

# **Operation and maintenance manual**

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#### PRIORITY INSTRUCTIONS

- 1. Before installing and using this unit, to ensure safe, efficient use of the unit, be sure you have read and fully understood the information and instructions given in this manual. A copy of this manual should be made available to every operator. Extra copies of this manual can be supplied on request.
- 2. Do not use the unit if any of the plates mounted on the unit are missing or if any of the information on the plates, as indicated at the end of the manual, are no longer legible. Identical plates will be supplied on request; these must be secured on the unit before it can be used again.
- 3. Make sure that all persons operating this unit know perfectly how to use it in a safe way, in observance of all safety at work regulations. This manual must be made available to all users.
- 4. The positioning and commissioning of this appliance must be carried out under conditions that ensure installer safety in compliance with the relevant regulations.
- 5. Each time, before using the unit, inspect the unit for any visible damage, as well as the accessories used with the unit. Never use an appliance that is not obviously in good condition. Returns the appliance to the manufacturer for servicing if any anomalies arise that have no connection with the state of the battery;
- 6. Protect your appliance from any form of impact, especially the display unit.
- 7. The unit must never be used for any operations other than those described in this manual. The unit must never be used to handle any loads exceeding the maximum utilization load indicated on the unit. It must never be used in explosive atmospheres.
- 8. This appliance should never be used for man-riding applications without a thorough prior check that the utilization coefficients required for personnel safety have been applied, and more generally that the safety regulations for the load line on which it has been installed have been applied.
- 9. Tractel® declines any responsibility for use of this unit in a setup configuration not described in this manual.
- 10. Tractel® declines any responsibility for the consequences of any changes made to the unit or removal of parts.
- 11. Tractel® declines any responsibility for the consequences resulting from disassembly of the unit in any way not described in this manual or repairs performed without Tractel® authorization, especially as concerns replacement of original parts by parts of another manufacturer.
- 12. If the unit is to be definitively removed from use, make sure the unit is discarded in a way which will prevent any possible use of the unit. All environment protection regulations must be observed.
- 13. Any operation of this appliance in conjunction with supplementary equipment relaying signals on an operating system must be preceded by a risk analysis related to the operating functions implemented, carried out by the system user or assembler, and all appropriate measures are taken as a consequence.
- 14. Certified in compliance with European regulations, this appliance should be checked for compliance with the regulations of any other country where it might be used, prior to being commissioned there.



As part of the continuous improvement of the quality of its products, TRACTEL<sup>®</sup> reserves the right to change, without notice, the characteristics of the products covered in this manual.

## 1. DEFINITIONS

In this manual, the following terms mean:

« Product » : Equipment element or assembly defined on the cover page, delivered complete in its standard version, or as one of the various models described.

« Installation » : Comprehensive set of operations required to place a complete product in a condition ready for commissioning (or connection to other components for commissioning), starting from the state in which the product has been delivered.

« User » : Person or department responsible for the management and safe use of the product described in the manual.

« Technician » : Qualified person in charge of the maintenance operations described and authorised to the user by the manual ; the technician is understood to be skilled and familiar with the product.

« Operator » : Person or department using the product in compliance with the purpose for which it is intended.

## 2. PICTOGRAMS USED IN THIS MANUAL



«DANGER»: Remarks intended to prevent fatal, serious or minor injury to personnel or damage to the environment.



«IMPORTANT»: Remarks intended to prevent a failure or damage to the product, but not directly endangering the life or health of the operator or any other person, or damage to the environment.



You must read the user and maintenance manual.

## 3. STANDARD CONTENT OF A DELIVERY

- An anchor tester dynaplug type HF 44/1 LPT
- 4 Studs M10, M12, M14, M16 + 1 traction fork
- 3 threaded rods to adjust the height of the legs
- 1 fixing tube with a chain
- A CE certificate & calibration certificate
- A user manual
- A rugged carrying box

## 4. INTRODUCTION

#### 4.1 Description

This anchor tester HF 44/1/LPT is an electronic load cell designed to measure anchor strength in construction material. The dynaplug HF 44/1/LPT measures traction forces up to 1500 daN.

