



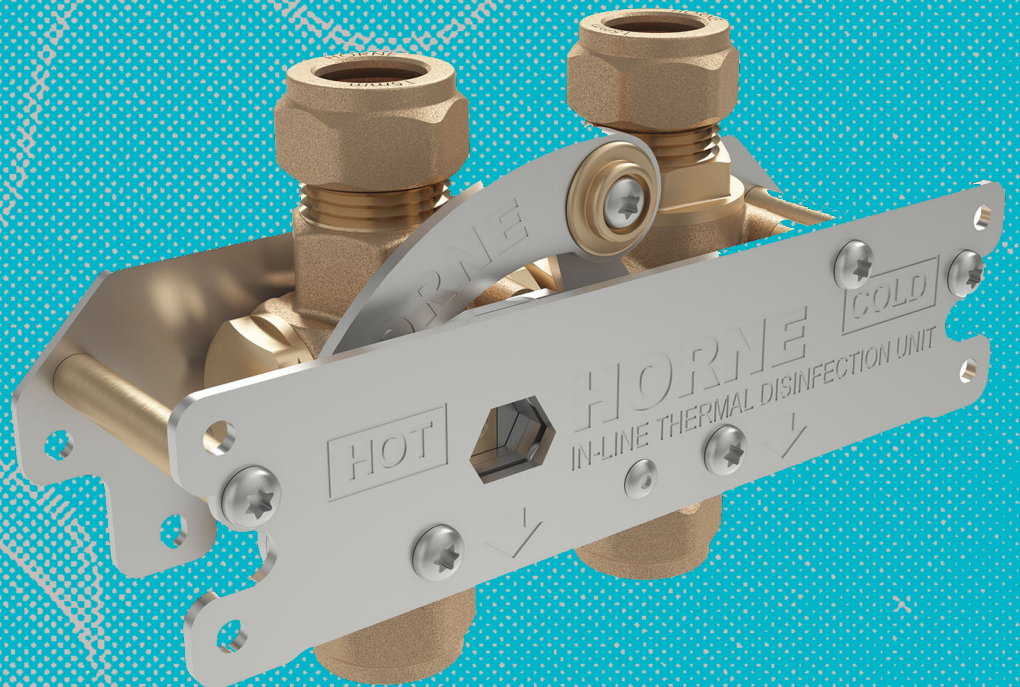
NBS Source
PARTNER

Pr_60_55_97_90 Thermal disinfection units

In-Line Thermal Disinfection Unit **ILTDU**



HORNE®

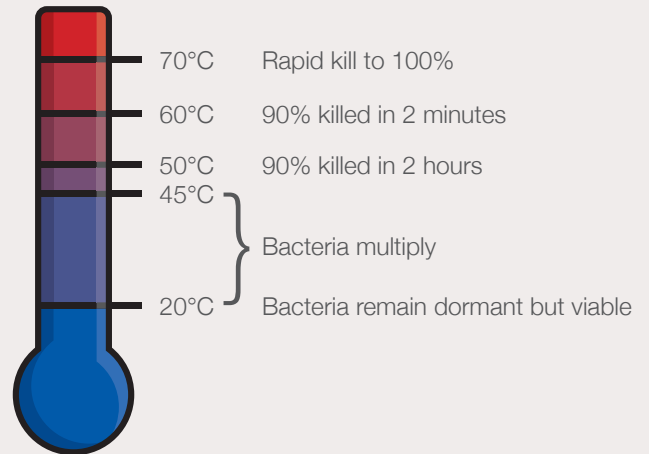


INTRODUCTION

Horne Engineering Ltd are pioneers in the field of thermostatic control engineering, inventing, in 1909, the self-acting control valve to regulate the temperature of steam calorifiers – a world first. Another world first came in the early 1920s with the invention of the thermostatic mixing valve (TMV) to accurately blend hot water with cold to provide safe and comfortable water for bathing and showering.

With the discovery of Legionella bacteria and its associated respiratory disease, Legionnaires Disease, a thermal regime, paired with point-of-use TMVs was determined the most effective method to mitigate the problem whilst also addressing the scald risk.

In recent years, a new problem has emerged that relates to antibiotic resistant and opportunistic microorganisms and their proliferation in domestic water supplies of institutional environments – especially in healthcare, but also education, prison accommodation and sport and leisure facilities.



The 'deadleg' drop to every tap or shower outlet between the TMV and the terminal fitting ranges in temperature from ambient to that of the TMV setting – favourable conditions for bacteria to multiply. The unavoidable air-water interface of the terminal fitting is also inherently vulnerable to retrograde contamination from the local environment.

Now, Horne Engineering has developed yet another World First with the invention of the In-Line Thermal Disinfection Unit (ILTDU), which specifically addresses this problem.

EXTENDING THE THERMAL REGIME

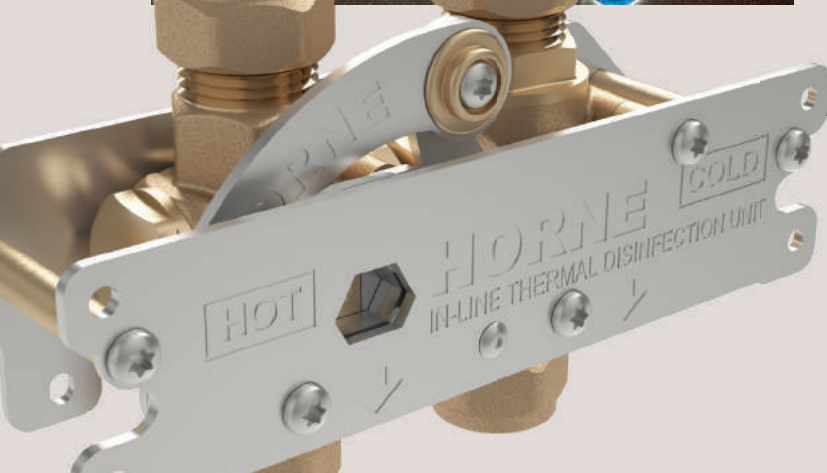


PROBLEM

Via the incoming water supply and by retrograde contamination, *Pseudomonas*, *Legionellae* and other pathogens can colonise the last two metres of domestic water supply pipework, including the outlet fitting (TMV, tap or shower). This problem is specifically described in the UK Department of Health's Health Technical Memorandum 04-01, Part C.

SOLUTION

The In-Line Thermal Disinfection Unit (ILTDU) facilitates periodic high temperature thermal disinfection using the readily available hot water supply. Now the thermal regime can be extended to the point of water discharge: therefore, the wetted surfaces of all downstream components, including the TMV and the outlet fitting, can be raised to system temperature.

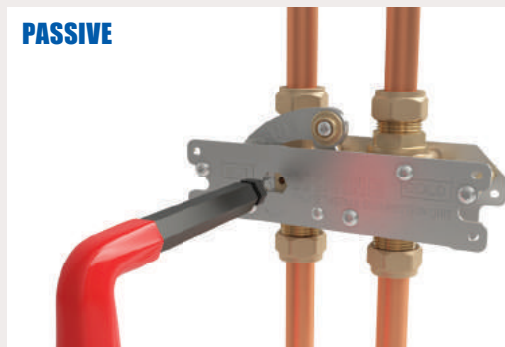
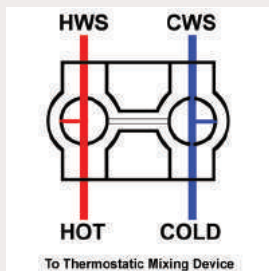


HOW DOES IT WORK?

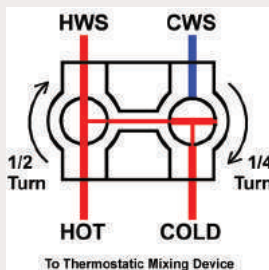
When not in use (Passive Mode), hot and cold water flows to the mixing valve and downstream fittings uninterrupted. The operation key transfers the mechanism into Disinfection Mode; diverting hot water at system temperature to the cold water supply pipe drop.

