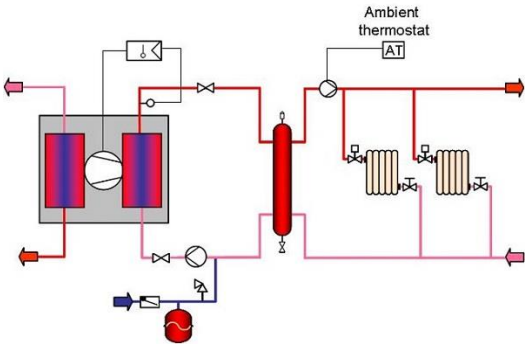
Nom: **Date:**

HVAC Learning.com

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.



CONNECTING – REGULATING HEAT PUMP WITHOUT DHW PRODUCTION

English lesson
https://hvac-learning.com/renewable-energy/heat-pump-training/connecting-regulating-heat-pump-without-dhw-production/

French version:
https://formation.xpair.com/cours/raccordement-regulation-pompes-chaleur-sans-ecs.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:

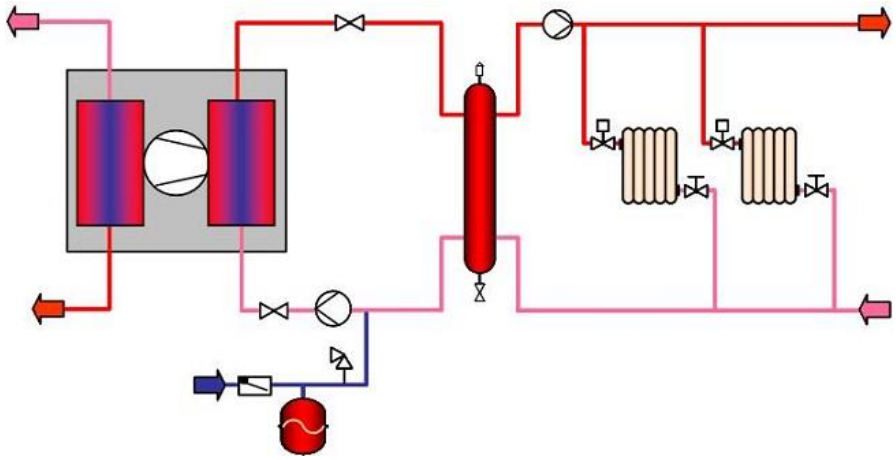
- *" **Study the course on-line before doing the next exercise**" or*
- *" **Study the course on-line before going to the next paragraph**"*

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.

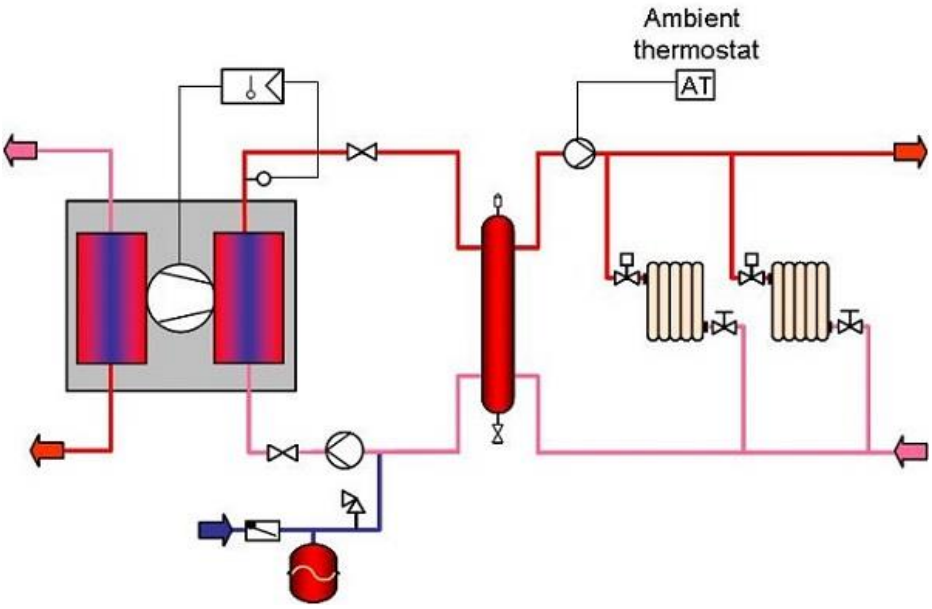
N°1 – Hydraulic connections for heat pumps (HP) in individual heating systems – A to HND level

Study the course on-line.



