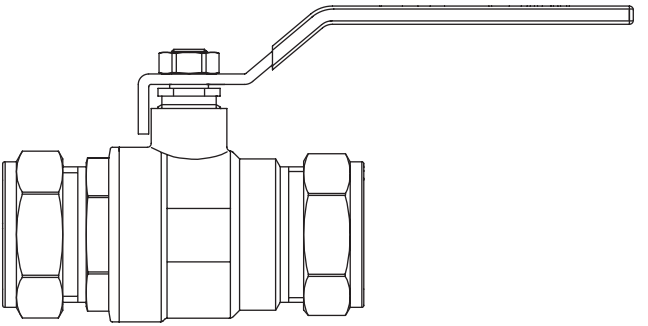
Universal Ball Valve

IN89ALGWC & IN90ALGWP

Installation and Maintenance Instructions



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Introduction

The Inta Universal ball valve is supplied with a yellow sleeve on the lever and separate red and blue sleeve which are intended to replace the yellow sleeve depending upon the service.

The yellow sleeve should be used on gas service such as natural gas.

The red sleeve should be used on hot water or hot water in heating systems.

Th blue sleeve should be used on cold water applications or for potable water.

These instructions cover the installation, operation and maintenance. Please read the enclosed instructions before commencing the installation of this product, please note;

We recommend that the installation of any Inta product is carried out by an approved installer.

It is recommended, especially in hard water areas, that a water softener such as the ActivFlo or ActivFlo lite be fitted to reduce the risk of calcium deposits forming.

Products

This IOM covers the following products;

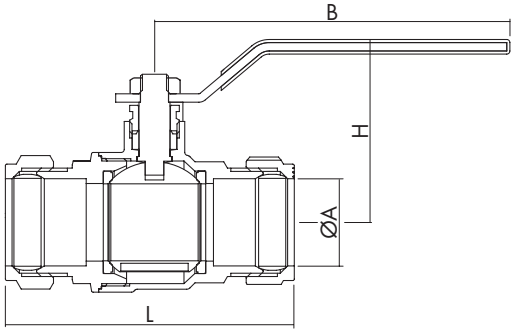
15mm universal gas/water lever ball valve with compression ends	IN89ALGWC15
22mm universal gas/water lever ball valve with compression ends	IN89ALGWC22
28mm universal gas/water lever ball valve with compression ends	IN89ALGWC28
35mm universal gas/water lever ball valve with compression ends	IN89ALGWC35
42mm universal gas/water lever ball valve with compression ends	IN89ALGWC42
54mm universal gas/water lever ball valve with compression ends	IN89ALGWC54
½" universal gas/water lever ball valve with threaded ends	IN90ALGWP15
¾" universal gas/water lever ball valve with threaded ends	IN90ALGWP20
1" universal gas/water lever ball valve with threaded ends	IN90ALGWP25
1¼" universal gas/water lever ball valve with threaded ends	IN90ALGWP32
1½" universal gas/water lever ball valve with threaded ends	IN90ALGWP40
2" universal gas/water lever ball valve with threaded ends	IN90ALGWP50

Technical Specification

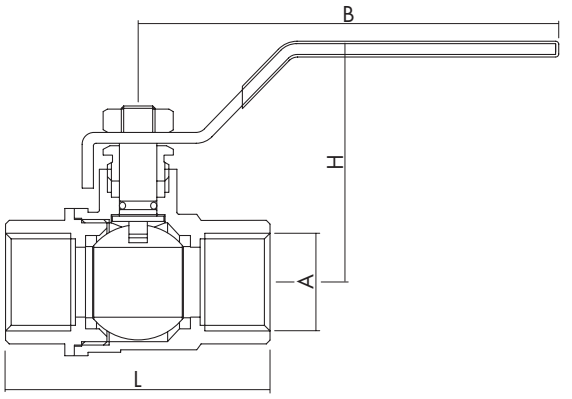
Pressure-temperature rating for compression connections based on BS EN 1254 for water;

16 bar	5 to 30˚C
10 bar	5 to 65˚C
6 bar	5 to 110˚C
10 bar for gas	-20 to 60˚C
Compression connections:	BS EN 1254
Pressure-temperature rating for threaded connections;	
Max. inlet pressure (static)	25 bar
Working temperature range for water:	-20 to110˚C
Working temperature range for gas:	-20 to 60˚C

