

Instruction manual for CROCOdoff and CROCOdoff Forte clamping crowns CROCOdoff及低支纱CROCOdoff夹纱器 说明书

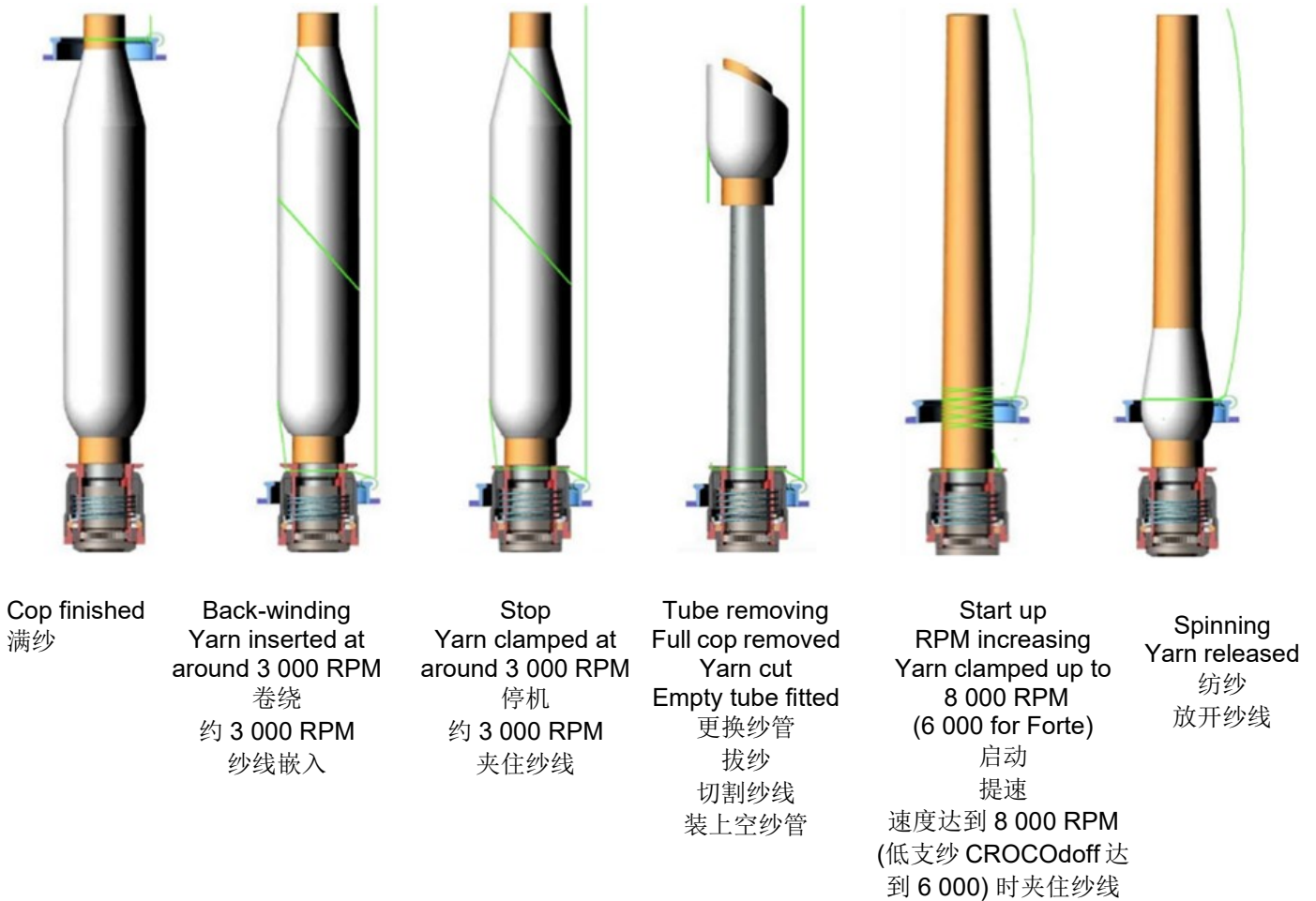


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1. Doffing process in general 常规落纱程序

