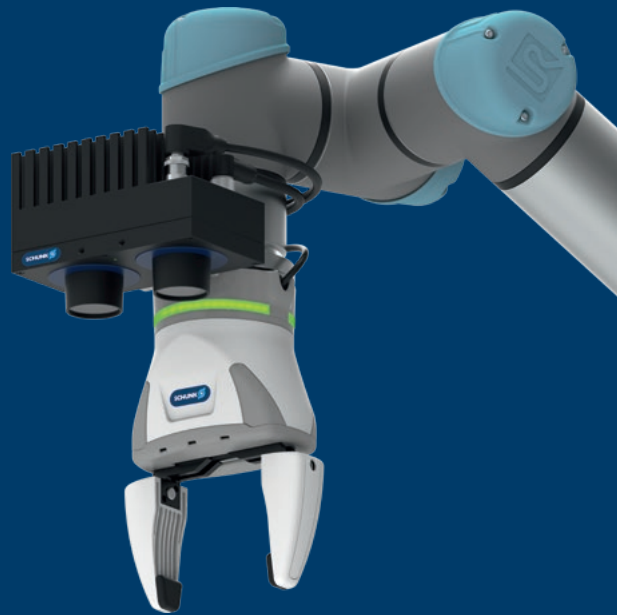




Superior Clamping and Gripping



Product Information

Application kit SGC

Easy. Intelligent. Reliable.

Application kit SGC

Application solution for gripping non position oriented workpieces consisting of camera system and gripper for simple automation with cobots.

Field of application

Application kit for object recognition and targeted gripping of non position oriented workpieces from one plane.



Advantages – Your benefits

Vision and handling expertise from a single source for a reliable complete solution across the entire application

Complete, perfectly attuned set of hardware, software, and service for quick and easy commissioning

Intuitive user interface of the software for easy configuration of the application

Integrated anti-collision device between gripper and transport box for high process reliability and less downtimes

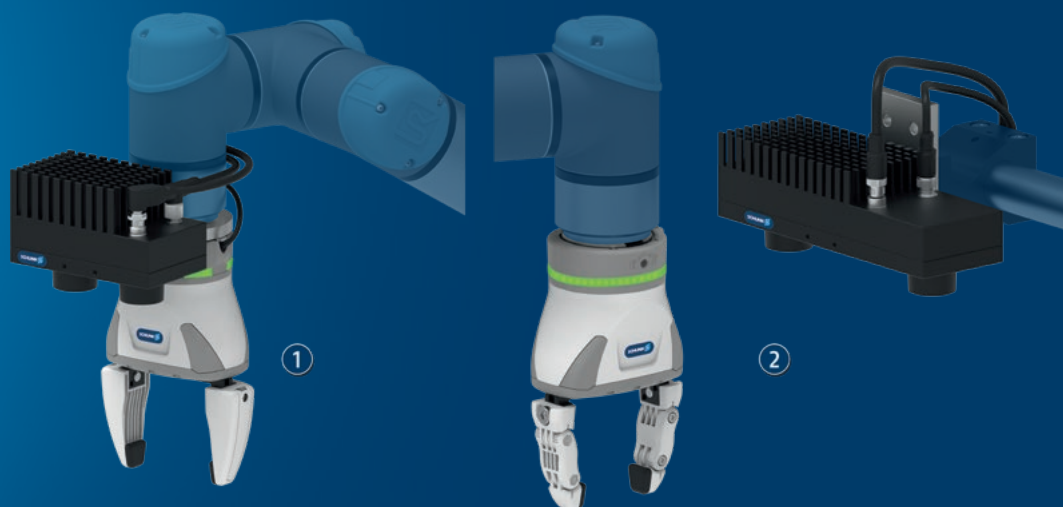
Plug & Work with the interfaces suitable for all robots from Universal Robots

Long and freely programmable gripper stroke for flexible handling of various workpieces

Functional description

The SGC application kit combines intelligent object recognition and flexible gripping in one intuitive set. The camera system reliably detects workpieces on a defined plane, even in poor lighting conditions, and calculates possible grips including collision checks. During workpiece detection, the software function "template matching" is

used to search for previously defined objects in a scene. If these are detected, collision-free grips and the approached reference points are automatically calculated, transferred to the robot and the gripper is pre-positioned in the required position.



