

**UV 专用胶辊产品及 UV&普通两用胶辊 FAQ****UV Dedicated Rubber Roller****UV / Conventional Combi Rubber Roller****FAQ**旗舰产品  
Flagship

1. Q: 胶辊直接承载的主体是油墨，UV 油墨与油性油墨的特性有何不同？

Q: The main substance directly borne by the rubber roller is ink. What are the differences between the characters of UV ink and oil-based ink?

A: 作为 UV 印刷所采用的 UV 油墨，又称紫外固化油墨。UV 油墨能在一定波长的紫外线照射下发生瞬间的光化学反应使油墨从流动的形态变为固态，它与普通油性油墨通过溶剂挥发的干燥方式完全不同。



UV inks used in UV printing are also known as UV-curable inks. Under UV light of a specific wavelength, they undergo an instantaneous photochemical reaction that transforms the ink from a liquid state into a solid state. This curing mechanism is completely different from conventional solvent-based inks, which dry through solvent evaporation. It is completely different from the drying method of the oil-based inks that relies on solvent evaporation

UV 油墨与油性油墨的干燥原理不同。主要是因为两者的组成成分不同，特别是两者的连结料。油性油墨的连结料，含有一定的有机溶剂，或使用亚麻油、桐油等作为干性油。其干燥原理是通过溶剂的挥发和干性油的氧化聚合干燥成膜。而 UV 油墨的连结料，主要为预聚物和单体，常用预聚物为丙烯酸树脂，单体一般为丙烯酸酯类化合物。预聚物和单体的作用，一方面作为连结料来控制 and 调节 UV 油墨的黏度和流动性；另一方面，通过紫外线的照射后，两者发生交联反应，使 UV 油墨固化成膜。

The drying principles of UV ink and oil-based ink are different, this is mainly because the components of the two are different, especially their binders. Their drying principle relies on solvent evaporation and the oxidative polymerization of the drying oils to

form a solid film. The binder of oil-based ink contains certain organic solvents, or linseed oil, tung oil, etc. are used as drying oils. Their drying principle relies on solvent evaporation and the oxidative polymerization of the drying oils to form a solid film. In contrast, the binders in UV inks mainly consist of prepolymers and monomers, typically acrylic resins and acrylate compounds. These components serve two key functions: As binders, they control and adjust the viscosity and fluidity of the UV ink. Upon exposure to UV light, they undergo a crosslinking reaction, causing the UV ink to cure and form a solid film.

2. Q: 对应于 UV 印刷及普通印刷, 在印刷胶辊的材质选择上有何不同?

Q: For UV printing versus conventional printing, what differences are there in the selection of compounds for printing rollers?

A: 由于 UV 油墨采用的连结料的干燥原理与普通印刷的油性油墨不同, 因此需要不同材质的印刷胶辊与之配套。例如, 普通油墨用的胶辊必须亲油、耐溶剂侵蚀; 而使用 UV 油墨的胶辊, 必须耐 UV 油墨中单体的浸透。

A: Because the curing principle of the binders used in UV inks differs from that of the oil-based inks used in conventional printing, different printing roller compounds are required to match each type of ink.

For example, rollers for conventional inks must be oleophilic and resistant to solvent attack, whereas rollers for UV inks must be resistant to permeation by the monomers present in UV inks.

普通胶印油墨呈非极性(油性), 普通橡胶(NBR)为极性橡胶; UV 油墨为极性油墨(丙烯酸树脂), UV 橡胶为非极性橡胶(EPDM)。如果将普通胶型的胶辊用于 UV 印刷, 或者将 UV 胶型的胶辊用于普通印刷, 由于相似相溶原理, 极性相似的油墨和橡胶会相互溶解, 导致胶辊橡胶腐蚀。因此, 在 UV 印刷时, 应该采用 EPDM 的 UV 专用橡胶, 而在进行普通印刷时, 应该采用 NBR 的普通橡胶。

Conventional offset inks are non-polar (oil-based), while conventional rubber (NBR) is a polar rubber. UV inks are polar (acrylic-based), while UV-resistant rubber is typically non-polar (EPDM). If a conventional NBR roller is used for UV printing, or a UV-grade EPDM roller is used for conventional printing, the principle of "like dissolves like" will cause the ink and rubber of similar polarity to interact and mutually dissolve, resulting in swelling, softening, or corrosion of the roller surface. Therefore, UV printing requires EPDM-based UV-dedicated rollers, while conventional printing requires NBR-based conventional rollers.

