

wifag-polytype group – brilliance on top

The science of coating

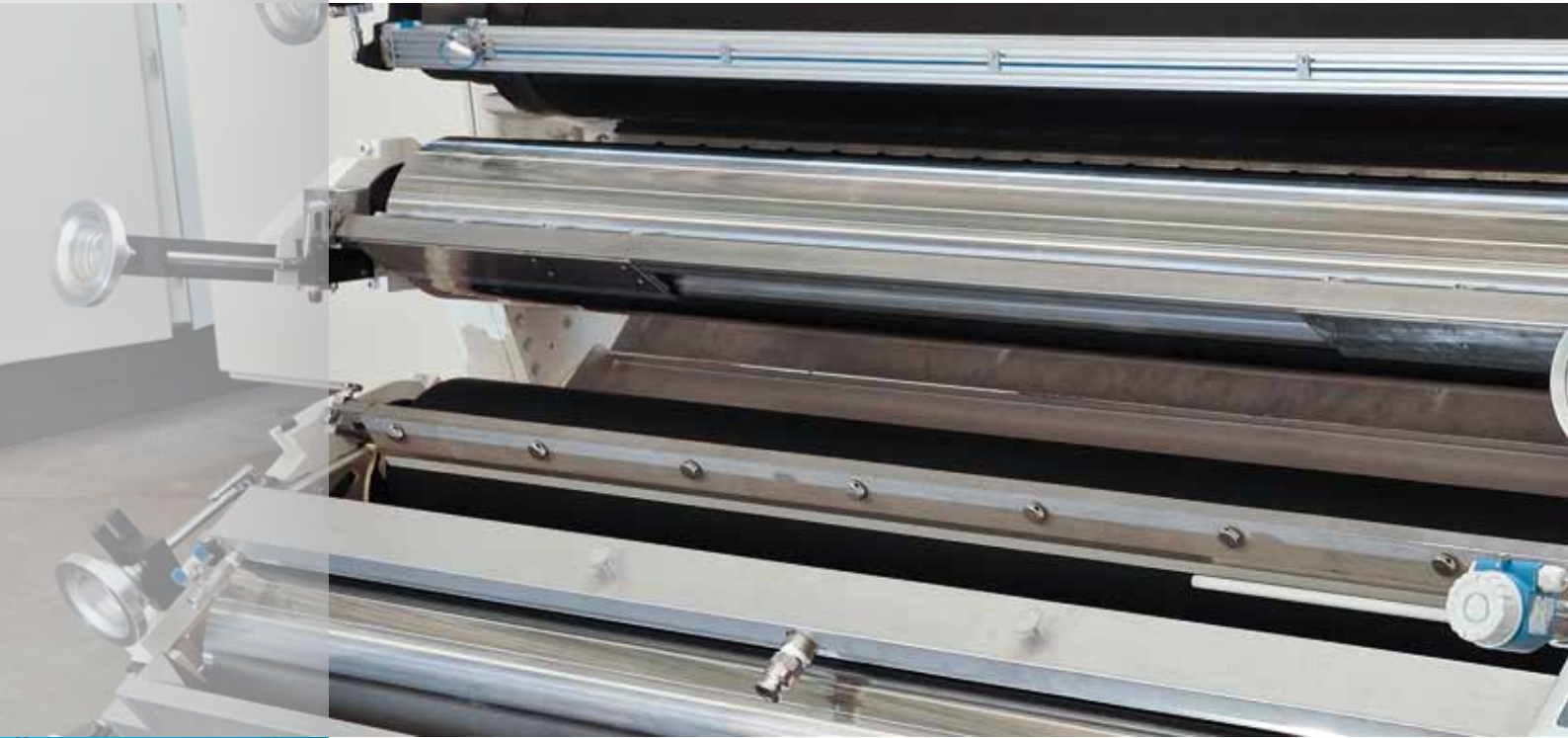


Coating methods for films, papers
and other flexible materials

//polytype

Competence and precision

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We are a global supplier of coating technology and coating equipment for the surface finishing of all kinds of flexible substrates.

