
USER GUIDE

MILTRONIC PREMIUM NEW TRAINING MODES

Imprint

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Translation of original document



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1 ABOUT THIS USER GUIDE

This User Guide applies to New Training Modes and is a **supplement** to the User Guides for the individual devices of the miltronic PREMIUM line of products.

All warnings and safety instructions listed in the User Guide of the device therefore apply.

It must always be to hand by the machine.

This User Guide only describes the function and operation of the New Training Modes.

Due to continuous on-going development, the illustrations, function steps and technical data may vary slightly from those of the actual machine.

2 DEFINITIONS

2.1 ISOKINETIC MEASUREMENT

An isokinetic measurement is a dynamic measurement. This means that the strength of the muscle is measured over its entire length. The angular velocity of each joint is predefined.

Importance for milon training:

Using isokinetic measurement, miltronic PREMIUM Strength machines from milon determine the best possible starting resistance for the user. This frees users from having to rely on their own subjective judgement or that of a trainer when selecting the training weight.

Beyond this, the MKI (milon Kraft Index) stands for the milon strength index, is calculated, which – when calculated repeatedly – can serve to assess the increase in strength.

2.2 ADAPTIVE TRAINING

During training, muscles become tired and therefore weaker. As a result, it is often difficult for users to complete the full motion during the repetitions at the end of a set. Adaptive training measures this drop in muscle strength and correspondingly adjusts the resistance.

Importance for milon training:

Miltronic PREMIUM Strength machines from milon measure the drop in strength during a set and correspondingly adjust the resistance. This provides the user with optimal muscle tension over the full range of motion.

Adaptive training is ideally combined with isokinetic measurement. This provides the user with not only optimal muscle tension but also the best possible starting resistance. This allows for maximum training stimulus.

2.3 ISOKINETIC TRAINING

Isokinetic training means working with a precise, consistent velocity for a motion from beginning to end. This means that the angular velocity of each joint is predefined. The resistance increases or decreases depending on the force exerted by the user.

Importance for milon training:

Miltronic PREMIUM Strength machines from milon allows for selection of three levels of angular velocity: fast, medium and slow. (The individual angular velocities vary depending on the movement of the joint.) This enables users (for example, patients suffering from chronic pain) to train exclusively with the resistance that they can handle without pain. At the same time, fitness users can give their muscles a maximum workout. It is also necessary for users to learn to pace themselves throughout the recommended training duration.

3 PREPARATION FOR TRAINING

3.1 SETTING UP THE CUSTOMER IN MILON CARE

All necessary information about milon CARE can be found in the milon CARE manual or online help.

4 SETTING UP THE TRAINING MACHINE FOR THE USER



Read the User Guide carefully before carrying out adjustments on the training machine.
Observe and comply with the safety instructions and warnings.

Before the first training or first measurement, the training machine must be adjusted to the physical dimensions of the user.

Adjustment of the machine is carried out by specialist training personnel.

Notice

Manual adjustment devices on training machine

Risk of injury

- When adjusting the training machine, ensure that the adjustment devices (e.g. indexing bolts, levers) lock safely and completely into place.
- If an adjustment device cannot be locked into place or fastened, the training machine must not be used.
- Have defective adjustment devices exchanged by the milon service department.

1. Push the user's RFID card into the slot of the card reader until it locks into place.

If the user is using the training machine for the first time, the specialist personnel must set the machine up for the user.

2. The specialist personnel logs into the machine using the trainer login (hold the card up to the RFID antenna until the trainer symbol appears) and carries out the personal settings for the user in sequence. Once the setting has been made, the final display "Training mode" appears.

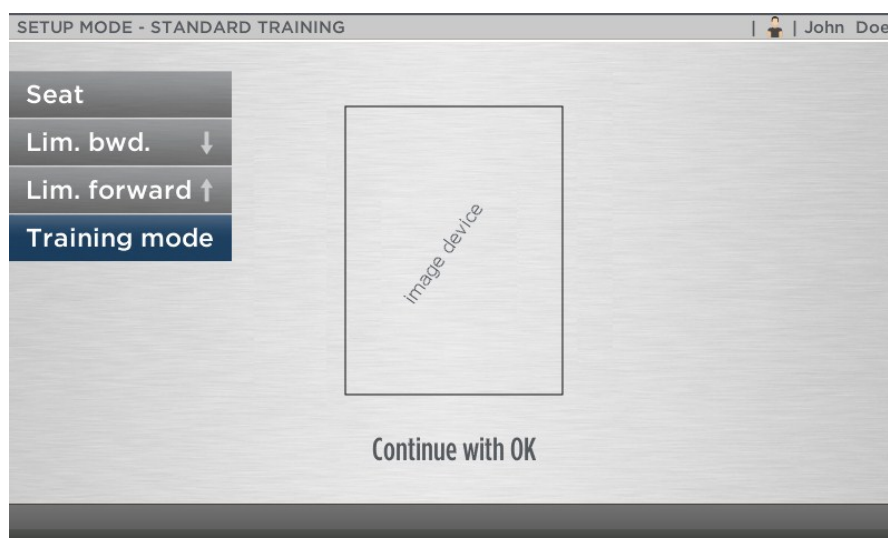


Fig. 1 Training mode selection

- ⇒ Once the "Training mode" button has been pressed, the following training modes can be selected one after another:

4.1 STANDARD TRAINING

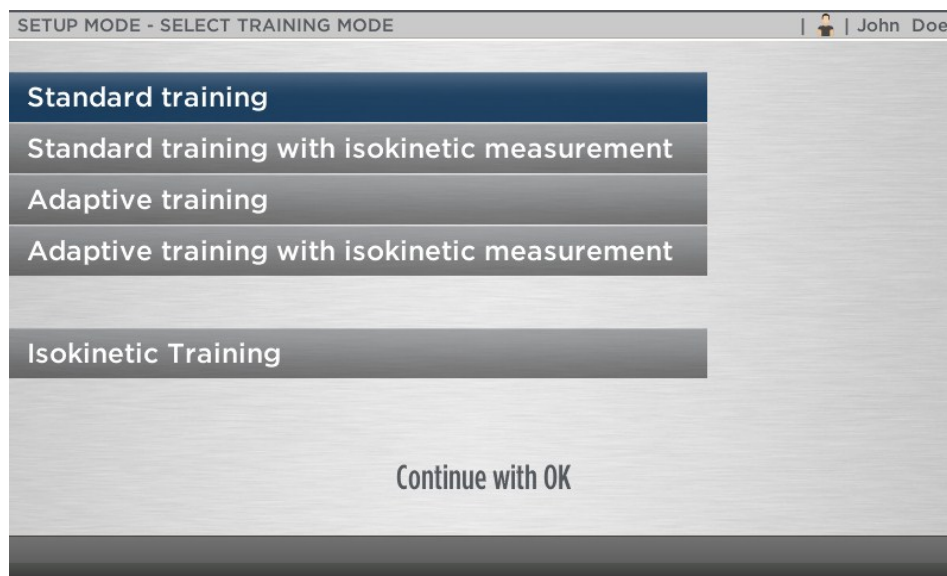


Fig. 2 Standard training

1. Confirm the training by pressing the OK key.



In standard training mode, the concentric and eccentric loads must be set manually. No measurement and/or adaptive training may take place.

2. Set the concentric and eccentric loads with the function keys.
3. Begin the training by pressing the START key.

4.2 STANDARD TRAINING WITH ISOKINETIC MEASUREMENT

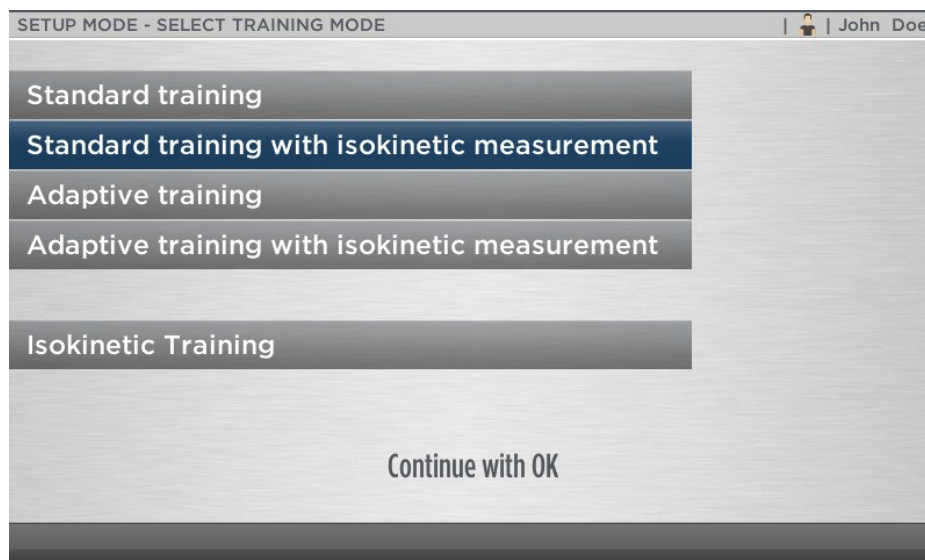


Fig. 3 Standard training with isokinetic measurement

1. Confirm the training by pressing the OK key.



In standard training mode with isokinetic measurement, the dynamic (isokinetic) strength test can be carried out. The calculated values can be stored as the concentric starting load – the eccentric increase, however, must be defined separately. No adaptive training takes place.

2. The “Standard training with isokinetic measurement” screen appears.

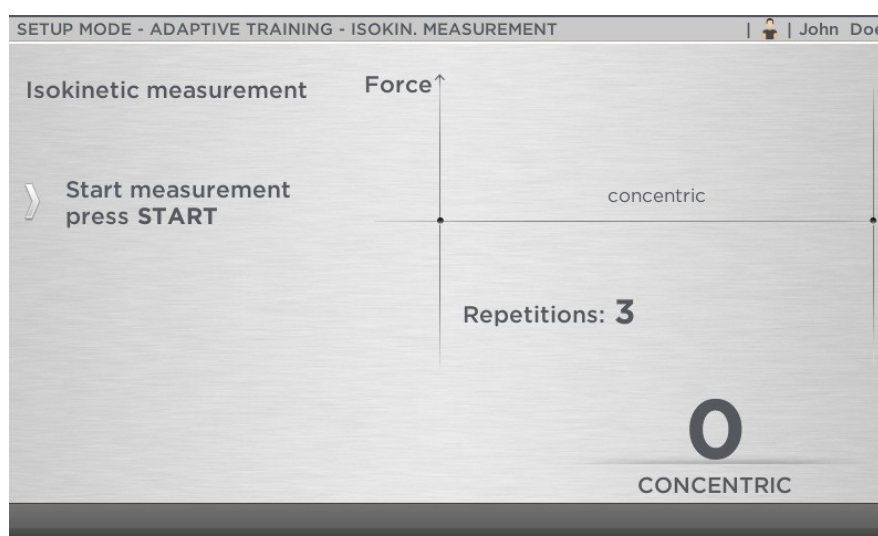


Fig. 4 Isokinetic measurement

3. Start the measurement using the START key. The lever moves into the start position.



Fig. 5 Lever moving to start position

- ⇒ The “Isokinetic measurement” start screen appears.

