baty
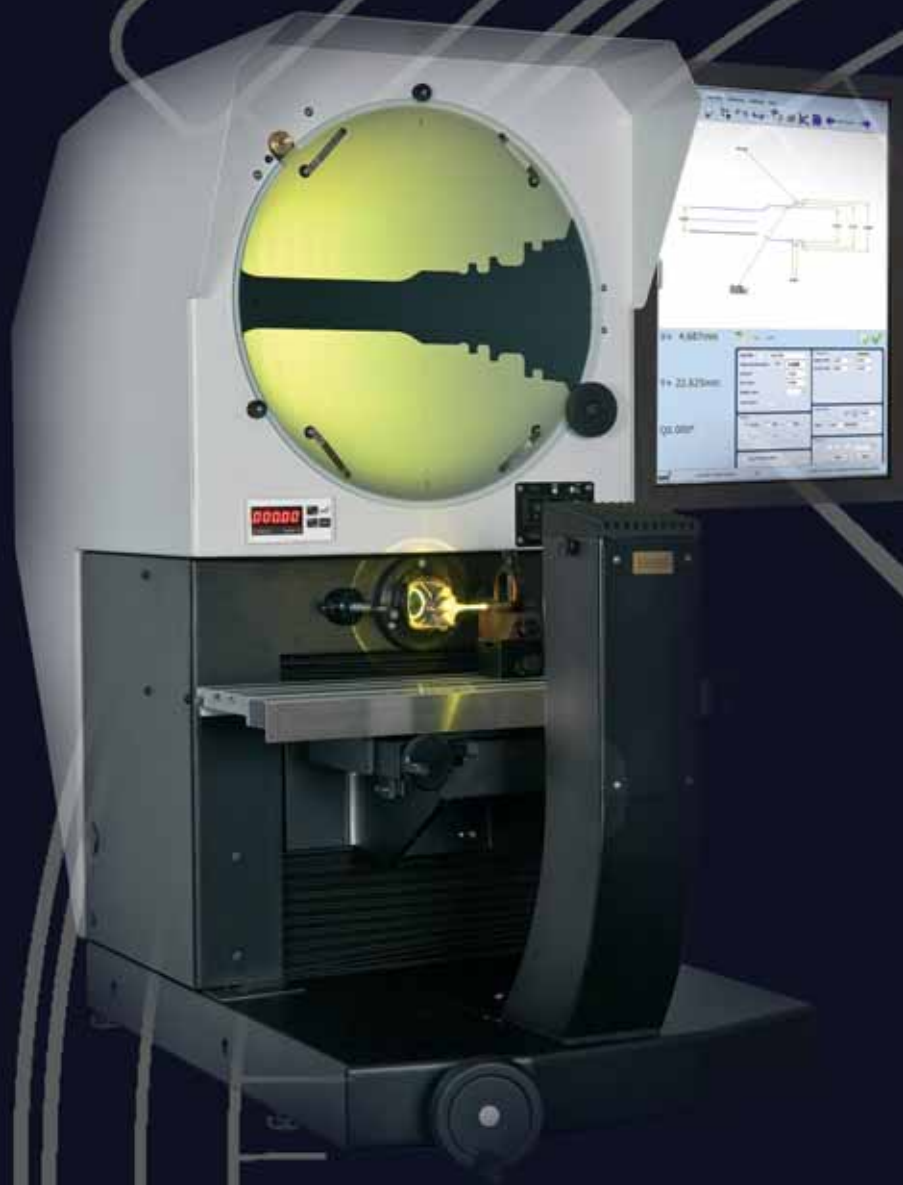
PROFILE PROJECTORS

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.
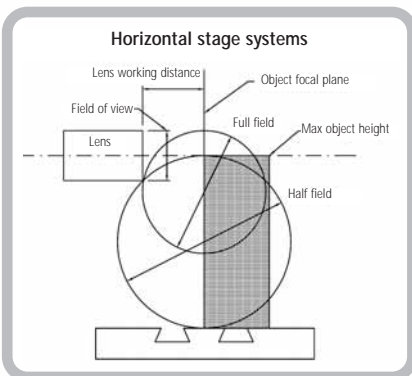
Standard features

- 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 ± 7° 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

GXL/GXLE

Horizontal stage systems

Lens working distance
Object focal plane
Field of view
Full field
Max object height
Lens
Half field

