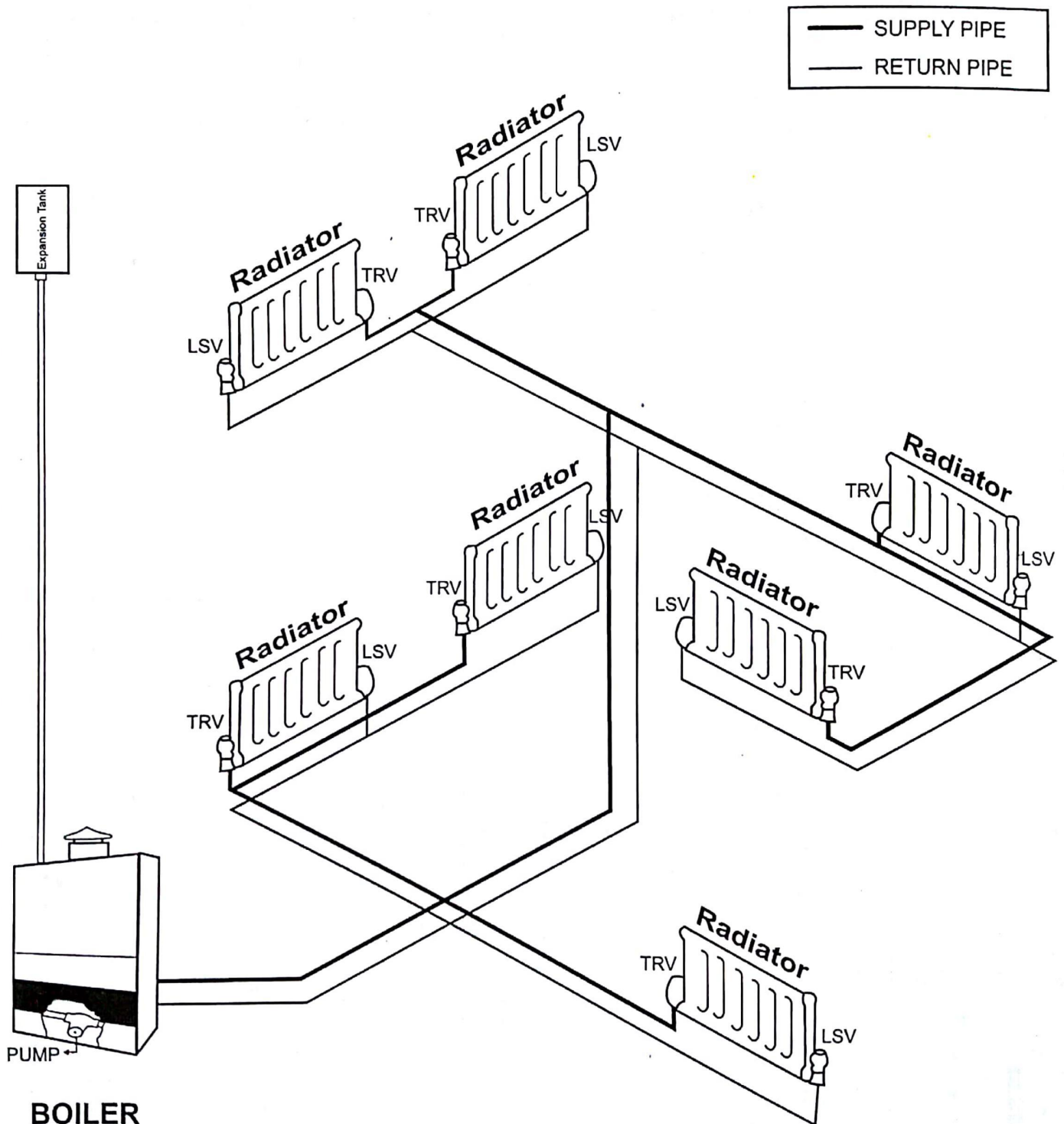


SCHEMATIC LAYOUT



LSV - LOCK SHIELD VALVE
TRV - THERMOSTATIC RADIATOR VALVE OPTIONAL

FULL RANGE OF RADIATORS / CONVECTORS

S.No.	Model	Type	Size (mm)	Size (Inches)	Output Watts	Output BTU/H
1	S30	Single	600 x 300	24 x 12	352	1200
2	S40	Single	600 x 400	24 x 16	469	1600
3	S60	Single	600 x 600	24 x 24	704	2400
4	S70	Single	600 x 700	24 x 28	821	2800
5	S80	Single	600 x 800	24 x 32	938	3200
6	S90	Single	600 x 900	24 x 36	1054	3700
7	S100	Single	600 x 1000	24 x 40	1173	4000
8	S120	Single	600 x 1200	24 x 48	1408	4800
9	S140	Single	600 x 1400	24 x 56	1642	5600
10	D30	Double	600 x 300	24 x 12	733	2500
11	D40	Double	600 x 400	24 x 16	977	3300
12	D60	Double	600 x 600	24 x 24	1466	5000
13	D70	Double	600 x 700	24 x 28	1710	5700
14	D80	Double	600 x 800	24 x 32	1906	6500
15	D90	Double	600 x 900	24 x 36	2199	7500
16	D100	Double	600 x 1000	24 x 40	2492	8500
17	D120	Double	600 x 1200	24 x 48	2933	10000
18	D140	Double	600 x 1400	24 x 56	3372	11500
19	D160	Double	600 x 1600	24 x 64	3909	13000
20	D180	Double	600 x 1800	24 x 72	4398	15000
21	TR30	Towel Rail	600 x 600	24 x 24	90	300

SKIRTING RADIATOR

Single			Double		
MODEL	SIZE (Inches)	Output BTU	MODEL	SIZE (Inches)	Output BTU
SS24	24 x 8.5	1000	SD 24	24 x 8.5	2000
SS36	36 x 8.5	1500	SD36	36 x 8.5	3000
SS48	48 x 8.5	2000	SD48	48 x 8.5	4000
SS60	60 x 8.5	2500	SD60	60 x 8.5	5000
