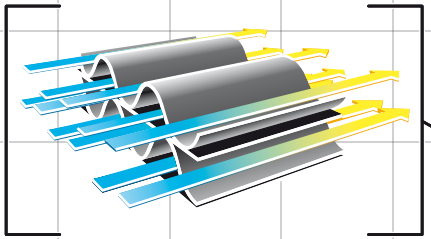
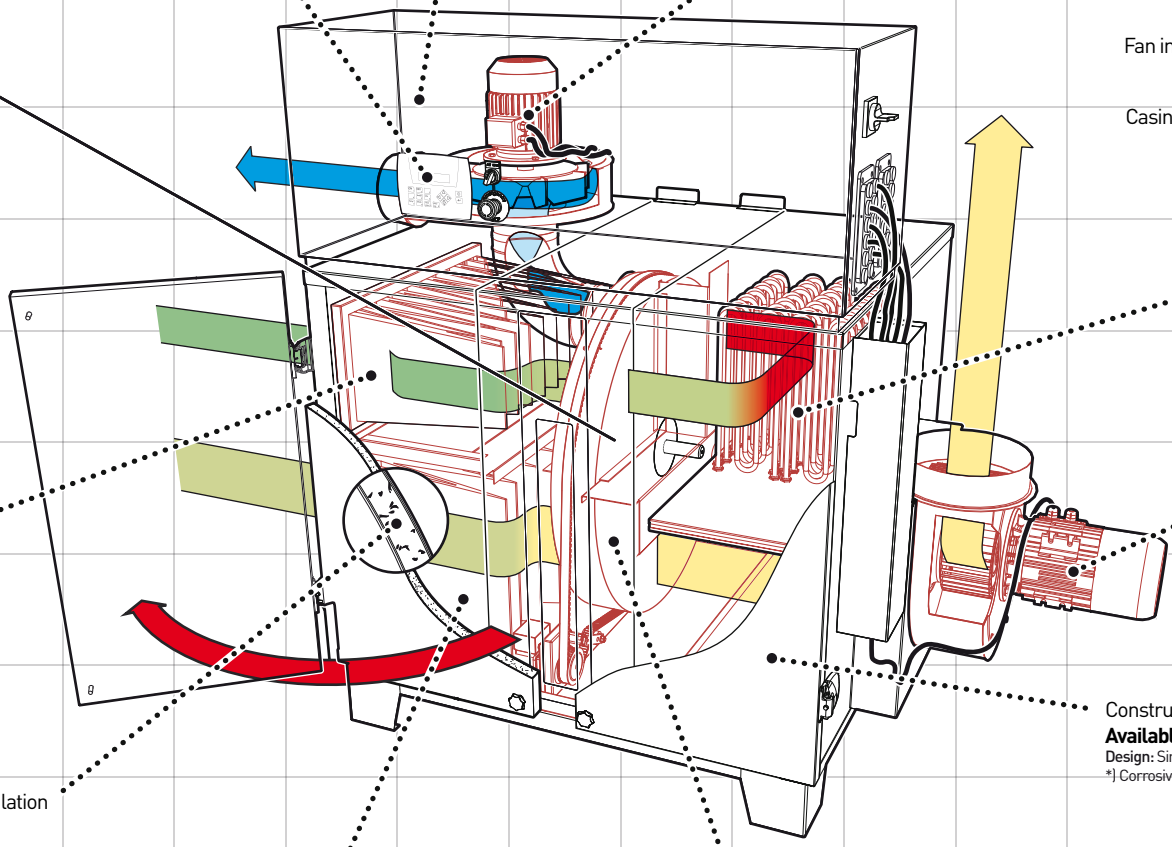
Anatomy of a RZ/RLZ-SERIES

Pg. 1 2 3 4



DST SORPTION TECHNOLOGY

DST's dehumidifers are desiccant. The basic principle is that the air to be dehumidified is passed through the rotating rotor which adsorbs the moisture. The moisture in the rotor is removed by a heated air stream.