- ① **Dynamic Kit SGC-65-EGH-UR-D**
for applications with multiple work areas for maximum flexibility.

- ② **Static Kit SGC-160-EGH-UR-S**
for applications with a firmly defined work area for optimized cycle times.

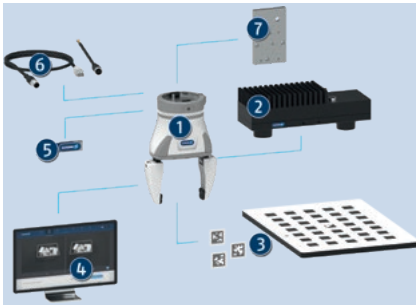
Detailed functional description

Static Kit SGC-160-EGH-UR-S



The static kit allows object recognition within a defined area at a working distance (distance between camera and base plane) between 0.5 m and 1.5 m. Compared to the dynamic kit, the working area is limited to the field of view of the camera, which is permanently mounted next to the robot. However, with this variant, gripping points can already be calculated during the robot movement, resulting in an optimized cycle time.

Scope of delivery of Static Kit SGC-160-EGH-UR-S



The following components of the SGC-160-EGH-UR-S are included in the scope of delivery:

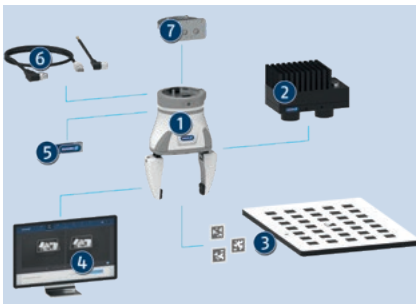
- ① Flexible gripper EGH
- ② 3D camera rc_visard 160
- ③ Calibration kit
- ④ Image processing software
- ⑤ USB stick with URCap plugin and example program
- ⑥ Connection cables
- ⑦ Adapter plate for fastening to pillar assembly system

Dynamic Kit SGC-65-EGH-UR-D



The dynamic kit is suitable for object detection in various work areas. The robot-mounted camera increases flexibility of application and makes it possible to cover a larger area within range of the robot. The working distance (distance between camera and base plane) should be between 0.2 m and 1.0 m.

Scope of delivery of Dynamic Kit SGC-65-EGH-UR-D



The following components of the SGC-65-EGH-UR-D are included in the scope of delivery:

- ① Flexible gripper EGH
- ② 3D camera rc_visard 65
- ③ Calibration kit
- ④ Image processing software
- ⑤ USB stick with URCap plugin and example program
- ⑥ Connection cables
- ⑦ Adapter plate with camera bracket for ISO50 flange

General notes about the series

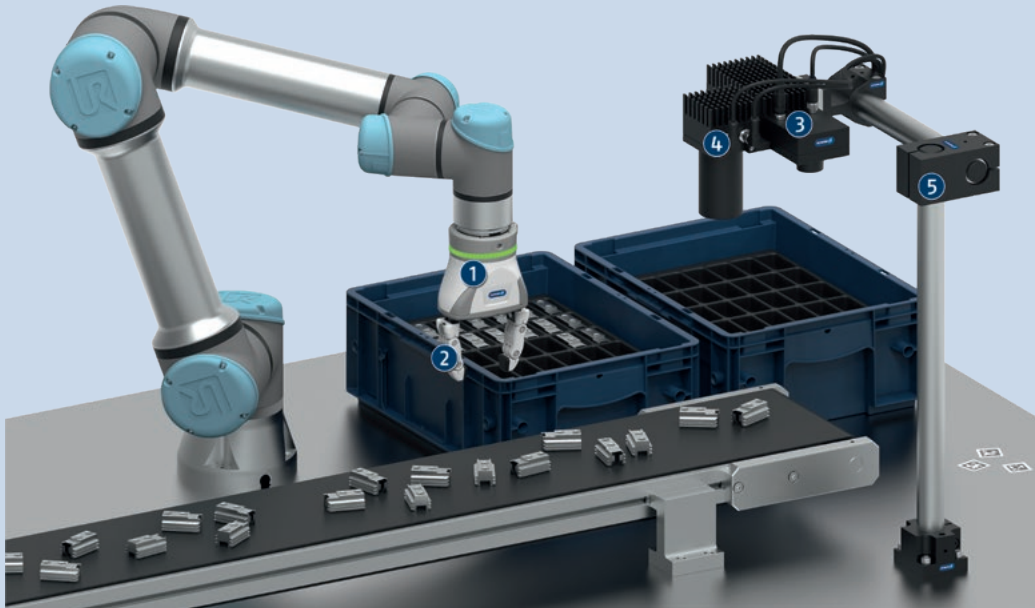
Warranty: 12 months

Gripping force: is the arithmetic sum of the individual force applied to each jaw at distance P (see illustration).