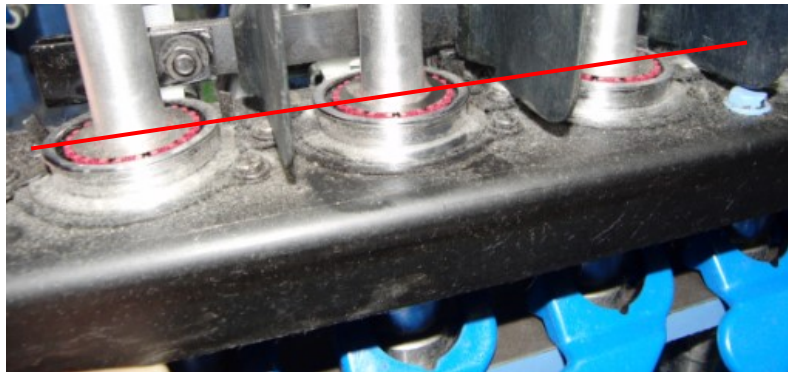


2. General rules for machine setting 机器设置通用规则

2.1. Ring rail leveling 钢领板调平

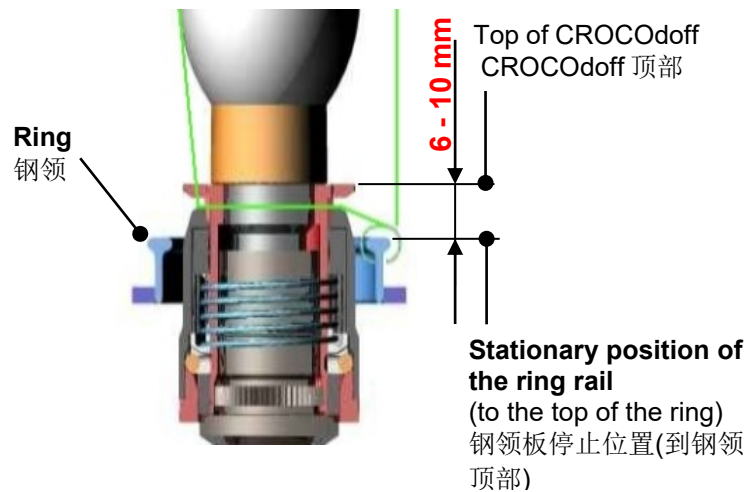
Ensure that the leveling of the whole machine is in order. In particular the ring rail must be well leveled with respect to the top of CROCOdoff, otherwise its correct running cannot be achieved.

确保整机处于很好的水平状态。特别是钢领板必须要很好地调平来保证钢领顶部与CROCOdoff顶部高度相同，否则不可能实现CROCOdoff的正确运行。



2.2. Under-winding position of the ring rail 钢领板的管底卷绕位置

Set the under-winding position of the ring rail in such a way that the top of CROCOdoff is positioned by 6 to 10 mm higher than the top of the ring (see picture). The distance has to be as uniform as possible across the length of the machine. 设置钢领板的管底卷绕位置，使CROCOdoff顶部比钢领顶部高6-10mm(见图)，该距离必须尽可能均匀贯穿整台机器。



2.3. Back-windings 纱线回绕

It is recommended to achieve as few back-windings as possible during the ring rail movement down to the under-winding position - up to 1,5 to 2 back-windings. However, the speed of the ring rail has to be set in relation to the spun material and the trouble free running of the winder. 在钢领板运行到管底卷绕位置的过程中，我们建议尽可能实现最少的回绕，即1.5圈到2圈的回绕。当然，钢领板速度必须根据纺纱原料来调整并且要确保络筒工序的顺利运行。

Trouble Shooting 问题解答

Too many back-windings (e.g. 5): 太多的回绕 (例如 5圈)

- set faster ring rail downwards movement 调快钢领板下行速度
- set the stop of the motor at higher position of the ring rail (earlier stop) 当钢领板在较高的位置时，停止电机 (提早停车)
- set lower spinning out speed 调低预备落纱速度

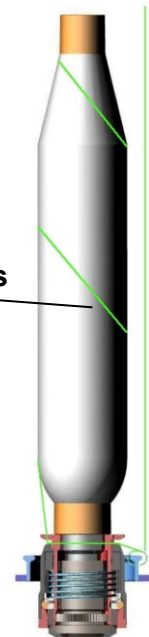
Too many back-windings can lead to long residual yarn tails after cutting the yarn (the yarn is broken far away from the crown) 太多回绕可能导致切纱后较长的尾纱 (纱线在离夹纱器更远的地方才断开)

