMMEDIATELY AT THE ARISING OF A FIRE TRIGGER.

NATURAL 77 IS A NEAT FLUID WITH COMPLEX ADDITIVATION, WITH VERY HIGH ANTI-WELDING POWER AND CONSPICUOUS EXTREME PRESSURE RESISTANCE, AND, USED WITH TOOLS OR CERAMIC METAL INSERTS, IT ALLOWS TO DOUBLE THE FEED SPEED IN COMPARISON WITH THE USUAL PARAMETERS OF USAGE. THE USE OF NATURAL 77 AVOIDS SMOKES THAT WOULD DEVELOP WITH TRADITIONAL OILS DURING THE INCREASING FEED SPEEDS MENTIONED ABOVE. FURTHERMORE, NATURAL 77 IS SUITABLE TO BE USED ON GEAR-CUTTING MACHINES USING BOTH CUTTING SYSTEMS SUCH AS "GLEASON" AND SLOTTING MACHINE SUCH AS "FELLOWS". NATURAL 77 IS ALSO WHOLLY FREE OF CHLORINE AND ITS DERIVATIVES.

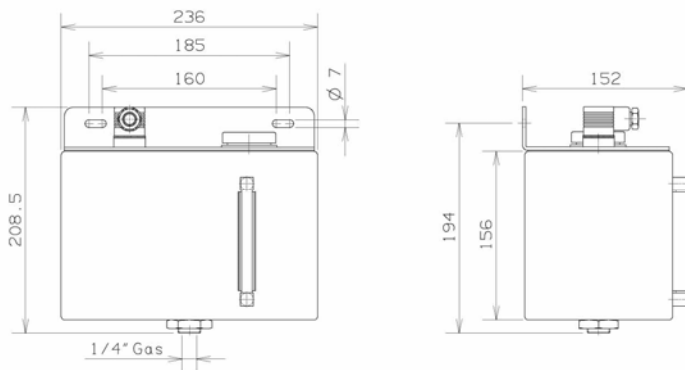
PRODUCT	SPECIFIC GRAVITY AT 15 °C KG/L	VISCOSITY cSt A 40 °C	FLASH POINT °C
NATURAL 77	0.928	68	290
CODE	DESCRIPTION	Q.TY	
30.600.6	5 L VEGETABLE OIL NATURAL 77	1	



**COMPONENTS  
RESERVOIRS**

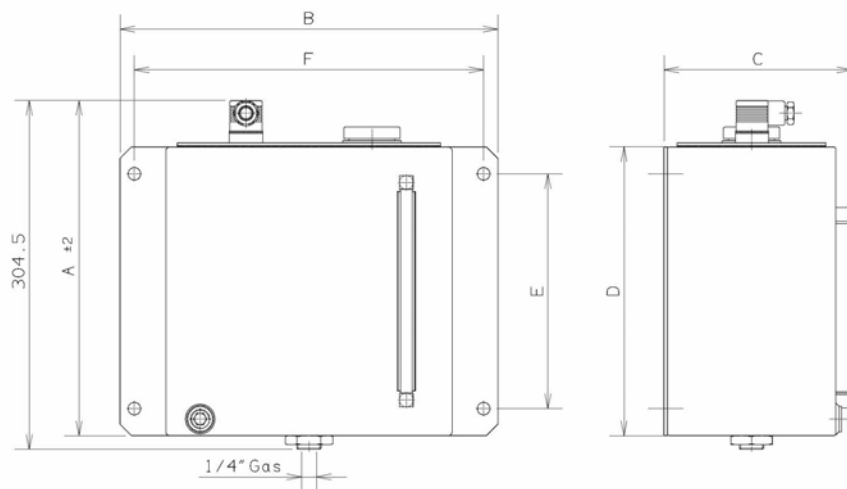


CODE	CAPACITY - L	LOW LEVEL SWITCH	A MM	B MM	C MM	D MM	E MM	F MM	G MM
A72.079263	1.2 Polyester		161	148	123	108	146	132	125
A72.079264	2.2 Polyester		213	148	123	160	198	132	125
A72.079265	3.6 Polyester		208	230	135	155	193	185	160
A72.079269	6.0 Nylon		303	230	135	250	288	185	160
A72.079260	1.2 Polyester	***	161	148	123	108	146	132	125
A72.079261	2.2 Polyester	***	213	148	123	160	198	132	125
A72.079262	3.6 Polyester	***	208	230	135	155	193	185	160
A72.079268	6.0 Nylon	***	303	230	135	250	288	185	160



CODE	CAPACITY - L	LOW LEVEL SWITCH
A72.079399	3.6 Metallic	***
A72.079399.SL	3.6 Metallic	

