



COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

LEVEL SENSED DRAINS

KAPTIV-MD
KAPTIV-CS
KAPTIV-CS-HP 50
KAPTIV-CS-HP 500

NUFORS-CR

MAGY-UL



 DRAIN EFFICIENCY

RELIABLE

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Version 2016

JORC Industrial is a global condensate management specialist of Dutch origin offering condensate drains, oil water separators and air saving equipment to distributors, dealers and OEM's in more than 100 countries. JORC Industrial is dedicated to setting the standard in helping its customers manage their condensate management requirements.

Information provided herewith is believed to be accurate and reliable. However, no responsibility is assumed for its use or for any infringement of patents or rights of others, which may result from its use. In addition, JORC reserves the right to revise information without notice and without incurring any obligation.

Chapter 1

COMPRESSED AIR CONDENSATE

During the process of compressing air, atmospheric air along with water vapour and atmospheric contaminants (hydrocarbon, dust particles or chemical vapours), are drawn into the compressor intake.

Additionally, the compression chambers of most compressors require oil for lubrication, sealing and cooling. Once compressed, the air flows into an after cooler to remove the heat of compression. As the air cools in the after cooler, water and hydrocarbon vapours will condense.

Additional condensation takes place as the air is further cooled in the piping and air dryers. Environmental regulations strictly prohibit the discharge of oily wastes and chemicals, including the condensate drained from a compressed air system. Because of these requirements, municipalities regulate the discharge of compressor condensate to surface water, wastewater treatment facilities, and sanitary sewers. Please refer to our range of oil/water separators: SEPREMIUM and PURO-CT.

WHY INSTALL A CONDENSATE DRAIN?

Condensate drains are possibly the least glamorous and most ignored component of a compressed air system but nevertheless, a most important part. No matter how much money you spend on that fancy new compressed air system, not spending a little effort with your drain choice could cause you no end of headaches and increased operating costs for years to come.

Contaminants can enter a system at the compressor intake or be introduced into the airstream by the system itself. Lubricant, metal particles, rust, and pipe scale are all separated and filtered out, but it's the drains that have to operate properly for the filters and separators to be successful in completing their task.

Drains can be found on an intercooler, after-cooler, filter, dryer, receiver, drip leg, or at point of use. Drains come in many types and variants for all these applications and they fall into these basic categories. Level sensed – timer operated – float – none (yes that is a drain choice).

How do your drains improve system efficiency? Besides the obvious savings of compressed air with a zero air loss drain choice, there are other less obvious ways drains can save energy or cost you energy if not properly maintained. They are key components in the quest for system efficiency and reliability.

On multiple stage compressors moisture carry over from the intercooler may allow liquid into the next stage causing premature wear and possibly a catastrophic failure.

Installing a reliable drain is an absolute must!



WILL ANY CONDENSATE DRAIN DO?

Compressed air condensate contains particles that contaminate compressed air systems and potentially cause valve blockages. It is important to choose a drain that offers a large enough orifice. Avoid drains that have diaphragm type valve constructions, the diaphragm has a very small hole in it, that once blocked, the complete drain fails to operate.

Drains are also installed outdoors. IP65 (Nema 4) insulation protection is therefore a minimum requirement. Avoid drains that do not comply to this minimum specification.

For long life expectations select drains that have FPM seals. FPM is the best suited for the aggressive make up of compressor condensate.

Servicing a drain must be straight forward and quick. Avoid drains that are not service friendly as this will cost more time during the maintenance interval.

JORC'S DRAIN CONSTRUCTION

It starts with the design! JORC drains are robust and designed for long life heavy duty applications.

The JORC direct acting valve construction has proven to be the most reliable option for condensate draining applications. We apply stainless steel moving parts that offer a long life guarantee and are less sensitive to larger particles found in condensate.

The drain housings are constructed from robust coated aluminium and not from plastic. This ensures that no damage is occurring during transport, installation, functional operation and the subsequent maintenance moments throughout the drain's working life.

