LiCON
Machining Centers
Automation
Process Technology

Maximum Performance the Whole Life Cycle

LiCON MT
modular machining centers

LiCON Products | Technical Data

The Right Solution
for Every Workpiece

Our LiFLEX modular system allows a flexible and yet standardized machine architecture. Whether large or small series, we set up a powerful solution for 5-axis complete machining processes of complex workpieces.

To offer you highest delivery reliability, we develop and manufacture more than 80 percent of our machine components in our own plant in Germany.

- E-Mobility
- Giga Parts and Structural Components
- Chassis
- Powertrain
- Hydraulics

LiFLEX Machining Centers

Single- and Multi-Spindle

TOOL CHANGE 1.1 SEC

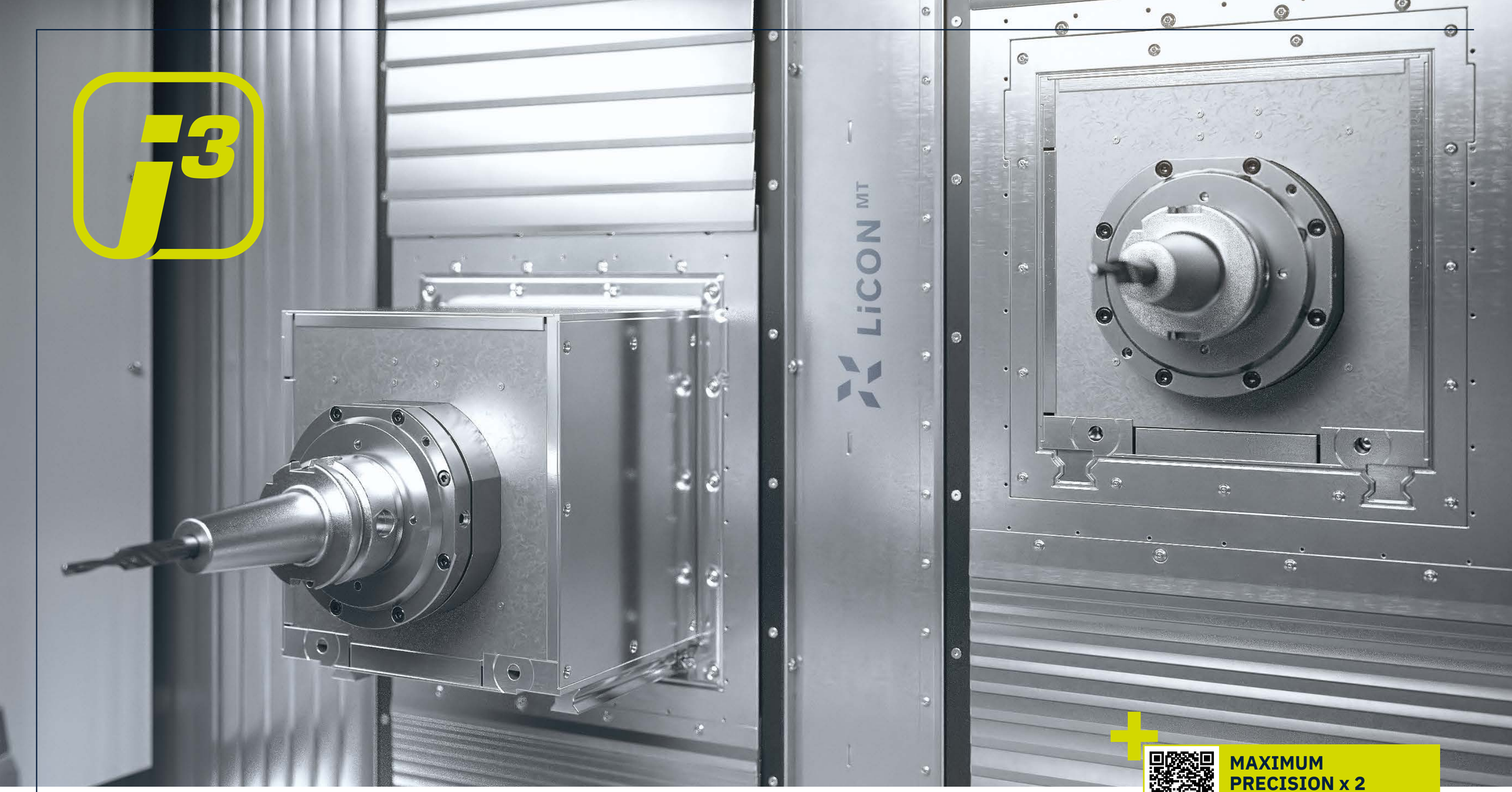
Proven quality, additional features
Our LiFLEX-Series

