



baty

precision  
measuring  
instruments



Baty International has been in business since 1932. Originally, a manufacturer of high precision dial indicators and other associated instruments such as cylinder bore gauges.

Baty soon diversified into non-contact measurement with Optical Profile Projectors and the Baty 'Shadograph' series has since become an industry standard in profile projectors. These products are still manufactured in Sussex in accordance with ISO 9001:2000.

For decades Baty has employed a team of Field Based Service Engineers. Today, our service department is the largest ISO 9001:2000 accredited Projector Service Organisation in the UK offering on-site Service, Training, Retrofits, and Repair for all makes of Profile Projector and Vision Systems.

In keeping with its gauging roots, Baty acquired John Bull and British Indicators, extending its gauging range to include calipers and flexible fixturing.

The range was then completed in the eighties when our first camera based Video Inspectors were developed. Video Edge Detection (VED) was soon added giving rise to increased accuracy, repeatability and measuring speed.

Now all our vision systems offer the best of both worlds with the combination of non-contact (VED) and contact measurement using Renishaw's extensive touch probe range.

Today, Baty is an ISO 9001:2000 accredited company that offers a range of Metrology Instruments from Hand Tools to Vision Systems, offering measuring solutions for almost every measurement application in modern manufacturing and now, we've put them together into one catalogue for your convenience.

So, whether you need a digital caliper or a full CNC multi-sensing Vision system...

...it's here.

We look forward to talking to you.

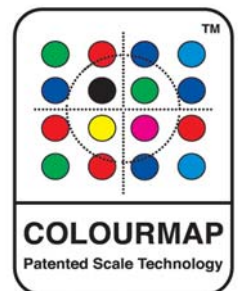
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# LEVER TYPE DIAL TEST INDICATORS – METRIC

The Baty HL series of lever-type dial test indicators are top quality, Swiss-made precision instruments. Low inertia jewelled movements and rugged construction make them suitable for universal applications in the workshop and inspection departments.

## Special Features

- High sensitivity, repeatability and accuracy
- Meet or exceed BS, DIN, Federal and other national standards
- Anti-magnetic
- Automatic reverse action stylus – hand always rotates clockwise
- Adjustable bezel and hand for zeroing
- Rugged, satin chrome finished body
- Three dovetail mountings, top, back and front
- Fully jewelled and geared movement
- Precision ball bearing mounted, interchangeable carbide point swivels through 240°

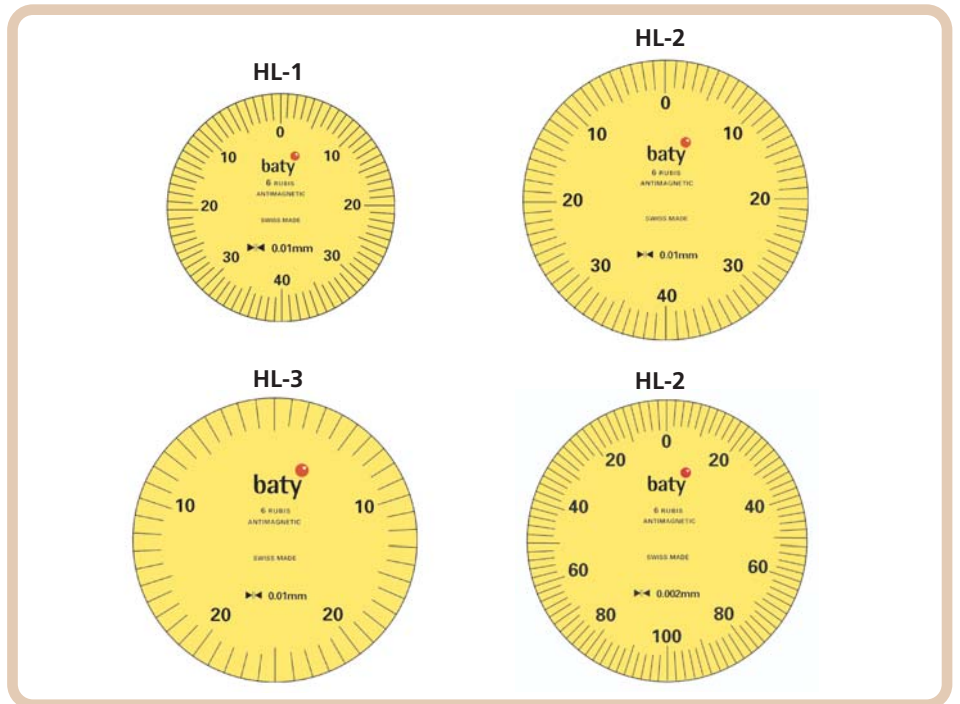
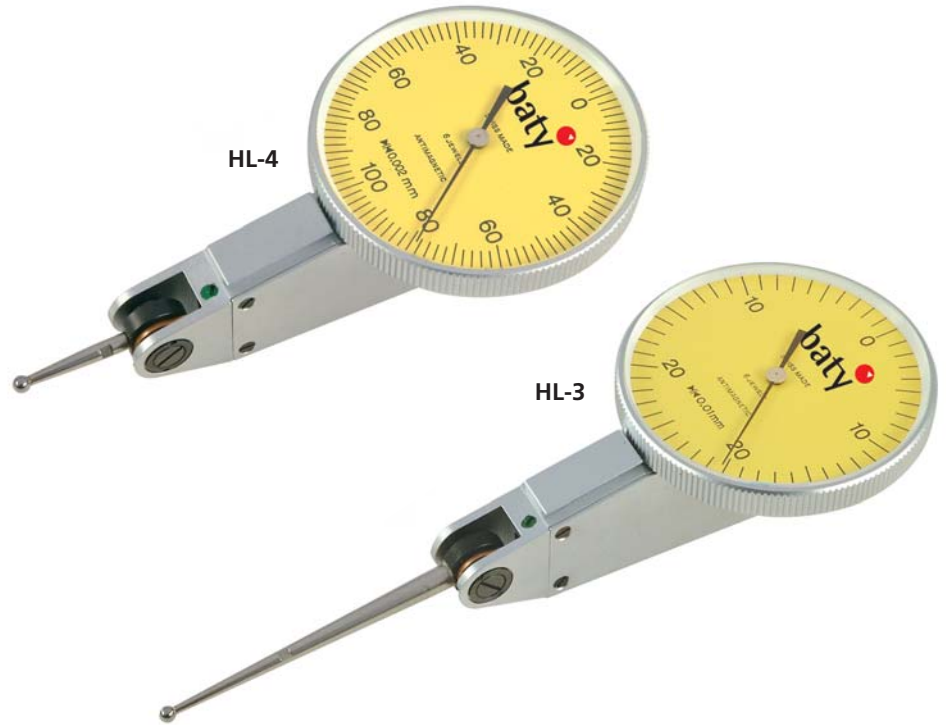
## Baty HL indicators are supplied with:

- 2mm diameter contact point – fitted
- 1mm and 3mm diameter interchangeable contact points
- Contact point key
- Dovetail stems 911 and 914
- Tough plastic case

**Note:** Models HL3 and HL7 are not supplied with additional contact points



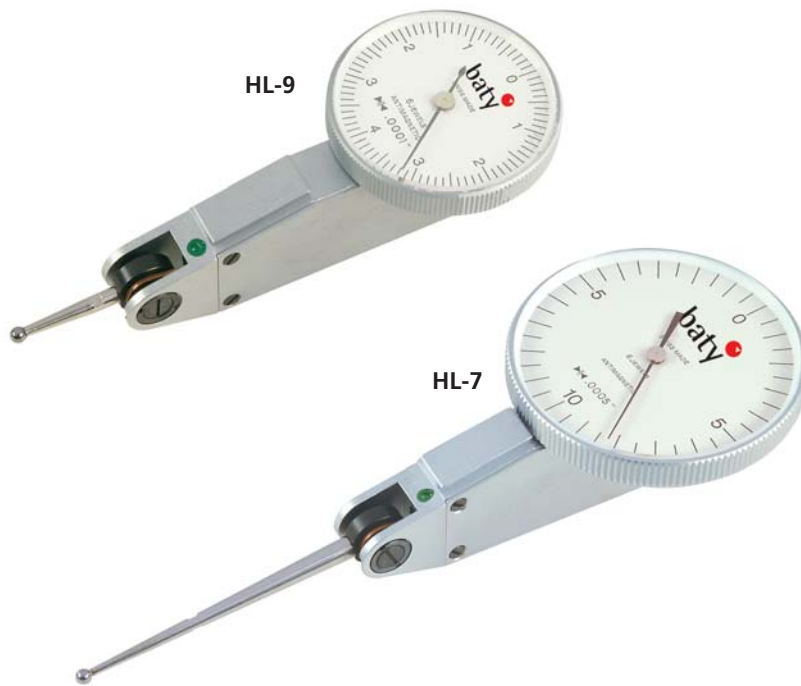
Baty HL indicators are supplied packaged as above



## Metric Reading Models

Model	Reading	Measuring Range	Indicator Diameter	Stylus Length	Graduated
HL-1	0.01mm	0.8mm	27mm	12mm	0-40-0
HL-2	0.01mm	0.8mm	37mm	12mm	0-40-0
HL-3	0.01mm	0.5mm	37mm	36mm	0-25-0
HL-4	0.002mm	0.2mm	37mm	12mm	0-100-0

# LEVER TYPE DIAL TEST INDICATORS – IMPERIAL



The Baty HL series of lever-type dial test indicators are top quality, Swiss-made precision instruments. Low inertia jewelled movements and rugged construction make them suitable for universal applications in the workshop and inspection departments.

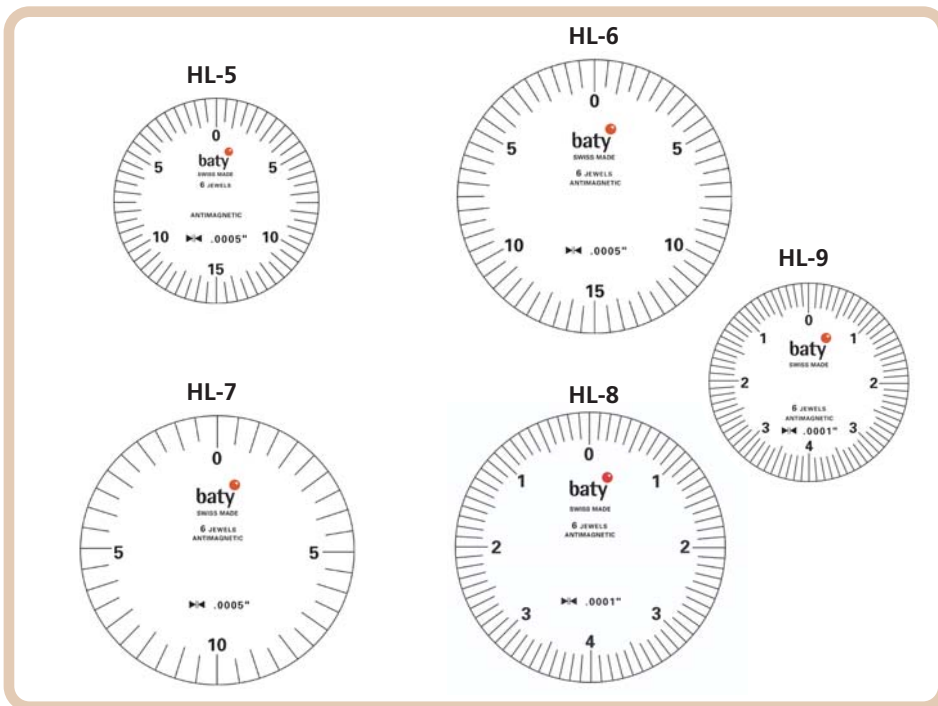
## Special Features

- High sensitivity, repeatability and accuracy
- Meet or exceed BS, DIN, Federal and other national standards
- Anti-magnetic
- Automatic reverse action stylus – hand always rotates clockwise
- Adjustable bezel and hand for zeroing
- Rugged, satin chrome finished body
- Three dovetail mountings, top, back and front
- Fully jewelled and geared movement
- Precision ball bearing mounted, interchangeable carbide point swivels through 240°

## Baty HL indicators are supplied with:

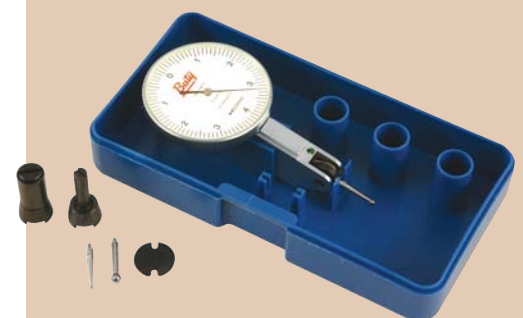
- 2mm diameter contact point – fitted
- 1mm and 3mm diameter interchangeable contact points
- Contact point key
- Dovetail stems 911 and 914
- Tough plastic case

**Note:** Models HL3 and HL7 are not supplied with additional contact points



## Imperial Reading Models

Model	Reading	Measuring Range	Indicator Diameter	Stylus Length	Graduated
HL-5	0.0005"	0.03"	1"	0.5"	0-15-0
HL-6	0.0005"	0.03"	1½"	0.5"	0-15-0
HL-7	0.0005"	0.02"	1½"	1.437"	0-10-0
HL-8	0.0001"	0.008"	1½"	0.5"	0-4-0
HL-9	0.0001"	0.008"	1"	0.5"	0-4-0



Baty HL indicators are supplied packaged as above

## LEVER TYPE DIAL TEST INDICATORS – BL SERIES

### Features

- Standard: DIN 2270
- Automatic reversal of measuring direction
- High precision fully jewelled bearings
- Rotating dial
- Two dovetail clamps
- Carbide points
- Long range - twice the range of most indicators (BL-9 and BL-10 only)



Model	Range	Graduation	Dial Reading	Dial Diameter	Dial Colour	Feeler Length
BL-1	0.8mm	0.01mm	0-40-0	25mm	white	12mm
BL-2	0.030"	0.0005"	0-15-0	1"	white	1/2"
BL-3	0.8mm	0.01mm	0-40-0	37mm	white	12mm
BL-4	0.030"	0.0005"	0-15-0	1 1/2"	white	1/2"
BL-5	0.2mm	0.002mm	0-100-0	25mm	white	12mm
BL-6	0.008"	0.0001"	0-4-0	1"	white	1/2"
BL-7	0.2mm	0.002mm	0-100-0	37mm	white	12mm
BL-8	0.008"	0.0001"	0-4-0	1/2"	white	1/2"
BL-9	1.6mm	0.01mm	0-40-0	37mm	white	12mm
BL-10	0.060"	0.0005"	0-15-0	1 1/2"	white	1/2"

## DIAL TEST INDICATOR ACCESSORIES – BL SERIES



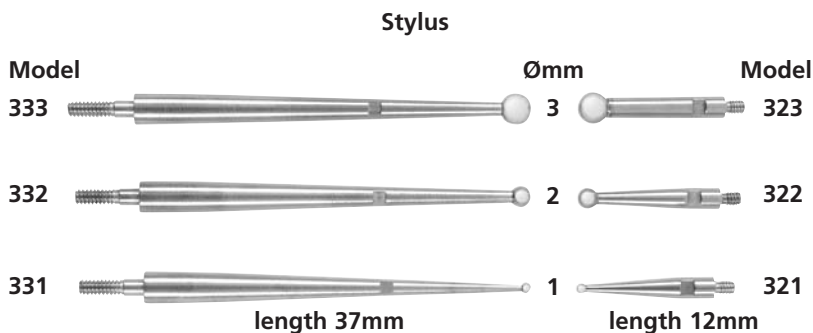
Model	Description
BL-UH	Universal holder
BL-CP1	Contact point 12mm length, 1 mm steel ball
BL-CP2	Contact point 12mm length, 2 mm carbide ball
BL-CP3	Contact point 12mm length, 3mm carbide ball
BL-CP40	Contact point 1/2" length, 0.040" steel ball
BL-CP80	Contact point 1/2" length, 0.080" carbide ball
BL-CP120	Contact point 1/2" length, 0.120" carbide ball

# LEVER-TYPE DIAL TEST INDICATORS ACCESSORIES



Model	Description
911	Dovetail Stem 1/4"
912	Dovetail Stem 5.5mm
913	Dovetail Stem 8mm
914	Dovetail Stem 4mm
915	Holding Bar 76 x 12 x 6mm x Ø 5.5mm
916	Holding Bar Round 8mm x 100mm long x Ø 5.5mm
917	Dovetail Swivel Clamp Ø 5.5mm and Ø 9.5mm
927	Dovetail Swivel Clamp 90mm long x Ø 9.5mm
928	Dovetail Swivel Clamp 25mm long x Ø 9.5mm
930	Angular Support Ø 9.5mm and Ø 9.5mm I/D
934	Centering Holder Ø 8mm and 4mm I/D
945	Magnetic stand, fully adjustable, suits plunger and lever type indicators. Max height to knuckle joint 100mm, max reach 120mm with fine adjust
943	Dovetail Swivel Support with fine adjustment 8mm x 120mm long
944	Dovetail Swivel Support with fine adjustment 8mm x 15mm long

All items are compatible with the HL Series Lever Gauges



Available with 1.4mm or 1.6mm thread

# CRANKSHAFT ALIGNMENT GAUGE SET

If an engine crankshaft is not correctly aligned in its bearings, it distorts and becomes subject to damaging stresses. Any misalignment causes a change in the distance between webs when the shaft revolves and can be detected by placing an indicating device between the webs.

The Baty crankshaft alignment gauge is designed for this purpose. Its contacts are pointed and fit into dimples in the webs. A heavy spring pressure ensures that the gauge is retained but is free to turn in relation to the crankshaft and an adjustable balance weight restrains the gauge against rotation of the crankshaft so that the dial always faces the inspector.

The gauge covers web-to-web distances of 57-500mm (2¼"-20").

Set supplied in a wooden case.

The special dial indicators may be purchased separately.



2553-D-SET



Model	Indicator Reading	Web-to-web
2553-D-SET	0.01mm	57-500mm
2552-D-SET	0.0005"	2¼"-20"
2553-D/CG	0.01mm	Indicator only
2552-D/CG	0.0005"	Indicator only







## Back Plunger Type

These are versatile instruments with countless uses in workshops and inspection departments; for example, concentricity checks, marking-out table and surface plate work, alignment of machine tools, testing, parallelism, etc.

### The set comprises:

- 35mm diameter, back plunger dial indicator with holding rod
- Lever attachment
- Universal clamp
- G-clamp
- Tool post holder
- Domed anvil
- All supplied in wooden case

Model	Range	Reading	Graduation
FTSM-1 Metric Test Set	2 mm	0.01 mm	0-100
FTSI-1 Imperial Test Set	0.1"	0.001"	0-100

## Plunger Type

### The set comprises:

- 57mm diameter plunger dial indicator
- Lever attachment
- Universal clamp
- G-clamp
- Tool post holder
- All supplied in wooden case
- Spigot back



Model	Range	Reading	Graduation
FTSU-M Metric Test Set	10 mm	0.01 mm	0-100
FTSU-I Imperial Test Set	0.5"	0.001"	0-100

Other options of indicator available on request

# BENCH COMPARATOR STANDS

These comparator stands provide for a wide variety of applications in both the workshop and the standards room. Compatible with all Baty mechanical and digital indicators.

## GS-3

- 0.002mm flatness
- Extreme stability
- 250mm height
- Other table sizes available



GS-3

Model	Measuring Height mm	Reach	Column Ø	Table Size
GS-3	180	100	35	200 x 150

## 2407

- Chrome column
- Fine adjustment
- Cast iron base with ground faces
- ø8mm stem mounting



Model	Column Ø	Arm	Base
2407	16mm x 250mm	16mm x 230mm	250 x 60 x 55mm

# PLUNGER DIAL INDICATORS – FM SERIES



FM-302



FM-3 fitted with MA-108 knife edge anvil



FM-1



D5

The Baty range of Plunger Dial Indicators includes a model for all applications. Building on decades of experience we offer standard indicators in most popular sizes. All units are supplied with 8mm stems, M2.5 threads and offset lug backs as standard.\*

Calibration certificate supplied with all Group 2 indicators reading 0.01mm or finer.

### Group 2 Features

- Solid brass case
- 57mm diameter bezel
- Tolerance pointers
- Precision movement
- Coarse and fine dials
- Range of contact tips and back plates available (see page 15)
- 3mm diameter carbide ball anvil

### FM-CSR

A single revolution dial indicator is included in the range to provide reliable reading and remove the risk of operator error. This indicator is especially useful when fitted to comparative gauging fixtures such as the Baty Checkmaster.

### Group 1 Indicators 42 mm Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
D5	0.01 mm	8 mm	1.0 mm	0-100

Centre lug or flat back

### Group 2 Indicators 57 mm Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
FM-1	0.01 mm	10 mm	1.0 mm	0-50-0
FM-2	0.01 mm	10 mm	1.0 mm	0-100
FM-3	0.01 mm	25 mm	1.0 mm	0-100
FM-4	0.002 mm	5 mm	0.2 mm	0-20/0-10-0
FM-8	0.002 mm	12 mm	0.2 mm	0-10-0/0-20
FM-5	0.001 mm	1 mm	0.2 mm	0-200/0-100-0
FM-9	0.001 mm	12 mm	0.2 mm	0-200
FM-6	0.1 mm	10 mm	10.0 mm	0-10
FM-7	0.1 mm	25 mm	10.0 mm	0-10
FM-CSR	0.01 mm	0.8 mm	0.8 mm	40-0-40

### Group 3 Indicators 76mm Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
FM-302	0.01 mm	50 mm	1.0 mm	0-100

# PLUNGER DIAL INDICATORS

The Baty range of Plunger Dial Indicators includes a model for all applications. Building on decades of experience we offer standard indicators in most popular sizes. All units are supplied with 8mm stems, M2.5 threads and offset lug backs as standard.\*

Non-standard configurations are also available on request.

### Group 3 Features

- Solid brass case
- Large 76mm diameter bezel
- Tolerance pointers
- Precision movement
- Range of contact tips and back plates available (see page 15)



FI-301



FI-3 fitted with MA-110 roller anvil



FI-6 fitted with MA-119 flat anvil



D1

### Group 1 Indicators 42mm Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
D1	0.001"	0.25"	0.1"	0-100

Centre lug or flat back

### Group 2 Indicators 2 1/4" Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
FI-1	0.001"	0.5"	0.1"	0-50-0
FI-2	0.001"	0.5"	0.1"	0-100
FI-3	0.001"	1"	0.1"	0-100
FI-4	0.0005"	0.5"	0.05"	0-50 / 0-25-0
FI-5	0.0001"	0.2"	0.01"	0-100 / 0-50-0
FI-6	0.0001"	0.5"	0.01"	0-100 / 0-50-0

### Group 3 Indicators 3" Nominal Diameter

Model	Reading	Range	Range per Rev.	Graduation
FI-301	0.001"	2"	0.1"	0-100

# PLUNGER DIAL INDICATOR – WS SERIES



WS-02



WS-04



WS-05



WS-07



WS-10

## Features

Standard: DIN 878

- Satin-chromed body
- With Tungsten carbide measuring tip
- With double dial indicator for measuring mm stroke
- Shockproof
- Micron versions are jewelled
- Adjustable scale with stop screw
- Some models offer tolerance indicators, see picture
- Packed in foam box

Model	Range	Resolution	Diameter
WS-01	0-1mm	0.001mm	58mm / flat
WS-02	0-1mm	0.001mm	58mm / lug
WS-03	0-3mm	0.01mm	42mm / lug
WS-04	0-5mm	0.01mm	42mm / lug
WS-05	0-10mm	0.01mm	58mm / flat
WS-06	0-10mm	0.01mm	58mm / lug
WS-07	0-10mm	0.01mm	54mm / waterproof
WS-08	0-10mm	0.1mm	54mm / lug
WS-09	0-30mm	0.01mm	58mm / lug
WS-10	0-50mm	0.01mm	58mm / lug
WS-11	0-10mm	0.01mm	58mm / flat

## DIGITAL INDICATOR

- **Inch / metric**

0-12.7mm (0-0.5") measuring range  
0.001mm (0.00005") resolution

- **Zero / on / off**

Zero setting at any position / manual power on / off

- **Data hold**

TIR, min and max hold functions

- **TOL**

Set tolerance for pass / fail indication

- **ABS**

Switch between absolute and incremental mode

- **Universal 8mm stem mount**

- **Supplied with 3mm diameter steel ball contact**

- **Rotating bezel**

- **Dual analogue and digital display**



Model	Range	Accuracy
DI-1	0 - 12.7mm / 0.5"	0.008mm / 0.0003"

## DIGITAL INDICATOR

### Features

- Direct inch / metric conversion
- 58mm dial face
- Lugback and 8mm stem mountings
- Resolution 0.01m / 0.0005"
- Absolute / Incremental reading
- Floating Zero



Model	Range	Accuracy
DI-2	0 - 12.7mm / 0.5"	0.02mm / 0.0008"
DI-3	0 - 25.0mm / 1.0"	0.03mm / 0.0012"

# PLUNGER DIAL INDICATORS ACCESSORIES



The applications of a plunger dial indicator can be extended and facilitated by a wide range of options and accessories. Changing anvils allows access to measurements that might be difficult to achieve with the standard anvils supplied.

<p><b>Needle-point</b></p> <p><b>MA-106</b></p>	<p><b>Knife-Edge</b></p> <p><b>MA-108</b></p>	<p><b>Offset Knife-Edge</b></p> <p><b>MA-109</b></p>																
<p><b>Roller</b></p> <p><b>MA-110</b></p>	<p><b>Domed</b></p> <p><b>MA-111</b></p>	<p><b>Taper</b></p> <p><b>MA-130</b></p>																
<p><b>Larger Flat Anvils</b></p> <table border="0"> <tr> <td><b>MA-115</b> D = 6.0</td> <td><b>MA-119</b> D = 15.0</td> </tr> <tr> <td><b>MA-116</b> D = 8.0</td> <td><b>MA-120</b> D = 20.0</td> </tr> <tr> <td><b>MA-117</b> D = 10.0</td> <td><b>MA-121</b> D = 25.0</td> </tr> <tr> <td><b>MA-118</b> D = 12.0</td> <td></td> </tr> </table>		<b>MA-115</b> D = 6.0	<b>MA-119</b> D = 15.0	<b>MA-116</b> D = 8.0	<b>MA-120</b> D = 20.0	<b>MA-117</b> D = 10.0	<b>MA-121</b> D = 25.0	<b>MA-118</b> D = 12.0		<p><b>Rack Extensions</b></p> <table border="0"> <tr> <td><b>MA-136</b> L = 15 mm</td> <td><b>MA-140</b> L = 40 mm</td> </tr> <tr> <td><b>MA-137</b> L = 20 mm</td> <td><b>MA-141</b> L = 50 mm</td> </tr> <tr> <td><b>MA-138</b> L = 25 mm</td> <td><b>MA-142</b> L = 60 mm</td> </tr> <tr> <td><b>MA-139</b> L = 30 mm</td> <td></td> </tr> </table> <p>Rack extensions in a range of lengths are available to fit between the indicator and contact point</p>	<b>MA-136</b> L = 15 mm	<b>MA-140</b> L = 40 mm	<b>MA-137</b> L = 20 mm	<b>MA-141</b> L = 50 mm	<b>MA-138</b> L = 25 mm	<b>MA-142</b> L = 60 mm	<b>MA-139</b> L = 30 mm	
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Model	Description	Size
<b>BMS038</b>	Carbide ball anvil	3mm
<b>DQ10-142</b>	Spindle brake attachment	Fits to the indicator stem end. Retains hand & spindle at max. reading position. Spindle released by pressing button
<b>DQ20-11</b>	Universal clamp	Ø ¼" & ⅝" holes
<b>DQ20-11a</b>	Universal clamp	Ø ¼" & ⅜" holes
<b>DQ20-11b</b>	Universal clamp	Ø ¼" & ¼" holes
<b>DQ20-50</b>	Universal clamp	Ø ½" & ⅞" holes
<b>DQ100/M</b>	Lifting lever	12mm lift to fit 8mm stem
<b>DQ122/M</b>	Lifting lever	25mm lift to fit 8mm stem

<b>DQ30-14/B</b>	Lever attachment	45mm reach, to fit 8mm stem
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<b>MA-102</b>	Radiused anvil	6mm
<b>MA-106</b>	Needle anvil	
<b>MA-108</b>	Knife edge anvil	
<b>MA-109</b>	Off-set knife edge anvil	
<b>MA-110</b>	Roller anvil	
<b>MA-111</b>	Radiused anvil	Ø 8mm radius x 9.5mm
<b>MA-112</b>	Anvil	Ø 12mm radius x 9.5mm
<b>MA-115</b>	Flat anvil	Ø 6mm
<b>MA-116</b>	Flat anvil	Ø 8mm
<b>MA-117</b>	Flat anvil	Ø 10mm
<b>MA-118</b>	Flat anvil	Ø 12mm
<b>MA-119</b>	Flat anvil	Ø 15mm
<b>MA-120</b>	Flat anvil	Ø 20mm
<b>MA-121</b>	Flat anvil	Ø 25mm
<b>MA-130</b>	Long taper anvil	5mm
<b>MA-132</b>	Long taper anvil	20mm
<b>MA-133</b>	Long taper anvil	25mm

<b>MA-136</b>	Rack extension	15mm long
<b>MA-137</b>	Rack extension	20mm long
<b>MA-138</b>	Rack extension	25mm long
<b>MA-139</b>	Rack extension	30mm long
<b>MA-140</b>	Rack extension	40mm long
<b>MA-141</b>	Rack extension	50mm long
<b>MA-142</b>	Rack extension	60mm long

<b>T-5</b>	Holding rod	Ø ½" x 19" long
<b>T-7</b>	Holding rod	Ø ¼" x 134mm long



Group 2 Back Plates – FM & FI Series

Model	Description
<b>BMS018</b>	Flat back
<b>BMS036</b>	Centre lug
<b>BMS037</b>	Off-set (fitted as standard)

# DIAL ANGLE PROTRACTOR

## Features

- Features high quality indicator
- Made of high quality hardened and ground stainless steel
- High precision satin chromed scale
- Minimum reading 5 minutes
- Magnifying glass for easy reading
- With fine adjustment and height gauge attachment
- 300mm / 12" rule and 150mm / 6" rule
- Packed as set in plastic box



Model	Range
AP-SET	360°

# DIGITAL ANGLE PROTRACTOR

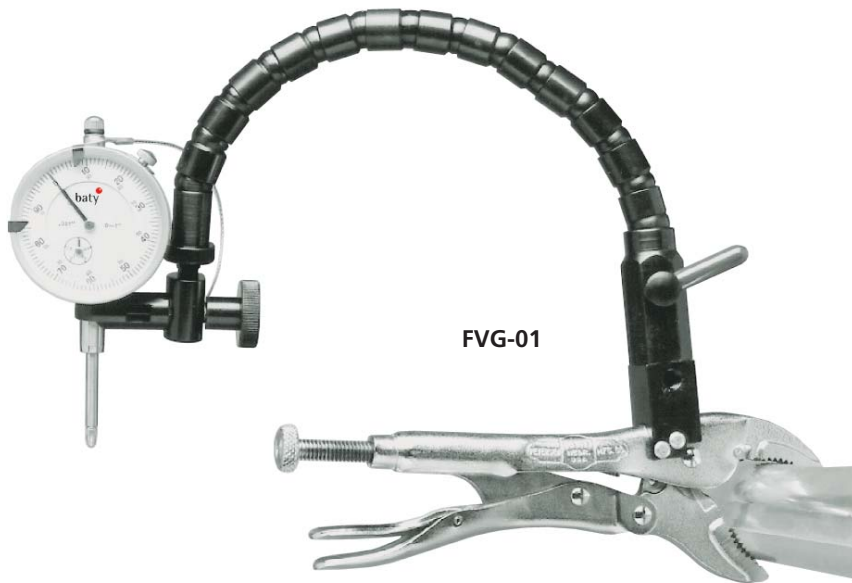
## Features

- 360° measuring range (4 x 90°)
- Manufactured from stainless steel
- Displays in degree / minute / second and decimal
- Resolution 30"
- Accuracy +/- 5'
- Fine adjustment
- Supplied with 300mm blades
- Supplied with acute angle attachment
- Battery CR2032



Model	Range
DAP-SET	Digital protractor 0-360°





FVG-01



FGC-01

## Features

These flexible gauge arms feature multiple swivel joints connected by a cable running through their centre for the length of the arm. Cable tension is released to allow the arm to be positioned exactly where required and then re-applied via a locking lever to form a solid gauge mounting arm in the desired shape.

