

Light. Stable. Flexible.

CGH Long-stroke Gripper

Gripper with weight optimized carbon fiber housing and large, flexibly adjustable jaw stroke for efficient handling of large parts and / or a broad range of parts.

Field of Application

Clean to slightly dirty working environments, especially suitable for the handling of car rims



Advantages – Your benefit

Robust bearing guidance for the precise handling of all kinds of workpieces

High moment payloads due to the guiding suitable for using long gripper fingers

Moment decoupling in the base jaws permit very large fingers via hinge bolts

Toothed belt for power transmission and synchronised, centric gripping

Stroke adjustment gripper open and gripper closed are separately adjustable for faster cycle times and reduced fluid consumption

Comprehensive sensor accessory program for versatile interrogation possibilities and control of stroke position

Available for standard robot adaptations according to ISO 9409



Sizes
Quantity: 1



Weight
11.65 kg



Gripping force
2500 N



Stroke per jaw
100 .. 160 mm



Workpiece weight
12.7 kg



Functional Description

Inside of the gripper are aluminum tubes which form the cylindrical housing through which the carbon fiber piston tube with aluminum end caps travels.

The base jaws are set in motion with the application of pressure to the piston chamber. The end of the stroke is damped with an elastomer pad.



- ① **Housing**
Made from a highly rigid, single piece carbon fiber with reduced mass and designed for high stress due to incorporated fibers
- ② **Base jaw**
for adaptation of the workpiece-specific gripper fingers, torque uncoupling with hinge bolt enables very long fingers
- ③ **Roller guide**
for precise and robust gripping due to the heavy duty roller guide with 4 carriages per base jaw
- ④ **Belt drive**
for power transmission and synchronised, centric gripping
- ⑤ **Damper**
Integrated end position dampening allows for maximum energy absorption with minimum space requirements
- ⑥ **Stroke adjustment**
Gripper open and gripper closed are separately adjustable for faster cycle times and reduced fluid consumption

CAD data, operating manuals and other current product documents are available at www.schunk.com

General Notes about the Series

Housing material: The housings is made of carbonfiber reinforced plastic, and is manufactured in an RTM process

Actuation: pneumatic, with filtered compressed air as per DIN ISO 8573-1: 7 4 4

Warranty: 24 months (details, general terms and conditions and operating manuals can be downloaded at www.schunk.com)

Gripping force maintenance device: possible with SDV-P pressure maintenance valve

Gripping force: is the arithmetic total of the gripping force applied to each gripper jaw at distance P (see illustration).

Finger length: is measured from the upper edge of the gripper housing in the direction of the main axis. The breach of the max. permitted finger length can bring higher abrasion. The maximum permissible finger length applies up to the nominal operating pressure. With higher pressures, the finger length must be reduced proportionally to the nominal operating pressure.

Repeat accuracy: is defined as the spread of the limit position after 100 consecutive strokes.

Workpiece weight: is calculated for a force-fit connection with a coefficient of friction of 0.1 and a safety factor of 2 against slippage of the workpiece on acceleration due to gravity g. Considerably heavier workpiece weights are permitted with form-fit gripping.

Closing and opening times: are purely the times that the base jaws or fingers are in motion. Valve switching times, hose filling times or PLC reaction times are not included in the above times and must be taken into consideration when determining cycle times.



Application example

Gripping unit with carbon fiber housing for handling of automobile wheel rims.

① CGH 2-Finger Long-stroke Gripper

② Sheet Metal Fingers

③ Workpiece

SCHUNK offers more ...

