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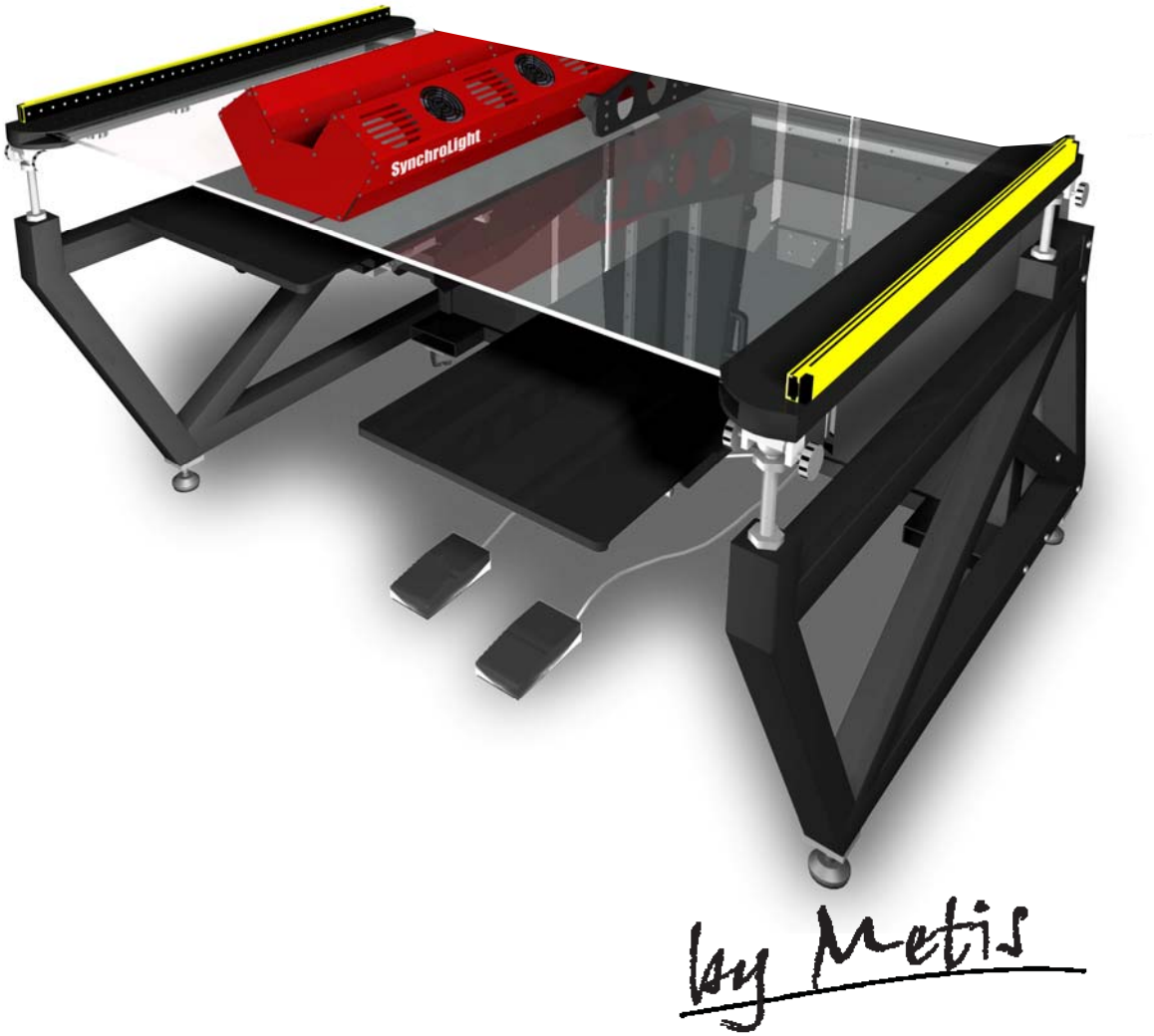

DRS A0 Book Cradle

ENG v.1310-1.1

Technical Specifications and description of the DRS A0 Book Cradle

The DRS A0 system integrates a highly automated, advanced and sophisticated electronic book cradle that can accommodate originals up to the A0 format and up to 50cm thick. It's the largest book cradle today available in the market and is also completely motorized and electronically controlled. The book cradle was also designed in order to perfectly work with flat originals such as maps and drawings or accommodate 3D objects such as paintings within their frame or raw materials such as marble or wood.

