



**NBS Source**  
PARTNER

Pr\_65\_54\_95\_48 High-performance thermostatic mixing valves  
S90/680 Thermostatic mixing valves

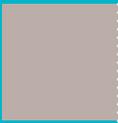
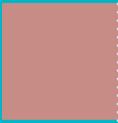
HORNE 15 and 20 thermostatic mixing valve specification manual



**HORNE**



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

At Horne Engineering we have been involved in the design, development and manufacture of thermostatic valves since 1909. In the early 1920s, Horne developed the first thermostatic mixing valves to be manufactured and sold in the UK.

Horne now supply mixing valves for a variety of applications including healthcare, nursing and sheltered accommodation, education, sport and leisure, housing associations and secure hospitals and prisons. In addition to the core markets for TMVs, HORNE also apply their thermostatic technology, expertise and quality to manufacture products for process, marine and specialist applications.



## Why thermostatic mixing valves?



### SAFE FROM LEGIONNAIRES DISEASE

#### PROBLEM

Legionnaires disease is an illness caused by inhaling droplets of water contaminated by *legionella pneumophila*, which is a naturally occurring organism frequently found in water supplies.

The organism can multiply in domestic hot water services at temperatures between 20°C and 46°C.



#### SOLUTION

Kill legionellae by the natural method of heat.

It is rapidly killed at a temperature of 60°C.

Therefore store and distribute domestic hot water at temperatures close to 60°C.

### SAFE FROM SCALDING

#### PROBLEM

Water at temperatures approaching 60°C presents a very high risk of scalding accidents.



#### SOLUTION

Reduce the temperature at the point of use by mixing the hot water with cold water using a HORNE thermostatic mixing valve to control the mixed water at a safe and comfortable temperature.





## Why **HORNE** thermostatic mixing valves?

### SAFETY AND PERFORMANCE

All versions of the HORNE 15 and 20 TMVs have been certified as compliant with the performance requirements of the *NHS Model engineering specifications D08 Thermostatic mixing valves (Healthcare premises)* and as such are termed Type 3 TMVs.

### MECHANICAL SPECIFICATION

A variety of options are available but all include certain key components in addition to the TMV itself such as full bore fine mesh strainers, angle pattern inlets and check valves. Other options include integral isolating valves, wall mounting kits and covers. These features must be taken into account when evaluating the cost benefits of the HORNE TMVs.

### DURABILITY

The current range of HORNE TMVs is the result of over eighty years of development and improvement. Materials and designs have been adopted to ensure that the product is highly robust and durable.

### MAINTENANCE SUPPORT

Having worked with our customers and end users, we are fully aware of the vital importance of maintenance. A TMV is principally a safety product that has moving parts and must be maintained to ensure correct performance. The HORNE online maintenance training zone (see appendix for further information) shows and tells our customers how to install, commission and maintain HORNE TMVs, and as such is an ideal method of achieving continual safe performance over a maximised lifespan.

# HORNE 15 thermostatic mixing valves

**H15-11B** (BRONZE FINISH)  
**H15-11C** (CHROMIUM PLATED FINISH)



## HORNE 15 THERMOSTATIC MIXING VALVE

- Including:
- full bore high capacity fine mesh strainers
  - check valves on hot and cold supplies
  - swivel inlet connections with flat faced unions
  - compression fittings for 15mm OD copper pipe on all connections
  - flow regulator - 8 l/min

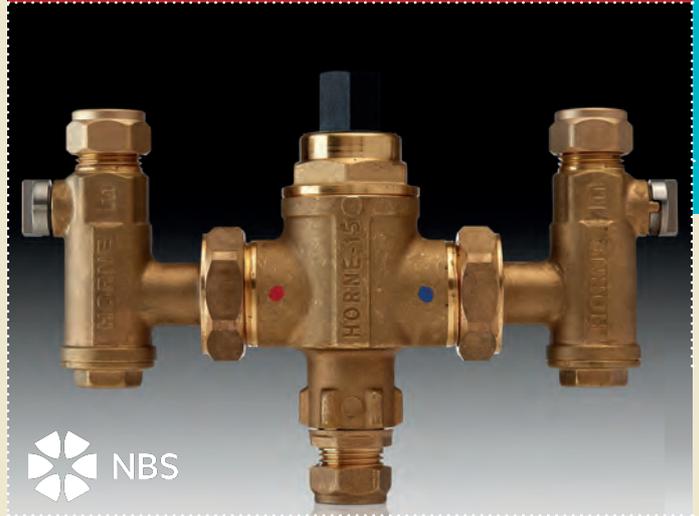
OPTIONS (see appendix for further details)

