

# JORC

## TIMER CONTROLLED DRAINS

FLUIDRAIN

EZ-1

FLUIDRAIN-COMBO

TEC-44

TEC-11

COMBO-D-LUX

FLUIDRAIN-HP(-S)



## DRAIN FLEXIBILITY

# RELIABLE

COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

# Condensate drains

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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

### INTRODUCTION TO COMPRESSED AIR CONDENSATE

During the process of compressing air, atmospheric air along with water vapor and atmospheric contaminants (hydrocarbon, dust particles or chemical vapors), 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 vapors will condense.

Additional condensation takes place as the air is further cooled in the piping and (refrigerated) 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.

### 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 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 several types and variants for all these applications, some quote fancy descriptions, but they fall into these basic categories: level sensed – timer operated – float - manual – none (yes, that is a drain choice!).

How do your drains improve system efficiency? Draining the moisture from compressed air systems ensures fewer downtimes and less damage due to rust and scale etc. JORC timer drains are designed for long life and require a minimum amount of maintenance. They are key components in the quest for system efficiency and reliability.

When a drain fails to discharge the condensate, the condensate can carry over into the system, causing build-up of contaminants in dryers, receivers and filters.

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?

Because 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. Always apply direct acting valve constructions.

Drains are also installed outdoors. IP65 (NEMA4) insulation protection is therefore a minimum requirement. Avoid drains that do not comply with 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.

### HOW ARE JORC'S DRAINS CONSTRUCTED?

It starts with the design! JORC drains are robust and designed for long life industrial 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 aggressive particles found in condensate.

JORC valves are constructed from robust brass or stainless steel and not from plastic. This ensures that no damage occurs during transportation, 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 our electronic modules.

Servicing JORC drains is quick and easy. Economically sensible 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 seals are selected as this material has proved to be the best choice for compressed air condensate draining applications.

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

JORC products carry globally recognised approvals and each product is 100% tested prior to dispatch.



**JORC is NEN – EN - ISO 9001:2015 – certified**



Chapter 3

# FLUIDRAIN

## Electronic timer controlled condensate drain

The FLUIDRAIN timer controlled condensate drain is a combination of a solenoid valve and an electronic timer designed to automatically remove condensate from compressed air systems.



### PRODUCT FEATURES

The FLUIDRAIN is designed to remove condensate from compressors, compressed air dryers and receivers up to any size, type or manufacturer.

The FLUIDRAIN offers true installation simplicity and it is recognised as the most reliable and best performing condensate drain worldwide. The larger orifice combined with its prominent front labelling feature is complemented by a selection of high pressure ranges and stainless steel valve options. In addition, virtually all voltage options are available in the FLUIDRAIN models.

### COMMERCIAL BENEFITS

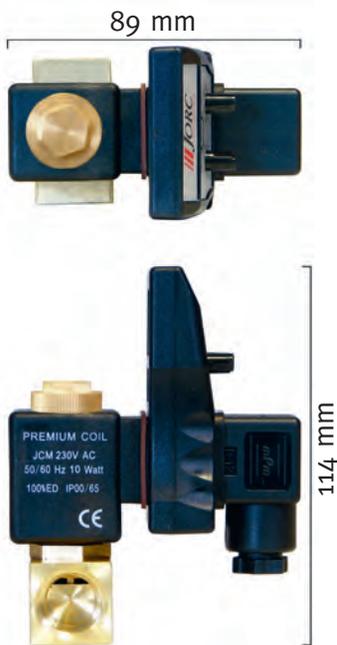
- Any type of compressed air system and up to any compressor capacity
- Also available in High Pressure and stainless steel
- Voltage range 12 – 380 VAC/DC
- Environmentally friendly low Watt version available
- Serviceable valve construction, offering you routine maintenance revenues

### TECHNICAL ADVANTAGES

- Large (4.5 mm) valve orifice
- Does not air-lock during operation
- Quick to service
- Test feature (micro-switch)
- Accurate time cycles
- High quality PCB components, offering you consistent quality



