

DeLaval International AB

DeLaval Swinging Cow Brush SCB

DLG Test Report 5939



Anmelder

DeLaval International AB
Site Glinde · P.O. Box 1136
DE-21503 Glinde/Germany
Phone: 0049 (0)40 303344-315
Telefax: 0049 (0)40 303344-349
E-mail: harald.kogler@delaval.com
Internet: www.delaval.com



DLG e.V.
Test Center
Technology and Farm Inputs

Short description

The cow brush consists of

- an electric motor with control electronics,
- a brush roller with yellow plastic brushes
and
- and a carrier arm out of sectional steel.

The rotating brush head consists of a brush cylinder and is suspended vertically in the carrier arm.

(Technical data see page 5.)

Evaluation – short version

Tested feature	Test result	Evaluation
Suitability	Suitable for cattle cleaning and skin care. Safe function requires that the switch hair of the animals is no longer than 3 cm.	

Technical criteria

Installation and Electricity supply		
Installation	can be carried out by the owner	○
Electricity supply	outside the motion range of the cows	+
Durability and wear		
Wear	little	+
Durability	good, no damage	+
Operational reliability		
	good, no malfunctions occurred	+
Maintenance		
Maintenance requirements	low	+
Changing of brush elements	simple	+
Cleaning	simple, only rarely necessary	+
Energy consumption		
	very low	++
Instructions of installation and use		
	detailed and understandable	+
Warranty		
	1 year	

Animal-related criteria

Animal observations		
	The animals learned quickly and without difficulties to start the cow brush.	+
Acceptance	very good	++
Injuries	none	○
	Automatically stops at very small resistance due to a sliding clutch	++
Cleanliness of the animals	good at exposed spots	+
Work safety		
	confirmed by DPLF	

Evaluation range: ++ / + / ○ / - / -- (○ = standard)

Test results

I. SUITABILITY

The DeLaval Swinging Cow Brush SCB is suitable for cattle cleaning and skin care. Since the cow brush is equipped with automatic control, the animals can start the brush themselves by pushing against it. The cow brush is in-stalled like in a cardan joint, which allows the brush to move in three directions.

Due to this design and its functional principle, the cow brush can reach the tail, the head/neck area, and in particular the flank and back area well.

Safe function requires that especially the tail hair of the cattle is no longer than 3 cm. If necessary, the hair must be shortened.

II. TECHNICAL CRITERIA

Installation

The cow brush can be installed by the owner using suitable tools. It is delivered pre-assembled and can be mounted directly to a wall or a post using an installation hook attached to the brush. After installation, the hook can be removed. For further simplification, the manufacturer includes a detailed installation plan in the delivery.

The electricity cable must be installed outside the cows' range of motion.

The installation height depends on the average withers height of the animals. The manufacturer recommends an installation height of the pivot point facing the wall of approx. 75 cm above the average withers height of the animals.

Durability and wear

The brush showed only little wear after six months of practical use in a group of ca. 60 cows.

Durability is good. Damage to the cow brush did not occur.

Operational reliability

Operational reliability is good. No malfunctions occurred during six months of practical use.

Maintenance

Maintenance requirements are low. They are limited to regular checks of the brush, the bolt connections, and the transmission casing. The brush cylinder is easy to change.

Dirt accumulation and cleaning

Hair deposits were observed under the cow brush.

Cleaning is easy. Due to the design, regular cleaning of the cow brush is generally unnecessary.



Figure 2:
DeLaval Swinging Cow Brush SCB with carrier

Energy consumption

Energy consumption is relatively low. Given the average number of 165 activations by approximately 60 cows, ca. 0.45 kW per day are consumed.

Electric power consumption is ca. 80 to ca. 180 W while the brush is running and ca. 0 W when the brush is not activated. If resistance is higher (brush is blocked), power consumption can reach up to 310 W for a short period of time.

Instructions of installation and operation

The instructions of installation and operation are detailed and understandable.

Installation, commissioning, maintenance, and care are illustrated with the aid of photos.

The instructions of installation and operation also include important advice regarding the operation of the cow brush, such as the correct installation height, the installation of the electricity cable, and the safety of cows with long hair. In a sketch (see figure 3), the manufacturer clearly points out to the user that the brush may not be used for cattle whose hair (including the switch) is longer than 3 cm.

