



Compac Technologies India Limited is an ISO 9001:2008 certified company engaged in manufacturing of Non Destructive Testing Equipment, Special Purpose Machines & Process Automation Systems. In house Manufacturing & design facilities spread in an area of 25000 sq.ft. allow us to design & build customized machines for testing & other processes. Top Management is technically qualified to understand & provide right solutions to its customers. We have installations all across India. Sales & Service Engineers are placed across India for quick support.

**Major Clients:**

- Ordnance Factories
- Indian Railways
- BHEL
- Automobile Manufacturers & OEMs
- Steel Industries
- Training Institutes
- Power & Petrochemical Plants

**Areas of Specialization:**

- Non Destructive Testing Equipment, Accessories & Consumables
- Special Purpose Machines
- Process Automation
- Linear, Two Axis, Three Axis Gantries
- CNC Plasma Cutting Machines



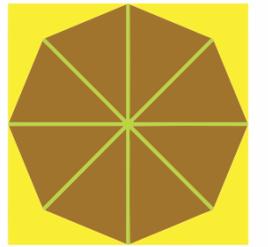
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**magkraft™**

A BRAND OF  
 COMPAC TECHNOLOGIES  
 INDIA LIMITED



**MAGNETIC PARTICLE INSPECTION EQUIPMENT,  
 ACCESSORIES & CONSUMABLES**

[www.compactech.co.in](http://www.compactech.co.in)



## BENCH TYPE EQUIPMENT

### ROUND COIL TYPE MACHINE

This machine is a horizontal bench type two vector machine. Circular Magnetic Field is generated by headshot & longitudinal field is created by an encircling coil. It is used to check medium to long components such as axles or small components with a bore such as sprockets & small gears. These machines are available in various amperages & job lengths. Standard Job Lengths: 700mm, 1300mm



### FLUX FLOW COIL TYPE MACHINE

This machine is a horizontal bench type, two vector machine. Circular Magnetic Field is generated by headshot & longitudinal field is created by two flux flow coils. Job length is restricted to 450mm. It is used to check even & odd shaped small components with or without bore. Standard Job Length : 450mm



### UNIVERSAL MACHINE

This machine is a horizontal bench type, two vector machine. Circular Magnetic Field is generated by headshot. Longitudinal field can be switched between coil method & flux flow coils. All types of components can be checked on this machine. Recommended for small to medium testing volumes. These machines are available in various amperages & job lengths. Standard Job Lengths: 450mm, 1000mm



### SPRING TESTING MACHINE

This machine is a horizontal bench type two vector machine. It is used to check coil springs. Circular Magnetic Field is generated by central conductor method & longitudinal field is created by headshot current. These machines are available in various amperages & job lengths.



### GEAR/RING TESTING MACHINE

This machine is designed for testing of finished or semi finished components in the shape of a ring or a disc such as bull gears. The component to be tested must have a bore of minimum 40 mm dia in the centre. This machine is a horizontal bench type two vector machine. Circular Magnetic Field is generated by central conductor method. Longitudinal & radial field is generated by induced current method. Standard Current Rating/Component Dia: 3000A/150mm, 4000A/200mm, 5000A/250mm, 6000A/300mm, 8000A/400mm, 9000A/450mm

All the above machines are available in Following Standard Current Ratings 1000A, 1500A, 2000A, 3000A, 4000A, 5000A, 6000A, 8000A & 9000A. Machines with Higher Current Ratings and/ or longer job lengths can be manufactured against order. All equipments are manufactured as per ASTM E-1444 and ASTM E-709

### DISK TESTING MACHINE

This machine is designed for testing of un-machined components in the shape of a ring or a disc such as gear blanks. The component to be tested need not have a bore in the centre. This machine is a horizontal bench type single vector machine. Magnetic field is generated by induced current method. Standard Current Rating/Component Dia: 3000A/150mm, 4000A/200mm, 5000A/250mm, 6000A/300mm, 8000A/400mm, 9000A/450mm



### BAR TESTING MACHINE Type B

This machine is used to check seams or longitudinal defects in black or bright steel bars. The machine checks the entire length of the bar at one time. This machine is semi automatic as all the processes such as movement of bar, spray, magnetization etc. are automatic. Only Headshot method is employed. This machine can check bars from 20mm diameter to 100mm diameter. Standard Current Rating: 2000A, 3000A, 5000A, Standard Bar Lengths: 1.5m, 3m, 6m

### BAR TESTING MACHINE Type A

This machine is used to check black or bright steel bars. There is no limitation to the length & diameter of the steel bar. The machine checks 1m length of the bar at one time. This machine is semi automatic as all the processes such as movement of bar, spray, magnetization etc. are automatic. Multiple cameras relay video to a computer screen which shows the entire cross section of the job. A joystick is used to move the camera across the length of the job. Available with or without coil. This machine can check bars from 20mm diameter to 100mm diameter.