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



Centering Sleeves



Inductive Proximity Switches



Sensor Cables



Sensor Distributor



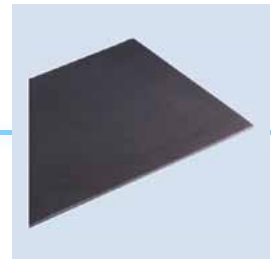
SWS Quick-change System



Flange



DDF 2 Rotary Feed-through



Gripper Pads

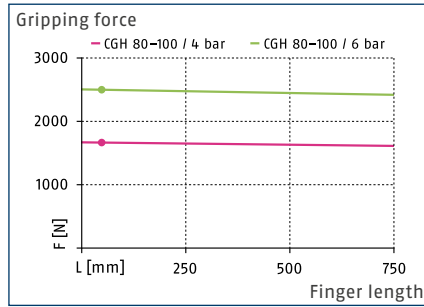
① Further information regarding the products can be found on the following product pages or at www.schunk.com. Please contact us for further information: SCHUNK technical hotline +49-7133-103-2696

Options and special Information

Efficient: The stroke can be separately adjusted for opening and closing. It is used for reducing cycle times, and helps to save compressed air

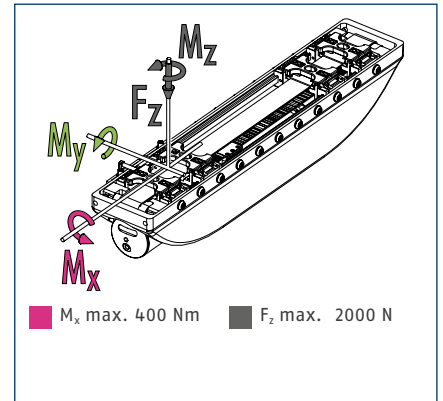


Gripping force, I.D. gripping



- ① The maximum permissible finger length of the respective variant is specified in the technical details.

Forces and moments



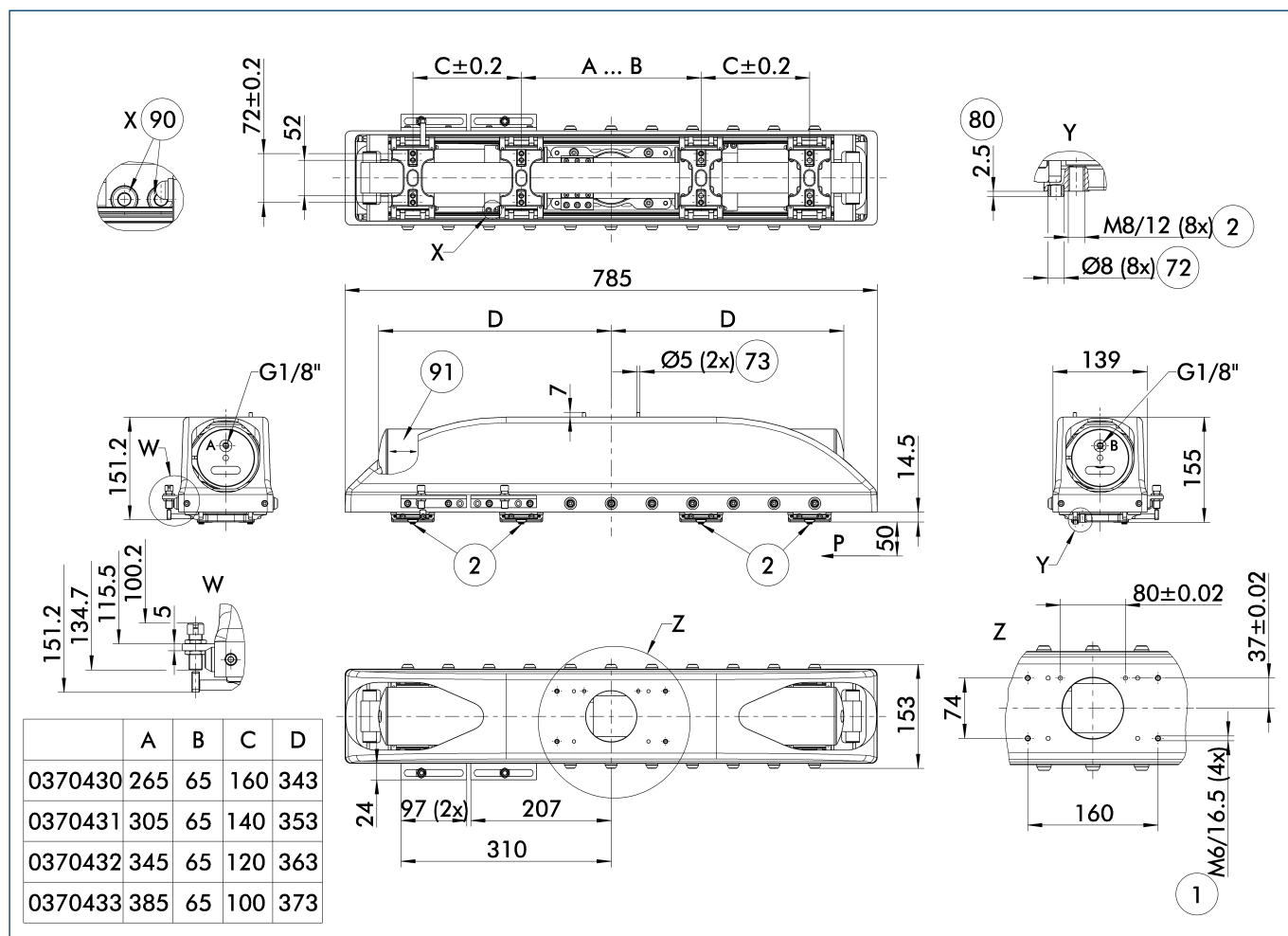
- ① The indicated moments and forces are statical values, apply for each base jaw and should not appear simultaneously. If the max. permitted finger weight is exceeded, it is imperative to throttle the air supply so that the jaw movement occurs without any hitting or bouncing. Service life may be reduced.

