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## Cleaning & Maintenance of numbering heads

Numbering machines are precision instruments. It is well worthwhile to handle them carefully. Standstills or waste sheets are more expensive afterwards in any case than to spend time for maintenance!

Lubrication and maintenance intervals are dependent of different factors like numbering switching cycles, paper abrasion and color components and cannot be generalized.

Following instruction should help to increase the life time of used numbering heads and will be handled like that in many printing companies.

If there is no automatic wash up equipment inside the machine, the cleaning procedure could be handled in traditional form as following.

In the evening or after the end of the shift, maculated sheets pass the machine in that way that the most rest of ink on the engraving surface is gone. With solvent moistened wheels can be cleaned finally with a plastic brush. (Do not use a metallic brush to avoid damages on the engraving or wheel magnets in case of using electronic controlled numbering heads.) Most ink cleaning solutions also reduce the oil film and after the cleaning procedure the numberings need a small lubrication again, see daily lubrication.

As a cleaning fluid use paraffin, petroleum or any commercial cleaning agents, available at company "Innotec", "Elkalub", Klüber Lubrication", etc. Dirty and not by hand cleanable parts can be washed up by using an Ultrasonic Cleaning bath. **Do not use the Cleaning device for wheels with glued magnets as the cleaning solution will destroy the glue!** Using such device will completely remove the oil film from the numerators so that the parts should subsequently be placed afterwards into petroleum in which 3-4% of resin free oil was dissolved. ("Fernschreiberöl") After drying from petroleum a thin lubricating film will thus remain which will protect all parts of the numbering machine from rust.

### Daily lubrication:

Before starting the production day we recommend small drop lubrications between the wheels. Please note that too much oil will spill over the paper sheets and over the wheels the ink will not fulfill the surface and leads in bad print quality. For the drop lubrication we recommend Isoflex PDP 61 A "Fernschreiberöl" from company:

Klüber Lubrication KG, Geisenhausenerstraße 7  
Germany – D 81379 München, Phone: +49 89/78 76 0

### Maintenance after 1.000.000 switching cycles:

Disassemble of the wheel set and cleaning in an Ultra sonic bath for approx. 35 minutes. (Time depend on the used solution). The temperature of the Ultra Sonic solution should be 30 – 40 degrees Celsius; it means the equipment must be able to heat up. Recommend cleaning solutions can be asked from the manufacturer of the Ultra Sonic Bath.

If dirtying is too much, please use an additional plastic brush!

The complete cleaning procedure must be repeat in regular intervals in complete dismantled condition, to keep the problematic zones between the wheels clean and free of resin, otherwise it can solve in dysfunctions. For an easier Assembly/Disassembly of the numbering heads, we can provide you with special tools.

To reduce the machine stop during the maintenance we recommend to change weekly 1 – 2 complete numbering rows with before maintained spare heads.

### Maintenance after 2 weeks:

Grease the switching cams and movable parts of operating arm.

### Maintenance after 2.000.000 switching cycles:

Additional to all other maintenance cycles grease all other moving parts of the numbering head.

Find more companies for purchasing lubrication and cleaning solutions:

Wied's Ecochem AG <http://www.wieds.de/>

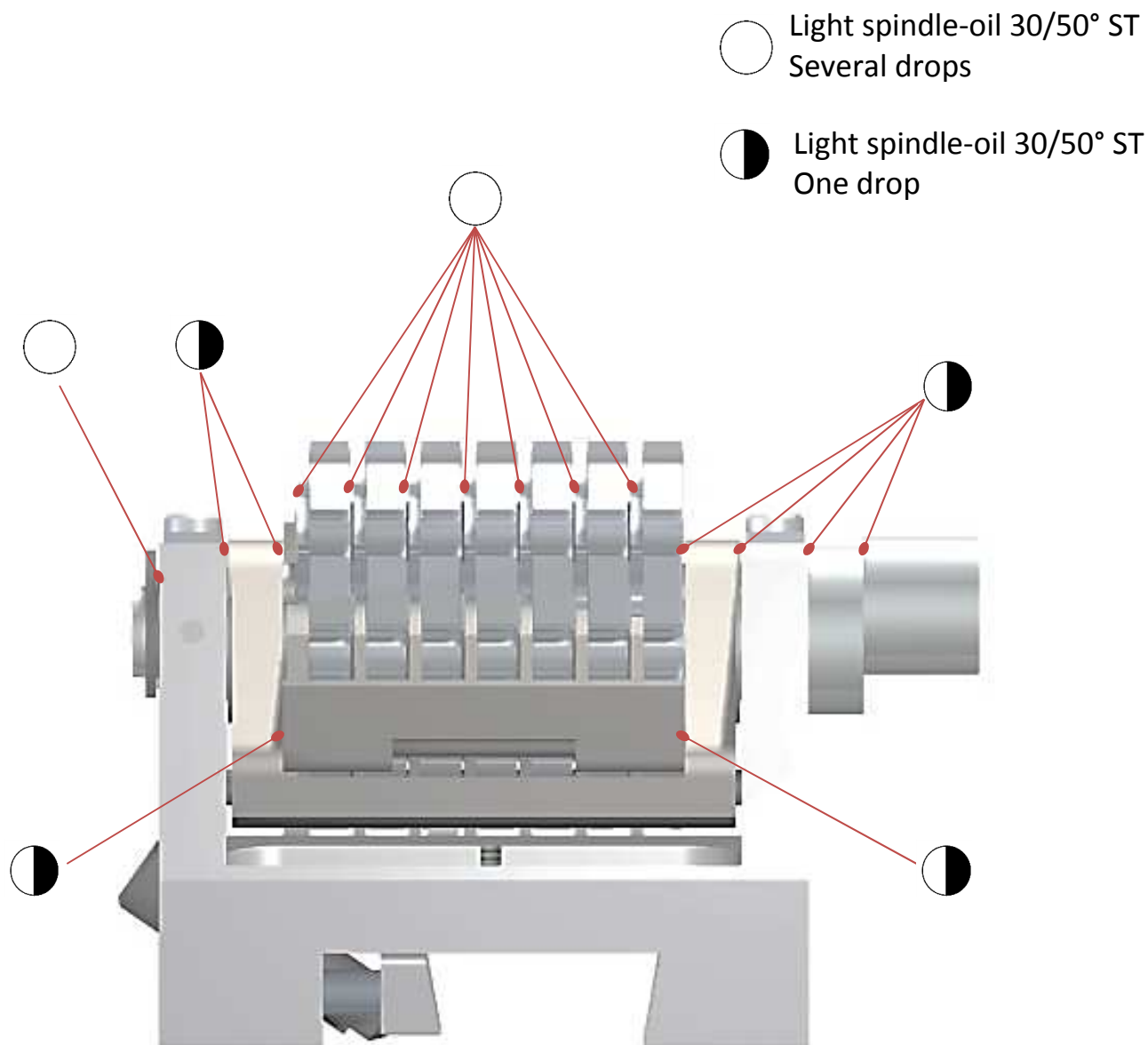
Chemie Technik GmbH <http://www.elkalub.com/>

