APA®

INSTRUCTION MANUAL
PULSE COMPUTER
HEART RATE MONITOR
WIRELESS DATA TRANSMISSION

Activation - Before starting

Heart Rate Monitor Watch
Please remove the protective foil from the display when you use the watch for the first time and press the A, C or D button (sound signal), until all display segments appear for a short time. You automatically reach the setting mode.
- Choose between the metric and imperial with the C button. Confirm with the A button, the 24H blink.
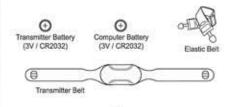
Setting the time in the time mode (also see TIME MODE)
- Choose between the 12h and 24h display with the C button.
- Confirm with the A button, the seconds blink.
- Press the C button to reset the seconds to zero. Confirm with the A button, the minutes blink.

Note: By pressing and holding the C button you can use the fast forward function in the settings.

- Set the minutes, hours, year, month, day, birthday, weight and height as described above. Now press the D button, all settings are saved.
The heart rate monitor watch can be worn like a wristwatch.

Note: By pressing and holding the A and C buttons in any time will turn the watch back to setting mode.

Accessories

Transmitter Battery (3V / CR2032)
Computer Battery (3V / CR2032)
Elastic Band
Transmitter Belt

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INTRODUCTION
WARNING: Always consult your physician before starting a fitness programme. A pulse computer is not a medical device. It is a training tool designed to measure and display your heart pace.

USE A PRECISE TRAINING METHOD
All the experts agree: the heart is the most important muscle in the body and, like all muscles, should be exercised regularly to remain strong and efficient. But how can determine whether you are exercising your heart both safely and effectively?
Fortunately, the heart itself provides you with key information that will help you to examine the effectiveness and the degree of safety of your training method. Your heart rate, which is expressed in a single number (Beats Per Minute), gives a constant account of your body's state of health. Your heart rate will tell you how fast you are using energy or wether you are exercising too hard or too lax.
Obviously, your body does not benefit from a training method if your heart rate is too low. If it is too high, you run the risk of injury and you will suffer from fatigue.
It does not matter whether your goal is to win athletics meetings, lose weight or simply to improve your overall health. What is important is that you can refine your training method by keeping your heart rate within a certain target zone. In order to accomplish this, you would obviously need to know your precise heart rate at any given moment throughout your training session.
modern technology has now enabled us to present you with wireless electronic pulse computers. monitoring your heart rate with one of these computers is easy and fun to do.

KNOW YOUR LIMITS AND DETERMINE YOUR PERSONAL EXERCISE ZONE
Exercise zones are established by setting Upper and Lower Heart Rate Limits. These limits constitute a certain percentage of your Maximum Heart Rate (MHR).
You may already know your MHR if you are an avid athlete or if you have already taken a Max. Heart Rate test. If not, the following formular will help you to make an educated guess:

MHR=220-(Your age)
e.g. Age: 20
MHR: 220-20=200
For instance, the current heart rate is 150, then 75% will be shown.

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EXERCISE ZONE (BPM)

AGE ▷	20	25	30	35	40	45	50	55	60	65
Zone 3 PERFORMANCE 80-95% MHR	190	160	155	170	171	166	161	156	152	147
	15	15	15	15	15	15	15	15	15	15
	160	156	152	148	144	140	136	132	128	124
Zone 2 FITNESS 65-80% MHR	160	156	152	148	144	140	136	132	128	124
	14	14	14	14	14	14	14	14	14	14
	130	126	123	120	117	113	110	107	104	100
Zone 1 HEALTH 50-65% MHR	130	126	123	120	117	113	110	107	104	100
	100	97	95	92	90	87	85	82	80	77

Zone 1 - Health (50% - 65% of the MHR)
This exercise zone is meant for long training sessions of low intensity. Exercising in this zone will improve both your mental and physical healthy.

Zone 2 - Fitness (65% - 80% of the MHR)
This exercise zone is used by athletes who wish to increase their strength and improve their endurance while burning a greater number of calories.

Zone 3 - Performance (80% - 95% of the MHR)
This exercise zone is ideal for short and very intensive training sessions. Competitive athletes use this zone in order to build greater speed and explosive power. Exercising in this zone will create an "oxygen debt" and increase the degree of lactic acid in the muscular tissue.

