

**BAUGH & WEEDON**



## MAGNACHECK 4D

**A Tangential Field Strength Meter designed for NDT Applications.**  
Faster Measurements, Easier Procedure Writing, Enhanced Result Accuracy.



**Shot Timer Mode:** Tracks magnetising shot duration and records max Gauss levels for precise MPI testing.

**Waveform Mode:** Visualizes magnetising waveforms and their changes with amperage, ensuring detailed analysis.

**Pie Gauge Feature:** Displays direction of expected indications or magnetic field, with colour-coded feedback for optimal testing.

**Enhanced Multi-Axis Sensitivity:** Accurate Gauss readings regardless of probe orientation, improving defect detection reliability.



The MagnaCheck 4D is the latest advancement in magnetic field strength measurement, designed to offer unparalleled accuracy and versatility in Magnetic Particle Inspection (MPI).

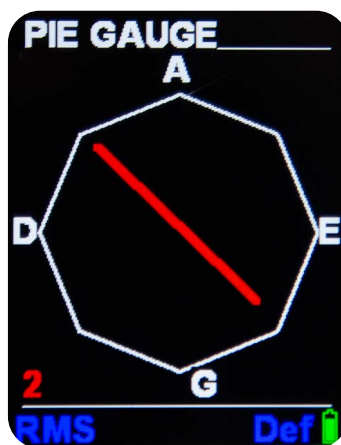
Building on the legacy of its predecessors, the MagnaCheck 4D introduces several new features aimed at enhancing the inspection process. Key innovations include the Shot Timer Mode for precise magnetising shot duration, the Waveform Mode for detailed waveform analysis, and the new Pie Gauge feature, which provides intuitive directionality for magnetic fields and expected indications.

With automatic scaling, multi-axis sensitivity, and improved probe orientation capabilities, the MagnaCheck 4D ensures reliable results for even the most complex MPI tests, making it an indispensable tool for professionals in the field.

## Pie Gauge Feature

The MagnaCheck 4D introduces the innovative Pie Gauge feature to the series, providing a modern, digital alternative to the mechanical Pie Gauge. This mode visually displays the directions of expected indications, offering a clear representation of potential defect locations. Additionally, it can be switched to show the actual magnetic field direction, enhancing the versatility of the inspection process.

A key advantage of this feature is the colour-coded line indicator, which turns green when the magnetic field strength reaches the optimal range of 30 to 60 Gauss — the “sweet spot” for effective Magnetic Particle Inspection (MPI). By utilizing two of its three sensors, the MagnaCheck 4D precisely determines the field’s direction, ensuring accurate readings regardless of the probe’s orientation on the part surface. This functionality streamlines the inspection process and improves defect detection reliability.

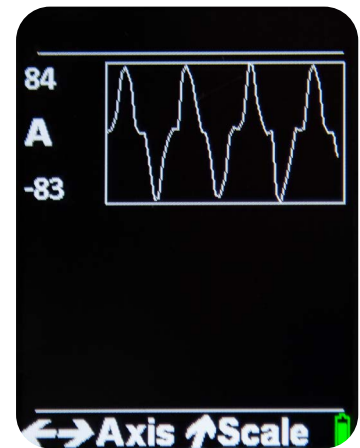


The MagnaCheck 4D is supplied with a comprehensive 12 month warranty as standard.

## Waveform Mode

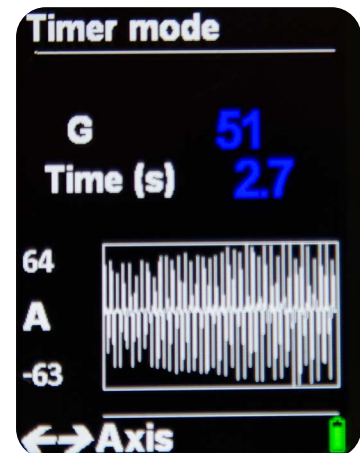
Waveform Mode provides a clear visual representation of the magnetising waveform, offering valuable insights into the magnetic field's behavior. Users can choose to display all three axes simultaneously for a comprehensive view or focus on a single primary axis of interest. With the convenience of automatic amplitude scaling via a single button press and adjustable waveform length through the menu, this mode offers both simplicity and flexibility.