SS72	72 x 8.5	3000	SD72	72 x 8.5	6000
SS84	84 x 8.5	3500	SD84	84 x 8.5	7000
SS96	96 x 8.5	4000	SD96	96 x 8.5	8000

Efficiency of Radiator Vs Water Temperature

The outputs quoted in this catalogue are based on mean water temperature in the radiator of 60°C and a room temperature of 20°C. For other operating conditions apply the factors shown in the table opposite.

CENTIGRADE					
5°C	0.04	30°C	0.41	55°C	0.89
10°C	0.10	35°C	0.50	60°C	1.00
15°C	0.10	40°C	0.56	65°C	1.11
20°C	0.24	45°C	0.69	70°C	1.22
25°C	0.32	50°C	0.79	75°C	1.34

GENERAL CONDITIONS:

Due to improvement on products, we reserve the right to alter specifications and prices at any time without prior notice.

SELECTION OF RADIATORS ACCORDING TO ROOM SIZE

RECOMMENDED ROOM TEMPERATURES

Bedroom	65 °F	18 °C	Bathroom	70 °F	21 °C
& Living & Dining	70-72 °F	21-22 °C	Hallways, W.C.s	65 °F	18 °C
Kitchen	68 °F	20 °C			

GUIDE TO CALCULATING YOUR RADIATOR OUTPUT REQUIREMENTS

ROOM SIZE IN FEET		65 °F - 18 °C	70 °F - 20 °C
Length	Width	BTU's /Hour	
8	8	3500	4100
10	8	4100	4800
12	10	5500	6400
14	12	6150	7200
16	12	7700	8900
18	10	7450	9600
18	12	8450	9800
18	14	9450	11000
20	12	9075	10550
20	14	10200	11860
20	18	12300	14200

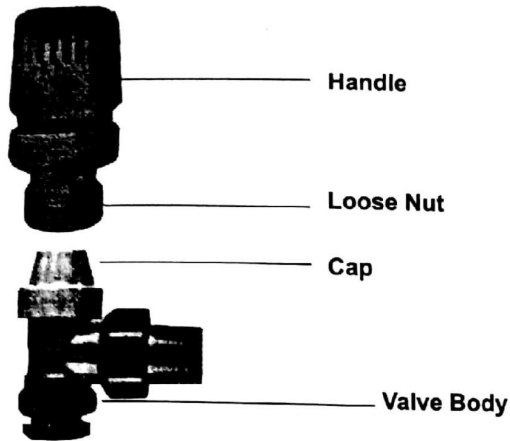
Figures based on house with 230mm solid brick walls, 2.4m high ceilings, 100mm thick loft insulation, each room having one external wall and average size windows.

