

## Unitate de amestec pentru incalzirea in pardoseala

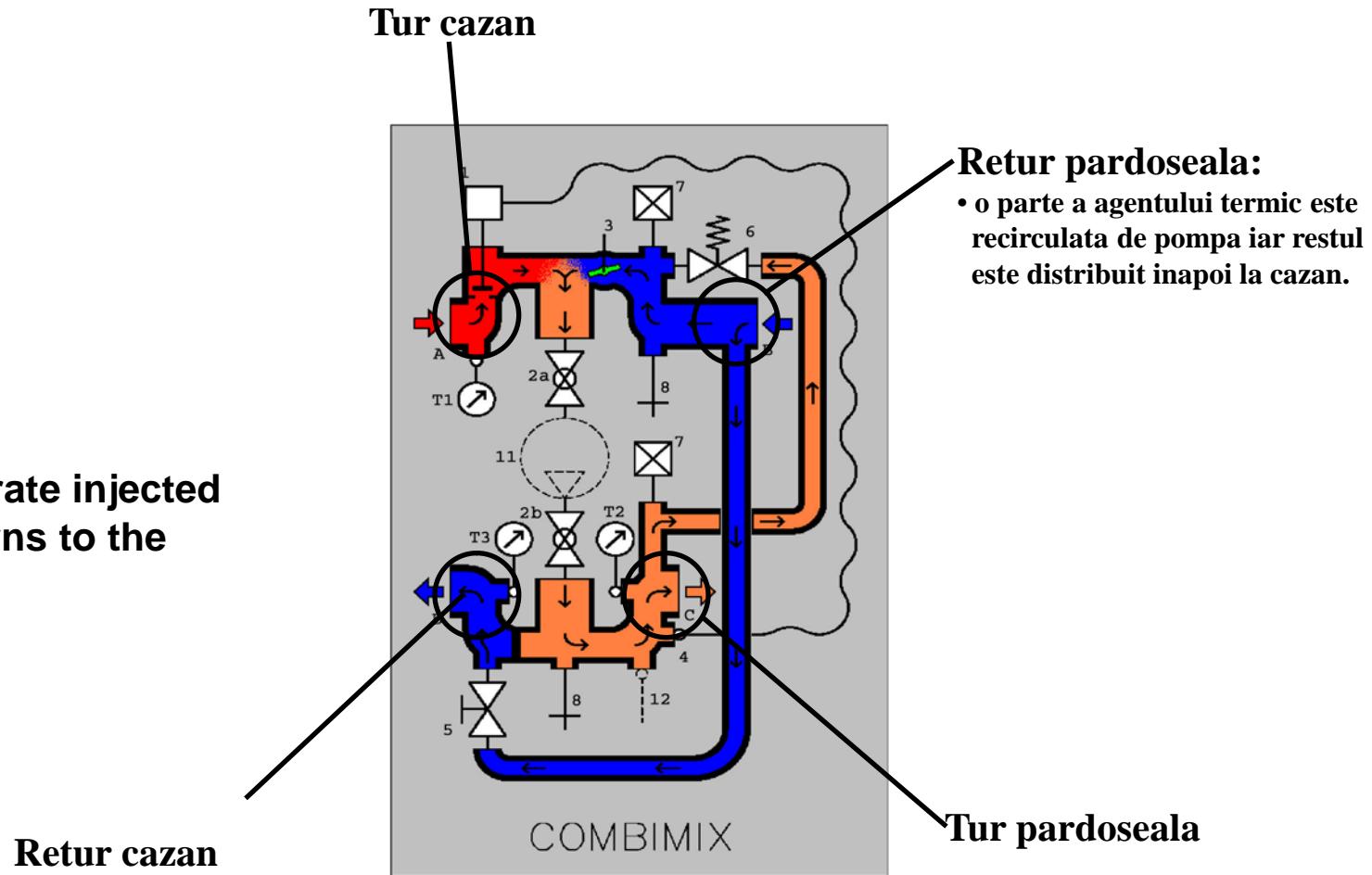


**Combimix este un sistem de amestec a agentului termic necesar incalzirii in pardoseala.**

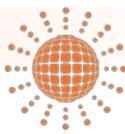
**Este disponibil in doua variante:**

- Cu reglaj in punct fix prin cap termostatat cu sonda; plaja reglaj: 20°C-60°C**
- Cu servomotor comandat de un controler cu reglaj al temperaturii si sonda externa.**