Too few back-windings (e.g. 0,5): 太少的回绕 (例如0.5圈)

- set slower ring rail movement downwards 调慢钢领板下行速度
- set the stop of the motor at lower position of the ring rail (later stop) 当钢领板在较低的位置时，停止电机 (推迟停车)
- set higher spinning out speed 调高预备落纱速度

Too few back-windings can break the yarn during lowering of the ring rail or to create problems on the winder. 在钢领板下降过程中太少的回绕会导致纱线断裂或给络筒工序带来问题。

Back-windings 回绕



2.4. Inserted length of the yarn 纱线嵌入长度

Synchronise the machine movements during stopping so that the clamped yarn length is 0,75 in circumference of CROCOdoff, ideally 270°. The length usually varies slightly from spindle to spindle. **It is essential that the clamped length never exceeds 360°!**

在纱锭停止过程中，按如下要求使机器协同运作，以确保夹在CROCOdoff内的纱线占整个CROCOdoff周长的0.75 (理想角度270°)。通常情况下这个长度在锭子与锭子之间会有一点差别。**最基本的要求是夹纱长度不允许超过360°!**

Each machine can be set according to its mechanical or software design. There are also machines available in the market where the length of the clamped yarn can be set easily via software.

每台机器可以根据机器本身的机械或软件设计进行设置。目前市场上有些设备可以很方便地通过软件对夹纱长度进行设置。

Clamped yarn length 夹纱长度



2.5. Normal stopping sequence 正常停锭步骤

Motor (spindle and drafting) braked earlier by inverter (at higher ring rail position) 通过变频器让电机（锭子和牵伸）提早停止运转（在较高的钢领板位置）