### CONTROL SYSTEM

All our standard machines have microprocessor based control system & an LCD based HMI. The HMI can store up to 80 different settings (programs) for different types of components. The operator has to select the program number & the settings are automatically loaded. Type of current can also be selected from this unit.

### Other Special Features of our machines are:

**Soft Switching** between AC/DC & Headshot/Coil Shot. No Moving Parts & No Clapping Sound.

**Stainless Steel Tank:** The collection tray & liquid storage tank are made of stainless steel. The machine can be used with water based powders also.

**Digital Metering with Retention:** The meters use large size digital display for easy reading.

**Current Failure Indicator:** An audible alarm which indicates if the current has not passed through the job.

**Constant Current Feature:** The machines employ fast feedback loop system to maintain the current at the desired level inspite of changes in resistance of the job. This leads to higher consistency in testing.

#### Optional Features:

- Auto Bath
- In Built Demagnetization
- FWDC Current
- Job Counter
- Motorized Tailstock Movement
- Motorized Job Rotation

## SPECIAL PURPOSE MACHINES

### TRAINING MACHINE

It is a low cost basic machine for purpose of training to students in educational institutions. It is a uni vector machine which produces only headshot current. A coil can be added on order. It is available in 1000Amp Rating with a maximum job length of 300mm



### MACHINE FOR TESTING OF LARGE CRANKSHAFTS

This machine can test engine crank shafts up to 6m length & 2000Kg Weight. Machine has facility for automatic coil movement & Motorized Job Rotation with inching. Dark room opens from the top for loading through EOT crane. Job is rested on hydraulically operated rollers. Standard Ampere Rating: 6000A, 9000A, 12000A, 15000A, 18000A, 24000A

### MACHINE FOR TESTING OF RAILWAY COMPONENTS

This machine is a bench type machine. It is a bigger version of the coil type/flux flow type machine. It is used to check various components of the railway engine & bogie such as Draft Gear Assembly, Anchor Links, Con Rod etc. Standard Ampere Rating: 6000A, 9000A, 12000A, 15000A, 18000A, 24000A



### SPECIAL PURPOSE MACHINES

This photograph shown is an example of special purpose machine. We design & manufacture customised machines according to the geometry of the component(s) to be tested. This particular machine had three different headstock & tailstock arrangements & an encircling coil. It is being used to check components used in locomotive braking systems.

## DEMAGNETIZERS

### DM200

This is a chute type demagnetizer with a coil opening of 200mmX200mm. It is used to demagnetize small components. It can be switched on continuously. Works on 220V AC



### DM300TR

It is a trolley type demagnetizer with a coil opening of 300mm X300mm. Standard Length is 3m. Standard Trolley Length is 450mm. Option of Motorized Trolley movement is available. Timing is controlled with a built in timer. Works on 415V AC. Longer Lengths or trolley sizes can be made on request. Used for Medium to long components.

### DM500TR

It is a trolley type demagnetizer with a coil opening of 500mm X500mm. Standard Length is 3m. Standard Trolley Length is 450mm. Option of Motorized Trolley movement is available. Timing is controlled with a built in timer. Works on 415V AC. Longer Lengths or trolley sizes can be made on request. . Used for Medium to long components.



All Standard Demagnetizers use slow withdrawal method for demagnetization and produce AC magnetic field. Reversing DC demagnetizers are manufactured on order

## PORTABLE & MOBILE UNITS

### YOKES

Handheld yokes for testing of weld joints & cast components. Two models are available.

**Model MK-YK-ADC:** AC/HWDC Operated on 220V AC.

**Model MK-YK-DC:** DC Only Operated on 12V DC. Can work on battery also.



### PORTABLE POWER PACK

This is a portable power pack for MPI. These packs generate both AC & HWDC current. Used to check weld cracks & cracks in large components & structures. Available in three current ratings: 750A, 1000A & 15000A. Comes with pair of prods & pair of 3m X 70mm<sup>2</sup> cables.

### MOBILE UNIT SMALL

This is a mobile power pack for MPI. These packs generate both AC & HWDC current. Used to check weld cracks & cracks in large components & structures. It is fitted with wheels which can be locked if required.