Our activities are geared first and foremost towards our customers and their products.

As a leading technology provider in our segment, we develop holistic solutions that meet the requirements of our customers for product quality, productivity and optimized product costs.

Polytype Converting AG is part of the wifag//polytype Group, allowing us to benefit from a broad technology base.

- // Modular systems
- // In-house design and production
- // Minimum tolerances
- // Maximum reliability
- // Swiss quality
- // Sustainable investments



Application systems are at the very heart of any coating line. That's why //polytype uses state-of-the-art design methods and applies minimum tolerances during production. Each and every //polytype coating unit benefits from over 40 years of systems engineering know-how.

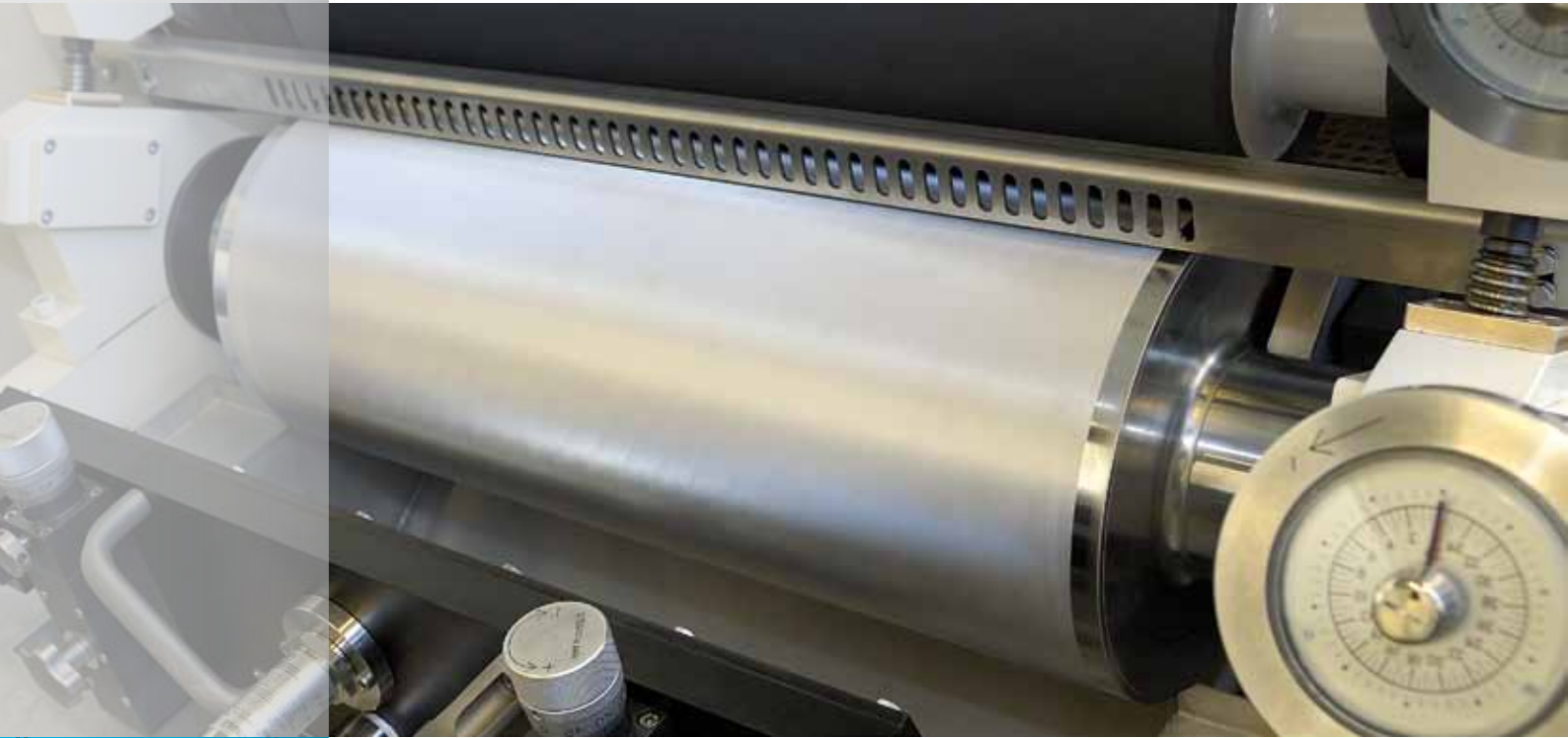
The units are used to coat all materials in web form:

- // Coating widths of a few millimeters to several meters
- // Coating weights of 0.1 g/m² to 500 g/m²
- // Coating media with a wide range of viscosities and different solvents
- // Coating speeds of 0.1 m/min to 1,525 m/min

The coating units' modular design enables rolls and sleeves to be changed in no time at all. Interchangeable trolleys enable individual units to be preset outside the machine, which means that trolleys can be changed with virtually no machine downtime. Coating accuracies and qualities comply with the narrowest tolerances in all areas of application.

Gravure roll systems

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Gravure roll systems are the workhorses of coating processes. Combining a simple structure with versatility, they cover a wide range of coating applications and enable customized coating unit design.

Gravure roll systems are best suited to coating films and foils with water/solvent-based lacquers.

The layer thicknesses that can be achieved depend on the gravure pattern, the direction of roll rotation and lacquer properties. Rolls with a ceramic coating extend the production time several times over. //polytype offers special gravure patterns that can be tested under production conditions at the Technology Center.

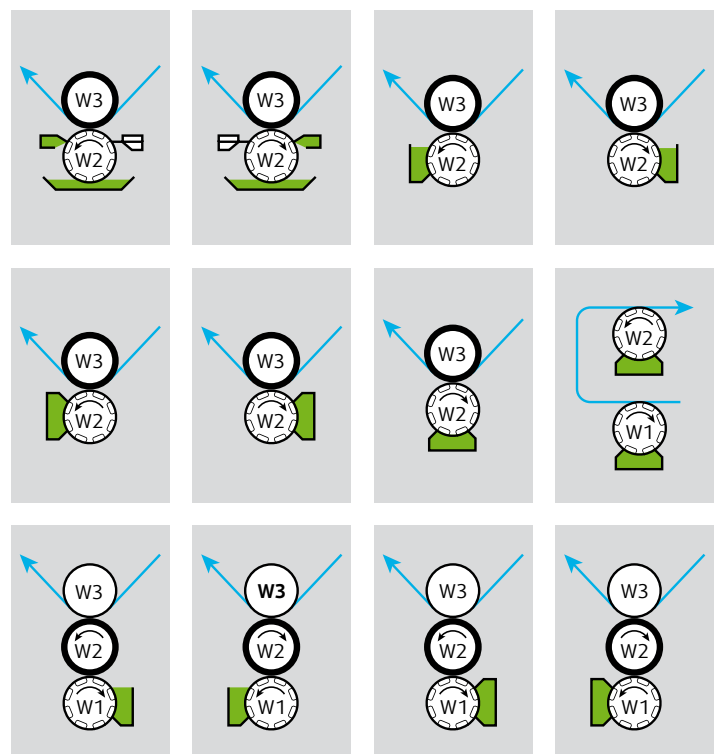
- // High surface quality
- // Wide range of coating weights
- // Excellent reproducibility of coating weight
- // Low to high production speeds
- // Coating media with or without solvents possible



Typical coating data:

- // Wet coating thicknesses of 0.1 to 50 g/m²
- // Viscosity up to 400 mPas
- // Coating tolerance of 1 to 5%
- // Coating speeds up to 1,000 m/min

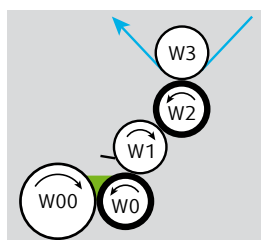
The basic configurations available include various doctor blade and feeding systems, which can be installed at various positions on the gravure roll.



