COMPANY PROFILE

Reliable on Rail

YUJIN MACHINERY LTD.



YUJIN

Copyrightⓒ 2026 All rights reserved by YUJIN Machinery., Ltd.

YUJIN | Reliable on Rail

CONTENTS

00 About YUJIN

01 What you gain: Solutions

02 How We Perform



00

YUJIN | Reliable on Rail

About YUJIN



About YUJIN

Reliable Rail Vehicle Systems Excellence over 50 years

Main Business

YUJIN MACHINERY LTD.

· **Railway Division**



Railway Vehicle Component

· **Industrial Air Compressor Division**





Shipbuilding Industry & Industrial Air Compressor

Affiliated Companies and Business Items

· **Domestic Affiliates**

YUJIN ELECTRIC LTD.
- Railway Vehicle Electronic Equipment

YUJIN ROLLINGSTOCK LTD.
- Railway Vehicle Maintenance Business

JEIL ROLLINGSTOCK LTD.
- Railway Vehicle Maintenance Business

· **Overseas Entities**

FRENSAN A.S.
- Railway Business in Türkiye

YUJIN BRAZIL EQUIPMENT LTDA.
- Railway Business in Brazil

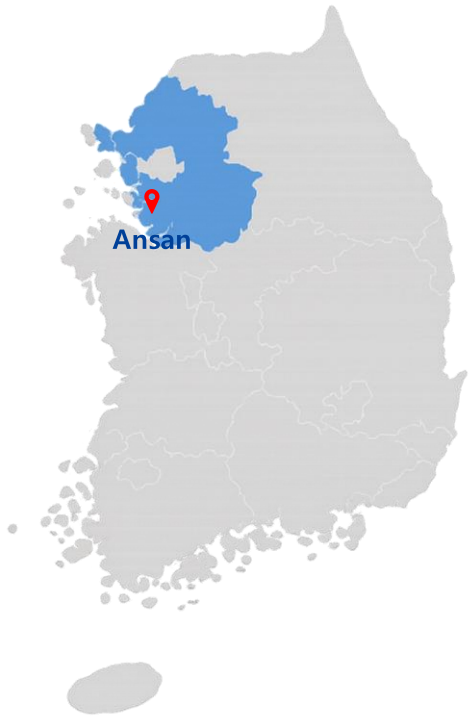
YUJIN MACHINERY INDIA PRIVATE LTD.
- Railway Business in India

EGYPT BRANCH OFFICE
- Service Work at Egypt and Neighboring Countries

About YUJIN

Finding answers where our customers are, spreading to the world

Locations in Korea



PLANT 1
242, Sandan-Ro, Danwon-Gu, Ansan-Si, Gyeonggi-Do, 15433, Korea

PLANT 2
47, Seonggok-Ro, Danwon-Gu, Ansan-Si, Gyeonggi-Do, 15409, Korea

PLANT 3
92, Haebong-Ro, Danwon-Gu, Ansan-Si, Gyeonggi-Do, 15603, Korea

Global Locations



YUJIN BRAZIL EQUIPMENT LTDA.
Avenida Carlos de Campos, N 156, Sala 26, Bairro Pari, Cidade de Sao Paulo, Brazil

FRENSAN A.S.
OSMANLI SK. NO: 13, 54100 İSTİKLAL MAH. SERDİVAN,SAKARYA, TURKEY

YUJIN MACHINERY INDIA PRIVATE LTD.
Plot No. 621, Sector-69, Faridabad, Haryana, India

