

infinite 2.0

柔性关节臂测量系统

Portable Arm Coordinate Measuring System



<http://www.hexagonmetrology.com.cn/>

Date: 2008-12-09
Offer No.: SH20081209026

客户信息 Customer:

公司名称 (Company) 上海祥鼎机电设备有限公司
姓名 (Name) 秦高峰
地址 (Address) 上海市浦东新区浙桥路 289 号 B 座 1305 室
Tel 13321848062
Fax

很高兴接到您的咨询, 现就 Hexagon 集团的 Romer-Infinite 2.0- 1.2 m 测量机提出方案。

In response to your request for consultation, we are pleased to submit our proposal covering the Hexagon Group CimCore-Infinite 2.0 2.4 m Coordinate Measuring Machine (CMM).

海克斯康测量技术(青岛)有限公司(原 Brown & Sharpe 前哨), 作为中国最大的世界级坐标测量机供应商, 是目前中国最大的技术最先进、实力最强的三坐标测量机合资制造企业。面向中国用户, 海克斯康可提供来自美国 Brown & Sharpe, 德国 LEITZ, 意大利 DEA 公司和中国青岛制造的测量机产品、技术服务、应用支持和一体化交钥匙项目, 并配置国际最先进的数控系统和各种功能完善的测量软件, 以满足广大制造业对质量保证和生产过程的要求。海克斯康拥有一支训练有素的测量机技术服务和应用支持队伍, 可为客户提供全方位的测量机技术支持和服务, 对于客户的任何技术问题, 承诺 12 小时内予以积极响应, 48 小时之内到用户现场解决相应问题。

HexMet Qingdao is the only world class and most powerful CMM JV manufacturer in China. And can supply Chinese customers with the most advanced CMM products, technical support and turnkey solution from Brown & Sharpe USA, DEA Italy, LEITZ Germany and Brown & Sharpe Qianshao China. HexMet Qingdao has a professional skilled service & application team, and is capable of providing all service to the customers, and promises for any technical problem of customers, we will response within 12 hours and arrives at customer site within 48 hours.

为便于您的查询, 本方案主要包括以下部分:

This quotation contains the following sections to allow the reader easy access to information:

I. 报价综述	Quotation Summary
II. 技术描述	Description
III. 选项	Options

希望能够为您的测量工作提供合适的解决方案, 如需其他信息, 请与我们联系。

We look forward to satisfying your measurement needs. If you require any additional information, please do not hesitate to contact with our representatives.

联系人 (Name): 欧国新
职务 (Title): PCMM 产品销售经理
联系电话 (Phone): 13381993902, 21-6353 1000

I. 报价综述 Quotation Summary

A. 主机 Machine

- (1) Infinite 2.0 1.2 m 柔性关节臂测量机
Infinite 2.0 1.2 m Portable Arm Coordinate Measuring Machine
- (1) 一体化充电式锂电池
Integrated rechargeable Li-ION battery
- (1) WinRDS™ 软件
WinRDS™ software
- (1) Wi-Fi 8.02.11b 无线通讯接口
Wi-Fi 8.02.11 wireless interface
- (1) 一体化数字相机
Integrated digital camera
- (1) 磁力表座
Magnetic Base
- (1) 美国国家标准局认证的长度标准尺
NIST – traceable certified length standard
- (1) 便携式仪器箱
Carrying case
- (1) 用户和系统说明书
Documentation

B. 测头系统 Probe System

- (1) 15 mm 不锈钢球硬测头
15 mm Stainless Steel Ball Probe
- (1) 6mm 红宝石硬测头
6mm Ruby Tip Probe
- (1) 3mm 红宝石硬测头
3mm Ruby Tip Probe

C. 软件系统 Software System

- (1) PCDMIS PRO 通用测量软件
PCDMIS PRO Measuring Software
- (1) PCDMIS PRO 软件参考手册
PCDMIS PRO Reference Manual