- **X-stroke from 225 to 2,000 mm**
- **3 loading options**
- **Spindle torque up to 500 Nm**
- **Independent linear axes possible**

LiFLEX I
Single-Spindle
Machining Centers

LiFLEX II
Twin-Spindle
Machining Centers

LiFLEX IV
Four-Spindle
Machining Centers



LiCON i³-Technology
Outstanding Precision and Efficiency

i³-Technology: Temperature variations lead to inaccuracies in the machining process. For highest demands on workpiece quality, LiFLEX twin-spindle machines can optionally be equipped with LiCON i³-Technology. This enables independent compensation in all three main axes.

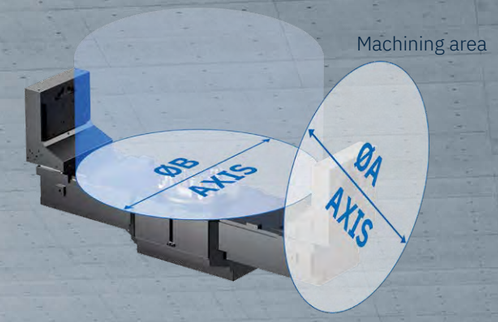
MAXIMUM PRECISION x 2
Experience i³

Spindle distances from 400 to 1,500 mm

Highest positioning accuracy
through compensation of temperature influences

Individually adjustable in X, Y and Z
as simple as with a single-spindle machine

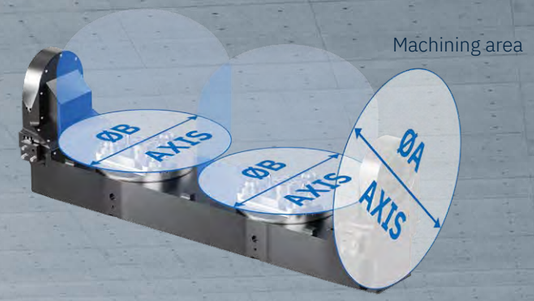
LiFLEX I
Single-Spindle Machines



LiFLEX I	744	1276	12126	12126 HD	17136	20136	30166	
Axes	4 / 5	4 / 5	4 / 5	4 / 5	4 / 5	4	4	
Spindle torque	100 / 200 / 500	100 / 200	100 / 200	100 / 200	100	100	100	Nm
Spindle speed	6,000 - 16,000	8,000 - 16,000	8,000 - 16,000	8,000 - 16,000	12,000 - 16,000	12,000 - 16,000	12,000 - 16,000	rpm
Strokes X / Y / Z_1	750 / 500 / 420	1,250 / 700 / 650	1,250 / 1,250 / 650	1,200 / 1,250 / 650	1,700 / 1,300 / 650	2,000 / 1,300 / 650	3,000 / 1,300 / 800	mm
Additional Z_2-axis	–	–	–	–	optional	optional	optional	
Measurement system	directly, absolutely				directly, absolutely			
Position tolerance X / Y / Z (VDI 3441)	0.008				0.008			mm
Spindle HSK-A	63 / 100	63 / 100	63 / 100	63 / 100	63	63	63	
Tool magazine places	30 / 60 / 96 / 120 / 160 / 176 – extensions upon request				30 / 60 / 96 / 120 / 160 / 176 – extensions upon request			
Tool change	pick up	double gripper	double gripper	double gripper	double gripper	double gripper	double gripper	
Chip to chip time (VDI 2852)	approx. 3.8	approx. 2.8	approx. 2.8	approx. 2.8	approx. 2.8	approx. 2.8	approx. 2.8	s
Loading options	DL / PC	DL / PC	DL / PC	DL / PC	DL	DL	DL	
Acceleration X / Y / Z	6 / 6 / 9	9 / 9 / 12	9 / 9 / 12	11 / 9 / 15	10 / 9 / 12	10 / 9 / 12	10 / 9 / 12	m/s^2
Rapid feed X / Y / Z	60 / 60 / 90	80 / 80 / 80	140 / 140 / 80	140 / 130 / 150	100 / 80 / 80	100 / 80 / 80	100 / 80 / 80	m/min
Max. feed force X / Y / Z	7.5 / 7.5 / 10	5 / 5 / 7	5 / 5 / 7	5 / 5 / 5	5 / 5 / 7	5 / 5 / 7	5 / 5 / 7	kN
Interference cubes A- / B-axis	765 / 700	1,600 / 1,600	1,600 / 1,600	1,600 / 1,600	2,300 / 1,850	2,300 / -	2,300 / -	mm
Process lubrication	dry / coolant / MQL				dry / coolant / MQL			
Dimensions w / d / h (DL)	3.4 / 4.5 / 3.2	3.7 / 5.4 / 3.7	3.8 / 6.1 / 4.6	4.3 / 6.7 / 4.9	4.1 / 6.5 / 4.9	4.5 / 6.5 / 4.7	6.0 / 6.5 / 4.7	m
Dimensions w / d / h (PC)	3.4 / 5.2 / 3.2	3.7 / 6.3 / 3.7	3.8 / 7.1 / 4.6	4.3 / 7.7 / 4.9	–	–	–	m

