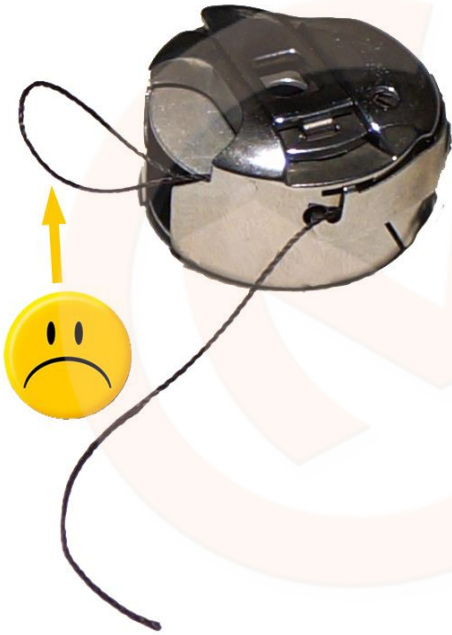


Bobbin braking devices prevent excessive unwinding of the lower thread due to the inertial rotation of the bobbin.

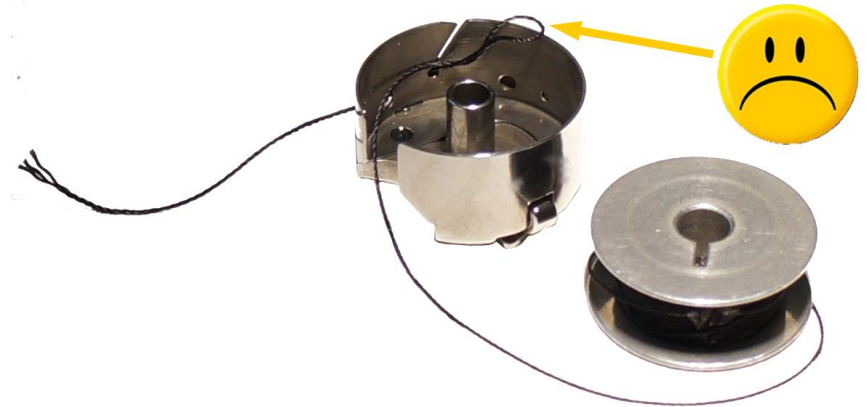
This unwanted unwinding of the thread may cause stitching defects when resuming the sewing operation, resulting in uneven tension, thread eyes, birdnesting and even thread breakage. The bobbin braking device is essential in all cases where the inertia of the bobbin is relevant, such as:

- substantial tears up of the lower thread while sewing
- during automatic thread trimming operations
- stopping sewing at high stitching speed
- stopping sewing with a high stitching length or wide zig-zag stitches
- using very heavy bobbins.



The braking of the bobbin is therefore much in use with sewing machines equipped with thread trimming devices, high stitching speeds, and in all cases where bobbins present high inertial forces.

Below the various bobbin braking systems implemented on bobbin cases and baskets respectively.



Then follows a detailed and illustrated list of the braking systems used by **M**CERLIANI Hooks & Bobbin Cases on their hooks and bobbin cases.

BOBBIN BRAKING SYSTEMS ON BOBBIN CASES

On horizontal axis rotary hooks, the braking device is normally placed in the bobbin case. For one same bobbin case also 4 different executions can exist:

- w/o NBL – without bobbin braking spring;
- NBL – with bobbin braking spring;
- MF – with adjustable bobbin braking spring;
- Magnet – with bobbin braking magnet (requires use of steel bobbins)

The choice of the correct bobbin case depends on its usage.

NBL

Bobbin case with bobbin braking spring.

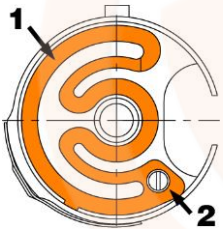


The device consists of an embedded spring (1) on the inside bottom of the bobbin case. The spring pushes on the upper flange of the bobbin and the latter against the bottom of the basket, causing a braking effect. The shape of the embedded spring changes according to the different bobbin cases on which it is mounted.

NBL

(with fastening screw)

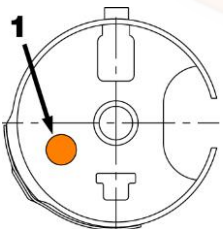
Bobbin case with bobbin braking spring and fastening screw.



The device consists of a spring (1) embedded on the inside bottom of the bobbin case and fixed by a screw (2) against accidental lost. The spring pushes on the upper flange of the bobbin and the latter against the bottom of the basket, causing a braking effect. The shape of the embedded spring changes according to the different bobbin cases on which it is mounted.

MAGNET

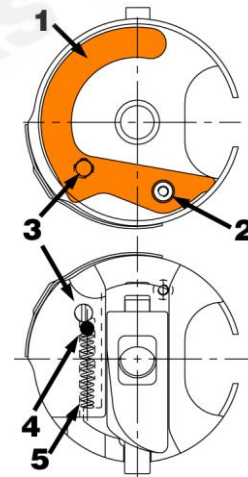
Bobbin case with bobbin braking magnet.



In this execution the braking of the bobbin is achieved by a magnet (1) imbedded into the inside bottom of the bobbin case. This magnet attracts the bobbin and creates friction between the bobbin and the inside bottom of the bobbin case. In order for such braking system to work properly, it is essential to use bobbins made of steel material!

MF

Bobbin case with adjustable bobbin braking spring.



