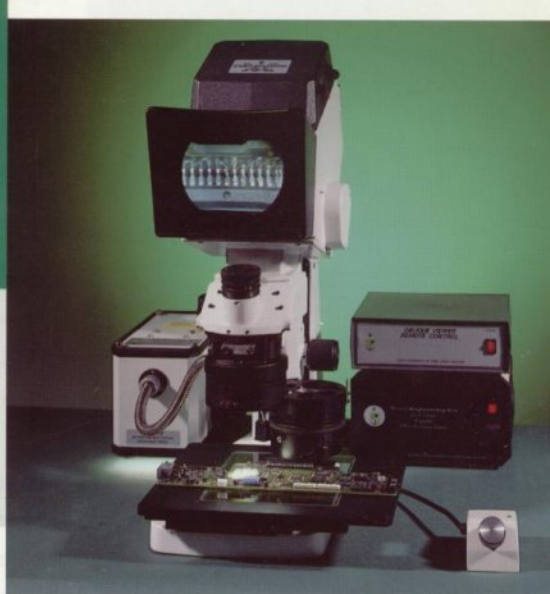


TS3

Stereo zoom inspection system

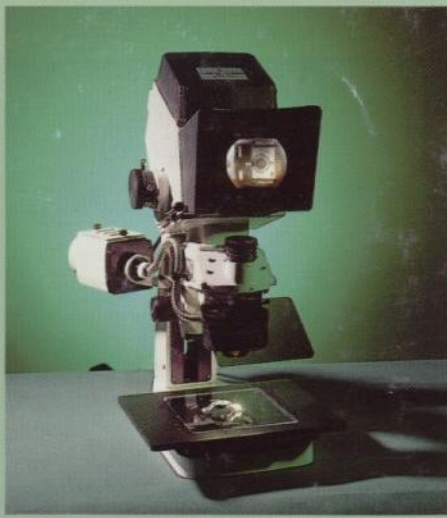


Features :

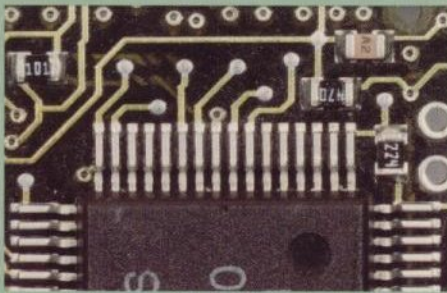
- fatigue free viewing
- freedom of head movement
- high spatial image resolution and image brilliance
- modular design with large range of options and accessories
- x4 to x80 magnification
 - stereo zoom

Within industry today, there is a clear requirement for an inspection system which offers the potential for enhancement of product quality and cost saving through increased productivity. The TS3 Stereo Zoom Inspection System from Vision Engineering is just such a product. Based on the highly acclaimed Dynascope principle, the TS3 offers superb stereo images at magnification levels between x4 and x80. Since the Dynascope allows the operator to inspect products in a totally relaxed way with no additional stress from eye fatigue or poor resolution problems, it supports your drive for increased throughput and improved quality standards.

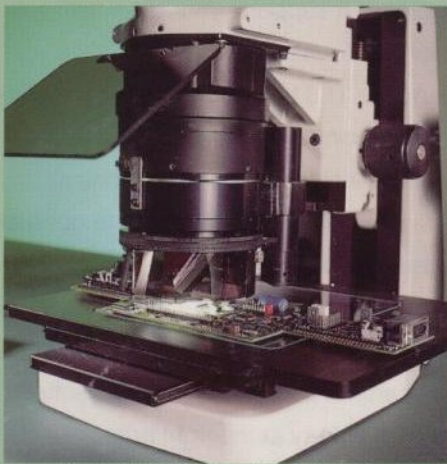
As a general inspection system, the TS3 has application in a variety of industries. Aerospace, electronics manufacture, semi-conductor, plastics, rubber, biomedical and metal fabrication industries all require a sophisticated system which is simple and easy to operate. As with any general system, users have individual requirements and the modular design of TS3 allows customised systems to be selected for your particular requirements. With a large range of options in the form of illumination, stage and camera accessories, the TS3 offers the latest in optical inspection technology at the right price.



