



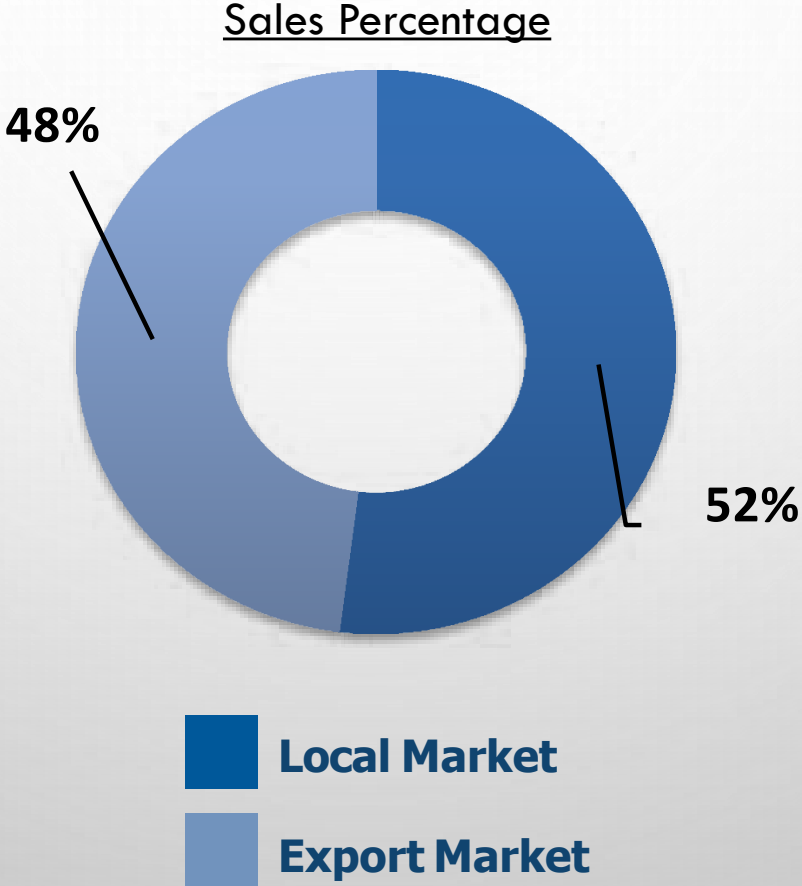
[korel.com.tr](http://korel.com.tr)

# KOREL COMPANY



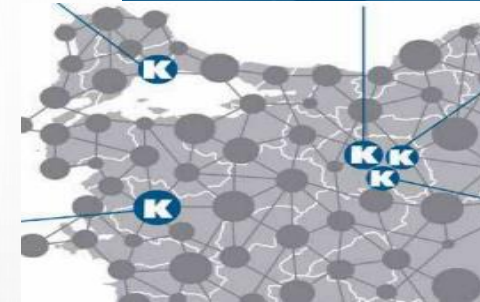
KOREL is a manufacturer of heating systems, exchangers, cooling systems, evaporators, extruded Aluminum tube-pipe-profiles, bycycle being a Group Company.

- Export 52%
- 2400 Employees
- 5 Facilities



- \*\* EVAPORATORS
- \*\* COOLING ELEMENTS
- \*\* CONDERSERS
- \*\* EXCHANGERS
- \*\* HEATING ELEMENTS
- \*\* HEATING CABLES
- \*\* ALUMINUM EXTRUSION PROCESS (ALUMINUM TUBES, PROFILES, AND BARS )
- \*\* ALUMINUM MACHINING PARTS
- \*\* BYCYCLE PRODUCTION WITH OWN BRAND