**PRODUCT DIMENSIONS**



Environmentally friendly  
low Watt version available

**PRODUCT SPECIFICATIONS**

Max. compressor capacity	Any size
Min./max. system pressure	0 - 16 bar (higher pressure available, see page 17)
Min./max. medium temperature	1 - 55 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	12 – 380 VAC/DC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Connector type (power)	DIN 43650-A
Inlet/outlet connections	1/8", 1/4", 3/8", 1/2" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, direct acting
Valve orifice	4.5 mm
Valve seals	FPM
Serviceable valve	yes
Valve housing material	Brass (stainless steel available, see page 17)
Test feature	yes
Timer cycle range (ON/OFF)	0.5 – 10 seconds / 0.5 – 45 minutes
Timer PCB	SMD technology, ensuring consistency in production
Timer cycle indication	Bright LED illumination



Highest quality PCB



Service kits  
available



Accessories include  
ball valve strainers

## Chapter 4

**EZ-1****Electronic timer controlled condensate drain**

The EZ-1 controlled condensate drain is a combination of a solenoid valve and an electronic timer designed to automatically remove condensate from compressed air systems.

**PRODUCT FEATURES**

The EZ-1 is designed to remove condensate from compressors, compressed air dryers and receivers up to maximum 16 bar. The EZ-1 offers true installation simplicity at the lowest possible cost. The EZ-1 is a mass produced product available in various valve connection sizes and timer color options.

**COMMERCIAL BENEFITS**

- Competitive pricing levels available
- Any type of compressed air systems and up to 16 bar
- Serviceable valve construction, offering you routine maintenance revenues
- Consult JORC for private labelling options

**TECHNICAL ADVANTAGES**

- Large (4.0 mm) valve orifice
- Various connection sizes available, offering you installation flexibility without the need of adapters
- Does not air-lock during operation
- Quick to service
- Test feature (micro-switch)
- Accurate time cycles
- Premium PCB components selected



**PRODUCT DIMENSIONS**



Bright LED illumination, indicating operating status

**PRODUCT SPECIFICATIONS**

Max. compressor capacity	Any size
Min./max. system pressure	0 - 16 bar (higher pressure available, see page 17)
Min./max. medium temperature	1 - 55 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	24 – 230 VAC/DC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Connector type (power)	DIN 43650-A
Inlet/outlet connections	1/4", 3/8", 1/2" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, direct acting
Valve orifice	4.0 mm
Valve seals	FPM
Serviceable valve	yes
Valve housing material	Brass (stainless steel available, see FLUIDRAIN)
Test feature	yes
Timer cycle range (ON/OFF)	0.5 – 10 seconds / 0.5 – 45 minutes
Timer PCB	SMD technology, ensuring consistency in production
Timer cycle indication	Bright LED illumination



Various valve connection options



Service kits available



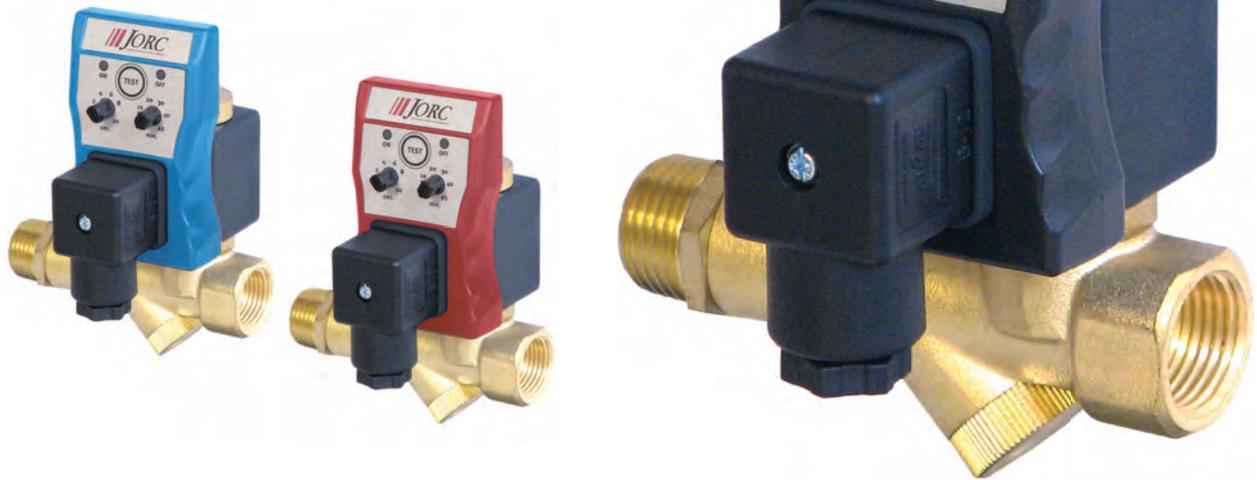
Accessories include ball valve strainers

