





R.M. ENGINEERING

MANUFACTURER AND EXPORTER OF CASTING PRODUCTS

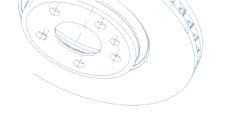
Address: Survey No. 201, Village: Bhunava, Taluka: Gondal, Dist: Rajkot, Gujarat



INTRODUCTION



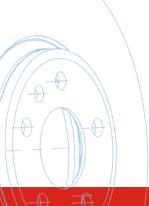
- R. M. Engineering is the leading manufacturer of Brake Discs & Drums in India for the automotive industry. Established in 5th May 2005, R. M. Engineering has grown steadily to become a leading Brake Disc & Drums supplier to OEMs & OESs operating in India. With design, development and manufacturing capability that matches global standards in quality and safety, R. M. Engineering is capable of providing full Brake Discs & Drums technology from concept to completion.
- The strength of R. M. Engineering India lies in its ability to motivate and stronger the capabilities of its human resource, develop and nurture a strong vendor base, its commitment to quality, cost, delivery, safety and customer satisfaction.
- R. M. Engineering pays particular attention to quality of products, processes, and services, and benchmarks against global quality standards. Empowered continuous improvement teams constantly strive to improve productivity, quality, cost, delivery, safety and morale.
- R. M. Engineering is one of the first company which manufacturing slotted brake disc in India.



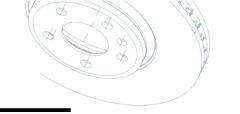


The strength of R. M. Engineering lies

- Our ability to motivate and stronger the capabilities of its human resource.
- Develop and nurture a strong vendor base.
- We are strongly focusing to quality, cost, delivery, safety and customer satisfaction.
- Strong in-house Research & Development, coupled with access to World Class Technology through collaboration and affiliations worldwide enables
- R. M. Engineering to provide the Best Braking Solutions and Castings to its customers.





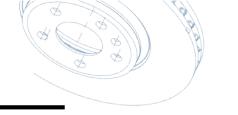






- Mr. Kiran H. VasoyaProduction DirectorR. M. ENGINEERING
- Mr. Vasu H. VasoyaMarketing DirectorR. M. ENGINEERING

OUR POLICY



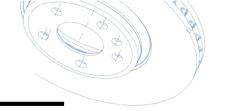


" We are committed to produce quality product consistently on schedule to the best satisfaction of all our customers.

We shall also strive for continual improvement in quality management system by establishing and achieving quality objectives aimed at overall improvement in our activities for enhanced customer satisfaction."

"हम अपने सभी ग्राहकों की सर्वोत्तम संतुष्टि के लिए लगातार समय पर गुणर्वत्ता वाले उत्पाद का उत्पादन करने के लिए प्रतिबद्ध हैं। हम ग्राहकों की संतुष्टि के लिए हमारी गतिविधियां में समग्र सुधार के उद्देश्य से गुणर्वत्ता उद्देश्यों को स्थापित और प्राप्त करके गुणर्वत्ता प्रबंधन प्रणाली में निरंतर सुधार करने का भी प्रयास करेंगे।"







16949:2016	IATF 16949:2016 TUV Rheinland® Certificate Register. No 01 111 2036314 IATF Certificate no. 0386535			
TÜVRheinland GERTIFIED	ISO 9001:2015 Quality Management System by TUV Rhineland Registration Number – 85 100 001 190147			
CONSULTING INC.	LEAN Certified			
QIMA YOUR EYES IN THE SUPPLY CHAIN YOUR EAST IN THE SUPPLY CHAIN	QIMA Certified			

CERTIFICATE FOR EXPORT





MINISTRY OF FINANCE भारत सरकार GOVERNMENT OF INDIA



T1 MSME

प्राधिकृत आर्थिक संचालक एम.एस.एम.ई प्रमाण-पत्र AUTHORIZED ECONOMIC OPERATOR MSME CERTIFICATE (IMPORTER & EXPORTER)



प्रमाण-पत्र संख्या Certificate Number : IN AEAPV0217L1F220

कम्पनी का नाम : M/s R. M. ENGINEERING

Name of Company: SURVEY NO. 201/1P2, BHUNAVA, RAJKOT, GUJARAT, 360311

IEC Number : 2409005934

अन्तर्राष्ट्रीय आपूर्ति श्रृंखला को सुरक्षित रखने हेतु आपकी प्रतिबद्धता का सम्मान करते हुए एवं डब्ल्यू सी.ओ. के सेफ फ्रेमवर्क ऑफ स्टैंडर्ड के अनुसरण में सी.बी.आई.सी. के परिपत्र संख्या 33/2016-सीमा शुल्क, दिनांक 22.07.2016 तथा परिपत्र संख्या 54/2020-सीमा शुल्क, दिनांक 15.12.2020 के अन्तर्गत भारतीय सीमा शुल्क अपने प्राधिकृत आर्थिक संचालक (ए.ई.ओ.) कार्यक्रम में आपके प्रतिष्ठित संगठन को प्रमाणित करता है। इस प्रमाणपत्र की वैधता सी.बी.आई.सी. परिपत्र संख्या 18/2021 दिनांक 31.07.2021 प्रावधानों के अधीन है।

