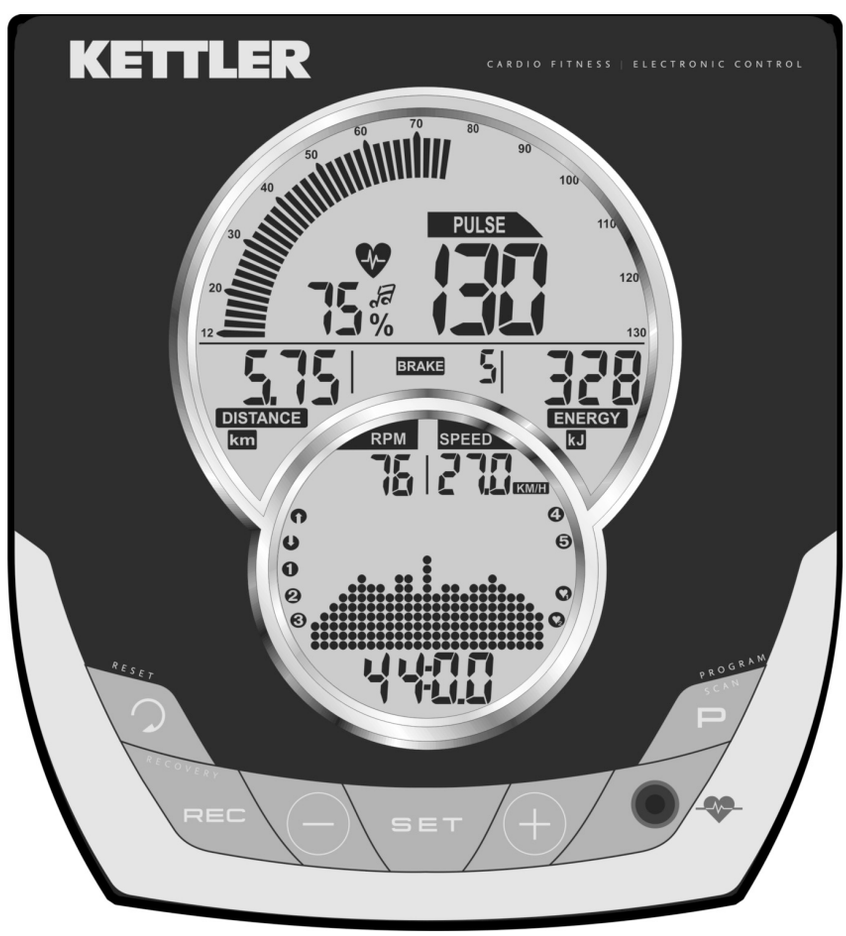
KETTLER

SM3616-68 / SM3656-68

Trainings- und Bedienungsanleitung	deutsch
Training and Operating Instructions	english
Mode d'emploi et instructions d'entraînement	française
Trainings- en bedieningshandleiding	nederlands
Instrucciones de entrenamiento y manejo	español
Istruzioni per l'allenamento e per l'uso	italiano
Instrukcja treningowa i instrukcja obsługi	polski
Návod na trénink a obsluhu	čeština
Trænings – og brugervejledning	dansk
Instruções de treino e utilização	português
Navodila za vadbo in uporabo	slovensko
Рекомендации по проведению тренировок и руководство по эксплуатации	русский



GOLF P eco

MADE IN GERMANY

Table of Contents

Safety notes

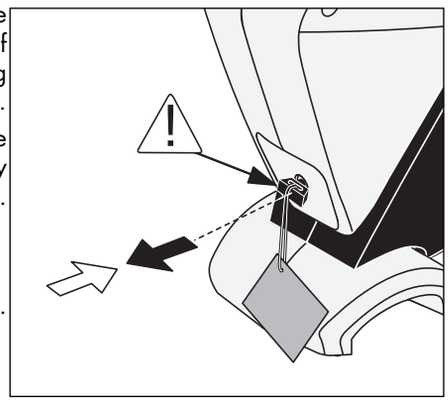
Please observe the following aspects for your own safety:

- The training device must be erected on an appropriate, fixed ground.
- The connections must be checked for firmness before the first start-up and also after ca. 6 days of operation.
- To prevent injuries resulting from wrong strain or excessive strain, the training device must only be used according to instructions.
- It is not recommended to put up the training device in wet places for a longer period of time because of corrosion.
- Check the functionality and the proper state of the training device regularly.
- The safety controls must be carried out by the user regularly and properly.
- Defect or damaged components must be replaced immediately. Use only original spare parts of KETTLER.
- The device must not be used until the repair has been carried out.
- The device's safety level can only be maintained, if it is checked regularly for damage and wear.

For your safety:

- **Before you start training, your general practitioner should find out, if you are fit for the training with this device in terms of health. The medical findings should be the basis of the structure of your training programme. Wrong or excessive training can lead to damage to your health.**

Functionality and Operation



This device is independent of mains voltage. As of approximately 30 pedal revolutions, the generator generates voltage in order to supply the electronics and charge an accumulator. If the charge condition is sufficient, the accumulator provides for the voltage supply during standstill. The accumulator plug prevents the discharge of the accumulator via the electronics.

Before commissioning the device, pull the accumulator plug out of the socket. If the accumulator's charge is sufficient, the display lights up. If this is not the case or if the display is only illuminated for a short time, you have to charge the accumulator by means of training.

