

Installation, Operating and Maintenance Instructions.

PEGLER 3-piece ball valves Stainless Steel series

A86B, A86BW, A86BSW, A86C, A86D, A86DSW



PRESSURE EQUIPMENT DIRECTIVE 2014/68/EU

In the context of the **Pressure Equipment Directive**, when used with **Water** (a Group 2 Fluid) and rated at **63bar**:

- Valves up to and including DN50 are designed and manufactured according to Sound Engineering Practice (SEP). Instructions of their use can be found below.

Section 1 - Technical Details

1.1 Valve drawing

Pegler Stainless Steel ball valves (available from Aalberts integrated piping systems) are intended for the isolation of sections of pipe work and equipment in HVAC, Industrial applications and general commercial applications.

Tube compatibility

Valve Type	connection specification
A86B, A86C	Female thread type Rp according ISO7-1
A86BW, A86C, A86D	Butt weld connection sch10
A86BSW, A86DSW	Socketed weld connection

1.2 Pressure and Temperature ratings

Valves must be installed in a piping system whose normal pressure and temperature does not exceed the stated rating of the valve. The maximum allowable pressure in valves as specified in the standards is for non-shock conditions. Water hammer and impact should also be avoided.

If system testing will subject the valve to pressures in excess of the working pressure, this should be within the "shell test pressure for the body" to a maximum of 1.5 times the PN rating of the valve and conducted with the valve fully opened.

It may be hazardous to use these valves outside of their specified pressure and temperature limitations and when not used for the correct application.

Technical Performance Specification

- A86 series stainless steel ball valves: all sizes rated at PN63
- Working temperatures: -29°C – 204°C
- Size range DN15-DN50

Section 2 - Installation

2.1 Electrical continuity

All metallic pipework should comply with the equipotential bonding requirements of the current edition of the IEE wiring regulations (BS7671: 2001). After all plumbing work has been completed continuity checks are to be conducted by a qualified electrician in accordance with the regulations.

2.2 Insulation

For all Pegler A86 series Stainless Steel ball valves, it is recommended that you adhere to the insulation requirements as specified by the Water Supply (Water Fittings Regulations 1999), always ensuring that access for valve operation is taken into consideration.

2.3 Valve selection

Valves must be selected for their intended services conditions. Provided it is installed correctly and receives adequate preventative maintenance it should give years of trouble-free service.

They must be compatible with the system design, pressure and temperature requirements and must be suitable for the fluids that they are intended to carry. Interactions between metals in the pipe system must be considered as part of the valve selection.

A86 series ball valves perform equally well in horizontal and vertical positions.

2.4 Location

Valves must be provided with adequate support. Adjoining pipe work must be supported to avoid the imposition of pipeline strains on the valve body, which would impair its performance,

Heavy valves may need independent support or anchorage.

To ensure ease of operation, adjustment, maintenance and repair, valve siting should be decided during the system design phase.

2.5 Pre Installation - Health and Safety

Before starting work on any installation, a risk assessment must be made to consider the possibility of operational limits being exceeded and reduction or elimination of any potential hazards.

1. Protective clothing and safety equipment must be utilized as appropriate to the hazard presented by the nature of the process to which the valve is being installed or maintained.
2. Before installing or removing a valve the pipeline circulating pumps (when fitted) must be turned off. The pipeline must be depressurised, drained and vented. Valves must be fully opened to ensure release of any pipeline or valve pressure.
3. Fitters must be trained in manual and mechanical handling enabling them to safely lift and install Pegler valves.
4. The valve selected must be suitable for the required service conditions. The pressure and temperature limitations are indicated on the valve nameplates, body or data plate. They must not be exceeded.
5. Any flushing fluid used to clean the pipeline must not cause any damage to the valve and its components.
6. Pegler valves must not be misused by lifting them by their hand wheels, levers or valve stems.
7. Pegler valves are not suitable for fatigue loading, creep conditions, fire testing, fire hazard environment, corrosive or erosive service, or for carrying fluids containing abrasive solids. There is no allowance for corrosion in the design of these valves. Design for this valve do not allow for decomposition of unstable fluids and must not be used where this could occur.
8. Pegler valves are not designed to withstand the effects of fire, wind, earthquakes and traffic.
9. All Health and Safety Rules must be followed when installing and maintaining valves.

2.6 Installation

- Prior to installation a check of the body markings must be made to ensure that the correct valve is being installed. Carefully check whether the valve mark is consistent with the operating requirements.
- Valves are precision manufactured items and as such, should not be subjected to misuse such as careless handling, allowing dirt to enter the valve through the end ports, lack of cleaning of both valve and system before operation and excessive force during assembly.
- Unpack the valve and check the bores are clean and free from foreign material. Valves must be provided with adequate support. Adjoining pipe work must be supported to avoid the imposition of pipeline strains on the valve body, which would impair its performance. Allow space for the removal of the centre body in the event that maintenance is required.
- Valves should not be lifted without taking into consideration the weight for health and safety reasons.
- Wash dirt, burrs and welding slag out of pipe before installation, otherwise seat and ball surface will be damaged. Remove thread or flange face protector
- After installation, the valve must be in the fully open position during pressure test of the system or pipeline.

2.6.1 Installation - threaded connections

- Sealing material such as PTFE tape should be used between pipe threads during installation, but the use of sealing medium should be applied carefully to avoid damaging the valve body;
- Screwed end valves must be operated only on the hexagon/octagon position nearest to the valve end. Do not tighten the opposite end cap or other valve parts. Tightening using the valve body, handle or opposite end cap will seriously damage the valve. At the same time, turn the wrench on the nearby end cover and pipe to avoid torque applied to the valve body during the screw connection as this can damage the seal of the valve itself.
- Evenly screw the pipe and valve together during installation to ensure that the valve and pipe are in a straight line to avoid the pipe stress.