D. 计算机系统 Computer System

- (1) 笔记本计算机系统: 奔腾® 双核 1.8 GHz/1 GB 内存/60 GB 硬盘/ 128M 独立显卡/14.1 吋液晶显示屏 /DVD-RM/无线网卡/

Laptop System: Pentium® D 1.8 GHz/ 1 G B RAM/ 60GB Hard Disk/128M graphic card/14.1 TFT/DVD-RM/Wireless Card

(1) HP 彩色喷墨打印机

HP Color DeskJet printer

E. 用户现场的测量机安装 Installation at Customer Site

测量机的安装包括了关节臂机的安装、调试以及安装现场的最终验收。最终的验收将根据 ROMER 公司的推荐标准执行。

System installation includes start-up, adjust and metrology test. The metrology test will be performed according the USA Romer suggested standard regulation.

F. 培训 Training

在用户现场进行为期 4 个工作日的机器操作和软件操作培训。

The machine and software operation & application training will take 4 working days on site.

G. 保修期 Warranty

测量机在买方调试验收合格后, 免费保修 12 个月。

12 Months guarantee free of charge after Final Acceptance.

H. 销售条款 Sales Terms

报价有效期	60 天	Quotation Validity	60 days
发货期	合同生效后 7 周	Delivery	7 Weeks, A. R. O
付款条件	<ul style="list-style-type: none"> - 预付款: 按合同订货金额的 50%, 在合同生效后 10 天内 T/T 到卖方帐户 - 45%货款: 在发货前电汇付出, 卖方收款后发货 - 5%余款: 在测量机买方最终验收后 30 天内付清。 	Payment Terms	<ul style="list-style-type: none"> - 50% Prepay should be paid to the Seller's A/C within 10 days after the Contract comes into effect - 45% Payment should be paid just before or upon delivery. Shipment will be made after the Payment received - 5% Remaining should be paid within 30 days of the Final Acceptance.
原产地	ROMER 公司 美国,	Manufacturer and country of Origin	ROMER Company USA

以上系统用户现场价: CIP CUSTOMER PRICE: RMB 373,800(含税价)

Total price for the above items

环境条件要求 Environment specifications

工作环境温度	: 0 °C 至 46 °C
环境湿度	: 95% (非压缩)
保护	: 满足 IP64 标准
Operating Range	: 0 °C to 46 °C
Humidity	: 95% Non-Condensing
Protection	: Provides protection to IP 64 standards
允许角加速度	: > 105 rad/s ² . 93/68/EEC
Permissible angular acceleration	: More than 105 rad/s ² . 93/68/EEC
震动 Vibration	: (55 to 2000 Hz) < 100 m/s ² (IEC 68-2-6)
碰撞 Shock and impact	: (6ms) < 1000m/s ² (IEC 68-2-27)
供电系统 Electrical requirements	: 100 – 240 VAC, 50/60 Hz

B. 测头系统 Probe System

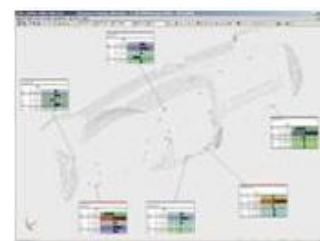
- Φ15mm, 50mm 不锈钢球测头
- Φ15mm, 50mm Stainless Steel Ball Probe
- Φ6mm, 50mm 红宝石测头
- Φ6mm, 50mm Ruby Tip Probe
- Φ3mm, 红宝石测头
- Φ3mm, Ruby Tip Prob

C. PC-DMIS PRO (Manual) 测量软件 Measuring & Inspection Software

PC-DMIS PRO (Manual)通用测量软件, 能够解决最复杂的计量检测任务。该软件主要针对车间基层检测人员设计, 能够使其在最短的时间内掌握该软件的使用。

PC-DMIS PRO (Manual) measurement and inspection software can help you deal with your most difficult inspection jobs. The software is design special for the shop floor personal with the minimum training time.

