

AIR LINE HUMIDITY

What is it?

The automotive refinish industry for years recognized the effect humidity has on refinish products that utilize isocyanates as a method for cross linking and curing. These polyurethane finishes have often shown both positive and negative results because of humidity in the surrounding air. For generations the refinish industry has used water traps on air lines to stop water in liquid form from damaging paint finishes. Today the negative effect air line moisture has in any form, liquid or vapor, must be recognized.

What is its effect?

If excessive amounts of humidity are injected into polyurethanes during the spraying process, it can cause drying and curing inconsistencies. This effect can cause finishes to dry erratically and trap solvents in the film. This causes die-back, excessive film softness, or finish "pinching".

What is the limit?

Studies have shown air line humidity below 14% provide additional forgiveness in the application process. When air line humidity exceed 14%, finishes may suffer both short term and long term.

How to prevent it?

The prevention of excessive air line humidity can be corrected by replacing old traditional type water traps with three stage desiccant drying systems, refrigerated systems or a combination of both.

How to test air lines for excessive humidity.

There are a number of ways to test air lines for excessive amounts of humidity. The most effective and accurate way is the use of a digital hydrometer with a wand. This instrument is available through ProMotor Car[®]. A less version, though not as accurate, is a digital thermometer/hydrometer by Radio Shack[®]. The ProMotor Car[®] hydrometer is extremely accurate, while the Radio Shack[®] will be accurate in this application plus or minus 5% relative humidity. (See diagram)

