Mitutoyo

EACAMPOS
Metrologia e Sistemas, S.A.

Porto R. Senhora da Penha, 110·4460-423 Senhora da Hora·Tel: +351 220 909 436
Lisboa Avenida Quinta Grande, 87B · 2610-158 Amadora · Tel: +351 210 949 532

info@metrologia.pt metrologia.pt

CONTOUR MEASUREMENT

QUALITY ASSURANCE WITH PROFILE

FORM MEASUREMENT

Mitutoyo

Quality testing: no ifs and buts...

...just winners and losers.

Anyone who is unable to guarantee compliance with the most stringent standards will soon find themselves without a future in this competitive world. Absolutely perfect measurement technology is therefore essential for lasting success.

The detection and evaluation of contours is particularly demanding work. As the most versatile supplier of production measuring technology in the world, Mitutoyo sets the standard in know-how and experience – with an intelligently-structured range of sophisticated solutions for modern contour measurement. Here users seeking high performance results will find a tailor-made configuration for the perfect evaluation of profiles in production and in the laboratory.

This brochure gives you an overview of the Mitutoyo range of contour measurement machines – from practical mobile devices through to high-end systems with dual stylus technology for automatic high-volume measurement. You will quickly be able to focus in on the best solution for you and your own particular measurement tasks. You can then request to see more detailed brochures on the configuration of your choice, together with the varied range of accessories and software available.

Whatever you choose: with a Mitutoyo contour measuring system, you will secure the experience, competence and performance of an international technology leader, and customer-oriented service worth getting excited about.

CONTOUR MEASURING MACHINES

ACER

Mitutoyo
ADJUSTABLE MEASURING FORCE
MULTI-DIRECTIONAL
C-4500

Individual solutions, sophisticated technologies, convincing concepts: contour measurement with Mitutoyo competence.

Model	Description	
Contracer CV-2100	Contour measuring instrument designed to support 'easy to use' and 'speedy' measurements.	
CONTRACER CV-3200	Powerful system for automatic high-volume measurement. With even greater precision in all axes for difficult stationary contour testing in the production environment or in the test room.	
CONTRACER CV-4500	Dual stylus measuring unit for upward/downward measurement. The system meets highest accuracy requirements.	

Mitutoyo offers a wide range of models for various applications.

Device-specific features

- Quick movement in Z2
- Centralized front control panel
- Easy operation with x-axis jog shuttle
- Including FORMTRACEPAK measurement and analytical software

Model	Measuring range X/Z axis	Height adjustment		Base plate dimensions
CV-2100 N4	100 / 50 mm	optional		optional
CV-2100 M4	100 / 50 mm	350 mm	man.	600x450 mm

- Magnetic stylus arm
- Measuring range of Z1=60 mm
- Motorised Z axis
- Including FORMTRACEPAK measurement and analytical software
- Feed inclination adjustment ± 45°
- ABS scale in the Z2 axis
- Z2 up to 700 mm

CV-3200 S4	100 / 60 mm	300 mm	mot.	600x450 mm
CV-3200 H4	100 / 60 mm	500 mm	mot.	600x450 mm
CV-3200 W4	100 / 60 mm	500 mm	mot.	1000x450 mm
CV-3200 L4	100 / 60 mm	700 mm	mot.	1000x450 mm
CV-3200 S8	200 / 60 mm	300 mm	mot.	600x450 mm
CV-3200 H8	200 / 60 mm	500 mm	mot.	600x450 mm
CV-3200 W8	200 / 60 mm	500 mm	mot.	1000x450 mm
CV-3200 L8	200 / 60 mm	700 mm	mot.	1000x450 mm

- Magnetic stylus arm
- Measuring range of Z1=60 mm
- Software controlled measuring force
- Motorised Z axis
- Including FORMTRACEPAK measurement and analytical software
- Feed inclination adjustment ± 45°
- ABS scale in the Z2 axis
- Z2 up to 700 mm