这一具有强大检测功能的工业级计量软件提供了用户简易操作界面, 帮助用户完成零件检测程序编程, 测量程序初始化设定以及执行检测程序。运用先进的图形化报告功能, 实现用户特殊的检测数据分析需求。PC-DMIS PRO (Manual)软件的优势之一为其直观化的自学习功能, 在不需要 CAD 模型的情况下, 实现用户零件检测编程。PC-DMIS PRO (Manual)软件独特的零件特征识别功能, 针对不同测量点的探测, 自动识别测量元素的类型(线、圆、圆柱, 等等)。在完成工件特征检测之后, PC-DMIS PRO (Manual)能够自动定义被测元素类型, 提供所需信息和屏幕分析图形, 这种动态图形通过被测几何元素之间拟合, 实现被测工件的元素构造。



This powerful industrial metrology software features an easy-to-use operator interface that guides your through part programming, setup and inspection routine execution. Advanced graphics reporting functions let your configure inspection results to meet your specific data analysis needs. One of the features of PC-DMIS PRO (Manual) is its intuitive self teach capability, that allow programming a part on the CMM without the help of a CAD file. The unique capability of PC-DMIS PRO (Manual) is its ability to recognize the feature type (line, circle, cylinder, etc.) from the points taken to measure it. After the measurement of a feature is completed, PC DMIS PRO (Manual) automatically defines the type of the element you measure, give you the essential information, and draws the feature of the part on the screen. And this dynamic drawing is useful for the operator to realize the feature construction function through the integration of the defined element with the other features.

PC-DMIS PRO (Manual) 提供了如下先进的性能 Main Features:

- 具有中文版面和在线中文帮助
- 完善、可定制的直观化图形用户界面(GUI)为不同软件应用水平的操作者提供了便捷的执行功能强大的计量软件的方法
- 点击鼠标, 立即执行下述操作: 完善的测头管理、零件坐标系管理和工件找正功能、检测报告、支持预览、特征构造、特征测量
- 几何元素的评价, 包括: 直线度、平面度、圆度、圆柱度、圆锥度以及圆环和球面等。相对基准几何要素真实位置度的评价: 平行度、垂直度、角度、对称度、位置度、同轴度、同心度、轴向跳动、径向跳动、轴向全跳动、径向全跳动
- 可实现工件几何特征量的直接测量, 并能够完成几何关系的计算、构造和形位公差的评价与分析
- 互动式超级报告功能, 增加了报告格式和数据处理上的灵活性
- PTB 完全认证
- 完全支持所有通用标准, 例如, DMIS 标准和 IGES 标准
- 符合 ISO 标准的公差评判能力
- Chinese language and Chinese on line help available.
- A fully configurable, intuitive graphic user interface (GUI) provides users of all skill levels with easy access to powerful measurement routines.
- One click start routines for: probe qualification and management, part alignments, reports, preview assistant, feature construction and feature measurement
- Form evaluations of geometrical elements: Straightness, Flatness, Roundness, Cylinder form, Conical form, Torus form, and Spherical form. True position of an element with reference to the datum(s): Parallelism, Squareness, Angularity, Symmetry, Position, Coaxiality, Concentricity, Axial runout, Radial runout, Total axial runout, Total radial runout
- Geometric features measurement, geometric relations calculation & construction, form and position tolerance evaluation.
- Interactive Hyper Reporting allows a new flexibility in report formatting and data handling
- Full PTB certification

Support for the most recent versions of all popular standards such as DMIS and IGES.

D. 计算机系统 Computer System**软件专用计算机系统**

- 奔腾®双核 1.8 GHz, 1G MB 内存
- 60GB 硬盘
- 128MB 独立显卡
- DVD-RM 光驱
- 14.1 吋液晶显示屏
- 光电鼠标
- 无线网卡

Computer System

- Pentium® D 1.8 GHz/ 1 GB Ram
- 60GB Hard Disk
- 128MB Video Card
- DVD-RM Drive
- 14.1 TFT
- Mouse
- Wireless Card

E. 用户现场的测量机安装 Installation at Customer Site

海克斯康青岛公司负责测量机的安装、调试以及测量机安装现场的最终验收。最终的验收将根据海克斯康集团公司的推荐标准执行。所有的包装箱需要在海克斯康工程师监督和认可的情况下才能开启。根据需要, 用户需提供内部运送和拆装支持。

System installation includes start-up and performance test and will be carried out by the service engineer of Hexagon Qingdao. The metrology test will be performed according the Hexagon Metrology suggested standard regulation. All boxes shall be opened only under the supervision of a Hexagon Qingdao engineer. During the installation, support for connections, internal transportation and unpacking must be provided.