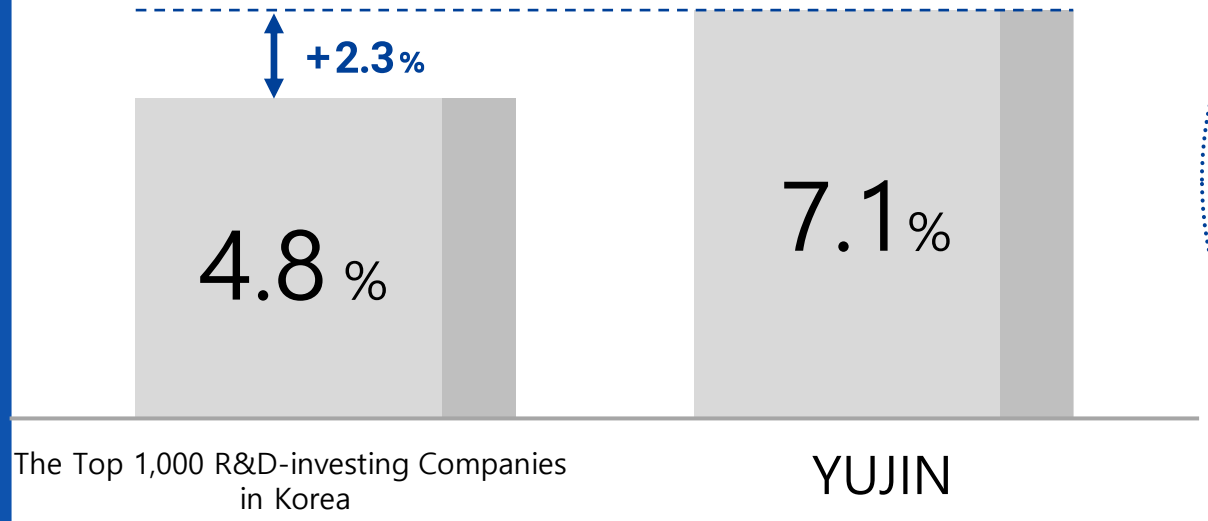
About YUJIN

A Trusted Partner in Global Rail Vehicle Systems

Top-level R&D investment in Korea

Innovative technological development is rooted in its focused investment in R&D.

POINT A higher R&D-to-revenue ratio than that of Korea's top 1,000 R&D-investing companies.



R&D
67 Employees

R&D investment-to-revenue ratio
7.1%

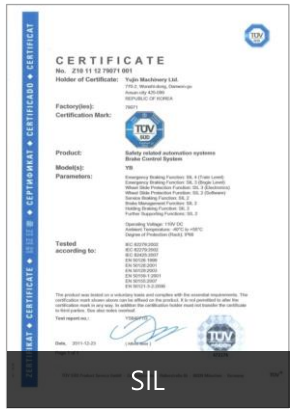
Ratio of R&D personnel to total employees
28%

※Source: Results of the 2024 R&D Investment of Korea's Top 1,000 Companies by R&D Spending (Ministry of Trade, Industry and Energy; Korea Institute for Advancement of Technology)

About YUJIN

Certified technology, delivering global trust and performance

SIL



Emergency Brake Function
SIL 4 Train Level

ISO





Integrated quality
& environment management

ISO
22163





Rail Industry Standard

Patent
&
Design













Total 101 Patents & Design registrations

About YUJIN

TSI Certified technology, delivering global trust and performance

Achieved Certifications

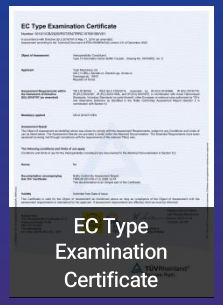
TSI IC CERTIFICATION

KOREA'S FIRST

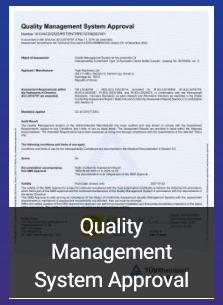
Completed TSI IC certification

in accordance with European rail interoperability standards





EC Type Examination Certificate



Quality Management System Approval

Type 10 Automatic Center Buffer Coupler (DAC)

- Fully compliant with TSI-LOC&PAS standards

In progress

WSP (Wheel Slide Protection) - H2 2026

Rig-Test completed (Sep 2025), On-train test in coordination



Pantograph – H1 2028

Rig-Test scheduled for H2 2027



01

YUJIN | Reliable on Rail

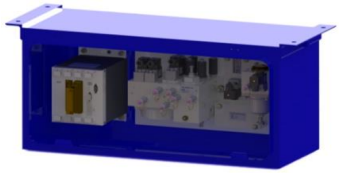
What You Gain

: Solutions



Our Core Rail Solutions

Brake System



Brake Control

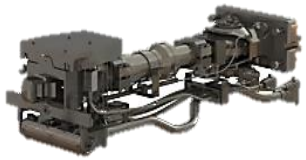


Air Supply



Bogie Brake

Coupler



Muti Coupler



Semi-Permanent Coupler

Reduction Gear Box

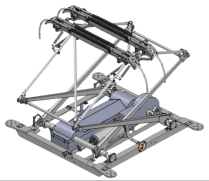


Reduction Gear Box (EMU)



Reduction Gear Box
(EMU, High Speed Train)

Pantograph



Double Arm Pantograph

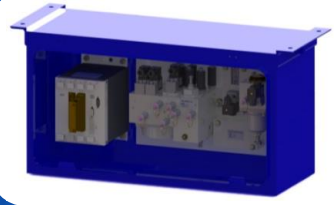


Single Arm Pantograph



Single Arm Pantograph For HST
(Semi Active System)

Brake System



Brake Control



Air Supply



Bogie Brake

Overview

All-in-one brake systems ensuring safety and reliability in every condition

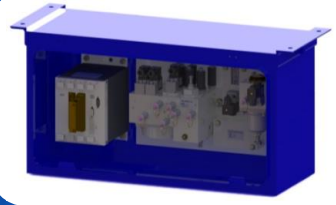
Key Features

- Precise brake control up to 430 km/h
- Reliable performance in extreme climates (−45 °C ~ +50 °C)
- Integrated architecture for flexible vehicle adaptation

Specifications

Max Operating Speed	430 km/h
Operating Temp.	–45 °C to +50 °C
Safety Level	SIL4 (train level)
System Architecture	Air Supply + ECU + Control + Bogie Equipment
Applications	High-speed trains, Locomotives, EMUs, LRVs

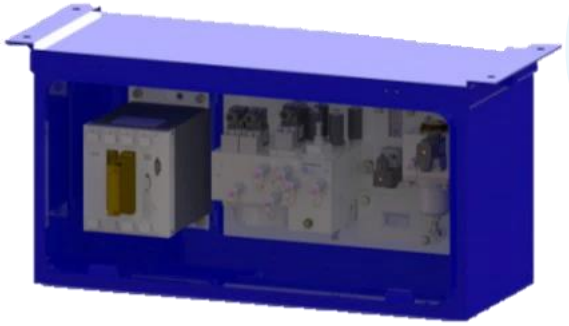
Brake System



Brake Control



YB10

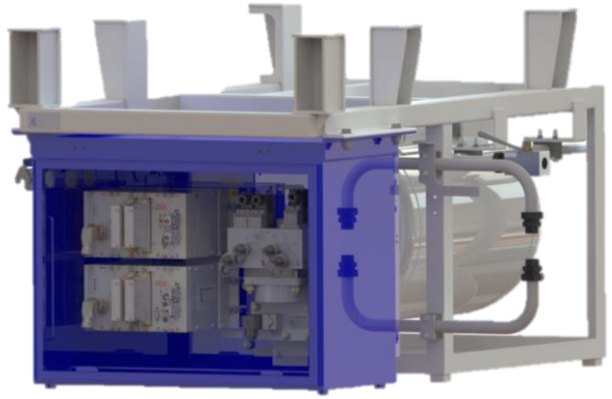


YB20





YB30 (BCU & ECU)



YB40



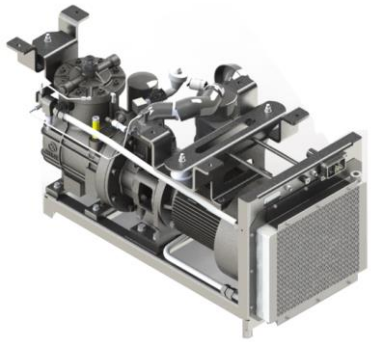


Electric Brake Control Unit & ECU

Brake System



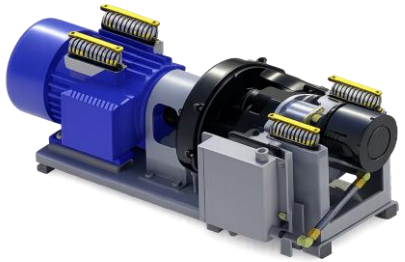
Air Supply



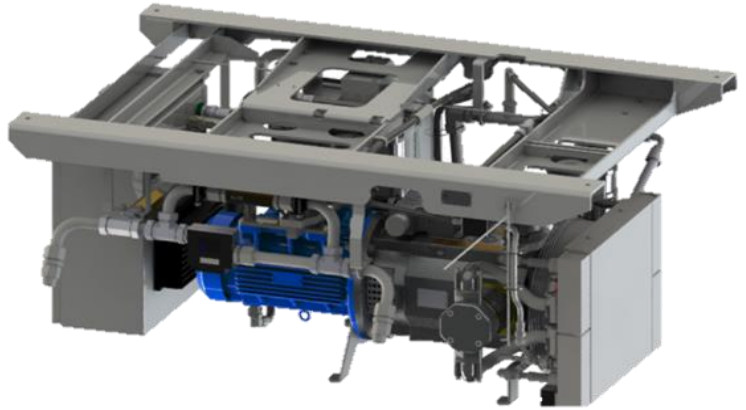
Oil Injection Screw Air Compressor



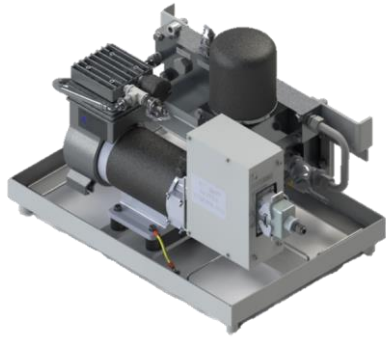
Oil Free Piston Air Compressor



Oil Free Scroll Air Compressor

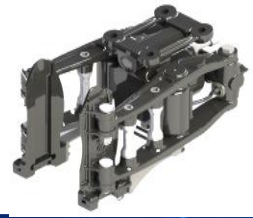


Integrated CM-ACM Module



Auxiliary Air Compressor Module

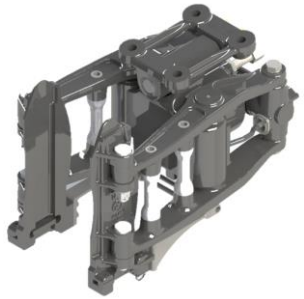
Brake System



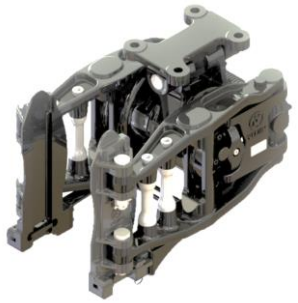
Bogie Brake



Convention type caliper



MCKL-B
Unit Caliper

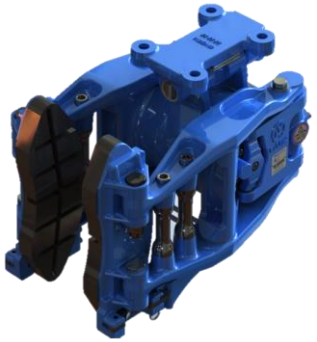


MCKL-C
Unit Caliper





Tread Brake Unit



Electro-Mechanical Caliper

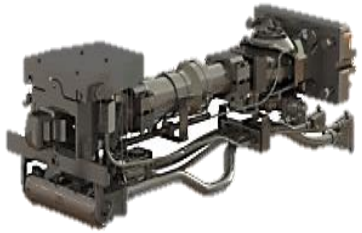


Wheel Mounted
Brake Disc



Axle Mounted
Brake Disc

Coupler



Automatic Multi Coupler



Semi-Permanent Coupler

Overview

Robust coupler solution engineered for safe, secure and durable connections.

Key Features

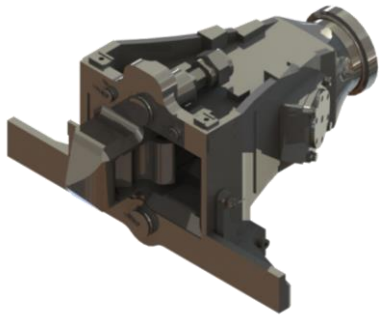
- Front coupler, Semi-Permanent Coupler, Rescue Coupler
- Enhanced passenger safety through efficient energy absorption in the event of collision
- Secure and reliable vehicle coupling performance with a robust locking mechanism
- Easy and efficient inspection and maintenance through a user friendly design

Specifications

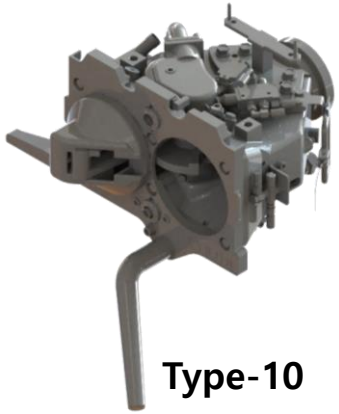
Types	Front coupler / Semi-Permanent coupler / Rescue coupler
Max Operating Speed	Max. 350 km/h
Energy Absorption	Meets shunting requirements at speeds of up to 10 km/h Meets collision requirements at speeds of up to 36 km/h
Applications	High-speed trains, Locomotives, EMUs, LRVs

