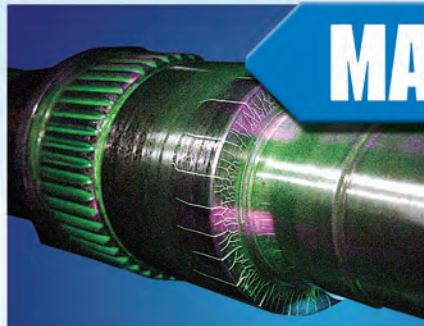


THE  
**MAGNAFLUX**  
GLOBAL ADVANTAGE



**MAGNAGLO<sup>®</sup>**



**ZYGLO<sup>®</sup>**



**SPOTCHECK<sup>®</sup>**



**DARACLEAN<sup>®</sup>**

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**MAGNAFLUX<sup>®</sup>**

A Division of Illinois Tool Works Inc.



**Magnetic particle inspection is a nondestructive inspection method used for detection of surface and subsurface flaws in ferrous parts. MPI inspection is used to inspect a variety of product forms such as castings, forgings, and weldments.**

- ▶ *Dry and wet particles are available to suit your needs.*
- ▶ *Choose from fluorescent or non-fluorescent for UV or daylight inspection.*
- ▶ *Particle size is controlled to ensure maximum sensitivity.*
- ▶ *Fluorescent particles are encapsulated to minimize separation of fluorescence from particles.*

## Benefits

Our magnetic particles are designed to hold up better and do not break down during agitation. This avoids having to change the bath as often and insures consistent performance during inspection.

The only requirement from an inspectability standpoint is that the component being inspected must be made of a ferromagnetic material such as iron, nickel or cobalt, or some of their alloys. Ferromagnetic materials are materials that can be magnetized to a level that will allow the inspection to be effective.

The **MAGNAGLO** product line is our fluorescent (requires a black light) wet method magnetic particle materials used in Magnetic Particle Inspection to locate surface and subsurface flaws in ferrous parts.

The **MAGNAFLUX** product line is our dry method, non-fluorescent magnetic particle materials used in Magnetic Particle Inspection to detect surface and subsurface flaws in ferrous parts.

**Applications** MAGNAGLO/MAGNAFLUX is used to detect flaws in the following:

- ▶ **Foundries**
- ▶ **Law Enforcement**
- ▶ **Lifting Devices**
- ▶ **Maintenance Shops**
- ▶ **Marine**
- ▶ **Military**
- ▶ **Pipelines**
- ▶ **Amusement Rides**
- ▶ **Automotive Components Manufacturers**
- ▶ **Automotive Rebuilders**
- ▶ **Fabrication Shops**
- ▶ **Railroads – Major Railway Systems & Local Transit Authorities**
- ▶ **Test Labs**
- ▶ **Tool Shops**
- ▶ **Utilities – Nuclear Power Plants & Electric and Gas Utilities**
- ▶ **Welding Shops**
- ▶ **Shipyards**
- ▶ **Ski Lifts**
- ▶ **Steel Mills**



**QUEBEC**  
164, St-Jean Baptiste  
Mercier, QC J6R 2C2  
Tel.: 450-691-9090

**ONTARIO**  
622 Trillium Drive, Unit 2A  
Kitchener, ON N2R 1E6  
Tel.: 519-894-9069

**WWW.QUALITYNDE.COM**

# Wet Method Fluorescent Magnetic Particles

## 14A

### Fluorescent Particles (to be mixed with Carrier II or Water/Additives)

14A is a dry, free flowing, brown magnetic powder which fluoresces bright yellow-green under black light. 14A is intended for use in high sensitivity wet method magnetic particle inspection. It may be suspended in either a petroleum-based vehicle (oil) such as MAGNAFLUX®/MAGNAGLO® Carrier II, or in water. When water is used as a vehicle, conditioning agents such as WA-2B, or WA-4 are required.  
*Suspension: Water/Oil*  
*Recommended Concentration: 1/8 oz./gallon (1.25 grams/liter)*

Part #:	Container Size:
01-0130-57	1 lb. Container
01-0130-71	Six Pack of 1 lb. Containers
01-0130-69	10 lb. Container
01-0130-75	20 lb. Container

## 14A Aqua-Glo™

### Fluorescent Premix with Water

Fluorescent green prepared solution of 14A fluorescent particles in a water based medium designed to offer the benefits of water and the convenience of aerosol form.  
*Suspension: Water Only*  
*Recommended Concentration: Comes as a prepared bath*

Part #:	Container Size:
01-1725-38	Case of 12 Aerosols

## 20B Preblended Dry Mix Fluorescent Particles (14A+Additives)

20B is composed of fluorescent magnetic powder, nonionic surfactants, and corrosion inhibitors. It is a pre-blended dry mix of 14A magnetic powder and WA-2B water conditioner.  
*Suspension: Water Only*  
*Recommended Concentration: 1.5 oz./gallon of water (11.25 grams/liter)*

Part #:	Container Size:
01-0179-71	Six Pack of 1 lb. Containers
01-0179-70	15 lb. Container
01-0179-84	30 lb. Container

## 14AM

### Fluorescent Premix with Carrier II

Fluorescent prepared bath of 14A powder and Carrier II (a high flash point petroleum vehicle). Ready to use without measuring and mixing.  
*Suspension: Oil*  
*Recommended Concentration: Comes as a prepared bath*

Part #:	Container Size:
01-0145-40	5 Gallon Pail
Also available in 16 oz. aerosol cans.	

## 14A Redi-Bath™

### Fluorescent Premix Concentrate for Water

Preblended concentrate of our 14A fluorescent green magnetic particle powder, mixed with water, wetting agent and corrosion inhibitor. Easiest method of water bath preparation. Simply add pre-blended concentrate to water.  
*Suspension: Water Only*  
*Recommended Concentration: 2.7 oz./gallon (21 ml/liter)*

Part #:	Container Size:
01-9130-41	6 pack of 27 oz. bottles
01-9130-20	1 Gallon Jug

## MG-3410

### Fluorescent Particles to be Mixed with Water

The powder contains conditioners which improve the magnetic particle suspendibility, mobility and wetting of test part surface. No additional wetting or conditioning agents are required when MG-3410 is used.  
*Suspension: Water Only*  
*Recommended Concentration: 1/8 oz./gallon (0.75 gram/liter)*

Part #:	Container Size:
01-0199-84	30 lb. Container

## MG-410

### Fluorescent Particles (to be Mixed with Carrier II or Water/Additives)

MG-410 is a dry, free flowing, green magnetic powder which fluoresces bright green under black light  
*Suspension: Water/Oil*  
*Recommended Concentration: 1/8 oz./gallon of vehicle (0.75 gram/liter)*

Part #:	Container Size:
01-0191-57	1 lb. Container
01-0191-69	10 lb. Container
01-0191-81	25 lb. Container

## Wet Method Visible Magnetic Particles

### 7C Black

Visible Particles  
(to be mixed with Carrier II or Water/Additives)

Non-fluorescent black magnetic particles. Provides excellent color contrast on shiny or light colored surfaces.

