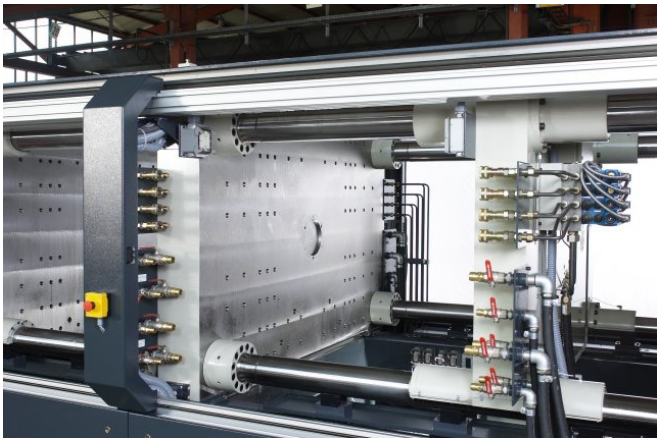
WINDSOR
TECHNOLOGIES

Core Casting Machine



For 2 tools with 2 closing units

An intelligent concept for reduced cost production of undercut hollow bodied components of complex geometry!

New !

Windsor KGM 100 DUO

The **KGM 100 DUO** core casting machine developed by Windsor is designed for two tools and accordingly features two closing units.

Each closing unit has its own independent hydraulic unit offering the advantage of parallel operation of all machine functions.

With a clamping force of 100 tons per closing unit the machine is designed for a maximum tool weight of 7.25 tons.

The core-casting machine injects repeatable cores for the overmoulding process by bottom casting.

The largest parts (air intake manifolds) designed to-date required a core weight of up to 100kg.

Windsor is the Core Cast Machine specialist and has developed a world first.

Process details

Wherever cavities of extremely complex design, within an injection moulded plastic component, no longer allows the finished product to be removed from the tooling the lost core technology offers an elegant solution to the problem.

The processing stages for production of components with undercut cavities are as follows

1. Casting of the fusible core in the core-casting machine
2. Over-moulding of the core with plastic in the injection moulding machine
3. Melting of this core (e.g. inductive)
4. Washing and drying of the plastic component.

Technology

The lost core technique is a specialised process within the field of injection moulding for the production of high quality plastic components.

Range of application

Automotive air intake manifolds, water-pumps, storage tanks, pressure vessels, tubular manifolds, valve housings, fittings and even tennis rackets or golf clubs can be economically produced without problem using this technique.

Windsor KGM 100 DUO – for 2 tools and with 2 closing units

Material

The range of material that can be processed using this technology is very broad as the alloy required for the fusible core can be matched to suit the specific melting points of individual plastics. To-date alloys of tin bismuth have proved especially successful within the lost core process.

(These are non-toxic and classified as food produce safe. The melting point must be below that of the plastic to be used for the finished component. For production with Polyamide an alloy with a melting point of 137° C would be selected. The market also offers alloys with a higher melting point for use with thermosetting materials for example, as well as blended alloys with melting points as low as 58°C.)

Economy

Unique design possibilities and increased utilisation together with reduced manufacturing costs guarantee the investment decision through optimum economy and future safety.

Minimising costs and maximising utilisation are two of the advantages of using the lost core melting technique.

One example for the economy is the manufacture of plastic air intake manifolds.

The comparison with aluminium air intake manifolds shows:
- manufacturing cost reduction of up to 35%
- weight savings of up to 50%

Advantages

The lost core process allows the manufacture of one-piece homogeneous seamless components in plastic, with almost any internal or external geometry, of guaranteed high quality and product safety.

Economic high volume production of complex geometric components is possible with this process.