This feature is particularly beneficial for understanding waveforms generated by thyristor or silicon-controlled rectifier (SCR) MPI benches. As amperage increases, Waveform Mode allows users to observe how the waveform evolves, helping to diagnose system performance and ensure accurate magnetic particle inspections.



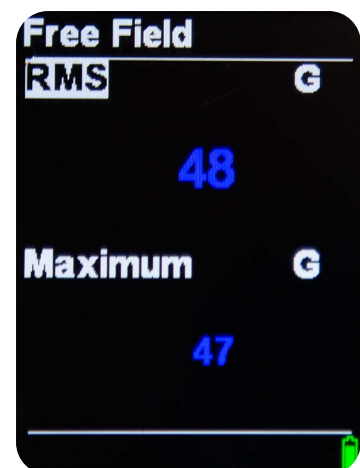
## Shot Timer Mode

A new addition to the MagnaCheck 4D, Shot Timer Mode offers enhanced monitoring capabilities for magnetic particle inspection. This mode accurately measures and displays the duration that a magnetising shot remains above a preset threshold, which can be set as low as one Gauss for precise detection. Additionally, it records the maximum Gauss level achieved, the total time the shot exceeded the threshold, and captures an image for further analysis. This comprehensive data ensures detailed documentation and improved quality control in magnetic testing applications.



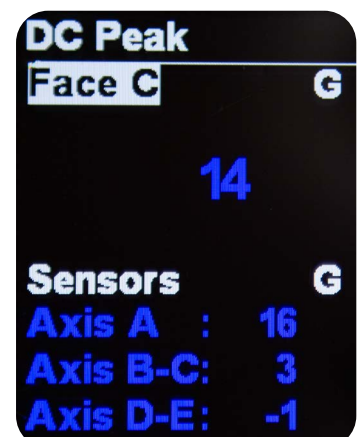
## Free Field

Free Field Mode is a key feature inherited from the MagnaCheck 3D, the pioneering Tangential Field Strength Meter designed to sense magnetic fields in three axes. By utilizing this advanced capability, the MagnaCheck Series combines input from all three sensors to provide accurate, true Gauss readings, regardless of the sensors orientation within the magnetic field. This ensures reliable and consistent results, even in complex or dynamic testing environments, making it an essential tool for precise Magnetic Particle Inspection (MPI).



## Face Select Mode

This mode displays the Gauss levels achieved in each axis, providing a comprehensive view of magnetic field strength. By showing the Gauss levels in two key directions critical to the Magnetic Particle Inspection (MPI) test, this mode ensures accurate readings even when the probe is not perfectly perpendicular to the magnetic field. This capability enhances the reliability of the test results, reducing the likelihood of false readings due to probe positioning.



## MagnaCheck 4D Specification

Measurement range	Up to 2000 Gauss
Units	Gauss, mTesla, Ka/m, A/cm
Measurement modes	DC, AC peak, true RMS
MPI bench support	True RMS for thyristor switched fields
Peak hold mode	Off, 1, 2, 5 and 10 seconds
Measurement sample rate	70 samples/second
Measurement resolution	0.16 Gauss
Probe types	4D Auto Recognition
Waveforms Display	Yes
Field Direction Display	Yes
Shot Timer	Yes
3D Sensor	Yes
Probe types	4D, 3D & 1D. Auto Recognition
Sensor calibration	Stored digitally in probe
Measurement accuracy	1%
Standards compliance	ASTM E1444/1444M-16 and EN ISO 9934-3
Zeroing	Manual zero with null pot supplied
Display type	Colour LCD with selectable backlight
Display size and resolution	70mm (2.8") 320x240 pixels
Power	2 x 1.5V AA batteries.
Typical battery life	In excess of 10 hrs continuous use. (using good quality batteries)
Instrument dimensions	163mm (6.4")(h) x 80mm (3")(w) x 25mm (1")(d) With rubber boot: 168mm (6.6") (h) x 85mm (3.3") (w) x 30mm (1.2")(d)
Instrument weight	350g (0.77lb) including batteries

### Standard Kit includes:

MagnaCheck Meter  
 4D Probe  
 Null Pot  
 Blue Rubber Boot  
 2 x Non-Rechargeable AA Batteries  
 Carry Case  
 Quick Reference Guide  
 MagnaCheck 4D Manual



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