

# LOCOMOTIVE CATALOG



**Wabtec**<sup>®</sup>  
CORPORATION

*Your Transportation, Equipment & Service Provider*





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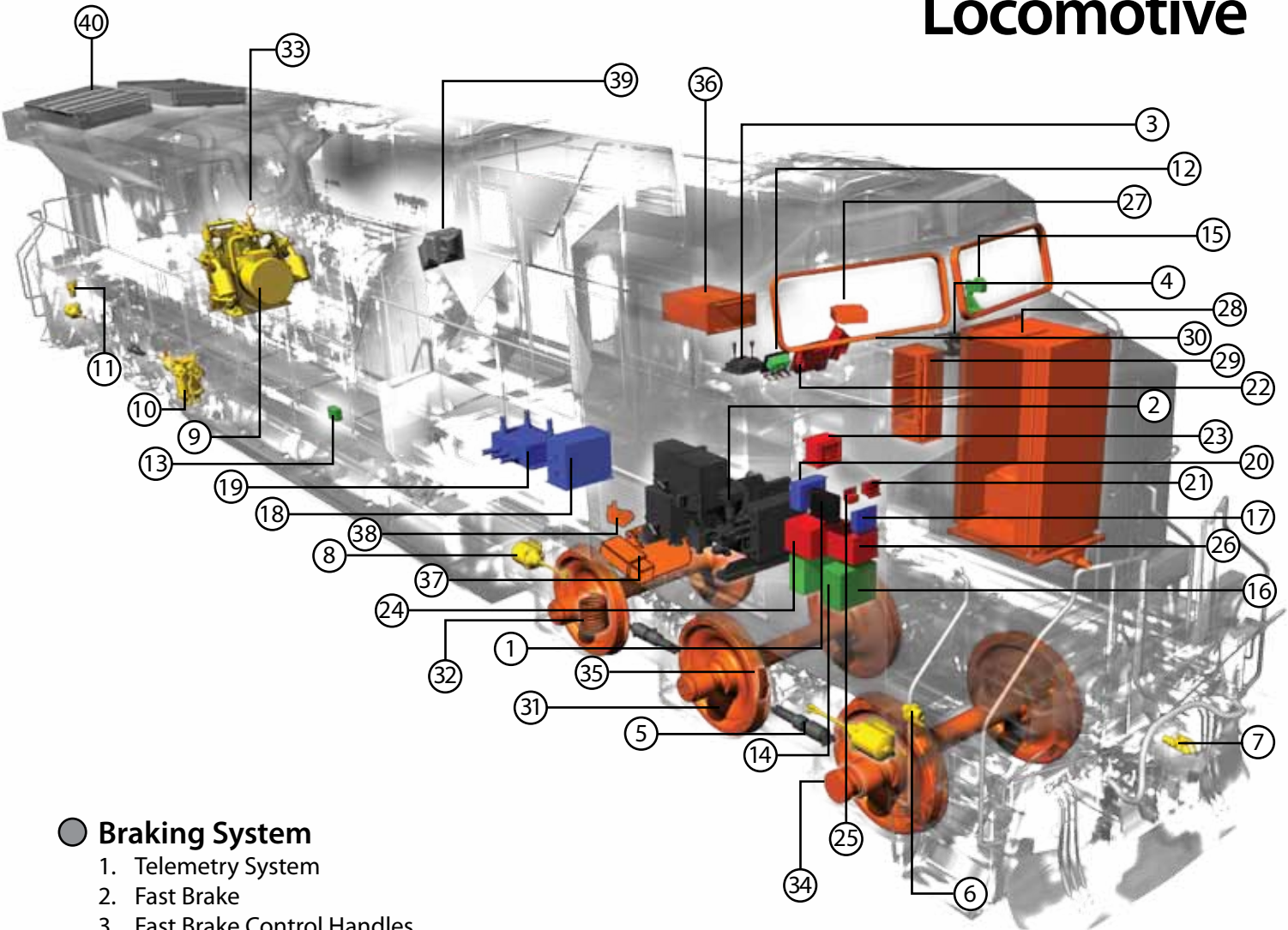
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# Locomotive



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## LOW EMISSIONS LOCOMOTIVES



LOCOMOTIVE **CATALOG** [www.wabtec.com](http://www.wabtec.com)  
1-888-264-0011  
[info@wabtec.com](mailto:info@wabtec.com)

# Low Emissions Locomotives

## Switchers

### Business Unit: MotivePower

As an industry leader in the design, manufacture and remanufacture of diesel – electric locomotives, MotivePower has delivered over 2,500 locomotives to customers since 1972.



### MP21B Ultra Low Emissions Multi-Engine Locomotive

- 35% or more fuel savings depending on duty cycle
- 80-90% less NOx; 70-80% less PM
- Tier 3 nonroad emissions levels
- Modular design for mobile maintenance
- Pressurized engine compartment
- High tractive effort; improved adhesion
- Integrated auto start/stop; less idling
- Redundant systems for improved reliability

Feature	MP21B Multi-Engine	MP20B Single Engine	MP20C Single Engine
Horsepower	2,100 bhp (700 bhp x 3)	2,000 thp	2,000 thp
Engine	Cummins Qsk-19 (Tier 3 nonroad)	Mtu-Detroit Diesel 12v4000 (or equivalent)	Mtu-Detroit Diesel 12v4000 (or equivalent)
Traction Motors	D77 / D78	D77 / D78	D77 / D78
Maximum Speed (nominal)	50 mph	70 mph	70 mph
Continuous Tractive Effort	55,000 lbs	55,000 lbs	82,000 lbs
Starting Tractive Effort	85,000 lbs	85,000 lbs	128,000 lbs
Weight (nominal)	270,000 lbs	277,000 lbs	390,000 lbs
Length	59' 2"	59' 2"	68' 2"
Height	Plate C / Plate L	Plate C / Plate L	Plate C / Plate L
Fuel Capacity	2,500 gal	2,500 gal	3,900 gal
Alternators	1800 rpm constant speed	Kato 350 KVA variable speed	Kato 350 KVA variable speed
Air Compressor	Electric driven rotary screw	WLN	WLN
Dynamic Brake	Optional	Optional	Optional
Locomotive Control	Q-Tron QES III microprocessor	Q-Tron QES III microprocessor	Q-Tron QES III microprocessor
	<i>*1,400 bhp model (Mp14b) coming soon</i>	<i>*Tier 2 Mpxpress commuter locomotive also available</i>	





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## TELEMETRY SYSTEMS



LOCOMOTIVE **CATALOG**

[www.wabtec.com](http://www.wabtec.com)  
1-888-264-0011  
[info@wabtec.com](mailto:info@wabtec.com)

# Telemetry Systems

## Head of Train

### Business Unit: Wabtec Railway Electronics

The TrainLink™ II End of Train telemetry system performs three major functions: monitoring many essential last car conditions, providing rear of train emergency braking capability, and providing a high visibility marker for nighttime use.

The TrainLink™ II system is comprised of a Head of Train Unit, located in the locomotive and an End of Train, located on the last car.

The End of Train sends the Head of Train the following Information (via a unique RF Radio link):

- Last Car Brake Pipe Pressure
- Motion Status
- Marker Light Status (On or Off)
- Battery Life
- RF Communication Status
- Emergency Valve Status

The Head of Train relays this information the operator of the train. It also allows the operator to check communication status and initiate emergency braking.



#### Integrated

- Controlled through the locomotive computer and is located in the equipment rack in the short hood of the locomotive



#### Standalone

- Self-contained unit that is located on the control stand in the locomotive cab

### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO
- Montreal, QC, Canada
- San Luis Potosi, Mexico





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## BRAKE SYSTEMS



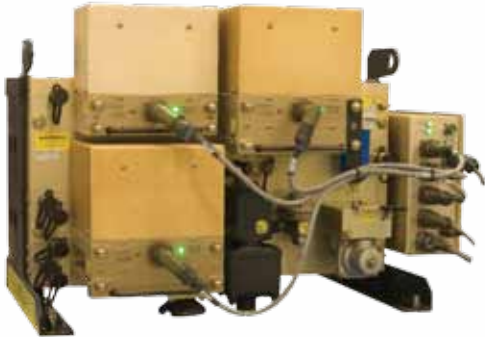
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[info@wabtec.com](mailto:info@wabtec.com)

# Brake Systems

## FastBrake® Electronic Air Brake

### Business Unit: Wabtec Railway Electronics

Wabtec's FastBrake® Electronic Air Brake is a microprocessor-based electro-pneumatic braking system providing means for control of the train air brakes in locomotive applications. FastBrake® is made up of two major components: the Pneumatic Operating Unit (POU) and the Handle Controller Unit (HCU).



