

Market launch “Hygienicglad”

HSK-INOX-HD + HYGIENIC DESIGN



Agenda



- 1. Hygienic design, areas and regulations in general**
- 2. HSK-INOX-HD**
 - I. Description**
 - II. Technical details**
 - III. Applications**
 - IV. Advantages / benefits**
- 3. Future prospects**

Hygienic design, areas and regulations



What is HD (hygienic design) – definition?

Which regulations / standards are important?

How can HD be fulfilled?

Which applications / industries need HD?

Why shall customer buy HD products?

What is HD (hygienic design) - definition?

Hygienic Design includes all formal principles to avoid constructive weaknesses which will support hygienic risks. Cleanability of the materials, the surface characteristic and constructive elements are the core point of “hygienic design”.

Determinations with each kind of contamination / dirt have to be avoided or is not allowed to stay permanently respectively it has to be removed easily.

Which regulations / standards are important?

How can HD be fulfilled?

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Why shall customer buy HD products?



HD ultrasonic cutting line (Beckhoff)

What is HD (hygienic design) - definition?

Which regulations / standards are important?

- 9. ProdSV Equipment and Product Safety Act
 - 2006/42/EG EC machinery directive / declaration of conformity
 - DIN EN 1672-2 [] Part 2: Hygiene requirements
 - DIN EN ISO 14159 [] Hygiene requirements for the design of machinery
 - GS-NV Proofed safety-food and packaging 2+6
- EHEDG European Hygienic Engineering and Design Group
- FDA Food and Drug Administration (U.S.)

How can HD be fulfilled?

Which applications / industries need HD?

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What is HD (hygienic design) - definition?

Which regulations / standards are important?

How can HD be fulfilled?

- Penetration / entry of foreign substances into the construction (housing) have to be avoided (tightness)
- Contamination of the product have to be avoided
- Devices, equipment, [] and rooms have to be cleaned easily and cheaply
- Resistance against chemical cleaning compounds
- Extreme durable materials

Which applications / industries need HD?

Why shall customer buy HD products?

Hygienic design, areas and regulations



What is HD (hygienic design) - definition?

Which regulations / standards are important?

How can HD be fulfilled?

Which applications / industries need HD?

- Food industry, beverage industry
- Pharmaceutical industry
- Chemical industry
- Clean room facilities (limited versatility->gas emission)
- Other / **all industries** which need easy and fast cleaning

Why shall customer buy HD products?

Hygienic design, areas and regulations



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What is HD (hygienic design) - definition?

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Which applications / industries need HD?

How big is this market?

Why shall customer buy HD products?

- Securing a sustainable and efficient production
- Reduction of Total Cost of Ownership
(faster cleaning and longer production times, reduced use of cleaning and chemicals)
- Fulfill regulation and requirements
- Safety reasons
(non-toxic materials, no food contamination, no dirt areas and contaminations)

HSK-INOX-HD



HSK-INOX-HD

+ HYGIENIC DESIGN



HSK-INOX-HD - description

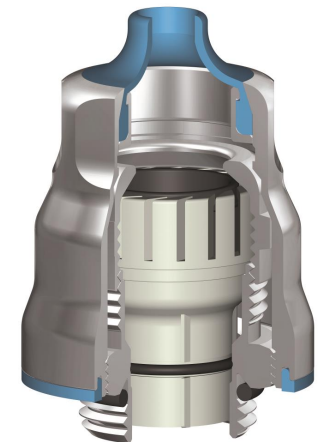


Gland designed and suitable for hygienic areas

Combination of our approved HSK Hummel safety gland with a hygienic design (HD) shell.

Developed for areas in which it is important to clean easy and fast and where it is important to avoid the deposition of dirt and bacteria

- Available from M12 up to M25
- EMC integrated
- For low pressure cleaning
- usable in splash zone (definition EHEDG)



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HSK-INOX-HD – technical details



Sizes / Clamping range:

Thread	Clamping range	Thread	Clamping range
M12x1,5	3,5mm - 6,5mm	M20x1,5	10mm - 14mm
M16x1,5	5mm - 10mm	M25x1,5	13mm - 18mm

Temperature range:

- 40° C up to + 120° C (standard version)
- 35° C up to + 150° C (on request)