Correction Factors

For solid floor	-10%	For two outside walls	+ 15%
For uninsulated cavity walls	-10%	For three outside walls	+ 40%
For foam filled cavity walls	-20%	For northern aspect	+ 10%
For upstairs bedrooms	-25%	For no loft insulation	+ 15%
For double glazing	-5%	For high ceiling - 3m	+ 20%

RADIATORS/CONVECTORS ACCESSORIES

INSTRUCTIONS FOR INSTALLATION OF SUNVIC TRV2 RADIATOR THERMOSTAT



OPERATION.

The radiator thermostat automatically controls the temperature of the room by regulating the water supply to the radiator. Turning the head to the selected setting point will control the room temperature at the desired comfort level. The radiator thermostat will then automatically open and close the valve, controlling the flow of water to the radiator, giving a constant room temperature.

The ability of the radiator thermostat to control the room temperature will be impaired if:

- The valve has not been installed in the correct position.
- The valve is subject to direct rays of the sun.
- Room curtains and other furnishing impede the free-flow of air to and from the radiator thermostat.

Anti-clockwise turning of the hand wheel increases the temperature setting.

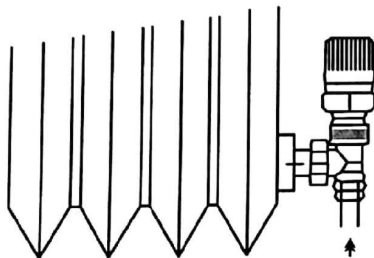
LOCKING TEMPERATURE SETTING

To prevent unauthorised adjustment of the temperature setting the thermostat head can be locked in position. The locking bar is visible in the temperature setting slot at the base of the head. Having selected the desired setting point, using a small screw driver, push the bright metal locking strap upwards. This will fit head in the setting position.

CONNECTING THE THERMOSTATIC HEAD

1. Remove the manual cap from the valve body.
 2. Turn the thermostatic head to figure 5.
 3. Place the head on to the valve body and screw on securely using the head nut and do not over-tighten.
- (*) Retain the cap of the body.

CORRECT INSTALLATION POSITION FOR RADIATOR THERMOSTAT.



Failure to fit the valve to the inlet side of the radiator can result in noise problems.

OPERATING INSTRUCTIONS.

The temperature shown on the following table are °C and refer to the valve shut-off point.

	* Frost Protection	1	2	3	4	5
* Lower than 5 °C	9	11	16	21	24	27

THESE FIGURES ARE APPROXIMATE AND ARE INTENDED AS A GUIDE ONLY.

SUPPLY OF THERMOSTATIC VALVE IS AN ACCESSORY.

Thermostatic radiator valves are used in place of standard on/off valves. Their purpose is to enable any central heating system to be used in the most effective and economic way. They can, in fact save you money. Instead of one central control thermostat switching all the radiators in the home on or off at the same time, depending solely on the temperature near the thermostat, every radiator is independently controlled by its own thermostat. As soon as any individual room temperature reaches a pre-set level, the radiator in that room automatically reduces its output, yet others in the house continue to operate until they too reach the required temperature. As a result expensive heat is not wasted.