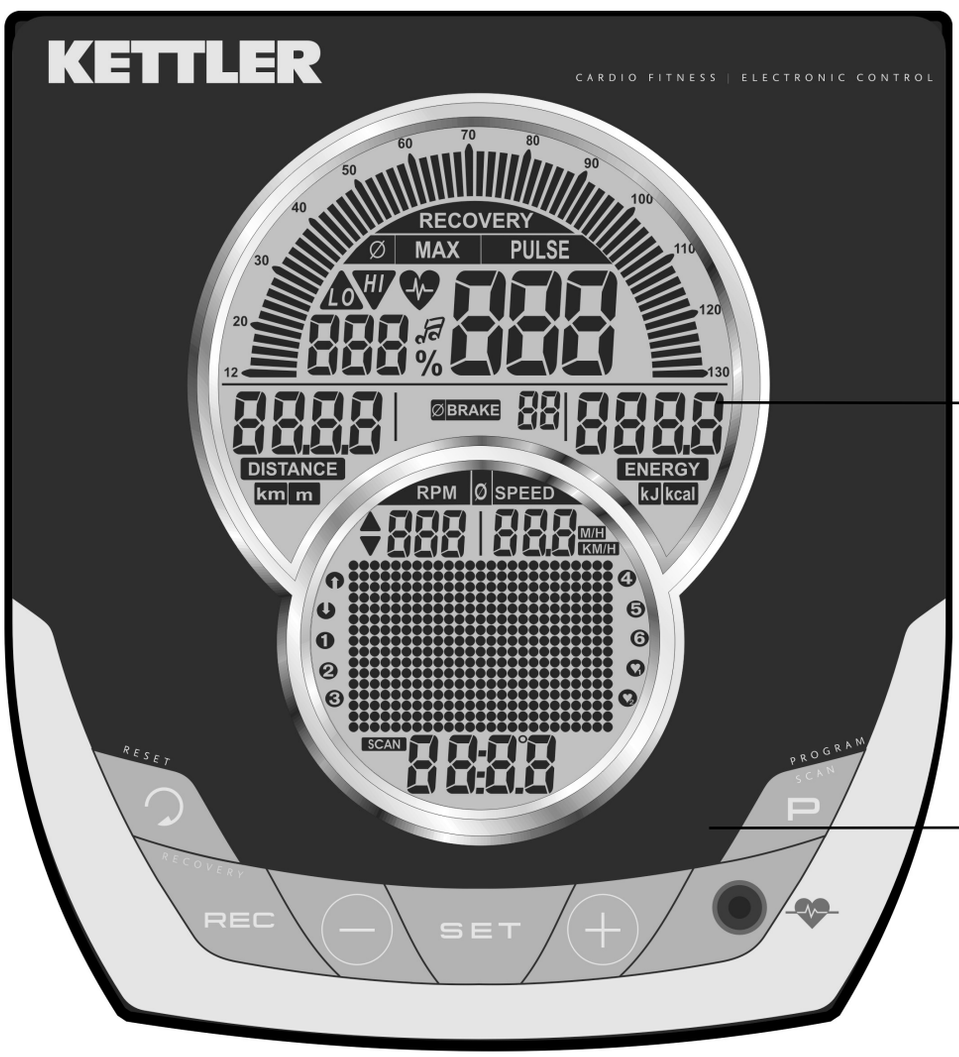
In case of non-use, plug the accumulator plug in the socket again.

Without activity, the electronics will switch off the display after 90 seconds.

A wall power supply for charging the accumulator is available as accessory via our service.

Short description

The electronics consists of a function range with buttons and an indicating range (display) with variable symbols and graphics.

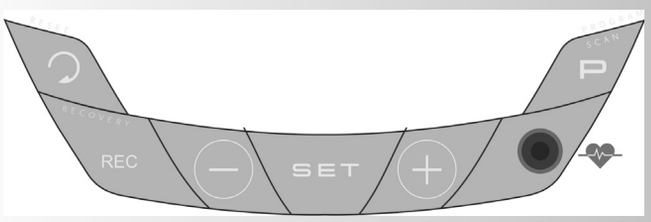


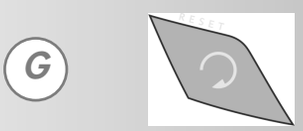
Indicating range

Display

Function range

Buttons





Short description

Function range

The six buttons are briefly explained in the following.

The precise use is explained in the individual chapters. In these descriptions, the names of the functional buttons are used in the same way.

SET (press briefly)

This functional button is for displaying input data. The set data is accepted.

SET (press for a longer period of time)

When displaying all segments: call "individual settings"

Reset

By means of this functional button the current display is deleted for a restart.

Programme

By means of this functional button the various programmes are selected.

Pressing again > next programme

Pressing for a longer period of time> sweep of programme

Minus - / Plus + buttons

By means of these functional buttons values are changed in the various menus before the training and the strain is adjusted during training.

- further "Plus"
- back to "Minus"
- pressing for a longer period of time > quick change
- pressing "Plus" and "Minus" **together**:
- strain goes to **Level 1**
- programmes go to **Original**
- input of values goes to **Off**

RECOVERY

By means of this functional button the recovery pulse function is started.

Note:

Further functions of the buttons are explained in the operating instructions where appropriate.

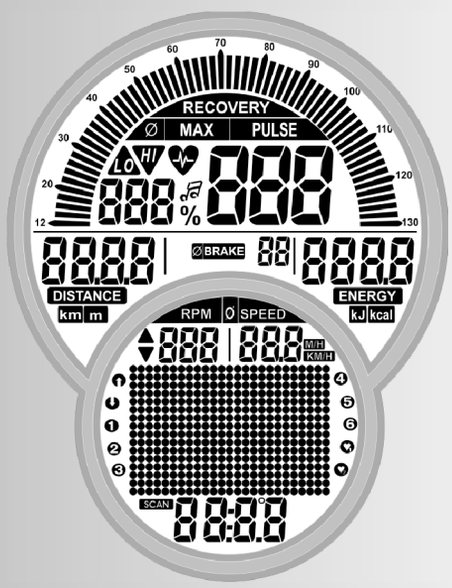
Measuring the pulse

The measurement of the pulse can be carried out by means of (3) sources:

1. Ear clip -
   the plug is put into the socket.
2. Chest belt (plug-in receiver required)
   Please observe the respective instructions.
3. Hand pulse

Indicating range / Display

The indicating range informs on the various functions and respectively selected setting modes.



Programmes: Count Up / Count Down

The programmes differ in their mode of counting.

Programms

Strains beyond the time or distance
Default profiles 1-6

Pulse-controlled programmes: HRC1/HRC2

Target pulse beyond the time
Two programmes that control the strain by a preset pulse value.

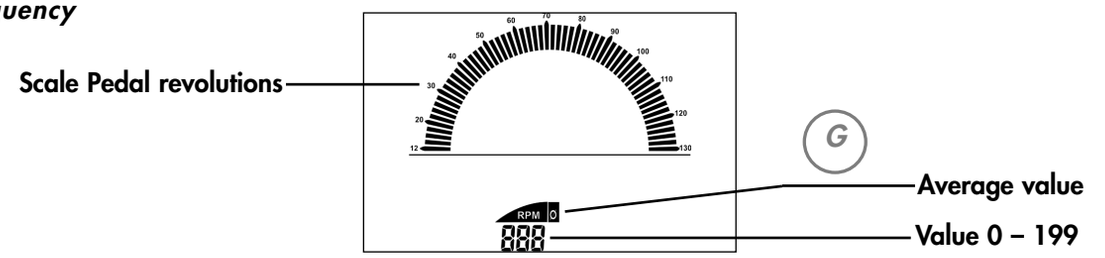
Display values

The example displays show the operation as home trainer.

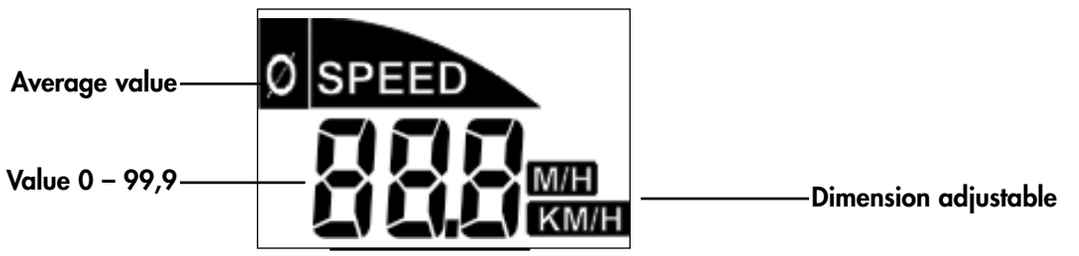
If the revolutions per minute correspond to the example displays the values for speed and distance are lower for cross trainers.

