



---

# Hygienic Design

Standard Parts Especially for the Use in Hygienically Sensitive Areas



Standard Parts. **Ganter.**



Knobs,  
T-Handles,  
Cabinet  
U-Handles



**GN 75.6**  
**Mushroom Shaped Knobs**  
Stainless Steel,  
[Hygienic Design](#)  
Page 8



**GN 5064**  
**T-Handles**  
Stainless Steel,  
[Hygienic Design](#)  
Page 9



**GN 429**  
**Cabinet U-Handles**  
Stainless Steel,  
[Hygienic Design](#)  
Page 10

Adjustable  
Hand Levers



**GN 305**  
**Adjustable Hand Levers**  
Stainless Steel,  
with Bushing,  
[Hygienic Design](#)  
Page 12



**GN 305**  
**Adjustable Hand Levers**  
Stainless Steel,  
with Threaded Stud,  
[Hygienic Design](#)  
Page 13

Star Knobs,  
Three-Lobed  
Knobs



**GN 5435**  
**Star Knobs**  
Stainless Steel,  
[Hygienic Design](#)  
Page 14



**GN 5445**  
**Three-Lobed Knobs**  
Stainless Steel,  
[Hygienic Design](#)  
Page 15

Wing Nuts,  
Wing Screws



**GN 8341**  
**Wing Nuts**  
Stainless Steel,  
[Hygienic Design](#)  
Page 16



**GN 8351**  
**Wing Screws**  
Stainless Steel,  
[Hygienic Design](#)  
Page 17

Indexing  
Plungers



**GN 8170**  
**Indexing Plungers**  
Stainless Steel,  
Knob Side  
in [Hygienic Design](#)  
Page 18

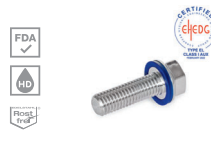


**GN 8170**  
**Indexing Plungers**  
Stainless Steel,  
Knob and Pin Side  
in [Hygienic Design](#)  
Page 19

Nuts,  
Screws



**GN 1580**  
**Nuts / Screws**  
Stainless Steel,  
Hygienic Design  
Page 20 / 21



**GN 1581**  
**Screws**  
Stainless Steel,  
Hygienic Design  
Page 22

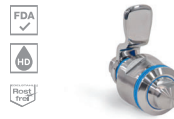


**GN 1582**  
**Screws**  
Stainless Steel,  
Hygienic Design  
Page 23

Latches,  
Socket Keys



**GN 1150**  
**Latches**  
Stainless Steel,  
Operating Side  
in Hygienic Design  
Page 24



**GN 1150**  
**Latches**  
Stainless Steel,  
Operating and Latch Arm Side  
in Hygienic Design  
Page 25



**GN 1151**  
**Socket Keys**  
for GN 1150,  
Plastic,  
Hygienic Design  
Page 27

Leveling Feet



**GN 19**  
**Leveling Feet**  
Stainless Steel,  
Hygienic Design  
Page 28



**GN 20**  
**Leveling Feet**  
Stainless Steel,  
without Mounting Holes,  
Hygienic Design  
Page 30



**GN 20**  
**Leveling Feet**  
Stainless Steel,  
with Mounting Holes,  
Hygienic Design  
Page 32

Cover Sleeves,  
Spacers



**GN 20.1**  
**Cover Sleeves**  
Stainless Steel,  
Hygienic Design  
Page 34



**GN 6226**  
**Spacers**  
Stainless Steel,  
Hygienic Design  
Page 35

Sealing Rings,  
Wipers



**GN 7600**  
**Sealing Rings**  
Elastomer,  
Hygienic Design  
Page 36



**GN 7607**  
**Wipers**  
Elastomer,  
Hygienic Design  
Page 37

## 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.

## Ganter Has Solutions

---

Since even the smallest weak spots can contaminate entire production lines, Ganter 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

---

**Less and shorter cleaning work** (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

## Design Requirements for Hygienic Design

### Material

- Non-rusting stainless steels
- FDA and EU compliant plastics and elastomers

### Surfaces

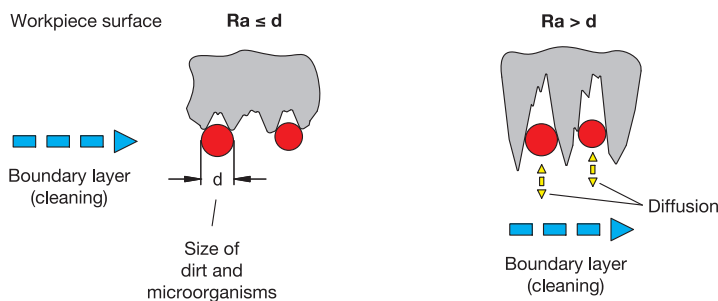
- Surfaces must be able to be cleaned
- Steps due to appliance configurations which are not aligned must be avoided
- Seals must be designed so that no gaps occur
- O-ring grooves must be hygienically designed
- Contact with the product to be manufactured must be ruled out
- Corners should preferably have a radius of 6 mm or more

### Design / Geometry

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

### Surface properties and roughness

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



## Design Principles for Hygienic Design

### EHEDG (European Hygienic Engineering & Design Group)

- Non-profit European consortium of machine and food manufacturers as well their suppliers, research institutes, universities and government health agencies
- Approximately 45 guidelines
- Examination of products and issue of certificates

### 3-A Sanitary Standards, Inc.

- Non profit and independent association in the USA
- Three interest groups:
  - Public and governmental health agencies, machine and food manufacturers
- Over 70 Sanitary Standards
- Examination of designs and processes, issue 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 the standard parts which are listed in Hygienic Design, seals have the central function of protecting dead spaces, gaps and cracks from the penetration of cleaning fluids or product residues.

For this, a defined pre-tension or pressing of the seals and wipers is necessary for a reliable and permanent seal in the installed condition. Within the Hygienic Design product family, seal installation spaces and seal cross sections are calculated and designed with simulation software, so that the necessary surface compression is achieved on installation and the seal material is not subjected to excess pressure.

A fundamental differentiation can be made between static and moving seals:

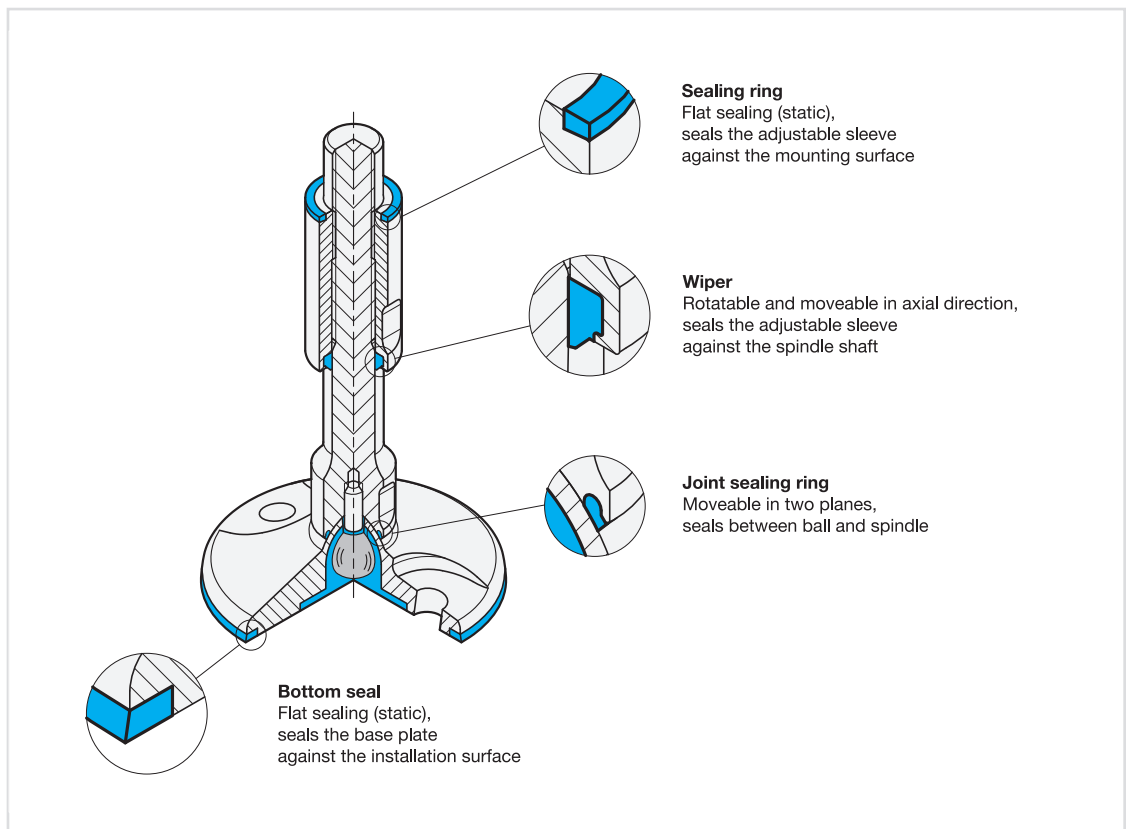
During assembly, the **static seals** in the design example shown below are tightened to the mounting surface at the top (**sealing ring**) and to the contact surface at the bottom (**bottom seal**). It should be ensured that all surfaces which make contact with the seal have a surface finish of at least  $R_a$  0.8  $\mu\text{m}$ .

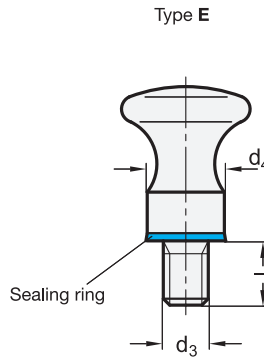
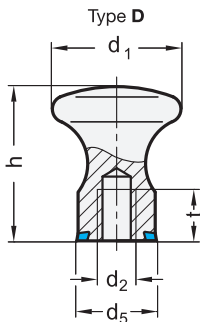
The **moving seals** on the adjustable sleeve (**wiper**) and the ball joint (**joint sealing ring**) of the foot are designed so that they allow adjustment in both height and angle. With these too, the installation space together with the cross section of the seal ensures a gap-free, pre-tensioned seal.

Depending on the version and the type of use, it may be the case that seals may need to be replaced in case of damage or for preventative maintenance. For this, Ganter supplies the relevant seals as spare parts or offers these under **GN 7600** ( $\rightarrow$  Page 36) and **GN 7607** ( $\rightarrow$  Page 37) as standard parts.

## Application Example

The illustrated design of the GN 20 Hygienic Design leveling foot shows how the various seal configurations are arranged.





**3 Type**

- D** With internal thread
- E** With threaded stud

<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b> Type D	<b>d<sub>3</sub></b> Type E	<b>d<sub>4</sub></b>	<b>d<sub>5</sub></b>	<b>h</b>	<b>Length l</b>	<b>t min.</b>
20	M 5	M 5	14	14,8	24	10	7
25	M 6	M 6	16	16,8	29	12	9
32	M 8	M 8	18	18,8	37	14	12

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- *Elastomer Characteristics* → Page 38
- *Stainless Steel Characteristics* → Page 39
- **RoHS**

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Mushroom shaped knobs GN 75.6 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.

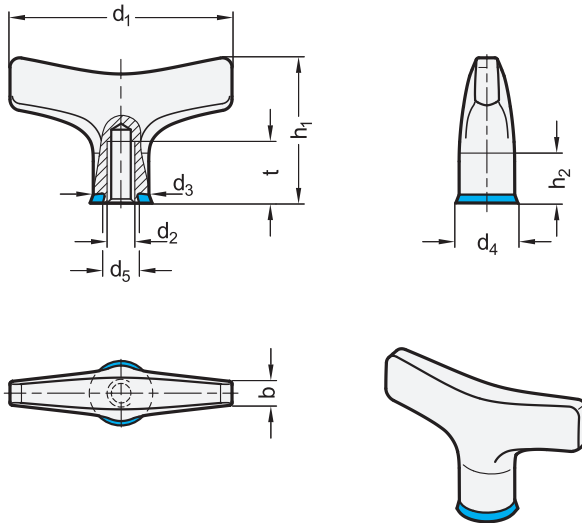
They have a compact and timeless design.

**How to order**

<b>1</b>	<b>d<sub>1</sub></b>
<b>2</b>	<b>d<sub>3</sub> (d<sub>2</sub>)</b>
<b>3</b>	<b>Type</b>
<b>4</b>	<b>Finish</b>
<b>5</b>	<b>Material (Sealing ring)</b>

**GN 75.6-25-M6-E-MT-H**





<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>b</b>	<b>d<sub>3</sub></b>	<b>d<sub>4</sub></b>	<b>d<sub>5</sub></b>	<b>h<sub>1</sub></b>	<b>h<sub>2</sub> ≈</b>	<b>t min.</b>
63	M 6	7	16	16,8	12	41	12	12
80	M 8	9	21	21,8	17	52	15	16
100	M 10	11	25	25,8	21	65	19	20

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- EHEDG Principles → Page 6
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

T-handles GN 5064 are intended for use in hygienic areas. The version with PL finish comply with the guidelines of the EHEDG. 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.

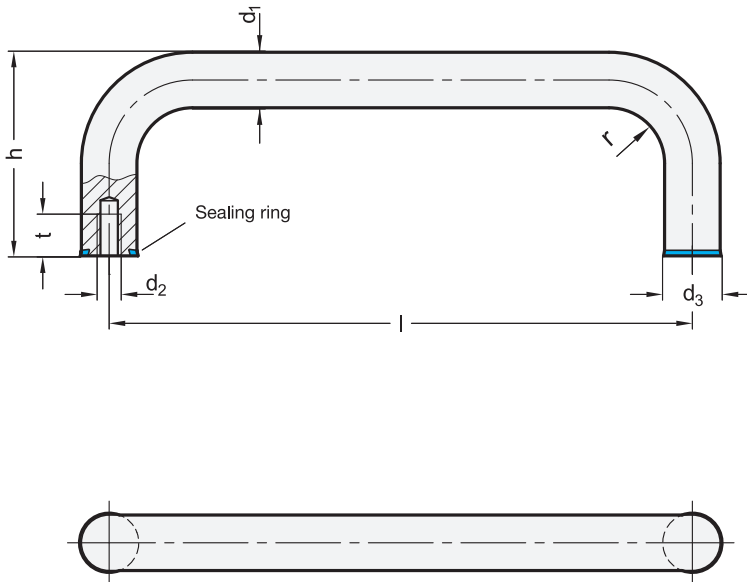
see also..

- T-Handles GN 563.2 (Aluminum) → Main Catalogue Page 91
- Wing Nuts GN 8341 (Stainless Steel, Hygienic Design) → Page 16

How to order

<b>1</b>	<b>d<sub>1</sub></b>
<b>2</b>	<b>d<sub>2</sub></b>
<b>3</b>	<b>Finish</b>
<b>4</b>	<b>Material (Sealing ring)</b>

**GN 5064-63-M6-PL-E**



2

3

d <sub>1</sub>	Length l ±0,5			d <sub>2</sub>	d <sub>3</sub>	h	r	t min.
12	125	160	200	M 5	12,8	51	14	12
16	160	200	250	M 6	16,8	59	18	12
20	200	250	300	M 8	20,8	85	22	15

**Specification**

1 4 5

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85±5 Shore A
  - FDA compliant
- Load Rating Information  
→ Main Catalogue Page 2106
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39

• RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Cabinet U-handles GN 429 are intended for use in hygienic areas. The version with PL finish comply also with the DGUV testing principles.

The sealed mounting surfaces enable fastening without dead spaces. The high quality finish prevents adherence of dirt and facilitates cleaning.

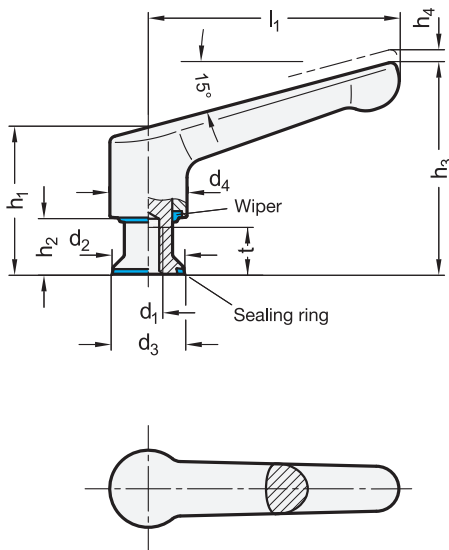
**How to order**

1	Material
2	d <sub>1</sub>
3	Length l
4	Finish
5	Material (Sealing ring)

1 2 3 4 5  
**GN 429-A4-12-160-MT-H**



Standard Parts in [Hygienic Design](#)



<sup>1</sup> l <sub>1</sub>	<sup>2</sup> d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub> Stroke	t min.
63	M 6	14	14,8	19	43,8	16,3	60,1	2,5	10
63	M 8	18	18,8	19	45,8	18,3	62,1	2,5	12
78	M 8	18	18,8	24	49,3	16,5	69,3	3	12
78	M 10	22	22,8	24	51,3	18,5	71,3	3	15

**Specification**

- Handle  
Stainless steel  
precision casting AISI 316  
Polished finish (Ra < 0.8 μm) **PL**
- Threaded bushing  
Stainless steel AISI 304
- Sealing ring / Wiper **H**  
- H-NBR  
Temperature resistant -25 °C to +150 °C  
**E**  
- EPDM  
Temperature resistant -40 °C to +120 °C  
- Blue  
- Hardness 85±5 Shore A  
- FDA compliant
- *Elastomer Characteristics* → Page 38
- *Stainless Steel Characteristics* → Page 39
- RoHS

**Information**

Adjustable hand levers GN 305 with solid stainless steel handle comply with the DGUV testing principles, making them suitable for use 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 facilitate cleaning.

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

The threaded insert is moveably attached to the handle with serrations. When pulling 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 Knob Handles GN 5445 (Stainless Steel, Hygienic Design)* → Page 15

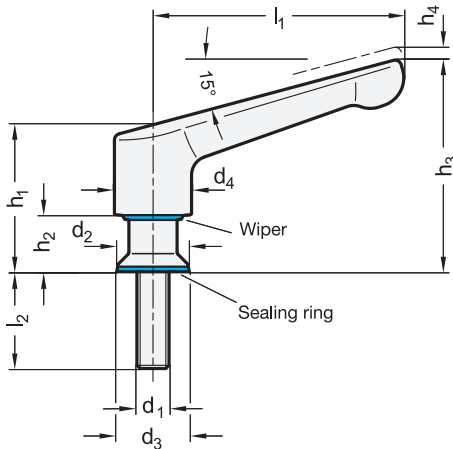
**Accessory**

- Sealing Rings GN 7600 → Page 36

How to order

**GN 305-63-M8-PL-H**

<sup>1</sup>	l <sub>1</sub>
<sup>2</sup>	d <sub>1</sub>
<sup>3</sup>	Finish
<sup>4</sup>	Material (Sealing ring)



1		2		3									
$l_1$	$d_1$	$l_2$		$d_2$	$d_3$	$d_4$	$h_1$	$h_2$	$h_3$	$h_4$		Stroke	
63	M 6	12	16	20	25	32	14	14,8	19	43,8	16,3	60,1	2,5
63	M 8	12	16	20	25	32	18	18,8	19	45,9	18,3	62,1	2,5
78	M 8	12	16	20	25	32	18	18,8	24	49,3	16,5	69,3	3
78	M 10	16	20	25	32	-	22	22,8	24	51,3	18,5	71,3	3

**Specification**

- Handle  
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 -25 °C to +150 °C  
**E**  
- EPDM  
Temperature resistant -40 °C to +120 °C  
- Blue  
- Hardness 85±5 Shore A  
- FDA compliant
- *Elastomer Characteristics* → Page 38
- *Stainless Steel Characteristics* → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36



**Information**

Adjustable hand levers GN 305 with solid stainless steel handle comply with the DGUV testing principles, making them suitable for use 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 facilitate cleaning.

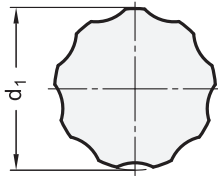
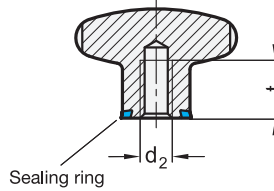
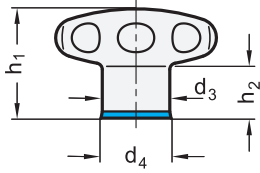
Adjustable hand levers are ideal whenever parts have to be clamped in a confined space or in a particular lever position.

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

**How to order**

1	$l_1$
2	$d_1$
3	$l_2$
4	Finish
5	Material (Sealing ring)

**GN 305-78-M10-20-PL-E**



<sup>1</sup> d <sub>1</sub>	<sup>2</sup> d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	t min.
40	M 6	18	18,8	30,5	15	12
40	M 8	18	18,8	30,5	15	15
50	M 8	21	21,8	34	17	15
50	M 10	21	21,8	34	17	18

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85±5 Shore A
  - FDA compliant
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Star knobs GN 5435 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.