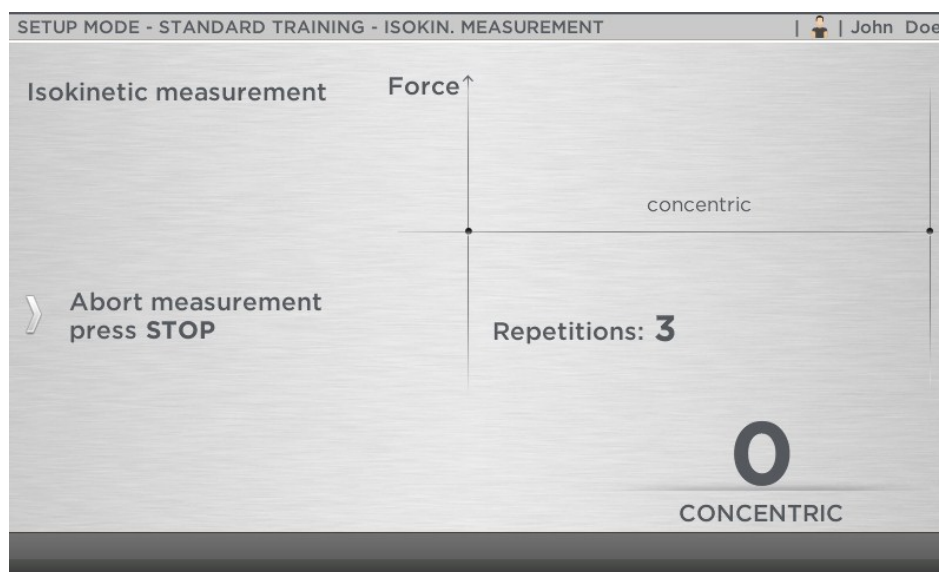


Fig. 6 Start screen for isokinetic measurement

4. The user now must perform three repetitions using maximum strength to overcome the resistance.



No force is to be applied to the lever as it returns to the start position.



The measurement can be interrupted at any time by pressing the STOP key.

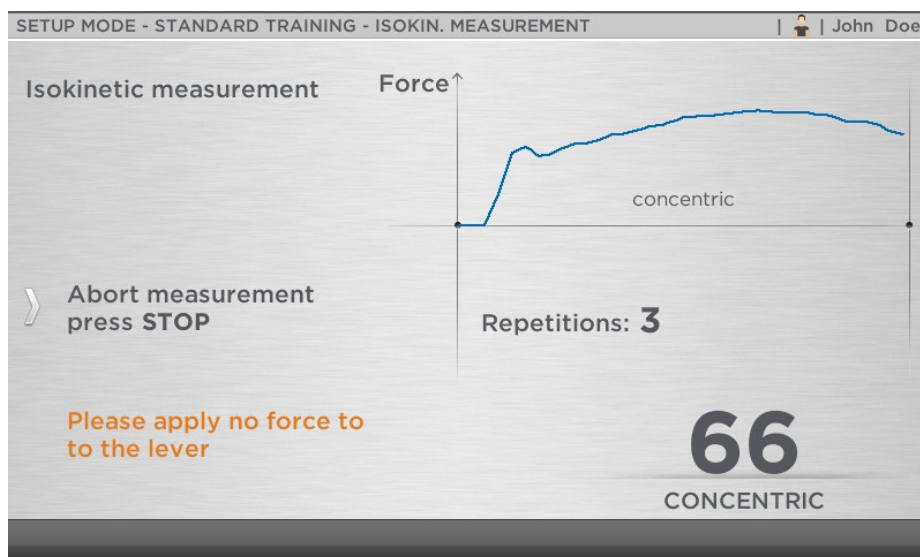


Fig. 7 Calculation of concentric force

5. The "Measurement done" screen appears once the three repetitions have been performed.

⇒ The user now has the option to show the results, repeat the measurement or quit.

