

# Indirect isolation

Elastic mounting of machines with inadequate rigidity.

Enhanced isolating effect and reduced vibration amplitudes through additional mass and lowering of the center of gravity.



## DIRECT ISOLATION

Direct isolation means that vibration isolators are fitted directly under or in the machine, usually at the same locations as the available installation points.

Direct isolation requires that the machine bed or base frame has sufficient integral rigidity and that it will not warp or twist due to elastic mounting. In addition the machine geometry must allow the suitable arrangement of the isolators.

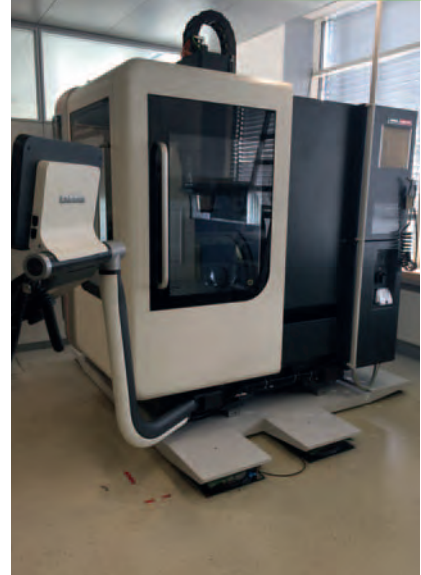
## INDIRECT ISOLATION

For machines whose rigidity is insufficient for direct isolation, a correspondingly rigidly designed intermediate structure must be introduced between the isolators and the machine. This method also allows the positioning of the isolators to be optimized for the application.

Depending on

- Machine dimensions,
- Machine center of gravity,
- Dynamic forces acting on the machine,
- Allowable machine movement,
- Requirements on the isolation,
- Mobility (flexible installation site),
- Attachment parts or feeds,
- Type of installation site (for example allowable floor loading, installation in above ground floors of a building),

this is achieved either by providing a block foundation made of concrete (see p. 77-82), a steel platform (p. 85) or a cast plate. In this case the isolation is referred to as indirect isolation.



## FOUNDATION ISOLATION

Indirect vibration isolation of a machine or system enhances the natural rigidity and leads to a significant improvement of the dynamic behavior in response to large changes in load and travel distances. The exact design of the foundation according to the machine properties ensures an economic solution for the long-term and trouble-free operation of the system.

We have many years and a wide range of experience in the design and projecting of machine foundations. We therefore offer all of the necessary services from single source:

- Vibration analysis on site
- Simulation
- Vibration isolation design
- Design and calculation of the foundation block
- Creation of the complete documentation (such as bidding documents, formwork and reinforcement plans)
- Construction supervision
- Installation and commissioning of the vibration isolation system

### Your benefits from Bilz foundation isolations:

- The increased machine rigidity enables effective vibration isolation even with large machines and systems. This results in increased precision, receiver isolation (see explanation on page 8) and protects the machine surroundings.
- Reduction of the vibration amplitude by adding additional mass or moment of inertia and lowering of the center of gravity. This results in electronic components, control, bearings, etc., enduring less stress and the quality of the results are significantly improved, in particular for applications where the level is critical.
- Smaller relative movements of individual machine components or attachments (such as robots, material feeds, etc.)
- Reduction of the size of the foundation compared to the foundation design without vibration isolation.
- All around service from one single source; fewer interfaces and contacts.



Cast foundation block