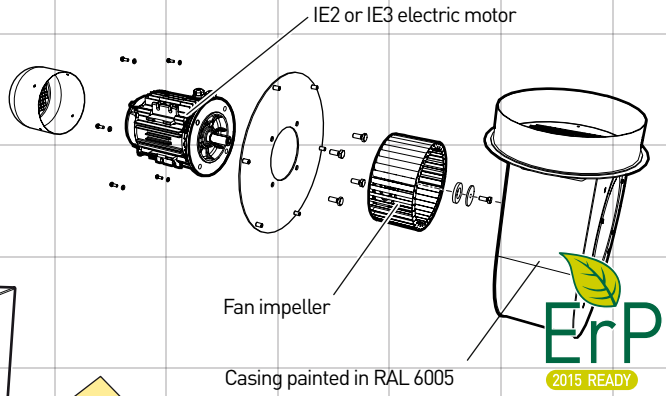


- Wet air outlet
- Regeneration air inlet
- Process air inlet
- Dry air outlet

C2:1 PLC control panel
Available in C4

Powder coated electric box
Color: RAL 6005
Thickness: 140 µm

Regeneration fan



Resistive regeneration heater
Available in oil, water, steam & gas

Process fan
Available in high airflow/pressure fan

G4 regeneration filter
Available in F7

Door insulation

G4 process filter
Available in F7

Non-flammable desiccant rotor with silica gel bonded to the carrying material. Durable and washable.
Available in hygienic and silicone free

Constructed with Aluzinc steel
Available in Stainless steel in 304 or 316L*
Design: Single-casing skin
*) Corrosive resistent

See next page on components details.

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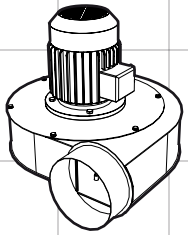
Revision no: RevH | Version no: 2.0 | Filename: Overview

Components RZ/RLZ-SERIES

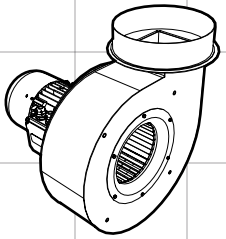
Pg. 1 2 3 4

(*) Option

Regeneration fan

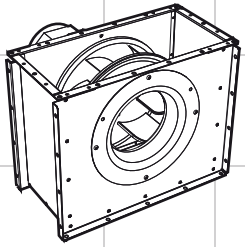


Process fan



Process fan ICE (*)

For increased flow/pressure



Material
The centrifugal fans are all made as rugged bolted steel construction with impellers made of aluminium galvanised steel or composite material. The exterior is powder coated in standard RAL6005.

ICE fan with increased airflow/pressure is available as an option.

Max permissible temperature: 80°C
Conforms to energy effeciency ErP 2009/640/EC directive
Motor class: IE2 or IE3
IP class: IP55
VSD controlled using Vacon or Danfoss
Manufacturer: Ventur Tekniska/Ziel abegg

Note: The fan casing and colour may vary between models
See standard dimension for that particular unit for measurements

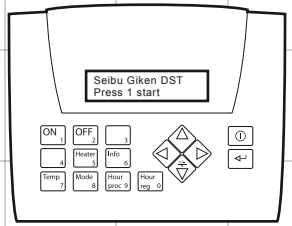
The curved type on the impeller varies depending on size and model. See table below.

RZ-	81	-	101	102	-
RLZ-	-	82	-	-	104
Process fan	F	B	F	F	B
Regeneration fan	S	S	S	S	B
Proces fan ICE (*)	B	-	B	B	-

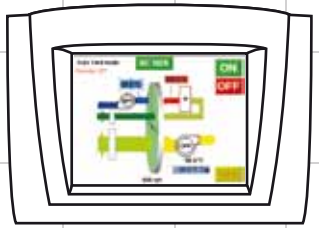
(S) = **Straight** (B) = **Backward** (F) = **Forward**

ErP 2015 READY

Programmable Logic Control



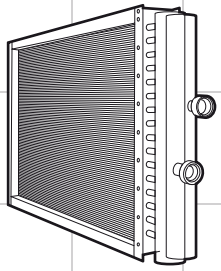
Type: C2, JZ10-11-UA24
The C2 offer two 16-character text lines, LCD illuminated screen, with alphanumeric 16-key customisable keypad, flexible 24K ladder code programming and on-board I/O configurations. The HMI application enables up to 60 text screens to be used and up to 64 HMI variables for the display of time, date and real-time system data.



