

HORNE 15 and 20 thermostatic mixing valve specification manual 2009



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 closely 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 maintenance CD presentation (see appendix) 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 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)

H15-13C As above plus wall mounting kit and white plastic cover (in chromium plated 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 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)

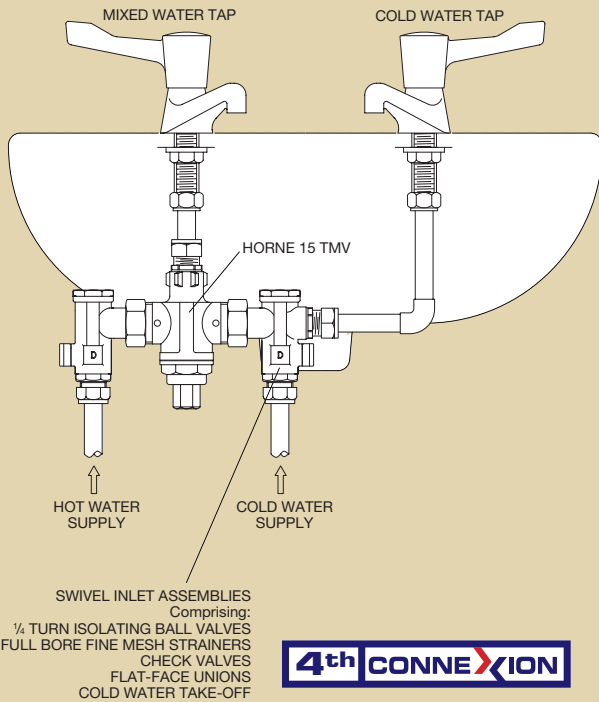
H15-22B As above plus wall mounting kit (in bronze finish)

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)

H15-23C As above plus wall mounting kit and white plastic cover (in chromium plated finish)

HORNE 15 4th Connection



ADDED BENEFITS

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

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 1/4 turn isolating ball valves
 - full bore 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

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)

H15-26C As above plus wall mounting kit and white plastic cover (in chromium plated finish)

HORNE 20 thermostatic mixing valves

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



HORNE 20 THERMOSTATIC MIXING VALVE

- Including:
- full bore 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

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 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)

H20-13C As above plus wall mounting kit and white plastic cover (in chromium plated finish)

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)

H20-23C As above plus wall mounting kit and white plastic cover (in chromium plated finish)

Product Options

+ WALL MOUNTING KIT
for all configurations of H15 and H20



+ WHITE PLASTIC COVER
for all configurations of H15 and H20



CHROMIUM PLATE for all configurations



Specification Guide

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

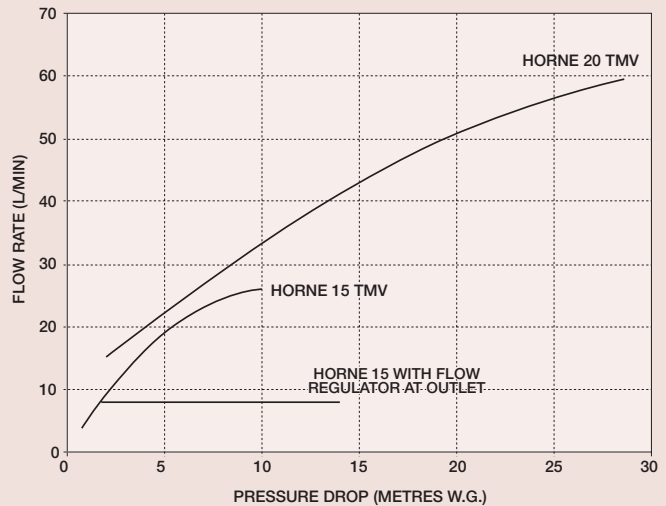
Technical Information

OPERATING PARAMETERS

Mixed water temperature setting at factory	41°C
Range of temperature adjustment	35-50°C
Range of hot water supply temperature	52-85°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

Hot and cold water supply pressures do not need to be equal. The lower of the two pressures, however, should not be less than 0.2 bar maintained (dynamic pressure). For example, mains cold water can be mixed with tank fed hot water, provided that the hot water pressure is not less than 0.2 bar.

