

VARNISHING PLATES

FREQUENTLY ASKED QUESTIONS (FAQ)

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QUESTIONS AND ANSWERS TO ENSURE THE BEST VARNISHING PERFORMANCE

(Note that in this text, when we writing POLISPOT we mean both Polispot and Polispot Compressible, unless otherwise specified)

PART 1: GENERAL TECHNICAL CONSIDERATIONS

WHY ARE POLISPOT AND POLI-STRIPLATE BETTER THAN A BLANKET?

- Polispot and Poli-striplate are manufactured using a strong polyester base. Polispot and Poli-striplate can be **used repeatedly for runs up to 500.000 or more** granting a high dimensional stability. Polispot and Poli-striplate can be reused without registration problems while rubber blankets tend to stretch with usage and must be changed more frequently.
- As a result of various tests carried out in conjunction with some of the major printing press manufacturers, we have proven that using Polispot results in very **low ink build up** and therefore we have **reduced the downtime necessary to clean the plate with the advantage of a higher productivity.**
- Polispot and Poli-striplate are easier to cut than rubber blankets because they are not constructed with an intermediate fabric layer. The fabric layer is tough to cut and when cut it may result in frayed edges, which will pick up varnish and spoil the printing job.
- Polispot and Polistrip-plate leave a high gloss surface finishing.
- Polispot has a smooth surface with a calibrated surface tension developed to avoid ink build-up. This keeps the coating clear and eliminates the downtime necessary for clean up.

HOW CAN A 1.95MM COATING BLANKET BE REPLACED BY A POLISPOT OR POLI-STRIPLATE 1.15 OR 1,35MM?

Both 1.15 and 1.35 plate thicknesses can replace a 1.95 coating blanket, by combining them with a suitable underplate. The table below shows the combinations of Polispot or Poli-striplate and underplate required to fill the cylinder undercut of the most common presses.

PRESS	CYLINDER UNDERCUT (mm)	=	POLISPOT POLISPOT COMPRESSIBLE POLI-STRIPLATE THICKNESS	+	POLIUNDER VA THICKNESS
Heidelberg	3.20	=	1.15	+	2.10
KBA	3.30 / 3.40	=	1.35	+	2.10
Komori	2.80	=	1.35	+	1.50
Man Roland	2.60	=	1.15	+	1.50
Mitsubishi	2.30	=	1.35	+	1.00

ADVANTAGES OF USING POLICROM'S VARNISHING PLATES INSTEAD OF COATING BLANKETS,

- the varnishing runs will be much longer due to lowest ink build up (can make 100.000 runs without stopping vs 10.000 to 20.000 runs for the blankets)
 - the plate can be reused as many times as necessary, reaching easily 500.000 copies with the same plate (the blanket stretches and cannot be reused to run repeated jobs)
 - varnish delivery is much better, no ink build up and no down time for extra washes.
- As a result, you will have a higher productivity and the best quality

WHAT ARE THE DIFFERENCES BETWEEN POLISPOT , POLISPOT COMPRESSIBLE AND POLI-STRIPLATE?

Polispot has the best value for the money as it gives very good varnish finish with both aqueous based as well as U.V. varnishes.

THIS PLATE COVERS 90% OF THE MARKET NEEDS

Polispot Compressible thanks to its resistant structure allows a higher tolerance of set up parameters (pressure adjustments). It performs well with uneven or hard substrates (such a cardboard). It is ideal for aqueous and U.V varnishes and also suitable for metallic varnishes.

Its resilience allows it to be used with hard underpacking such as paper and polyester

Poli-striplate among the 3 products has the highest tolerance of set up parameters (pressure adjustments) especially in case of varnishing units that are old or have inaccurate settings

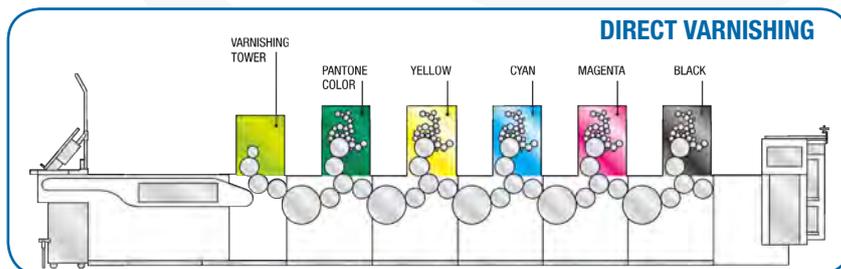
It is the best suited for uneven or hard substrates and is ideal when using hard underpacking such as paper or polyester