Type: C4, V570 *
The touchscreen HMI enables the display of 'touchable' images and text according to real-time conditions—for on-line operation and diagnostics.

The C4 offers a rich range of embedded features such as multiple auto-tuned PID loops, internal 120K structured data table and loadcell support, Ethernet, GSM/SMS, MODBUS, networking, remote access and much more.

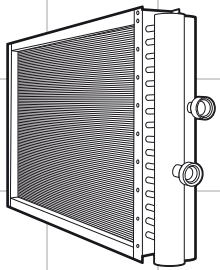
Thermal oil coil (*)



Material
Made of black carbon steel and is completely hot-dip galvanised.

Thermal oil
Max. operating temperature: 250°C
Max. pressure: 16 bar(g)
Oil: Shell Thermia oil A

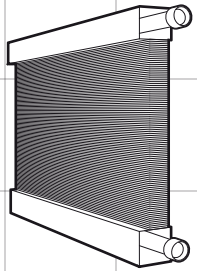
Water/Fluid coil (*)



Material
The heat exchanger is designed using copper tubes and aluminium fins with a casing of hot-dip galvanised steel sheet and steel headers.

Fluid
Max. Fluid velocity: 1.5 m/s in tubes.
Max. Air velocity: 5.0 m/s.

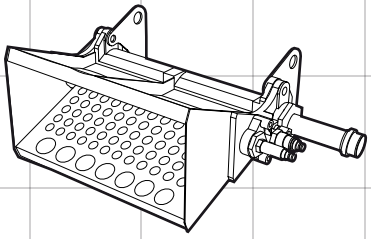
Steam coil (*)



Steam
Max. Operating pressure: 10 bar(g)
Max. Operating temperature: 185°C

All coils conforms to SS-EN ISO 228-1 and Pressure Equipment Directive PED 97/23/EC.

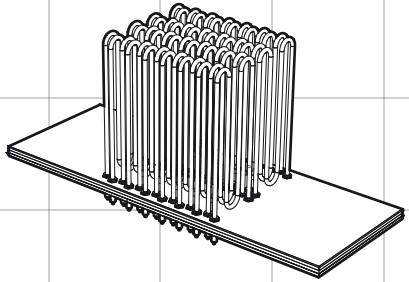
Gas heater (*)



Material:
The burner consist of rust resistant cast iron body (which serve as the gas manifold) drilled to discharge the fuel between diverging stainless steel mixing plates. The main heater assembly houses the circulating air fan, the gas burner, the fuel gas line and all necessary safety and burner management system controls.

Burner type: Maxon LV-NP Direct fire heater
Material: Rust resistant cast iron bodies
Maximum effect: 75kW
Siemens electronic control box and Honeywell safety components
Note: Honeywell control box may also be used in some cases.

Electric heater



Material: AISI 316L/EN1.4404
Tube diameter: 8.5mm
Current: Max. 600V
Conforms to: EN60335-1 safety
Corrosion: Minimal due to low carbon
Max 700°C for use in corrosive environment
Connection: 2 nipples on each end secured using heat resistant bushing and nut
Bending radius: R12.5

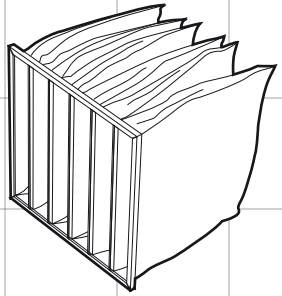
Components RZ/RLZ-SERIES

Pg. 1 2 4 3

All information and illustrations are for guidance only and are subject to change without notification.
DST do not accept liability for any errors or omissions herein.