#### The POU Consists of Four Major Portions

- Brake Pipe Control Portion (BP)
- Brake Cylinder Control Portion (BCP)
- Independent Application and Release Portion (IAR)
- Power Supply Portion

#### Features / Benefits:

- FastBrake® has been developed to include advanced diagnostics to provide railroad personnel with step-by-step troubleshooting capabilities and recommended actions
- FastBrake® can be integrated with Distributed Power (DP) and Electronically-Controlled Pneumatic (ECP) braking applications
- FastBrake® design configurations can support both one pipe or two pipe locomotive pneumatic interconnection as well as single or dual cab control
- Designed for superior reliability including tightly integrated electronics and pneumatics, redundant electronics, dual channel power supply, and reduced part count
- Enhanced maintainability including fewer replaceable modules, advanced diagnostics and troubleshooting capabilities as well as integrated fault retrieval
- Distributed processing among portions
- OEM integrated or separate displays
- Industry standard communication-controller Area Network (CAN)
- Service proven, core pneumatic technology from 26L and EPIC®
- Easily accessible pneumatic test points
- Pneumatic backup

#### POU Specifications:

- Pneumatic Operating Unit (POU)
- Size: 36 in W x 23 in H x 23 in D, weight 295 lbs.
- Primary Replaceable Modules: 4
- Supply Voltage: Nominal 74 or 110 VDC
- Power Usage: 1 Amp @ Nominal 74 VDC

#### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO
- Montreal, QC, Canada



# Brake Systems

## FastBrake® Cab Handle Unit

### Business Unit: Wabtec Railway Electronics

Wabtec's braking systems use of state-of-the-art microcomputer technology. It provides the logic for electro-pneumatic operators to control the compressed air generated from the locomotive main reservoirs. The equipment includes an electronic cab control unit, available in the desk-style and standalone consoles shown here. A micro-computer is programmed to issue and interpret commands from both the cab controller and pneumatic control units. The pneumatic interface unit and optional cab display unit are designed to provide feedback information to the engineer during equipment operation. The enhanced diagnostics built into the unit greatly reduce locomotive downtime during testing and troubleshooting.



#### Desktop "30" Style

- Magnetostrictive, non-contacting position sensor technology
- Desktop or side mount handle options compatible with all design configurations



#### Standalone "26" Style with Display

- Magnetostrictive, non-contacting position sensor technology
- Desktop or side mount handle options compatible with all design configurations

### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO
- Montreal, QC, Canada

# Brake Systems

## Brake Valves

### Business Unit: WABCO Locomotive Products

Wabtec offers Emergency Brake Valves and Slack Adjusters for locomotive braking systems.



#### Emergency Brake Valve

- Large capacity for fast venting of brake pipe to initiate emergency quick action
- Available with integral microswitch for direct interfacing with electronic air brake equipment, event recorders and other safety related devices
- Handle available from the factory pre-assembled in either left or right hand configurations; also field changeable



#### 26 C Brake Valve

- Provides air brake control of the locomotive and the train
  - Controls brake pipe pressure to activate the control valves on each car and locomotive in the train to apply or release train brakes
  - Usually assembled with the Independent Brake Valve to provide better train control



#### 30 A-CDW Brake Valve

- Desktop mounted air brake control of the locomotive and the train in conjunction with 30-CW module
  - Controls brake pipe pressure to activate the control valves on each car and locomotive in the train to apply or release train brakes
  - Usually assembled with the Independent Brake Valve to provide better train control





# PNEUMATICS



# Pneumatics

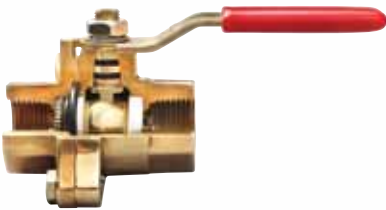
## Ball Valves

### Business Unit: WABCO Locomotive Products

Wabtec offers over 2000 types of ball valve configurations including 2 way, 3 way, and dual valves.

#### Features & Benefits

- Forged brass valves last longer and perform better due to Wabtec's innovative valve design
- All valves are available with Teflon or Buna seals depending on the material flowing through the valve
- Most sizes are available in full or standard port sizes
- Replacement kits are available for valves
- Special configurations can be produced based on need and usage



#### 2 – WAY

- 400 WOG
- Available with standard or locking handle
- Available with wire ties
- Vented or non-vented



#### 3 – WAY

- 200 WOG
- Available with T or L Ports
- Available w/standard or locking handle
- Can be manufactured with various pipe threads



#### Dual Valve

- 200 WOG
- Valves operate together with one handle motion
- Can be both open or one open and one closed



# Pneumatics

## Vaporid® Air Dryer

### Business Unit: WABCO Locomotive Products

VAPORID® provides the most convenient, cost effective and reliable method of removing contaminants.



### Features & Benefits

- Provides an effective, reliable method to remove water, oil, aerosols, and line debris from train-line air
- Clean, dry air is essential to achieve long life for air brake systems and all related pneumatic equipment on locomotives and cars
- Twin tower design provides continuous drying
- Borosilicate coalescing filter reduces debris and oil aerosols (that can clog the desiccant) for increased dryer life
- Pre-measured easy-change desiccant bags mean less downtime
- Potted sealed solid state electronics are weather resistant for reliable operation
- Electronics Control Package is equipped with a memory function, allowing the dryer to operate when the compressor is loaded thereby conserving air
- Electrical options include 24, 37.5, 74, and 110 VDC, with other voltages available
- Humidity indicators are located on both towers to ensure that each is functioning properly
- Thermostatically controlled high power heaters for drain and purge valves are standard equipment to guard against freeze-ups
- Max flow rate of 236 SCFM with adjustments for specific flow rates available
- Compact size: 24" H x 13.75" W x 15.5" D
- Light weight: 92.5 lbs.

### Reconditioning Service Available in:

- Carson City, NV
- Chicago, IL
- Kansas City, MO
- Montreal, QC, Canada

# Pneumatics

## Compressors

### Business Unit: WABCO Locomotive Products

Offering a complete line of air-cooled, water-cooled, and rotary compressors, Wabtec provides original equipment and can rebuild main line reciprocating compressors.

### 3 Cylinder Air Cooled Compressor (3CD™)



#### Features & Benefits

- Pulley shaft or motor drive
- Single or dual speed motor drive
- Various motor voltages available
- Stainless steel braided unloader tubing
- Rated for continuous or start/stop operation
- Stand alone or palletized
- 1100 RPM rated speed; 140 psi rated pressure
- Displacement at rated speed: 247.5 CFM
- 60 HP at rated speed and pressure



# Pneumatics

## Compressors (continued)

### 3CD™ Compressor Upgrades



#### Integral Aftercooler

- Efficient, cost effective, maintenance-free way to precipitate moisture from compressed air braking systems
- Reduces the need for cooling piping or tubing between the discharge and the first main reservoir



#### Thermostatically Controlled Intercooler (TCIS™)

- Designed for motor driven compressors that operate start/stop
- Eliminates water condensate in oil by maintaining a stable intercooler temperature



#### Rapid Unloader

- Vents intercooler pressure in under 2 seconds
- Prevents motor stalls by removing air load when starting
- Eliminates manual intercooler draining procedure
- 75 watt heater to protect against freeze-ups



#### One Piece Molded Fan

- Simplified design
- Higher cooling efficiency
- Virtually indestructible

# Pneumatics

## Compressors (continued)

2CD™



### Features & Benefits

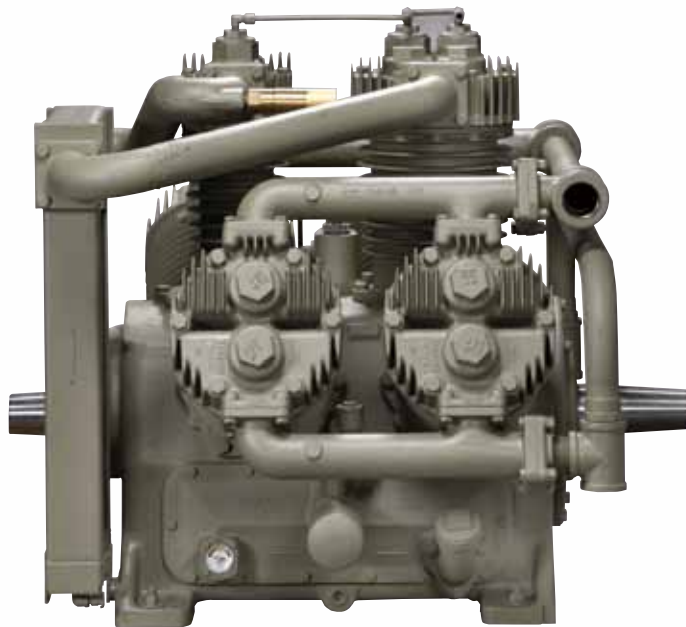
- Temperature Management System (TMS) to control internal temperature
- Pulley, shaft, or motor drive
- Integral cooling fans
- High efficiency inlet filter
- Oil sight gage/Oil pressure indicator
- Rated for continuous or start/stop operation
- Rated speed: 1000 RPM
- Rated pressure: 140 psi
- Displacement at rated speed: 153.5 CFM
- 40 HP at rated speed and pressure



# Pneumatics

## Compressors (continued)

### 6 Cylinder/4 Cylinder Air Cooled Compressor Exhauster



#### Features & Benefits:

- Combination compressor exhauster:
  - 2 or 3 compression cylinders
  - 2, 3 or 4 exhauster cylinders
- Oil sight gauge
- Oil pressure indicator
- Optional oil cooler kit
- Rated for continuous operation

	6CD3UC™	6CD4UC™	4CD2UC™
Rated Speed:	1050 RPM	1050 RPM	1050 RPM
Rated Pressure:	140 psi	140 psi	140 psi
Rated Vacuum:	28 inHg	28 inHg	28 inHg
Displacement at rated speed:	—	—	—
- Compression:	323 CFM	161 CFM	161 CFM
- Vacuum:	484 CFM	645 CFM	323 CFM
HP at Rated Speed, Pressure and Vacuum:	120	105	65

