KETTLER

Computer- und Trainingsanleitung
ST 33xx-68

KETTLER

Training and Operating Instructions

G

This sign in the instructions refers to the glossary, where the respective term will be explained.

Safety instructions

Please observe the following instructions for your own safety:
- The training device must be set up on an appropriate and firm surface.
- Inspect the connections for firm fitting before initial operation and additionally after approximately six operation days.
- In order to prevent injuries caused by wrong stress or over-stress, the training device may only be used in accordance with the instructions.
- It is not recommended to permanently set up the device in humid rooms due to the resulting corrosion development.
- Assure yourself regularly that the training device functions properly and that it is in duly condition.
- The operator is responsible for the safety controls, which have to be carried out on a regular and proper basis.
- Defective or damaged parts must be exchanged immediately. Only use original KETTLER spare parts.
- The device may not be used until after repairs are completed.
- The safety level of the device can only be maintained provided that it is regularly inspected for damage and wear and tear.

For your safety:
- **Please clarify with your general practitioner before you start with the training, whether or not your health condition allows you to train with this device. The diagnostic findings should be the basis for the determination of your training programme. Wrong or excessive training can cause damage to your health.**

Short description

The electronics assembly is equipped with functions with keys and a display range (display) with variable symbols and graphics.

display range

display

functions

keys

Quick reference guide

Functions

The four keys will be described in short below.

A detailed application description can be found in the respective chapters. The names of the function keys in the chapters correspond to the names used in this quick reference guide.

SET (press shortly)

Input data are accessed with this function key.
The set data are accepted.

Reset (press SET longer)

The current display is deleted for a reset.

Minus – / Plus +

With these function keys, you can change the values in the different input data before the start of the training.

- press longer > fast run through the values

- press "Plus" and "Minus" **together**: value input skips to **OFF**

RECOVERY

You can start the recovery pulse function with this function key.

Pulse measurement

Pulse measurement can be achieved via three sources:

1. ear clip – connect the plug with the plug socket
2. hand pulse – the connection is situated at the back of the display
3. breast belt (accessories) – please observe the corresponding instructions
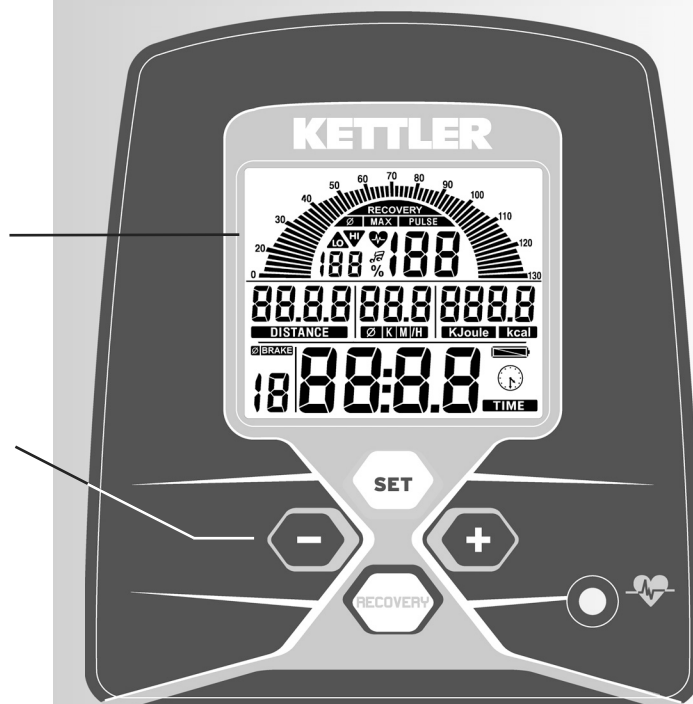
Quick reference guide
Display range/display

The display range (display) informs you about the different functions.

