Introduction

Utilising extensive industry knowledge and expertise, Hot Press has prepared a helpful guide to assist with various aspects of hot dry mounting and surface presentation for photographs, posters and other forms of artwork. This text should be combined with practical application of the techniques described, so that a reasonable level of competence is achieved before any important or commercial work is attempted.

Two general principles should be remembered at all times:

- Cleanliness is vital to achieve top quality results. At each stage, always check for dust, board particles etc., trapped in the artwork assembly.

- Before putting the assembly into the press, always make sure that any exposed adhesive (whether facing upwards or downwards) is covered by a release paper or film.

Important points regarding specific pieces of equipment and associated items:

- Mechanical presses (hard and soft beds) have a narrow throat or opening, which can make it difficult to insert work and ensure all items keep their relative positions. The use of a flat, rigid carrier board (e.g. 5mm MDF) on which to prepare work and slide it in and out of the press will assist greatly; mounting siliconised paper onto it (silicone side up) makes it non-stick and increases its life.

- It is often beneficial to pre-dry mounting board and sometimes prints by putting them into the warmed-up press, separately, for a couple of minutes before processing. This is especially important where the relative humidity (dampness) of storage conditions can vary considerably even over short periods of time. Please note: prints should be dried between two pieces of matt absorbent paper (i.e. Kraft or blotting paper).

- Silicone release paper and silicone release film are available as release agents; the film is double-sided. The silicone paper is cheaper, but the film lasts longer. However, silicone has a greater tendency to migrate onto the surface of glossy prints from silicone film than from silicone paper. When used in conjunction with a glass topped vacuum press, silicone film allows the user to view work during dry mounting.

- A print with any degree of gloss surface will show “orange-peeling” or dimpling when mounted onto card, even a good quality lined product such as white display board; this simply reflects the unevenness of the card’s core and cannot be totally avoided. Foam centred board is growing in popularity due to its flatness and smoothness, and acid free forms are available for the fine art market.

Dry Mounting

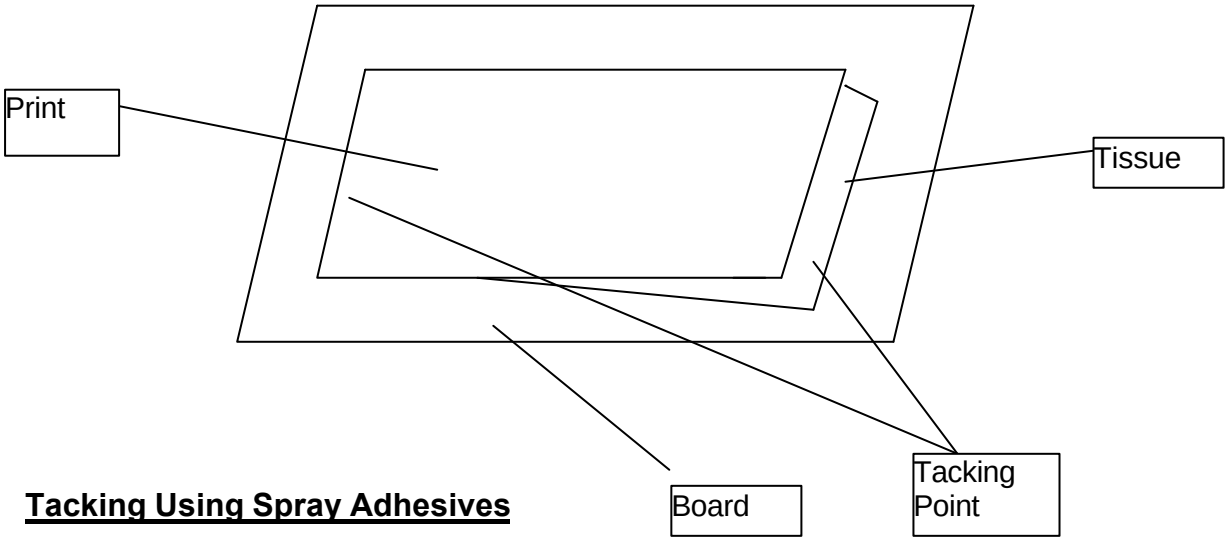
PERMANENT MOUNTING USING DRY MOUNT TISSUE

Set the press between 80°C and 90°C. Place the Dry Mount Tissue (DMT) between the print and the mounting board. It is usually important to maintain accurate placement of all these items prior to processing; although use of a glass top vacuum press with its combination of easy access and visibility can make it unnecessary. The initial assembly (known as "tacking") can be done in various ways:

Tacking Using an Iron

Using the special heated tacking iron, tack the tissue lightly to the print at one end, and then tack the tissue to the board at the other end. This will hold the assembly in place but still allow creases or ripples to flatten naturally during processing. Tacking each component in more than one place can cause a crease to develop during the mounting process. The method of tacking described above is commonly known as "Z" tacking because when the board and print are moved apart the components (board, tissue, print) look like a "Z" (see diagram).

Special Note - always place a small piece of silicone paper between the tissue and iron head to keep the iron clean.



Tacking Using Spray Adhesives

This method uses a spray adhesive. Spray a very small amount onto the middle of the mounting board, and place the DMT in position. Then spray a similar amount onto the back of the art work, and place print in position. This holds the assembly in place whilst it is being put into the press. The spray adhesive disappears during the bonding process with no apparent detrimental effects, although too much spray mount may show through on thin prints.

Water based adhesive sticks can also be used in a similar fashion.

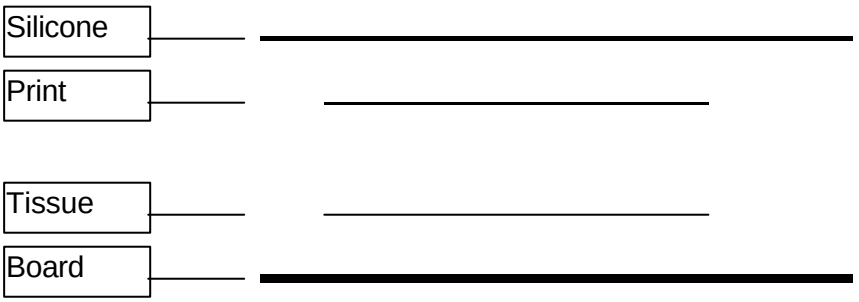
Tacking Using Tape

Where a subject is to be centrally mounted onto a larger board and decorated with a window mount, the tissue can be cut to an intermediate size (larger than the print and smaller than the board). The assembly can then be held in place with a strip of masking tape during mounting. The indentation this will leave can then be hidden by the window mount.

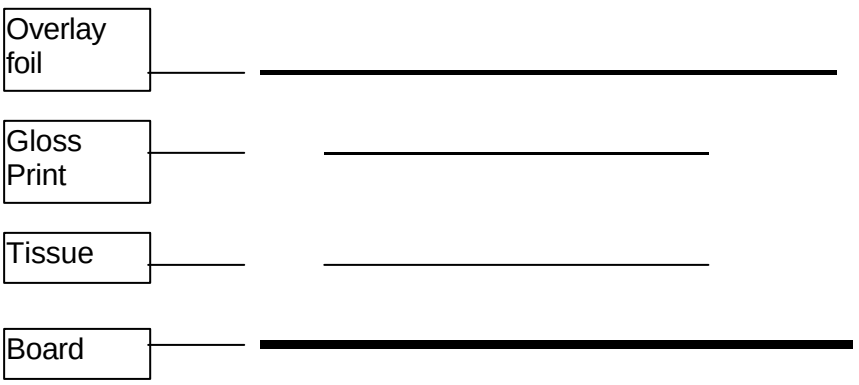
Note - after tacking the tissue to the print (using any of the tacking methods), the tissue can be trimmed to size if desired, e.g. when centre mounting or making a montage.

