



Technical Training Program for class 7 – 8 Truck / Tractor and Trailer air brake systems and wheel-end service

Overview / course outline

This series of 4 technical training clinics, each lasting up to 4 hours, is established on two levels.

- **System functionality training** designed for intermediate level and more experienced technicians. **Everything** a technician needs to know to **perform quick and accurate diagnostics** and be efficient on any shop floor. For all, an excellent opportunity to get some questions answered by our experienced trainers. Beginners will probably need to take these courses 2 or 3 times to get full benefit of this training.

In our courses the content developed is intended to elevate the skill level of mechanics on the different methods of diagnostic, installation, adjustment and repair. WE ARE NOT TEACHING part replacement procedures as we believe you already know how to replace parts.

We will offer some new approaches to troubleshooting and failure analysis. Our primary goal is to improve your knowledge on the operation and function of the different systems and their components.

- All brands and manufacturers are discussed without discrimination in our clinics.
- Our Trainers possess a profound knowledge of all brands, manufacturers and systems.

Air Brake System Pneumatics – Clinic manual / 28 pages

Study and differentiation of the **4 separate functions of the air system** starting from the air compressor to the brake actuators. How and where does the compressed air charge and supplies the system. We discuss what happens at 6, 60, 95, 125, 150, 200, 250 and 300 PSI. **In depth study of the internal functions of the Bendix AD-9, AD-IP and the AD-IS air dryers.** Coverage of possible causes of water in air systems. Overview of all types of air dryers for mono and twin cylinder air compressors. Exploration of environmental conditions & physics affecting air drying systems. **Discussions on air dryer cycles, too frequent and too long.** What approach do we take? Do we have the correct dryer? When air system leaks develop, what are the quick **troubleshooting options?** We will cover universal color codes for air system plumbing.

Air Brake Foundation Mechanics – Clinic manual / 36 pages

Starting at the brake actuators, we will **discuss the options of standard versus long stroke brake chambers**, work our way from **Spring Brake chamber installation to cutting the push rods.** Study the operation of all five working principles of **automatic brake adjusters**, and their dial-in procedures. We will discuss the different methods for **checking brake stroke, brake adjustment**, talk about the basics of friction, "s" cams and the relation of cam-bushing wear to foundation brake problems. Other topics covered are; brake wear analysis and offer a few tips on troubleshooting "S" cam brakes with the wheels on or off. This Clinic features a segment on new technologies like: Air disc brakes, alternative methods of repair for persistent "S" cam brake problems and some handy new tools that help you save time.

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Wheel end (wheels & hub) Mechanicals – Clinic manual / 56 pages

Starts with the theory and functions of the **various wheel components for steered, powered and trailer axles**. We will discuss the different **types of wheel hubs – adjustable, pre - set and unitized**. We will see the various methods of **wheel bearing adjustment**, including **all known brands & types of wheel bearing adjustment nuts**, as well as **bearing failure analysis**. A segment of the clinic deals with disc wheels, spoke wheel rims, and **taking proper actions to prevent losing the clamping force of the wheel fasteners**. A section is also dedicated to the different types of wheel fasteners, the replacement of studs and the identification of the various rims used in the industry.

Antilock Brake Systems (ABS) – Clinic manual / 28 pages

Starts with **theory and operation of ABS and ATC systems**, identification of components for trucks, tractors, buses and trailers. We explain all configurations from 2S/1M through 6S/6M, as well as axle-by-axle or side-by-side control systems. We discuss **Level 1, 2, and 3 troubleshooting**. Level 1 diagnostics are explained through the use of blink code switches, DVOM's and other rudimentary tools to identify and correct ABS fault codes, **DVOM component testing for ABS and ATC**. An overview of Level 2 diagnostics with hand held testers like the "pro Link", the "info Center" or the "Data Master" etc. to identify and correct ABS fault codes. We will approach Level 3 troubleshooting with a "PC" computer and see how they can be used for diagnostics, simulations and communicating with the ABS systems.

Please note that level 2 and 3 troubleshooting is thoroughly covered in the advanced level 2 clinic.

None of the clinics are compulsory to get any other of your choice. We strongly recommend that you participate in the clinics on - Air Brake Systems + Mechanicals of the Air Brake Systems +wheel end mechanicals before you sign up for the Antilock Brake Systems (ABS) clinic. It is preferable to follow these clinics in the same order they are described in this overview.

These 3 to 4 hours clinics can be conducted in conference rooms arranged in a classroom setting to comfortably accommodate a maximum of 50 participants per session. Our training program is supported by "state of the art" audio visual technology and each participant receives a training manual (which they can keep for further reference) containing pertinent technical information from each course. A "buffet style" meal is served before each clinic, hot & cold drinks with cookies and pastries are served during hourly breaks during the sessions.

Clinics can also be conducted in a private setting at the customer's facilities providing availability of suitable quarters to dispense training, in small or larger groups as convenient.

Participants receive an attendance certificate at the end of each clinic.

For information concerning our next clinics in your region or rates, please contact us at info@cftsgroup.com or call us at 514-805-8625 or 1-877-765-9629