# MINIATURE REDUCER/ECONOMIZER, SERIES RML, RMC AND RMS

The RML R miniature pressure regulator belongs to the LINE ON LINE® family and can be connected in series or in parallel with all the other products.
The miniature pressure regulator is available in five different types:

- In-line with push-in input and output fitting
- In-line with threaded input port and push-in output fitting
- In-line with push-in input fitting and threaded output port
- At an angle with threaded input port and push-in output fitting
- Cartridge type for direct assembly in suitably worked slot.

The miniature pressure regulator is fitted with a relief valve for over-pressure exhaust.

- Particularly suitable for use between the valve and actuator and as a pressure regulator in secondary branches of the pneumatic system.

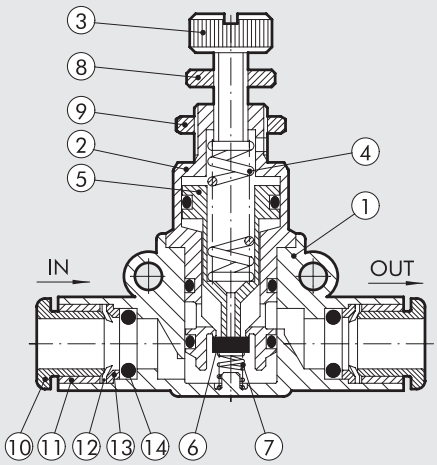
| TECHNICAL DATA | | RML Ø 6 | RMC 1/8 | RMS 1/8 | RML Ø 1/4" | RML Ø 8 (Ø5/16") | RMC 1/4 | RMS 1/4 |
|---|---|---|---|---|---|---|---|---|
| Threaded ports | G (BSP) | 1/8"-1/4" | 1/8" | 1/8" | - | 1/8"-1/4"-3/8" | 1/4" | 1/4" |
| Pipe coupling | Ø | 6 | 4▲ - 6 - 8▲ | – | 1/4" | 8▲ | 6 - 8▲ - 10 | – |
| Regulation range | | 1 to 8 bar - 0.1 to 0.8 MPa - 14.5 to 116 psi | | | | | | |
| Inlet pressure | MPa | 0.2 to 1 | | | | | | |
| | bar | 2 to 10 | | | | | | |
| | psi | 29 to 145 | | | | | | |
| Flow rate at 6.3 bar (0.63 MPa - 91 psi) ΔP 1 bar | Nl/min | 150 | | | 150 | 260 | | |
| Flow rate on exhaust at 6.3 bar (0.63 MPa - 91 psi) | | 400 | | | 400 | 600 | | |
| Fluid | | Lubricated or unlubricated filtered compressed air; if used, must be continuous | | | | | | |
| Max. temperature at 1 MPa; 10 bar; 145 psi | °C | – 20 to + 60 | | | | | | |
| | °F | – 4 to + 140 | | | | | | |
| Assembly position | | Available | | | | | | |
| Notes | | In the miniature regulator the pressure must always be set upwards | | | | | | |
| Compatibility with oils | | See **chapter Z1** | | | | | | |

▲ **Ø4** = Ø5/32"; **Ø8** = Ø5/16"

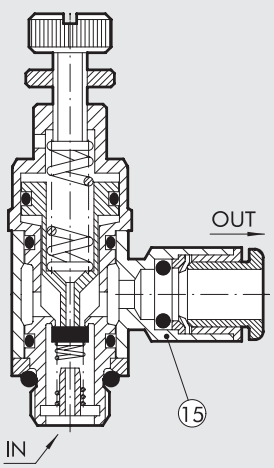
## COMPONENTS

① Technopolymer body (brass for RMC)
② Nickel-plated brass insert
③ Nickel-plated brass adjusting screw
④ Steel adjusting spring
⑤ Brass piston rod
⑥ NBR shutter
⑦ Stainless steel shutter spring
⑧ Adjusting screw ring nut
⑨ Nickel-plated brass wall ring nut
⑩ Technopolymer release bushing
⑪ Technopolymer stop bushing (brass for RMC)
⑫ Stainless steel crimping spring
⑬ Technopolymer spring ring
⑭ NBR gasket
⑮ Nickel-plated brass rotating ring

