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标题

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01 -	DWU		DWU	20.03.2010
02 Q-Requirements added, some Symbols changed, consecutive numbers	DWU	ROM	DWU	21.04.2010
03 Numbering for IQC dimensions added	DWU	ROM	DWU	15.06.2010
04 More flexible requirements for major dimensions. Measuring points and layers.	DWU	ROM	DWU	06.04.2012
05 Additional marking for calibration items	ROM	FKÜ	DZO	08.11.2013
06 Gauge check added	APR	ROM	DZO	15.01.2015
07 Add "Under Construction, Preliminary" to markings, Additional definition for "Current and specified dimension"	APR	DHA	EPR	12.03.2020
08 Change description from "Major Dimension" to "Special Characteristic"	APR	DHA	EPR	23.06.2022

Changes to the previous revision are color-coded.

Scope / 范围

This EGSTON Standard defines the dimensioning und marking of technical documents just as the symbols to be used.

This standard is valid for all applications, departments just as for all EGSTON-documents.

本标准定义技术图纸的尺寸及标识，以及图纸中用到的标记。本标准对所有的应用和部门有效，也适用于所有的EGSTON文件

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1 MARKINGS | 综述

1.1 PRELIMINARY, UNDER CONSTRUCTION | 正在完善中, 初始图纸

PRELIMINARY

Drawings, which are not final for serial production, but are used for clarifications, must be clearly marked with "Under Construction" or "Preliminary".

These drawings must not be used for orders or quotations!

并非批量生产的最终图纸, 而是用于说明的图纸, 必须清楚地标有“正在完善中”或“初始”。这些图纸不得用于下单或报价!

1.2 ONLY FOR OFFER | 报价图纸

ONLY FOR OFFER

Drawings, which are not released, but are used for quotations from suppliers, must be clearly marked with "Only for Offer".

These drawings must not be used for orders!

对仅用于向供应商报价图纸, 必须在图纸上清楚地标上“仅供报价”。

这些图纸不得用于下单!

1.3 ONLY FOR PROTOTYPES | 仅适用于原型样件

ONLY FOR PROTOTYPES

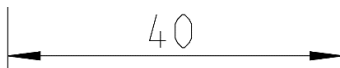
Drawings, which are not final for serial production, but are used for prototype parts or prototype tools, must be clearly marked with "Only for Prototypes".

These drawings must not be used for orders of serial production!

并非批量生产的最终图纸, 而是用于原型零件或原型工具的图纸, 必须明确标有“仅用于原型样件”。这些图纸不得用于批量生产订单!

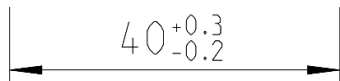
2 SYMBOLS | 标记

2.1 NOMINAL DIMENSION | 名义尺寸



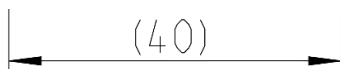
General tolerances as stated in the title block apply. 未注明公差尺寸按照未注公差表要求执行。

2.2 NOMINAL DIMENSION WITH TOLERANCE | 带公差名义尺寸



The tolerances stated override the general tolerances. 带公差的尺寸按注明公差要求, 不需执行未注公差要求。

2.3 AUXILIARY DIMENSION | 辅助尺寸



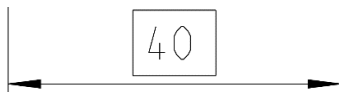
Is an overdimensioning of the part and is used for the production and inspection. The general tolerances are not valid for such a dimension.

零件的过约束尺寸, 仅用于制造检测。未注明公差表不适用于这类尺寸。

Auxiliary dimensions are not measured for the initial sample report. Such dimensions are shown by the technical design department, to emphasize some aspects of the function of the part.

辅助尺寸在首样检测时不需要做测量。该类尺寸由技术设计部门指出, 以强调零件功能上的特征。

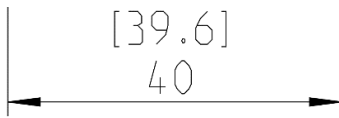
2.4 THEORETICAL ACCURATE DIMENSION | 理论正确尺寸



The exact position of the tolerance zone without tolerances is determined, all holes, edges, etc. on a theoretically accurate dimension require their own position tolerance.

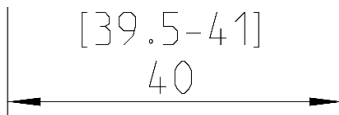
理论正确尺寸是决定公差带的不带公差的确切位置尺寸，所有理论正确尺寸标注的孔、边等，都需要有自己的位置度公差。

2.5 NOMINAL AND CURRENT DIMENSION | 标称尺寸和当前尺寸



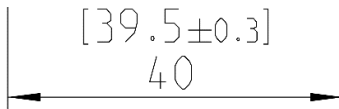
(a)
The nominal dimension remains 40, but 39.6 is the current valid limit dimension in one tolerance side. For new tools the valid dimension is 40 again.

