

Test&Motion
Application Module

KU 17 – Compression Test for rubber properties
(D575-91)

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1 Introduction

Dear customer, thank you for choosing a product of **DOLI Elektronik GmbH**. **Test&Motion** is a modern application for the operating systems Microsoft Windows 7/10®.

This manual does not deal with the **Test&Motion software** in general but with the application module **KU 17** in particular. Hence, it is recommended to read the **Test&Motion** application manual in order to get familiar with the software. Please follow the demands and safety hints listed in the manual!

1.1 Symbols

The different symbols in this manual will allow you to find your way more easily.

Table 1: Symbols and their meaning.

Symbol	Meaning
	Safety Instructions: In order to avoid interruptions in the work flow as well as damages to man and machine, follow the safety instructions at all cost.
	Job/work instructions: Instructive part of the document with precise work instructions. Here you are asked to do something.
	Information: General information and descriptions of working procedures, etc.
	Note: Important note for the operation, the function or for the working procedures.
	Tip: Gives tips for easy handling of the Test&Motion Software , the EDCs or the testing instrument.

2 KU 17 – Compression test for rubber properties (acc. to ASTM D575-91)

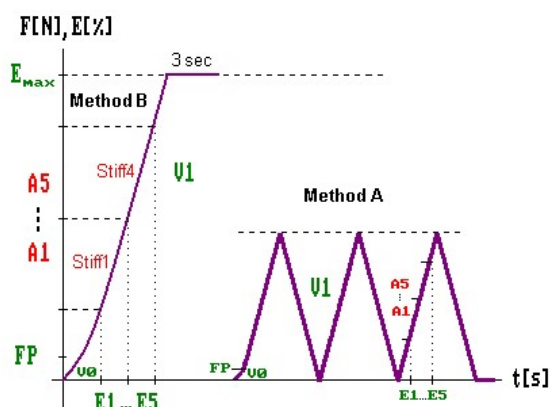
2.1 Field of application

Two different test methods for determination of the compression-deflection characteristics of rubber compounds. These test methods are useful in comparing stiffness of rubber materials in compression.

Test Method A: Compression test of specified deflection

Test Method B: Compression test at specified force

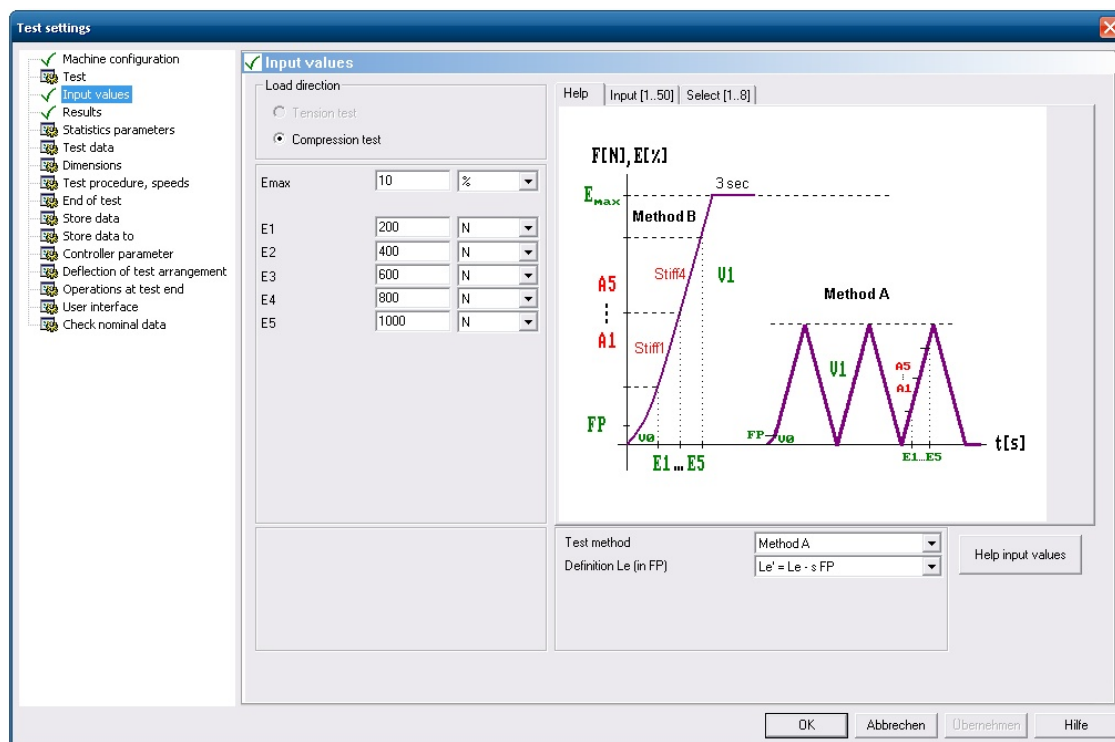
2.2 Test graphic KU 17



2.3 Input values KU 17



1. Click **Menu Test → Command Settings → Input values**. Here you can already find expedient input values for this test regulation. If necessary adjust the values to your needs.