Chapter 5

# FLUIDRAIN-COMBO

## Electronic timer controlled condensate drain

The FLUIDRAIN-COMBO timer controlled condensate drain combines an adjustable electronic timer controlled drain, a ball valve and a mesh strainer into one compact easy to install package, designed to automatically remove condensate from compressed air systems.



### PRODUCT FEATURES

The FLUIDRAIN-COMBO is designed to remove condensate from compressors, compressed air dryers and receivers up to 16 bar.

The FLUIDRAIN-COMBO saves installation time and protects against large particles found in condensate, thanks to the integrated ball valve and strainer. The unit can be shut off from the compressed air system, enabling easy and safe work to be carried out.

### COMMERCIAL BENEFITS

- Installation time saver thanks to the integrated shut off valve & mesh strainer
- Dual thread inlet (1/2" & 1/4"), offering installation flexibility
- Any type of compressed air system and up to 16 bar
- Serviceable valve construction, offering you routine maintenance revenues
- Consult JORC for private labelling options

### TECHNICAL ADVANTAGES

- Integrated mesh strainer, offering valve and orifice protection from larger particles found in condensate
- Integrated shut off valve, offering easy shut off of the valve for routine maintenance
- Does not air-lock during operation
- Test feature (micro-switch)



**PRODUCT DIMENSIONS**



Exceptionally compact

**PRODUCT SPECIFICATIONS**

Max. compressor capacity	Any size
Min./max. system pressure	0 - 16 bar (higher pressure available, see page 17)
Min./max. medium temperature	1 - 55 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	12 - 380 VAC/DC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Connector type (power)	DIN 43650-A
Inlet/outlet connections	1/4" & 1/2" / 1/2" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, direct acting
Valve orifice	4.0 mm
Valve seals	FPM
Serviceable valve	yes
Valve housing material	Brass
Test feature	yes
Timer cycle range (ON/OFF)	0.5 - 10 seconds / 0.5 - 45 minutes
Timer PCB	SMD technology, ensuring consistency in production
Timer cycle indication	Bright LED illumination



Dual inlet feature  
1/2" and 1/4"



Shut off valve  
incorporated



Integrated mesh strainer

## Chapter 6

# TEC-44

## Motorised ball valve condensate drain

The TEC-44 is a microprocessor operated ball valve, designed to remove condensate from deliquescent dryers, rusty old tanks, vessels and refrigerated dryers.



Large full bore orifice



### PRODUCT FEATURES

The TEC-44 is a powerful timer controlled motorised ball valve, designed to remove condensate from deliquescent dryers, tanks, vessels and refrigerated dryers.

The TEC-44 is designed to remove heavy contaminated condensate up to pressure ratings of 40 bar. This condensate drain cannot be blocked and is applied where all else fails. Draining applications with a high level of contamination (rust, scale etc.) require the TEC-44. The TEC-44 is impossible to block due to its powerful ball valve rotation and large orifice.

