



## Train Door Solutions

# Class 15X Fleet

## Gear Box Valve Module

Arriva Trains Wales and  
Northern Rail (Class 153)

### Train Door Solutions

Train Door Solutions Ltd. was formed in 1999 and is one of the UK's leading independent companies specialising in offering innovative engineering solutions for the improvement of door system and other pneumatic subsystems for the railway industry. Our key objectives are the improvement of reliability, maintainability and availability of the system whilst ensuring that the safety meets the current Railway Group Standards.

Train Door Solutions is currently supplying both new and overhauled components for C4 and C6 overhauls to some of the UK's leading train owners, train operators and maintenance companies. This includes valve control modules, actuators and filter regulator units.

If you are experiencing problems with your pneumatic subsystems please contact us on **01908 265 652**.



### Project Background

**Train Door Solutions have designed and developed a valve module for the Voith turbo transmission that is used on all Class 15X railcars with diesel engine drives.**

Train Door Solutions have designed and developed a valve module for the Voith turbo transmission that is used on all Class 15X railcars with diesel engine drives.

The TDS gearbox valve module was designed as a direct replacement for the existing module, which suffers with poor reliability due to its susceptibility to air supply contamination. The new unit also offers improved spare part cost and availability.

Atkins Rail have independently reviewed the TDS gearbox valve module against mandatory requirements and have concluded that it does not impact group standards. The module is physically a direct replacement for the existing item, performs an identical function and is similar in performance and weight to the existing valve module.

TDS have currently manufactured and supplied gearbox valve modules to Arriva Trains Wales for their Class 153 fleet of railcars. The units have been in service since 2003 without any reported failures. The unit is provided with a full 12 months warranty and no routine maintenance is required between C6 overhaul periods.



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## Gear Box Valve Module

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### Specification

Control:	Electro-pneumatic
Input Voltage:	24V dc
Voltage Range:	+/- 30% of input voltage
Temperature Range:	-10°C to +65°C

### Construction

The TDS gearbox module is supplied fully assembled and factory tested ready for installation to the Voith transmission.

**Valves:** 5-station valve manifold fitted with 5 port 2 position single solenoid pilot operated valves to provide the following functions

- Reverse • Forward • UW
- Primary Influence • Transmission Fill

The electrical connections to the valve solenoids are by DIN plug connector. All wiring is 18 AWG Tri-rated cable

All pneumatic connections are push-in quick release type

**Pneumatic Connection:** The outlets from the valve module are terminated in 8mm diameter nylon tube, which connect to the existing bulkhead inlets

**Electrical Connection:** Termate Ter-Mini M4 stud terminal rail

**Mounting:** The valve manifold and terminal rail are mounted on a painted steel back plate, which has the same mounting interface as the existing module