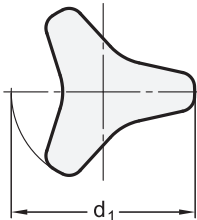
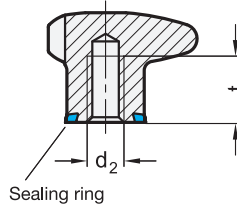
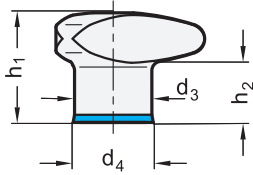
see also...

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

How to order

<sup>1</sup> d <sub>1</sub>
<sup>2</sup> d <sub>2</sub>
<sup>3</sup> Finish
<sup>4</sup> Material (Sealing ring)

**GN5435-40-M8-PL-H**



<sup>1</sup> d <sub>1</sub>	<sup>2</sup> d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	h <sub>1</sub>	h <sub>2</sub>	t min.
40	M 6	18	18,8	26	15	12
40	M 8	18	18,8	26	15	15
50	M 8	21	21,8	30	17	15
50	M 10	21	21,8	30	17	18

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85±5 Shore A
  - FDA compliant
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Three-lobed knobs GN 5445 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.

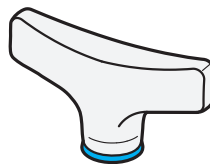
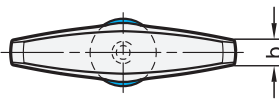
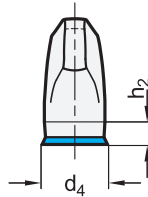
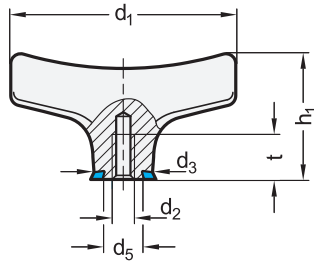
see also...

- Star Knobs GN 5435 (Stainless Steel, Hygienic Design) → Page 14
- Adjustable Hand Levers GN 305 (Stainless Steel, Hygienic Design) → Page 12 / 13

How to order

<sup>1</sup> d <sub>1</sub>	
<sup>2</sup> d <sub>2</sub>	
<sup>3</sup> Finish	
<sup>4</sup> Material (Sealing ring)	

**GN5445-40-M8-PL-H**



<sup>1</sup> d <sub>1</sub>	<sup>2</sup> d <sub>2</sub>	b	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	h <sub>1</sub>	h <sub>2</sub> ≈	t min.
40	M 4	4	11	11,8	7	22	4	8
50	M 5	5	13	13,8	9	28	5	10
63	M 6	7	16	16,8	12	35	6	12

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- EHEDG Principles** → Page 6
- Elastomer Characteristics** → Page 38
- Stainless Steel Characteristics** → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Wing nuts GN 8341 are intended for use in hygienic areas. The version with PL finish comply with the guidelines of the EHEDG. 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.

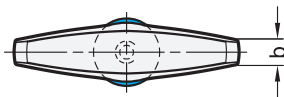
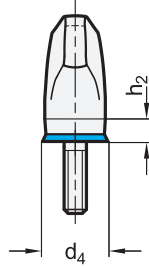
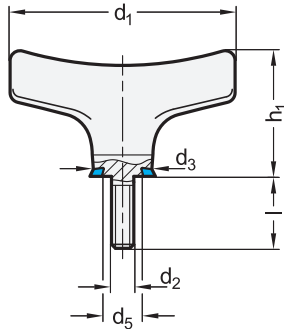
The wing nuts can also be used in particularly aggressive environments thanks to the material used.

see also...

- Wing Screws GN 8351 (Stainless Steel, Hygienic Design) → Page 17
- T-Handles GN 5064 (Stainless Steel, Hygienic Design) → Page 9

How to order	
<sup>1</sup>	d <sub>1</sub>
<sup>2</sup>	d <sub>2</sub>
<sup>3</sup>	Finish
<sup>4</sup>	Material (Sealing ring)
<b>GN 8341-50-M5-MT-E</b>	





<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>Length l</b>			<b>b</b>	<b>d<sub>3</sub></b>	<b>d<sub>4</sub></b>	<b>d<sub>5</sub></b>	<b>h<sub>1</sub></b>	<b>h<sub>2</sub> ≈</b>
40	M 4	8	12	16	4	11	11,8	7	22	4
50	M 5	12	16	20	5	13	13,8	9	28	5
63	M 6	16	20	25	7	16	16,8	12	35	6

**Specification**

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- EHEDG Principles → Page 6
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

Wing screws GN 8351 are intended for use in hygienic areas. The version with PL finish comply with the guidelines of the EHEDG. 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.

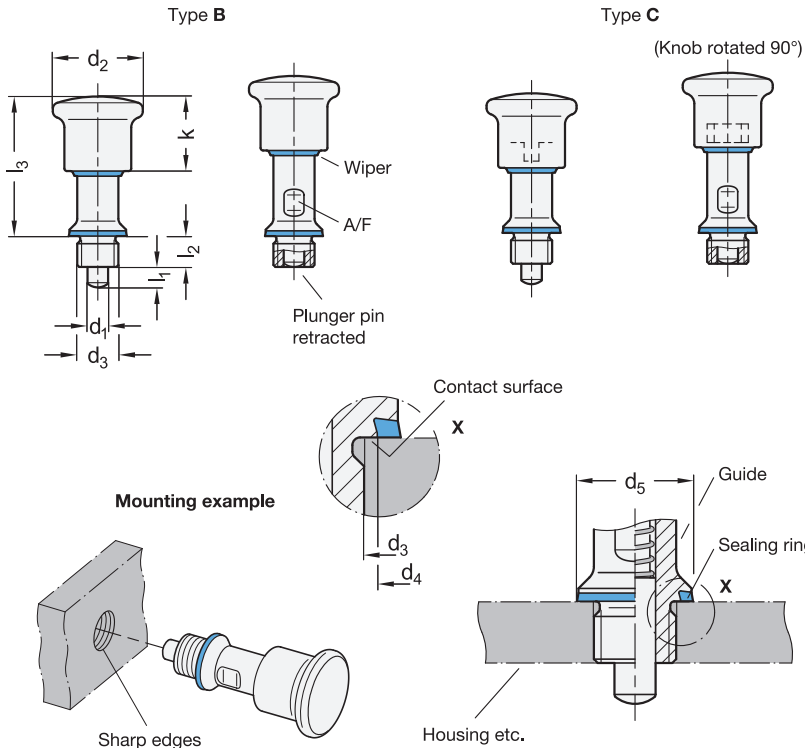
see also...

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

**How to order**

<b>1</b>	<b>d<sub>1</sub></b>
<b>2</b>	<b>d<sub>2</sub></b>
<b>3</b>	<b>Length l</b>
<b>4</b>	<b>Finish</b>
<b>5</b>	<b>Material (Sealing ring)</b>

**GN8351-50-M5-16-MT-E**



- 2 Type**
  - B Without rest position
  - C With rest position
- 3 Coding**
  - FH Knob side in Hygienic Design (front hygiene)

1

d <sub>1</sub> Plunger f8 Bore H8	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	d <sub>5</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	k	A/F	Spring load in N ≈	
										Initial	End
6	35	M 12 x 1,5	18	22,8	6	12	49,8	29	14	20	36
8	35	M 16 x 1,5	18	22,8	8	12	54,3	29	14	22	32

Specification

4

- Stainless steel AISI 316  
Plunger pin case hardened
- Pressure spring  
Stainless steel AISI 316Ti
- Seals, blue, FDA compliant  
Temperature resistant -25 °C to +110 °C
  - Sealing ring  
H-NBR, hardness 85 ±5 Shore A **H**
  - Wiper  
TPU, hardness 95 ±5 Shore A
- All moving parts lubricated with FDA compliant grease
- Load Rating Information  
→ Main Catalogue Page 2132
- ISO Fundamental Tolerances  
→ Main Catalogue Page 2151
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

Information

Indexing plungers GN 8170 are certified according to DGUV Test guidelines and meet hygiene requirements on the knob side (front hygiene).

Wipers between the knob and the guide as well as the sealing ring between the guide and the housing keep the locking mechanism on the knob side leak-tight. At the same time, the high surface quality (Ra < 0,8 µm) and dead-space-free mounting prevent dirt from adhering and facilitate cleaning.

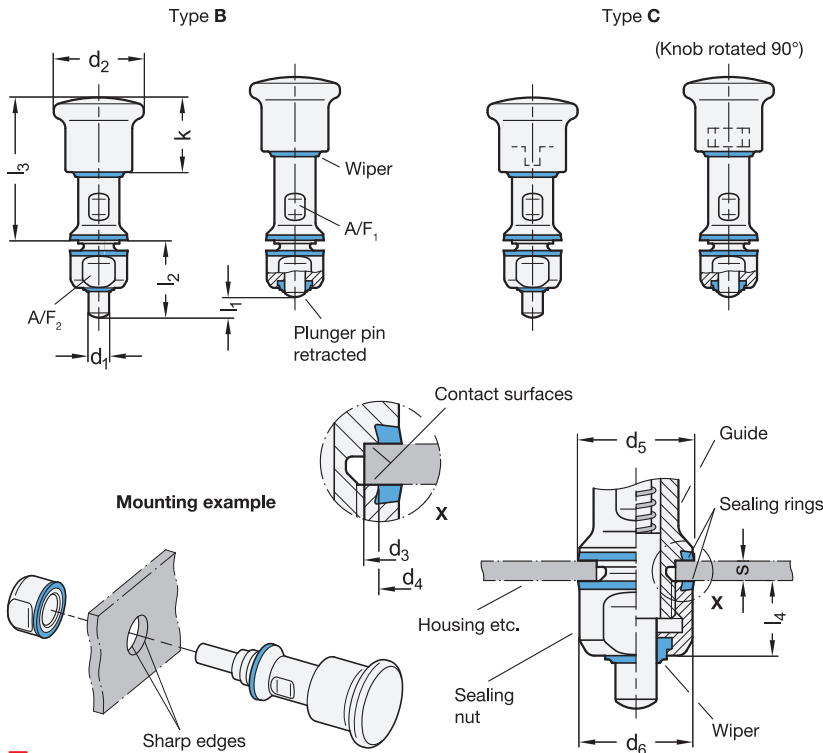
Indexing plungers with a rest position (Type C) are used for such applications where the plunger has to stay in its retracted position. In that case, the knob is retracted and afterwards turned by 90°. A notch keeps the plunger in this position.