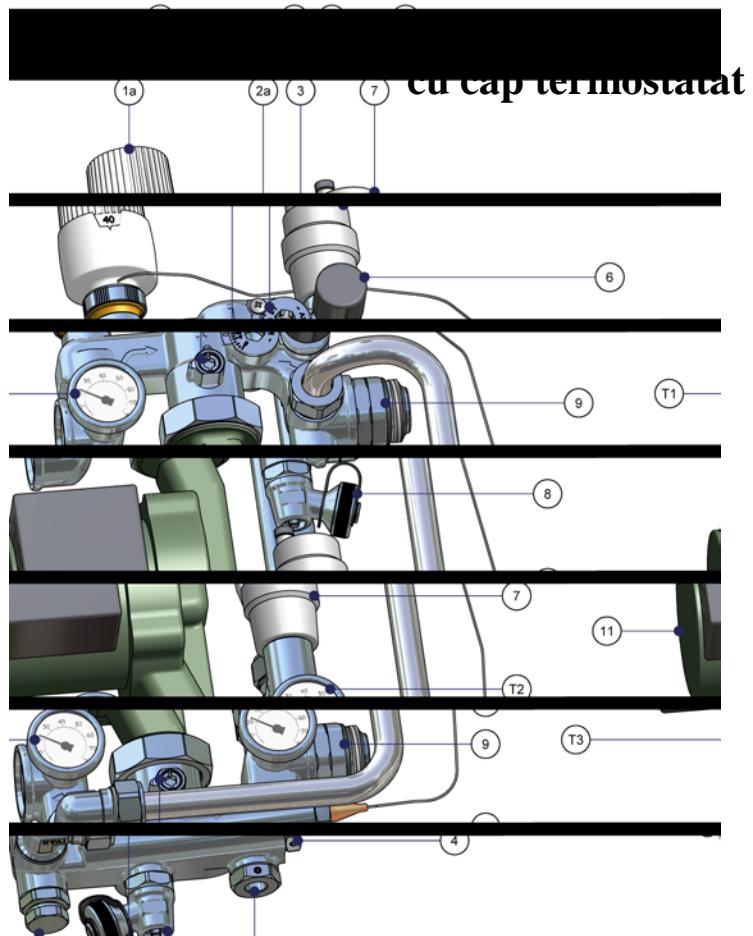
Combimix este un sistem in care agentul termic furnizat de centrala/cazan este injectat printr-o vana cu 2 cai pentru a mentine constanta temperatura setata prin unitatea de reglaj (cap termostat sau servomotor).



