



JOZ b.v.
Industrieweg 5
1617 KK Westwoud
The Netherlands

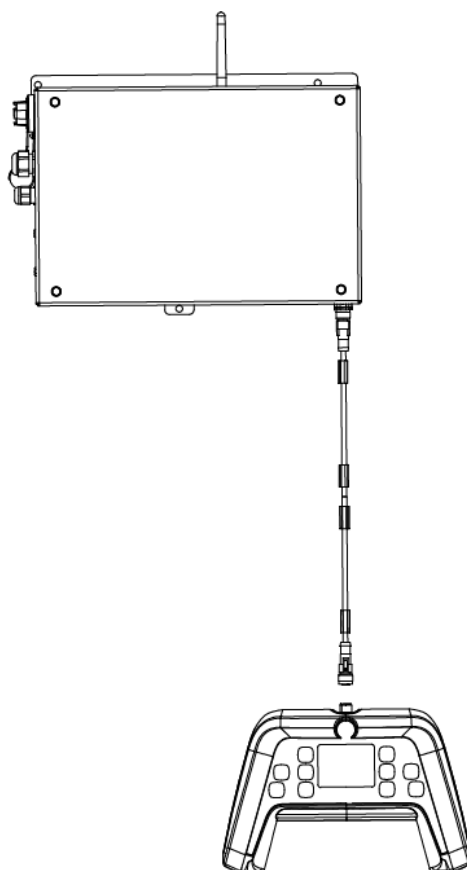
P. +31 (0)228 566 500
F. +31 (0)228 566 570
E. info@joz.nl

Bank: ABN AMRO
IBAN: NL25 ABN A048 564 2832
ICC: Hoorn, 36 041 158
V.A.T. NL008785351.B01

INSTALLATION MANUAL

J-Link

V1.1 Eng



Version Management

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1. Foreword

As the founder of modern barn cleaning, JOZ b.v. is *the* specialist in manure disposal systems and feed pushing robots. JOZ b.v. has been developing and manufacturing different types of manure disposal systems since 1948.

JOZ b.v. aims to achieve an extremely clean environment in the barn through the use of mobile robots.

For this purpose, JOZ b.v. has developed a number of autonomous/self-driving products, such as the JOZ-Tech manure robot and the MOOV robotic feed pusher.

At JOZ b.v. our aim is for our solutions and services to boost the efficiency of the farmer and to increase livestock yields. We do this by improving hygiene in the barn, which serves to benefit the health of the animals.

To support you, JOZ b.v. has developed a range of manuals, such as user manuals, installation manuals and parts manuals. If you are uncertain about any of the content or require additional information, please feel free to contact your local dealer or JOZ b.v.

Tip: The relevant manuals are also available through the dealer section at www.joz.nl

We hope you will enjoy using them!



Home of the clean stable

2. Disclaimer

No part of this publication may be reproduced and/or made public by means of print, photocopy or in any other way whatsoever without the prior written permission of JOZ b.v.

JOZ b.v. reserves the right to change components and/or specifications without prior notice. The contents of this manual can also be changed without prior warning.

JOZ b.v. cannot be held liable for any damage caused by specifications that deviate from the standard design.

JOZ b.v. does not accept any liability for direct or indirect damage caused by or related to the use of publications issued by JOZ b.v. In case of ambiguity, JOZ b.v. must be contacted for clarification.

Although this manual has been drawn up with the utmost care, JOZ b.v. will not accept any liability for any errors in this manual and/or the consequences of (erroneous) interpretation of the content.

JOZ b.v. is not liable for damage or problems resulting from the use of other than the original components or changes made by third parties.

If this manual does not include instructions for certain repairs, adjustments or maintenance, please contact JOZ b.v.

All descriptions, drawings, illustrations and specifications included in this manual apply to the device at the time of delivery.

JOZ b.v. reserves the right to make changes at any time without modifying this documentation.

Typographical errors reserved.