Pedal frequency (RPM)
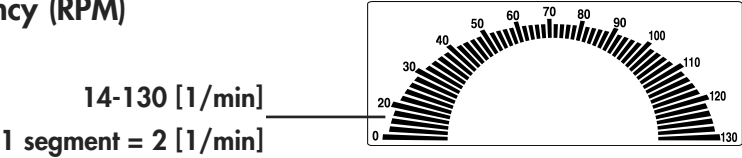
14-130 [1/min]

1 segment = 2 [1/min]

Pulse (PULSE)   G

maximum pulse

warning (blinks) max. pulse +1

display of average value

target pulse limit exceeded +11

target pulse limit undershot −11

heart symbol (blinks)

RECOVERY

Ø MAX   PULSE

recovery function

pulse display
40 – 199 [1/min]

Percentage pulse

warning signal ON/OFF

percentage value
comparison actual pulse/ max
pulse

Distance (DISTANCE)

DISTANCE

value 0.00 – 99.99

Speed

value 0 – 99.9

display of average values

Ø K M H

Energy consumption

8888 KJoule | kcal
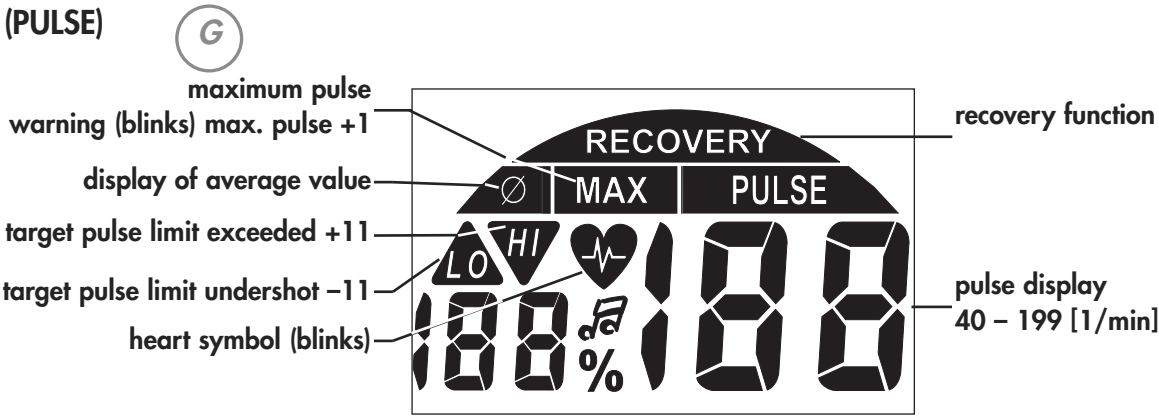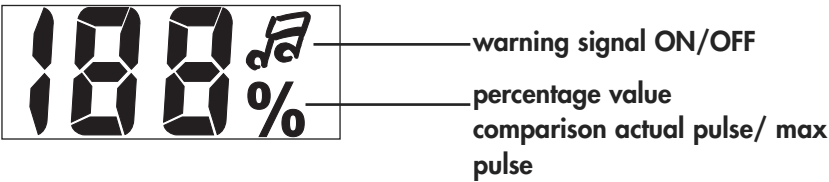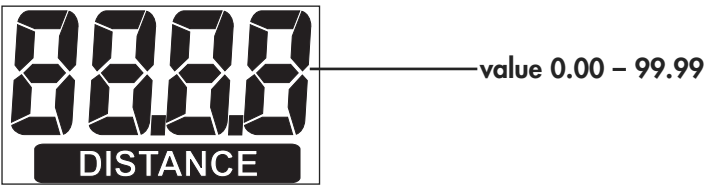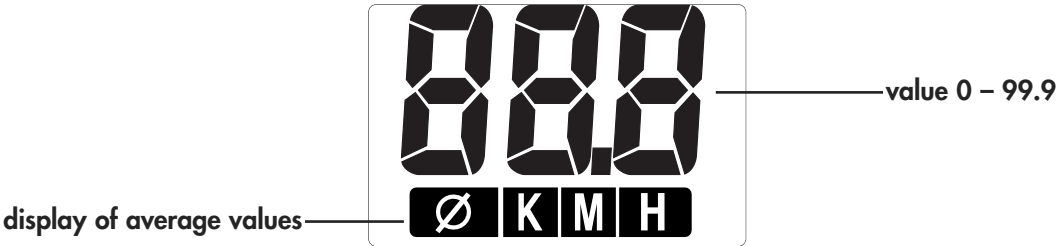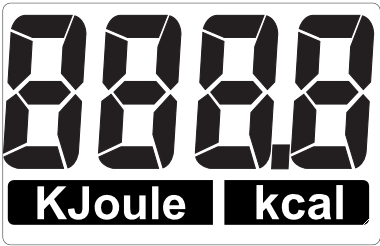
value: 0 – 9999

odometer value > total k(m)

Time(TIME)

88:88 TIME

value 0:00 – 99:59

Brake level (BRAKE)

display of average value ————————— ∅ BRAKE

18

level 1 - 10

battery charge

clock symbol ————————
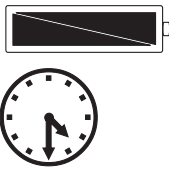
Battery charge sufficient for pulse measurement.

