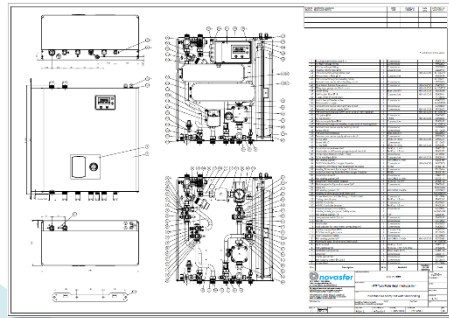


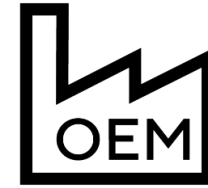
HEAT INTERFACE UNITS

NOVASFER → 100% OEM

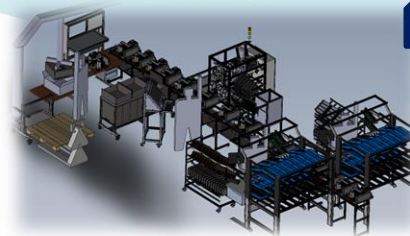
**CUSTOMER REQUEST &
PRODUCT PROPOSAL
FROM TEAM IDEAS**



**PROJECT DEVELOPMENT
AND APPROVAL**



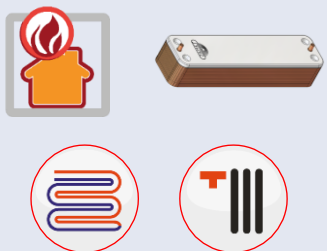
**FINAL PRODUCT
PRODUCTION**



SATISFIED CUSTOMERS

HIU V1

INDIRECT HEATING



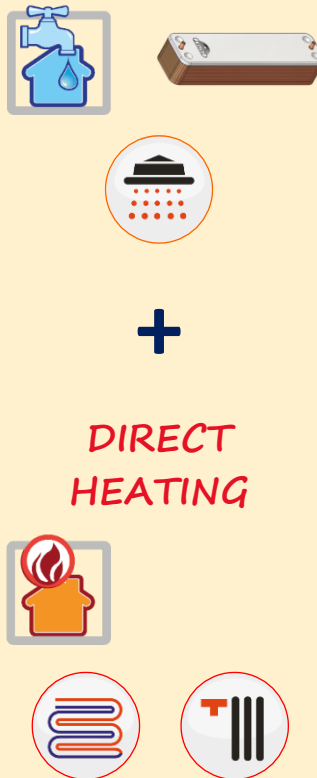
HIU V2

DHW TANK INTEGRATION
INDIRECT HEATING



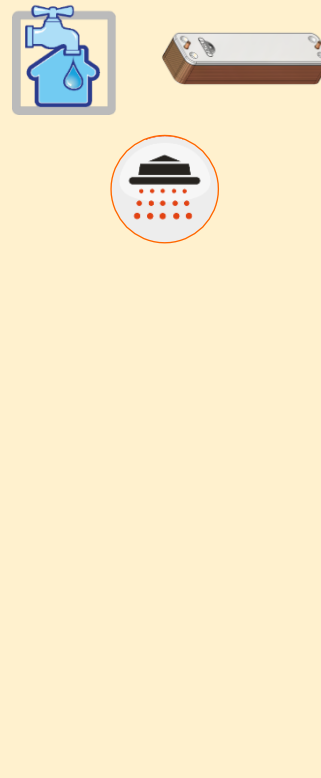
HIU V3

DHW INSTANT PRODUCTION



HIU V4

DHW INSTANT PRODUCTION



HIU V5

DHW INSTANT PRODUCTION



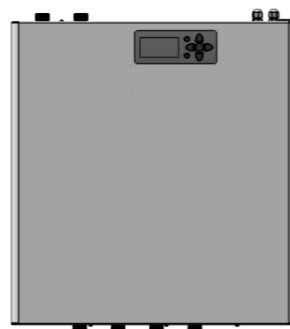
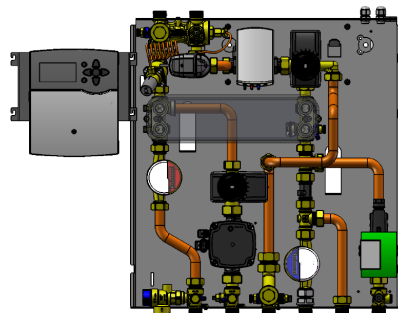
HIU V1



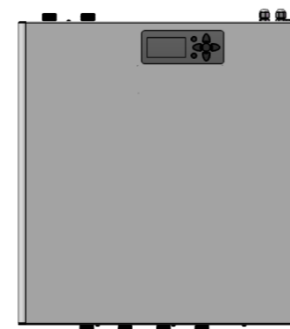
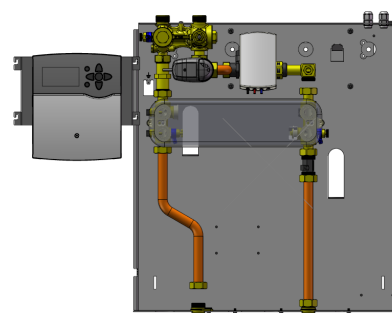
HIU V2



HIU V3

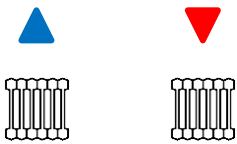


HIU V4

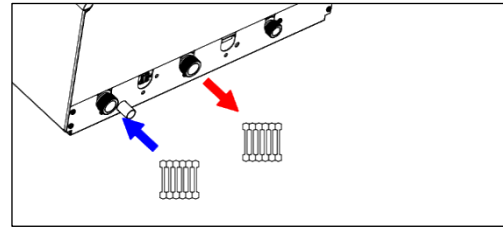


HIU V5



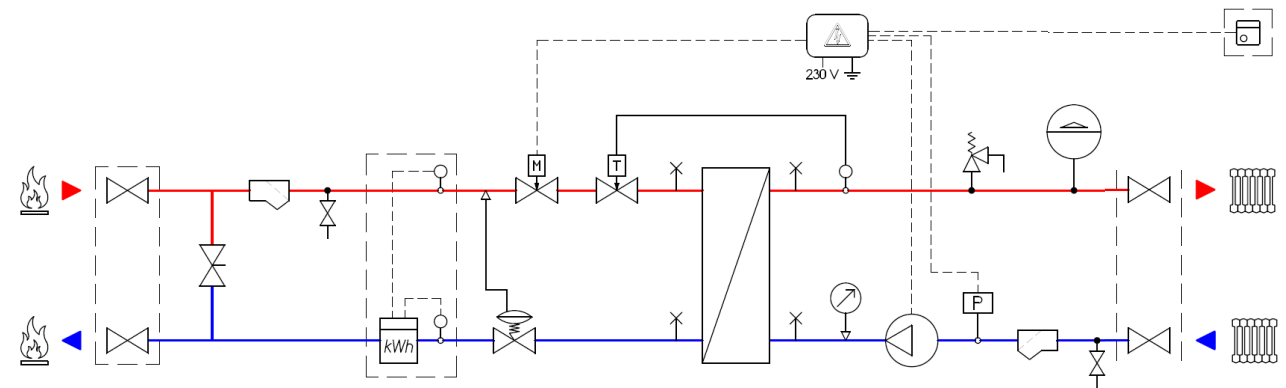


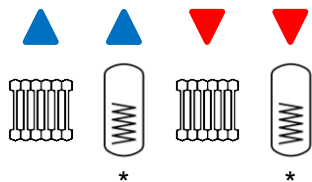
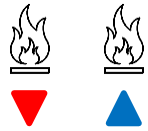
HIU V1 Indirect Heating



Components

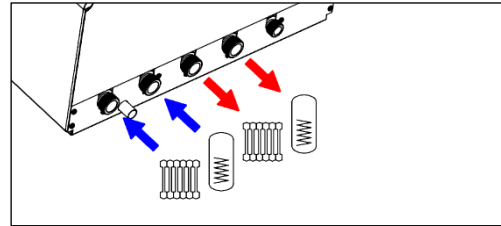
- Installation valves (opzional)
- Manual By-pass**
- Primary zone valve
- Heat meters 3/4" x 110 mm (opzional)**
- Differential pressure valve**
- Heating circuit temperature control**
- Insulated PHE**
- Manometer, Expansion vessel, Safety valve
- Pump**
- Pressure switch**
- Primary / Heating strainer
- Air purge
- Box for connection
- Cover painted