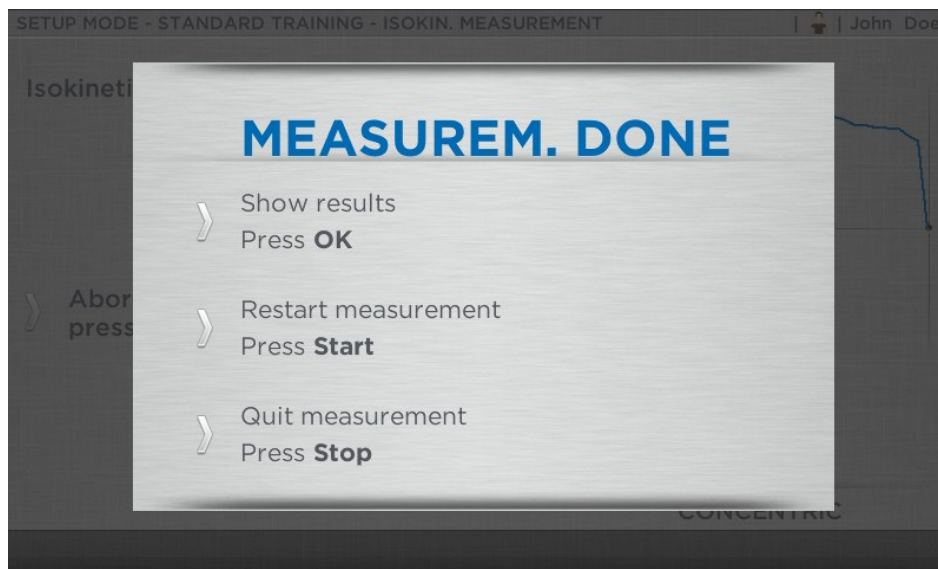


Fig. 8 Measurement done

6. Display the measured values by pressing the OK key.

⇒ Determine the starting load of the concentric load using function keys 1 to 4.



The eccentric load must be defined separately.

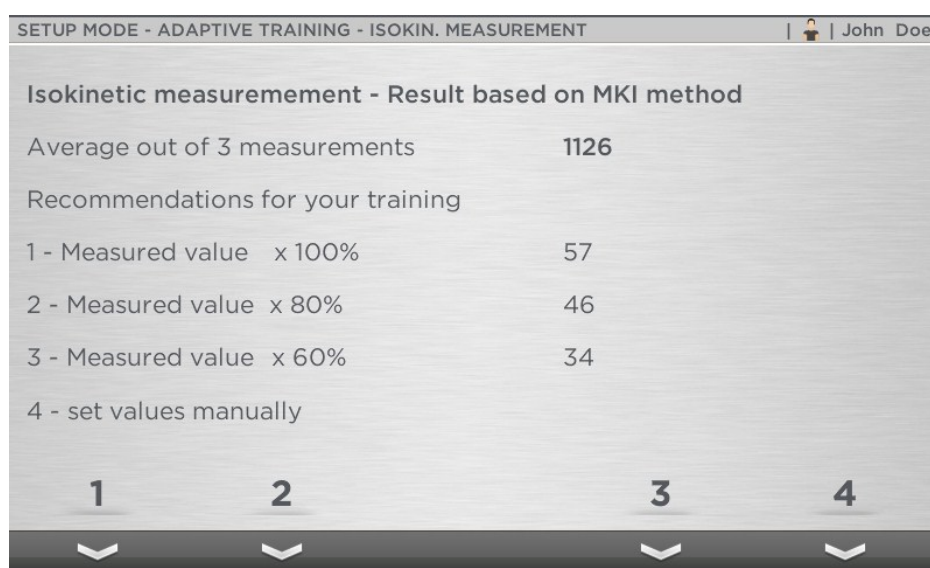


Fig. 9 Display of the measured values

7. Start the training using the START key.

⇒ If necessary, the eccentric load may be adjusted separately using both right-hand function keys.



The MKI method (milon Kraft Index) stands for the milon strength index. The value calculated here reflects the average force exerted during the three repetitions. This value is also useful for later comparison measurements to show an increase in strength.

4.3 ADAPTIVE TRAINING

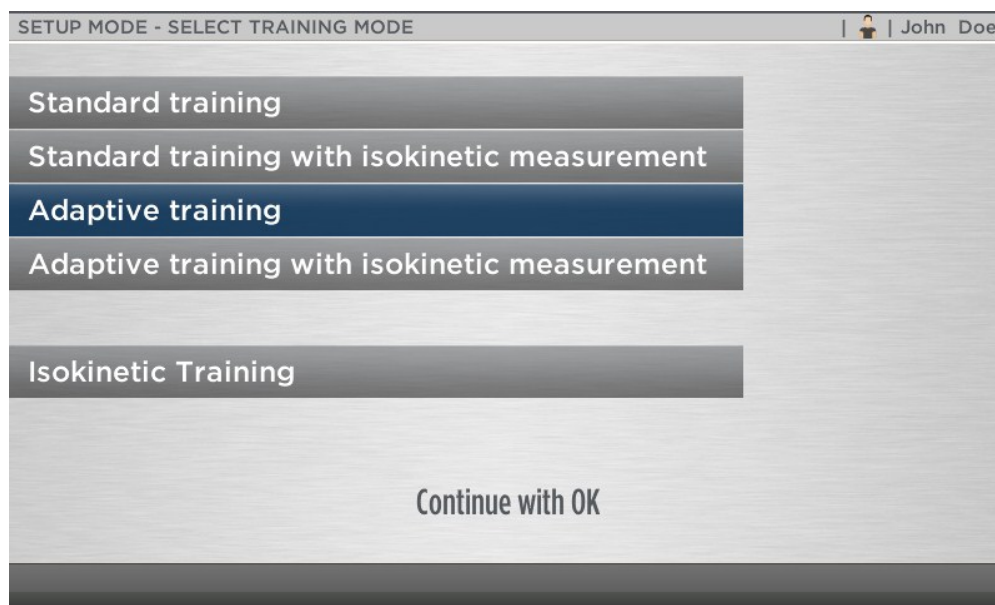


Fig. 10 Adaptive training

1. Confirm the training by pressing the OK key.



In adaptive training mode, the concentric as well as the eccentric loads must be specified manually. During the training, however, the machine measures any drop in strength and adjusts the load as necessary.