Print and Press Protection

Before placing the assembly into the press, please consider the following: It is usually desirable to protect your print from direct contact with the heated platen and also protect the press from any exposed adhesive which may stick to it. Silicone Film or Paper will perform both functions; however the silicone can tend to offset onto some surfaces, particularly high gloss finishes, giving a blotchy appearance. When using glossy prints or photographs, tack the print and tissue together, trim off any excess DMT, then cover the print with gloss acetate foil.



Standard Assembly for Dry Mounting



Special Assembly for Dry Mounting Gloss Work

Processing the Work

Place the prepared and protected work in the press and process it under heat and pressure for 1 to 3 minutes. The precise time required will depend on various factors such as:

- **Format** - smaller items need less time
- **Temperature** - higher temperatures activate the adhesive quicker
- **Press Efficiency** - how accurate the temperature indicator is
  - how well temperature is maintained
  - how evenly heat is distributed
  - the amount of pressure applied

Please Note - When mounting a large imporous print such as a photograph in a vacuum press there is a possibility the tissue can be partly activated before all the air has been extracted, resulting in bubbles of trapped air. Cover the assembly with foam plastic. This provides a temporary heat insulation that allows time for all the air to be extracted.

When using a vacuum press, the phenomenon of “false vacuum” needs to be avoided. This can occur when two smooth surfaces are pressed together sufficiently tightly all around the edge of the assembly preventing air being extracted. The machines gauge will register that a full vacuum has been pulled, but the trapped air can result in a bubbled print. Examples of this might be if siliconised paper or film is placed both above and below the assembly or when centre mounting onto a large very smooth board (e.g. foam centred board), where the silicone seals itself onto the edge of the board and prevents air extraction. Matt (blue) release or foam plastic can be used on top of the assembly to help avoid this.

After Processing

Remove the assembly from the press, holding it flat. Place the work immediately on a cool flat surface under a weight to ensure adhesion and to help minimise bowing if using a mount board. This can occur over a period of time, but can be avoided by counter-mounting onto the reverse of the board.

PERMANENT MOUNTING USING DRY MOUNT FILM

Set the press at 80°C to 90°C, as for Dry Mount Tissue. However, the work will require longer, usually 3 to 4 minutes to process fully. (it is usually desirable to pierce the film before use, although it is not absolutely necessary if mounting a porous print onto a porous substrate. The surface tack of the film avoids the need to tack the assembly into place prior to processing. However, avoid preparing work too near a heat source as this can cause problems removing and repositioning the work).

Cut a sheet of film from the roll, either exactly to size or slightly larger, and pierce if appropriate. You will see that this film is protected both sides by release liners. Peel back about 25mm (1 inch) of one of the release liners and fold into a hard crease. (it is usual that when unrolled, the liner that was on the outside of the roll may pipe away from the carrier. This is the side that should be peeled back first. Even if both liners pipe, removing the outer liner first minimises the chance of the carrier creasing and causing problems when mounting). Tape the roll up after use to avoid any undue piping.

Position the print accurately on the exposed film and press down from the middle to the edges. Then peel back the rest of the release paper, gently pressing the print onto the film as it is exposed - a cloth, squeegee or roller will help. When completed the dry mount film can be trimmed exactly to size.

Next peel back about 25mm (1 inch) of the second release liner and position the print onto the board. When in place, smooth down the exposed film (again from the middle to the edges) and gradually peel back the rest of the release paper as before.

Processing the Work

The assembly can then be put into the press with silicone paper or film over the top to protect the print from direct heat contact and to avoid any excess adhesive sticking to the press.

A heatseal film can also be applied at the same time if desired. If the work is to be heatsealed using pre-pierced film (i.e. if the print is imporous) or if a stippled finish imparted by foam is required, then a sheet of foam plastic should be placed over the assembly in the press. If a porous print is being heatsealed, foam may not be necessary. The film can then be covered with gloss acetate overlay foil for example.

After Processing

As with most mounting procedures, place the processed work on a cool flat work surface and position a weight on top to help minimise any bowing of the finished work.