Simultaneously, the cold water supply is closed. Hot water at system temperature is now able to permeate all wetted parts of the system downstream of the ILTDU until such times as the key is turned back to the passive position.

PASSIVE MODE



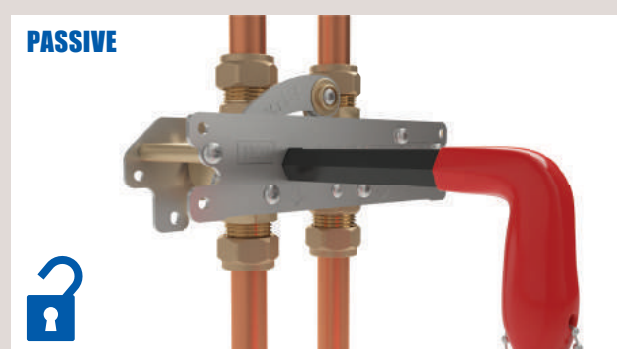
DISINFECTING MODE



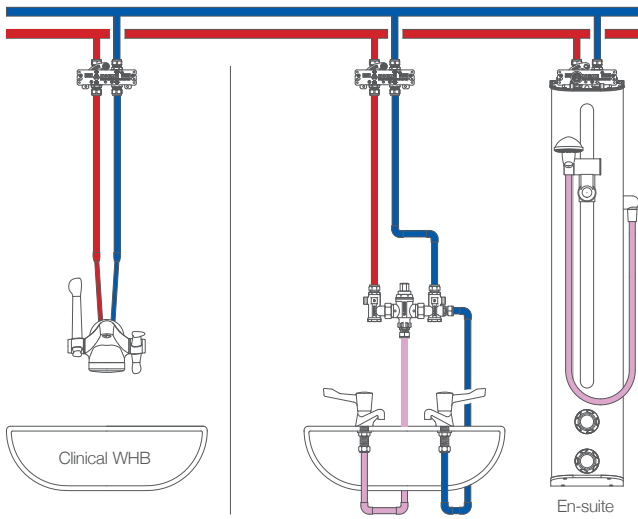
DUTY OF CARE

Thermal disinfection of outlets should be conducted by an appointed Responsible Person. The ILTDU is operated using a unique key, which has a large red warning notice indicating the hazard of scalding hot water. During disinfection, it is not possible to remove the key from the device – ensuring the warning notice is visible throughout the process. Only on returning the device to Passive Mode will the key be removable. Immediate removal of the key following disinfection is good practice. A local risk assessment should be conducted to ascertain the temperature and duration required for effective thermal disinfection.

For maximum effectiveness in improving water quality and minimising the rate of contamination, thermal disinfection should be conducted in combination (but not simultaneously) with elevated velocity flushing via the drain points of any downstream thermostatic mixing valve (see our [Elevated Velocity Flushing](#) article for further information).