在市场上，很多时候遇到这种情况：当客户由商务印刷转向 UV 印刷时，由于订单的不确定性，大部分客户要求印刷机要有更多的灵活性。在这种情况下，应该提供普通/UV 两用型胶辊。

In the market, it is common to encounter the following situation: when customers switch from commercial printing to UV printing, the uncertainty of orders often leads most of them to require their press to have greater flexibility. In such cases, conventional/UV combi rollers should be provided.

3. Q: 什么是新辊的渗透处理（养辊）？对于 UV 专用胶辊，如何进行相关的操作？

Q: What is “penetration treatment” (also known as “roller conditioning”) for new rollers? For UV-dedicated rollers, how should this process be performed?

A: 新 UV 胶辊上机初期，如果不经过渗透处理（养辊）直接进行印刷，因胶辊大量吸收单体，使 UV 油墨的单体明显减少，导致 UV 油墨发干、发黏，不能正常上墨。操作者必须先开机匀墨一段时间。随着胶辊吸收单体饱和后，才能正常印刷。

When a new UV roller is first installed on the press, if it is put into production without prior penetration treatment (roller conditioning), the roller will absorb a large amount of monomers from the UV ink. This significant reduction in monomer content can cause the UV ink to become dry and tacky, The ink cannot be applied normally.

Operators must first run the press for a period of time to distribute and condition the ink. Printing can only proceed normally after the rubber roller has absorbed the monomer to saturation.

在新 UV 辊上机后，让新 UV 辊充分吸收 UV 油墨中的单体，使其单体在胶辊中处于饱和状态。这样，在正常的 UV 印刷时，UV 油墨中的单体就不会被 UV 胶辊就不断吸收而造成油墨发干、不下墨及干燥不良等现象。这种作业方式叫新辊的渗透处理，也形象地叫做“养辊”或是“润辊”。

After a new UV roller is installed on the press, it is necessary to allow the roller to fully absorb the monomers from the UV ink until the monomers inside the roller reach a saturated state. This ensures that during normal UV printing, the monomers in the UV



ink will not be continuously absorbed by the UV roller, which could otherwise cause issues such as ink drying out, poor ink transfer, and insufficient curing.

This process is called penetration treatment for new rollers, and is also commonly referred to as “roller conditioning” or “roller breaking-in.”

UV 专用胶辊，建议正常的渗透处理时间为24 小时；将 UV 调墨油打到调节压力后（UV 辊的辊间压痕应该比标准的辊间压痕小1mm）的胶辊上，让设备缓动，不断碾压滚动胶辊有助于胶辊快速吸收油墨单体。1 小时后用 UV 清洗剂洗一次车，将废旧的 UV 调墨油洗掉。之后打上新的UV 调墨油，循环以上程序。12 小时之后，可改为间隔2 小时进行一次。这样 24 小时下来，大约可进行 18 次操作，才能达到基本的起印条件。如果不能进行较高频度的打新墨/洗车程序，则“养辊”的时间顺延。

For UV-dedicated rollers, the recommended penetration treatment time is 24 hours. Apply UV ink reducer to the rollers that have been adjusted to the correct pressure(The Nip of the UV roller should be 1mm smaller than that of the standard Nip), and run the press at slow speed. Continuous rolling and squeezing of the rollers help them absorb ink monomers more quickly.

After 1 hour, wash the rollers once with a UV cleaning agent to remove the used UV reducer. Then apply fresh UV reducer and repeat the above process.

After 12 hours, the interval can be changed to once every 2 hours. Following this schedule for 24 hours will result in approximately 18 cycles, which is sufficient to achieve basic printing readiness.

If it is not possible to perform the cycle of applying fresh reducer and washing the rollers at such a high frequency, the roller conditioning time must be extended accordingly.

