



Perkins® Engine Training Centre

SECODI presentation



■ A culture of training

Since it was founded in 1978, Secodi has focused on diesel engines and their applications.

Our partnership with Perkins®, **now in its 45th year**, has enabled us to develop resources and expertise in the service and marketing of engines for industry, agriculture, construction and materials handling...

Based in Nantes, Secodi's dynamic growth has seen it gradually expand its sector to become a **"national distributor"** in France, Finland, Estonia, Turkey and Spain, as well as in 21 countries in French-speaking Africa...

This development is rooted in strong technical skills. To support our Perkins® customers, this constant quest for efficiency has given us a training culture that we are now extending to our network and our customers in France and abroad.

The training centre



Seco Academy is an accredited training organisation that trains several hundred people a year, in both tried-and-tested and innovative technologies. In 2021, it received Qualiopi certification and certified number 52 44 0568744.

Set up in 2001, the aim of the centre is to provide trainees (professionals and/or private individuals) with the knowledge they need to carry out any work on engines in the Perkins® range.

Perkins® technical training covers **all engine applications**.

Trainees are welcomed in special premises where the full range of Perkins® engines is available. Appropriate **teaching aids** are used to supplement **real-life situations**.

Our trainers are approved by Perkins® and regularly attend training courses to keep their knowledge up to date with the latest developments in engine technology.

CERTIFICATIONS

▶ **2011:** French-speaking countries

▶ **2012:** Authorized Perkins® Training Center

▶ **2021:** The Seco Training Centre Academy is certified Qualiopi

Our commitments

The Secodi training center is an approved center, which allows companies to integrate the cost of internships into their training budget.

A detailed training program is provided before each session.

During the training, tests of evaluation and validation of prior learning are carried out. At the end, trainees receive **a certification**.

By applying adapted teaching, the **training centre undertakes to transmit to the participants the skills necessary for the proper use and optimum maintenance of the diesel engine**.

To consult the general conditions of registration, go to page 29 of this booklet.

KEY FIGURES

▶ **+ de 30** internships
per year

▶ **+ de 4000** trainees
since 2002

▶ Training in French
and English

▶ On-site training or
in our center (inter-
company and inter-
company)



Training

NEW

In addition to Perkins® on-site training, get **free online training!**

Model program

- ▶ Reception, definition of objectives
- ▶ Presentation of the company
- ▶ Introducing the Perkins® range
- ▶ Engine Technology
- ▶ Maintenance program
- ▶ Practical work
- ▶ Knowledge check
- ▶ Evaluation of the internship

Specificity of the courses

- ▶ Number of trainees:
6 to 8 people
- ▶ Start: Monday at 2.00 pm
- ▶ Schedule: 8.30 am - 12.00 pm /
2.00 - 5.30 pm
- ▶ End: Friday at 12.00 pm

List of generic training lessons

	PLMS Code ⁽¹⁾	Time ⁽²⁾	Page
Diagnosis Stage IV / Tier 4 – Interim	41751	3 days	8
Diagnostic Stage IV / Tier 4 – Final	44210	3 days	8
Electronic management	41748	3 days	9
Electronic regulation E.C.G / L.C.G..	41222	1 day	10
Analysis of defective parts	41221	2,5 days	11
Pandaros Regulator	41745	1 day	33
Marine Applications Initiation	SEC1	3 days	-
Historical range (tailor-made)	H1	On demand	-

(1) Perkins Learning Management System / Perkins® Interactive Training®
(2) Time adaptable according to training needs

