

3. KBD WATER HEATER WITH DOUBLE SERPENTINE

3.1. Definition

It is recommended to use in systems with a double heater source. In case two energy sources of systems such as water heater, heat pump, solar energy are used at the same time, one of the first serpentine heat source and the second of the second serpentine heat source is connected and the domestic water is heated by indirectly transferring energy from both serpentine. It is a suitable solution for economical and hygienic domestic water heating for villas, apartments, hospitals and hotels.

Terms of Use

- | | |
|---|--|
| ▪ Heater water side (primary circuit) | Operating pressure maximum 10 Bar
Hot water inlet maximum 110°C |
| ▪ Domestic water side (secondary circuit) | Operating pressure maximum 10 Bar
Hot water outlet maximum 95°C |



3.2. Product Features and Advantages

- »Quality management system in ISO 9001:2015 standard
- »Design in accordance with TS 736, TS EN 12897 and TS EN 13445-3 standards
- »Internal body enamel coating and cathodic protection in accordance with DIN 4753-3 standard
- »CE, TSE, Solarkeymak, EAC Eurasia Customs Declaration documents and certificates
- »100 L- 500 L 42 ±2 kg/m³ HCFC-free water-based rigid polyurethane
- »800 L- 1000 L 42 ±2 kg/m³ HCFC-free water-based rigid polyurethane(Optional)
- »800 L- 3000 L 18 kg/m³ soft polyurethane
- »800 L- 3000 L 26 kg/m³ flame retardant soft polyurethane (Optional)
- »Use of lead-free electrostatic powder paint on galvanized sheet (100 L-500 L)
- »Possibility to use electrical heater (Optional- 2Kw- Please consult with KODSAN for less or more than 2 Kw)

Firsts in Turkey

- »Energy Performance Regulations (ERP); EU No 812/2013, EU No 814/2013 and Eco Design Directive Water heaters in accordance with 2009/125/EC and Energy Labeling Directive 2010/30/EU (100 L - 2000 L)
- »Class C insulation with expanded, graphite nanoparticulate polystyrene for 800 L - 2000 L water heaters
- »Class C insulation with rigid PU for 100 L - 500 L water heaters
- »Excellent insulation with cross-linked structure (Optional)
- »TÜV approved glass lined (enamel glass coating) inner body coating (100 L - 3000 L)

»Providing the most suitable storage conditions for drinking water using enamel with Wras (Water Regulations Advisory Scheme) certificate

»Internal and external, double-sided enamel application (100 L- 3000 L)

»Use of endless life electronic anode for cathodic protection (Optional)

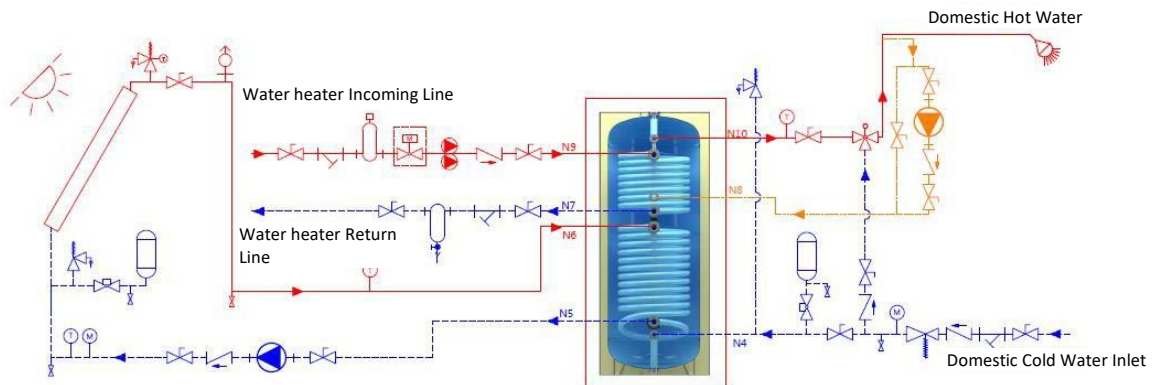
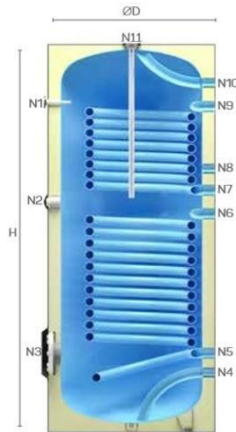
3.3. Technical Specifications

