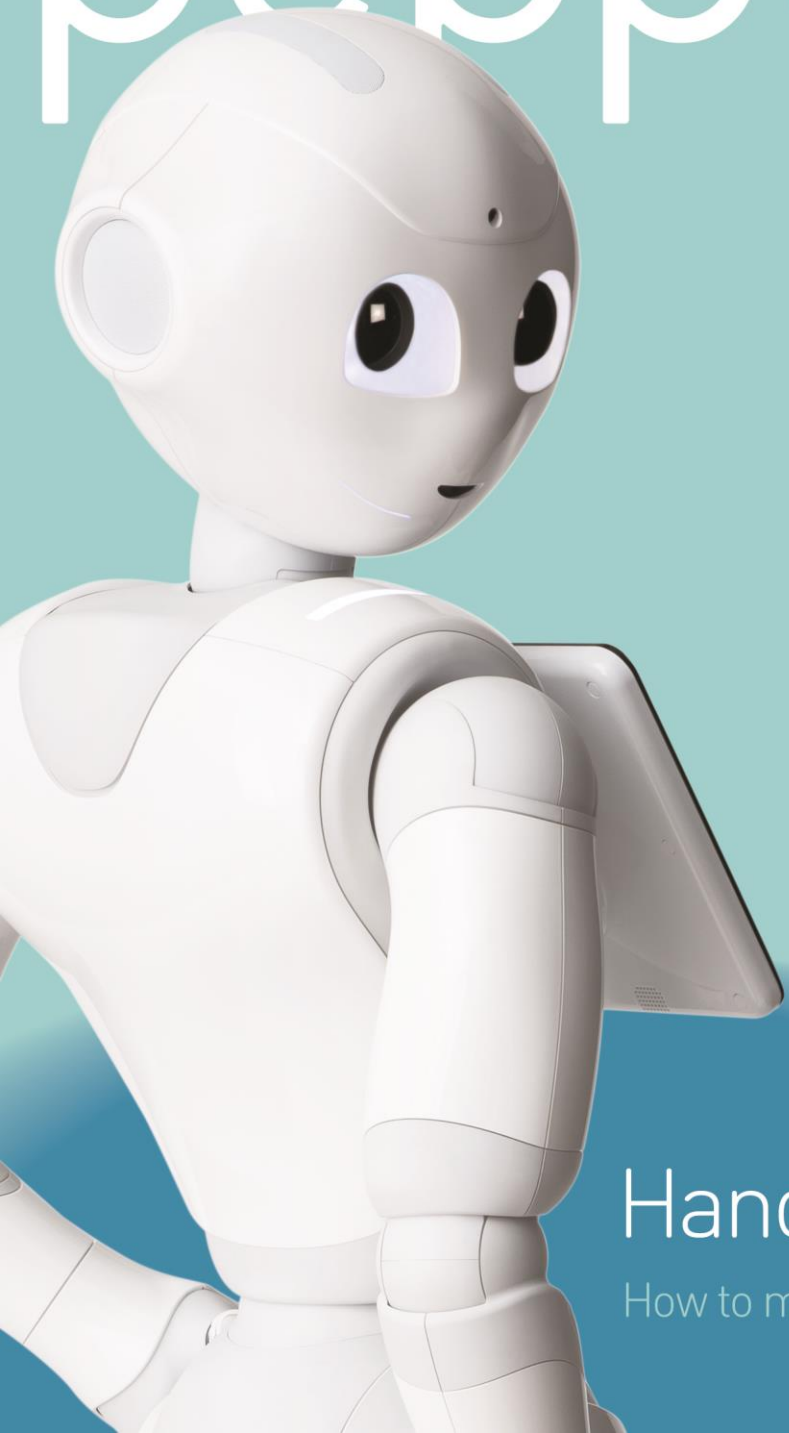
pepper

SoftBank Robotics



Handbook

How to manage Pepper

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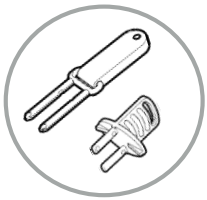
Pepper overview