All plates yield very long runs (over 500.000 copies) and can be reused without registration problems

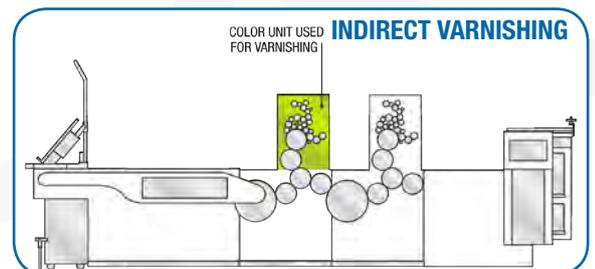
WHAT ARE THE DIFFERENCES AMONG POLISPOT, POLI-STRIPLATE AND POLICOAT?

Polispot and Poli-striplate are designed for direct varnishing. They replace rubber blankets in a varnishing tower. Policoat is an adhesive product designed to be placed on a printing plate and used in indirect varnishing applications, where one of the printing units is used for varnishing.

Please see picture 1a & 1b



Picture 1a



Picture 1b



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QUESTIONS AND ANSWERS TO ENSURE THE BEST VARNISHING PERFORMANCE

PART 2: CUTTING AND STRIPPING/PEELING

WHICH IS THE BEST WAY TO CUT AND PEEL POLISPOT, POLISPOT COMPRESSIBLE AND POLI-STRIPLATE?

There are three ways to carve the plate:

- **By Plotter** (all plates and all thicknesses) Using a plotter is the best carving option because the blade depth, once set, remains constant. Of course, before starting the carving job, it is necessary to calibrate the cutting system. To do this we recommend using a section of the plate that will be subsequently peeled off. If necessary Policrom can offer a carving service: send us via email the carving file and we will forward a quotation for the complete job.

Please see picture 2



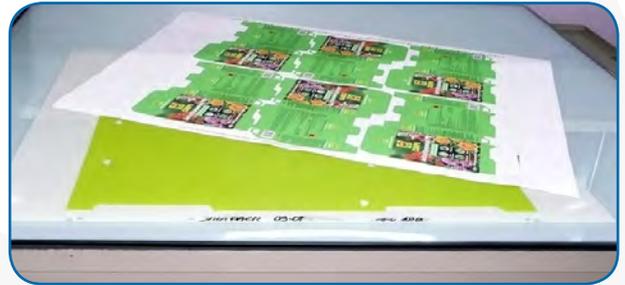
Picture 2

- **By hand using a printed sheet, a colour proof or, in packaging application, the plot of the die cut showing the area to be carved** (Polispot 1,15 and 1,35mm only) Place the sheet on a light table (printed side up) then overlay the Polispot and trace the lines underneath.

Use a cutter with a sharp blade and a metal ruler.

Apply a gentle pressure until the tip of the blade is in contact with the polyester base then pull the cutter along the ruler taking care to maintain the same pressure until the end of the line to be cut.

Please see picture 3a & 3b



Picture 3a

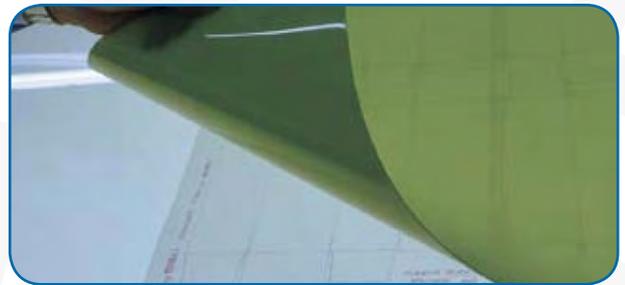
- **By hand using a printed varnishing plate** (all plates and all thicknesses) This is done by running a few printed sheets through the press without applying the varnish. The sheets wet with ink will image the varnishing plate.

The varnishing plate can then be removed and carved by tracing the printed image.

Use a cutter with a sharp blade and a metal ruler.