SIZING CHART



Note 1: The HORNE 15 and HORNE 20 TMVs can be installed with unequal inlet pressures and it is the lower of the two supply pressures which will determine the flow rate for the valve.

Note 2: This graph allows for a maximum water velocity of 3m/s in accordance with BS6700.

STANDARDS AND APPROVALS

HORNE 15 and HORNE 20 TMVs are designed to meet the requirements of BS7942:2000, 'Thermostatic mixing valves for use in care establishments' and are approved, under the TMV3 Scheme, to the following designations of the NHS Model Engineering Specifications D 08 Thermostatic mixing valves (Healthcare premises):

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

HORNE 15 TMV (TYPE 1504)		
Applications	Designation	Hot & Cold Water Pressure
Baths	-HP-T44	1-5 bar
	-HP-T46	1-5 bar



All materials in contact with water are WRAS approved.



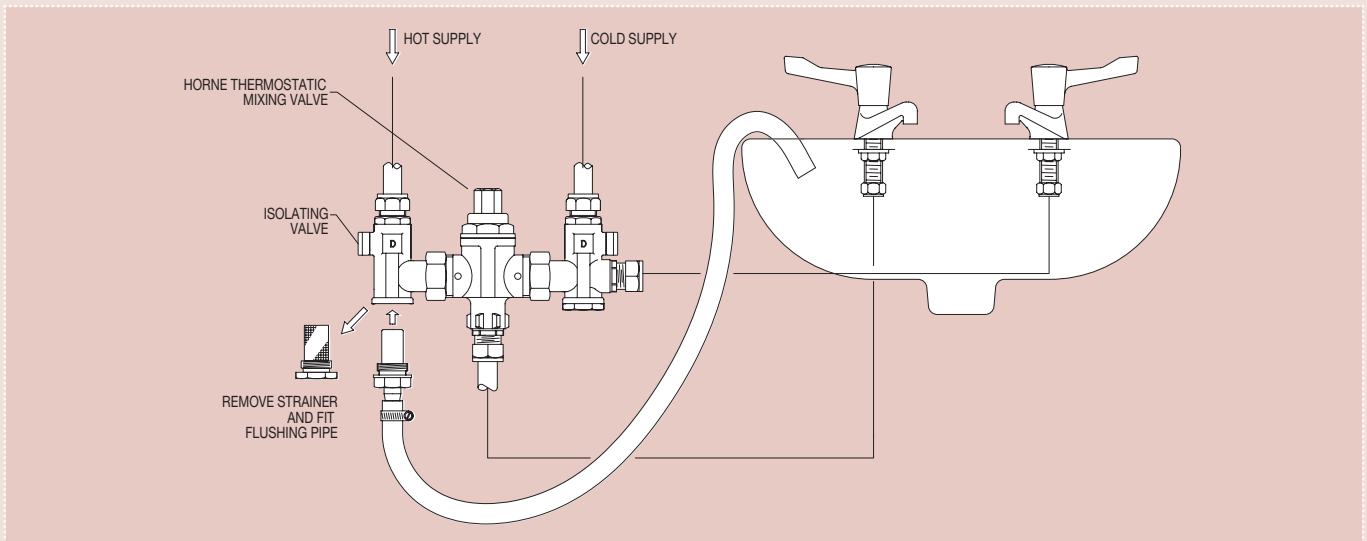
All HORNE products are manufactured under our Quality Management System to BS EN ISO 9001:2000. Certificate No. FM 1224.

