Hygienic Design

Standard Parts Especially for the Use in Hygienically Sensitive Areas

Standard Parts. Winco.
Product Family Hygienic Design

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Hygienic Design

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

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

JW Winco Has Solutions

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

The Hygienic Design Product Family

All Standard Parts of the “Hygienic Design” product family are labeled with the HD icon. They combine high surface quality, freedom from dead spaces, non-scooped outer surfaces, and sealed bolting areas. A sealing concept based on FEM calculations ensures reliable contact pressure after installation. Hygienic Design also means that the time and material needed for regular cleaning is significantly reduced—which also noticeably lowers operating costs.
Why Hygienic Design?

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

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

Advantages of Hygienic Design

**Minimized and reduced cleaning process** (this can be up to 25% of the production time), therefore
- more time available for production
- less fresh water consumption
- lower energy consumption
- less cleaning agent required
- less production of waste water
- lower total costs and saving of resources

Legal Basis of Hygienic Design

**EN 1672-2:2009 “Food machinery”**
Machines must be able to be cleaned, i.e. they must be designed and constructed so that dirt can be removed with the recommended cleaning methods.

**Machinery directive 2006/42/EC**
Machines must be designed so that
- materials can be easily and fully cleaned before each use and
- no risk of infections or illness is created.

**DIN EN ISO 14519:2008-07**
Hygiene requirements for the design of machines

**DIN EN 1672-2:2021-05**
Food machinery – General design principles – Part 2
Principles
Requirements, Design Principles

Construction requirements for Hygienic Design

Material
- Stainless steels
- FDA and EU compliant plastics and elastomers

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

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

Surface properties and roughness
Easy to clean with Ra < 0.8 μm

Design principles of Hygienic Design

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

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

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

Seals

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

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

A fundamental differentiation can be made between static and movable seals: The **static seals** shown in the application example below (at the top towards the mounting surface (sealing ring) and at the bottom towards the installation surface (bottom seal) are tightened during installation. It should be ensured that all surfaces in contact with the seals have a surface quality of at least Ra 0.8 µm.

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

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

Application example

With the example of a GN 20 Hygienic Design leveling foot, the illustrated design shows how the various seal configurations can be designed.
Mushroom Shaped Knobs
Stainless Steel, with Tapped Hole or Threaded Stud, Hygienic Design

GN 75.6

Metric table

| Type | d1 | d2 (Type D) | d3 (Type E) | d4 | d5 | h  | Length l | t min.
|------|----|-------------|-------------|----|----|----|----------|-------
| D    | 20 | M 5         | M 5         | 14 | 14.8 | 24 | 0.94     | 10    | 0.39  | 0.28 |
|      | 25 | M 6         | M 6         | 16 | 16.8 | 29 | 1.14     | 12    | 0.47  | 0.35 |
|      | 32 | M 8         | M 8         | 18 | 18.8 | 37 | 1.46     | 14    | 0.55  | 0.47 |

Dimensions in: millimeters - inches

Information

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

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

Specification

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

Accessory

- Sealing rings GN 7600 → page 35

How to order

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

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<td>3</td>
<td>Type</td>
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<td>4</td>
<td>Finish</td>
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<td>5</td>
<td>Sealing ring material</td>
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T-Handles
Stainless Steel, with Tapped Hole, Hygienic Design

How to order
GN 5064-63-M6-PL-E

Dimensions in: millimeters - inches

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

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

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

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

see also...

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

Accessory
- Sealing rings GN 7600 → page 35
Cabinet U-Handles
Stainless Steel AISI 316L, with Tapped Holes, Hygienic Design

Metric table

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Dimensions in: millimeters - inches

Specification

- **Body**
  Stainless steel AISI 316L
  - Matte finish (Ra < 0.8 µm) A4
  - Polished finish (Ra < 0.8 µm) MT PL

- **Sealing ring**
  - H-NBR
  - Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
  - EPDM
  - Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
  - Blue
  - Hardness 85±5 shore A
  - FDA compliant

- **Load Rating Information**
  ➔ Standard Parts Handbook page 2068

- **Plastic Characteristics**
  ➔ Standard Parts Handbook page 2135

- **Stainless Steel Characteristics**
  ➔ Standard Parts Handbook page 2143

- **RoHS compliant**

Information

GN 429 cabinet U-handles are intended for use in hygienic areas. The version with PL finish is certified according to the DGUV Test.

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

Accessory

- Sealing rings GN 7600 ➔ page 35

How to order

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

1. Material
2. Handle diameter d₁
3. Length l
4. Finish
5. Sealing ring material
Standard Parts in Hygienic Design
Adjustable Levers
Stainless Steel, DGUV Certified, Tapped Type, Hygienic Design

Adjustable levers GN 305 with solid stainless steel lever body are certified according to 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 facilitates cleaning.

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

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

see also...
• Star Knobs GN 5435 (Stainless Steel, Hygienic Design) → page 14
• Three Lobe Knobs GN 5445 (Stainless Steel, Hygienic Design) → page 15

Specification

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

- Plastic Characteristics
  → Standard Parts Handbook page 2135
- Stainless Steel Characteristics
  → Standard Parts Handbook page 2143
- RoHS compliant

Accessory

- Sealing rings GN 7600 → page 35

Information

Adjustable levers GN 305 with solid stainless steel lever body are certified according to 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 facilitates cleaning.

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

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

see also...
• Star Knobs GN 5435 (Stainless Steel, Hygienic Design) → page 14
• Three Lobe Knobs GN 5445 (Stainless Steel, Hygienic Design) → page 15

Metric table

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Dimensions in: millimeters - inches

How to order

GN 305-63-M8-PL-H

1 Lever length l₁
2 Thread d₁
3 Finish
4 Sealing ring material
Adjustable Levers
Stainless Steel, DGUV Certified, Threaded Stud Type, Hygienic Design

Metric table

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Dimensions in: millimeters - inches

Information

Adjustable levers GN 305 with solid stainless steel lever body are certified according to 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 facilitates cleaning.

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

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

Specification

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

Accessory

- Sealing rings GN 7600 → page 35

How to order

1. Lever length l1
2. Thread d1
3. Thread length l2
4. Finish
5. Sealing ring material

www.jwwinco.com | phone: 1-800-877-8351

WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov
**Star Knobs**
Stainless Steel, with Tapped Blind Bore, Hygienic Design

**Metric table**

<table>
<thead>
<tr>
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<th>d₂</th>
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Dimensions in: millimeters - inches

**Specification**

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

**Information**

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

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

**Accessory**

- Sealing rings GN 7600 → page 35

How to order

GN 5435-40-M8-PL-H

- Handle diameter d₁
- Thread d₂
- Finish
- Sealing ring material
GN 5445 Three-Lobed Knobs
Stainless Steel, with Tapped Blind Bore, Hygienic Design

Metric table

<table>
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Dimensions in: millimeters - inches

Speciation

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

Information

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

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

How to order

GN 5445-40-M8-PL-H

1. Handle diameter d₁
2. Thread d₂
3. Finish
4. Sealing ring material
Wing Nuts
Stainless Steel AISI 316, with Tapped Blind Bore, Hygienic Design

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

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

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

see also...
• Wing Screws GN 8351 (Stainless Steel, Hygienic Design) → page 17
• T-Handles GN 5064 (Stainless Steel, Hygienic Design) → page 9

Information

Metric table

<table>
<thead>
<tr>
<th>d₁</th>
<th>d₂</th>
<th>b</th>
<th>d₃</th>
<th>d₄</th>
<th>d₅</th>
<th>h₁</th>
<th>h₂</th>
<th>t min.</th>
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<tr>
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<td>0.54</td>
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<td>63</td>
<td>M 6</td>
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<td>16</td>
<td>0.63</td>
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<td>12</td>
</tr>
</tbody>
</table>

How to order

GN 8341-50-M5-MT-E

1 Handle diameter d₁
2 Thread d₂
3 Finish
4 Sealing ring material

Specification

• Body
  Stainless steel precision casting AISI 316
  - Matte finish (Ra < 0.8 μm)
  - Polished finish (Ra < 0.8 μm)

• Sealing ring
  - H-NBR
    Temperature resistant
    -13 °F to +302 °F (-25 °C to +150 °C)
  - EPDM
    Temperature resistant
    -40 °F to +248 °F (-40 °C to +120 °C)
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant

• Plastic Characteristics
  → Standard Parts Handbook page 2135

• Stainless Steel Characteristics
  → Standard Parts Handbook page 2143

• RoHS

Accessory

• Sealing rings GN 7600 → page 35
**Wing Screws**

**Stainless Steel, Hygienic Design**

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

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

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

**Metric table**

<table>
<thead>
<tr>
<th>d₁</th>
<th>d₂</th>
<th>l</th>
<th>b</th>
<th>d₃</th>
<th>d₄</th>
<th>d₅</th>
<th>h₁</th>
<th>h₂</th>
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</thead>
<tbody>
<tr>
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<td>8</td>
<td>0.31</td>
<td>12</td>
<td>0.47</td>
<td>16</td>
<td>0.63</td>
</tr>
<tr>
<td>50</td>
<td>1.97</td>
<td>M 5</td>
<td>12</td>
<td>0.47</td>
<td>16</td>
<td>0.63</td>
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<td>0.79</td>
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<td>0.98</td>
</tr>
</tbody>
</table>

**Information**

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

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

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

**Specification**

- **Body**
  - Stainless steel precision casting AISI 316
  - Matte finish (Ra < 0.8 µm) **MT**
  - Polished finish (Ra < 0.8 µm) **PL**

- **Sealing ring**
  - H-NBR **H** Temperature resistant -13 °F to +302 °F (-25 °C to +150 °C)
  - EPDM **E** Temperature resistant -40 °F to +248 °F (-40 °C to +120 °C)
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant

- **Plastic Characteristics**
  → Standard Parts Handbook page 2135

- **Stainless Steel Characteristics**
  → Standard Parts Handbook page 2143

- **RoHS**

**Accessory**

- Sealing rings GN 7600 → page 35

**How to order**

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

1. Handle diameter d₁
2. Thread d₂
3. Length l
4. Finish
5. Sealing ring material
**Indexing Plungers**

Stainless Steel, DGUV Certified, Lock-Out and Non Lock-Out, Hygienic Design

**GN 8170**

**Identification**

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

**Identification**

- **FH**: Without sealing lock nut, knob side in Hygienic Design

---

**Metric table**

<table>
<thead>
<tr>
<th>Pin diameter d₁</th>
<th>d₂</th>
<th>d₃</th>
<th>d₄</th>
<th>d₅</th>
<th>l₁</th>
<th>l₂</th>
<th>l₃</th>
<th>k</th>
<th>A/F</th>
<th>Spring load ≈</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0.24</td>
<td>35</td>
<td>1.38</td>
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<td>0.90</td>
<td>6</td>
<td>0.24</td>
<td>2.2 N lbf</td>
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<tr>
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<td>35</td>
<td>1.38</td>
<td>M 16 x 1.5</td>
<td>18</td>
<td>22.8</td>
<td>0.90</td>
<td>8</td>
<td>0.31</td>
<td>2.2 N lbf</td>
</tr>
</tbody>
</table>

**Specification**

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

**Information**

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

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

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

**How to order**

1. Pin diameter d₁
2. Type
3. Identification
4. Sealing ring material

**Example**: GN8170-8-C-FH-H
Indexing Plungers
Stainless Steel, DGUV Certified, Lock-Out and Non Lock-Out, Hygienic Design

GN 8170

Metric table

<table>
<thead>
<tr>
<th>Pin diameter d₁</th>
<th>Type</th>
<th>Identification</th>
<th>Threaded body / knob / plunger pin</th>
<th>Spring</th>
<th>Seals</th>
<th>Sealing rings</th>
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</thead>
<tbody>
<tr>
<td>6.00 mm</td>
<td>B Non lock-out</td>
<td>VH With sealing lock nut, knob and pin side in Hygienic Design</td>
<td>Stainless steel AISI 316</td>
<td>Stainless steel AISI 316Ti</td>
<td>Blue</td>
<td>H-NBR, hardness 85 ±5 shore A</td>
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<tr>
<td>8.00 mm</td>
<td>C Lock-out</td>
<td></td>
<td>Plunger pin case-hardened</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.00 mm</td>
<td></td>
<td></td>
<td>Stainless steel AISI 316</td>
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<td></td>
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</table>

Information

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

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

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

How to order

GN 8170-6-B-VH-H

1 Pin diameter d₁
2 Type
3 Identification
4 Sealing ring material
**Metric table**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Dimensions in: millimeters - inches</th>
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<td>$d_1$</td>
<td>$d_2$</td>
</tr>
<tr>
<td>M 4</td>
<td>11</td>
</tr>
<tr>
<td>M 5</td>
<td>12</td>
</tr>
<tr>
<td>M 6</td>
<td>14</td>
</tr>
<tr>
<td>M 8</td>
<td>18</td>
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<td>M 10</td>
<td>21</td>
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<tr>
<td>M 12</td>
<td>25</td>
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<tr>
<td>M 16</td>
<td>32</td>
</tr>
<tr>
<td>M 20</td>
<td>40</td>
</tr>
</tbody>
</table>

**Specification**

- **Body**
  - Stainless steel AISI 316L (Matte finish (Ra < 0.8 µm) MT, Polished finish (Ra < 0.8 µm) PL)

- **Sealing ring**
  - H-NBR: Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
  - EPDM: Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
  - Blue: Hardness 85±5 shore A, FDA compliant

- **EHEDG Principles**
  - Standard Parts Handbook page 1508

- **Plastic Characteristics**
  - Standard Parts Handbook page 2135

- **Stainless Steel Characteristics**
  - Standard Parts Handbook page 2143

- **RoHS compliant**

- **How to order (H-NBR sealing ring)**
  - GN 1580-M10-MT-H
  - 1. **Thread $d_1$**
  - 2. **Finish**
  - 3. **Sealing ring material**

- **How to order (EPDM sealing ring)**
  - GN 1580-M10-PL-E
  - 1. **Thread $d_1$**
  - 2. **Finish**
  - 3. **Sealing ring material**

**Information**

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

see also...

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

**Accessory**

- Sealing rings GN 7600 → page 35
Hex Head Screws
Stainless Steel, Hygienic Design

**WARNING:** Cancer and Reproductive Harm — www.P65Warnings.ca.gov

Hex Head Screws
Stainless Steel, Hygienic Design

**Metric table**

<table>
<thead>
<tr>
<th>d₁</th>
<th>l₁</th>
<th>d₂</th>
<th>d₃</th>
<th>k</th>
<th>l₂</th>
<th>A/F</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 4</td>
<td>8 0.31</td>
<td>10 0.39</td>
<td>12 0.47</td>
<td>-</td>
<td>16 0.63</td>
<td>-</td>
</tr>
<tr>
<td>M 5</td>
<td>10 0.39</td>
<td>16 0.63</td>
<td>-</td>
<td>-</td>
<td>20 0.79</td>
<td>-</td>
</tr>
<tr>
<td>M 6</td>
<td>12 0.47</td>
<td>16 0.63</td>
<td>20 0.79</td>
<td>25 0.98</td>
<td>30 1.18</td>
<td>-</td>
</tr>
<tr>
<td>M 8</td>
<td>16 0.63</td>
<td>20 0.79</td>
<td>25 0.98</td>
<td>30 1.18</td>
<td>40 1.57</td>
<td>-</td>
</tr>
<tr>
<td>M 10</td>
<td>20 0.79</td>
<td>25 0.98</td>
<td>30 1.18</td>
<td>-</td>
<td>40 1.57</td>
<td>50 1.97</td>
</tr>
<tr>
<td>M 12</td>
<td>25 0.98</td>
<td>30 1.18</td>
<td>-</td>
<td>-</td>
<td>40 1.57</td>
<td>50 1.97</td>
</tr>
<tr>
<td>M 16</td>
<td>30 1.18</td>
<td>40 1.57</td>
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<td>-</td>
<td>50 1.97</td>
<td>60 2.36</td>
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<tr>
<td>M 20</td>
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<td>-</td>
<td>-</td>
<td>60 2.36</td>
<td>-</td>
<td>40 1.57</td>
</tr>
</tbody>
</table>

Dimensions in: millimeters - **inches**

**Information**

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

**Specification**

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

**How to order (H-NBR sealing ring)**

1. Thread d₁
2. Length l₁
3. Finish
4. Sealing ring material

**How to order (EPDM sealing ring)**

1. Thread d₁
2. Length l₁
3. Finish
4. Sealing ring material
Hex Head Screws
Stainless Steel, Hygienic Design

**Metric table**

<table>
<thead>
<tr>
<th>d₁</th>
<th>l₁</th>
<th>Without shaft</th>
<th>With shaft</th>
<th>d₂</th>
<th>d₃</th>
<th>k</th>
<th>l₂</th>
<th>A/F</th>
</tr>
</thead>
<tbody>
<tr>
<td>M 4</td>
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<td>0.31</td>
<td>-</td>
<td>16</td>
<td>0.63</td>
<td>10</td>
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<tr>
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<td>0.39</td>
<td>-</td>
<td>20</td>
<td>0.79</td>
<td>16</td>
<td>0.63</td>
<td>-</td>
</tr>
<tr>
<td>M 6</td>
<td>12</td>
<td>0.47</td>
<td>-</td>
<td>30</td>
<td>1.18</td>
<td>25</td>
<td>0.98</td>
<td>-</td>
</tr>
<tr>
<td>M 8</td>
<td>16</td>
<td>0.63</td>
<td>-</td>
<td>40</td>
<td>1.57</td>
<td>30</td>
<td>1.18</td>
<td>-</td>
</tr>
<tr>
<td>M 10</td>
<td>20</td>
<td>0.79</td>
<td>-</td>
<td>50</td>
<td>1.97</td>
<td>40</td>
<td>2.36</td>
<td>-</td>
</tr>
<tr>
<td>M 12</td>
<td>25</td>
<td>0.98</td>
<td>-</td>
<td>60</td>
<td>2.36</td>
<td>50</td>
<td>2.36</td>
<td>-</td>
</tr>
<tr>
<td>M 16</td>
<td>30</td>
<td>1.18</td>
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<td>70</td>
<td>2.76</td>
<td>60</td>
<td>2.36</td>
<td>-</td>
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<tr>
<td>M 20</td>
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<td>-</td>
<td>80</td>
<td>3.16</td>
<td>70</td>
<td>2.76</td>
<td>-</td>
</tr>
</tbody>
</table>

Dimensions in: millimeters - inches

**Information**

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

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

**How to order**

1. Thread d₁
2. Length l₁
3. Finish
4. Sealing ring material

**Accessory**

- Sealing rings GN 7600 → page 35

**Specification**

- Leveling Feet GN 20 (Stainless Steel, with Mounting Holes, Hygienic Design) → page 31
- Nuts GN 1580 (Stainless Steel, Hygienic Design) → page 20
Hex Head Screws
Stainless Steel, with Recessed Stud for Loss Protection, Hygienic Design

WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov

Hex Head Screws
Stainless Steel, with Recessed Stud for Loss Protection, Hygienic Design

Specification

• Body
  Stainless steel AISI 316L
  - Matte finish (Ra < 0.8 μm) MT
  - Polished finish (Ra < 0.8 μm) PL

• Sealing ring
  - H-NBR
    Temperature resistant -13 °F to +302 °F (-25 °C to +150 °C)
  - EPDM
    Temperature resistant -40 °F to +248 °F (-40 °C to +120 °C)
  - Blue
  - Hardness 85 ±5 Shore A
  - FDA compliant

• EHEDG Principles
  → Standard Parts Handbook page 1508

• Plastic Characteristics
  → Standard Parts Handbook page 2135

• Stainless Steel Characteristics
  → Standard Parts Handbook page 2143

• RoHS compliant

Accessory

• Sealing rings GN 7600 → page 35

Metric table

<table>
<thead>
<tr>
<th>d₁</th>
<th>l₁</th>
<th>a₁</th>
<th>a₂</th>
<th>a₃</th>
<th>a₄-0.2</th>
<th>d₄</th>
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<th>k</th>
<th>l₂</th>
<th>l₃</th>
<th>A/F</th>
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</thead>
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<td>0.79</td>
<td>2.5-6</td>
<td>0.10-0.24</td>
<td>0.24-0.41</td>
<td>0.41-0.55</td>
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<td>11.8</td>
<td>0.46</td>
<td>0.157</td>
</tr>
<tr>
<td>M 5</td>
<td>25</td>
<td>0.98</td>
<td>6-11</td>
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<td>0.43-0.55</td>
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<td>11.8</td>
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<td>0.157</td>
</tr>
<tr>
<td>M 6</td>
<td>25</td>
<td>0.98</td>
<td>3-7</td>
<td>0.12-0.28</td>
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<td>0.51-0.67</td>
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<td>1.18</td>
<td>7-12</td>
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</tbody>
</table>

Dimensions in: millimeters - inches

How to order

1. Thread d₁
2. Length l₁
3. Finish
4. Sealing ring material
5. Identification no.

Information

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

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

On request

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

www.jwwinco.com | phone: 1-800-877-8351

WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov
Cam Latches
Stainless Steel AISI 316L, Operating Side in Hygienic Design

GN 1150 cam latches are intended for use in hygienic areas and meet hygiene requirements on the operating side. The locking mechanism is protected by two seals. At the same time, the high surface quality (Ra < 0.8 µm) and dead-space-free mounting prevent dirt from adhering and facilitate cleaning. The latches create a secure closure by rotating a maximum of 90°, which positions the latch arm in the locked position behind the frame. Slanted surfaces on the latch arm ensure smooth positioning. Latch arms are available with different bend angles to cover a latch arm distance A from 6 to 28 mm.

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

specification

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

accessory

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

information

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

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

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

See also...

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

how to order

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

1. Diameter d₁
2. Type
3. Latch arm distance A
4. Coding
5. Material (Sealing ring / O-ring)
Cam Latches
Stainless Steel AISI 316L, Operating and Latch Arm Side in Hygienic Design

**WARNING**: Cancer and Reproductive Harm — www.P65Warnings.ca.gov

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

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

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

Information

- Cam latch housing
  Stainless steel AISI 316L
- Latch arm
  Stainless steel AISI 316
- Seals
  Blue, FDA compliant
  Temperature resistant -40 °F to 230 °F (-40 °C to 110 °C)
  - Sealing rings / O-ring
    EPDM
    Hardness 85 ±5 shore A (Sealing rings)
    Hardness 70 ±5 shore A (O-ring)
  - Other seals / wipers
    TPU, hardness 95 ±5 shore A
- Other parts
  Stainless steel AISI 316L
- All moving parts lubricated with a special, FDA compliant grease
- Protection class IP 66
- IP Protection Classes
  ➔ Standard Parts Handbook page 2130
- Plastic Characteristics
  ➔ Standard Parts Handbook page 2135
- Stainless Steel Characteristics
  ➔ Standard Parts Handbook page 2143
- RoHS compliant

**Metric table**

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<th>A</th>
<th>b₁</th>
<th>b₂</th>
<th>d₂</th>
<th>k</th>
<th>l₁</th>
<th>l₂</th>
<th>l₃ =</th>
<th>s₁</th>
<th>s₂</th>
<th>A/F</th>
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</table>

How to order

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

Specifying

- Diameter d₁
- Type
- Latch arm distance A
- Coding
- Material (Sealing ring / O-ring)
Technical and assembly instructions

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

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

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

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

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

<table>
<thead>
<tr>
<th>Construction note for d₁ = 22</th>
<th>Construction note for d₁ = 30</th>
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</thead>
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<tr>
<td>Bore distance</td>
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</table>

<table>
<thead>
<tr>
<th>Installation bore for punching or lasering</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Installation bore for drilling or milling</th>
</tr>
</thead>
</table>

WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov
**GN 1151 | Socket Keys**

**Plastic, for Cam Latches GN 115 and GN 1150, Hygienic Design**

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**Metric table**

<table>
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<tr>
<th>i_l</th>
<th>d_1</th>
<th>d_2</th>
<th>h</th>
<th>l_2</th>
<th>A/F in mm</th>
<th>For cam latches</th>
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<td>23</td>
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<td>35 1.38</td>
<td>GN 1150 / GN 115-AZ13</td>
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</table>

