



DOCTOR BLADES FOR

FLEXO

NARROW WEB APPLICATIONS

Doctor blade life on modern flexo presses, with their combination anilox roller/doctor blade inking systems, is of great importance. The surface of ceramic anilox rollers requires minimal doctor blade pressure to prevent excessive blade and anilox wear.

Equally important for blade life is the relationship between cell configurations (shape / count) and the blade tip thickness. Daetwyler manufactures a wide variety of doctor blades to meet your specifications and applications.

Innovating print performance
since 1972.



Daetwyler



STANDARD This special design of our European steel is the most commonly used product in water-based, narrow web applications. Our most popular tip configuration is a lamella tip of 95 microns and this combination is widely used in all types of narrow web presses. It provides a clean, continuous wipe on mid to high anilox line screens.



SOFT This blade is coated with a soft, corrosion-resistant nickel based material. The soft coating provides a more gentle contact point therefore reducing or eliminating the chance of anilox score lines. This coating also heals small nicks in the blade edge, reducing lines and streaking as well as steel contamination of the ink.



MULTIFLEX This combination of special engineered steel and tip configuration was designed to reduce or eliminate UV spitting on specific narrow web presses where doctor blade adjustment is limited.



PEARLSTAR New coating technology significantly reduces ink adherence to the doctor blade and lowers friction values. This has proven to greatly reduce or eliminate UV spitting in Flexo label printing. Because of its non-stick properties, it can also be used as a containment blade in chamber applications to reduce back doctoring. It also performs very well with (cold seal) lacquers and in combination with adherent fluids.



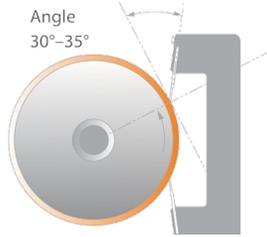
LONGLIFE The doctor blade of choice for fighting print defects, such as streaking. It is commonly used for abrasive inks and coating. This hardened-coating significantly lengthens blade life, therefore reduces the amount of steel contamination in the ink. Fewer blade changes are needed, resulting in reduced downtime and waste.



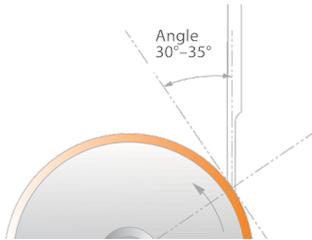
IBOSTAR PLUS Alternative product to the LONGLIFE which offers an attractive cost to performance ratio. In addition, the special coating has proven beneficial in preventing score lines and is also corrosion resistant.



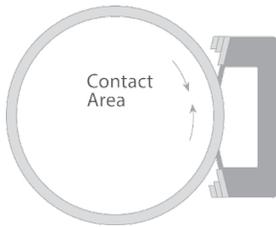
ONE STEP A long time standard used in UV printing to reduce UV spitting. Its special base material and tip design allows for clean doctoring regardless of ink viscosity and can be used on medium to high anilox line screens. A good choice for use with more viscous inks.



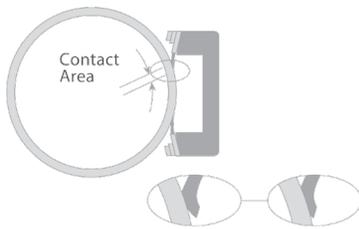
CHAMBER DOCTOR BLADE SYSTEMS There are two distinctly different blade systems; single Reverse-Angle Blade system and the more commonly used Enclosed Doctor Blade System. Angles on an enclosed system are pre-set and for single reverse-angle blade system the industry standard is approximately 30 to 35 degrees. Flat angles create greater contact area, requiring more doctor blade pressure to get a clean wipe. This increase in pressure creates excessive anilox and blade wear.



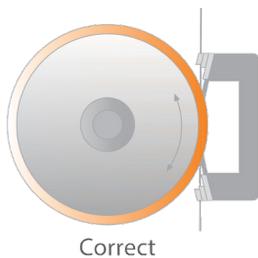
REVERSE ANGLE DOCTOR BLADES Provide excellent printing and wiping. To obtain best results, the blade holder must be cleaned carefully and be in good condition. The Doctor Blade must be mounted absolutely straight and without waves. To prevent waves, tighten bolts in the blade holder from the center out. As always, minimal pressure is the key to successful printing.



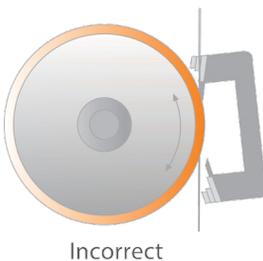
THE CORRECT PRESSURE Minimum pressure ensures consistent blade wear and extended anilox life. The thinner the tip, the less pressure required to achieve a clean and brilliant printing result. It is recommended to use the same material on both sides of the chamber to eliminate uneven pressure. Increased pressure leads to a deflection of the doctor blade, resulting in a reduced angle and therefore in an increased contact area. The actual wiping is done by the back of the blade, leading to excessive anilox and blade wear.



THE INCORRECT PRESSURE Or excessive blade pressure creates free floating metal slivers that contaminate ink systems. When a hard particle becomes trapped between the deflected blade tip and the anilox, this particle rides there, effectively destroying rows of cells. These rows of cells appear as thin bands running the circumference of an anilox and are commonly called score lines.



PROPER SYSTEM ALIGNMENT For consistent ink metering, best print quality and optimized blade life, an enclosed chamber system requires perfect alignment (both horizontal and vertical) so that both blades have equal amounts of pressure. Incorrect alignment creates uneven blade pressure, blade wear and/or ink leakage.



A common error that results from correcting alignment problems is excessive blade pressure. This excessive pressure will lead to a variety of previously discussed problems, like score lines.



FLEXO PRINTING PROBLEMS

INK SPITTING

CAUSES:

- » Surface of the anilox does not match correctly with doctor blade tip
- » Doctor blade is too flexible
- » Doctor blade is loose in the holder
- » Doctor blade angle is not correct
- » Dried ink on cylinder ends

SOLUTIONS:

- » Replace doctor blade with thicker blade
- » Ensure the blade tip is matched for the anilox line screen
Check doctor blade angle to ensure holder is set parallel with the anilox roller
- » Check for dried ink on anilox ends
- » Check for damage on anilox ends

SUGGESTED PRODUCTS:

- » MULTIBLADE
- » ONE STEP
- » PEARLSTAR

BACK DOCTORING

CAUSES:

- » Too much blade pressure
- » Incorrect ink viscosity
- » Containment blade is not correct

SOLUTIONS:

- » Reduce blade pressure
- » Look for signs of extra pressure (i.e. wavy blades) and correct
- » Check ink viscosity to ensure it is within specifications
- » When using steel for both wiping and containment blades, the containment blade should be thinner than the wiping blade
- » When using plastic, containment blade should not be more rigid than the wiping blade
- » Containment blade width should be within specification of the chamber manufacturer

SUGGESTED PRODUCTS:

- » POLYPRO
- » OPTIPRO PLUS
- » PEARLSTAR

UNEVEN METERING

CAUSES:

- » Wavy blades
- » Blade/chamber alignment
- » Vibration

SOLUTIONS:

- » Clean holder and reset blade
- » Check holder for damage and repair
- » Tighten bolts from center out alternating sides
- » Replace missing bolts
- » Provide even tensioning on bolts
- » Check end seal placement and height
- » Ensure centerline of chamber is parallel to centerline of anilox
- » Make sure containment and wiping blade in chamber contact the roller at the same time without adding additional pressure
- » Check blade extension throughout entire chamber to consistency
- » Check gear box of vibration

SUGGESTED PRODUCTS:

- » STABLEFLEX
- » MULTIBLADE

LINES

CAUSES:

- » Foreign particles trapped under the doctor blade
- » Nick in the doctor blade

SOLUTIONS:

- » Reduce blade pressure
- » Install ink filters and magnets
- » Change doctor blade
- » Check anilox for damage
- » Send worn doctor blades to Daetwyler for evaluation

SUGGESTED PRODUCTS:

- » LONGLIFE
- » STARLIFE

ANILOX WEAR

CAUSES:

- » Over-pressure of doctor blade
- » Doctor blade contact area too large
- » Incorrect blade material
- » Blade holder/chamber in contact with anilox roller
- » Excessive engraving recast

SOLUTIONS:

- » Look for reasons excessive pressure is needed and correct (see uneven metering)
- » Install stops to limit over adjustment (pressure) of doctor blades
- » Use filters and magnets in ink system
- » Inspect anilox for recast on top of cell walls
- » Use correct doctor blade to match anilox line screen
- » Check new doctor blades for smoothness/roughness

SUGGESTED PRODUCTS:

- » SOFT
- » LONGLIFE
- » STANDARD STEEL (LAMELLA)
- » FLEXOLIFE
- » MULTIBLADE

EXCESSIVE INK FILM THICKNESS

CAUSES:

- » Contact area of doctor blade too large
- » Anilox cell count and volume does not match doctor blade selection
- » Anilox line count and volume is too large
- » Doctor blade is not set parallel to anilox and/or set incorrectly
- » Blade pressure is too high causing blade to bend and wipe with back of blade
- » Doctor blade wears too quickly/aggressively

SOLUTIONS:

- » Match blade tip to anilox line screen
- » Check doctor blade set up to ensure blade is set evenly across the anilox and low pressure is used
- » Look for reasons excessive pressure is needed and correct.
- » Use a longer life, coated doctor blade

SUGGESTED PRODUCTS:

- » LONGLIFE
- » SOFT
- » STANDARD STEEL (LAMELLA)
- » MULTIBLADE
- » IBOSTAR PLUS

LEAKING CHAMBER

CAUSES:

- » Incorrect chamber alignment
- » Incorrect end seals
- » Wavy blades
- » Re-doctoring of ink from the containment blade (back doctoring)

SOLUTIONS:

- » Verify chamber is parallel to anilox roller and both top and bottom blade are contacting the anilox roller at the same time
- » Check with holder manufacturer for the correct end seal specifications and material
- » Check blade settings to ensure the seal apex and blade width match

SUGGESTED PRODUCTS:

- » OPTIPRO PLUS



Daetwyler USA Headquarters

Max Daetwyler Corporation
13420 Reese Blvd. West
Huntersville, NC 28078

Phone: (704) 875-1200 Fax: (704) 875-0781
infodpr-usnc@daetwyler.com

www.daetwyler-usa.com



Daetwyler