Available in three current ratings: 2000A, 2500A & 30000A. Comes with pair of prods & pair of 3m X 120mm<sup>2</sup> cables.



### MOBILE UNIT MEDIUM

This is a mobile power pack for MPI. Maximum current capacity is 12000 Amps. These packs generate both AC & HWDC current. FWDC is available on request. Used to check weld cracks & cracks in large components & structures. Available in three current ratings: 4000A, 5000A & 6000A. Comes with pair of prods & pair of 5m X 120mm<sup>2</sup> cables.

Mobile Units with Amp Ratings more than 6000A, up to 24000Amp and with FWDC current are made against orders.

## UV LIGHTS

We are the first company in India who manufacture LED based UV Lights for MPI. Advantages of LED Based UV Lights are:

- Light Weight
- Negligible Heat Generation
- Reaches Full Intensity Within a Second
- Doesn't get switched off in coil field
- Long Life of LED-No frequent replacement of Lamp.
- Increased Comfort for operator due to lesser weight & heat.
- Life of LED can be further increased by switching on the light only when it is required.
- Environment friendly, doesn't contain any Mercury.
- Very little power consumption.
- Robust Construction.
- No Expensive UV filters
- Light output concentrated at 365nm. No need for filters and no risk of UV-B radiation.
- Can Run on battery also. Making it ideal for portable use.
- Reduces cost of UV lighting.

### HAND HELD UV LIGHTS

Model	MK-LED-1500	MK-LED-1500-B	MK-LED-5000	MK-LED-5000-B
Max Intensity at a distance of 15" from	1500uW/cm <sup>2</sup>	1500uW/cm <sup>2</sup>	5000uW/cm <sup>2</sup>	5000uW/cm <sup>2</sup>
Works On	AC-AC Adapter	In Built Rechargeable Battery	AC-AC Adapter	In Built Rechargeable Battery
				

### UV FLOOD LIGHTS

LED Based UV Flood Lights. It can illuminate an area of 400mmX200mm. Intensity varies from 2000 to 3000uW/cm<sup>2</sup> at different points when measured at a distance of 15" from the lens. Can be suspended on top of the machine. Enables hands free inspection. Works on 220V AC. Consumes only 30W Power.



### LAMP & FILTER FOR ZB100



## MEASURING INSTRUMENTS

### UV METER

Digital Ultraviolet Light Intensity Meter with inbuilt sensor. Can measure UV radiation up to 20,000uw/cm<sup>2</sup>. The meter has an OLED display so that readings may be taken in the dark also. Works on standard 9V battery.



### ANALOG RESIDUAL FIELD INDICATORS

Two Models are available.  
MK-RFI-AN-10 having range of ± 10Gauss  
MK-RFI-AN-20 having range of ± 10Gauss

These RFIs are used to check residual magnetic field left in the components after magnetization. Not recommended to measure active field strength.



### DIGITAL RESIDUAL FIELD INDICATORS

Two Models are available.  
MK-RFI-D-30 having range of ± 30Gauss  
MK-RFI-D-50 having range of ± 50Gauss

The field is displayed on a LCD. It has built in indicator which indicates if the field is more than 3 gauss. Used to check residual magnetic field left in the components after magnetization. Not recommended to measure active field strength.



### DIGITAL METERING MODULES

We can add this module to any old machine having analog meters. Takes inputs directly from Shunt. Works on 24V AC/DC. The reading is retained after even after the flow of current stops. Has Large Sized illuminated displays to show the value of current. Two separate displays show readings for headshot & coilshot.



## STANDARD TEST PIECES

### ASTM PI FIELD INDICATOR

ASTM PI Field Indicator is used to check the presence and direction of magnetic field. It comes with a non ferrous handle for easy placement on the job. Artificial cracks are generated in an octagonal test piece. Lines which are perpendicular to the magnetic field give indications. Meets Requirements of ASTM E1444.



### KETOS RING

Used for System Performance Test  
Meets ASTM E1444 requirements  
Drilled holes simulate subsurface discontinuities.  
Form surface indications at various magnetizing levels.



### QQI SHIMS

QQI's (Quantitative Quality Indicators) are magnetic particle test pieces with artificial defects used to verify proper field direction and adequate field strength is produced.

