

DAGE 5000



Packaging - Processing
Bid on Equipment
 1-847-683-7720
www.bid-on-equipment.com

Dage 5000

Advanced Small Geometry
 Bondtesting

Dage 5000 | Specifications

Footprint (W x D x H)	960mm (including monitor) x 730mm x 710mm
Weight (unpacked)	63.5kg (including anti-vibration mount and Borescope)
Power supply	100/110V, 220/240V AC, 50/60Hz switchable
Pneumatic supply	4 bar, 6mm OD, 4mm ID plastic pipe
Vacuum supply	Minimum 500mm Hg
International certification	Compliant with EC regulations EMC Directive, low voltage directive, mechanical safety directive
Manufactured	In accordance with ISO 9002
PC (minimum requirement)	Please consult factory
Monitor/Optics options	17 inch Flat Screen LCD / Leica S6 or Olympus SZ 3060 or Nikon SMZ 1. Please see Dage 4000 price list for full configurations
Borescope	350 micron field of view
Max force Y axis	5kg (50mm, X, Y stage) optional 100kg – please consult factory
Max force X axis	5kg (50mm, X, Y stage)
Max force Z axis	10kg (50mm, X, Y stage)
Z axis travel	65mm
Total stepback accuracy	+/- 0.25 micron over 10 micron of Z travel during stepback
Total system accuracy	+/- 0.25% of full scale deflection of loadrange selected
Maximum loadcartridge accuracy	To within 0.01% (100ppm) and repeatability under controlled conditions
Working envelope	X 220mm, Y 220mm, Z 50mm
Data analysis	In accordance with Dage 4000
Software control	Windows XP, Windows 2000
SPC	See separate data sheet

GLOBAL PRESENCE, GLOBAL SUPPORT, LOCAL CARE

With 6 direct offices and representatives world wide, Dage can support you locally as well as internationally. Please contact your nearest Dage office if you require any further information or would like a demonstration of the Dage 5000 system.

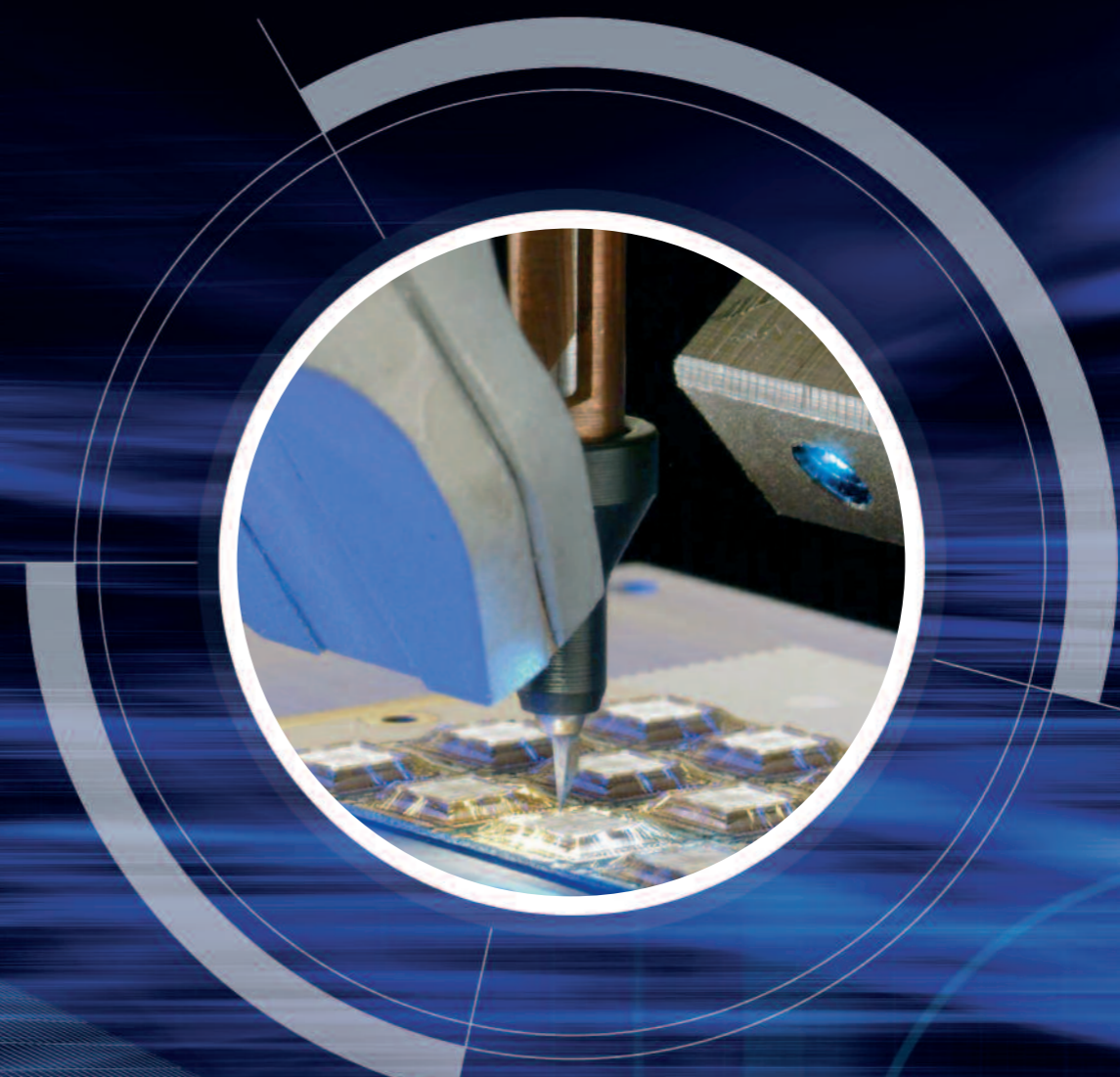
Our website: www.dage-group.com will also give additional details on Dage and its range of products as well as the contact details for your local Dage representative.