## FVG-01

325mm length flexible gauge arm attached to vice grips. Fitted with universal stem clamp accepts 3mm-13mm dia.

## FGC-01

As FVG-01 but mounted to G-Clamp. Clamp capacity: 35mm x 19mm throat.

## MAGNETIC INDICATOR STAND

### MB 15

Heavy duty stand with 12mm diameter vertical column. 230mm height x 160mm reach with lug back clamp, 4mm and 8mm stem mounting. Switchable heavy duty magnetic base.

### Features

- Basic type
- With powerful on/off magnetic base
- Magnetic force 80Kg / 175 LBS
- Universal model which can be used for indicators with or without 'lug' on back plate
- Accepts dial test indicators, digital indicators and normal indicators
- Extra rigid



Model	Description
MB-15	Adjustable gauge stand with ON/OFF magnetic base

## MAGNETIC INDICATOR STAND

### MB15-FA

Heavy duty stand with 12mm dia. vertical column. 230mm height x 160mm reach with lug back clamp, 4mm and 8mm stem mounting. Switchable heavy duty magnetic base.

### Features

- Features fine adjustment
- With powerful on / off magnetic base
- Magnetic force 80Kg / 175 LBS
- Universal model which can be used for indicators with or without 'lug' on back plate
- Accepts dial test indicators, digital indicators and normal indicators
- Extra rigid



Model	Description
MB-15FA	Adjustable gauge stand with ON/OFF magnetic base and fine adjustment

## MAGNETIC INDICATOR STAND



### Features

- Versatile magnetic base that can be adjusted in almost unlimited ways
- Fine adjustment
- 30kg clamp force
- V-slotted base
- Universal model which can be used for indicators with or without 'lug' on back plate
- Accepts dial test indicators, digital indicators and normal indicators

### Model

MB15-AB

### Description

Articulating arm magnetic base

## HYDRAULIC INDICATOR STAND



### Features

- Features a unique hydraulic central lock for all arms and swivel positions
- Super solid model
- With fine adjustment
- With powerful on/off magnetic base
- Magnetic force 80Kg / 175 LBS
- Universal model which can be used for indicators with or without 'lug' on back plate
- Accepts dial test indicators, digital indicators and normal indicators
- Dovetail groove for clamping a dial test indicator
- Super rigid

### Model

HGS-1

### Description

Hydraulic lock adjustable gauge stand with ON/OFF magnetic base

## FLEXIBLE MAGNETIC BASE

### FMB-01

400mm length with switchable mag. base and base mounted fine adjust. Fitted with universal stem clamp accepts 3mm-13mm diameter

#### Features

- Corrosion resistant chrome plated flex arm
- Magnetic force 40kg / 85 lbs
- Holds rigidly in almost any position
- V-base for mounting on rounded surfaces



Model	Description
FMB-01	Flexible arm gauge stand with ON/OFF magnetic base

## MINI MAGNETIC BASE

### 945

Budget stand for lever indicators only. 135mm vertical height to dovetail mounting with 80mm extension rod providing 6mm stem clamp. Permanent magnetic base with fine adjustment.

#### Features

- 2 universal ball sockets
- Microfine adjustment screw
- Dovetail mounting
- Chuck adapter
- Indicator sold separately (see section 1)



Model	Description
945-LI	Mini magnetic base supplied without indicator

## MAGNETIC BASE SETS

Supplied with our DI-3 digital indicator.



FMB-Set



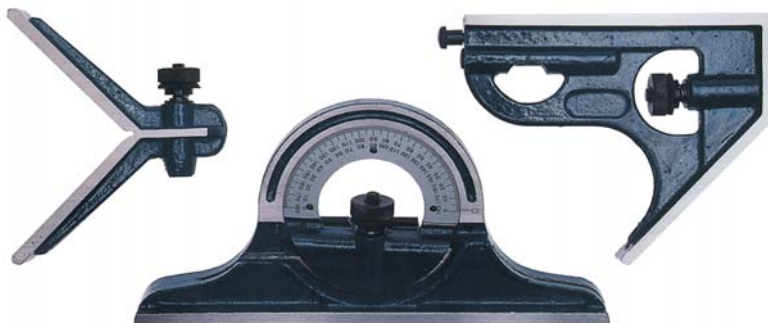
MB15-FASET

### Features

- Direct inch / metric conversion
- 58mm dial face
- Lugback and 8mm stem mountings
- Resolution 0.01m / 0.0005"
- Absolute / incremental reading
- Floating Zero

Model	Description
FMB-SET	Snake stand with DI-3
MB15-FASET	Articulating magnetic base with DI-3 digital indicator

## COMBINATION SET



### Features

- Three measuring heads are attached to the stainless steel ruler, allowing versatile measurements on various types of work pieces
- Square head, protractor head and centrehead
- For various measuring and marking applications
- Hardened and ground slide ways
- Stainless steel rule with engraved graduations

Model	Description	Items in Set
CSS-300	180°	4

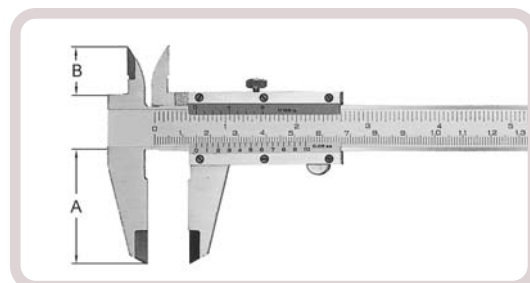
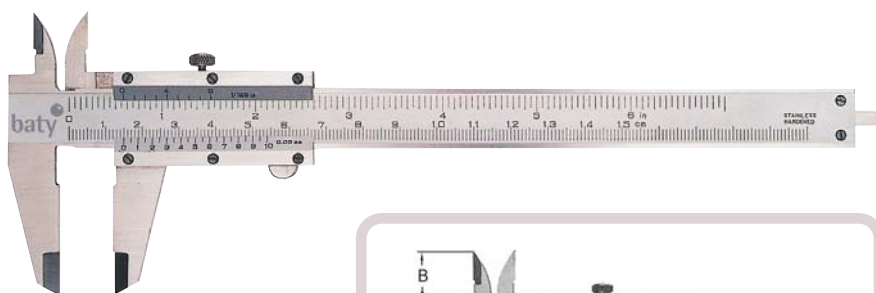
\* Metric and inch scale rule

## WORKSHOP VERNIER CALIPER

### Features

Standard DIN 862

- Standard workshop model with stop screw
- Assembly slider model
- 4-way measurement
- Made of hardened alloyed stainless steel
- Chromed scale with engraved graduations
- Measuring surface is micro-lapped
- Packed in plastic box

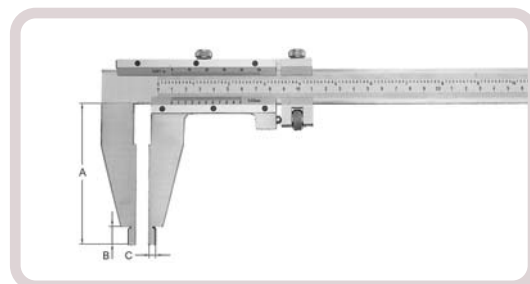
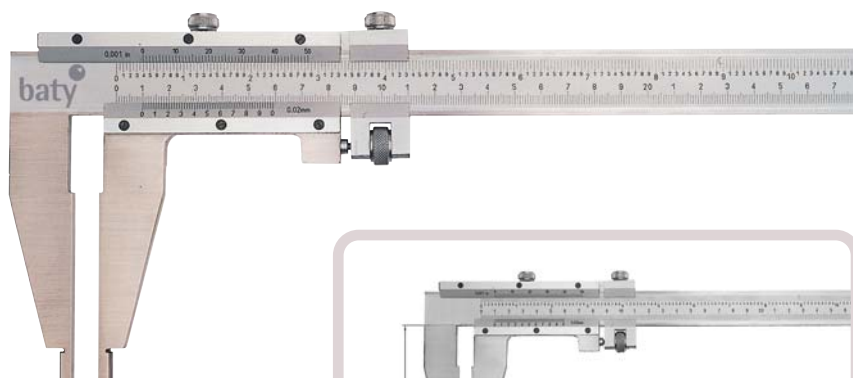


Model	Range	Resolution	Dimensions	
			A	B
<b>WVC-15</b>	0-150mm / 0-6"	0.02mm - 0.001"	40mm	16mm
<b>WVC-15F</b>	0-150mm / 0-6"	0.05mm - 1/128"	40mm	16mm
<b>WVC-20</b>	0-200mm / 0-8"	0.02mm - 0.001"	50mm	19mm
<b>WVC-20F</b>	0-200mm / 0-8"	0.05mm - 1/128"	50mm	19mm
<b>WVC-30</b>	0-300mm / 0-12"	0.02mm - 0.001"	55mm	21mm
<b>WVC-30F</b>	0-300mm / 0-12"	0.05mm - 1/128"	55mm	21mm

## LARGE WORKSHOP VERNIER CALIPER

### Features

- Standard workshop model with stop screw
- Mono block solid slider
- Made of hardened alloyed stainless steel
- Jaws for internal and external measurement
- Chromed scale with laser engraved graduations
- Measuring surface is micro-lapped
- With fine adjustment
- Packed in wooden box



Model	Range	Resolution	Dimensions		
			A	B	C
<b>WVC-50</b>	0-500mm / 0-20"	0.02mm - 0.001"	100mm	12mm	5mm
<b>WVC-60</b>	0-600mm / 0-24"	0.02mm - 0.001"	100mm	12mm	5mm
<b>WVC-100</b>	0-1000mm / 0-40"	0.02mm - 0.001"	125mm	18mm	10mm
<b>WVC-150</b>	0-1500mm / 0-60"	0.02mm - 0.001"	150mm	20mm	10mm
<b>WVC-200</b>	0-2000mm / 0-80"	0.02mm - 0.001"	200mm	20mm	10mm

## POLY FRAME DIAL CALIPER

These low cost calipers are made from glass fibre reinforced super-polyamid. Light weight and easy to handle, with a clearly marked dial helps reduce reading errors.

Features include zero reset by dial rotation and a friction thumbroller for ease of use and reliability.

Non conductive materials mean the caliper can be used in otherwise hazardous areas.

### Typical applications:

- Model making, wood working, textiles, electrical, education



**B-921**

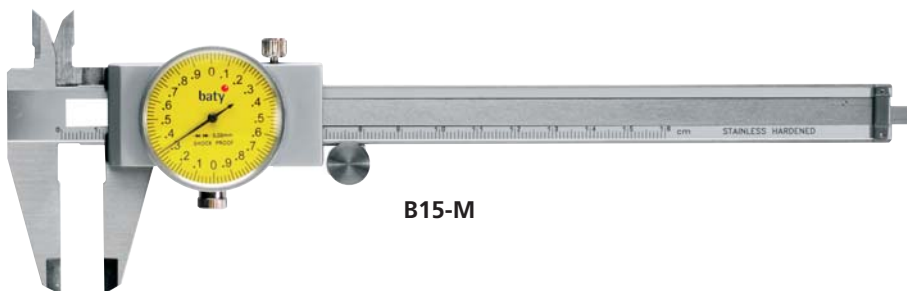
Model	Range	Reading
B-921	0-150mm	0.1mm
B-941	0-6"	0.01"

## HARDENED STAINLESS STEEL FRAME DIAL CALIPER

### Features

Standard: DIN 862

- High-quality shockproof dial caliper
- Rapid movement with thumb wheel
- Covered rack
- 4-way measurement
- Standard yellow metric face
- Standard white imperial face
- Hardened stainless steel rack
- Measuring surface is micro-lapped



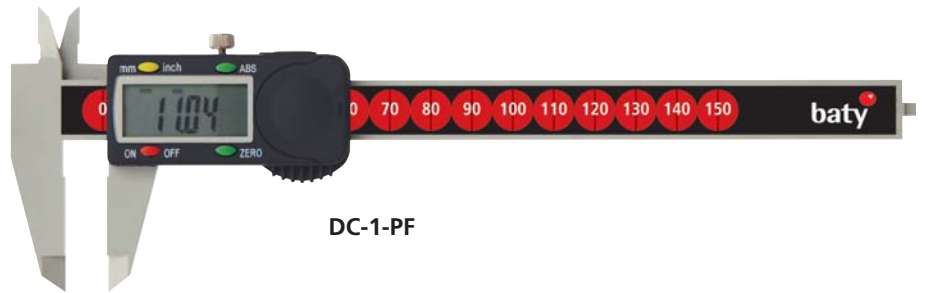
**B15-M**

Model	Capacity	Resolution
B15-M	0-150mm	0.02mm
B20-M	0-200mm	0.02mm
B30-M	0-300mm	0.02mm
B15-I	0-6"	0.001"
B20-I	0-8"	0.001"
B30-I	0-12"	0.001"

## POLY FRAME DIGITAL CALIPER

### Features

- Polycarbonate frame
- 4 way measurement
- Accuracy +/- 0.2mm / 0.008
- Functions: mm/inch, zero setting, ABS / INC measurement
- Supplied retail packed with vinyl pouch



DC-1-PF

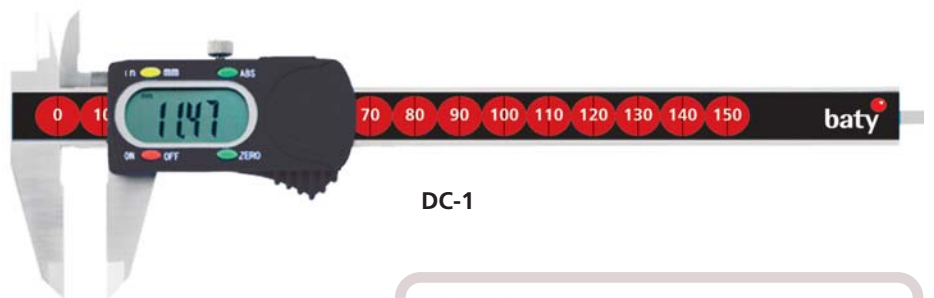
Model	Range	Resolution	Jaw Length
DC-1-PF	0-150mm / 0-6"	0.01mm / 0.0005"	40mm

## CALMASTER DIGITAL CALIPER

### Features

Standard: DIN 862

- ABS / INC measurement
- Large LCD display
- On / off switch
- Zero point at any position
- Displays values in mm and inch
- All metal parts made of hardened stainless steel
- CR2032 battery



DC-1



Model	Range	Resolution	Dimensions	
			A	B
DC	0-100mm / 0-4"	0.01mm / 0.0005"	30mm	13mm
DC-1	0-150mm / 0-6"	0.01mm / 0.0005"	40mm	16mm
DC-2	0-200mm / 0-8"	0.01mm / 0.0005"	50mm	16mm
DC-3	0-300mm / 0-12"	0.01mm / 0.0005"	60mm	21mm



# WATERPROOF DIGITAL CALIPER IP67 SERIES



## Features

Standard: DIN 862

- Water, coolant and dust proof to IP67 specification
- Functions: mm / inch conversion, on / off, zero setting
- CR2032 battery
- Inductive measuring system

Model	Range	Resolution	Jaw Length
DC-1 WP	0-150mm / 0-6"	0.01mm / 0.0005"	40mm

# LARGE DIGITAL WORKSHOP CALIPER



## Features

- Top quality digital caliper
- Modern design
- Large 7.5mm / 10mm character height digital display
- Long life guaranteed
- Ground micro-lapped measuring surfaces
- Functions: mm / inch conversion, on / off, data-output, zero-setting, ABS / zero, battery low indication
- With fine adjustment

Model	Range	Resolution	Dimensions		
			A	B	C
DC-60	0-600mm / 0-24"	0.01mm / 0.0005"	100mm	18mm	10mm
DC-100	0-1000mm / 0-40"	0.01mm / 0.0005"	125mm	24mm	10mm
DC-150	0-1500mm / 0-60"	0.01mm / 0.0005"	125mm	24mm	10mm
DC-200	0-2000mm / 0-80"	0.01mm / 0.0005"	180mm	24mm	10mm

## ANALOGUE DEPTH MICROMETER

- 'Speeder' type ratchet
- Lock screw
- Interchangeable depth rods
- 4mm diameter
- 100mm / 4" base length
- 0-300mm / 0-12" set



Model	Range	Reading
DMSET-30A	0-300mm	0.01mm
DMSET-12A	0-12"	0.001"

## DIGITAL DEPTH MICROMETER

### Features

Standard: DIN 863

- Interchangeable rods
- Rods are hardened and the measuring faces are micro-lapped
- Features 'easy to read' large 7.5mm character height, digital display
- 'Soft keys' for maximum operating comfort
- Constant force ratchet thimble
- Satin chrome finished base
- Functions: mm / inch conversion, tolerance indication, ABS / INC, preset, on / off, zero - setting, battery low indication



Model	Capacity	Resolution	Base
DMSET-30-D	0 - 300mm / 0 - 12"	0.001mm / 0.00005"	4" / 100mm

## DIAL DEPTH GAUGE



### Features:

- 0-25mm travel indicator
- Satin chrome finish
- Rods connect together for full 550mm capacity
- Base size: 100mm
- Includes 2 extra points for small hole applications

Model	Capacity	Resolution
DG-550-A	0-550mm	0.01mm

## DIGITAL DEPTH GAUGE



### Features:

- 0-25mm / 0-1" travel indicator
- Inch / mm conversion
- Zero setting at any position
- Rods connect together for full 550mm capacity
- Base size: 100mm
- Includes 2 extra points for small hole applications

Model	Capacity	Resolution
DG-550-D	0-550mm / 0-22"	0.01mm / 0.0005"

# DUAL PLANE DIGITAL GAUGE

## The choice for all your small parts

- Range up to 0-600mm
- No surface plate required
- Measures offset components
- Can be used as an ordinary digital caliper
- Easy to use clear readout
- Large ground face to ensure component square when being measured
- 0.010mm resolution (0.0005")



### DHG-300 and DHG-600

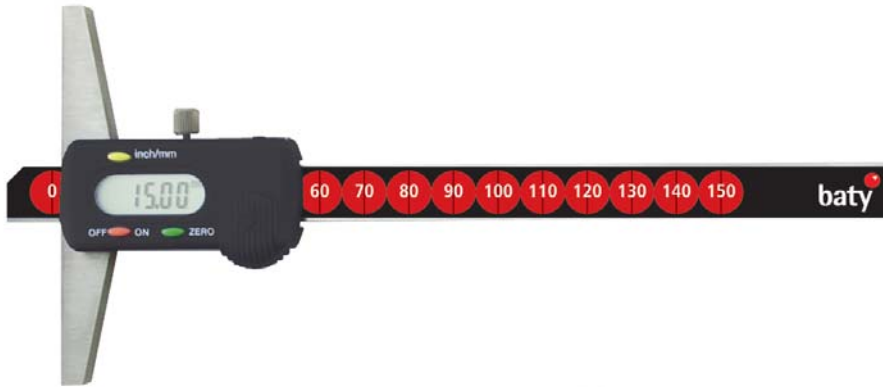
300mm and 600mm models supplied with dial indicator mounting feature.



Model	Capacity	Resolution	Accuracy
DHG-150	0-150mm / 0-6"	0.01mm / 0.0005"	+/-0.03mm / 0.0012"
DHG-300	0-300mm / 0-12"	0.01mm / 0.0005"	+/-0.04mm / 0.0015"
DHG-600	0-600mm / 0-24"	0.01mm / 0.0005"	+/-0.05mm / 0.002"



## DIGITAL DEPTH CALIPER



### Features

- Top quality digital depth caliper
- Modern design
- Large 7.5mm character height digital display
- Long life guaranteed
- Ground micro-lapped measuring surfaces
- Functions: mm / inch conversion, on/off, data-output, zero-setting, battery low indication

Model	Range	Resolution	Length of Base
DDC-15	0-150mm / 0-6"	0.01mm / 0.0005"	100mm
DDC-20	0-200mm / 0-8"	0.01mm / 0.0005"	100mm
DDC-30	0-300mm / 0-12"	0.01mm / 0.0005"	100mm

## DIGITAL HEIGHT GAUGE



### Features

- Heavy duty beam
- Handwheel for ease of use
- ABS / INC measurement
- Large LCD display
- Inch / mm conversion
- Positive lock carbide scriber
- Supplied in moulded case

Model	Capacity	Resolution	Accuracy
DHG-1	0-300mm / 0-12"	0.01mm / 0.0005"	+/-0.04mm / 0.0015"
DHG-2	0-600mm / 0-24"	0.01mm / 0.0005"	+/-0.05mm / 0.002"

# DIGITAL TYRE TREAD DEPTH GAUGE

## Features

- Spring loaded with a hold measurement button for ease of use
- Large LCD display
- Supplied on retail packaging
- Vinyl holder supplied as standard



Model	Capacity	Resolution
TG25-D	0-25mm / 0-1"	0.01mm / 0.0005"

# TYRE TREAD DEPTH GAUGE

The Baty tyre tread depth gauge has been specially designed to measure the remaining tread depth on motor vehicle tyres to a very high degree of accuracy.

Many simple gauges currently available give only an approximate indication of depth, and have been found inaccurate up to 0.5mm. Such errors could be the difference between legal and illegal!

The gauge can be supplied with a calibration certificate traceable to national standards if required.

Tyre gauge comes supplied in a pvc wallet.

As supplied to police traffic divisions throughout the UK



The Baty tyre tread gauge has colour-coded bands on the dial:

**GREEN BAND:** tread depth in excess of 2mm and is therefore safe/legal

**YELLOW BAND:** tread depth between 2mm and 1.6mm: depth legal but **CAUTION** – tyre will need replacing very soon

**RED BAND:** tread depth less than 1.6mm: **ILLEGAL!** Tyre must be replaced



Planoclean		
1 Min	3 Min	5 Min
Soap Solution		
1 Min	3 Min	5 Min
Washing-up Liquid Solution		
1 Min	3 Min	5 Min
Brand X		
1 Min	3 Min	5 Min
Brand Y		
1 Min	3 Min	5 Min

Siemens Industrial Turbomachinery AB conducted a product test. Planoclean™ was compared with two competing brands and solutions of soap and washing-up liquid. The fluids were applied to a surface plate and thereafter wiped off, after one, three and five minutes respectively with a high absorbant paper. The paper was then photographed. The results are presented in the table on the right.

Baty feels that Planoclean™ satisfies their high demand. "Our customers expect the highest possible quality in everything that we do. If we are to satisfy their demands for precision, it is essential that the measurement results are correct because all production is based on them. Without a clean surface plate, the measurement results will inevitably become disrupted since the plate is a reference plate for the measurements".

A safety data sheet with more detailed information on safety and environmental issues is supplied with all orders of Planoclean™.



It was in the process of conducting measurement services with our customers, that we identified the need for a product like Planoclean™. There were no alternatives on the market that could satisfy our high demands on quality as well as environmental consideration.

Environmental considerations are becoming increasingly important to companies. In today's industry it is not enough for a cleaning product to clean. It should preferably be environmentally friendly as well, and Planoclean™ was developed with this taken into consideration.

The product is designed not only to make the surface plates as clean as possible, but also to be as gentle as possible to our environment.

In order to be able to use the surface plate as a reference surface whilst conducting measurements, it needs to be calibrated at regular intervals. Just as important though, is to keep dirt and grease off the surface plate. Otherwise impurities in the plate will disrupt the results where the surface plate is used as a reference for measurements.

It was in order to live up to the high standards for purity required for the surface plates, that Planoclean™ was developed. The product swiftly and conveniently cleans the surface plate, thus ensuring that impurities will not disrupt the measurements.

Ever increasing demands on higher precision in manufacturing leads to higher demand on correct references and measurements.

An increased focus on precision measurement has the potential of preventing serious errors in production and thus, reducing the costs of manufacturing.

But in order to generate cost savings, it is vital to use correct references when conducting measurements. The reference often used, is the surface plate.

<b>PB-Bottle</b>	Planoclean bottle
<b>PB-Box</b>	Planoclean – Box 14 bottles
<b>PB-Set</b>	Planoclean set 3-bottles, 20 cloths, wall mount
<b>PB-Cloth</b>	Drying Cloths 100 pieces

## GRANITE SURFACE PLATES

All granite surface plates are manufactured to DIN876-83 and supplied with a calibration certificate.

- Grade '00' accuracy is  $(2+I / 500)$   
Where I = length in mm.



Model	Surface Plate Dimensions (mm)	Net Weight (kg)	C/W Stand Y / N
GSP-1	300 x 200 x 50	9.4	N
GSP-2	300 x 300 x 70	20.0	N
GSP-3	300 x 450 x 80	33.5	N
GSP-4	400 x 400 x 100	50.0	N
GSP-5	600 x 450 x 100	84.0	N
GSP-6	630 x 400 x 100	80.0	N
GSP-7	630 x 630 x 130	160.0	N
GSP-8	750 x 750 x 130	152.0	N*
GSP-9	800 x 500 x 130	162.0	N*
GSP-10	600 x 900 x 130	218.0	N*

\*stand available as an option

## GRANITE SURFACE TABLES

All granite surface tables are manufactured to DIN 876-83 and supplied with a steel stand with adjustable levelling and a calibration certificate.



Model	Surface Plate Dimensions (mm)	Net Weight (kg)	C/W Stand Y / N
GST-1	600 x 900 x 130	218.0	Y
GST-2	1000 x 630 x 150	293.0	Y
GST-3	1000 x 750 x 150	350.0	Y
GST-4	1000 x 1000 x 150	465.0	Y
GST-5	1200 x 800 x 150	447.0	Y
GST-6	1200 x 900 x 150	503.0	Y
GST-7	1500 x 1000 x 200	930.0	Y
GST-8	1600 x 1000 x 200	993.0	Y

Model	Surface Plate Dimensions (mm)	Net Weight (kg)	C/W Stand Y / N
GST-9	2000 x 1000 x 200	1240.0	Y
GST-10	2000 x 1500 x 200	1860.0	Y
GST-11	2000 x 1600 x 250	2480.0	Y
GST-12	2500 x 1600 x 300	3720.0	Y
GST-13	3000 x 1000 x 300	2790.0	Y
GST-14	3000 x 2000 x 400	7440.0	Y
GST-15	4000 x 2000 x 500	12400.0	Y



## GRANITE VEE BLOCKS

Available in three sizes. Each set is a pair of blocks made from high density black granite.

- Anti magnetic
- Corrosion resistant
- High wear resistance



Model	Size	Squareness	Parallelism
GVB-1	63 x 63 x 90	4 microns	4 microns
GVB-2	100 x 100 x 90	4 microns	4 microns
GVB-3	160 x 160 x 90	5 microns	5 microns

## GRANITE PARALLELS

Available in five sizes. Each set is a pair. Made from high density black granite. (Properties as above).



Model	Size	Parallelism	Flatness
GPAR-1	100 x 63 x 16	1.5 microns	1.5 microns
GPAR-2	160 x 40 x 25	1.5 microns	1.5 microns
GPAR-3	250 x 40 x 25	2 microns	2 microns
GPAR-4	400 x 63 x 40	4 microns	4 microns
GPAR-5	630 x 100 x 63	6 microns	6 microns

## VEE BLOCKS AND CLAMPS

### Features

Standard: BS3731, Grade B

- Manufactured from case hardened and ground mild steel
- Supplied in matched pairs only
- Two malleable iron clamps with steel screws supplied with each pair of blocks



Model	Capacity	Size	Accuracy
SVB-1	25mm	32 x 42 x 32mm	0.01mm

## CAST IRON VEE BLOCKS

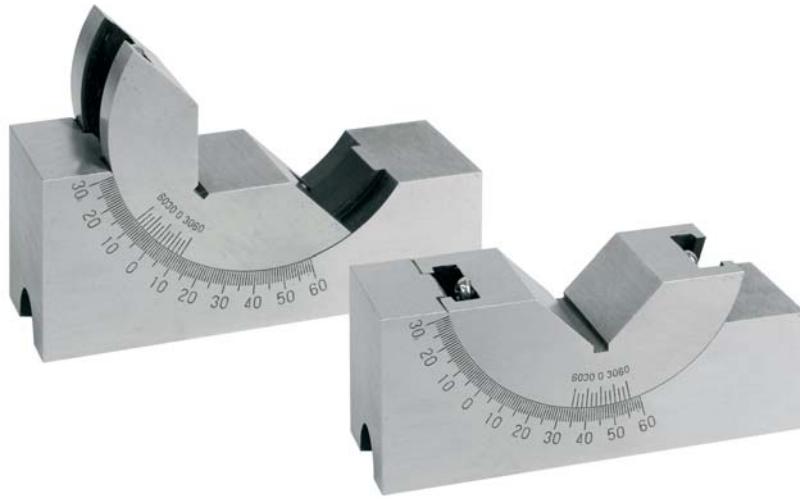
### Features

- Supplied in matched and numbered pairs only
- Manufactured from close grained cast iron
- Ground faces



Model	Capacity	Width	Length	Height	Accuracy
IVB-1	63mm	80mm	35mm	60mm	0.04mm
IVB-2	80mm	100mm	40mm	75mm	0.04mm
IVB-3	100mm	130mm	45mm	90mm	0.05mm
IVB-4	125mm	150mm	50mm	100mm	0.05mm
IVB-5	160mm	180mm	60mm	130mm	0.06mm
IVB-6	200mm	220mm	70mm	160mm	0.06mm

## ADJUSTABLE ANGLE VEE BLOCKS

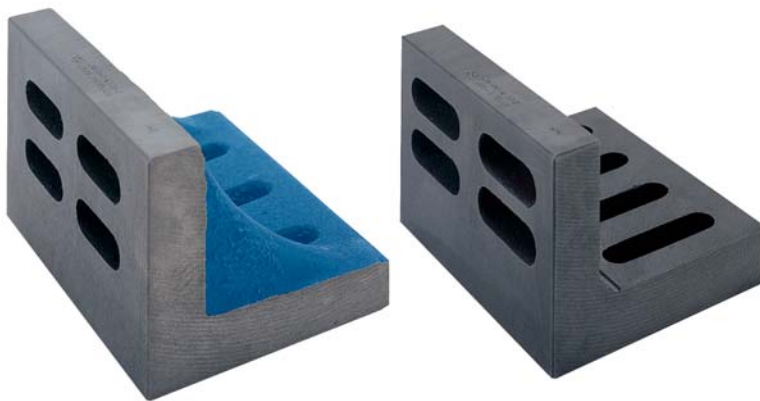


### Features

- High precision model adjustable from 0 up to +60° and -30°
- Accuracy of angle 0.01°
- Made of hardened micro-lapped chrome-steel
- Robust design which can be used on workshop machinery or for measuring purposes
- 3 different sizes

Model	Dimensions	Weight
SVB-1-A	32 x 25 x 75mm	0.5kg
SVB-2-A	47 x 30 x 102mm	1.0kg
SVB-3-A	47 x 46 x 102mm	1.3kg

## ANGLE PLATES



### Features

Standard: BS5535, Grade B

- Manufactured from close grained cast iron
- Heat stabilised to prevent distortion
- Ground to tolerance on all four edges and two faces

Model	Type	Length	Width	Height	Model	Type	Length	Width	Height
AP1-W	Webbed	100mm	60mm	80mm	AP-1	Open end	125mm	80mm	100mm
AP2-W	Webbed	125mm	80mm	100mm	AP-2	Open end	160mm	100mm	125mm
AP3-W	Webbed	160mm	100mm	125mm	AP-3	Open end	200mm	125mm	160mm
AP4-W	Webbed	200mm	125mm	160mm	AP-4	Open end	250mm	160mm	200mm
AP5-W	Webbed	250mm	160mm	200mm	AP-5	Open end	315mm	200mm	250mm
AP6-W	Webbed	315mm	200mm	250mm					

# PRECISION MICROMETERS

Each of the high quality micrometers in this range has a unique serial number and is supplied with a calibration certificate showing actual errors in four places over the measuring range.