**Inspection of die-cast
model railway component**



**Pin inspection of Quad Pack
at x12 magnification**



Solder-joint integrity inspection of SMDs

Engineering flexibility.

Vision Engineering prides itself on its customer service and its ability to supply answers to customer needs. In addition to our standard products, we provide specialist help and consultation to design and manufacture customised engineering solutions to your problems.

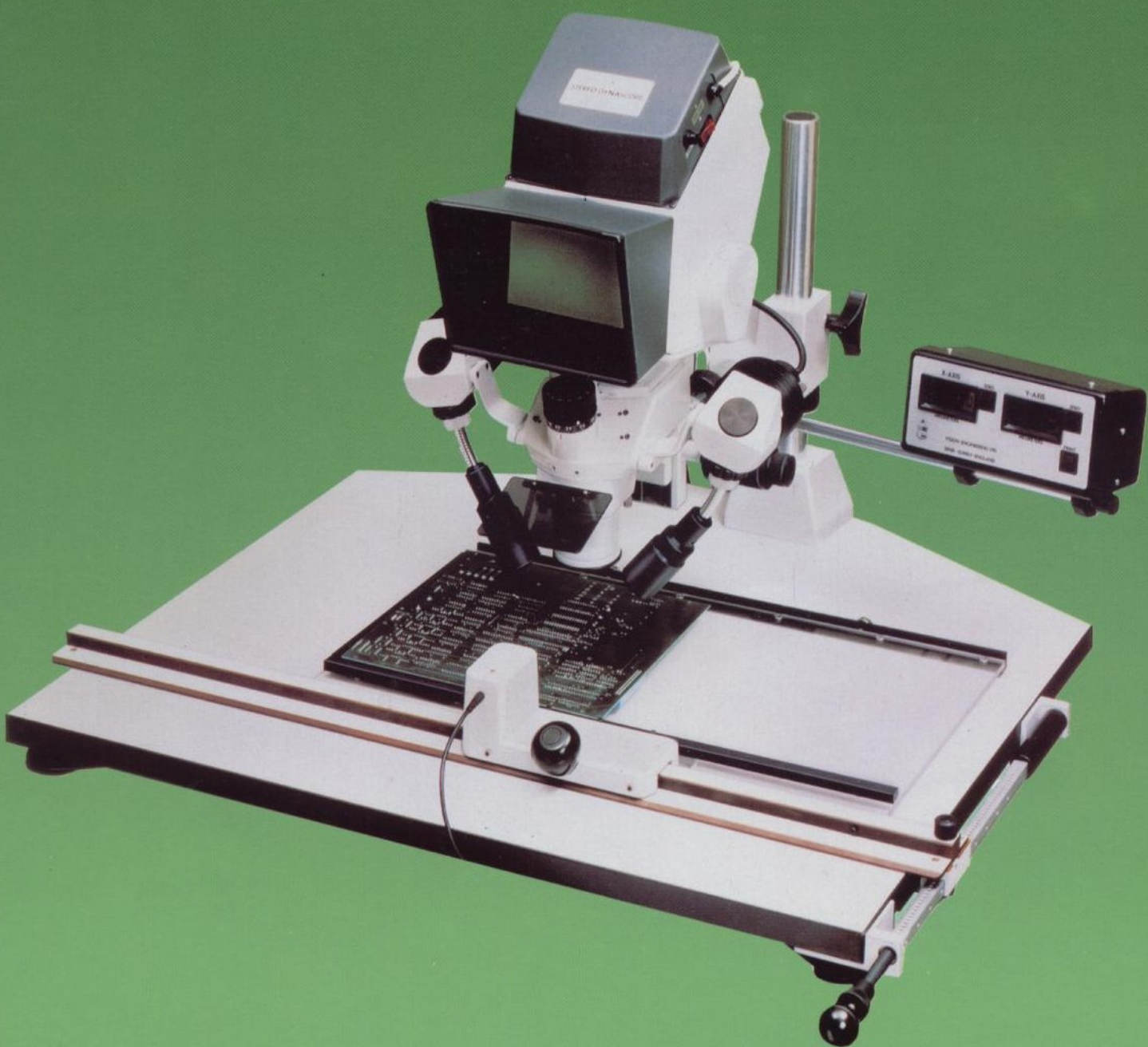
Technical specification:

Optical	Zoom objective with 6.6:1 ratio			
	Graticule facility			
Magnification, field of view, working distance				
Multiplier	Overall Mag.	Field at Min.	Field at Max.	Working Dist.
x0.7	4.2 to 28	35.6mm	5.25mm	113mm
x1.0	6 to 40	25mm	4mm	86mm
x1.5	9 to 60	15.3mm	2.5mm	39mm
x2.0	12 to 80	12.5mm	1.87mm	18mm
Resolution.	Better than 7 line pairs/mm/magnification.			
Illumination	Incident, epi, transmitted options.			
Photographic	Instant, 35mm, CCTV			
Electrical	Supply voltage and frequency range			
	100/110/220/240V			
	50/60 Hz. switchable			
Power consumption	400W max.			



Vision

Stereo scanning inspection system



Why Dynascopes represent state-of-the-art projected image technology.

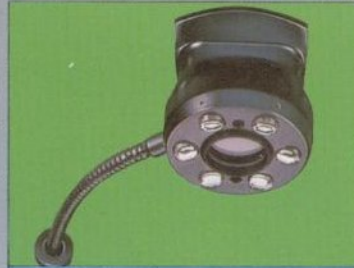
For many years industry has recognised the need for eyestrain and fatigue-free optical inspection and measuring instruments with superior performance to conventional eyepiece microscopes

Vision Engineering has singularly and diligently dedicated research and development to meet that need, resulting in Dynascopic projected image technology. This revolutionary world patented system represents the first major advance in projected image technology as applied to microscopes since Galileo

The purpose of Dynascopic image presentation is to produce an optical image with resolution and brilliance far superior to any other projected image system, thus eliminating the inherent problems of eyestrain and fatigue associated with conventional eyepiece microscopes.




Dynascopic instruments do not employ the optical methods used in projector or ground glass screen systems, which are unable to provide the same high resolution, image brilliance, contrast, or depth of field. This is also true in the comparison between Dynascopic viewing and CCTV presentation which produces pictures with poor depth of field and resolution together with other intrinsic problems associated with electronically reproduced images.