进行测量机的安装, 需在满足供货方所要求环境条件符合标准规定的情况下才能进行。

Concerned environment and facilities for the CMM installation must meet the requirement of the specifications before the installation.

F. 培训 Training

该课程旨在对测量机系统操作人员提供系统使用和坐标计量技术基本培训。参加该课程人员一般要求具备计量基础知识、计算机应用知识及英语基础人员。

The course is designed to train operators on the use of the system and on fundamentals of Coordinate Metrology. People attending this class are expected to have some familiarity with metrology knowledge, PC application skill and English.

时间 Duration : 4 个工作日 4 Working Days

地点 Place : 用户现场 Customer Sit.

参加人数 Attendees : 2 人 2 Persons

III. 选项 Options

A. 软件系统选项 Software System Option:

PowerINSPECT Lite 测量软件 Measuring & Inspection Software(Part No. CIM-31596-4230)

PowerINSPECT Lite 测量软件, 具备强大的测量功能, 能够完成各种测量和检测任务, 并适用于逆向工程的应用, 为操作人员高效完成其测量任务提供了便利。

PowerINSPECT Lite measuring and inspection software is a very powerful software on inspection and reverse engineering that can help you deal with different measuring and inspection jobs with high efficiency.

PowerINSPECT Lite 采用友好的 Windows 界面, 通过比较测量的方法, 实现工件比较, 对每个点可实现利用色差对不符合项进行标注, 从而可以马上判断出不合格项。

PowerINSPECT Lite works can comparing a part highlighting discrepancies using a color-coded graphics for immediate validation of each data point.

可以评价位置度、垂直度、倾斜度、同心度、同轴度等 ISO 标准的形位公差。并且简洁的界面可以指导操作者顺利完成测量。

GD&T wizard includes true position, perpendicularity, angularity, parallelism, concentricity, coaxiality. The user interface easily guides the operator through the process.

通过使用功能强大的报告功能, 能够自动产生和定制 Excel 格式的报告。

Through utilizes powerful reporting capabilities with automatic generation of customized Microsoft Excel report.

升级到 PC-DMIS CAD (Manual) 测量软件 Measurement Software



功能强大的计量与检测软件 PC-DMIS, 为计量需要提供了完美的解决方案, 使您的测量过程始终以高效率和高精度进行。这一完善的测量软件, 通过其简洁用户界面, 引导使用者进行零件编程、程序初始设定和执行工件检测。同时, 利用其一体化的图形功能, 能够将检测数据生成可视化的图形报告。

Powerful PC-DMIS measurement and inspection software is the ideal solution for any metrology requirement. With PC-DMIS software, you can take your measurement with efficiency and accuracy. This comprehensive software features an easy-to-use operator interface that guides you through part programming, setup and inspection routine execution. Plus, with its integrated graphics function, you can create reports that put a fresh perspective on dimensional data.

