FINISHES FOR POLYMERS PROCESSES AND TECHNIQUES

This mobile revision pdf is based on detailed work found in the 'MATERIALS' section.
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FINISHES FOR POLYMERS PROCESSES AND TECHNIQUES

1. PAINT SPRAYING OF PLASTICS

2. RUBBERISING SPRAY

3. HEAT TRANSFER PRINTING - VINYL DECALS - VINYL STICKERS

4. FLOCKING - POLISHING (BUFFING) - LASER ETCHING

5. ELECTROLESS PLATING AND POLYMERS

6. HYDROGRAPHIC PRINTING / IMMERSION PRINTING

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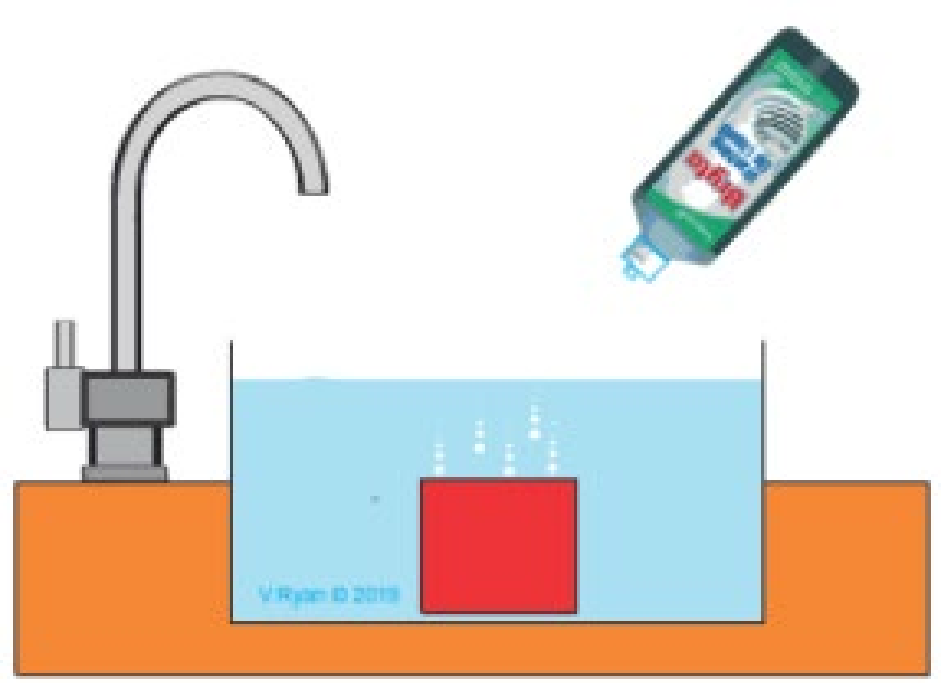
PAINT SPRAYING OF PLASTIC SURFACES

Before spraying a surface with paint, it must be prepared. This involves abrading the surface with wire wool, followed by cleaning with water (including detergent)

Tap the image for information/exercises



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PAINT SPRAYING OF PLASTIC SURFACES

Ensure that the paint is suitable for plastics. If they are not, they may damage and even melt the surface. Acrylic sprays are often the best choice, but spray a test area first, before committing to spraying the entire surface. The surface must be sprayed with primer paint first, allowed to dry completely, and then finished with a top coat.

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PAINT SPRAYING OF PLASTIC SURFACES

Spraying large areas involves using a compressor and spray gun (with reservoir of thinned paint). The air pressure forces paint out of the spray gun, as a fine, uniform mist.

