

Railway Systems

軌道系統

產品及產業化 Product And Industrialization



智慧化軌道巡檢機車

Intelligent Track Inspection Vehicle

簡介 Introductions

本巡檢機車主要針對軌道巡軌道需求，所發展的小型軌道巡檢機車，具備輕量化和低噪音的優點，結合專用的運轉資訊紀錄器及管理系統，達成智慧化軌道巡檢和資訊回報功能，降低巡檢人力負擔，並提高軌道巡檢效率。

With the advantages of lightweight and low-noise, this small inspection vehicle is mainly designed for track inspection purposes. Combined with the Permanent Way Information System (PWIS), it achieves intelligent track inspection and information reporting functions, reduces manpower burden, and improves track inspection efficiency.

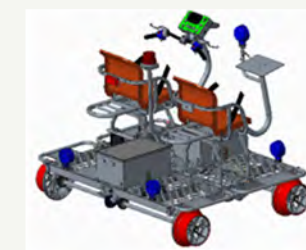
特色與創新 Features and Innovations

- 使用電動馬達為動力，具備零排放和低噪音優點，大改善巡檢人員工作環境。
- 車體以輕量化鋁合金製造，採用前 / 後獨立模組設計，兩名人員即可從月台搬運至軌道，並且於軌道快速組裝，完成出勤準備。
- 具備旋轉機構和換向系統專利設計的轉向座椅裝置。可於 30 秒內完成巡軌載具的方向調轉。
- 巡檢人員可以使用文字，照像，錄影和錄音四種方式建立災損資訊，並回傳至後台資訊管理系統。行控中心人員訊息掌握度高。
- Electric power vehicle: low-noise and zero emission, greatly improves working environment.
- Vehicle body: lightweight aluminum alloy and front/rear independent module design, allowing easy carry and assembly.
- Steering seat device with patented rotating mechanism and reversing system design, allowing for turn of vehicle direction within 30 seconds.
- PWIS provides four format options to record on-site

inspection status, allowing control center personnel a high degree of information awareness.

應用與效益 Applications and Benefits

- 應用於軌道快速巡檢並提升軌道巡檢效率。
- Enhanced efficiency of track inspection.



智慧化軌道巡檢機車 Intelligent track inspection vehicle



輕量化車體易於搬運和組立 Lightweight vehicle body for easy carrying and assembly



30 秒內完成巡軌機車的方向調轉 Complete the direction reversal of the track vehicle within 30 seconds

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轉向架走行測試設備

Bogie Running Tester (BRT)

簡介 Introductions

工研院與台灣高鐵公司合作開發轉向架走行測試設備，在原有的列車轉向架維修程序上，多一道轉向架測試關卡，先以此設備執行廠內高速運轉測試，確認轉向架的各項運轉指標正常，再進行正線運轉測試，有助提早找出異常原因，突破工作人員的維修瓶頸，提升列車維修品質，減少維修時間成本與人力。

The Bogie Running Tester (BRT) is jointly developed by Industrial Technology Research Institute (ITRI) and Taiwan High Speed Rail Corporation (THSRC). Based on existing maintenance procedures of train bogies, the BRT is deployed as an additional checkpoint aiming to confirm bogie operation and to determine the cause of abnormality in advance, by performing high speed operation in the depot before the test in the main line. The utility of the BRT is to overcome the maintenance bottleneck, improve the quality of train maintenance and reduce time and manpower cost.

特色與創新 Features and Innovations

- 國內首座列車轉向架走行測試設備，測試能力媲美國際，性價比遠勝於日、德機種。
- 導入工業 4.0 預兆診斷、人工智慧與大數據分析的技術，預防設備老化，判定測試設備馬達及軸承在全域運轉下的狀態是否正常。
- 設備建置及維修零件在地化，轉向架的檢修保養服務更即時、有效率。
- The first domestic train bogie running tester with testing capability comparable to international models, which has a cost performance ratio that is far better than Japanese and German models.
- Technology Industry 4.0 predictive diagnosis, artificial

intelligence and big data analysis are introduced to prevent equipment aging, and to determine whether the motor and bearing of the test equipment are in normal status under all-range operation.

- Localization of equipment installation and maintenance parts, enabling more timely and efficient inspection and maintenance services for steering gear.

應用與效益 Applications and Benefits

- 國內外高速鐵路及一般中、低速鐵路運營商。
- For high-speed railway and general medium and low-speed railway operators in domestic and international markets.



轉向架走行測試設備
Bogie Running Tester, BRT

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