

# Thermoline Towel Rails

Installation and operating instructions



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## 1 - INTRODUCTION

This brochure has been compiled to give complete technical information on selecting, installing and commissioning Thermoline towel radiators. Thermoline radiators are produced on the most modern automated radiator manufacturing equipment. Thermoline radiators are manufactured to ISO 9001 Quality Management System and are certified to comply with the following international standards **EN 442, BS EN ISO 9001:2000, NFP 52 - 011 & - 012**. Thermoline radiators have a wide range of straight or curved models providing flexibility in sizing. All the radiators are tested to 13 bar pressure to ensure that the completed product is fault free before leaving the factory. Thermoline radiators are fully cleaned, prime coated and electro statically powder coated or chrome plated before packing.

## 2 - GENERAL ADVICE

1. The radiator outputs in this catalogue are quoted with the standard water temperature of **EN442 90/70/20  $\Delta T$  60°C**. The radiators can be used at different temperatures but their heat output will vary accordingly. Please refer to page 5 for further details.
2. Thermoline radiators are designed to be installed in a sealed system only. Never drain the water in the heating system unless absolutely necessary, add water only if needed. Each time you add water or change the water in the heating system, corrosion occurs and the life of the radiator will decrease. Thermoline radiators can be used indefinitely without changing the water in the system. Refer also to section 14.
3. The pipe work should be pressure tested to eliminate any leaks but **DO NOT** use **MAINS PRESSURE** if the radiators are connected.
4. Use only **OVENTROP** or approved valves both on the flow and return side of each radiator. The manual or thermostatic valves should be placed on the inlet side with the lockshield valve for flow control on the outlet side. The use of thermostatic valves will provide more comfort and economy.
5. Keep the packing on the radiator until the installation is completed to prevent any unwanted scratches or damage to the radiator.
6. Use the air vent in one of the top connections to eliminate all the air from the radiator.
7. The normal system pressure for a closed vented sealed system is between 1 - 2 Bars when cold.

## 3 - TECHNICAL SPECIFICATIONS

All Hurlcon Hydronic Heating Thermoline radiators are manufactured to the following standards:

- Steel quality ST 12.03 DIN 1543
- Test pressure 13 BAR minimum
- Working pressure 10 BAR maximum
- Connections Standard radiator 3 places -1/2" BSP
- Paint specification Epoxy-polyester Powder RAL 9016
- Finishes Chrome plate

Accessories supplied with each Thermoline radiator:

- Screws and plastic wall plugs
- Wall hangers
- Blanking plug G 1/2"
- Airvent plug G 1/2"

## TECHNICAL DATA

**Table 1 - Thermoline Flat Towel Radiators**

Description Flat	Width x Height x Depth mm	Pipe Centres	kW Output White / Chrome	Weight kg	Water volume litre	# Bars
White / Chrome	500 x 764 x 30	456	0.459 / 0.306	6.18	3.77	16
White / Chrome	500 x 1172 x 30	456	0.695 / 0.468	9.36	5.73	24
White / Chrome	500 x 1750 x 30	456	1.026 / 0.689	13.06	7.86	36
White / Chrome	600 x 764 x 30	556	0.534 / 0.356	7.07	4.28	16
White / Chrome	600 x 1172 x 30	556	0.810 / 0.450	10.72	6.52	24
White / Chrome	600 x 1750 x 30	556	1.194 / 0.809	14.96	8.96	36
White / Chrome	750 x 764 x 30	706	0.642 / 0.428	8.39	5.04	16
White / Chrome	750 x 1172 x 30	706	0.975 / 0.668	12.77	7.71	24
White / Chrome	750 x 1750 x 30	706	1.435 / 0.986	17.79	10.60	36

**Table 2 - Thermoline Curved Towel Radiators**

Description Curved	Width x Height x Depth mm	Pipe Centres	kW Output White / Chrome	Weight kg	Water volume litre	# Bars
White / Chrome	500 x 764 x 70	456	0.469 / 0.316	6.23	3.6	16
White / Chrome	500 x 1172 x 70	456	0.724 / 0.491	9.49	5.56	24
White / Chrome	500 x 1750 x 70	456	1.061 / 0.706	13.32	7.81	36
White / Chrome	600 x 764 x 80	556	0.550 / 0.370	7.13	4.17	16
White / Chrome	600 x 1172 x 80	556	0.848 / 0.577	10.88	6.39	24
White / Chrome	600 x 1750 x 80	556	1.243 / 0.831	15.24	8.92	36
White / Chrome	750 x 764 x 90	706	0.669 / 0.449	8.48	4.97	16
White / Chrome	750 x 1172 x 90	706	1.029 / 0.706	12.98	7.64	24
White / Chrome	750 x 1750 x 90	706	1.510 / 1.015	18.12	10.60	36

## 4 - SIZES & TYPES AVAILABLE

Refer Tables 1 & 2 above for sizing.

