Operating Instructions

(English)

Pressure Generator with AIR

Model : CA1-200B and CA2-200B

Concerns the models :

✓ *model : CA1-200B*

✓ *model : CA2-200B*

Arémeca - Instrumentation -

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E-mail : aremeca@wanadoo.fr - site : www.aremeca-instrumentation.com

Your Model : .....

Serial number : .....

Made the : .....

to contact Sales Manager : d.regal@aremeca.fr

SUMMARY

Read the instructions before handling and retain this information for future use

The pressure generators models CA1 or CA2 describes in this manual are designed and manufactured by AREMECA (France).

Our products follow manufacturing procedures and controls in line with our Quality System ISO9001 version 2008 and in accordance with the standards in force.

This manual commissioning informs the user about the functioning of the instrument and the safety limits for work peacefully.

This manual is an integral part of the device. It must be kept close to the workstation and accessible at any time by the user.

AREMECA reserves the right to alter the content or form of this manual at any time and without notice. And to make technical amendments to change the product.

Responsibility AREMECA is not liable for any damage caused by :
- not in accordance with intended usage,
- non compliance with instructions for use,
- use of the instrument by unqualified untrained operator ,
- a transformation / modification of the device carried by the user.

The operator must have read and understand prior to operating mode and use the device to start handling.

For more information

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- web site : www.aremeca-instrumentation.com
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to Contact Sales Manager : d.regal@aremeca.fr

a) Device

Device Identification

indicates the model of comparator
ex : CA1-200B

indicates the serial number of comparator

indicates the date of commissioning of the unit

Intended use of the device

Before switching on the device, ensure that the technical characteristics (measuring range, precision, fluid etc...) correspond to your needs

> For example : the maximum pressure defined for this compressor must not be exceeded

The pressure comparator is designed and manufactured for use as described in this document

In this case of misuse or mishandling, outside the technical specifications contained in this manual. The instrument must be immediately isolated, identified as inoperative and must be checked by our service department.

Precautions storage and transport

It's necessary to take care of the unit during storage or transportation. It must be protected from moisture, shock, extreme temperatures and shouldn't be removed or changed

> On our catalog, we have a suitcase, adapted to transport your device. (Ref.OP0002)

If the comparator is moved to a new environment (warmer, colder, etc..). Observe the phase of "quarantine" and wait until the device temperature stabilizes at room temperature before handling.

b) User

User qualifications

> Improper use of the device can cause significant bodily injury and properly

Qualified operator, due to : it's product training, knowledge in the field of metrology and experiences in field of pressure and knowledge on standards and guidelines, is able to perform the operations describes in this manual. He will be able to detect potential dangers.

AREMECA offers on demand, an installations / commissioning of the instrument performance.

Personal protective equipment (PPE)

The personal protective equipment must be defined in the security register of the user company and made available to the operator. These devices are used to protect the operator from potential risks that impede their safety and health at work.

- Protecting fluid

> Wear eye protection : protects the eyes against splashes and projections of the fluid.

> wear gloves : protect the skin against irritation, allergies.

AREMECA provides for oil dead weight, a bottle of colorless mineral oil. Safety data sheet of used oils are available on request.

a) Unpacking the unit

Upon receipt of the equipment, check the status and content of your package. All of the following elements must be present in the package :

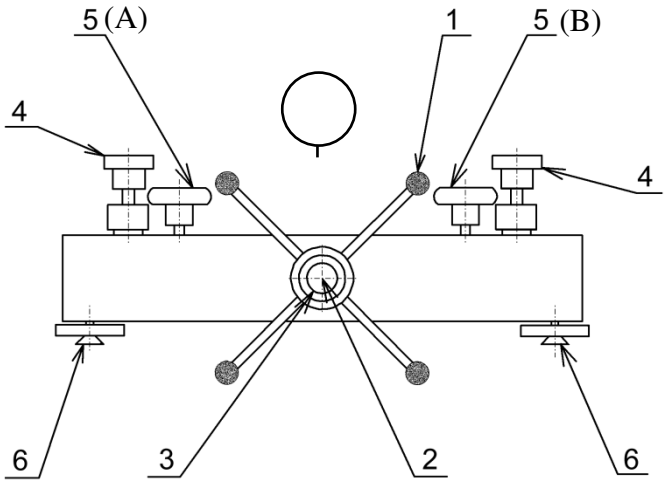
- 1 compressor
- 1 capstan consists of 4 delivered arms removed
- 2 connectors G1/2 (supplied as standard unless otherwise specified)
- 1 manual