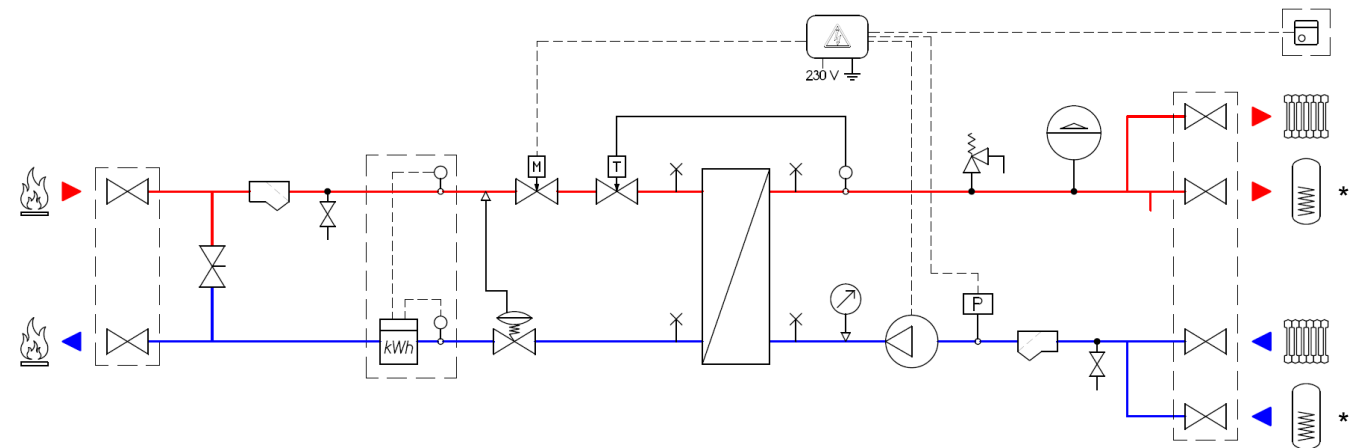
HIU V2


Indirect Heating
Stored Sanitary water



Components

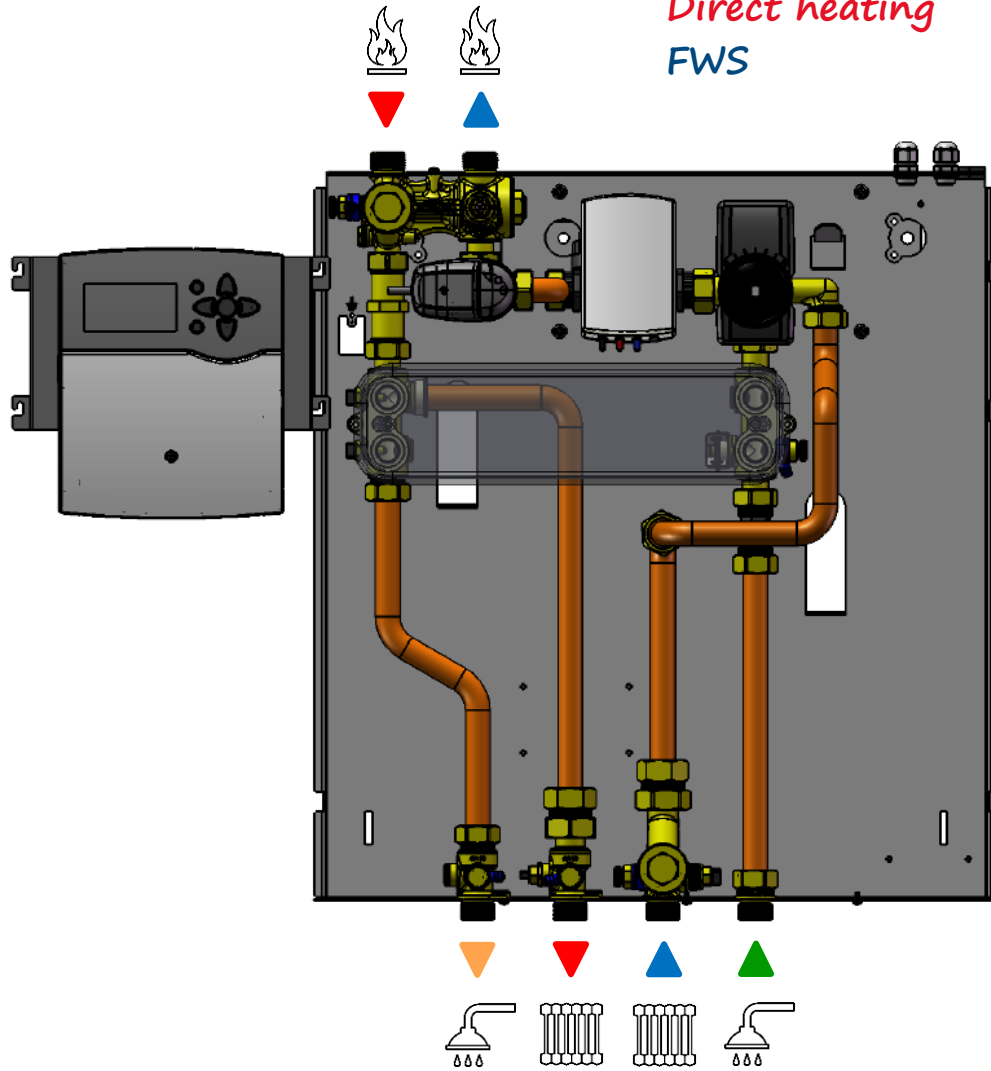
- Installation valves (opzional)
- Manual By-pass**
- Primary zone valve
- Heat meters 3/4" x 110 mm (opzional)**
- Differential pressure valve**
- Heating circuit temperature control**
- Insulated PHE**
- Manometer, Expansion vessel, Safety valve
- Pump**
- Pressure switch**
- Primary / Heating strainer
- Air purge
- Box for connection
- Cover painted



 * Connections available only for HIU V2

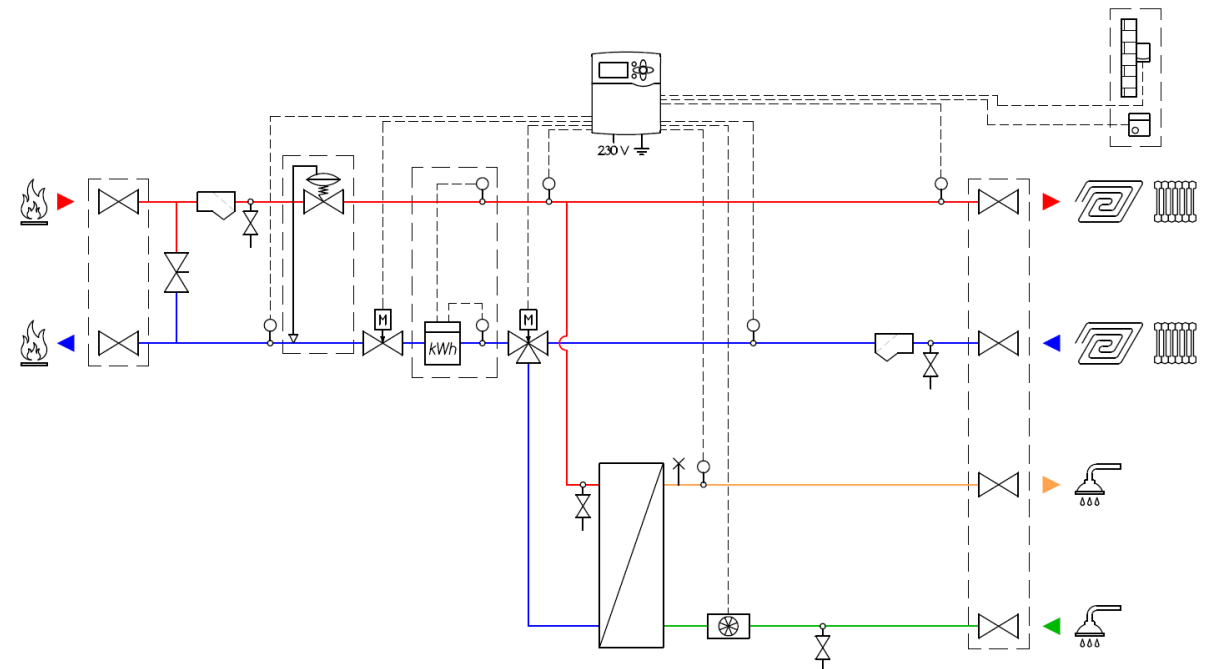
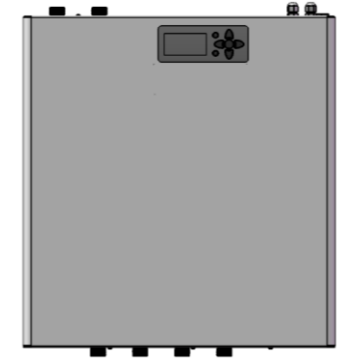
HIU V3 → direct high temperature

HIU V3 Direct heating FWS

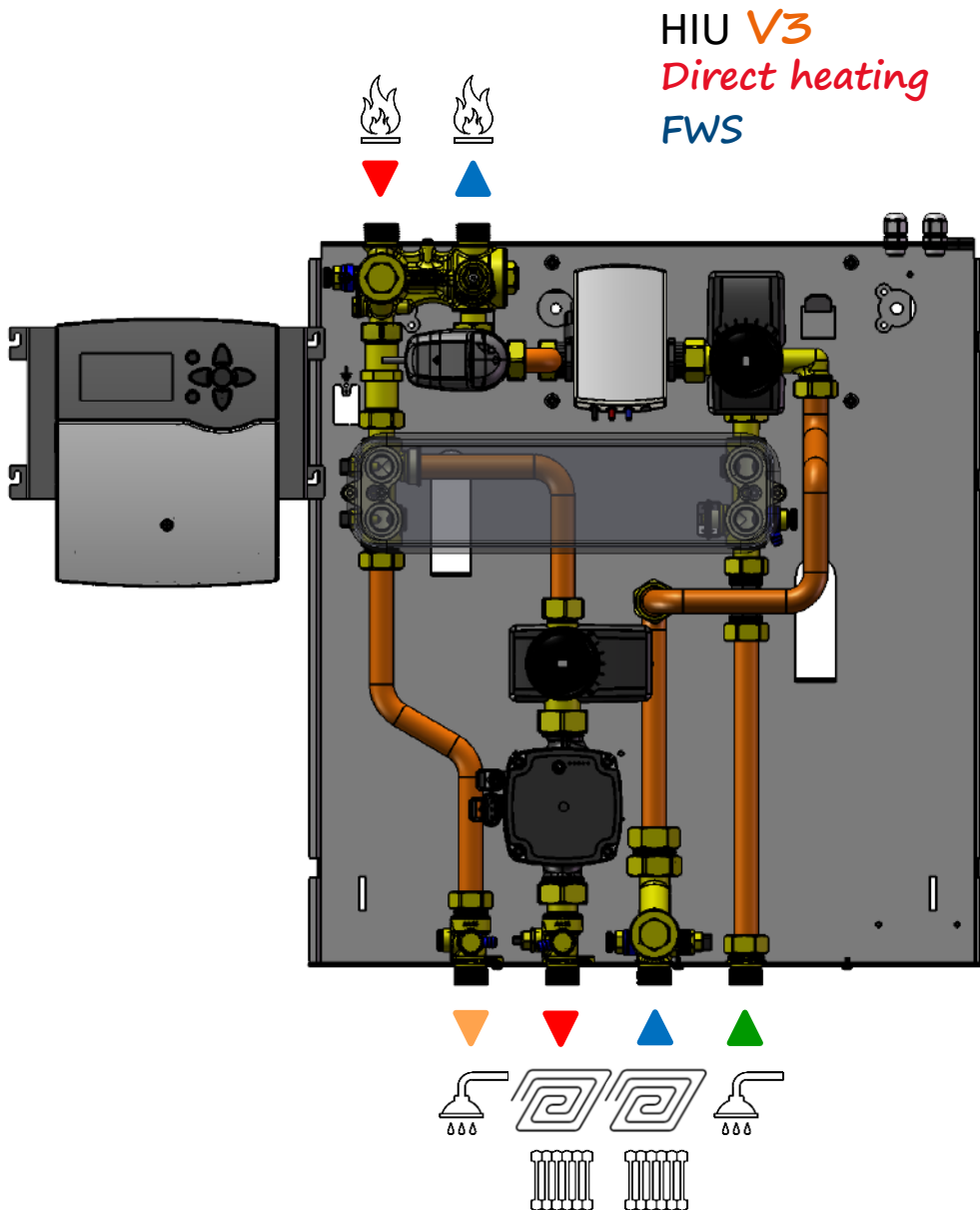


Components

- Installation valves (optional)
- Manual By-pass**
- NVC Control Group**
- Differential pressure valve (optional)**
- Primary control valve
- Heat meters 3/4" x 110 mm (optional)**
- 3way valve for DHW priority**
- Insulated PHE for DHW**
- Temperature probes
- DCW flow meter**
- Pressure switch (optional)
- Primary / Heating strainer
- Air purge
- Cover painted