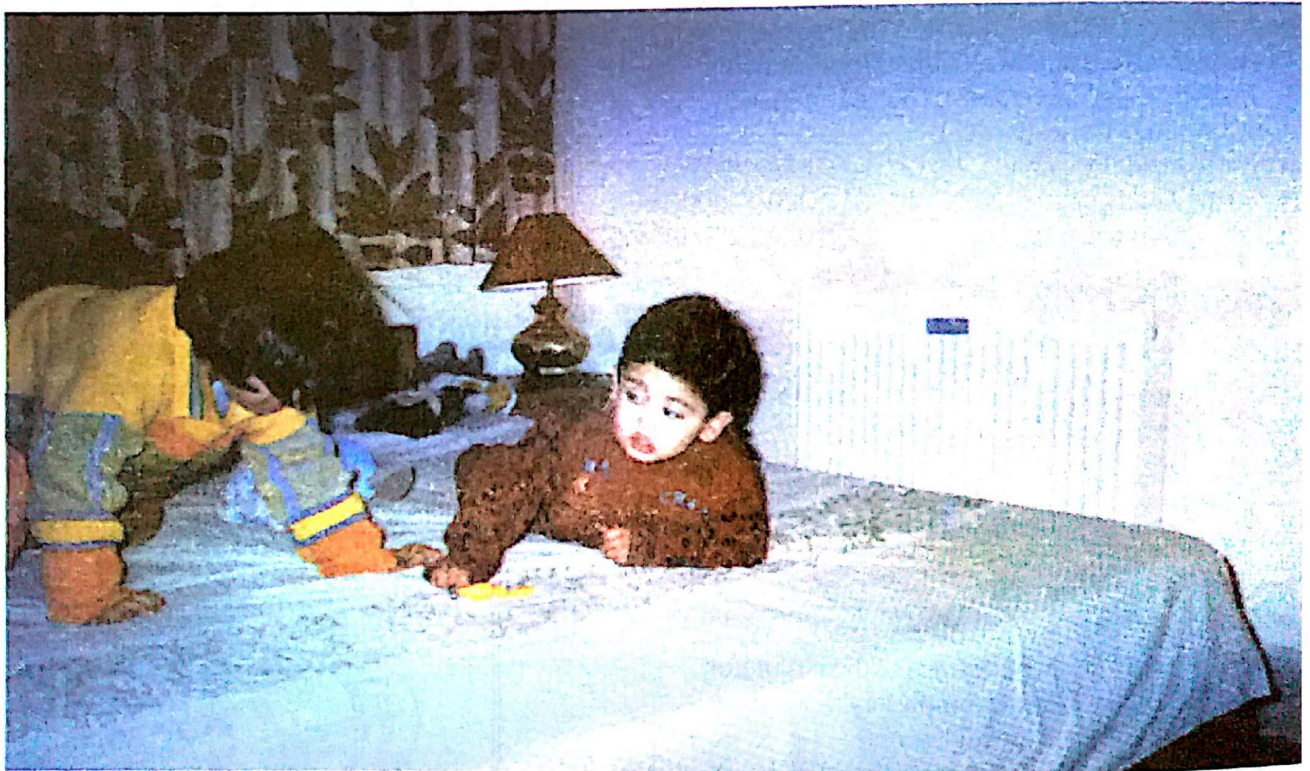
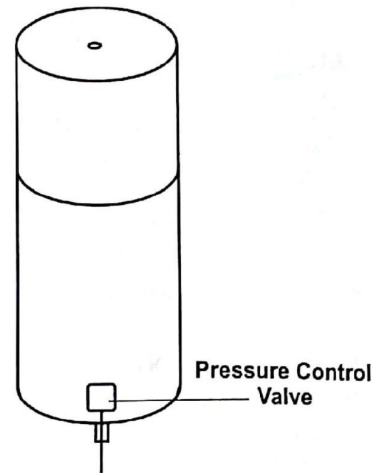
TRVs are fitted to the flow or return tapings on the radiator with a lock shield valve on the other tapping. They are supplied with full fitting instructions.

Always leave one, or even better two, radiators without a TRV if you have a fully pumped central heating and hot water system. The radiators, ideally in the bathroom, should have a permanently open lock shield valve at both ends so that pressure is not put on the pump when the TRV's elsewhere have closed down all the other radiators.

FEED AND OPEN TYPE EXPANSION TANK

Because water expands as it is heated a feed and expansion tank must be fitted above the highest part of the system usually in the roof space. N.B if the heating pipes also run in the roof space the feed and expansion tank must be put on a platform so that the water level is at least 800 mm above the highest pipe. This is to give efficient air venting. The feed and expansion tank should ideally be vertical above the boiler position and in case all automation become out of order it will be save from any type of explosion / blast. This expansion tank has in built pressure control valve.

We have preferred to manufacture and use open type expansion tank to make it maximum riskless & safe.



FOR "ECONOMIA" your health and safety is more important than money.

WATER CIRCULATING PUMP

We are using imported Wilo Gold-50 pump for water circulation made in ECC as per below specifications:

Application

For circulation of water in open and closed circuit
Domestic central heating and air-conditioning system.