Workpiece weight: is calculated for force-fit gripping with a coefficient of static friction of 0.1 and a safety factor of 2 against workpiece slippage at acceleration due to gravity g . For form-fit or capture gripping, there are significantly higher permissible workpiece weights.

Base plane: is the plane on which the workpieces are located which are to be gripped.

Working distance: is the distance between camera and base plane.



Application example

Pick & place application for sorting non-oriented workpieces into storage boxes. The camera detects the workpiece position, calculates the gripping point, thereby enabling reliable and precise gripping and placing.

- ① Universal gripper EGH
- ② Flexible fingers AUB-F
- ③ 3D camera rc_visard 160

- ④ Sample projector rc_randomdot
- ⑤ Pillar assembly system SAS

SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Pillar assembly system



Manual change system



Force/torque sensor

① For more information on these products can be found on the following product pages or at [schunk.com](https://www.schunk.com).

Options and special information

Application kit: The kit includes all the necessary components to mount the gripper and camera to the robot and to put them into operation. In addition to the EGH starter kit and the camera, the contents include the necessary fastening material, tools, calibration kit, USB stick with URCap and sample program as well as connection cable.

Calibration kit: During commissioning, the camera system is calibrated in several steps; the necessary tools required for this as well as instructions are included in the application kit.

Software: For the gripper and camera, a software module for robots from Universal Robots is supplied on an enclosed USB stick. Furthermore, the USB stick contains an example program that can be used to easily implement pick & place applications.

Documentation: The application kit includes commissioning instructions for the entire system as well as assembly instructions for the universal gripper EGH. Further information including the software manual for the software modules for Universal Robots can be found at www.schunk.com.

Pattern projector: In applications where the workpieces are gripped from transport boxes, use of the pattern projector `rc_randomdot` is recommended to increase the quality of the spatial depth information. The pattern projector is not included in the scope of application kit and can be ordered separately.

