

## Know when to restring

All string materials start losing tension after the racquet is strung through repeated impacts and through aging even if it has not been used

**Restring the racquet when the DT-value has decreased by 10% to maximum 20%**

**Never play tennis when the DT-value below 28 !**  
(Low ball control, risk of tennis elbow and back problems)

### Technical data ERT 300 TENNISCOMPUTER

Field of application	Tennis racquets
Dynamic system	Electronic simulation of ball impact
Measuring of the resonance frequency	Converting the string bed stiffness DT
DYNAMIC TENSION DT	20...65 DT (kp/cm; Newton/mm)
Accuracy	+/- 1 kp/cm (+/- 1 digit)
Display	Measurement 4...6 sec., Display 8 sec.
Dimensions	110 x 50 x 25 mm
Weight	50 g
Ambient temperature	5...45° Celsius / 40...115° Fahrenheit
Relative humidity	20%...80% (not waterproof)
Batteries	2 x CR 2032 coin type

Replace batteries when battery sign appears in display.  
Caution: Do not loose the tiny screws.  
Always use a proper desk top.



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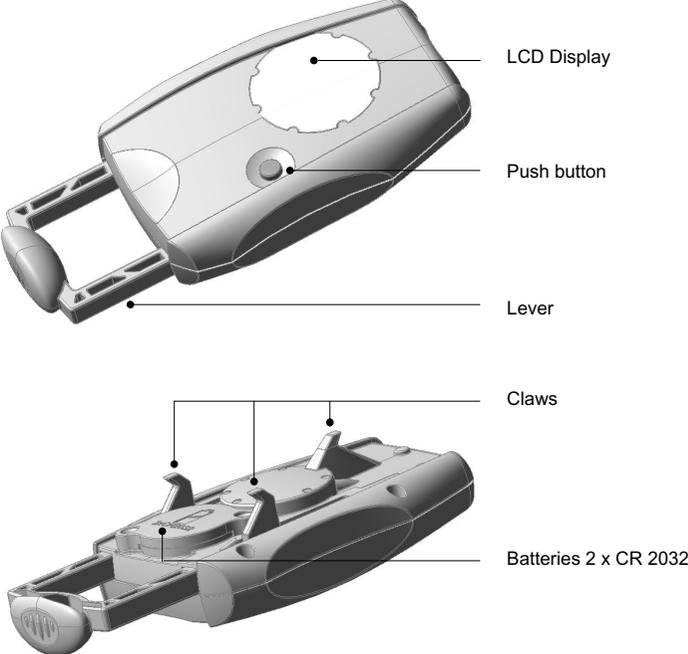
# ERT 300

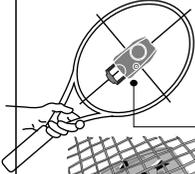
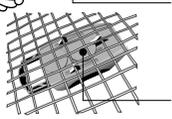
Microprozessor gesteuertes Messgerät zur Bestimmung der Besaitungs- und Spieleigenschaften an jedem Tennisracquet. 1

Micro ordinateur destiné à déterminer les caractéristiques de cordage et du jeu pour chaque raquette de tennis. 11

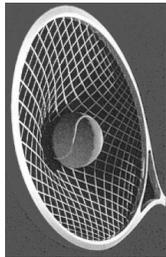
Uno strumento altamente tecnologico per la misurazione della caratteristica d'incordatura delle racchette da tennis. 21

Micro computer for precise determination of strings and playing characteristics of any Tennis Racquet. 31

ERT 300 Tenniscomputer	What information gives the ERT 300												
 <p>LCD Display</p> <p>Push button</p> <p>Lever</p> <p>Claws</p> <p>Batteries 2 x CR 2032</p>	 <p><b>DT range / Power of play</b></p> <table border="1"> <tr> <td>Lo</td> <td>DT 28...34</td> <td>Defensive play</td> </tr> <tr> <td>Mid</td> <td>DT 35...41</td> <td>Dynamic, offensive play</td> </tr> <tr> <td>Hi</td> <td>DT 42...46</td> <td>Fast, aggressive play</td> </tr> <tr> <td>Hi+</td> <td>DT 47...54</td> <td>Very fast, extremely aggressive play</td> </tr> </table> <p><b>ERROR</b>          No DT detection          Tension to low or incorrect handling          Place the device again</p> <p><b>DYNAMIC TENSION DT (DT-value)</b>          DT is the string bed stiffness          Higher DT for more control          Lower DT for more power (ball speed up)</p> <p><b>Replace the batteries</b> 2 x CR 2032 coin type</p> <p><b>Restring the racquet at the latest</b>          (Not recommended to play tennis when DT below 28)</p> <p><b>String tension kp, lbs.</b>          To be read out at the DT system disc</p> <p>kp, lbs.</p> <p>DT is the string bed stiffness. The DT-value is the ball force in kilopond (kp) that is needed to deflect the string bed 1 cm at the sweet spot (ball impact).          Internat. standard. units: kp/cm or Newton/mm.          DT determines the playing characteristics POWER and CONTROL.</p>	Lo	DT 28...34	Defensive play	Mid	DT 35...41	Dynamic, offensive play	Hi	DT 42...46	Fast, aggressive play	Hi+	DT 47...54	Very fast, extremely aggressive play
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32	ENGLISH 33												