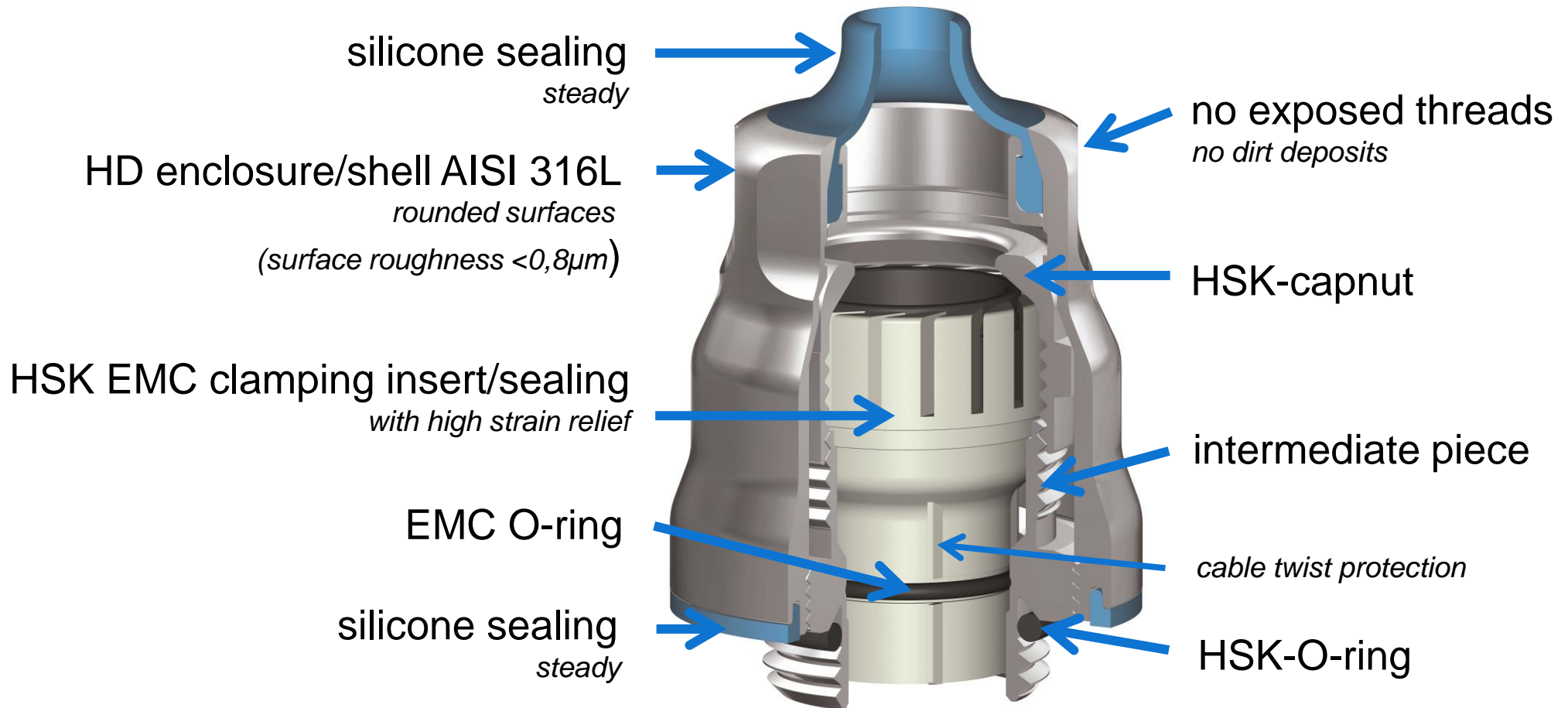
Material:

- Enclosure: INOX AISI 316L / EN 1.4404
- Sealings: Silicone (outer)
Buna N (inner)



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HSK-INOX-HD – technical details



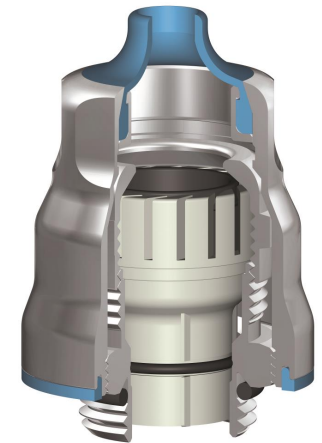
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HSK-INOX-HD - technical details



Tests:

- Density IP66 and IP68 2bar
- EHEDG & FDA compliant materials
- Riboflavin (cleaning) test performed and passed
- Resistance tests against cleaning compounds in process (Ecolab)
(Diversay and Finktec possible)



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HSK-INOX-HD - applications



Areas of application

Food industry for example meat goods

Beverage industry for example milk and juice

Products / devices for cleaning and disinfection purpose

Pharmaceutical and chemical industries

Control and junction boxes, housings, engines, servo motors, rotary encoder, gears and gear boxes for example in the following constructions / devices for:

extraction, defrosting , baking, illumination, disinfection, batching, sterilization, packaging and many more

