
Seal Products

OWNERS Operation and Service MANUAL

VACUSEAL™ M-H SERIES Modular Combination Vacuum Presses



VacuSeal 4366M-HD

VacuSeal 4366M-HS

VacuSeal 3646M-HD

VacuSeal 3646M-HS

IMPORTANT SAFEGUARDS

1. Place the vacuum press on a sturdy flat level surface and make certain the feet and hinges are properly adjusted. The press should not be located in the direct path of air conditioning vents or room cooling fans.
2. Keep the vent cloth positioned so that it covers the vacuum manifolds (located in the rear corners of the press) and does not extend across the edge of the rubber diaphragm. Failure to do so will result in temporary loss of vacuum.
3. Place all materials inside the press so that they fit into the recessed chamber in the base. If any materials extend across the edge of the rubber diaphragm they will prevent a seal and cause either low vacuum or no vacuum at all.
4. Grasp the center of the handle when opening and closing the press. Keep body, head and hands away from the press opening at all times.
5. Foreign objects such as knives, tools, rulers, paper clips and markers should be kept out of the press and away from the press opening at all times.
6. Do not stack boards in the press. Placing a smaller board on top of a larger one may cause dents or lines in the aluminum platen.
7. Do not use an exposed blade to cut materials in the press. A slice or puncture in the rubber diaphragm will result in loss of vacuum.
8. Allow the vacuum level to drop before opening the press.
9. Turn the Power Breaker off and keep the press in the closed position when not in use. Disconnect the power supply before cleaning or replacing parts.
10. High pressure gas springs make opening and closing the press easier. If they are to be removed, the top **MUST** be held in the fully opened position for safety and to prevent damage.

Contact an authorized Seal dealer, or Seal Technical Service, in the event the press needs service or parts not covered in this Owners Manual.

Please read the entire manual and fully understand the proper operating procedures before proceeding to use the press.

INTRODUCTION

Welcome to the large, rapidly growing family of Seal press users.

Once you have used the VacuSeal press, you'll understand exactly why it is of the highest quality in design and manufacture available. With proper care and minimal maintenance you can expect many years of trouble free operation.

This combined Owners Operation and Service Manual will make you familiar with the features, operating

principles, procedures for use and necessary maintenance and troubleshooting of the press.

Proper understanding of this manual will enable you to obtain the level of performance and dependability that has been incorporated into the design of the press.

This basic knowledge will also provide a springboard to new and innovative uses of your Seal press as you gain experience.

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PRESS FEATURES

The VacuSeal 4366M-H and 3646M-H presses are professional mounting and laminating systems designed to provide the highest quality results with maximum versatility and ease of operation. The combination of two machines in one - a dry mount press and cold vacuum frame - allows the quick professional application of dry mounting adhesives and laminates, as well as wet and spray adhesives. The presses decrease labor costs, and increase production, while minimizing operator training and supervision.

Specific features and benefits include:

- Hot or cold operation: Use hot with dry mount adhesives and laminates or cold with wet and spray adhesives.
- Easy to use: Close the top, turn on a switch, and wait for the timer to signal that the work is done.
- High uniform pressure: 10-12 psi (24-26" Hg) ensures good bond penetration for consistent professional results.
- Automatic pressure adjustment: Self adjusts for substrates up to 1" thick, or mounts several pieces of varying thicknesses at one time.
- Double-duty top: Specially constructed heavy duty flat top doubles as work or storage space when the press is not in use.
- Modular: Unique construction allows the controller system to accept installation of new modules for additional features.
- Tool Tray: 3" utility tray holds cutters, rulers and markers, and includes 115V Tacking Iron outlet.
- Optional Controllers: Choice of electronic systems with L.E.D. vacuum indicators, self-timers, solid state circuitry and single switch operation:
M-HS: Single Temperature Controller
M-HD: Dual Temperature Controller with Readout
- Optional FloorStands: Makes the press a freestanding unit and incorporates one shelf support, with a second shelf support also optional.
- Optional Dual Pump Assembly: Speeds operation and increases efficiency by reducing draw-down time.

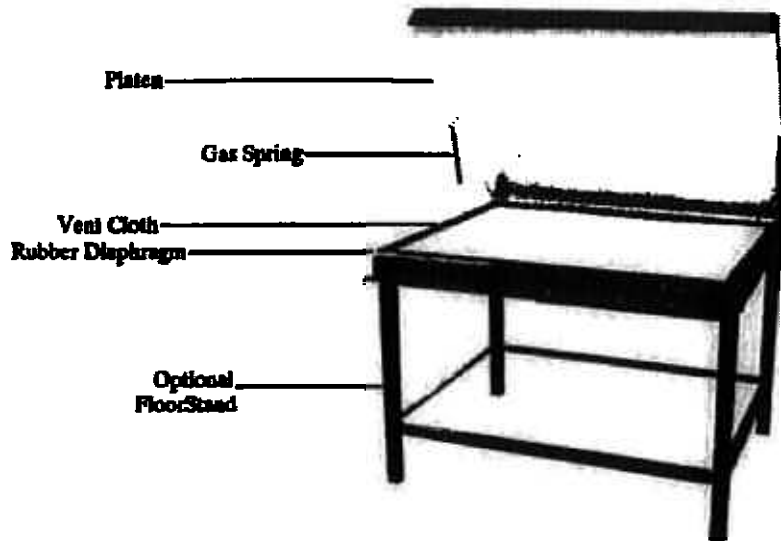
SPECIFICATIONS

	<u>VacuSeal 3646 Series</u>	<u>VacuSeal 4366 Series</u>
CATALOG NUMBERS -		
- M-HD Press:	2025*	2000*
- M-HS Press:	2028*	2003*
- FloorStand:	2021	2020
- 2nd Shelf Support:	2021-1	2020-1
- Dual Pump Assembly:	2022*	2022*
WORK CAPACITIES :		
- up to 1/4" thick:	36" x 46"	43" x 66"
- up to 1" thick	32" x 44"	40" x 60"
DIMENSIONS:	53" x 46" x 7" 37" high (open)	72" x 52" x 7" 37" high (open)
NET WEIGHT -		
- Press:	125 lbs.	190 lbs.
- Pump:	21 lbs.	21 lbs.
SHIPPING WEIGHT:	180 lbs.	250 lbs.
POWER REQUIREMENTS:	Nominal 230 V.A.C. Single Phase, 4 wire	Nominal 230 V.A.C. Single Phase, 4 wire
POWER CONSUMPTION:	Approx. 3000 watts @ 230 V.A.C. (13 amps)	Approx. 3600 watts @ 230 V.A.C. (16 amps)