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1. Introduction

1.1. Purpose of the document

This document has been written to inform a qualified installation technician or service engineer about the functionalities of the J-Link. The document describes the settings that can be configured on the J-Link when the J-Touch is connected to it.

This document is intended to supplement the installation manual for the systems that use the J-Link. The functionalities as set out in this document are optional and do not affect the operation of the systems as they are delivered.

1.2. Intended use

The J-Link is intended to store and if necessary transmit robot data when connected to JMS over the internet. Each system requires at least one J-Link to be operational.

1.3. Symbols used

The following symbols are used in this manual:



Symbol for: Please note!



Symbol for: Caution!



Symbol for: Voltage > 50 V_{AC} or 70 V_{DC}.

2. Safety

Always follow the safety instructions:



Unauthorized persons may only access the operational area of the slurry scraper or feed pushing robot under supervision!



Always keep at least 50 cm around the robot clear. Take extreme care not to become trapped!

Keep children and unauthorized persons away from the charging station!
Place a barrier or fence around the charging station so the cattle cannot get near it!



When carrying out work, switch off the power:
1. Turn the main switch OFF.
2. Remove the plug from the power socket.

2.1. Safety precautions

Make sure the area is safe:

1. Hang up warning signs (Figure 2-1) at the entrance to the barn.



Figure 2-1 Warning sign

In the event of a collision between the robot and an obstruction, the robot will stop by means of the built-in collision safety device (see the user manual relating to the specific robot).

2.2. FCC required user manual statements

Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Warning (Part 15.21)



Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Interference Statement (Part 15.105 (b))

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF Exposure Warnings

This portable transmitter with its antenna complies with FCC/IC RF exposure limits for general population / uncontrolled exposure.

2.3. Section 8.4 of RSS-GEN

This Device complies with Industry Canada License-exempt RSS standard(s). Operation is subject to the following two conditions: 1) this device may not cause interference, and 2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



3. Technical specifications

3.1. J-Link

Type	J-Link
Dimensions	38x24x8 cm
Weight	3 kg
Power supply	230 VAC
	50 Hz
Connectivity	Ethernet
Manufacturer	JOZ b.v.
	Industrieweg 5
	1617 KK Westwoud
	The Netherlands

3.2. J-Touch

Type	J-Touch
Dimensions	25x17x4 cm
Weight	0.34 kg
Power supply	230 VAC
	50 Hz
Connectivity	Wired
Manufacturer	JOZ b.v.
	Industrieweg 5
	1617 KK Westwoud
	The Netherlands

4. Summary

4.1. Composition

Legend for Figure 4-1:

1. USB connection
2. J-Link
3. Data cable
4. J-Touch

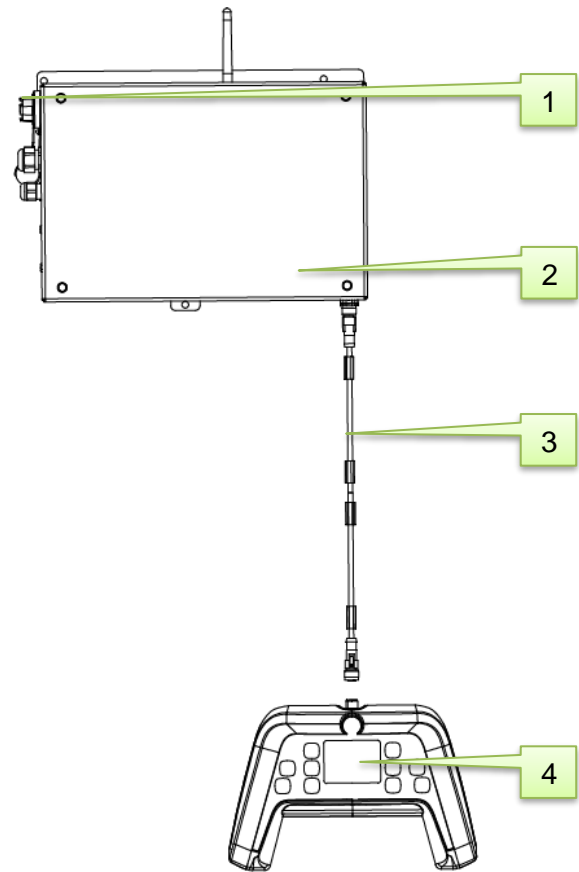


Figure 4-1 J-Link summary

4.2. Location

The J-Link is fitted above the battery charger at the rear of the J-Load/charging station.

