



Pneumatic benchtop injection molding

Italian 3D printer manufacturer **Robot Factory Srl** has just launched its first **Pneumatic Benchtop Injection Molding System**, the injection system for plastic molding, which uses compressed air to create pressure.

Thanks to his new project, **Robot Factory Srl** developed a low-cost production process that will allow injection molding to be brought to everyone's reach.

This system is based on a substantially simple principle, by heating the plastic pushed into a heating chamber, once the plastic is at its melting point, it is injected into a two shells mold, thus the plastic takes the form of the mold. As the plastic cools, it becomes solid again and maintains the form of the mold.



Usually the mold consists of two aluminum half molds (of course the molds can also be made of steel, resin, epoxy resin, etc.). As an alternative to metal molds, molds obtained with both **FDM** and **Stereolithographic** 3D printers can be used with excellent results. In the first case, it is necessary to use filament able to resist the melting temperature such as PPS, PBT, Ultem, Peek, etc. In the second case it will be necessary to use resins suitable for high temperatures. In both cases, the molds produced with 3D printers will be placed inside metal counter-molds (available on request). A lot of documentation on this topics with various examples are available on web.

Despite being a decades old system, the injection molding process is still considered a very expensive process because the initial plant costs are decidedly high and recoverable only for large productions, with the adoption of the process proposed by **Robot Factory Srl**, the costs are break down drastically.

In addition to offering relatively **lower system costs** than other manufacturing processes, this system offers **ease of use**, a wide availability of readily **available raw materials on the market** and the ability to produce parts with **recycled material**, for an even more productive solution, cheaper and more ecological!



This plastic injection molding machine is designed for use the **compressed air** to move the piston to inject plastic into metal molds for prototyping, research and development and production cycles. The plastic injection molding are perfect for a variety of uses within electronics, jewelry, figurine and medical device manufacturers and other specialized applications that require a lot of small plastic parts.

TECHNICAL SPECIFICATIONS

Model	Pneumatic
Maximum processing temperature	350 °C
Temperature processing	Digital (4-digit) with double display (reached, set)
Injection chamber capacity	32 Cm ³ (about 32 g by weight at 1.0 density)
Injection nozzle	6 mm (others available on request)
Mold size dimensions (default)	80mm H x 100mm L x 30mm T (user adjustable)
Pneumatic cylinder size	Selectable between Ø 50mm, Ø 63mm
Force exerted at 6 bar (newton)	Ø 50mm – 1178N, Ø 63mm – 1870N
Operating pressure	Via pressure regulator (recommended 6 – 8 bar)
Volts	230 V – 2 A (fuse 3.15 A – 5x20T)
Watts	340 W
Machine weight	14.00 Kg about
Machine dimension	260mm W x 400mm L x 700mm H
Recommended materials	PP, PE, PS, ABS, TPE, PMMA, TPU, TPV, EVA (also recycled)
NOT recommended materials	PC, PET, PVC, NYLON

A project developed and produced by:



All Robot Factory production is **MADE IN ITALY**

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