

Test&Motion plus
Application Module:
DYN 2 – Dynamical test

Version 1.0 (State 20160819)

DOLI Elektronik GmbH

Corporate name:	DOLI Elektronik GmbH
Headquarters:	Adi-Maislinger-Straße 7, 81373 München, Germany
	 +49-89-20243-0
	Fax +49-89-20243-243
	E-Mail info@doli.de
Sales:	E-Mail sales@doli.de
Production:	Ulmer Straße 34, 89584 Ehingen, Germany
	 +49-7391-58039-0
	Fax +49-7391-58039-71
	E-Mail ehi@doli.de
Internet:	www.doli.de
	www.flexometer.com



Contents:

1	INTRODUCTION.....	4
1.1	Symbols.....	4
2	APPLICATION MODULE DYN 2: DYNAMICAL TEST.....	5
2.1	Field of application	5
2.2	Test graphic DYN 2	5
2.3	Input values DYN 2	6
2.4	Results DYN 2.....	8
2.5	Hints for the test DYN 2	9
2.5.1	Test procedure , speeds	9
2.5.2	Definition cosinus cycles.....	9
2.5.3	Repeats.....	9
2.5.4	Dynamic limits.....	9
2.5.5	Static limits	10

Test&Motion plus Application Module DYN 2



1 Introduction

Dear customer, thank you for choosing a product of **DOLI Elektronik GmbH**. **Test&Motion plus** is a modern application for the operating systems Microsoft Windows 7/8/10®.

This manual does not deal with the **Test&Motion plus software** in general but with the application module Plastics Tensile Test DYN 2 in particular. Hence, it is recommended to read the **Test&Motion plus** 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 meanings.

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 plus Software , the EDCs or the testing instrument.

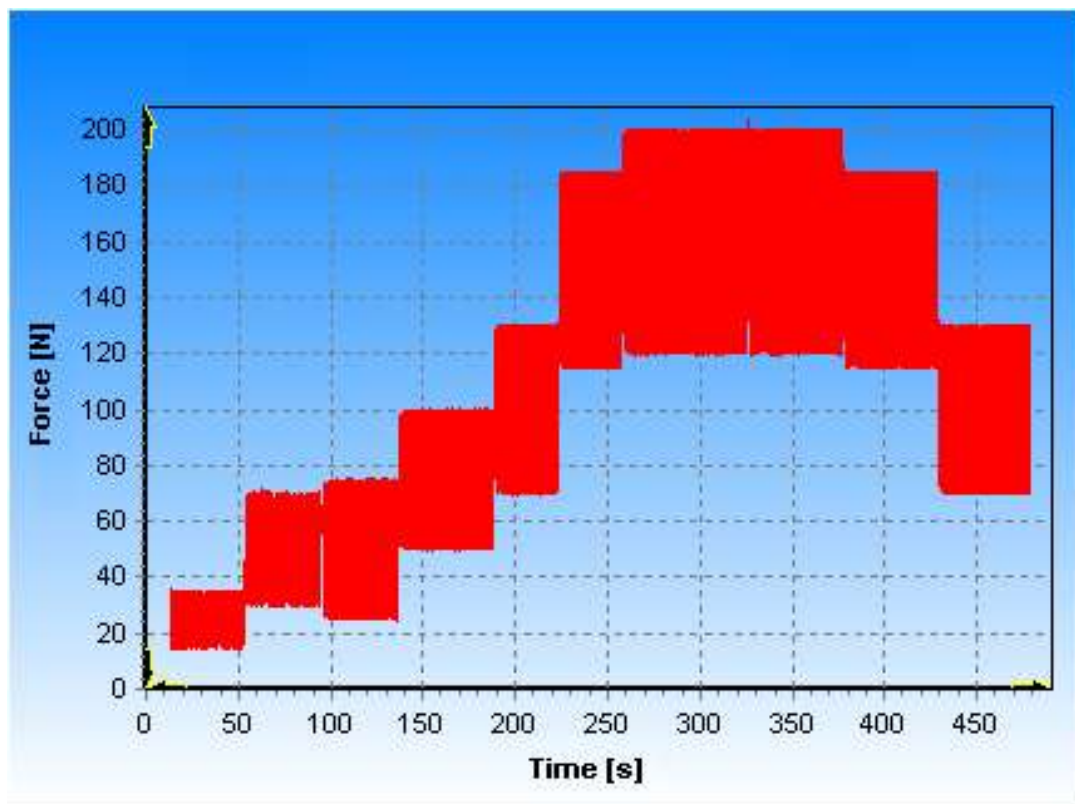


2 Application module DYN 2: Dynamical test

2.1 Field of application

Dynamic loading of a specimen displacement-controlled, force-controlled or strain controlled. Sinusoidal, rectangular or triangular waveforms are possible.

2.2 Test graphic DYN 2



Test&Motion plus Application Module DYN 2



2.3 Input values DYN 2



1. Click **Toolbar Test** → **CONFIG** → **Test speeds, Definition cosinus cycles**. Here you can find expedient input values for this test regulation, already. If necessary adjust the values to your needs.