The range includes standard 10 micron versions and high resolution 1 micron ranges and includes a boxed set of four micrometers, with setting pieces, covering the most common 0-4" capacity requirement.

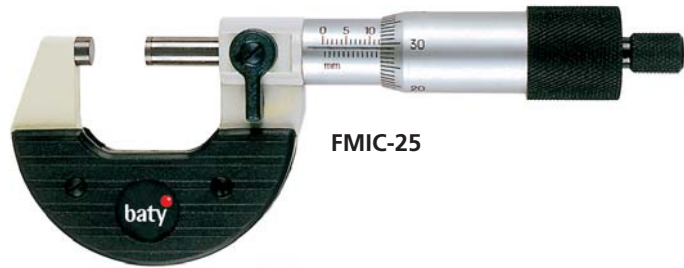
### Benefits include:

- A calibration certificate (supplied with each unit)
- Lapped carbide tipped measuring faces and angled markings for clear reading
- Simple one handed use thanks to the convenient location of the ratchet clutch
- Reliability in use due to secure zero setting and a unique design of spindle lock
- Heat insulated frame

**MS706  
Micrometer  
Bench Stand**



**FMIC – SET 4**



**FMIC-25**

### General Purpose Micrometers

Model	Range	Resolution
FMIC-01	0-1"	0.001"
FMIC-02	1-2"	0.001"
FMIC-03	2-3"	0.001"
FMIC-04	3-4"	0.001"
FMIC-25	0-25mm	0.01mm
FMIC-50	25-50mm	0.01mm
FMIC-75	50-75mm	0.01mm
FMIC-100	75-100mm	0.01mm
FMIC-125	100-125mm	0.01mm
FMIC-150	125-150mm	0.01mm
FMIC-175	150-175mm	0.01mm
FMIC-200	175-200mm	0.01mm

### High Precision Micrometers

FMIC-25/HR	0-25mm	0.001mm
FMIC-50/HR	25-50mm	0.001mm
FMIC-75/HR	50-75mm	0.001mm
FMIC-100/HR	75-100mm	0.001mm

### Micrometer Sets C/W setting masters

FMIC-SET04	0-4"	0.001"
FMIC-SET100	0-100mm	0.01mm
FMIC-SET100HR	0-100mm	0.001mm

## DIGITAL MICROMETERS



DM-1

- IP54 protection level can be used when exposed to coolant water, dust and oil
- Large LCD
- Inch-metric and zero setting
- SPC output
- Friction thimble
- Chrome plated frame
- Carbide tips
- Resolution 0.001mm (0.00005")
- Automatic power off
- Easy single-handed use
- Heat insulated frame

### Digital Micrometers

Model	Resolution	Range
DM-1	0.001mm / 0.00005"	0-25mm
DM-2	0.001mm / 0.00005"	25-50mm
DM-3	0.001mm / 0.00005"	50-75mm
DM-4	0.001mm / 0.00005"	75-100mm
DM-5	0.001mm / 0.00005"	100-125mm
DM-6	0.001mm / 0.00005"	125-150mm
DM-7	0.001mm / 0.00005"	150-175mm
DM-8	0.001mm / 0.00005"	175-200mm



MS706

## DIGITAL MICROMETER SET



New from Baty this high quality precision micrometer set features four digital micrometers and setting pieces.

Each micrometer features the latest high contrast 'Supertwist' digital LCD display and is ergonomically designed for comfort.

The frame has a thumb lock and heat insulation grip and has fixed carbide anvils. The fixed length barrel features a friction clutch for repeatable results.

- Absolute / Incremental mode allows fixed and floating datums.
- Metric / imperial direct conversion
- 0.001mm / 0.0001" resolution
- Ergonomic design
- IP54 Rating
- Full 1 year warranty
- Exceptional value
- Ball anvil adaptor
- Complete with setting pieces

Model	Range	Ball Anvils	Setting Rods
DM-SET-4	0-100mm	Included	Included

# DIGITAL UNIVERSAL ANVIL MICROMETER

## Features

Standard: DIN 863

- Digital outside micrometer with 'easy read' large 7.5mm character height, digital display
- Features interchangeable universal anvil inserts for different purposes
- Full set of inserts included, flat, disc, spline, conical, V-shaped, blade, point
- Tapered for easier access to difficult areas
- 'Soft keys' for maximum operating comfort
- Long life guaranteed
- Features non-rotating spindle and constant force ratchet thimble
- Hammertone finished frame with high quality insulated grip
- Functions: mm / inch conversion, tolerance indication, ABS / INC, preset, on / off, zerosetting, data-output, battery low indication
- Packed in plastic box with standard and adjusting key

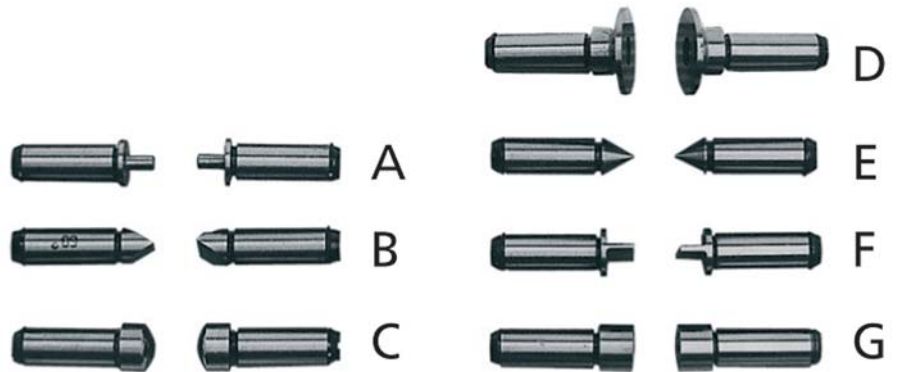


Model	Range	Resolution
<b>DUAM-1</b>	0-25mm / 0-1"	0.001mm / 0.00005"
<b>DUAM-2</b>	25-50mm / 1-2"	0.001mm / 0.00005"
<b>DUAM-3</b>	50-75mm / 2-3"	0.001mm / 0.00005"
<b>DUAM-4</b>	75-100mm / 3-4"	0.001mm / 0.00005"

# ANVILS

## Anvils Included

- A: 2mm diameter spline
- B: 0.35mm diameter knife edge
- C: 6.5mm diameter R5 spherical
- D: 12mm diameter disc
- E: 0.3mm diameter point
- F: 0.7mm diameter blade
- G: 6.5mm diameter x 4.5mm flat



# DIGITAL THREAD MICROMETER WITH ANVILS



## Features

Standard: DIN 863

- Digital outside micrometer with 'easy read' large 7.5mm character height, digital display
- Features 5 sets of interchangeable v-anvil inserts for different metric pitches
- Full set of metric anvil inserts included
- Tapered for easier access to difficult areas
- Modern design
- Soft keys' for maximum operating comfort
- Long life guaranteed
- Features non-rotating spindle and constant force ratchet thimble
- Hammertone finished frame with high quality insulated grip
- ABS/INC, preset, on / off, zero-setting, data-output, battery low indication
- Packed in plastic box with standard and adjusting key

Model	Range	Resolution
DTM-1	0-25mm / 0-1"	0.001mm / 0.00005"
DTM-2	25-50mm / 1"-2"	0.001mm / 0.00005"
DTM-3	50-75mm / 2"-3"	0.001mm / 0.00005"
DTM-4	75-100mm / 3"-4"	0.001mm / 0.00005"

# METRIC AND IMPERIAL INSERTS



## Features

- Supplied in sets of 2 parts
- Available in metric pitch (mm) or imperial (Inch)

Model	Range	Model	Range	Model	Range
TA-1	0.4 - 0.5mm	TA-7	60 - 48TPI	TA-13	14 - 10TPI
TA-2	0.6 - 0.9mm	TA-8	48 - 40TPI	TA-14	10 - 7TPI
TA-3	1.00 - 1.75mm	TA-9	40 - 32TPI	TA-15	7 - 4.5TPI
TA-4	2.00 - 3.00mm	TA-10	32 - 24TPI	TA-16	4.5 - 3.5TPI
TA-5	3.50 - 5.00mm	TA-11	24 - 18TPI		
TA-6	5.50 - 7.00mm	TA-12	18 - 14TPI		

# ANALOGUE BORE MICROMETERS

**This premium quality, high precision bore micrometer range is designed and manufactured in England to exacting standards.**

The micrometer heads feature a precision ground cone which is displaced by the micrometer barrel. The displaced cone in turn acts on the measuring anvils to expand the head to the size of the bore to be measured. The measuring anvils feature an inset carbide pin to provide a line contact with the bore's surface, this serves to naturally align the micrometer with the axis of the measured bore to ensure repeatable results. A ratchet clutch in the barrel provides consistent measuring force.

Each micrometer is serial numbered and individually calibrated, a specific UKAS calibration certificate is included for each micrometer and setting ring showing measured values over the measuring range using standards that are traceable directly to the National Standard.

The carbide pins in the measuring anvils extend almost to the end of the micrometer head to facilitate blind bore measurement. In addition, special anvils are available to measure internal screw threads, grooves, undercuts, internal splines etc etc. please contact for a quotation for your special application requirements.



## Boxed Sets

Model	Measuring Range
<b>BMSET-2-3</b>	2 - 3mm
<b>BMSET-3-6</b>	3 - 6mm
<b>BMSET-6-10</b>	6 - 10mm
<b>BMSET-10-20</b>	10 - 20mm
<b>BMSET-20-50</b>	20 - 50mm
<b>BMSET-50-100</b>	50 - 100mm
<b>BMSET-100-150</b>	100 - 150mm
<b>BMSET-150-200</b>	150 - 200mm





# ANALOGUE BORE MICROMETERS



## Features

Standard: DIN 863

- Range 2-300mm
- 2-6mm 2 point / 6-300mm 3 point measurement
- Tungsten carbide contact points above 12.5mm
- Traceable certificates supplied as standard with all micrometers and setting rings
- Blind bore measurement from 2 - 6mm and above 12.5mm diameter
- Micrometer head fitted with a ratchet for constant gauging pressure
- Supplied in robust fitted case
- Extensions available above 6mm for deep hole measurement
- Available as individual instruments or boxed sets
- Setting ring included

Ring gauges manufactured to BS4064: 1966

## Individual Micrometers

Model	Range	Accuracy	Depth
BM-1	2 - 2.5mm	0.004mm	9mm
BM-2	2.5 - 3mm	0.004mm	9mm
BM-3	3 - 4mm	0.004mm	12mm
BM-4	4 - 5mm	0.004mm	18mm
BM-5	5 - 6mm	0.004mm	18mm
BM-6	6 - 8mm	0.004mm	58mm
BM-7	8 - 10mm	0.004mm	58mm
BM-8	10 - 12.5mm	0.004mm	58mm
BM-9	12.5 - 16mm	0.004mm	62mm
BM-10	16 - 20mm	0.004mm	62mm
BM-11	20 - 25mm	0.004mm	66mm
BM-12	25 - 35mm	0.004mm	66mm
BM-13	35 - 50mm	0.004mm	80mm
BM-14	50 - 65mm	0.005mm	80mm
BM-15	65 - 80mm	0.005mm	80mm
BM-16	80 - 100mm	0.005mm	100mm
BM-17	100 - 125mm	0.006mm	115mm
BM-18	125 - 150mm	0.006mm	115mm
BM-19	150 - 175mm	0.007mm	115mm
BM-20	175 - 200mm	0.007mm	115mm
BM-21	200 - 225mm	0.008mm	118mm
BM-22	225 - 250mm	0.008mm	118mm
BM-23	250 - 275mm	0.009mm	118mm
BM-24	275 - 300mm	0.009mm	118mm



# TRIGAMASTER BORE GAUGING

## 3 Point Bore Gauges

### Features

Standard: DIN 863 - Part 4

- Measurement range from 6 - 100mm
- Ergonomically designed pistol grip body
- LCD display unit with rotating display for easy reading at any angle
- Functions include 2 pre-set memories, tolerance indicator lights and mm / inch conversion
- RS232 data output facility
- Self centring measuring heads with tungsten carbide contact points
- Setting rings provided with each instrument complete with UKAS certification
- Blind bore measurement on all instruments above 12.5mm
- Available as individual instruments or boxed sets
- Diameter above 100mm available on request
- Setting rings included

Note: Digital Indicator with direct mm/inch conversion

### Bore Gauge Sets supplied with required setting rings and UKAS certificate

Model	Measuring Range mm	Max Bore Depth mm	Accuracy mm
TMSET6-10	6 - 10	58	0.004
TMSET10-20	10 - 20	62	0.004
TMSET20-50	20 - 50	66	0.004
TMSET50-100	50 - 100	82	0.005
TMSET6-20	6 - 20	58 - 62	0.004
TMSET20-100	20 - 100	66 - 82	0.005



### Individual Bore Gauges

Model	Range	Maximum Bore Depth	Accuracy
TM-1	6 - 8mm	58mm	0.004mm
TM-2	8 - 10mm	58mm	0.004mm
TM-3	10 - 12.5mm	62mm	0.004mm
TM-4	12.5 - 16mm	62mm	0.004mm
TM-5	16 - 20mm	62mm	0.004mm
TM-6	20 - 25mm	66mm	0.004mm
TM-7	25 - 35mm	66mm	0.004mm
TM-8	35 - 50mm	66mm	0.004mm
TM-9	50 - 65mm	82mm	0.005mm
TM-10	65 - 80mm	82mm	0.005mm
TM-11	80 - 100mm	82mm	0.005mm

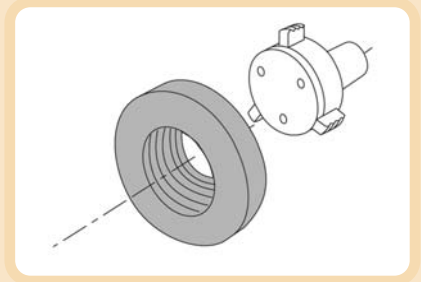


### Extensions

Model	Length mm	Inch	To Fit Heads mm	Inch
TME-1	63	2.5	6 - 10	1/4 - 3/8
TME-2	76	3.0	10 - 12.5	3/8 - 1/2
TME-3	100	4.0	12.5 - 20	1/2 - 3/4
TME-4	150	6.0	20 - 50	3/4 - 2

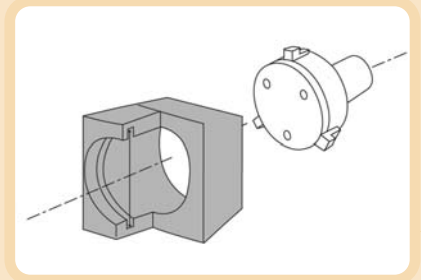
## Screw Threads

To measure effective (functional) diameter, pitch diameter, major diameter, between M4-300mm / No 8 UN-12" diameter.



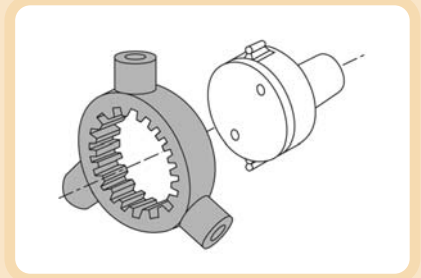
## Grooves

For sizes from 2mm - 300mm diameter.



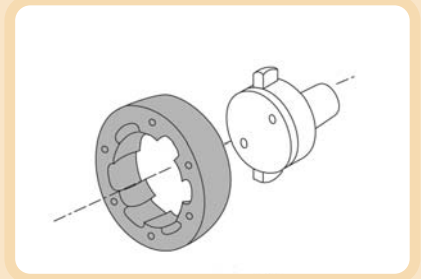
## 2-Point Spline

2 and 3 point heads available. Anvils manufactured from tool steel. Between pin, major and minor diameter heads available. Diameters from 12 - 300mm diameter (1/2" - 12").



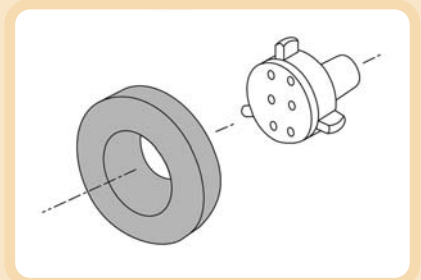
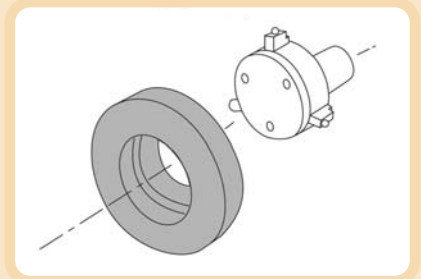
## 2-Point Spherical

2 point available from 3 - 150mm. 3 point from 6 - 300mm diameter.



## Ball Screw Threads

From  $\varnothing$ M10



## 2 POINT BORE COMPARATOR SETS

**Baty Dial Indicating Bore Gauges allow rapid and accurate checking of bores for size, ovality, taper, wear, etc. in the workshop or inspection room.**

All models operate on the proven principle of two diametrically opposed measuring points, one fixed and one moving, plus a spring-loaded centralising shoe.

To check the actual size of bore, the gauge must be set to size with a ring gauge or micrometer and inserted into the bore. It is then necessary to 'rock' the gauge slowly to locate its measuring axis to the bore, shown by the point of reversal of the indicator hand or analogue display. The reading at that point is the deviation from set or normal size.

For larger bores, a range of interchangeable extension rods allow a single instrument to cover a wide range of bore sizes.

All bore gauges come supplied in a wooden case.



2104



210 Series

215 Series

235 Series

Model	Capacity Metric (mm)	Capacity Imperial (inch)	Standard Bore Depth	Indicator Reading
2101	22.5 - 50	7/8" - 2"	150mm (6")	0.0005"
2103	22.5 - 50	7/8" - 2"	150mm (6")	0.0001"
2102	22.5 - 50	7/8" - 2"	150mm (6")	0.01 mm
2104	22.5 - 50	7/8" - 2"	150mm (6")	0.002 mm
2151	50 - 150	2" - 6"	300mm (12")	0.0005"
2153	50 - 150	2" - 6"	300mm (12")	0.0001"
2152	50 - 150	2" - 6"	300mm (12")	0.01 mm
2154	50 - 150	2" - 6"	300mm (12")	0.002 mm
2351	150 - 600	6"-24"	450mm (18")	0.0005"
2353	150 - 600	6"-24"	450mm (18")	0.0001"
2352	150 - 600	6"-24"	450mm (18")	0.01 mm
2354	150 - 600	6"-24"	450mm (18")	0.002 mm

Available in lengths up to 96" (2.4m)

price on application

## WORKSHOP BORE COMPARATOR SETS



### Features

- With interchangeable contact points
- Set of carbide tipped contact points included
- Unique self centring device
- Supplied with dial indicator, resolution 0.01mm / 0.0001" / 0.0005"
- Packed as set with all necessary accessories to measure the complete range as shown

Model	Range	Resolution
BC-1-A	6 - 10mm	0.01mm
BC-2-A	10 - 18mm	0.01mm
BC-3-A	18 - 35mm	0.01mm
BC-4-A	35 - 50mm	0.01mm
BC-5-A	50 - 160mm	0.01mm
BC-6-A	100 - 250mm	0.01mm

## DIGITAL BORE COMPARATOR SETS



### Features

- With interchangeable contact points
- Set of carbide tipped contact points included
- Unique self centring device
- Supplied with digital indicator with bar graph and numerical display
- Packed as set with all necessary accessories to measure the complete range as shown

Model	Range	Resolution
BC-1-D	6 - 10mm	0.001mm / 0.00005"
BC-2-D	10 - 18mm	0.001mm / 0.00005"
BC-3-D	18 - 35mm	0.001mm / 0.00005"
BC-4-D	35 - 50mm	0.001mm / 0.00005"
BC-5-D	50 - 160mm	0.001mm / 0.00005"
BC-6-D	100 - 250mm	0.001mm / 0.00005"

# TELESCOPIC GAUGE SET

## Features

- For quick inside measurement and determination of inside diameters
- Spring loaded plunger that expands in the bore or groove
- Satin chromed body
- With auto extension and direct locking
- Measuring faces are hardened and micro-lapped

## Range

8 - 150mm



### Metric / Imperial Telescopic Gauge Set

Model	Range	Quantity
Telescopic-G-S	8 - 150mm	6 pieces



The robust, easy to use Electronic Plug Gauge range is designed to give the operator greater speed of use, unmatched measuring accuracy and superb repeatability, especially in harsh shop-floor environments. Advanced hand held ergonomics allied to an ingenious mechanical / electronic system render EPG the easiest to operate Baty bore gauging system to date.

The flexible nature of Baty EPG range means that they can be supplied fitted with easy to read electronic indicators (ideal for automatic data collection), conventional analogue indicators, or transducer probes linked to remote digital readout units.

## Features

- Range 6 - 280mm
- Tough, robust construction
- Easy-to-use
- Long life
- High accuracy dedicated plug-gauges
- Flexible, modular
- Hand-held measurement
- Can be incorporated into automated measuring systems (in-series)
- Cost-effective
- Short delivery times
- High visibility display
- Protective indicator shroud (with some indicators)
- All setting rings supplied as standard with UKAS calibration certificates
- Coverplates as standard on all SmartPlugs
- Specials (e.g. blind bore) on request
- Repeatability  $\leq 1\mu\text{m}$
- Setting by means of a setting ring
- Quick and reliable measurement
- 2 - point measurement as standard
- Blind bore available on request
- Depth-stops available
- Extensions available for deeper bores
- Guide chamfer for easy entry into bore
- High durability, long-life plugs and contacts
- Easy to clean
- Plug body coatings: Hard-chrome (standard), T.i.N., Plain steel
- Measuring contacts: Tungsten carbide, (standard), hard-chrome, ruby, ceramic

# ELECTRONIC PLUG GAUGES



DI-1



Transducer Probe

## HOLDERS



EPGA001M  
M6 Holder



EPGA002M  
M6 Holder



EPGA003  
M6  
100mm  
Extension



EPGA028  
M6-M10 Adapter



EPGA004  
M6 Probe  
Holder



EPGA008  
M10 Probe  
Holder



EPGA007  
M10-100mm  
Extension



EPGA006M  
M10 Holder



EPGA005M  
M10 Holder



EPGA500-09  
Depth Stop

## EPGS

M6 Thread Range 6-20mm  
Please state size to be measured



M10 Thread Range 15-280mm  
Please state size to be measured



Contact Options: Tungsten Carbide (standard), Hard Chrome, Ruby, Ceramic  
Plug Body Options: Hard Chrome Plated (standard), Titanium Nitride, Plain Steel



## ELECTRONIC PLUG GAUGES

SmartPlug Standard	Bore Diameters	Connecting Thread
EPG010	>6 - 20mm / 0.236" - 0.787"	M6 x 0.75
EPG012	>15 - 25mm / 0.590" - 0.984"	M10 x 1
EPG014	>25 - 35mm / 0.984" - 1.378"	M10 x 1
EPG016	>35 - 45mm / 1.378" - 1.772"	M10 x 1
EPG018	>45 - 60mm / 1.772" - 2.362"	M10 x 1
EPG020	>60 - 80mm / 2.362" - 3.150"	M10 x 1
EPG022	>80 - 100mm / 3.150" - 3.937"	M10 x 1
EPG024	>100 - 125mm / 3.937" - 4.921"	M10 x 1
EPG026	>125 - 150mm / 4.921" - 5.906"	M10 x 1
EPG028	>150 - 175mm / 5.906" - 6.890"	M10 x 1
EPG030	>175 - 200mm / 6.890" - 7.874"	M10 x 1
EPG032	>200 - 225mm / 7.874" - 8.858"	M10 x 1
EPG034	>225 - 250mm / 8.858" - 9.843"	M10 x 1
EPG036	>250 - 280mm / 9.843" - 11.025"	M10 x 1

SmartPlug Blind-Bore	Bore Diameters	Connecting Thread
EPG010BB	>6 - 20mm / 0.236" - 0.787"	M6 x 0.75
EPG012BB	>15 - 25mm / 0.590" - 0.984"	M10 x 1
EPG014BB	>25 - 35mm / 0.984" - 1.378"	M10 x 1
EPG016BB	>35 - 45mm / 1.378" - 1.772"	M10 x 1
EPG018BB	>45 - 60mm / 1.772" - 2.362"	M10 x 1
EPG020BB	>60 - 80mm / 2.362" - 3.150"	M10 x 1
EPG022BB	>80 - 100mm / 3.150" - 3.937"	M10 x 1
EPG024BB	>100 - 125mm / 3.937" - 4.921"	M10 x 1
EPG026BB	>125 - 150mm / 4.921" - 5.906"	M10 x 1

Sizes above 150mm on request



## ELECTRONIC PLUG GAUGE ACCESSORIES

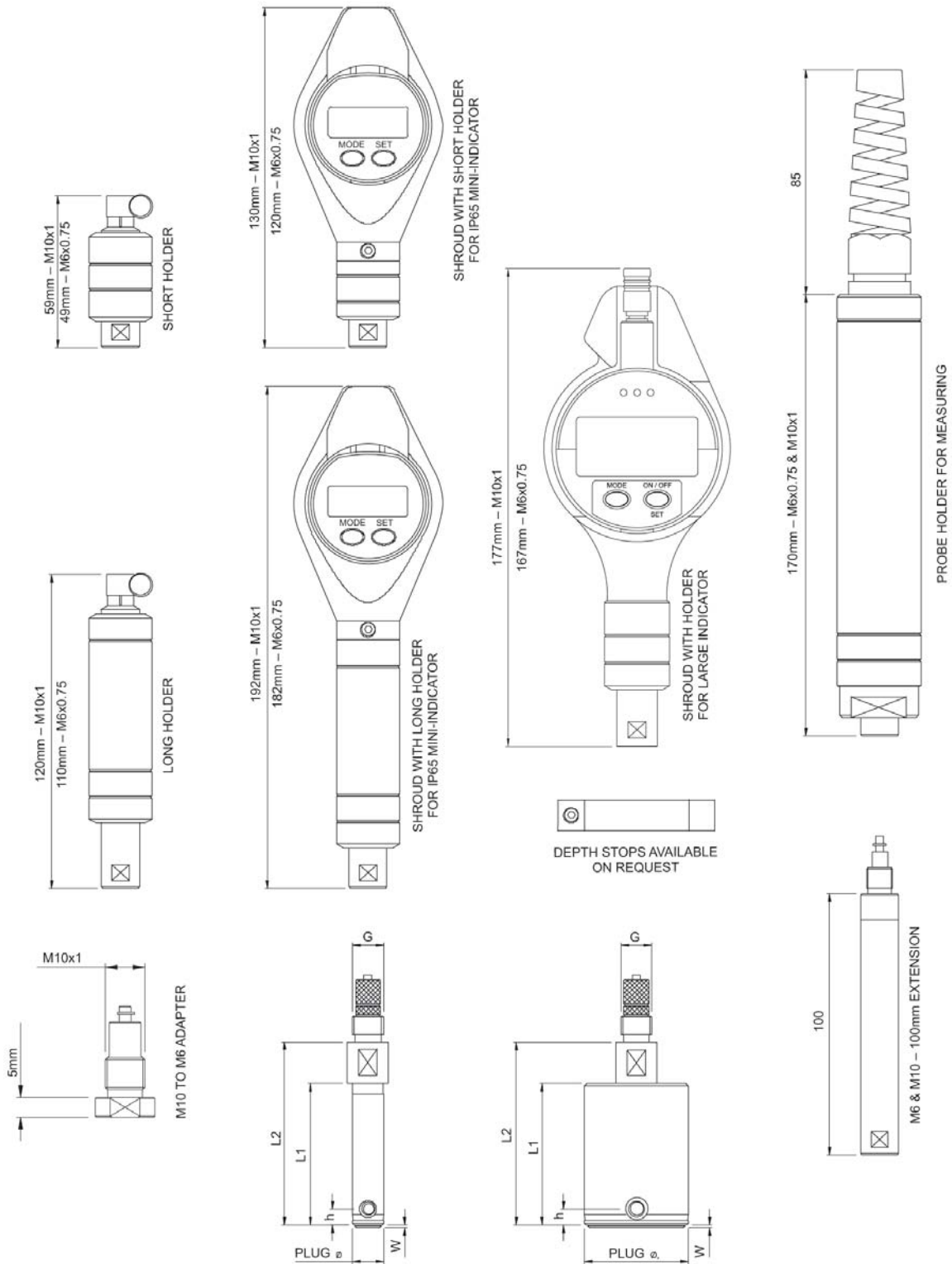
Accessories	M6 Thread
EPG001M	M6 Holder short 8mm stem
EPG002M	M6 Holder long 8mm stem
EPG003	M6 100mm extension
EPG004	M6 Probe holder 8mm stem
EPG009M	*Type A Mini indicator with shroud & M6 short holder 8mm stem*
EPG011M	*Type A Mini indicator with shroud & M6 long holder 8mm stem
EPG013	Type C Indicator with shroud & M6 holder 8mm stem
EPG028	M6-M10 Adapter (to use M10 holders with M6 plugs)

Accessories	M10 Thread
EPG005M	M10 Holder short 8mm
EPG006M	M10 Holder long 8mm stem
EPG007	M10 100mm extension
EPG008	M10 Probe holder 8mm stem
EPG015M	*Type A Mini indicator with shroud & M10 short holder 8mm stem
EPG017M	*Type A Mini indicator with shroud & M10 long holder 8mm stem
EPG019	Type C Indicator with shroud & M10 holder 8mm stem

Indicating Units	
DI-1	Digital Indicator 0.001mm
	Transducer probes – see page 61



# ELECTRONIC PLUG GAUGES TECHNICAL DETAILS



Plug Gauge Head Dimensions

Diameter size (mm)	Range	h	L1	L2	W	G
6 - 7.8*	0.15	3	27	35	0.5	M6 x 0.75
7.9 - 20	0.15	3	27	35	0.5	M6 x 0.75
15 - 45	0.2	3.5	28	43.5	1	M10 x 1
45.1 - 70	0.2	4	28	44	1.5	M10 x 1
70.1 - 280	0.2	4	35	44	1.5	M10 x 1

\* max measuring depth 27mm between 6 and 7.8mm

# ELECTRONIC PLUG GAUGES SETTING RINGS

All rings are supplied with UKAS calibration certificates and can be supplied in nominal grade, grade X and grade XX – in accordance with ANSI / ASME B89.1.6M.



