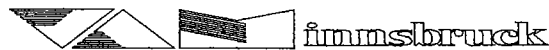


VERSUCHSANSTALT FÜR MASCHINENBAU

an der Höheren Technischen Bundeslehr- und Versuchsanstalt Innsbruck



Staatliche Prüfstelle mit vom BMWA akkreditierten Prüfverfahren
Prüfstellenummer: 94

Test Report

Auftrag-Nr.: 1998-022

Unser Zeichen: VAM/bü

Innsbruck, am 21.04.2004

Purpose of Test:

Determination of the proper function of buckles after short time constant load tests as well as maximum tension test F_m , in each case for an axial load on the buckle with a belt width of 43 mm.

Applicant:

AUSTRIALPIN Vertriebs GmbH
Industriezone C 10
6166 Fulpmes/Austria

The applicant does not have his own validation facility independent from the manufacturing department.

The material supplied for testing fulfills the conditions of the requirements for the test. The test report of the Test Institute therefore is conform with a Test Certificate according to ÖN – EN 10204 Pkt. 2.3

Test material:

20 pieces CLICK COBRA – Buckles type FC45B

Date of entry:

13.07.1998

Entry No:

E 98-094

Oder No.:

Letter of A.B.A. Hörtnagl KG, 6166 Fulpmes/Austria

The test report contains:

5 pages text

-- attachments

3 diagrams)

Postanschrift :
Versuchsanstalt für Maschinenbau
6020 Innsbruck, Anichstraße 26 - 28

Zufahrt:
Innrain 31

Fernsprecher :
0512/ 59717 DW 260/ 261/263
Fax :0512/ 59717 DW 262

Bankverbindung
PSK - Konto Nr. 5410.293

Test material:

20 pieces Click-Cobra Buckles consisting of main part and insert part FC45B for 43 mm wide belts.

The test material was taken from the applicant and manufacturer A.B.A. Hörtnagle KG, Fulpmes by VAM Innsbruck.

Purpose of the test

- Establishment of the buckle functionality after short time constant load trials under axial load and at two different load levels.
- Establishment after the maximum tension force F_m under axial load.

Description of the test

To verify the buckle function two shot time permanent tests were conducted with load levels of $F = 18,0$ kN and $F = 16,5$ kN, each time with a duration 1 minute.

For every permanent test new Click-Cobra buckles (FC45B) were used.

When establishing the maximum load the buckles were subjected to continuously increased load without holding time up to the point of breakage.

All tests were conducted under controlled force, the speed of the force being about 12 kN/min.

For all tests the Click-Cobra Buckle and the belt were connected conform with its function. The closed belt loops were then placed with a suitable devices into the test machine in the test room.

The test took place at a room temperature of 20°C.

... eingebaute. (siehe Abb. 1)
... durchführung erfolgte bei Raumtemperatur von $t = 20^\circ\text{C}$.