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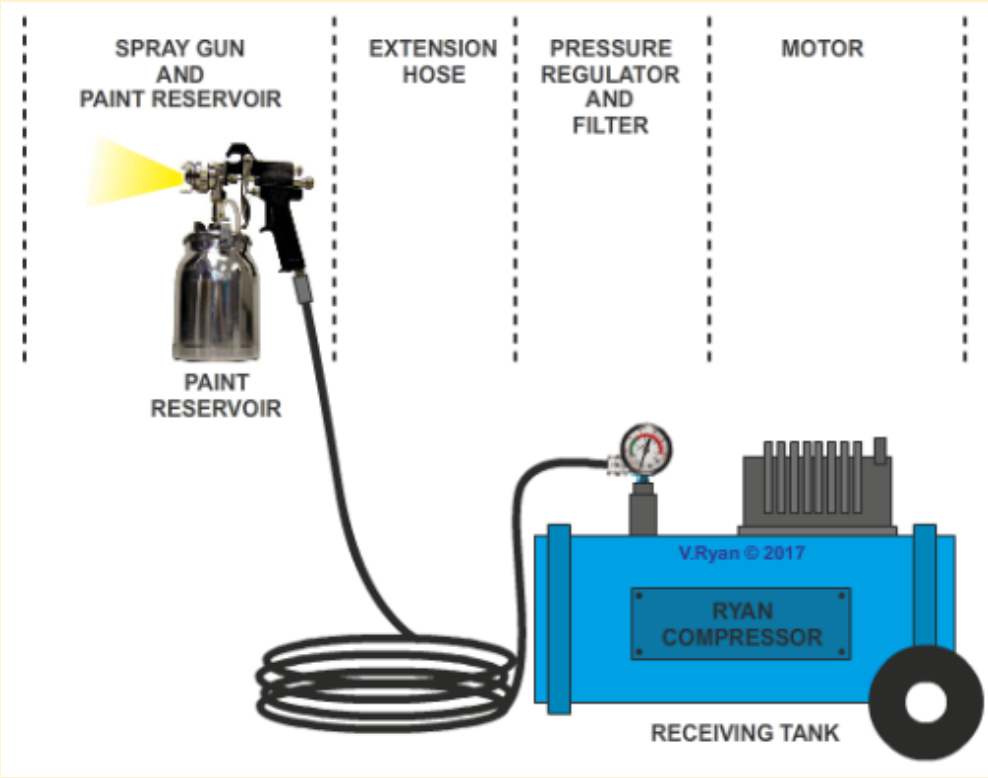

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RUBBERISING SPRAY

This is a process whereby UV (Ultra Violet) resistant acrylic rubberising compound, is applied to the surface. This has a number of advantages including, providing a slip resistant surface, as well as a surface that has a comfortable feel.

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HEAT TRANSFER PRINTING

This technique involves using a transfer, which is pressed on to the plastic / polymer surface, through the use of a heated press (Heat Press Transfer Machine). The transfer (graphics) is usually produced using CAD software, which is printed out by a sublimation printer. This technique produces a permanent surface finish. Study sublimation printing for more detail.

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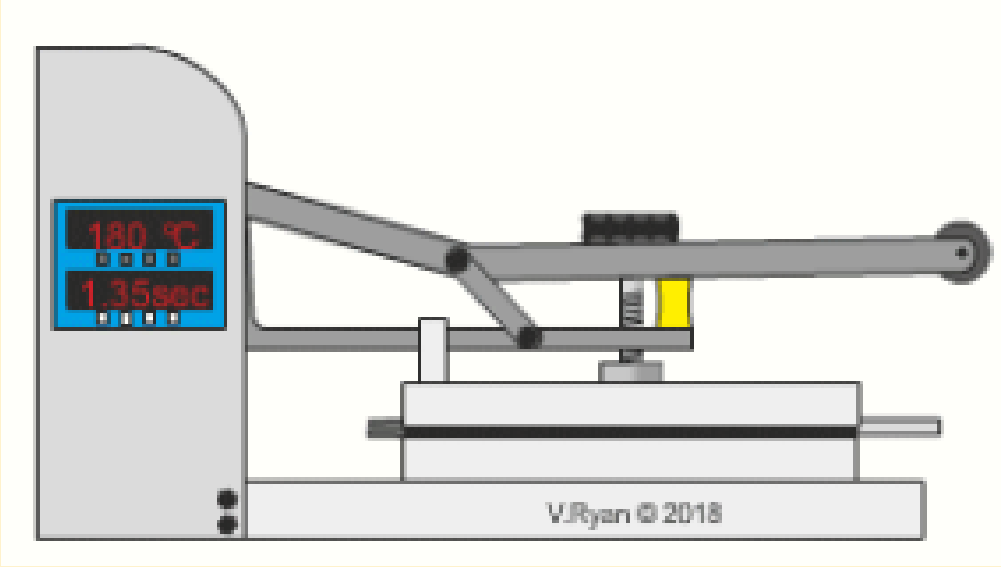

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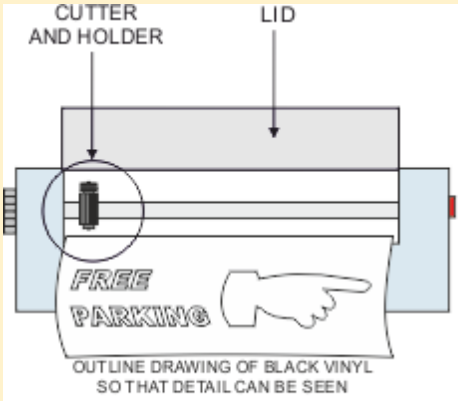
VINYL DECALS

Vinyl Decals are made up of shapes / labels, cut out of a coloured vinyl roll, by a computer controlled vinyl cutter. The shapes are then applied to an application roll (a Taping Machine is use for this process). The vinyl shapes on the surface of the application roll, are then ready to be applied to a surface, such as the bodywork of a car, delivery van, or a signpost etc.... For more information study vinyl cutting / cutters.

