JORC

COMPRESSED AIR CONDENSATE MANAGEMENT AND ENERGY SAVING PRODUCTS

TIMER CONTROLLED DRAINS

FLUIDRAIN
EZ-1
TEC-11
TEC-44
QUICK-SET
D-LUX
HIGH PRESSURE

DRAIN FLEXIBILITY

RELIABLE

Condensate drains

INDEX

Version 2014

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.

CONDENSATE MANAGEMENT SPECIALIST

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 (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 quite fancy, 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 condensate from compressed air systems ensures less downtime 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 eject all of the condensate collected, oil and/or water will collect, causing carry over into the system – allowing 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 (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 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 larger particles found in condensate.

The JORC valves are constructed from robust brass or stainless steel and not from plastic. This ensures that no damage is occurring 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 the electronic modules.

Servicing JORC drains is quick and simple. 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 proven 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 despatch.

JORC is NEN – EN - ISO 9001 – 2008 Certified

Chapter 3

FLUIDRAIN®

Electronically 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 capacity.

The FLUIDRAIN offers installation simplicity and is recognised as the most reliable and best performing condensate drain worldwide. The large orifice in the direct acting valve, combined with its sophisticated timer module, ensure many years of trouble-free draining of condensate providing minimum service work is carried out.

COMMERCIAL BENEFITS

- Any type of compressed air systems and up to any size
- Also available with stainless steel valves and for high pressure (see page 20/21)
- TEST (micro-switch) feature
- Private labelling and various colour options are possible

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Accurate time cycles
- Premium PCB components selected
- Large (4.5 mm) valve orifice
- Quick and easy serviced
- Voltage range 12 – 380VAC/DC
- Environmentally friendly low Watt version available

PRODUCT DIMENSIONS

Also available in a version that requires less than 1 Watt to operate!

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 16 bar (higher pressure available see page 20)
Supply voltage options	12 – 380 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
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
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	4.5mm
Valve seals	FPM
Inlet/outlet connections	1/8", 1/4", 3/8", 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass (stainless steel available see page 21)
Power and alarm connectors	DIN 43650-A
Environmental protection rating	IP65 (NEMA4)

Highest quality PCB

Service kits available

Accessories include ball valve strainers

Chapter 4

EZ-1®

Electronically timer controlled condensate drain

The EZ-1 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 EZ-1 is designed to remove condensate from compressors, compressed air dryers and receivers up to maximum 16 bar applications.
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 colour options.

COMMERCIAL BENEFITS

- Any type of compressed air system up to 16 bar.
- Competitive pricing levels available
- TEST (micro-switch) feature
- Private labelling and various colour options are possible

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Accurate time cycles
- Large (4.0 mm) valve orifice
- Quick servicing advantage

PRODUCT DIMENSIONS

Bright LED illumination, indicating operating status

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 16 bar (higher pressure available see FLUIDRAIN)
Supply voltage options	24 – 230 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
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
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	4.0mm
Valve seals	FPM
Inlet/outlet connections	1/4", 3/8", 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass (Stainless steel available see FLUIDRAIN)
Power connector	DIN 43650-A
Environmental protection rating	IP65 (NEMA4)

Various connection options

Service kits available

Accessories include ball valve strainers

Chapter 5

FLUIDRAIN-COMBO®

Electronically timer controlled condensate drain

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

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
- Any type of compressed air systems and up to 16 bar
- Dual thread inlet (1/2" & 1/4"), offering installation flexibility
- TEST (micro-switch) feature
- Private labelling and colour options

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Accurate time cycles
- Premium PCB components selected
- Integrated mesh strainer for large particles
- Quick servicing advantage
- Shut off valve incorporated

PRODUCT DIMENSIONS

Exceptionally compact!

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 16 bar (higher pressure available see FLUIDRAIN)
Supply voltage options	12 – 380 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
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
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	4.0mm
Valve seals	FPM
Inlet/outlet connections	1/4" & 1/2" / 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass (Stainless steel available see FLUIDRAIN)
Power and alarm connectors	DIN 43650-A
Environmental protection rating	IP65 (NEMA4)

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 highly contaminated condensate from deliquescent dryers, rusty old tanks, vessels and refrigerated dryers.

