

NEW

高精度的显微硬度测试

Micro hardness testing in ultimate precision.



Qness
Hardness testing redefined.

Q10
Q30



请见视频 »
to the Movie »

多种型号

The variants

Q10 M
Q30 M

载物台直径100 mm
Test anvil Ø 100 mm



12" 触摸屏
12" Touch-Screen
Qpix T12

Q10 A
Q30 A

XY-水平载物台
XY-cross slide



软件
Software
Qpix CONTROL

Q10 A+
Q30 A+

摄像头
Sample image camera

XY-水平载物台
XY-cross slide



软件
Software
Qpix CONTROL

测试方法和载荷应用

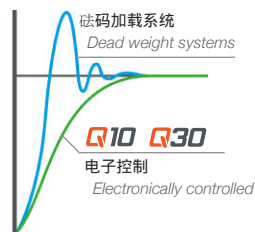
Test methods and load application



测试载荷扩展 / Test load extension (option)

电子控制的传感器加载方式确保了快速精确的硬度测试结果，同时也保证测试方法的快速切换（免维护的）并且自动进行对焦识别

Electronically controlled loads secure a quick and precise hardness testing as well as quick method change (maintenance free) and automatic recognition of the focus layer.



提供测试方法和结果转换

Supported test methods and conversions

Vickers DIN EN ISO 6507, ASTM E-384

HV0.001	HV0.002	HV0.005	HV0.01	HV0.02	HV0.025	HV0.05
HV0.1	HV0.2	HV0.3	HV0.5	HV1	HV2	HV3
HV5	HV10	HV20	HV30			

Knoop DIN EN ISO 4545, ASTM E-384

HK0.01	HK0.02	HK0.025	HK0.05	HK0.1	HK0.2	HK0.3
HK0.5	HK1	HK2				

Brinell DIN EN ISO 6506, ASTM E-10

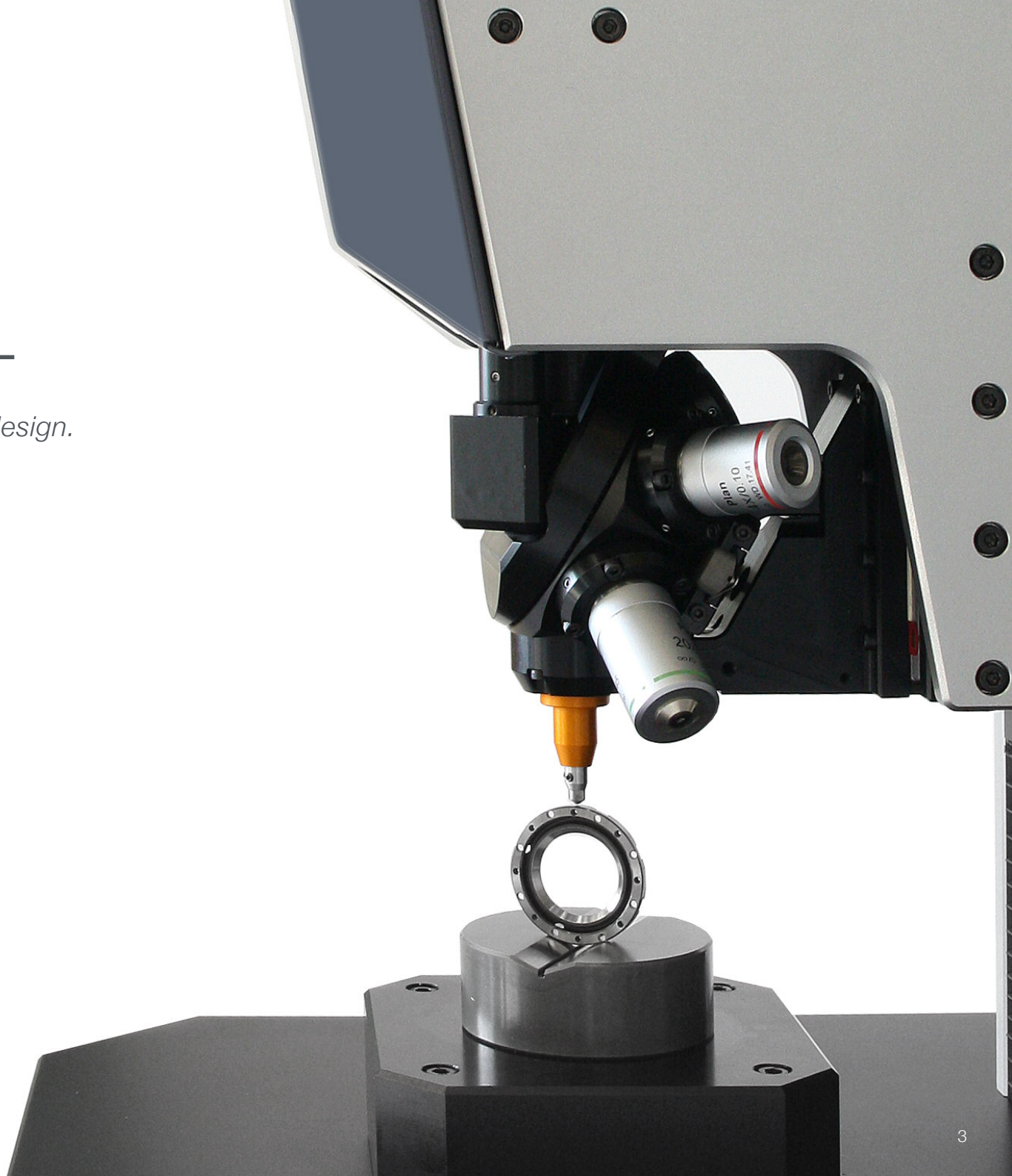
1/1	1/2.5	1/5	1/10	1/30
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集成的测试结果转换 / Integrated conversions

