



Magnetic Particle Testing

Penetrant Testing

UV Lamps

Aqueous Cleaners

Ultrasonic Couplants

## **Non-Destructive Testing Products Catalogue**

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# Magnetic Particle Testing

Materials

### Fluorescent, Wet Method

	14A	14HF	MF-655 WB	MG 410	MG 601	WB-12	622.1	690.1
<b>Description</b>	Particles	Ready-to-use liquid & aerosol	Ready-to-use liquid	Particles	Particles	Ready-to-use liquid	Ready-to-use liquid	Ready-to-use aerosol
<b>Suspension Vehicle</b>	Water or oil	Oil	Water	Water or oil	MF-655 WB	Water	Oil	Oil
<b>Sensitivity*</b>	8 - 9	8	7 - 8	7	8 - 9	7 - 8	8 - 9	8 - 9
<b>AMS 2641</b>		✓					✓	✓
<b>AMS 3044</b>	✓	✓	✓		✓	✓	✓	✓
<b>AMS 3045</b>		✓					✓	✓
<b>AMS 3046</b>		✓ Aerosol						✓ Aerosol
<b>ASTM E709</b>	✓	✓	✓	✓	✓	✓	✓	✓
<b>ASTM E1444/ E1444M</b>	✓	✓	✓		✓	✓	✓	✓
<b>ASME BPVC Section V</b>	✓	✓	✓	✓	✓	✓	✓	✓
<b>ISO 9934-2</b>	✓	✓	✓		✓	✓	✓	✓
<b>KTA 3905</b>					✓		✓	
<b>MIL-STD-2132</b>	✓	✓	✓	✓	✓			
<b>NAVSEA 250- 1500-1</b>			✓	✓				
<b>Rolls Royce RRP 58004 (CSS 231)</b>	✓	✓				✓		
<b>SAE AS4792</b>			✓			✓		
<b>SAFRAN IN 5300</b>	✓	✓		✓				
<b>SNECMA DMR70-520</b>		✓						

\* Representative of the number of indications on a tool steel ring as defined in ASTM E1444.

## Visible

	7HF	WB-27	1 Grey	8A Red
<b>Description</b>	Ready-to-use aerosol	Ready-to-use liquid	Particles	Particles
<b>Method</b>	Wet method	Wet method	Dry method	Dry method
<b>Suspension Vehicle</b>	Oil	Water	-	-
<b>Sensitivity*</b>	6 - 7	6 - 7	7	7
<b>AMS 2641</b>	✓			
<b>AMS 3040</b>			✓	✓
<b>AMS 3041</b>	✓			
<b>AMS 3042</b>		✓		
<b>AMS 3043</b>	✓ Aerosol			
<b>ASTM E709</b>	✓	✓	✓	✓
<b>ASTM E1444/E1444M</b>	✓	✓	✓	✓
<b>ASME BPVC Section V</b>	✓	✓	✓	✓
<b>ISO 9934-2</b>	✓	✓		✓
<b>MIL-STD-2132</b>	✓	✓	✓	✓
<b>NAVSEA 250-1500-1</b>		✓		
<b>NAVSEA T9074-AS-GIB-010/271</b>			✓	✓
<b>SAE AS4792</b>		✓		

\* Representative of the number of indications on a tool steel ring as defined in ASTM E1444.



## 14A Wet Method Fluorescent Magnetic Particles

A highly sensitive magnetic particle powder, 14A fluorescent mag particles are engineered to locate very fine discontinuities in critical parts and applications.

Designed with strong fluorescent properties, 14A magnetic powder is made with a carefully optimised range of particle sizes and shapes to ensure particles move quickly and easily to indications, while minimising background and particle clumping. The result is faster inspections with better reliability and greater confidence.

### Benefits

#### Increases indication detection

- Find smaller, finer indications in critical applications with these highly sensitive, strong ferromagnetic particles.
- Optimised particle size and shape help particles move freely and stick to a wide variety of discontinuities with less particle clumping.

#### Minimises inspection time

- Clear, bright fluorescent indications form quickly due to the highly fluorescent, highly mobile particles.
- Minimal background fluorescence helps indications stand out more so inspectors spend less time examining each part.

#### Improve inspection consistency and reliability

- Maintain magnetic particle system performance over greater periods of time due to the highly durable, easily dispersed 14A particles.
- Reduced particle clumping helps maintain particle concentration in the suspension bath, for dependable inspections.

### Features

- Can be suspended in water or petroleum distillate (oil) vehicle
- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Optimised particle size and shape distribution
- Easily dispersed

### Part Numbers

**059C025:** 1 kg (P)

**059C026:** 5 kg



## MG 410 Wet Method Fluorescent Magnetic Particles

MG 410 is a highly sensitive fluorescent powder concentrate for detecting very fine to fine surface and slightly subsurface discontinuities.

MG 410 can be mixed with either water or oil for wet method inspection of metal parts. Conditioners for water baths - such as WA-1 - should be used for anti-foaming and corrosion inhibiting, as a wetting agent, and to facilitate particle suspension.

### Benefits

- Increases indication detection
- Minimises inspection time
- Improves inspection consistency and reliability

**Part Number**  
**057C036: 1 kg**

### Features

- Provides excellent discontinuity detection
- Can be suspended in water or oil
- Minimal background
- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Optimised particle size distribution
- Durable particles
- Easily dispersed



## MG 601 Wet Method Fluorescent Magnetic Particles

MG 601 is a highly sensitive powder concentrate for detecting very fine to fine surface and slightly subsurface discontinuities.

MG 601 is a top-up for MF-655 WB ink concentrate.

### Benefits

- Increases indication detection
- Minimises inspection time
- Improves inspection consistency and reliability

**Part Number**  
**061C026: 1 kg**

### Features

- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Optimised particle size distribution
- Durable particles
- Easily dispersed





## 14HF

### Oil-based Fluorescent Magnetic Particle Ink

14HF is a ready-to-use fluorescent mag particle ink for locating medium-fine discontinuities in critical parts. 14HF is an ideal choice for high-performance inspections of precision safety-critical or high-stress components, and to extend the life of valuable mag particle equipment. It is widely regarded as the test material of choice for aerospace applications.

#### Benefits

##### Increases indication detection

- Find smaller, finer indications in critical applications with these highly sensitive, strong ferromagnetic particles.
- Optimised particle size and shape help particles move freely and stick to a wide variety of discontinuities with less particle clumping.

##### Minimises inspection time

- Clear, bright fluorescent indications form quickly due to the highly fluorescent, highly mobile particles.
- Minimal background fluorescence helps indications stand out more so inspectors need to spend less time examining each part.

##### Improve inspection consistency and reliability

- Maintain magnetic particle system performance over greater periods of time, thanks to the highly-durable, easily-dispersed 14A particles.

#### Features

- Ready-to-use, low maintenance, oil-based suspension
- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Good dispersion stability
- Protects parts and equipment against corrosion
- Great concentration consistency
- Superior surface wetting
- Even surface coverage for better detection

#### Part Numbers

**008A105:** Aerosol (case of 10) (P)

**058C006:** 5 litres (case of 4) (P)

**058C007:** 25 litres (P)



## 690.1 Oil-based Fluorescent Magnetic Particle Ink

690.1 is a ready-to-use fluorescent ink for locating medium-fine discontinuities in critical parts. It provides clear, bright, fluorescent green indications for excellent inspection quality and accuracy.

### Features

- Ready-to-use
- Low maintenance, oil-based suspension
- High sensitivity
- Excellent fluorescent contrast
- Excellent particle mobility
- Good dispersion stability
- Protects parts and equipment against corrosion
- Great concentration consistency
- Superior surface wetting
- Even surface coverage for better detection

### Part Number

**008A185:** Aerosol (case of 10)



## 622.1 Oil-based Fluorescent Magnetic Concentrate

622.1 is an oil-based fluorescent ink concentrate for locating medium-fine discontinuities in critical parts. It must be suspended in a petroleum-based vehicle (oil), such as Carrier II.

### Features

- Excellent fluorescent contrast
- Excellent particle mobility
- Optimised particle size distribution
- Durable particles
- Easily dispersed

### Part Number

**061C068:** 1 litre (case of 6)



### WB-12

#### Water-based Fluorescent Magnetic Concentrate

WB-12 is a highly-sensitive liquid concentrate for locating fine surface and slightly subsurface discontinuities. The ultra-sensitive particles provide unbeatable inspection quality and accuracy, and the water conditioners provide enhanced corrosion protection.

#### Features

- High sensitivity
- Easy post-testing clean up
- Excellent fluorescent contrast for quick identification
- Excellent particle mobility
- Good dispersion stability
- Great concentration consistency
- Superior surface wetting
- Non-foaming
- Even surface coverage for better detection
- Good corrosion protection

#### Part Number

**058C033:** 1 litre (case of 6) (P)



### MF-655 WB

#### Water-based Fluorescent Magnetic Concentrate

MF-655 WB is a highly-sensitive liquid concentrate for locating fine surface and slightly subsurface discontinuities. The ultra-sensitive particles provide clear, bright, fluorescent green indications under UV light for unbeatable inspection quality and accuracy, and the water conditioners provide enhanced corrosion protection.

#### Features

- High sensitivity
- Easy post-testing clean-up
- Excellent particle mobility
- Good dispersion stability
- Great concentration consistency
- Superior surface wetting
- Non-foaming
- Even surface coverage for better detection
- Enhanced corrosion protection – meets Corrosion Level 0 according to DIN 51360
- Free from silicone, chromates and nitrates
- Non-hazardous

#### Part Numbers

**061C063:** 1 litre (case of 12) (P)

**061C064:** 5 litres (case of 4) (P)



## 1 Grey Coloured Non-fluorescent Magnetic Particles

Use 1 Grey for visible light flaw detection of surface and slightly subsurface discontinuities during dry method mag particle testing. This off-white/grey powder provides sharp colour-contrast contrast on most metal surfaces; it is particularly effective on highly-reflective surfaces.

### Features

- Good particle buildup for quick detection
- Highly refined for optimal particle shape and size combination
- Minimal dust build-up
- Does not require a UV light or darkened inspection area

**Part Number**  
**057C005:** 5 kg



## 8A Red Coloured Non-fluorescent Magnetic Particles

Use 8A Red for visible light flaw detection of surface and slightly subsurface discontinuities during dry method mag particle testing. This red powder provides sharp colour-contrast on most metal surfaces and coloured backgrounds.

### Features

- Good particle buildup for quick detection
- Highly refined for optimal particle shape and size combination
- Minimal dust build-up
- Does not require a UV light or darkened inspection area

**Part Number**  
**057C067:** 5 kg



## 7HF Oil-based Visible Magnetic Particle Suspension

A highly-sensitive oil-based mag particle aerosol for visible wet method magnetic particle testing, 7HF locates fine and medium discontinuities on finished parts.

7HF provides clear, strong indications due to the heavy buildup of the highly magnetic particles. The convenient aerosol packaging is ideal for field testing, spot inspections and places where bulk processing is impractical, and the wide spray pattern makes it easy to cover large areas for faster processing during remote inspections of tubing, piping and large structures.

### Benefits

#### Maximise indication detection

- Find indications of all shapes and sizes due to the smallest particle on the market.
- Heavy buildup of highly magnetic particles around all leakage fields make for high-contrast indications, especially when used with WCP-2 white contrast paint.

#### Convenient to use

- Inspect in all conditions without the need for darkness or UV lights.
- The visible particles come in a convenient, aerosol format that is easy to carry and use in the field.

### Features

- Convenient to use and easy to carry
- Heavy particle buildup
- Great particle mobility
- Protects parts and equipment against corrosion
- Superior surface wetting
- Very small particle size
- Oil-based formula
- Very low toxicity
- Low odour

### Part Number

**008A103:** Aerosol (case of 10) (P)



## WB-27 Water-based Visible Magnetic Particle Suspension

A highly-sensitive water-based liquid concentrate for visible wet method magnetic particle testing, WB-27 locates fine and medium discontinuities on finished parts. It provides clear, strong indications due to the heavy buildup of the highly magnetic particles.