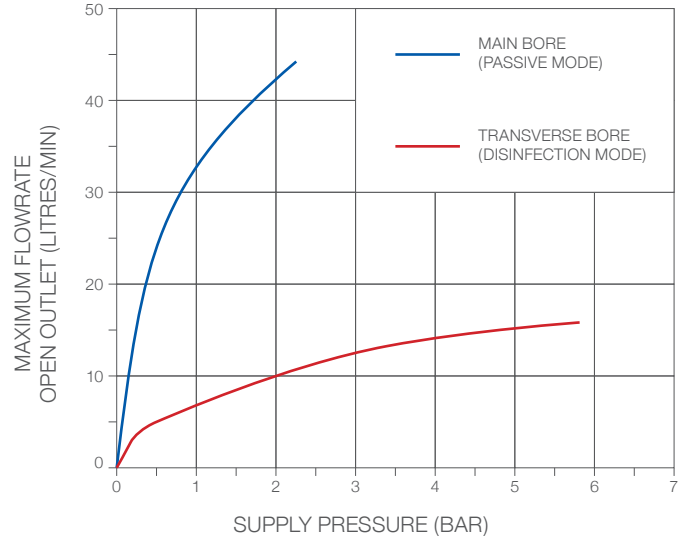


TYPICAL INSTALLATIONS

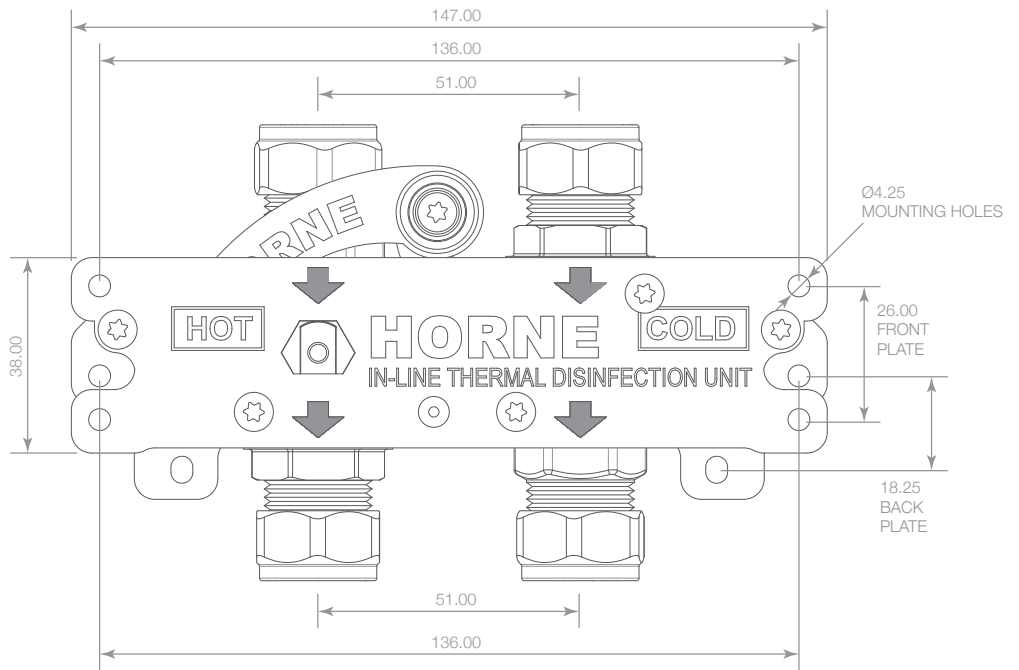
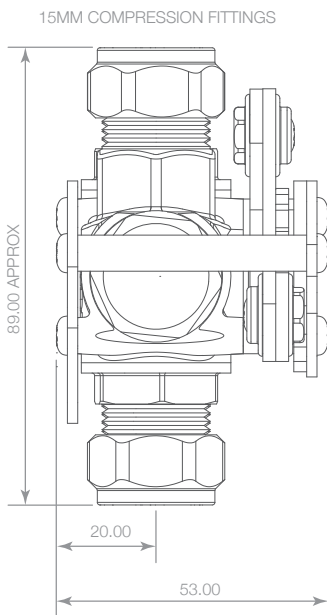


Example configuration for patient room with en-suite

CAPACITY CHART



DIMENSIONS



MATERIALS

Body: brass alloy, BS EN 12164 CW 617N
 Seals: Nitrile/PTFE
 Four way link mechanism: stainless steel
 Connections: compression fitting 15mm OD pipe
 Weight: 1.0kg

PART NUMBERS

- In-Line Thermal Disinfection Unit: ILTDU
- Operating Key: 6236

EUROPEAN PATENT

EP 2948716B

Please see www.horne.co.uk for full list of granted patents.

OPERATING CONDITIONS

Max working pressure (static): 10bar
 Max temperature: 85°C

NARRATED ANIMATION



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