

2019 | CATALOGUE

COORD3.IT



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COORD3 is a world leading supplier of coordinate measuring machines. It was established in 1973 and today it boasts a portfolio of over 3000 units successfully installed throughout the world.

In addition to offering advanced machine technologies, COORD3 places primary emphasis on customer service as one of its key strengths. Our product portfolio offers state-of-the-art measuring platforms, ranging from the budget priced workbench CMM for inspecting small parts to some of the largest gantry CMMs ever built.

We offer solutions for the aerospace industry, defence and homeland security and heavy industry.





▶ CMM | BRIDGE

THE “BRIDGE” CONFIGURATION IS THE IDEAL SOLUTION FOR SMALL-SIZED MEASURING TASKS, AS IT ENSURES BOTH AN EXCELLENT QUALITY-PRICE RATIO AND THE INDISPUTABLE ADVANTAGE OF HAVING A WORKBENCH INTEGRATED IN THE MACHINE STRUCTURE.

Bridge CMMs are equipped with three moving elements which are shifted isostatically on air bearings along three guides perpendicular to each other. The measuring sensor is fixed to the ram, which slides vertically with respect to the head. This moves horizontally with respect to the crossbeam element, which in turn is held by two struts installed at its ends, and slides horizontally with respect to the cast iron base plate

BRIDGE | BENCHMARK

BUDGET PRICED YET HIGH-PERFORMANCE CMM FOR HIGH-PRECISION INSPECTION OF SMALL - AND MEDIUM - SIZED PARTS

The open structure of the **BENCHMARK** solution offers an outstanding ergonomic design. Thanks to its compact size, it is perfect for quality control rooms or production environments.

The fully equipped **BENCHMARK** solution with air bearings ensures an accuracy of 2.5 microns. The standard version is equipped with a Renishaw touch-probe and can be supplied with a motorized probe head for fully automated inspection applications.

The **BENCHMARK** solution is available in manual or CNC configuration. Manual units can be later upgraded on site to the full CNC version, which offers the opportunity to consider a two-phase investment.

The **BENCHMARK** CMM is particularly suitable for small workshops.



1. UNIQUE HALF-GANTRY DESIGN FOR GREATER RIGIDITY AND LOWER INERTIAL MASS
2. TABLE WITH WIDE ACCESS AREA FOR EASY LOADING OPERATIONS
3. OPTIMIZED DIMENSIONS

FEATURES AND BENEFITS

- | Ultra-rigid platform in advanced alloy
- | Rapid thermal diffusion through advanced alloy CMM frame when temperatures change
- | FEA design provides optimum moment of inertia and stiffness, allowing high accelerations
- | One-piece granite base plate with M8 threaded table inserts with wide grid pattern
- | Rigid air bearings
- | Pneumatic Z-axis counterbalance
- | 0.1-micron resolution measuring scales with dynamic signal processing
- | Fully digital motion control with probe path blending for optimized CMM performance
- | Zero hysteresis friction drives to all axes
- | Passive vibration damping system to isolate external vibrations
- | Free access to the CMM measuring area
- | Maximum positioning speed: 500 mm/sec
- | Maximum acceleration: 1500 mm/sec²

ENVIRONMENT

- | Nominal temperature: 20 °C
- | Metrological temperature range: 18 - 22 °C (Extended range: 16 - 26 °C)
- | Temperature gradient: 0.5 °C/hour - 2 °C/day (Extended range: 5 °C/day)
- | Operating temperature range: 15 - 35 °C
- | Relative humidity: 40 - 80% (non-condensing)
- | Acceptable vibrations: 30 mm/sec² 1-10 Hz | 15mm/sec² 10-20 Hz | 50 mm/sec² 20-100 Hz

SUPPLIES

- | Minimum air supply: 5 bar (72 PSI)
- | Air consumption: 90 NL/min (3 cfm)
- | Power supply voltage: 230 V 50 Hz or 110 V 60 Hz
- | Maximum power consumption: 10 A, 1200 W

PERFORMANCE DATA

All COORD3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard



OPTIONS

- | Optional CMM touch station for enhanced ergonomics
- | Dynamic wireless thermal compensation of machine and part
- | Pneumatic vibration isolation system
- | Air dryer
- | Modular part fixture kits
- | CMM modular enclosure
- | Manual Benchmark CNC upgrade kit

MODELS AND SIZES

COORD3 BENCHMARK CMMs are available with the following measuring strokes (X | Y | Z mm)
| 6.5.4

BRIDGE | ARES

HIGH-PERFORMANCE DIMENSIONAL INSPECTION FOR A WIDE RANGE OF METROLOGY APPLICATIONS.

ARES CMMs have a lower overall height compared to most CMM solutions available on the market. They may also be provided with a low profile support stand to reduce the overall height by an additional 100 mm. This particular features makes ARES especially suitable for inspection laboratories with low ceilings.

ARES CMMs are available in manual or CNC configuration; manual units may be optionally upgraded to a full CNC version at a later date.

Two performance levels are available:

ARES: for standard applications

ARES NT: for higher performance requirements.

ARES CMMs are available with bridge widths of 500 mm and 700 mm, and are perfectly suitable for workshops.

The **ARES NT** model has a silicon carbide Z-axis column that increases the overall stiffness of the measuring platform.



1. ZERO-HYSTERESIS FRICTION DRIVES ON ALL AXES

2. TABLE WITH WIDE ACCESS AREA FOR EASY LOADING OPERATIONS

3. RIGID, AIR-SUPPORTED STRUT WITH GUIDE PROTECTED BY BELLOWS

FEATURES AND BENEFITS

- | Ultra-rigid alloy CMM frame provides maximum stiffness for scanning applications
- | Rapid thermal diffusion structure when environment conditions change
- | FEA-designed bridge beam extrusion to optimize the moment of inertia and ensure minimum deflection when operating at high accelerations
- | M8 threaded table fitted in a wide grid pattern
- | Rigid air bearings for wide bearing spread ratios
- | Pneumatic Z-axis counterbalance
- | Free-floating, 0.1-micron resolution measuring scales with incorporated dynamic signal processing
- | Fully digital motion control with probe path blending for optimized performance
- | Zero hysteresis friction drives on all axes
- | Passive vibration damping system to isolate external vibrations
- | Free access to the CMM measuring area from all sides
- | Maximum positioning speed: 517 mm/sec
- | Maximum acceleration: 1730 mm/sec²

ARES NT

- | Silicon carbide Z-axis column for greater rigidity
- | Optional Renishaw TONiC 0.1-micron resolution measuring scales
- | Dynamic wireless thermal compensation system including part temperature sensor

