Advagym Installation Manual

Sony Mobile Lund - 2018-10-26

This document is an installation guide aimed to guide through the steps to install a machine exercise with the Advagym solution. The Android application used to perform this installation is in ongoing development and will be available shortly in the application market Google Play. Login with credentials received from the Sony Advagym team.

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1. Preparations

1.1 Account

To be able to use the Advagym Installation App a valid account is needed. This account is given to the installer by Sony Advagym, with the correct credentials for the installation site. The credentials can also be distributed to an already existing account by Sony Advagym or an account with admin rights for the installation site. An account can be created from the Sony Advagym application (available both on Google Play and App Store) or from the web interface **https://tool.advagymsolutions.com**

1.2 Advagym Hardware

The Advagym system consists of the following hardware components

1.2.1 Puck

Used together with main unit on gym machines with weight stack. Can also be used as a *Zone puck* or as a *Reception puck*.

Figure 1. Picture of the unit "Puck".

The pucks are mounted on a suitable surface on the gym machine to allow for the user to easily tap the phone. Zone pucks should be placed within easy reach for the consumer next to the equipment that the zone puck refers to.

Each puck is unique with a reserved MAC address which can be found on a label. The label itself is located inside the puck. To access it, twist open the back of the puck. The label is located near the battery holder. Seen in Figure 2 marked yellow.
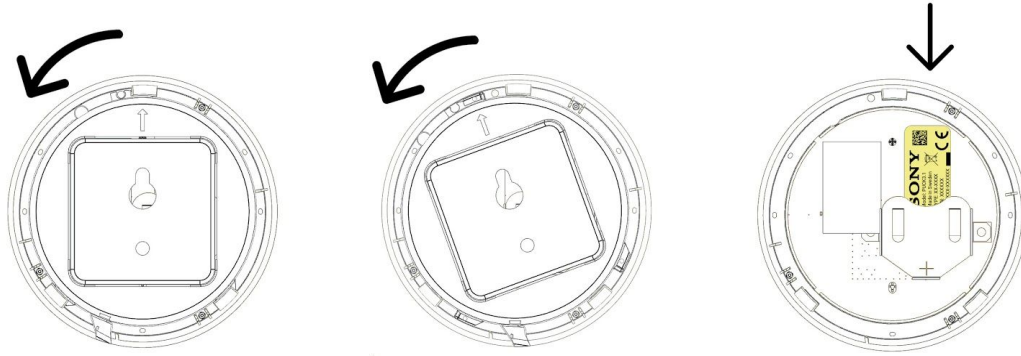
Figure 2. How to open the "Puck" and find the label.

1.2.2 Main unit and reflexive tape

The main unit is used together with puck on gym machines with weight stack.

The main unit is mounted on the weight stack top plate with free line of sight to a reflexive tape that is attached to a flat surface above the main unit.

The reflexive tape is mandatory to attach on a suitable area inside the machine with free line of sight to the main unit. The maximum distance between the main unit and the reflexive tape is 120cm.

Figure 3. Picture of the "main unit".

Each main unit is unique with a reserved MAC address which can be found on a label. The label itself is located inside the main unit. To access it, open up the main unit by pressing a screwdriver head in to the latch and pushing it slightly upwards. Slide the top off and lift from the case. The label is located beside the battery pack on one side. Seen in Figure 4 marked yellow.
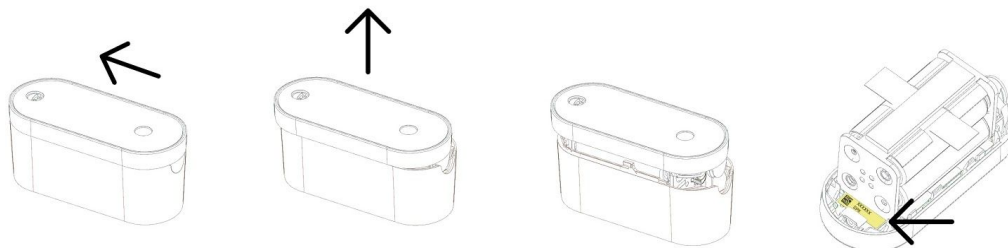

Figure 4. How to open the "main unit" and find the label

1.2.3 Observer (Raspberry Pi Zero)

The observer is the connection hub to all pucks and main units in the Advagym system. In certain cases multiple observers may be required.

