



September 24, 2002

Mr. Joe Smith  
ABC Company  
7990 Auburn Rd.  
Concord Township, OH 44077



Subject: PadPak<sup>®</sup> Package Designs for Multi-function Fax/Copy/Scan Computer Units

Dear Mr. Smith:

We designed PadPak<sup>®</sup> packages for two multi-function fax/copy/scan computer units provided by your company. In addition, we also conducted drop & vibration tests on these PadPak<sup>®</sup> designs and your current package designs in accordance with ISTA Integrity Test Procedure #1G for packaged products weighing less than 150 pounds. Following are detailed descriptions of our PadPak<sup>®</sup> designs, test procedures and results.

**PadPak<sup>®</sup> Package Design for Multi-function Fax/Copy/Scan Computer Unit:**

1. We used an RSC – 200 lb. test, double wall corrugated box with inside dimensions of 21-1/2" x 18-1/2" x 16".
2. Produced a 96 inch pad. Formed the pad into a coil and placed it into the bottom of the box as shown.



- Placed the multi-function unit on top of the coiled pad and pushed downward to nest it into the coil as shown.



- Produced two (2) – 72 inch pads. Folded each one to create pads with four (4) thicknesses.



- Bent each folded pad to form an “L” shape and placed them around the front corners of the unit as shown.



6. Produced a 72 inch pad. Folded it to form a pad with four thicknesses. Placed the pad between the box and the rear of the unit as shown.



7. Produced a 96 inch pad. Coiled the pad and placed it over the top of the copy/scan unit as shown.



8. Closed the flaps and sealed the box with pressure sensitive tape.
9. Total PadPak<sup>®</sup> used in this package design was **34 linear feet**.

**PadPak<sup>®</sup> Package Design for Second Multi-function Fax/Copy/Scan Computer Unit:**

1. We used an RSC – 200 lb. test, double wall corrugated box with inside dimensions of 22" x 17" x 13".

2. Produced a 72 inch pad. Coiled the pad and placed it into the bottom of the box as shown.



3. Placed the unit on top of the coiled pad and pushed downward to nest it into the coil as shown.



4. Produced two (2) – 96 inch pads. Folded each one to create pads with five (5) thicknesses.



5. Bent each folded pad to form an “L” shape and placed them around the front corners of the unit as shown.



6. Produced a 72 inch pad. Folded it to form a pad with five thicknesses. Placed the folded pad between the box and the rear of the unit as shown.



7. Produced a 72 inch pad. Coiled the pad and placed it over the top of the fax/copy/scan unit as shown.



8. Closed the flaps and sealed the box with pressure sensitive tape.
9. Total PadPak<sup>®</sup> used in this package design was **34 linear feet.**

### **ISTA Test Procedures:**

We conducted the package performance tests in accordance with ISTA Integrity Test Procedure #1G. For the vibration portion of the test, the packages were subjected to 60 minutes of random vibration. The test was conducted as follows: 30 minutes of random vibration input with the package in its bottom down orientation, 10 minutes in the top down position, and 10 minutes on both one side and one end. After the completion of the 60 minute test, the packages were drop tested.

The drop test procedure consisted of subjecting the packages to one corner drop, three edge drops and six flat drops (one on each face) for a total of 10 drops. The packaged weight of the first unit was 21.5 pounds and the weight of the second unit was 18.4 pounds. Therefore, the packages were dropped from 24 inches and 30 inches respectively. After completion of the tenth and final drop on each package, the units were unpacked and inspected for damage. I am happy to report that no damage of any type was noticed on either of the units. Therefore, these PadPak<sup>®</sup> package designs successfully passed this ISTA Test Procedure.

In addition to testing our PadPak<sup>®</sup> package designs, we tested these units in your current package designs. The vibration test procedure was the same for these units, but the drop height for both of your current packages was 30 inches due to the fact that both boxes weighed less than 21 pounds. After the completion of the test, the units were unpacked and inspected for damage. No damage was noticed on either unit, so your current package designs also passed the ISTA Test Procedure.

### **Summary & Comments:**

The PadPak<sup>®</sup> material used in these package designs was 3 ply - 30/50/30. This material has excellent cushioning properties and would make a great packaging material for your computer equipment.

We would like to note that we decreased the size of the boxes used for both of these units. We decided to go with two different box sizes – one for small printers/fax machines and one for large printers/copiers. By reducing the box sizes you will be able to use less PadPak<sup>®</sup> material which will lower the cost of packing these units.

It is also my understanding that you ship out most of your packages by next day air. All packages that are shipped by air will be subjected to the dimensional weight rule. Dimensional weight takes into account the actual size of the package for calculating the shipping weight. The two smaller boxes that we are recommending for these units will also significantly lower your shipping costs. For example, your current packages for these two units would air ship at 43 pounds each. Our recommended smaller boxes would air ship at 39 pounds (first unit) and 33 pounds (second unit). These smaller boxes would reduce your air shipment costs by 14 pounds.

The multi-function computer units were packaged in the PadPak<sup>®</sup> designs described above and will be shipped back to you on September 24<sup>th</sup> via UPS Ground.

Thank you for the opportunity to work on this project. If you have any questions regarding these PadPak<sup>®</sup> package designs, please do not hesitate to contact me. I can be reached at (800) 726-7257 ext. 8124 or by e-mail at [sbaiers@ranpak.com](mailto:sbaiers@ranpak.com).

Sincerely,

A handwritten signature in black ink that reads "Shawn M. Baiers". The signature is written in a cursive style with a prominent initial 'S' and a long, sweeping underline.

Shawn M. Baiers, CPP  
Packaging Engineer