Legend for Figure 4-2:

1. J-Link
2. Battery charger (see robot manual)

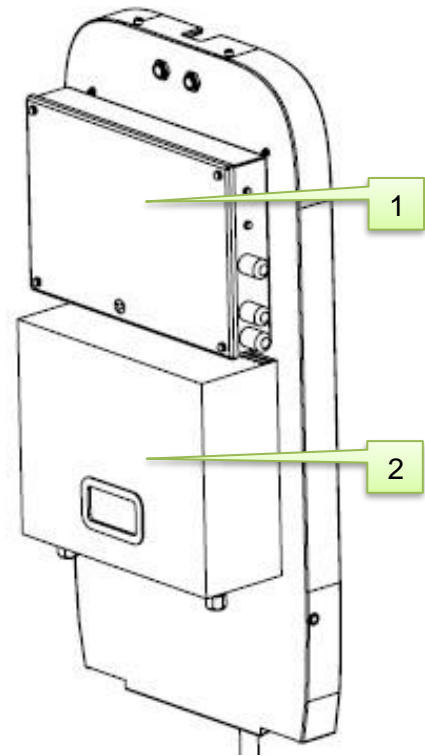


Figure 4-2 Location of J-Link

4.3. J-Touch controller



The J-Touch is not supplied with the J-Link. The J-Touch is a part of the robot and can be used on J-Link.

Legend for Figure 4-3:

1. Home: back to the starting menu
2. Reverse navigation button
3. Forwards navigation button
4. Selection button
5. Selection button
6. Touchscreen
7. Robot On / Off button
8. Selection button
9. Selection button
10. Turn left navigation button
11. Turn right navigation button
12. Back: go to previous screen

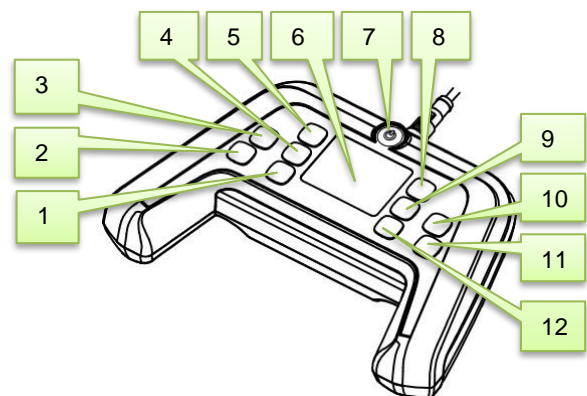


Figure 4-3 J-Touch controller

4.4. Type plate

The type plate (Figure 4-4) is mounted to the left of the antenna on the top of the J-Link.

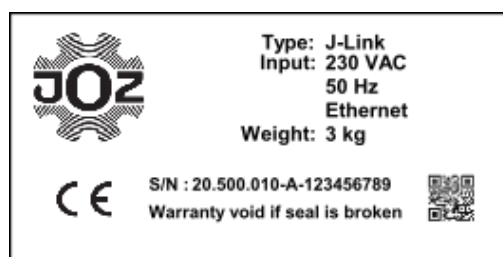


Figure 4-4 Type plate

4.5. Serial number and Token

The serial number plate (Figure 4-5) is mounted in the upper right corner on the front of the J-Link.

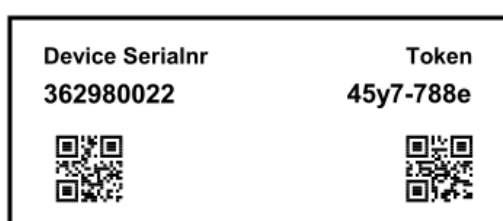


Figure 4-5 Serial number and Token

5. General description

5.1. J-Link (access point)

The J-Link (Figure 5-1) serves as robot data storage.