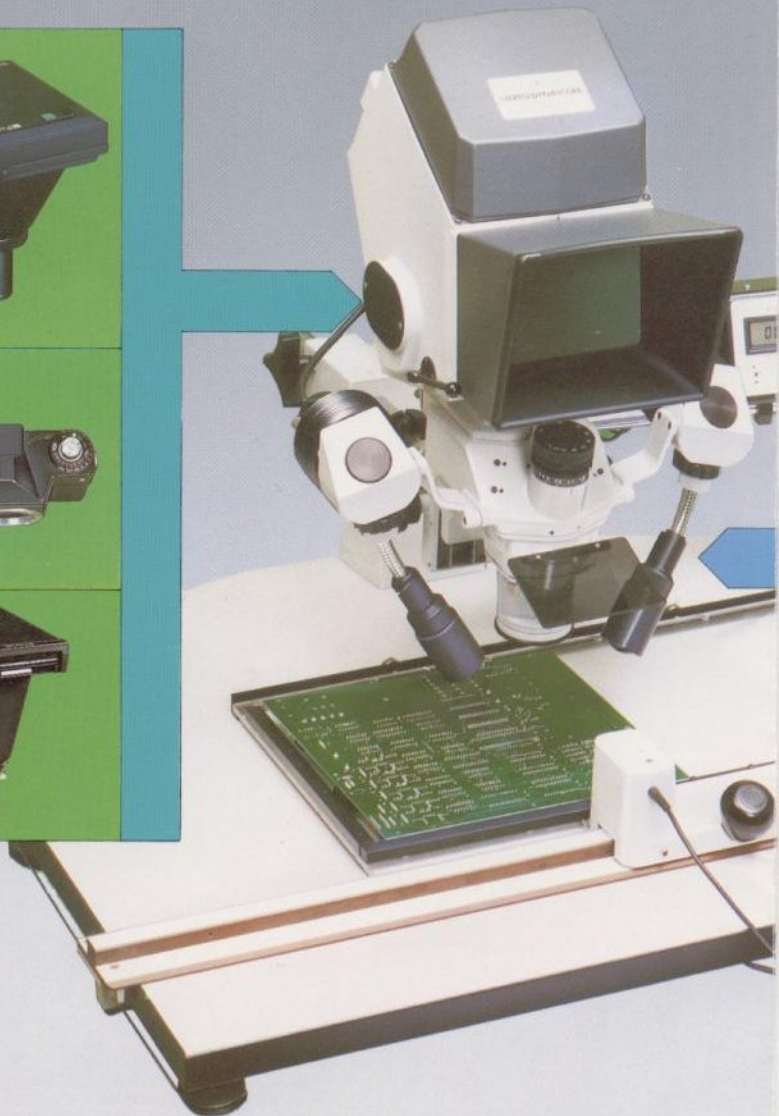
The revolutionary breakthrough of Dynascopic optical technology is embodied in the stereo system employed in the VS6 scanning inspection instrument covered in this brochure. A true three dimensional projected image is produced combined with a zoom magnification capability giving operators a fatigue free "sit and view" inspection system. The ease of operation, clarity of image, depth of field and versatility afforded by this system is vital to the quality control procedures in artwork, board production, conventional and surface mount assemblies



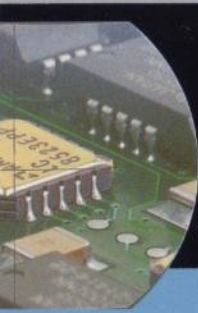
Six point fibre optic ringlight for all round fixed illumination, part number TS2/132



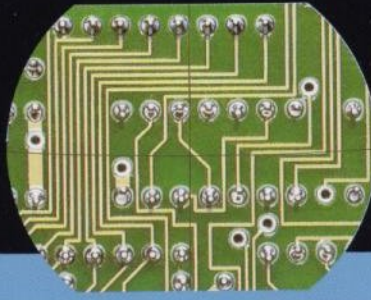
<p>CB 33 fully automatic Polaroid camera back consisting of body, electronic shutter and tube with projection lens, part number 900/53. Also requires automatic exposure control microprocessor part number 900/52 and focusing assembly 900/49.</p>	
<p>Manual 35mm attachment for SLR body part number 900/50, requires focusing assembly consisting of prismatic elbow and scroll focus part number 900/49.</p>	
<p>CB 1033 manual Polaroid complete with viewing assembly, copal shutter, projection lens tube and cable release part number 900/51. Focus assembly also required part number 900/49.</p>	



PCB and component assembly inspection system.



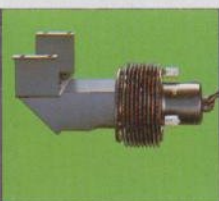
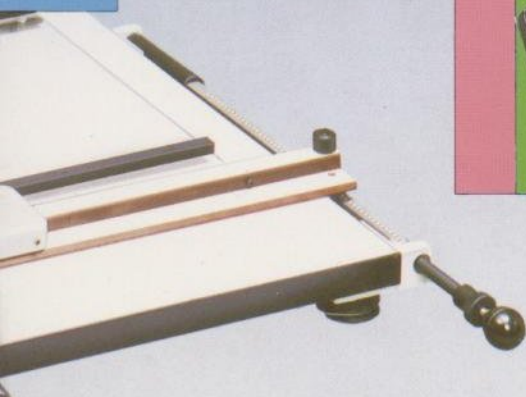
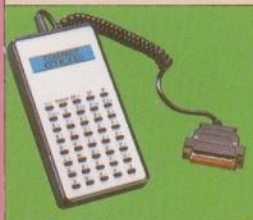
TS3/211 - Manual rotation oblique and direct overhead viewing attachment TS3/211M as TS3/211 but remote control motorised version