DIN EN ISO 18265	DIN EN ISO 50150	ASTM E140
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现代技术和创新设计

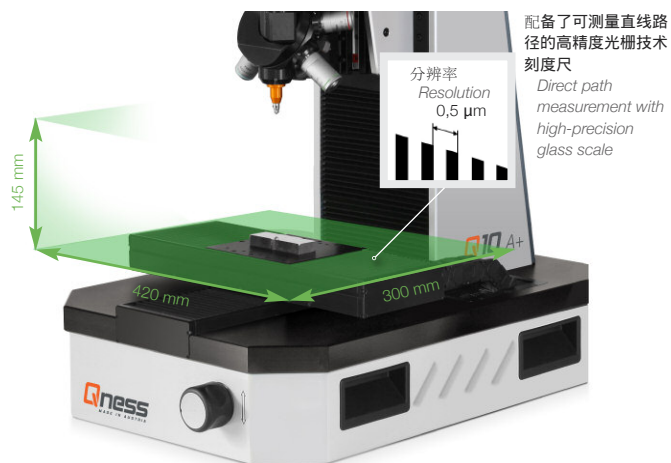
Modern technology and innovative design.



优点和特点

Highlights & Features

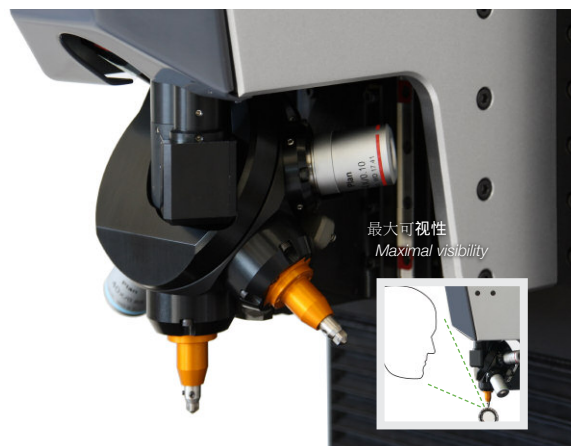
1 定位精确，测试空间较大 Exact positioning and large test room



尖端的阳极氧化铝的构造提供了一个宽大并精心布局的测试空间。我们可以在全自动XY-水平载物台和高精度的光学路径测试系统上配置一个8位样品架。除此之外，客户可以在软件中创建和管理各种测试路径方法。

The sophisticated construction in anodised aluminium offers a big and well-arranged test room. The fully automatic XY-slide with high-precision optic path measurement system can be equipped i.e. with an 8-fold sample holder. Beyond that customer specific magazines can be managed and created in the software.

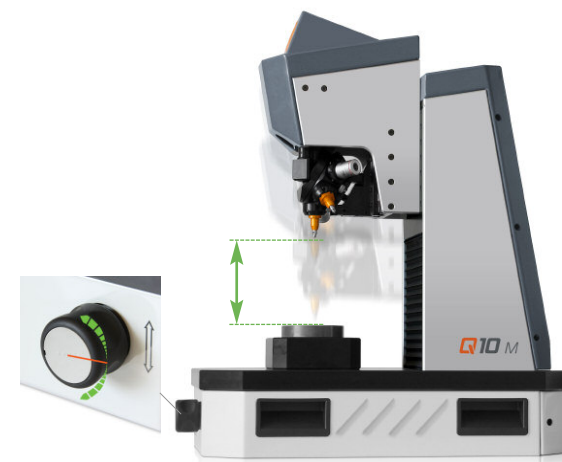
2 6位自动转塔台 6-fold measurement turret



所有型号均标配了6位自动转塔台，因此能适用不同的测试方法。例如，它可以为 Vickers、Knoop、Brinell 配备3种不同倍率的镜头和相应的压头。

The 6-fold measurement turret is standard with all models and offers space for different test methods. For example it can be equipped with 3 different magnification lenses and the corresponding penetrators for Vickers, Knoop or Brinell.

