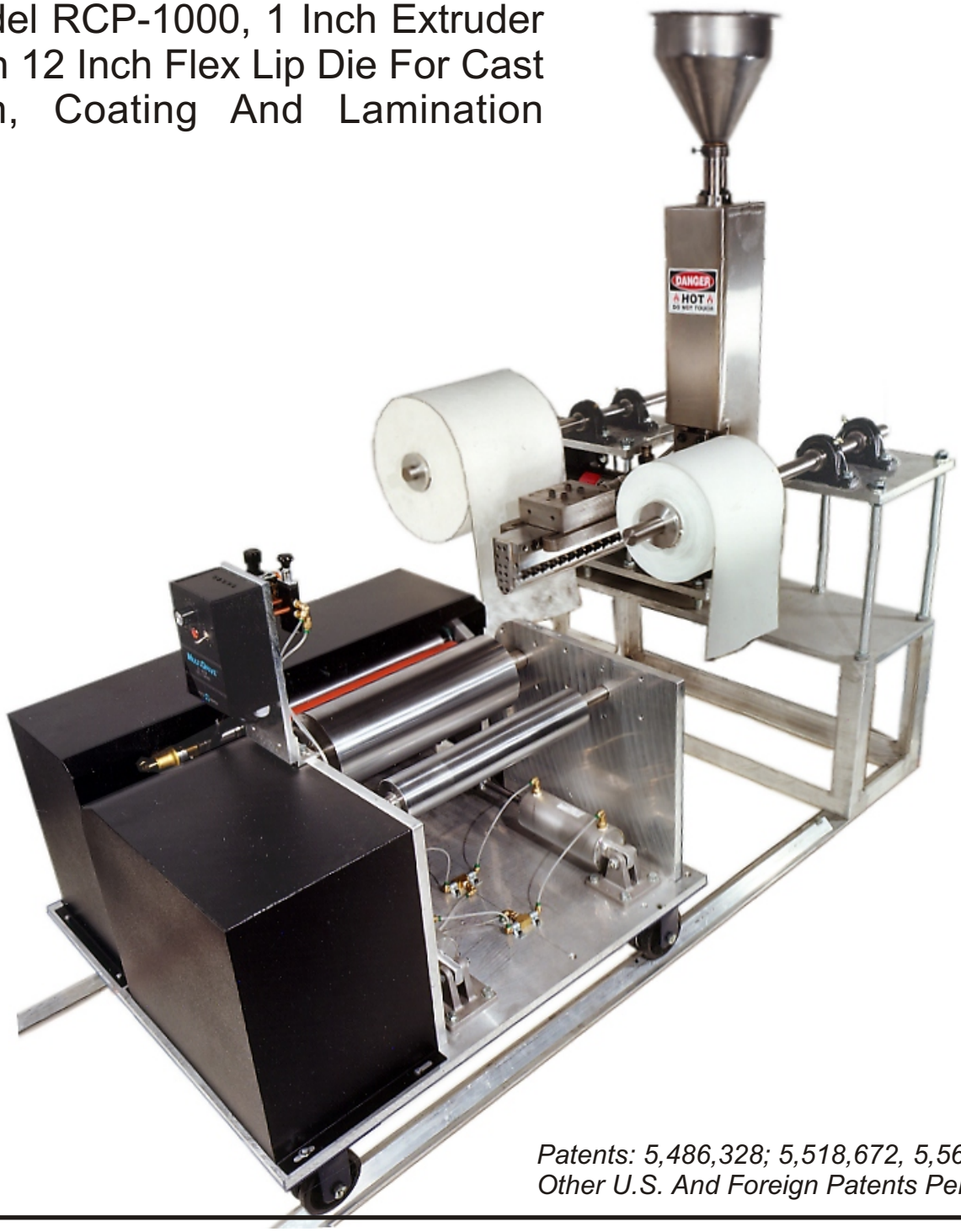
RANDCASTLE'S
CAST FILM/COATING LINES

Model RCP-1000, 1 Inch Extruder With 12 Inch Flex Lip Die For Cast Film, Coating And Lamination

