

PRV INFORMATION AND CERTIFICATE

IMPORTANT INFORMATION MUST BE READ BEFORE GOODS ARE UNPACKED

AKO ADVISE TO INFLATE THE PRV ONCE UNPACKED TO CHECK FOR LEAKAGES AND DAMAGE, ANY LEAKAGES MUST BE REPORTED TO AKO IMMEDIATELY WITHOUT CARRYING ANY WORK OUT ON THE PRV ON SITE.

General Handling, Unpacking & Fault Reporting

All valves are tested at AKO UK to ensure they are completely leak tight. All valves are packed to ensure damage will not occur in transit. If any box looks at all damaged on arrival this must be reported to AKO UK **BEFORE GOODS ARE UNPACKED**. This will allow us to take up any perceived problems with our courier.

THE PRESSURE RELIEF VALVE MUST NOT BE CARRIED BY THE SWITCH, THE MANIFOLD BLOCK, OR THE GAUGE, it should be carried by the main body of the valve

ANY DAMAGE CAUSED BY MISHANDLING OF THE VALVE WHEN UNPACKING OR DURING INSTALLATION WILL NOT BE CONSIDERED FOR REPLACEMENT, UNDER ANY WARRANTY.

Having unpacked the goods if anything is **DAMAGED OR MISSING, THIS MUST BE REPORTED TO AKO UK IMMEDIATELY.**

ANY DAMAGED OR MISSING GOODS NOT REPORTED WITHIN 5 WORKING DAYS WILL NOT BE CONSIDERED FOR REPLACEMENT, UNDER ANY WARRANTY.

General Health and Safety

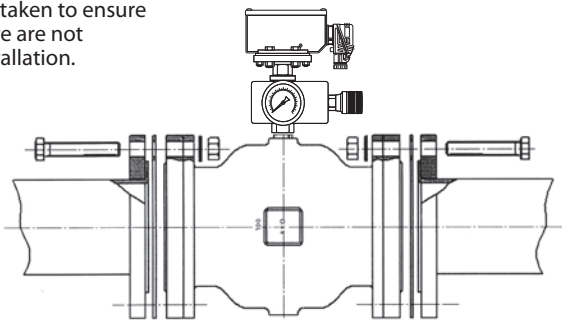
All installations of AKO Valves should be carried out by a fully qualified, competent member of staff.

Do not inflate the AKO Valve to higher than the recommended pressures. Ensure that the AKO Valve is de-pressurised during installation and all maintenance works.

General Health and Safety Policy should be followed.

Installation Instructions (Into the line)

Care must always be taken to ensure parts of the AKO Valve are not damaged during installation.



Faulty installation or incorrect commissioning can lead to damage in the plant or equipment and to personal injuries. AKO does not give any guarantee for damage resulting from improper handling or due to the use of third party parts. AKO will also not offer warranty on any Valves where any of the PRV system has been removed or adjusted. Our V/VF/VM/VMF series valves are designed as defined by the Pressure Devices Directive (EC Directive RL97/23/EC) for Group II fluids. AKO does not accept any responsibility for the resistance of the valve materials, if the customer's operating data are not known. If a pinch valve is intended for use in potentially explosive Ex Zones 1 or 2, an AKO pinch valve should be used with an ATEX conformity (configuration upon request) also observing the additional operating instructions.

A functional test must always be carried out before installing the pinch valve. AKO UK are not responsible for any goods that are damaged during installation.

The AKO pinch valve is normally supplied with two standard adaptations screwed or flanged:

Internal thread connection G3/8" to G4" (See Datasheet PRV-01)

The threaded connection seal must be achieved with a suitable sealant. This should be based on standard engineering practice. To prevent twisting of the sleeves if a socket valve is used, secure the thread taper with a suitable open-ended spanner during the installation.

Flange connection DN40 - DN250 PN10/16 (See Datasheet PRV-01)
(ANSI 150lbs are available on request)

To seal the flange connections we recommend suitable, standard flange seals. Valves with a flange collar do not require an additional flange seal. Ensure that the flange surfaces are clean and undamaged.

During the installation it may be necessary to retighten the flange screws several times to secure the sealing effect.