Battery charge not sufficient anymore for pulse measurement, change battery.
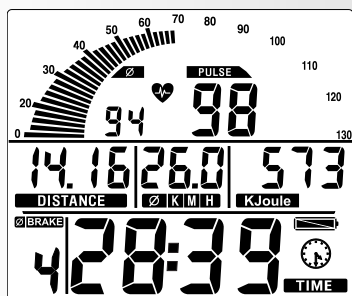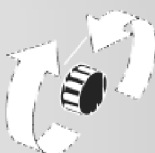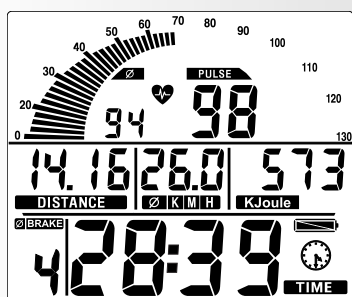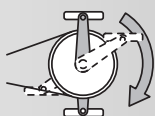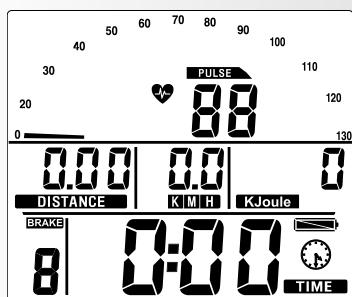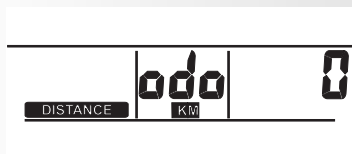
Quick start (for introduction)

Without special settings

• press a key

Display

• All segments are shortly displayed (segment test).
• The total kilometres are shortly displayed.

Subsequently change to the display "Reading for training".

Ready for training

Display

All segments display "Zero", except for pulse (if activated) and brake level.

Start training by pedalling.

Start of training

Display

• Pedal rotation segments, distance, speed, energy and time increase.
• Pulse (if activated).

Brake setting levels 1-10

• Turn hand wheel to the right to increase the brake level; turn hand wheel to the left to decrease the brake level.

Training interruption/end of training

If you interrupt or complete your training, average values of the last training unit are displayed with the Ø symbol.

Display

• Average values Ø:

  pedal rotation segments, speed, brake level and pulse (if activated).

• Total values:

  distance, energy and time.

Sleep mode

Four minutes after the end of training, the device switches into the sleep mode. If you press a key, the display starts again with the segment test, odometer and ready for training.

Training

1. Training without presetting

• Press a key.

and/or
• Start pedalling (as in "Quick start").

2. Training with presetting

Display: "Ready for training".

• Press "SET": presetting segment

Time setting (TIME)
• Enter values using "Plus" or "Minus" (e.g. 30:00), confirm with "SET".

Display: next menu "DISTANCE".

Distance setting (DISTANCE)
• Enter values using "Plus" or "Minus" (e.g. 7.50), confirm with "SET".

Display: : next menu "ENERGY".

Energy setting (KJoule/kcal)
• Enter values using "Plus" or "Minus" (e.g. 780), confirm with "SET".

• Select unit KJoule or kcal using "Plus" or "Minus", confirm with "SET".

Display : next menu "Age input".

Age input (AGE)
The input of the age serves for the calculation and the monitoring of the maximum pulse (symbol HI; warning signal, if activated).

• Enter values using "Plus" or "Minus" (e.g. 50). Upon input, the maximum pulse is calculated with the formula (220 – age), here: maximum pulse of 170. Confirm with "SET".

Display : next menu "Alarm signal".

Alarm signal, if maximum pulse is exceeded
• Select function using "Plus" or Minus", confirm with "SET".

Display : next menu target pulse selection "FA 65%".

Target pulse monitoring FA 65%/FI 75%
• Make your choice using "Plus" or "Minus".

• Fat burning 65%, fitness 75% of maximum pulse, confirm with "SET" (presetting mode completed).

Display : ready for training with the presetting.

Or
Target pulse input

The input 40 – 199 serves for the determination and monitoring of a training pulse independent of the age (symbol HI; warning signal, if activated; no maximum pulse monitoring). Note that that the age input has to be set to "OFF".

• Switch off maximum pulse monitoring using "Plus" and "Minus". Display: "AGE OFF", confirm with "SET".