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FEATURES
If necessary, you can consult the table on the gift box.

HEART RATE MONITOR
- Maximum pulse alert
- Pulse zone training programs (health, fitness, performance and user-define)
- Zone timers (in zone, belowzone, above zone and total)
- Pulse out zone alert
- Highest pulse, lowest pulse, average pulse

CALORIE FUNCTIONS
- Calories loss and fat burn during exercise
- Calculation of BMI
- Fitness level

CHRONOGRAPH
- Count-down timer
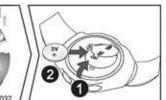- 1/100 second 99 laps multi-split stopwatch

WATCH
- Dual time clock
- Auto Calendar
- Clock alarm
- Hourly chime signal

OTHER SPECIFICATIONS
- EL backlight
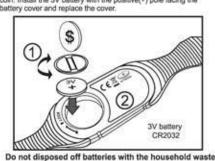- Water resistant housing

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BATTERY INSTALLATION
Computer Watch
Remove the back cover of the watch with a screwdriver, install the 3.0V-battery with the positive(+) pole facing up and replace the cover. Remove the battery and reinsert it if the LCD displays irregular figures. This will clear and restart the watch's microprocessor.

3V battery CR2032

Transmitter Belt
Remove the battery cover from the bottom of the belt using a small coin. Install the 3V battery with the positive(+) pole facing the battery cover and replace the cover.

3V battery CR2032

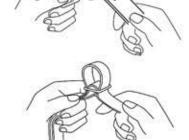Do not disposed of batteries with the household waste

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WEARING THE TRANSMITTER BELT
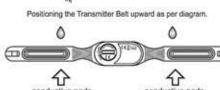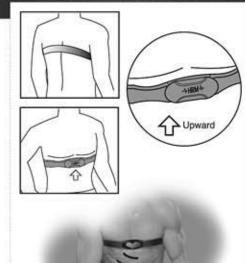Adjust the elastic belt so that it fits tightly around your chest just below the pectoral muscles. Moisten the transmitter's conductive pads with saliva or ECG-gel (available at your local chemist's) in order to ensure a good contact with the skin at all times.
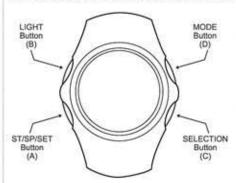
Positioning the Transmitter Belt upward as per diagram.

conductive pads   conductive pads

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Function Button/Modes/Settings
Function Buttons of the Heart rate monitor Watch

LIGHT Button (B)
MODE Button (D)
ST/SP/SET Button (A)
SELECTION Button (C)

⇧ Upward

Main Function Mode
The Speed Master watch has three main function modes, which are described further in the next chapters.
- Time Mode
- Stopwatch Mode
- Heart Rate Mode

The first mode displayed is the time mode. Press the D button to switch between the different modes. The different modes are described in sections TIME MODE, STOPWATCH MODE, HEART RATE MODE.

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TIME MODE
Press the D button until you reach the time mode, shown by "TIME".
By pressing the C button in the time mode, you can choose between the sub-functions
- Time (TIME)
- Alarm (ALARM)
- Countdown Timer (TIMER).

Time
Press the C button in the time mode until TIME is displayed.

In the time mode, the year is displayed in the upper segment of the display and the weekday and date in the lower segment.

Setting the Time
Keep the A button pressed for about 3 seconds, "SETTING" appears on the display and 24H blinks. Choose between the 12h and 24h display with the C button. Confirm your selection with the A button, the seconds blink.
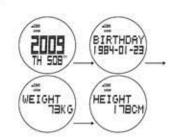
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- Press the C button to reset the seconds to zero. Confirm your selection with the A button, the minutes blink.

Note: You can use the fast forward function in the settings by pressing and holding the C button.

- Set the minutes with the C button. Confirm with the A button. Set the hours, year, month, day, birthday, weight and height as described above. Now press the D button, all settings are saved.

Second Time
Keep the C button pressed for about 3 seconds, the heart rate monitor watch changes to the second time (T2 appears on the bottom right of the display).
The setting of the second time works as described in section "setting the time". Now press the D button, all settings are saved.