### Features

- Maximise indication detection
- Convenient to use
- Wide application versatility
- Heavy particle buildup
- Great particle mobility
- Protects parts and equipment against corrosion
- Superior surface wetting
- Very small particle size
- Water-based formula
- Very low toxicity
- Low odour

### Part Number

**058C036:** 1 litre bottle (case of 6)



## WCP-2 White Contrast Paint

A bright white, opaque NDT contrast paint, WCP-2 provides a high contrast background to improve detection and sensitivity during visible magnetic particle inspections.

This fast-drying paint aerosol sprays on evenly, without flaking, so when coloured magnetic particles are applied, the indications appear clearly against the opaque white background.

WCP-2 can be used with all types of coloured and visible mag particles, and is suitable for use in both dry method and wet method magnetic particle inspection.

### Benefits

#### Maximise indication detection

- See indications more easily against a bright white, opaque surface, which highlights indications while minimising glare and reflections.

#### Increase inspection speed

- Speed up inspections by applying a clean coat on the first pass, without bubbles or flakes.
- Dries evenly and quickly to create an optimal surface for faster indication formation.

#### Application versatility

- Comes in a convenient aerosol to take it with you wherever you go.
- Can be used with wet or dry method magnetic particles on virtually any part.

### Features

- Bright white colour
- High opacity
- Matte coating
- Provides good background contrast
- Fast drying
- Convenient, ready-to-use formula
- Controlled application
- Strong surface adhesion
- Good hide power
- Low in sulphur and halogens

### Part Numbers

**008A009:** Aerosol (case of 10) (P)

**055C027:** 5 litres (case of 4)



## Carrier II

### NDT-approved Petroleum-based Suspension Vehicle

Carrier II is a high-purity, NDT-approved suspension vehicle developed specifically for wet method magnetic particle testing. This petroleum distillate carrier oil provides excellent particle mobility, good suspension stability and enhanced corrosion protection for reliable, spec-compliant mag particle inspections.

Carrier II contains special additives to minimise background fluorescence when using fluorescent materials.

### Benefits

#### Faster, more reliable inspections

- Increases inspection speed and reliability by quickly wetting the entire test surface.
- Helps 14A particles move quickly to discontinuities.

#### Reduces maintenance

- Magnetic particle baths last longer due to slow evaporation, and are less susceptible to contamination from bacteria or fungus.
- Protects magnetic particles like 14A from wear and tear and keeps them evenly dispersed throughout the bath.

#### Improves operator comfort

- Made with a highly-refined oil to reduce skin irritation and eliminate strong odours for a nicer work environment.

#### More inspection flexibility

- Conforms to all major international magnetic particle testing specifications.
- Prevents corrosion of most alloys and eliminates post-inspection processing for corrosion protection.

#### Safer to use

- Reduces EHS concerns with high flash point and low toxicity.

#### Increases equipment life-span

- Protects magnetic particle equipment from internal rust and corrosion, helping to keep expensive machines running longer with less downtime.

### Features

- Provides excellent particle mobility
- Protects parts and equipment against corrosion
- Provides superior wetting and surface coverage
- Low maintenance oil-based suspension
- Very low toxicity
- High flash point
- Low volatility
- Odourless
- Wide temperature stability

### Part Numbers

**058C024:** 25 litres (P)

**058C028:** 200 litres (P)



## WA-1 Water Conditioner

WA-1 is a general-purpose water-conditioning liquid, designed specifically to enhance surface wetting and magnetic particle dispersion stability in water-based magnetic particle suspensions.

As a liquid, WA-1 is easier to mix into a bath than powder conditioners, especially when mixing into hard water. Its unique blend of wetting agents, corrosion inhibitors and anti-foaming agents eliminates the need for additional water conditioning agents.

### Features

- Great for use with hard water
- Provides excellent surface wetting
- Disperses quickly in water
- Easy to prepare and use

### Part Number

**064C003:** 1 litre bottle (case of 6)



## WA-2 Silicone-free Anti-foam

WA-2 is an excellent general-purpose defoaming additive, formulated to eliminate and prevent foaming in water-based magnetic particle suspensions. WA-2 can be sprinkled onto the surfaces of baths to eliminate foaming; it is not intended to remove fine lather which may occur in recirculating baths where there is excessive air intake in the recirculation pump.

### Features

- Easy to use
- Effective, concentrated formula
- Excellent defoaming characteristics
- Silicone free

### Part Number

**064C006:** 1 litre bottle (case of 6)





# Penetrant Testing

Materials

## Fluorescent Penetrants (Type 1), Water-washable and Water-based

	ZL-15B	ZL-19	ZL-60C	ZL-60D	ZL-67B	ZL-56	ZL-405	ZL-425	ZL-440
Level	0.5	1	2	2	3	4	0.5	1	2
Classification Method(s)	A, C	A, C	A, C	A, C	A, C	A, C	A(W)	A(W)	A(W)
AMS 2644	✓	✓	✓	✓	✓	✓		✓	✓
ASME BPVC Section V	✓	✓	✓	✓	✓	✓		✓	✓
ASTM E165/E165M	✓	✓	✓	✓	✓	✓		✓	✓
ASTM E1417/E1417M	✓	✓	✓	✓	✓	✓		✓	✓
ISO 3452-2		✓**	✓	✓	✓		✓	✓	✓
MIL-STD-2132	✓	✓	✓	✓	✓	✓		✓	✓
Pratt & Whitney PMC		4350	4351-8	4350	4360-10			✓	✓
Rolls Royce RRP 58003 (CSS 232)			✓	✓	✓	✓			
SAFRAN Pr 5000/In 5000			✓						

\*\* water absorbency 6.10, requirement of >5% not met

## Fluorescent Penetrants (Type 1), Post-emulsifiable

	ZL-2C	ZL-27A	ZL-37
Level	2	3	4
Classification Method(s)	B, C, D	B, C, D	B, C, D
AMS 2644	✓	✓	✓
ASME BPVC Section V	✓	✓	✓
ASTM E165/E165M	✓	✓	✓
ASTM E1417/E1417M	✓	✓	✓
ISO 3452-2		✓	✓
MIL-STD-2132	✓	✓	✓
Pratt & Whitney PMC	4352-2	4353-2	4354-2
Rolls Royce RRP 58003 (CSS 232)	✓	✓	✓
SAFRAN Pr 5000/In 5000	✓	✓	

## Visible (Red) Penetrants (Type 2)

	SKL-SP2	SKL-WP2
Removal Type	Solvent-removable	Water-washable
Classification Methods	B, C, D	A, C
AMS 2644	✓	✓
ASME BPVC Section V	✓	✓
ASTM E1417/E1417M	✓	✓
ASTM E165/E165M	✓	✓
ISO 3452-1	✓	✓
ISO 3452-2	✓	✓
MIL-STD-2132	✓	✓
PMUC		✓ (aerosol)

### Developers

	ZP-4D	ZP-5B	ZP-9F	ZP-14A	SKD-S2
<b>Classification</b>	Type 1, Form a	Type 1 & 2, Form c	Type 1, Form d Type 2, Form e	Type 1, Form b	Type 1, Form d Type 2, Form e
<b>AMS 2644</b>	✓	✓	✓	✓	✓
<b>ASME BPVC Section V</b>	✓	✓	✓	✓	✓
<b>ASTM E1417/E1417M</b>	✓	✓	✓	✓	✓
<b>ASTM E165/E165M-18</b>	✓	✓	✓	✓	✓
<b>ISO 3452-1</b>					✓
<b>ISO 3452-2</b>	✓				✓
<b>MIL-STD-2132</b>	✓	✓	✓	✓	✓
<b>PMUC</b>					✓ (aerosol)
<b>Pratt &amp; Whitney PMC</b>	4356		4357-2		
<b>Rolls Royce RRP 58003 (CSS 232)</b>			✓		
<b>SAFRAN Pr 5000/In 5000</b>			✓		✓

### Cleaners and Emulsifiers

	ZE-4B	ZR-10C	SKC-S
<b>Product Type</b>	Emulsifier	Emulsifier	Cleaner
<b>Classification</b>	Method B	Method D	Class 2
<b>AMS 2644</b>	✓	✓	✓
<b>ASME BPVC Section V</b>	✓	✓	✓
<b>ASTM E1417/E1417M</b>	✓	✓	✓
<b>ASTM E165/E165M-18</b>	✓	✓	✓
<b>ISO 3452-1</b>			✓
<b>ISO 3452-2</b>		✓	✓
<b>MIL-STD-2132</b>	✓	✓	✓
<b>PMUC</b>			✓ (aerosol)
<b>Pratt &amp; Whitney PMC</b>		4355-11	4366
<b>Rolls Royce RRP 58003 (CSS 232)</b>		✓	
<b>SAFRAN Pr 5000/In 5000</b>		✓	



### ZL-15B

#### Level ½ (0.5) Water-washable Fluorescent Penetrant

ZL-15B is a low-sensitivity, water-washable penetrant that features excellent washability. It is used to find open surface flaws such as cracks and porosity in seams, laps, cold shuts, laminations on castings, forgings, extrusions, and parts with rough surfaces.

#### Features

- Excellent washability
- Bright indications

#### Part Numbers

**056C061:** 25 litres  
**056C062:** 200 litres

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level ½ - Very Low Sensitivity	Method A Method C	Water-washable	UV light source



### ZL-19

#### Level 1 Water-washable Fluorescent Penetrant

A water-removable Level 1 penetrant, ZL-19 is designed for use on rough or unmachined surfaces, such as castings and forgings, to find larger discontinuities. It is ideal for inspecting automotive and general industrial components such as engine cylinder blocks, powertrain components, rocker arms, pistons, steering knuckles, etc.

#### Benefits

##### Speed up your inspection process

- Quickly apply and remove penetrant due to high surface wetting and easy washability.
- ZL-19 is spray-friendly and will not clog nozzles in automated lines, for less maintenance downtime.

##### Performance value

- Use less penetrant per part, thanks to lower drag out.
- Penetrant can be reused from the dwell cycle, so more of it stays in your tank instead of getting carried away on parts.

#### Features

- Excellent rough surface washability
- Bright, high contrast indications
- Clean rinsing on cast parts
- Good surface wetting
- High flash point

#### Part Numbers

**056C185:** 25 litres  
**056C186:** 200 litres

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 1 - Low Sensitivity	Method A Method C	Water-washable	UV light source



### ZL-60C

#### Level 2 Water-washable Fluorescent Penetrant

Developed for testing rough machined surfaces, ZL-60C is ideal for finding indications in castings, forgings, extrusions and rough surfaces.

This medium-sensitivity penetrant washes off parts quickly and easily, leaving less fluorescent background - even on rough surfaces - for clearer indications and better inspection reliability. Broad specification compliance further increases this penetrant's flexibility.

ZL-60C has excellent alloy compatibility and is safe to use on most engineering and aerospace materials, including aluminium, steel, nickel and titanium.

#### Benefits

##### Improve indication detection

- Indications stand out more, as excess penetrant washes off easily with water.
- Reduces background fluorescence, even on rough surfaces.

##### Maximise application versatility

- Ideal for an extensive variety of part types due to Level 2 sensitivity.
- Universal specification conformance and fast, even surface wetting.

##### Affordable performance

- High surface wetting enables quick application.
- Easily washes off with water.
- Use less penetrant over time because of lower drag-out and slower evaporation.

##### Maximise operator comfort and safety

- Reduces discomfort from strong odours, providing the operator with a more comfortable work environment.

