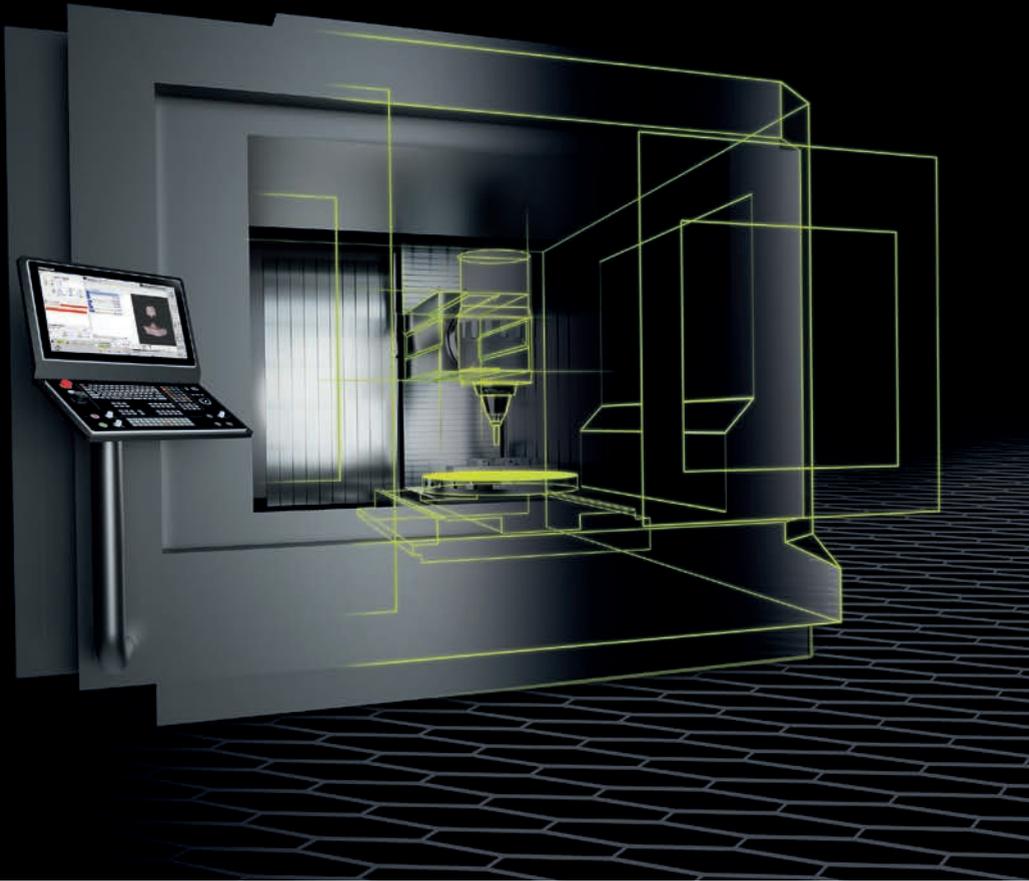# HEIDENHAIN

Digital twin

Realistic simulation for reliable production processes

www.heidenhain.de/digital-twin

Reduced setup and program execution times

A HEIDENHAIN programming station is an exact copy of a control. But it only simulates the control and doesn't model the machine. To meet this need, the HEIDENHAIN Service department is offering digital twins.

A digital twin is a realistic model of the machine on a programming station. With it, the machine's real kinematic behavior, parameters, and functions become available in the office. Its machining simulation can therefore run just like the real machine. This provides greater shopfloor assurance that programs created with CAM systems or the programming station will run seamlessly. That saves time on setup, simulation, and shopfloor debugging, thereby increasing process reliability and manufacturing productivity.
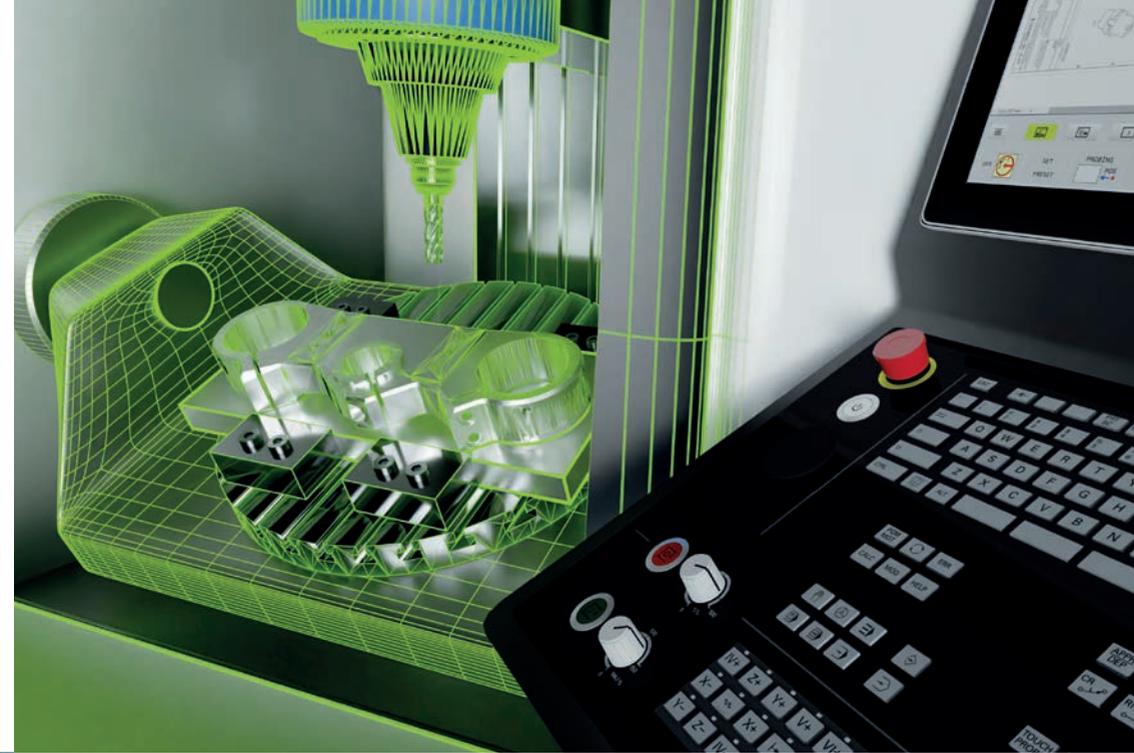
Fast and reliable production

Determine exact machining times
- Calculate costs and deadlines

Check and optimize tool paths
- Prevent program interruptions
- Avoid collisions
- Make full use of the work envelope
- Test complex 5-axis movements

Check and optimize the clamping position
- Reduce setup and changeover times
- Avoid collisions

Vocational training
- Gain realistic practice in a safe context

Almost finished before even starting

Increased programming station performance

- Realizable with older software versions
- Usable on multiple programming stations
- Individualized consultation provided by the HEIDENHAIN Service department
- Less expensive than a virtual machine tool
- Based on the HEIDENHAIN PLC basic program

The fast and reliable route to a finished part
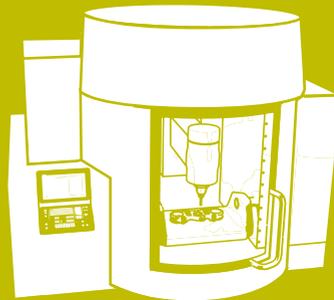
- Realistic simulations on the programming station
- Reduced setup and testing times
- NC program verification for greater productivity

Digital twin
Realistic simulation
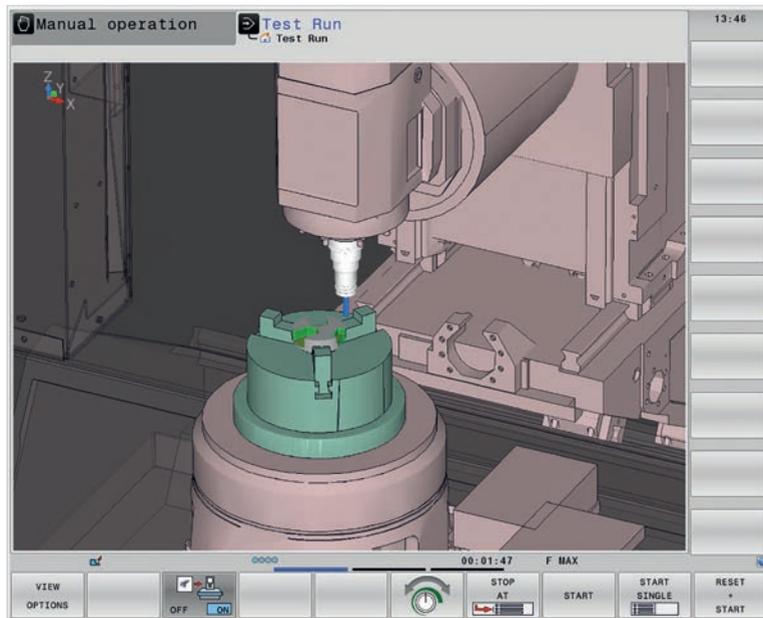
Machine
Reliable, productive manufacturing

Workpiece
Low machine run times and error rates

Virtual setup: simulations with real workholding

Setting up the machine is a key work step. Valuable machine time is lost when a part needs to be rechucked, and collision with a clamping element can cause expensive damage. The digital twin helps you avoid these additional costs.

The digital twin monitors the actual machining environment, including the workholding scenario. Clamping elements are selected and positioned via insertion points. The programming station graphically renders the machine components, workpiece, tool, and workholding system, checking them for collisions that would occur during machining.

The digital twin brings the machine to the office

The easy steps to getting a digital twin

1. Communication with the NC Programming Helpline by phone or e-mail to determine the exact needs

2. Preparation of a rough cost estimate by HEIDENHAIN based on the machine data

3. Tendering of an offer

4. Order placement by the customer

5. Adaptation of the programming station

6. Creation and delivery of a backup file of the adapted programming station

7. Upload of the backup file to the customer's programming station

The backup with the modified data can be uploaded to all equivalent programming stations.

HEIDENHAIN NC Programming Helpline:
☎ 08669 31-3103 or service.nc-pgm@heidenhain.de

Optimal support throughout the machine's life cycle

The HEIDENHAIN Service department offers professional and personalized support for the machine manufacturer and user.

For more information, visit *heidenhain.services*

HEIDENHAIN