Keep the C button pressed for about 3 seconds to return to the normal time (T1 appears on the bottom right of the display).

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Note: Start the setting procedure again to correct any wrong settings.

Alarm
Press the C button in the time mode until ALARM is displayed.

Setting the Alarm
- Keep the A button pressed for about 3 seconds, "SETTING" appears on the display and minutes blink. Set the minutes with the C button. Confirm your selection with the A button, the hours blink.
- Set the hours with the C button. Confirm with the A button, the month blinks.
- Set the month with the C button. Settings of 1, 2, 3,.... 11, 12 and -- are possible. If you choose --, the alarm sounds every month (on the set day - see the next section, "setting the day"). Confirm with the A button, the day blinks.
- Set the day with the C button. Settings of 1, 2, 3, 30, 31 and -- are possible. If you choose --, the alarm sounds every day. Confirm with the A button, the button CHIME (hourly alarm) blinks.
- You can now set the hourly alarm to ON or OFF with the C button.

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Bell symbol displayed = hourly alarm on
Bell symbol not displayed = hourly alarm off

Now press the D button, all settings are saved and the set alarm is activated automatically.
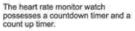
Activate/Deactivate Alarm
Press the A button when the alarm time is displayed
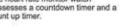Alarm symbol ♪ is displayed = alarm on
Alarm symbol not displayed = alarm off

Switch off Alarm
When the alarm rings, you can switch it off by pressing the A, C or D button.

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Countdown Timer
Press the C button in time mode until TIMER is displayed.
The heart rate monitor watch possesses a countdown timer and a count up timer.

Basic setting 00:01:00 (1 minute)
Keep the A button pressed to set the countdown timer, "SETTING" appears.
Set the minutes with the C button, confirm with the A button, select the hours with the C button, confirm with the A button.

r: the timer starts to count down the previously set time again after zero is reached.
U: the timer starts to count up from zero after zero is reached.
S: The timer stops after zero is reached.

Confirm the entry with the D button.
For all three types of timers applies:
- Press A button - Timer starts
- Press A button again - Timer stops
- Press A button again - Timer continuous
- Keep A pressed for about 3 seconds when the time is stopped - timer resets to the originally set time.
- When the countdown timer reaches zero, an alarm sounds, which ends after about 15 seconds, or can be ended by pressing the A, C or D button.

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STOPWATCH MODE
Press the D button until you reach the stopwatch mode, shown by "CHRONO".
In stopwatch mode you can choose between the sub functions with the C button.
- CHRONO (stopwatch) and
- DATA RECALL (view data)

Note: Switching between "stopwatch" and "data recall" only works if at least 1 lap has been recorded.

Stopwatch
Press the C button in the stopwatch mode until CHRONO is displayed.

99 lap times can be saved. If the lap memory is full, the display MEMORY FULL appears.

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- Press A button to start / stop the stopwatch.
- Press C button to record the lap memory when the stopwatch is counting.
- If the stopwatch saves over 99 laps, it will display FULL.
- To reset the stopwatch, press and hold A button to zero.

STOPWATCH mode
Total counting time
Lap memory FULL

To recall the stopwatch memory
- Press A button to stop the stopwatch, then press C button to enter data recall mode.
- Display show the record of BEST LAP, the icon "BEST=LAP" will be displayed.
- Press A button to read different lap memories.
- Press C button to exit the memory recall mode.

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For your reference, you can following methods to take different measurement:
STANDARD MEASUREMENT : A-A-A
START → STOP → RESET (Hold A)
Press A → Press A → Hold A
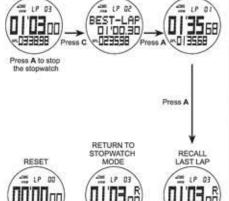
LAP TIME MEASUREMENT : A-C-C-A-A
START → Lap 1 → Lap 2 → Lap 3 → RESET → STOP
Press A → Press C → Press C → Press C → Hold A → Press A

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RECALL LAP MEMORY : C-A-A-......A-C-A
STOPWATCH MODE → RECALL BEST LAP → RECALL FIRST LAP
Press C → Press A

Press A to stop the stopwatch

Press A

RETURN TO STOPWATCH MODE → RECALL LAST LAP
Hold A → Press C

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HEART RATE MODE
Press the D button until you are in the heart rate mode, displayed by "HRM".

