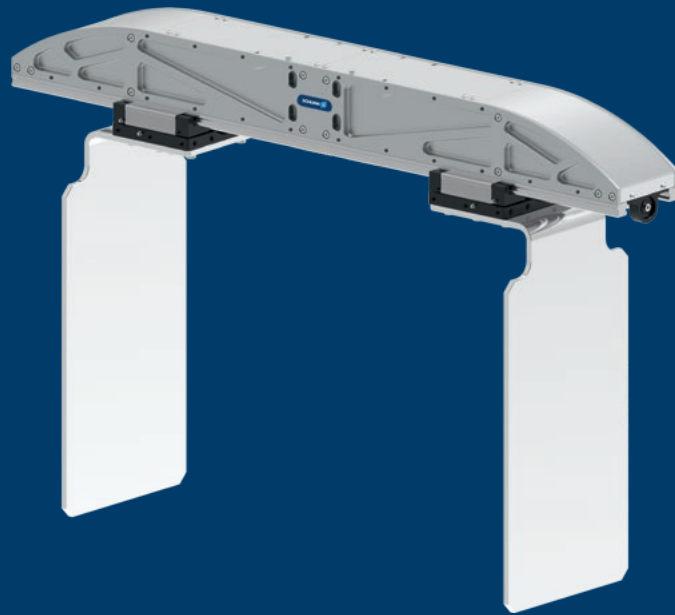




Superior Clamping and Gripping



Product Information

Long-stroke gripper LEG

Flexible. Light. Productive.

LEG long-stroke gripper

Electric 2-finger parallel gripper with lightweight profile rail guide and adaptable servomotor

Field of application

Light long-stroke gripper for flexible and highly dynamic handling of various components. Universal application in clean environments, e.g. in the machine and plant building industry, assembly and handling as well as in the automotive industry.



Advantages – Your benefits

High moments due to double profiled rail guide suitable for using long gripper fingers

Extremely narrow design for minimal interfering contours

Adaptable drive motor for versatile approach and easy integration into existing control concepts

Position and torque-controlled movement of the gripper
For very flexible gripping of various geometries and types of components

Synchronized but also asynchronous moving of the fingers for various gripping applications

Safety functions such as STO and SLS can be realized by the use of a suitable drive motor and controller

Available for standard robot adaptations according to ISO 9409



Sizes
Quantity: 3



Weight
5.4 .. 7.9 kg



Gripping force
1050 .. 1500 N



Stroke per jaw
101 .. 281 mm



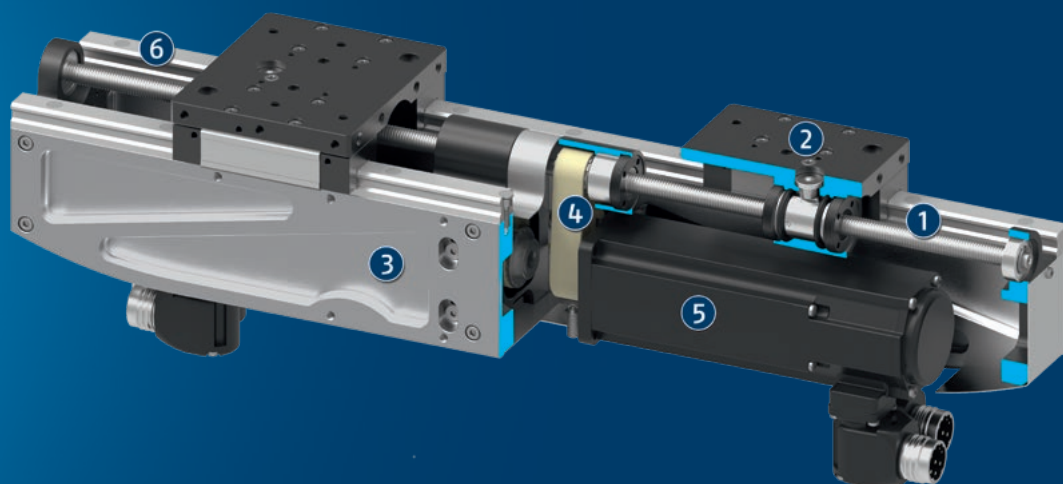
Workpiece weight
5.25 .. 7.5 kg

Functional description

The two ball-screw spindle drives, which move the base jaw, are driven by one or two servomotors via a toothed belt.

With two drives every jaw can be moved individually from

each other. During the actuation with a servomotor, a coupling synchronizes the right-to-left and the left-to-right spindle with each other.

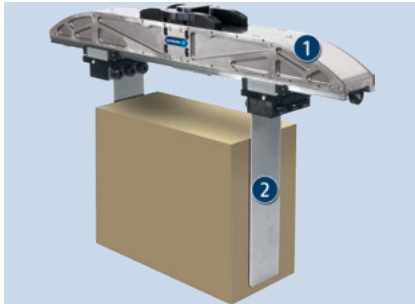


- ① **Recirculating ball bearing guide**
precise gripping due to high-amperage smoothly running recirculating ball bearing guide
- ② **Base Jaw**
for the connection of workpiece-specific gripper fingers
- ③ **Housing**
weight-optimized due to FEM and topology examination

- ④ **Kinematics**
high moment payloads and accuracy due to the ball screw
- ⑤ **Motor installation space**
for various motors
- ⑥ **Linear guide**
heavy-duty for high moment loads and long top jaws

Application examples

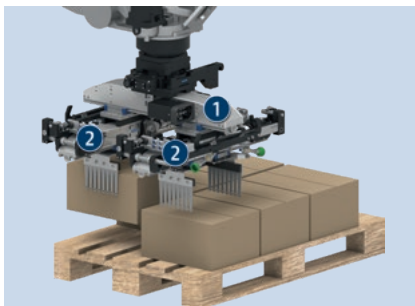
Handling of cardboard packaging



Basic version of LEG

- ❶ LEG 2-finger long-stroke gripper
- ❷ Gripper fingers

Gripping system solution for asynchronous handling of cardboard packaging



The LEG gripping system solution with two asynchronous grippers accommodates multiple cardboard packaging in successive sequences. The higher-level asynchronous gripper serves only for adjusting the inside micrometer.

- ❶ LEG 2-finger long-stroke gripper, asynchronous version
- ❷ LEG 2-finger long-stroke gripper, asynchronous version

Gripping system solution for synchronous handling of cardboard packaging

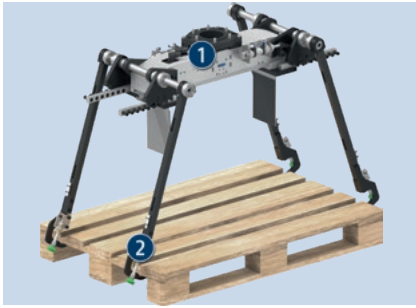


The LEG gripping system solution with two synchronous grippers is used for handling multiple cardboard packaging at the same time. The higher-level asynchronous gripper serves only for adjusting the inside micrometer.