2. The display for setting the load appears.
⇒ Set the concentric and eccentric loads using function keys 1 to 4.

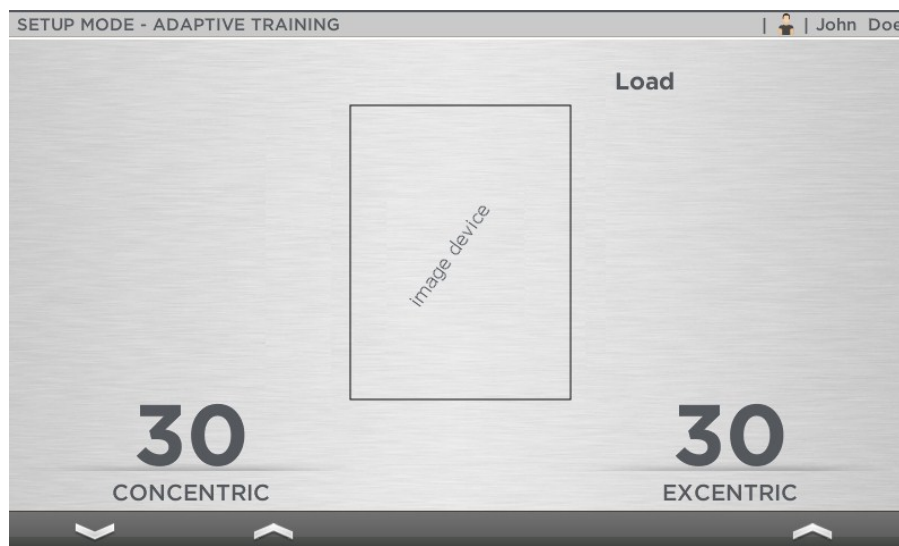


Fig. 11 Setting the load

3. Start the measurement using the START key. The lever moves into the start position.



Fig. 12 Lever moving to start position

- ⇒ The training screen for “Adaptive training” appears.



Fig. 13 Training screen for “Adaptive training”

4. Move the blue point on the circle shape by moving the lever.
 - ⇒ The rising semicircle reflects the concentric load, and the falling semicircle reflects the eccentric load.
 - ⇒ If the blue point cannot be shown on the circle, the machine adjusts the load automatically.



The load is always adjusted downwards. It is never increased automatically.



The following rules for adaptation are applied:

1. If the concentric resistance cannot be maintained, only the concentric load is decreased. Here the delta between the concentric and the eccentric load is increased.
2. If the eccentric resistance cannot be maintained, only the eccentric load is decreased. Here the delta between the concentric and the eccentric load is decreased.
3. If neither the concentric nor the eccentric resistance can be maintained, both loads are decreased. Here the delta between the concentric and the eccentric load remains the same.
4. If the preset end position cannot be reached, the concentric and the eccentric loads are decreased. Here the delta between both load types remains the same.

4.4 ADAPTIVE TRAINING WITH ISOKINETIC MEASUREMENT

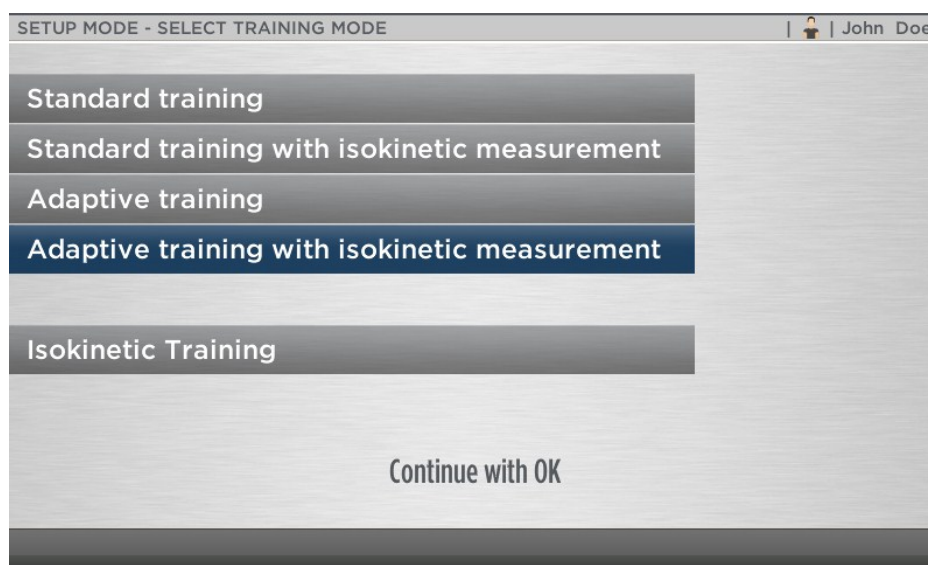


Fig. 14 Adaptive training with isokinetic measurement

1. Confirm the training by pressing the OK key.



In adaptive training mode with isokinetic measurement, the values from the dynamic (isokinetic) measurement can be applied as the starting load of the concentric resistance. During the training, however, the machine measures any drop in strength and adjusts the load as necessary.