X-Y co-ordinate readout display for use with scanner table (metric part number 803/234) (imperial part number 803/233) (For co-ordinate positions only. Not to be used for measurement). Print facility requires part number 803/236 printer interface.



Hand held keypad for use with X-Y readout displays. Printer part number 900/46 and printer interface part number 803/236.



High intensity substage illuminator (fan cooled) part number 803/231

INSPECTION - THE KEY TO QUALITY

We at Vision Engineering (after several decades of research, development, production and marketing of inspection systems) have seen the rise of companies with excellent products in concept, then fail because of one area - "quality control". This is why we have continuously applied our resources to develop inspection systems that are vital in meeting the demanding specifications of today's technology.

Take for instance the system covered by this brochure, dedicated to the printed circuit industry, one of the most active areas of electronic production, whether it be artwork, bare board, solder, component or S.M.D. technology. Here we have undoubtedly a system without equal in versatility and performance.

The optical system, the subject of world patents, gives a performance in terms of resolution, image brilliance, zoom magnification and depth of field which must be seen to be appreciated. Just as important are the accessories available to enable you to carry out your exacting tasks. This is why we have developed modular accessories, retrofittable, to meet changing requirements over years of continuous service. The indexed work table allows 100% coverage of the subject under scrutiny, the ring illuminator giving all round fixed illumination for inspection and rework, plus further illumination options, and a range of photographic facilities or CCTV interface for recording faults or for training purposes. Now the latest additions to the range, an oblique viewing attachment, specifically designed for S.M.D. inspection giving a 45° view with 360° rotation facilitating 100% inspection all round the components. A new co-ordinate readout package (not for measurement purposes) which can be fitted with keypad and printer for coding and printing the type of fault and its location, thereby, achieving faster throughput in the rework department.

QUALITY EQUIPMENT - THE KEY TO INSPECTION

Stereo Dynascope

operating principles.

Multiplier	Overall Mag.	Field at Min.	Field at Max.	Working Dist.
×0.7	4.2 to 28	35.6mm	5.25mm	113mm
×1.0	6 to 40	25mm	4mm	86mm
×1.5	9 to 60	15.3mm	2.5mm	39mm
×2.0	12 to 80	12.5mm	1.87mm	18mm

It is important to understand that the VS6 DOES NOT produce images on a ground glass screen which would be unable to provide the high resolution and depth of field required. If we refer to the optical schematic, the specially designed coupled zoom lens system (1) provides primary magnification to the secondary magnification projection lenses (2) in which recticles can be interposed for measurement and alignment purposes. The images are then relayed through mirrors (3) and brought to focus on the Dynascope disc (4).

This disc consists of a honeycomb array of precision convex mirrors over its whole surface. The diameter of each mirror being in the order of 100th of an inch. The element (4) is spun on axis by a precision long life shaded pole motor at approximately 2500 rpm. The whole system being dynamically balanced and mounted in anti-vibration mounts.

This multiple mirror element serves to expand the intrinsic pupils of the system so that two discrete beams of light are reflected from it through field lenses so that in the viewing position they are arranged side by side at the average separation of the operator's eyes. These beams of light which represent the left and right hand images of the stereo system are of sufficient diameter to enable considerable head freedom to be enjoyed both in the lateral and in and out position.

In the case of a conventional eyepiece system the light bundles emerging from the eyepieces are only in the order of 1.5mm diameter and precise location of the head is therefore required to enable these small light bundles to enter the eye.

It is the substantial enlargement of these ray bundles produced by the Dynascope which makes this system unique and results in the previously mentioned advantages.