Further specifications on request. We reserve the right to make technical changes without prior notice.

LiFLEX II
Twin-Spindle Machines



LiFLEX II	444	655	766	776	1076	1276	1576	
Axes	4 / 5	4 / 5	4 / 5	4 / 5	4 / 5	4 / 5	4 / 5	
Independent axes	i / f³	f³	i / f³	f³	f³	f³	f³	
Spindles distance	400 / 450	600	750	750	1,050	1,200	1,500	mm
Spindle torque	100 / 200 / 500	100 / 200	100 / 200 / 500	100 / 200	100 / 200	100 / 200	100 / 200	Nm
Spindle speed X / Y / Z_1	6,000 - 16,000	8,000 - 16,000	6,000 - 16,000	8,000 - 16,000	8,000 - 16,000	8,000 - 16,000	8,000 - 16,000	rpm
Strokes X / Y / Z_1	450 / 500 / 420	600 / 500 / 500	750 / 660 / 650	750 / 700 / 650	1,050 / 700 / 650	1,200 / 700 / 650	1,500 / 700 / 650	mm
Additional Z_2-axis	–	–	–	–	–	–	–	
Measurement system	directly, absolutely (with air sealing)				directly, absolutely (with air sealing)			
Position tolerance X / Y / Z (VDI 3441)	0.008				0.008			mm
Spindle HSK-A	63 / 100	63 / 100	63 / 100	63 / 100	63 / 100	63 / 100	63 / 100	
Tool magazine places	60 / 120 / 160	60 / 120	60 / 98 / 120	60 / 96 / 120 / 168	60; 64 / 120; 128	60 / 120	60 / 120	
Tool change	pick up	double gripper	pick up	double gripper	double gripper	double gripper	double gripper	
Chip to chip time (VDI 2852)	approx. 3.8	approx. 2.8	approx. 3.8	approx. 2.8	approx. 2.8	approx. 2.8	approx. 2.8	s
Loading options	DL / PC / DT	DL / PC / DT	DL / PC / DT	DL / PC / DT	DL / PC	DL / PC	DL / PC	
Acceleration X / Y / Z	6 / 6 / 9	9 / 9 / 12	6 / 6 / 9	9 / 9 / 12	9 / 9 / 12	9 / 9 / 12	9 / 9 / 12	m/s^2
Rapid feed X / Y / Z	60 / 60 / 90	80 / 80 / 80	60 / 60 / 90	80 / 80 / 80	80 / 80 / 80	80 / 80 / 80	80 / 80 / 80	m/min
Max. feed force X / Y / Z	15 / 15 / 10	5 / 5 / 7	15 / 15 / 10	5 / 5 / 7	5 / 5 / 7	5 / 5 / 7	5 / 5 / 7	kN
Interference cubes A- / B-axis (DL / PC)	765 / 449	1,000 / 599	1,200 / 749	1,200 / 749	1,600 / 1,049	1,600 / 1,199	1,600 / 1,499	mm
Interference cubes A- / B-axis (DT B22)	600 / 449	750 / 599	750 / 749	750 / 749	–	–	–	mm
Process lubrication	dry / coolant / MQL				dry / coolant / MQL			
Dimensions w / d / h (DL)	3.4 / 4.5 / 3.2	3.5 / 5.4 / 3.6	4.3 / 5.4 / 3.6	3.8 / 5.4 / 3.7	4.1 / 5.6 / 3.7	4.5 / 5.6 / 3.7	5.2 / 5.6 / 3.7	m
Dimensions w / d / h (PC / DT)	3.4 / 5.2 / 3.2	3.5 / 6.2 / 3.6	4.3 / 6.3 / 3.6	3.8 / 6.3 / 3.7	4.1 / 6.4 / 3.7	4.5 / 6.4 / 3.7	5.2 / 7.8 / 3.7	m