3 动态高度调节功能 Dynamic height adjustment

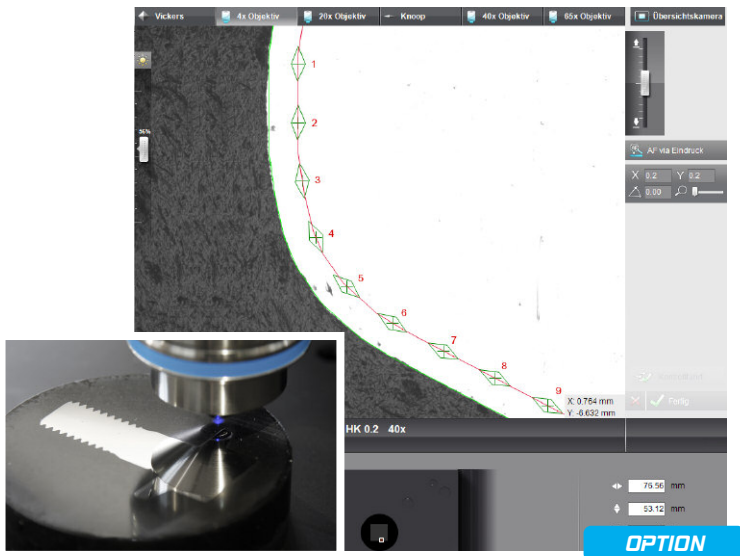


电子移动控制允许鼻锥快速精确且灵敏移动。实现不费力、灵敏且防碰撞的旋转角定位（速度为0.01~20mm/s）。一个附加的电动Z轴可以实现此功能。

The electronic movement control allows a quick, accurate and sensitive movement of the nose cone. Forceless, sharply and collision-proof positioning above the rotation-angle (0.01 up to 20 mm/s). An additional Z-axis makes this helpful function possible.

4 轮廓扫描和边缘识别

Contour scan / Edge recognition



请见视频 »
to the Movie »

通过镜头和内置程序实现轮廓全局或部分轮廓高精度定位。并且可以通过程序设定测试点与轮廓边缘的距离和数量。硬度测试将基于此程序进行全自动测试。

Selectively the total or partial segments of a contour are delineated high-precision by means of the lens and are deposit in the program. After that the test points can be programmed in a certain number or distance corresponding to the edge. Hardness testing will be fully automatic based to this programming.

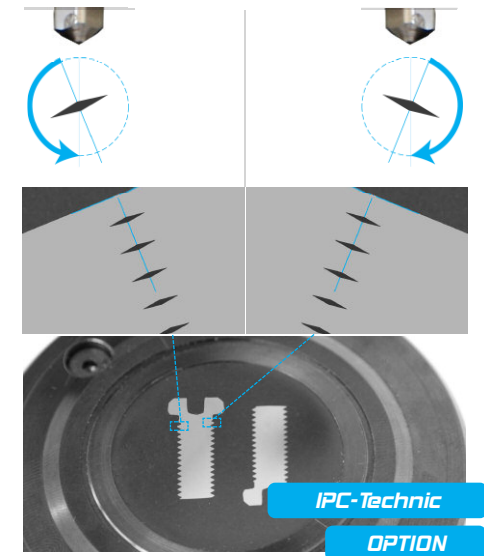
5 IPC工艺/压头可旋转

IPC-technique / Penetrator turnable



IPC-轮廓平行压痕技术
操作者可以调整压头位置对应于不同的样品轮廓边缘。此操作可以全自动或手动方式进行。基于此项全新技术，可轻松对多层混合材料样品进行快速精准地硬度测试。

IPC - Indenter parallel to Contour
The operator can adapt the penetrator to the respective contour. Alternatively manually or fully automatic.
Based on this new development different material layers can be tested reasonable and precise.



采用此技术，第一次在硬度计测试中实现压头能够对样品轮廓边缘按照一定距离进行全自动平行测试。

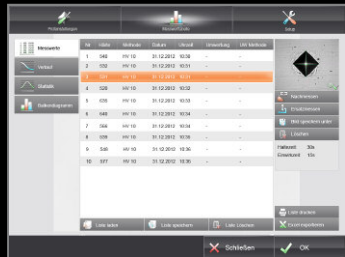
For the first time in hardness testing the penetrator adapts itself fully automatic parallel to the contour during the test cycle.