The DRS A0 book cradle is capable of very fine pressure adjustments in order to allow safely handling and scanning fragile, valuable and antiques originals. Many features in this Book Cradle are absolutely unique and do not have corresponding in any other product today available in the market. In particular the main features of the DRS A0 Book Cradle are :

- The book cradle integrate an autonomous and powerful intelligence which regulates in real time the cradle and glass behavior and position based on customer needs, on characteristics measured directly on the originals thanks to information provided by many different sensors (such as weight and pressure sensors).
- The book cradle accept books up to the A0 format and 50cm thick. The distance between the two plates may be adjusted by the user in order to fit any type of book.
- The book cradle integrates a fixed glass that can be (optionally available) removed for operating without glass. It's also possible to work with the glass but without contact between the glass surface and the originals. These modes are very important for fine art applications or when the original is framed (such in the case of some paintings). Furthermore when the glass is removed the electronic book cradle enter into a completely different operating mode where the original position and weight is no more calculated respect to the glass position but instead is estimated based on original thickness. This ensure

always a proper magnification, focus and enlightening of the originals avoiding most of the typical problems caused by working without a glass.

- When working without glass (i.e. with a framed painting) the original thickness and exact position is set and compensated thanks to specific sensors and to the ability to automatically adapting the camera head position according to it.

- In order to facilitate the user, the plates slides toward the front of the system in order to more easily substitute the original or turn the page.

- The Book Cradle behavior is user adjustable down to the smallest detail in order to perfectly adapt to different operational needs (such as rapid and massive reproduction or on the contrary, the reproduction of ancient and fragile originals). For example you can set the maximum pressure over the originals, the speed of descent and ascent, the pressure accuracy, the thickness of the originals, the descent of the plates at a precise level in mm, the plates may be obliged to work in parallel, the plates may be locked in position in order to avoid contact between the originals and the glass, the opening / closing of the book cradle may be set manually or automatically and even semi-automatically, the start of the scan may be automatically started when the plates detect the regulated pressure, the opening of the book cradle may also be automatically issued at the end of every scan, the book cradle and/or the scan may be operated from the 3 integrated foot pedals, and much more. Most of these options are generally set automatically without the user having to necessarily interact with the software, but the most demanding user has also the possibility to customize the book cradle and workflow as desired.

- The pressure over the originals (when the glass is used) is accurately and automatically set to the desired level thanks to special sensors that can read differences of even a few grams over the plates. There is no other book cradle, such as the one integrated into the DRS A0, capable of reaching a similar level of accuracy and sensitivity, and the benefit is visible when it

comes to digitize very precious and delicate originals that otherwise could not be acquired with the aid of a crystal. In fact the system is so sensitive that it's even possible to stop the cradles simply with the touch of a finger. Furthermore the pressure between the two plates (the two sides of the book) is always taken into consideration in order to avoid stressing the books independently from the use of the glass.

- The book cradle integrate a unique "electronic" balance. In fact, all book cradle which integrates a balance provide a mechanical solution that works with the "classical" principle of the old balance with weights. But the misalignment of the plans in such a mechanical balance is fixed and not adjustable while different originals (such as books but not only) can have a different weight / thickness ratio requiring different types of misalignment. The electronic balance into the DRS A0 book cradle automatically adjusts itself to the detected original weight / thickness ratio, according to the information provided by various sensors (the value can also be manually set), making possible to work optimally with any type of original.

- Furthermore, the balance is equipped with an electronic friction (a sort of clutch) that allows the user to finely adjust the response of the plates according to the detected weight and pressure. For example, setting a soft friction allows the user to obtain an automatic and rapid adaptation of the plates position according to the weight / pressure / thickness of the book while at opposite a stiffer friction allows the user to manually adjust the plate misalignment pushing the plates with the hands (and this in practice is extremely useful).

- The book cradle incorporates several features built to protect the originals (but also the operator). For example: the descent of the plates is automatically stopped if an obstacle is detected under the plates (an object or the operator's knees), the plates automatically lower if during the ascent of the plates the pressure regulated by the user is exceeded (it may happen if the book cradle is set to work very fast and the originals are very hard) .

- The book cradle, in particular the supports of the glass, have also been designed in order to allow accommodating originals in excess of the A0 format. In fact the book cradle is practically open on 3 sides.