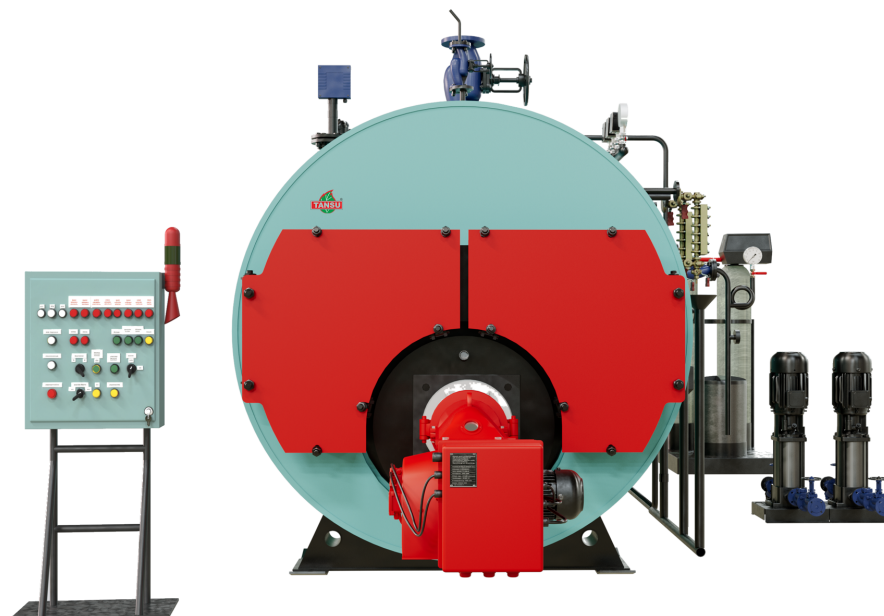


OVERALL AND CONNECTION DIMENSIONS

TANSU steam boilers

Steam boilers type E-MGDN · capacity 0.3–20 t/h · saturated steam



TANSU E-MGDN steam boiler, front view (gas/oil burner)

This document provides the overall, installation and connection dimensions of TANSU E-MGDN steam boilers and is intended for design engineers when planning boiler houses. For each size, an overall drawing, a dimensions table, a nozzle layout diagram and a valve specification are provided.

Model range

Model	Capacity, t/h	Furnace	Working pressure, bar	Flue outlet dia.	Weight, kg
E-0.3 MGDN	0.3	reverse-flame	8	ø250	1200
E-0.6 MGDN	0.6	reverse-flame	8	ø300	1850
E-1.0 MGDN	1.0	reverse-flame	8	ø300	2500
E-2.0 MGDN	2.0	three-pass	8	ø400	5100
E-3.0 MGDN	3.0	three-pass	8	ø450	6700
E-4.0 MGDN	4.0	three-pass	13	ø500	9800
E-5.0 MGDN	5.0	three-pass	13	ø600	12300
E-6.0 MGDN	6.0	three-pass	13	ø600	13300
E-8.0 MGDN	8.0	three-pass	13	ø700	16500
E-10.0 MGDN	10.0	three-pass	13	ø800	21800
E-12.0 MGDN	12.0	three-pass	13	ø800	24000
E-16.0 MGDN	16.0	three-pass	13	ø850	32500
E-20.0 MGDN	20.0	three-pass	13	ø900	36700

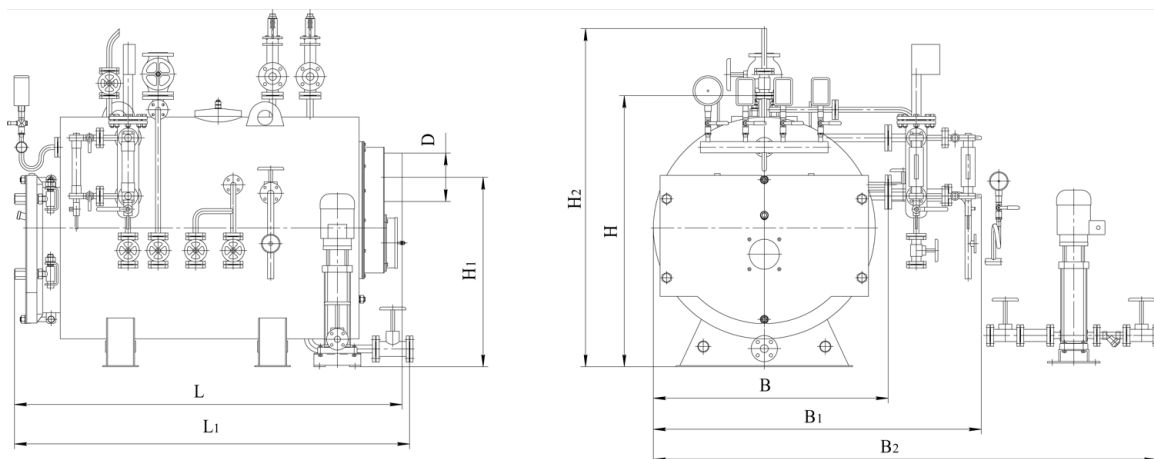
Dimension symbols. Letter symbols (L, L₁ — length; H, H₁, H₂, H₃ — heights; B, B₁, B₂ — transverse dimensions; D — flue gas duct diameter; A...U, a...h — nozzle location coordinates) correspond to the markings on the drawings of the relevant section.

Contents. The document is arranged by size: 1. Boilers 0.3–1.0 t/h (reverse-flame furnace) · 2. Boilers 2–3 t/h · 3. Boilers 4–12 t/h · 4. Boilers 16–20 t/h (three-pass furnace) · 5. Notes and conditions. Each section: overall dimensions, nozzle layout and sizes, valve arrangement.