*Suspension: Water/Oil*

*Recommended Concentration: 1.25 oz./gallon (9.36 grams/liter)*

**Part #:**

01-1116-66

**Container Size:**

8 lb. Container

### 9C Red

Visible Particles  
(to be Mixed with Carrier II or Water/Additives)

Non-fluorescent red magnetic particles. Similar to 7C but preferred for good contrast on gray, black or dark surfaces.

*Suspension: Water/Oil*

*Recommended Concentration: 1.25 oz./gallon (9.36 grams/liter)*

**Part #:**

01-1132-66

**Container Size:**

8 lb. Container

### 7HF Black

Visible Premix with Carrier II

7C Black Powder premixed with Carrier II packaged in an aerosol can.

*Suspension: Oil*

*Recommended Concentration: Premixed in Aerosols*

Available in 16 oz. aerosol cans.

### 9CM

Visible Premix with Carrier II

9C Red powder premixed with Carrier II packaged in an aerosol can.

*Suspension: Oil*

*Recommended Concentration: Premixed in Aerosols*

Available in 16 oz. aerosol cans.

### WCP-2

White Contrast Paint

Available in 16 oz. aerosol cans.

## Oil Petroleum Vehicle

### Carrier II

Oil Vehicle

Suspension Vehicle formulated for magnetic particle testing; odor-free, low-viscosity, high flash point.

**Part #:**

01-2122-40

01-2122-30

01-2122-45

**Container Size:**

5 Gallon Pail

20 Gallon Drum

55 Gallon Drum



## Dry Method Magnetic Particles

### #1 Gray

#### General Purpose

General Purpose Dry Method Particles. Choose the color that offers the best contrast to the surface you are inspecting.

Part #:	Container Size:
01-1716-72	12 – 1 lb. Containers
01-1716-69	10 lb. – Pail
01-1716-81	25 lb. – Pail
01-1716-87	45 lb. – Pail

### #2 Yellow

#### General Purpose

General Purpose Dry Method Particles. Choose the color that offers the best contrast to the surface you are inspecting.

Part #:	Container Size:
01-1732-69	10 lb. – Pail
01-1732-81	25 lb. – Pail
01-1732-87	45 lb. – Pail

### #3A Black

#### General Purpose

General Purpose Dry Method Particles. Choose the color that offers the best contrast to the surface you are inspecting.

Part #:	Container Size:
01-1748-72	12 – 1 lb. Container
01-1748-69	10 lb. – Pail
01-1748-81	25 lb. – Pail
01-1748-87	45 lb. – Pail

### #8A Red

#### General Purpose

General Purpose Dry Method Particles. Choose the color that offers the best contrast to the surface you are inspecting.

Part #:	Container Size:
01-1780-72	12 – 1 lb. Containers
01-1780-69	10 lb. – Pail
01-1780-81	25 lb. – Pail
01-1780-87	45 lb. – Pail

## Water Bath Additives

### AX-52

#### Corrosion Inhibitor

AX-52 is a Corrosion Inhibitor. Corrosion Inhibitors retard water's attack on the magnetic particles and thus extend bath life. They also help prevent corrosion of parts during processing and protect any exposed parts of inspection machinery. They are not designed to provide long-term corrosion protection for parts during storage after testing. When long term protection is required, an oil vehicle or separate anticorrosion treatment is recommended.

*Form:* Yellow Liquid

*Recommended Concentration:* 1% – 5% by Volume

Part #:	Container Size:
01-2190-40	5 Gallon Pail
01-2190-45	55 Gallon Drum

### WA-2B

#### Water Bath Additive

WA-2B is a wetting agent and corrosion inhibitor and antifoam water bath additive. Wetting Agents enable easier suspension of magnetic particles in water.

*Form:* White Granular Powder

*Recommended Concentration:* 1.33 oz./gallon (10 grams/liter)

Part #:	Container Size:
01-2148-63	5 lb. Container
01-2148-84	30 lb. Container

### WA-4

#### Water Bath Additive

WA-4 consists of a Wetting Agent and Corrosion Inhibitor.

*Form:* Amber Liquid

*Recommended Concentration:* 1% by Volume

Part #:	Container Size:
01-2172-20	1 Gallon Jug
01-2172-40	5 Gallon Pail

### ZAF-2

#### Antifoaming Additive

Antifoaming agents suppress the natural tendency of any water bath to foam when agitated.

*Form:* Clear Liquid

*Recommended Concentration:* 3 – 5 Drops/15 gallons

Part #:	Container Size:
01-9410-20	1 Gallon Jug

## INTRODUCING ... THE Y-1 YOKE

### Benefits:

- ✓ 37% Lighter than standard yoke
- ✓ Soft grip for operator's comfort
- ✓ Angled body for arm and wrist positioning
- ✓ Easy trigger position and shape
- ✓ Impact and chemical resistant shell
- ✓ Improved Cord Strength
- ✓ Field Serviceable for reduced downtime
- ✓ Eyelet for hands-free carrying



### Specifications:

Yoke P/N	623502 - Y-1 Yoke -115v	623503 - Y-1 -230v
Yoke Kit P/N	623529 - Y-1 Kit 115v	623530 - Y-1 Yoke Kit
Current Draw	115 Volt - 60 Hz.	230 Volt - 50/60 Hz.
Line Current	2.2 Amperes	1.6 Amperes
Weight	4.56 lbs.	4.56 lbs.
Cord Length	10' Cord	10' Cord
Leg Capacity	0" - 11" (0-30 cm) across poles	0" - 11" (0-30 cm) across poles
Warranty:	One Year Warranty	One Year Warranty

If you have any questions, please call Customer Service at 847-657-5300.

# Magnetizing Yoke Kits

Designed for one-person portable magnetic particle inspections of ferrous parts. Ideal for inspection of welds and other remote testing. Articulating, double-jointed legs of yokes contour to any part shape to assure good contact.



## Y-6 AC Yoke Kit

### Part #

45291 – 115V  
45292 – 230V

### Includes

Y-6 Yoke, 1 lb. of #1 Gray Dry Powder, 1 lb. of #8A Red Dry Powder, 4 – Packets of Scrubs™, Powder Spray Bulb, Paint Marker, Wiping Cloth and Instructions.  
**One Year Warranty**

## Y-7 AC/DC Yoke Kit

### Part #

43509 – 115V  
620741 – 230V

### Includes

Y-7 Yoke, 1 lb. of #1 Gray Dry Powder, 1 lb. of #8A Red Dry Powder, 4 – Packets of Scrubs™, Powder Spray Bulb, Paint Marker, Wiping Cloth and Instructions.  
**One Year Warranty**



## Y-8 Battery Powered Yoke Kit

### Part #

611710 – 115V  
6117710-01  
– 230V

### Includes

Battery Powered Yoke, Case, Charger and 1 lb. of #1 Gray Powder, Powder Spray Bulb, Paint Marker, Scrubs™, Wiping Cloth and Instructions.  
**One Year Warranty**

## Non-Fluorescent Material Kit

### Part #

045295

### Includes

1 lb. of #1 Gray, #8A Red, & #3A Black Powder, 1 can (16 oz.) of 7HF, 9CM and WCP-2, 2 cans of SKC-S Cleaner/Remover, Powder Spray Bulb, Field Indicator, a Paint Marker, Scrubs™, Wiping Cloth and Instructions.