The J-Link communicates wirelessly with the robot(s) via a ZigBee connection.

It allows:

- Data to be exchanged.
- Data to be displayed.

The J-Link stores data for 30 days, after which the old data is overwritten.

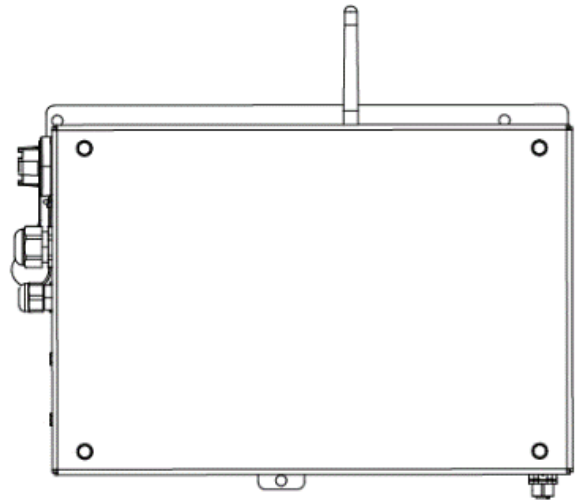


Figure 5-1 J-Link

5.1.1. JMS

The J-Link must be connected to the internet for it to be able to communicate with the JMS (JOZ Management System).

Every ten minutes, the data is sent to the JMS database in bundles of 1000 lines.

The serial number and token (see §4.5) are also used for the purpose of identification and security.

5.2. J-Touch controller



The J-Link will work without the J-Touch. The J-Touch is part of the robot and only functions as a display and hand controller.

The J-Touch (Figure 5-2) is used to change the settings on the J-Link.

The J-Touch must be connected to the J-Link by a data cable.



Figure 5-2 J-Touch

5.3. USB connection

Stored data can be copied to the USB stick using the USB socket on the side of the J-Link (Figure 5-3).

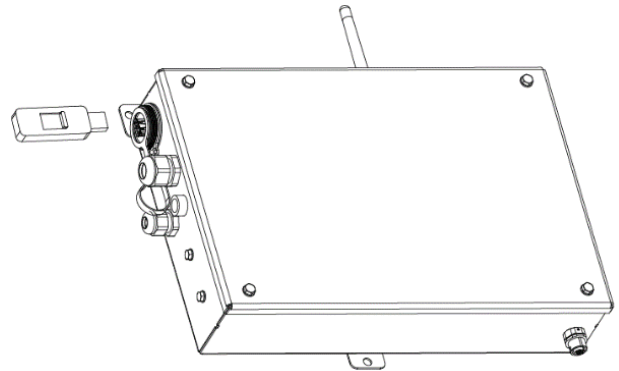


Figure 5-3 USB connection

6. Controls



Unauthorized persons may only access the operational area of the slurry scraper or feed pushing robot under supervision!



Always keep at least 50 cm around the robot clear. Take extreme care not to become trapped!

Keep children and unauthorized persons away from the charging station!
Place a barrier or fence around the charging station so the cattle cannot get near it!



See the relevant robot manual for specific robot controls.



The J-Link is programmed by the engineer.



The J-Touch is not supplied with the J-Link. The J-Touch is a part of the robot and can be used on J-Link.

Follow the steps below to operate the J-Link:

1. Connect the J-Touch (Figure 6-1) using the data cable on the J-Link.

The touchscreen displays the various menus.