The observer should be positioned in a central location in the gym facility and within reach of the WiFi network. Furthermore, the observer is the only component in the Advagym system that require a power outlet. We recommend that the power outlet is placed out of reach for gym visitors, preferably somewhere close to the ceiling of the gym.

Figure 5. Picture of the "observer".

1.2.4 WiFi network (not provided by Sony)

The observer is connected to a stable WiFi network that is provided by the gym facility. The WiFi network should always be connected to the internet in order for the training data recorded by the Advagym system to be backed-up to the cloud storage.

1.2.5 Additional hardware

As an addition to the above mentioned hardware there are other optional components that are applicable on a case by case basis:

- Phone holder that can be mounted on the machine where the user can put his/her phone while working out on a machine
- Velcro straps for attaching phone holders and pucks
- Holder/attachment unit for main unit on weight stack (used on some occasions depending on weight stack set-up)
- Holder/attachment unit for reflexive tape

2. Installation

The installation procedure is done with a smartphone or tablet running Android OS. The app is provided available on Google Play on the following link:

[Link coming soon..]

The app will take the user through the complete installation and configuration procedure step-by-step. The user needs to log in with his/her Advagym user name and password. We recommend that you download the Advagym consumer app first and create a user with your email and password. Then as a second step you log on to the installation app. In order to use the installation app you need to have admin rights that are provided by the Sony Advagym team or by a colleague that already has admin rights.

Admin rights and Advagym system monitoring is accessible from this web site (by using your Advagym user name and password: **https://tool.advagymsolutions.com**

Here follows a step by step guide on how to install a machine with the Advagym solution.

2.1 Login to site

1. Login using a valid account and password.
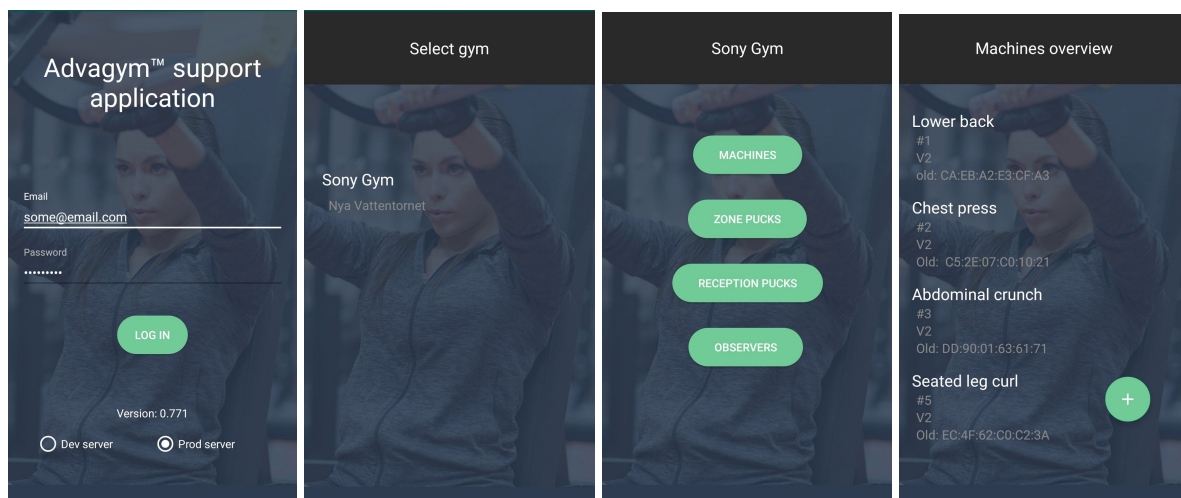2. Choose the installation site.

Figure 6. Screen 1: Login view, Screen 2: Sites overview,
Screen 3: Site overview, Screen 4: Machines overview