**For Yoke Operating Instructions see page 36.**



## MAGNAGLO® Fluorescent Kit

Part #	Includes
600088	ZB100F Blacklight 115v, 2 aerosol cans of 14AM (Wet Method, Fluorescent Premix of 14A Magnetic Powder and Carrier II Oil Petroleum Vehicle), 2 aerosol cans of SKC-S Cleaner, Paint Marker, SCRUBS™ Hand Cleaner, Wiping Cloth and Instructions.
600089	ZB-100F Blacklight (230v-60 hz)
621305	ZB-100F Blacklight (220v-50 hz)

## MAGNAGLO®/MAGNAFLUX® Specification Conformance Chart

### Wet Method Magnetic Particles

Specification	14A	14AM	14 Aqua Glo™	14A Redi-Bath™	20B	MG-410	7C Black	7HF Black	9C Red	9CM Red	Carrier II
NAVSEA T9074-AS-GIB-010/271	X		X	X	X	X	X		X		X
MIL-STD-2132	X	X	X	X	X	X	X	X	X	X	X
AMS 2641											X
AMS 3041								X		X	
AMS 3042							X		X		
AMS 3043								X		X	
AMS 3044	X		X	X	X						
AMS 3045		X									
AMS 3046		X									
ASME B & PV Code, Sec. V	X	X	X	X	X	X	X	X	X	X	X
ASTM E 709	X	X	X	X	X	X	X	X	X	X	X
ASTM E 1444	X	X	X	X	X		X	X	X	X	X
A-A-59230		X									X
Boeing PS-21201	X	X	X	X	X		X	X	X	X	X
NAVSEA 250-1500-1	X		X	X	X	X	X		X		
Pratt & Whitney PMC 1887											X

### Dry Method Magnetic Particles

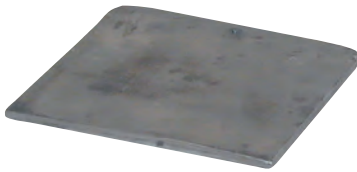
Specification	1 Gray	2 Yellow	8A Red	3A Black
NAVSEA T9074-AS-GIB-010/271	X	X	X	X
MIL-STD-2132	X	X	X	X
AMS 3040	X	X	X	X
ASME B & PV Code, Sec. V	X	X	X	X
ASTM E 709	X	X	X	X
ASTM E 1444	X	X	X	X
NAVSEA 250-1500-1	X	X	X	X



# MAGNETIC PARTICLE ACCESSORIES

## Contact Plates for Wet Horizontal Units

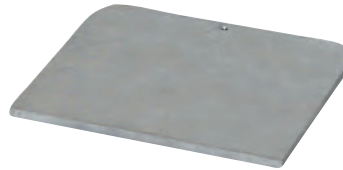
Copper braid pads and lead contact plates prevent burning by ensuring good electrical contact between test part and contact heads. Coils mount on rails of wet horizontal units for detection of transverse cracks on parts.



### Lead Contact Plate

- ▶ Duplicates original headstock/tailstock contact plates
- ▶ Soft lead plate provides excellent contact
- ▶ 1/4" x 6 3/4" x 6 5/8"
- ▶ Fits all units except A-915 and MAG Series units

**Part #:** 605647



### Heavy-Duty Lead Contact Plate

- ▶ Braided copper impregnated with lead
- ▶ Lasts up to 10 times longer than solid lead contact plates
- ▶ 1/4" x 6 3/4" x 6 5/8"
- ▶ Fits all units except A-915 and MAG Series units

**Part #:** 605657

## Contact Pads for Wet Horizontal Units



### Double-Braided Pad with V-Block

- ▶ Heavy copper braid over neoprene base
- ▶ Molded-in V-block centers and supports test parts
- ▶ Flexible, provides contact over greater surface area
- ▶ Reversible – two wear faces
- ▶ Fits all units except A-915 and MAG Series units

**Part #:** 18948



### Double-Braided Pad with Clip

- ▶ Similar to #18948, but clips over headstock of A-915 and MAG Series units

**Part #:** 18949



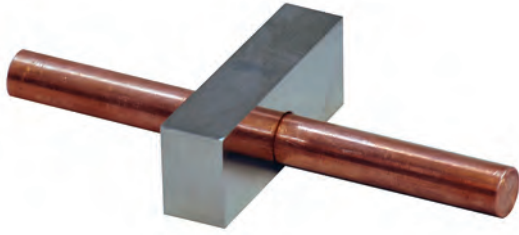
### Replacement Pad

- ▶ Replacement pad for 18948 and 18949
- ▶ 4.75" x 7.5"

**Part #:** 1848

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## Test Pieces



### Continuous Method Test Block

- ▶ Quick, convenient check for proper magnetizing technique on wet horizontal units
- ▶ Crack indication forms on test block if current flow and bath concentration are adequate

**Part #:** 75130



### Tool Steel Test Ring

- ▶ Drilled holes simulate subsurface discontinuities
- ▶ Form surface indications at various magnetizing current levels
- ▶ Meets ASTM E 1444 requirements and certified to AS 5282

**Part #:** 159999



### Magnetic Particle Test Bar

- ▶ Contains coarse and fine artificial surface and subsurface defects in both directions
- ▶ Meets or exceeds most industrial and military specifications for artificial test specimens, including MIL-STD-271

**Part #:** 189838



### Pie Gauge

- ▶ The Magnetic Particle Pie Gauge is a device used as an aid in determining the direction of magnetic fields for detection of discontinuities in ferrous metals.

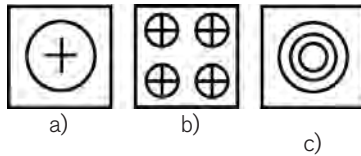
**Part #:** 169799

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# Test Pieces

## QQI Test Pieces

Quantitative Quality Indicators (QQI) are Magnetic Particle Test Pieces with Artificial Defects.



QQI's are used

- ▶ to increase productivity by minimizing magnetizing shots
- ▶ to verify field direction and relative strength
- ▶ to balance multi-directional fields

### b) Miniature QQI's

Similar to KSC-230, except miniature design for small areas on test part. The four circles may be cut apart for individual use.

Part #:	Model#	Description:
519631	KSC-4-230	Miniature QQI with four circles per sheet, flaw depth 30% of Shim thickness, .002" thick

### a) Standard QQI's

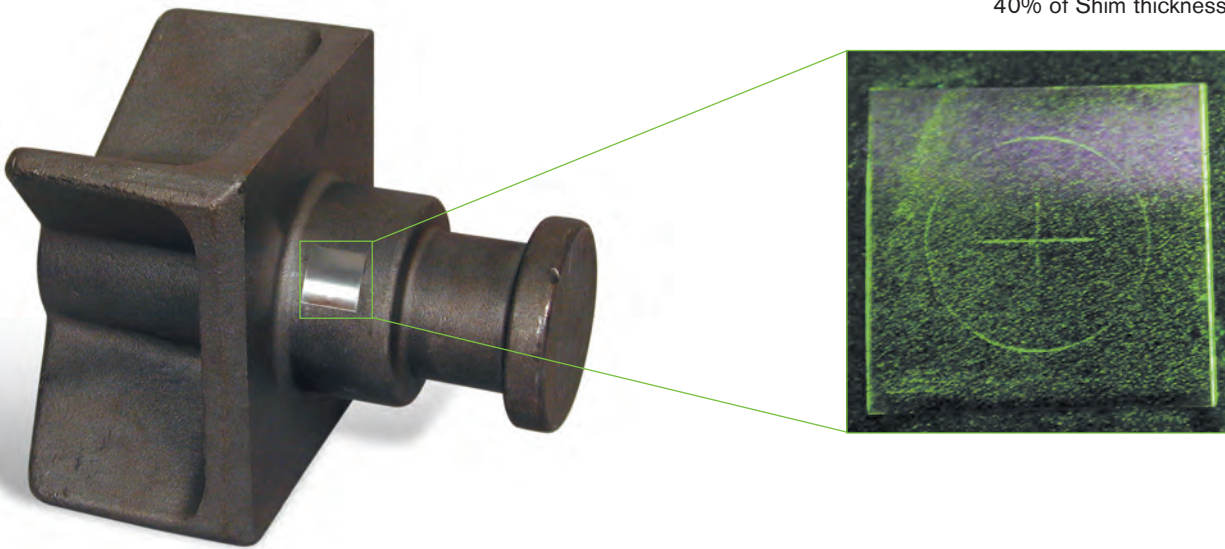
Basic circular and crossed bar flaw configuration suitable for longitudinal and circular fields.

Part #:	Model#	Description:
519630	KSC-230	Standard QQI, flaw depth of 30% of Shim thickness, .002" thick. Self Adhesive
521048	KSC-430	Standard QQI, flaw depth of 30% of Shim thickness, .004" thick

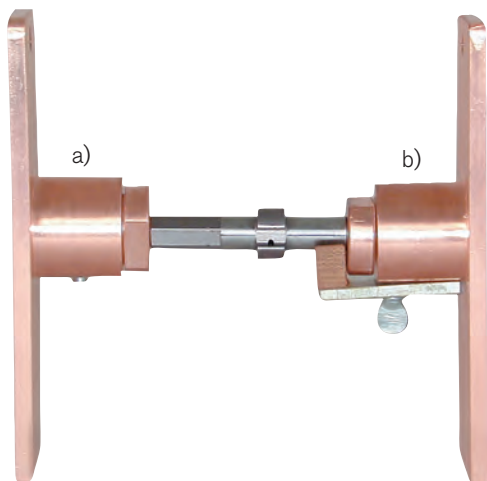
### c) Variable Depth QQI's

These QQI's are used for more quantitative work, three concentric circular flaws of differing depth.

Part #:	Model#	Description:
519632	KSCT-234	Variable depth QQI's, flaws 20%/30%/40% of Shim thickness, .002" thick. Self Adhesive
521049	KSC4-234	Variable depth flaws 20%/30%/40% of Shim thickness, .004" thick



# Head Stock and Tail Stock Adaptors



### a) Small Parts Adaptor, Headstock

- ▶ Enables inspection of small parts such as bolts, screws and pins on wet horizontal units
- ▶ Solid copper, mounts to headstock

**Part #:** 28470

### b) Small Parts Adaptor, Tailstock

- ▶ Enables inspection of small parts such as bolts, screws and pins on wet horizontal units
- ▶ Solid copper, mounts to headstock

**Part #:** 28471

# Field Indicators



## Field Indicator

- ▶ Rugged, pocket-size meter used to indicate residual magnetism remaining in part after demagnetization
- ▶ Inexpensive disposable unit
- ▶ Non certifiable

**Part #:** 2480



## 20 Gauss Calibrated Indicator

- ▶ Accurate to  $\pm 0.5$  gauss. Scale range of 20-0-20
- ▶ Certification Provided

**Part #:** 105645



## 10 Gauss Calibrated Indicator

- ▶ Offers highly accurate measurement of residual leakage field in parts after demagnetization
- ▶ Accurate to  $\pm 0.3$  gauss. Scale range of 10-0-10
- ▶ Certification Provided

**Part #:** 505056



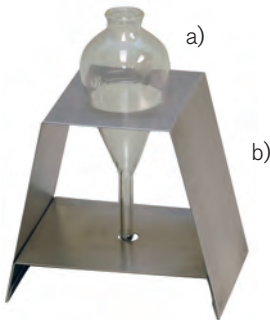
Actual product's appearance may vary from product shown.

## Digital Hall Effect Probe Gaussmeter

- ▶ Hand-held meter measures AC and DC magnetic field strength in Gauss
- ▶ Includes meter, transverse probe, zero gauss chamber, four "9 Volt" batteries, operation manual and carrying case
- ▶ Axial probe (#521045) available as an option

**Part #:** 521043

# Centrifuge Tubes



With MAGNAFLUX centrifuge tubes, you can monitor the concentration and level of contamination of magnetic particles in MAGNAFLUX or MAGNAGLO baths.

14A Centrifuge tube shown with stand (sold separately).

## a) 14A Centrifuge Tube

- ▶ 100 ml, 0 – 1.0 ml in 0.05 increments
- ▶ For use with #14A, #14AM and #20B MAGNAGLO fluorescent materials

**Part #:** 8493

## 7C/9C Centrifuge Tube

- ▶ 100 ml, 0 – 1.5 ml in 0.10 increments
- ▶ For MAGNAFLUX color-contrast materials including #7C, #9C and #9CM

**Part #:** 2461

## b) Centrifuge Stand

- ▶ Safely holds centrifuge tubes when mixing bath concentrations

**Part #:** 1837A

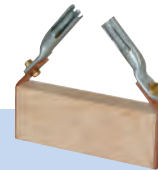
## MG-410 Centrifuge Tube

- ▶ 100 ml, 0 – 0.2 ml in 0.01 increments
- ▶ For use with MG-410

**Part #:** 507923

# Contact Block and Central Conductors

## Contact Block



- ▶ When clamped between heads, supplies magnetizing current to remote prods or clamps through flexible cable (not included)
- ▶ Permits remote testing of parts that are too heavy or too large for processing on unit

**Part #:** 1830



## Central Conductors

These solid copper rods provide circular magnetization of hollow parts. Three sizes are available.

### Part #:

111203  
111204  
111202  
111205

### Size:

$\frac{3}{4}$ " x 24"  
1" x 18"  
 $\frac{1}{2}$ " x 12"

Set of Three: One each of 111202, 111203, and 111204

## Wet Particle Bath Sprayers

### Magnetic Particle Spray System

30 Gallon MPI Spray system with 15ft. recirculation hose attached to a fan pattern spray gun. The system is fully portable with casters for added mobility. Water or oil based solution may be used depending on your application. Bath is continuously agitated, keeping the particles suspended and uniform through the tank, hose and spray gun.

