

YONGGUI  
CONNECTOR



# Electric Coupler Maintenance Service 2023-05-01

# Electric Coupler Maintenance Service

## Overview of Service Business

Yonggui Electric Coupler team has more than ten years of electric hook product development, production and maintenance experience, with strong research ability and rich practical experience.

By April 2023, our team completed 21 urban rail and 8 Chinese standard EMUs electric coupler (Nano ***E-Coupler*** in following paragraphy) maintenance service projects.

The maintenance projects included E-coupler from oversea suppliers such as Voith, Dellner, Faiveley etc.

Service for Shanghai 6\*8 line is now in process

Service for Guangzhou APM line and Shanghai Line 17 is in biz negotiation.





# Electric Coupler Maintenance Service

## Introduction of Maintenance Process

- **Confirmation of Technical Status**

Check and record Following Items:

1. Wiring Principle,
2. Overall Size,
3. Electrical Performance,
4. Customer Label Content
5. Contact Status.



- **Disassembly and Clean**

Disassemble the E-coupler which was inspect with above items, the clean the parts, recover the appearance. The whole process of disassembly should be recorded.



- **Repair or Replacement of Core Elements**

Evaluation, repair, replacement for core elements (such as isolators, contacts, cable assembly) . The whole process should be recorded.



# Electric Coupler Maintenance Service

## Introduction of Maintenance Process

- Re-Assembly and Step Confirmation**

Re-assemble together of all elements and components which were refreshed according to reverse sequence of disassembly record. Confirm whole process with assembly record.

Assembly Checklist

装配检查表		检查日期	检查员
产品名称	Y227R-100	检查日期	
产品型号	Y227R-100	检查员	
规格	Y227R-100	检查日期	
图号	Y227R-100	检查员	
检查项目	检查内容	检查结果	备注
1. 外观检查	• 零件齐全, 无损坏 • 零件清洁, 无油污 • 零件规格与图纸一致	是	4.13
2. 产品装配	• 零件装配正确 • 零件装配牢固 • 零件装配到位	是	王超
3. 电气性能	• 电气性能符合技术要求 • 电气性能符合国家标准	是	王超
4. 机械性能	• 机械性能符合技术要求 • 机械性能符合国家标准	是	王超
5. 包装	• 包装完好 • 包装符合客户要求	是	王超

Test Report

例行检验记录表		产品型号	5(310)E (03)
产品名称	电气车钩	物料编号	Y227R-100
No.	检验项目	检查方法	检查结果
1	外观	目视	合格
2	电气性能	目视	合格
3	机械性能	目视	合格
4	包装	目视	合格

Replacement Record

序号	日期	更换零件名称	数量	备注
1	2023.11.13	Y227R-100	1	
2	2023.11.13	Y227R-100	1	
3	2023.11.13	Y227R-100	1	
4	2023.11.13	Y227R-100	1	
5	2023.11.13	Y227R-100	1	
6	2023.11.13	Y227R-100	1	
7	2023.11.13	Y227R-100	1	
8	2023.11.13	Y227R-100	1	
9	2023.11.13	Y227R-100	1	
10	2023.11.13	Y227R-100	1	
11	2023.11.13	Y227R-100	1	
12	2023.11.13	Y227R-100	1	
13	2023.11.13	Y227R-100	1	
14	2023.11.13	Y227R-100	1	
15	2023.11.13	Y227R-100	1	
16	2023.11.13	Y227R-100	1	
17	2023.11.13	Y227R-100	1	
18	2023.11.13	Y227R-100	1	
19	2023.11.13	Y227R-100	1	
20	2023.11.13	Y227R-100	1	
21	2023.11.13	Y227R-100	1	
22	2023.11.13	Y227R-100	1	
23	2023.11.13	Y227R-100	1	
24	2023.11.13	Y227R-100	1	
25	2023.11.13	Y227R-100	1	
26	2023.11.13	Y227R-100	1	
27	2023.11.13	Y227R-100	1	
28	2023.11.13	Y227R-100	1	
29	2023.11.13	Y227R-100	1	
30	2023.11.13	Y227R-100	1	
31	2023.11.13	Y227R-100	1	
32	2023.11.13	Y227R-100	1	
33	2023.11.13	Y227R-100	1	

