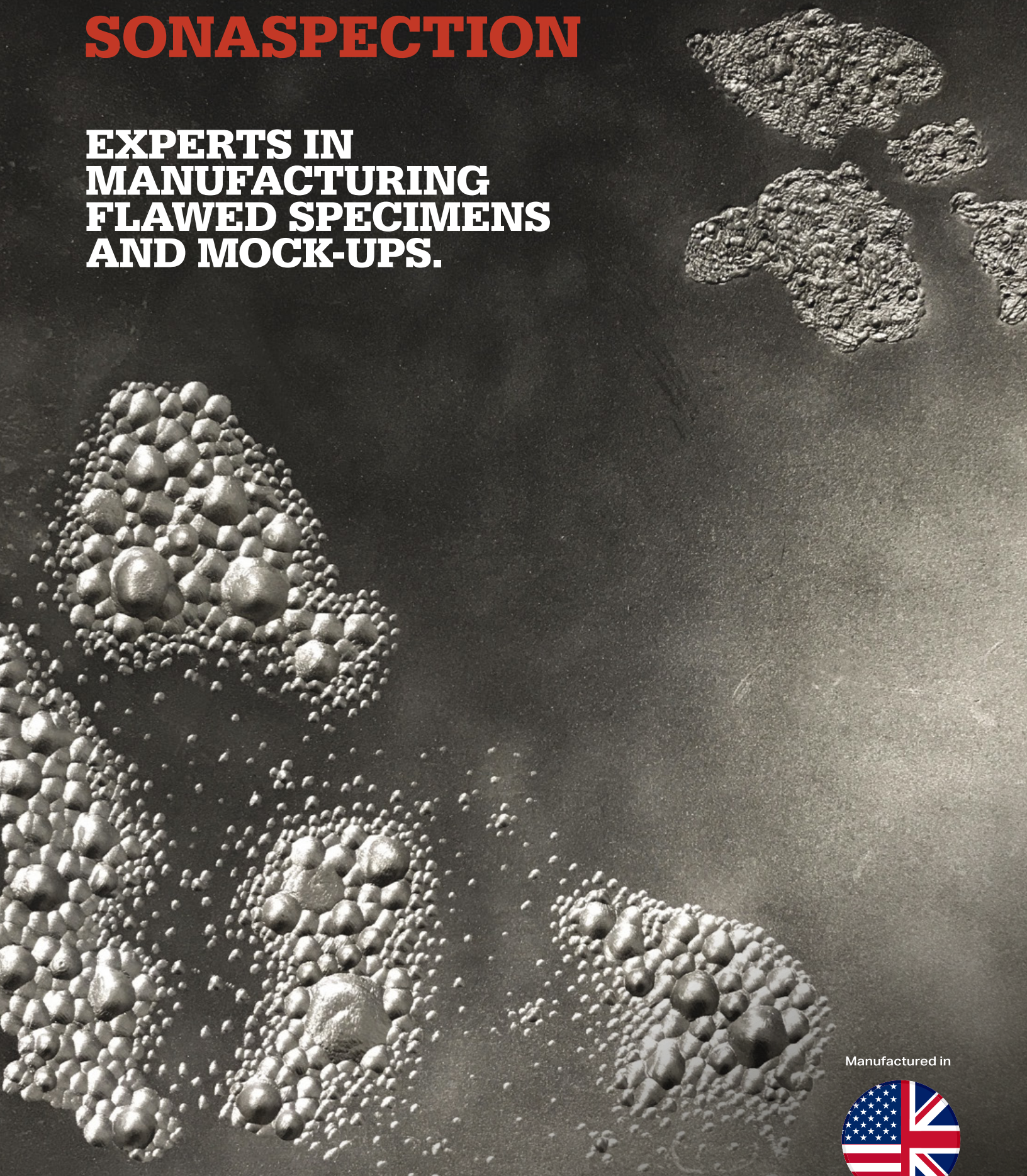
SONASPECTION

EXPERTS IN MANUFACTURING FLAWED SPECIMENS AND MOCK-UPS.