Qpix T12 12" 触摸屏实现大部分简便操作

Most simple operation on 12" touch-screen



- 连续的软件设计
 - 全自动图像分析
 - 每个镜头均为标准的2x变焦
 - 快速自动对焦
 - 可以手动进行第二次试验
 - 大量的统计功能：条形图、进度图、直方图
 - 以Excel数据格式（CSV）导出测量值序列
 - 为每个压痕提供标准化的详细信息
 - PDF/直接打印协议为A4
 - 提供不同安全权限级别的用户管理
- Continuous software design
 - Fully automatic image analysis
 - 2x zoom as standard for each lens
 - Quick auto-focus
 - Possibility for second test manually
 - Numerous statistic functions: bar graph, progression, histogram
 - Measurement value list to export as "Excel" (CSV)
 - Standardized detail information to each impression
 - A4 protocol as PDF / direct print
 - User management with different security access levels



数据管理以及测试报告创建功能
Data management and test report creation



CHD过程测试
CHD progression



大量统计信息
Numerous statistics



虚拟键盘输入功能
Input by virtual keyboard

Qpix CONTROL 制定新标准

sets new standards.

1. 测试数据的生成

Creation of test data

2. 定义测试流程

Definition of test run

3. 测量数据的管理

Management of measurement values



所有测量得到的数据均可被储存或用于继续处理。包括：储存列表、载入和删除、以Excel格式导出列表和打印列表。而且，这些数据可以以不同的文件格式导出。



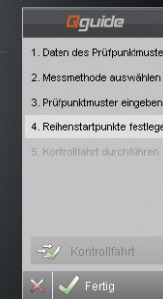
All measurement data can be stored or processed.

Among the functions are: store list, load and delete export list as Excel and print list. Furthermore, the data can be exported in different file formats.

Nr.	Härte	Methode	Objektiv	Datum	Umwert	UW Methode	Fehler	X-Coord	Y-Coord	X-Coord	Y-Coord
1	630	HV 1	40x	20.04.11 11:52:34	---	---	---	0.500	0.000	0.500	0.000
2	674	HV 1	40x	20.04.11 11:52:58	---	---	---	1.000	0.000	1.000	0.000
3	705	HV 1	40x	20.04.11 11:53:23	---	---	---	1.500	0.000	1.500	0.000
4	687	HV 1	40x	20.04.11 11:53:47	---	---	---	2.000	0.000	2.000	0.000
5	692	HV 1	40x	20.04.11 11:54:11	---	---	---	2.500	0.000	2.500	0.000
6	696	HV 1	40x	20.04.11 12:53:01	---	---	---	3.000	0.000	3.000	0.000

最大化可重复性。所有测试得到的数据均被储存在相应的任一测试点。要查看该测试点或第二次测试该点很容易。

Maximal repeatability. All test specific data are stored corresponding to any single test point. Test points can be checked or tested a second time easily



让Qguide中的选项变为灰色，这样就可以通过测试程序了。

The optional to be faded in Qguide escorts you through the test program.

全自动的系列点测量以及过程测量
Fully automatic row- and progression measurement

连续且直观测试流程
Continuous and intuitive measurement run

Qpix CONTROL 所有测试点一览无遗

Pros at a glance

以不同的视场查看工作的测试位置
View work pieces and test positions with different fields of view