Klüber Lubrication <http://www.klueber.com>

Innotec <http://www.innotec.at>

## Lubrication

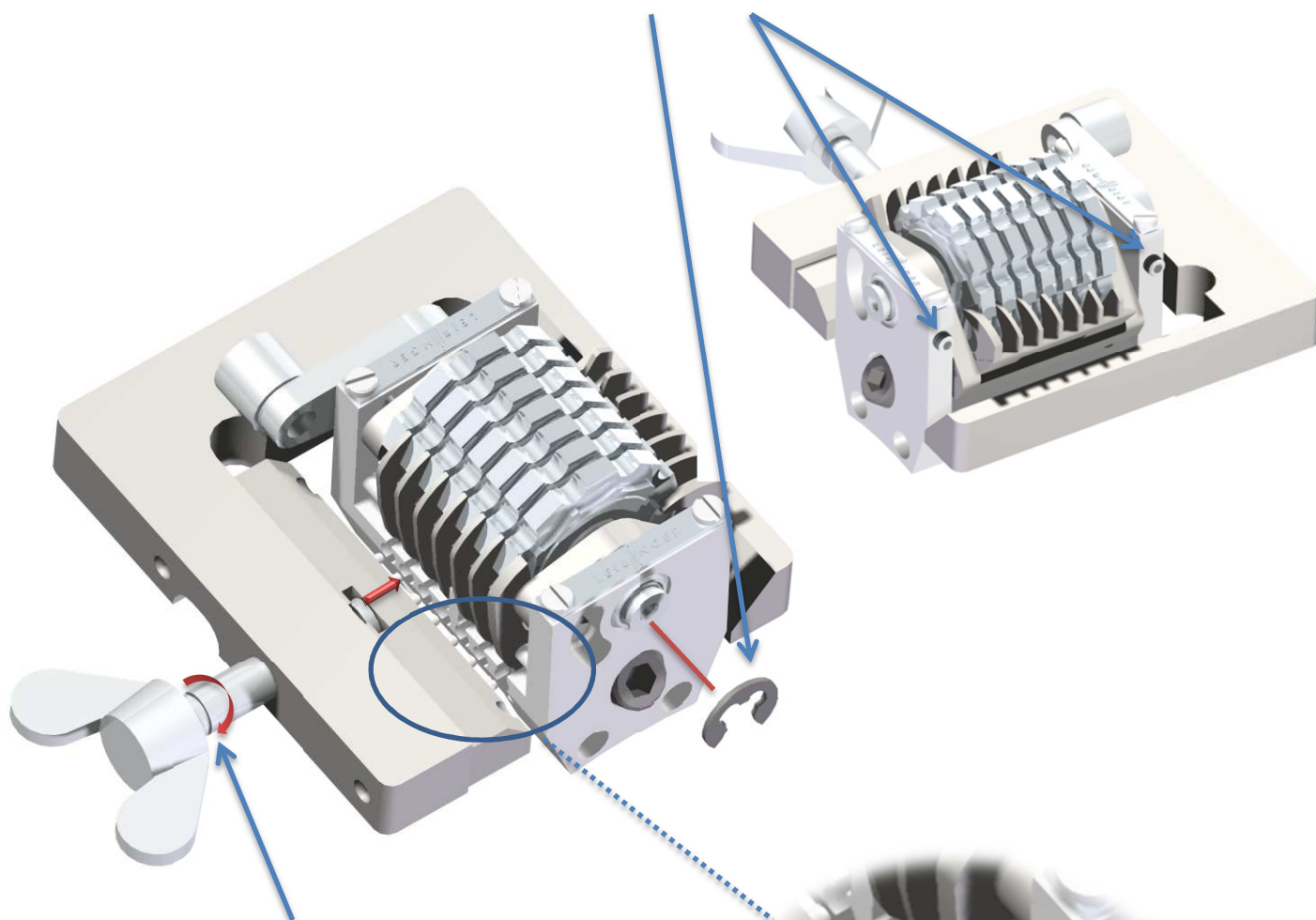
We recommend oiling once every day or when working in several shifts at the beginning of each shift. It is most essential to select a resin free quality oil of the right viscosity of 30°/50° ST.



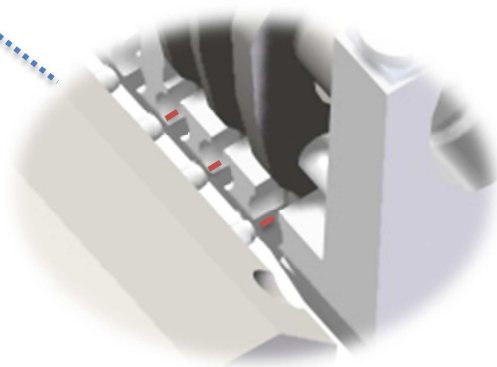
## Replacement of parts/Dismantling numbering box