Its shape as a tripod has been especially designed to minimize its influence on the concrete around the fixing. The three legs made in stainless steel can be adapted from 70 mm up to 190 mm high.

Two programs have been included into the electronic:

Program n<sup>o</sup> applies a force of 500 daN on the fixin g during 20 seconds.

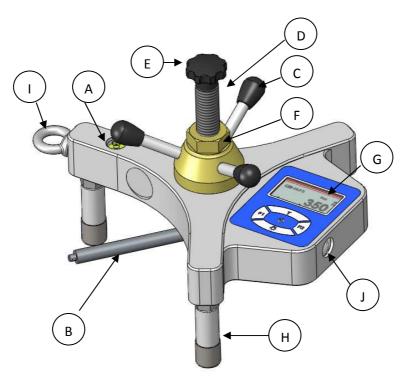
Program n<sup>2</sup> applies a force between of 1000 daN on the fixing during 3 minutes.

#### 4.2 Characteristics

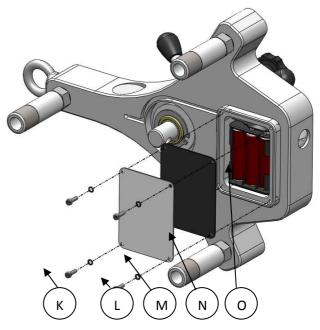
- Capacity: de 0 à 1500 kg
- Accuracy: +/- 0,2 % of full range
- Temperature of use: -5°à +60℃
- Protection: IP 65
- Size of the packaging: 420 x 340 x 210 mm
- Total weight of the device in its carrying box: 8,1 kg
- Net weight of the HF 44/1/LPT: 4,1 kg
- Power supply: 3 Alkaline cells AA

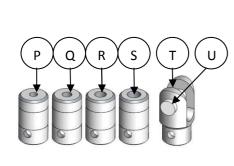
## 5. PRESENTATION

#### 5.1 The dynaplug HF44/1/LPT



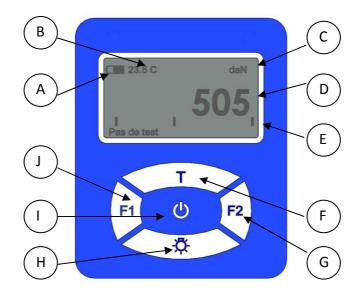
A	Level	F	Angular contact plain bearings
В	Fixing tube	G	Display
С	Crank	Н	Legs in stainless steel
D	Tightening screw	I	Suspension ring
E	Fast tightening screw adjuster	J	USB plug





K	Screws	Q	M12 Studs (in stainless steel)
L	Security spacer	R	M14 Studs (in stainless steel)
Μ	Battery cover	S	M16 Studs (in stainless steel)
Ν	Rubber joint	Т	Fork for ring
0	Batteries 1,5V type AA (3)	U	Axle of the fork
Р	M10 Studs (in stainless steel)		

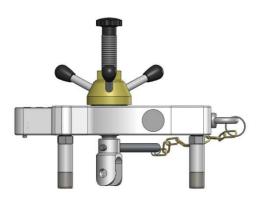
## 5.2 Display information and keyboard functions

