

Drying of Work & Turn Aqueous Coating

When printing a job that is going to run two-sided with aqueous coating there are many precautions that must be taken to be successful without picking or sticking.

The most critical part of successful work & turn coating jobs is the use of specially formulated aqueous coatings to have extremely fast dry speed and a block resistance rating of at least 140°F / 2psi / 24 hours (coating to coating) as long as the ink is dry.

Aqueous coatings are thermoplastic in nature meaning that under heat and pressure, they will re-soften. It is important to keep the pile temperature of the coated sheet within the guidelines of the coating manufacturer's recommendation. Overheating the sheets on the second side of a print job will cause sticking, picking, or blocking of coating on a two-sided job.

• **Infra-red (I.R.)** is used on a press to heat up the sheet and ink, thus driving off the solvents and oils in the ink to make the ink dry. The infra-red should be used to control the pile temperatures.

Do not use the hot air knives to control the pile temperature.

- **Air Knives** – Many new presses are equipped with hot air knives. These air knives can be turned up or down regulating not only the volume of air, but also the temperature being applied to the sheet. Air knives should be set at 100% all the time, but the temperature should be set to ambient only.
- **Air Evacuation** – Should always be set at 100% and the dampener should always be opened all the way to evacuate as much moist hot air out and away from the press delivery as possible. This helps ensure that constant movement of air is kept in the delivery giving optimum drying of the sheets.
- **Extended Delivery** – If a press is equipped with a delivery of over ten feet it can be considered extended delivery. Extended delivery provides much better drying of the ink and coating due to longer dwell time under the infra-red and air knives.



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Steps to Successful Work & Turn Jobs

First Pass Printing and Coating

- Use a work & turn coating recommended and supplied by your Nova representative.
- Always mix drum thoroughly and check viscosity and temperature before running any coating. Use of a coating with too high or too low viscosity could cause picking or sticking (refer to recommended viscosity on technical data sheet).
- Set air knives at 100% volume to maximize air flow over the sheet and to extract as much saturated air as possible enabling the coating to dry quickly and sufficiently.
- Infra-Red should be set so that pile temperature is at 95-100°F.

Second Pass Printing and Coating

- Wait as long as possible before starting to print and coat the second side. Ink can take as long as 80 hours to dry depending on the ink density, substrate holdout and atmospheric conditions such as very humid weather.
- Infra-red should be turned down so that the second pass pile temperature does not exceed 90°F. This is necessary to prevent re-softening of the coating on the first side of the sheet.
- Set air knives at 100% volume to maximize airflow. Don't lower from first side. It is very critical on the second side to evacuate as much saturated air as possible.
- The use of larger micron spray powder (30 micron or larger) is recommended for two-sided jobs.