2. Press the icon or selection button required.

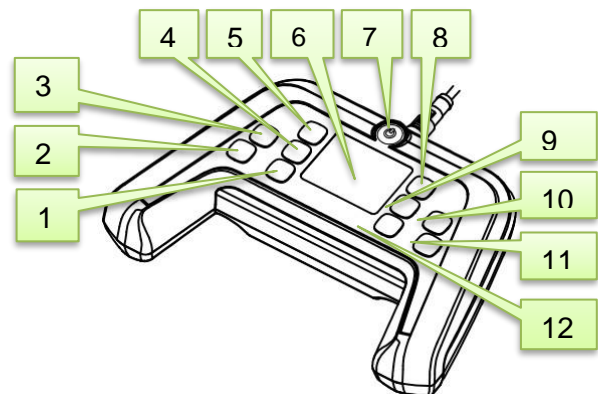


Figure 6-1 J-Touch controller

1. Home: back to the starting menu
2. Reverse navigation button
3. Forwards navigation button
4. Selection button
5. Selection button
6. Touchscreen
7. Robot On / Off button
8. Selection button
9. Selection button
10. Turn left navigation button
11. Turn right navigation button
12. Back: go to previous screen

6.1. Start screen

After connecting the J-Touch to J-Link, you will be directed to the Start screen. The settings on the J-Link are intended for the service engineer.

1. In the Start screen (Figure 6-2) press



Engineer

2. Enter the code **1955**.



Figure 6-2 Start screen

6.2. Pairing



The *pairing* function is optional and is therefore not a standard feature on the robot. If you wish to use this function, the right software will have to be installed in the robot.

Use *pairing* if there are multiple systems in the barn.

- Pairing links a robot to a specific J-Link.
- Pairing always allows data to be sent to the linked J-Link, even if there are other active J-Links in the area.

1. Place a USB stick in the J-Link.

2. In the screen (Figure 6-3) press



Pairing information

You will be directed to the “Pairing information” screen (Figure 6-4).

3. In the screen, press  Generate key

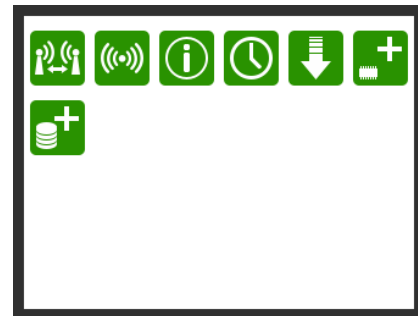



Figure 6-3 Pairing



Figure 6-4 Pairing information

4. Confirm your choice (Figure 6-5) by pressing  OK

Once approved, a key will be generated allowing the J-Link and the robots to be connected to one another.

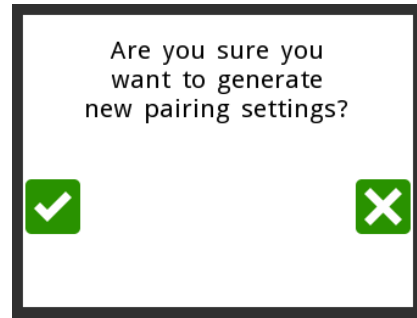


Figure 6-5 Confirm selection



5. In the screen (Figure 6-6) press  Save key



Figure 6-6 Save key

6. Confirm your choice with  OK

Once approved, the generated key will be written to the USB stick.

7. Place the key in the robot following the instructions described in the manual for the device concerned.

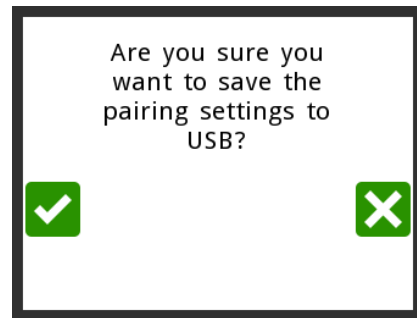


Figure 6-7 Confirm selection

When the pairing function is active, this can be seen in the Start screen (Figure 6-8).

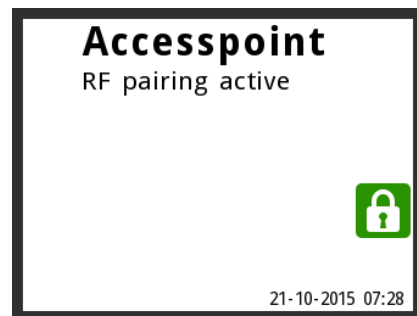


Figure 6-8 Pairing function active

6.3. Connections

The *connections* screen indicates the status of the connections.