Mounting holes and through-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.

How to order

**GN8170-8-C-FH-H**

- 1 d<sub>1</sub>
- 2 Type
- 3 Coding
- 4 Material (Sealing ring)



- 2 Type**
- B** Without rest position
  - C** With rest position

- 3 Coding**
- VH** Knob and pin side in Hygienic Design (full hygiene)

**1**

d <sub>1</sub> Plunger f8 Pin H8	d <sub>2</sub>	d <sub>3</sub> -0,1	d <sub>4</sub>	d <sub>5</sub>	d <sub>6</sub>	l <sub>1</sub>	l <sub>2</sub>	l <sub>3</sub>	l <sub>4</sub>	k	s Clamping length		A/F <sub>1</sub>	A/F <sub>2</sub>	Spring load in N ≈	
											min.	max.			Initial	End
6	35	16	18	22,8	22	6	27,5	50,5	14,5	29	1,5	4	14	18	20	36
8	35	16	18	22,8	22	8	29,5	55,5	14,5	29	1,5	4	14	18	22	32

**Specification**

**4**

- Stainless steel AISI 316  
Plunger pin case hardened
- Pressure spring  
Stainless steel AISI 316Ti
- Seals, blue, FDA compliant  
Temperature resistant -25 °C to +110 °C  
- Sealing rings  
H-NBR, hardness 85 ±5 Shore A **H**  
- Wiper  
TPU, hardness 95 ±5 Shore A
- All moving parts lubricated with  
FDA compliant grease
- Load Rating Information  
→ Main Catalogue Page 2132
- ISO Fundamental Tolerances  
→ Main Catalogue Page 2151
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Information**

Indexing plungers GN 8170 are certified according to DGUV Test guidelines, and with their additional sealing nuts, they meet hygiene requirements on the knob and pin sides (full hygiene).

Wipers between knob and guide and between guide and pin as well as sealing rings on the guide and sealing nut keep the locking mechanism leak-tight. At the same time, the high surface quality (Ra < 0,8 µm) and dead-space-free mounting prevent dirt from adhering and facilitate cleaning.

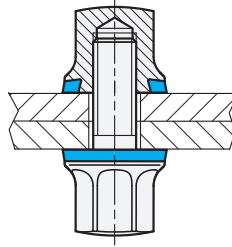
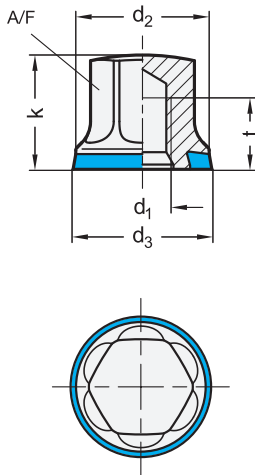
Indexing plungers with a rest position (Type C) are used for such applications where the plunger has to stay in its retracted position. In that case, the knob is retracted and afterwards turned by 90°. A notch keeps the plunger in this position.

Through-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.

**How to order**

**GN8170-6-B-VH-H**

- 1** d<sub>1</sub>
- 2** Type
- 3** Coding
- 4** Material (Sealing ring)



1

d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	k	t min.	A/F
M 4	11	11,8	9,5	6	7
M 5	12	12,8	10	6	8
M 6	14	14,8	12	7,5	10
M 8	18	18,8	14,5	9,5	13
M 10	21	21,8	18	12	16
M 12	25	25,8	21	14,5	18
M 16	32	32,8	26	17	24
M 20	40	40,8	32	46	30

## Specification

2

3

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- [EHEDG Principles](#) → Page 6
- [Elastomer Characteristics](#) → Page 38
- [Stainless Steel Characteristics](#) → Page 39
- [RoHS](#)

## Accessory

- Sealing Rings GN 7600 → Page 36

## On request

- with FKM sealing ring (Fluorine rubber) **F**

## Information

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

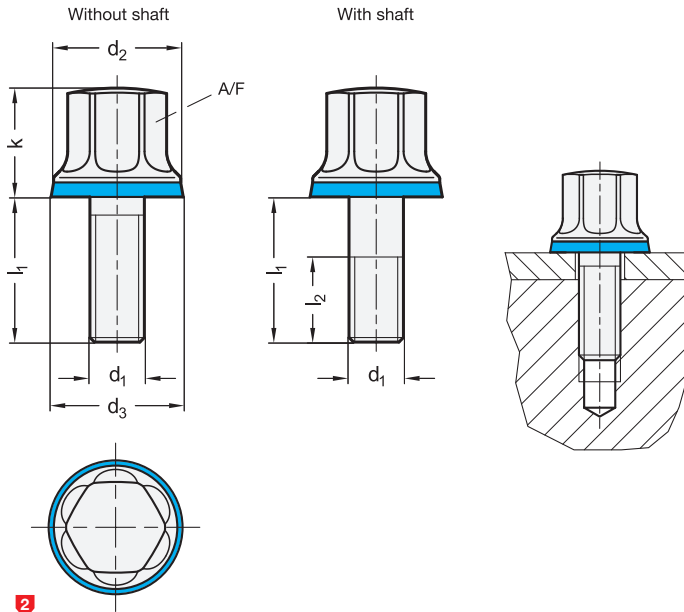
see also...

- [Leveling Feet GN 20](#) (Stainless Steel, with Mounting Holes, [Hygienic Design](#)) → Page 32
- [Screws GN 1580](#) (Stainless Steel, [Hygienic Design](#)) → Page 21

### How to order

**GN 1580-M10-PL-E**

1	d <sub>1</sub>
2	Finish
3	Material (Sealing ring)



1

2

d <sub>1</sub>	l <sub>1</sub>					With shaft			d <sub>2</sub>	d <sub>3</sub>	k	l <sub>2</sub>	A/F
	Without shaft												
M 4	8	10	12	-	-	16	-	-	11	11,8	9,5	14	7
M 5	10	16	-	-	-	20	-	-	12	12,8	10	16	8
M 6	12	16	20	25	30	30	-	-	14	14,8	12	18	10
M 8	16	20	25	30	40	40	-	-	18	18,8	14,5	22	13
M 10	20	25	30	-	-	40	50	-	21	21,8	18	26	16
M 12	25	30	-	-	-	40	50	60	25	25,8	21	30	18
M 16	30	40	-	-	-	50	60	70	32	32,8	26	38	24
M 20	40	-	-	-	-	60	-	-	40	40,8	32	46	30

**Specification**

3

4

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue, FDA compliant
  - Hardness 85 ±5 Shore A
- [EHEDG Principles](#) → Page 6
- [Elastomer Characteristics](#) → Page 38
- [Stainless Steel Characteristics](#) → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**Information**

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

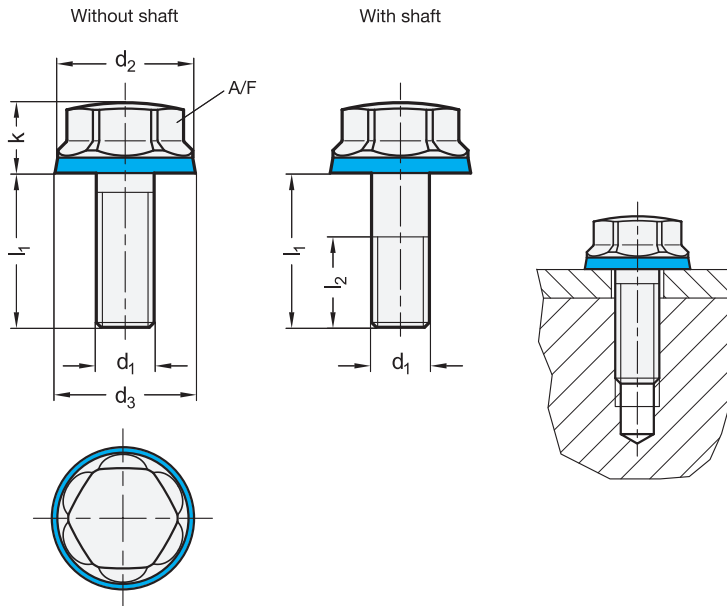
see also...

- [Leveling Feet GN 20](#) (Stainless Steel, with Mounting Holes, Hygienic Design) → Page 32
- [Nuts GN 1580](#) (Stainless Steel, Hygienic Design) → Page 20

How to order

1 2 3 4  
**GN 1580-M8-30-PL-E**

1	d <sub>1</sub>
2	l <sub>1</sub>
3	Finish
4	Material (Sealing ring)



1

2

d <sub>1</sub>	l <sub>1</sub>					With shaft			d <sub>2</sub>	d <sub>3</sub>	k	l <sub>2</sub>	A/F
	Without shaft												
M 5	10	16	-	-	-	20	-	-	11	11,8	7	16	8
M 6	12	16	20	25	-	30	-	-	13	13,8	7,5	18	10
M 8	16	20	25	30	-	40	-	-	16	16,8	8,5	22	13
M 10	20	25	30	-	-	40	50	-	19	19,8	9,5	26	16
M 12	25	30	-	-	-	40	50	60	22	22,8	11	30	18
M 16	30	40	-	-	-	50	60	70	28	28,8	13	38	22

**Specification**

3

4

- 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 -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue, FDA compliant
  - Hardness 85 ±5 Shore A
- EHEDG Principles → Page 6
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Information**

Screws GN 1581 with low-profile head are certified according to EHEDG guidelines and are therefore ideal for use in hygienic areas. The sealed mounting surface enables components to be mounted 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 32
- Nuts GN 1580 (Stainless Steel, Hygienic Design) → Page 20

**Accessory**

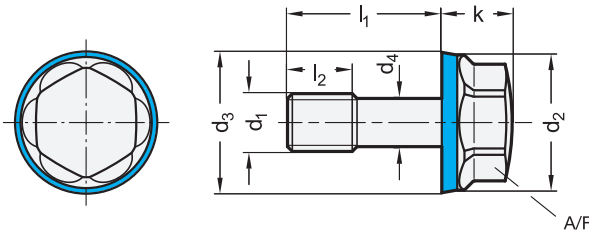
- Sealing Rings GN 7600 → Page 36

**On request**

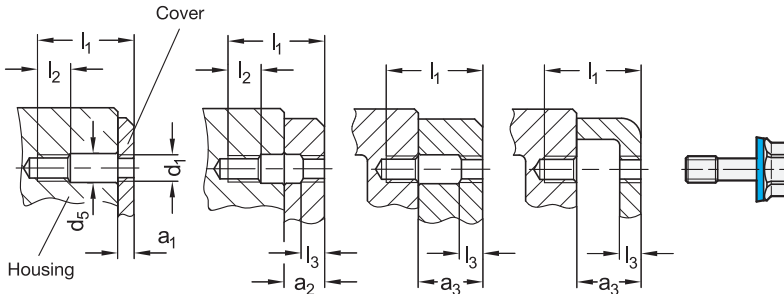
- with FKM sealing ring (Fluorine rubber) **F**

How to order	
1	d <sub>1</sub>
2	l <sub>1</sub>
3	Finish
4	Material (Sealing ring)

**GN 1581-M10-50-PL-H**



Assembly options



5 Identification no.

- 1 Without additional lock washer

d <sub>1</sub>	l <sub>1</sub>	a <sub>1</sub>	a <sub>2</sub>	a <sub>3</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub> -0,2	d <sub>5</sub>	k	l <sub>2</sub>	l <sub>3</sub>	A/F
M 5	20	2,5-6	6-10,5	10,5-14	11	11,8	4	5,5	7	6	2,5	8
M 5	25	6-11	11-14	14-19	11	11,8	4	5,5	7	6	2,5	8
M 6	25	3-7	7-13	13-17	13	13,8	4,8	6,5	7,5	8	3	10
M 6	30	7-12	12-17	17-22	13	13,8	4,8	6,5	7,5	8	3	10
M 8	30	4-8	8-16	16-20	16	16,8	6,5	8,5	8,5	10	4	13
M 8	40	8-18	18-25	25-30	16	16,8	6,5	8,5	8,5	10	4	13
M 10	40	5-14	14-19	19-28	19	19,8	8,2	10,5	9,5	12	5	16
M 10	50	14-24	24-28	28-38	19	19,8	8,2	10,5	9,5	12	5	16

Specification

- 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 -25 °C to +150 °C
  - EPDM **E**
  - Temperature resistant -40 °C to +120 °C
  - Blue, FDA compliant
  - Hardness 85 ±5 Shore A
- EHEDG Principles → Page 6
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

Accessory

- Sealing Rings GN 7600 → Page 36

On request

- with FKM sealing ring (Fluorine rubber) **F**
- Screws with additional lock washer (Identification no. 2)

Information

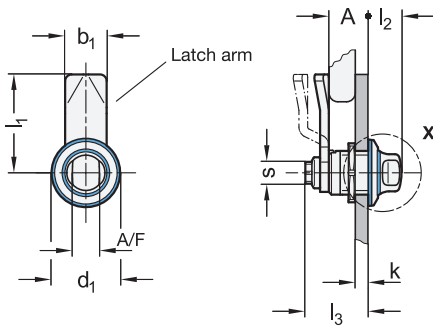
Screws GN 1582 with low-profile head are certified according to EHEDG guidelines and therefore ideal for use in hygienic areas. Due to the d<sub>4</sub> recessed stud, they are easily secured against loss, such as in a cover. Thus the „captivity of the mounting element“ according to the Machinery Directive 2006 / 42 / EG is given.

When using, instead of a typical tapped and bore hole, it is necessary to provide tapped bores with a thread d<sub>1</sub> on each of the two elements to be assembled. Additionally, a clearance bore of d<sub>5</sub> on one or both sides must be cut. Depending on the design and required clamping length a<sub>1</sub> ... a<sub>3</sub> 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 d<sub>4</sub>.

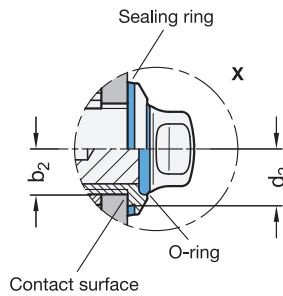
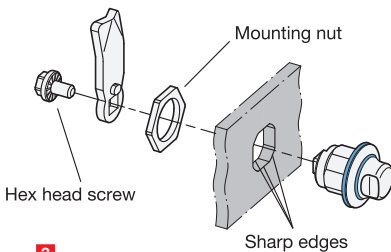
How to order

1	d <sub>1</sub>
2	l <sub>1</sub>
3	Finish
4	Material (Sealing ring)
5	Identification no.

GN 1582-M10-50-PL-H-1



Mounting example



**2 Type**

**SW** With two spanner flats

**4 Coding**

**FH** Operating side in Hygienic Design (front hygiene)

**1 3**

d <sub>1</sub>	Latch arm distance A										b <sub>1</sub>	b <sub>2</sub>	d <sub>2</sub>	k		l <sub>1</sub> ±1	l <sub>2</sub>	l <sub>3</sub> ≈	s	A/F
	7,5	13,5	19,5	-	-	-	-	-	-	-				min.	max.					
22	7,5	13,5	19,5	-	-	-	-	-	-	-	12	7	9	1,5	5	24	12,6	21	8	9
30	6	10	14	18	20	22	24	26	28	19	10	13	1,5	6	45	15,3	29	10	13	

**Specification**

- Lock housing  
Stainless steel AISI 316L
- Latch arm  
Stainless steel  
- AISI 304 for d<sub>1</sub> = 22  
- AISI 316 L for d<sub>1</sub> = 30
- Sealing ring / O-ring  
EPDM **E**  
- Blue, FDA compliant  
- Temperature resistant -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 FDA compliant special grease
- Protection class IP 66
- IP Protection Classes  
→ Main Catalogue Page 2153
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36
- Socket Keys GN 1151 → Page 27

**5**

**Information**

Latches GN 1150 are intended for use in hygienic areas and meet hygiene requirements on the operating side (front hygiene). 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. Stainless steel latches GN 1150 are supplied with loosely enclosed latch arm.

see also...

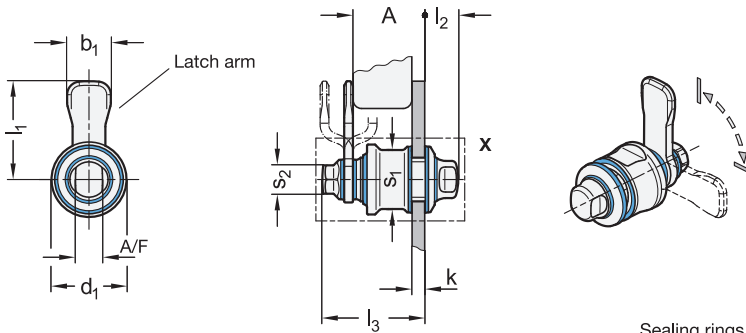
- *Technical and Assembly Instructions* → Page 26
- *Latches GN 1150 (Stainless Steel, Full Hygiene, Hygienic Design)* → Page 25

**How to order**

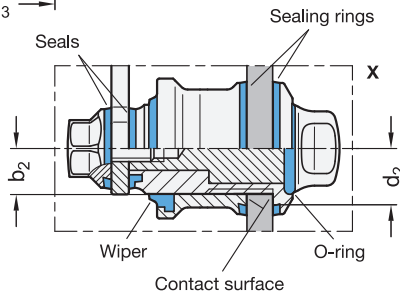
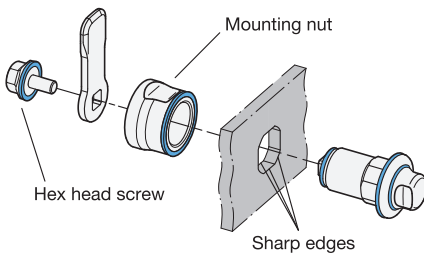
<b>1</b>	d <sub>1</sub>
<b>2</b>	Type
<b>3</b>	Latch arm distance A
<b>4</b>	Coding
<b>5</b>	Material (Sealing ring / O-ring)

**GN 1150-22-SW-7,5-FH-E**





**Mounting example**



**2 Type**

**SW** With two spanner flats

**4 Coding**

**VH** Operating and latch arm side in Hygienic Design (full hygiene)

1

3

d <sub>1</sub>	Latch arm distance A		b <sub>1</sub>	b <sub>2</sub>	d <sub>2</sub>	k	l <sub>1</sub> ±1		l <sub>2</sub>	l <sub>3</sub>	s <sub>1</sub>	s <sub>2</sub>	A/F
	min.	max.											
30	22	33	44	20	10	13	1,5	6	45	15,3	47	27	13

**Specification**

5

- Lock housing  
Stainless steel AISI 316L
- Latch arm  
Stainless steel AISI 316
- Seals  
Blue, FDA compliant  
Temperature resistant -40 °C to +110 °C  
- Sealing rings / O-ring  
EPDM  
Hardness 85 ±5 Shore A (Sealing rings)  
Hardness 70 ±5 Shore A (O-ring)
- Other seals / Wiper  
TPU, Hardness 95 ±5 Shore A
- Other parts stainless steel AISI 316L
- All moving parts lubricated with  
FDA compliant special grease
- Protection class IP 66
- IP Protection Classes  
→ Main Catalogue Page 2153
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

**Accessory**

- Sealing Rings GN 7600 → Page 36
- Socket Keys GN 1151 → Page 27

**Information**

Latches GN 1150 are designed for use in hygienic 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 hexagon 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...

- Latches GN 1150 (Stainless Steel, Front Hygiene, Hygienic Design) → Page 24

**How to order**

1	d <sub>1</sub>
2	Type
3	Latch arm distance A
4	Coding
5	Material (Sealing ring / O-ring)

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

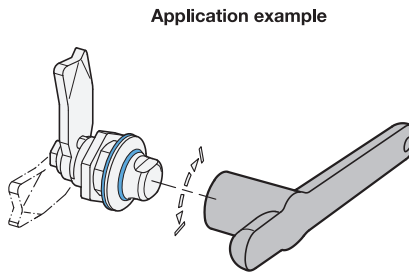
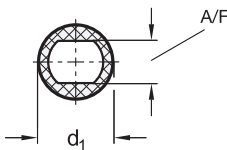
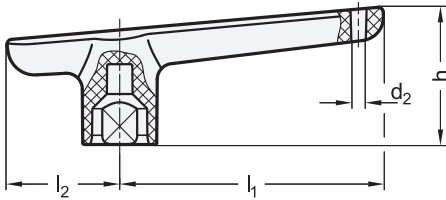
### Technical and Assembly Instructions

For installation, set a bore diameter in the door, cover or hatch as shown in the outline drawing opposite. The lock housing is inserted into the installation bore from the front and secured from the back with the mounting nut. Then the latch bar 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 → *Main Catalogue Page 1267* 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	



**2 Type**

**SW9** With two wrench flats A/F9

**SW13** With two wrench flats A/F13

**1**

$l_1$	$d_1$	$d_2$	$h$	$l_2$	A/F	For latches
82	23	5	42,7	35	9	GN 1150
82	23	5	42,7	35	13	GN 1150 / GN 115-AZ13

**Specification**



- Plastic Technopolymer (Polyamide PA) **PA**
- Glass fiber reinforced
- Blue **BL**
- *Plastic Characteristics* → Main Catalogue Page 2158
- **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

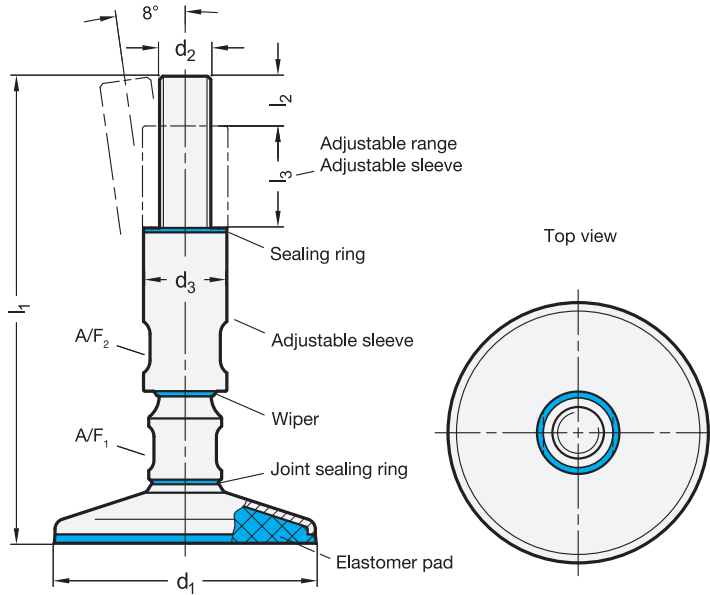
see also...

- Latches GN 1150 (Stainless Steel, Front Hygiene, Hygienic Design) → Page 24
- Latches GN 1150 (Stainless Steel, Full Hygiene, Hygienic Design) → Page 25

How to order

**GN 1151-82-SW13-PA-BL**

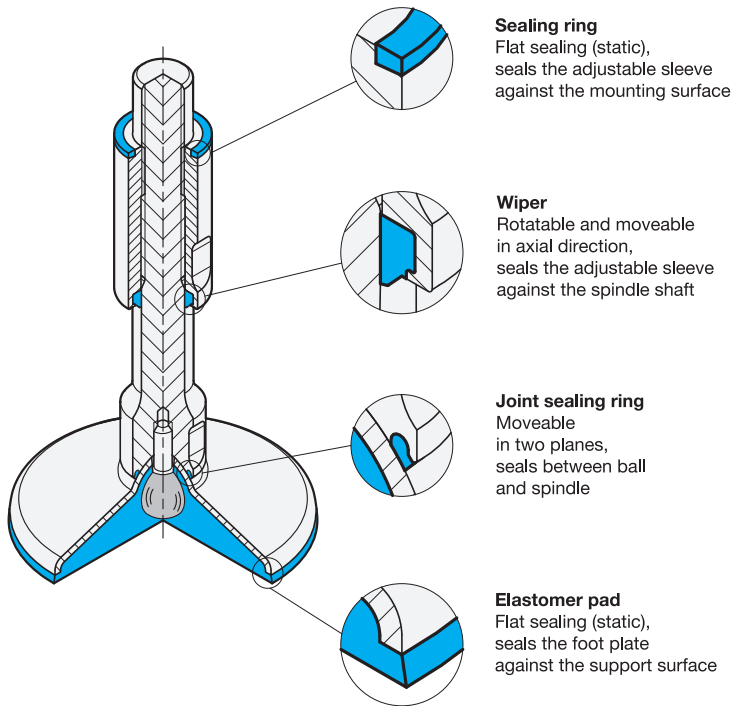
<b>1</b>	$l_1$
<b>2</b>	Type
<b>3</b>	Material
<b>4</b>	Color



**4 Type**  
**A** Without mounting holes

<b>1</b> $d_1$	<b>2</b> $d_2$	<b>3</b> $l_1$		$d_3$	$l_2$	$l_3$	$A/F_1$	$A/F_2$	Static load in kN (see information)
60	M 12	175	225	25	14	35	17	19	9
60	M 16	175	225	28	19	35	18	22	9
80	M 12	175	225	25	14	35	17	19	15
80	M 16	175	225	28	19	35	18	22	15
80	M 20	185	235	32	24	35	24	27	15
80	M 24	185	235	36	29	35	24	30	15
100	M 16	175	225	28	19	35	18	22	22
100	M 20	185	235	32	24	35	24	27	22
100	M 24	185	235	36	29	35	24	30	22
120	M 16	175	225	28	19	35	18	22	30
120	M 20	185	235	32	24	35	24	27	30
120	M 24	185	235	36	29	35	24	30	30

## Sealing concept



### Sealing ring

Flat sealing (static), seals the adjustable sleeve against the mounting surface

### Wiper

Rotatable and moveable in axial direction, seals the adjustable sleeve against the spindle shaft

### Joint sealing ring

Moveable in two planes, seals between ball and spindle

### Elastomer pad

Flat sealing (static), seals the foot plate against the support surface

## Specification

- Spindle, adjustable sleeve
  - Stainless steel AISI 304
  - Turned
- Foot 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
- Elastomer pad, blue, FDA compliant
  - Silicone, hardness 85 ±5 Shore A
  - Vulcanised
- 3-A Principles → Page 6
- Elastomer Characteristics → Page 38
- Stainless Steel Characteristics → Page 39
- RoHS

## Accessory

- Cover Sleeves GN 20.1 → Page 34
- Sealing Rings GN 7600 → Page 36
- Wipers GN 7607 → Page 37

## Information

Leveling feet GN 19 comply with the 3-A sanitary standard 88-01 and the DGUV 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.

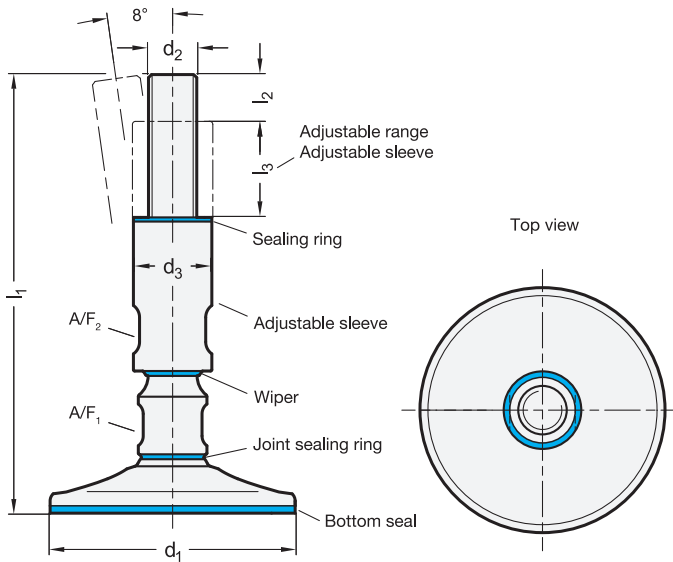
see also...

- Leveling Feet GN 20 (Stainless Steel, Hygienic Design) → Page 30 / 32

### How to order

  
**GN 19-100-M16-175-A**

1	d <sub>1</sub>
2	d <sub>2</sub>
3	l <sub>1</sub>
4	Type



**4 Type**  
**A** Without mounting holes

<b>1</b> d <sub>1</sub>	<b>2</b> d <sub>2</sub>	<b>3</b> l <sub>1</sub>		d <sub>3</sub>	l <sub>2</sub>	l <sub>3</sub>	A/F <sub>1</sub>	A/F <sub>2</sub>	Static load in kN (see information)
60	M 12	175	225	25	14	35	17	19	16
60	M 16	175	225	28	19	35	18	22	30
80	M 12	175	225	25	14	35	17	19	16
80	M 16	175	225	28	19	35	18	22	30
80	M 20	185	235	32	24	35	24	27	47
80	M 24	185	235	36	29	35	24	30	67
100	M 16	175	225	28	19	35	18	22	30
100	M 20	185	235	32	24	35	24	27	47
100	M 24	185	235	36	29	35	24	30	67
120	M 16	175	225	28	19	35	18	22	30
120	M 20	185	235	32	24	35	24	27	47
120	M 24	185	235	36	29	35	24	30	67



## Specification

- Spindle, adjustable sleeve, foot plate
  - 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
- [Elastomer Characteristics](#) → Page 38
- [Stainless Steel Characteristics](#) → Page 39
- [RoHS](#)

## Accessory

- [Cover Sleeves GN 20.1](#) → Page 34
- [Sealing Rings GN 7600](#) → Page 36
- [Wipers GN 7607](#) → Page 37

## Information

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

The bottom seal protects the area beneath the foot plate from dirt. For this, the foot must be pressed down by the weight of the machine. The sealing ring above the adjustment sleeve enables fastening without dead space. Due to the wiper or 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.

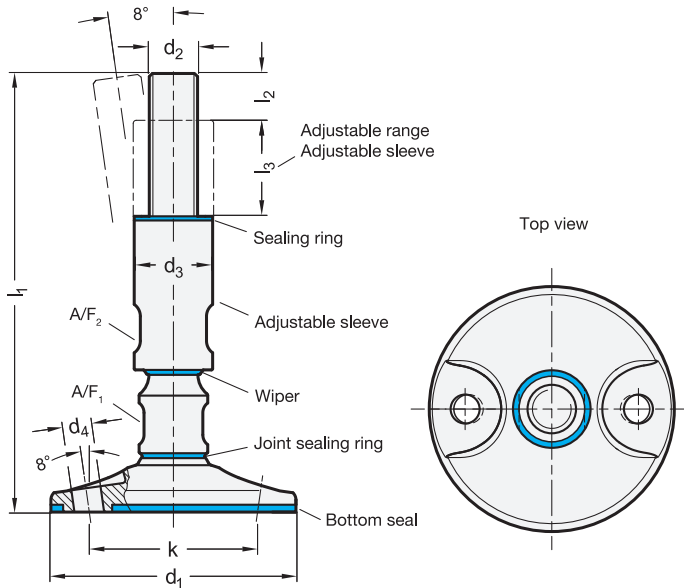
see also...