Display : next presetting "Target pulse" (pulse).

• Enter values using "Plus" or "Minus" (e.g. 130), confirm with "SET" (presetting mode completed).

Display : ready for training with the presetting.
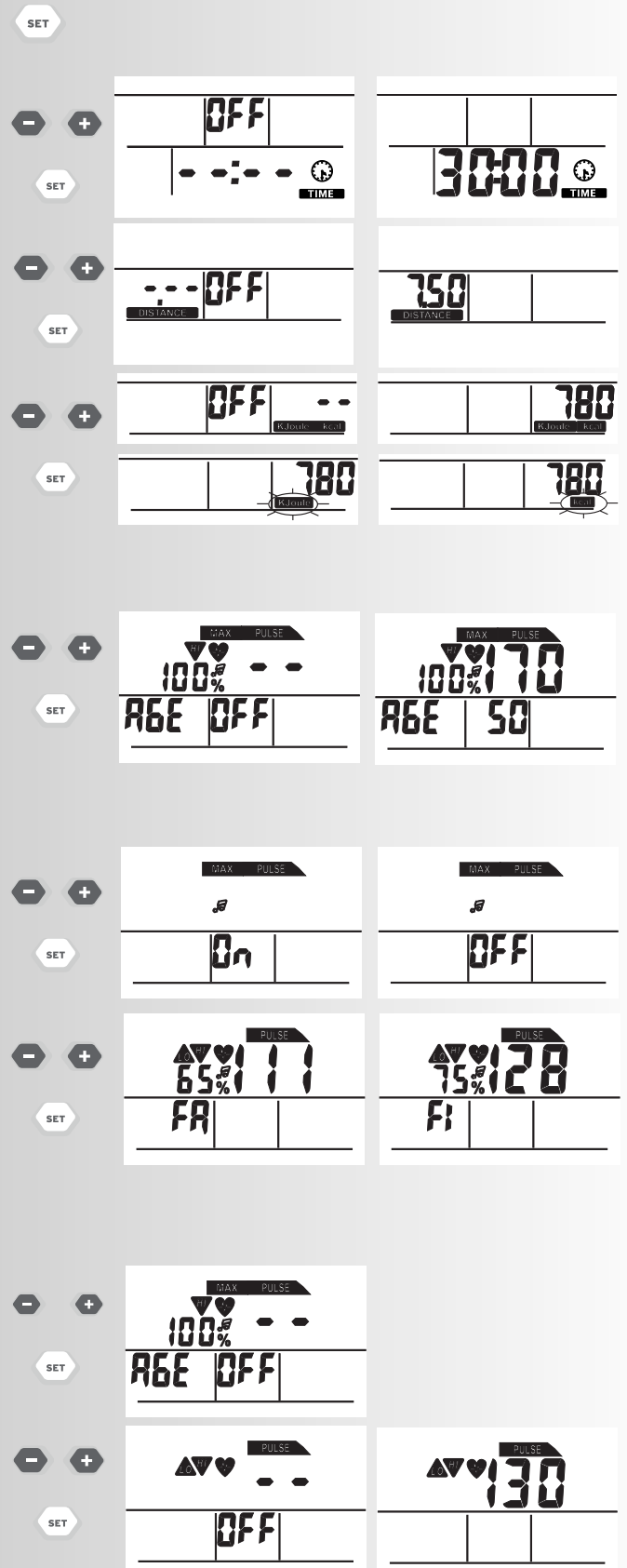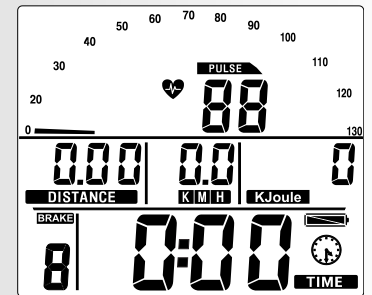
Training and Operating Instructions
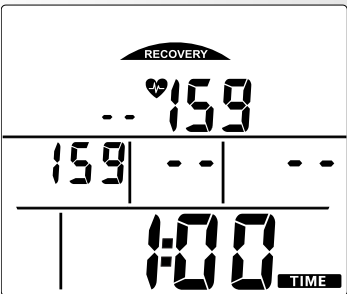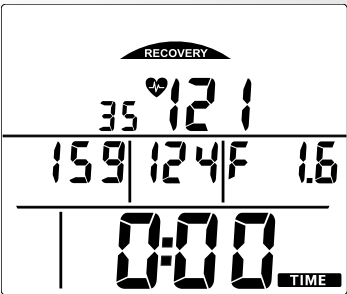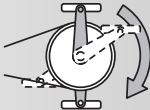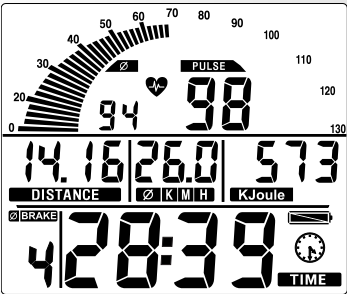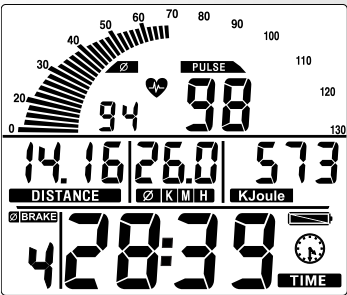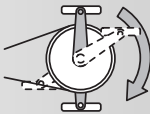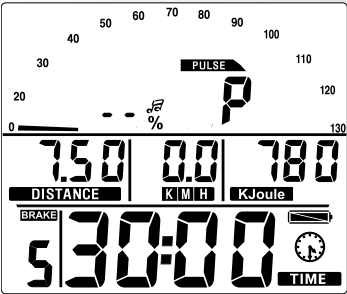
• Pedalling

