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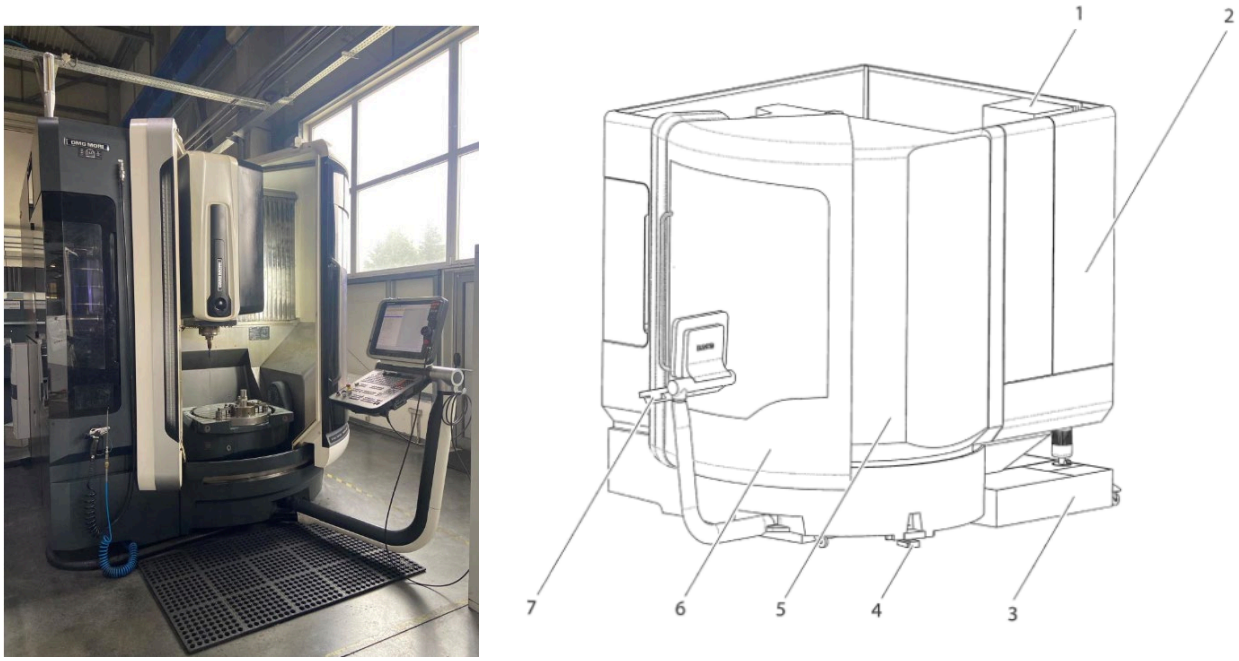
IDENTIFICATION OF HAZARDS AND RISK MANAGEMENT IN MILLING CENTER OPERATIONS

Miroslav Žitňák[1], PhD., prof. Ing.,
Maroš Korenko[1], PhD., prof. Ing.,
Taras Shchur[2], PhD., Asoc. Prof.,
Ľuboš Kazán[1]
[1]*Slovak university of agriculture in Nitra, Slovakia.*
[2]*Cyclone Manufacturing Inc, Mississauga, Ontario, Canada.*

Risk management is an ongoing process that pertains to employees in all sectors and at all levels. For the organization itself, it represents one of the key activities, the primary aim of which is to ensure the safety of its employees. Machines are designed and constructed with consideration for compliance with legal standards regarding the maximum allowable noise levels in the workplace.



1 - Heat exchanger,2 - Liquid supply, 3 - Waste tank for capturing debris, 4 - Installation components, 5 - Cabin, 6 - Safety doors, 7 - Control panel

Fig. 1. Milling center DMG MORI 75 and its main components

The milling center DMG MORI 75 has been developed and manufactured in compliance with current safety and technical regulations, standards, as well as in accordance with the requirements and specifications outlined in the Directive 2006/42/EC on machinery. This machine is operationally safe; however, there are situations in which health and life could be at risk.

The employer has a legal obligation to regularly inspect the safety conditions in the workplace and, in case of identifying deficiencies, ensure their immediate rectification. In our work, we have adhered to this obligation, as one of the measures was precisely the implementation of regular inspection activities in accordance with Section 9, Control Activity, of the Law 124/2006 Z. z. [1]

In the course of working with this equipment, there are fundamental hazards that can affect the operator. These hazards include the risk of injury from sharp and moving machine parts, the potential for electric shock, the possibility of improper handling of compressed air, and inadequate lighting in the work environment.

In our risk assessment, we addressed these hazards. Specifically, we identified the risk of injury from moving machine parts, which we evaluated in the context of equipment adjustment. Inadequate lighting was considered a factor that increases visual strain and the likelihood of errors in operations. The use of compressed air for cleaning the workspace was prohibited, and we also clearly marked areas with electrical voltage and restricted access to those areas. [2]

When using the FMEA (Failure Mode and Effects Analysis) method on a manual lathe, the VCD intern identified that the most significant risk in the work process is inadequate maintenance of the machine and its structural components. We fully agree with this statement because in our assessment, we have also concluded that a significant number of hazards can be mitigated through timely and proper maintenance conducted at regular intervals. [3]

The significant risk associated with the sudden start of the machine when there is a person in the workspace performing maintenance or replacing machine parts is indeed a genuine concern. We also identified this risk in our assessment and categorized it as a high-risk factor. Therefore, it is crucial for us to pay close attention to the inspection of the machine's safety features and ensure that the emergency stop button is properly activated when entering the workspace. [4]

Among the most commonly used types of protective devices are protective covers, locking devices, safety mechanisms, and shut-off devices. All of these devices were present on our assessed machines, and, therefore, we placed special emphasis on their regular inspection at intervals to ensure a safe working environment. [5].

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