2.2.1 Install a "Machine": Find & mount main unit

1. Press the machines tab in the site overview.
2. Press the "+"-button in the machines overview.

3. Open up the unit by using a flat screwdriver located at the top of the unit, by pressing the screwdriver head in to the latch and pushing it slightly upwards.
4. Slide the top off and lift from the case.
5. Insert the fourth AA battery. Make sure that all 4 batteries are placed correctly.
(The main unit is in sleep when it is still. By shaking the main unit it is woken up by an accelerometer. When it is woken up the green LED is lit, and it emits its MAC address. After 3 seconds of no activity it goes back to sleep again.)

    - The application should now have found the unit -

6. Verify the MAC address given from the app, is the same as on the label of the unit (to find the unit see Figure 4), by pressing "yes". Otherwise, press no and repeat step 1-3.
7. Close the unit again by putting on the case and sliding it back to place.
8. Mount the main unit on the very top of the weightstack, by removing the plastic from the double-sided tape and placing it on a flat surface with free sight to the top of the machine's roof. **Alt:** A clamp solution could also be used if no flat area is available.
(OBS! Make sure that the surface is clean. Use electrical cleaning spray or equivalent).
9. Place the reflection tape straight above the main unit, on the roof of the machine, with a clear sight for the main unit. The roof area should be vertical facing the top of the main unit. If the area is not flat this will reduce the signal strength or even eliminate the signal.
10. Test the reflex placement by lifting the stack a slightly (~1 cm) to wake up the main unit, make sure that the LED indicator lights up, and put it down again. If the signal is acceptable, press "Continue".
11. Perform 5 reps on the machine, moving the stack and the main unit up and down. Make sure that the LED indicator lights up during repetitions and goes out when the stack stays still at the bottom after a couple of seconds.
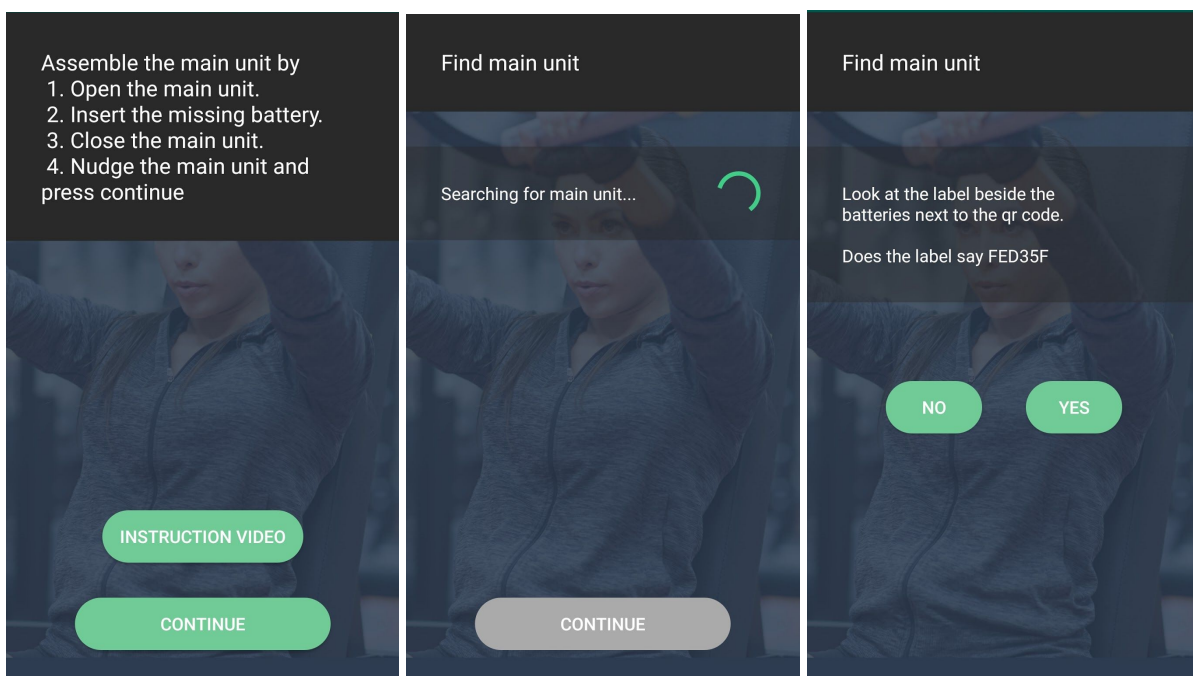12. Press continue.