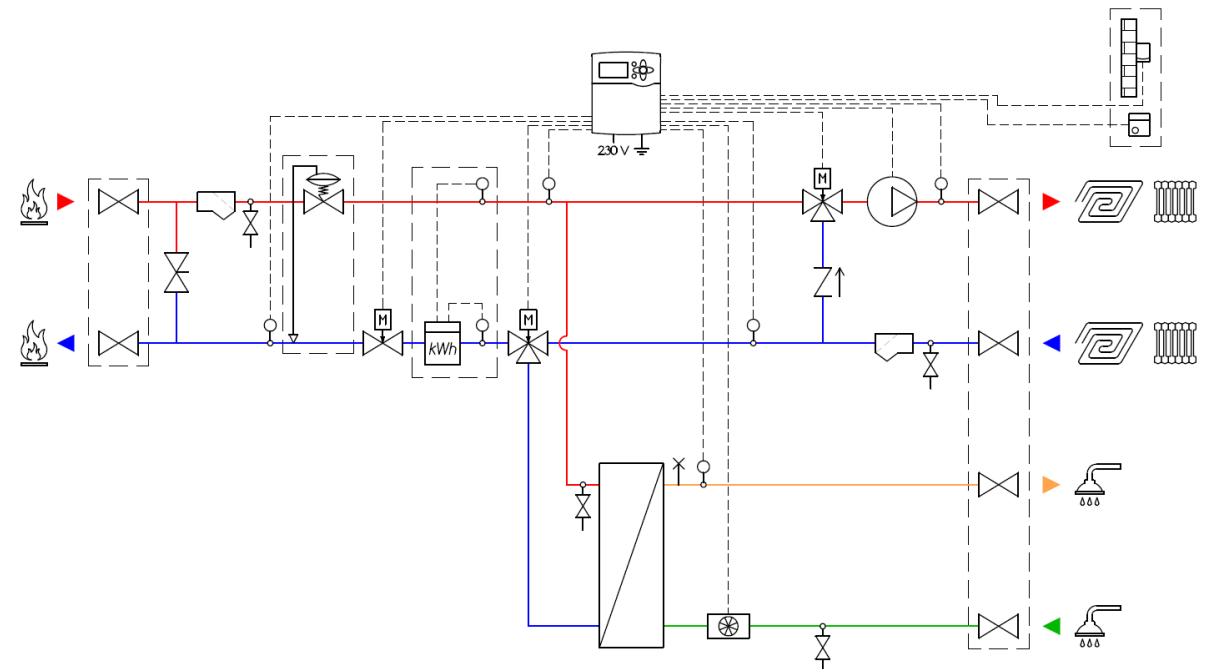
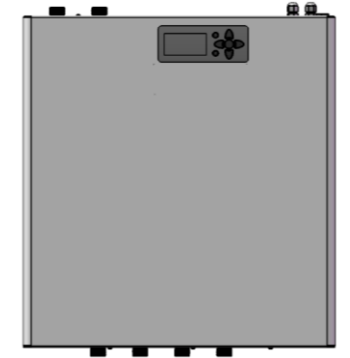


HIU V3 → direct low temperature



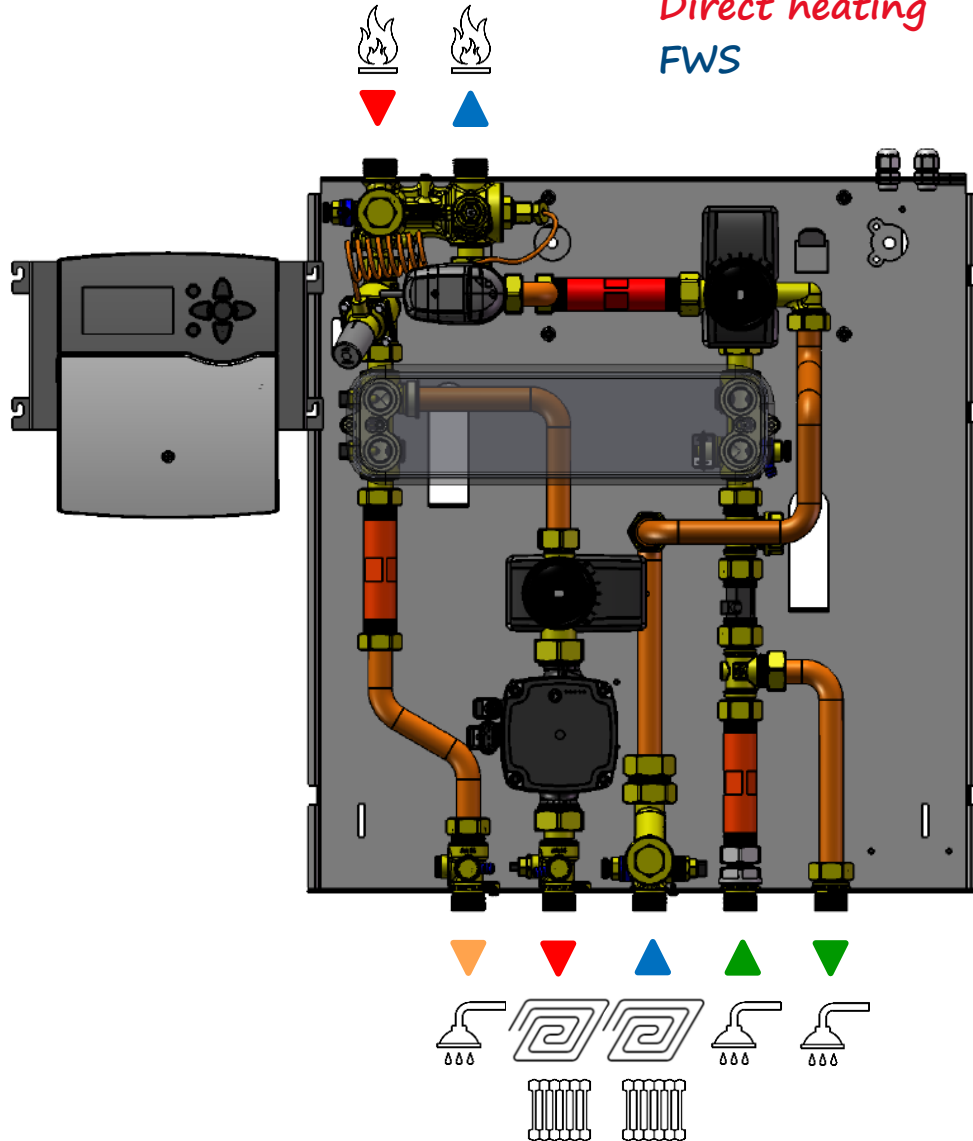
Components

- Installation valves (opzional)
- Manual By-pass**
- NVC Control Group**
- Differential pressure valve (optional)**
- Primary control valve
- Heat meters 3/4" x 110 mm (opzional)**
- 3way valve for DHW priority**
- Insulated PHE for DHW**
- Temperature probes
- Heating additional pump / Mixing valve**
- DCW flow meter**
- Pressure switch (optional)
- Primary / Heating strainer
- Air purge
- Cover painted



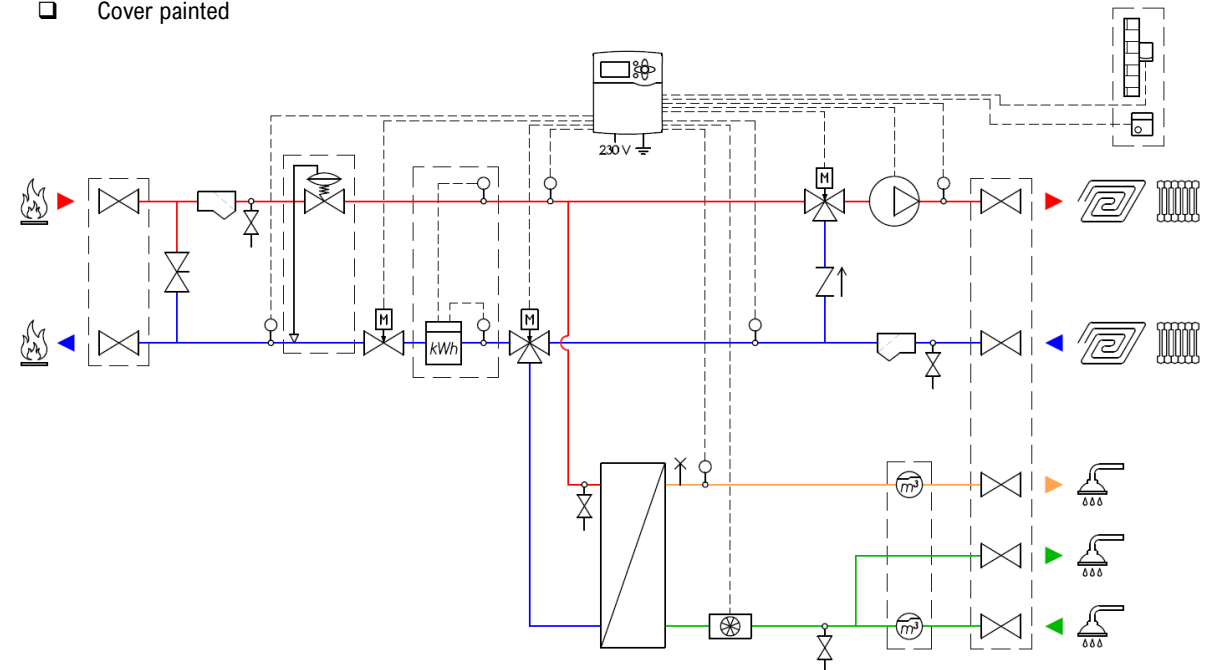
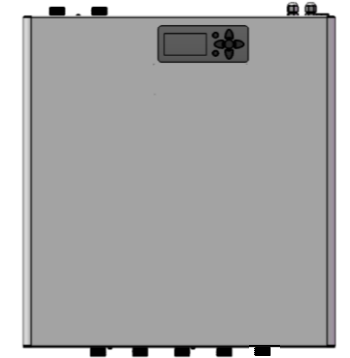
HIU V3 → direct low temperature + cold/hot water meters