#### Features

- Bright, high-contrast indications
- Good removability
- Excellent rough surface washability
- High flash point
- Very low odour
- Better surface wetting
- Alloy compatibility
- Very low toxicity

#### Part Numbers

**008A008:** Aerosol (case of 10)

**056C205:** 25 litres (P)

**056C206:** 200 litres (P)

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 2 - Medium Sensitivity	Method A Method C	Water-washable	UV light source



## ZL-60D

### Level 2 Water-washable Fluorescent Penetrant

Developed for testing rough machined surfaces, ZL-60D is ideal for finding indications in castings, forgings, extrusions and rough surfaces. This medium-sensitivity penetrant washes off parts quickly and easily, leaving less fluorescent background for clearer indications and better inspection reliability.

ZL-60D is one of the most versatile 'work-horse' penetrants; customers use this penetrant for a wide range of applications on a range of parts to find many different types of defects, including cracks, seams, laps, cold shuts, laminations and porosity. Broad specification compliance further increases this penetrant's flexibility.

ZL-60D has excellent alloy compatibility and is safe to use on most engineering and aerospace materials, including aluminium, steel, nickel and titanium.

### Benefits

#### Improve indication detection

- Indications stand out more, as excess penetrant washes off easily with water.
- Reduces background fluorescence, even on rough surfaces.

#### Maximise application versatility

- Ideal for an extensive variety of part types due to Level 2 sensitivity.
- Universal specification conformance and fast, even surface wetting.

#### Affordable performance

- High surface wetting enables quick application.
- Easily washes off with water.
- Use less penetrant over time because of lower drag-out and slower evaporation.

#### Maximise operator comfort and safety

- Reduces discomfort from strong odours, providing the operator with a more comfortable work environment.

### Features

- Bright, high-contrast indications
- Good removability
- Excellent rough surface washability
- High flash point
- Very low odour
- Better surface wetting
- Alloy compatibility
- Very low toxicity

### Part Numbers

**056C010:** 25 litres (P)

**056C011:** 200 litres (P)

### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 2 - Medium Sensitivity	Method A Method C	Water-washable	UV light source



### ZL-67B

#### Level 3 Water-washable Fluorescent Penetrant

A high-sensitivity Level 3 penetrant, ZL-67B is designed to find smaller, finer indications in safety-critical components common to aerospace and engineering applications. ZL-67B is often used to find flaws in investment castings, jet engine components, and highly machined surfaces.

ZL-67B is specially formulated for strong capillary action, which allows it to penetrate defects quickly and bleed out into developer faster and more completely than other penetrants. This results in stronger, higher contrast indications that are easier for inspectors to identify, even when the defects are very fine.

#### Benefits

##### Improve indication detection

- Clear, bright, indications appear every time due to high UV and thermal stability.
- Higher contrast indications form due to strong capillary action, making them easier to spot.

##### More reliable, consistent inspections

- Maintain penetrant system performance over longer periods of time thanks to low volatility and high water tolerance.

##### Wide range of inspections

- Inspect a wide range of components without fear of corrosion or specification non-conformance.

#### Features

- Bright, high-contrast indications
- High flash point
- Wide range of application methods
- Controlled washability
- Low odour
- Very low toxicity
- Alloy compatibility
- Optimised capillary action

#### Part Numbers

**056C034:** 25 litres (P)

**056C035:** 200 litres (P)

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 3 - High Sensitivity	Method A Method C	Water-washable	UV light source



### ZL-56

#### Level 4 Water-washable Fluorescent Penetrant

An ultra-high sensitivity penetrant (Level 4), ZL-56 is designed for non-porous and highly machined components. It is safe for use on alloys in engineering and aerospace use, including aluminium, steel, nickel, and titanium.

#### Benefits

- Bright, high-contrast indications
- Ideal for critical part inspection
- Ultra-high sensitivity for aerospace inspections

#### Part Numbers

**056C201:** 25 litres

**056C202:** 200 litres

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 4 - Ultra-High Sensitivity	Method A Method C	Water-washable	UV light source





### ZL-400 series Water-based Fluorescent Penetrants

The ZL-400 series is a range of water-based, water-washable fluorescent penetrants used for finding indications in castings, forgings, extrusions and other materials with rough surfaces, commonly found in automotive part applications.

These penetrants offer an ideal solution when waste water produced during the inspection process is a concern for the operation. They are water-based and contain no petroleum distillates, which may allow the rinse water to be disposed of directly into the sewage system depending on local regulations.

ZL-400 series penetrants feature excellent rinse removability and are self-developing, which means that separate developer may not be necessary (depending on the application). They are designed to be environmentally sensitive while meeting EN ISO 3452-2, and can be used in place of any conventional water-washable fluorescent penetrant.

#### Benefits

##### Reduce environmental footprint and waste-water pollutants

- Reduce water treatment costs and discharge waste process water directly into the sewage system (depending on local regulations) due to minimal water-based contaminants.
- Meet or exceed local discharge regulations with low Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) levels.
- Support a healthy environment with water-based penetrants that have minimal occupational health and safety impacts.

##### Reliably speed up inspection and wash processes

- Identify bright indications with superior sensitivity and low fluorescent background interference.
- Increase throughput and reduce costs by eliminating the developer step of inspection (depending on procedures and requirements).
- Rapid rinse and post-inspection washing of parts due to excellent washability properties.

#### Features

- Available in three sensitivity levels: very low (0.5), low (1) and medium (2)
- Hydrocarbon-free
- Biodegradable
- Excellent water wash removability

#### Part Numbers

- 056C212:** ZL-405, 200 litres
- 056C214:** ZL-405, 1000 litres
- 056C217:** ZL-425, 25 litres
- 056C218:** ZL-425, 200 litres
- 056C219:** ZL-425, 1000 litres
- 056C229:** ZL-440, 25 litres
- 056C230:** ZL-440, 200 litres
- 056C231:** ZL-440, 1000 litres

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Method	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	ZL-405: Level ½ - Very Low ZL-425: Level 1 - Low ZL-440: Level 2 - Medium	Method A	Water-washable (water-based)	UV light source



### ZL-2C

#### Level 2 Post-emulsifiable Fluorescent Penetrant

A medium sensitivity penetrant (Level 2), ZL-2C is designed to be removed from the part surface by emulsifiers or solvent. ZL-2C has a high flash point, and is ideal for use in open dip tanks.

#### Benefits

- Improve indication detection
- Maximise inspection process control
- Wide range of inspections
- Maximise operator comfort and safety

#### Part Numbers

**056C079:** 25 litres  
**056C080:** 200 litres

#### Features

- Bright indications
- Minimal background fluorescence
- High flash point

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 2 - Medium Sensitivity	Methods B, C, D	Post-emulsifiable	UV light source



### ZL-27A

#### Level 3 Post-emulsifiable Fluorescent Penetrant

ZL-27A is a Level 3, high-sensitivity penetrant designed for inspections which require maximum process control and reliability, such as safety-critical aerospace testing.

ZL-27A has a high flash point and provides long tank life when used in open dip tanks. It can also be applied in a variety of other ways, including electrostatic spray.

#### Benefits

##### Improve indication detection

- Clear, bright, indications are easier to detect due to high UV and thermal stability – even for small flaws and discontinuities.

##### Wide range of inspections

- Inspect a wide range of components without fear of corrosion or specification non-conformance.
- Meets all major industry and NDT specification requirements, including AMS 2644 and ISO 3452.

##### Maximise operator comfort and safety

- Reduces discomfort from strong odours, providing the operator with a more comfortable work environment.

#### Features

- Bright indications
- Resists over-washing and over-removal
- High flash point
- Wide range of application methods
- Low odour
- Very low toxicity
- Alloy compatibility

#### Part Numbers

**008A002:** Aerosol (case of 10)

**066C017:** 25 litres (P)

**066C016:** 200 litres (P)

#### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 3 - High Sensitivity	Methods B, C, D	Post-emulsifiable	UV light source



## ZL-37 Level 4 Post-emulsifiable Fluorescent Penetrant

Essential for critical component applications, ultra-high sensitivity ZL-37 post-emulsifiable penetrant is designed for detecting fine, tight discontinuities in safety-critical components, such as titanium turbine components, and in high-stress parts, such as investment castings.

### Benefits

#### Improve indication detection in the most critical applications

- Creates the clearest, brightest indications for the finest flaws due to very strong UV and thermal stability.
- Highest fluorescent brightness of any Level 4 penetrant for high-contrast indications that are easy for inspectors to see – even when the indications are very small.
- Indications stand out more since background fluorescence is minimised; emulsifiers only remove surface penetrant without the risk of over-washing.

#### Maximise penetrant inspection process control

- Prevents over-washing since ZL-37 cannot be removed with water (unless combined with an emulsifier).
- Post emulsifiable penetrant system is less susceptible to human error since only surface penetrant is removed in the final rinse stage.

#### Wide range of inspections

- Inspect a wide range of high-value components without fear of corrosion or specification non-conformance.
- Meets all major industry and NDT specification requirements.

#### Maximise operator comfort and safety

- Reduces discomfort from strong odours, providing the operator with a more comfortable work environment.

### Features

- Bright, high-contrast indications
- Resists over-washing and over-removal
- High flash point
- Wide range of application methods
- Low odour
- Very low toxicity
- Alloy compatibility

### Part Numbers

**066C020:** 25 litres (P)

**066C019:** 200 litres (P)

### Product Properties

NDT Type	Penetrant Type	Sensitivity	Penetrant Methods	Removal Type	Required Equipment
Fluorescent Penetrant Testing	Type 1	Level 4 - Ultra-High Sensitivity	Methods B, C, D	Post-emulsifiable	UV light source



### SKL-SP2

#### Solvent-removable Visible Dye Penetrant

Developed for preventative maintenance, control checks and weld inspection, SKL-SP2 is a rich, vivid red dye penetrant for Type 2 penetrant testing in visible white light. This colour-contrast penetrant meets all NDT specifics for dye penetrant testing and can be used on a wide variety of metals, including non-ferrous and ferrous, and on non-porous ceramics.

SKL-SP2 is designed to provide complete coverage with minimal product for an optimal balance of reliability, performance and value. It reliably locates surface flaws and discontinuities with a simple three-step process (cleaner, developer, penetrant) that is ideal for basic industrial NDT.

#### Benefits

##### Fastest inspection processing

- Reliable, simple 3-step process is a convenient and easy-to-use solution for preventative maintenance and control checks.
- Quickly and completely covers the entire test surface due to high surface wetting.
- Remove excess penetrant without water to eliminate the need to dry parts before applying developer.

##### Reliable and convenient to use

- Easy to carry and use in the field with convenient aerosol cans, which are carefully designed for consistent, even coverage and maximum test area coverage.
- Use in all conditions without the need for darkness or UV lights.

##### Maximum indication detection

- Produces strong indications due to its bright, vibrant red colour, especially when used with SKD-S2 solvent-based developer.

##### Wide application versatility

- Inspect a wide range of components without fear of corrosion or specification non-conformance.
- Meets AMS 2644 and is NDT-approved for professional industrial applications.

#### Features

- Outstanding penetrating characteristics
- Vivid, high-contrast red colour
- Superior flaw resolution
- Excellent reliability
- Wide range of applications
- Good surface wetting
- Optimised capillary action
- Works in visible light
- Very low toxicity
- Low odour

#### Part Numbers

**008A016:** Aerosol (case of 10) (P)

**055C076:** 5 litres (case of 4)

#### Product Properties

NDT Type	Penetrant Type	Penetrant Methods	Removal Type
Visible Penetrant Testing	Type 2	Method C	Solvent-removable



## SKL-WP2

### Water-washable Visible Dye Penetrant

SKL-WP2 is a water-removable red dye penetrant for Type 2 penetrant testing in visible white light. It is designed for large surface areas and rough surfaces where excess penetrant is difficult to remove with a solvent-removable cleaner or emulsifier.

