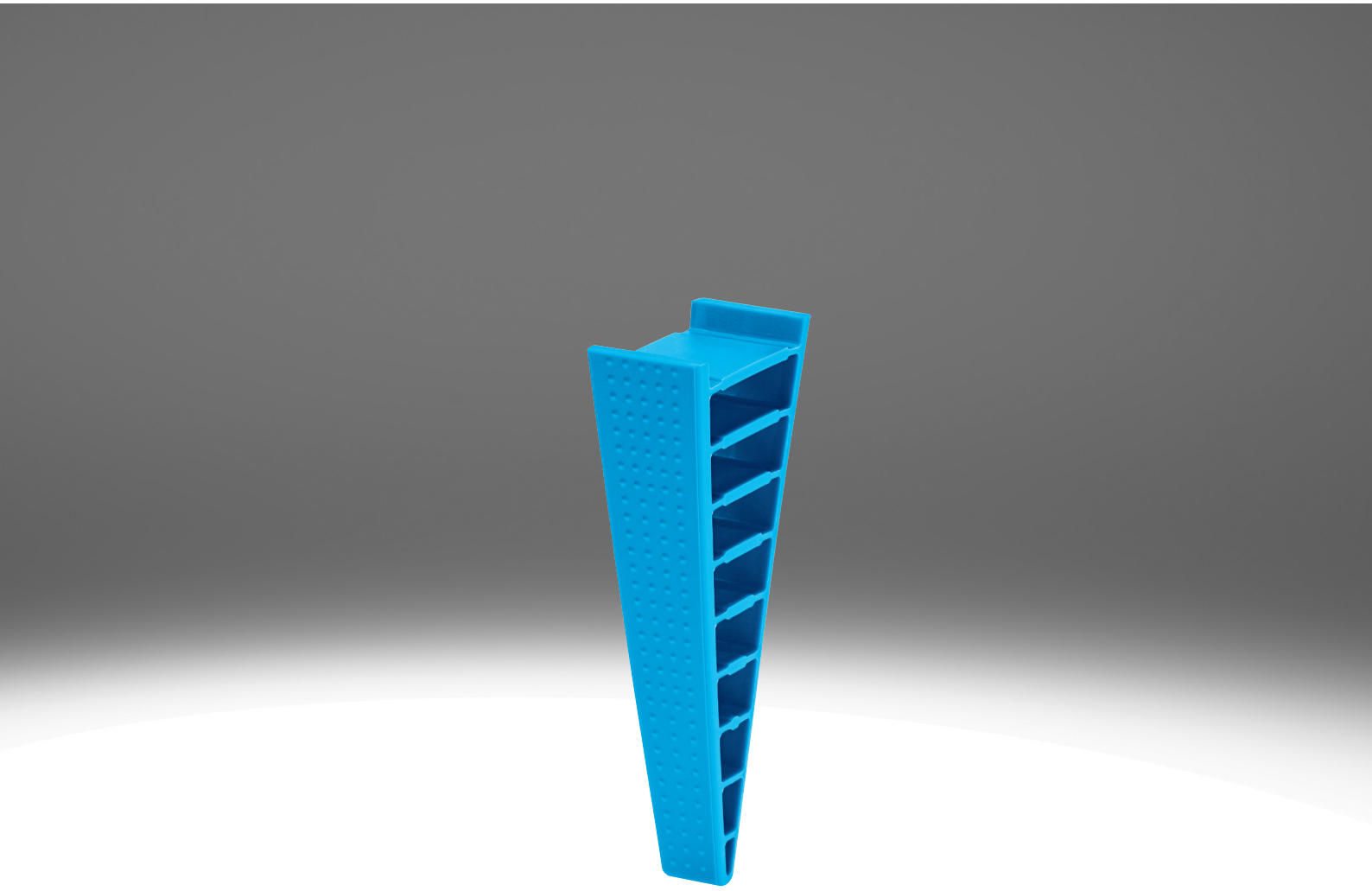
Adaptive gripper finger DHAS



Characteristics

At a glance Further information → dhas

Gripper finger for gentle and flexible gripping, using the Fin Ray effect modelled on a fish's tail fin. Two flexible bands, which meet at the top like a triangle, form the basis of the Fin Ray structure. The bands are connected by ribs, spaced at regular intervals, using flex hinges. This flexible but sturdy connection of the joints allows the gripper fingers to adapt to the contours of a workpiece.

Application areas:
- Machine building
- Agriculture
- Human-machine cooperation

Gripping:
- Particularly suitable for long-stroke, radial and angle grippers.
- The gripper fingers are suitable for gripping round shapes. The stroke per gripper jaw should be at least 10 mm.

Mounting:
- Additional mounting components are required to attach the gripper fingers to grippers. All information on this can be found in the gripper accessories.

Service life
- The gripper finger may become slightly deformed during its service life. However, this has no influence on the function of the gripper finger.

These gripper fingers are not designed for the following or similar application examples:
- Machining
- Aggressive media
- Grinding dust
- Welding spatter

Diagrams Further information → dhas

The diagrams shown in this document are also available online. These can be used to display precise values.

Trademarks

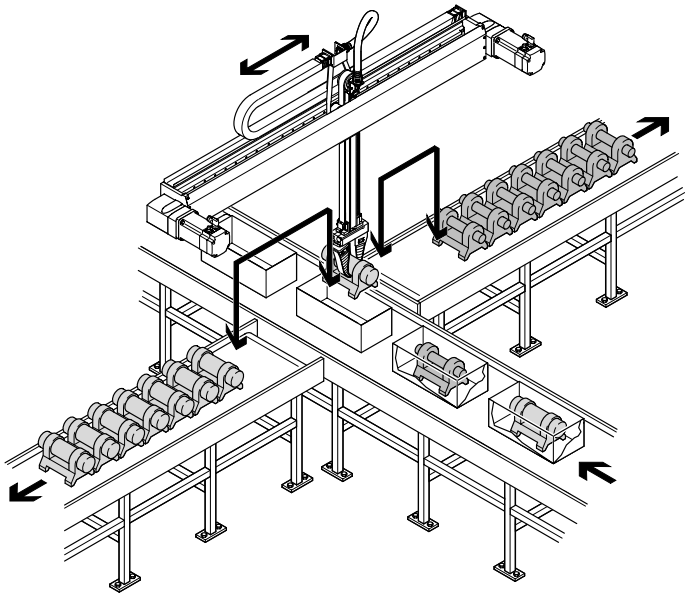
The following are the registered trademarks of the respective trademark owner in certain countries:
- Fin Ray Effect®
- Fin Ray Structure®

Special material properties

Metals with more than 1% copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, circuit boards, cables, electrical plug connectors and coils

Characteristics

Application example



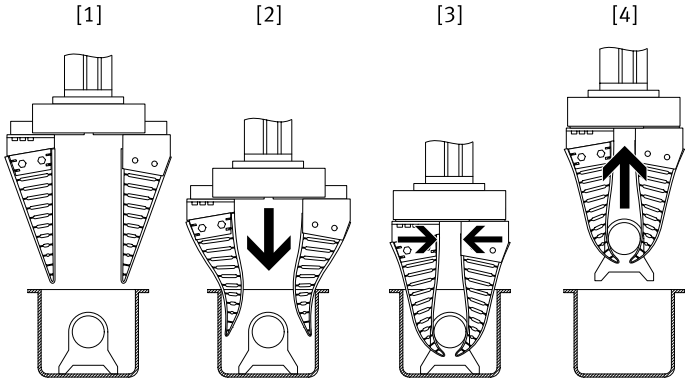
Transferring parts from tight packaging (see illustration):
- Different part diameters can be gripped in a form-fitting way with one gripper
- Using standard gripper jaws to grip parts that are tightly packed is difficult
- Thanks to the gripper fingers' pointed shape, they can be slid between the side and the workpiece, even if the workpiece is off-centre

Further application examples:

Transferring sensitive parts such as filter cartridges:
- Sensitive and fragile workpieces can be gripped gently
- Standard gripper jaws can damage workpieces during transfer
- The operating pressure can be adjusted using a proportional valve. This is particularly useful when the gripping force is distributed over several gripper fingers (less surface pressure)

Transferring unevenly shaped parts such as avocados:
- Differently shaped parts can be gripped in an adaptive and gentle way without any need to change the gripper
- The option of having an internal block to reduce the stroke is particularly suitable if the workpiece forms vary significantly
- By varying the distance between the grippers, both the gripping force and the flex distance (the distance by which the fingers flex if pressed) can be adapted

Overview



[1] Step 1: Position the gripper fingers above the packaging
[2] Step 2: Slide the gripper fingers along the inside of the packaging
[3] Step 3: Form-fit gripping of the workpiece
[4] Step 4: Lift the workpiece

Type code

001	Series	
DHAS	Gripper finger	

002	Product type	
GF	Fin jaw	

003	Size [mm]	
60	60	
80	80	
120	120	

004	Material	
U	Polyurethane	

005	Colour	
BU	Blue	

Datasheet

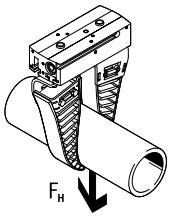
General technical data			
Size	60	80	120
Mounting position	optional		
Product weight	7 g	13 g	29 g
Material clamp jaws	TPE-U(PU)		
Note on materials	RoHS-compliant		
LABS (PWIS) conformity	VDMA24364-B1/B2-L		
Suitability for the production of Li-ion batteries	Metals with more than 1% by mass of copper, zinc or nickel by mass are excluded from use. Exceptions are nickel in steel, chemically nickel-plated surfaces, printed circuit boards, cables, electrical plug connectors and coils		

Operating and environmental conditions			
Size	60	80	120
Ambient temperature	10 ... 50°C		
Corrosion resistance class CRC [1]	2 - Moderate corrosion stress		
Suitable for use with food [2]	See supplementary material information		

1) More information: www.festo.com/x/topic/crc

2) More information www.festo.com/sp → Certificates.

Max. holding force FH as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23 °C

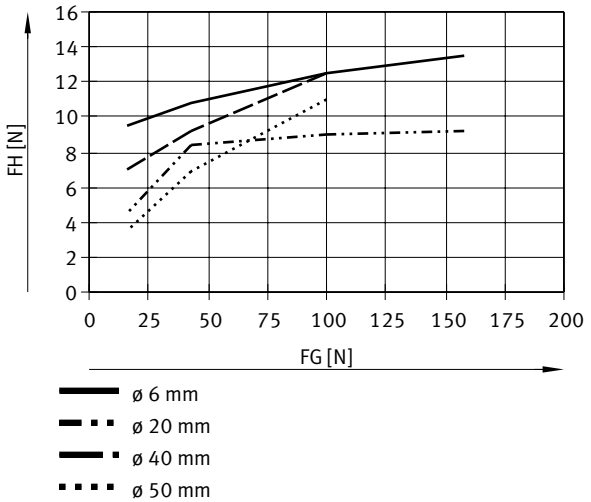


The holding force FH is the maximum force that may be applied so that the gripper fingers can still hold the workpiece.

The values were determined under the following conditions:
- With parallel gripper HGPL-14
- Cylindrical workpiece

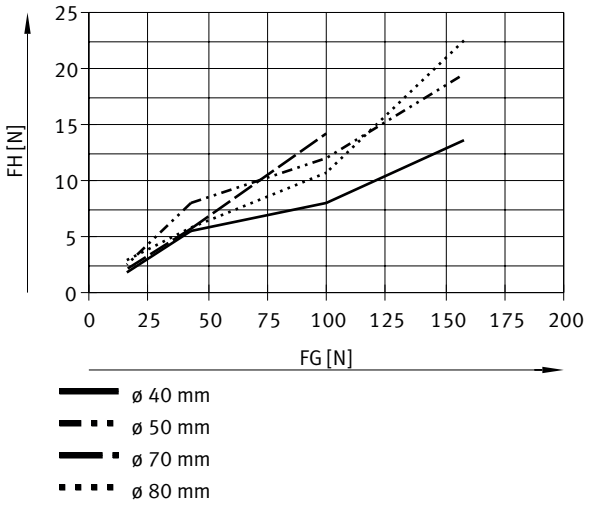
The values may differ under other ambient conditions (additional information on request).