- Routine Test and Document Files**

Following test items should be performed:

1. Appearance Inspection
2. Electrical Performance
3. Mechanical Performance
4. Assembly Inspection

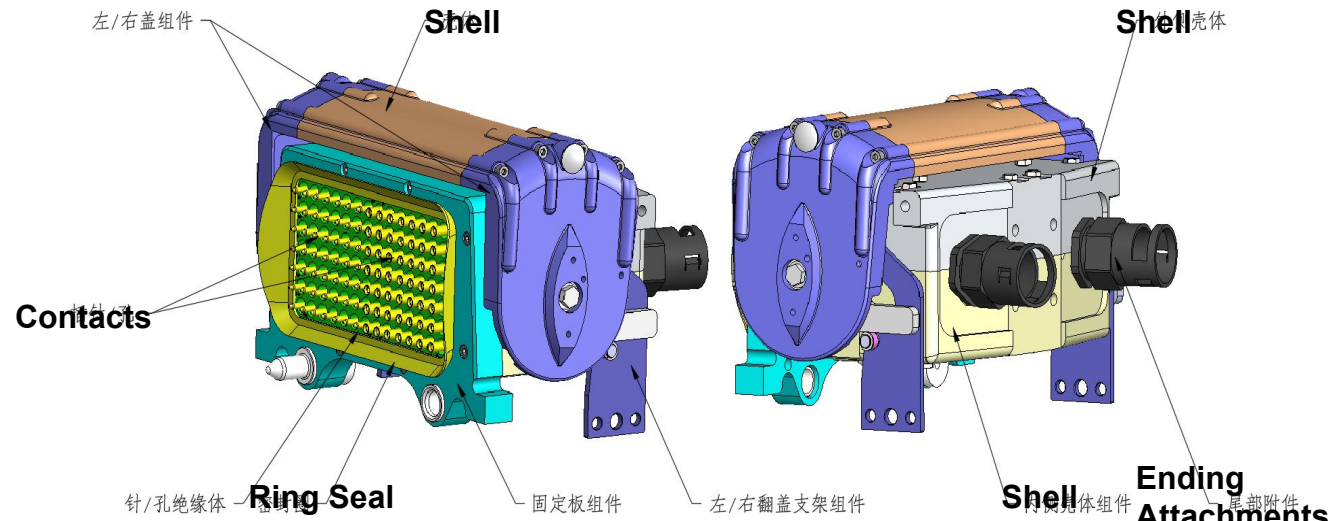
Test reports should be documented with replacement report and assembly checklist together for auditing.

After maintenance service, the E-coupler should meet the criteria of technical agreements.

# Electric Coupler Maintenance Service

## Introduction of Maintenance of China EMU's E-Coupler

- The **1st** maintenance cycle: **6 Years (Level 4)**
- The **2nd** maintenance cycle: **12 Years (Level 5)**
- The operation of the **2 cycles** are similar
  - a. Replacement of Ring Seal and accessories ;
  - b. Replacement of contacts and accessories;
  - c. Clean and Status Confirmation of Shell Components and Rear Ending Attachments
  - d. Test of Electrical and Mechanical Performance



# Electric Coupler Maintenance Service

## Introduction of Maintenance of Urban Railway System Coupler

- The **1st** maintenance cycle: **4-5 Years (Intermediate)**
- The **2nd** maintenance cycle: **8-10 Years (General)**

### Intermediate Overhaul

- Replacement of Ring Seal and accessories ;
- Inspection of contacts and accessories;
- Clean and Status Confirmation of Shell Components and Rear Ending Attachments
- Test of Electrical and Mechanical Performance

