

Customer Satisfaction from BEST QUALITY

DOOWON

INDUSTRIES CO.

*Leading manufacturer in Korea, Supplying OEM parts for automobiles.
for Friction Disk & Thrust Washer*



DOOWON

Industries co.

CEO Message

Doowon Industries aims for the leader in manufacturing & service with a specific product group that customer needs.

Established in 1994, our company has the motto of technology development for customer satisfaction, and manufactured automobile components during the past 20 years. Our clients include renowned conglomerates, which we are producing and supplying internal combustion engine and driving system components.

Also, we have founded the company-affiliated R&D institution, focusing on development in special components using sintering technique. As a production company specializing in material, we are expanding our business field by manufacturing sintering wear plate that can be used in synchronizer friction ring for the vehicle's manual transmission, large-sized brake system, clutch and others.

Doowon Industries promise customers that they will be satisfied with top quality by realizing tailored production service for specific material in need and simultaneously focusing on continuous R&D and investment.

Thank you very much.

Doowon Industries CEO, **Won-Seok Lee**



VISION



Our company delivering high customer satisfaction through top-grade quality and technology development.

By producing high quality products with R&D in new materials and many years of processing knowhow, we aim for a company expanding together with our customers by achieving customer satisfaction.

HISTORY

- 2016 ○ Installed South Korea's largest synchronous sintering furnace (no. 2)
Certified as excellent company in technology evaluation/NICE Information Service
- 2015 ○ Exported OEM products to Japan
- 2014 ○ Moved Head Office (Sejong Eungam Factory)
- 2013 ○ Patent Registration
Manufacturing method of synchronizer friction ring _ sintering technology and cone-shaped modification technology
- 2011 ○ Started transaction with Federal Mogul Korea
Installed synchronous sintering furnace (no.1)
Patent Registration
Production method of thrust washer _ press technology
Established Doowon DTI
- 2010 ○ Established Company-Affiliated Research Institution
- 2009 ○ Certification of Small & Medium Enterprises with Management Innovation
- 2008 ○ Moved Head Office (Sejong Myeonghak Factory)
- 2004 ○ KS Q ISO9001 :2009
ISO9001 :2008 Certification
Moved Head Office (Daejeon Deokam Factory)
- 2003 ○ Started transaction with Dry Bearing Korea
- 2000 ○ Started transaction with Dongsung Metal
- 1997 ○ Moved Head Office (Seongnam Factory, Daejeon)
Installed press facilities
Started transaction with Daerim MTI
- 1994 ○ Established company
Installed CNC & MCT processing facilities

Based on customer-oriented management, we are expanding to a component production expert in many industries, not only limited to the automobile industry.



CERTIFICATION

Doowon Industries is always with you in the future through R&D and quality improvement.



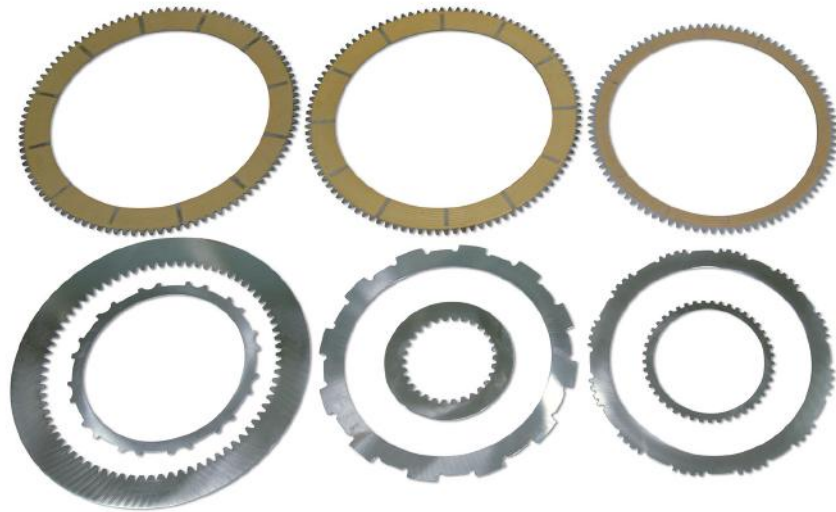
Company-affiliated R&D Institution Certificate Excellent Company in Technology Evaluation Certificate Management Innovation for Small and Medium Businesses Confirmation Quality Management System Certificate ISO9001:2009 Manufacturing Method and Patent Registration of Friction Ring Patent Registration of Thrust Washer

Friction Disk

Processing of customer tailored Friction plate through sintering of mixed metal powder

Friction plate is a component that is applied to the operation of clutch and brake system, which helps to decelerate the vehicle by using friction during engine operation without stopping

Installed and operating by adopting South Korea's largest synchronous sintering furnace. According to customer's request, we can produce from small-sized $\text{Ø}60$ to mega-sized $\text{Ø}650$.



Friction Disk, Steel Plate

Applied Industry



CUSTOMER SATISFACTION
from BEST QUALITY



Condition of Related Facilities

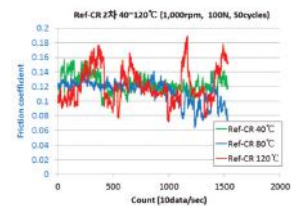
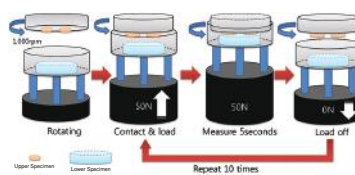
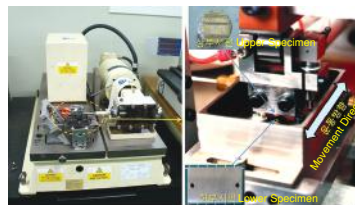


Sintering Furnace No.2

Cooperation with R&D

KATECH KOREA AUTOMOTIVE TECHNOLOGY INSTITUTE

- Cooperating Department
Center Manager Joon-Won Min
from Environment-Friendly
Material Technology R&D Center
- Measure friction factor using
analyzing equipment and mutual
development on test module
- Provides performance evaluation
of products and test certificate



Synchronizer Friction Ring

Processing of manual transmission synchronizer friction ring for commercial vehicle

Synchronizer ring refers to a core component of the vehicle's manual transmission that smoothly changes the gear by synchronizing peripheral velocity between different gears.

Through independent technology development, we have succeeded in localization of friction ring used in multi-cone type synchronizer ring. We can supply corn type friction ring with requested standard by using our own facility.



Synchronizer Friction Ring

Applied Industry



Small-sized Truck



Large-sized Truck



SUV/RV

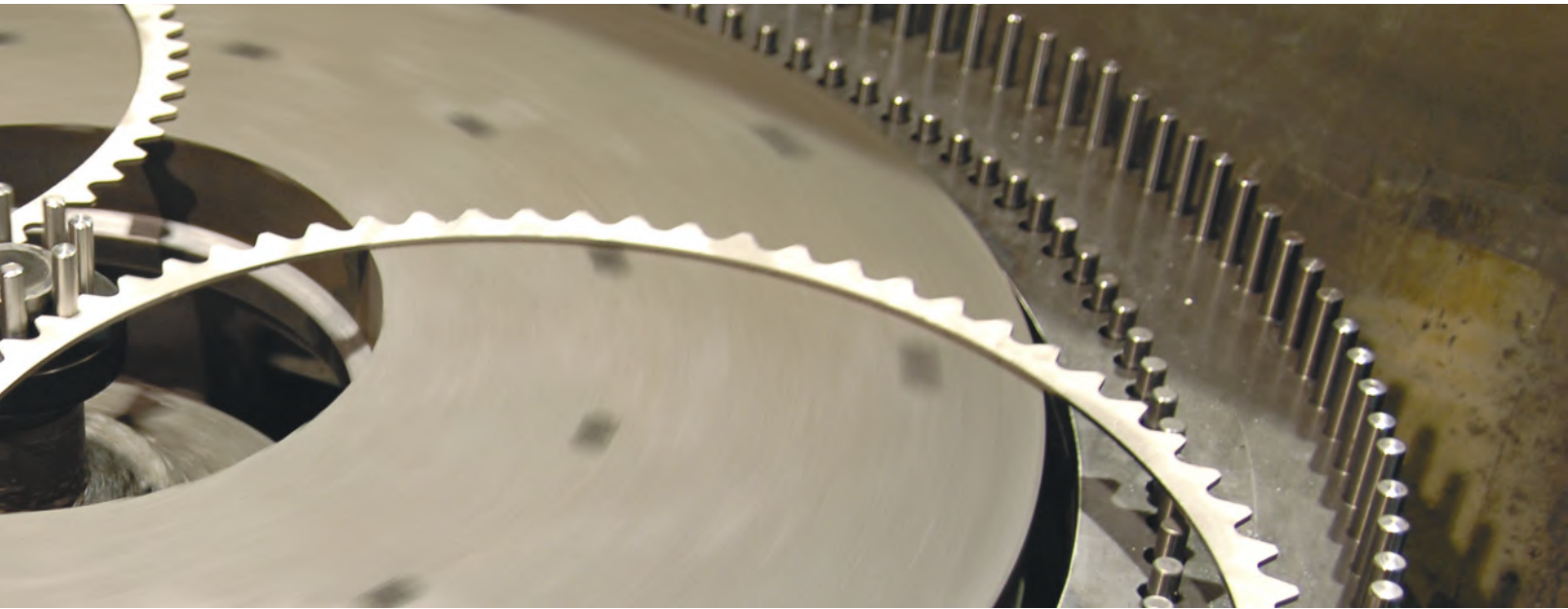


Agricultural Machine



Forklift and Heavy Equipment

CUSTOMER SATISFACTION
from BEST QUALITY



Condition of Related Facilities

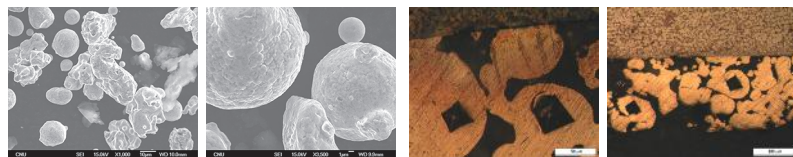


Sintering Furnace No.1

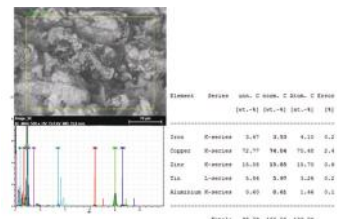
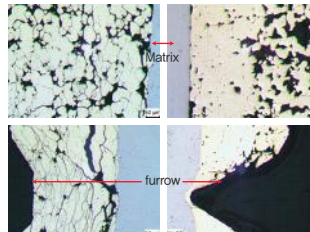
Cooperation with R&D



- Cooperating Department
New Material Engineering
Department, Professor Soon-Ik Hong
- Mutual research on compositional
analysis and optimized compositional
value for sintering of mixed alloy
- Providing research material through
minute structure analysis of sintering
items and filming of shape



Foreign Products Developed Products

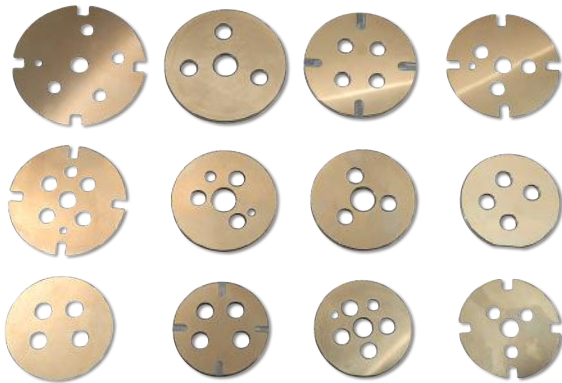


Thrust Washer

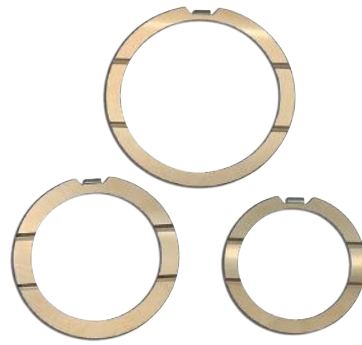
Precise processing technology with 20 years of knowhow

Thrust washer refers to a component for vehicle engine that vertically supports the left and right of journal bearing responding to the vertical movement of vehicle engine's crank axis

During 20 years of business, we produced thrust washers, and manufacture and deliver all types of thrust washers that customers need regardless of quantity. When producing plate-typed thrust washer, we guarantee our product's quality based on independent production technology for high-intensity steel plate with thickness of 6T.



Thrust washer(Plate-type)

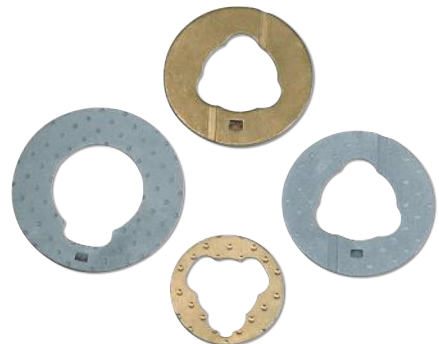


Thrust washer(Ring-type)

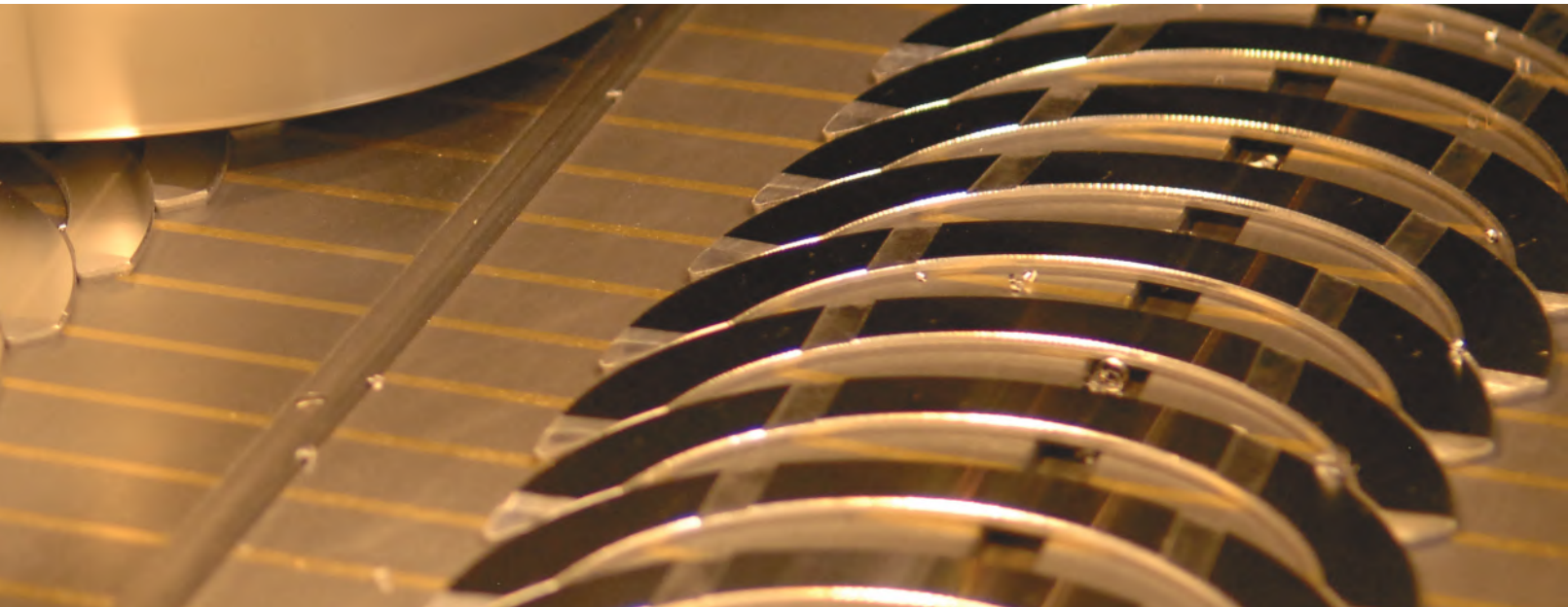
When producing half type thrust washer, production of large-sized over $\text{Ø}100$ that is difficult for adopting automation facilities can be done, and top-grade quality is guaranteed for whatever size requested.



Thrust washer(Half-type)

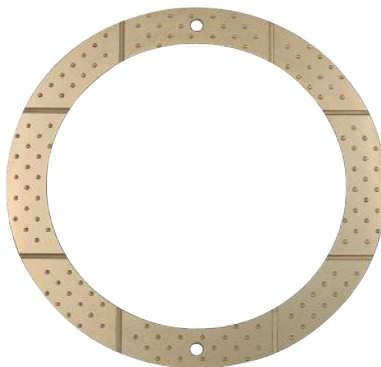


Other thrust washer (Coin-type)



Thrust Washer made with Sintering Material

If the material that customer requested is not available, we manufacture and provide self-produced thrust washer by mixing compositional powder that customer wants.

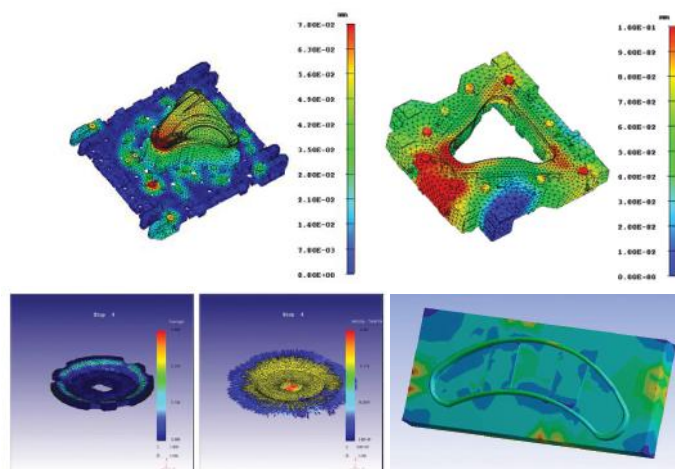


Sintering thrust

Cooperation with R&D



- Cooperating Department
Mecatronics Engineering Professor
Hyeon-Hwan, Jung
- Analyze product blueprint and
advise production of mold
- Simulation analysis when
manufacturing test product.
Predict change in mold and device.