SKL-WP2 washes off parts with ease, leaving less background for clearer indications, even on rough surfaces. The quick rinsing reduces water usage in the inspection process, and the rinse water is easily treatable for simple disposal, for a reliable NDT process with less cost per part.

### Benefits

#### Reliable and convenient to use

- Easy to carry and use in the field with the convenient aerosol cans which are carefully designed for consistent, even coverage.
- Use in all conditions without the need for darkness or UV lights.
- Quickly and completely covers the entire test surface due to high surface wetting.

#### Maximum indication detection

- Produces strong, vibrant indications thanks to the bright, vibrant red colour, especially when used with a developer.

#### Wide application versatility

- Meets AMS 2644 and is NDT-approved for professional industrial applications.
- Reduces processing cost per part due to excellent washability, which is especially useful for large parts and cast components.

### Features

- Outstanding penetrating characteristics
- Easy water-wash removal
- Vivid high-contrast colour
- Superior flaw resolution
- Excellent reliability
- Wide range of applications
- Can be used on ferrous and non-ferrous materials
- Excellent controlled washability over a wide temperature range and variable dwell times
- Aerosol PMUC approved

### Part Numbers

**008A163:** Aerosol (case of 10)

**055C071:** 5 litres (case of 4) (P)

**055C072:** 25 litres

**055C073:** 200 litres (P)

### Product Properties

NDT Type	Penetrant Type	Penetrant Methods	Removal Type
Visible Penetrant Testing	Type 2	Methods A and C	Water-washable



## SKD-S2 Solvent-based Developer

A bright white, non-aqueous developer, SKD-S2 creates an opaque white background for high-contrast penetrant testing. It quickly draws penetrant out to create stronger, clearer indications for better inspection reliability and sensitivity.

Noted for its compatibility with special alloys, such as stainless steel, aluminium, magnesium and titanium, SKD-S2 is non-halogenated and can be used with Type 1 and Type 2 penetrants.

SKD-S2 helps speed up the inspection process by going on easily, drying quickly, promoting faster indication formation and minimising post-inspection cleaning. It is ideal for machine shops, weld testing and field applications.

### Benefits

#### Increases indication visibility

- Improves indication detection by creating an optimal surface for penetrant indication formation.
- Bright white, opaque coverage blocks all underlying surface color and quickly draws penetrant to the surface for stronger, clearer indications.

#### Application versatility

- Can be used with a variety of Type 1 and Type 2 penetrants in many different situations without measuring or diluting.

#### Faster cleaning

- Reduces inspection process time by minimising post-inspection cleaning.
- Easy-to-apply formula goes on cleanly, dries quickly and promotes faster indication formation to shave time off each step of the inspection process.

### Features

- Fast drying
- Convenient, ready-to-use formula
- Easy to apply
- Very low toxicity
- Easy to clean
- Maximum sensitivity
- Low in sulphur and halogens
- Contains no chlorinated hydrocarbons
- Suitable for use at low temperatures
- ISO 3452 conformance
- Aerosol PMUC approved

### Part Numbers

**008A007:** Aerosol (case of 10) (P)

**055C014:** 5 litres (case of 4) (P)

### Product Properties

NDT Type	Penetrant Type	Developer Form
Fluorescent Penetrant Testing, Visible Penetrant Testing	Type 1, Type 2	Form d, Form e



## ZP-9F Solvent-based Developer

ZP-9F is a non-aqueous developer made of organic particles. It produces a fast-drying, opaque white coating and contrasting background for fluorescent and visible penetrant inspections.

ZP-9F is used extensively to test metalwork in the automotive, aircraft, marine, construction, and maintenance sectors. It is ideal for testing welds, castings and forgings on pressure vessels, petroleum pipelines, power plant components, off-highway equipment and farm machinery.

### Benefits

#### Increases indication visibility

- Improves detection by creating an optimal surface for penetrant indications to form.
- Bright white, opaque coverage blocks all underlying surface color and quickly draws penetrant to the surface for stronger, clearer indications.

#### Application versatility

- Can be used with a variety of Type 1 and Type 2 penetrants in many different situations without measuring or diluting.

#### Faster cleaning

- Reduces inspection process time by minimising post-inspection cleaning.

### Features

- Fast drying
- Convenient, ready-to-use formula
- Easy to apply
- Very low toxicity
- Easy to clean

### Part Number

**008A010:** Aerosol (case of 10)

### Product Properties

NDT Type	Penetrant Type	Developer Type
Fluorescent Penetrant Testing, Visible Penetrant Testing	Type 1, Type 2	Form d, Form e



## ZP-4D Dry Powder Developer

ZP-4D is a dry powder, Form a developer that is ideal for highly sensitive fluorescent penetrant processes. It forms a thin film on parts that enhances the visibility of ultra-fine discontinuities.

### Features

- Even, thin developer coverage
- Non-combustible dust

### Part Numbers

**055C084:** 5 kg (P)

### Product Properties

NDT Type	Penetrant Type	Developer Type
Fluorescent Penetrant Testing	Type 1	Form a





## ZP-5B Water-suspendible Developer

ZP-5B white powder developer is mixed with water for use and disperses quickly to form an opaque white suspension. ZP-5B can be used to enhance fluorescent indications during Type 1 testing or used at higher concentrations to form an opaque white background for Type 2 penetrant inspections.

### Features

- Higher concentration of powder gives a more opaque coating
- Good colour contrast with red penetrants
- Non-flammable

### Part Number

**055C002:** 5 kg

### Product Properties

NDT Type	Penetrant Type	Developer Type
Fluorescent Penetrant Testing, Visible Penetrant Testing	Type 1, Type 2	Form c



## ZP-14A Water-soluble Developer

ZP-14A is free-flowing white powder which dissolves in water to form a developer solution. It produces a uniform white porous coating when dry which is easily removed with a water spray in post-inspection cleaning.

### Features

- Bright, highly-defined indications
- Can be cleaned off with water
- Even, uniform coverage
- Chromate and nitrite free

### Part Number

**055C010:** 5 kg

### Product Properties

NDT Type	Penetrant Type	Developer Type
Fluorescent Penetrant Testing	Type 1	Form b



## ZR-10C Hydrophilic Emulsifier

Designed to remove excess surface penetrant, ZR-10C minimises surface background during Method D fluorescent penetrant testing, while protecting indication integrity in critical component inspections. It provides long tank life and excellent solution consistency for dependable, long-lasting performance in a variety of applications.

ZR-10C reduces fluorescent background on rough surfaces and minimises penetrant bleed-out from hollow parts. It works with Magnaflux penetrants ZL-2C, ZL-27A and ZL-37 for verified system reliability.

### Benefits

#### Maximise penetrant inspection process control

- Post-emulsifiable system is less susceptible to human error since ZR-10C only works with rinse water to remove excess surface penetrant.
- Maintains solution consistency for dependable performance with minimal agitation.

### Features

- Reduces bleed-out on hollow parts
- Reliable results
- Usable in a wide range of concentrations
- Excellent control over removability
- Biodegradable

### Part Numbers

**065C002:** 25 litres (P)

**065C003:** 200 litres (P)



## ZE-4B Lipophilic Emulsifier

A Method B lipophilic emulsifier, ZE-4B diffuses into the penetrant to clear it from the surface of the part being inspected. It is rinsed from the part by water, carrying penetrant off the part surface. ZE-4B is designed to be used with post-emulsifiable penetrants ZL-2C, ZL-27A and ZL-37.

### Features

- Low volatility
- High flash point
- Can be used in open immersion tanks
- Fast acting for quick processing times
- Supplied ready to use
- Biodegradable
- Safe to use on all aerospace alloys, e.g. aluminium, steel, nickel, titanium

### Part Number

**065C025:** 25 litres



## SKC-S NDT Cleaner and Remover

SKC-S is an NDT-approved solvent cleaner/remover for pre-cleaning before testing, and for removing excess surface penetrant from an inspection area before applying developer.

This non-halogenated remover can be used on a wide range of substrates to remove oils, greases and other contaminants. SKC-S dries quickly without leaving a residue, and meets the low-residue requirements for NDT and aerospace penetrant testing.

### Benefits

#### Maximise range of inspections

- Inspect a wide range of components without worry.
- Conforms to AMS 2644 Class 2, ASME BPVC and all major aerospace requirements.

#### Application versatility

- Use a single cleaner throughout the entire penetrant testing process.
- Comes in both bulk and aerosol forms, or as part of a kit for convenience.

#### Minimise risk of missing a flaw

- Inspect reliably by cleaning only the surface without flushing penetrant out of discontinuities.
- Dries quickly without leaving residue to prevent false indications.

### Features

- Fast drying
- Leaves no residue
- Suitable for use at low temperatures
- Alloy compatibility
- Doesn't over clean
- Non-halogenated
- Aerosol PMUC approved

### Part Numbers

**008A100:** Aerosol (case of 10) (P)

**054C007:** 5 litres (case of 4) (P)

**054C008:** 25 litres



### SK-3 Kit

#### Solvent-removable Visible Penetrant Testing Kit

The SK-3 Kit is a convenient collection of Magnaflux dye penetrant testing consumable products in easy-to-use aerosol form for Type 2 penetrant non-destructive testing. Each penetrant testing kit comes with SKL-SP2 solvent removable penetrant, SKD-S2 solvent-based developer and SKC-S remover.

SK-3 Kits are portable and great for job sites or field inspections to check welds, forgings, pressure vessels, castings, general metal work and many other applications.

#### Features

- Pre-packaged set of products provides everything you need for dye penetrant testing.
- Vivid, high-contrast color
- Superior flaw resolution
- Excellent reliability

#### Part Number

**008A038:** SK-3 Kit

- 3 x Aerosol SKC-S Cleaner
- 2 x Aerosol SKL-SP2 Penetrant
- 3 x Aerosol SKD-S2 Developer
- Soft carry case

#### Product Properties

NDT Type	Penetrant Type	Penetrant Methods	Removal Type
Visible Penetrant Testing	Type 2	Method C	Solvent-removable



# Aqueous Cleaner



## AQ-710 Alkaline Aqueous Cleaner

AQ-710 is a high performance cleaner designed specifically for non-destructive testing processes. The alkaline aqueous cleaner is ideal for a wide range of materials and a variety of contaminants. A low-foaming all-purpose glycol-free alkaline cleaning solution with a unique blend of surfactants and corrosion inhibitors, it meets or exceeds the specifications for most aerospace NDT applications for aqueous and alkaline cleaners.

AQ-710 is designed for immersion, ultrasonic and spray applications, and is safe for use on most metals. It is non-aggressive towards aluminum, magnesium and titanium alloys, and can be used in concentrations up to 25 percent. It is moderately alkaline with low foaming levels for use in spray applications, contains inhibitors to protect metal surfaces from corrosion and it is also tolerant of hard water.

### Features

- Extensive materials compatibility
- Cost efficient concentrate formulation
- Outstanding cleaning performance on a broad spectrum of soils
- Alkaline cleaner
- Low foam level
- Rust inhibitors

### Part Numbers

**062C003:** 25 litres  
**062C004:** 200 litres



# Ultrasonic Couplants





## Sono 600 High Temperature Couplant

Sono 600 is a versatile, multi-purpose couplant with a wide operating temperature range for flaw detection, thickness gauging and acoustic emission testing in petrochemical, power generation, automotive, aerospace, food processing equipment and pharmaceutical manufacturing.

Recommended temperature range is 0 to 700°F / -18 to 371°C.

### Features

- Economical high-temperature couplant
- Excellent corrosion inhibition
- Very slow drying for extended inspection time or long-term coupling
- Non-toxic, biodegradable formula

### Part Number

**45-901UK:** 3.78 litres



## Ultragel II General Purpose Couplant

Ultragel® II is an industry-leading, high-performance, ultrasonic couplant for flaw detection and sizing, thickness gauging, flow metering and acoustic emission testing.