2. The “Adaptive training with isokinetic measurement” screen appears.

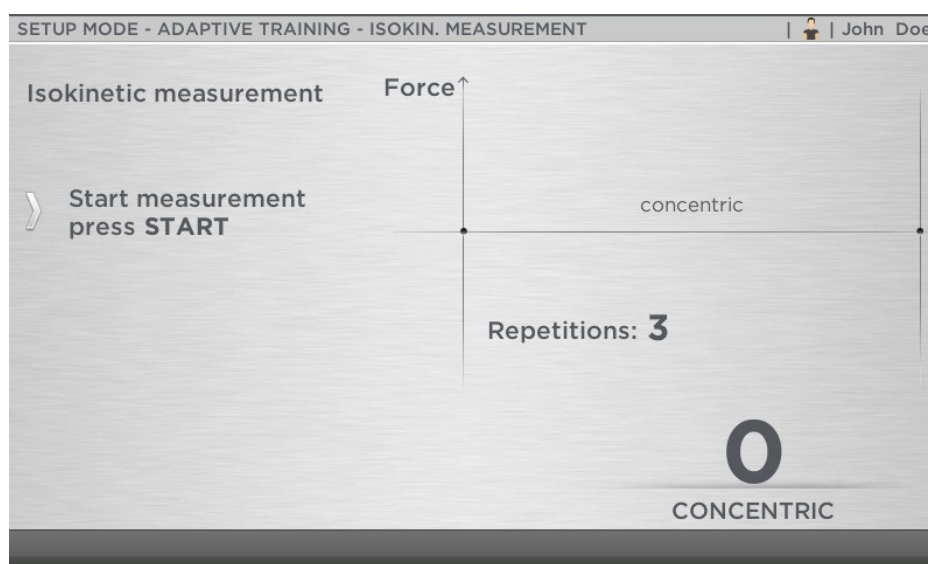


Fig. 15 Isokinetic measurement

3. Start the measurement using the START key. The lever moves into the start position.



Fig. 16 Lever moving to start position

⇒ The “Isokinetic measurement” start screen appears.

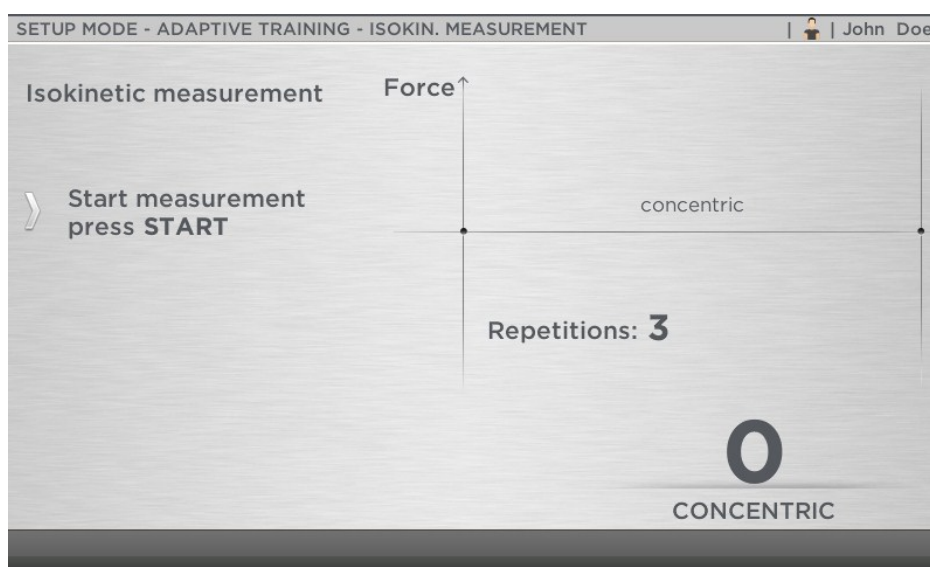


Fig. 17 Start screen for isokinetic measurement

4. The user now must perform three repetitions using maximum strength to overcome the resistance.



No force is to be applied to the lever as it returns to the start position.



The measurement can be interrupted at any time by pressing the STOP key.

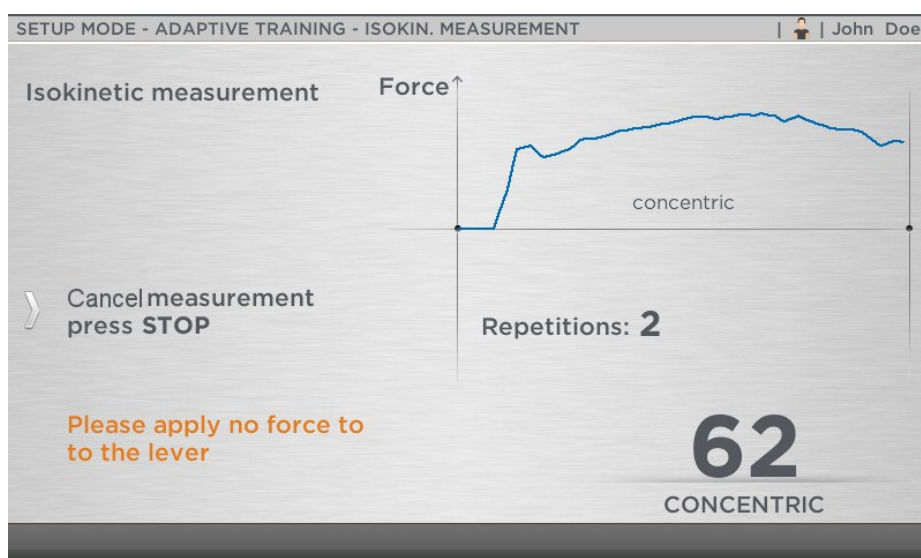


Fig. 18 Calculation of concentric force

5. The “Measurement done” screen appears once the three repetitions have been performed.

⇒ The user now has the option to show the results, repeat the measurement or quit.