PC-DMIS CAD (Manual) 提供了如下先进的性能 Main Features:

- 具有中文版面和在线中文帮助
- 完善、可定制的直观化图形用户界面(GUI)为不同软件应用水平的操作者提供了便捷的执行功能强大的计量软件的方法
- 点击鼠标, 立即执行下述操作: 完善的测头管理、零件坐标系管理和工件找正功能、检测报告、支持预览、特征构造、特征测量
- 几何元素的评价, 包括: 直线度、平面度、圆度、圆柱度、圆锥度以及圆环和球面等。相对基准几何要素真实位置度的评价: 平行度、垂直度、角度、对称度、位置度、同轴度、同心度、轴向跳动、径向跳动、轴向全跳动、径向全跳动
- 可实现工件几何特征量的直接测量, 并能够完成几何关系的计算、构造和形位公差的评价与分析
- 互动式超级报告功能, 增加了报告格式和数据处理上的灵活性
- PTB 完全认证
- 完全支持所有通用标准, 例如, DMIS 标准和 IGES 标准
- 符合 ISO 标准的公差评判能力
- 可支持 I++
- Chinese language and Chinese on line help available.

- A fully configurable, intuitive graphic user interface (GUI) provides users of all skill levels with easy access to powerful measurement routines.
 - One click start routines for: probe qualification and management, part alignments, reports, preview assistant, feature construction and feature measurement
 - Form evaluations of geometrical elements: Straightness, Flatness, Roundness, Cylinder form, Conical form, Torus form, and Spherical form. True position of an element with reference to the datum(s): Parallelism, Squareness, Angularity, Symmetry, Position, Coaxiality, Concentricity, Axial runout, Radial runout, Total axial runout, Total radial runout
 - Geometric features measurement, geometric relations calculation & construction, form and position tolerance evaluation.
 - Interactive Hyper Reporting allows a new flexibility in report formatting and data handling.
 - Full PTB certification.
 - Support for the most recent versions of all popular standards such as DMIS and IGES.
 - ISO tolerancing capability.
- support I++.

更换为 PowerINSPECT 测量软件 Measuring & Inspection Softwar

PowerINSPECT 测量软件, 具备强大的测量功能, 能够完成各种测量和检测任务, 并适用于逆向工程的应用, 为操作人员高效完成其测量任务提供了便利。

PowerINSPECT measuring and inspection software is a very powerful software on inspection and reverse engineering that can help you deal with different measuring and inspection jobs with high efficiency.

PowerINSPECT 采用友好的 Windows 界面, 通过比较测量的方法, 实现工件与其 CAD 模型比较, 对每个点可实现利用色差对不符合项进行标注, 从而可以马上判断出不合格项。

PowerINSPECT works can comparing a part or tool against a 3D CAD model and highlighting discrepancies using a color-coded graphics for immediate validation of each data point.

同时, 该软件还可以在不具备 CAD 文件的情况下, 实现工件的检测和执行逆向工程的相关应用。

Powerful inspection tools an also inspect parts or tools or conduct reverse-engineering without a CAD file.

先进的逆向工程应用允许通过截面产生三维曲线, 使得工件的几何形状能够以 IGES 格式产生和输出。

Reverse engineering allows creation of section cuts to generate 3D curves. Geometric shapes can be created and exported in IGES format.

通过使用功能强大的报告功能, 能够自动产生和定制 Excel 格式的报告。

Through utilizes powerful reporting capabilities with automatic generation of customized Microsoft Excel report.

B . 主机系统选项 Machine System Option:

原装固定高度重型三角测量车/ Brunson Stand Model 230-F24, F-26 or F-48(需选择)

固定高度为 609mm/914mm/1219mm 的可移动测量车; 可用于现场无合适放置设备时用, 增加了测量机的现场便携性。(可直接安装到 INFINITE 2.0 型测量机上)

Fixed heights of 609 mm (24 in.), 914 mm (36 in.) or 1219 mm (48 in.). Specify Point or Pad feet. (direct mount of INFINITE 2.0 arm,).

Part #: 32190 / 32191 / 32192



原装小型可调高度重型三角测量车/ Brunson Stand Model 231- small

高度调整范围为 711mm~1016mm 的可移动测量车; 可用于现场无合适放置设备时用, 增加了测量机的现场便携性, 重量 83kg。(可直接安装到 INFINITE 2.0 型测量机上, STINNGER 型需要转接座#31660-1)



Brunson Stand Model 231- small, adjust from 711 mm to 1066 mm (28 in. to 42 in.), weighs 83 kg (183 lbs.). Specify Point or Pad feet. (direct mount of INFINITE 2.0 arm, other arms require mounting adapter # 31660-1).

