



Test Report No. 5776



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departement EVD
Forschungsanstalt
Agroscope Reckenholz-Tänikon ART

Report No. D-15.08

Test Report



KWF-Test No. 4963

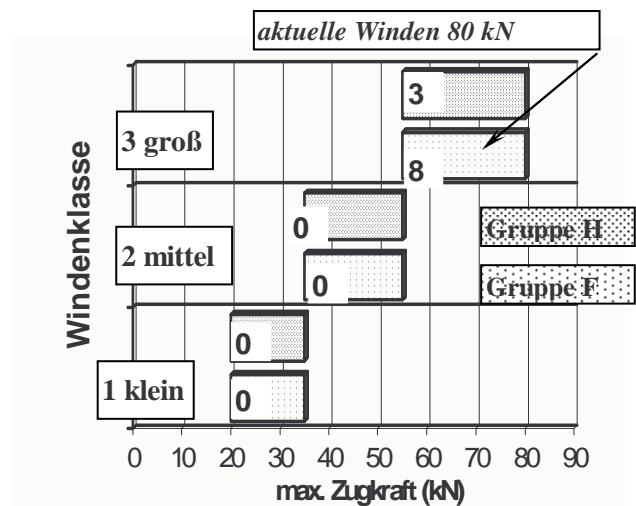


Figure: number of mounted winches tested to date
Group H = lever/line controlled
Group F = remote controlled
Dated: May 2008

Mounted Cable Winch RITTER

Type S29-DYED

(Double drum-winch for 3-point attachment)

Manufacturer and applicant:

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1. Evaluation - Review



FAT TÄNIKON



RITTER Type S29-DYED mounted cable winch with independent hydr. system

<i>Test item</i>	<i>Test result</i>	<i>Evaluation</i>
Winch class 3Dehy	Line pull >55 kN see test basis page 8	
Application field	<p>Double drum linkage mounted cable winch for yarding and skidding of medium thick to thick long wood in easy terrain, as well as assisting felling work; suitable for farmer foresters and sideline forestry.</p> <p>The mounted winch is available with electro-hydraulic cable control or remote control. Yarding without remote control is more time consuming and causes more damage to the stand.</p>	
Line pull	Depending on rope layer on drum, from 38 kN to 80 kN	
Tractor	An agricultural 4WD tractor with more than 80 kW engine power is recommended.	
Reliability		good
	No damage during the test	+
Handling		good
Operation	simple	0
Physical strain	Actuation force for <ul style="list-style-type: none"> • Pulling out the cable approx. 40 N, • Winching and brake release push button operation – very low 	+ ++
Piling	Poor body posture when using the stacking shield	-
Assembly / Maintenance		good
Assembly time	Attachment and removal in less than 15 minutes	0
Maintenance effort	low	+
Work safety	Confirmed by GS-Test (DPLF)	

Evaluation range: ++ / + / 0 / - /-- (0 = Standard)

2. Short description

- Electro-hydraulically operated double drum winch for 3-point attachment category 3 (ISO 730) powered by tractor PTO-shaft;
- Controlled by independent hydraulic system integrated in the winch unit,
- Operated by cable or remote control.

(Technical data see page 5).

3. Test results

Application field / required tractor

The winch is primarily suited for yarding and skidding medium thick and thick long wood in easy terrain and as an aid in felling operations.

The mounted winch is also suitable for use in farmer forestry and for sideline forest work.

It is recommended to mount the winch on a 4WD agricultural tractor weighing at least 4800 kg and with an engine power in excess of approx 80 kW.

For safe and rational skidding work, the axle weight distribution should be improved by attaching additional front counterweights. If necessary the lifting force of the 3-point power lifter should be increased by mounting an additional cylinder.

The relatively small winch does not noticeably affect the manoeuvrability of the tractor. The winch can also be attached to a 3 point quick-hitch.

Load collecting, anchoring, rope speed

The load is collected using the choker procedure or by hauling-in individual stems while winch is firmly anchored to the ground.

Yarding without remote control causes more damage to the stand and is more time consuming.

The stacking shield provides adequate support.

The line-in speed can be varied as required by controlling the PTO shaft speed, up to 1000 rpm (see page 5).

The drum capacity permits hauling-in stems from a distance of up to 90 m.

Transport

The load is transported either suspended from the ropes or using choker chains fasten to the chain slots.

Piling

Stems can only be piled by pushing them together using the stacking shield.