RML

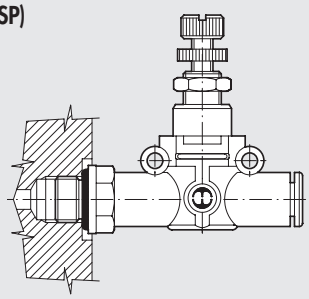



RMC

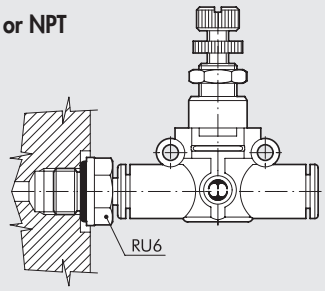


## ASSEMBLY OPTIONS

Ⓐ **G (BSP)**



**UNF or NPT**

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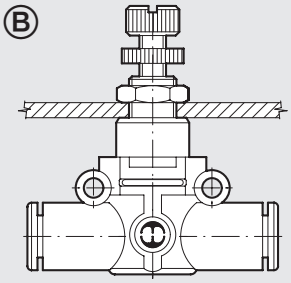
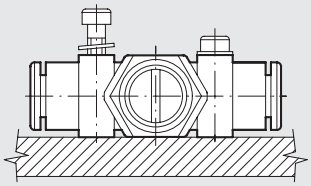


Ⓒ



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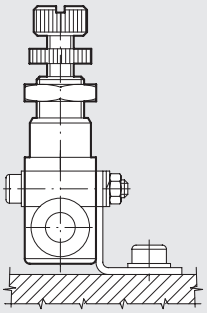

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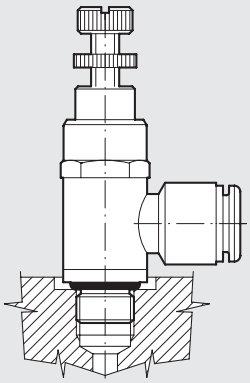
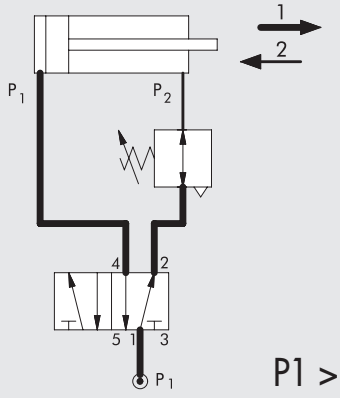


How to assembly RML/RMC:

- Fig. Ⓐ **G (BSP)**: Thanks to the male threaded part it's possible to assembly directly on the actuator or on the valve.
  **UNF or NPT**: Adding a RU6 fitting, with his male UNF or NPT thread, it is possible to mount the RML straight on to the actuator or the control valve.
- Fig. Ⓑ By using the ring nut screwed on the threaded body it's possible the assembling on panels.
- Fig. Ⓒ On the plastic body there are two strong ring for the direct wall assembly.
- Fig. Ⓓ Fixing on plate trought the proper small square SQU L.
- Fig. Ⓔ For maintaining the tube the most parallel possible to the system , had been designed a specific version (RMC) with inlet and outlet at 90°.

## POSSIBLE APPLICATIONS

### ECONOMIZER

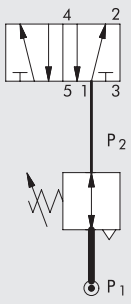



P1 > P2

If in a cylinder you require a thrust in one direction only, e.g. piston rod extension, and a lower thrust and pressure is sufficient in the oth er direction, you can save a lot of energy by mounting an economizer valve.

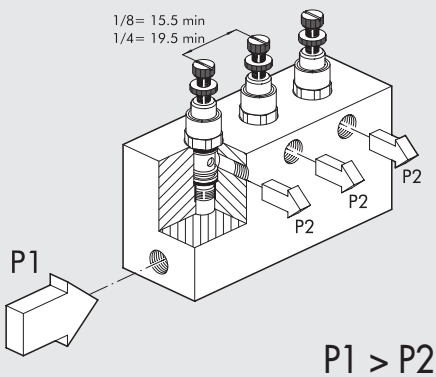
**Example**
Cylinder Ø 80 mm, stroke 200 mm, 6 bar, 12 cycles/min, 16 hours a day, 230 days a year. Consumption: 144 Nl/min => 3460 kWh/year => 880 litres of oil => 2428 kg of $CO_2$ => € 346/year. If you install an economizer that reduces the pressure from 6 to 2 bar, you SAVE: € 115/year.

### REMOTE REDUCER




P1 > P2

### CARTRIDGE REDUCER, SERIE RMS

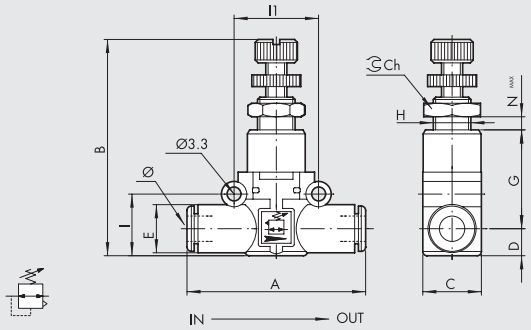



P1 > P2

The cartridge regulator can be used:

- Fitted directly into the structure or along the air supply ducting.
- Package with common feed and separate regulated outlets.

