SHERPA

SherpaLoader®

Camera-guided CNC automation
for small and medium-sized batches

Challenges for SME Contract Manufacturers

Decreasing
Batch Sizes often 20-500 parts

Increasing
Production Cost

Fluctuating
Order Intake

Shorter **Delivery Periods**
at no extra margin

Lack of
Skilled Operators

Price Pressure
from low-cost countries

The solution: a camera-laser-dual-gripper-six-axis-robot, or simply:

SherpaLoader®

Camera-Guided

SherpaLoaders® see what they load

Intuitive

Easy-to-use touchscreen replace robot programming

Flexible

Since you don't know what you'll produce tomorrow

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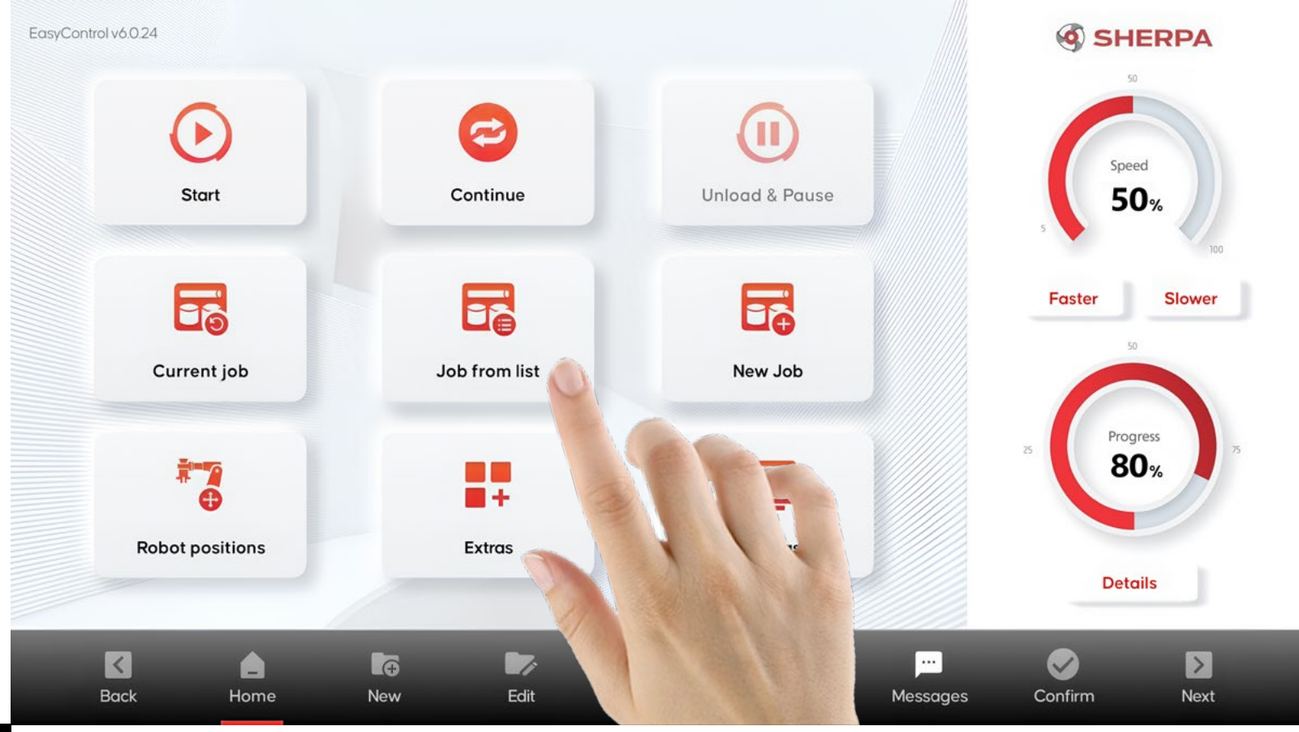
Camera-Guided

The Heart of the System: SherpaVision®, i.e. the camera-laser system, is designed to detect workpieces without the need for grid plates.

It eliminates constant retooling of grid plates, error-prone programming of magazines, and the high costs associated with automated rotary and stacking tables. A protective cover keeps the camera lens clean, ensuring a clear view even in harsh operating conditions.



Intuitive

The robot cell is controlled via a 17-inch touch display, featuring a user-friendly graphical interface similar to a smartphone. Clear symbols and intuitive input screens offer context-sensitive guidance, making the setup process efficient for technical staff. Operators can set up new jobs without any programming knowledge. It’s as easy as 1-2-3!

Flexibel

When upcoming jobs are uncertain, flexibility is key. Designed for batch sizes ranging from 5 to 5,000, the SherpaLoader® provides unparalleled versatility. Its adaptable layout fits seamlessly into any production environment, while its modular interface integrates effortlessly with all major machining centers.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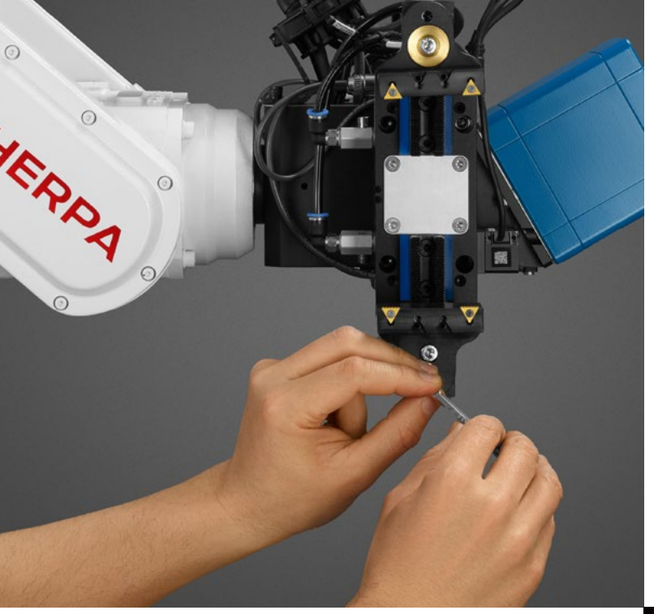
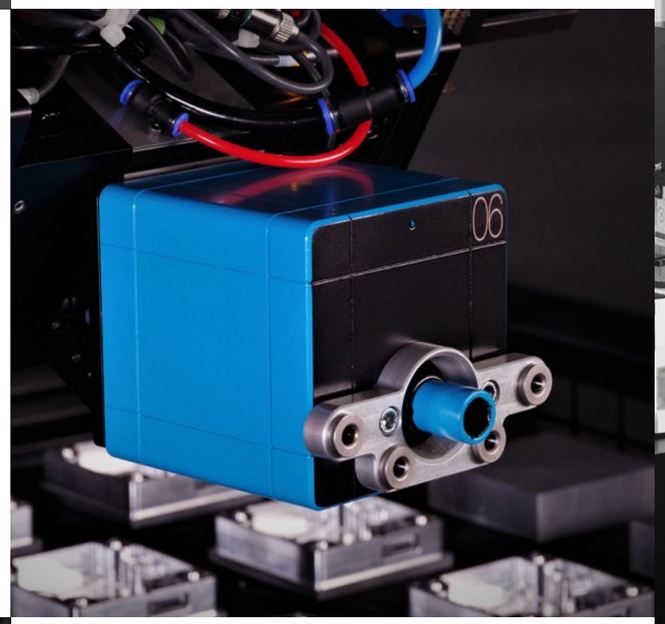


Adaptive Grippers

As a long-standing system partner, SHERPA Robotics equips its robot cells with ZIMMER handling technology. Cylinders are clamped with 3-jaw centric grippers, while cuboids and shafts use 2-jaw parallel grippers. The gripper fingers are quickly and accurately adjusted over a wide range with fine-tooth gearing.

Electric Spindle Drive

Automating mechanical vises, the SherpaLoader® features an electric drive to clamp and release the vise. Torque and opening angle for releasing clamped parts are controlled with the touch display, and saved with each job. This allows even machining centers without pneumatic or hydraulic rotary feedthrough to be automated.