Tap the images for information/exercises



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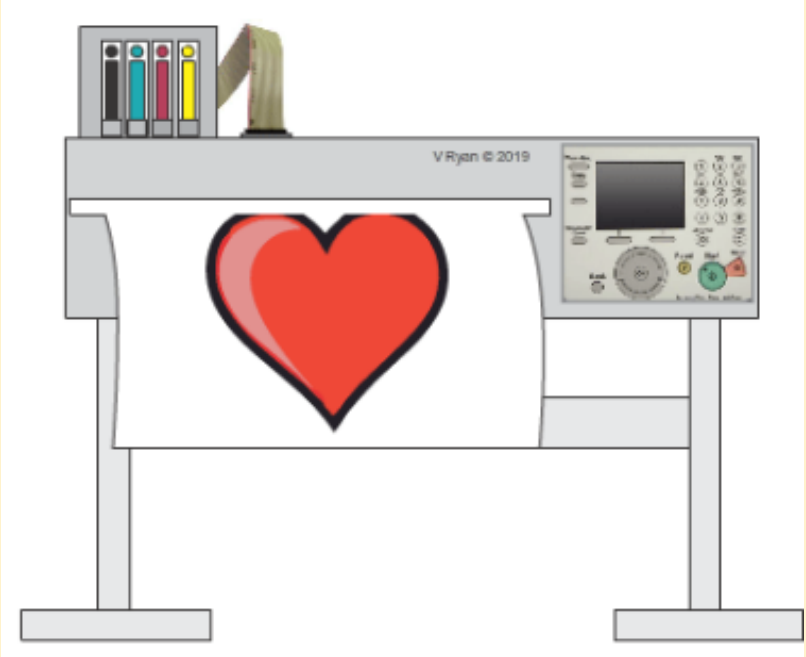
VINYL STICKERS

Vinyl stickers are sometimes confused with Vinyl Decals. They manufactured from a roll of digital vinyl, that runs through a printer. The printer has a full range of printing cartridges, and prints images on to the digital vinyl. The ink has advance properties, ensuring that it is long-lasting. Further to this, the printed sheet can then be die-cut, giving it any required outline shape

Tap the image for information/exercises



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FLOCKING

Flocking is a processes whereby, fine synthetic fibres, are applied to a surface. This is achieved by electrostatically charging the fibres, so that they are attracted to the surface, standing on end. Adhesive holds the fibre to the surface. This leaves the surface soft to the touch, like a soft velvet texture. Plastic / polymer products are sometimes flocked.

Tap the images for information/exercises

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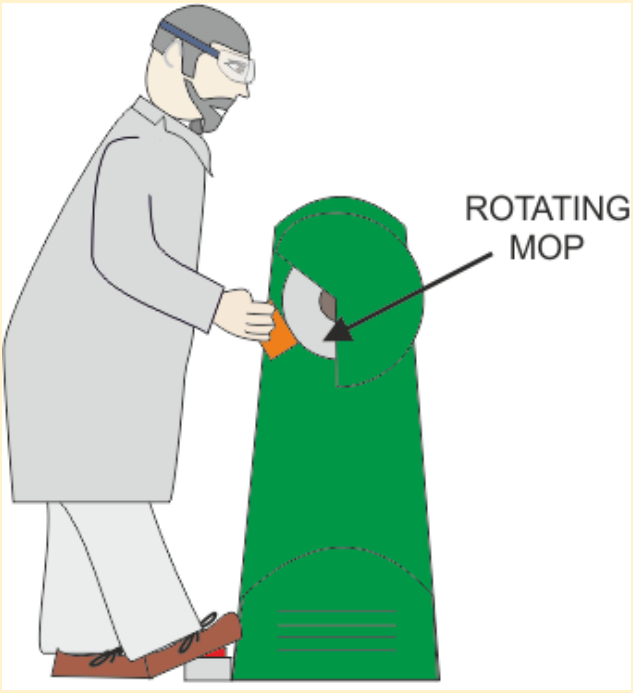
POLISHING (BUFFING)