Ultragel II is widely recognized as the industry's most dependable and popular ultrasonic couplant. This general-purpose medium viscosity gel is known for its outstanding performance, excellent corrosion protection, thixotropic properties and comprehensive range of specifications and approvals.

Ultragel II is Pratt & Whitney approved and meets nuclear grade specifications for halogen and sulfur levels.

### Features

- Clings well to vertical and overhead surfaces
- Fills in depressions in rough surfaces
- Highest corrosion protection
- Slow drying for longer inspection time
- Provides good transducer lubrication
- Increased acoustic impedance reduces surface noise
- Wide range of specifications and approvals
- Thixotropic gel
- Great surface wetting
- Nuclear grade
- Aerospace approvals
- Hydrogen embrittlement testing

### Part Numbers

**25-901:** 3.78 litres

**25-905:** 18.9 litres





# Magnetic Particle Testing

Equipment



## D-2060 CE Magnetic Wet Benches with 3-Phase FWDC and Optional AC & HWDC Capability

The D-2060 is one of our most powerful wet magnetic benches, providing 6,000 amps of 3-phase FWDC and an optional 2,500 amps of AC or 6,000 amps of AC & HWDC current. The two outputs are independently adjustable to set each magnetic field, circular or longitudinal, at distinct levels.

This magnetic particle inspection bench provides magnetisation to find sub-surface (FWDC) and surface (AC option only) defects with clear indications while using minimal power.

### Benefits

#### Faster, consistent inspections

- Operators can inspect parts more quickly with an automatic double mag shot, adjustable mag shot timer, and machine repeatability.
- Reduce processing time with operator-enabled automatic double-mag shot and adjustable mag shot time, accessible through a user-friendly operator interface.
- Process more parts with up to 300+ shots per hour at 5% duty cycle of 0.5 seconds on, 10 seconds off, at the maximum output.

#### Streamline sourcing, service, and maintenance

- Simplify your quality procedures with integrated solutions from Magnaflux. Our team and channel partners can help select the correct solution for chemicals, equipment, UV lamps and accessories that comply with industry standards.

#### Durability and support through a global network

- Confidence that the equipment will survive your demanding environment, backed by an industry leading warranty, and supported by a global network.
- Develop techniques and train for your inspection processes on Magnaflux equipment that is available globally.

#### Features

- Meets aerospace specifications
- Faster part processing
- Real-world dependability for minimal downtime
- Easy to use and maintain
- Siemens PLC provides reliable controls and off-the-shelf replacements
- Simple touch-screen operator interface
- External pump system for particle bath agitation, circulation and application
- Integrated ultra-low frequency, reversing, step-down DC demagnetisation with 1-touch control

#### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.

## MAG 40 Series Magnetic Wet Benches with AC and HWDC Magnetisation

The MAG 40 test benches are self-contained, low-cost units that detect and locate fatigue cracks and processing defects during wet method magnetic particle inspection. These medium-duty machines are ideal for machine shops, tool rooms, foundries and similar plants where low-volume testing of ferrous components is required.

### Features

- Can inspect components up to 1 m in length.
- Thyristor controlled
- 2,500 Amp output
- AC and HWDC
- MAG 40 HFD model includes DC flux 20,000 ampere turn
- Stainless steel tank

### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.



## MAG 50 Series Magnetic Wet Benches with AC and HWDC Magnetisation

The MAG 50 series of test bench units are heavy-duty machines designed for the inspection of ferrous components. There are numerous options in both ranges and all units come with separate power packs and stainless steel tanks.

### Features

- Can inspect components up to 2.5 m in length
- 3,000 or 5,000 Amp output
- AC and HWDC
- Stainless steel tank

### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.



## Ferroflux 400 Magnetic Wet Bench

Our Ferroflux benches detect longitudinal and transversal cracks in two separate sequential steps. The standard systems are suitable for testing work pieces with clamping lengths of 400 mm up to a maximum of 3615 mm; we can also supply special clamping lengths if you need them.

Ferroflux benches are supplied with external power packs to feed the magnetisation circuits and, if required, can be equipped with darkening cabins, an exhaust fan and a light fixture.

### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.



## Ferroflux Series Magnetic Wet Benches

Ferroflux crack detection units are equipped with external power packs to feed the magnetisation circuits. The detection of longitudinal and transversal cracks is carried out in two separate sequential steps.

The standard systems are suitable to test parts from 1,150 mm length (Ferroflux 1000) up to a maximum of 3550 mm (Ferroflux 3500). Special clamping lengths are available on request.

### Part Numbers

**041100:** Ferroflux 1000

**041150:** Ferroflux 1500

**041250:** Ferroflux 2500

**041350:** Ferroflux 3500



## Universal WE

### Multi-Directional Magnetic Wet Bench

The Universal WE is a multi-direction magnetic wet bench designed to completely magnetise the surface of parts up to 90 cm long in a single shot. This can potentially cut inspection time in half because the part can be inspected in both directions at once.

The Universal WE offers 200 - 2,000 Amps AC for contact shots and 1,500 - 15,000 Amp-turns AC for coil shots. The two outputs are independently adjustable to set each magnetic field, circular or longitudinal.

#### Benefits

##### Faster part processing

- Double your inspection speed by magnetising parts in a single shot.
- Fully inspect longer parts, up to 90 cm, without requiring an auxiliary coil.
- Speed up part processing with a large automated surface shower.

##### Advanced process control

- Maximise consistency between tests with 1,000 customer-programmable techniques.
- Prevent accidental and unauthorised alterations with multiple user profiles and varying tiers of control for a range of operator experience levels.
- Receive visual alerts when produced amperage is 90% or less than set amperage.

##### Real-world dependability for minimal downtime

- Siemens PLC provides reliable controls and off-the-shelf replacements.

- Minimise downtime with standard spare parts package.

##### Easy to use and maintain

- Make quick operational adjustments using the simple, user-friendly operator interface with touch-screen controls.
- External pump system provides fast access for easy cleaning and service.

##### Features

- 60% duty cycle at 50% power output with a max of 6 seconds on and 4 seconds off
- Large surface shower to bathe entire part automatically with mag shot
- Advanced touch-screen operator interface

##### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.



## Universal SW Magnetic Wet Bench

The Universal SW magnetic wet benches are equipped with two AC circuits, allowing the detection of longitudinal and transversal cracks at the same time. Universal SW benches are suitable for testing work pieces with clamping lengths from 1200 mm to 3200 mm, and a maximum weight of 300 kg (standard) or 1000 kg (option).

### Features

- pneumatic clamping of the test pieces
- infinitely variable clamping length adjustment
- manually movable magnetisation coil
- stainless steel test liquid drip tray and tank
- separate dust-proof switch cabinet with display and operating elements

- command box with control keys and emergency-off at the front of the test bench
- demagnetisation for both magnetisation circuits

### Ordering Information

**Magnaflux magnetic particle equipment is built to order:** Please contact us for a detailed quote.



## Ferrottest Mobile Power Packs

The high-current Ferrottest mobile power packs provide maximum AC magnetising currents from 1000 Amps up to 7100 Amps. The Ferrottest GWH mobile power packs provide both AC and HWDC; they generate test currents from 1050 Amps to 7100 Amps.

### Features

- **Constant current magnetisation**  
Constant current is initiated upon operating a foot or hand switch. An electronic system regulates the test current from 0 to maximum in approx. 200 ms, which avoids unnecessary peak loading of the mains supply.
- **Impulse magnetisation**  
When the impulse operation is selected, a sequence of single impulses is produced according to a factory-set on/off duty cycle of (1 s/1 s).

- **Demagnetisation**

After selecting the demagnetisation setting, the test current is regulated from the set maximum value to 0 in approximately 600 ms.

### Part Numbers

- 061140:** Ferrottest 10
- 061280:** Ferrottest 20
- 062150:** Ferrottest GWH 15
- 062400:** Ferrottest GWH 40
- 062600:** Ferrottest GWH 60
- 062900:** Ferrottest GWH 100



## Isotest

### Mobile Power Packs

Isotest mobile power packs are designed for constant or impulse current magnetisation and are suitable for magnetising parts either with AC or FWDC. They are ideal for use in harsh conditions where the highest reliability is essential, for example, the automotive and aeronautical industries, foundries, forging shops, steel production and processing.

### Features

- Constant current control and optional current flow detection system for maximum testing safety
- Multi-stage, low-frequency demagnetisation system

### Part Numbers

- 065610:** Isotest 60 E for test currents up to 6,000 A DC
- 065910:** Isotest 100 E for test currents up to 10,000 A DC



## Chain Inspection System

### Mobile Crack Detection Unit

It is important to periodically check chain links for surface cracks using magnetic particle inspection. The compact design of our mobile chain inspection system is ideal for use on-site, and it can also be used as a stationary system.

### Features

- Foot switch to control the inspection current
- Closed magnetising coil Ø 350 mm (working height of the coil approx. 840 mm)
- Test liquid drip tray with test liquid pump
- High-current cables
- Fixed on a movable trolley
- Two lockable guides and two fixed rollers
- Test liquid pump complies with IP 64
- Spraying device including valve for regulation
- Multiple socket (switchable) for UV light and pump
- Drip tray with coil - easy to disassemble and usable as a stationary system

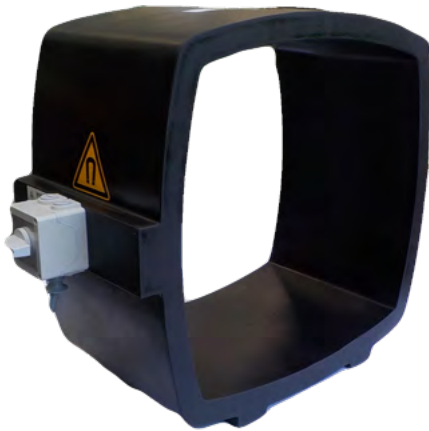
### Part Numbers

- 094105:** Chain Inspection System with Ferrotest 10
- 094106:** Chain Inspection System with Ferrotest GWH 15

## Demagnetisation Units

Magnaflux demagnetisation units remove any residual magnetism remaining after conducting magnetic particle inspection. Demagnetisation of ferromagnetic parts and materials is often a requisite to final finishing, or to prepare an item for its ultimate use.

Industrial demagnetising is not an easy task without an effective demagnetising system; it is especially difficult when the magnetic field must be reduced to a very low level. Compact in size and ruggedly built, Magnaflux demagnetising equipment offers a fast and efficient method for demagnetising a broad variety of part types and sizes.



### ETT Series

#### Tabletop Demagnetisation Tunnel

The compact demagnetisation tunnels of the ETT series are designed for tabletop use.

#### Features

- conforms to IEC Protection Class II (double insulated)
- saturation depth of the 50 Hz alternating field is approx. 2mm
- current is activated by an ON/OFF switch
- available in standard and reinforced models

#### Part Numbers

**101155:** ETT 150 AC 400V

**101255:** ETT 250 AC 400V

**101555:** ETT 550 AC 400V



### ETW Series

#### Demagnetisation Unit with Trolley

Our ETW units are ideal for demagnetising large, heavy parts which cannot be easily passed through a spool. You place the part onto the trolley and manually push it through the tunnel, where the demagnetisation spools generate a strong magnetic field.

#### Features

- loading aides, distancers and safety grids available on request
- available in standard and reinforced models

#### Part Numbers

**102355:** ETW 350 AC 400V

**102555:** ETW 550 AC 400V





# Magnetic Particle Testing

Yokes



## Benefits

### Increase inspector productivity and reduce physical fatigue

- Less arm strain, wrist fatigue and physical stress helps operators get more done.
- Easily position the yoke in any direction with lightweight, heavy-duty and powerful electronics components.

