

Pressure Generator with OIL (Models : CH3)



Model : CH3-10000B

Concerns the models :

✓ model : CH3-10000B



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Your Model :

Serial number :

Made the :

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

SUMMARY

	Pages
1 - General	4
2 - Security	5
a) Device	5
b) User	6
3 - Put into service	7
a) Unpacking the unit	7
b) Installation.....	7
c) Put into service.....	8
d) Test run after installing.....	9
4 - Procedure	10
a) Pressure generator models CH3-10000B.....	10
5 - Cleaning/Maintenance	12
a) Cleaning.....	12
b) Maintenance	12
c) Inspection.....	13
6 - Annexes	14
Options.....	14



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

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The pressure generators models CH3 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 2015 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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a) Device

Device Identification



indicates the model of comparator
ex : CH3-10000B

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.OP0254)*

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 property

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 generator
- 0.5 liter of Oil for models CH3
- 2 capstan consists of 4 delivered arms removed
- 1 connector G1/2 (2000 bar max supplied as standard unless otherwise specified)
- 1 pocket AREMECA with : manual + data sheet etc..

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

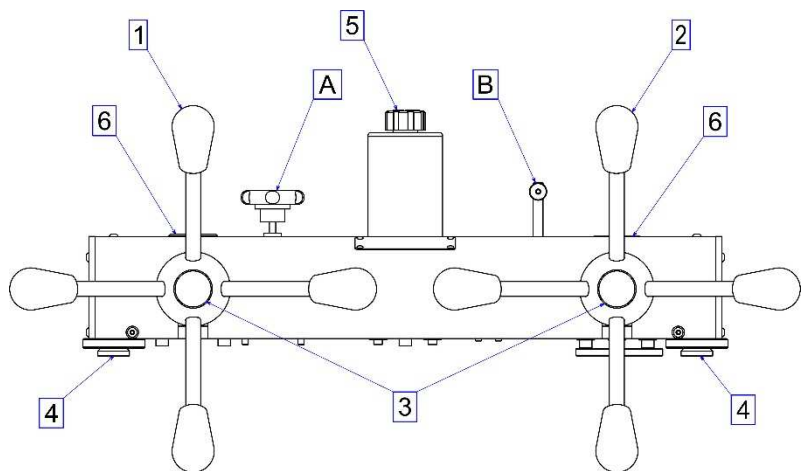
Preferably, install your unit in a stable and controlled environment



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 +2 : capstan + axis of rotation
- 3 : clamping knob
- A+B : valves
- 4 : sidesteps
- 5 : filler cap
- 6 : pressure connection



Installation / Assembly

- Install pressure generator on a established stable an rigid about 0,90 m tall.
- Adjust the stability of the generator through sidesteps 4.
- Insert the capstans 1 and 2 on the axis of rotation, screw the clamping knob 3 to the axis of rotation
- Remove the yellow caps protections pressure connections 6.
- Set up the plug M20x150 of the output 6 of the pressure generator + the reference transmitter on the other.



*> 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)*

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.

Filling the device with the fluid

1. Open valves **A + B** and turn the capstans **1 and 2** in the direction of clockwise until reaching the stop limit switch forward.

Information about valves :

- Maximum torque applicable abutment valve open = 0,3 Nm
- Maximum torque applicable abutment valve closed = 4 Nm.

2. Remove the filler cap on the tank **5**

3. Fill the tank with the correct fluid. Use the supplied oil. Don't use other liquids. Put the cap back on **5**



> Our devices are mounted and designed to a standard use. They function with the fluid provided. Some fluids such skydrol, castor oil etc... are corrosive and can damage the o-ring of your device.

On request : we can deliver a device designed for these fluids.

4. Turn the capstans **1 and 2** completely in the opposite direction of clockwise until it reaches the stop.

5. If necessary replenish the tank **5** .

Purging the device

1. Turn capstans **1 and 2** clockwise until they reach the front end stop to purge air from the circuit. Air bubbles can then appear in the tank.