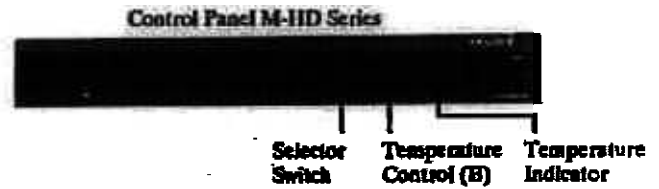
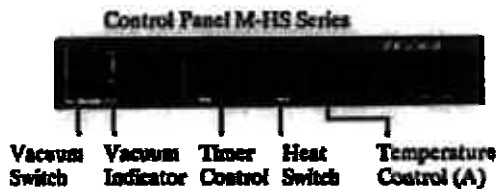
* Domestic U.S. model. Export models are also available.

IDENTIFICATION OF CONTROLS

External Parts



Control Panel



- Power Breaker:** Circuit breaker which supplies power to controller and outlets. Reset, if tripped, by turning fully **OFF** and then back **ON**.
- Vacuum Switch:** Activates both vacuum pump and timer.
- Vacuum Indicator:** Indicates level of vacuum in the press.
- Timer Control:** Controls time period for vacuum pump signal. When set on **3**, the pump will run for approx. 3 minutes before the signal sounds.
- Heat Switch:** Activates the Temperature Controls and heater. When **ON**, the platen will begin to heat to the level set on the selected Temperature Control.

- Temperature Control (A):** When set to **185** with Heat Switch **ON** (and Selector Switch on **A**), platen temperature will rise to and cycle at **185°F**.
- Selector Switch:** [on M-HD only] Selects which Temperature Control monitors and controls the platen temperature (**A** or **B**).
- Temperature Control (B):** [on M-HD only] When set to **215** with Heat Switch **ON** (and Selector Switch on **B**), platen temperature will rise to and cycle at **215°F**.
- Heater Light(s):** Glows when the platen temperature is below the Temperature Control setting.
- Temperature Indicator:** [on M-HD only] Indicates the temperature of the press platen.

INSTALLATION AND PREPARATION

Each VacuSeal M-H Series press is fully assembled, calibrated and tested at the factory to pull a high level of vacuum in a minimum amount of time. Once passed by the Quality Control department, the completely tested press and pump are packaged and shipped together to ensure that each customer receives a complete and tested unit.

During shipping and uncrating, the alignment of the top and base of the press may be altered and require readjustment by the user. In addition, placing the press on an uneven or warped table surface may require adjustment of the leveling feet and hinges by the user. Follow these instructions to ensure proper operation.

Installation:

For consistent long term operation Seal recommends using the appropriate VacuSeal FloorStand. First assemble the FloorStand following the directions supplied with it, then unscrew the four adjustable leveling feet from the base of the press and place the press in position on the FloorStand. Using the bolts supplied with the FloorStand, screw one into each of the four former foot locations, then tighten fully and use the remaining four nuts and bolts to secure each of the remaining pre-drilled holes.

As an alternative to a VacuSeal FloorStand, a heavy duty, flat level table can be constructed. The press should sit completely on the table and 3/4" Grade B plywood or better is the recommended surface material. A table height of 30" is typical. Make sure all four adjustable feet are screwed in fully, and place the press on the prepared flat level table.

Leave at least 5" between the rear of the press and the wall so the top has room to open easily.

Each VacuSeal M-H press has been shipped with the upper end of each gas spring properly attached. With an assistant holding the press open, remove the safety clip from the free end of each gas spring and snap the end onto the appropriate stud on the base. Reinstall each safety clip properly. Follow the specific instructions included within the shipping crate.

For a Qualified Electrician:

The VacuSeal M-H Series presses are rated for 230 V.A.C. 60 Hz Single Phase (with Neutral) on a 20 amp circuit. Actual line voltages between 208-240 V.A.C.

are acceptable. The power cord may be either hard-wired direct to a junction box, or a plug may be fitted to the cord for use on an existing outlet. On domestic U.S. models, the 12 gauge Power Cord (3 wire plus ground) is color coded using conventional standards (Red=L1, Black=L2, White=Neutral, Bare=Ground). After hookup is complete, and with the Power Breaker and Vacuum Switch **ON**, the Tacking Iron and Vacuum Pump Outlets should measure between 110-120 V.A.C. Refer to the Wiring Diagram enclosed with the press for additional information.

The vacuum pump should be placed on the floor near the press. The plastic vacuum line tubing is already connected underneath the press, and the free end will have to be attached to the inlet side of the pump. To attach, unscrew the brass ferrule with plastic insert (nut and sleeve) from the brass fitting on the pump and slide them over the end of the vacuum line tubing. Insert the tubing fully into the brass fitting and while holding it in place tighten the nut hand-tight and then an additional 3/4 turn using a 9/16" wrench.

With the Power Breaker and Vacuum Switch **OFF**, plug the vacuum pump power cord into the electrical outlet marked "Vacuum Pump Only" on the right rear of the press.

The press is now ready for use. Check operation by closing the press and turning the Power Breaker and Vacuum Switch **ON**. Within one minute on a 4366M-H press (or 40 seconds on a 3646M-H press) the vacuum indicator lights should start to glow starting with the lowest L.E.D. A maximum vacuum is attained when the top light glows. If there is any difficulty in drawing a proper vacuum refer to the Owner Adjustment Procedures section on pages 22-23.

Preparation:

The press should be cleaned thoroughly before initial use. UnSeal adhesive releasing solvent is suggested to fully clean the platen. Normal cleaning solutions can be used on the Formica top and painted metal components.