At 60 min-1 (**RPM**)
Home trainers: = 21,3 km/h
Exercise bikes: = 9,5 km/h

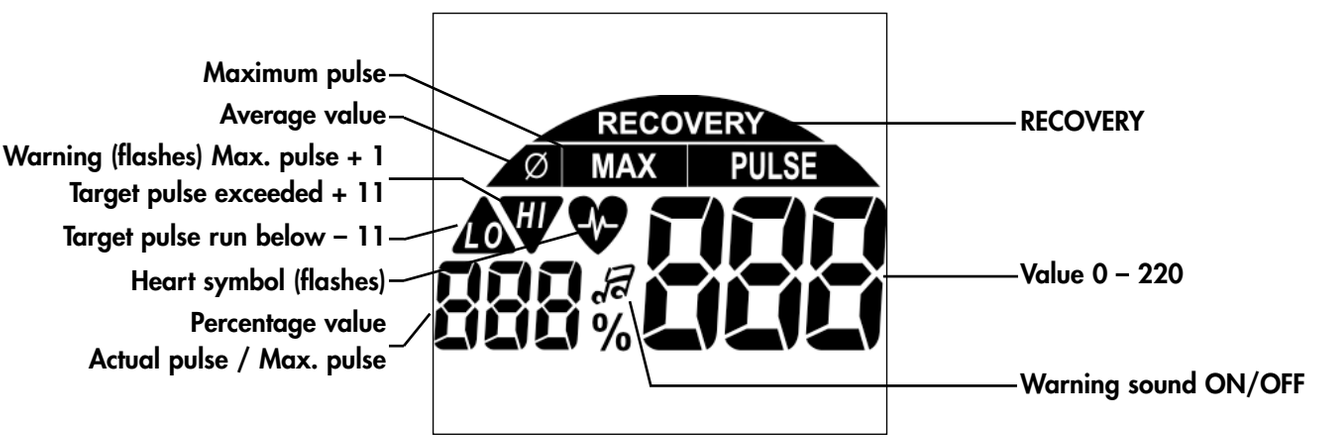
Pedalling frequency



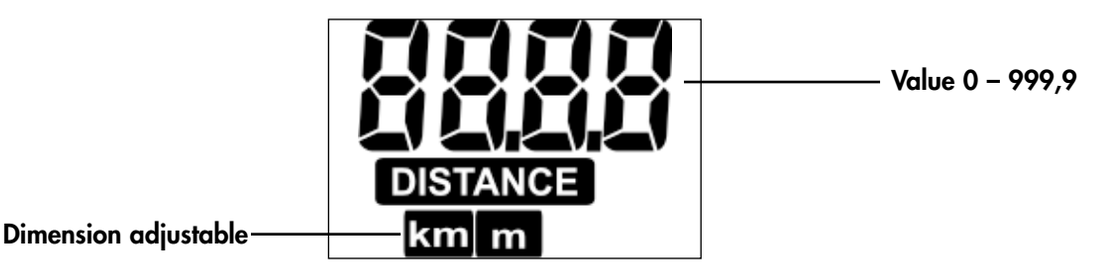
Speed



Puls

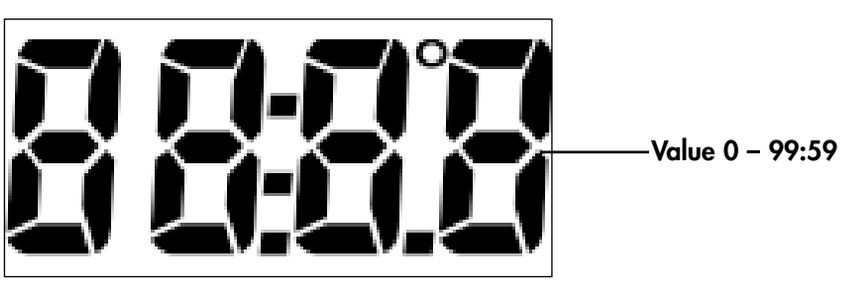


Distance

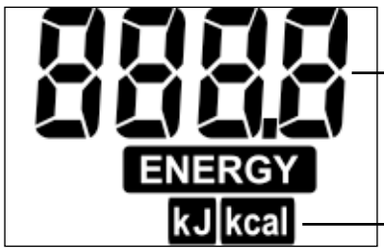


Level of strain

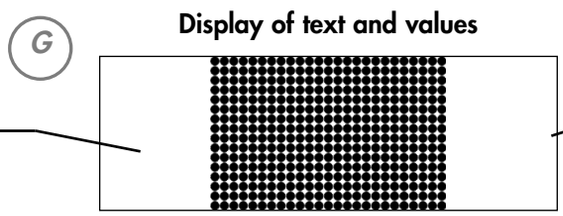
Time



Energy consumption



Points



Quick start (Introduction)

Start of training:

without special settings

- Image shown after switch-on
  Display of total kilometres "**odo**"
- After 5 seconds: ***Display*** "Count Up"; all values indicate 0;
  Strain shows Level 1
- Start of training

Display
Scale, Pulse (if measurement of pulse is active), distance, level, energy, time, revolutions, speed and time

Change of the strain during training:

- "Plus": display value next to "BRAKE" is increased in steps of 1.
- "Minus" reduces in steps of 1

Continuation of the training with this setting. Changes of strain in the meantime are possible at any time.

