



ACK 2 Two Pass Low Temperature Hot Water Boilers

## Definition of Reliability and Economy

ACK 2 Two Pass Low Temperature Hot Water Boilers

# PRODUCT OF EXPERIENCE

CALOR SRL

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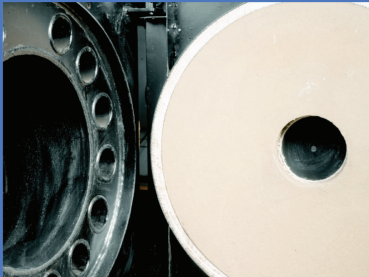
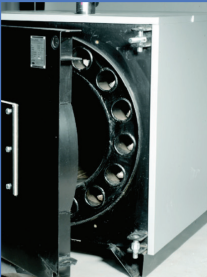
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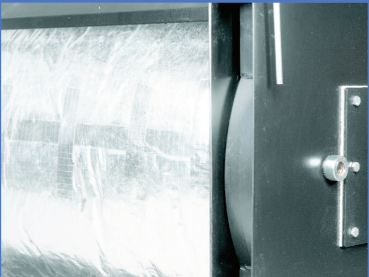
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Special hinge system offers easy installation, maintenance and operation.Double side openability. Independent 4 point adjustable sealing system.

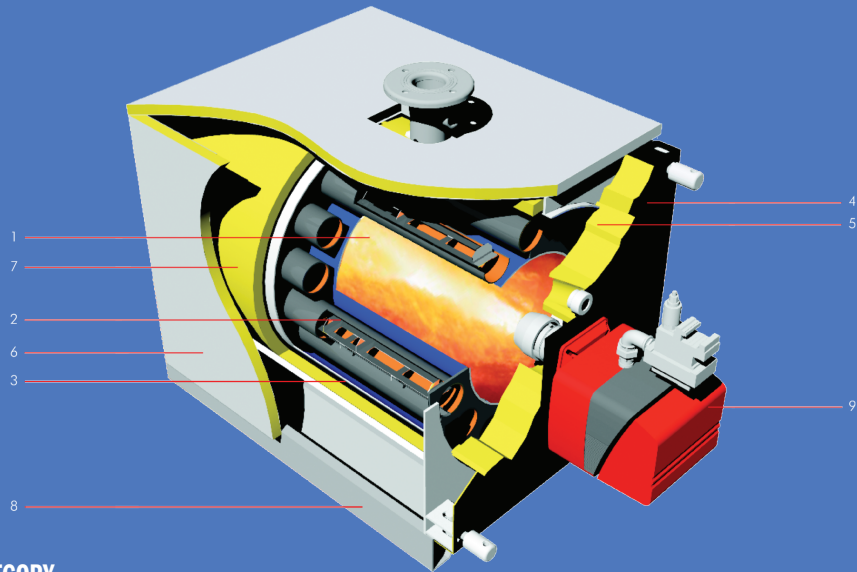


Peak values on front door heat insulation and leak proof valves:  
Higher temperature endurance: 1371 °C  
Higher durability: 62 kg/cm²  
Lowerdensity: 1.28 kg/dm³  
Lower thermal conduction: 0,33 kcal/hr (C/M)

With high-density aluminium folio wrapped, glass wool insulation; boiler radiation losses and stand by time losses are decreased to minimum states.



Perfect natural circulation and maximum heat transfer obtained as circulation water inlet located bottom rear, enables a balanced large water galleries inside the boiler.



TOP RATED IN STEEL BOILERS CATEGORY

**1. FLAME RECYCLING COMBUSTION CHAMBER**  
Most efficient burning is attained by Forcing Flames & Combustion gases to flow back from the end tip of the chamber.This way, returning gases mix with the burner flame again and any unburned gasses re-burned, preventing waste gas generation.

**2. GAS TUBES & TURBULATORS**  
Stainless steel and corten turbulators placed inside the tubes force turbulent flow in gas flow lines.This increases heat transfer rates to heating water through tube walls. Flue gas temperatures decreased to desired levels and optimum heating is obtained.

**3. BOILER BODY**  
Cylindrical, high pressure endurant, entirely welded monoblock steel body. Homogeneous heat transfer points balances possible heat expansions offering long service life.

**4. REMOVABLE FRONT DOOR**  
Both direction opened doors. Allows easy installation, maintenance, and cleaning of boiler. Special hinge system allows 4 independent edges to be adjusted seperately, and complete sealing is obtained.This system prevents possible damages to insulation elements & door pars by moving front by itself, when loosening hinges before opening.