Ring rail position 钢领板

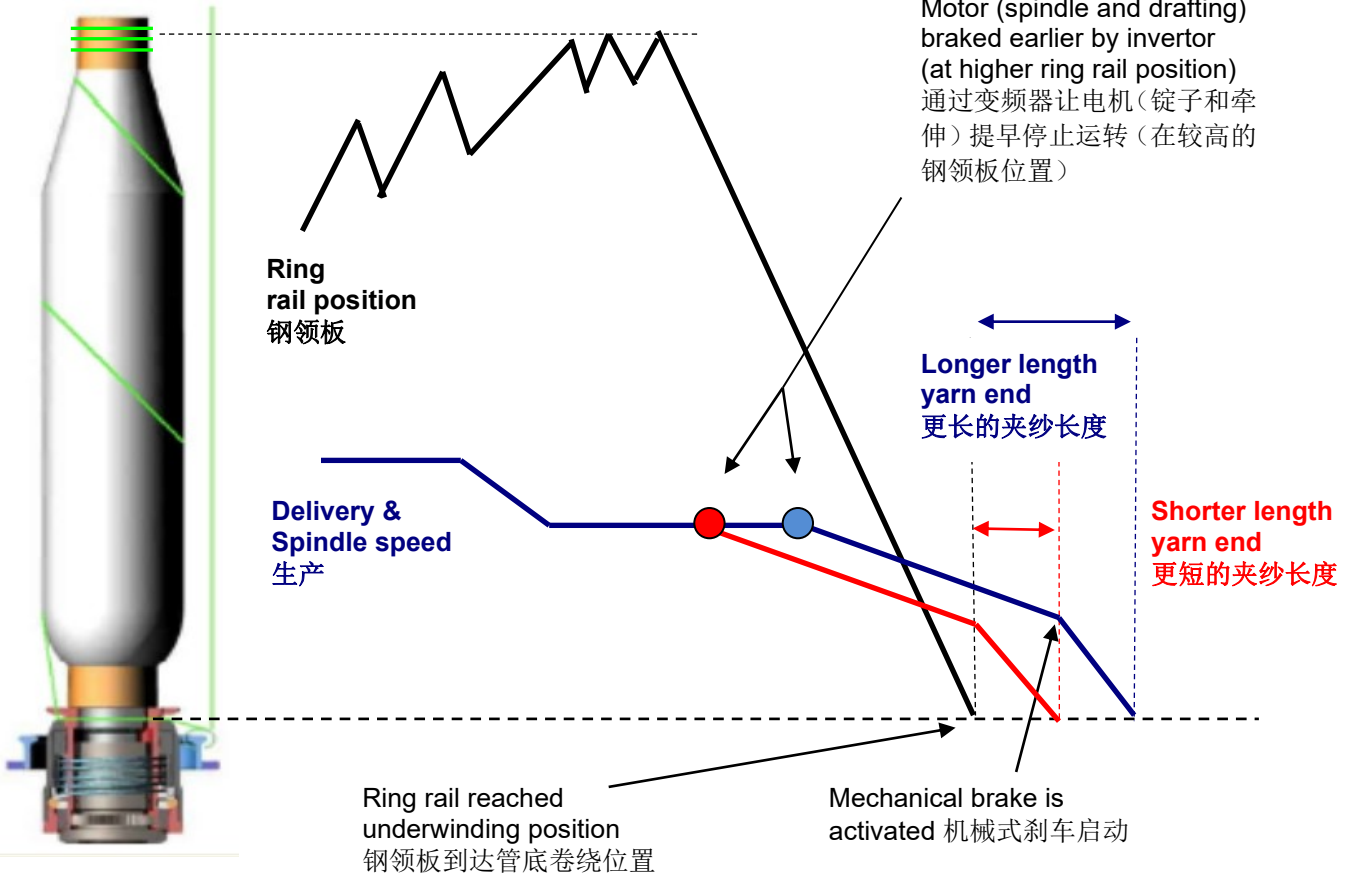
Delivery & Spindle speed 生产

Longer length yarn end 更长的夹纱长度

Shorter length yarn end 更短的夹纱长度

Ring rail reached underwinding position 钢领板到达管底卷绕位置

Mechanical brake is activated 机械式刹车启动



Trouble shooting 问题解答

Clamped length of the yarn is too long (more than 270°):过长的夹纱长度 (大于270°)

- stop motor earlier (at higher ring rail position) 提早停止电机 (钢领板在更高的位置)
- activate mechanical brake earlier 提早启动机械式刹车
- set lower spinning out speed 调低预备落纱速度

Clamped length of the yarn is too short (less than 180°):过短的夹纱长度 (小于180°)

- stop motor later (at lower ring rail position) 推迟停止电机 (钢领板在更低的位置)
- activate mechanical brake later 推迟启动机械式刹车
- set higher spinning out speed 调高预备落纱速度

2.6. Start- up of the machine 机器启动

There are different ways of setting the start-up of the machine. One of them is described bellow. Apart from the rule that the start-up speed has to be for a short time bellow 8 000 RPM respectively 6 000 RPM for Forte (to enable first few windings of the yarn on the tube) it is possible to modify the process according to the customer's best experience.

有各种不同的方式设置机器的启动。下面列举其中一种。机器的启动速度短时间内必须低于8 000 RPM，相对应的低支纱CROCOdoff为 6 000 RPM (以便开始几圈的纱线缠绕在空管上)，除此之外，客户也可以根据自己的最佳经验来对步骤进行调整。



2.7. Yarn winding 绕纱

Make sure that the operators always start to spin by inserting the first windings on the tube surface. Never insert the yarn under the tube. It can lead to excessive dust accumulation. Additionally, the doffer can be damaged when removing the jammed tubes.

要确保操作人员在纱管表面缠绕几圈纱线后再开始纺纱。绝对不能在纱管下方嵌入纱线，否则会造成灰尘堆积。此外，移除堵塞的纱管时可能会对落纱装置造成损坏。

3. General rules for handling 操作规范

3.1. General rules 通用规则

Correct handling during assembling, disassembling, cleaning etc. is essential for the trouble-free running of CROCOdoff.

Always follow the instructions described in this manual and in Novibra Spindle Manual.

锭子在安装、拆卸及清洁等过程中的正确操作是必要的，以确保CROCOdoff无障碍运行。Novibra强烈建议始终遵守本说明书的指示。



It is strictly forbidden to use an excessive load or sharp tools during handling.