# SNAPMASTER

The Snapmaster snap gauge has been designed specifically for quick, reliable and accurate measurement of external cylindrical diameters.

Particularly suitable for use in series production, the instrument is tough and solid enough to use on the machine in the workshop and flexible enough to be used in the measuring room for sample measurements (bench-stand available).

The measuring surfaces are of top-quality tungsten carbide mounted on a no-maintenance spring-operated mechanism. Special anvils (e.g for grooves etc) can be fitted to the standard gauge by means of the mounting holes in the anvil.



Model	Range	Flatness	Parallelism
USG-25LI	0 - 25	0.3µm	2µm
USG-25LI	25 - 50	0.3µm	2µm
USG-25LI	50 - 75	0.3µm	3µm
USG-25LI	75 - 100	0.3µm	3µm
USG-25LI	100 - 125	0.3µm	4µm
USG-25LI	125 - 150	0.3µm	4µm

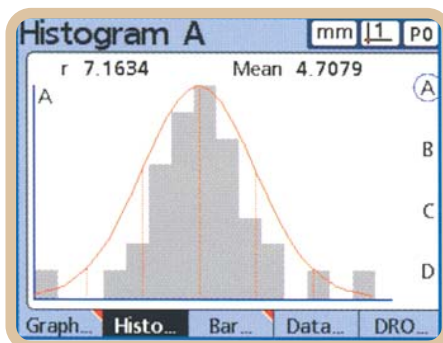
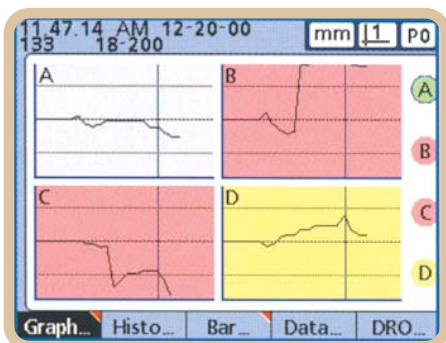




## Features

- Measuring ranges:
 

0 - 25mm	(0 - 1")
25 - 50mm	(1 - 2")
50 - 75mm	(2 - 3")
75 - 100mm	(3 - 4")
100 - 125mm	(4 - 5")
125 - 150mm	(5 - 6")
- Gauging travel : 0.5mm
- Constant measuring pressure
- Adjustable depth-stop
- 8mm diameter indicator locking bush as standard (3/8" on request)
- Can be used with dial-gauges, digital indicators or measuring probes
- 16mm wide tungsten carbide measuring surfaces for positive-feel measurement (see table for flatness and parallelism)
- Measuring force: 13 N ± 3N
- Indicator protection
- Indicator can be swivelled through 360°
- Bench stand available
- Heat-resistant polymer grip
- Mounting holes for fitting special contacts eg. grooves



# CHECKMASTER COMPARATOR

Available in two sizes, Checkmaster is the flexible gauging solution for short production runs. Simply setup your Universal Tooling set to suit your application (see opposite), fit your preferred indicator and zero against a master for Fast Accurate and incredibly Repeatable results.

Gauging force can be adjusted for softer materials and biased for either internal or external dimensions by a simple lever selection. This enables multi-dimension setups to be easily catered for.

## Need absolute results?

Using Baty's DI-1 Digital indicator, the master size can be pre-set. Now the results are displayed as Absolute dimensions. Tolerances can be entered and an out of tolerance symbol will flash for even quicker reference.

## Need SPC, printed reports data storage?

Replacing the conventional indicator with a transducer linked to our GageChek display will allow you to setup and store multiple parts each with pre-toleranced dimensions. Just setup the correct tooling situation, select the part / job number required from the GageChek memory and you are ready to go.

SPC Data from previous measurements of the same part type can be viewed on the large colour screen and even printed direct from GageChek or transferred to a PC.

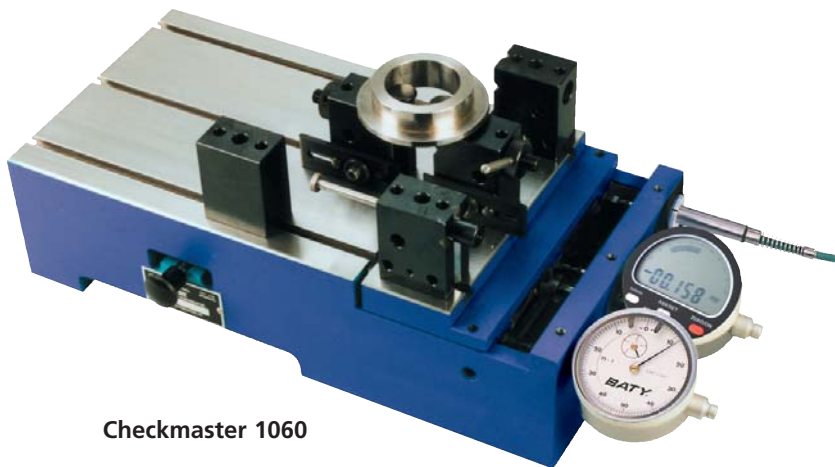
Full maths functionality included: take dynamic measurements such as roundness / concentricity or solve more complex applications by using multiple transducers.

Checkmaster 1050



Checkmaster 1050 with Gage-Chek





Checkmaster 1060

## The capacity of the Checkmaster can be made greater by the use of customised tooling

- Unique 3 gauge station and readout capability
- Remarkable versatility and repeatability
- Accepts most Dial Indicators, Digital Indicators (12.7mm travel) and Gauging Probes
- Excellent Gauge Repeatability and Reproducibility (G.R. & R.) capability
- Exceptionally tough for shopfloor on-line inspection
- Measuring force, with adjustable setting
- Multi functional
- Ideal for SPC and 100% inspection
- Left or right hand operation

## Tooling:

The Universal Tooling Set includes 2 x universal tooling blocks, combination blade / radius anvil, Mushroom anvils and mounting bars to allow a variety of internal and external features to be measured.



Universal Tooling Set

## Model

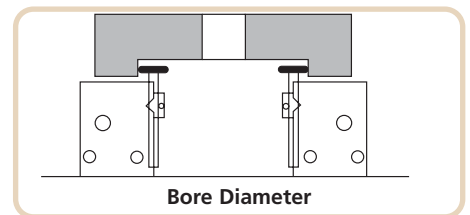
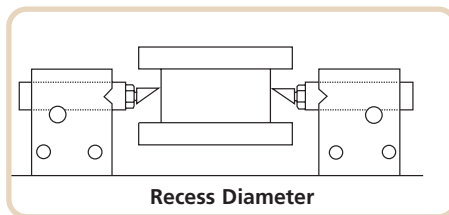
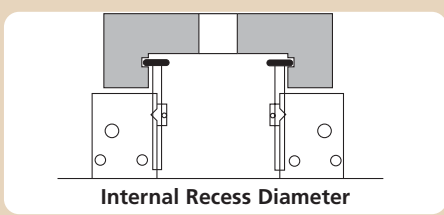
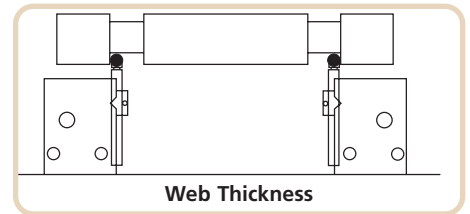
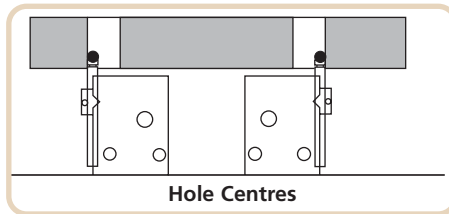
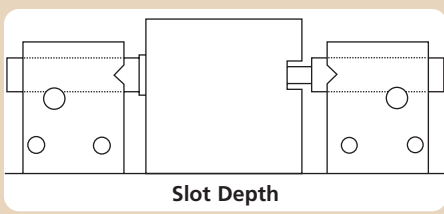
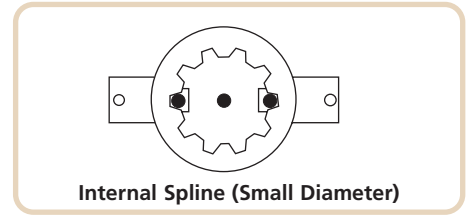
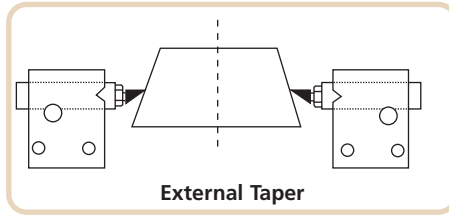
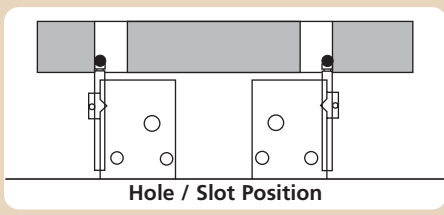
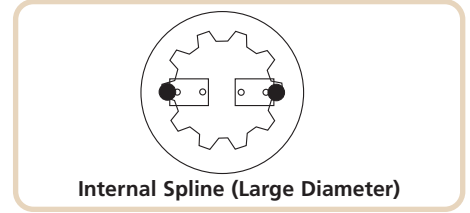
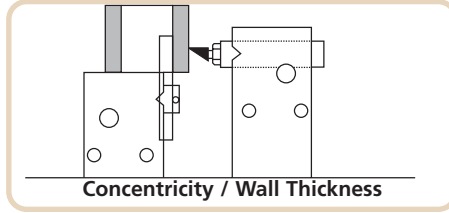
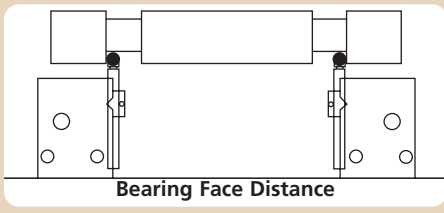
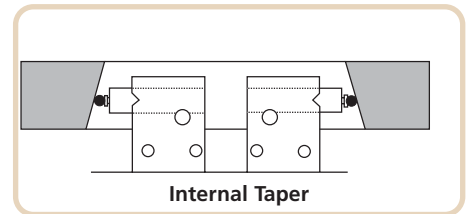
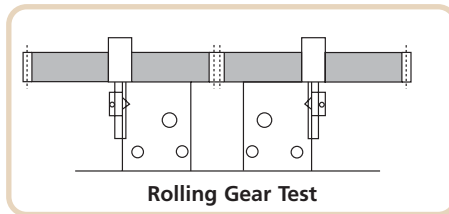
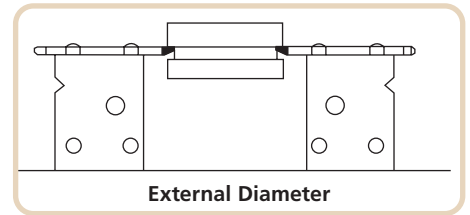
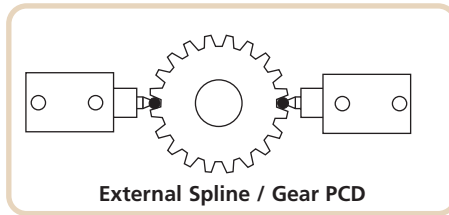
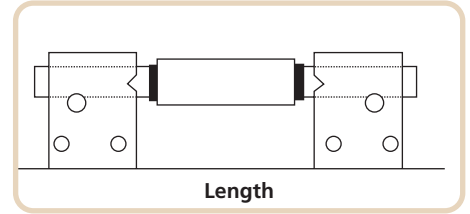
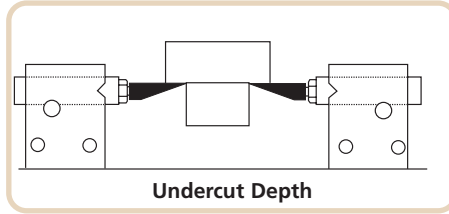
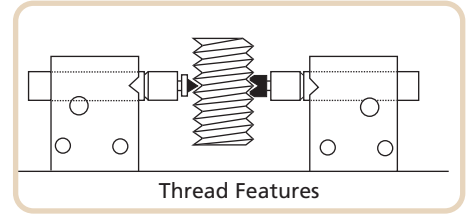
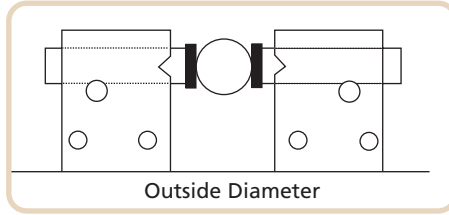
1060-UTS

## Description

Universal Tooling Set for 1050 or 1060 Checkmaster

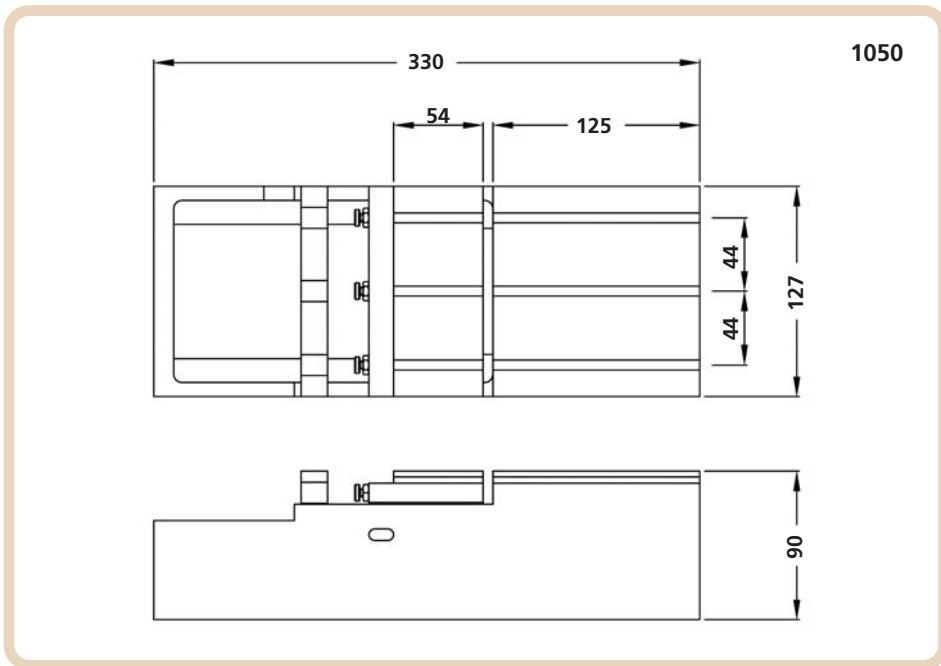
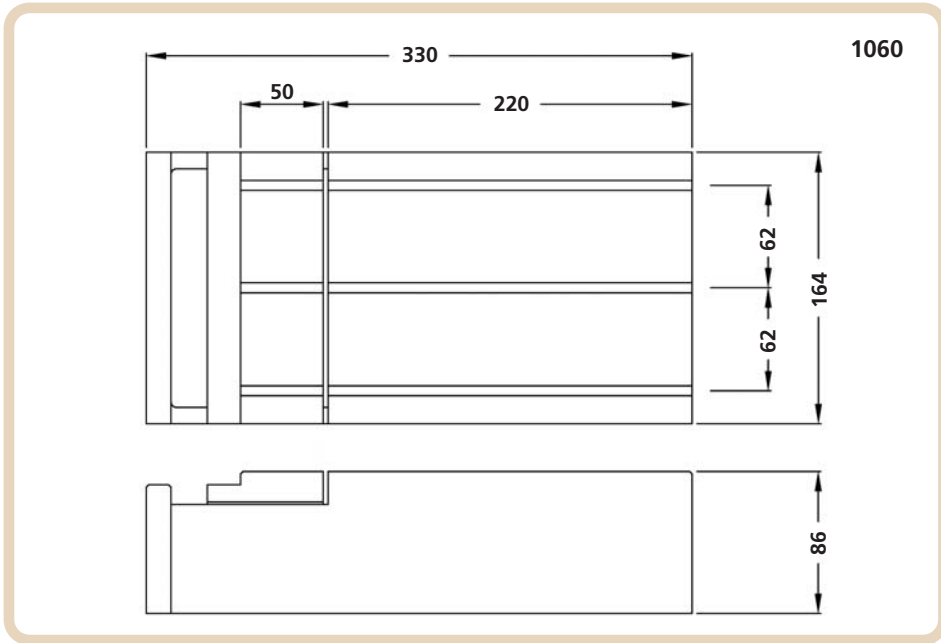
# CHECKMASTER TOOLING APPLICATIONS

- Diameters, internal and external
  - Undercuts, O ring grooves, ball tracks internal and external
  - Gear and spline pitch diameter internal and external
  - Rolling gear test, gear to gear or gear to master
  - Gear pitch diameter to shaft bore run out
  - Holes centre to centre
  - Concentricity bore to O.D.
  - Step height, lengths, depths
- A range of universal tooling is available for these applications.





# CHECKMASTER DIMENSIONS



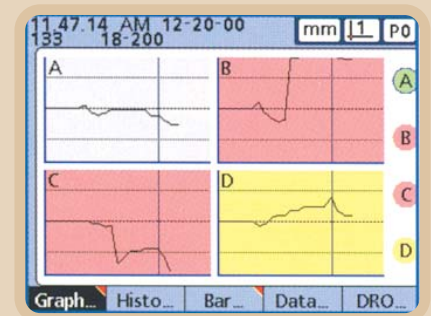
## Checkmasters can be supplied with or without indicators

If ordered 'Less Indicator' (eg 1050-LI) the Checkmaster will be supplied with a set of split bushes to suit any 8mm or 5/8" stem mount gauge with a suitable reach, set of Allen keys and a wooden storage box

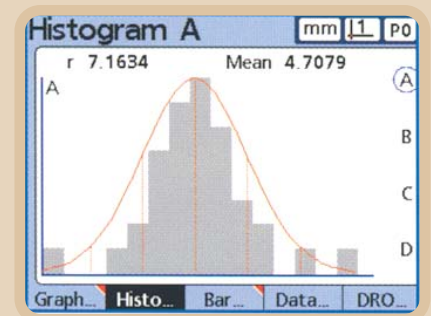
For Baty's range of indicators please see table below.



Gage-Chek



SPC screens



### Indicator Options

#### 57mm Diameter Analogue

Model	Graduation
FI-1	0.001"
FI-4	0.0005"
FI-6	0.0001"
FM-1	0.01mm
FM-5	0.001mm
FM-8	0.002mm

#### Digital

Model	Graduation
DI-1	0.001mm / 0.00005"

#### GageChek

GC-110	Gage Chek – 1 transducer input (probes not supplied)
GC-140	Gage Chek – 4 transducer input (probes not supplied)
GC-180	Gage Chek – 8 transducer input (probes not supplied)

# GAGE-CHEK MULTI INPUT GAUGE DISPLAY

## A compact design for up to eight encoders

The Gage-Chek combines familiar digital readout functions with colour graphics to provide fast and accurate measurement feedback. Encoders can be algebraically combined for dimensions such as thickness, flatness and volume. Results can be displayed numerically, graphically or achieved for process studies such as SPC.

The Gage-Chek contains powerful maths and trig formulas that can be applied to one or more inputs to display complex dimensions. It can be configured to solve basic to advanced applications. Soft keys and numeric short cut keys can be mapped to fit your needs. Two large, easy to reach hot keys on top of the console can be programmed to trigger an operator's most frequent steps.

The Min Max function continuously monitors the highest or lowest measured or calculated value. Each input or calculated dimension can be tolerated. Output includes colour pass/fail indication and audio alerts. Multiple 'parts' tolerances, SPC parameters and custom formulas are stored on a part basis so that the Gage-Chek can measure a wide variety of fixtures and parts.

Gage-Chek can connect and receive data from three types of probe / instrument.



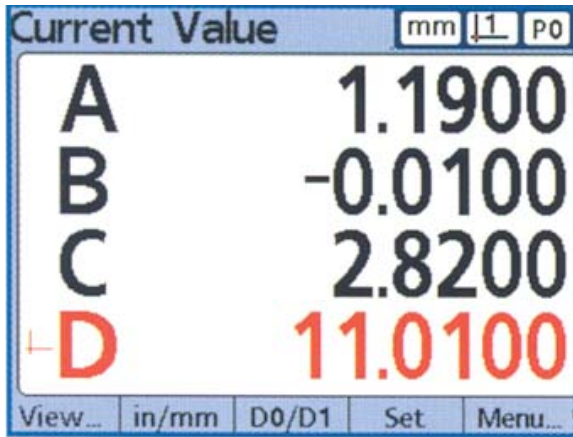
GC-140



Model	Input channels	Input type
GC-110	1	Digital Encoder
GC-140	4	Digital Encoder
GC-180	8	Digital Encoder
GC-110-TS-HB	1	Half Bridge Transducer
GC-140-TS-HB	4	Half Bridge Transducer
GC-180-TS-HB	8	Half Bridge Transducer
GC-110-BSR	1	Serial Cable
GC-140-BSR	4	Serial Cable
GC-180-BSR	8	Serial Cable

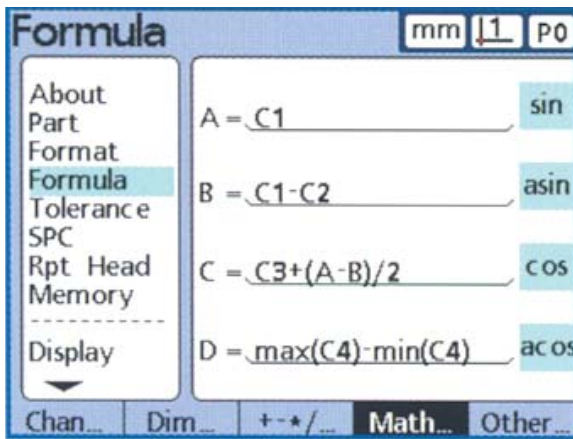


# GAGE-CHEK MULTI INPUT GAUGE DISPLAY



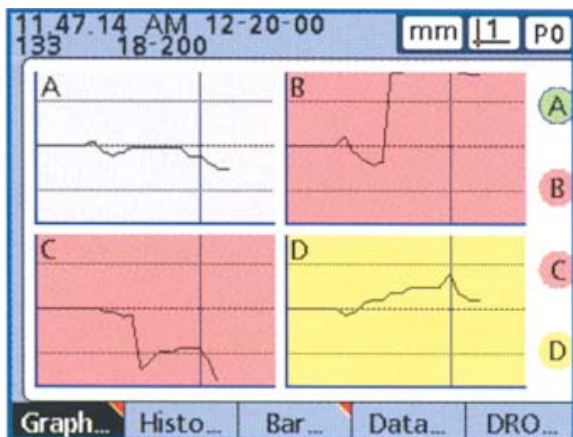
**Large, easy-to-read display**

Get instantaneous 4 dimension feedback with 'out of tolerances' condition indicators.



**Powerful custom formulae**

Powerful math and trigonometric formulae can be applied to one or more inputs (C1, C2...) to display complex dimensions (A, B...)



**Integrated SPC evaluation**

The Gage-Chek includes integrated SPC studies such as X-bar and range charts. Statistics such as mean, min, max, standard deviation and range are available for each dimension.

Digital Encoders require very little set-up and are self-referencing. These tend to be used for absolute measurement.

Half-Bridge Transducers need to be calibrated using a master and tend to have a relatively short measuring range. They are ideally suited to fixturing and tend to be used for comparative measurement.

In both cases the probe measures displacement which is displayed on the Gage-Chek.

The serial input allows data to be sent from another digital instrument such as a micrometer, caliper, bore gauge or height gauge. These instruments will display the measured result on their own display but the data can also be sent via a serial cable to the Gage-Chek for tolerance classification, storage, spc and reporting.

# GAGE-CHEK MULTI INPUT GAUGE DISPLAY

Specifications	Gage-Chek
Display	16 Dimensions
Inputs	Up to 8 probes
Colour LCD screen	15cm (6")
Adjustable-tilt front panel	+15° – 45°
Hot keys	15
Date / time	Yes
Sound	Speaker
Footswitch	Option
Remote keypad	Option
Keypad in relief	Yes

Inputs	Gage-Chek
Length gauges	Yes
Linear encoder	Yes
Measuring instruments	Yes

Power Supply Unit	Gage-Chek
Input voltage range	85-264 VAC
Input frequency	43-63 Hz
Operating temperature	0-45°C

Functions	Gage-Chek
Inputs / dimensions combination	By formulae
Number of part settings	10
Statistics (SPC)	Yes
Static measurement	Yes
Dynamic measurement (min/max)	Yes
Tolerances	Yes
MM / inch	Yes
Auto-enter function	Yes
Reference marks	Yes
Error compensation	Linear, segments

Outputs & Interfaces	Gage-Chek
Parallel port	Printer
RS 232 port	Computer
Switching outputs	2

Dimensions & Weight	Gage-Chek
Enclosure	W 287 – H 195 D 75mm
Base	W 257 – H 57 D 198mm
Enclosure + base	1.6kg + 3.2kg (4.8kg)

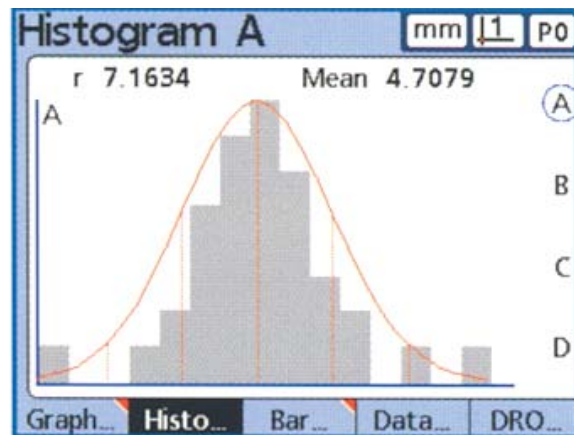


Colour-enhanced vertical or horizontal bar graph (up to 16 dimensions). User selectable nominal value, high and low tolerance limits and high and low warning limits.



## Historical data views

The Gage-Chek can store hundreds of measurements into its database. Historical raw data may be viewed in a tabular numeric display.

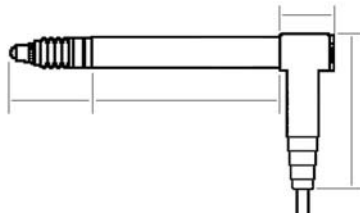


Histogram charts are available to check sample's distribution.

TD-1-HB



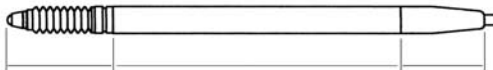
TD-2-HB



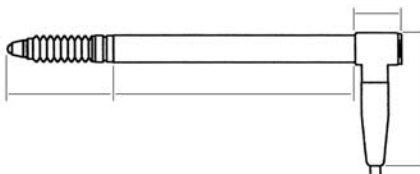
TD-1-HB / TD-2-HB

Maximum stroke	4.6mm
Measuring stroke	±2mm
Spring rate	0.63N ±20% at electrical zero
Linearity error	0.3% in ±1000µm range (at 20°C ±1°C)

TD-3-HB



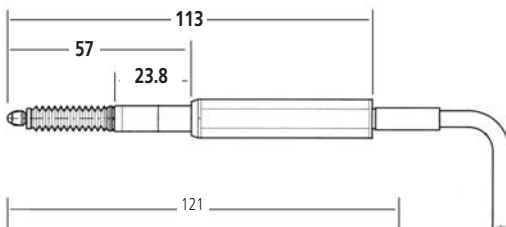
TD-4-HB



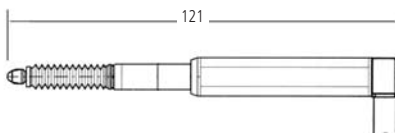
TD-3-HB / TD-4-HB

Maximum stroke	10.6mm
Measuring stroke	±5mm
Spring rate	1.0N ±20% at electrical zero
Linearity error	0.9% in ±5000µm range (at 20°C ±1°C)

TD-1



TD-2



TD1 / TD2

Maximum stroke	12mm
Measuring stroke	12mm
Spring rate	0.6-2.4N
Linearity error	±1 micron

## General Specifications – Half Bridge

### Pretravel

Adjustable

### Bearing

Ball bearing

### Life

>10 million cycles

### Tip rotation

1° over full stroke

### Temperature range

-10 to +65°C, operation & storage

### Mounting position

Any

### Contact Tip

3mm tungsten carbide ball, M2.5 fixing thread, interchangeable

### Gaiter

Viton

### Body diameter

Ø 8h6 (DIN No 7182)

### Cable

in polyurethane, length 2m

### Plug

5 Pin 240° (DIN No. 453220)

### Sensitivity

73±0.15mV / (V\*mm) into R=2kΩ (±0.1%)

### Drive frequency

13kHz ±5%

### Drive voltage

3 V ±0.5% RMS

### Coil form

Halfbridge

### Repair

possible, unit can be disassembled

## General Specifications – Digital

### Temperature range

10°C – 40°C

### Reference mark

mounting diameter

Ø 8h6

### Protection IP64

### Resolution

1µm / 0.5µm

### Contact Tip

3mm tungsten carbide ball, M2.5 fixing thread, interchangeable, absolute measurement

# STEEL GAUGE BLOCKS

## Features

Standard: DIN 861

- Made from high quality stress relieved alloy steel
- Hardened to HV820 (HRC65)
- Excellent rigidity
- Size and serial number are engraved on each individual gauge block
- Available in 3 grades:
  - Grade 0 for calibration
  - Grade 1 for inspection
  - Grade 2 for workshop
- All sets can be issued with a UKAS certificate at extra cost



Model	Description
GB-M87	Metric Set – M87
GB-M47	Metric Set – M47
GB-E81	Imperial Set – E81
GB-E41	Imperial Set – E41

# CERAMIC GAUGE BLOCKS

## Features

Standard: DIN 861

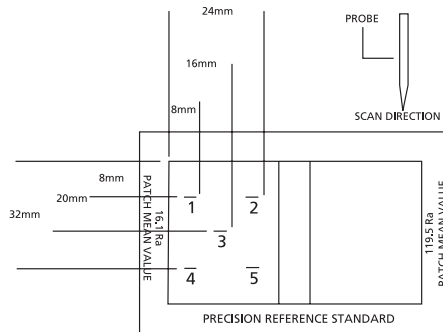
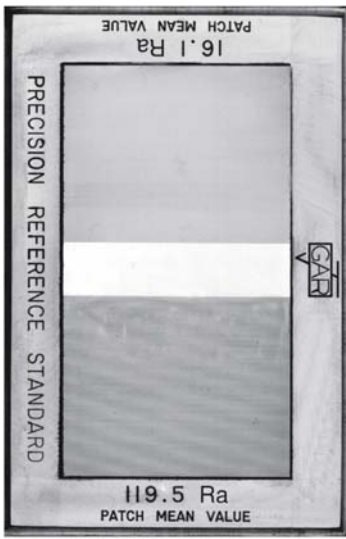
- Made from very tough Zirconia Ceramic with high precision
- Service life is up to 10 times that of steel
- Hardened to HV1350
- Thermal expansion  $11.5 \times 10^{-6}/K$
- No requirements for anti corrosion treatment
- No effects resulting from hand contact
- Antimagnetic, anti-static, and non-conductive properties
- Excellent wringability due to microlite material
- Every gauge block has its own serial number
- Available in 2 grades:
  - Grade 0 for calibration
  - Grade 1 for inspection
- All sets can be issued with a UKAS certificate at extra cost



Model	Description
GB-M87C	Metric Set – M87
GB-M47C	Metric Set – M47



# SURFACE FINISH REFERENCE STANDARDS



Model SF-REF

**Precision Reference Standard & Stylus Check will calibrate your surface analysing equipment to peak efficiency.**

- Economical calibration tool
- Shows actual patch mean values of low and high microinch
- Surface consists of a series of parallel, uniform, V-shaped grooves, having an included angle of 150° between the sides
- Not recommended for use in visual or tactual comparison
- Set contains metric conversion chart plus signed Certificate of Traceability to NIST. Made of pure electro-formed nickel. Supplied with protective case

Patch Mean Values

Area No	P1 16.1 Microinches	P2 119.5 Microinches
1	16.20	119.40
2	16.20	119.16
3	15.66	118.10
4	16.00	119.63
5	16.26	119.50

# SURFACE ROUGHNESS STANDARDS



Model SR-REF

**Ideal for use in the drafting room, engineering department or small shop.**

- Made from solid electroformed nickel
- Markings in AA (microinches) and metric in Ra (micrometers)
- Each type of surface finish is truly and consistently reproduced to give the operator a realistic idea of the feel, appearance and texture of the machined component
- Conforms to S.A.E. and military specifications for visual and tactile inspection

Set contains 30 Specimens, each 7/8" x 3/8" comprising:

3 Specimens Flat Lapping	2, 4 and 8μ" AA
3 Specimens Reaming	16, 32 and 63μ" AA
6 Specimens Grinding	2, 4, 8, 16, 32 and 63μ" AA
6 Specimens Horizontal Milling	16, 32, 63, 125, 250 and 500μ" AA
6 Specimens Vertical Milling	16, 32, 63, 125, 250 and 500μ" AA
6 Specimens Turning	16, 32, 63, 125, 250 and 500μ" AA

# MAJOR CALIPERS

**An extensive range of dial caliper gauges for measuring both internal and external dimensions.**

These instruments can be used as direct reading instruments for quick checking of components such as castings prior to machining or for the checking of wall thickness in difficult to measure components such as valve or pump bodies.