**H15-12B** As above plus wall mounting kit (in bronze finish)

**H15-12C** As above plus wall mounting kit (in chromium plated finish)

**H15-13B** As above plus wall mounting kit and white plastic cover (in bronze finish)

**H15-21B** (BRONZE FINISH)  
**H15-21C** (CHROMIUM PLATED FINISH)



## HORNE 15 THERMOSTATIC MIXING VALVE WITH INTEGRAL ISOLATING VALVES

- Including:
- integral ¼ turn isolating ball valves
  - full bore high capacity fine mesh strainers
  - check valves on hot and cold supplies
  - swivel inlet connections with flat faced unions
  - compression fittings for 15mm OD copper pipe on all connections
  - flow regulator - 8 l/min

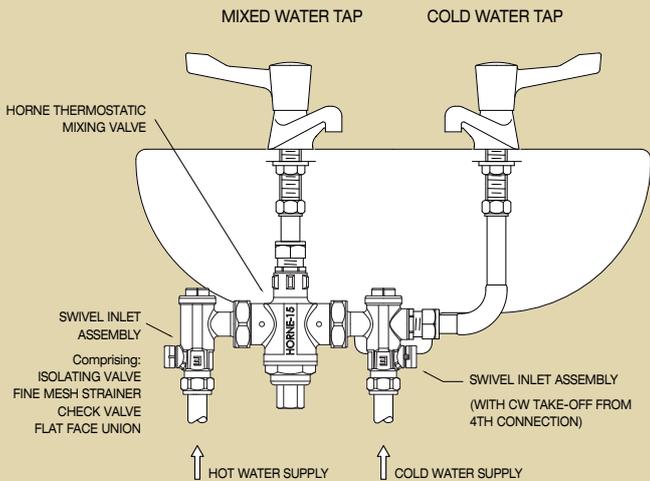
OPTIONS (see appendix for further details)

**H15-22B** As above plus wall mounting kit (in bronze finish)

**H15-22C** As above plus wall mounting kit (in chromium plated finish)

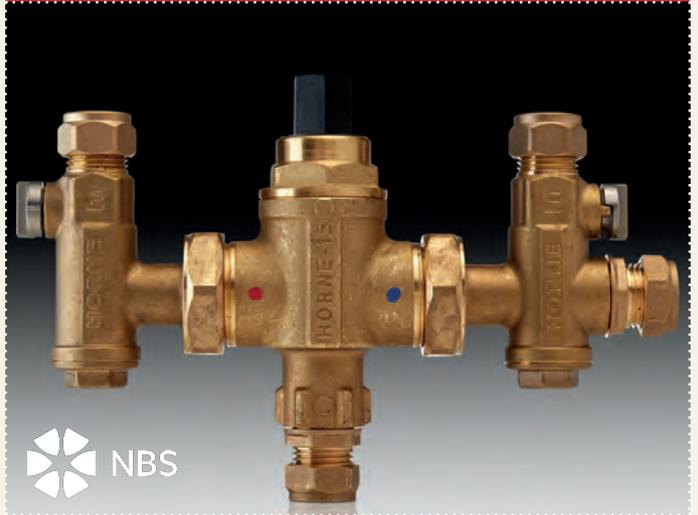
**H15-23B** As above plus wall mounting kit and white plastic cover (in bronze finish)

# HORNE 15 4th Connection



**H15-24B (BRONZE FINISH)**

**H15-24C (CHROMIUM PLATED FINISH)**



## HORNE 15 THERMOSTATIC MIXING VALVE WITH INTEGRAL ISOLATING VALVES and 4TH CONNECTION TO COLD WATER TAP

- Including:
- integral ¼ turn isolating ball valves
  - full bore high capacity fine mesh strainers
  - 4th Connection elbow
  - check valves on hot and cold supplies
  - swivel inlet connections with flat faced unions
  - compression fittings for 15mm OD copper pipe on all connections
  - flow regulator - 8 l/min

## ADDED BENEFITS

- Strainer also protects cold tap mechanism
- Cold tap isolation
- Elimination of components = save money
- Reduced installation time = save money

### OPTIONS (see appendix for further details)

**H15-25B**

As above plus wall mounting kit (in bronze finish)

**H15-25C**

As above plus wall mounting kit (in chromium plated finish)

