elesa+GANTER

Standard Parts in Hygienic Design

HD
HYGIENIC DESIGN

Standard Parts in Hygienic Design

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

ELESA+GANTER has solutions

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

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.

The Hygienic Design Product Family

GN 75.6 INOX Stainless Steel
Waist shaped knobs
Type D
Stainless Steel

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GN 75.6 INOX Stainless Steel
Waist shaped knobs
Type E
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hand levers
with threaded stud
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Sealing rings
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Principles

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 assist the production process in these sensitive areas and facilitate the manufacture of products with a long shelf life, which are free from preservatives.

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

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 1672:2009-07

Food machinery – General design principles – Part 2

Principles

Design requirements for Hygienic Design

Material

- Non-rusting Stainless Steels
- FDA and EU compliant plastics and elastomers

Surfaces

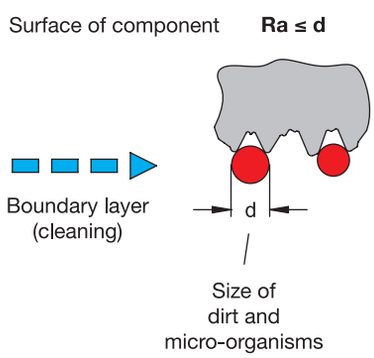
- Surfaces must be able to be cleaned
- Steps due to appliance configurations which are not aligned must be avoided
- Seals must be designed so that no gaps occur
- O-ring grooves must be hygienically designed
- Contact with the product to be manufactured must be ruled out
- Corners should preferably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

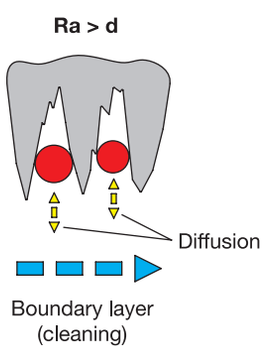
Design / Geometry

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 µm





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 Standard, 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

Principles

Seals, Installation example

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:

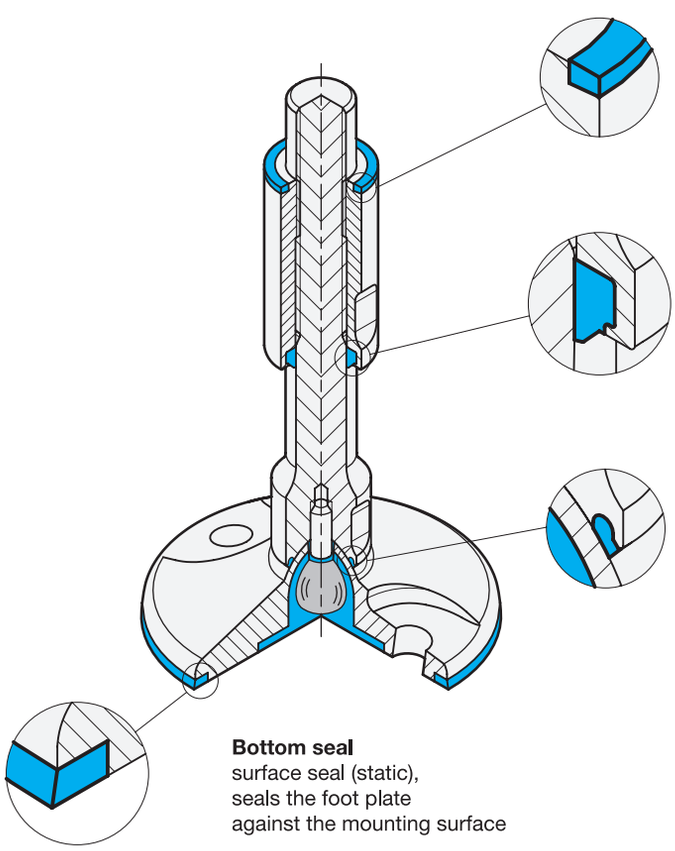
Is the static seal, application examples shown below the top faces the mounting surface (sealing ring) and the bottom faces the contact surface (bottom seal), so that the corresponding pressure is achieved by tightening. It should be ensured that all surfaces which make contact with the seal have a surface finish of al least Ra 0.8 µm.

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, ELESA+GANTER supplies the relevant seals as spare parts or offers these under GN 7600 (see page 16) as standard parts for spare parts

Installation example

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



Sealing ring
surface seal (static),
seals the adjustable sleeve
against the mounting surface

Wiper
rotatable and moveable in the axial direction,
the adjustable sleeve is sealed
against the spindle shaft

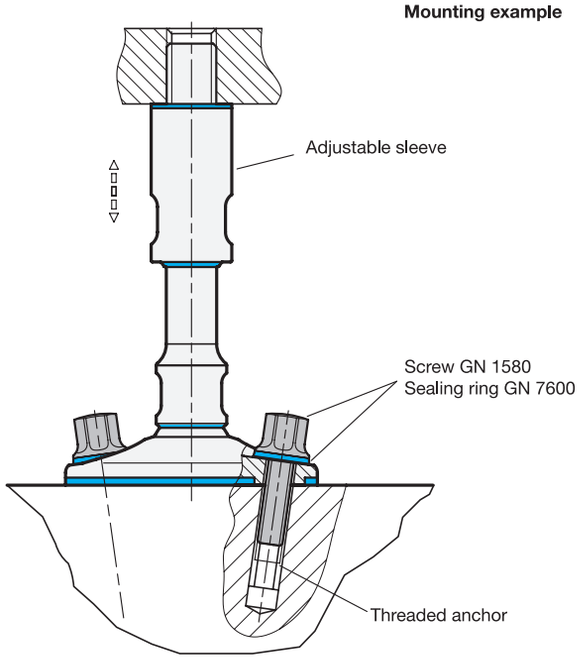
Joint sealing ring
swivelling (moveable) in two planes,
provides a seal between the ball and the spindle

Bottom seal
surface seal (static),
seals the foot plate
against the mounting surface

Principles

Application example, Certification

Mounting example



CERTIFIED
HYGIENIC ENGINEERING & DESIGN
EHEDG
EUROPEAN GROUP
TYPE EL
CLASS I AUX
JULY 2016

Levelling foot GN 20 Hygienic Design with mounting holes (see page 15)

GN 75.6

INOX Stainless Steel

Waist shaped knobs
Hygienic Design

RoHS

Specification

Types
Type **D**: with female thread
Type **E**: with threaded stud

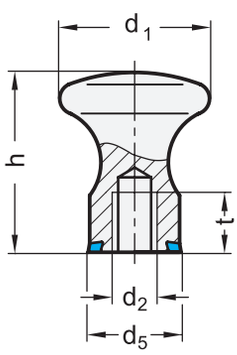
Stainless Steel
AISI 316 L (A4)
matt shot blasted **MT**
polished (Ra < 0.8 µm) **PL**

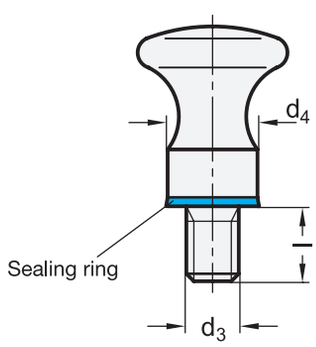
Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information

GN 75.6 flat knobs are intended for use in hygiene 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 an d facilitates cleaning.

GN 75.6 flat knobs have a compact and timeless design.





Standard Elements	Main dimensions							
Description	d1	d2	d3	d4	d5	h	Length l	t min.
GN 75.6-20-M5-D-MT	20	M5	-	14	14.8	24	10	7
GN 75.6-25-M6-D-MT	25	M6	-	16	16.8	29	12	9
GN 75.6-32-M8-D-MT	32	M8	-	18	18.8	37	14	12
GN 75.6-20-M5-E-MT	20	-	M5	14	14.8	24	10	-
GN 75.6-25-M6-E-MT	25	-	M6	16	16.8	29	12	-
GN 75.6-32-M8-E-MT	32	-	M8	18	18.8	37	14	-
GN 75.6-20-M5-D-PL	20	M5	-	14	14.8	24	10	7
GN 75.6-25-M6-D-PL	25	M6	-	16	16.8	29	12	9
GN 75.6-32-M8-D-PL	32	M8	-	18	18.8	37	14	12
GN 75.6-20-M5-E-MT	20	-	M5	14	14.8	24	10	-
GN 75.6-25-M6-E-MT	25	-	M6	16	16.8	29	12	-
GN 75.6-32-M8-E-MT	32	-	M8	18	18.8	37	14	-

GN 429

INOX Stainless Steel

Cabinet "U" handles
Hygienic Design

RoHS

Specification

Stainless Steel AISI 316 L (**A4**)
matt shot blasted **MT**
polished (Ra < 0.8 µm) **PL**

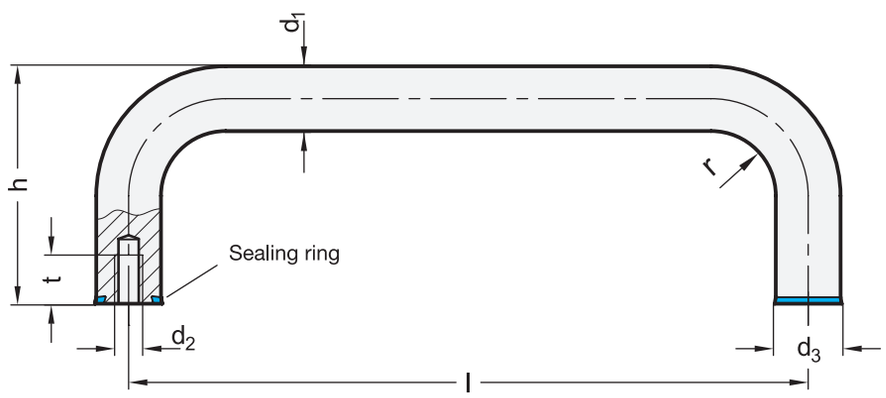
Threaded bushing
Stainless Steel AISI 304

Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information

GN 429 cabinet "U" handles 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.