Further specifications on request. We reserve the right to make technical changes without prior notice.

LiFLEX IV
Four-Spindle Machines

LiFLEX IV	244	366	
Axes	4 / 5	4 / 5	
Independent axes	-	-	
Spindles distance	225	375	mm
Spindle torque	100	100 - 200	Nm
Spindle speed	12,000	8,000 - 16,000	rpm
Strokes X / Y / Z_1	225 / 470 / 420	375 / 660 / 650	mm
Measurement system	directly, absolutely (air sealing)		
Position tolerance X / Y / Z (VDI 3441)	0.008		mm
Spindle HSK-A	63	63 / 100	
Tool magazine places	80 / 160	72 / 156	
Tool change	pick up	pick up	
Chip to chip time (VDI 2852)	approx. 4	approx. 4	s
Loading options	DL / DT	DL / DT	
Acceleration X / Y / Z	6 / 6 / 9	6 / 6 / 9	m/s^2
Rapid feed X / Y / Z	60 / 60 / 90	60 / 60 / 90	m/min
Max. feed force X / Y / Z	20 / 13 / 20	20 / 13 / 20	kN
Interference cubes A- / B-axis	600 / 224	750 / 374	mm
Process lubrication	dry / coolant / MQL		
Dimensions w / d / h (DL)	3.4 / 4.5 / 3.4	4.3 / 5.4 / 3.6	m
Dimensions w / d / h (DT)	3.4 / 5.5 / 3.4	4.3 / 6.3 / 3.6	m