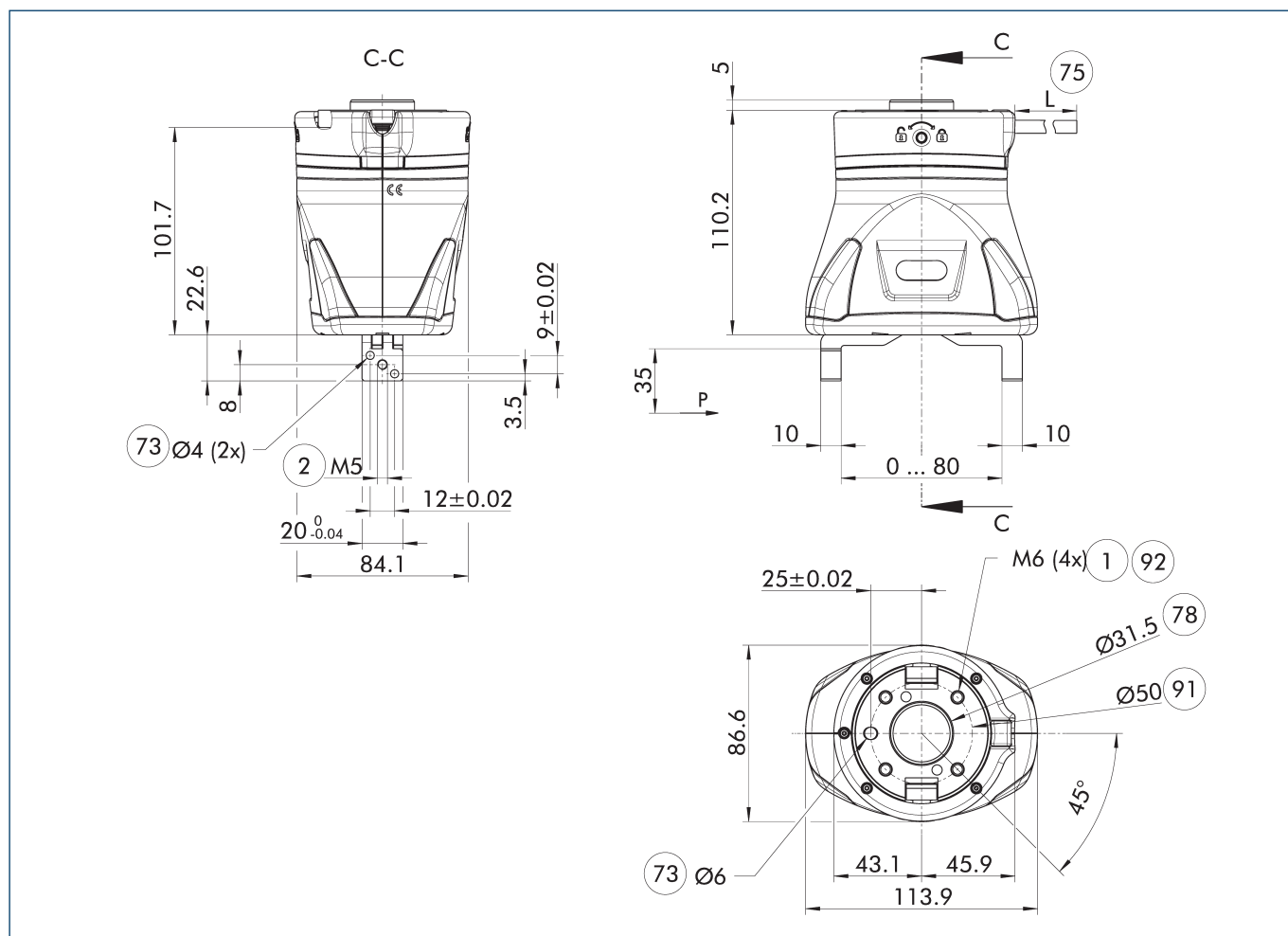


Technical data

Description		SGC 160-EGH-UR-S	SGC 65-EGH-UR-D
ID		1465651	1465678
Version		static	dynamic
General operating data			
Compatible robot		UR 3/5/10/16	UR 3/5/10/16
Min./max. ambient temperature	[°C]	5/50	5/50
Nominal voltage	[V]	24	24
Operating data gripper			
Variant		EGH 80-IOL-N-UREK Starter	EGH 80-IOL-N-UREK Starter
Stroke per jaw	[mm]	40	40
Min./max. gripping force	[N]	50/100	50/100
Recommended workpiece weight	[kg]	0.5	0.5
Weight	[kg]	0.95	0.95
Cable connector/cable end		open wire strands	open wire strands
Cable length	[m]	4	4
Communication interface/ specification		IO-Link/V1.1	IO-Link/V1.1
Operating data camera			
Variant		rc_visard 160	rc_visard 65
Image resolution		1,280 x 960 pixels, monochrome	1,280 x 960 pixels, monochrome
Focal length	[mm]	4	4
Opening angle (horizontal/vertical)	[°]	61/48	61/48
Depth measuring range		0.5 m to infinity	0.2 m to infinity
lateral resolution (x/y direction)		0.5 mm - 2.8 mm (at 0.5 m - 3 m working distance)	0.2 mm - 2.8 mm (at 0.2 m - 3 m working distance)
Depth resolution (z-direction)		0.1 mm - 3.3 mm (at 0.5 m - 3 m working distance)	0.04 mm - 8.0 mm (at 0.2 m - 3 m working distance)
Weight	[kg]	0.84	0.68
Communication interface/ specification		GigE Vision	GigE Vision
Operating data adapter plate			
Weight	[kg]	0.101	0.209
Material		Aluminum	Aluminum

① You can find more technical data on the included gripper in the catalog chapter EGH.