Description

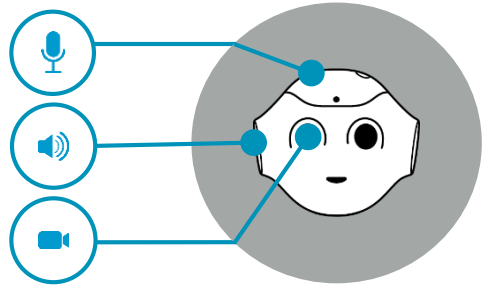


Pins

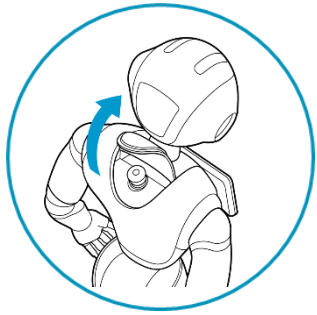
Microphone

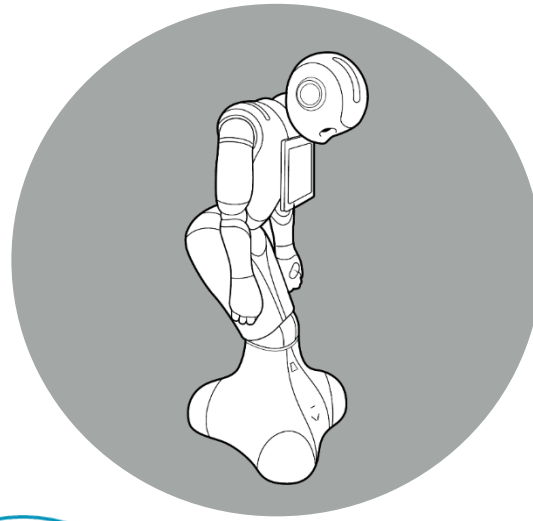
Speaker

Camera

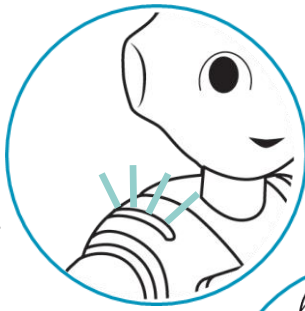


Soft Cover

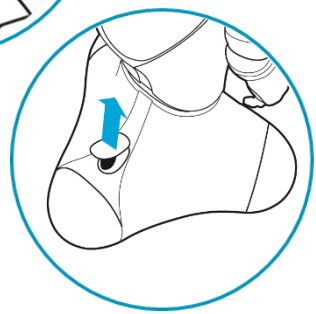




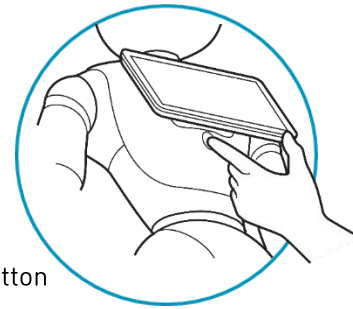
Shoulder LEDs



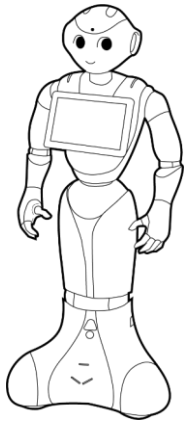
Charging Flap



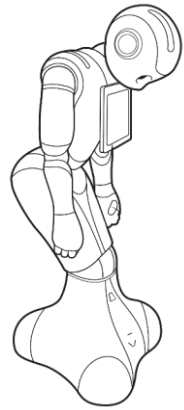
Chest Button



Postures



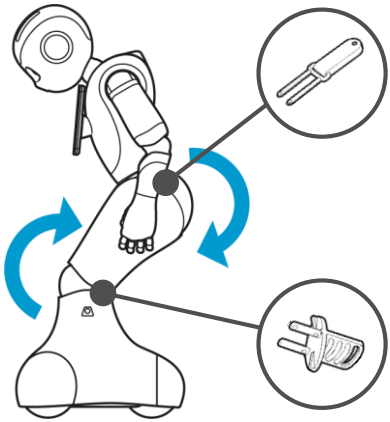
Standing Posture



Safe Posture

Wrong posture!

Using the Pins

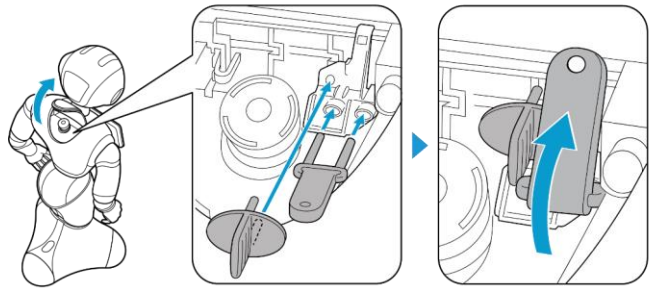


Pins **inserted**	Pins **removed**
Knee and hip joints can **move freely**.	Knee and hip joints are **blocked.**

Do not insert the Pins when Pepper is ON.
Insert the Pins only when:

- cleaning Pepper.
- reboxing Pepper.
- putting Pepper in Safe Posture.

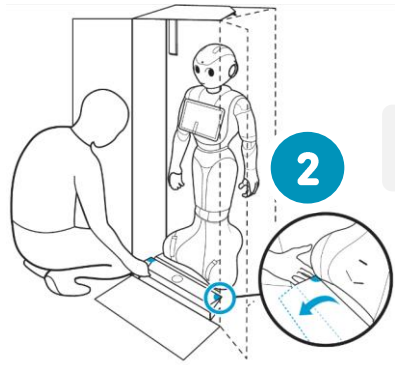
Don't forget to store the Pins after use.