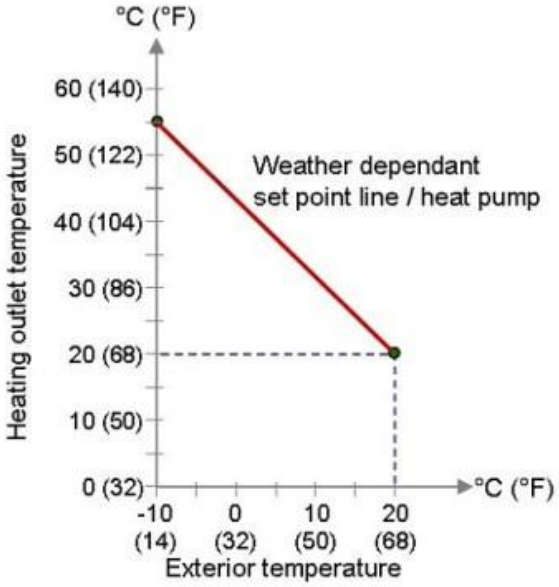
N°2 – Regulating fixed temperature heat pumps in individual heating systems – A to HND level

Study the course on-line.



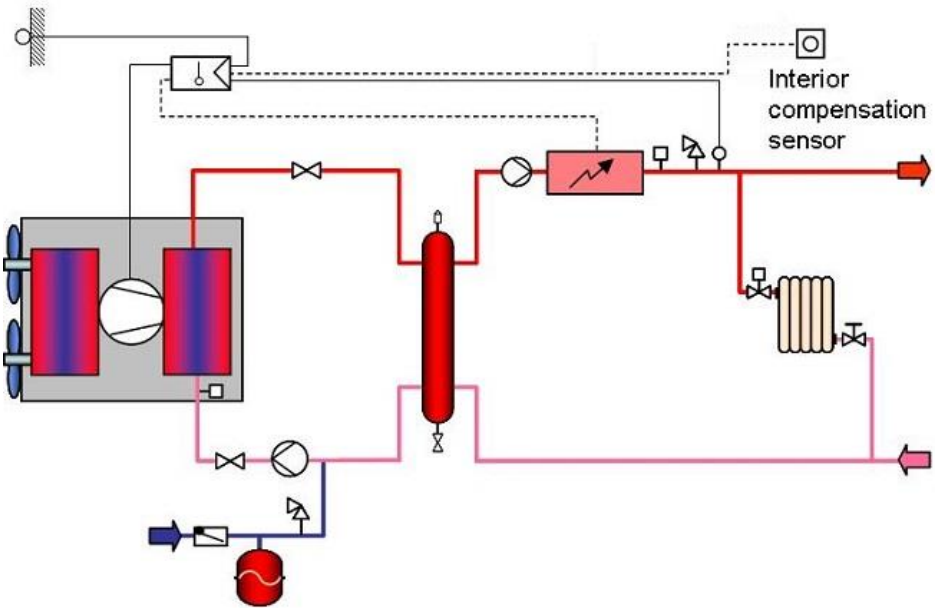
N°3 – Regulating variable temperature heat pumps in individual heating systems – A to HND level

Study the course on-line.



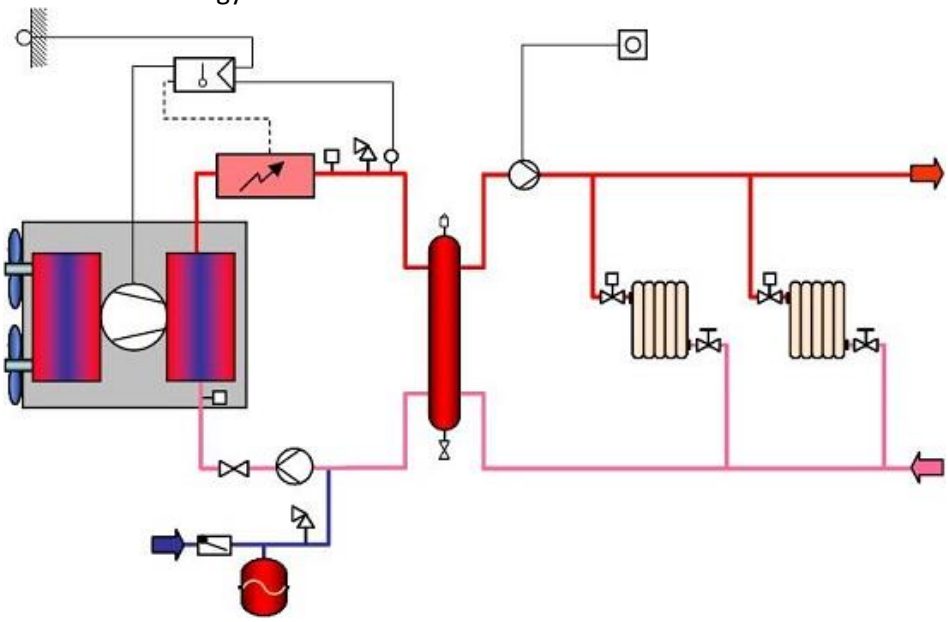
N°4 – Regulating heat pumps with supplementary electric heating in individual heating systems – A to HND level

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



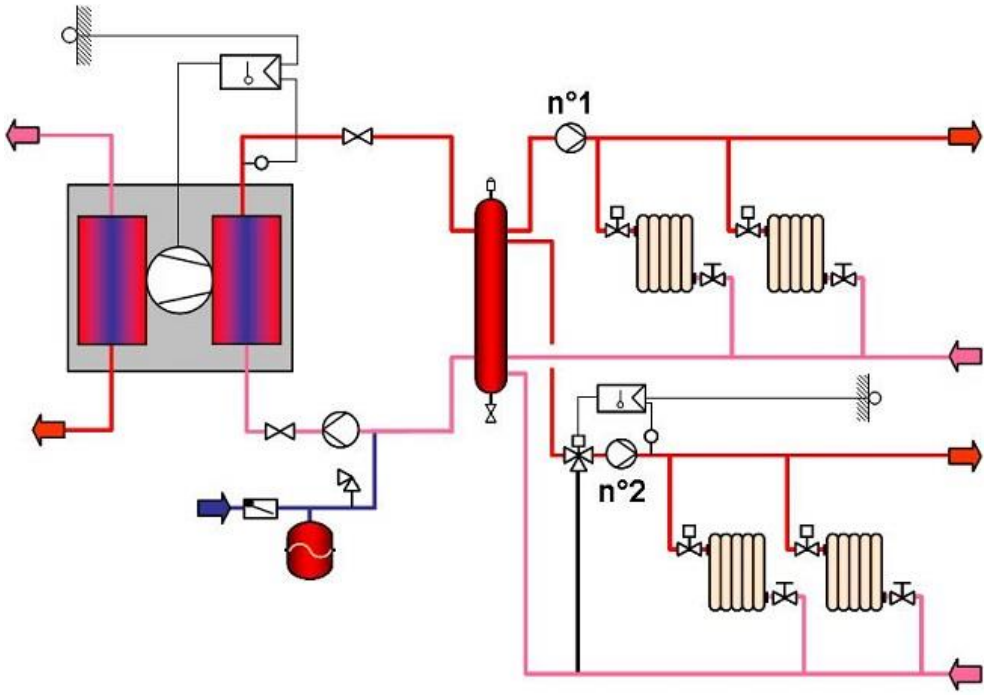
Question 1

What are the differences between the solution shown below and that shown above?
Why is the solution below less energy efficient than that shown before?



N°5 – Principles of regulating heat pumps in collective heating systems – A to HND level

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



Question 1

Explain literally the principle governing the control of the heating system above.

Question 2

Which hypotheses could justify the fact that circuit n°2 above requires an outlet temperature which is always equal to or less than that of circuit n°1?

Question 3

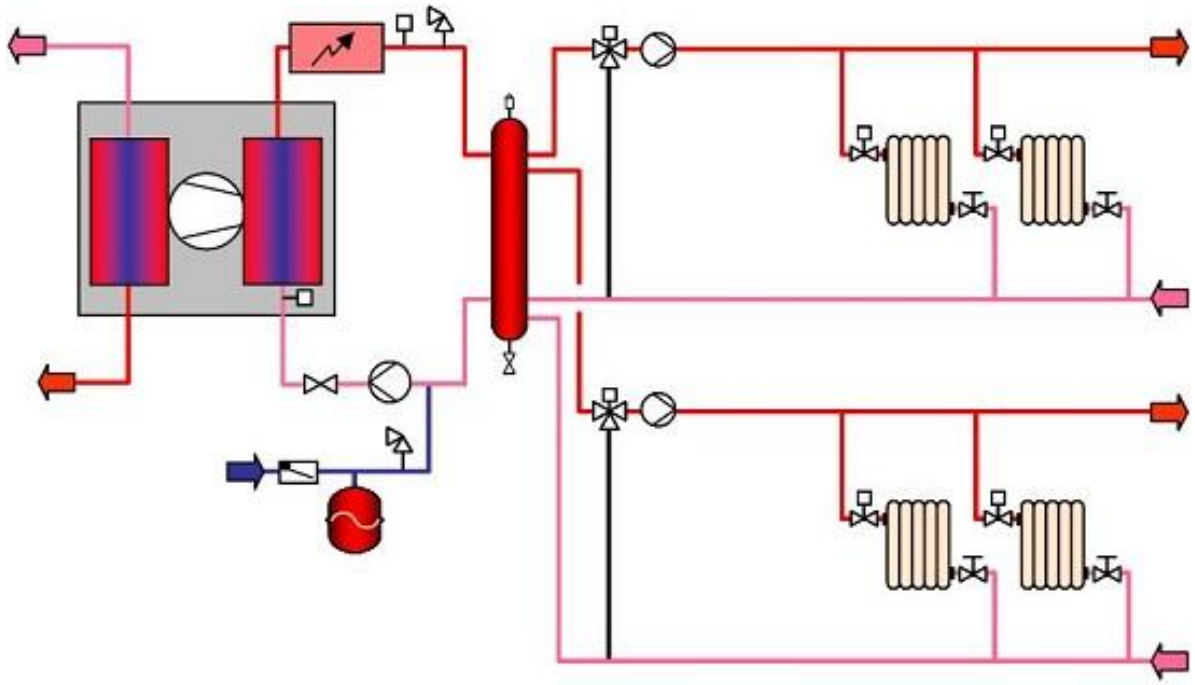
Supposing that circuits n° 1 and n°2 are of the same type but with different orientations, propose 2 orientations which would justify the presence of a 3 way valve on circuit n°2.

Question 4

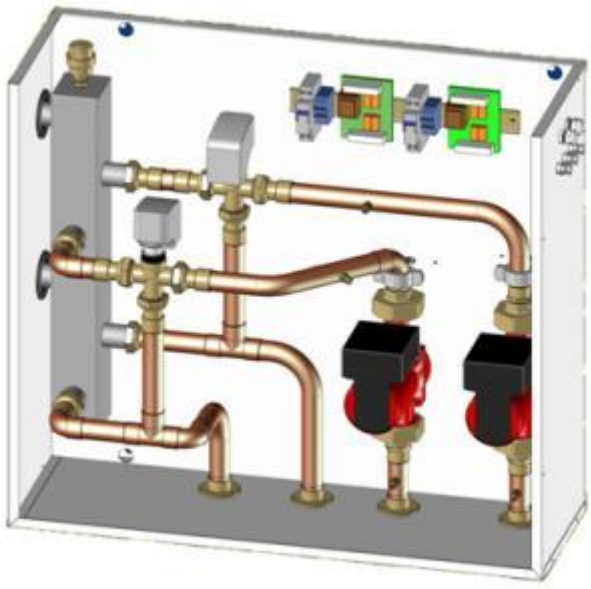
Supposing that circuits n°1 and n°2 have the same orientation, propose 2 types of premises which would justify the presence of a 3 way valve on circuit n°2.

Question 5

If circuits connected to the secondary circuit of the decoupling cylinder require from time to time a lower supply temperature than that of the other circuits, on a random basis, they will be fitted with a specific control subject to the exterior temperature.
Symbolise with 3 regulators the regulating of the installations below (heat pump + supplementary electric heating and 2 outlets to collective installations).

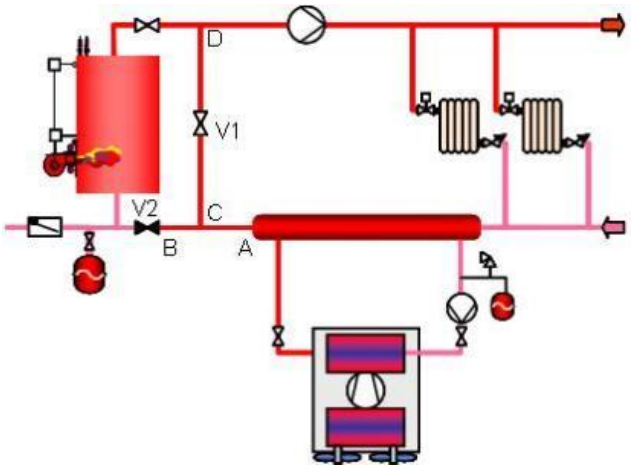


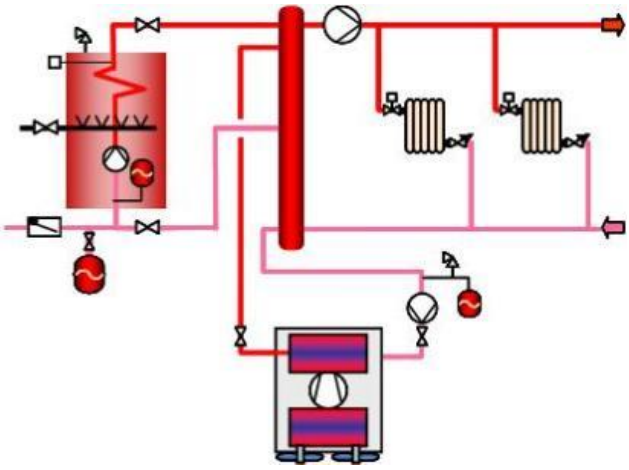
Study the course on-line before treating the next paragraphe.



N°6 – Principles of connecting and regulating heat pumps undergoing renovation – A to HND level

Study the course on-line.





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