To test the reflex placement, lift the weight stack around 1cm where the main unit is fastened.

Main unit signal ok. Check if the distance between the main unit and the reflex is roughly 29 cm.Otherwise recheck the reflex placement and try again.

CONTINUE

Test the reflex placement by doing five reps on the machine.

Number of reps: 0/5

CONTINUE

Test the reflex placement by doing five reps on the machine.
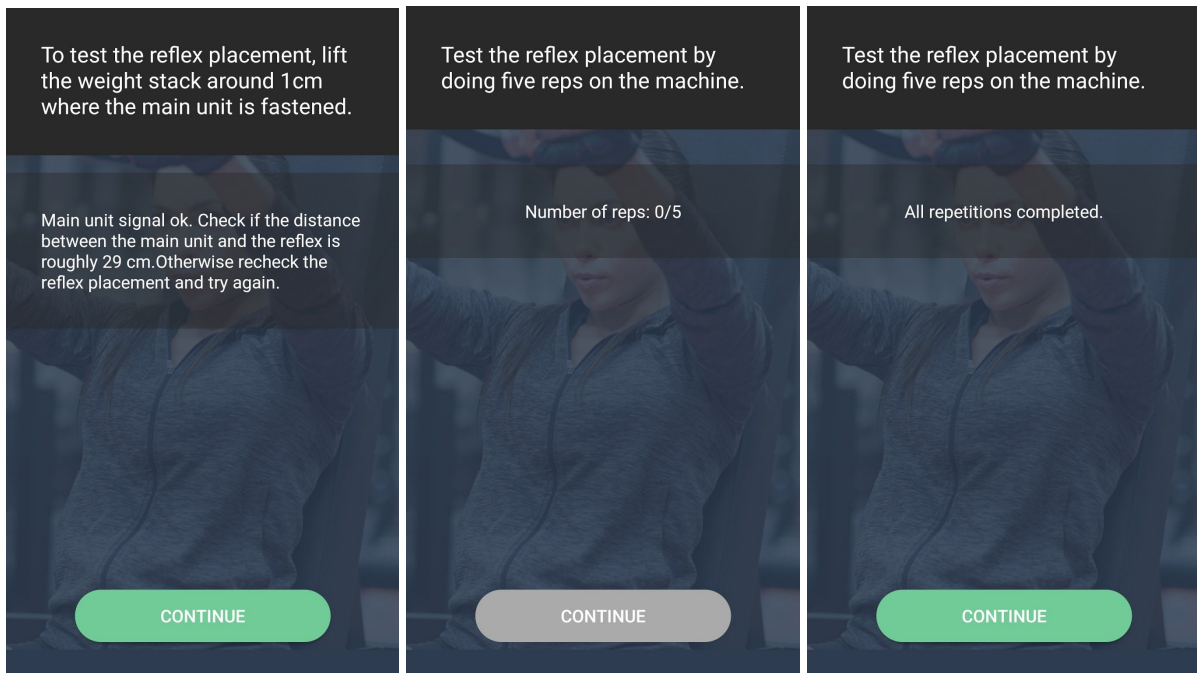
All repetitions completed.

CONTINUE

Figure 8. Screen 1: Testing the placement of the reflex,
Screen 2: Testing the signal on the reflex placement, Screen 3: Test complete.