Decreases with presetting.

Comment:

• The presetting entries are lost with a "Reset".

Training interruption/end of training

With less than 14 pedal rotations per minute, the electronics assembly of the device identifies a training interruption. The achieved training data are displayed. Rotations, pulse, speed and brake level are displayed as average values with the symbol Ø.

You can switch to the current display using "Plus" or "Minus".

The training data are displayed for four minutes. If you do not press any key nor train during this period of time, the electronics assembly of the device switches to sleep mode and displays the room temperature.

Resumption of training

If you resume training within four minutes, the last values continue to be increased or decreased.

RECOVERY function

Recovery pulse measurement

Press "RECOVERY" at the end of training.

Display

• RECOVERY

The electronics assembly of the device measures your pulse 60 seconds in reverse.

The current pulse value is saved under "DISTANCE"; the pulse value after 60 seconds is saved under "KM/H".

Next to "% Puls", the difference between the two values is displayed. From this difference, a fitness mark (in this example F 1.6) is calculated. The display switches off after 20 seconds.

"RECOVERY" interrupts the recovery pulse function or the fitness mark display.

If no pulse is measured in the beginning or at the end of the reverse counting, the error message "E" is displayed

General instructions

System signals

Activation of the device
If you activate the device, a signal is emitted during the segment test.

Presetting
A short signal is emitted, if you reach a presetting like time, distance and KJoule/kcal.

Exceeding of maximum pulse

If the set maximum pulse is exceeded by one pulse beat, two short signals are emitted for the time of exceedance.

Recovery

Calculation of the fitness mark (F):

$$\text{mark } (\mathbf{F}) = 6.0 - \left(\frac{10 \times (P1-P2)}{P1} \right)^2$$

P1 stress pulse	P2 = recovery pulse
F1.0 = very good	F6.0 = insufficient

Calculation of average value

The calculations of the average values refer to training units in the past until a reset or the sleep mode.

Instructions for pulse measurement

The pulse measurement starts as soon as the heart in the display blinks in time with your pulse beat.

With ear clip
The pulse sensor works with infrared light and measures the variations in translucence in your skin, which are produced by your pulse beat. Rub your ear ten times strongly to activate the blood circulation before attaching the pulse sensor to your earlobe.

Avoid disturbing pulses.

- Attach the ear clip properly to your earlobe and look for the best point for the measurement (heart symbol blinks without interruption).
- Do not train directly under strong incidence of light, e.g. neon light, halogen light, spotlight, sun light.
- Completely eliminate any shocks or bounces of the ear sensor and the cable. Always attach the cable with a clip at your clothing or, even better, at your headband.

With breast clip
Please observe the corresponding instructions.

With hand pulse
An extra-low voltage caused by the contractions of your heart is registered by the hand sensors and evaluated by the electronics assembly of the device.

- Always grab the contact faces with both hands.
- Avoid jerky grasping.
- Hold your hands calmly and avoid contractions and rubbing on the contact faces.