HIU V3 Direct heating FWS



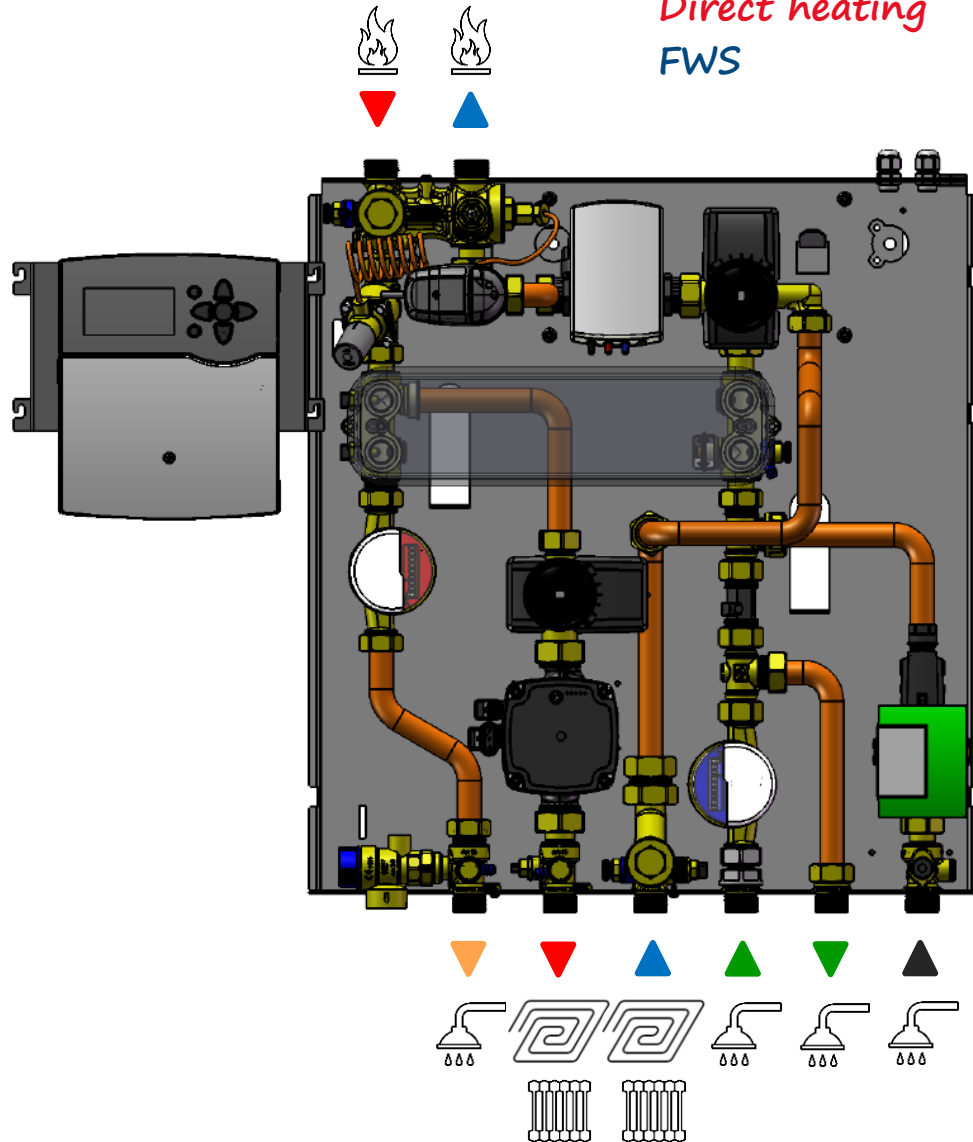
Components

- Installation valves (optional)
- Manual By-pass**
- NVC Control Group**
- Differential pressure valve (optional)**
- Primary control valve
- Heat meters 3/4" x 110 mm (optional)**
- Sanitary water counters (optional)**
- 3way valve for DHW priority**
- Insulated PHE for DHW**
- Temperature probes
- Heating additional pump / Mixing valve**
- DCW flow meter**
- Pressure switch (optional)
- Primary / Heating strainer
- Air purge
- Cover painted



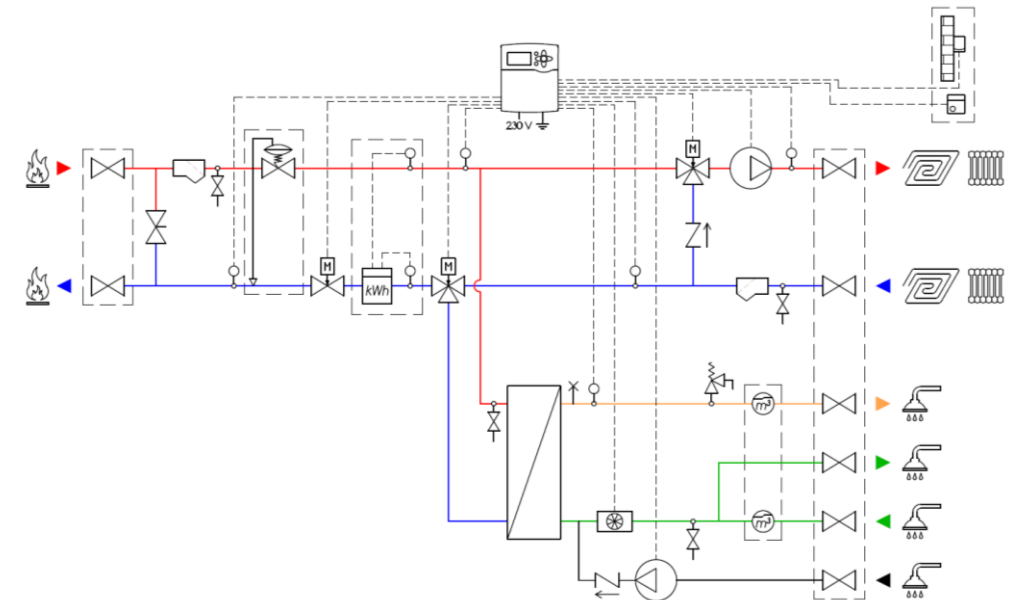
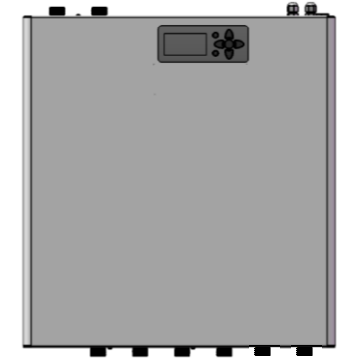
HIU V3 → direct low temperature + cold/hot water meters + DHW recirculation pump

HIU V3 Direct heating FWS

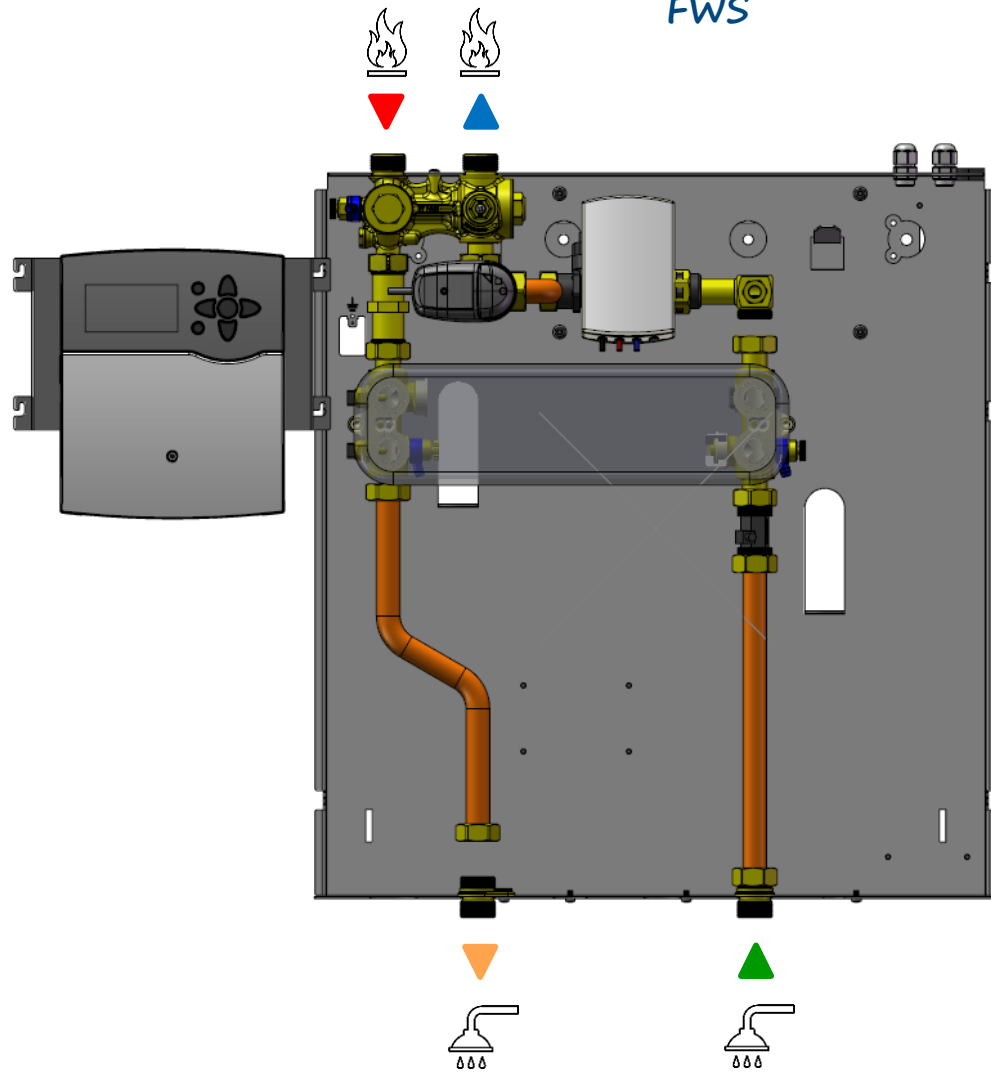


Components

- Installation valves (opzional)
- Manual By-pass**
- NVC Control Group**
- Differential pressure valve (optional)**
- Primary control valve
- Heat meters 3/4" x 110 mm (opzional)**
- Sanitary water counters**
- DHW Recirculation pump**
- 3way valve for DHW priority**
- Insulated PHE for DHW**
- Temperature probes
- Heating additional pump / Mixing valve**
- DCW flow meter**
- Pressure switch (optional)
- Primary / Heating strainer
- Air purge
- Cover painted

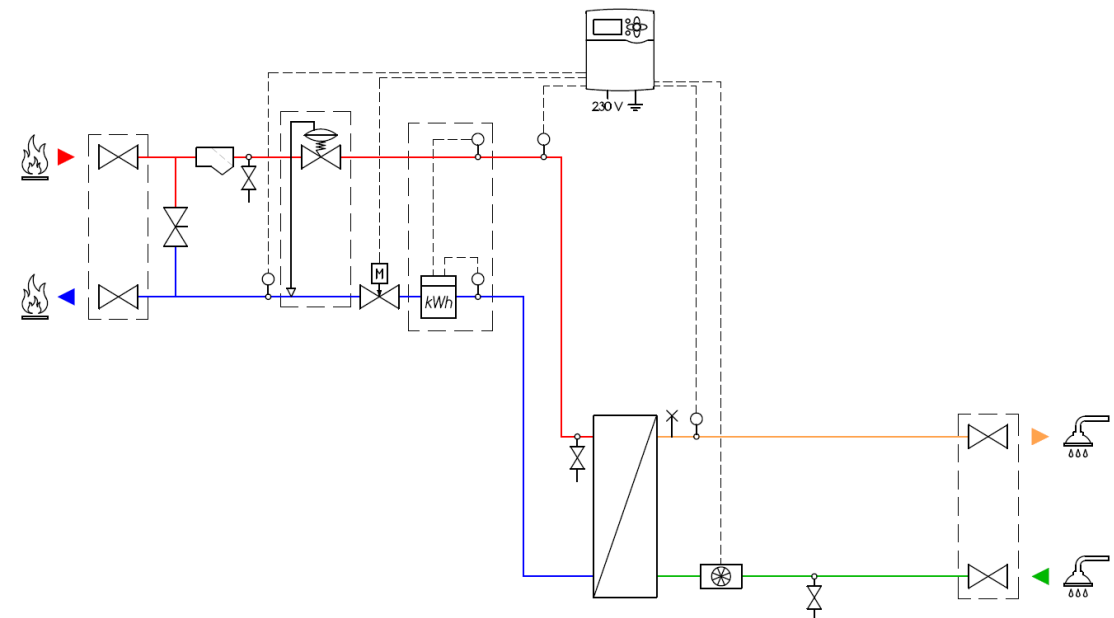
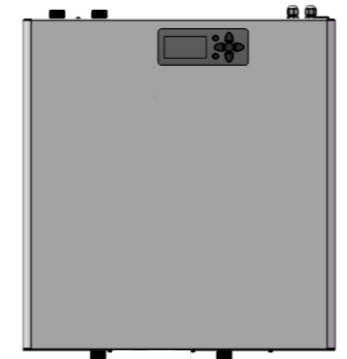