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)
Packed weight	R14: 92Kg Stand: 45Kg
R14 packed dims	1450mm x 1160mm x 610mm
Stand dims	1040mm x 950mm x 680mm

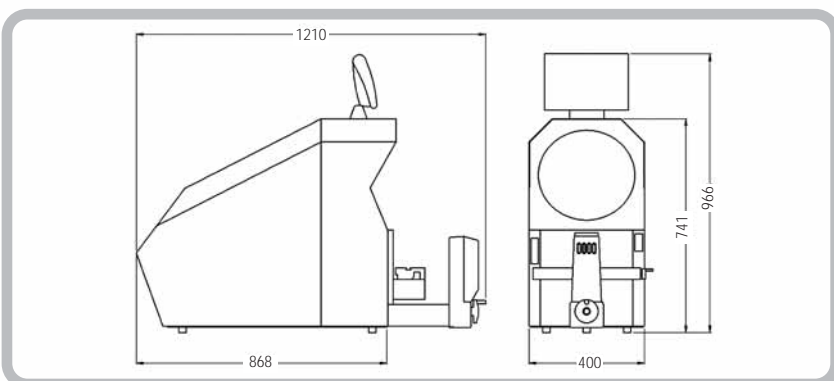## The basic R14 model consists of

- 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 100mm (4") with slot for mounting accessories
Scale resolution	0.0005mm
Movement	Manual with fine 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, circle, Line, angle and radius measurement. Pitch circle diameter and construction of intersection points etc. Tolerancing and simple reporting also included.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software. Full geometric functionality, view of measured part can be printed as a fully dimensioned drawing. Full reporting capability includes, SPC, tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT-2E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

R14 on cabinet stand

Accessories

See page 14.

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 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.
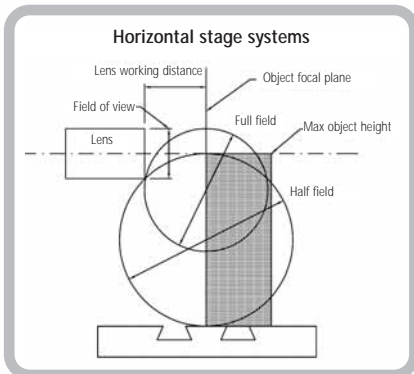
Standard features

- 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

Model shown R400 FT2-E

Horizontal stage systems

Lens working distance
Object focal plane
Field of view
Full field
Max object height
Lens
Half field

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

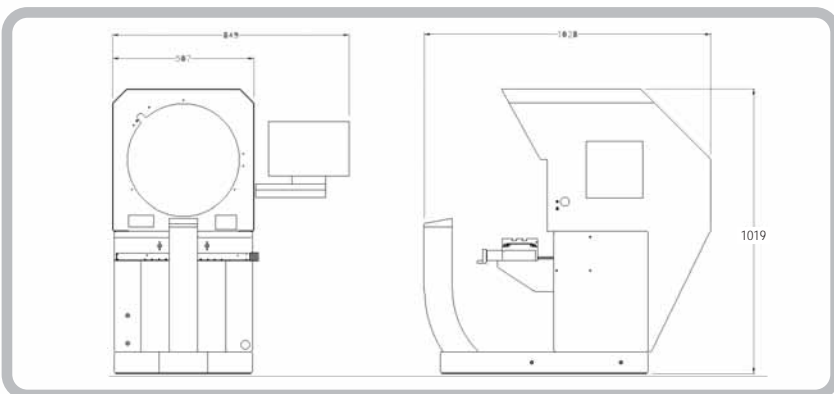|	
Type	Bench standing with horizontal light path
Screen	Rotating 400mm diameter, vertically mounted, with hood
Image	Erect, reversed left to right
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	120kg (264lb)
Packed weight	R400: 177Kg Stand: 45Kg
R400 packed dims	1210mm x 820mm x 1470mm
Stand dims	1040mm x 680mm x 950mm

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 (15") 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

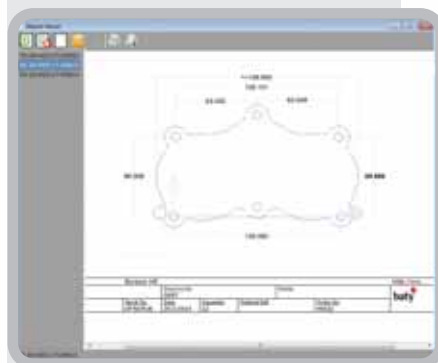|	
Lens mount	Single, quick change snap-fit mounting
Lens magnification	x10, x20, x25, x50, x100,
Focussing	By hand wheel
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	± 7° by light source alignment
Light source	Profile illumination 12v 100w lamp (tungsten halogen) Surface illumination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