Unboxing

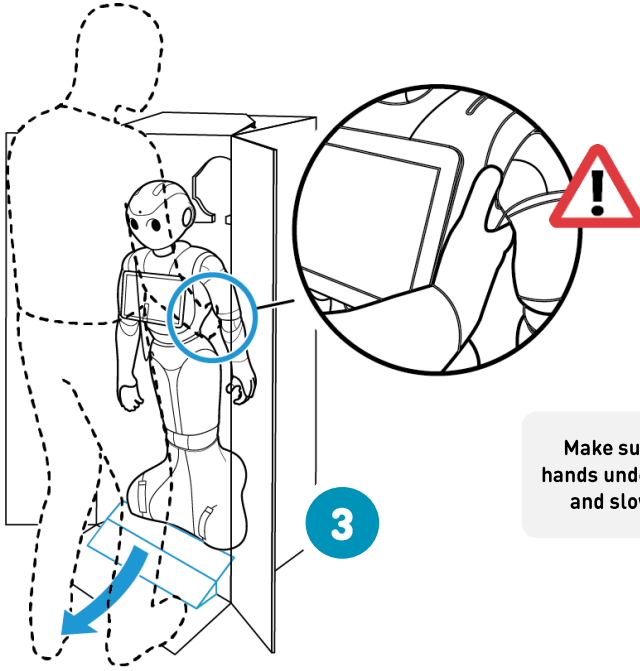
Preparation

Keep the box and protections.

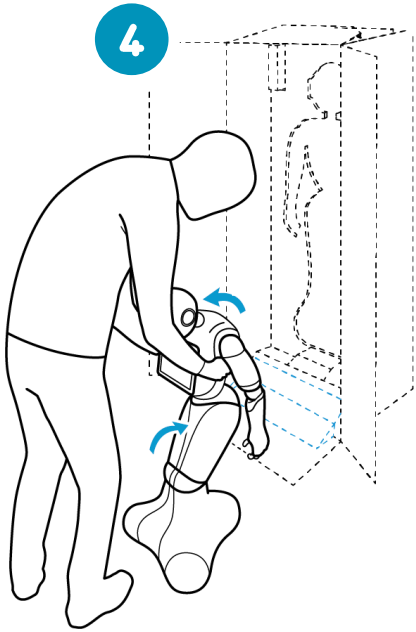


Pull the ramp out.

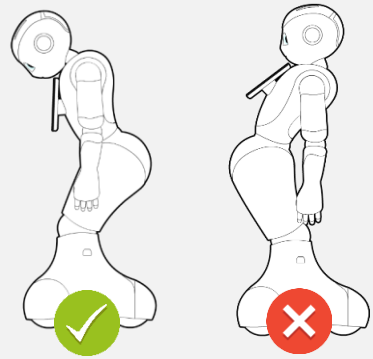
Getting Pepper out of the box



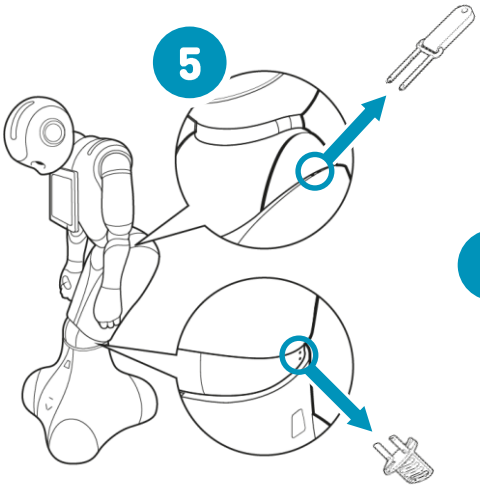
Make sure to place your hands under Pepper's arms, and slowly lift Pepper.



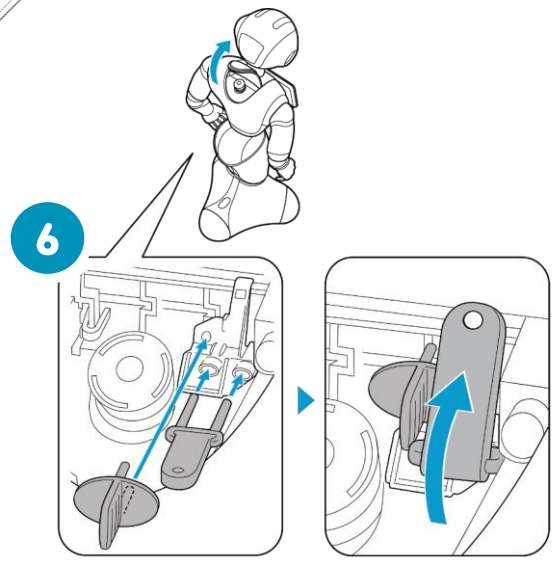
Pepper may be unstable and fall if not put in the right posture.



Getting Pepper ready



Remove the Pins, and store them.