1. Boilers 0.3–1.0 t/h · reverse-flame (2-pass) furnace

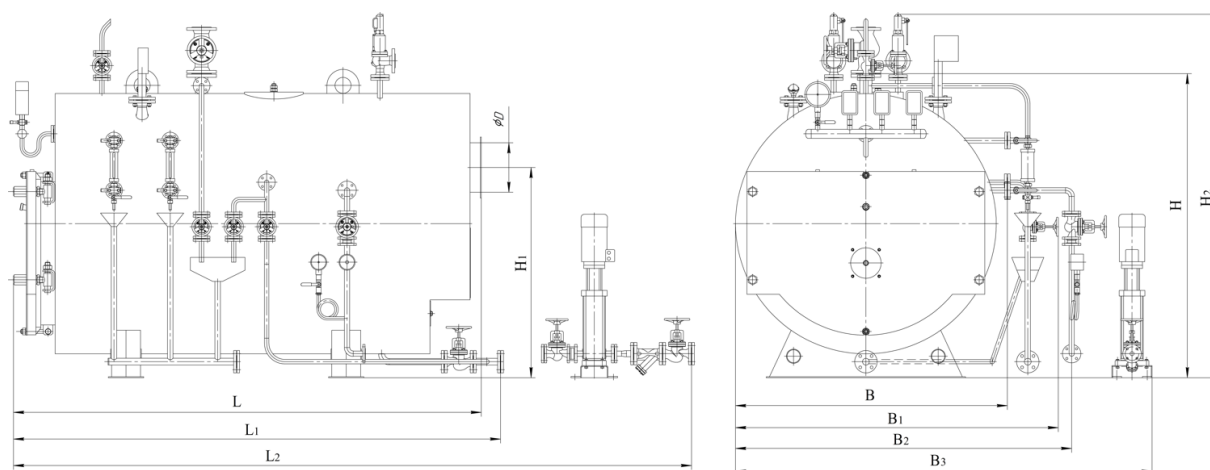
Dimensions are in millimetres; weight is given without water. Nozzle positions correspond to the diagrams; DN — nominal diameter. P — design pressure, bar.

1.1 Overall dimensions



Overall drawing · boilers 0.3–0.6 t/h (reverse-flame furnace)

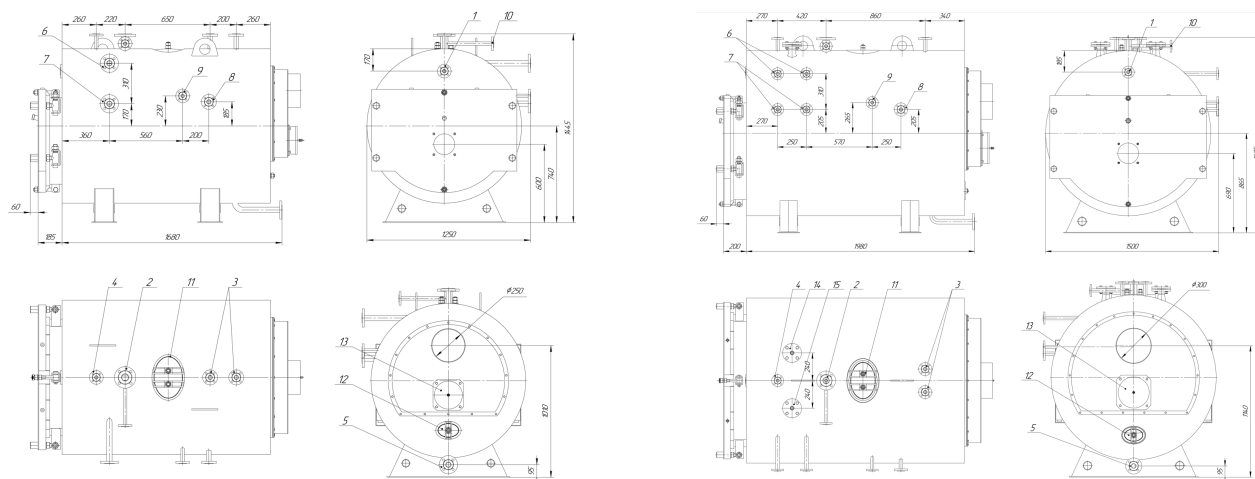
Designation	L	L ₁	H	H ₁	H ₂	B	B ₁	B ₂	D	Weight, kg
E-0.3 MGDN	2100	2270	1445	1140	1820	1250	1750	2700	ø250	1200
E-0.6 MGDN	2395	2420	1695	1140	1820	1250	1750	2920	ø300	1850



Overall drawing · boiler 1.0 t/h (reverse-flame furnace)

Designation	L	L ₁	L ₂	H	H ₁	H ₂	B	B ₁	B ₂	B ₃	D	Weight, kg
E-1.0 MGDN	2910	3030	4220	1895	1310	2265	1690	2010	2090	2590	ø300	2500

1.2 Nozzle layout and sizes



Nozzle layout · boilers 0.3 t/h (left) and 0.6 t/h (right)

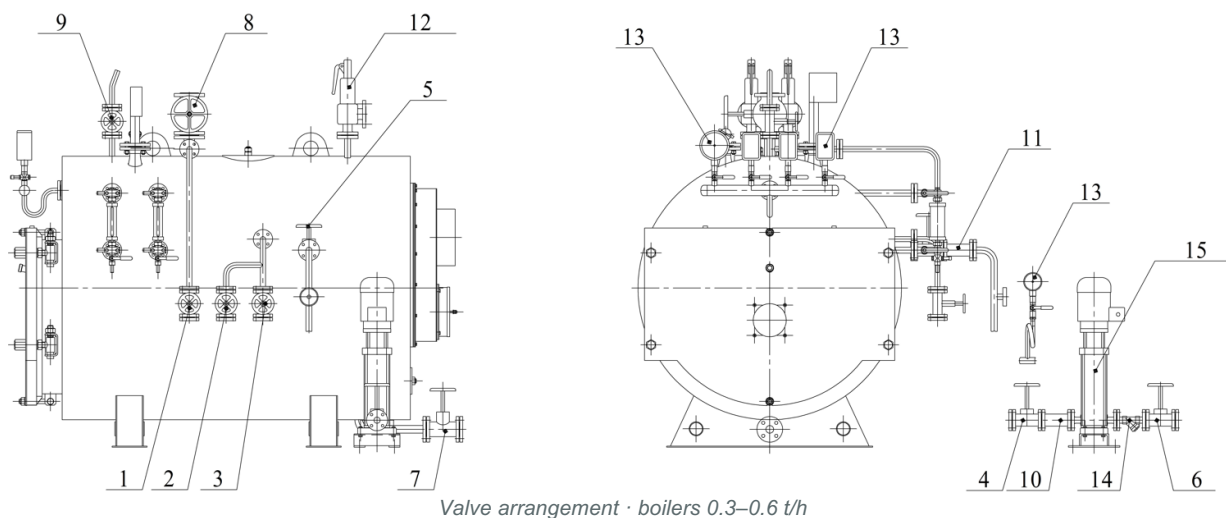
Nozzle nominal diameters (DN)