通常初始的印刷，因为 UV 胶辊仍有对单体少量的吸收，故最好是进行对纸张的 UV 印刷作业。在此之后，由于 UV 胶辊对 UV 油墨单体的吸收逐渐趋向饱和（通常需要 1-2 周，视印刷的时长），此后可以进行塑料印刷了。

During the initial printing phase, since UV rollers still absorb a small amount of monomers, it is best to run UV printing jobs on paper first.

After this initial period, as the UV rollers gradually approach saturation with UV ink monomers (usually taking 1 - 2 weeks, depending on the printing hours), plastic printing can then be performed.

对于 UV 产品，关键点在于干燥性能/附着力/抗刮性/抗化学品性能，这些性能，都是在承印物上表现出来的，也就是说，在不同的承印物上的表现不同。在不同承印物的 UV 印刷难易程度，纸张>金银卡>塑料（排前的为容易）

For UV products, the key performance factors are curing performance, adhesion, scratch resistance, and chemical resistance. These characters are ultimately reflected on the substrate, meaning they can vary significantly depending on the substrate being printed.

In terms of UV printability on different substrates, the ease of printing generally follows this order: paper > gold/silver cardboard > plastics (the ones ranked higher are easier).

4. Q: 如果新的UV胶辊不进行浸透处理（养辊），会出现什么情况？

Q: What problems will occur if a new UV roller is not subjected to penetration treatment (roller conditioning)?

A: UV油墨中的单体在UV油墨固化前呈液态，流动性较强。其变化量导致UV油墨的黏度变化和流动性变化，并影响UV油墨固化。

The monomers in UV ink are liquid before curing and have relatively high fluidity. Any change in their content will cause variations in the viscosity and flow properties of the UV ink, thereby affecting the curing performance of the ink.

新辊的渗透处理（养辊），已是UV印刷业界的共识。如果不进行“养辊”处理，或是“养辊”处理不彻底，就会造成UV油墨中的单体被UV胶辊所吸收。而UV油墨的单体减少，直接破坏油墨的流动性，使油墨发黏，造成不下墨或油墨发干。当这种现象发生时，表明此时处于“养辊”的初级阶段。

Penetration treatment (roller conditioning) for new rollers is already a common consensus in the UV printing industry. If this treatment is not performed, or if it is incomplete, the monomers in the UV ink will be absorbed by the UV roller.

The reduction of monomers in UV ink directly disrupts the fluidity of the ink, causing it to become sticky and resulting in poor ink transfer or ink drying out. When this occurs, it indicates that the roller is still in the initial stage of conditioning.

在“养辊”初级阶段，一定停止所有的印刷作业，用上述所提的方式，进行“养辊”处理。

During the initial stage of roller conditioning, all printing operations must be stopped immediately, and the roller conditioning process should be carried out using the method described above.

这个阶段，还有一个常见的现象，就是发干的油墨附着在串墨辊或是硬辊上，造成洗车

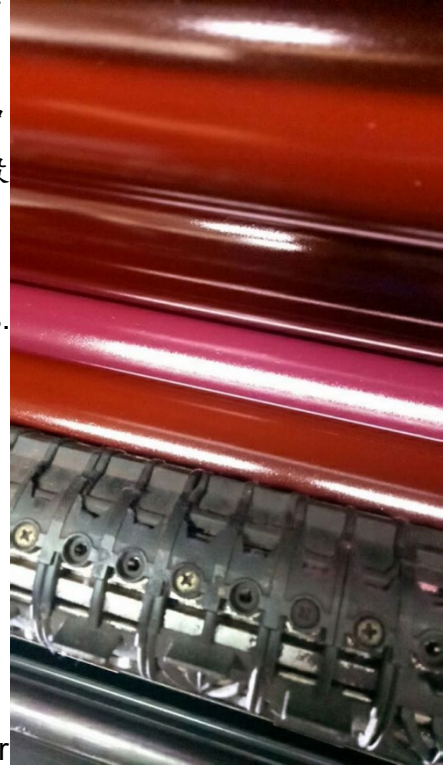
时的困难。此时，有可能要对附着在硬辊上的这些发干的油墨进行手工清洗。

During this stage, another common phenomenon is that dried ink adheres to the oscillating rollers or nylon rollers, making it difficult to clean during washing. In such cases, it may be necessary to manually clean the dried ink deposits on these rollers.