### Keep tools in service with a design that's built to last

- Cords and triggers can be easily replaced, so work doesn't stop and tools aren't scrapped due to accidental damage.
- Prevent dust and dangerous water damage with an IP54 o-ring sealed housing.

## Y-2

### AC Electromagnetic Ergonomic Yoke

The Y-2 is an AC electromagnetic yoke, ergonomically designed to improve productivity and reduce operator arm and wrist fatigue. The yoke generates a strong AC magnetic field for the detection of surface indications during magnetic particle testing.

Lightweight with an ergonomic grip and trigger, the Y-2 is designed for the rugged demands of field inspection. Featuring a field swappable cord and isolated trigger switch; the Y-2 is easily serviceable because a severed cord should not stop a job from getting done.

## Features

- Ergonomic, lightweight design
- IP54 sealed housing resists dust and water
- Field-swappable power cord
- Isolated, replaceable trigger switch
- Steel shields for contact (pole) protection
- Exceeds ASTM lifting specifications
- Supplied with convenient carrying case
- Optional LED yoke light lasts longer and is more intense compared to traditional bulbs

## Part Numbers

**628555:** 220-230V, EU Type F electrical plug with UK Type G adapter (P)

**630445:** 110-115V, cord only, without electrical plug (P)



## Y6 AC Electromagnetic Yoke

The Y6 is a durable, lightweight, encapsulated AC yoke designed for reliable one-person inspection. It is easy to use single-handed and its articulated legs to contour to any part shape, allowing you to inspect components of different sizes and shapes.

Featuring sealed chemical-resistant construction and a robust strain-relieved power cord for field use, the Y6 is ideal for inspection of welds and other remote testing.

### Part Number

**630405:** 230V, EU Type F electrical plug with UK type G adapter (P)

### Features

- Sealed, durable construction
- Chemical and abrasion resistant
- Articulated, double-jointed legs
- Demagnetising capability
- Exceeds ASTM lifting specifications



## Y7 AC/DC Electromagnetic Yoke

The Y-7 is a durable, high-strength AC/DC magnetic yoke designed to detect surface and sub-surface indications in the most rugged applications.

Featuring sealed chemical-resistant construction, articulating legs to contour to any part shape and robust strain-relieved cord for field use, the Y-7 is ideal for inspection of welds and other remote testing.

Solid-state controls allow the operator to use AC magnetic fields for surface indications or DC magnetic fields for sub-surface indications to meet all inspection needs.

### Part Numbers

**625643:** Y-7, 115V

**625644:** Y-7, 230V

**NOTE:** The Y-7 yoke does **not** carry a CE mark and is **not** labelled to EU standards.

### Features

- Sealed, durable construction
- Chemical and abrasion resistant
- AC and DC operation options
- Exceeds ASTM lifting specifications
- Individual serial number for each yoke



## Y-8 Kit

### DC Battery-Powered Electromagnetic Yoke

The Y-8 is a battery-powered, DC electromagnetic yoke designed to stand up to the most rugged applications. True portability for inspection in the field and remote locations is achieved through a compact battery pack which provides a full 8-hour shift of inspection power.

#### Features

- Chemical and abrasion resistant
- Exceeds ASTM lifting specifications
- Articulated, double-jointed legs
- Sealed, durable, lightweight construction
- True portability with compact battery pack
- Solid state controls for maximum safety and reliability

#### Part Number

**630550:** Y-8 yoke with:

- Multi Adapter Plug
- Battery
- Battery charger (100/240V; 50/60 Hz)



## Yoke Light

### Add-on Light for Y-2 Yokes

An add-on accessory for the Y-2 AC yoke, the yoke light provides focused, visible light to the inspection area when the yoke is activated. The strong light is designed to enhance visible detection of flaws and discontinuities under low conditions and in difficult-to-reach areas not accessible to a secondary light source.

#### Features

- No wiring connection necessary
- Automatically activated when yoke is energised
- Snap-on assembly for fast, easy installation - no tools required

#### Part Number

**628840:** Y-2 Yoke Light



## Yoke Test Weight

### Use With AC Electromagnetic Yokes

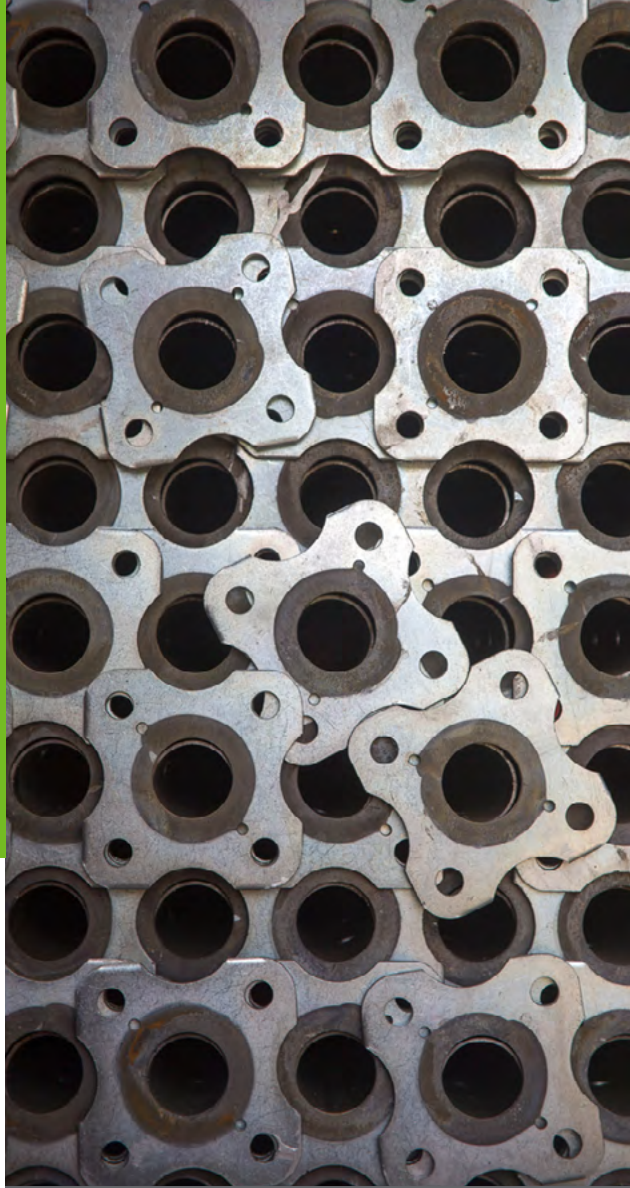
The yoke test weight is a certified weight designed specifically for AC magnetic yokes to confirm the yoke has sufficient strength to perform magnetic particle inspections. Each yoke test weight has a built-in leg positioning guide to assure balanced distribution and operator safety.

#### Features

- Balanced weight
- Leg positioning guide
- Serialised and certified
- Dimensions: 23 x 5 x 5 cm

#### Part Number

**624115:** 4.5 kg Test Weight



# Magnetic Particle Testing

Accessories



## QB2- Plus Quick Break Tester

The QB2-Plus provides quantitative verification of quick break function and measures the duration of the magnetising shot. The QB2-Plus can verify the correct function of AC, HWDC, and FWDC equipment, and verify quick break function on 3-phase FWDC units. Shot time and quick break voltage are alternately shown on the LCD display after each reading.

### Features

- Simultaneous measurement of shot time and quick break
- Can be used with coils and cable wraps over 64cm in diameter
- Quantitative results provide true verification of equipment

### Part Number

**628989:** QB-2 Plus (P)

**NOTE:** The QB2-Plus does **not** carry a CE mark and is **not** labelled to EU standards.



## FSM-2 Magnetic Field Strength Meter

The FSM-2 is used for tangential measuring of the magnetic field strength in DC and AC fields. A tangential field probe is attached to the workpiece's surface during magnetisation, and the hall sensor measures the voltage change produced by the magnetic field. The FSM-2 measures the true RMS of asymmetric magnetic fields.

### Features

- Equipped with a RS 232 interface and background display lighting
- With closed cover, the housing meets protection class IP65
- Supplied with a mains adapter and a tangential field probe
- A factory calibration certificate is included

### Part Number

**133033:** FSM-2 (P)



## Digital Ammeter Calibration Kit Digital Amperage Meter

Our lightweight and fully-portable digital amperage meter is specifically designed for NDT applications and can be used to certify amperage on MPI equipment up to 10,000 Amps.

### Features

- Checks AC, HWDC, 1 Phase FWDC, and 3 Phase FWDC
- Accurate to + 3% at level
- Meets ASTM E1444 and ANSI Z-540 specifications
- Supplied with certificate

### Part Number

**005M133:** Digital Ammeter Calibration Kit



## Test Kit For Magnetic Particle Inspection

Supplied in a carry case with:

- Field strength meter FSM-2 with tangential field probe
- UVM3059 Digital UV-Intensity Meter
- Non-calibrated magnetic field indicator
- Magnetic Flux Indicator Type G (set of 5 pieces)
- Reference block type 1 (according to EN ISO 9934-2)

### Part Number

**135058:** Test Kit 1 with ASTM centrifuge D96 (0.05 scale) and stand

**135059:** Test Kit 2 with ASTM centrifuge (0.1 scale) and stand



## QQIs Quantitative Quality Indicator Test Piece Shims

Quantitative Quality Indicators (QQIs) are artificially-flawed, low-carbon steel specimens used during inspection to verify your MPI procedures. They provide a quantitative method of establishing the correct field direction and strength that are needed to produce clear indications of flaws.

### Part Numbers

**631590:** Standard QQI, CX-230, set of 5

**631591:** Standard QQI, CX-430, set of 5

**631650:** Standard QQI, CX-430 self-adhesive, set of 5

**631592:** Miniature QQI, CX4-230, set of 5

**625554:** Variable QQI, 3C2-234, set of 5



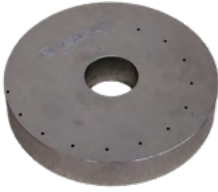
## Magnetic Flux Indicator Strips Magnetic Field Verification Test Pieces

Flexible laminated strips used to verify the presence and direction of magnetic fields during the testing process. Brass cladding on both sides of the strip provides protection against corrosion and allows the strips to be re-used multiple times. Supplied in packs of five.

### Part Number

**008M004:** Type G (I) for general use

**008M005:** Type A (I) for aerospace use

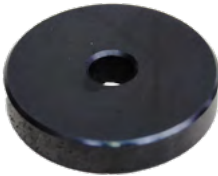


## AS 5282 Test Ring (Ketos Ring) Magnetic Particle System Performance Test Piece

This tool steel ring is manufactured to AS-5282 requirements to check magnetic particle system performance. A progressive series of sub-surface holes are used to verify equipment performance at different amperages using HWDC or FWDC waveforms. Formerly known as a Ketos test ring.

### Part Number

**159999:** AS 5282 Test Ring



## Reference Block Type 1 (MTU Test Block Nr. 3) Magnetic Particle System Performance Test Piece

Use this test block to test the concentration of your magnetic powder suspensions, and ensure optimal error indication while carrying out magnetic particle inspection. Tested in accordance with EN ISO 9934-2, and supplied with certificate and reference picture.

### Part Number

**135012:** Reference Block Type 1

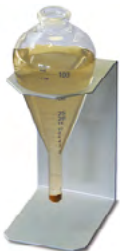


## Magnetic Particle Test Bar Magnetic Particle System Performance Test Piece

This test bar contains coarse and fine surface and subsurface defects in both directions. It meets or exceeds most industrial and military standards for artificial test specimens and complies with MIL-STD-271.

### Part Number

**189838:** Magnetic Particle Test Bar



## Centrifuge Tubes For Magnetic Particle Inspection

Designed in accordance with ASTM E 709-80 standard, our centrifuge tubes are individually calibrated to measure the precise concentration of magnetic particles in suspensions, as well as contamination levels of the bath. Use as part of your regular system performance checks for ASTM E709, ASTM E1444 or ASME BPVC.

