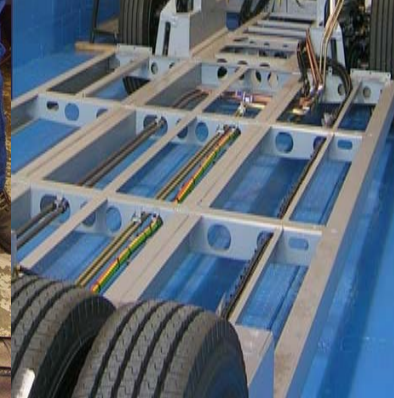
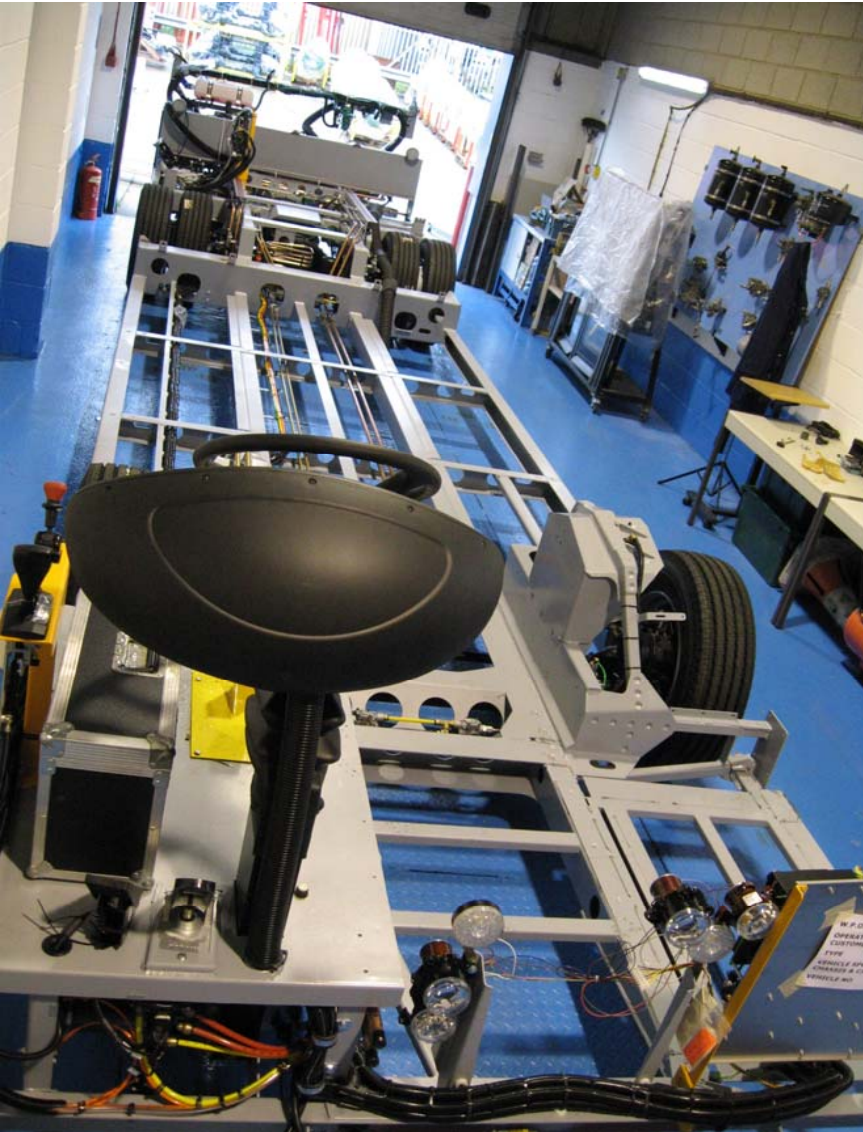


Customer Training Programme - 2012



Keeping *You* Moving

Training for the Future

Buses *Designed* for You

Alexander Dennis offers you a comprehensive, stylish range of buses built in Britain. Whether you need a manoeuvrable midi bus for town operation or high capacity double deck for inter-urban use, Alexander Dennis has the right bus for you.

Training = Life-Support

Alexander Dennis provides the highest levels of After Sales Support and this is exemplified at our new Training Centre in Guildford. Alexander Dennis Buses are designed for long and trouble free operation, but the right Training will ensure your buses receive the *Life-Support* they deserve, keeping your buses moving and your passengers safe.