当渗透处理的中后期（浸透处理不彻底），胶辊吸收单体未达到饱和，在印刷过程中，UV 油墨已能正常地传递，下墨。但油墨中的单体仍有少量不断被胶辊吸收，油墨中的单体减少，油墨固化成分随之不足，经过 UV 灯照射，会发现油墨干燥不良。这种现象的发生，表明此时处于“养辊或润辊”的中后阶段

During the middle to later stages of penetration treatment (when conditioning is still incomplete), the roller has not yet reached full saturation with monomers. Although UV ink can generally be transferred and supplied normally during printing, small amounts of monomers in the ink continue to be absorbed by the roller.

As the monomer content decreases, the curing components in the ink become insufficient. After exposure to UV light, poor ink curing may be observed. The occurrence of this phenomenon indicates that the roller is in the middle to later stage of conditioning (roller breaking-in).



在“养辊”的中后阶段，可尝试进行纸张的 UV 印刷。纸张是多孔的承印物，相对来说，对于附着力的要求较低，相应的，对于 UV 干燥固化的性能没那么高。

During the middle to later stages of roller conditioning, you may attempt to do UV printing on paper. Paper is a porous substrate and, relatively speaking, has lower requirements for adhesion. Correspondingly, it is less demanding in terms of UV curing performance.

在印刷初始阶段，一定要检查 UV 干燥是否满足工艺要求。如果达不到要求，则要返回再进行“养辊”作业。

In the initial printing stage, it is essential to check whether the UV curing meets the process requirements. If it does not meet the requirements, you must return to the roller conditioning process and continue the treatment.

5. Q: 有适用于 UV 印刷及普通印刷的两用型胶辊吗? 特点如何?

Q: Are there combi rollers suitable for both UV printing and conventional printing? What are their characteristics?

A: 在市场上, 很多时遇到这种情况: 当客户由商务印刷转向 UV 印刷时, 由于定单的不确定性, 大部分客户要求印刷机要有更多的灵活性。在这种情况下, 应该提供 UV&普通两用型胶辊。

A: In the market, it is common to encounter the following situation: when customers switch from commercial printing to UV printing, the uncertainty of orders often leads most of them to require their presses to have greater flexibility. In such cases, UV & conventional combi rollers should be provided.

普通/UV 两用型胶辊, 其意思是即可以应对 UV 油墨的印刷, 也可以应对普通油墨的印刷。这样看来, 两用型胶辊是普通橡胶及 UV 橡胶的综合体, 集成了这两种橡胶的性能, 适应了客户灵活性的要求, 是一种最佳的解决方案。

Conventional/UV combi rollers are designed to handle both UV inks and conventional inks. As such, they can be seen as a combination of conventional rubber and UV-resistant rubber, integrating the performance characteristics of both types.

This enables them to meet customers' requirements for greater flexibility, making combi rollers an optimal solution in such scenarios.

两用型胶辊, 是集成的普通型胶辊及 UV 专用型胶辊的特点, 在不拆卸更换胶辊的情况下, 对普通印刷及 UV 印刷进行切换。这是它的一大优点, 但由于胶料的特性, 使得它在进行普通印刷及 UV 印刷时, 印刷的适性及使用寿命, 都比普通专用胶料及 UV 专用胶辊有所不及。在 UV 印刷应用时, 要除了 UV 油墨的干燥性能, 还要特别注意成膜后产品的附着力及抗刮性能是否达到产品的要求。并且, 不建议将 UV&普通两用型胶辊应用于塑料印刷。

Combi rollers integrate the characteristics of both conventional rollers and UV-dedicated rollers, allowing switching between conventional printing and UV printing without replacing the rollers. This is one of their major advantages. However, due to the inherent characters of the rubber compound, their printability and service life for both conventional and UV printing are not as good as those of conventional-dedicated or UV-dedicated rollers. When used in UV printing, in addition to ensuring the curing performance of the UV ink, special attention must be paid to whether the adhesion and scratch resistance of the printed film meet the product requirements. Furthermore, it is not recommended to use UV & conventional combi

rollers for plastic printing.

