



JW WINCO®
A Ganter Company

Hygienic Design

Standard Parts Especially for the
Use in Hygienically Sensitive Areas



Standard Parts. **Winco.**



Knobs,
T-Handles,
Cabinet
U-Handles



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with Tapped Holes
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Hygienic Design

Maximum hygiene is a fundamental requirement, not only where food is produced. Hygiene also plays an increasing role in other industrial areas, from the pharmaceutical industry to the manufacture of paints and dyes. Nowadays a major issue is the manufacture of products without added preservatives or with as few added preservatives as possible—while still achieving a long shelf life.

However, this can only be achieved in a production environment in which all risks of contamination with microorganisms or dirt are excluded. For plant construction, this means that all components, elements, as well as surfaces, must be designed accordingly. Contaminants must not accumulate and must be easy to remove.

JW Winco Has Solutions

Since even the smallest weak spots can contaminate entire production lines, JW Winco decided to develop a special series of Standard Parts that meet the high requirements of the EHEDG, DGUV Test and the 3-A Sanitary Standards, Inc.

The Hygienic Design Product Family

All Standard Parts of the “Hygienic Design” product family are labeled with the HD icon. They combine high surface quality, freedom from dead spaces, non-scooped outer surfaces, and sealed bolting areas. A sealing concept based on FEM calculations ensures reliable contact pressure after installation.

Hygienic Design also means that the time and material needed for regular cleaning is significantly reduced—which also noticeably lowers operating costs.



Why Hygienic Design?

In the food industry, medical technology and the pharmaceutical industry, product safety and consumer protection are becoming increasingly important.

Due to their specific properties, standard parts in Hygienic Design can support the production process in these sensitive areas and facilitate the manufacture of products with a long shelf life, reducing the need for preservative agents.

Advantages of Hygienic Design

Minimized and reduced cleaning process (this can be up to 25% of the production time), therefore

- more time available for production
- less fresh water consumption
- lower energy consumption
- less cleaning agent required
- less production of waste water
- lower total costs and saving of resources

Legal Basis of Hygienic Design

EN 1672-2:2009 “Food machinery”

Machines must be able to be cleaned, i.e. they must be designed and constructed so that dirt can be removed with the recommended cleaning methods.

Machinery directive 2006/42/EC

Machines must be designed so that

- materials can be easily and fully cleaned before each use and
- no risk of infections or illness is created.

DIN EN ISO 14519:2008-07

Hygiene requirements for the design of machines

DIN EN 1672-2:2021-05

Food machinery – General design principles – Part 2

Principles

Requirements, Design Principles

Construction requirements for Hygienic Design

Material

- Stainless steels
- FDA and EU compliant plastics and elastomers

Surfaces

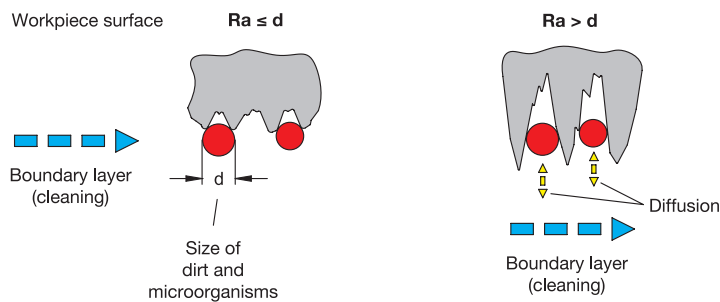
- Surfaces must be cleanable
- Steps due to non-aligned device arrangements should be avoided
- Seals must be designed so that no gaps occur
- O-ring grooves must be hygienically designed
- Contact with the product to be manufactured must be ruled out
- Corners should preferably have a radius of 6 mm or more

Design / Geometry

The interior and exterior areas of all appliances, components and piping must be self-draining or drainable and easy to clean.

Surface properties and roughness

Easy to clean with $Ra < 0.8 \mu\text{m}$



Design principles of Hygienic Design

EHEDG

- European Hygienic Engineering & Design Group
- European, nonprofit consortium of machine and food manufacturers and their suppliers, research institutes, universities and governmental health agencies
- Approximately 45 guidelines
- Testing of products and issuing of certificates



3-A Sanitary Standards, Inc.

- Nonprofit and independent organization in the USA
- Three interest groups:
 - Public and governmental health agencies, machine and food manufacturers
- Over 70 Sanitary Standards
- Testing of designs and processes, issuing of certificates



- **BGN** (Berufsgenossenschaft Nahrungsmittel und Gastgewerbe) [Food and Hospitality Trade Association]
- Active participation in national, European and international standardization efforts. Prevention of work accidents, occupational illnesses and work-related health risks
- European Machinery Directive (98/37/EC), plus the German Appliance and Product Safety Act (GPSG)
- Testing of parts and machines, issuing of certificates

Seals

For parts that are designed in Hygienic Design, seals have the central function of protecting dead spaces, gaps and cracks from penetration of cleaning fluids or product residues.

This requires a defined pre-tension / pressure of the seals and wipers for a reliable and permanent seal when installed. Within the Hygienic Design range, seal installation spaces and seal cross sections are therefore calculated and designed using simulation software in such a way that the necessary surface pressure is achieved during installation and at the same time, the seal material is not overstressed.

A fundamental differentiation can be made between static and movable seals: The **static seals** shown in the application example below (at the top towards the mounting surface (**sealing ring**) and at the bottom towards the installation

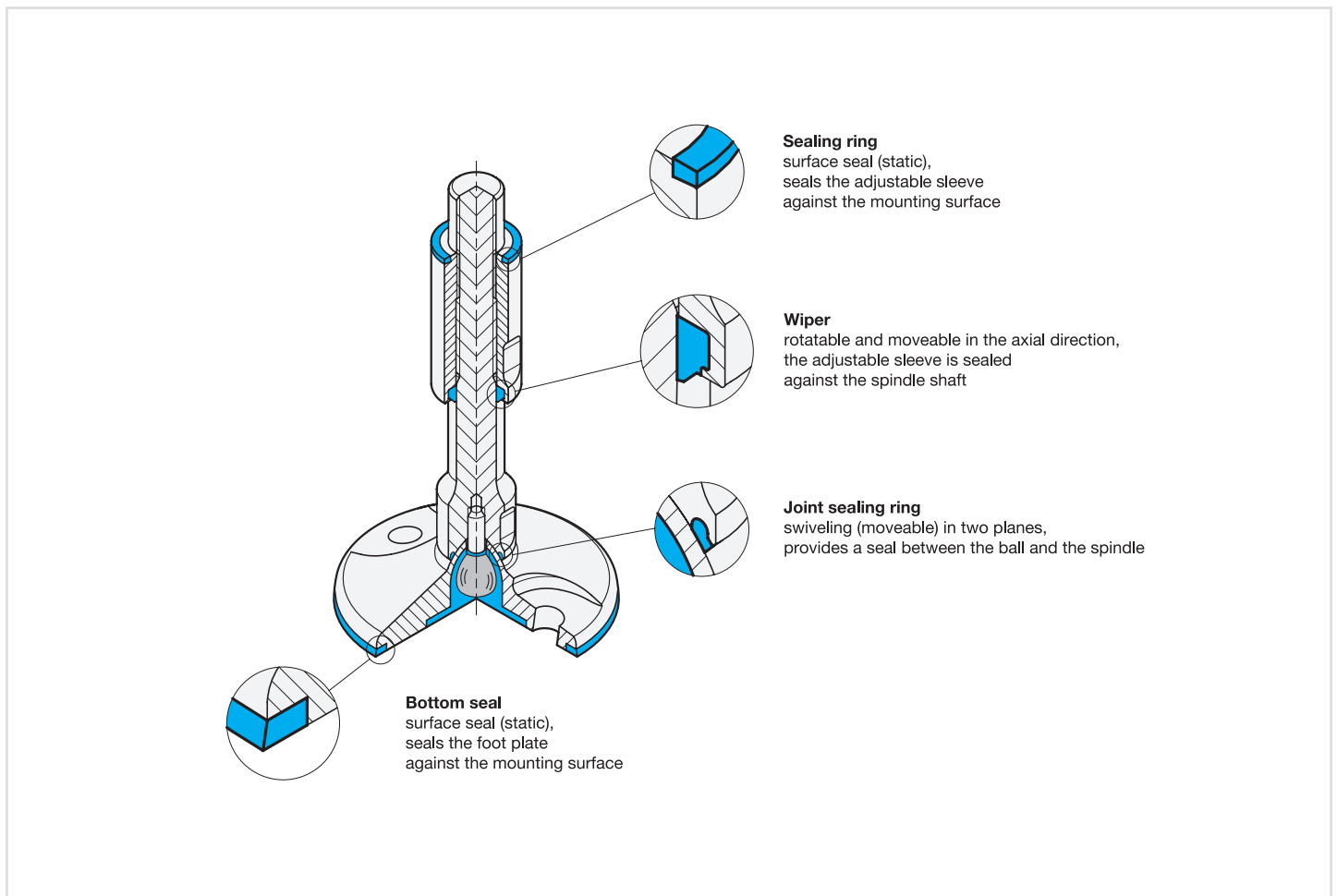
surface (**bottom seal**) are tightened during installation. It should be ensured that all surfaces in contact with the seals have a surface quality of at least Ra 0.8 µm.

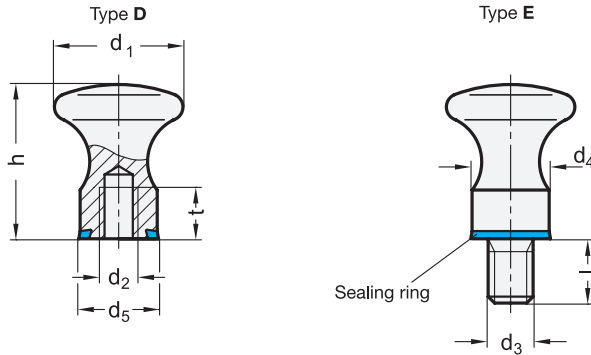
The **movable seals** on the adjustable sleeve (**wiper**) and on the ball joint (**joint sealing ring**) of the foot are designed in such a way that they allow an adjustment in height and angle. Also with these, the installation space together with the seal cross section ensures a gap-free, pre-tensioned seal.

Depending on the version and application, it may be necessary to replace the seals in case of damage or for preventative maintenance. For this purpose, JW Winco offers the respective seals separately as a standard part under **GN 7600** (→ page 35) and **GN 7607** (→ page 36) for spare part requirements.

Application example

With the example of a GN 20 Hygienic Design leveling foot, the illustrated design shows how the various seal configurations can be designed.





3 Type
D With tapped hole
E With threaded stud

Metric table

Dimensions in: millimeters - inches

1 d_1	2 d_2 Type D	3 d_3 Type E	d_4	d_5	h	Length l	t min.
20 0.79	M 5	M 5	14 0.55	14.8 0.58	24 0.94	10 0.39	7 0.28
25 0.98	M 6	M 6	16 0.63	16.8 0.66	29 1.14	12 0.47	9 0.35
32 1.26	M 8	M 8	18 0.71	18.8 0.74	37 1.46	14 0.55	12 0.47

Specification

- Stainless steel AISI 316L
 - Matte finish ($R_a < 0.8 \mu m$) **MT**
 - Polished finish ($R_a < 0.8 \mu m$) **PL**
- Sealing ring
 - H-NBR **H**
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
 - EPDM **E**
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
 - Blue
 - Hardness 85±5 shore A
 - FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Accessory

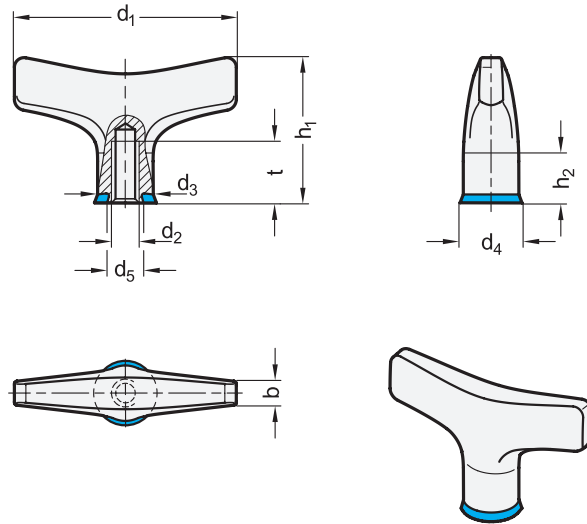
- Sealing rings GN 7600 → page 35

Information

GN 75.6 mushroom shaped knobs are intended for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The impervious geometry in combination with the high quality finish prevents the accumulation of dirt and facilitates cleaning.

GN 75.6 mushroom shaped knobs have a compact and timeless design.

<p>How to order</p> <p>1 2 3 4 5</p> <p>GN 75.6-25-M6-E-MT-H</p>	1 Handle diameter d_1
	2 Tapped hole d_2 (Threaded stud d_3)
	3 Type
	4 Finish
	5 Sealing ring material



Metric table

Dimensions in: millimeters - inches

¹ d ₁	² d ₂ Thread	b	d ₃	d ₄	d ₅	h ₁	h ₂ ≈	t min.
63 2.48	M 6	7 0.28	16 0.63	16.8 0.66	12 0.47	41 1.61	12 0.47	12 0.47
80 3.15	M 8	9 0.35	21 0.83	21.8 0.86	17 0.67	52 2.05	15 0.59	16 0.63
100 3.94	M 10	11 0.43	25 0.98	25.8 1.02	21 0.83	65 2.56	19 0.75	20 0.79

Specification

- Body
Stainless steel
precision casting AISI 316
- Matte finish (Ra < 0.8 μm) **MT**
- Polished finish (Ra < 0.8 μm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 Shore A
- FDA compliant
- *Plastic Characteristics* → page 2135
- *Stainless Steel Characteristics* → page 2143
- **RoHS**

Accessory

- Sealing rings GN 7600 → page 35

Information

T-handles GN 5064 are intended for use in hygienic areas. The sealed mounting surface enables mounting without dead spaces; the impervious geometry in combination with the high quality finish prevents the accumulation of dirt and facilitates cleaning.

T-handles are great for lifting, moving and operating parts or for clamping purposes by means of threads. The ergonomic shape allows for high operating forces.

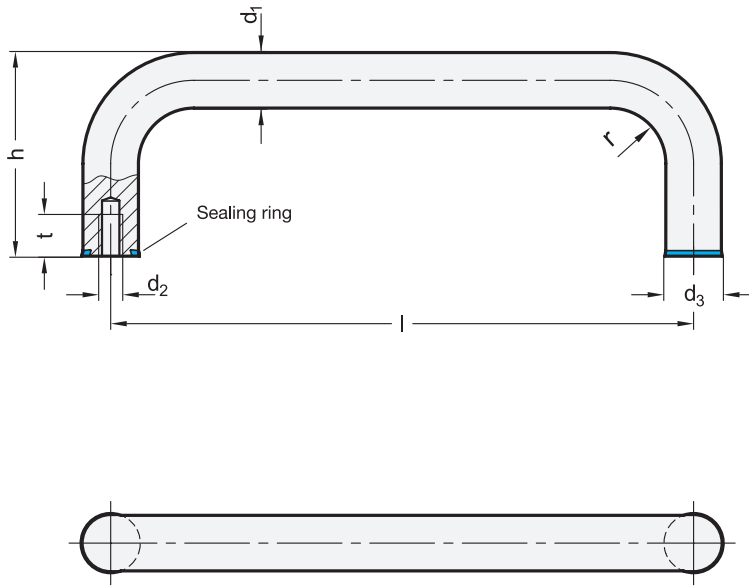
The T-handles can also be used in particularly aggressive environments thanks to the material used.

see also...

- *Wing Nuts GN 8341 (Stainless Steel, Hygienic Design)* → page 16

How to order	
¹ Handle diameter d ₁	
² Thread d ₂	
³ Finish	
⁴ Sealing ring material	

GN 5064-63-M6-PL-E



Metric table

Dimensions in: millimeters - inches

² d ₁	³ Length l ±0.5			d ₂	d ₃	h	r	t min.
12 0.47	125 4.92	160 6.30	200 7.87	M 5	12.8 0.50	51 2.01	14 0.55	12 0.47
16 0.63	160 6.30	200 7.87	250 9.84	M 6	16.8 0.66	59 2.32	18 0.71	12 0.47
20 0.79	200 7.87	250 9.84	300 11.81	M 8	20.8 0.82	85 3.35	22 0.87	15 0.59

Specification



- Body
Stainless steel AISI 316L **A4**
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- Load Rating Information
→ Standard Parts Handbook page 2068
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

GN 429 cabinet U-handles are intended for use in hygienic areas. The version with PL finish is certified according to the DGVV Test.
The sealed mounting surfaces enable fastening without dead spaces. The high quality finish prevents adherence of dirt and facilitates cleaning.

Accessory

- Sealing rings GN 7600 → page 35

On request

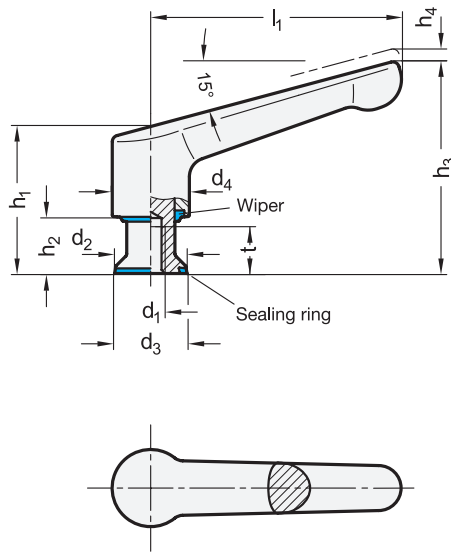
- Special lengths

How to order	1 Material
	2 Handle diameter d ₁
	3 Length l
	4 Finish
	5 Sealing ring material

GN 429-A4-12-160-MT-H



Standard Parts in [Hygienic Design](#)



Metric table

Dimensions in: millimeters - inches

¹ l ₁	² d ₁	d ₂	d ₃	d ₄	h ₁	h ₂	h ₃	h ₄ Stroke	t min.
63 2.48	M 6	14 0.55	14.8 0.58	19 0.75	43.8 1.72	16.3 0.64	60.1 2.37	2.5 0.10	10 0.39
63 2.48	M 8	18 0.71	18.8 0.74	19 0.75	45.8 1.80	18.3 0.72	62.1 2.44	2.5 0.10	12 0.47
78 3.07	M 8	18 0.71	18.8 0.74	24 0.94	49.3 1.94	16.5 0.65	69.3 2.73	3 0.12	12 0.47
78 3.07	M 10	22 0.87	22.8 0.90	24 0.94	51.3 2.02	18.5 0.73	71.3 2.81	3 0.12	15 0.59

Specification

- Lever body
Stainless steel
precision casting AISI 316
Polished finish (Ra < 0.8 μm) **PL**
- Tapped insert
Stainless steel AISI 304
- Sealing ring / wiper **H**
- H-NBR
Temperature resistant from
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

Adjustable levers GN 305 with solid stainless steel lever body are certified according to DGUV testing principles, making them suitable for use in in hygienic areas.

The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the impervious exterior surfaces prevent adherence of dirt and facilitates cleaning.

Adjustable levers are ideal whenever parts have to be clamped in a confined space or in a particular lever position.

The tapped insert is moveably attached to the handle with serrations. When pulling up on the handle the serration frees itself and can be re-located into any required position. Engagement is achieved by releasing the lever.

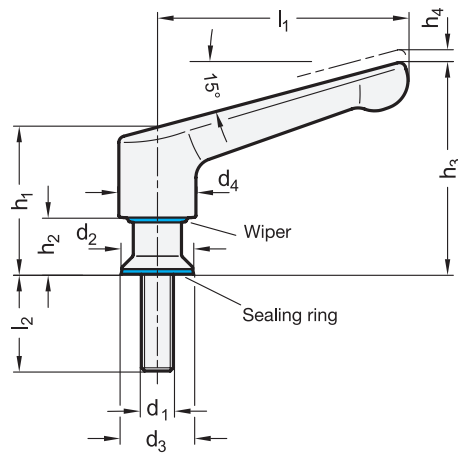
see also...

- Star Knobs GN 5435 (Stainless Steel, [Hygienic Design](#)) → page 14
- Three Lobe Knobs GN 5445 (Stainless Steel, [Hygienic Design](#)) → page 15

Accessory

- Sealing rings GN 7600 → page 35

How to order ¹ ² ³ ⁴ GN 305-63-M8-PL-H	1 Lever length l ₁
	2 Thread d ₁
	3 Finish
	4 Sealing ring material



Metric table

Dimensions in: millimeters - inches

¹ l ₁	² d ₁	³ l ₂					d ₂	d ₃	d ₄	h ₁	h ₂	h ₃	h ₄ Stroke
63 2.48	M 6	12 0.47	16 0.63	20 0.79	25 0.98	32 1.26	14 0.55	14.8 0.58	19 0.75	43.8 1.72	16.3 0.64	60.1 2.37	2.5 0.10
63 2.48	M 8	12 0.47	16 0.63	20 0.79	25 0.98	32 1.26	18 0.71	18.8 0.74	19 0.75	45.8 1.80	18.3 0.72	62.1 2.44	2.5 0.10
78 3.07	M 8	12 0.47	16 0.63	20 0.79	25 0.98	32 1.26	18 0.71	18.8 0.74	24 0.94	49.3 1.94	16.5 0.65	69.3 2.73	3 0.12
78 3.07	M 10	16 0.63	20 0.79	25 0.98	32 1.26	-	22 0.87	22.8 0.90	24 0.94	51.3 2.02	18.5 0.73	71.3 2.81	3 0.12

Specification

⁴ ⁵

- Lever body
Stainless steel
precision casting AISI 316
Polished finish (Ra < 0.8 µm) **PL**
- Threaded stud
Stainless steel AISI 304
- Sealing ring / wiper **H**
- H-NBR
Temperature resistant from
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

Adjustable levers GN 305 with solid stainless steel lever body are certified according to DGUV testing principles, making them suitable for use in in hygienic areas.

The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the impervious exterior surfaces prevent adherence of dirt and facilitates cleaning.

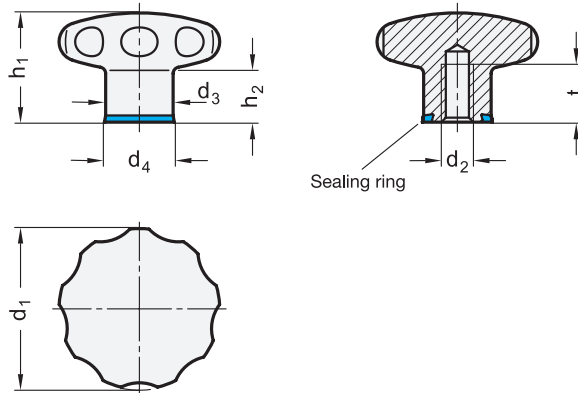
Adjustable levers are ideal whenever parts have to be clamped in a confined space or in a particular lever position.

The tapped insert is moveably attached to the handle with serrations. When pulling up on the handle the serration frees itself and can be re-located into any required position. Engagement is achieved by releasing the lever.

Accessory

- Sealing rings GN 7600 → page 35

<p>How to order</p> <p>¹ ² ³ ⁴ ⁵</p> <p>GN 305-78-M10-20-PL-H</p>	1 Lever length l ₁
	2 Thread d ₁
	3 Thread length l ₂
	4 Finish
	5 Sealing ring material



Metric table

Dimensions in: millimeters - inches

¹ d ₁	² d ₂	d ₃	d ₄	h ₁	h ₂	t min.
40 1.57	M 6	18 0.71	18.8 0.74	30.5 1.20	15 0.59	12 0.47
40 1.57	M 8	18 0.71	18.8 0.74	30.5 1.20	15 0.59	15 0.59
50 1.97	M 8	21 0.83	21.8 0.86	34 1.34	17 0.67	15 0.59
50 1.97	M 10	21 0.83	21.8 0.86	34 1.34	17 0.67	18 0.71

Specification

- Star knob
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

GN 5435 star knobs are intended for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The high quality finish and the large corner radii prevent adherence of dirt and facilitate cleaning.

see also...

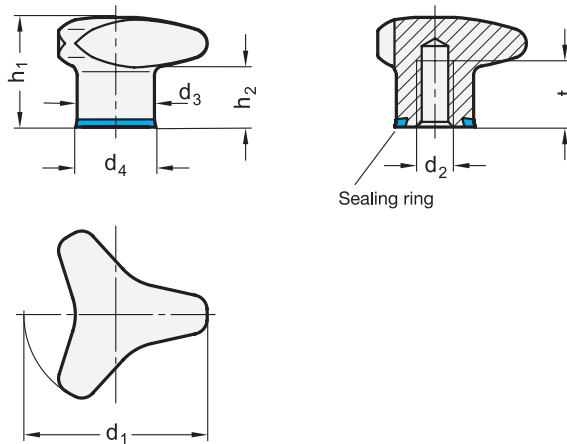
- Three-Lobed Knobs GN 5445 (Stainless Steel, *Hygienic Design*) → page 15
- Adjustable Levers GN 305 (Stainless Steel, *Hygienic Design*) → page 12 / 13

Accessory

- Sealing rings GN 7600 → page 35

How to order	
¹	Handle diameter d ₁
²	Thread d ₂
³	Finish
⁴	Sealing ring material

GN 5435-40-M8-PL-H



Metric table

Dimensions in: millimeters - inches

¹ d ₁	² d ₂	d ₃	d ₄	h ₁	h ₂	t min.
40 1.57	M 6	18 0.71	18.8 0.74	26 1.02	15 0.59	12 0.47
40 1.57	M 8	18 0.71	18.8 0.74	26 1.02	15 0.59	15 0.59
50 1.97	M 8	21 0.83	21.8 0.86	30 1.18	17 0.67	15 0.59
50 1.97	M 10	21 0.83	21.8 0.86	30 1.18	17 0.67	18 0.71

Specification

- Three-lobed knob
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

GN 5445 three-lobed knobs are intended for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the large corner radii and closed surfaces prevent adherence of dirt and facilitate cleaning.

see also...

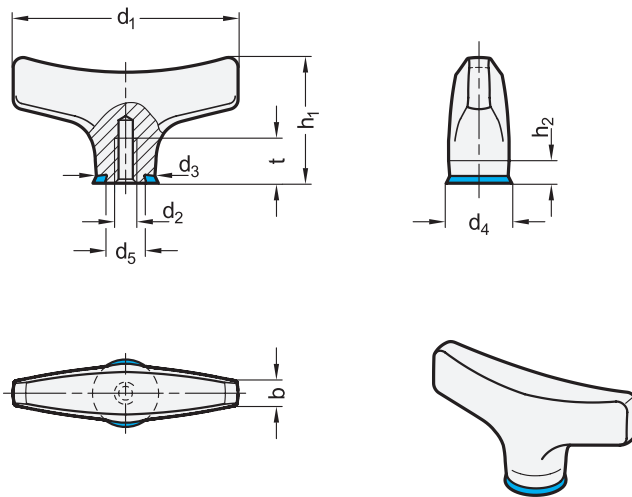
- Star Knobs GN 5435 (Stainless Steel, *Hygienic Design*) → page 14
- Adjustable Levers GN 305 (Stainless Steel, *Hygienic Design*) → page 13 / 14

Accessory

- Sealing rings GN 7600 → page 35

How to order	
¹	Handle diameter d ₁
²	Thread d ₂
³	Finish
⁴	Sealing ring material

GN5445-40-M8-PL-H



Metric table

¹ d ₁	² d ₂	b	d ₃	d ₄	d ₅	h ₁	h ₂ ≈	t min.
40 1.57	M 4	4 0.16	11 0.43	11.8 0.46	7 0.28	22 0.87	4 0.16	8 0.31
50 1.97	M 5	5 0.20	13 0.51	13.8 0.54	9 0.35	28 1.10	5 0.20	10 0.39
63 2.48	M 6	7 0.28	16 0.63	16.8 0.66	12 0.47	35 1.38	6 0.24	12 0.47

Dimensions in: millimeters - inches

Specification

- Body
Stainless steel
precision casting AISI 316
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 Shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS

Information

Wing nuts GN 8341 are intended for use in hygienic areas. The sealed mounting surface enables mounting without dead spaces; the impervious geometry in combination with the high quality finish prevents the accumulation of dirt and facilitates cleaning.

Wing nuts clamp and fasten parts easily without tools. The ergonomic shape allows for high tightening forces.

The wing nuts can also be used in particularly aggressive environments thanks to the material used.

see also...

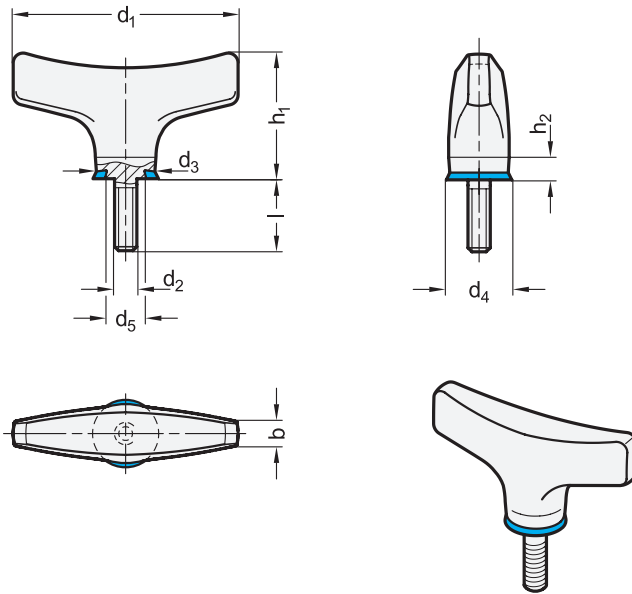
- Wing Screws GN 8351 (Stainless Steel, [Hygienic Design](#)) → page 17
- T-Handles GN 5064 (Stainless Steel, [Hygienic Design](#)) → page 9

Accessory

- Sealing rings GN 7600 → page 35

How to order	
¹ Handle diameter d ₁	
² Thread d ₂	
³ Finish	
⁴ Sealing ring material	

GN8341-50-M5-MT-E



Metric table

Dimensions in: millimeters - inches											
1	2	3									
d ₁	d ₂	Length l			b	d ₃	d ₄	d ₅	h ₁	h ₂ ≈	
40 1.57	M 4	8 0.31	12 0.47	16 0.63	4 0.16	11 0.43	11.8 0.46	7 0.28	22 0.87	4 0.16	
50 1.97	M 5	12 0.47	16 0.63	20 0.79	5 0.20	13 0.51	13.8 0.54	9 0.35	28 1.10	5 0.20	
63 2.48	M 6	16 0.63	20 0.79	25 0.98	7 0.28	16 0.63	16.8 0.66	12 0.47	35 1.38	6 0.24	

Specification

- Body
Stainless steel
precision casting AISI 316
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 Shore A
- FDA compliant
- Plastic Characteristics
→ *Standard Parts Handbook page 2135*
- Stainless Steel Characteristics
→ *Standard Parts Handbook page 2143*
- RoHS

Accessory

- Sealing rings GN 7600 → *page 35*

Information

Wing screws GN 8351 are intended for use in hygienic areas. The sealed mounting surface enables mounting without dead spaces; the impervious geometry in combination with the high quality finish prevents the accumulation of dirt and facilitates cleaning.

Wing screws clamp and fasten parts easily without tools. The ergonomic shape allows for high tightening forces.

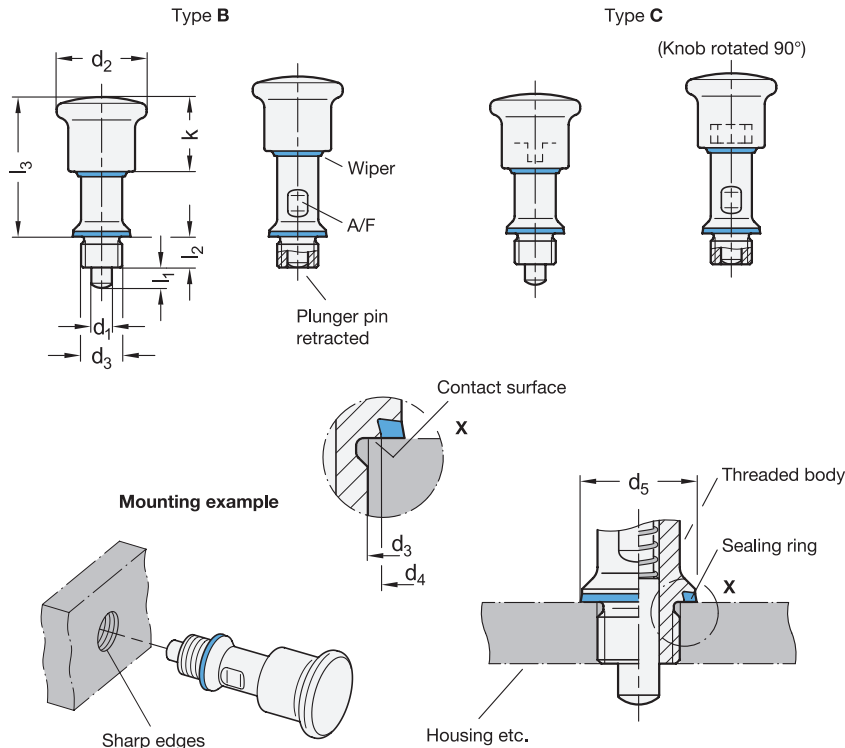
The wing screws can also be used in particularly aggressive environments thanks to the material used.

see also...

- *Wing Nuts GN 8341 (Stainless Steel, Hygienic Design) → page 16*

How to order	
1	Handle diameter d ₁
2	Thread d ₂
3	Length l
4	Finish
5	Sealing ring material

GN 8351-50-M5-16-MT-E



2 Type

- B** Non lock-out
- C** Lock-out

3 Identification

FH Without sealing lock nut, knob side in Hygienic Design

Metric table



Dimensions in: millimeters - inches

d ₁ Pin f8 Bore H8	d ₂	d ₃	d ₄	d ₅	l ₁	l ₂	l ₃	k	A/F	Spring load ≈	
										Initial	End
6 0.24	35 1.38	M 12 x 1.5	18 0.71	22.8 0.90	6 0.24	12 0.47	49.8 1.96	29 1.14	14 0.55	20 N 4.50 lbf	36 N 8.09 lbf
8 0.31	35 1.38	M 16 x 1.5	18 0.71	22.8 0.90	8 0.31	12 0.47	54.3 2.14	29 1.14	14 0.55	22 N 4.95 lbf	32 N 7.19 lbf

Specification



- Threaded body / knob / plunger pin
Stainless steel AISI 316
Plunger pin case-hardened
- Spring
Stainless steel AISI 316Ti
- Seals
 - Blue
 - Temperature resistant from -13 °F to +230 °F (-25 °C to +110 °C)
 - FDA compliant
 - Sealing ring
H-NBR, hardness 85 ±5 shore A **H**
 - Wiper
TPU, hardness 95 ±5 shore A
- All moving parts are lubricated with a special, FDA compliant grease
- Load Rating Information
→ Standard Parts Handbook page 2103
- ISO Fundamental Tolerances
→ Standard Parts Handbook page 2129
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

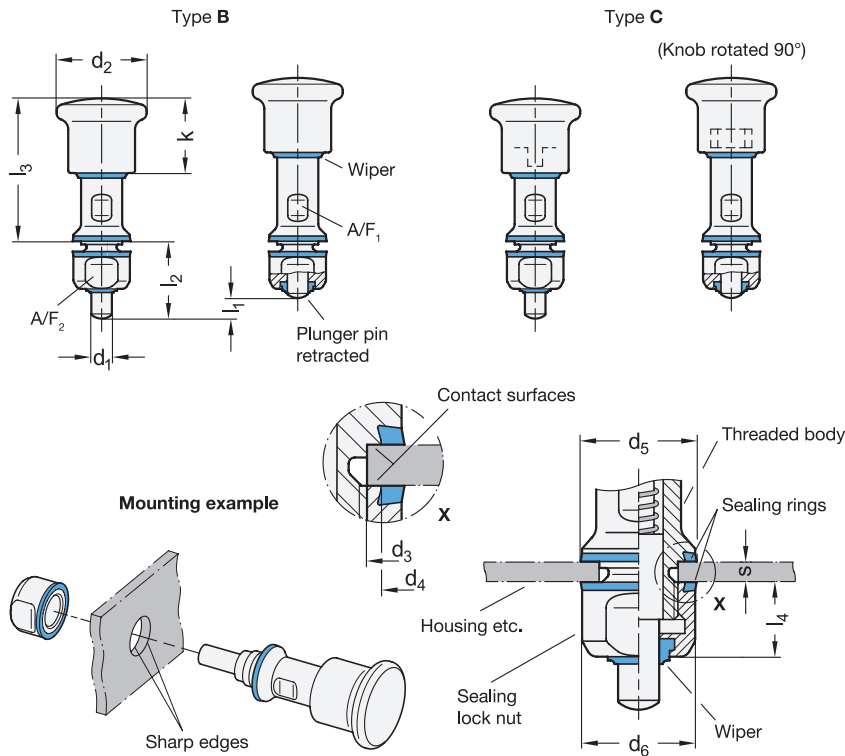
Information

GN 8170 indexing plungers are certified according to DGUV Test and meet hygienic requirements on the knob side. Wipers between the knob and the threaded body as well as the sealing ring between the threaded body and the housing keep the mechanics on the knob side sealed. The high surface quality (Ra < 0.8 µm) and the free of dead-space mounting prevent dirt from adhering and facilitate cleaning.

Indexing plungers with lock-out (type C) are used for applications where the plunger pin needs to stay in its retracted position. To achieve this, the knob is rotated by 90 degrees after being retracted. A notch keeps the plunger in the retracted position.

Mounting holes and through-holes in the housing must be drilled at a right angle, free of burrs and without a chamfer. This ensures that the sealing rings will function after being mounted.

<p>How to order</p> <p>GN8170-8-C-FH-H</p>	1 Pin diameter d ₁
	2 Type
	3 Identification
	4 Sealing ring material



2 Type

- B** Non lock-out
- C** Lock-out

3 Identification

VH With sealing lock nut, knob and pin side in Hygienic Design

Metric table

Dimensions in: millimeters - inches

d ₁ Pin f8 Bore H8	d ₂	d ₃ -0.1	d ₄	d ₅	d ₆	l ₁	l ₂	l ₃	l ₄	k	s Clamping distance		A/F ₁	A/F ₂	Spring load ≈	
											min.	max.			Initial	End
6 0.24	35 1.38	16 0.63	18 0.71	22.8 0.90	22 0.87	6 0.24	27.5 1.08	50.5 1.99	14.5 0.57	29 1.14	1.5 0.06	4 0.16	14 0.55	18 0.71	20 N 4.50 lbf	36 N 8.09 lbf
8 0.31	35 1.38	16 0.63	18 0.71	22.8 0.90	22 0.87	8 0.31	29.5 1.16	55.5 2.19	14.5 0.57	29 1.14	1.5 0.06	4 0.16	14 0.55	18 0.71	22 N 4.95 lbf	32 N 7.19 lbf

Specification

- Threaded body / knob / plunger pin
Stainless steel AISI 316
Plunger pin case-hardened
- Spring
Stainless steel AISI 316Ti
- Seals
 - Blue
 - Temperature resistant from -13 °F to +230 °F (-25 °C to +110 °C)
 - FDA compliant
 - Sealing rings
H-NBR, hardness 85 ±5 shore A **H**
 - Wiper
TPU, hardness 95 ±5 shore A
- All moving parts are lubricated with a special, FDA compliant grease
- Load Rating Information
→ Standard Parts Handbook page 2103
- ISO Fundamental Tolerances
→ Standard Parts Handbook page 2129
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

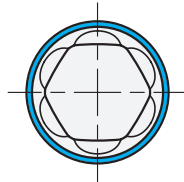
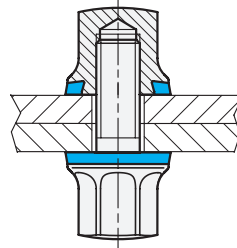
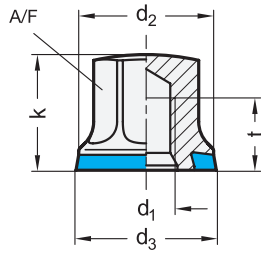
Information

GN 8170 indexing plungers are certified according to DGUV Test and, with their additional sealing lock nut, meet hygienic requirements on the knob and pin side. Wipers between knob and threaded body and between threaded body and pin as well as sealing rings on the threaded body and sealing lock nut keep the mechanics sealed. The high surface quality (Ra < 0.8 µm) and the free of dead-space mounting prevent dirt from adhering and facilitate cleaning.

Indexing plungers with lock-out (type C) are used for applications where the plunger pin needs to stay in its retracted position. To achieve this, the knob is rotated by 90 degrees after being retracted. A notch keeps the plunger in the retracted position.

Through-holes in the housing must be drilled at a right angle, free of burrs and without a chamfer. This ensures that the sealing rings will function after being mounted.

<p>How to order</p> <p>GN8170-6-B-VH-H</p>	1 Pin diameter d ₁
	2 Type
	3 Identification
	4 Sealing ring material



Metric table

Dimensions in: millimeters - inches

d ₁	d ₂	d ₃	k	t min.	A/F
M 4	11 0.43	11.8 0.46	9.5 0.37	6 0.24	7 0.28
M 5	12 0.47	12.8 0.50	10 0.39	6 0.24	8 0.31
M 6	14 0.55	14.8 0.58	12 0.47	7.5 0.30	10 0.39
M 8	18 0.71	18.8 0.74	14.5 0.57	9.5 0.37	13 0.51
M 10	21 0.83	21.8 0.86	18 0.71	12 0.47	16 0.63
M 12	25 0.98	25.8 1.02	21 0.83	14.5 0.57	18 0.71
M 16	32 1.26	32.8 1.29	26 1.02	17 0.67	24 0.94
M 20	40 1.57	40.8 1.61	32 1.26	22 0.87	30 1.18

Specification

- Body
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- EHEDG Principles
→ *Standard Parts Handbook page 1508*
- Plastic Characteristics
→ *Standard Parts Handbook page 2135*
- Stainless Steel Characteristics
→ *Standard Parts Handbook page 2143*
- RoHS compliant

Information

GN 1580 nuts are certified according to EHEDG guidelines and are therefore ideal for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the large corner radii and closed surfaces prevent adherence of dirt and facilitate cleaning.

see also...

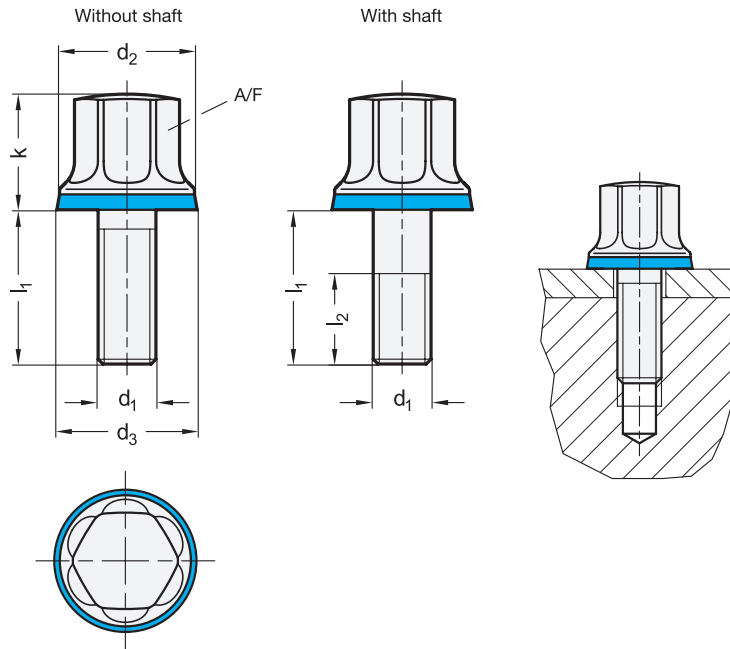
- *Leveling Feet GN 20 (Stainless Steel, with Mounting Holes, [Hygienic Design](#))* → page 31
- *Hex Head Screws GN 1580 (Stainless Steel, [Hygienic Design](#))* → page 21

Accessory

- Sealing rings GN 7600 → page 35

How to order (H-NBR sealing ring)	1 Thread d ₁
GN 1580-M10-MT-H	2 Finish
	3 Sealing ring material

How to order (EPDM sealing ring)	1 Thread d ₁
GN 1580-M10-PL-E	2 Finish
	3 Sealing ring material



Metric table

Dimensions in: millimeters - inches

d ₁	l ₁				With shaft			d ₂	d ₃	k	l ₂	A/F
	Without shaft											
M 4	8 0.31	10 0.39	12 0.47	-	16 0.63	-	-	11 0.43	11.8 0.46	9.5 0.37	14 0.55	7 0.28
M 5	10 0.39	16 0.63	-	-	20 0.79	-	-	12 0.47	12.8 0.50	10 0.39	16 0.63	8 0.31
M 6	12 0.47	16 0.63	20 0.79	25 0.98	30 1.18	-	-	14 0.55	14.8 0.58	12 0.47	18 0.71	10 0.39
M 8	16 0.63	20 0.79	25 0.98	30 1.18	40 1.57	-	-	18 0.71	18.8 0.74	14.5 0.57	22 0.87	13 0.51
M 10	20 0.79	25 0.98	30 1.18	-	40 1.57	50 1.97	-	21 0.83	21.8 0.86	18 0.71	26 1.02	16 0.63
M 12	25 0.98	30 1.18	-	-	40 1.57	50 1.97	60 2.36	25 0.98	25.8 1.02	21 0.83	30 1.18	18 0.71
M 16	30 1.18	40 1.57	-	-	50 1.97	60 2.36	70 2.76	32 1.26	32.8 1.29	26 1.02	38 1.50	24 0.94
M 20	40 1.57	-	-	-	60 2.36	-	-	40 1.57	40.8 1.61	32 1.26	46 1.81	30 1.18

Specification

- Body
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- EHEDG Principles
→ Standard Parts Handbook page 1508
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

GN 1580 hex head screws are certified according to EHEDG guidelines and are therefore ideal for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the large corner radii and closed surfaces prevent adherence of dirt and facilitate cleaning.

Accessory

- Sealing rings GN 7600 → page 35

How to order (H-NBR sealing ring)

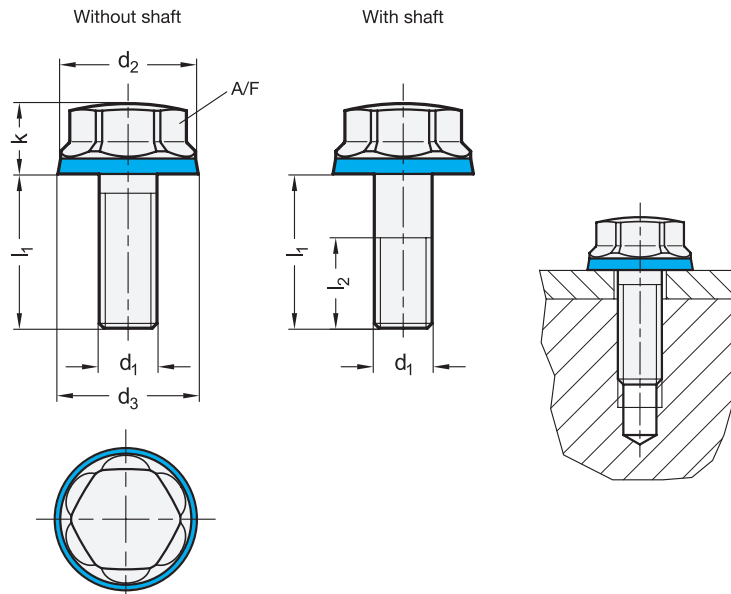
1	Thread d ₁
2	Length l ₁
3	Finish
4	Sealing ring material

GN 1580-M10-50-PL-H

How to order (EPDM sealing ring)

1	Thread d ₁
2	Length l ₁
3	Finish
4	Sealing ring material

GN 1580-M8-30-PL-E



Metric table

Dimensions in: millimeters - inches

d ₁	1 2					d ₂	d ₃	k	l ₂	A/F					
	Without shaft		With shaft												
M 4	8 0.31	10 0.39	12 0.47	-	-	16 0.63	20 0.79	25 0.98	30 1.18	-	10 0.39	10.8 0.43	6.5 0.26	14 0.55	7 0.28
M 5	10 0.39	16 0.63	-	-	-	20 0.79	25 0.98	30 1.18	35 1.38	40 1.57	11 0.43	11.8 0.46	7 0.28	16 0.63	8 0.31
M 6	12 0.47	16 0.63	20 0.79	25 0.98	-	30 1.18	35 1.38	40 1.57	50 1.97	-	13 0.51	13.8 0.54	7.5 0.30	18 0.71	10 0.39
M 8	16 0.63	20 0.79	25 0.98	30 1.18	-	40 1.57	50 1.97	60 2.36	-	-	16 0.63	16.8 0.66	8.5 0.33	22 0.87	13 0.51
M 10	20 0.79	25 0.98	30 1.18	-	-	40 1.57	50 1.97	60 2.36	-	-	19 0.75	19.8 0.78	9.5 0.37	26 1.02	16 0.63
M 12	25 0.98	30 1.18	-	-	-	40 1.57	50 1.97	60 2.36	-	-	22 0.87	22.8 0.90	11 0.43	30 1.18	18 0.71
M 16	30 1.18	40 1.57	-	-	-	50 1.97	60 2.36	70 2.76	-	-	28 1.10	28.8 1.13	13 0.51	38 1.50	22 0.87
M 20	40 1.57	-	-	-	-	60 2.36	-	-	-	-	34 1.34	34.8 1.37	15 0.59	46 1.81	27 1.06

Specification

- Body
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85±5 shore A
- FDA compliant
- EHEDG Principles
→ Standard Parts Handbook page 1508
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Accessory

- Sealing rings GN 7600 → page 35

Information

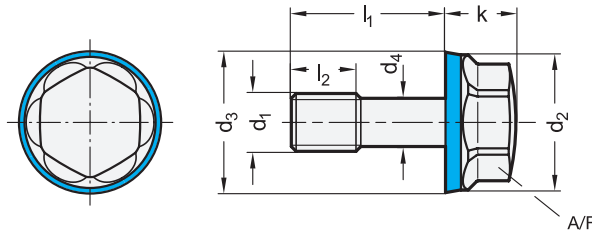
GN 1581 hex head screws with low-profile head are certified according to EHEDG guidelines and are ideal for use in hygienic areas. The sealed mounting surface enables fastening without dead spaces. The high quality finish as well as the large corner radii and closed surfaces prevent adherence of dirt and facilitate cleaning.

see also...

- Leveling Feet GN 20 (Stainless Steel, with Mounting Holes, *Hygienic Design*) → page 31
- Nuts GN 1580 (Stainless Steel, *Hygienic Design*) → page 20

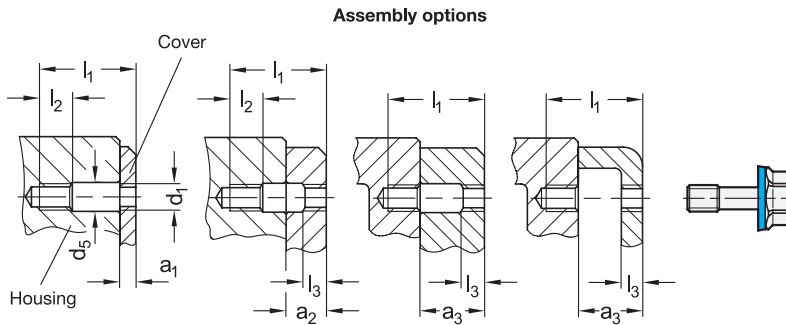
How to order	
1	Thread d ₁
2	Length l ₁
3	Finish
4	Sealing ring material

GN 1581-M10-50-PL-H



5 Identification no.

1 Without additional lock washer



Metric table

Dimensions in: millimeters - inches

1	2	3	4	5	6	7	8	9	10	11	12	13	14
d ₁	l ₁	a ₁	a ₂	a ₃	d ₂	d ₃	d ₄ -0.2	d ₅	k	l ₂	l ₃	A/F	
M 5	20 0.79	2.5-6 0.10-0.24	6-10.5 0.24-0.41	10.5-14 0.41-0.55	11 0.43	11.8 0.46	4 0.157	5.5 0.22	7 0.28	6 0.24	2.5 0.10	8 0.31	
M 5	25 0.98	6-11 0.24-0.43	11-14 0.43-0.55	14-19 0.55-0.75	11 0.43	11.8 0.46	4 0.157	5.5 0.22	7 0.28	6 0.24	2.5 0.10	8 0.31	
M 6	25 0.98	3-7 0.12-0.28	7-13 0.28-0.51	13-17 0.51-0.67	13 0.51	13.8 0.54	4.8 0.189	6.5 0.26	7.5 0.30	8 0.31	3 0.12	10 0.39	
M 6	30 1.18	7-12 0.28-0.47	12-17 0.47-0.67	17-22 0.67-0.87	13 0.51	13.8 0.54	4.8 0.189	6.5 0.26	7.5 0.30	8 0.31	3 0.12	10 0.39	
M 8	30 1.18	4-8 0.16-0.31	8-16 0.31-0.63	16-20 0.63-0.79	16 0.63	16.8 0.66	6.5 0.256	8.5 0.33	8.5 0.33	10 0.39	4 0.16	13 0.51	
M 8	40 1.57	8-18 0.31-0.71	18-25 0.71-0.98	25-30 0.98-1.18	16 0.63	16.8 0.66	6.5 0.256	8.5 0.33	8.5 0.33	10 0.39	4 0.16	13 0.51	
M 10	40 1.57	5-14 0.20-0.55	14-19 0.55-0.75	19-28 0.75-1.10	19 0.75	19.8 0.78	8.2 0.323	10.5 0.41	9.5 0.37	12 0.47	5 0.20	16 0.63	
M 10	50 1.97	14-24 0.55-0.95	24-28 0.95-1.10	28-38 1.10-1.50	19 0.75	19.8 0.78	8.2 0.323	10.5 0.41	9.5 0.37	12 0.47	5 0.20	16 0.63	

Specification

- Body
Stainless steel AISI 316L
- Matte finish (Ra < 0.8 µm) **MT**
- Polished finish (Ra < 0.8 µm) **PL**
- Sealing ring
- H-NBR **H**
Temperature resistant -13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant -40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 Shore A
- FDA compliant
- EHEDG Principles
→ Standard Parts Handbook page 1508
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Accessory

- Sealing rings GN 7600 → page 35

Information

GN 1582 hex head screws with the low-profile head are certified according to EHEDG guidelines and are ideal for use in hygienic areas. The d₄ dimension has been created to allow the screw to be used as a captive screw with or without a lock washer to secure it against loss.

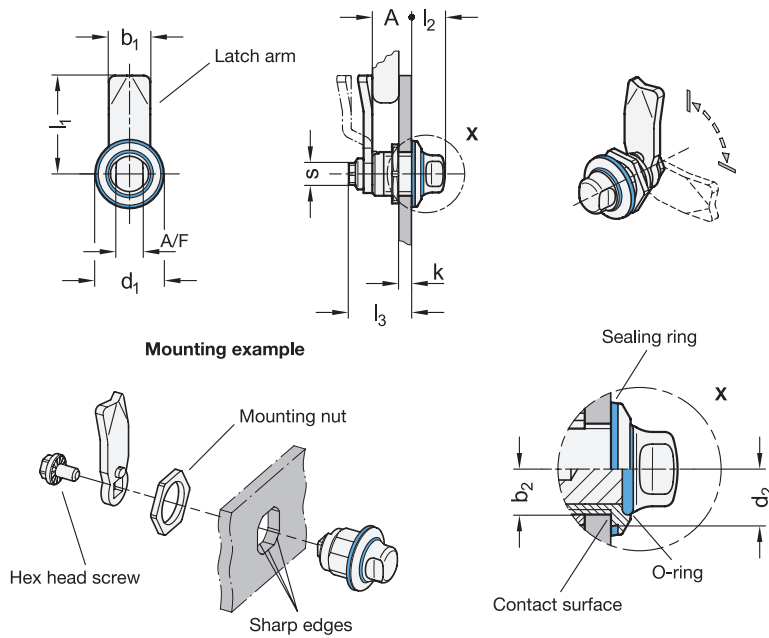
It is necessary to provide tapped bores with the thread d₁ on each of the two components to be assembled. Additionally, a clearance bore of d₅ on one or both sides must be drilled. Depending on the design and required clamping length a₁ ... a₃ of the component being attached, there are a number of assembly options as shown above. Alternatively, securing can also be achieved by an additional lock washer mounted on the thin shank d₄.

On request

- Screws with additional lock washer (Identification no. 2)

How to order	
1	Thread d ₁
2	Length l ₁
3	Finish
4	Sealing ring material
5	Identification no.

GN 1582-M5-20-PL-H-1



- 2 Type**
SW With two spanner flats
- 4 Coding**
FH Operating side in Hygienic Design

Metric table

Dimensions in: millimeters - inches

d ₁	Latch arm distance A									b ₁	b ₂	d ₂	k		l ₁ ±0.1	l ₂	l ₃ ≈	s	A/F
	7.5	13.5	19.5	-	-	-	-	-	-				min.	max.					
22 0.87	7.5 0.30	13.5 0.53	19.5 0.77	-	-	-	-	-	-	12 0.47	7 0.28	9 0.35	1.5 0.06	5 0.20	24 0.94	12.6 0.50	21 0.83	8 0.31	9 0.35
30 1.18	6 0.24	10 0.39	14 0.55	18 0.71	20 0.79	22 0.87	24 0.94	26 1.02	28 1.10	19 0.75	10 0.39	13 0.51	1.5 0.06	6 0.24	45 1.77	15.3 0.60	29 1.14	10 0.39	13 0.51

Specification

- Cam latch housing
Stainless steel AISI 316L
- Latch arm
Stainless steel
- AISI 304 for d₁ = 22
- AISI 316L for d₁ = 30
- Sealing ring / O-ring
EPDM **E**
- Blue, FDA compliant
- Temperature resistant -40 °F to 248 °F (-40 °C to 120 °C)
- Hardness 85 ±5 shore A (Sealing ring)
- Hardness 70 ±5 shore A (O-ring)
- Other parts
Stainless steel AISI 316L
- All moving parts lubricated with a special, FDA compliant grease
- Protection class IP 66
- IP Protection Classes
→ Standard Parts Handbook page 2130
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Accessory

- Sealing rings GN 7600 → page 35
- Socket keys GN 1151 → page 27

Information

GN 1150 cam latches are intended for use in hygienic areas and meet hygiene requirements on the operating side. The locking mechanism is protected by two seals. At the same time, the high surface quality (Ra < 0.8 µm) and dead-space-free mounting prevent dirt from adhering and facilitate cleaning.

The latches create a secure closure by rotating a maximum of 90°, which positions the latch arm in the locked position behind the frame. Slanted surfaces on the latch arm ensure smooth positioning. Latch arms are available with different bend angles to cover a latch arm distance A from 6 to 28 mm.

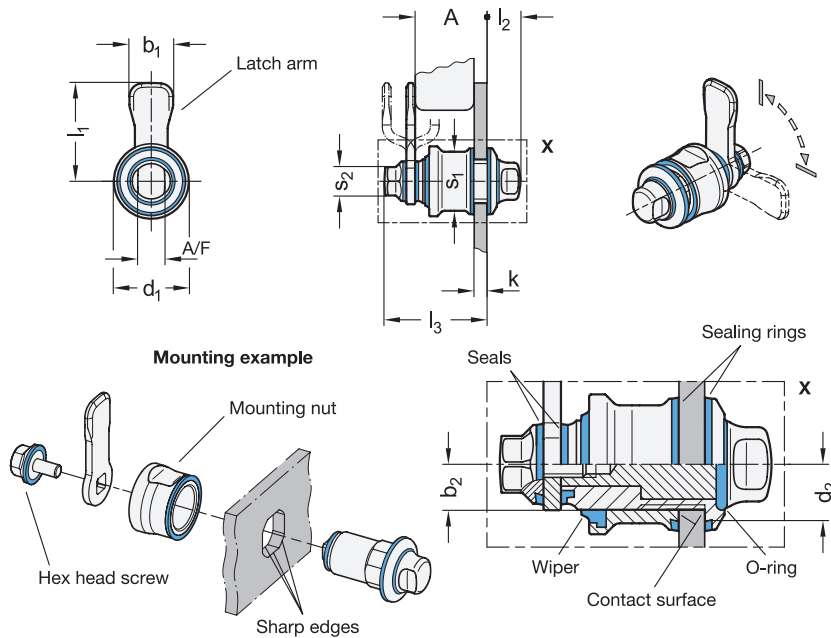
The mounting holes in the housing must be at a right angle, free of burrs and without a chamfer. This ensures that the sealing rings will function properly. GN 1150 stainless steel latches are supplied with loosely enclosed latch arm.

see also...

- Cam Latches GN 1150
(Stainless Steel, Operating and Latch Arm Side in **Hygienic Design**) → page 25

How to order	
1	Diameter d ₁
2	Type
3	Latch arm distance A
4	Coding
5	Material (Sealing ring / O-ring)

GN 1150-22-SW-7.5-FH-E



- 2 Type**
SW With two spanner flats
- 4 Coding**
VH Operating and latch arm side in Hygienic Design

Metric table

Dimensions in: millimeters - inches

d ₁	Latch arm distance A				b ₁	b ₂	d ₂	k		l ₁ ±0.1	l ₂	l ₃ ≈	s ₁	s ₂	A/F
	22	33	44					min.	max.						
30 <i>1.18</i>	22 <i>0.87</i>	33 <i>1.30</i>	44 <i>1.73</i>		20 <i>0.79</i>	10 <i>0.39</i>	13 <i>0.51</i>	1.5 <i>0.06</i>	6 <i>0.24</i>	45 <i>1.77</i>	15.3 <i>0.60</i>	47 <i>1.85</i>	27 <i>1.06</i>	13 <i>0.51</i>	13 <i>0.51</i>

Specification

- Cam latch housing
Stainless steel AISI 316L
- Latch arm
Stainless steel AISI 316
- Seals
Blue, FDA compliant
Temperature resistant -40 °F to 230 °F (-40 °C to 110 °C)
 - Sealing rings / O-ring
EPDM
 - Other seals / wipers
TPU, hardness 95 ±5 shore A
- Other parts
Stainless steel AISI 316L
- All moving parts lubricated with a special, FDA compliant grease
- Protection class IP 66
- IP Protection Classes
→ *Standard Parts Handbook page 2130*
- Plastic Characteristics
→ *Standard Parts Handbook page 2135*
- Stainless Steel Characteristics
→ *Standard Parts Handbook page 2143*
- RoHS compliant

Accessory

- Sealing rings GN 7600 → *page 35*
- Socket keys GN 1151 → *page 27*

Information

GN 1150 cam latches are designed for use in hygiene areas and meet strict hygiene requirements (full hygiene) on the operating and latch arm side due to the special mounting nuts as well as the optimized latch arm and hex head screw. The locking mechanism is protected by multiple seals. At the same time, the high surface quality (Ra < 0.8 µm) and dead-space-free mounting prevent dirt from adhering and facilitate cleaning.

The latches create a secure closure by rotating a maximum of 90°, which positions the latch arm in the locked position behind the frame. Slanted surfaces on the latch arm ensure smooth positioning. Latch arms are available with different bend angles to cover a latch arm distance A from 22 to 44 mm.

The mounting holes in the housing must be at a right angle, free of burrs and without a chamfer. This ensures that the sealing rings will function properly.

see also...

- *Cam Latches GN 1150 (Stainless Steel, Operating Side in Hygienic Design) → page 24*

How to order	
1	Diameter d ₁
2	Type
3	Latch arm distance A
4	Coding
5	Material (Sealing ring / O-ring)

GN 1150-30-SW-22-VH-E

Technical and assembly instructions

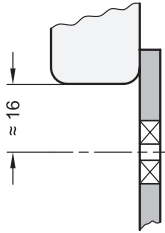
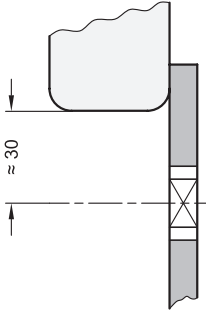
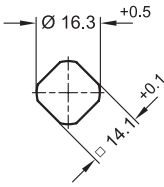
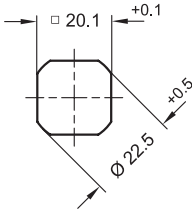
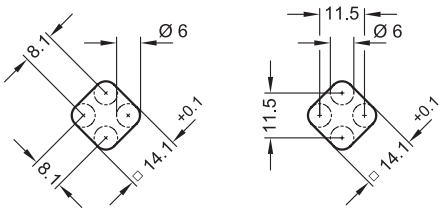
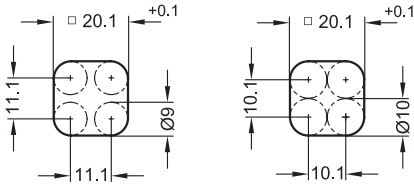
For installation, set a bore diameter in the door, cover or hatch as shown in the outline drawing below.

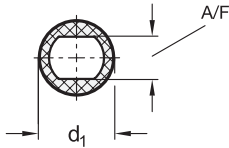
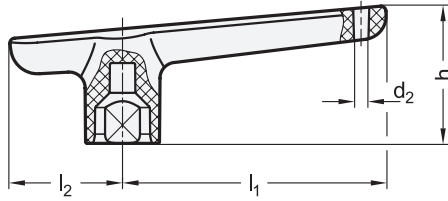
The latch housing is inserted into the installation bore from the front and secured from the back with the mounting nut. Then the latch arm is secured with the hex head screw.

In series production, the required installation bore in the door leaf is usually created by punching or laser cutting.

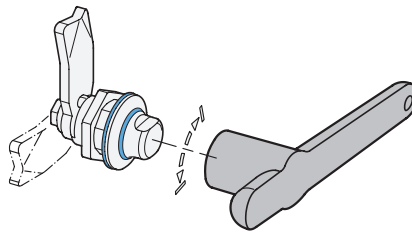
The installation bore diameter can also be created by drilling or milling as shown in the outline drawings.

The sheet metal punch GN 123 → Standard Parts Handbook page 1248 is also available for small series production and sheet steel with a thickness < 2 mm.

Construction note for $d_1 = 22$	Construction note for $d_1 = 30$
Bore distance	
	
Installation bore for punching or lasering	
	
Installation bore for drilling or milling	
	



Application example



Metric



- 2** Type
SW9 With two wrench flats A/F9
SW13 With two wrench flats A/F13

Metric table



Dimensions in: millimeters - inches

l_1	d_1	d_2	h	l_2	A/F in mm	For cam latches
82 3.23	23 0.91	5 0.20	42.7 1.68	35 1.38	9	GN 1150
82 3.23	23 0.91	5 0.20	42.7 1.68	35 1.38	13	GN 1150 / GN 115-AZ13

Specification



- Plastic
Technopolymer (Polyamide PA) **PA**
- Glass fiber reinforced
- Blue **BL**
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- RoHS

Information

Socket keys GN 1151 can be used to operate latches in hygienic areas. The material used protects the drive surface from damage.

The bore d_2 serves for storing the socket key near the place of use, for example, or can be used to attach a key ring or retaining cable to prevent loss.

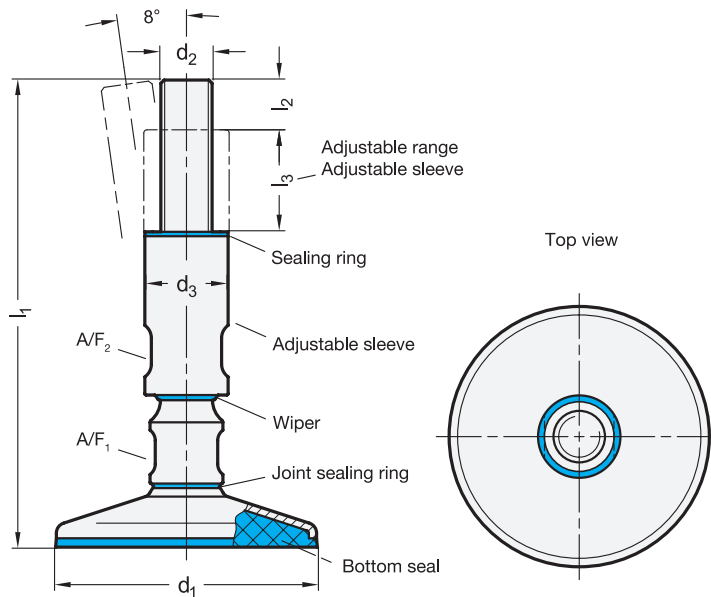
see also...

- Cam Latches GN 1150
(Stainless Steel, Operating Side in [Hygienic Design](#)) → page 24
- Cam Latches GN 1150
(Stainless Steel, Operating and Latch Arm Side in [Hygienic Design](#)) → page 25

How to order

GN 1151-82-SW9-PA-BL

1	Length l_1
2	Type
3	Material
4	Color



4 Type

A Without mounting holes

Specification

- Threaded stud, adjustable sleeve
Stainless steel AISI 304
Turned
- Base plate
Stainless steel sheet metal AISI 316L
- Seals
Blue, FDA compliant
 - Sealing ring
H-NBR, hardness 70 ±5 shore A
 - Wiper
TPU, hardness 95 ±5 shore A
 - Joint sealing ring
H-NBR, hardness 85 ±5 shore A
- Bottom seal
Elastomer
 - Blue, FDA compliant
 - Silicone, hardness 85 ±5 shore A
 - Vulcanised
- 3-A Principles → page 6
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

Leveling feet GN 19 comply with the 3-A sanitary standard 88-01 and the DGVU testing principles, making them suitable for use in hygienic areas.

The elastomer pad seals the space below the foot plate against dirt. This is achieved by the weight of the machine on the plate. The sealing ring above the adjustment sleeve enables fastening without dead space. Due to the wiper and the joint sealing ring, the moving components are sealed against the environment.

The high quality finish prevents adherence of dirt and facilitates cleaning.

The values listed in the table for static load capacity refer to a purely vertical load in relation to the leveling foot. Under normal operating conditions bending loads or angular loads are not uncommon and result in a reduction of load capacity, which must be taken into consideration.

see also...

- Leveling Feet GN 20 (Stainless Steel, [Hygienic Design](#)) → page 30 / 31

Accessory

- Protective end caps GN 20.1 → page 33

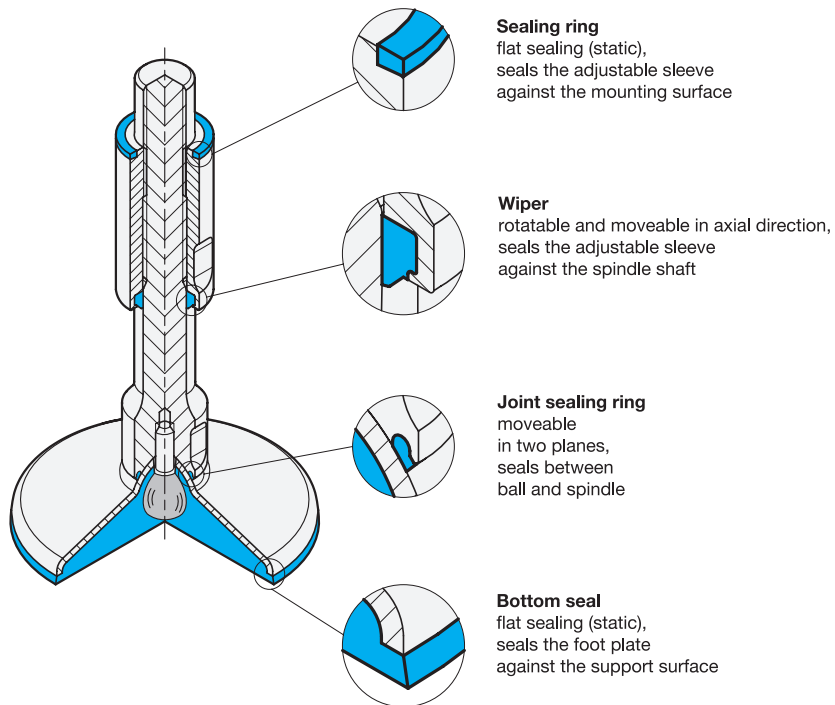
How to order	1 Foot diameter d_1
1 2 3 4	2 Thread d_2
GN 19-100-M16-175-A	3 Length l_1
	4 Type

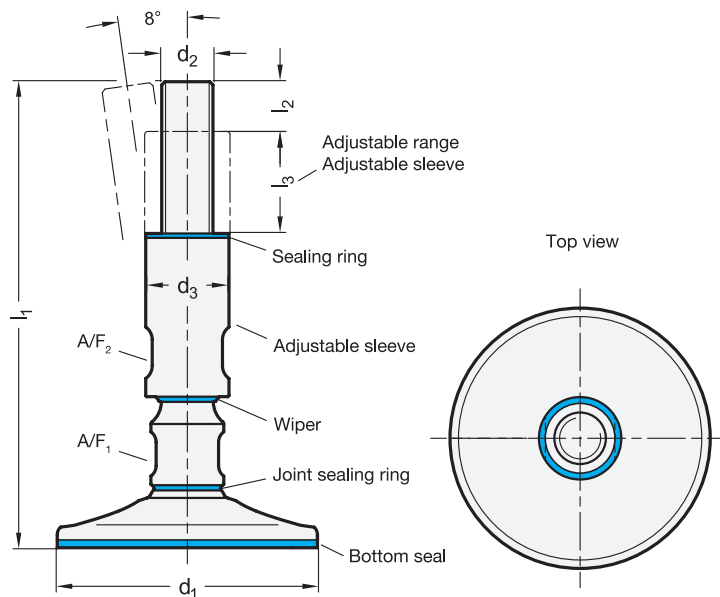
Metric table

Dimensions in: millimeters - inches

¹ d ₁	² d ₂	³ l ₁		d ₃	l ₂	l ₃	A/F ₁	A/F ₂	Static load (See information)
60 2.36	M 12	175 6.89	225 8.86	25 0.98	14 0.55	35 1.38	17 0.67	19 0.75	9 kN 2023 lbf
60 2.36	M 16	175 6.89	225 8.86	28 1.10	19 0.75	35 1.38	18 0.71	22 0.87	9 kN 2023 lbf
80 3.15	M 12	175 6.89	225 8.86	25 0.98	14 0.55	35 1.38	17 0.67	19 0.75	15 kN 3372 lbf
80 3.15	M 16	175 6.89	225 8.86	28 1.10	19 0.75	35 1.38	18 0.71	22 0.87	15 kN 3372 lbf
80 3.15	M 20	185 7.28	235 9.25	32 1.26	24 0.94	35 1.38	24 0.94	27 1.06	15 kN 3372 lbf
80 3.15	M 24	185 7.28	235 9.25	36 1.42	29 1.14	35 1.38	24 0.94	30 1.18	15 kN 3372 lbf
100 3.94	M 16	175 6.89	225 8.86	28 1.10	19 0.75	35 1.38	18 0.71	22 0.87	22 kN 4946 lbf
100 3.94	M 20	185 7.28	235 9.25	32 1.26	24 0.94	35 1.38	24 0.94	27 1.06	22 kN 4946 lbf
100 3.94	M 24	185 7.28	235 9.25	36 1.42	29 1.14	35 1.38	24 0.94	30 1.18	22 kN 4946 lbf
120 4.72	M 16	175 6.89	225 8.86	28 1.10	19 0.75	35 1.38	18 0.71	22 0.87	30 kN 6744 lbf
120 4.72	M 20	185 7.28	235 9.25	32 1.26	24 0.94	35 1.38	24 0.94	27 1.06	30 kN 6744 lbf
120 4.72	M 24	185 7.28	235 9.25	36 1.42	29 1.14	35 1.38	24 0.94	30 1.18	30 kN 6744 lbf

Sealing Concept





4 Type
A Without mounting holes

Metric table

¹ d ₁	² d ₂ Thread	³ l ₁		d ₃	l ₂	l ₃	A/F ₁	A/F ₂	Static load (See information)
60	M 12	175	225	25	14	35	17	19	16 kN
2.36		6.89	8.86	0.98	0.55	1.38	0.67	0.75	3597 lbf
60	M 16	175	225	28	19	35	18	22	30 kN
2.36		6.89	8.86	1.10	0.75	1.38	0.71	0.87	6744 lbf
80	M 12	175	225	25	14	35	17	19	16 kN
3.15		6.89	8.86	0.98	0.55	1.38	0.67	0.75	3597 lbf
80	M 16	175	225	28	19	35	18	22	30 kN
3.15		6.89	8.86	1.10	0.75	1.38	0.71	0.87	6744 lbf
80	M 20	185	235	32	24	35	24	27	47 kN
3.15		7.28	9.25	1.26	0.94	1.38	0.94	1.06	10566 lbf
80	M 24	185	235	36	29	35	24	30	67 kN
3.15		7.28	9.25	1.42	1.14	1.38	0.94	1.18	15062 lbf

Dimensions in: millimeters - inches

¹ d ₁	² d ₂ Thread	³ l ₁		d ₃	l ₂	l ₃	A/F ₁	A/F ₂	Static load (See information)
100	M 16	175	225	28	19	35	18	22	30 kN
3.94		6.89	8.86	1.10	0.75	1.38	0.71	0.87	6744 lbf
100	M 20	185	235	32	24	35	24	27	47 kN
3.94		7.28	9.25	1.26	0.94	1.38	0.94	1.06	10566 lbf
100	M 24	185	235	36	29	35	24	30	67 kN
3.94		7.28	9.25	1.42	1.14	1.38	0.94	1.18	15062 lbf
120	M 16	175	225	28	19	35	18	22	30 kN
4.72		6.89	8.86	1.10	0.75	1.38	0.71	0.87	6744 lbf
120	M 20	185	235	32	24	35	24	27	47 kN
4.72		7.28	9.25	1.26	0.94	1.38	0.94	1.06	10566 lbf
120	M 24	185	235	36	29	35	24	30	67 kN
4.72		7.28	9.25	1.42	1.14	1.38	0.94	1.18	15062 lbf

Specification

- Threaded stud, adjustable sleeve, base
Stainless steel AISI 304
Turned
- Seals
Blue, FDA compliant
 - Sealing ring
NBR, hardness 70 ±5 shore A
 - Wiper
TPU, hardness 95 ±5 shore A
 - Joint sealing ring
H-NBR, hardness 85 ±5 shore A
 - Bottom seal
Silicone, hardness 85 ±5 shore A
- 3-A Principles → page 6
- RoHS compliant

Information

GN 20 leveling feet without mounting holes comply with the 3-A sanitary standard 88-01 and the DGUV testing principles, making them suitable for use in hygienic areas.

The bottom seal protects the area beneath the base from dirt. For this, the foot must be pressed down by the weight of the machine. The sealing ring above the adjustment sleeve enables mounting without dead space. Due to the wiper or the joint sealing ring, the movable components are sealed against the environment.

The high surface quality prevents dirt from adhering and facilitates cleaning.

The values for static load capacity listed in the table refer to a purely vertical load to the leveling foot. Under normal operating conditions, bending loads or angular loads are not uncommon and result in a reduction of the load capacity, which must be taken into consideration.

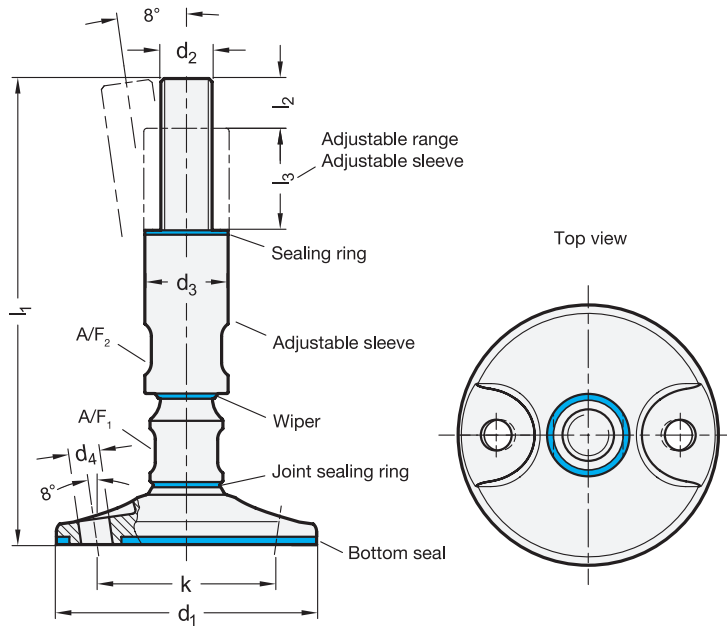
see also...

- Leveling Feet GN 20 (Stainless Steel, with Mounting Holes, Hygienic Design) → page 31
- Leveling Feet GN 19 Hygienic Design → page 28

Accessory

- Protective end caps GN 20.1 → page 33

How to order	¹ Foot diameter d ₁
	² Thread d ₂
	³ Length l ₁
	⁴ Type
GN 20-100-M16-175-A	



4 Type
B With mounting holes

Specification

- Threaded stud, adjustable sleeve, base
Stainless steel AISI 304
Turned
- Seals
Blue, FDA compliant
 - Sealing ring
NBR, hardness 70 ±5 shore A
 - Wiper
TPU, hardness 95 ±5 shore A
 - Joint sealing ring
H-NBR, hardness 85 ±5 shore A
 - Bottom seal
Silicone, hardness 85 ±5 shore A
- 3-A and EHEDG Principles → page 6
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Accessory

- Protective end caps GN 20.1 → page 33
- Hex head screws GN 1580 → page 21
- Hex head screws GN 1581 → page 22

Information

GN 20 leveling feet with mounting holes comply the guidelines of the EHEDG, with the 3-A sanitary standard 88-01 and the DGUV testing principles, making them suitable for use in in hygienic areas.

The bottom seal protects the area beneath the base from dirt. For this, the foot must be screwed down using the mounting holes and compressed accordingly. Hygienic fasteners such as GN 1580 screws and nuts, and the correct position of the mounting bores in the mating surface are essential for a properly sealed foot to surface installation. The sealing ring above the adjustment sleeve enables mounting without dead space. Due to the wiper or the joint sealing ring, the movable components are sealed against the environment.

The high surface quality prevents dirt from adhering and facilitates cleaning.

The values for static load capacity listed in the table refer to a purely vertical load to the leveling foot. Under normal operating conditions, bending loads or angular loads are not uncommon and result in a reduction of load capacity, which must be taken into consideration.

see also...

- Leveling Feet GN 20 (Stainless Steel, without Mounting Holes, Hygienic Design) → page 30

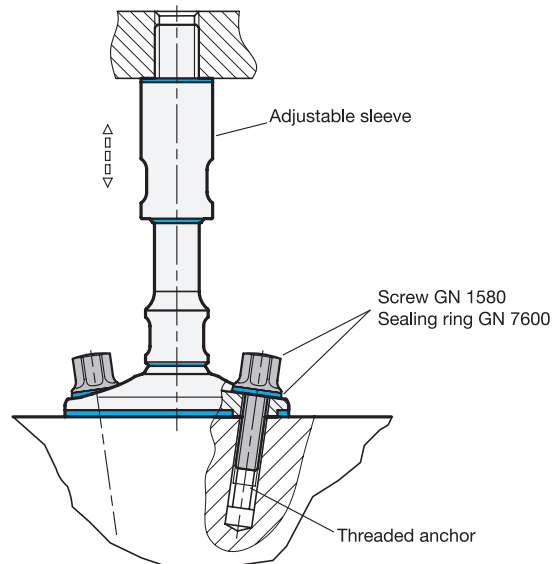
How to order	1 Foot diameter d_1
1 2 3 4	2 Thread d_2
GN 20-120-M16-175-B	3 Length l_1
	4 Type

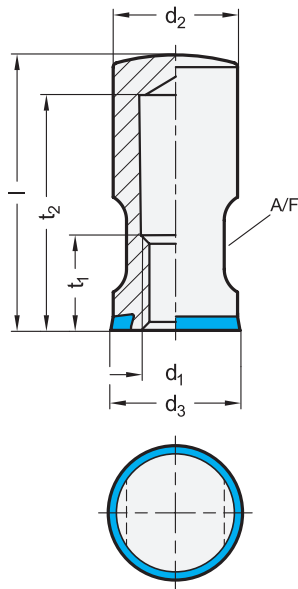
Metric table

Dimensions in: millimeters - inches

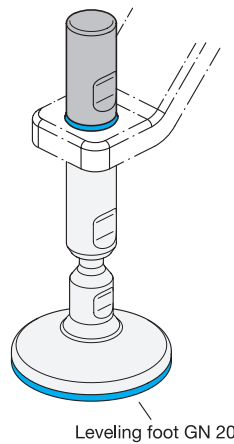
¹ d ₁	² d ₂	³ l ₁		d ₃	d ₄	l ₂	l ₃	k	A/F ₁	A/F ₂	Static load (See information)
80 3.15	M 12	175 6.89	225 8.86	25 0.98	9.5 0.37	14 0.55	35 1.38	55.5 2.19	17 0.67	19 0.75	16 kN 3597 lbf
80 3.15	M 16	175 6.89	225 8.86	28 1.10	9.5 0.37	19 0.75	35 1.38	55.5 2.19	18 0.71	22 0.87	30 kN 6744 lbf
80 3.15	M 20	185 7.28	235 9.25	32 1.26	9.5 0.37	24 0.94	35 1.38	55.5 2.19	24 0.94	27 1.06	47 kN 10566 lbf
80 3.15	M 24	185 7.28	235 9.25	36 1.42	9.5 0.37	29 1.14	35 1.38	55.5 2.19	24 0.94	30 1.18	67 kN 15062 lbf
100 3.94	M 16	175 6.89	225 8.86	28 1.10	12 0.47	19 0.75	35 1.38	69 2.72	18 0.71	22 0.87	30 kN 6744 lbf
100 3.94	M 20	185 7.28	235 9.25	32 1.26	12 0.47	24 0.94	35 1.38	69 2.72	24 0.94	27 1.06	47 kN 10566 lbf
100 3.94	M 24	185 7.28	235 9.25	36 1.42	12 0.47	29 1.14	35 1.38	69 2.72	24 0.94	30 1.18	67 kN 15062 lbf
120 4.72	M 16	175 6.89	225 8.86	28 1.10	12 0.47	19 0.75	35 1.38	89 3.50	18 0.71	22 0.87	30 kN 6744 lbf
120 4.72	M 20	185 7.28	235 9.25	32 1.26	12 0.47	24 0.94	35 1.38	89 3.50	24 0.94	27 1.06	47 kN 10566 lbf
120 4.72	M 24	185 7.28	235 9.25	36 1.42	12 0.47	29 1.14	35 1.38	89 3.50	24 0.94	30 1.18	67 kN 15062 lbf

Mounting example





Application example



Metric table

Dimensions in: millimeters - inches

d₁	Length l	d₂	d₃	A/F	t₁	t₂
M 12	56 2.20	25 0.98	25.8 1.02	19 0.75	15.5 0.61	50 1.97
M 16	62 2.44	28 1.10	28.8 1.13	22 0.87	20.5 0.81	55 2.17
M 20	68 2.68	32 1.26	32.8 1.29	27 1.06	25.5 1.00	60 2.36
M 24	74 2.91	36 1.42	36.8 1.45	30 1.18	30.5 1.20	65 2.56

Specification

- Body
Stainless steel AISI 304
- Sealing ring
 - H-NBR
Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
 - EPDM
Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
 - Blue
 - Hardness 85 ±5 shore A
 - FDA compliant
- 3-A and EHEDG Principles → page 6
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

GN 20.1 protective end caps comply with the guidelines of the EHEDG, the 3-A sanitary standard 88-01 and the DGVU testing principles, making them extremely suitable for use in hygienic areas.

They cover protruding threaded studs and at the same time they replace lock nuts. The sealed mounting surface enables fastening without dead spaces. The high surface quality prevents adherence of dirt and facilitates cleaning.

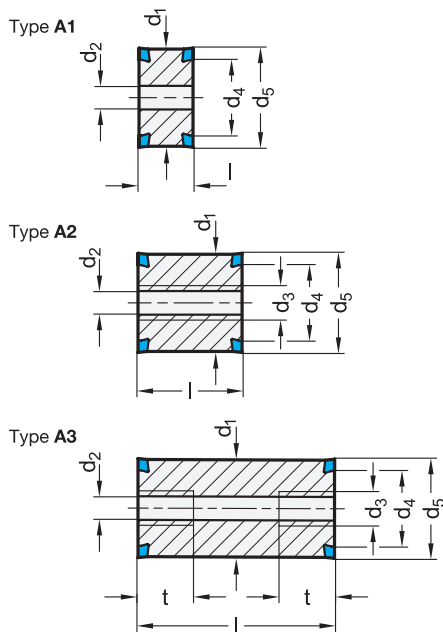
see also...

