

A Tool for Pressure Sensitive Tape Removal: The AirPencil

The Zephyrtronics™ AirPencil ZT-2 is an invaluable tool for removing pressure sensitive tapes mechanically. The presence of non-archival pressure sensitive tapes on paper supports raises red flags for conservators and archivists. The damaging effects of non-archival pressure sensitive tapes on cellulose have been well studied and discussed in the conservation literature so I will not rehash those findings here.

Removal of pressure sensitive tapes can sometimes be a difficult affair. Solvents and mechanical methods are employed to remove the carrier and reduce the adhesive. The type of technique used is determined by several factors, which include the condition of the pressure sensitive adhesive in addition to the potential hazards related to the support and inks. If, the adhesive is still soft and pliable, and there is no risk of damaging the object, then a mechanical technique is often preferred. The technique keeps adhesive from spreading and contaminating other parts of the object. It also greatly reduces the risk of moving soluble inks.

Mechanical methods of removing pressure sensitive tapes usually involve the use of heat to swell the adhesive and allow the carrier to be pulled away. Heretofore, hot air guns such as hair dryers have been employed to for this purpose. Hot tacking iron tools have been used as well. Solvent vapor chambers are used in addition to Gore-Tex and solvent vapor systems. Pliable adhesive residue can be reduced mechanically with a crepe rubber block.

These techniques work well, but there is another tool that can be added to the arsenal of fighting pressure sensitive tapes. The AirPencil is an effective tool for removing pressure sensitive tapes, which are still soft and pliable. It provides a non-contact method of applying heat to swell the adhesive and remove the carrier with much of the adhesive. The AirPencil was originally designed for soldering, and removing heat-sensitive semi-conductors and ceramic chips found on computer boards. I saw the AirPencil one day in a technical tool catalog and decided to try it out for pressure sensitive tape removal purposes. The

unit features a closed loop electronic variable (adjustable) temperature control system. And, not only can the air temperature be controlled, but also the air flow from the “pencil,” which is a long hollow metal and heat resistant ceramic tube. Several very small stainless steel air tips, which are only a few millimeters in diameter, are used on the end of the tube. The air tips provide pin point accuracy as a very fine stream of heated air is directed to any location on the tape carrier.

The tool is completely portable and is easy to use. One simply turns on the unit, and then sets the heat and air flow. I have found that the heat control knob should be set at the absolute lowest level and the air flow control should be set at the highest level for the best performance and safety. A few minutes are needed for the unit to reach the desired operating temperature. The “pencil” is removed from its cradle on the unit and the tip held a few inches away from the pressure sensitive tape. A stream of heated air should be directed at the spot where the adhesive interfaces with the support. The carrier is lifted and pulled back at an acute angle with a pair of fine tweezers as the adhesive becomes soft. Board and light weight should be placed on either side of tape carrier to prevent the support from moving as the tape carrier is lifted. Crepe is used to lift mechanically any adhesive residue left behind after removing the carrier from the object. One should test operating procedures on a blank sheet of paper with tape before working with an actual object. This will give the user a good idea about the overall working characteristics of the unit.

The advantage of the system is that there is a continuous flow of heated air over the adhesive to swell it and thereby avoids the cooling off period of the adhesive, which happens with heated tacking irons that must be moved out of the way to lift the carrier. The adhesive may cool enough to cause resistance and thus potential damage to the support by skinning the surface if the carrier is not lifted carefully. Hot hair dryers sometimes have too big and wide of an air flow, and the temperature cannot be

control as well as the AirPencil. In such instances, large areas of a support could cockle and distort from the exposure to hot air.

One may consider using the AirPencil for other purposes such as heating locally applied enzyme poultices or ammoniated methyl cellulose poultices. There may be other uses for the AirPencil that have yet to be explored. The AirPencil is a great tool and should be seriously considered as an addition to one's conservation laboratory.

It should be noted that a very similar unit is sold in the United Kingdom by Willard Development, which I have not used. It is called the Hot Air Pen. It appears that the Hot Air Pen has the same air flow and temperature setting control features as the AirPencil according to Willard's literature. And, it also uses very small nozzles that provide pinpoint accuracy.

AirPencil: Manufacturer/Supplier

Manufacturer:
Zephyrtronics™
207 North Palomares
Pomona, CA 91767
909 865-2595

Supplier:
Techni-Tool
5 Apollo Road
PO Box 368
Plymouth Meeting, PA
19462-0368
1 800 832-4866
Cost: \$749.45

Air tips are an additional \$15.95 to \$19.95 each.

Hot Air Pen: Manufacturer/Supplier

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