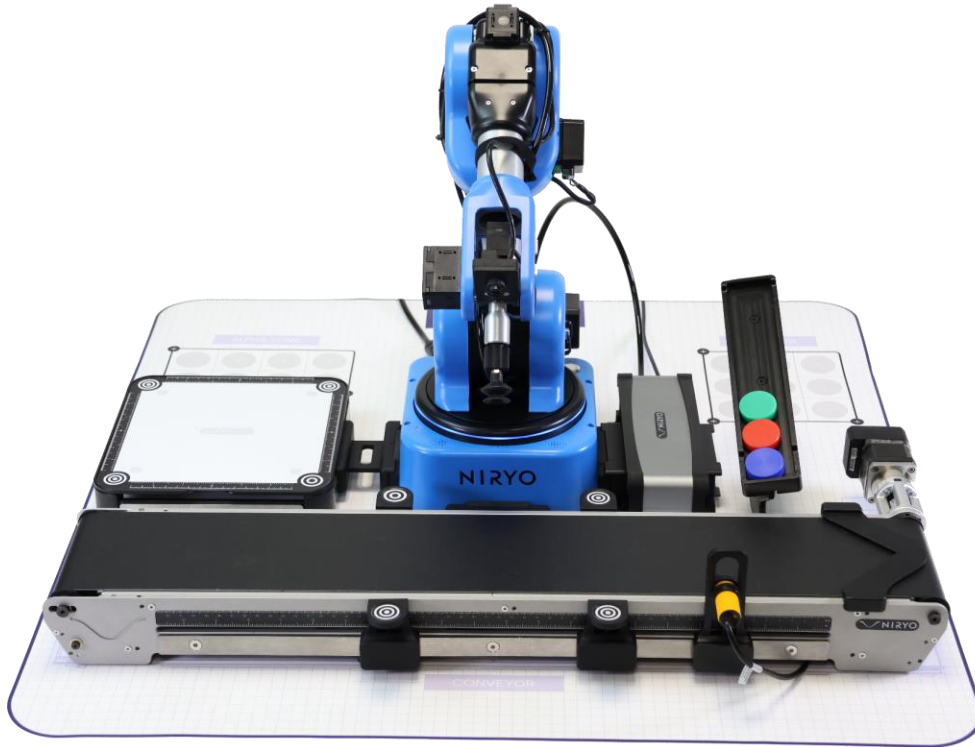


# Description of Bundle Discovery



## 3 lines description

**Bundle discovery** is the perfect pack to teach with **a plug & play solution** and an entire **ecosystem** to explore unlimited possibilities. This is a flexible, and innovative tool to enhance their teaching experience and unlock endless creative potential.

## **Short description**

Bundle discovery is the perfect pack to teach with a plug & play solution and an entire ecosystem to explore unlimited possibilities. Programmation, industry 4.0, IA initiation, start practicing with your students thanks to all accessories, our Ned2 robot and exclusive content

## Large description

### CONTENT OF BUNDLE DISCOVERY

- 1 Ned 2
- 1 Large Gripper
- 1 Adaptative Gripper
- 1 Vacuum Pump
- 1 Vision Set
- 1 Electromagnet
- 1 Discovery Vinyl
- 1 Conveyor Belt
- 2 Snaplink kit
- 1 TCP
- Doc: Start guide

### LARGE GRIPPER

The **large grippers** in your **Bundle Discovery** is compatible only with the **Ned2** robot, you will be able to catch larger objects than with the custom gripper provided with the robot. The two fingers of the gripper remain parallel, so the grabbed object does not slide forward.

You can also precisely grab small objects from a greater distance.

The insertion of the gripper in the robot has been changed to a magnetic tip, it enables the grippers to be changed in a faster and efficient way.

The weight of the gripper has been reduced (79,2g) thanks to a lighter motor (Dynamixel XL330). This enables the robot to increase its payload capacity with the gripper connected without harming its reliability.

Find all the information about the **large gripper** [here](#).

## ADAPTATIVE GRIPPER

The **adaptive gripper** in your **Bundle Discovery** is compatible only with **Ned2** robot, you can grab non-standard objects that are difficult to handle with other grippers: round objects, pens, apples, eggs, etc.

You can be sure that the object will be correctly caught in the center of the gripper.

This gripper is perfect for fragile objects, or when the shape is not regular. You can also grab hollow objects from the inside (e.g. aluminum tube).

The insertion of the gripper in the robot has been changed to a magnetic tip, it enables the grippers to be changed in a faster and efficient way.

The weight of the gripper has been reduced (83g) thanks to a lighter motor (Dynamixel XL330). This enables the robot to increase its payload capacity with the gripper connected without harming its reliability.

Find all the information about the **adaptatiive gripper** [here](#).

## CONVEYOR BELT

This **discovery bundle** includes 1 stand-alone **conveyor** enabling you to prototype an industrial production line. The Conveyor is composed of an infrared module, a ramp, 6 manipulable objects, an end-of-stroke stopper and 4 Workspace markers, enabling you to recreate a workspace and interact with our Vision Set (product sold separately).

We have reworked the structure of the Conveyor to offer you a powerful, easy-to-install magnetic holding system, so you can focus solely on your Industrie 4.0-oriented projects.

The **Conveyor** comes with a Control Box for stand-alone use.

Compatible with **Ned2**.

## Main features

- Bidirectional
- Adjustable speed
- Autonomous
- Adapted to the **Ned2**'s ecosystem.