HIU V4 FWS

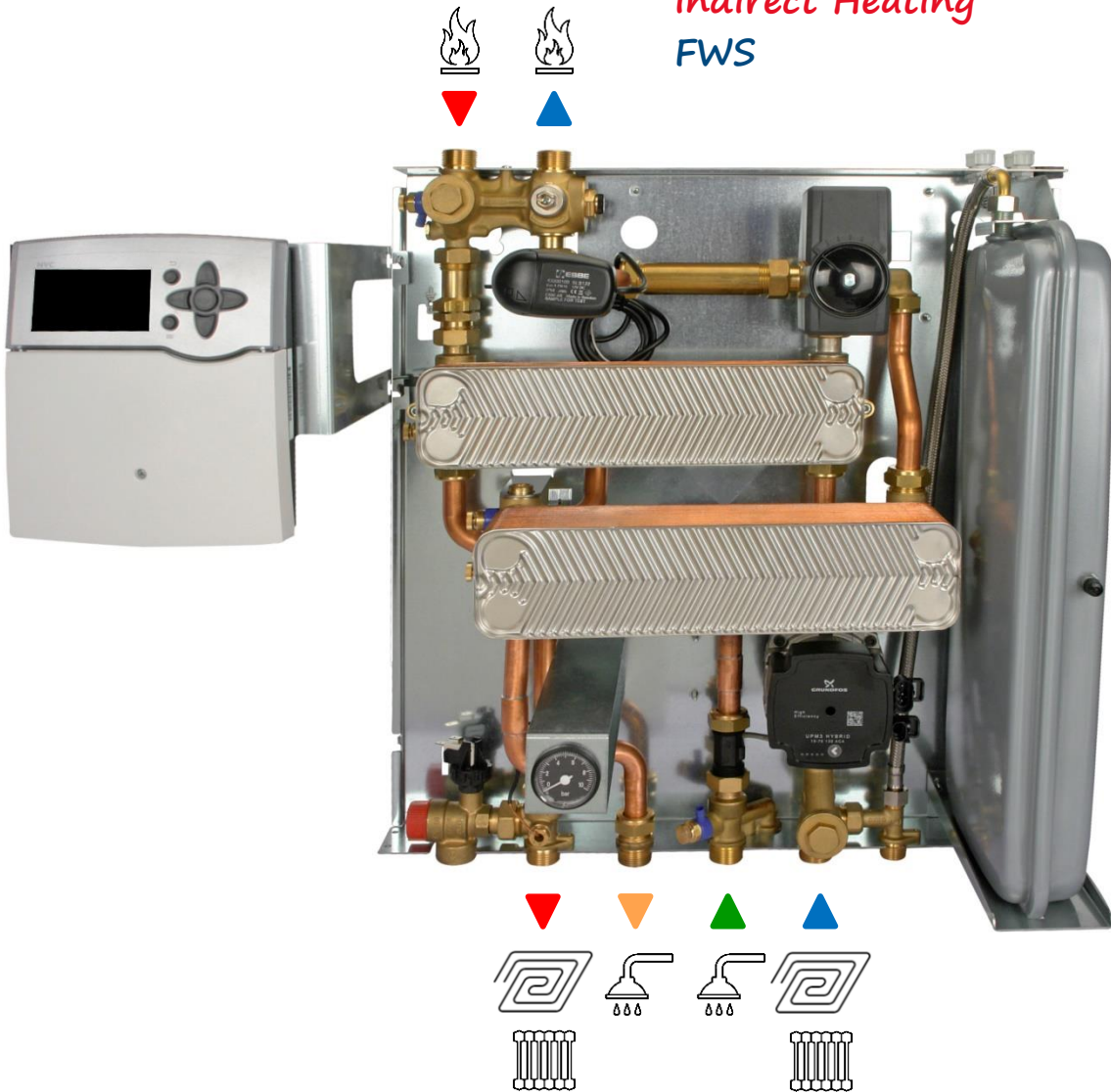


Components

- Installation valves (opzional)
- Manual By-pass**
- NVC Control Group**
- Primary control valve
- Heat meters 3/4" x 110 mm (opzional)**
- Insulated PHE for DHW**
- Temperature probes
- DCW flow meter**
- Primary strainer
- Air purge
- Cover painted

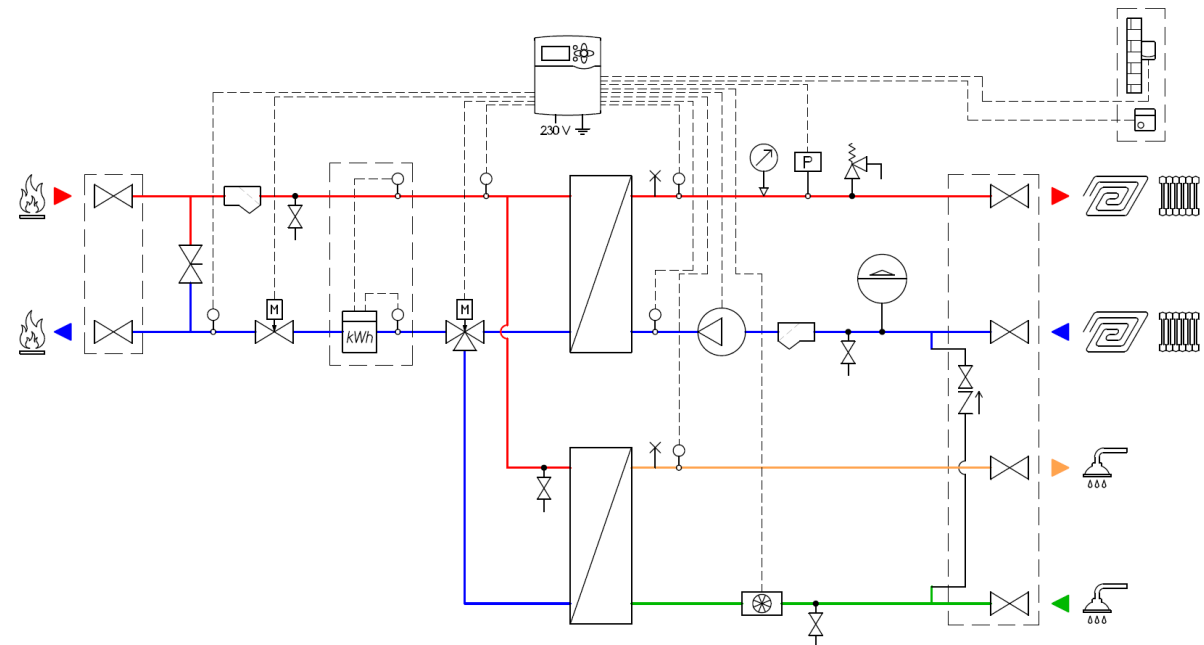


HIU V5 Indirect Heating FWS



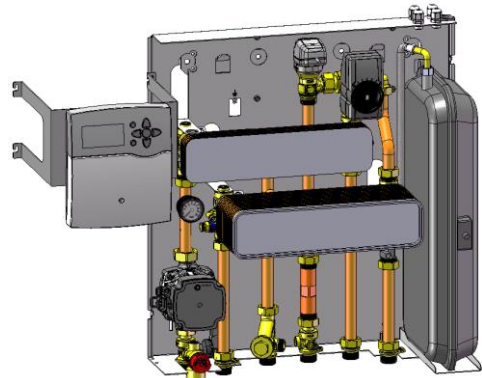
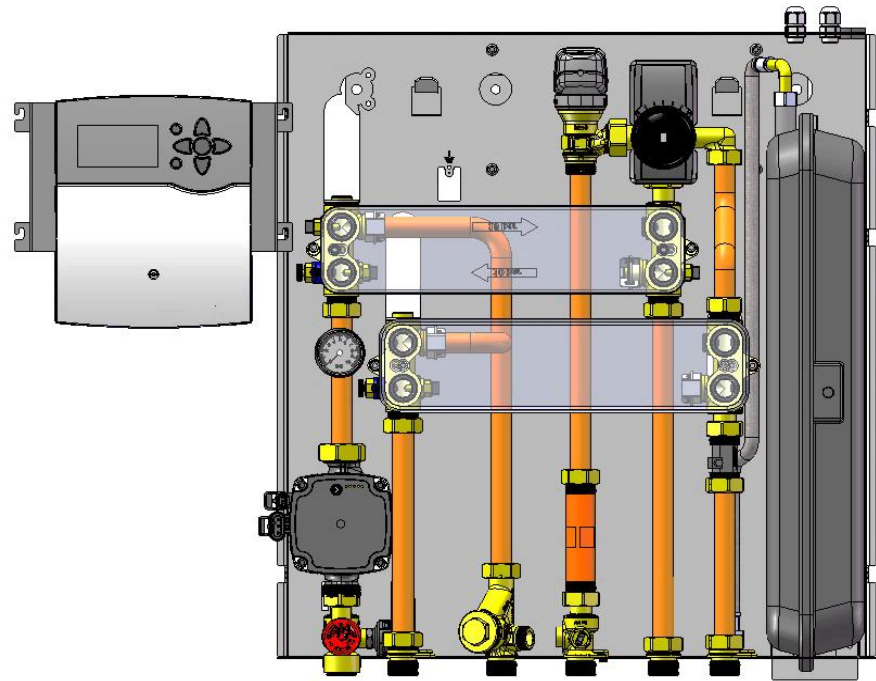
Components

- Installation valves (opzional)
- Manual By-pass**
- NVC Control Group**
- Primary control valve
- Heat meters 3/4" x 110 mm (opzional)**
- 3way valve for DHW priority**
- Insulated PHE for DHW**
- Insulated PHE for CH**
- Temperature probes
- DCW flow meter**
- Heating pump**
- Manometer, Expansion vessel, Safety valve
- Pressure switch
- Primary / Heating strainer
- Air purge
- Cover painted

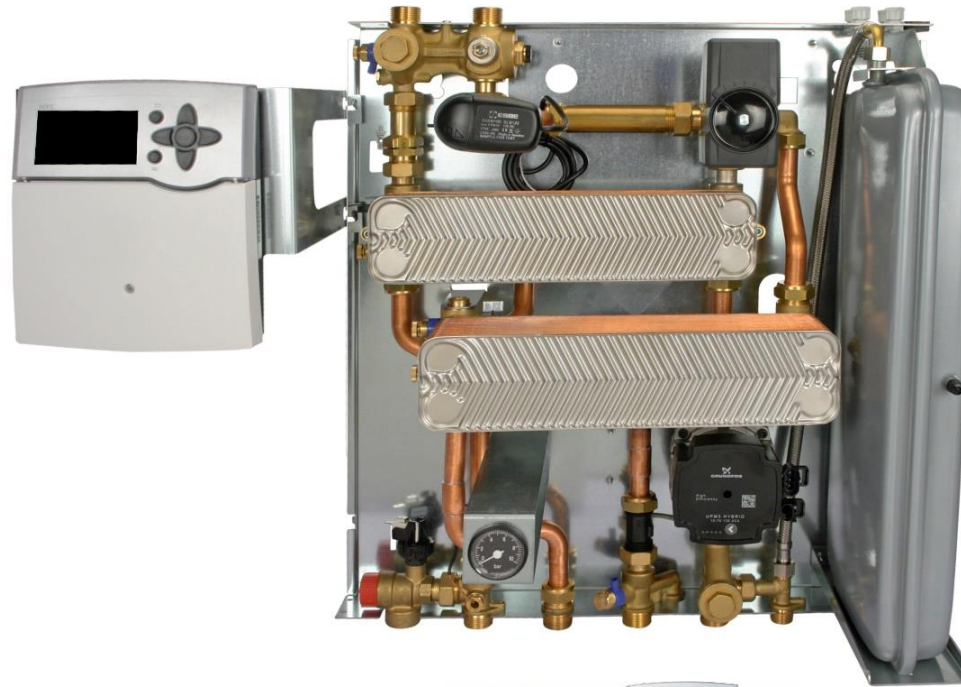


HIU Twin Plate → 100% priority DHW instant production + Low and High Temperature Indirect Heating

BASIC VERSION



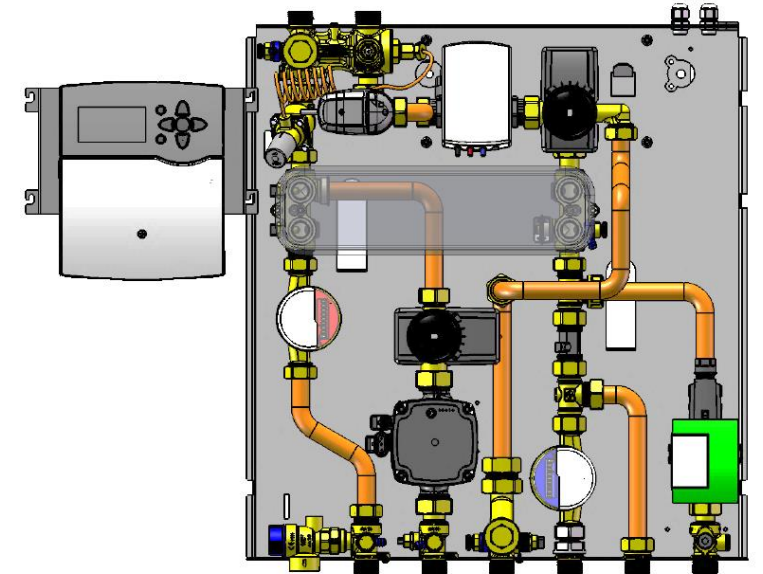
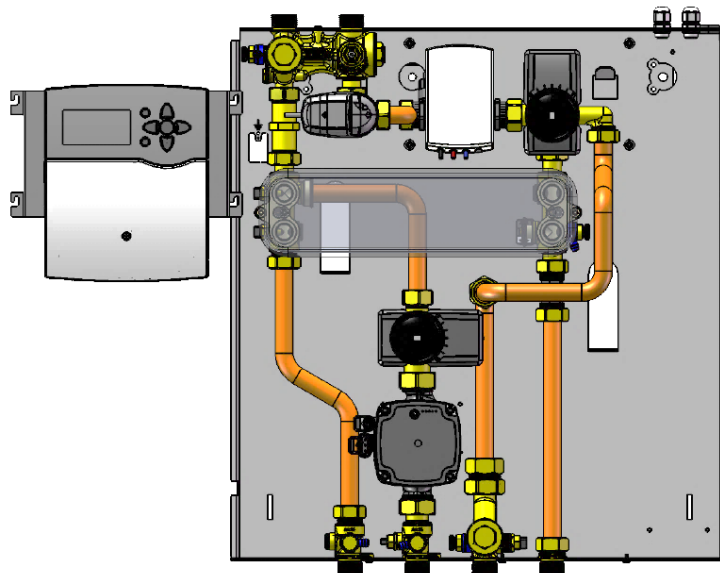
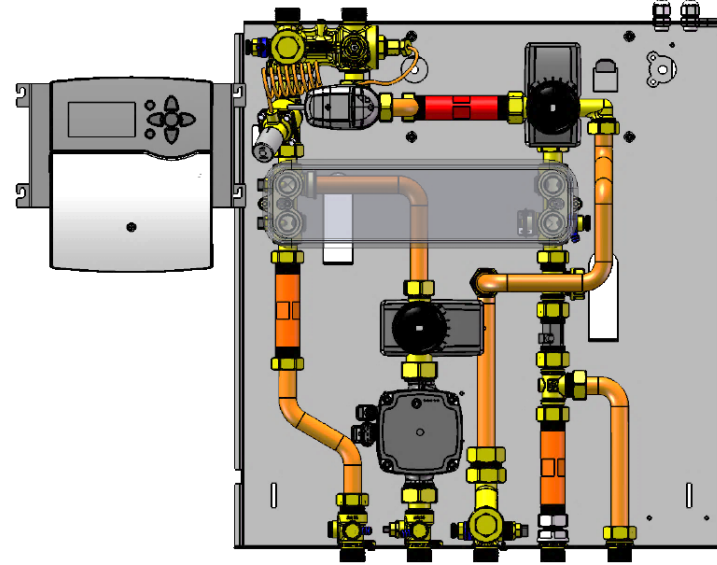
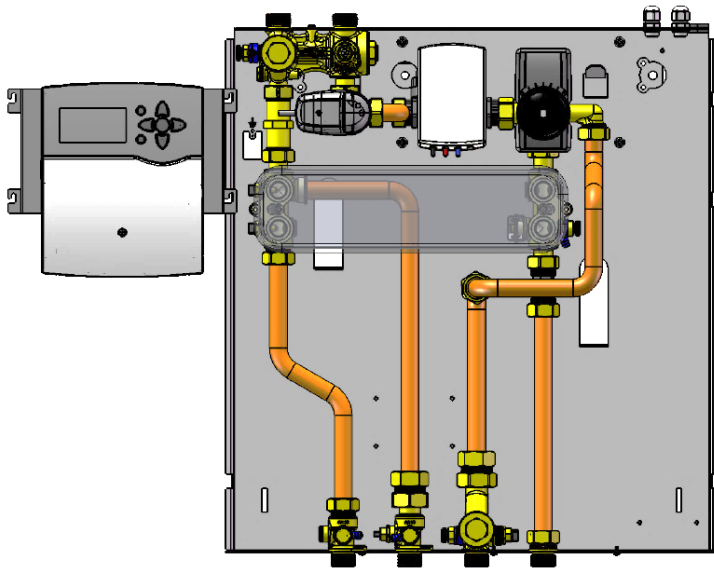
PREMIUM VERSION



NOVASFER → 100% OEM

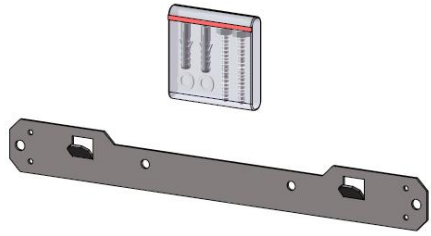
IT IS POSSIBLE TO CUSTOMIZE EVERYTHING!!!

HIU Single Plate → 100% priority DHW instant production + Low and High Temperature Direct Heating

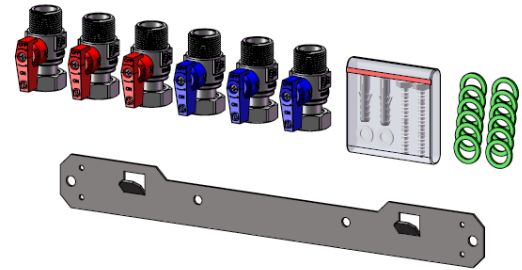


Possible Accessories

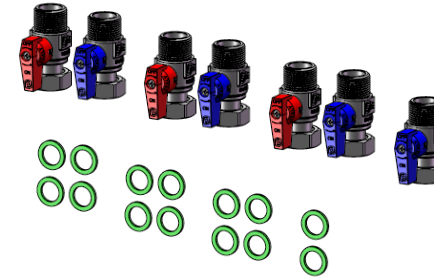
Wall Bracket



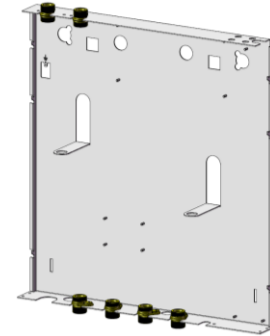
Kit Isolation valves (x6) and Wall Bracket



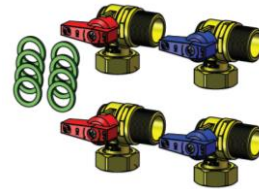
Isolation ball valves



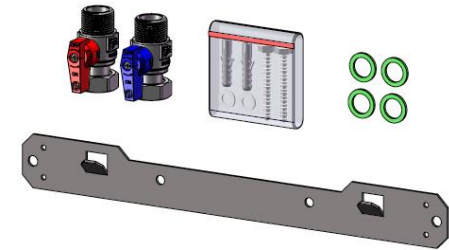
First Fix JIG → pre installation template



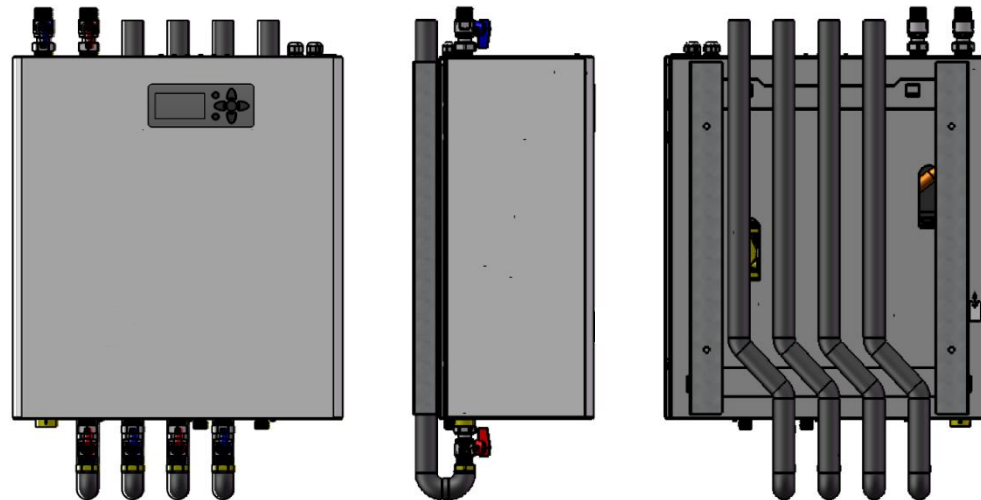
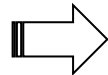
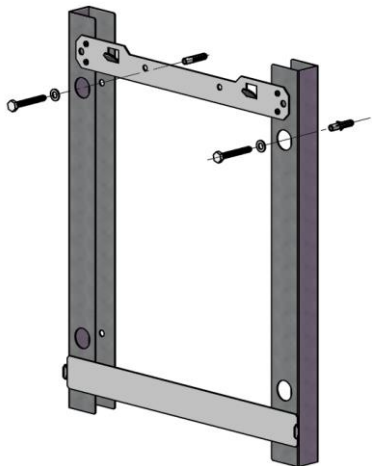
Kit Isolation angle valves (x4)



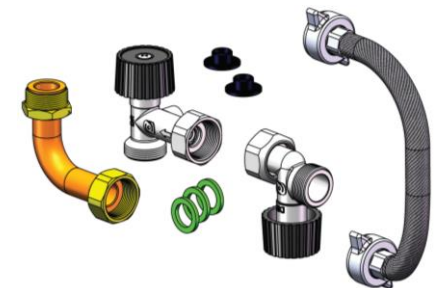
Kit Isolation valves (x2) and Wall Bracket