# Pneumatics

## Compressors (continued)

### 3 Cylinder Water Cooled Compressor

3CW™



3CWD™



#### Features & Benefits

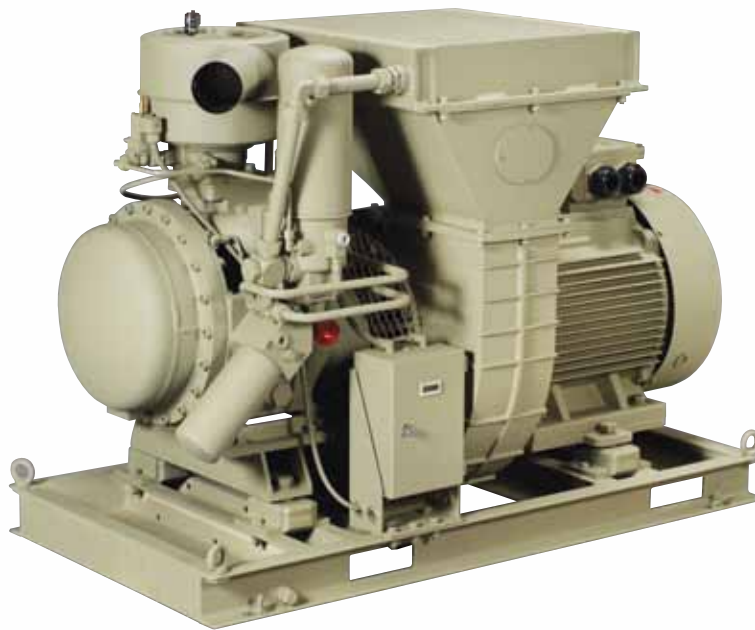
- Directly interchangeable with WLN/WBO type compressors
- Various crankshaft centerline heights available
- Available as either shaft or motor drive
- Oil sight gage or dipstick available
- Double pass and plate style intercooler available
- Wabtec safety valve and breather
- Rated for continuous or start/stop operation
- Rated speed: 1050 RPM
- Rated pressure: 140 psi
- Displacement at rated speed 296 CFM
- 68 HP at rated speed and pressure



# Pneumatics

## Compressors (continued)

### Rotary Screw Air Cooled Compressor



#### Features & Benefits:

- Compact unit
- Various motor voltages
- Spin-on oil filter and separator cartridge
- High temperature protection
- Start/stop or continuous operation
- Encapsulated air end
- High efficiency inlet filter
- Combination oil/aftercooler

	WRS-100™	WRS-160™
Rated Pressure:	145 psi	145 psi
Maximum Air Delivery Range:	70-120 CFM	120-175 CFM
Maximum Horsepower Range:	22-40 HP	35-60 HP

# Pneumatics

## Miscellaneous

### Business Unit: WABCO Locomotive Products

Wabtec manufactures pneumatic brake components and related devices.



#### 26-F Control Valve

- Responds to changes in brake pipe pressure to provide a locomotive brake application on one locomotive
- Includes a quick release valve to provide actuate or bail-off of train brakes



#### A-1 Charging Cut-off Pilot Valve

- Responds to a train break-in-two or emergency brake from the locomotive to initiate:
  - Brake pipe charging cut-off
  - Automatic Sanding
  - Power Cut-off
  - Dynamic Cut-off



#### H-5 Relayair Valve

- A pneumatic, double piloted, three way valve that changes the air passages through it when air pressure of a predetermined amount or more is in the control chamber
- Used in various ways including to control a large flow of air piloted by a small amount of control air, an interlock to control flow of air in one circuit by placing its control in another independent air circuit, as a sequence valve for timing, cycling, etc.
- Not interchangeable with an HB Relayair Valve



# Pneumatics

## Miscellaneous (continued)



### P-2-A Brake Application Valve

- Safety device that causes a penalty full service brake application when initiated by over speed control or safety control systems



### J-1 Relay Valve

- Receives a signal from the control valve or independent brake valve to allow main reservoir air to the brake cylinders to provide a brake application



### Brake Handle

- Removable brake handle for 26 type brake valves



### 24-A Double Check Valve

- Allows air flow from one of two separate sources to a common point of use without either of the two sources being connected to each other

# Pneumatics

## Miscellaneous (continued)



### VX Vent Valve

- Enhanced venting capacity results in increased emergency transmission speeds at lower brake pipe pressures
- Self purging exhaust valve and improved corrosion resistant design promotes more reliable operation long term



### Angle Cock

- Designed for application to the ends of the brake pipe on each car
- Provides a means for closing the brake pipe as on the end of the last car of a train and for the attachment of the brake pipe hose which permits the brake pipe to be connected between coupled cars
- The handle is designed to lock in both open and closed positions



### Brake Cylinders

- Furnished to suit the space and leverage requirements of locomotives, these cylinders differ from freight car brake cylinders primarily in the wide variety of diameters available and shorter piston strokes
- The push rod is pinned to the piston hollow rod for positive release of the shoe from the wheel when the piston retracts
- North American standard for diesel-electric locomotives
- Wide variety of sizes and push rod configurations available to suit varied application requirements





# MONITORING



# Monitoring

## Fuel Monitors

### Business Unit: Wabtec Railway Electronics & Wabtec Global Services

Wabtec offers locomotive fuel monitoring systems.



#### FuelLink

- Utilizes solid-state electronics and advanced pneumatics to determine locomotive fuel levels
- Accurate to +/- one percent
- Provides automatic fuel tank configuration while adding dynamic tag capabilities for the transfer of fuel level and other useful management information to wayside readers for collection
- Internal diagnostics and use of the "bubble method" for calculating the fuel level increase the reliability and accuracy of the system
- Fuel level can be integrated into locomotive builders' displays, and stand-alone displays are available for internal/external mounting



#### Ultrasonic Fuel Monitor

Eliminate the maintenance cost of your traditional bubbler system by switching to Wabtec Global Services ultrasonic fuel measurement solution!

- Wabtec Global Services now offers a low cost turnkey solution to convert your bubbler fuel measuring system to an ultrasonic fuel measuring system
- Through Wabtec Global Services' ultrasonic fuel measuring system which does not require air, you can eliminate airline and fuel contamination maintenance costs
- We provide a small and unobtrusive unit that integrates directly into the existing wiring of your Wabtec fuel monitoring system
- Wabtec's plug & play capability allows our ultrasonic fuel measuring system to be mounted upon multiple styles of locomotives
- Unlike other systems, WGS' directly integrates with Wabtec's fuel monitoring system, with no need to change back office systems
- Wabtec Global Services ultrasonic fuel measurement sensor is constructed of stainless steel making it rugged and weather resistant
- 2 year warranty
- Built in fault detection function to identify inaccurate readings
- Provides more accurate fuel readings than traditional bubbler systems



#### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO



# Monitoring

## VideoTrax™ Digital Recorder System

### Business Unit: Wabtec Railway Electronics

The VideoTrax™ Digital Video Recorder system provides digital video and audio information for accident investigations.



### Features & Benefits:

- Integrates with existing Wabtec Solid State Event Recorders for a complete picture onboard the locomotive
- Easy-to-use data analysis and playback tools
- GPS support for location and time synchronization
- Ethernet communications for remote access and configuration
- Supports up to four cameras
- Multiple audio options
- Multiple hard drive configuration options
- Supports NTSC and PAL standards
- Complete installation and support services

### Reconditioning Service Available in:

- Kansas City, MO

# Monitoring

## Event Recorders

### Business Unit: Wabtec Railway Electronics

Wabtec offers a variety of event recorders with a range of capabilities, from basic FRA-compliant units to enhanced models with integrated alertness control, expanded events, integrated air and modular PC board designs.



#### PTC Event Recorder - TTX - REC – ETMS

- Multiple data stream recording capability is compatible with existing RS-422 locomotive communication channels for FRA Event Recorder logging. Single point download and common message timestamp
- FRA Crash hardened memory
- 8GB / 16GB, (DOT certified to - FRA 49 CFR Part 229)
- LSI 5 MCU rack mount compatible
- Compliant with S-9101B V1.0 Draft Appendix B
- Fully integrated with Wabtec I-ETMS® system
- Ethernet port for direct connection to Wabtec I-ETMS® system or to on board locomotive network
- Download via Ethernet connection (direct, PTC wireless communications, locomotive network)
- Download via High-Speed USB port (card reader replacement)
- PTC Enhanced Data Analysis Software (DAS-3) provides users with an integrated solution for displaying critical PTC data, I-ETMS® data, locomotive FRA data, train location on map, and video recording
- TTX-REC-IDR compatibility for EVO applications
- TTX-REC-PCM compatibility for PCM-0X replacement
- TTX-REC-CHM compatibility for CHM-0X replacement
- TTX-REC-M5 and M6 compatibility via LegacyLink cable
- Bach-Simpson 53000/54000 compatibility via LegacyLink cable
- Q-Tron Databord 5000/6000 compatibility via LegacyLink cable
- Wabtec ECP brake event recording
- Synchronization output compatible with Wabtec Videotrax™
- QES System recording via Ethernet

#### Reconditioning Service Available in:

- Columbia, SC



#### Data Analysis Program III (DAS III)

- Builds upon Wabtec Railway Electronics trusted suite of data analysis tools to provide a method of decompressing, processing, and analyzing data downloaded from supported solid state event recorders
- It displays data in 'timeline' based graphs and tables, and allows users to quickly scan for events of interest
- DAS III has all the features of previous versions, reorganized and presented in an efficient and intuitive layout

# Monitoring

## Central Diagnostics System

### Business Unit: MotivePower

Monitor locomotive location, health status and manage fleet diagnostics in real-time with the MotivePower Central Diagnostics System (MPXCDS). Meeting the needs for fleets of all sizes, the CDS system can help improve on-time performance, reduce operating costs and increase revenue through improved productivity, enhanced asset tracking, proactive service management and comprehensive preventative maintenance information.

