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thermostatic tap specification manual 2011

OPTITHERM®

The optimum in safety and control

HORNE®

contents

This CD contains product specifications, dimensioned drawings and a 3D animation that explains how the tap is operated, cleaned and maintained.

For further technical specification advice or information please contact us.

If your CD is missing please contact us and request CD ref: L-176

Tel: +44 (0)1505 321455
email: sales@horne.co.uk
web: horne.co.uk/optitherm

N.B. This CD will work best if Internet Explorer is set as your default browser.

A fully rendered 3D animation is available to view on the CD rom above. Please refer to it for a fully guided and narrated tour of the OPTITHERM® Thermostatic tap

OPTITHERM®

introduction




OPTITHERM®

HORNE Engineering have been designing, developing and manufacturing thermostatic valves since 1909.

Over the years we have continually improved and refined thermostatic temperature control technology and its application. Our product portfolio includes a broad range of specialised thermostatic mixing valves and shower valves developed to address the needs of a variety of niche applications. Now our product range has been extended further with the production of our first thermostatic tap – the award-winning* OPTITHERM®.

*Best interiors product building better healthcare awards 2008

The OPTITHERM® tap features an integral Thermostatic Mixing Valve that is certified as Type 3 (TMV3 Approval number: BC405/0508 and WRAS Approval number: 0806001) in compliance with NHS Model engineering specifications D 08 Thermostatic mixing valves (Healthcare premises) and BS 7942.

design brief

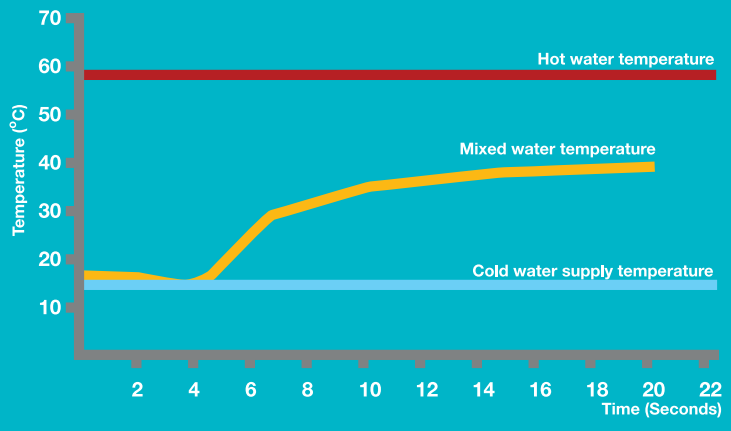
DESIGN CONCEPT

The OPTITHERM® is a highly specialised thermostatic tap developed principally for healthcare applications. We set out to achieve a design that meets the needs of a variety of users looking for the following key features:

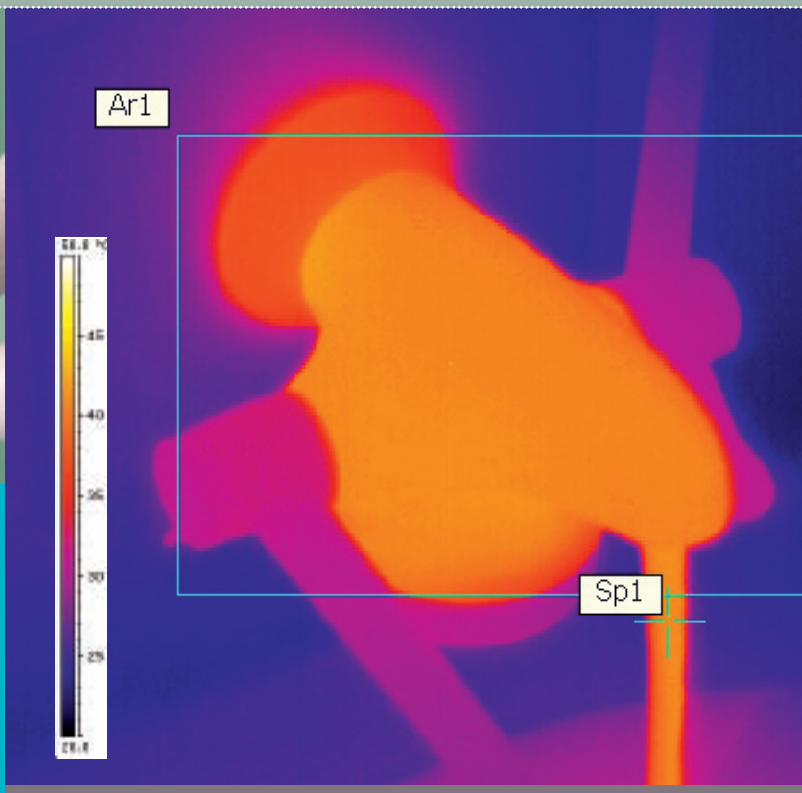
- ease of use
- consistent delivery of safe and comfortable hot water
- easy access for testing and maintenance -
- optimised user interface - to enhance hygiene compliance
- easy cleaning for improved hygiene
- robust construction
- compliance with a range of healthcare related regulations and published guidance
- efficient use of energy and water
- minimisation of coldwater dead legs

safe hot water & surface temperatures

The consistent delivery of 'safe' hot water is an essential component in the provision of good healthcare.