Specification

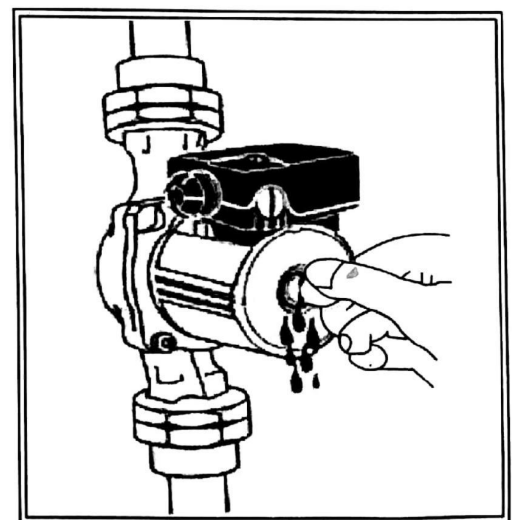
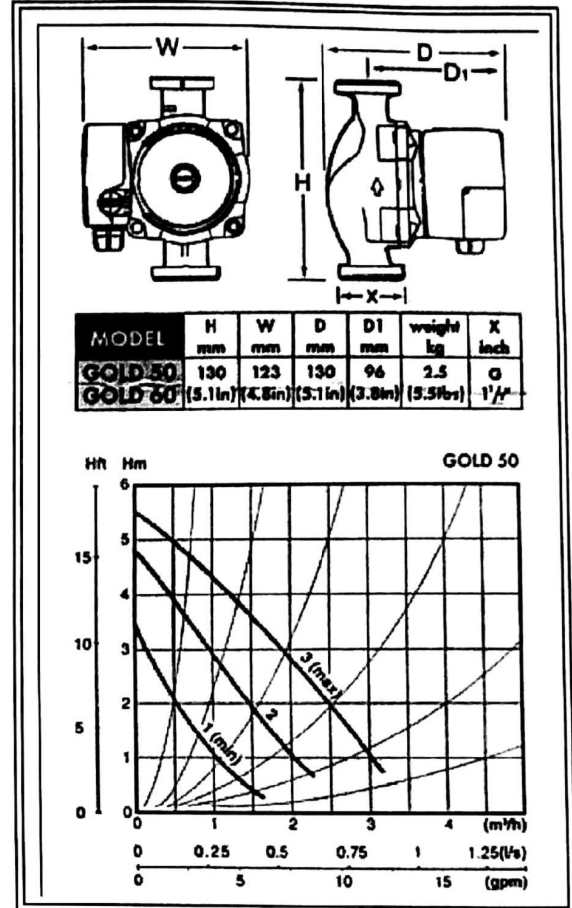
- Temperature range : -10° to $+110^{\circ}\text{C}$
- Ambient temperature : up to 40°C
- Max. service pressure : 10 bar
- Min. suction pressure : 1.5 m (5 feet)
to prevent cavitation
noise and give
adequate lubrication
to bearings : 3 m (10 feet)
at $+95^{\circ}\text{C}$
: 10 m (133 feet)
at $+100^{\circ}\text{C}$
- Antifreeze (Water + glycol) : up to 50%
(with the exclusion of all other liquids without
first obtaining agreement). Curves published
are accurate for water SG.1
- Rated meter Power : 88/60/40W
- Speed Three : 2200/2000/1600
- Rating current : 0.38/0.27/0.18 A

STRATING UP

Filling, Venting

 **Never operate the circulator WITHOUT WATER.**

- Disconnect the power to the pump.
- Open the valves on both sides of the circulator and fill the installation completely.
- Bleed the circuit at the high point.
- Bleed air from the circulator by hand by Unscrewing the vent plug a few turns; close it when water runs Out and when there are no more air bubbles.



CENTRAL HEATING HOT WATER BOILER

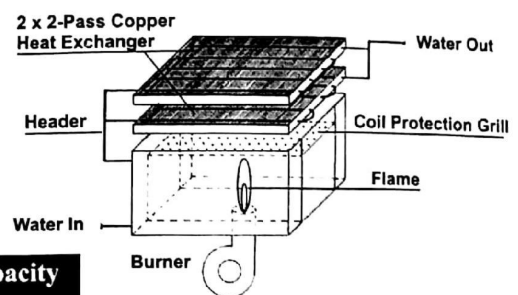
O.B Boiler:

Oil Boiler is specially designed and manufactured where natural gas is not available and where it is difficult to carry L.P.G we have designed Kerosene Oil operated boiler having an imported burner and circulating pump. The boiler is 100% locally designed and manufactured by "ECONOMIA" R&D section.



Heat Exchanger:

Using 4 pass by copper heat exchanger to transfer max. heat into the water is specially designed with consideration of high flame of oil burner to transfer heat upto 98%.



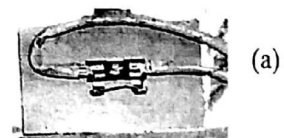
Data:

Model No.	Size			Input Capacity BTUs/hr	Output Capacity BTUs/hr
	W	H	D _c		
OB-90	20"	42"	13"	94,500	90,000
OB-120	25"	42"	13"	1,26,000	1,20,000
OB-160	30"	42"	13"	1,68,000	1,60,000
OB-240	39"	42"	13"	2,52,000	2,40,000

Temperature Control and Safety Devices:

We have incorporated four type of gadgets for safety and temperature control to smooth operation in boiler.