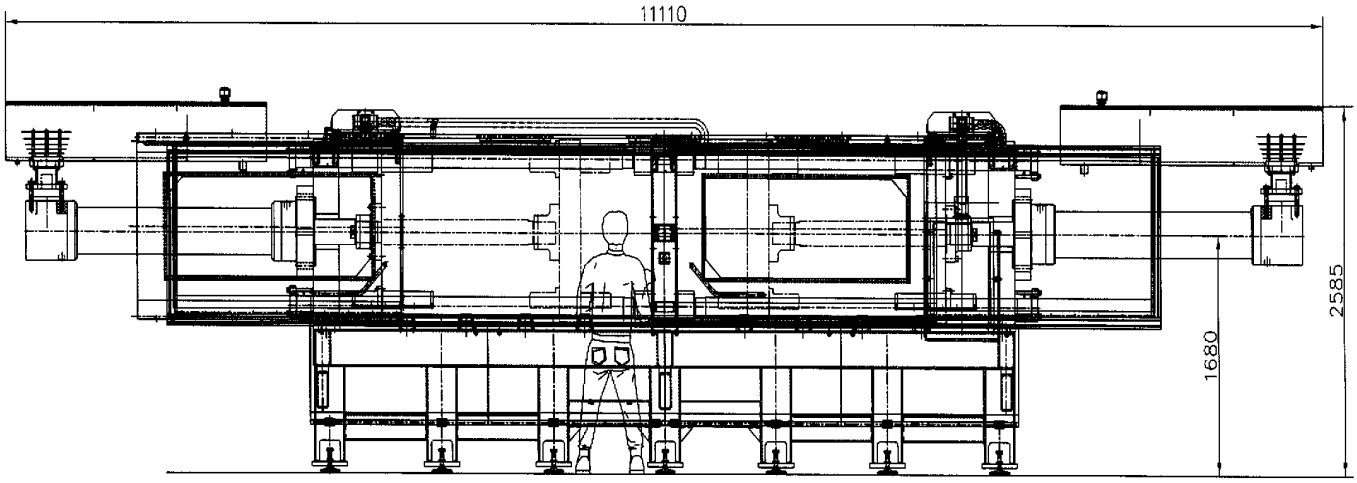
The lost core technique offers the possibility to integrate additional peripheral components into the plastic component (valves, fittings, etc.).

Despite the minimal weight of the component maximum strength can be achieved. Dependant on application and requirement the wall thickness can be optimised and a homogeneous material structure achieved.

Mechanical finishing work, trimming, is no longer necessary due to the extremely high manufacturing tolerances and the smooth, joint free internal and external surface finish of the component.

The smooth surfaces and transitions within the component minimise flow resistance toward the gaseous and liquid media resulting in either increased performance or decreased energy consumption.

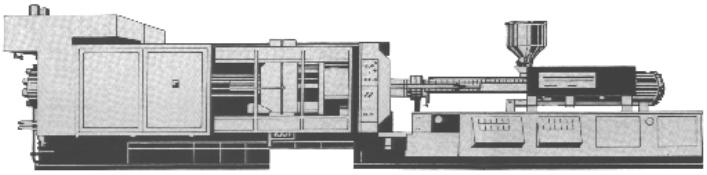
Technical Data:



Windsor KGM 100 DUO		
Technical data:		
Machine dimensions (L x W x H)	mm	10.890 x 3.000 x 2.370
Platen dimensions	mm	2.100 x 1.300
Mould Installation Area	mm	1.610 x 810 (1700 x 900)
Minimum Mould installation Height	mm	2 x 600
Opening Stroke	mm	2 x 1500
Clamping force per closing unit	t	100
Maximum Mould Weight	kg	7.250
No. of core circuits per mould		8
No. of needle valves per mould		4
No. of metal dispense pumps per mould		2
No. of cooling circuits per mould		7

An annual production of approx. 250 – 300.000 components
is envisaged by the **KGM 100 DUO** machine.

WINDSOR
TECHNOLOGIES



Windsor Kunststofftechnologie GmbH
Moselstraße 27
D-63452 Hanau
Telefon: +49 6181 9003-0
Telefax: +49 6181 9003-40
E-Mail: windsor@windsor-gmbh.de
Internet: http://www.windsor-gmbh.de