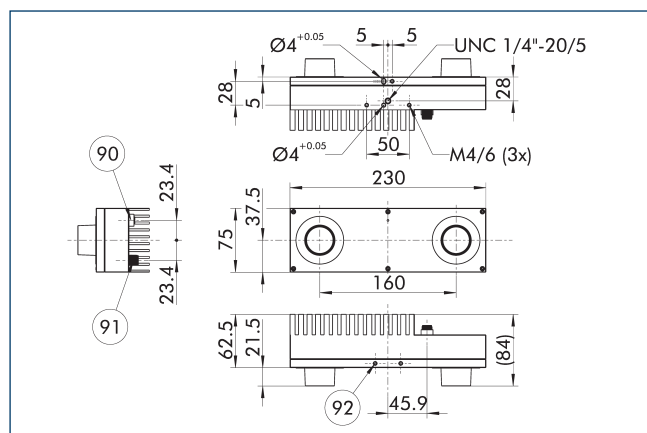
Main view EGH 80-IOL-N-UREK starter



The drawing shows the basic version of the gripper with open jaws, without dimensional consideration of the options described below.

- | | |
|---------------------------|--|
| ① Gripper connection | ⑦⑧ Fit for centering |
| ② Finger connection | ⑨① DIN ISO-9409 bolt circle |
| ⑦③ Fit for centering pins | ⑨② Through holes for screw connections |
| ⑦⑤ Cable length | |

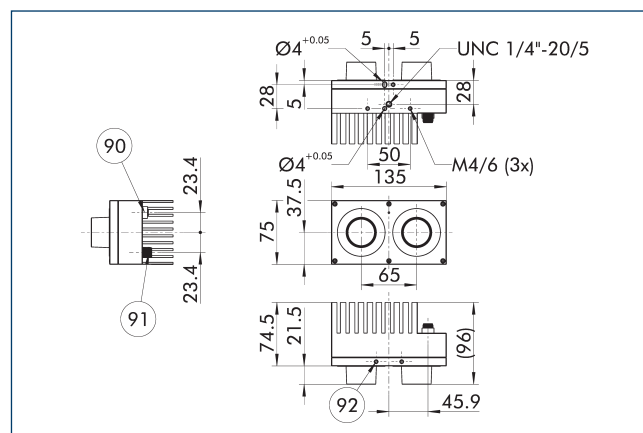
Camera rc_visard 160



- | | |
|-----------------------------|-----------------------|
| ⑨① Power supply | ⑨② Projector mounting |
| ⑨① EtherNet plug connectors | |

Camera rc_visard 160 is included in the application kit SGC 160-EGH-UR-S.

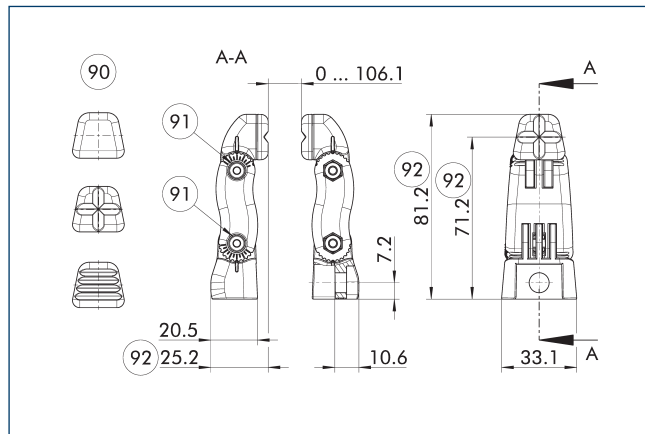
Camera rc_visard 65



- | | |
|-----------------------------|-----------------------|
| ⑨① Power supply | ⑨② Projector mounting |
| ⑨① EtherNet plug connectors | |

Camera rc_visard 65 is included in the application kit SGC 65-EGH-UR-D.