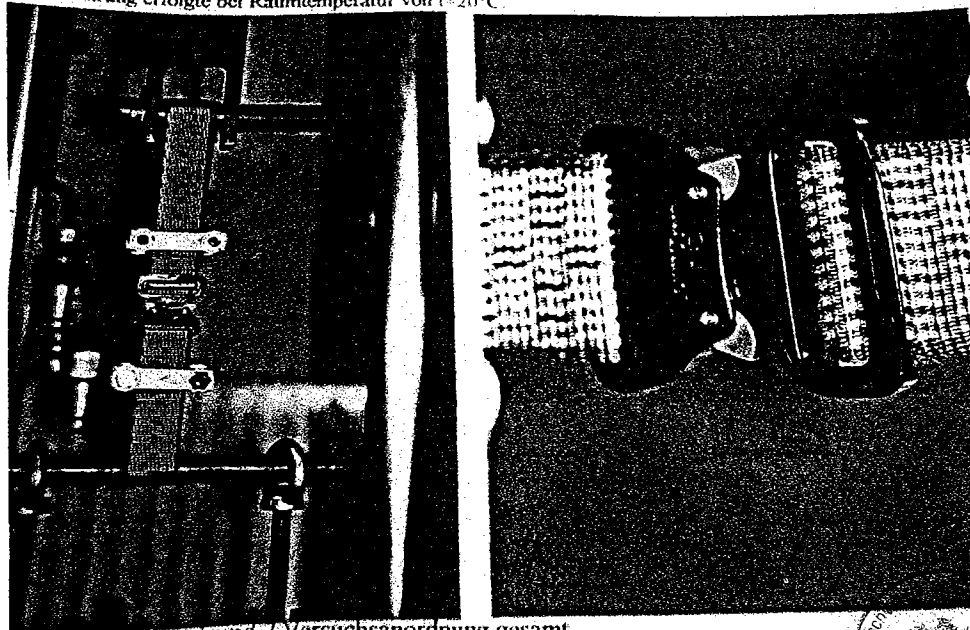


Abb. 1 und 2 Versuchsanordnung gesamt

Pictures 1 and 2 Test arrangement complete

Test result

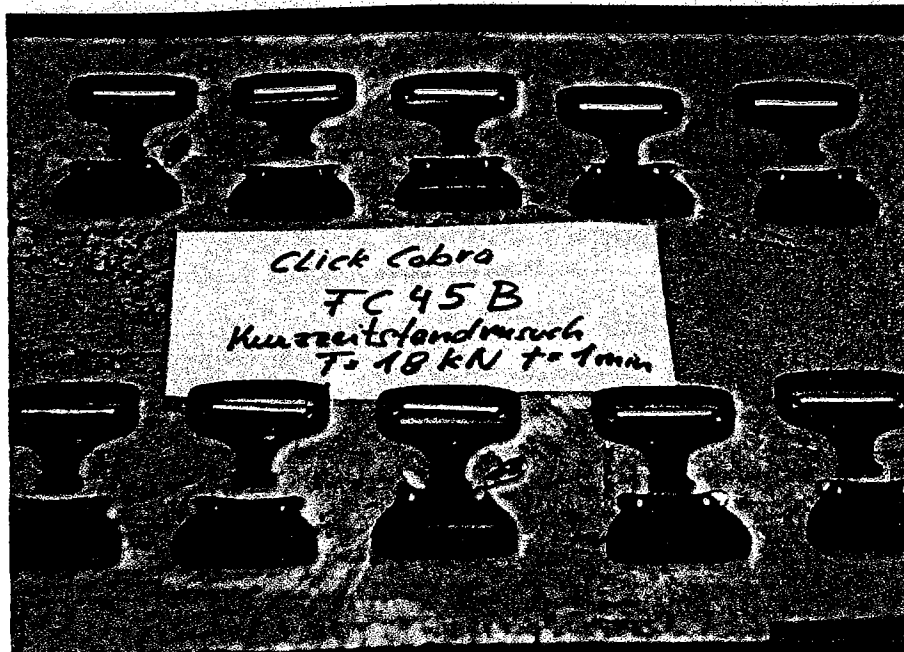
1) Short time constant load tests.

The result of the short time constant load test with a load level of $F = 18 \text{ kN}$ over a holding period 1 minute is tabulated as follows.

Click Cobra Buckle (FC45B) for a belt width of 43 mm

Test No.	Force F [kN]	Break point	Function
1	18,00	None	intact
2	18,00	None	intact
3	17,43	Main part	Non existent
4	18,00	None	Intact
5	18,00	None	Intact
6	16,10	Main part	Wrong test-load off center
7	18,00	None	Intact
8	18,00	None	Intact
9	16,00	Nose sheard off	Wrong test-load off center
10	18,00	None	intact

The result is that not all buckles have successfully passed the short time constant load test at a load of $F = 18,0 \text{ kN}$ over a holding period of 1 minute.