Standards

The Dage 5000 conforms to and in some cases exceeds the following industry standards:

CBP/HBP	JEITA EIAJ-7407
BGA BUMP SHEAR	JEDEC JESD22-B117
AU BALL SHEAR	JEDEC JESD22-B116
BALL BOND SHEAR	ASTM F1269
WIRE PULL DT/NDT	MIL STD 883
STUD PULL	MIL STD 883
DIE SHEAR	MIL STD 883

Please consult factory for accessories where applicable.



Low force, high resolution load cartridges

Borescope image system for superior tool alignment and failure grading

Cavity shear

Quick guard loadtools

Built in anti-vibration

Soft landing for stacked die applications

High precision sample manipulation

For additional information please contact:

China
 Tel: +86 512 6665 2008
 email: l.leyu@dage-group.com

Japan
 Tel: +81 432 995851
 email: info_mail@arctek.com

UK
 Tel: +44 1296 317800
 email: dpi-sales@dage-group.com

Germany
 Tel: +49 7021 950690
 email: dage@dage.de

Singapore
 Tel: +65 655 27533
 email: dageplc@dage-group.com

USA
 Tel: +1 510 683 3930
 email: sales@dage-group.com



www.dage-group.com

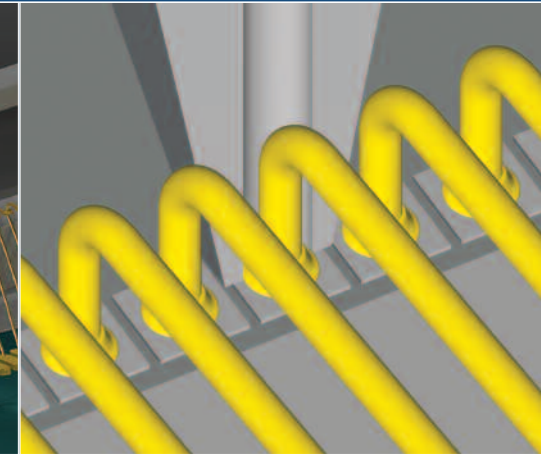
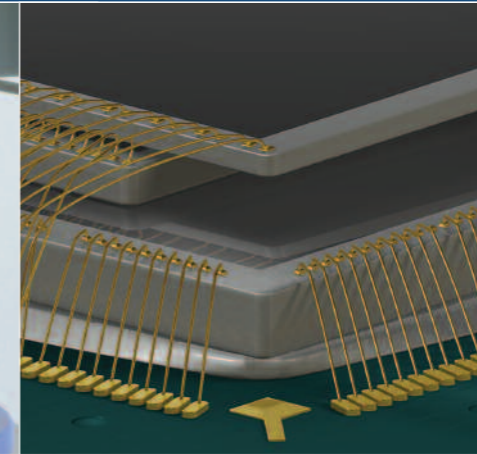
Specifications subject to change without prior notice.