Flexible top jaw AUB-F EGH

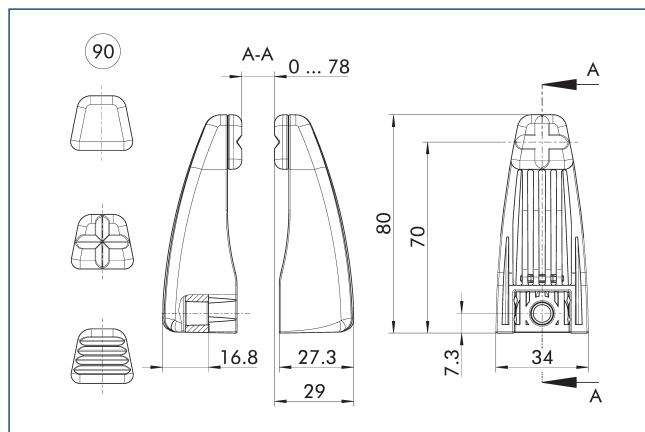


- 90 Finger inserts
 91 Screw for adjustment
 92 variable dimensions

The flexible top jaws are specifically designed for the EGH gripper. The top jaws are mutually adjustable via two clampings in the clamping range. Depending on the application and workpiece, one of the supplied finger inserts can be used. The finger inserts are manufactured from rigid or elastic material. The top jaws are used for initial commissioning of the gripper, and for initial gripping cycles. They are not designed for continuous operation.

- ① The scope of delivery includes two top jaws including fastening material. Observe the notes in the Assembly and Operating Manual of the EGH gripper.

Top jaw AUB EGH

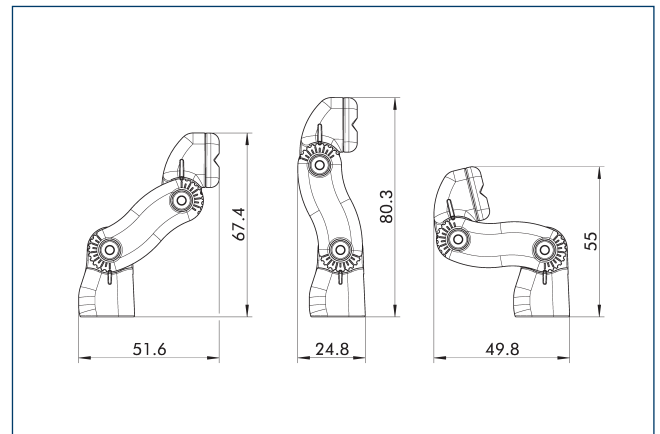


- 90 Finger inserts

The top jaws are specifically designed for the EGH gripper. Depending on the size, they are available with varying clamping ranges. Depending on the application and workpiece, one of the supplied finger inserts can be used. The finger inserts are manufactured from rigid or elastic material.

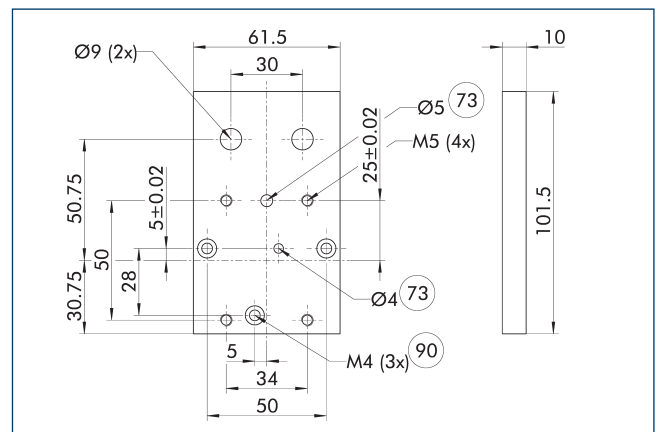
- ① The scope of delivery includes two top jaws including fastening material. Observe the notes in the Assembly and Operating Manual of the EGH gripper.

Flexible top jaw AUB-F EGH



The flexible top jaws are specifically designed for the EGH gripper. The top jaws are mutually adjustable via two clampings in the clamping range. The drawing shows the achievable maximum values.

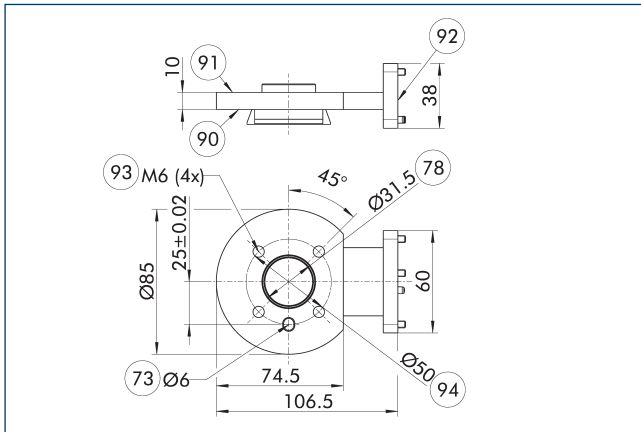
Adapter plate for SGC-160-EGH-UR-S



- ⑦③ Fit for centering pins

This adapter plate comes with the SGC-160-EGH-UR-S and enables the rc_visard 160 camera to be mounted to a static structure such as the SCHUNK pillar assembly system SAS.