List of training lessons Engine series

		PLMS Code ⁽¹⁾	Time ⁽²⁾	Page
Series 100	Series 100	41430	1 day	12
Series 400	Series 400C, D	41746	1 day	13
	Series 400F	44800	1 day	14
	Series 400J NEW	55886	2 days	15
Series 800	Series 800C, D	41747	1 day	16
Series 854	Series 854E - Interim	42021	4 days	17
	Series 854F - Final	42021	4 days	18
Series 900	Series 904D/F/J NEW	52041	3 days	19
Series 1000	Series 1000	H1	1 day	20
Series 1100	Series 1100A, B, C & D	41430	1 day	21
	Series 1100C Mecanical / Electronics	41392	4 days	22
	Series 1100D Mecanical / Electronics	41486	4 days	23
Series 1200	Series 1200E - Interim	41740	4 days	24
	Series 1200F - Final	41740	4 days	25
	Series 1200J NEW	53468	4 days	26
Series 1300	Series 1300EDI Mecanical / Electronics	41741	2 days	27
Series 1500	Series 1500	44335	2 days	28
Series 1600	Series 1600EDI	41742	3 days	29
Series 1700	Series 1700J NEW	56294	4 days	30
Series 2000	Series 2206F NEW	41743	4 days	31
	Series 2200, 2300, 2500, 2800 Mecanical / Electronics	41745	2 days	32
Series 4000	Series 4000 Diesel	41745	4 days	33
	Series 4000 Gaz	41949	4 days	-
Series 5000	Series 5000 NEW	55865	4 days	34

(1) Perkins Learning Management System / Perkins® Interactive Training®

(2) Time adaptable according to training needs

Stage IV / Tier 4 Diagnostics

Time*: **3 days**

Interim Lesson Code: **41751**

Final Lesson Code: **44210**

With the new technologies such as high temperature regeneration and the **NOx reduction system** used on the latest range of Perkins engines®, it becomes essential to train technicians to provide them with the know-how and self-confidence necessary to intervene effectively.

During this training, trainees will mainly work on a functional engine where damage will be replicated. They will have at their disposal the **E.S.T** (Electronic Diagnostic Tool), **workshop manual** and all the tools required to learn how to **correctly diagnose Stage IV / Tier 4 range engines**.



Prerequisite:

Trainees wishing to participate in this course must have followed the Electronic Management Lesson or completed it during the session. They must have completed Tier 4 modules I and II.

Location of the training:

The training can take place in your facilities or in our Secodi – Perkins® training centre located in Nantes France.

Déroulement du stage

- ▶ **Reception** of interns
- ▶ Stage IV/Tier 4 Technology **Review**
- ▶ **Additional parameters of E. S.T** related to Stage IV / Tier 4
- ▶ Using the manual
- ▶ **Stage IV/Tier 4 diagnostics**

Objectives

At the end of this training, participants will be able to:

- ▶ Diagnose the **NOx** reduction system and **post-treatment** (Particulate Filter: Interim; urea system: Final)
- ▶ Use the **multimeter** and the **new features of the E. coli. S.T**
- ▶ Perform electronic diagnostics
- ▶ Use the **diagnostic guide** to find faults

Electronic management

Time*: **3 days**
Lesson Code: **41748**

This training, originally designed for technicians, covers **all topics related to the electronic control of Perkins® engines**, from basic speed management circuits to sensor operation to "motor" and "machine" harnesses.

Part of the training is dedicated to the search for faults and the use of electronic diagnostic tools such as multimeters, E.S.T., etc.



Prerequisite:

A basic knowledge of electricity would be appreciated.

Location of the training:

It can take place in your facilities or in our Secodi – Perkins® training centre located in Nantes France.

Lesson process

▶ Reception

- ▶ Basic circuit construction and use of the multimeter for basic diagnosis
- ▶ **Operation of the electronic control module**
- ▶ Sensors
- ▶ **Engine speed control**

Objectives

At the end of this training, participants will be able to:

- ▶ Describe the value of electronics in motors
- ▶ Answer basic questions about **system components**
- ▶ Use a multimeter to make diagnostics (voltage measurement, resistance)
- ▶ Know **the main functions of E. coli. S.T. (electronic diagnostic tool)**
- ▶ **Diagnose an engine problem** using an electrical diagram
- ▶ Reprogram an E.C.M. (Electronic Control Module) and adapt its configuration
- ▶ Reprogram the parameters of an accelerator pedal and understand the Process

*Time adaptable according to training needs

Electronic regulation E.C.G. / L.C.G.

