

AYERBE

- **GRUPOS ELECTROGENOS 3.000 r.p.m.**
- **GENERATING SETS 3.000 r.p.m.**
- **GROUPES ELECTROGENES 3.000 t.p.m.**
- **GRUPOS ELECTROGÉNEOS 3.000 r.p.m.**



AYERBE INDUSTRIAL DE MOTORES, S.A.

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AYERBE

INTRODUCTION

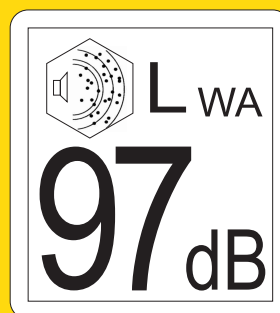
Thank you for purchasing an **AYERBE** generator.

This manual explains the operating and maintenance procedures of your **AYERBE** generator.

We recommend that you read this manual carefully and that you follow closely all of the guidelines for the safety, use, and maintenance of your generator.

Due to the constant efforts we make in order to improve our products, some procedures and specifications are subject to modification without prior warning.

DIAGRAM AND PLATES THAT ARE ON YOUR GENERATOR AND WHAT THEY MEAN

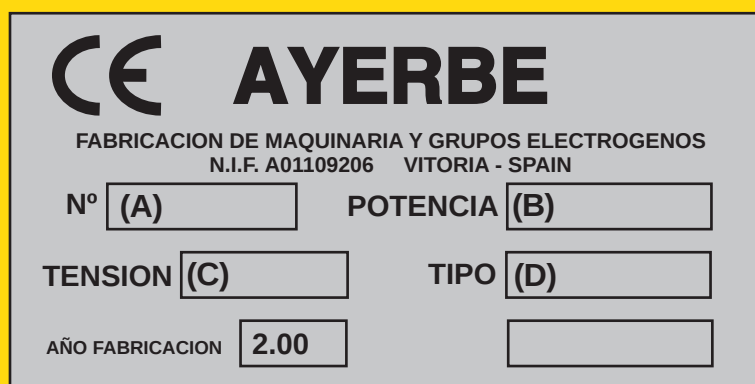


Indicates the acoustic levels L_{WA} in dB in relation to 1 p.w.



Indicates that the product was manufactured in accordance to the European Community standards.

- (A)= Serial number
- (B)= Generator power
- (C)= Generator voltage
- (D)= Generator model



Example of the identification plate

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1.SAFETY INSTRUCTIONS

Your safety and the safety of others are very important. Please read these instructions carefully.

If you do not follow the instructions below, you could run the risk of **serious injury or even death**.

GENERAL RECOMMENDATIONS

- 1.One of the essential safety factors is to respect the maintenance schedule (see maintenance table below).
 - 2.Never make repairs or carry out maintenance operations if you lack the experience or necessary tools.
 - 3.Never get near a rotating part that is in motion while wearing loose clothing or with long hair without wearing a hairnet. Never try to stop, slow down, or block a rotating part that is in operation.
 4. When you receive your generator, check to make sure it is in good condition. Do not make sharp movements or shake the generator when handling it, being careful to prepare a place to store and use it beforehand.
 5. You must know how to turn the generator off in case of an emergency and must familiarize yourself with its controls and exhausts.
 6. Never let someone use the generator who is not familiar with how to use it.
 7. Keep minors away from the generator.
- Perform the proper checks before starting the generator in order to avoid accidents or damaging the equipment.

WARNINGS ABOUT ELECTROCUTION

1. Always ground the generator and the charge.
2. Never touch bare wires or unplugged plugs.
3. Never use the generator with wet hands or feet.
4. Never use the generator in the rain or snow.
5. Never use equipment that is in poor condition that could damage the generator.
6. Never plug the generator into the public electricity supply. A qualified electrician must connect it according to the electrical rules and regulations in force. An improper connection can cause electrical back currents with the danger of electrocuting anyone working on the public electricity network.
7. Circuit breakers have been specially designed for this type of generator in order to protect against electric shock. If they need to be changed, circuit breakers with the same features and values must be used.

Periodically inspect the electrical cables and replace any cables that are in poor condition before starting the generator.

WARNINGS ABOUT FIRES OR EXPLOSIONS

1. Never start the generator if there is gasoline or another gas-like or flammable fuel nearby as it could cause a fire or explosion.
2. Never fill the fuel tank with the motor running. Never smoke or have an open flame nearby either.
3. Pay careful attention not to spill any fuel while filling the tank. If you do, clean it up and let it dry completely before starting the motor.
4. Do not bring any type of flammable substance, fuel, matches, gunpowder, oily rags, or trash near the generator.
5. Never cover the generator with any type of material while it is in operation or just after it has been turned off because the motor will be hot.
6. Keep the generator level on a solid, flat surface. If you do not, the fuel could spill and catch on fire. Do not overfill the fuel tank. Always make sure the fuel cap is closed properly.

WARNINGS ABOUT EXHAUST GASES

1. Do not run the generator in closed areas, caves, tunnels, or places with little ventilation.
2. Always use it in areas that are very well ventilated since the exhaust produced by the motor can cause death.
3. Keep the generator at least 1 meter minimum from any type of structure or building during use.
4. If the generator must be used in a closed area, the area must be well ventilated and all of the necessary precautions must be taken in order to evacuate the exhaust.

WARNINGS ABOUT BURNS

1. Be careful not to touch the hot parts of the motor or muffler which could cause serious burns.
2. Hot oil causes burns. Therefore, avoid direct contact with your skin. Make sure that the system is not under pressure before performing any type of operation.
3. Do not start or make the motor turn with the fuel cap off.
4. Let the motor cool down before you perform any maintenance on the generator or before storing it.

WARNINGS ABOUT BATTERIES (for electric starters)

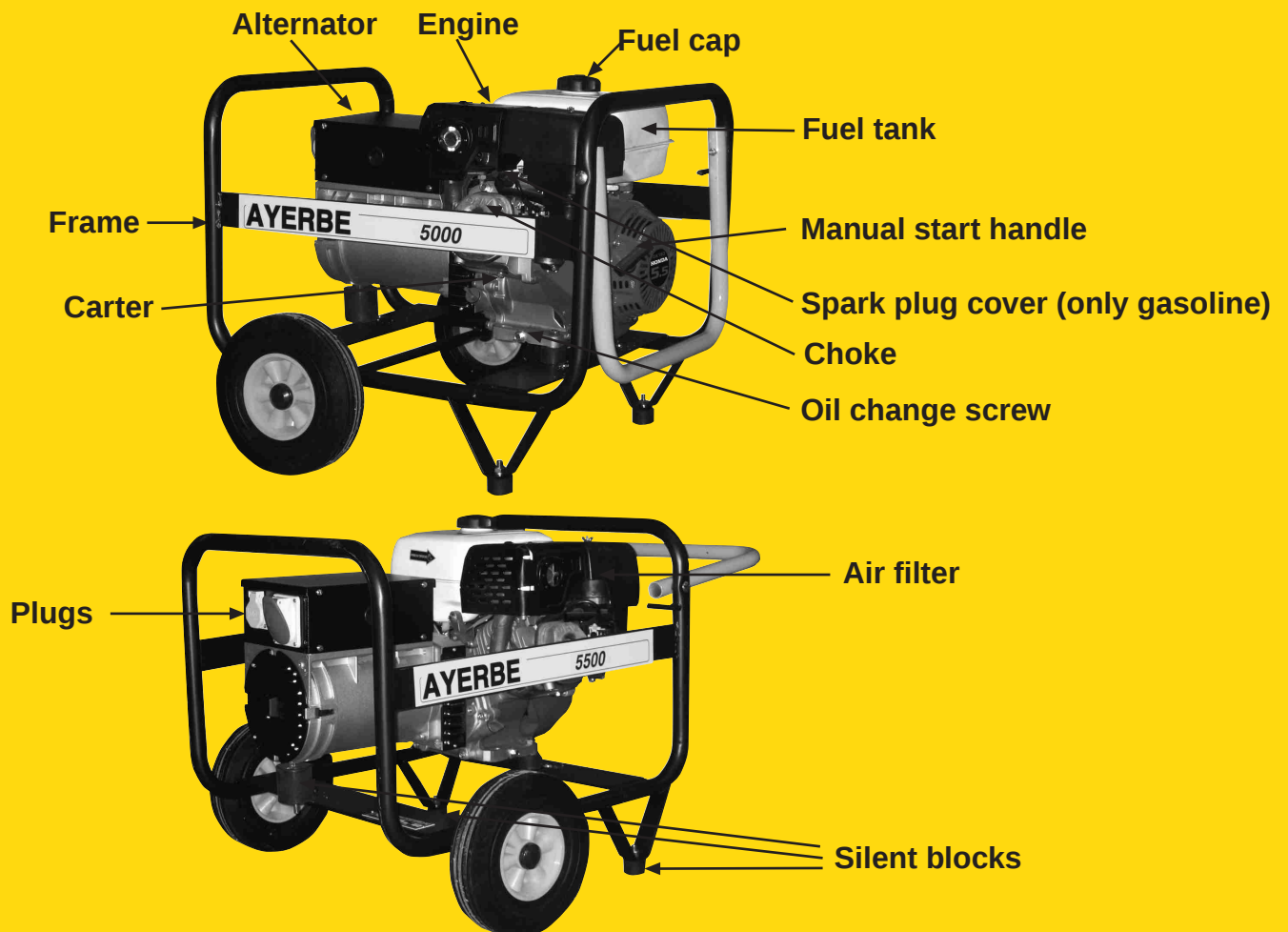
1. Do not mix up the positive and negative terminals on the battery when hooking it up because this could seriously damage the generator.

2. Never place the batteries near a flame or fire.
3. Never use sulfuric acid or acidified water to fill the electrolyte level. Use distilled water. The electrolytes that batteries contain are toxic and dangerous. Batteries contain sulfuric acid and can cause corrosion or heating. Avoid getting the acid on your skin, in your eyes, or on your clothing.
4. Only recharge the battery in a well ventilated area.

WARNINGS ABOUT THE ENVIRONMENT

1. Never empty or dump used oil directly on the ground. Please use a container to do so.
2. Get rid of used oil in an environmentally friendly manner. We recommend that you take the used oil in a closed container to your local recycling center. Never throw it in the trash, pour it out onto the ground, or dump it in the sewer.
3. Used oil can cause skin cancer if your skin comes into contact with it frequently and for prolonged periods of time. Although it is highly unlikely, we recommend that you wash your hand after handling used oil.

2. PARTS



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3. CHECKS TO PERFORM BEFORE STARTING

It is important to take into account the following recommendations before starting the generator.

MOTOR OIL

All generators come without oil. The oil is an important factor that affects the performance and life of the motor.

Use detergent oils for 4-stroke engines or API SE or higher (SG, SH, or SJ recommended). We recommend you use SAE 10W-30 or SAE 10W-40 oil for general use at all temperatures. If you use a monograde oil, choose the proper viscosity according to the temperature of the area where you live.

Monograde oil	5 W						
		10 W					
			20 W				
				# 20			
					# 30		
Multigrade oil						# 40	
Room temperature	-20	-10	0	10	20	30	40 °C
	-4	14	32	50	68	86	104 °F

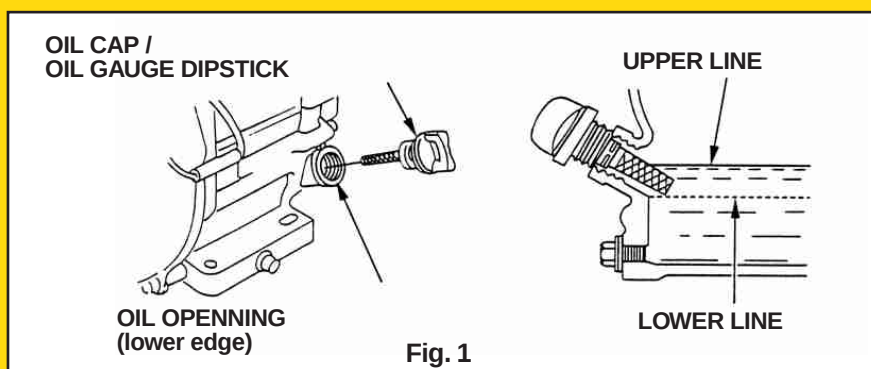
Never used non-detergent or vegetable oils.

In addition, we must point out that running the motor without enough oil could seriously damage it.

CHECKING THE OIL

Check the oil level while the motor is turned off. Make sure the motor is level and follow the steps below: (See Fig. 1)

- Pull out the dipstick and clean it off with a cloth.
- Stick the dipstick back in the oil tank.
- Pull the dipstick out again and check the oil level on the dipstick. If the oil level is close to or below the lower line on the dipstick, fill the motor with oil up to the upper line (lower edge of the opening where you fill it with oil).



Important: **AYERBE GASOLINE** generators have an oil level alert system that will automatically shut off the engine before the oil level falls below the safety limit. However, in order to avoid having it shut off unexpectedly, always check the oil before starting it.

AYERBE DIESEL GENERATING SETS have not this oil level alert system.

CHANGING THE OIL

To change the oil, please see the manual of your motor.

FUEL GASOLINE GENERATORS

This generator is certified to operate with 95 octane and 98 octane unleaded gasoline. Unleaded gasoline produces less build-up in the engine and on the spark plugs and extends the life of the exhaust system.

It is very important to follow the safety regulations explained above.

In addition, you should keep in mind the following recommendations:

- Do not use bad or dirty gasoline or gas mixed with oil.
- Keep dirt or water out of the fuel tank.
- Do not use fuel with alcohol.

FUEL DIESEL GENERATORS

G.E. must use automotion diesel fuel, the use of another type (agricultural or for heatings) can damage the injection system.

GROUDING THE GENERATOR

To ground the generator, use a 10 mm² copper wire attached to the generator's ground plug and a galvanized steel ground rod 50 cm. into the ground. This ground plug also dispels static electricity generated by electric machines.

4. STORAGE

If you aren't going to use the generator for a prolonged period of time, we recommend that you follow the steps below:

- Store the generator in a clean, dry place.
- If you are not going to use the generator for six months, empty the oil tank, remove the oil filter, and drain the fuel tank.
- Take out the injectors and pour a small amount of oil into the cylinders through the openings.
- Disconnect the battery if it has one

5. OPERATION

IMPORTANT: 3.000 r.p.m. Generating Sets mustn't be operating over 4 hours continuously.

STARTING GASOLINE ENGINE

Before starting the generator, make sure that it is not connected to any electric machine.

**DO NEVER TOUCH THE ACCELERATION LEVER.
THE ENGINE OF THIS GENERATOR HAS BEEN REGULATED TO
THE APPROPRIATE REVOLUTIONS IN ORDER TO HAVE A PERFECT OPERATION.**

Follow the steps below in order to start the generator:

MANUAL STARTER:

- Turn the fuel valve to the ON position.
- To start the motor when it is cold, turn the choke to the CLOSED position.
- To start the motor when it is hot, turn the choke to the OPEN position.
- Then turn the engine switch to the ON position.
- Pull the starter handle lightly until you feel resistance. Then pull hard. Slowly release the starter handle.

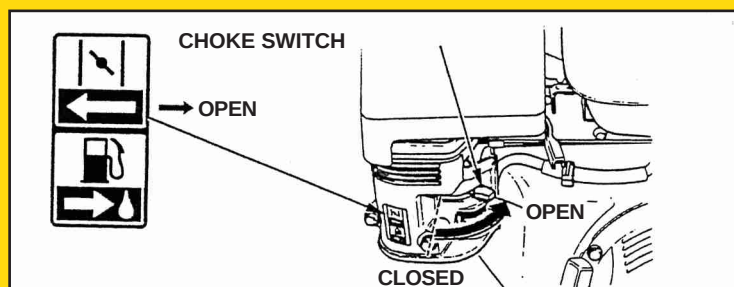
ELECTRIC STARTER:

To start an electric start generator, turn the key to the Start position and hold it until the motor starts. If it doesn't start after 5 seconds, let off the key and wait at least 10 seconds before trying to start it again.

Important: If you use the electric starter for more than 5 seconds at a time, the starter will overheat and can break.

When the motor starts, release the key, allowing it to return to the ON position.

If you moved the choke to the CLOSED position in order to start the motor, gradually move it to the OPEN position as the motor warms up.



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TURNING THE GASOLINE ENGINE OFF

If you need to turn the motor off in the event of an emergency, just turn the engine switch to the OFF position. In normal situations, use the following procedure:

- Disconnect all of the devices connected to the outputs of the generator.
- Turn the switch to the OFF position.
- Turn the fuel valve to the OFF position.

If it is an electric start motor, turn the starter to the OFF position.

STARTING DIESEL ENGINE

Before starting the generator, make sure that it is not connected to any electric machine. Follow the steps below in order to start the generator:

MANUAL STARTER:

- Press the decompressor valve, located in the top of the cylinder head, until to it is fixed.
- Check that the acceleration lever is not in STOP position, and fix it in the top maxime position.
- Pull the starter handle lightly until you feel resistance. Then pull hard. Slowly release the starter handle.

ELECTRIC STARTER:

To start an electric start generator, turn the key to the ON position and turn the key until the motor starts.

If it doesn't start after 5 seconds, let off the key and wait at least 10 seconds before trying to start it again.

Important: If you use the electric starter for more than 5 seconds at a time, the starter will overheat and can break.

When the motor starts, release the key, allowing it to return to the ON position.

TURNING THE DIESEL ENGINE OFF

If you need to turn the motor off in the event of an emergency, just move the accelerate lever to the STOP position. In normal situations, use the following procedure:

- Disconnect all of the devices connected to the outputs of the generator.
- Turn the switch to the OFF position.
- Turn the fuel valve to the OFF position.

If it is a hand start motor, turn the acceleration lever to the STOP position.

6. DESCRIPTION OF ALTERNATOR/WELDER WORKING PRINCIPLES

1. Selector of Alternator/Welder function
2. Selector of current range
3. Quick plug of maximum welding current
4. Quick plug of common welding current

Working as alternator:

In this function the selector (1) must be on position "GENERATOR" and current selector (2) must indicate the maximum value.

This way it is possible to use the single phase sockets mounted on the panel.

Working as AC / DC current welder:

In this function the selector is on position "WELDER". The welding cables must be connected to plugs (3) and (4).

With current range selector (2) it is possible to set the most suitable value according to the used electrode.

Important: every time the machine is used as welder, selector (1) must be in position "WELDER" to avoid any damage caused by voltage fluctuations on the sockets.

SAFETY INSTRUCTIONS FOR WELDING

- Avoid any direct contact with the welding circuit, the arc striking tension of the welding outlet can be dangerous in some circumstances
- Accomplish equipotential connection of all metallic parts according to national safety rules, as well as for any eventual connection to earth.
- Do not use cables with wrong insulation or loose connections
- Do not weld on containers or pipes which have held flammable materials or gaseous or liquid combustibles
- Remove from working area all flammable materials like wood, paper, rags, etc.
- Always protect your eyes with fitting actinic glasses mounted on welding masks or helmets. Use proper gloves or protecting clothes avoiding the exposure of your skin to welding arc.

Connection of the welding cables

Cable with "electrode holder" gun is connected to terminal (3).

The earth return cable must be connected to terminal (4) of the welder and earth terminal, in the opposite side of the cable, must be connected to the work piece or a metallic work bench as closed as possible to the joint to be made.

Connected cables must be turned fully into the quick plugs to ensure a good electrical contact (loose connections will cause overheating with consequent rapid deteriorations of the same).

Avoid using welding cables of length over 10m.

WELDING

This welder is designed to weld rutile and acid electrodes and all other kind of electrodes suitable for fusion with alternating current. Welding current must be regulated according to electrode diameter and type of joint to be carried out.

The user must consider that in case of same electrode diameter, higher current values must be used for flat welding and lower values for vertical and overhead welds.

Procedures

Holding the mask in front of the face, strike the electrode tip on the work piece as if you were striking a match. Do not hit the electrode on the work piece because you could damage the electrode covering and make strike-up difficult. As soon as arc is ignited, maintain a distance from the work piece equal to the diameter of the electrode; keep an angle of 20°-30° as it advances.

For more information see the attached alternator manual.

7. MAINTENANCE

Maintenance is essential in order to keep the generator in good working condition. Improper maintenance or not repairing a problem could be the cause of improper functioning and could run the risk of causing serious injury or even death.

That is why we recommend the following:

- Before performing any type of maintenance, let the generator cool down for at least fifteen minutes if it was running.
- We suggest the following maintenance program:

MAINTENANCE ITEMS	ACTION	EACH USE	FIRST MONTH OR 20 HRS	EVERY THREE MONTHS OR 50 HRS	EVERY SIX MONTHS OR 100 HRS	EVERY YEAR OR 200 HRS
Motor Oil	Check the oil Change	×	×		×	
Air filter	Check Clean	×		×	Change	
Sedimentation cup	Clean				×	
Oil filter	Change					×
Spark plug	Check-Adjust Change				×	×
Combustion chamber	Clean					Every 500 hrs *
Valve clearance	Check-Adjust					×
Valves	Clean					×
Fuel tank / filter	Clean					×

* Servicing for these parts should be done by a specialist, unless you have the proper tools and mechanical knowledge needed.

AIR FILTER

A dirty filter restricts the flow of air to the carburetor, reducing the motor's performance. If you use the motor in dusty places, clean the air filter more often than what is specified in the maintenance program.

It should be mentioned that if you turn the motor on without the air filter in place or with a damaged filter, dirt will get inside the motor and will make it wear out quickly. This type of damage is not under warranty.

To check and clean it, please see the manufacturer's motor manual.

SPARK PLUG (ONLY GASOLINE GENERATORS)

For good performance, the electrodes should have a gap of 0.70mm to 0.80mm. It is also important to mention that a loose spark plug could cause overheating and damage the motor. Tightening spark plugs excessively can also damage the threads of the cylinder head.

8. MOST FREQUENT PROBLEMS

PROBLEM	PROBABLE CAUSE	SOLUTION
Motor doesn't start	Machine is out of fuel Dead or low battery Fuel filter blocked Air or water in the fuel line Valve recession Ducts blocked A safety device is on Cable improperly connected or bad connection Air filter blocked	Add fuel Replace or charge Check and change Purge Take apart and polish valve seats Take apart and clean Check and resolve the safety device problem Review the diagram and modify Replace
The motor starts and stops	Slow idle Fuel filter blocked Air in the fuel line Tank vent blocked Defective base supply	Change it to 51.5 Hz Replace Purge Clean Check and change if necessary
The generator doesn't produce electricity	The circuit breaker is unplugged Excitation problem Engine speed too slow Problem with the alternator	Plug in the circuit breaker Check with a Service Technician Check the engine speed Check
High or low voltage vacuum	Alternator not adjusted properly Engine's RPMs too low	Adjust the voltage on the regulation board Adjust the RPMs
Voltage lower than nominal voltage	Too much charge Engine's RPMs too low	Check and reduce the charge Adjust the RPMs
Unstable voltage	Unreliable contacts	Check the connections
The generator stops	Stopped as a safety measure Air intake	Check the alarms and resolve the problem Check and eliminate



AYERBE

DECLARATION OF CONFORMITY

The manufacturer: AYERBE INDUSTRIAL DE MOTORES, S.A.
C/ Oilamendi, 8 - 10 01015 Vitoria - SPAIN
Fiscal ID#:A01109206

Hereby declares that the generator **MODEL:** with **PLATE:** complies with all applicable provisions of the Machinery Directive (Directive 2006/42/EC) and national regulations which transpose it; it also meets all applicable provisions of the following EC Directives:

- EMC Directive 2004/108/EC
- Directive 2005/88/EC of noise emissions (as amended)
- Directive 2006/95/CE of electrical safety

and all national regulations which transpose it;

it meets the provisions of the following harmonized standards: EN ISO 14121-1:2007 and EN12601:2001

By virtue of that which is stipulated in Directive 2005/88/EC (2000/14/EC):

- The following values indicate the acoustic levels for the aforementioned machine:

Measured acoustic level: dB Guaranteed acoustic level: dB

- We have followed a process of total quality assurance in order to evaluate the conformity which is approved by the following notified body which intervened: Soci t  Nationale et d'Homologation S.A.R.L. (SNCH) n  0499,

11 Rue de Luxembourg, 1-5230 Sandweiler; LUXEMBOURG.

Certificate of Compliance No. SNCH*2000/14*2005/88*0691*03

The contact information of the person to draw up/store the technical report are:

D. Adri n Mart nez de Albornoz Arregui
Manager
AYERBE INDUSTRIAL DE MOTORES, S.A.
C/ Oilamendi, 8-10 01015 VITORIA - SPAIN


Signed
Adri n Mtz. de Albornoz
Manager
In Vitoria, on January 1, 2017

DECLARA  O DE CONFORMIDADE

O fabricante: AYERBE INDUSTRIAL DE MOTORES, S.A.
C/ Oilamendi, 8 - 10 01015 Vitoria - SPAIN
CIF: A01109206

Declara que o grupo electr geno **MODELO:** com **PLACA:** cumpre com todas as disposi  es aplic veis da Directiva de M quinas (Directiva 2006/42/CE) e as regula  es nacionais que a transp em; cumpre tamb m com todas as disposi  es aplic veis das seguintes Directivas Comunit rias:

- Directiva 2004/108/CE de compatibilidade electromagn tica
- Directiva 2005/88/CE de emiss es sonoras (e suas modifica  es)
- Directiva 2006/95/CE de seguran a el trica

e as regula  es nacionais que a transp em;

cumpre as disposi  es das seguintes normas harmonizadas: EN ISO 14121-1:2007 e EN12601:2001

Em virtude do estabelecido na Directiva 2005/88/CE (2000/14/CE):

- S o indicados os seguintes valores de pot ncia ac stica para a m quina mencionada:

N vel de pot ncia ac stica medido: dB N vel de pot ncia ac stica garantido: dB

Foi seguido um procedimento de garantia total da qualidade para avaliar a conformidade, aprovado pelo seguinte organismo

Notificado que interveio: Soci t  Nationale de Certification et d'Homologation s. .r.l. (SNCH) n  0499

11, rue de Luxembourg. 1-5230 Sandweiler; LUXEMBOURG

CERTIFICADO CE DE CONFORMIDADE N : SNCH*2000/14*2005/88*0691*03

Os dados da pessoa facultativa para elaborar/conservar o relat rio t cnico s o:

D. Adri n Mart nez de Albornoz Arregui
Gerente
AYERBE INDUSTRIAL DE MOTORES, S.A.
C/ Oilamendi, 8-10 01015 VITORIA - SPAIN


Ass: Adri n Mtz. de Albornoz
Gerente
Vitoria, a 1 de Janeiro de 2017

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