**5. FRONT DOOR INSULATION**  
High temperature resistant reflective material is used in insulation. Flexible thick wicks provide long service life.

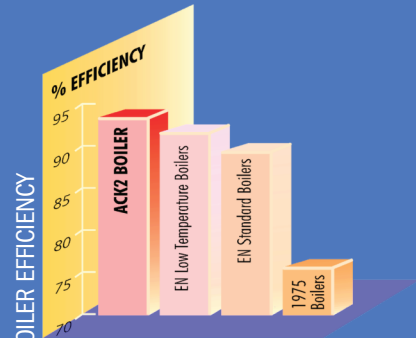
**6.BOILER JACKETS**  
Aesthetic and modern appearances by metallic grey jackets, hot dipped galvanized and double layer protective painting.

**7. BODY INSULATION**  
Perfect isolation applied to the body minimizes stand by times.

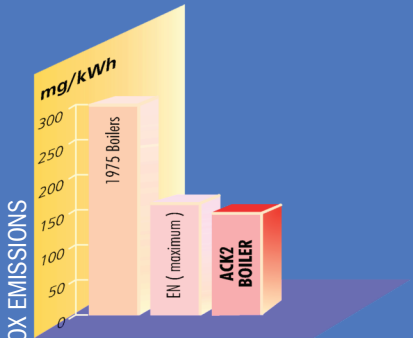
**8. BASES**  
Single piece durable steel welded stands along the boiler allow the boiler to be moved on pipes for transportation purposes.

**9. GAS / DIESEL FUEL BURNER**  
Long blast tubed and high-pressure burners not required. Compatible with every burner complies with the norms.

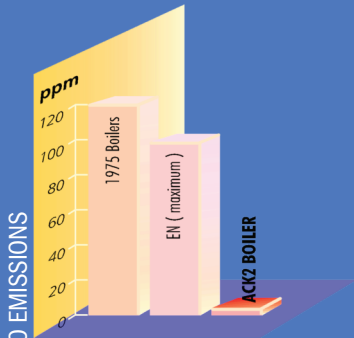
ACK 2 SERIE BOILERS



BOILER EFFICIENCY  
Flue gas temperatures has been lowered to 175-185 °C and %95 -96 efficiency values attained based on DIN 4207-8 norms, providing %3 more efficiency values achieved compared to EN minimum efficiency norms allowing boiler to be qualified to bear international "energy & performance" mark.



NOX & CO EMISSIONS  
Large combustion chamber allows complete burning along with low flame temperatures, by use of optimal heat transfer surfaces. Burner comparability in compliance with the norms, allows hazardous gasses such as carbon monoxide, nitrogen oxide to be kept below European norms. These values are all tested in EU confirmed labs an have obtained right to be used in the all environment sensitive European nations.