Dimensions



ØA	15mm	22mm	28mm	35mm	42mm	54mm
B	98.5	98.5	115	140	140	165
L	67	80	93	105	124	143
M	47	52	61	77	83	95



A	½"	¾"	1"	1¼"	1½"	2"
B	88	100	125	140	140	165
L	56.7	67	77	88	99.3	121
M	48	55	55	80	87	92

Preparation for installation

Flush the water supply pipes thoroughly prior to installation. Do not allow debris, PTFE tape or any metal particles to enter the system.

Important: All plumbing is to be installed in accordance with applicable codes and regulations.

Important: The use of brass valves and fittings is not recommended on chilled water applications as stress corrosion cracking may occur.

Stress Corrosion Cracking - SCC

Stress Corrosion Cracking occurs occasionally in fittings and brass valves and almost always on chilled water service where high levels of stress in the component combined with a corrosive environment can cause cracks to propagate.

Inadequate vapour sealing of the insulation is one of the most common cause of SCC in the presence of condensation in chilled water systems and which reacts with various ammonia based gases or particles which may be present in the atmosphere or transferred to the valves through the insulation material.

High stresses are commonly introduced by tightening threaded connections and compression nuts and for this reason it is very important that joints are assembled exactly in accordance with these instructions.

On chilled water systems the installer should ensure the insulation and vapour barriers are correctly applied and comply with the requirements of BS 5970: 2012 and BS 5422: 2022.

Pressure - Temperature Rating

These valves are suitable for PN16 compression and PN25 threaded pressure ratings.

The valves must be installed in a piping system where the normal pressure and temperature do not exceed the ratings specified- see Technical Specification.

The maximum allowable pressure as specified is for non-shock conditions. Water hammer and impact for example, should be avoided.

If system testing will subject the valve to pressures in excess of the working pressure rating, this should be within the test pressure for the body, 1.5 times the PN rating with the valve in the open position.

If the limits of use specified in these instructions are exceeded or if the valve is used on applications for which it was not designed, a potential hazard could result.

End of Line Service and Location

Valve locations should be decided during the system design stage to allow easy access to the valve for operation and adjustment.

Compression ended valves are not suitable for end of line service.

Threaded end valves can be used on end of line service and it is recommended that a blank plug is fitted to the outlet port.

Installation

Unpack the valve and check that the flow path and threads are clean and free from debris.

Check the body and lever markings to ensure that the correct valve has been selected for the installation.

To change the sleeve on the lever pull off the yellow sleeve and push on the red sleeve of hot applications and the blue for cold or potable water.

Ball valves may be fixed in any orientation, always leaving enough space for the 90° operation of the lever handle.

Inta ball valves are manufactured to high quality standards and should not be subjected to misuse.

The following should be avoided:

- Dirt and debris entering the valve through the end ports.
- Careless handling.
- Excessive force during assembly and lever operation.

Adjoining pipework must be supported to avoid imposing pipeline stress on the valve body which may impair its performance.

Ball valves have threaded ends to BS EN ISO 228-1 or Type A compression ends to BS EN 1254.

Compression End Valves

Compression ends are suitable for copper tube to BS EN 1057: R250 (half hard).

Ensure that the valve and fitting are the correct size for the pipe being used.

Make sure that the ball valve is fully open during installation.

Cut the pipe to length, making sure that the cut is square and the pipe is not deformed. Remove any burrs from the cut ends.

Insert the pipe into the compression end without removing the olive, ensuring that the olive is in the correct position and that the pipe makes contact with the stop in the body of the valve.