2.2.2 Install a "Machine": Select exercises

1. Press on the "+"-button.
2. Choose the machine exercise of the current machine by pressing on the name.
   (Press on the info-button to see an instruction video of the exercise)
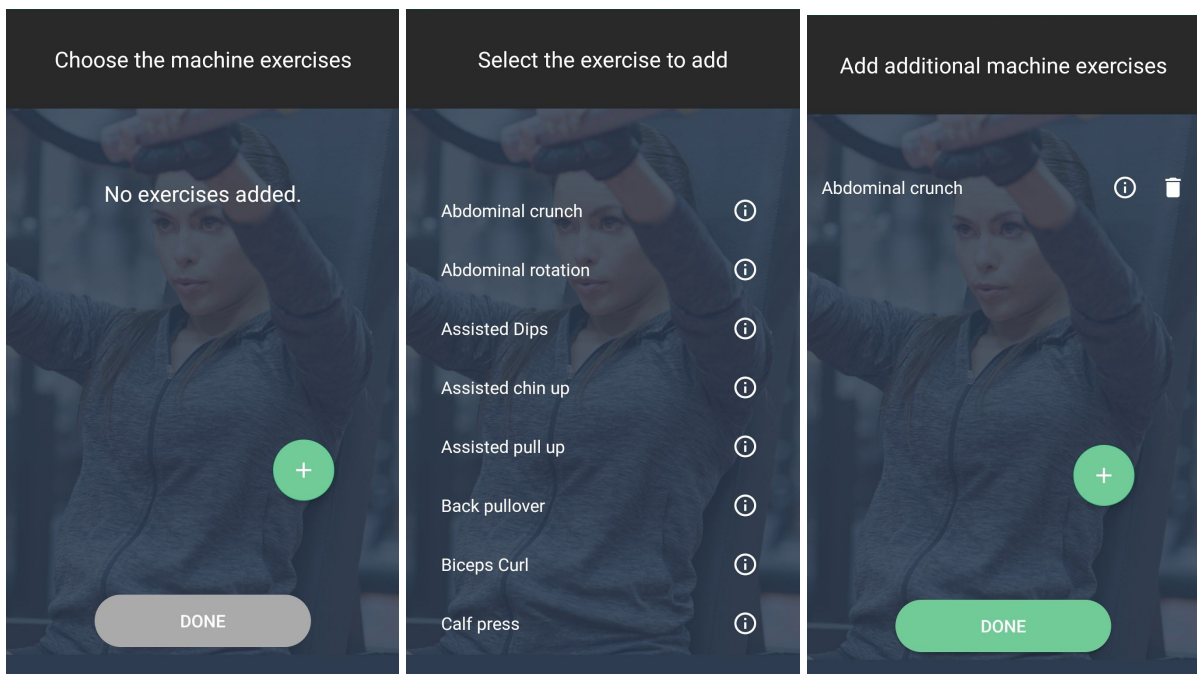3. Repeat step 1-2 to add more machine exercises on the machine, or press "Done" to continue.

Choose the machine exercises

No exercises added.

+

DONE

Select the exercise to add

Abdominal crunch ⓘ

Abdominal rotation ⓘ

Assisted Dips ⓘ

Assisted chin up ⓘ

Assisted pull up ⓘ

Back pullover ⓘ

Biceps Curl ⓘ

Calf press ⓘ

Add additional machine exercises

Abdominal crunch ⓘ 🗑

+

DONE

2.2.3 Install a "Machine": Select stack

1. Choose if the machine displays both kg and lb on the stack, or one of them.
2. Select main weight by pressing on "Select main weights".
3. Choose the main weight stack amongst the list of weight stacks, or create a new one by pressing the "+"-button.
   (If this is the first machine being installed on the site, the list will be empty)

If the main weight stack of the machine doesn't exist in the list, create a new one following these steps:

4. Enter the number of stacks on the weight stack.
5. Add the first and second value of the weightstack.
6. A "*smart-add*" solution fills the rest of the list with values. Confirm that these are correct. If not, correct the values manually according to the weight stack. Then press "Done".