№	Nozzle name	0.3 t/h	0.6 t/h
1	Pressure sensor nozzle	DN 20	DN 20
2	Steam outlet nozzle	DN 50	DN 50
3	Safety valve nozzle	DN 25	DN 25
4	Air vent nozzle	DN 20	DN 20
5	Drain nozzle	DN 32	DN 32
6	Level column nozzle	DN 32	DN 20
7	Level column nozzle	DN 32	DN 20
8	Boiler make-up nozzle	DN 25	DN 25
9	Boiler blowdown nozzle	DN 20	DN 20
10	Steam sampling nozzle	DN 20	DN 20
11	Inspection manhole	320×220	320×220
12	Handhole	200×130	200×130
13	Explosion relief valve	Ø 200	Ø 200

For 0.6 t/h boilers, additionally: 14 — electrode nozzle of the second low-low water level electrode; 15 — electrode nozzle of the water level control system.

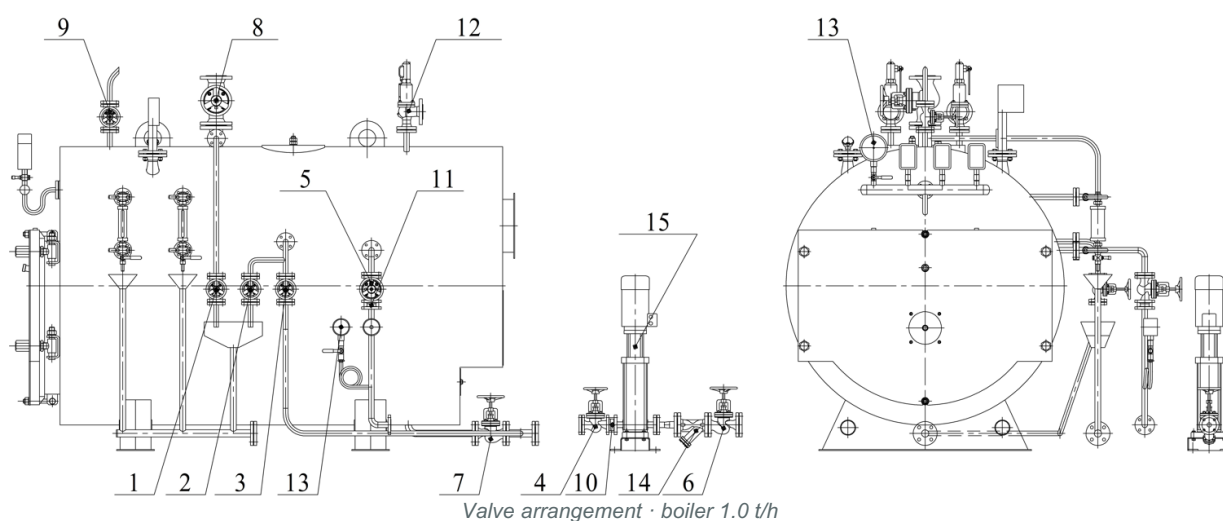
For the 1.0 t/h reverse-flame boiler, the nozzle layout is per the overall drawing (item 1.1) and the order drawings.

1.3 Valve arrangement



Valve arrangement · boilers 0.3–0.6 t/h

Nº	Valve / fitting	0.3 t/h DN	0.6 t/h DN	P, bar
1	Steam sampling valve	20	20	16
2	Boiler water sampling valve	20	20	16
3	Boiler blowdown valve	20	20	16
4	Feed pump valve	25	25	16
5	Make-up nozzle valve	25	25	16
6	Feed water supply valve	25	25	16
7	Drain nozzle valve	32	32	16
8	Main steam valve	50	50	16
9	Air vent valve	20	20	16
10	Feed pump check valve	25	25	16
11	Boiler make-up nozzle check valve	25	25	16
12	Safety valve	25	25	16
13	Three-way cock	15	15	16
14	Feed water filter	25	25	16
15	Feed pump CDLF	2-110	2-130	



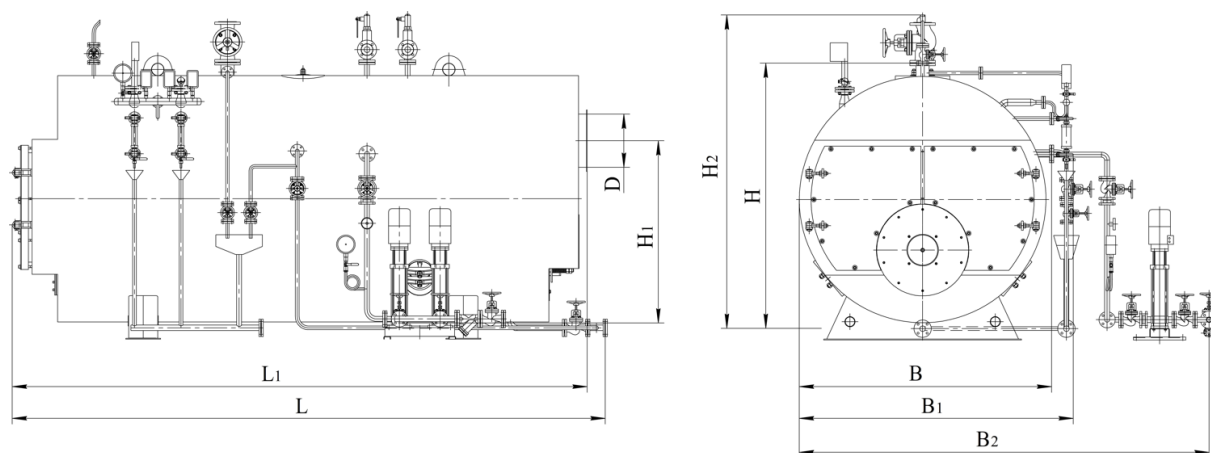
Valve arrangement · boiler 1.0 t/h

Nº	Valve / fitting	1.0 t/h DN	P, bar
1	Steam sampling valve	20	16
2	Boiler water sampling valve	20	16
3	Boiler blowdown valve	20	16
4	Feed pump valve	25	16