Before using the press heated a Seal Release overlay should be prepared. This performs the function of keeping the press and work clean while allowing adhesives to be use oversized without sticking to the press. Three types of Release Materials are available:

Double Sided Release Paper - a thin bleached paper coated with silicone on both sides to create two non-stick surfaces. (Recommended size is Seal Cat. No. 934 - 42" x 30 yd. roll).

Single Sided Release Paper - a heavier white paper coated with silicone on one side. (Recommended size is Seal Cat. No. A492 - 42" x 30 yd. roll).

Release Boards - a thin smooth board coated with silicone on both sides. Lays flat to smooth out curled posters, doesn't wrinkle or crease and lasts longer than release papers. (Recommended size is Seal Cat. No. 938 - 32" x 40" sheets, pack of 5).

It is advised to always leave a full sheet of Release Paper under the materials being processed (on top of the Vent Cloth). Two sheets of Release Paper, or one Release Board, should be placed over the materials.

The press is now ready for use.

Please read the entire manual and fully understand the proper operating procedures before proceeding to use the press.

BASIC OPERATING PRINCIPLES

To achieve optimum results when dry, wet or spray mounting (or dry laminating) the following procedures should be followed:

- A. Adequate uniform application of the adhesive.
- B. Application of uniform pressure.
- C. Removal of air and moisture.
- D. Uniform heating of the artwork and substrate to the Minimum Temperature of the adhesive (if required).
- E. Maintaining pressure (and temperature) long enough for an adequate bond to form.
- F. Allowing enough time for the adhesive to cure before testing bond strength or subjecting to stress.

The VacuSeal M-H Series presses are designed to automatically control the variables in four of these procedures (B, C, D & E) and thus ensure consistent results while minimizing operator adjustments. The operator need only apply the adhesive, select the proper settings, start the press, and follow proper procedures after removing the materials.

During operation an airtight chamber is formed when the press is closed. When the Vacuum Switch is turned on it starts the vacuum pump which draws the air from the

chamber and from the layers of artwork, adhesive and substrate. Atmospheric pressure outside the chamber then forces the flexible diaphragm up against the platen and applies approx. 10-12 psi of pressure uniformly to the artwork and substrate, regardless of their thickness. When the time set on the Timer Control has elapsed the press will signal the operator to turn the Vacuum Switch off and remove the materials from the press.

When used heated, the platen temperature will rise to and maintain the temperature set on the selected Temperature Control. After the press has drawn a vacuum the Heater Light will come on indicating the materials are below the selected temperature. As the heaters bring the materials up to temperature, moisture will be released which the vacuum pump automatically withdraws, eliminating the need to predry materials while still preventing moisture bubbles or poor bonds. Thirty seconds after the Heater Light goes out if dry mounting, or 1-4 minutes if laminating or texturing, the materials are ready to be removed.

To minimize the bowing of mounted materials and increase bond strength it is recommended to allow the materials to cool completely under a flat weight (1/4" plate glass, metal, etc.) before flexing, bending, picking at corners, or trimming. This is especially important with removable dry adhesives that bond while cooling, and with wet mounting adhesives.

PROCEDURES FOR USE

Dry Mounting:

VacuSeal M-H Series presses use standard operating procedures to make the majority of dry mounting jobs as easy as:

1. Assembling the materials to be processed and placing them in the press.
2. Closing the press and turning on one switch.
3. Turning off the switch and opening the top when the timer sounds.
4. Removing and cooling the processed materials.

The following are detailed step-by-step instructions for normal operation of the VacuSeal M-H Series presses, and recommendations on how to handle a variety of special applications.

Refer to the specific instructions provided with the adhesive being used for information on the proper Recommended Temperature and Time settings.

Normal operating temperatures of the press are 155-215°F. Set the Temperature Control to stabilize the press at 10° less than the regular Recommended Temperature setting. When processing color photos or delicate materials, a slightly lower temperature may be used (no less than the Minimum Temperature setting for the specific adhesive being used).

A review of sample settings is provided on pages 20-21 of this Owners Manual. These settings are based upon our research and believed to be accurate, but the accuracy and completeness of our recommendations is not guaranteed.

Press Warm-up

1. Close the press.
2. Press the Power Breaker and Heat Switch to the ON position.
3. Select and set the Temperature Control (normally 185°F, however refer to the Recommended Temperature for the specific adhesive being used, and set at approx. 10° less, or see page 18).
4. Wait for the Heater Light to go out (approx. 15 min) indicating the press plate has reached the operating temperature set in step 3.

Normal Operation

1. Allow the press to reach operating temperature (see Press Warm-up, above).
2. Set the Timer Control (normally 3-6 minutes, refer to page 20 for the Recommended Time for the specific materials being processed).

3. Select the proper dry mounting adhesive for the materials to be processed, and cut and place an appropriately sized piece on top of the substrate. Cutting the adhesive slightly oversize, rather than the exact size of the artwork and/or substrate, is a normal time saving step. Release Paper will keep the oversize adhesive from adhering to the press, and all excess adhesive and substrate can be trimmed together after processing.
4. Place the artwork on the adhesive. If exact positioning of the artwork is necessary, cover a spot along one edge with Release Paper and tack the artwork to the adhesive and substrate, through the Release Paper, with a Sealector Tacking Iron in one spot. With photographic materials, and other high gloss or soft artwork surfaces, tack one edge of the adhesive to the rear of the artwork (through Release Paper), and then the opposite edge of the adhesive to the substrate. This avoids touching the tacking iron to the face of the artwork.

Normal Operation (cont'd)

5. If a high gloss photograph is being mounted, trim the adhesive to the exact size of the photo and place a ColorMount Cover Sheet (or Gloss Release Film from the Exhibitex process) over the face of the photo to preserve the glossy surface of the emulsion.
6. Place the assembled materials in the press on top of the bottom sheet of Release Paper. The materials should be placed at the center of the press for precise temperature control.
7. Position the remaining two sheets of Release Paper (or a release board) to completely cover all the materials. Visually check to ensure all materials are inside the recessed area of the base frame.
8. Close the press and turn on the Vacuum Switch immediately to withdraw the air and apply pressure before the heat starts activating the adhesive.
9. The timer will sound when the time set on the Timer Control has elapsed. If more time is desired, reset the appropriate time on the Timer Control and rock the Vacuum Switch OFF, wait 10 seconds and then back ON.
10. Turn the Vacuum Switch OFF.
11. Open the press, remove the materials and allow them to cool under a flat weight (glass, metal, etc.).