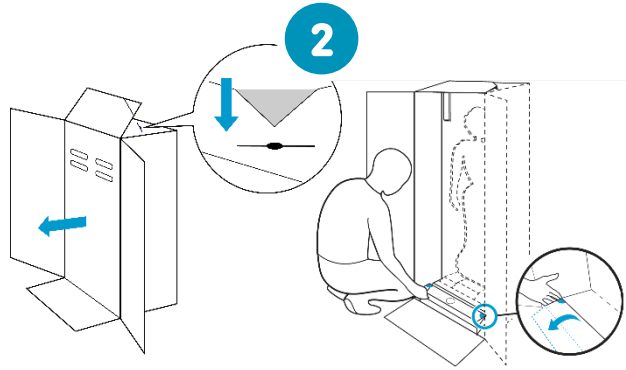
Reboxing

Preparation

1

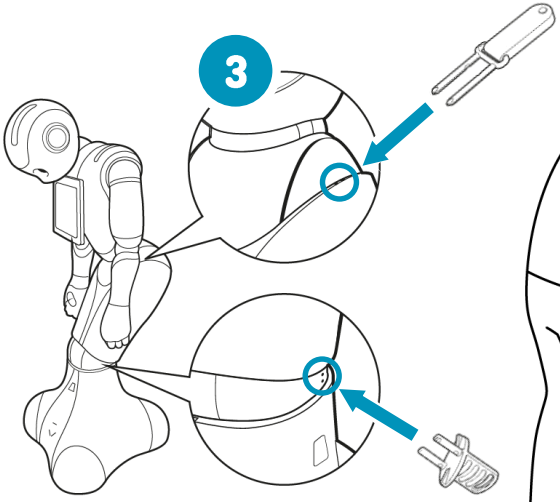
Pepper must be switched OFF and the Stop Button pushed.

2



Getting Pepper in the box

3



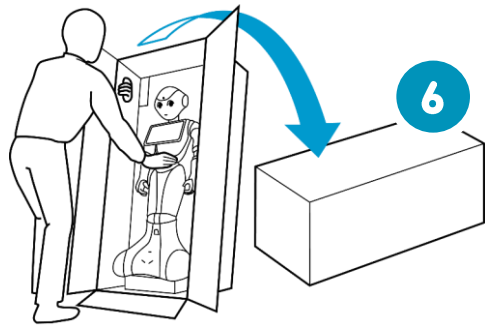
Insert the Pins.

4

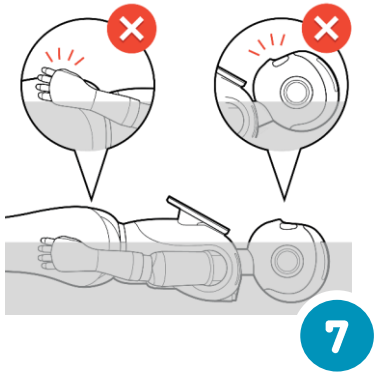
Be careful, when the Pins are inserted, Pepper's knee and hip will move freely.

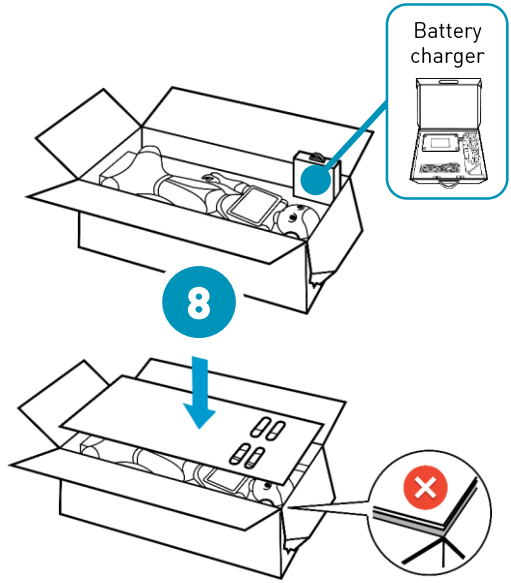
Bring Pepper in front of the box, and make sure the Charging Flap is closed.

Put Pepper in Standing Posture while pushing into the box. **Be careful, Pepper could be unstable.**



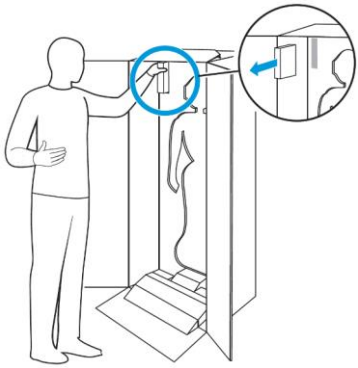
Adjusting Pepper in its box

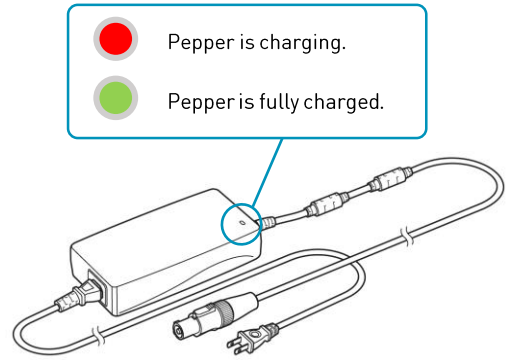




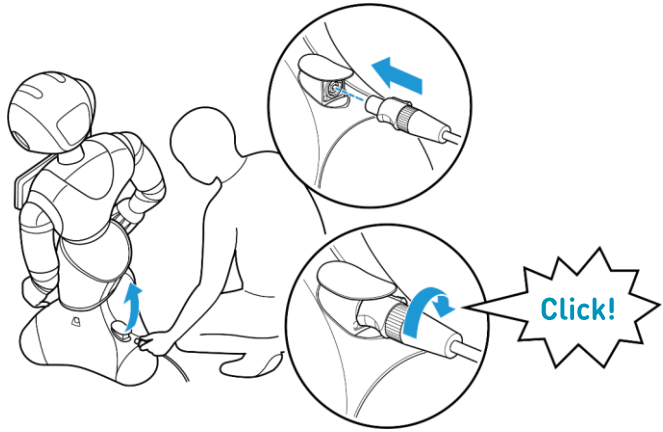
Charging Pepper

The battery charger





Plugging the battery charger



Autonomy & Charging time

A fully charged Pepper can last **8h~12h** depending on the activity.