Max. holding force FH as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23°C – DHAS-GF-60

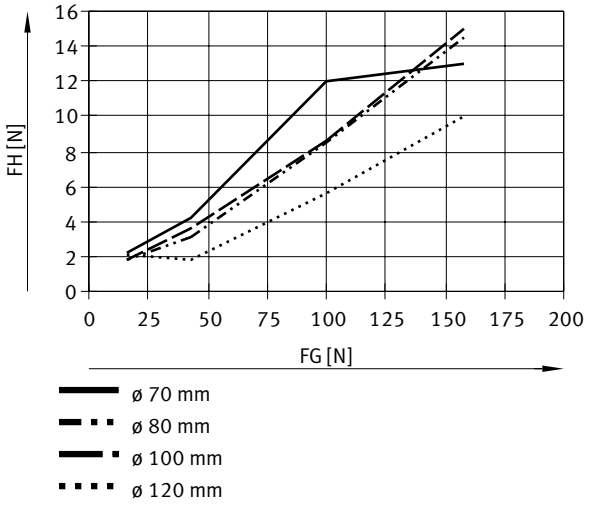


Datasheet

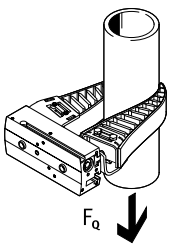
Max. holding force FH as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23°C – DHAS-GF-80



Max. holding force FH as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23°C – DHAS-GF-120



Max. lateral force FQ as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23 °C



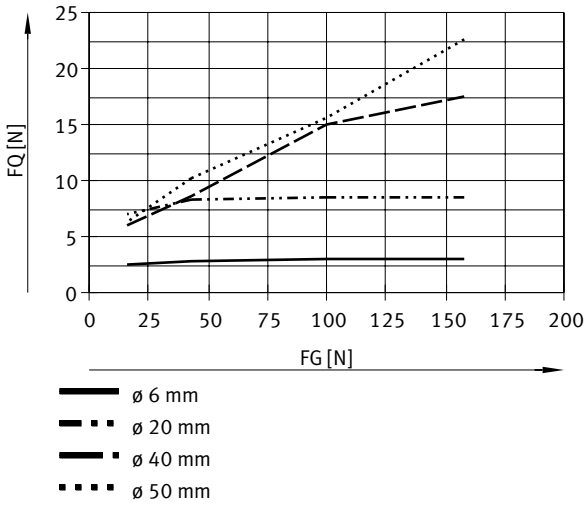
The lateral force FQ is the maximum force that may be applied so that the workpiece does not begin to slip.

The values were determined under the following conditions:
- With parallel gripper HGPL-14
- Cylindrical workpiece
- In the middle of the gripper finger (MP2)

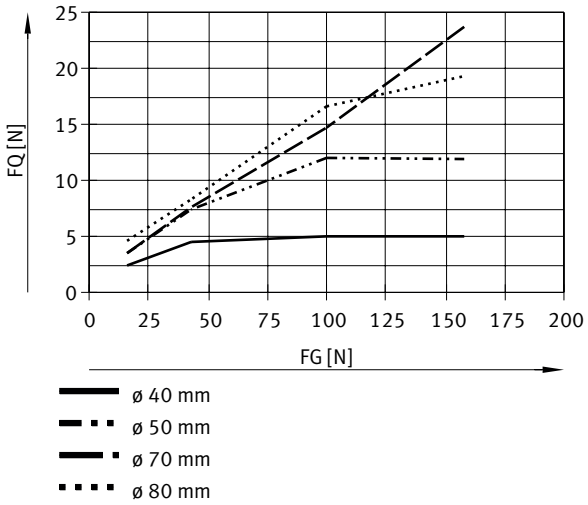
The values may differ under other ambient conditions (additional information on request).

Datasheet

Max. lateral force FQ as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23 °C – DHAS-GF-60

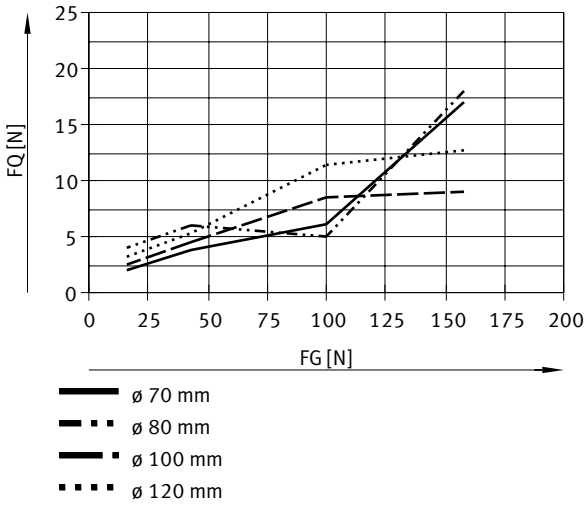


Max. lateral force FQ as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23°C – DHAS-GF-80

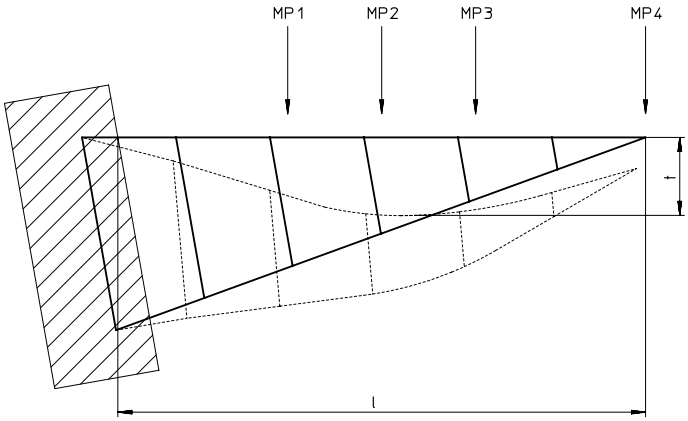


Datasheet

Max. lateral force FQ as a function of gripping force FG (of two gripper fingers) and workpiece diameter at 23°C – DHAS-GF-120



Indentation depth t as a function of gripping force FG (per gripper finger) at 23 °C



l = Total length
MP1 = Measuring point 1
MP2 = Measuring point 2
MP3 = Measuring point 3
MP4 = Measuring point 4
t = Indentation depth

DHAS-GF-60:
l = 50 mm
MP1 = 15 mm
MP2 = 25 mm
MP3 = 35 mm
MP4 = 50 mm
t for MP2 = 12 mm

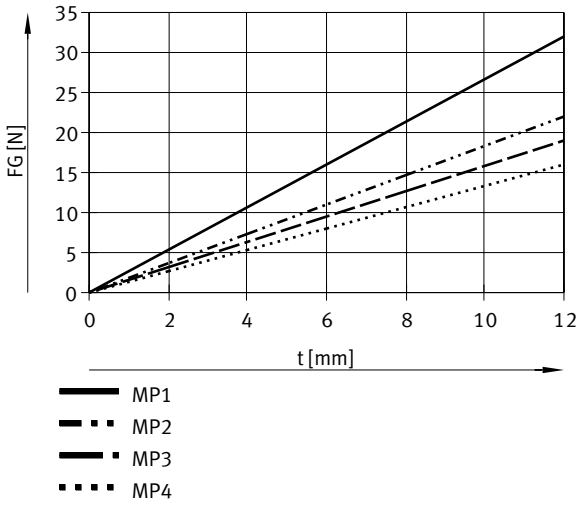
DHAS-GF-80:
l = 80 mm
MP1 = 30 mm
MP2 = 40 mm
MP3 = 50 mm
MP4 = 80 mm
t for MP2 = 20 mm