Or

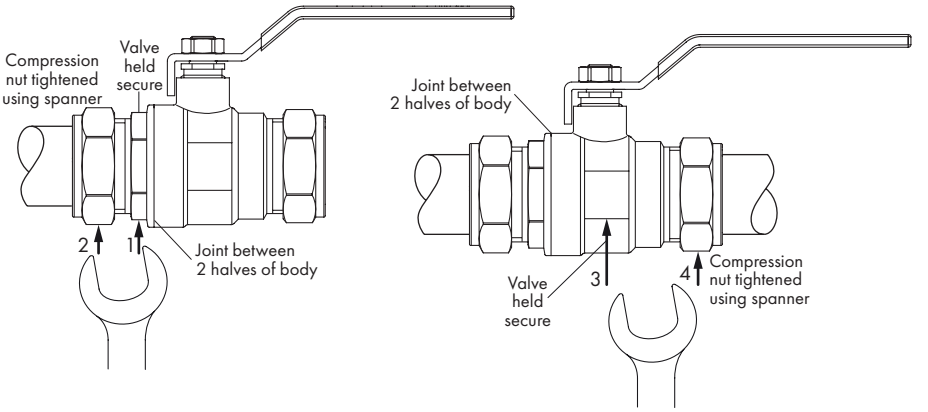
Unscrew the compression nut and olive from the fitting. Slide the compression nut and olive onto the pipe and insert the pipe into the valve as far as the stop.

Hand tighten the compression nut onto the valve. A drop of light machine oil on the threads will facilitate tightening - particularly on the larger size valves.

Jointing compounds or sealants are unnecessary and should not be used with compression ended valves; the use of these materials could impair the efficiency of the joint and may contravene water regulations.

Using a correctly fitting spanner further tighten the compression nut as shown, locating the spanner on the hexagon or pad on the body at locations 1 & 2 and then 3 & 4.

Compression End Valves Continued



WARNING: Care should be taken not to break the joint between the two halves of the body which could occur if locations 3 & 4 were used to tighten or unscrew the first compression nut 1 and locations 1 & 2 to tighten or unscrew the second compression nut.

The following should be used as a guide to tightening;

Nominal Size	Guide to Tightening - No. of Turns
15 to 28 mm	¾ to 1
32 to 54 mm	1 to 1¼

The compression nut can alternatively be tightened to the following torques;

Nominal Size	15mm	22mm	28mm	35mm	42mm	54mm
Torque - Nm	50	60	80	80	80	80

NOTE:

Over tightening will not produce a better sealing joint and may lead to problems in service.

The valve should be operated from fully open to fully closed to test that it has been installed correctly.

Threaded End Valves

Cut the pipe to length, making sure that the cut is square, remove any burrs from the cut ends.

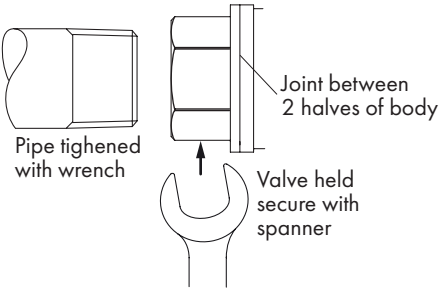
Thread sealing compounds appropriate for the application or PTFE tape may be used but excessive use should be avoided. Coarse fibrous sealing materials should be avoided if possible because with excessive use, they pack the threads and induce high stresses in female connections.

Ensure the threads are properly engaged and proceed to tighten the valve onto the pipe. 'Stilson' type wrenches should not be used.

A correctly fitting spanner must be located on the end of the valve into which the pipe is being fitted as shown.

Hand tighten onto the valve, then as a guide tighten by the number of turns shown in the table

Excessive tightening force should not be used since this could overstress the valve and cause permanent damage.



Nominal Size	Guide to Tightening - No. of Turns
½" to 1½"	1½
2"	2

Operating the Valves

Ball valves have a quarter turn operation (clockwise to close) providing quick and positive isolation. The lever will be in line with the pipeline with the valve in the open position.

Caution:

Rapid closure of quarter turn valves on liquid service may cause water hammer in the system.

The valve should only be used in the fully open or fully closed position. Inta ball valves are unsuitable for regulating and throttling service.

Suitable hand protection should be worn when operating valves used in extreme temperature applications.

Maintenance

Inta ball valves will provide a long service life and no maintenance is required

In the unlikely event that a valve requires replacement then the following should be taken into consideration;

- The valve should be at zero pressure and ambient temperature before any valve replacement is carried out.
- Correctly fitting tools should be used, eye protection and gloves must be worn for this operation.
- As the valve is removed there will be water loss between the two isolation points, therefore unless the pipework has been drained at another location, a means of collecting the discharged water is recommended.