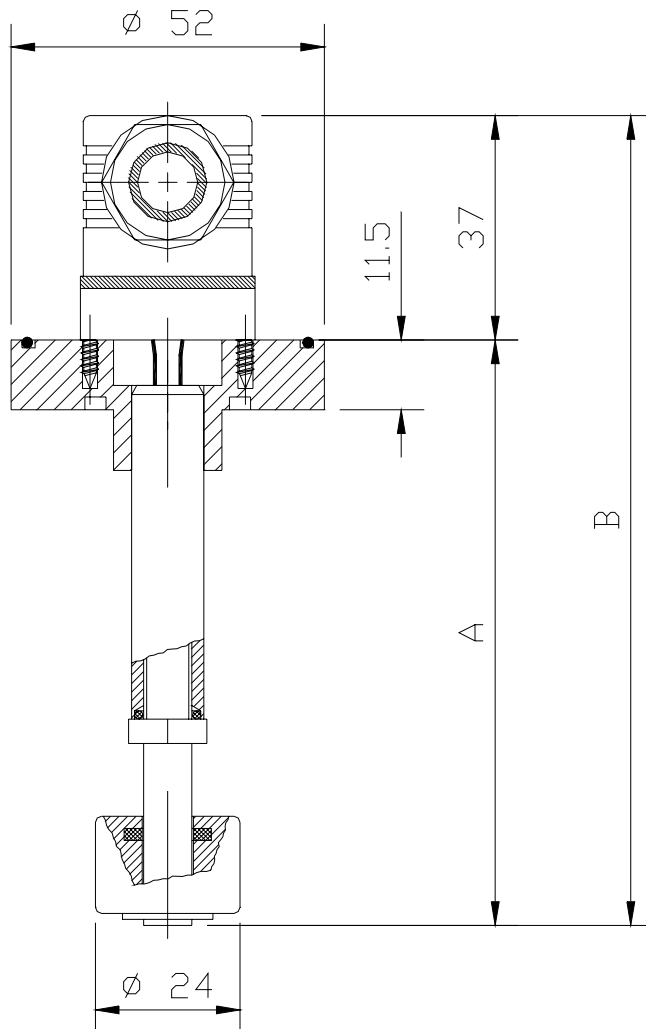




CODE	CAPACITY - L	LOW LEVEL SWITCH	A MM	B MM	C MM	D MM	E MM	F MM
A72.079415	8.0 <i>Metallic</i>	***	305	330	163	252	205	305
A72.079324	12.0 <i>Metallic</i>	***	305	355	196	252	205	330
A72.079420	50.0 <i>Metallic</i>	***	452	560	266	400	300	530
A72.079415.SL	8.0 <i>Metallic</i>		282	330	163	252	205	305
A72.079324.SL	12.0 <i>Metallic</i>		282	355	196	252	205	330
A72.079420.SL	50.0 <i>Metallic</i>		429	560	266	400	300	530



**COMPONENTS**  
**LOW LEVEL SWITCHES**



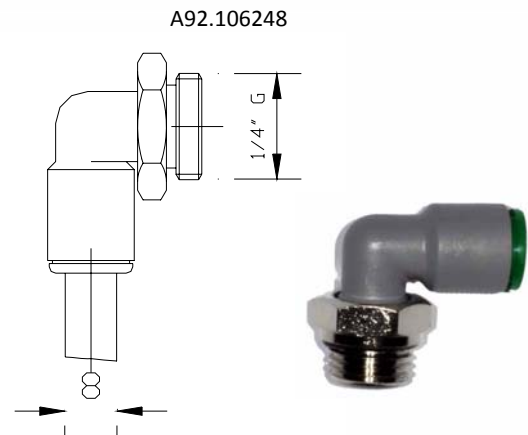
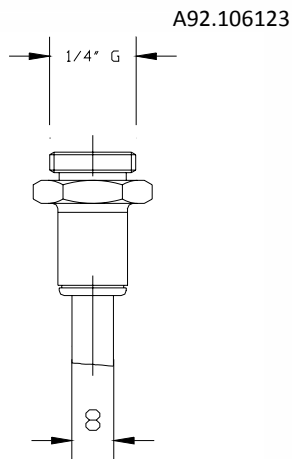
CODE	RESERVOIR L	A MM	B MM
A70.094040	1.20	97	133.5
A70.094029	2.20	144	181
A70.094029	3.60	144	181
A70.094037	6.00	240	277



**COMPONENTS**

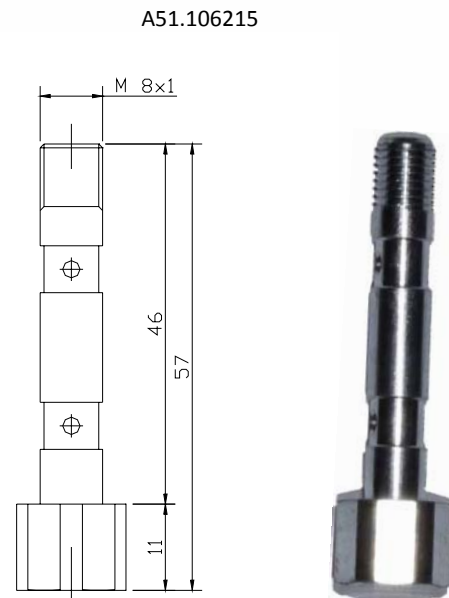
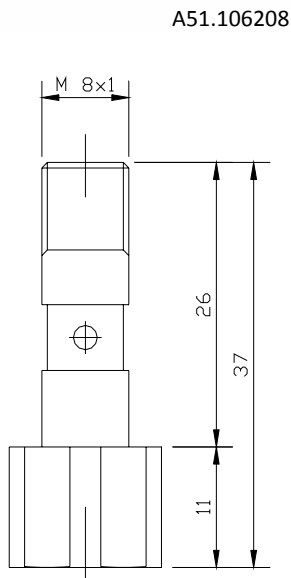
*PUSH-IN FITTINGS TO CONNECT RESERVOIR OUTLET TO AN 8  
MM TUBE*