# KOREL AT A GLANCE



Totally 156.000m2  
land area



5 Facilities in  
Eskişehir /Turkey



Export to more  
than 20  
countries



100%  
Domestic  
Capital



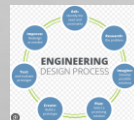
Totally 90.000 m2  
closed area



120 Engineers  
and 2350  
employees



Design and  
Engineering  
Studies



Special Processes  
(Robotic welding, hard  
anodizing, decal paint,  
etc



3D Measurement and  
Reverse Engineering  
Technology



Sustainability



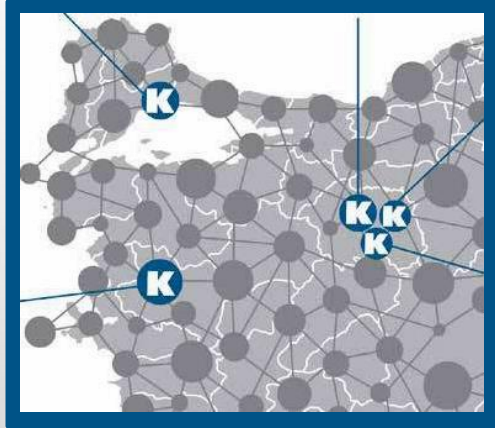
End formed parts  
(welding, etc)



# WHERE IS KOREL?



- At Eskişehir city / Turkey
- Total Land Area: 156.000m<sup>2</sup>
- Total Closed Area: 90.000m<sup>2</sup>
- We started new construction, after finish it our total closed area will be 122.000m<sup>2</sup>