### Part Numbers

**044C003:** Centrifuge tube for visible magnetic ink (0 - 15 ml)

**044C005:** Centrifuge tube for fluorescent magnetic ink (0 - 1 ml)

**044C004:** Centrifuge tube stand





## ASME Pie Field Indicator Magnetic Field Indicator

The ASME Field Indicator is used to gauge the strength and direction of the magnetic field in accordance with ASME Boiler and Pressure Vessel Code Section V, Article 7.

### Part Number

**008M003:** ASME Field Indicator



## Field Indicator (Uncalibrated) Magnetic Field Indicator Gauge / Magnetometer

Rugged, pocket-size meter used to indicate residual magnetism remaining in the part after magnetisation, or to verify demagnetisation. Inexpensive and disposable with no certification to maintain.

### Part Number

**2480:** 10 Gauss Field Meter, uncalibrated



## Calibrated Field Indicators Magnetic Field Indicator Gauge / Magnetometer

Rugged, pocket-size meters used to indicate residual magnetism remaining in part after magnetisation, or to verify demagnetisation. Supplied with certification.

### Part Numbers

**505056:** Calibrated 10 Gauss Field Indicator; accurate to +/- 0.2 gauss with scale range of 10-0-10

**105645:** Calibrated 20 Gauss Field Indicator; accurate to +/- 0.4 gauss with scale range of 20-0-20



## Steady-Rests For Magnetic Particle Inspection Benches

Steady-rests support and stabilise long or heavy parts, such as crankshafts, during the inspection process. Our rail and headstock-mounted roller-style steady-rests support a variety of part lengths and make the loading of heavy and long parts easier. Our tailstock steady-rest mounts directly onto the tailstock shelf and is designed to work with either headstock or rail-mounted steady-rests. Its twin rollers enable components to be rotated.

### Part Numbers

**20955A3:** Movable Steady-Rest

**20978A1:** Headstock Steady-Rest



## Small Parts Adapters For Magnetic Particle Inspection Benches

Our auxiliary adapters enable our standard bench units to test small parts. Mounted directly to either the headstock or tailstock, the solid copper adapters maintain adequate clearance to proper clamping action.

### Part Numbers

**030C035:** Adapter that fits our MAG 40 bench units

**030C009:** Adapter that fits our MAG 50 bench units



## Magnet Electrodes For Connection to High Current Cables

### Part Numbers

**129102:** Type DIX PM 70 with lug connector - for power packs with a test current up to 6,000 A



Standard Prod Set  
(056200)

## Prod Sets and Melt-Off Magnet Electrodes For Connection to High Current Cables

### Part Numbers

**056200:** Standard Prod Set - handles for installation of the melt-off electrodes, consisting of one handle with control cable and one handle without control cable.

**056205:** Dual Prod Assembly, electrode distance 250 mm

**129110:** Melt-Off Electrode, Type A (up to 1500 A)

**129111:** Melt-Off Electrode, Type B (1500 - 3000 A)

**129112:** Melt-Off Electrode, Type C (3000 - 8000 A)



Dual Prod Assembly  
(056205)



## Twin-Core Threaded Bars For Internal Conductor-Current Induction Method

Laminated twin-core threaded bars for internal conductor/current induction method, according to ISO 9934-1:2016. Available as plastic covered or steel covered.

### Part Numbers

Various; please contact us for a quote.



## Contact Pads

### For Magnetic Particle Inspection Benches

Our range of copper contact pads come in a variety of shapes, sizes and types to make sure your magnetic bench is outfitted correctly for the parts you inspect. Magnaflux contact pads prevent arc burning, and ensure good, reliable electrical contact between the headstock and part.

#### Part Numbers

- 031C003:** Double braided contact pad - copper braid and neoprene (145 x 125 mm)
- 031C010:** Copper braid contact pad for MAG II & MAG II H, MAG 20 (45 x 65 mm)
- 031C012:** Brass mesh contact pad for MAG II F & MAG II HF, MAG 20F (60 x 65 mm)
- 031C016:** Brass mesh contact pad for MAG 40 Series (all versions; 100 x 120 mm)
- 031C020:** Copper braid contact pad for MAG 50 Series (145 x 125 mm) (P)



## Copper Contact Plates

### For Magnetic Particle Inspection Benches

Our copper contact plates are designed for use with Universal systems types 100, 150, 200, etc. They are made from spirally-inserted copper braid cord with a tinned contact area.

#### Part Numbers

- 129150:** Standard contact sheet for Universal 600/900 WE since 1986
- 129151:** Contact sheet for Universal 35/50/85 W built 1979-1985. Ø 140 mm.
- 129153:** Standard contact sheet for Universal 900 WE II
- 129155:** Copper contact sheet with integrated copper pad for Universal WE, Ø 80 mm
- 129160:** Copper contact sheet for divided headstock vertical on Universal WE
- 129162:** Copper contact sheet for divided headstock horizontal on Universal WE
- 129205:** Copper contact pad, Ø 80 mm
- 129207:** Copper contact pad, Ø 120 mm



## Copper Contact Braid

### For Magnetic Particle Inspection Benches

Copper braid to make special contacts. Available in different widths and thicknesses, and sold by the metre.

#### Part Numbers

- 129250:** Fine copper braid, 30 x 2 mm | 25 mm<sup>2</sup>
- 129251:** Fine copper braid, 45 x 3 mm | 60 mm<sup>2</sup>
- 129253:** Fine copper braid, 75 x 5 mm | 185 mm<sup>2</sup>



## L-10 Coil

### Portable Magnetic Coil For Magnetic Particle Inspection

The L-10 electromagnetic coil is specifically designed to detect transverse defects in shafts, spindles and similar components. It can inspect parts up to 250 mm diameter.

The L-10 has a wear-resistant resin coating and is supplied with a foot switch to energise the coil and 3.6 metres of flexible supply cable.

#### Features

- AC output
- Ideal for transverse defect location
- Demagnetisation capability
- Hands-free control via a foot switch
- Completely portable

#### Part Number

**630516:** 230V



## Closed Coil

### Magnetic Coil for Magnetic Particle Inspection Benches

Number of turns: 3

#### Part Numbers

**129001:** Ø 200mm

**129002:** Ø 350mm



## Hinged Coil

### Magnetic Coil for Magnetic Particle Inspection Benches

Hinged coil with easy-to-operate locking handle. Number of turns: 3

#### Part Numbers

**129020:** Ø 200mm

**129021:** Ø 350mm

**129022:** Ø 500mm

## Spray Pumps For Magnetic Particle Ink

Our magnetic particle applicators provide a convenient method for applying an even, adjustable flow of magnetic particles across large test parts, or in situations where only spot particle application is required. The coverage speed and consistency provided by these applicators can dramatically improve application uniformity and part processing time.



### Portable Spray Pump

#### Features

- Complete with container and hand hose
- Capacity: 8 litres
- Power supply: 3 x 400 V (circuit breaker), 230 V available on request.
- Output quantity: 25 litres per minute at 3 m throughput height or 40 litres per minute at 2 m throughput height

#### Part Number

**129410:** Portable Test Liquid Spray Pump



### Mobile Spray Pump

#### Features

- Includes metal drip tray to re-collect test liquid to container.
- Spraying via hand hose
- Capacity: 8 litres
- Power supply: 3 x 400 V (circuit breaker), 230 V available on request
- Output quantity: 25 litres per minute at 3 m throughput height or 40 litres per minute at 2 m throughput height

#### Part Number

**129415:** Mobile Test Liquid Spray Pump



### Stationary Spray Pump

#### Features

- Stainless steel container
- Removable cover
- Spraying via hand hose
- Capacity: 40 litres
- Power supply: 3 x 400 V (circuit breaker)
- Output quantity: 25 litres per minute at 8 m throughput height

#### Part Number

**129420:** Stationary Test Liquid Spray Pump



## MAGNAGLO® Applicator For Magnetic Particle Ink

Replacement nozzle for bath applications; easily attaches to a ½" (13 mm) bore hose.

#### Part Number

**004G006:** MAGNAGLO® Applicator



# Penetrant Testing

Equipment





## ZA-28 Fluorescent Penetrant Testing Equipment System

ZA-28 is a high-performance, integrated processing/inspection system for fast and reliable manual penetrant testing. It is suitable for processing components up to 350 mm x 350 mm x 820 mm in size.

The ZA-28 system comes in three models, each designed for a specific testing method. Its modular design varies with different penetrant materials:

- ZA-28W - Water-Washable Method - These are the simplest units because water can be used directly to wash excess penetrant from parts without additional steps.
- ZA-28E - Post-Emulsified Method - These units can locate extremely shallow flaws, but they require an extra processing step - applying an emulsifier - to make the penetrant washable.
- ZA-28H - Hydrophilic Method - These units deliver the highest sensitivity, but require an additional processing station for pre-rinsing parts.

### Features

- Modular design
- Digital PID Controlled recirculating hot air dryer
- Dry developer storm cabinet

### Ordering Information

**Magnaflux penetrant testing equipment is built to order:** Please contact us for a detailed quote.





## ZA-37 Fluorescent Penetrant Testing Equipment System

ZA-37 is a high-performance, integrated processing/inspection system for fast and reliable manual penetrant testing. It is suitable for processing components up to 650 x 300 x 250mm in size.

The ZA-37 system comes in three models, each designed for a specific testing method. Its modular design varies with different penetrant materials:

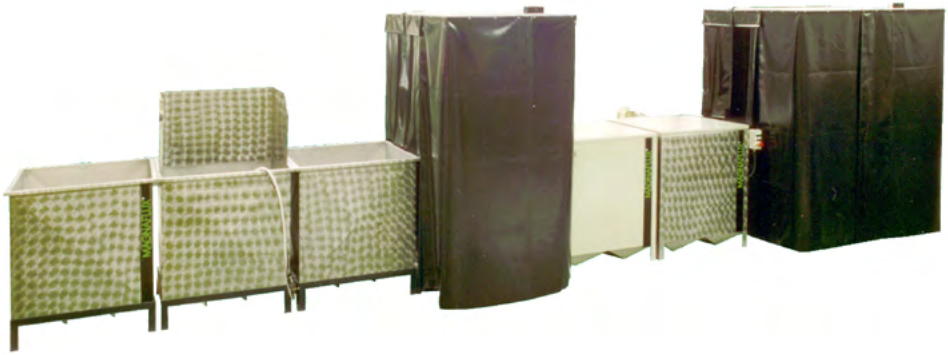
- ZA-37W - Water-Washable Method - These are the simplest units because water can be used directly to wash excess penetrant from parts without additional steps.
- ZA-37E - Post-Emulsified Method - These units can locate extremely shallow flaws, but they require an extra processing step - applying an emulsifier - to make the penetrant washable.
- ZA-37H - Hydrophilic Method - These units deliver the highest sensitivity, but require an additional processing station for pre-rinsing parts.

### Features

- Modular design
- Digital PID Controlled recirculating hot air dryer
- Dry developer storm cabinet

### Ordering Information

**Magnaflux penetrant testing equipment is built to order:** Please contact us for a detailed quote.



## ZA-915

### Fluorescent Penetrant Testing Equipment System

The ZA-915 system is one of the most popular penetrant testing systems on the market. As a multi-station process for components up to 850 mm x 850 mm x 750 mm in size, it offers the flexibility of modular construction and has the added advantage of simple tank additions to meet your specific requirements.

Designed to operate from the left or the right, the system can, when arranged in a straight line configuration, be used either as a manual unit or in conjunction with a linear robot for fully automatic applications. Alternatively, where space is limited, the ZA-915 can be arranged in a 'U' or 'L' configuration to suit the area available.