Dage 5000

Advanced Small Geometry Bondtesting



Leading the way in advanced small geometry bondtesting

Traditional bondtesting technology is being pushed to the limit by the reduction in wire bonding geometries and the development of stacked die configurations

These challenges have been addressed in the Dage 5000 with several innovative features

The new Dage 5000 features are backwardly compatible with the Dage 4000, so the same machine can be used for both advanced and conventional bondtesting. For the latter, the advanced features are easily removed or disabled

Dage 5000 features:

- Lower range force measurement
- New load tool design optimised to the changing shape of small geometry bonds and to overcome problems associated with passivation layer thickness
- Soft landing and oscillating load tool for stacked die bondtesting
- Improved optics and illumination facilitating load tool alignment and the grading of failure modes
- Improved shear height accuracy and repeatability
- Anti-vibration measures to maintain accuracy and optical performance under typical environmental conditions
- Improved control over sample manipulation under the test head
- All these improvements and innovations result in a flexible and revolutionary system capable of industry standard and advanced bondtesting applications

Low Force/High Resolution Loadcartridges

The quick release intelligent loadcartridge system on the Dage 4000 has now been extended on the Dage 5000 with the introduction of two new cartridges: WP25 (Wire Pull) and BS25 (Ball Shear). These cartridges enable the detection and precise, repeatable measurement of low force bond strengths. They feature 3 software selectable load ranges per cartridge, zero friction design, mechanical over range protection with low landing forces and low shear height capability for ball shear.

They also come complete with automatic loadtool protection guards.

'Quick Guard' Loadtools

The Quick Guard loadtool system has been introduced to optimize tool design, reduce loadtool changeover time (no tools needed) and provide built in protection to reduce tool damage. Utilizing an automatic shroud, tool changeover problems and damage are now eliminated.

Note: This feature is only available on the WP25 and BS25.

Borescope Image System

The traditional stereo zoom microscope has many limitations when used at high magnifications; the long working distance limits resolution and depth of focus. The Dage 5000 offers a unique solution to these problems using high resolution fibre optic technology. The use of a Borescope mounted on a slide with gross and fine adjustment in X,Y, & Z reduces the working distance to 12mm, making grading "on the fly" and tool alignment easy on the operator. It features integral lighting, enhanced LED back lighting and includes image capture. Images are displayed on a 17" LCD screen.

Anti-vibration Mount

Ambient vibration becomes more significant with very low force, small geometry bondtesting. It is essential to eliminate as much vibration as possible. On the Dage 5000 provision has been made to isolate the machine with built in self-levelling, self-damping anti-vibration mounts. This improves bond strength measurement accuracy, machine calibration and optical image quality. Recommended for use with the Borescope.

Soft Landing on Stacked Die

Bondtesting on an overhanging die can be particularly difficult. Complications such as narrow spacing, multi-layer wire bonding and low profile bonds require specialised bondtesting techniques. The Soft Landing option (virtually zero landing force) combined with an 'oscillating loadtool' overcomes the problem of flexion in the die overhang during loadtool landing and stepback.

Easily Adjustable Optics Mounting

Following on from ergonomic features introduced on the Dage 4000, the Dage 5000 has been fitted with an optics mounting arm which slides in an arc around one central point, keeping the loadtool, working height and focal point in a fixed position during adjustment.

Cavity Shear

The subject of a number of technical articles, cavity shear is a loadtool optimized to overcome some of the problems associated with Ultra Fine Pitch ball shear testing. Essentially the tool has been shaped to 'fit' around the bond transferring a higher force to the wire-pad interface. Mean test forces are typically 9% higher than with a standard chisel tool. More potential bond failures are identified and there is less effect from variations in step back height caused by passivation layer thickness.

High Precision X, Y Sample Manipulation Stage

The Dage 5000 X, Y stage has been engineered to enable the operator to easily align the tool to the bond. This is particularly important with repetitive manipulation (testing many bonds). The joystick programmed step and repeat automation software has been further enhanced with the addition of an automatic index feature. The loadtool is automatically indexed to the next bond removing the need for the operator to do it manually.