Test settings

- Machine configuration
- Test
- Input values
- Definition Cosinus cycles
- Test procedure, speeds
- Results editor
- Results
- Statistics parameters
- Test data
- Dimensions
- End of test
- Store data
- Store data to
- Controller parameter
- Operations at test end
- User interface
- Settings dynamic
- Check nominal data
- Store to FDB database

Definition Cosinus cycles

	Offset	Hz	Amplitude	Control type:		Number of cycles	Save each nth cycle	n	Ctrl. Param.	Temp. stop	PeakCtrl. On	PeakCtrl. not off	values	n:
1	50	15	10	F	kN	100	10	1	Param 1	☐	☒	☐	2	☒ Send contr.param.
2	50	20	10	F	N	1.000	20	1	Param 2	☐	☒	☐	2	
3	50	22	10	F	N	50.000	1000	1	Param 3	☐	☒	☐	2	
4	0	5	1	S	mm	1.000	10	1	Param 4	☐	☐	☐	2	
5	0	5	1	S	mm	1.000	10	1	Param 5	☐	☐	☐	2	
6	0	5	1	S	mm	1.000	10	1	Param 6	☐	☐	☐	2	
7	0	5	1	S	mm	1.000	10	1	Param 7	☐	☐	☐	2	
8	0	5	1	S	mm	1.000	10	1	Param 8	☐	☐	☐	2	
9	0	5	1	S	mm	1.000	10	1	Param 9	☐	☐	☐	2	
10	0	5	1	S	mm	1.000	10	1	Param 10	☐	☐	☐	2	
11	0	5	1	S	mm	1.000	10	1	Param 11	☐	☐	☐	2	
12	0	5	1	S	mm	1.000	10	1	Param 12	☐	☐	☐	2	
13	0	5	1	S	mm	1.000	10	1	Param 13	☐	☐	☐	2	
14	0	5	1	S	mm	1.000	10	1	Param 14	☐	☐	☐	2	
15	0	5	1	S	mm	1.000	10	1	Param 15	☐	☐	☐	2	

Waveform icons: Sinus, Triangle, Rectangle

Table 2: Input values for test DYN 2.

Parameter	Meaning	Dimension
v to F0	Test speed to preload F0 (touch the sample)	[mm/min]
v to first pos.	Test speed to offset of first sinus command	[mm/min]
v change	Test speed between sinus commands (switch from old offset to next one)	[mm/min]
Offset	Offset of actual load, the peak values are Offset ± Amplitude	[mm], [N], [mm]
Hz	Frequency	[Hz]
Amplitude	Amplitude	[mm], [N], [mm]
Control type	- S [mm] xhead controlled - F [N] load controlled - dL[mm] elongation controlled	
Waveform	- Sinus - Triangle - Rectangle	
Number of cycles	Number of cycles	

Test&Motion plus Application Module DYN 2



Save each n'th cycle	Each n'th cycle is stored into the measurement window (MVL)	
n		
P	Controller parameter P (optional)	
SpeedFFP	Controller parameter SpeedFFP (optional)	
PosDelay	Controller parameter PosDelay (optional)	
Temp. stop	After completion of , Number of cycles' the machine stops and a dialog is displayed to continue the test.	
PeakCtrl. On	Activate ,Peak control of EDC' for this step	
Not off	After completion of , Number of cycles' do not deactivate peak control.	
values	Calculate average of ,value' peaks to use in ,Peak control'	

Test&Motion plus Application Module DYN 2



2.4 Results DYN 2



1. Click [Menu Test](#) → [Command Settings](#) → [Results](#). Here you can already find expedient results. If necessary, adjust the values to your needs.

Table 3: Results for test DYN 2.

Parameter	Meaning	Dimension
Fmax	Maximum test load	[N]
Fmin	Minimum test load	[N]
Cnt. cycles	Number of cycles completed	
Repeats	Number of repetitions	



2.5 Hints for the test DYN 2

2.5.1 Test procedure , speeds

The test speed to the first middle position (offset) is '**v to first pos.**'

The load cycles always begin and end in the middle position. Between these positions from one step to next the xhead speed is '**v change**'

2.5.2 Definition cosinus cycles

In dialog "Definition Cosinus cycles" we can define up to 20 load levels. In each of these levels we can go sinusoidal, rectangular or triangular.

2.5.3 Repeats

Within the above defined steps, a cycle can be defined. This cycle is then executed n times.

☒ Repeats	Number	100	between	1	and	3
	Save the first n'th	10		after this, save each		5

2.5.4 Dynamic limits

You can call this dialog via Toolbar Machine '**Dynamic Limits**'.

Start observation meas.val.

COV - Settings

☒ 1 Xhead

☐ 2 Force

☐ 3 Elongation

☐ 4 ---

☐ 5 ---

☐ 6 ---

☐ 7 ---

☐ 8 ---

Upper peak

5,000 mm ± 1

N ± 0,5

mm ± 0,5

Lower peak

-5,000 mm ± 1

N ± 0,5

mm ± 0,5

Start observation again xx seconds after change of command

sec

Reaction

☒ Stop S - controlled

☐ Drive off

☐

Upper peak

± x

Lower peak

± y

no observation

activate

Test&Motion plus Application Module DYN 2



2.5.5 Static limits

Here, two independent measurement channels are observed for minimum and maximum.

You can call this dialog via Toolbar Machine **‘Static limits’**.

Observation meas. channel

Observation relative limits, display value DSP window

☒ Observation 1

Sensor: Xhead

-7 mm

<- Xhead ->

3 mm

Reaction

☒ Stop S - controlled

☐ Drive off

☐ Observation 2

Sensor: Xhead

0 mm

<- Xhead ->

0 mm

Observation

☒ always

☐ only if Xhead is moving

OK

Cancel