Alternatively they can be used as a comparative gauge when set to a measuring standard and the indicator zeroed. When used as a comparative gauge it is generally recognised that a higher standard of accuracy is achieved.

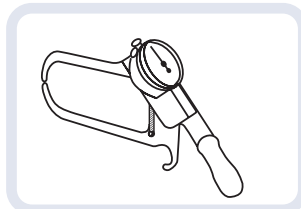
**For finer reading options, please contact our sales team.**



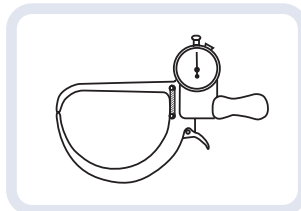
725-M



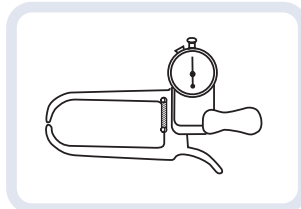
700-M



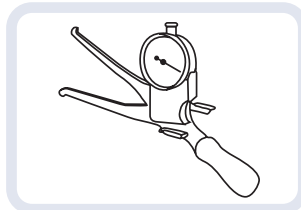
Series	Range	Arm length
705	0 - 50mm (0 - 2")	150mm (6")
710	0 - 50mm (0 - 2")	254mm (10")



Series	Range	Arm length
725	0 - 50mm (0 - 2")	150mm (6")
730	0 - 50mm (0 - 2")	254mm (10")



Series	Range	Arm length
800	0 - 50mm (0 - 2")	150mm (6")
802	0 - 50mm (0 - 2")	254mm (10")



Series	Range	Arm length
700	23 - 73mm (7/8" - 2 7/8")	100mm (4")

**Custom frame designs available for specific applications**

- contact us with your requirements





Every major caliper comes fitted with an indicator. Whether fitted analogue or digital, these indicators are specially adapted for use on major calipers and are calibrated along with the instrument. Under no circumstances should indicators be interchanged between instruments.



800-D

### External Gauging

Model	Reading	Measuring Range	Arm Length
705-M	0.1mm	0-50mm	150mm
705-I	0.010"	0-2"	6"
705-D	0.1mm / 0.010"	0-50mm / 0-2"	150mm / 6"
710-M	0.1mm	0-50mm	254mm
710-I	0.010"	0-2"	10"
710-D	0.1mm / 0.010"	0-50mm / 0-2"	254mm / 10"
725-M	0.1mm	0-50mm	150mm
725-I	0.010"	0-2"	6"
725-D	0.1mm / 0.010"	0-50mm / 0-2"	150mm / 6"
730-M	0.1mm	0-50mm	254mm
730-I	0.010"	0-2"	10"
730-D	0.1mm / 0.010"	0-50mm / 0-2"	254mm / 10"
800-M	0.1mm	0-50mm	150mm
800-I	0.010"	0-2"	6"
800-D	0.1mm / 0.010"	0-50mm / 0-2"	150mm / 6"
802-M	0.1mm	0-50mm	254mm
802-I	0.010"	0-2"	10"
802-D	0.1mm / 0.010"	0-50mm / 0-2"	254mm / 10"

### Internal Gauging

700-M	0.1 mm	23 - 73mm	100mm
700-I	0.010"	0.875" - 2.875"	4"
700-D	0.1mm / 0.010"	23 - 73mm / 0.875" - 2.875"	100mm / 4"

# DIAL THICKNESS GAUGES

Baty dial thickness gauges are direct reading instruments for quick and accurate measurement of rod, strip or sheet material.

All standard instruments are supplied with 10mm (0.39") diameter flat contacts.

The well balanced frame and handgrip make these thickness gauges very easy to use for the measurement of sheet materials.

The range of throat depths permit measurements to be made across the sheet. The lifting lever and spring-loaded spindle ensures controlled contact pressure on the work.

Larger anvils available, see page 15 – (price on application).

## FTI and FTM

FTI and FTM thickness gauges are supplied in a wooden case

Larger anvils available, see page 15 – (price on application).

## FPMP-1

Particularly useful for measuring materials where fine measurement is not required, for example, plywood. The measuring contacts are closed by pushing down the spindle with the fingers.

Supplied in a wooden case.

Larger anvils available, see page 15 – (price on application).



13512

### 135 series

Model	Indicator Reading	Range per rev.	Capacity	Dial Graduation	Throat Depth
1353	0.01mm	1mm	10mm	0-100	100mm
1356	0.01mm	1mm	25mm	0-100	100mm
1359	0.01mm	1mm	25mm	0-100	200mm
13512	0.01mm	1mm	25mm	0-100	300mm
1351	0.001"	0.1"	0.5"	0-100	4"
1354	0.001"	0.1"	1"	0-100	4"
1357	0.001"	0.1"	1"	0-100	8"
13510	0.001"	0.1"	1"	0-100	12"



FTM-1



FPMP-1

### FT Series

Model	Indicator Reading	Range per rev.	Capacity	Dial Graduation	Throat Depth
FTM-1	0.01mm	10mm	10mm	0-100	30mm
FTM-5	0.01mm	10mm	25mm	0-100	50mm
FTI-1	0.001"	0.1"	0.5"	0-100	1.2"
FTI-5	0.001"	0.1"	1"	0-100	2"
FPMP-1	0.1mm	10mm	25mm	0-10	50mm

Contact our sales team for finer reading options



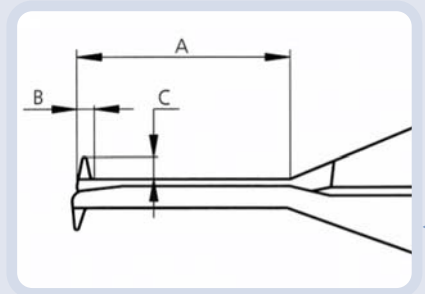
## INTERNAL DIGITAL CALIPER



### Features

- Large LCD display
- 0.01mm or 0.0005" resolution
- Preset capability
- Direct inch / metric conversion
- Absolute / incremental measurements

Model	Range mm	Range Inch	A (mm)	Dimensions		Contact Radius
				B (mm)	C (mm)	
IDMC5-15	5 - 15mm	0.2-0.6"	20.0	1.0	1.5	0.3
IDMC15-20	10 - 20mm	0.4-0.8"	25.0	1.5	3.0	0.3
IDMC20-30	20 - 30mm	0.8-1.2"	30.0	2.0	6.5	0.5
IDMC30-40	30 - 40mm	1.2-1.6"	30.0	2.5	9.0	0.5
IDMC40-50	40 - 50mm	1.6-2.0"	30.0	2.5	9.0	0.5



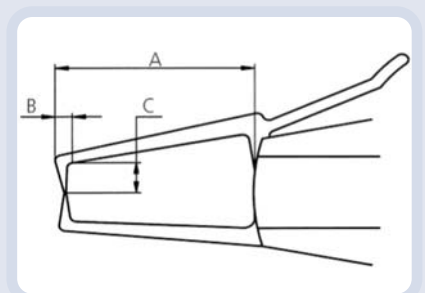
## EXTERNAL DIGITAL CALIPER



### Features

- Large LCD display
- 0.01mm or 0.0005" resolution
- Preset capability
- Direct inch / metric conversion
- Absolute / incremental measurements

Model	Range mm	Range Inch	A (mm)	Dimensions		Contact Radius
				B (mm)	C (mm)	
EDMC0-10	0 - 10mm	0.2 - 0.4"	40.0	3.0	8.0	0.5mm
EDMC0-10-20	10 - 20mm	0.4 - 0.8"	40.0	3.0	8.0	0.5mm
EDMC0-20-30	20 - 30mm	0.8 - 1.2"	40.0	3.0	8.0	0.5mm
EDMC0-30-40	30 - 40mm	1.2 - 1.6"	40.0	3.0	8.0	0.5mm
EDMC0-40-50	40 - 50mm	1.6 - 2.0"	40.0	3.0	8.0	0.5mm



# FIBRE OPTIC BORE-SCOPE

**This fibre optic bore-scope features a 6mm diameter fibre optic bundle.**

Ideal for engine gearbox inspection, the construction consists of a wide angle objective lens and high resolution imaging fibre to carry the image to the high magnification eye piece.

Built-in light source on handle illuminates target area.

The flexible shaft features 'stay-put' type sheathing that holds its shape to view around corners and into restricted areas. This instrument utilises state of the art high resolution imaging fibre connected to the wide angle objective lens and the easy to view high magnification eyepiece.

## Features

- field of view 48°
- Fibre length 600mm
- Supplied in case
- Diopter adjustable eyepiece
- Bending radius down to 75mm
- Depth of field from infinity to 10mm
- Supplied with 90 degree mirror viewing attachment



**Model 1352**



The portable Video-Scope 900 is a new visual inspection device which comes with an integrated 2.4" TFT LCD display and 320 x 240 CMOS water-resistant camera, complete with two adjustable LEDs plus an AV connector for your TV.

Small size, lightweight design and easy to use mechanism makes it a cost effective tool for many fields such as machinery, chemical, aviation, security and other areas.

### Features

- Flexible video borescope with built-in dual LED light source to illuminate object
- High resolution image and optical system
- Glare free close up and wide range field of view
- Flexible fibre optic gooseneck, 900mm long retains configured shape
- Shaft can be exposed to water, sealed to IP67
- TV video output for capturing images
- Powered by 4 x AA batteries (supplied)

### Specifications

- 2 adjustable white LED lighting
- Lens: F#2.8 view of angle 54°
- 1/8" analog CMOS
- Focal distance 3~6cm
- Lens outer diameter 10mm
- NTSC TV video AVI output
- Flexible tube in 900mm length
- Tube outer diameter 6.8mm
- 2.4" colour LCD, 234 x 320 pixels
- Powered by 4 x AA batteries
- PE covered tube, ABS handler
- Magnet / hook and mirror accessories



### Technical data

2.4" TFT resolution	320 x 234 pixels
Lens sensor resolution	320 x 240 pixels
Sensitivity	0.7V (Lux sec)
Colour mosaic	RGB Bayer pattern
White comparison	Automatic
Exposure to light	Automatic
Video format	NTSC composite video
Camera illumination	2 LEDs, white
Handler end AVI port	NTSC signal out
Power by	4 x 1.5V AA
Power consumption	200mA
Ambient/operation temperature	0 to 45
TV cable length	Approx 1.5m
Total length of device	114.9 ± 2.0cm
Metal tube length	88.0 ± 2.0cm
Minimum bending radius	4.5cm
Lens coverage	54
Short distance focus	3~6cm
Weight without accessories	Approx 370gm

# R14 PROFILE PROJECTOR

The Baty R14 bench mount profile projector with its 340mm screen combines high accuracy non-contact measurement and inspection with a large 175mm x 100mm measuring range.

Choice of digital readouts and optional automatic profile edge detection. The horizontal light path configuration is ideally suited to machined parts that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The compact and robust lightweight chassis makes the R14 ideal for workshop environments.

## Standard features

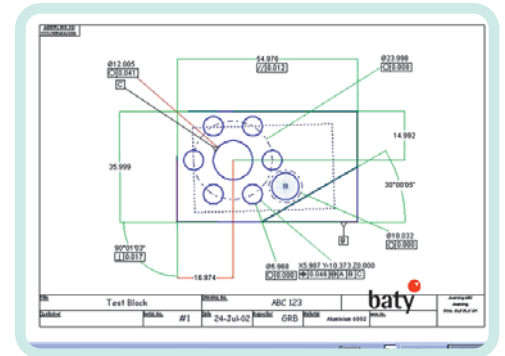
- 340mm (14") screen with 90° crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: x10, x20, x25, x50 and x100
- Surface illumination (fibre optic)
- Helix adjustment of light source  $\pm 7^\circ$  for accurate thread form projection
- Workstage with machined slot for holding accessories
- Workstage measuring range of 175mm (7") x 100mm (4")
- Digital angle measurement to 1 minute

## Optional features

- Internally fitted automatic edge sensor (illustrated)
- Swing over lamphouse to allow clear access to the workstage
- Various electronic measuring systems to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Other options include foot switch control and printer

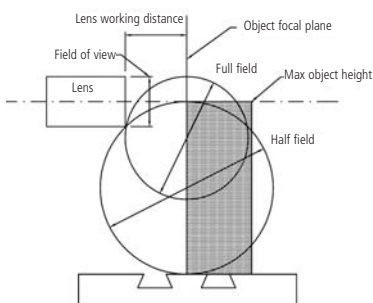


**Fusion-2:** PC software option shows measured part as a dimensional drawing



Measuring Option Fusion 2

## Horizontal stage systems



## R14 Lens Working Capacity mm / (inches)

Magnification	x10	x20	x25	x50	x100
Field of view	34 (1.4)	17 (0.7)	13.5 (0.53)	6.8 (0.27)	3.4 (0.13)
Working distance	80.5 (3.2)	38.5 (1.5)	28 (1.1)	15.5 (0.64)	30 (1.2)
Max work diameter (Full field)	119 (4.7)	108 (4.3)	56 (2.2)	31 (1.2)	77 (3.0)
Max work diameter (Half field)	100 (3.9)	100 (3.9)	79 (3.1)	44 (1.7)	96 (3.7)
Maximum work piece height	100mm				



## Basic Machine

Type	Bench standing with horizontal light path
Screen	Rotating 340mm diameter, inclined 75° to horizontal, with hood
Image	Inverted and reversed
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	60kg (132lb)

## The basic R14 model consists of

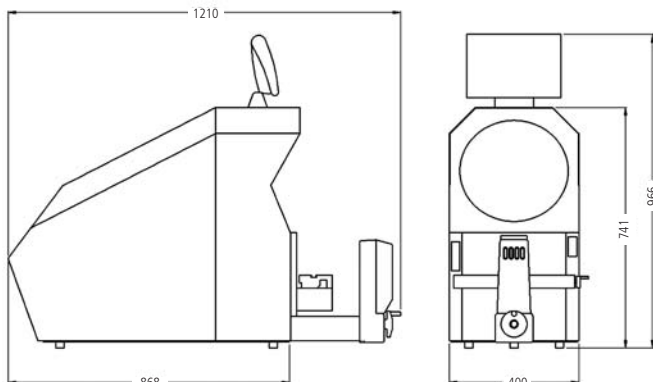
- 340mm diameter translucent screen with chart clips
- Digital angle measurement, with 1 minute of arc resolution
- Profile illumination with fan cooled lamphouse
- Surface illumination
- Focussing single lens mount
- x10 magnification lens
- Collimation lens
- Helix adjustment
- Machine slotted, chrome plated, cast iron workstage
- Green filter

## Workstage

Measuring range	Horizontal (X) axis travel 175mm (7") Vertical (Y) axis travel 100mm (4")
Surface area	325mm (12.8") x 100 (4") with slot for mounting accessories
Scale resolution	0.0005mm
Movement	Manual with fine screw adjustment, quick release on X axis

## Optical System

Lens mount	Single, screw clamping
Lens magnification	x10, x20, x25, x50, x100,
Focussing	By hand wheel
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	± 7° by light source alignment
Light source	Profile illumination 12v 100w lamp (tungsten halogen) Surface illumination 12v 100w lamp (tungsten halogen)
Option	Internally mounted edge sensor



## Measuring options

**XLS:** A simple 2 axis digital readout for X&Y measurement

**GXL:** Incorporates geometric functions for skew alignment, angle radii measurement, pitch circle diameter and construction of intersect points etc

**GXL-E:** As GXL with screen mounted automatic profile edge sensor. As an option the sensor can be fitted internally

**AB-2:** Fusion PC based measuring system produces dimensioned part drawing, includes geometric tolerancing, SPC, full reporting with pass / fail analysis, auto Excel™ link and auto sequence program

**AB-2E:** As AB-2 with screen mounted automatic profile edge sensor. As an option the sensor can be mounted externally.

**QC3-CNC:** 2 axis touch screen display with external edge detection. Full CNC control allows automatic part inspection. Integral joystick for manual (motorised control).



R14 QC3 with motorised joystick control

## Accessories

See page 80.

# R400 PROFILE PROJECTOR

The Baty R400 bench mount profile projector with its 400mm screen combines high accuracy non-contact measurement and inspection with a large 300mm x 150mm measuring range.

Choice of digital readouts, corrected image optics and automatic profile edge detection. The horizontal light path configuration is ideal for checking machined components that can be secured to the workstage using a range of optional accessories from the Baty fixture family. The robust design of the R400 makes it suitable for both the shop floor and standards room.

## Standard features

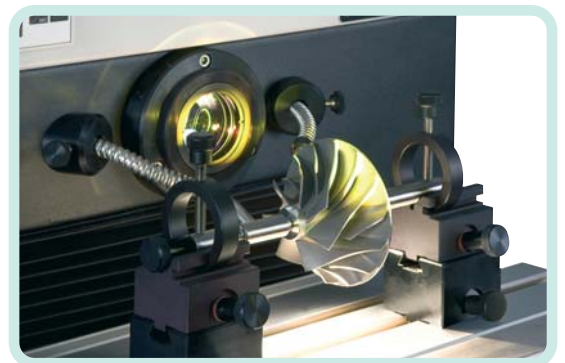
- 400mm (16") screen with 90° crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: x10, x20, x25, x50 and x100
- Surface illumination (fibre optic)
- Helix adjustment of light source for accurate thread form projection
- Workstage with two machined slots for holding accessories
- Workstage measuring range of 300mm (12") x 150mm (6")
- Digital angle measurement

## Optional features

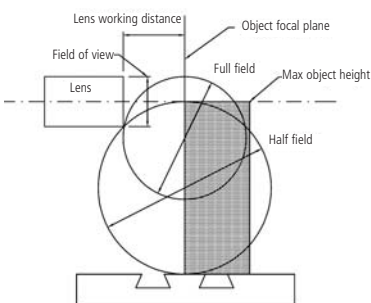
- Internally fitted automatic edge sensor
- Swing over lamphouse to allow clear access to the workstage
- Various electronic measuring systems to suit individual requirements
- Cabinet stand ensures a solid base and provides storage
- Computer numerical control (CNC) for automated measuring
- Other options include foot switch control



R400



## Horizontal stage systems



## R400 Lens Working Capacity mm / (inches)

Magnification	x10	x20	x25	x50	x100
Field of view	40 (1.5)	20 (0.78)	16 (0.63)	8 (0.31)	4 (0.15)
Working distance	80 (3.15)	82 (3.23)	70 (2.76)	53 (2.09)	43 (1.69)
Max work diameter (Full field)	184 (7.24)	184 (7.24)	184 (7.24)	184 (7.24)	184 (7.24)
Max work diameter (Half field)	178.5 (7.03)	176.1 (6.93)	181 (7.13)	147 (5.79)	122.5 (4.82)
Maximum work piece height			185 (7.28)		



## Basic Machine

Type	Bench standing with horizontal light path
Screen	Rotating 400mm diameter, vertically mounted, with hood
Image	Erect, reversed left to right
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	120kg (264lb)

## The basic R400 model consists of

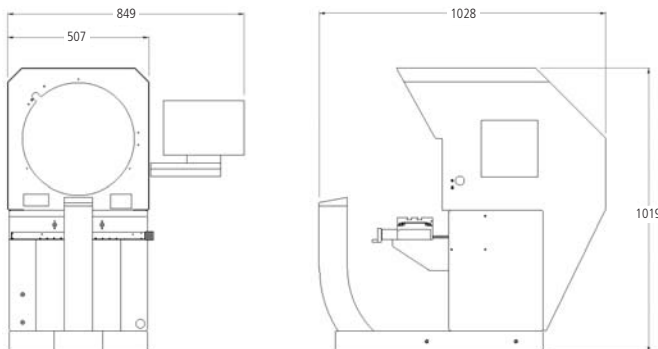
- 400mm diameter translucent screen with chart clips
- Digital angle measurement, with 1 minute of arc resolution
- Profile illumination with fan cooled lamphouse
- High intensity fibre optic surface illumination
- x10 magnification lens
- Collimation lens
- Helix adjustment
- Machine slotted, chrome plated, cast iron workstage
- Green filter

## Workstage

Measuring range	Horizontal (X) axis travel 300mm (12") Vertical (Y) axis travel 150mm (6")
Surface area	480mm (19") x 127 (5") with 2 slots for mounting accessories
Scale resolution	0.0005mm
Movement	Manual with ultra smooth plain rod drive and quick release on X axis 400MX motorised X and Y axes with joystick control (optional) 400CNC automatic position control and measurement (optional)

## Optical System

Lens mount	Single, quick change snap-fit mounting
Lens magnification	x10, x20, x25, x50, x100,
Focussing	By hand wheel
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	± 7° by light source alignment
Light source	Profile illumination 12v 100w lamp (tungsten halogen) Surface illumination 12v 100w lamp (tungsten halogen)
Surface illumination	Twin adjustable fibre optic light guides



## Measuring options

**XLS:** A simple 2 axis digital readout for X&Y measurement

**GXL:** Incorporates geometric functions for skew alignment, angle radii measurement, pitch circle diameter and construction of intersect points etc

**GXL-E:** As GXL with screen mounted automatic profile edge sensor. As an option the sensor can be fitted internally

**AB-2:** Fusion PC based measuring system produces dimensioned part drawing, includes geometric tolerancing, SPC, full reporting with pass / fail analysis, auto Excel™ link and auto sequence program

**AB-2E:** As AB-2 with screen mounted automatic profile edge sensor. As an option the sensor can be mounted externally.

**AB-2-CNC:** Fusion PC based measuring system, motorised X & Y axis with joystick control and CNC position programming for automatic measuring, produces dimensioned part drawing. Includes geometric functions and tolerancing, SPC, full reporting with pass/fail analysis, auto Excel link & auto sequence program, includes external edge sensor.

## Accessories

See page 80.



R400 GXL

# R600 PROFILE PROJECTOR

The Baty R600 with its 600mm (24") screen and high specification, presents the capability to make simple comparative non-contact measurement through to complex CNC programmed measuring sequences with SPC capability.

The horizontal light beam configuration is ideally suited to large machined or turned workpieces for mounting in vee blocks and centres, or customised features.

## Standard features

- 600mm (24") screen with 90° cross lines and chart clips
- Heavy duty workstage with 450mm x 200mm (18" x 8") measuring range and 2 machine slots for workpiece holders
- Angular rotation of  $\pm 15^\circ$  on workstage for measuring threadforms or cutting tools
- Vertical 200mm (8") Y axis power driven with joystick control
- Lens magnification choice – x5, x10, x20, x25, x50, x100
- 4 position rotating lens turret for ease of lens changing
- Profile illumination with halogen lamp and green filter
- Screen hood and curtains for use in bright ambient light conditions
- Digital angle measurement

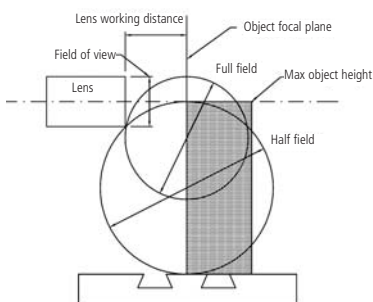


R600 GXL

## Optional features

- Horizontal axis motorisation via joystick control
- CNC workstage for automatic measuring
- Internally fitted automatic edge sensor to allow the use of overlay charts on an unobstructed screen
- Various electronic measuring systems to suit your individual requirements
- SPC to add to your quality control without the purchase of a separate system
- Extended workstage X axis travel to 450mm (18")

### Horizontal stage systems



### R600 Lens Working Capacity mm / (inches)

Magnification	x5	x10	x20	x25	x50	x100
Field of view	120 (4.72)	60 (2.36)	30 (1.18)	24 (.94)	12 (.47)	6 (1.72)
Workpiece distance	245 (9.64)	135 (5.31)	132 (5.19)	106 (4.17)	93 (3.15)	50 (1.96)
Max work diameter (Full field)	292 (9.64)	343 (13.50)	343 (13.50)	343 (13.50)	343 (13.50)	195 (7.75)
Max work diameter (Half field)	406 (18.98)	343 (13.50)	343 (13.50)	343 (13.50)	343 (13.50)	235 (9.25)

## Basic Machine

Type	Floor standing with horizontal light path
Screen	Rotating 600mm (24") diameter, vertical
Image	Erect, reversed left to right
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	550kg (1200lb)

## The basic R600 model consists of

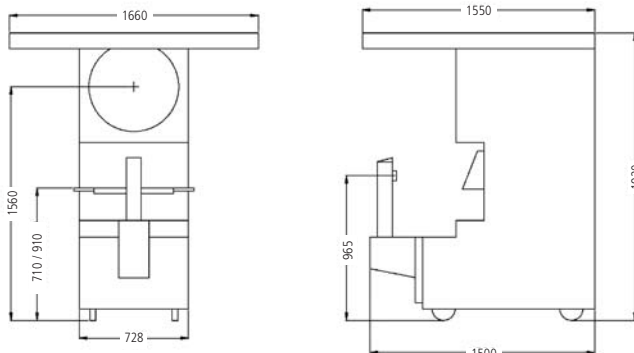
- 600mm (24") diameter translucent screen with chart clips
- Digital angle measurement, with 1 minute of arc resolution
- Profile illumination with fan cooled lamphouse
- Lens turret with 4 lenses
- Standard and high magnification collimation lenses
- Workstage with 450 x 200mm (18" x 8") travel
- Motorised Y axis (vertical) with joystick control
- Green filter
- Fibre optic surface illumination
- Screen hood and curtains

## Workstage

Measuring range	Horizontal (X) axis 300mm (12") x Vertical (Y) axis 200mm (8") Optional X axis travel 450mm (18")
Surface area	600mm (24") x 200 (8")
Movement	Horizontal manual (option: motorised). Vertical motorised by joystick control
Scale resolution	0.0005mm
Max load	50kg (110lb)

## Optical System

Lens mount	Rotary lens turret for 4 lenses with screw fitting
Lens magnification	x5 (single lens mount) x10, x20, x25, x50, x100
Focusing	By hand wheel
Helix adjustment	± 15° rotation of workstage
Light source	Profile illumination 24v 150w Surface illumination 24v 250w
Options	Internally mounted edge sensor Footswitch control



## Measuring options

**XLS:** A simple 2 axis digital readout for X&Y measurement

**GXL:** Incorporates geometric functions for skew alignment, angle radii measurement, pitch circle diameter and construction of intersect points etc

**GXL-E:** As GXL with screen mounted automatic profile edge sensor. As an option the sensor can be fitted internally

**AB-2:** Fusion PC based measuring system produces dimensioned part drawing, includes geometric tolerancing, SPC, full reporting with pass/fail analysis, auto Excel™ link and auto sequence program

**AB-2E:** As AB-2 with screen mounted automatic profile edge sensor. As an option the sensor can be mounted externally.

**AB-2-CNC:** Fusion PC based measuring system, motorised X & Y axis with joystick control and CNC position programming for automatic measuring, produces dimensioned part drawing. Includes geometric functions and tolerancing, SPC, full reporting with pass/fail analysis, auto Excel link & auto sequence program, includes external edge sensor.

## Accessories

See page 80.



Standard and high magnification collimation lenses are included in a rotary mounting.

# SM350 PROFILE PROJECTOR

The 2010 SM350 is an all new design. This vertical 14" / 350mm screen bench projector features an option where the focus axis can also be used as a 3rd measurement axis. This enables Z axis height measurements to be taken using a touch trigger probe. Another new feature is the option of a three lens turret for instant lens changes without re-calibration.