Part #: 621778

**new**



### Portable Pressure Sprayer

- ▶ Easy-to-use, heavy-duty pressure sprayer is ideal for spot application of magnetic particle bath
- ▶ Features chrome-plated solid brass construction, one-quart capacity
- ▶ Pressurize with compressed air to a maximum of 200 psi

Part #: 195260



## Portable Powder Blower and Powder Spray Bulb



### Portable Powder Blower

- ▶ Even, adjustable flow of dry magnetic powder
- ▶ 2 pound reservoir
- ▶ Air blow off
- ▶ 115V 1 phase operation

Part #: 620936

### Powder Spray Bulb

- ▶ Lightweight, easy-to-use spray bulb for applying MAGNAFLUX dry powders
- ▶ Cap removes for easy filling



Part #: 501232

## Monitoring Devices

Easy-to-use test meters verify the accuracy of the built-in ammeter of standard wet horizontal magnetic particle units and power packs.

**new**



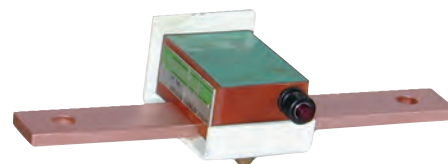
NEW and IMPROVED Digital Amperage Meter designed specifically for NDT applications. This digital unit certifies amperage on all Magnaflux MPI units up to 10,000 amps.

### Digital Amperage Meter

Other features include:

- ▶ Light weight design
- ▶ Battery operation (making the unit fully portable)
- ▶ Direct read out (which eliminates conversion charts)
- ▶ Meets ASTM E1444 and ANSI Z-540
- ▶ Checks AC, HWDC, 1 Phase FWDC and 3 Phase FWDC
- ▶ Accurate to +/- 3% at level

Part #: 622350



### Quick Break Tester

- ▶ Quickly and accurately confirms function status of "quick break" circuitry in three phase FWDC magnetic particle units
- ▶ Manufactured for compliance to ASTM E 1444

Part #: 148335

# Prod Sets

Hand-held electrodes enable magnetizing current to pass through sections of welds, castings, forgings and large fabrications.

All prod sets:

- ▶ Require additional power cables, purchased separately
- ▶ Include solid tip prods and 20' control cable with trigger in handle
- ▶ Available for connection with P-Series and M2000 Series units

## Standard Prod Set

- ▶ Individual contact prods offer maximum flexibility in prod spacing and magnetizing of complex-shaped parts
- ▶ New design has user-friendly pistol grip and out-of-the-way cable hookups
- ▶ With 3 PTL plug for P-Series portable power packs

Part #:	Description
157662	For use with P-Units
157660	For use with M-2000 series units

## Dual Horizontal and Vertical Prod Assemblies

- ▶ Offers one person operation with variable prod spacing
- ▶ New design has user-friendly pistol grip and out-of-the-way cable hookups
- ▶ With connector for use with M-2000 Series units

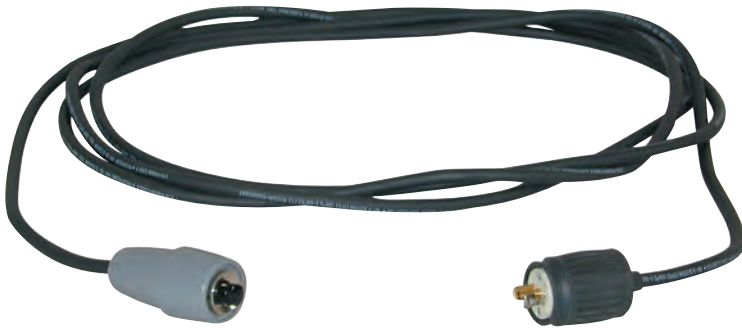
Part #:	Description
157781	For use with P-Units
622499	Dual Horizontal Prod Assembly for use with M-2000 Series Units
622085	Dual Vertical Prod Assembly for use with M-2000 Series Units



Standard Prod Set

## Remote Cable/Palm Button

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### Remote Control Cable, 15'

- ▶ Allows remote energization of portable power packs
- ▶ Standard with 3 PTL plug
- ▶ Use with P-Series Units

**Part #:** 157657



### Remote Palm Button

- ▶ Mounts on side of MAG Kit for energizing current from power pack
- ▶ Standard with 3 PTL plug
- ▶ Use with Standard P-Series Units

**Part #:** 169621

## Publications

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### Principles of MPI Testing Book

- ▶ "Principles of Magnetic Particle Testing" by C.E. Betz explains the fundamental concepts, basic techniques and procedures and various methods of magnetic particle testing

**Part #:** 517422



### Demagnetizing Techniques Videotape

- ▶ Informational and educational video on demagnetizing techniques

**Part #:** 520586



### QQI's in Action Videotape

- ▶ Informational and demonstrational video on QQI's (artificial defects)

**Part #:** 520584

# Cables and Connectors

Rubber-covered flexible cables are available in standard lengths of 15' and 20' with your choice of eitherend or lug connectors. Individual connectors to replace those worn or damaged in use are also available.

## Standard 4/0 Cable Assemblies

Part #:	Length (Feet):	Fittings:
11306	15	Lugs at both ends
11307	15	Lug and eitherend
11308	15	Eitherends at both ends
11312	20	Lugs at both ends
11313	20	Lug and eitherend
11314	20	Eitherends at both ends

Custom 4/0 and 1 million circular mill cable assemblies are also available.



### 4/0 Eitherend Connector

- ▶ Allows quick cable disconnect for maximum flexibility

**Part #:** 1238  
1238A-Boot only



### 4/0 Lug

- ▶ For permanent attachment to magnetizing equipment

**Part #:** 2590



### Eitherend Lug Adaptor

- ▶ Changes lug terminals to eitherend terminals

**Part #:** 1574



### Eitherend Lug Adaptor, 90°

- ▶ Similar to #1574, but at a 90° angle

**Part #:** 1576

# Contact Clamps



## Spring Loaded Contact Clamp

- ▶ Specifically designed for more accurate inspection of tubing, bars and tubular assemblies, such as aircraft engine mounts and fuselage sections
- ▶ Clamps connect via lugs and flexible cables to electrical terminals of portable units or contact blocks (#1830) on bench units
- ▶ For 1 1/4" to 2 1/2" diameter parts
- ▶ Replacement Copper Braid (#14710) also available

**Part #:** 1865A

## Heavy-Duty Contact Clamp

- ▶ Similar to #1865A, but for parts up to 7" diameter

**Part #:** 169802



## Split Coils

Our multiple-loop, quick-connect cable-coil saves time, eliminates complicated coil winding and is particularly useful when inspecting heavy equipment, rolling stock and heavy machinery.

**Part #:** 14725, 14726, 14727  
**Size:** 12" diameter 4/0 cable with eitherends, 18" diameter also available, 24" diameter also available



## Magnetic Leech

- ▶ Permanent magnet with 4/0 eitherend connector attaches to part, freeing a hand to enable one-person prod operation

**Part #:** 54975



# Steadyrests and Raising Blocks

To support long or heavy parts such as crankshafts during inspection, choose from the following selection of MAGNAFLUX steadyrests and raising blocks.



