HLT

MT

BK

16 · 18 · 20 · 22

T · 17 · 19 · 21 · T · T · 23

P1

P2

V1

1 · 3 · 5 · 6 · 7 · 8 · 9 · 10 · 11 · 14

2

V1

12 · 15

Cold water

4

CFC

13

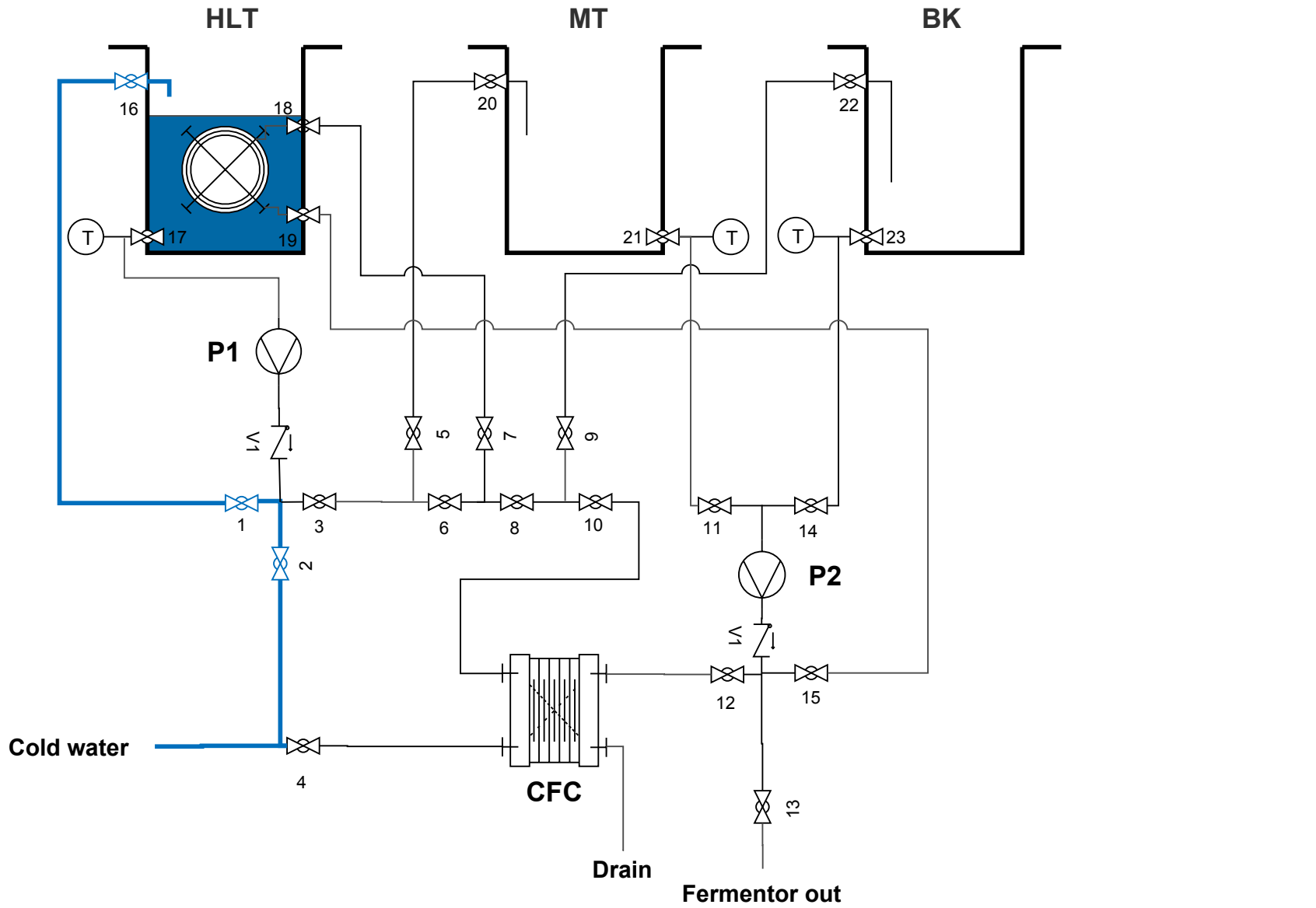**Drain**

Fermentor out

Sytem overview
HERMS design with fixed connections and 23 ball valves and 2 non-return valves.
It can perform these steps without swapping hoses: fill with water, heat, mash in, mash, sparge, sparge out,
whirlpool and cool, dump wort to fermentor, clean in place, drain system. All inputs and outputs to the system as a
