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THERMAL SPRAY

*Complete Solution Provider
since 1967*

Way back in 1967, when I started a small unit with four workers in a small auto repair shop, "Thermal Spray" of today was known as "Metallizing" and given status of a black art. Time passed gradually, we grew with mission and vision bringing MEC - now a legend in Thermal Spray Technology. Collective efforts have transformed that black art into a precise science now attracting qualified engineers and experts from world over.

Asia is now on steep growth curve. MEC is poised to contribute value to this coating technology. I express my gratitude to team over 225 persons working with great passion and talent in our organization. Thanks to all suppliers, big and small, who helped to sustain us. Finally, I wish cherished tradition of dignity and fair play will continue to percolate to young generation now conducting the business of MEC.

Thanks a lot, with best of luck and warm regards.



M. D. Modi, Chairman

WHAT IS THERMAL SPRAY ?

Thermal spraying is a group of coating processes in which finely divided metallic or non-metallic materials are deposited in a molten or semi molten condition with excessively high velocity to form a coating. The coating material is in any form as powder, wire or rod of pure metals and alloys of iron, tungsten, nickel, chromium etc. and wide range of oxides and nitrates. Thermal spray process has advantage over other processes as it is cold process so it never distorts parent material. Thickness of coating is controllable with no limitations of job size.

OUR VISION

Think High – Aim High
Innovation is the key to progress.
Build New Product, Make it better
and efficient.



OUR POLICY

The policy of MEC is to strive for customer satisfaction by providing products and services as per applicable requirement in cost effective and timely manner and to continually improve the Quality Management System.