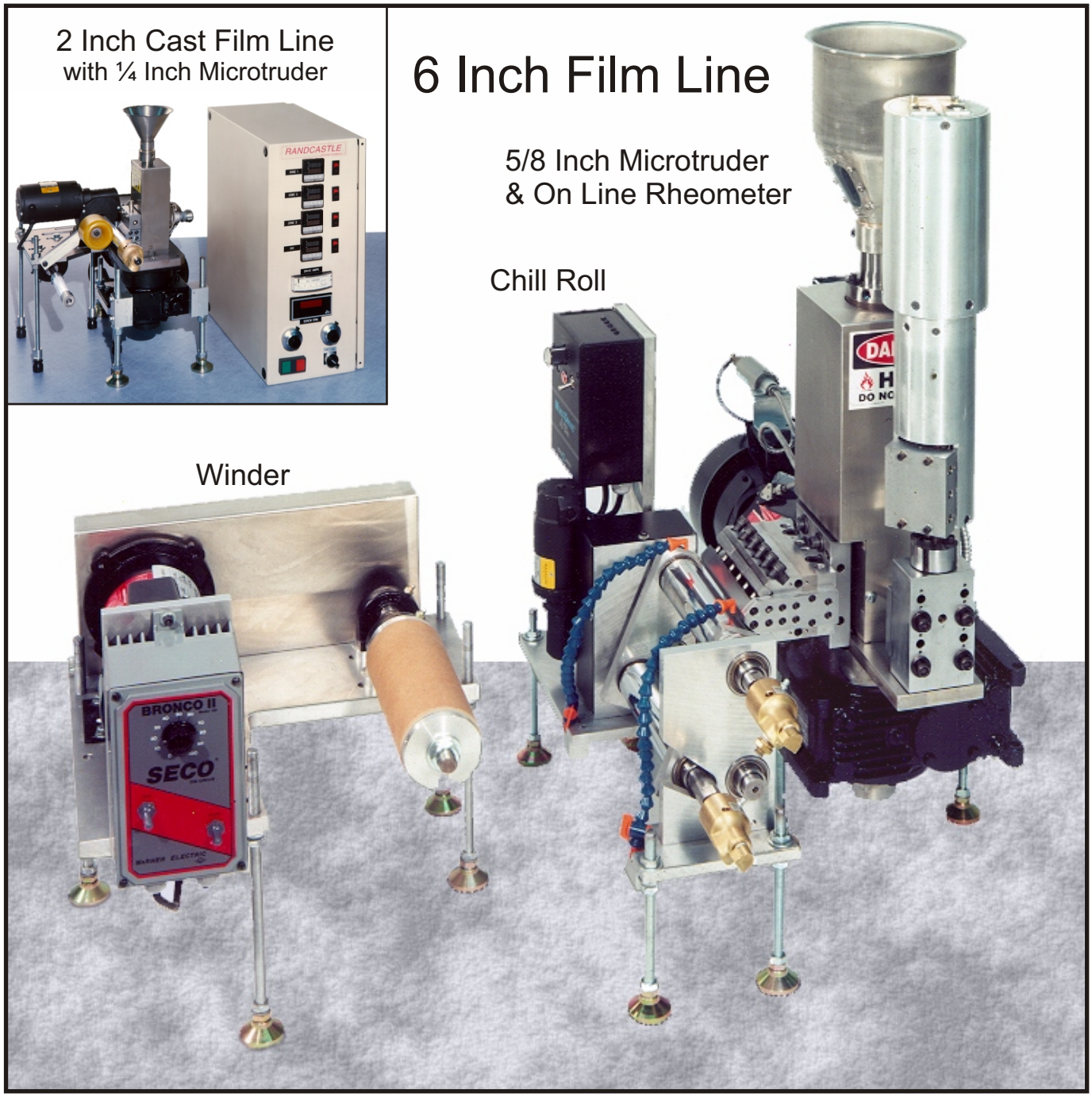


Patents: 5,486,328; 5,518,672, 5,569,429
Other U.S. And Foreign Patents Pending

MONOLAYER CAST FILM LINES

INTRODUCTION: Extruded cast film is defined as film less than 0.010 inch thick. Cast films are made by an extruder that melts and pumps the polymer through a slot die. The polymer is then pulled from the die (becoming thinner as it is drawn) and cooled continuously on chilled rolls. Randcastle Cast Film Lines make film from 2 to 20 inches wide making them ideal for research, development, quality control, and thermoforming applications.