2. Turn capstans **1 and 2** counterclockwise until reaching the rear end stop.

3. If necessary, top up the tank level. And repeat operations 1. and 2. until no more air bubbles appear in the tank.

The pressure generator is ready to use.

d) Test run after installing

- 1) It is possible to perform a calibration test with an exact known "test" instrument (see chapter operating mode next page) to check and validate the good operating condition of the compressor.

Note: When calibrating instruments with a large volume, the amount of fluid in the compressor may be insufficient to achieve the desired pressure. In this case, the instrument must be filled as much as possible before being connected to the compressor in order to reduce the volume of useful fluid.

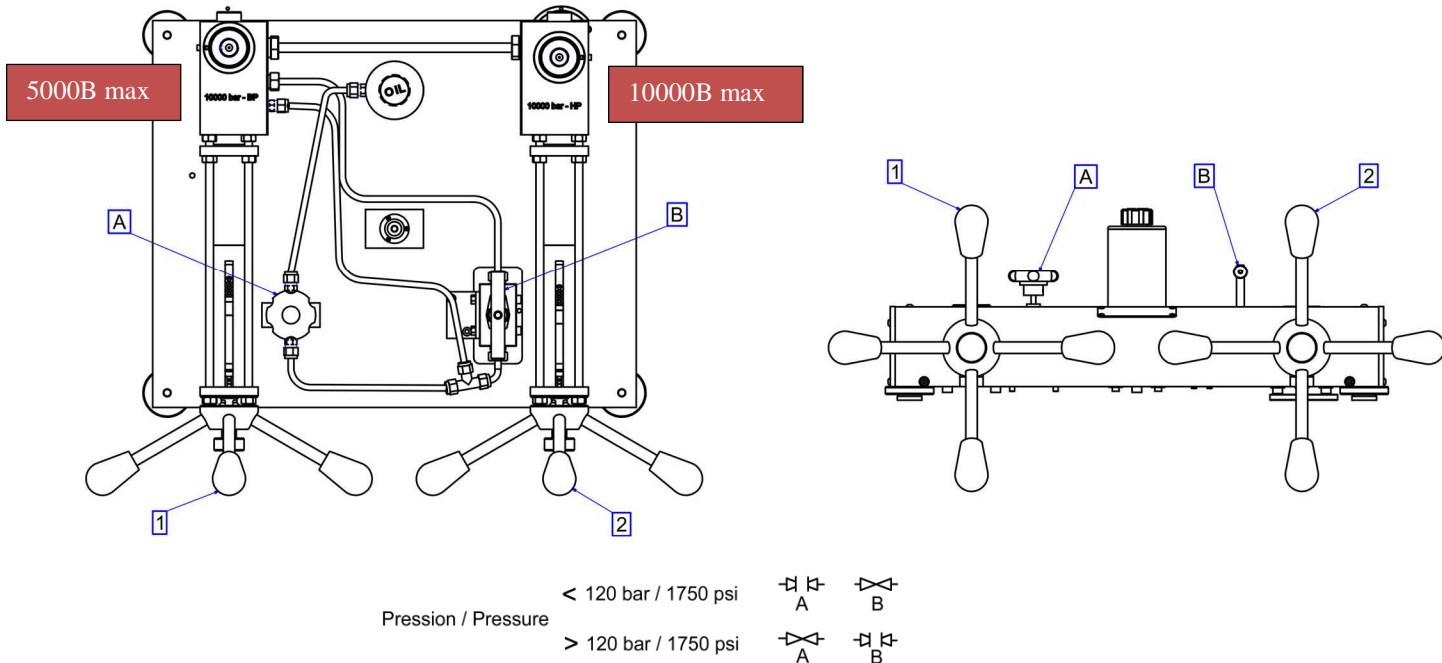


> As an alternative, we provide you with a hand pump Ref. OP0158 with a reservoir volume of 327 cm³

- 2) Relieve the pressure by turning the capstans anti-clockwise and remove the "test" instrument.
- 3) Once the functional test has been carried out, unscrew the M20x150 plug from outlet **6** and install the instrument to be checked instead.