The manufacturing process (bending) allows the production of special lengths in relatively small quantities.



Standard Elements	Main dimensions						
Description	**d1**	**Length l ±0.5**	**d2**	**d3**	**h**	**r**	**t min.**
GN 429-A4-12-125-MT	12	125	M5	12.8	51	14	12
GN 429-A4-12-160-MT	12	160	M5	12.8	51	14	12
GN 429-A4-16-160-MT	16	160	M6	16.8	59	18	12
GN 429-A4-16-200-MT	16	200	M6	16.8	59	18	12
GN 429-A4-12-125-PL	12	125	M5	12.8	51	14	12
GN 429-A4-12-160-PL	12	160	M5	12.8	51	14	12
GN 429-A4-16-160-PL	16	160	M6	16.8	59	18	12
GN 429-A4-16-200-PL	16	200	M6	16.8	59	18	12

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GN 305

INOX Stainless Steel

Adjustable hand levers
Hygienic Design

RoHS

Specification

Handle
Stainless Steel precision casting
AISI CF-8
polished (Ra < 0.8 µm) **PL**

Threaded stud
Stainless Steel AISI 304

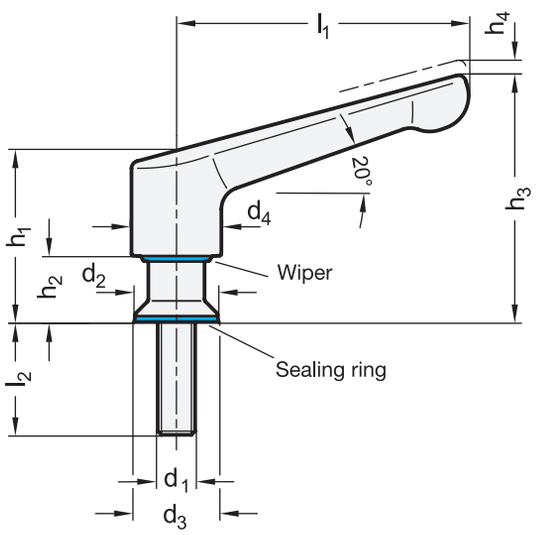
Sealing ring / Wiper
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information

GN 305 adjustable hand levers with solid Stainless Steel handles are intended for use in hygiene 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.



Standard Elements	Main dimensions									
Description	l1	d1	l2	d2	d3	d4	h1	h2	h3	h4 Stroke
GN 305-63-M6-12-PL	63	M6	12	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M6-16-PL	63	M6	16	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M6-20-PL	63	M6	20	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M6-25-PL	63	M6	25	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M6-32-PL	63	M6	32	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M8-12-PL	63	M8	12	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-63-M8-16-PL	63	M8	16	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-63-M8-20-PL	63	M8	20	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-63-M8-25-PL	63	M8	25	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-63-M8-32-PL	63	M8	32	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-78-M8-12-PL	78	M8	12	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M8-16-PL	78	M8	16	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M8-20-PL	78	M8	20	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M8-25-PL	78	M8	25	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M8-32-PL	78	M8	32	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M10-16-PL	78	M10	16	22	22.8	24	43.8	17.6	65.9	3
GN 305-78-M10-20-PL	78	M10	20	22	22.8	24	43.8	17.6	65.9	3
GN 305-78-M10-25-PL	78	M10	25	22	22.8	24	43.8	17.6	65.9	3
GN 305-78-M10-32-PL	78	M10	32	22	22.8	24	43.8	17.6	65.9	3

GN 305

INOX Stainless Steel

Adjustable hand levers
Hygienic Design

RoHS

Specification

Handle
Stainless Steel precision casting
AISI CF-8
polished (Ra < 0.8 µm) **PL**

Threaded bushing
Stainless Steel AISI 304

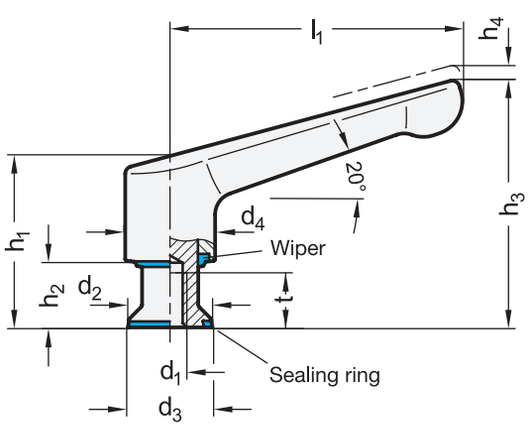
Sealing ring / Wiper
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information

GN 305 adjustable hand levers with solid Stainless Steel handles are intended for use in hygiene 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.



Standard Elements	Main dimensions								
Description	l1	d1	d2	d3	d4	h1	h2	h3	h4 Stroke
GN 305-63-M6-PL	63	M6	14	14.8	19	39.3	14.8	55.5	2.5
GN 305-63-M8-PL	63	M8	18	18.8	19	41.3	16.8	57.5	2.5
GN 305-78-M8-PL	78	M8	18	18.8	24	43.8	15.6	63.9	3
GN 305-78-M10-PL	78	M10	22	22.8	24	43.8	17.6	65.9	3

GN 5435

INOX Stainless Steel

Star knobs
Hygienic Design

RoHS

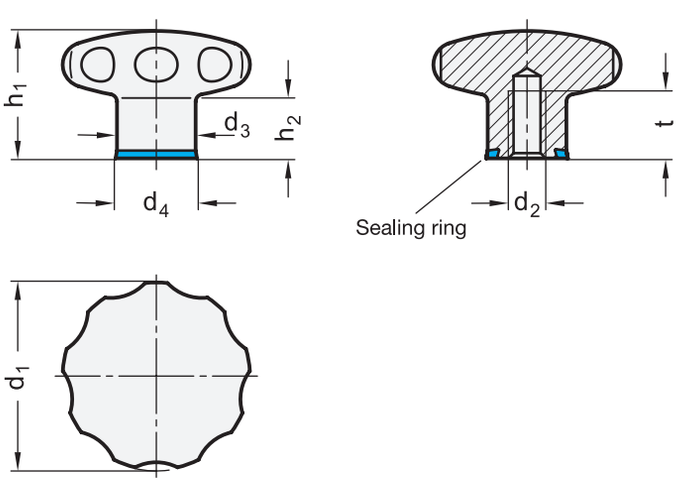
Specification

Stainless Steel
AISI 316 L (A4)
matt shot blasted **MT**
polished (Ra < 0.8 µm) **PL**

Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information

GN 5435 star knobs are intended for use in hygiene 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.



Standard Elements	Main Dimensions						
Description	**d1**	**d2**	**d3**	**d4**	**h1**	**h2**	**t min.**
GN 5435-40-M6-MT	40	M6	18	18.8	30.5	15	12
GN 5435-40-M8-MT	40	M8	18	18.8	30.5	15	15
GN 5435-50-M8-MT	50	M8	21	21.8	34	17	15
GN 5435-50-M10-MT	50	M10	21	21.8	34	17	18
GN 5435-40-M6-PL	40	M6	18	18.8	30.5	15	12
GN 5435-40-M8-PL	40	M8	18	18.8	30.5	15	15
GN 5435-50-M8-PL	50	M8	21	21.8	34	17	15
GN 5435-50-M10-PL	50	M10	21	21.8	34	17	18

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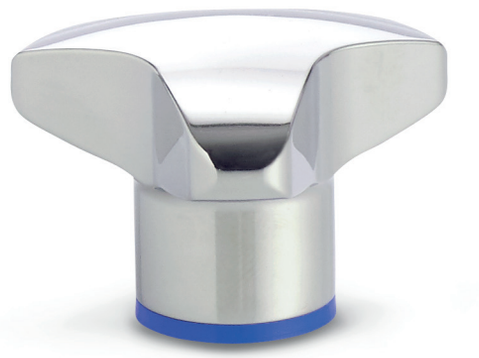
GN 5445

INOX Stainless Steel

Three lobe knobs
Hygienic Design

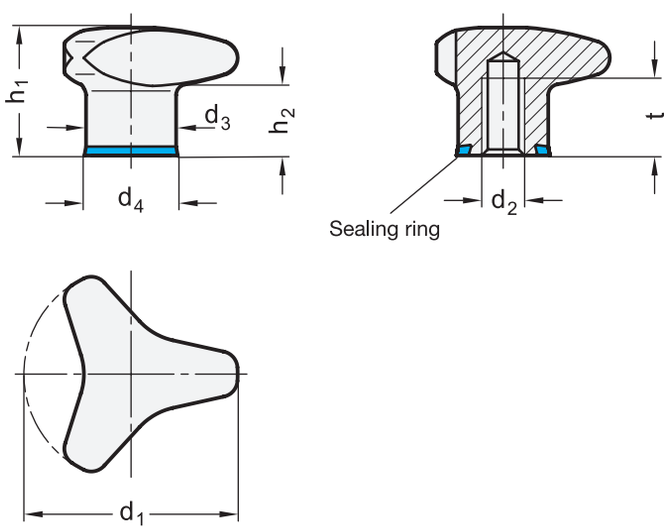
RoHS



Specification
Stainless Steel
AISI 316 L (A4)
matt shot blasted **MT**
highly polished **PL**

Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information
GN 5435 star knobs are intended for use in hygiene 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.



Standard Elements	Main Dimensions						
Description	d1	d2	d3	d4	h1	h2	t min.
GN 5445-40-M6-MT	40	M6	18	18.8	30.5	15	12
GN 5445-40-M8-MT	40	M8	18	18.8	30.5	15	15
GN 5445-50-M8-MT	50	M8	21	21.8	34	17	15
GN 5445-50-M10-MT	50	M10	21	21.8	34	17	18
GN 5445-40-M6-PL	40	M6	18	18.8	30.5	15	12
GN 5445-40-M8-PL	40	M8	18	18.8	30.5	15	15
GN 5445-50-M8-PL	50	M8	21	21.8	34	17	15
GN 5445-50-M10-PL	50	M10	21	21.8	34	17	18

GN 1580

HD INOX Stainless Steel

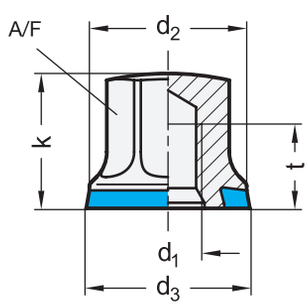
Nuts
Hygienic Design

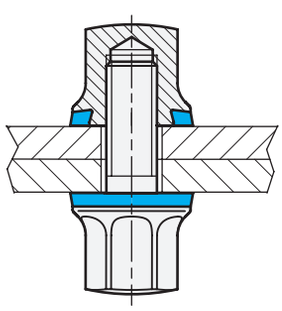
RoHS

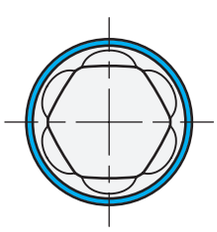
Specification
Stainless Steel
AISI 316 L (A4)
matt ground **MT**
polished (Ra < 0.8 µm) **PL**

Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information
GN 1580 nuts are intended for use in hygiene areas. The sealed flange 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.







Standard Elements	Main Dimensions					
Description	**d1**	**d2**	**d3**	**k**	**t**	**A/F**
GN 1580-M5-MT	M5	12	12.8	10	6	8
GN 1580-M6-MT	M6	14	14.8	10	7.5	10
GN 1580-M8-MT	M8	18	18.8	14.5	9.5	13
GN 1580-M10-MT	M10	21	21.8	18	12	16
GN 1580-M5-PL	M5	12	12.8	10	6	8
GN 1580-M6-PL	M6	14	14.8	10	7.5	10
GN 1580-M8-PL	M8	18	18.8	14.5	9.5	13
GN 1580-M10-PL	M10	21	21.8	18	12	16

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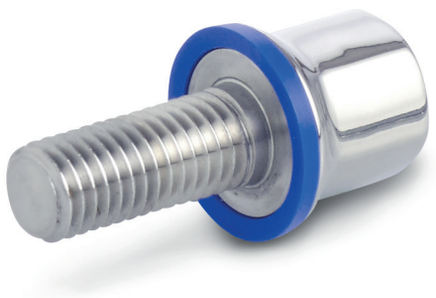
GN 1580

INOX Stainless Steel

Screws
Hygienic Design

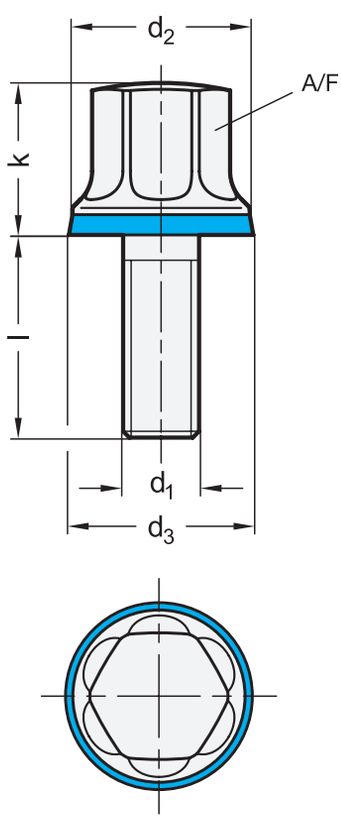
RoHS

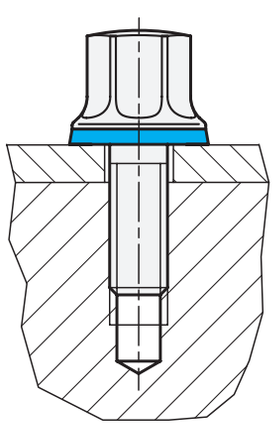


Specification
Stainless Steel
AISI 316 L (A4)
matt ground **MT**
polished (Ra < 0.8 µm) **PL**

Sealing ring
hydrogenated acrylonitrile butadiene rubber (H-NBR)
blue
temperature resistant -25 °C to +150 °C
Hardness 85±5 Shore A
FDA compliant

Information
GN 1580 screws are intended for use in hygiene areas. The sealed flange 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.





Standard Elements	Main Dimensions					
Description	**d1**	**Length l**	**d2**	**d3**	**k**	**A/F**
GN 1580-M5-10-MT	M5	10	12	12.8	10	8
GN 1580-M5-16-MT	M5	16	12	12.8	10	8
GN 1580-M5-20-MT	M5	20	12	12.8	10	8
GN 1580-M6-12-MT	M6	12	14	14.8	12	10
GN 1580-M6-16-MT	M6	16	14	14.8	12	10
GN 1580-M6-20-MT	M6	20	14	14.8	12	10
GN 1580-M6-25-MT	M6	25	14	14.8	12	10
GN 1580-M6-30-MT	M6	30	14	14.8	12	10
GN 1580-M8-16-MT	M8	16	18	18.8	14.5	13
GN 1580-M8-20-MT	M8	20	18	18.8	14.5	13
GN 1580-M8-25-MT	M8	25	18	18.8	14.5	13
GN 1580-M8-30-MT	M8	30	18	18.8	14.5	13
GN 1580-M8-40-MT	M8	40	18	18.8	14.5	13
GN 1580-M10-20-MT	M10	20	21	21.8	18	16
GN 1580-M10-25-MT	M10	25	21	21.8	18	16
GN 1580-M10-30-MT	M10	30	21	21.8	18	16
GN 1580-M10-40-MT	M10	40	21	21.8	18	16
GN 1580-M10-50-MT	M10	50	21	21.8	18	16
GN 1580-M5-10-PL	M5	10	12	12.8	10	8
GN 1580-M5-16-PL	M5	16	12	12.8	10	8
GN 1580-M5-20-PL	M5	20	12	12.8	10	8
GN 1580-M6-12-PL	M6	12	14	14.8	12	10
GN 1580-M6-16-PL	M6	16	14	14.8	12	10
GN 1580-M6-20-PL	M6	20	14	14.8	12	10
GN 1580-M6-25-PL	M6	25	14	14.8	12	10
GN 1580-M6-30-PL	M6	30	14	14.8	12	10
GN 1580-M8-16-PL	M8	16	18	18.8	14.5	13
GN 1580-M8-20-PL	M8	20	18	18.8	14.5	13
GN 1580-M8-25-PL	M8	25	18	18.8	14.5	13
GN 1580-M8-30-PL	M8	30	18	18.8	14.5	13
GN 1580-M8-40-PL	M8	40	18	18.8	14.5	13
GN 1580-M10-20-PL	M10	20	21	21.8	18	16
GN 1580-M10-25-PL	M10	25	21	21.8	18	16
GN 1580-M10-30-PL	M10	30	21	21.8	18	16
GN 1580-M10-40-PL	M10	40	21	21.8	18	16
GN 1580-M10-50-PL	M10	50	21	21.8	18	16

GN 20

HD INOX Stainless Steel

Levelling feet without mounting holes RoHS

Hygienic Design

Specification

Types
Type **A**: without mounting holes

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

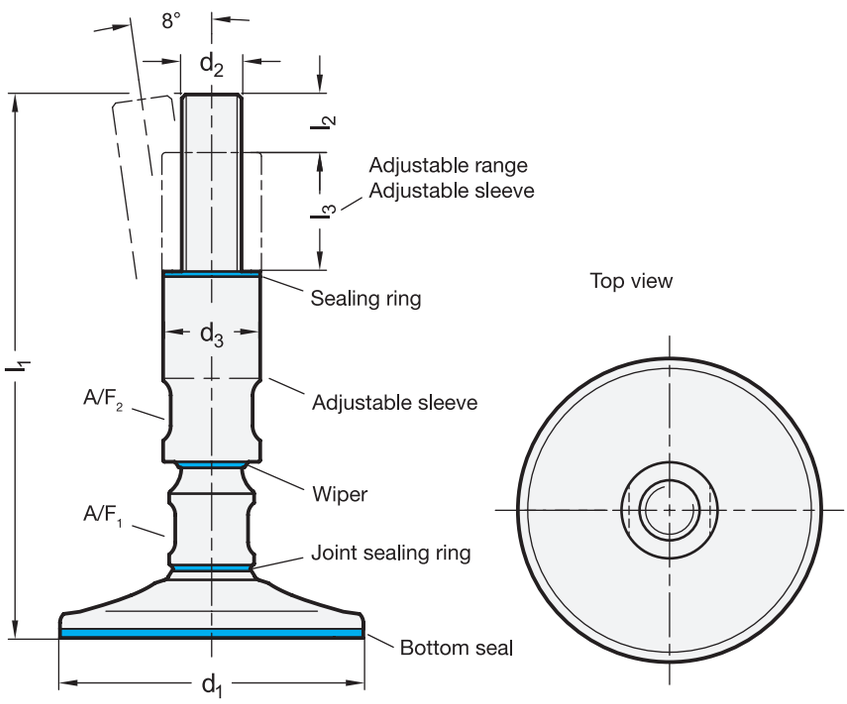
Joint sealing ring
H-NBR, hardness 85 ±5 Shore A

Bottom seal
Silicon, hardness 85 ±5 Shore A

Information

GN 20 levelling feet without mounting holes are intended for use in hygiene 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 ball seal, the moving components are sealed against the environment.

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



Standard Elements	Main dimensions							
Description	**d1**	**d2**	**l1**	**d3**	**l2**	**l3**	**A/F1**	**A/F2**
GN 20-80-M16-175-A	80	M16	175	28	19	35	18	22
GN 20-80-M16-225-A	80	M16	225	28	19	35	18	22
GN 20-80-M20-185-A	80	M20	185	32	24	35	24	27
GN 20-80-M20-235-A	80	M20	235	32	24	35	24	27
GN 20-80-M24-185-A	80	M24	185	36	29	35	24	30
GN 20-80-M24-235-A	80	M24	235	36	29	35	24	30
GN 20-100-M16-175-A	100	M16	175	28	19	35	18	22
GN 20-100-M16-225-A	100	M16	225	28	19	35	18	22
GN 20-100-M20-185-A	100	M20	185	32	24	35	24	27
GN 20-100-M20-235-A	100	M20	235	32	24	35	24	27
GN 20-100-M24-185-A	100	M24	185	36	29	35	24	30
GN 20-100-M24-235-A	100	M24	235	36	29	35	24	30
GN 20-120-M16-175-A	120	M16	175	28	19	35	18	22
GN 20-120-M16-225-A	120	M16	225	28	19	35	18	22
GN 20-120-M20-185-A	120	M20	185	32	24	35	24	27
GN 20-120-M20-235-A	120	M20	235	32	24	35	24	27
GN 20-120-M24-185-A	120	M24	185	36	29	35	24	30
GN 20-120-M24-235-A	120	M24	235	36	29	35	24	30

GN 20

HD INOX Stainless Steel

Levelling feet with mounting holes

RoHS

Hygienic Design

Specification

Types
Type **B**: with mounting holes

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
Silicon, hardness 85 ±5 Shore A

Information

GN 20 levelling feet with mounting holes are intended for use in hygiene areas. The bottom seal protects the area beneath the foot plate from dirt. For this, the foot must be screwed on using the mounting holes and compressed accordingly. Hygienic fastenings 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 ball seal, the moving components are sealed against the environment.

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

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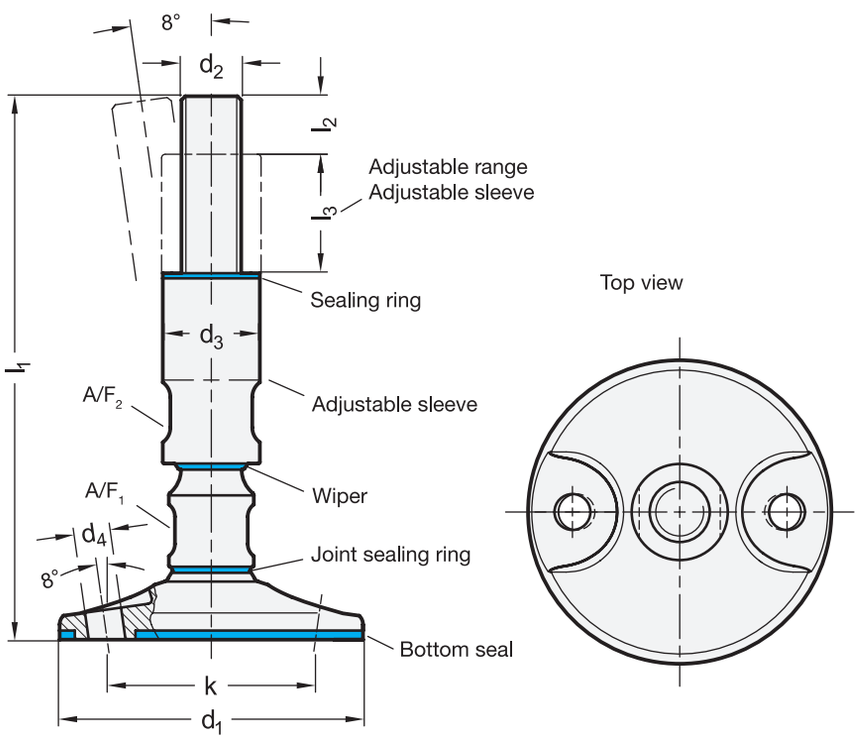
JULY 2016