(a)
标称尺寸保持为40，但在公差一侧的当前有效极限尺寸为39.6。
针对新模具，有效尺寸用回40。



(b)
The nominal dimension remains 40, but 39.5 and 41 are the current valid dimensions. For new tools the valid dimension is 40 again.

(b)
标称尺寸仍为40，但39.5和41是当前有效尺寸。对于新模具，有效尺寸仍然为40。



(c)
The nominal dimension remains 40, but 39.5±0.3 is the current valid dimension. For new tools the valid dimension is 40 again.

(c)
标称尺寸保持为40，但当前有效尺寸为39.5±0.3。对于新模具，有效尺寸仍然为40。

2.6 SPECIAL CHARACTERISTICS | 特殊特性



Major Dimension

- for special purposes, where details are written on the document (e.g., Cp instead of CpK values).
- for EGSTON internal equipment requirements which must be checked frequently.

主要尺寸：

- 有特殊用途的尺寸，具体要求在图纸中注明（如：用CP代替CpK数据）。
- 益仕敦内部设备要求必须周期性检查的尺寸。



Record values

Such dimensions require a machine capability index $CmK \geq 1.33$.
This has to be done for the whole production, and the recorded data have to be handed out to EGSTON upon request at any time.

记录数据

此类尺寸要求机器能力指数 $CmK \geq 1.33$ 。
在量产过程中，每一个测量结果都必须做记录，当任何时候益仕敦有要求时，供应商必须提交报告。



CpK ≥ 1.33

Such dimensions require a machine capability index $CmK \geq 1.67$.
For an FMEA the severity index must be between 6 and 8.
The process capability studies must be done for the whole production and must be handed out to EGSTON upon request at any time.

CpK ≥ 1.33

此类尺寸要求机器能力指数 $CmK \geq 1.67$ 。
FMEA中的严重度系数必须是6到8之间。
整个生产中都必须做过程能力研究，当任何时候益仕敦有要求时，供应商必须提交报告。



CpK ≥ 1.67

Such dimensions require a machine capability index $CmK \geq 2$.
For an FMEA the severity index must be 9.
The process capability studies must be done for the whole production and must be handed out to EGSTON upon request at any time.

CpK ≥ 1.67

此类尺寸要求机器能力指数 $CmK \geq 2$ 。
FMEA中的严重度系数必须是9。
整个生产中都必须做过程能力研究，当任何时候益仕敦有要求时，供应商必须提交报告。



100% inspection

Such dimensions require 100 % checking during production. The checks must be done according Poka Yoke system. No wrong part must be forwarded to the next production step.
For an FMEA the severity index must be 10. It is required to have a low action priority.
Each measurement during series production must be recorded and must be handed out to EGSTON upon request at any time.

100% 检测

此类尺寸要求在生产时做100%检查。产品检测必须满足 Poka Yoke 系统要求。不能有坏品流入到下道生产工序。
FMEA中的严重度系数必须是10。优先级要求为较低级别。
在量产过程中，每一个测量结果都必须做记录，当任何时候益仕敦有要求时，供应商必须提交报告。

2.7 GAUGE CHECK | 量具检测



Record values

These dimensions must be checked with a gauge. If already available, the number of the gauge must be mentioned on the document!
Old documents:

Such dimensions require a machine capability index $CmK \geq 1.67$.

For an FMEA the severity index must be between 6 and 8.

The process capability studies must be done for the whole production and must be handed out to EGSTON upon request at any time.

记录数值

这些尺寸必须用量具进行检测。量具的号码须在文件中说明！
旧文件：

此类尺寸要求机器能力指数 $CmK \geq 1.67$ 。

FMEA中的严重度系数必须是6到8之间。

整个生产中都必须做过程能力研究，当任何时候益仕敦有要求时，供应商必须提交报告。



100% inspection

These dimensions must be checked with a gauge. If already available, the number of the gauge must be mentioned on the document!

Such dimensions require 100 % checking during production. The checks must be done according Poka Yoke system. No wrong part must be forwarded to the next production step.

For an FMEA the severity index must be 10. It is required to have a low action priority.

Each measurement during series production must be recorded and must be handed out to EGSTON upon request at any time.

100% 检测

这些尺寸必须用量具进行检测。量具的号码必须在文件中说明！

此类尺寸要求在生产时做100%检查。产品检测必须满足Poka Yoke系统要求。不能有坏品流入到下道生产工序。

FMEA中的严重度系数必须是10。优先级要求为较低级别。

在量产过程中，每一个测量结果都必须做记录，当任何时候益仕敦有要求时，供应商必须提交报告。

2.8 TEST DIMENSION FOR EGSTON-IQC | 益仕敦检测尺寸 益仕敦-IQC



Consecutive number for dimensions, which will be checked in the EGSTON-IQC has a consecutive number which is different from the normal consecutive numbers below.

The incoming quality check (IQC) department of the receiving EGSTON company must check such dimensions according to AQL-spot check plan.

将在EGSTON-

IQC中进行检查的尺寸，需要具有一个连续编号，该编号与下面的正常连续编号不同。

来料检验部门（IQC）必须按照AQL检测计划检测此类尺寸。

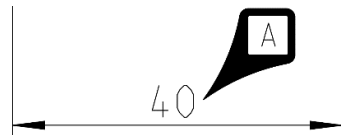
2.9 REVISION MARKER | 版本标识



All changed dimensions are marked with the current drawing version.

所有改动尺寸必须用当前的图纸版本号做标识

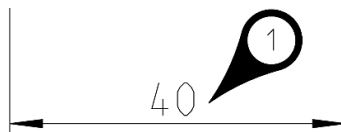
2.10 ADJUSTABLE MEASUREMENT | 可调整的尺寸



Tool changes are expected. The tool maker must ensure a simple tool change (remove material).

可能会改模的尺寸。模具制造商必须保证可以做适当的模具修改（比如在模具上切掉钢材）。

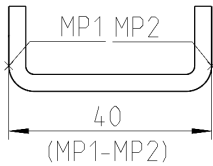
2.11 CONSECUTIVE NUMBER | 连续数字



An identification number for dimensions.

标识尺寸的一组数字。参照第1章。

2.12 MEASURING | 测量

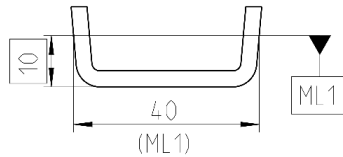


Measuring Points

Define the exact point where to measure a dimension. The MPs to use for a dimension is written below the dimension in parenthesis (read "MP1-MP4, MP7-MP9" as MPs 1, 2, 3, 4, 7, 8, and 9).

测量点

定义测量尺寸的准确测量点。尺寸的测量点用括号标注在尺寸下面（举例：“MP1-MP4, MP7-MP9”指测量点1、2、3、4、7、8和9）。



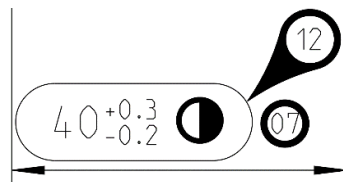
Measuring Layer

Define a layer/plane used for measuring a dimension. The layer (or layers) to use for a dimension is written below the dimension in parenthesis. The position of the layer is specified with a theoretical accurate dimension.

测量面

用于定义测量尺寸的面/层。测量面用括号标注在尺寸下面。测量面的位置用理论尺寸在图面上做明确定义。

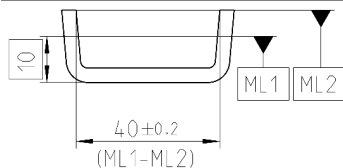
2.13 EXAMPLES | 举例



A special characteristic with tolerance $+0.3$ and -0.2 and a CpK value of ≥ 1.67 (valid for supplier and EGSTON). It has the consecutive number 12 (for all measuring reports). This dimension is also checked by EGSTON IQC as dimension number 07.

一个公差 $+0.3/-$

0.2 ，并且要求CpK值 ≥ 1.67 （对供应商和益仕敦有效）。该尺寸的图纸序号为12（针对全尺寸检测报告）。该尺寸也必须由益仕敦的IQC做检测，IQC检测时用尺寸序号7。



The dimension is not constant due to a draft angle. It must be measured at layer ML1 and ML2 and **both** measurements must be within the specified tolerance.

由于产品上有拔模斜度，尺寸是变化的，该尺寸必须取两个测量面ML1和ML2上做测量，并且两个测量结果都必须满足指定的公差要求。

3 QUALITY REQUIREMENTS | 品质要求

3.1 CONSECUTIVE NUMBERS | 连续编号

All dimensions used in measurement reports must have a "Consecutive number".

Test dimensions for EGSTON-IQC must have a "Test dimension for EGSTON-IQC"-number.

测量报告中使用的所有尺寸都必须具有“连续编号”。

EGSTON-IQC的测试尺寸必须具有“EGSTON-IQC的测试尺寸”编号。

3.2 CAPABILITY STUDY | 能力研究

For all significant characteristics, where a process capability study (CpK value) is required, the QS 9000 PPAP requirements (latest revision) must be followed.

对于所有重要特征，需要进行过程能力研究（CpK值），必须遵循QS 9000 PPAP要求（最新版本）。