在操作过程中严禁使用过度的外力或尖锐的工具。

Never clean CROCOdoff while it is rotating! CROCOdoff旋转时严禁清洁CROCOdoff!

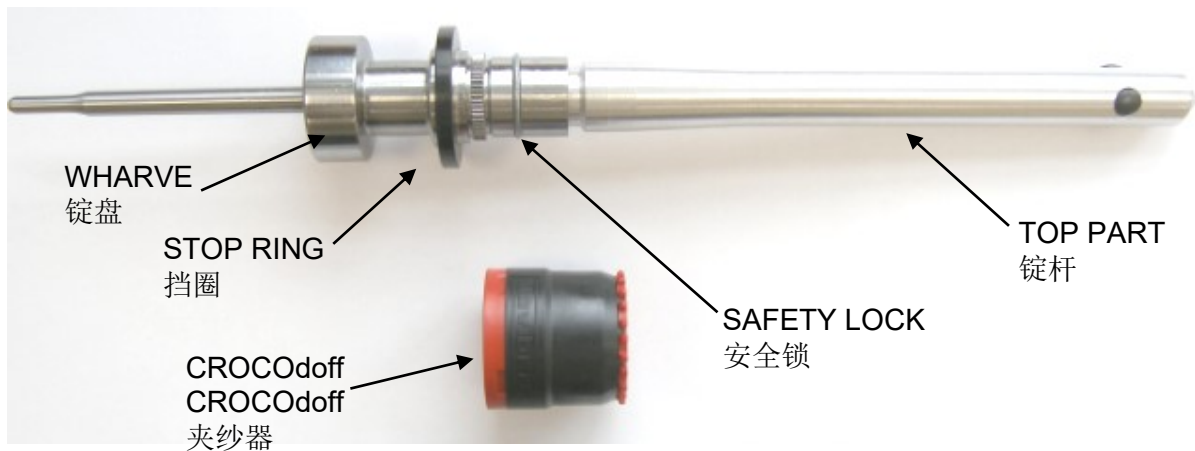
Never run CROCOdoff if it shows any sign of a damage! 严禁使用出现损坏迹象的CROCOdoff!

Do not use any cleaning liquid or a special chemical agent as this can damage CROCOdoff. 请勿使用任何洗涤液或特殊化学制剂，否则可能损坏CROCOdoff。

Consequences: 后果:

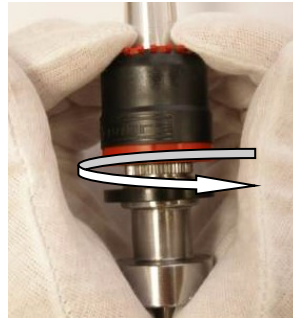
Injury to the staff. 伤害员工

CROCOdoff can be damaged. 损坏CROCOdoff

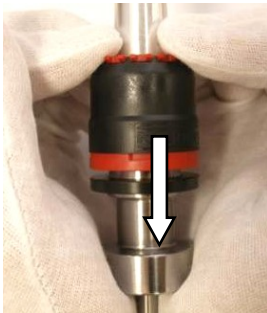


3.2. Assembly of CROCOdoff CROCOdoff 的安装

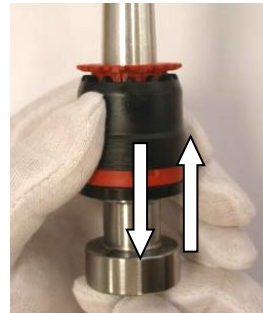
1) Insert CROCOdoff on the Top part
将CROCOdoff插在铤杆上。



2) Find the right position of CROCOdoff by turning the part while applying a low force. The teeth of CROCOdoff must match the teeth of the wharve
稍稍用力转动CROCOdoff找到它的正确位置。CROCOdoff的齿必须与铤盘的齿相吻合。



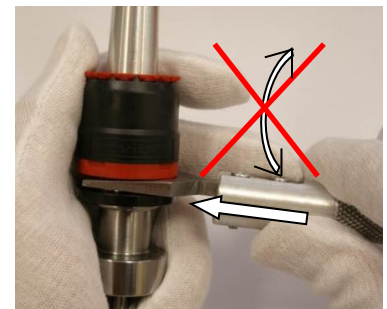
3) Press CROCOdoff in the direction of arrow at the picture. Use gentle force to overcome safety ring that keeps CROCOdoff in the correct position.
按照图中箭头所示方向压CROCOdoff。稍稍用力压过CROCOdoff卡圈，CROCOdoff会被卡圈固定在正确的位置。