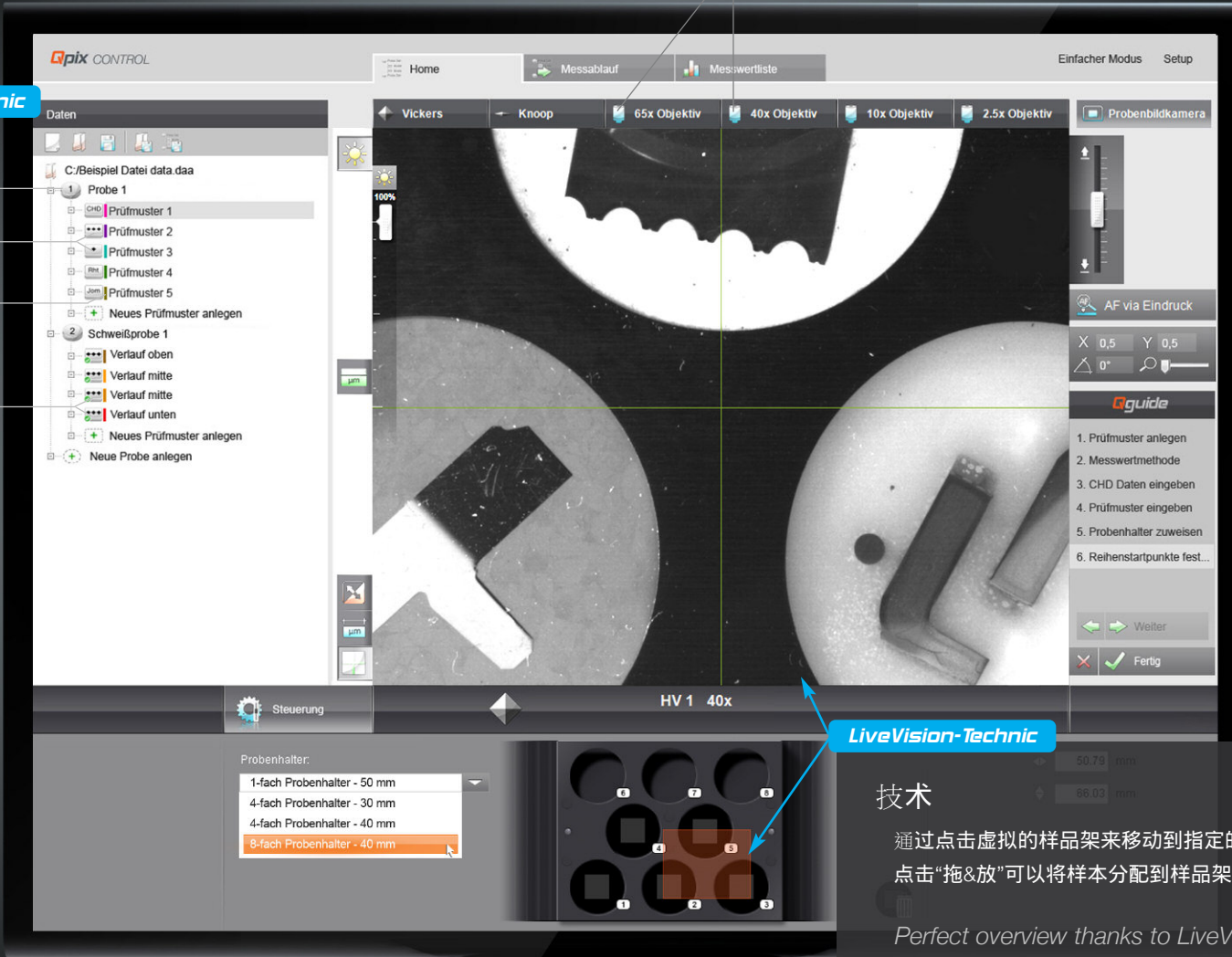
InfoGraphic-Technic

样品位置序列号
Sample place No.

测量模式
Measurement mode

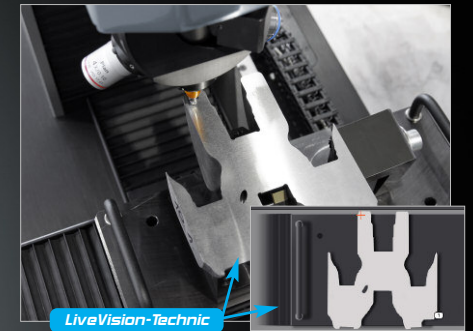
不同颜色用于不同统计信息
Colour allocation for statistics

已测量
Measured



由客户指定样品架

Customer specific sample holder



采用模板技术，可以对重复性的样品按照比例定义模板。操作者只需点击一次模板就可以将整个样品的所有测试点复制过来，进行快速精确地定位测试

Periodic samples can be defined graphically to scale. Quick and precise positioning by one mouse - click will enthuse the operator.

LiveVision-Technic

技术

通过点击虚拟的样品架来移动到指定的位置。除此之外的视场是真实的区域尺寸。点击“拖&放”可以将样本分配到样品架上。

Perfect overview thanks to LiveVision technique

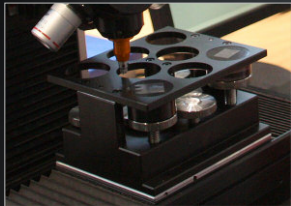
Move to requested position via click to the visualised sample holder. Besides that the field of view is visualised true to scale. The samples are allocated to the sample holder via "drag & drop"

CHD-自动测试流程

Run of CHD-measurement

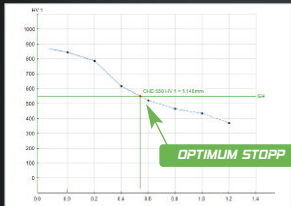
快速

More accurate hardness measurements rapidly



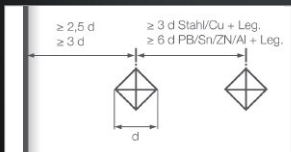
全自动硬度测试：可同时创建几个进程和样本，且完全无需照看（例如一次测试过程中在八个不同的样本上进行60个进程）

Fully automatic hardness testing: several progressions and samples are created and completed "unmanned" handled (i.e. 60 progressions on 8 different samples in one test run)



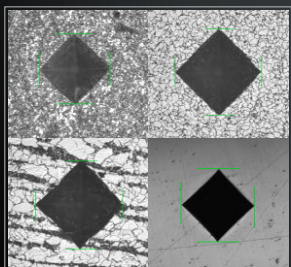
通过设置可调整的停止条件，我们可以中断测试进程。此功能的初衷可以是为了在CHD测试达到硬化层极限后节省时间。

The test progression is stopped via adjustable stop-condition. This function causes i.e. time saving after reaching the limit hardness with CHD-measurement.