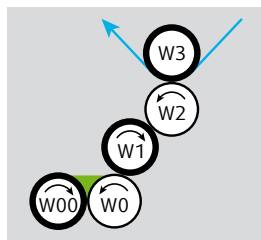
Smooth roll systems with nip metering

Smooth roll systems with nip metering are universal coating systems. Their specific roll arrangement with various feed systems makes them both the all-rounders and specialists of coating units.

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Different roll arrangements and material combinations make them suitable for all areas of application – whether for lacquering, gluing, functional coatings, hotmelt applications or remoistening paper.

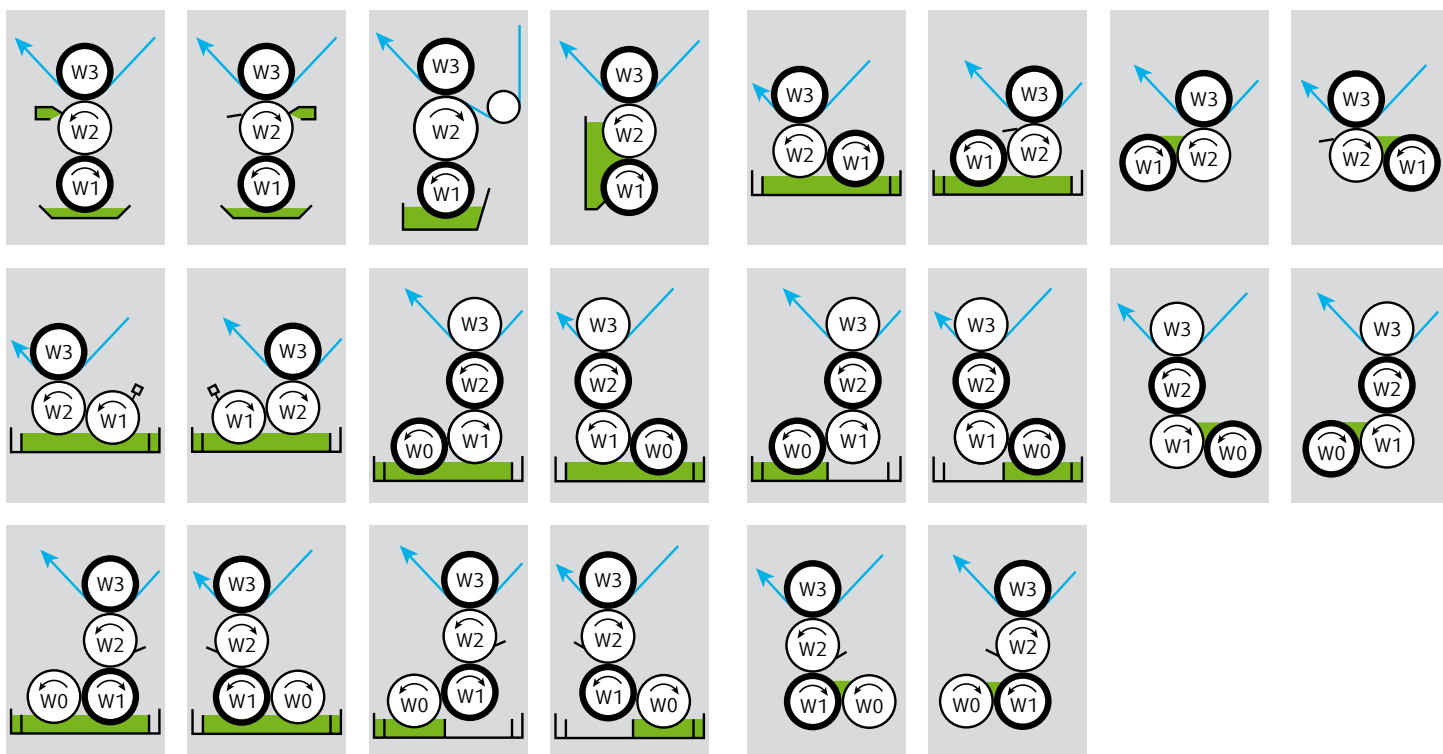


Smooth roll systems with nip metering are best suited to coating substrates with water- or solvent-based lacquers. The layer thicknesses that can be achieved depend on the number of rolls, the direction of roll rotation and the rheological lacquer properties. The basic versions available include nip and pan feed systems.

Typical coating data:

- // Wet coating thicknesses of 0.1 to 50 g/m²
- // Viscosity of 50 to 3,000 mPas
- // Coating tolerance approx. 5%
- // Coating speeds up to 1,525 m/min

- // Low media stresses due to low shear forces
- // Low- to high-viscosity coating media
- // Large range of coating weights without changing rolls
- // Excellent reproducibility of coating weight
- // Potential to operate at high speeds
- // Straightforward operation and cleaning



Smooth roll systems with gap metering



Smooth roll systems with gap metering are universal coating systems. Their specific roll arrangement with various feed systems makes them both the all-rounders and specialists of coating units. They range from the basic two-roll coating unit to the complex comma doctor system.

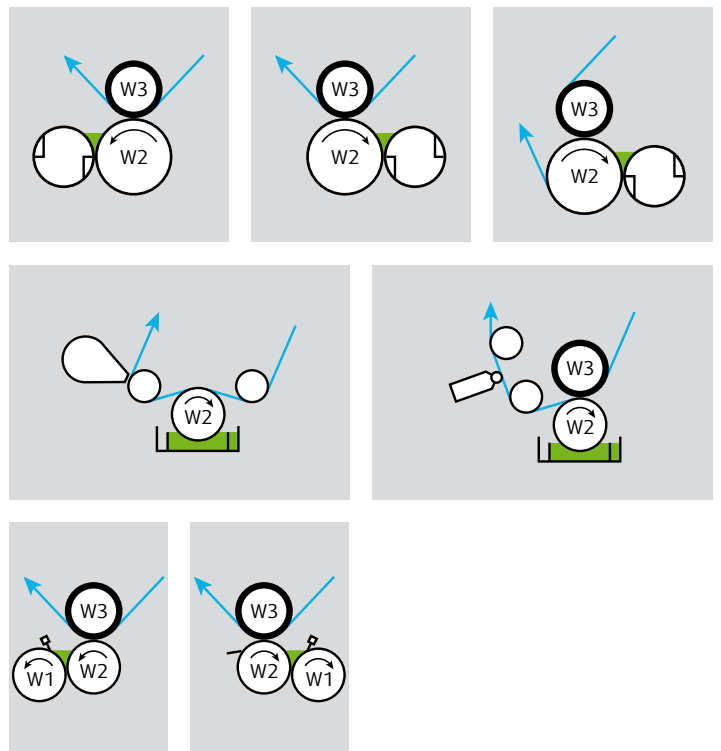
Smooth roll systems with gap metering are best suited to coating films and foils with water- or solvent-based lacquers and adhesives.