ENVIRONMENT

- | Nominal temperature: 20 °C
- | Metrological temperature range: 18 - 22 °C (Extended range: 16 - 26 °C)
- | Temperature gradient: 0.5 °C/hour - 2 °C/day (Extended range: 5 °C/day)
- | Operating temperature range: 15 - 35 °C
- | Relative humidity: 40 - 80% (non-condensing)
- | Acceptable vibrations: 30 mm/sec² 1-10 Hz | 15mm/sec² 10-20 Hz | 50 mm/sec² 20-100 Hz



SUPPLIES

- | Minimum air supply: 5 bar
- | Air consumption: 100 NI/min
- | Power supply voltage: 230 V 50 Hz or 110 V 60 Hz (+/- 2% single-phase)
- | Maximum power consumption: 10A 1200W (1600 W in the largest models)

PERFORMANCE DATA

All Coord3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Laser scanning sensor
- | Dynamic wireless thermal compensation of the machine and its components
- | Pneumatic vibration isolation system
- | Modular part fixing kits

MODELS AND SIZES

COORD3 ARES CMMs are available with the following measuring strokes (X | Y | Z mm)

7.5.5

7.7.5 | 10.7.5 | 12.7.5

7.7.7 | 10.7.7 | 12.7.7

BRIDGE | UNIVERSAL

THE NEW GENERATION OF CMMs DESIGNED BY COORD3 BUILDS UPON 40 YEARS OF EXPERIENCE

The **UNIVERSAL** series represents the ultimate generation of CMMs. It is perfectly suitable both for traditional point-to-point measurements and for more sophisticated contact scanning and laser scanning cycles. Thanks to its outstanding structural rigidity, the **UNIVERSAL** range is an ideal platform for 5-axis scanning systems and gear measurement applications.

The technical features are specifically designed to reduce the number of parts, streamline construction and minimize maintenance times and costs.

The COORD3 **UNIVERSAL** range offers the first CMM on the market equipped with wireless thermal compensation system. This fully automatic system dynamically compensates for changes in CMM operating environment in a temperature range from 16°C to 26°C. In addition, the use of high-resolution (0.1 µm), free-floating optical linear scales eliminates any distortion due to deformations of the main structure.



1. OPTIMIZED POSITIONING OF INCREMENTAL OPTICAL TRANSDUCERS

2. TOOTHED DRIVE BELTS TO ALL AXES TO PROVIDE VIBRATION FREE MOTION

3. MONOLITHIC GRANITE BASE PLATE WITH ISOSTATIC SUPPORT AND INTEGRATED GUIDE-WAYS TO ENSURE MAXIMUM RIGIDITY

FEATURES AND BENEFITS

- | Ultra rigid alloy CMM platform provides maximum stiffness for scanning applications
- | Structure highly responsive to any ambient temperature change
- | FEA designed bridge beam extrusion provides optimum moment of inertia for minimum deflection operating at high accelerations
- | Monolithic granite base plate with integral Y dovetail guide-way
- | M8 threaded table inserts in generous grid pattern
- | Sliding system on air bearings with ultra-rigid isostatic support on all measuring axes
- | Pneumatic Z-axis counterbalance
- | High-resolution optical linear scales (0.1 micron) mounted in carriers with dynamic signal processing
- | Full digital motion control with probe path blending for optimized CMM performance
- | Zero hysteresis toothed belt drives to all axes
- | Passive vibration damping system to isolate external vibrations
- | Easy access to the measuring area
- | Maximum positioning Speed 866mm/sec
- | Maximum acceleration 1500mm/sec²

ENVIRONMENT

- | Nominal temperature: 20°C
- | Metrological temperature range: 18 - 22°C (Extended range: 16 - 26°C)
- | Maximum temperature gradients allowed: 0.5°C/hours - 2°C/24 hours (extended range 5°C/24 hours)
- | Operating temperature range: 15 - 35°C
- | Relative humidity: 40 - 80% (non-condensing)
- | Acceptable Vibrations: 30 mm/sec² 1-10Hz | 15 mm/sec² 10-20Hz | 50 mm/sec² 20-100Hz

SUPPLIES

- | Minimum air supply: 5 Bar -72PSI
- | Air consumption: 100Nl/min
- | Power supply voltage: 230v 50Hz or 110v 60Hz
- | Maximum power consumption: 10A 1200W

NT SERIES

- | Silicon carbide Z-axis column enhancing further CMM stiffness
- | 0.1 micron resolution free floating measuring scales
- | Dynamic wireless thermal compensation system including part temperature sensor



PERFORMANCE DATA

Each COORD3 CMM is factory-tested according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Automatic multi-probe thermal compensation
- | Active safety system with volumetric scanners
- | Pneumatic Vibration Isolation System
- | Air Dryer
- | Modular Parts Fixturing Kits
- | CMM Modular Enclosure
- | Modular protection box

MODELS AND SIZES

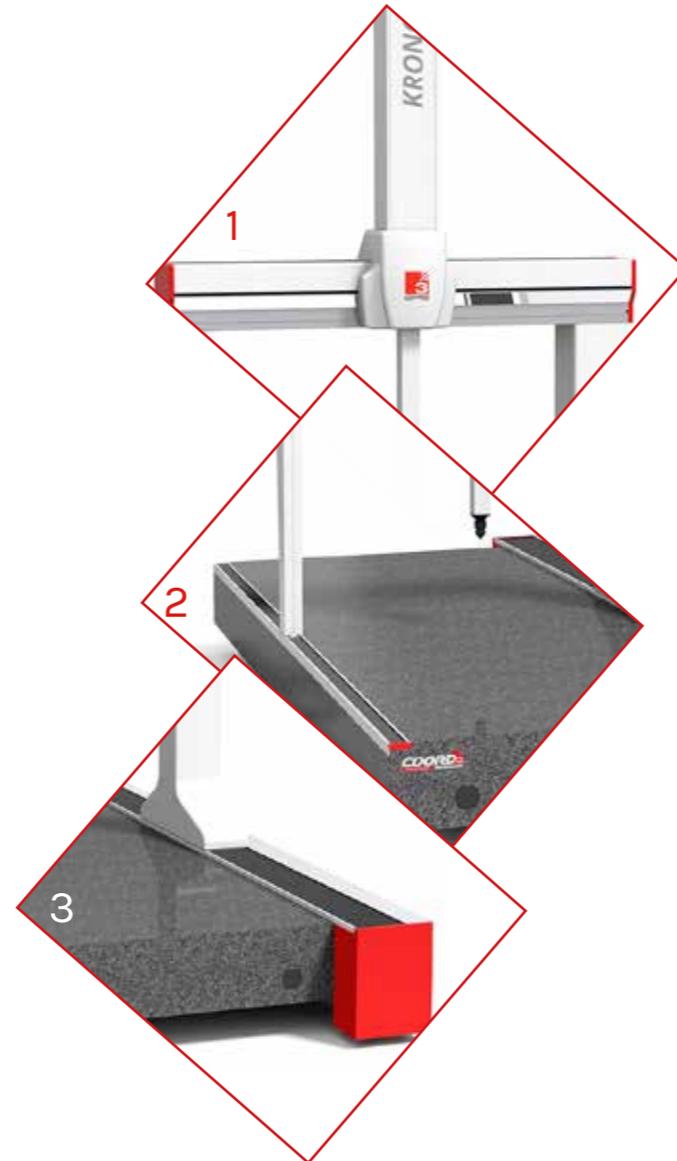
COORD3 UNIVERSAL CMMs are available with the following measuring strokes (Y | Z mm)
7.7 | 9.8 | 10.8 | 10.10 | 12.10 | 15.10 | 15.13