BUSH & OTHERS

Processing Technology using Devices

Not only CNC and MCT with general purpose, we hold various processing technology and 60 types of equipments such as Centares fitting the requirements of customers.

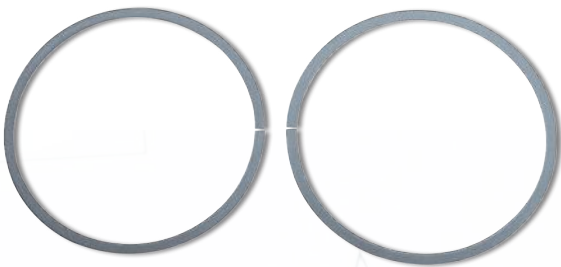
As the automobile industry evolved to electric cars, we hold processing technology such as dry bush using Teflon coating material, further promotes continuous R&D.



BUSH

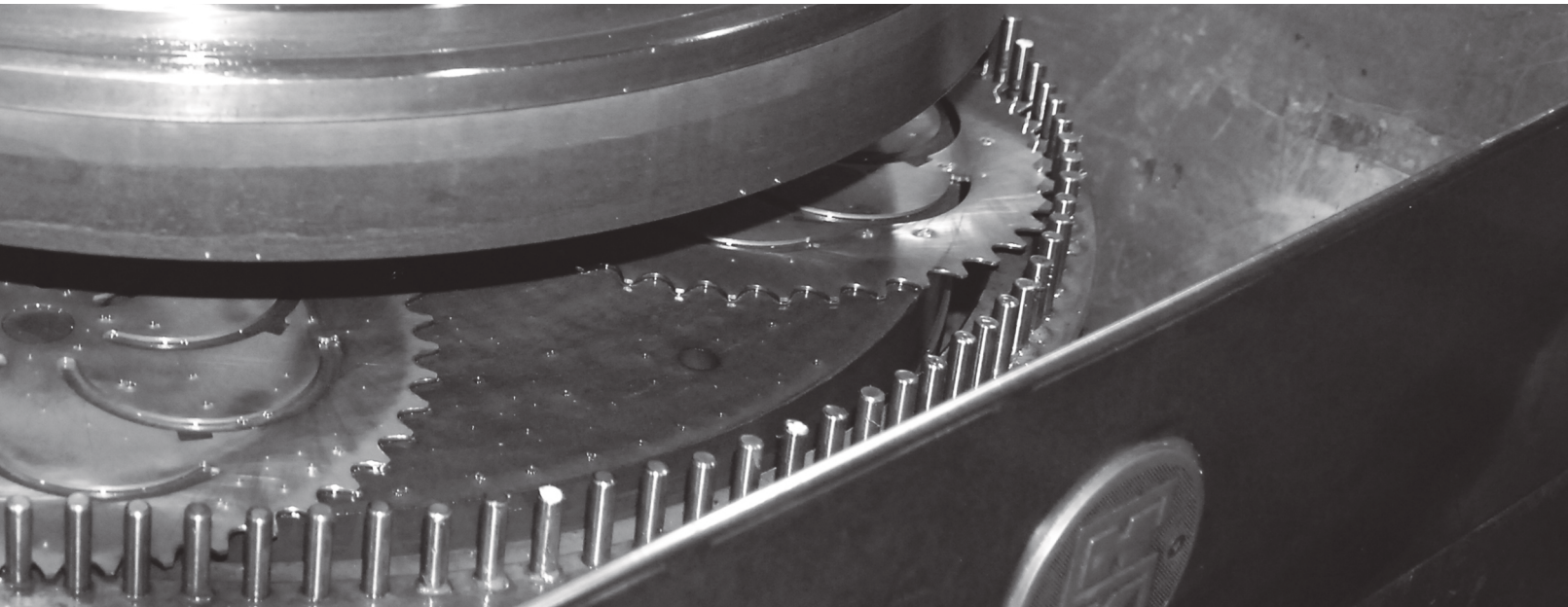


Half Bearing



R-ENG EURO6





Condition of Related Facilities



Uncoiler



CNC Nakamura



Double-Disk Grinder



200 ton Power Press



Hydraulic Press



Hydraulic Press



MCT Daewoo



MCT Gotobuki

Condition of Self-retention examination equipment



Three-dimensional measuring instrument



Roughness Meter

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