



Bendix[®] ACom[®] Diagnostic Software Starter Guide

Steps for proper installation and operation

GENERAL SAFETY GUIDELINES



WARNING! PLEASE READ AND FOLLOW THESE INSTRUCTIONS



TO AVOID PERSONAL INJURY OR DEATH:

When working on or around a vehicle, the following guidelines should be observed **AT ALL TIMES**:

- ▲ Park the vehicle on a level surface, apply the parking brakes and always block the wheels. Always wear personal protection equipment.
- ▲ Stop the engine and remove the ignition key when working under or around the vehicle. When working in the engine compartment, the engine should be shut off and the ignition key should be removed. Where circumstances require that the engine be in operation, **EXTREME CAUTION** should be used to prevent personal injury resulting from contact with moving, rotating, leaking, heated or electrically-charged components.
- ▲ Do not attempt to install, remove, disassemble or assemble a component until you have read, and thoroughly understand, the recommended procedures. Use only the proper tools and observe all precautions pertaining to use of those tools.
- ▲ If the work is being performed on the vehicle's air brake system, or any auxiliary pressurized air systems, make certain to drain the air pressure from all reservoirs before beginning **ANY** work on the vehicle. If the vehicle is equipped with a Bendix® AD-IS® air dryer system, a Bendix® DRM™ dryer reservoir module, or a Bendix® AD-9si® air dryer, be sure to drain the purge reservoir.
- ▲ Following the vehicle manufacturer's recommended procedures, deactivate the electrical system in a manner that safely removes all electrical power from the vehicle.
- ▲ Never exceed manufacturer's recommended pressures.
- ▲ You should consult the vehicle manufacturer's operating and service manuals, and any related literature, in conjunction with the Guidelines above.
- ▲ Never connect or disconnect a hose or line containing pressure; it may whip and/or cause hazardous airborne dust and dirt particles. Wear eye protection. Slowly open connections with care, and verify that no pressure is present. Never remove a component or plug unless you are certain all system pressure has been depleted.
- ▲ Use only genuine Bendix® brand replacement parts, components and kits. Replacement hardware, tubing, hose, fittings, wiring, etc. must be of equivalent size, type and strength as original equipment and be designed specifically for such applications and systems.
- ▲ Components with stripped threads or damaged parts should be replaced rather than repaired. Do not attempt repairs requiring machining or welding unless specifically stated and approved by the vehicle and component manufacturer.
- ▲ Prior to returning the vehicle to service, make certain all components and systems are restored to their proper operating condition.
- ▲ For vehicles with Automatic Traction Control (ATC), the ATC function must be disabled (ATC indicator lamp should be ON) prior to performing any vehicle maintenance where one or more wheels on a drive axle are lifted off the ground and moving.
- ▲ The power **MUST** be temporarily disconnected from the radar sensor whenever any tests **USING A DYNAMOMETER** are conducted on a vehicle equipped with a Bendix® Wingman® system.

Bendix® ACom® Diagnostic Software 6.14+ Minimum Requirements

- A computer with the minimum system requirements to run Bendix® ACom® diagnostic software - see *Appendix 3*.
- The latest version of Bendix ACom diagnostic software installed. ACom software is available for download at bendix.com.
- An RP1210 data link or Power Line Communication (PLC) adapter with the latest drivers and firmware installed.
- A powered, fully functioning J1939 or PLC diagnostics port on the host vehicle or trailer.
- Keys to the vehicle and a fully charged vehicle battery, or an auxiliary battery tender, to support extended ignition - ON mode.



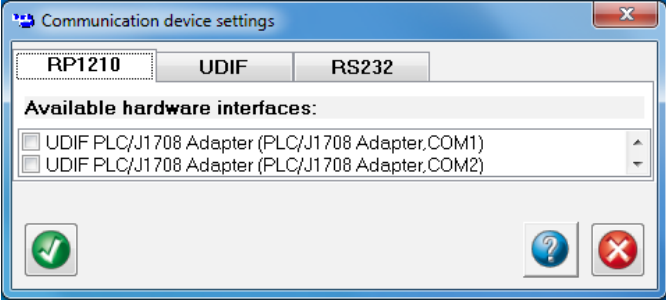



Before Starting The ACom Software



Confirm you are working with genuine Bendix® parts. Look for the Bendix label and part number before you start.

1. Insert the key in the ignition and turn it to the 3rd position – On/Run (not to be confused with Engine Start). The dash display should light up and the vehicle will begin its electronic readiness check, as well as the chuff test, if it is equipped with air brakes. Wait until the chuff test is completed or a minimum of 40 seconds after turning the key.
2. Plug the J1939 diagnostic harness adapter of your Data Link unit into the vehicle diagnostics port – this port is usually found under the dash, in the driver-side left corner knee-space or along the left side of the driver seat mounting rail. For PLC, locate the trailer interface port at the front of the trailer.
3. Your Data Link Adapter (DLA) should show a power ON light and possible blinking of a J1939 data light. Plug the DLA into your computer.
4. Start the ACom software by double clicking the Bendix ACom software shortcut on your desktop.

Using the Bendix® ACom® Starter Interface

Step	Screen																								
<p>1. Press the Communication Device icon and select your RP1210 or PLC adapter from the list of installed drivers*. This only needs to be done once as long as you continue to use the same DLA adapter on your PC. The device list will only show items for which proper drivers have been installed on your system.</p> <p>Press the green check mark to exit the screen.</p> <p><i>*For a list of compatible devices, please refer to Appendix 3.</i></p>																									
<p>2. Now select the Electronic Control Unit (ECU) that you wish to diagnose from the ECU list on the starter main screen.</p> <p>If the required ECU is not on the list, press the “Detect ECU” button and wait for the detection cycle to complete. In order for an ECU to be detected, it must be powered and currently connected to the J1939 CAN bus.</p> <p><i>For a complete list of all ECUs available—and their use—please refer to the table in Appendix 1.</i></p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">ECU</th> <th style="text-align: left;">Connection line</th> <th style="text-align: left;">Protocol</th> </tr> </thead> <tbody> <tr> <td>EC-60</td> <td>SAE J1708</td> <td>J1587</td> </tr> <tr> <td>EC-60</td> <td>CAN/J1939</td> <td>J1939</td> </tr> <tr> <td>EC-80</td> <td>CAN/J1939</td> <td>J1939</td> </tr> <tr style="background-color: #e0f0ff;"> <td>Wingman</td> <td>CAN/J1939</td> <td>TP20/J1939</td> </tr> <tr> <td>VS500</td> <td>CAN/J1939</td> <td>J1939</td> </tr> <tr> <td>FLC20</td> <td>CAN/J1939</td> <td>J1939</td> </tr> <tr> <td>SDP</td> <td>CAN/J1939</td> <td>J1939</td> </tr> </tbody> </table> 	ECU	Connection line	Protocol	EC-60	SAE J1708	J1587	EC-60	CAN/J1939	J1939	EC-80	CAN/J1939	J1939	Wingman	CAN/J1939	TP20/J1939	VS500	CAN/J1939	J1939	FLC20	CAN/J1939	J1939	SDP	CAN/J1939	J1939
ECU	Connection line	Protocol																							
EC-60	SAE J1708	J1587																							
EC-60	CAN/J1939	J1939																							
EC-80	CAN/J1939	J1939																							
Wingman	CAN/J1939	TP20/J1939																							
VS500	CAN/J1939	J1939																							
FLC20	CAN/J1939	J1939																							
SDP	CAN/J1939	J1939																							
<p>3. Click on the “Start with ECU” button after you’ve highlighted the ECU in the list.</p> <p>The ACom software will now begin to communicate with the selected ECU. This can take several minutes depending on CAN bus traffic and the state of the ECU.</p>																									
<p>4. If you receive an “ECUtalk Platform Error” during the application loading time, you must check your connections, drivers, ports and CAN load. <i>For additional information on this, please refer to Appendix 2.</i></p>																									
<p><i>For additional Starter functions, please refer to Appendix 4;</i></p> <p><i>*For a list of compatible devices, please refer to Appendix 3.</i></p>																									

Connection with Device is Established – Next Steps

Depending on the nature of the ECU and the complexity of the system you're connecting to, here are some features you can expect to see when using the Bendix® ACom® diagnostic software.

What the ACom Software Can Do
Provide a view of ECU/system status with current user settings, safety parameters and active/inactive configurations.
Provide a view of any active Diagnostic Trouble Codes (DTCs).
Clear the DTCs if the problem is resolved.
Provide access to user programmable settings.
Provide access to configure certain system and safety settings.
Record and print diagnostic reports and event records.
Log background safety and user data including past DTCs, system alerts, and major events.
Calibrate certain systems, such as radar and camera devices.
Provide, as applicable, diagnostics of onboard sensors.
Support changing of the sensor configuration.
Support software-based addition or removal of sensors.
Allow activation or deactivation of alerts.
Support changing of in-cab display configurations, such as units and menu items.
Provide sound output control for certain ECUs/devices/systems.
Support self-diagnostics and simulated performance tests.
Simulate alerts, blink codes, sounds, etc. to verify system functions and auxiliary devices such as lights and speakers.
Some examples of ACom diagnostic software applications are, but not limited to, Bendix® Wingman® Advanced - A Collision Mitigation Technology, Bendix™ Wingman® Fusion™, SmarTire® Tire Pressure Monitoring System (TPMS) by Bendix CVS, Bendix® ESP® Full-Stability Technology, Bendix® Antilock Brake Systems (ABS), Bendix® Trailer Antilock Air Brake Systems (TABS), etc.

The following is a listing of what the ACom software cannot do.

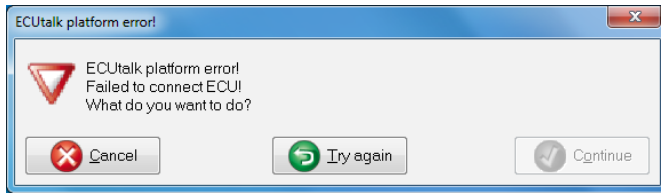
What the ACom Software Cannot Do
Repair electrical or mechanical hardware issues.
Allow access to more than one ECU, device or system at a time.
Run multiple versions of the ACom software at the same time.
Connect to more than one data link or PLC adapter at a time.
Display recorded videos.
Change or deactivate system critical alerts and functions.
Allow the reduction of safety parameters beyond reasonable measure.
Delete system critical records.
Alter previously recorded event data or alerts.
Change device serial numbers.

Appendix 1 – Each ECU and its Function

Bendix® ECU	Description	Use
EC-60™	Bendix® EC-60™ ABS (Standard) / ATC (Premium)/ESP (Advanced) controllers	For status, diagnostics, and configuration for the EC-60 antilock braking system family of controllers.
EC-80™	Bendix® EC-80™ ABS/ATC/ESP controllers	For status, diagnostics, and configuration for the EC-80 antilock braking system family of controllers.
Wingman®	Bendix® Wingman® ACB (Active Cruise with Braking) system Bendix® Wingman® Advanced™ system (Bendix™ FLR-10™ sensor) Wingman Advanced system (Bendix™ FLR-20™ sensor) Bendix™ Wingman® Fusion™ system	For status, diagnostics, and configuration for the Wingman family of radar-based collision mitigation systems.
VS-500™	Bendix™ VORAD® VS-500™ system (includes Bendix™ SmartCruise® adaptive cruise control without braking)	For status, diagnostics, and configuration for the VS-500 radar-based adaptive cruise control system.
FLC-20™	Bendix™ FLC-20™ forward looking camera	For status, diagnostics, and configuration for the camera component of the Wingman Fusion system.
SDP	Bendix™ SafetyDirect® web portal processor	For status, diagnostics, and configuration for the component that is used to collect safety data and supply it to the vehicle's On Board Computer/Telematics system for transfer to the SafetyDirect web site.
AutoVue® 3G	Bendix™ AutoVue® 3G Lane Departure Warning (LDW) system	For status, diagnostics, and configuration for the AutoVue 3G system.
VORAD® VS-400™/DIU	Bendix™ VS-400™ (Adaptive Cruise Control without Braking) Driver Interface Unit (DIU) that is mounted in the dash; works on VS-400, VS-500 systems, the Wingman family, and FLC-20 camera	For status, diagnostics, and configuration for the VS-400 radar-based adaptive cruise control system. For status, diagnostics, and configuration for the DIU.
SmarTire® Receiver	Bendix™ SmarTire® Tire Pressure Monitoring System (TPMS)	For status, diagnostics, and configuration for the tire pressure sensors & settings.
Trailer-Link™	Bendix™ SmarTire® Trailer-Link™ Tire Pressure Monitoring System for Trailers	For status, diagnostics, and configuration for the tire pressure sensors & settings on a trailer.
Trailer Lift Axle ABS	Bendix® TABS-6™ premium module used to control the TLV-9000™ lift axle valve on a trailer	For status, diagnostics, and configuration for the trailer lift axle ABS modules.
TABS-6™	Bendix® TABS-6™ Standard and Premium trailer ABS modules	For status, diagnostics, and configuration for the TABS-6 Standard and Premium Trailer ABS modules.
TABS-6 Advanced	Bendix® TABS-6™ Advanced single- and multi-channel trailer ABS modules	For status, diagnostics, and configuration for the TABS-6 Advanced single- and multi-channel trailer ABS modules.
EC-30™	Bendix® EC-30™ ABS/ATC Controller	For status, diagnostics, and configuration for the EC-30 ABS/ATC Controller.
EC-17™	Bendix® EC-17™ Antilock Traction Controller (ATC) system	For status, diagnostics, and configuration for the EC-17 Antilock Traction Controller.
ABS U1x (Gen 4)	Generation 4 ABS/ATC system	For status, diagnostics, and configuration for the Generation 4 ABS/ATC system.
ABS2x (Gen 5)	Generation 5 ABS/ATC system	For status, diagnostics, and configuration for the Generation 5 ABS/ATC system.
EC-30T™	Bendix® EC-30T™ trailer ABS controller assembly	For status, diagnostics, and configuration for EC-30T trailer ABS controller assembly.
MC-30™	Bendix® MC-30™ trailer ABS controller assembly	For status, diagnostics, and configuration for MC-30 Trailer ABS controller assembly.
A-18™	Bendix® A-18™ Trailer ABS	For status, diagnostics, and configuration for the A-18 trailer antilock braking system.

Appendix 2 – Knorr-Bremse ECUTalk® Platform Error – Troubleshooting:

In the event an ECUTalk platform error message is displayed while attempting to communicate with the vehicle diagnostic port, check the following. If the Data Link Adapter (DLA) device has a test utility, use it to make sure that the adapter can see the Bendix® ECU. If the test utility does not communicate with the Bendix ECU, start troubleshooting the reason why, without using the Bendix® ACom® diagnostics software.



Confirm you are working with genuine Bendix® parts. Attempting to interface to non-Bendix devices will also generate ECUTalk platform errors. **Look for the Bendix label and part number before you start.**

J1939 Specific:

- The RP1210 device driver and firmware may be out-of-date and require updating. Check the manufacturer website for the latest versions.
- The Bendix® ACom® diagnostics software version may be out-of-date. Go to bendix.com and download the latest software revision.
- The RP1210 device harness may be faulty or partially engaged in the port. Unplug all connections and re-seat the connectors firmly, note that the J1939 and On-Board Diagnostic (OBD) connectors are indexed/keyed for a specific direction.
- The DLA connector harness and DLA unit may have manufacturer mismatch. Ensure your DLA device uses only its dedicated harness to connect to the vehicle; do not mix and match a DLA unit with an interface harness from a different DLA unit as the pin-outs may not match.
- The DLA unit may not match vehicle manufacturer requirement. Some vehicle brands, such as Volvo, may have a proprietary DLA unit.
- The required, proprietary J1939 interface diagnostics harness for your brand of vehicle (i.e. MCI Y-harness) is not being used. Check with the vehicle manufacturer for specific requirements.
- The J1939 diagnostics port connection may be faulty. The onboard diagnostic connector may be damaged or not connected to the vehicle network.
- The J1939 diagnostics port may not be powered by 12V or 24V ignition On source. Perform a voltage check on the power pin(s).
- The J1939 High (yellow) or Low (green) signal wire may be faulty or have switched pins—check the connector pin out to conform to the J1939 specification.
- The Controller Area Network (CAN) bus resistors may be mismatched. A 120 ohm resistor must be in the loop at the beginning and the end of the CAN bus. Check for their presence.
- A J1939 device address violation. Another device on the CAN bus is using the DLA device address and start up message request—temporarily deactivate other CAN-based vehicle systems by removing the corresponding fuses, then attempt to reconnect with the ACom software.
- The CAN bus communications may be overloaded. Temporarily deactivate other CAN-based vehicle systems by removing the corresponding fuses, then attempt to reconnect using the ACom software.

Appendix 3 – PC & Data Link Adapter Compatibility List


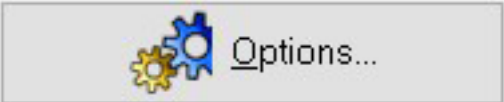
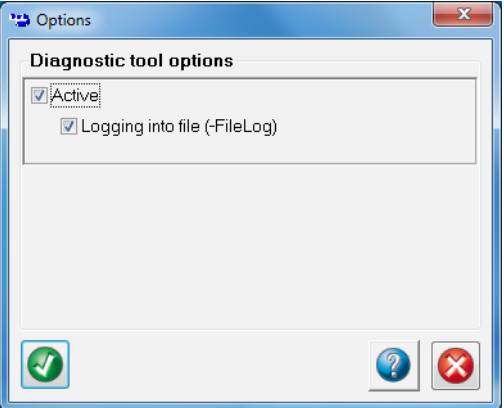
Computer Requirements:

Bendix® ACom® diagnostic software will run on Windows® Vista®, Windows® 7, Windows® 8 and Windows® 10 operating systems.

Note: Windows® 95, 98 and XP operating systems are not supported.

- 1 Gigahertz (GHz) or faster 32-bit (x86) or 64-bit (x64) processor
- 2 GB RAM
- 1 GB free disk space
- Microsoft® Internet Explorer® 8+
- Adobe® Acrobat® (latest version recommended)
- USB communication port
- VGA standard graphics adapter with a resolution of 800 x 600 (minimum), 1024 x 768 (recommended)
- Windows compatible keyboard and mouse
- Compatible Data Link Adapter brands and models are, but not limited to: Caterpillar® CAT® Communications Adapter III • Cummins® INLINE™ 5 • Cummins INLINE 6 • Dearborn® DPA4+ • Dearborn DPA5 • Dearborn Netbridge • Dearborn PLC TestCon (may be available in a kit with DPA4+) • Nexiq® USB-Link • Nexiq Bluetooth USB-Link • Nexiq USB-Link2 • Nexiq Bluetooth USB-Link2 • Nexiq WVL2 • Nexiq PLC Converter • Nexiq Universal J560 PLC Adapter • Noregon® JPRO DLA+ • Noregon JPRO DLA+PLC • Noregon Trailer Diagnostics Adapter • Volvo® Vocom 88890020 • Volvo Vocom 88890300
*Note: The Cummins INLINE™ 5 adapter supports SAE and does not support 500kb baud rate.
The Dearborn DPA4 adapter does not support channel 2.*
- For PLC interfacing, the following Bendix® parts are recommended:
 - 802162 - Bendix® TRDU - Trailer Remote Diagnostic Unit
 - 802165 - TRDU adapter - 7-pin adapter
 - 800790 - J1587 (6-pin) trailer diagnostic cable
 - K044767 - J1939/J1587 (9-pin) trailer diagnostic cable

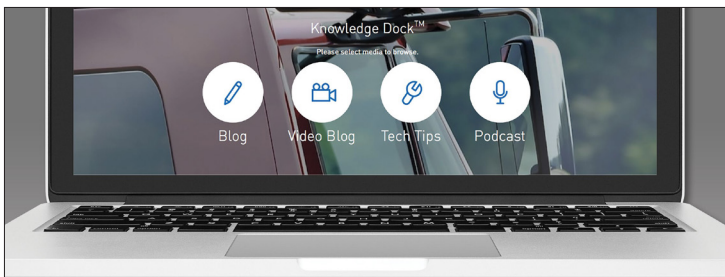
Appendix 4 – Additional Starter Functions explained:

<p>Demo Mode</p> 	<ul style="list-style-type: none"> To practice, press the “Start in demo mode” button. A demo diagnostic operating mode is also available. In demo mode most functions of the diagnostic tool are available and can be tried without connecting an Electronic Control Unit (ECU). 	
<p>Diagnostic Options</p>  	<ul style="list-style-type: none"> To log encrypted background data press “Options...” If the diagnostic tool of the selected ECU requires—or provides—additional command line options, these options can be activated/deactivated here. If the “Active” flag is checked, this option will be used in the application command line. 	
<p>Available Starter Options</p>	<p>Language parameter sent to applications:</p>	<p>If activated, selected starter language is passed to the started diagnostic application if the application supports language setting via command line parameter.</p>
	<p>Immediate start of detected ECU:</p>	<p>If activated, the tool starts the diagnostic application for the detected ECU automatically.</p>
	<p>Close when diagnostics started:</p>	<p>If activated, the starter is closed after a diagnostic application is launched.</p>
	<p>Close when tool started:</p>	<p>If activated, the starter is closed after a tool application is launched.</p>
	<p>Start troubleshooting automatically:</p>	<p>If this option is checked, the help window appears automatically on failure in automatic ECU detection.</p>
	<p>Always show device settings before detection:</p>	<p>If this option is checked, the device settings window appears before the ECU detection.</p>
	<p>Always show device settings before starting w/ECU:</p>	<p>If this option is checked, the device settings window appears before starting with ECU.</p>


Legal Disclaimer:

This guide, as well as the software described in it, is furnished under license and may only be used or copied in accordance with the terms of the license. Please contact the Bendix Tech Team for a copy of such license. PLEASE NOTE: The information provided in this manual is for informational purposes only and is subject to change without notice and should not be construed as a guarantee by Bendix Commercial Vehicle Systems LLC (Bendix). Bendix assumes no responsibility or liability for any errors or inaccuracies that may appear in this publication nor within the Bendix® ACom® Diagnostic Software itself. The User is using the software “as-is”, “where-is” with no warranty implied or otherwise. At no time shall Bendix be liable to the user for any direct, special, indirect, consequential, liquidated, punitive, or progressive damages relative to the use of the software hereunder. The User is responsible to ensure that the correct version of the Bendix ACom diagnostic software has been selected for the controller being connected. The User accepts that no expectation of reliability of any given version of Bendix ACom software to be able to retrieve any specific version of data is given. It is the User’s responsibility to verify the suitability of any data retrieved by the software. Depending on the product type and version, Bendix Electronic Control Units (ECUs) may store data related to troubleshooting, diagnostics, service needs, vehicle system operating status, and vehicle operator inputs. No personally identifying data (e.g. name, gender, or age) is recorded. Bendix will not access stored ECU data or share it with others except: with the consent of the vehicle owner; in response to an official request by law enforcement or other governmental agency; as part of Bendix’s defense of litigation; or, as otherwise required by law. Data that Bendix receives may also be used for research purposes or made available to others for research purposes, where a need is shown and the data is not linked to a specific vehicle or owner. Bendix ECUs are not designed to store data for purposes of accident reconstruction and Bendix ACom Diagnostic Software is not intended to retrieve data for purposes of accident reconstruction. Bendix makes no representations as to the accuracy of data retrieved and interpreted from ECUs for purposes of accident reconstruction. Bendix does not offer accident reconstruction services or interpretation of stored data. Bendix ECUs are not protected from fire, loss of power, impact, damage, or other conditions that may be sustained in a crash situation and may cause data to be unavailable or irretrievable.

The ACOM, BENDIX, EC-60, EC-80, ESP, FLC20, GEN 4, GEN 5, MC-30, SAFETYDIRECT, SMART ATC, SMARTCRUISE, SMARTIRE, TABS-6, TRAILER-LINK, VORAD, WINGMAN, WS-24, YAS-60, and YAS-70X trademarks are licensed to or owned by Bendix Commercial Vehicle Systems LLC. Windows, Windows NT, Windows 2000, Windows Vista and Windows XP are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Any references in this document to CATERPILLAR, CUMMINS, DEARBORN, NEXIQ NOREGON, VOLVO, and any other company or trademark are solely for identification purposes. The trademarks are the property of their respective companies and are not affiliated with or endorsing Bendix Commercial Vehicle Systems LLC. Bendix Commercial Vehicle Systems LLC does not represent any parts shown as products manufactured or remanufactured by the companies so named herein.



Trucking moves fast. Move faster.
Knowledge Dock™
• BLOGS • PODCASTS • VIDEOS • 24/7/365
[knowledge-dock.com]



Log-on and Learn from the Best
On-line training that's available when you are –24/7/365.
Visit www.brake-school.com.