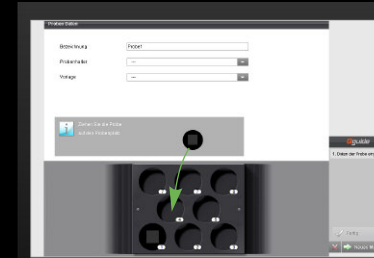
自动地以最小的间隔生成测试点。因此得出的结果更精确。

The distances of test points are generated automatically to the minimum norm distance. So the test results will be executed more accurately.



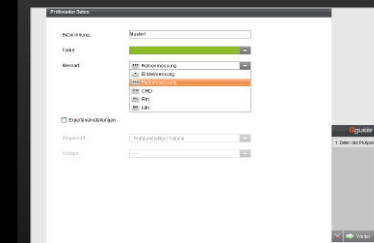
通过采用可调节的表面压痕识别方法，可以有效降低在“非最佳”表面进行硬度测试时对样本制备的要求。因此可在表面质量不好的情况下（例如有蚀刻、磨损.....）进行自动压痕识别。

By means of the adjustable Surface-Impression-Recognition the effort of sample preparation for hardness testing on "not optimal" surfaces is reduced. Hence automatic impression recognition is also possible on critical surfaces (etching, grinding...)



1 点击“拖&放”键创立测试样本并把测试样本分配到样品架上

Creation of samples and allocation of sample holder by "drag & drop"



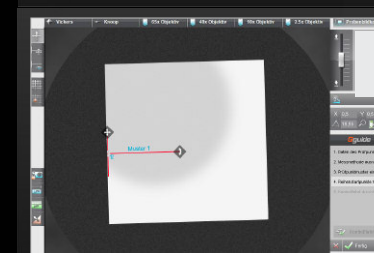
2 选择所要求的测试模板

Chosing of requested measurement mode



3 新建测试模板

Creation of test pattern



4 定位测试样本并开始测试

Positioning of test samples and starting of test run



5 布局良好的测试结果演示

Well-arranged demonstration of test results.

精取于实践

Appliance from practice.

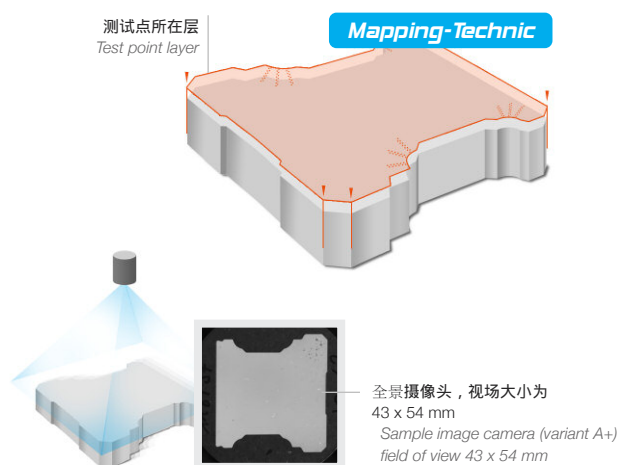
1 动态高度调节功能 Dynamic height adjustment



基于此独特设计的高度动态调整六位转塔台，可以同时多个不同高度样品进行一次测量。

Based on the unique design of the high-dynamic measurement turret unlike high samples can be positioned in the test area.

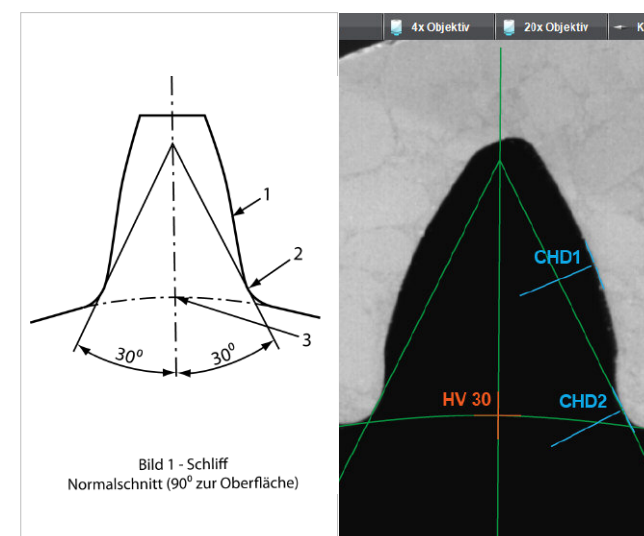
2 模板功能 Pattern function



- 反复试验/重复组件的理想选择
- 在“测试点层”上直接对齐工件的参考线和基准
- 即使没有“修复停止”功能和样品架也可以工作
- 可加入图像样本以获得清晰的报告。

- Ideal for repeated tests / components
- Alignment of "test point layers" directly on the work piece with reference lines and bench marks
- Even without "fix stop" and without sample holder
- The sample image can be used for a clear report