1019

Measuring options

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

GXL: Incorporates geometric functions for skew alignment, circle, Line, angle and radius measurement. Pitch circle diameter and construction of intersection points etc. Tolerancing and simple reporting also included.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software. Full geometric functionality, view of measured part can be printed as a fully dimensioned drawing. Full reporting capability includes, SPC, tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT-2E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

Accessories

See page 14.

baty

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
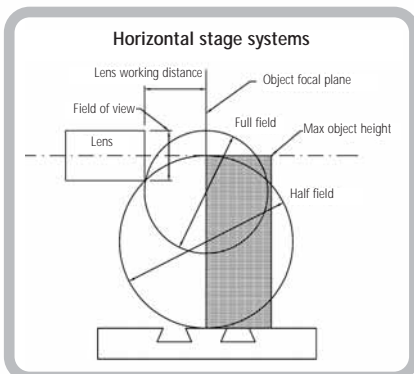
Standard features

- 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 ± 15° 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 FT2

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
- Reduced workstage X axis travel to 300mm (12")

Horizontal stage systems

Lens working distance
Object focal plane
Field of view
Full field
Max object height
Lens
Half field

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

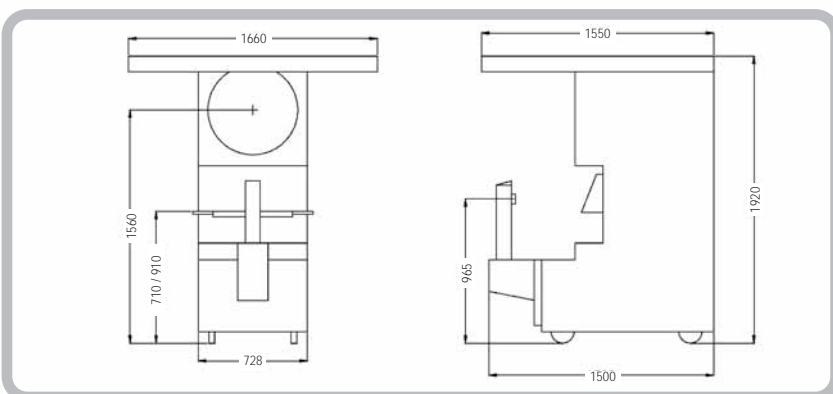|	
Type	Floor standing with horizontal light path
Screen	Rotating 600mm (24") diameter, vertical
Image	Erect, reversed left to right
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	550kg (1200lb)
Packed weight	R600: 620Kg (1,365lb)
R600 packed dims	1700mm x 1040mm x 2060mm

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 450mm (18") x Vertical (Y) axis 200mm (8") Optional X axis travel 300mm (12")
Surface area	900mm (36") 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, circle, Line, angle and radius measurement. Pitch circle diameter and construction of intersection points etc. Tolerancing and simple reporting also included.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software. Full geometric functionality, view of measured part can be printed as a fully dimensioned drawing. Full reporting capability includes, SPC, tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT-2E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

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.

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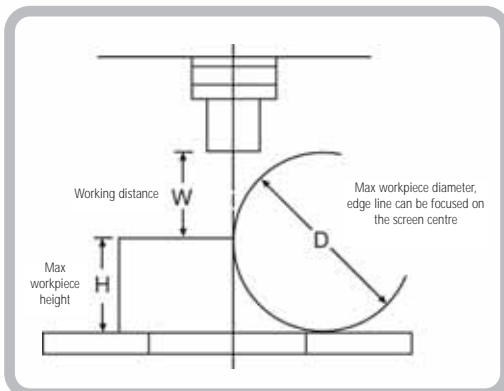
Accessories

See page 14.