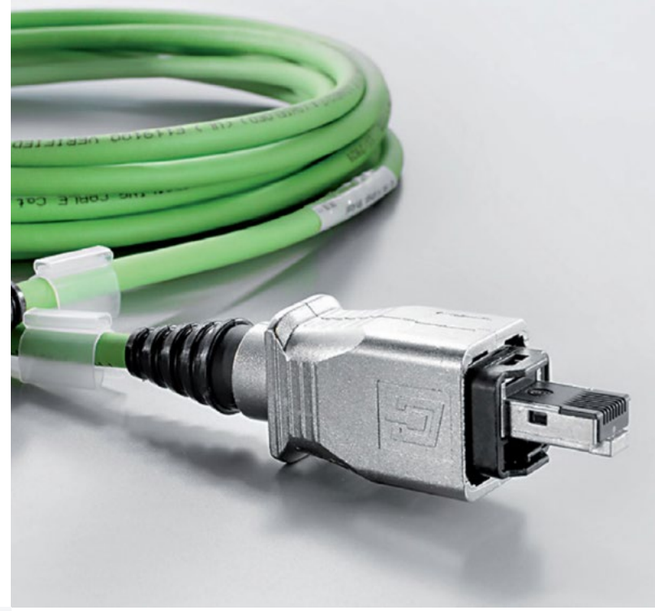


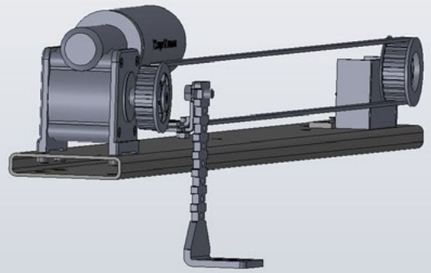
Air Blow

Cleanliness is key to precision work. The SherpaLoader® is equipped with an air nozzle to clean the clamping device of the machining center before loading blanks and to remove coolant and chips from parts after machining.

Universal Interface

The SherpaLoader® is compatible with both new and existing machines. For the past decade, machine tools have offered bus interfaces for automation. The SherpaLoader® supports popular standards like Profibus, Profinet, and EtherNet/IP. For machines without a bus interface, SHERPA uses M-Functions and potential-free relay contacts. This helps customers to avoid costly retrofitting by the original machine manufacturer.





Safety Door Automation

For machining centers without powered safety doors, SHERPA Robotics retrofits a maintenance-free electric door drive. This further reduces idle time in the machining process. Opening and closing speeds are individually adjustable, with automatic obstacle detection and secure speed and force limitation in compliance with EN ISO 13849-1, Performance Level d.

Remote Diagnostics

Every SherpaLoader® is equipped with an online diagnostics and remote maintenance interface. When needed, service technicians access machine logs, adjust the control system, and perform software updates remotely, ensuring fast troubleshooting and minimal downtime. Customers maintain full control over the interface, which connects securely to the maintenance server using TLS 1.2 and RSA 2048 asymmetric key exchange—the same security standard used in online banking.

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15

Seconds*

That's all it takes for a loading cycle with the SherpaLoader®. While the CNC machine processes the next part, the robot unloads the finished piece and picks up a new blank for the next operation. This maximizes your effective spindle time.

5

Minutes*

With this rapid changeover time, the SherpaLoader® stands unmatched. Digitalization replaces the need for complex loading mechanisms in material staging. When switching workpieces, only the gripper fingers require adjustment. While other robot cells are still being retooled, SherpaLoader® is already back in action.

12

Months*

During that time, an actively utilized SherpaLoader® will have fully recouped its investment. By eliminating costly mechanics and oversized components, it significantly increases spindle time for high-value production machines—at only a fraction of the cost.

3000

Parts

Providing several days of unmanned production, the SherpaLoader® outperforms alternative systems. Its open layout, free from the constraints of rotary tables or lifting devices, offers up to 12 sqm of storage on the footprint of two Euro pallets—accommodating over 3,000 parts.

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Magazines

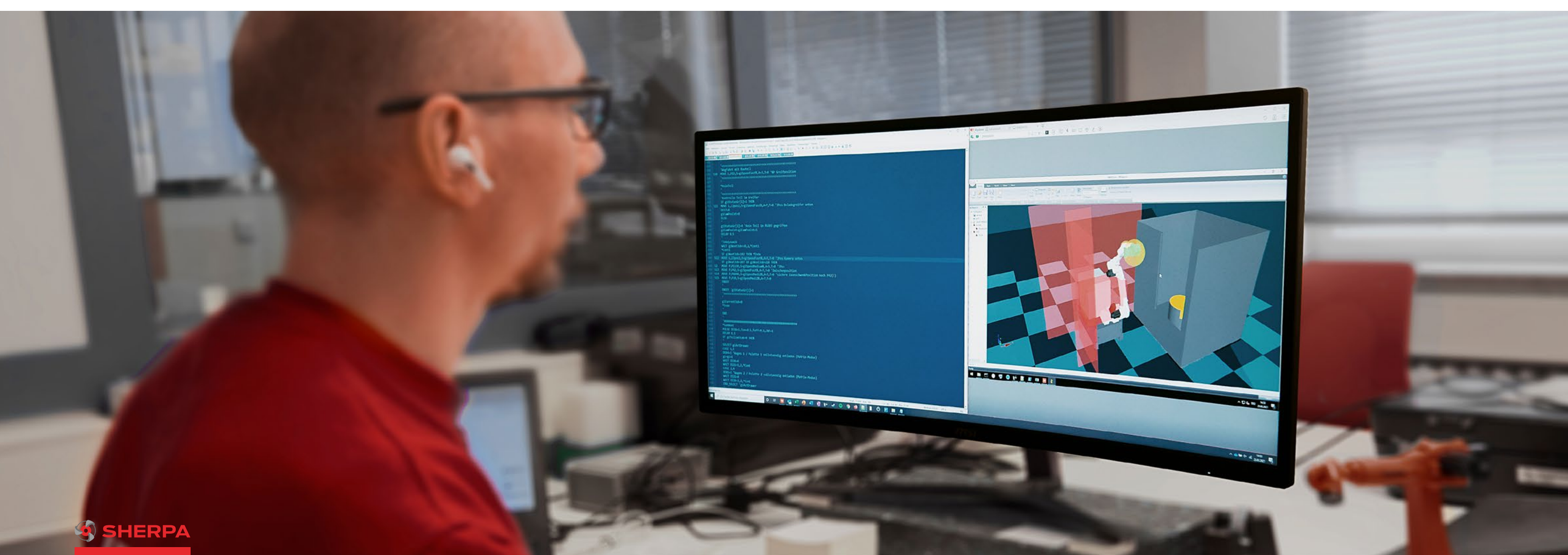
Using a sophisticated vision system, the SherpaLoader® eliminates the need for magazines, pins, and grid plates. Blanks are placed on table trolleys, drawers, or pallets and they stay in place throughout the entire production process. This minimizes manual handling, enhances ergonomics, and reduces the overall workload for your team.

100 %

Service

Each SherpaLoader® is equipped with an online diagnostic interface, enabling remote diagnosis and maintenance of the control system. If on-site service is needed, SHERPA or a local service partner will quickly provide support.

** Estimate, may vary with the specific use case*



Technical Specifications

SherpaLoader®

	T7/M7	T25/M25	T50/M50	T88/M88
Workpieces				
Cylinders [mm]	Ø 10 - 150 l 10 - 150	Ø 15 - 220 l 10 - 200	Ø 20 - 300 l 10 - 300	Ø 20 - 300 l 10 - 300
Cuboids [mm]	10 x 10 x 10 - 150 x 150 x 150	20 x 20 x 10 - 200 x 200 x 200	20 x 20 x 10 - 300 x 300 x 300	20 x 20 x 10 - 300 x 300 x 300
Shafts [mm]	Ø 10 - 30 l 50 - 300	Ø 10 - 60 l 100 - 400	Ø 20 - 80 l 200 - 600	Ø 20 - 80 l 200 - 1000
Weight [kg]	max. 4	max. 18	max. 38	max. 73
Workpiece Capacity				
Ø or length 20 mm	max.144	max. 3,400	max. 3,400	max. 3,400
Ø or length 100 mm	max. 16	max. 560	max. 560	max. 560
Ø or length 140 mm	max. 9	max. 300	max. 300	max. 300
Storage Area				
Table trolley [sqm]	-	1.2	2.4	2.4
SpaceBox [sqm]	-	12.0	12.0	12.0
Pallet [sqm]	0.4	1.0	2.4	2.4
Supply				
Three-phase current	400V, 16A	400V, 16A	400V, 16A	400V, 16A
Compressed air [bar]	3 - 8	3 - 8	3 - 8	3 - 8
Dimensions				
Length [mm]	1,200	1,350	1,500	1,500
Width [mm]	800	750	750	750
Height [mm]	2,000	2,300	2,300	2,300
Weight [kg]	295	985	1,830	1,830

Specifications subject to change.

Videos

SHERPA Robotics SUBSCRIBE

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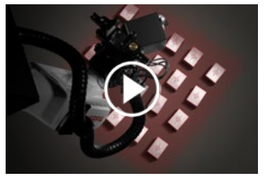
SherpaLoader® Compilation


CHIRON MILL 3000


DMG DMU 65


DOOSAN PUMA TL 2400 LM


GROB G350


GROB G550a


HERMLE C20U


GILDEMEISTER CTX beta 800


GILDEMEISTER CTX 400


MAZAK INTEGREX i-400ST


MAZAK Quick Turn 250M


MAZAK VCN-530C


MORI SEIKI NTX2000


OKUMA ST LU300-M


POSmill E 1100


SPINNER U-1520

For more installation examples, follow us on **youtube.com/SherpaRobotics24**

SHERPA

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