EXTRUDERS: Randcastle is a technology driven company focusing on small diameter extrusion lines. Our cast film lines start with the patented Microtruder vertical screw extruder. Microtruder screws are two to four times stronger, feed much better and surge far less than other small bore extruders. Our patent pending Recirculator turns your single screw into a superb compounder with multiple elongational flow fields for direct compounding. . Randcastle's exclusive smooth bore feed sections are an unparalleled tool to enhance your processing flexibility. Add our in-line rheometer to measure the melt viscosity and establish relationships between flow and film properties



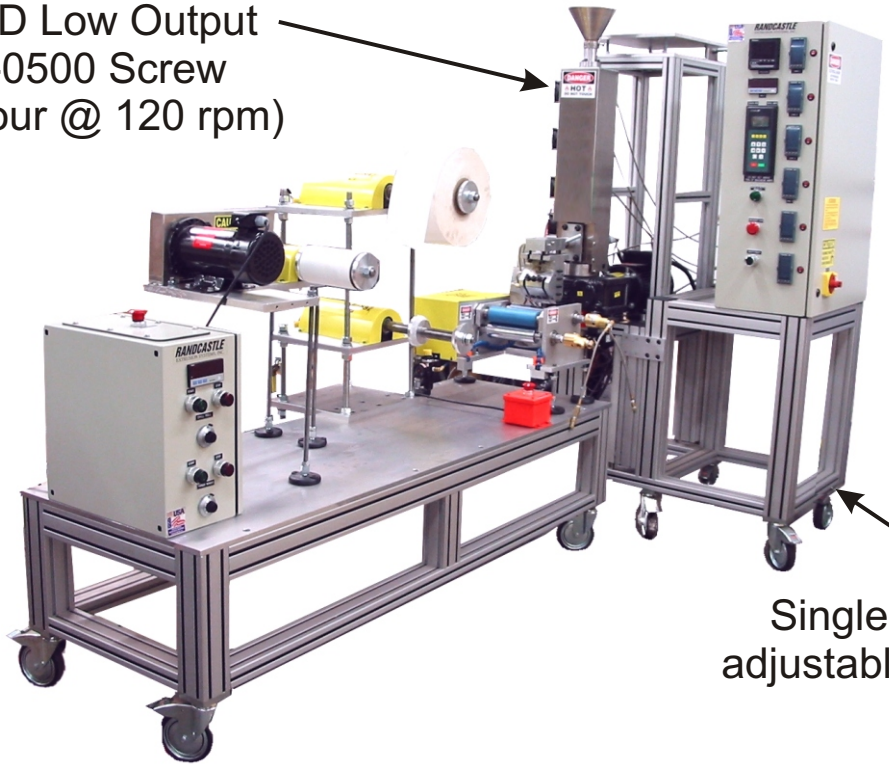
MONOLAYER CAST FILM LINES

SLOT DIES: The next part of a cast film line is the die. Our flexible lip slot dies are engineered with a unique interchangeable distribution manifold. A manifold is the major polymer distributor in a die so it must match the polymer viscosity. Change the manifold to suit viscosity of your polymer for maximum processing range. Remember, a fixed manifold limits film uniformity over a wide range of materials. A flexible lip only makes minor adjustments to the film.

CHILL ROLL TAKE OFF: Chill rolls are the cooling and pulling system for cast film. Chill rolls are available with horizontal and vertical discharge. In many bench applications, horizontal discharge dies make for a compact, space saving design such as the lines on the preceding page. Vertical designs, below and on the cover, are best for very low melt strength materials and extrusion coating.

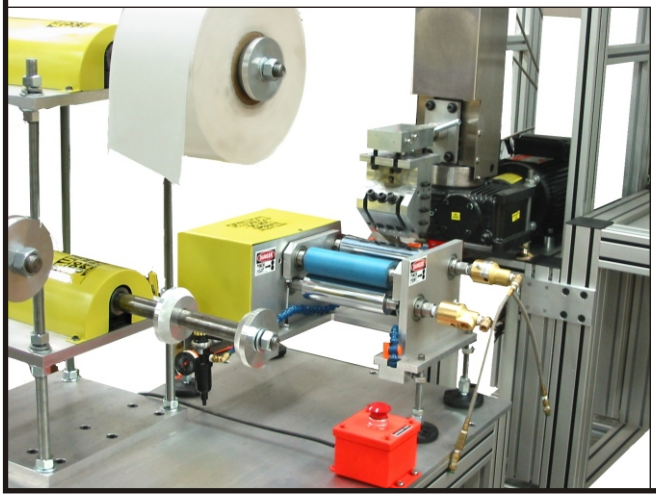
Direct Compounding Film Line

50/1 L/D Low Output
RCP-0500 Screw
(~80g/hour @ 120 rpm)