Check that there isn't damage or breakages during transport. If there are missing items, please immediately notify AREMECA or your local distributor for what is missing.

b) Installation

Preferably, install your unit in a stable and controlled environment

You will get better performance if :
> the temperature and humidity of the room are stable,
> the workstation is clean and dry, protected from drafts, noise, vibration, and without passing



Component Identification
1 : capstan
2 : axis of rotation
3 : clamping knob
4 : connector
5 : valves (A and B)
6 : sidesteps

Installation / Assembly

- Install pressure generator on a established stable an rigid about 0,90 m tall.
- Adjust the stability of the generator through sidesteps **6**.
- Insert the capstan **1** on the axis of rotation **2**, the screw tightening knob **3** to the axis of rotation **2**.
- Remove the yellow caps protections pressure connections.
- Make sure the O-rings are positioned in their throats.
- Place the two adapters rotating nut **4** on the connectors.
- Make sure that o-ring are well positioned.

- Connect the pressure source on the outlet 1/4 gas cylindrical located behind the generator.

Note on source pressure : Use a clean gas, no aggressive and no-toxic dry such as nitrogen U. Provide a single regulator output pressure source.

> Dirty or polluted gauges must be cleaned before mounting the pressure generator to prevent contamination on the hydraulic circuit. Don't clean the tank with alcohol
Option : cleaning bench (Ref.OP0062)

Important for the valves
- Maximum torque applicable abutment valve open = 0,3 Nm
- Maximum torque applicable abutment valve closed = 4 Nm.

When the abutment valve open is reached, turn the wheel valve 1/4 turn clockwise.

c) Put into service

> the generators are equipped with precision valves instrumentation, it is imperative to observe the following guidelines to keep your machine in good working condition.

1. Install on the left G1/2 connector your standard gauge

2. Install on the right G1/2 connector your test gauge

3. Connect the instrument to be tested

4. Check the valve **A** and **B** are closed

5. Check the capstan **1** pressure generator is in the retracted end position (towards you). For this, turn it in the opposite direction clockwise until reaching the stop

6. Feed the pressure generator with compressed air and check that the supply pressure reading on the gauge is located in a close range of the pressure desired for calibration.

7. Open valve **A**, the comparator load pressure gas

8. Close valve **A**

The pressure generator is ready to use.

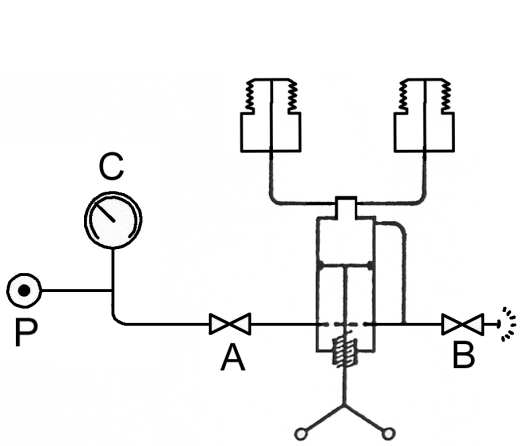
d) Test run after installing

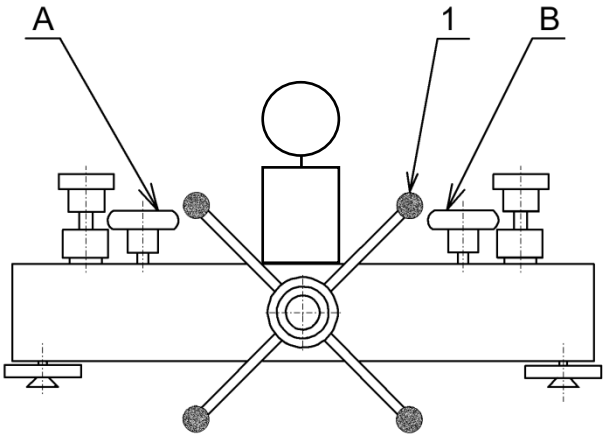
1. Perform a calibration test instrument with a "test" known correct (see chapter procedure) to verify and validate the operational statues of the pressure generator

2. The device is now ready to use.

Procedure for pressure generator models CA1-200B and CA2-200B

> *Pneumatic diagram*





> Pressure mounted

> *Observe the maximum operating pressures of the pressure generator*

Maximum operating pressure : CA1-200B → 200 bar and CA2-200B → 200 bar

a) After the stage of commissioning is finish, you can now adjust the pressure by turning the capstan **1** in the direction of clockwise to increase pressure. Pressure can thus be up to 200 bar (Maximum pressure : 210 bar).

b) Use the purge valve **B** to relieve pressure if necessary.

c) Make the measurement point.

> To reduce and relieve pressure at the end of measuring cycle

a) Turn the capstan **1** anticlockwise until it reaches the stop end position of the capstan. Then put the dead weight at atmospheric pressure by slowly opening the valve **B** to purge the system.

b) Then disassemble your product.

a) Cleaning

The generator cleaning and checking fluid levels are the only periodic maintenance required. No additional maintenance should be necessary if all instructions are followed.

We recommend a complete overhaul of the unite every 2 years. This operation can only be performed by the manufacturer. If necessary, send us your device for maintenance. A complete assessment of your device will be made and an estimate of rehabilitation will be sent.

Instructions reminders :

- Only use a clean, dry air like nitrogen. The unit is not compatible with oxygen

- Don't remove the protective cover.

b) Maintenance

> Piezometric set

It's designed for extremely narrow limits of accuracy. It's forbidden to disassemble it.

> Valves

Generator and dead weight are equipped with instrumentation valves, it's imperative to observe the following guidelines :
- Maximum torque applicable abutment valve open = 0,3 Nm
- Maximum torque applicable abutment valve closed = 4 Nm.
When the abutment valve open is reached, turn the wheel valve 1/4 turn clockwise.

c) Inspection

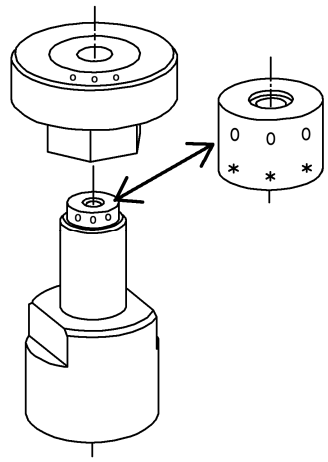
It's recommend to a service of your device every 2 years. The average response time is 2 weeks. Cleaning generator, replacement o-rings, testing pressure rise and stability are made.

d) Connection

The device is equipped with a specific connector for less than 1250 bar pressure. It is necessary to orient the ring according to the type of connector correctly.

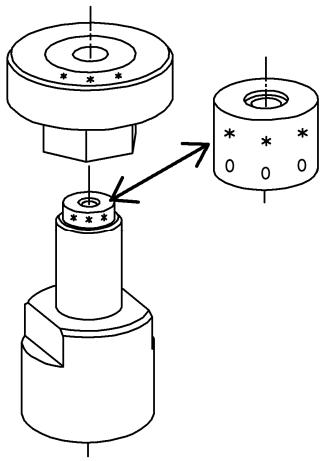
Thread M10x100, G1/8, 1/8 BSP-TR, 1/8 NPT

For these connectors guide ring, mark : **000** visible.
The connector must be tightened by hand.



Thread M12x150, M16x150, M18x150, M20x150, G1/4, G3/8, G1/2,1/4 BSP-TR, 3/8 BSP-TR, 1/2 BSP-TR, 1/4 NPT, 3/8 NPT, 1/2 NPT

For these connectors guide ring, mark : *** * *** visible.
The connector must be tightened by hand.



> Available as an option :
Suitcase with 4 connectors type G (Ref.OP0171)
Suitcase with 4 connectors type NPT (Ref.OP0172)
Suitcase with 4 connectors type BSPTR (Ref.OP0173)
Suitcase with 5 connectors type M (Ref.OP0174)
Suitcase with 17 connectors (Ref.OP0037)
standard o-ring (Ref.OP0038CEO)
special o-ring (Ref.OP0038J)

> OPTIONS

Connectors
OP0174 : Suitcase with 5 connectors metrics - M10x100 ; M12x150 ; M16x150 ; M18x150 ; M20x150
OP0171 : Suitcase with 4 connectors gas cylindrics - G1/8 ; G1/4 ; G3/8 ; G1/2
OP0172 : Suitcase with 4 connectors NPT - 1/8NPT ; 1/4NPT ; 3/8NPT ; 1/2NPT
OP0173 : Suitcase with 4 connectors BSPTR - 1/8BSPTR ; 1/4BSPTR ; 3/8BSPTR ; 1/2BSPTR
OP0037 : Suitcase with 17 connectors - all connectors

Kit cleaning
OP0062 : Cleaning bench for manometers
OP0023 : Separator

Transport
OP0002 : Suitcase for dead weight or comparator

Protection of the workstation
OP0192 : transparent protective cover for dead weight without motorization

Notes