Special connections (triclamp, IDF, RJT are available on request).

Commissioning Instructions

Connect the Pressure Switch as per instructions (see over).

Using an AKO foot pump the valve should be inflated to the required set pressure using the reading on the gauge. The valve should be set closed to the pressure it needs to relieve at. When inflated to the required pressure disconnect the foot pump. Do not inflate the AKO valve to higher than the recommended pressures.

Test valve for functionality within the system it is fitted on.

How the Pressure Relief Valve Works

The AKO pressure relief valve is fitted onto a bypass line of a pump. The valve is then charged with air and set closed at the pressure it is required to relieve at. If the associated pump becomes clogged or blocked, causing the line pressure to exceed the pressure at which the valve is set closed at, it will open allowing the product to bypass the pump equalising the pressure until the blockage is cleared. When the blockage is cleared the valve will reset itself in its 'closed' position to the original set pressure.

Pressure Switch

The optional pressure switch has two switches inside a single IP65 housing. It is set so it will send a rising signal when the valve is relieving or a falling signal if there is a problem with the valve.

Rising and Falling Pressure Signals

- Local starter (stops pump until the problem is rectified)
- PLC Control (eg. to stop other valves on the system, until the problem is rectified)
- Alarm - to alert operator/ maintenance (eg. telephone)

Technical Operating Data

Maximum relief pressure:	10-150mm Valves = 5 bars
	200mm Valves = 3 bars
	250mm Valves = 2 bars

We do not recommend the use of Nitrogen to inflate the valve.

For further technical information please contact the AKO Technical Department.

General Routine Maintenance

AKO recommend that the valves are de-pressurised every 8 weeks for a period of 15 minutes. This will ensure maximum life from the sleeve. During the same period the valve should be visually checked to ensure all parts are working. AKO advise checking the PRV every 4 weeks to make sure it is holding pressure. It is possible the PRV can lose up to 0.5 BAR within a 4 week period, if this occurs use the foot pump to inflate the PRV to the desired pressure.

Sleeve Maintenance

AKO pressure relief valves do not require any special maintenance. Only the sleeve is subject to wear and can quickly be replaced on site or at AKO. AKO UK offers a complete refurbishing service with the quickest possible turnaround, this is there commended option for refurbishment as full tests will be carried out by AKO when the job is completed.

Valves must be fully cleaned before being sent back to AKO UK for maintenance!

Please contact the AKO UK Ltd sales team for information.

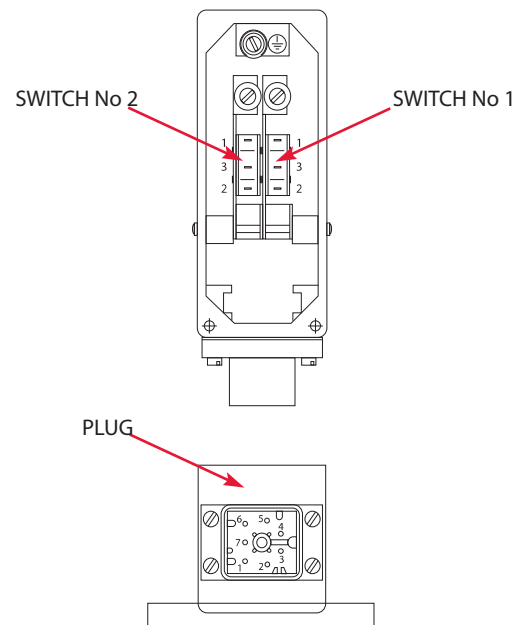
Pressure relief valve maintenance instructions (PRV Maint & Parts) are available on request, please contact the AKO technical department.

Maintenance should always be carried out by a competent member of staff. Please ensure the correct protective clothing is worn at all times when handling the AKO Valve. Valves should be cleaned before handling.

Sleeve Selection and Storage

AKO can only be responsible for sleeve selection when full information and chemical codes have been given to the AKO technical department. AKO are not responsible for sleeves wrongly specified by the customer. Please note stored sleeves must have adequate protection from UV rays. Sleeves should also never be stored on a metal surface. AKO recommend a cardboard or wooden box.