300mm screen projector with multi-function readout unit, printer and data output

Standard features

- Top quality profile projector highly versatile and easy to operate
- Large travel range 150mm x 50mm (6″ x 2″) as standard
- Linear scale stage with 0.001mm resolution
- Fine ground glass screen for clear image with cross hairs
- Screen complete with cross hair lines and chart clips
- Built-in profile and surface illumination
- 10x, 20x, 50x, 100x projection lenses available
- Data output via RS-232 interface
- Display-readout unit DC300 included in standard delivery

Optional features

- Projection lens 10x with half reflecting mirror
- Projection lens 20x with half reflecting mirror
- Projection lens 50x with half reflecting mirror
- Projection lens 100x with half reflecting mirror
- Rotary table 360°
- Swivel centre support
- Holder with clamp
- V-block with clamp
- Overlay charts
- Software pc for CV-PP300

Working distance

W

D

Max workpiece diameter, edge line can be focused on the screen centre

Max workpiece height

H

Projection capacity (unit mm)				
Magnification	10x	20x	50x	100x
View field diameter	30	15	6	3
Working distance W	77.7	44.3	24.5	25.3
Max workpiece height H	80	80	80	80
Max workpiece diameter, edge line can be focused on screen centre D	160	130	55	60

Basic Machine

Stage XY travel range	150mm x 50mm (X x Y)
Stage focus travel range	90mm
Stage effective glass size	196mm x 96mm
Stage dimensions	340mm x 152mm
Stage measuring device	Built-in linear scales
Stage resolution	0.001mm
Screen rotary range	312mm diameter, effective diameter 300mm
Digital angle display	0-360°
Angle resolution	0.01° or 1'
Functions	Zero set, ABS/INC selection, mm/inch selection, 1/2 calculation
Projection lens	10x, 20x, 50x, 100x (selection see options)
Magnification accuracy	Contour: ±0.1% or less Surface: ±0.15% or less
Contour illumination	Light source: 24V, 150W halogen lamp Method: Zooming telecentric illumination Function: 2-step brightness selection
Surface illumination	Light source: 24V, 150W halogen lamp Method: Vertical surface using half-transparent mirror
Filters light	Green, blue
Data output	RS-232 from counter
Printer	Integrated
Power supply	220V AC / 50-60Hz
Dimensions	780mm x 550mm x 1140mm
Weight	180kg

- Readout unit for profile projector SM300
- XY axis and Q/Z zero axis and angle reading
- Point, line, circle various calculations
- Features 10 user programs and 1000 steps of each program
- Polarity/Cartesian coordinate transformation
- Segmented linear error correction
- RS-232 interface data output to pc or printer
- Foot switch or edge detector optional

Profile filters

Objective lenses

Rotary table

Vee and centres

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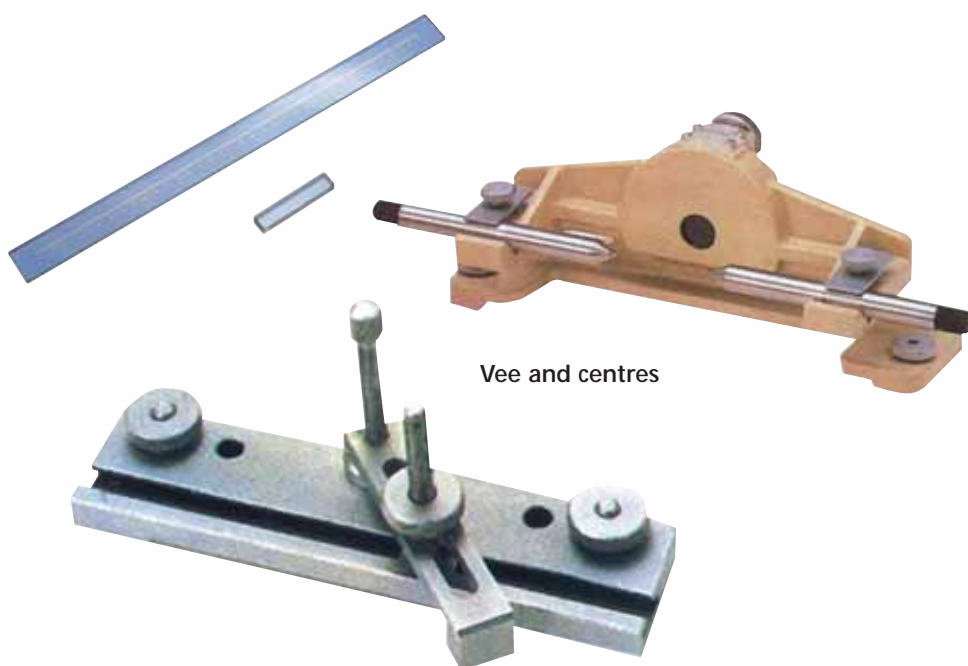
The SM350 is an all new design. This vertical 14" / 350mm screen bench projector features an option where the focus axis can also be used as a 3rd measurement axis.
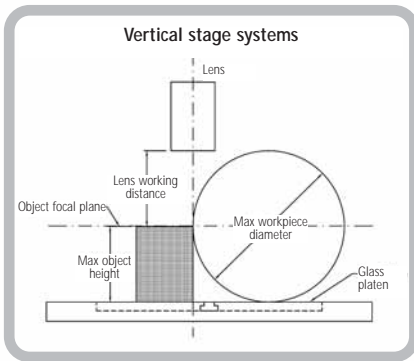
This enables Z axis height measurements to be taken using a touch trigger probe. Another new feature is the option of a three lens turret for instant lens changes without re-calibration.