(*) Option

Main filter

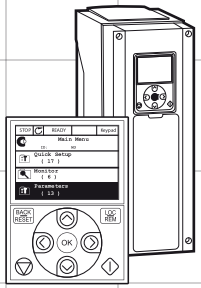


Type: Compact multi-pocket bag filter
Frame: Galvanised steel
Media: Polyester
EN779:2012 efficiency: G4
Recommended final pressure drop: 200 Pa
Temperature: 70°C

Note: Also available in F7

VSD*

Frequency converter



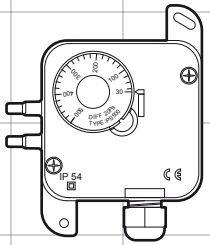
Type: AC drive
Input voltage: 208...240, 380...500
Input frequency: 50...60 Hz -5...+10%
Standards: Compliance with global standards and approvals E.g. EMC compliance, Safety: EN 61800-5-1 (2007)...
IP class: IP21 or IP54
Remote access: Built-in Modbus TCP and Modbus RTU
Feature: Real time clock with calendar based functions
- Energy counter
- Flying start
- Motor Switch
- Skip frequency range
- Digital control panel
- Safe torque off, Safe Stop

Manufacturer: Vacon

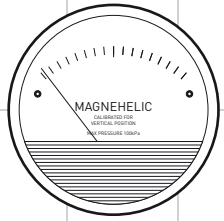
Note: Danfoss frequency converter is also available as an option. Specification not displayed here.

Differential pressure switch & manometers (*)

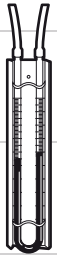
Multiple sub-options and combinations



Pressure range: 30-300Pa
Type: Pressure switch
Permissible temperature: -20°C/40°C
Max. pressure: 50kPa
IP class: 54

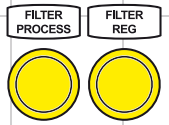


Pressure range: 0-250/750Pa
Type: Manometer
Permissible temperature: -20°C/60°C
Max. pressure: 100kPa

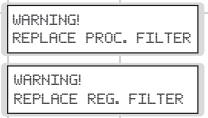


Pressure range: 0-1200Pa
Type: Manometer

The indicators are sub-options for both electromechanical control and/or PLC control.



Yellow light indicator for electromechanical control



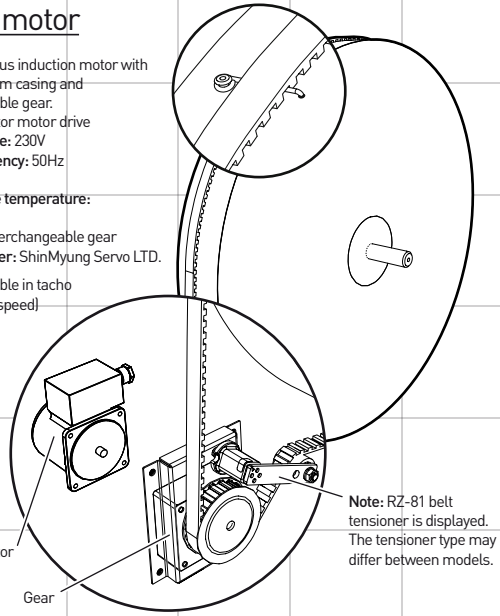
Information display for PLC control

Note: Only available for differential pressure switches only
Note: Magnehelic gauges can be added to the pressure switches

Rotor motor

Asynchronous induction motor with an aluminium casing and interchangeble gear.
Type: AC rotor motor drive
Input voltage: 230V
Input frequency: 50Hz
Effect: 23W
Permissible temperature: -10°C/40°C
Feature: Interchangeable gear
Manufacturer: ShinMyung Servo LTD.

Note: Available in tacho (adjustable speed)

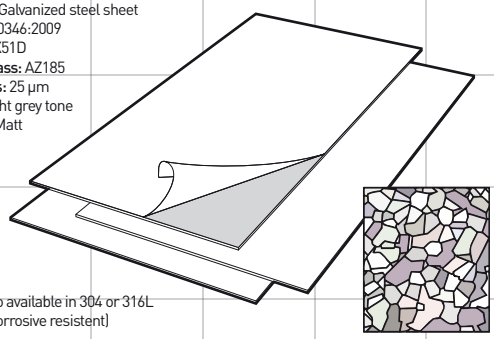


Note: RZ-81 belt tensioner is displayed. The tensioner type may differ between models.

Steel sheet

Aluzinc® steel sheet has a dual surface covered aluminium-zinc coating. The alloy consist of approx. 55% Aluminium, 43% Zinc and 2% Silicon. An excellent coated steel with ability to long term resist corrosion in most atmospheric conditions.

Material: Galvanized steel sheet
ISO: EN 10346:2009
Grade: DX51D
Weight class: AZ185
Thickness: 25 µm
Color: Light grey tone
Surface: Matt



Note: Also available in 304 or 316L (316L is corrosive resistent)

Texture of galvanised steel

Rotors

D-MAX CI 100% SILICON FREE
D-MAX EFFICIENCY BY DESIGN
D-MAX H BACTERICIDAL & HYGIENIC

Rotor:
Non-flammable desiccant rotor with silica gel bonded to the carrying material.
Bacteriostatic, fungistatic, durable and washable.

Manufacturer: Seibu Giken Japan

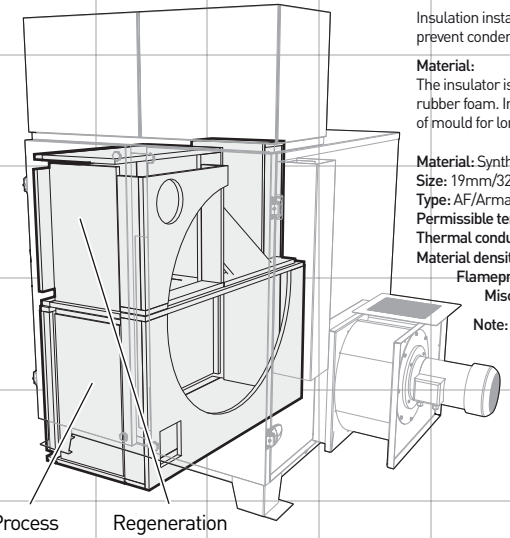
D-MAX (Standard)
D-MAX 100% SILICON FREE (*)
D-MAX BACTERICIDAL & HYGIENIC (*)

Components RZ/RLZ-SERIES

Pg. 1 2 3 4

(*) Option

Insulation (*)



Insulation installed inside of process air inlet and/or regeneration air inlet to prevent condensate forming on the ouside of the unit.

Material:
The insulator is a flexible closed cell insulation based on extruded elastomer rubber foam. Infused with Microban® antibacterial protection to inhibit growth of mould for long exposure of increased humidity.

Material: Synthetic rubber based foam
Size: 19mm/32mm
Type: AF/Armaflex
Permissible temperature: -50°C/110°C
Thermal conductivity: 0.033 W/mK
Material density: 50kg/m^3
Flameproof class: 0, A1 (ISO1182)
Misc: Antibacterial, infused with Microban®

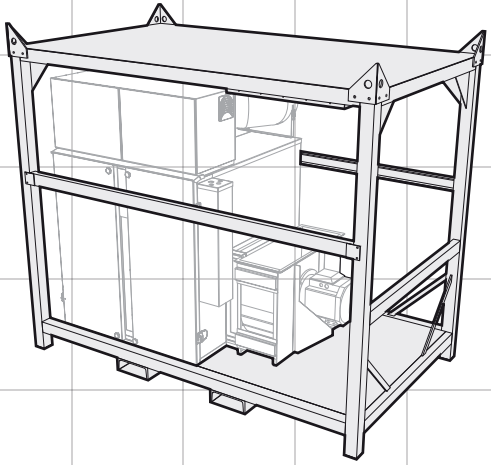
Note: 32mm is not available for all sizes

Door / Heat insulation

Insulation installed around the regeneration heater compartment and service panels.

Material: Mineral wool
Thickness: 50 mm
Density: 100kg/m^3
Thermal conductivity: 0.045 W/mK
Flameproof class: 0, A1 (ISO1182)
Manufacturer: Rockwool

Steel frame (*)



Unit fixed inside a welded steel frame to facilitate transport and instantly set up the unit for operation.
When installed with quick connections for ducts, plugs for electrical supply and a PLC control panel, the unit turns into an advanced mobile dehumidfier platform.

This setup comes in variety of configurations and is fully customisable for broad range of applications.

DST Seibu Giken

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Revision no: RevD | Version no: 1.0 | Filename: Components