- // Low media stresses due to low shear forces
- // Low- to high-viscosity coating media
- // Large range of coating weights without changing rolls
- // Excellent reproducibility of coating weight
- // Potential to operate at high speeds
- // Straightforward operation



Typical coating data:

- // Wet coating thicknesses of 3 to 500 g/m²
- // Viscosity up to 3,000 mPas
- // Coating tolerance approx. 5%
- // Coating speeds up to 300 m/min



Die systems

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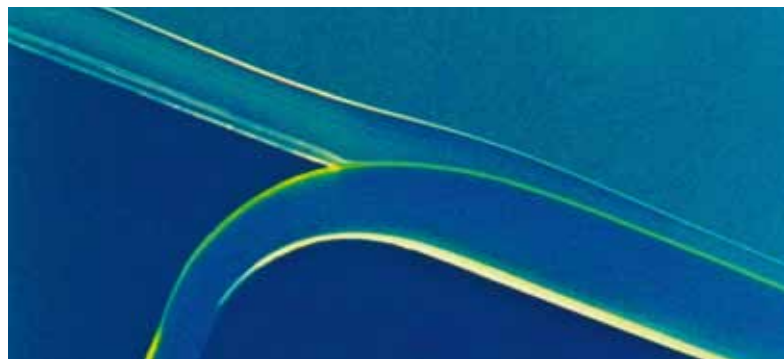
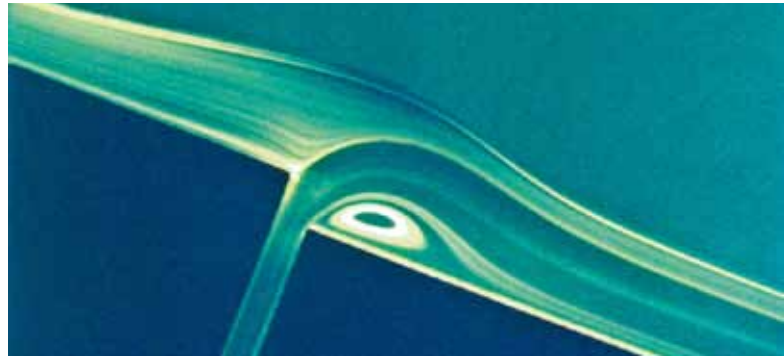


The die systems include slot, slide and curtain coating systems. They have been optimized by //polytype for coating and laminating applications and now rank among the coating systems of choice for customers with high demands in terms of coating quality and production speed.

The great strength of the die systems lies in their ability to apply several coatings in a single pass. Individual functional layers can be as thin as 1 μm . //polytype's curtain coating system produces multilayer coatings with longitudinal and transverse profiles that satisfy even the toughest demands.

Die systems are best suited to coating films, foils and papers with water- or solvent-based lacquers and adhesives or 100% systems. They are also used for two-component systems where the components are mixed directly at the die inlet.

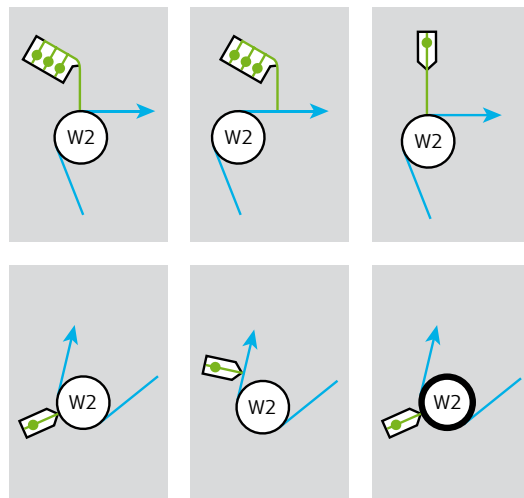
- // Simultaneous multilayer coating
- // Top coating qualities combined with minimal coating losses
- // No media circulation
- // Maximum reproducibility of coating weight
- // Potential to operate at high speeds
- // Coating media with or without solvents possible



The system configuration for handling complex tasks is based on the process know-how of //polytype experts. This covers the entire process flow - from liquid preparation to mixing and degassing.

Typical coating data:

- // Wet coating thicknesses of 10 to 500 g/m²
- // Viscosity up to 30,000 mPas
- // Coating tolerance approx. 1 to 2%
- // Coating speeds up to 2,000 m/min



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