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

Lens

Lens working distance

Object focal plane

Max workpiece diameter

Max object height

Glass platen

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

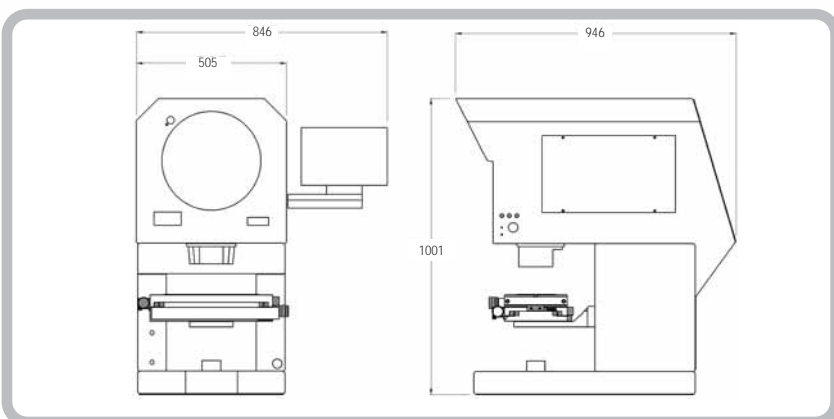|	
Type	Bench standing with vertical light path
Screen	Rotating 340mm (14") diameter, vertically mounted with hood
Image	Erect and reversed
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	133kg (290lb)
Packed weight	177kg (390 lb) 45kg (100lb)
SM350 packed dims	1210mm x 820mm x 1470mm
Stand dims	1040mm x 680mm x 950mm

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
- Digital angle measurement

Workstage

Measuring range	X axis 250mm (10") Y axis 100mm (4")
Surface area	410mm (16.14") x 260 (10.23") with slot for mounting accessories
Scale resolution	0.0005mm
Movement	Manual with backlash free plain rod drives, quick release on X & Y axes

Optical System

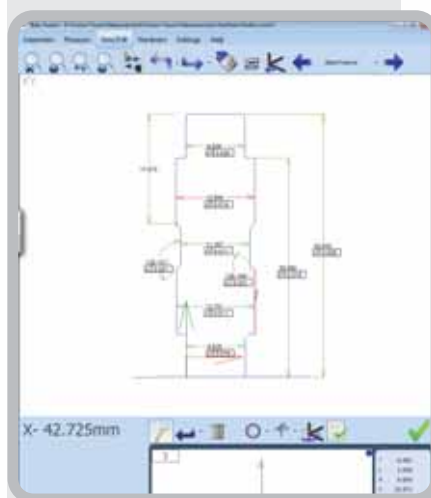|	
Lens mount	Single, quick change with lock nut, optional 3 lens turret
Lens magnification	x10, x20, x25, x50, x100
Focusing	By hand wheel
Magnification accuracy	Profile 0.05%. Surface 0.1%
Helix adjustment	± 7° by light source alignment
Light source	Profile illumination 12v 100w lamp Surface illumination 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, circle, Line, angle and radius measurement. Pitch circle diameter and construction of intersection points etc. Tolerancing and simple reporting also included.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software. Full geometric functionality, view of measured part can be printed as a fully dimensioned drawing. Full reporting capability includes, SPC, tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT-2E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

Accessories

See page 15.