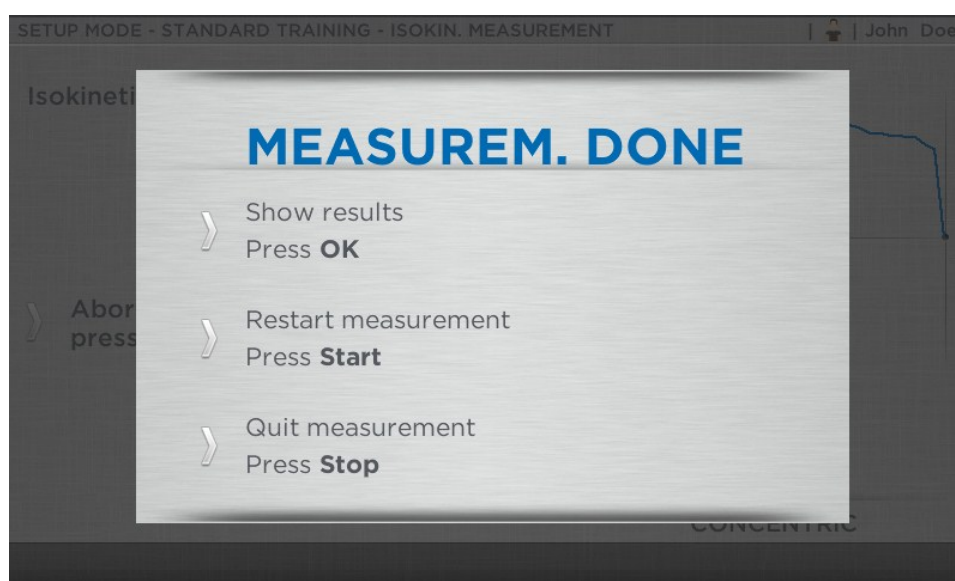


Fig. 19 Measurement done

6. Display the measured values by pressing the OK key.

⇒ Determine the starting load of the concentric load using function keys 1 to 4.



The eccentric load must be defined separately.

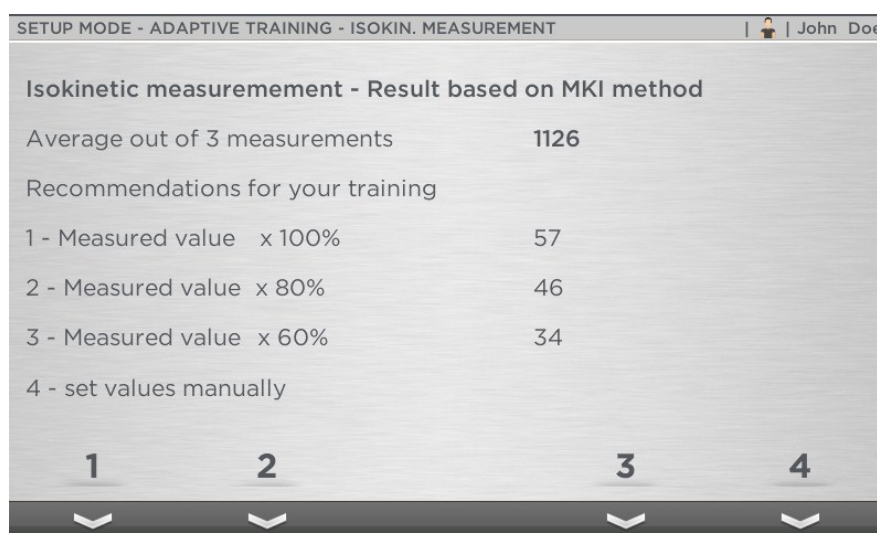


Fig. 20 Display of the measured values



The MKI method (milon Kraft Index) stands for the milon Strength Index. The value calculated here reflects the average force exerted during the three repetitions. This value is also useful for later comparison measurements to show an increase in strength.

7. Start the training using the START key.

⇒ If necessary, the eccentric load may be adjusted separately using both right-hand function keys.



Fig. 21 Setting the load

⇒ The lever moves into the start position.



Fig. 22 Lever moving to start position

⇒ The training screen for “Adaptive training” appears.



Fig. 23 Training screen for “Adaptive training”

8. Move the blue point on the white circle shape by moving the lever.

- ⇒ The rising semicircle reflects the concentric load, and the falling semicircle reflects the eccentric load.
- ⇒ If the blue point cannot be shown on the circle, the machine adjusts the load automatically.



The load is always adjusted downwards. It is never increased automatically.



The following rules for adaptation are applied:

1. If the concentric resistance cannot be maintained, only the concentric load is decreased. Here the delta between the concentric and the eccentric load is increased.
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3. If neither the concentric nor the eccentric resistance can be maintained, both loads are decreased. Here the delta between the concentric and the eccentric load remains the same.
4. If the preset end position cannot be reached, the concentric and the eccentric loads are decreased. Here the delta between both load types remains the same.

