

varisco®

a solid name in fluids

GB



**Safety instructions in
accordance with Directive 94/9/CE
serie**



SAFETY INSTRUCTIONS IN ACCORDANCE WITH DIRECTIVE 94/9/CE

1. Foreword

The safety instructions contained in this document integrate and replace, where conflicting, those contained in the use and maintenance manual.

The safety instructions refer to the installation, use and maintenance of centrifugal pumps protected against the risk of explosion and designed for use in potentially explosive atmospheres.

CAUTION: THESE INSTRUCTIONS ARE ESSENTIAL FOR COMPLIANCE OF THE PUMP WITH THE REQUIREMENTS OF THE DIRECTIVE 94/9/EC AND THEY MUST THEREFORE BE KNOWN, AVAILABLE, UNDERSTOOD AND USED.

CAUTION: THE PERSONNEL ASSIGNED TO PUMP INSTALLATION, INSPECTION AND MAINTENANCE MUST HAVE ADEQUATE TECHNICAL TRAINING COMBINED WITH SUFFICIENT KNOWLEDGE OF POTENTIALLY EXPLOSIVE ATMOSPHERES AND RELATED RISKS.

CAUTION: ALL USES OF THE PUMP NOT SPECIFIED IN THE INSTRUCTIONS IN THIS USE AND MAINTENANCE MANUAL AND THIS SUPPLEMENT WILL INVALIDATE COMPLIANCE WITH THE REQUIREMENTS CONCERNING SAFETY AND PROTECTION AGAINST THE DANGER OF EXPLOSION.

CAUTION: THE RISKS CONNECTED WITH USE OF THE PUMP IN THE EXACT CONDITIONS PRESCRIBED BY THE USE AND MAINTENANCE MANUAL AND THIS SUPPLEMENT HAVE BEEN ANALYSED: IT IS THE JOB OF THE INSTALLER TO ANALYSE THE RISKS ASSOCIATED WITH INTERFACING WITH OTHER SYSTEM COMPONENTS.

2. Place of installation

The essential safety requirements against the risk of explosion in the areas classified are covered by directives 94/9/CE and 99/92/CE.

The criteria relating to classification of the areas are specified in the harmonised European standards EN 60079-10 and EN 1127-1.

3. Markings and general information

In compliance with regulation 94/9/CE the centrifugal pumps bear the following identification marking:



II 2 G : Surface equipment for use in areas with the presence of gas, vapours or mist occurring occasionally during normal operation (EN 1127-1 par. 6.3).

Eex c : Equipment with protection by constructional safety (prEN 13463-5)

T4 : Permitted temperature class. The user must process hot fluids in compliance with this classification taking into account the indications provided in this manual and the regulations currently in force. The user must furthermore take into account the sparking temperatures of the gases, vapours or mists present in the area of use.



= safety symbol in compliance with DIN 40012 appendix A.

The technical file is kept at TÜV NORD CERT in Hanover.

4. Installation and start-up

The following general precautions should be observed:

- Check presence of lubricant.
- Check that the pump is full and the level is 0.5 m above it.
- Check that the fluid treated does not or cannot contain solid parts large enough to cause damage. Check that there is no oxidised steel or ferromagnetic parts, even small.
- Check that there are no restrictions in the pump inlet and/or outlet to prevent phenomena of cavitation or overloading of the motor.
- Check that the connection pipes are strong enough and that they cannot become deformed under the weight of the pump and the suction.
- If the pump has been switched off for long periods, you are advised to circulate clean water for a few minutes to avoid the risk of scaling.
- Check that the rotation direction is correct.
- Check the general earth and that of the individual components.

5. Cleaning the pump

CAUTION: CLEAN THE PUMP WITH A DAMP CLOTH ONLY.

6. Temperature class

The reference temperature class is **T4**; the operating conditions are specified below:

Permitted ambient temperature variation: $-20^{\circ}\text{C} < \text{AmbT} < 40^{\circ}\text{C}$

Maximum value permitted for fluid process temperature: 45°C

CAUTION: IN VIEW OF THE PERMITTED VARIATION RANGE OF THE AMBIENT TEMPERATURE, FLUID PROCESS TEMPERATURES ABOVE 45°C DO NOT PERMIT COMPLIANCE WITH THE TEMPERATURE CLASS (T4) IN ADDITION TO CAUSING DAMAGE TO THE PUMP.

CAUTION: WHERE THE USER ENVISAGES EXCEEDING THE TEMPERATURE LIMITS PROVIDED FOR BY THIS MANUAL, A PROTECTION DEVICE MUST BE FITTED ON THE SYSTEM WHICH, APPLIED ON THE SEAL AREA, PREVENTS THE OVERALL TEMPERATURE (FLUID AND AMBIENT) OF 90°C BEING REACHED. THE DEVICE MUST BE CERTIFIED IN COMPLIANCE WITH THE ATEX DIRECTIVE FOR CATEGORY 2G.

7. Earthing point

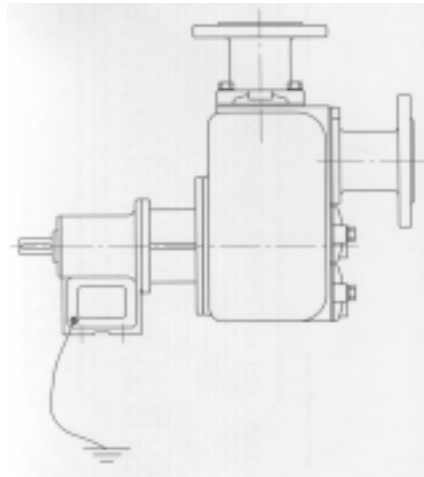


Figure 1

Figure 1 shows the earthing point (on the part called “motor holder”) to which the user must connect the earth cable. This cable must be of adequate section.

CAUTION: THE PUMP MUST ALWAYS BE EARTHED INDEPENDENTLY FROM THE MOTOR OR OTHER ITEMS CONNECTED TO IT. NO EARTHING OR INCORRECT EARTHING WILL INVALIDATE COMPLIANCE WITH THE REQUIREMENTS CONCERNING SAFETY AND PROTECTION AGAINST THE DANGER OF EXPLOSION.

8. Mechanical seal

The seal may become damaged and the pump liquid may seep out; the user must take this possibility into account and adopt all due precautions to ensure that the liquid does not react with the environment.

CAUTION: INSPECT THE SEAL EVERY TIME THE PUMP IS SERVICED AND STOP IT IMMEDIATELY IN THE EVENT OF LEAKAGE.

If a seal leaks, it must be replaced following the instructions provided in the pump use and maintenance manual. Varisco original spare parts must be used.

9. System delivery safety device

It is essential to fit a maximum pressure valve in the immediate vicinity of the pump delivery line. This maximum pressure valve must be marked CE in compliance with directive **97/23/CE (PED) in category 4**, as a safety device that stops operation of the pump.

CAUTION: ABSENCE OF THE MAXIMUM PRESSURE VALVE SAFETY DEVICE OR NON-CORRESPONDENCE WITH THE REQUIRED CHARACTERISTICS WILL INVALIDATE COMPLIANCE WITH THE REQUIREMENTS CONCERNING SAFETY AND PROTECTION OF THE PUMP AGAINST THE DANGER OF EXPLOSION.

The calibration pressure of this valve must correspond to the working pressure increased by not more than 10% with respect to the operating pressure. In the event of pressure fluctuations, contact the Varisco technical department.

CAUTION: INCORRECT CALIBRATION OF THE MAXIMUM PRESSURE VALVE SAFETY DEVICE WILL INVALIDATE COMPLIANCE WITH THE REQUIREMENTS CONCERNING SAFETY AND PROTECTION OF THE PUMP AGAINST THE DANGER OF EXPLOSION.

10. Compatibility between liquid processed and pump materials

The user must always use materials compatible with the liquid processed with reference to the pump design conditions.

CAUTION: USE OF THE PUMP WITH FLUIDS NOT COMPATIBLE WITH THE PUMP COMPONENT MATERIALS OR IN AN ENVIRONMENT WITH THE PRESENCE OF INCOMPATIBLE FLUIDS IS FORBIDDEN IN ALL CASES.

11. Lubrication of bearings

The bearings must be lubricated every 500 hours of operation with mineral oil lithium grease HTF 5613 GRADE 3.

CAUTION: POOR OR INCORRECT LUBRICATION OF THE BEARINGS WILL INVALIDATE COMPLIANCE WITH THE REQUIREMENTS OF SAFETY AND PROTECTION OF THE PUMP AGAINST THE DANGER OF EXPLOSION.
CAUTION: THE BEARINGS MUST BE REPLACED ONLY BY VARISCO S.P.A.

12. Tensioning the belt

The belt provided complies with the directive 94/9/CE.

CAUTION: THE BELT CAN BE REPLACED ONLY WITH ANOTHER ONE HAVING THE SAME SPECIFICATIONS AND IN COMPLIANCE WITH DIRECTIVE 94/9/CE.

The belt must be tensioned according to the attached instructions and the tension value must be checked with an appropriate instrument.

CAUTION: CHECK THAT THE BELT TENSIONING INSTRUCTIONS ARE PROVIDED; IF NOT, CONTACT VARISCO S.P.A.

CAUTION: INCORRECT BELT TENSIONING CAN CAUSE OVERHEATING AND DAMAGE TO THE BEARINGS: IN THIS CASE COMPLIANCE WITH THE TEMPERATURE CLASS CANNOT BE GUARANTEED.

13. Cavitation

Apart from damaging the pump, cavitation is dangerous in a potentially explosive atmosphere: check that the pump has been correctly sized referring to the NPSH diagrams in the technical manual. The installer must calculate the system NPSH AVAILABLE also taking into account pump suction filters and all fluid leaks before the pump.

CAUTION: VARISCO S.P.A. ONLY PROVIDES THE NPSH REQUIRED BY THE PUMP AND DECLINES ALL LIABILITY FOR CIRCUIT NPSH AVAILABLE.



VARISCO S.p.A.

Zona Industriale Nord - Terza Strada, 9 - 35129 PADOVA - Italy
Tel.+39 049 82 94 111 - Fax +39 049 82 94 373 - e-mail: italia@variscospa.com
Web site: www.variscospa.com