Comment:

Only one way of pulse measurement is possible: either with ear clip or with hand pulse or with breast belt. If no ear clip or plug recipient is located in the pulse plug, hand pulse measurement is activated. If you insert an ear clip or a plug recipient in the pulse plug, hand pulse measurement is automatically deactivated. It is not necessary to disconnect the plug of the hand pulse measurement.

Failures with the training computer
Press the "SET" key for a longer period of time (reset).

Brake level display

The brake setting is divided into levels 1-10. If this division is deranged or lost, you can reset it in the following way:

- Insert batteries and press the "SET" key until the segment test is completed.
- Turn hand wheel back to the minimum setting and press the "SET" key when "LO" 0%, BRAKE 0 is displayed.
- Turn hand wheel forward to the maximum setting and press the "SET" key when "HI" 100%, BRAKE 10 is displayed.

Process completed.

Training Instructions

Sports medicine and training science use cycle 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 and Operating Instructions

Pulse

Pulsediagramm
Fitness and Fat Burner

Maximalpulse
(220 minus Age)

Fitnesspulse
(75% of Max.Pulse)

Fat combustion pulse
(65% of Max.Pulse)

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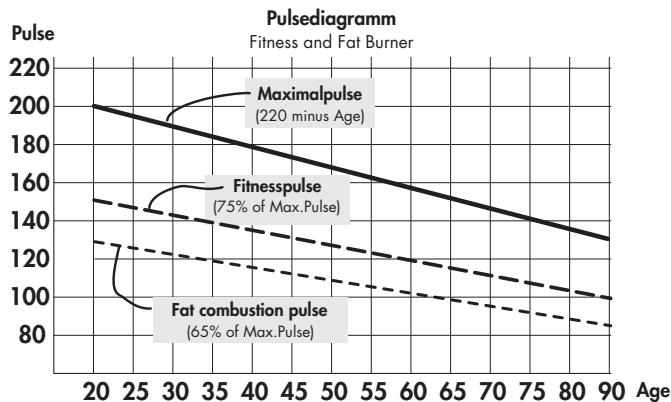
It is recommended that you perform approx. 5 minutes of exercises before and after every training unit, in order to warm up and cool down. There should be a training-free day between each two consecutive training units, if you prefer training sessions of 20-30 minutes 3 times a week later on in your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

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

Glossary

Age
Input for the calculation of the maximum pulse.

Dimension
Units for the display of km/h or mph, KJoule or kcal.

Fat burning pulse
Calculated value of: 65% maximum pulse.

Fitness pulse
Calculated value of: 75% maximum pulse.

Glossary
An accumulation of attempts at explanation.

HI symbol
If "HI" is displayed, the target pulse is too high by 11 beats. If "HI" blinks, the maximum pulse is exceeded. "HI" monitoring is always activated.

LO symbol
If "LO" is displayed, the target pulse is too low by 11 beats. "LO" monitoring is activated, if the target pulse is reached during training.

Maximum pulse(s)
Value calculated from 220 minus age.

Menu
Display, in which values can be entered or selected.

Pulse
Registration of the heart beat per minute.

Recovery
Recovery pulse measurement at the end of training. The difference between start pulse and end pulse of a minute is calculated. With the help of this difference, a fitness mark is determined. If you train regularly, the improvement of this mark is an indication for your fitness progression.

Reset
Deletes the display contents and resets the display.

Target pulse
Input of a particular pulse value, which is be monitored.

Performance table

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

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

Leistungstabelle

– GB – Performance table		– F – Tableau de performances		– NL – Prestatientabel			
– E – Table de rendimiento							

		P 1	**P 2**	**Belastungs-stufe**	**Zeit (min.)**	**Entfernung (km)**	**Energie-verbrauch**	**Fitness-note**
– D – Datum	Ruhepuls	**Belastungspuls**	**Erholungspuls**					
– GB – Date	Restpulse	Stress pulse	Recovery pulse	Slope	Time (min)	Distance (km)	Energy consumption (Kcal)	Fitness Mark
– F – Date	Pouls au repos	Pouls en change	Pouls de récupération	Ange d'inclination	Temps (mn.)	Distance (km)	Dépense d'énergie (Kcal)	Note
– NL – Datum	Rustpols	Belastingspols	Ontspanningspols	Hellingshoek	Tijd (min.)	Afstand (km)	Calorieenverbruik (Kcal)	Waard. cijfer
– E – Fecha	Pulso en reposo	Pulso bajo esfuerzo	Pulso de recuperación	Escalón de carga	Tiempo (min.)	Distancia (km)	Consumo de energia (Kcal)	Nota

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