### COMMERCIAL BENEFITS

- Suitable for all types of compressed air systems with high contamination levels (rust, scale)
- Impossible to block due to its powerful ball valve rotation
- Compressed air systems up to 40 bar applications

### TECHNICAL ADVANTAGES

- Large (full bore) 12 mm orifice, offering you a drain that cannot block
- Stainless steel rotating ball
- Remote switch feature
- Does not air-lock during operation
- Test feature (micro-switch)
- Micro-processor controlled (high level of time cycle accuracy)



**PRODUCT DIMENSIONS**



Bright visual display of selected program

**PRODUCT SPECIFICATIONS**

Max. compressor capacity	Any size
Min./max. system pressure	0 - 40 bar
Min./max. medium temperature	1 - 60 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	24 VDC, 115 VAC and 230 VAC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Power connection	Cable and plug
Inlet/outlet connections	1/2" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, motorised ball valve
Valve orifice	12 mm
Valve seals	FPM and Teflon
Serviceable valve	yes
Valve housing material	Brass nickel plated valve, stainless steel rotating ball
Test feature	yes
Remote switch feature	yes
Timer cycle range (ON/OFF)	7 seconds to 15 minutes ON / 4 minutes to 24 hours OFF
Actuator PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination



Brass nickel plated valve



Stainless steel rotating ball



Remote switch feature

## Chapter 7

# TEC-11

## Electronic timer controlled condensate drain

The TEC-11 timer controlled condensate drain is a combination of a solenoid valve and an electronic timer designed to automatically remove condensate from compressed air filters.



### PRODUCT FEATURES

The TEC-11 removes condensate, automatically, from compressed air filters and small dental (oil free type) compressors.

The clever in-line design allows for perfect installation under all types of compressed air filters, regardless of their capacity or size.

### COMMERCIAL BENEFITS

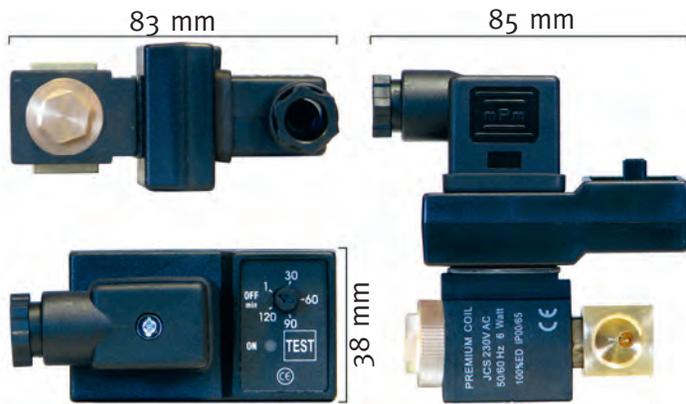
- In-line design, offering easy mounting under filters
- Small and compact, offering easy installation on small dental compressors
- Medium pressure up to 16 bar (optionally up to 21 bar)
- Serviceable valve construction, offering you routine maintenance revenues
- Consult JORC for private labelling options

### TECHNICAL ADVANTAGES

- Connection sizes 1/8" & 1/4"
- Does not air-lock during operation
- Quick to service
- Test feature (micro-switch)
- Fixed ON cycle and an adjustable OFF cycle



**PRODUCT DIMENSIONS**



Inline installation under compressed air filters

**PRODUCT SPECIFICATIONS**

Max. filter capacity	Any size
Min./max. system pressure	0 - 16 bar
Min./max. medium temperature	1 - 55 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	12 - 380 VAC/DC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Connector type (power)	DIN 43650-B
Inlet/outlet connections	1/8" or 1/4" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, direct acting
Valve orifice	2.0 mm
Valve seals	FPM
Serviceable valve	yes
Valve housing material	Brass
Test feature	yes
Timer cycle range (ON/OFF)	2 seconds fixed / 1.2 minute to 120 minutes adjustable
Timer PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination



Service kits



Private labelling available



Install under any filter

## Chapter 8

# COMBO-D-LUX

## Digital time controlled condensate drain

The COMBO-D-LUX timer controlled drain combines a premium digital timer controlled drain, a ball valve and a mesh strainer into one compact easy to install package.



### PRODUCT FEATURES

The COMBO-D-LUX is designed to remove condensate from compressors, compressed air dryers and receivers up to any size, type or manufacturer.

The COMBO-D-LUX is an all-in-one digital timer drain with an integrated ball valve and strainer. The unit offers true digital time cycle programming luxury, ranging from milliseconds to 99 hours.