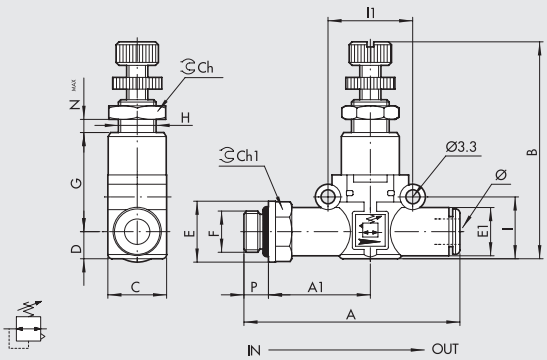
## LINE-MOUNTED MINIATURE REDUCER, SERIES RML




| Code | Ref. | Ø | A | B | C | D | E | G | H | I | I1 | Ch | Nmax |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9061316** | RML Ø6-Ø6 | 6 | 49.4 | 46-52 | 14.7 | 6.4 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 4.5 |
| **9061316U** | RML Ø1/4-Ø1/4 | 1/4 | 49.4 | 46-52 | 14.7 | 6.4 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 4.5 |
| **9061324** | RML Ø8-Ø8 | 8 ▲ | 57.3 | 52-58 | 18.7 | 9.1 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 3.8 |

▲ **Ø8** = Ø5/16"

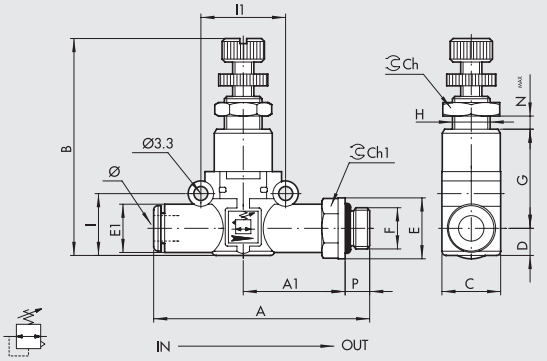
## LINE-MOUNTED G (BSP) THREAD - PIPE MINIATURE REDUCER SERIES RML




| Code | Ref. | F | Ø | P | A | A1 | B | C | D | E | E1 | G | H | I | I1 | Ch | Ch1 | Nmax |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9061408** | RML 1/8-Ø6 | 1/8 | 6 | 6 | 58.5 | 27.8 | 46-52 | 14.7 | 6.4 | 14 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 12 | 4.5 |
| **9061409** | RML 1/4-Ø6 | 1/4 | 6 | 8 | 61.5 | 28.8 | 46-52 | 14.7 | 6.4 | 18 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 14 | 4.5 |
| **9061410** | RML 1/8-Ø8 | 1/8 | 8 ▲ | 6 | 66.2 | 31.8 | 52-58 | 18.7 | 9.1 | 15 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 14 | 3.8 |
| **9061411** | RML 1/4-Ø8 | 1/4 | 8 ▲ | 8 | 70.6 | 34.2 | 52-58 | 18.7 | 9.1 | 18 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 14 | 3.8 |
| **9061412** | RML 3/8-Ø8 | 3/8 | 8 ▲ | 9 | 72.2 | 34.8 | 52-58 | 18.7 | 9.1 | 22 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 17 | 3.8 |

▲ **Ø8** = Ø5/16"

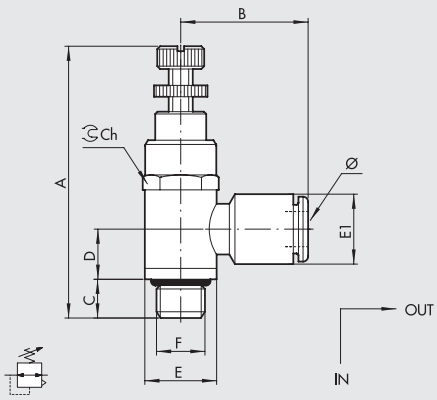
## LINE-MOUNTED PIPE - G (BSP) THREAD MINIATURE REDUCER, SERIES RML




| Code | Ref. | Ø | F | P | A | A1 | B | C | D | E | E1 | G | H | I | I1 | Ch | Ch1 | Nmax |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **9061508** | RML Ø6-1/8 | 6 | 1/8 | 6 | 58.5 | 27.8 | 46-52 | 14.7 | 6.4 | 14 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 12 | 4.5 |
| **9061509** | RML Ø6-1/4 | 6 | 1/4 | 8 | 61.5 | 28.8 | 46-52 | 14.7 | 6.4 | 18 | 11.4 | 24.8 | M9x0.75 | 14.6 | 20 | 11 | 14 | 4.5 |
| **9061510** | RML Ø8-1/8 | 8 ▲ | 1/8 | 6 | 66.2 | 31.8 | 52-58 | 18.7 | 9.1 | 15 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 14 | 3.8 |
| **9061511** | RML Ø8-1/4 | 8 ▲ | 1/4 | 8 | 70.6 | 34.2 | 52-58 | 18.7 | 9.1 | 18 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 14 | 3.8 |
| **9061512** | RML Ø8-3/8 | 8 ▲ | 3/8 | 9 | 72.2 | 34.8 | 52-58 | 18.7 | 9.1 | 22 | 13.8 | 27.4 | M11x1 | 18.7 | 24 | 13 | 17 | 3.8 |

