

# Design Transfer

Prozess Innensicht eines Inverkehrbringers:  
Spezifische Vorgaben und Umsetzung anhand eines Praxis-Beispiels

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## **Disclaimer**

All shown information regarding tolerances, distributions and other technical details do not represent reality 100%.

The numbers (e.g. tolerances) are typical for the dental implant field and shall help to understand the leverage arm, design transfer can have.

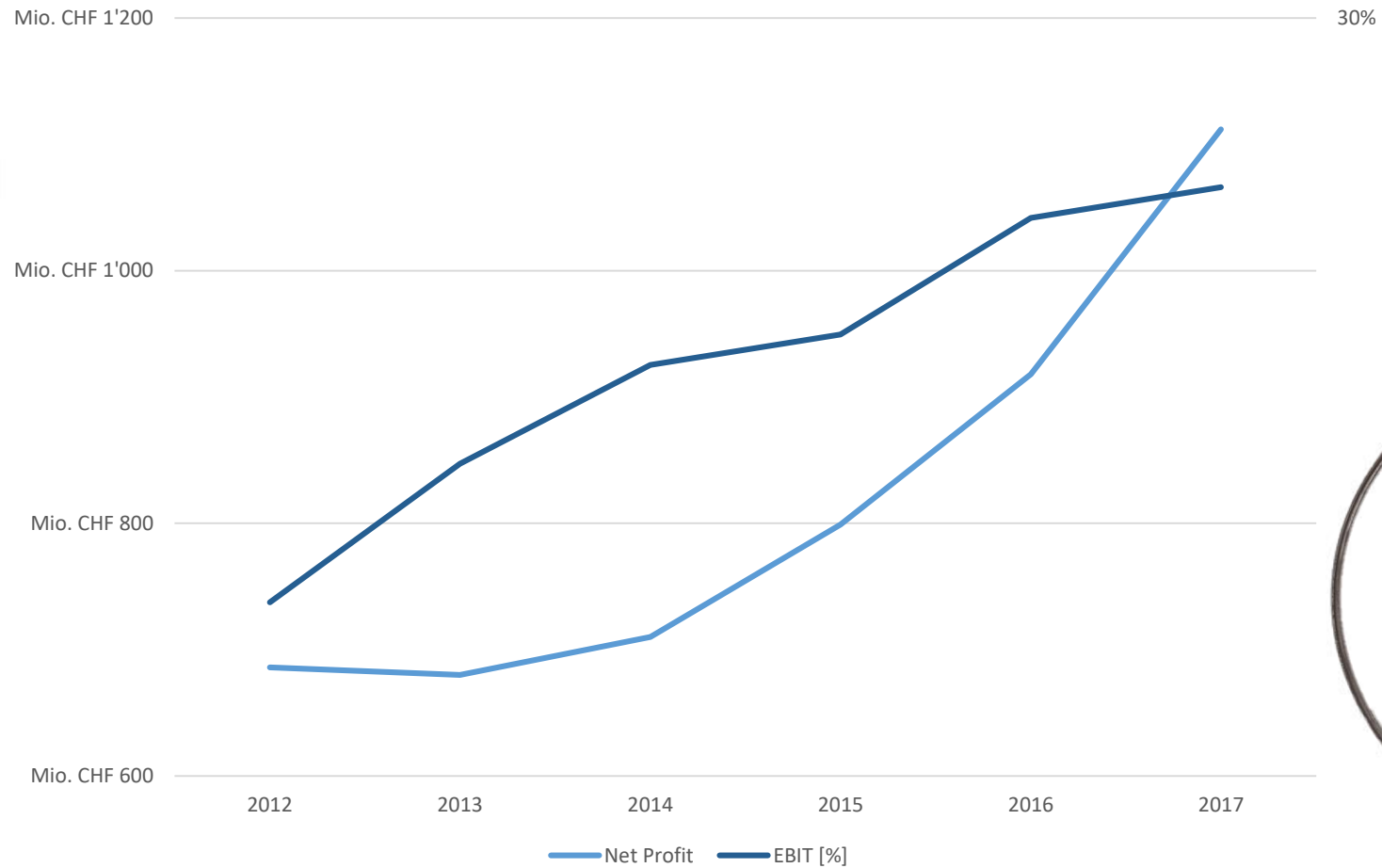
# Design Transfer

- Design transfer is the process of transferring product design information (Product Specifications) to Manufacturing so that the input requirements meet the process output
- The product specification will be transferred to the manufacturing site where they produce Functional Samples, Prototypes, Zero Series Production Units.

## **Design Transfer within development projects**

- The best practices include coordination with manufacturing early in the design process to ensure that design decision take into consideration manufacturability.
- Effective design transfer can lower material and production costs, decrease product time to market, increase product quality.

**+16%**  
REVENUE GROWTH  
(organic)



**26%**  
EBIT MARGIN  
(excl. exceptionals)  
UP 90 BASE POINTS

**#WeRockDentistry – literally.**

# Performance highlights 2017

## Cost Of Goods Sold

Raw materials, machining,  
warehousing, direct labor costs,  
factory overhead expenses

### GROUP KEY FIGURES

(in CHF million)

	2017	2016	Change (%)
Revenue	840	719	17
Gross profit	324	259	25
EBITDA	284	227	26
Operating profit (EBIT)	286	227	26
excl. exceptionals	276	230	20
Net profit	217	185	18
Cash generated from operating activities	73	47	57
Capital expenditure	145	139	9
Free cash flow	17.61	14.68	20
Basic EPS (in CHF)	4881		
Employees (at year end)			

$$\text{Net Revenue} - \text{COGS} = \text{Gross Margin}$$

## Operating Expenses

Offices, salary, licenses,  
travel expenses, etc.

$$\text{Gross Margin} - \text{OPEX} = \text{EBIT}$$

Earnings before  
Interests and Taxes

+16%  
REVENUE GROWTH  
(organic)

+25%  
EBIT MARGIN  
(excl. exceptionals)  
vs. 2016

+20%  
PROFIT

# Performance highlights 2017

## GROUP KEY FIGURES

	2017	2016	Change (%)
Revenue	840	719	17
Gross profit	324	259	25
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Cash generated from operating activities	217	185	18
Capital expenditure	73	47	57
Free cash flow	145	139	9
Basic EPS (in CHF)	17.61	14.68	20
Employees (at year end)	4881	4700	4

**Net Revenue – COGS = Gross Margin**

**Gross Margin – OPEX = EBIT**

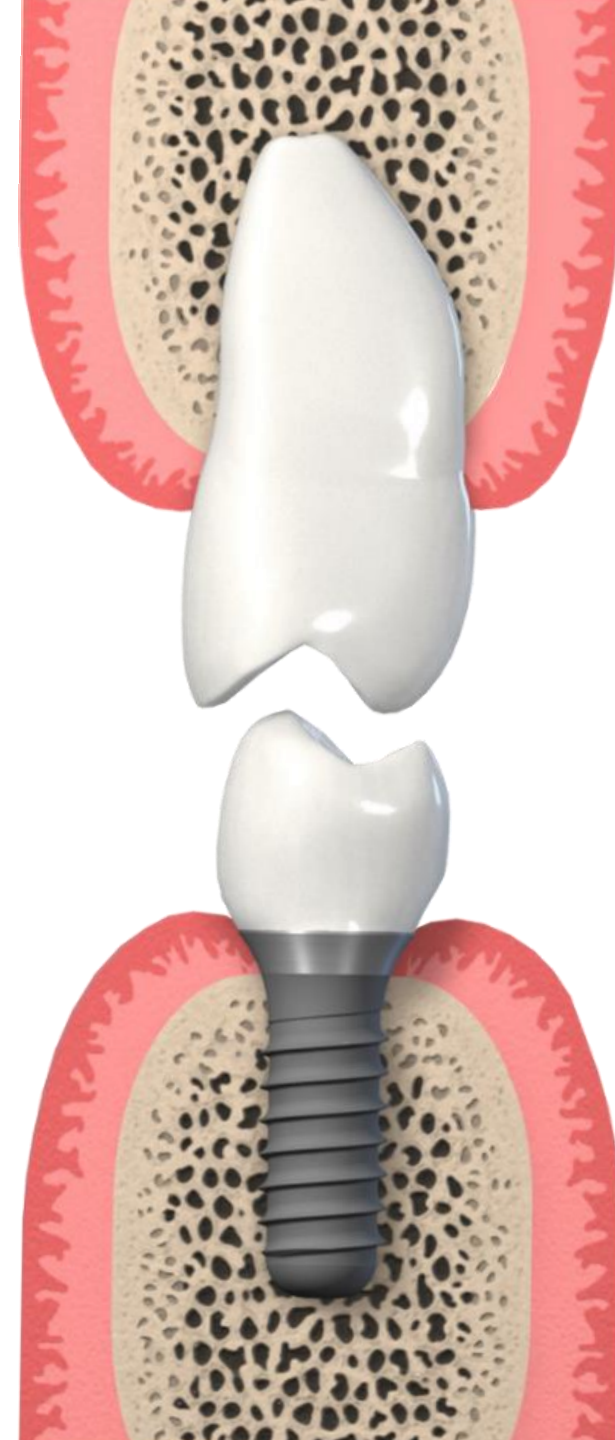
+16%  
REVENUE GROWTH  
(organic)

26%  
EBIT MARGIN  
(excl. exceptionals)  
9.5 CASE POINT

+20%  
NET PROFIT

## **Straumann Portfolio in 2017**

- 3000+ articles (implants, prosthetic components, instruments and auxiliaries)
- Implants in 3 different materials launched (titanium grade 4, TiZr und ZrO<sub>2</sub>)
- 9 implant/prosthetic interfaces established
- Various prosthetic concepts (cement retained, screw retained, Variobase, etc.)





## Tissue Level

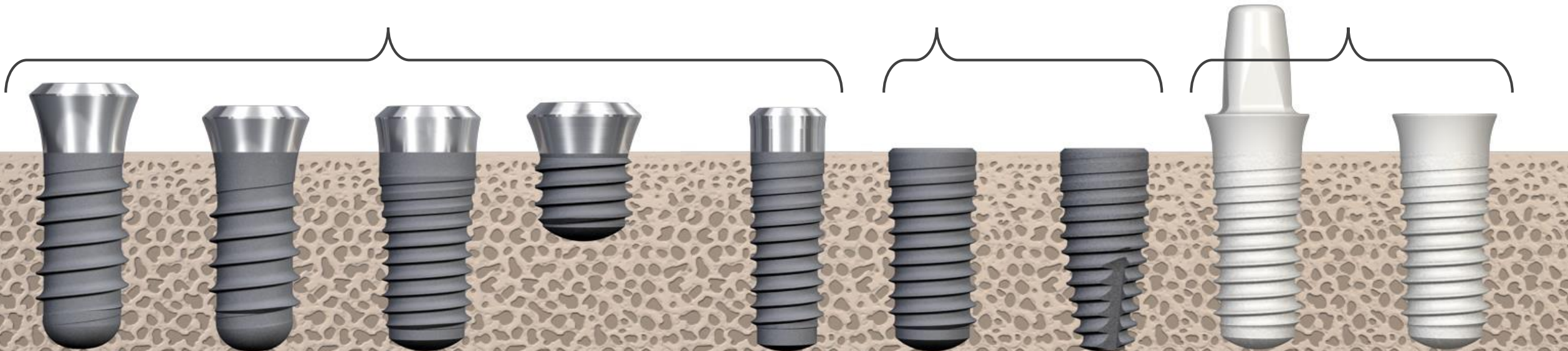
Wide Neck (WN)  
Regular Neck (RN)  
Narrow Neck Crossfit (NNC)

