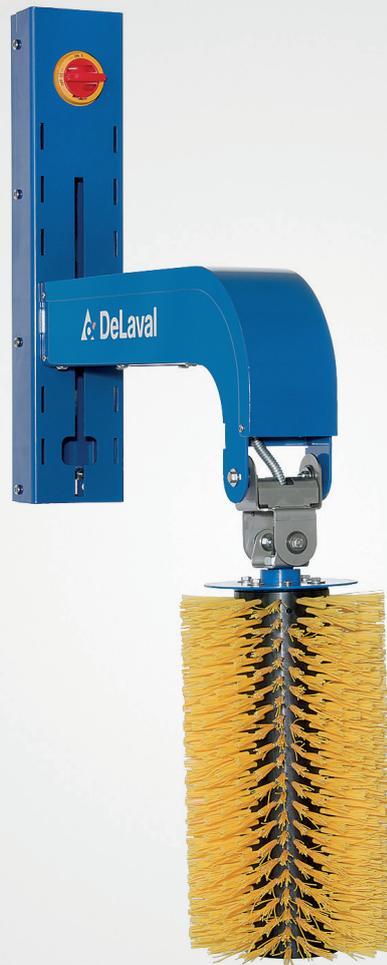


DLG Test Report 6236 F

DeLaval mini swinging brush MSB for calves and goats

Energy consumption, shutdown force



Testzentrum
Technik und Betriebsmittel

www.DLG-Test.de

Overview

The FokusTest is a DLG usability test intended to allow product differentiation and special highlighting of innovations in machinery and technical products used primarily in agriculture, forestry, horticulture, fruit cultivation and viticulture, as well as in landscape and municipal management. This test focuses on testing a product's individual qualitative criteria, e.g. fatigue strength, performance, or quality of work. The scope of testing can include

criteria from the testing framework of a DLG SignumTest, the DLG's extensive usability test for technical products, and concludes with the publishing of a test report and the awarding of a test mark.

The DLG FokusTest "Energy consumption, shutdown force" includes technical measurements in real-life farms. The energy consumption, power consumption and shutdown force were measured.



The testing was based on the DLG testing framework for cow cleaning machines, as at March 1999.

Other criteria were not investigated.

Assessment – Brief Summary

The DeLaval mini swinging brush MSB tested here, a cleaning machine for calves and goats, was investigated in practical use with regard to functional properties in a DLG FokusTest. The energy consumption and shutdown force were measured.

The energy consumption and shutdown force were considerably lower than the standard values.

Table 1:
Overview of results

Test characteristic	Test result	Evaluation*
Energy consumption	very low	++
Shutdown force	stops at very low resistance	++

* Evaluation range: ++ / + / o / - / -- (o = standard)

The Product

Manufacturer and Applicant

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Product:
DeLaval mini swinging brush MSB

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Description and Technical Data

The DeLaval mini swinging brush MSB tested here is used for cleaning and grooming calves and goats. Since the mini brush has an auto-

matic control unit, the animals can start the brush themselves by pushing against it.

The DeLaval mini swinging brush MSB is similar to a universal joint, allowing the brush to move in three dimensions. This design and mode of operation allow the brush to easily reach the tail, the head/neck area and, in particular, the flank and back area. Safe operation requires that especially the calves' tail hair is no longer than 5 cm. This must be cut if necessary.

The DeLaval mini swinging brush MSB consists of an electric motor with control electronics, a brush roller with yellow/blue plastic bristles, and a carrier arm made of sectional steel.

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

Technical Data	
Brush head	
Height	approx. 30 cm
Width	approx. 13 cm
Depth	approx. 72 cm
Weight	approx. 35,5 kg
Brush	
Diameter	approx. 28 cm
Length	approx. 48 cm

The Method

Energy/power consumption

The electrical power consumption is recorded using a power recording instrument during idling, as well as during cleaning of an animal for at least 2 min uninterrupted. The energy consumption in practical use is recorded using a power recording instrument over a period of at least

one week. The number of animals in the group that have access to the brush is documented.

Shutdown force

The shutdown force is measured using a spring balance and a strap, approx. 2 cm in width (which simulates an animal's tail).

Once the strap is entangled, it is pulled with the spring balance to stop the machine. The force required to do this is measured.

The Test Results in Detail

Energy/power consumption

In relative terms, the energy consumption is very low, measuring approx 0.09 kWh per day for the average recorded number of 108 activations (with 14 calves). The energy consumption by goats was 0.25 kWh per day for the average recorded 300 activations (with 40 goats). The electrical power consumption is approx. 5 watts

to approx. 35 watts with the brush running and approx. 2.2 watts when the brush is idle. In case of increased resistance (if the brush is blocked), the power consumption can rise briefly to 51 watts.

Shutdown force

The measurement of the shutdown force showed that the sliding clutch is activated by a relatively very

small force of 50 N, which thereby stops the DeLaval mini swinging brush MSB.

The risk of injury to the animals is therefore very low. In order to prevent possible injuries, the manufacturer recommends cutting the switch hair according to the operating instructions.

Summary

The criteria tested in this DLG FokusTest evaluate functional properties of the DeLaval mini swinging brush MSB for use with calves and goats based on practical investiga-

tions. The tested DeLaval mini swinging brush MSB satisfied the requirements of the testing framework with respect to the investigated criteria.

Further Information

Further test results for cleaning machines are available to download at www.dlg-test.de/stalleinrichtungen.

The relevant DLG committees have published various instruction leaflets on the topics of animal welfare and cattle farming. These are available free of charge in PDF format at www.dlg.org/merkblaetter.html.

Test execution

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Technology and Farm Inputs,
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64823 Groß-Umstadt

DLG Testing Framework

“Cow cleaning machines”
(as at 03/1999)

Field

Indoor operations

Project manager

Dipl.-Ing. agr. Susanne Gäckler

Test engineer(s)

Dr. Harald Reubold*

* Reporting engineer

The DLG

In addition to conducting its well-known tests of agricultural technology, farm inputs and foodstuffs, the DLG acts as a neutral, open forum for knowledge exchange and opinion-forming in the agricultural and food industry.

Around 180 full-time staff and more than 3,000 expert volunteers develop solutions to current problems. More than 80 committees, working groups and commissions form the basis for expertise and continuity in technical work. Work at the DLG includes the preparation of technical information for the agricultural sector in the form of instruction leaflets and working documents, as well as contributions to specialist magazines and books.

The DLG organises the world's leading trade exhibitions for the agriculture and food industry. In doing so, it helps to discover modern products, processes and ser-

vices and to make these transparent to the public.

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The DLG Test Center Technology and Farm Inputs

The DLG Test Center Technology and Farm Inputs in Groß-Umstadt sets the benchmark for tested agricultural technology and farm inputs and is the leading provider of testing and certification services for independent technology tests. With the latest measurement technology and practical testing methods, the DLG's test engineers carry out testing of both product developments and innovations.

As an EU-notified test laboratory with multiple accreditations, the DLG Test Center Technology and Farm Inputs provides farmers and practitioners with important information and decision-making aids, in the form of its recognised technology tests and DLG tests, to assist in the planning of investments in agricultural technologies and farm inputs.

ENTAM

European Network for Testing of Agricultural Machines is the association of European test centres. ENTAM's objective is the Europe-wide distribution of test results for farmers, agricultural equipment dealers, and producers.

More information about the Network is available at www.entam.com or by writing to ENTAM at the email address: info@entam.com

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