4.5 ISOKINETIC TRAINING

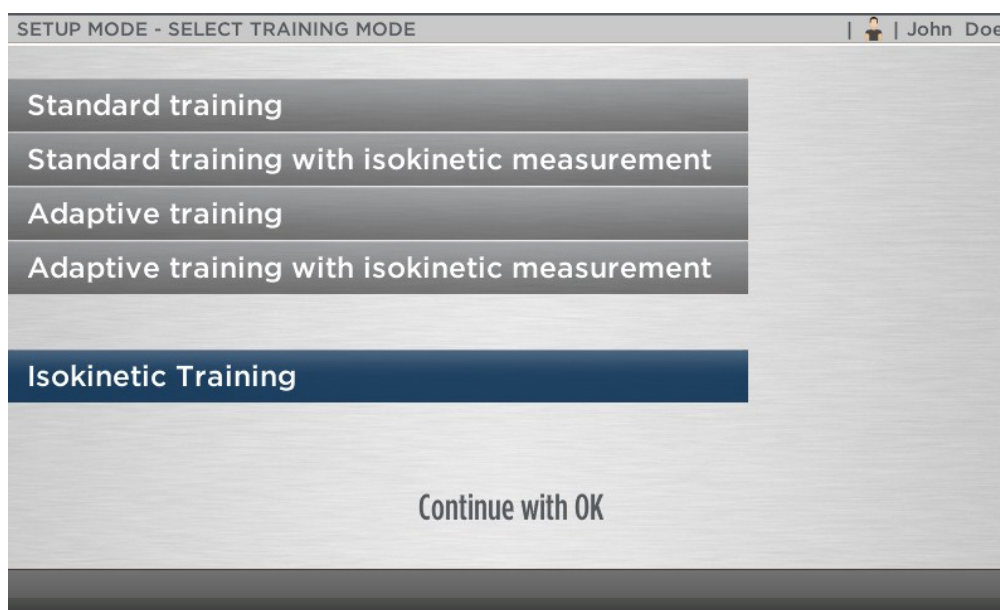


Fig. 24 Isokinetic training

1. Confirm the training by pressing the OK key.



In isokinetic training mode, training is performed with a specific predefined angular velocity. The machine load depends on the force exerted by the user. The greater the force exerted, the greater the load.

2. Select the angular velocity.
 - ⇒ Select an angular velocity from the “Slow – Medium – Fast” options using both right-hand function keys.

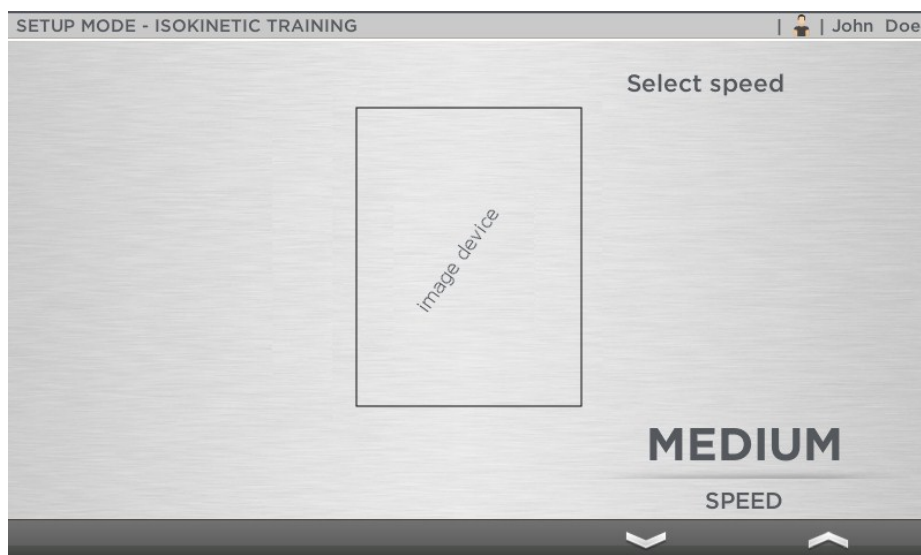


Fig. 25 Angular velocity selection

3. Start the training using the START key.
⇒ The lever moves into the start position.



Fig. 26 Lever moving to start position

The training screen for “Isokinetic training” appears.

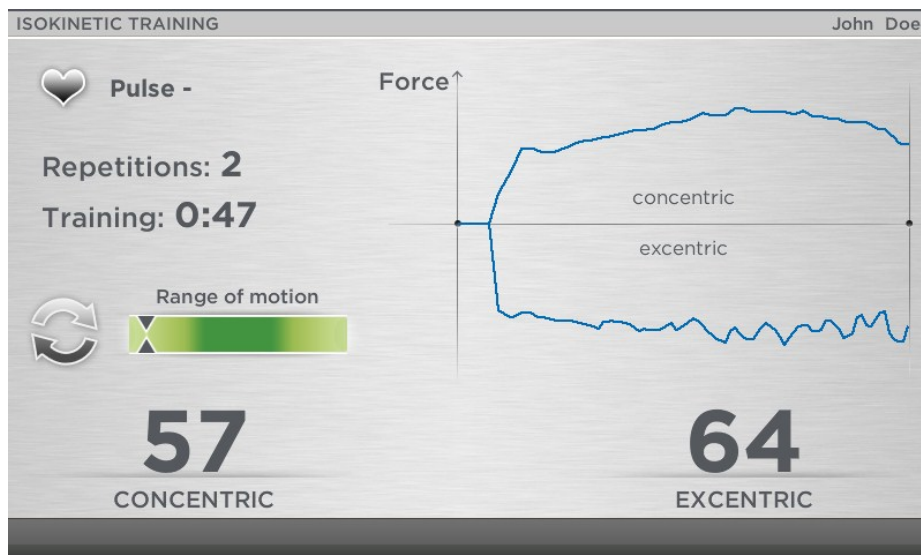


Fig. 27 Training screen for “Isokinetic training”

- ⇒ Overcome the lever resistance with the desired force (concentric) and return to the start position (eccentric).



The eccentric load during isokinetic training is always 30 percent of the concentric value.

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