Safe temperature, safe hands



ANALYSIS

Ar1 Min 21.8 °C Max 41.8 °C Average 33.7 °C
Sp1 41.0 °C

OPTITHERM® thermal image

SAFE HOT WATER

The Type 3 approved OPTITHERM® mixes hot and cold water immediately prior to the point of discharge and it is essential that the user does not experience transients or excursions in the temperature of the mixed water. It is normal for thermostatic mixing valves to produce transients when starting from ambient as the proportioning device in the mixing valve moves to the desired position. The highly responsive mechanism in the OPTITHERM® produces exceptional performance in this regard as shown on the above graph. Please refer to the CD affixed to the front cover for further details.

SAFE SURFACE

The OPTITHERM® should be supplied with hot water at a temperature that will typically be in the range of 55°C – 65°C, which is then mixed with cold water inside the tap to produce mixed water at a safe and comfortable level. It is essential that the temperature of the outer surface of a tap does not become dangerously high during and immediately after periods of operation. The thermal image above demonstrates how the temperature of the outer surface of the OPTITHERM® remains at a safe level during operation.

infection control and hand-washing

Fixtures and fittings used by healthcare staff and patients should be designed wherever possible to contribute to enhanced infection control and perform in a manner that is conducive to maintaining excellent levels of hygiene.

Correct operation prevents re-contamination

Smooth and accessible surface for complete cleaning

USER OPERATION

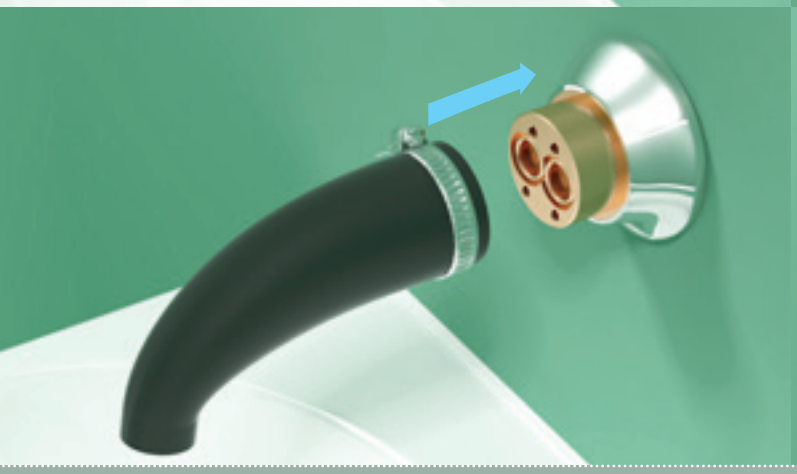
The manner in which the user makes physical contact with the tap when opening and closing the flow is recognised as a particularly important feature of a hospital tap. Our unique double lever option allows for the lever to be pushed on using a single thumb **(A)** but, crucially, after hand washing, the elbow or upper forearm is used, again in a pushing forward movement **(B)**, to close the flow keeping the hands away from the face and hair. Wherever possible we have made the user interface as easy and intuitive as possible. An integral flow regulator ensures that water is delivered in a controlled manner (6 l/m) as opposed to a splashing surge, which again gives a more user friendly result, that is conducive to good hand washing practice.

EASE OF CLEANING

The OPTITHERM® has been designed to ensure that all areas of the outer surface of the product are highly accessible for easy and effective cleaning. There are also no parts that can be prised off leaving recesses, which can harbour dirt and pathogens. The enclosed CD explicitly shows the outer surface of the OPTITHERM® and how it can be easily accessed for thorough and effective cleaning.

installation & commissioning

A complete and effective commissioning procedure will help to ensure the correct operation of the hot and cold water systems.



Flush pipework after spigot installation

Fit and commission during final fit-out

INSTALLATION

Installation of the OPTITHERM® is particularly easy and can be achieved in two stages. The spigot can be installed at the same time as the water supply pipe work and wall panelling.

A Flushing kit (part number 5640) fits over the spigot such that, in accordance with Water Supply (water fitting) Regulations, pipe work flushing can be carried out as soon as water is available on site. This spigot mounted flushing kit also better facilitates the required thermal and chemical disinfection of the hot and cold water system before the tap body is connected to the spigot.

COMMISSIONING

The OPTITHERM® tap assembly may be fitted to the spigot and commissioned during the final build phase. This greatly reduces the risk of damage or contamination to the tap, which is often sustained as plastering and painting etc. is carried out around the wash hand basin. In any case the OPTITHERM® can only be properly commissioned once hot water is available and this is very often only in the latter stages of the build programme.

maintenance and testing

In order to achieve consistent and accurate performance over a maximised operational lifespan, the product should be designed in such a way that facilitates easy access for routine testing and maintenance.

Isolation valves are accessed under the tap spigot

Simple and effective flushing and sampling procedure

ACCESSIBILITY

By virtue of the fact that the thermostatic control is integral to the tap, it is easily accessed by facilities management staff in possession of the correct tools and equipment (see accessories on page 9). The OPTITHERM® features integral isolation valves, which are accessible without moving the tap or any panelling, and are used when testing control performance and safety or taking water samples. The CD supplied with this literature features a narrated animation showing this feature and how other key components, such as the strainers and the thermostatic cartridge, are accessed for cleaning and maintenance.

TESTING AND SAMPLING

An additional Flushing Kit (part number 5492) allows for routine pipe work flushing with the OPTITHERM® tap in situ. The enclosed CD shows this process and describes how the Flushing Kit may also be used for water sampling and during system chlorination.

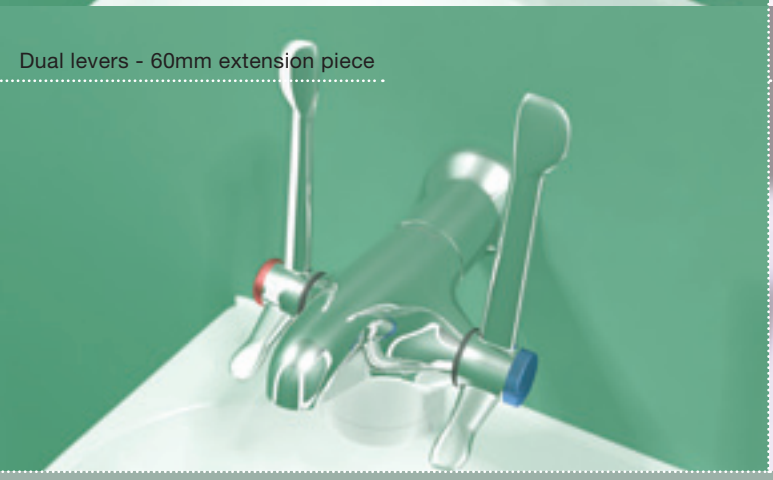
options

OPTITHERM®

Dual levers - no extension piece

Dual levers - 30mm extension piece

Dual levers - 60mm extension piece

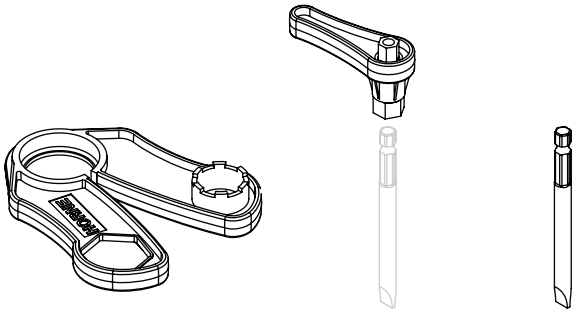


Short levers - 30mm extension piece

OPTIONS

The OPTITHERM® can be installed with our unique dual levers or with short levers as required. The location of the point of discharge can be modified by the inclusion of extension pieces. It is important that water does not fall directly into the plughole and the extension pieces give the designer and installer scope to make the OPTITHERM® ideally compatible with the selected wash hand basin.

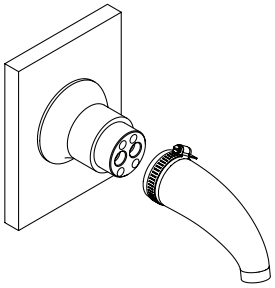
accessories



Multitool

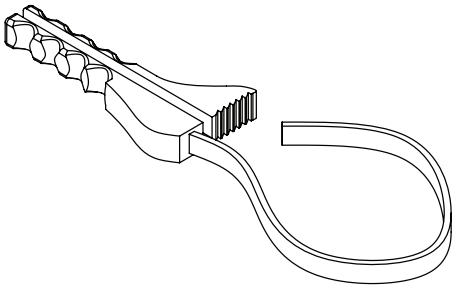
PART No 5459

PART No 5632



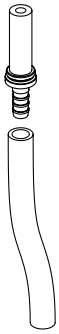
Spigot Flushing Kit

PART No 5640



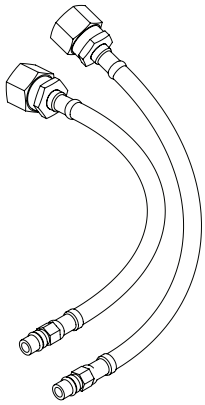
Strap Wrench

PART No 5457



Flushing/Sampling Kit

PART No 5492



Flexible braided hoses (Soft-PEX)

PART No 5872

The above accessories are available as individual items or together as part of the OPTITHERM® Tool Kit (part number 5491) available in a robust tool roll.

FULL TOOL KIT CONTENTS (PART NO 5491)

Multitool plus screwdriver bit

4 No. Hex Keys

Strap Wrench

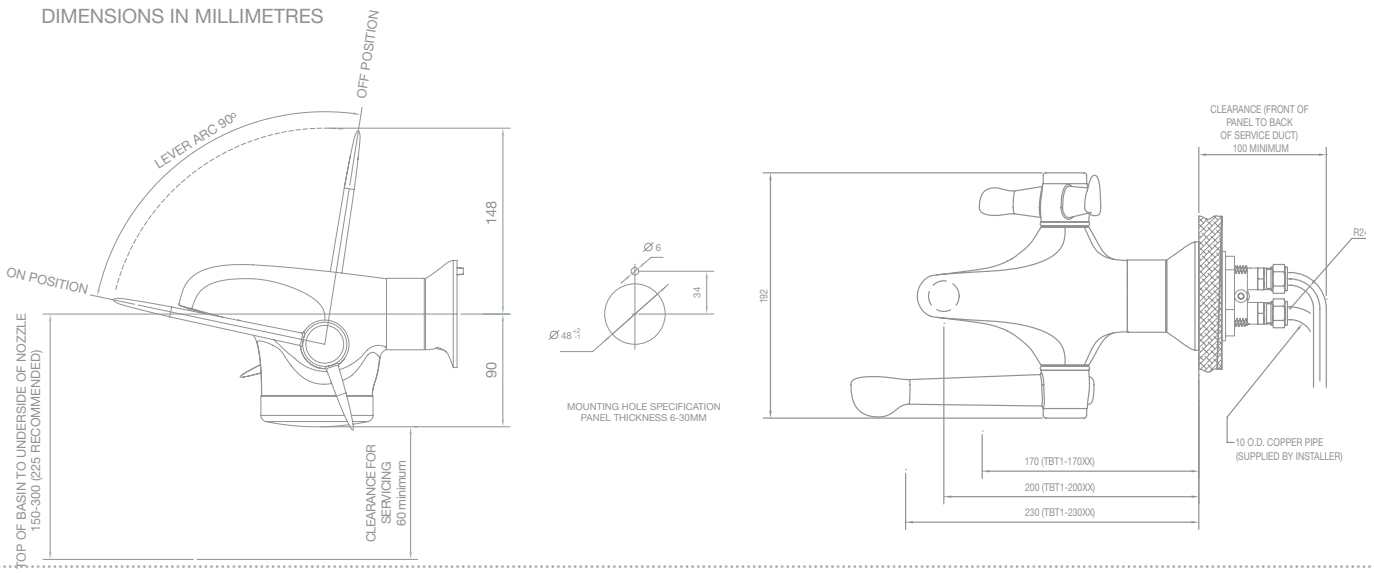
Flushing/Sampling Kit

Oil bottle

Thermostatic cartridge removal tool

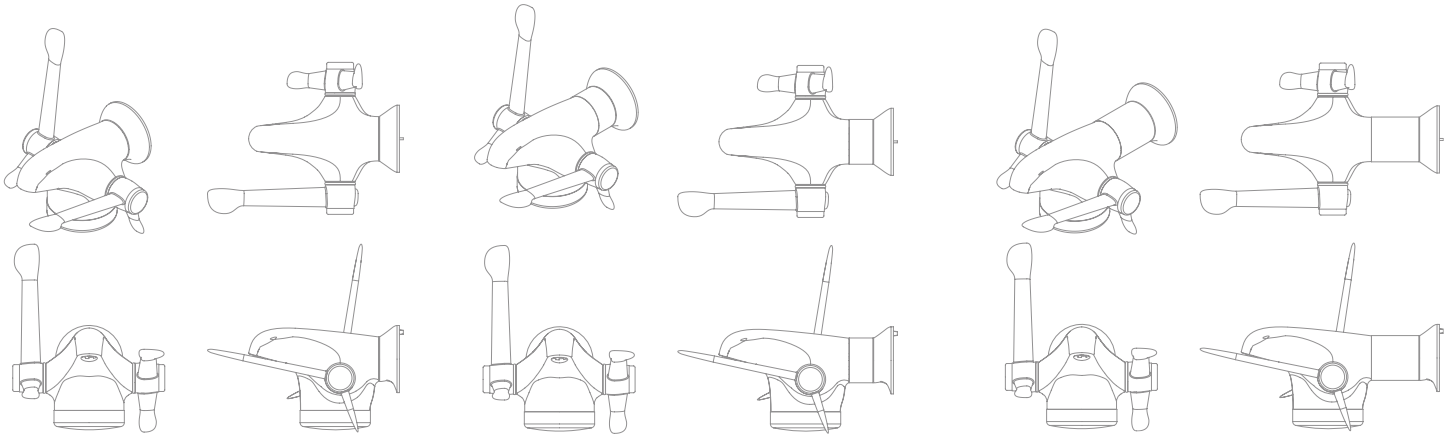
The strip of images above are frames taken from a fully guided tour of the OPTITHERM® (narrated 3D animation in photo-realistic render). Please refere to the CD-ROM on the inside front cover of this brochure.

tap dimensions/CAD drawings



Product references -

Full specification clauses for each of the OPTITHERM® configurations below can be found on the CD-ROM on the inside front cover of this brochure



TBT1-170DL

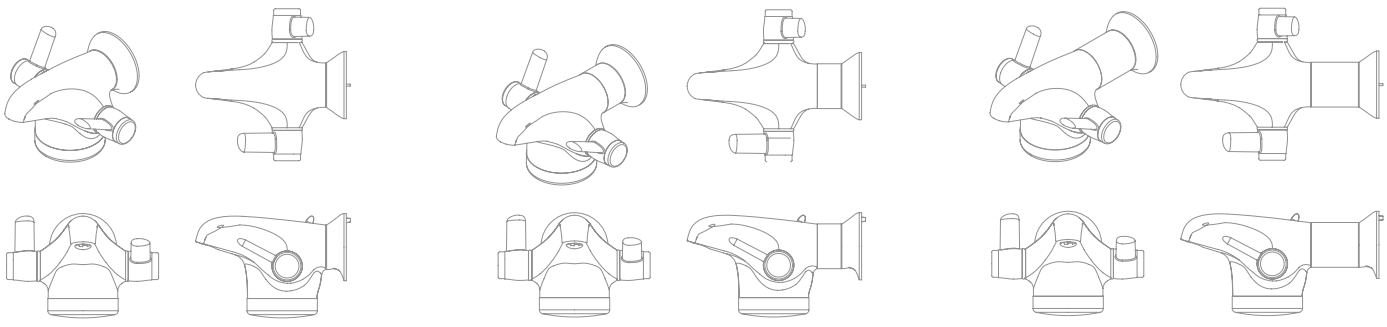
No extension piece, dual levers

TBT1-200DL

30mm extension piece, dual levers

TBT1-230DL

60mm extension piece, dual levers



TBT1-170SL

No extension piece, short levers

TBT1-200SL

30mm extension piece, short levers

TBT1-230SL

60mm extension piece, short levers

Further Reading

Health Technical Memorandum 04-01: *'The Control Of Legionella, Hygiene, "Safe" Hot Water, Cold Water And Drinking Water Systems: Part A Design, Installation And Testing', 2006.*

Health Technical Memorandum 04-01: *'The Control Of Legionella, Hygiene, "Safe" Hot Water, Cold Water And Drinking Water Systems: Part B Operational Management', 2006.*

www.epic.tvu.ac.uk *Epic II Guidelines.*

Health Guidance Note, *"Safe" Hot Water And Surface Temperatures. NHS Estates*

Health Technical Memorandum 64, *'Sanitary Assemblies', 3rd ed., 2006*

Infection Control Nurses' Association, *'Hand Decontamination Guidelines'.*

Infection Control in the Built Environment: *Design and Planning. NHS Estates, 2003.*

HORNE

HORNE ENGINEERING Ltd
PO Box 7, Rankine Street
Johnstone, United Kingdom PA5 8BD
tel +44 (0)1505 321455
fax +44 (0)1505 336287
email sales@horne.co.uk
web www.horne.co.uk

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