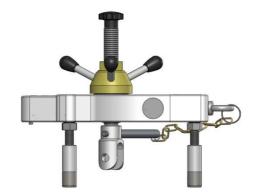


А	Battery level indication	В	Current temperature
С	Current unit	D	Current measure
E	Graphic visualization of the measure between maximum and minimum	F	<ul> <li>"T" Key</li> <li>Press 2 sec = increase police of the current measure</li> <li>Press = keep the device on when auto-off</li> <li>In MENU Mode</li> <li>Press = scroll up</li> </ul>
G	<ul> <li>"F2" Key</li> <li>Press = access to list of automatic tests</li> <li>In MENU Mode</li> <li>Press = Select</li> </ul>	н	<ul> <li>"O" key</li> <li>Press 2 sec = Backlight ON / OFF</li> <li>Press = data log</li> <li>In MENU Mode</li> <li>Press = scroll down</li> </ul>
I	<ul> <li>"ON/OFF" Key</li> <li>Press = ON</li> <li>Press 2 sec = OFF</li> <li>When ON</li> <li>Press = access to MENU</li> <li>In MENU Mode</li> <li>Press = Enter</li> </ul>	J	<ul> <li>"F1" Key</li> <li>Press = launch the automatic test</li> <li>In MENU Mode</li> <li>Press = Escape</li> </ul>

#### 5.3 Adjustment of the legs

With threaded rod of 75 mm:





Minimum height: 70 mm With threaded rod of 150 mm:

Maximum height: 115 mm



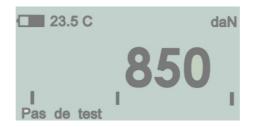
Minimum height: 140 mm

Maximum height: 190 mm

## 6. TO CARRY A MEASUREMENT OUT

#### 6.1 Carry a measurement without selecting an automatic test

- Place the right accessory (sturd) on the structural anchor
- Turn the Dynaplug on
  - o Logo TRACTEL
  - o Parameter setting values
- Fix and secure the accessory and the tightening screw
  - o Adjust the feet if necessary
- Use the crank to apply the tension on the structural anchor
- Screen will display (see § 5.2):
  - o Current measurement unit
  - o Current temperature
  - o Battery level of charge
  - o Measured force

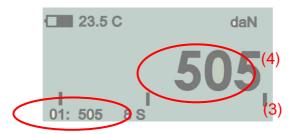


#### 6.2 Carry a measurement with an automatic test

- Place the right accessory (sturd) on the structural anchor
- Turn the Dynaplug on
  - o Logo TRACTEL
  - o Parameter setting values
- Fix and secure the accessory and the tightening screw
  - Adjust the feet if necessary
- Press F2 to see the available tests
  - o Tests are shown as: test number : tolerance @ target effort unit duration S

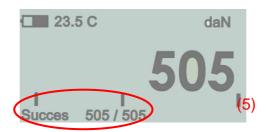
Note: tolerance is 2% of target effort

- Select the test with ON/OFF
- Use the crank to apply the tension
- Press shortly on F1
  - o if no test is selected, the message "!" will appear
- The reference number of the test, the tension applied at the beginning of the test and a countdown (in second) of the duration of the test is displayed at the bottom of the screen (3). The main number remains the current measurement. (4)



Note: If the tension is too low or too high, the automatic test cannot be carried on and the message « LOW » or « HIGH » will appear on the display. The force applied must be between [target effort – 1 \* tolerance] and [target effort + 2 \* tolerance]

• At the end of the test, the message « Success » or « Failed » appears as well as the initial and final measurements. (5)





Once the memory is full, the dynaplug will erase the first recorded results and replace them with the new.

## 7. CONFIGURATION MENU

- Accede to the Menu by pressing the "ON/OFF" key
- Use the key board to scroll the menu (See § 5.2)

ON/OFF		
	PARAMETRES	LANGUAGE
		AUTO OFF
	-	BACKLIGHT
	-	TIME
	-	DATE
	-	INFORMATION
	-	RESTORE
	RECORDS	READ
		DELETE
	UNITS	LOAD
		G
	-	DIAMETER
	-	TEMPERATURE

#### PARAMETERS

- LANGUAGE
   Available languages are French and English
- AUTO OFF
   Setting from "0" up to "60" minutes
- BACKLIGHT
   Setting from "0" up to "60" minutes
- TIME Set your local time
- DATE Set your local date
- INFORMATION About the display

• RESTORE

To restore the factory setting (Except TIME and DATE)