In recognition and appreciation of your commitment to secure the international supply chain and in compliance with the WCO's SAFE Framework of Standards, Indian Customs certifies your esteemed organization in its Authorised Economic Operator (AEO) programme under CBIC Circular Number 33/2016-Customs, dated 22.07.2016 read with Circular Number 54/2020-Customs dated 15.12.2020. The validity of this certificate is subject to the provisions of CBIC Circular No. 18/2021 dated 31.07.2021.

आरती अग्रवाल श्रीनिवास Arti Agarwal Srinivas ए. ई. ओ. कार्यक्रम प्रबेषक/प्रधान आयुक्त AEO Programme Manager/ Pr. Commissioner अन्तर्राष्ट्रीय सीमा शुल्क निदेशालय Directorate of International Customs

स्थान : नई दिल्ली Place : New Delhi दिनांक : 04.05.2022 Dated : 04.05.2022

This Certificate is digitally signed by AEO Programme Manag





COUNTRIES TO WE ARE EXPORTING





OUR VALUABLE CUSTOMERS





DASH4 BRAKE PRODUCTS USA



NEOTEK CORPORATION USA



POWERSTOP LLC USA



A GLOBAL BRAKE SUPPLIER

NEWTEK AUTOMATIVE USA, Inc. USA



VENUS AUTO PARTS

VENUS AUTO PARTS

USA



SAUDI ARABIA





WILWOOD ENGINEERING **USA**



THE HOFFMAN GROUP INTERNATIONAL LLC



AERO AUTO METAL PRODUCTS LLC DUBAI





Auto Zone Trading Co. Ltd. **USA**



OUR OEM CUSTOMERS



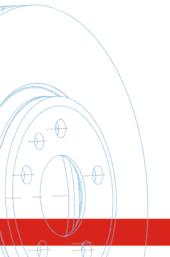








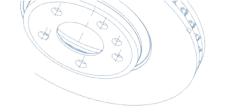






INDIA

NPD DEPARTMENT







Using the latest CAD/CAM and Declaim software our highly talented engineers and technicians design and develop innovative products, meeting stringent specifications as per customer requirements.

The management is pledged to provide the best available facilities, technologies & instruments available to Dept. & this has been a major driving force behind our success story.

R.M. ENGINEERING has been working closely with OEM & International Customers for developing new products for various automotive requirements.





- Our quality foundation is our people i.e. we have assembled a talented and experienced team with an
 unwavering commitment to quality. We build on that through adherence to rigorous and
 qualified processes that ensure quality every step of the way and back it up with fully documented proof,
 through the use of batch records to provide traceability of all materials used, equipment utilized and work
 performed, and our comprehensive Certificate of Analysis.
- Every product lot is fully and thoroughly documented in a batch record providing traceability of all components, calibrations and work performed.
- Quality Assurance team audits each batch record and reviews all data prior to release.
- Critical production processes and systems are qualified to ensure quality, accuracy and repeatability.
- Internal audit programs and corrective / preventive action facilitate monitoring and continuous improvement across all processes and all departments
- Internally we are using key factors for Quality is SPC, MSA, CHECK SHEET, etc.

CORE MAKING





Specification

- Fully Automized sand Transfer & preparation Plant.
- No. of Box Core Shooters : 10 Nos.
- Single Switch operate sand preparation devise.
- Core Capacity up to 30 Kg.
- Core sand storage 60 MT.
- HMI controlled dosing system for Chemical addition.
- Customised Production Data storage facilities in all machines.

CORE MAKING DEPARTMENT







HIGH PRESSURE MOULDING MACHINE (TOKYU, JAPAN)





HIGH PRESSURE MOULDING MACHINE (TOKYU, JAPAN)



BRAKE DISC & DRUM

SPECIFICATION

Molding Speed : 18 Sec. / Cycle

Core Setting Time : 18 Sec.

No. of Mold in Line : 45 Box.

Cooling Time : 55 Min.

Mold Production : 200 Mold/Hr.

Box Size : 610 X 508 X 130-200 / 130-200

Bunch Weight : 50 Kg.



FULLY AUTOMIZED SAND PLANT

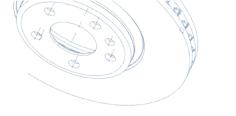




SPECIFICATION

- Sand Plan Capacity 40 MT Prepared sand/hour.
- Mixture Capacity 500 kg.
- No. of Mixture 2 No.
- Total Sand Storage 180 MT
- Fully Automized addition of New Sand, Bentonite, Lustrous coal, and Water.

QUALITY CONTROL







VACUUM EMISSION SPECTROMETER

Optical emission spectrometry involves applying electrical energy in the form of spark generated between an electrode and a metal sample, whereby the vaporized atoms are brought to a high energy state within a so-called "discharge plasma". For chemical testing (21 elements).



ROCKWELL HARDNESS TESTER

The Rockwell scale is a hardness scale based on indentation hardness of a material. The Rockwell test determines the hardness by measuring the depth of penetration of an indenter under a large load compared to the penetration made by a preload.



MICROSCOPE WITH IMAGE ANALYZER

The macroscopic properties of metals are tested using instruments capable of measuring their hardness, tensile strength and compressive strength, analysis of a metal's microstructure is carried out using a combination of general and specialist microscopy techniques. With the right tools, metallurgists can confidently survey a host of metallurgical failure mechanisms including:



CE METER

Principal of Operation:

Thermal Analysis is the interpretation of cooling curve of liquid iron sample. First arrest point, the liquidus is a temperature level is directly related to Carbon Equivalent. (online chemical testing for liquid metal)

CE = %C + %Si/3 + %P/3.

In-House Sand Testing Lab

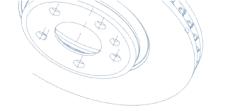








TESTING DETAILS





!ncoming Raw Materials Testing:

- ✓ Pig iron c,si, mn, s, p, cr, cu
- ✓ Pitch powder vm, ash, fc tested using muffle furnace
- ✓ Scrap c,si, mn, s, p, cr, cu
- ✓ Bentonite powder swelling capacity
- √# carbon and Sulphur is tested using carbon sulphur apparatus
- ✓ Si, mn is tested using chemical solutions

❖ Melting:

- ✓ Pyrometer- to test the temperature of molten metal .
- ✓ CE meter -- to test the c and si content of molten metal.
- √ Vacuum emission spectrometer

❖ Manufacturing Process Testing:

- ✓ Mould hardness tester to test the mould hardness
- ✓ Moisture tester to test the moisture of sand
- ✓ Compression strength tester to test green compression strength and green shear strength of sand
- ✓ Sand rammer to test the compatibility of sand
- ✓ Vm, loi tested using muffle furnace
- ✓ Active clay of sand is measured using methylene blue test

❖ Inspection:

- ✓ Rockwell hardness tester to test the hardness of casting
- ✓ Vernier caliper to test the dimensions of casting
- ✓ MPI (crack detection)
- ✓ UTM(tensile, elongatin, compression)
- ✓ Microscope with image analyzer

Sand Plant with Online sand Controller (Foundry Plant 2)





• Capacity: 20 TPH

• Mixer : RMC-20

Sand Cooling : Included in RMC-20

Auto Compactability controller: RTC-103.6SDL

Sand Plant with Online sand Controller (Foundry Plant 2)





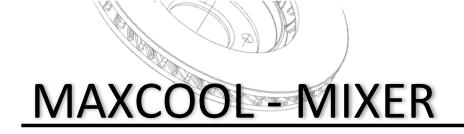
SPACIFICATION

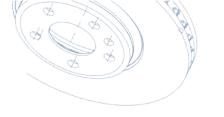
Mold Production : 50 Box / Hours

• Core Setting Time : 72 Sec.

• Box Size : 700 X 750 / 150-150

• Bunch Weight: 120 Kg.







MAXCOOL-Mixer

Model : RMC 20 Capacity : 20TPH

Total installed power: 100KW

Coolerdozing system. with RTC103.6SDL, complete with Control Panel, Batch Hopper with Load Cells, dust collection system, heater, with synchronous panel and water.



MELTING PROCESS







POURING PROCESS







MACHINING FACILITY





CNC : 350X250 MM to 430X500 MM

VTL : 500x500 mm

VMC : 710X510X510 mm

VMC : 510X510X510 mm

VMC : 400X500X500 mm

VMC : 1600X700X700 mm











AUTO BALANCING MACHINE : 340X80MM
AUTO PAINT ROBOTIC LINE : 340X80MM
LASER MARKING MACHINE : 400X160

LATHA MACHINE QTY : 1450X650 MM

AUTO CONVER LINE

PROOF MACHINING 1st OPERATION



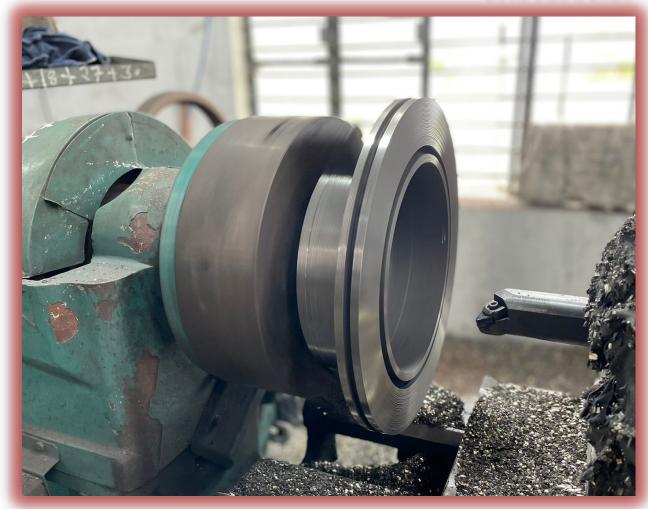
The inner Hat Section Is being Clamped and then Outer Hat Section & Outer Diameter Are Being Proof Finished.



PROOF MACHINING 2nd OPERATION



The Outer Hat Section Is being Clamped and then the Inner Hat Section, Friction Surface, Pilot Bore, Pilot Bore Thickness & Total height Are Being Proof Finished.



CNC TURNING 1st OPERATION



The Outer Diameter Is being Clamped and then the Outer Hat Section And Wheel Hub Mounting Surface Are Being Finished.



CNC TURNING 2nd OPERATION

RM®

The Outer Hat section Is being Clamped and then the Inner Hat Section, Outer Diameter, Pilot Bore, Friction Surface, Total Height, Hub Mounting Surface Are Being Finished.



DRILLING OPERATION



The Outer Diameter Is being Clamped and Then Doing Stud Bore, Tapping, And PCD Operation.



QUALITY CONTROL







BALANCING MACHINE

Balancing machines have two pedestals that sit on top of a supporting platform of disc brake. The part that needs to be tested is bolted on a platform and rotated with a belt or end driver. While the part is rotating, the balancing machine aims to monitor vibration by detecting vibrations through the machine's sensors.



DTV TESTING PLATFORM

Disc Thickness Variation (DTV) is where the rotor or disc varies in thickness. DTV causes torque variation with symptoms such as Pedal pulsation as the rotor passes through the caliper/pads with lower pedal efforts very noticeable and higher pedal efforts less noticeable.



ROUGHNESS TESTER

Surface roughness often shortened to roughness, is a component of surface texture. It is quantified by the deviations in the direction of the normal vector of a real surface from its ideal form. If these deviations are large, the surface is rough; if they are small, the surface is smooth.



RUNOUT TESTING PLATFORM

Brake disc runout, which is defined as a variation in the distance of a brake surface to a reference plane, is a key contributor to torque variations. Runout also leads to disk thickness variation by inducing uneven wear of the disc and is affected by assembly and manufacturing inconsistencies.



IN-PROCESS TESTING



FIRST PART APPROVEL PROCESS

The Q.C Inspector Is Filling the First Part Approval Inspection Report While Starting the Operation.

IN-PROCESS INSPECTION PROCESS All Operation Parameters are Being checked by the Q.C inspector During In process of Machining and also Filling an In-Process Inspection Report.



GAUGES SYSTEM FOR SPECIAL CHARACTERISTIC





H-TYPE PLUG GAUGE IS USED TO CHECK THE PILOT BORE 100%



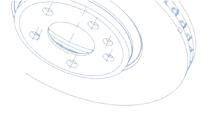
PCD GAUGE IS USED TO CHECK THE HOLE PCD 100%

MACHINING FACILITY









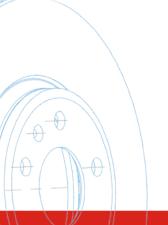


Served in: Disc Brake & Drum, Hub For Automobile Industries







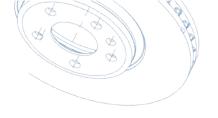










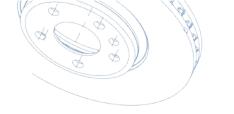




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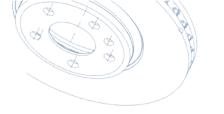






- We would be highly obliged to serve your organization at an International Level.
- We are passionate about customers. Every time we have contact with a customer, our aim is to deliver an excellent experience.
- We're working to meet the needs that customers have today and innovating to meet the needs they will have tomorrow.
- We hope that every time customers deal with us, their experience reflects our vision:
- We do what we say we will do when we say we will do it for the word we stated.
- We are pro-active and easy to do business with and we care
- If we don't keep our promises, we make recovery our number one priority.



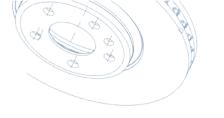




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KINDLY SEND YOUR VALUABLE INQUIRY REGARDING YOUR CASTING REQUIREMENT.