### Features / Benefits:

- Remote monitoring of vehicle health
  - CDS integrates with the Q-Tron locomotive control system, Head End Power (HEP) genset (where applicable) and Cab Signal system
  - Captures 80 % of locomotive functions
  - System provides faults real-time to the MPXCDS web site
  - Over 200 messages available from control system alone
- Intuitive web site display of critical parameters such as:
  - Prime Mover and HEP operating values such as real time horse-power, fuel consumption, operating temperatures, and more.
  - Battery Current (Amps)
  - Locomotive Speed (MPH)
  - HEP kW load vs. Time
  - Trainline monitoring of critical MU (multi-unit) signals
  - AESS status
- GPS location tracking for each locomotive
- On site technicians available to offer support
- CDS system to utilize cellular communication or 802.11 wireless
- Secure & reliable CDS data storage
- Email notification to key operations personnel
- Easy to use web interface
  - Basic diagnostic instructions included for both maintainer and operating engineer
  - Access individual locomotive schematics and manuals online through the CDS interface
- Locomotive proven, rugged, expandable CDS hardware
- Ability to access portable test equipment files remotely
- All CDS hardware, provisions and labor included
- Combines MotivePower service expertise and the CDS system
- Improves on-time performance





# Monitoring

## Miscellaneous

### Business Unit: Wabtec Railway Electronics, Wabtec Global Services

Wabtec offers a variety of locomotive monitoring systems.



#### RM-160 Monitoring System

- Basic system includes RM-160 modem, 160MHz radio, DC/DC Power converter (either 12VDC/12VDC or 24VDC/12VDC), Communication Cables
- Wabtec supports RM-160 for new builds, narrowband upgrades, and repairs



#### LocoTemp Fan Controller System

- LocoTemp (fan controller), Power/Interface Cable, Temperature Probe
- Wabtec supports new builds and repairs



#### ICE Equipment

- Offering the Rockwell Train Power Supply
- Wabtec supports ICE equipment repairs



#### Digital Pressure Panel

- Low cost, easy to install digital duplex gauge with expansion capabilities
- Ports in the back, allowing quick and easy calibration checks without removing the pressure display from the locomotive
- Easy to read values for main reservoir, equalizing reservoir, brake pipe and brake cylinder
- Low power consumption and the ability to measure pressure ranges from 0-200 psi with a resolution of 1psi
- 100% compatible with existing control consoles, providing you the lowest possible entry cost
- Longer calibration intervals over traditional analog displays which can reduce annual servicing man hours by over 50%
- Displays use back-lit LCD technology to provide a high contrast indication in all lighting conditions, from bright sun light to night-time viewing
- The retro-fit application is powered by a 74V DC via a terminal block on the back of the panel



# ECP BRAKING





# ECP Braking

## Miscellaneous

### Business Unit: Wabtec Railway Electronics

The Wabtec ECP System is an Electronically Controlled Pneumatic Braking System for freight trains that is compliant with the AAR S4200 industry standards. The complete ECP system includes locomotive components, car/wagon components and an ECP-EOT.



#### Network Interface Unit (NIU-II)

- HEU/LCM Application Software
- Multiple LSI Interfaces for communications to industry standard locomotive systems
- Ethernet interface for connection to data loggers and other locomotive systems
- 2 x 4-20mA inputs for external sensors
- Discrete 74VDC I/O for external control/monitoring
- Frequency Input for Axle Speed Sensors



#### ECP Interface Unit

The EIU directly interfaces with the ECP 230 VDC Trainline power supply. The EIU is directly connected to the NIU-II and also acts as a gateway between the NIU-II and Trainline Network to allow HEU/LCM messages to be passed between the Trainline network devices and the NIU-II. NOTE: The previous Locomotive ID (LID) functionality is now integrated into the cable between the EIU and NIU-II. This cable has an integrated static memory for maintaining the Locomotive Static parameters specific to each customer application.

- Interfaces directly to the Trainline Power Supply and NIU-II
- Discrete 74 VDC I/O
- PCS Relay (NO & NC operation)
- Power Supply Controller Logic
- ECP Trainline Interface for NIU-II

#### Reconditioning Service Available in:

- Montreal, QC, Canada



# ECP Braking

## Miscellaneous (continued)



### 230VDC Trainline Power Supply

The 230VDC Trainline Power Supply converts the Locomotive Battery Voltage to the 230 VDC power required to operate the ECP devices. The power supply also provides the 24VDC output used for sequencing ECP compliant cars and locomotives.

- Interfaces directly to the locomotive inverter output and EIU
- 74VDC to 230VDC conversion for trainline power
- 24 VDC for sequencing cars and locomotives
- Over current protection
- Trainline polarity matching



### Junction Box

The junction boxes are installed on the front and back of each ECP locomotive. The J-Box allows the locomotive to be connected to an adjacent locomotive or car/wagon. The junction box also provides a Head End Termination (HET) Plug to terminate the Trainline.

- Located at end of locomotive
- BIW end sill connectors protect car/locomotive permanent wiring

### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO

# ECP Braking

## Miscellaneous (continued)



### Cab Display Unit

The CDU is a proprietary graphical interface to an ECP/WDP system. The interface communicates directly with the NIU-II and is used as a MMI between the user and the ECP/WDP System.

- Connects to the NIU-II and CDU
- Graphical color display
- Soft keys to receive user input
- Audible alarm output

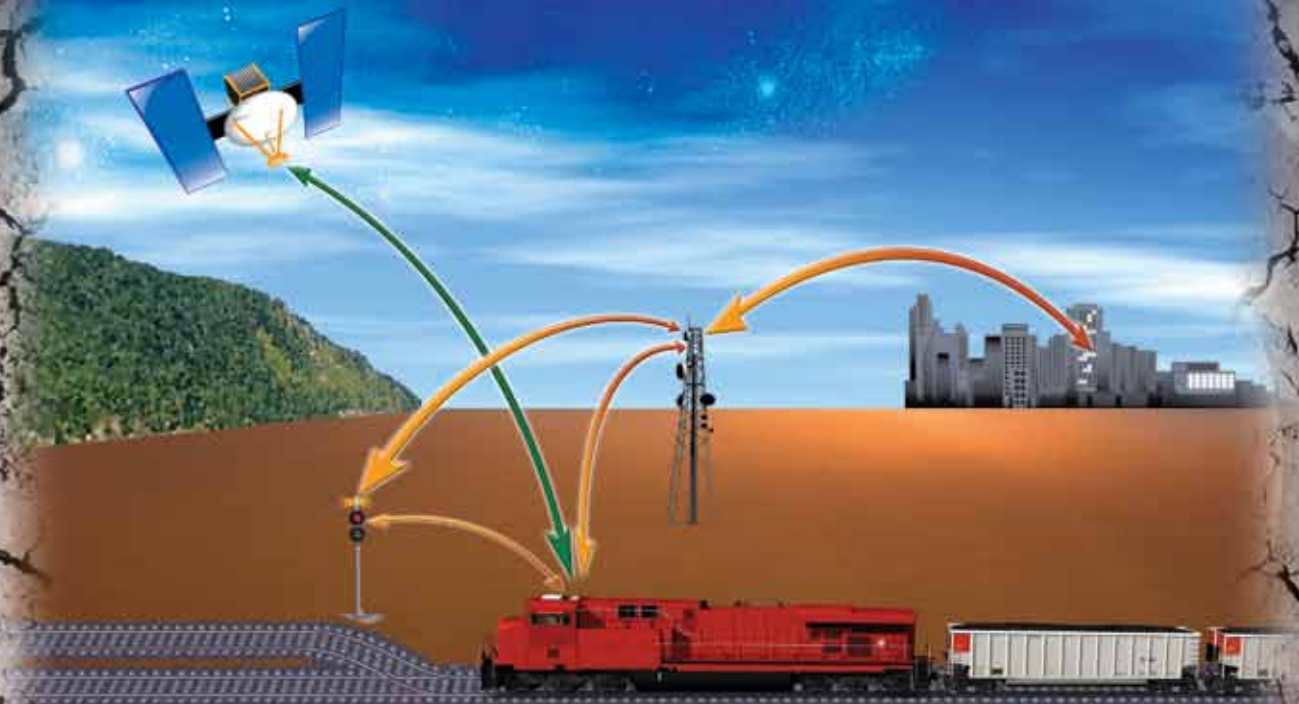
### Reconditioning Service Available in:

- Columbia, SC
- Kansas City, MO



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## POSITIVE TRAIN CONTROL



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[info@wabtec.com](mailto:info@wabtec.com)



# Positive Train Control

## Interoperable Electronic Train Management System – I-ETMS®

### Business Unit: Wabtec Railway Electronics

Wabtec Railway Electronics designs and manufactures electronic and electro-pneumatic train control systems for the railway industry.