Technicians & Career Development

We have created a range of courses designed to help Technicians develop their careers in line with the today's technology, including Multiplexing, Emission Standards, After Treatment Systems, ABS, Disc Brakes and many more.

Chassis & Body Training

We offer Training Support for all major aspects of your Alexander Dennis bus - chassis and body. Please contact us regarding any specific training requirements for auxiliary items such as CCTV and Destination Equipment.

Door Training – Deans & Ventura

We have invested in new Door Training Rigs and can offer comprehensive training on both Deans and Ventura doors. Doors represent one of the most heavily used items on a bus and maintenance programs need to reflect this. A simple door fault can keep a bus off the road wasting time & money. Door training can be offered at your Workshops, making it easy and cost effective for Operators. For further details please contact 01483 825031.

Apprentice Training – Technicians of the future

Alexander Dennis offer excellent training opportunities for your Apprentices as part of their External Training Programme. The training gives Apprentices the opportunity to experience new and challenging technology first hand, such as Hybrids. We would welcome any enquiries regarding your Apprentice Training Programme and how we may add to their learning experience.

Specific training requirements

If you do not see a training course that meets your needs, please call us.

Training is often the answer

ABS

The ABS Training course is designed to give participants a confident understanding in the ABS systems fitted to Alexander Dennis buses. Delegates will learn efficient and safe diagnostic techniques for fast & reliable fault finding and repair, including function, location and testing of components & use of diagnostic equipment.

This two day course can be attended by any Technicians involved in the maintenance and repair of ABS systems. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the course.

Delegates will learn to carry out all maintenance and repair procedures to the ABS system using blink codes & laptop based diagnostics and is able to clear faults, confirm correct operation following installation of new components and test for faults using a digital multimeter.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Dynamic presentation, demonstrating ABS characteristics & faults.
- Digital multimeter skills to improve fault finding.
- Live ABS troubleshooting and diagnostics on Training chassis.
- Practical assessment including pre-set faults on Training chassis.
- Written assessment.
- All Students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available for employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

ABS

ABS is an integral part of the braking system on your bus, improving safety, passenger comfort and allowing the driver more control in all conditions.

As a major safety feature, it is important to ensure the ABS system functions properly. Understanding the system and its components will allow your technicians to benefit from good maintenance procedures and help them to identify and rectify faults quickly and effectively.



Basic Electrical Theory & Fault Finding Techniques – Includes Free Digital Multimeter

More electronics and control systems are being used in the Motor Industry and Alexander Dennis have been at the forefront of these changes, introducing CAN lines and multiplexing. Some of these changes can seem daunting to Technicians, but it is clear that technology will keep advancing and that Technicians must keep up-to-date if they are to remain effective. The aim of this course is to introduce the basic requirements for electrical fault finding techniques, using the principles of Ohms Law and encouraging the use of a digital multimeter. Each delegate will receive a free digital multimeter to encourage them to practice their new skills. Electrical & diagnostic specialists are coming under greater pressure; therefore all Technicians should have a good understanding of electrical fault finding.

This one day course is aimed at Technicians involved in the maintenance and repair of Alexander Dennis buses. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the two days.

Delegates will learn about Ohms law and how to apply the principles to fault finding. We will teach them how to use a digital multimeter and the benefits of using one, how to carry out simple tests on circuits, such as measuring voltage, current, resistance and where best to do so and why.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Simple explanation of Ohms Law and how to apply to work related problems.
- Investigating Multiplexing and CAN lines how they work, fault finding & testing.
- Use of digital multimeter to improve fault finding techniques.
- Specific multimeter tests, checking voltage, current and resistance.
- Live trouble shooting and practical demonstration on training chassis.
- Practical assessment including finding pre-set faults on training chassis.
- Written assessment.
- All students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Basic Electrical Theory

The Basic Electrical Theory course is not designed to replace specialist Electrical Engineers, but will allow good Technicians to develop their skills and allow them to undertake some basic fault finding steps, before calling for specialist help if required.

The majority of faults are usually minor, not requiring the involvement of a specialist engineer, whose time is already at a premium. Checking simple things first can save valuable time and money.

