

# CIFRA MARKETING CORPORATION



# **CIFRA MARKETING CORPORATION**

**CIFRA Marketing Corporation** is a customer oriented company involved in the distribution of Non-Destructive Testing (NDT) practitioners with quality on the latest product technology.

**CIFRA** also maintains technicians who support our sales group for calibration and repair of equipment and training in the actual use of equipment.

**Mission** To provide professional, efficient, cost-effective, timely and quality services to our customers. To utilize new technology and know how acquired through training to meet the requirements of our clients.



# Non – Destructive Testing

- Use of physical methods which will test the material, components and assemblies without damaging their future usefulness
- Nondestructive Testing (NDT) is a very broad, interdisciplinary field that plays a critical role in assuring that structural components and systems perform their function in a reliable and cost effective fashion

# There are six NDT methods that are used most often:

- Visual and Optical Testing
- Penetrant Testing
- Magnetic Particle Testing
- Electromagnetic Testing or Eddy Current Testing
- Radiographic Testing
- **6** Ultrasonic Testing



# **Visual Testing**

- Visual inspection refers to an NDT method which uses eyes, either aided or non-aided to detect, locate and assess discontinuities or defects that appear on the surface of material under test
- One of the most common and most powerful means of NDT
- In inspection of any engineering component, if visual inspection alone is found to be sufficient to reveal the required information necessary for decision making, then other NDT methods may no longer considered necessary.

# **Equipments :**

- a. Fiberscope
- b. Borescopes
- c. Magnifying Glasses
- d. Mirrors
- e. Videoprobe





GE Inspection Technologies



#### **Application :**

Aerospace, Automotive, Power generation, Process, Law Enforcement (Surveillance)

#### XLGO/ XLG3 Video Probe



**Rigid Borescope** 

#### Application :

Aerospace, Power generation, Manufacturing Industries



#### Application :

Tank Inspection – no need to enter confined space, Power generation, Process Industries



#### **Flexible Fiberscope**

#### **Application :**

Turbine and airframe inspections, heat exchangers, process, weld inspections, manufacturing and quality assurance

**CA-ZOOM** 



# **Penetrant Testing**

- Liquid penetrant is an NDT method that utilizes the principle of capillary action in which liquid of suitable physical properties can penetrate deep into extremely fine cracks or pitting that are opened to the surface without being affected by the gravitational force.
- Which can be employed for the detection of open to surface discontinuities in any industrial product which is made from a non-porous material.
- Widely used for testing of non-magnetic materials.

# **Advantages :**

- Inexpensive
- **2** Simple to perform
- **B** Fast
- Applicable to materials with complex geometry



# MAGNAFLUX

#### **Visible Dye Penetrant**



**Spotcheck Penetrant** 

#### **Fluorescent Dye Penetrant**



**Zyglo Penetrant** 

#### **Application :**

Aerospace, Amusement Rides, Automotive, Fabrication, Foundries, Maintenance, Marine Construction/Maintenance, Pipelines, Railroads, Shipyards, Steel Mills, Test Labs, Welds, Power Plant



# **Magnetic Particle Testing**

- The basic principle of Magnetic Particle Inspection is that the material under test is magnetized, a magnetic ink or powder is applied to the medium surface and the resultant indications evaluated.
- **2** Used for testing materials which can be easily magnetized.
- Capable of detecting open to surface and just below surface discontinuities.

# **Equipments :**

- a. Yoke
- b. Power pack

# Methods for testing :

- a. Dry Method
- b. Wet Method



# MAGNAFLUX

#### **Non-Fluorescent Dry Powder**



Magnaglo Dry Powder and Y-6 AC Yoke

#### **Fluorescent Wet Particles**



Magnaglo Fluorescent Magnetic Particle and blacklight

#### **Application :**

Aerospace, Amusement Rides, Automotive, Fabrication, Foundries, Maintenance, Marine Construction/Maintenance, Pipelines, Railroads, Shipyards, Steel Mills, Test Labs, Welds, Power Plant



# **Ultrasonic Testing**

- Ultrasonic testing (UT) method uses high frequency sound waves (ultrasounds) to measure geometric and physical properties in materials
- In ultrasonic inspection, sounds are generated by the use transducers that are made of materials exhibiting piezoelectric effect
- Quite sensitive to small flaws and allows precise determination of the location and size of flaws
- 4 Mostly used for detection of flaws in materials
- **•** Widely used for thickness measurement
- **6** Determination of mechanical properties and grain structure of materials
- Evaluation of processing variable on materials







## **Flaw Detectors**



#### **Application :**

Power generation, Petrochemical Industries, Aerospace, Automotive



## USM Vision

#### **Application :**

For pipe weld inspection. Using Time of Flight Diffraction (TOFD)

#### **USM 35X**



Phasor XS

#### **Description :**

Phase – Array and Pulse Echo Unit

#### **Application :**

Aerospace, Automotive, Oil and Gas, Power generation



#### Spotchecker

## **Application :**

Automotive (Spotwelding)





Inspection Technologies

## **Flaw Detectors**



#### **Application :**

**USM Go-** Applications for testing large work pieces, welding inspection.



**USN 60** 

#### Application :

Power generation, Petrochemical industries, Automotive, Aerospace

**USM 32X** 

#### **Precision Thickness Gauge**



Application :

Automotive, Aerospace, Aviation







## **Corrosion Thickness Gauge**

Rightrax Portable Low-Temperature (LT) Installed-Sensor Manual System (- 40°C up to 120°C) (- 40°F up to 248°F)



