

Description

Image

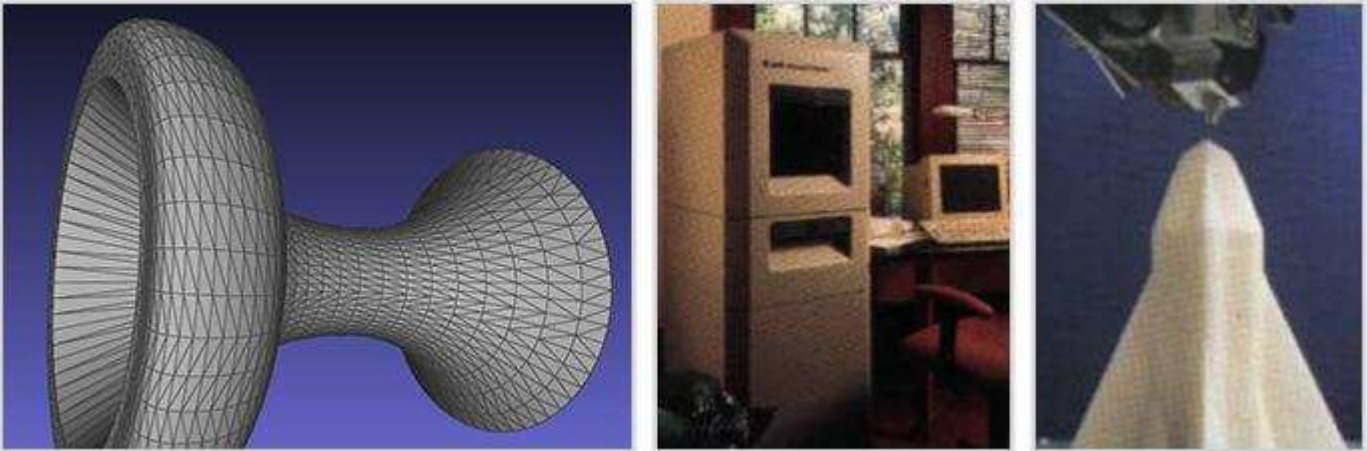


Image caption

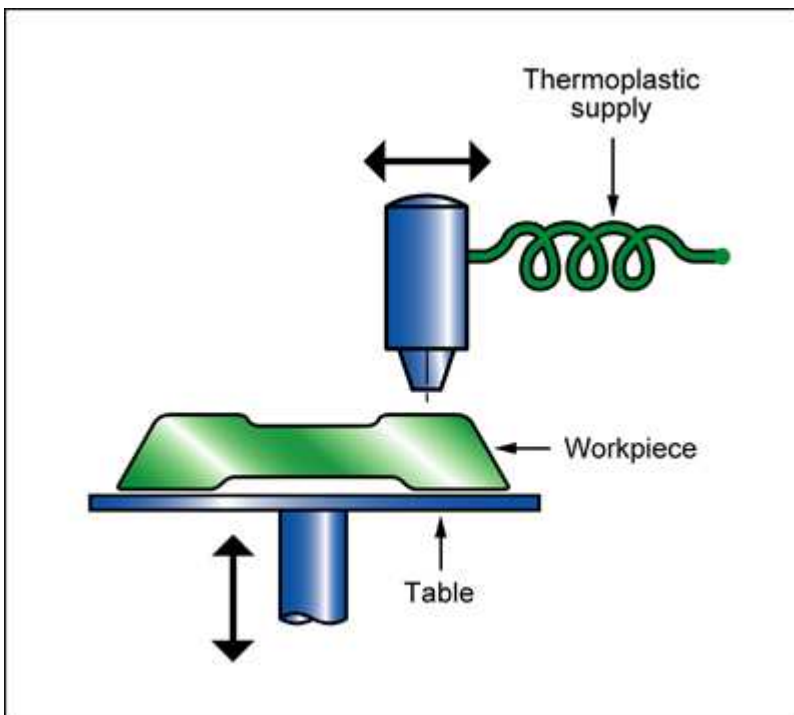
(1) STL sample © Kaboldy at Wikimedia Commons (CC BY 3.0) (2) BPM Personnel Modeler © BPM Inc (3) BPM Personnel Modeler in action © BPM Inc

The process

BALLISTIC PARTICLE MANUFACTURE (BPM) is a rapid prototyping technique in which microscopic particles of molten thermoplastic are shot by a piezoelectric jetting system and freeze when they hit the object being created. A wide range of materials can be used. As with other rapid prototyping processes, a CAD solid model of the part is required.

The process is now obsolete, having been superseded by inkjet methods (3D printing).

Process schematic



Material compatibility

Polymers - thermoplastics

**Shape**

Circular prismatic



Non-circular prismatic



Flat sheet



Dished sheet



Solid 3-D



Hollow 3-D

**Economic compatibility**

Economic batch size (units)

1

-

10

Physical and quality attributes

Mass range

0.22

-

17.6

lb

Range of section thickness

59.1

-

3.94e3

mil

Tolerance

14.2

-

78.7

mil

Roughness

3.94

-

13

mil

Process characteristics

Primary shaping processes



Discrete



Prototyping

**Cost model and defaults**

Relative cost index (per unit)

Out Of Range

Capital cost

2.69e5

-

5.37e5

USD

Material utilization fraction

*

0.9

-

0.98

Production rate (units)

0.06

-

0.08

/hr

Tooling cost

*

53.7

-

134

USD

Tool life (units)

1

-

10

Supporting information**Design guidelines**

All shapes can be made. The only finish available is in

Technical notes

The system uses materials which can be easily melted and solidified such as thermoplastics, aluminum and wax.

Typical uses

Making prototypes and models quickly from CAD systems.

The environment

No particular environmental hazards. No material is wasted in this process.

Links

MaterialUniverse

Reference