End of training

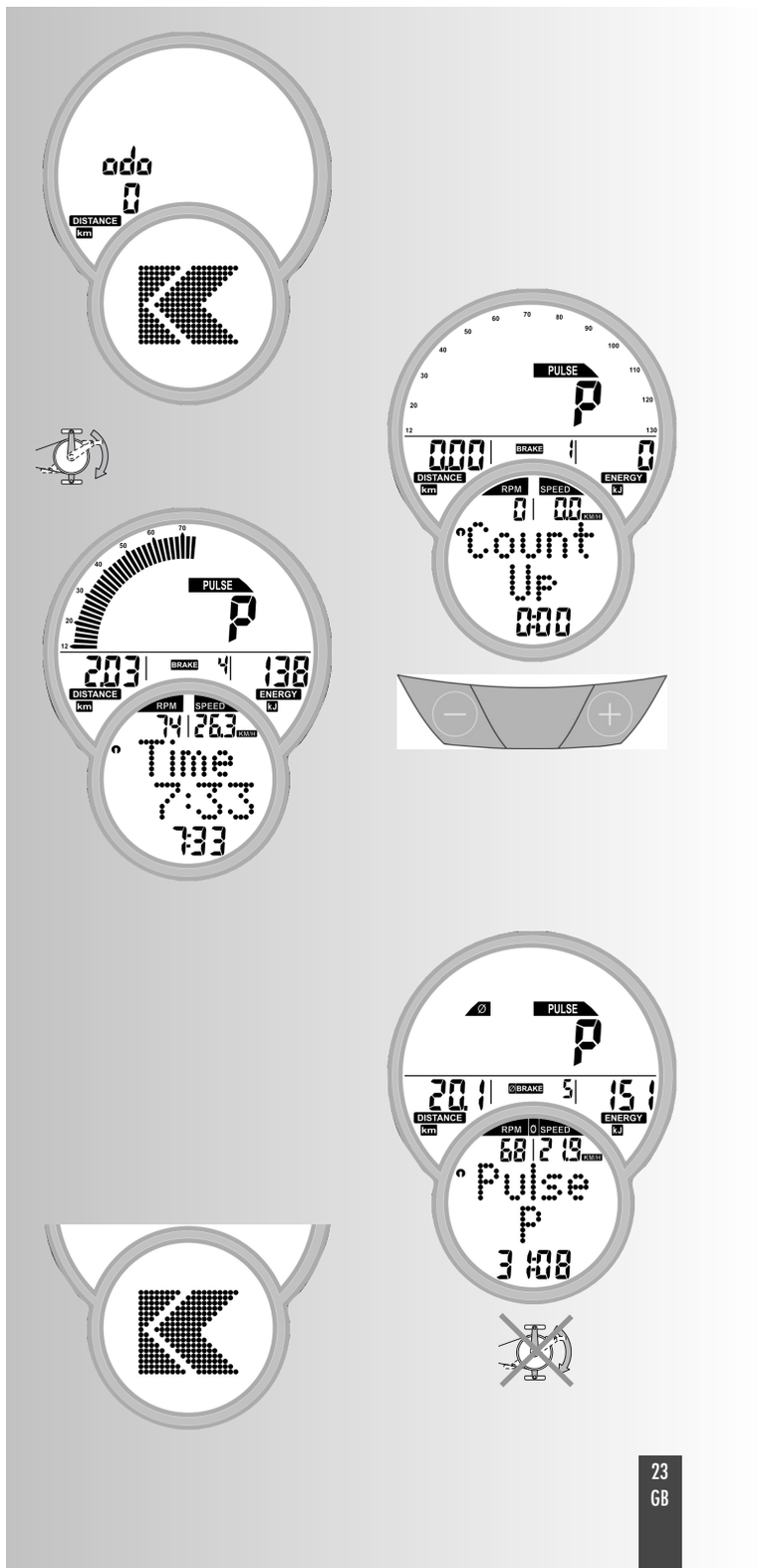
- Average values (Ø):

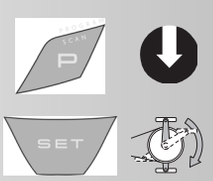
Display
Pulse (if measurement of pulse is active), level, revolutions and speed

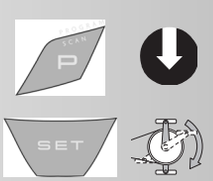
- Total values
  Distance, energy and time

Standby operation

The display goes to standby operation 90 seconds after the end of training. Press any button, display re-starts with "Count Up".







Training

The computer is equipped with 10 training programmes. They clearly differ in strain intensity and duration.

1. Training by defaults of strain

a) Manual strain input
- (PROGRAM) "Count Up"
- (PROGRAM) "Count Down"

b) Strain profiles
- (PROGRAM) "1" – "6"

2. Training by defaults of pulse

Manual defaults of pulse
- (PROGRAM) "HRC1 Count Up"
- (PROGRAM) "HRC2 Count Down"

Training by defaults of strain

a) Manual strain input
(PROGRAM) "Count Up"
- Press "PROGRAM" until: ***display*** "Count Up"
  Start training, all values count up.

Or
- Press "SET": default range
- "Plus" or "Minus": change strain.
  Start of training, all values count up.

(PROGRAM) "Count Down"
- Press "PROGRAM" until: ***Display:*** "Count Down"
- The programme counts down > 0 from the entered values. If nothing is entered, the training starts in the programme "Count Up". For the start of the programme at least one input for distance, time or energy must be entered.
- Press "SET": default range

Default range
Display: distance default "Dist"

Distance default
- Enter values by means of "Plus" or "Minus" (e.g. 14.00)
  Confirm by means of "SET".

Display: Next menu time default "Time"

Time default
- Enter values by means of "Plus" or "Minus" (e.g. 45:00)
  Confirm by means of "SET".

Display: Next menu energy default "Energ."

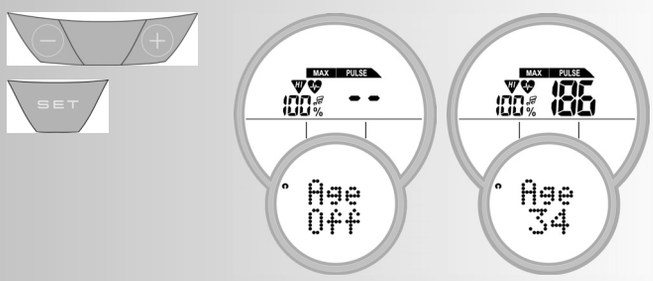
Energy default
- Enter values by means of "Plus" or "Minus" (e.g. 1500)
  Confirm by means of "SET".

Display: Next menu Age default "Age"

Age input
The input of the age serves to determine and control the maximum pulse (Symbol HI, warning sound, if activated).

- Enter values by means of "Plus" or "Minus" (such as 34). Based on it, the maximum pulse of 186 is calculated according to the formula (220 – Age) Confirm by means of "SET".

Display: next menu selection of target pulse "Fat 65%"



Selection of target pulse

- Select by means of "Plus" or "Minus"
- Fat burning 65%, Fitness 75%, Manual 40 – 90% Confirm by means of "SET" (e.g. Manual 40 – 90%)
- Enter values by means of "Plus" or "Minus" (e.g. Manual 83) Confirm by means of "SET" (default mode completed)

Display: readiness for training with all defaults

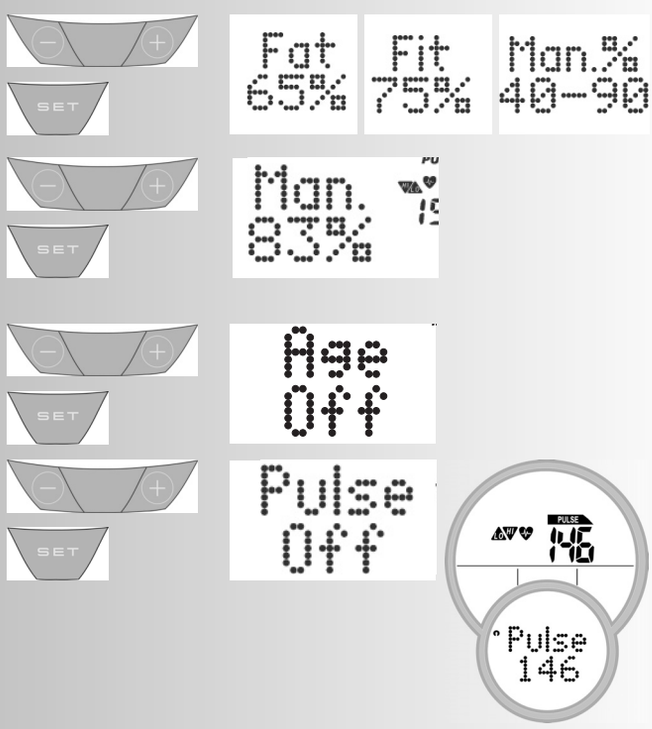
Or

Target pulse (40 – 200)

- Deselect the age input by means of "Plus" or "Minus". Display: "AGE OFF" Confirm by means of "SET".