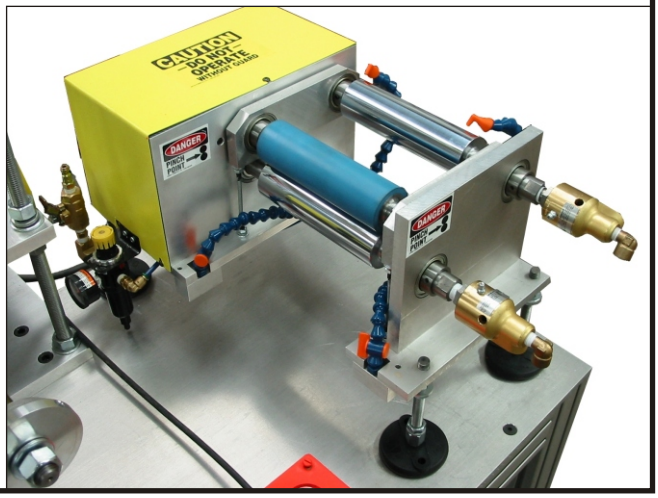


Single handcrank
adjustable height base

Dual Payoff For
Release Paper



Vertical Chill Roll
With Edge Pinners



Custom 12 Inch Cast Film Line

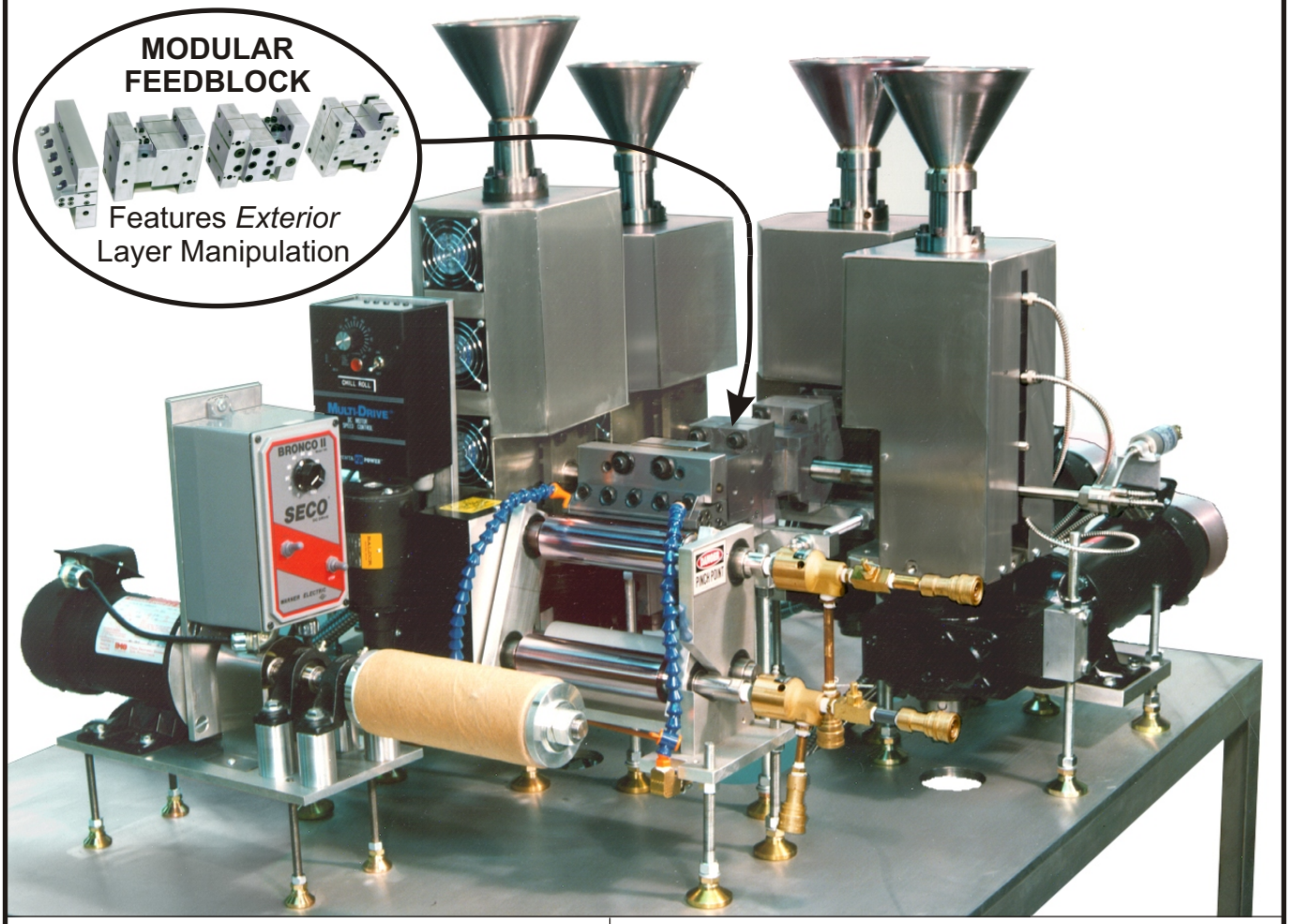
1 Inch Microtruder, Horizontal Flex Lip Die
Chill Roll with Air Knife & Stripper Roll