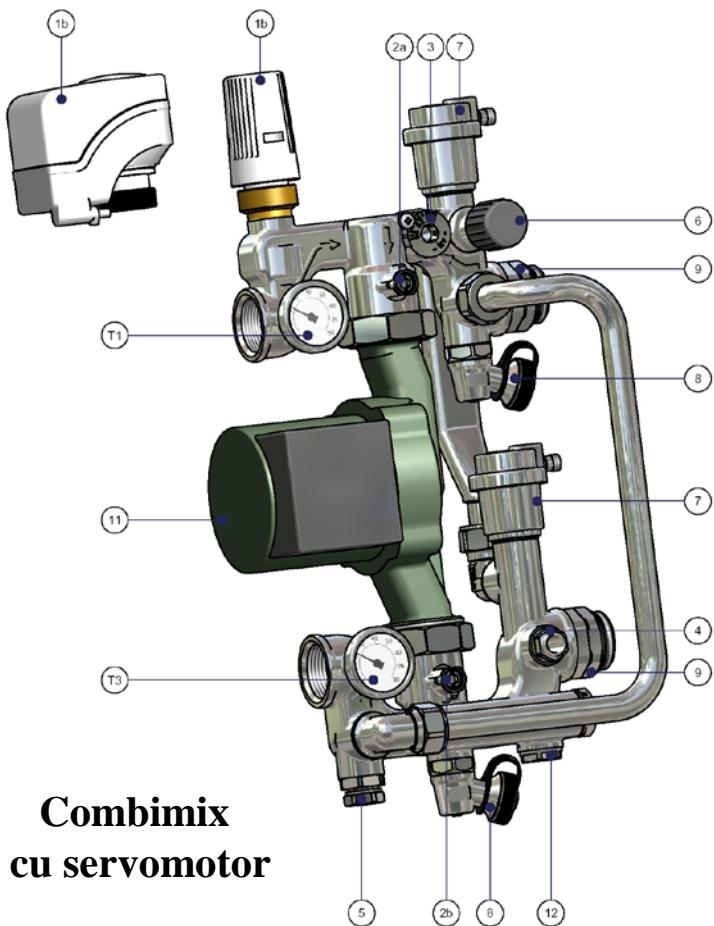
# COMBIMIX



IVAR



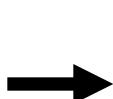
cu cap termostata



Combimix  
cu servomotor

- Ambele versiuni au aceleasi caracteristici hidraulice





**Chiar daca au capete de reglaj diferite:**

**Cap reglaj punct fix**



**Cap reglaj pentru servomotor**

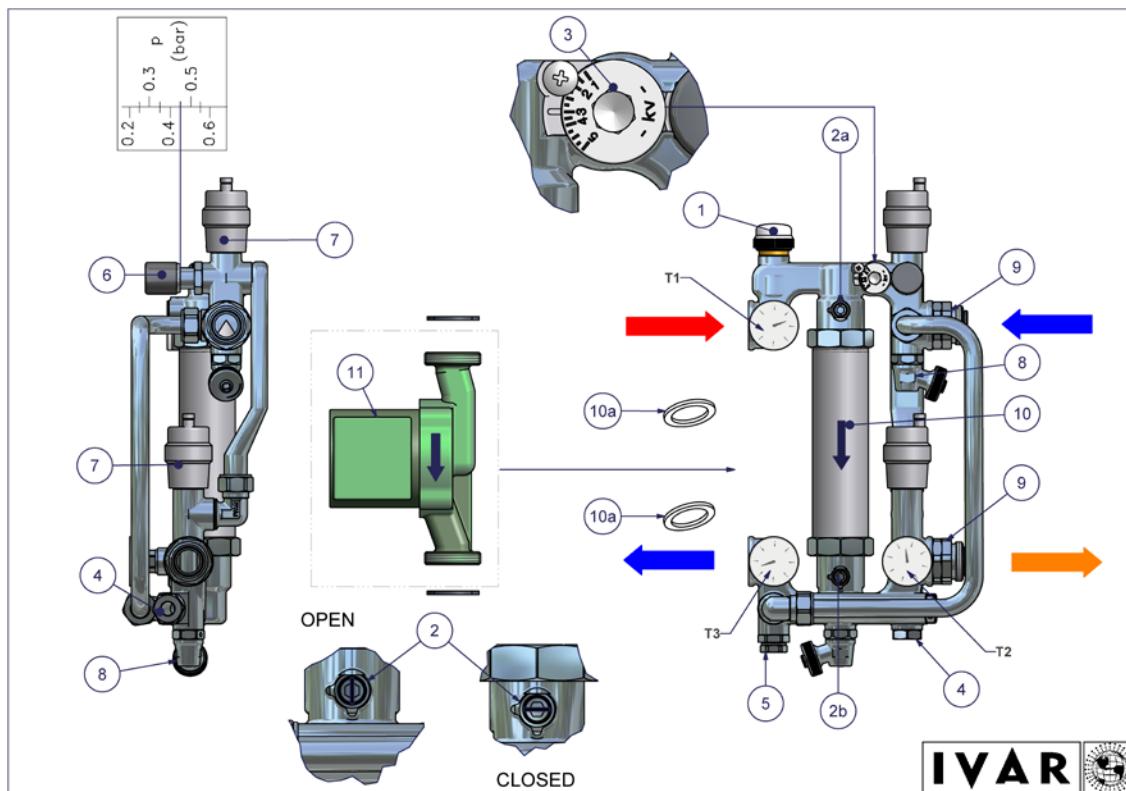


**Arc pentru absorbtia  
socurilor hidraulice  
ca protectie a servomotorului.**

Aceasta versiune are etansarea prin obturator plan pentru a asigura un debit nominal Kv2 = 0,9 la o deschidere a tijei de 0.22 mm.

Aceasta versiune are etansarea prin obturator conic pentru a asigura un debit nominal Kv2 = 0,9 la o deschidere maxima a servomotorului..

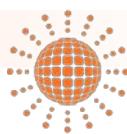
## COMBIMIX - COMPONENTE



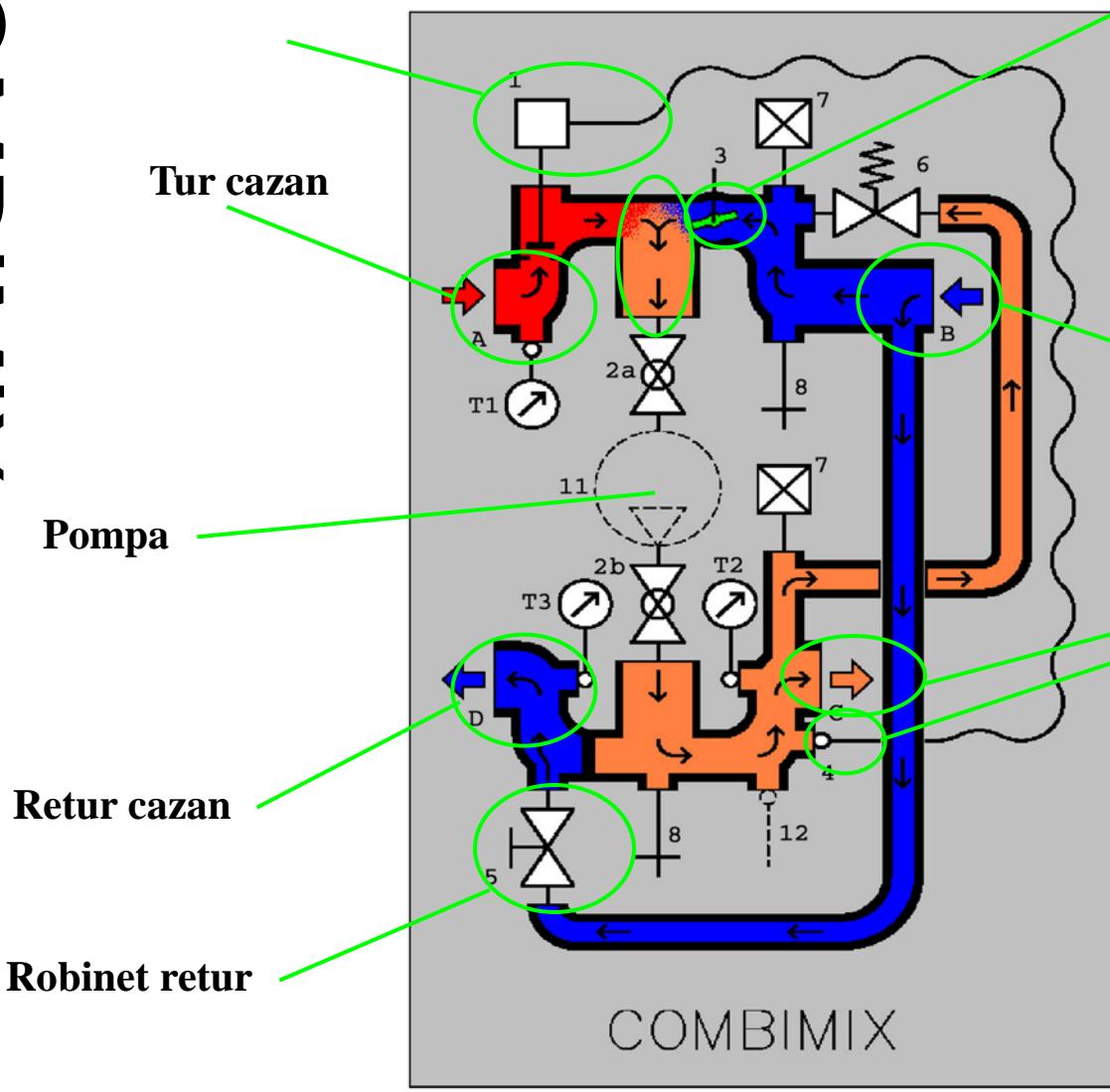
1. Cap reglaj (2 versiuni)  
2a-2b Robineti izolare pompa
3. Vana amestec  
(circuit secundar)
4. Robinet return
5. Reglaj by-pass diferential
6. Aerisitor automat
7. Robinet golire/incarcare
8. Niplu olandez
9. Racorduri pompa
10. Pompa
11. T1-T2-T3 Termometre

# COMBIMIX

Ajustarea capului de reglaj permite vanei cu 2 cai sa furnizeze/opreasca agentul termic de la cazan.



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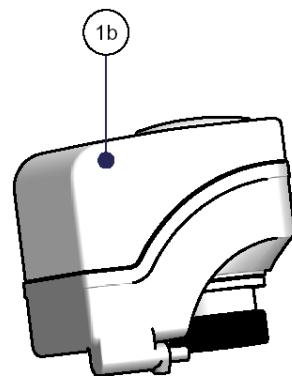
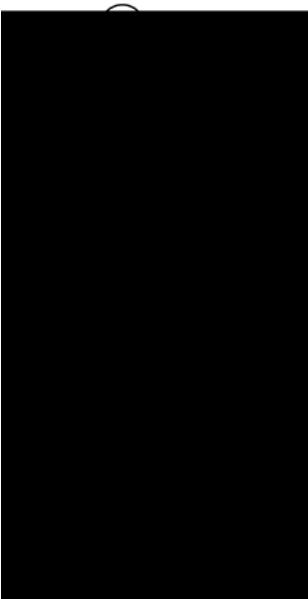


**Zona amestec:**  
apa de pe turul cazanului se amesteca cu cea de pe returul de la pardoseala.Debitul poate fi reglat prin ajustarea vanei de amestec (3).

**Retur pardoseala**

**Tur pardoseala**  
Senzorul de temperatura monitorizeaza temperatura agentului termic distribuit catre pardoseala si transmite informatia catre capul de reglaj. In cazul in care temperatura acestuia este prea mica capul de reglaj se deschide; iar daca temperatura este prea mare acesta se va inchide.

## VANA CU 2 CAI

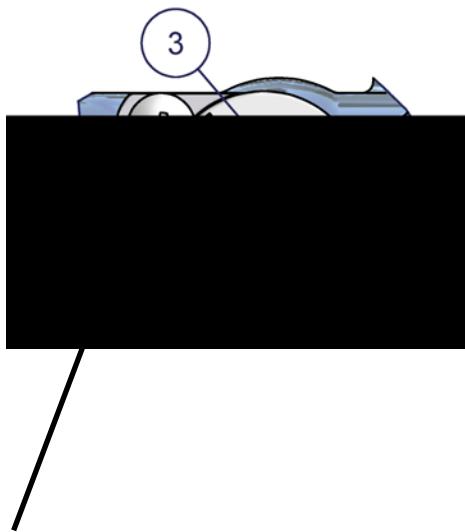


### Caracteristici:

- Permite ajustarea temperaturii de intrare a agentului termic furnizat de cazan pentru a mentine o temperatura constanta in pardoseala.
- Disponibila in doua variante (1a) cu reglaj in punct fix sau (1b) cu servomotor.
- Insertiile sunt diferite pentru cele doua tipuri de reglaj.



## VANA DE AMESTEC PENTRU CIRCUITUL SECUNDAR



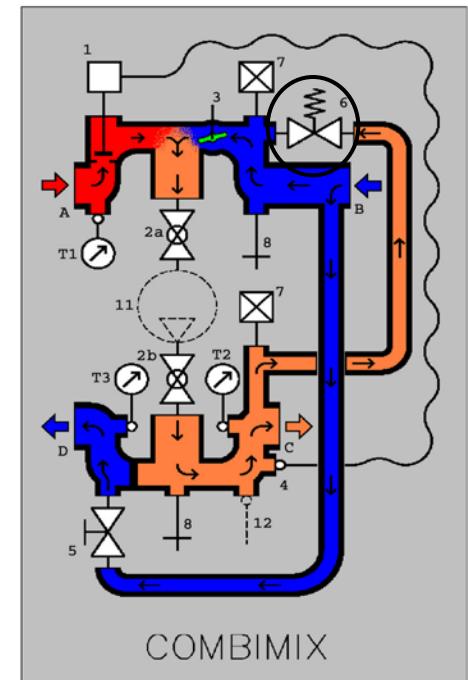
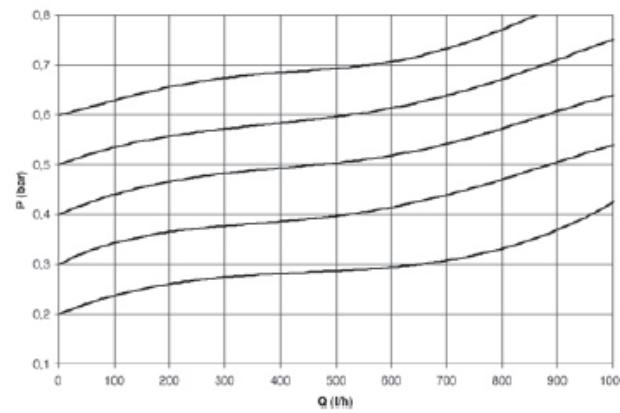
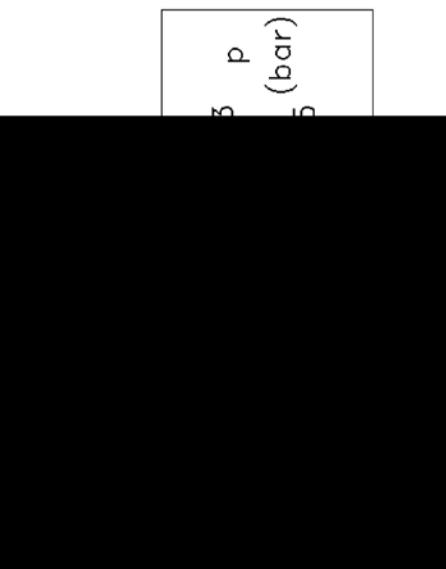
### Caracteristici:

- Permite amestecul intre agentul termic furnizat de cazan si cel de pe returul pardoselii.
- Reglabil de la 1 la 5 cu cheie imbus de 10 mm.
- Permite ajustarea debitului de recirculare; pozitia 1 debit redus – pozitia 5 debit maxim.
- Permite reglarea puterii termice a sistemului: debit marit = putere termica mai mare.

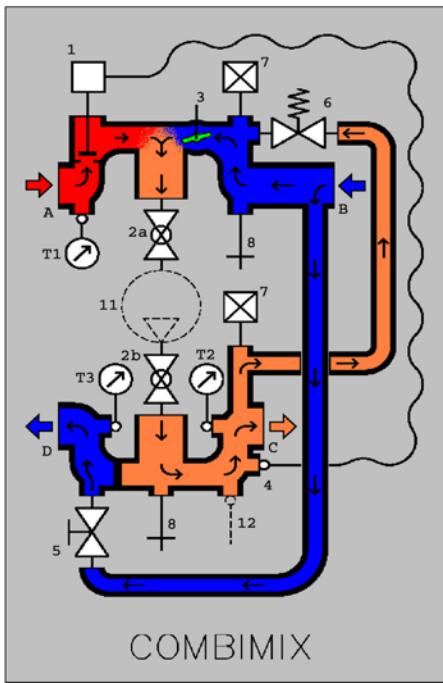
## BY-PASS DIFERENTIAL

### CARACTERISTICI:

- In cazul in care toate circuitele sunt inchise permite recircularea apei si protejeaza pompa sa nu functioneze in gol.
- reglabil intre 0.2 si 0.6 bar
- cand presiunea este mai mare decat cea setata by-pass-ul se deschide eliminand astfel riscul suprasolicitarii instalatiei.
- by-pass-ul trebuie setat la o presiune mai mare decat cea a pompei de lucru.



# COMBIMIX



## EXEMPLU

**Date:**

$$E_p = \text{Putere termica pardoseala} \quad 10 \text{ kW}$$

$$T_c = \text{Temperatura furnizata de cazan} \quad 70^\circ\text{C}$$

$$T_{ip} = \text{Temperatura tur pardoseala} \quad 40^\circ\text{C}$$

$$T_{rp} = \text{Temperatura retur pardoseala} \quad 30^\circ\text{C}$$

$$Q_p = \text{Debit necesar circuit cazan} \quad ?$$

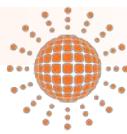
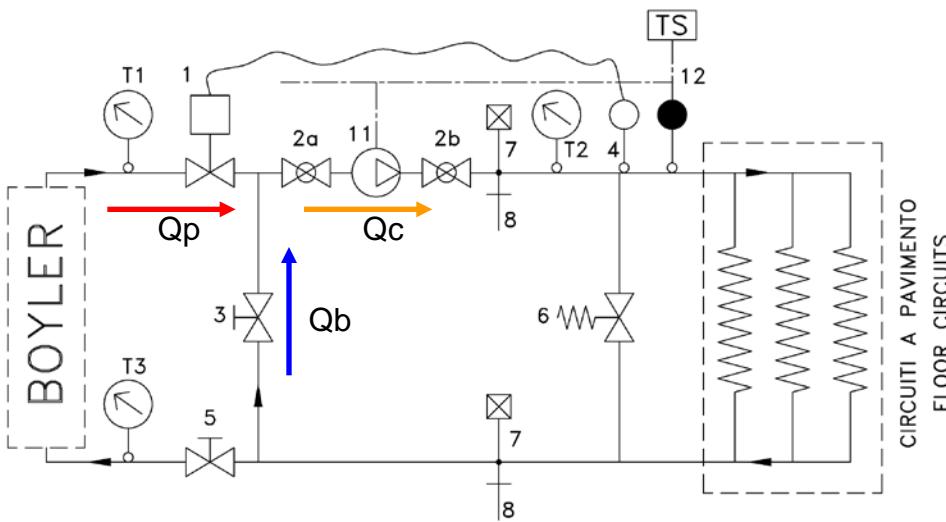
$$Q_p = \frac{E_p}{T_c - T_{rp}} = \frac{10000}{70 - 30} \cdot 0.86 = 215 \text{ Kg/h}$$

$Q_c = \text{Debit necesar catre pardoseala}$

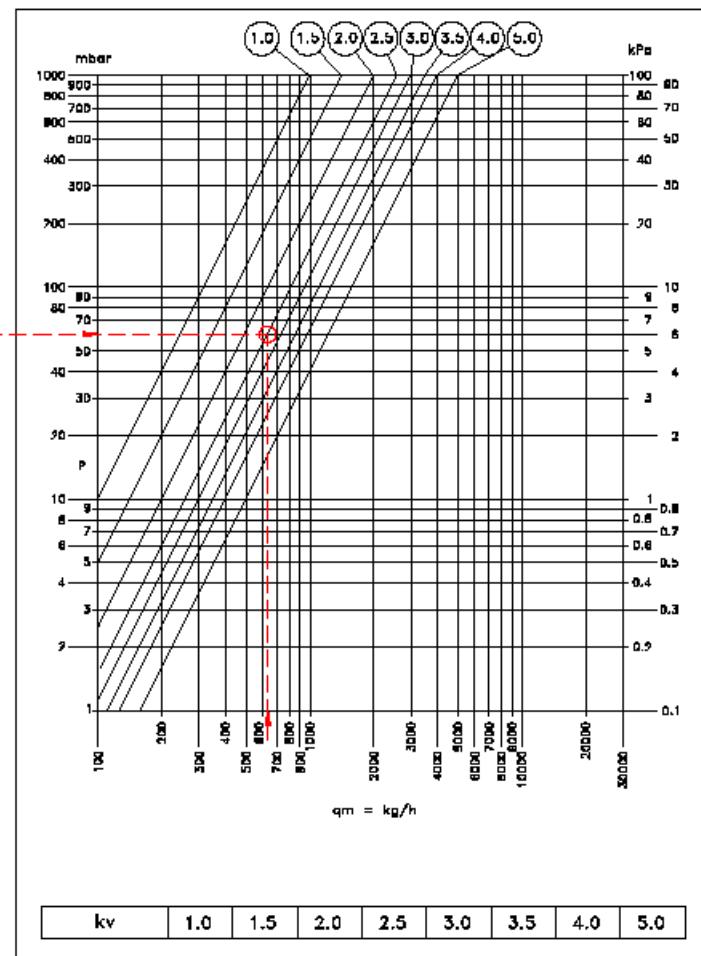
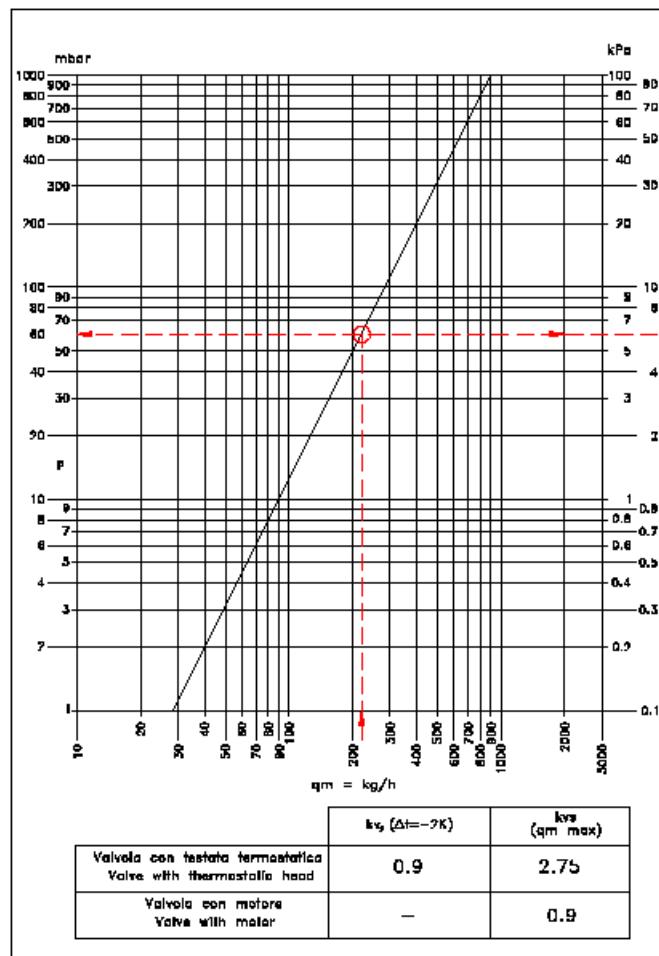
$$Q_c = \frac{E_p}{T_{ip} - T_{rp}} = \frac{10000}{40 - 30} \cdot 0.86 = 860 \text{ Kg/h}$$

$Q_b = \text{Debit necesar al vanei de amestec}$

$$Q_b = Q_p - Q_c = 860 - 215 = 645 \text{ Kg/h}$$



IVAR

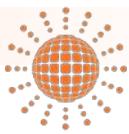


**Alegerea pompei:** presupunand o pierdere de 250 mbar a celui mai lung circuit

$$\text{Pompa} = 250 + 60 \text{ (pierderea vanei de amestec)} = 310 \text{ mbar}$$

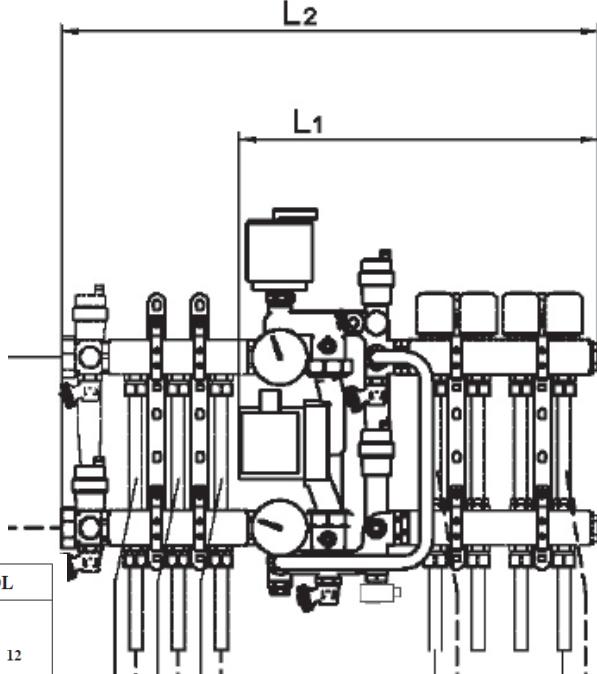
$$Q_c = 860 \text{ kg/h}$$

→ In concluzie pompa trebuie sa asigure o presiune de 310 mbar cu un debit de 860 Kg/h



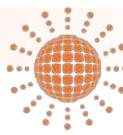
### Dimensionarea casetelor:

- distributie pardoseala
- distributie pardoseala + radiatoare 2 cai
- distributie pardoseala + radiatoare 3 cai

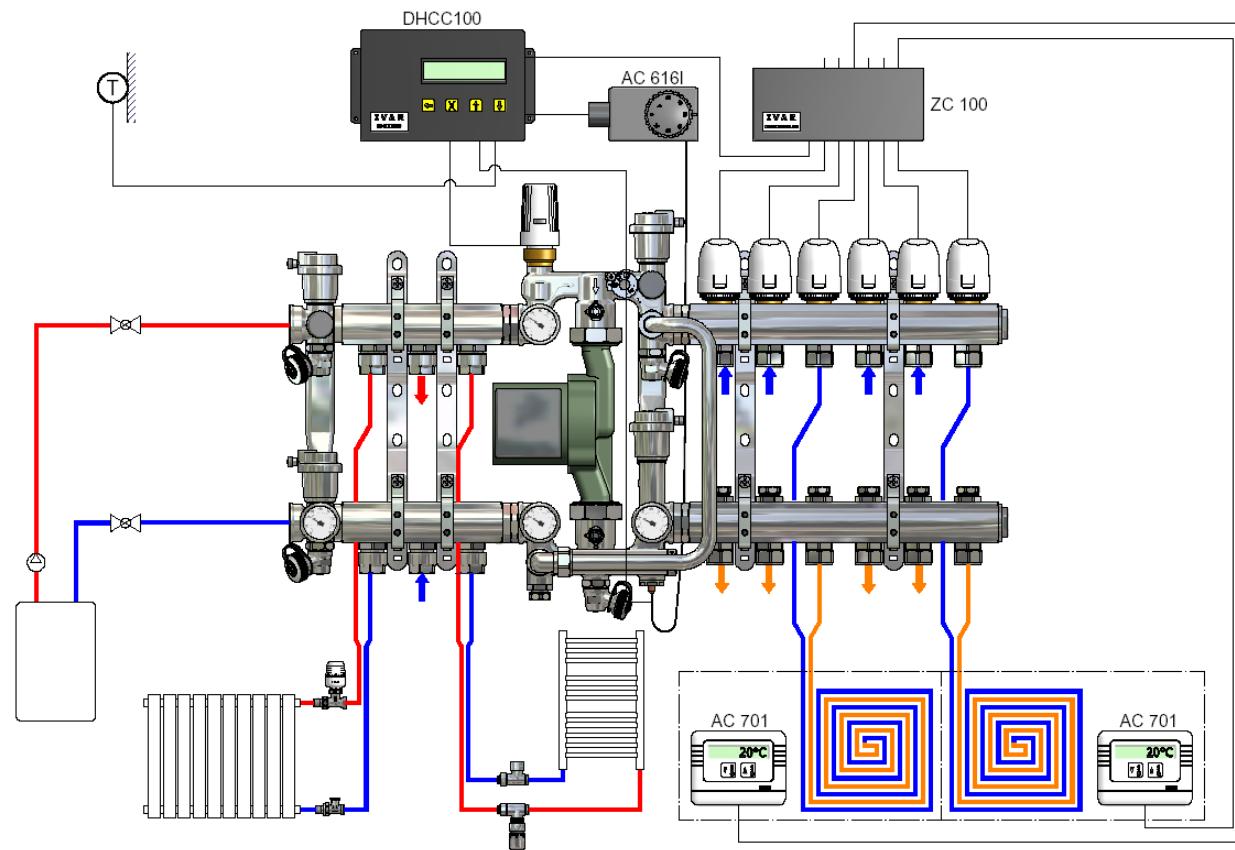


IMPIANTO A PAVIMENTO - FLOOR-MOUNTED SYSTEM - FUSSBODENHEIZUNG - INSTALLATION DE CHAUFFAGE AU SOL											
ATTACCHI PANNELLI PANEL COUPLINGS PLATTENHEIZKÖRPER ANSCHLÜSSE FIXATIONS ANNEAUX	2	3	4	5	6	7	8	9	10	11	12
L <sub>1</sub> (mm)	320	370	420	470	520	570	620	670	720	770	820
IMPIANTO MISTO - MIXED SYSTEM - GEMISCHTE ANLAGE - INSTALLATION DE CHAUFFAGE MIXTE											
ATTACCHI RADIATORI RADIATOR COUPLINGS HEIZKÖRPERANSCHLÜSSE FIXATIONS RADIAUTEURS	2	2	2	2	2	2	2	2	2	2	2
ATTACCHI PANNELLI PANEL COUPLINGS PLATTENHEIZKÖRPER ANSCHLÜSSE FIXATIONS ANNEAUX	2	3	4	5	6	7	8	9	10	11	12
L <sub>2</sub> (mm)	475	525	575	625	675	725	775	825	875	925	975
ATTACCHI RADIATORI RADIATOR COUPLINGS HEIZKÖRPERANSCHLÜSSE FIXATIONS RADIAUTEURS	3	3	3	3	3	3	3	3	3	3	3
ATTACCHI PANNELLI PANEL COUPLINGS PLATTENHEIZKÖRPER ANSCHLÜSSE FIXATIONS ANNEAUX	2	3	4	5	6	7	8	9	10	11	12
L <sub>2</sub> (mm)	525	575	625	675	725	775	825	875	925	975	1025

# COMBIMIX

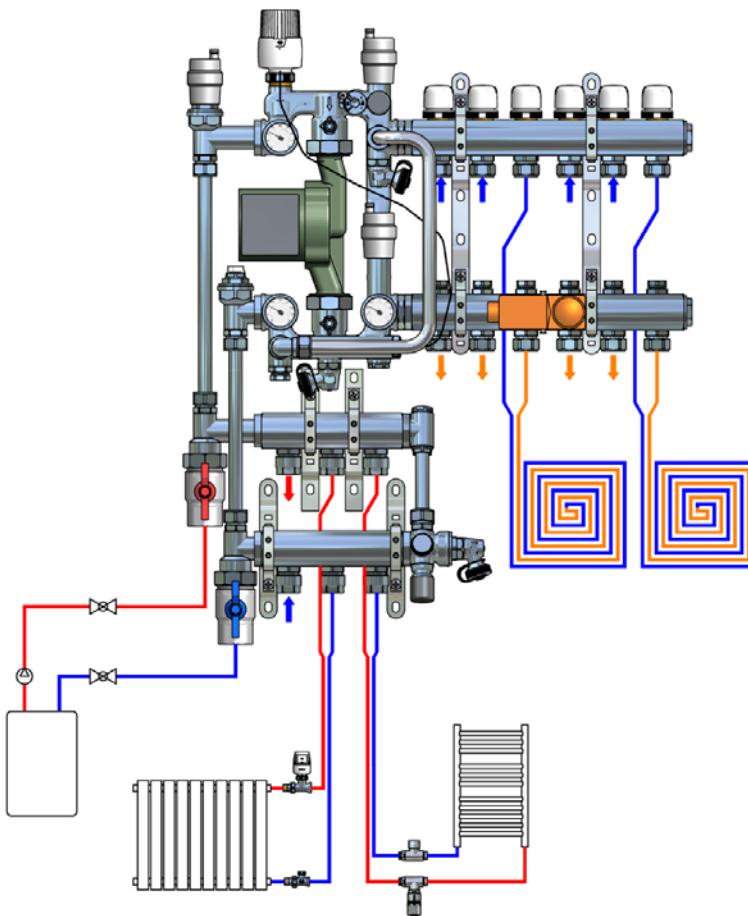


IVAR



Configuratie completa cu:

- kit Combimix motorizat (cu servomotor 0-10 V )
- distribuitor temperatura inalta pentru radiatoare
- distribuitor temperatura joasa pentru pardoseala (cu reglaj micrometric pe tur si actuator pe return)
- controler electronic cu sonda externa si Zone Controller pentru controlul actuatorilor



**Configuratie completa cu:**

- reglaj in punct fix prin cap termostat cu sonda de imersie
- distribuitor temperatura inalta pentru radiatoare de tip vertical (kit CEP)



- distribuitor temperatura joasa pentru pardoseala cu reglaj micrometric pe tur si actuator pe retur