## Rail-Mounted Roller-Type Steadyrest

- ▶ Mounts and moves on rails to accommodate various part lengths
- ▶ A pair increases weight capacity from 300 to 1500 lbs
- ▶ Adjustable height
- ▶ Fits all units except the A-915 and MAG Series units

**Part #:** 1857

**NOTE:** Also order "Raising Block" 14786 if used with 16", 20" or 25" coil.



## Headstock-Mounted Roller-Type Steadyrest

- ▶ Mounts on headstock to support one end of part (Use rail-mounted steadyrest #1857 to support other end)
- ▶ Facilitates part loading as coil may be retracted past headstock
- ▶ Fits all current models except the A-915 and MAG Series units

**Part #:** 605750



## Tailstock Steadyrest

Similar to Headstock Steadyrest, but designed to mount on the tailstock.

- ▶ Handy for long round parts to ease inspection by allowing part to be rotated without unloading.
- ▶ Can be used in any combination of Headstock and Rail Steadyrests.

**Part #:** 621658



## Coil for Bench Units

- ▶ 5-turn coils in various diameters for most units

Part #:	Size:
28501	12" Coil
28511	16" Coil
28531	20" Coil
28541	25" Coil

## Coil Base

- ▶ **Part #:** 26193  
For use with coils on most units



## Flat Magnetizing Coil

- ▶ Accessory for use with any magnetic particle unit or power pack
- ▶ Non-contact method of applying field
- ▶ Allows for quick, easy processing of several small parts at one time, such as fasteners, ring-like parts

**Part #:** 611700

# MAGNETIC PARTICLE EQUIPMENT

## Yokes

### Benefits

- ▶ Portable lightweight yokes for one-person inspection in tight places
- ▶ Adjustable legs enable you to inspect many different surface configurations
- ▶ **NEW!!**  
**One Year Warranty**

### MAGNAFLUX Yoke and Coil Kits

MAGNAFLUX Yoke Kits are designed for reliable, one person magnetic particle inspection of ferrous parts when portability is essential. Because the kits are portable and the yokes fit into tight places, they are ideal for in-plant structures and field work. MAGNAFLUX offers a variety of options, so you can select exactly what you need – a yoke only, or a kit that also includes testing materials and accessories.

Whether you choose a Y-6 AC yoke to locate surface cracks or a Y-7 AC/DC yoke to find surface and near-surface defects or a Y-8 battery powered yoke for portability, you always get unsurpassed MAGNAFLUX quality and reliability.

- ▶ Articulating, double-jointed legs contour easily to any part shape to assure good contact.
- ▶ Pull force (60 lbs DC, 10 lbs AC) complies with specifications.
- ▶ Solid state controls located in housing for maximum safety and reliability.
- ▶ 2-minute ON/OFF duty cycles for fast, efficient inspections (Y-6 and Y-7).
- ▶ 30-second ON/OFF duty cycle - Y-8.

### Operating Instructions

When yoke is connected to a proper power source and energized, an intense longitudinal magnetic field is created in the area between the yoke legs. Any surface cracks will create flux leakages which will attract magnetic particles that form indications that allow for detection.

There are two testing methods:

**MAGNAFLUX** Dry Non-Fluorescent Method, used with a yoke, does not require a black light and is more sensitive for finding near-surface defects on components with rough surfaces, such as castings and forgings.

**MAGNAGLO** Wet Fluorescent Method, used with a yoke and an ultraviolet black light, can find very fine surface flaws or slightly near-surface discontinuities (with Y-7 or Y-8 yokes only).

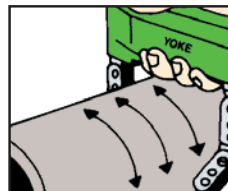
### How to use



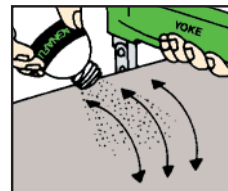
Preclean inspection area. Spray on Cleaner. Wipe off with cloth.



Place Yoke on test piece perpendicular to direction of suspected cracks.



Energize Yoke. Magnetic field will form in test piece.



Apply magnetic powder or prepared bath while Yoke is energized.



Indications will form immediately.



## Y-6, Y-7 Light

This slim molded light easily fits on the leg of our Y-6 and Y-7 yokes to illuminate the inspection area. Light works in AC mode when yoke is activated.

**Part #:** 621785

**Benefits:** Light fits on both Y-6 and Y-7 yokes. Meets ASTM E 1444 visible light requirement of 100 foot candles. Allows the inspector to use the yoke in darkened areas when extra ambient light may be required.



## Y-6 AC Yoke

Yoke:	115v, 50/60 hz (Part #43530) or 230v, 50/60 hz (Part #43540)
Current Draw:	Less than 9 amps @115v Less than 4 amps @230v
Demag:	Yes
Yoke Weight:	7.3 lbs (3.1 kg)
Leg Capacity:	0" – 12" (0-30 cm) across poles
Cord:	9 ft (365.8 cm) with grounded plug
Other:	Carrying case and instructions

## Y-7 AC/DC Yoke

Yoke:	115v, 50/60 hz (Part #43550) or 230v, 50/60 hz (Part #43560)
Current Draw:	9 amps @ 115v AC 4 amps @ 115v DC 4 amps @ 230v
Demag:	Yes
Yoke Weight:	7.4 lb 115v (3.6 kg) 7.2 lb 220v (3.27 kg)
Leg Capacity:	0" – 12" (0-30 cm) across poles
Cord:	9 ft (365.8 cm) with grounded plug
Other:	Carrying case and instructions

## Y-8 Battery Powered Yoke

Yoke:	Y-8 Battery Powered Yoke ONLY* (Part #620145)  *Must choose the appropriate voltage for the battery charger.
Battery Charger:	115v Charger (Part #620142) 230v Charger (Part #620709)
Current Draw:	4 amps @ 6 volts DC (Yoke Only)
Current Draw:	0.2 amps @ 115v or 230v (Charger Only)
Demag:	No
Yoke Weight:	7 ¾ lb.
Leg Capacity:	0" – 12" (0-30 cm) across poles
Cord:	12 ft., coiled

### BATTERY SPECIFICATIONS

Rechargeable Battery: 6 volt, 12-amp hour

Battery Weight: 5 ¼ lb.

Under normal duty cycle, battery lasts 8 hours between charges.



## L-10 Coil

- ▶ For detection of surface cracks
- ▶ 10" coil I.D., 15" coil O.D.
- ▶ Wear-resistant neoprene coating
- ▶ Equipped with footswitch for energizing magnetic current
- ▶ 10' flexible line cable
- ▶ 115V, 60 hz, single-phase power source required
- ▶ 2,800 amp turns

**Part #:** 50651

# Portable Power Packs



## Specifications

	Model P-70	Model P-1500
Length	17 1/2" (44.5 cm)	22" (55.8 cm)
Width	9" (23 cm)	9 1/2" (24.3 cm)
Height	7 1/2" (19.1 cm)	9 1/2" (24.3 cm)
Maximum output*	750 amps, AC or HWDC	1500 amps, AC or HWDC
Current input, single phase	115 VAC, 50/60 hz; 230 VAC, 50/60 hz (other voltages available)	230 VAC, 50/60 hz; 460 VAC, 50/60 hz (other voltages available)
Line current	26 amps @ 115 VAC; 13 amps @ 230 VAC	42 amps @ 230 VAC; 21 amps @ 460 VAC
Maximum duty cycle	2 minutes ON 2 minutes OFF	2 minutes ON 2 minutes OFF
Unit weight	35 lbs (15.9 kg)	93 lbs (42.2 kg)

\* Current ratings based on the use of two 15-foot lengths of 4/0 cable.