Procedure for pressure generator models CH3-1000B

> Hydraulic diagram



> Pressure mounted



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

Maximum operating pressure :
CH3-1000B → 10 000 bar / 145000 PSI

- The instrument to be tested + the reference instrument are connected on the output M20x150 (=M20x1.5) and purging the device is OK (cf.chapter 3 : put in service)
- Check the valves **A** and **B** are open (on the opposite direction of clockwise) and the capstans **1** and **2** are at the rear end stop.
Valve information:
- maximum torque applicable when the valve is open: 0.3 Nm
- maximum torque applicable in stop valve closed: 4 Nm
When the valve open stop is reached, turn the valve handwheel ¼ turn clockwise.
- Turn capstan **1** clockwise : make about 6 turns.
- Close the valve **A** (in the direction of clockwise), and open **B**, turn the capstan **1** in the direction of clockwise : you can build up pressure up to 120 bar (Maximum operating pressure : 150 bar). Take measurement point reading in this measuring range

- e) To generate higher pressures, close valve **B** (clockwise) and open valve **A** (counterclockwise), turn capstan **1** clockwise. We can thus increase the pressure up to about 5000 bar (pressure given as an indication because everything depends on your pressure gauge volume). When the capstan **1** comes to the front stop, apply a force on the capstan **1** arm of about 10 kg to close the 5000 bar circuit.



> PROTOCOL TO RESPECT FROM 7000 to 10000 BAR :

For up and down pressure from 7000 to 10000 bar : it is essential to realize them in stages of 500 bar with an approximate speed of 500 bar / 30 seconds. The stabilization times are 2 minutes for each stages. This protocol allow the system to be constrained progressively. Especially at the highest pressures.

- f) To continue the pressure build-up and continue measuring point readings, turn capstan **2** clockwise to 10000 bar. Attention, when increasing pressure, don't touch to the capstan **1**. If you can not get enough pressure, the volume of the fluid is not enough. To correct, go back to step c) by making fewer turns of the capstan (3 turns for example instead of 6)

> To lower and release the pressure at the end of the measurement cycle

- g) After taking the measurement point readings, turn capstan **2** anticlockwise to the rear end stop, then turn capstan **1** anticlockwise. clockwise to the rear end stop and open valve **B** (counterclockwise).

- h) Measuring instruments can be dismantled.

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 :

- Use only oil Sebacate (depending on model).The guarantees of performance and operation are insured with the use of these oils.



> wear are protection : protects the eyes against splashes and projections of the fluid.

- Don't remove the protective cover.

b) Maintenance

> 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.

> Tank oil

Make sure the tank contains enough liquid to make the required calibrations. If necessary, fill the tank with the same liquid as that already used. Don't mix different types or brands of fluids into the generator and use the recommended oil.

Skydrol, solvents may damage the o-rings mounted on a generator.

Keep clean bench, wipe traces of fluid, and particularly the oil condition in the tank to detect traces of pollution. If the fluid in the system is dirty, drain the device and remove dirty oil.



> Option : cleaning kit Ref. OP0025 you will aspirate oil durty present in the tank.

Don't clean the tank with alcohol

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.

> OPTIONS / ACCESSORIES / PARTS FOR SERVICE AFTER SALES

Oil

OP0135 : 1 liter Oil Sébacate (models CH3-10000B)

Adaptators HP+

OP0250 : suitcase with 5 adaptatoes HP+, plug HP

Kit cleaning

OP0025 : Cleaning kit for tank

OP0062 : Cleaning bench for manometers

Protection of the workstation

transparent protective cover for the generator

shipping

OP0254 : suitcase for the transportation of your device

Parts :

CP160-015 : tank

CP160-041 : o-ring for tank



Notes