High grade coil insulation protect the copper wire from overheating and top brand pcb components are applied on the electronic modules.

Servicing JORC drains is quick and simple. Low cost service kit packages are available for all JORC drains.

In all JORC drains there are FPM seals that have been specifically selected based on their high and low temperature operation characteristics. In addition, FPM is the best choice for compressed air condensate as it is often quite aggressive.

JORC drains can be applied in both oil lubricated and oil free compressor applications.

JORC products carry globally recognised approvals.



Chapter 3

KAPTIV[®]-MD

Electronically operated level sensed drain

The KAPTIV-MD (Mini Drain) removes all types of condensate from compressed air systems up to 10 m³/min. without the loss of compressed air.

PRODUCT FEATURES

The KAPTIV-MD incorporates the reliable JORC direct acting valve assembly with FPM seals, offering a pressure range of 0 to 16 bar (up to 230 PSI).

The solid and robust aluminium housing design of the KAPTIV-CS has also been incorporated in to this model.

With an inlet connection height of only 74 mm this is an incredibly compact solution with unrivaled installation versatility and reliability. The weight of the KAPTIV-MD is 0.5 kgs.!

The maximum compressor capacity of this drain is 10m³/min (350 CFM) and typical draining applications include fridge dryers and filters - mainly due to its incredible compact size.



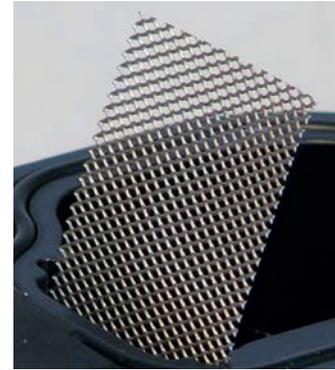
COMMERCIAL BENEFITS

- Extremely compact and lightweight unit.
- True zero air-loss solution.
- One model covers all compressor capacities up to 10 m³/min.
- No sizing chart required, offering stocking advantages.
- The serviceable valve offers maintenance opportunities.
- Personal branding opportunities.

TECHNICAL ADVANTAGES

- Zero air-loss during the condensate discharge.
- Visual alarm feature.
- Easy to install due to its low inlet height.
- External valve construction allows for fast and easy maintenance.
- Direct acting valve with FPM (Viton) seal.
- Robust corrosion resistant aluminium housing.
- A large integrated mesh strainer

DIMENSIONS MM



Integrated mesh filter

SPECIFICATIONS

Maximum compressor capacity	10 m ³ /min.
Min./max. system pressure	0 bar / 16 bar
Valve type	2/2 way, direct acting
Valve orifice	2.0 mm
Valve seals	FPM
Inlet connection	1/2" (BSP or NPT)
Outlet connection	1/4" (BSP or NPT)
Inlet height	7.4 cm
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Supply voltage options	230VAC / 115VAC 24VAC / 24VDC
Connector	DIN 43650-B
Serviceable valve	Yes
TEST feature	Yes
Environmental protection	IP65 (NEMA4)
Integrated mesh strainer	Yes
Alarm	Yes, LED indication



JORC direct acting valve construction offering you condensate discharge reliability.

For external alarm options please see the KAPTIV-CS range.

Quick disassembling to service the drain – standard tools required



Chapter 4

KAPTIV[®]-CS

Electronically operated level sensed drain with alarm function

The KAPTIV-CS (Compact Solution) removes all types of condensate from compressed air systems up to 100 m³/min. without the loss of compressed air.

PRODUCT FEATURES

The KAPTIV-CS is cost effective and offers a rapid pay-back period due to a competitive pricing level, low stocking cost, zero air-loss and energy saving features.

The compact robust industrial housing, 2/2 way direct acting valve with a large orifice, alarm NC or NO and the integrated mesh strainer make the KAPTIV-CS a highly reliable draining solution.

The alarm function can be connected to the JORC WARNER[®] ensuring you never miss maintenance opportunities.