- ❶ LEG 2-finger long-stroke gripper, asynchronous version
- ❷ LEG 2-finger long-stroke gripper, synchronous version



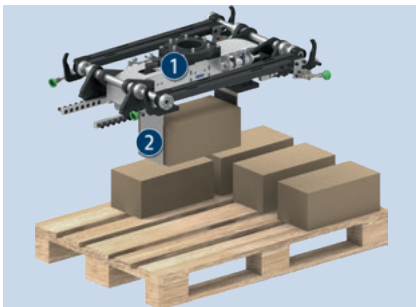
LEG with palletizing option – pallet handling



Gripping system solution with palletizing option for handling pallets, clipboards and cardboard packaging

- ❶ LEG 2-finger long-stroke gripper, synchronous version
- ❷ Swiveling arm for form-fit gripping of pallets

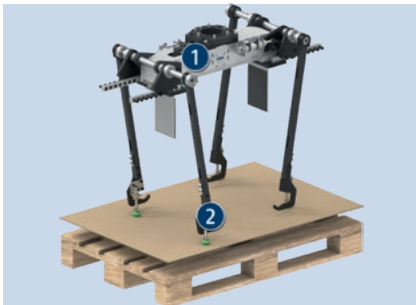
LEG with palletizing option – handling of cardboard boxes



- ❶ LEG 2-finger long-stroke gripper, synchronous version

- ❷ Gripper fingers

LEG with palletizing option – handling of clipboards



- ❶ LEG 2-finger long-stroke gripper, synchronous version

- ❷ Vacuum suction cup

General notes about the series

Operating principle: Spindle drive

Housing material: Aluminum alloy, coated

Base jaw material: hard-anodized, high strength aluminum

Actuation: electrically via an adaptable servo drive

Warranty: 24 months

Scope of delivery: Enclosed pack with centering sleeve and centering pins, assembly and operating manual with declaration of incorporation. Depending on the variant, operation of the gripper requires a motor add-on kit, a servomotor, and a suitable controller. They are not included in the scope of delivery and must be ordered separately.

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

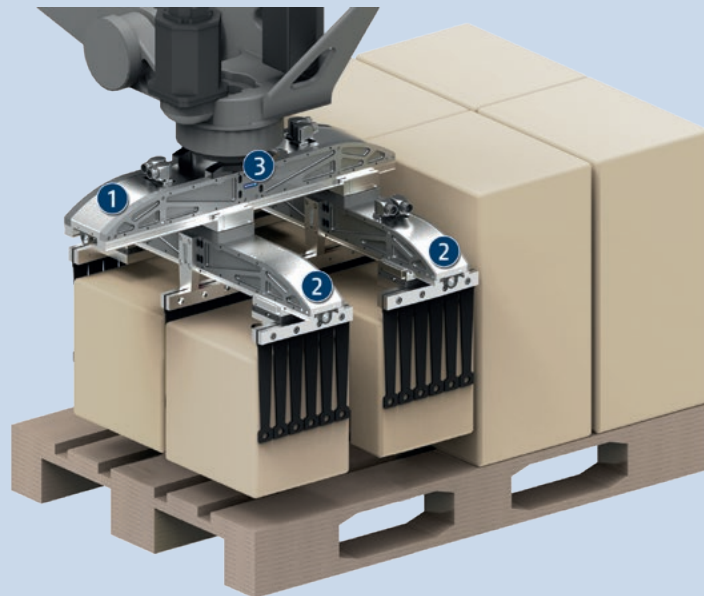
Finger length: measured from the screw surface of the base jaw in the direction of the main axis. Failure to comply with the max. permissible finger length will result in increased wear.

Repeat accuracy: is defined as a distribution of the end Position for 100 consecutive strokes.

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.

Closing and opening times: When gripping, the speed must be adapted as described in the operating manual so that the closing and opening times can increase. The times specified are only the movement times of the base jaws at max. speed, max. acceleration without electrical restrictions, and observance of the maximum permissible masses per finger.

Motor torque: Required motor torque may be permanently applied to achieve the maximum gripping force.



Application example

Gripping system solution comprising three electric grippers for the handling of a wide variety of workpieces

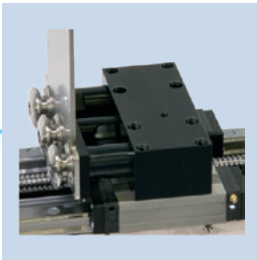
① LEG 2-finger long-stroke gripper, asynchronous version

② LEG 2-finger long-stroke gripper, synchronous version

③ Adapter flange

SCHUNK offers more ...

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



Finger change system (on request)

① For more information on these products can be found on the following product pages or at schunk.com.

Options and special information

Flexible in motor and controller selection: The electrical control is carried out via an adaptable servo drive using common standard controller like Bosch or Siemens.

Easy integration: The easy integration into the control system is ensured by the possibility of attaching a common servomotor.

Identical control: Like a normal servo axis, the gripper can be directly controlled and interpolated with existing axes.

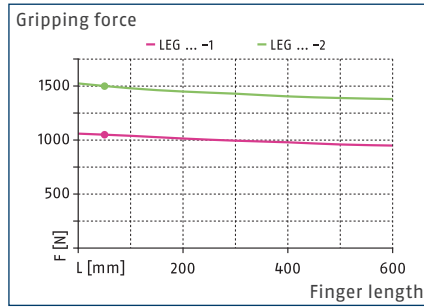
Complete solutions: On request, SCHUNK can supply complete drive solutions including motor, gears, controller, and cables.

LEG 400

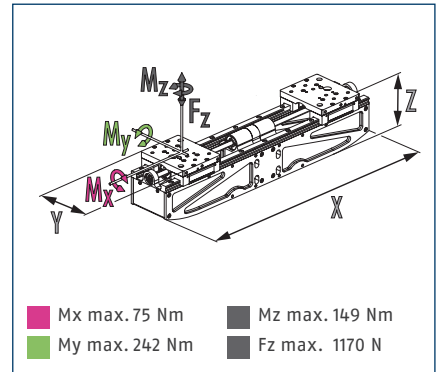
Long-stroke gripper



Gripping force



Dimensions and maximum loads



① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

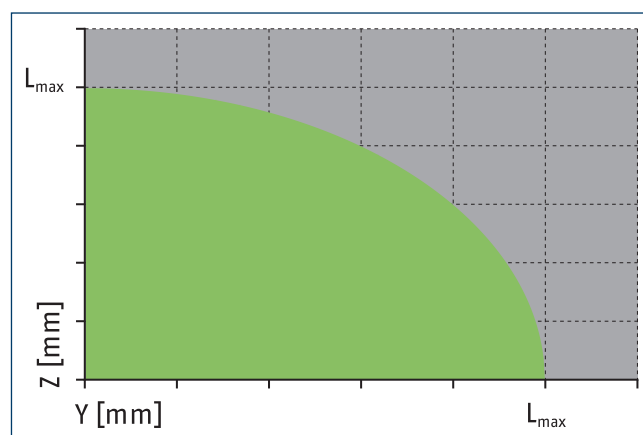
Description		LEG 400-1-15-2-10X3-B	LEG 400-2-15-2-10X3-B
ID		0308040	0308041
General operating data			
Stroke per jaw	[mm]	101	101
Min./max. gripping force	[N]	300/1050	300/1500
Closing/opening time	[s]	0.55/0.55	0.55/0.55
Max. permissible speed (positioning)	[mm/s]	276	276
Max. permissible speed (gripping)	[mm/s]	10	10
Recommended workpiece weight	[kg]	5.25	7.5
Repeat accuracy	[mm]	0.05	0.05
Max. permissible finger length	[mm]	600	600
Max. permissible mass per finger	[kg]	10	10
Motor moment required	[Nm]	1	0.75
Max. drive speed	[1/min]	4000	4000
Weight	[kg]	5.4	5.4
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		20	20
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	400 x 112 x 107.5	400 x 112 x 107.5

① Motors are not included in the purchase price in the base variant. Please ask us for details about the integration of your motor type.