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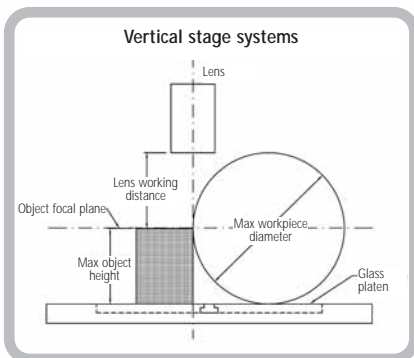
The vertical light beam configuration is ideally suited for work-pieces which are more readily mounted flat or horizontally.

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

SM20

XLS:
Shopfloor DRO

Vertical stage systems

Lens

Lens working distance

Object focal plane

Max workpiece diameter

Max object height

Glass platen

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

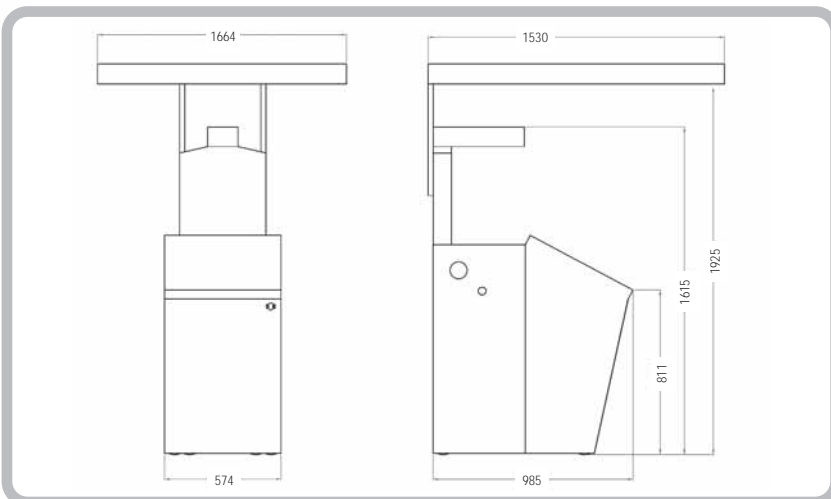|	
Type	Floor standing with vertical light path
Screen	Rotating 500mm diameter, inclined at 30° to the horizontal
Image	Inverted and reversed
Power supply	220 / 240 volt 50Hz or 110 volt 60Hz
Weight	150kg (330lb)
Packed weight	212Kg (465lb)
SM20 packed dims	1760mm x 660mm x 1200mm

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

Workstage

Measuring range	X axis 250mm (10") Y axis 100mm (4")
Surface area	410mm (16.14") x 260 (10.23") with slot for mounting accessories
Scale resolution	0.0005mm
Movement	Manual with backlash free plain rod drives, quick release on X & Y axes

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, circle, Line, angle and radius measurement. Pitch circle diameter and construction of intersection points etc. Tolerancing and simple reporting also included.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software for projectors with full geometric functionality. Graphical view of measured part can be printed as a 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. SPC and best fitting to dxf (overlay). Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT-2E: Complete TOUCH SCREEN DRO with 2D Fusion Touch software as above. Built-in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen-mounted fibre optic sensor. An internally mounted edge sensor is available as an option on all 'R' series projectors.

Built in high magnification condenser lens

Accessories

See page 15.

