



INSTALLATION, SERVICE AND MAINTENANCE INSTRUCTIONS

**ANNEX FOR CE MARKED EQUIPMENT ACCORDING TO THE ATEX
DIRECTIVE 2014/34/EU:**

NHS VERTICAL AGITATOR Ex

The content of this Annex supplements the information in the instruction manual. The instructions in this Annex must be taken into account in conjunction with the equipment marked according to Directive 2014/34/EU.

This Annex is complemented by the manuals of the ATEX-certified components comprising the assembly (e.g. drives, etc).



Original Manual
20.050.30.02EN
(A) 2021/11

EU Declaration of Conformity

We:

INOXPA, S.A.U.
Telers, 60
17820 - Banyoles (Girona)

Hereby declare under Our sole responsibility that the machine

VERTICAL AGITATOR

Model

NHS

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


is in compliance ⁽²⁾ with all applicable provisions of the following directive:


Directive ATEX 2014/34/UE


Harmonized technicals norms applicable:

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 T125 °C...T200 °C Db

 II 2G Ex h IIB T4...T3 Gb
II 2D Ex h IIIB T125 °C...T200 °C Db

The technical documentation referenced 174324-771316 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, 2022



David Reyero Brunet
Technical Office Manager

(1) where X is a numeric character

(2) stainless steel splash ring

1. Safety Instructions

1.1. SAFETY INSTRUCTIONS

In addition to the instruction manual, this annex to the manual contains basic guidelines which must be followed during the installation, start-up, and maintenance of this machine. Therefore, it is essential that both the installers and technical staff responsible for the plant read this annex to the instruction manual prior to the installation, and to ensure that it is permanently available next to the agitator or corresponding installation.

The safety instructions detailed in this section as well as all the special measures and recommendations included in the other sections of this annex must be observed and fulfilled.

1.2. SYMBOLS USED



Danger of formation of explosive atmospheres or generation of ignition sources of potentially explosive atmospheres

1.3. GENERAL SAFETY INSTRUCTIONS

- Read the instructions in this annex in addition to the manual before installing and starting the agitator.
- The installation and use of the agitator must always be carried out in accordance with applicable health and safety regulations.
- All electrical work must be carried out by authorised specialised personnel.
- Check the characteristics of the motor and its control panel, especially in areas with a risk of fire or explosion (classified areas). The technical manager or other responsible person of the company operating the system must define risk areas (zones 0 - 1 - 2).
- When disassembling the agitator, the possible formation of potentially explosive atmospheres must be considered, and the responsible person at the operating site must issue the corresponding safe work permits.
- Do not exceed the agitator's maximum operating conditions. Do not modify the operating parameters initially set for the agitator without prior written authorisation from INOXPA.
- The limit values for the operating conditions in explosive atmospheres shall not be exceeded under any circumstances.
- Standard agitators are not designed to operate during tank filling or draining processes. Ignoring this may cause premature wear of the motor bearings, resulting in a temperature increase up to levels which could be unacceptable for the respective classified zone.

1.4. WARRANTY

Any warranty will be void immediately and lawfully and, in addition, INOXPA shall be compensated for any product liability claims submitted by third parties in the case of non-compliance with any of the indications given in the attached annex or in the following cases:

The agitator was selected for use in explosive atmospheres at the time of placing the order, according to ATEX form. INOXPA is not liable for any damage that may arise if the information provided by the buyer is incomplete or incorrect (liquid type, viscosity, RPM, classification of the potentially explosive area, gas generated by the potentially explosive atmosphere, etc.)

The General Terms of Delivery already in your possession are also applicable.

1.5. INSTRUCTION MANUAL AND ANNEX FOR ATEX EQUIPMENT

The information published in the instruction manual and this complementary annex is based on updated data.

We reserve the right to modify the design and/or manufacturing specifications of our products as required, devoid of any obligation on our part to adapt any product supplied prior to such alteration.

The technical and technological information made available in this annex, along with any graphs, charts and technical specifications provided, remain our property and shall not be used (except for starting up this machine), copied, photocopied, made available or otherwise communicated to third parties without our prior written consent.

