

HARDWARE SPECIFICATION

SCAPE Mini-PICKER™

Product Option MP10-03



Introduction

The easy way to Bin-Picking. SCAPE Mini-Picker includes a complete Tool Unit with a 3D sensor and two grippers (suction cup & finger gripper). Ready to be mounted on your robot¹. PC and all necessary software to get started are included.

SCAPE Product Options

| | | |
|---|---------|---|
| ✓ | SW10-20 | SCAPE Mini-Picker Software Suite™ |
| ✓ | OP13-08 | SCAPE Grid Scanner Recognition™ - Compact |
| ✓ | OP17-03 | SCAPE Automatic Self Test™ |
| ✓ | TC10-20 | SCAPE Part Training Studio™ |
| ✓ | TU10-11 | Tool Unit Compact |
| ✓ | TA11-01 | Suction cup gripper |
| ✓ | TA11-03 | Finger gripper |
| ✓ | PC10-20 | SCAPE Controller PC |

Tool Unit with 3D sensor and Suction Cup with Built-in Collision Protection



The SCAPE Mini-Picker Tool Unit is optimized for Bin-Picking in more complex applications. It features two grippers, one suction cup and one finger gripper, a 3D sensor and various other sensors.

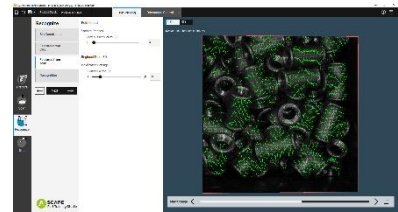
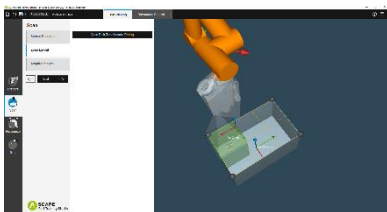
SCAPE Grid Scanner Recognition™ - Compact



SCAPE Grid Scanner Recognition™ - Compact gives high flexibility. Structured light is projected onto the parts and from the image acquired by the camera a 3D point cloud is obtained.

SCAPE Part Training Studio™

| | | |
|---|---------|---|
| ✓ | TC10-20 | SCAPE Part Training Studio™ enables you to perform full training of new parts for Pick & Place and Bin-Picking without programming. Offline training is based on 3D CAD models. |
|---|---------|---|



¹ Can be used with KUKA, ABB, and Universal Robots. Interface plate is included, just inform Scape about robot brand and model.

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Introduction

Pick your parts directly from the bin using the SCAPE Mini-Picker. The included two-gripper Tool Unit, makes it possible to do much more bin-picking compared to the SCAPE Easy-Picker. For instance, the finger gripper can be used to improve the high-precision grip during Orientation Control while using the suction cup in the bin. Picking different parts in the same cycle, i.e. without changing grippers, is now also much more versatile because different parts often needs different grippers.

For even more functionality, the SCAPE Mini-Picker can be expanded with several add-ons:

SCAPE 3D Orientation Control - Enables high precision gripping and guaranteed delivery in pre-defined poses.

SCAPE Part Turner - Gives the possibility of turning parts after precision gripping for maximum delivery flexibility.

Stationary Camera for Orientation Control - Faster cycle times with a second camera for Orientation Control.

Part Specifications

| | | | |
|---------------------|-------------------------------------|-----------------------|------|
| Maximum size | Approx. 200 mm in largest dimension | Maximum weight | 1 kg |
| Material | Any | | |

3D Sensor Specifications

| | | | |
|----------------------------|----------------------------------|--|-----------|
| Grid Scanner | Field of View | Near: 205 x 205 Far: 293 x 293 | [mm] |
| | Working Distance | 280 ... 565 | [mm] |
| | Acquisition Time | 0.3 seconds | [seconds] |
| | Resolution in X-Y Plane | 1.05 ... 1.37 | [mm] |
| | Depth Uncertainty (RMS) | 0.25 ... 0.44 | [mm] |
| | Depth Range | Near: 340 [280;480] Far: 445 [325;565] | [mm] |
| | Min Surface Area on Parts | Near: 4.9 x 4.9 Far: 5.8 x 5.8 | [mm] |
| | Light | Ring light: 660 (red) Pattern Projector: 625 (red) | [nm] |
| Grid Scanner Camera | Interface | GigE | |
| | Resolution | 2592 x 1942 | [pixels] |
| | View angle | 45 | [degrees] |

Tool Unit Specifications

| | | | |
|------------------------------|---|--|--|
| Dimensions (WxDxH) | 443 x 184 x 186 [mm] | Power | 24V AC |
| Suction Cups Included | Round with 2.5 bellows [mm]. 2 of each size: Ø5, Ø7, Ø9, Ø12, Ø14, Ø17.5, Ø20, Ø25 | Pneumatic Supply | 6-8 bar 28 liter/min ² |
| Weight | 5.0 [kg] | Energy Chain: IGUS I-PCLT-36B | Length: 3 m for robots with reach up to 1200 mm, 6 m for robots with reach above 1200 mm |
| Sensors | Vacuum sensor (x2), Collision sensor (x2) | Other Components | Tool Unit Controller with valves, power supply, ejector, bus-system |
| Bus system | UR robots: Modbus, Kuka robots: EtherCAT, ABB, Fanuc, Kawasaki: EtherNET/IP | | |

SCAPE Controller PC (PC10-20)

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|---|---------------------------------|-------------------------|---------------------|
| CPU | Intel Core i5-10400 (6 core) | Memory | 16 GB of RAM |
| Storage | 250 GB SSD | Graphics | Intel Graphics 630 |
| Ethernet | 3 Ethernet 100 Mbit Connections | Dimensions [mm] | 175 x 355 x 420 |
| Display Requirements³ | 1440 x 900 (24-bit colour) | Operating System | Windows 10 (64 bit) |

Requirements for Robot

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|-------------------------------|-----------------------------|
| Supported Robot Brands | KUKA, ABB, Universal Robots |
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² May vary. Depends on the size of suction cup, part surface, and cycle. Air must be supplied from external source.

³ Monitor, keyboard and mouse not included.