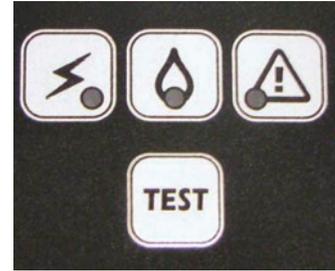
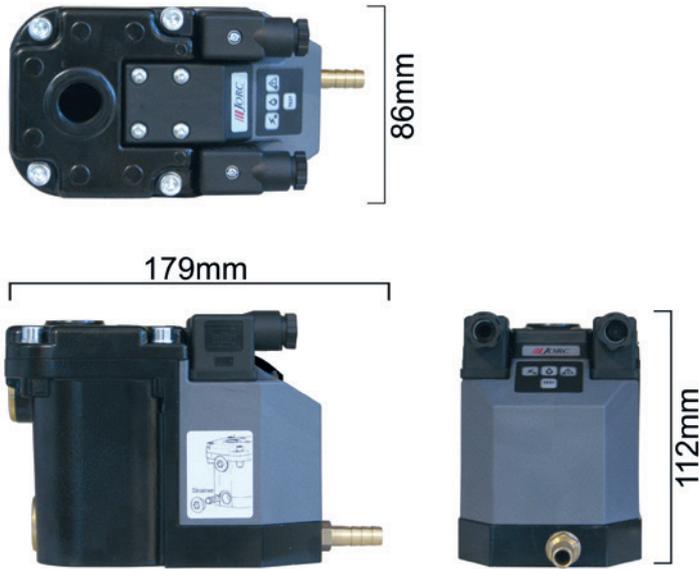
COMMERCIAL BENEFITS

- Competitive compact level sensed draining solution.
- Capacitive level sensing technology saves air, energy and money.
- Rapid pay-back period due to competitive pricing level and reduced stocking costs.
- 1 model covers up to 100 m³/min. compressor capacity.
- No sizing charts required.
- The KAPTIV-CS can be connected to the JORC WARNER[®] or to any other alarm device.
- A stainless steel version is also available.
- Consult factory for D-LUX models.

TECHNICAL ADVANTAGES

- Alarm function (NO or NC) standard incorporated.
- Successful draining of all types of condensate due to large orifice.
- Easy installation and visual display of operating status.
- Integrated strainer.
- Direct acting valve assembly, ensuring reliable discharge operation.
- Robust industrial housing.
- Servicing the KAPTIV-CS is quick and easy.

DIMENSIONS MM



Touch button display feature

SPECIFICATIONS

Maximum compressor capacity	100 m ³ /min.
Pressure range	0 bar / 16 bar
Valve type	2/2 way, direct acting
Valve orifice	4mm
Valve seals	FPM
Inlet connections	1/2" (BSP or NPT) (3 inlet options)
Inlet height	11 cm (top) and 7.5 & 1.5 cm (side)
Outlet connection	1/4" (BSP or NPT)
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Supply voltage options	230VAC / 115VAC / 24VAC / 24VDC
Power and alarm connectors	DIN 43650-B
Serviceable valve	Yes
TEST feature	Yes
Environmental protection	IP65 (NEMA4)
Integrated mesh strainer	Yes
Alarm contact options	Alarm Normally Closed (NC) & Alarm Normally Open (NO)
Housing material	Corrosion resistant aluminium



Integrated mesh strainer removes large contaminants



Three inlets offer installation flexibility



The KAPTIV-CS can be connected to the JORC WARNER® (consult factory for more information).

Chapter 5

KAPTIV[®]-CS-HP

High pressure electronic level sensed condensate drain

The KAPTIV-CS-HP (up to 50 bar) removes all types of condensate from compressed air systems up to 100 m³/min. without the loss of compressed air.

PRODUCT FEATURES

The KAPTIV-CS-HP is a compact electronically operated level sensed condensate drain which offers zero air-loss during the condensate discharge cycle for applications up to 50 bar.

The KAPTIV-CS-HP is cost effective and offers a rapid pay-back period due to a competitive pricing level, low stocking cost, zero air-loss and energy saving aspects.

