DOCTOR BLADES FOR

GRAVURE

PRINTING

Gravure printing covers many markets — flexible packaging, paperboard, illustration, decorative, and others. Whether it is high-speed solvent press printing catalogs or water-based printing on film, each comes with it's own set of unique applications and printing problems.

Daetwyler understands these markets and manufactures a wide range of doctor blades to meet your every day use and special applications.

Innovating print performance
since 1972.

Daetwyler

STANDARD This award-winning blade has a consistent tip thickness, which provides even doctoring for all gravure cylinder applications. Tonal values remain unchanged throughout the life of the blade. The specially polished tip guarantees a quick, streak free start-up.

MULTIBLADE A 3° flat beveled blade increases stiffness and reduces tip deflection caused by high blade pressure and fast press speeds. The thin tip wipes clean helping to decrease print related toning and hazing issues. The 50-micron tip increases proportionally to the 3° angled bevel.

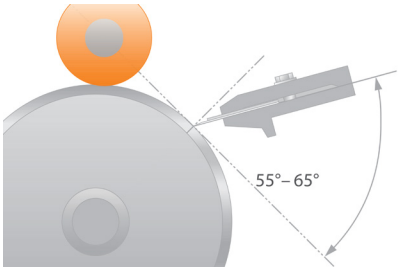
LONGLIFE The best choice for fighting print defects, the LONGLIFE blade provides clean doctoring, reduces drag-outs and increases cylinder life. With an industry specific hardened coating that significantly increases blade life, press downtime and waste are reduced. It is an excellent blade for abrasive and corrosive inks and coatings.

IBOSTAR This coated blade is superb for sharp transitions and is an alternative to the LONGLIFE blade for short to medium runs. IBOSTAR delivers a short running-in period due to the soft coating, reduces hazing and streaks, and provides corrosion protection.

MDC GOLD This doctor blade provides a perfect performance at all contact angles, and has no start-up time due to the technically advanced lamella profile. The blade reduces defects in the entire print run and delivers precise ink metering.

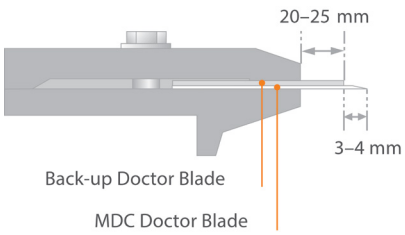
OPTILIFE This doctor blade has a new special coating designed to produce an instantaneous smooth and clean wipe. This extremely smooth and durable coating eliminates streaks from the very beginning and maintains this clean wipe throughout the run. The low friction values of this smooth coating result in very low chrome wear, which helps to maintain the integrity of the cylinder surface.

ULTRALIFE This premium doctor blade has a specially formulated coating designed to prevent hazing and streaks. Ideally, this blade is suited for short to midrange run lengths. It also provides enhanced cylinder life due to smooth and consistent wear characteristics of the coated lamella tip.



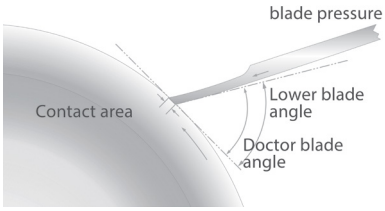
Fine adjustments are required for optimal printing results The gravure industry recommends a doctor blade contact angle of approximately 55 to 65 degrees.

Flat angles create a greater contact area, thereby increasing hazing and drag-outs. Angles too steep produce chattering. A precise adjustment doctor blade angle is crucial for an optimal contact zone.



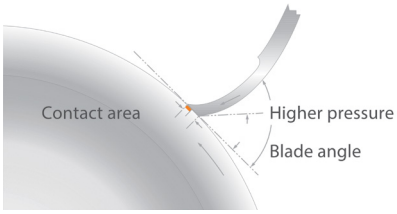
The correct installation of the doctor blade into the doctor blade holder
For best results, the blade holder and back-up blade (if used), must be cleaned carefully and be in good condition.

The Doctor Blade must be mounted absolutely straight, without waves. To prevent waves, tighten bolts in the blade holder beginning in the center and working your way out, alternating sides.



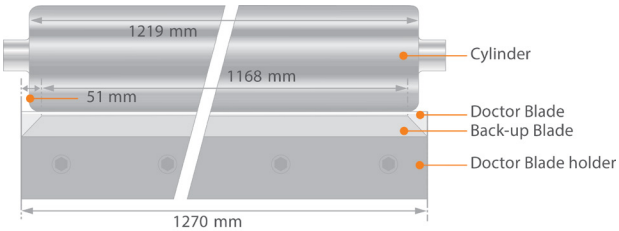
Doctor blade pressure: Less is more We strongly recommend using minimal doctor blade pressure. The thinner the tip, the less pressure required to achieve a clean and brilliant printing result.