Display: next default "target pulse" (Pulse)
•Enter value by means of "Plus" or "Minus" (e.g. 146) Confirm by means of "SET" (default mode completed)

Display: readiness for training with all defaults



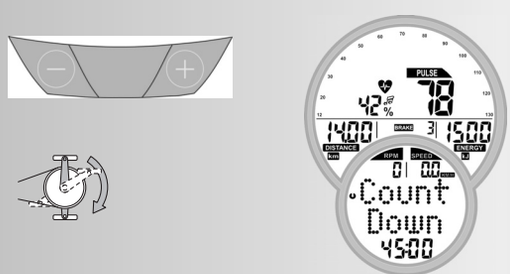
Note:

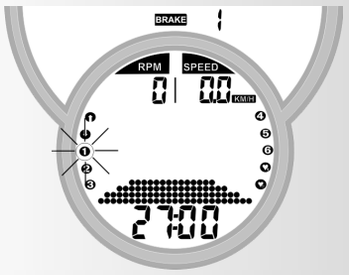
- An overview of all setting possibilities in the programmes is summarised in the tables (see page 29).
- The defaults are lost in case of "Reset". If in case of individual settings "Storage of defaults" is activated (page 14), the pulse defaults will remain. When calling Count Up / Count Down for the next time, the data is accepted.

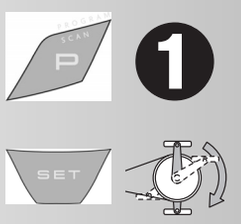
Readiness for training

Strain

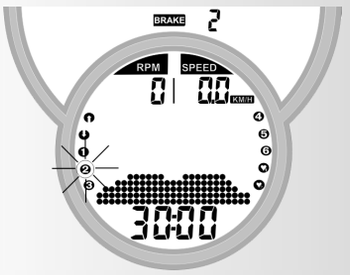
- Change strain by means of "Plus" or "Minus". Start of training by pedalling.

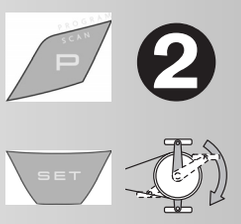






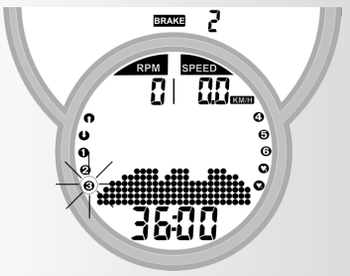
b) strain profiles (PROGRAM) "1" – "6"
All profiles are selected by pressing "PROGRAM".
e.g. ***Display:*** "1"
Fitness beginners I; strain level 1-4, 27 min.
Press "SET": default range,
Start of training

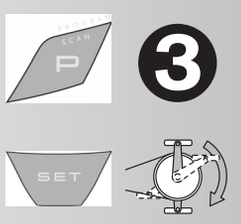




- Press "PROGRAM" until: ***display*** "2"
  Fitness beginners II; strain level 1-5, 30 min.
  Press "SET": default range,

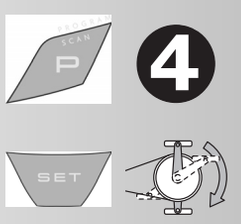
Start of training





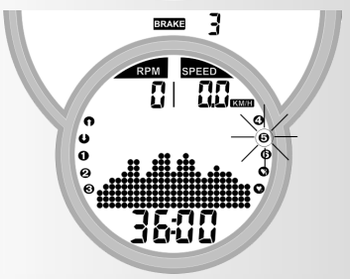
- Press "PROGRAM" until: ***display*** "3"
  Advanced I; strain level 1-6; 36 min.
  Press "SET": default range

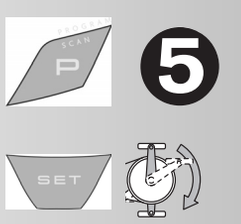
Start of training



- Press "PROGRAM" until: ***display*** "4"
  Advanced II; strain level 1-7, 38 min.
  Press "SET": default range

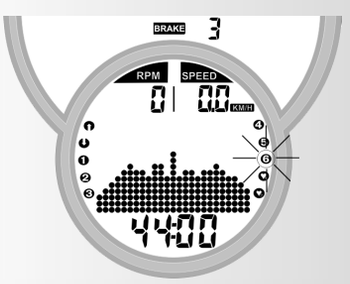
Start of training

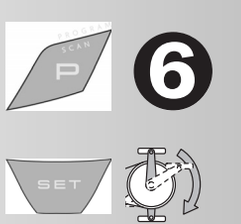




- Press "PROGRAM" until: ***display*** "5"
  Professional I; strain level 1-9, 36 min.
  Press "SET": default range

Start of training





- Press "PROGRAM" until: ***display*** "6"
  Professional II; strain level 1-10, 44 min.
  Press "SET": default range

Start of training

Note:

The profile is compressed to 25 columns in the programme displays in case of times exceeding 25 min.

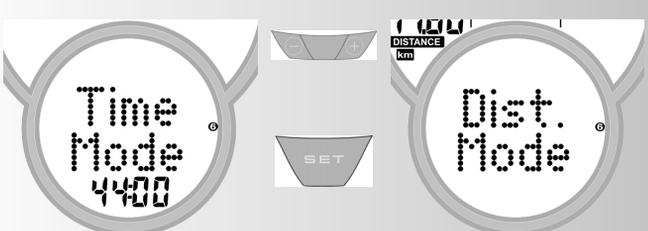
Defaults see table page 29.

Switching over time/distance

In the programmes 1-6 the switch-over is possible from the time mode to the distance mode in the default range.

- Set mode by means of "Minus" or "Plus".
  Confirm by means of "SET".