Stand off Bracket frame Kit → all connections on top or below



Kit Filling Group



Performance tables DHW production

PRIMARY					DHW ΔT 35 °C (10/45 °C)				DHW ΔT 40 °C (10/50 °C)				DHW ΔT 45 °C (10/55 °C)				DHW ΔT 50 °C (10/60 °C)			
Primary supply temperature	Primary Flow rate		Pressure drops primary circuit		PHE Zilmet 17B3154334 43 plates				PHE Zilmet 17B3154334 43 plates				PHE Zilmet 17B3154334 43 plates				PHE Zilmet 17B3154334 43 plates			
			with fitted heat meter ¹⁾	without fitted heat meter ²⁾	Primary return temperature	DHW Flow rate	Heat exchanger max. capacity	Pressure drops DHW circuit	Primary return temperature	DHW Flow rate	Heat exchanger max. capacity	Pressure drops DHW circuit	Primary return temperature	DHW Flow rate	Heat exchanger max. capacity	Pressure drops DHW circuit	Primary return temperature	DHW Flow rate	Heat exchanger max. capacity	Pressure drops DHW circuit
	°C	L/h	m ³ /h	kPa																
55	400	0,4	7,7	6,9	19	7	17	6,5	22	5	15	3,3	-	-	-	-	-	-	-	-
	600	0,6	17,4	15,6	21	10	24	13,2	22	8	23	8,5	-	-	-	-	-	-	-	-
	800	0,8	30,9	27,7	22	13	31	22,3	23	10	30	13,2	-	-	-	-	-	-	-	-
	1000	1,0	48,2	43,3	23	15	37	29,8	24	13	35	22,3	-	-	-	-	-	-	-	-
	1300	1,3	81,5	73,1	24	18	45	42,8	24	15	43	29,8	-	-	-	-	-	-	-	-
60	400	0,4	7,7	6,9	17	8	20	8,5	21	7	18	6,5	24	5	15	3,3	-	-	-	-
	600	0,6	17,4	15,6	19	12	28	19,0	21	10	26	13,2	25	8	23	8,5	-	-	-	-
	800	0,8	30,9	27,7	20	15	35	29,8	23	12	35	19,0	26	10	31	13,2	-	-	-	-
	1000	1,0	48,2	43,3	22	18	44	42,8	23	15	43	29,8	26	13	39	22,3	-	-	-	-
	1300	1,3	81,5	73,1	24	22	54	64,0	23	18	53	42,8	27	15	45	29,8	-	-	-	-
65	400	0,4	7,7	6,9	16	8	23	8,5	20	7	20	6,5	21	6	19	4,8	24	5	17	3,3
	600	0,6	17,4	15,6	18	13	32	22,3	21	10	30	13,2	23	9	29	10,7	25	8	26	8,5
	800	0,8	30,9	27,7	20	17	42	38,2	22	15	40	29,8	23	13	39	22,3	25	10	36	13,2
	1000	1,0	48,2	43,3	21	20	50	52,9	23	17	49	38,2	24	15	47	29,8	25	12	46	19,0
	1300	1,3	81,5	73,1	23	25	62	82,6	24	21	60	58,3	24	20	60	52,9	26	15	53	29,8
70	400	0,4	7,7	6,9	15	10	25	13,2	19	9	23	10,7	20	8	22	8,5	22	6	22	4,8
	600	0,6	17,4	15,6	17	15	36	29,8	21	12	33	19,0	21	11	32	16,0	23	10	32	13,2
	800	0,8	30,9	27,7	19	20	47	52,9	21	17	45	38,2	22	14	44	25,9	25	12	43	19,0
	1000	1,0	48,2	43,3	20	23	57	69,9	22	20	55	52,9	22	16	54	33,8	26	15	52	29,8
	1300	1,3	81,5	73,1	22	28	72	103,7	23	25	67	82,6	23	21	65	58,3	27	17	60	38,2
75	400	0,4	7,7	6,9	15	12	28	19,0	18	9	25	10,7	19	8	25	8,5	22	7	25	6,5
	600	0,6	17,4	15,6	17	17	40	38,2	20	13	37	22,3	21	12	36	19,0	24	10	35	13,2
	800	0,8	30,9	27,7	18	23	52	69,9	21	18	50	42,8	23	15	48	29,8	25	13	45	22,3
	1000	1,0	48,2	43,3	19	26	65	89,4	22	22	60	64,0	24	18	58	42,8	26	16	54	33,8
	1300	1,3	81,5	73,1	22	30	80	119,0	23	28	76	103,7	24	23	74	69,9	28	20	68	52,9
80	400	0,4	7,7	6,9	14	12	32	19,0	18	10	27	13,2	18	8	26	8,5	19	8	28	8,5
	600	0,6	17,4	15,6	16	18	45	42,8	18	15	42	29,8	19	13	41	22,3	22	12	40	19,0
	800	0,8	30,9	27,7	17	24	57	76,2	20	20	55	52,9	21	17	54	38,2	24	15	51	29,8
	1000	1,0	48,2	43,3	19	28	70	103,7	22	24	67	76,2	23	20	65	52,9	26	17	62	38,2
	1300	1,3	81,5	73,1	-	-	-	-	24	30	82	119,0	24	27	80	96,4	28	22	76	64,0
85	400	0,4	7,7	6,9	14	14	33	25,9	16	12	31	19,0	17	10	30	13,2	19	8	30	8,5
	600	0,6	17,4	15,6	15	20	49	52,9	18	17	47	38,2	19	15	45	29,8	21	13	44	22,3
	800	0,8	30,9	27,7	17	25	63	82,6	19	22	61	64,0	20	18	60	42,8	23	17	57	38,2
	1000	1,0	48,2	43,3	18	30	75	119,0	21	27	73	96,4	22	24	72	76,2	25	20	69	52,9
	1300	1,3	81,5	73,1	-	-	-	-	-	-	-	-	26	28	90	103,7	29	24	86	76,2



up to 90 kW *

HIU DHW production flow rate limit 30 L/min

¹⁾ Heat meter: ista ultego III smart 1,5. Refer to heat meter technical documentation

²⁾ With fitted pipe spacer 3/4" x 110 mm instead of heat meter

* with 85 °C and 1,3 m³/h on primary and ΔT 45 °C on sanitary

New assembly line Industry 4.0



New production site NOVASFER 4 (plant on the left of picture, **5.000 m²**, which are added to the other 18.000 m² already existing) completely dedicated to the **assembly and testing (hydraulic and functional)** of new products in an **Industry 4.0** logic

- Digital and interconnected HIU assembly line
- Management and **interconnection** of all assembly stations
- Complete **traceability** of the product in its entire life cycle through the **serial number**
- Availability on **database** of all data collected for analysis, optimization and customer service



x1 Production Line with 1 shift of 8 hours

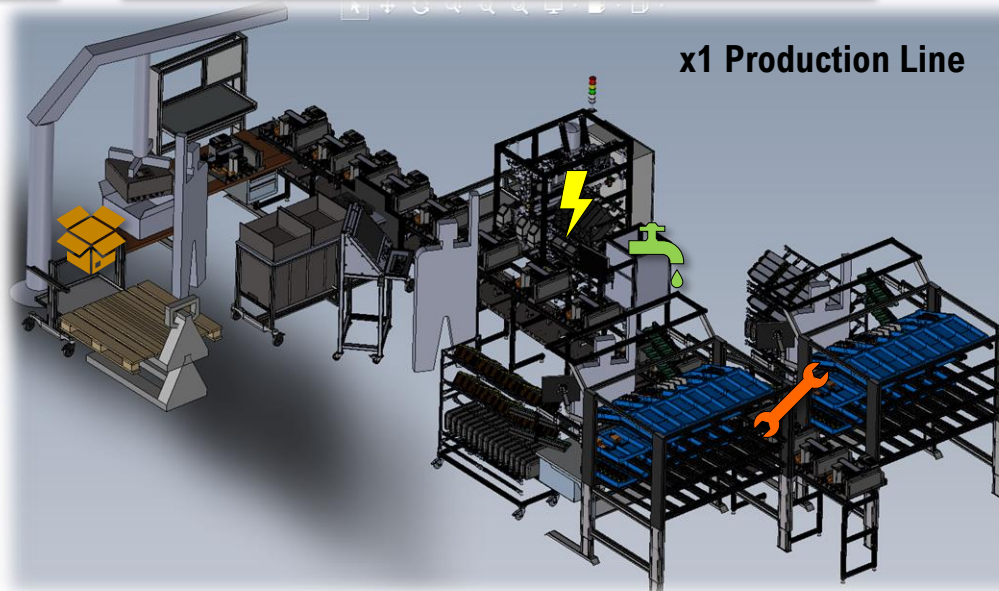
- ➔ ~ 30 HIUs per **day!!!**
- ➔ ~ 150 HIUs per **week!!!**
- ➔ ~ 600 HIUs per **month!!!**
- ➔ ~ 7.200 HIUs per **year!!!**

NOW

x3 Production Lines with 1 shift of 8 hours

- ➔ ~ 90 HIUs per **day!!!**
- ➔ ~ 450 HIUs per **week!!!**
- ➔ ~ 1800 HIUs per **month!!!**
- ➔ ~ 21.600 HIUs per **year!!!**

FUTURE



1. **ASSEMBLY OF HIU COMPONENTS**



2. **AIR PRESSURE TEST → HYDRAULIC LEAKAGE INSPECTION**



3. **ELECTRICAL AND FUNCTIONAL TEST WITH WATER → COMPLETE TEST SIMULATING REAL OPERATING CONDITIONS → TEST WITH HOT WATER**



4. **HIU PACKAGING**



BISHOP MES
NOVASFER

Bishop Light Mes

La soluzione ideale per il rilevamento dei dati di produzione e matricola, perfettamente integrabile con i software gestionali e altri applicativi del tuo impianto.

Timeline
Visualizza in tempo reale gli eventi attualmente in corso sulle macchine e le attività svolte dagli operatori.

Stato matricole
Visualizza l'avanzamento di ogni singola matricola caricata nel MES.

Stato macchine
Visualizza le ripartizioni di carico su ogni macchina in base alle attività svolte.

Vista operatore
Accedi alla vista operatore per avviare o continuare una lavorazione.