The result is that all buckles have successfully passed the short time constant load test at a load of $F = 16,5 \text{ kN}$ over a holding period of 1 min.

Test No.	Force F [kN]	Break point	Function
11.1	16,50	None	intact
12.1	16,50	None	intact
13.1	16,50	None	intact
14.1	16,50	None	intact
15.1	16,50	None	intact
16.1	16,50	None	intact
17.1	16,50	None	intact
18.1	16,50	None	intact
19.1	16,50	None	intact
20.1	16,50	None	intact

The result is that all buckles have successfully passed the short time constant load test at a load of $F = 16,5 \text{ kN}$ over a holding period of 1 min.

The manufacturer guarantees the proper function of the Click Cobra buckles up to a load of $F = 15,0 \text{ kN}$. The load level of the short time constant load test is 10% higher than the value given by the manufacturer. The reliability of the data given by the manufacturer is proven by the results of the short time constant load tests.

2) Maximum tension forces F_m

The maximum tension forces F_m of the Click-Cobra buckles at constantly increasing axial load are tabulated as follows.

Click-Cobra Buckle (FC45B) for a belt width of 43 mm

Test No.	Max. tension force F_m [kN]	Break point	Remarks
11.2	22,54	Main part/Snacher	None
12.2	24,65	Main part/Snacher	None
13.2	20,50	Insert part/Holder	None
14.2	23,80	Insert part/Holder	None
15.2	22,90	Main part/Snacher	None
16.2	23,60	Main part/Snacher	None
17.2	24,45	Main part/Holder	None
18.2	24,10	Main part/Holder	None
19.2	22,80	Main part/Snacher	None
20.2	22,95	Main part/Snacher	None

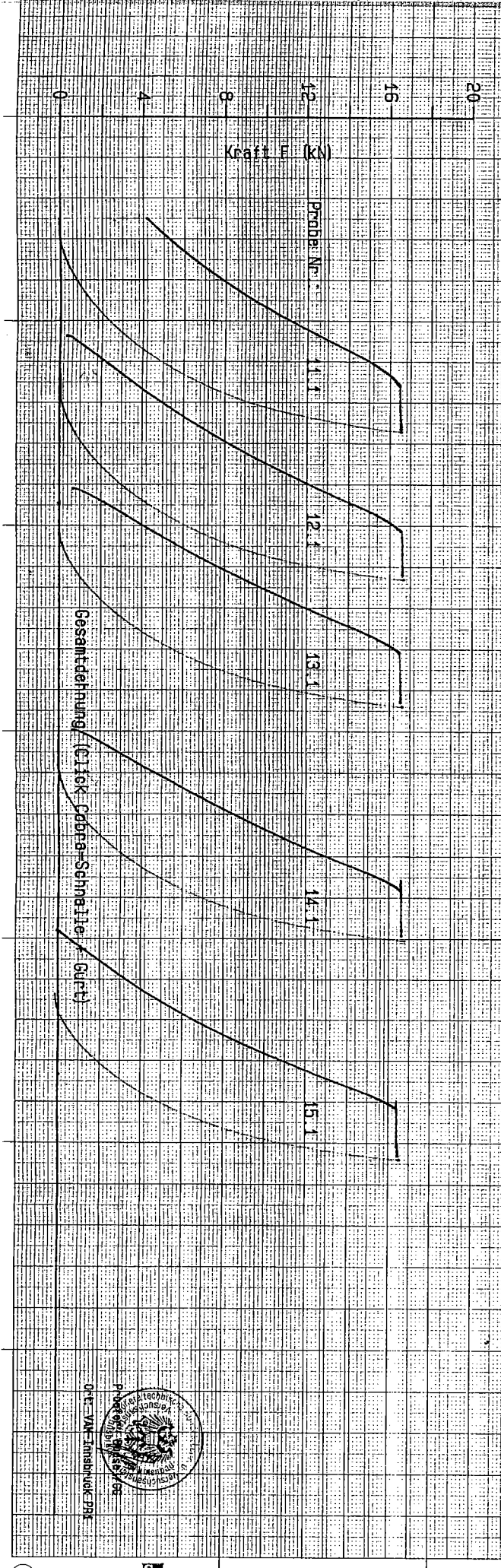
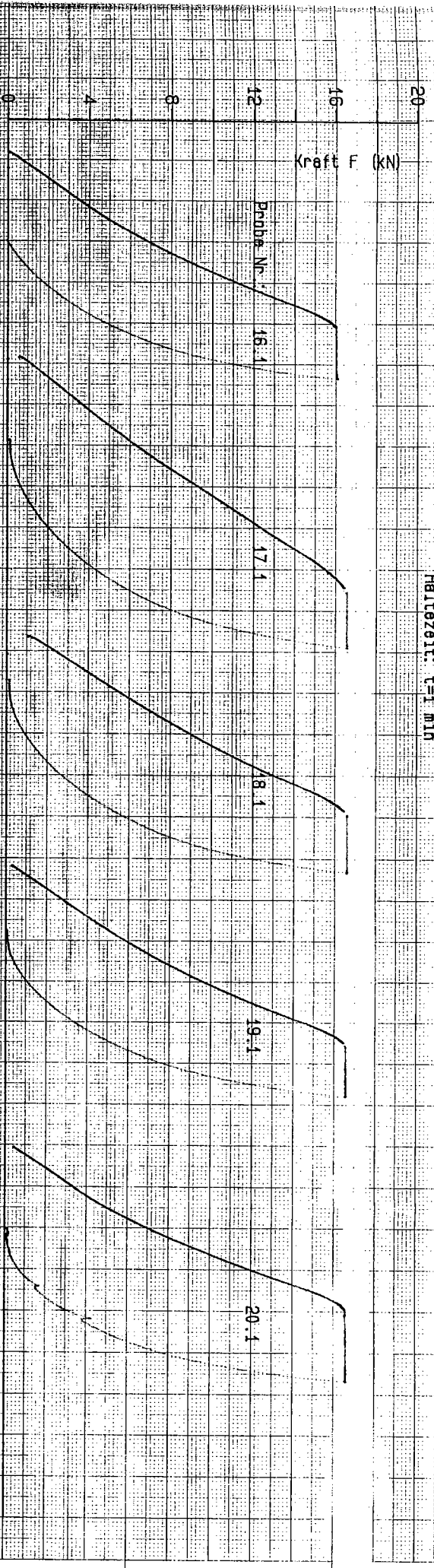
F_m Medium value $F_{m_{med}}$ (kN) 23,23