Time*: **1 day**
Lesson Code: **41222**

This training does not stop at the simple **use of E.C.G. and L.C.G. regulators**. It also covers **installation, programming and diagnostics**.

This course is recommended for anyone involved in the installation and maintenance of a Perkins® engine using this type of regulator. It can also be beneficial for people wishing to gain knowledge about how regulations work.



Prerequisite:

To participate in this lesson, trainees must have a good knowledge of the operation of the diesel engine, a basic knowledge of electricity including the use of a multimeter and the electronic control of diesel engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception**
- ▶ **Product Overview**
 - ▶ Technical characteristics of regulators
 - ▶ **Digital inputs/outputs**
 - ▶ **Characteristics of regime control**
 - ▶ Maintenance tool

Objectives

At the end of this training, participants will be able to:

- ▶ **Install a regulation that meets the specifications** of an installation
- ▶ Using the right tools
- ▶ **Program regulators with required programs**
- ▶ Perform **an electrical/electronic diagnosis**

Analysis of defective parts

Time*: **2,5 days**
Lesson Code: **41221**

Despite all the care taken in the design and manufacture of an engine, an event can always cause a part to break.

This course has been designed to help trainees understand the source of a problem. The latter must be able to draw up a report for the customer, the manager or the manufacturer causing the damage.



Prerequisite:

Anyone whose job is related to the assembly of engines. Anyone carrying out analyses of defective parts and wishing to improve their knowledge.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

▶ Reception

- ▶ Group work (workshop) - **analysis report of defective parts**
- ▶ Collect defect data
- ▶ Analyze data
- ▶ Determine the origin of the defect:
 - Determination of the chronology
 - Data synthesis

Objectives

This course is designed to provide a practical approach to analyzing defective parts leading participants to identify by themselves the different types of defects.

At the end of this training, participants will be able to:

- ▶ Define the different types **of defects**
- ▶ **Describe the clues** leading to classical defects
- ▶ Determine the **root cause** of the defect

100 Series

Time*: **1 day**
Lesson Code: **41430**

Practical and theoretical training built to address all the characteristics of the 100 Series engines.

Maintenance is also discussed during the session, which can **be suitable for both technical and non-technical people**.



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 100 Series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcoming trainees**
- ▶ **Theory:** The different circuits, internal mechanics
- ▶ **Practical:** Disassembly and reassembly of the engine
- ▶ **Approbation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on 100 Series engines. At the end of this training, trainees will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble** 100 Series engines
- ▶ Carry out maintenance operations

400C series; D

Time*: **1 day**
Lesson Code: **41476**

Practical and theoretical training is built to address all the characteristics of the 400 Series engines.

This engine is the worthy successor to the 100 Series. It allowed the transition to Stage II / Tier 2 and Stage III / Tier 3. This lesson also covers **maintenance and can therefore be suitable for both technical and non-technical trainees.**



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 400C, D series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcoming trainees**
- ▶ **Theory:** The different circuits, internal mechanics
- ▶ **Practical:** Disassembly and reassembly of the engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge of 400C, D Series engines.

At the end of this training, participants will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble** 400C, D Series engines
- ▶ Carry out maintenance operations

400F Series

Time*: **1 day**
Lesson Code: **44800**

Evolution in the 400 Series family; Equipped with a common rail injection system, the CRDI 400 Series meets the Stage IV / Tier 4 Final standard. As such, it uses new technologies and a pollution control system including a catalytic converter.

All engine features 400 series are covered in this training. This lesson is **particularly suitable for maintenance technicians and people who may have to work with this generation of engines.**



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 400F series engines.

Location of the training:

The internship can take place in your facilities or in our Secodi - Perkins® training center located in Nantes.

Lesson process

- ▶ **Welcoming trainees**
- ▶ **Theory:** The different circuits, internal mechanics
- ▶ **Practical:** Disassembly and reassembly of the engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge of 400F Series engines.

At the end of this training, trainees will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble** engines 400F Series
- ▶ Carry out maintenance operations

400J Series **NEW**

Time*: **2 days**
Lesson Code: **55886**

Evolution in the 400 Series family; equipped with a common rail injection system, the CRDI 400J series meets the standard Stage V / Tier 4 Final. As such, it uses new technologies and a pollution control system including a catalytic converter and a particulate filter.

All the characteristics of the 400J Series engines are covered in this training. This lesson is **particularly suitable for maintenance technicians and people who may have to work with this generation of engines.**



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines who wishes to acquire or improve their knowledge of Perkins® 400J series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcoming trainees**
- ▶ **Theory:** The different circuits, internal mechanics
- ▶ **Practical:** Disassembly and reassembly of the engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge of 400J Series engines.

At the end of this training, trainees will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble 400J Series engines**
- ▶ Carry out maintenance operations

800C, D Series

Time*: **1 day**
Lesson Code: **41747**

A **practical and theoretical** training is built to address all the characteristics of the 800 Series engines.

This course addresses both **the operation and specificities of the engine but also its maintenance and can thus be suitable for both technical and non-technical trainees.**



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 800C, D Series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcoming** trainees
- ▶ **Theory:** The different circuits, internal mechanics
- ▶ **Practical:** Disassembly and reassembly of the engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge of 800C, D Series engines.

At the end of this training, participants will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble engines 800C, D Series**
- ▶ Carry out maintenance operations

854E series, Acting

Time*: **4 days**
Lesson Code: **42021**

The 854 series is the new engine family Perkins®, succeeding the 800D Series and 1104D, meeting Stage IIIB / Tier 4 Interim. As such, it uses **new technologies and a combustion after-treatment system** to remove particulate matter.

All engine features 854 series are covered in this training. This course is **particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or completed it during this session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage IIIB / Tier 4 Interim
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools related to the 854**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 854E Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

Series 854F, Final

Time*: **4 days**
Lesson Code: **42021**

The 854F series is the evolution of the 854E series.

This new generation of engine meets the Stage IV / Tier 4 Final standard.

As such, it exploits **new technologies**, in particular a N.R.S. (reduction of nitrogen oxides) system and the addition of urea D.E.F. (Diesel Exhaust Fluid).

All engine features 854F series are discussed in this document. **This lesson is particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have completed the Electronic Management Lesson as well as the Series 854E course.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage IV / Tier 4 Final
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools related to the 854**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this lesson is to provide technical knowledge on the engines of the 854F Series.

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

904D/F/J series **NEW**

Time*: **3 days**
Lesson Code: **52041**

This new engine has been developed to meet EU STAGE IIIA, STAGE IV and STAGE V standards, depending on the machine's destination. As such, it uses new technologies including a N.R.S. system, a particulate filter (reduction of nitrogen oxides) and urea addition (D.E.F. Diesel Exhaust Fluid)

All engine features Series 904D/F/J are covered in this training. This lesson is **particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome of trainees and presentation of the engine range**
- ▶ **Reminder** on the legislation Stage V / Tier 4 Final
- ▶ **Engine mechanics** overview
- ▶ **Maintenance operations**
 - ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ **Use of electronic diagnostic tools related to 904**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this course is to provide technical knowledge of 904J Series engines.

At the end of this training, trainees will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

Time*: **1 day**
Lesson Code: **H1**

1000 Series

Practical and theoretical training is built to address all the characteristics of the 1000 Series engines.

It is aimed at those who work with this engine and want to understand its operation and maintenance.



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 1000 Series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception**
- ▶ Engine **history**
- ▶ Nomenclature
- ▶ Technical presentation
- ▶ Using the technical manual
- ▶ **Disassembly and reassembly**
- ▶ **Maintenance operations**
- ▶ **Test of validation of prior learning and delivery of the Perkins® official diploma**

Objectives

The objective of this training is to provide technical knowledge of 1000 Series engines.

At the end of this training, trainees will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble 1000 Series engines**
- ▶ Carry out maintenance operations

Time*: **1 day**
Lesson Code: **41430**

1100A, B, C&D Series

Practical and **theoretical** training is built to address all the characteristics of the 1100 Series engines.

It is aimed at those who work with this engine and want to understand its operation and maintenance.



Prerequisite:

Anyone with basic or advanced knowledge of diesel engines, who wishes to acquire or improve their knowledge of Perkins® 1100 Series engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception**
- ▶ Engine **history**
- ▶ Nomenclature
- ▶ Technical presentation
- ▶ Using the technical manual
- ▶ **Disassembly and reassembly**
- ▶ **Maintenance operations**
- ▶ **Test of validation of prior learning and delivery of the Perkins® official diploma**

Objectives

The objective of this training is to provide technical knowledge of 1100 Series engines. At the end of this training, trainees will be able to:

- ▶ **Use the Perkins® BOM to identify** the engine type
- ▶ Use the information in the workshop manual
- ▶ **Disassemble and assemble 1000 Series engines**
- ▶ Carry out maintenance operations

1100C Series

Time*: **4 days**
Lesson Code: **41392**

This training covers both the **mechanics and electronics of the 1100C Series engine**, including components and their operation.

Elements specific to the electronic diagnostic system are also discussed.



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or completed it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ Engine **reception** and **overview**
- ▶ Sensor operation (pressure, temperature, rpm)
- ▶ Motor harness and machine harness
- ▶ **Diagnostics / Reprogramming**
- ▶ Explanation and use of the electronic diagnostic tool
- ▶ Familiarization with the new mechanical characteristics of the 1100C Series engines
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1100C Series engines.

At the end of this training, trainees will be able to:

- ▶ **Recognize the different components** associated with the 1100C Series engine and understand how they work
- ▶ Understanding the origin of the use of new electronic technologies
- ▶ Using **IT tools**

1100D Series

Time*: **4 days**
Lesson Code: **41486**

The 1100D Series is one of the first generations of engines produced by Perkins® to meet increasingly demanding pollution standards. As such, it exploits **new technologies** for the first time used by Perkins engines®.

All engine features 1100D series are covered in this training. This lesson is **particularly suitable for maintenance technicians and people who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or completed it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception** of interns
- ▶ **Presentation** of the engine range
- ▶ **Engine mechanics overview**
- ▶ **Maintenance** operations
- ▶ Overview of **electrical and electronic equipment**
- ▶ Use of **electronic diagnostic tools**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1100D Series engines.

At the end of this training, trainees will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

Time*: **4 days**
Lesson Code: **41740**

1200E Series, Acting

The 1200E Series is the engine family Perkins®, evolution of the 1100D Series, meeting Stage IIIB / Tier 4 standards Interim. As such, it uses **new technologies** and a combustion after-treatment system to remove particulate matter.

All engine features 1200E series are covered in this training. This lesson is **particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or completed it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage IIIB / Tier 4 Interim
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools related**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

- The objective of this training is to provide technical knowledge on the 1200E Series engines.
- At the end of this training, participants will be able to:
- ▶ **Recognize the different components and understand how they work**
 - ▶ Perform **dismantling / reassembly** and maintenance
 - ▶ Perform electronic diagnostics

Time*: **4 days**
Lesson Code: **41740**

1200F Series – Final

The 1200F Series is the evolution of the 1200E Series.

This generation of engine meets the standard Stage IV / Tier 4 Final.

As such, it exploits new technologies and is equipped with a S.C.R. (reduction of nitrogen oxides) system and using urea D.E.F. (Diesel Exhaust Fluid).

All engine features 1200F series are covered in this training. This lesson is **particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson and the 1200E Series engines

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage IV / Tier 4 Final
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools related**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1200F Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

Série 1200J **NEW**

Time*: **4 days**
Lesson Code: **53468**

The 1200J Series is the evolution of the 1200E Series and 1200F. This generation of engine meets the Stage V / Tier 4 Final standard. As such, it leverages the combination of **technologies** used on the 1200E engines and 1200F. This series is therefore equipped with catalyst, particulate filter and addition of urea S.C.R.

All engine features 1200J series are discussed in this training. This lesson is **particularly suitable for service technicians and trainees who may work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Course 41748.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage V / Tier 4 Final
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools related**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1200J Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

1300EDI Series

Time*: **2 days**
Lesson Code: **41741**

1300EDI Series engines (Electronic Diesel Injection) were the **first electronic engines produced by Perkins®**.

This lesson is intended for **technicians or managers** likely to work with this engine.



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or perform it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Engine reception and overview**
 - ▶ How the injection works
 - ▶ Study of the oil and fuel system
 - ▶ Analysis of the operation of the E.C.M. (electronic control module) and sensors
- ▶ **Diagnostics / Reprogramming**
 - ▶ Explanation and use of "flashing codes"
 - ▶ Explanation and use of the electronic diagnostic tool – specific to this engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1300 Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ **Perform diagnostics** requiring the use of a multimeter, "flashing codes" and the electronic tool
- ▶ **Wiring** the different options that can be found on the machines

Time*: **2 days**
Lesson Code: **44335**

1500 Series

The 1500 Series is the new family of Perkins engines®. Worthy replacement of the 1300 and 1600 series, this engine is equipped with the **latest generation of injection H.E.U.I.** (Hydraulically Electronically Unit Injection).

All engine features 1500 series are covered in this training. This lesson is **particularly suitable for maintenance technicians and trainees who may have to work with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or perform it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception** of interns and **presentation** of the engine range
- ▶ **Reminder** on the legislation Stage IIIB / Tier 4 Interim
- ▶ **Engine mechanics** overview
- ▶ **Maintenance** operations
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of **electronic diagnostic tools**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1500 Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ **Perform diagnostics** requiring the use of a multimeter, "flashing codes" and the electronic tool
- ▶ **Wiring** the different options that can be found on the machines

1600EDI Series

Time*: **3 days**
Lesson Code: **41742**

The 1600EDI series (Electronic Diesel Injection) is part of the new family of Perkins® engines that complete the power range between the 1300 Series and 2000. New technologies, such as H.E.U.I. (Hydraulically Electronically Unit Injection) are used.

This lesson has been specially designed for technicians by combining dismantling, reassembly and technical diagnosis.



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or perform it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Reception** of interns and **presentation** of the engine range
- ▶ **Reminder** on the legislation Stage IIIB / Tier 4 Interim
- ▶ **Engine mechanics** overview
- ▶ **Maintenance** operations
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of **electronic diagnostic tools**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1600 Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ **Perform diagnostics** requiring the use of a multimeter, "flashing codes" and the electronic tool
- ▶ **Use the E.S.T.** (Electronic Diagnostic Tool Perkins®) and perform fault finding Specific

1700J series **NEW**

Time*: **4 days**
Lesson Code: **56294**

The 1700J Series is the evolution of the 1700E Series and 1700F. This generation of engine meets the Stage V / Tier 4 Final standard. As such, it leverages the combination of **technologies** used on the 1700E engines, and 1700F. This series is therefore equipped with catalyst, particulate filter and addition of urea S.C.R.

All engine features 1700J series are covered in this training. **This lesson is particularly suitable for maintenance technicians and trainees who may be working with this generation of engines.**



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Course 41748.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Welcome** of trainees and presentation of the engine range
- ▶ **Reminder** on the legislation Stage V / Tier 4 Final
- ▶ **Engine mechanics overview**
- ▶ **Maintenance operations**
- ▶ Overview of electrical, electronic and post-treatment equipment
- ▶ Use of electronic **diagnostic tools**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

The objective of this training is to provide technical knowledge on the 1700J Series engines.

At the end of this training, participants will be able to:

- ▶ **Recognize the different components and understand how they work**
- ▶ Perform **dismantling / reassembly** and maintenance
- ▶ Perform electronic diagnostics

Time*: **4 days**
Lesson Code: **41743**

2206F Series **NEW**

With the advancement of diesel engine technologies, new skills must be constantly acquired.

The 2206 Series is no exception. This lesson is the answer to this evolution. This new generation of engines meets the stage V / Tier 4 standard. As such, it uses new techniques and in particular an NRC system (reduction of nitrogen oxides), a particulate filter and the addition of urea.

This course has been specially designed for technicians by combining dismantling, reassembly and technical diagnosis.



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Course 41748. or perform it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Introducing** the Perkins® range
- ▶ Engine characteristics
- ▶ Analysis of the operation of the E.C.M. (electronic control module) and sensors
- ▶ Electrical diagram "Motor" and "Machine"
- ▶ **Diagnosis / reprogramming**
- ▶ Overview of electrical, electronic and post-treatment equipment.
- ▶ **Use of E. coli. S.T.**, settings and menus related to this engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

*Time adaptable according to training needs

Objectives

- At the end of this training, trainees will be able to:
- ▶ **Use official techniques to disassemble / reassemble** this engine using specific tools
 - ▶ **Adjusting the injection system**
 - ▶ **Use the E.S.T.** (Electronic Diagnostic Tool Perkins®) and perform fault finding Specific

2000C/D Series

Time*: **2 days**
Lesson Code: **41745**

With the advancement of diesel engine technologies, new skills must be constantly acquired.

The 2000C/D series (2200, 2300, 2500, 2800) is no exception. This lesson is the answer to this evolution.

This training has been specially designed for technicians by combining dismantling, reassembly and technical diagnosis.



Prerequisite:

Trainees wishing to attend in this lesson must have followed the Electronic Management Lesson or perform it during the session.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Introducing** the Perkins® range
- ▶ Engine characteristics
- ▶ Analysis of the operation of the E.C.M. (electronic control module) and sensors
- ▶ Electrical diagram "Motor" and "Machine"
- ▶ **Diagnosis / reprogramming**
- ▶ **Use of E. coli. S.T.**, settings and menus related to this engine
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**

Objectives

- At the end of this training, trainees will be able to:
- ▶ **Use official techniques to disassemble / reassemble** this engine using specific tools
 - ▶ **Adjusting the injection system**
 - ▶ **Use the E.S.T.** (Electronic Diagnostic Tool Perkins®) and perform fault finding Specific

Time*: **4 days**
Lesson Code: **41745**

4000 Series

The 4000 Series **is one of the largest engines produced** by Perkins®. It is found in many global applications.

This training covers the entire engine and is particularly suitable for technical staff.



Prerequisite:

Trainees should have an advanced level of skills in diesel engines.

Lieu du stage

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Introducing the Perkins® range** and the 4000 Series engine
- ▶ **External characteristics** of the engine
- ▶ **Disassembly** of part of the engine with dedicated tooling
- ▶ **Lubrication and fuel system**
- ▶ **Control and reassembly of the engine** using the specific tooling
- ▶ **Analysis of defective parts**
- ▶ **Cooling circuit**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**
- ▶ Study of the **different regulations**:
 - Pandaros Platinum (Single/Double)
 - Perkins® calculator

*Time adaptable according to training needsn

Objectives

À la fin de cette formation, les participants seront capables de:

- ▶ **Differentiating between circuits**
- ▶ Understanding how **injection works**
- ▶ Carry out **injection adjustments**
- ▶ **Dismantling / reassembling** the engine
- ▶ **Understanding engine control**

5000 Series **NEW**

Time*: **4 days**
Lesson Code: **55865**

The 5000 Series is the evolution of the 4000 series. **It meets new environmental requirements** (noise reduction, emission and consumption).

As such, **it operates a new MEUI** (Mechanically) injection system Actuated Electronically Controlled Unit Injector).



Prerequisite:

Trainees should have an advanced level of skills in diesel engines.

Location of the training:

The training can take place in your facilities or in our Secodi - Perkins® training centre located in Nantes, France.

Lesson process

- ▶ **Introducing the Perkins®** range and the 4000 Series engine
- ▶ **External characteristics** of the engine
- ▶ **Disassembly** of part of the engine with dedicated tooling
- ▶ **Lubrication and fuel system**
- ▶ **Control and reassembly of the engine** using the specific tooling
- ▶ **Analysis of defective parts**
- ▶ **Cooling circuit**
- ▶ **Validation of prior learning test and presentation of the official Perkins® diploma**
- ▶ Study of the **different regulations**:
 - Pandaros Platinum (Single/Double)
 - Perkins® calculator
- ▶ **Diagnosis / reprogramming**
- ▶ **Overview of electrical, electronic and post-treatment equipment**
- ▶ **Use of E. coli. S.T., settings and menus** related to this engine

Objectives

- At the end of this training, trainees will be able to:
- ▶ **Differentiate circuits**
 - ▶ Understanding **how injection works**
 - ▶ Make **injection adjustments**
 - ▶ **Disassemble / reassemble** the engine
 - ▶ **Understanding** engine regulation
 - ▶ **Use the E.S.T.** (Perkins electronic diagnostic tool) and search for specific faults

General conditions of registration

Enquiries

For any information on a training, contact Seco Academy:

- ▲ Technical Coordinator & Perkins UK Certified Trainer (2001): **Patrick CAILLON**
 - ▲ Phone: **+33 (0)2 40 35 93 15**
 - ▲ E-mail: **academy@secoglobalservices.com**
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Cancellation of registrations

Any withdrawal must be reported at least **15 days before** the start of the lesson. SECODI TRAINING reserves the right to cancel a lesson, especially in the case of an insufficient number of registrations. The client can then choose another date in the calendar, or cancel their request.

Price

Our prices include the provision of the trainer(s), the provision of lesson support and technical documentation, the award of a diploma, the provision of a training room and a workshop for practical work as well as "school engines" from the Perkins® range. Lunch is also included.

Our welcome desk is at your disposal to help you book the hotel rooms of the category you want. Accommodation costs and transport costs remain the responsibility of the trainees.

Payment

Except in exceptional circumstances, payments are made upon receipt of invoice. A certificate of attendance will be attached to the invoice.

Information sheet

News

Society:

Name of training manager:

Address:

.....

Phone:

E-mail:

Wishes to register the following:

Name	Lesson	Desired period
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		/ /
		/ /

Return this form by:

✦ **Mail:**

15 Rue Marcel Sembat - B.P. 78553
44185 NANTES Cedex 4 - FRANCE

✦ **E-mail:**

academy@secoglobalservices.com

Access map / Nantes place



Adress

Secom – Training Center
3 Rue Joseph Cholet
44100 NANTES - FRANCE
Phone: **+33 (0)2 40 35 93 15**

GPS details

Longitude: 47.199541
Latitude: -1.582486



Contact

Training Department

- ▶ Your contact person: **Patrick CAILLON**
- ▶ Phone: **+33 (0)2 40 35 93 15**
- ▶ E-mail: **academy@secoglobalservices.com**

Online information

 www.secoacademy.fr

Our training department is at your disposal
to help you in your search for financing



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