



founded 1842

## General Guideline for Aprons and Cots

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### **A. General Aspects**

#### **A.1. General**

J. Kaulhausen & Sohn –JKS- is the German company in the world who supplies Aprons & Cots for all 4 spinning systems: Ring Spinning, Compact Spinning, Air Jet Spinning and Rotor Spinning. We are quality oriented and due to our close relationship with our customers we are always upgrading and engineering our products to trend customers and machine manufacturer requests.

JKS is a family owned enterprise founded 1842 as manufacturer of Leather belts like V-belts & Tooth-belts etc.

Around 60 years ago we started our production of aprons for Ringspinning mc/s, first in leather execution only. In the beginning of the seventies we have developed rubber aprons and rubber cots and extended our production facilities in Germany.

With a high standard production plant and a modern equipped laboratory in combination with our modern office and high experienced employees we are delivering best suitable Aprons and Cots qualities for all spinning applications. The shore hardness range for JKS cots is actually produced from 63°A to 90°A, at the entire working satisfaction of our customers.

JKS leads the production of spare parts also for compact spinning mc/s and high speed mc/s.

JKS delivers their products to all European Spinning Mills and to mills from South America, Turkey, Russia, Asia and especially also to Middle and Far East.

World-wide we have around 600 customers periodically supplied by JKS Cots and Aprons.

The following is only a general short guideline, if you have any queries please do not hesitate to contact us directly under [info@jks-spinning.de](mailto:info@jks-spinning.de).

Yours faithfully

J. Kaulhausen & Sohn, Germany

Managing Director



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### A. 2. Order Specifications

Main information for any material supplied by JKS are the production process and the required dimension. In general we need the following information:

#### A. 2.1 Order Specifications for cots

1. BRD = Bare Roller Diameter
2. FOD = Finished Outside Diameter
3. L = Length
4. Shore Hardness in SH°, if recommendation is required the Type of Yarn produced
5. Type of Construction (Alucore / Springrip - hard innercore)
6. Edge construction (Round / Straight)

#### A.2.2 Order Specification for aprons

1. ID: Inner Diameter
2. W: Width
3. Thickness
4. Produced Yarn and count no. in NE (English Count)
5. If possible for which ring frame model / machine the aprons are required

### B. Life time

#### B.1. General

It is a very difficult question to answer the working life of cots and aprons as there are a number of factors affecting the lifetime of aprons and cots.

To name a few general factors affecting the life time of Aprons and Cots:

- Type of fibres being processed
- Spinning Speed
- Yarn Count
- Atmospheric conditions, Humidity impact
- Top Arm Pressure
- Machine condition
- Traverse mode



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For conventional spinning JKS aprons have a lifetime while producing cotton + blends fibres in a range of 18 to 24 month and for synthetic fibres of about 12 to 16 month.

Life time for Cots are in addition mainly influenced by the treatment / maintenance. In general the grinding cycles are as follows:

### B.2. Grinding cycles:

The following grinding cycles are depending on 'normal' conditions in the mill.

Tolerances of shore hardness: +- 2°/3° (DIN ISO 7619-1)



Product	JKS AP 63	JKS GG65	JKS BY 66	JKS BE 68	JKS LG 70
Colour	apricot	greenish/grey	yellow	blue	light grey
Shore Hardness	SH 63 °A	SH 65 °A	SH 66 °A	SH 68 °A	SH 70 °A

#### Grinding Interval

Ring Spinning	60 days	60-90 days	60-90 days	90-140 days	100-150 days
Compact Spinning	30-45 days	45 days	45 days +	45-60 days	60 days +

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Soft Cot: JKS AP 63 (apricot)  
JKS GG 65 (greenish grey)  
JKS BY 66 (yellow)  
JKS BE 68 (blue)  
JKS LG 70 (light grey)

Medium Cot: JKS GR 75° (green), JKS BL 80 (black)  
Minimum 90 to 120 days grinding cycle

Hard Cot: JKS G 83 (grey), JKS TB 85 (dark blue)  
Minimum 120 to 180 days grinding cycle



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### **C. Treatment of Cots**

#### **C.1. Grinding stones**

Generally aluminium oxide grinding wheel is used for grinding the cots. JKS recommends a grinding stone of 120 grid, in general it should be above 100 grid. For Jet Spinning 120 grid is required. The stone is used for grinding and polishing. During grinding process the stone increases its temperature, if the stone gets hot the pores are overloaded with rubber, than truing is required with a diamond dresser.