REVERSIBLE MOUNTING
USING ARCHIVAL DRY MOUNT TISSUE

As the title suggests, this method of mounting can be reversed (see section below). Follow the instructions for permanent mounting using Dry Mount Tissue with regard to tacking, trimming and general processing. However, please note the following:

- Press temperature can be lowered (75°C - 80°C)
- Archival DMT bonds as it cools (rather than as it heats up) and so great care needs to be taken when removing work from the press. The assembly should immediately be placed under a weight to allow it to cool down flat. **DO NOT** remove any protective covering until it has cooled completely.

REVERSIBLE MOUNTING
USING ACID FREE MOUNT FILM

Follow previous instructions for mounting but please note:

- This product cannot be tacked using a tacking iron; follow other suggested methods
- It does not always lie flat, so can be difficult to trim exactly to size. Therefore, it is often best left slightly oversized if possible.
- Press temperatures are similar to Archival Tissue
- When removed from the press allow the assembly to cool completely as the film may still be easily removable. If it is not kept flat, problems may occur with the edges or corners of the work lifting.

REVERSING ARCHIVAL TISSUE & ACID FREE FILM

This is best achieved using a hairdryer, hot air blower or a domestic iron. A lot will depend on how vulnerable the subject is to a direct heat source.

Carefully reheat one corner of the print and gently lift it from the substrate (board). As the surfaces come apart, the tissue or film will remain stuck to either the print or the board (which one, depends on the relative porosity of each). Continue applying the heat to the area of de-lamination (the breaking point between the adhesive and the print or board), steadily and carefully pulling back the print. To help remove the print successfully, begin to roll it over a cardboard tube as it is eased from the board. Place some siliconised paper or film over the adhesive as it is exposed to prevent re-bonding.

This process will need to be repeated if the adhesive has remained attached to the print.

Heatseal Laminating

PVC heatseal films are available from Hot Press with plain or textured surface finishes. These can be applied over many surfaces including papers, photographs and fabrics.

"Polyester" and "Acetate" films are also available for certain specialised applications.

APPLYING PVC HEATSEAL FILMS

The procedure can vary slightly depending upon whether the item to be laminated is porous (such as paper, fabric and card) or non-porous (such as resin coated photographs).

Porous Subjects

Typically an item is dry mounted *and* heatsealed. Depending upon preference and level of skill, this can be done as a two-stage or single-stage operation. As a two-stage operation, complete the dry mounting in the normal way and then apply the heatseal film as another process. Alternatively heatsealing the art work first, then dry mounting, reduces the time the board is in the press and can therefore help minimise bowing.

As a single-stage process, make up the sandwich of board, tissue, print and heatseal film. Tack the tissue in place. Trim the heatseal film to a size to cover the print and any exposed dry mount tissue. Bear in mind that any film overlapping the board will stick to the press unless siliconised film or paper is used to protect the machine. Do not peel all the backing paper off the heatseal at once, as this can make it difficult to handle and prone to attract dust particles. Peel and fold back about 25mm (1 inch) of the release paper, along one edge. Lay the film onto the print and position it carefully (heatseal film normally has sufficient surface tack to maintain its position). Press on the leading edge gently and gradually peel away the rest of the backing paper. At the same time use a cloth to press out any air bubbles from between the art work and the film.

Now, place the assembly into the press. If you wish to retain a gloss finish when using Gloss Lustre heatseal, place a piece of overlay foil over the film and put directly into the press with no foam plastic over the top. If foam plastic is used instead of the overlay foil, the PVC becomes soft and malleable under the heat and takes on a stippled texture from the cellular structure of the foam.

Note - The use of un-pierced film is also recommended if you wish to retain a gloss finish.

Non Porous Subjects

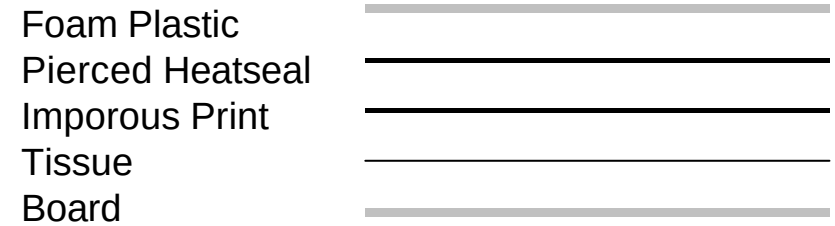
With porous materials, any air trapped between the film and the print can escape through the print, tissue and even the board. However, most photographs are based on impervious, resin coated and plastic materials. These have the effect of trapping air, which shows up under the surface of the heatsealed print as tiny air bubbles known as “silvering”. This can be overcome by perforating the film using a special spiked roller (piercing tool), or more commonly by using pre-pierced films.