A full risk assessment and methodology statement must be compiled prior to any maintenance.

Note: The following additional instructions apply when the valves are used with a yellow sleeve on the lever to indicate gas service

Installation

The IN89ALGWC and IN90ALGWP ball valves may be installed for flow in either direction.

Use standard practices when installing the valves.

Make sure pipes are properly aligned before the valve is installed.

With all compression connection valves, at pressures 2 bar and above, a gas certified approved sealing compound should applied to the olive (do not apply an excessive amount) to achieve a gas tight seal.

When tightening threaded end valves to the pipe use a correctly sized spanner to the end nearest to the pipe being worked.

For valves with compression ends, hand tighten the compression nut and then using a correctly sized spanner tighten the compression nut an additional turn to the following.

Valve Size	Number of Turns
15mm	$1\,^{1}/_{8}$
22mm	$^{7}/_{8}$
28 to 54mm	$^{5}/_{8}$

After installation is completed, the whole installation including the ball valves should be subjected to a gas soundness test.

Operation

The ball valves shall be operated by turning the lever through 90˚ in the clockwise direction to close the valve, until the lever contacts the stop on the body.

Maintenance

Periodically observe the valve to be sure of correct performance.

More frequent observations are recommended under extreme operating conditions.

Warnings

- Any deterioration or destruction of any part of the manually operated ball valve and closed bottom taper plug valve shall result in the need to replace the complete valve. Alterations to any part of the complete valve shall result in the valve no longer being in compliance with the performance requirements of this document.
- Ensure that the manually operated ball valve allows an adequate flow rate for its intended use.
- All installations should be performed in accordance with existing local installation regulations and codes of practice where they exist.
- It is imperative to follow these installation instructions and/or those of the appliance manufacturer, including those for the correct position of the connection point for the valve.

Operational Data

Maximum working pressure:	5 bar
Pressure rating:	BS EN 331:2015 Class C
High temperature resistance:	All pressures up to and including 150mbar
Working temperature range:	-20˚C to +60˚C
Gas families:	All 1st, 2nd & 3rd family gases

Identification

Inta IN89ALGWC and IN90ALGWP ball valves for gas service are fitted with a yellow lever and the pressure and temperature rating is restricted to that specified in BS EN 331.

Inta Ball Valves For Gas

See Products on page 2 of this IOM for product codes

NOTE:

As these valves are for gas and of brass construction, Inta does not recommend the use of these valves on chilled water applications.

Gas Appliance Regulations Declaration (EU) 2016/426

This fitting conforms with the provisions of the European Gas Appliances Regulations which apply to it and has been tested by BSI to all of the relevant requirements of BS EN331:2015.

Where this fitting is used as a replacement spare part for a gas appliance, it must be installed in accordance with the servicing instructions issued by the appliance manufacturer.

BS EN 331: 2015 Requirements

Below is extracted from BS EN 331 as confirmation that this IOM meets these requirements.

7.2 Instructions for installation and operation

For all manually operated ball valves the installation and servicing operating instructions shall be available and written in the official language(s) acceptable to the country into which the manually operated ball valve will be delivered, giving BS EN 331:2015, EN 331:2015 (E)33 all the necessary information regarding its appropriate installation and operation together with details of the effectiveness test that is to be used upon installation and during its lifetime.

The instruction shall include all marking details described in 7.1.

The instructions shall detail the method and procedure of how to install and operate a manually operated ball valve and how to verify its correct installation and operation.

The valve shall be operated only by means of the operating mechanism provided with the original valve by the manufacturer.

BS EN 331: 2015 Requirements Continued

Warnings

- any deterioration or destruction of any part of the manually operated ball valve shall result in the need to replace the complete valve: alterations to any part of the complete valve shall result in the valve no longer being in compliance with the performance requirements of this document;
- ensure that the manually operated ball valve allows an adequate flow rate for its intended use;
- all installations should be performed in accordance with existing local installation regulations and codes of practice where they exist;
- it is imperative to follow the installation instructions of the manually operated ball valve manufacturer and of the appliance manufacturer, including those for the correct position of the connection point for the valve.

These instructions and warnings may be supplemented as required by drawings.

Please leave this Manual for the User

To activate your product warranty please visit

www.intatec.co.uk

and click on Product Registration

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