Technical data

Description		CGH 80-100	CGH 80-120	CGH 80-140	CGH 80-160
ID		0370430	0370431	0370432	0370433
Stroke per jaw	[mm]	100	120	140	160
Closing- / opening force	[N]	2500/2500	2500/2500	2500/2500	2500/2500
Weight	[kg]	11.65	11.65	11.65	11.65
Recommended workpiece weight	[kg]	12.7	12.7	12.7	12.7
Fluid consumption per double stroke	[cm ³]	1005	1210	1410	1650
min. / max. operating pressure	[bar]	2/6	2/6	2/6	2/6
Nominal operating pressure	[bar]	6	6	6	6
Closing- / opening time	[s]	0.85/0.85	1/1	1.2/1.2	1.35/1.35
max. permitted finger length	[mm]	750	650	550	450
max. permitted weight per finger	[kg]	10	9	8	7
IP class		30	30	30	30
min. / max. ambient temperature	[°C]	5/75	5/75	5/75	5/75
Repeat accuracy	[mm]	0.05	0.05	0.05	0.05
Moments M_y max./ M_z max.	[Nm]	1250/1250	1150/1150	1000/1000	800/800

- ① Requirements on the levelness of the bolting surface (in relation to the entire bolting surface for the gripper):
- < 0.02 mm with an edge length of up to 100 mm
 - < 0.05 mm with an edge length of 100 mm or longer

Main view



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

① The SDV-P pressure maintenance valve can be used as a gripping force maintenance device (see catalog section on "Accessories").

① Gripper connection

② Finger connection

⑦ Fit for centering sleeves

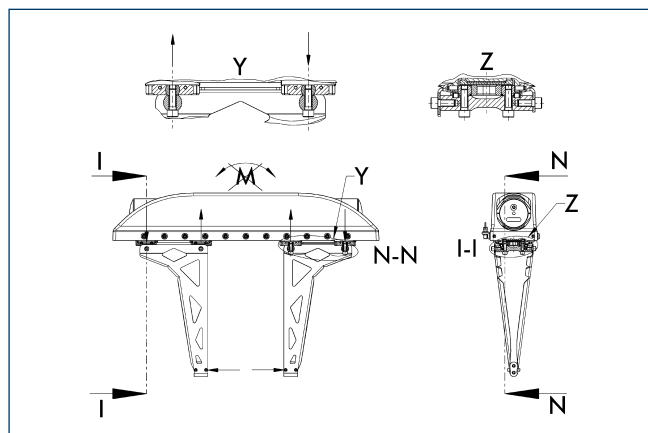
⑦ Fit for centering pins

⑧ Depth of the centering sleeve hole in the mating part

⑨ Mounting screws for stroke adjustment

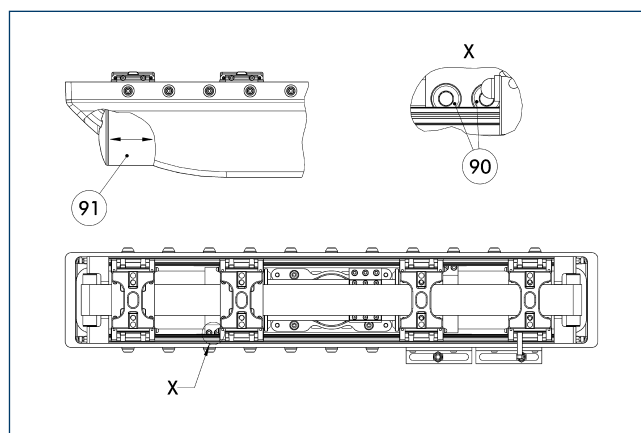
⑨ Stroke adjustment

Moment decoupling



The rotary hinge bolts of the guided slides convert the arising gripping torque into pure tensile and/or pressure forces. The use of long fingers is possible for gentle and low-wear handling.

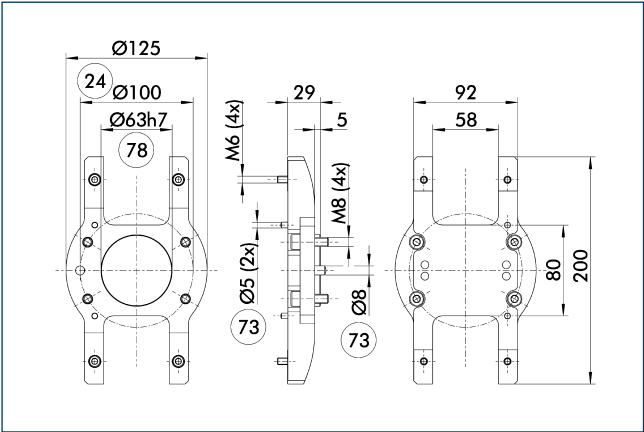
Stroke adjustment



⑨ Mounting screws for stroke adjustment

⑨ Stroke adjustment

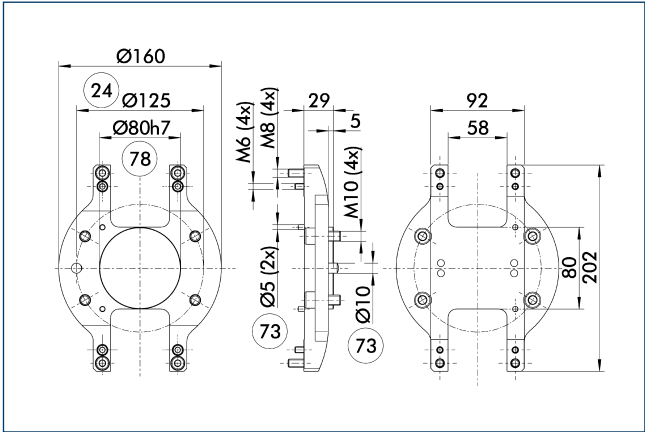
Adapter flange according to ISO-9409-1-100



- 24 Bolt circle
73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 100	0308092	

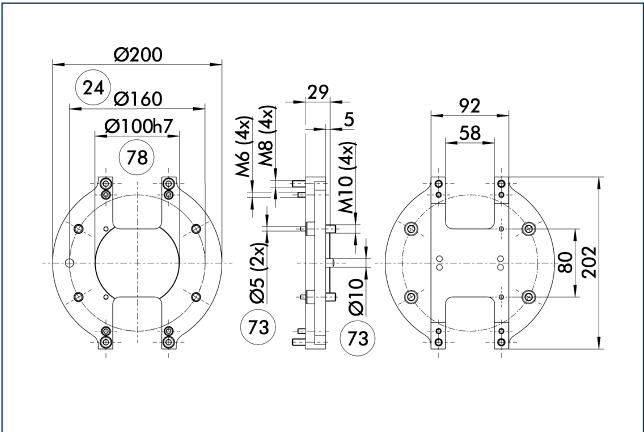
Adapter flange according to ISO-9409-1-125



- 24 Bolt circle
73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 125	0308093	

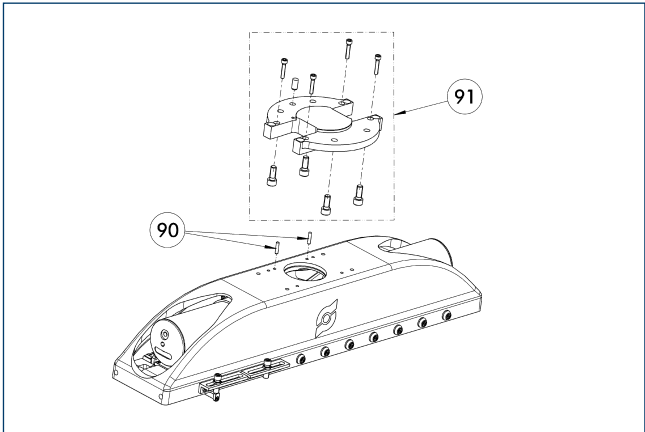
Adapter flange according to ISO-9409-1-160



- 24 Bolt circle
73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 160	0308094	

Adapter plate

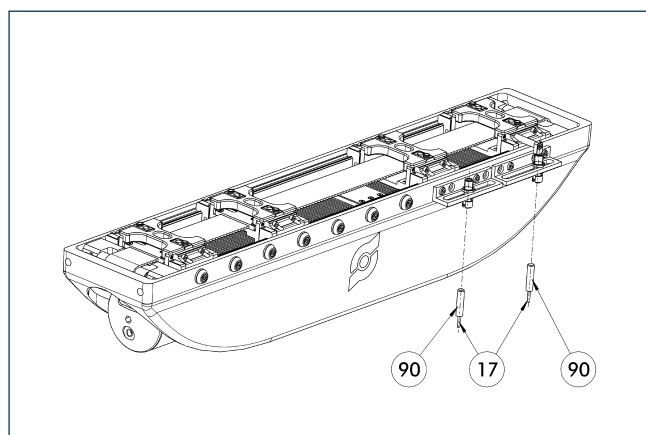


- 90 Included in the gripper's scope of delivery
91 Included in the adapter flange's scope of delivery

Adapter plate for connecting further SCHUNK components or customized attachments.

Description	ID	
ISO flanges		
ADF 100	0308092	
ADF 125	0308093	
ADF 160	0308094	

Inductive proximity switches



17 Cable outlet

90 IN ... sensor

Description	ID	Often combined
Inductive proximity switches		
IN 80-S-M12	0301578	
IN 80-S-M8	0301478	●
INK 80-S	0301550	
Cable extensions		
KV BG12-SG12 3P-0030-PNP	0301999	
KV BG12-SG12 3P-0060-PNP	0301998	
KV BW08-SG08 3P-0030-PNP	0301495	
KV BW08-SG08 3P-0100-PNP	0301496	
KV BW08-SG08 3P-0200-PNP	0301497	●
KV BW12-SG12 3P-0030-PNP	0301595	
KV BW12-SG12 3P-0100-PNP	0301596	
KV BW12-SG12 3P-0200-PNP	0301597	
Clip for plug / socket		
CLI-M12	0301464	
CLI-M8	0301463	
Connection cables		
KA BG08-L 3P-0300-PNP	0301622	●
KA BG08-L 3P-0500-PNP	0301623	
KA BG12-L 3P-0500-PNP	30016369	
KA BW08-L 3P-0300-PNP	0301594	
KA BW08-L 3P-0500-PNP	0301502	
KA BW12-L 3P-0300-PNP	0301503	
KA BW12-L 3P-0500-PNP	0301507	
Sensor distributor		
V2-M8	0301775	●
V2-M12	0301776	●
V4-M12	0301747	
V4-M8	0301746	
V8-M12	0301752	
V8-M8	0301751	

- ① Two sensors (closer/S) are required for each unit, plus extension cables as an option. Please note the minimum permitted bending radii for the sensor cables, which are generally 35 mm.