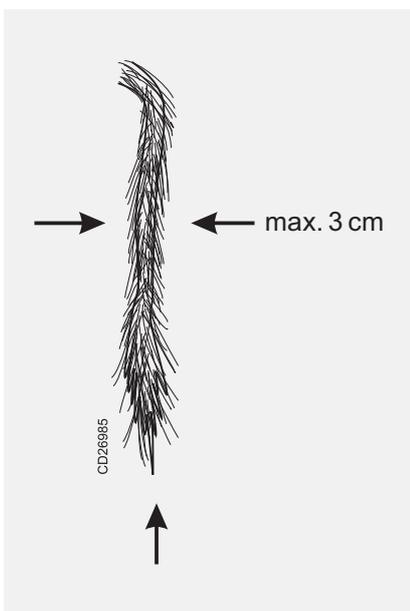


Figure 3:
Maximum hair length

Warranty

The manufacturer grants a warranty period of one year for the cow brush.

III. ANIMAL-RELATED CRITERIA

Animal observations

The animals learned quickly and without difficulties to operate the cow brush.

When an animal pushes the brush out of its vertical resting position, it begins to rotate. The brush stops approximately 10 seconds after it has returned to its vertical position. Afterwards, the cow brush can be restarted immediately by pushing.

The animals accept the cow brush very well for fur care, especially at the head, the neck, the back, and the tail head. The registration of the activation processes over a period of one week showed that the cow brush was activated on average 165 times per day in a herd of approximately 60 cows.

Injuries

On the two test farms where the cow brush was used for six months, no tail injuries, skin abrasions, ripped-out ear marks, or other injuries caused by the brush were found. If resistance at the brush head increases because the tail is being rolled up, for example, a sliding clutch automatically separates the brush from the motor.

Measurements have shown that the cow brush stops at a relatively small force of about 110 N because the sliding clutch is activated.

This means that the risk of cattle injury is small. In order to prevent potential injuries, the manufacturer recommends cutting the switch hair according to the instructions of operation.

Cleanliness of the animals

If the installation height is correct, the animals are cleaned well at those parts of the body which can

be reached by the brush. The animals independently accept the brush well for skin care.

IV. SURVEY RESULT

A survey among 2 reference farms of the manufacturer, which used the cow brush for up to one year, confirmed the observations and measurements evaluated in the test.

Installation on these farms was carried out by the company DeLaval. The cow brush is accepted well by the animals on the farms. The farmers surveyed stated that no injuries caused by the cow brush were observed after the brush had been installed. The farmers questioned gave the cow brush a satisfactory/very good overall evaluation and would buy it again if needed.

V. WORK SAFETY

The DeLaval Swinging Cow Brush SCB has been tested for work safety by the German Test Station for Agricultural and Forestry Equipment (DPLF).

Design

- Electric motor (0.15 kW) for a mains voltage of 230 V.
- The brush features vertical pendulum suspension and consists of a brush cylinder.
- It rotates at ca. 28 revolutions per minute.

Warranty period

1 year

CE mark

The conformity declaration of the manufacturer has been presented.

Main measurements and weight

total

Height	1200 mm
Width	500 mm
Depth	1000 mm

Brush

Weight	ca. 70 kg
Diameter	500 mm
Length	600 mm

For the test, one cow brush each was used on two farms.

The DLG SignumTest is based on technical measurements on farms, behavioral observations, and a survey among two reference farms of the manufacturer. Power and energy consumption, the number of activations per day, as well as the force at which the cow brush stops were measured on the farms.

Realization of the test

DLG e.V.,
Test Center
Technology and Farm Inputs,
Max-Eyth-Weg 1,
D-64823 Groß-Umstadt

Agricultural Center
Haus Düsse,
D-59505 Bad Sassendorf

Practical use

Agricultural Center
Haus Düsse,
D-59505 Bad Sassendorf

Schäfer-Wolf GbR,
D-64739 Höchst

Reporting engineer

Dr. agr. Harald Reubold,
Groß-Umstadt

DLG test panel

Dr. agr. Steffen Pache, Köllitsch

Dipl.-Ing. Andreas Pelzer,
Bad Sassendorf

Reiner Schmidt, Ronneburg

Dipl.-Ing. agr. Klaus-Werner Wolf,
Höchst

Dr. med. vet./Dipl.-Ing. agr.
Wilfried Wolter, Giessen

DLG committee for animal welfare

Ms. Dr. sc. agr. Christiane Müller,
Trenthorst

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DLG e.V. – Test Center Technology and Farm Inputs

Max-Eyth-Weg 1, D-64823 Groß-Umstadt,
Telephone 069 247 88-600, Fax: 069 247 88-690, E-mail: Tech@DLG.org,
Internet: www.DLG.org

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