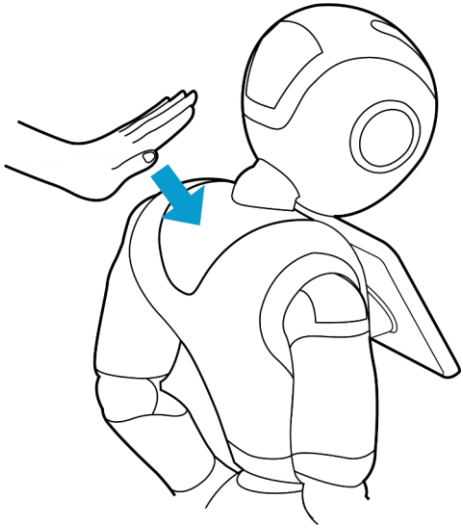
Charging time		Battery level
3h30	→ 80%	
8h	→ 100%	

Stop Button

When do I use the Stop Button?

For Security

- When Pepper is switched OFF
- When Pepper is stored or boxed
- During cleaning

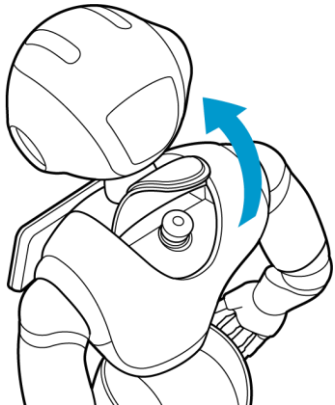


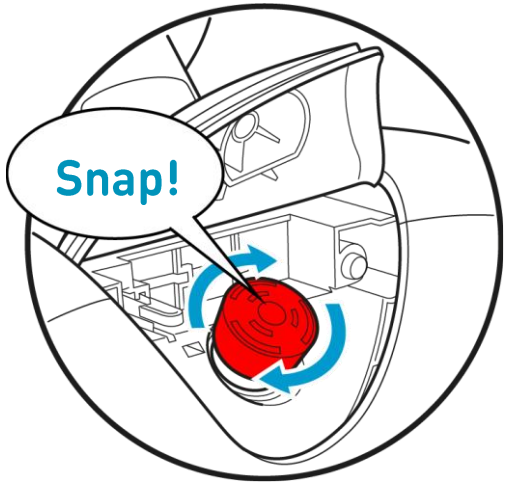
In case of emergency

- Liquid projection
- Pepper has fallen
- Unexpected physical behavior

Unlocking

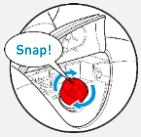
If the Stop Button is pushed down, make sure to unlock it before turning Pepper ON.



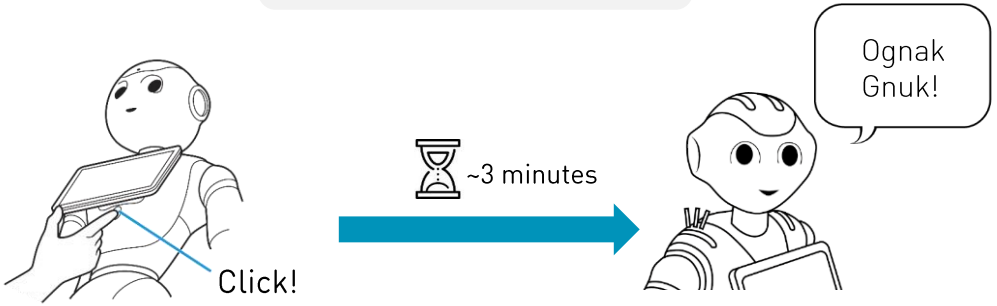


Operating Pepper

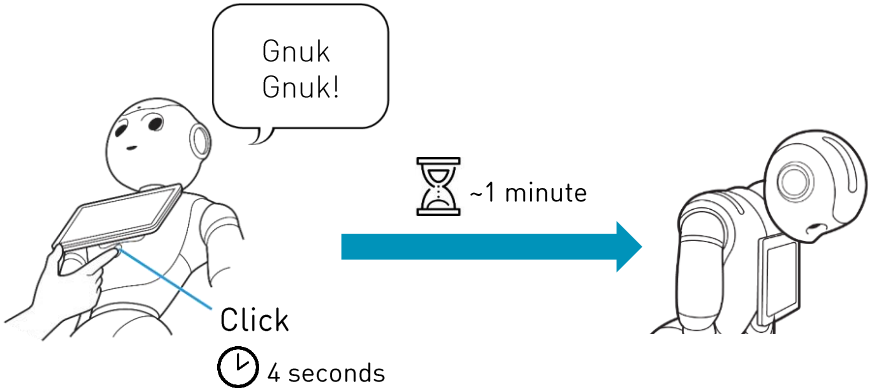
Turning Pepper ON



The **Stop Button** has to be unlocked before turning Pepper ON.



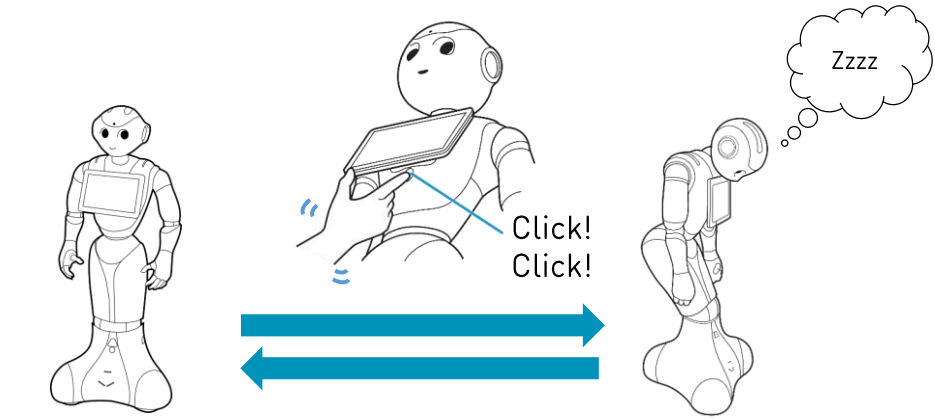
Turning Pepper OFF



If Pepper doesn't turn OFF using the above method, try to push on the Chest Button during 8 seconds, **and Pepper will switch OFF instantly.**

By using this method you could lose all your data.

Rest Mode

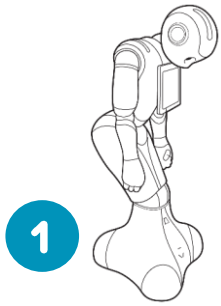


Standing Posture

Safe Posture

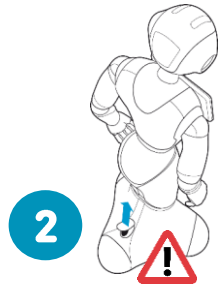
In Rest Mode, **Pepper stops its activities and motors**: it will not be able to speak or move by itself.

Moving Pepper around



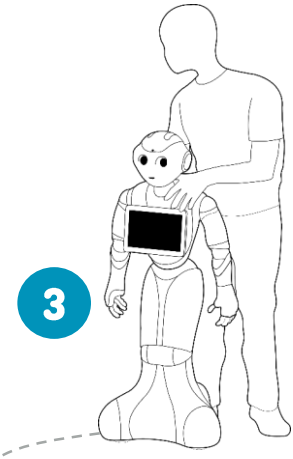
1

Pepper is switched OFF or in Rest Mode.



2

Open the Charging Flap.



3

Place one hand on the shoulder and the other on the hip and push Pepper to its new location.

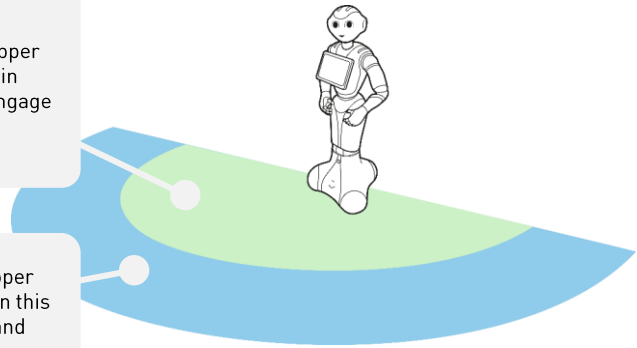
Don't forget to close the Charging Flap after moving Pepper.

Interaction with Pepper

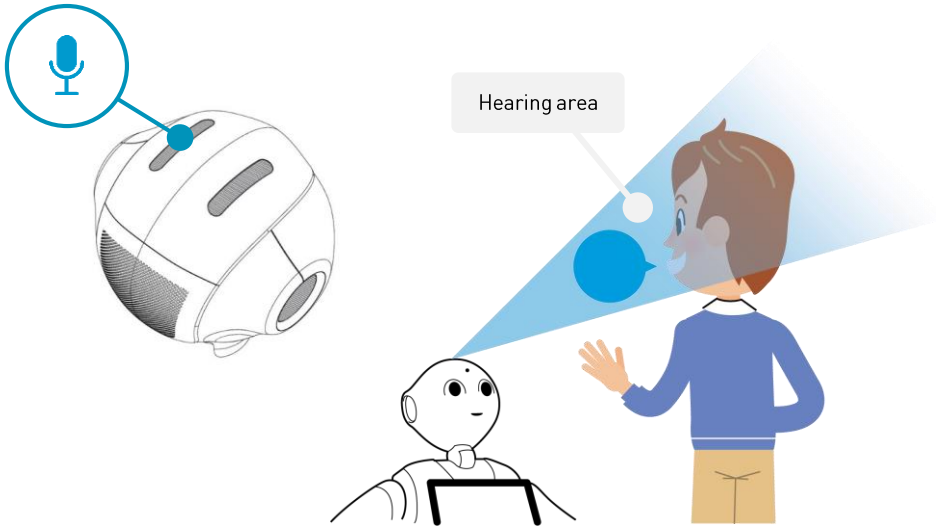
Engagement zone

ZONE 1 When Pepper detects a human in this zone it will engage the conversation.