Display: readiness for training



The distance per column is 0.4 km (0.2 miles).
Cross ergometer: 0.2 km (0.1 miles)

2. Training by defaults of pulse

Manual defaults of pulse
(PROGRAM) "HRC1" Count Up"

- Press "PROGRAM" until: display: HRC1
- Press "SET": default range

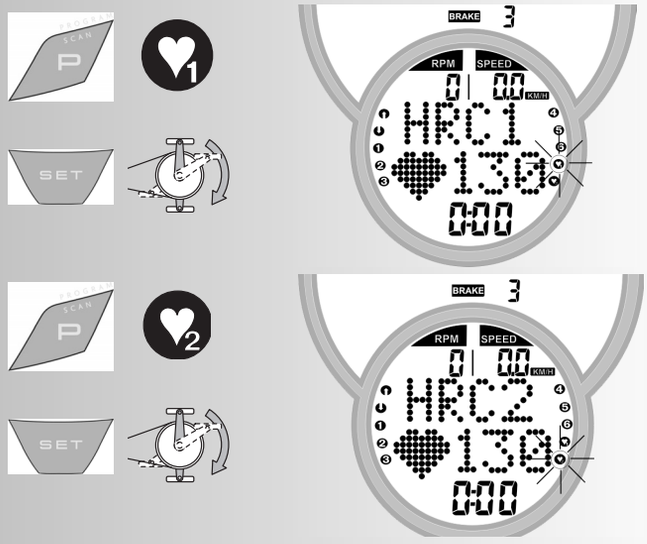
Or

- Start training, all values count up.
  The strain is increased automatically until the target pulse is achieved (e.g. 130)

(PROGRAM) "HRC2" Count Down"

- Press "PROGRAM" until: display HRC2
- Press "SET": Default range
  The input and adjustment possibilities are analogous relating to the programme item "Count Down".
- Start of training
  The strain is increased automatically until the target pulse is achieved (e.g. 130)

Or
Start training



Note:

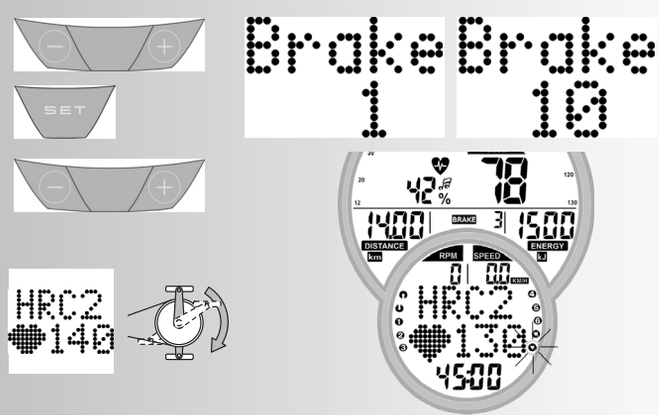
Initial strain
In HRC programmes the definition of the initial strain is possible in the default range from level 1-10.

- Enter values by means of "Plus" or "Minus" (e.g. 10)
  The strain is increased automatically from the entered level until the target pulse is achieved (e.g. 130)

Pulse

- The pulse value can be changed at this point (readiness for training) by means of "Plus" or "Minus", e.g. from 130 to 140.
  Start of training by pedalling.

Default possibilities: see table page 29



Note:

- KETTLER recommends the pulse measurement by means of the chest belt for HRC programmes
- A strain adjustment is realised for HRC programmes in case of deviations of +/- 6 heartbeats.

Training functions

Display change during training
Adjustment manually

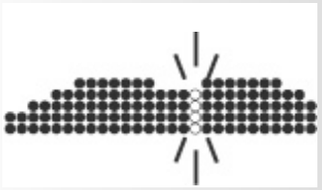
By means of "PROGRAM" the display changes in the following order in the item field: Time / RPM / Speed / Dist. / Pulse / Brake / Ener. / Time …

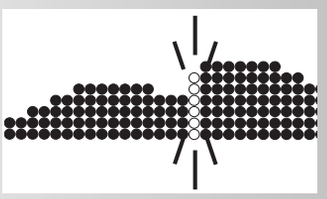
Adjustment automatically **(SCAN)**

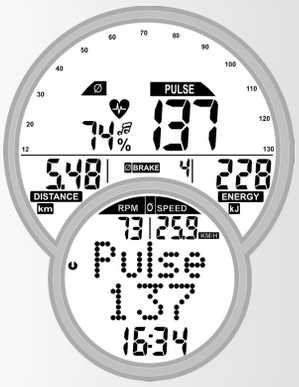
Press "PROGRAM" button for a longer period of time until the SCAN symbol appears on the display. Change of the displays at intervals of 5 seconds. The SCAN function is ended by re-pressing the "PROGRAM" button, recovery function or interruption of training.

Adjustment of the strain profile

If the strain is adjusted during the programme flow, the change appears from the flashing column to the right. The columns left of it show the realised strain levels and remain unchanged.







Interruption/end of training

The electronics detects an interruption of the training in case of less than 10 pedal revolutions/min or pressing "RECOVERY". The achieved training data is shown. Pulse, strain, revolutions and speed are shown as average values with Ø symbol.

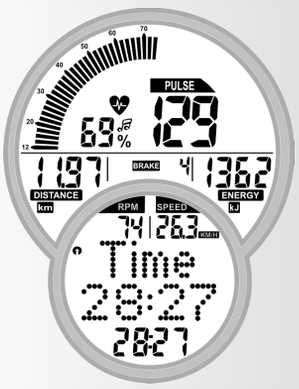
Change to the current display by means of "Plus" or "Minus".

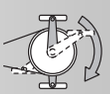
The training data is shown for 4 minutes.

If you do not press any buttons during this period and do not exercise, the electronics switches over to standby mode.

Resumption of training

If the training is continued within 4 minutes, the last values will also be counted or counted down.

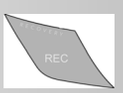




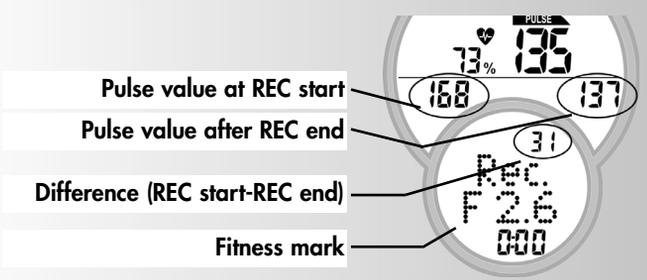
RECOVERY function

Measuring the recovery pulse

The electronics reversingly measures your pulse for 60 seconds and determines a fitness mark.



Press "RECOVERY" at the end of the training. The current pulse value (in the figure "168") is stored. After 60 seconds the pulse value (in the figure "137") is stored again. The difference between both values (in the figure "31") is shown, based on which a fitness mark (in the figure "F 2.6") is determined. The display ends after 10 seconds.



"RECOVERY" or "RESET" interrupts the function.

If no pulse is measured at the beginning or end of the time return, an error message will appear.