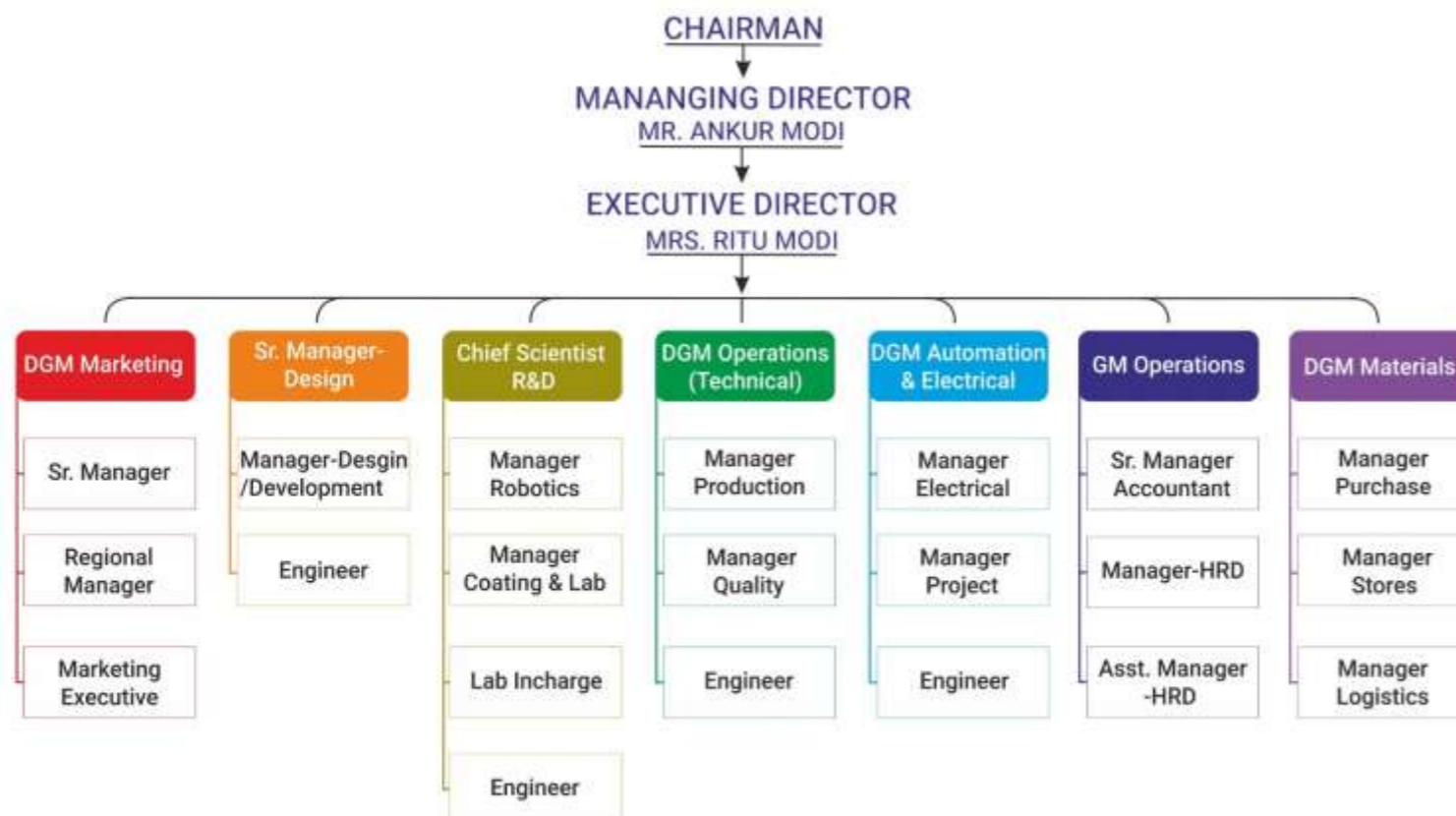


OUR POWER POINT

Truth always triumphs.
Goodwill to all, malice to none.
Share the profit with the co-workers.
Create Solution with innovation.



ORGANISATION CHART



RESEARCH & DEVELOPMENT

MEC is proud to have In-house R&D equipped with highly sophisticated instruments and recognized by DEPARTMENT OF SCIENCE & INDUSTRIAL RESEARCH, GOVT. OF INDIA to examine and provide best solution for processes and parameters of a defined application. Customer samples are processed to achieve desired results. Continuous research is going on to develop new applications & processes in field of Thermal Spray Coatings.

For technology upgradation and know-how, our R&D is associated with various prestigious research institutes of India as IIT's, BHEL (R&D), PESIT, GTRE, NML, CERCL and many renowned Universities.

MEC owns several patents such as ZINCAL Coting, Combustion Wire HVOF Gun, Special Cool Head for Arc Spray Gun.



IMAGE ANALYZER & METALLURGICAL LABORATORY INSTRUMENTS



SCANNING ELECTRON MICROSCOPE WITH EDS



X-RAY DIFFRACTION MACHINE (XRD)



BOND STRENGTH TEST MACHINE

MEC has state of art coating facilities such as:

- Robotic Plasma Spray System
- Robotic HVOF (Liquid & Gas) Spray System
- Combustion Wire/Rod Spray System
- Combustion Powder Spray System
- Twin Arc Spray System
- Robotic Shot Peening System
- Post treatments (Sealing & Finishing)

MEC R&D houses numerous testing facilities that meet ASTM Standards to characterize the coatings in terms of:

- Wear Testing
- Bond Strength
- Hardness (micro / macro)
- Surface Roughness Measurement
- Online particle diagnostic system by sophisticated camera
- Erosion Testing
- Porosity Testing
- Thickness Measurement

TRAINING



PRODUCTION FACILITY

Our competent team of designers are always on the task of delivering the best which would give the optimum performance. MEC has a fully computerized CAD operated design department backed with a team of qualified and experienced engineers.

The designs generated are made to reality by our ultra modern facility consisting CNC's, VMC's & various other High Tech Precision Machines, followed by rigorous testing of components at each level before it reaches to final assembly.

The new products of MEC are tested thoroughly at Test Cells and then sent for field trial before being launched in the market. SAFETY is keyword to MEC, hence almost all products carry CE mark of European Inspection & Certification Co. S.A.