BRIDGE | KRONOS

BRIDGE CMMs FOR MEASURING LARGE MECHANICAL PARTS WITHOUT THE NEED FOR SPECIALLY CONSTRUCTED FOUNDATIONS.

Its robust construction and the protection system of covers and bellows, allows the **KRONOS** series to operate in several production environments, ranging from metrology rooms to manufacturing areas.

This CMM is equipped with a portable lever unit for manual control of motorised motions (Arkey). The **KRONOS** is also available in the NT version, which features an innovative silicon carbide ram for enhanced metrological performances.



1. GUIDE-WAYS PROTECTED BY BELLOWS ON ALL AXES
2. LARGE MEASURING VOLUMES WITH WIDE FRONT AND SIDE ACCESS FOR LOADING OPERATIONS
3. RACK AND PINION DRIVES TO OPTIMISE GANTRY HANDLING OPERATIONS EVEN WITH LONG STROKES

FEATURES AND BENEFITS

- | Moving alloy bridge frame on granite table machine base with isostatic supporting system.
- | Z ram made of micro-machined alloy extrusion or Silicon Carbide (NT).
- | Mixed rack and pinion drives with zero-hysteresis friction drive for smooth and repeatable operations
- | Measuring system with high-resolution linear transducers (0.1 μm)
- | Multi-sensor temperature compensation system complete with part temperature probe.

ENVIRONMENT

Temperature range for metrological specification:

T1:

- | Ambient temperature: 18 \div 22 $^{\circ}\text{C}$
- | Maximum hourly gradient: 1.0 $^{\circ}\text{C}/\text{h}$
- | Maximum daily gradient: 2.0 $^{\circ}\text{C}/24\text{h}$
- | Maximum volume gradient: 0.5 $^{\circ}\text{C}/\text{m}$

T2:

- | Ambient temperature: 16 \div 26 $^{\circ}\text{C}$
- | Maximum hourly gradient: 1.0 $^{\circ}\text{C}/\text{h}$
- | Maximum daily gradient: 5.0 $^{\circ}\text{C}/24\text{h}$
- | Maximum volume gradient: 1.0 $^{\circ}\text{C}/\text{m}$
- | Operating temperature: 15 \div 35 $^{\circ}\text{C}$
- | Operating relative humidity: 40 \div 80% (non-condensing)
- | Allowed vibrations: (acceleration between peaks)
 - 30mm/sec² from 1 to 10 Hz
 - 15 mm/sec² from 10 to 20 Hz
 - 50 mm/sec² from 20 to 100 Hz

SUPPLIES

- | Minimum air supply: 6 Bar (79PSI)
- | Air consumption: 160Nl/min
- | Power supply voltage: 230 V \pm 10% | 50 Hz \pm 2% single-phase
- | Maximum power consumption: 10A 1600W

PROBES AND MEASURING HEADS

- | Manual probe heads: MIH, MH20, MH20i
- | Motorised indexable probe heads: PH10T, PH10M, PH10MQ
- | Point to point trigger probes: TP2, TP20, TP200
- | Analogue contact probes: Analogue scanning contact probe SP25
- | Laser probes: Metris LC/XC series (qualification sphere included)
- | Stylus and probe changers: fully automatic changing stations



PERFORMANCE DATA

All Coord3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Passive vibration isolation system
- | Active vibration isolation system (AVM)
- | Multi-wire cables
- | Pallet loading/unloading system, manual or automatic
- | PC and printer
- | Training c/o Coord3 Centres or resellers
- | Installation by Coord3 personnel or resellers

MODELS AND SIZES

COORD3 KRONOS CMMs are available with the following measuring strokes (Y | Z mm)
| 13.10 | 15.13 | 20.15



► CMM | GANTRY

GANTRY CMMS ARE EQUIPPED WITH THREE MOVING ELEMENTS WHICH ARE SHIFTED ON AIR BEARINGS ALONG THREE GUIDES PERPENDICULAR TO EACH OTHER. THE SENSOR IS FIXED TO THE RAM, WHICH SLIDES VERTICALLY WITH RESPECT TO THE HEAD. THIS MOVES HORIZONTALLY WITH RESPECT TO THE CROSSBEAM, WHICH IN TURN SLIDES HORIZONTALLY WITH RESPECT TO THE MACHINE BASE PLATE. THE CROSSBEAM IS MOTORISED BY A RACK AND PINION DRIVE SYSTEM ALONG TWO GUIDE-WAYS (BEAMS) LOCATED OVER THE MACHINE BASE PLATE. THESE GUIDES ARE SUPPORTED BY A COLUMN STRUCTURE, WHICH THANKS TO A CROSSBOW SYSTEM COMPENSATES FOR ANY LENGTHWISE ELONGATION.

In addition to minimizing errors of inertia and distortions in shape, the column architecture ensures excellent metrological performances even in case of large measuring volumes, while offering full access to the work area for programming, loading and unloading operations.

CMM GANTRY | MCT NT

THE NEW GANTRY RANGE WITH STATE-OF-THE-ART TECHNOLOGIES

The **MCT NT** series is characterised by an innovative mechanical design, which ensures long-term metrological accuracy while reducing periodic calibration costs.

MCT NT is also available in the **NT LIGHT** configuration, which features a Z ram in light aluminium alloy and a “**Single Read**” system on the X-axis.



FEATURES AND BENEFITS

- | **Y main carriage in advanced alloy:** ensures high rigidity combined with low weight to reduce inertia effects
- | **Z ram in silicon carbide:** the use of this material ensures outstanding performance levels in terms of both rigidity and thermal stability
- | **Automatic, multi-sensor system** for compensating errors due to the thermal elongation of structural elements.
- | **“Dual Read” system** on both X beams to ensure excellent metrological performance levels up to cross sections of 2500 x 1800 mm
- | **Machine beams are free to expand** (no constraints) on their main axis (machine X axis)
- | **Optical scales free to expand lengthwise.** Resolution: 0.1 microns.
- | **It may be equipped with a full fairing and bellows system** on the main mobile structure (X and Y axes)

ENVIRONMENT

Temperature range for metrological specification:

- | Ambient temperature: 18 ÷ 22 °C
- | Maximum hourly gradient: 1.0 °C/h
- | Maximum daily gradient: 2.0 °C/24h
- | Maximum volume gradient: 1.0 °C/m
- | Operating temperature: 15 ÷ 35 °C
- | Operating relative humidity: 40 ÷ 80 % (non-condensing)
- | Allowed vibrations: (acceleration between peaks)
30 mm/sec² from 1 to 10 Hz
15 mm/sec² from 10 to 20 Hz
50 mm/sec² from 20 to 100 Hz

SUPPLIES

- | Minimum air supply: 5.5 bar
- | Air consumption: 150Nl/min
- | Power supply voltage: 230 V ± 10% | 50 Hz ± 2% (single-phase) | 115 V ± 10% | 60 Hz ± 2% (single-phase)

PROBES AND MEASURING HEADS

- | Manual probe heads: MIH, MH20, MH20i
- | Motorised indexable probe heads: PH10T, PH10M, PH10MQ, PH20, REVO
- | Point to point trigger probes: TP2, TP20, TP200
- | Analogue contact probes: SP25M
- | Laser probes: Perceptron Laser Scanner
- | Stylus and probe changers: Fully automatic changing stations

PERFORMANCE DATA

All Coord3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Multi-wire cables
- | Pallet loading/unloading system, manual or automatic
- | PC and printer
- | Training c/o Coord3 Centres or resellers
- | Installation by Coord3 personnel or resellers

MODELS AND SIZES

COORD3 MCT NT CMMs are available with the following measuring strokes (Y | Z mm)
| 20.10 | 20.15 | 25.15 | 25.18

CMM GANTRY | MCT STARLIGHT

MEDIUM-LARGE COLUMN CMM – AN ALL-ROUNDER THAT ENSURES AN EXCELLENT STRUCTURAL RIGIDITY

MCT SL is a range of medium-to-large Gantry CMMs that stand out for their excellent structural stability and flexibility. These solutions may be tailored to any measuring requirements and are available in many different sizes.

MCT STARLIGHT is also available in the NT LIGHT configuration, which features a Z ram in light aluminium alloy and a “Single Read” system on the X-axis.



FEATURES AND BENEFITS

- | Generous distance between bearings for optimum mechanical rigidity.
- | Main Y carriage with high rigidity and exclusive tubular steel structure.
- | Z ram in extruded aluminium alloy to guarantee rigidity and minimize inertia.
- | X beams with large transversal section in stabilised steel, equipped with a support system to allow for linear expansion without risking distortion.
- | Ground X/Y axes guide-ways in high-resistance epoxy resin (roughness 0.4 mm)
- | Measuring system with high-resolution linear transducers (0.1 µm) with “Dual Reader” system on the longitudinal Xaxis
- | “Dual Drive” system on main X carriage (optional, standard for stroke Y=3000)
- | Automatic, multi-sensor system for compensating errors due to the thermal elongation of structural elements.

ENVIRONMENT

- Temperature range for metrological specification:
- | Ambient temperature: 18 ÷ 22 °C
 - | Maximum hourly gradient: 1.0 °K/h
 - | Maximum daily gradient: 2.0 °K/24h
 - | Maximum volume gradient: 0.5 °K/m (SL NT) - 1.0 °K (SL)
 - | Operating temperature: 15 ÷ 35 °C
 - | Operating relative humidity: 40 ÷ 80% (non-condensing)
 - | Allowed vibrations: (acceleration between peaks)
30 mm/sec² from 1 to 10 Hz
15 mm/sec² from 10 to 20 Hz
50 mm/sec² from 20 to 100 Hz

SUPPLIES

- | Minimum air supply: 6 bar
- | Air consumption: max. 300 Nl/min
- | Power supply voltage: 230 V ± 10% | 50 Hz ± 2% (single-phase) | 115 V ± 10% | 60 Hz ± 2% (single-phase)



PROBES AND MEASURING HEADS

- | Manual probe heads: MIH, MH20, MH20i
- | Motorised probe heads: PH10M, PH10MQ
- | Motorised indexable probe heads: PH20, REVO
- | Point to point trigger probes: TP2, TP20, TP200
- | Analogue contact probes: SP600, SP25M, SP80
- | Stylus and probe changers: Fully automatic changing stations

PERFORMANCE DATA

All Coord3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Multi-wire cables

MODELS AND SIZES

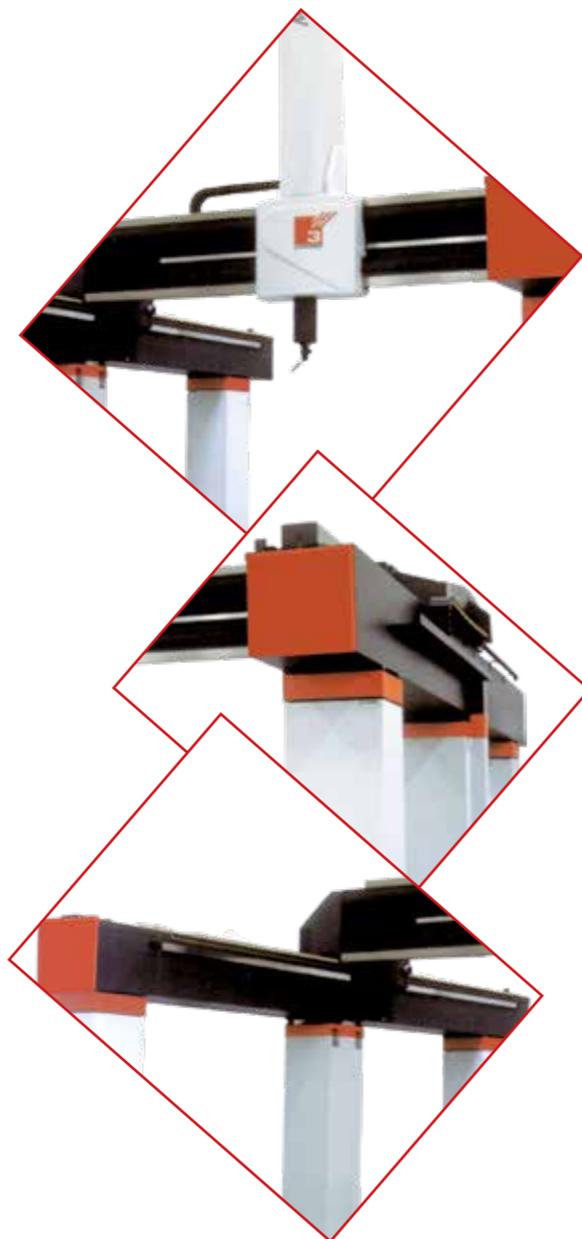
COORD3 MCT STARLIGHT CMMs are available with the following measuring strokes (Y | Z mm)
20.20 | 25.18 | 25.20 | 30.20 | 30.25

CMM GANTRY | MCT PLUS

LARGE-SCALE CMM DESIGNED FOR INDUSTRIAL WORKSHOPS.

MCT PLUS is a range of large-scale gantry CMMs designed for industrial measuring applications. Its unique structure incorporates the “**Dual Drive**” and the “**Dual Read**” system on the beams to limit structural distortion during motion while ensuring excellent metrological performance levels.

GANTRY **MCT PLUS** systems are particularly suitable for inspections of large components, such as marine engines and transmissions, aeronautical structures, rotors and components for nuclear and thermal power plants, as well as components of wind turbines.



FEATURES AND BENEFITS

- | Wide distance between bearings for optimum mechanical stability.
- | X and Y axes with rack and pinion drive system to ensure an efficient motion of the main axes
- | X beams with large transversal section in stabilised steel, equipped with pillar support system to allow for linear expansion without risking stress or distortion.
- | Measuring system with high-resolution linear transducers (0.1 µm) and with “Dual Reader” and “Dual Drive” systems on the longitudinal X-axis.
- | Automatic, multi-sensor system for compensating errors due to the thermal elongation of structural elements.

ENVIRONMENT

- | Nominal temperature: 20 °C
- | Metrological temperature range: 18 - 22 °C
- | Maximum hourly gradient: 0.5 °C/h
- | Maximum daily gradient: 2 °C/24h
- | Maximum volume gradient: 0.5 °C/m

- | Operating temperature: 15 ÷ 35 °C
- | Operating relative humidity: 40 ÷ 80% (non-condensing)
- | Allowed vibrations: 30 mm/sec² tra 1 e 10 Hz
15 mm/sec² tra 10 e 20 Hz
50 mm/sec² tra 20 e 100 Hz

SUPPLIES

- | Minimum air supply: 5 bar
- | Air consumption: 100 NI/min
- | Power supply voltage: 230 V 50 Hz or 110 V 60 Hz (± 2% single-phase)
- | Maximum power consumption: 10 A 1200 W

PERFORMANCE DATA

All Coord3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

MODELS AND SIZES

COORD3 MCT PLUS CMMs are available with the following measuring strokes (Y | Z mm)
20.20 | 25.18 | 25.20 | 30.20 | 30.25





► CMM | HORIZONTAL

HORIZONTAL ARM CMMs ARE THE IDEAL SOLUTION TO MEASURE COMPONENTS SUCH AS CAR BODIES, SHEET METAL PANELS, VEHICLE GLASS AND DASHBOARDS, AND ARE PARTICULARLY SUITABLE FOR THE DIMENSIONAL TESTING OF MECHANICAL PARTS SUCH AS ENGINE BLOCKS, GEARBOXES AND CASTINGS, AS WELL AS AERONAUTICAL AND AUTOMOTIVE COMPONENTS.

Horizontal arm CMMs are equipped with three moving elements which are shifted along three guides perpendicular to each other. The sensor is fixed to the ram, which slides horizontally with respect to the carriage. This moves vertically with respect to the column, which in turn slides horizontally with respect to the machine base plate.

CMM | SWAN SI

HORIZONTAL ARM MEASURING SYSTEM WITH LONGITUDINAL X GUIDE ATTACHED TO THE FLOOR ("RUNWAY" STRUCTURE)

The **SWAN SI** range offers a technologically advanced and cost-optimised solution for dimensional inspection of thin-walled metal sheet or plastic components typically used in the automotive industry.

SWAN SI CMMs are equipped with air bearings on both the Y-axis and the Z-axis, which ensure excellent results and high accuracy. The X-axis guide is located on the side of the cast iron or granite base plate.

The light and robust carriage, built entirely of light alloy, as well as the dual mechanical guide-way on the X beam, provide reliability, precision and rapid measurements.

When used in manufacturing environments, the **SWAN SI** machine may be installed on a pneumatic vibration isolation system without requiring specially constructed foundations.



FEATURES AND BENEFITS

- | Measuring system with optical linear transducers
- | Motion control thanks to DC servomotors.
- | Air bearing guides on Y and Z axes, precision guide on X-axis
- | Mechanical head balancing with safety brake

ENVIRONMENT

- | Temperature: $(20 \pm 2) ^\circ\text{C}$
- | Temperature gradient: $1 ^\circ\text{C}/\text{hour} - 2 ^\circ\text{C}/\text{day} - 0.5 ^\circ\text{C}/\text{m}$
- | Acceptable vibrations: $30 \text{ mm}/\text{sec}^2$ tra 1 e 10 Hz
 $15 \text{ mm}/\text{sec}^2$ tra 10 e 20 Hz
 $50 \text{ mm}/\text{sec}^2$ tra 20 e 100 Hz

SUPPLIES

- | Minimum air supply: 0.55 MPa
- | Air consumption: 90 NI/min (14 l/min at 0.55 MPa)
- | Power supply voltage: 230 V 50 Hz
- | Maximum power consumption: 10 A 1400 W

PERFORMANCE DATA

All COORD3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

Cast iron or granite surface plate

MODELS AND SIZES

COORD3 SWAN SI CMMs are available with the following measuring strokes (Y | Z mm)

10.12 | 10.15 | 10.18 | 10.20
12.15 | 12.18 | 12.20
15.15 | 15.18 | 15.20

CMM | SWAN L

HORIZONTAL ARM MEASURING SYSTEM WITH LONGITUDINAL X GUIDE ATTACHED TO THE SIDE OF THE SURFACE PLATE ("CONSOLE" STRUCTURE)

SWAN L CMMs feature a horizontal arm installed on guides (tracks) and may be installed flush with the floor of the plant.

Its walkable covers allow operators to control large and heavy parts, which may be placed on a separate floor, on a system installed on the ground or on an automated system.

Their "Console" structure with integral support plate is extremely modular and easy to configure, and thus combines the flexibility and programmability of measuring machines with the speed and intuitive use of traditional measurement gauges.



FEATURES AND BENEFITS

- | Measuring system with optical linear transducers
- | Motion control thanks to DC servomotors.
- | Air bearing guideways on all axes
- | Mechanical head balancing with safety brake

ENVIRONMENT

- | Temperature: $(20 \pm 2) ^\circ\text{C}$
- | Temperature gradient: $1 ^\circ\text{C}/\text{hour} - 2 ^\circ\text{C}/\text{day} - 0.5 ^\circ\text{C}/\text{m}$
- | Acceptable vibrations: $30 \text{ mm}/\text{sec}^2$ from 1 to 10 Hz
 $15 \text{ mm}/\text{sec}^2$ from 10 to 20 Hz
 $50 \text{ mm}/\text{sec}^2$ from 20 to 100 Hz

SUPPLIES

- | Minimum air supply: 0.55 MPa
- | Air consumption: 100 Nl/min (17 l/min at 0.55 MPa)
- | Power supply voltage: 230 V 50 Hz
- | Maximum power consumption: 10 A 1400 W

PERFORMANCE DATA

All COORD3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Cast iron surface plate
- | Linear thermal compensation

MODELS AND SIZES

COORD3 SWAN L CMMs are available with the following measuring strokes (Y | Z mm)
12.15 | 12.18 | 12.20
15.15 | 15.18 | 15.20

CMM | JUPITER

HORIZONTAL ARM MEASURING SYSTEM WITH LONGITUDINAL X GUIDE ATTACHED TO THE FLOOR ("RUNWAY" STRUCTURE) WITH MOBILE ARM EQUIPPED WITH FAIRING

JUPITER CMMs are reliable, high-performance machines designed for direct use in production areas and developed specifically for body and subassembly inspection applications.

JUPITER CMMs are mounted on tracks and available both in single and dual arm versions. They are totally encapsulated to guarantee thermal insulation, and feature a system that prevents contamination from the workshop floor.

Their open built-in structure, the walkable covers that protect the X guideways and the fairing that protects the entire structure ensure maximum accessibility to the measuring area and simplify part loading and unloading operations, in addition to being designed for direct use in production areas.

These CMMs, which may be installed with Flush-floor level equipped with walkable covers as a standard feature, stand out for their high dynamics and metrology performances.

The air bearings mounted on both the Y-axis and the Z-axis are the key element of this high-performance measurement solution. In the dual arm configuration, the measurement volumes of the two horizontal arms overlap by 100 mm in order to allow for measurements the entire structure



FEATURES AND BENEFITS

- | Measuring system with optical linear transducers
- | Motion control thanks to DC servomotors.
- | Air bearing guides on Y and Z axes, recirculating ball bearings on X-axis
- | Mechanical head balancing with safety brake

ENVIRONMENT

- | Temperature: $(20 \pm 2) ^\circ\text{C}$
- | Temperature gradient: $1 ^\circ\text{C}/\text{hour} - 2 ^\circ\text{C}/\text{day} - 0.5 ^\circ\text{C}/\text{m}$
- | Acceptable vibrations: $30 \text{ mm}/\text{sec}^2$ from 1 to 10 Hz
 $15 \text{ mm}/\text{sec}^2$ from 10 to 20 Hz
 $50 \text{ mm}/\text{sec}^2$ from 20 to 100 Hz

SUPPLIES

- | Minimum air supply: 0.55 MPa
- | Air consumption: 150 NI/min (23 I/min at 0.55 MPa)
- | Power supply voltage: 230 V 50 Hz
- | Maximum power consumption: 10 A 1400 W

PERFORMANCE DATA

All COORD3 CMM products are factory-tested for accuracy according to the UNI EN ISO 10360 - 2 standard

OPTIONS

- | Cast iron or granite surface plate
- | Linear thermal compensation

MODELS AND SIZES

COORD3 JUPITER CMMs are available with the following measuring strokes (Y | Z mm)

14.20 | 14.25 | 14.30
16.20 | 16.25 | 16.30

PORTABLE ARM | ECHO

AS THE MARKET KEEPS EVOLVING AND CUSTOMERS DEMAND INCREASINGLY TAILORED SOLUTIONS FOR PROFESSIONAL MEASURING TASKS, WE INTEGRATED OUR PRODUCT PORTFOLIO WITH 6- OR 7-AXIS 3D MEASURING ARMS.

THIS IS WHY OUR RANGE NOW INCLUDES THE FOLLOWING SOLUTIONS:

- C3 ECHO PLUS
- C3 ECHO PRO
- C3 ECHO PRO SCAN



C3 ECHO PLUS

Budget priced, lightweight and easy-to-use solution with an aluminium/carbon structure.

| Work volume: 2.6m | 3.2m | 4.2m | 4.6m

C3 ECHO PRO

The ideal solution for 3D contact and contactless measurements, combining accuracy and ease of use.

TECHNICAL FEATURES

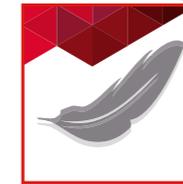
- | Ready for use
- | Compatible with the main software solutions available on the market
- | Ergonomic handle
- | Stable, magnetic rest position
- | Automatic detection of the probe diameter
- | Work volume: 2m | 2.5m | 3m | 3.5m | 4 m | 4.5m

C3 ECHO PRO SCAN

A well-designed combination of arm and 3D scanner to save time.

TECHNICAL FEATURES

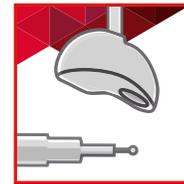
- | The scanner may be removed without tools
- | The probe may be applied directly on the scanner
- | High resolution
- | High accuracy even on complex surfaces (dark and glossy carbon surfaces)
- | Work volume: 2m | 2.5m | 3m | 3.5m | 4 m | 4.5m



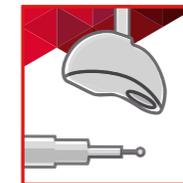
EXTREMELY LIGHTWEIGHT



BUDGET PRICED SOLUTION



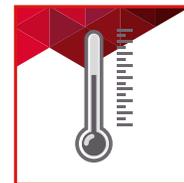
SCANNER + INTEGRATED PROBE



READY FOR KREON SCANNERS AND PROBES



BUILT-IN BATTERY



TEMPERATURE COMPENSATION

LASER SCANNER | V7

WITH THE NEW V7 LASER SENSOR, PERCEPTRON INTRODUCES YET ANOTHER REVOLUTIONARY SOLUTION FOR SCANNING APPLICATIONS.

The **V7** is designed with cutting-edge technology and offers a blue laser function at an extremely competitive price, thus making scanning applications available to all users of Coord3 measuring machines. The **V7** laser sensor makes laser scanning on CMMs easier than ever.

This versatile 3D scanning tool enables reverse engineering, point cloud-to-CAD comparison, 3D visualisation and inspection applications.



NEW

V7



SENSOR

- | Length: 114.26 mm
- | Height: 112.65 mm
- | Width: 65 mm
- | Weight: 456 g
- | Connections: GiGE Ethernet
- | Operating temperature: 10°C - 40°C
- | Laser class : 2M
- | Laser wavelength: 450 nm (blu)
- | Certification: UL, CSA, CE
- | Safety: IEC 60825-1:2007
- | Protection: IP54
- | Depth of field: 100 mm
- | Near field width: 48 mm (+/-2 mm)
- | Far field width 88 mm (+/-4 mm)
- | Mean point resolution: $\leq 40 \mu\text{m}$ at mid field
- | Points per line: 1280
- | Scan rate: >64,000 points per second
- | Frequency: >50 Hz

FEATURES AND BENEFITS

- | Speed: up to 1,280 points along the laser line at a rate up to 50Hz provides high-density scan data.
- | Dynamic range: The **V7 sensor blue laser** captures data accurately even on dark and reflective surfaces without the need for harmful white powder sprays and paints.
- | Field of view: thanks to maximum width of 88mm and to a maximum depth of 100mm, it can capture large and complex areas.
- | Real-time integration: direct integration with easy-to-use **TouchDMIS software** to allow the user to scan within a familiar interface.

MINIMUM REQUIREMENT

- | Operating system: Windows 10 Professional, 64-bit
- | CPU: Intel Quad Core 2Ghz or higher, 64-bit
- | RAM: 32 GB
- | Ethernet: NVIDIA Quadro series graphics card (2 GB)
- | USB: 3.0

SOFTWARE | TOUCH DMIS

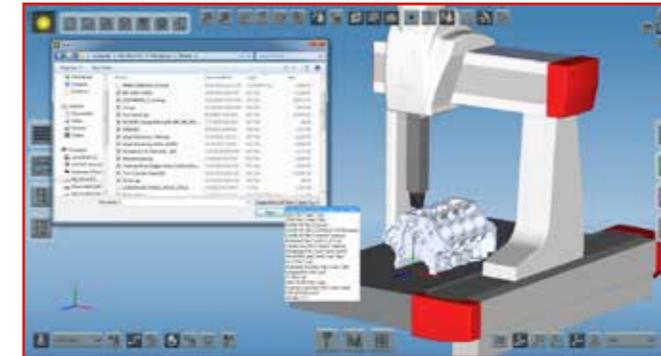
THE INTUITIVE TOUCHDMIS INTERFACE HAS BEEN ERGONOMICALLY DESIGNED TO PROVIDE MAXIMUM PRODUCTIVITY, AND ALL FUNCTIONS MAY BE EASILY ACCESSED WITH JUST A TOUCH OR A MOUSE CLICK. TOUCHDMIS INCORPORATES FLOATING TOOLBARS TO MAXIMISE THE GRAPHICS AREA. THE MAIN SOFTWARE FUNCTIONS MAY BE ACCESSED VIA EIGHT FUNCTION BUTTONS.

TouchDMIS is a synonym for easy measurement: it takes just a few hours of training to perform the first measuring tasks. The 64-bit architecture encompasses all metrology standards developed in the last ten years:

- | Programming language DMIS - ISO 22093
- | Tolerance - ASME Y14
- | Feature extraction algorithms - PTB (Physikalisch | Technische Bundesanstalt)
- | Filtering algorithms - ISO / TS16610-31:2010
- | STEP | Import | Export of CAD files
- | STEP - ISO 10303
- | I++DME Communication Protocol



TouchDMIS



GENERAL FEATURES

- | It supports several CNC control systems for measuring machines (Renishaw - Pantec- CC3 - AX3 - DEVA - IEPC)
- | The Touch Probe Manager supports the following probes and measuring heads: SP25 - SP80 - PH20 - TP20 - TP200 - TP2 - TP6 - PH10M - PH10T - MH20
- | Tool changes supported: ACR3 - MCR20 - TCR20 - SCR200

MEASURE

- | Touchscreen: allows operators to use the software exclusively via touch, swipe, gesture controls
- | Direct "One-Touch" measure
- | Measurement Wizard
- | "One-Touch" feature constructions
- | Selection | extraction of CAD elements with "One-Touch" function
- | Two programming modes: Block and Editor
- | Blueprint reporting
- | Graphical representation of measured elements
- | Thru-View Windows technology
- | Advanced floating window functions
- | Relative measurement for thin wall parts
- | Automatic part program generation

CAD

- | "One-Touch" extraction function
- | Import file CAD STEP - IGES
- | Export file CAD STEP
- | Native import of main CAD files (optional)
- | "Heavy" CAD files may be quickly and effectively imported and graphically edited
- | CAD transparencies to aid visualisation
- | "One-Touch" vector flipping
- | Optimised measurement strategy for the relevant features
- | Single "Touch" discs for point or path adjustment
- | Realistic off-line program simulation

OPTIONS

- Our TouchDMIS is available in 5 different versions:
- | Manual
 - | Manual with CAD
 - | Motorised (CNC)
 - | Motorised (CNC) with CAD
 - | Off-line

Further hardware platforms supported by TOUCHDMIS

- | Faro PCMMs | Hexagon PCMMs | API OTII Laser Trackers | Microscribe Digitizers

SERVICES | AFTERMARKET

**ALWAYS AT YOUR SIDE TO ENSURE THAT YOUR CMM RETAINS ITS VALUE OVER TIME
QUALITY, EFFICIENCY, QUICK RESPONSE TIMES**

We offer you a wide range of pre and post-sales services in our facilities and authorised centres to make sure that your measuring systems retain their value over time. Thanks to our highly qualified and experienced technical staff, we ensure quick response times when it comes to addressing customers' requests – which is certainly one of our key strengths.

All our aftermarket, demo, training and consulting services are provided directly by our staff or through our centres and laboratories.

RETROFITTING

**RETROFITTING AN EXISTING MEASURING SYSTEM MEANS REDUCING ITS
MAINTENANCE COSTS WHILE EXTENDING ITS SERVICE LIFE**

RETROFITTING | ELECTRONIC AND MECHANICAL SYSTEMS

Given the continuous evolution of electronic components, the use of new or updated control systems can significantly improve the performance level of CMMs and reduce possible downtime costs.

RETROFITTING | SOFTWARE

Software updates include the latest upgrades of measurements programs (graphical reports, CAD data import/export, off-line programming, latest-generation measurement heads and sensors), which can dramatically increase the performance level and flexibility of measuring machines

ASSISTANCE

- | Technical and practical assistance in TEAMVIEWER to fix quickly any metrological issues (probes qualification, part-program debugging)
- | ACCREDIA certification and calibration services for measuring machines
- | Electronic, mechanical and software CMM retrofitting
- | Preventive maintenance and periodic checks on CMMs according to the UNI EN ISO 10360-2 standards
- | Transfers or relocations of measuring machines: disassembly, proper packaging, padding, use of proper aids to secure moving parts, handling, reassembly Off-line DMIS part programming
- | Assistance to small enterprises and their customers for testing operations
- | Mechanical and metal sheet parts measuring
- | Reverse engineering with contact and laser probes
- | Metrological assistance for configuring measurement and GD & T programs
- | Creation and management of programs for measuring machines
- | Advanced DMIS programming training, Visual Basic for measuring tasks with customised interfaces or result management, training on the use of measuring machines, basic principles of metrology

LAT 138 CALIBRATION LABORATORY



LAT 138

LAT 138 IS AN ACCREDITED LABORATORY AUTHORISED TO TEST THE PERFORMANCE OF COORDINATE MEASURING MACHINES ACCORDING TO THE UNI EN ISO 10360-2:2010 STANDARD.

A proper metrological assessment of CMMs ensures:

- | Comparison between metrological measurements and national samples
- | Assessment of measurement uncertainty
- | Repeatable and reproducible results
- | ACCREDIA certificate attesting the performance test executed on the CMM; this certificate is internationally recognised within the framework of the ILAC Mutual Recognition Arrangements (International Laboratory Accreditation Cooperation).



PERCEPTRON OFFERS AN EXTENSIVE PORTFOLIO OF DIMENSIONAL GAUGING AND INSPECTION PRODUCTS ALONG WITH ROBOTIC GUIDANCE, GAP & FLUSH MEASUREMENT AND 3D LASER SCANNING SOLUTIONS. WITH OVER 30 YEARS OF EXPERIENCE, PERCEPTRON CAN BE YOUR ENTERPRISE METROLOGY PARTNER.

GLOBALLY, COMPANIES RELY ON PERCEPTRON'S METROLOGY SOLUTIONS TO ASSIST IN MANAGING THEIR COMPLEX MANUFACTURING PROCESSES TO IMPROVE QUALITY, SHORTEN PRODUCT LAUNCH TIMES AND REDUCE COSTS. MORE THAN 900 SYSTEMS, 12,000 PERCEPTRON MEASURING SENSORS AND OVER 3,000 COORD3 COORDINATE MEASURING MACHINES ARE IN ACTIVE DAILY USE WORLDWIDE. HEADQUARTERED IN PLYMOUTH, MICHIGAN USA WITH SUBSIDIARY OPERATIONS IN BRAZIL, CHINA, THE CZECH REPUBLIC, FRANCE, GERMANY, INDIA, ITALY, JAPAN, SLOVAKIA, SPAIN AND THE UK.

OUR STORY

Perceptron (NASDAQ:PRCP) was founded in 1981 by graduates of The General Motors Institute (formerly GMI and now Kettering University).

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AUTOGAUGE - DIMENSIONAL GAUGING

Precision non-contact automated dimensional measurement and gauging solutions provide real-time part, assembly and process information for **In-Line or Near-Line** quality control applications.

Perceptron's turnkey engineering team will design a solution using our standard modules and sensors to inspect critical features and part characteristics. Perceptron Gauging Solutions are well proven in the most rugged of industrial environments with over 900 installations in active daily use. Advanced software allows monitoring of both part quality and the manufacturing process either locally at the inspection cell or remotely from any global location, providing both discrete feature measurement and 3D scanning data.

Applications: • Body-in-White (BIW) • Frames Engine Cradle • Underbody • Bodysides • Hydroformed Parts • Exhaust Pipes



AUTOGUIDE – ROBOT GUIDANCE

Perceptron Robot Guidance Solutions (RGS) have proven reliability with decades of in-process assembly guidance in harsh industrial environments. Our Visual Fixturing Engine enables full 6 degree-of-freedom offsets while allowing the user to prioritize key customer-centric metrics by utilizing anchor points, over-weighting, and full relationship-based offsetting. **Applications:** • Windshield Insertion • Door & Roof Load • Seam Sealing • Soft Touch Form & Pierce • Laser Welding and Cutting



AUTOFIT - GAP AND FLUSH

Perceptron's automated, non-contact **Gap & Flush** Solutions measure Class A mating parts for quality validation as well as providing 100% data for process optimization. Measurement results guide necessary adjustments or corrections downstream in the manufacturing process. Uniquely, Perceptron scanning sensors offer the ability to provide measurement data on unpainted and the full spectrum of painted assemblies for in-process final product verification. **Applications:** • Vehicle Assembly Operations • Finished Vehicle – Vehicle on Wheels (VOW) • Bumper Alignment • Closure Panel Fit



AUTOGUIDEMT – SIMPLIFIED ROBOT GUIDANCE

Perceptron's robot guidance platform has been completely reworked and optimized for the requirements of our single offset applications. With the streamlined

interface for these specific applications, station setup time can now be measured in hours, not days; saving you money and time. **Applications:** • Pallet Loading • Rack Loading • De-Palletizing



ACCUSITE

Perceptron's **AccuSite™ Optical Tracking** option takes the robot out of the accuracy equation and provides the most accurate robotic measurement solution available for the manufacturing floor.

How it works: As the **Helix-evo sensor scans** the measurement features, the **AccuSite** tracker locates the artifacts attached to the sensor and records their exact location and orientation in space. The **AccuSite** option only requires the robot to be a simple mover and eliminates all mechanical drift and temperature influence from the measurement results, without markers or any other part preparation.

Why AccuSite? • Save Time • Measure parts as built; no requirement for sprays, stickers, or fiducials. • Measure where you manufacture, no need to remove parts from the assembly line. • High throughput suitable for in-line and near-line measurement applications. • Real-time

results; no time-consuming data processing. • ISO10360-8 system accuracy validation ensures data confidence. • Fully integrated solution without 3D party software. • **AccuSite** can be mounted in multiple configurations based on your measurement plan and assembly layout.





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