- Thermal Fuse (in case over pressure / chimney blockage).
- Temperature adjustment thermostat.
- Over heating cut off safety switch (Limit Switch).
- Burner Cutoff over load system (Re-set Button placed at Burner).
- Digital micro processor controller (optional) having in/out and setting digital display.



Note:

- While selecting the boiler 20% de-rating factor should be consider for better Performance
- For higher capacity hot water boiler operated on natural gas, diesel/ kerosene oil please see our higher capacity HC model catalogue.

Warning:

The boiler guarantee will only be valid when installed with "ECONOMIA" Radiators / complete system and its design is approved or its layout & selection is made according to specification given in leaflet.

CENTRAL HEATING HOT WATER BOILER

After deep research of our R&D, we have developed two types of 100% locally designed & manufactured boiler except imported hot water pump with the consideration of available gas variable pressure at peak time and electric fluctuation as well as hardness in the water. We have made available various size of Boiler operated on Natural Gas, L.P.G and Oil in the market according to user Requirement.

C.B Boiler: C.B boiler is design as compact boiler.

This boiler is also 100% locally designed and manufactured. Pump for water circulation is imported. It performs according to the actual gas pressure which is designed on 6 water column equal to mentioned full capacity of boiler which is show below in:-

Model No.	Size			Input Capacity BTUs/hr	Output Capacity BTUs/hr
	W	H	D		
CB-60	20"	29"	10"	63,000	60,000
CB-90	20"	29"	10"	94,500	90,000
CB-120	25"	29"	10"	126,000	120,000
CB-160	30"	29"	10"	168,000	160,000
CB-240	25"	29"	15"	252,000	240,000

Heat Exchanger: We have used copper tubes and copper fins for heat exchanger to make the C.B boiler more efficient. 100% locally designed & manufactured due to close circuit water circulation does not effect its performance for many years to come.

Note: At the time of selection of boiler capacity 20% de-rating should be considered due to pressure drop of natural gas at peak time, as its performance is instant. However de-rating may not be considered when operated on L.P.G as it confirms Natural Gas pressure.

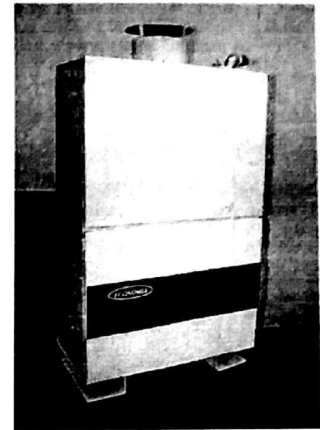
Temperature Control and Safety Devices:

We have incorporated four type of gadgets for safety and temperature control to smooth operation in boiler

- Pilot holding and gas control safety valve.
- Thermal Fuse. (In case over pressure / chimney blockage).
- Temperature adjusting thermostat controlling gas by electric operated solenoid valve.
- Over heating cut off safety switch (Limit Switch).
- Digital micro processor controller (optional) having in/out and setting digital display.

Burner:

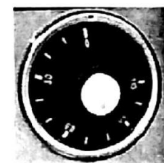
Specially designed stainless steel burner used in both type of boilers to avoid Carbon in burner and to increase the life of burner / boiler only.



(a)



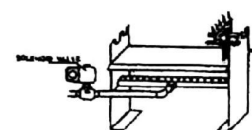
(b)



(c)



(d)



RADIATORS / CONVECTORS

FITTING INSTRUCTIONS

MATERIAL

Panel radiators are manufactured from 1.2mm (18 SWG) cold rolled steel sheet conforming to BS 1449, Part I, 1983.

TAPPINGS

All radiators are supplied with four 13mm (1/2" B.S.P.) standard tappings.

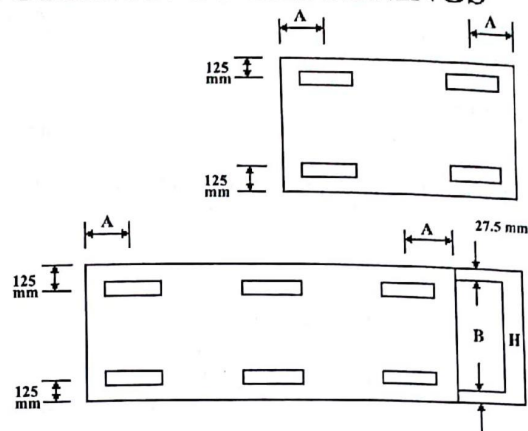
PRESSURES TEST

The standard final pressure test up to 7 bar (105 PSI) maximum for use with both open and closed systems, indirect system only.

INSTALLATION

For maximum efficiency, radiator should be fixed at not less than 114mm (4.5") from finished floor level.

POSITION OF FASTENINGS



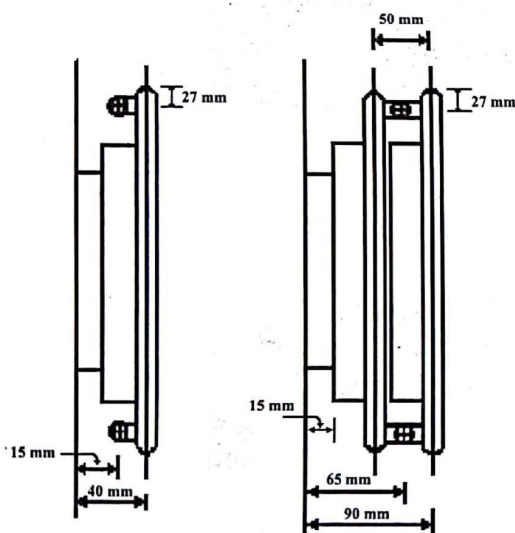
Type	A (mm)
SINGLE	12.5
DOUBLE	137.5

Radiator Height H (mm)	Bracket Height F (mm)	B (mm)
600	377	545
950	725	850
Skirting Radiator		
600mm - 2400mm	4 - 6	218 150 150

Radiator Length	Number of legs
600mm - 1600mm	4
Skirting Radiator	
600mm - 2400mm	4 - 6

Single

Double

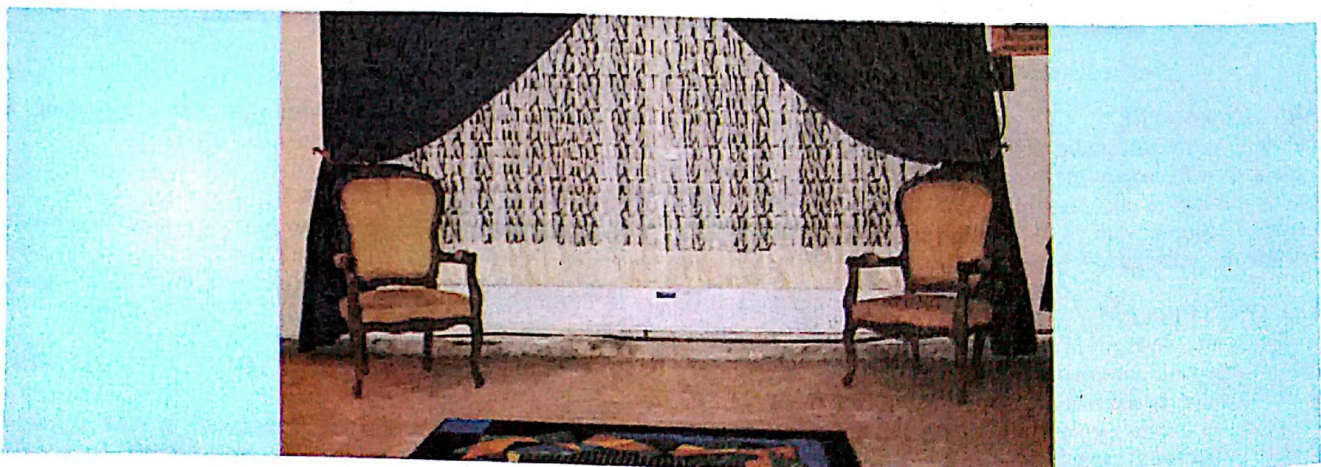


EASY INSTALLATION

Everything you will need for easy installation is included with the radiators, and sealed in protective packing. The installation kit includes all brackets, plugs, vents, bolts, wallplugs and a vent key.

GUARANTEED QUALITY

We are confident in the quality and performance of our products that each one comes with a Five (5) Years Guarantee against any leakage due to manufacture or material defect and One (1) Year Service Warranty.