LiFLEX Loading Options
The Right Option for Every Process

Direct load
DL

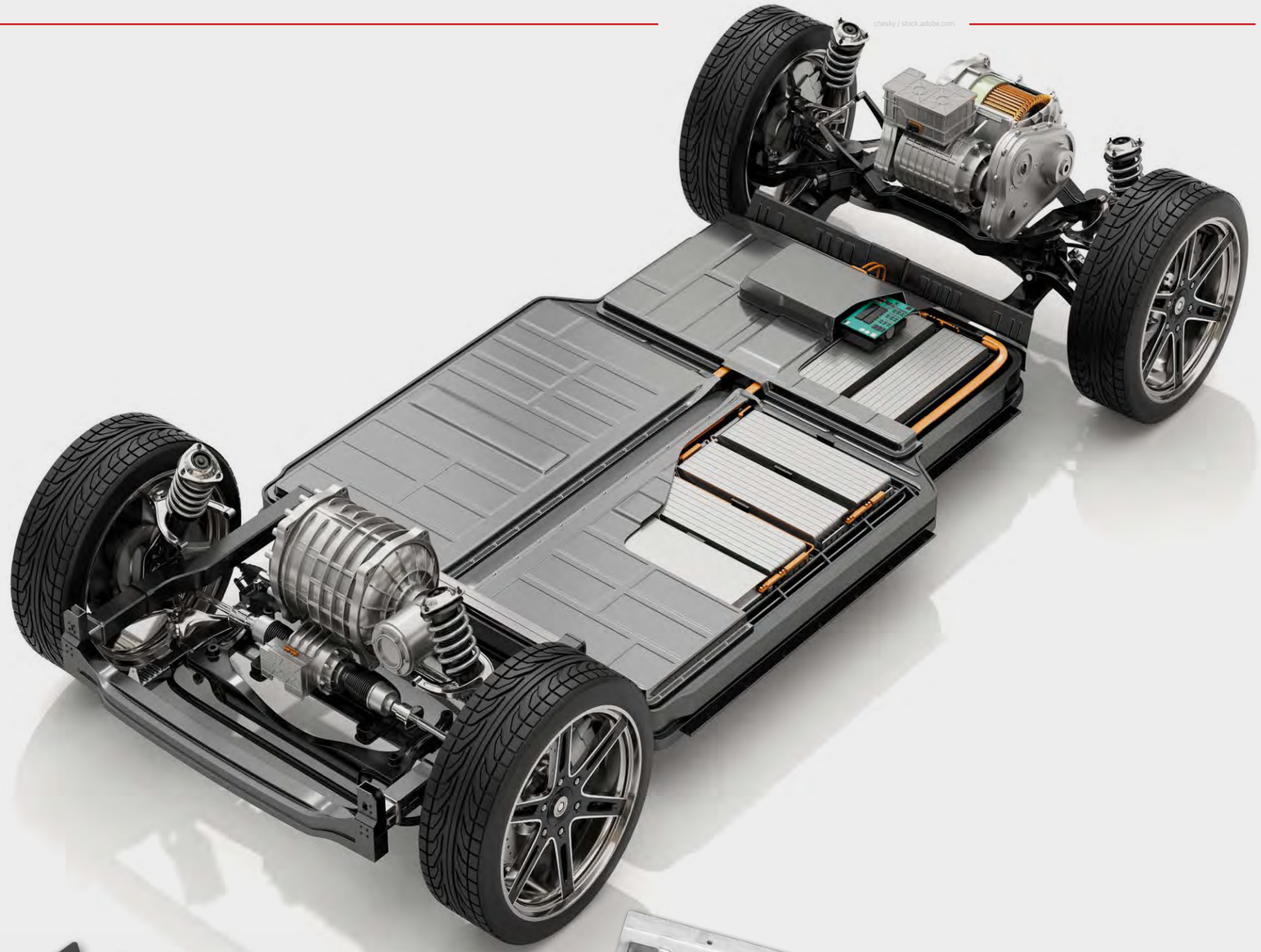
Pallet changer
PC

Double trunnion
DT

Loading options
Matching the process

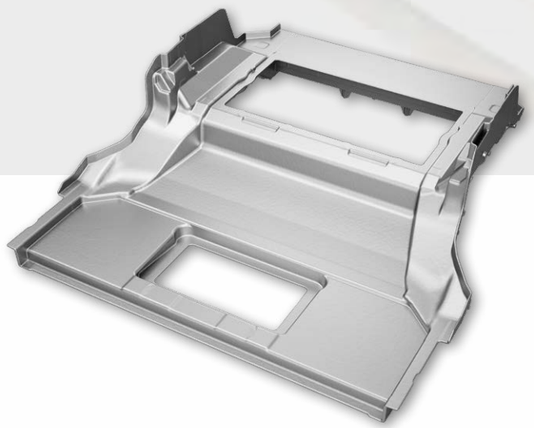
Further specifications on request. We reserve the right to make technical changes without prior notice.

E-Mobility
Special Requirements - Special Solutions from the LiFLEX Modular System