Control the Bundle Conveyor Belt in different ways:

- With your robot:
  - Connect the Conveyor to **Ned2**,
  - Choose your programming method (**Niryo Studio, Python API...**),
  - You are ready to control your production line.
- With its control box:
  - Connect the control box to a power source,
  - Connect it to your Conveyor,
  - Control your Conveyo in full autonomy, by adjusting its speed thanks to the potentiometer present on the box.

Find all the information about the **conveyor belt** [here](#).

## VACUUM PUMP

A vacuum pump is a very efficient system for "pick and place" (moving objects). With this tool only compatible with **Ned2** robot, you can remove plastic lids from cans, move coffee capsules, or large objects with a flat, non-porous surface.

Thanks to its 3 different models of suction, you will be able to grab a wide range of objects having a smooth surface in order to realize your use cases.

Most vacuum pumps make so much noise that it is impossible to work next to the robot. The pump developed by **Niryo** is different: it is quiet, but has the same efficiency as a normal vacuum pump, for the same price. A servomotor activates a syringe that will suck the air to catch the object.

The box of this vacuum pump is customized by Niryo!

Inserting the vacuum pump into the robot is easy thanks to the product's magnetic tip, which allows a quick and efficient tool change.

Find all the information about the **vacuum pump** [here](#).

## **VISION**

## **SET**

Give new perspectives to your projects and prototype advanced **industry 4.0** processes with the **Vision Set** included in your **Bundle Discovery**.

The **Vision Set** gives **Ned2** the ability to detect objects and select the ones you want to interact with. It comes with a camera and objects of different shapes and colors to allow you to study topics such as **image recognition, machine learning and Artificial Intelligence** thanks to the contribution of **vision**.

The **Workspace**, also included in the **Vision Set**, is designed to work horizontally, vertically or even tilted. Its design, based on nano-suction technology, makes it sticky and repositionable.

## Main features

- Object detection based on shape and color
- Easily perform advanced functions such as visual picking thanks to the new blocks in **Niryo Studio's Blockly** interface.
- An onboard camera on the wrist for a global field of view
- A modular workspace that can be used in the orientation and inclination of your choice.
- Adapted to the **Ned2's** ecosystem.

## Using the Vision Set

- Install the **Vision** module on the robot;
- Connect it to the robot through **Ned2** back panel thanks to USB 3.0 ports;
- Choose your programming approach:
  - **With Niryo Studio**
    1. Open the visual programming interface (**Blockly**).
    2. Perform a workspace calibration.
    3. Use the new blocks to perform advanced functions.
  - **With a TCP script**
    1. Use the TCP Client/Server environment of the robot.
    2. Write a script in the desired programming language.

3. Use the new functions introduced by the **Vision Set**.

### **Content of the pack**

- 1 x Camera
- 1x Calibration tip
- 2 x Screws to fix the camera on the support
- 1 x Workspace
- 6 x Objects to handle (3 squares & 3 rounds)
- 1 x USB cable
- 2 x Tape scratches to attach the cable

The Vision Set is sold with the content mentioned above.

To go even further in the implementation of Industry 4.0 oriented processes, couple Ned2 and your Vision Set with our Bundle Conveyor Belt (v2).

Find all the information about the **vision set** [here](#).

### **ELECTROMAGNET**

With the **electromagnet** in your pack, compatible only with **Ned2** robot, you can easily pick and place small metal parts (or several at a time), which may be impossible with other grippers, especially for very small parts (screws, washers, nuts, ...).

The insertion of the gripper in the robot has been changed to a magnetic tip, it enables the grippers to be changed in a faster and efficient way.

Find all the information about the **electromagnet** [here](#).

## **DISCOVERY VINYL**

Thanks to its defined spaces, you'll be able to easily place your elements to carry out your use cases.

## **TCP**

The TCP will help the robot find its way around its axes.

## **SNAPLINK**

The Snaplink system connects all the elements of the Bundle Discoverye in a single gesture. Once the links have been installed, your set-up is ready.



**6 599,00 € Excl. VAT**

**7099.00 \$ Excl. VAT**

## **YOUR PERSONALIZED ASSISTANCE PROGRAM:**

Our Expert+ Program offers you:

- Installation and configuration of your products with step-by-step assistance
- Assistance with your applications: our experts can advise you on Matlab, Blockly, ROS, Python and Ned2-compatible environments (thanks to customized program development on request).
- Assistance with practical exercises to prepare your courses
- Training to carry out 1 practical task of your choice from a list
- Assistance with product programming (Matlab, Blockly, Python)



**590,00 € Hors TVA**

**590.00 \$ Hors TVA**

## **YOUR ONLINE EDUCATIONAL RESOURCES PLATFORM:**

We offer you an online educational resource platform called **Niryo Academy** which includes:

- Written assignments with answer keys
- Regular updates with new tutorials created by teachers
- Video tutorials to help you complete the assignments

We have a **Freemium offer** that gives you 6 months' use of Niryo Academy with every purchase until 31/12/2024.



**799,00 € Hors TVA**

**990.00 \$ Hors TVA**

## **WARRANTY:**

For all NED 2 robots, Niryo includes a 1-year manufacturer's and publisher's warranty on :

- 6-axis arm
- Conveyor
- NiryoStudio application
- NiryoAcademy platform

The warranty covers :

- material damage upon receipt of equipment
- hardware or software malfunctions
- hardware or software performance that does not comply with technical specifications
- hardware or software deterioration unrelated to use
- inaccessibility of the software or platform