Pressure Switch–Safety Precautions and Wiring



WIRING CONNECTIONS

TERMINALS

PLUG	SW. 1	SW. 2	CABLE
1	1 (COM)		BROWN - 90mm (K44D)
2	2 (N/C.)		BLUE - 70mm (K44E)
3	3 (N/O.)		YELLOW - 80mm (K44H)
4	EARTH		YEL / GRN - 150mm (K44B)
5		1 (COM)	RED - 90mm (K44A)
6		2 (N/C.)	BLACK - 70mm (K44C)
7		3 (N/O.)	WHITE - 80mm (K44W)

- All installation, adjustments and maintenance should be carried out by a competent electrician with the pressure switch electrically isolated.
- Do not exceed the electrical rating given on the label.
- Before fitting the pressure switch to a pressure source, ensure that the maximum pressure on the source is less than the maximum pressure on the pressure switch.
- Before removing the pressure switch from the pipe work ensure the system is adequately drained.
- For hazardous areas flame proof pressure switches or intrinsically safe electrical circuits must be used.
- When tightening the switch to the manifold block use the correct spanners on the base of the hexagon.
- Do not use the switch body housing to tighten the switch to the manifold block.
- Ambient and process temperatures acting on the pressure switch should be within -10DegC and +85DegC. The fluid in the pressure chamber should not be allowed to crystallise as this can lead to rupturing of the sensing element.
- Line pressure must not exceed the line pressure stated on the switch label.
- Pressure switches are preset as requested by the customer as indicated on the test certificate and pressure switch labels. If pressures need to be changed this can be done on site or by sending the valves back to AKO UK. This cost must be met by the customer.
- If there are any questions or problems concerning the application of the pressure switch, or for a full set of instructions from the manufacturer, please contact the AKO Technical Department.

Additional Information/Terms and Conditions

All relief pressures quoted are based on sleeves in 'new' condition. After one year the pressure needed to open a valve may have increased. This needs to be determined by the customer through on site testing. Please note the AKO valve is a Pressure Relief Valve and NOT a Safety Valve. AKO will not be held responsible for any damage that is caused to any pump or system that it is fitted to. AKO will also not be held responsible for any liquidated damages caused by delayed/late delivery. AKO will not be responsible for any injury caused due to misuse of our products. Pressure relief information is based on experience of working installations in the water industry since 1992. Further tests for all valve sizes showing relief pressures for sleeves in new condition are available on request. For a complete set to four general terms and conditions please contact AKO UK Ltd.

AKO UK Limited Pressure Relief Certificate

CUSTOMER:

ORDER NUMBER:

AKO INVOICE NUMBER:

CERTIFICATE OF CONFORMITY

AKO UK Ltd confirm that the goods supplied against this order conform to the above order and have successfully passed our quality assurance system. All products supplied comply with the PED and have the CE marking. For ATEX approved valves a separate certificate is required.

The following valves have also been tested at 5 bars to ensure they are leaktight.

The maximum recommended set pressure to close the pressure relief valve for sizes up to and including 150mm is 5bars. Maximum recommended set pressure for 200mm valves is 3bars.

Do not use nitrogen to inflate the pinch valve.

The valves must be used in conjunction with the AKO Pressure Relief Information & Datasheets. Damage caused by mishandling of the valves or non-approved modifications to the system will make the warranty null and void.

QTY	PART NUMBER	DESCRIPTION	SIZE	AKO VALVE NUMBER

ENDS

ALUMINIUM/MILD STEEL BUSHINGS
CAST IRON
ALUMINIUM
ALUMINIUM WITH SS 316 BUSHINGS
STAINLESS STEEL 316
PVC
POM

BODY MATERIAL

ALUMINIUM
PVC
STAINLESS S 316

SLEEVE

NATURAL RUBBER
NITRILE

MANIFOLD BLOCK PRESSURE SWITCH

MILD STEEL ZINC COATED

PRESSURE SWITCH

IP65 SWITCH

GAUGE

STAINLESS STEEL GLYCERINE FILLED

RIISING PRESSURE

FALLING PRESSURE

HIRSHMAN PLUG

QTY

SIGNED:

DATE: