

Notes:

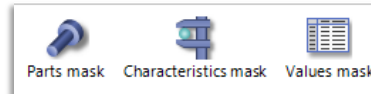
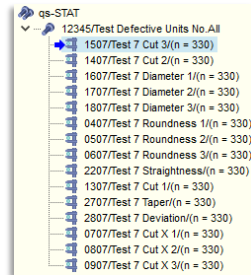
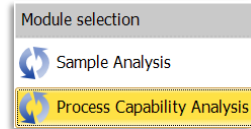


## **File and dataset creation**

Create, change and correct datasets

## Agenda

- Which module for which dataset?
  - [Module selection](#)
- Create new Files / datasets
  - [Flowchart for data input](#)
  - [Types of characteristics](#)
  - [Change presets](#)
  - [Data structure](#)
- Input masks
  - [Parts mask](#)
  - [Characteristics mask](#)
  - [Values mask](#)



Notes:

## Which task for which module?

- 1 Part Analysis
- 5 Part Analysis
- Machine capability analysis
- Tool change report
- Cold run

Sample analysis

- Process capability analysis
- Calculate quality control charts
- Evaluate attributive data

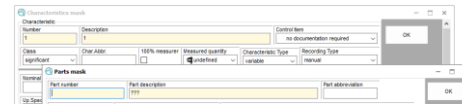
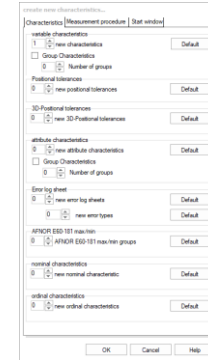
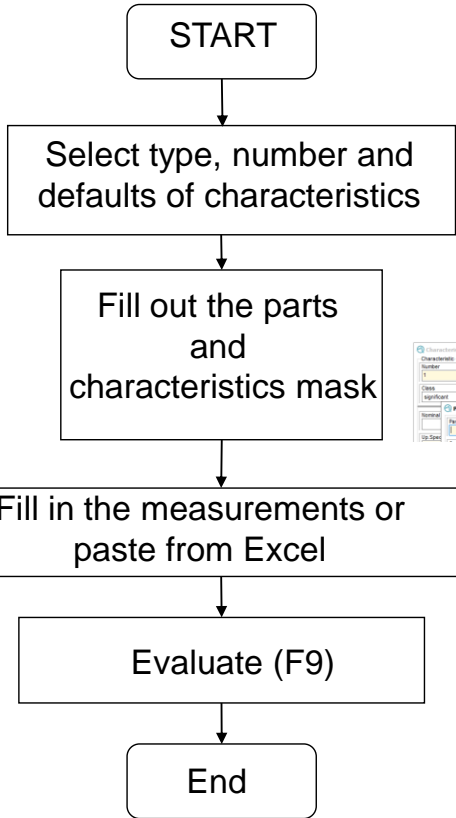
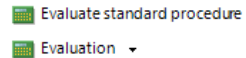
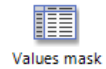
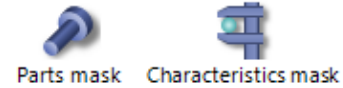
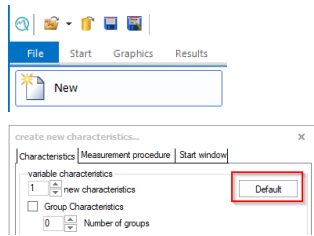
Process capability analysis

- Type 1-3 Study
- Linearity
- Stability

solara.MP  
destra Measurement system analysis

Notes:

# Data creation flowchart



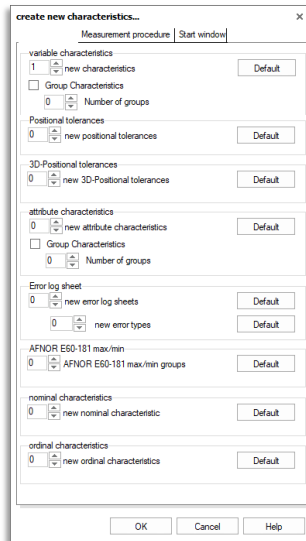
Characteristic	Transformation				
Number	Description	Up Spec. Lim.	Lo Spec. Lim.	Factor	Constant
998	0.508			1	0
999	0.486			1	0
999	0.268			1	0
999	0.274			1	0
999	0.531			1	0
999	0.526			1	0
999	0.401			1	0
999	0.447			1	0
999	0.493			1	0
999	0.544			1	0
999	0.265			1	0
999	0.528			1	0
999	0.332			1	0
999					

Notes:

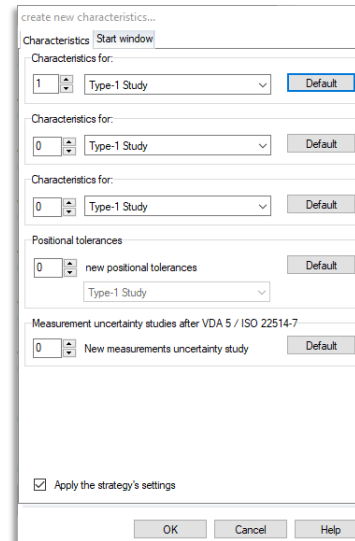
## Differences in the programs

- Each program and module has special defaults and restrictions
- The menu „| File | New“ is different in each program / module
- E. g. sample size only available in process analysis

qs-STAT  
Sample & process analysis



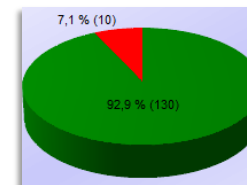
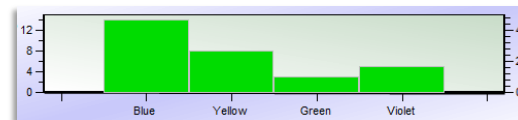
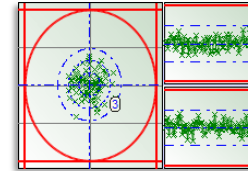
Solara.MP  
measurement system analysis



Notes:

## Characteristic types

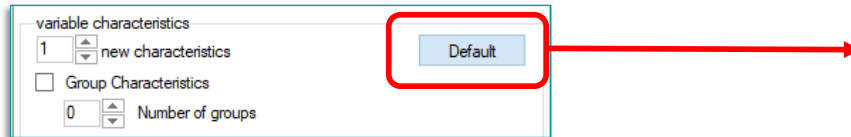
- Variable characteristics (Measurement values | Cp/Cpk)
- Special case: Positional tolerances (2D/3D)
- Attribute characteristics
  - Binomially distributed characteristics (defective units, max. error count = sample size)
  - Poisson distributed characteristics (defects per unit, no max. error count, sample size independent)
- Error log sheet
  - Always Poisson distributed
  - Used as a simple tool for workshop operators
- AFNOR E60-181 max/min
  - Is a special characteristics group, which is used if ovality is more than 1/7 of the tolerance
- Nominal characteristics
- Ordinal characteristics



Notes:

## Presets for new characteristics

- The default settings for **new characteristics** can be changed by clicking on „Default“
- The presets should fit as much as possible characteristics of that kind
- Sample size, numbering and measurement devices can be preset
- **Rarely** use the specifications for usability reasons (each non correct tolerance has to be altered!)



**general data**

consecutive characteristic number

1 Increment

1 Number of significant figures

Characteristic Description

significant Characteristics Class

undefined Measured quantity

Events Catalogue Events Catalogue

**Specification**

Nominal value

Upper Allowance

Lower Allowance

mm Unit

3 Decimal Places

**Subgroups**

5 Subgroup size

fixed Subgroup type

**Measuring device**

manual

Assign consecutive channel numbers

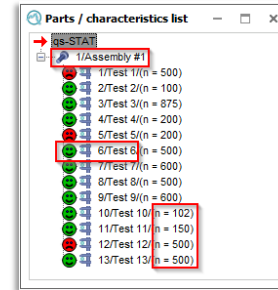
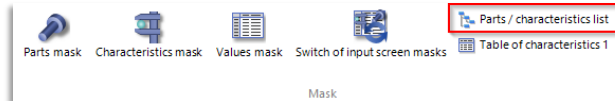
No. of the 1st channel Increment

0 0

Notes:

## Dataset structure

- Provides an overview about the loaded part, groups and values
- Is called with Parts-/characteristics list
- We distinguish 3 different Levels:
  - Part level (Part name and number)
  - Characteristics level (Name/number of char.)
  - Value level (measurements)
- The part level is a „Part type“ not a specific measurement of one part
- On characteristics level the measurement is described (tolerances, subgroup size...)
- On the value level are the measurement values, additional data and attributes for the evaluation



Notes:

## Mask overview

- The parts mask includes all product relevant informations
- The characteristics mask includes characteristics depending information
- The values mask includes all measurements and additional data

The screenshot shows the 'Mask' menu in the software interface. The 'Parts mask' option is highlighted with a red box, and a red arrow points from it to the 'Parts mask' dialog box. Similarly, the 'Characteristics mask' and 'Values mask' options are highlighted with red boxes, and red arrows point from them to their respective dialog boxes.

**Parts mask dialog box:** This dialog box contains fields for Part number, Part description, Part abbreviation, and Part revision. It also includes sections for Part results, Drawing number, Data language, and various identification numbers like Manufacturer no., Material number, Contractor number, Customer number, and Supplier number.

**Characteristics mask dialog box:** This dialog box contains fields for Characteristics, Description, and Unit. It also includes sections for Material, Location, and various identification numbers like Material no., Location no., and Operator no.

**Values mask dialog box:** This dialog box contains a table with columns for Characteristic, Description, Up Spec. Lim., Lo. Spec. Lim., Factor, and Constant. The table is populated with data for various characteristics, including measurements and locations.

Notes:

## Parts level

- Everything which describes the population globally (Product) fits in here
- Each product (or test plan) will be found by the data of this mask
- The yellow fields mark the most important informations (can be set by the keyuser)
- The white fields are optional

Notes:

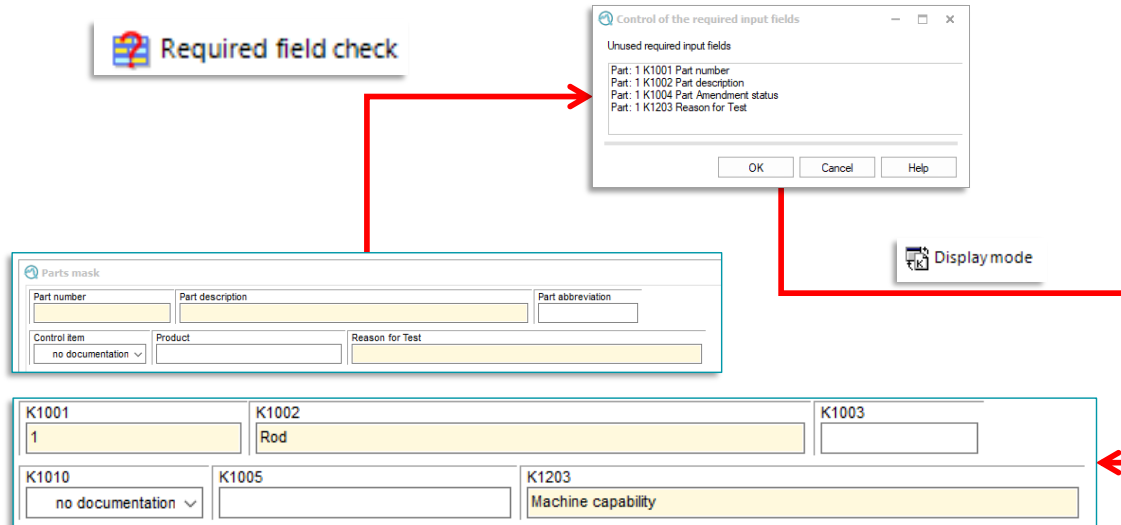
The screenshot shows a 'Parts mask' dialog box with the following fields and values:

- Part number:** (Yellow field)
- Part description:** Assembly #1 (Yellow field)
- Part abbreviation:** (White field)
- Control item:** no documentation (White field)
- Product:** (White field)
- Reason for Test:** Machine Acceptance (Yellow field)
- Part remark:** Completion of tests 1 thru 13 (Text area)
- Drawing number:** (White field)
- Drawing Amendment:** (White field)
- Drawing name:** (White field)
- Part Amendment status:** (Yellow field)
- Data language:** --- (Dropdown)
- Internal configuration:** Standard view (Dropdown)
- Measurement procedure scheme:** no (Dropdown)
- Manufacturer No.:** (White field)
- Manufacturer name:** Q-DAS (White field)
- Test Location:** (White field)
- Material number:** (White field)
- Material Description:** (White field)
- Machine Number:** (White field)
- Machine Description:** Machining & Assembly Cell (White field)
- Contractor Number:** (White field)
- Contractor Name:** Analysis Inc. (White field)
- Work Cycle / Operation no.:** (White field)
- Production cycle description:** (White field)
- Customer Number:** (White field)
- Customer Name:** Assembly Works (White field)
- Plant Sector:** (White field)
- Workshop/sector:** (White field)
- Supplier Number:** (White field)
- Supplier Name:** (White field)
- Department:** (White field)
- Cost centre:** (White field)
- user field content 1:** (Text area)
- user field content 2:** (Text area)

Notes:

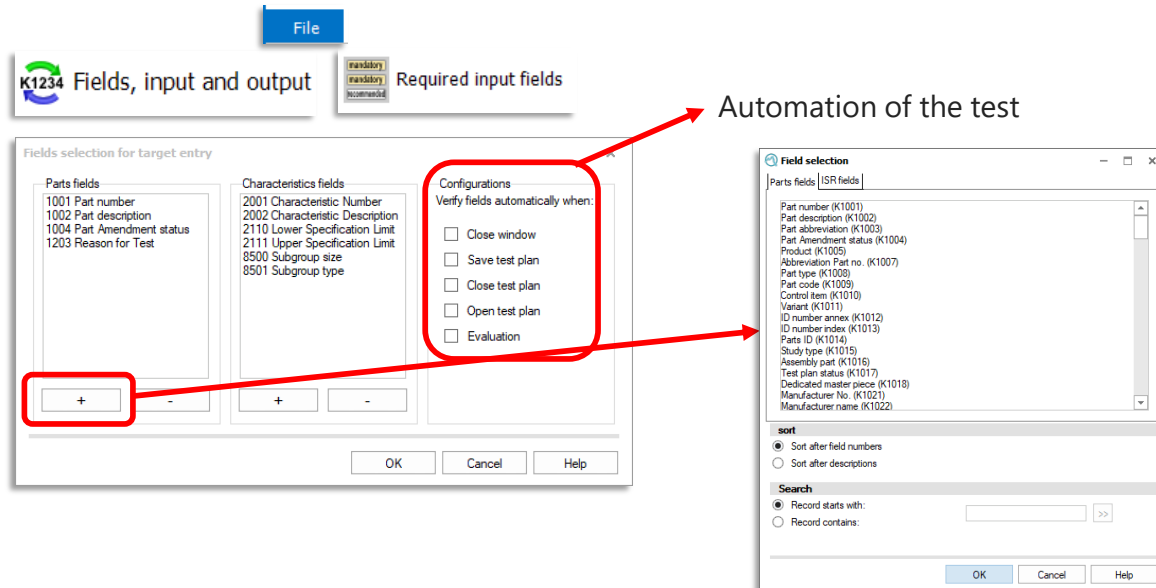
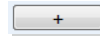
## Change of the display mode

- In Q-DAS programs the so called „K-Fields“ are used as variable names
- These K-Fields can be displayed by changing the „Display mode“
- To change the descriptions use the „Display mode“ icon in the tab „Part / characteristic“
- The „Required field check“ will enable you to find missing information in bigger datasets



## Required fields definition

- Users with the authorisation to open this dialog can change and add fields
- The color for the display of these fields can be changed (graphical settings)
- /File/Configurations/Fields, input and output/Required input fields
- To add new fields, just select the „+“ Icon for parts or characteristics



Notes:

## Characteristics level



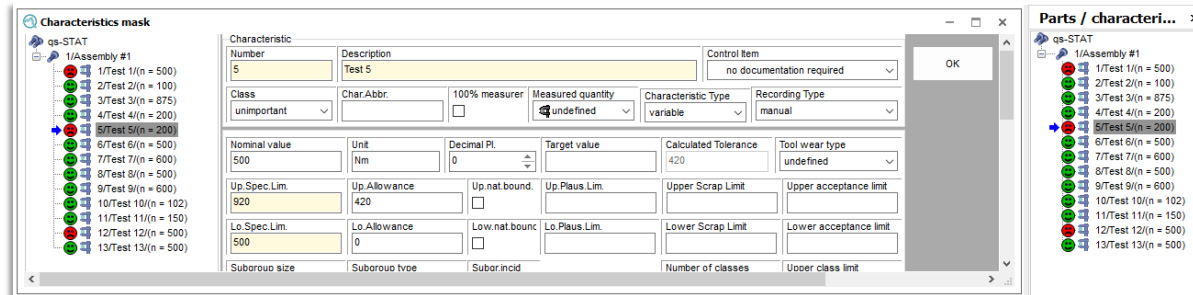
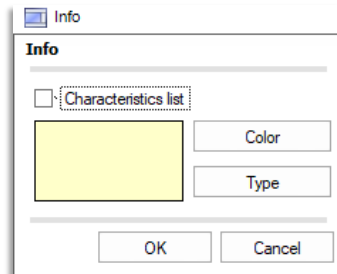
- Characteristics mask
- Everything which describes the characteristics precisely has to be put in here.
- E. g. tolerances and descriptions

Notes:

Notes:

## Parts with more than one characteristics

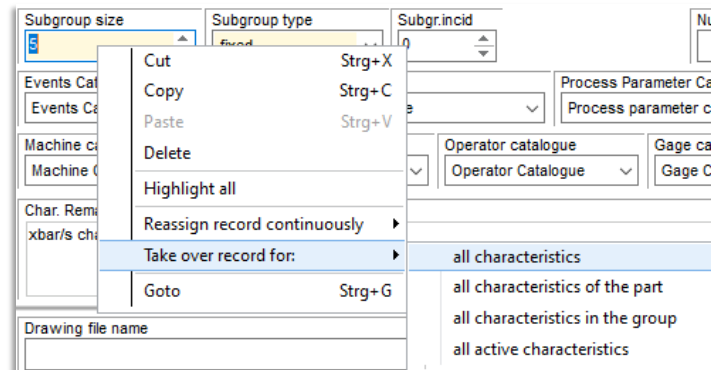
- To navigate between the characteristics use the parts-/characteristics list
- This list is included to the mask and to the assistant
- If you prefer to use the assistant go to the mask and it's „graphical settings“ to „Info“ and remove the checkmark for the list



Notes:

## Take over information to more characteristics

- To take over information to other characteristics just right click this field and take it over for all or selected characteristics
- There is no „undo“ function for this!
- If you have more than one characteristic and want a „count“ you can reassign this record continuously



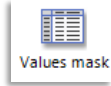
## Hyperlinks

- Remarks can also be hyperlinks
- Links can be Webpages, network or file system folders and files
- To add more than one link a space or <ctrl><enter> can be used
- Virus scanners and user rights need to be considered for usage
- Local files should not be linked because others may not be able to open them

Notes:

Char. Remark	
<a href="http://www.Q-DAS.com">http://www.Q-DAS.com</a>	<a href="file://s:\N_Test">file://s:\N_Test</a>
<a href="http://www.piq-online.com">http://www.piq-online.com</a>	<a href="file://\Servername\Home\user">file://\Servername\Home\user</a>
<a href="http://www.hexagon.com">http://www.hexagon.com</a>	<a href="file://\servername\Home\user\documentation.pdf">file://\servername\Home\user\documentation.pdf</a>

# Value level



- Values mask
- Includes all measurement values, validity of the measurement (attributes) and additional data
- A control bar can also be displayed

Notes:

Control column

no control column  
✓ Bar  
Smiley

current characteristic  
all characteristics  
all characteristics of the part  
all characteristics in the group

Display / Hide additional data fields

**Additional data display**

- attribute
- Time
- Date
- Event
- Batch number
- Smiley number
- Operator name
- Text
- Machine number
- Process parameter
- Gage number
- Part ID number
- Reason for test
- Production number

Highlight all  
No highlight

Windows of same type

current characteristic  
 all characteristics  
 all characteristics of the part  
 all characteristics in the group

OK Cancel

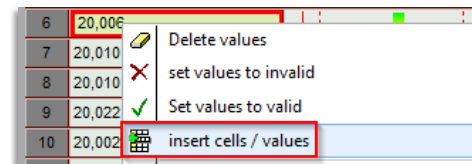
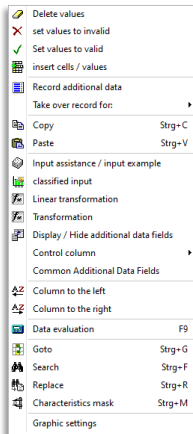
**Values mask**

Characteristic	Number	Description	Up. Spec. Lim.	Lo. Spec. Lim.	Factor	Constant
1	19.993	Test 1	20.040	19.960	1	0