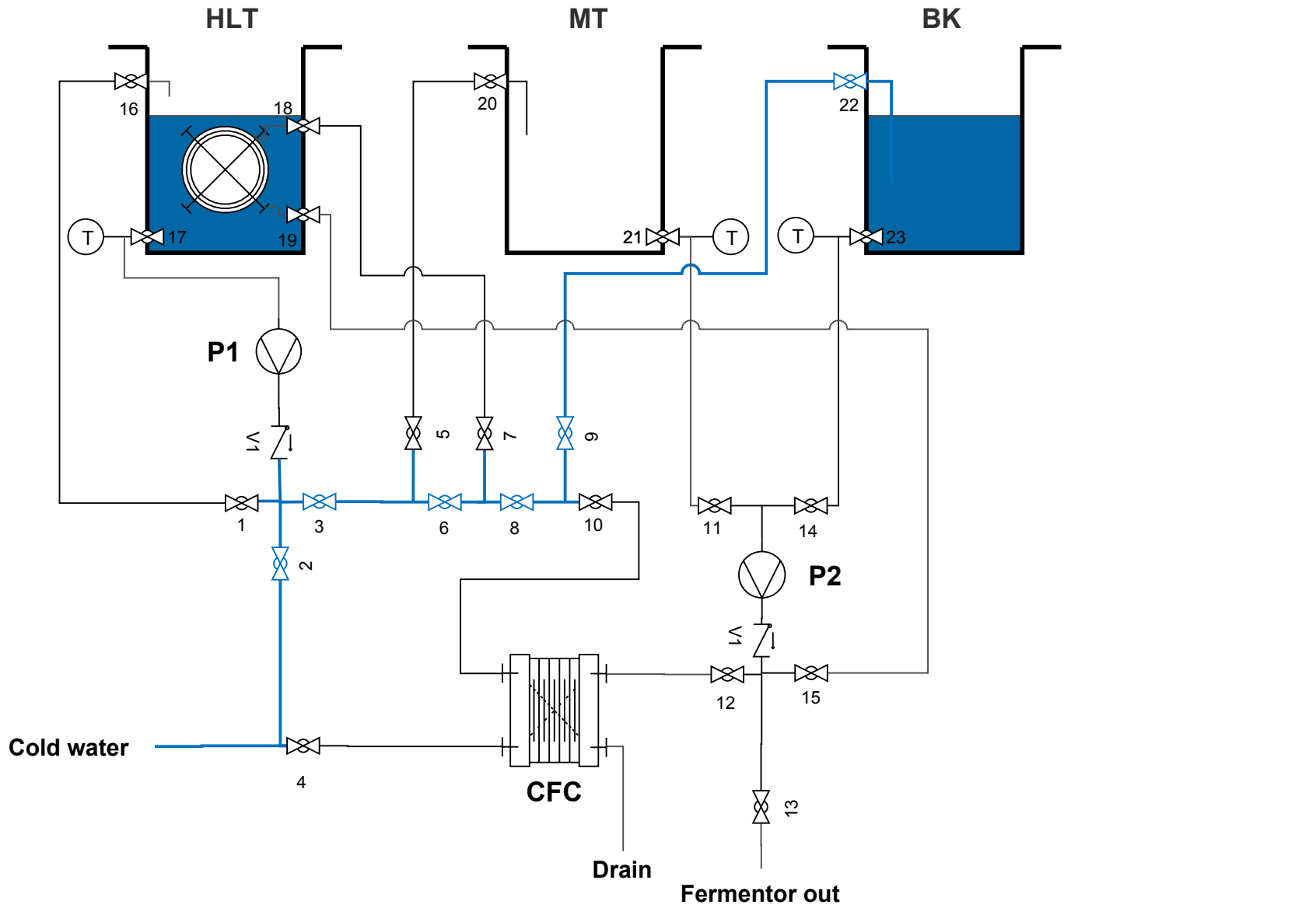whole are manual, to prevent spillage.

⋈ manual ball valve   ⋉ one-way valve

HLT

MT

BK

16

18

20

22

17

19

21

23

T

T

T

P1

V1

1

3

5

7

9

6

8

10

2

11

14

P2

V1

12

15

13

CFC

Cold water

4

Drain

Fermentor out

Fill HLT with cold water

From the cold water input, the water can flow to the HLT, MT, BK and the CFC. This is driven by the tap pressure.

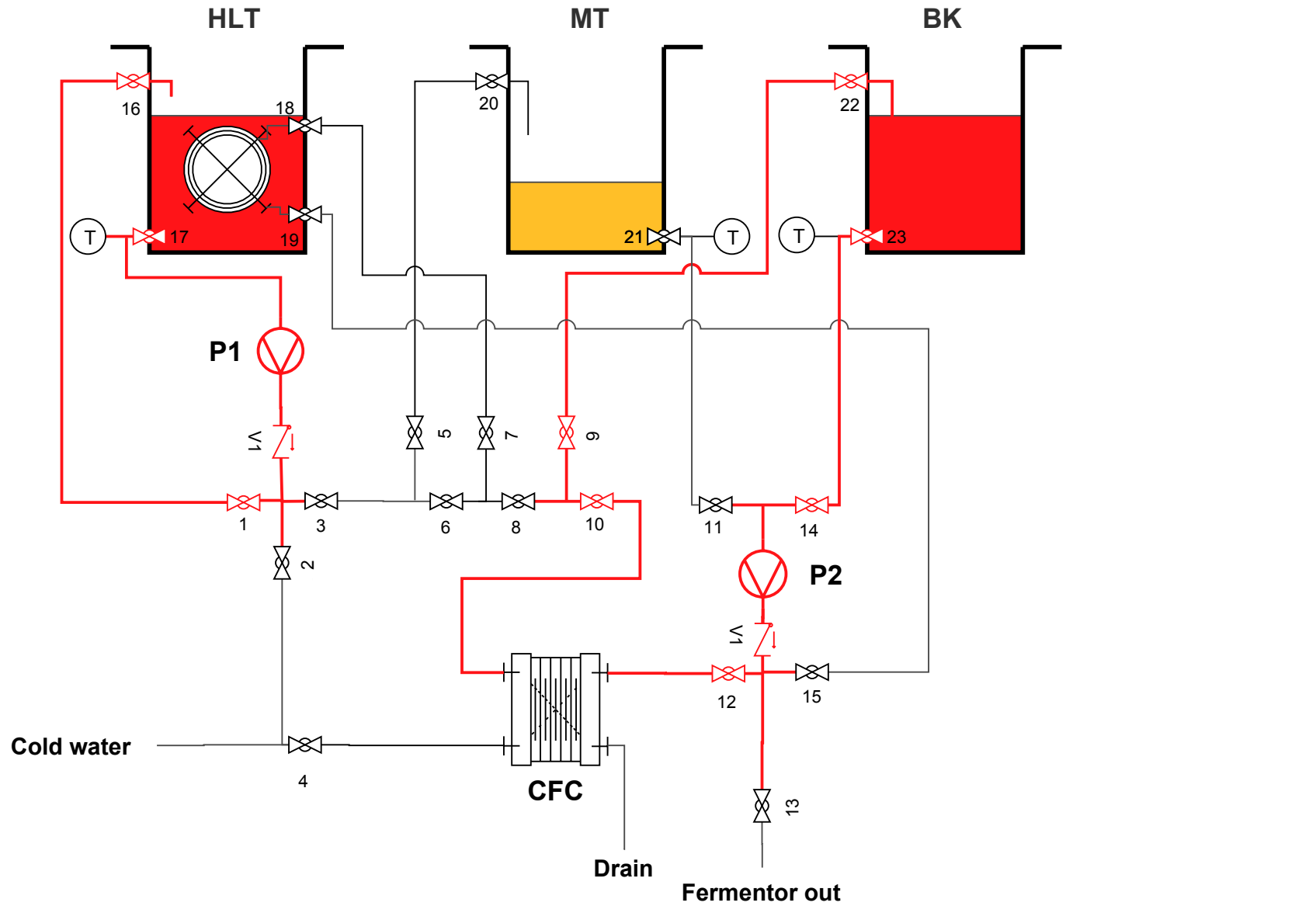To fill the HLT, open valves 1, 2 and 16.

⋈ manual ball valve   ⬚ one-way valve

HLT   MT   BK

16   18   20   22

T   17   19   21   T   T   23

P1

V1

1   3   6   8   10   11   14

5   7   9

2

P2

V1

12   15

Cold water

4

13

CFC

Drain

Fermentor out

Fill BK with cold water
The BK is filled with water after the HLT is full. This water is used for mash in. By using the water from the BK, we
can measure the mash volume in the BK before mashing and the HLT stays full. System opens 2, 3, 6, 7, 9 and 22.
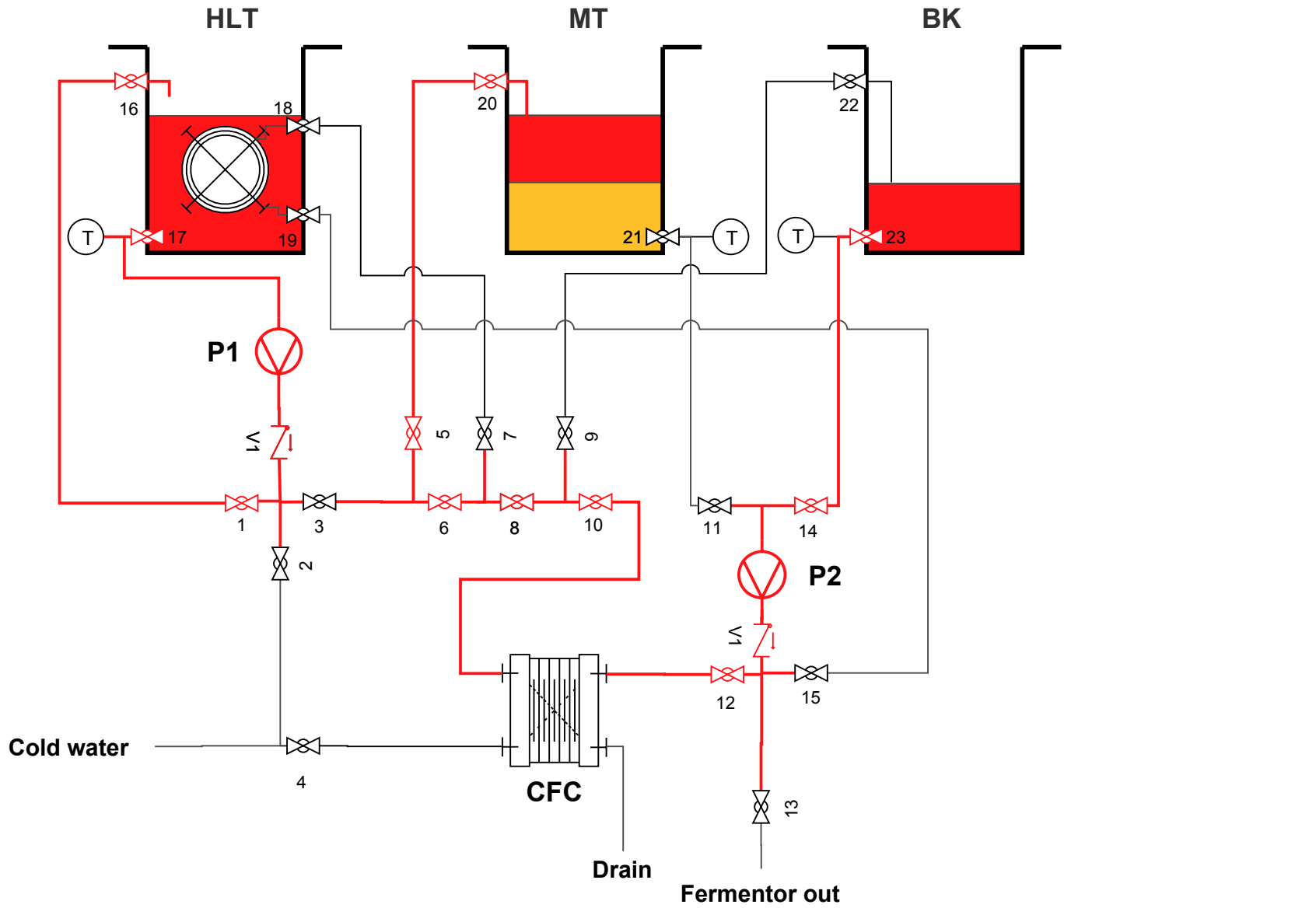
⋈ manual ball valve   ⋉ one-way valve

HLT

MT

BK

16 18
20 22

T 17 19 21 T T 23

P1

V1

1 3 6 8 10 11 14

2 5 7 9

P2

V1

12 15

Cold water

4

CFC

13

Drain

Fermentor out

Heat HLT and BK
The HLT is heated to the first mash temperature, the BK is warmer to account for temperature losses later when grain is added. The BK and HLT are circulated while heating. In the meantime, grain is added to the MT. Valves 1, 16, 17 and 9, 10 12, 14, 22 and 23 are open.
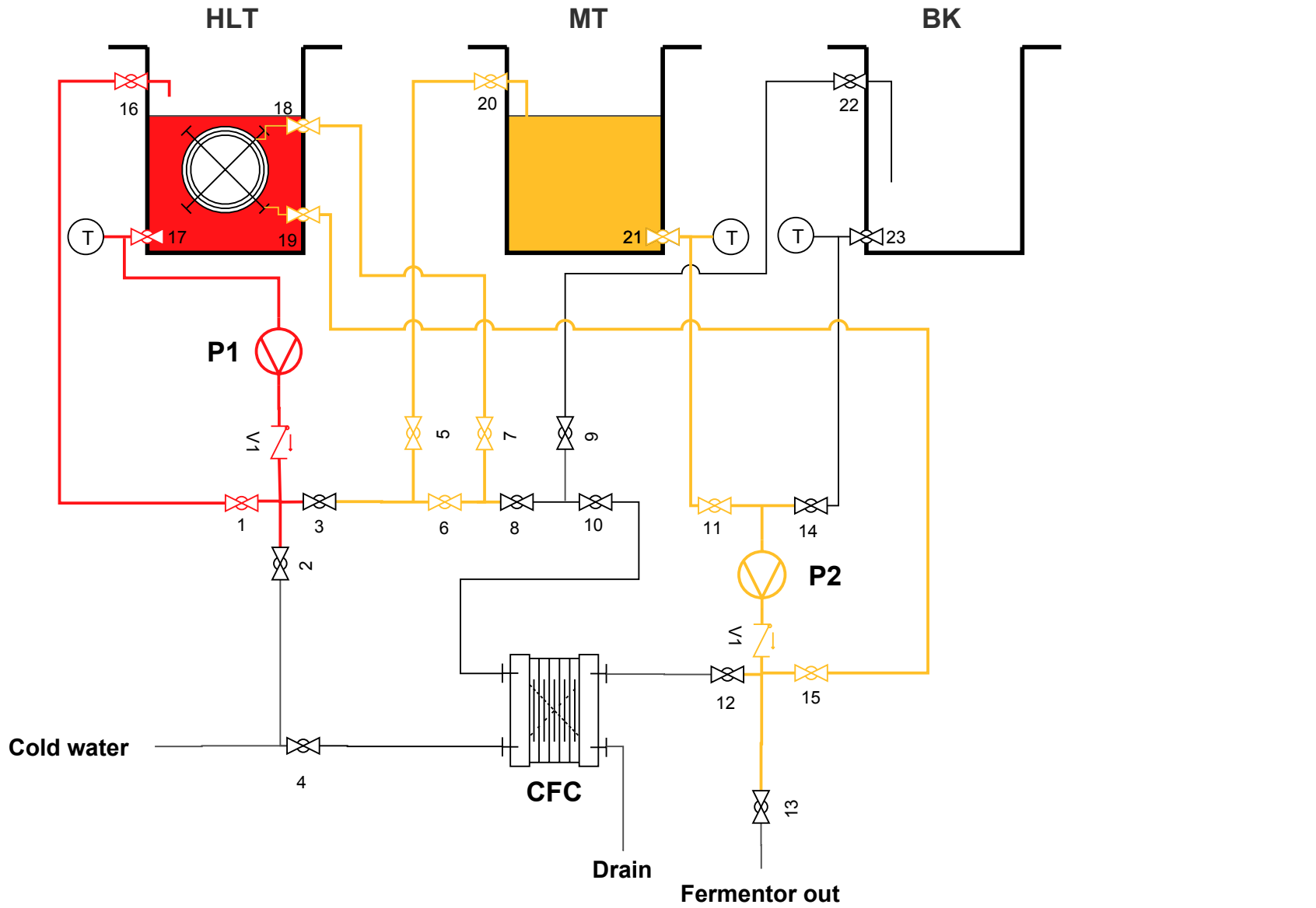Pump P1 and P2 are running.

⋈ manual ball valve   one-way valve

HLT

MT

BK

16 18

20

22

T

17 19

21 T T 23

P1

V1

5 7 9

1 3 6 8 10 11 14

2

P2

V1

12 15

Cold water

4

CFC

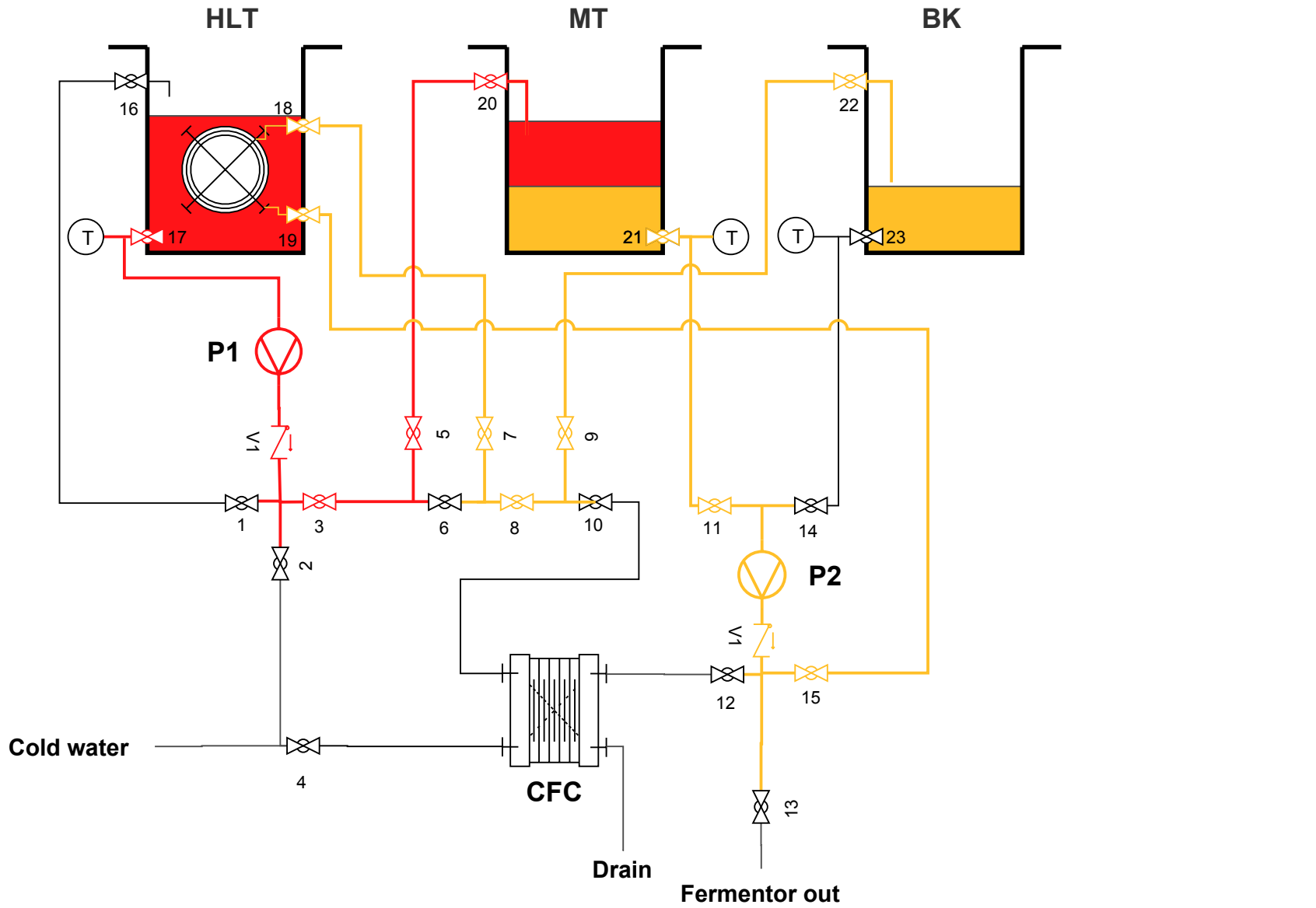13

Drain

Fermentor out

Mash in
Hot water from the BK is pumped onto the malt in the MT.
Valves 1, 16 and 17 as well as 23, 14, 12, 10, 8 ,6, 5 and 20 are open.
Pump P1 and P2 are running.

manual ball valve   one-way valve

HLT

MT

BK

16
18
20
22

T
17
19
21
T
T
23

P1

V1

P2

V1

1
3
5
6
7
8
9
10
11
14

2

12
15

13

Cold water

4

CFC

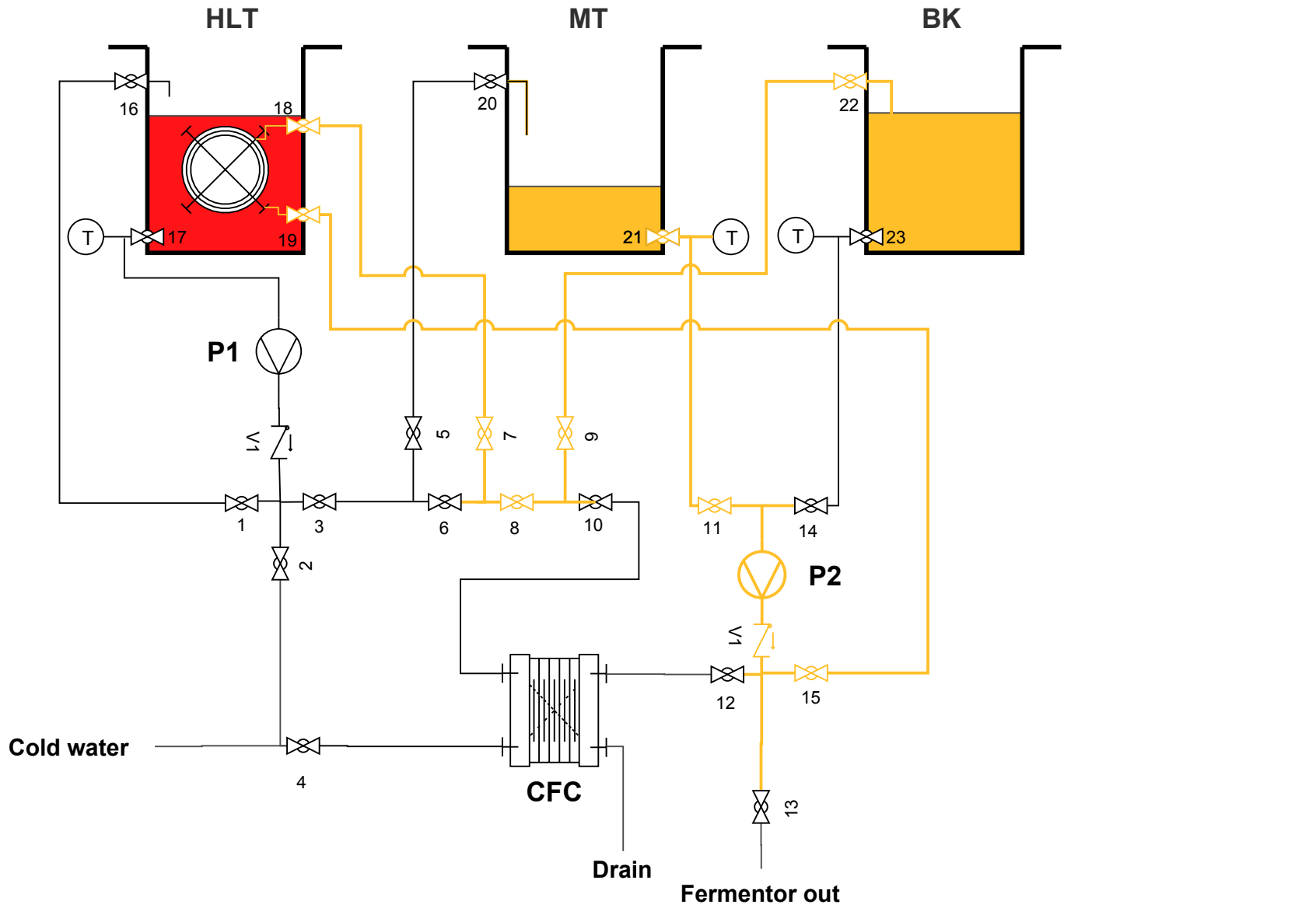**Drain**

Fermentor out

Mash
The mash is cirulated by pump P2, through the coill in the HLT. The mash temperature is controled via the HLT
temerature.
Valves 1, 16 and 17 as well as 21, 11, 15, 19, 18, 7, 6, 5 and 20 are open.
Pump P1 and P2 are running.

⋈ manual ball valve   one-way valve

HLT

MT

BK

16
18
20
22

17
19
21
23

T

T

T

P1

V1

5

7

9

1
3
6
8
10
11
14

2

P2

V1

12
15

13

Cold water

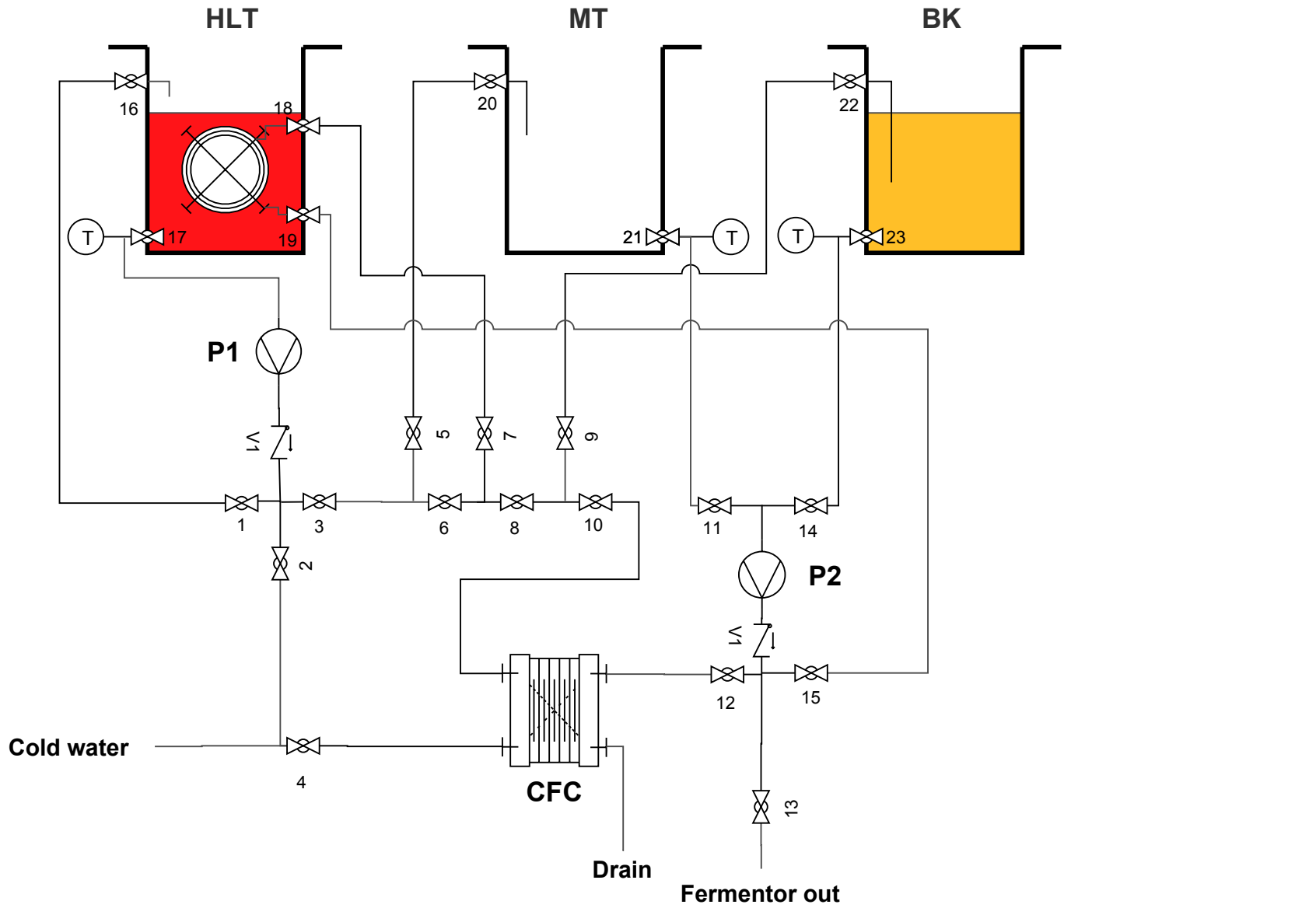4

CFC

Drain

Fermentor out

Sparge
After mashing the wort is pumped to the BK. Water from the HLT is pumped to the MT for sparging.
Valves 3, 5, 17 and 20 as well as 7, 8, 9, 11, 15, 18, 19, 21 and 22 are open.
Pump 1 and Pump 2 are running.

manual ball valve   one-way valve

HLT

MT

BK

16

18

20

22

17

19

21

23

P1

V1

P2

V1

1

2

3

5

6

7

8

9

10

11

14

12

15

13

Cold water

4

CFC

Drain

Fermentor out

Sparge out
Water flow from HLT is stopped. Valves 3, 5, 17 and 20 are closed.

manual ball valve   one-way valve

HLT

MT

BK

P1

P2

16
18
20
22

17
19
21
23

V1

1   **3**   **6**   **8**   **10**   **11**   **14**

2

V1

5   **7**   **9**

12   **15**

Cold water

4

CFC

13

Drain

Fermentor out

Boiling
During boiling all valves are closed and the pumps are not running.

⊠ manual ball valve   ⋈ one-way valve

HLT

MT

BK

16
18
20
22

T
17
19
21
T
T
23

P1

V1

1
3
5
6
7
8
9
10
11
14

2

P2

V1

12
15

Cold water

4

CFC

13

Drain
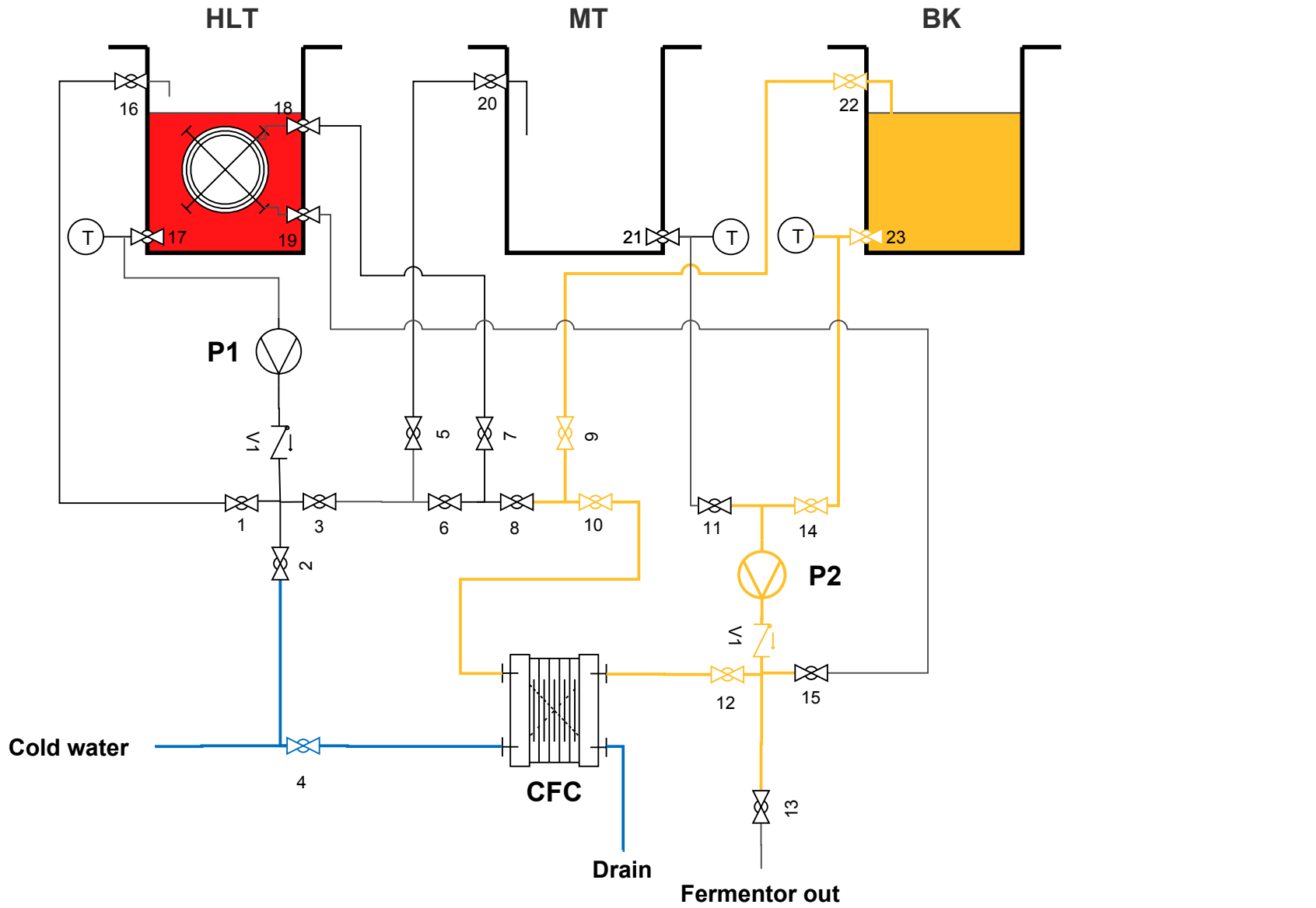
Fermentor out

Cooling
After boiling the wort is circulated through the CFC until pitch temperature is reached. Cold water is ran through the CFC to the drain.
Valves 9,10, 11, 12, 14, 22 and 23 as well as 4 are open.

manual ball valve   one-way valve

HLT

MT

BK

16
18
20
22

T 17 19

21 T

T 23

P1

P2

V1

1 3 6 8 10 11 14

5 7 9

2

12 15

V1

Cold water

4

CFC

13

Drain
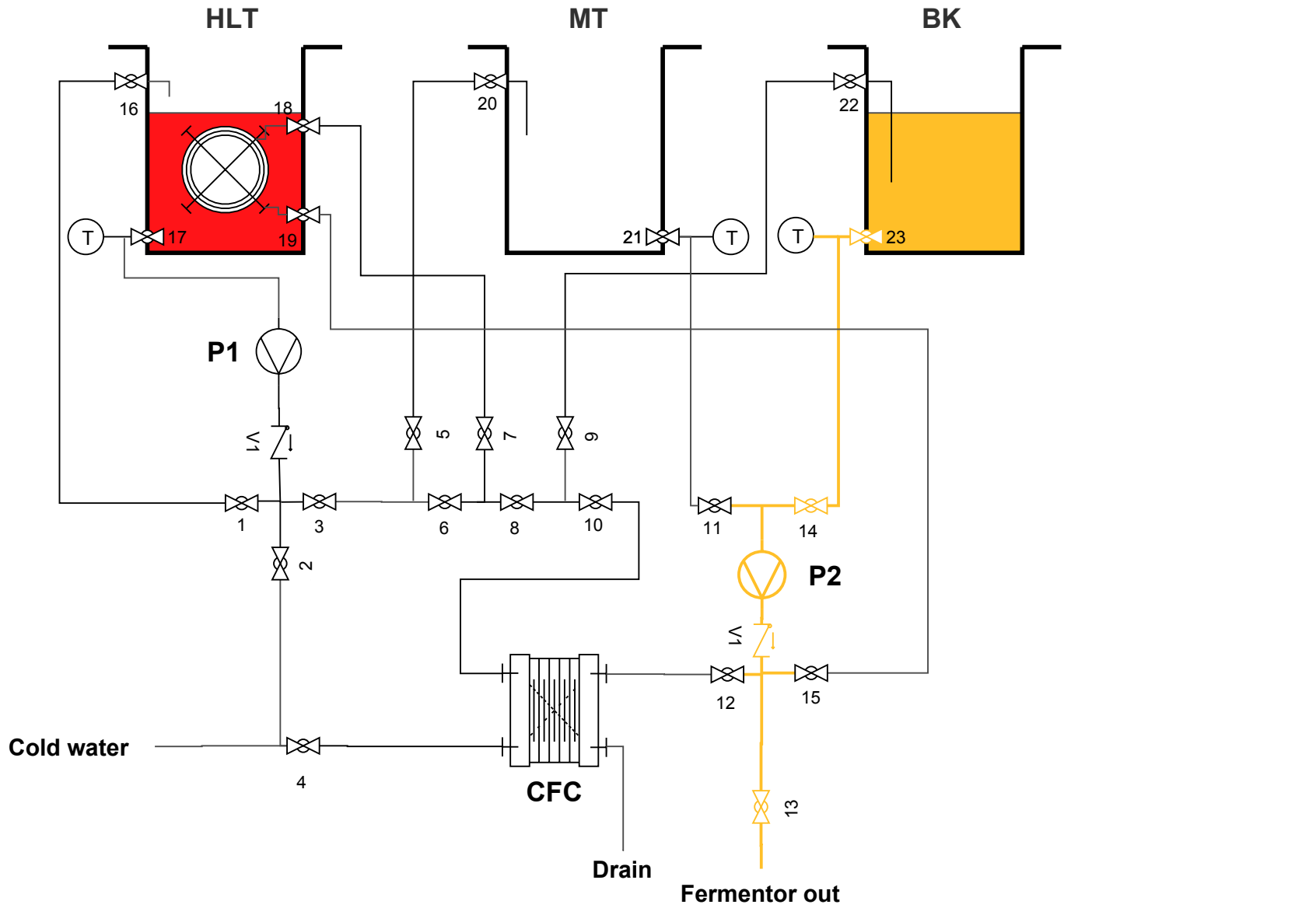
Fermentor out

Fermentor out
After cooling the wort is collected in a fermentor.
Valves 13, 14 and 23 are open.
Pump P2 is running.

⋈ manual ball valve   ⊿ one-way valve