### General Overhaul

- Replacement of Ring Seal and accessories ;
- Replacement of contacts and accessories
- Replacement of fasteners and accessories;
- Clean and Status Confirmation of Shell Components and Rear Ending Attachments
- Test of Electrical and Mechanical Performance

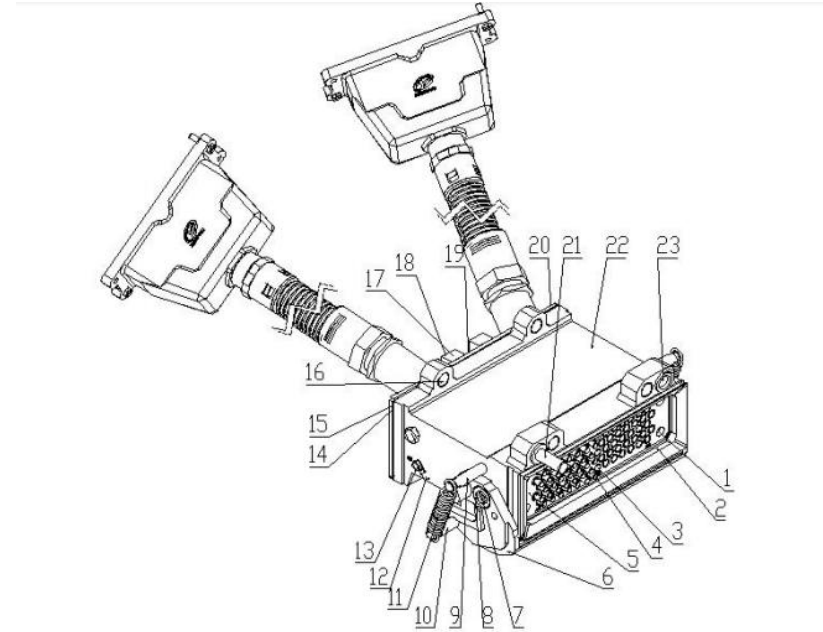


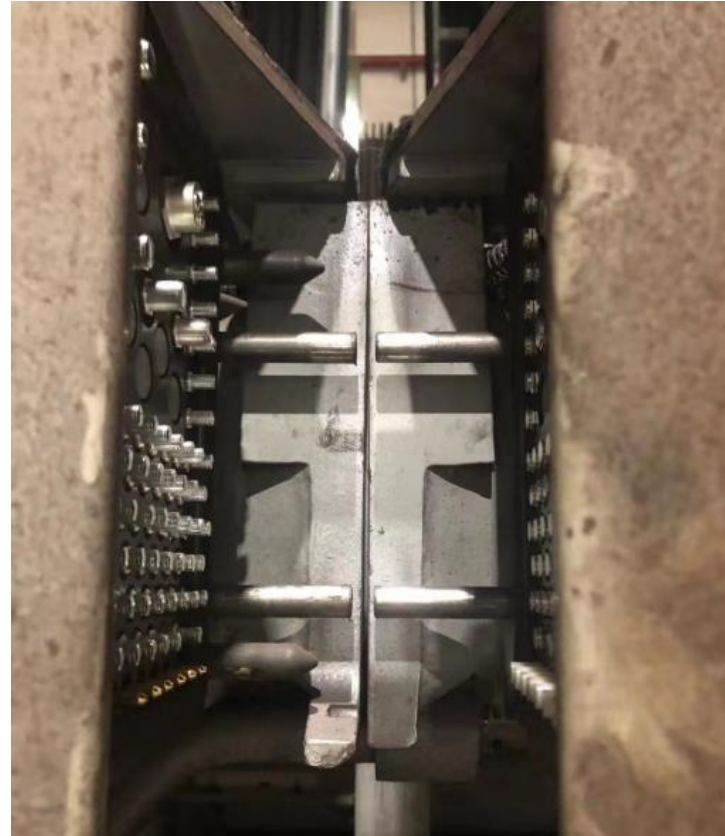
图1. 电气车钩

件号	说明	件号	说明
件 1	内六角圆柱头螺钉 M6	件 13	六角头螺栓 M6
件 2	密封圈	件 14	密封垫
件 3	插针/插孔	件 15	固定挡板
件 4	动触头/定触头	件 16	套筒
件 5	绝缘体	件 17	固定块
件 6	前盖	件 18	内六角圆柱头螺钉 M6
件 7	内六角圆柱头螺栓 M8	件 19	连接轴
件 8	轴套	件 20	内六角圆柱头螺钉 M6
件 9	拉簧轴IV	件 21	导向套/导向柱



# Electric Coupler Maintenance Service

## Introduction of Maintenance of Couplers of Overea Suppliers



**Service for VOITH Coupler  
on Shanghai 1 & 2 Line :**

- 1. 32 Cores Left/Right  
Automatic Electric Hook**
- 2. Semi-Auto Center-Position  
Hook**

# Electric Coupler Maintenance Service

## Introduction of Maintenance of Couplers of Overea Suppliers



Service for Faiveley Coupler  
Beijing Airport Line APM

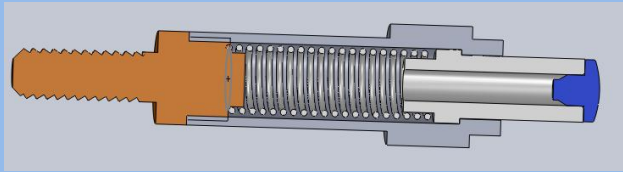


Service for Dellner Coupler  
Shanghai 6 & 8 Line

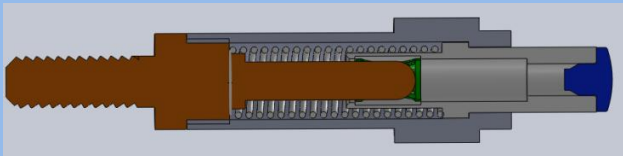


# Electric Coupler Maintenance Service

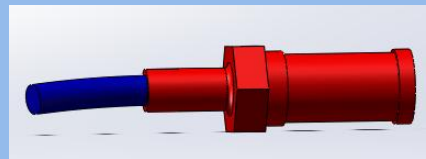
## Introduction of Components Localization--Example



VOITH Design



YG Design

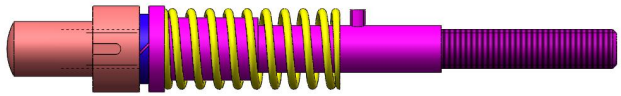


YG modified and optimized the original E-Coupler and developed many kinds of key parts such as contact , insulators, termination and sealing rings. The performance test results passed and were successfully applied in Shanghai No.1 Line.

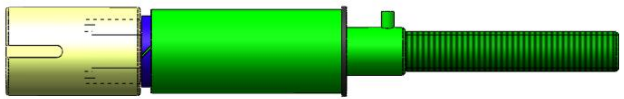
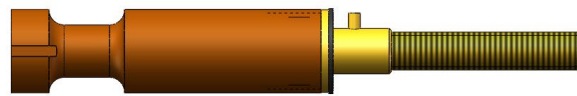
The E-coupler of Shanghai Line 1 was overhauled in 2014, and Shanghai Line 2 was overhauled in 2019. No quality problems reported

# Electric Coupler Maintenance Service

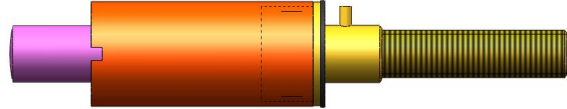
## Introduction of Components Localization--Example



YG Manufacturing



YG Manufacturing



The structure and performance of key parts such as contacts, insulators, terminating modes and sealing rings are required to be completely equal to original parts in the service of Beijing Airport line APM. Ensure that There are fully compatibility to originals.

The E-coupler of BEIJING Airport Line APM was overhauled in 2019.  
No quality problems reported

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*Thank you*