Manufactured in

sonaspection.com

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WHO WE ARE

Globally acclaimed manufacturer of Non-Destructive Testing (NDT) and Evaluation (NDE) flawed specimens.

We work with multinational organizations worldwide, constantly facing requirements and challenges that push us to create new standards and improve the reliability of the industry.

Founded in 1980, and acquired by the Institution of Mechanical Engineers in 2013, we have manufactured thousands of flawed specimens for many of the major performance demonstration, training and qualification centers around the world.

With offices in Charlotte, USA, and Lancaster, UK, we pride ourselves in pioneering many ‘industry standard’ flaw manufacture and implanting techniques.

Our flawed specimens can be found in any reputable organization across a multitude of sectors; including petrochemical, nuclear, aerospace and shipbuilding, providing training and certification of technicians, as well as procedure and equipment development, in non-destructive evaluation.

This, combined with our first-class workmanship, specialized welding and non-destructive evaluation skills, means our promise to you is that your business will receive the best quality and most accurate flawed specimens on the market.

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Timeline

1980 Welder training center in Lancaster, UK, is established alongside Sonaspection, an NDE Inspection service provider (originally named Bowland Scott) to the local power station and beyond. After experiencing a severe gap in the market when performing NDE training at a local college, we undertook several years of research and development to manufacture flawed specimens.

1984 Sonaspection International Ltd is formed by owner Phillip Bisgrove after successfully manufacturing flawed specimens for NDE training for multiple clients and realizing there is a scope for expansion.

1994 Manufacturing facility established in Georgia, USA, following increased demand in the US and surrounding markets.

2002 USA manufacturing facility relocates from Georgia to Charlotte, North Carolina.

2003 Management buyout by Martin Peacock, Steve Berriman and Neil Kelly.

2013 Sonaspection International Ltd is acquired by the Institution of Mechanical Engineers (IMechE) and the head office relocates to a new facility on White Lund Industrial Estate, Lancaster.

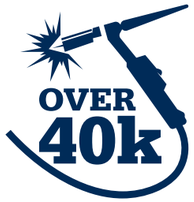
2020 Expansion of UK manufacturing facility in Lancaster, enabling investment in new machinery and significantly increasing capacity to accommodate global demand whilst maintaining a safe working environment for staff.