**H15-26B**

As above plus wall mounting kit and white plastic cover (in bronze finish)

# HORNE 20 thermostatic mixing valves

**H20-11B (BRONZE FINISH)**  
**H20-11C (CHROMIUM PLATED FINISH)**



## HORNE 20 THERMOSTATIC MIXING VALVE

- Including:
- full bore high capacity fine mesh strainers
  - check valves on hot and cold supplies
  - swivel inlet connections with flat faced unions
  - compression fittings for 22mm OD copper pipe on all connections

### OPTIONS (see appendix for further details)

**H20-12B** As above plus wall mounting kit (in bronze finish)

**H20-12C** As above plus wall mounting kit (in chromium plated finish)

**H20-13B** As above plus wall mounting kit and white plastic cover (in bronze finish)

**H20-21B (BRONZE FINISH)**  
**H20-21C (CHROMIUM PLATED FINISH)**



## HORNE 20 THERMOSTATIC MIXING VALVE WITH INTEGRAL ISOLATING VALVES

- Including:
- integral ¼ turn isolating ball valves
  - full bore high capacity fine mesh strainers
  - check valves on hot and cold supplies
  - swivel inlet connections with flat faced unions
  - compression fittings for 22mm OD copper pipe on all connections

### OPTIONS (see appendix for further details)

**H20-22B** As above plus wall mounting kit (in bronze finish)

**H20-22C** As above plus wall mounting kit (in chromium plated finish)

**H20-23B** As above plus wall mounting kit and white plastic cover (in bronze finish)

# Applications

## Single Outlet

The Horne 15 thermostatic mixing valve is supplied with one, or two\*, 8 L/min flow regulators for energy and water conservation, and, in Type 3 healthcare applications, a single Horne TMV should supply a single handwash basin or shower. The larger, DN20, Horne 20 mixing valve, without flow regulator, can deliver a maximum flow rate of 60 L/min and is suitable for (single) bath-fill applications.

*\*4th connection models (H15-24), have one flow regulator for the mixed water outlet, and one for the cold water outlet.*

## Multiple Outlets (group mixing)

In sport/leisure/education settings, several outlets such as a row of basins, or a group of timed-flow control (TFC) showers, e.g. the S407A or the Horne Dušo can be served from a single 'group' mixing TMV.

Where water supply pressures allow, the Horne 15 can serve 4 no. basin taps fitted with 6 L/min flow regulators (all running simultaneously,  $4 \times 6 = 24$ ), or 3 no. 8L/min showers.

The Horne 20 could serve four no. showers fitted with 12 L/min flow regulators\*, or 7 showers with 8 L/min flow regulators.

*\*for water and energy conservation, Horne showers are supplied with 8 L/min flow regulators as standard. 12 L/min regulators are available on request.*



# Dušo Sport shower column

## Dušo

The Dušo sport shower column is a modern and stylish non-thermostatic shower panel for sport and leisure applications. Supply pre-mixed warm water to a group of Dušo showers from a single, suitably sized, upstream group thermostatic mixing valve such as a HORNE 15 or HORNE 20.

### Colour options



## Valve Sizing Tool

To help you size your group mixing installation, have a look at our handy tool; it takes account of site parameters (water pressures and temperatures), number of outlets, maximum required flowrates, and calculates the optimum size of valve to serve each grouping. Optimum for water and energy conservation, pipe sizing, and for legionella control. <https://b.link/WhatSizeTMV>

# Product Options

**+ WALL MOUNTING KIT**  
for all configurations of H15 and H20



**+ WHITE PLASTIC COVER**  
for Bronze configurations of H15 and H20



**CHROMIUM PLATE**



## Specification Guide

	HORNE 15		HORNE 15 4 <sup>TH</sup> CONNECTION		HORNE 20	
	BRONZE	CHROME	BRONZE	CHROME	BRONZE	CHROME
TMV with <b>check valves and strainers</b>	<b>H15-11B</b>	<b>H15-11C</b>	N/A	N/A	<b>H20-11B</b>	<b>H20-11C</b>
TMV with check valves, strainers and wall mounting kit	<b>H15-12B</b>	<b>H15-12C</b>	N/A	N/A	<b>H20-12B</b>	<b>H20-12C</b>
TMV with check valves, strainers, wall mounting kit and white plastic cover	<b>H15-13B</b>	<b>H15-13C</b>	N/A	N/A	<b>H20-13B</b>	<b>H20-13C</b>
TMV with check valves, strainers and isolating valves	<b>H15-21B</b>	<b>H15-21C</b>	<b>H15-24B</b>	<b>H15-24C</b>	<b>H20-21B</b>	<b>H20-21C</b>
TMV with check valves, strainers, isolating valves and wall mounting kit	<b>H15 22B</b>	<b>H15-22C</b>	<b>H15-25B</b>	<b>H15-25C</b>	<b>H20-22B</b>	<b>H20-22C</b>
TMV with check valves, strainers, isolating valves wall mounting kit and white plastic cover	<b>H15-23B</b>	N/A	<b>H15-26B</b>	N/A	<b>H20-23B</b>	N/A

# Technical Information

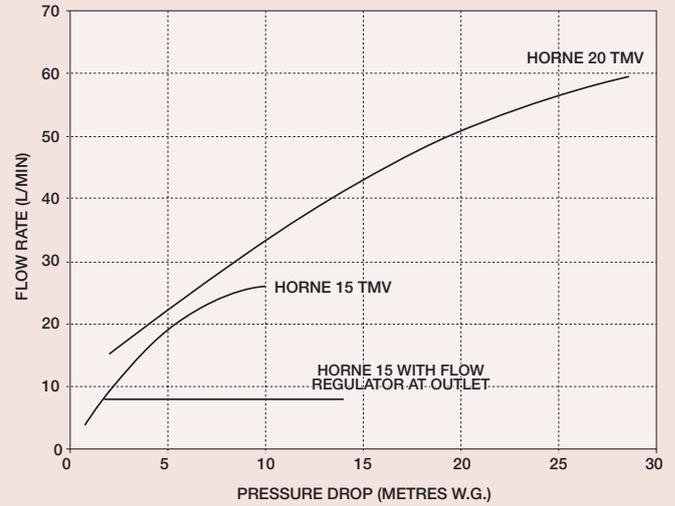
## OPERATING PARAMETERS

(Type 3 Thermostatic Mixing Valves)

Mixed water temperature setting at factory	41°C
Range of temperature adjustment	35-50°C
Range of hot water supply temperature	55-65°C
Minimum differential between hot water temperature and mixed water temperature	5°C
Maximum static pressure	10 bar
Range of maintained water supply pressures	0.2-5 bar

**Unequal pressures are usually acceptable if gravity-pressure supplies one of the inlets: minimum 0.2 Bar. The lower of the two pressures will determine the flow rate. When both supplies are pumped, pressures should be nominally balanced.**

## SIZING CHART



Note 1: This graph allows for a maximum water velocity of 3m/s in accordance with BS 8558:2015.

HORNE 15 TMV (TYPE H1503)		
Applications	Designation	Hot & Cold Water Pressure
Bidet	-LP-B	0.2-1 bar
	-HP-B	1-5 bar
Shower	-LP-S	0.2-1 bar
	-HP-S	1-5 bar
Washbasin	-LP-W	0.2-1 bar
	-HP-W	1-5 bar

HORNE 20 TMV (TYPE H2003)		
Applications	Designation	Hot & Cold Water Pressure
Bath	-HP-T44	1-5 bar
	-HP-T46	1-5 bar
	-LP-T44	0.2-1 bar
Shower	-LP-S	0.2-1 bar
Washbasin	-LP-W	0.2-1 bar

Note 2: For clarity, a single Horne 15 or Horne 20 TMV is suitable for both LP and HP designations.



All HORNE products are manufactured under our Quality Management System to BS EN ISO 9001:2015. Certificate No. FM 1224.