The press may now be reloaded and the next cycle started.

If the press will not be used for the next several minutes, close the top to conserve heat and electrical power.

If the press is not to be used for an extended period, close the top and turn both the Heat Switch and Power Breaker OFF.

Solutions

Mounting Boards

Vacuum presses are designed to pre-mount onto many of the foam center boards available. Full vacuum pressure shrinks boards during a normal 5 minute dwell.

The program may impart a slight bevel to the bottom board. For this reason and others to mount on an oversize board and trim it.

If there already cut to size, place scrap strips about one inch wide next to the edges which you are mounting. Or create a mask by cutting a slightly oversize opening in a piece of foam board.

Medium and Plexiglas

When non-porous substrates such as aluminum, Formica, etc. use an initial low temperature to warm up the press. Select the temperature (normally 185°F) after turning the Vacuum Switch to ensure complete removal of moisture before bonding takes place. Place long enough to reach the desired temperature for 30 seconds to one minute.

Mounting

Material mounted to canvas with Seal Fusion 4000 procedure is the same as normal dry mounting. A Protective Board is placed under the bottom sheet.

Precoating

The presses perform many operations in addition to mounting artwork onto rigid substrates. In procedure, a board or other rigid substrate is not used. A cloth material may texture the material. Examples of these procedures are double side laminating, applying Chartex, etc.

To avoid this, place a Protective Board beneath the bottom Release Paper sheet during these procedures. Protective Boards may be made from single- or double-weight mount board, 1/8" Masonite, 1/32" Formica, etc. Do not use foam center board.

NOTE: Never stack boards in the press.

Precoating Artwork

A mounting situation may arise where it is desirable to precoat the artwork with a dry mounting adhesive and trim it to the exact size before placing the artwork on the substrate.

1. Place a Protective Board under the bottom sheet of Release Paper.
2. Use the same temperature and time you would use if you were actually mounting the artwork.
3. Place the adhesive on the Release Paper, the artwork face up on the adhesive, and cover with two sheets of Release Paper (or a release board).
4. Close the press and turn the Vacuum Switch **ON**.
5. At the end of the cycle turn the Vacuum Switch **OFF** and open the press. Allow the materials to cool before removing them along with the Protective Board.

Precoating Substrates

It is also possible to precoat substrates with adhesive for later use. The procedures are identical to regular dry mounting except that the artwork is left out. Place the two top sheets of Release Paper directly on the adhesive.

At the end of the cycle, remove the substrate and Release Paper from the press and allow them to cool before lifting off the Release Paper.

Cloth Backing

Artwork can be reinforced with a linen cloth using Seal Chartex[®]. The procedures are the same as for Precoating Artwork except Chartex is placed on the Release Paper with the adhesive side up and the artwork is placed over it with the face side up.

Dry Adhesive Information

Seal currently offers five different dry mounting adhesives, in addition to spray, wet and pressure sensitives. A specific adhesive may be required for a particular job, however some are much more versatile than others.

Each user must review their own requirements and choose the adhesive, or adhesives, that will perform best for them. Many find that it is best to have a selection of two or three, so that the entire range of their workload can be completed quickly and professionally.

The following is a quick recap of the particular advantages of each dry mounting adhesive:

ColorMount[®]: A dry mounting adhesive that permanently bonds together almost any smooth surfaced paper or photograph and board at 185°F. Once mounted, the bond is unaffected by extremes in either temperature or humidity, and requires a solvent to remove. ColorMount is the single largest selling dry mounting adhesive worldwide due to it's high quality and versatility.

ArchivalMount[™]: A removable 160°F dry mounting adhesive with an alkaline buffered paper core. Extremely versatile, ArchivalMount handles even the thinnest materials (rice papers, tissues, silks) without any chance of bleedthrough, yet has great holding power. To remove, simply reheat (200°F) and peel the work off. For the ultimate protection of dry mounted work, use with acid-free boards.

Fusion[®] 4000 Plus: The pure adhesive film of Fusion 4000 Plus melts when heated (160°F) and flows evenly and easily to bond even the most difficult pieces. Because it has no paper core it can be pieced together and overlapped for oversize work. Fusion 4000 Plus can be used for almost any mounting job, but may require special precautions in certain applications. To remove, simply reheat (200°F) and peel the work off the board.

MIS[®]: An economical permanent dry mounting adhesive. Similar to ColorMount (185°F), only limited to use with porous papers, or similar materials that air and moisture can readily pass through. Not recommended for use with photographs or 'slick' posters.

Fotoflat[®]: Similar to ArchivalMount, with slightly more adhesive (155°F) and an unbuffered paper core. The original dry mounting adhesive for paper goods and fabrics, and still very popular.

Refer to the Recommended Time and Temperature Settings included with each specific adhesive, or the sample settings listed on page 20 of this Owners Manual, for proper settings when using any of these adhesives. For more information on specific applications, please refer to The Sealection Guide (a slide chart), or MOUNTING, LAMINATING and TEXTURING, Seal's 96 page comprehensive instruction manual.

Wet Mounting:

VacuSeal M-H Series presses can be used to mount most artwork using wet adhesives. The following instructions refer to use with Seal VacuGlue™ 300, an acid-free, water-soluble mounting adhesive that has great bonding strength but is fully reversible (or removable) by rewetting the adhesive.

1. Make sure that the Heat Switch is OFF and the press is cool.
2. Apply Seal VacuGlue 300 to the substrate evenly with a brush, paint roller or spray gun (for RC photos or other nonporous materials, coat the back of the artwork).
3. Position the artwork in place on the substrate while the adhesive is still wet (up to 7 minutes).
4. Cover the substrate with porous kraft paper and place in the press. The kraft paper will absorb any excess adhesive around the artwork and keep the press clean.
5. Preset the Timer Control for 2 to 5 minutes (3 to 7 minutes for nonporous materials), then close the press and turn the Vacuum Switch ON.
6. When the timer sounds, turn the Vacuum Switch OFF, open the press and remove the mounted materials.
7. Peel off and discard the kraft paper.
8. Allow the bond to cure for 15 minutes to 1/2 hour before handling, longer in more humid areas (or for RC photos).