### COMMERCIAL BENEFITS

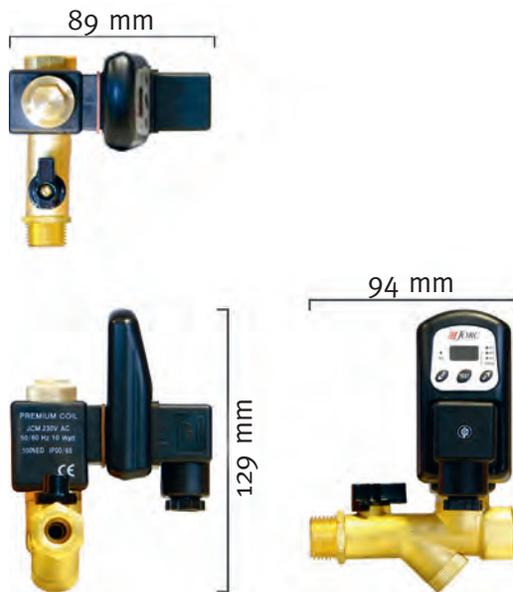
- Wide time setting range, offering you application flexibility
- Exceptionally accurate cycle timing
- Suitable for all types of compressed air systems
- Serviceable valve construction, offering you routine maintenance revenues
- Consult JORC for private labelling options

### TECHNICAL ADVANTAGES

- Integrated mesh strainer for large particles
- Shut off valve incorporated
- Dual threaded inlet (1/2" and 1/4")
- Does not air-lock during operation
- Quick to service
- Test feature (micro-switch)
- Bright digital illuminated display, offering you a visual indication of current operating cycle



**PRODUCT DIMENSIONS**



Also available in a FLUIDRAIN valve version

**PRODUCT SPECIFICATIONS**

Max. compressor capacity	Any size
Min./max. system pressure	0 - 16 bar (higher pressure available see, page 17)
Min./max. medium temperature	1 - 55 °C
Min./max. ambient temperature	1 - 55 °C
Supply voltage options	12 - 230 VAC/DC 50/60 Hz
Environmental protection	IP65 (NEMA4)
Connector type (power)	DIN 43650-A
Inlet/outlet connections	1/4" & 1/2" / 1/2" BSP or NPT
Inlet connection height	Approx. 1 cm
Valve type	2/2 way, direct acting
Valve orifice	4.0 mm
Valve seals	FPM
Serviceable valve	yes
Valve housing material	Brass
Test feature	yes
Timer cycle range (ON/OFF)	0.01 second to 99 hours (both ON and OFF)
Timer PCB	SMD technology, ensuring consistency in production
Timer cycle indication	Bright LED illumination



Visual display of current operating cycle



Integrated mesh strainer



Digital processor, offering you exceptional time cycle accuracy

## Chapter 9

# FLUIDRAIN-HP(-S)

## Electronic timer controlled condensate drain

The FLUIDRAIN-HP (High Pressure) timer controlled condensate drains are designed to automatically remove condensate from compressed air systems up to 500 bar.



### PRODUCT FEATURES

The FLUIDRAIN-HP is designed to remove condensate from high pressure compressed air systems and systems that require stainless steel valves (food industry etc.).

The FLUIDRAIN-HP offers true installation simplicity and it is recognised as the most reliable and best performing condensate drain worldwide.

The FLUIDRAIN-HP offers trouble free condensate draining on systems up to 500 bar, depending on the valve orifice, valve material and seal selection.

### COMMERCIAL BENEFITS

- Suitable for all types of compressed air systems up to 500 bar
- Special valve constructions & seals available for special applications
- Stainless steel valve options, offering you solutions in niche markets
- Serviceable valve construction, offering you routine maintenance revenues
- Consult JORC for private labelling options

### TECHNICAL ADVANTAGES

- Brass & stainless steel valve constructions depending on pressure
- FPM, Peek, PU, NBR and several other seals are available
- Does not air-lock during operation
- Quick to service
- Test feature (micro-switch)



**PRODUCT DIMENSIONS**



The right seal for the right job

**PRODUCT SPECIFICATIONS**

Max. compressor capacity  
Min./max. system pressure

Any size  
0 - 500 bar (depending on model)

Min./max. medium temperature  
Min./max. ambient temperature

1 - 55 °C  
1 - 55 °C

Supply voltage options  
Environmental protection  
Connector type (power)  
Inlet/outlet connections  
Inlet connection height

12 - 380 VAC/DC 50/60 Hz.  
IP65 (NEMA4)  
DIN 43650-A  
1/4" BSP or NPT  
Approx. 1 cm

Valve type  
Valve orifice  
Valve seals  
Serviceable valve  
Valve housing material

2/2 way, direct acting  
Depending on pressure  
FPM or other, depending on pressure and application  
yes  
Brass or stainless steel, depending on pressure

TEST feature

yes

Timer cycle range (ON/OFF)  
Timer PCB  
Time cycle indication

0.5 - 10 seconds / 0.5 - 45 minutes  
SMD technology, ensuring consistency in production  
Bright LED illumination



Highest quality PCB



Service kits available



Stainless steel valve options, offering you solutions in niche markets

## Chapter 10

### BALL VALVE STRAINERS

The FLUIDRAIN and EZ-1 drain valves have a large orifice. This large orifice ensures that emulsions and particles in compressed air do not block the valve.

To avoid unnecessary adapters, we offer strainers that match the JORC valves and are available with outlet connection sizes 1/2", 3/8" and 1/4".

In addition, the strainer inlet is dual threaded (1/2" and 1/4").

Pressure ratings of the JORC ball valve strainers are 0 to 40 bar.



### JORC PREMIUM COILS

JORC's JC-type coils are produced with H-grade coil insulation, ensuring maximum heat resistance during operation.

All voltages are available, ranging from 12 – 380 VAC/DC 50/60 Hz.

There are three coil sizes (JCS, JCM and JCL) depending on type of valve in combination with pressure rating requirements.



### POWER CONNECTORS

Electrical power connectors (DIN) are available in Form A & B (square and rectangle) with or without a moulded power cord.

Special adapters to connect Form B to A, are also available.



### HOSE BARB ADAPTERS

Hose barb connectors are a secure and simple way to install the discharge pipe from the drain to the oil/water separator.

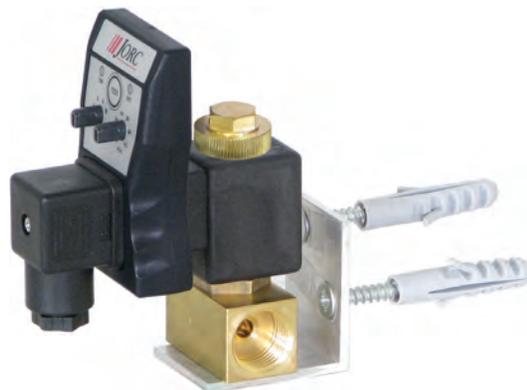
The hose diameter matches the connection to the SEPREAMIUM or PURO-CT oil/water separators.



### WALL MOUNTING BRACKET

Wall mounting brackets allow easy installation of timer drains to walls or to the inside of refrigerated dryers.

The bracket kit contains all necessary fixings to complete the job.



### SERVICE KITS

Great care is taken to ensure long lasting components are selected and applied in our products.

JORC products are designed in a way that makes servicing simple, quick and error free.

Servicing JORC products is a cost effective way to recondition the products for many more years of draining service.



### IP COIL SEALING KIT

JORC drains are assembled with the specially designed IP coil sealing set.

The sealing set offers a better protection against water ingress.

We also offer the IP65 sealing kit to protect the coil and timer, as a replacement accessory.



### JORC TIMERS

The JORC timers (EZ-1, FLUIDRAIN, D-LUX, TEC-11) are produced to the highest standards. We apply two voltage protection element (IN and OUT) to ensure a long life protection against electrical power surges.

Our timers are also purchased by other solenoid valve producers and mounted on their valves for all kinds of different applications besides condensate draining.



# COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

## **JORC Industrial BV**

Pretoriastraat 28  
NL-6413 NN Heerlen  
The Netherlands

Tel: +31 (0) 45 524 24 27  
[info@jorc.nl](mailto:info@jorc.nl)  
[www.jorc.eu](http://www.jorc.eu)