

INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS
ANNEX FOR EC ATEX REGISTERED EQUIPMENT UNDER DIRECTIVE
2014/34/EU:

TANK BOTTOM MIXER

ME-6100 Ex

The contents of this Annex complements the information included in the instruction manual. The instructions of this Annex must be observed whenever equipment registered under Directive 2014/34/EU is used.

This Annex is to be added to the manuals of the ATEX registered components that form part of the assembly (e.g. driving, etc.).



Original Instructions
03.600.30.04EN
(E) 2023/06

EU Declaration of Conformity

We,

INOXPA, S.A.U.

Telers, 60

17820 – Banyoles (Girona)

Hereby declare under our sole responsibility that the machine

TANK BOTTOM MIXER

Designation

ME

Type

ME 6100

From serial number **lxxxxxxxx** to **lxxxxxxxx** ⁽¹⁾

Is in compliance with applicable provisions of the following directive:

Directive ATEX 2014/34/EU

Applicable harmonized standards:

EN ISO 80079-36:2016

EN ISO 80079-37:2016

EN 1127-1:2019

EN 13237:2012

EN 15198:2007

EN IEC 60079-0:2018

This Declaration of Conformity covers equipment with the following ATEX marking:

 II 2G Ex h IIB T4...T3 Gb

 II 2D Ex h IIIB T130 °C...T154 °C Db

 II 2G Ex h IIB T4...T3 Gb
 II 2D Ex h IIIB T130 °C...T154 °C Db

⁽¹⁾ Where x is a numeric character

The technical documentation referenced 14771110-778370 is on file with the notified body LABORATOIRE CENTRAL DES INDUSTRIES ELECTRIQUES (LCIE), 33, Av. du Général Leclerc BP 8, 92266 Fontenay-aux-Roses, France. Reference num. 0081.

The person authorized to compile the technical documentation is the signer of this document.



Banyoles, 2023

David Reyro Brunet
Technical Office Manager

⁽¹⁾ Where x is a numeric character

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2. Generalities

2.1. INSTRUCTIONS MANUAL

The information published in the instruction manual and in this Annex which complements this is based on updated information.

We reserve the right to modify the design and/or manufacture of our products when we consider it opportune, without having any obligation to appropriately adapt any product supplied beforehand.

The technical and technological information issued in this Annex, together with the graphs and technical specifications we provide, will continue to be our property and should not be used (unless it is used for the starting of this installation), copied, photocopied, delivered or communicated to third parties without prior written notice. INOXPA reserves the right to modify this Annex to the instruction manual without prior notice.

2.2. COMPLIANCE WITH THE INSTRUCTIONS

This Annex to the instruction manual, together with the manual, contains the basic indications which should be fulfilled during the installation, starting and maintenance. Consequently, it is indispensable that prior to the installation, the installer as well as the technical personnel responsible for the plant read this Annex to the instruction manual and that this remains permanently available in the proximity of the corresponding mixer or installation.

Not only should the safety instructions indicated in this chapter be observed and fulfilled, but so should the special measures and recommendations included in the other chapters of this manual.

2.3. WARRANTY

Finally, we should point out that any guarantee issued will be cancelled immediately and as a matter of law and, in addition, we will require compensation for any claims of civil liability presented by third parties in case of non-fulfilment of any of the indications given in the attached annex or:



The mixer was selected for working conditions in explosive atmospheres at the time the order was placed. INOXPA will not be responsible for any damage which may be caused if the information provided by the buyer is incomplete or incorrect (type of liquid, viscosity, RPM, classification of the potentially explosive zone, gas generated by the potentially explosive atmosphere, etc.).

The General Delivery Terms already provided also apply.

3. Safety

3.1. WARNING SYMBOLS

The safety instructions contained in this Annex, whose non-fulfilment could cause a risk for persons or for the machine and its operation, are expressed through the symbols indicated in the following:



This sign will identify all the safety instructions given in this Annex concerning the danger of the development of explosive atmospheres as well as the creation of sources of ignition in potentially explosive atmospheres when failure to comply with those instructions can threaten your safety.

3.2. GENERAL SAFETY INSTRUCTIONS



- Read the instructions contained in this Annex on a complementary basis with the manual before installing the mixer and starting it.
- The installation and use of the mixer should always be in accordance with applicable regulations in regard to health and safety.
- All the electric work should be carried out by specialised personnel.
- Control the characteristics of the motor and operation of the control board, above all in areas where there is a risk of fire or explosion (classified zones). The responsible person of the user company should define the risk zones (zone 0 – 1 – 2).
- On dismantling the mixer, the possible formation of potentially explosive atmospheres should be considered, for which the responsible person of the user company should issue safe work permits.
- The maximum operating conditions of the mixer should not be exceeded. Nor should the operating parameters for which the mixer was initially designed be modified without written authorisation from INOXPA.
- Under no circumstances should the limit values of working conditions in explosive atmospheres be exceeded.
- Standard mixers are not designed to work during the filling or emptying of tanks. This could cause the premature deterioration of the motor bearings, causing the temperature to rise to unacceptable levels for the classified zone.

3.2.1. DURING THE INSTALLATION

Check the characteristics of the motor and its control panel, especially in areas at risk of fire or explosion.



**Do not disassemble the mixer without having previously disconnected the electrical panel. Remove the fuses and disconnect the motor power cable.
All electrical work must be carried out by specialized personnel.**

3.2.2. DURING OPERATION



The limit values for working conditions in explosive atmospheres must not be exceeded. INOXPA will not be held responsible for any damages that may be caused by the use of the mixer in conditions other than those expressed in the ATEX form.

3.2.3. DURING MAINTENANCE



Important notes on explosion protection.
Always observe the instructions for explosion protection.
Maintenance must be carried out by qualified personnel.

4. General Information

4.1. DESCRIPTION

For series Ex ME-6100 mixers, the driving should be appropriate to operate in explosive atmospheres.

Mechanical seal suitable for working in classified areas. The installation instructions provided by the seal supplier must be followed.



The mixer was selected for working conditions in explosive atmospheres at the time the order was placed. INOXPA will not be responsible for any damage which may be caused if the information provided by the buyer is incomplete or incorrect (type of liquid, viscosity, RPM, classification of the potentially explosive zone, gas generated by the potentially explosive atmosphere, etc.).

Single mechanical seal. If the single mechanical seal is working in dry conditions, its maximum operating temperature may be exceeded. This is why a simple mechanical seal must not operate under any circumstances in dry conditions.

- Regularly check that the single mechanical seal is functioning correctly.
- Check that the hydraulic part of the pump is always free of liquid during operation.
- Avoid pumping fluids that contain large amounts of gas.

The end user must ensure a liquid level above the mixer of at least a height equal to 2 times its diameter, by means of a level detector, to avoid an increase in surface temperature due to dry working.

- Double pressurized mechanical seal option. Must be protected by controlling the washing liquid.
 - o Check the level of supply reserve.
 - o Check the temperature of the washing liquid.
 - o Check the pressure.
 - o Check the condition of the washing liquid: Change the washing liquid if it has been contaminated by another liquid. Contamination of the liquid means that the pump is not functioning properly and it must be inspected. For example, the sealing system may have leaks in the middle or be open due to insufficient backpressure of the washing liquid.



Caution! The washing liquid must always be under pressure when the pump is operating.

- Cooled mechanical seal option.
 - Check the level of supply reserve.
 - Check the temperature of the washing liquid.
 - Check the pressure.

Attention: the cleaning liquid must always be under pressure when the mixer is in operation

- Check the condition of the washing liquid by inspecting it: Change the washing liquid if it has been contaminated by another liquid.

Frequent contamination is indicative of an unacceptable leak in the sealing system that must be repaired.

Contamination of the liquid means that the pump is not functioning properly and it must be inspected. For example, the sealing system may have leaks in the middle or be open due to insufficient backpressure of the washing liquid.

4.2. OPERATING PRINCIPLE



Do not modify the operating parameters for which the mixer was selected; deterioration may be produced, which is dangerous for the user and there is a risk of forming explosive atmospheres and the creation of sources of ignition.

The mixer cannot be operated without liquid. A safety system is therefore required to ensure a minimum liquid level from at least a height to 2 times his diameter, when the mixer is operational.

4.3. APPLICATION

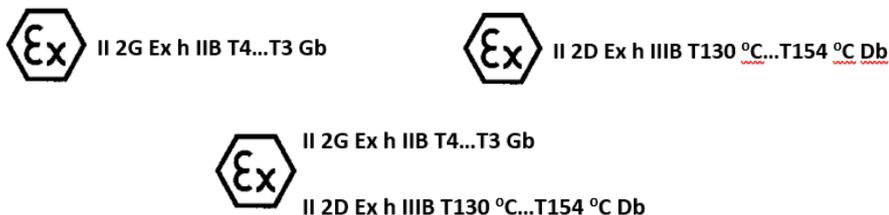


The mixer was selected for working conditions in explosive atmospheres at the time the order was placed. INOXPA will not be responsible for any damage which may be caused if the information provided by the buyer is incomplete or incorrect (type of liquid, viscosity, RPM, classification of the potentially explosive zone, gas generated by the potentially explosive atmosphere, etc.).

5. Installation

5.1. RECEPTION OF THE MIXER

Check the ATEX CE marking on the nameplate of the machine and verify that it meets the conditions of the order.



CE ATEX mark inscribed on the manufacturer's plate.

If the equipment mark does not correspond to the order, INOXPA should be immediately informed of the situation.

The temperature class and the maximum surface temperature depend on the temperature of the product to be pumped and the ambient temperature.

Temperature class for explosive gas atmospheres

Temperature class	Product temperature	Room temperature
T3	Will be T3 if product temperature ≤ 120 °C	-20 °C to +40 °C
T4	Will be T4 if product temperature ≤ 103 °C	-20 °C to +40 °C

Maximum surface temperature for explosive dust atmospheres

Maximum surface temperature	Product temperature	Room temperature
T147 °C	Will be T147 °C if product temperature ≤ 120 °C	-20 °C to +40 °C
T130 °C	Will be T130 °C if product temperature ≤ 103 °C	-20 °C to +40 °C

Notations

- For explosive dust atmospheres, take into account the temperature limitations indicated in Standard EN 60079-14:2014: the maximum temperature of the equipment surface must not exceed 2/3 of the minimum ignition temperature in °C of the dust-air mixture in question:

$$T_{max} \leq 2/3 \text{ TCL}$$
 where TCL is the minimum ignition temperature of the explosive dust atmosphere.
- For explosive dust atmospheres, take into account the dust layer thickness limitations indicated in Standard EN 60079-14:2014: when the equipment is not marked with a dust layer thickness as part of the T classification, it is You must apply a safety factor taking into account the thickness of the dust layer as:

up to 5 mm thick:

The maximum surface temperature of the equipment must not exceed a value of 75 °C below the minimum ignition temperature for the 5 mm thick layer of the dust in question:

$$T_{\max} \leq T_{5 \text{ mm}} - 75 \text{ °C}$$

where $T_{5 \text{ mm}}$ is the minimum ignition temperature of the 5 mm dust layer.

5.2. IDENTIFICATION OF MIXER

The mixer is identified by means of a nameplate. The mixer type and the serial number can be found on the plate.

In addition to the information in the manual it should be taken into account that ATEX equipment will be provided with the corresponding marking.

5.3. TRANSPORT AND STORAGE

5.4. LOCATION

It is very important to be able to access the electric connection device of the mixer, even when in operation.



It should be considered that during any operation of the electric connection equipment there may be a potentially explosive atmosphere, for which safe work permits should be issued.



It should be ascertained that there is air circulation for the mixer driving to cool. Ensure that there is no other equipment or surfaces close to the driving which might radiate additional heat or affect the cooling of the driving. See the driving's instructions manual.

If necessary, install an independent fan, taking into consideration the atmosphere in which this fan will operate (potentially explosive atmosphere).

Excessive temperatures

Depending on the fluid to be agitated, high temperatures may be reached inside and around the mixer:



Note that the surface temperature of the mixer in normal operating conditions is determined by the fluid it agitates. Therefore the table of temperature classes and maximum surface temperature in section 5.1 must be taken into account.

5.5. ELECTRICAL INSTALLATION

Before connecting the driving to the system, consult the supplier's instruction manual. This driving should be ATEX with adequate protection for the work environment in which it operates.

Before connecting an electric driving to the system, check local regulations regarding electric safety, as well as standards EN 60204-1 and EN 60079-14 currents of the moment.



The electrical equipment, terminals and components of the control systems may still contain electric current when switched off. Contact may place the operator or installation in danger or cause irreparable damage to the material. The supplier's instructions for the safe opening of the driving should be followed at all times.



Safe work permits should be issued for any handling of equipment in potentially explosive atmospheres, with it being advised to carry out this type of work in unclassified atmospheres (there should not be an explosive atmosphere where the mixer is located during handling).



Follow the driving manufacturer's indications at all times.



The control equipment should comply with the regulations in effect, as is stipulated by the electric safety standard, as well as the indications established by the ATEX driving manufacturer.



Also install protection against driving overload suitable to the nominal driving instructions manual.

5.6. ASSEMBLY



ATEX mixers are compact units and are **ALWAYS** supplied together with the driving.

5.7. PRESSURE VESSEL



A pressurization tank for a double mechanical seal, it must be ensured that the tank is always at a height of between 1 and 2 meters with respect to the entrance and exit of the mechanical seal. See the instruction manual for the mechanical seal and pressurization bottle. Verify that the instrumentation that the pressurization tank has is suitable for the work area. Prevent the cooling circuit from running out of liquid.

6. Start-up



Explosive atmospheres may be generated during the start-up of the mixer, for which safe work permits should be issued and this work should only be carried out by qualified or trained personnel.



The work without product can generate a temperature in the mechanical seal superior of the allowed in the classified zone.

7. Troubleshooting

8. Maintenance

8.1. GENERAL CONSIDERATIONS



Maintenance work on any equipment intended for use in potentially explosive atmospheres should involve the adoption of safe work permits as stipulated by Directive 1999/92/CE.

8.2. MAINTENANCE



The possible presence of explosive atmospheres or the formation of these during the maintenance work should be considered, for which safe work permits should be issued.



The maintenance of the driving and mechanical seal shall be carried out according to the manufacturer's indications (See instruction manual).



Use technically adequate tools for the maintenance and repair work. In case the zone is not declassified, all the tools should be non-sparking and safe work permits should be issued.



In the case of painting the parts of the mixer (except driving), the type of paint to be used must be conductive, dissipative or antistatic insulating, so that no accumulation of charges occurs or, if yes, these are controlled (paint must have a surface resistivity $<$ or $= 1$ Gohm).

8.3. LUBRICATION

8.4. SPARE PARTS

On requesting the spare parts of a mixer to operate in a classified zone, the order should explicitly indicate that these are for ATEX mixer and indicate the manufacturing number.

In case of failing to do so, INOXPA will not be responsible for the mixer operating with parts which are inadequate for the classified zone where installed.

8.5. CONSERVATION

8.6. DISASSEMBLY AND ASSEMBLY OF THE MIXER



The assembly and disassembly work of any equipment to be used in potentially explosive atmospheres should involve the adoption of safe work permits, in accordance with that specified by Directive 1999/92/CE.



Both assembly and disassembly of the mixers should be carried out by qualified personnel, using only appropriate tools, as well as adequate work methods.



Use technically adequate tools for the maintenance and repair work. In case the zone is not declassified, all the tools should be non-sparking and safe work permits should be issued.



An incorrect assembly or disassembly may cause damage in the operation of the mixer, resulting in high repair costs, an extensive period of inoperation and even invalidate the protection systems of the equipment.



INOXPA is not responsible for accidents or damage caused as a result of the non-fulfilment of the instruction manual and this Annex.

Cleaning

Before proceeding with the disassembly of the mixer it is necessary to clean it, on the inside as well as outside. In addition, the possible presence or formation of explosive atmospheres should be considered; consequently, safe work permits should be issued.

8.7. DISASSEMBLY OF THE ME-6103, ME-6105 AND ME-6110 MIXER WITH SIMPLE MECHANICAL SEAL

8.8. ASSEMBLY OF THE ME-6103, ME-6105 AND ME-6110 MIXER WITH SIMPLE MECHANICAL SEAL

8.9. DISASSEMBLY OF THE ME-6125 AND ME-6130 MIXER WITH SIMPLE MECHANICAL SEAL

8.10. ASSEMBLY OF THE ME-6125 AND ME-6130 MIXER WITH SIMPLE MECHANICAL SEAL

8.11. DISASSEMBLY AND ASSEMBLY OF FLUSHING

8.12. DISASSEMBLY OF THE ME-6103, ME-6105 AND ME-6110 MIXER WITH DOUBLE MECHANICAL SEAL

8.13. ASSEMBLY OF THE ME-6103, ME-6105 AND ME-6110 MIXER WITH DOUBLE MECHANICAL SEAL

8.14. DISASSEMBLY OF THE ME-6125 AND ME-6130 WITH DOUBLE MECHANICAL SEAL

8.15. ASSEMBLY OF THE ME-6125 AND ME-6130 MIXER WITH DOUBLE MECHANICAL SEAL

9. Technical Specifications

Temperature range. See section 5.1.

9.1. MATERIALS

9.2. SIMPLE MECHANICAL SEAL

9.3. DOUBLE MECHANICAL SEAL

9.4. MECHANICAL SEAL WITH FLUSHING

9.5. MOTOR

9.6. ANOTHER SPECIFICATIONS

9.7. DIMENSIONS

9.8. EXPLODED DRAWING AND PARTS LIST OF ME-6103, ME-6105 AND ME-6110 MIXER

9.9. EXPLODED DRAWING AND PARTS LIST ME-6125 AND ME-6130 MIXER

9.10. EXPLODED DRAWING AND PARTS LIST OF DOUBLE MECHANICAL SEAL ME-6103, ME-6105 AND ME-6110 MIXER

9.11. EXPLODED DRAWING AND PARTS LIST OF DOUBLE MECHANICAL SEAL ME-6125 AND ME-6130 MIXER

9.12. EXPLODED DRAWING AND PART LIST MECHANICAL SEAL WITH FLUSHING ME-6103, ME-6105 AND ME-6110 MIXER

How to contact INOXPA S.A.U.:

Contact details for all countries are continually updated on our website.

Please visit www.inoxpa.com to access the information.



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