Input and functions

Training	Stillstand	↑	↓	1	2	3	4	5	6	♥1	♥2
Strain	Strain	✔	✔								
Profile	Profile			✔	✔	✔	✔	✔	✔		
	Distance		✔								✔
	Time		✔								✔
	Energy		✔								✔
	Max. Pulse	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
	or										
	Fat burning 65% or Fitness 75% or Manually 40-90%	✔	✔							✔	✔
	→ Target pulse 40-200	✔	✔							✔	✔
	Time/Distance Swichover			✔	✔	✔	✔	✔	✔		
	Recovery	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Display in case of pulse events

Value / Input			%	Exceeding HI	Exceeding LO	Exceeding MAX	Exceeding ♫
Maximal Pulse 121-210			✔	+1		+1	+1
Off							
Target pulse		Fat burning	65%				
or	Fitness	75%	✔	+11	–11*		
or	Manually	40-90%					
→ Target pulse		40-200			+11	–11*	

***note: appears only, if the target pulse was achieved once**

If the entered training pulse (-11 beats) is undercut, the symbol "*LO*" is shown.

If it is exceeded (+11 beats) the symbol "*HI*" is shown.

If the maximum pulse is exceeded, the "*HI*" arrow is flashing and the writing "*MAX*" is shown.

If the "alarm sound in case of exceeding the maximum pulse" is activated in individual settings (page 30), additional sounds are output.

Display colours and their meaning:

The display can illuminate in 3 different colours: **blue, green** and **red**. To ensure an obvious notification of pulse events the meaning of the colours are defined as follows:

The display illuminates **blue** if the following conditions apply:

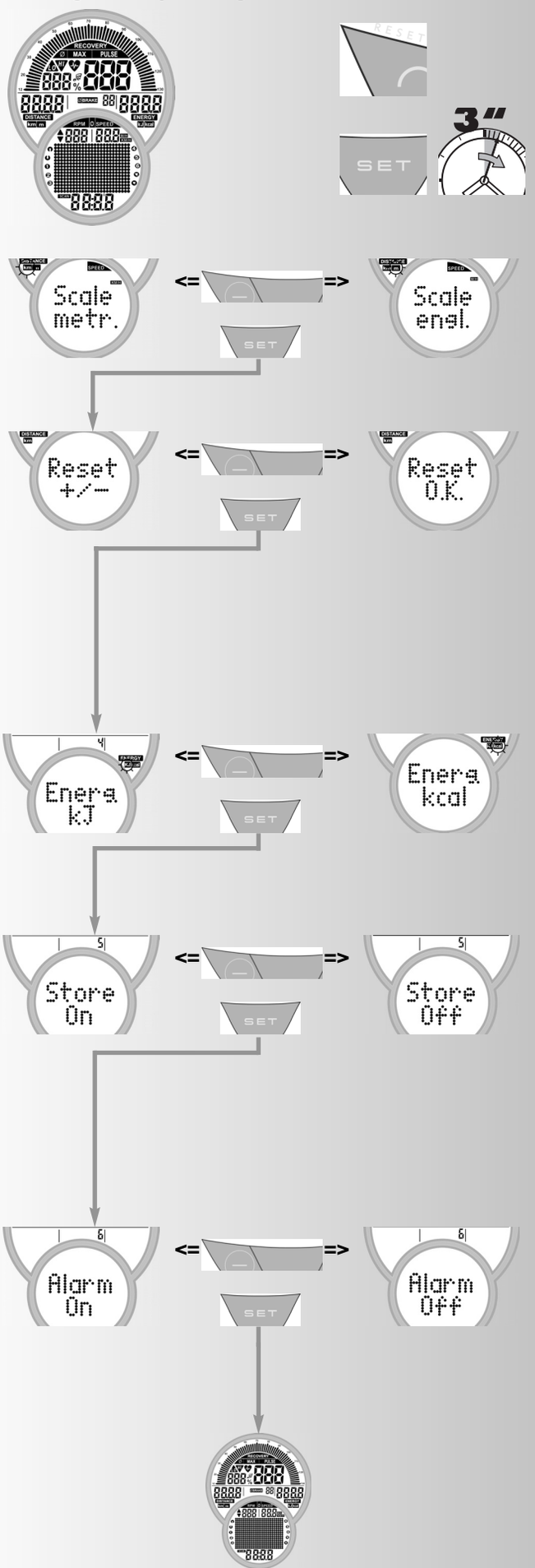
- The pulse monitoring is deactivated
- The target pulse monitoring (-/+ 10 pulses) is active but not reached yet.
- The target pulse monitoring is deactivated, the pulse limit monitoring is active but the pulse is below the selected pulse limit.
- You are in the default area.

The display illuminates **green**:

The pulse is within the range of the target pulse monitoring (-/+ 10 pulses)

The display illuminates **red**:

If the pulse limit is exceeded while the pulse limit monitoring is active the display turns red.



Individual settings

Proceed according to the figure on the left:

Press "RESET"

Display: all segments

Now press "SET" for a longer period of time: menu: individual settings

Display: Scale

1. Display of the unit in kilometres / miles

Press "Plus" or "Minus"

Function: Selection kilometres or miles display

Press "Set": the selected unit is accepted and change to the next setting

Display: Reset +/– Total kilometers

2. Deletion of total kilometres

Press "Plus" + "Minus" together

Function: Deleting Display: "Reset O.K."

Press "Set": change to the next setting

Or: Skipping Deletion of the total values, only press "SET"

Display: Energ.

3. Display of the energy consumption in kJoule / kcalorie

Press "Plus" or "Minus"

Function: Selection of the energy consumption display

Press "Set": the selected unit is accepted and change to the next setting

Display: Store

4. Storage of defaults

Press "Plus" or "Minus"

Defaults for distance, time, energy, age, target pulse are permanently stored

Function:

ON = Storage also after "Reset"

Off = Storage until next "Reset"

Press "Set":

Change to the next setting

Display: Alarm

5. Alarm sound in case of exceeding the maximum

Press "Plus" or "Minus"

Function: Switching on or off the alarm sound.

Press "Set": the selected setting is accepted and "restart" of the display.

General Instructions

Exercise bike

Speed calculation
60 pedal rotations per minute result in a speed of 21.3 km/h.

Crosstrainer

Speed calculation
60 pedal rotations result in a speed of 9.5 km/h.

Fitness value calculation

The computer calculates and assesses the difference between load pulse and recovery pulse and your resulting "fitness value" on the basis of the following formula:

$$\text{Note (F)} = 6 - \left(\frac{10 \times (\text{P1} - \text{P2})}{\text{P1}} \right)^2$$

P1 = load pulse P2 = recovery pulse

Value 1 = very good Value 6 = unsatisfactory

The comparison of load and recovery pulse is a simple and fast method to control your physical fitness. The fitness value is a value of orientation with regard to your ability to recover after physical load. Before you press the recovery pulse button and have the computer calculate your fitness value you should train in your load range for a longer time, this means for at least 10 minutes. With regular cardiovascular training you will notice that your "fitness value" will improve.

System Sounds

Switching On
On switch-on during the segment test a small sound is emitted.

Programme End
A programme end (profile programme, countdown) is indicated by a short sound.

Maximum Pulse Overrun
If the preset maximum pulse is exceeded by one pulse beat then 2 short sounds are emitted every 5 seconds.

Error Display
In the case of errors, e.g. a recovery can not be carried out without a pulse signal, then 3 short sounds are emitted.

