We are bound by technical innovation, product quality, and customer services.
About us

We pursue mutual growth with customers through continuous and infinite value creation.

Since establishment in 1972, DY METALWORKS Inc. has been manufacturing and assembling precision parts with various metal forming and machining methods. The continuous investments, especially in research ensured DY METALWORKS to advance autonomous design capacity and high precision engineering on diverse products upon customers’ request. With our valuable partners, DY METALWORKS will continue its effort to achieve innovations in technologies and uncompromising quality. To remain at the forefront in the limitless competition and technical paradigm shift, DY METALWORKS will continue its best performance in professional engineering based on eco-friendly management.
History

1970’s: The origin of Company

The bicycle was an icon of Korea in the 1970’s. The population had usage of the bicycle as a daily mode of transportation rapidly grew through this period. In 1972, DY METALWORKS effectively answered the market's needs by starting the first steps as a manufacturer of bicycle’s functional components including chains, brake assemblies and hubs.

1980’s: Enhancement of Technology

DY METALWORKS has always aimed to further advance technical improvements and organizational management systems to strive at being a professional manufacturer of industrial components. In 1985, DY METALWORKS began supplying VCR head drums to SAMSUNG which led to supplying to JVC, Toshiba, renowned global VCR manufacturers. Starting in 1986, a new plant for starter motor solenoid switches allowed DY METALWORKS production know-how and technical experience to accumulate further in the automotive industry.

In the late 80’s, DY MetAlworkS continued to innovate in manufacturing methods and process design by opening R&D Center to accomplish the advanced precision forging technologies.

1990’s: Innovation and Growth

Professional engineering at DY METALWORKS ensures the highest and most outstanding methods for improved applications. In 1991, DY METALWORKS introduced cold forged bevel gears to the domestic market for the first time and drew large customer notice as a reliable partner.

In 1997, DY METALWORKS successfully paved its way to secure the position as a global supplier by establishing the Tianjin, China facility. This facility became DY METALWORKS outpost to respond to various customers’ needs, including Samsung Electronics, seeking for local partners in the Chinese market. The “challenge” has been our drive and motivation to be a global supplier for worldwide industrial market needs.

2000’s: Expanding Business

The new millennium was the year for acceleration towards the global market for DY METALWORKS. DY METALWORKS aggressively implemented global standards as an automotive part manufacturer. This effort resulted to win the supply contract for Valeo Group’s starter motor pinion and thrust spline.

DY METALWORKS’ innovations and unprecedented applied application of forging technology brought a shift of higher and more efficient standards on various automotive parts manufacturers who depend on machining methods for their product designs.

2010’s: Creating New Value

By 2012, DY METALWORKS welcomed the 40th anniversary of the company’s foundation and looked back upon its path of challenges with various technical innovations. With the 40 years of valuable experience, DY METALWORKS steps forward to be the world’s most reliable manufacturer.

BMW, VW, Fiat, GM, and Hyundai, Kia certified DY METALWORKS as their trustworthy partner for brake components as 50 million units produced in DY METALWORKS own production line in a year.

Moreover, DY METALWORKS continues to reinforce R&D capacities to create new value and tackle the new paradigm of automotive technology innovations; fuel efficiency and weight reduction.
DY METALWORKS is equipped with highly efficient state-of-the-art facilities and management systems in order to keep up with new technical paradigms. To do so, our products are manufactured by the most current methods through constant and scientific research activity. DY METALWORKS is equipped with the largest scale of cold forging and automated machining facility in Korea to answer diverse customer requirements on time.

Locations
Through continuous improvement and innovation, DY METALWORKS has been developing manufacturing technologies on various methods for forging, machining and metal surface treatment since its foundation. Based on ages of proficiency in metal forming methods, we are expanding our business to different industry sectors. DY METALWORKS guarantees to be the best partner with high quality and cost competitiveness.
The DY METALWORKS Research & Development center founded in 1988 was an annex lab and has been successful in various joint research projects with customers. DY METALWORKS R&D performs the best on continuous technical improvements and designing optimized manufacturing processes to satisfy customers’ requirement from the very beginning of prototype stages to mass production.

- Highly trained engineering groups to respond to customers’ diverse designing request on optimal level.
- Experts on engineering software for 2D/3D drawings and metal forming simulation.
- Practical and efficient technical support for each step of development stages.
- Active contribution to customers for improvement on newly developed products and current production line up.
To successfully deliver a competitive product to market, our world class engineers and forging facilities are fully operational with robust tooling analysis and on-demand designing capabilities. DY METALWORKS will never cease its effort to create quality-oriented and market leading forging products.

**Differential Gear Forging Simulation**

- **Material**: Flexible application of materials per targeted mechanical properties by extensive knowledge and experience.
- **Design**: Tailored tools and manufacturing processes designed according to customers’ demand.
- **Facility**: Improvement in quality and productivity with automated facility.
- **Annealing & Lubrication**: Methods of metal structuring and friction reduction applied to accomplish enhanced forging efficiency and tool life.
DY METALWORKS operates on an optimized machining line structure for the various materials including steel, casting and aluminum. Critical dimensions are fully controlled within operations by automated in-process measurement devices.

INTEGRATED PRODUCTION LINE FOR SHAFT

Integrated processing line including CNC, threading, induction hardening and grinding is fully operational to accomplish high productivity and customer’s quality standards.

MULTI-AXIS CNC MACHINING

CAD/CAM design and autonomous measuring equipment are applied in multi-axis CNC machining line to manufacture high valued machining products.

DUCTILE CASTING MACHINING

DY’s robust tooling design and process line-up guarantees mass production for ductile castings in various shapes and sizes with high efficiency.

ALUMINUM MACHINING

Utmost accuracy and repetitiveness is controlled with the high speed precision machining facility.

Technology  Precision Machining
Technology Heat Treatment

Line of heat treatment furnaces are automatically controlled for proper heat treatment condition. Experienced engineers’ inspection per batch completes the integrity of metallurgical structure and hardness of each heat treated products.

**CARBURIZING**
Carburizing increases strength and wear resistance by diffusing carbon into the surface of the steel creating a case while retaining a substantially lesser hardness in the core. This treatment is applied to low carbon steels after machining.

**INDUCTION HARDENING**
Induction hardening is process used for the surface hardening of steel and other alloy components. The core of the component remains unaffected by the treatment and its physical properties are the same as what it was machined or preheat treated.

**ANNEALING**
Annealing is used to induce softness before forging, or to produce a definite microstructure. The temperature is uniform throughout the part, and then slow cooling the part through the transformation range. The heating and cooling rates depend on the composition, shape and size of the part.

**NORMALIZING**
Normalizing is used to unify the microstructure of the heat-affected zone segregation in casting and forgings, and also to provide moderate hardening.
Quality Assurance

DY METALWORKS Quality Assurance guarantees the highest quality by applying various testing measures vigorously to ensure best quality performance. 3D measuring machines, metallurgical structure inspection and destructive / non-destructive test machines are fully operational by qualified engineers.

Based on the strictest quality control, DY METALWORKS is capable with flexible process design and reliable manufacturing process to fulfill diverse customer requirements.
Manufacturing Process

Hot & Cold Forging
For large size parts production, hot forging applied for the forming of overall dimensions and cold forging completes functional dimensions such as tooth profiles and helical gears to ensure better process efficiency and quality control on following process.

Heat Treatment
To meet exact customers’ requirements, DY’s specified control methods are in place for material control and heat treatment condition along with real-time monitoring.

Precision Machining
Machining programs designed to satisfy the critical dimension within processes. DY’s automated machining process guarantees high productivity with reliable quality.

Powertrain Components

OUTER RACE
Roller type one-way clutch transfers power to one direction during automatic gear shifting by combination of cam profile with inner side rollers.

PARKING GEAR
Parking gear(pawl) fitted into auto transmission to lock up gear transitions.

DIFFERENTIAL GEAR
Differential gear is a type of bevel gear to compensate asymmetric wheel rotation ratio during corner work of automobile.

INNER SLEEVE
A part of clutch pack, inserted to boss to dispense oil flow and guide the rotation of main shaft with implanted needle bearings.

CLUTCH GEAR
Successful and efficient power transition in manual and DCT transmission is ensured for each shift.

INPUT SHAFT & FLANGE
Long stroke forging for solid and hollow shaft, applicable for various functional shaft in powertrain.
Brake Components

CALIPER PISTON

Hydraulic pressure behind each caliper piston pushes the pistons outward. This forces the brake pad into contact with the disk. The resulting frictional contact slows and stops the disc and wheel.

Manufacturing Process

**Former**
Coil materials after annealing treatment are fed into the former for continuous multi staged forging process and maximize production efficiency.

**Metal Plating Treatment**
To acquire corrosion and abrasion resistance, metal plating treatment line is fully operational. At this line, advanced rectifier, automatic density controller are included to ensure stable plating thickness and surface quality on each product.

**Grinding**
Centerless grinding is applied to assure outer diameter in micron level and surface roughness.
With electromagnetic charge, solenoid pushes the pinion gear toward flywheel ring gear to set the engine in motion.

On ignition, starter motor pinion is engaged with the flywheel to start the engine and the pinion decoupled back to original position after the engine start.

With electromagnetic charge, solenoid pushes the pinion gear toward flywheel ring gear to set the engine in motion.

Electronic part to prevent overcurrent on solenoid when starting the engine.
Sales & Purchasing
[314, Migun Techno world 2] 187, Techno 2-ro, Yuseong-gu, Daejeon, Korea

Forging & Machining Factory
184, 132 Ben-Gil, Daewha-Ro, Daedeok-Gu, Daejeon, Korea

Electrical Parts Factory – Site I
12, Moadongsan-Gil, Chunbuk-Myun, Kyungju, Korea

Electrical Parts Factory – Site II
36-11, Daehapgongdan-Gil, Daehap-Myun Changnyeng-Gun, Korea

DY Metalworks China
07Hao, Fagang-lu, Shuanggang-EDA, Jinnan-qu, Tianjin, China

Module Assembly Factory
1000-1, Dongsan-Ri, Yeonmu-Eub, Nonsan, Korea
(Plan to open in 2017 year)