			ACK2-30	ACK2-40	ACK2-50	ACK2-60	ACK2-70	ACK2-80	ACK2-100	ACK2-120	ACK2-125	ACK2-140	ACK2-150	ACK2-160	ACK2-180	ACK2-200	ACK2-250	ACK2-300	ACK2-350	ACK2-400	ACK2-500	ACK2-600	ACK2-700	ACK2-800	ACK2-900	ACK2-1000	ACK2-1250	ACK2-1500	ACK2-1750	ACK2-2000	ACK2-2500	ACK2-3000			
Nominal Heat Output		kW	35	47	58	70	81	93	116	140	145	163	174	186	209	233	291	349	407	465	581	698	814	930	1.047	1.163	1.453	1.744	2.035	2.326	2.907	3.488			
		kcal/h	30.000	40.000	50.000	60.000	70.000	80.000	100.000	120.000	125.000	140.000	150.000	160.000	180.000	200.000	250.000	300.000	350.000	400.000	500.000	600.000	700.000	800.000	900.000	1.000.000	1.250.000	1.500.000	1.750.000	2.000.000	2.500.000	3.000.000			
Direct Efficiency	in full load, 100%	%	92,8	92,4	92,6	92,6	92,2	92,8	92,8	92,8	92,8	92,8	92,9	92,7	92,8	93,0	93,1	93,1	93,1	93,0	93,0	93,1	93,1	93,2	92,6	92,0	90,5	89,0	89,0	89,0	90,0	90,0			
Operating Pressure		bar	3													4										4				4					
Stand-by Losses		%	0,16	0,14	0,12	0,12	0,11	0,1	0,1	0,09	0,09	0,09	0,09	0,09	0,08	0,32	0,28	0,27	0,25	0,24	0,17	0,17	0,16	0,16	0,16	0,16	0,15	0,15	0,15	0,15	0,15	0,15			
Boiler Counter Pressure		mbar	0,17	0,23	0,27	0,6	0,6	0,65	0,7	1	1,02	1,14	1,18	1,26	1,33	1,52	1,78	1,46	1,64	1,6	1,6	1,82	2,3	2,56	2,8	3	3,68	3,83	4,75	4,93	5,02	4,46			
Water Flow Resistance		mbar	0,38	0,63	0,76	0,82	0,95	1,34	1,7	2,2	3	2,4	4	2,7	3	12	14	14	15	15	16	16	18	20	22	22	28	31	35	46	48	50			
Total Width (With Cover Plates), B		mm	650			710			850						923			1.040			1.240			1.450			1.550			1.650		1.890	2.050		
Length, C		mm	766	866	966	1.015	1.115	1.155	1.170	1.417					1.467	1.425		1.734			1.964	2.005			2.400			2.800	3.100	3.000	3.268	3.300	3.670		
Water Connections Height, A		mm	771			822			853		992			1.024			1.104			1.305			1.511			1.700			1.810			1.918		2.171	2.325
Stack Size (Outer Diameter), ØD1		mm	150			200				200						250			300			400			450			500			500		600	600	
Flue Gas Exit Connection Height, E		mm	525			555				625						744			821			956			1.045			1.123			1.277		1.406	1.480	
Boiler Empty Weight (without cover plates)		kg	131	156	160	192,5	212,2	232	240	388	393	323	412	412	426	507	534	829	863	993	1.274	1.348	1.811	1.868	1.925	2.016	2.703	3.026	3.455	3.743	4.864	5.924			
Water Outlet Connection	Diameter, ØD2	inch	1¼"			1½"			2"		2"			NW 65			NW 65			NW 80			NW 100			NW 125			NW 150			NW 150		NW 200	NW 200
	Position, C	mm	265			280				335						335			355			442			615			605			1.895	2.235	2.150	2.400	2.400
Expansion Tank Outlet, D		inch	-			-				-			1¼"			1¼"		1¼"	1½"	1½"	2"	2"			2½"			2½"	3"	3"	4"	4"	4"	4"	
Water Inlet Connection	Diameter, ØD3	inch	1¼"			1½"			2"		2"			NW 65			NW 65		NW 80			NW 100			NW 125			NW 150			NW 150		NW 200	NW 200	
Expansion Tank Return, G		inch	¾"			¾"			1"		1"				1¼"			1¼"			1½"			2"			2½"			2½"		2½"		2½"	3"
Filling & Drain Pipe, ØD4		inch	½"			½"		¾"	¾"					¾"	¾"	¾"	¾"			¾"			1"			1"			1"		1"		1"	1"	
Condensation Outlet, ØD5		inch	½"			½"		¾"	¾"					¾"	¾"	¾"	¾"			¾"			¾"			¾"			¾"		¾"		¾"	¾"	
Water Content		lt	47	54	65	86	93	91	119	181	177	172	168	168	170	194	170	293	269	315	661	606	988	947	947	882	1.370	1.578	1.652	1.813	2.568	3.379			



## ACK 2 Two Pass Low Temperature Hot Water Boilers

# TECHNICAL SPECIFICATIONS

### ENVIRONMENT FRIENDLY:

No hazardous materials for environment and used in our products nor in the production processes. We ensure our environment friendly policy not only controlling our processes but also for all our suppliers by demanding them to provide necessary certificates for their products.

### LONG SERVICE LIFE:

All Certified materials, balanced and reliable design on heat expansion points, certified automated welding methods, Design & production in European norms and approved automatic resource management methods offers longer service times then ever.

### BURNER COMPATIBILITY:

Thanks to our versatile design, special high pressure and long ballast burners are not required. High efficiency is attained with stable, smooth and silent combustion by all burners that comply with EN676 and EN267.

### AESTHETIC APPEARANCE:

Boiler cover jackets are protected against corrosion and external factors by 3 features:

- 1- Hot dipped Galvanized (GALVATITE®) steel material.
- 2- Protective double layer special organic undercoat plating.
- 3- Special organic paint in front, with top layer protective and aesthetic plating. (COLORCOAT®)