### RECORDS

- READ
   Read the previous logged operations
- DELETE To clear the memory

### UNITS

- LOAD UNITS
   N, daN, kN, kg, lbf, lbs
- "g" COEFFICIENT Modify the default parameter : 9,81
- DIAMETER Available units : mm, decimal inches, fraction inches.
- TEMPARATURE Available units : C° and F°

## 8. ADVANCED FUNCTIONS

RECORD – ·Ô·

MONITOR - F1

## 8.1 Record

To record the data at the end of a measurement process

- Press key "" during the measurement process, display will show "REC"
- Conditions : Wire rope selected / Batteries OK
- In average mode, the value recorded is the average value and not the current effort
- To read the values recorded, enter the menu : records : read

## 8.2 Monitor

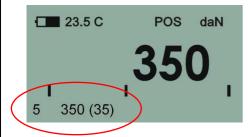
The monitor function allows you to launch an automatic acquisition sequence, i.e. recording during a specified period at a specified interval, variations of effort on an anchor (maximum 999 acquisitions).

The operating data recorded via the monitor function requires LOADER MONITOR software option.

- Press 3 sec to turn Monitor mode on
- Set the interval time in seconds (from 1 to 60) with the keys T and -Q-
- Validate with 心

The automatic recording has started and is displayed at the bottom left of the screen :

The countdown till the next recording (based on the set interval) – current measure – between brackets the number of measurements recorded



Press F1 for 3 sec to leave the Monitor mode

## 9. MAINTENANCE, CHECKING AND CLEANING

#### 9.1 Alkaline cells replacement

- Turn the display OFF
- Remove the batteries cover by unscrewing the 4 fixing screws
- Replace the 3 batteries and respect polarities
- Put the batteries cover back

#### 9.2 Regulatory check

New appliances come with a certificate of adjustment. This document indicates the values obtained during adjustment and certifies that the sensor has been adjusted, in compliance with an in-house procedure, on a calibration bench with its calibration sensor connected to the International Standard calibrator.

Tractel<sup>®</sup> recommends an annual metrological check for every appliance.

#### 9.3 Maintenance

The sensor/display unit requires no specific maintenance other than a regular cleaning with a dry cloth.

## 10. MESSAGES

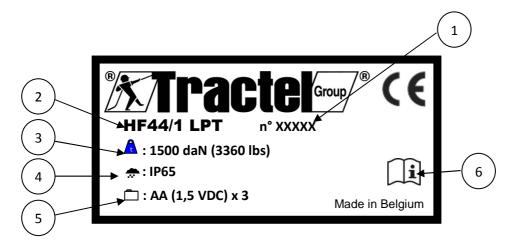
#### 10.1 Information messages

Message	Cause	Solution
LOW	Applied force is below the tolerance to start the automatic test. (see § 6.2)	Apply more tension
HIGH	Applied force is above the tolerance of the automatic test. (see § 6.2)	Lower the tension
!!!!	Current effort is way above the capacity of the dynaplug.	Lower the tension
Auto Off : xx S	Announcement of the imminent extinction of the device	Press key "T" to reset the counter or let it shut down
TIME	Automatic extinction of the device	
BAT	Automatic extinction of the device due to low batteries condition	Replace the alkaline cells (see § 9.1)

## 10.2 Error messages

Message	Cause	Solution
Corrupted signature	Error in the test parameters	Use the optional LOADER software to update the data bank. Or, contact the manufacturer.
Corrutped math	Error in the test parameters	Use the optional LOADER software to update the data bank. Or, contact the manufacturer.
Unknow error	Unidentified error	Contact the manufacturer.
!	No test selected	See § 6.2
AD-L	The output signal is too low	Contact the manufacturer.
AD-H	The output signal is too high	Verify that the sensor is not overloaded. Contact the manufacturer
Z-er	The system cannot zeroing. Connection problem between the tension meter and the display.	Contact the manufacturer

## 11. MARKINGS



1	Serial number
2	Identification (TYPE)
3	Maximal capacity
4	Protection rating
5	Power supply
6	Symbol « Read the instruction Manual »