Coupler Configuration Opti

- Coupler Head
- Shock Absorption
- Drawgear



Tight lock



Type-10



AAR-E



Collapsible Tube



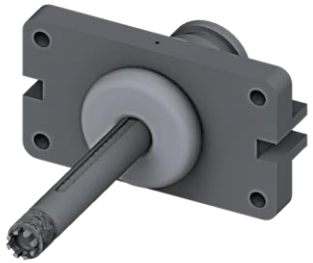
Viscoelasticity Buffer



Drawgear – EFG Type



Spherical bearing



Rubber or Polymer Ring

Reduction Gear Box



Reduction Gear Box For EMU



Reduction Gear Box For EMU, High Speed Train

Overview

Advanced gear systems delivering efficient power transmission

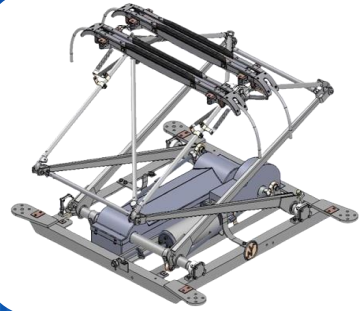
Key Features

- Optimized gear tooth design for noise and vibration reduction
- High load-bearing capacity for heavy and high-speed applications
- Advanced lubrication and cooling systems for long lifecycle

Specifications

Max Operating Speed	From 80 km/h to 370 km/h
Applications	High-speed trains, EMUs

Pantograph



Double Arm Pantograph



Single Arm Pantograph

Overview

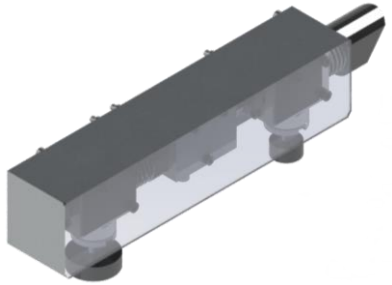
Pantographs designed to ensure stable current collection performance and high reliability under various railway operating conditions.

Key Features

- Various pantograph models available in both single-arm and double-arm configurations
- Optimal pantograph solutions tailored to various vehicle and infrastructure
- TSI certification in progress for a medium- to high-speed pantograph model (Max. 180 km/h)
- Semi-active control system under development for a high-speed pantograph model (Max. 320 km/h)

Specifications

Certification	TSI certification for a maximum speed of 180 km/h (Target: Jan.2028)
Applications	High-speed trains, Locomotives, EMUs
Options	ADD(Auto Drop Devices), OHP(Over Height Protection)



OHP



ADD

02

YUJIN | Reliable on Rail

How We Perform



02. How We Perform

Performance Verified by Systemic Design Process

Managed Development Lifecycle (17-Step)

Customer needs analysis and objective setting

01~02 Development Planning

03 Kick-off Meeting

04 Design Input

Review & Strategy

05 Design Review

06 Verification Planning

Verification & Iteration

07 1st Verification

08 2nd Verification

09 Verification Closure

Validation & Feasibility

10~11 Feasibility Study

12 Pre-Production Review

13 Completion Report

Mass Production Pilot

14 Mass Prod. Kick-off

15 Pilot Verification

16 Pilot Review

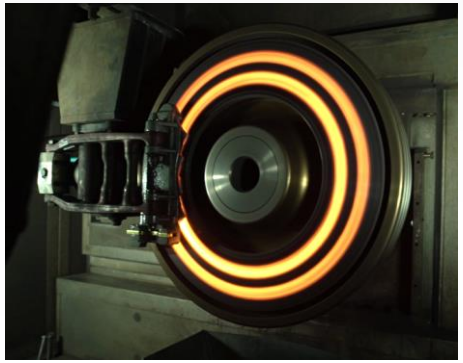
17 Project Closure



In-House Test & Manufacturing Facilities

Dynamo Tester

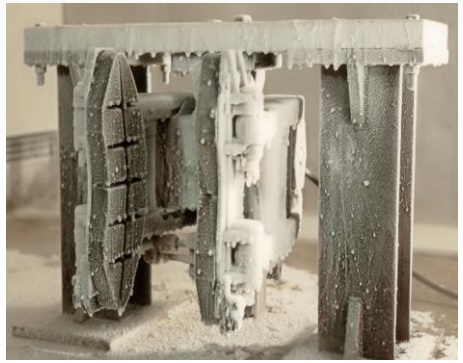




• Test speed up to 500 km/h

Environmental Tester





• Test –45 ℃ low temp

Gear Box Load Tester





• Load/No-Load Test

In-House Test & Manufacturing Facilities

Articulated Arm Measuring Machine





• Real time laser scanning

Automatic Torque Monitoring & Recording Machine

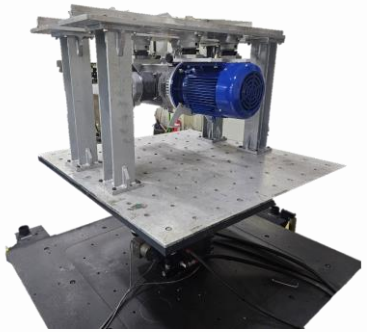




• Real time working process tracking

Vibration Tester





• Vibration test (X/Y/Z axis)

Proven Performance in Diverse Environments

Arctic Cold(-45°C)



Desert Terrain



High Altitude



The above images are AI-generated.

Over 16,000 Rolling Stock System in Revenue & Maintenance Service

Type of car	Product	Quantiy	Delivered
 LRV & Monorail & Maglev	Brake System, Coupler	Over 310 cars	2010 ~ Present
 EMU & Metro	Brake System, Coupler, Driving Gear, Pantograph	Over 11,000 cars	1989 ~ Present
 Intercity EMU	Brake System, Coupler, Pantograph	Over 360 cars	2008 ~ Present
 High Speed Train	Brake System, Coupler	Over 1,250 cars	2009 ~ Present
 Locomotives	Brake System, Coupler, , Pantograph	Over 87 cars	2012

Over 16,000 Rolling Stock System in Revenue & Maintenance Service

Country	PROJECT/END USER	CAR BUILDER	TYPE	PRODUCT	QUANTITY	DELIVERED
Philippines	Manila line 2	Hyundai-rotem	EMU	Brake System / Reduction Gear Box	72	2002
	Manila line 7	Hyundai-rotem	EMU	Coupler	108	2018
	Philippine EMU	CAF	Intercity-EMU	Brake System	56	2026 ~
Malaysia	KTMB	Hyundai-rotem	EMU	Brake System	30	2008
Kazakhstan	Almaty Metro	Hyundai-rotem	EMU	Brake System / Reduction Gear Box	28+32	2008/2020
Ukraine	URSC	Hyundai-rotem	Intercity-EMU	Brake System	90	2011
Brazil	Brazil Rio metro	Hyundai-rotem	EMU	Brake System	80	2005
	Salvador Metro	Hyundai-rotem	EMU	Brake System	136	2015
	São Paulo	Hyundai-rotem	EMU	Reduction Gear Box	84+90	2015
Ecuador	Metro Quito	CAF	EMU	Brake System	108	2017
Colombia	Metro Medellín	CAF	EMU	Air compressor	126	2020
Indonesia	SHIA APMS	Woojin Industrial System	LRV	Brake System	12	2017
	JAKPRO	Woojin Industrial System +Hyundai-rotem	LRV	Brake / Coupler	16	2017
Turkiye	IMM	Hyundai-rotem	EMU	Brake / Reduction Gear Box	68	2016
	Marmaray	Hyundai-rotem	EMU	Reduction Gear Box	440	2013
	Istanbul Metro	Hyundai-rotem	EMU	Brake System	120+144	2019
Egypt	Cairo line3, line2	Hyundai-rotem	EMU	Brake System	256+48+64+256	2019 ~ Present
Tanzania	Tanzania Railway	Hyundai-rotem	Intercity-EMU	Brake System / Pantograph	80	2024
Uzbekistan	Uzbekistan	Hyundai-rotem	HST	Brake System	42	2025
Morocco	ONCF	Hyundai-rotem	EMU	Brake System / Reduction Gear Box Coupler / Pantograph	440	Contracted

Over 16,000 Rolling Stock System in Revenue & Maintenance Service





On-Site Support in Turkiye



Maintenance service at Egypt



Joint maintainability review at Canada

Sustainable by Design: ESG from Concept to Production

Real-time monitoring

Process Innovation (Manufacturing)

+ Coupler Insulator Processing Transformation

Traditional Machining » Precision Injection Molding

- Waste Reduced by 90%
- Hazardous Substances Eliminated (100%)

+ Eco-Friendly BCU Production

Adoption of injection molding for Brake Control Units to **reduce raw material waste**

Green & Lightweight Engineering (R&D)

+ Material Upgrade

Heavy components » Aluminum

- weight reduction
- higher recyclability

+ System Integration

Integrated CM-ACM Module **increase energy efficiency** while lowering maintenance needs without **the auxiliary compressor**

The above image is AI-generated.



Copyrightⓒ 2026 All rights reserved by YUJIN Machinery., Ltd.