WHY CHOOSE US

What you can expect

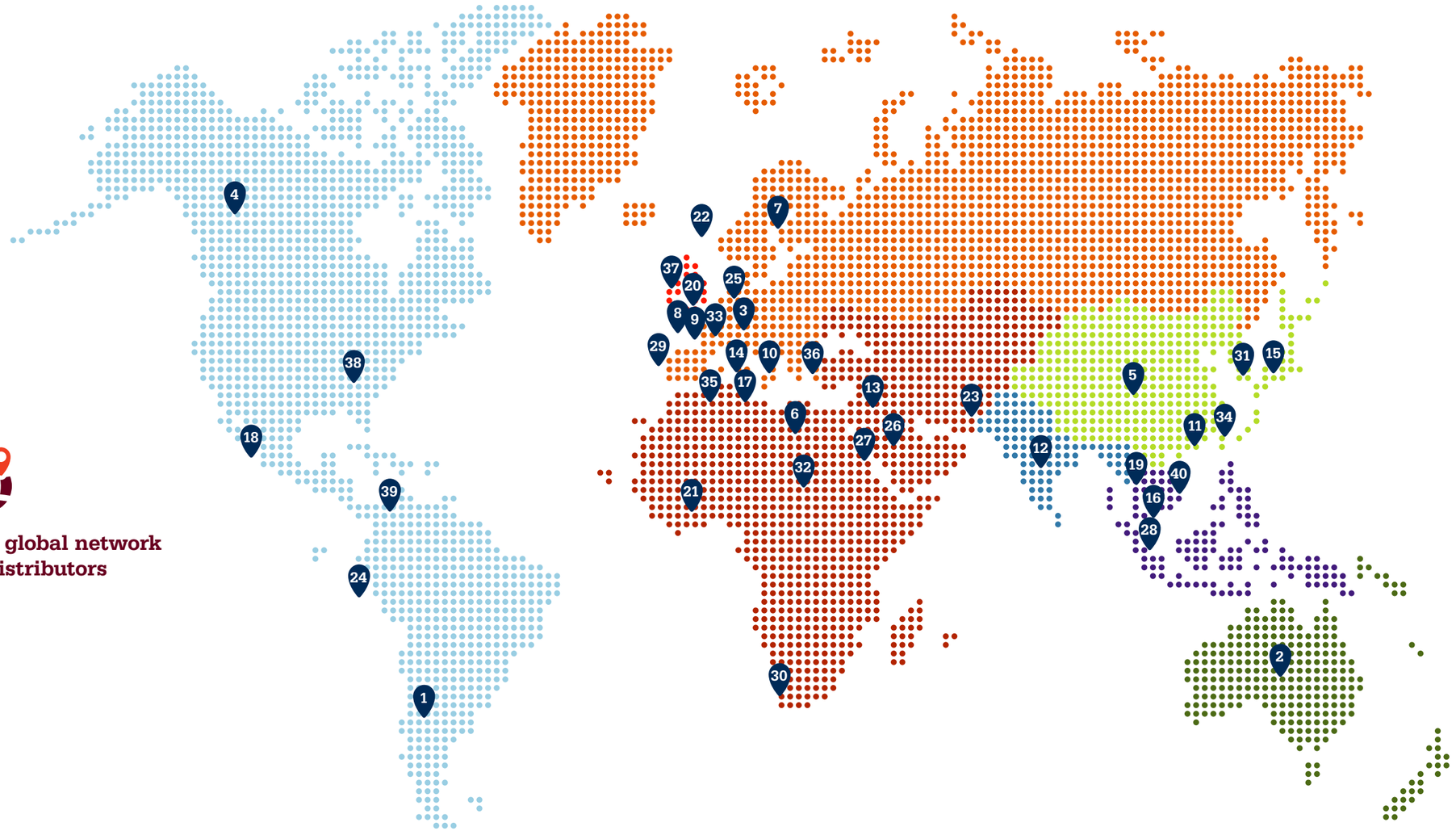
- The most accurate flawed specimens on the market
- Unique specimens containing purposely induced flaws that are accurately sized and located
- All specimens go through a full range of quality control processes to ensure our flaws are of the highest quality
- Documentation detailing flaw types, sizes and location supplied with each specimen
- Excellent customer service from initial contact
- Whatever the challenge, we work hard to find solutions to ensure we can support our customers with exactly what they need

Longest established flaw manufacturer in the world.



Standard specimens manufactured at our facilities.

The weight of the heaviest specimen into which we have implanted flaws.



Our global network of distributors

1	Argentina	21	Nigeria
2	Australia	22	Norway
3	Austria	23	Pakistan
4	Canada	24	Peru
5	China	25	Poland
6	Egypt	26	Qatar
7	Finland	27	Saudi Arabia
8	France	28	Singapore
9	Germany	29	Spain
10	Greece	30	South Africa
11	Hong Kong	31	South Korea
12	India	32	Sudan
13	Iraq	33	Switzerland
14	Italy	34	Taiwan
15	Japan	35	Tunisia
16	Malaysia	36	Turkey
17	Malta	37	UK
18	Mexico	38	USA
19	Myanmar	39	Venezuela
20	Netherlands	40	Vietnam

EDUCATIONAL KITS

A set of miniature welds, macro sections and photo-radiographs to demonstrate the principles of flaw detection, flaw interpretation and basic sizing.

Our educational kits can be made of four different materials: carbon steel, stainless steel, aluminum and 3D printed resin. Our 3D printed resin kits weigh just 3.5kg, making them over 70% lighter than their carbon steel counterpart, and are easier to handle, transport and store. All educational kits are presented in a durable polypropylene carry case with high-density foam inserts to ensure total protection of the specimens.