A certain amount of flexibility is needed to compensate for things such as deviation of the cylinder surface or changes in diameter.



Excessive doctor blade pressure Too much pressure will result in excessive deflection of the doctor blade. Increased deflection creates a lower contact angle and wider contact area, which leads to hazing and tonal value changes in the printed product.

Customize Doctor Blades to fit your cylinder To prevent excessive pressure at the ends of the cylinder, which could crack a doctor blade, we rvecommend that the back-up blade be cut at an angle at both ends. The cut should end approximately 12.7 mm inside each end of the cylinder to include allowance for oscillation travel. Ideally, the ends of your cylinder should be equally rounded.



GRAVURE PRINTING PROBLEMS

HAZING

CAUSES:

- Blade angle is too shallow
- Excessive blade contact pressure
- Ink is not drying quickly enough
- Incorrect roughness of the printing cylinder

SOLUTIONS:

- Increase the blade angle
- Use thinner lamella
- Check the blade pressure
- Check ratio support blade to lamella (max. 5 mm)
- Add accelerator, check the viscosity
- Check the roughness of the cylinder
- Dechrome or rechrome the cylinder if necessary

SUGGESTED PRODUCTS:

Use a coated doctor blade with a thin configuration

- OPTILIFE
- LONGLIFE
- GOLD

UNSMOOTH GRADATIONS

CAUSES:

- High ink viscosity
- Incorrect screen or cell geometry
- High cylinder and ambient temperature
- No electrostatic assist

SOLUTIONS:

- Check ink viscosity
- Discuss screen or cell geometry with cylinder manufacturer
- Check cylinder and ambient temperature
- Flat doctoring
- Check electrostatic printing assist (ESA)

SUGGESTED PRODUCTS:

Check blade configuration

CHATTER MARKS

CAUSES:

- Blade angle too steep
- Too much blade pressure
- Problems with gear box
- Doctor blade is loose in the holder
- Rough oscillation

SOLUTIONS:

- Lower contact angle
- Reduce blade pressure
- Check main gear box
- Check oscillation bearings
- Reset blade in holder and tighten all bolts evenly
- Ensure holder is clean
- Use support blade

SUGGESTED PRODUCTS:

The right configuration is key:

- The set-up is decisive
- Select Multiblade configuration
- Select thicker doctor blades

DRAG OUTS

CAUSES:

- Upper side of blade tip has build up
- Ink viscosity is too low
- Burr is forming on blade tip

SOLUTIONS:

- Clean blade contact point with "slur stick"
- Increase ink viscosity
- Use an ink filter
- Use a durable coated doctor blade

SUGGESTED PRODUCTS:

It is essential to use a hard coating

- LONGLIFE
- OPTILIFE
- ULTRALIFE
- GOLD

INK STREAKS

CAUSES:

- Debris in ink
- Damage to blade tip
- Rough area on cylinder caused excessive blade wear

SOLUTIONS:

- Clean blade contact point with a "slur stick"
- Use/change ink filter (finer mesh)
- Replace doctor blade
- Check cylinder surface
- Adjust ink viscosity

SUGGESTED PRODUCTS:

- OPTILIFE
- LONGLIFE
- GOLD

MISSING DOTS

CAUSES:

- Cells are not emptying due to lack of electrostatic discharge
- Surface of the substrate is not in contact with the ink/cylinder
- Coarse substrate
- Rough or worn impression roller

SOLUTIONS:

- Electrostatic assist needs cleaning or adjusting (check with manufacturer when using metal composite or metallic inks)
- Check impression roller conductivity
- Reduce cylinder screen width/resolution for more coverage
- Change impression roller hardness
- Grind impression roller

SUGGESTED PRODUCTS:

Since the choice of blade is not decisive, we recommend the following:

- Use a soft set-up
- Shallower blade angle

CYLINDER WEAR

CAUSES:

- Doctor blade friction is too high
- High blade pressure
- Not optimum cylinder roughness

SOLUTIONS:

- Use a coated blade with low COF
- Reduce blade pressure
- Adjust cylinder surface roughness to provide more lubrication

SUGGESTED PRODUCTS:

Adjust the set up to prevent the blade from being deflected

- OPTILIFE
- LONGILIFE
- IBOSTAR
- GOLD

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