QUALITY CONTROL USING MODERN CMM



MODERN DESIGN SECTION



FIVE AXES VMC : HIGHEST LEVEL OF PRECISION WORK



SPARE PARTS IN BATCH



MASS PRODUCTION AVAIL READY STOCK DELIVERY



ASSEMBLY SECTION



PRODUCTION CELL (CNC)

PLASMA SPRAY SYSTEM

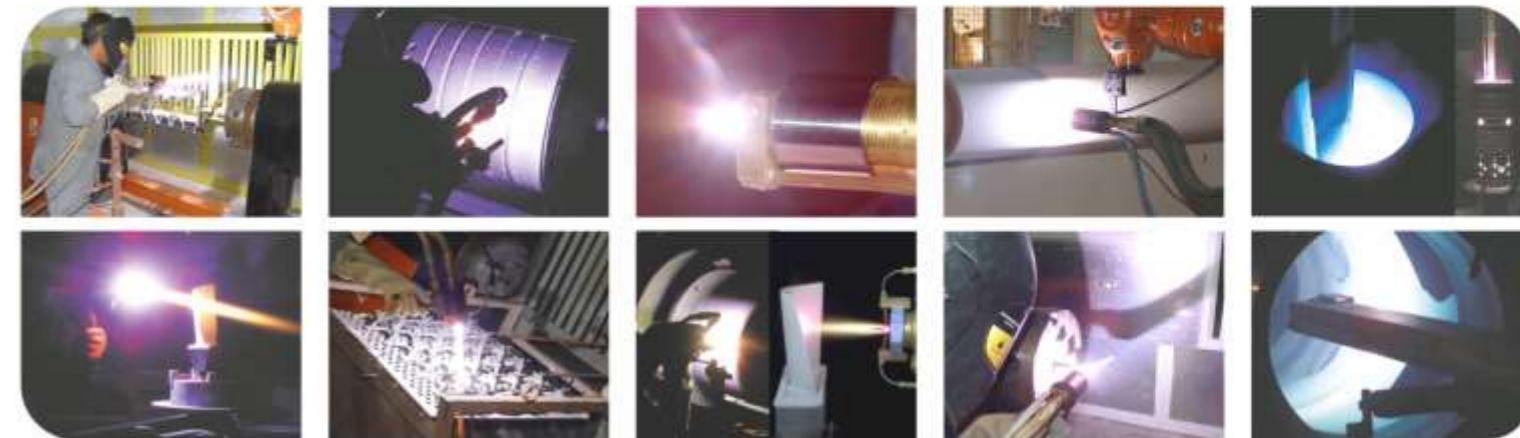
MASS FLOW CONTROLLED



PLASMA GUN



MASS FLOW VIEW



HIGH VELOCITY OXY-LIQUID FUEL SPRAY SYSTEM

SEMI - AUTOMATIC VERSION

MASS FLOW CONTROLLED VERSION



COMBICOAT® SYSTEM



• COMBINE ONE OR MORE OF FOLLOWING PROCESSES •



	PLASMA	HVOLF	HVOF	LVOF WIRE	LVOF POWDER	ARC
MAIN CONTROL MODULE	✓	✓	✓	✓	✓	✓
GAS MODULE	✓	✓	✓	✓	✓	✗
POWER SOURCE	✓	✗	✗	✗	✗	✓
JAM BOX	✓	✓	✓	✗	✗	✗
POWDER FEEDER	✓	✓	✓	✗	✓	✗