Standard Elements	Main dimensions									
Description	d1	d2	l1	d3	d4	l2	l3	k	A/F1	A/F2
GN 20-100-M16-175-B	100	M16	175	28	12	19	35	69	18	22
GN 20-100-M16-225-B	100	M16	225	28	12	19	35	69	18	22
GN 20-100-M20-185-B	100	M20	185	32	12	24	35	69	24	27
GN 20-100-M20-235-B	100	M20	235	32	12	24	35	69	24	27
GN 20-100-M24-185-B	100	M24	185	36	12	29	35	69	24	30
GN 20-100-M24-235-B	100	M24	235	36	12	29	35	69	24	30
GN 20-100-M16-175-B	120	M16	175	28	12	19	35	89	18	22
GN 20-100-M16-225-B	120	M16	225	28	12	19	35	89	18	22
GN 20-100-M20-185-B	120	M20	185	32	12	24	35	89	24	27
GN 20-100-M20-235-B	120	M20	235	32	12	24	35	89	24	27
GN 20-100-M24-185-B	120	M24	185	36	12	29	35	89	24	30
GN 20-100-M24-235-B	120	M24	235	36	12	29	35	89	24	30

GN 7600

INOX Stainless Steel

Sealing rings
Hygienic Design

RoHS

Specification

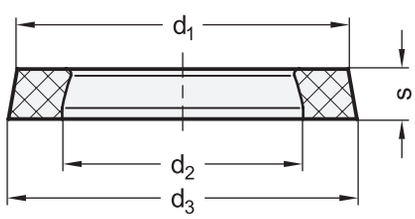
H-NBR HNBR
hydrogenated acrylonitrile butadiene rubber
blue
temperature resistant -25 °C to +150 °C
FDA compliant
Hardness 85 ±5 Shore A **85**

Information

Components with cylindrical mounting surfaces which are installed in hygiene areas can be sealed and mounted without dead spaces using GN 7600 sealing rings.

As delivered, or unassembled, the sealing rings have the "actual dimensions" as stated in the table. To ensure a firm seating and reliable sealing, an installation space must be provided in the component as shown in the diagram. 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.

ELESA+GANTER standard parts which are supplied with GN 7600 sealing rings are listed in the table and can be supplied individually in case service is required.



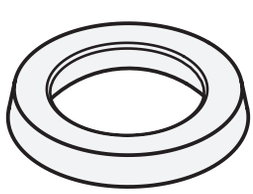
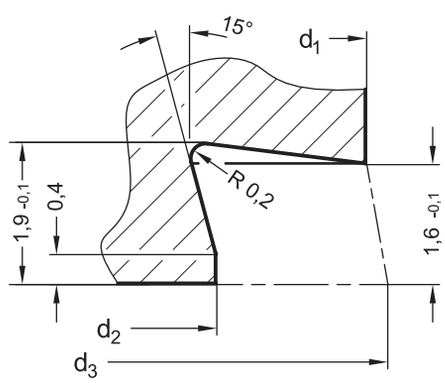


Diagram
Installation space



Standard Elements	Nominal dimensions Installation space				Actual dimensions Sealing rings				Suitable for
Description	d1	d2	d3	s	d1	d2	d3	s	
GN 7600-12-8-2-HNBR-85	12	8	12.8	1.6	11.25	7	12.35	2	GN 429 / GN1580
GN 7600-14-10-2-HNBR-85	14	10	14.8	1.6	13.25	9	14.35	2	GN 75.6 / GN 305 / GN 1580
GN 7600-16-12-2-HNBR-85	16	12	16.8	1.6	15.25	11	16.35	2	GN 75.6 / GN 429
GN 7600-18-14-2-HNBR-85	18	14	18.8	1.6	17.25	13	18.35	2	GN 75.6 / GN 305 / GN 1580 / GN 5435 / GN 5445
GN 7600-21-17-2-HNBR-85	21	17	21.8	1.6	20.25	16	21.35	2	GN 1580 / GN 5435 / GN 5445
GN 7600-22-18-2-HNBR-85	22	18	22.8	1.6	21.25	17	22.35	2	GN 305
GN 7600-25-21-2-HNBR-85	25	21	25.8	1.6	24.25	20	25.35	2	-
GN 7600-30-26-2-HNBR-85	30	26	30.8	1.6	29.25	25	30.35	2	-

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