## P-SERIES

For convenient, economical inspection in a wide range of magnetic particle applications that require only moderate power. For large or heavy parts, in-service mobile equipment, or job-site welds, portable power packs are the ideal choice.

### Features:

- ▶ Find surface defects with AC current; switch cable connection to halfwave DC (HWDC) for near-surface flaws
- ▶ Locate defects in any direction using prods, central conductor, or coil (wrap part with 3-5 turns of cable)
- ▶ Infinitely variable current control
- ▶ Demagnetize part in AC mode by slowly turning the current dial to zero
- ▶ Built-in automatic-reset circuit breaker

### Recommended Operating Accessories:

4/0 Cable Assemblies\*, Prods Sets\* Powder Spray Bulb (#501232), Pie Field Indicator (#169799), Flat Magnetizing Coil (#611700), Remote Control Cable (#157657), 5' Cable with Eitherends (#11308), and Remote Palm Button (#169621)

\* Various sizes/styles available – check out our website

Part #:	Model:	Voltage:
190575	P-70	115V
190575-1	P-70	230V
198500	P-1500	Specify 230V or 460V

# Mag Kit



## Standard Mag Kit

39 Inch Head Opening, 11 Inch Coil (#69420) and Separate Power Supply (Must purchase either P-70 or P-1500 Portable Power Pack to energize the MAG Kit).

Part #:	Description:
69360-11	Standard Mag Kit 39" Head Opening, 11 Inch Coil (#69420) and Separate Power Supply (must purchase either P-70 or P-1500 Portable Power Pack to energize the MAG Kit).
605165PK	Mag Kit Hood



## MAG Kit Pump

- ▶ To be used with the MAG Kit bench unit
- ▶ Provides continuous spray and re-capture of MAGNAGLO bath
- ▶ Includes hose, nozzle, fittings, 5-gallon pail
- ▶ Operates on standard 115V, 50 -60 hz, single phase line current

**Part #:** 69390

# Demagnetizer Equipment

## S-66 Demagnetizer

The S-66 Demagnetizer is a fast, effective, dependable piece of demag equipment. This equipment is created specifically for volume demagnetizing of small parts on a production line.



Part #:	Description:
197250	S-66 Continuous Duty AC Demagnetization Coils Opening Size: 6" x 6" Opening (15 cm x 15 cm) Ampere Turns: 4,600; Voltage: 115v - 50-60/1
197251	S-66 Continuous Duty AC Demagnetization Coils Opening Size: 6" x 6" Opening (15 cm x 15 cm) Ampere Turns: 4,600; Voltage: Specify 230V or 460V; Other Voltages Available

## S-1212 Demagnetizer

The S-1212 Demagnetizer is a fast, effective, dependable piece of demagnetization equipment. This equipment is created specifically for volume demagnetizing of small parts on a production line. The S-1212 has a larger opening than the S-66, allowing for larger parts to be demagnetized.



Part #:	Description:
197260	S-1212 Continuous Duty AC Demagnetization Coils Opening Size: 12" x 12" (30 cm x 30 cm) Ampere Turns: 7,500; Voltage: Specify 230V or 460V Other Voltages Available

# BLACK LIGHTS



## Benefits

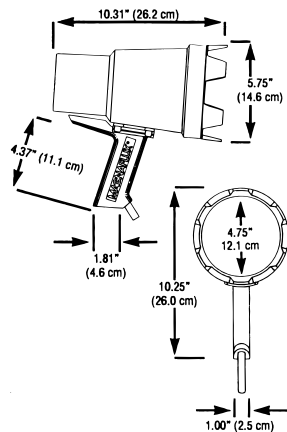
One significant feature that separates the ZB-100F from other black lights – it has a built-in, quiet-operating fan located at the rear of the lamp housing.

The advantage of this design feature is obvious – dramatically reduced running temperature. In practical terms, the fan-cooled ZB-100F means more comfort and safety for operators plus longer bulb life.

Because black lights are often hand-held during fluorescent inspections, the heat they create is an important consideration. The typical running temperature of the ZB-100F is less than 85 degrees Fahrenheit, so it does not significantly raise the ambient temperature around the operator, nor is it a safety concern.

The ZB-100F also shares all of the features of the ZB-100, our most popular NDT black light.

- ▶ Polycarbonate bezel helps keep operators' hands away from lens glass during use
- ▶ Cord-through-handle design reduces operator fatigue, improves balance and provides greater safety
- ▶ Fiberglass-reinforced handle always stays cool
- ▶ Tough aluminum housing withstands rugged use
- ▶ Recessed lens design protects lens and bulb from damage



## ZB-100F

**Portable Black Light System produces longwave ultraviolet light at 365 nanometers, providing optimum fluorescence in MAGNAGLO® and ZYGLO® testing materials.**

- ▶ 100 watt black light with transformer, cords, GFCI and plug.
- ▶ Built-in fan keeps light cool-to-the-touch.
- ▶ Running temperature <85°F.
- ▶ Typical output 5,000 μW/cm<sup>2</sup>.
- ▶ #600004 portable unit includes carrying base and stand for storage of cord.
- ▶ #600005 Hand-held unit similar to #600004, except no carrying base provided.

## Technical Specifications for ZB-100F

- ▶ **Power Supply:** 115V/50 or 60 hz/1ph (P/N600004)  
115V/60 hz/1ph (P/N600005)
- ▶ **Current Draw:** 1.9 amps
- ▶ **Typical Visible Light:** 10 Lux or 1 foot candle @ 15" (38 cm)
- ▶ **Bulb:** 100 watts
- ▶ **Running Temperature:** 85°F (30°C) @ 70°F  
13 amps @230 VAC
- ▶ **Weight—Hand Lamp:** 3 lbs. (1.4 kg)
- ▶ **Weight—Hand Lamp with Transformer:** 12.5 lbs. (5.7 kg)  
Control Unit
- ▶ **Lamp to Transformer:** 10 ft. (3.1 m) Cable Unit
- ▶ **Main Cable Supply:** 12 ft. (3.7 m) with Ground Fault Protection
- ▶ **UV Intensity meets industry and military standards @ 15" (38 cm)**

## ZB-100F and ZB-100 Hand-Held Black Lights

- ▶ 100 watt, hand-held model includes transformer, cords, GFCI and plug.
- ▶ 115v or 230v
- ▶ Typical intensity @15" (38 cm): 4300 Microwatts/cm<sup>2</sup>
- ▶ Polycarbonate bezel protects operators from burns
- ▶ Fan-cooled model reduces running temperature <85°F  
Keeps light cool to the touch

Uses Medium Base Bulb (Part #: 507320)



## ZB-100F Hand-Held, Fan-Cooled Black Light

Part #:	Voltage:
600004	115v/60 hz/1ph with carrier/stand
600005	115v/60 hz/1ph
600068	Carrier/stand for ZB-100F
621312	230/60/1 with carrier/stand
621311	220v/50/1 with carrier/stand
621109	Carrying case for ZB-100F

## ZB-100 Black Light

Part #:	Voltage:
600000	115v/60 hz/1ph
600001	230v/60 hz/1ph
600002	230v/50 hz/1ph
600003	115v/50 hz/1ph
047685	Carrying Case for ZB-100

## ZB-100F MB – MAG Shot Black Light

We have taken our ZB-100F Fan-Cooled black light and added the convenience of energizing your Power Packs or Wet Benches REMOTELY, when checking for cracks in extra long parts.