The stone should have a diameter of 250mm in order to get a perfect contact between stone and cot.

Surface roughness / RA-value after grinding and polishing should be between R 0.6 and 0.9 micron.

If the RA value is high it will lead to **lapping**.

RA value should be checked after grinding and polishing before using.

In case of lapping the fibres must be removed immediately.

The surface of the cots has to be cleaned.

#### **C.2. Frequency of Grinding**

No general guideline is advisable, as conditions, besides the count, vary from mill to mill. Normally the mill should set up an individual schedule for the maintenance, mostly influenced by the yarn quality which has to be checked. The mill should record the period for which the aprons and cots have worked and use this norm for the maintenance cycles.

In general JKS is recommending a very light cut combined with polishing than processing deeper cuts at longer intervals. A cut / grinding of **0.1-0.2 mm** on the OD (outer diameter) would be preferable.

A cut above 0.2mm has an additional higher temperature impact on the cot surface.

#### **C.3. Chemical treatment**

##### **C.3.1 Ultraviolet treatment**

In general UV-treatment is not required for JKS quality cots, especially if the grinding process is done carefully. This treatment influences the rubber compound and due to JKS experience lifetime will be reduced.



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With this UV-treatment roller lapping can be reduced for synthetics and blends, particularly if the cot is concentric and taper free.

For high speed Jet Spinning the surface can be influenced positively with a homogeneous surface.

### **C.3.2 Acid treatment**

The cots surface is treated with sulphuric acid and then rinsed with water.

The acid on the cot, can be neutralised with an alkaline solution and then washed with water.

No general recommendation for Acid treatment from JKS.

### **C.3.3. Anti-lapping solution**

Various types of anti-lap solutions are readily available in the market.

All treatments of cots have an additional impact on the lifetime, especially Acid treatment and Anti-lapping solutions have to be used carefully. JKS Anti-Lapping two-component solvent has to be used within 2-3 days after mixture.

JKS can provide a general manual for JKS Anti-lapping solvent.

Life time for cots is belonging to the grinding process, as explained we recommend to grind 0.1 to maximum 0.2 mm. The yarn results / U% are normally better with softer cots, but the grinding cycles will be less, so the shore hardness has an impact on the lifetime. In general cots can be grinded around 10 times.

## **D. Endless making of JKS open aprons**

### **D.1 JKS open skived aprons**

- Rapid Glue should be used – JKS recommends SICOMET 8400
- Skived surface must be free from contamination (dust, lubricants)
- The skived edges should be placed in the clamp
- The arrows of the skived edges should be in counterpart
- A drop of Rapid Glue should be coated on the bottom skived area
- No glue should be coated on the top skived area
- After closing the clamp the apron is ready for use within 2-3 minutes



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- In case maintenance people are well trained, the closing procedure can be executed by finger pressure (protection by finger tips required)

### D.2 JKS open pre-glued aprons

- Put the apron into the work position.
- Avoid touching the skived surface
- Only a light coat of JKS EP activator liquid should be put on both skived edges with a thin brush or with a pen on the full skived area.
- Let the activator dry for approx. 10 seconds until the activator is not any more shiny.
- Stick the ends carefully by applying uniform pressure by fingers by around 30 seconds.
- To use a clamp is advisable.
- Leave the joint dry for around 4-5 minutes.
- The strength increases with the drying time.

### D. Storage of Aprons & Cots

Aprons & Cots should be stored on following storage conditions:

- Keep the Aprons & Cots inside the JKS carton box
- Avoid direct sunlight
- Aprons & Cots should be stored with clean conditions
- Temperature above 25°C and humidity above 60% has a negative impact on storage time

Under suitable storage conditions Aprons & Cots can be used after 1 year storage time.

Yours faithfully

J. Kaulhausen & Sohn, Germany

Managing Director