除此之外，还是要注意两用辊的使用范围，两用型印刷机，最好是 70% 以上印普通油墨，UV 印刷比例不超过 30%，超过 30%，该印刷机应该采用 UV 专用胶辊。

In addition, attention should also be paid to the scope of application of combi rollers. For a combi press, it is preferable that more than 70% of the printing is done with conventional inks, and UV printing should not exceed 30%. If UV printing exceeds 30%, the press should instead be equipped with UV-dedicated rollers.

6. Q: 普通/UV 两用型胶辊启用时的注意事项，请介绍一下

Q: What precautions should be taken when putting conventional/UV combi rollers into use? Please provide an introduction.

A: 两用型印刷机，在采用两用型胶辊时，还要特别注意：为了让 UV 普通两用型胶辊有更长的使用寿命，UV 普通两用型印刷机的胶辊，在初始阶段的 2-3 星期，必须使用普通油墨进行印刷，让普通油墨的连接料打底浸透到胶辊体内。这样才能使辊子逐渐适应，提高胶辊的使用寿命。

A: For combi press using combi rollers, special attention must be paid to the following: To ensure a longer service life for the UV & conventional combi rollers, the rollers must be run with conventional ink for the first 2 - 3 weeks. This allows the binder of the conventional ink to penetrate the roller and form a base layer inside the rubber. This process helps the roller gradually adapt and significantly improves its overall service life.

并且，有了普通油墨的打底渗透，才能减少 UV 油墨单体的渗入。一开始就使用 UV 油墨会此引胶辊的膨胀更甚，影响胶辊的使用寿命。

In addition, having the conventional ink binder penetrate the roller first helps reduce the subsequent absorption of UV ink monomers. If UV ink is used from the very beginning, the roller will swell more significantly, which can adversely affect its service life.

普通/UV 两用型胶料，对 UV 油墨单体的吸收更强。一般来说，第一次渗透处理（养辊）需按以上程序进行 48 小时。

Conventional/UV combi rubber compounds have a stronger tendency to absorb UV ink monomers. As a result, the initial penetration treatment (roller conditioning) typically requires 48 hours following the procedures described above.

在两用型胶辊初次使用 UV 油墨前，同样的，需进行渗透处理（养辊）：让设备缓动，用 UV 调墨辊淋在墨辊上。每两小时，用洗车水将干涸的调墨油洗掉。再淋上 UV 调墨油，反复进行。处理过程，大约两天。

Before using UV ink with combi rollers for the first time, penetration treatment (roller conditioning) is also required: Run the press at slow speed and apply UV ink reducer to the rollers. Every two hours, use washing solution to remove dried reducer, then re-apply fresh UV reducer and repeat the process. This conditioning typically takes about two days to complete.

另一个需要关注的点是洗车水。优良的洗车水，要能够达成以下几点 1) 能够在合理的时间内清洗胶辊上的油墨。2) 清洗之后的印刷适性正常。3) 对胶辊的负面影响（膨胀）在许可范围内。

Another important point to consider is the washing solution. A high-quality washing solution should achieve the following:

Adequately clean the ink from the rollers within a reasonable time.

Ensure normal printability after cleaning.

Keep any negative effects on the rollers (such as swelling) within acceptable limits

前面两点，是操作人员可以直接感受到的。但对于关于洗车水的第三点，操作人员不会有立即感受，但这一点，却对胶辊的使用寿命有重要的影响。

The first two points can be directly felt by the operator.

However, regarding the third point about the washing solution, the operator will not notice any immediate effect. Nevertheless, this factor has a significant impact on the service life of the rollers.

DBW 对客户的洗车水进行专业的**免费测试**。请客户要关注洗车水的匹配问题，以共同保障胶辊的使用。

DBW can conduct a professional **free test** of the customer's washing solution. We ask customers to pay attention to the compatibility of the washing solution to jointly ensure the optimal performance and longevity of the rollers.

7. Q: UV 专用辊及普通/UV 两用型胶辊有初次上机调节压力时，有何特别注意之处？

Q: Are there any special precautions when initially setting the roller pressure for UV-dedicated rollers or conventional/UV combi rollers?