4 panels interconnected to the MES

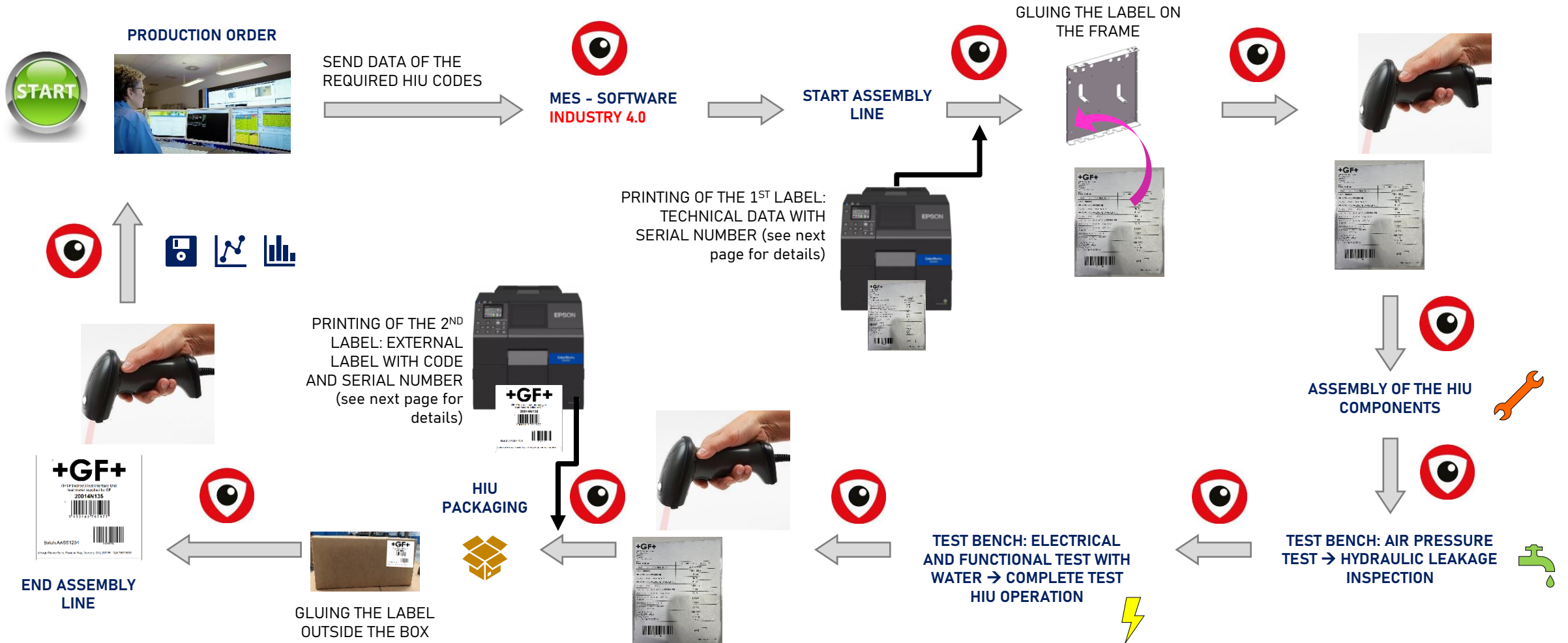


Traceability with serial number

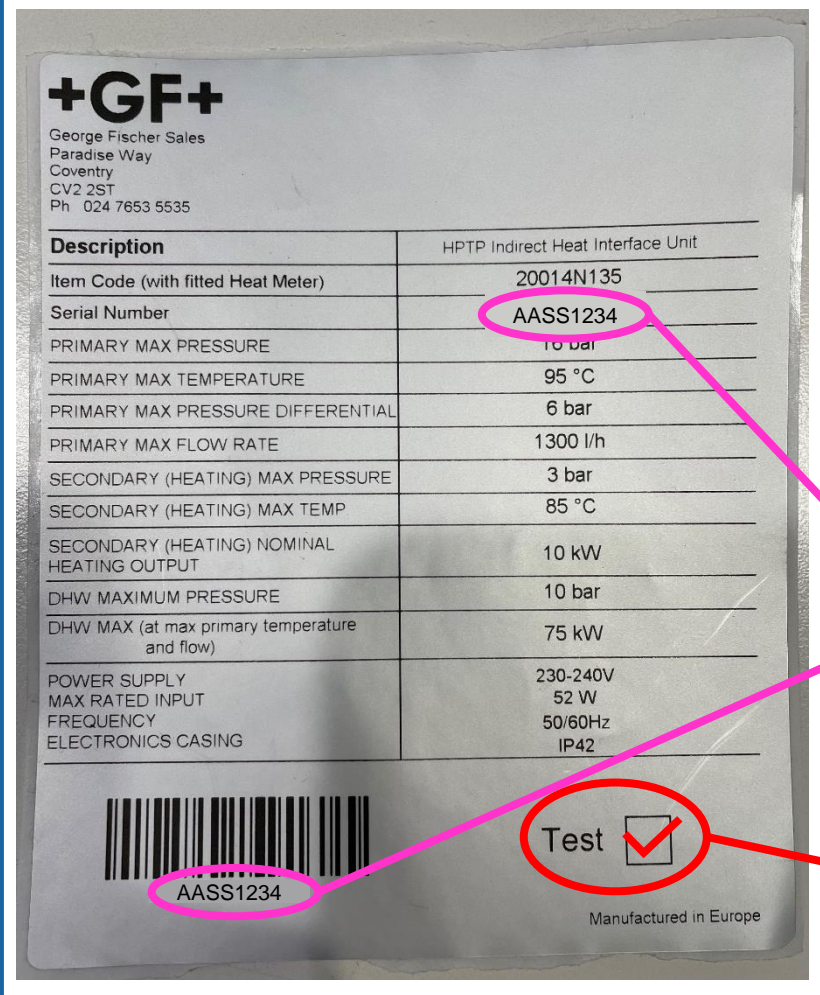
THE INVESTMENTS MADE IN THE NEW ASSEMBLY LINE (**INDUSTRY 4.0**) ARE BASED ON THE COMPLETE TRACEABILITY THROUGH THE PRODUCT **SERIAL NUMBER**, AND THE LABEL PRINTING TAKES PLACE IN **REAL TIME ONLY IF THE PRODUCT HAS COMPLETED ALL THE ASSEMBLY STEPS IN THE CYCLE** (ASSEMBLY, HYDRAULIC TEST, FUNCTIONAL TEST, PACKAGING)



Example with customer **+GF+ UK**



TECHNICAL DATA LABEL WITH SERIAL NUMBER



label example

- INTERNAL LABEL WITH TECHNICAL DATA AND SERIAL NUMBER
- ADHESIVE LABEL IN **MATT POLYESTER ALUMINUM**
- SAME PRINTING TECHNOLOGY AS THE LABELS OF THE LATEST GENERATION AND NEW WALL-MOUNTED BOILERS
- PRINTED WITH **THERMAL TRANSFER TECHNOLOGY**
- IS **WATERPROOF**
- BEAUTIFUL **AESTHETIC**
- DIMENSIONS 100 x 120 mm



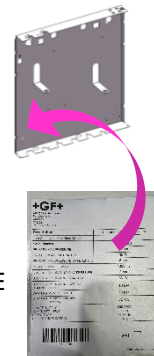
SERIAL NUMBER

AA: YEAR OF PRODUCTION
SS: WEEK OF THE YEAR OF PRODUCTION
0001: PROGRESSIVE HIU PRODUCED (COUNT OF 1 AT A TIME, NEXT WOULD BE 0002)

ALL TESTS PASSED



GLUING THE LABEL ON THE FRAME



- EXTERNAL LABEL WITH CODE AND SERIAL NUMBER
- PAPER ADHESIVE LABEL
- DIMENSIONS 100 x 100 mm

LABEL OUTSIDE THE BOX WITH CODE AND SERIAL NUMBER



SERIAL NUMBER

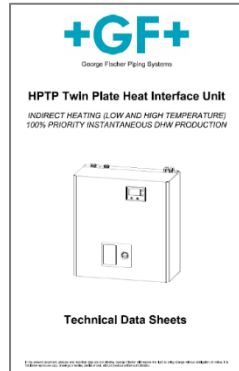
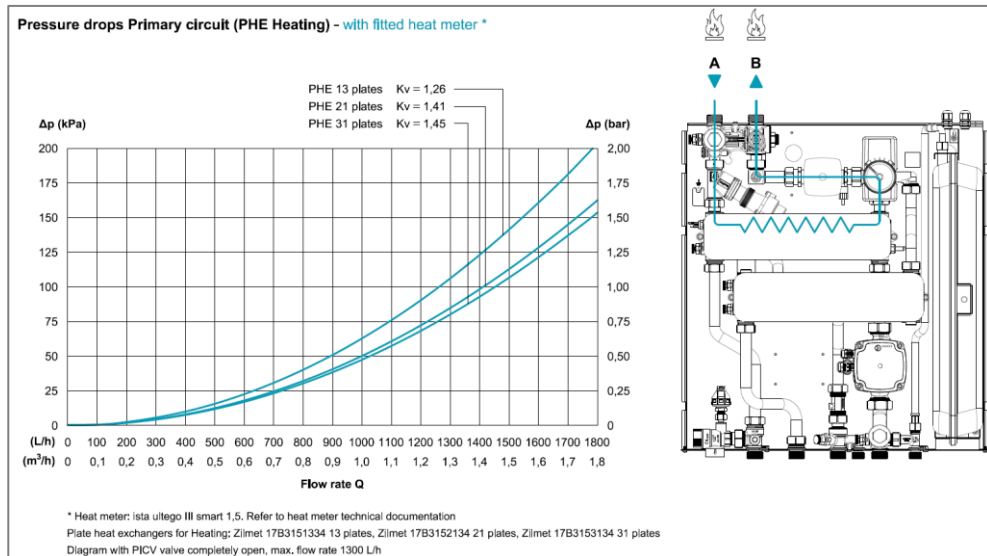
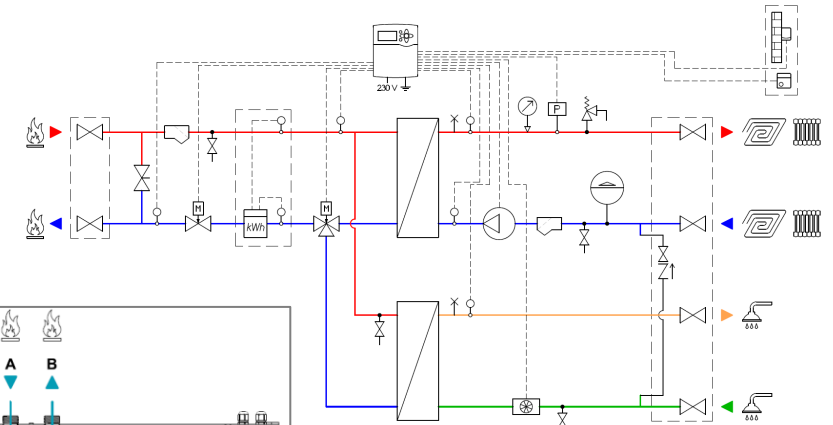
GLUING THE LABEL OUTSIDE THE BOX



label example; the squares not printed

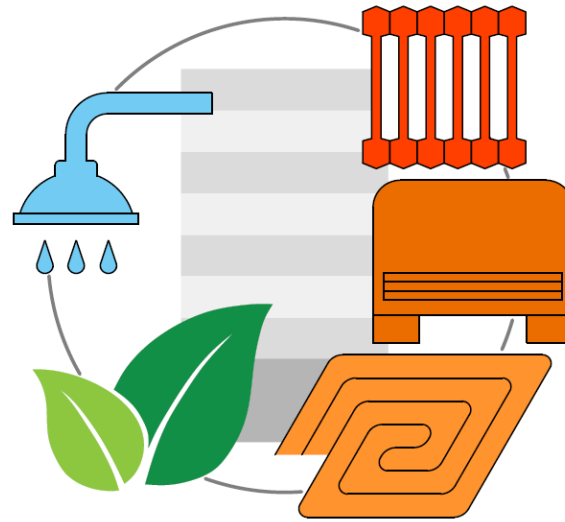


Novasfer can help for any documentation (brochure, schemes, instructions) and laboratory test (hydraulic and functional)





novasfer
FLOW CONTROL SYSTEMS



Thank you