The button 'Help input values' opens a help page containing all input values and their meanings, as they are explained in the following tables, also.

Table 2: Input values for test KU 17.

Parameter	Meaning	Dimension / Selection possibilities
E _{max}	Upper and lower compression strength, load/unload 3 times	[N/mm ²]
E1	Reference value 1	[N, kN], [N/mm ²], [mm_S], [mm_dL], [%], [s, min, h]
E2	Reference value 2	...
E3	Reference value 3	...
E4	Reference value 4	...
E5	Reference value 5	dimensions analogue E1
n	Number of preload cycles (Method A)	
The following input values can be found in dialog Test procedure, speeds (Menu Test → Command Settings)		
FP	Preload (preliminary force)	[N]
V0	Test speed until preload FP	[mm/min]
V1	Test speed after reaching preload FP	[mm/min], [N/s]

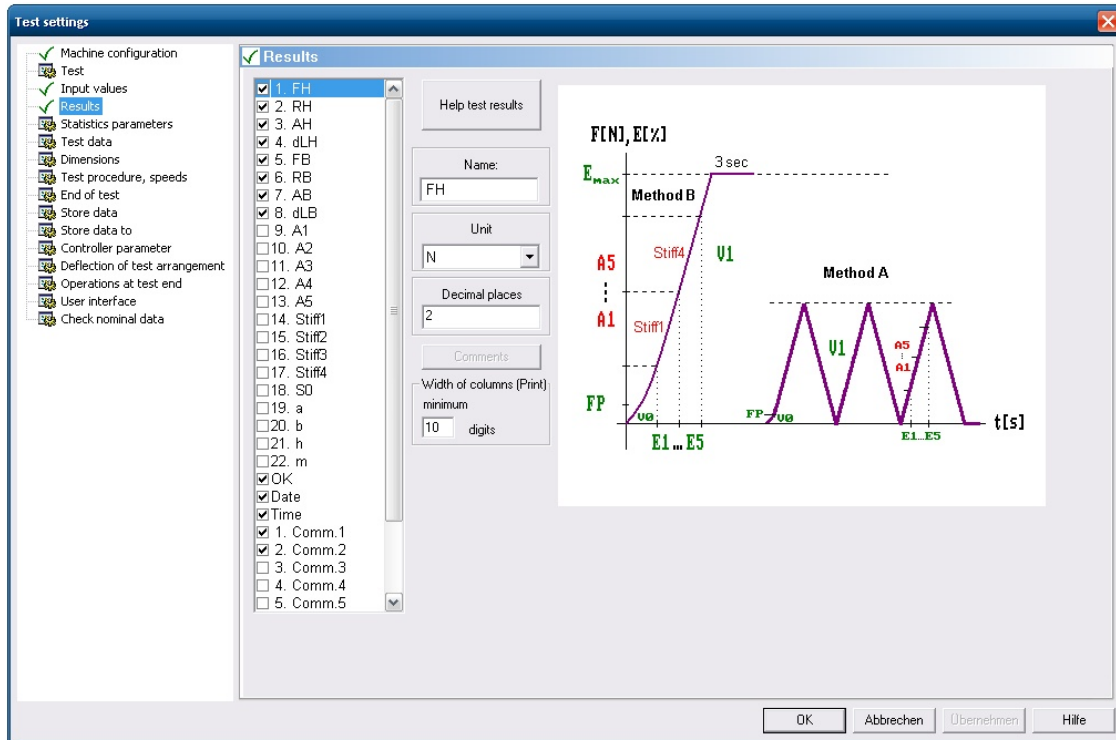
Table 3: KU 17 Selections and their meanings.

Selection	Meaning
Test method	Chose the test method
Method A	
Method B	
Definition Le (in FP)	
Le' = Le – s FP	
Le' = Le	

2.4 Results KU 17



2. Click **Menu Test → Command Settings → Results**. Here you can already find expedient results. If necessary, chose and adjust the values to your needs.



3. By clicking on one of the test results in the list, you can change its unit, decimal places and width of colums for the printout in the fields beside the list, if necessary.

The button 'Help test results' opens a help page containing all output values and their meanings, as they are explained in the following tables, also.

Table 4: Results for test KU 17.

Parameter	Meaning
A1	Reference value at point E1
A2	Reference value at point E2
A3	Reference value at point E3
A4	Reference value at point E4
A5	Reference value at point E5
Stiff1	Stiffness between E1 and E2
Stiff2	Stiffness between E2 and E3
Stiff3	Stiffness between E3 and E4
Stiff4	Stiffness between E4 and E5
S0	Test piece section
PA1	Test piece sample 1
PA2	Test piece sample 2

2.5 Notes for test KU 17

2.5.1 Preload FP

For test control, the deflection is set to zero after reaching preload FP.

Switching over point of the test rate V0 to V1

2.5.2 Calculation Stiffness 1, ..., 4

The stiffness values are calculated between input values E1,...,E5.