Trim the film to size and lay it film side up on a cutting mat or other clean, smooth and cool surface. Roll the piercing tool gently but firmly over the surface of the film in both directions. The tiny holes in the film will allow air to escape and will then heal up and disappear during processing in the press.

The time taken to heatseal a photograph, to the point where all “silvering” has disappeared, can vary considerably. Different photographic papers, varying ambient conditions and the thickness of the film involved can all have an effect. The optimum temperature range is 90°C - 95°C. The minimum processing time is approximately 4 minutes, but it can take up to 10 - 12 minutes in some circumstances. As a rough guide, divide the gauge of the film (in microns) by 10; this should give an appropriate time (in minutes) e.g. 50 micron Gloss Lustre will take about 5 minutes.

After piercing, follow the procedure as for porous materials. However, **DO NOT** place overlay foil over the heatseal as it will block the pierced holes, resulting in silvering. A degree of gloss can be restored to Gloss Lustre heatseal by a ***second*** pressing; place overlay foil on top of the heatseal and place something flat over the top of this (e.g. glass, aluminium or card).

Heatsealing Assembly (normal)



Heatsealin[redacted]urous print)

Overlay
Unpierced Gloss
Heatseal
Porous Print
Tissue
Board

APPLYING POLYESTER & ACETATE HEATSEAL FILM

This procedure can vary according to whether or not the subject is porous.

Porous Subjects

Proceed as for PVC heatseals. The surface finishes of these films will remain glossy, as neither acetate nor polyester will soften much with heat. Therefore, use of foam will tend to give a dimpled effect, rather than the pleasing texture achieved with PVC films.

Non Porous Subjects

Any air trapped when the film is laid onto the print will have nowhere to go and will remain evident as silvering. The air needs to be removed prior to lamination. This can be achieved successfully by using a rotary laminator to apply the film brfore processing it in the press.

Canvas Bonding

This is a system for mounting an image onto canvas, so that the texture shows through; thereby imitating, to some degree, the appearance of an oil painting. To assist the process, it is necessary to make the image as thin as possible by stripping away its backing paper. Canvas Bonding is commonly done with resin coated photographs because the construction is suited particularly well to this process. The canvas used for this process has a much coarser weave than material used for artist's canvas.

PROCEDURE

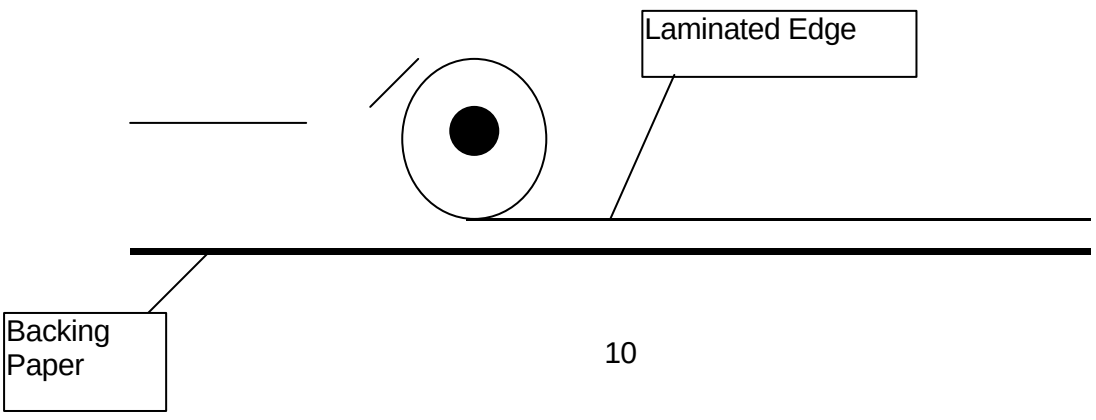
1) Take a sheet of heatseal film, 50mm - 70mm (2 - 3 inches) larger than the print all the way around. Gloss Lustre film is normally used, however the Heavy Duty version may be preferred for larger subjects to help minimise stress when stripping. The pre-pierced version of the film should be used for resin coated photographs or other non porous subjects.