In general suitable for all areas and if hygienic design is required than also usable in the splash zone



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HSK-INOX-HD – advantages / benefits



Hygienic Design (HD) enclosure

Characteristics	Advantage
- Enclosure made of stainless steel 1.4404/AISI 316L and sealings made of silicone	- High resistance against chemicals/ cleaning compounds
- Rounded surfaces (no edges/corners) - Surface roughness < 0,8µm - No exposed threads	- Avoids the determination of dirt and bacteria - easy and fast cleaning
- Diaphragm seal	- Reducing of cable neck downs - No cable twisting during assembly

Complete gland HSK-INOX-HD

Characteristics	Advantage
HUMMEL clamping finger cable gland with wide clamping range	- Fast and easy assembly - No special tools necessary - High strain relief across entire clamping range
Integrated cable twist-protect-function	- Avoids cable twisting during assembly
EMV finish	- The cable shielding can be fast and easily 360° connected
Halogen- und Phosphor free	



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Future prospects



HSK-INOX-HD-RG - description:

Hygienic design gland for high pressure cleaning process and high temperatures

Designed and certified according to EHEDG standard

- will be developed in M12x1,5 up to M32x1,5
- IP68 10bar, IP69K high pressure cleaning version
- EHEDG certification in process, FDA conform materials
- high temperature version (-40° C up to 180° C)
- non EMC version
- different sealing per size

Already available in size M25x1,5

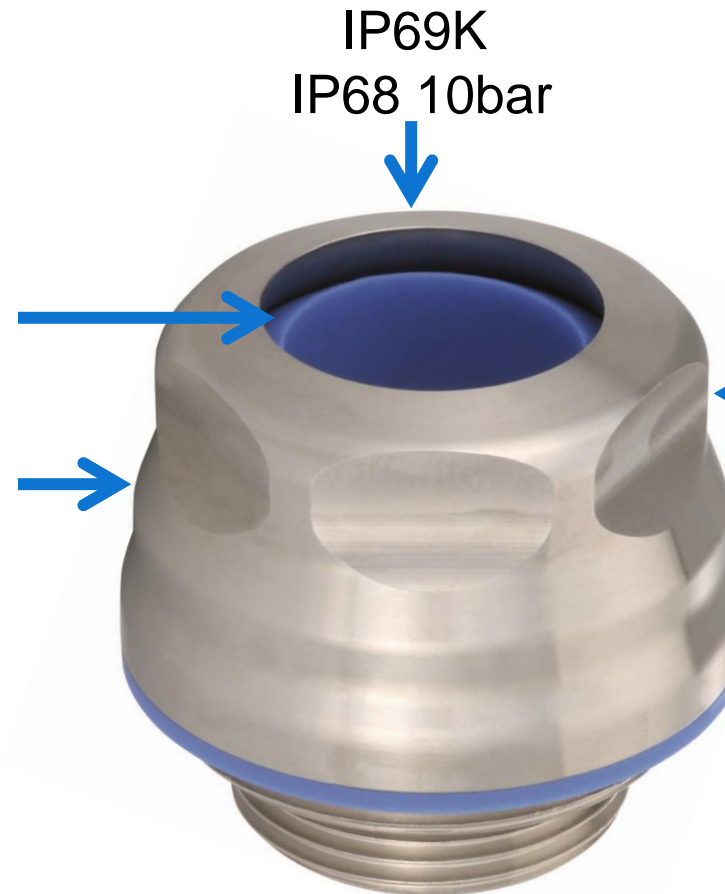


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Future prospects



HSK-INOX-HD-RG



IP69K
IP68 10bar

silicone sealing
steady

no exposed threads
no dirt deposits

HD enclosure/shell AISI 316L
rounded surfaces
(surface roughness <0,8µm)

only two materials
high temperature

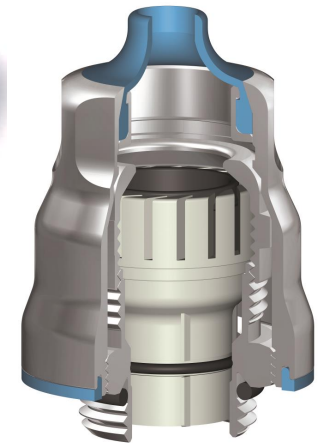
silicone sealing
steady

EHEDG
*Certificate type: Type EL Class I
in progress*

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HSK-INOX-HD – Questions



Please ask us !!

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