- *Leveling Feet GN 20 (Stainless Steel, Hygienic Design)* → page 30 / 31
- *Leveling Feet GN 19 (Stainless Steel, Hygienic Design)* → page 28

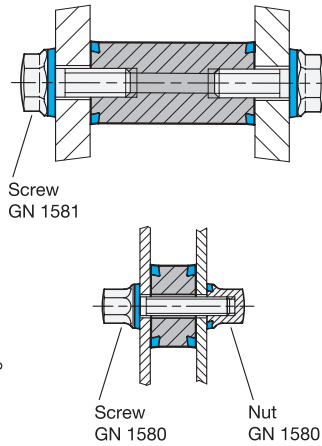
Accessory

- Sealing rings GN 7600 → page 35

How to order	1 Thread d₁
GN 20.1-M12-56-H	2 Length l
	3 Sealing ring material



Application examples



3 Type

- A1** Through hole
- A2** Through hole with continuous thread
- A3** Through hole with thread on both sides

Metric table

d ₁	1 Length l ±0.1			2 Length l ±0.2			d ₂ Through hole for screw	d ₃ Thread	d ₄	d ₅	t min.
	Type A1	Type A2	Type A3								
22 0.87	10 0.394	12 0.472	16 0.630	20 0.79	30 1.181	50 1.969	M 5	M 6	18 0.71	22.8 0.90	12 0.47
28 1.10	12 0.472	16 0.630	20 0.787	30 1.18	50 1.969	75 2.953	M 6	M 8	24 0.94	28.8 1.13	16 0.63
34 1.34	12 0.472	16 0.630	20 0.787	30 1.18	50 1.969	100 3.937	M 8	M 10	30 1.18	34.8 1.37	20 0.79

Dimensions in: millimeters - inches

Specification

- Body
Stainless steel AISI 316L
Matte finish (Ra < 0.8 µm) **MT**
- Sealing ring
- H-NBR **H**
Temperature resistant
-13 °F to +302 °F (-25 °C to +150 °C)
- EPDM **E**
Temperature resistant
-40 °F to +248 °F (-40 °C to +120 °C)
- Blue
- Hardness 85 ±5 shore A
- FDA compliant
- Plastic Characteristics
→ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
→ Standard Parts Handbook page 2143
- RoHS compliant

Information

Spacers GN 6226 are certified according to EHEDG and DGUV Test guidelines and are intended for use in hygiene areas. The sealed mounting surfaces enable fastening without dead spaces. The high quality finish prevents adherence of dirt and facilitates cleaning.

Spacers are used to fasten parts at an offset parallel to their plane of installation. This avoids doubling up on surfaces and leaves space for cleaning. The internal thread can alternatively be used as a through hole by a screw with a smaller thread.

see also...

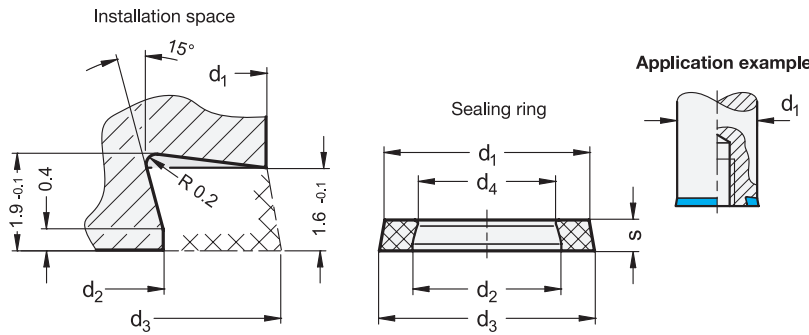
- Hex Head Screws GN 1580 (Stainless Steel, Hygienic Design) → page 21
- Nuts GN 1580 (Stainless Steel, Hygienic Design) → page 20
- Hex Head Screws GN 1581 (Stainless Steel, Low-Profile Head, Hygienic Design) → page 22
- Hex Head Screws GN 1582 (Stainless Steel, with Recessed Stud for Loss Protection, Hygienic Design) → page 23

Accessory

- Sealing rings GN 7600 → page 35

How to order	
1	Outer diameter d ₁
2	Length l
3	Type
4	Finish
5	Sealing ring material

GN 6226-28-75-A3-MT-H



Dimensions in: millimeters - inches

Metric table

1 2			3				
d ₁	d ₂	d ₃	d ₁	d ₂	d ₃	d ₄	s
Nominal dimensions - installation space			Actual dimensions - sealing rings, unassembled				
10	6	10.8	9.5	6.1	10.2	5.4	2
0.39	0.24	0.43	0.37	0.24	0.40	0.21	0.08
11	7	11.8	10.2	6.8	10.9	6.1	2
0.43	0.28	0.46	0.40	0.27	0.43	0.24	0.08
12	8	12.8	11.2	7.8	11.9	7.1	2
0.47	0.31	0.50	0.44	0.31	0.47	0.28	0.08
13	9	13.8	12.2	8.8	12.9	8.1	2
0.51	0.35	0.54	0.48	0.35	0.51	0.32	0.08
14	10	14.8	13.2	9.8	13.9	9.1	2
0.55	0.39	0.58	0.52	0.39	0.55	0.36	0.08
16	12	16.8	15.1	11.7	15.8	11	2
0.63	0.47	0.66	0.59	0.46	0.62	0.43	0.08
18	14	18.8	17.0	13.6	17.7	12.9	2
0.71	0.55	0.74	0.67	0.54	0.70	0.51	0.08
19	15	19.8	17.9	14.5	18.6	13.8	2
0.75	0.59	0.78	0.70	0.57	0.73	0.54	0.08
20	16	20.8	18.9	15.5	19.6	14.8	2
0.79	0.63	0.82	0.74	0.61	0.77	0.58	0.08
21	17	21.8	19.9	16.4	20.5	15.7	2
0.83	0.67	0.86	0.78	0.65	0.81	0.62	0.08
22	18	22.8	20.8	17.4	21.4	16.7	2
0.87	0.71	0.90	0.82	0.69	0.84	0.66	0.08
25	21	25.8	23.6	20.2	24.3	19.5	2
0.98	0.83	1.02	0.93	0.80	0.96	0.77	0.08
28	24	28.8	26.5	23.1	27.2	22.4	2
1.10	0.94	1.13	1.04	0.91	1.07	0.88	0.08
30	26	30.8	28.5	25.1	29.2	24.4	2
1.18	1.02	1.21	1.12	0.99	1.15	0.96	0.08
32	28	32.8	30.4	27.0	31.1	26.3	2
1.26	1.10	1.29	1.20	1.06	1.22	1.04	0.08
34	30	34.8	32.3	28.9	34.0	28.2	2
1.34	1.18	1.37	1.27	1.14	1.34	1.11	0.08
36	32	36.8	34.2	30.8	34.8	30.1	2
1.42	1.26	1.45	1.35	1.21	1.37	1.19	0.08
40	36	40.8	38.1	34.7	38.8	34	2
1.57	1.42	1.61	1.50	1.37	1.53	1.34	0.08
42	38	42.8	39.9	36.5	40.6	35.8	2
1.65	1.50	1.69	1.57	1.44	1.60	1.41	0.08

Suitable for
GN 1581
GN 1580 / GN 1581 / GN 1582 / GN 8341 / GN 8351
GN 429 / GN 1580
GN 1581 / GN 1582 / GN 8341 / GN 8351
GN 75.6 / GN 305 / GN 1580
GN 75.6 / GN 429 / GN 1581 / GN 1582 / GN 5064 / GN 8341 / GN 8351
GN 75.6 / GN 305 / GN 1580 / GN 5435 / GN 5445
GN 1581 / GN 1582
GN 429
GN 1580 / GN 5064 / GN 5435 / GN 5445
GN 305 / GN 1150 / GN 1581 / GN 8170 / GN 6226
GN 20 / GN 20.1 / GN 1580 / GN 5064
GN 20 / GN 20.1 / GN 1581 / GN 6226
GN 1150
GN 20 / GN 20.1 / GN 1580
GN 6226
GN 20 / GN 20.1
GN 1580
-

Specification

- Hydrogenated acrylonitrile butadiene rubber **HNBR**
 - Blue
 - Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
 - FDA compliant
 - Hardness 85 ±5 shore A **85**
- Ethylene propylene diene rubber **EPDM**
 - Blue
 - Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
 - FDA compliant
 - Hardness 85 ±5 shore A **85**
- RoHS compliant

Information

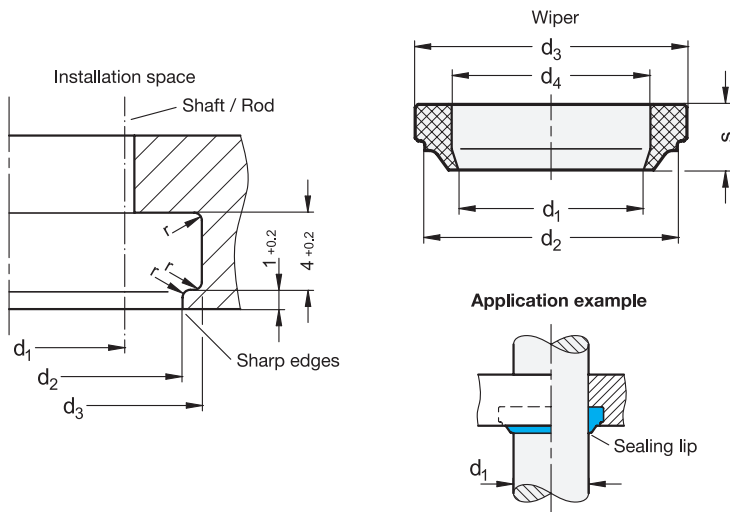
Components with cylindrical mounting surfaces, which are installed in hygienic areas, can be sealed and mounted without dead spaces using GN 7600 sealing rings. Standard parts that are supplied with GN 7600 sealing rings are listed in the table and can be supplied individually in case service is required.

When delivered, or when not assembled, the sealing rings have the “actual dimensions” stated in the table. To ensure a firm seating and a reliable sealing, an installation space as shown in the sketch must be provided on the component. This ensures that when the sealing ring is mounted, it will be subject to the necessary pressure without excess load. All surfaces that are in contact with the sealing ring should have a minimum surface quality of Ra 0.8 µm.

How to order	
1	Outer diameter d ₁
2	Inner diameter d ₂
3	Width s
4	Material
5	Hardness

GN 7600-12-8-2-HNBR-85

3.1
3.2
3.3
3.4
3.5
3.6
3.7
3.8
3.9
3.10



Metric table

Dimensions in: millimeters - inches

1									
d ₁ h9	d ₂ H9	d ₃ H9	r max.	d ₁	d ₂	d ₃	d ₄	s	Suitable for
Nominal dimensions - installation space				Actual dimensions - wipers, unassembled					
12 0.472	18 0.709	20 0.787	0.4 0.02	11.2 0.44	18.2 0.72	20.2 0.80	12.6 0.50	6.8 0.27	GN 19 / GN 20
14 0.551	20 0.787	22 0.866	0.4 0.02	13.2 0.52	20.2 0.80	22.2 0.87	14.6 0.57	6.8 0.27	GN 1150
16 0.630	22 0.866	24 0.945	0.4 0.02	15.2 0.60	22.2 0.87	24.2 0.95	16.6 0.65	6.8 0.27	GN 19 / GN 20 / GN 8170
20 0.787	26 1.024	28 1.102	0.4 0.02	19.3 0.76	26.3 1.04	28.3 1.11	20.7 0.81	6.8 0.27	GN 19 / GN 20 / GN 1150
24 0.945	30 1.181	32 1.260	0.4 0.02	23.3 0.92	30.3 1.19	32.3 1.27	24.7 0.97	6.8 0.27	GN 19 / GN 20

Specification

- Thermoplastic polyurethane **TPU**
- Blue
- Temperature resistant from -4 °F to 230 °F (-20 °C to 110 °C)
- FDA compliant
- 95 ±5 shore A **95**
- *ISO Fundamental Tolerances*
→ *Standard Parts Handbook page 2129*
- *Plastic Characteristics*
→ *Standard Parts Handbook page 2135*
- **RoHS compliant**

Information

When used in hygienic areas, wipers GN 7607 can be used to seal axially or radially moving components with a cylindrical cross-section against their bearing position. With their specially shaped sealing lip, the wipers prevent the formation of dead spaces where dust can accumulate. Commercially available wipers are not suitable for this purpose due to a 45° chamfer on the inner edge of the sealing lip.

All standard parts equipped and delivered with wipers GN 7607 are listed in the table. For replacement, the corresponding wipers can be ordered individually.

As delivered, or unassembled, the wipers have the "actual dimensions" as stated in the table. To guarantee a secure fit and a reliable seal, the specified installation space must be provided at the bearing position. This ensures that the wiper undergoes the necessary deformation during installation. All surfaces in contact with the wiper should have a minimum surface quality of Ra 0.8 µm.

see also...

- *Sealing Rings GN 7600 Hygienic Design* → page 35

How to order GN 7607-16-TPU-95	1	Inner diameter d ₁
	2	Material
	3	Hardness

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