*RACCORDO A 90 GRADI  
ELBOW FITTING*



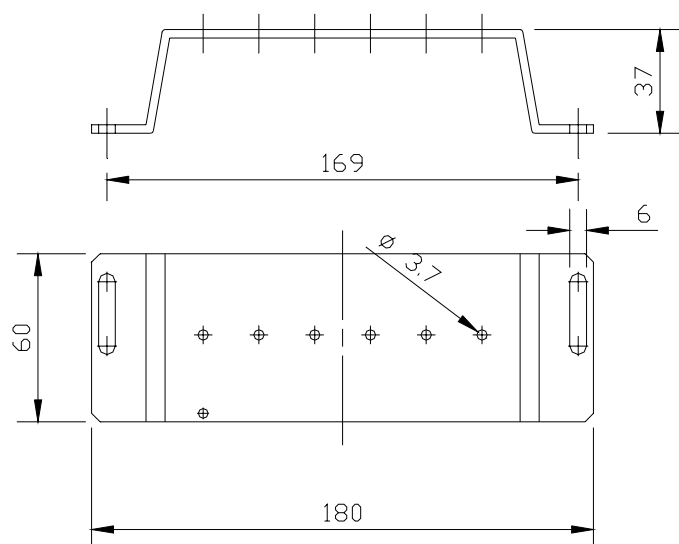
*ADAPTORS FOR MINI LUBETOOLS WITH ONE PUMP*

*ADAPTORS FOR MINI LUBETOOLS WITH TWO PUMPS*

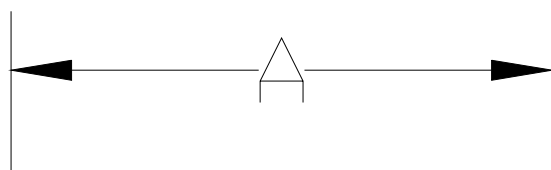


**BRACKET TO INSTALL THE BASE PUMPS (FROM 1 TO 6 PUMPS)**

A85.120401



**TIE-RODS TO JOIN THE PUMP BASES**

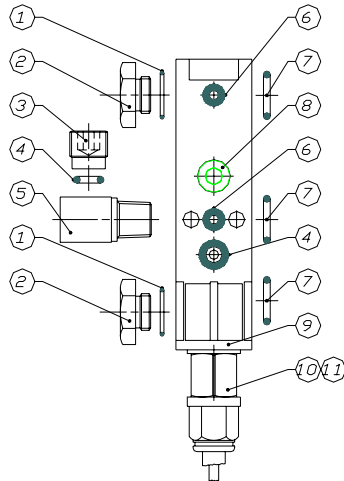


CODE	OUTLETS	A
A70.093167 (x2)	2	35
A70.093168 (x2)	3	55
A70.093169 (x2)	4	75
A70.093170 (x2)	5	95
A70.093171 (x2)	6	115