By pressing the C button in the heart rate mode, you can choose between the sub functions
- Training time (TIMER)
- Memory (MEMORY)
- Training zone (ZONE)
- Calories, fat and BMI (CALORIE)
- Fitness level (FITNESS LEVEL)

Note: If the buttons are not pressed for about 5 minutes in the heart rate mode, the watch automatically changes to the time mode.

When the chest belt is worn, the current heart rate is shown in the middle segment of the display. Otherwise "0" is displayed. The heart symbol blinks when the heart rate is received from the chest belt. If no signal is received, the heart symbol stops blinking and the last heart rate remains displayed.

On the right of the current heart rate the % of the maximum heart rate is displayed. The maximum heart rate is calculated automatically by entering personal data such as age, weight, etc

Attention: All the sub functions described below only work when the chest belt is worn.

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Training Time
Press the C button in the heart rate mode until TIMER is displayed.
The training time is shown in the lower segment of the display, in the middle the heart rate.

The display of the training time is activated automatically when a heart rate signal is received. The training time shows the total time you have worn the chest belt and the heart rate was received by the heart rate monitor watch, even if you switch to another mode from the heart rate mode.

If you press the A button shortly, you can choose between the following displays:
TIMER= The total training time
(⌛)=The time while you were within the chosen training zone
(▲)=The time while you were outside of the chosen training zone
(▼)=The time while you were below the chosen training zone

Press and hold the A button (shown by RESET), to reset the training time to zero.

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Memory
Press the C button in the heart rate mode until MEMORY is displayed.
The saved heart rate data is shown in the lower segment of the display, the current heart rate in the middle, as long as the chest belt is worn.

You can look at the following data by pressing the A button:
HI = highest heart rate
LO = lowest heart rate
AV = average heart rate

Press and hold the A button (shown by RESET), to reset the training time to zero.

Training Zones
Press the C button in the heart rate mode until ZONE is displayed.
The lower and upper limits of your training zone are shown in the lower segment of the display, the heart rate in the middle and the chosen zone (1, 2, 3 or U) at the top.

Upper limit   Lower limit

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Setting:
Keep the A button pressed, "SETTING" appears, select zone 1, 2, 3 or U with button C. Confirm the selection of 1, 2 or 3 with the D button. The setting is completed. The upper and lower limits are calculated automatically.

Alarm symbol ♪ appears = Training zone alarm activated Alarm symbol disappears = Training zone alarm deactivated If the heart rate drops below the lower limit or it rises above the upper limit, the alarm sounds (if activated).
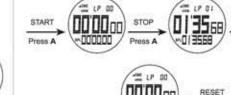
Alarm when exceeding the maximum heart rate.
On the right of the current heart rate the % of the maximum heart rate is displayed.

If your heart rate is at 99% of the calculated maximum heart rate or even exceeds it, a permanent audible warning sounds to call your attention. You can minimize the risk of overexertion. The alarm for the maximum heart rate is independent of whether the training zone alarm is activated or not.

The audio warning automatically ends as soon as your heart rate drops below 99% of your maximum heart rate.

Display:
▲▼ Heart rate is within the training zone
▲ Heart rate is above the training zone
▼ Heart rate is below the training zone.

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Training Zone Alarm
Press the C button pressed with the display of the upper and lower limits.
Alarm symbol ♪ appears = Training zone alarm activated Alarm symbol disappears = Training zone alarm deactivated If the heart rate drops below the lower limit or it rises above the upper limit, the alarm sounds (if activated).

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Calories, Fat and BMI
Press the C button in the heart rate mode until CALORIE is displayed.
In the lower segment of the display calories, fat and BMI are displayed (switch with the A button), in the middle the heart rate.
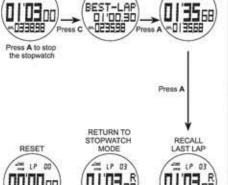
Calories (CALORIE appears)
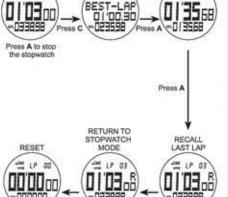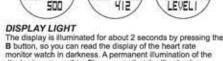The metabolic rate in calories is measured automatically when the heart rate is received in the heart rate mode. The measured value is shown in the bottom line of the display (C:...). Press and hold the A button (shown by RESET) to reset the value to zero.