4) Check the correct function of CROCOdoff by opening and closing it. Both movements must be smooth.
通过打开与闭合CROCOdoff检查CROCOdoff的功能，打开与闭合必须自如顺畅。

3.3. Disassembly of CROCOdoff CROCOdoff 的拆卸

Use special removal tool supplied by Novibra to disassemble CROCOdoff. 使用 Novibra 提供的专用拆卸工具来拆卸 CROCOdoff。



Insert removal tool between the stop ring and CROCOdoff. Apply only a low force perpendicular to the top part axis. Do not use the tool as a crowbar! 将拆卸工具插进CROCOdoff挡圈与CROCOdoff之间，只需在铤杆轴的垂直方向稍稍用力压进。不要上下摇摆工具！

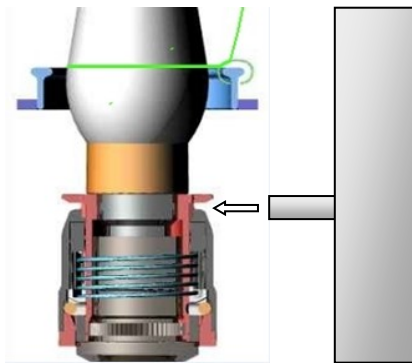
The Top Part has to be always disassembled from the bottom part otherwise the spindle can be damaged 在拆卸CROCOdoff时必须把铤杆从铤胆中拿出来，以免损坏铤子

3.4. Maintenance CROCOdoff CROCOdoff 维护

CROCOdoff has been designed keeping in view the market request for minimum level of cleaning. However, depending on the kind of spinning yarn, the cleanliness of the environment, the maintenance and machine setting, it may be necessary to clean it from time to time. CROCOdoff的设计立足于市场需求，确保了最低的日常清洁需要。当然，根据所纺的纱线品种、纺纱环境、机器的设置和维护等因素，如有需要，可以对CROCOdoff进行清洁。

This cleaning job has to be done in a dry way. **Do not use any liquid or a special chemical agent as this would damage CROCOdoff.** Use a soft brush or a wiper. CROCOdoff的清洁必须以干燥的方式完成，千万不可用任何液体或者特殊化学制剂来清洁，否则会损坏CROCOdoff。使用软刷或者抹布来清洁。

Remove CROCOdoff from the top part in the way described above. Then open CROCOdoff as much as possible so as it can be cleaned easily. 按照前面描述的方法将CROCOdoff从锭杆上取出，尽可能将CROCOdoff打开，这样更容易清洁。



CROCOdoff can be also cleaned by the machine blower. Set one of the nozzles of the machine blower so that the air cleans the opened teeth of CROCOdoff while running along the machine. CROCOdoff也可以通过机器吹吸风装置来实现清洁。将机器吹吸风装置的一个喷嘴进行调整，使其吹出的空气能在吸吹风装置的巡回过程中对打开的CROCOdoff齿进行清洁。

While cleaning follow General rules as described in the chap.3.1.
请按照章节3.1中的操作规范进行清洁。

Depending on the external parameters specified above and on the level of maintenance, CROCOdoff / CROCOdoff Forte exchange should be considered after 4-5 years of operation to secure its best practice. 根据上述外部参数和维护水平，CROCOdoff / CROCOdoff Forte 应在运行 4-5 年后考虑更换，以确保其达到最佳效果。

3.5. Maximal operational speed 最高运行速度



It is strictly forbidden to operate: 严禁以下操作:

CROCOdoff above 25 000 RPM CROCOdoff超过25 000 RPM

CROCOdoff Forte above 20 000 RPM 低支纱CROCOdoff超过20 000 RPM

Consequences:后果

Injury to the staff. 伤害员工

CROCOdoff can be damaged. 损坏CROCOdoff

This Manual is valid from 1.2.2024 and replaces all previous versions of Instruction Manual for CROCOdoff. 本说明书自2024.2.1起正式生效，并取代之前所有版本的CROCOdoff说明书。