Accessories for R14/R400
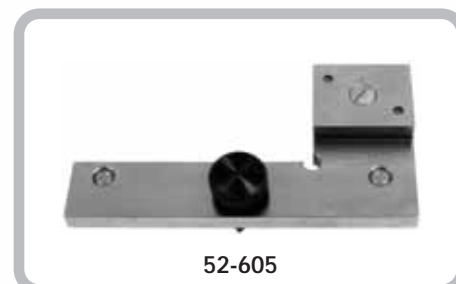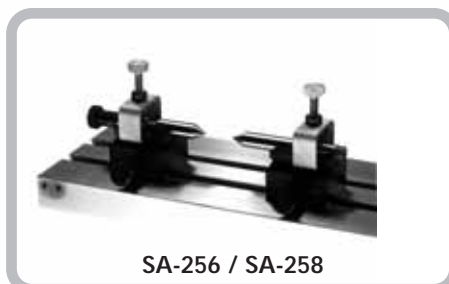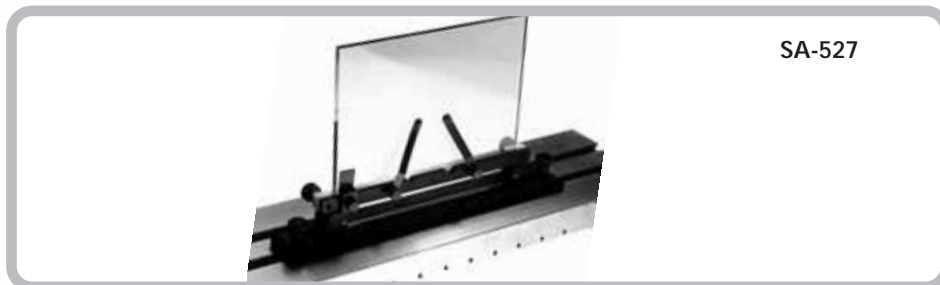
Part No.	Description
202-1327-1	Footswitch for GXL
ABFS-001	Footswitch for AB2 Fusion Systems
52-371	Protective cover – R14
350-035	Protective cover – R400 / SM350
SA-328	Cabinet stand
SA-250	Iris diaphragm
SA-256	Vee blocks
SA-258	Spring loaded centres
SA-259	Riser blocks 38mm ($\frac{1}{2}$") for SA-256
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

Part No.	Description
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

Part No.	Description
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

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

**Rotary Glass Stage
SA-245-2**

SA-370 Back Stop

SA-371 Side Stop

**SA-196-EXT
Dual Vee Block and Centres**

FM-2510

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

SA-179

SA-119-A

SA-2510

Workstages

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

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 90º with 30º, 45º and 60º 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 90º crosslines with 30º, 45º and 60º 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.**
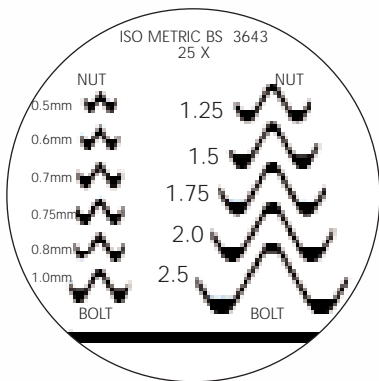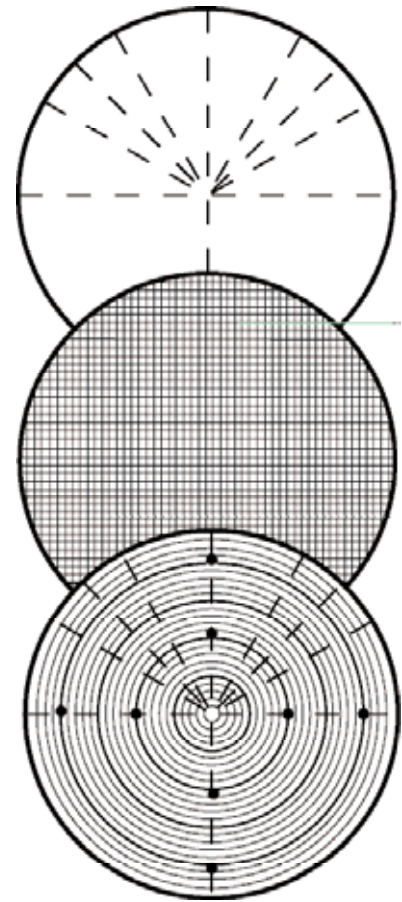
	254mm (10")	305mm (12")	500mm (20")
Crossline		SC-12-5	SC-20-5
Grid Metric	GM-275-1	SC-12-8	SC-20-8
Grid Imperial	GC-275-1	SC-12-6	SC-20-6
Concentric Circles Metric	RM-275-1	SC-12-11	SC-20-11
Concentric Circles Imperial	RC-275-1	SC-12-10	SC-20-10
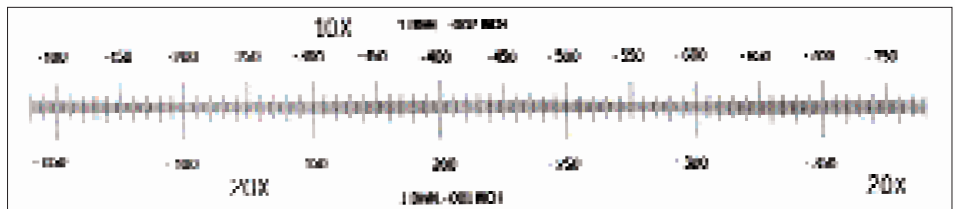
Part Number	Length	Resolution	Magnification
E2/1020	10"	0.002" / 0.001"	x10 / x20
E2/2550	10"	0.001" / 0.0005"	x10 / x20
M2 / 1020	250mm	0.05 / 0.025mm	x10 / x20
M2 / 2550	250mm	0.02 / 0.01mm	x25 / x50
E5/1020	20"	0.002" / 0.001"	x10 / x20
E5/2550	20"	0.001" / 0.0005"	x25 / x50
M5/1020	500mm	0.05 / 0.025mm	x10 / x20
M5/2550	500mm	0.02 / 0.01mm	x25 / x50