## Bone Level

Regular Crossfit (RC)  
Narrow Crossfit (NC)

## PURE

Regular diameter (RD)  
Narrow diameter (ND)





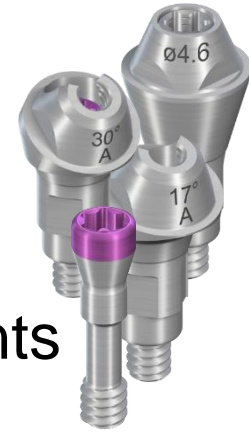
### Launch Bone Level Prosthetic Portfolio

• 2008 -> 71 SKU



### Launch screw retained abutments

• 2015 -> 58 SKU  
• 2017 -> 91 SKU



### Bone Level Prosthetic Portfolio

• 2017 -> 305 SKU



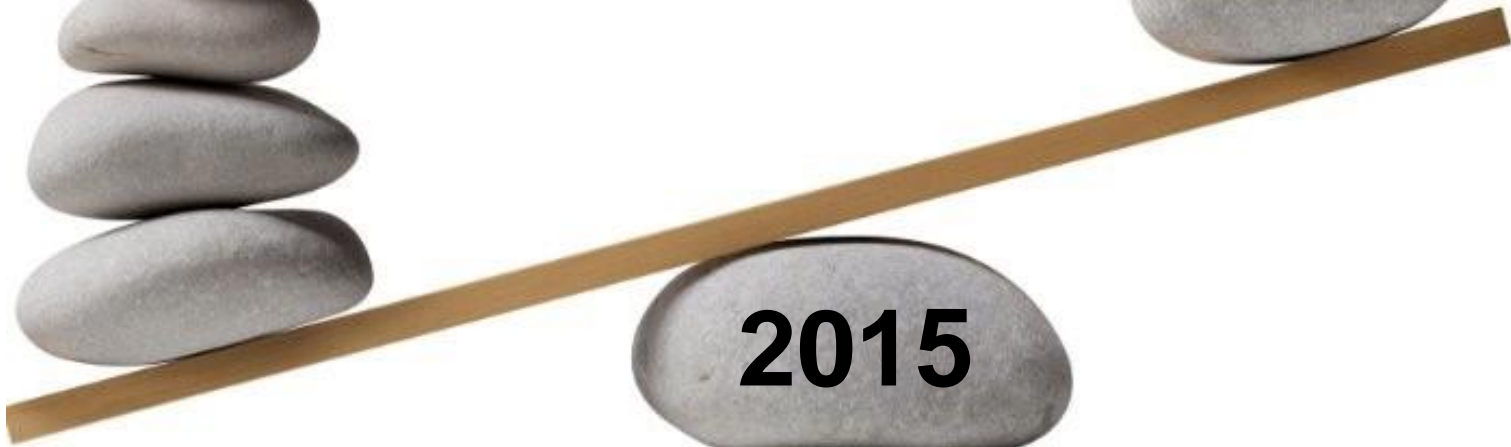
### Launch VarioBase

• 2014 -> 15 SKU  
• 2017 -> 51 SKU

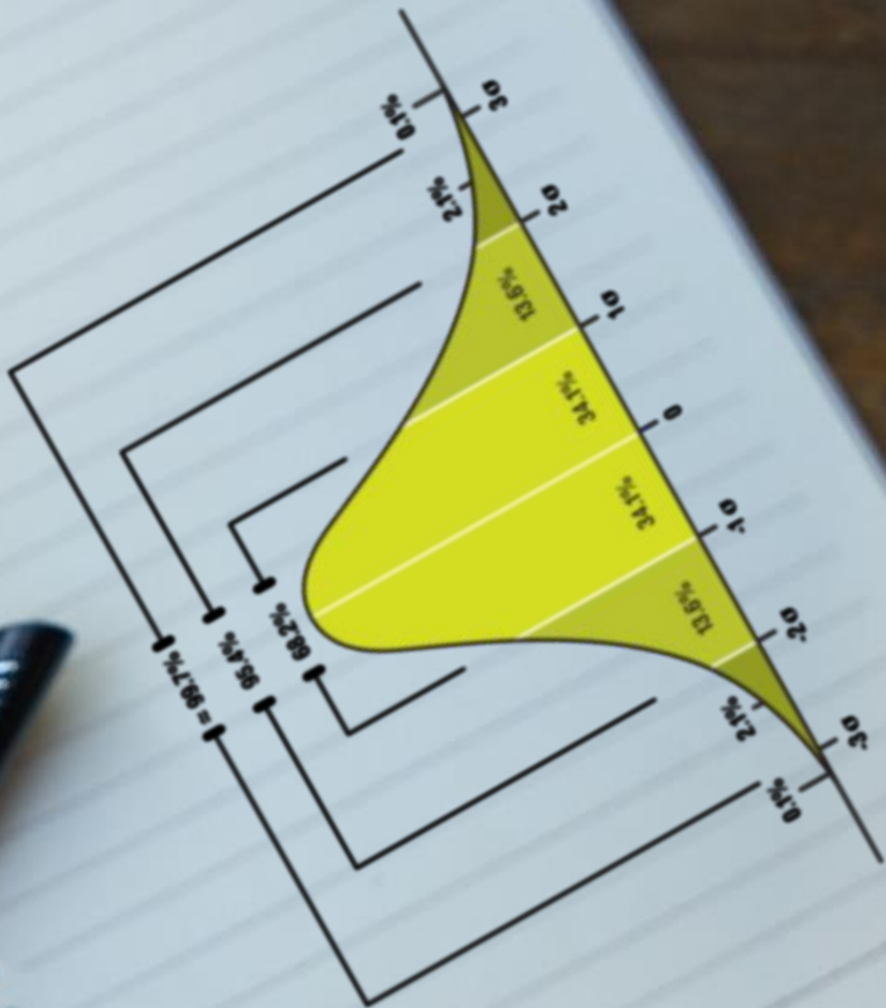




**2008**



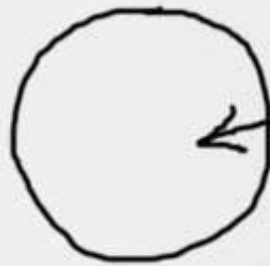
**2015**



Tolerance  
+/-20μm

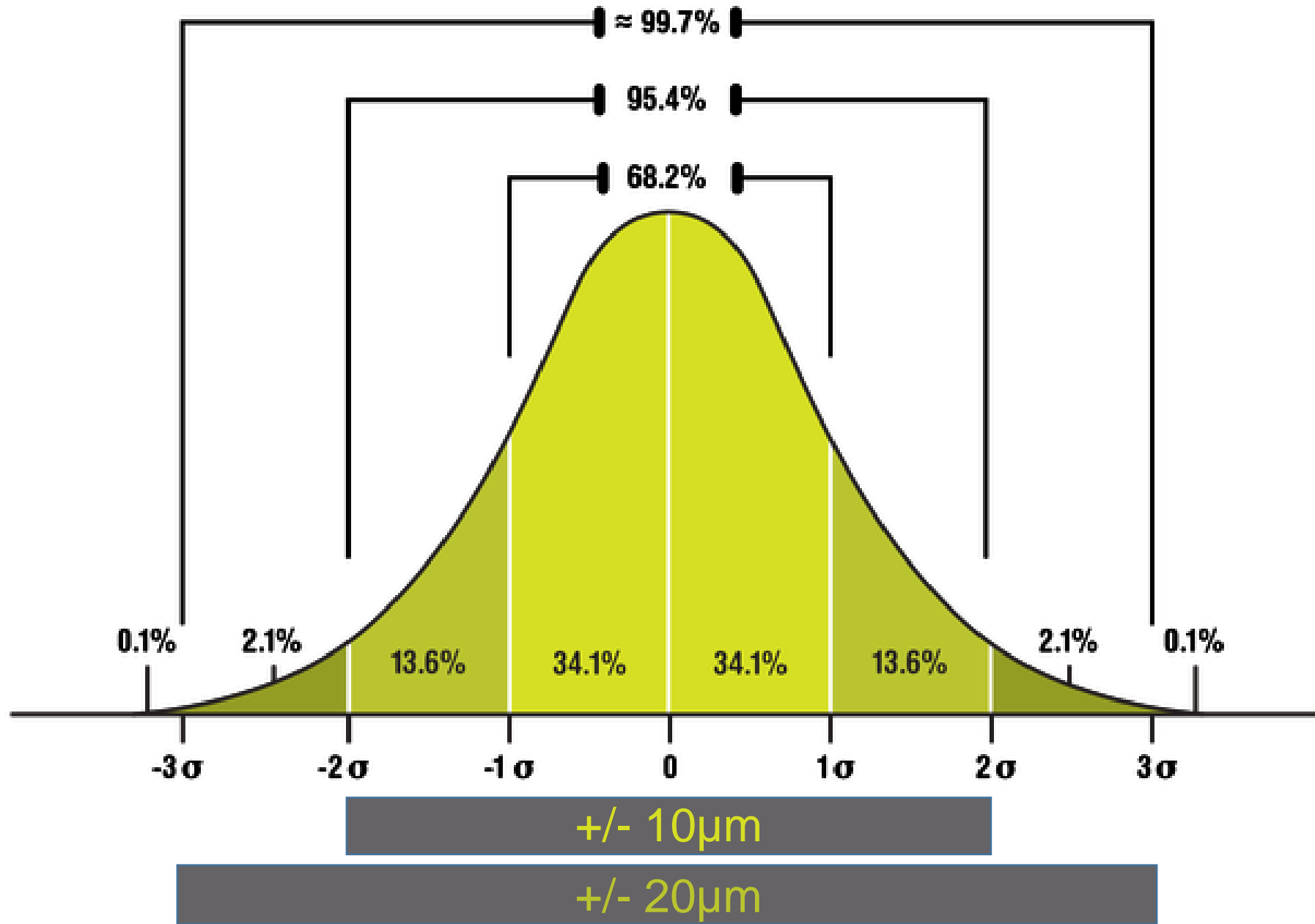


DEVELOPERS COMFORT  
ZONE



Tolerance  
+/-10μm





# Requirements

- Mechanical performance (e.g. ISO 14801 testing)
- Fit between implant and abutment (no collision)
- Rotational freedom (handling)



## Results

- 14 different studies found with relevant data
- Rotational freedom measured between  $1^\circ$  and  $5.3^\circ$  (mean values)
- Estimated worst case rotational freedom (mean + 3SD) of up to  $7.5^\circ$

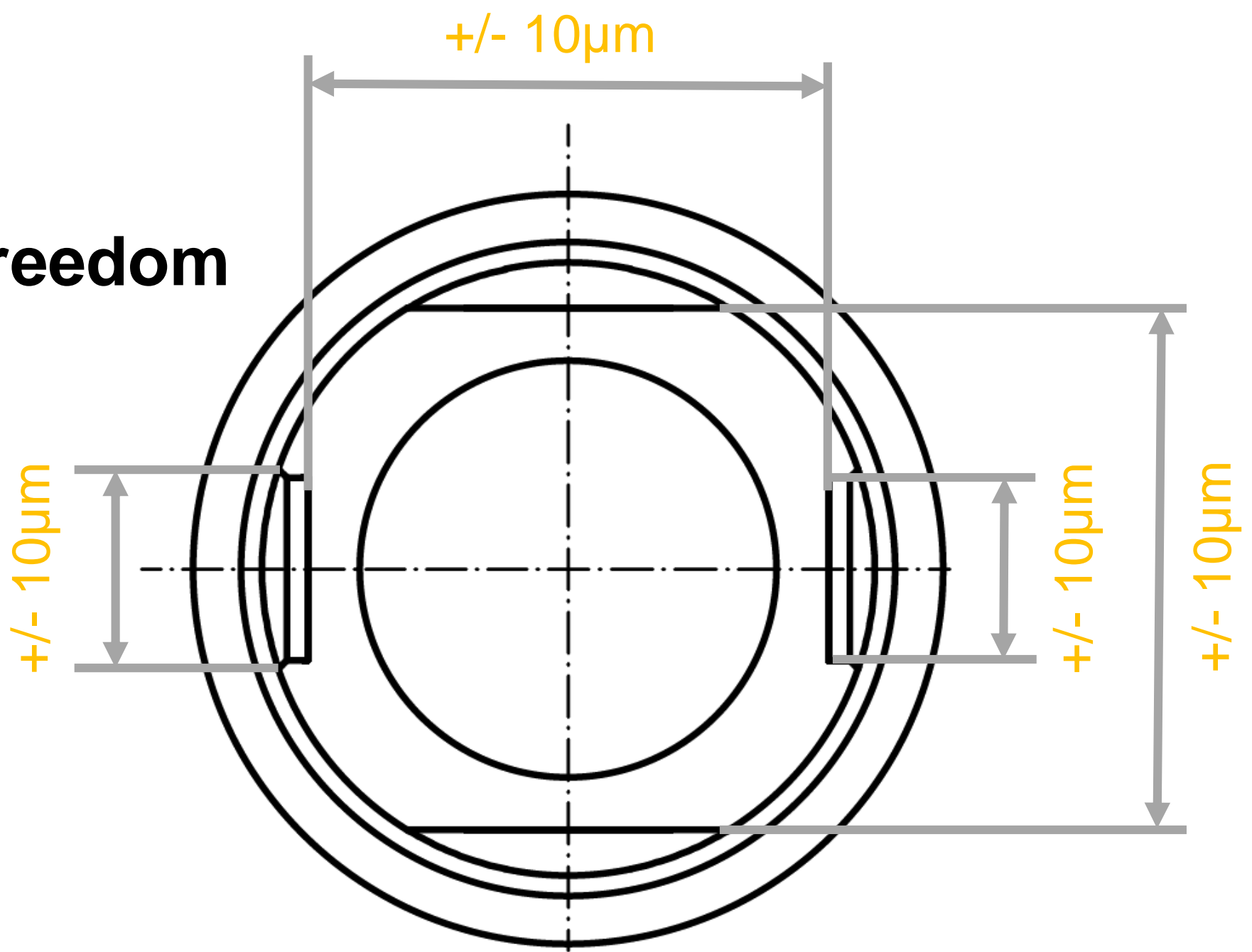
## Acceptance criteria

Rotational freedom for screw retained interfaces  $\leq 5^\circ$ .



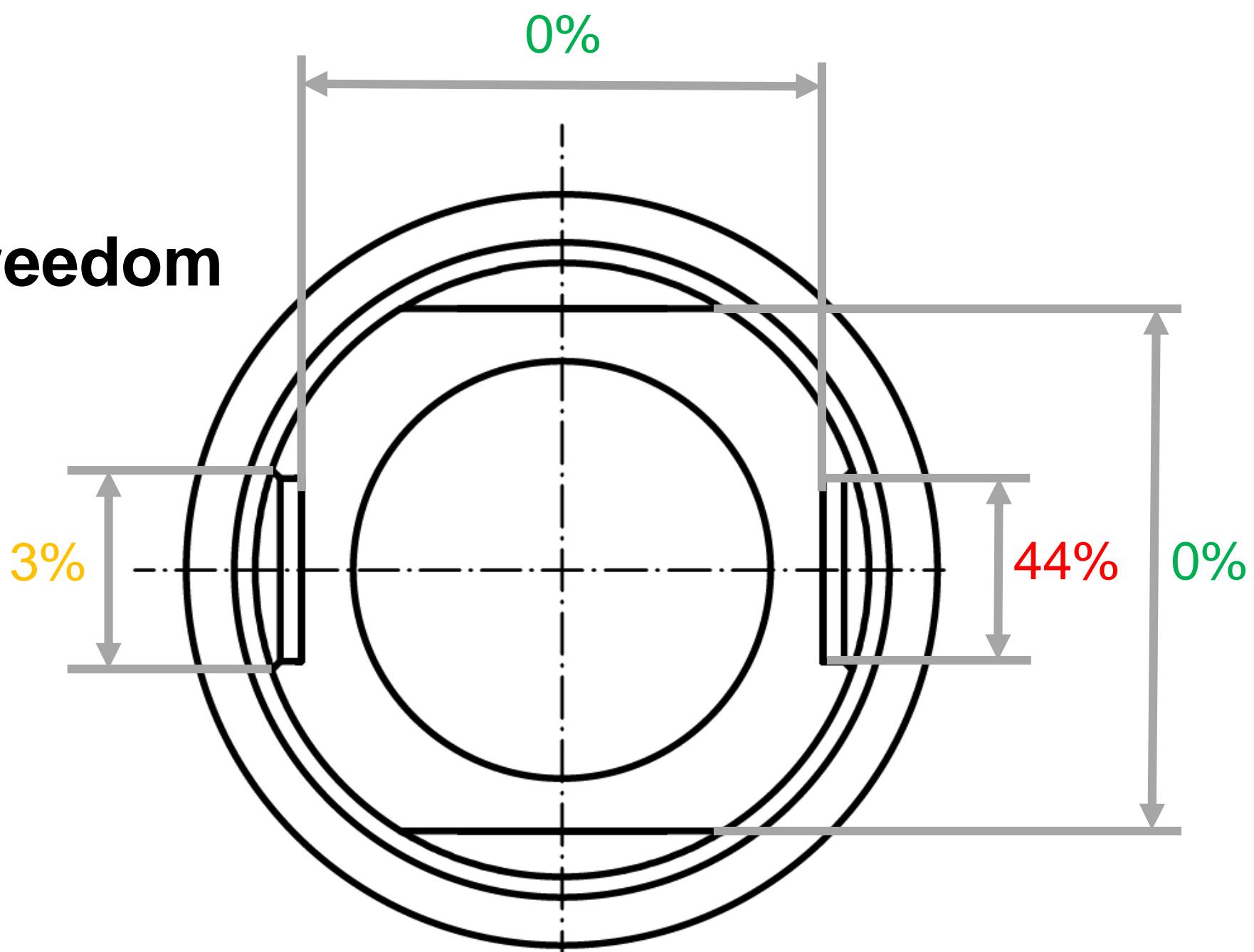
# Rotational Freedom

=> 2.6°



# Rotational Freedom

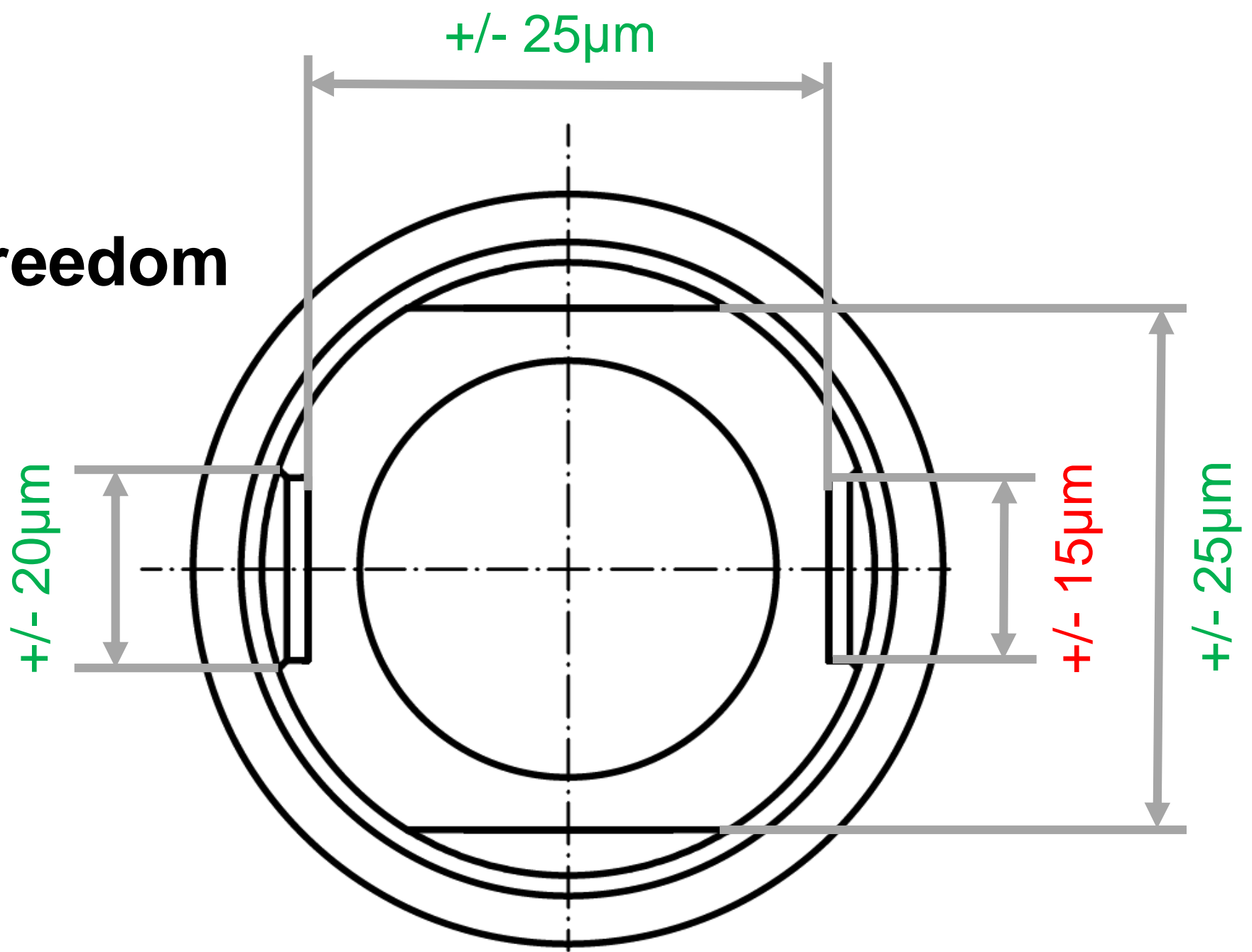
=> 2.6°



# Rotational Freedom

~~=> 2.6°~~

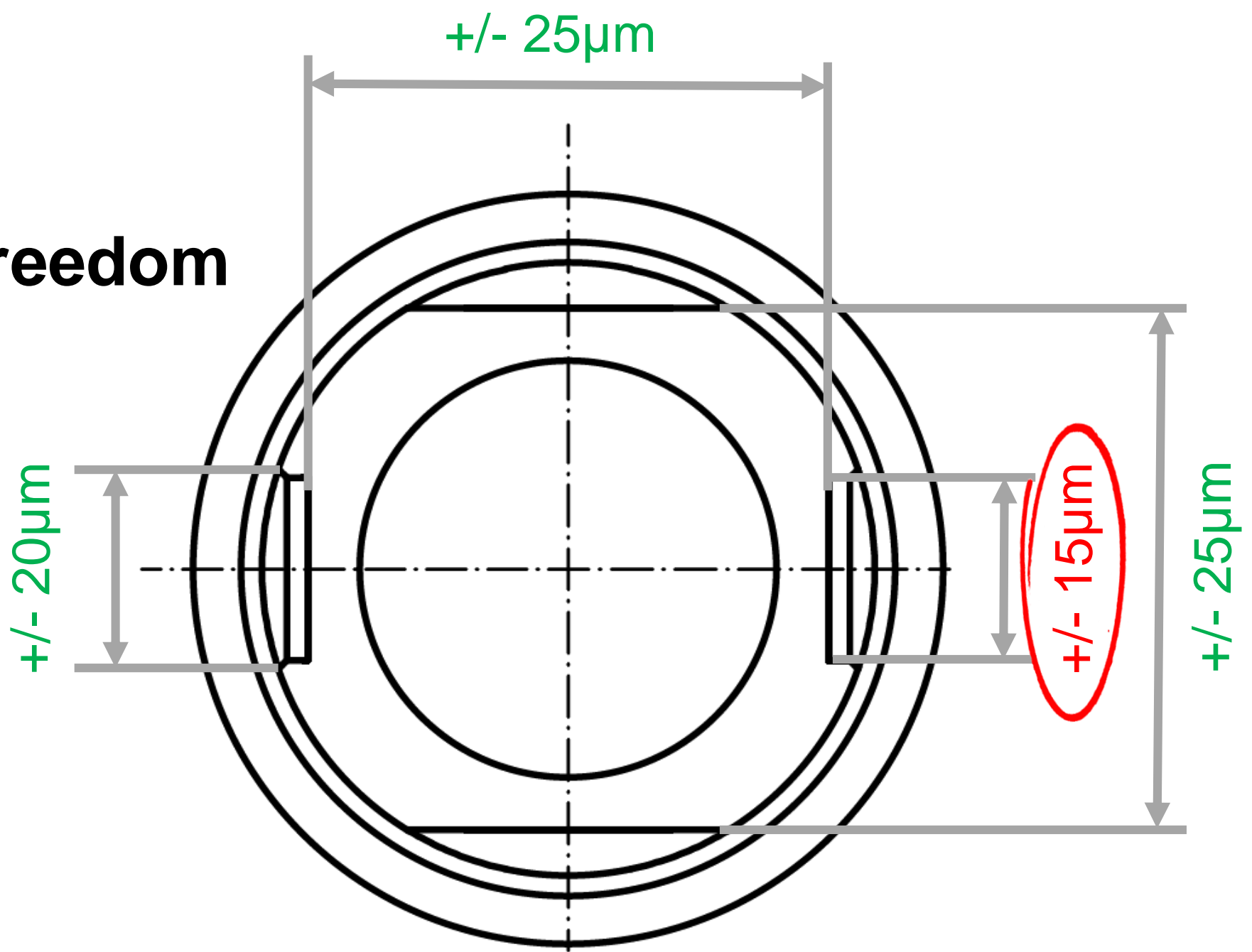
=> 3.7°



# Rotational Freedom

~~=> 2.6°~~

=> 3.7°

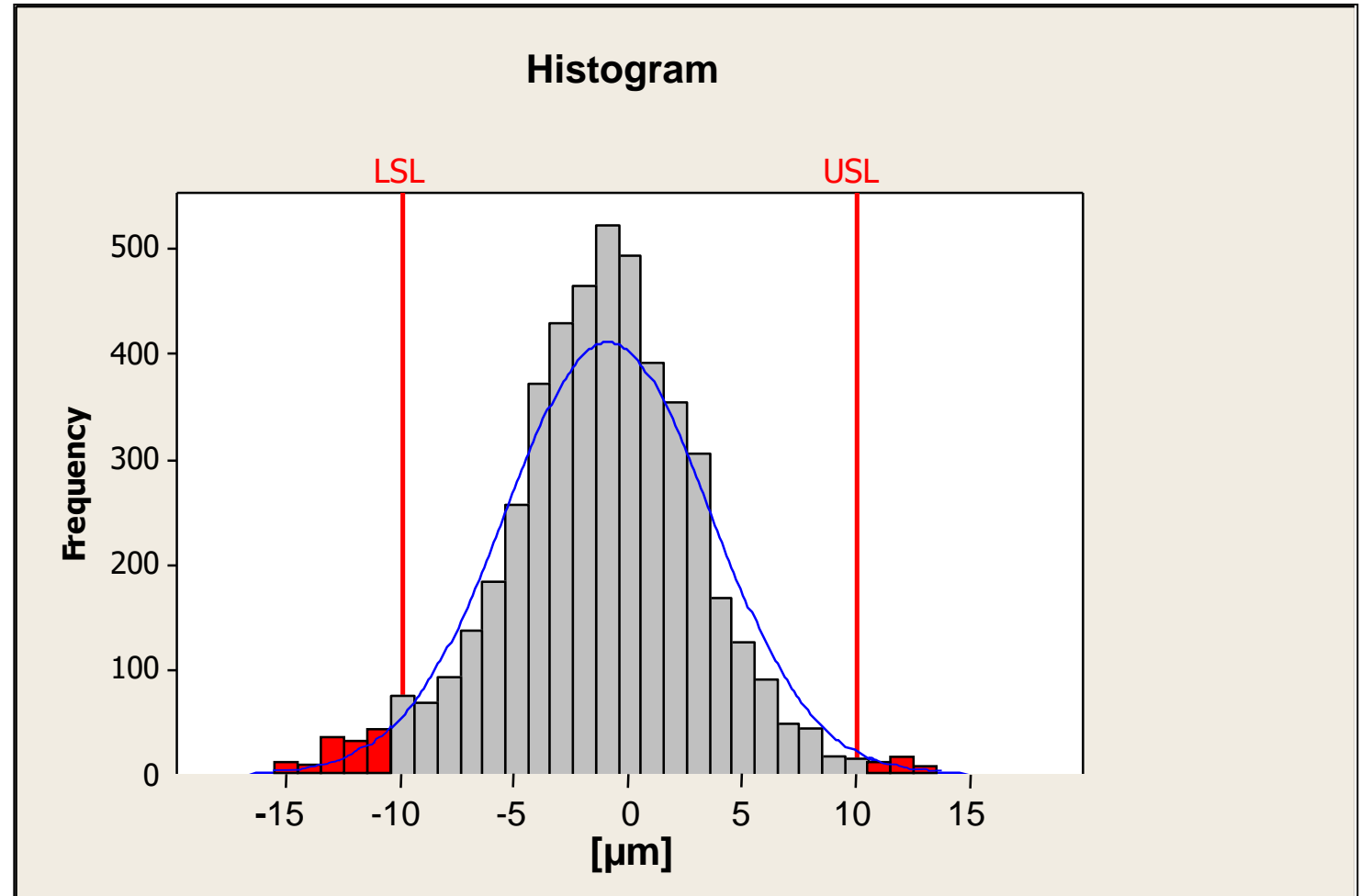


# Process Capability

Cp 1.18 / Cpk 1.05

Cpk  $\geq 1.33 = 4\sigma$

Cpk  $\geq 2.00 = 6\sigma$





**2016**



# Performance highlights 2017

## GROUP KEY FIGURES

	2017	2016	Change (%)
Revenue	2,840	2,424	17
Gross profit	840	719	17
EBITDA	224	259	25
Operating profit (EBIT)	234	227	26
excl. exceptionals	286	227	26
Net profit	276	230	20
Cash generated from operating activities	217	185	18