CV-4500 S4	100 / 60 mm	300 mm	mot.	600x450 mm
CV-4500 H4	100 / 60 mm	500 mm	mot.	600x450 mm
CV-4500 W4	100 / 60 mm	500 mm	mot.	1000x450 mm
CV-4500 L4	100 / 60 mm	700 mm	mot.	1000x450 mm
CV-4500 S8	200 / 60 mm	300 mm	mot.	600x450 mm
CV-4500 H8	200 / 60 mm	500 mm	mot.	600x450 mm
CV-4500 W8	200 / 60 mm	500 mm	mot.	1000x450 mm
CV-4500 L8	200 / 60 mm	700 mm	mot.	1000x450 mm

man: manual
mot: motorised

Contracer CV-2100
Extensive contour measurement quick and easy.

CV-2100

Measuring range:

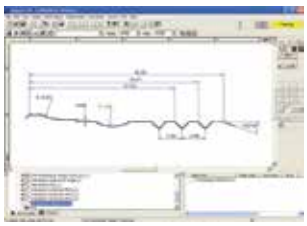
X	100 mm
Z	50 mm

Resolution:

X axis	0.1 µm
Z axis	0.1 µm

Accuracy:

X axis	±(2.5+0.02L) µm
Z axis	±(2.5+0.1H) µm



FORMTRACEPAK software: Evaluation screen

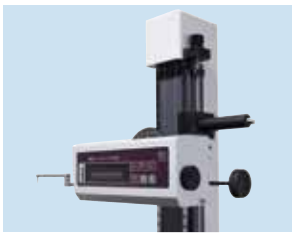
FORMTRACEPAK software: Layout

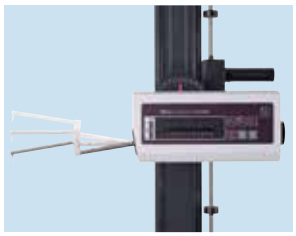
Contracer CV-2100:

This contour measuring instrument is designed to support "easy to use" and "speedy" measurements.

The Contracer CV-2100N4 and CV-2100M4 offer you the following benefits:

- Extensive contour measurement quick and easy.
- Quick movement in Z2 because of an easy to use quick grip. [M4 type]
- Auto execution and multi point measurement with the new stylus up-and down function.
- X-axis drive up to 20mm/s by jog shuttle.
- Centralized front control panel
- Easy part programming as well as single measurement with software FORMTRACEPAK.
- Automatic evaluation, best fit of contours, CAD comparison and many more features as standard.
- CV-2100 M4 mounted with quick grip stand on a granite base.
- CV-2100 N4 can be mounted on an optional granite base with a manual column.





quick & easy

CV-2100 M4
Easy to use and speedy measurement with quick movements.

CV-2100 N4
Mobile or stationary – build into a jig or on a granite stand.

CONTRACER CV-3200
Top technology for contour measurement

CV-3200

Measuring range: [Resolution]:

X axis	100/200 mm
Z2 axis	300/500/700 mm
Z1axis	60 mm

Accuracy:

X [S4,H4,W4,L4]	±(0.8+0.01L) µm
X [S8,H8,W8,L8]	±(0.8+0.02L) µm
Z1	±(1.4+0.02H) µm
Straightness X	0.8 µm/100 mm 2.0 µm/200 mm

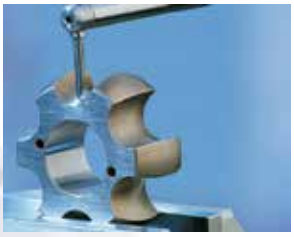
FORMTRACEPAK software: Evaluation screen

CONTRACER CV-3200:

Powerful stand-alone system for automatic high-volume use in measuring rooms and laboratories. Highly efficient with motorized axis, good measurement volume and magnetic stylus arm attachment.

- Quick and easy measurement, evaluation and print out of contours
- Measurement and analytical software FORMTRACEPAK
- Contour measuring range of Z1 = 60 mm as standard
- Easy exchange of magnetic contour stylus arm gives excellent flexibility
- Excellent accuracy and resolution
- Highest positioning speed up to 80 mm/s
- Ceramic straightness guide of X axis
- Wide range of accessories
- Collision prevention
- Supports many CNC functions
- Z2 column travel of up to 700 mm

technology



Mitutoyo

CONTRACER CV-4500
No compromise.

maxim

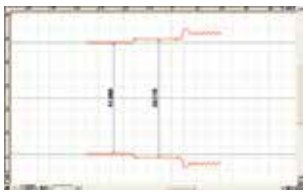
CV-4500

Measuring range [Resolution]:

X axis	100/200 mm
Z2 axis	300/500/700 mm
Z1axis	60 mm

Accuracy:

X [S4,H4,W4,L4]	±(0.8+0.01L) µm
X [S8,H8,W8,L8]	±(0.8+0.02L) µm
Z1	±(0.8+0.02H) µm
Straightness X	0.8 µm/100 mm
	2.0 µm/200 mm



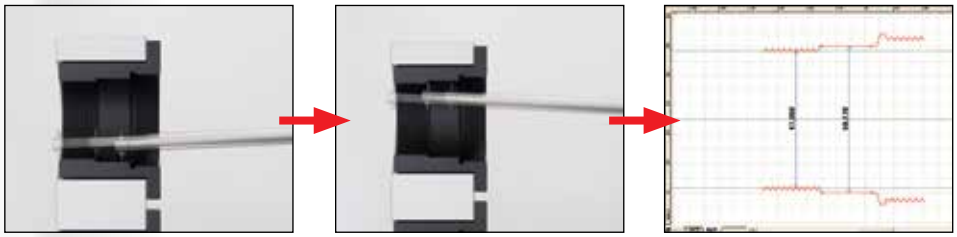
FORMTRACEPAK: Double side contour

CONTRACER CV-4500:

This stationary high-end dual stylus system meets highest requirements. Powerful system for use in measuring rooms and laboratories.

- Dual stylus system for upward /downward measurement at double side contours
- Measurement force controlled by software FORMTRACEPAK
- Contour measuring range of Z1 = 60 mm as standard
- Quick and easy measurement, evaluation and print out of contours
- Easy exchange of magnetic contour stylus arm gives excellent flexibility
- Measurement and analytical software FORMTRACEPAK
- Highest accuracy and resolution
- Highest positioning speed up to 80 mm/s
- Wide range of accessories
- Collision prevention
- Supports many CNC functions
- Z2 column moving range up to 700 mm

num precision



MiCAT
Mitutoyo Intelligent Computer Aided Technology
the standard in world metrology software
FORM

Professional Software

FORMTRACEPAK
CONTOUR
Software package

Expansion module

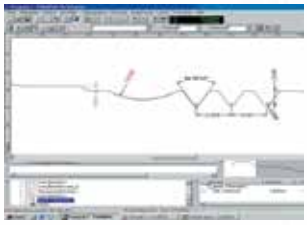
MeasurLink
Module for statistical measurement data processing and analysis, and storage of measured data.

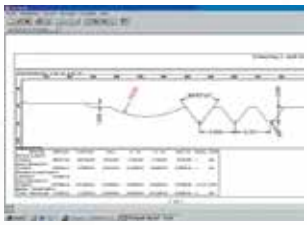
FORMTRACEPAK

Measuring, evaluation and complete documentation: with FORMTRACEPAK, the high-end software from Mitutoyo. Comes as standard with all CONTRACER systems, at no extra cost and with impressive range of features – a real bonus. For professional contour measurement with best results.

- Reading in of DXF and IGES formats is possible
- Outputting of DXF and IGES formats is possible
- Evaluation of measured data against DXF or IGES setpoint contours
- Individual preparation of reports
- Reading in of grafic files
- Automatic parts program sequence
- Editing of parts programs
- User-defined settings
- Graphic representation during contour detection
- Control of the measurement system using software and joystick
- Individual outputting of results (report, ASCII, CSV)
- Linking of individual contours
- Representation and evaluation of several contours on one screen
- Best fit function for graphic setpoint/actual comparisons and parts program measurement

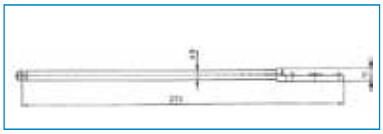
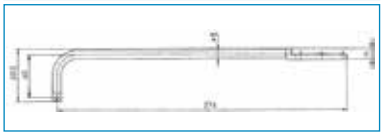
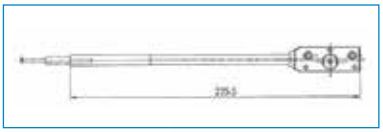
Contour recording during measurement


Evaluation

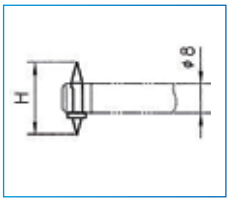
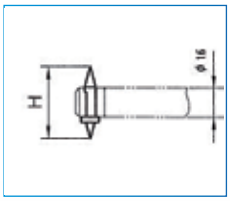

Report editor

Optional

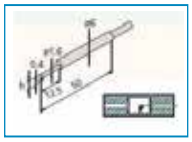
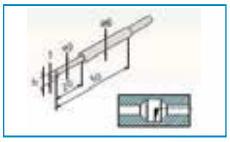
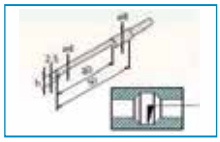
Applicable arms for CV-3200, CV-4500

Straight 12AAM101		AB-31
Eccentric 12AAQ762		AB-37
Small hole 12AAM103		AB-33

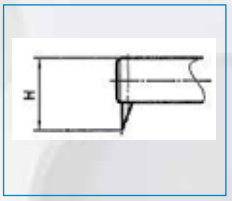
Applicable styli for CV-4500

Both sides conical 12AAM095		SPHW-56 H = 20 mm
Both sides conical 12AAM096		SPHW-66 H = 32 mm
Both sides conical 12AAM097		SPHW-76 H = 48 mm
Both sides small hole 12AAM108		SPHW-31 H = 2.4 mm
Both sides small hole 12AAM109		SPHW-32 H = 5 mm
Both sides small hole 12AAM110		SPHW-33 H = 9 mm

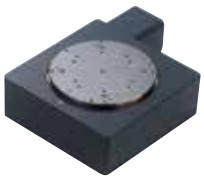
Applicable arms for small diameters for CV-2100

		
SP-11 SP-31	SP-12 SP-32	SP-13 SP-33

Applicable styli for CV-3200, CV-4500

Small hole		SPH-41 H = 2 mm
Small hole		SPH-42 H = 4 mm
Small hole		SPH-43 H = 6.5 mm

Accessories for supporting CNC functions of CV-3200/CV-4500



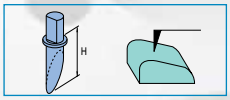
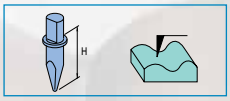
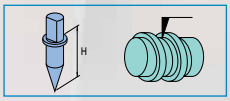
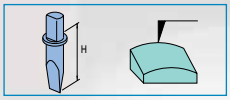
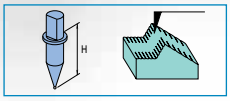
θ 1 axis

θ 2 axis

Y table

2D-3D auto leveling table

Applicable styli for CV-2100, CV-3200, CV-4500*

Flat on one side		SPH-51 6 mm SPH-61 12 mm SPH-71 H = * 20 mm SPH-81 30 mm SPH-91 42 mm
Cross-ground		SPH-52 6 mm SPH-62 12 mm SPH-72 H = 20 mm SPH-82 30 mm SPH-92 42 mm
Conical		SPH-53 6 mm SPH-63 12 mm SPH-73 H = 20 mm SPH-83 30 mm SPH-93 42 mm
Knife edge		SPH-54 6 mm SPH-64 12 mm SPH-74 H = 20 mm SPH-84 30 mm SPH-94 42 mm
Ball		SPH-55 6 mm SPH-65 12 mm SPH-75 H = 20 mm SPH-85 30 mm SPH-95 42 mm

* Extract from the wide range of styli.

Something else your partners will need to measure up to: Competent advice and service.

Anyone who performs precision work needs a partner with sharp vision. Not only in the development and supply of the ideal measuring system, but also beforehand and afterwards – with advice and service. As a manufacturer of measuring machines with the world's broadest range of products and over seven decades of experience, Mitutoyo has a particularly refined range of services. For absolute customer satisfaction long before, and for a long time after, the decision to purchase.

Advice

Depending on your requirements, you can define, in close dialogue with the Mitutoyo specialist consultants, the machine or system selection to fit your specific measuring tasks – either standard or special tailor-made solutions in the context of the revolutionary M³ solution concept from Mitutoyo.

This guarantees that you will be operating with the most suitable measuring equipment, both in terms of technical aspects and cost. As the sole complete supplier in its sector, Mitutoyo is well placed to configure the most efficient and suitable systems for you.

Service

Only seamless service will give you the assurance that you can be sure that you have made the right choice with Mitutoyo – and give us the assurance of being able to satisfy your needs completely, well into the future. That is why we make continuous and comprehensive investments in expanding our already outstanding range of services. Because that, at the end of the day, is the standard against which you will measure your machine suppliers. After all, technical perfection goes without saying – at least from Mitutoyo.

Competence

© MITUTOYO/D 03/17 PRE1163(9)

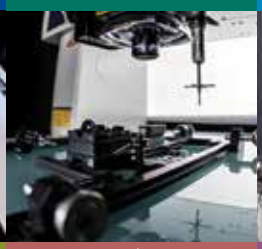
EACAMPOS
Metrologia e Sistemas, S.A.

Porto R. Senhora da Penha, 110·4460-423 Senhora da Hora·Tel: +351 220 909 436
Lisboa Avenida Quinta Grande, 87B · 2610-158 Amadora · Tel: +351 210 949 532

info@metrologia.pt
metrologia.pt

Coordinate Measuring Machines

Vision Measuring Systems



Form Measurement

Optical Measuring

Sensor Systems

Test Equipment and Seismometers

Digital Scale and DRO Systems

Small Tool Instruments and Data Management

Whatever your challenges are, Mitutoyo supports you from start to finish.

Mitutoyo is not only a manufacturer of top quality measuring products but one that also offers qualified support for the lifetime of the equipment, backed up by comprehensive services that ensure your staff can make the very best use of the investment.

Apart from the basics of calibration and repair, Mitutoyo offers product and metrology training, as well as IT support for the sophisticated software used in modern measuring technology. We can also design, build, test and deliver bespoke measuring solutions and even, if deemed cost-effective, take your critical measurement challenges in-house on a sub-contract basis.

Find additional product literature and our product catalogue

www.mitutoyo.eu

Note: Product illustrations are without obligation. Product descriptions, in particular any and all technical specifications, are only binding when explicitly agreed upon.
MITUTOYO is either registered trademarks or trademarks of Mitutoyo Corp. in Japan and/or other countries/regions. Other product, company and brand names mentioned herein are for identification purposes only and may be the trademarks of their respective holders.

Mitutoyo

Mitutoyo Europe GmbH

Borsigstraße 8-10
41469 Neuss

Tel. +49 (0) 2137-102-0
Fax +49 (0) 2137-102-351

info@mitutoyo.eu
www.mitutoyo.eu