3.3.1. Connection and size information

DEFINITION	Code	Unit	KBD 160	KBD 200	KBD 300	KBD 400	KBD 500	KBD 800		KBD 1000		KBD 1500		KBD 2000		KBD 2500	KBD 3000
Volume	V	liter	160	200	300	400	500	800	800	1000	1000	1500	1500	2000	2000	2500	3000
Net Volume	V	liter	172	207	283	408	507	811	811	1000	1000	1459	1459	1805	1805	2324	2784
Diameter (Insulated)	ØD	mm	590	590	700	750	750	900	900	1000	1000	1120	1160	1260	1300	1460	1460
Height (Insulated)	H	mm	1125	1320	1210	1450	1800	2100	2100	2070	2070	2300	2300	2230	2230	2100	2560
Diameter (Uninsulated)	ØD	mm	480	480	600	640	640	750	750	850	850	960	960	1100	1100	1300	1300
Electric heater connection	N2	inch	1½"	1½"	1½"	1½"	1½"	2"	2"	2"	2"	2"	2"	2"	2"	2"	2"
Cleaning & Control Flange	N3	inch	4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	5"	5"	5"	5"	5"
Domestic Hot Water Inlet/Outlet	N4-N10	inch	¾"	¾"	1"	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"
Circulation Return	N8	inch	¾"	¾"	1"	1"	1"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"
Upper Serpentine Inlet/Outlet	N7-N9	inch	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"
Lower Serpentine Inlet/Outlet	N6-N5	inch	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"
Insulation Type & Thickness	t	mm	PU/50	PU/50	PU/50	PU/50	PU/50	S/80	N/80	S/80	N/80	S/80	N/100	S/80	N/100	S/80	S/80
Gross Weight	G	kg	95	112	132	170	223	290	295	318	324	417	424	640	651	812	925
Net Weight	G	kg	91	108	127	165	218	280	285	304	310	403	410	625	636	790	903
Tipping Height		mm	1290	1465	1420	1650	1970	2300	2300	2320	2320	2580	2580	2580	2580	2660	3020
Magnesium Anode Connections	N11	inch	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Thermometer & Sensor Connections	N1	inch	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"	½"
Rigid Polyurethane Energy Class / Heat Loss	W		B/57	B/60	C/87	C/91	C/92	-	-	-	-	-	-	-	-	-	-
Soft Polyurethane Energy Class / Heat Loss	W		-	-	-	-	-	D/160	-	C/137	-	E/275	-	E/354	-	-	-
Neodull Energy Class/Heat Loss	W		-	-	-	-	-	-	C/117	-	C/148	-	C/170	-	C/182	-	-

Lower Serpentine Net Length	m	5	6	6	8	16	22	22	22	22	27,5	27,5	34,5	34,5	41	47
Upper Serpentine Net Length	m ²	4	5	5	6	10	11	11	11	11	11	11	17	17	19	23
Lower Serpentine Surface Areas	m	0,66	0,8	0,8	1,06	2,13	2,92	2,92	2,92	2,92	3,66	3,66	4,59	4,59	6,21	7,12
Upper Serpentine Surface Areas	m ²	0,53	0,66	0,66	0,8	1,33	1,46	1,46	1,46	1,46	1,46	1,46	2,26	2,26	2,88	3,48
Serpentine Outer Diameters	mm	42,4	42,4	42,4	42,4	42,4	42,2	42,4	42,4	42,4	42,4	42,4	42,4	42,4	48,3	48,3
	inch	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1½"	1½"
Serpentine Inner Diameters	mm	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	37,4	41,9	41,9
Serpentine Wall Thicknesses	mm	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	2,5	3,2	3,2
Lower Serpentine Water Volume	lt	5,5	6,6	6,6	8,7	17,5	24,2	24,2	24,2	24,2	30,2	30,2	37,9	37,9	56,5	64,8
Upper Serpentine Water Volume	lt	4,4	5,5	5,5	6,6	11	12	12	12	12	12	12	18,6	18,6	26,2	31,7

- N1** Thermometer-sensor connection
- N2** Electric heater connection
- N3** Cleaning-control flange
- N4** Domestic cold water inlet
- N5** Lower serpentine outlet
- N6** Upper serpentine inlet
- N7** Upper serpentine outlet
- N8** Hot water circulation
- N9** Upper serpentine inlet
- N10** Domestic hot water outlet
- N11** Magnesium anode



KBD WATER HEATER WITH DOUBLE SERPENTINE

51012
1113KBD
01-1806

GENERAL SPECIFICATIONS			WATER HEATER WITH DOUBLE SERPENTINE										
DEFINITION	Code	Unit	KBD 160	KBD 200	KBD 300	KBD 400	KBD 500	KBD 800	KBD 1000	KBD 1500	KBD 2000	KBD 2500	KBD 3000
Diameter	∅D	mm	590	590	700	750	750	900	1000	1120	1260	1460	1460
Height	H	mm	1125	1320	1210	1450	1800	2100	2070	2300	2230	2200	2620
Thermometer & Sensor Connection Height	L1	mm	870	1070	930	1160	1510	1670	1570	1935	1780	1715	2195
Electric Heater Connection Height	L2	mm	600	725	700	720	1045	900	1110	1180	1290	1295	1525
Cleaning & Control Flange Height	L3	mm	300	300	310	340	340	400	420	375	460	395	485
Hot Water Inlet Height	L4	mm	210	210	220	250	250	310	340	285	380	305	395
Lower Serpentine Outlet Height	L5	mm	270	300	230	340	340	410	430	375	470	395	485
Lower Serpentine Inlet Height	L6	mm	550	670	650	670	990	1050	1070	1085	1240	1235	1465
Upper Serpentine Inlet Height	L7	mm	650	780	750	770	1100	1150	1160	1245	1340	1355	1586
Circulation Return Height	L8	mm	750	900	840	870	1200	1300	1310	1395	1490	1530	1831
Upper Serpentine Outlet Height	L9	mm	870	1060	930	1050	1490	1515	1514	1545	1700	1705	2075
Hot Water Outlet Height	L10	mm	960	1140	1010	1170	1610	1730	1630	1935	1780	1785	2195
Magnesium Anode Connections	L11	inch	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Leg Assembly Measures	L12	mm	102	102	176	154	154	193	212	195	215	265	265
Electric Heater Service Measures	L13	mm	1125	1125	1125	1125	1125	1125	1125	1125	1125	1125	1125
Cathodic Protection Element Service Height	L14	mm	350	350	600	600	1050	1050	1200	1200	1200	1200	1200
Min. Ceiling Height	L15	mm	1475	1920	1810	2500	2850	3150	3270	3500	3430	3400	3820
Insulation Type & Thickness	t	mm	PU/50	PU/50	PU/50	PU/50	PU/50	SP80	SP80	SP80	SP80	SP80	SP80
Tipping Height	R	mm	1290	1465	1420	1650	1970	2300	2320	2580	2580	2660	3020

3.4. Assembly Measures