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**Specification**

- Plastic: Technopolymer (Polyamide PA) PA
  - Glass fiber reinforced
  - Blue BL
- RoHS

**Information**

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

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

**see also...**

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

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**How to order**

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<table>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

**Dimensions in: millimeters - inches**

**Type**

- SW9 With two wrench flats A/F9
- SW13 With two wrench flats A/F13
Leveling Feet
Stainless Steel, 3-A and DGUV Certified, Hygienic Design

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

Information
Leveling feet GN 19 comply with the 3-A sanitary standard 88-01 and the 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 / 31

Accessory
- Protective end caps GN 20.1 → page 33

How to order
GN 19-100-M16-175-A

1. Foot diameter d₁
2. Thread d₂
3. Length l₁
4. Type
### Metric table

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<th>$l_3$</th>
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</table>

Dimensions in: millimeters - inches

### 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

#### Bottom seal
- Flat sealing (static), seals the foot plate against the support surface
**Leveling Feet**

Stainless Steel, 3-A and DGUV Certified, without Mounting Holes, Hygienic Design

**Metric table**

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**Dimensions in: millimeters - inches**

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</table>

**Specification**

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

**Information**

GN 20 leveling feet without mounting holes comply with the 3-A sanitary standard 88-01 and the DGUV testing principles, making them suitable for use in hygienic areas. The bottom seal protects the area beneath the base from dirt. For this, the foot must be pressed down by the weight of the machine. The sealing ring above the adjustment sleeve enables mounting without dead space. Due to the wiper or the joint sealing ring, the movable components are sealed against the environment.

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

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

**see also...**

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

**Accessory**

- Protective end caps GN 20.1 → page 33

**How to order**

<table>
<thead>
<tr>
<th>1</th>
<th>Foot diameter $d_1$</th>
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<tbody>
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<td>Thread $d_2$</td>
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Leveling Feet
Stainless Steel, EHEDG / 3-A and DGUV Certified, with Mounting Holes, Hygienic Design

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

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

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

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

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

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

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

How to order
GN 20-120-M16-175-B

1. Foot diameter \(d_1\)
2. Thread \(d_2\)
3. Length \(l_1\)
4. Type

WARNING: Cancer and Reproductive Harm — www.P65Warnings.ca.gov
### Metric table

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**Dimensions in: millimeters - inches**

---

**Mounting example**

- **Adjustable sleeve**
- **Screw GN 1580**
- **Sealing ring GN 7600**
- **Threaded anchor**
GN 20.1 Protective End Caps
Stainless Steel, 3-A and DGUV Certified, Hygienic Design

Metric table

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Dimensions in: millimeters - inches

Specification

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

Information

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

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

see also...
- Leveling Feet GN 20 (Stainless Steel, Hygienic Design) ➔ page 30 / 31
- Leveling Feet GN 19 (Stainless Steel, Hygienic Design) ➔ page 28

Accessory

- Sealing rings GN 7600 ➔ page 35

Warning: Cancer and Reproductive Harm — www.P65Warnings.ca.gov
Spacers
Stainless Steel AISI 316L, Hygienic Design

### Metric table

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### 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.

---

### Specification

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

### Accessory

- Sealing rings GN 7600 → page 35

---

### How to order

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

1. Outer diameter d₁
2. Length l
3. Type
4. Finish
5. Sealing ring material
### Specification
- Hydrogenated acrylonitrile butadiene rubber (HNBR)
- Blue
- Temperature resistant from -13 °F to +302 °F (-25 °C to +150 °C)
- FDA compliant
- Hardness 85 ±5 shore A
- Ethylene propylene diene rubber (EPDM)
- Blue
- Temperature resistant from -40 °F to +248 °F (-40 °C to +120 °C)
- FDA compliant
- Hardness 85 ±5 shore A
- RoHS compliant

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

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

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### Warning
- Cancers and reproductive harm — www.P65Warnings.ca.gov
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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.

Information

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

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

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

See also...

• Sealing Rings GN 7600 Hygienic Design → page 35

Specification

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

How to order

GN 7607-16-TPU-95

| 1 | Inner diameter d₁ |
| 2 | Material |
| 3 | Hardness |