

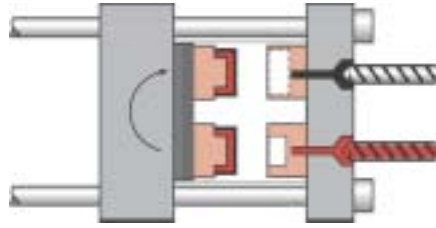
Cost-effective machinery conversions enhance your bottom line.

Multi-Shot

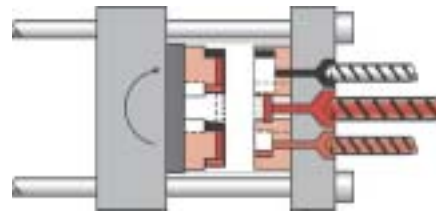
Multi-Shot injection molding is the phased delivery of two or more plastic materials, or two or more different colors of the same type, into a multi-cavity mold from alternate points of entry. This produces a single part of multiple materials and/or colors.

Multi-shot material processing requires separate injection units fitted to a single injection molding machine, each specifically sized for individual shot components. Example: two color lenses for automotive applications.

Multi-Shot



Top view: Side-by-side / rotating molds;
2-color / 2-material molding



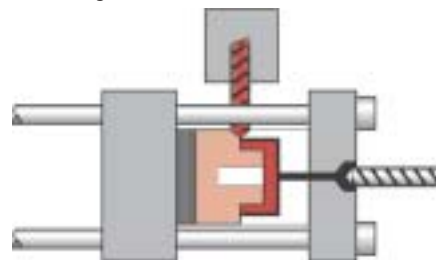
Top view: Side-by-side / rotating molds;
3-color / 3-material injection molding

Co-Injection

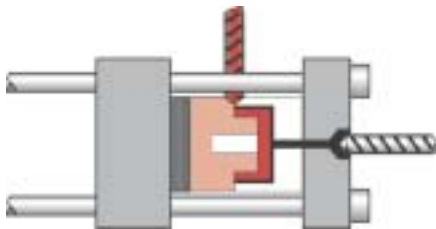
Co-Injection is the continuous injection molding of multiple materials into the same mold cavity which allows one polymer to be encapsulated by another; also known as "sandwich molding". Using a single multi-channel nozzle or special co-injection block fed by multiple injection units, the outer (or "skin") material is injected first.

Immediately following, injection of the "core" material is accomplished through the same runner and will actually push the remaining unset skin material ahead of it as it fills the balance of the cavity.

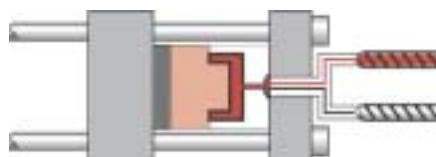
Co-Injection



Top view: Side entry / parting line;
2-color / 2-material molding



Side view: Top entry / parting line;
2-color / 2-material molding



Top view: Co-injection molding

Molding Applications	2-Color / Material	Composite Injection Molding	Multi-Component Injection Molding	3-Color / Material
Number of Injection Units	2	2	2	3
Type of Clamp Unit Required	<ul style="list-style-type: none"> · Conventional · Rotary Table · Shuttle Table · Conventional with Rotating Mold 	<ul style="list-style-type: none"> · Conventional—Dual Channel Sprue/Hot Runner System 	<ul style="list-style-type: none"> · Conventional—Dual Channel Sprue/Hot Runner System 	<ul style="list-style-type: none"> · Conventional with Modified Mold · Conventional with Rotating Mold · Rotating Table

Benefits

The benefit of multi-shot molding is the ability to produce a single part with enhanced properties that previously would have required two or more parts to be made, then assembled, to achieve the same end result. This process can therefore eliminate post-mold assembly operations and the need to inventory multiple components.

The benefit of co-injection molding is that the processor can again produce a single part with enhanced properties which typically is a class “A”, or high appearance finish, over a low cost commodity or regrind core material. These cost savings to the processor can be significant. Other uses include the ability to mold non-conductive materials over an electrically conductive core material for EMI shielding applications.

“Smart Money Solutions” from EPCO include:

- Multi-Shot Conversions
- Co-Injection Conversions
- 2-Color / 2-Material Molding Conversions
- 3-Color / 2-Material Molding Conversions
- Multi-Component Molding Conversions

Most conventional molding machines

can be modified or “converted” to run special processes. Multi-shot or co-injection molding can be achieved with your existing or newly purchased machines for substantially less cost than buying new specialty equipment. EPCO is uniquely qualified to perform these highly-engineered modifications through its experience as an integrator. EPCO is familiar with virtually every machine control system ever built.

What does the Conversion alternative offer you?

For starters, it’s less expensive. Why? Because EPCO is uniquely experienced and organized as a specialized machinery conversion and remanufacturing company. Unlike OEMs who typically are in business to sell “standard” equipment, EPCO has operated as a custom engineering and manufacturing company since 1959.

EPCO machine conversions can:

- Give you faster delivery times than OEM equipment providers
- Use existing foundations and utilities
- Take advantage of established spare parts inventories
- Be installed on your machine at your facility

An EPCO conversion will turn your older and less-productive injection

molding machine into a high-tech wonder. The process takes advantage of EPCO’s over 40 years as a custom machine designer and builder, coupled with our renowned capabilities in remanufacturing old machines and delivering them with “new-machine” productivity. No other company is as uniquely qualified for multi-shot and co-injection machine conversions.

Your partner in the machine design...

An EPCO conversion gives you the ability to participate in the design of the equipment to fit your particular application. EPCO conversions can be designed to accommodate multiple configurations:

- Side-by-side barrels
- 90° to press, at the parting time
- Vertically mounted units

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