Part #: 30050

原装大型可调高度重型三角测量车/ Brunson Stand Model 230- Large

高度调整范围为 1092mm~1701mm 的可移动测量车; 可用于现场无合适放置设备时用, 增加了测量机的现场便携性, 重量 118kg。(可直接安装到 INFINITE 2.0 型测量机上, STINGER 型需要转接座#31660-1)

Brunson Stand Model 230- Large, adjust from 1092 mm to 1701 mm (43 in. to 67 in.), weighs 118 kg (260 lbs.). Specify Point or Pad feet. (direct mount of INFINITE 2.0 arm, other arms require mounting adapter # 31660-1).



Part #: 30051

原装碳纤维可调高度便携三角测量车(需选择)

高级碳纤维, 高度调整范围为 711mm~1320mm/743 mm~1403mm 的可折叠测量车; 可用于现场无合适放置设备时用, 增加了测量机的现场便携性, 重量 18kg。不含包装箱。

Brunson Stand, Carbon Graphite Portable Model - height adjusts from 711 mm - 1320mm, includes shipping container. Specify Point or Pad feet. Stand weighs 18 kg. No travel case.



Part #: 30826/32986

碳纤维三角测量车便携支架箱 Travel Case for Graphite portable stands

适用于原装碳纤维可调高度便携三角测量车 (30826/32986)

Best fit for Graphite portable stands (30826/32986)

Part #: 32989

(国产) 可调高度重型三角测量车/ Brunson Stand

可调高度为 600mm~1000mm 的可移动测量车; 可用于现场无合适放置设备时用, 增加了测量机的现场便携性。

Brunson Stand 600mm~1000mm。Specify Point or Pad feet.

Part #: CNCIM-32196



蛙跳基座/ Leap Frog Kit

蛙跳功能, 用于扩展测量臂测量范围, 可测量大小超过测量机量程范围的大型物体; 例如, 整车、大型模具等等。

Set of four magnets used for leap frogging.



Part #: A2304-4

● **标准球/ Calibration Probe Sphere**

校验用标准球。用于测头的重新标定、校准。

Calibration Probe Sphere with Magnetic Mount - 25 mm (1").

Part #: 32099-02



C. 测针系统选项 Probe System Option:

探针

说明: 53906、54280 开头的测针为钢制主体, 接口为标准 TESA 公插头; 用于 6 轴机器和 7 轴的第二测头位置 (非中心位置):

Part#	Description	Price
53906-01	15 mm Steel Ball Probe - TKJ male connector (working length 50 mm)	
53906-02	6 mm Ruby Ball Probe - TKJ male connector (working length 50 mm)	
53906-03	3 mm Ruby Ball Probe - TKJ male connector (working length 50 mm)	
53906-04	Point Probe - TKJ male connector (working length 50 mm)	
53906-05	6 mm Ruby Ball Probe - TKJ male connector (working length 85 mm)	
53906-06	3 mm Ruby Ball Probe - TKJ male connector (working length 85 mm)	
53906-07	Point Probe - TKJ male connector (working length 85 mm)	
53906-08	6 mm Ruby Ball Probe - TKJ male connector (working length 110 mm)	
53906-09	3 mm Ruby Ball Probe - TKJ male connector (working length 110 mm)	
53906-10	Point Probe - TKJ male connector (working length 110 mm)	
53906-11	6 mm Ruby Ball Probe - TKJ male connector (working length 130 mm)	
53906-12	3 mm Ruby Ball Probe - TKJ male connector (working length 130 mm)	
53906-13	Point Probe - TKJ male connector (working length 130 mm)	
53906-14	6 mm Ruby Ball Probe - TKJ male connector (working length 150 mm)	
53906-15	3 mm Ruby Ball Probe - TKJ male connector (working length 150 mm)	
53906-16	Point Probe - TKJ male connector (working length 150 mm)	
54280-01	45° Point Tip Probe - TKJ male connector (working length 149 mm with 38 mm offset)	

