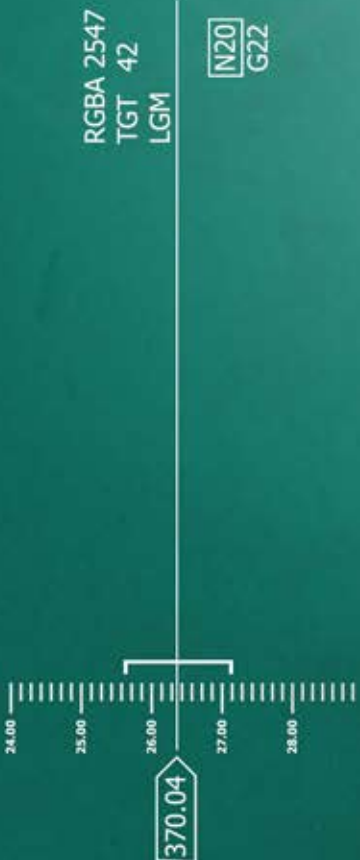


AND AVAILABLE TO ORDER WITH THE TUBES TO BE DESIGNED, SOME SOLUTIONS...  
 QUALITY MATERIALS, SANITARY WATER, FOOD, WASTE WATER, INDUSTRIAL...  
 FLOOR HEADINGS, BUFFER TANKS, STORAGE TANKS, HOT EXTRA...  
 THICKNESS, COILS, WITH... BIOMASS OIL, BOILER...  
 VALVES, WATER, AIR, CENTRAL HEATING, BUFFER TANKS, MADE IN...  
 INSIDE ALSO... COILS, MADE IN... LIFE, WATER, AIR, HEATING...  
 SYSTEMS, FLEXIBLE, AND...  
 STAINLESS STEEL, GAS, CERTIFIED, AND...  
 WATER, WATER, WATER, WATER, WATER, WATER, WATER, WATER...

## BUFFER TANKS & CALORIFIERS

[WWW.REFRA.EU](http://WWW.REFRA.EU)

GFX 42  
SDC 90



N20  
G22



# BUFFER TANKS & CALORIFIERS

## SIMPLE

Material: Carbon steel S355, powder coated; AISI 304; AISI 316  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armalex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

**Calculations on following conditions:**

Primary circuit at the heat source: +80°C  
 In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C  
 Outlet temperature: +60°C (after 1st hour)



Model	Volume
	Litres
FG0-V200D65PL50	200
FG0-V300D65PL50	300
FG0-V400D65PL50	400
FG0-V500D65PL50	500
FG0-V600D65PL50	600
FG0-V800D85PL50	800
FG0-V1000D85PL50	1000
FG0-V1200D110PL50	1200
FG0-V1400D110PL50	1400
FG0-V1500D110PL50	1500
FG0-V1600D110PL50	1600
FG0-V1800D110PL50	1800
FG0-V2000D110PL50	2000

## COMBI-1

Material: Carbon steel S355; Stainless steel AISI 304 or AISI 316  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armalex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

**Calculations on following conditions:**

Primary circuit at the heat source: +60°C  
 In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C  
 Outlet temperature: +60°C



Model	Volume	Diameter, D	Height, H	Dimensions, mm							
				H1	H2	H3	H4	H5	H6	H7	
	Litres	mm	mm								
FH4-V200D65PL50	200	650	900	310	320		372	449	527	604	
FH4-V300D65PL50	300		1200				396	549	701	854	
FH4-V400D65PL50	400		1500				430	650	870	1090	
FH4-V500D65PL50	500		1800				468	763	1058	1353	
FH4-V600D65PL50	600	850	2100	350	360		505	875	1245	1615	
FH4-V800D85PL50	800		1750				495	765	1035	1305	
FH4-V1000D85PL50	1000		2100				539	896	1254	1611	
FH4-V1200D110PL50	1200		1600				511	714	916	1119	
FH4-V1400D110PL50	1400	1100	1800	400	410		536	789	1041	1294	
FH4-V1500D110PL50	1500		1960				556	849	1141	1434	
FH4-V1600D110PL50	1600		2050				568	883	1198	1513	
FH4-V1800D110PL50	1800		2250				593	958	1323	1688	
FH4-V2000D110PL50	2000		2420				614	1021	1429	1836	

\* Heat source biomass/gas boiler

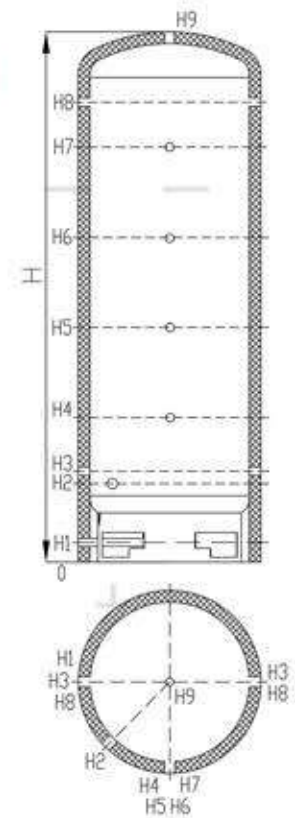
\*\* Sanitary water according UNI CTI 8065



Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

1	Drain	4	Thermometer	7	Thermomanometer
2	Electrical heater	5	Anode	8	Hot water (circulation)
3	Cold water (circulation)	6	Manometer	9	Hot water outlet

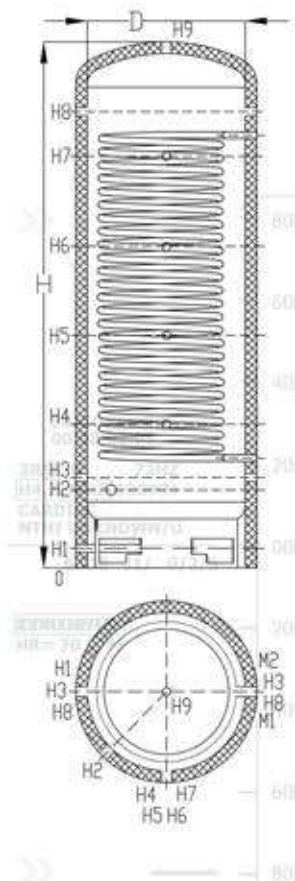
Diameter, D mm	Height, H mm	Dimensions, mm									Connections				
		H1	H2	H3	H4	H5	H6	H7	H8	H9	1	2	3	4-7	8-9
650	900				372	449	527	604	630	900	3/4"				
	1200				396	549	701	854	930	1200					
	1500	80	310	320	430	650	870	1090	1200	1500					
	1800				468	763	1058	1353	1500	1800					
	2100				505	875	1245	1615	1800	2100					
850	1750	80	350	360	495	765	1035	1305	1440	1750	3/2"		1"	1/2"	
	2100				539	896	1254	1611	1790	2100					
1100	1600				511	714	916	1119	1220	1600	1"		3/2"		3/2"
	1800				536	789	1041	1294	1420	1800					
	1960	80	400	410	556	849	1141	1434	1580	1960					
	2050				568	883	1198	1513	1670	2050					
	2250				593	958	1323	1688	1870	2250					
	2420				614	1021	1429	1836	2040	2420					



Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

1	Drain	4	Thermometer	7	Thermomanometer
2	Electrical heater	5	Anode	8	Hot water (circulation)
3	Cold water (circulation)	6	Manometer	9	Hot water outlet

			Connections							Capacity of primary heat source*	Heat exchanger surface area	Capacity of heat exchanger	Sanitary water production**	
H8	M1	M2	1	2	3	4-7	8-9	10-11	kW	m <sup>2</sup>	kW	ltr/h	ltr/10 min	
630	400	540	3/4"		1"		1"		12	1,2	9,26	159	73	
930		840							18	3,6	29,31	502	231	
1200		1110							23	5,9	47,36	812	373	
1500		1410							29	8,3	67,27	1153	530	
1800	450	1710	3/2"			1/2"	1"		35	10,8	87,32	1497	689	
1440		1350							47	10,1	81,77	1402	645	
1790		1700							58	14,1	43,55	747	343	
1220		1130							70	9,4	76,37	1309	602	
1420	500	1330	1"			3/2"	3/2"		82	12,4	100,59	1724	793	
1580		1490							88	14,8	119,88	2055	945	
1670		1580							93	16,2	130,83	2243	1032	
1870		1780							105	19,2	155,05	2658	1223	
2040		1950							117	21,7	175,57	3010	1384	



TECHNICAL DATA - HEAT EXCHANGER:  
 Material: Stainless steel AISI 316L, DN 20  
 Maximum working pressure: 10 bar

# BUFFER TANKS & CALORIFIERS

## COMBI-2

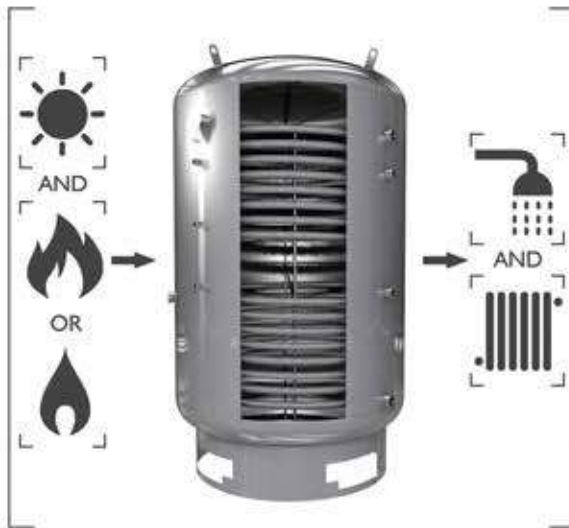
Material: Carbon steel S355; Stainless steel AISI 304 or AISI 316  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armaflex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

Calculations on following conditions:  
 Primary circuit at the heat source: +60°C  
 In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C  
 Outlet temperature: +60°C

TECHNICAL DATA - HEAT EXCHANGER:  
 Material: Stainless steel AISI 316L, DN 20  
 Maximum working pressure: 10 bar

1  
2  
3



Model	Volume Litres	Diameter, D mm	Height, H mm	Weight kg	Dimension						
					H1	H2	H3	H4	H5	H6	H7
FH2-V300D65PL50	300	650	1200	53	80	310	320	396	549	701	854
FH2-V400D65PL50	400		1500	62				430	650	870	1090
FH2-V500D65PL50	500		1800	72				468	763	1058	1353
FH2-V600D65PL50	600		2100	81				505	875	1245	1615
FH2-V800D85PL50	800	850	1750	97	80	350	360	495	765	1035	1305
FH2-V1000D85PL50	1000		2100	112				539	896	1254	1611
FH2-V1200D110PL50	1200	1100	1600	159	80	410	410	511	714	916	1119
FH2-V1400D110PL50	1400		1800	175				536	789	1041	1294
FH2-V1500D110PL50	1500		1960	185				556	849	1141	1434
FH2-V1600D110PL50	1600		2050	195				568	883	1198	1513
FH2-V1800D110PL50	1800		2250	211				593	958	1323	1688
FH4-V2000D110PL50	2000		2420	225				614	1021	1429	1836

\* Heat source biomass/gas boiler

\*\* Ignition time of a buffer tank if | heat exchanger returns the

## COMBI-3

Material of main vessel: Carbon steel S355, powder coated  
 Material of inner vessel: Stainless steel AISI 304  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armaflex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

Calculations on following conditions:  
 Primary circuit at the heat source: +60°C  
 In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C  
 Outlet temperature: +60°C (after 1st hour)



Model	Total Volume Litres	Diameter, D mm	Height, H mm	Volume V1 Litres	Volume V2 Litres	Weight kg	Dimension		
							H1	H2	H3
FG3-V200D65PL50	200	650	900	150	50	43	80	310	320
FG3-V300D65PL50	300		1200	225	75	53			
FG3-V400D65PL50	400		1500	300	100	62			
FG3-V500D65PL50	500		1800	375	125	72			
FG3-V600D65PL50	600	850	2100	450	150	81	80	350	360
FG3-V800D85PL50	800		1750	600	200	97			
FG3-V1000D85PL50	1000	1100	2100	750	250	112	80	400	410
FG3-V1200D110PL50	1200		1600	900	300	159			
FG3-V1400D110PL50	1400		1800	1050	350	175			
FG3-V1500D110PL50	1500		1960	1125	375	185			
FG3-V1600D110PL50	1600		2050	1200	400	195			
FG3-V1800D110PL50	1800		2250	1350	450	211			
FG3-V2000D110PL50	2000		2420	1500	500	225			

\* Heat source biomass/gas boiler

\*\* Heat source for inner vessel heated by the water in main

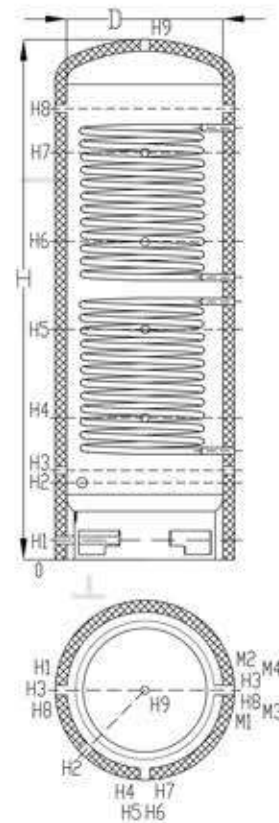


Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

Drain	4	Thermometer	7	Thermomanometer	10	Internal heat exchanger inlet/outlet
Electrical heater	5	Anode	8	Hot water (circulation)	-	
Cold water (circulation)	6	Manometer	9	Hot water outlet	13	

Dimensions, mm						Connections						Capacity of primary heat source*	Heat exchanger surface area	Capacity of heat exchanger	Sanitary water production per 1 heat exchanger**	
H8	H9	M1	M2	M3	M4	1	2	3	4-7	8-9	10-13	kW	m <sup>2</sup>	kW	ltr/h	ltr/10 min
930	1200	400	580	670	840	3/4"		1"	1"	1"	1"	18	1,5	12,03	206	95
1200	1500		715	805	1110							23	2,6	20,98	360	165
1500	1800		865	955	1410							29	3,8	30,87	529	243
1800	2100		1015	1105	1710							35	5,1	41,04	704	324
1440	1750	450	855	945	1350	3/2"	3/2"	1/2"	1/2"	1"	1"	47	3,3	27,00	463	213
1790	2100		1030	1120	1700							58	4,8	38,73	664	305
1220	1600		770	860	1130							70	2,2	18,05	309	142
1420	1800		870	960	1330							82	3,1	24,69	423	195
1580	1960	500	950	1040	1490	1"	3/2"	3/2"	3/2"	3/2"	3/2"	88	3,7	29,93	513	236
1670	2050		995	1085	1580							93	4,1	33,04	566	261
1870	2250		1095	1185	1780							105	4,9	39,65	680	313
2040	2420		1180	1270	1950							117	5,6	45,36	778	358

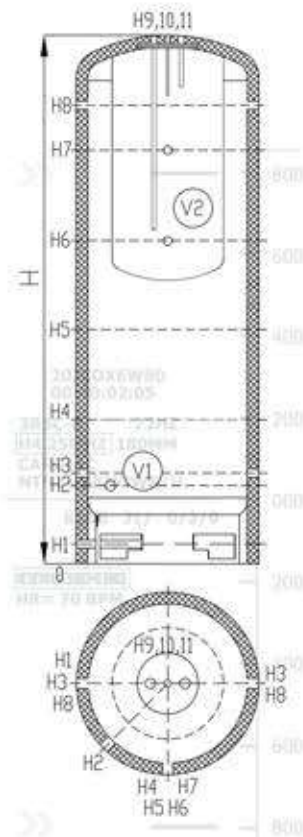
heat



Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

Dimensions, mm							Connections						Capacity of primary heat source*	Capacity of secondary heat source**	Ignition time of inner vessel
H4	H5	H6	H7	H8	H9, H10, H11		1	2	3	4-7	8-9	10-13	kW	kW	min
372	449	527	604	630	900	3/4"			1"	1"	1"	1"	12	73,02	2,74
396	549	701	854	930	1200								18	97,36	3,08
430	650	870	1090	1200	1500								23	121,71	3,29
468	763	1058	1353	1500	1800								29	158,22	3,16
505	875	1245	1615	1800	2100	3/2"	3/2"	1/2"	1/2"	1"	1"	35	182,56	3,29	
495	765	1035	1305	1440	1750							47	182,56	4,38	
539	896	1254	1611	1790	2100							58	219,07	4,56	
511	714	916	1119	1220	1600							70	194,73	6,16	
536	789	1041	1294	1420	1800	1"	3/2"	3/2"	3/2"	3/2"	3/2"	3/2"	82	219,07	6,39
556	849	1141	1434	1580	1960								88	231,24	6,49
568	883	1198	1513	1670	2050								93	243,41	6,57
593	958	1323	1688	1870	2250								105	279,92	6,43
614	1021	1429	1836	2040	2420								117	304,26	6,57

vessel





# BUFFER TANKS & CALORIFIERS

## COMBI-4

Material of main vessel: Carbon steel S355, powder coated  
 Material of inner vessel: Stainless steel AISI 304 or AISI316  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armaflex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

**Calculations on following conditions:**

Primary circuit at the heat source: +60°C

In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C

Outlet temperature: +60°C (after 1st hour)



Model	Total Volume	Diameter, D	Height, H	Volume V1	Volume V2	Weight									
							Litres	mm	mm	Litres	Litres	kg	H1	H2	H3
FG3-V200D65PL50	200	650	900	150	50	43	80	310	320				372	449	
FG3-V300D65PL50	300		1200	225	75	53							396	549	
FG3-V400D65PL50	400		1500	300	100	62							430	650	
FG3-V500D65PL50	500		1800	375	125	72							468	763	
FG3-V600D65PL50	600		2100	450	150	81							505	875	
FG3-V800D85PL50	800	850	1750	600	200	97		350	360				495	765	
FG3-V1000D85PL50	1000		2100	750	250	112							539	896	
FG3-V1200D110PL50	1200	1100	1600	900	300	159		400	410					511	714
FG3-V1400D110PL50	1400		1800	1050	350	175								536	789
FG3-V1500D110PL50	1500		1960	1125	375	185								556	849
FG3-V1600D110PL50	1600		2050	1200	400	195	568							883	
FG3-V1800D110PL50	1800		2250	1350	450	211	593							958	
FG3-V2000D110PL50	2000		2420	1500	500	225	614							1021	

\* Heat source biomass/gas boiler

\*\* Heat source for inner vessel heated by the water in main

## COMBI-5

Material of main vessel: Carbon steel S355, powder coated  
 Material of inner vessel: Stainless steel AISI 304 or AISI316  
 Thermal insulation: Soft polyurethane, thickness 50 mm or 100 mm or armaflex 40 mm or 80 mm  
 Finishing: leatherette, red or blue color

**Calculations on following conditions:**

Primary circuit at the heat source: +60°C

In first 10 min and first hour can be taken at 60°C

Inlet temperature: +10°C

Outlet temperature: +60°C (after 1st hour)



Model	Total Volume	Diameter, D	Height, H	Volume V1	Volume V2	Weight										
							Litres	mm	mm	Litres	Litres	kg	H1	H2	H3	H4
FG3-V300D65PL50	300	650	1200	225	75	53	80	310	320				396	549	701	
FG3-V400D65PL50	400		1500	300	100	62							430	650	870	
FG3-V500D65PL50	500		1800	375	125	72							468	763	1058	
FG3-V600D65PL50	600	850	2100	450	150	81		350	360					505	875	1245
FG3-V800D85PL50	800		1750	600	200	97								495	765	1035
FG3-V1000D85PL50	1000	1100	2100	750	250	112		400	410					539	896	1254
FG3-V1200D110PL50	1200		1600	900	300	159								511	714	916
FG3-V1400D110PL50	1400		1800	1050	350	175								536	789	1041
FG3-V1500D110PL50	1500		1960	1125	375	185								556	849	1141
FG3-V1600D110PL50	1600		2050	1200	400	195								568	883	1198
FG3-V1800D110PL50	1800		2250	1350	450	211	593							958	1323	
FG3-V2000D110PL50	2000		2420	1500	500	225	614							1021	1429	

\* Heat source biomass/gas boiler

\*\* Heat source for inner vessel heated by the water in main



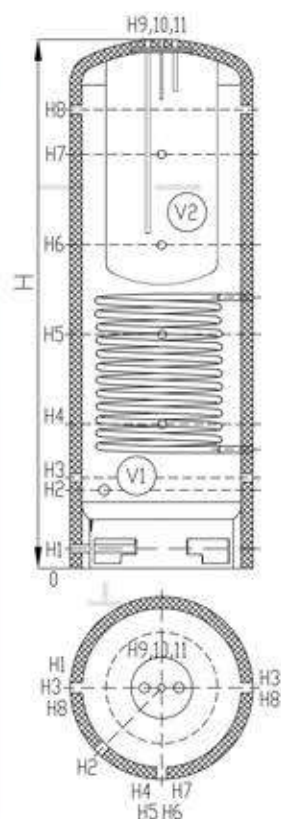
Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

**TECHNICAL DATA - HEAT EXCHANGER:**

Material: Stainless steel AISI 316L, DN 20  
 Maximum working pressure: 10 bar

Dimensions, mm						Connections						Capacity of primary heat source*	Capacity (surface area) of inner vessel	Capacity (surface area) of heat exchanger	Ignition time of inner vessel
H6	H7	H8	H9,H10,H11	M1	M2	1	2	3	4-7	8-9	10-11	kW	kW (m <sup>2</sup> )	kW (m <sup>2</sup> )	min
527	604	630	900	400	458	3/4"		1"		1"		12	73,02 (0,6)	1,94 (0,3)	2,67
701	854	930	1200		580							18	97,36 (0,8)	6,46 (1,0)	2,89
870	1090	1200	1500		715							23	121,71 (1,0)	11,63 (1,8)	3,00
1058	1353	1500	1800		865							29	158,22 (1,3)	17,45 (2,7)	2,85
1245	1615	1800	2100		1015							35	182,56 (1,5)	23,26 (3,6)	2,92
1035	1305	1440	1750	450	855	3/2"		1/2"		1"	47	182,56 (1,5)	16,8 (2,6)	4,01	
1254	1611	1790	2100		1030						58	219,07 (1,8)	23,91 (3,7)	4,12	
916	1119	1220	1600		770						70	194,73 (1,6)	14,86 (2,3)	5,73	
1041	1294	1420	1800		870						82	219,07 (1,8)	20,03 (3,1)	5,86	
1141	1434	1580	1960		950						88	231,24 (1,9)	24,56 (3,8)	5,86	
1198	1513	1670	2050	500	995	1"	3/2"	3/2"			93	243,41 (2,0)	27,14 (4,2)	5,91	
1323	1688	1870	2250		1095						105	279,92 (2,3)	32,31 (5,0)	5,76	
1429	1836	2040	2420		1180						117	304,26 (2,5)	37,48 (5,8)	5,85	

vessel



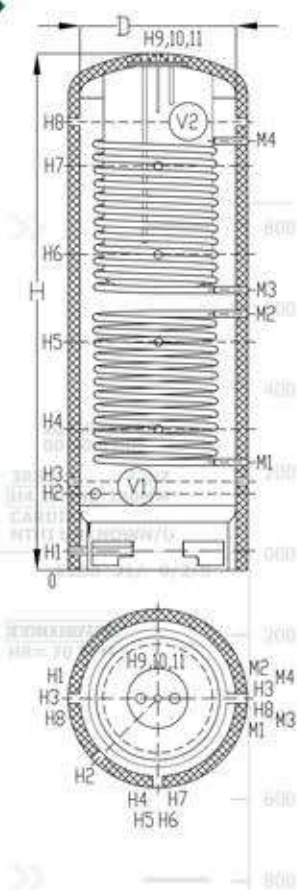
Maximum working pressure: 6 bar  
 Minimum/Maximum working temperature: -20°C/+95°C

**TECHNICAL DATA - HEAT EXCHANGER:**

Material: Stainless steel AISI 316L, DN 20  
 Maximum working pressure: 10 bar

Dimensions, mm							Connections						Capacity of primary heat source*	Capacity (surface area) of inner vessel	Capacity (surface area) of heat exchanger	Ignition time of inner vessel
H7	H8	H9	M1	M2	M3	M4	1	2	3	4-7	8-9	10-14	kW	kW (m <sup>2</sup> )	kW (m <sup>2</sup> )	min
854	930	1200	400	580	670	840	3/4"		1"		1"		18	97,36 (0,8)	6,46 (1,0)	2,72
1090	1200	1500		715	805	1110							23	121,71 (1,0)	11,63 (1,8)	2,76
1353	1500	1800		865	955	1410							29	158,22 (1,3)	17,45 (2,7)	2,59
1615	1800	2100		1015	1105	1710							35	182,56 (1,5)	23,26 (3,6)	2,62
1305	1440	1750		450	855	945							1350	3/2"		1/2"
1611	1790	2100	1030		1120	1700	58	219,07 (1,8)	23,91 (3,7)	3,75						
1119	1220	1600	770		860	1130	70	194,73 (1,6)	14,86 (2,3)	5,35						
1294	1420	1800	870		960	1330	82	219,07 (1,8)	20,03 (3,1)	5,40						
1434	1580	1960	500		950	1040	1490	1"	3/2"	3/2"			88			
1513	1670	2050		995	1085	1580	93						243,41 (2,0)	27,14 (4,2)	5,37	
1688	1870	2250		1095	1185	1780	105						279,92 (2,3)	32,31 (5,0)	5,22	
1836	2040	2420		1180	1270	1950	117						304,26 (2,5)	37,48 (5,8)	5,27	

vessel



UAB "REFRA"  
DARIAUS IR GIRENO STR. 107  
VILNIUS, LT-02189, LITHUANIA

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WWW.REFRA.EU

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+370 5 2031021  
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