**NOTE:** Hurlcon Hydronic Heating has most sizes ex stock, however, check the availability with your nearest Hurlcon Hydronic Heating sales office prior to commencing installation as delivery of special orders can be up to 10 -12 weeks.

## 5 – HEAT CORRECTION FACTORS

For selection of radiator size, Thermoline radiator heat outputs vary according to the difference between the room air temperature and the average of the flow and return water temperatures (called mean water temperature). The data supplied is based on 90/70 °C water temperatures and 20°C ambient air temperature **C<sub>f</sub> = 1**

Flow water Temp	Room Temp °C	Correction Factor C <sub>f</sub>							
		Return water Temperature °C							
		40	45	50	55	60	65	70	75
90 °C	24	1.97	1.71	1.53	1.38	1.27	1.17	1.10	1.03
	22	1.81	1.59	1.43	1.31	1.20	1.12	1.05	0.99
	20	1.68	1.49	1.35	1.24	1.14	1.07	<b>1.00</b>	0.95
	18	1.56	1.40	1.27	1.17	1.09	1.02	0.96	0.91
	15	1.41	1.28	1.18	1.09	1.02	0.95	0.90	0.86
85 °C	24	2.10	1.82	1.62	1.46	1.34	1.24	1.16	1.09
	22	1.92	1.69	1.52	1.38	1.27	1.18	1.11	1.05
	20	1.78	1.58	1.42	1.30	1.21	1.12	1.06	1.00
	18	1.65	1.48	1.34	1.24	1.15	1.07	1.01	0.96
	15	1.49	1.35	1.24	1.14	1.07	1.00	0.95	0.90
80 °C	24	2.24	1.94	1.72	1.56	1.42	1.32	1.24	1.16
	22	2.05	1.80	1.61	1.46	1.35	1.25	<b>1.18</b>	1.11
	20	1.89	1.67	1.51	1.38	1.27	1.19	1.12	1.06
	18	1.75	1.57	1.42	1.31	1.21	1.13	1.07	1.01
	15	1.58	1.42	1.30	1.21	1.12	1.06	1.00	0.95
75 °C	24	2.41	2.08	1.85	1.66	1.52	1.41	1.32	
	22	2.20	2.02	1.72	1.56	1.43	1.34	1.25	
	20	2.02	2.02	1.61	1.47	1.35	1.27	1.19	
	18	1.87	1.87	1.51	1.38	1.28	1.20	1.13	
	15	1.67	1.67	1.38	1.27	1.19	1.12	1.06	
70 °C	24	2.61	2.25	1.99	1.79	1.64	1.52		
	22	2.37	2.07	1.85	1.67	1.54	1.43		
	20	2.17	1.91	1.72	1.57	1.45	1.35		
	18	2.00	1.78	1.61	1.47	1.37	1.28		
	15	1.79	1.61	1.47	1.35	1.27	1.19		
65 °C	24	2.85	2.44	2.15	1.94				
	22	2.58	2.24	1.99	1.81				
	20	2.35	2.07	1.85	1.69				
	18	2.15	1.91	1.73	1.59				
	15	1.91	1.72	1.57	1.45				
60 °C	24	3.14	2.68	2.36					
	22	2.82	2.45	2.18					
	20	2.56	2.24	2.02					
	18	2.34	2.07	1.87					
	15	2.03	1.85	1.69					

Example.

Required .8 kW heating

Conditions

Flow temp 80°C

Return temp 70°C

Ambient air 22°C

From the chart

**C<sub>f</sub> = 1.18**

Corrected Radiator

.8kW x 1.18 = .944kW

std output required.

Correction factor for other temperature conditions available on request.



## 10 - INSTALLATION DETAILS

A method of installation.

1. Determine the size and position of the radiator to be installed in the room.
2. Locate & drill the mounting holes for wall hanger brackets.
3. Fix the brackets in place with the appropriate fixing screws and level the brackets.
4. Remove cardboard packaging and fit the air bleed plug to a top corner and the valve unions and plugs according to the plumbing requirements.
5. It is wise to check a sample radiator for dimensions before committing the pipe work. This allows for varying valve fittings and bracket location.
6. Determine the position of the pipe entries through the floor or wall. Drill oversize holes to allow for alignment variations and expansion movement.
7. Fit the radiator to the wall brackets. Leave the plastic packing on to protect the finish during the installation phase.
8. Install the radiator valves and plumb to suit. **DO NOT** water test with **MAINS PRESSURE** water.
9. When the installation is complete, fill the system, check for leaks, and eliminate all air from the system.
10. Commission and run the boiler to heat the water.
11. Balance the system using the lockshield valves to give proportional flow to all radiators.
12. Re-check for air in the system and that the circulator is running quietly.