Recommended for

- Introduction to weld flaws
- Demonstration of principles of flaw detection
- Demonstration of typical flaw responses
- Demonstration of principles of flaw interpretation
- Basic flaw sizing

Methods

- Demonstration kit containing a specimen for each method
- Ultrasonic testing
- Magnetic particle testing
- Penetrant testing
- Visual testing
- Radiographic testing

Materials

- Carbon steel
- Stainless steel
- Aluminium
- 3D printed resin

Kit contents

- 10 miniature flawed specimens, each implanted with one flaw
- Flaw location details
- Testing and acceptance criteria
- Photo-radiographs (where applicable) for each specimen
- 10 macro sections
- Magnifying glass
- Certificate of conformance

An example of a weld flaw identification kit and 3D printed resin visual testing kit

Kit types and contents

Demonstration kit (KTCS91)

1 tee and 9 plate specimens carefully selected from the visual, magnetic, penetrant, ultrasonic, and radiographic kits to provide an overview of flaw types and their detection using various non-destructive testing techniques.

- Carbon steel - 12 kg/29 lbs

Ultrasonic kit (KTCS86)

1 tee and 9 plate specimens containing commonly occurring surface-breaking and weld-body flaws.

- Carbon steel - 12 kg/26 lbs
- Stainless steel - 12 kg/26 lbs
- Aluminium – 7 kg/15 lbs

Visual kit (KTCS87)

3 tee and 7 plate specimens containing commonly occurring visual welding flaws and irregularities.

- Carbon steel - 12 kg/26 lbs
- 3D printed resin – 3.5 kg/7.7 lbs

Magnetic particle kit (KTCS88)

3 tee and 7 plate specimens containing a selection of commonly occurring surface-breaking flaws.

- Carbon steel – 12 kg/26 lbs

Penetrant kit (KTCS89)

3 tee and 7 plate specimens containing a selection of commonly occurring surface-breaking flaws.

- Carbon steel – 12 kg/26 lbs
- Stainless steel – 12 kg/26 lbs
- Aluminium - 7 kg/15 lbs

Radiographic kit (KTCS90)

1 tee and 9 plate specimens containing commonly occurring surface-breaking and weld-body flaws.

- Carbon steel - 12 kg/26 lbs
- Stainless steel - 12 kg/26 lbs
- Aluminium - 7 kg/15 lbs

Weld flaw identification kit (KTCS92)

30 macro sections showing the cross section of flaws.

- Carbon steel - 7 kg/15 lbs

A magnetic particle kit containing 10 macro sections of various flaws

Each kit contains the following flaws as indicated				MT kit	PT kit	VT kit	Demo kit	UT kit	RT kit	Weld ID kit
Def 1		Toe crack		MT	PT		DM	UT		W
Def 1A		Toe crack		MT	PT					W
Def 1B		Toe crack		MT	PT					
Def 1C		Toe crack (full pen)						UT		
Def 2		Root crack		MT	PT		DM	UT	RT	W
Def 3		Side wall crack								W
Def 4		Centre line crack surface		MT	PT					W
Def 5		Centre line crack weld body						UT		W
Def 6		Porosity weld body					DM	UT	RT	W
Def 6A		Porosity surface breaking		MT	PT	VT				W
Def 7		Slag					DM	UT	RT	W
Def 8		Lack of side wall fusion					DM	UT		W
Def 9		Lack of root fusion		MT	PT				RT	W
Def 10		Root concavity				VT	DM		RT	W
Def 11		Incomplete root penetration SV				VT		UT	RT	W
Def 12		Over penetration				VT			RT	W
Def 13		Incomplete root penetration DV						UT		W
Def 14		Lamination		MT	PT					W
Def 14A		Lamination weld preparation		MT	PT					W
Def 14B		Lamination						UT		W
Def 15		Irregular root penetration				VT	DM		RT	W
Def 16		Weld spatter				VT			RT	W
Def 17		Undercut				VT				W
Def 18		Excess cap				VT	DM		RT	W
Def 19		Mismatch plate								W
Def 20		Misalignment plate								W
Def 21		Crack surface breaking			PT		DM			
Def 21A		Crack subsurface cap removed		MT						W
Def 22		Concave cap				VT				W
Def 22A		Incomplete weld fill								W
Def 23		Uneven leg lengths				VT	DM			W
Def 26		Lack of inter run fusion								W
Def 27		Underflush								W