Plastics are often given a polished finish. This is normally along edges, achieved through the use of a buffing / polishing Machine. The edge of the plastic is filed, smoothed with wet and dry paper and then finally polished on the 'mop' of the polishing machine.
This gives a shiny / reflective surface finish.
Click here for more on Buffing / Polishing

Tap the image for information/exercises



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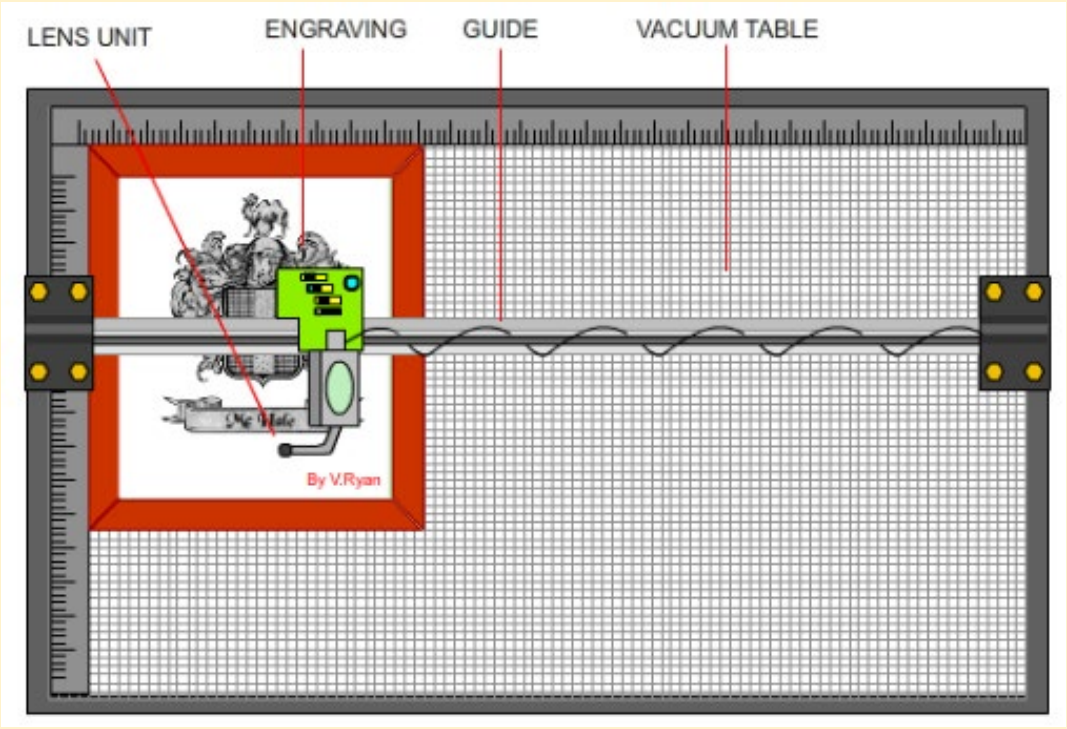
LASER ETCHING

A laser cutter can be used to produce an engraved finish. This is where the surface of material has a pattern or texture cut into its surface, but not all the way through. The example below shows a coat of arms, being etched into a decorative plastic panel.

Click here for detail on laser cutters.

Tap the link buttons for information/exercises



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ELECTROLESS PLATING OF POLYMERS

Plastics are non-conductive, which means they do not conduct electrical current. However, there are times when there is a need for a plastic to conduct electricity, Electroless plating of plastics, such as polycarbonate, ABS and polypropylene, is a process whereby a conductive layer (gold, nickel or copper) is applied to the surface, as a finish. Used extensively by the automotive industry.

Tap the image for information.