Switch On/Off Automatic Scan Function
When activating and deactivating the automatic Scan Function, a short sound is emitted.

Time/Distance Switch

In the programs 1-6, switchover from time to distance mode is possible in the default section.

The distance per column is
Exercise bike: 0.4 km (0.2 miles).

Crosstrainer: 0.2 km (0.1 miles)

Profile Display during Training

At the start the first column flashes. According to the flow it moves further to the right.

And in profiles over 25 minutes it reaches the middle (column 13). Then the profile moves from the right to the left. If the profile end appears in the last column (column 25), the flashing column moves further to the right until the end of the programme.

Average Calculation

The average value is calculated per training unit.

Instructions for Pulse Measurement

The pulse calculation starts when the heart flashes in the display in rhythm with your pulse rate.

With Ear Clip
The pulse sensor works with an infrared light and measures the translucency changes of your skin, which are caused by your pulse beat. Before you tuck the pulse sensor onto your earlobe, rub it 10 times forcefully to increase the blood circulation.

Avoid interference impulses.

- Fasten the ear clip carefully onto your ear lobe and find the most opportune moment for its removal (heart symbol flashes without interruption).
- Do not train directly under strong light e.g. neon lights, halogen lights, spotlights, beams or sunlight.
- Totally remove all vibrations and shaking of the ear sensor including cables. Always secure the cable with clips to your clothing or even better to a sweatband.

With Hand Pulse
The extra-low voltage generated through the contraction of the heart is recorded through the hand-sensors and assessed by the electronics.

- Always grip the contact areas with both hands.
- Avoid gripping jerkily.
- Hold the hands calmly and avoid contractions and rubbing on the contact areas.

With Chest strap
Observe the relevant instructions.

Failures in the pulse display

Should there once be any problems with pulse detection, please check the above mentioned points once again.

Comment

Only **one** way of pulse measurement is possible **either** with ear clip **or** hand pulse **or** Chest strap. If there is no ear clip or plug receiver in the pulse socket then the hand pulse measurement is activated. If there is contact between the ear clip/plug receiver in the pulse socket, then the hand pulse measurement is automatically deactivated. It is **not** necessary to remove the plug of the hand pulse sensors.

Faults in the Training Computer

Press the Reset Key

Training Instructions

Sports medicine and training science use ergometry, among other things, for the examination of the functional capability of heart, circulation and respiratory system.

You can find out whether or not you have achieved the desired effect from your training after several weeks using the following method:

1. You manage a particular endurance performance with less heart / circulation performance than previously
2. You sustain a particular endurance performance with the same heart / circulation performance over a longer period.
3. You recover more quickly than previously after a particular heart / circulation performance.

Guide values for the endurance training

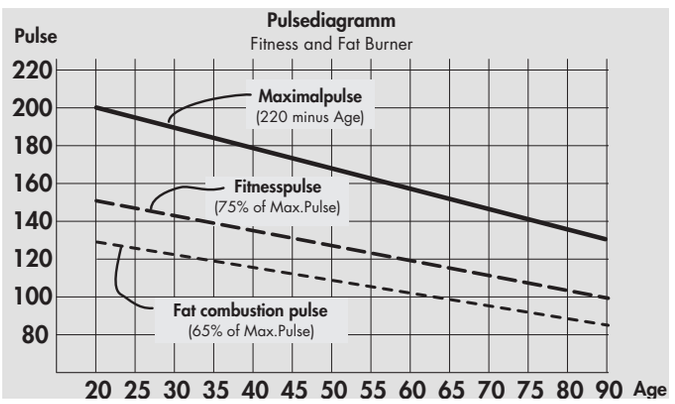
Maximum pulse: maximum strain means the reaching of the individual maximum pulse. The maximum achievable heart rate is dependant on age.

Here, the following empirical formula applies: the maximum heart rate per minute corresponds to 220 heart beats minus age in years.

Example: age 50 years -> 220 – 50 = 170 pulse / min.

Load Intensity

Load pulse: the optimum intensity of load is reached at 65–75% (see also diagram) of the maximum pulse. This value changes depending on age.



Extent Of Load

Duration of a training unit and its frequency per week:

The optimum extent of load is attained, if 65–75% of the individual heart / circulation performance is achieved over a longer period.

Empirical Formula:

Training frequency	Duration of training
daily	10 minutes
2–3 times a week	20–30 minutes
1–2 times a week	30–60 minutes

Beginners should not begin with training units of 30-60 minutes.

The beginner's training can be planned as follows in the first 4 weeks:

Training frequency	Extent of training session
	1st week
3 times a week	2 minutes of training Break of 1 minute for physical exercises 2 minutes of training Break of 1 minute for physical exercises 2 minutes of training
	2nd week
3 times a week	3 minutes of training Break of 1 minute for physical exercises 3 minutes of training Break of 1 minute for physical exercises 2 minutes of training
	3rd week
3 times a week	4 minutes of training Break of 1 minute for physical exercises 4 minutes of training Break of 1 minute for physical exercises 3 minutes of training
	4th week
3 times a week	5 minutes of training Break of 1 minute for physical exercises 4 minutes of training Break of 1 minute for physical exercises 4 minutes of training

It is recommended that you perform approx. 5 minutes of exercises before and after every training unit, in order to warm up and cool down. There should be a training-free day between each two consecutive training units, if you prefer training sessions of 20-30 minutes 3 times a week later on in your training. Otherwise, there is no reason why you should not train daily.

Glossary

Recovery
Recovery pulse measurement at the end of the training. From start and end pulse of one minute the deviation and a fitness grade are determined. With the same training, the improvement of this grade is a measure for fitness increase.

Reset
Deletion of the display contents and restart of the display.

Programs
Possibilities for training, which require manual or program-determined loads or target pulses.

Profiles
Change of loads over time or distance represented in the points field.

Dimension
Units for display of km/h or mph, kjoule or kcal

Energy
Calculates the energy turnover of the body

Control
The electronic equipment controls the load or the pulse for manually entered or default values.

Points field
Display section with 25 x 16 points for representation of load and pulse profiles as well as text and value display.

Pulse
Recording of the heartbeat per minute

MaxPulse(s)
Calculated value from 220 minus years of age

Target pulse
Manual or program-determined pulse value, which is to be calculated.

Fat burning pulse
Calculated value of: 65 % MaxPuls

Fitness pulse
Calculated value of: 75 % MaxPuls

Manual
Calculated value of: 40 – 90 % MaxPuls

Age
Here an entry for calculation of the maximum pulse.

HI symbol
With "HI" displayed, a target pulse is too high by 11 beats. With HI blinking, the maximum pulse is exceeded.

LO symbol
With "LO" displayed, a target pulse is too low by 11 beats.

Menu
Display, in which values are to be entered or selected.

Glossary
Collection of attempts for explanation.

Performance table

Date	Restpulse	Stress pulse	Recovery pulse	Slope	Time (min)	Distance (km)	Energy consumption (Kcal)	Fitness Mark

KETTLER

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