▲ **Ø8** = Ø5/16"

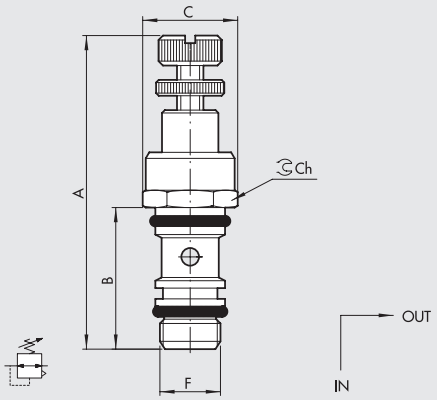
## MINIATURE REDUCER, SERIES RMC




| Code | Ref. | Ø | F | A | B | C | D | E | E1 | Ch |
|---|---|---|---|---|---|---|---|---|---|---|
| 9061102 | RMC 1/8-Ø4 | 4 ▲ | 1/8 | 51-57 | 20.4 | 7.1 | 12.7 | 14 | 9.5 | 14 |
| 9061108 | RMC 1/8-Ø6 | 6 | 1/8 | 51-57 | 23.7 | 7.1 | 12.7 | 14 | 11.3 | 14 |
| 9061110 | RMC 1/8-Ø8 | 8 ▲ | 1/8 | 51-57 | 25.6 | 7.1 | 12.7 | 14 | 13.8 | 14 |
| 9061109 | RMC 1/4-Ø6 | 6 | 1/4 | 57-63 | 25.1 | 9 | 11 | 18 | 11.3 | 17 |
| 9061111 | RMC 1/4-Ø8 | 8 ▲ | 1/4 | 57-63 | 27 | 9 | 11 | 18 | 13.8 | 17 |
| 9061112 | RMC 1/4-Ø10 | 10 | 1/4 | 57-63 | 32.2 | 9 | 11 | 18 | 16.5 | 17 |

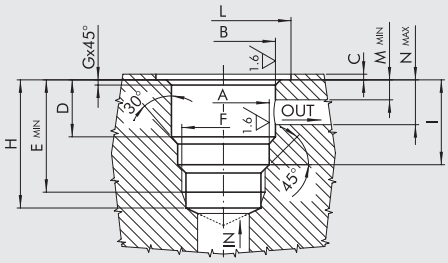
▲ **Ø4** = Ø5/32"; **Ø8** = Ø5/16"

## CARTRIDGE REDUCER, SERIES RMS



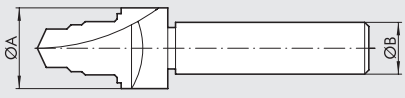

| Code | Ref. | F | A | B | C | Ch |
|---|---|---|---|---|---|---|
| 9061001 | RMS 1/8 | 1/8 | 51-57 | 24.3 | 15 | 14 |
| 9061002 | RMS 1/4 | 1/4 | 57-63 | 27.8 | 19 | 17 |

## SEAT OF A MINIATURE CARTRIDGE REDUCER




| Code | F | A | B | C | D | E | G | H | I | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SE.RMS 1/8 | 1/8 | 9.8 $^{+0.1/-0}$ | 11.2 $^{\pm0.05}$ | 0.5 $^{\pm0.5}$ | 15.6 $^{\pm0.07}$ | 24.6 | 0.3 | 27 | 18.1 $^{\pm0.2}$ | 15.4 | 3.5 | 12 |
| SE.RMS 1/4 | 1/4 | 13.5 $^{+0.1/-0}$ | 14.4 $^{\pm0.05}$ | 0.5 $^{\pm0.5}$ | 17.5 $^{\pm0.07}$ | 28 | 0.4 | 31.2 | 20.8 $^{\pm0.2}$ | 19.4 | 3.5 | 13.5 |

## TOOL FOR RMS SEAT




| Code | Ref. | Ø A | Ø B |
|---|---|---|---|
| 9062001 | UT.SE 1/8 | 16 | 12 |
| 9062002 | UT.SE 1/4 | 20 | 15 |