## Standard Features

- Fully usable 340mm screen
- Digital screen protractor
- Built in helix adjustment
- Sturdy all-steel design
- Cross roller bearings
- Quick release 'X' and 'Y' travel
- Erect image
- Easy-view vertical screen
- Large stage travel 10"(250mm) x 5"(125mm)
- Rotating chart clips
- Fibre optic illumination for surface measurement
- Includes 10x lens

## Optional Features

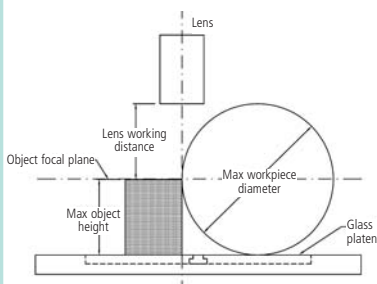
- Automated measurement system with joystick control
- Automatic edge sensing
- Motorised focus axis
- Heavy duty cabinet
- Touch trigger probe for fast Z axis measurement
- 3-Position turret



SM350



Vertical stage systems



SM350 Lens Working Capacity mm / (inches)

Magnification	x10	x20	x25	x50	x100
Field of view	34 (1.33)	17 (0.66)	13.5 (0.53)	6.8 (0.26)	3.4 (0.13)
Workpiece distance	83.98 (3.30)	37.05 (1.45)	29.42 (1.15)	16.58 (0.65)	41.18 (1.62)
Max work diameter (Full field)	170.67 (6.71)	129.9 (5.11)	74.82 (2.94)	37.43 (1.47)	90.94 (3.58)
Max work diameter (Half field)	220 (8.66)	162.27 (6.38)	52.62 (2.07)	51.51 (2.02)	139.94 (5.50)
Max workpiece height	114 (4.48)	113 (4.44)	106 (4.17)	111 (4.37)	103 (4.05)



## Basic Machine

Type	Bench standing with vertical light path
Screen	Rotating 350mm (24") diameter, vertically mounted with hood
Image	Erect and reversed
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	133kg

## The basic SM350 model consists of

- 350mm (14") screen with 90 degree crosslines and chart clips
- Profile illumination with halogen lamp and green filter
- Lens magnification choice: x10, x20, x25, x50, x100
- Surface illumination (fibre optic)
- Helix adjustment of light source for accurate thread form projection
- SA-2510 precision workstage with 250 x 125mm measuring range, 0.0005mm
- Digital angle measurement

## Optical System

Lens mount	Single, quick change with lock nut, optional 3 lens turret
Lens magnification	x10, x20, x25, x50, x100
Focusing	By hand wheel
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	$\pm 7^\circ$ by light source alignment
Light source	Profile illumination 12v 100w lamp Surface illumination 12v 100w lamp
Surface Illumination	Twin adjustable fibre optic light guides

## Measuring options

**XLS:** A simple 2 axis digital readout for X&Y measurement

**GXL:** Incorporates geometric functions for skew alignment, angle radii measurement, pitch circle diameter and construction of intersect points etc

**GXL-E:** As GXL with screen mounted automatic profile edge sensor. As an option the sensor can be fitted internally

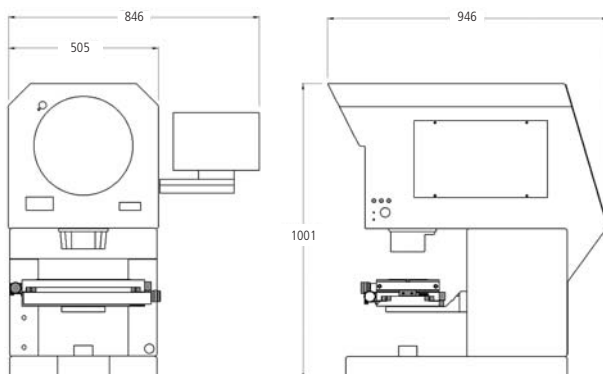
**AB-2:** Fusion PC based measuring system produces dimensioned part drawing, includes geometric tolerancing, SPC, full reporting with pass/fail analysis, auto Excel™ link and auto sequence program

**AB-2E:** As AB-2 with screen mounted automatic profile edge sensor. As an option the sensor can be mounted externally.

**AB-2E-CNC:** Fusion PC based measuring system, motorised X & Y axis with joystick control and CNC position programming for automatic measuring.

## Accessories

See page 81.



SM350-GXL

# SM20 PROFILE PROJECTOR

The **Baty Shadomaster SM20** with its **500mm screen** and high specification presents the capability to make simple comparative measurements through to complex results storage and tolerancing with **SPC capability**.

The vertical light beam configuration is ideally suited for workpieces which are more readily mounted flat or horizontally.

## Standard features

- 500mm screen with 90 degree crosslines and chart clips
- Angled screen for easy viewing
- Profile illumination with halogen lamp and green filter
- Single lens mounting
- Lens magnification choice: x5, x10, x20, x25, x50 and x100
- Helix adjustment of light source for accurate thread form projection
- 250mm x 125mm stage measuring range
- Digital angle measurement

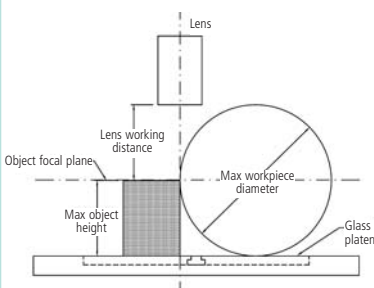
## Optional features

- Screen hood and curtains with generous proportions for use in bright ambient light conditions
- Surface illumination through twin fibre optics for bright full colour surface inspection
- 3 position lens turret for easy lens changing
- Various electronic measurement systems to suit your individual requirements
- SPC to add to your quality control without the purchase of a separate system



**GXL-GXL-E:**  
Shopfloor DRO  
with feature view and full  
reporting

## Vertical stage systems



## SM20 Lens Working Capacity mm / (inches)

Magnification	x10	x20	x25X	x25	x50	x100
Condenser	L	L	L	S	S	S
Field of view	50	25	20	20	10	5
Max diameter	200	200	200	200	180	85
Max focal pane height (profile lighting)	205	203	218	254	240	195
Max end mill height (surface lighting)	150	153	153	155	150	150



## Basic Machine

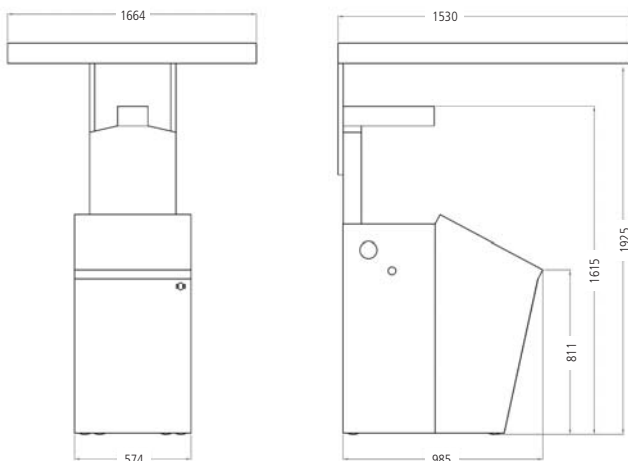
Type	Floor standing with vertical light path
Screen	Rotating 500mm diameter, inclined at 30° to the horizontal
Image	Inverted and reversed
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	150kg

## The basic SM20 model consists of

- 500mm diameter screen
- Digital angle measurement
- Profile illumination with fan cooled lamphouse
- Single lens mount
- Collimation lens for x10, x20, x25 magnification with swivel mount for x50, x100
- Manual focus system
- Green filter
- SA-2510 precision workstage with 250mm x 125mm measuring range, 0.0005mm

## Optical System

Lens mount	Single lens mount, rotating turret to accommodate three lenses – optional
Lens magnification	x5 (not turret mounted) x10, x20, x25, x50, x100,
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	± 7°
Light source	Profile illumination 12v 100w lamp (tungsten halogen) Surface illumination 12v 100w lamp (tungsten halogen)
Surface illumination	Twin adjustable fibre optic light guides



## Measuring options

**XLS:** A simple 2 axis digital readout for X&Y measurement

**GXL:** Incorporates geometric functions for skew alignment, angle radii measurement, pitch circle diameter and construction of intersect points etc

**GXL-E:** As GXL with screen mounted automatic profile edge sensor. As an option the sensor can be fitted internally

**AB-2:** PC based measuring system produces dimensioned part drawing, includes geometric tolerancing, SPC, full reporting with pass / fail analysis, auto Excel™ link and auto sequence program

**AB-2E:** As AB-2 with screen mounted automatic profile edge sensor. As an option the sensor can be mounted externally.

## Accessories

See page 81.



Standard and high magnification collimation lenses are included in a rotary mounting.

# PROFILE PROJECTOR HORIZONTAL ACCESSORIES

## Accessories for R14/R400

Part No.	Description
202-1327-1	Footswitch for GXL
ABFS-001	Footswitch for AB2 Fusion Systems
52-371	Protective cover – R14
350-035	Protective cover – R400 / SM350
SA-328	Cabinet stand
SA-250	Iris diaphragm
SA-256	Vee blocks
SA-258	Spring loaded centres
SA-259	Riser blocks 38mm (1½") for SA-256
SA-152	Vice stage and vice
SA-260	Swivel vice
SA-276	Single vee and clamp (Vee parallel to optic axis)
SA-153	Fixture base
SA-527	Glass plate work holder

## Fixture Family

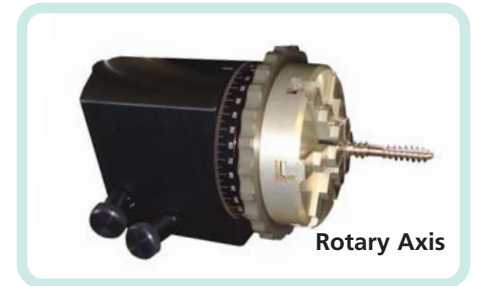
52-600	Self centering vice
52-601	Dual axis vee block and clamp to Ø 15mm
52-602	Dual axis vee block and clamp to Ø 30mm
52-603	Precision rotary base
52-604	Universal base
52-605	Precision ground steel alignment feature
52-606	Magnetic vee block
52-701	Dual axis vee block fitted with side base

## Accessories for R600

SA-551	Iris diaphragm
SA-542	Large vee blocks & centres
SA-543	Riser blocks
SA-614	Large vice stage & vice
SA-527	Glass plate work holder
SA-617	Heavy duty rotating vice
SA-733	Swing over lamphouse
SA-606	Screen chart rest bar



SA-527



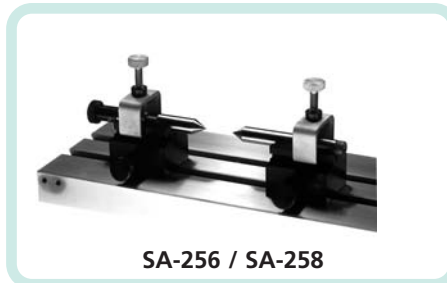
Rotary Axis



SA-250



52-602



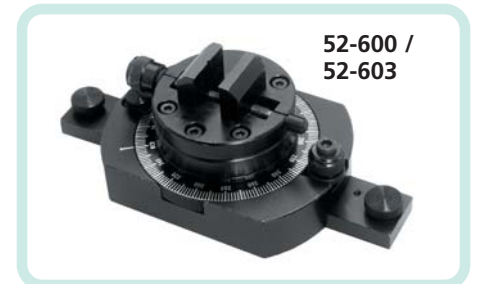
SA-256 / SA-258



52-701 / 52-604



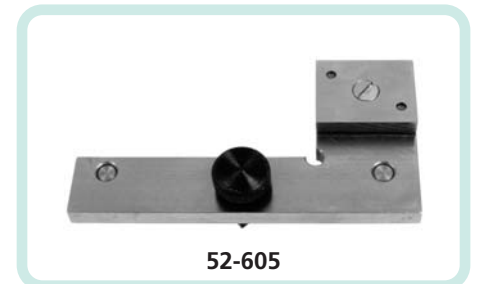
SA-152



52-600 / 52-603



SA-260



52-605



SA-542  
Large Vee Blocks and Centres



SA-543 Riser Blocks



## PROFILE PROJECTOR VERTICAL ACCESSORIES



Rotary Glass Stage  
SA-245-2



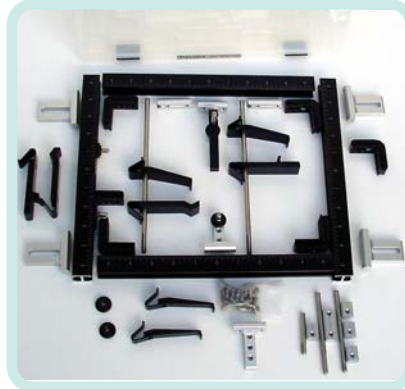
SA-370 Back Stop



SA-371 Side Stop



SA-196-EXT  
Dual Vee Block and Centres



### Accessories for SM350/SM20

Model	Description
SA-245-2	Rotary glass stage
SA-370	Back stop
SA-371	Side stop
SA-196-EXT	Dual vee block and centres
FM-2510	Open frame fixturing for 2510 stage
SA-551	Iris diaphragm for SM20 / SM350 / R600
350-035	Protective cover SM350 / R400

## WORKSTAGES

SA-179



SA-119-A

### SA-179

- Fixed glass work platen

### SA-119-A

- 50mm x 50mm workstage incorporating Digital Micrometers with 0.5 micron resolution

### SA-2510

- Heavy duty precision workstage with large 250mm x 125mm, X-Y measuring range, ultra smooth plain rod drives and rapid traverse on BOTH axis, complete with 0.5 micron resolution scales



SA-2510

# OVERLAY CHARTS

Baty screen charts, thread form diagrams and scales are specially manufactured on stable plastic. They are translucent and must be used as an overlay on either a clear or translucent glass screen.

Standard rulings include crossline, grid and concentric circles, whilst special charts can be supplied to your requirements. Replacement glass screens can also be supplied with either standard or special rulings on application.

## Ruling Type

### Crossline

- Chain crossline at 90° with 30°, 45° and 60° intermediate chain lines in two quadrants

### Grid

- Grid squares in 2mm increments (metric) or 0.1" increments (imperial) with every 5th and 10th line in bold

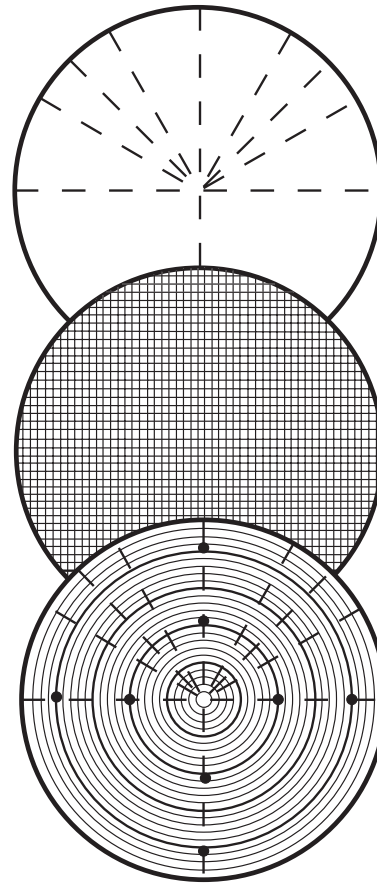
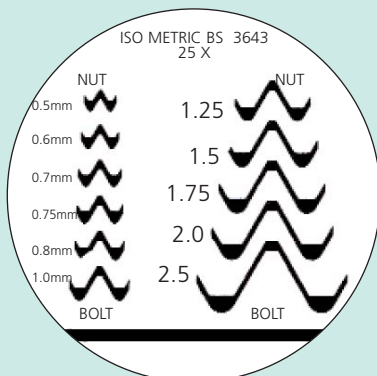
### Concentric Circles

- Concentric circles in 2mm or 0.1" incremental radii and 90° crosslines with 30°, 45° and 60° intermediate chain lines in two quadrants

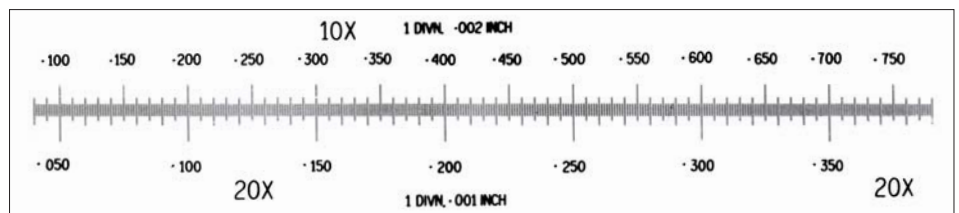
## Measuring Scales

- Used for making direct measurements at the screen. The graduations and numbering relate to the magnification being used and therefore give a direct reading of work size

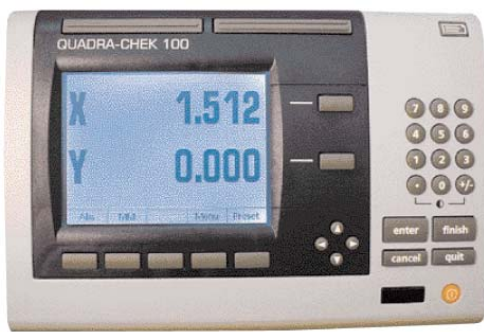
- Thread form diagrams are available on request.



	254mm (10")	305mm (12")	500mm (20")
Crossline		SC12-5	SC20-5
Grid Metric	GM275-1	SC12-8	SC20-8
Grid Imperial	GC275-1	SC12-6	SC20-6
Concentric Circles Metric	RM275-1	Sc12-11	SC20-11
Concentric Circles Imperial	RC275-1	SC12-10	SC20-10



Part Number	Length	Resolution	Magnification
E2/1020	10"	0.002" / 0.001"	x10 / x20
E2/2550	10"	0.001" / 0.0005"	x10 / x20
M2 / 1020	250mm	0.05 / 0.025mm	x10 / x20
M2 / 2550	250mm	0.02 / 0.01mm	x25 / x50
E5/1020	20"	0.002" / 0.001"	x10 / x20
E5/2550	20"	0.001" / 0.0005"	x25 / x50
M5/1020	500mm	0.05 / 0.025mm	x10 / x20
M5/2550	500mm	0.02 / 0.01mm	x25 / x50



XLS

**XLS:** A simple two axis digital readout for point to point X,Y or R,A measurements.

Absolute or incremental mode with Inch / metric conversion, Zero, preset and print functions. RS232C serial and parallel ports. Footswitch compatible.

**GXL:**

As XLS with geometric functions for skew alignment, angle, radius, point, line, circle. Automatic feature list and graphical view. Macro programming facility guides the operator through the measurement process. Feature tolerancing and standard report printout. Footswitch compatible.

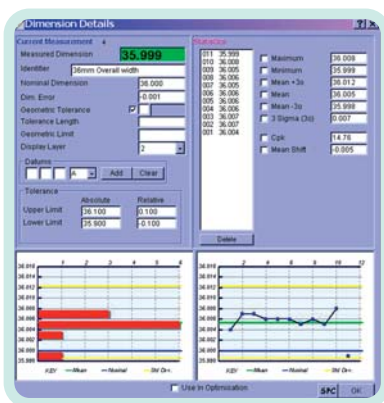
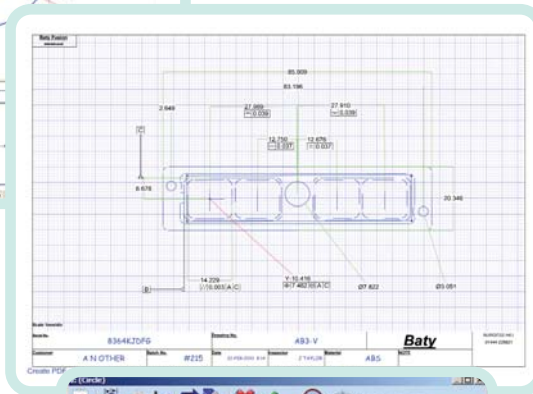
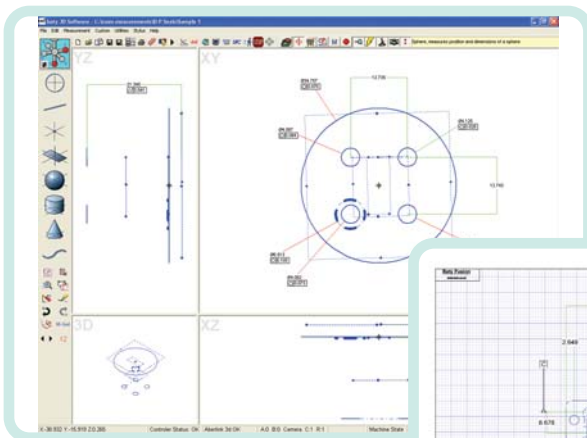
**GXL-E:** As GXL with profile edge sensor to take data points automatically. Eliminates operator error and speeds up inspection times.

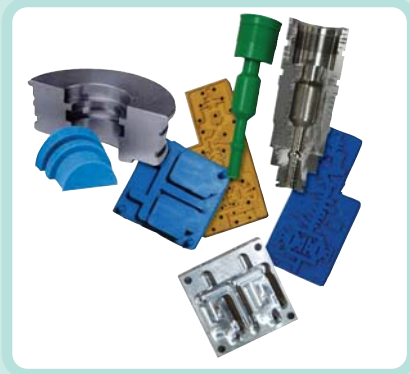
**Fusion-2:** PC based measuring system with full geometric functionality. Graphical view of measured part can be printed as fully dimensioned drawing with geometric tolerances. Other graphics include form error and SPC charts. Full reporting capability includes tabulated details with pass / fail analysis, auto-link to Excel™ and auto sequence programming feature. Can be supplied as software only for self-installation or as a complete system.

**Fusion 2-E:** As Fusion but supplied with screen mounted automatic edge detector. As an option the sensor can be fitted internally.

**FUSION2-E CNC:** Fusion software with full CNC control for automatic part inspection. Auto program from CAD. Manual joystick control, multiple part reports and SPC.

GXL/GXLE





## Original Reprorubber® Thin Pour

**Final Colour: LIGHT GREEN**

For internal-shape applications where a thin pour will completely fill the cavity without voids. A complete replica casting is quickly formed.

- Manipulation time is approx 2 minutes and cure time is approximately 10 minutes
- Start to finish: approximately 12 minutes
- Kits include graduated mixing cups, wooden spatulas and instructions

## Original Reprorubber® Quick Setting Putty

**Final Colour: LIGHT BLUE**

Roll two equal-sized balls of catalyst putty and base putty and simply knead them together like dough. Excellent for external shapes. Simply spread over master pushing down with fingers and wait for cure 8-10 minutes. You have 1 or 2 minutes of manipulation time. Therefore 12 minutes start to finish. You can also cast internal shapes and cavities but some pressure should be applied such as a weighted object on top.

## Metrology grade casting material

Reprorubber offers numerous advantages over other hard-copy replicating materials:

- Quick casting – zero shrinkage
- No release agent required – will not stick to part
- Surface finish replication is exact with excellent optical properties easily checked on an optical comparator or video inspection machine
- Copies can be re-copied from original mould
- Replicas are permanent – will not leach out, ooze out, or gas out
- No more 16 hour cure time as with RTV silicones
- More accurate than all other RTV compounds



## New Reprorubber® Orange – Medium Body Pre-filled Cartridges

**Final Colour: ORANGE**

New Medium Body (Medium Viscosity – Medium Durometer) casting material ideal for both internal and external applications. Disposable pre-filled dual barrel 50ml cartridges can quickly dispense casting material utilizing the REPRO-MIX II Gun System.

- Mix time: 15-30 seconds and cure time is 5 - 6 minutes
- Start to finish: 6 - 8 minutes



	REPRORUBBER THIN POUR	REPRORUBBER MEDIUM BODY ORANGE	REPRORUBBER QUICK SETTING PUTTY
<b>Mix Time</b>	<b>15-30 seconds</b>	<b>15-30 seconds</b>	<b>Approximately 1 minute</b>
Working Time (Manipulation Time)	2 minutes	2.5 minutes	1 - 2 minutes (from beginning of mix)
Setting Time (at room temperature)	10 - 15 minutes	5 - 6 minutes	8 - 10 minutes
Permanent Deformation	0.2%	0.3%	0.3%
Dimensional Stability	less than 0.50%	less than 0.40%	less than -0.25%
Tear Strength	44 pounds per sq. inch	300 pounds per sq. inch	105 pounds per sq. inch
Elongation	60% at break	70% at break	6.3% at break
Durometer (Shore A-2)	30 (at 15 minutes)	40 (at 10 minutes)	50 (at 7 minutes)
Temperature Stability	1 week @ 23°C (72°F)	1 week @ 23°C (72°F)	1 week @ 23°C (72°F)
Detail Reproduction	EXCELLENT	EXCELLENT	EXCELLENT

## Quick Dispense Cartridge System Kit

Reprorubber Quick Dispense Cartridge System Kits contain everything you need to easily create Highly Accurate, Zero Shrinkage replicas. Each kit includes 1 each Repru-Mix II Reusable Dispensing Gun, 6 each 50ml Pre-filled Reprorubber Disposable Cartridges, 15 Disposable Mixing Nozzles, 2 Micro Injector Snap-On Nozzles, and a Deluxe Fitted Carrying Case.



### Kit No. 16305

Reprorubber Orange

Also Available: Thin Pour (Green) and Combo Kits.

Nozzle (optional) for small holes and cavities

Low cost, disposable mixing nozzle tops allow multiple applications

### Ordering Complete Kits:

<b>No. 16300</b>	Reprorubber Thin Pour (Green) Quick Dispense Cartridge System Kit Complete
<b>No. 16305</b>	Reprorubber Orange (Medium Body) Quick Dispense Cartridge System Kit Complete
<b>No. 16309</b>	Reprorubber Combo Kit Quick Dispense Cartridge System Kit, Includes 3 each Thin Pour & 3 each Orange

### Ordering Original Mix Your Own Kits:

#### Original Reprorubber® Thin Pour – Final Colour: LIGHT GREEN

<b>Trial Size Kit:</b>	Order No. 16116	Thin Pour 130ml Trial Kit
<b>Standard Size Kits:</b>	Order No. 16135	Thin Pour 380ml Kit
	Order No. 16137	Case of 10 each 380ml Kits

#### Original Reprorubber® Quick Setting Putty – Final Colour: LIGHT BLUE

<b>Trial Size Kit:</b>	Order No. 16129	220ml Trial Quick Setting Putty Kit
<b>Other Kits:</b>	Order No. 16130	1¼ lb (520ml) Introductory Kit
	Order No. 16131	7lb (2150ml) Economy Kit



### System Refills:

<b>No. 16301</b>	Reprorubber Thin Pour (Green) 50ml Cartridge, 1 each
<b>No. 16302</b>	Reprorubber Thin Pour (Green) 50ml Cartridges, 6 pack
<b>No. 16306</b>	Reprorubber Orange (Medium Body) 50ml Cartridge, 1 each
<b>No. 16307</b>	Reprorubber Orange (Medium Body) 50ml Cartridges, 6 pack
<b>No. 16311</b>	Repru-Mix II Dispensing Gun (reusable)
<b>No. 16313</b>	Repru-Mix II Helix Mixing Nozzles, 15 Pack
<b>No. 16316</b>	Repru-Mix II Helix Mixing Nozzles, 100 Pack
<b>No. 16315</b>	Quick Dispense Cartridge System Fitted Case (without contents)
<b>No. 16314</b>	Micro Injector Snap-On Nozzle, Pack of 15

## Applications

You can take impressions of:

- All metals
- Non metals
- Paper or cardboard items
- Wood, marble etc
- All plastics
- Non metals
- Rubber
- Ceramic and glass items

## Other Uses Include:

- Prototypes of rubber type components such as gaskets, washers, etc
- Making joints where flexibility is required
- As a mask for high temperature plasma spray of metallic coatings
- Fixturing where semi-rigid structure is desired

## Physical advantages over the hard-copy replicas

- Replica is easy to remove – even if they are under cuts or grooves
- Cross-sectioning of replica is easily accomplished with a knife or razor
- It can then be checked on an optical comparator or microscope
- Surface finish replication is exact with excellent optical properties
- Reprorubber copies can be re-copied (copy from a 'female mould' yields a male-shaped replica).
- Replicas are permanent – will not leach or ooze out nor outgas
- No more 16 hour cure time as with RTV silicones
- More accurate than all other RTV compounds
- Reprorubber putty will withstand up to 600°F (or more)





**VuMaster is a manual 2D vision system with a massive difference.**

Due to the newly patented Colourmap™ scale system, the VuMaster does not have a conventional stage or encoders – just a floating measuring camera that moves anywhere in the measuring range. The result is fast, accurate, ‘non contact’ measurement over a much larger measuring range – 400mm x 300mm to be exact!

Because the camera moves and the part stays still, there is often no need for expensive and time consuming work holding devices.

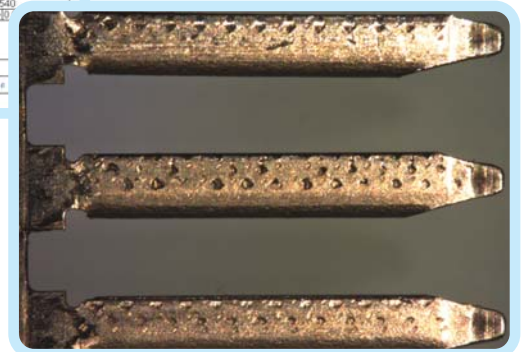
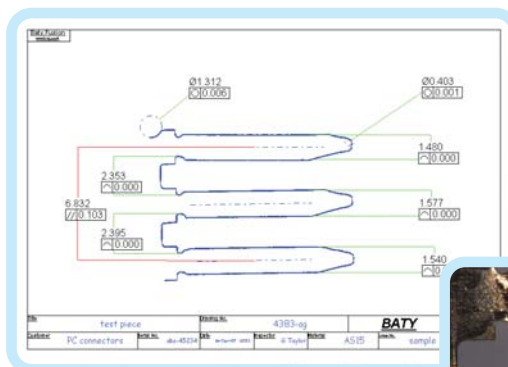
VuMaster is either operated manually or inspection routines can be recorded and stored. When played back, these ‘programs’ guide the operator through a pre-defined inspection procedure recreating the same lighting conditions and using ‘Video Edge Detection’ to automatically ‘capture’ feature data.

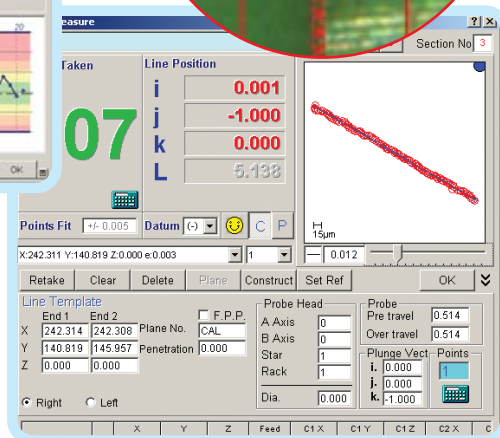
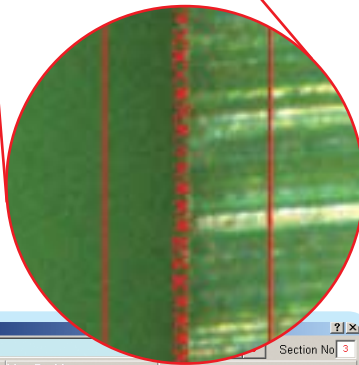
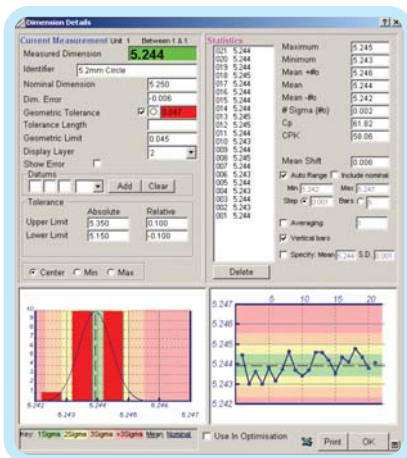
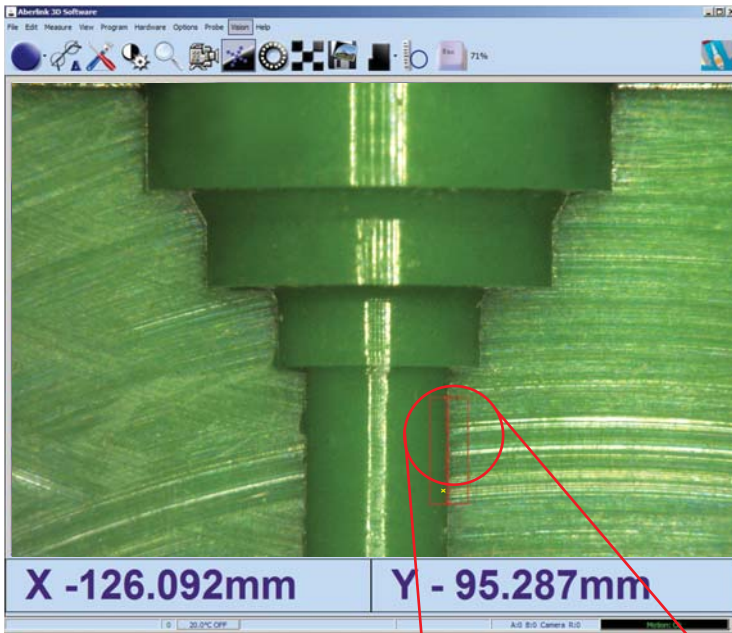
Finally, a report is generated in the form of a fully dimensioned drawing of the measured part.