Our ZB-100F MB has a remote button integrated into the handle of the black light to eliminate the need to continuously return to the MPI Unit to initiate a mag shot.

Uses Medium Base Bulb (Part #: 507320)

**Part #:** 600086

## ZB-150 FSB Self-Ballasted Black Light

For Portable Inspections!

- ▶ No Transformer
- ▶ Fan-Cooled
- ▶ Ergonomic Grip

Uses 150W Self-Ballasted Replacement Bulb (Part #: 519296)

**Part #:** 621135      115v/60 hz



## ZB-240 Cool Max Fluorescent Overhead UV Light Fixture

- ▶ Y bracket mounting makes it easy to install
- ▶ Protective lens is impact-resistant and hinged for easy cleaning
- ▶ Cool fluorescent operation, energy-efficient design, and easy bulb replacement
- ▶ Bulb life estimated at 8,000 to 10,000 hours
- ▶ Could replace large "flood style" units which generate excessive heat
- ▶ Uniform light intensity allows for a larger inspection area
- ▶ Much less expensive than the typical "flood style" lamp

Uses 4 ft. (1.2 m) Tubular Black Light Bulb (40 w) (Part #: 622048)



## 40W Tubular Black Light Bulb

- ▶ 4 foot (1.2 m), 40 watt, replacement for the ZB-240 Cool Max Light Fixture.

**Part #:** 622048      **Description:**  
Package of 3 bulbs

**Part #:** 621509      115v  
621563      230v

# BLACK LIGHT ACCESSORIES

## Black Light Bulbs



### 100W Medium Base Bulb

- ▶ 100 watt spotlight bulb, replacement for ZB-100 and ZB-100F models and all other MAGNAFLUX 100 watt lamps made after May 1982.

**Note:** The socket base of the 507320 is similar in size to that of a table lamp socket.

**Part #:** 507320



### 100W Ad Medium Base

- ▶ 100 watt spotlight bulb, replacement for MAGNAFLUX 100W lamps made BEFORE May 1982. Replacement of current Spectronics Lamps.

**Note:** The socket size of the Ad Medium Base Bulb is larger than that of the Medium base bulb (507320).

**Part #:** 1914



### 150W Self-Ballasted Bulb

- ▶ Built in ballast, 150 watt (Used in our ZB-100FSB Black Light System)

**Note:** The socket base of the 519269 is similar in size to that of a table lamp socket.

**Part #:** 519296

## U-V Absorbing Spectacles



### UV-Absorbing Spectacles

- ▶ Reduces eye fatigue from exposure to UV light emission

**Part #:** 506249

## Filters



### Smooth Filter Glass

- ▶ For use with ZB-100 and ZB-100F models

**Part #:** 519227



### Fluted Filter Glass

- ▶ Similar to # 519227, but fluted for a more diffused output pattern

**Part #:** 3901



# Black Light Mounting Hardware

Side mounts, tabletop assemblies and wall brackets facilitate the use of black lights in a variety of applications.



## Modular Black Light Mounting System

- ▶ May be configured for wet bench mounting, tabletop, and overhead lighting
- ▶ Infinite positioning capabilities
- ▶ Easy lock and hold hardware

Call Magnaflux for configuration and part numbers to fit your need.



## ZB-100/100F Tabletop Mount Assembly

- ▶ Tabletop mount assembly
- ▶ Movable pivot arms for adjustment of black light
- ▶ Light assembly lifts from fixture for portable use

Part #: 600026



## ZB-100/100F Side-Mount Assembly

- ▶ Bracket mounts on side of horizontal units
- ▶ Movable pivot arms for adjustment of black light
- ▶ Light assembly lifts from fixture for portable use

Part #: 600029

# Light Meters

## Digital White Light Meter

- ▶ Accurately measures visible light by footcandles and lux
- ▶ Includes meter and white light meter sensor (permanently affixed to meter by coiled cord)
- ▶ Calibrated/Certified for NDT use
- ▶ Meter comes with battery and carrying case

Part #: 622338



## Digital Black Light Meter

- ▶ Accurate digital readout of black light intensity, tuned at 365 nanometers (microwatts/cm<sup>2</sup>)
- ▶ Includes meter and permanently affixed black light sensor
- ▶ Calibrated/Certified for NDT use
- ▶ Meter comes with battery and carrying case

Part #: 622339



# SPECIALITY PRODUCTS



## SCRUBS™ In-A-Bucket

### Heavy Duty Hand Cleaning!

Revolutionary premoistened hand cleaner towels that go where you go. SCRUBS In-A-Bucket has powerful, yet safe cleaning agents working together with an absorbent, non-scratching abrasive hand cleaner towel. Contains emollients that condition and soften your hands.

Scrubs work well to remove stains from your hands when working with...

- ▶ Liquid Penetrant
- ▶ Grease
- ▶ Magnetic Particle Bath
- ▶ Paint
- ▶ Lubricants
- ▶ Tar
- ▶ Adhesive
- ▶ Sealants, etc.
- ▶ Ink

**Part #:**

42272

**Container Size:**

SCRUBS In-A-Bucket Case of 6 Buckets

## P-1A Partek – Fluorescent Material for Porous Materials

Specifically for porous materials (i.e., unfired clay ware, sintered metallic compacts, concrete and certain fired ceramics). P-1A is used to locate cracks open to the surface in porous materials.

**Part #:**

01-8114-40  
01-8114-45

**Container Size:**

5 Gallon Pail  
55 Gallon Drum

## Ultra Clear Cleaner

Cleaning solution for Filter Cartridge used in our Ultrafilter and Nanofilter Filtration units. Ultra Clear cleaner is a clear, colorless, odorless, water solution to be used for removing scales and oils in our filter membranes.

**Part #:**

01-9299-20

**Container Size:**

1 Gallon Jug

## ZAF-2 - Antifoaming Agent

Antifoaming liquid additive

**Part #:**

01-9410-20

**Container Size:**

1 Gallon Jug

## Foilcheck

Foilcheck is a clear hydrocarbon based penetrant fluid with no added dyes. It readily finds "through porosity" in a wide range of manufactured metallic foils and thin film materials. Foilcheck is safe to use on all aerospace alloys including aluminum, magnesium, steel, nickel and titanium.

**Part #:**

056C169

**Container Size:**

55 Gallon Drum



**164, St-Jean Baptiste  
Mercier, QC J6R 2C2  
Tel.: 450-691-9090  
WWW.QUALITYNDE.COM**