ZONE 2 When Pepper detects a human in this zone it will react and make signs to encourage the interaction.



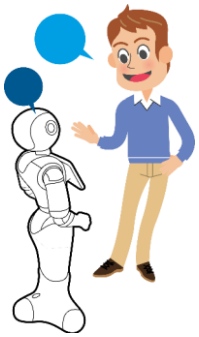
Microphone Performance



Pepper Hearing area is narrow. Keep in mind that **Pepper will only listen where it is looking at!**

Talking with Pepper

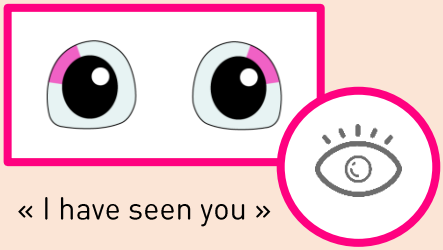
Pepper will need some help to understand you:



- Make short sentences.
- Don't speak too fast!
- Make sure Pepper is listening (see below).
- Stay close to Pepper.

Pepper won't listen to you at all times: it needs to see you before!

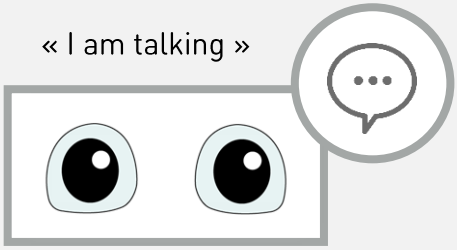
You can tell what Pepper is doing by **the color of its eyes.**



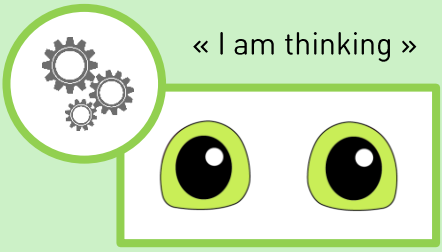
« I have seen you »

« I am listening »

« I am talking »



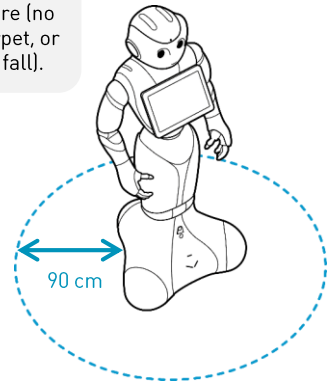
« I am thinking »



Choosing Pepper's location

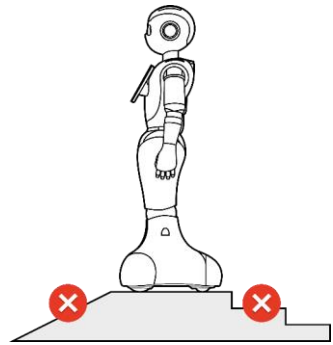
Location

The floor should be flat, dry and bare (no rug or thick carpet, or Pepper could fall).



Make sure that there is at least 90 cm (approximately 3 feet) of free space around Pepper.

Do not put Pepper near steps or slopes as it could fall.



Environment

Pepper should be placed in a quiet zone for voice recognition performance.

Make sure there is no intense light in Pepper's field of view, or interaction could be interrupted.

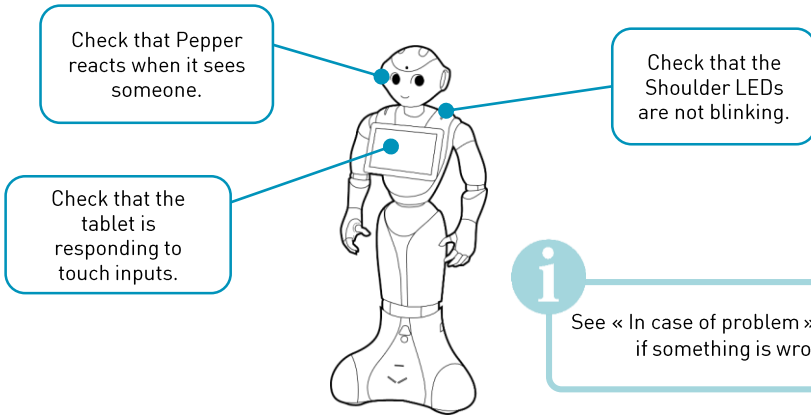
Pepper is designed for indoor use only.

There should be no obstacle within a range of 2 m in front of Pepper, as it could be recognized as a human.

Daily Maintenance

Pepper is operating

To ensure an optimum robot experience, you should **check the following points 2 or 3 times per day.**

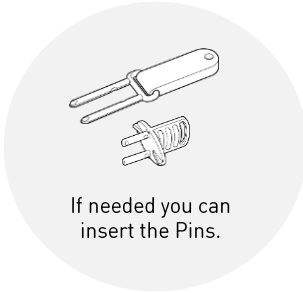


See « In case of problem » (page 17) if something is wrong.

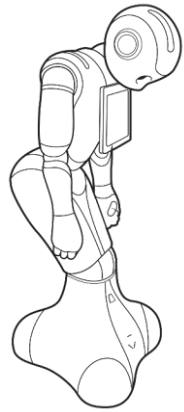
Cleaning Pepper

You should clean Pepper at least **once a week.**

Make sure that Pepper is switched OFF (Stop Button pushed) and unplugged during cleaning.



If needed you can insert the Pins.



You can use a soft dry cloth, or standard cleaning wipes.

Do not use water.

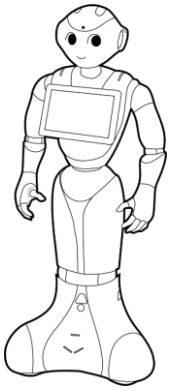
Do not use alcohol or ammonia-based products.

Wi-Fi requirements

Description

Pepper has one Ethernet connection and two Wi-Fi connections. **Only the Head Wi-Fi is required.**
WEP, WPA and WPA2 securities are supported. WPA2 is preferred.

Head Wi-Fi
IEEE 802.11 a/b/g/n,
Security 64/128 bit,
WEP, WPA, WPA2 personal



Tablet Wi-Fi
IEEE 802.11 a/b/g/n

Estimated bandwith

NAOqi OS update ≈ 400 MB

Update of content already installed on the robot ≈ 30 MB

Download applications during first configuration ≈ 300 MB

Every day network traffic ≈ 10 MB

Wi-Fi recommandations

Should have:

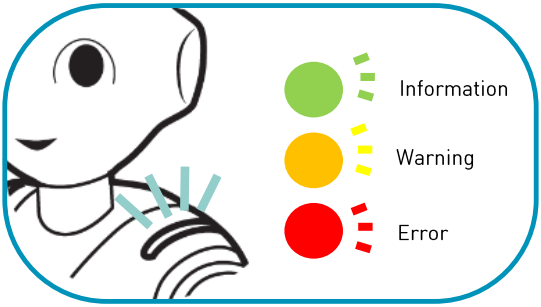
- Minimum download speed 10 Mb/s
- Minimum upload speed 5 Mb/s
- Signal above -65 dBm
- Maximum latency 50 ms

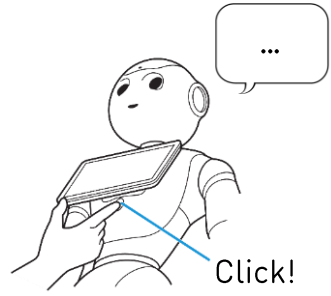
Should avoid:

- Hidden networks
- MAC address filtering
- Port filtering

In case of problem

Your robot doesn't move or speak?
Check if the **Shoulder LEDs** are blinking:



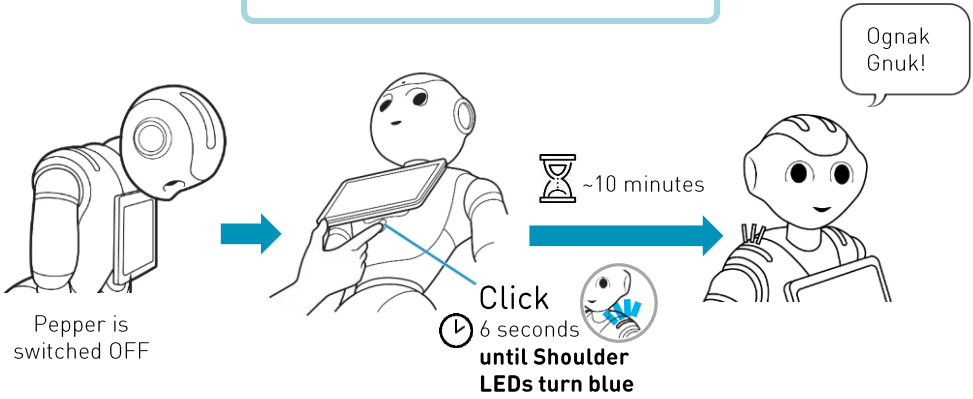


Push once on the Chest Button to listen to the **notification**.

If Warning or Error

Restart your robot using the below **Special start-up**. It will make Pepper reinstall the firmware of its electronic boards.

Special start-up



If LEDs are not blinking

Try to restart your robot normally. If the problem persists contact Support: https://account.aldebaran.com/support/

Checklist

Before contacting Support

Have you unlocked the Stop Button?

Page **9**

Is Pepper's battery fully charged?

Page **8**

Is the Wi-Fi connection working?

Page **16**

Did you try the Special start-up?

Page **17**

SoftBank Robotics Support: https://account.aldebaran.com/support/