Availability, reliability, durability

The mounted winches are reliable. Spooling quality is good. No defects occurred during the test.

Winch construction is robust and durable: No defects occurred during the test.

The durability of the surface coating is good.

Ergonomics (operation – physical effort)

The operation of the winch is simple. The actuating forces required for hauling-in the ropes and releasing the brake using the push-button are very low.

The effort required for uncoiling the rope from the drums is low (approx. 40 N).

Operator is forced to assume an unfavourable body posture during piling.

Assembly time and maintenance

The mounted winch can be attached to or removed from the tractor in less than 15 min.

The time required for maintenance is low.

Stability

Two stabilizer provide safe support for the mounted winches on hard ground.

Work safety

The RITTER Type S29-DYED mounted winch has been tested for work safety at the Deutsche Prüfstelle für Land- und Forsttechnik (DPLF) (GS-test).

Operators manual and spare parts list

The operators manual and spare parts list are comprehensive and clear.

Survey results

The test results are confirmed by a survey among owners of type-identical mounted winches.

4. Description and technical data (measured values)

Construction	Double drum winches for 3-point attachment - category 3 (ISO 730); Welded frame with stacking shield; Drums are arranged horizontally, the shafts mounted at right angles to long axis of the vehicle;	
Cable entry	top: via pivoted cable guide pulleys which align themselves independently with the pull direction; all bearings are roller bearings	
Brakes	Spring loaded outer band brake	
Cable brake	Outer band brakes with manually adjustable spring pre-tensioning	
Stacking blade	With integrated trailer hitch (for attaching two-axle trailers) and arch with 10 slots for attaching choker chains	
Control	Electro-hydraulic with independent hydraulic system	
Operation	Cable bound or remote control with continuous engine speed control	
Drive	PTO-shaft via roller chain and worm gear on the drum shafts; power transferred to cable drums by means of hydraulically operated multiple disc clutch <u>Gear ratio</u> = 15 : 1; Maximum permitted drive speed 1000 rpm	
Average line speed	at PTO shaft speed 540 / 750 / 1000 rpm = 0.54 / 0.75 / 0.98 m/s Layer dependant speed fluctuations +/- 40 %	
Line pull	Depending on layer, bare drum / full drum	80 / 38 kN
Actuating forces	<u>Uncoiling rope</u> adjustable <u>Hauling-in / release brakes</u> using push-buttons	ca. 40 N -/-
Dimensions and weights	Height with protective grid	2300 mm
	Greatest width	1820 mm
	Stacking blade, width	1820 mm
	Thickness measured from attachment	615 mm
	Drum: diameter inner / outer width	160 / 420 mm 180 mm
	Rope: maximum length/diameter	2 x 95 m / 13* mm
	Height of rope entry above stand area	1250 mm
	Weight, winch without rope 2 wire ropes (13 mm diameter, 90 m long)	825 kg each approx. 80 kg

*)compacted rope

Machine costs

Price without VAT (dated 5.2008)

Mounted winch	16.300,-- €
Joint shaft	130,-- €
Wire ropes (90 / 13mm)	each 470,-- €
Choker hooks	each 18,-- €
Remote control	upon request

Additional equipment (not tested)

Cable guide pulley with hydraulic cable brake for preventing slackness; cable pay out device with cable entry brake; continuous engine speed control on the remote control; manual or remote control load lowering brake; other stacking blade widths; line pull adjustment; removable trailer hitch.



5. Test

Requirements/recommendations: none

BFW-Test (Austria)

The RITTER Type S29-DYED mounted winches were tested and approved in a joint effort in accordance with an agreement between the KWF and the BFW.

ART- Approval (Switzerland)

This test report is accepted by ART in accordance with the ENTAM agreement.

Test centre

- Kuratorium für Waldarbeit und Forsttechnik (KWF), D-64823 Gross-Umstadt,

Field test

- Different forest entrepreneurs and private forest owners in Baden-Württemberg and Hesse

Author

- Dipl.-Ing. E. Debnar, KWF-Zentralstelle, Gross-Umstadt,

FPA/DLG Test commission

KWF-test committee "Schlepper und Maschinen" (tractors and machines) (Chairman: FD H. Geske)

KWF-Utility Value Approval

Test No. 4693 / 5776, valid until June 30, 2013

The applicant is entitled to display the test mark on machines of this type according to the test regulations and to use the certification for advertising purposes.

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