F_m Maximum value $F_{m_{max}}$ (kN) 24,45

F_m Minimum value $F_{m_{min}}$ (kN) 20,50

Kurzzeitstandversuch

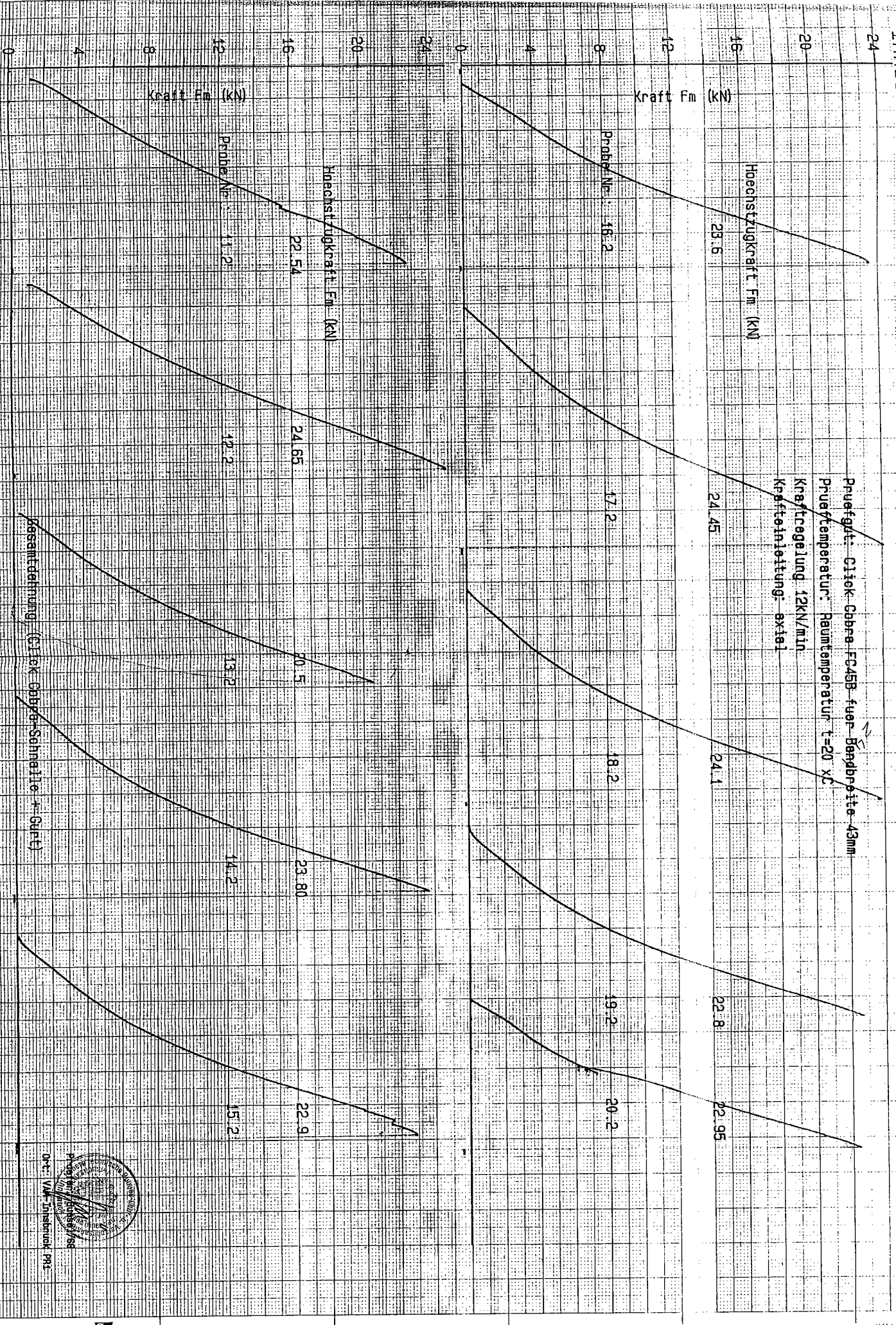
Prüfgerät: Click Cobra FC45B fuer Bandbreite 43mm
 Prüftemperatur: Raumtemperatur t=20 °C
 Kraftregelung: 12kN/min
 Kraftinjektion: axial, Belastungsniveau: 16-5 kN
 Haltezeit: t=1 min



Gesamtdehnung (Click Cobra-Schneide Gurte)