Nº	Valve / fitting	1.0 t/h DN	P, bar
5	Make-up nozzle valve	25	16
6	Feed water supply valve	32	16
7	Drain nozzle valve	32	16
8	Main steam valve	65	16
9	Air vent valve	20	16
10	Feed pump check valve	25	16
11	Boiler make-up nozzle check valve	25	16
12	Safety valve	25	16
13	Three-way cock	15	16
14	Feed water filter	32	16
15	Feed pump LVR	3-21	

2. Boilers 2–3 t/h · three-pass furnace

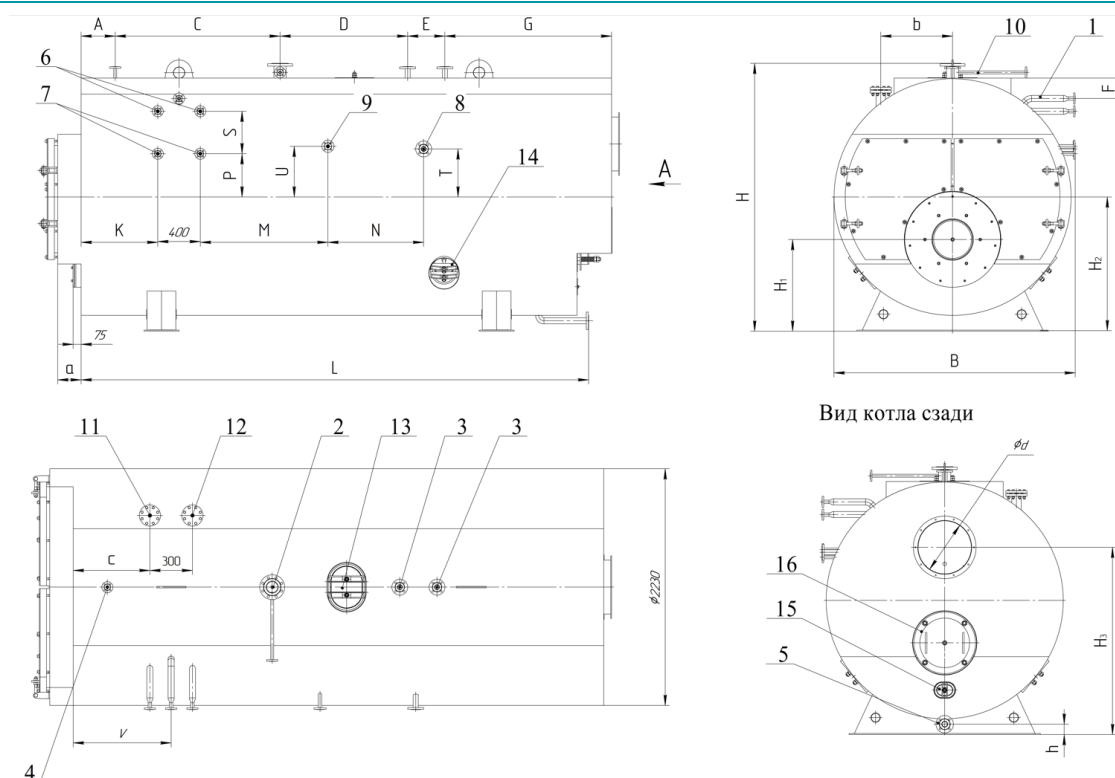
2.1 Overall dimensions



Overall drawing · Three-pass furnace · 2–3 t/h

Designation	L	L ₁	H	H ₁	H ₂	B	B ₁	B ₂	D	Weight, kg
E-2.0 MGDN	4545	4450	2185	1560	2600	1950	2140	3215	ø400	5100
E-3.0 MGDN	5100	4950	2385	1710	2800	2170	2360	3525	ø450	6700

2.2 Nozzle layout and sizes



Nozzle layout · boilers 1–12 t/h

Nozzle designation (items 1–16)

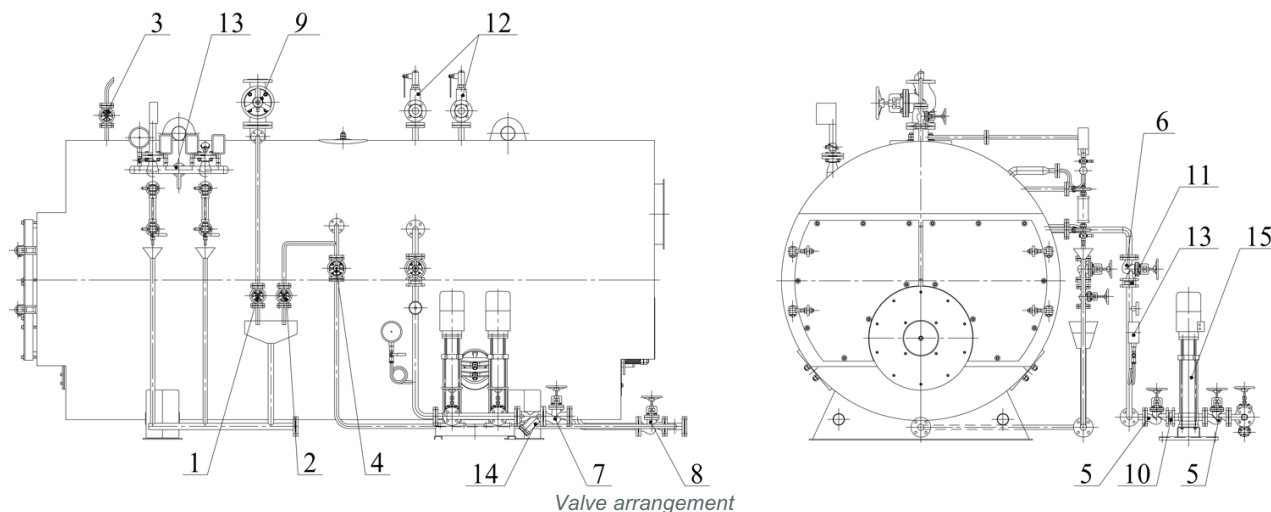
- | | |
|----------------------------------|--|
| 1 — pressure sensor nozzle | 10 — steam sampling nozzle |
| 2 — steam outlet nozzle | 11 — water level control system nozzle |
| 3 — safety valve nozzle | 12 — low water alarm level nozzle |
| 4 — air vent nozzle | 13 — access manhole |
| 5 — drain nozzle | 14 — inspection manhole |
| 6, 7 — water level gauge nozzles | 15 — handhole |
| 8 — boiler make-up nozzle | 16 — explosion relief valve |
| 9 — boiler blowdown nozzle | |