chesky / stock.adobe.com

E-motor housing
Tight tolerances

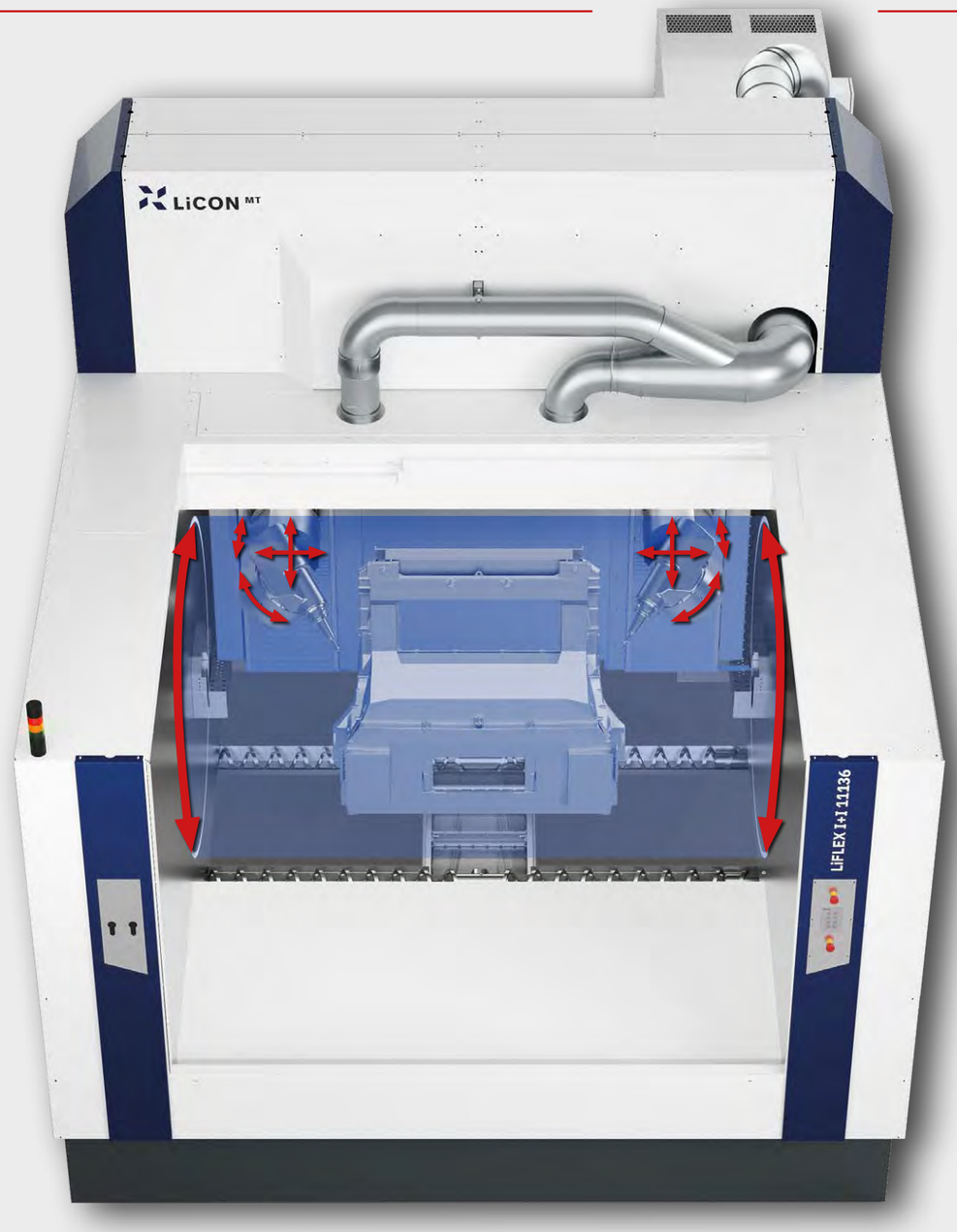


Structural components
Large dimensions

Battery components
Short cycle time

LiFLEX GigaLine

Machining of Large and Complex Workpieces



4 **LiFLEX I+I**
4-axis
Pallet changer

5 **LiFLEX I+I**
5-axis
A/C spindles

Big – Bigger – Giga
Our GigaLine

- **Up to seven axes**
- **Workpiece sizes up to 3,000 mm**
- **Single and double spindle**
  on a single workpiece
- **Body-in-white-complete processing**

LiFLEX I **1 spindle**

- **One large-dimensional machining task**
  in one machine
- 4/5-axis machining
- Up to 3,000 mm X-stroke

LiFLEX I+I **2 spindles**

- **Two different machining tasks**
  in one machine
- 4/5-axis machining
- Spindle distance 600 – 2,500 mm

