



## FEATURES

**CONSTANT FLOW RATE**  
EVEN UPON VARYING  
THE INFLOWING AND  
OUTFLOWING PRESSURE

**INDEPENDENT**  
SOLENOID VALVE  
CONTROL

**THE PRESSURE**  
COMPENSATION VALVE  
CAN MAINTAIN THE OIL  
FLOW RATE CONSTANT  
EVEN UPON VARIATION  
OF THE AIR INFLOW AND  
OUTFLOW PRESSURE

**AN OIL SUCTION SYSTEM**  
IS INTEGRATED IN THE  
COAXIAL SYSTEMS

**THE STANDARD VERSION**  
COMES WITH SINGLE-  
PIPE OR COAXIAL PIPE

**RESERVOIR CAPACITY:**  
1 LT  
3LT

**FLOW RATE: VARIABLE:**  
0÷2 CC/MIN

**OIL AND AIR FLOW RATE**  
CAN BE REGULATED PER  
SINGLE ELEMENT

**AIR AND OIL REGULATION**  
PER SINGLE ELEMENT

## APPLICATIONS

MACHINE TOOL

MACHINE FOR CUTTING  
AND FOLDING SHEETS

STEEL PLANTS

## MINIMAL AIR LUBRICATION CENTRALISED SYSTEM – PNEUMATIC CONTROL AIR

### EFFICIENT AND COMPLETE

The MiQueL air/oil modular system was conceived for minimal lubrication of machine tools in general, machines for cutting and folding sheets, steel plants. It can be used on any system that requires calibrated lubrication as well as controlling all functions.

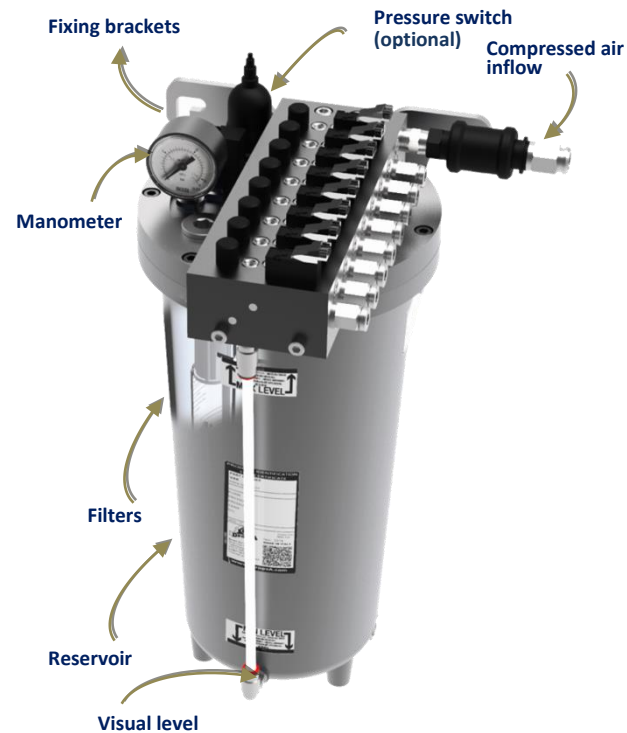
Up to 8 mutually connected elements that can be cut off or activated separately by means of a solenoid valve integrated therein at any time can be fitted.

### FUNCTIONAL AND EASY TO USE

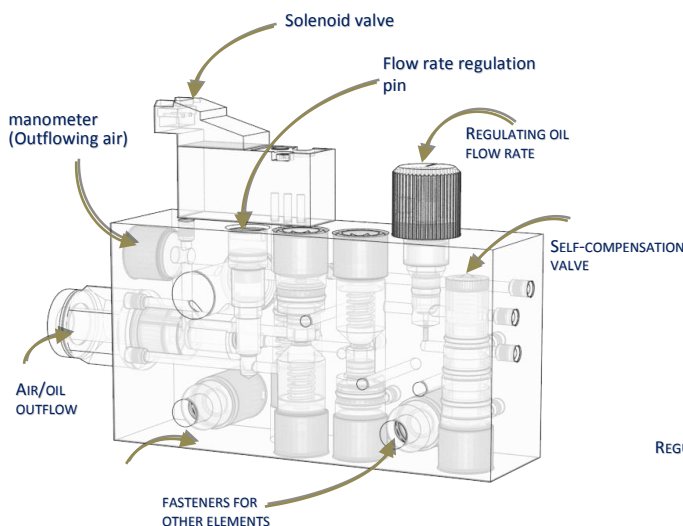
Both the air flow rate and oil flow rate can be controlled separately per single element.