Oversize Diameter Cooling Drum

COEXTRUSION CAST FILM LINES

Study film properties, adhesion, develop new films, and make customer samples. Unique for their performance and size, the line below is a mere 36 inches by 60 inches. Our sequential, modular feedblock lets you change structures (say from ABCDBA to ABCD), match stream velocities, and correct non-uniform layering (due to mismatched viscosity) *without taking the feedblock apart.* Critical to success in coextrusion with multimanifold dies, our unique interchangeable manifold (see page 3) lets you match the manifold to the viscosity of each material *on site* for uniform individual layering. Then, the flexible lip die lets you adjust the overall film thickness.

7 LAYER LINE, 6" DIE



5 LAYER LINE, 6" DIE

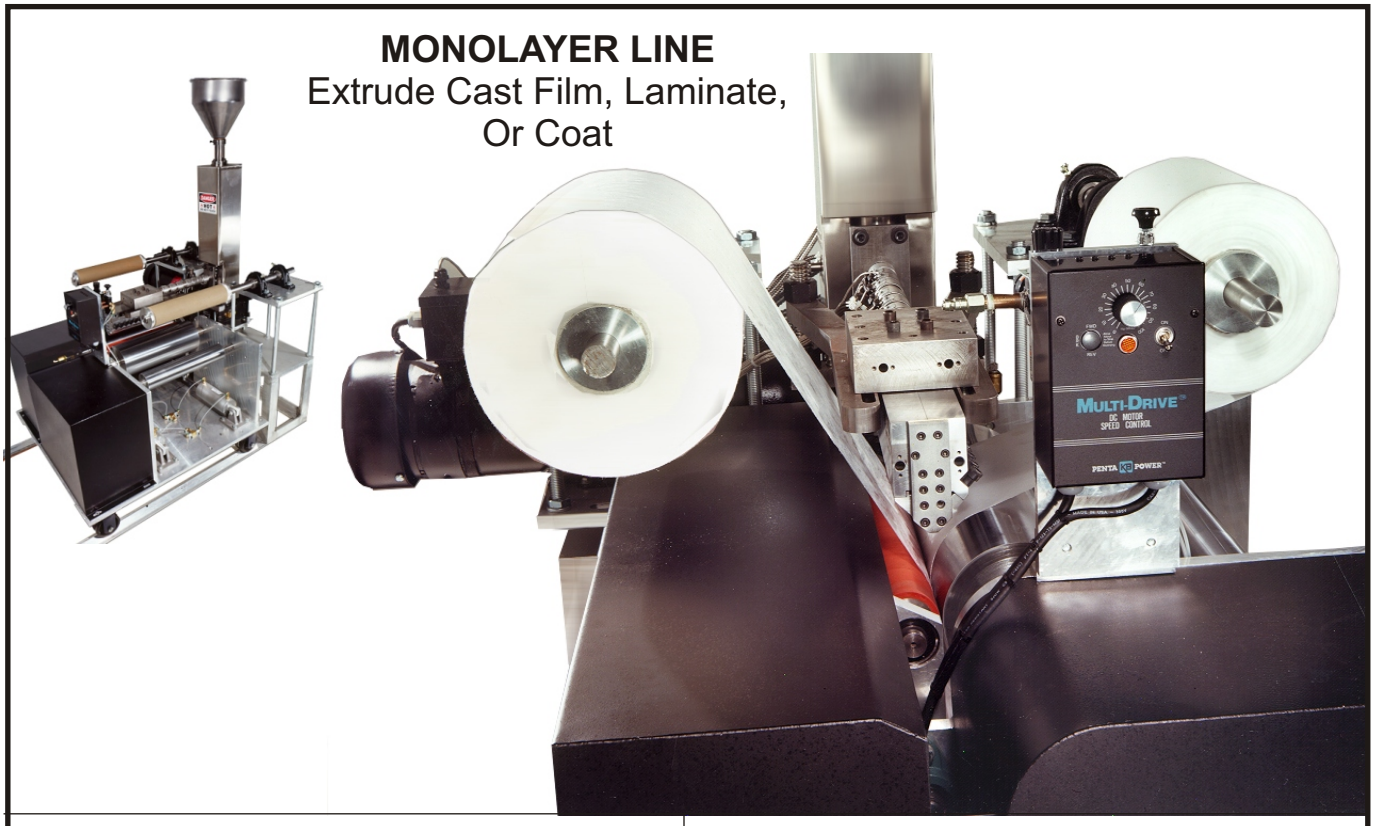
3 LAYER LINE, 12" DIE

COATING/LAMINATION/EMBOSSING LINES INCLUDING COEXTRUSION