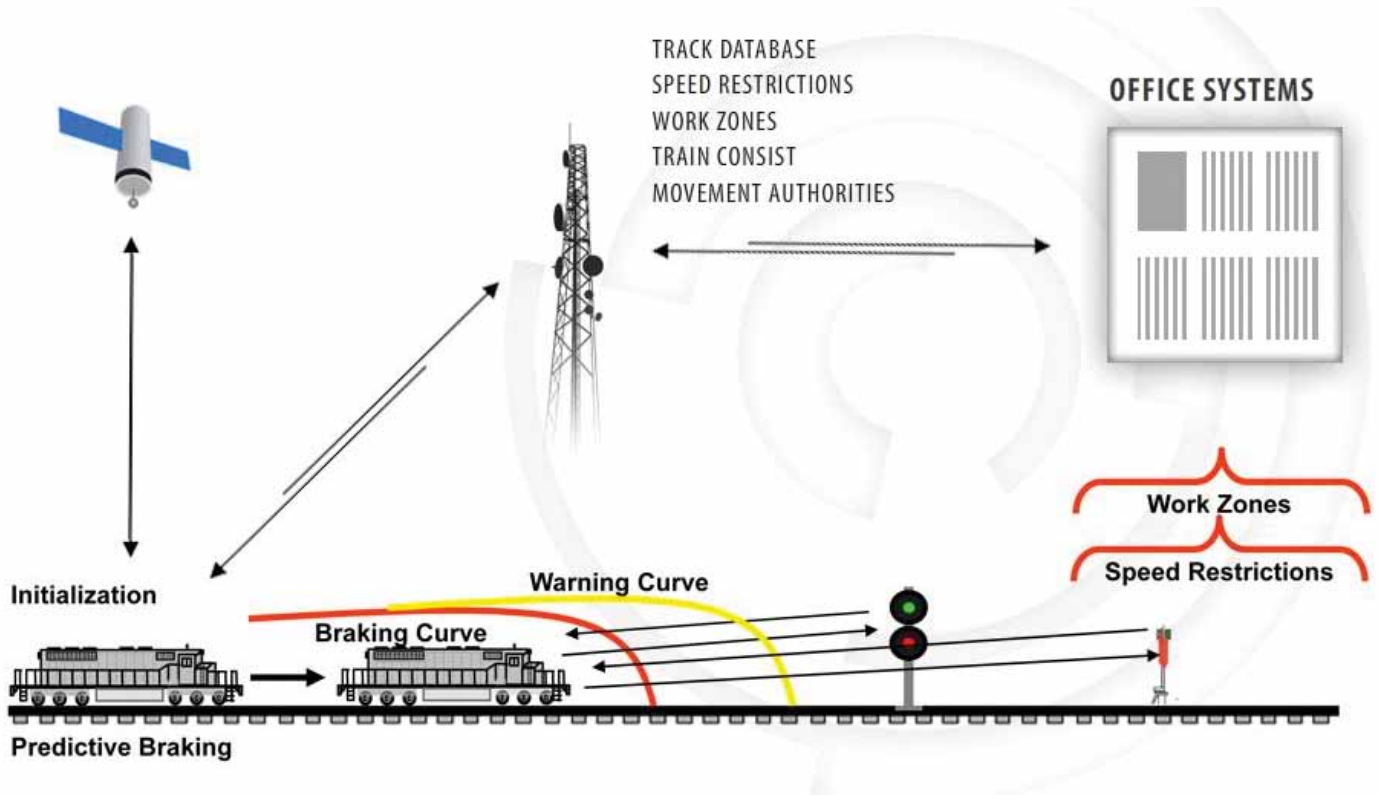
#### Features / Benefits:

- Integrates new technology with existing train control and operating systems to enhance train operation and safety
- Prevents track authority violations, speed limit violations, unauthorized entry into work zones, and train movement through a switch left in the wrong position, all of which reduce the potential for train accidents
- With I-ETMS®, the crew remains in control of the train. The system monitors and ensures the crew's compliance with all operating instructions, while the I-ETMS® display screen provides the train crew a wealth of operating information
- As the train moves down the track, the I-ETMS® on-board computer, with the aid of an on-board geographic database and global positioning system, continuously calculates warning and braking curves based on all relevant train and track information including speed, location, movement authority, speed restrictions, work zones, and consist restrictions
- I-ETMS® also communicates with wayside devices checking for broken rails, proper switch alignment and signal aspects
- All information is combined and analyzed in real time to provide a "safety-net" for improved train operation

# Positive Train Control

## Interoperable Electronic Train Management System – I-ETMS®

I-ETMS® System Architecture



# Positive Train Control

## PTC Components

### Business Unit: Wabtec Railway Electronics

Wabtec offers various PTC components for use with their Interoperable Electronic Train Management System, I-ETMS®.



#### Train Management Computer

- Enforces Movement Authorities, Speed Limits, Hand Throw Switch Alignment
- Triplex Train Control CPU's for Safety and High Availability
- Meets Subpart I Requirements for Positive Train Control Systems
- Hosts Energy Management Application CPU
- Hosts ITC Message Router (ITCM) CPU



#### I-ETMS® Display

- Displays Train Location, Track Features, Restrictions, Work Zones
- Enhances Situational Awareness
- Crew Entry of Credentials
- Dual Displays Available to Support Additional Crew with Duties in Cab



#### Commlink II

Wabtec's Communication Manager, Commlink II, provides IP routing and communication management functions.

- Host for additional applications such as:
  - ITC application gateway
  - Event recorder download
  - Video recorder health
  - Fuel reporting
  - Health monitoring
- Card-file architecture provides flexibility
  - Mobile access router
  - General purpose computer
- Fully qualified for locomotive environment
- Shared components with I-ETMS® TMC simplifies logistics management
- Core system comprised of processor module, router / switch module (RSM), cellular modems, and GPS receiver



# Positive Train Control

## PTC Components (continued)



### Cut-Out Cabinet

- Convenient mounting for TMC in retrofit applications



### Asy Cut-Out Switch

- Cut out I-ETMS<sup>®</sup> from penalty brake, emergency brake and horn
- Tamper-evident seals



### Navigation Sensor Module

- GPS Receiver
- Provides WAAS-corrected position for train location
- Two receivers per system for high availability

### Reconditioning Service Available in:

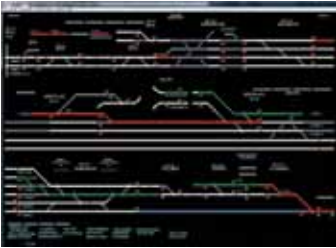
- Columbia, SC

# Positive Train Control

## Train Management Dispatch System - TMDS®

### Business Unit: Wabtec Railway Electronics

TMDS® is a fully-integrated, bilingual train control solution for all methods of operation, including CTC, TWC, DTC, and PTC.



### TMDS®

- Standard train management functions including:
  - Track bulletin system
  - Train sheet system
  - Track & time / track tags
  - Auto routing / movement planning
  - SCADA control
  - Back office systems interface
  - Mobile device interfaces
  - Third party and custom interfaces
  - Track editor
  - Playback and simulation tools
- TMDS® utilizes commercial-off-the-shelf (“COTS”) hardware and software that create a system that is straightforward and simple to operate and maintain
- TMDS® is scalable from one to over 100 dispatchers



### Back Office Server

- Interface to dispatch system
- High-availability, fault-tolerant, scalable platform
- Supports software and tracks database updates (mobile device manager)
- Supports train initialization process and interoperability transitions
- Maintains downloaded on-board system logs
- Communication server – data radio network(s)
- Other MIS Systems





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## FRICTION PRODUCTS



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# Friction Products

## Brake Shoes

### Business Unit: Railroad Friction Products Corporation

Railroad Friction Products manufactures COBRA® high-friction and low-friction composition brake shoes, specialty shoes, and disc brake linings for freight, locomotive, and transit vehicles.



#### TreadGuard®

Developed by Railroad Friction Products Corporation to address the problem of wheel removals due to shelling, spalling, and high impacts, TreadGuard® is a value-added brake shoe with a cast iron insert that provides the following benefits for a wide range of freight car and locomotive applications:

- Cast iron inserts continually clean minor tread defects & damage
- Minimizes removal of wheels for repair
- Prolongs life cycle of wheels
- Reduces wheel set inventory and changeouts
- Minimizes impacts between wheel and rail
- Painted RED for immediate identification
- Reduces wheel set turnings, out of service time and high impact frequencies
- Materials that meet AAR industry standard RP-599



#### Standard Composition & Standard Flanged Composition

- Full line of friction materials for locomotive applications
- Materials that meet AAR industry standard RP-599
- Configurations to meet a variety of locomotive applications
  - Full width, AP design, offset design and flanged
  - 14",16",18" lengths



#### Low-Friction

- No conversion costs – Low Friction Locomotive Brake Shoes are a direct replacement for cast iron brake shoes
- Longer Wheel Life – Insert conditions the tread and removes minor damage to wheels
- Lighter in weight than cast iron brake shoes
- Color coded to indicate they are Low Friction Brake Shoes
- Painted yellow and shipped in yellow containers



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## TRUCK COMPONENTS



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# Truck Components

## Miscellaneous

**Business Unit: Standard Car Truck, Barber Spring, Swiger Coil Systems, Fulmer Company, MotivePower**

Wabtec offers a variety of locomotive truck components.



### OneSteel MicroAlloy Wheels

- Forged wheel
- Rim quench and temper
- Microalloyed with vanadium
- Improved wear resistance
- Improved resistance to thermal damage
- Two grades "Micro C" and "Micro B"
  - "Micro C" used for freight cars
  - 40–60 % wear reduction and zero failures
- Mobile wheel truing service offered



### Powder Coated Springs

- Wabtec uses computer controlled coilers
- Spring capabilities include bar diameters from 1/2" to 4", outer diameter to 24", and free lengths to 72
- Load testing to customer specifications
- Non destruction testing on site
- Powder coat and custom colors done in house
- Shot-peening and end surface grinding available upon request
- Offering hot wound compression springs



# Truck Components

## Miscellaneous (continued)

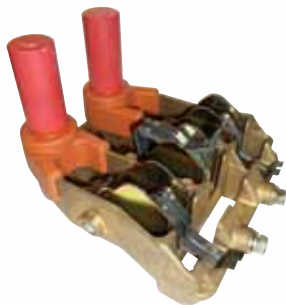
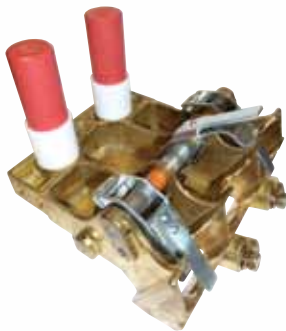


### Traction Motors

- AC/DC traction motor remanufacturing
  - D77, D78, D87, others
- Traction motor components
- Coil products and services
- Remanufactured units are equivalent to obtaining a new motor directly from the OEM
  - Unit exchange programs available

