



## ANILOX LASER TECHNOLOGY 2020

### Ultrasonic Cleaning Systems

User guide

#### Understanding the system

Ultrasonic cleaning systems are a very efficient and quick method for cleaning anilox rollers/sleeves, the system is using 4 main elements during the process, and these are:

- ULTRASONIC ENERGY
- CHEMICAL SOLUTION
- HEAT
- TIME

The 4 elements combined ensure the anilox cells are cleaned, let's review each element:

**Ultrasonic Energy:** This is created using a series of Transducers on the underside of the tank and these emit ultrasonic energy at a set frequency, these energy waves travel through the solution and into the anilox cells attacking, breaking down and removing contamination.

**Chemical Solution:** The chosen solution must be recommended by the supplier of the system and compatibility should be reviewed to ensure the chemical is safe to use on the anilox roller, especially in the case of a sleeve and an aluminium body roller. The solution should be pre-mixed via a dilution unit or in a container so as the system evaporates and the operator tops up the tank the correct mix percentage is always been adhered too.

**Heat:** The heating is usually created by an internal element or a limpet style heater on the outside skin of the tank. The operating range is usually between 30 and 38 degrees, this should always be confirmed with the supplier of the system as the Chemical efficiency can change with the heat. Excessive heat can cause damage to the anilox roller and sealers used in the roller.

**Time:** This is a very important that the anilox roller is cleaned regularly in the Ultrasonic system, little and often is the key. It is vital the anilox is placed in the tank and only left in the tank for the desired cleaning cycle (as detailed by the system supplier). The anilox should not be left unattended for long

periods of time in the system. If the roller/sleeve requires multiple cleans then it should be allowed to cool between the cycles.

**Disciplines when using the Ultrasonic system:**

1. The solution should be fresh at the beginning of each week
2. Topping up the solution should only be done via an automatic dilution unit or a pre-mixed container of fresh solution.
3. The solution will be evaporating during the day so ideally keep the lid closed whenever possible to limit this.
4. Rollers and sleeves must be handled with care and the engraved face of the roller should not be handled or placed on any working bench.
5. If the face needs to be handled then the operator must wear soft clean latex type gloves.
6. When presenting rollers and sleeves to the system it is good practice to ensure as much ink/coating has been removed prior to placing the roller/sleeve in the system to avoid quick contamination of the solution.
7. PH can be monitored of the solution to establish when the solution has lost its chemical properties.
8. The heat setting should be left at one consistent setting and not increased or decreased.
9. Keep the drive rollers or belts clean and free from contamination to ensure the rotation is consistent.
10. The tank should be cleaned once a week and the solution dropped and the tank thoroughly cleaned, in very busy environments and depending on tank size this may need doing more frequently. The PH checks should help indicate this.
11. When presenting sleeves to the system ensure the end bungs are clean and in good working order, the seal on the sleeve is important as we need to avoid solution entering the body of the sleeve or accessing the edges of the sleeve where we may have delaminating of the sleeve walls, the chemicals can attack the adhesive compounds.
12. Rollers with excessive edge wear/chipping will need to be monitored as the solution can access the roller base and ultimately could cause some corrosion at the base (resulting in base corrosion and in some cases ceramic blistering)
13. Your anilox roller supplier can help you understand the different cycle time required for the different specifications of anilox rollers.
14. After the anilox has finished the cycle then ideally the anilox should be wiped clean and if possible the use of an airline to dry the cells completely, the anilox should at this stage be inspected for damage, difficult stains, score lines, scratches and these noted on the inventory so monitoring of the rolls is in place and all Pre-press and press operators are aware of the anilox condition and issues.
15. The anilox should then be placed safely in the dedicated storage area ready for the next print run.