XLS

GXL/GXLE

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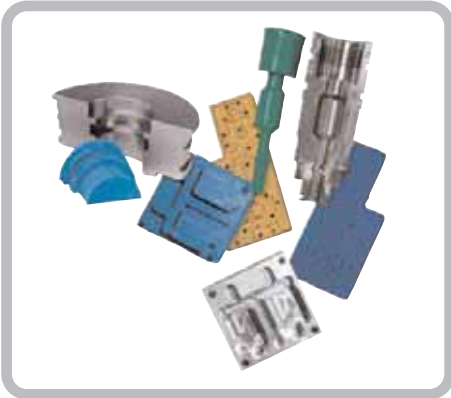
GXL: As XLS with geometric functions for skew alignment, angle, radius, point, line, circle. Automatic feature list and graphical view. Macro programming facility guides the operator through the measurement process. Feature tolerancing and standard report printout. Footswitch compatible.

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

FT-2: Complete TOUCH SCREEN DRO with 2D Fusion touch software for projectors with full geometric functionality. Graphical view of measured part can be printed as a 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. SPC and best fitting to dxf (overlay). Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

FT2-E: Complete TOUCH SCREEN DRO with 2D Fusion touch sw. Full geometric functionality. Built in optical edge detection allows data points to be taken 'on the fly' as the projected image is passed under the screen mounted fibre optic sensor. View of measured part can be printed as a fully dimensioned drawing. Full reporting capability includes, SPC, tabulated details with pass / fail analysis, auto link to Excel and auto sequence programming feature. Windows O/S and built in 19" portrait touch screen monitor in a rugged all steel housing.

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.

baty

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

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. Manipulation time is 1 to 2 minutes. 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.

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 15-30 seconds	REPRORUBBER MEDIUM BODY ORANGE 15-30 seconds	REPRORUBBER QUICK SETTING PUTTY Approximately 1 minute
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 Repro-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:

No. 16300	Reprorubber Thin Pour (Green) Quick Dispense Cartridge System Kit Complete
No. 16305	Reprorubber Orange (Medium Body) Quick Dispense Cartridge System Kit Complete
No. 16309	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

Trial Size Kit:	Order No. 16116	Thin Pour 130ml Trial Kit
Standard Size Kits:	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

Trial Size Kit:	Order No. 16129	220ml Trial Quick Setting Putty Kit
Other Kits:	Order No. 16130	1¾ lb (520ml) Introductory Kit
	Order No. 16131	7lb (2150ml) Economy Kit

System Refills:

| No. 16301	Reprorubber Thin Pour (Green) 50ml Cartridge, 1 each
No. 16302	Reprorubber Thin Pour (Green) 50ml Cartridges, 6 pack
No. 16306	Reprorubber Orange (Medium Body) 50ml Cartridge,1 each
No. 16307	Reprorubber Orange (Medium Body) 50ml Cartridges, 6 pack
No. 16311	Repro-Mix II Dispensing Gun (reusable)
No. 16313	Repro-Mix II Helix Mixing Nozzles, 15 Pack
No. 16316	Repro-Mix II Helix Mixing Nozzles, 100 Pack
No. 16315	Quick Dispense Cartridge System Fitted Case (without contents)
No. 16314	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 600oF (or more)
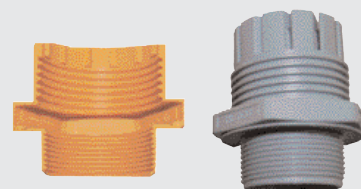
BOWERS GROUP

www.bowersgroup.co.uk