HIGH VELOCITY OXY-FUEL (GAS) SPRAY SYSTEM



AUTOMATIC PLC CONTROLLED SYSTEM

STANDARD SYSTEM

HIJET WIRE FEED CONTROLLER



HIPOJET-2700

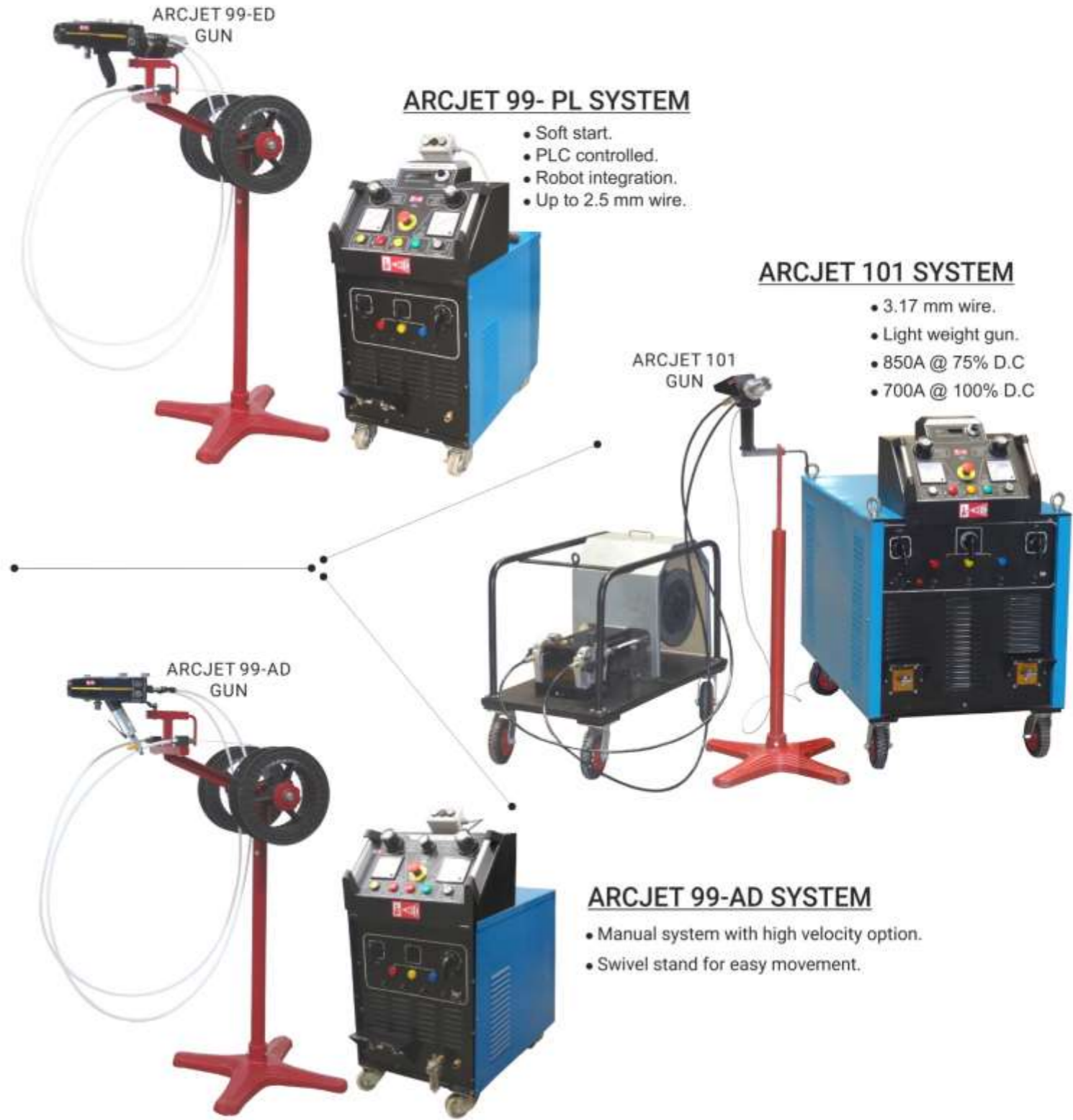
HIPOJET-2750

HIPOJET-2700
WATER COOLED

HIJET-9610



ARC SPRAY SYSTEM



ARCJET 99-ED
GUN

ARCJET 99- PL SYSTEM

- Soft start.
- PLC controlled.
- Robot integration.
- Up to 2.5 mm wire.

ARCJET 101 SYSTEM

- 3.17 mm wire.
- Light weight gun.
- 850A @ 75% D.C
- 700A @ 100% D.C

ARCJET 101
GUN

ARCJET 99-AD
GUN

ARCJET 99-AD SYSTEM

- Manual system with high velocity option.
- Swivel stand for easy movement.



FLAME SPRAY SYSTEM

WIRE SYSTEM



SPRAYJET-87

SPRAYJET-88

SPRAYJET-98

SPRAYJET-111

SPRAYJET-EL

CONTROL ACCESSORIES



Air control unit



Flow Meter



Gas control unit

POWDER SPRAY



POWDER JET 85

POWDER JET 86

ROD SPRAY



RODOJET 9810

POWDER FEEDERS



MODEL: PF-SB, PF-SB-A, PF-SB-HP

- Small and light portable base.
- Heating Jacket optional
- Supply pressure – 2.5 bar or 9 bar.
- Calibrated Flow tube scale in SCFH and SLPM.
- Manual control of carrier.
- Can be integrated with other make Panels.



3355: Improved design for more accurate feed rate and pads eliminated:
Capacity – 3.3 Litres,
Max. W.P. – 10 bar



MODEL: PF-MFS, PF-MFS-HP

- Fitted with Single canister.
- Mass flow controlled.
- Trolley mounted with castors.
- Integrated with MEC controllers.
- Optionally available for stand alone working.
- Heating Jacket optional.



2850: Smaller version of 3355 with higher W.P.:
Capacity – 2.8 Litres,
Max. W.P. – 12 bar



MODEL: PF-MFD, PH-MFD-HP

- Fitted with Double canisters and having two separate outlets.
- Suitable for Graded Coatings.
- Mass flow controlled.
- Trolley mounted with castors.
- Integrated with MEC controllers.
- Optionally available for stand alone working.
- Heating Jacket optional.



5000: Improved design for more accurate feed rate and pads eliminated.:
Capacity – 5.0 Litres,
Max. W.P. – 2.5 bar



7800: Improved design for more accurate feed rate and pads eliminated.:
Capacity – 7.8 Litres,
Max. W.P. – 2.5 bar



MODEL: PF-QR-A, PF-QR-MF

- Quick release of canisters by unlocking latches.
- Suitable for high purity coatings where changing of powder type needs to be avoided.
- Only for 6P, Plasma, MJP-5000/6000 and systems with NOT high back pressure.
- Heating Jacket optional.



2855: Smaller canister version of 3355 with less weight:
Capacity – 2.8 Litres,
Max. W.P. – 2.5 bar



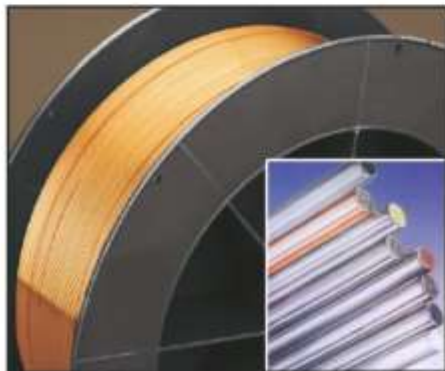
SPARES & CONSUMABLES



MEC supplies Spare Parts for all popular brands:
 PLASMA (SG-100/ 3MB/ 9MB/ F4-MBXL/ F4-90 XL)
 HVOF (JP-5000/ DIAMOND JET/ JET KOTE/ WOKAJET)
 FLAME SPRAY (11E/ 12E/ 14E/ 16 E/ 5K/ 5P II/ 6P II)
 ARC SPRAY (8830/ LDU2)



WIRES & RODS



We recognize that high quality spray equipment without compatible, first-rate coating material can lead to less than desirable coatings. For arc spray, only wires designed and produced for thermal spraying ensure trouble free application and superior, consistent coatings.

MEC has complete portfolio of ARC WIRES & FLAME WIRES with over 100 standard materials include Aluminium, Aluminium Alloy, Tin, Tin Alloy, Nickel, Nickel Alloy, Zinc, Stainless Steel, Brass, Monel, Copper & many more.

MEC is also able to fulfill the requirement of Cored Wires, the latest development in coating consumables. Ceramic Rods are available being used with CERAMIC ROD SPRAY SYSTEM.

MEC can assist in the selection of the correct material for specified applications.

POWDERS



MEC Thermal Spray Powders are mainly used in aircraft, power generation, automotive industry. But other applications like steel industry, textile industry, paper/print or offshore industry are served too. MEC has complete powder product range which include:

Full range of Carbides
 Tungsten & Chromium Carbides

Metals, Alloys & Composites
 NiAl, NiCrSiB, Stellite 6, Alloy 625 etc.

Ceramics
 Yttria stabilized Zirconia, Chrome Oxide Alumina-Titania etc.

Abradables
 Nickel Graphite, Aluminium Polyester etc.

MASKING TAPES



MEC has a complete range of high performance masking tapes specifically designed to meet the needs of the Thermal Spray Industry.

These tapes provide superior mechanical and thermal protection, Excellent abrasion resistance makes these tapes ideal for Grit Blasting and Plasma, HVOF applications.

These tapes are available in width from 1/8" to 48" standard roll length is 36 yards.

- Silicone Coated Fiberglass Tapes
- Fiberglass Cloth Tapes
- Fiberglass Cloth Tapes, Double Coated
- Aluminium Foil Tapes

ANCILLARY EQUIPMENTS

HEAD STOCK

- Upto 10MT
- Upto 600RPM
- Servo or AC Motor

ROBOT

- Upto 9 axis
- Additional carriage axis
- Upto 60 Kg. payloads

TAIL STOCK

- Manual or Motorized
- Gear Lock Holding
- Optional Chuck
- Optional Pneumatic

ADD-ON'S

- Additional T.T.
- Multi spindle T.T.
- Multi Chuck
- Vertical Job holding



6 AXES ROBOT WITH 7TH AXIS LINER TRACK

JOB/GUN HANDLING EQUIPMENTS



HORIZONTAL TURN TABLE



XYZ / XYZ-R GUN MANIPULATOR

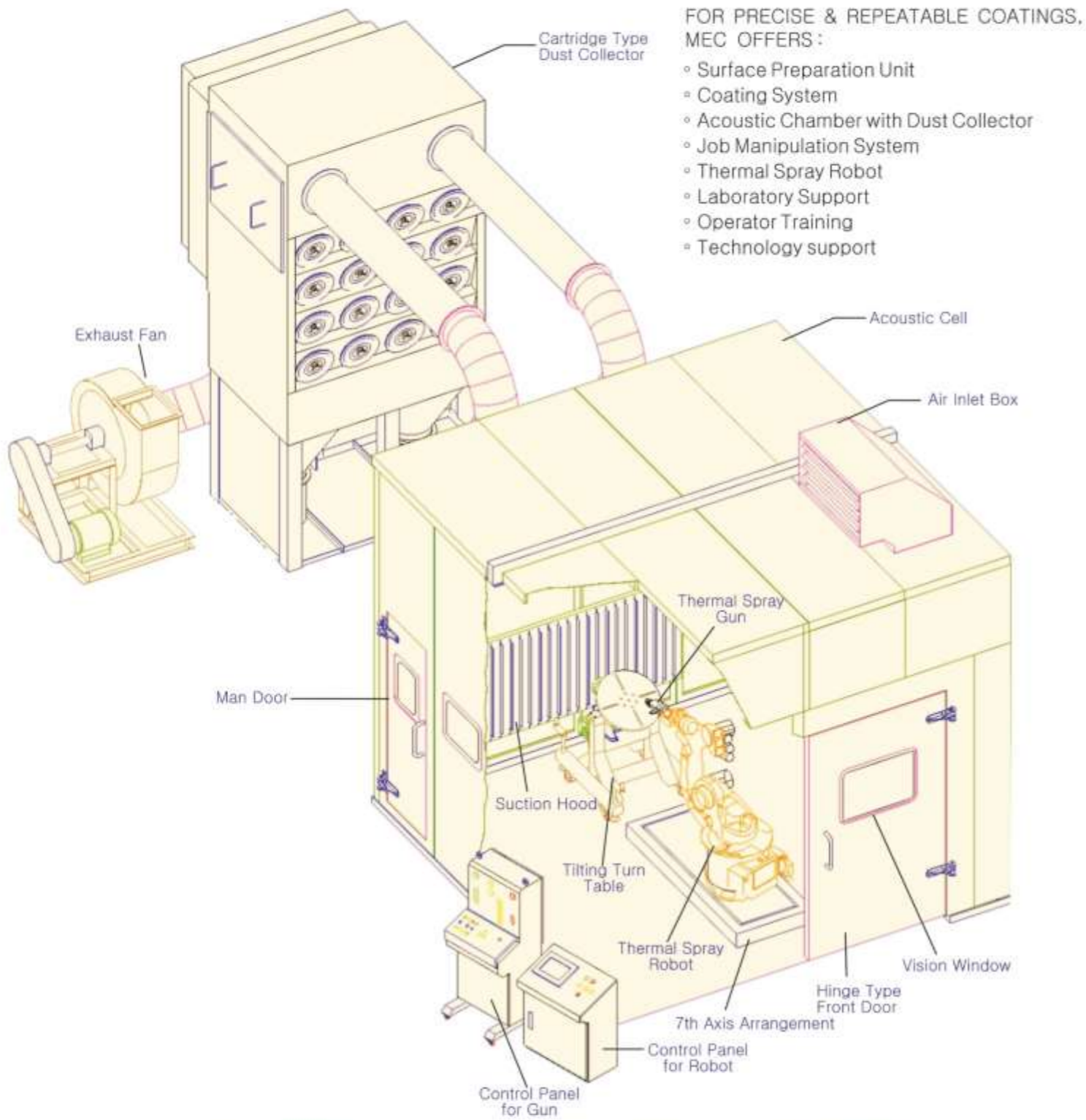


TILTING TURN TABLE



MULTI SPINDLE TURN TABLE

ROBOTIC THERMAL SPRAY CELL



COMPLETE TURNKEY PROJECT



ROBOTIC MASS FLOW CONTROLLED THERMAL SPRAY FACILITY



SURFACE PREPARATION EQUIPMENTS

ECO FRIENDLY



PRESSURE BLASTER



WET BLASTER



SUCTION BLASTER



VACUUM BLASTER

ABRASIVE BLAST ROOM

Fully automatic & semi automatic recovery types



MEC "P-14" HANDY BLAST CLEANER

A small blasting tool for instant cleaning & preparing of fairly plain surface.

Features:

- It works only on compressed air.
- Auto-recycling of abrasive.
- Dust Free operation.
- Special blast heads for corners and angles.

PORTABLE MACHINE



SPECIAL BLASTING MACHINES



3-AXES AUTOMATIC BLASTING MACHINE



INLINE PIPE BLASTING & COATING MACHINE



CNC BLASTING MACHINE



AUTOMATIC BALL VALVE BLASTING MACHINE

SHOT PEENING MACHINES



CNC 2 AXES CERAMIC/GLASS BEAD PEENING MACHINE

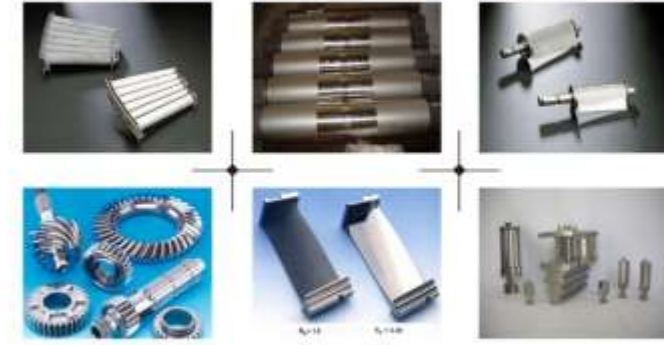


8 AXES ROBOTIC SHOT PEENING MACHINE

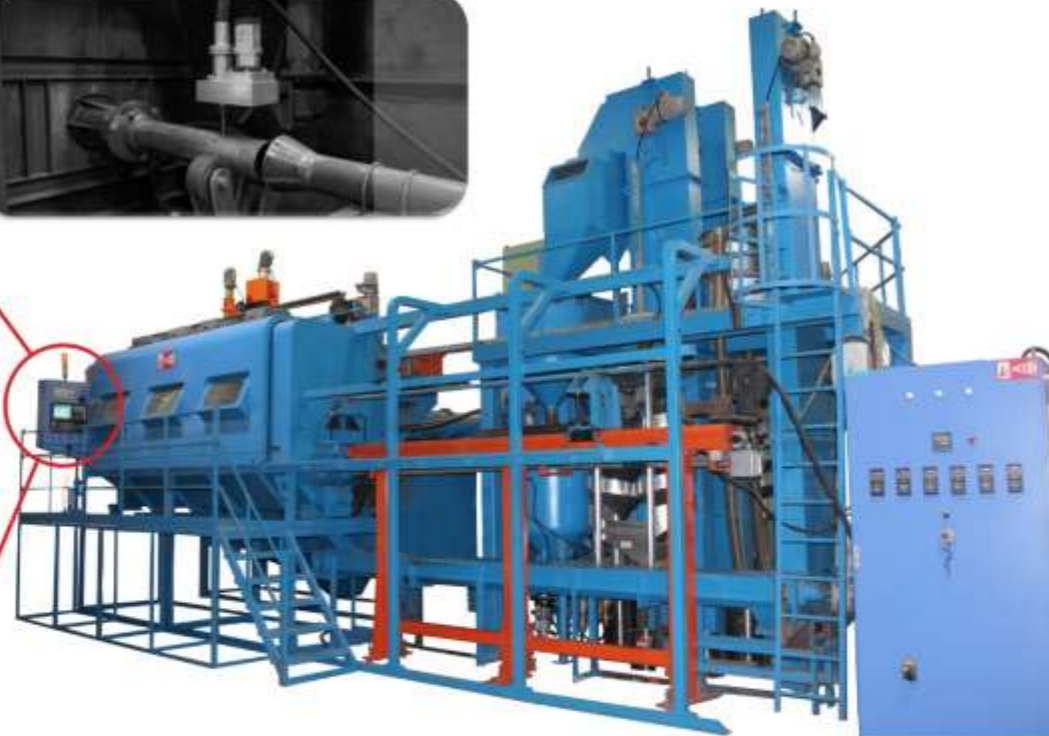
SHOT PEENING MACHINES

MEC Robotic & CNC multi-axis shot peening represents the state-of-the-art with a process integrated monitoring system to achieve consistent and unerring results in compliance with International Specifications & Standards. The features :

- Built to customer's specifications
- Integrated in customer's process
- Closed looped control for air and shots
- Designed to use with shots, glass beads etc.
- Servo controlled nozzle movement.
- High accuracy & reproducibility of process parameters
- Optional internal peening device & shot separate unit.



ROBOTIC 7 AXES SHOT PEENING MACHINE



CNC 6-AXES CERAMIC BEAD PEENING MACHINES FOR AERO ENGINE PARTS

CNC 6-AXES WET BLASTING MACHINE



ROBOTIC WET BLASTING MACHINE



CERTIFICATION & APPROVALS



DGCA APPROVAL FOR COATING ON AERO ENGINE



R&D LAB APPROVAL BY GOVT. OF INDIA



EXCELLENCE IN GAS TURBINE COATING WORK



MARKETING NETWORK

MEC has a wide marketing network of its branch offices and representatives throughout the globe. Our sales outlet is backed with good strength of highly experienced engineers having expertise to advise selection for both equipment and application requirements.



HEAD OFFICE, JODHPUR, INDIA

OUR VALUED CUSTOMERS



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