[illegible]

① Gripper connection	⑧⑩ Depth of the centering sleeve
② Finger connection	hole in the counter part
⑦② Fit for centering sleeves	⑨⑩ Plug connector of the
⑦③ Fit for centering pins	individual motor

Technical drawing of a mechanical part, showing a side view. The drawing includes two dimension lines: a horizontal line labeled 'Y' indicating the width of the upper section, and a vertical line labeled 'Z' indicating the height of the upper section. The part features a central circular feature with a cross-hatched area, suggesting a threaded or hollow section. The base of the part is wider than the upper section.



■ Permitted range
 ■ Inadmissible range

Lmax is equivalent to the maximum permitted finger length, see the technical data table.

Long-stroke gripper

Technical drawing of a mechanical part, showing three views: front view, side view, and top view. Dimensions are given in millimeters.

Front View: Shows a central circular feature with a diameter of $\text{Ø}31.5h7$ and a surrounding rectangular area with a diameter of $\text{Ø}50$. The part has a total width of 24 mm. Callout 78 is present.

Side View: Shows a curved profile with a height of 20 mm and a base diameter of $\text{Ø}6$. The part has a total width of 5 mm. Callout 73 is present.

Top View: Shows a rectangular plate with a width of 92 mm and a height of 200 mm. The part has a total width of 58 mm. Callout 73 is present.

Other dimensions and callouts include: M6 (4x) , $\text{Ø}5 (2x)$, M6 (4x) , and $\text{Ø}6$.

78 Fit for centering

Technical drawing of a mechanical part showing three views: front, side, and top. The front view shows a rectangular part with a central circular feature and four mounting holes. The side view shows the profile with a 20mm height and a 5mm thickness. The top view shows the rectangular footprint with dimensions 92mm by 200mm. Dimensions are given in millimeters.

⑦⑧ Fit for centering

Description	ID	
ISO flanges		
ADF 050	0308090	

Description	ID	
ISO flanges		
ADF 063	0308091	

Technical drawing of a 4-hole flange. The drawing includes three views: a front view, a side view, and a top view. The front view shows a circular flange with a central hole of diameter Ø100 and four outer holes of diameter Ø12.5. The side view shows the flange's profile with a thickness of 29 mm and a central hole of diameter Ø63h7. The top view shows the flange's top surface with a diameter of 92 mm and four outer holes of diameter Ø12.5. The drawing also indicates the number of holes (4x) and the hole diameter (Ø12.5).

(78) Fit for centering

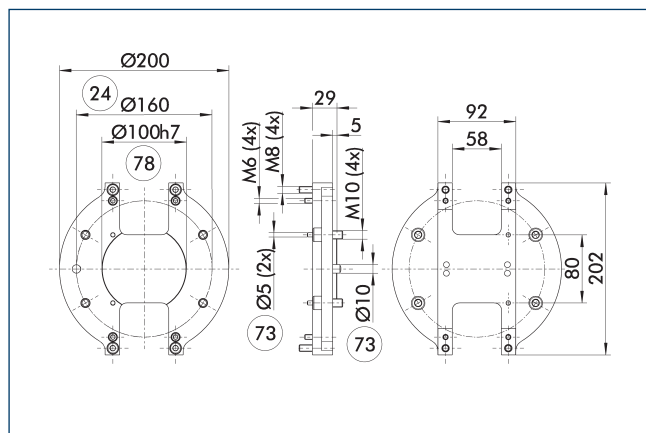
[illegible]

(78) Fit for centering

Description	ID	
ISO flanges		
ADF 100	0308092	

Description	ID	
ISO flanges		
ADF 125	0308093	

Adapter flange according to ISO-9409-1-160



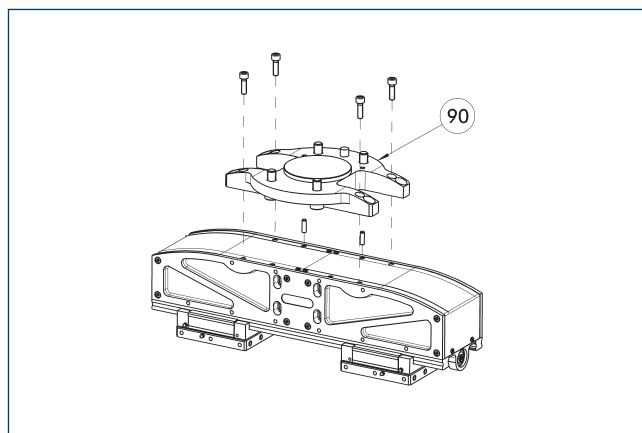
24 Bolt circle

78 Fit for centering

73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 160	0308094	

Adapter flange

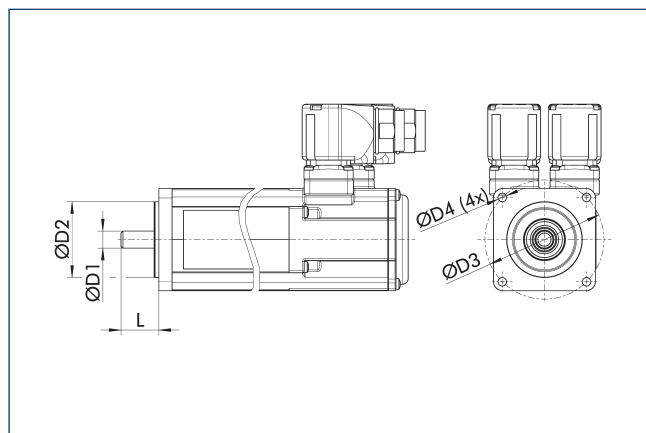


90 Adapter flange

Adapter flange for connection of additional SCHUNK components or customized attachments.

Description	ID	
ISO flanges		
ADF 050	0308090	
ADF 063	0308091	
ADF 100	0308092	
ADF 125	0308093	
ADF 160	0308094	

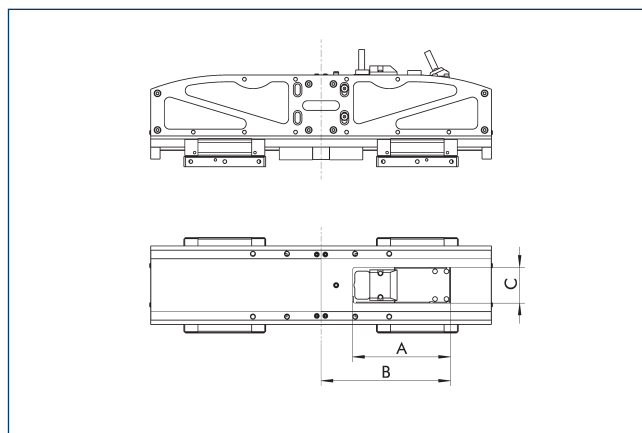
Motor add-on kit



The basic version without a drive motor (version B) can be equipped with the corresponding motor using a motor attachment kit. The motor itself is not part of the attachment kit, and must be provided by the customer.

Description	ID	D1	D2	D3	D4	L min/ max
		[mm]	[mm]	[mm]		[mm]
Motor add-on kits						
MAS-LEG 09-050-070-M05	1331139	9	50	70	M5	15/21
MAS-LEG 11-050-070-M04	1331129	11	50	70	M4	22/30

Cover plate



The cover plate protects the gripper against external influences up to protection class IP20. The basic version without a drive motor requires one cover plate for each motor.

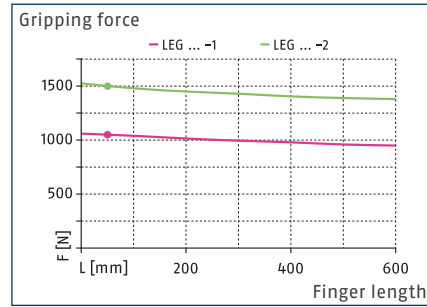
Description	ID	A	B	C
		[mm]	[mm]	[mm]
Cover plate				
ADB-LEG 400-000-000-000	1331174	0	0	0
ADB-LEG 400-115-152-042	1331172	115	152	42

LEG 520

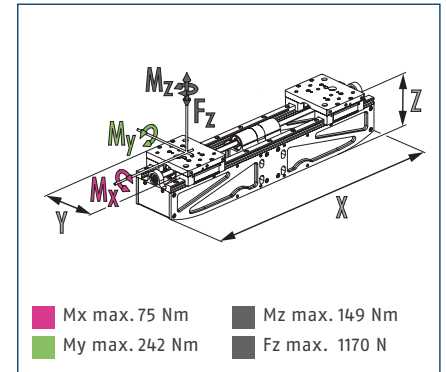
Long-stroke gripper



Gripping force



Dimensions and maximum loads



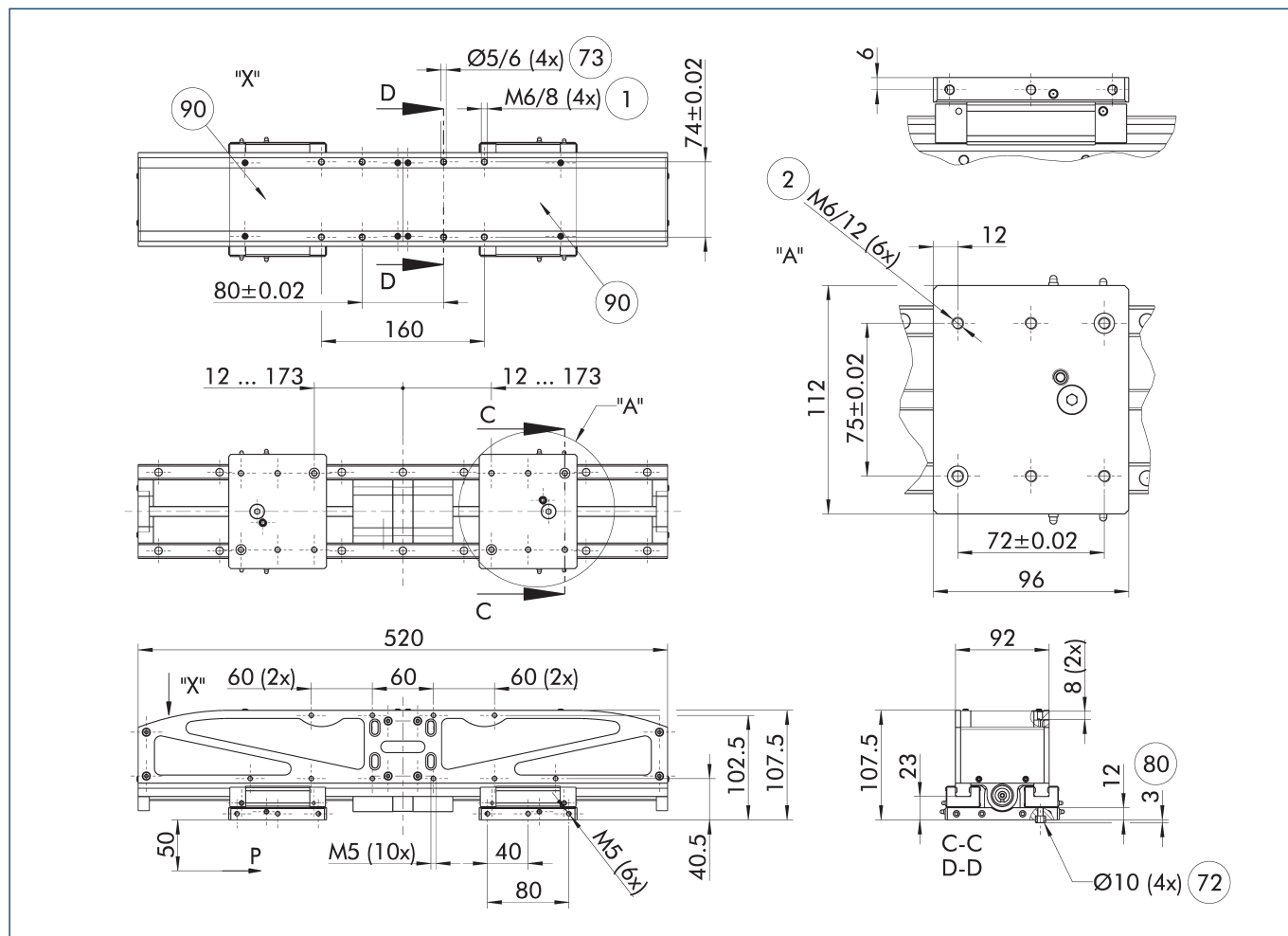
① The indicated moments and forces are statical values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		LEG 520-1-15-2-10X3-B	LEG 520-2-15-2-10X3-B
ID		0308050	0308051
General operating data			
Stroke per jaw	[mm]	161	161
Min./max. gripping force	[N]	300/1050	300/1500
Closing/opening time	[s]	0.73/0.73	0.73/0.73
Max. permissible speed (positioning)	[mm/s]	276	276
Max. permissible speed (gripping)	[mm/s]	10	10
Recommended workpiece weight	[kg]	5.25	7.5
Repeat accuracy	[mm]	0.05	0.05
Max. permissible finger length	[mm]	600	600
Max. permissible mass per finger	[kg]	10	10
Motor moment required	[Nm]	1	0.75
Max. drive speed	[1/min]	4000	4000
Weight	[kg]	6.4	6.4
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		20	20
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	520 x 112 x 107.5	520 x 112 x 107.5

① Motors are not included in the purchase price in the base variant. Please ask us for details about the integration of your motor type.

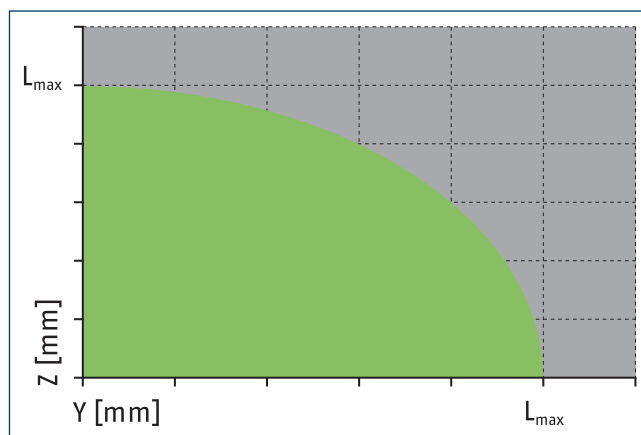
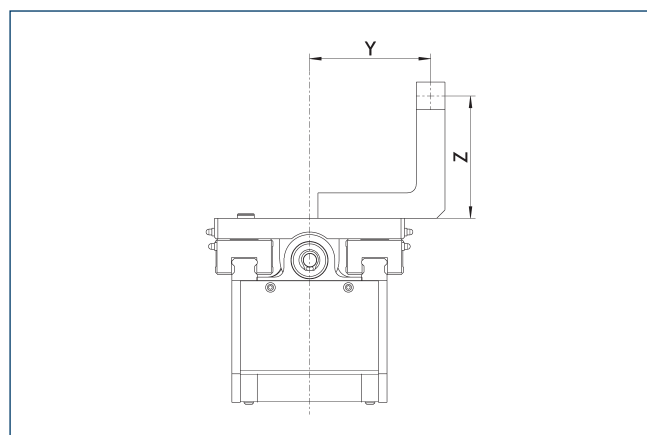
Main view



The drawing shows the basic version of the gripper without dimensional consideration of the options described below.

- ① Gripper connection
- ② Finger connection
- 72 Fit for centering sleeves
- 73 Fit for centering pins
- 80 Depth of the centering sleeve hole in the counter part
- 90 Plug connector of the individual motor

Maximum permitted finger projection



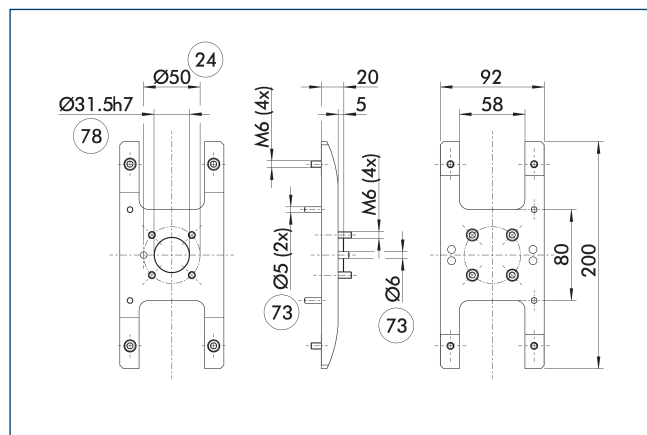
■ Permitted range ■ Inadmissible range

L_{max} is equivalent to the maximum permitted finger length, see the technical data table.

LEG 520

Long-stroke gripper

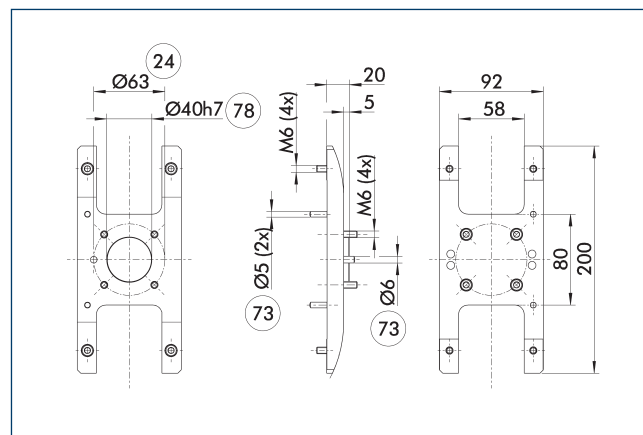
Adapter flange according to ISO-9409-1-050



- 24 Bolt circle
- 78 Fit for centering pins

Description	ID	
ISO flanges		
ADF 050	0308090	

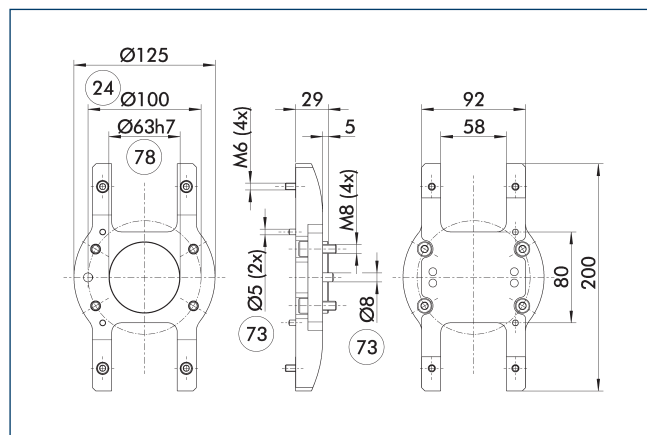
Adapter flange according to ISO-9409-1-063



- 24 Bolt circle
- 78 Fit for centering pins

Description	ID	
ISO flanges		
ADF 063	0308091	

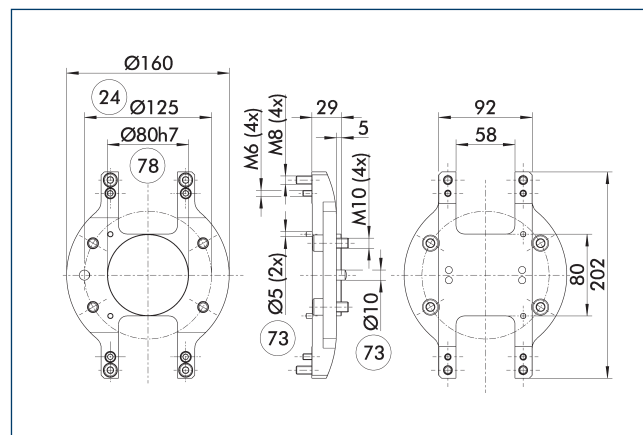
Adapter flange according to ISO-9409-1-100



- 24 Bolt circle
- 78 Fit for centering pins

Description	ID	
ISO flanges		
ADF 100	0308092	

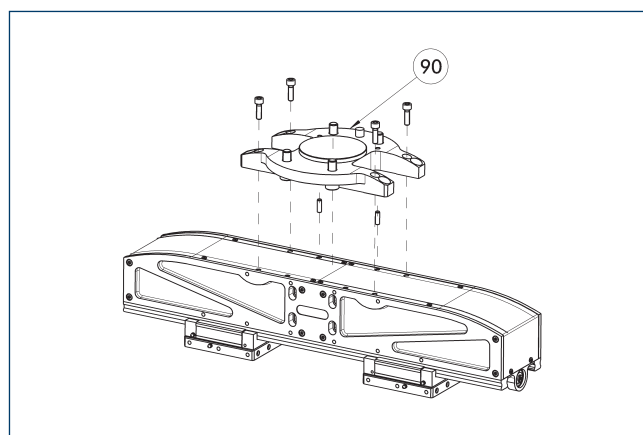
Adapter flange according to ISO-9409-1-125



- 24 Bolt circle
- 78 Fit for centering pins

Description	ID	
ISO flanges		
ADF 125	0308093	

Adapter flange

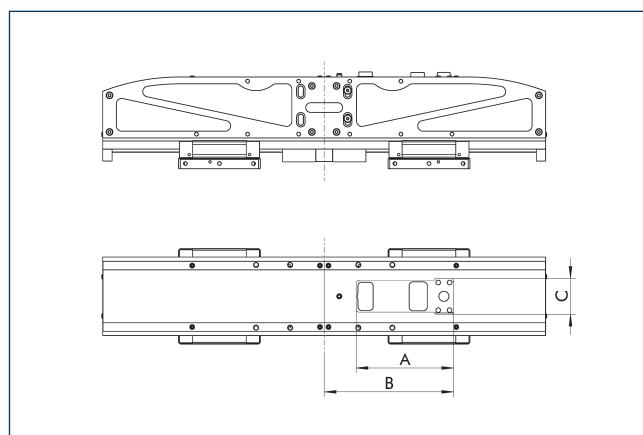


- ⑨ Adapter flange

Adapter flange for connection of additional SCHUNK components or customized attachments.

Description	ID	
ISO flanges		
ADF 050	0308090	
ADF 063	0308091	
ADF 100	0308092	
ADF 125	0308093	
ADF 160	0308094	

Cover plate



The cover plate protects the gripper against external influences up to protection class IP20. The basic version without a drive motor requires one cover plate for each motor.

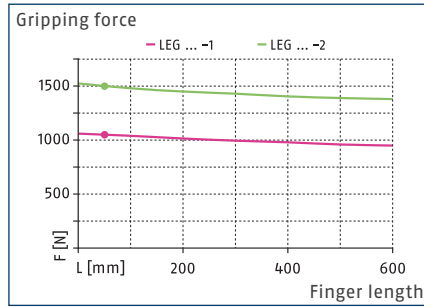
Description	ID	A	B	C
		[mm]	[mm]	[mm]
Cover plate				
ADB-LEG 520-000-000-000	1331187	0	0	0
ADB-LEG 520-065-210-060	1331176	65	210	60
ADB-LEG 520-100-200-059	1331182	100	200	59
ADB-LEG 520-110-203-059	1331184	110	203	59
ADB-LEG 520-115-152-042	1331179	115	152	42

LEG 760

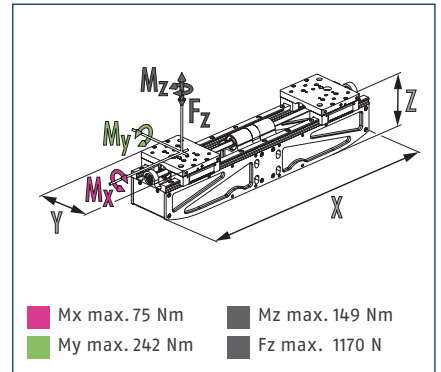
Long-stroke gripper



Gripping force



Dimensions and maximum loads



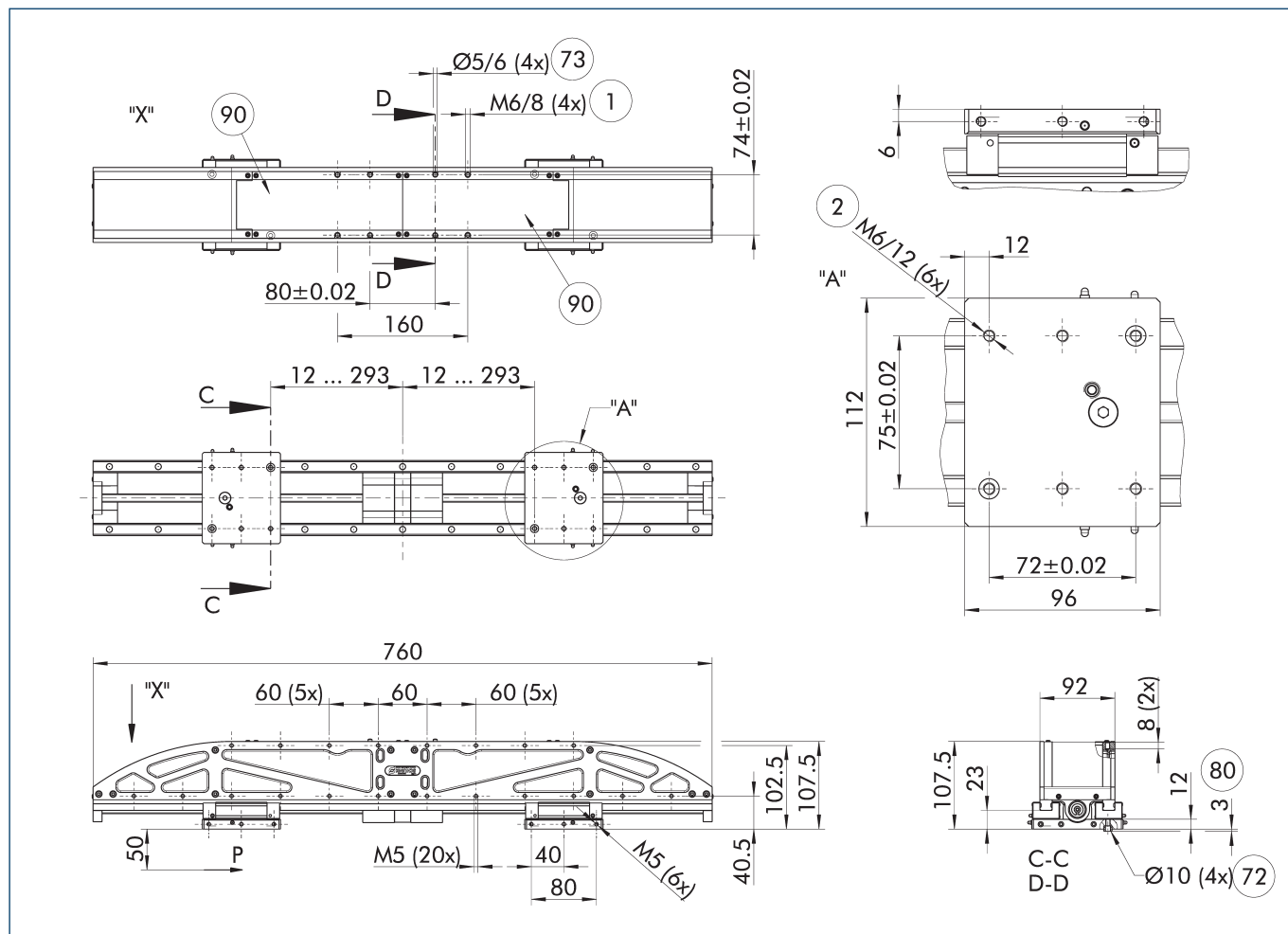
① The indicated moments and forces are static values, apply for each base jaw and may appear simultaneously. Loads may additionally occur to the moment produced by the gripping force itself.

Technical data

Description		LEG 760-1-15-2-10X3-B	LEG 760-2-15-2-10X3-B
ID		0308060	0308061
General operating data			
Stroke per jaw	[mm]	281	281
Min./max. gripping force	[N]	300/1050	300/1500
Closing/opening time	[s]	1.2/1.2	1.2/1.2
Max. permissible speed (positioning)	[mm/s]	276	276
Max. permissible speed (gripping)	[mm/s]	10	10
Recommended workpiece weight	[kg]	5.25	7.5
Repeat accuracy	[mm]	0.05	0.05
Max. permissible finger length	[mm]	600	600
Max. permissible mass per finger	[kg]	10	10
Motor moment required	[Nm]	1	0.75
Max. drive speed	[1/min]	4000	4000
Weight	[kg]	7.9	7.9
Min./max. ambient temperature	[°C]	5/55	5/55
IP protection class		20	20
Noise emission	[dB(A)]	<70	<70
Dimensions X x Y x Z	[mm]	760 x 112 x 107.5	760 x 112 x 107.5

① Motors are not included in the purchase price in the base variant. Please ask us for details about the integration of your motor type.

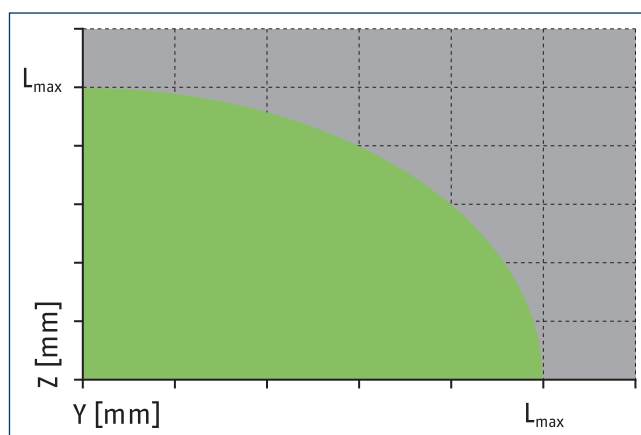
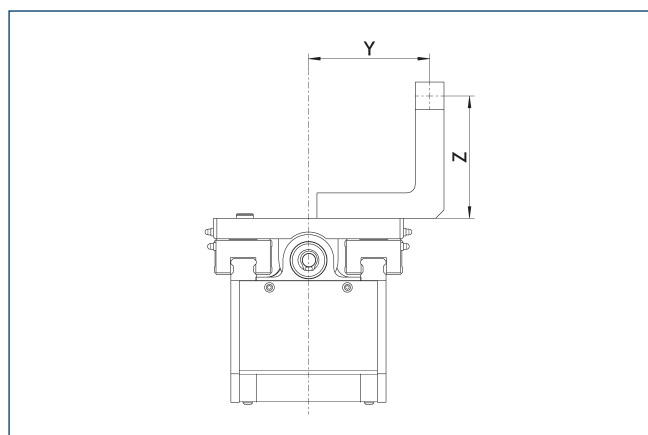
Main view



The drawing shows the basic version of the gripper without dimensional consideration of the options described below.

- | | |
|------------------------------|---|
| ① Gripper connection | ⑧⑩ Depth of the centering sleeve hole in the counter part |
| ② Finger connection | ⑨⑩ Plug connector of the individual motor |
| ⑦② Fit for centering sleeves | |
| ⑦③ Fit for centering pins | |

Maximum permitted finger projection

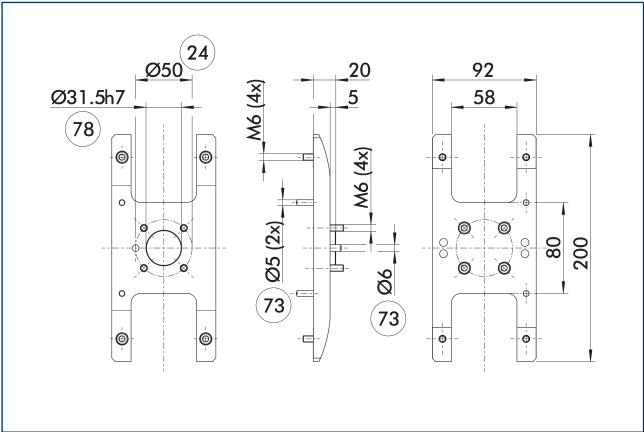


■ Permitted range

■ Inadmissible range

$L_{\max}$ is equivalent to the maximum permitted finger length, see the technical data table.

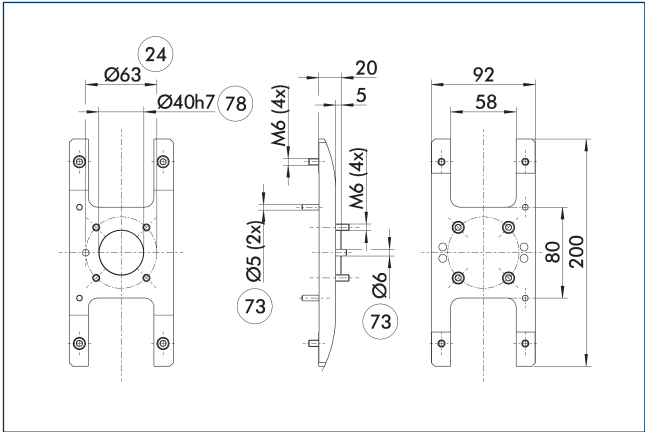
Adapter flange according to ISO-9409-1-050



- 24 Bolt circle
- 78 Fit for centering
- 73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 050	0308090	

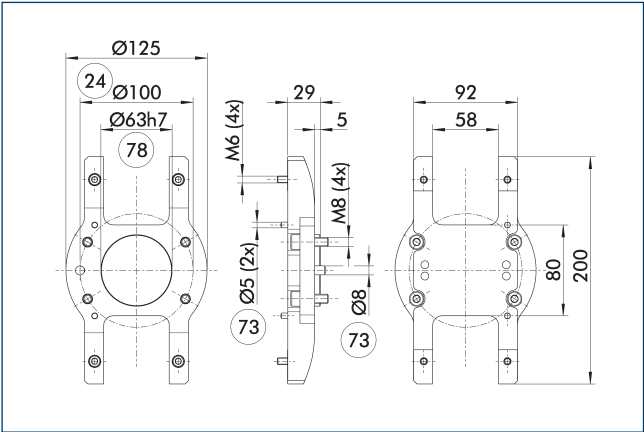
Adapter flange according to ISO-9409-1-063



- 24 Bolt circle
- 78 Fit for centering
- 73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 063	0308091	

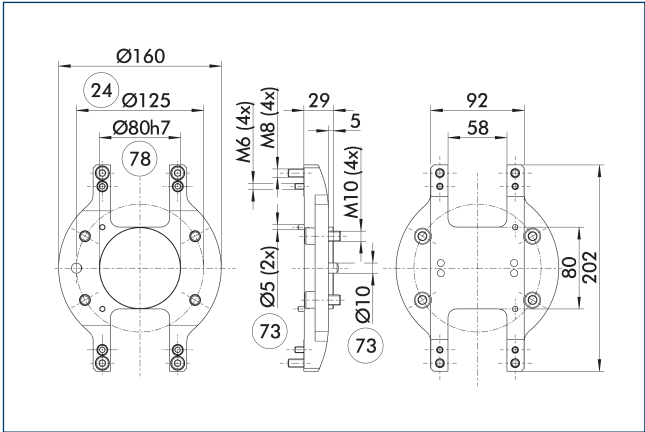
Adapter flange according to ISO-9409-1-100



- 24 Bolt circle
- 78 Fit for centering
- 73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 100	0308092	

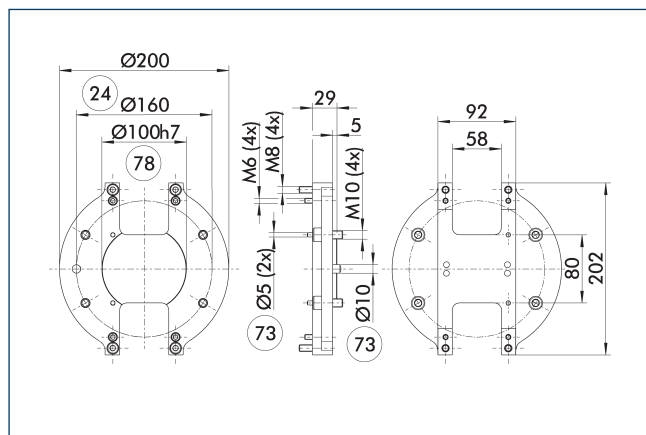
Adapter flange according to ISO-9409-1-125



- 24 Bolt circle
- 78 Fit for centering
- 73 Fit for centering pins

Description	ID	
ISO flanges		
ADF 125	0308093	

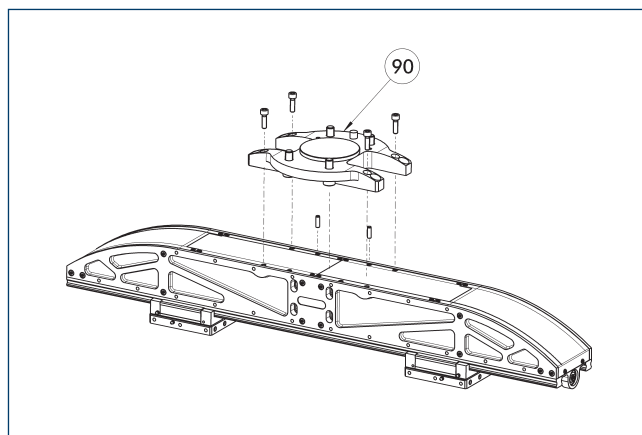
Adapter flange according to ISO-9409-1-160



- 24 Bolt circle
- 73 Fit for centering pins
- 78 Fit for centering

Description	ID	
ISO flanges		
ADF 160	0308094	

Adapter flange

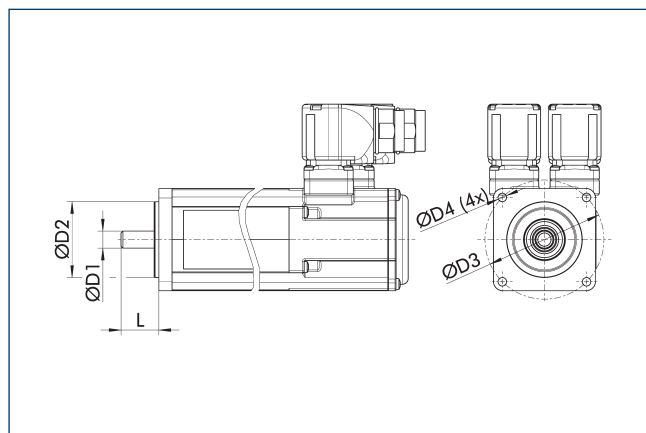


- 90 Adapter flange

Adapter flange for connection of additional SCHUNK components or customized attachments.

Description	ID	
ISO flanges		
ADF 050	0308090	
ADF 063	0308091	
ADF 100	0308092	
ADF 125	0308093	
ADF 160	0308094	

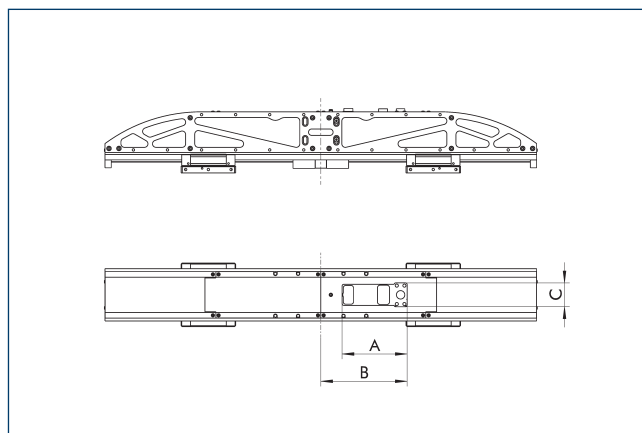
Motor add-on kit



The basic version without a drive motor (version B) can be equipped with the corresponding motor using a motor attachment kit. The motor itself is not part of the attachment kit, and must be provided by the customer.

Description	ID	D1	D2	D3	D4	L min/ max
		[mm]	[mm]	[mm]		[mm]
Motor add-on kits						
MAS-LEG 09-040-063-M04	1331135	9	40	63	M4	15/21
MAS-LEG 09-040-063-M05	1331148	9	40	63	M5	15/21
MAS-LEG 09-050-070-M05	1331139	9	50	70	M5	15/21
MAS-LEG 11-050-070-M04	1331129	11	50	70	M4	22/30

Cover plate



The cover plate protects the gripper against external influences up to protection class IP20. The basic version without a drive motor requires one cover plate for each motor.

Description	ID	A	B	C
		[mm]	[mm]	[mm]
Cover plate				
ADB-LEG 760-000-000-000	1331191	0	0	0
ADB-LEG 760-051-205-060	1331188	51	205	60
ADB-LEG 760-095-205-059	1331190	95	205	59
ADB-LEG 760-115-152-042	1331189	115	152	42



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