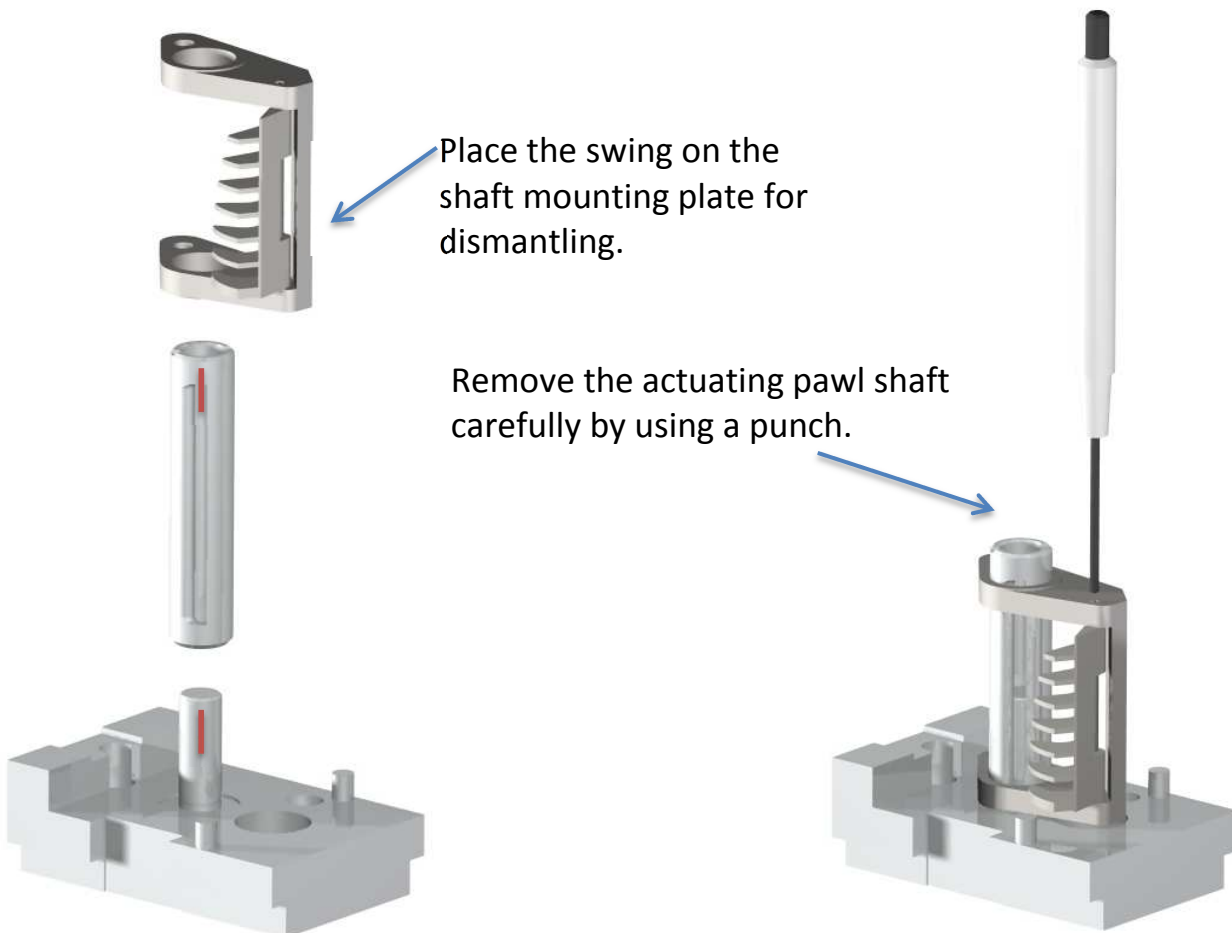
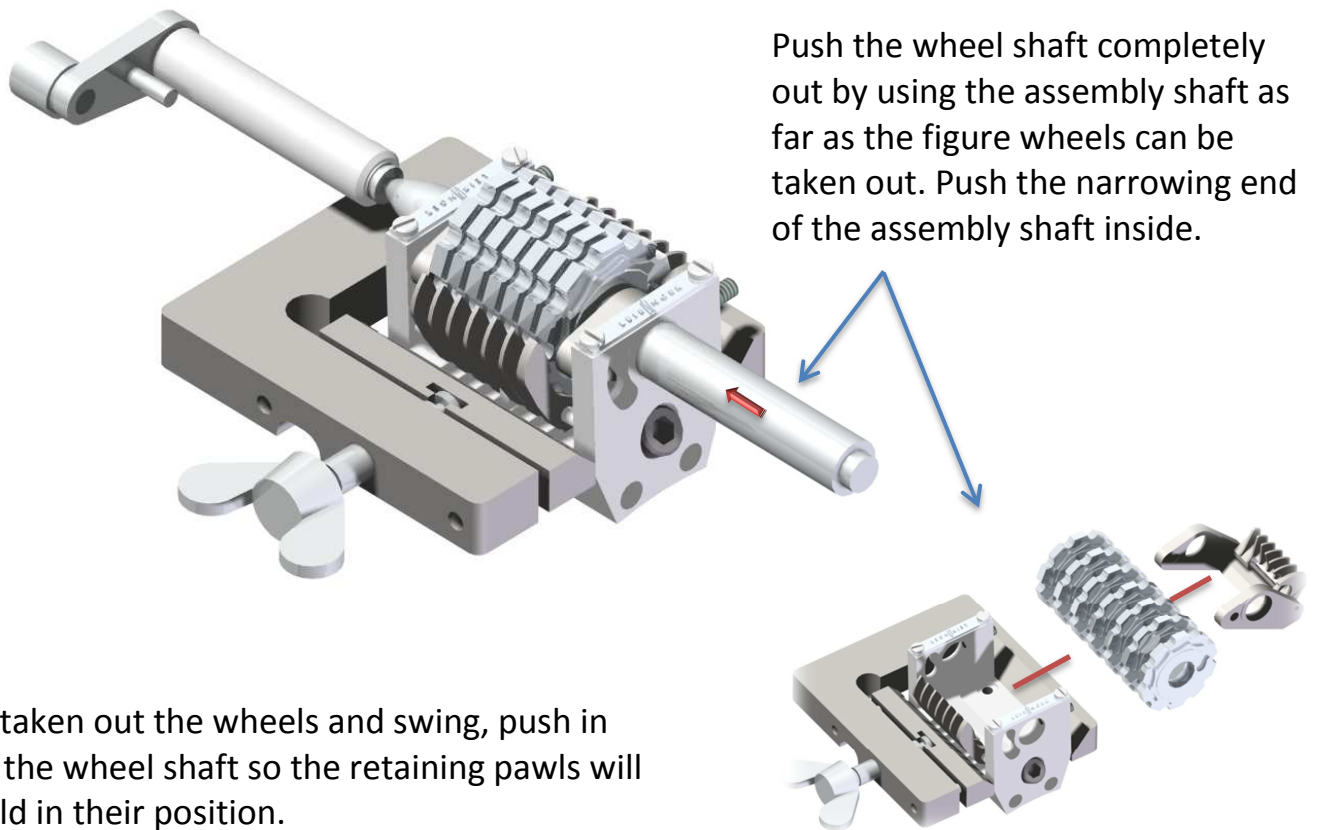
Check the parts for damage and if necessary remove the damaged parts.