ELECTROLESS PLATED CAR GRILL

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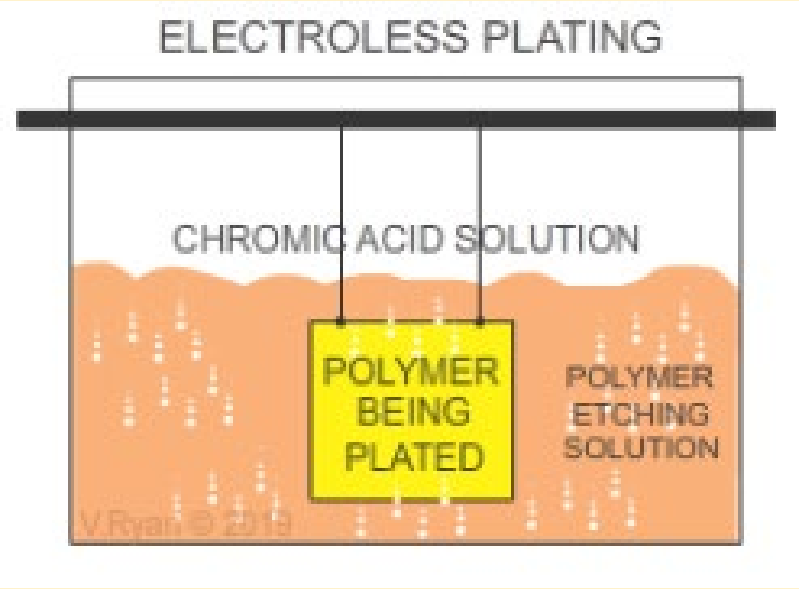
ELECTROLESS PLATING OF POLYMERS

The polymer is first etched to allow metal ions to attach to the surface. The polymer is then cleaned and placed in an electroless plating tank (see below). If ELECTROPLATING is required as an additional process, it can now take place, as the surface of the polymer has been metalised. Click here for the ELECTROPLATING PROCESS.

Tap the image for the full process



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HYDROGRAPHIC PRINTING / IMMERSION PRINTING

Hydrographic printing, is a process whereby, a film of ink floats on the surface of water. A 'blank' product is immersed in the solution and collects the ink on its own surface. This allows complex and interesting patterns, to be transferred from the water, to the surface of a product. A range of materials can be used including polymers.

Tap the image for information/exercises

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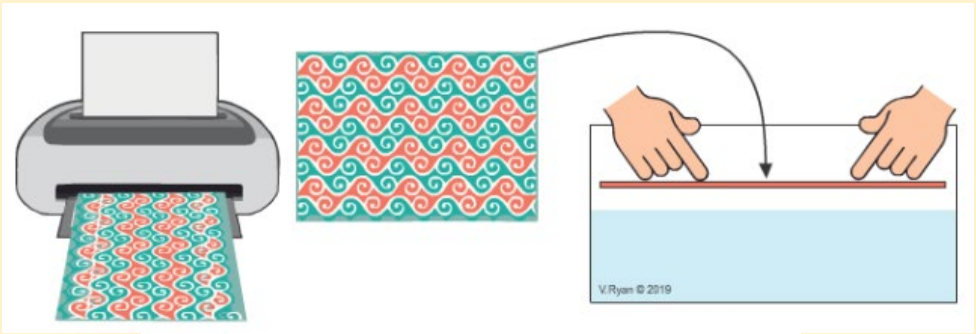
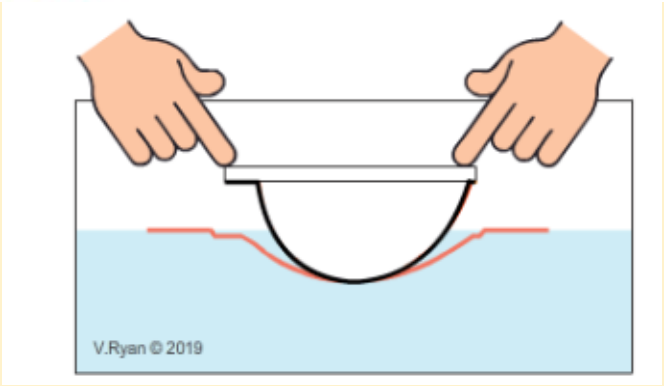
HYDROGRAPHIC PRINTING / IMMERSION PRINTING

An image / pattern is printed on a special transparency. It is allowed to touch the surface water, in an immergence tank. The ink pattern is transferred to the water surface. The blank product is immersed and collects the ink on its own surface.

Tap the images for the full process.





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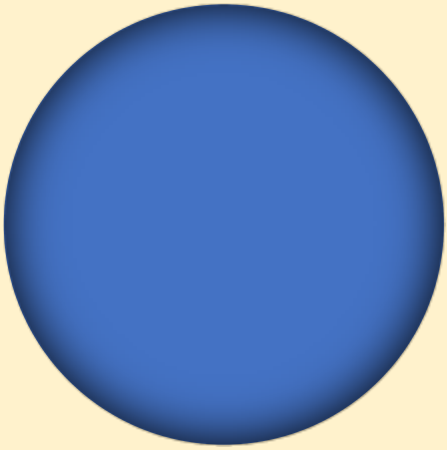

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