If the machine has an "extra weight":

1. Select the extra weight by pressing on "Select extra weight".
2. Choose the extra weight stack amongst the list of weight stacks, or create a new one by pressing the "+"-button.
   (If this is the first machine being installed on the site, the list will be empty)

If the extra weight stack of the machine doesn't exist in the list, create a new one following these steps:

3. Enter the number of stacks on the weight stack.
4. Add the first and second value of the weightstack.
5. A "*smart-add*" solution fills the rest of the list with values. Confirm that these are correct. If not, correct the values manually according to the weight stack. Then press "Done".
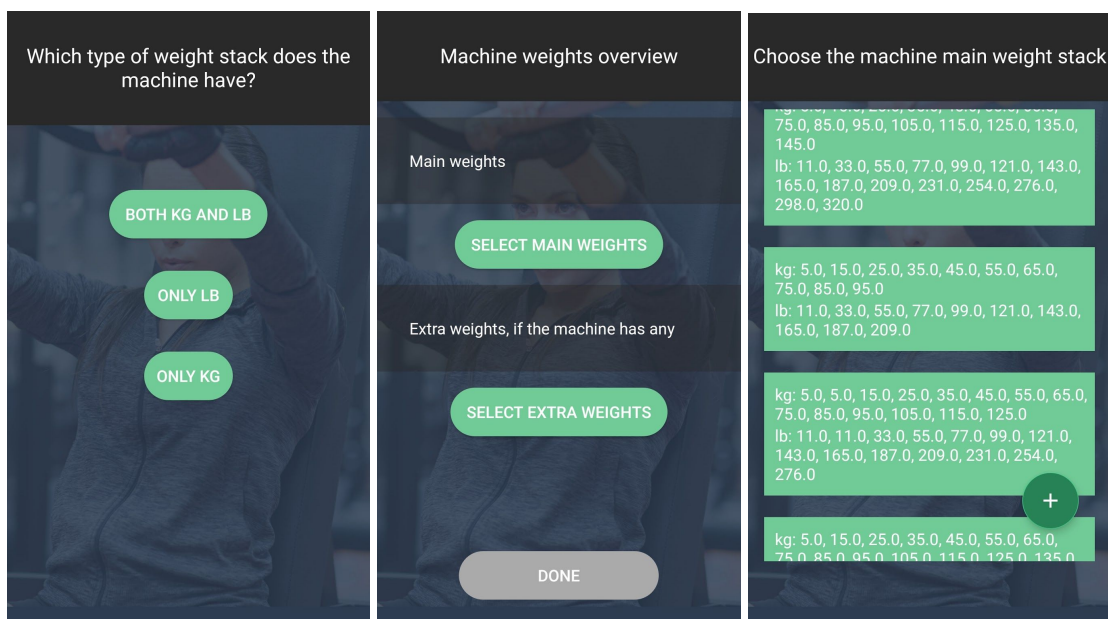