QQI's are both thin and flexible to conform the the geometry of the test piece. They must be held in intimate contact with the test piece by either tape or glue. Meet Requirements of ASTM E1444. Available in Circular + Cross Bar Pattern and Straight Line Pattern (Burmah Castrol Strips)



### MTU TEST BLOCK

The MTU-3 Test Block is used to check the sensitivity of magnetic particle materials. This two sided block has a variety of indications ranging in size from small to large. Use the MTU-3 to compare different types of materials. MTU-3 Blocks are prepared in accordance with the EN ISO 9934 – 2 : 2002. Can be used with fluorescent or visible particles Supplied with reference photograph



### MAGNETIC STRIPE CARD

MAGNETIC STRIPE CARDS are simple tools that assist in evaluating the sensitivity of wet-method and dry-method magnetic particle inspection (MPI) materials. The stripe on each card contains a standardized pattern of magnetic lines across the length of the stripe. Particles are attracted to these lines and form visual indications.



### YOKE TEST WEIGHT BARS

Used to check performance of Magnetizing Yokes.  
Weight Bars to Check AC & DC Yokes. 4.5Kg (10lbs) for AC Yoke & 13.6Kg (30 lbs) for DC Yoke.  
As per ASTM E1444



## OTHER ACCESSORIES

### CENTRIFUGAL TUBE & STAND

Centrifugal tube is used to measure the concentration of magnetic powder in the bath. The tube is filled with the solution up to the mark printed on the tube. The tube is then placed in the stand and the solution is allowed to settle down for 15-20 minutes. The amount of powder in the solution can then be seen at the bottom of the tube. Available in two bottom sizes of 0.5ml and 1.0ml. Total Volume of all the tubes is same at 100ml. Complies with ASTM D-96.



### COPPER BRAIDED CONTACT PADS

Are placed in front of copper contacts to avoid arcing when there is heavy current flow & the contact is not proper. Two Types of Designs are available. One with Hooks & the other one compatible with Magnaflux Design. Non Standard Sizes can be made against order.

### STEADY ROLLERS

Available in fixed height & adjustable height models. These rollers are placed on the machine & the job to be tested is rested on these rollers. The job can be easily rotated on these rollers for 360 degree inspection. Adjustable height model allows components with different sizes to be clamped properly in the machine and also helps to place the component as desired.



### COPPER CENTRAL CONDUCTORS

Central conductors are used to inspect hollow or annular parts. These are available in various diameter and length combinations



### PRODS

Prods are used to pass current through jobs which can't be loaded on the bench type equipment. One of the prods comes with an inbuilt push switch & cable.



### CABLES

Flexible Cables of 70mm<sup>2</sup> and 120mm<sup>2</sup> are available in standard lengths of 3m, 5m & 10m. Both the ends are fitted with copper lugs.



### UV PROTECTION GOGGLES

These goggles protect the eyes of the operator from the harmful effects of UV radiation.

## CONSUMABLES

Magkraft brings you Magnetic Powders from Massachusetts NDT, USA. Complete range including wet, dry, florescent & day light powders is available.

### OIL BASED POWDERS

**MRZ OF 10-G** : This is an oil based florescent powder having very fine grain size. Can detect very fine cracks also. Mixing ratio is 0.75-1.0 gm/L.

**MRZ OD 100-R** : This is a red coloured oil based powder. Mixing ratio is 10.0 gm/L.

**MRZ OD 100-B** : This is a black coloured oil based powder. Mixing ratio is 10.0 gm/L.



These powders give best results when used with our carrier fluid MRZ 920. Available in pack sizes of 400g & 1Kg.

### WATER BASED POWDERS

**MRZ WF 15-G** : This is a water based florescent powder having very fine grain size. Can detect very fine cracks also. Mixing ratio is 1.5 gm/L.

**MRZ WD 100-R** : This is a red coloured water based powder. Mixing ratio is 10.0 gm/L.

**MRZ WD 100-B** : This is a black coloured water based powder. Mixing ratio is 10.0 gm/L.



These powders give best results when used with demineralized water. Available in pack sizes of 400g & 1Kg.

### DRY POWDERS

Fine Dry Powders are available in Red & Black Colours.

**MRZ D-R** : Red Coloured Dry Powder

**MRZ D-B** : Black Coloured Dry Powder

Available in pack sizes of 1Kg & 5Kg.



### CARRIER FLUID MRZ 920

It is an odourless, non sticky, low viscosity fluid for MPI testing. It replaces kerosene & has many advantages such as high flash point & little evaporation rate.

Available in pack sizes of 35L & 210L.

### UV PROTECTION CREAM

This cream protects the skin of operator from harmful effects of UV radiation.

Available in pack sizes of 200gm & 1Kg