**PUMP BASE**  
**THE CODE A70.093165 IS COMPLETE OF ALL THE ITEMS**  
**SHOWED IN THE BELOW DRAWING**

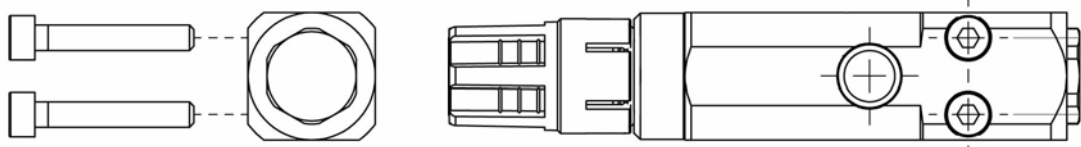
A70.093165



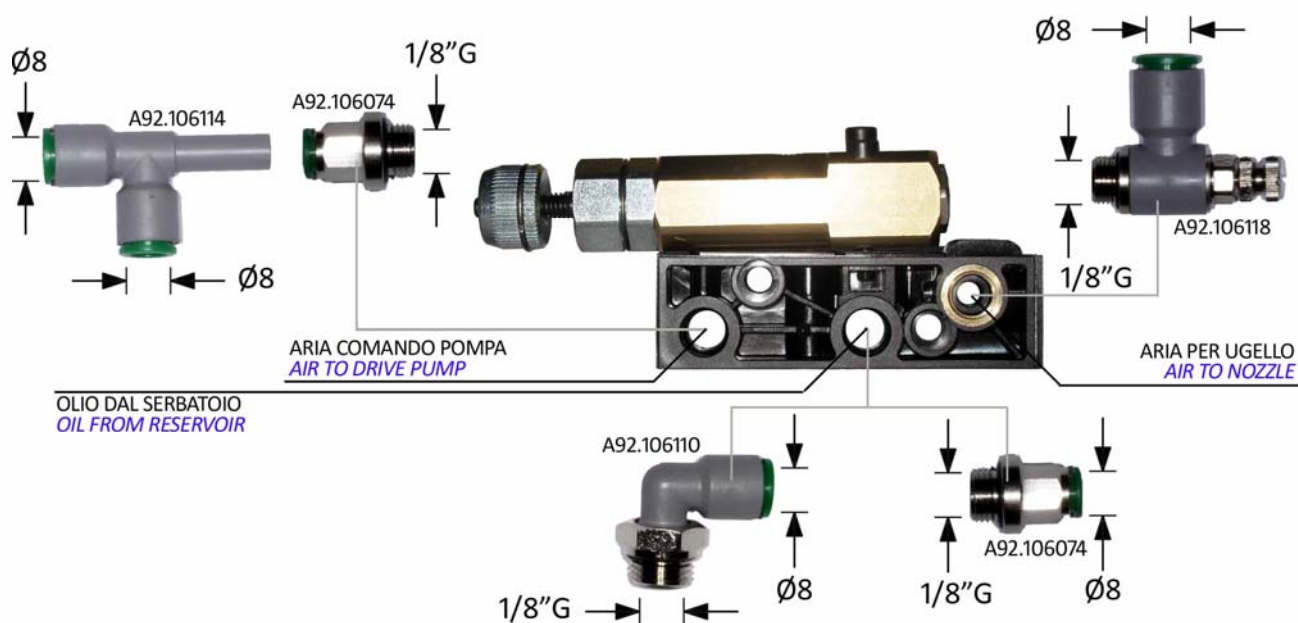
POS.	CODE	DESCRIPTION
1	A92.127109	"O"-RING 11x1
2	A51.096055	PLUG
3	A73.087010	PLUG
4	A92.127108	"O"-RING 2018
5	03.231.0	ELBOW ADAPTOR
6	A92.127106	"O"-RING 2010
7	A92.127109	"O"-RING 2037
8	UNI5931-M5X25	SCREW M5x25 UNI 5931
9	A83.082081	SINGLE BASE
10	A70.093219	DELIVERY FITTING + 5 M COAXIAL TUBE – 6 MM
11	A70.093228	DELIVERY FITTING + 5 M COAXIAL TUBE – 8 MM

**MICRO PNEUMATIC PUMP TO BE INSTALLED ON THE BASE**

A70.093463



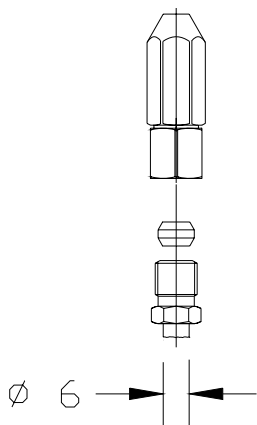
**FITTINGS FOR PUMP BASE**



**NOZZLE COMPLETE OF FITTING FOR TUBE 6 MM**

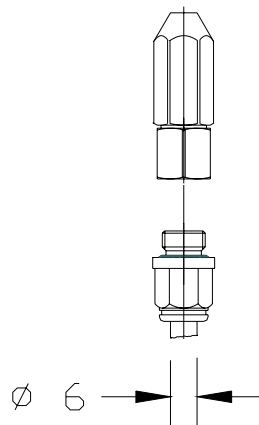
**NUT AND OLIVE FITTING**

A70.093172



**PUSH-IN FITTING**

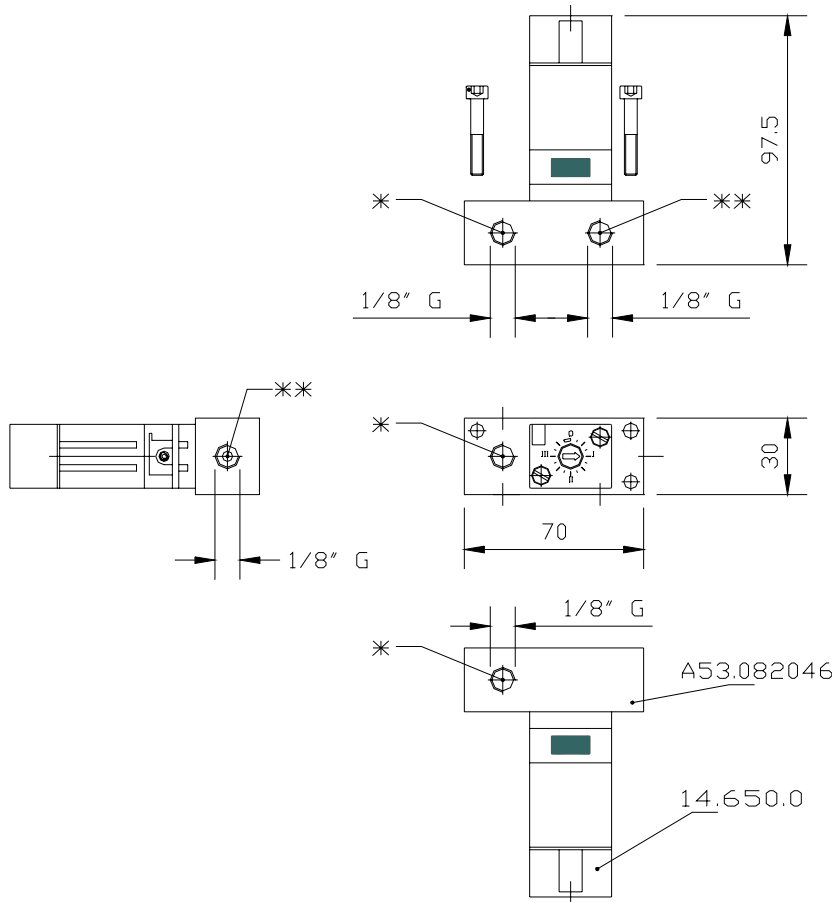
A70.093180



**FREQUENCY GENERATOR COMPLETE OF BASE**

A72.079243

**	AIR FOR PNEUMATIC PUMPS
*	AIR FOR NOZZLE



base **A70.093491**

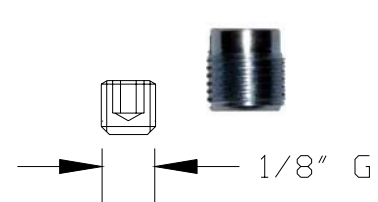
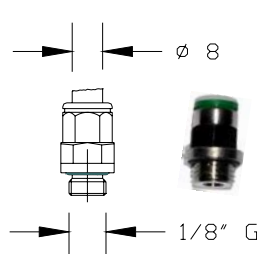
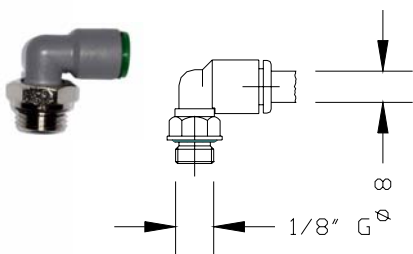
**RACCORDI BASE E TAPPO**

**BASE FITTINGS AND PLUG**

A92.106110

A92.106074

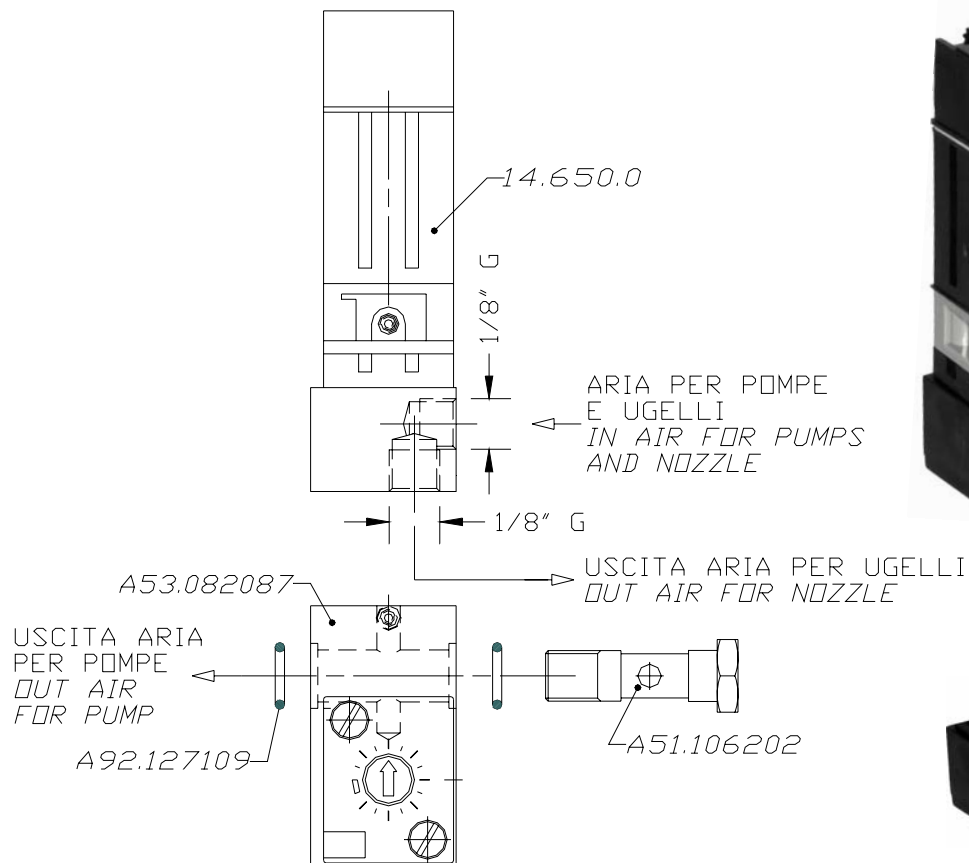
A92.087058



**FREQUENCY GENERATOR COMPLETE OF BASE**

THIS IS USED FOR THE MINI VERSION WITH ONE OR TWO PUMPS

A72.079321

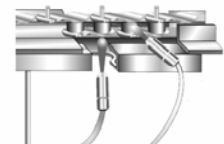
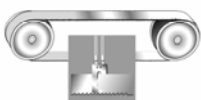
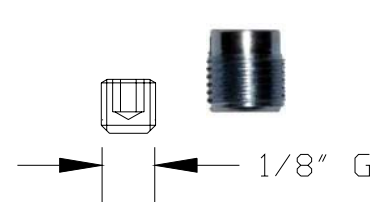
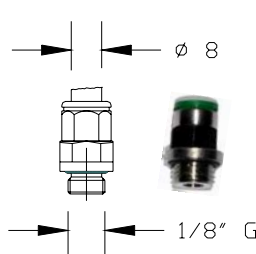
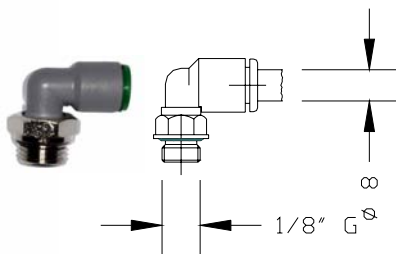


base **A70.093504**

**BASE FITTINGS AND PLUG**

A92.106074

A92.087058



**SOLENOID VALVES**

<i>Code</i>	<i>Description</i>	<i>Image</i>
<b>14.660.0</b>  14.660.1 14.660.2 14.660.3 14.660.4	<b>Solenoid valve</b> Connection: 1/4" G Orifice size (mm): 6 Discharge (NI/min): 620 Max Pressure (BAR): 10  Coil 24 V DC Coil 115 V AC Coil 230 V AC Coil 24 V AC	
<b>14.663.5</b>  14.660.1 14.660.2 14.660.3 14.660.4	<b>Solenoid valve</b> Connection: 1/8" G Orifice size (mm): 1,5 Discharge (NI/min): 60 Max Pressure (BAR): 10  Coil 24 V DC Coil 115 V AC Coil 230 V AC Coil 24 V AC	
<b>14.662.5</b>  14.662.1 14.662.2 14.662.3 14.662.4	<b>Solenoid valve</b> Connection: 3/8" G Orifice size (mm): 10 Discharge (NI/min): 1500 Max Pressure (BAR): 10  Coil 24 V DC Coil 115 V AC Coil 230 V AC Coil 24 V AC	







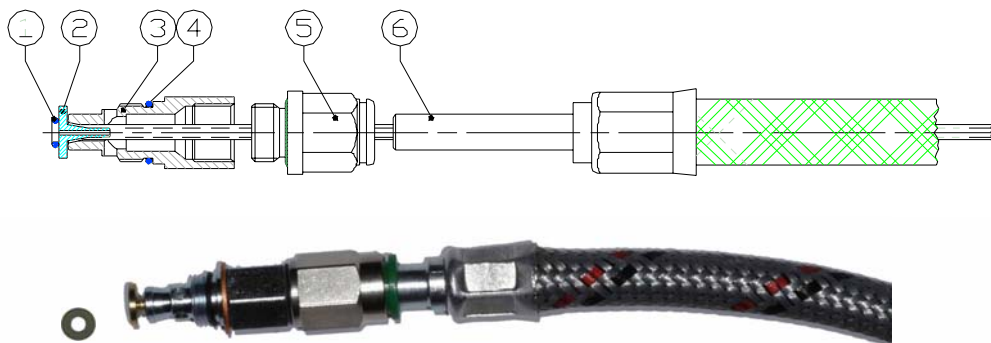
POS	DESCRIPTION	CODICE - CODE
1	O"-RING 3x1	A92.127034
2	NOZZE FOR PUMP BASE	A52.090051
3	ADAPTOR	A51.106104
4	"O"-RING 8x1	A73.127065
5	PUSH-IN FITTING	*
6	COAXIAL HOSE	**

	DESCRIPTION	CODE
*	PUSH-IN FITTING 1/8" HOSE 6 MM	A92.106113
*	PUSH-IN FITTING 1/8" HOSE 8 MM	A92.106074
*	PUSH-IN FITTING 1/4" HOSE 10 MM	03.214.0 + A92.106191

**			
Mt	Ø6	Ø8	Ø10
1	70.150.1	70.160.1	70.170.1
2	70.150.2	70.160.2	70.170.2
3	70.150.3	70.160.3	70.170.3
4	70.150.4	70.160.4	70.170.4
5	70.150.5	70.160.5	70.170.5
6	70.150.6	70.160.6	70.170.6
7	70.150.7	70.160.7	70.170.7
8	70.150.8	70.160.8	70.170.8
9	70.150.9	70.160.9	70.170.9
10	70.151.0	70.161.0	70.171.0
11	70.151.1	70.161.1	70.171.1
12	70.151.2	70.161.2	70.171.2
13	70.151.3	70.161.3	70.171.3
14	70.151.4	70.161.4	70.171.4
15	70.151.5	70.161.5	70.171.5
16	70.151.6	70.161.6	70.171.6
17	70.151.7	70.161.7	70.171.7
18	70.151.8	70.161.8	70.171.8
19	70.151.9	70.161.9	70.171.9
20	70.152.0	70.162.0	70.172.0
21	70.152.1	70.162.1	70.172.1
22	70.152.2	70.162.2	70.172.2
23	70.152.3	70.162.3	70.172.3
24	70.152.4	70.162.4	70.172.4
25	70.152.5	70.162.5	70.172.5
30	70.153.0	70.163.0	70.173.0



**METALLIC COAXIAL HOSES COMPLETE OF FITTING, ADAPTOR  
AND NOZZLE FOR THE PUMP BASE**



<i>CODES TO ORDER</i>	<i>DESCRIPTION</i>
A70.093351	1 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093352	2 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093353	3 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093354	4 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093355	5 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093356	6 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093357	7 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093358	8 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093359	9 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093360	10 M COAXIAL HOSE TERMINAL 8 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE





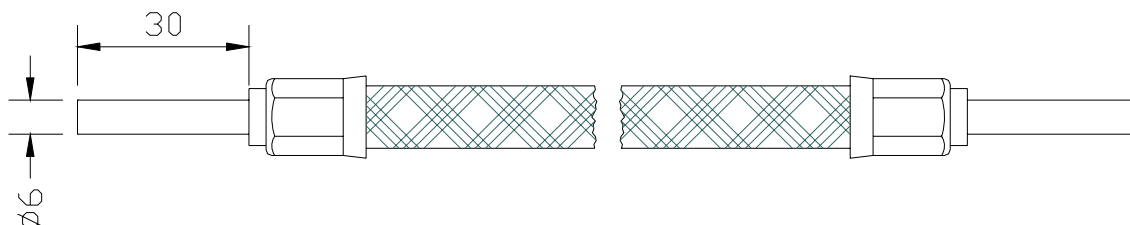
A70.093341	1 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093342	2 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093343	3 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093344	4 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093345	5 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093346	6 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093347	7 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093348	8 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093349	9 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE
A70.093350	10 M COAXIAL HOSE TERMINAL 6 MM COMPLETE OF FITTING, ADAPTOR AND NOZZLE FOR THE PUMP BASE

POS	DESCRIPTION	CODICE - CODE
1	O"-RING 3x1	A92.127034
2	NOZZE FOR PUMP BASE	A52.090051
3	ADAPTOR	A51.106104
4	"O"-RING 8x1	A73.127065
5	PUSH-IN FITTING	*
6	COAXIAL HOSE	*

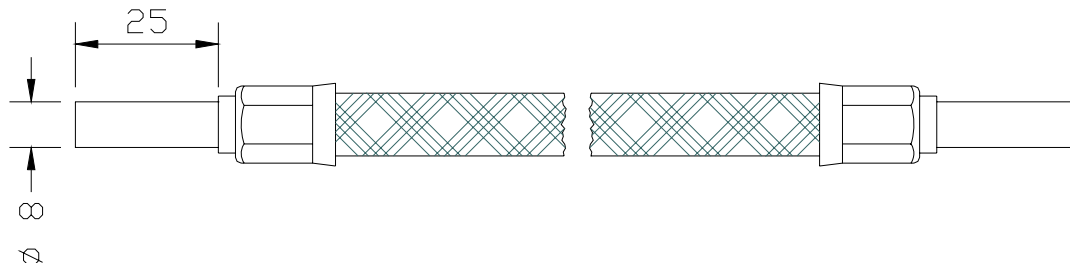
	DESCRIPTION	CODICE - CODE
*	PUSH-IN FITTING 1/8" HOSE 8 MM	A92.106074
*	PUSH-IN FITTING 1/8" HOSE 6 MM	A92.106113