3 齿状侧翼测量 Tooth flank testing

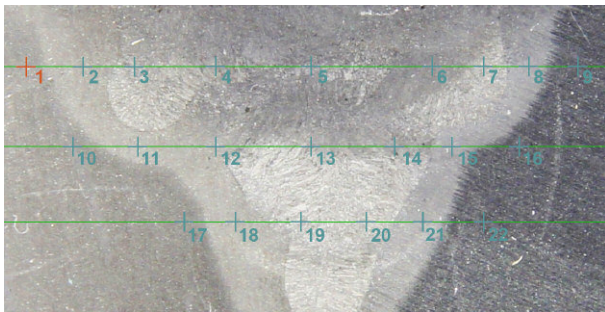


通过内置的预定义的齿状模板，可以极大得节约对于复杂耗时的测试点的设置时间，特别像齿状侧翼测量点的设置。在Q-30A+中，所有标准预设如HV30和HV0,5能在一个设备中实现。相应的报告也会存储起来。也可以根据客户需求进行修订。

The time-consuming creation of test points especially with tooth flank testing is minimized by means of pre-defined test pattern. With the Q30A+ the whole norm presetting HV30 and HV0,5 can be shown with one device. Certainly a corresponding report is stored. This can be emended customer specific.

4 单个测试点信息识别

Identification of single test points



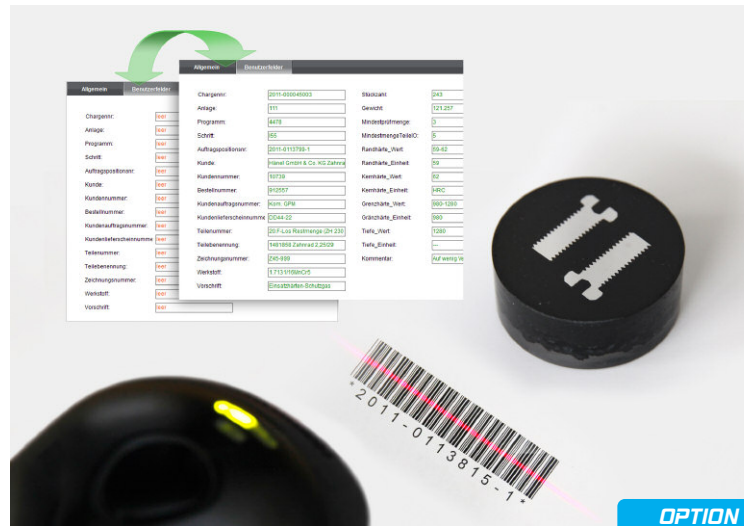
Nr.	Härte	Methode	X-Koord	Y-Koord	Bezeichnung
1	---	HV 1	-28.857	7.196	Grundwerkstoff
2	---	HV 1	-26.780	7.419	Wärmeeinflusszone
3	---	HV 1	-26.558	6.232	Schweißnaht
4	---	HV 1	-26.261	5.193	Schweißnaht
5	---	HV 1	-24.851	7.642	Schweißnaht
6	---	HV 1	-23.813	7.419	Schweißnaht
7	---	HV 1	-22.923	7.419	Schweißnaht

所有测试点信息可以单独或者根据客户需求识别标明。测试点识别信息会可以在测试值序列表和全局图中方便查询。此功能对后续分析处理非常重要。

All test points can be identified individually or customer specific. The identification is shown in the measurement value list and in the test protocol. An important function for later analysis.

5 数据转换/任务管理

Data exchange / Order management



独立序列管理系统能将测试的所有测试信息以及测试方法以串行列表的方式发送给测试器。测试结束后，返回测试结果。另外，所有测试数据可以被写入一个条码扫描器。简单而有效的设备。

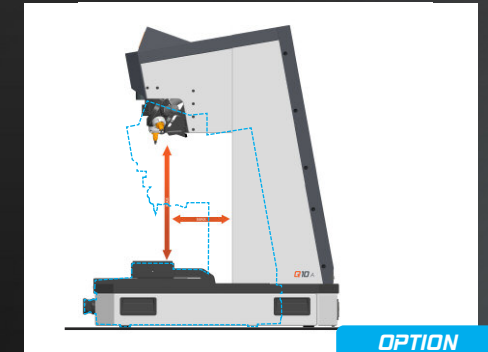
Independent order management systems can send all information from serial numbers of samples until defined test method to the tester. After the test the measurement results will be returned. Alternatively all test data can be read-in with a barcode scanner. Simple and very efficient in appliance.