The KAPTIV-CS-HP can be installed in all compressed air system components up to 100 m³/min regardless size and climate zone – only 1 model needed!

The robust industrial housing, the alarm feature and the 2/2 way direct acting valve assembly make the KAPTIV-CS-HP a Reliable solution for all compressed air system applications.

The KAPTIV-CS-HP offers an integrated mesh strainer (to prevent large particles from entering the valve orifice), is easy to disassemble and is service friendly.



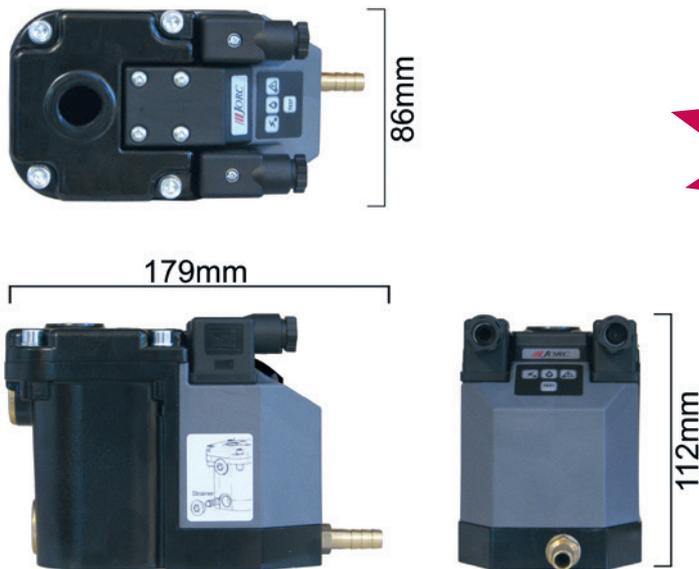
COMMERCIAL BENEFITS

- Competitive compact zero air-loss draining solution.
- Capacitive level sensing technology saves air, energy and money.
- Rapid pay-back period due to competitive pricing level and reduced stocking costs.
- 1 model covers up to 100 m³/min. compressor capacity.
- No sizing charts required.
- The KAPTIV-CS-HP can be connected to the JORC WARNER[®] or to any other alarm device.
- A stainless steel version is also available.
- Consult factory for D-LUX models.

TECHNICAL ADVANTAGES

- Alarm function (NO or NC) incorporated as a standard.
- Successful draining of condensate due to large orifice (also heavily emulsified condensate).
- Easy installation and Visual display of operating status.
- Integrated strainer.
- Direct acting valve assembly, ensuring reliable discharge operation.
- Robust aluminium housing.

DIMENSIONS MM



High pressure up to 50 bar

SPECIFICATIONS

Maximum compressor capacity	100 m ³ /min.
Min./max. system pressure	0 bar / 50 bar
Valve type	2/2 way, direct acting
Valve orifice	1.8 mm
Valve seals	FPM
Inlet connections	1/2" (BSP or NPT) (3 inlet options)
Inlet height	11 cm (top) and 1.5 & 7.5 cm (side)
Outlet connection	1/4" (BSP or NPT)
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Supply voltage options	230VAC / 115VAC / 24VAC / 24VDC
Connectors	DIN 43650-B
Serviceable valve	Yes
TEST feature	Yes
Environmental protection	IP65 (NEMA4)
Integrated mesh strainer	Yes
Alarm contact options	Alarm Normally Closed (NC) / Alarm Normally Open (NO)
Housing material	Corrosion resistant aluminium



Multiple (3) inlet options



Integrated mesh strainer to protect the valve.



Three stage compressor applications can be fitted with the all-in-one solution, covering the various pressure stages – mounted on one bracket.

Chapter 6

KAPTIV[®]-CS-HP-500

High pressure electronic level sensed condensate drain

The KAPTIV-CS-HP (up to 500 bar) removes all types of condensate from compressed air systems up to 100 m³/min. without the loss of compressed air.

PRODUCT FEATURES

The KAPTIV-CS-HP-500 is a compact electronically operated level sensed condensate drain which offers zero air-loss during the condensate discharge cycle for applications up to 500 bar.

The KAPTIV-CS-HP can be installed in all compressed air system components up to 100m³/min regardless size and climate zone – only 1 model needed!

The robust industrial housing, the alarm feature and the 2/2 way direct acting valve assembly make the KAPTIV-CS-HPa reliable solution for all compressed air system applications.

This model is supplied as standard with a bracket.



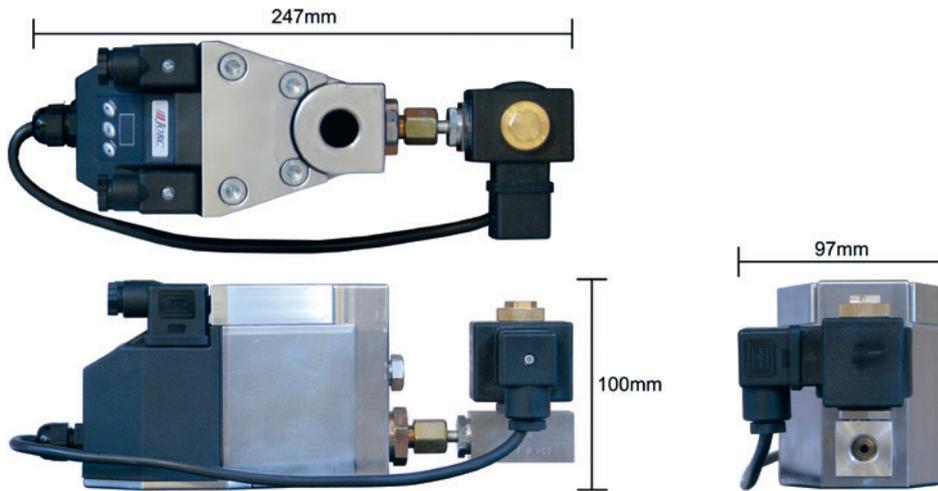
COMMERCIAL BENEFITS

- Competitive compact zero air-loss draining solution.
- Capacitive level sensing technology saves air, energy and money.
- Quick and easy access to the valve components during maintenance activity.
- 1 model covers up to 100 m³/min. compressor capacity.
- No sizing charts required.
- The KAPTIV-CS-HP can be connected to the JORC WARNER[®] or to any other alarm device.

TECHNICAL ADVANTAGES

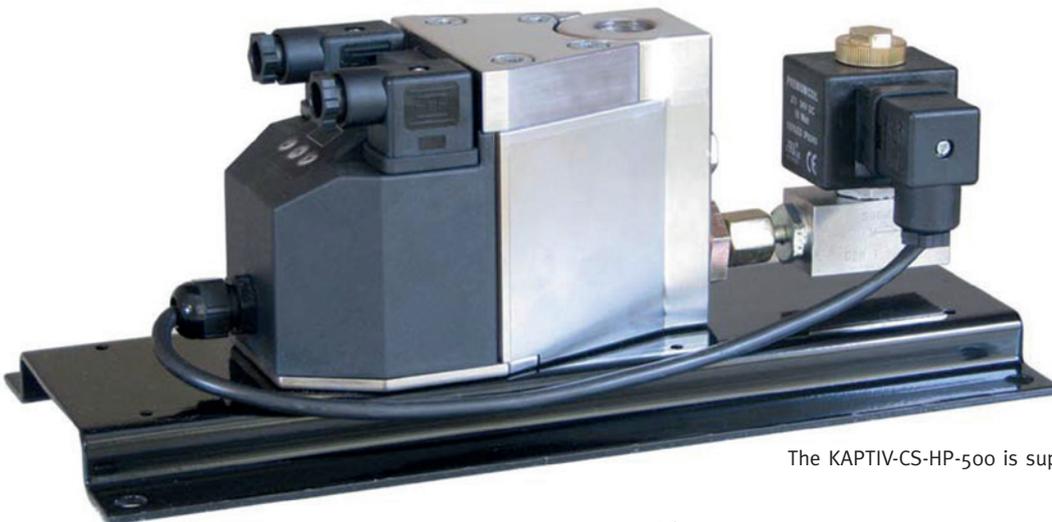
- Alarm function (NO or NC) incorporated as a standard.
- Direct acting valve assembly, ensuring reliable discharge operation.
- Specially selected aluminium applied for the housing construction.
- The D-LUX electronics module is its standard operating system.
- A direct acting valve assembly offers reliability and is service friendly.

DIMENSIONS MM



SPECIFICATIONS

Maximum compressor capacity	100 m ³ /min.
Min./max. system pressure	0 bar / 500 bar
Valve type	2/2 way, direct acting
Valve orifice	1.0 mm
Valve seals	PCTFE
Inlet connection	1/2" (BSP or NPT)
Outlet connection	1/4" (BSP or NPT)
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Supply voltage options 2	30VAC / 115VAC / 24VAC / 24VDC
Connectors	DIN 43650-B
Serviceable valve	Yes
TEST feature	Yes
Environmental protection	IP65 (NEMA4)
Alarm contact options	Alarm Normally Closed (NC) / Alarm Normally Open (NO)
Housing material	Corrosion resistant aluminium



The KAPTIV-CS-HP-500 is supplied with its bracket.

Chapter 7

NUFORS[®]-CR

Level sensed condensate drain

The NUFORS-CR removes all types of condensate from compressed air systems up to 100 m³/min. without the requirement of electricity.

PRODUCT FEATURES

The NUFORS-CR removes condensate from compressed air systems **without using electricity**.

The discharge process is automatic and is based on a newly developed **3/2 way** level controlled valve principle that operates a piston type **direct acting** valve.

The NUFORS-CR is ideally suited in applications where power is not available, too expensive or not reliable.

The **integrated stainless steel strainer** protects the valve, optimising the discharge performance.

The condensate level can be viewed through the optionally available **sight port** that offers a visual monitoring.



COMMERCIAL BENEFITS

- Competitive 'true green' solution.
- No operating costs.
- No electricity required – install and go!
- Condensate viewing sight port optionally available.
- Operating pressure up to 16 bar.
- Reduced stocking costs - 1 model covers 100 m³/min.
- Suitable for any type of compressed air system.
- No complicated sizing charts required.

TECHNICAL ADVANTAGES

- Compact and unique design.
- Successful draining of condensate due to large orifice (also heavily emulsified condensate).
- Incredibly easy and quick to install and to service.
- No complicated external control air balance line required.
- Integrated strainer.
- Top- and side inlets available.
- TEST feature.
- Robust aluminium housing.
- Direct acting valve construction for a reliable condensate discharge operation.

DIMENSIONS MM



SPECIFICATIONS

Maximum compressor capacity	100 m ³ /min.
Min./max. system pressure	3 bar / 16 bar
Valve type	Direct acting
Valve orifice	6.0 mm
Valve seals	FPM
Inlet/outlet connection	1/2" (BSP or NPT) (3 inlet options)
Inlet height	112 mm (top) 97 mm (side top) 15 mm (side bottom)
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Serviceable valve	Yes
TEST feature	Yes
Condensate sight port	Yes
Integrated mesh strainer	Yes
Housing material	Corrosion resistant aluminium
Serviceable valve	Yes



Integrated strainer to protect the valve.



Three inlet options for easy installation.



TEST button feature for routine testing.

Chapter 8

MAGY[®]-UL

Magnetically operated level sensed filter drain

The MAGY-UL is a magnetically operated level sensed drain that discharges condensate from all types of compressed air filters by using a unique technology based on magnetic forces.

PRODUCT FEATURES

The MAGY-UL uses specially selected magnets that operate the 2/2 way direct acting valve assembly.

The discharge process of the MAGY-UL is automatic and there is no loss of compressed air during the condensate discharge cycle.

The specially selected magnets ensure a high operation consistency.

The MAGY-UL is easy to install and to service and can also remain hooked up to the filter while maintenance is being carried out (i.e. the drain does not need to be unthreaded from the filter).

JORC recommends to replace all unreliable filter (float) drains and to install the MAGY-UL.



COMMERCIAL BENEFITS

- Competitive true 'green' solution suitable for all compressed air filters.
- Level sensed magnetic technology saves air, energy and money!
- Does not require electricity.
- No operating cost.
- Low stocking cost advantages for you.
- Low purchase threshold for your customers.
- Service kit available.

TECHNICAL ADVANTAGES

- Robust industrial corrosion proof housing.
- Incredibly simple to install and to service.
- No need to unthread the MAGY for routine maintenance.
- Direct acting valve, for a reliable discharge.
- The anti-air-lock adapter is integrated in the design.

DIMENSIONS MM



SPECIFICATIONS

Maximum filter capacity	Unlimited
Maximum drainage capacity	200 litres condensate per hour
Valve type	2/2 way direct acting
Valve orifice	2 mm
Valve seal	FPM
Inlet connection	1/2" (BSP or NPT) (2 inlet options)
Outlet connection	1/8" (BSP or NPT)
Minimum system pressure	0 bar
Maximum system pressure	16 bar
Minimum medium temperature	2° C
Maximum medium temperature	50° C
Housing material	Corrosion resistant aluminium, specially coated
Serviceable valve	Yes



Easy to install and to service



Anti-air-lock adapter (included)



Designed for filter draining

Chapter 9

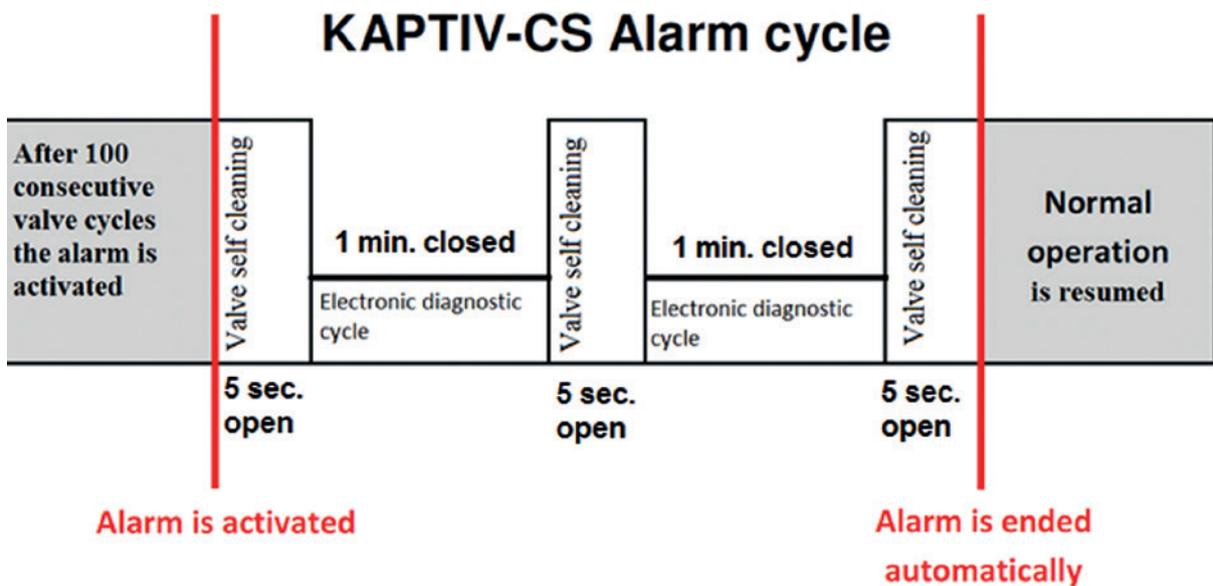
KAPTIV[®]-CS

Electronically operated level sensed drain with alarm function



ALARM FEATURES

KAPTIV-CS Alarm cycle



After 100 continues drain cycles the alarm will be activated.

The smart alarm feature is programmed to try and blow out any debris that might obstruct the valve discharge orifice. In case of a valve orifice blockage the diagram demonstrates how the smart alarm feature will operate and try to resolve a blockage.

After the alarm cycle is completed the drain will automatically resume normal operation. There is no need to manually re-set the drain.

SERVICING THE KAPTIV-CS

Servicing an electronic level sensed drain has never been so easy as with the KAPTIV range of drains.

The KAPTIV-CS consists of three (3) main components that can be easily removed by unscrewing the 4 bolts on the top.

Remove the top part, slide off the (grey) PCB module and you have immediate access to the direct acting valve assembly.

A low cost service kit for the KAPTIV-CS is available.



SERVICING THE KAPTIV-MD



Servicing the KAPTIV-MD could not be easier. The drain comes apart by unscrewing two screws. You lift the coil from the valve stem and you have direct access to the valve assembly.

The JORC valve inner (moving) parts are always produced from high quality grade stainless steel. This offers long life and high resistance to aggressive types of condensate.

SERVICING THE MAGY-UL

Like all JORC drains, once installed, the threaded connection remains in place during service activities. The illustration of the MAGY-UL makes this very clear.

One of the advantages is that you do not need to re-connect the threaded connection, which saves time.

The MAGY-UL service kit is simple to install and the Allan key is part of the kit.



SERVICING THE NUFORS-CR



The NUFORS-CR design allows you to service the valve by unthreading one brass fitting. You have direct access to the valve plunger and orifice.

The NUFORS-CR too is design to remain threaded to your compressed air system whilst maintenance activities are being carried out.

Chapter 10

INSTALLATION

POSITIONING

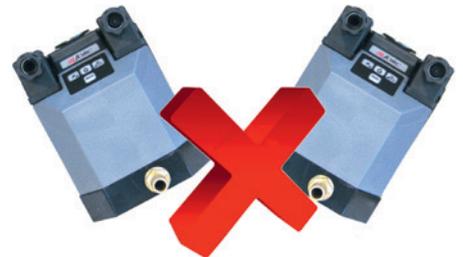
Installation of level sensed drains involves attention to detail.

Level sensed drains must always be installed upright.

Installing a level sensed drain on an angle or upside down will cause malfunction in the way of air locking.

We recommend proper installation of level sensed drains at all times.

The JORC installation manuals offer more detailed information and guidance on level sensed drain installation procedures.



ANTI AIR-LOCK ADAPTER



The anti-air-lock adapter is simple to install and helps prevent air locks from being created.

This adapter is typically applied in combination with the MAGY-UL but can also be connected to other level sensed condensate drains.

The anti-air-lock adapter has a 1/2" inlet and outlet.

LEVEL SENSED DRAIN ACCESSORIES

IN-LINE BALL VALVE STRAINER

The specially designed in-line ball valve strainer allows for easy local shut off of zero air loss drains for maintenance purposes.

Any debris will be caught in the mesh strainer that protects the drain from any blockages and reducing maintenance to a minimum.

It is specially designed to prevent flow restrictions that can cause air-locks.

A specially designed in-line protective strainer ensures debris does not affect the valve orifice or seals and allows the service engineer to safely shut the drain off from the compressed air system.

The typical Y or L type strainers are not designed for applications involving level sensed drains.



HOSE PIPE CONNECTORS

Hose pipe connectors are a robust and simple way to install the discharge pipe.

The diameter matches the connection to the JORC oil/water separators.

Alternatively, we can offer push-in nipples.



HEATER

In very cold temperatures, condensate may run the risk of freezing when it does not continuously flow through the system.

The heater guarantees a continuous condensate flow in all systems where you have trouble keeping the condensate flowing due to extreme cold weathers.

The heater can be installed in most of JORC's level sensed drains.



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