### CLEAN

The system comes with a device that ensures that the lubricant does not drip upon completing the lubrication cycle.



## OPERATING PRINCIPLE

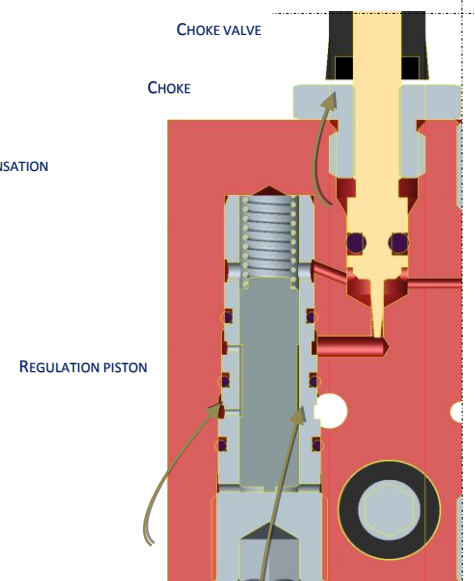


### MIXING ELEMENT

Upon varying the inflow and outflow pressure, the lubricant flow rate remains constant thanks to the self-compensation valve which maintains the  $\Delta p$  between the inflowing oil pressure and the outflowing pressure constant.

$$\Delta p_{(oil)} = \text{constant} (\sim 2 \text{ bars}) \Rightarrow Q_{(oil)} = \text{constant}$$

### SELF-COMPENSATION VALVE (OFF-SCALE SECTION)





TECHNICAL FEATURES

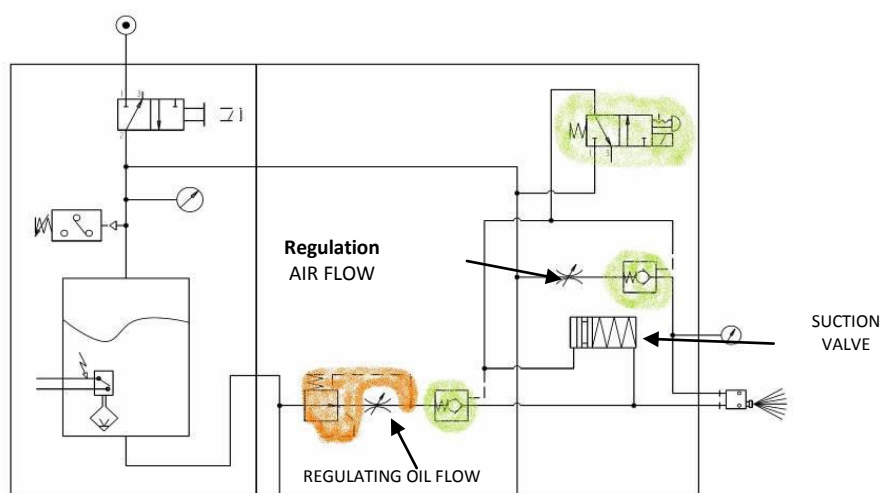
TECHNICAL FEATURES		
Reservoir capacity	1L – 3L	
Maximum number of modules	8	
Air inflow pressure	4 bars ÷ 7bars	
Maximum consumption of outflowing air	~50Nl/min (per module)	
Air inflow pipe	Ø10 mm	
Air outflow pipe	Ø6 mm	
Oil outflow pipe	Ø3 mm	
Oil flow rate per element	PRO	0.1 ÷ 2.7 cc/min (oil 10cSt) 0 ÷ 1 cc/min (oil 32cSt) 0 ÷ 0.2 cc/min (oil 100cSt)
	BASE	0.3 ÷ 8 cc/min (oil 10cSt) 0.1 ÷ 3 cc/min (oil 32cSt) 0 ÷ 0.6 cc/min (oil 100cSt)
	CART	$cc/min = (P \times 8.16) / V$ <i>P = operating pressure in [bars]</i> <i>V = viscosity [Engler] at operating temp.</i>
Lubricating oil	10cSt ÷ 100cSt	
Degree of protection for element “-i”	standard	IP 00
	upon request (special)	IP 65
Degree of protection of the reservoir	IP 65	
Calibration of the pressure switch (optional)	6 bars	
Maximum load of the pressure switch (optional)	Clean contact maximum voltage 250V Maximum power 100W	
Maximum load minimum level	(1) 0,25A @ 48V	
	(2) 0,5A @ 48V	
Element solenoid valve power supply	24 Vdc	
Operating temperature	+5°C ÷ +50°C	
Storage temperature	-10°C ÷ +80°C	
Max relative humidity without operating condensate	90%	
Sound pressure level	< 70 db (A)	
Net weight	~5Kg (mod. 1 L) – ~7Kg (mod. 3 L)	