A: 大家知道, 胶辊的主体是橡胶制品, 在接触油墨及洗车水或是其它的化学品之后, 或多或少都会产生膨胀。在胶辊的使用过程中, 要注意通过合理的方式, 抵消这种膨胀带来的负面影响。

As we all know, the main body of a rubber roller is a rubber product. After coming into contact with ink, washing solution, or other chemicals, it will more or less swell. During the use of the roller, it is important to use appropriate methods to offset the negative effects caused by this swelling.

普通的胶辊, 在与普通油墨及洗车水接触后, 会有轻微的膨胀。这种膨胀, 不会对胶辊的压痕线产生明显的影响。故通常不需要特别的关注。

Conventional rollers will experience slight swelling after coming into contact with conventional inks and washing solutions. This swelling generally does not have a significant impact on the roller's Nip, so it usually does not require special attention.

UV 专用胶辊及普通/UV 两用胶辊, 在与油墨接触后, 其橡胶的膨胀, 会在胶辊的直径上产生的变化。这种变化, 在胶辊的压痕线上可看到明显的变化。

UV-dedicated rollers and conventional/UV combi rollers, when in contact with UV ink, will experience rubber swelling that causes a noticeable change in the roller diameter. This change can be clearly observed in the Nip of the rollers.

正确的方法: 新辊上机, 在进行胶辊的压力调节时, 要注意将压力比操作说明书上的压痕线调小 1mm。在这个压力条件下, 再进行胶辊的渗透处理(养辊)。在正常的渗透处理结束后(24-48 小时), 再重新调节胶辊压力, 之后进行生产。

在 1 周后, 再重新调节压力(比标准值小 1mm), 之后的胶辊即处理稳定的状态了。

The correct procedure is as follows: When installing new rollers and adjusting the roller pressure, the Nip should be set 1 mm smaller than the value specified in the operation manual. Under this pressure setting, perform the roller penetration treatment (breaking-in).

After the normal penetration treatment is completed (24 - 48 hours), readjust the roller pressure before starting production.

One week later, adjust the pressure again(Nip is 1mm smaller than normal setting). After this, the rollers will be in a stable condition.

8. Q: 普通/UV 两用型胶辊在 UV 印刷及普通印刷转换时, 切换程序如何做?

Q: What is the switching procedure for conventional/UV combi rollers when changing between UV printing and conventional printing?

A: 两用型印刷机，在采用两用型胶辊时，经常会碰到 UV 印刷转普通印刷，或是普通印刷转 UV 印刷的问题。相应的，切换程序应该如何进行？

当然，油墨，橡皮布，印版等需要进行相应的切换，这里，只对洗车的程序进行说明。

A: For combi presses using combi rollers, it is common to switch between UV printing and conventional printing. Naturally, the ink, blanket, plate, and other components must be changed accordingly. We only describe the washing procedure.

UV 印刷 -> 普通印刷:

UV printing → Conventional printing:

第一步：用 UV 洗车水，按正常的程序，将 UV 油墨从墨路洗除。

Step 1: Use UV washing solution and follow the normal procedure to completely remove the UV ink from the inking system.

第二步：用 Böttcher 的深度清洗剂 AR 或是 DBW 的深度清洗剂 RC506 进行深度清洗（建议大家对比一下这两种深度清洗剂的使用效果）。此时，可以看到，即使是用 UV 洗车水无法清洗出来的浸入胶辊体中的油墨，也可以通过深度清洗剂洗出。

Step 2: Perform a deep cleaning using Böttcher's deep-cleaning agent AR or DBW's deep-cleaning agent RC506 (we recommend comparing the performance of these two deep cleaners). At this stage, you will notice that even the ink that has penetrated into the roller and could not be removed by the UV washing solution can be cleaned out by the deep-cleaning agent.



第三步：用抹布沾酒精，手动清洗刮墨刀的背面，避免下次清洗时交错混入。

Step 3: Use a cloth dampened with alcohol to manually clean the back of the wash-up scraper, preventing cross-contamination during subsequent cleaning processes.

第四步：打上普通油墨，长车运转 5 分钟，用普通洗车水进行清洗。

Step 4: Apply conventional ink and run the press for 5 minutes, then clean the rollers using conventional washing solution.

以上，即完成 UV 印刷->普通印刷的洗车切换，可进行正常的普通印刷了。

With the above steps completed, the changeover from UV printing to conventional printing is finished, and normal conventional printing can proceed.