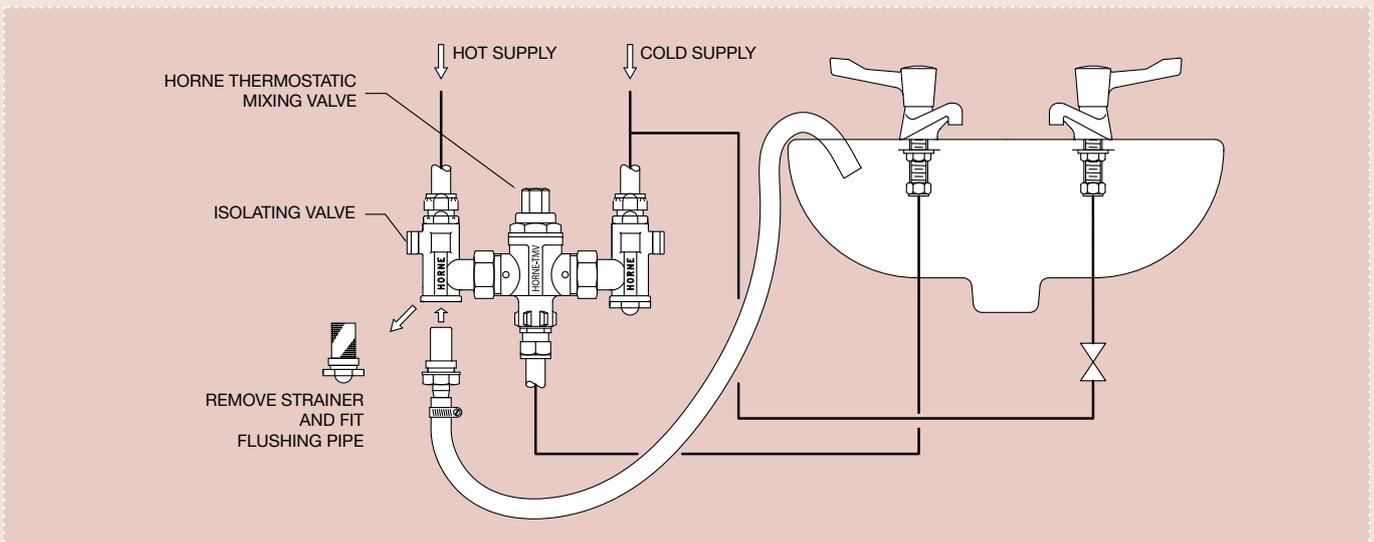
# Accessories

## FLUSHING KIT

To comply with Water Byelaws 2014 (Scotland) and BS6700:1997 (England and Wales) all pipework should be flushed after installation, renewal or repair.

A HORNE Flushing Kit allows the pipework to be thoroughly flushed at *full bore* without any dirt or debris entering the TMV, non-return valves or strainer baskets.

The Flushing Kit consists of a screwed adaptor to fit into the strainer body in place of the strainer basket and a plastic hose. Only one or two Flushing Kits are required on each site and these are available on request (see diagram below).



## MONITORING KIT PART NO. 71-7377

The HORNE Monitoring Kit can be used for periodically testing the performance of the TMV and identifying what kind of maintenance, if any, is required. The monitoring kit comprises:

- Digital thermometer
- Two pressure gauges 0-2 bar 0-10 bar
- Immersion probe
- Contact probe
- Carrying case
- Hot and cold supply access adaptors

The monitoring kit enables the on-site measurement of the following conditions:

- Hot water supply pressure
- Cold water supply pressure
- Hot water temperature at the inlet to the HORNE TMV
- Cold water temperature at the inlet to the HORNE TMV
- Mixed water temperature at the tap or outlet

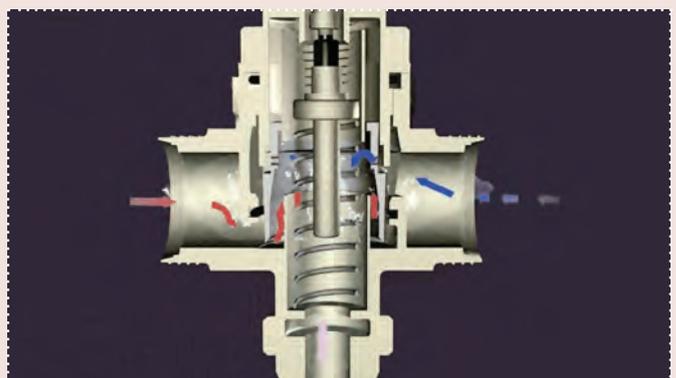


## MAINTENANCE TRAINING

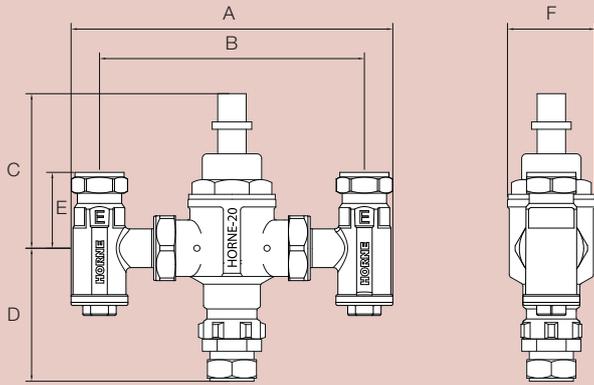
To ensure a maximised working lifespan, HORNE thermostatic mixing valves require periodic testing and maintenance. To ensure that the correct procedures are adhered to, we have developed a free online training zone that covers all technical aspects of HORNE TMVs from how a HORNE valve works, installation and commissioning and common maintenance procedures.

The parts and procedures are illustrated with digital animation, photographs and video footage alongside PDF product instructions and spare part lists.

Visit [www.horne.co.uk/technical-support/advice-and-support/maintenance-training](http://www.horne.co.uk/technical-support/advice-and-support/maintenance-training)

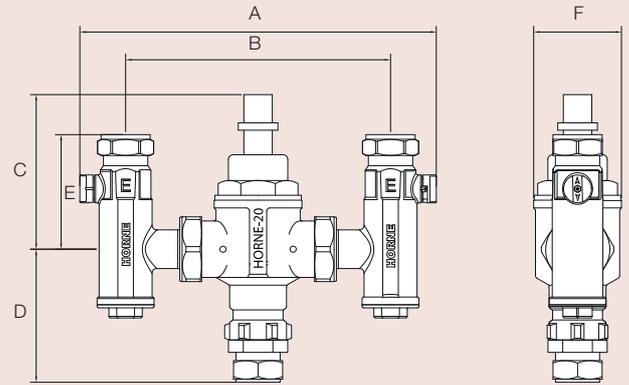


# Dimensions (sizes in mm)



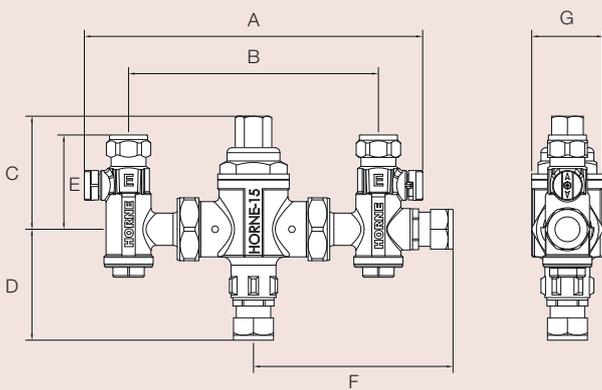
DIMENSIONS **H15-11B/C**, **H15-12B/C**, **H20-11B/C\*** and **H20-12B/C\***

	H15-11B/C	H15-12B/C	H20-11B/C*	H20-12B/C*
A	179	179	207	207
B	150	150	170	170
C	68	68	100	100
D	67	82	86	100
E	23	23	33	33
F	43	53	56	61



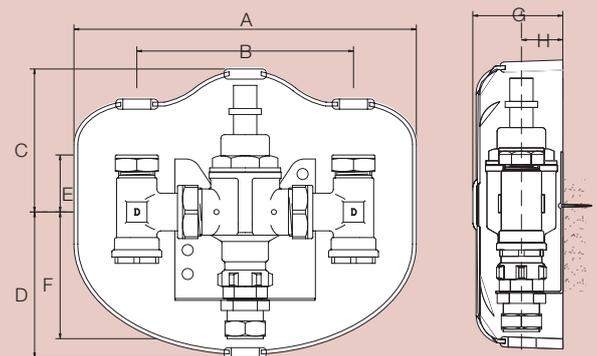
DIMENSIONS **H15-21B/C**, **H15-22B/C**, **H20-21B/C** and **H20-22B/C**

	H15-21B/C	H15-22B/C	H20-21B/C	H20-22B/C
A	203	203	229	229
B	150	150	170	170
C	68	68	100	100
D	67	82	85	100
E	39	39	51	51
F	43	53	56	61



DIMENSIONS **H15-24B/C** and **H15-25B/C**

	H15-24B/C	H15-25B/C
A	203	203
B	150	150
C	68	68
D	67	82
E	39	39
F	120	120
G	43	53



DIMENSIONS **H15-13B**, **H15-23B**, **H15-26B**, **H20-13B** and **H20-23B**

	H15-13B	H15-23B	H15-26B	H20-13B	H20-23B
A	226	226	280	272	272
B	150	150	150	170	170
C	92	92	115	117	117
D	95	95	114	117	117
E	23	39	39	33	51
F	82	82	82	100	100
G	65	65	70	70	70
H	32	32	32	33	33

\* Dimensions differ for chromium-plated models with D inlets. Drawings at [www.horne.co.uk](http://www.horne.co.uk)

**HORNE**

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