### Standard features

- Large 400mm x 300mm measuring range
- Patented measuring technology
- Teach and repeat part programming
- Video edge detection
- Digital zoom
- Fully integrated system – everything is included: built-in PC, 19" flat screen monitor and printer
- Programmable segmented LED lighting system
- Motorised autofocus
- Image grab

\* CNC option available





Baty's PC based Fusion software is powerful and easy to use. The graphical user interface minimises keyboard use and the need for multiple toolbars. The result is a software package that enables the user to produce a fully dimensioned drawing of the measured part in minutes!

Other standard reports include tabulated results and multiple part reports all of which can be exported to Excel® in a single click.

### Video Edge Detection

Video edge detection (VED) ensures a repeatable result without relying on the skill of the operator. Hundreds of data points can be taken in an instant to calculate standard geometric features. Standard VED tools include arc, circle, line, point, focus and curve.

### Profile Scanning

The curve tool automatically traces the profile of an undefined part. The resulting data-point cloud can then be compared to a pre-toleranced DXF master for best fit analysis.

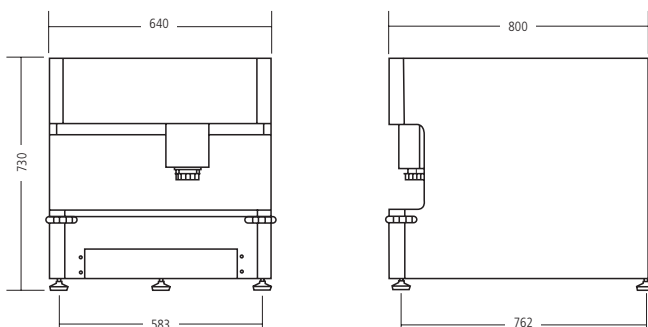
Once 'fitted' the data points appear red or green to indicate whether in tolerance. In addition to best fit, conventional dimensions can also be applied to the scan.

### SPC Included

Baty Fusion software will also display SPC batch information for multiple components. Information given includes maximum value in batch, minimum value, user definable sigma value, CP and CPK value, mean shift and also plots two different charts of the batch data. SPC data can also be exported to Excel™ for further analysis.

### Dimensioned Part View

Measured results are displayed in the form of a fully dimensioned drawing. Dimensions within the specified tolerance are shown in green whilst dimensions out of tolerance are shown in red for immediate visual status of the measured part.



Bench Top System

**The highly successful Venture range includes both manual and full CNC systems that cover two standard measuring ranges:**

The VI-2510 has a 250mm x 125mm x 165mm X,Y,Z measuring capacity and the VI-3030 has 300mm x 300mm x 165mm.

The original design brief was to bring together high-end software functionality with a proven mechanical design at a competitive price. With over 20 years experience as a manufacturer of vision systems and over 75 years in metrology, Baty have built up a sound knowledge of vision application requirements. Whether manual or CNC, we believe the newly revised Venture range includes more functionality as standard than any other vision system package on the market.

### Venture QC3

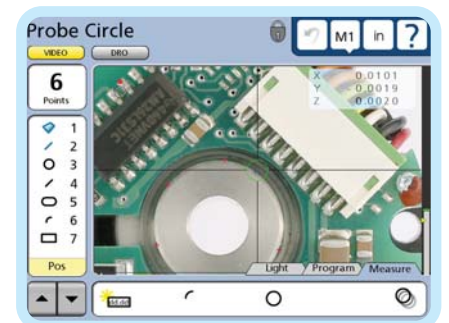
This is a manually operated 3D vision system designed for the shop floor. The fully integrated QC300 measuring system has a colour touch screen so there is no need for a mouse or keyboard to clutter the workstation.

Full geometric functionality is included so features like circles, lines arcs and points can be measured using dedicated tools. Data points are automatically taken along the edge of the feature using video edge detection, then all measurements are automatically saved in the on-screen features list.

The programmable LED lighting is also controlled using the touch screen. Surface, through the lens and profile lighting conditions can be adjusted to ensure that the feature edge is perfectly illuminated.

Tolerances are set for each dimension so that the final inspection report clearly displays a pass or fail status.

For parts that need to be measured regularly, measurement routines can be 'recorded', saved and played back. During this process the operator is guided through the process by the display. Magnification, VED tool positioning, number of data points required and the exact lighting conditions are all reproduced by the system ensuring that each part in a batch is measured the same way for optimum repeatability.



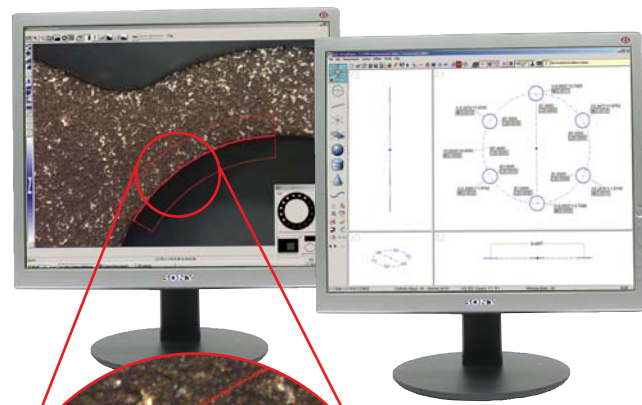
### Standard Venture system features include:

- High resolution 0.5  $\mu\text{m}$  scales for increased accuracy
- 6.5:1 Zoom lens
- Programmable segmented LED lighting system
- Z axis dovetail slide mount for increased Z axis capacity
- High precision cross-roller stage
- Ultra-smooth plain rod drives

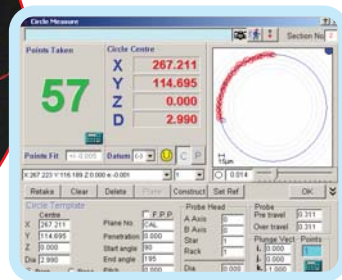
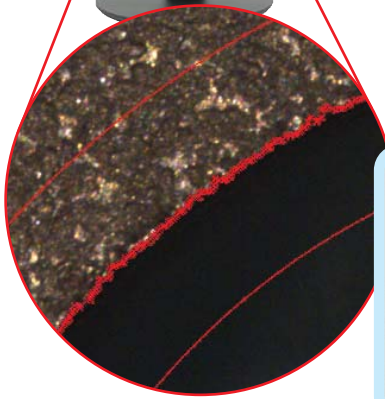
### Standard QC3 features:

- Auto video edge detection tools
- Auto programming
- On screen focus meter (Man) / Auto-focus (CNC)
- Colour touch screen display





Advanced video edge detection tools and LED lighting are standard on Fusion based systems



## Standard Fusion system features include:

- Fully dimensioned part view
- CAD import / export
- profile scanning and best fit to CAD master
- SPC batch information including control charts
- Auto output to excel
- 64 LED programmable segmented surface illumination
- Advanced video edge detection
- TTL light and collimated profile illumination

## Venture AB3-V options:

- Motorised Z axis
- Autofocus
- Renishaw touch probe
- Manually indexable rotary axis



Venture AB3-V

## Venture AB3-V

This model features Baty's powerful Fusion software with full 3D functionality. The measured part can now be dimensioned in all three projections showing true 3D results.

## Touch Probe

The popular Renishaw Touch probe option often helps to solve complex 3D measurement applications. Fusion allows the use of both touch probe and camera measurements in the same inspection so that features that are out of the camera's view can be measured without re-positioning the part.



As with all Ventures, a high precision zoom lens is featured as standard. This manual version has 6 preset zoom positions which provide a magnification range from approx. 30x – 200x\* which can be extended with the use of auxiliary lenses. Each preset position is pre-calibrated enabling the user to quickly select the optimum magnification for each measurement and continue measuring.

## Easy Reporting

In addition to a graphical representation of the measured part, detailed reports can be instantly created showing the feature name, nominal dimension, actual, error, upper and lower limits and a green pass or red fail label for each measured dimension in tabulated format. Geometric tolerance details can also be displayed along with a thumbnail view of the part and batch/customer information.

The entire report can be duplicated as an Excel workbook for email.



Fusion metrology software has been the foundation for Baty's camera based inspection systems for the last decade. The combination of ease of use, advanced edge detection and graphical reporting has established this remarkable software as the standard by which other vision packages are measured.

### Dimensioned Part View

Measured results are displayed in the form of a fully dimensioned drawing. Dimensions within the specified tolerance are shown in green whilst dimensions out of tolerance are shown in red for immediate visual status of the measured part.

Geometric tolerances can also be displayed using the standard drawing practice. The final dimensioned part view can then be printed as an engineering drawing with a traditional drawing frame containing company details, customer and part details, date and inspection name.

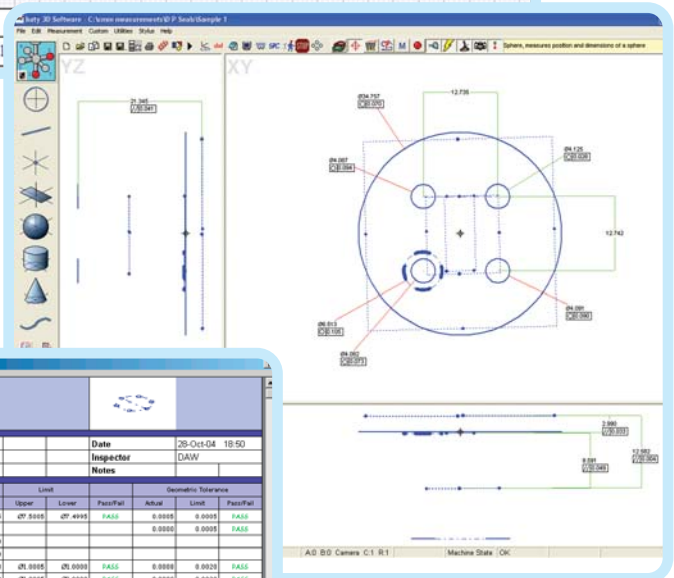
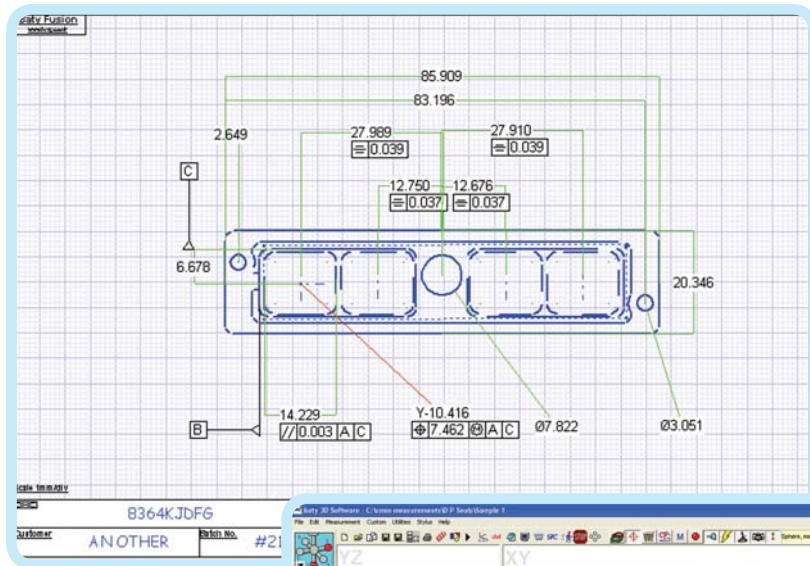
### SPC Included

Baty Fusion software will also display SPC batch information for multiple components. Information given includes maximum value in batch, minimum value, user definable sigma value, CPK value, mean shift and also plots two different charts of the batch data.

### Easy Reporting

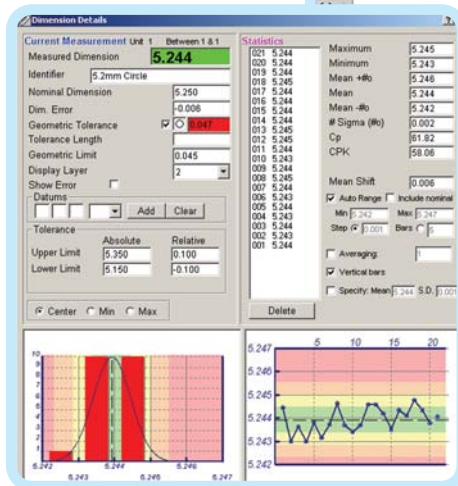
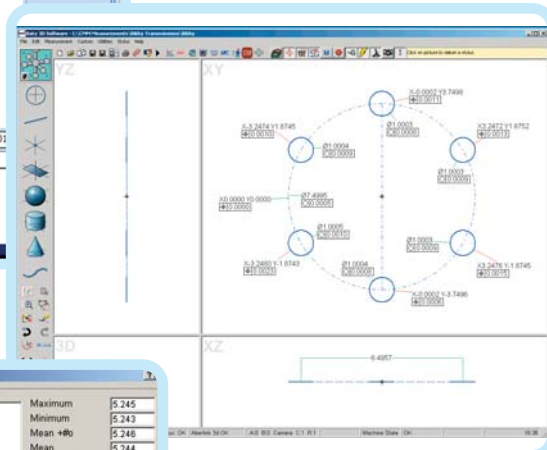
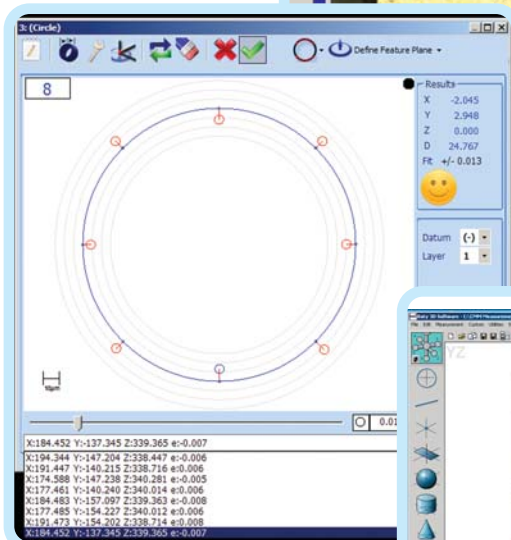
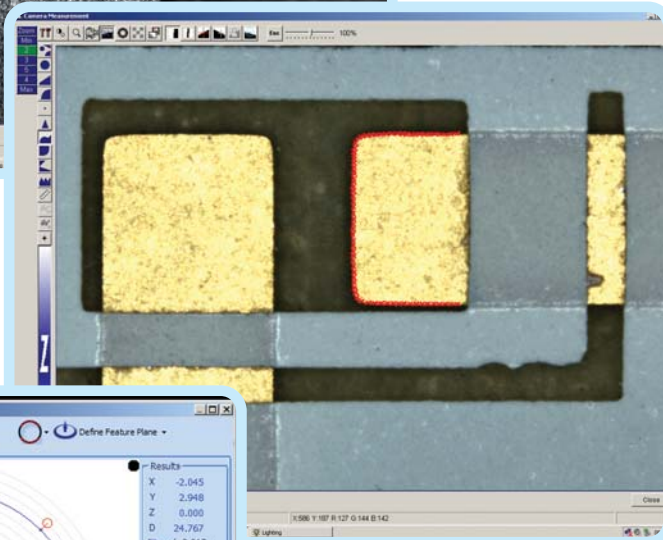
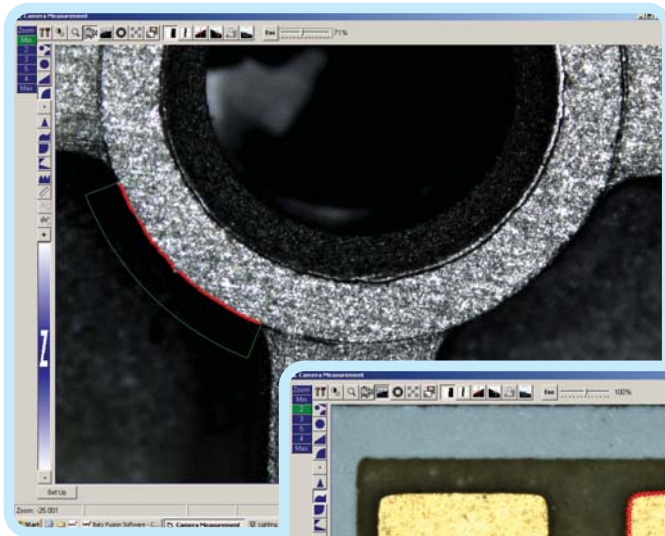
In addition to the graphical representation above, detailed reports can be instantly created showing the feature name, nominal dimension, actual, error, upper and lower limits and a green pass or red fail label for each measured dimension in tabulated format. Geometric tolerance details can also be displayed along with a thumbnail view of the part and batch/customer information.

The entire report can be duplicated as an Excel workbook for email.



Baty International										
Drawing No.	S2774-B	Order No.		Date	26-Oct-04 18:50	Title	Clamant Blade	Inspector	DAW	
Customer	Bobby	Material		Notes		Material		Notes		
Identifier	Dimension	Nominal	Actual	Error	Upper	Lower	Pass/Fail	Actual	Limit	Pass/Fail
I-Circle	Ø1.5100	Ø1.4995	Ø1.5005	0.0010	Ø1.5105	Ø1.4985	PASS	0.0010	0.0015	PASS
I30.5mm Circle True Position		0.0000	0.0000	0.0000				0.0000	0.0005	PASS
I-Plane		0.0000	0.0000	0.0000						
I-Circle	Ø1.0000	Ø1.0000	Ø1.0000	0.0000	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I-Circle	Ø1.0000	Ø1.0000	Ø1.0000	0.0000	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I-Circle	Ø1.0000	Ø1.0000	Ø1.0000	0.0000	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I-Circle	Ø1.0000	Ø1.0000	Ø1.0000	0.0000	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I-Circle	Ø1.0000	Ø1.0000	Ø1.0000	0.0000	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I-Circle	Ø1.0000	Ø1.0004	Ø1.0004	0.0004	Ø1.0005	Ø1.0000	PASS	0.0000	0.0020	PASS
I5.4mm Circle True Position		0.0000	-0.0002	-0.0002						Fail
I-Plane		3.7493	3.7490	-0.0003				0.0010	0.0005	Fail
I5.4mm Circle True Position		3.2480	3.2472	-0.0008				0.0010	0.0005	Fail
I-Plane		1.8746	1.8752	0.0006				0.0010	0.0005	Fail
I5.4mm Circle True Position		3.2480	3.2476	-0.0004				0.0010	0.0005	Fail
I-Plane		-1.9746	-1.9745	0.0001				0.0010	0.0005	Fail
I5.4mm Circle True Position		0.0000	-0.0002	-0.0002				0.0010	0.0005	Fail
I-Plane		-3.7493	-3.7490	-0.0003				0.0010	0.0005	Fail
I5.4mm Circle True Position		-3.2480	-3.2480	-0.0001				0.0010	0.0005	Fail
I-Plane		-1.8746	-1.8743	0.0003				0.0010	0.0005	Fail





## Video Edge Detection

Video edge detection (VED) ensures a repeatable result without relying on the skill of the operator. Hundreds of data points can be taken in an instant to calculate standard geometric features. Standard VED tools include arc, circle, line, point, focus and curve.

## Profile Scanning

The curve tool automatically traces the profile of an undefined part. The resulting data-point cloud can then be compared to a pre-toleranced DXF master for best fit analysis.

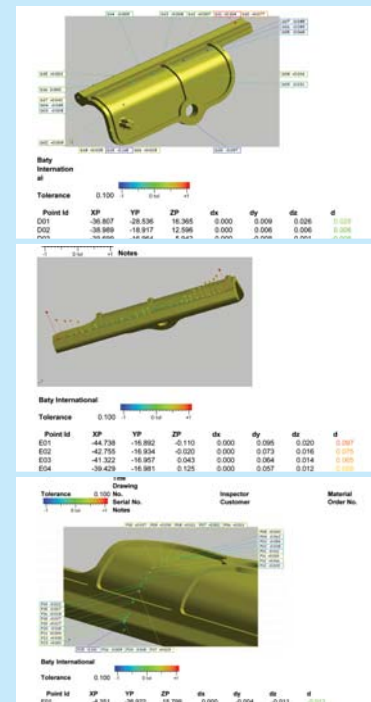
## Touch Probe Compatible

Fusion metrology software is ready to accept touch probe measurements as well as optical and camera based. Offsets for each measuring system can be calculated enabling you to use a combination of non-contact measurements in the same inspection. An optional probe storage rack can also be used to allow automatic probe changes mid program.

## CNC Operation

The CNC option enables fully automatic part inspection with teach and repeat programming and manual joystick control. Parts can be palletised for batch inspection and reports are generated automatically.

## CAD Option



Allows measurement data points taken anywhere on the part surface to be compared to a 3D IGES or TIFF CAD model.

Venture CNC models take the power of fusion software one stage further by completely automating the inspection process. Now advanced features like scanning and best fitting can be done quickly without taking up the time of skilled operators.

CNC programming is a simple teach and repeat process. Just measure the part once and a full CNC program is created automatically. The zoom lens can also be controlled so that magnification changes are all recorded into the program.

### Large measurement Volume

The use of a touch probe is optimised on a CNC system. Measurements from data points taken using the touch probe can be combined with those taken using video edge detection for optimum speed and reduced inspection times.

A probe changer rack can be installed so that probe modules fitted with a variety of pre-calibrated styli can also be used in the same inspection. When a change of stylus is required, the system automatically puts the current probe module back in the rack and picks up the next to continue the inspection process.

When programming using the touch probe, use only the minimum points required to define each element. Then simply edit in the optimum number of points for each element. The new probe path is then automatically created when the program is played, cutting down both programming and inspection time.

### Standard CNC System Features Include:

- Teach and repeat programming
- Programmable segmented LED lighting
- High resolution 0.5µm scales for increased accuracy
- CAD import / export
- Scanning & best fitting
- Fully dimensioned part view
- SPC included
- One click output to Excel™
- Autofocus
- 165mm Z axis measuring range on adjustable dovetail slide
- 250mm x 120mm and 300mm x 300mm XY stages available
- Auto program from CAD

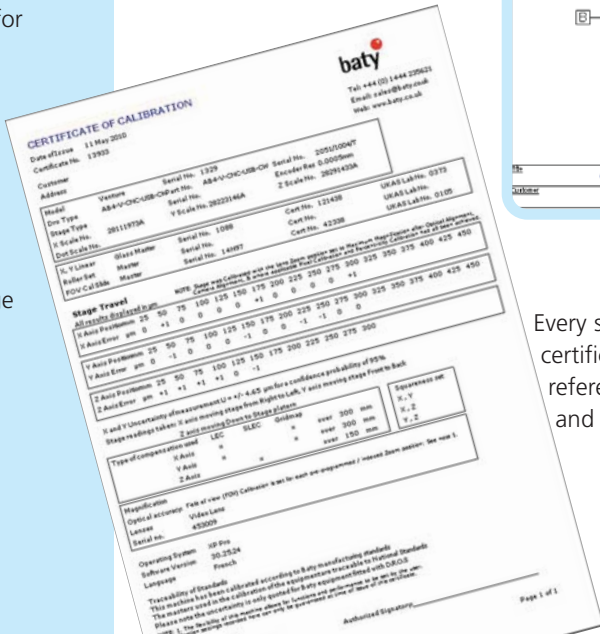
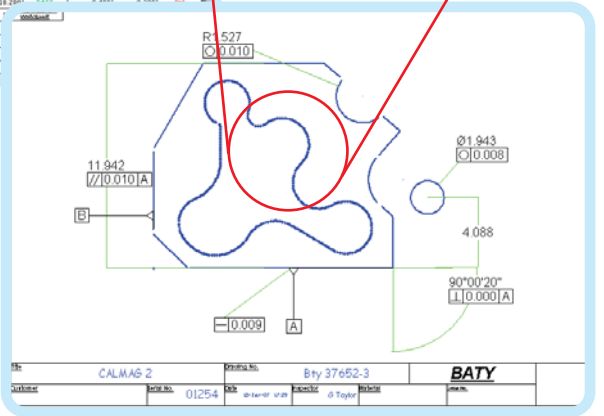
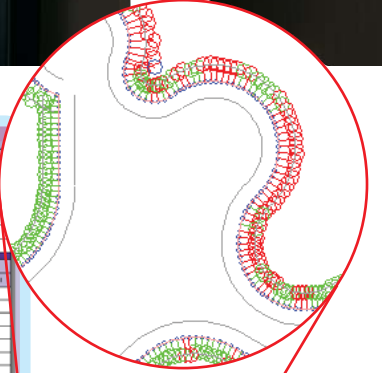


Print Preview

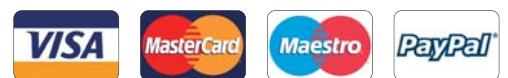
Baty International

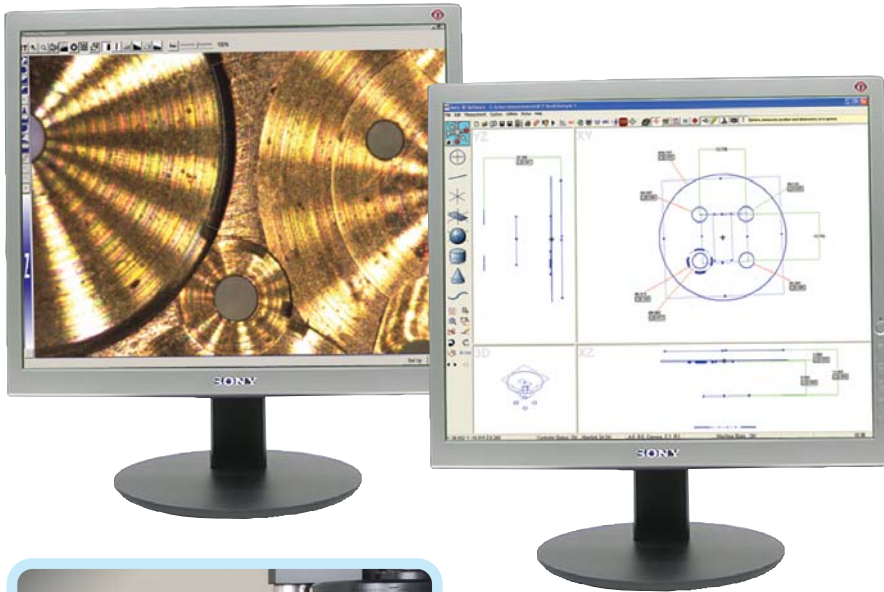
Drawing No. 012-7463 Order No. 200903 Date 14 sept 09 08:19  
 Title bearing plate Serial No. 93475643-307457 Inspector J Brown  
 Customer Bacton Engineering Material Mild steel Notes final batch

Identifier	Dimension		Dim.	Limit		Geometric Tolerance			
	Nominal	Actual		Upper	Lower	Pass/Fail	Actual	Limit	Pass/Fail
85mm Between Line and Line	65.000	64.947	-0.033	65.200	64.800	PASS	0.018	0.200	PASS
85.5mm Between Line and Line	89.200	89.143	-0.087	89.400	89.000	PASS	0.160	0.200	PASS
85mm Between Line and Line	40.000	39.999	-0.002	40.200	39.800	PASS	0.040	0.200	PASS
11.7mm Between Round and Round	11.500	11.500	-0.007	11.600	11.300	PASS	0.040	0.200	PASS
11.4mm Between Line and Line	19.400	19.399	-0.041	19.600	19.200	PASS	0.400	0.200	Fail
Inner Dia	3.500	3.500	0.000	3.600	3.400	PASS			
85mm Between Line and Line	65.000	64.947	-0.033	65.200	64.800	PASS	0.018	0.200	PASS
85.5mm Between Line and Line	89.200	89.143	-0.087	89.400	89.000	PASS	0.160	0.200	PASS
85mm Between Line and Line	40.000	39.999	-0.002	40.200	39.800	PASS	0.040	0.200	PASS
11.7mm Between Round and Round	11.500	11.500	-0.007	11.600	11.300	PASS	0.040	0.200	PASS
11.4mm Between Line and Line	19.400	19.399	-0.041	19.600	19.200	PASS	0.400	0.200	Fail
Inner Dia	3.500	3.500	0.000	3.600	3.400	PASS			



Every system is supplied with a factory calibration certificate and can be supplied with our own glass reference standard for field of view pixel calibration and verification of measurements.



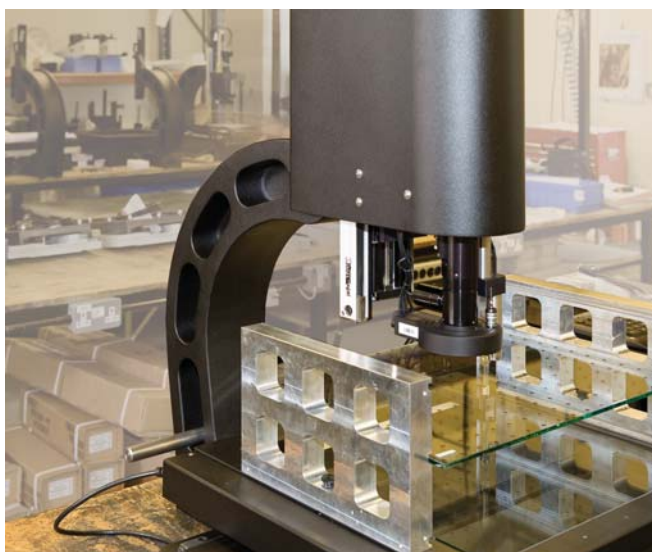


### Touch Probe

The popular Renishaw Touch probe option can be combined with a probe module storage rack for automatic probe changes.

### Advanced error mapping.

Once the X-Z and Y-Z alignment and calibration is completed, every Venture goes through an error mapping process using a calibrated master grid as a reference. Any errors in X, Y, Xdy, Ydx and X-Y squareness are compensated and verified. The grid is then re-positioned in the Z axis and the process repeated to eliminate Xdz and Ydz errors.