普通印刷 -> UV 印刷:

Conventional printing → UV printing:

第一步: 用普通洗车水, 按正常的程序, 将普通油墨从墨路洗除。

Step 1: Use conventional washing solution and follow the normal procedure to completely remove the conventional ink from the inking system.

第二步: 用 Böttcher 的深度清洗剂 AR 或是 DBW 的深度清洗剂 RC506 进行深度清 (建议大家对比一下这两种深度清洗剂的使用效果)。此时, 可以看到, 即使是用普通洗车水无法清洗出来的浸入胶辊体中的油墨, 也可以通过深度清洗剂洗出。

Step 2: Perform a deep cleaning using Böttcher's deep-cleaning agent AR or DBW's deep-cleaning agent RC506 (we recommend comparing the performance of these two deep cleaners). At this stage, you will notice that even the ink that has penetrated into the roller and could not be removed by the conventional washing solution can be cleaned out by the deep-cleaning agent.



第三步: 用抹布沾酒精, 手动清洗刮墨刀的背面, 避免下次清洗时交错混入。

Step 3: Use a cloth dampened with alcohol to manually clean the back of the wash-up scraper, preventing cross-contamination during subsequent cleaning processes.

第四步: 打上 UV 油墨, 长车运转 10 分钟, 用 UV 洗车水进行清洗。

Step 4: Apply UV ink and run the press for 10 minutes, then clean the rollers using UV washing solution.

第五步: 再打上 UV 油墨, 长车运转 10 分钟, 用 UV 洗车水进行清洗。

Step 5: Apply UV ink again and run the press for 10 minutes, then clean the rollers using UV washing solution.

以上, 即完成 UV 印刷->普通印刷的洗车切换, 可进行正常的普通印刷了。

With the above steps completed, the changeover from conventional printing to UV printing is finished, and normal UV printing can proceed.

这里关键的胶辊化学用品：博星公司的深度清洁剂 BöttcherPro AR 及 DBW 公司的深度清洁剂 RC506，都是很好的产品。大家可以实际使用，对比一下这两者的差异。本文不做对比描述。

The key chemical products for roller cleaning mentioned here are Böttcher's deep-cleaning agent (BöttcherPro AR) and DBW's deep-cleaning agent (RC506). Both are excellent products.

You can use them in practice and compare the differences between the two. This article does not provide a comparative description

9. Q: UV 胶辊及普通/UV 两用胶辊在经过长期使用后，是否可以用起渍膏进行处理？

Q: Can UV rollers and conventional/UV combi rollers be treated with cleaning paste after long-term use?

A: 同普通胶印一样，UV 胶辊及普通/UV 两用胶辊在经过长期使用后，表面共出现硬化，釉化等情况，失去橡皮应有的弹性。故定期的使用起渍膏进行处理，这是很好的一种方法。

As with conventional offset printing, UV rollers and conventional/UV combi rollers can develop surface hardening, glazing, and loss of elasticity after long-term use. Therefore, periodic treatment with cleaning paste is an excellent way to maintain their performance.



但与普通胶辊不同，在使用起渍膏进行处理后，再次使用时，还需对 UV 胶辊及普通/UV 两用胶辊进行浸透处理（养辊）。但过程相比而言要轻很多，只需进行一次即可（1-2 小时）。否则，会出现印品不干的情况。

However, unlike conventional rollers, after treatment with cleaning paste, UV rollers and conventional/UV combi rollers must undergo a re-soaking (breaking-in) process before reuse. This process is relatively light and only needs to be done once (1 - 2 hours). Failure to do so may result in printed products not drying properly.

这里关键的胶辊化学用品：博星公司的清洁还原膏 BöttcherPro ROL-O-PAST 及 DBW 公司的除钙清洁膏 RC701，都是很好的产品。大家可以实际使用，对比一下这两者的

差异。本文不做对比描述。

The key chemical products for roller treatment mentioned here are Böttcher' s cleaning and restoring paste (BöttcherPro ROL-O-PAST) and DBW' s decalcifying cleaning paste (RC701). Both are excellent products.

You can use them in practice and compare the differences between the two. This article does not provide a comparative description.

