

# MettleWorx

*Engineering Services and Procurement Partner*

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- About MettleWorx – What, Why and How!
- Supplier Network
- Expert Network
- About the Founders
- Why Partner with MettleWorx?
- Supplier portfolio



# What?

## *Consulting and Benchmarking Services...*

### I. Procurement Consulting

- Connect global companies with Indian suppliers certified to international standards
  - Product design and simulation (FEA) services
  - Supplier scouting, pre-vetting and auditing
  - RFQ management and supplier negotiations
  - Production launch and post-launch management

### II. India Market Benchmarking

- Market landscape assessment for global companies targeting Indian market entry
  - Product benchmarking of competitive domestic and international alternatives
  - Price benchmarking to compare international manufacturing costs vs cost to manufacture in India
  - Market analysis to study current and future trends

**MettleWorx offers services across the product lifecycle – from design to launch, supported by portfolio of manufacturing processes across diverse industries such as automotive, defense, medical and more...**



# Why?

## To Bridge Market Gap...

### Market gaps

#### Demand side needs (International companies looking to manufacture in India)

- No easy way to identify, audit and onboard Indian manufacturers
- Gap between suppliers' marketing materials and actual capabilities
- Communication challenges during project launch and post-launch
- Need continuous supplier monitoring after program launch

#### Supply side needs (Indian manufacturers)

- No focused sales and marketing teams to identify export clients
- Disconnect between client requirements and suppliers' on-the-ground action plans

### What MettleWorx offers?



A **true engineering partner** for customers and suppliers across product lifecycle phases



**1-stop solution** for international customers – relieving them from having to search and manage multiple suppliers in India/Asia



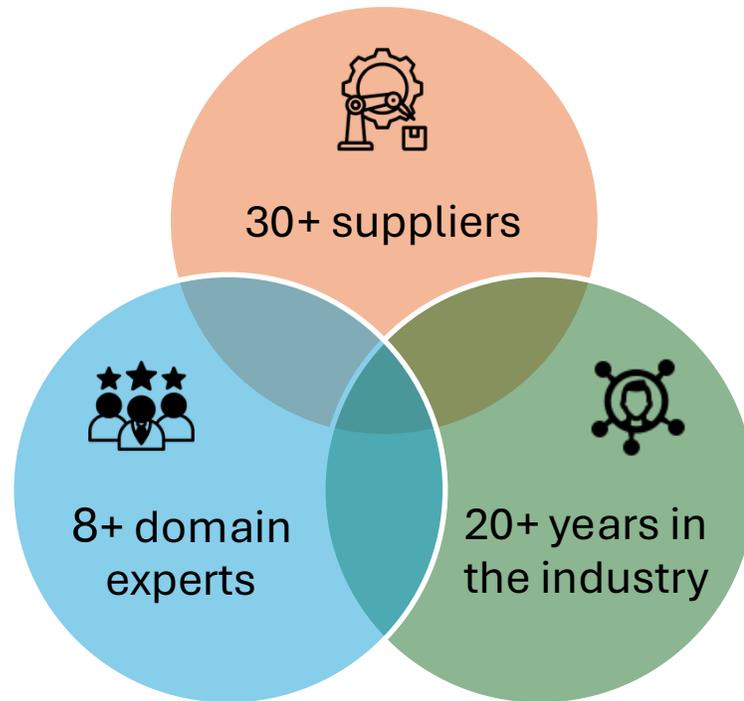
Broadcast capabilities of Indian suppliers to the global markets **creating a win-win situation** for both – high quality parts at competitive prices for customers and long-term business opportunities for suppliers

**MettleWorx strives to bridge the gap between the buyer and seller sides by offering an end-to-end procurement consulting and project operationalization solutions**



# How?

*3 key enablers...*



30+ suppliers certified to international standards with experience in casting, forging, stamping, extrusion, injection molding, reverse engineering and more...



Our expert network of industry professionals helps us solve design and manufacturing challenges throughout the product launch cycle



Founders' experience working with organizations in the US, EU and Asia, helps them empathize with clients' needs and identify the right solutions

**An extensive network of suppliers and industry experts spanning various industries, along with the founders' 20+ years of experience in the US market gives us a strong foundation to fulfill clients' critical needs**



# Supplier network | Certified suppliers serving domestic and international clients through prototype and production phases

**30+**

SUPPLIERS ACROSS INDIA



**100%**

ISO  
CERTIFIED

With suppliers holding industry specific certifications such as IATF, UL, ISO, etc.



**10+**

MANUFACTURING  
PROCESSES

Includes stamping, casting, forging, extrusion, machining, fabrication, wire harnessing, gear manufacturing, plastic and rubber molding



**8+**

INDUSTRIES  
SERVED

Automotive – 4 wheelers, 2-wheeler, EVs and commercial vehicles, defense, aerospace, construction, oil and gas, food processing, agriculture, energy, home appliances



# Expert network | Our experts are always reachable and support us hit the ground running on new projects

## Why leverage experts?

- Bridges potential technical gaps, both in customers and suppliers' teams
- Helps leverage experience from similar projects with other customers and suppliers
  - Helps catch any design issues early
  - Ensures design for manufacturing
  - Pre- and post-production problem-solving support

### Expert 1

- 15+ years of experience in developing forged components
- Expertise in global trade across multiple industries and products

### Expert 2

- 30+ years of experience in developing drill taps for diverse applications
- Global trade experience within the machine tools portfolio

### Expert 3

- Expertise in developing and manufacturing gears for automotive and industrial applications in both domestic and international markets
- Currently serves multiple Indian and German OEMs

### Expert 4

- 30+ years in the procurement domain working with domestic and international suppliers of components made of metals and non-metals
- Expert in supplier vetting, product pricing and launch-readiness assessment

and many more...



# About the Founders



**Nitin Jadhav**

- 15 years of experience with leading engineering, manufacturing and technology firms in the USA
- Held various technical, commercial and business roles at automotive OEM and tier-1 suppliers
- MSME (Michigan Tech); MBA (Uni. of Michigan)



**Suhas Patil**

- 11 years of experience as a mechanical engineer and strategic consultant
- Held R&D roles in engineering organizations, entrepreneurship in digital marketing, and data-driven consulting for small businesses
- MSME (Michigan Tech)