- [Leveling Feet GN 20](#)  
(Stainless Steel, with Mounting Holes, [Hygienic Design](#)) → Page 32
- [Leveling Feet GN 19](#)  
(Stainless Steel, [Hygienic Design](#)) → Page 28

### How to order

  
**GN 20-100-M16-175-A**

1	d <sub>1</sub>
2	d <sub>2</sub>
3	l <sub>1</sub>
4	Type

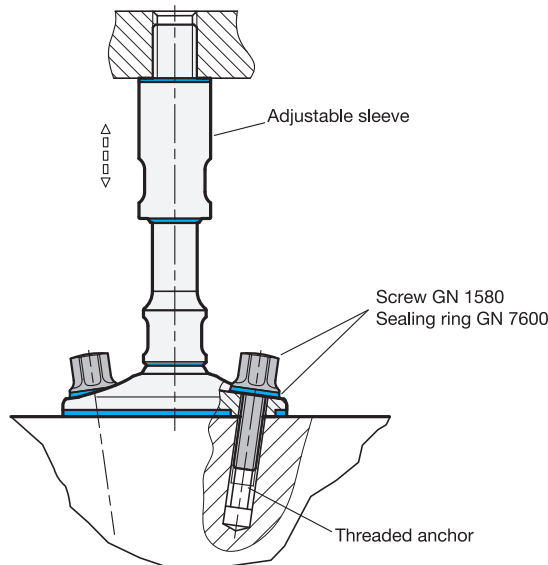


**4 Type**  
**B With mounting holes**

<b>1</b> d <sub>1</sub>	<b>2</b> d <sub>2</sub>	<b>3</b> l <sub>1</sub>	d <sub>3</sub>	d <sub>4</sub>	l <sub>2</sub>	l <sub>3</sub>	k	A/F <sub>1</sub>	A/F <sub>2</sub>	Static load in kN (see information)	
80	M 12	175	225	25	9,5	14	35	55,5	17	19	16
80	M 16	175	225	28	9,5	19	35	55,5	18	22	30
80	M 20	185	235	32	9,5	24	35	55,5	24	27	47
80	M 24	185	235	36	9,5	29	35	55,5	24	30	67
100	M 16	175	225	28	12	19	35	69	18	22	30
100	M 20	185	235	32	12	24	35	69	24	27	47
100	M 24	185	235	36	12	29	35	69	24	30	67
120	M 16	175	225	28	12	19	35	89	18	22	30
120	M 20	185	235	32	12	24	35	89	24	27	47
120	M 24	185	235	36	12	29	35	89	24	30	67



### Mounting example



### Specification

- Spindle, adjustable sleeve, foot plate
  - 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
- *EHEDG and 3-A Principles* → Page 1454
- *Elastomer Characteristics* → Page 2158
- *Stainless Steel Characteristics* → Page 2166
- RoHS

### Accessory

- Cover Sleeves GN 20.1 → Page 34
- Sealing Rings GN 7600 → Page 36
- Wipers GN 7607 → Page 37
- Screws GN 1580 → Page 20
- Screws GN 1581 → Page 22

### Information

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

The bottom seal protects the area beneath the foot plate from dirt. For this, the foot must be screwed on using the fixing holes and compressed accordingly. Hygienic fastenings, e.g. GN 1580 screws and nuts, and the correct position of the mounting holes are essential. The sealing ring above the adjustment sleeve enables fastening without dead space. Due to the wiper or 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...

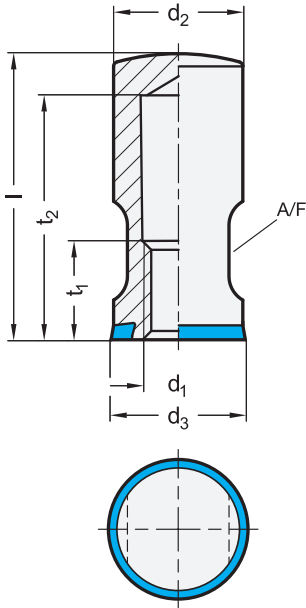
- *Leveling Feet GN 20*  
(Stainless Steel, without Mounting Holes, *Hygienic Design*)

→ Page 30

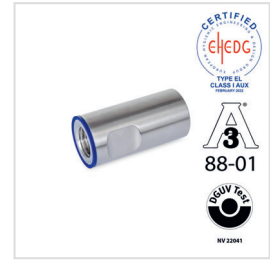
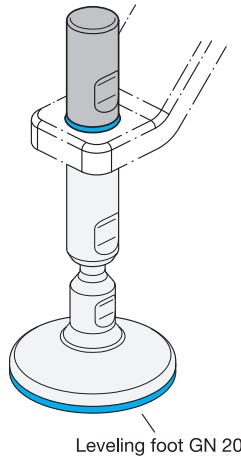
### How to order

1	d <sub>1</sub>
2	d <sub>2</sub>
3	l <sub>1</sub>
4	Type

GN 20-120-M16-175-B



Application example



<b>d<sub>1</sub></b>	<b>Length l</b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>A/F</b>	<b>t<sub>1</sub></b>	<b>t<sub>2</sub></b>
M 12	56	25	25,8	19	15,5	50
M 16	62	28	28,8	22	20,5	55
M 20	68	32	32,8	27	25,5	60
M 24	74	36	36,8	30	30,5	65

**Specification**

- Cover sleeve  
Stainless steel AISI 304
- Sealing ring
  - H-NBR **H**  
Temperature resistant -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- *EHEDG and 3-A Principles* → Page 6
- *Elastomer Characteristics* → Page 38
- *Stainless Steel Characteristics* → Page 39
- **RoHS**

**Accessory**

- Sealing Rings GN 7600 → Page 36

**Information**

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

These cover protruding male threads while also substituting for lock nuts. The sealed mounting surfaces enable fastening without dead spaces. The high quality finish prevents adherence of dirt and facilitates cleaning.

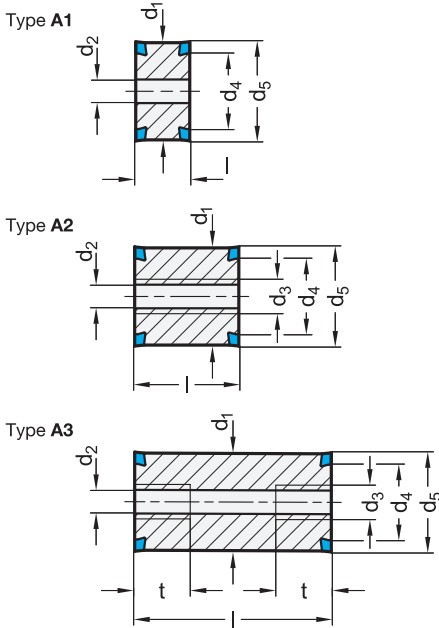
see also...

- *Leveling Feet GN 20 (Stainless Steel, Hygienic Design)* → Page 30 / 32
- *Leveling Feet GN 19 (Stainless Steel, Hygienic Design)* → Page 28

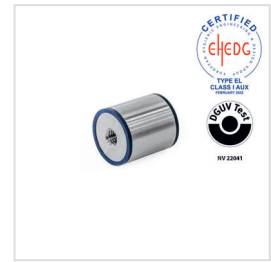
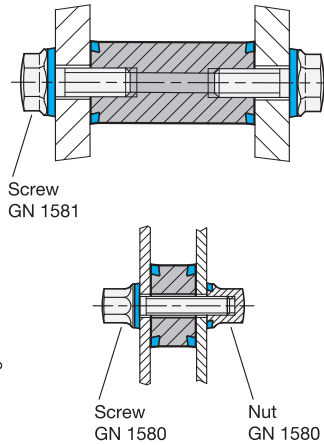
How to order

**GN 20.1-M12-56-H**

1	d <sub>1</sub>
2	Length l
3	Material (Sealing ring)



**Application examples**



**3 Type**

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

d <sub>1</sub>	Length l ±0,1				Length l ±0,2		d <sub>2</sub> Through-hole for screw	d <sub>3</sub> Thread	d <sub>4</sub>	d <sub>5</sub>	t min.
	Type A1		Type A2		Type A3						
22	10	12	16	20	30	50	M 5	M 6	18	22,8	12
28	12	16	20	30	50	75	M 6	M 8	24	28,8	16
34	12	16	20	30	50	100	M 8	M 10	30	34,8	20

**Specification**

- Stainless steel AISI 316L  
Matte finish (Ra < 0.8 µm) **MT**
- Sealing ring **H**
  - H-NBR **H**  
Temperature resistant -25 °C to +150 °C
  - EPDM **E**  
Temperature resistant -40 °C to +120 °C
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant
- *EHEDG Principles* → Page 6
- *Elastomer Characteristics* → Page 38
- *Stainless Steel Characteristics* → Page 39
- **RoHS**

**Accessory**

- Sealing Rings GN 7600 → Page 36

**On request**

- with FKM sealing ring (Fluorine rubber) **F**

**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.

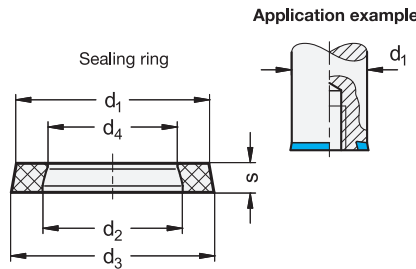
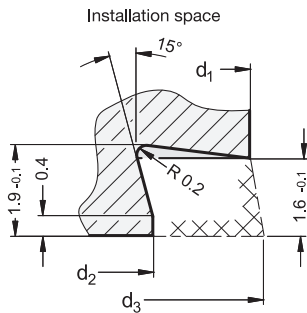
see also...