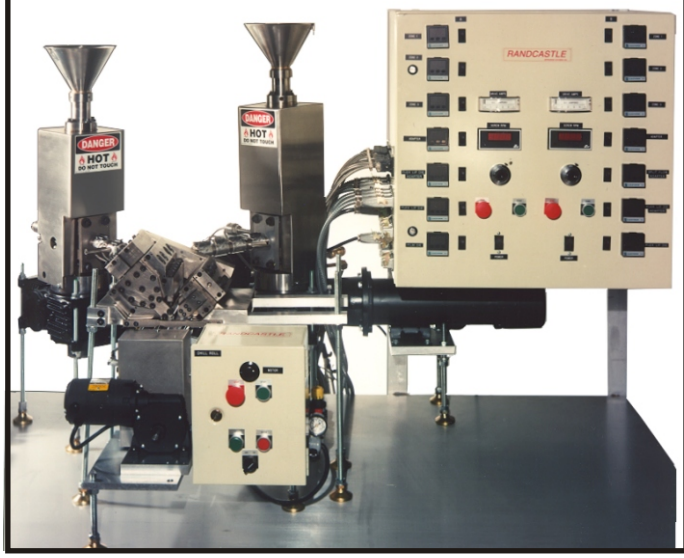
The ultimate in lab lines, our multipurpose take-off allows you to make cast film, extrusion coat or laminate (see cover picture). For embossing applications, the primary cooling roll is customized to suit your needs. Randcastle slot dies feature our unique manifold (see page 3). Chill rolls cool both sides of the extrudate and air cylinders push the pressure roll into the web. A cooling roll, not visible in the pictures, keeps the pressure roll surface cool.

The coextrusion line (left below) shows an AB multimanifold die that coats one side of the substrate while a single manifold die coats the other side. The coextrusion line (right below) shows a five layer line in an extrusion coating application. Coextrusion lines are also available for lamination and embossing. See page 3 for additional information on our feedblocks and multimanifold dies.

