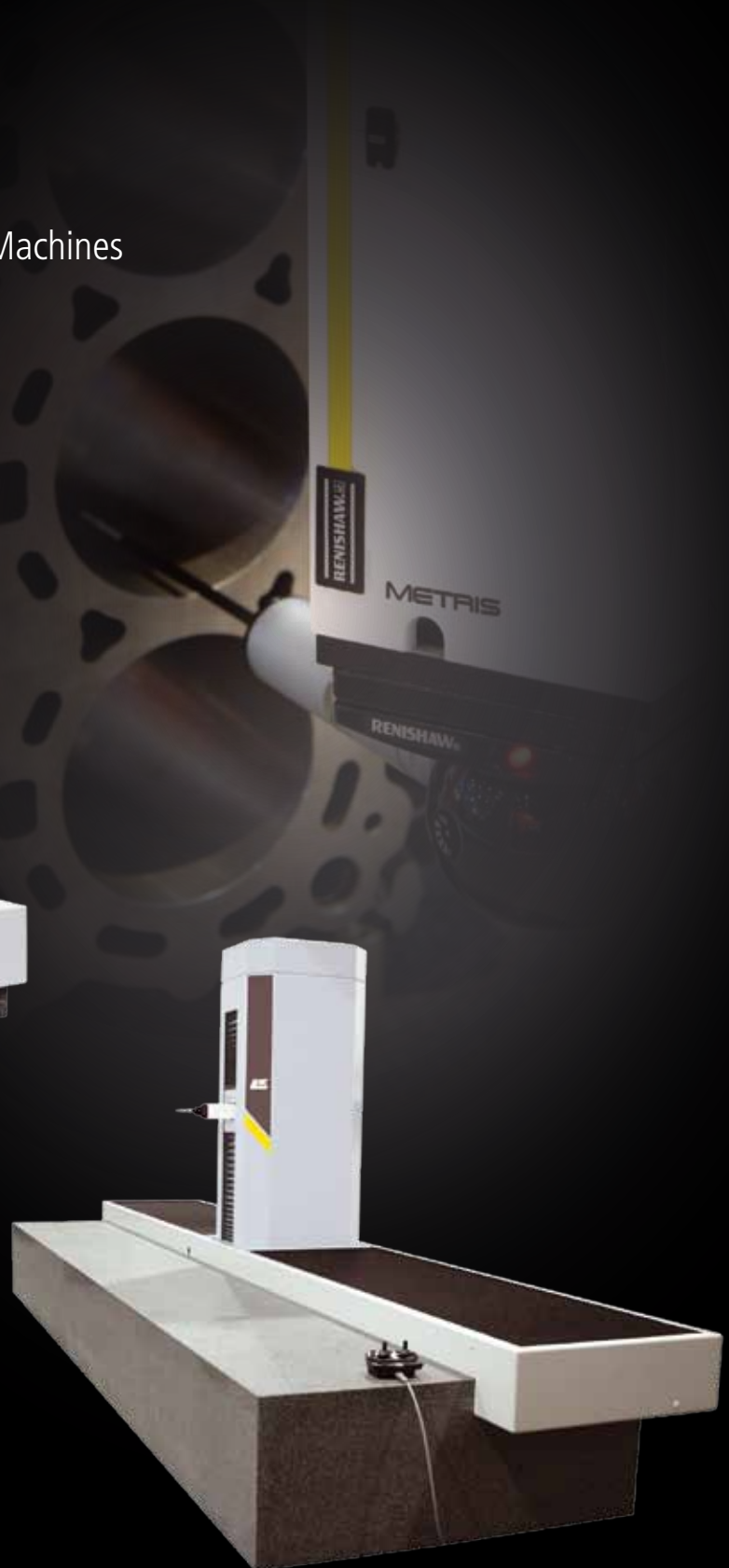
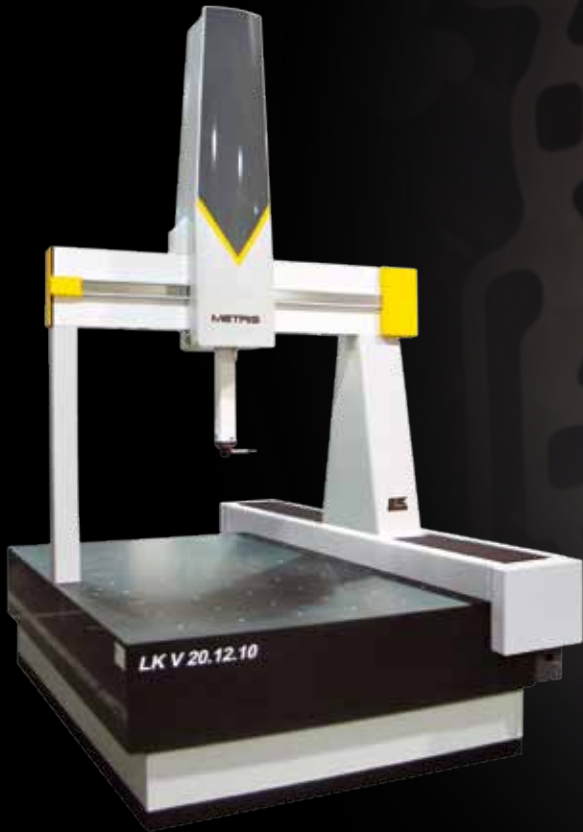




LK CMM

Coordinate Measuring Machines



So much more than precision

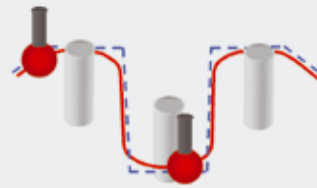
The Nikon Metrology LK range of Coordinate Measuring Machines represent the ultimate in CMM technology. Designed and manufactured using only the highest quality materials, they carry a heritage of over 45 years experience and expertise. LK CMMs deliver the ability to perform dimensional, positional and surface measurement in a single system. Combined with a complete range of contact and non-contact sensors, Nikon Metrology CMMs provide true multi-sensor capability. Sensors can be quickly changed to combine geometric and surface measurement into a single inspection routine.

Key design features

- Ceramic bridge and spindle provide a thermally stable and ultra-stiff frame for long lasting accuracy.
- Nikon Metrology unique LK air bearings provide a smaller air gap with greater stiffness than standard air bearings to enhance the rigidity of the frame.
- Granite table with integral dovetail guideway (10.10.8 and bigger) provides the smoothest of drives with high velocity and acceleration.
- Steel support legs designed on CAD with Finite Element Analysis provide a stable mounting for the ceramic beam and carriage assembly.
- Friction-driven axes remove the uncertainty of belt drives and gear-boxes and provide a hysteresis-free smooth repeatable motion.
- Bonded Renishaw scales negate the need for separate scale and mechanical frame thermal compensation, providing confidence in repeatability and accuracy.

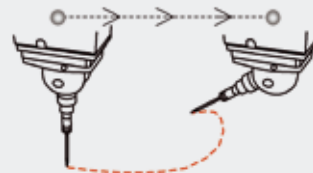


Key performance features



Fly Mode

Provides optimized motion control for more efficient machine movement and faster throughput.



PH Fast

Further optimize the machine throughput by moving the probe head simultaneously with machine motion.



CMM Hand-box

Multi-function hand-box provides access to programming tools without returning to the computer.

Multi-sensor support - Measurement for everyone



Scanning made easy

Regardless whether contact or non-contact scanning is required, Nikon Metrology has a solution designed that provides highly repeatable and accurate scanning results for geometric feature and free-form surface inspection.

Unique and unequalled, digital scanning is delivered as standard on every Nikon Metrology LK CMM equipped with either TP20 or TP200 probes. This cost-effective scanning solution enhances traditional CMM inspection to increase productivity.



When accuracy and high speed are expected, LK CMMs' ultra-stiff ceramic frame guarantees that continuous contact scanning (SP25M) will provide you feature, form and free-form surface data that is equal to any 'fixed-head' probe system.

Non-contact laser scanning, with the world leading Nikon Metrology LC and unique patented XC (Cross-Scanner) technology, allow you to scan virtually any component with unequalled levels of performance. Suitable for geometric inspection, free-form surface inspection or reverse engineering, laser scanning is available for everyone.



When size truly matters

Nikon Metrology recently manufactured one of the largest CMM bridge sizes ever to be ordered with a measuring length and width of 6 meter.

Whether it is a large bridge or a horizontal arm configuration you require, the Nikon Metrology LK range has a standard solution ready for you. Based on the same ceramic and granite construction, the large bridge and horizontal arm CMM range offers market leading accuracy and performance characteristics.



LK V Bridge and LK V HA High Accuracy CMM

High-performance ceramic bridge CMMs

LK's ceramic bridge and spindle components coupled with proven air-bearing design provide the ultimate in stiffness and stability, altogether delivering significantly improved repeatability.

Benefits

- Premium performance
- High velocities/accelerations for low cycle times
- Excellent accuracy and repeatability
- Total solution for probing, scanning and digital inspection

Features

- Flexible multi-sensor platform: touch probes, analog scanning and laser scanning
- High capacity (loads) table

Applications

- Machined and pressed parts
- Plastic moldings
- Casting and forgings
- Touch trigger and non-contact inspection
- Digitizing, scanning and reverse engineering

Specifications

- Volumetric accuracy
 - from 1.8 μ m + L/350 (LK V)
 - from 1.5 μ m + L/375 (LK V-HA)
- Repeatability
 - from 1.8 μ m (LK V)
 - from 1.5 μ m (LK V-HA)
- Velocity
 - up to 42m/min (LK V)
 - up to 50m/min (LK V-HA)
- Acceleration
 - up to 7840m/min² (LK V)
 - up to 5400m/min² (LK V-HA)



LK V 15.12.10



LK V 8.7.6 (Tripod stand)



LK V 15.10.8

LK V (small) - Standard bridge style CMM (high-accuracy versions available)

Sizes ¹ (Tripod stand)	Sizes ¹	Probe head	Probes
6.5.4	10.10.8	PH10T	TP20
8.7.6	15.10.8	MH20i	TP200
10.7.6	20.10.8	PH10M	SP25M
	25.10.8		LC15, LC50Cx, LC60Dx, XC65D (-LS)

LK V (medium to large) - Standard bridge style CMM

Preferred sizes ¹	Probe head	Probes
15.12.10 20.15.12 25.15.15 20.20.15	PH10MQ	TP20 (LK V only)
20.12.10 25.15.12 30.15.15 30.20.15		TP200
25.12.12 30.15.12 35.15.15 35.20.15		SP25M
30.12.10 35.15.12 40.15.15 40.20.15		LC15, LC50Cx, LC60Dx, XC65D (-LS)

¹ (other sizes available on request)

LK High-speed scanning bridge CMM

LK V-SL and LK V-SL HA offering ultimate scanning and inspection performance

The LK V-SL features a revolutionary design that delivers the best scanning and inspection performance currently available in the marketplace. Particularly suited to meet the demands of automotive and aerospace applications, the LK V-SL is a unique and distinctive multi-sensor CMM. With the HA option, such a system becomes a metrology lab reference CMM featuring submicron accuracy for applications requiring highest precision.

Benefits

- Increased scanning performance delivering high accuracy and throughput
- Increased stiffness and stability of the metrology frame
- Ready for shop floor and metrology lab

Features

- Granite table with ceramic Y & Z guideways
- Raised X-axis guideway provides ultrafast dynamics
- S-axis 0.1 micron scale
- Multi-sensor capability
- Pneumatic anti-vibration mounts
- Temperature compensation as standard

Applications

- Analog, digital or laser scanning
- Automotive, engine and transmission components
- Aerospace blade, engine and aircraft components
- General precision engineering
- Medical instruments

Specifications

- Volumetric accuracy
 - from 1.1 μ m+L/400 (LK V-SL)
 - from 0.7 μ m+L/600 (LK V-SL HA)
- Repeatability
 - from 0.7 μ m (LK V-SL)
 - from 0.5 μ m (LK V-SL HA)
- Velocity
 - up to 51m/min (LK V-SL)
 - 20m/min (LK V-SL HA)
- Acceleration
 - up to 5065m/min² (LK V-SL)
 - 722m/min² (LK V-SL HA)



LK V 10.10.8 SL equipped with an LC60Dx laser scanner



LK V-SL (HA) metrology lab reference CMM



Ceramics for LK PREMIUM performance

Stress-free ceramic guideways are most dimensionally stable, provide high and long-lasting measurement accuracy, and require minimum machine verification, saving both time and money.

LK V-SL and LK V-SL HA - High accuracy bridge style CMM

Preferred sizes ¹	Probe Head	Probes
8.7.6 10.10.8 20.12.10	PH10MQ	TP200
10.7.6 15.10.8		SP25M
15.7.6		LC15, LC50Cx, LC60Dx, XC65D (-LS)

¹ (other sizes available on request)

LK V Large scale twin-rail mounted and gantry CMMs

A new breed of large scale CMMs

Nikon Metrology offers large scale gantry and twin-rail mounted bridge style CMMs when size really matters. In addition to high accuracy with maximum volume, these large scale CMMs support a variety of probing solutions, including touch-trigger digital, analogue and laser options. Nikon Metrology also provides customized gantry CMM projects that meet customers' exacting requirements. LK large scale CMMs are constructed using materials with high thermal stability to guarantee optimum accuracy.

Benefits

- Ceramic material offering 300% more stiffness over aluminium allows for ultra large machine sizes with premium accuracy
- Floor-mounted or raised gantry versions to suit all environments and component handling situations
- Twin drive systems valued for smooth motion
- Available with separate measuring plate if required

Features

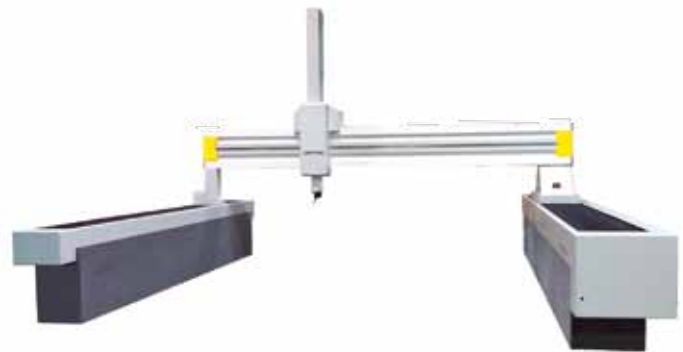
- High-performance air bearings
- LK CMMs feature granite rails with ceramic Y and Z guideways
- Supports tactile styli, analogue scanning and laser scanners

Applications

- Automotive and commercial vehicles
- Aerospace components and structures
- Marine and locomotive engine components
- Telecommunications and satellite equipment

Specifications

- Volumetric accuracy
 - from 4.5µm + L/200 (LK V-R)
 - from 3.5µm + L/250 (LK V-G(P))
- Repeatability
 - from 4.5µm (LK V-R)
 - from 3.5µm (LK V-G(P))
- Velocity
 - up to 32m/min (LK V-R)
 - up to 27m/min (LK V-G(P))
- Acceleration
 - up to 2270m/min² (LK V-R)
 - up to 2070m/min² (LK V-G(P))



LK V 50.40.12 R



LK V-R twin-rail mounted bridge style CMM

LK V-R and LK V R-SL - Twin-rail mounted bridge style CMM

(short-leg models available)

Sizes ¹	Probe Head	Probes
Rail lengths from 3m to 10m+	PH10MQ	TP20
Bridge sizes from 2m to 4m		TP200
Spindle lengths from 1.2m to 3m		SP25M
<i>(short-leg model with steel legs or concrete riser foundation)</i>		LC15, LC50Cx, LC60Dx, XC65D (-LS)

LK V-G(P) - High accuracy and ultra high accuracy bridge style CMM

Sizes ¹	Probe Head	Probes
Rail lengths from 2m to 10m+	PH10MQ	TP20
Bridge sizes from 4m to 7m		TP200
Spindle lengths from 3m to 4m		SP25M
<i>(available with steel legs or concrete riser foundation)</i>		LC15, LC50Cx, LC60Dx, XC65D (-LS)

¹ (other sizes available on request)

LK H Horizontal arm CMM

The fastest high accuracy horizontal arm CMMs on the market

Nikon Metrology's complete range of horizontal arm CMMs provides unequalled performance in speed, accuracy and repeatability. Ceramic guideways and air bearings used in the construction of LK H CMMs, offer stability at high velocity and acceleration. LK horizontal arm CMMs provide unique access to the measuring envelope and can be supplied as subfloor or floor level installations, or as part of fully-automated measurement cells.

Benefits

- High velocities/acceleration for low cycle times
- Excellent accuracy and repeatability
- Flexible multi-sensor platform: touch probes, analog scanning, laser scanning

Features

- Multiple CMM configurations available: table, rail, twin, etc.
- Supports laser scanners and touch sensors
- Can be supplied with cast-iron measuring plate if required

Applications

- Automotive full body and panels inspection
- Inspection of large parts such as mold tools, housings, castings, etc.
- Integrated in-line inspection
- Touch trigger and non-contact inspection
- Digitizing, scanning and reverse engineering

Specifications

- Volumetric accuracy
 - from 1.9 μ m + L/250 (LK H-T)
 - from 10 μ m + L/200 (LK H-R)
- Repeatability
 - from 1.9 μ m (LK H-T)
 - 6.0 μ m (LK H-R)
- Velocity
 - up to 51m/min (LK H-T)
 - up to 40m/min (LK H-R)
- Acceleration
 - up to 10830m/min² (LK H-T)
 - up to 7580m/min² (LK H-R)



LK H-R premium series twin-rail mounted horizontal arm CMM with walk-on covers

LK H-R - high accuracy rail mounted horizontal arm style CMM (single or twin column)

Sizes ¹	Probe Head	Probes
Rail lengths from 4m to 10m+	PH10MQ	TP7M
Spindle lengths from 0.4m to 1.6m		TP20
Column heights from 2m to 3m		TP200B
<i>(available with walk-on or bellow covers for rails)</i>		SP25M
		LC15, LC50Cx, LC60Dx, XC65D (-LS)

LK H-T - high accuracy table mounted horizontal arm style CMM

Sizes ¹	Probe Head	Probes
Rail lengths from 1m to 5m	PH10MQ	TP20
Spindle lengths from 0.4m to 1.6m		TP200B
Column heights from 0.6m to 2m		SP25M
		LC15, LC50Cx, LC60Dx, XC65D (-LS)

¹ (other sizes available on request)



LK H-R dual column horizontal arm CMM

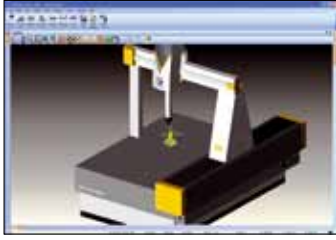


LK H-T high accuracy table mounted horizontal arm CMM

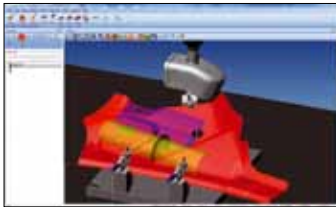


LK H-T featuring rotating table

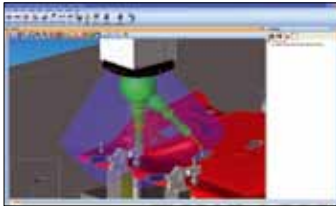
CAMIO Multi-sensor metrology software



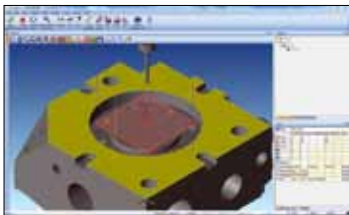
Camio drives laser scanners and a variety of touch sensors



Straightforward scanner path definition based on CAD data



Powerful off-line programming including collision detection



Graphical on-screen programming

The benchmark for efficient multi-sensor CMM operation

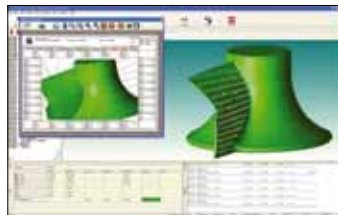
Camio is a fully integrated multi-sensor software platform for off-line programming and on-line inspection. It redefines the world of CMM measurement, featuring powerful tools that efficiently drive laser scanners as well as a wide variety of touch sensors. User-friendly programming techniques as well as drag-and-drop and wizard-based functionality provide new and experienced users all efficient means to create CMM inspection programming with or without CAD product model data.

Benefits

- Easy to use graphical interface
- Full screen simulation before program execution
- Windows 7 (32 and 64 bit) compliant
- Support 3rd party CMM through I++ interface
- Switch between touch trigger probing, analog or laser scanning with minimum program modifications
- Access to PMI (Product Manufacturing Information) data from leading CAD software packages
- Production mode operation, reducing cycle time up to 25%

Features

- Integrated solution for on-line and off-line programming
- Full and exact compliance to the DMIS standard
- Support of wide range of CAD file formats: CATIA® v4 & v5, Pro/E®, UG®, Parasolid®, HOOPS®, STEP®, IGES®, ACIS®, VDA-FS® and Solidworks®
- Multi-sensor programming and simulation
- Powerful laser scanning feature inspection



Flexible reporting options



Digigraph profile reporting with optional blade analysis



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