Nozzle location dimensions, mm

Dim., mm	2.0 t/h	3.0 t/h
A	330	310
B	1950	2170
C	1000	1150
D	1975	1200
E	300	350
F	190	225
V	820	860
H	2185	2385
H ₁	760	775
H ₂	1110	1210
H ₃	1560	1710
G	675	1470
K	620	660
L	3805	4360
M	800	1000
N	400	600
P	345	390
S	310	310

Dim., mm	2.0 t/h	3.0 t/h
T	345	385
U	370	415
a	240	240
b	535	670
c	620	660
d	ø400	ø450
h	100	100

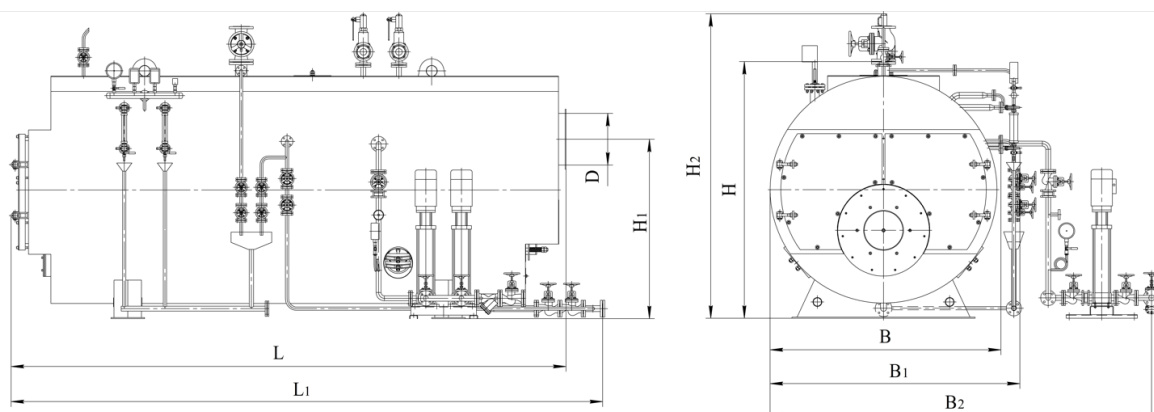
2.3 Valve arrangement



№	Valve / fitting	2.0 t/h	3.0 t/h	P, bar
1	Steam sampling valve	20	20	16
2	Boiler water sampling valve	20	20	16
3	Air vent valve	20	20	16
4	Boiler blowdown valve	25	25	16
5	Feed pump valves	25	32	16
6	Make-up nozzle valve	25	32	16
7	Feed water supply valve	32	40	16
8	Drain nozzle valve	40	40	16
9	Main steam valve	80	100	16
10	Feed pump check valve	25	32	16
11	Make-up nozzle check valve	25	32	16
12	Safety valve	32	32	16
13	Three-way cock	15	15	16
14	Feed water filter	32	32	16
15	Feed pump CDLF	2-220	4-190	

3. Boilers 4–12 t/h · three-pass furnace

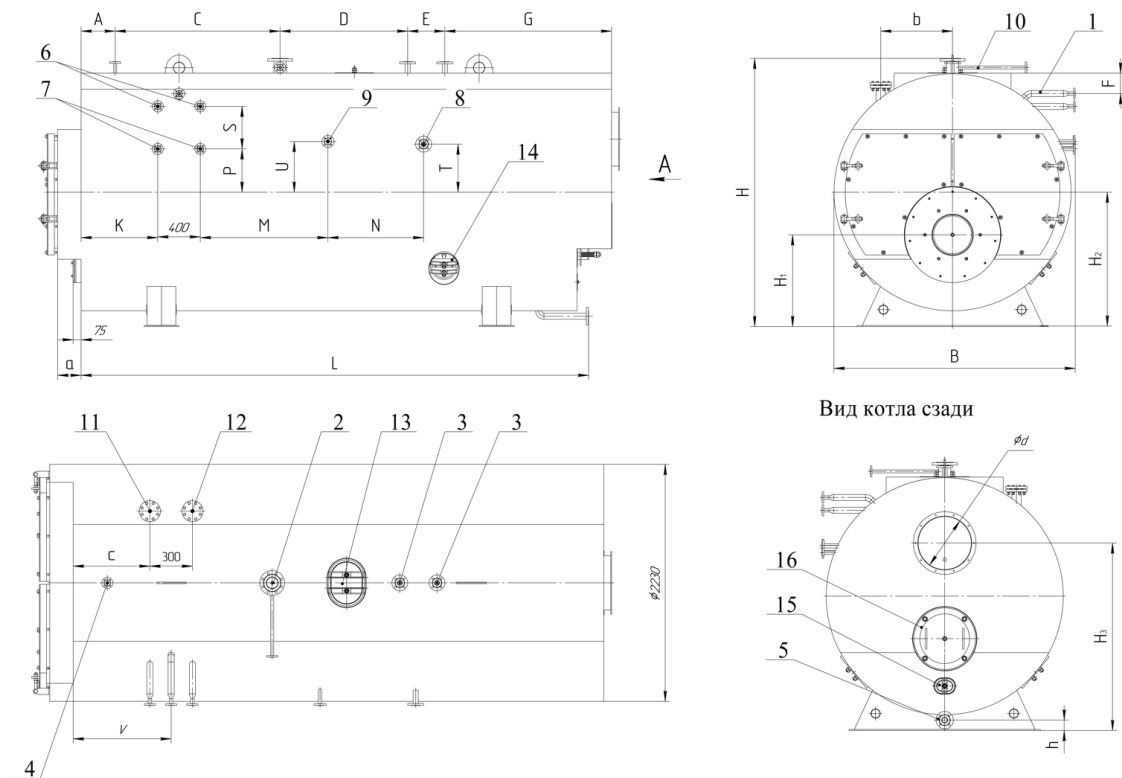
3.1 Overall dimensions



Overall drawing · Three-pass furnace · 4–12 t/h

Designation	L	L ₁	H	H ₁	H ₂	B	B ₁	B ₂	D	Weight, kg
E-4.0 MGDN	5455	5820	2525	1765	2995	2270	2455	3750	ø500	9800
E-5.0 MGDN	5295	5480	2730	1870	3200	2460	2645	5025	ø600	12300
E-6.0 MGDN	5595	5930	2730	1870	3200	2460	2645	3970	ø600	13300
E-8.0 MGDN	6560	6720	2940	2115	3540	2635	2820	4815	ø700	16500
E-10.0 MGDN	6910	7250	3160	2245	3640	2835	3020	4430	ø800	21800
E-12.0 MGDN	7345	7500	3390	2420	4020	3050	3240	4650	ø800	24000