Graphical reports show the measured part as a dimensioned drawing with 'in tolerance' dims shown in green and 'out of tolerance' dims shown in red for an instant pass / fail classification. Geometric call outs can also be shown as well as datum features and true position.

Supplementary tabulated reports show nominals as well as tolerance values with a 'PASS' or 'FAIL'

SPC information can either be reported or exported to excel. Distribution and control charts are also produced.

### Programmable Segmented Light

Lighting is critical to ensure that the correct edge is measured. Baty's new programmable LED lighting head allows the user to define any segment pattern to be switched on. This means that oblique lighting conditions can be achieved to illuminate more difficult edges. Segments can then be rotated and intensity varied to suit the radial position of the edge. Once set, the lighting condition for each measured feature is now automatically programmed and will be reproduced by the software each time a new part is measured. Through the lens (TTL) lighting is included for applications like blind bore measurement. 64 white LED's are used to ensure Venture's high quality colour image is achieved.

Only now can this functionality be combined with traditional touch probe technology to offer the ultimate in large format multi-sensing Vision systems – Venture Plus.



The Venture range of products are designed and built at Baty's Burgess Hill factory in the south of England. The latest 3D modelling techniques were used to optimise the new base / column design to ensure stability.



## CAD

3D CAD models (STEP or IGES) can be imported and are shown in a floating window. After alignment to the CAD model, points are taken anywhere on the part surface and displayed on the CAD model. The points appear colour coded so as to indicate their distance from the nominal surface.

## Rotary Axis

A rotary indexing device is used to rotate the part and bring the required features into the camera view.

Rotations are automatically recorded into the inspection program.

6 jaw keyless chuck to suit O/D range of 2-44mm. Can be mounted horizontally (as shown) or vertically.

A CNC rotary axis is used to rotate the part to a pre-determined angle for the next set of measurements to be taken.

## SA-196

Cast vee blocks and extended centres for the 2510 Venture model

## UFB3030

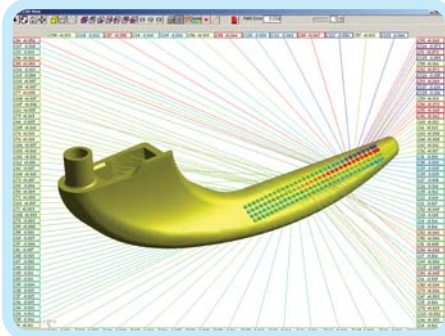
Universal fixture base provides fixture mounting slots compatible with all projector accessories.

## Venture Stand

Rigid steel stand with granite top and integral PC / controller shelf for Venture 2510 and 3030 models

## Glass Reference Standard

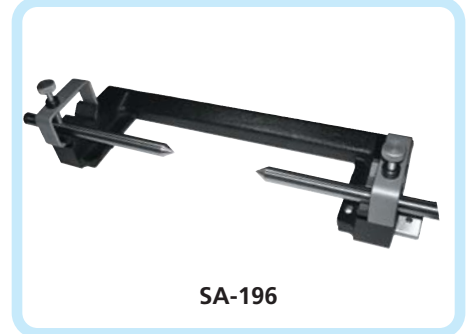
Calibration standard with nominal diameters for field of view measurement verification and pixel calibration.



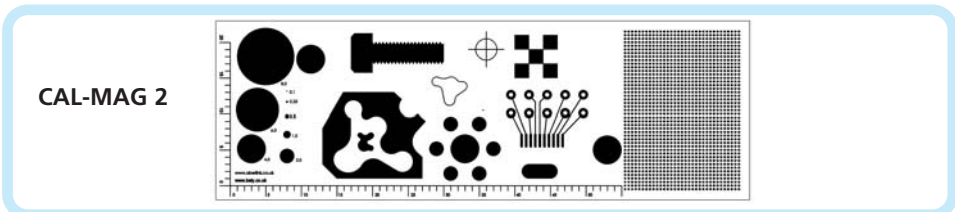
UFB-3030



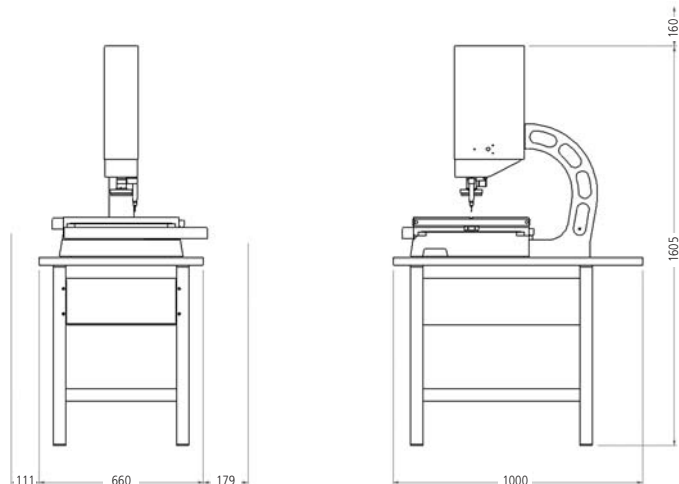
SA-196

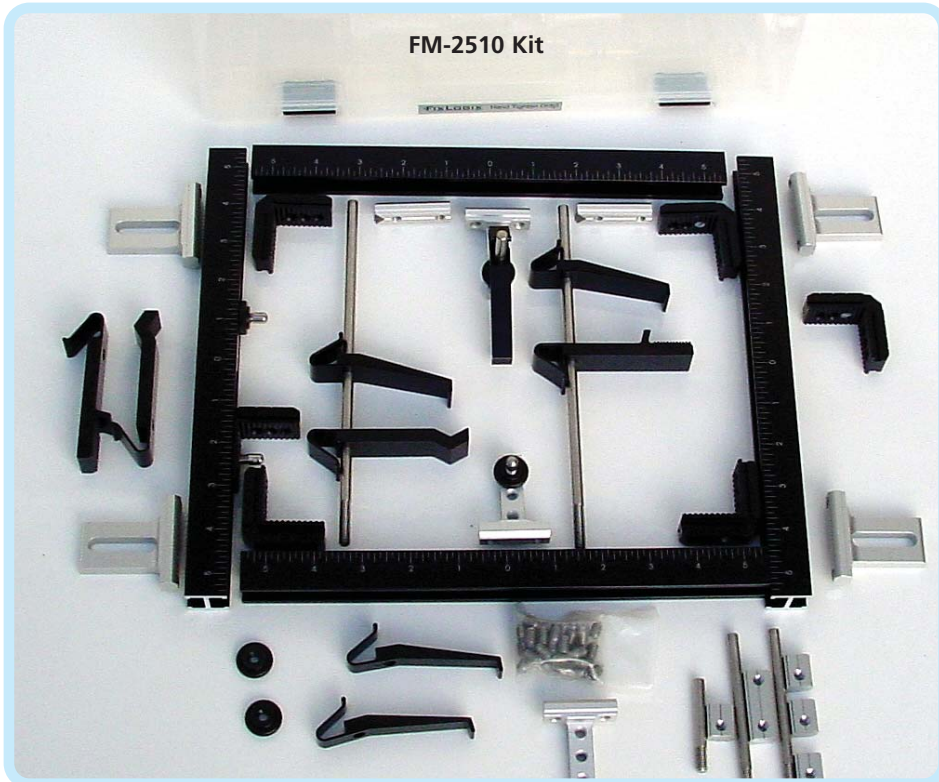


Venture Stand



CAL-MAG 2





Flexmaster components introduce new technology. Our self-wedging clamps offer near zero clamping force. Sliding t-nut tooling blocks provide an infinite variety of fixture solutions.

Even the corner joiners for our frame are dual purpose, providing ridges that allow backlighting to illuminate edges for inspection.

**Standard Kits includes the following components:**

Fixture frame assembly, including the following:

- 4 off linear slide-frames with t-slots, and laser marked reference scales
- 4 off ridged two-way T-nuts for corner joining and part location
- 4 off sliding hold-down brackets with slots for 2 axis adjustment to mount t-slot frames to venture stage frame

**Component kit includes the following:**

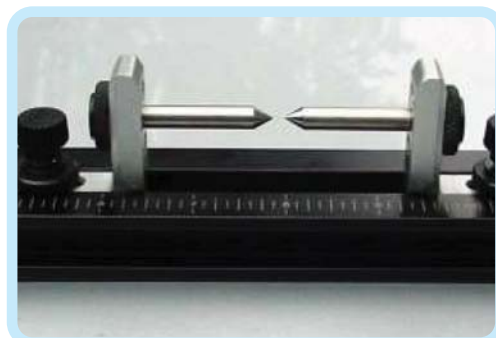
- Fasteners: 30 off stainless grub screws
- 3 off long T-nuts
- 6 off short T-nuts
- 2 off T-nuts with machined vee in end
- 12 off locknut with threaded ID. (For use with clamp rods, thumbscrew, and spherical locator pin)

**Clamps and Rods**

- 2 off narrow 'soft-touch' self-wedging tail-spring clamp
- 2 off wide 'soft-touch' self-wedging tail-spring clamp
- 2 off self-wedging V-clamp
- 2 off ridged corner locator clamp
- 3 off stainless clamp rod. (Use with locknut to attach rods to slide-frame, for self-wedging clamps)
- 3 off stainless clamp rod
- 2 off stainless clamp rod

**Locators**

- 3 off sliding tool blocks with threaded holes for vertical clamp and adjustment
- 4 off adjustable rest button, stainless, spherical top
- 2 off additional ridged two-way t-nuts for part location
- 1 off case



# SHADOMASTER

**The ShadoMaster is a horizontal camera based video inspection system that is particularly aimed at turned part measurement.**

The cast iron stage has tooling slots aligned with the optical path to facilitate the mounting of work holding fixtures such as vee-blocks and centres.

A selection video edge scanning tools scan the profile of the shaft and Baty's Fusion software converts this scanned data into a dimensioned drawing of the measured part.

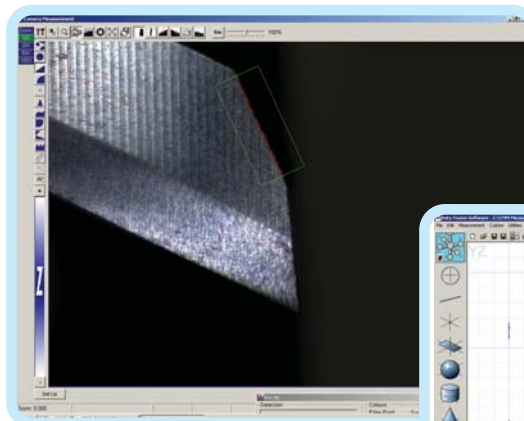
Interchangeable fixed objective lenses are used to determine the field of view and pixel size which can be sub-micron for close tolerance requirements.

The VI-3015H can measure shafts up to 300mm in length with a maximum diameter of 150mm providing the overall weight does not exceed 25KG

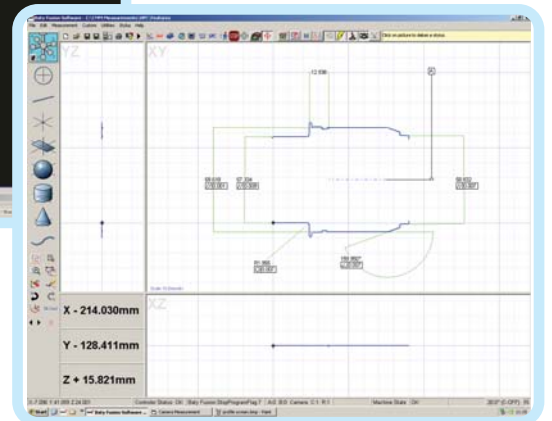
The PC based controller runs on a Windows 7 operating system and is completely integrated within the chassis so the installation is both quick and easy with no trailing cables. The system is also supplied with LED surface illumination which is ideal for illuminating the various facets of form cutting tools for example. The LED lighting consists of 16 high intensity white LEDs which can be switched on in clusters to form a segment which can be radially positioned by using the mouse. This means that the light can be positioned exactly where it needs to be in order for the edge detection tools to measure the edges that you are interested in. Once programmed, the lighting conditions are reproduced by the software for every inspection to ensure optimum repeatability.



ShadoMaster  
VI-3015



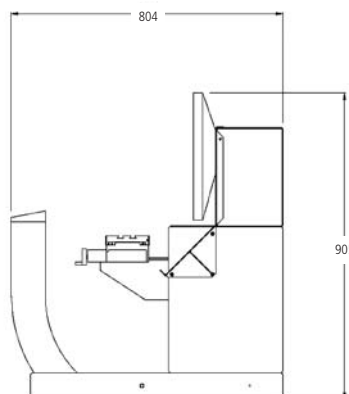
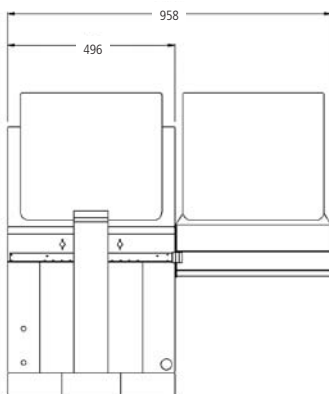
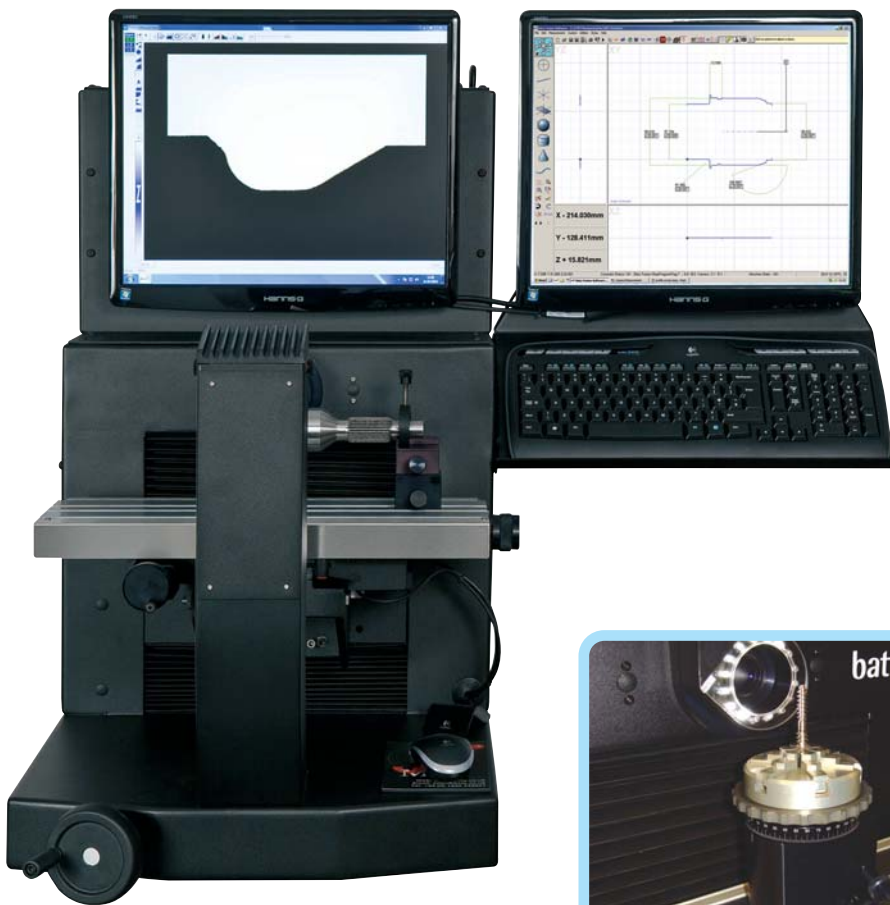
Programmable LED illumination allows surface features to be measured using video edge detection





**Standard system features include:**

- Collimated profile light ideal for shaft measurement
- Choice of 5 fixed objective lenses from 20x - 200x
- 300mm x 150mm measuring range.
- Programmable LED surface illumination with Autofocus for pocket depth measurement
- Integral windows 7 controller
- Helix light adjustment for screw thread measurement
- Auto program from CAD



**The ShadoMaster 3015 has a solid cast iron stage 300 x 150 x 60 X,Y,Z measuring range. Dovetail slots provide mounting for work holding accessories which are naturally aligned with the optical path.**

A choice of 5 interchangeable fixed objective lenses provide a magnification range from 20x to 200x and digital zooming allows further enhancement to over 800x.

- PC based 3 axis Fusion software with full 3D geometric functionality
- Enhanced video edge detection tools with autofocus, auto program from dxf
- CNC profile scanning and best fit analysis, SPC
- Part view can be printed as dimensioned drawing
- Programmable segmented LED Surface lighting provides a detailed colour surface image and a collimated profile light ensures a crisp profile image
- PC controller is integral and 2 x 19" LCD monitors are chassis mounted with keyboard shelf for ease of use
- Automatic shaft profile scan

**Profile Scanning**

The curve tool automatically traces the profile of an undefined part. The resulting data-point cloud can then be compared to a pre-toleranced DXF master for best fit analysis.

Once 'fitted' the data points appear red or green to indicate whether in tolerance. In addition to best fit, conventional dimensions can also be applied to the scan.

**SPC Included**

Baty Fusion software will also display SPC batch information for multiple components. Information given includes maximum value in batch, minimum value, user definable sigma value, CP and CPK value, mean shift and also plots two different charts of the batch data. SPC data can also be exported to Excel™ for further analysis.

# VENTURE PLUS



The Venture Plus range includes all of the standard Venture features with a little more... measuring range that is.

## Large Measurement Volume

The Venture Plus is available in three models:

VP-6460 with 640mm x 600mm x 250mm measuring range

VP6490 with 640mm x 900mm x 250mm measuring range

VP100150 with 1000mm x 1500mm x 400mm measuring range

The bridge type construction is all aluminium resulting in low inertia and low thermal mass. Air bearings are used on all axes and a granite Y beam is used for increased accuracy. This ensures that the machine will expand and contract uniformly with temperature changes ensuring minimal distortion and subsequent errors. Ambient temperature can be compensated for within the Fusion software making Venture Plus ideal for use on the shop floor.

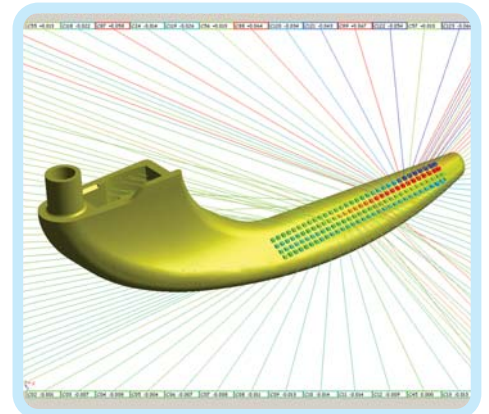
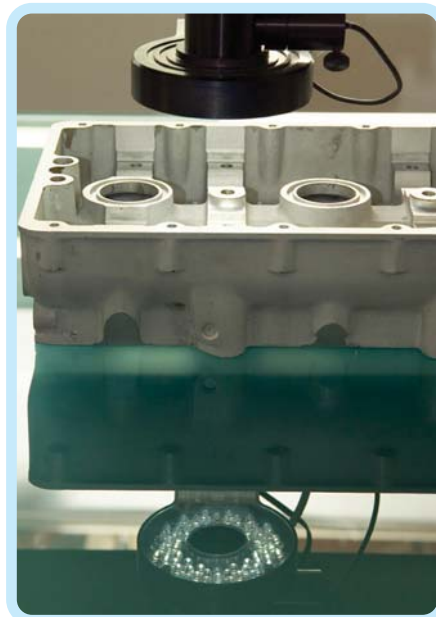
Complete with our standard zoom optics and lighting, Venture Plus offers the same level of camera based functionality as every other Venture.



Venture Plus VP-6460

## Standard CNC System Features Include:

- Teach and repeat programming
- Programmable segmented LED lighting
- High resolution 0.5µm scales for increased accuracy
- CAD import / export
- Scanning & best fitting
- Fully dimensioned part view
- SPC included
- One click output to Excel™
- Autofocus
- Renishaw TP20 touch probe joint



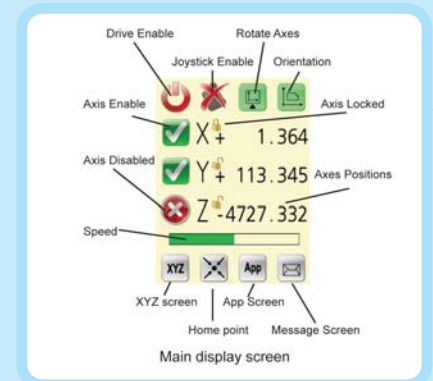


### Venture Plus additional features include:

- Rigid, low mass bridge construction
- Integral zoom optics
- Patented light table technology
- 250mm Z axis measuring range
- 640mm x 640mm and 640mm x 940mm bridge formats available
- New 1000mm x 1500mm x 400mm model now available
- Optional automatic temperature compensation
- Optional multi function joystick with colour touch screen

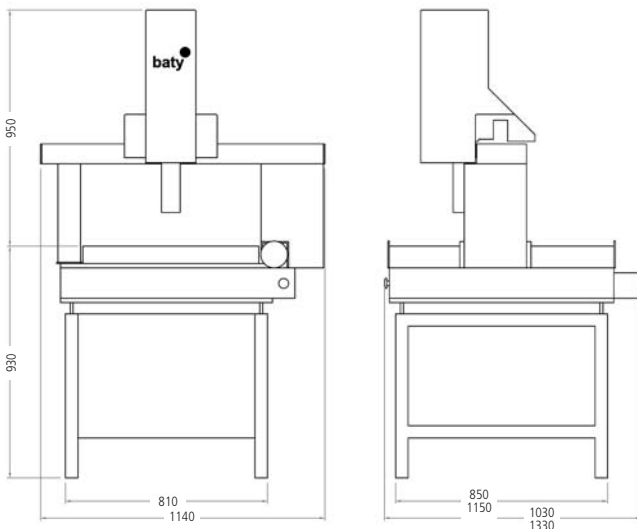
### Options include:

Multi-function joystick with colour touch screen



### Features:

- High quality 3 axis hall effect joystick
- Speedwheel for feedrate control
- High resolution colour touch screen
- Easy to use graphic interface
- Hardwired emergency stop button
- Built in speaker for audio feedback
- Left and right handed operation
- 3m CAT5 cable easily extendable
- Remote operation of Windows PC
- Software extendable user interface



# VISION SYSTEMS TECHNICAL SPECIFICATION

MANUAL SYSTEMS				
	VM-4030 VuMaster	VI-2510 Venture	VI-3030 Venture	ShadoMaster VI-3015
X, Y, Z measuring range (mm)	400 x 300	250 x 125 x 165	300 x 300 x 165	300 x 150 x 40
Workstage area (mm)	420 x 320	414 x 262	464 x 462	475 x 127
Max workpiece load (kg)	25	25	25	15
Drive type	Manual	Manual	Manual	Manual
Bearings	Air bearings	Cross roller rail guide	Cross roller rail guide	Cross roller rail guide
Camera type	2048 x 1590 pixel colour USB2 camera with 8 x 9mm chip and dynamic latch			
Optics / lighting	Fixed objective telecentric lens with programmable LED lighting	6.5:1 detent zoom lens. Fully programmable software controlled white LED segmented surface lighting head with understage and through the lens (TTL) lighting as standard		Interchangeable fixed objective telecentric lenses with programmable 16LED surface and collimated profile lighting
Resolution	0.001mm	0.0005mm	0.0005mm	0.0005mm
Accuracy	7.5µm	2+L / 100	2+L / 100	2+L / 100
Max field of view (FOV)	12mm	16mm*	16mm*	13.5mm
Magnification	20x 350x	Optical zoom ratio 27x - 175x on 17" monitor with digital zoom enhancement to over 1200x		20x - 200x optical magnification using fixed lenses with digital zoom enhancement to over 1200x
Touch probe option available	No	Yes	Yes	No
Probe type	N/A	Renishaw TP20	Renishaw TP20	N/A
Change rack compatible?	N/A	N/A	N/A	N/A

\*using optional 0.5x adapter lens

CNC SYSTEMS							
	VM-4030 VuMaster	VI-2510 Venture	VI-3030 Venture	VP-6460 Venture Plus	VP-6490 Venture Plus	VP-100150 Venture Plus	VI-3015 ShadoMaster
X, Y, Z measuring range (mm)	400 x 300	250 x 125 x 165	300 x 300 x 165	640 x 600 x 250	640 x 900 x 250	1000 x 1500 x 400	300 x 150 x 40
Workstage area	420mm x 320mm	414mm x 262mm	464mm x 462mm	700mm x 940mm	700mm x 1240mm	1050mm x 1850mm	475mm x 127mm
Max workpiece load (kg)	25	25	25	75	75	75	15
Drive type	CNC / handwheel	CNC / joystick	CNC / joystick	CNC / joystick	CNC / joystick	CNC / joystick	CNC / joystick
Bearings	Air bearings	Cross roller rail guide	Cross roller rail guide	Air bearings	Air bearings	Air bearings	Cross roller rail guide
Max drive speed	100mm / sec	200mm / sec	200mm / sec	350mm / sec	350mm / sec	350mm / sec	100mm / sec
Camera type	2048 x 1590 pixel colour USB2 camera with 8 x 9mm chip and dynamic latch						
Optics / lighting	Fixed objective telecentric lens with programmable LED lighting	6.5:1 detent zoom lens. Fully programmable software controlled white LED segmented surface lighting head with understage and through the lens (TTL) lighting as standard					
Resolution	0.001mm	0.0005mm	0.0005mm	0.0005mm	0.0005mm	0.0005mm	0.0005mm
Accuracy	7.5µm	2+L / 100	2+L / 100	2.5+L / 150	2.5+L / 150	2.5+L / 150	2.5+L / 150
Max field of view (FOV)	12mm	16mm*	16mm*	16mm*	16mm*	16mm*	13.5mm
Magnification	20-350x						
Touch probe option available	No	Yes	Yes	Yes	Yes	Yes	Yes
Probe type	N/A	Renishaw TP20	Renishaw TP20	Renishaw TP20	Renishaw TP20	Renishaw TP20	Renishaw TP20
Change rack compatible?	N/A	Yes	Yes	Yes	Yes	Yes	No

\*using optional 0.5x adapter lens



# BATY SERVICE, CALIBRATION AND UPGRADES

Give your projector the Baty service star treatment. Regular calibration is essential to your Quality system. Why not let Baty take care of it?

**What's the difference?**

We don't just calibrate. Firstly we will carry out a full service on your projector to optimise its performance. This way you don't just get the calibration certificate you need. You also get a better projector.

**Why trust your projector to anyone other than the UK's premier Projector manufacturer.**

- Factory trained service personnel
- Manufacturer approved parts
- National service organisation
- Full service procedure managed to ISO9001:2000 assured quality system
- Calibration to factory procedures
- Full non linear error compensation available
- Certificate of calibration traceable to National Standards
- Three-year service contracts at reduced prices
- Credit account facilities
- Service report on completion
- Upgrades and retrofits
- On-site training



Our factory trained service personnel are all experienced engineers. With Baty you'll get full service procedure backed by our ISO 9002 assured quality system. Our highly skilled and experienced technicians are experts in their field with full access to the only source of genuine, manufacture approved Baty replacement parts.

At the end of every projector service you'll receive a full certificate of calibration. Baty calibration is done to factory procedures and your certificate is traceable to National Standards. You'll also get a full service report.

A Baty service contract means total service commitment from the biggest professional projector service in the country. With Baty you'll have peace of mind and the security of knowing that our nationwide team of engineers is always just a phone call away.

With credit account facilities and three-year service contracts at a reduced price, you can't do better than choose Baty.

2 Point Bore Comparator Sets	44	Lever Type Dial Indicators – Metric	4
Adjustable Angle Vee Blocks	35	Lever Type Dial Test Indicators – BL Series	6
Adjustable Gauge Arms	17	Lever Type Dial Test Indicators Accessories	7
Analogue Bore Micrometers	40	Magnetic base Sets	21
Analogue Depth Micrometer	26	Magnetic Indicator Stand	18
Angle Plates	35	Major Calipers	64
Anvils	38	Metric and Imperial Inserts	39
Bench Comparator Stands	10	Mini Magnetic Base	20
Calmaster Digital Caliper	24	Overlay Charts	82
Cast Iron Vee Blocks	34	Planoclean	31
Ceramic Gauge Blocks	62	Plunger Dial Indicators	12
Chekmaster Comparator	54	Plunger Dial Indicators – FM Series	11
Chekmaster Dimensions	57	Plunger Dial Indicators – WS Series	13
Chekmaster Tooling Applications	56	Plunger Dial Indicators Accessories	15
Combination Set	21	Poly Frame Dial Caliper	23
Crankshaft Alignment Gauge Set	8	Poly Frame Digital Caliper	24
Dial Angle Protractor	16	Precision Micrometers	36
Dial Depth Gauge	27	Profile Projector Horizontal Accessories	80
Dial Test Indicator Accessories – BL Series	6	Profile Projector Vertical Accessories	81
Dial Thickness Gauges	66	R14 Profile Projector	70
Digital Angle Protractor	16	R14 Technical Specification	71
Digital Bore Comparator Sets	45	R400 Profile Projector	72
Digital Depth Caliper	29	R400 Technical Specification	73
Digital Depth Gauge	27	R600 Profile Projector	74
Digital Depth Micrometer	26	R600 Technical Specification	75
Digital Height Gauge	29	Reprorubber	84
Digital Indicators	14	ShadoMaster	96
Digital Micrometer Set	37	SM20 Profile Projector	78
Digital Micrometers	37	SM20 Technical Specification	79
Digital readouts	83	SM350 Profile Projector	76
Digital Thread Micrometer with Anvils	39	SM350 Technical Specification	77
Digital Tyre Tread Depth Gauge	30	Snapmaster	52
Digital Universal Anvil Micrometer	38	Steel Gauge Blocks	62
Dual Plane Digital Gauge	28	Surface Finish Reference Standards	63
Electronic Plug Gauge Accessories	49	Surface Roughness Standards	63
Electronic Plug Gauge Setting Rings	51	Telescopic gauge Set	46
Electronic Plug Gauge Technical Details	50	Transducers	61
Electronic Plug Gauges	47	Trigmaster Bore Gauging	42
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Fibre Optic Bore Scope	68	Vee Blocks and Clamps	34
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Flexmaster Fixtures	95	Venture – 3D Manual	88
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Gage-Chek Multi Input Gauge Display	58	Venture Plus	98
Granite Parallels	33	Video Scope 900	69
Granite Surface Plates	32	Vision Systems Technical Specification	100
Granite Surface Tables	32	VuMaster – 2D Manual / 2D CNC	86
Granite Vee Blocks	33	Waterproof Digital Caliper IP67 Series	25
Hardened Stainless Steel Frame Dial Caliper	23	Workshop Bore Comparator Sets	45
Hydraulic Indicator Stand	19	Workshop Vernier Caliper	22
Indicator Test Sets	9	Workstages	81
Internal Digital Caliper	67		
Large Digital Workshop Caliper	25		
Large Workshop Vernier Caliper	22		
Lever Type Dial Indicators – Imperial	5		

Whilst every effort has been made to ensure accuracy of data, all product information should be taken as guidance only. Quality Measurement Ltd accepts no liability for errors or omissions and reserves the right to alter specification without prior notice.





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