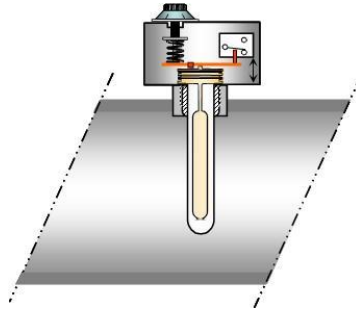


# Exercise Booklet

Print this exercise booklet before studying the lesson on line. It will enable you to write your answers to the HVAC learning exercises. You will thus be able to switch between reading or listening to the file on-line and writing in the booklet.



## REGULATING INDIVIDUAL SYSTEMS PART 1

English lesson:

<https://hvac-learning.com/heating/heating-regulating/regulating-individual-systems-part-1-bis/>

French lesson:

<https://formation.xpair.com/cours/regulation-systemes-individuels-partie-1.htm>

For each exercise, you will write your answer, then you will study its correction on-line before going to the next exercise.

If you cannot do an exercise, you will be able to study its correction directly, but **force yourself to write your answer** as often as possible.

Note that between 2 exercises, you will find it necessary to study the course. As a warning, in the booklet, you will sometimes find the following indication:

- “ **Study the course on-line before doing the next exercise**” or
- “ **Study the course on-line before going to the next paragraph**”

Only study the paragraphs or the exercises which have an equal or a lower level than the one your training requires.

NVQ Level = Vocational Certificate

A Level = High school Diploma

HND Level = Associate's Degree

MSC Level = Engineering Schools

Then, when you have completed a file, you will be able to assess your level on-line through a Multiple Choice Questionnaire in which you will only answer the questions related to the themes you have studied.

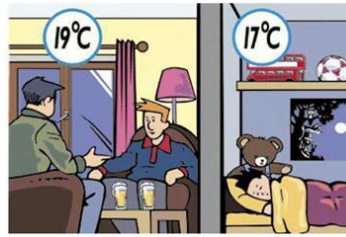
So now off you go and work well!

Good luck!

The Authors.

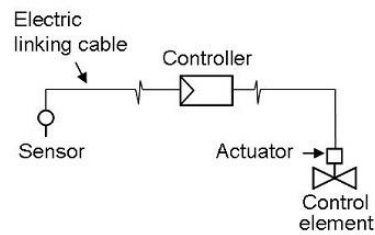
## 1) Regulating objectives training (VTC level)

**Study the course on-line.**



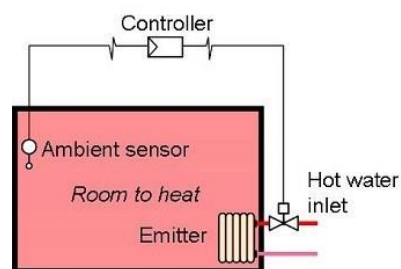
## 2) Composition of a control regulating system training (VTC to A level)

**Study the course on-line.**



## 3) Regulating depending on interior or exterior temperatures training (VTC to A level)

**Study the course on-line.**



#### 4) The principles of power variation of an emitter training (VTC to A level)

**Study the course on-line.**



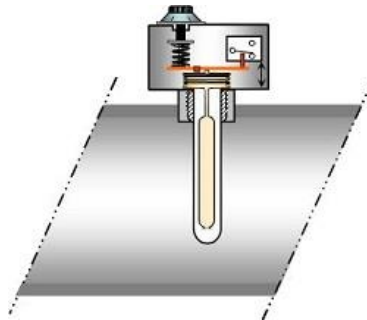
#### 5) Stats (VTC to A level)

**Study the course on-line before treating the next exercise.**

*Stats are simple control mechanisms which compactly regroup the 4 stages of a control regulation system (measurement-comparison-transmission-action).*

##### Question 1:

Indicate on the aquastat below the 4 stages of « measurement-comparison-transmission-action ».



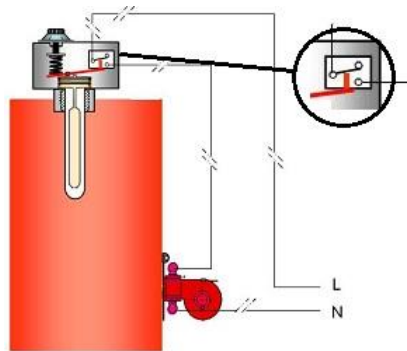
##### Question 2:

Connect, by drawing, the aquastat below, so that the burner is on.



**Question 3:**

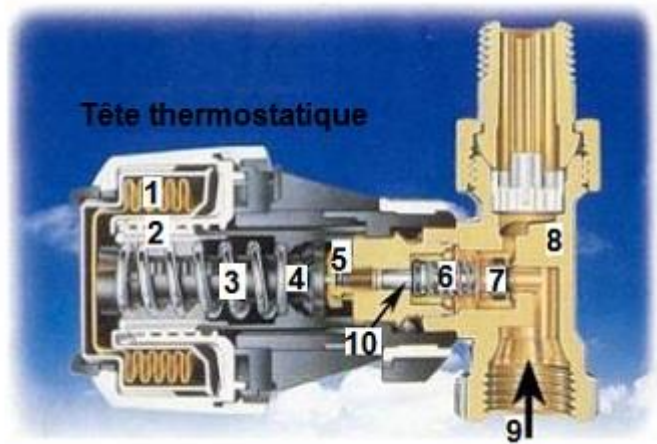
The system below is in operation (January in the Northern Hemisphere). Is the boiler at operating temperature and why?



**Study the course on-line before treating the next exercise.**



Source DANFOSS



Source Hervé SILA

**Question 4:**

Considering the identification shown above, which elements conform to the stages of «measurement-comparison-transmission-action»?

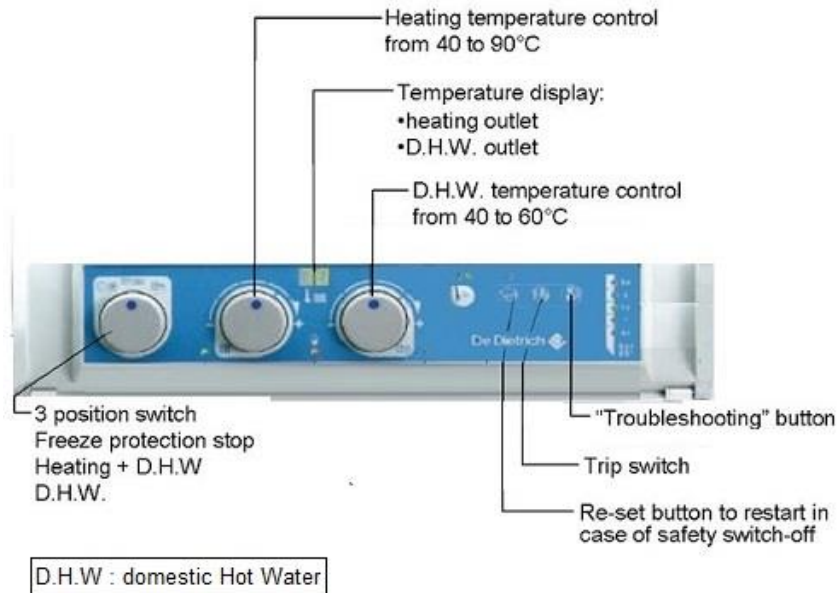
STAGE	N°	PART
Measurement	1	Bellows thermostat
Comparison	3	
Transmission	4	
Action	7	

## 6) Individual heating, manual regulating on the boiler aquastat training (VTC to A level)

As a minimum, regulating a hot water heating circuit is carried out by manually setting the adjustable aquastat of the boiler.

### Question 1:

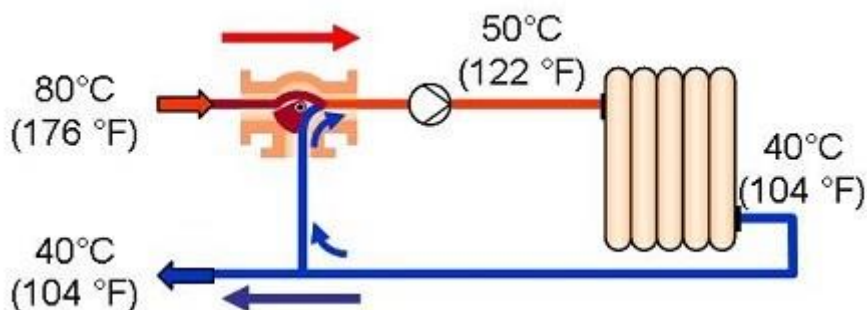
Identify on the wall-mounted boiler control panel below, the setting button for the adjustable aquastat (for heating).



**Study the course on-line before treating the next paragraph.**

## 7) Individual heating, manual regulating on 3 or 4 way valves training (VTC to A level)

**Study the course on-line.**






## 8) Summary regulation system training

Let's recognise the main components of a control regulation system




### Question 1:

Name the elements below and indicate their functions.

ELEMENT	NAME	FUNCTION
		
		
		



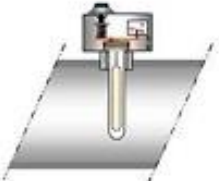

### Question 2:

Name the elements below and indicate their functions.

ELEMENT	NAME	FUNCTION
		
		
		

**Question 3:**

Name the elements below and indicate their functions.

ELEMENT	NAME	FUNCTION
	Air temperature measuring sensor	Fitted in the room of a house, it measures ambient temperature, which will be interpreted by the heating controller.
		
		
		

*English lesson:*

<https://hvac-learning.com/heating/heating-regulating/regulating-individual-systems-part-1-bis/>

*French lesson:*

<https://formation.xpair.com/cours/regulation-systemes-individuels-partie-1.htm>

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