3.2 Nozzle layout and sizes



Nozzle layout · boilers 1–12 t/h

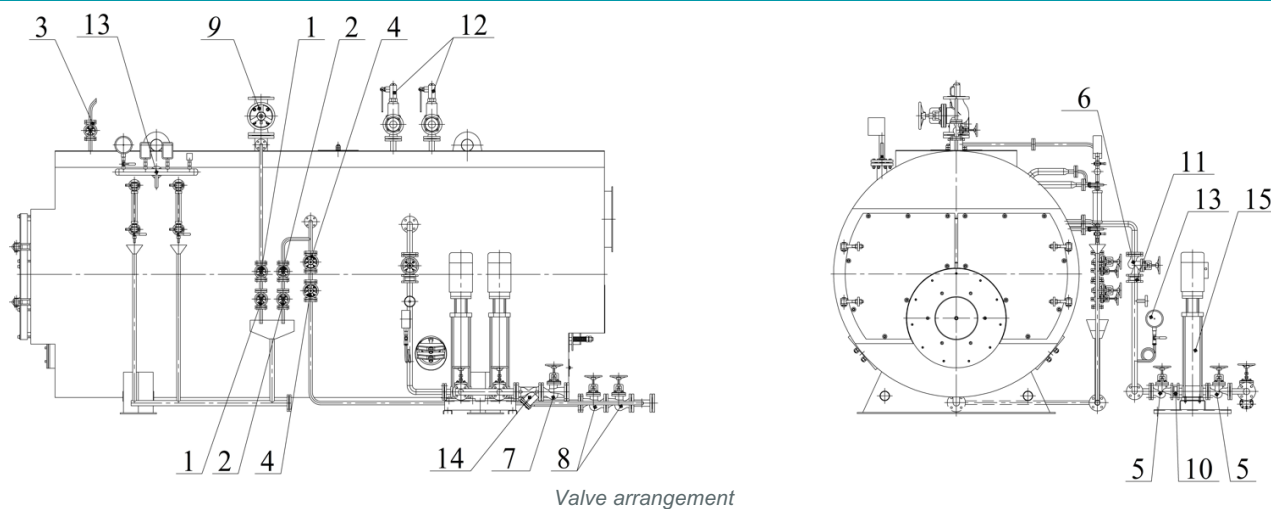
Nozzle designation (items 1–16)

- | | |
|----------------------------------|--|
| 1 — pressure sensor nozzle | 10 — steam sampling nozzle |
| 2 — steam outlet nozzle | 11 — water level control system nozzle |
| 3 — safety valve nozzle | 12 — low water alarm level nozzle |
| 4 — air vent nozzle | 13 — access manhole |
| 5 — drain nozzle | 14 — inspection manhole |
| 6, 7 — water level gauge nozzles | 15 — handhole |
| 8 — boiler make-up nozzle | 16 — explosion relief valve |
| 9 — boiler blowdown nozzle | |

Nozzle location dimensions, mm

Dim., mm	4.0 t/h	5.0 t/h	6.0 t/h	8.0 t/h	10.0 t/h	12.0 t/h
A	320	375	375	370	380	380
B	2270	2460	2460	2635	2835	3050
C	1550	1500	1550	1750	1750	1800
D	1200	1300	1450	1490	2200	1550
E	350	445	450	450	500	450
F	190	240	240	260	420	383
V	920	925	1025	970	650	830
H	2525	2730	3200	2940	3100	3390
H ₁	865	915	915	945	995	1155
H ₂	1265	1370	1370	1465	1565	1720
H ₃	1765	1870	1870	2115	2215	2420
G	1570	1640	1740	1970	1465	2680
K	720	725	825	770	560	830
L	4775	4615	4915	5795	6345	6670
M	1200	1200	1150	1670	2300	2000
N	900	700	600	1000	480	700
P	410	465	465	605	603	683
S	400	400	400	310	310	400
T	453	510	510	560	606	673
U	478	535	535	585	638	743
a	240	240	240	240	240	240
b	675	770	770	850	930	980
c	720	725	825	770	650	830
d	ø500	ø600	ø600	ø700	ø800	ø800
h	100	100	100	100	110	145

3.3 Valve arrangement

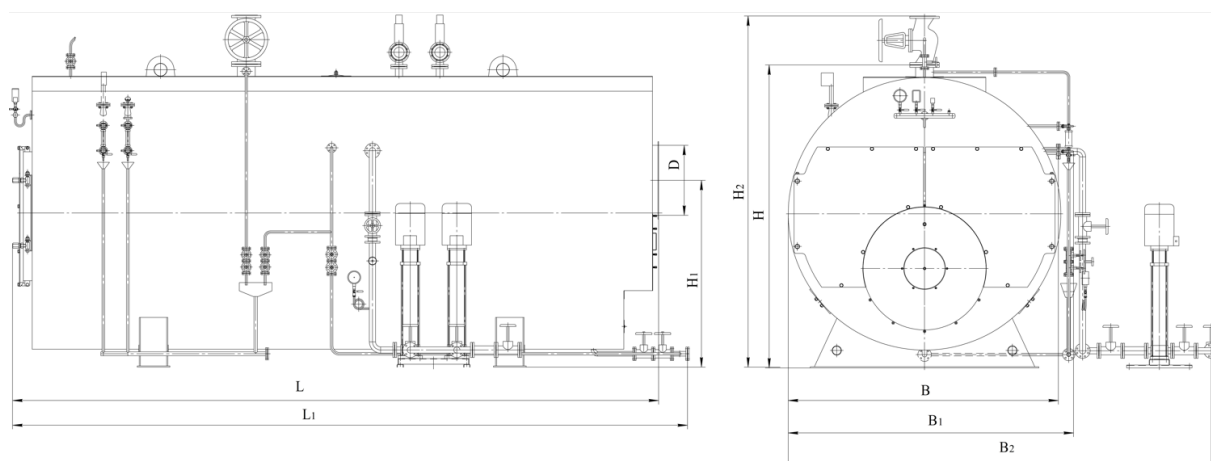


Nº	Valve / fitting	4.0 t/h	5.0 t/h	6.0 t/h	8.0 t/h	10.0 t/h	12.0 t/h	P	Qty
1	Steam sampling valve	20	20	20	20	20	20	25	2

No	Valve / fitting	4.0 t/h	5.0 t/h	6.0 t/h	8.0 t/h	10.0 t/h	12.0 t/h	P	Qty
2	Boiler water sampling valve	20	20	20	20	20	20	25	2
3	Air vent valve	20	20	20	20	20	20	25	1
4	Boiler blowdown valve	25	25	25	25	25	25	25	2
5	Feed pump valves	40	40	40	50	50	50	25	4
6	Make-up nozzle valve	40	40	40	50	50	50	25	1
7	Feed water supply valve	50	50	65	50	50	65	25	1
8	Drain nozzle valve	50	50	50	50	50	50	25	2
9	Main steam valve	100	125	125	200	150	150	25	1
10	Feed pump check valve	40	40	40	50	50	50	25	2
11	Make-up nozzle check valve	40	40	40	50	50	50	25	1
12	Safety valve	40	40	40	50	65	65	25	2
13	Three-way cock	15	15	15	15	15	15	25	4(5)
14	Feed water filter	50	50	65	50	50	65	25	1
15	Feed pump, LVR type	10-20	10-18	10-20	10-16	15-14	15-17		2

4. Boilers 16–20 t/h · three-pass furnace

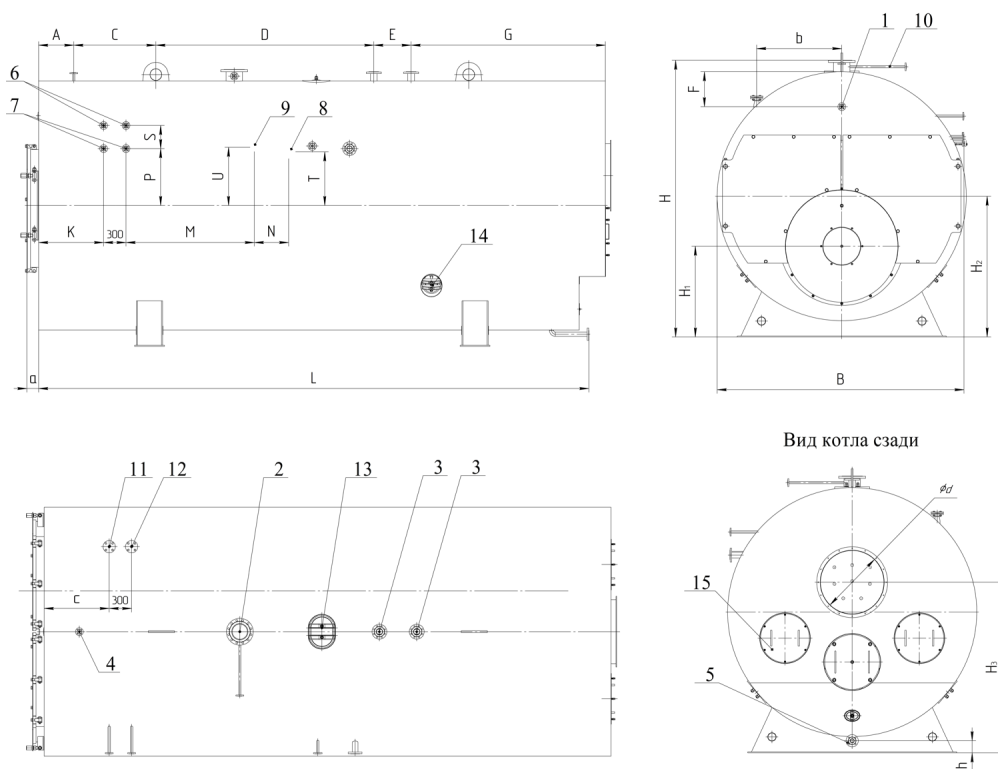
4.1 Overall dimensions



Overall drawing · Three-pass furnace · 16–20 t/h

Designation	L	L ₁	H	H ₁	H ₂	B	B ₁	B ₂	D	Weight, kg
E-16.0 MGDN	7910	8265	3710	2290	4310	3310	3495	5180	ø850	32500
E-20.0 MGDN	7325	7400	4070	3193	4670	3790	3900	6436	ø900	36700

4.2 Nozzle layout and sizes



Nozzle layout · boilers 16–20 t/h

Nozzle designation (items 1–15)

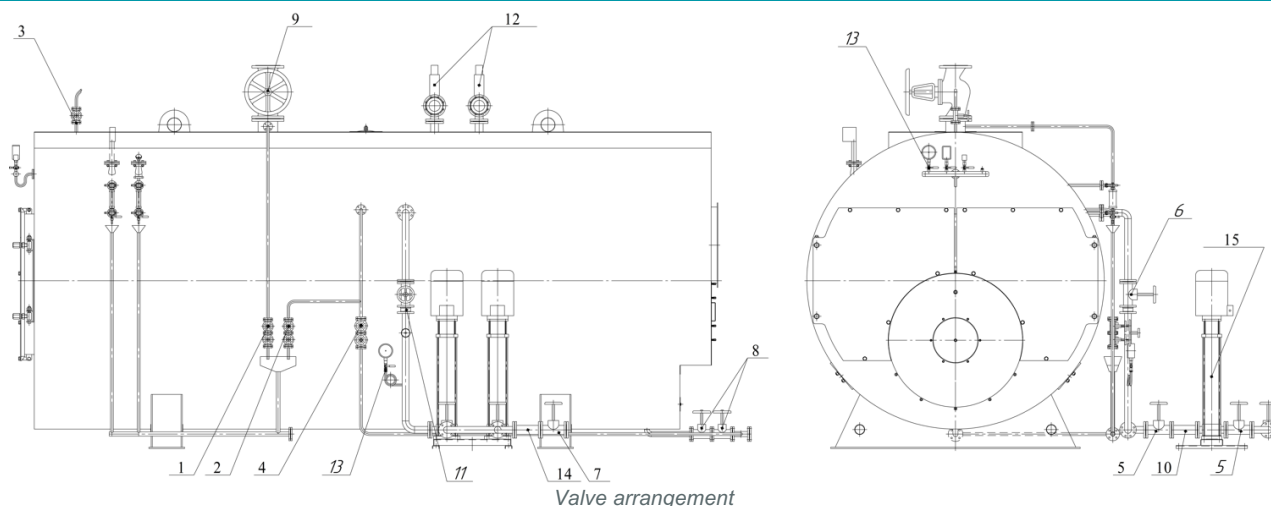
- | | |
|----------------------------------|--|
| 1 — pressure sensor nozzle | 9 — boiler blowdown nozzle |
| 2 — steam outlet nozzle | 10 — steam sampling nozzle |
| 3 — safety valve nozzle | 11 — water level control system nozzle |
| 4 — air vent nozzle | 12 — low water alarm level nozzle |
| 5 — drain nozzle | 13 — access manhole |
| 6, 7 — water level gauge nozzles | 14 — inspection manhole |
| 8 — boiler make-up nozzle | 15 — explosion relief valve |

Nozzle location dimensions, mm

Dim., mm	16.0 t/h	20.0 t/h
A	470	430
B	3310	3510
C	2150	2100
D	1870	1800
E	500	600
F	475	—
H	3720	3905
H ₁	1218	1305
H ₂	1888	1970
H ₃	2288	2370
G	2605	2700
K	870	680
L	7375	7400
M	2495	2650
N	500	—
P	765	768
S	310	400
T	765	—
U	800	838

Dim., mm	16.0 t/h	20.0 t/h
a	150	250
b	1140	1250
c	870	1880
d	ø850	ø900
h	165	145

4.3 Valve arrangement



№	Valve / fitting	16.0 t/h	20.0 t/h	P, bar
1	Steam sampling valve	20	20	25
2	Boiler water sampling valve	20	20	25
3	Air vent valve	20	20	25
4	Boiler blowdown valve	25	32	25
5	Feed pump valves	65	65	25
6	Make-up nozzle valve	65	65	25
7	Feed water supply valve	65	100	25
8	Drain nozzle valve	50	50	25
9	Main steam valve	200	200	25
10	Feed pump check valve	65	65	25
11	Make-up nozzle check valve	65	32	25
12	Safety valve	80	80	25
13	Three-way cock	15	15	25
14	Feed water filter	65	100	25
15	Feed pump, CDLF type	32-110	32-120	25

5. Notes and conditions

- Overall, installation and connection dimensions are given in millimetres and are for reference only. Final dimensions are defined by the order drawings.
- Owing to continuous design improvement and changes in component types, some dimensions given in the tables may differ from the actual ones.
- The boiler weight is given in kilograms for the boiler without water (dry weight). When designing the foundation, account for the operating weight including water and heat-transfer medium.
- Design (working) steam pressure: 8 bar for boilers 0.3–3 t/h and 13 bar for boilers 4–20 t/h. Valves — classes PN 16 and PN 25 respectively.
- Furnace: reverse-flame (2-pass) — for boilers 0.3–1.0 t/h; three-pass — for boilers 2–20 t/h.

6. Nominal diameters and valve types are selected per the tables of the relevant section; feed pump models (CDLF, LVR and equivalents) are specified at ordering.
7. The building structure dimensions (openings, foundations, service platforms) are determined taking into account the equipment layout and service requirements.
8. The scope of supply is defined by the questionnaire and the contract.

For equipment selection and drawings, please contact the manufacturer.

Contacts:

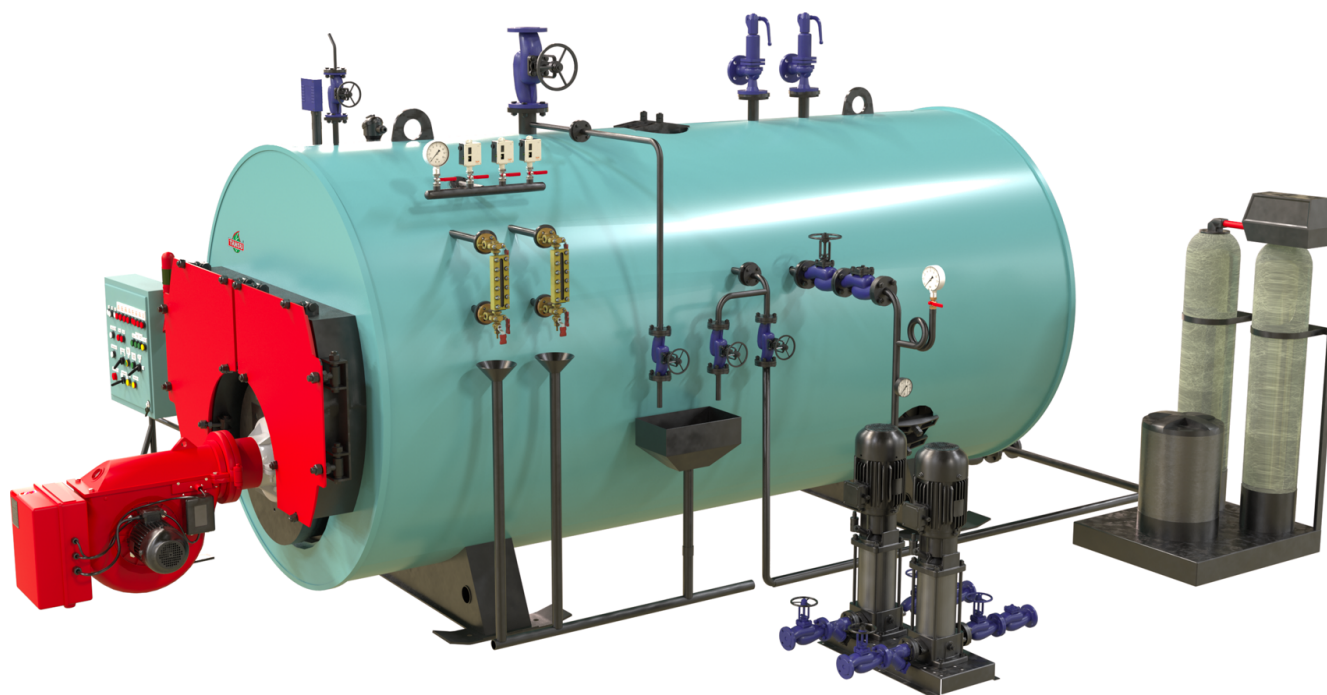
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TANSU E-MGDN steam boiler, fully equipped