MONOLAYER LINE
Extrude Cast Film, Laminate, Or Coat



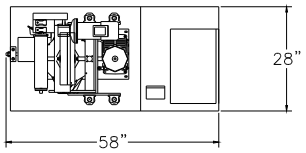
COEXTRUSION COATER
Makes AB-Substrate-A

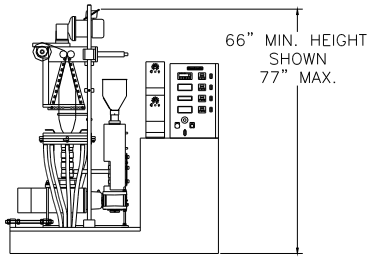


COEXTRUSION COATER
Makes AB to ABCBA Coatings

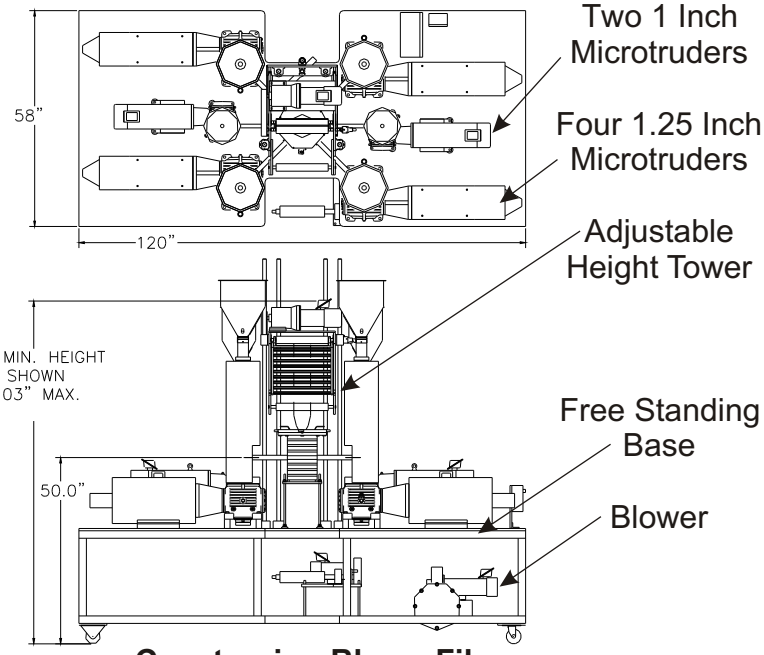
Other Randcastle Lines

Randcastle lines are available from 1 to 15 layers with up to 8 extruder inputs. The drawings below show a sampling of lines including a state of the art 50:1 compounder with multiple mixing zones and our exotic 11 layer blown film line. Many other standard lines are available and new lines are constantly under development. We welcome calls for custom built extrusion machinery too.

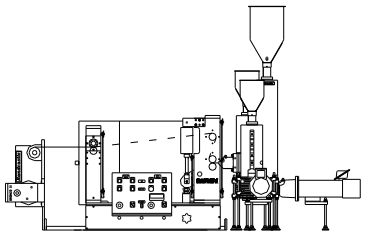




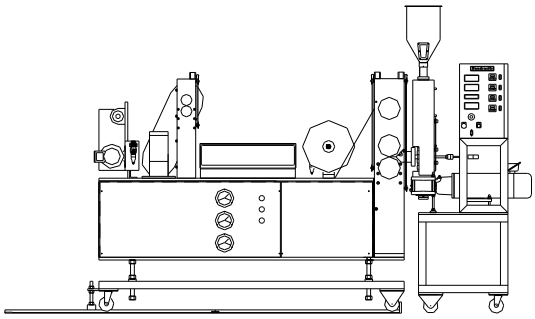
Blown Film
¾ Inch Dedicated Line



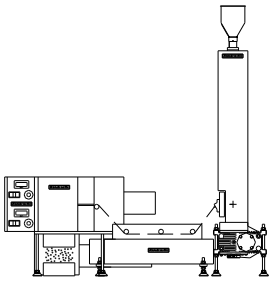
Coextrusion Blown Film
Six Extruder, 11 Layer Line



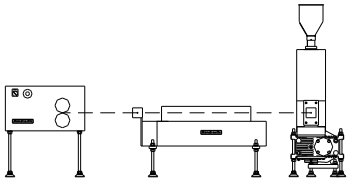
Sheet
5 Layer Bench Line



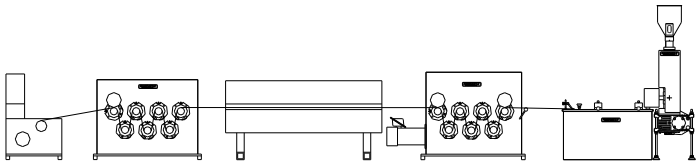
Sheet
Floor Model With Laminating Payoff



50:1 L/D
Compounder/Pelletizer



Tubing
Up to Three Layers



Monofilament

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