LiFLEX High-Performance Spindles

Produced In-House Plus Sensors for the Decisive Added Value

Own development and production
LiFLEX motor spindles

Maximum torque: 500 Nm

Max. power: 76 kW

High spindle stiffness

LAVA **Real-time data analysis with LiCON Added Value Analysis**

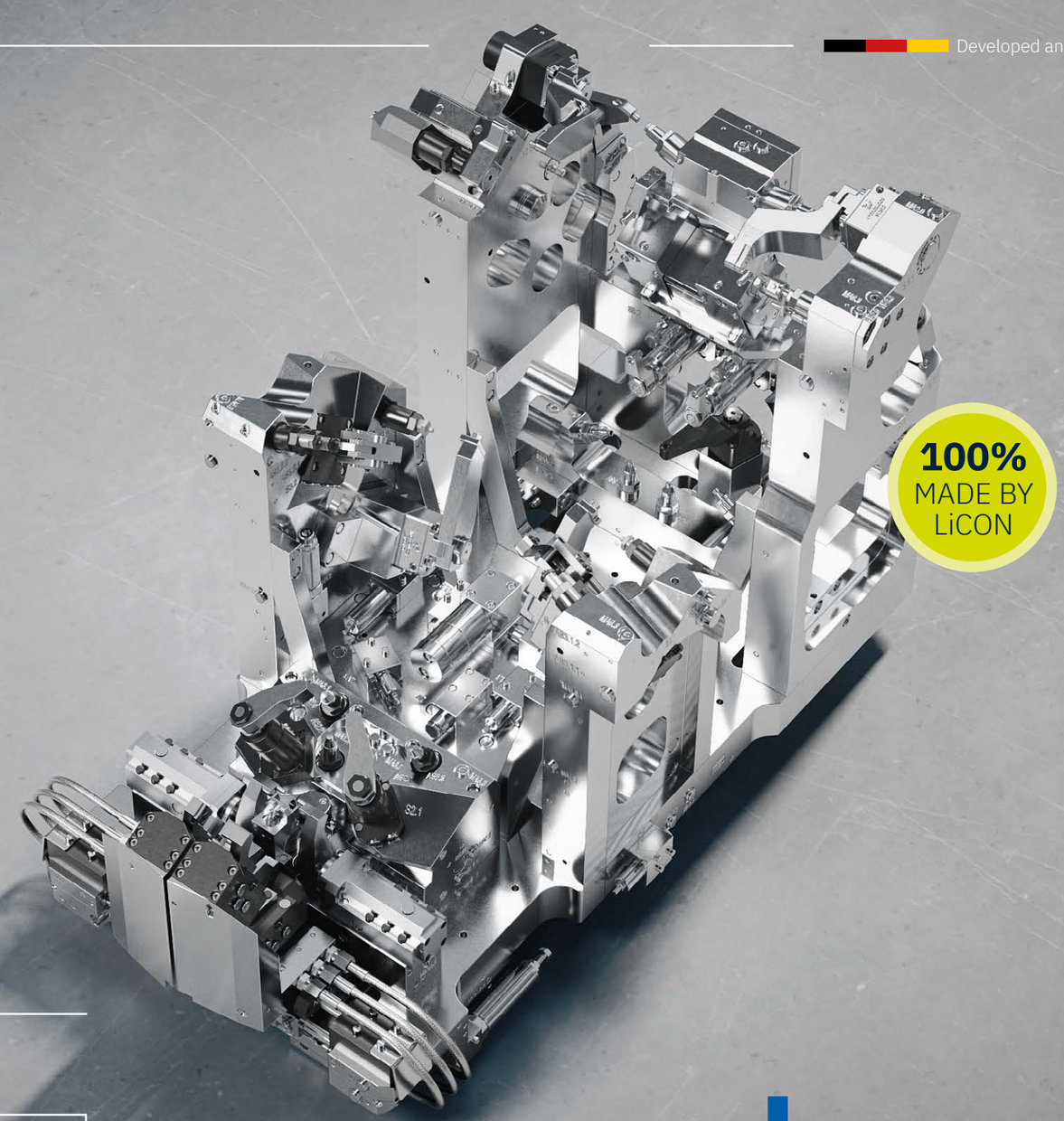
100% MADE BY LiCON

2 axes milling head

In-house engineered high performance spindles with 6-bearing configuration guarantee extremely high stiffness in pressure and tension processing and enable optimum material removal and long tool life.