M2 transducer sensors

Rightrax



DL2 ultrasonic instrument with data logger



#### DM5E

#### **Application :**

3ridges, hulls, cranes, pelines, storage tanks, pressure vessels, pumps



#### **Application :**

Boilers, tanks, pipes, tubes, plates

**PocketMike** 





GE

Krautkramer Inspection Technologies Uttrasonic Systems

## **Hardness Testing Equipments**



**DynaPOCKET – Rebound Method** 

#### **Application :**

Forged parts, cast materials



#### **Application :**

Machine parts made of steel and cast aluminum alloys, heavy forgings



#### MIC 10 – UCI Method

#### **Application :**

Castings / forgings, weld (HAZ), tubes



MIC 20 – Rebound and UCI Method

#### **Application :**

Pipelines, tooth flanks, rotogravure cylinders, weld (HAZ), castings/forgings, tubes, machine parts

#### **DynaMIC – Rebound Method**



**TIV (Through Indenter Viewing)** 

**Application :** 

Aerospace, Manufacturers of coils, Testing Companies, Research Institutes





## **Coating Thickness Gauge**



#### **Application :**

For measuring paint, powder on all metals, measuring galvanizing, plating, anodizing



PosiPen

## Application :

Ideal for measuring on small, hot or hard-to-reach surfaces on non-magnetic coatings on steel

**PosiTector 6000** 



# Application :

Measuring non-magnetic coatings on steel

PosiTest



# **Eddy Current Testing**

- Eddy current Testing utilizes the interaction between eddy current and discontinuity.
- **2** Detect surface flaws, sort materials, measure thin walls from one surface only
- Measure thin coatings, measure case depth
- Applicable to electrically conductive materials only

# **3 Types of probes in ET :**

- **Internal Probes** Used for in-service testing of heat exchanger tubes
- **2** Encircling Probes Used for testing of rods and tubes during manufacturing
- Surface Probes
  Location of cracks, sorting of materials, measurement of wall and coating thickness





# HOCKING

# **Eddy Current Testing Equipment**



## **Application :**

Aerospace Industry : Aircraft Manufacturers, Airlines



**Application :** 

Eddy Current for Heat Exchangers

WheelScan 5

Apollo

# **Eddy Current Testing Equipment**



#### **Application :**

Aerospace, Power generation, Petrochemicals, Manufacturing, Shipbuilding, Metalworking and forming, construction



# **Radiographic Testing**

- The use of X-rays and gamma rays to produce a radiograph of a specimen, showing any changes in thickness, defects (internal and external).
- **2** Uses penetrating radiation
- Based on differential absorption of radiation by the part under inspection

# 3 basic requirements in producing a radiograph :

- source of radiation
- **2** a specimen to be examined
- 8 radiographic film

# 3 Rules in producing a radiograph :

- Keep source dimensions to a minimum
- 2 Keep object to film distance to a minimum
- **B** Keep source to film distance to the practicable maximum



**Portable X-Rays** 





**Application :** 

Aerospace, Automotive, Pipe and vessels inspections



## **Gamma Ray Projectors**



880 Delta Projector





**Application :** 

Small Controlled Area Radiography (24/7 Operation)



Inspection Technologies

# **Rhythm Inspection Management Software**

#### **Description :**



Offers advanced image review tools and data management for all X-ray inspection modalities, including computed radiography, digital radiography and film digitization.

#### **Application :**

Oil and Gas, Aerospace, Power Generation, Automotive



## **Portable Concrete Testing Equipments**



Silver Schmidt Test Hammer



Profometer Rebar Locator



**Pundit Lab** 

Profoscope









**Industrial X-Ray Films and Chemicals** 



Is Radiography Survey Meter



## **Radiograph Film Viewers**





Model 309A



SB- 900X Super Bright

GE Inspection Technologies



## **Industrial X-Ray Accessories**



**Lead Screens** 



Image Quality Indicator (DIN/ASTM/Others)



**Film Cassettes** 



#### **Radiation Warning Signs**



**PROCESS IN** ORDERING and DELIVERING of **IR-192** SOURCES



Upon receipt of shipping docs from Sentinel (Invoice, AWB, Shipper's Declaration, Decay Charts), Cifra will request for the Release Certificate via NSW (computerized) and Authority to Transport from PNRI. Cifra representative will get the original copies of Release Certificate and Authority to Transport at PNRI QC.

Cifra to give broker copy of shipping docs (invoice, AWB, original Certificate of Release and Authority to Transport) for the release of shipment from Bureau of Customs. We will then monitor the arrival of shipment (usually Monday).





After confirmation of shipment arrival, Cifra Broker will process the release of shipment from Customs.

Broker delivers the shipment to Cifra office. Source is place inside the source changer.



Upon receipt of shipment, Stock Receiving Report is prepared for documenting the items received

Warehouse Form will be given to Accounting to make invoice. Approved warehouse form and invoice will be given to warehouse for the release and delivery of items.



# PROCESS ON RETURNING DEPLETED SOURCE

# TRANSFERRING DEPLETED SOURCE INTO THE SOURCE CHANGER





After the source are delivered, depleted sources loaded in the source changer will be returned to the country of origin (USA or Korea) Prior to returning the depleted source changer, Cifra to send the details (source changer serial number, source serial number, activity) to QSA Global/Sentinel Asia for approval to return.

> After receiving approval, Cifra will request Authority to Transport to PNRI.

After documents are prepared (Invoice/Packing List, Consignor's Certificate, Shipper's Declaration for Dangerous Goods, PNRI Authority to Transport, Special Form and Package Design Certificate), Cifra to ask forwarder (Kintetsu World Express) to pick-up the source changer. If all documents are in order, Source changer will be returned via Fedex for USA or Korean Air for Korea.

Cifra will monitor the shipment/return of source changer by Fedex/Korean Air tracking number.

QSA Global/Sentinel Asia will send Receiving Report to Cifra via e-mail to confirm the return of the source changer with depleted source.











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