## 13 - PROBLEM SOLVING

1. A radiator needs a continuous flow of hot water to work effectively.
2. If the radiator is hot at the bottom but cold at the top - bleed the air out.
3. If the radiator flow pipe is hot and the return cold - increase the flow of water by re-balancing the system.
4. If the radiator or the pipe work is noisy, check for air in the system. Switch the circulator off and allow the air to settle to the top of the radiators. Then bleed the radiators, top up water if necessary.
5. A radiator will be hot only at maximum heat output. A warm radiator indicates that the boiler has switched off or the thermostatic valve, if fitted, has adjusted the output down to suit the required room conditions. It is wise to provide an external drain at the lowest point of the pipe work in the event that the system has to be drained for maintenance or modification.

## 14 - WATER TREATMENT

1. There is a basic need to treat the water contained in all heating systems that have steel radiators.
2. radiators.
3. There will always be some corrosion in a steel radiator system even though the system is closed.
4. The water in a closed system will promote corrosion unless the initial charge of water is correctly treated.
5. Open vented systems in particular should be treated, as open vented systems are not completely sealed off from the atmosphere. It is essential to provide a tank open to the atmosphere if proper venting and expansion of the system is to be achieved. The same tank that is used to fill the system provides the capacity for the storage of water that has expanded when heated. When the system cools down, this same water is drawn back into the system taking with it a small quantity of dissolved oxygen. Even without any leakages from the system, there will be evaporation losses from the surface of the tank depending on the ambient temperature.
6. In practice the development of corrosion in a system reduces the transfer of heat through the formation of black iron oxide sludge. This corrosion process causes noises from the boiler and circulator eventuating in the premature failure of the radiators, circulator and boiler.
7. For the above reasons, it is suggested that the system is thoroughly flushed through at the time of installation.
8. The system should then be filled with a stable water treatment solution that does not require continuous topping up. For example **GEL LONG LIFE 100 CORROSION INHIBITOR**. Please refer to our website for more technical details.

## 15 - WARRANTY

Thermoline Towel radiators have a 5 year warranty for powder coated towel radiators and a 2 year warranty for chrome towel radiators, against defects in material or workmanship.

Warranty includes rework or replacement of the radiator (parts only).

This warranty does **DOES NOT COVER** any labour charges, travel time expenses, or any consequential losses or damage.

The products must be installed and used according to accepted plumbing practices, such as BS5449. Failure to do so will void the warranty.

The below items must also be followed or else the warranty may be voided:

1. Thermoline towel radiators must only be used for the purpose for which they are intended.
2. Thermoline towel radiators should only be used in closed heating systems. Never use in open circuit (steam, thermal spring, boiled water or tap water) or with pipe systems that are not oxygen-tight to relevant DIN standards (DIN 4726) will not be covered under this warranty.
3. After the installation, the system should be tested by a qualified person. Otherwise, damage may occur in the place of installation.
4. Please ensure that the connection elements are free of any dirt and burr after installation.
5. Do not use the radiators in humid environments (swimming pool, sauna bath, green house)
6. Do not overtighten the stoppers, airvents or valves, otherwise the connection threads could be damaged.



## WARRANTY cont...

7. Keep the plastic packaging on the radiator even after installing the radiator until all construction work is finished. The packaging will prevent scratches and damage on the radiator surface or paint.
8. When filling the radiators for the first time, heating system controls should be closed and the system should be set to right pressure.
9. Never empty the water in heating system. Add water when needed. Each time you add or change water to your heating system, corrosion occurs and its life time will decrease.
10. Please take precautions against the risk of freezing.
11. After installation the system must be properly flushed, and filled using an approved corrosion inhibitor, for example **GEL LONG LIFE 100 CORROSION INHIBITOR**. Please refer to our website for more technical details. The corrosion inhibitor must be checked at regular intervals and recommended concentration levels must be verified and recorded by a qualified installer. The annual boiler service provides a convenient opportunity for this service.
12. Avoid dropping or flexing (bending) the radiators when carrying or transporting.
13. Use a soft cloth and warm soapy water to clean radiators, please do not use corrosive or abrasive agents.
14. Do not place more than 10 kgs onto the radiator to avoid the brackets coming out of the wall.
15. This warranty shall not apply to any radiators that have been subject to accident, negligence, alteration, abuse or misuse.



# installation and operating instructions

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