54280-02	45° 3 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 38 mm offset)	
54280-03	45° 4 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 38 mm offset)	
54280-04	45° 6 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 38 mm offset)	
54280-05	60° Point Tip Probe - TKJ male connector (working length 149 mm with 57 mm offset)	
54280-06	60° 3 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 57 mm offset)	
54280-07	60° 4 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 57 mm offset)	
54280-08	60° 6 mm Ruby Tip Probe - TKJ male connector (working length 149 mm with 57 mm offset)	
54280-09	90° Point Tip Probe - TKJ male connector (working length 173 mm with 43 mm offset)	
54280-10	90° 3 mm Ruby Tip Probe - TKJ male connector (working length 173 mm with 43 mm offset)	
54280-11	90° 4 mm Ruby Tip Probe - TKJ male connector (working length 173 mm with 43 mm offset)	
54280-12	90° 6 mm Ruby Tip Probe - TKJ male connector (working length 173 mm with 43 mm offset)	

D. 管件测量系统包选项 Tube Inspection System Kit

专业管件测量软件 – Supravisation (必选) (Part #:11148-INT)

或者 DOCS (必选) (Part #: 13281-2.3)

Supravisation™是主要用于各种材质的管件的检测和逆向工程的专业软件。适用于塑料、橡胶、金属等各种材质的管件。该系统采用红外线非接触测量工作原理，可以检测管件的长度、弯曲角度、回弹、送料总长度、YBC (LRA) 等参数，同时可以对管件数据进行多种方式的数据拟合修正。

Supravisation™ is the premier software package for inspecting or reverse engineering plastic, rubber or metallic tubing using a noncontact infrared probe on a Romer portable coordinate measuring machine. The software will determine tube lengths, bend angles, tube spring back and corrected bend data.

作为管件制造业的专业软件，还具有以下特点：

- 带有声音反馈的一体化校验和在线诊断功能，对操作者可以进行在线提示；
- 简洁、清晰的命令模式便于操作者学习掌握；
- 远程“测头-鼠标”一体化控制功能；
- 连续扫描模式：提高计算管件方向的准确度；
- 终端扫频测量模式：从不同方向对管件末端进行多次扫频测量，进行平均计算；
- 变直径管件测量功能；
- 可与弯管机直接连接，进行数据交换，控制弯管机的生产过程保证生产的质量；
- integrated calibration and diagnostics with audible feedback to assist the operator
- clear, concise commands that make for a quick learning curve
- allows selection of features and operations by remote control using hand movement probe commands. No keyboard operation is required, allowing easy, one-person operation.

- Straight Scan Mode allowing the operator to take more than two measurements per straight to calculate a better average for the straight vector.
- End Multiple Sweep Mode allows the end of the tube to be swept from both directions several times to collect more data (up to 30 points) for averaging.
- Variable Diameter Measuring (also referred to as double precision) allows the measurement of tube with different diameter along the straight sections of the tube.
- It can work with tube bender after certain software processing. And input the measuring data to the tube bender and correct its working process.

专业非接触管件测头 Non-Contact Infrared Tubing Probe (至少选择一个测头一个与其对应的校准器)

带 TKJ 接口的测头用于 INFINITE 2.0 机器, 不带 TKJ 接口的测头用于 INFINITE 1.0 和 Stinger II i 机器

Part Number	描述	
		
34268	6 mm TKJ Non-Contact Tubing Probe for INFINITE 2.0 Arms ³⁶	
34269	25 mm TKJ Non-Contact Tubing Probe for INFINITE 2.0 Arms ³⁶	
34270	75 mm TKJ Non-Contact Tubing Probe for INFINITE 2.0 Arms ³⁶	
34271	100 mm TKJ Non-Contact Tubing Probe for INFINITE 2.0 Arms ³⁶	
34272	150 mm TKJ Non-Contact Tubing Probe for INFINITE 2.0 150 mm Non-Contact Tubing Probe - will not work with DOCS version 2.2 or earlier Arms ³⁶	
		
30237-1	certified length standard for 6 mm tube probes.	
30031-1	certified length standard for 25\75\100\150 mm tube probes.	

管件测量用夹持器 (选项) / Tube Clam Option

管件测量专用夹持器; 最大可夹持管件直径 50mm;

Tube Clamp - up to 50 mm (2 in.) diameter tube

Part#: 20539 -4



激光系统 Laser Scanner System

ScanWorks V4i 三维激光扫描系统/3D Laser Scanning System (Part# : PER926-0146-4122-16)



扫描可以快速而精确地产生关于一个物体的数字化表示。所产生的文件是代表了物体表面和特性的点云，从而可完成逆向工程的应用、检测、CAD 模型比较、造型以及更多的应用。ScanWorks 激光扫描系统，在合适价格的基础上，聚焦于精度、速度和灵活性，从而使得用户能够从最初的设计一直到最终检测都能够从中受益。

Scanning creates an organized digital representation of an object quickly and accurately. The file created is a cloud of points that represent the surfaces and characteristics of the object and is used for reverse engineering, inspection, CAD comparison, prototyping, or other applications. ScanWorks™ solutions focus on accuracy, speed, and portability at an affordable price. Benefits are realized from the initial design through final inspection.

ScanWorks 三维激光扫描系统采用非接触的激光扫描技术，通过线扫描的方式提高了数据采集率。每秒钟采集数据点可高达 23000 点，在不损失精度的情况下，ScanWorks 简化了复杂的测量任务。

ScanWorks™ uses solid state non-contact laser-based technology to optically generate a line of points that accelerate data acquisition rates far beyond traditional contact or single-point acquisition methods. Acquiring more than 23,000 points/second, ScanWorks™ simplifies complex projects without compromising accuracy.

ScanWorks V4i 激光扫描系统包括:

- V4i 增强性激光测头
- V4i 控制器
- 连接电缆
- 配磁力表座的校验球
- ScanWorks 版权和软件光盘(包含技术文档)
- ScanWorks V4i 便携式仪器箱

The ScanWorks V4i system includes:

- V4i Enhanced Contour Probe
- V4i Controller
- Cable
- Calibration Sphere W/ Mag Base
- ScanWorks License and Software CD(with Concerned Technical Documentation)
- ScanWorks V4i Carry Case

ScanWorks 激光测头的主要性能指标:

- 每条激光线高达 768 点
- 每秒钟发出 30 条激光线
- 逃逸距离 104 mm
- 精度 24 μ m, 2 sigma
- 外型尺寸: 105 x 52 x 90 mm
- 坚固耐用并不包含移动部件

Main Features of ScanWorks Laser Probe

- Up to 768 points per laser line
- Up to 30 lines per second
- 104 mm standoff
- Accuracy 24 μm , 2 sigma
- Dimension: 105 x 52 x 90 mm
- Robust and reliable with no moving parts inside

ScanWorks™ 激光扫描系统软件 ScanWorks laser scanning system software

ScanWorks 软件是使得数据信息完成各种测量、逆向工程、CAD 比较或者其他各种应用的驱动器。数据点云能够同许多第三方软件产品兼容, 以完成相应的操作。



ScanWorks Software is the engine that drives the efficient utilization of digital information for measurement, reverse engineering, CAD comparison, or other applications. The cloud of points created is compatible with 3rd party software products where inspection, reverse engineering, or other applications are performed.

ScanWorks™ 激光扫描系统软件, 主要功能包括:

- 数据采集
- 校准
- 特征检测
- 数据同步
- 定制检测算法

ScanWorks laser scanning system software, main features includes:

- Data collection
- Calibration
- Feature Inspection
- Data synchronization
- Custom inspection algorithms

用于处理卡及扫描测头的控制,扫描参数的设定,扫描数据的显示、编辑和处理,扫描系统的诊断,激光测头的校准。