INOXPA reserves the right to modify this annex to the instruction manual without prior notice.

Table of contents

1. Safety Instructions	
1.1. Safety instructions	1.1
1.2. Symbols used.....	1.1
1.3. General safety instructions	1.2
1.4. Warranty	1.3
1.5. Instruction manual	1.3
1.6. INOXPA Service	1.3

Table of contents

2. Reception, storage and transport	
2.1. Reception.....	2.1
2.2. Storage	2.1
2.3. Transport.....	2.1

3. Identification, description and use	
3.1. Identification.....	3.1
3.2. Description	3.1
3.3. Using the agitator.....	3.1

4. Installation and assembly	
4.1. Installation and assembly.....	4.1
4.2. Installation site.....	4.1
4.3. Assembly	4.1
4.4. Electrical connection	4.3

5. Start-up, operation and shutdown	
5.1. Start-up	5.1
5.2. Operation	5.2

6. Maintenance and storage	
6.1. Maintenance	6.1
6.2. Lubrication	6.1
6.3. Spare parts	6.1
6.4. Repair	6.1

7. Operating problems: causes and solutions

8. Disassembly and assembly	
8.1. Electrical safety	8.1
8.2. Disassembly.....	8.1
8.3. Assembly	8.1

9. Technical specifications	
9.1. Technical specifications and dimensions.....	9.1
9.2. NHS Agitator: parts list	9.2
9.3. Sealing: Lip seal	9.3

2. Reception, storage and transport

2.1. RECEPTION

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

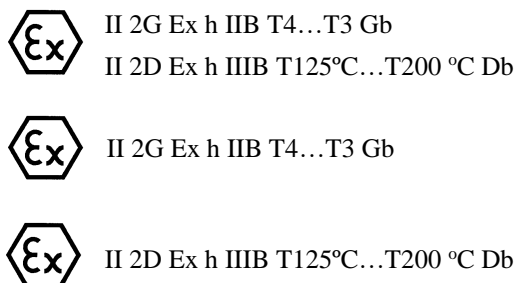


Figure 1.1.: ATEX CE marking on the nameplate.

Should the marking on the machine not correspond with the order, please contact INOXPA immediately to explain the situation.

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

Temperature class for explosive gas atmospheres

Temperature class	Product temperature (in process or cleaning)	Room temperature
T4	$\leq 110\text{ °C}$	-20 °C to +40 °C
T3	$\leq 140\text{ °C}$	-20 °C to +40 °C

Maximum surface temperature for explosive dust atmospheres

Maximum surface temperature	Product temperature (in process or cleaning)	Room temperature
T125 °C	$\leq 125\text{ °C}$	-20 °C to +40 °C
T200 °C	$\leq 200\text{ °C}$	-20 °C to +40 °C

3. Identification, description and use

3.1. IDENTIFICATION

The agitator is identified by means of a nameplate. The agitator 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.

3.2. DESCRIPTION

For the NHS series agitators fitted with seals, the drives must be suitable for operation in explosive atmospheres.

Stainless steel splash ring.

Lip seal obturation system; option to use garlock (work with pressure or vacuum).

The agitator was selected for use in explosive atmospheres at the time of placing the order, according to ATEX form. INOXPA is not liable for any damage that may arise if the information provided by the buyer is incomplete or incorrect (liquid type, viscosity, RPM, classification of the potentially explosive area, gas generated by the potentially explosive atmosphere, etc)

4. Installation and assembly

4.1. INSTALLATION AND ASSEMBLY

ATEX agitators are very compact machines and are always supplied together with the drive

4.2. INSTALLATION SITE

It is very important to be able to access the electrical wiring and connections on the agitator, even when it is in operation.

Please be aware that while handling any equipment with an electrical connection, a potentially explosive atmosphere may be present, and for this reason safe work permits should be issued

Some type of air recirculation for cooling the gear motor on the agitator must be provided. Make sure that there are no other systems or surfaces close to the gear motor which may radiate additional heat or may affect its cooling capacity. See instruction manual of the gear motor

Install a separate fan, if necessary, taking into account the atmosphere in which the fan should be operating (potentially explosive atmosphere).

Excessive temperatures

Depending on the fluid being agitated, high temperatures can be reached within and around the agitator:

It should be taken into account that, under normal conditions, the surface temperature of the agitator is a function of the temperature of the fluid being agitated, therefore the table of temperature classes and maximum surface temperature in section 2.1 must be taken into account

4.4. ELECTRICAL CONNECTION

Before connecting the gear motor to the power supply, consult the supplier's instruction manual. The gear motor must be ATEX certified and with adequate protection for the work environment in which it is intended to operate.

Before connecting a gear motor to the mains, check the local electrical safety regulations, as well as the specifications of standards EN 60204-1 and EN 60079-14 currents of the moment.

Electrical equipment, terminals and components of the control systems may still bear electrical current when they are disconnected. Making physical contact with them can endanger the safety of the operators and the installation or cause irreparable damage to the equipment; the supplier's instructions for the safe opening of the gear motor must be carefully followed at all times

Safe work permits shall be issued if the system is to be handled in the presence of potentially explosive atmospheres; it is recommended to do this kind of work in non-classified atmospheres (no explosive atmosphere can be present at the location of the agitator during its handling)

Follow the gear motor manufacturer's instructions at all times

The switchgear must comply with all applicable regulations, as stipulated in the electrical safety regulations as well as the directions laid down by the manufacturer of the ATEX gear motor

In addition, overload protections suitable for the gear motor power rating must be installed on the gear motor

5. Start-up, operation and shutdown

5.1. START-UP

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

5.2. OPERATION

Do not modify the operating parameters initially set for the agitator, according to ATEX Form sheet; since this could result in deterioration and the risk of formation of explosive atmospheres and ignition sources, placing the operator in danger

The agitator cannot operate with no fluid in the tank. Therefore, a safety system is required to ensure a minimum fluid level of 350 mm above the top blade when the agitator is running.

6. Maintenance and storage

Maintenance of any equipment intended for use in potentially explosive atmospheres shall only be carried out in conjunction with the use of safe work permits as specified in Directive 1999/92/EC

6.1. MAINTENANCE

The possible presence or generation of explosive atmospheres should be taken into account during maintenance work, and safe work permits should therefore be used accordingly

Maintenance of the gear motor shall be performed according to the manufacturer's specifications; refer to the manufacturer's instruction manual.

Use tools which are technically suitable for the specific maintenance and repair work involved. If the area is not declassified, all the tools used must be non-sparking and safe work permits shall be required

In the case of painting the parts of the agitator (except drive), 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 $\leq 1 \text{ Gohm}$)

6.3. PARTS LIST

To request spare parts for an agitator intended to work in a classified zone, it is necessary to explicitly indicate in the order that it is an ATEX agitator and include the manufacturing number.

If the spare parts are not requested in this way, Inoxpa shall not be responsible for the case that the agitator may not operate with parts which are not suitable for the classified zone where is installed.

8. Disassembly and assembly

Disassembly or assembly of any equipment intended for use in potentially explosive atmospheres shall only be carried out in conjunction with the use of safe work permits as specified in the Directive 1999/92/EC.

Both the assembly and disassembly of agitators must be performed by qualified personnel, using only appropriate tools, as well as suitable working methods.

Use tools which are technically suitable for the specific maintenance and repair work involved. If the area is not declassified, all tools must be non-sparking and safe work permits must be issued.

Incorrect assembly or disassembly may cause the agitator to malfunction and lead to high repair costs and a long down-time period, even invalidating the system's protection systems.

INOXPA is not responsible for accidents or damages caused by failure to comply with the instruction manual and with this annex.

Cleaning

Before disassembling the agitator, it must be cleaned both on the outside and on the inside. Furthermore, the possible presence or formation of explosive atmospheres should be taken into account, and safe work permits should therefore be used accordingly.

9. Technical Specifications

Temperature range. See section 2.1.