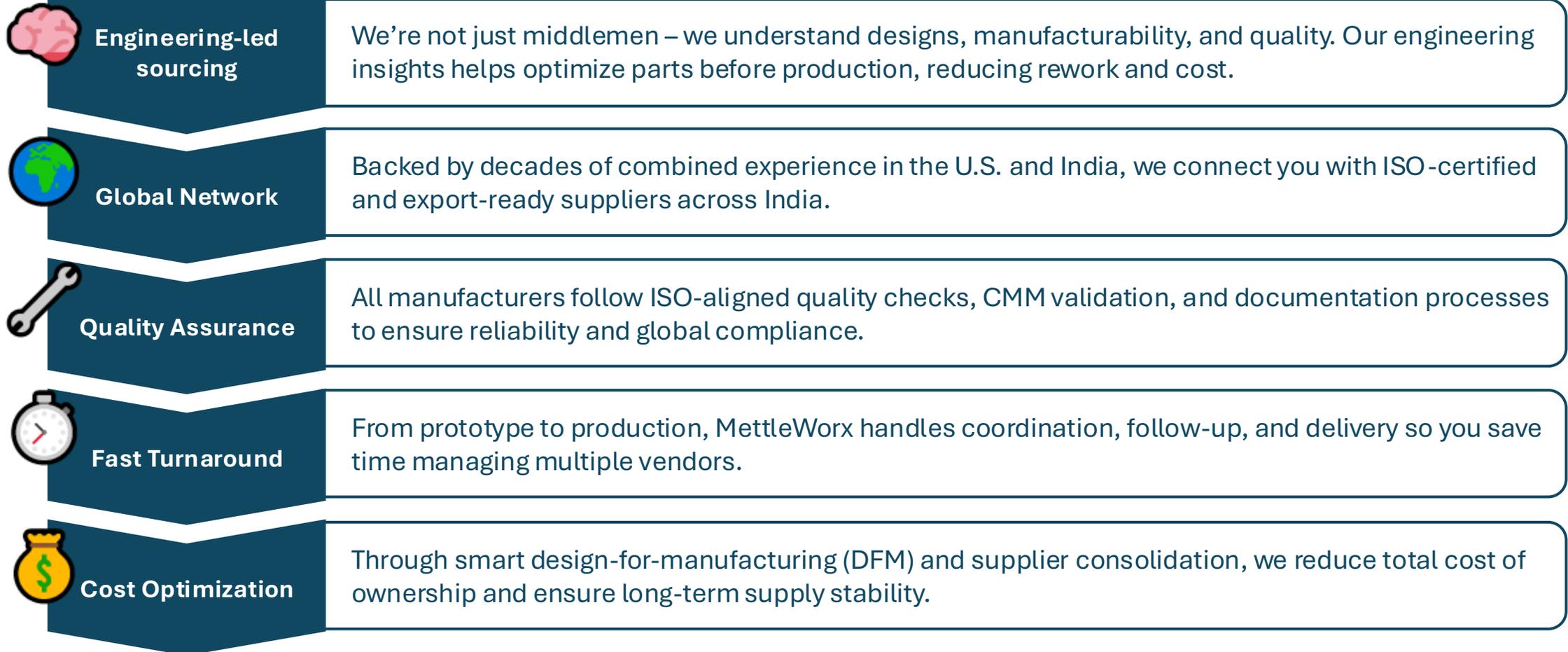
## Our Experience

- Component design, DFM and CAE
- RFQ process management and strategic supplier nomination
- Product portfolio management - make vs buy analysis, mitigate component proliferation
- Global project management, technical partnerships for R&D
- Product bundling and pricing strategies
- DFMEA, root cause identification (RCA), and continuous improvement using six sigma tools
- Component design and product optimization for scalability
- Supplier & partner network management
- Data analytics to support critical business decision-making
- Digital marketing

**The founders seek to leverage their knowledge of working with the US organizations and their network of suppliers in India to offer high quality engineering and manufacturing services to global customers**



# Why Partner with MettleWorx?



# Supplier Portfolio

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- *We partner with suppliers certified to the international standards and have extensive experience in working with both domestic and international clients*
- *Our suppliers are predominantly based in India with support from suppliers in Eastern Europe, Vietnam and Malaysia*



# Supplier network | Certified suppliers serving domestic and international clients through prototype and production phases

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Includes stamping, casting, forging, machining, fabrication, wire harnessing, gear manufacturing, plastic and rubber molding



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INDUSTRIES  
SERVED

Automotive – 4 wheelers, 2-wheeler, EVs and commercial vehicles, defense, aerospace, construction, oil and gas, food processing, agriculture, energy, home appliances



# Machining Capabilities

## Manufacturing capabilities

- Multi-axis machining
- Post-machining of cast, forged and stamped parts
- Computer Aided Manufacturing (CAM)
- Die and gauge design / manufacturing

## Manufacturing Equipment

- Conventional machining – drilling, grinding, cutting, etc.
- CNCs, HMCs and VMCs
- Plating and paint booth

## Inspection equipment

- Coordinate Measuring Machine (CMM)
- Vision Measurement Machine (VMM)
- Custom gauges

## Materials machined

Steel, Aluminum, Stainless Steel, Brass, Copper, Inconel, Titanium, PTFE, Nylon, Polycarbonate

## Example parts





# Stamping Capabilities / Press parts

## Capabilities

- High-volume and batch production
- Tool design and development
  - Progressive and transfer
  - Prototype tooling
- Simulation – AutoCAD, Delcam, Polyworks, UG-NX, Catia, IDEAs

## Manufacturing and inspection equipment

- Presses across a wide range of tonnage – 30 ton to 1000 ton
- CNCs, HMCs and VMCs
- CED coating and plating
- CMM, surface profile tester, FARO arm

## Part details

- Thickness range: 0.4 to 8 mm based on material
- Wide range of materials including steel, aluminum, copper, high strength materials

## Example parts





# Casting Capabilities – GDC and PDC

## Capabilities

- Gravity and pressure die casting - aluminum
- 0.020 kgs to 30 kgs
- Mold flow analysis

## Manufacturing equipment - GDC

- Horizontal gravity machines
- Melting and holding furnaces

## Manufacturing equipment - PDC

- 130 – 720 MT machines

## Other equipment

- Tumble and blast type shot blasting
- Vibro deburring and finishing machine
- Heat treatment, core making shop
- CNC/VMC machine shop
- 6-axis robot

## Inspection equipment

- UTM, Spectro m/c for chemical analysis, profile projector, hardness tester, CMM, gas evaluation for molten metal

## Example parts





# Forging Capabilities

## Capabilities

- Forging
- Metallurgical analysis
- Tool and Die development

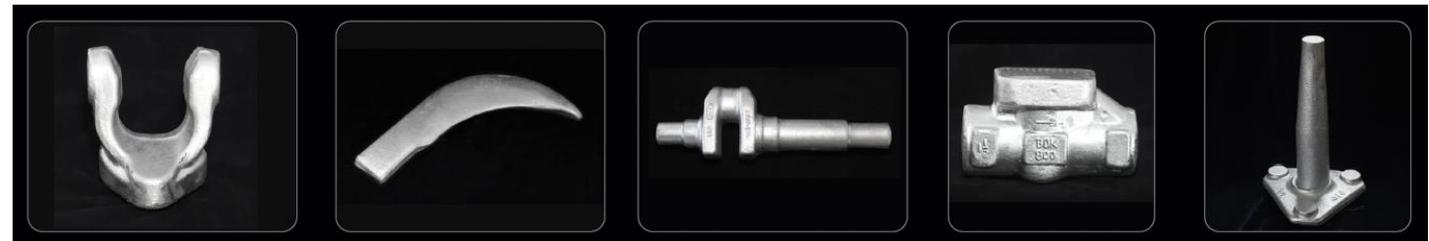
## Manufacturing equipment

- Multiple shearing and bandsaw machines
- Electrotherm 200, 300 KW
- Forging hammers: 0.5 - 2.5 MT
- Trimming presses: 100 - 200 MT
- Forging press: 1000 to 1600 MT
- Induction heating, trimming machines
- CNCs and VMCs

## Inspection equipment

- Spark, Spectra and Magnaflux (ability for 100% Spectra inspection)
- Hardness tester, microscope analysis

## Example parts





# Plastic Injection Molding Capabilities

## Capabilities

- Injection molding
- Insert molding, hot forming
- Ultrasonic welding
- Tool design using Creo, UG, DelCAM, Power Shape, AutoCAD

## Manufacturing equipment

- 100 to 1000 MT injection molding machines
- 3 axis and 5 axis VMCs
- EDM and wire EDM cell
- Assembly cell (manual)

## Inspection equipment

- 3D scanner
- Profile inspector, sharp point tester in addition to conventional gauges

## Materials molded

Wide range of materials including Acetol, Nylon, HDPE, LDPE, Polycarbonate, Polyester, Polypropylene, Polystyrene, PVC, TPE

## Example parts





# Pipe Bending Capabilities

## Capabilities

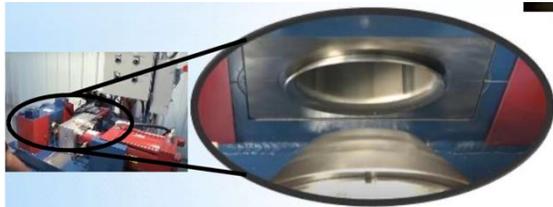
- Tube bending, flaring and squeezing
- Project welding, spot welding, CO2 welding – manual and robotic

## Manufacturing equipment

- CNC pipe bending machines

## Part details

- Pipe thicknesses up to 4 mm and brackets up to 16 mm thick



TUBE FLARING



TUBE SQUEEZING

## Example parts





# Heat Sink Capabilities

## Capabilities

- Pressure die casting of aluminum and post-machining

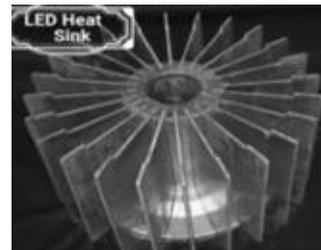
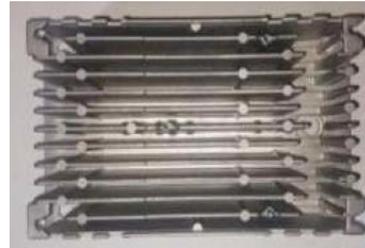
## Manufacturing equipment

- PDC machines: 160 to 700 tons
- Melting furnaces
- Shot blasting – rotary and hanger
- Trimming press
- Machine shop – CNCs, VMCs, conventional machines, SPMs

## Inspection equipment

- Density testing equipment
- CMM, surface roughness, hardness tester, microscope, UTM
- Spectroscope

## Example parts





# Wire Harness Capabilities

## Capabilities

- Wire harnessing
- Electro-mechanical assemblies and box building
- Control units
- UPS assemblies

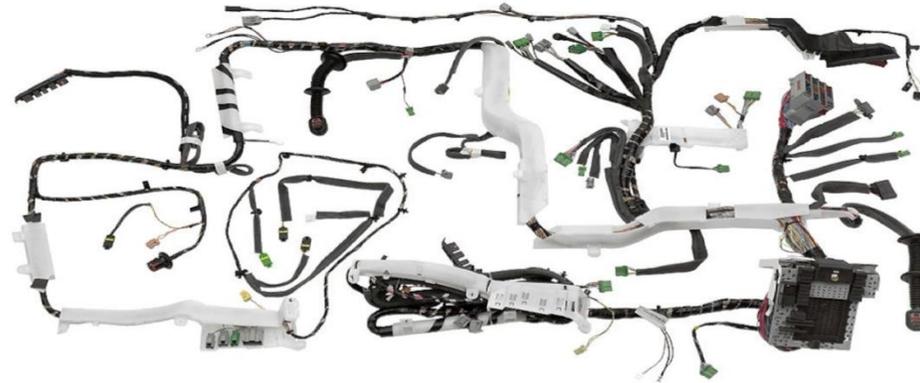
## Manufacturing equipment

- Fully automatic sleeve cutting machine
- Cable tag/ ferrule printing machine
- Semi-automatic lug crimping machine
- Dowel crimping machine
- Heat gun

## Inspection equipment

- Crimp cross-section analyzer
- Motorized pull tester
- Crimp Force Monitor (CFM)
- Cathode Ray Oscilloscope (CRO)
- Megger
- DC test kit
- Relay test kit
- Variac transformer

## Example parts





# Gear Manufacturing Capabilities

## Manufacturing capabilities

- Gear hobbing, shaping, shaving, grinding

## Manufacturing Equipment

- CNC gear hobbing: Pfauter PE-200, Gleason GH-125
- Gear shaping: Fellows 6A, Liebherr LC-350, Lorenz LS-154
- Gear grinder: Reishauer NZA
- Cylindrical grinders, automatic bandsaw

## Inspection equipment

- Lead & Profile Tester: MAAG – PH60 and MAAG – PH40
- Height gauge, bore dial gauge, span micrometer

## Materials machined

Ferrous, non-ferrous, plastics

## Example parts





# Aluminum Extrusion Capabilities

## Manufacturing capabilities

- Aluminum extrusion, heat treatment, painting, laser marking

## Manufacturing Equipment

- Extrusion presses ranging from 4” to 9”, continuous extrusion presses, cold draw extrusion setup
- Anodizing, powder coating, machining, laser marking equipment
- Tool room equipment – VMC, CNC, EDM, conventional machine tools

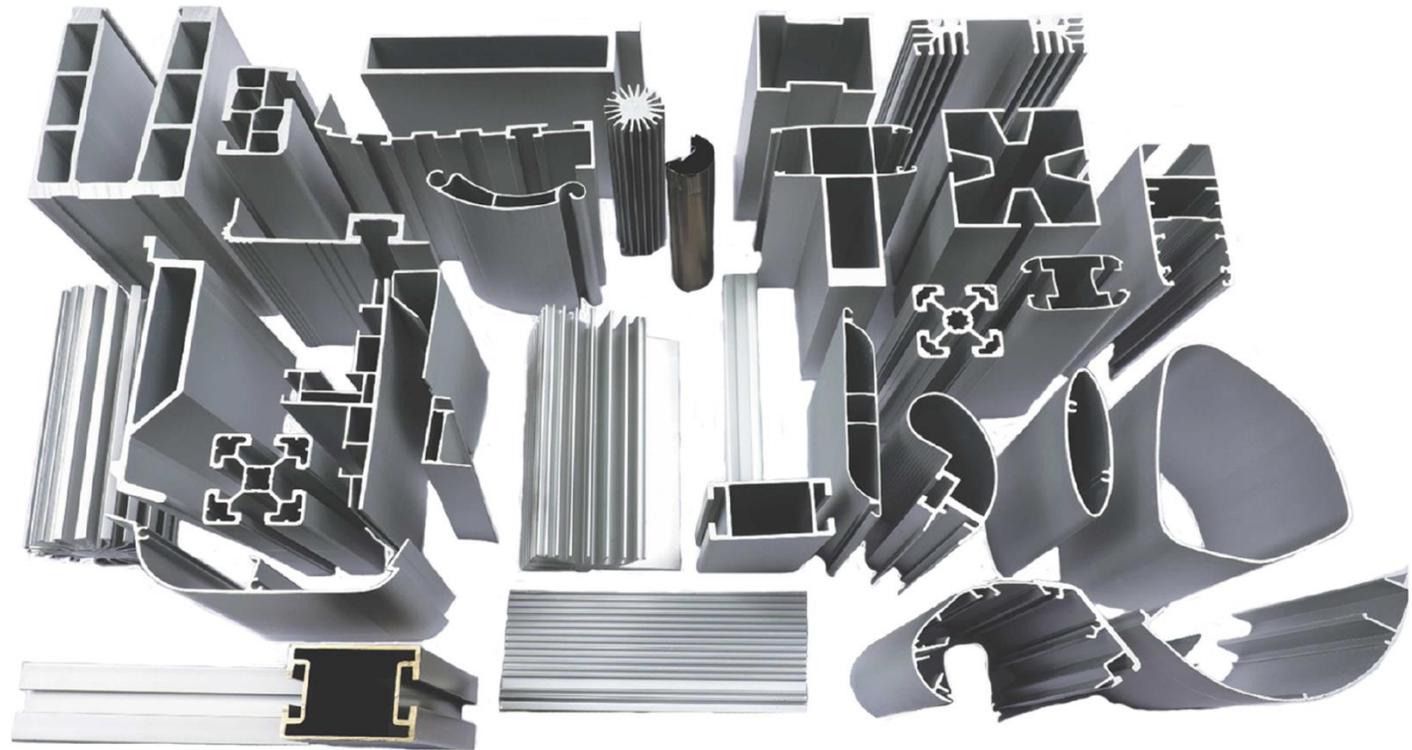
## Inspection equipment

- UTM, crack detection using conductivity and ultrasonic tests, Ascona and Keyence machines for profile measurement, hardness testers

## Alloys range

1xxx, 2xxx, 3xxx, 5xxx, 6xxx, and 7xxx series, covering both commercial and hard alloys

## Example extruded profiles





# Comprehensive Industrial Sourcing for EPC Projects

From standard equipment to highly specific project requirements

- Welding machine and accessories
- Motor, Pumps and accessories
- Panel AC, Cooling Tower Fans
- Lubricants & Coolants
- Cutting tools – inserts, cutting wheels, grinding discs, etc.
- Fasteners
- Gaskets, filters and seals
- Welding rods and electrodes
- Measuring tools and equipment
- Maintenance and cleaning supplies – cleaning fluids, rags, brushes, etc.

## Example parts



# Thank you!

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