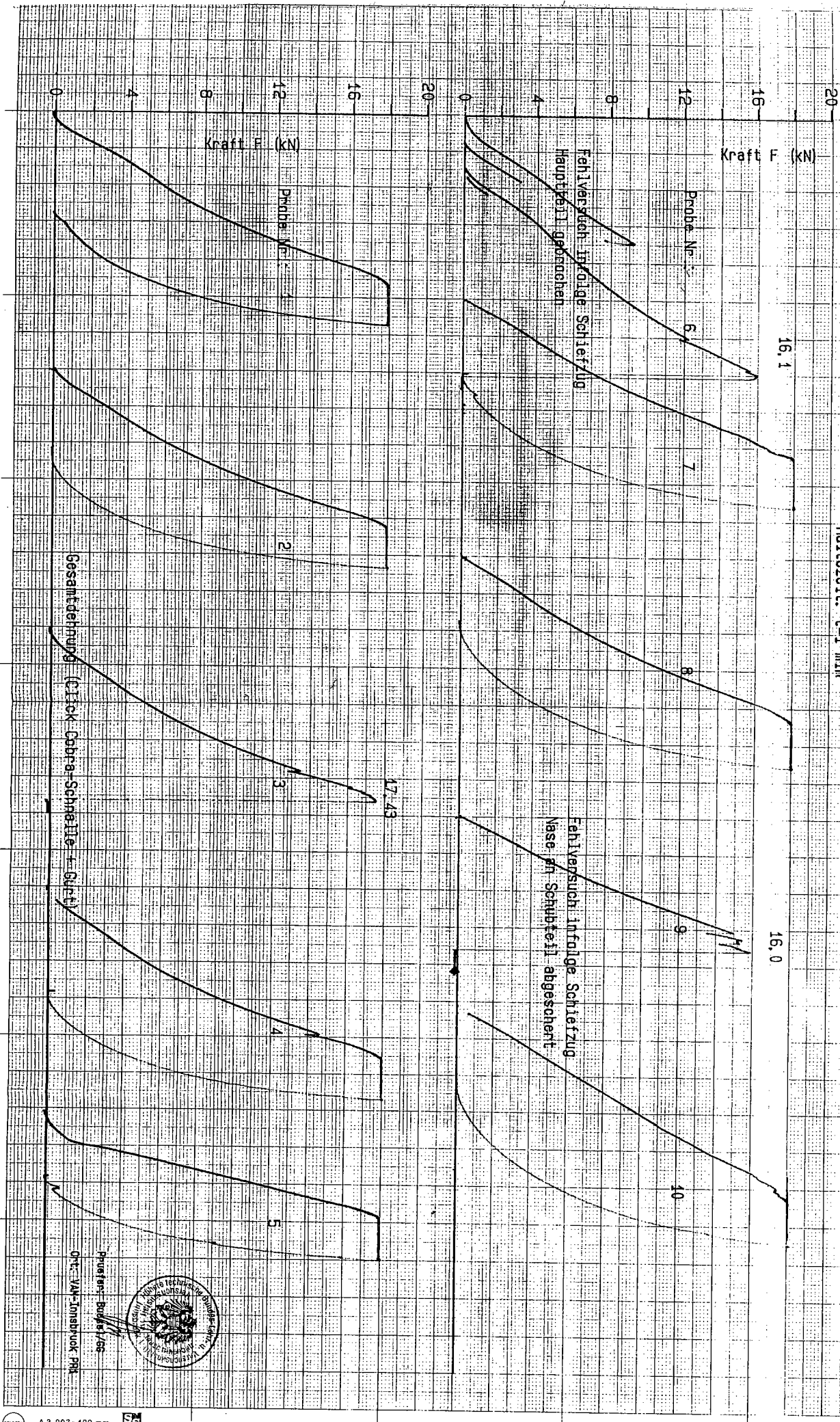
Prüfgerät: Citek Cobra FGA5B fuer Bandprobe 43mm
 Prüftemperatur: Raumtemperatur t=20 °C
 Kraftregelung 12kN/min
 Kraftmessleitung: axial



Dr.-Ing. Ingrid Pichler

Kurzzeitstandversuch

Pruftgut: Giesk-Cobra-FC45B-fürer-Bandbreite-43mm
 Pruftemperatur: Raumtemperatur t=20 °C
 Kraftregeldung: 12kN/min
 Kraftinjektion: axial, Belastungsniveau: 18.0 kN
 Haltezeit: t=1 min



Prof. Dr. Budek/06
 Dr. V.M. Jandnauer PRK