This patented execution of the braking device has the advantage, compared to the prior system, to make possible to adjust the pressure of the spring against the bobbin. This allows to regulate the pressure of the braking spring against the bobbin according to the intensity of the pulling stress on the thread during trimming operations and the inertial force produced by the type of thread used. It is so possible to achieve a superior braking effect for heavy threads and a weaker braking effect for light threads, without influencing excessively the tension of the lower thread while sewing. This tension must be in fact determined only by the tension spring on the outside of the bobbin case. The adjustable device consists of a sickle-shaped spring (1) placed inside the bobbin case. The amount of pressure that this spring applies to the bobbin can be adjusted by screw (3). To avoid that the vibrations transmitted to the bobbin case during the sewing operation may cause a rotation of the adjusting screw, CM CERLIANI® has adopted a convenient solution that keeps it locked. The effect is obtained by inserting underneath the spiral spring of the bobbin case's latch slide (5) a small sphere (4) that goes to rest against the thread of the adjusting screw.

BOBBIN BRAKING SYSTEMS ON BASKETS

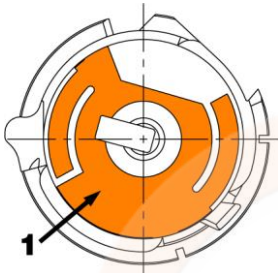
On vertical axis rotary hooks, the braking device is placed in the cap (similar to that of the bobbin cases for horizontal axis rotary hooks) or in the basket (compulsory choice for "KL" execution hooks which are without cap).

Several bobbin braking systems have been designed for baskets:

- w/o NBL – without bobbin braking spring;
- NBL – with bobbin braking spring;
- NBL (spiral spring) – with bobbin spiral braking spring;
- Magnet – with bobbin braking magnet (requires the use of steel bobbins)
- Sphere – with a steel sphere to brake the bobbin

NBL

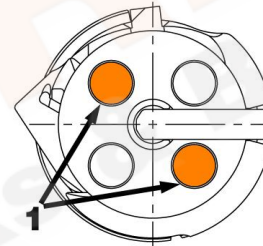
Basket with bobbin braking spring.



The device consists of a spring (1) embedded on the inside bottom of the basket. The spring pushes on the lower flange of the bobbin and the latter against the cap or the latch of the basket (in the case of "KL" execution hooks without cap), causing a braking effect. The shape of the embedded spring changes according to the different baskets on which it is mounted.

MAGNET

Basket with bobbin braking magnet.

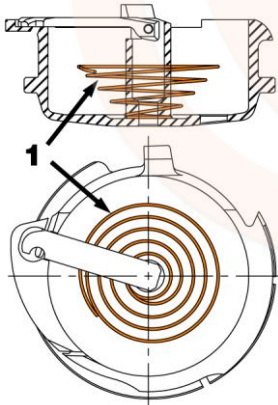


The braking effect of the bobbin is achieved by a magnet (1) embedded into the inside bottom of the basket. This magnet attracts the bobbin and creates friction between the bobbin and the inside bottom of the basket. In order for such braking system to work properly, it is essential to use of bobbins made of steel material!

NBL

(spiral spring)

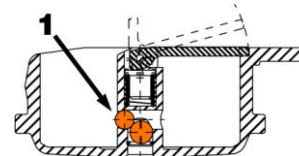
Basket with bobbin braking spiral spring.



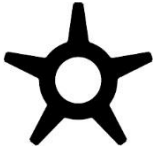






The device consists of a conic spiral spring (1) placed on the inside bottom of the basket. The spring pushes on the lower flange of the bobbin and the latter against the cap or the latch of the basket (in the case of "KL" execution hooks without cap), causing a braking effect. There are several spiral springs available, differing in diameters and over all for the braking force applied on the bobbin. This spiral spring has also the function to ease the extraction of the bobbin from the basket when it has to be changed.










SPHERE

Basket with bobbin braking steel sphere.



A steel sphere (1) placed in the shaft of the basket achieves the braking effect of the bobbin. The sphere pushes against the inside diameter of the bobbin's center hole, creating friction. In some executions, the pressure of that sphere can be managed by the sewing machine that controls its function only at the necessary moment. The use of steel bobbins is suggested!

Braking item	Article on which it is used (hooks and bobbin cases)	Line
130.08.612 NBL 	130.08.578 130.08.642 130.08.646 130.08.648 130.08.654 130.08.657 130.08.748 130.13.134 130.13.157	KK KK KP KK KK KK KK KK KK
130.08.628 NBL 	130.08.658 130.08.658R 130.08.659 130.08.661 130.08.816R 130.08.821R	KK KK KP KK KK KK KK
130.08.813 NBL 	130.08.805	KK
130.10.009 MF 	130.10.007 130.10.015	KP KP
130.10.012 MF 	130.10.037	KP
130.10.019 MF 	130.10.013 130.10.028	KP KP
130.10.022 MF 	130.10.023	KP

Braking item	Article on which it is used (hooks and bobbin cases)	Line
130.10.034 MF 	130.10.030	KP
130.10.047 NBL 	130.10.039 130.10.045 130.10.048 130.10.050 130.10.052 130.10.054	KP KP KP KP KP KP
130.10.063 NBL 	130.10.061	KP
130.10.065 NBL 	130.10.059 130.10.067	KP KP
130.10.506 NBL 	130.10.500	KP
130.11.185 Magnet 	130.11.180 130.11.180L	KL KL
130.13.044 Sphere 	130.13.020 130.13.024 130.13.038 130.13.055 130.13.058	KK KK KS KK KS
130.13.049 NBL 	130.13.024 130.13.047	KK KP
130.13.062 NBL 	130.13.020 130.13.055 130.13.060	KK KK KP