10. Q: UV 专用胶辊性能这么好，是否也可用于普通油墨的印刷？

Q: UV-dedicated rollers perform so well, can they also be used for conventional ink printing?

A: 普通油墨，也称为油性油墨，其连结料，是油性的物质。这一点，无论是非环保的矿物油，或是环保的大豆油，在普通油墨（油性油墨）中，都是一样的。如果普通油墨用 EPDM 橡胶进行匹配，可能会出现以下问题：

A: Conventional ink, also known as oil-based ink, uses an oil-based vehicle. This is true whether it is non-environmentally friendly mineral oil or environmentally friendly soybean oil.

If conventional ink is used with EPDM rollers, the following problems may occur:

UV 橡胶即 EPDM 橡胶，它能耐受 UV 油墨中的活性成分（如单体、光引发剂等），但它的耐油性相对较差，普通油墨中的油性成分会导致橡胶膨胀、软化、变形。从而破坏胶辊的尺寸精度和物理性能。

UV rollers are made of EPDM rubber. While EPDM is resistant to the active ingredients in UV inks (such as monomers and photoinitiators), it has relatively poor oil resistance. The oil-based components in conventional inks can cause EPDM to swell, soften, and deform, which impairs the roller' s dimensional accuracy and physical characteristic.

此外，EPDM 橡胶在油性环境下耐磨性方面不如 NBR 橡胶，会导致胶辊表面磨损。In addition, EPDM rubber is not as wear-resistant as NBR rubber in an oil-based environment, which can lead to faster surface wear of the rollers.

总之，长期使用普通油墨可能导致 UV 胶辊表面膨胀、软化或开裂，影响其传墨性能。In conclusion, long-term use of conventional ink can cause UV rollers to swell, soften, or even crack, which significantly affects their ink-transfer performance.

在使用的早期，还会有另外一种现象：普通油墨在 UV 专用的 EPDM 胶辊上无法附着，

形成脱墨的现象。所造成的原因为：

In the early stages of use, another phenomenon may occur: conventional ink cannot adhere properly to UV-dedicated EPDM rollers, resulting in ink stripping.

The reasons for this are as follows:

材料的成分不同

### 1) Different material component

由于普通油墨的成分通常以矿物油、植物油或醇类溶剂为基础，这些成分与 UV 胶辊材质的亲和性较差，无法在胶辊表面均匀附着，导致脱墨。

Because conventional inks are typically based on mineral oils, vegetable oils, or alcohol-based solvents, these components have poor compatibility with the material of UV rollers, making it difficult for the ink to adhere evenly to the roller surface and resulting in ink stripping.

### 2) 表面能差异

#### Difference in surface energy

UV专用胶辊的表面能通常较低，适合 UV 油墨的传递。普通油墨的表面张力较高，无法在低表面能的胶辊上均匀润湿，导致油墨无法稳定附着。

UV-dedicated rollers typically have lower surface energy, which is suitable for transferring UV inks. Conventional inks, however, have higher surface tension and cannot wet the low-surface-energy roller surface evenly, resulting in unstable ink adhesion.

脱墨现象：由于表面能差异，普通油墨在 UV 胶辊上会形成“珠状”或“收缩”现象，无法均匀分布，最终导致脱墨。

Ink stripping phenomenon: Due to the difference in surface energy, conventional ink will form a “beading” or “shrinking” effect on UV rollers, preventing it from spreading evenly and ultimately leading to ink stripping.

### 3) 油墨黏度与胶辊硬度不匹配

#### Mismatch between ink viscosity and roller hardness

UV胶辊的硬度通常较高，适合传递 UV 油墨，但普通油墨需要较软的胶辊才能有效传递。硬度不匹配会导致油墨传递不良。

UV rollers are generally harder and designed for transferring UV inks. Conventional

inks, however, require softer rollers for effective ink transfer. A mismatch in hardness can lead to poor ink transfer performance.

#### 4) 溶剂侵蚀问题

##### Solvent attack issues

普通油墨中的溶剂（如矿物油、醇类）会侵蚀 UV 胶辊的表面，导致胶辊表面性能下降，进一步加剧脱墨现象。

The solvents in conventional inks (such as mineral oils and alcohols) can attack the surface of UV rollers, causing deterioration of the roller surface and further exacerbating ink stripping.