扩展的可测试区域

由客户指定测试高度和喉深

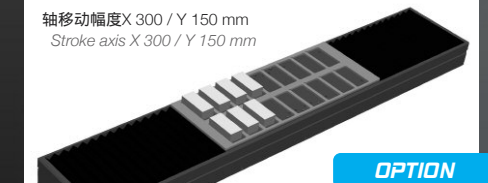
Extended test area

Customer-specific test height and throat depth



OPTION

轴移动幅度X 300 / Y 150 mm
Stroke axis X 300 / Y 150 mm



OPTION

宽大的高精度自动XY-水平载物台

Big high-precision XY-test slide with glas scales



SPECIFIC

一个门户解决方案为我们提供大范围的移动路径并且为显微/低载荷硬度测试提供了新的可能性。

A portal solution offers superior large traverse paths and opens new possibilities in micro-/low-load-hardness testing.

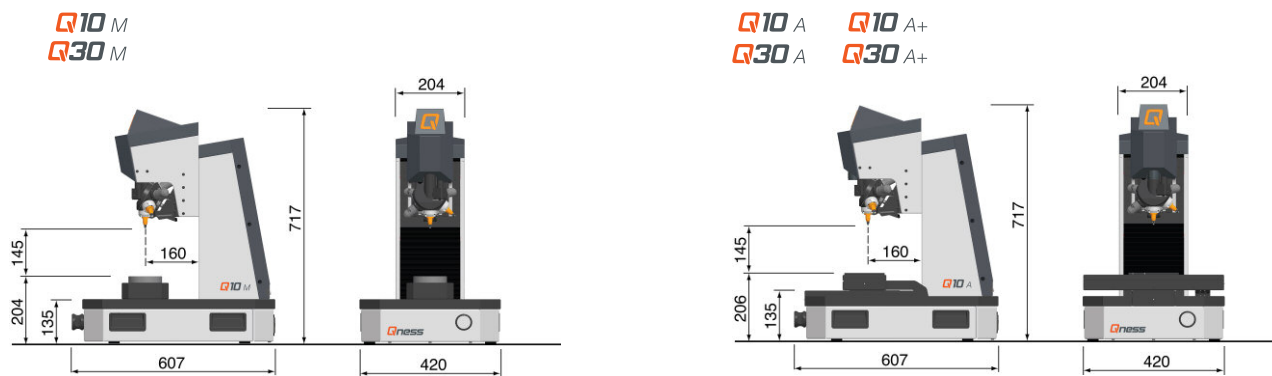
技术数据

Technical data

Qness
Hardness testing redefined.

Qness GmbH
Bluntaustrasse 52
5440 Golling, Austria

Phone +43 6244 34393
office@qness.at
www.qness.at



	Q10 M	Q10 A	Q10 A+	NEW Q30 M	NEW Q30 A	NEW Q30 A+
测试载荷范围 / Test load range	50 g - 10 kg (0,49 - 98,1 N)			100 g - 30 kg (0,98 - 294,3 N)		
测试载荷扩展 / with test load extension	1 g - 10 kg (0,0098 - 98,1 N)			1 g - 30 kg (0,0098 - 294,3 N)		
转塔台 / Turret	6位 · 自动 / 6-fold, motor-driven					
软件 / Software	Qpix T12	Qpix CONTROL		Qpix T12	Qpix CONTROL	
摄像头 / Sample image camera	-	-	是 / Yes	-	-	是 / Yes
载物台/水平载物台 / Test anvil/Cross slide	Ø 100 mm	电机驱动 / motoric		Ø 100 mm	电机驱动 / motoric	
在X/Y/Z轴上的测试遍历路径 / Traverse path X/Y/Z	Z 145 mm	X 150 / Y 150 / Z 145 mm		Z 145 mm	X 150 / Y 150 / Z 145 mm	
数据接口 / Data interface	3x USB, 1x RS232C, 1x Ethernet	3x USB, 1x Ethernet		3x USB, 1x RS232C, 1x Ethernet	3x USB, 1x Ethernet	
仪器基本重量 / Weight of basic machine	52 kg	58 kg		52 kg	58 kg	
可测试工件的最大重量 / Max. work piece weight	50 kg					
电源 / Power supply	230~1/N/PE, 110~1/N/PE					
最大功耗 / Max. power consumption	~ 360 W					
附件和选项 / Accessories and options						
标准附件 / General	镜头 (10x, 20x, 40x, 65x, 100x), 测试压头 (Vickers, Knoop, Brinell) Lenses (2.5x, 4x, 10x, 20x, 40x, 65x, 100x), Penetrators (Vickers, Knoop, Brinell)					
样品架 / Sample holder	一位样品架, 8位样品架 (直径30/40mm) / 1-fold, 4-fold (Ø 30 / 40 / 50 mm), 8-fold (Ø 30 / 40 mm)					
水平载物台 / Cross anvil	手动 * / manual *	X 300 x Y 150 mm		手动 * / manual *	X 300 x Y 150 mm	

* 通过模拟或者数字安装可达到遍历路径X方向25mm x Y方向25mm / * Dimensions 150 x 150mm Traverse path X 25 x Y 25 via analogue or digital installation micrometer