DHAS-GF-120:
l = 115 mm
MP1 = 47.5 mm
MP2 = 57.5 mm
MP3 = 67.5 mm
MP4 = 115 mm
t for MP2 = 30 mm

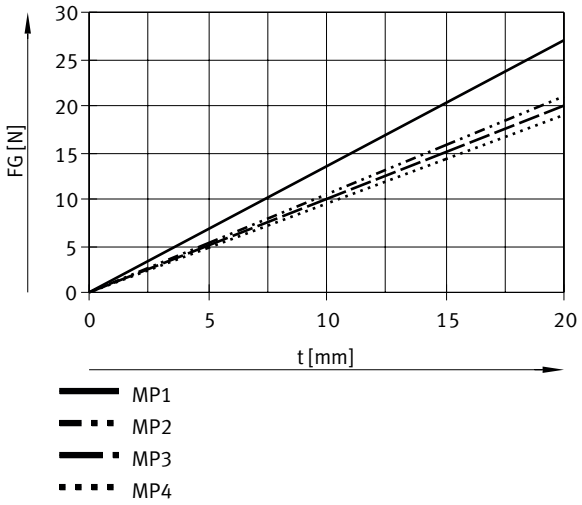
Workpieces are best gripped in the middle of the gripper finger (MP2).
The values may differ under other ambient conditions (additional information on request).

Datasheet

Indentation depth t as a function of gripping force FG (per gripper finger) at 23 °C – DHAS-GF-60

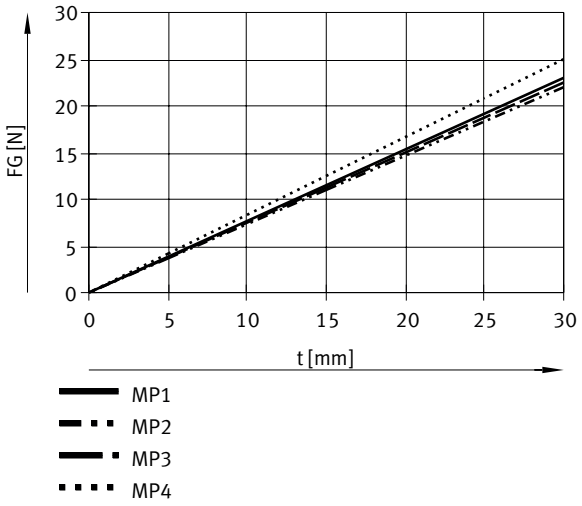


Indentation depth t as a function of gripping force FG (per gripper finger) at 23 °C – DHAS-GF-80



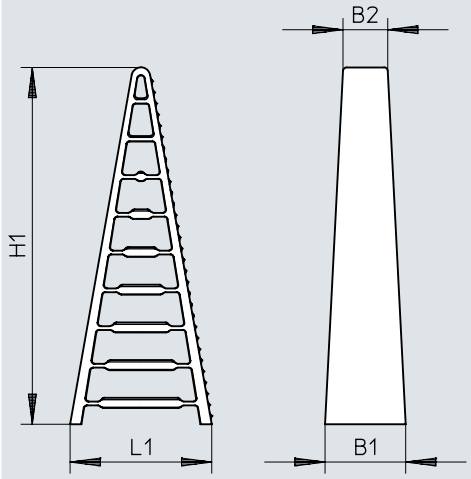
Datasheet

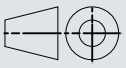
Indentation depth t as a function of gripping force FG (per gripper finger) at 23 °C – DHAS-GF-120



Dimensions

Dimensions – Adaptive gripper finger DHAS Download CAD data → www.festo.com





	B1	B2	H1	L1
DHAS-GF-60-U-BU	18	11,8	61,5	26
DHAS-GF-80-U-BU	21,3	11,8	94,5	37,5
DHAS-GF-120-U-BU	25	11,8	134,5	50

Ordering data

Adaptive gripper finger DHAS

	Size	Part no.	Type
	60	**3998967**	**DHAS-GF-60-U-BU**
	80	**3998964**	**DHAS-GF-80-U-BU**
	120	**3998959**	**DHAS-GF-120-U-BU**