#### Features

- Flexible modular construction
- Manual or automatic applications
- Conforms with most required testing specifications
- Incorporates all the necessary equipment for fluorescent penetrant testing

#### Ordering Information

**Magnaflux penetrant testing equipment is built to order:** Please contact us for a detailed quote.



## S200SA

### Semi-automatic Carbon Filtration Unit

Our carbon filtration units are designed to remove penetrants from post-rinsewater. Once clean, the rinsewater can be pumped to drain/waste (subject to local authority requirements) or recycled to another process.

The S200SA consists of a unique activated carbon filter unit through which penetrant rinsewater is circulated. A pump circulates the rinsewater from the holding tank through the carbon filter, and then back to the holding tank. This process is repeated until the rinsewater is clean.

#### Features

- Low-cost and economical to run
- Self-contained and portable
- Easy to use

#### Part Number

**009Z014:** S200SA



## S500

### Carbon Filtration Unit

The S500 unit comprises a pressure vessel fitted with inlet and outlet control valves. The pump, operated by float switches, forces contaminated water to the top of the vessel, which then passes down through the activated carbon filter bed, where the contaminants are removed.

The S500 can also be used in conjunction with a coalescing filter (S500C) to remove post-emulsifiable penetrant from pre-rinsewater.

#### Features

- Low-cost and economical to run
- Self-contained and portable
- Easy to use

#### Part Numbers

**009Z001:** S500

**009Z002:** S500C



# Penetrant Testing

Accessories



## NiCr Test Panels For Liquid Penetrant Testing

Our NiCr test pieces will help you maintain your testing process by verifying penetrant sensitivity and performance. Use to check for penetrant deterioration, to compare different penetrants or to verify sensitivity or visibility.

NiCr test panels are supplied in pairs, with panel set crack depths available in 20 microns.

### Part Number

**506252:** Pair of 20 $\mu$  panels



## Refractometer Measures the concentration of hydrophilic remover in water

An easy-to-use, hand-held optical instrument for measuring the concentration of hydrophilic remover in water. Apply a small sample of solution to the prism face and take the reading by looking at the built-in scale.

Meets Pratt and Whitney and GE concentration specifications for hydrophilic removers.

### Part Number

**008M009:** Refractometer



## Dual-channel Timer Digital Penetrant Process Timer

Our dual-channel process timer allows simultaneous programming of two different activities. Each channel has a distinct electronic alarm and visual indicator when zero is reached. For repetitive timing, microcomputer chip memory permits two countdown times; for normal timing, memory recalls last countdown time set.

### Part Number

**004T087:** Dual-channel process timer, including batteries and certificate

## Penetrant Applicators

### Fast, consistent and even application of penetrant or water

These product applicators and water sprayers will help you speed up your penetrant inspection process by offering fast, consistent and even application of penetrant or water to the part surface. Manufactured from high-quality materials and components, these sprayers will deliver years of trouble-free performance for all liquid penetrant testing applications.



#### Air/Water Gun

A combined air and water spray gun for washing parts during the penetrant process. Trigger-controlled water spray.

**Part Number**

**004G003:** Air/Water Gun

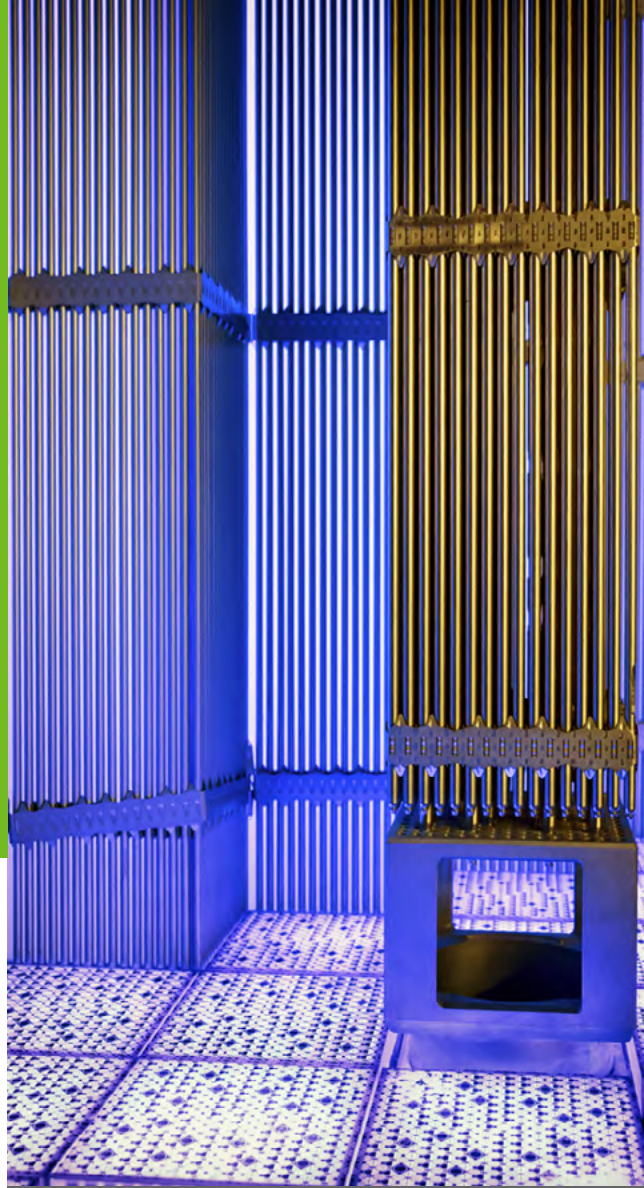


#### Water Only Gun

A spray gun with trigger action for washing parts during the penetrant process.

**Part Number**

**520090:** Water Only Gun



## UV Lamps



## EV6000 Hand-Held LED UV Lamp

The EV6000 is a portable, hand-held UV lamp for fluorescent penetrant testing and fluorescent magnetic particle inspection.

The EV6000 features a uniform beam that is 23cm wide, 33% wider than the next widest hand-held UV lamp in the industry. Custom-designed optics provide intense and even UV-A coverage to easily identify indications, and an integrated filter ensures minimal visible light emission to improve inspection reliability.

The EV6000 is certified to NDT standards for LED UV lamps, and certified for Aerospace Prime and OEM specifications for emission spectrum and beam profile.

### Benefits

#### Minimises time to inspect parts

- Speeds up inspection time with one of the widest, most even beams on the market.
- Indications are clearly visible even at the edge of the 23cm beam, thanks to the high intensity LEDs.

#### Maximize range of inspections

- Use for virtually any fluorescent penetrant or mag particle inspection
- Inspect a wide range of components, including aerospace parts, without worry
- Full NDT specification compliance, including ASTM E3022 and RRES 90061

#### Increases real-world reliability

- Reduces on-the-job downtime with dependable, reinforced construction.
- Fully sealed IP65 rated housing will stand up to the elements, along with a fan-less cooling system and non-clouding lens for reliable, consistent inspections.

### Features

- 23cm wide, uniform beam
- No hot-spots in the beam profile
- Rugged, durable design
- No internal fan
- Low energy consumption
- Aerospace prime and OEM certified
- Improved operator and environmental safety
- Certified to ASTM / RRES / NADCAP

### Part Number

**628000:** EV6000 lamp with power supply (P)





## EV6500

### Hand-Held LED UV Lamp

The EV6500 is a hand-held, portable LED UV lamp with built-in white light LEDs for non-destructive testing applications like fluorescent penetrant testing and fluorescent magnetic particle inspections.

Designed with broad-beam profile for in-line and hand-held use, the EV6500 will decrease inspection time by improving indication visibility with 7,000  $\mu\text{W}/\text{cm}^2$  high intensity UV-A illumination and the widest coverage area in its class.

To improve NDT inspection flexibility, the EV6500 has easy-on visible light LEDs for visible flaw location, eliminating the need for a separate flashlight.

#### Benefits

##### Minimises time to inspect parts

- Speeds up inspection time with the widest, most even beam on the market.
- Indications are clearly visible even at the edge of the 25cm beam, thanks to the high intensity LEDs.

##### Improves visibility and versatility

- Eliminates the need for a separate flashlight for visible spot checking.
- See clearly without fumbling in the dark or having to turn on an overhead light with the 41 cm beam of bright white light.

##### Increases real-world reliability

- Reduces on-the-job downtime with dependable, reinforced construction
- Fully sealed IP65 rated housing will stand up to the elements

#### Features

- 7,000  $\mu\text{W}/\text{cm}^2$  high intensity UV-A illumination
- 25 cm wide, uniform beam
- No hot-spots in the beam profile
- Built-in LED white light
- Rugged, durable design
- Low energy consumption

#### Part Number

**629677:** EV6500 lamp with power supply (P)



## ST700 LED UV Lamp for Stationary Inspection

The ST700 is an inspection-grade overhead LED UV flood lamp with high-intensity UV-A illumination, designed for fluorescent penetrant and magnetic particle testing.

The ST700 projects an ultra-wide, even beam of UV-A light straight onto the inspection area, allowing for quick examination of parts with minimal part handling. The high-intensity beam makes indications stand out bright and clear, speeding up the inspection process. The ST700 is certified to NDT standards for LED UV lamps, and certified for Aerospace Prime and OEM specifications for emission spectrum and beam profile.

The IP65 aluminium case stands up to harsh environments and a range of mounting and angling options allow it to be set up anywhere in the inspection process, from mag benches to wash stations.

### Benefits

#### Speed up the inspection process

- Inspect more of the part at once thanks to the ultra-wide beam.
- Eliminate additional steps and equipment involved with using a secondary handheld lamp.

#### Minimise risk of missing indications

- Indications stand out bright and clear due to high intensity LED technology.
- Mount the light out of the way, up to 117cm above the inspection surface while still maintaining inspection level intensity.

#### Real-world reliability

- Fully sealed construction prevents dust and water damage.
- Maintain UV intensity and coverage over time with non-clouding, proprietary lenses.
- Rugged, impact resistant metal construction designed for NDT environments.

#### Work in comfort

- Keeps inspection booths cool thanks to the fan-less, LED technology.
- Eliminates hazardous mercury vapour for safer working conditions and better EHS compliance.
- Easily maintain and changeover equipment with built-in white light.

#### Features

- High intensity compliant UV-A illumination
- 50 x 66 cm wide beam on standard model at 90cm
- IP65 sealed construction prevents damage from water, vapour or dust
- Angled mounting brackets
- No hot-spots in the beam profile
- Aluminium body in a rugged, durable design
- No internal fan necessary
- Certified to ASTM, AITM, RRES and Nadcap

#### Part Numbers

**631323:** ST700 (P)

**631331:** ST700 low intensity (5,000  $\mu\text{W}/\text{cm}^2$ )



## Mounting Adapters

Our mounting hardware allows the EV6000 and EV6500 to be permanently or temporarily mounted in the inspection or testing station for hands-free inspection, while still allowing the light to be continuously repositioned to illuminate all areas of a test part.

### Part Numbers

**023A008:** Adjustable bracket for mag bench mounting

**023A008B:** Adjustable bracket for table mounting

**023A008M:** Bracket mounting to the lamp



## UVM3059

### Digital Light Meter for UV-A Light

The UVM3059 is designed for measuring ultraviolet radiation, primarily for use in non-destructive material testing. It was developed according to the specifications of EN ISO 3059. The housing is dust and splash-proof according to protection class IP54.

### Features

- LCD colour display with wide viewing angle (320 x 240 pixel, 7cm)
- Rechargeable battery via mains or USB
- Dust/splash proof case protected to IP65
- Calibration expiry alarm

### Part Number

**133200:** UVM3059



## Luxmeter

### Digital Light Meter for Visible Light

The Luxmeter is a high-resolution instrument that measures the irradiance of daylight sources or the daylight environment. The measurement is made by a sensor connected to the instrument by a flexible cable. Metering range: 0,01...199,99 x 10<sup>-3</sup> (automatic switch-over).

### Part Number

**134056:** Luxmeter