### Reconditioning Service Available in:

- Cleveland, OH



### Brush Holders

- With 75 + years in service, Fulmer Company offers a comprehensive product offering: Brush holder assemblies for traction motors, generators, alternators, and auxiliary DC equipment found on Electro-Motive Diesel and General Electric locomotives
- Replacement OEM brush holder parts, available from stock, including insulated studs, spring cells, springs, levers, bushings and other components
- Fulmer Company's extensive parts inventory and captive foundry enable them to provide exceptional customer service
- Fulmer Company provides applications engineering and technical expertise to create or improve designs
- ISO 9001:2008 certified

### Reconditioning Service Available in:

- Export, PA

# Truck Components

## Miscellaneous (continued)



### **Axle Generators**

#### Dual / Single Output

- Converts the rotation of the locomotive axle into a pair of 120 pulses per revolution electrical signals

#### Single Output

- Converts the rotation of the locomotive axle into a 60 pulses per revolution electrical signals

### **Reconditioning Service Available in:**

- Columbia, SC
- Kansas City, MO





# CAB COMPONENTS





# Cab Components

## Locomotive Cabs

### Business Unit: MotivePower

Offering design and fabrication of all locomotive structures including cab, car bodies and frames



### Features / Benefits:

- Maximize the value of capital expenditures through a locomotive cab replacement
- Extend locomotive life while increasing efficiency and productivity
- MotivePower's OEM engineering expertise and focus on quality
- Flexible designs
- Plug and play methodology
- Enhanced locomotive performance
- Ability to maintain proper emissions levels
- Facility capability

### Reconditioning Service Available in:

- Boise, ID
- Chicago, IL
- Houston, TX

# Cab Components

## Locomotive Cab Radios

### Business Unit: Wabtec Global Services

Wabtec offers a narrowband (12.5KHz) and ultra narrowband (6.25KHz) AAR compliant Locomotive Cab Radio.



#### Locomotive Cab Radio, Tri-Mode

- Meets FCC and AAR requirements for wide and narrowband channels
- Meets future requirements for ultra narrowband (6.25KHz) using NXDNTM standard
- Drop-in replacement for existing AAR clean cab radios, will fit in standard AAR clean cab radio rack
- New Wabtec proprietary designed parts with same look and feel as existing clean cab radios
- Backlit buttons can be operated with gloved hands
- Tested to AAR Standard S5702
- 512 available channels
- Bright 40 character display with customizable text labels for home channel names
- DTMF and single tone controls
- Dispatch channel control
- Squelch control
- Manual / auto dimming feature
- Stun feature for over-the-air disabling of radio transmitter



#### Portable Locomotive Cab Radio, Tri-Mode

- Meets FCC and AAR requirements for wide and narrowband channels
- Meets future requirements for ultra narrowband (6.25KHz) using NXDNTM standard
- Pre-programmed with ARR channel plan
- New Wabtec proprietary designed power supply for locomotive voltage operation
- Microphone handset included
- 512 available channels
- Backlit 14 character display with customizable text labels for home channel names
- Capable of transmitting DTMF and single tone
- Dispatch channel control
- Squelch control
- Stun feature for over-the-air disabling of radio transmitter
- Optionally programmed channel pairs upon request

### Reconditioning Service Available in:

- Kansas City, MO

# Cab Components

## Lavatory and Sanitary System Products

### Business Unit: Microphor

Microphor offers sanitation systems to the rail industry including cost efficient recirculating retention toilets for freight locomotives. Built to withstand rugged conditions, Microphor's robust retention toilets offers ease of maintenance and fits in tight locomotive compartments.



#### RC900 & RC920 Toilet

- Corrosion-free polyethylene inner tank
- Exclusive composite inner tank minimizes any interaction with human waste during periodic servicing
- Heavy duty filter screen remains in tank during servicing
- Recessed heavy duty tank drain slide valve
- Excellent bowl rinse and durable pump handle
- Universal mounting for installation
- Lid assembly is interchangeable with compatible toilets



#### Lavatory Module

- Complete water & waste system solution within a lavatory enclosure for easy integration in the locomotive cab.
- Lavatory enclosure is made from FRP material compliant with FRA regulations
- Turnkey solution for your water and waste in a locomotive cab.
- Easy integration in to the locomotive cab.
- Clear interface points minimizes your water waste integration engineering hours



#### Biological Treatment System

- Waste treatment systems
- Biological system
- No daily pumping required

**Microphor also offers a variety of waste treatment system maintenance products.**

#### Reconditioning Service Available in:

- Chicago, IL
- San Luis Potosi, Mexico



# Cab Components

## Miscellaneous

### Business Unit: Microphor

Microphor manufactures ice boxes for locomotive use as well as ditch light controllers and accessories.



#### Icebox

- Through floor drain to prevent puddles
- Stainless steel interiors for easy maintenance
- Heavy duty hinges for dependable operation
- Closed cell sponge rubber door seals for better performance
- Bolts to floor for great stability
- Designed specifically for railroad applications



#### Ditch-Master™ II Ditch Light Controller

- Meets FRA specifications - Flashes at a rate of once per second with a 50% duty cycle
- Polarity Protected – Not damaged by input voltage reversal
- Short Circuit Protection – Able to withstand a direct short circuit across lamp terminals or wiring
- Transient Voltage Protection – Filtering and transient protection from spikes and noise on the power lines
- Easy Installation – Rear mounting bracket and compact package provide greater mounting flexibility
- Rugged Design — State of the art technology and transient power protection on all inputs will withstand typical railroad conditions for an extended service life

# Cab Components

## Miscellaneous (continued)



### Slow-Closing Faucet

- Heavy nickel chrome plated brass, nonadjustable
- Mounting - deck or wall
- Water Flow - 53 gpm, @ 50 PSI
- Reliable simple balanced valve design
- Efficient rose spray pattern
- Design reduces cleaning requirements and water usage



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## HEAT EXCHANGERS



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# Heat Exchangers

## Jacket–Water Radiators

### Business Unit: Young Touchstone

Young Touchstone's Flat-Round® Mechanical Bond Radiator cores are your best choice for long service life and eliminating downtime. Young Touchstone begins construction with heavy copper fins which resist damage and maintain consistent heat transfer. Flat, heavy wall, seamless brass tubes are used for proven reliability. Tubes are soldered to the fins to provide maximum performance. The tube ends are mechanically brought to a perfectly round shape then bonded to a heavy duty steel header plate with Young Touchstone's Mechanical Bond process. Young Touchstone's unique bolted, deflection free side rails with patented expansion joints are added for strength and rigidity.



### Replacement Cores are available as:

- **Single Length 6 Row — Part Number 01788**  
Replaces EMD — Part Numbers 3129131, 8206685, 8490482, 92526642
- **Double Length 6 Row — Part Number 02190**  
Replaces EMD — Part Numbers 9504784, 9583760, 40017115
- **Triple Length 6 Row — Part Number 02192**  
Replaces EMD — Part Numbers 3010256, 3027016, 3036850, 8356205, 8462344, 8366731, 8389388, 9315655
- **Also Available in 8 Row and 4 Row Configurations**

### Features/Benefits:

- Built to last the life of the locomotive
- Tubes are mechanically bonded into headers
- Heavy duty fin construction, 10 fins per inch
- Precision tooled headers
- Unique bolted deflection free side expansion joint

### Reconditioning Service Available in:

- Carson City, NV
- Columbia, SC
- Kansas City, MO

# Heat Exchangers

## Miscellaneous

### Business Unit: Young Touchstone

Wabtec manufactures heat exchange products for the railway industry.



#### Mechanical Bond Aftercooler Core

- Improved side frame design eliminates weld cracks and improves air flow through the core for greater cooling efficiency
- Mechanically bonded 1/2" thick steel header joint
- Copper tubes for better heat transfer
- Tubes mechanically expanded into aluminum or copper fins for superior heat transfer



#### Mechanical Bond Lube-Oil Cooler

- Box styles
- Mechanically bonded 1/2" thick steel header joint
- Copper tubes for better heat transfer
- Tubes mechanically expanded into aluminum fins for superior bond, heat transfer performance and header joint strength compared to metallurgical bonds
- Replacement oil cooler cores exceed OEM standards and are interchangeable with original equipment oil cooler cores on GP/SD18, GP/SD20, GP/SD24, GP/SD28, GP/SD30, GP/SD35, GP/SD38, GP/SD39, GP/SD40, GP/SD45, GP/SD50, and GP/SD60 locomotives



#### Fuel Oil Pre-Heater

- Replaces EMD 9517269
- Shell & tube styles
- Brass tubes, headers, shell and end hubs
- Cast iron end bonnets
- Brass baffles
- Steel mounting brackets
- Non-asbestos nitrile rubber cellulose fiber

### Reconditioning Service Available in:

- Carson City, NV
- Columbia, SC
- Kansas City, MO

# Heat Exchangers

## Miscellaneous (continued)

### Business Unit: Triangle Engineered Products

Triangle Engineered Products specializes in the manufacture and remanufacture of locomotive water pumps.



#### Water Pumps

- New water pumps
- Replacement components for EMD pump applications.
- Remanufactured water pumps that feature computer balanced shaft and impeller assemblies

#### Reconditioning Service Available in:

- Bensenville, IL





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## RUBBER PRODUCTS



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# Rubber Products

## Miscellaneous

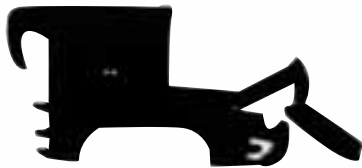
### Business Unit: Wabtec Rubber Products and Durox

Wabtec specializes in producing custom-molded rubber products in standard or customized compounds, including EPDM, Fluroelastomer, BUNA N, and Chloroprene.



#### Gaskets & Seals

- Economical OEM replacement gaskets and seals for EMD, GE, & Alco engines
- Premium OEM enhancements cut from proprietary materials such as Swellex™, which swells to a controlled maximum 30% of its original thickness to eliminate leak paths and Durogard™ seals to eliminate problems associated with cracked and hardened traditional sealing products
- Also offering the Vector Oil Retention System to deflect oil back to the oil sump, inhibiting deck cover leaks



#### Weather Stripping

- For cab windows, doors, and number boards
- Prevents moisture and air from entering the locomotive
- Made from EPDM material for long-term use
- A full range of in-line sections for body panel thickness 1/16" to 3/4", glass thickness 1/16" to 3/4"
- A full range of off-line sections for body panel thickness 1/16" to 1/4", glass thickness 3/16" to 9/16"
- Self lock and separate lock applications



#### Rubber Parts Kits

- 26L equipment
- NC-391 locomotive draft gear

Also offering magnetic signage and non-conductive cable cleats





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## SERVICES



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# Services

## Education

### Business Unit: Wabtec Global Services

Wabtec offers comprehensive training seminars and material geared toward educating rail personnel on the operation and maintenance of rail equipment.



#### Locomotive Air Brake Training

This class is designed for a locomotive mechanic/machinist but it is adaptable to anyone working on locomotive brake equipment. Class topics include basic locomotive brakes, the history of air brakes and key in on the 26 type brake equipment. In this class participants will learn how to read air brake diagrams, what the various components do and how they work together. By understanding the components students are better equipped to troubleshoot the 26L or 30ACDW brake equipment. Class dates are published at [www.wabtecglobalservices.com](http://www.wabtecglobalservices.com)



#### PTC Training and Qualification Program for PTC Systems

Designed as a training and qualification program for PTC systems subject to FRA Rule, 49PART236 sub part I, Wabtec's training program educates students on PTC systems to enable them to provide superior product support and install on-board PTC equipment to ensure successful railroad operations.

- Class curriculum includes the use of an in-class virtual PTC environment simulator and will provide trainees the knowledge to:
  - Safely install, replace, or repair each of the on-board PTC components
  - Safely install, replace, or repair the interconnecting wiring for each PTC component
  - Load operating software to critical PTC components
  - Configuration for PTC operation
  - Validation testing of the PTC and related locomotive systems
  - Adhere to SAE standards: Producing quality, reliability, and repeatability
  - Troubleshoot, diagnose, repair, and test all related aspects of the onboard PTC equipment
  - Rapidly identify potential technical PTC system discrepancies that may pose an operational safety issue



#### Books and Training Materials

Wabtec offers a wide variety of material geared toward educating rail personnel on the operation and maintenance of rail air brake equipment. Obtain a training catalog at [www.wabtecglobalservices.com](http://www.wabtecglobalservices.com) for a complete listing of publications.

# Services

## PTC Support

### Business Unit: Wabtec Global Services and Xorail

Wabtec offers a variety of PTC support services to assist customers with their PTC implementation.



#### PTC Equipment Installation and Testing

- Turn-key installation services by Wabtec trained and certified PTC installation technicians and validation testing to ensure successful on-board system installation

#### PTC Integration

- Xorail's approach to total systems integration consists of the preliminary field survey, design and verification, testing and installation, data management systems design and verification, total communication and office control systems, locomotive on board systems and final in-service commissioning

#### Field Support

- PTC certified field service technicians dedicated to customer installation programs and on-board system commissioning as well as long term support for post-commissioning operations

#### Software Maintenance

- To maintain consistency of the onboard design, performance, availability and reliability, WGS will provide software maintenance which includes management of third party software upgrade and licenses, support, software patches and system enhancement services as released

#### Help Desk

- 24/7 phone support to address field related problems, assist in troubleshooting field repair, and dispatch of field service resources

#### Spares

- Spare parts inventory and pool stock management

#### Repair

- Offering multiple service locations for repair and return of onboard PTC equipment, by qualified Wabtec technicians

#### Wayside Solutions

- Wabtec offers a variety of wayside solutions, including preliminary surveys and engineering, digital circuit design, application software design, simulation and rack testing, strategic sourcing, bungalow wiring, factory acceptance testing, logistic material and data management, construction installation, in-service commissioning, and data application software and plan management

# Services

## Reconditioning Services — Compressors

### Business Unit: Wabtec Global Services, Triangle, WABCO Locomotive Products

Combining a long history of compressor remanufacturing from Triangle Engineered Products, the design and development experience of OEM compressor manufacturing through WABCO Locomotive Products and the North American network of Wabtec Global Services' repair centers, Wabtec offers comprehensive compressor solutions for the rail industry. Wabtec offers a complete line of air-cooled, water-cooled, and rotary compressors for OE application as well as remanufacturing services for the aftermarket.



#### Features / Benefits:

- One contact for all your compressor needs
- ISO 9001-2008 and AAR M-1003 certified
- OEM design and development product knowledge
  - Custom packages for unique applications
  - Motor and direct drive compressors in both air and water-cooled technology
  - Complete rotary air generation packages



#### Remanufacturing Capabilities:

- In-house cylinder and shaft remanufacture
- In-house Magna-flux capability
- Access to development upgrades
- Internal access to a wide variety of replacement components
- Core management services
- North American network of service locations



#### Reconditioning Service Available in:

- Carson City, NV
- Columbia, SC
- San Luis Potosi, Mexico
- Wilmerding, PA
- Bensenville, IL



# Services

## Remanufacturing Services — Traction Motors

### Business Unit: Swiger Coil Systems and Fulmer Company

Wabtec remanufactures traction and blower motors to the OEM specification and offers brush holder reconditioning.



#### Traction Motors Service

- AC/DC Traction Motor Remanufacturing
  - D77, D78, D87, others
- Traction Motor Components
- Coil Products and Services
- Remanufactured units are equivalent to obtaining a new motor directly from the OEM
  - Unit exchange programs available

#### Reconditioning Service Available in:

- Cleveland, OH



#### Brush Holders

- Fulmer Company rebuilds used brush holder assemblies to the OEM specifications, offering the same warranty as new
- Nearly all returned brush holders are repairable, with an average cost savings of 40% and significantly reduced lead time. This is typically less than internal rebuild costs
- Unit exchange programs are available

#### Reconditioning Service Available in:

- Export, PA

# Services

## Locomotive Service

### Business Unit: Wabtec Global Services

Wabtec Global Services offers full locomotive shop services, mobile maintenance, emissions certification, mobile wheel truing and integrated component support.



- Complete locomotive overhauls and FRA-required scheduled inspections
- Engine and truck overhauls
- Emissions testing and reduction packages
- Mobile maintenance and wheel truing
- Electrical cabinet upgrade and rebuild
- Design and fabrication

	Boise, ID	Chicago, IL	Houston, TX	Salt Lake City, UT
<b>LOCOMOTIVE SERVICE</b>				
Engine Overhaul	●		●	
Engine Repair	●	●	●	●
Truck Overhaul	●		●	●
Truck Repair	●	●	●	●
Locomotive Rebuild	●	●	●	
Fabrication / Repair	●	●	●	
Paint	●		●	
Rotating Electrical Repair	●	●	●	●
Wheel Truing	●	●	●	●
Drop Table			●	●
Crane Max Capacity	50 Ton	30 Ton	30 Ton	250 Ton
Storage Track Capacity	15	5	10	10
Main Generator Replacement	●	●	●	•
Fuel Tank Repair	●	●	●	
Gear Train Repair	●	●	●	●
Burn Repair	●	Limited	Limited	Limited
Return to Service / Storage	●	●	●	●
Scheduled Maintenance	●	●	●	●
FRA Inspections	●	●	●	●
Mobile Service	●	●	●	●
Wreck Service	●	●	●	●

# Services

## Reconditioning Services — Pneumatics

### Business Unit: Wabtec Global Services

Known as an industry leader for engineering expertise and quality in locomotive overhaul, remanufacture and modernization services, Wabtec helps customers extend service life, improve reliability, and enhance the performance of their locomotive fleet.



- Wabtec Global Services offers locomotive equipment reconditioning for 26 type control valve equipment, 26-C type automatic and independent brake valves, 30 CDW type automatic brake valves and modules, check valve portions, products such as air compressors, air dryers, brake cylinders, slack adjusters, cooling system products as well as EPIC equipment and a wide variety of cocks and valves.

	Carson City, NV	Chicago, IL	Columbia, SC	Kansas City, MO	Montreal, QC (CAN)	San Luis Potosi (MEX)
<b>LOCOMOTIVE PRODUCTS</b>						
<b>Air Compressors</b>						
WABCO Shaft Drive and Motor Drive (GY28A Motors)	●		●			●
Gardner Denver WBO & WLN Compressors	●		●			●
<b>Air Dryers</b>						
WABCO Vaporid, Graham White 975	●	●		●	●	
<b>Brake Cylinders</b>						
All sizes and types of WABCO & NYAB	●	●	●	●	●	●
<b>Cooling System Products</b>						
Radiators	●		●	●		●
Oil Coolers	●		●	●		
Charge Air Coolers			●	●		
Fuel Oil Preheaters	●		●	●		
Aftercoolers / Intercoolers	●		●	●		
Durox Wicks & Hatch Covers			●			
<b>Locomotive Brake Equipment</b>						
Fast Brake			●	●	●	
EPIC Equipment			●	●	●	
22 & 24 Type Brake Valves		●	●	●		
26 & 30 Type Brake Valves	●	●	●	●	●	●
Control Valves (26F, 26D, MC-31)	●	●	●	●	●	●
Safety Valves - J Series	●	●	●	●	●	●
Safety Valves - E Series	●	●	●	●	●	
Relay Valves (C2W, J Series)	●	●	●	●	●	●
Pilot Valves, P-2-A Valves, MU Valves	●	●	●	●	●	●
Vent Valves (#8, VX, KM2)	●	●	●	●	●	●
Air Horns	●	●	●	●	●	●
Graham White & Salem Type Valve (Wiper Motors, Drain Valves & Sander Motors)	●	●	●	●	●	●
<b>COBRA®</b>						
Brake Shoes	●	●	●	●	●	●
Water & Oil Pumps		●				
Rocker Arms & Valve Bridges				●		



# Services

## Reconditioning Services — Electronics

### Business Unit: Wabtec Global Services

Wabtec's FCC licensed electronic technicians follow proper ESD precautions and practices that meet industry standard, ANSI/ESD S20.20 and continuously attend training with OEM's and technical schools to stay on the forefront of today's technology.



- Wabtec Global Services offers the finest in component level electronic repair including repair, renewal and upgrade of Wabtec products as well as:
  - Wabtec acquisition product lines including Pulse Electronics, Rockwell Railway Electronics, TSM, and Q-Tron
  - Handheld wireless equipment
  - Consumer and industrial goods
  - Motorola, Harmon, and Kenwood radios

	Columbia, SC	Kansas City, MO	Montreal, QC (CAN)	San Luis Potosi (MEX)
<b>ELECTRONICS</b>				
<b>WRE / Pulse Products</b>				
Speed Indicators / Controllers (Analog/Digital)	●	●		●
Event Recorders - M Series		●		●
Event Recorders - F&I Type	●	●		●
Axle and Traction Motor Speed Signal Generators	●	●		●
IFC Equipment - AVB, FLK, LDU, MCDLP, PCM	●	●		●
Head of Train and End of Train Devices (All Types)	●	●	●	●
Battery Packs & Chargers	●	●		●
Computer Equipment - ECU's, CDU's, DMS's	●	●		
Fuellink Equipment - INT's, LDU's, AFR's, etc.	●	●		●
Helperlink Equipment	●			
CBTM / ETMS	●			
TrainSentry Alertness - Audio Alarm Panel, UAU's, CAU's AMU's, etc	●	●		●
MTR Recorders	●	●		
EM2000 Equipment - CPU's, MEM's, etc.		●		
SIU - ES Interface Unit			●	
ARES / ATCS / GTC Kits		●		
LUL Recorder / Datalogger		●		
VideoTrax		●		
<b>Rockwell Products</b>				
ICE Equipment - ICE 300's AVU's, CCC's, TSI's, etc.		●		
Communication Equipment - CTC's Vigilant, GTC		●		
RDR 160 / RM 160		●		
RDR 900	●	●		
Train Power Supplies, Smart Key, GPS Receiver		●		

# Services

## Reconditioning Services — Electronics

Columbia, SC	Kansas City, MO	San Luis Potosi (MEX)
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<b>ELECTRONICS</b>			
<b>TSM Products</b>			
Fuel Monitoring Systems	●	●	
Cab and Remote Displays	●	●	
Locomotive Temperature Controller	●	●	●
Crossing Guard Controllers		●	
<b>WRE (Q-Tron Products)</b>			
Event Recorder - Datacord	●	●	
ERM	●		
ACU & Actuator		●	
Traction Control Equipment (QTRAC)	●	●	
Speed Indicators / Controllers	●	●	
Axle Generators & Sensor Probes	●	●	
Alarm Panels & Crew Alerters	●	●	
QES 1000 Excitation System		●	
QES III Excitation System		●	
<b>Additional</b>			
Ultrasonic Fuel Sensors	●	●	
Kenwood Radios (Mobile, Handheld, Two-Way, Data)	●	●	
Locomotive Cab Radios		●	
RFL Modem Cards		●	
Radio Handsets (Microphone)	●	●	
Dash-2 Voltage Modules	●		●
<b>COMMUNICATIONS &amp; SIGNALING</b>			
<b>Hand Held Radios</b>			
Motorola - HT-440, HT-600, HT-1000, MT-1000, MT-2000		●	
Kenwood - TK-270, TK-290, TK-370, TK-390, TK-480, TK-3131, NX 200, NX 300		●	
<b>Mobile Radios</b>			
Motorola - Spectra, MCX1000, MaxTrac 300, MaxTrac 100		●	
Kenwood - TK 7180, NX 700, TK 780, TK 981 TK-860 (UHF), TK-862 (UHF), TK-890 (UHF)		●	
<b>Base Radios</b>			
Wabtec - ETD / HTD Repeaters		●	
Kenwood - TK-7400, TK-300, TK-790		●	
Motorola - Micor, Syntor, Spectra, MaxTrac 300, MaxTrac100, MTR 2000		●	
<b>Locomotive Radios</b>			
Motorola - Spectra Clean Cab	●	●	
<b>Detector Radios</b>			
Motorola - MaxTrac300 (Detector)		●	
MeteorComm - MCC-545C		●	
Kenwood - TK762 (Detector)		●	
<b>Radio Frequency Data Link - RFOL</b>			
Wabtec - RDR 160, RM 160		●	
Kenwood - TK790		●	
<b>Mobile Communication Package (MCP)</b>			
Wabtec - RDR900	●	●	
<b>Ground Terminal Controller (GTC)</b>			
Wabtec - GTC400, GTC500		●	
<b>Base Communication Package (BCP)</b>			
Safetran - Base Controller with Radio, DC/DC Converter, DC/AC Inverter		●	
<b>Sierra Wireless Modems</b>			
Raven X, Raven XT		●	
<b>RFL Modem Printed Circuit Boards</b>			
68T-2F-19 (TX425HZ, TX756HZ, TX1080HZ, TX2040HZ)		●	
68R-2F / 3F-61 (REC425HZ, REC1080HZ, REC2040HZ)		●	
<b>Power Supply</b>			
24 PS (68 PS 24 DC-1), Dual Amp (68 AF Dual Amp-1, 68 AF Dual Amp)		●	
<b>Field Service Maintenance - Contact Kansas City Service Center</b>			
ACU & Actuator		●	

**Bach-Simpson**

P.O. Box 5484  
109 Meg Drive  
London, Ontario N6A 4L6 - Canada  
Phone: 519-452-3200  
Fax: 519-452-3165

**Barber Spring**

1 McCandless Ave.  
Pittsburgh, PA 15201  
Phone: 412-782-7330  
Fax: 412-782-7343

**Durox**

12312 Alameda Road  
Strongsville, OH 44149  
Phone: 440-238-5350  
Fax: 440-238-5773

**Fulmer Company**

3004 Venture Court  
Export, PA 15632  
Phone 724-325-7140  
Fax: 724-327-7459

**Microphor**

452 East Hill Road  
Willits, CA 95490  
Phone: 707-459-5563  
Fax: 707-459-6617

**MotivePower**

4600 Apple Street  
Boise, ID 83716  
Phone: 208-947-4800  
Fax: 208-947-4820

**Railroad Friction Products**

P.O. Box 1349  
Laurinburg, NC 28353  
Phone: 910-844-9700  
Fax: 910-844-9733

**Standard Car Truck**

865 Busse Highway  
Park Ridge, IL 60068  
Phone: 847-692-6050  
Fax: 847-692-6299

**Swiger Coil Systems**

4677 Manufacturing Rd.  
Cleveland, OH 44135  
Phone: 216-362-7500  
Fax: 216-362-1496

**Triangle Engineered Products**

701 Maple Lane  
Bensenville, IL 60106  
Phone: 630-860-5511  
Fax: 630-860-5607

**WABCO Locomotive Products**

1001 Air Brake Avenue  
Wilmerding, PA 15148  
Phone: 412-825-1000  
Fax: 412-825-1019

**Wabtec Railway Electronics**

21200 Dorsey Mill Road  
Germantown, MD 20876  
Phone: 301-515-2000  
Fax: 301-515-2100

**Wabtec Rubber Products**

269 Donohoe Road  
Greensburg, PA 15601  
Phone: 724-838-1317  
Fax: 724-832-5630

**Young Touchstone**

200 Smith Lane  
P.O. Box 7568  
Jackson, TN 38308  
Phone: 1-800-349-0275  
Fax: 731-265-2302

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**Wabtec Global Services**

Wabtec Global Services  
1001 Air Brake Avenue  
Wilmerding, PA 15148  
Phone: 1-877-922-2627

5401 Arrowhead Dr.  
Carson City, NV 89706  
Phone: 775-882-0282  
Fax: 775-882-4796

8400 S. Stewart Ave.  
Chicago, IL 60620  
Phone: 773-602-7476  
Fax: 773-602-7483

1222 Bluff Rd.  
Columbia, SC 29201  
Phone: 803-256-1612  
Fax: 803-799-8402

4800 Deramus Ave.  
Kansas City, MO 64120  
Phone: 816-245-5450  
Fax: 816-245-5460

4600 Apple Street  
Boise, ID 83716  
Phone 208-947-4800  
Fax: 208-947-4820

900 North 500 South  
Salt Lake City, UT 84116  
Phone: 801-201-8977

800 Milby Street  
Houston, TX 77023  
Phone: 713-222-0792  
Fax: 713-222-2183

2610 Jean Baptiste Dechamps  
Lachine, QC  
Canada H8T 1C9  
Phone: 514-636-3115  
Fax: 514-636-8740

EJE 126 No. 230  
Zona Industrial del Potosi  
San Luis Potosi, SLP  
Mexico 78090  
Phone: 52-444-834-4807