Figure 10. Screen 1: Type of weight stack (kg/lbs), Screen 2: Choose the weight stack overview,
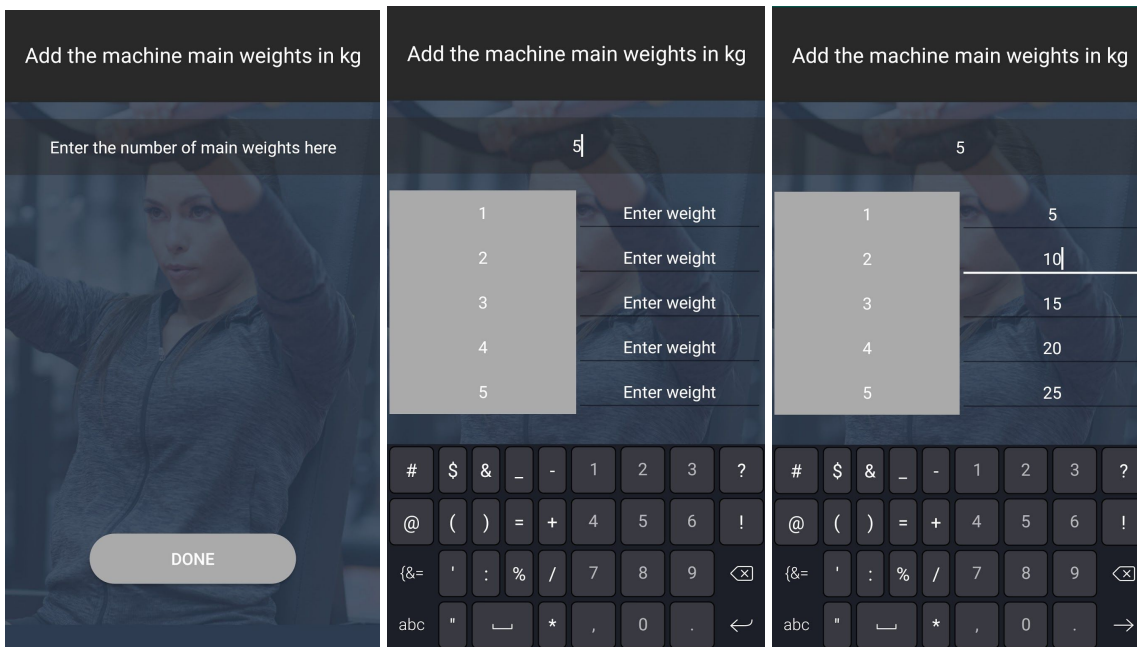*Screen 3: List of main weight stacks in the gym and a "add stack" button.*

Figure 11. Screen 1:Adding a new weight stack, enter the number of stacks, Screen 2: Generated weight input fields, Screen 3: The weight stack automatically filled with "smart-add" entering the values of stack 1 & 2.

2.2.4 Install a "Machine": Select puck

1. To assemble the puck, twist open the back of the puck and insert the battery with the negative node facing the unit. The light of the puck should now turn on in a blue color and shortly change to green before shutting down.
2. Put back the back of the puck by twisting it in place. Press "Continue".
3. Scan a puck by bringing it close to the NFC reader on the phone. Make sure that the MAC address of the puck is the same as the label shows (see Figure 3 on how to find the label).
   - Make sure that NFC and bluetooth antenna is turned on-
4. Mount the puck on the machine on a flat visible surface using the double sided tape on the back of the puck. **Alt:** Or on the side frame of the machine with a strap.
   Make sure that the area is clean and dust free.
   (OBS! Make sure that the surface is clean. Use electrical cleaning spray or equivalent).
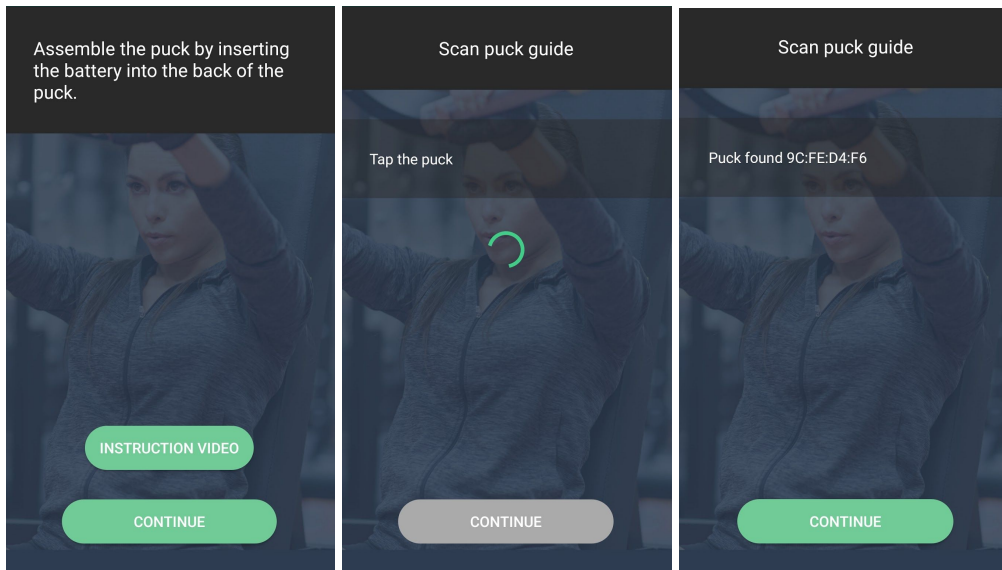5. Press continue

Figure 12. Screen 1: Instructions on assembling the puck, Screen 2: Scan puck by taping it with your smartphone, Screen 3: Puck scanned and found, displaying the MAC address.