FLUSHING KIT

To comply with Water Byelaws 2000 (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 CD PART NO. L-107

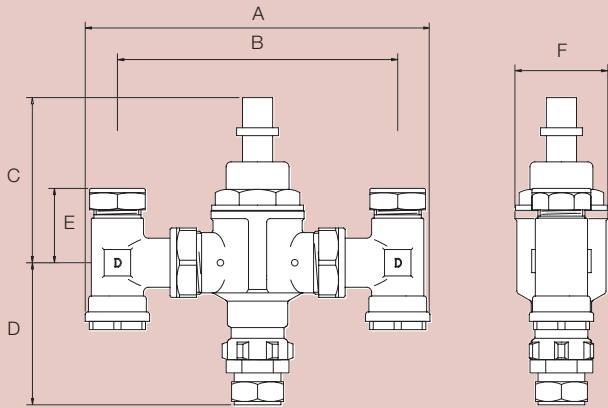
To ensure a maximised working lifespan, HORNE thermostatic mixing valves require periodic testing and maintenance.

To ensure that the correct procedures are adhered to, we have developed a CD ROM that covers all aspects from how a HORNE valve works, installation and commissioning to the maintenance procedures. The parts and procedures are illustrated with digital animation, photographs and video footage as well as being available in pdf documents for you to download.

Please call us to arrange for a CD demonstration.

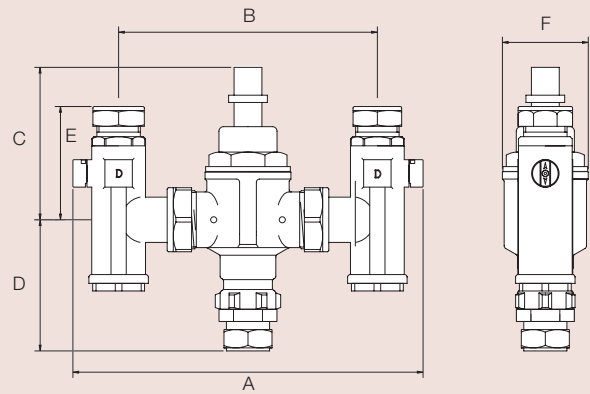


Dimensions (sizes in mm)



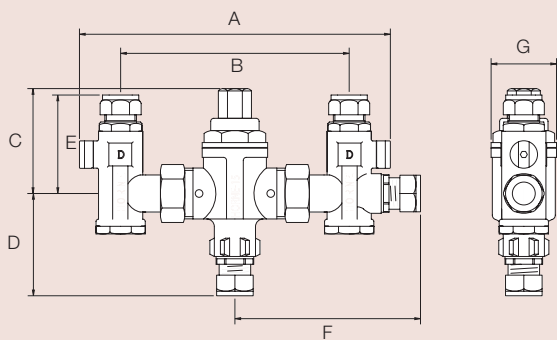
DIMENSIONS **H15-11B/C** and **H20-11B/C**

	H15-11B / C	H20-11B / C
A	185	209
B	150	170
C	69	100
D	67	85
E	39	45
F	43	56



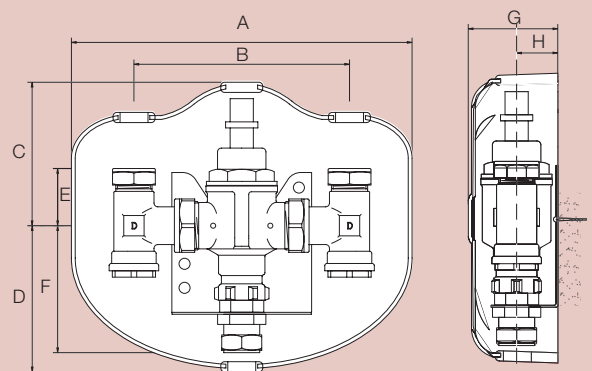
DIMENSIONS **H15-21B/C** and **H20-21B/C**

	H15-21B / C	H20-21B / C
A	206	234
B	150	170
C	69	100
D	87	85
E	65	74
F	43	56



DIMENSIONS **H15-24B**

	H15-24B / C
A	206
B	150
C	69
D	67
E	65
F	122
G	43



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

	H15-13B / C	H15-23B / C	H15-26B / C	H20-13B / C	H20-23B / C
A	226	226	280	272	272
B	150	150	150	170	170
C	92	92	118	118	118
D	95	95	117	117	117
E	39	65	65	45	73
F	82	82	82	100	100
G	63	63	67	67	67
H	32	32	32	32	32

HORNE

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