RADIATORS / CONVECTORS

The Benefits

HIGH OUTPUT

Designed for efficiency and style, radiators are manufactured using state-of-the-art production technology. The unrivalled output level will maximize the potential of any heating system and follows BS 3528, 1977 and quality standards of BS 5750, part 2:1987.

FULL RANGE

The range is one of the most comprehensive in the market today. With a choice of single or double convectors/radiators in lengths from 300mm, 1800mm and height 600mm and 950mm there is a Economica radiator for nearly every application.

EASY INSTALLATION

Everything you will need for easy installation is included with the radiators, and sealed in protective packing. The installation kit includes all brackets, plugs, vents, bolts, wallplugs and a vent key.

FACTORY FITTED TOP AND SIDE PANELS

All our double convectors/radiators are complete with factory fitted top and side panels. We can also provide grilles and panels for single convectors/radiators to create a uniform look when they are fitted in conjunction with double convectors/radiators.



5 YEARS GUARANTEE

The radiators as manufactured follow BS 5750 quality system. This, coupled with newly developed surface sealing methods and quality testing in the most gruelling condition means that each radiator comes with a 5 years guarantee against any defects caused by faulty materials or manufacture.

QUALITY PAINT FINISH

The radiators are finished in a off-white color. Each radiator is degreased and zinc phosphated. The Radiators are then prime coated with water based cathoparatic paint. The top coat is applied using an epoxy-polyester electrostatic powder coating system and then backed to a superb hard wearing finish.

PACKAGING

All radiators are supplied in strong protective packaging with reinforced cardboard edges or other needs.

THE SERVICE COMMITMENT

We support our quality products with a quality service. Our centrally located Head Office and distribution facility ensures prompt response to your enquiries and quick delivery from stock.

SUPPLY OF COMPLETE RADIATORS/CONVECTORS

Each unit of any size will be supplied with fittings/brackets and angle lockshield valve which are included in cost of radiator. However thermostatic valve will be an accessory on additional cost. This supply term is only valid in the country.

**Price List**Revised Rate list
01-01-19

S.No.	Model		Size (mm)	BTU/Hr	Type	Price Only	Remarks
1	S30	Steel Radiator	600x300	1200	Single	6270	
2	S40	Steel Radiator	600x400	1600	Single	6960	
3	S60	Steel Radiator	600x600	2400	Single	7650	
4	S70	Steel Radiator	600x700	2800	Single	7700	
5	S80	Steel Radiator	600x800	3200	Single	8350	
6	S90	Steel Radiator	600x900	3700	Single	9050	
7	S100	Steel Radiator	600x1000	4000	Single	9800	
8	S120	Steel Radiator	600x1200	4800	Single	11500	
9	S140	Steel Radiator	600x1400	5600	Single	12200	
10	D30	Steel Radiator	600x300	2500	Double	8350	
11	D40	Steel Radiator	600x400	3300	Double	9800	
12	D60	Steel Radiator	600x600	5000	Double	12900	
13	D70	Steel Radiator	600x700	5700	Double	14000	
14	D80	Steel Radiator	600x800	6500	Double	14300	
15	D90	Steel Radiator	600x900	7500	Double	14600	
16	D100	Steel Radiator	600x1000	8500	Double	15300	
17	D120	Steel Radiator	600x1200	10000	Double	16100	
18	D140	Steel Radiator	600x1400	11500	Double	19850	
19	D160	Steel Radiator	600x1600	13000	Double	21700	
20	D180	Steel Radiator	600x1800	15000	Double	22950	
21	Skirting Radiator SS					1700/RFT	
22	Skirting Radiator SD					3500/RFT	
23	CB-60	Gas Operated Boiler				79900	
24	CB-90	Gas Operated Boiler				86600	
25	CB-120	Gas Operated Boiler				106500	
26	CB-180	Gas Operated Boiler				126500	
27	CB-240	Gas Operated Boiler				166100	
28	OB	Kerosene Oil Operated boiler				242000	
29	EB-60	Electric Boiler				90500	
30	EB-90	Electric Boiler				104700	
31	EB-120	Electric Boiler				167000	
32	EB-180	Electric Boiler				195500	
33	EB-240	Electric Boiler				278300	
34	Only Lock Shield Valve					1700	
35	Only Thermostatic Valve					5200	
36	U Channel outdoor					200/RFT	
37	U Channel in door					250/RFT	
38	Circulating Pump					19000	
39	Expansion Tank					7500	

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Email: ageco@economia.com.pk, URL: www.economia.com.pk**Works:**Plot # 262, Kabuta Triangle,
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Karachi.