PRODUCT FEATURES

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

The TEC-44 is designed to remove heavily contaminated condensate up to pressures 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

- Compressed air systems up to 40 bar applications
- Powerful ball valve rotation (impossible to block)
- Suitable for all types of compressed air systems e.g. with a high level off contamination of its condensate (rust, scale)
- TEST (micro-switch) feature

TECHNICAL ADVANTAGES

- Does not air-lock during Operation
- Micro-processor controlled (high level of time cycle accuracy)
- Medium pressure up to 40 bar
- Remote control – optional.
- Large 12 mm orifice.

PRODUCT DIMENSIONS

Bright visual display of selected program!

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 40 bar (higher pressure available see FLUIDRAIN)
Supply voltage options	24V, 115V and 230VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Timer cycle range (On / OFF)	7 seconds / 4 minutes to 24 hours
Actuator PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination
TEST feature	Yes
Valve type	2/2 way, motorised ball valve
Valve orifice	12.0mm
Valve seals	FPM and Teflon
Inlet/outlet connections	1/2" / 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass nickel plated (Stainless steel available see FLUIDRAIN)
Power connector	Cable gland including cable and plug
Environmental protection rating	IP65 (NEMA4)
Remote switch option	Yes

Nickel plated valve

Stainless steel rotating ball

Remote switch option

Chapter 7

TEC-11®

Electronically 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 automatically removes condensate 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

- Suitable for Compressed air filters up to 16 bar
- Clever in-line design
- TEST (micro-switch) feature

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Fixed ON cycle and an adjustable OFF cycle
- Medium pressure up to 16 bar (optionally up to 21 bar)
- Connection sizes 1/8" and 1/4"
- Incredibly compact design

PRODUCT DIMENSIONS

Inline installation under compressed air filters.

PRODUCT SPECIFICATIONS

Maximum filter capacity	Any size
Pressure range	0 bar / 16 bar (higher pressures available see FLUIDRAIN)
Supply voltage options	12 - 380 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Timer cycle range (On / OFF)	2 seconds fixed / 1 minutes to 120 minutes adjustable
Timer PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	2.0mm
Valve seals	FPM
Inlet/outlet connections	1/8" or 1/4" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass
Power connector	DIN 43650-B
Environmental protection rating	IP65 (NEMA4)

Service kits

Private labelling possible

Install under any filter

Chapter 8

QUICK-SET®

Easy select timer controlled condensate drain

The QUICK-SET feature is a predetermined time setting applied on timer controlled condensate drains designed to automatically remove condensate from compressed air systems.

PRODUCT FEATURES

The FLUIDRAIN-QUICK-SET is designed to remove condensate from compressors, compressed air dryers and receivers up to 20m³/min compressor capacity and 10 bar pressure.

The FLUIDRAIN-COMBO-QUICK-SET saves installation time and protects against large particles found in condensate, thanks to the integrated ball valve strainer and the Quick Set timer adjustability.

Simply adjust the timer according to the compressor capacity and the operating pressure – and go!

COMMERCIAL BENEFITS

- Suitable for all types of compressors up to 20m³/min
- TEST (micro-switch) feature
- Private labelling possible
- Simple to select the correct time settings

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Medium pressure up to 10 bar
- Can be combined with various types of JORC solenoid valves

PRODUCT DIMENSIONS

Simply select the compressor capacity and pressure!

PRODUCT SPECIFICATIONS

Maximum filter capacity	Any size
Pressure range	0 bar / 10 bar (higher pressures available see FLUIDRAIN)
Supply voltage options	12 - 380 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Timer cycle range (ON / OFF)	Simply select the compressor capacity and pressure!
Timer PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	4.5mm
Valve seals	FPM
Inlet/outlet connections	1/8", 1/4", 3/8", 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass (Stainless steel available see FLUIDRAIN)
Power connector	DIN 43650-A
Environmental protection rating	IP65 (NEMA4)

Service kits

Private labelling possible

The Quick-Set timer can be mounted on any JORC DIN form A type solenoid valve.

Chapter 9

D-LUX®

Digitally controlled timer condensate drain

The D-LUX features is a digital timer applied for timer controlled condensate drains designed to automatically remove condensate from compressed air systems.

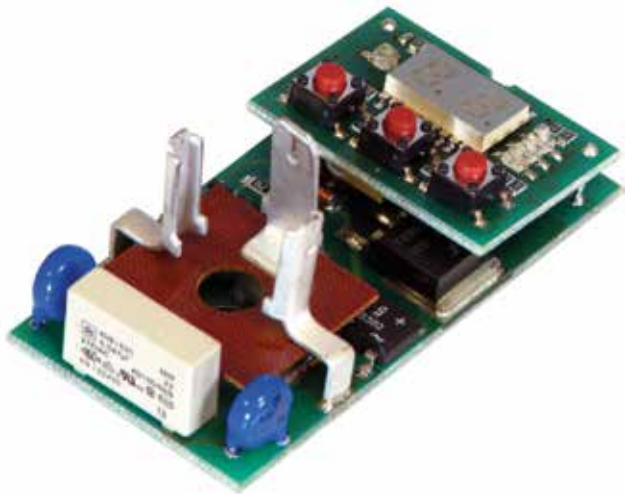
PRODUCT FEATURES

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

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 mille-seconds to 99 hours.

COMMERCIAL BENEFITS

- Suitable for all types of compressed air systems
- TEST (micro-switch) feature
- Private labelling possible
- Bright digital illuminated cycle display



TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Exceptionally accurate cycle timing
- Incredible time cycle programming flexibility

PRODUCT DIMENSIONS

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 16 bar (higher pressures available see FLUIDRAIN)
Supply voltage options	12 - 230 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Timer cycle range (On / OFF)	from 10 milliseconds to 99 hours (both ON and OFF)
Timer PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	4.0mm
Valve seals	FPM
Inlet/outlet connections	1/4" & 1/2" / 1/2" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass (Stainless steel available see FLUIDRAIN)
Power connector	DIN 43650-A
Environmental protection rating	IP65 (NEMA4)

Visual display of current operating cycle

Simple to service

Also available with a FLUIDRAIN valve

Chapter 10

HIGH PRESSURE

Timer controlled condensate drains

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 range is designed to remove condensate from high pressure compressed air systems and systems that require stainless steel valves (e.g. food industry).

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
- TEST (micro-switch) feature
- Private labelling possible
- Special seals available for special applications

TECHNICAL ADVANTAGES

- Does not air-lock during operation
- Accurate cycle timing
- Pressures up to 500 bar
- Brass and stainless steel valve constructions depending on pressure
- FPM, Peek, PU, NBR and several other seal materials are available

PRODUCT DIMENSIONS

The right seal for the right job!

PRODUCT SPECIFICATIONS

Maximum compressor capacity	Any size
Pressure range	0 bar / 500 bar
Supply voltage options	12 - 380 VAC/DC 50/60 Hz.
Minimum medium temperature	1° C
Maximum medium temperature	50° C
Timer cycle range (On / OFF)	0.5 – 10 seconds / 0.5 – 45 minutes
Timer PCB	SMD technology, ensuring consistency in production
Time cycle indication	Bright LED illumination
TEST feature	Yes
Valve type	2/2 way, direct acting
Valve orifice	Depending on pressure
Valve seals	FPM or other depending on pressure and application
Inlet/outlet connections	1/4" (BSP or NPT)
Inlet connection height	1.0 cm
Serviceable valve	Yes
Valve housing material	Brass and stainless steel valve constructions depending on pressure
Power connector	DIN 43650-A
Environmental protection	IP65 (NEMA4)

Highest quality PCB

Service kits available

High pressure stainless steel ball valve strainers are available

BALL VALVE STRAINERS

The FLUIDRAIN and EZ-1 drain valves have an orifice of 4.5 mm (EZ-1 4.0mm). This large orifice ensures that emulsions and particles in compressed air cannot block the valve.

We offer 1/2", 3/8" and 1/4" valves and to avoid unnecessary adapters etc. and we offer the right strainer for the right valve. In addition, the inlet thread is dual threaded 1/2"and 1/4".

The BVS is useful when servicing the drain.

Pressure ratings of the JORC strainers are up to 40 bar.

JORC PREMIUM COILS

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

The outer encapsulation is an ABS type material.

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

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

Special adapters to take connection from FORM B to FORM A, are also available.

CONNECTORS

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

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

WALL MOUNTING BRACKET

Wall mounting brackets allow easy installation of timer drains to walls or inside 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 problem free and reliable draining.

IP SEALING KIT

In certain applications a drain requires to be installed to a higher degree of environmental protection. For instance an installation inside a refrigerated air dryer.

For these special applications we offer an IP sealing kit to protect the coil and timer.

JORC TIMERS

The JORC timers (D-LUX, FLUIDRAIN, EZ-1 and 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

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