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MDC Vacuum Manufacturing



MDC is a world leader in Vacuum and Ceramic Seal Solutions

MDC was founded in 1975 to serve a rapidly expanding vacuum industry and to satisfy the increasing demand for high quality vacuum components with fast delivery and reasonable prices. Over the years MDC has expanded its portfolio acquiring Insulator Seal (ISI), a ceramic to metal bonding company, Innovent Technologies, a gas and vacuum weldment company. Today MDC is a leading manufacturer engineered process solutions; in HV & UHV Vacuum, ceramic-to-metal bonding and gas delivery.

MDC services

Providing a complete engineering package from concept and design through to manufacture, assembly and test.

Services include - in-house 3D Solidworks designing. CAD/CAM, 5 Axis Machining, Coded Tig Welding and ISO Class 5 Clean Room Assembly. MDC manufactures small to medium batch production in various industry sectors including Automotive, and Scientific and Medical.

A fully integrated MRP system, complete with full traceability and documentation, to provide assured, timely, quality, products.



MDC ENGINEERING

EXPERTISE AND BENEFITS

- Extensive expertise in design, engineering and production with specialist, high specification materials, to ensure your ideas and designs are turned into reality.
- Fully skilled and knowledgeable engineering design team for trouble free design work.
- MDC's engineering capability crosses a wide range of fields to fully achieve your requirements.

FEATURES AND SPECIALIST AREAS

- Product areas: - design only, design and manufacture, make to your design.
- Specialists in the design and manufacture of Ultra High Vacuum systems.
- Manufacturer of high specification components and assemblies for:-
systems to analyse materials; equipment for medical use and research
systems for nuclear research, global universities and institutes.
- Design and manufacture of Mu-metal chambers.
- Specialists in complex assemblies.
- Top level capabilities in high specification milling, turning, and coded welding.

EQUIPMENT AND CAPABILITIES

- State-of-the-art CAD/CAM design and manufacturing for fast, efficient design and production. Full 3D for fast design and proofing.
- Modern CNC 5 and 4 axis milling and CNC turning machines for efficient production.
- Highest quality coded welding, clean room assembly, and testing.
- In house automatic CNC wire erosion.
- CMM electronic inspection equipment for accuracy and quality.

MANUFACTURING CAPABILITY SIZES

Milling:	4 axis machines. 5 axis simultaneous machine. 5 axis material sizes, max 1.2m cube 4 axis material sizes, max 2.0m x 1.0m x 1.0m
Turning:	CNC, up to 600mm max OD x 1.0m length Manual, up to 1.0m swing
Wire erosion:	CNC up to 400mm long x 250mm x 250mm

MANUFACTURING EQUIPMENT

CNC Milling:

- 1 x DMG DMU 125P3 5 Axis Machining Centre X: 1250mm, Y: 1250mm, Z: 1000mm Heidenhein iTNC 530 Control
- 1 x Hartford HV80A 4 Axis Vertical Machining Centre X: 2000mm, Y: 1000mm, Z: 880mm, Mitsubishi PC/NC Control
- Nikken CNC250R 4th Axis a Control / Albert! T-90 90° Large Capacity Milling Head
- 1 x Hartford HV70A 4-axis Vertical Machining Centre X: 1500mm, Y: 780mm, Z: 700mm , Mitsubishi PC/NC Control
- Nikken CNC250R 4th Axis Control
- 2 x Hartford HV1020A 3-axis Vertical Machining Centre X: 1020mm, Y: 500mm, Z: 450mm Mitsubishi PC/NC Control
- 1 x Hartford HV850A, 3-axis Vertical Machining Centre X: 850mm, Y: 500mm, Z: 670mm Mitsubishi Control
- 1 x Fanuc Robodrill Alpha-T21iDL, X: 500mm, Y: 300mm, Z: 350mm Fanuc Control

Manual Milling:

- 1 x Lilian Vertical Milling Machine, X: 1000mm, Y: 600mm, Z: 700mm Heidenhein DRO
- 1 x Tos Trecin FNK25A Vertical Milling Machine, X: 1000mm, Y: 600mm, Z: 700mm Heidenhein DRO

CNC Turning:

- 1 x Goodway GA300 with Hydrafeed bar feed, 0560mm swing, 600mm between centres
- 1 x Goodway GCL-2, 0225mm swing, 450mm between centres

Manual Turning:

- 1 x Colchester Mastiff, 0750mm swing, 2020mm between centres
- 2 x M300 with Heidenhein DRO, 0310mm swing, 600mm between centres
- 1 x Harrison M390, 0415mm swing, 600mm between centres
- 1 x Harrison M400, 0400mm swing, 800mm between centres
- 1 x Harrison M500 with Heidenhein DRO, 0500mm swing, 800mm between centres
- 1 x Binns and Berry Trident L1000 with Heidenhein DRO, 01000mm swing, 1500mm between centres

Wire Erosion:

- 1 x Agie 250HSS Submerged 5 axis CNC Wire EDM with Auto Wire Thread, X: 400mm, Y: 250mm, Z: 256mm AgieMatic CF50 CNC Control

Welding, Clean Assembly & Test:

- TIG Welding c/w Class 5 Laminar Flow cabinet
- ISO Class 5 Softwall Cleanroom 8m x 4m + changing zone
- 2 x Balzers Qualytest Dry Helium Leak Detector
- 1 x Leybold L200 Helium Leak Detector
- Bakeout Oven 3m x 1.1 m x 0.8m

Inspection:

- 1 x Feranti Merlin 750 CNC CMM with DMIS CAD Software
- 1 x Mitutoyo B706 Manual CMM with QCT Software




Software:

- CAD 3D Solidworks, CAM 3D Solidcam, FEA ANSYS Workbench



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