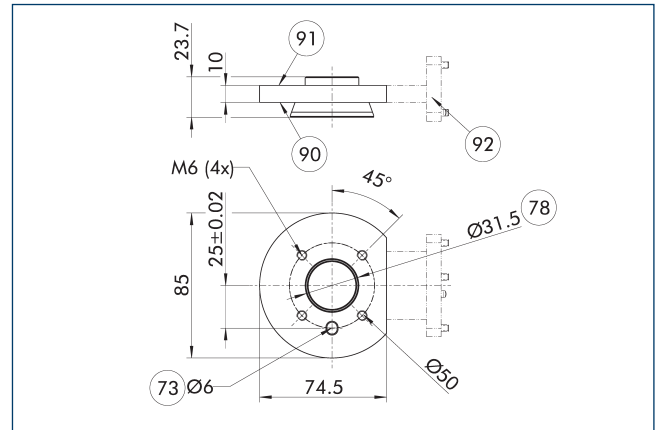
Adapter plate for SGC-65-EGH-UR-D



- 73 Fit for centering pins
- 78 Fit for centering
- 90 Gripper side
- 91 Robot side
- 92 Camera side
- 93 Through holes for screw connections
- 94 DIN ISO-9409 bolt circle

This adapter plate comes with the SGC-65-EGH-UR-D and enables the rc_visard 65 camera to be mounted to the ISO 50 flange of the robot.

Adapter plate for SGC-65-EGH-UR-D (screw connection diagram SHS)

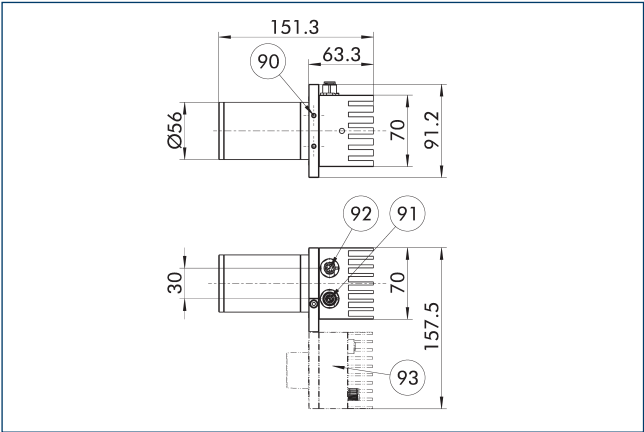


- 73 Fit for centering pins
- 78 Fit for centering
- 90 Gripper side
- 91 Robot side
- 92 Camera side
- 93 Through holes for screw connections

This adapter plate is required for mounting the rc_visard 65 camera to the robot when using the manual SHS change system and is not included in the scope of the SGC-65-EGH-UR-D. The camera bracket indicated in the drawing is not supplied with the adapter plate. To use this adapter plate, the camera bracket included in the SGC-65-EGH-UR-D application kit is repositioned.

Description	ID	
Adapter plate		
AKO SGC-65-D/SHS50	1463099	

Sample projector rc_randomdot



- 90 Camera mounting
- 91 Connection camera
- 92 Power supply
- 93 Camera

The pattern projector rc_randomdot can be used in applications with transport boxes to increase the quality of depth information when detecting these boxes. In addition, the projector can be used as another option to calibrate the base plane. The delivery includes a connection cable and a bracket for mounting the projector on the camera.

Description	ID	Weight
		[kg]
Accessories		
SGC rc_randomdot	1465694	0.66

- ① The pattern projector and camera together require a power output of 65 W. Therefore they cannot be directly connected to the robot's ControlBox from Universal Robots. The required power supply unit (ID 31001408) for mounting in an external control cabinet is available on request. The maximum ambient temperature of the projector is 45 °C.



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