1. In the screen (Figure 6-9) press

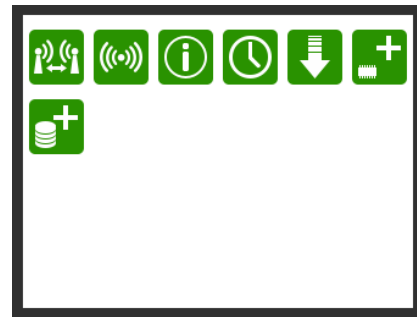


Figure 6-9 Start screen

You will be directed to the “Connections” screen (Figure 6-10).

Name	Value
Modem Accespoint	OK
Modem inst.	OK
RF Network.	OK
Local Network	OK
Internet	OK
Backoffice	OK

Figure 6-10 Connections

6.4. System info

The *system info* screen shows a list of installed software versions and serial numbers.

1. In the screen (Figure 6-11) press

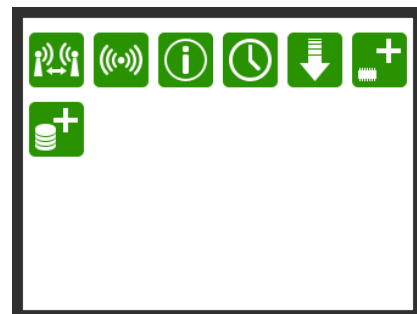


Figure 6-11 Start screen

You will be directed to the “System info” screen (Figure 6-12).

Name	Value
AP Version	-----
Remote Version	0.0.0-rc0
Firmware Version Modem	8615
Hardware Version Modem	7750
Token	No Token
AP Serial	3141592653

Figure 6-12 System info

6.5. Date/time

In the *date/time* screen you can set the date, time and time zone.

If the robot is not connected to the internet, these settings will be transmitted to the robot. With this option the automatic adjustment for DST is not active. This will need to be set by hand as and when necessary.

If the robot is connected to the internet, the date and time will be configured automatically according to the configured time zone. Time zone once have to be set using the PPI tool

1. In the screen (Figure 6-13) press



System info

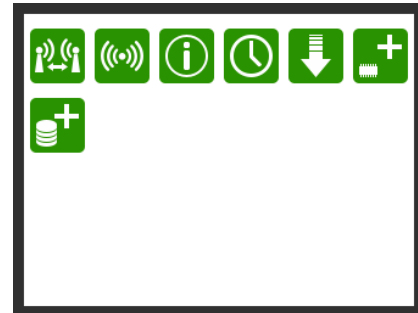


Figure 6-13 Start screen

You will be directed to the “Date/time” screen (Figure 6-14).

2. Select the date/time/time zone and adjust them using



and



3. Confirm your choice with



OK



Figure 6-14 Date/time

6.6. Updates

In the updates screen you can update the J-Link via the USB.

1. In the screen (Figure 6-15) press



Updates

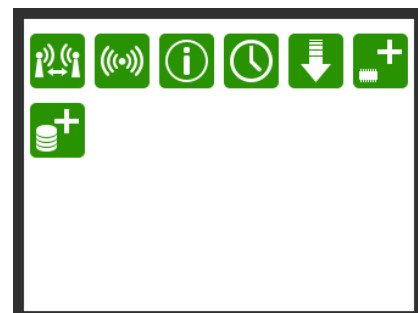


Figure 6-15 Start screen



The “Updates” screen (Figure 6-16) shows all the updates installed on the USB.

2. Select the required update.
3. Confirm your choice with

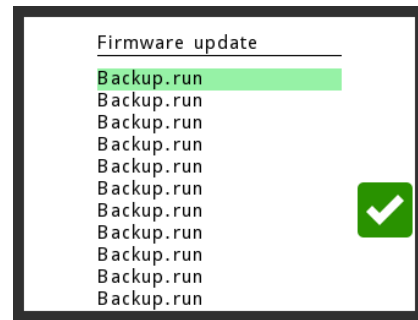


Figure 6-16 Updates

6.7. Create a backup

In the *back-up* screen you can back up data from the selected machine.

