Since mid 1990s Alnal Electromechanics Co. succeeded in many railway projects.

Due to growing demand in rolling stock market, company separated its railway division and Alnal Railway Systems Co. was established in 2009.

In order to be a professional rolling stock supplier, company started quality processes and has been awarded with EN 15085-2 (CL-1) and EN ISO 3834.
Our Profile

Our firm, established in 1980, not only serves the production sector with its activities in the area of machine production, but it has also come to be renowned in the metal sector for its department of sheet metal processing set up in 1995. ALNAL, having transferred its experience to several other sectors, has intensified its activities in the production of auxiliary equipment for the railway sector, which has been evolving rapidly both in our country and the world, under the brand ALNAL RAILWAY SYSTEMS.

We have successfully produced vacuum toilet systems, heating units, high voltage and battery boxes, chassis for air conditioning units, boxes for distribution of electrical energy, all of which have proven to be pretty important for the leading firms specialized in the production of railway equipment.

With its qualified, knowledgeable and dynamic workforce and its quality management specifics continuously aiming for the better, ALNAL is determined not to deviate from the course of its projects described above and to contribute to the synergy of the railway sector.
About Vacuum Toilet Systems
- The Vacuum Toilet System is comply with TSI PRM Standards
- ALNAL produce European Style & Oriental Style & Prm (Disabled persons) European Style Vacuum Toilet Systems
- Toilet module’s interior and exterior linings are FRP; side and ceiling FRP panel’s thickness of wall is minimum 3 mm.
- Manual Or Electromechanic Operated Door Systems
European Vacuum Toilet System
Oriental Vacuum Toilet System
Vacuum Toilet Alafranga

Vacuum Toilet System

The vacuum toilet system is a type of hygienic toilet, which has Turkish style and European style models, which collects the wastes at the storage in its body and prevents significantly the environmental pollution, which can clean itself with its economical water, which runs with vacuum and pressure system, and which is suitable for using in the rail, air, maritime and road sectors.

Applying the vacuum toilet system needs compressed air, 24V DC energy and water that are present in all possible transportation vehicles.

The system is formed by being combined the pneumatic, hydraulic and electronic systems.

Water consumption of average 10 liters for single use in the normal system falls to 0.5 liters in the system that we’ve created, including cleaning the toilet bowl.

For hygienically reasons, all metal equipments to be used was manufactured from AISI 316 quality stainless steel.

Major Advantages;
- Low water consumption
- Sensitivity to the human health and environmental pollution
- To be the original design of the project
- Compliance with Islamic rules with its bidet system
- To be the only domestic production in our country and to prevent import
- Easy availability of spare parts.
## Main technical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Supply Pressure</td>
<td>5 to 10 bar</td>
</tr>
<tr>
<td>Working Water Pressure</td>
<td>0.1 to 1.5 bar [bidet function min. 1 bar]</td>
</tr>
<tr>
<td>Number of Release Nozzles</td>
<td>3</td>
</tr>
<tr>
<td>Vacuum</td>
<td>-0.6 bar</td>
</tr>
<tr>
<td>Overpressure</td>
<td>-1.5 bar</td>
</tr>
<tr>
<td>Air Consumption</td>
<td>-20 liters / cycle</td>
</tr>
<tr>
<td>Water Consumption</td>
<td>0.25 to 0.5 liter / cycle</td>
</tr>
<tr>
<td>Weight</td>
<td>-21 kg</td>
</tr>
<tr>
<td>Dimensions</td>
<td>531x459x367</td>
</tr>
<tr>
<td>Interface</td>
<td>Water: Ø8mm tube coupling - Air: Ø10mm tube coupling - Water outlet: Ø41mm</td>
</tr>
<tr>
<td>Electric Power Supply</td>
<td>16.8-32V DC</td>
</tr>
<tr>
<td>Electric Power</td>
<td>~20W (~5W standby)</td>
</tr>
<tr>
<td>Temperature</td>
<td>-20°C to +60°C</td>
</tr>
<tr>
<td>Working Temperature</td>
<td>2°C to +60°C</td>
</tr>
<tr>
<td>Valves</td>
<td>Pinch Valves</td>
</tr>
<tr>
<td>Casing, Seat and Cover</td>
<td>Antiseptic Laminate</td>
</tr>
<tr>
<td>Control System</td>
<td>Dispersed Module + Main Controller</td>
</tr>
<tr>
<td>Intermediate Tank</td>
<td>AISI 316 acid resistant steel</td>
</tr>
<tr>
<td>Lavatory Pan</td>
<td>AISI 316 acid resistant steel</td>
</tr>
<tr>
<td>Mounting</td>
<td>Screws M6x15</td>
</tr>
</tbody>
</table>

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**Vacuum Toilet Alaturka**

"AS GOOD, AS YOU NEED IT"
Water & Sewage Tanks
The Air Condition Duct Of Compartment

Skirt Panel
Battery Box
Converter Box
Converter Box
Hvac Air Condition Chassis
Hvac Air Condition Chassis
Cable Duct & Extension Supply Receptacle Box
Compressed Air Tank

Sanding Box
High Voltage Control Box

Hvac Underframe Heating Unit
CERTIFICATE

awarded to

ALNAL ELEKTROMEKANİK SANAYİ ve TİCARET ANONİM ŞİRKETİ
YEŞİLTEPE MH.8030.SOKAK NO:14-21
54200, ERENLER/SAKARYA
Turkey

Certification Association “Russian Register”

confirms, as an IRIS Certification™ approved certification body, that the Management System of the above organization has been assessed and found to be in accordance with the

IRIS Certification™ rules:2017
and based on
ISO/TS 22163:2017

for the activities of Design and Development and Maintenance and Manufacturing for the scopes of certification: 07 (Interiors), 15 (Lighting) of toilet system and lighting systems

Certificate valid from: 22/07/2018
Certificate valid until: 21/07/2021*

Current date: 16/07/2018
Certificate-Register-No: 18.1102.026

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.
Certification body address: 45/8 A, office 6N, Liteynyi prospect, 191014 Saint Petersburg, Russian Federation

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Our Certificates

IRIS CERTIFICATE
ISO 9001: 2018
ISO 14001:2015
DIN EN 15085-2 CL-1
DIN EN ISO 3834-2
EN 286-3: 1997
EN 286-1: 1998