Apply a gentle pressure until the tip of the blade is in contact with the polyester base then pull the cutter along the ruler taking care to maintain the same pressure until the end of the line to be cut

Please see picture 4

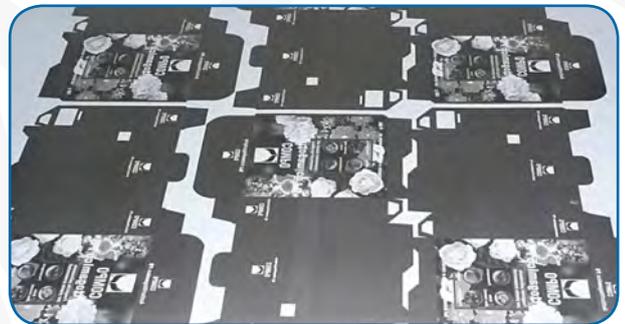


Picture 3b

The thickness of the top membrane changes with the total plate thickness: the 1.15 mm plates have a 0.80mm thick membrane, while the 1.35mm and 1,95 plates have a 1.00mm thick membrane. To peel the membrane, after cutting, lift it up using a metal tip, starting from one edge and pulling it gently in the opposite direction.

Please make sure that the membrane is completely cut, especially at the corners, to avoid that it lifts up along the edges of the varnishing areas.

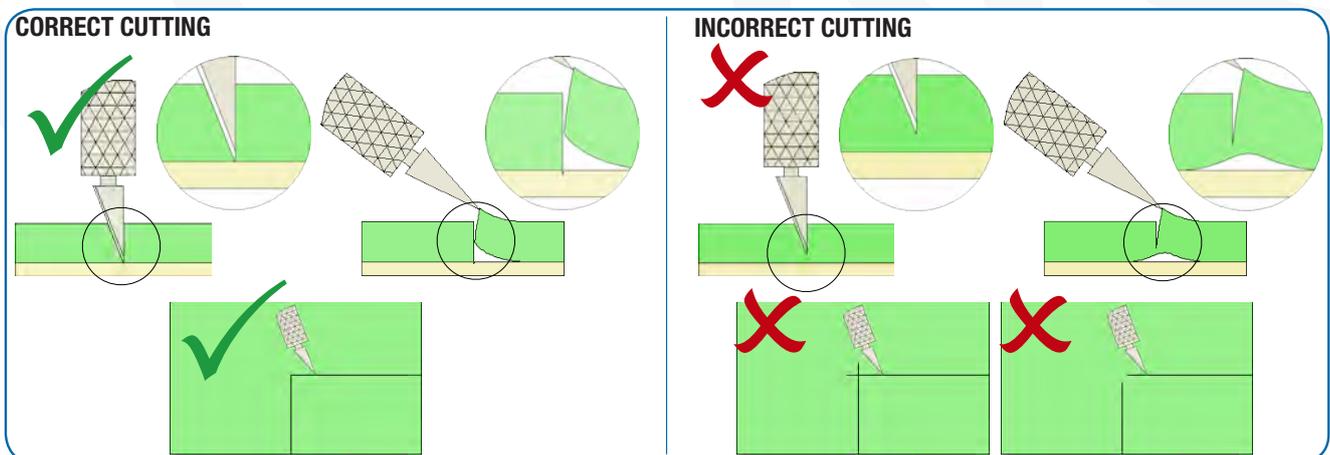
Please see picture 5



Picture 4

If large areas have to be peeled off it is advisable to cut strips of 30 -50 mm in order to make the peeling easier.

BE CAREFUL NOT TO CUT INTO THE POLYESTER LAYER. SCRATCHING IT SLIGHTLY HELPS Once the polyester is cut, it is also made weaker and prone to braking under stress.



Picture 5



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QUESTIONS AND ANSWERS TO ENSURE THE BEST VARNISHING PERFORMANCE

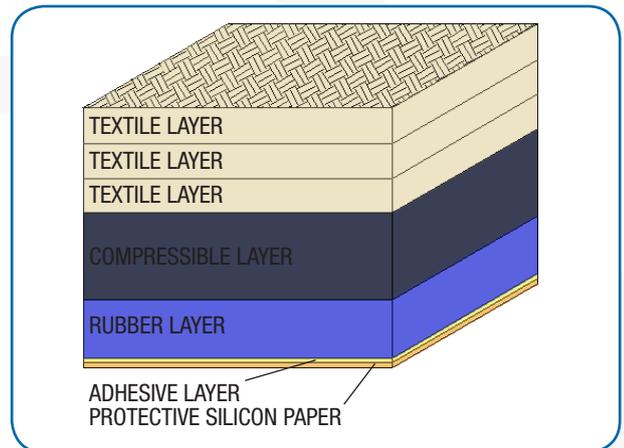
PART 3: CORRECT UNDERPACKING / MOUNTING OF THE PLATES ON THE CYLINDER

WHAT TYPE OF UNDERPACKING DO YOU RECOMMEND?

We recommend using Policrom's Poliunder plain or with adhesive (POLIUNDER VA) available in thicknesses of 1.00, 1.50, 2.10 mm. Any compressible non adhesive or even better adhesive-backed material, made of layers of synthetic rubber and cloth with a hardness of 77 shore A can be used. Poliunder or Poliunder VA is used to pack the varnishing plates. The fabric side in contact with the plate (upwards) helps the plate to better adapt to the cylinder (granting an optimal varnish delivery) and to avoid ink build up. An under packing which is too hard will cause a bounce effect which will result in an excessive stress of the plate with the risk of lifting the top membrane along the edges.

This is especially true for Polispot (soft underpacking which requires), but Polispot Compressible and Poli-striplate may also be underpacked with polyester, paper, (hard underpacking)

Please see picture 6



Picture 6

HOW IS POLISPOT/POLI-STRIPLATE MOUNTED ON THE CYLINDER?

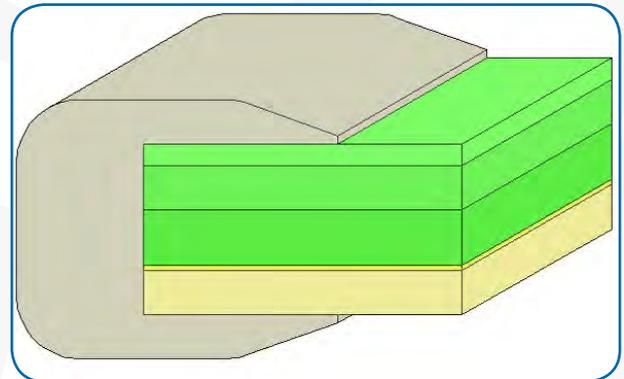
Polispot and Poli-striplate can be mounted on the cylinder in the same way as the blankets. They can be either clamped, barred or pinned. In case a barring system is used, see the following instructions:

a) If the bar is bonded by means of thermal adhesive tape, please make sure that the thermal adhesive tape is applied on the membrane side

b) If the bar is bonded with 2-component glue make sure to apply the glue on both sides (polyester and membrane)

For metal "zwick" bar it is sufficient to apply the glue on the membrane side.

Please see picture 7



Picture 7

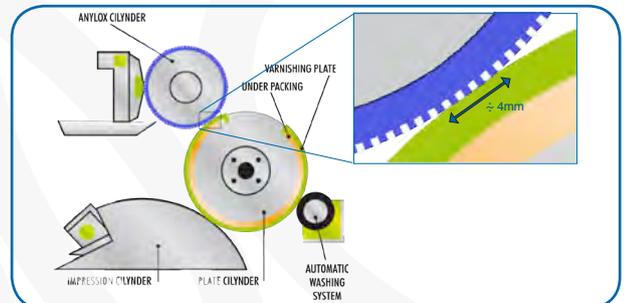
IS THERE A FIBRE ORIENTATION IN POLISPOT / POLI-STRIPLATE?

Contrary to rubber blankets, there is no preferential direction of cutting, in fact, both Polispot and Poli-striplate are manufactured using a base layer made of 350 micron bi-axially oriented polyester film to ensure the maximum stability in both directions.

ARE THERE ANY ADJUSTMENTS OF THE COATING SYSTEM TO OPTIMIZE THE QUALITY OF A VARNISHING JOB?

To obtain the best results it is necessary to adjust the pressure between the Anilox® cylinder and the plate cylinder, as well as the pressure between the plate cylinder and the impression cylinder at the **lowest possible level**. (kiss coating)

Please see picture 8

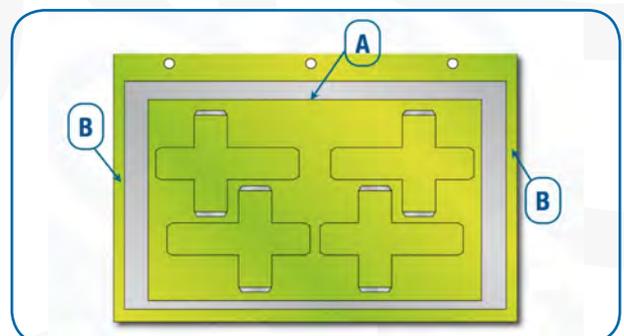


Picture 8

HOW TO MANAGE IN CASES WHERE THE VARNISHED AREA IS MUCH SMALLER THAN THE TOTAL PLATE AREA?

In varnishing jobs where the varnished area is much smaller than the plate, (i.e. the plate size is 1000X800mm and the varnishing size is 800X600mm) it is advisable to leave a strip (B) of the top layer running along the edges of the plate to maintain a constant contact between the plate, the impression cylinder and the Anilox® cylinder. This will reduce the mechanical stress on the leading edge (A) and the bounce between the plate and the two cylinders, and improve the ability to increase the speed and the run length.

Please see picture 9



Picture 9



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QUESTIONS AND ANSWERS TO ENSURE THE BEST VARNISHING PERFORMANCE

PART 4: QUALITY CONSIDERATIONS

WHAT AFFECTS THE DURABILITY OF A VARNISHING PLATE AT HIGH SPEED (I.E. OVER 10.000 RPM) VERSUS LOWER SPEEDS? CAN THE PLATE BE DAMAGED AT HIGHER SPEED?

The higher the speed is, the stronger the mechanical stress on the plate, especially when the size of the area that is actually used for the varnishing is smaller than the total area of the plate. It is advisable to pay great attention at the set up of the pressures.

Please see picture 8 & 9

WHAT IS "SWELLING", WHAT CAUSES IT AND WHAT IS THE RELATIONSHIP TO SPEED AS ABOVE?

Although the top layer might indeed swell or bulge if put in contact with very aggressive solvents, in most cases what is referred as "swelling", is actually the lifting of the top layer during the varnishing process and has nothing to do with speed.

This originates from 2 causes:

a) The application of excessive mechanical stress (too high pressure). This unnecessary stress causes a failure of the bond between the top layer and the PET base and eventually the top layer lifts up.

b) An insufficient depth of the carving, which causes an incomplete incision of the top layer. When this occurs the areas of the top layer adjacent to the areas being peeled off are lifted slightly from the polyester layer. This weakens the bond and eventually with the help of the mechanical stress large portions of the top layers lift off causing what is improperly referred to as "swelling"

Please see picture 5 & 9.

WHY ARE POLISPOT COMPRESSIBLE AND POLI-STRIPLATE APPARENTLY PERFORMING BETTER THAN POLISPOT WITH SOME TYPES OF VARNISHES?

Our products were designed to be universal, i.e. to ensure top performance with any kind of varnish. We have no evidence that the performance of our products varies according to specific chemical qualities of the varnish. In some cases, where no particular care is, or can be, given to the pressure adjustment between cylinders, Polispot Compressible and Poli-striplate perform better than Polispot with U.V. metallic and pearlescent varnishes. This is attributed to the special, very compressible middle layer of the Polispot Compressible and to the compressible rubber structure of the Poli-striplate. These allow higher chemical / mechanical stress. However if the pressure is correctly adjusted, Polispot performs even better than Polistrip-plate with aqueous and U.V. varnishes as it minimizes ink build up.

PART 5: CLEANING OF THE PLATES

WHAT KIND OF SOLVENTS ARE RECOMMENDED FOR CLEANING THE PLATES AFTER USE

You can use the standard cleaners recommended by the manufacturer of the varnish used. Generally for water based varnishes, just use water (better if hot) whereas for U.V. varnishes we recommend to use specific U.V. varnish washing solutions or alternatively Isopropyl alcohol. The surface of our Polispot and Poli-striplate is compatible with the most common solvents used to clean printing blankets, however, we always recommend testing first any cleaner on an unused small section of the plate before cleaning the complete surface.

WHAT SOLVENTS HAVE PROVEN TO BE TOO AGGRESSIVE TO CLEAN THE TOP LAYER OF THE PLATES AND SHOULD BE AVOIDED?

Strong solvents like MEK or the type of deglazers used to remove the dried ink on rollers and blankets should be avoided.

To prevent spoiling the plates and to prolong their life it is advisable to clean the plate with the appropriate detergents – according to the type of varnish used – after each varnishing job is completed.