## \*\* Eskişehir Aluminium Tube Extrusion Factory

Land Area: 40.000m<sup>2</sup>

Closed Area: 25.000m<sup>2</sup>

## \*\* Heating Elements Factory & Cooling Systems Factory

Land Area: 60.000m<sup>2</sup>

Closed Area: 38.000m<sup>2</sup>

## \*\* Manisa Cooling Elements Factory

Land Area: 5.000m<sup>2</sup>

Closed Area: 3.000m<sup>2</sup>

## \*\* Çerkezköy Factory

Land Area: 9.000m<sup>2</sup>

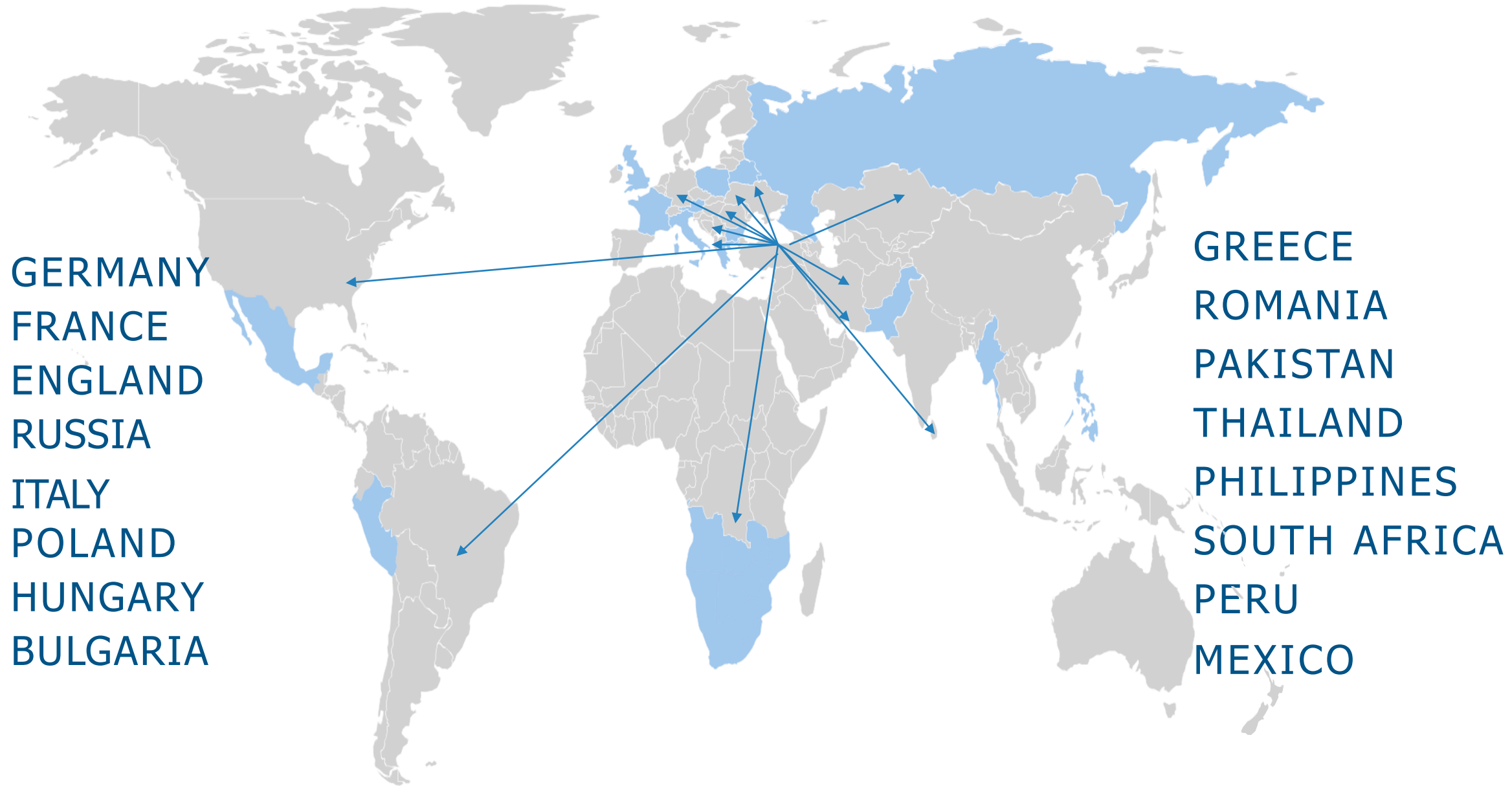
Closed Area: 7.600m<sup>2</sup>

## \*\* Bicycle Factory

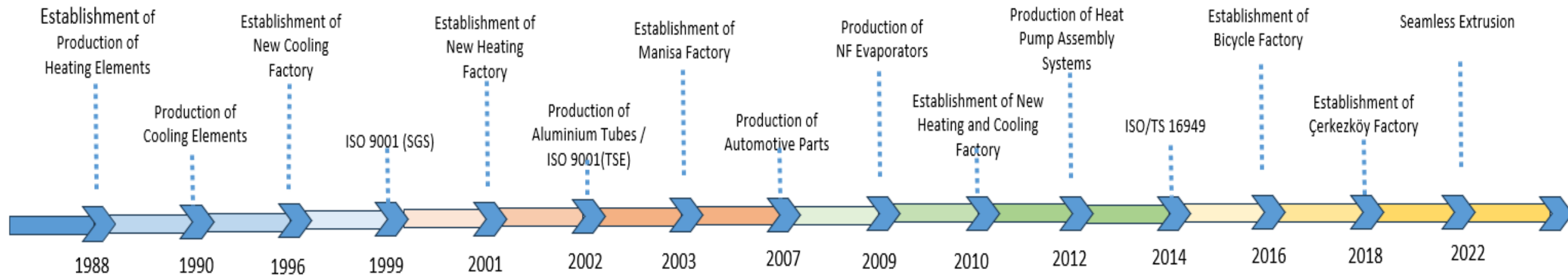
Land Area: 42.000m<sup>2</sup>

Closed Area: 14.600m<sup>2</sup>

# RELATED COUNTRIES IN OUR EXPORT MARKET



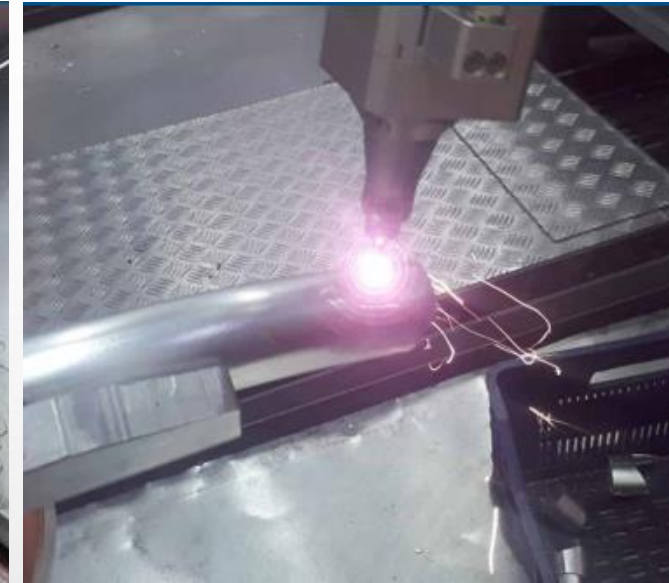
# KOREL CORPORATE \_ MILESTONES



# CAPABILITIES OF KOREL COMPANY



- ✓ AI extrusion process by porthole and seamless technology
- ✓ CNC machining process ( 9 cnc machines )
- ✓ Robotic welding lines (21 robotic welding machines )
- ✓ Robotic laser cutting process
- ✓ Robotic tube cutting line
- ✓ Blown Parts like accumulators
- ✓ Manual welding lines
- ✓ Painting Line (Powder- Wet Paint)



# CAPABILITIES OF KOREL COMPANY



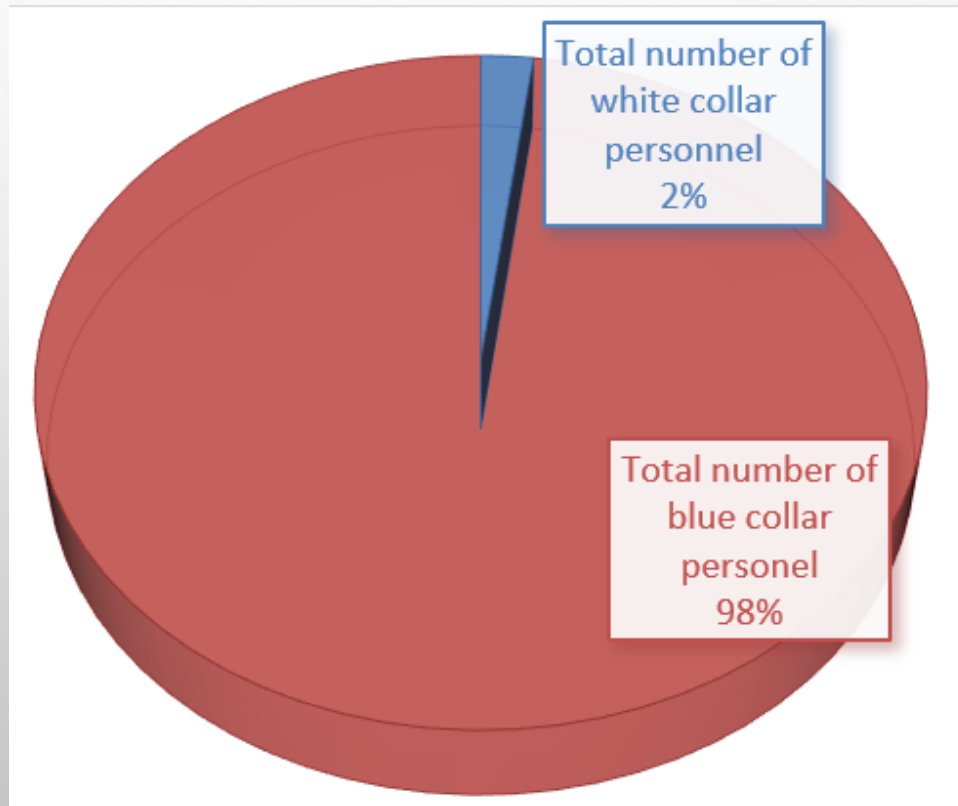
- ✓ T4 – T6 Heat Treatment Furnaces
- ✓ Surface treatment line
- ✓ Anodizing process for producing (hard anodized) parts
- ✓ Sand Blasting
- ✓ Decal Production and Application





# STAFF

- ✓ Number of employees in the industrial sites: 2050
- ✓ Total number of employees in Korel Group: 2400
- ✓ Average seniority of blue - collar employees : 8 years
- ✓ Average seniority of white - collar employees: 11 years



# QUALITY CERTIFICATIONS OF KOREL



- ISO 9001: 2015 Quality Management System Certificate –SGS
- ISO 9001: 2015 Quality Management System Certificate – TSE
- IATF 16949: 2016 Automotive Quality Management System Certificate
- ISO 50001: 2018 Energy Management System Certificate
- ISO 14001: 2015 Environmental Management System Certificate
- TSE Covid 19 Safe Production Certificate
- Code of Conduct Approval



# 1. KOREL ALUMINUM EXTRUSION FACTORY



- ✓ 14 Porthole Extrusion Lines
- ✓ 1 Seamless Extrusion Line
- ✓ 25.000m<sup>2</sup> closed area, 40.000m<sup>2</sup> total area
- ✓ 25.000 tons Annual production Capacity
- ✓ We are capable to produce max 100mm OD by Seamless process
- ✓ Min 1mm thickness for the tubes by seamless process
- ✓ We are capable to produce max 90mm OD by porthole extrusion process.
- ✓ Min thickness can be extruded as 0,3mm for multichannel profiles.
- ✓ 35.000tons Billet Casting Capacity

1000-2000-3000-5000-6000-7000 series

K Performance 3000 series alloy for improved corrosion resistance



# 1.1. CAPABILITIES OF KOREL ALUMINUM EXTRUSION FACTORY



- ✓ \*\* Coiled tubes and profiles
- ✓ \*\* Profiles up to 6 meters length
- ✓ \*\* Cut to length profiles
- ✓ \*\* Bended
- ✓ \*\* Cold Drawned
- ✓ \*\* Painted
- ✓ \*\* Grooved
- ✓ \*\* Additional processes like welded parts after profile/tube extrusion
- ✓ \*\* All extrusion tube and profile tools are produced inhouse.
- ✓ \*\* Part anodizing (hard anodizing)



## 1.2 GENERAL INTRODUCTION OF KOREL ALUMINUM EXTRUSION FACTORY



As Korel, we produce the shapes and sizes of all standard and special aluminum extrusion alloys of

1000-2000-3000-5000-6000-7000 alloys

3000 Alloy K – Performance Special Alloy

(Special K material can withstand salt spray for 500 hours)

by both direct and indirect extrusion with our expert staff, our expert team can develop solutions for special alloy aluminum profile applications and we can carry out R&D studies in terms of producing special alloys.

- ✓ Billet casting house
- ✓ Robotic cutting processes for billets
- ✓ Billet homogenization furnace
- ✓ 10-20 ton pulling force drawing benches
- ✓ Rolling machine for straightness
- ✓ T4 and T6 tempering furnaces



# 1.3 TEST CAPABILITIES OF THE KOREL ALUMINUM



- In every production we get sample from billet casting furnace and also from final products, and analyse chemical and mechanical properties
- World class durability and hardness tests can be performed
- 2024 INVESTMENTS →Ultrasonic test equipment  
→Electrical Conductivity Measurement Device  
→Mechanical test equipment (tensile test machine)

## TUBE TESTING LABORATORY

- ▶ Spectrometer to analyze alloy ingredients
- ▶ Tensile tester for tubes and profiles
- ▶ Hardness measurement (HB)
- ▶ Internal residue tests of tubes
- ▶ Miscibility tests with refrigerants
- ▶ Burst test
- ▶ Surface roughness measurements



## COORDINATE MEASURING MACHINE



## CYCLIC CORROSION TEST (CCT)



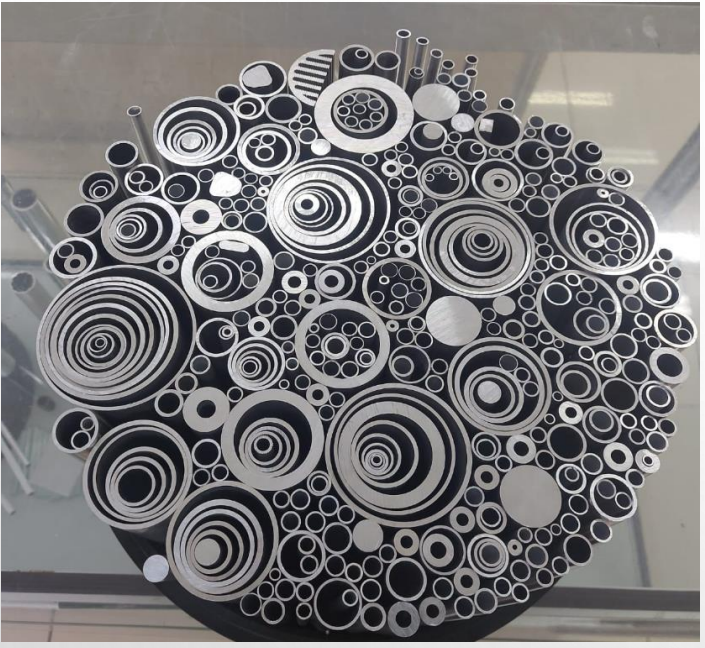
## 1.4 ADVANTAGE OF KOREL VIA OTHER EXTRUSION FACTORIES



- ✓ We have serious price advantage because we have billet casting house inside of Korel.
- ✓ In billet casting process, we never use scraps collected from the market. We use pure Aluminum.
- ✓ In below side of melting furnace , there is a special Electromagnetic mixer.
- ✓ 35.000 tons billet casting capacity
- ✓ And also we have degaser system with 4 cavities
- ✓ During billet casting process we use 40 PPI ceramic filter
- ✓ In every production line, we have Eddy Current Devices. By using it we are able to control the tubes by 100%
- ✓ We apply 20 bar dry air inside of tubes, and wait 24 hours.  
If there is a problem during transportation the customer can perform test of our tube.
- ✓ During 100% Eddy Current control, if there is fault on any side of the tube, we cut the system and never send this tube to customer. We start to produce a new coil in conformity to our quality standards. In briefly, our tubes have not got paint mark.



# 1.5 OUR PRODUCTS





# OUR PRODUCTS



Aluminum  
Accumulators used in  
Whitegood industry



Used in ovens and  
stoves main line gas  
distribution pipes



Turbo and intercooler  
tubes for Aviation  
industry



HVAC and tubes for brake  
system



Assembled iHX Tube



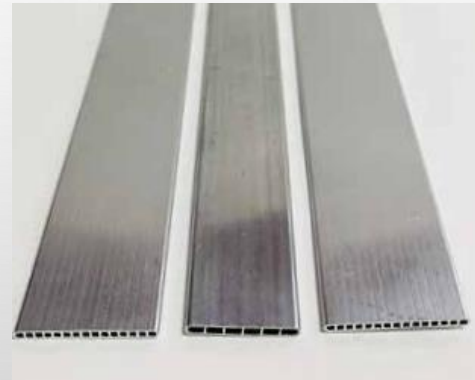
iHX Heat exchanger tube



Welded and Foam PVC Painted  
Tube



Intercooler multicanal profiles



Welded tube assemblies



End formed tubes



Tubes for Turbo Systems



# OUR PRODUCTS



Machined brackets used in automotive AC and hydrolic system



# MAIN CUSTOMERS

## AUTOMOTIVE CUSTOMERS

SUNITOMO RIKO GROUP  
SumiRiko Italy S.p.A.  
(Türkiye, İtalya)



**TEKLAS**  
(Türkiye, Bulgaristan,  
Meksika)



  
Orhan Holding



  
(Türkiye, Bulgaristan)



  
**HÜNER KRIKO**  
VE YEREL PARÇA SAN VE LTD. ŞİTİ



## AVIATION CUSTOMERS



## WHITE GOODS CUSTOMERS



# 2. KOREL COOLING ELEMENTS FACTORY



## 2.1 PRODUCTS

- Copper Tube / Aluminum Fin Evaporators and Condensers  
750.000 sets /year
- Aluminum Accumulators
- Painted Sheets
- Evaporators tube on sheet and roolbond  
15million parts /year
- No Frost Fin Evaporators  
17million parts /year
- Heat Pump Assemblies  
2million parts /year
- Heat Exchanger  
20million parts /year
- Silencer Tubes



# 2. KOREL COOLING ELEMENTS FACTORY



## 2.1 PRODUCTS

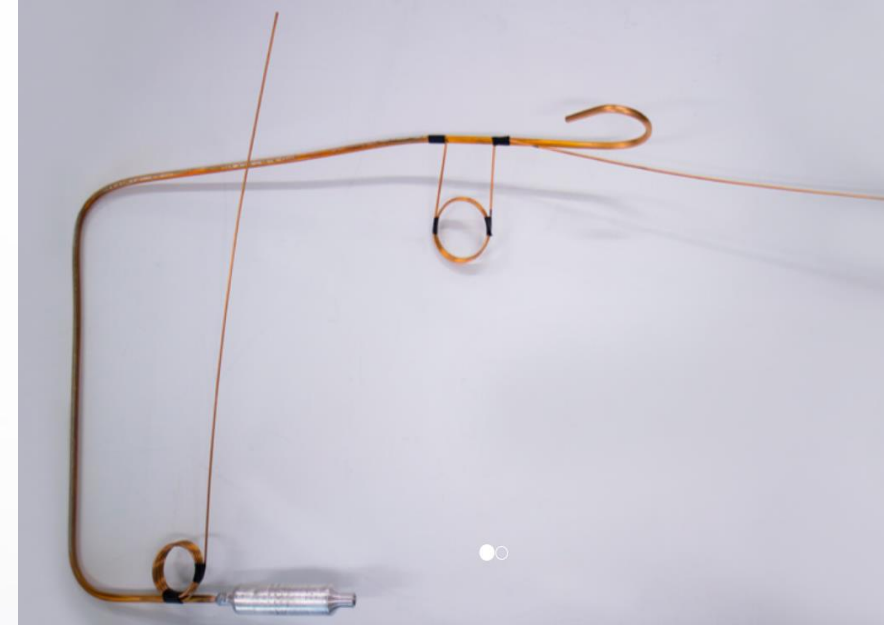
Dondurucu Evaporatörleri



Borulu Evaporatörler



Isı eşanjörü



## 2.1 PRODUCTS

# 2. KOREL COOLING ELEMENTS FACTORY



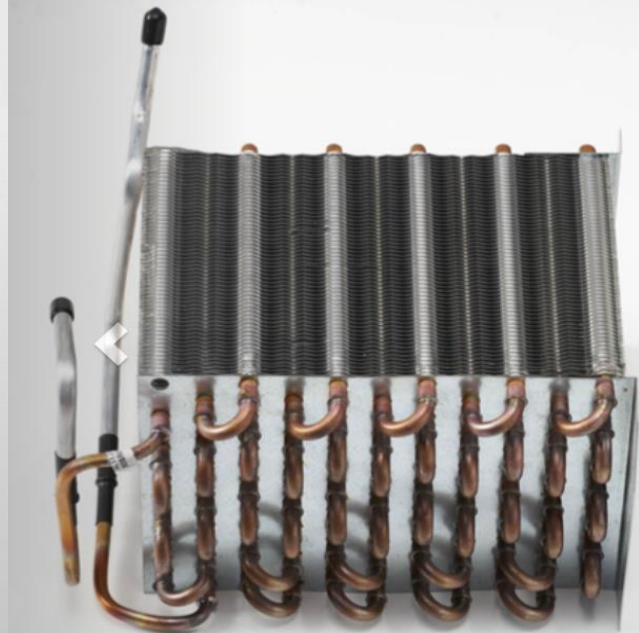
NF Evaporatörleri



Isı Pompası Elemanları



Isı Pompası Elemanları

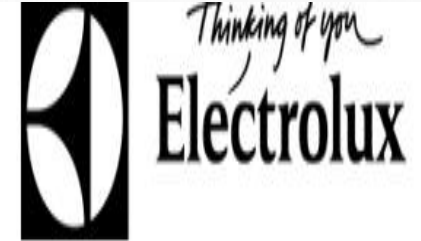


## 2.3. CUSTOMERS AND DIFFERENCE OF KOREL FOR PRODUCING COOLING SYSTEMS



- Proactive approach
- Expert technical team
- Design capability with all customers
- We produce all machines, automation Systems and fixtures inside of Korel  
Therefore In case of a problem, our response time is very short.

### CUSTOMERS FOR COOLING SYSTEMS





# 3. KOREL HEATING ELEMENTS FACTORY



## 3.1 PRODUCTS

- Cable heaters
- Foil heaters
- Aluminum Tube Heaters
- Assembled products special for customers



## 3.2 LABORATORY AND TEST CAPABILITIES ON HEATING ELEMENTS FACTORY

- Electrical Testing Equipments
- Life Testing Machines
- Cycling Temperature Testing Machine
- Raw Material Compliance Test
- Humidity Test
- Glow Wire Test



# 3. KOREL HEATING ELEMENTS FACTORY



## 3.3 CUSTOMERS

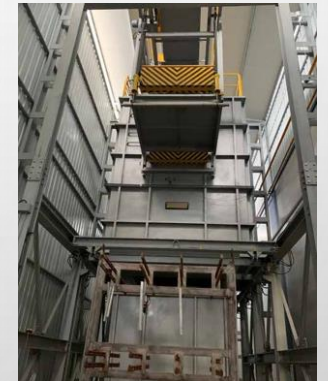


# 4. BCYCLE FACTORY



## 3.1 PRODUCTS

- Robotic Laser Cutting
- Robotic Tube Cutting Lines
- Robotic welding line
- Heat Treatment T4-T6 Furnaces
- Surface treatment
- Anodizing (hard)
- Sand blasting
- Painting line (powder- wet paint)
- Label production and application
- Assmebly line



# 4. BCYCLE FACTORY



## 3.2 LABORATORY AND TEST CAPABILITIES OF BCYCLE FACTORY

- 3D Dimensional control
- Reverse engineering with part scanning, point cloud generation
- Horizontal Fatigue test



# 4. BCYCLE FACTORY



## 3.3 ALUMINUM FRAME AND BIKE PARTS



## E-BIKES



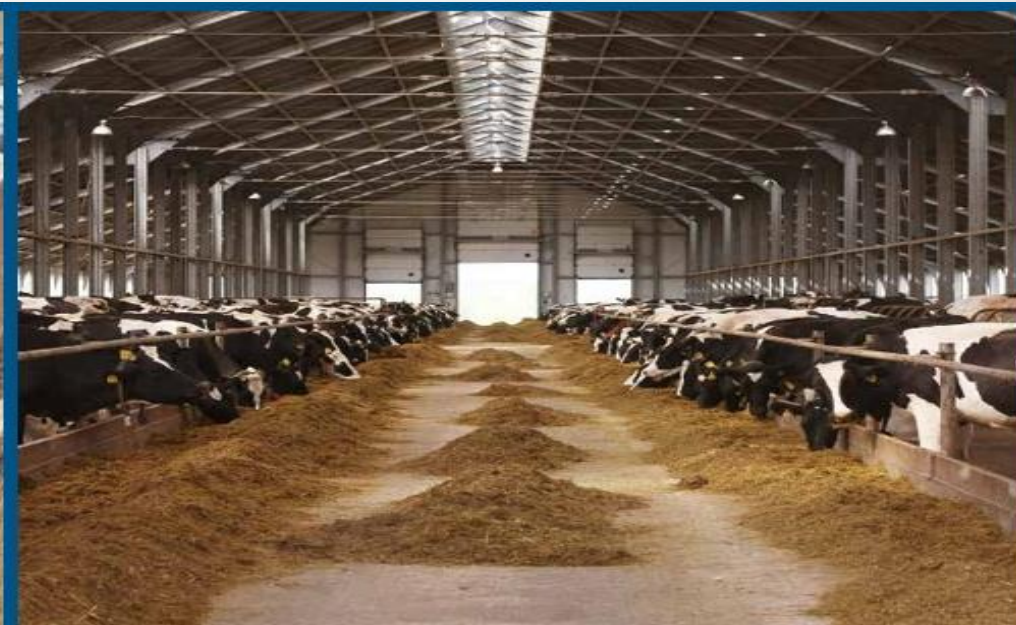
## BYCYLES



## 5. KOREL THERMAL HOTEL



## 6. LIVESTOCK INVESTMENT



# INVESTMENT PLANS FOR 2024



## ➤ Machine Investments

- 3500-4000 Tons Indirect Extrusion Press (This way we can perform extrusion till max 200mm OD)
- 3500-4000 Tons Direct Extrusion Press
- Stretching Bench Process with 600tons
- T4 Furnace with big capacity and height (6m), vertical system.
- Anodizing process line will be constructed for length profiles/tubes.
- CNC Machine

## ➤ Construction investments

- 5000m<sup>2</sup> new construction will be made for the installation of new presses to be purchased for Al extrusion factory
- Totally ; 32.000m<sup>2</sup> construction will be made for other facilities' improvement plan

## ➤ Laboratory Investments

- Ultrasonic test equipment

It will be very useful for easy control of non-visual surface defects and help our rapid product development activities.

- Electrical Conductivity Measurement Device
- Mechanical test equipment (tensile test machine) acc to EN 2002-1 or ASTM B 557

# SUSTAINABILITY



- As Turkey, we were subjected to this carbon regulation mechanism at the border. We started our work on carbon footprint with a regulation that Europe wants. We do our own reporting. We continue to work together with our Ministry of Environment and Urbanization. We started to measure our carbon footprint and report them to relevant ministries.
- We get solar panel establishment license.
- In Q1/2024 year, Korel will create a forest by afforestation work on its own behalf.





THANK YOU

**KOREL ELEKTRONİK SANAYİ ve TİCARET A.Ş.**

**Organize Sanayi Bölgesi 14. Cadde No:18-20**

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