Press Time: Artwork mounted in the press for 1-2 minutes can be peeled off the substrate immediately if necessary. Leaving materials in the press for a longer time dries the bond more thoroughly so that not as much curing time is needed.

Removing Artwork After It Is Mounted: This can be done even at a later date by using one of a variety of methods:

- a) Immerse the entire substrate and artwork in water until the adhesive is dissolved and the artwork released.
- b) Mist water over the artwork (covered with kraft paper or towel), place in press, and pull vacuum for 1-5 minutes to rewet the adhesive and allow easy removal.
- c) Moisten an edge of the artwork to dissolve the adhesive, and then gently peel the artwork off the substrate while spraying more water between the artwork and the substrate.
- d) Peel off most of the substrate from the back, then wet the remaining layer and gently separate from the artwork.

Counter mounting: This is recommended to eliminate excessive bowing. To do this, simultaneously mount a similar material (kraft paper, etc) to the rear of the substrate with Seal VacuGlue 300 to equalize the surface tensions.

Spray Mounting

VacuSeal M-H Series presses may also be used to mount artwork using spray adhesives. The following are instructions for use with Seal ProBond™ Spray Mounting Adhesive.

1. Make sure that the Heat Switch is **OFF** and the press is cool.
2. Place the artwork face down on a piece of kraft paper, or on the rack of a spray booth.
3. Shake the can of Seal ProBond Spray adhesive well before using, and turn the spray nozzle so that it points to the mark on the rim of the can.
4. Spray the adhesive uniformly across the back of the artwork, keeping the can a constant 6-8 inches away. Start and finish past the edge of the artwork. A double application of adhesive in a criss-cross pattern is suggested for best results.
5. Invert the can and spray until the nozzle is clear.
6. Wait until the adhesive dries and is repositionable (approx. 2 minutes). Test tackiness by touching a bent knuckle lightly to the adhesive coated print. When pulled away, the knuckle should release with a small "pop" and without adhesive residue.

NOTE: Using the adhesive while still in it's tacky stage (30 seconds to 2 minutes) results in greater bond strength, but care must be taken to ensure that the artwork is correctly positioned.

7. Place the substrate in the press.
8. Position the artwork on the substrate and press lightly into place. A sheet of Release Paper or kraft paper placed on top of the substrate will help keep the press clean.
9. Preset the Timer Control for 2 to 5 minutes (depending upon the size and porosity of the artwork), then close the press and turn the Vacuum Switch **ON**.
10. When the timer sounds, turn the Vacuum Switch **OFF**, open the press and remove the mounted materials.

While the artwork is now adhered to the substrate, the bond is not yet fully set. For maximum protection, allow 8 - 24 hours curing time before subjecting the materials to bending, flexing, or substantial temperature changes.

LAMINATING

The VacuSeal M-H Series presses are engineered to make combined mounting and laminating of artwork easy and consistent through the sophisticated controller system and automated operating principles.

Seal currently offers three different types of laminating films: Print Guard™, Exhibitex® and Seal-Lamin®. Comparative information on each is given at the end of this section. While specific procedures may vary slightly depending upon the materials used and effects desired, the following instructions will provide basic guidelines for the proper use of each of the three films.

NOTE: Be aware that after mounting and laminating a piece of artwork onto a foam center board, that the surface of the finished work will not be protected from denting or other physical damage. Two and four ply card stock boards, Masonite, aluminum and presswood are more dense and less likely to suffer from damage. If desired, mounting and laminating onto foam boards can be accomplished simultaneously (suggested is Print Guard at 200°F for 4 minutes), however the operator should experiment first with their own particular stock of foam board before proceeding.

Mounting and Laminating with Print Guard™

With Print Guard, mounting and laminating of porous paper artwork can be processed quickly and simply in one step. Photographic materials and other non-porous artwork will require some extra precautions to eliminate any chance of air or moisture entrapment.

Print Guard - Mounting and Laminating Porous Paper Artwork:

1. Set Temperature Control at 215°F (using "B" on M-HD presses).
2. Set the Timer Control for approx. 5-7 minutes.
3. Place the proper dry mounting adhesive on the back of the artwork, tack it in place, and trim the adhesive to the size of or slightly larger than the artwork. Position the artwork on the substrate and tack in place.
 - if the artwork lays flat, proceed directly to step 4 for simultaneous mounting and laminating.
 - if the artwork is curled or wrinkled, proceed to mount the artwork and cool the materials before proceeding to step 4.
4. Cut a piece of Print Guard laminating film so that it will completely cover the artwork and adhesive.

5. Apply the film to the artwork, making sure that the dry mounting adhesive is fully covered:

For artwork less than 16" x 20", remove the release liner from the Print Guard film and apply the film to the artwork, adhesive (tacky) side down. Smooth the film in place with a soft cloth.

- For artwork 16" x 20" and larger, peel approx. one inch of the release liner back from the Print Guard film. Position the Print Guard film correctly over the artwork, and secure in place by smoothing the 1" strip of exposed adhesive onto the artwork using a soft cloth. Then peel off the rest of the release liner while smoothing the film onto the surface of the artwork using a soft cloth (the technique is similar to applying contact paper).
6. With a soft cloth, gently rub smooth the surface of the applied film, removing the air and eliminating wrinkles.
 7. Place the substrate, adhesive, artwork and film on top of the bottom sheet of Release Paper in the press. Place a Sponge Foam Overlay (see following note) directly on top of the film and cover the overlay with the two remaining sheets of Release Paper (or a release board).

Laminating with Print Guard (cont'd.)

8. Close the press and turn the Vacuum Switch ON.
9. The timer will sound when the time set on the Timer Control has elapsed. (If more time is desired, reset the appropriate time on the Timer Control, rock the Vacuum Switch OFF, and then after 10 seconds back ON.)
10. Turn the Vacuum Switch OFF and open the press.
11. Remove the finished materials from the press and allow to cool.

Print Guard - Mounting and Laminating Photographs.