This data includes the routes and the timetable and can be reinstalled in the robot.

For restoring the back-up see the installation manual for the relevant machine.

1. In the screen (Figure 6-17) press



2. Select the required machine (Figure 6-18)
3. Confirm your choice with



“Backup finished” indicates that the back-up was successful.

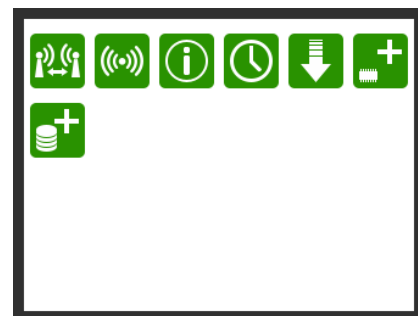


Figure 6-17 Start screen

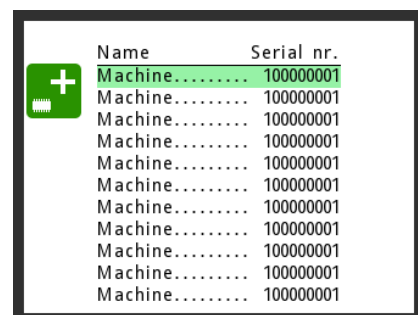


Figure 6-18 Back-up

6.7.1. Delete machine



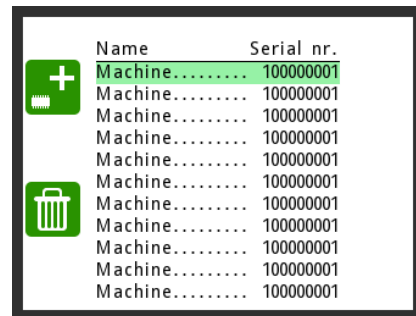
The *delete machine* function is only available when the J-Link is connected to the internet.

The *delete machine* function removes the selected machine and the corresponding data from the J-Link.

1. In the screen (Figure 6-19) press



Delete machine



Name	Serial nr.
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001
Machine.....	100000001

Figure 6-19 Delete machine

6.8. Create back-up database

In the *back-up database* screen you can back up data on the J-Link.

This data contains the routes of all machines on the J-Link and can be used to view all of the routes.

See “Route Viewer User manual” to view the backed-up routes.

1. In the screen (Figure 6-20) press



Create Back-up database

2. “Back-up database finished” indicates that the back-up was successful.

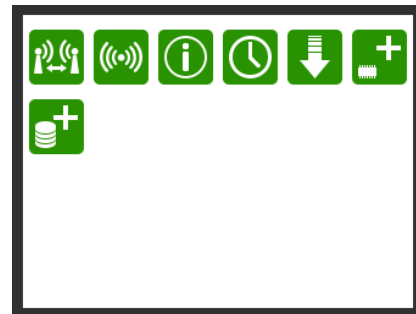


Figure 6-20 Start screen

7. Troubleshooting

See the maintenance manual for the robot that is being controlled by the J-Link.



8. Maintenance and repairs



When carrying out work, switch off the power:

1. Remove the plug from the power socket.

See the maintenance manual for the robot that is being controlled by the J-Link.

9. Storage and transportation

The following general rules apply for transportation and storage:

- Completely disconnect the J-Link from all power sources for transportation and storage.
- Always keep the J-Link dry and frost-free.

10.End of service life

For disposing of the J-Link, there are no specific rules other than current legislation covering electrical appliances.



**JOZ b.v.**

Industrieweg 5
1617 KK Westwoud
The Netherlands

P. +31 (0)228 566 500
F. +31 (0)228 566 570
E. info@joz.nl

Bank: ABN AMRO
IBAN: NL25 ABN A048 564 2832
ICC: Hoorn, 36 041 158
V.A.T. NL008785351.B01

Home of the clean stable
www.joz.nl