2) Smooth the film onto the print and either replace the release paper or place on a siliconised carrier board to protect any exposed adhesive. Place in the press, with foam plastic over the top, for 4-5 minutes at 90°C - 95°C.

3) Take the assembly out of the press and remove the backing paper from the film and image. This is best achieved by starting at one corner, using a knife or fingernail to separate the backing paper from the film. Place the print on a flat surface, face up and start peeling back firmly and evenly. Photographs should be peeled at an acute angle (about 20° from horizontal), litho prints at a more obtuse angle (about 45°).

4) There are alternative methods of stripping the prints. One method is to soak the laminated print in water and then scrub off the backing paper (this is usually the best way to strip litho prints). Another method is to flush mount the print onto card, then laminate; the rigidity of the card and backing paper allows simple, even stripping of the image and heatseal film.

5) To help ensure the backing paper is stripped evenly, roll the image and heatseal film around a length of tubing or doweling; the rigidity of the tube avoids localised stressing of the image. Pushing the tube away from you, hold the waste backing paper down firmly with your free hand and roll the print around the tubing after each 3 - 4 inches is stripped. This method of "reverse rolling" makes a more acute angle of de-lamination than alternatives and thereby achieves a much thinner result.



6) The thin, flexible image is now ready to be mounted; adhesive coated canvas is usually preferred. If stretcher bars are to be used, the canvas will need to be larger than the print to accommodate this. If the canvassed print is to be mounted onto board, then no overlap is necessary. After checking the canvas weave for consistency and direction, peel back about 25mm (1 inch) of the release paper. Place the heatsealed image onto the canvas and gradually peel back the rest of the release paper. Continually smooth down the print; the surface tack of the adhesive will hold the smoothed out print in place if it has been stressed during the stripping process. To increase the surface tack of coated canvas (for badly stressed or wrinkled prints), warm the canvas on top of the press (for vacuum presses) or on a warm carrier board (for other presses). If uncoated canvas is used, you will need an adhesive such as Dry Mount Film (clear or white) or Acid Free Mount Film.

7) Put the work back into the press at 90°C - 95°C. Bonding will only take a minute or two, but by increasing the dwell-time the degree of texture will improve. If a vacuum press is used, this final process may achieve better results if the assembly is reversed; so that the flexible diaphragm presses the foam against the heatsealed image, thereby pushing it as far as possible into the weave of the canvas (face down on top of the foam).

Note - Softbed presses are usually unsuitable for canvas bonding as they do not apply enough pressure to create the desired texture.

Texturising System

Texturing Film is a thick thermoplastic film which becomes soft and sticky when heated (i.e. it does not have an adhesive coated side). Most roll sizes are supplied pre-pierced; to allow air to escape easily when processed.

PROCEDURE

1) Cut a sheet to size and place over the print (mounted or unmounted).

2) The uppermost surface also becomes sticky when heated, so it needs to be protected by siliconised film during processing. This should initially be Matt Release to allow air to escape (use of Gloss Release at this stage could seal the pre-pierced holes and cause silvering).

3) If a matt finish is required, a texturising agent (e.g. canvas, sandpaper, etc.) can be placed on top at this stage.

4) If a gloss finish is required, the (matt) laminated print can be put in the press a second time with Gloss Release - and a texturising agent if required.

5) The whole assembly should be protected by foam plastic whenever it is put into the press.

6) Temperatures and dwell times will need to be increased (typically 100°C - 105°C for 8 - 12 minutes).

Note - If a porous subject is being texturised, it is not necessary to initially process with Matt Release if a gloss finish is required as the air will escape through the print.