Photographs and other non-porous artwork normally have a tendency to trap air and moisture between the face of the print and the laminating film, causing bubbles or "silvered" areas.

This problem is eliminated with Print Guard laminating films by perforating the film prior to use. The perforations allow the air and moisture to escape, then seal and disappear for a perfect lamination every time.

For foolproof operation, start out with the press at a low initial temperature (180°F) so the perforations stay open. Select the bonding temperature (215°F) a short time after turning on the Vacuum Switch (M-HD Series presses use "A" for the initial and "B" for the

bonding temperatures). Because the perforations will not seal until the bonding temperature is reached, this procedure allows them to stay open during the initial stages of processing when pressure is being applied so that all entrapped air and moisture may escape.

Follow the directions just given for Porous Paper Artwork, making the following changes/additions:

1. Set Temperature Control at 180°F (use "A" on M-HD presses).
2. Set the Timer Control at approx. 8-11 minutes.
4. After cutting the laminating film to size, lay it (release side down) onto a scrap piece of mount board and roll a Seal Perforator lightly over the film to randomly perforate it. The resulting perforations should be 1/8" to 1/4" apart.
8. A short time (1 - 3 minutes, depending upon the size of the artwork) after turning the Vacuum Switch ON, set the temperature at 215°F (use "B" on M-HD presses). The press must reach 215°F and hold it for 2-4 minutes before turning the Vacuum Switch OFF and opening the press.

NOTE: A 1/8" to 1/2" thick soft Sponge Foam Overlay is needed to let air and moisture to escape. As this will also impart a slight texture to the surface of the Print Guard film, care must be taken to locate suitable material. A Seal Sponge Foam Overlay specially suited for this use is readily available.

Mounting, Laminating and Texturing with Exhibitex^R

With Exhibitex, all porous paper artwork can be given a textured matte or gloss finish in one step. Photographic materials must be given a matte finish first, which can be changed to a gloss finish in a subsequent second procedure.

Exhibitex - Matte Finish

1. Set Temperature Control at 180°F ("A" on M-HD presses).
2. Set the Timer Control at approx. 8-12 minutes.
3. Place the dry mounting adhesive on the substrate, and the artwork on the adhesive (remember to use Fusion 4000 Plus if mounting onto canvas).
4. Place a sheet of LaminTexTM Film over the artwork, cut slightly larger than the artwork.
5. Place a sheet of Matte Release Film over the LaminTex Film. The Matte Release Film should be large enough to completely cover the LaminTex Film and the adhesive.
6. Place the texturing medium over the Matte Release Film. If a canvas texture is desired, use canvas as the texturing medium, if a linen texture is desired use linen, etc.
7. Place a Seal Sponge Foam Overlay over the texturing medium. This is recommended to ensure full contact between the texturing medium, Matte Release Film, and LaminTex Film.

8. Place the assembled materials in the press on top of the bottom sheet of Release Paper, cover with the remaining two sheets (or release board), close the press and turn the Vacuum Switch ON.
9. Set the Temperature Control at 215°F ("B" on M-HD presses).
10. Allow enough time for the press to heat the assembly to that temperature and hold it for two to four minutes.
11. Turn the Vacuum Switch OFF.
12. Open the press and remove the assembly. Allow the materials to cool before removing and discarding the Matte Release Film. The foam and texture materials may be stored for future use (inspect for lines, wrinkles).

Exhibitex - Gloss Finish

As previously mentioned, porous paper artwork can be given a gloss finish satisfactorily in one step, by substituting Gloss Release Film for Matte Release Film in Step 5 of the preceding instructions.

Photographs and other non-porous artwork require a two step procedure. First bond the LaminTex Film to the artwork using the Matte Finish instructions above, then give it a gloss finish in a second step. Full instructions are described below:

- Step A.** Using the Matte Finish instructions, perform steps 1 through 5, and 7 through 12, skipping step 6 (leave out texturing medium).
- Step B.** Perform steps 5 through 12, substituting Gloss Release Film for Matte Release Film.

Laminating with Seal-Lamin^R

Seal-Lamin can be used as a protective covering for either one or both sides of unmounted artwork, or to protect paper artwork that is mounted. Seal-Lamin is not intended or recommended for use on any photographic or non-porous materials.

Seal-Lamin - Mounting and Laminating

1. Set Temperature Control at 180°F (use "A" on M-HD presses) and allow the press to warm up.
2. Set the Timer Control at approx. 7-12 minutes.
3. Place the substrate on the bottom sheet of Release Paper, the dry mounting adhesive over the substrate, and the artwork over the adhesive. The adhesive should not extend more than 1/4" past the edges of the artwork.
4. Cut the Seal-Lamin film so that it will completely cover the artwork and adhesive, and place the film adhesive (dull) side down over the artwork, making sure it extends no more than 1/2" past the artwork and adhesive.
5. Cover the assembled materials with the two remaining sheets of Release Paper (or release board).
6. Close the press and turn the Vacuum Switch ON.
7. Set Temperature Control ("B" on M-HD presses) at the bonding temperature (see Recommended Time and Temperature Settings).

8. After the platen has reached the bonding temperature and remained at that temperature for two minutes, turn the Vacuum Switch OFF. Open the press, and allow the materials to cool to a temperature low enough to allow their safe removal from the press.
9. Set Temperature Control back to 185°F ("A" on M-HD presses) and allow the platen temperature to cool to that temperature before starting the next job in the press.

Seal-Lamin - Single Side Laminations (without mounting)

Follow the instructions for mounting and laminating (preceding section) making the following change:

3. Place a Protective Board under the bottom sheet of Release Paper in the press, and place the artwork face up on top of the Release Paper.

Remove the Protective Board from the press when the process is completed.

Seal-Lamin - Double Side Laminating

For a double-side lamination using Seal-Lamin films it is recommended to laminate each side in separate operations to prevent premature sealing of the film at the edges causing air entrapment.

Follow the directions from the preceding section on single side laminating, and then trim the excess laminate to within 1/8" of the edge of the artwork. To laminate the second side place the already laminated artwork face down and repeat steps 4 through 9.

Laminating Materials Information

Print Guard: a vinyl based laminating film that can be used to protect both photographs and paper artwork. Print Guard comes in Luster, Matte, Canvas and Linen finishes in a variety of roll sizes. The surface is extremely durable and eliminates the need for glass.