2.6.2 Welded connections

- For the installation of butt welded and socket welded valves, firstly ensure that the welding procedures and materials used are suitable, spot weld the valve to the pipe at four points of the two end caps.

- Keep the valve in the open position (when the handle is parallel to the axis of the valve and pipe, the valve is in the open position), unscrew all body bolts and remove the valve body.
- Turn handle to valve half open position. Remove seat and body gaskets. Turn the handle to the closed position of the valve and remove the ball. Place all disassembled parts in a clean and secure place. Reposition the valve body and all bolts and tighten them gently. This operation is critical so that the body and end cap remain completely parallel to prevent any leakage at the body joint after welding.
- Weld the two end caps to the pipe. After cooling, remove body, clean end cover sealing surface and reassemble ball and seat and cross tighten the bolts to the required torque. See tables below for correct torque according to valve size.

Torque requirements.

3-PC Ball Valve Bolts Tighten Torque [N.m]				
Bolt Size	M6	M8	M10	M12
Valve Size	1/4 - 3/8	1/2 - 1	1 1/4 - 1 1/2	2
Tighten Torque	6±1	12±1	25±1	40±3

Note: The tightening process should be carried out evenly in a crisscross pattern.

Section 3 - Operation

3.1 Testing

Each product is tested in accordance with the table below to criteria in EN 12266 and API 598, acceptance requires no detectable leakage.

Tests	Norm	PN63
Hydrostatic body		95 bar
Hydraulic seat		69 bar

3.2 Certification

Not applicable

3.3 Caution:

Service applications with extremes of pressure may cause the ball to become tight in the valve. The valve may become stiff to operate in these circumstances.

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

3.4 Operation / Commissioning

To avoid buildup of scale, the A86 series ball valve should be operated at least twice every year

In use, the ball should be fully opened or closed, and the ball should not be partially opened for flow regulation.

When the manual valve is opened or closed, the handle should be used to open and close, and the auxiliary lever or other tools should not be used.

In systems where corrosion could be a potential hazard, wall thickness checks on the body and bonnet should be made. This requires either the removal of the valve from the pipeline or the removal of the centre body with system at zero pressure. If the wall thickness of the valve has reduced by 25% then the valve should be replaced.

3.5 Maintenance

To avoid buildup of scale, the A86 series ball valve should be operated at least twice every year.

The valve should be checked regularly to check whether the sealing surface is worn and gasket packing. In case of damage and failure, it should be repaired or replaced in time

The valve should be at zero pressure and ambient temperature prior to any maintenance. Maintenance Engineers and Operators are reminded to use the correct fitting tools and equipment.

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

The risk assessment must consider the possibility of the limits of use being exceeded whereby a potential hazard could result.

A maintenance program should therefore include checks on the development of unforeseen conditions, which could lead to failure.

In systems where corrosion could be a potential hazard, wall thickness checks on the body and bonnet should be made. This requires either the removal of the valve from the pipeline or the removal of the bonnet with system at zero pressure. If the wall thickness of the valve has reduced by 25% then the valve should be replaced.

3.6 Product Life Span

When a valve is selected for its service conditions it should give years of trouble-free service provided it is installed correctly and receives adequate preventative maintenance. By not considering the compatibility of the system design and the pressure and temperature requirements the life expectancy of the valves can be adversely affected, and valve failure may occur. The nature of the fluid being carried through the valve could also affect the valve performance as this could lead to premature valve failure. There may also be interactions between metals in the pipe system and the valve which need to be considered. Appropriate flushing and cleaning of the pipe work installation should take place when commissioning the system as this would help extend the valve life.

3.7 Additives

It is strongly recommended to consult a commissioning engineer in conjunction with the manufacturer prior to their use.

3.8 Warranty

Products are subject to a 2-year guarantee that is between Aalberts integrated piping systems and the final purchaser of the product.

The guarantee is subject to proof of purchase being supplied.

This guarantee does not affect any statutory rights the consumer may have in law.

The guarantee covers manufacturing or material defects and does not cover parts subject to normal wear and tear.

This product range has been designed for the use in commercial applications and therefore the guarantee is subject to the product being selected for their intended service conditions.

The guarantee is not applicable where the product is fitted contrary to the conditions in the fitting instructions.

This is reinforced where valves are covered by the European Pressure Equipment Directive (2014/68/EU(PED)) where Installation, Operating and Maintenance Instructions are supplied with each product and/or carton.

Provided it is installed correctly and receives adequate preventative maintenance it should give years of trouble -free service. Abusive behaviour

and accidental damage to the product are not covered by this guarantee.

The extent of this liability is limited to the cost of the replacement of the defective item and not to fitting or consequential damages.

Section 4 - Storage

The valve should be stored in a dry and ventilated room, and both ends of the valve channel should be blocked to prevent dust or impurities from entering the body.

Valves, stored for a long time should be checked regularly to remove dirt. Special attention should be paid to the cleaning of the sealing surface to prevent the damage of the sealing surface.

When Pegler valves are fitted to pressure equipment or assemblies, suitable protective devices may be required.

Section 5 - Additional information

Additional information can be found on our website, in the download-tab



Section 6 - Contact details

For further details please contact our technical department: **+44 (0)1302 560 560**

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