How to measure the string bed stiffness	Instructions
 <p><b>1. Clip the ERT 300 in the center of the string bed</b> <b>2. Push the button</b> <b>3. After a few seconds read out the values determining the playing characteristics</b></p>	 <p><b>1 Hold the racquet at throat as shown</b> During the measurement hold the racquet steady, do not touch or put down the racquet</p>  <p><b>2 Clip the ERT 300 in the center of the string bed</b> The 3 claws hold the device parallel to the strings by gentle spring tension (jump one cross string).</p>  <p><b>3 Push button to start the DT test</b> The ball impact is simulated electronically (gentle vibrations). The exact readings are displayed after 6...8 seconds. (The device switches-off automatically)</p>  <p><b>DT-range / Power and aggressiveness of play</b> Example: Mid, dynamic and offensive play <b>DYNAMIC TENSION DT</b> Example: 38 DT <b>String tension kp, lbs.</b> To be read out at the DT-disc (page 38)</p> <p><b>Important:</b> The ERT 300 Tennis computer must be clipped at the center of the string bed. If it is placed outside the center, e.g. towards the top or bottom, the measured value will change. Normally in such a case the stringing appears to be tighter. This corresponds to the reality. We however are interested in the impact zone. Variations can also occur as a result of incorrect or defective stringing. For exact comparative measurements (rechecks) the ERT 300 must always be applied to exactly the same point, <b>count or mark the strings.</b></p>

## What is the DT-value



**DYNAMIC TENSION DT**  
 The DT-value is the stiffness of the string bed that effects during the ball impact of any racquet.  
 DT determines the playing characteristics **POWER** and **CONTROL**.

**Higher DT** provides more control  
**Lower DT** provides more power (ball speed up)

DT is ball power in kilo pond (kp) required to depress the string bed 1 cm at the sweet spot (ball impact).  
 Internat. standard units kp/cm or Newton/mm

The DT-value is measured with the ERT 300 Tennis computer by electronic simulation of the ball impact (vibrations). All factors of influence such as racquet type, racquet size, string pattern and string characteristics are automatically taken into account.

DT is the only realistic (since close to play) and precise value that can be measured directly at the strung racquet.

## How to find the optimum DT-value



The DT can be mainly determined by 4 ranges:  
**Lo, Mid, Hi, Hi+**  
 (not to be mixed with the racquet size)

Each player determines his DT reference value respectively DT playing rang best suited for his power level and style of play (overlapping possible). Optimum stringing ensures play with maximum ball control and power reducing fatigue and the rebound shock.

### PLAYING

Defensive from the baseline

Dynamic and offensive

Fast and aggressive

Very fast and extremely aggressive

MORE POWER

MORE CONTROL

DT 28 - 34

DT 35 - 41

DT 42 - 46

DT 47 - 56

Lo

Mid

Hi

Hi+



Club

Club / WTA

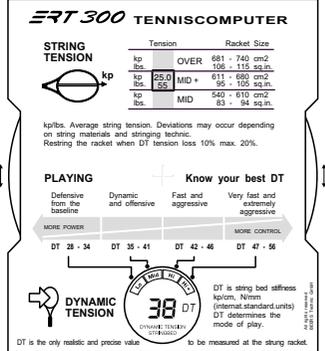
Club / WTA / ATP

ATP (mostly jused)

The string bed is the heart of the racquet. The proper combination of string and Dynamic Tension DT suited for a specific style of play is necessary to obtain maximum player performance.

### How to know the string tension kp (lbs.)

Use the enclosed DT-disc for reading out the current string tension kp (lbs.)



**Example:**

Racquet size MID+ (98 sq.in.)  
string tension 25 kp (55 lbs.)

Measured DT-value

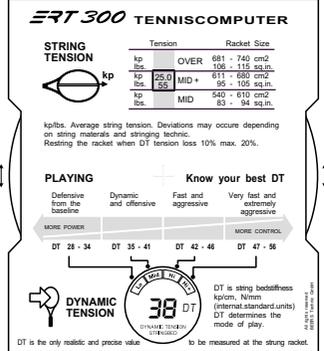
Set the measured DT-value                      38 DT

**Read out the average string tension**      **25 kp      (55 lbs.)**

After the stringing process, the tension of an individual string can no longer be measured directly. The string bed stiffness DT is measured precisely by electronic simulation of the ball impact. The corresponding string tension kp (lbs.) can be read at the DT-disc as an average value.

### How to obtain the required DT-value

After determining of the suitable DT-value the corresponding machine pull tension set in kp (kilopond) or lbs. (pounds) is to be read out at the DT-disc.



**Example:**

Racquet size MID+ (98 sq.in.)  
pull tension 25/24 kp (55/53 lbs.)

Required string bed stiffness of  
DT 38 which means dynamic  
and offensive play

Set the required DT-value                      38 DT

Read out the corresponding string tension    25 kp      (55 lbs.)

**String the racquet with**                      **25/24 kp      (55/53 lbs.)**

The effective resulting DT-value may deviate slightly. This is not unusual and is subject to string material, racquet design, string pattern and stringing technique etc. The experienced stringer will adjust the tension on his stringing machine accordingly. Check periodically the machine pull tension. Do not forget: Within the first 2 to 4 hours after stringing, there is often a remarkable tension loss of 2...4 DT, called the **stabilization losses**.

ENGLISH