Fat (FAT BURN appears)
As soon as the heart rate signal is received in the heart rate mode, the estimated value of the burned fat in grams is shown in the lower line of the display (F:.).
Press and hold the A button (shown by RESET) to reset the value to zero.

Note: It is necessary to enter the correct date of birth and weight to receive a meaningful value of calorie consumption and fat burning.

Note: The body fat function is only active, if the training intensity is more than 120bpm.

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BMI (Body Mass Index)

Age (years)	BMI normal value (kg/m2)
19-24	19 - 24
25-34	20 - 25
35-44	21 - 26
45-54	22 - 27
55-64	23 - 28
> 64	24 - 29

approximate values of the BMI
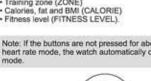
The BMI (Body Mass Index) is a measured value for the evaluation of the body weight of humans. The BMI only gives a rough guidance level.
The BMI is calculated by dividing the body weight in kg by the body size in metre squared. The heart rate monitor watch automatically calculates the BMI from the entered data.

Fitness Level
Press the C button in the heart rate mode until FITNESS LEVEL is displayed.
Press the A button immediately after the training (with applied chest belt) to start a 5 minute countdown. After the countdown (recovery phase) the heart rate and the fitness level are displayed.

Level of Fitness	Heart rate after 5 min
Level 6	> 130
Level 5	130-120
Level 4	120-110
Level 3	110-105
Level 2	105-100
Level 1	< 100

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During the countdown you can see the following indicators on the display:
- Heart symbol, which moves from left to right (progress bar)
- Number on the left of the display: Heart rate at the time when the countdown was started.
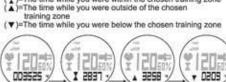- Number on the right of the display: Current heart rate.
- Lower segment of the display: The minutes are counted down.

DISPLAY LIGHT
The display is illuminated for about 2 seconds by pressing the B button, so you can read the display of the heart rate monitor watch in darkness. A permanent illumination of the display is not possible. Please note that the illumination consumes more power, which reduces the lifespan of the battery.

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TROUBLESHOOTING
Why is the displayed covered distance incorrect?
Have you performed a calibration? For optimum results the calibration has to be performed for "walking" as well as "running". A shuffling gait, bad shoes and varying surface can lead to inaccurate measurements. A lower distance is measured when climbing steps, because the watch is designed for even surfaces. Choose the used during calibration speed when walking or running. Please note that the measurements of untrained persons can be inaccurate/irregular.

Why does the heart rate monitor watch not display the heart rate?
Please check the chest belt. Possible causes of error are:
- The chest belt is not positioned correctly.
- The skin is too cold or dry.
- The sensor contacts are not moistened or are dirty.
- Atmospheric or wireless interferences appear due to for example high voltage lines (above or below ground), overhead electrical lines, electric motors, car engines, mobile phones, airplanes etc.
- Weak battery in the chest belt - please change.
- Distance to the chest belt is too large (max. 60 cm).
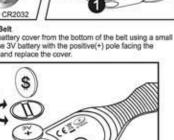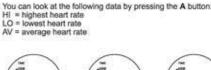- Signals from other chest belts in the surrounding of less than 2 metres can be the cause of incorrect values.

The display of the heart rate is incorrect, why?
- Perhaps the sensor contacts of the chest belt are not moistened.
- Check if the chest belt fits tightly to the chest.
- Also check the battery
- We advise against the simultaneous use of the heart rate monitor watch and a wireless bicycle computer, because the signals from the transmitter of the bicycle computer can interfere with the heart rate monitor watch.
- Signals from other chest belts in the surrounding of less than 2 metres can be the cause of incorrect values.

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The display is weak, hardly readable, what can I do?
Replace the battery as soon as the display weakens or when it fades totally. Always pay attention to the polarity when inserting a new battery. When the battery has been removed and reinserted, the personal data has to be entered again.

Why does the display light not work?
Perhaps the battery is empty? Please check the battery and replace it if it is empty (3 V / CR2032). Note the +/- pole.

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