2.2.5 Install a "Machine": Finished

1. Name the machine to be able to identify it easier in the future. For example, if there are two machines of the same kind you can name one with "left" and the other with "right". Or you can use a serial number for all your machines starting with 1, 2 etc. Press "Continue".
2. Confirm the details being displayed of the current machine. Press "Confirm".
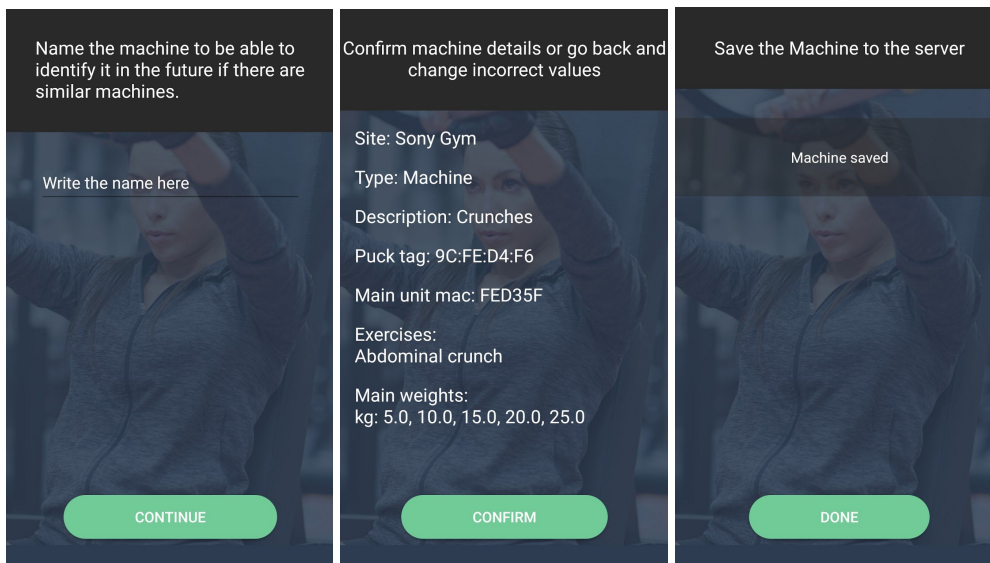3. The machine is now installed and ready to be used! Press "Done".

Figure 13. Screen 1: Enter a name for the machine, Screen 2: Machine details,
Screen 3: Machine saved and the installation process is done.

2.3.1 Install a "Zone puck":

[Coming soon...]

2.4.1 Install a "Reception puck":

[Coming soon...]

2.5.1 Install a "Observer":

[Coming soon...]

3. Troubleshooting & tips

3.1 Main unit

- Make sure that the main unit is a new unit, and isn't already in use.
- Install one machine at a time, only plugging in one main unit at a time.
- If the main units isn't detected, press the retry button and unplug and replug the red and black wires of the unit.
- If the LED indicator won't light up during the installation, make sure that the red and black wires are properly placed in the socket and that the socket isn't damaged. Make also sure that the batteries are properly placed. If the LED indicator still won't light up, replace it with a one of the spare main units.
- If the LED indicator won't shut off the light after performed sets, try adding more reflective tape to the roof or, if possible, place the reflective tape even closer to the main unit.
- If the LED indicator still won't shut off the light after performed sets, try restarting it by unplugging and replugging the red and black wires.

3.2 Puck

- Make sure that bluetooth and NFC antenna is turned on.
- Bring the phone close to the puck so the LED lights up and then bring the puck close by the NFC antenna of the phone and wait for the NFC to be read
- If you still can't scan the puck, try restarting the phone.