Print Guard Luster provides a highlighting, sparkling finish that's still glare-free. Perfect for dramatic posters, graphics and brightly colored prints.

Print Guard Matte is a softer, completely non-reflective film. Use it for warmer prints, or in extremely brightly lit displays.

Print Guard Canvas recreates the rich feel and texture of artists canvas. It adds authenticity and surface interest to portraits, landscapes and reproductions.

Print Guard Linen adds the dimension of a light linen texture with a softer appearance for fine art reproductions and photographs.

Exhibitex: a unique laminating process that both protects and enhances artwork with any choice of surface textures and finishes.

Any artwork - paper or photograph - can be given either a gloss or matte finish, and textured for a canvas, linen, pebble or any other look. Should the texture or

finish need to be changed, all work can be reprocessed easily and quickly. Just choose the right materials for the new look and reprocess in the press.

Many users choose to "canvas mount" using Exhibitex. Artwork can be mounted onto canvas (using Fusion 4000 Plus) and in the same step laminated and textured with a canvas surface. The result looks and feels like canvas - but is protected from dirt, scratches, moisture and ultraviolet degradation.

The technique is simple, and the options are endless. Experiment with a number of combinations of finishes and textures, and display finished samples. Exhibitex is an excellent vehicle to gaining additional sales and profits.

Seal-Lamin: a clear polyester laminating film used to protect porous paper artwork. Seal-Lamin can be written on and wiped off. Mounting and laminating can be done at one time, or the artwork can be laminated on one or both sides without mounting.

Seal-Lamin is available in either a high gloss or non-reflective matte finish in a variety of widths and thicknesses. The thicker materials (5, 10, 15 mil) provide rigidity as well as protection.

Seal-Lamin has been developed for use on paper prints, blueprints, maps, charts, menus and other porous materials and is not intended or recommended for use on non-porous materials such as photographs, coated posters, etc.

Sample Time and Temperature Settings

The following settings are suggested as reference points when processing materials under normal conditions. Depending on the thickness and size of substrates, the amount of moisture present, the actual line voltage and other local conditions, the settings may differ slightly. Refer to the specific instructions provided with the adhesive or laminate being used, the guidelines in this Owners Manual, and your own personal experience for best results.

		<u>Mounting</u>		
		<u>Temperature</u>		<u>Time</u>
<u>Substrate</u>	<u>Artwork</u>	<u>Initial "A"</u>	<u>Bonding "B"</u>	
Single or Double Wt. Mount Bd.	ColorMount	-	190°F	4-6 min.
	ArchivalMount	-	175°F	4-6 min.
	Fusion 4000 Plus	-	175°F	4-6 min.
	Fotoflat	-	165°F	4-6 min.
	MTS	-	190°F	4-6 min.
1/4" Foam Center Boards	ColorMount	-	190°F	3-5 min.
	ArchivalMount	-	175°F	3-5 min.
	Fusion 4000 Plus	-	175°F	3-5 min.
	Fotoflat	-	165°F	3-5 min.
	MTS	-	190°F	3-5 min.
1/8" to 1/4" Masonite	ColorMount	-	190°F	6-9 min.
	ArchivalMount	-	175°F	6-9 min.
	Fusion 4000 Plus	-	175°F	6-9 min.
	Fotoflat	-	165°F	6-9 min.
	MTS	-	190°F	6-9 min.
1/8" Flexiglas	ColorMount	165°F	190°F	6 min.
1/16" Aluminum	ColorMount	165°F	190°F	9 min.
Canvas	Fusion 4000 Plus	-	175°F	4-6 min.
Any	ProBond Spray	-	-	2-5 min.
Any	VacuGlue 300	-	-	2-5 min.
None	Chartex	-	165°F	3-5 min.

**Mounting and Laminating
PRINT GUARD**

Substrate	Artwork	Temperature		Time
		Initial "A"	Bonding "B"	
Single or Double Wt. Mount Bd.	Porous Papers	-	215°F	4-7 min.*
	Photographs	180°F	215°F	6-11 min.*
1/8" to 1/4"	Porous Papers	-	215°F	6-10 min.
Masonite	Photographs	180°F	215°F	8-14 min.*

**Mounting, Laminating and Texturing
EXHIBITEX**

Substrate	Artwork	Temperature		Time
		Initial "A"	Bonding "B"	
Single or Double Wt. Mount Bd.	Any	180°F	215°F	8-11 min.*
1/8" to 1/4" Masonite	Any	180°F	215°F	12-15 min.*
Canvas	Any	180°F	215°F	6-10 min.*

**Laminating
SEAL-LAMIN**

Substrate	Artwork	Temperature		Time
		Initial "A"	Bonding "B"	
15 mil	Porous Paper	180°F	240°F	7-10 min.*
2, 5, 10, and 15 mil	Porous Paper	180°F	230°F	6-10 min.*

* Time should be allowed for the press temperature to rise from the initial low to the bonding temperature and maintain it for 1 - 4 minutes (dwell time). With the press at the low temperature, turn the Vacuum Switch ON, select the bonding temperature and wait for

the Heater Light to go out. At that time set one to four minutes on Timer Control and rock the Vacuum Switch OFF, then in 10 seconds back ON. When the press signals the process will be complete. Note the complete cycle time for future reference.

OWNER ADJUSTMENT PROCEDURES

Proper leveling of the press, and correct adjustment of the hinges, is necessary to achieve a proper vacuum level.

To take advantage of the advanced "no latch" design of the VacuSeal press, check the following owner adjustment procedures if any difficulty arises.

Pump, fittings: To check attachment of the vacuum pump and tubing, open the press and fold the vent cloth forward exposing the vacuum manifolds (2). Place a small piece of thin rubber or similar material (ie. inner tube, heavy shrink wrap or plastic film approx. 6"x6") over each vacuum manifold. Turn the Vacuum Switch **ON** and observe the reading on the Vacuum Indicator. If the press does not register a good vacuum, check the vacuum line fittings for leaks, then have the pump repaired or replaced. If the vacuum level is correct, then the pump, lines, and fittings are all fine. After completing these checks, turn the Vacuum Switch **OFF**, remove the pieces of thin rubber from both manifolds and reposition the vent cloth.

Leveling: If the press is not placed on a sturdy flat level surface then proper operation cannot be guaranteed. Ensure press levelness using the following procedure:

1. Screw all feet fully into the base (disregard if the appropriate FloorStand is being used).
2. Open the press and place a 2' carpenters level inside.
3. Shim the table (or FloorStand) legs so that the inside of the press is level (both front-to-back and side-to-side).
4. If not on a FloorStand, minor adjustment of corner feet can also be made to facilitate press leveling.

Hinge Adjustment: After leveling the press, check the adjustment of the two press hinges. These may have changed during shipment, handling or rigorous use and are essential to proper alignment of the top to the base. To realign follow these instructions:

1. Open the press and remove the safety clip on the lower end of each gas spring. With an assistant holding the press in the fully opened position, unsnap each gas spring from its lower ball stud and then close the press.
2. With a 1/4" Allen wrench, loosen the three bolts securing each hinge pin plate one turn. The hinge pin plates (2) are located on the rear frame of the press at each corner.
3. Turn the Vacuum Switch **ON** and allow the press to reach vacuum (pressing down on the top of the press if necessary).
4. When full vacuum is achieved, retighten each hinge bolt (6), then turn the Vacuum Switch **OFF**, open the press and reattach the gas springs and safety clips.

Foam Support: To check the foam support (after following Owner Adjustment Procedures), slowly close the press and watch the platen contacting the rubber diaphragm. Identify any areas of no contact visually, or by trying to insert a thin piece of paper between the platen and rubber. Repair the effected area, if possible by using a foam shim under the foam support, or install a new replacement diaphragm assembly as needed.

**If any further questions arise,
contact an authorized Seal dealer,
or the Seal Technical Service Department.**

PERIODIC MAINTENANCE

The VacuSeal M-HS Series vacuum press has been specifically engineered to require a minimum level of maintenance. The following guidelines were designed to keep the press in prime operating condition throughout its lifetime.

1. **Clean the platen** regularly. UnSeal adhesive releasing solvent or Seal Platen Cleaner can be used to dissolve and remove difficult deposits as needed.
2. **Check the vent cloth** regularly for proper positioning and cleanliness. Ensure both vacuum manifolds are fully covered and clean or replace the vent cloth as necessary when soiled.
3. **Check the vacuum manifolds** occasionally for blockages. Make sure that obstructions, paper and debris are removed.
4. **Check the rubber diaphragm** occasionally for abrasions, cuts, slices and cleanliness. Repair or clean as necessary.
5. **Check the foam support** occasionally for tears, depressions, hard or soft spots, and cleanliness. Repair or clean as necessary.
6. **Check the overall press** occasionally for levelness, loose screws, or damaged components. Adjust, tighten or fix as necessary.
7. **Check the vacuum pump** occasionally for cleanliness, dryness and any strange or unusual noises. The vacuum pump requires no specific maintenance, however keeping the pump clean and dry will result in a longer life.

TROUBLESHOOTING GUIDE

<u>SYMPTOM</u>	<u>PROBABLE CAUSE</u>	<u>ACTION</u>
No Vacuum	<ul style="list-style-type: none"> * Pump, fittings * Levelness * Hinge Adjustment * Foam Support 	<ul style="list-style-type: none"> * Owner Adj. Proc. (pg. 10) * Owner Adj. Proc. (pg. 10) * Owner Adj. Proc. (pg. 11) * Owner Adj. Proc. (pg. 11)
Low Vacuum	<ul style="list-style-type: none"> * Materials extending across rubber edges * Vent Cloth * Leak in diaphragm 	<ul style="list-style-type: none"> * Reposition materials placed in press * Check position, clean or replace * Locate and patch, or replace diaphragm
No Heat	<ul style="list-style-type: none"> * Not plugged in * Power supply off * Power Breaker off * Heat Switch off * Controller malfunction 	<ul style="list-style-type: none"> * Check power cord * Check circuit breaker (in building) * Check position * Check position * Contact Seal Technical Service department
Uncontrolled Heat	<ul style="list-style-type: none"> * Controller malfunction 	<ul style="list-style-type: none"> * Contact Seal Technical Service Department
Bumps, pits	<ul style="list-style-type: none"> * Cleanliness 	<ul style="list-style-type: none"> * Clean platen
Bubbles, non-adhesion	<ul style="list-style-type: none"> * Uneven adhesive coverage * Light adhesive coating * Improper adhesive * Inadequate time * Low/uneven pressure * Low/high temperature * High moisture level 	<ul style="list-style-type: none"> * Remove and reapply * Remove and reapply * Check specifications * Reprocess longer * See Low Vacuum (above) * Check specifications * Reprocess longer

REPLACEMENT PARTS

	<u>VacuSeal</u> <u>3846M-H</u>	<u>VacuSeal</u> <u>4366M-H</u>
1 Replacement Platen Assembly		
2 Gas Spring Stud	101385	101385
3 Gas Spring Clip	101886	101886
4 Gas Spring		
5 Acorn Nut 5/16"-18	1610026	1610026
8 AC Inlet	1202048	1202048
9 Feet	1108010	1108010
10 Corner Bracket	5611152	5611152
Not Illustrated:		
Vent Cloth (not shown)	5214004	5214003
Replacement Diaphragm Assembly	6301023	6301020
Pump Assembly (115VAC 60Hz)	6299103	6209015 KIT
Pump Assembly (230VAC 60Hz)	6209014 KIT	6206014 KIT
Pump Assembly (100VAC 50/60Hz)	6209016	6209016

The information contained herein is based upon our research and believed to be accurate, but the accuracy and completeness of our recommendations is not guaranteed. The user shall determine the suitability of the product for their intended use, before using the product, and the user assumes all risk and liability whatsoever in connection with the use of the product. Neither seller nor manufacturer shall be liable for any injury, loss or damage, direct or consequential, arising out of the use of or liability to use the product. The following is made in lieu of all warranties, express or implied: Seller's and manufacturer's only obligation shall be to replace or credit such quantity of the product proved to be defective.

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