- *Nuts GN 1580 (Stainless Steel, Hygienic Design)* → Page 20
- *Screws GN 1580 (Stainless Steel, Hygienic Design)* → Page 20
- *Screws GN 1581 (Stainless Steel, Hygienic Design)* → Page 22
- *Screws GN 1582 (Stainless Steel, with Recessed Stud for Loss Protection, Hygienic Design)* → Page 23

**How to order**

1	d <sub>1</sub>
2	Length l
3	Type
4	Finish
5	Material (Sealing ring)

**GN6226-28-75-A3-MT-H**



<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>d<sub>1</sub></b>	<b>d<sub>2</sub></b>	<b>d<sub>3</sub></b>	<b>d<sub>4</sub></b>	<b>s</b>	Suitable for
Nominal dimensions - Installation space			Actual dimensions - Sealing rings, unassembled					
10	6	10,8	9,5	6,1	10,2	5,4	2	GN 1581
11	7	11,8	10,2	6,8	10,9	6,1	2	GN 1580 / GN 1581 / GN 1582 / GN 8341 / GN 8351
12	8	12,8	11,2	7,8	11,9	7,1	2	GN 429 / GN 1580
13	9	13,8	12,2	8,8	12,9	8,1	2	GN 1581 / GN 1582 / GN 8341 / GN 8351
14	10	14,8	13,2	9,8	13,9	9,1	2	GN 75.6 / GN 305 / GN 1580
16	12	16,8	15,1	11,7	15,8	11,0	2	GN 75.6 / GN 429 / GN 5064 / GN 1581 / GN 1582 / GN 8341 / GN 8351
18	14	18,8	17,0	13,6	17,7	12,9	2	GN 75.6 / GN 305 / GN 1580 / GN 5435 / GN 5445
19	15	19,8	17,9	14,5	18,6	13,8	2	GN 1581 / GN 1582
20	16	20,8	18,9	15,5	19,6	14,8	2	GN 429
21	17	21,8	19,9	16,4	20,5	15,7	2	GN 1580 / GN 5064 / GN 5435 / GN 5445
22	18	22,8	20,8	17,4	21,4	16,7	2	GN 305 / GN 1150 / GN 1581 / GN 8170 / GN 6226
25	21	25,8	23,6	20,2	24,3	19,5	2	GN 20 / GN 20.1 / GN 1580 / GN 5064
28	24	28,8	26,5	23,1	27,2	22,4	2	GN 20 / GN 20.1 / GN 1581 / GN 6226
30	26	30,8	28,5	25,1	29,2	24,4	2	GN 1150
32	28	32,8	30,4	27,0	31,1	26,3	2	GN 20 / GN 20.1 / GN 1580
34	30	34,8	32,3	28,9	34,0	28,2	2	GN 6226
36	32	36,8	34,2	30,8	34,8	30,1	2	GN 20 / GN 20.1
40	36	40,8	38,1	34,7	38,8	34	2	GN 1580
42	38	42,8	39,9	36,5	40,6	35,8	2	-

**Specification**

- Hydrogenated acrylonitrile butadiene rubber **HNBR**
    - Blue, FDA compliant
    - Temperature resistant -25 °C to +150 °C
    - Hardness 85 ±5 Shore A **85**
  - Ethylene propylene diene rubber **EPDM**
    - Blue, FDA compliant
    - Temperature resistant -40 °C to +120 °C
    - Hardness 85 ±5 Shore A **85**
  - Fluorine rubber **FKM**
    - Blue, FDA compliant
    - Temperature resistant -5 °C to +200 °C
    - Hardness 85 ±5 Shore A **85**
- *Elastomer Characteristics* → Page 38

• RoHS

**Information**

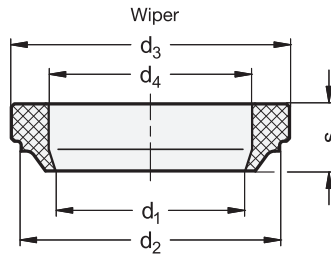
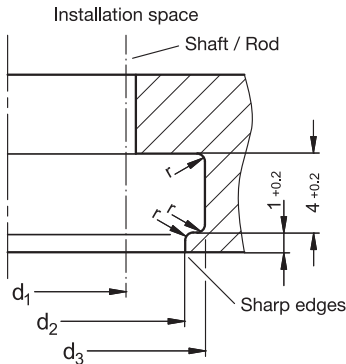
Components with cylindrical mounting surfaces which are installed in hygienic areas can be sealed and mounted without dead spaces using GN 7600 sealing rings. All standard parts equipped and delivered with sealing rings GN 7600 are listed in the table. For replacement, the corresponding sealing rings can be ordered individually.

As delivered, or unassembled, the sealing rings have the “actual dimensions” as stated in the table. To ensure a firm seating and reliable sealing, a corresponding installation space must be provided in the component. This ensures that when the sealing ring is installed, it will be subject to the necessary pressure without excess load. All surfaces which are in contact with the sealing ring should have a minimum surface quality of Ra 0.8 µm.

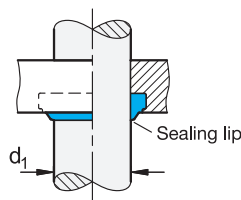
**How to order**

1	d <sub>1</sub>
2	d <sub>2</sub>
3	s
4	Material
5	Hardness

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



Application example



1

d <sub>1</sub> h9	d <sub>2</sub> H9	d <sub>3</sub> H9	r max.	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>	s	Suitable for
Nominal dimensions - Installation space				Actual dimensions - Wipers, unassembled					
12	18	20	0,4	11,2	18,2	20,2	12,6	6,8	GN 19 / GN 20
14	20	22	0,4	13,2	20,2	22,2	14,6	6,8	GN 1150
16	22	24	0,4	15,2	22,2	24,2	16,6	6,8	GN 19 / GN 20 / GN 8170
20	26	28	0,4	19,3	26,3	28,3	20,7	6,8	GN 19 / GN 20 / GN 1150
24	30	32	0,4	23,3	30,3	32,3	24,7	6,8	GN 19 / GN 20

**Specification**

2 3

- Thermoplastic polyurethane **TPU**
- Blue
- Temperature resistant -20 °C to +110 °C
- FDA compliant
- Hardness 95 ±5 Shore A **95**
- *ISO Fundamental Tolerances*  
→ Main Catalogue Page 2151
- *Elastomer Characteristics* → Page 38
- **RoHS**

**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.

How to order	1
	d <sub>1</sub>
	Material
	Hardness

**GN 7607-16-TPU-95**

	Elastomers		
Symbol	EPDM	H-NBR	TPU
Trade name	-	-	Desmopan® / Elastollan®
Chemical description	Ethylene propylene diene rubber	Hydrogenated acrylonitrile butadiene rubber	Thermoplastic polyurethane
Hardness (Shore A)	70 ... 85	85	55 ... 85
Temperature resistance			
• short-term	-40° ... +150 °C	-	-50° ... +120 °C
• long-term	-40° ... +120 °C	-25° ... +150 °C	-30° ... + 90 °C
Tensile strength in N/mm <sup>2</sup>	14	11	50
Wear resistance / Abrasion resistance	very good	good	very good
Resistance to: *			
• Oil, greases	-	+	+
• Solvents	o	+	-
• Acid	+	o	-
• Alkalines	+	+	o
• Petrol	-	+	o
• UV light / weather exposure	+	+	+
General	<p>EPDM is a synthetic all-purpose rubber characterized by its high steam and hot water resistance.</p> <p>Also worth mentioning are its outstanding resistance to aging, weathering and environmental influences as well as acids and alkalines.</p> <p>The material is used in sealings and tubings.</p>	<p>H-NBR is obtained through full or partial hydrogenation of NBR. This significantly improves the resistance to heat, ozone and aging.</p> <p>The resulting materials are characterized by high mechanical strength and high abrasion resistance. Media resistance is comparable to NBR.</p>	<p>TPU has generally good physical properties, making it ideal for demanding applications in virtually all industrial areas.</p> <p>In addition to the very high wear and abrasion resistance, the excellent tear growth resistance and cold flexibility of the material at low temperatures should also be mentioned.</p> <p>TPU can be made for a large hardness range and from an ergonomic point of view it can also be used advantageously due to its good surface feel (Softline!).</p>

\* + resistant, o conditionally resistant, - non-resistant

## Information of hardness data for Elastomers

Hardness data of vulcanized or thermoplastic elastomers are measured using the Shore scale. This value is determined by measuring the indentation depth of a spring-loaded indenter into the material. A low indentation depth is a high Shore value, a high indentation depth a low Shore value.

Different indenter shapes are used depending on the materials being examined. The elastomer materials used in Ganter products are measured according to "Shore A" with a blunt indenter with a tip angle of 35°.

AISI Standard	CF-8 Precision casting	316	316LHC Sintered Material	316 Precision casting
<b>German Material No.</b>	1.4308	1.4401 (A4)	1.4404	1.4408
<b>DIN / EN-Number</b>	EN 10213-4	EN 10088-3	Sint C40	EN 10213-4
<b>Symbol</b>	GX 5CrNi 19-10	X 5 CrNiMo 17-12-2	X 2 CrNiMo 17-13-2	GX 5 CrNiMo 19-11-2
<b>Alloying components %</b>	C ≤ 0,07 Cr 18,0 ... 20,0 Ni 8,0 ... 11,0	C ≤ 0,07 Cr 16,5 ... 18,5 Ni 10,0 ... 13,0 Mo 2,0 ... 2,5	C ≤ 0,08 Mo 2,0 ... 4,0 Cr 16,0 ... 19,0 Ni 10,0 ... 14,0	C ≤ 0,07 Cr 18,0 ... 20,0 Ni 9,0 ... 12,0 Mo 2,0 ... 2,5
<b>Minimum tensile strength R<sub>m</sub> in N/mm<sup>2</sup></b>	440 ... 640	500 ... 700	330	440 ... 650
<b>Yield strength R<sub>p0,2</sub> in N/mm<sup>2</sup></b>	≥ 175	≥ 200	≥ 250	≥ 185
<b>Machinability</b>	medium	medium	–	medium
<b>Forgeability</b>	–	good	–	–
<b>Weldability</b>	good	good	–	good
<b>Special characteristics</b>	antimagnetic, austenitic structure	antimagnetic, austenitic structure suitable for low temperatures, can be used up to 600 °C	antimagnetic structure	antimagnetic, austenitic structure
<b>Corrosion resistance</b>	good  largely comparable with AISI 304	very good  significantly higher than AISI 304 in natural environmental mediums and moderate chlorine and salt concentra- tions, however not resistant to ocean water	medium  by virtue of its coarser porosity the corrosion resistance is in general reduced as compared with stainless steel, reservations especially in acid and salty environment	very good  acid-resistant
<b>Main areas of application</b>	Food industry, Beverage industry, Packaging industry, Fittings, Pumps, Agitators	Chemical industry, Food industry, Machine construction, Building industry	Paint, oil, soap and textile industry, Electronics, Decorative purposes (Kitchen equipment)	Food industry, Chemical industry, Fittings, Pumps, Machine construction

The characteristics described should be treated as guidelines only. No guarantee is made. The exact conditions of use have to be taken into account individually.



**Otto Ganter GmbH & Co. KG**

Triberger Straße 3  
78120 Furtwangen  
Germany

**Tel.** +49 7723 6507-0

**Mail** [info@ganternorm.com](mailto:info@ganternorm.com)

**[ganternorm.com](http://ganternorm.com)**