(1) Models with only minimum level

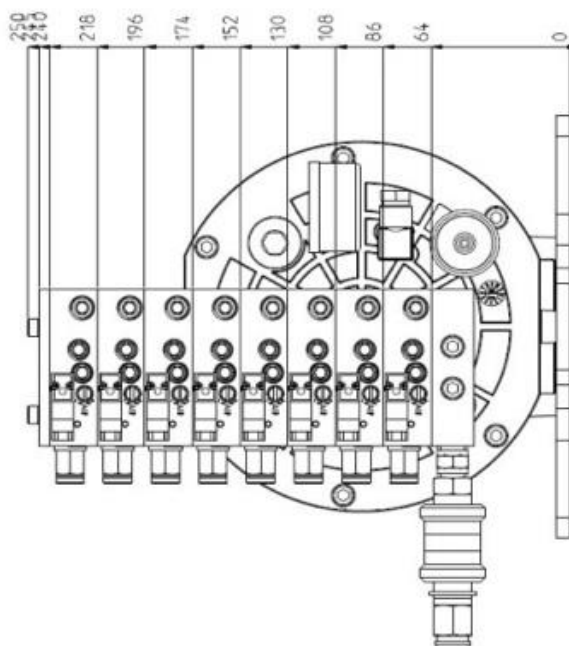
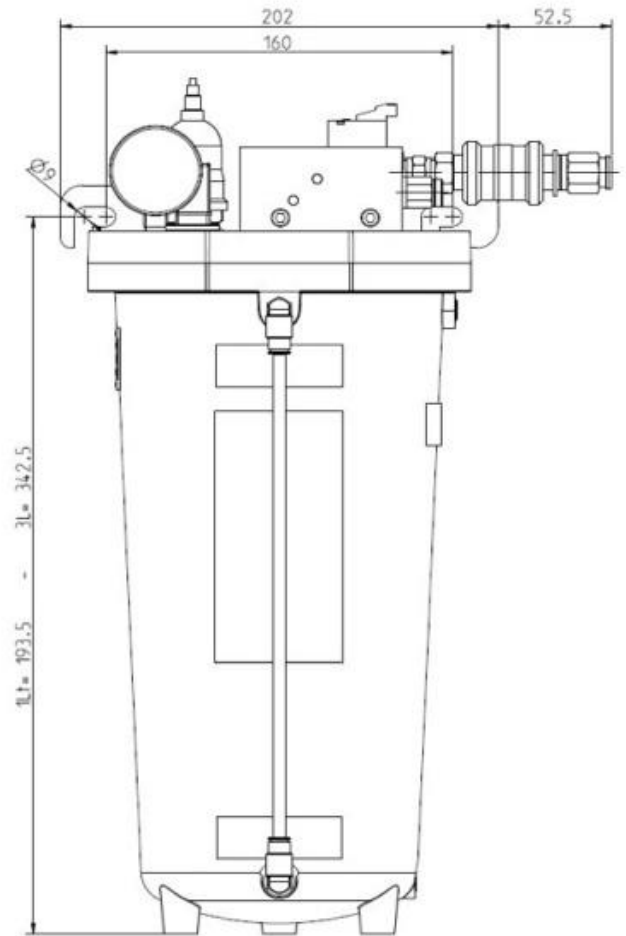
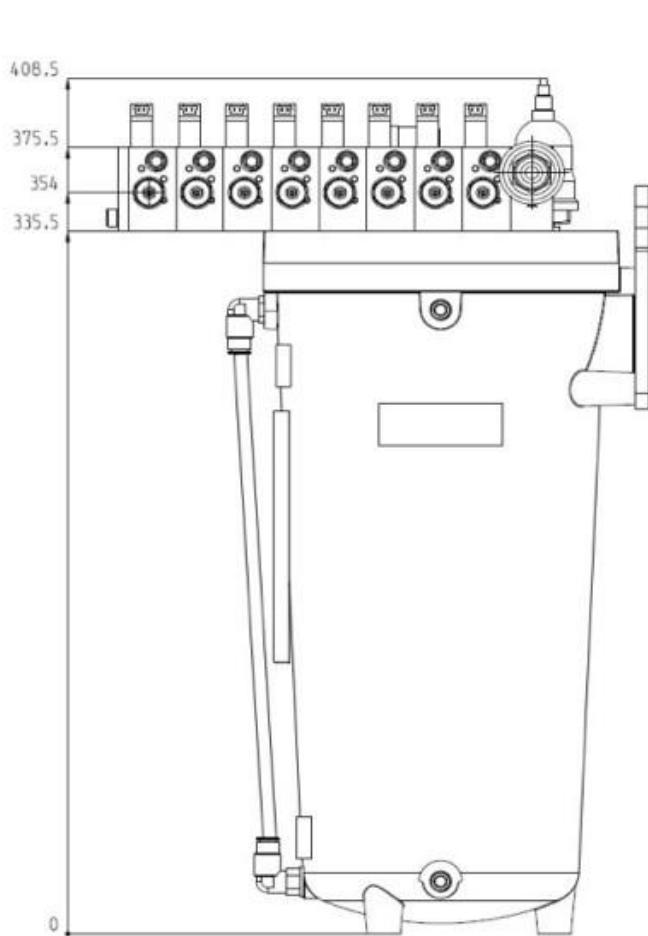
(2) Models with minimum and maximum level

HYDRAULIC DIAGRAM

- PRO Version
- i-Version



**DIMENSIONS** (DRAWINGS NOT TO SCALE)





## ORDER SPECIFICATIONS

MODEL	DESCRIPTION	MODULES	RESERVOIR CODE 1 L	CODE RESERVOIR 3 L
MiQueL PRO	Air/Oil Modular Minimal System <b>with</b> compensation valve <b>without</b> independent control solenoid valve	1	3135501	3135541
		2	3135502	3135542
		3	3135503	3135543
		4	3135504	3135544
		5	3135505	3135545
		6	3135506	3135546
		7	3135507	3135547
		8	3135508	3135548
MiQueL PRO - ε	Air/Oil Modular Minimal System <b>with</b> compensation valve <b>with</b> independent control solenoid valve	1	3135511	3135551
		2	3135512	3135552
		3	3135513	3135553
		4	3135514	3135554
		5	3135515	3135555
		6	3135516	3135556
		7	3135517	3135557
		8	3135518	3135558
MiQueL BASE (BASIC)	Air/Oil Modular Minimal System <b>without</b> compensation valve <b>without</b> independent control solenoid valve	1	3135521	3135561
		2	3135522	3135562
		3	3135523	3135563
		4	3135524	3135564
		5	3135525	3135565
		6	3135526	3135566
		7	3135527	3135567
		8	3135528	3135568
MiQueL BASE (BASIC) - ε	Air/Oil Modular Minimal System <b>without</b> compensation valve <b>with</b> independent control solenoid valve	1	3135531	3135571
		2	3135532	3135572
		3	3135533	3135573
		4	3135534	3135574
		5	3135535	3135575
		6	3135536	3135576
		7	3135537	3135577
		8	3135538	3135578
MiQueL BASE (BASIC) - ε IP65	Air/Oil Modular Minimal System <b>without</b> compensation valve <b>with</b> independent control solenoid valve Degrees of protection IP65	1	3135681	3135621
		2	3135682	3135622
		3	3135683	3135623
		4	3135684	3135624
		5	3135685	3135625
		6	3135686	3135626
		7	3135687	3135627
		8	3135688	3135628
MiQueL CART - ε	Air/Oil Modular Minimal System <b>without</b> compensation valve and oil regulation <b>with</b> independent control solenoid valve	1	-	3135641
		2	-	3135642
		3	-	3135643
		4	-	3135644
		5	-	3135645
		6	-	3135646
		7	-	3135647
		8	-	3135648
MiQueL BASE NO-EV (BASIC)	Air/Oil Modular Minimal System <b>without</b> compensation valve <b>with</b> pneumatic valve for independent control	1	3135441	3135451
		2	3135442	3135452
		3	3135443	3135453
		4	3135444	3135454
		5	3135445	3135455
		6	3135446	3135456
		7	3135447	3135457
		8	3135448	3135458



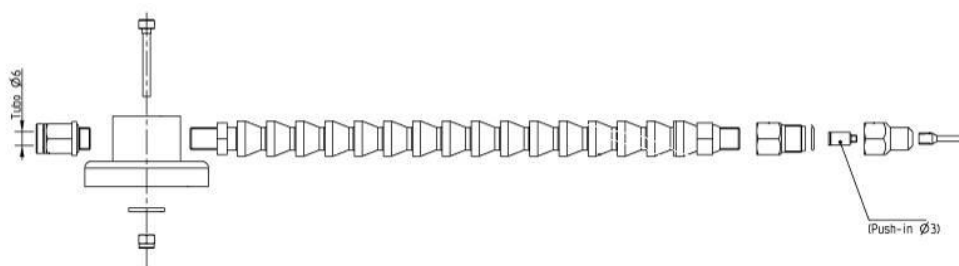
## ACCESSORIES

DESCRIPTION	CODE
AIR inflow solenoid valve Kit	3133559
Module AIR outflow manometer (-i)	0020694
Module solenoid valve connector (-i) with 600 mm cable	1525446
Module solenoid valve connector (-i) with 8 M cable	1525476
Ø3 OIL outflow pipe	5717232
Ø6 AIR outflow pipe	5717301
20 L MK 150 oil	3226664
25 L MK 100 oil	3226665
29 L MK High Performance oil	3226666
20 L MK Stainless oil	3225465
FULL cone coaxial nozzle kit	3132768
FULL cone coaxial nozzle	3133455
65° FLAT jet coaxial nozzle	3133558
FULL cone single-pipe nozzle FULL cone single-pipe nozzle	3133564
65° FLAT jet single-pipe nozzle	3133565
Single-pipe nozzle for 50 mm BLADE	1525050
Single-pipe nozzle for 70mm BLADE	1525051
Ø3 pipe disassembling equipment	1525475

## SPARE PARTS

DESCRIPTION	CODE
MiQueL PRO- i - Modular Element	1525430
MiQueL PRO - Modular Element	1525440
MiQueL BASE (BASIC) - i - Modular Element	1525450
MiQueL BASE (BASIC) - Modular Element	1525460
MiQueL BASE (BASIC)- i - IP65 - Modular Element	1525456
MiQueL CART- i - Modular Element	1525688
MiQueL CART- i - Without SV - Modular Element	1525871
MiQueL BASE- i - NO-EV - Modular Element	1526013
Module solenoid valve (-i)	1525442
Minimum electrical level sensor	1525431
Minimum electrical level connector	0039841
Pressure switch calibrated at 6 bars (optional)	3291028
Reservoir manometer	0020566

## FULL CONE COAXIAL NOZZLE KIT

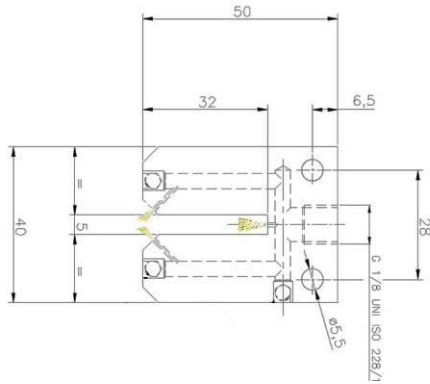


CODE

3132768

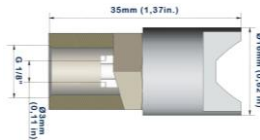


BLADE LUBRICATION NOZZLE



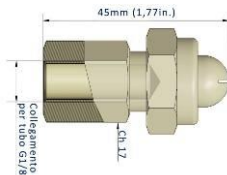
INLET	OUTLETS	BLADE THICKNESS	CODE
1	3	50 mm	1525050
		70 mm	1525051

CONICAL JET

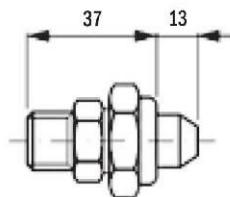


CODE
3133558

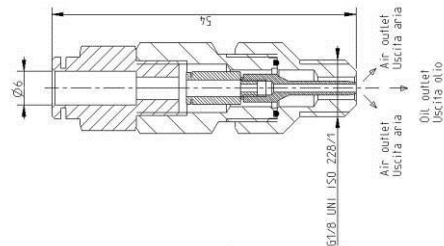
BLADE JET



CODE
3133565



CODE
3133564



CODE
3133455

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