We are not promising to make electronics experts out of everyone, but it should be within the capability of most Technicians to check continuity or resistance first to eliminate the obvious.

Many mechanical components such as doors, ramps etc are now controlled via electronic control systems like multiplexing. Mechanical Technicians will often need to wait for an electrical engineer to attend first, to indicate what repair procedure is needed. This is clearly not an effective or efficient way of maintaining vehicles.

This course will help to maximise the benefit offered by your Technicians.

Brakes

The brake course is split into two areas, the air system and the Foundation brakes. The air system will cover types of components and their location along with piping layouts and port designations. Foundation Brakes will cover the Wabco PAN Series of Disc Brakes and the Knorr Bremse SN & SB Disc Brakes. A separate two day ABS course is offered, which, if completed in conjunction with this Brake course, will give participants a comprehensive understanding of the modern braking systems and components fitted to the current Alexander Dennis “Enviro” range of buses.

This two day course is aimed at all competent Technicians involved in the maintenance and repair of the major braking system components. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the two days.

Delegates will learn to carry out maintenance and repair procedures in line with the recommended service schedule and to recognise wear patterns and determine if repair or renewal is necessary. This includes full strip and rebuild of disc brake and carrier assemblies.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Detailed video presentation on re-build of each caliper assembly.
- New caliper assemblies in Workshop for strip and repair exercise using correct tooling for replacing guide pins.
- General maintenance and adjustment.
- Air brake component board – to be correctly piped by Delegates.
- Practical assessment including identifying wear patterns and when to repair or renew.
- Written assessment.
- All Students will receive full course material on a CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Brakes

With ever increasing capacities on our buses - an Enviro 400 double deck bus can carry over 100 people; it is not surprising we must take Brakes seriously.

We aim to highlight the need for good maintenance procedures on the braking system along with well trained and vigilant Technicians who can spot the early signs of trouble.

Brakes are subject to extreme conditions of temperature and operate in a very hostile environment, but a proper maintenance program will ensure many years of trouble free operation.

Remember that Brakes are designed as a wearing item and components will need replacing as wear takes place.

Cummins Virtual College (CVC) : ISBe Engine

A pre-requisite of anyone attending an engine course at Cummins is to complete a Cummins “Virtual College Course”. We are pleased to offer this in Guildford at a special rate of £90 per person per day subject to a minimum of at least three people attending on any course. The course is a computer based learning programme using CD’s to take the participant through an array of technical detail on the engine including electronic control systems, aftertreatment SCR technology (AdBlue), and different types of sensors, basic electrical theory & diagnostics including the use of Insite (Cummins diagnostic software) and much more. Students will be shown the latest examples of engine technology in our Production Facility to help reinforce the learning process.

This five day course is aimed at Technicians and Apprentices who need to further their skills to progress their careers and ensure they are qualified to work on the latest ISBe engine and aftertreatment systems. The Cummins ISBe engine platform is used on nearly all Alexander Dennis Buses including Enviro 200, Enviro 300 & Enviro 400. The Javelin coach also uses this engine from Euro 4 onwards.

Delegates will learn about the latest Euro 4, Euro 4+ & Euro 5 engines and exhaust aftertreatment systems. Alexander Dennis will register Students and obtain individual Smart Program Guides from Cummins and provide all course material, including CD’s. We assist Students to set-up and oversee the course helping to upload Student data back to Cummins. A separate classroom will be provided for Delegates to study and work through the CD’s, with help always at hand if needed. Lunch and refreshments provided.

Course Content

- Computer based learning programme for the ISBe engine, targeting electronic control systems and exhaust aftertreatment system with SCR technology (Selective Catalytic Reduction).
- Separate classroom with new 17” lap tops. Comfortable headphones are provided.
- Alexander Dennis registers Students with Cummins and obtains individual Smart Program Guides.
- Assistance with setting-up and uploading completed data back to Cummins. Help always on hand.
- Practical confirmation of learning objectives with factory tour looking at latest engine and aftertreatment systems and live demonstration of electronic systems and Insite diagnostics.
- All Students will receive course material on CD to take home.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.

Cummins Virtual College

The Cummins Virtual College Course (CVC) provides an excellent grounding in basic electrical theory and trouble shooting techniques as well as taking you through the ISBe engine electronic control systems and diagnostic capabilities, including the vast array of sensors now needed to comply with the latest emission standards and OBD (On Board Diagnostics) required by law, which monitors (and on the latest engines), records this information. In some cases, this information can be viewed by the relevant authorities and may result in retrospective fines if the engine is found to have been running outside the legal emission standards!

Whilst the course is normally a pre-requisite for attending a full engine course at Cummins; it will provide Students with an in-depth look at the ISBe engine, which is now the main engine platform for nearly all Alexander Dennis buses. As such the information will prove invaluable to anyone working on the latest range of Alexander Dennis buses.

Doors : Deans & Ventura

More & more operators are calling for door training so we are pleased to introduce our new door training courses for both Deans and Ventura Doors. Inward glider and plug Doors of each make can be covered. New door training rigs are used to ensure all aspects of door maintenance are covered. In order to keep these courses cost effective, we plan to offer door training mainly on-site at your garage, but courses will also be available at our training centre in Guildford. Courses are half day per door type, allowing us to provide you with up to two courses in one day. Typically a full day will need to be booked, but depending on demand and logistics; we may be able to offer half-day courses as part of a planned programme of training. Please contact us for further details.

These half day courses are aimed at Technicians involved in the maintenance, repair and set-up of Doors. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the day.

Delegates will learn the how to adjust the mechanical door mechanisms, replace glazing units, adjust the air pressures to obtain correct opening/closing speeds including cushioning and learn about the different types of electrical interface and interlock systems including sensitive edges.

Course Content

- Mainly centered in the Workshop using door training rigs and customer vehicle for practical demonstration, adjustments and maintenance.
- Mechanical door system and adjustments including glazing replacement.
- Air pressure adjustments opening/closing speed and cushioning.
- Diagnostics where applicable through door ECM or via Multiplex system.
- Correct use of service manuals for wiring diagrams.
- Digital multimeter skills to improve fault finding.
- Training material can be provided in hard copy or on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Doors : Deans & Ventura

Doors represent one of the most heavily used systems on a bus so it is no wonder operators are requesting more training on them in order to keep them maintained to the standards needed to ensure trouble free operation.

Doors may look simple, but when you consider there are three different systems all operating together and all must be set up properly to ensure smooth & reliable operation

1. Mechanical
2. Air
3. Electrical/electronic

Let's face it, you don't want three engineers to fix the problem, so our courses are designed to teach a competent Engineer to set-up the door mechanism, adjust the air pressures and be able to diagnose electrical faults that may affect the door operation.

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Enviro 200 Introduction

The Enviro 200 Introduction course is designed for Technicians who need to know more about the new systems & components fitted to the latest Alexander Dennis buses. These include Multiplexing, Disc Brakes, ABS, Engine & After Treatment. The course also covers the vehicles on-board diagnostic capability and the benefits of using plug-in diagnostic software via laptop computers. Whilst not as in-depth as individual courses on each particular topic, a competent Technician will gain sufficient knowledge and skills to help with most maintenance and fault finding requirements.

This Three day course is aimed at all competent Technicians involved in the general maintenance and repair of the Enviro 200 bus. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the three days.

Delegates will learn to carry out maintenance and repair procedures using blink codes, on-board diagnostics via the Screen Control Unit (SCU) on the dash & laptop diagnostics. They will gain a good understanding of the Foundation Brakes & ABS system and importantly, they will learn about the differences between Euro 4, Euro 4+ & Euro 5 engines and how the emission regulations and fault clearing apply to each level.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Simulator mode for Cummins Insite in classroom on new 17" laptops.
- Dynamic use of all systems on training chassis, including engine, after treatment, ABS & Multiplex.
- CAN lines, how they work and testing.
- Digital multimeter & basic electrical skills to improve fault finding.
- Difference in Euro 4, Euro 4+ & Euro 5 Engines & requirements for fault finding & clearing.
- Practical assessment including pre-set faults on training chassis.
- Written assessment.
- All Students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Details and results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Enviro 200 Introduction

For those operators new to the Enviro range of buses, or for competent Technicians wishing to brush-up their skills on the latest technology, the Alexander Dennis introduction courses offer great value for money.

Not as in-depth as individual courses, but structured to give participants the start they need, particularly when faced with new technology.

Most competent Technicians will find the information and hands on experience sufficient to understand the systems involved and armed with the right Service Manuals, should be able to resolve the majority of problems encountered.

Technology in the industry is moving quickly and Technicians must adapt and be prepared to learn. The introduction courses are an excellent starting point.

Enviro 300 Introduction

The Enviro 300 Introduction course is designed for Technicians who need to know more about the new systems & components fitted to the latest Alexander Dennis buses. These include Multiplexing, Disc Brakes, ABS, Engine & After Treatment. The course also covers the vehicles on-board diagnostic capability and the benefits of using plug-in diagnostic software via laptop computers. Whilst not as in-depth as individual courses on each particular topic, a competent Technician will gain sufficient knowledge and skills to help with most maintenance and fault finding requirements.

This Three day course is aimed at all competent Technicians involved in the general maintenance and repair of the Enviro 300 bus. Delegates will be encouraged to develop their understanding by participating in practical exercises and discussion throughout the three days.

Delegates will learn to carry out maintenance and repair procedures using blink codes, on-board diagnostics via the Screen Control Unit (SCU) on the dash & laptop diagnostics. They will gain a good understanding of the Foundation Brakes & ABS system and importantly, they will learn about the differences between Euro 4, Euro4+ & Euro 5 engines and how the emission regulations and fault clearing apply to each level.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Simulator mode for Cummins Insite in classroom on new 17" laptops.
- Dynamic use of all systems on training chassis, including engine, after treatment, ABS & Multiplex.
- CAN lines, how they work and testing.
- Digital multimeter & basic electrical skills to improve fault finding.
- Differences in Euro 4, Euro 4+ & Euro 5 engines & requirements for fault finding & clearing.
- Practical assessment including pre-set faults on training chassis.
- Written assessment.
- All students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Details and results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Enviro 300 Introduction

For those operators new to the Enviro range of buses, or for competent Technicians wishing to brush-up their skills on the latest technology, the Alexander Dennis introduction courses offer great value for money.

Not as in-depth as individual courses, but structured to give participants the start they need, particularly when faced with new technology.

Most competent Technicians will find the information and hands on experience sufficient to understand the systems involved and armed with the right Service Manuals, should be able to resolve the majority of problems encountered.

Technology in the industry is moving quickly and Technicians must adapt and be prepared to learn. The introduction courses are an excellent starting point.

Enviro 400 Introduction

The Enviro 400 Introduction course is designed for Technicians who need to know more about the new systems & components fitted to the latest Alexander Dennis buses. These include Multiplexing, Disc Brakes, ABS, Engine & After Treatment. The course also covers the vehicles on-board diagnostic capability and the benefits of using plug-in diagnostic software via laptop computers. Whilst not as in-depth as individual courses on each particular topic, a competent Technician will gain sufficient knowledge and skills to help with most maintenance and fault finding requirements.

This Three day course is aimed at all competent Technicians involved in the general maintenance and repair of the Enviro 400 bus. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the three days.

Delegates will learn to carry out maintenance and repair procedures using blink codes, on-board diagnostics via the Screen Control Unit (SCU) on the dash & laptop diagnostics. They will gain a good understanding of the Foundation Brakes & ABS system and importantly, they will learn about the differences between Euro 4, Euro4+ & Euro 5 engines and how the emission regulations and fault clearing apply to each level.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Simulator mode for Cummins Insite in classroom on new 17" laptops.
- Dynamic use of all systems on training chassis, including engine, after treatment, ABS & Multiplex.
- CAN lines, how they work and testing.
- Digital multimeter & basic electrical skills to improve fault finding.
- Differences in Euro 4, Euro 4+ & Euro 5 engines and requirements for fault finding and clearing.
- Practical assessment including pre-set faults on training chassis.
- Written assessment.
- All Students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Details and results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Enviro 400 Introduction

For those operators new to the Enviro range of buses, or for competent Technicians wishing to brush-up their skills on the latest technology, the Alexander Dennis introduction courses offer great value for money.

Not as in-depth as individual courses, but structured to give participants the start they need, particularly when faced with new technology.

Most competent Technicians will find the information and hands on experience sufficient to understand the systems involved and armed with the right Service Manuals, should be able to resolve the majority of problems encountered.

Technology in the industry is moving quickly and Technicians must adapt and be prepared to learn. The introduction courses are an excellent starting point.

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Hybrid Overview and High Voltage Awareness

Delegates will learn how the Alexander Dennis Hybrid system works, the benefits of Hybrid buses and the principles of how the hybrid system reduces the amount of fuel used, dramatically reducing emissions.

The course ensures delegates have a good understanding of the safety systems used in our hybrid buses, providing high voltage awareness training to promote safe working practices for anyone who may be expected to work around the high voltage areas.

This is a half day classroom based course using presentation material. If a hybrid bus is available, a walk around the bus is included where hybrid components and high voltage cables will be identified. Two courses per day can be run, depending on circumstances.

Please note: This course is not intended to certify anyone to work on any part of the high voltage system or the hybrid system in general. More in-depth courses are available for technicians expected to work on the hybrid system and for using diagnostics. Please contact us for more details.

Course Content

- Classroom presentation.
- Hybrid overview, how system works.
- Benefits of Hybrid system – how it reduces fuel use and emissions.
- High voltage awareness.
- Safety systems and procedures.
- Each delegate will be provided with a hard copy of the presentation.
- Certificates will be provided to all delegates who attend the course.
- Please note this is not an assessed course, the certificate is provided as a record of attendance.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Certificates issued to participating Delegates. Valid for three years unless stated otherwise.

Hybrid Buses

European Regulations have forced a dramatic reduction in vehicle exhaust emissions over the last twenty years, the results of which have been spectacular.

Starting a depot full of buses in the morning used to be accompanied by clouds of smoke, creating an unpleasant work environment and pollution in towns and cities.

Starting the same amount of buses with Euro 5 engines fitted, has little effect now.

Hybrid buses use the same highly efficient Euro 5 engines, but the addition of the hybrid system reduces fuel consumption and emissions by more than thirty percent over a normal Euro 5 bus.

This is achieved by collecting braking energy from the bus, which as you can imagine, is a lot of stopping!

This is known as regenerative braking, harnessing the kinetic energy of the bus. The electrical energy created is used to charge the hybrid system batteries which in-turn help to drive the bus.

ISBe Engine: Diagnostics & Fault Finding, including Aftertreatment

The engine training course is designed to give participants an in-depth understanding of the ISBe Engine, including the Aftertreatment (AdBlue) system. The course is mainly targeted at the increased use of sensors and diagnostics, which now play an ever important role in monitoring emissions. It is imperative that all Technicians understand the differences between Euro 4, Euro 4+ & Euro 5 engines with regard to “On Board Diagnostics” (OBD). Operating Euro 4+ & Euro 5 engines with incorrect emissions may result in substantial power de-rates, incur fines, and require different fault clearing processes.

This Three day course is aimed at competent Technician involved in the maintenance and repair of engine & aftertreatment systems. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the course.

Delegates will learn to carry out maintenance and repair procedures using blink codes & laptop diagnostics including Cummins Insite software. At the end of the course participants will be able to identify faults using fault tree diagnosis, be able to rectify and clear faults and recognise the different implications for fault clearing between Euro 4, Euro 4+ & Euro 5 engines.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Simulator mode for Cummins Insite in classroom on new 17” laptops.
- Dynamic use of fully running engine and after treatment systems on training chassis.
- CAN lines, how they work and testing.
- Digital multimeter skills to improve fault finding.
- Live Engine trouble shooting and diagnostics.
- Difference between Euro4 & Euro4+ and the implications with regard to emissions and fault clearing.
- Practical assessment including pre-set faults on training chassis.
- Written assessment.
- All students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Details and results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

ISBe Engine & Aftertreatment.

Modern engines use an array of electronic control systems to give outstanding power, improved fuel economy and reduced emissions.

It is incumbent on us all to ensure the impact of transport on the environment is kept to a minimum.

Ensuring your buses continue to maintain their low emission standard is important to the environment, but equally as important to the operator. Fines may be given for buses operating outside the legal emissions standards.

Training for your Technicians will enable them to utilise the on board diagnostics and laptop diagnostics to ensure your engine continues to perform to the highest level and keep you legal whilst ensuring the best fuel economy is achieved.

ISCe Euro 3 Engine & CAPS Fuel Pump

The ISCe Engine course is designed primarily to help Delegates understand the CAPS Fuel System (Cummins Accumulator Pressure System) and how to detect faults using blink codes and the Cummins Insite diagnostic program.

This one day course is aimed at competent Technicians involved in the maintenance and repair of engine & fuel systems. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the day.

Delegates will learn the characteristics of the CAPS fuel pump and how to diagnose faults using the fault tree process in Insite and replace the faulty component or complete pump assembly as needed.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- Practical assessment including strip and rebuild CAPS fuel pump in Workshop, identifying which parts can be replaced.
- Simulator mode for Cummins Insite in classroom on new 17" laptops.
- CAN lines, how they work and testing.
- Digital multimeter skills to improve fault finding.
- Written assessment on CAPS pump.
- All students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

ISCe Euro 3 Engine & CAPS

The ISCe Engine has not been fitted for a number of years, but we recognise that substantial quantities of buses are still in operation using this engine.

The ISCe Engine was predominately a mechanically controlled engine, but the CAPS fuel system was added to help meet Euro 3 emission standards. Our training focuses on this aspect as most Technicians will be familiar with typical mechanical parts.

Buses are often moved between garages or sold on to other bus operators and therefore, it is important that we continue to offer training on the ISCe Euro 3 Engine and CAPS fuel pump system for those Engineers who may come across it for the first time or have not seen one for a while and need a refresher.

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Laptop Diagnostics

The Laptop & Diagnostic course is designed to give participants a good understanding in the various diagnostic programs and interfaces that are available for Alexander Dennis buses. More and more electronics are being introduced and there is an array of diagnostic equipment on the market to choose from. The course will simplify and explain how best to choose and use it. The course will consider the benefits of using plug-in diagnostics versus current on-board systems and blink codes. It will aim to cover the majority of major systems and components currently used on Alexander Dennis buses. Please note: the course concentrates on using diagnostics rather than individual components such as engines or multiplexing.

This Two day course is aimed at competent Technicians involved in the maintenance and repair of Alexander Dennis buses, in particular electrical or diagnostic specialists. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the two days.

Delegates will learn to identify specific interface requirements for each system such as Multiplexing, Engine, Transmissions & ABS and the corresponding programs. Participants will be expected to use each program and learn to navigate and explore the potential available and how to keep programs up-dated.

Course Content

- Classroom presentation with examples of recent and current diagnostic equipment for comparison and identification, including interfaces and connecting leads.
- Classroom presentation demonstrating diagnostic programs.
- Identifying diagnostic points on Alexander Dennis buses.
- Practical use of diagnostic packages on training chassis. Please note: Some programs depend on availability of production chassis at time of course.
- How to update programs and re-flash interfaces using CD and internet options.
- Written assessment.
- All Students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Laptop Diagnostics

Electronic controls are now an integral part of our buses. This will come as no surprise as nearly all vehicles produced in the world today are liberally sprinkled with electronically controlled systems.

The use of “on board diagnostics” and blink codes are increasing and becoming more sophisticated, but there is no getting away from it, without proper diagnostic tools, Technicians will struggle to get the job done quickly and effectively.

A comprehensive Snap-On tool kit is every Technicians dream, but tools alone may no longer be sufficient. A laptop is just as valuable....in fact a necessity in many cases.

No good then keeping the diagnostic kit locked in an office for special occasions, only to discover when dusted off that the program licence has expired!

Laptops are relatively inexpensive now and probably cost less than a good socket set!

Training is a great way to encourage the use of diagnostics. Remember, the industry needs these skills now and into the future.

Multiplex

Delegates will learn how Multiplex works and how to identify components and their location. The course aims to simplify Multiplexing, so that Technicians of all levels will understand and be confident in their approach to fault finding and using the technical information provided in our Service Manuals. Multiplexing controls just about everything on the bus!

This Two day course is aimed at competent Technicians involved in the maintenance and repair of Alexander Dennis buses, in particular electrical or diagnostic specialists. Delegates will be encouraged to develop their understanding by participating in practical exercises & discussion throughout the two days.

Delegates will learn to identify Multiplex components, use the on-board diagnostic system via the dash mounted screen control unit (SCU) along with full MultiAid diagnostic program via laptop to improve their fault finding procedures and be taught how to check the CAN line communication network. Good use of a digital multimeter and how to interpret the technical information provided in our manuals.

Course Content

- Classroom presentation using components for demonstration, identification and testing.
- IOU's – input & output units – how they link together including CAN line network.
- Using on board diagnostics via SCU & full laptop based diagnostics using MultiAid program.
- CAN lines, how they work, fault finding & testing.
- Live Multiplex trouble shooting & practical use of diagnostic packages on training chassis.
- Practical assessment including finding pre-set faults on training chassis.
- Using digital multimeter to improve fault finding techniques.
- Written assessment
- All Students will receive full course material on CD.

Additional Information

- Students must provide their own *clean* safety shoes for Workshop areas.
- Joining instructions and site information will be sent to you.
- Results of individual assessments are available to employers on request.
- Certificates issued to successful Delegates. Valid for three years unless stated otherwise.

Multiplex

Multiplex Systems are widely used in the motor industry. The technology is exciting and allows us to program the many functions and interlocks needed for safe and reliable operation of your buses.

Information on the communication network is shared throughout the bus, for example; doors shouldn't open if speed above 5Kph. The speed signal is generated by the transmission and broadcast on the CAN network. The Multiplex System sees this information and uses it to "enable" the door interlock system.

The Multiplex system is used to provide many of the safety interlocks used on our buses, but as you can imagine this may at first seem quite complicated. In fact, the Multiplex System uses far less relays, fuses and wiring making for a simpler system and saves cost & weight.

Our training course concentrates on these aspects and proves that you do not have to be a computer wizard to understand Multiplexing and be able to confidently work and fault find on Multiplex systems.

In essence, Multiplexing is a simpler system.

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Customer Training Schedule - 2012

	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T							
Jan						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18	18		20	21	22	23	24	25	26	27	28	29	30	31	
Feb		1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29						
Mar			1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
Apr						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
May		1	2	3		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Jun					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Jul					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
Aug		1	2		3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
Sep					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30			
Oct	1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
Nov			1		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30				
Dec					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		

CHOOSE YOUR SKILL

Allocated	ISBe Eng & Aftertreatment 3 days	Laptop Diagnostics 2 days	Brakes 2 days
Enviro Introduction 3 days	Hybrid Overview + HV Half Day	Basic Electrical Theory 1 day	Multiplex 2 days
	Doors 1 day	ABS 2 days	Bank Holidays

Other courses Available on Request. Please contact us for details.

Tel: 01483 825031 or 01483 468124

Training Schedule

General Information

Course Schedule

Courses are scheduled to commence at 9:30am on the first day and 9:00am on subsequent days and finish at approximately 4pm. Coffee will be available approximately 15 – 20 minutes prior to the start of each training session.

Cancellations

If cancellations are made less than 10 days before the course commences, or a student fails to attend, we reserve the right to invoice for the full cost of the training. If the original candidate is unable to attend, substitute delegates will always be welcomed.

Accommodation

We request customers to book and pay for their own accommodation. Alexander Dennis can provide details of local hotels with rates.

Travel Arrangements

Travel arrangements and transport between the Training Centre and accommodation is the customers responsibility, however Alexander Dennis will be pleased to help arrange taxis or airport transfers if required.

Safety

Alexander Dennis considers the Health and Safety of its employees and guests, of primary importance and therefore requests that all delegates are equipped with the appropriate Personal Protective Equipment (PPE) so that they can safely participate in all aspects of the training courses.

Alexander Dennis will supply general safety items such as high visibility jackets, ear protectors and glasses where necessary, but, please be advised that all delegates **MUST** wear their own safety shoes, whilst on the shop floor to allow them to participate in any factory tours and practical sessions scheduled as part of the training course.

Special Requirements

To ensure the delegate's time at Alexander Dennis is as pleasant as possible, we request that any special dietary needs, equipment or other requirements are indicated on the form at the time of booking.

Joining Instructions

Alexander Dennis will send out Joining Instructions including location maps and any other details approximately three weeks in advance of a course.

Course Fees – Guildford Training Centre

£142.00 per delegate day + VAT
Cummins CVC courses: £95.00 per delegate day.

Alexander Dennis courses are inclusive of training materials, refreshments and lunch.

On-Site Course Fees

£725 per Trainer day + VAT
Travel and accommodation costs for the trainer will be passed on at cost.
Customer is responsible for providing refreshments and lunch.
Suitable facilities for training must be available.

For more details or to make a booking, please contact

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Ros Collin
Training Administrator
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