**METALLIC FLEXIBLE HOSES**



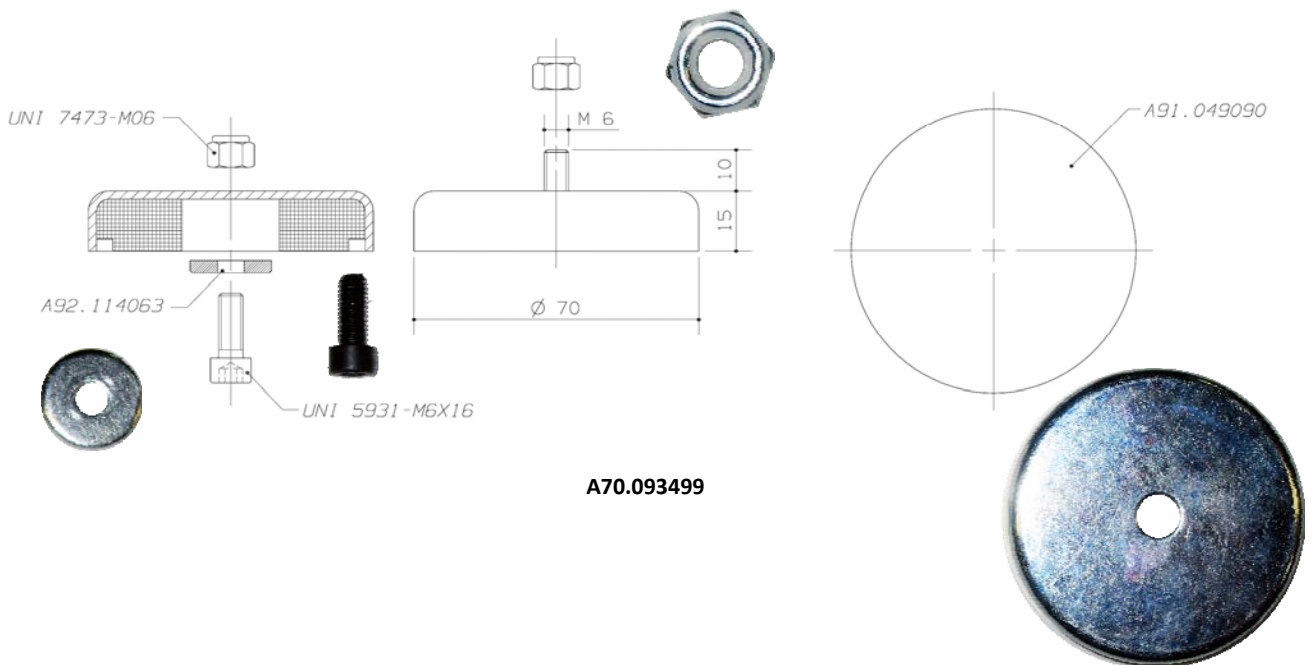
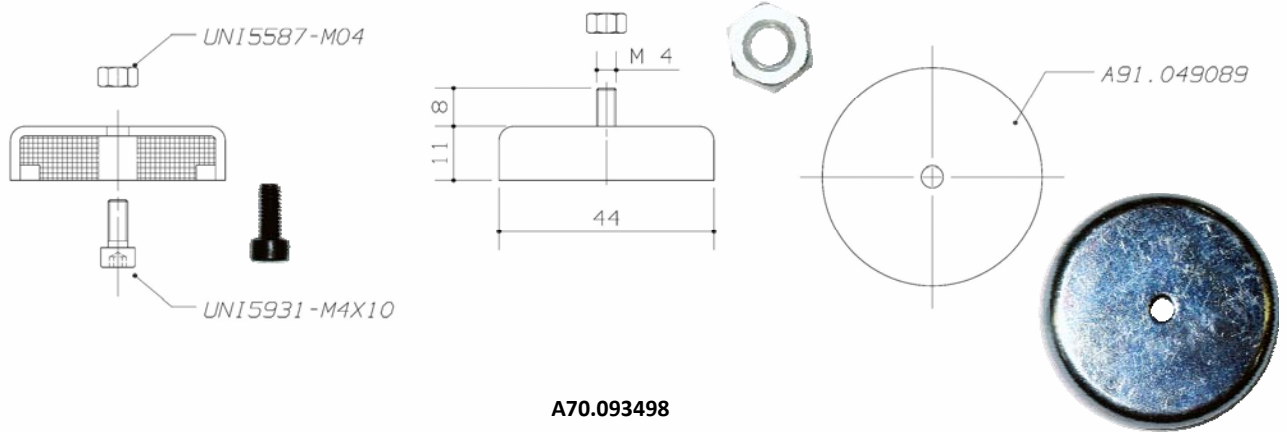
**	CODES TO ORDER METALLIC FLEXIBLE HOSES
30.616.0.01000	1 M METALLIC HOSE 6 MM
30.616.0.02000	2 M METALLIC HOSE 6 MM
30.616.0.03000	3 M METALLIC HOSE 6 MM
30.616.0.04000	4 M METALLIC HOSE 6 MM
30.616.0.05000	5 M METALLIC HOSE 6 MM
30.616.0.06000	6 M METALLIC HOSE 6 MM
30.616.0.07000	7 M METALLIC HOSE 6 MM
30.616.0.08000	8 M METALLIC HOSE 6 MM
30.616.0.09000	9 M METALLIC HOSE 6 MM
30.616.0.10000	10 M METALLIC HOSE 6 MM



**	CODES TO ORDER METALLIC FLEXIBLE HOSES
30.618.0.01000	1 M METALLIC HOSE 8 MM
30.618.0.02000	2 M METALLIC HOSE 8 MM
30.618.0.03000	3 M METALLIC HOSE 8 MM
30.618.0.04000	4 M METALLIC HOSE 8 MM
30.618.0.05000	5 M METALLIC HOSE 8 MM
30.618.0.06000	6 M METALLIC HOSE 8 MM
30.618.0.07000	7 M METALLIC HOSE 8 MM
30.618.0.08000	8 M METALLIC HOSE 8 MM
30.618.0.09000	9 M METALLIC HOSE 8 MM
30.618.0.10000	10 M METALLIC HOSE 8 MM



**MAGNETS**





**FITTINGS**

		HOSE	4 MM	HOSE	6 MM	HOSE	8 MM	HOSE	10 MM
	1/8" G	A92.106165		A92.106113		A92.106074			
	1/8" G	A92.106218		A92.106195		A92.106110			
	1 / 4" G			A92.106133		A92.106123		A92.106191	
	1 / 4" G			A92.106224		A92.106248		A92.106199	