Capital expenditure	73	57	28
Free cash flow	145	139	4
Basic EPS (in CHF)	17.61	14.68	20
Employees (at year end)	4,881	4,700	4

**25%**

**+0.25%**

**Net Revenue – COGS = Gross Margin**

**-1%**

**+0.25%**

**Gross Margin – OPEX = EBIT**

**26%**  
EBIT MARGIN  
(excl. exceptionals)

**+0.25%**

**+16%**  
REVENUE GROWTH  
(organic)

**+20%**  
NET PROFIT

# Take home message

- Design transfer can be triggered by development and production
- Design transfer is a continuous step and shall not come to an end
- Product portfolios which grow over time must be assessed regarding the optimisation of the design, since the impact of reduced COGS can be significant
- All products (especially big portfolios) must be assessed, if requirements change

An aerial photograph of a lush mountain valley. The foreground is dominated by terraced rice fields, showing a mix of vibrant green and golden-yellow hues. The fields are arranged in concentric, wavy patterns that follow the contours of the land. In the middle ground, a small cluster of white buildings is nestled in a valley. The background features rolling green hills and dark, forested mountain ranges under a bright blue sky filled with large, white, fluffy clouds. Sunlight filters through the clouds, creating a soft, ethereal glow over the landscape.

# Thank you

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