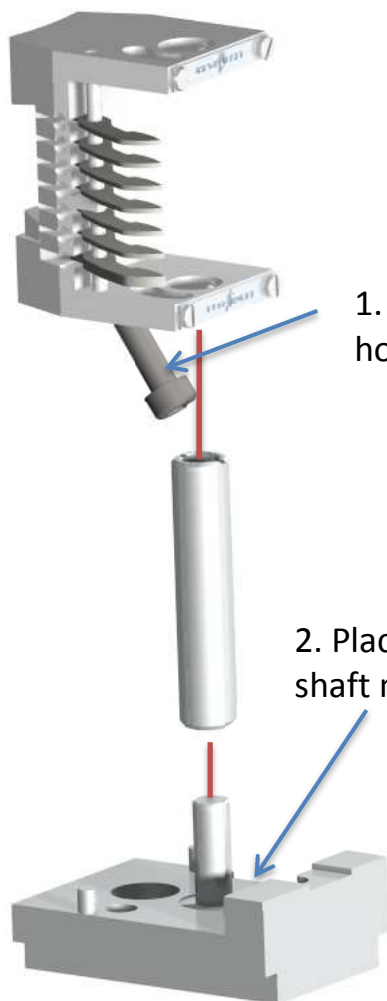
1. Remove the shaft secure ring and loosen the shaft set screw.



2. Fix the retaining pawls by using the mounting clamp in the release position.







Remove the two gib holding screws and take the gib out