	Test 1	Location	Batch number	Machine number	Order
1	19.993	█	Charge Nummer1	Machine 1	0815
2	19.995	█	Charge Nummer1	Machine 1	0815
3	19.997	◆	Charge Nummer1	Machine 1	0815
4	19.995	█	Charge Nummer1	Machine 1	0815
5	19.999	◆	Charge Nummer1	Machine 1	0815
6	20.006	█	Charge Nummer1	Machine 1	0815
7	20.010	█	Charge Nummer1	Machine 1	0815
8	20.010	█	Charge Nummer1	Machine 1	0815
9	20.022	◆	Charge Nummer1	Machine 1	0815
10	20.002	█	Charge Nummer1	Machine 1	0815
11	19.958	█	Charge Nummer1	Machine 1	1056
12	19.982	█	Charge Nummer1	Machine 1	1056
13	19.973	█	Charge Nummer1	Machine 1	1056
14	19.985	█	Charge Nummer1	Machine 1	1056
15	19.979	█	Charge Nummer1	Machine 1	1056
16	19.996	◆	Charge Nummer1	Machine 1	1056
17	20.006	█	Charge Nummer1	Machine 1	1056
18	19.988	█	Charge Nummer1	Machine 1	1056
19	20.002	◆	Charge Nummer1	Machine 1	1056
20	20.001	◆	Charge Nummer1	Machine 1	1056
21	19.995	█	Charge Nummer1	Machine 1	1056

## Values mask

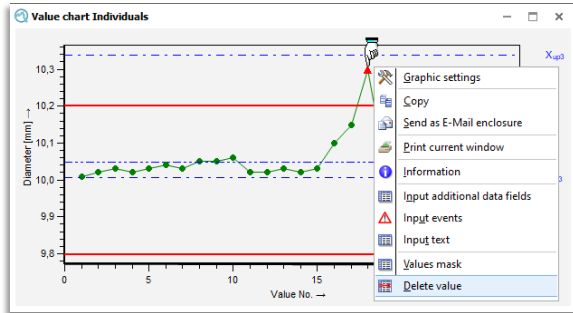
- To fill it with data just write down the values
- If something needs to be set just right click to the mask
- Here you will find also some graphic settings
- If a value is missing go to the cell where the missing value should be and go to insert cells / values
- It is also possible to measure and directly take over the values with a measurement device like a caliper



Notes:

## Delete values or set them invalid

- Values can be deleted with the keystroke <delete>
- This can also be done in the value chart individuals
- There is no undo function!
- The preferred way is to set the value to invalid, because this can be undone



- Delete values
- set values to invalid
- Set values to valid

**Delete value** ✕

Value No.

Number

---

Deletion range

Highlighted range

current characteristic

all characteristics

all characteristics of the part

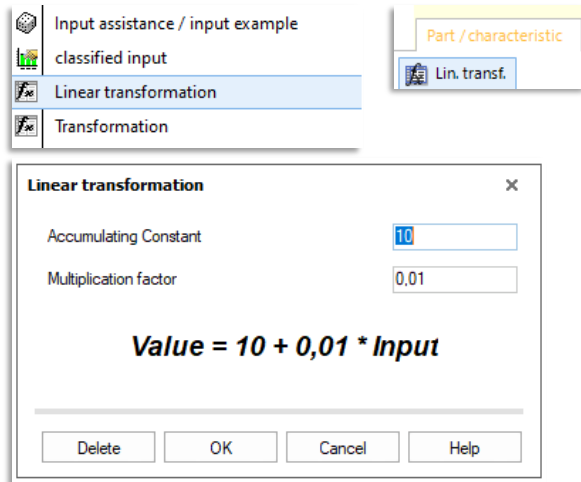
all characteristics in the group

9	20,022								
10	20,002								
11	19,958								
12	19,982								
13	19,973								

Notes:

## Simplify data input

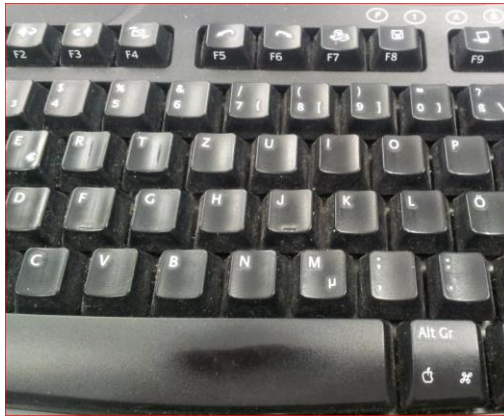
- With linear transformation the data input time can be drastically be reduced
- Input errors will be reduced
- The users need to be aware and the data input needs to be clear
- It's available by right click or in Part / characteristic



Notes:

## Practical uses for linear transformation

- If a dial gauge only displays the difference to a master part
- Manual input of a lot of data
- Take over values from Excel and directly convert the data
- Dial gauges can send values which directly need to be converted



Notes: