



ACADEMY

Turning **knowledge** into **system performance**

**DEVELOPING PRACTICAL
EXPERTISE FOR ENGINEERS
AT EVERY LEVEL**



CPD
Accreditation



Courses for
any level



Customized
learning experience

We believe in education



Ugo Pettinaroli

CEO
Pettinaroli Group

Continuous training is the key to master the most advanced technology solutions

Having properly trained staff is a **crucial factor** for any successful business. Skills improvement and qualified knowledge enable companies to be **competitive** and constantly oriented towards innovation. Alongside basic background, it is essential to constantly **update personal skills** in order to keep up with the technology of a sector such as that of **HVAC**, which is constantly and rapidly evolving. Our **decades on-field experience** in balancing of hydronic systems, and the **thousands of big international projects** carried out with our products over the years, has convinced us of the importance of **sharing our technical expertise** with the people who work in the industry on a daily basis. We feel responsible for the environment, therefore we constantly look for supplying innovative solutions and information to enable our customers to win everywhere, everyday. With this in mind, we chose to establish the **Pettinaroli UK Academy**. We are committed to make our deep knowledge at disposal of our customers **to help UK hydronic industry** to advance and create more healthy places where people live, work, learn and play.

About Pettinaroli UK

Specialist solution providers for the balancing, controlling and **metering of water distribution systems in the HVAC industry**

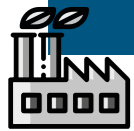
As specialist solution providers for the **balancing, controlling and metering of water distribution systems** in the **HVAC industry**, Pettinaroli UK is dedicated to creating and supplying innovative and efficient products that meet the rapidly changing needs of buildings and users alike. With solutions ranging from **valve distribution** to the design and supply of **complex bespoke manifolds**, we have the products, knowledge and passion to meet our customers' requirements. At Pettinaroli UK **we bring together bright ideas**, innovative concepts and intelligent valves **to achieve first class solutions** that provide customers with product excellence, and a future proofed, fully supported system.



THE HOME OF
HYDRONIC
BALANCING

Offered services

Access to courses allows you to benefit from a number of useful services to maximise the learning experience and make participation immersive and enjoyable



Facility

Face-to-face courses are held at Pettinaroli UK's headquarter in the Riverside Industrial Estate in Birmingham. The venue is provided with **digitally-equipped classrooms** and all the necessary **tools** to carry out tests and along with **course materials** and documentation in hard copy and digital formats.



Teaching materials

Each course will be backed up by training materials specially designed to **ease learning**. Pettinaroli UK are introducing '**One Page Information sheets**' as an easy method of keeping and access useful technical information **either in the office or on site**. This concept has also been applied to the Pettinaroli product range.



Practical demonstration rigs

Courses with a **practical section** are delivered using specifically designed **practical demonstration rigs** that recreate the dynamics of operating an operational **hydraulic system**. In this way, theoretical notions can be immediately checked and **put into practice**, facilitating an easier and better understanding.



Accommodations

During the courses held at the Pettinaroli UK Academy premises, it will be possible to obtain accommodation at **affiliated structures** in the Academy's vicinity. During the course days accommodation will also include **catering service**. Further details on services will be provided during booking.

The Academy program

The Academy has been designed to further the education of young and trained Engineers, from those who are just starting in the industry, to those with more experience who would like to increase their skills

TURNING KNOWLEDGE INTO SYSTEM PERFORMANCE

To help the understanding of PICCV valves and the many applications in water distribution systems. Pettinaroli UK have developed a series of 'Hands on' practical courses that allow the attending delegate to carry out several exercises, as would be required on site, to experience and gain knowledge of the design, installation, flushing and commission of terminal units.

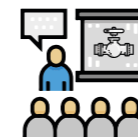
Customize your learning experience through the access to exclusive training delivered through a wide variety of modalities according to your needs

About The Academy courses and CPD accreditation

The course programme offered by Pettinaroli UK Academy includes both face-to-face and remotely accessible courses. The duration of the various didactic modules varies from one-day, to half-day, up to one-hour courses, according to the complexity of the topics covered. Courses may also include a practical training useful to test and concretely apply the theoretical notions learned. As a CIBSE accredited company, Pettinaroli UK is qualified to deliver courses valid for CPD training credits. The Chartered Institution of Building Services Engineers (CIBSE) is the professional body

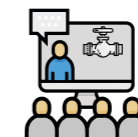
that backs up the community of building services engineers, investing in education and research and supporting the professionals involved in the building environment. All CIBSE members are required to undertake continuing professional development (CPD) in order that they keep up to date with the latest technical information and maintain their professional competence. Pettinaroli UK courses give access to CPD credits as they are reviewed and assessed by CIBSE that ensures the technical contents are of a high standard and offer valuable professional training to delegates.

Face-to-face



Face-to-face courses feature a mixed theoretical and practical learning mode. Participants will be asked to apply notions provided during the lessons, performing hands-on tests that will let them gain practical experience, by simulating on-site installations by through dedicated test rigs.

Live remote



Live remote courses will provide all the theoretical knowledge needed to understand the dynamics of hydronic system operation. The video lessons will be supported by digital materials that will provide all the notions and skills needed to understand the topics covered.

Webinar



Webinar courses are available anywhere, anytime, maximizing the flexibility of the learning experience and giving all the information needed to understand each topic covered in a synthetic presentation. In this way, each lesson can be accessed whenever the user prefers without time constraints.

The Academy courses

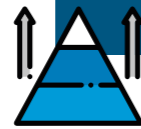
A source of learning to enhance the skills of **engineering professionals of all levels**

Thanks to Pettinaroli **decades on-field experience** in balancing of hydronic systems, and the thousands of **big international projects** carried out with HVAC products over the years, **Pettinaroli UK Academy** courses are now set to be a **point of reference** for hydronic engineering professionals of all levels. The educational programme includes **basic courses**, which provide direct knowledge for novice and newly graduated engineers, **intermediate courses**, which can be useful for both young and experienced engineers, and **advanced courses** that require a more extensive knowledge and experience of the subject and can provide more detailed information on specific topics. More courses will be soon available and included in the Academy program.



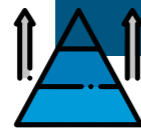
Basic

Specifically addressed to **beginner engineers** to get 'hands on' experience and understanding of **on-site work**, these courses give **technical and practical instruction** to enable students to use purpose-built **demonstration rigs** to flush and commission terminal devices. Lessons also include a **low-level introduction** and explanation to **Thermo-fluid theory**.



Intermediate

Designed for those **engineers** who already have a good understanding of **flushing and commissioning**, to further develop 'hands on' skills with **PICCV valves and flow measurement**. To help build on the flushing and commissioning skills the demonstration rig allows students to investigate the different aspects **flushing, commissioning and maintenance**.



Advanced

This advanced level course focuses on **Remote Commissioning** developed by Pettinaroli UK more than 10 years ago and combined to **smart actuators** to take the concept of **maintaining the Delta T** to the next level. Using a purpose-built demonstration rig, participants will acknowledge the **effects of poor balancing** and guided towards right product choice.

Course index

Basic

- *The Definitive Guide to PICVs*
- *Embracing the Circular Economy in the design and development of Terminal Units*

Intermediate

- *Energy Efficiency with PICV*

Expert

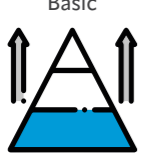

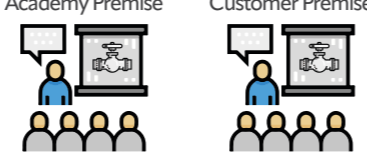





- *Commissioning and Life Cycle Analysis*
- *Improving Comfort, Reliability and Efficiency of HVAC Systems: beating LOW ΔT Syndrome in existing buildings*

The Definitive Guide to PICVs

Course description:

This training addresses commonly posed questions regarding pressure independent control valves (PICVs) and their application in variable flow heating and chilled water systems. The advice provided is based on Pettinaroli products and experience but is generally applicable to all PICVs.

Course features:

| | | |
|---|--|---|
| <p>Level</p> <p>Basic</p>  | <p>Duration</p>  <p>1 hour</p> | <p>Accessibility</p> <p>Academy Premise Customer Premise</p>  <p>Live Remote</p>  |
| <p>Attendees</p>  <p>9 max.</p> | <p>Approvals</p>  | |
| <p>Minimum requirements</p>  <p>Basic knowledges</p> | <p>Course result</p>  <p>CPD Accreditation</p> | |



Course contents

A bried history of flow systems

- Constant Flow Systems
- Variable Flow Systems

Select PICV for the right application

- PICV Equal Percentage for clean systems Air to water (Fan Coil units)
- PICV Linear for contaminated water water to water (Heat Exchangers)
- Full stroke control – reduced stroke

Position PICV valve

- In the flow to allow back flushing
- At ever terminal
- At ever by-pass
- Include other dynamic devices

Ensure PICV valves with Low Start Up

- (Save energy) Upward Curve

Ensure PICV provide good delta T



Teaching Materials

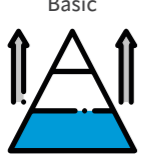

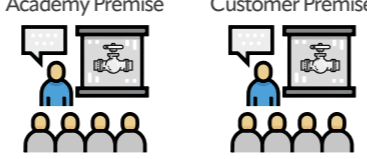
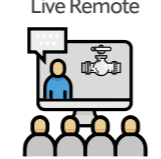




Course documentation in printed or electronic formats according to course's accessibility.

Embracing the Circular Economy in the design and development of Terminal Units

Course description:

This training addresses commonly posed questions regarding design and construction of valve assembly for fan coil unit to embrace the circular economy industry trend and fulfill BSRIA BG29 2021 Pre-commission cleaning of pipework systems. The advice provided is based on Pettinaroli products and experience.

Course features:

| | | |
|---|--|---|
| <p>Level</p> <p>Basic</p>  | <p>Duration</p>  <p>1 hour</p> | <p>Accessibility</p> <p>Academy Premise Customer Premise</p>  <p>Live Remote</p>  |
| <p>Attendees</p>  <p>9 max.</p> | <p>Approvals</p>  | |
| <p>Minimum requirements</p>  <p>Basic knowledges</p> | <p>Course result</p>  <p>CPD Accreditation</p> | |

Course contents

The Future of HVAC Design and Manufacturing

- The Product Life Cycle/Circular Economy
- Variable Flow Systems

Using BSRIA BG29 2021 as the new standard detail Template

- BSRIA BG29 2021 Pre-Commission Cleaning of pipework systems
- Ensuring less Magnetite and Debris water in piped distribution systems

The Importance of a clean System

Design stage – Would specification benefit from incorporating allowance for change?

- Change of Delta T
- Change of Flow (Ultra low flow)
- Change of what is possible Currently there is no benefit from having a single coil for heating & cooling

Circular Economy

- Interchangeability in terminal valve assemblies (reuse, recondition, replace)

Teaching Materials



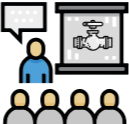
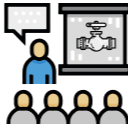
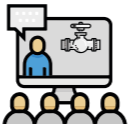




Course documentation in printed or electronic formats according to course's accessibility.

Energy Efficiency with PICV

Course description:

This training addresses to all the professionals that want to know more about how to get energy efficiency with pressure independent control valves (PICV) in chilled and hot water systems. The course particularly focuses on Pettinaroli range of PICVs.

Course features:

| | | |
|---|--|---|
| <p>Level</p> <p>Intermediate</p>  | <p>Duration</p>  | <p>Accessibility</p> <p>Academy Premise Customer Premise</p>   <p>Live Remote</p>  |
| <p>Attendees</p>  <p>9 max.</p> | <p>Approvals</p>  | |
| <p>Minimum requirements</p>  <p>Intermediate knowledges</p> | <p>Course result</p>  <p>CPD Accreditation</p> | |



Course contents

Section 1: PICV features to look at

Objective: understand what really makes the difference into a PICV to provide energy savings

Section 2: Control valve characteristic

Objective: understand how the characteristics affect the system flow rate and Delta T

- Deep understanding of overflow, Low DeltaT syndrome and their effects on system efficiency
- Understanding of benefits of equalpercentage characteristic and Linear characteristic

Section 3: Start-up pressure

Objective: understand how the start-up pressure affects system efficiency

- Understanding of Start-up pressure of a PICV
- Understanding of energy savings due to low start-up pressure PICVs
- Understanding of energy savings due to proper system optimisation



Teaching Materials

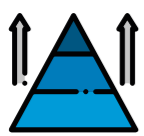

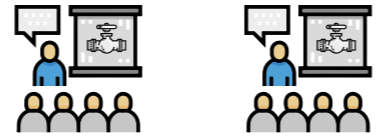
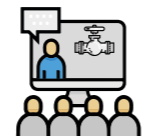




Course documentation in printed or electronic formats according to course's accessibility.

Commissioning and Life Cycle Analysis

Course description:

This training addresses to all the professionals that want to know more concerning **Water Quality, Commissioning and Energy Management with PICCV and PICVs**. The course particularly focuses on Pettinaroli range of products.

Course features:

| | | |
|--|--|---|
| <p>Level</p> <p>Advanced</p>  | <p>Duration</p>  <p>1 hour</p> | <p>Accessibility</p> <p>Academy Premise Customer Premise</p>  <p>Live Remote</p>  |
| <p>Attendees</p>  <p>9 max.</p> | <p>Approvals</p>  | |
| <p>Minimum requirements</p>  <p>Advanced knowledges</p> | <p>Course result</p>  <p>CPD Accreditation (pending)</p> | |



Course contents

Section 1 - PICV and PICCV Testing

- Body Valve Pressure test
- Seat Leakage Rate test
- Full stroke movement, reduced stroke movement
- Linear and equal percentage Characteristics
- Range of valves verse valve sizing

Section 2: Water Quality

Critical to ensure good flow distribution

- Clean
- Flush
- Circulate Chemicals

Two methods affect valve performance

- Adding to the system (chemicals in the water and biocides)
- Removing from the system
 - Magnetite and debris
 - Air Deration and degassing

Section 3: Commissioning

- Hysteresis
- Start-up pressure
- Flow measurement
- Pressure sensor location
- Reference method to set pressure

Section 4: Energy Efficiency

- Energy Consumption Building Life
- Life Cycle Costing
- Water Quality
- Commissioning



Teaching Materials

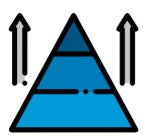

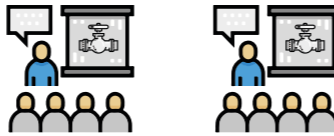
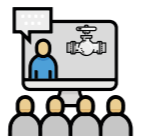




Course documentation in printed or electronic formats according to course's accessibility.

Improving Comfort, Reliability and Efficiency of HVAC Systems: **beating LOW ΔT Syndrome in existing buildings**

Course description:

The session provides an in-depth overview of **Low DeltaT Syndrome and its impact on HVAC system performance**. Participants will learn about the **critical role of water quality** in system efficiency and reliability, and explore **practical technical solutions to prevent Low DeltaT**. The training focuses on Pettinaroli products.

Course features:

| | | |
|--|--|---|
| <p>Level</p> <p>Advanced</p>  | <p>Duration</p>  | <p>Accessibility</p> <p>Academy Premise Customer Premise</p>  <p>Live Remote</p>  |
| <p>Attendees</p>  | <p>Approvals</p>  | |
| <p>Minimum requirements</p>  <p>Advanced knowledges</p> | <p>Course result</p>  <p>CPD Accreditation (pending)</p> | |



Course contents

Section 1 - Low DeltaT Syndrome

- Overview
- Definition
- why it matters in HVAC systems

Section 2: Water Quality in HVAC Systems

- Key parameters
- impact on system efficiency
- reliability
- lifespan

Section 3: Technical Solution

- How PICV valves and BluDrive actuators can prevent Low DeltaT
- improve comfort
- increase energy efficiency

Section 4: Saving

- Real-world applications
- Energy performance improvements




Teaching Materials

Course documentation in printed or electronic formats according to course's accessibility.



"A **system** is only as **effective**
as the
knowledge behind it"



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