Individual Clamping Fixtures

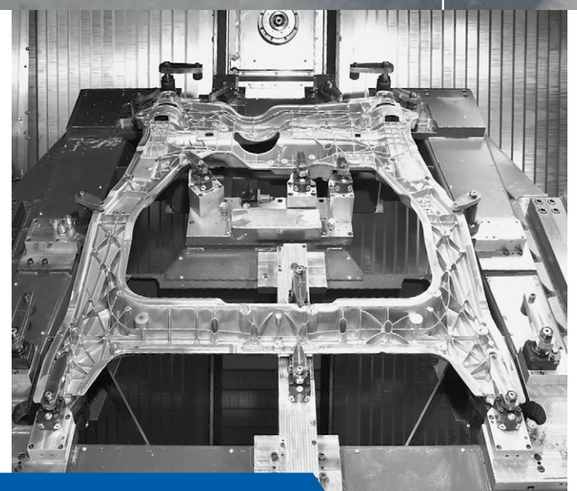
For Accurate and Long-Term Stable Machining Processes



100% MADE BY LiCON

Clamping fixture for motorcycle frame
Picture without workpiece

Clamping fixture for structural component



Our clamping fixtures allow a 5-axis complete machining process of workpieces in only one clamping. This offers decisive advantages in workpiece qualitiy, process control and logistics in the production environment.

Own development and production
Clamping fixtures

- **For 4- and 5-axis complete machining**
- **Maximum process reliability**
- **LiCON Clamping fixture concepts**

Highly Flexible Solutions

Everything from One Source

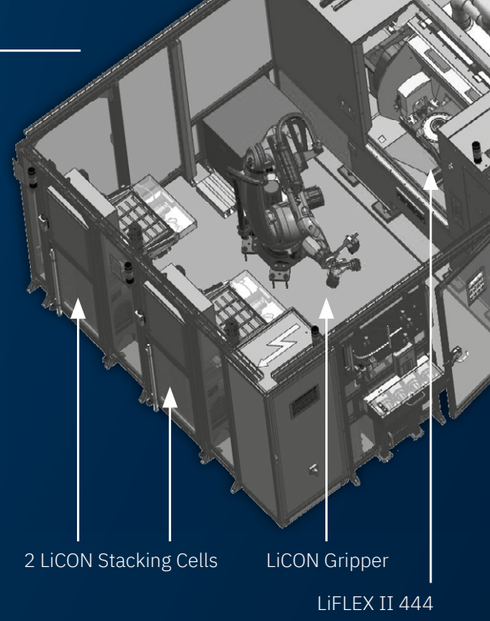
LiCON Workpiece Gripper
Combination gripper for alternately transporting left and right semi trailing arm in combination with a subframe.

Automation with the multi-functional gripper
View Video

- **Integration of further processes**
- **Gripper and clamping device from a single source**
- **Multi-functional gripper**

LiCON Stacking Cell
Reduced costs thanks to automated production cells

- **Compact workpiece storage**
- **Modular system**
  with standard modules
- **High storage capacity**
  with low space requirements
- **Flexible use for different workpieces**
- **Typical autonomy up to 8 hours**
  (1 shift)



Space requirements / floor space	920 x 1,200 mm / 1.1 m²
Number of trays	workpiece dependent
Tray size (W x D)	600 x 400 mm
Level spacing	60 mm
Total workpiece weight (approx.)	25 kg / per tray
Typical workpiece cube (L x W x H)	< 100 x 100 x 50 mm
Tray change time (approx.)	8 sec.
Control (standard / optional)	interface to higher-level control system / with stand-alone control system

LiCON Automation
individual solutions based on a modular system

LiCON Stacking Cell

Particularly in the case of smaller cubic workpieces, enormous productivity advantages can be achieved by stocking a higher number of raw parts and buffering finished parts directly at the line. This is possible with the LiCON stacking cell.

With the Licon stacking cell, the production line can run without personnel for several hours. Thus, in addition to other automation solutions from LiCON, it ensures a further increase in the autonomy ratio of the total production time.

Developed and produced in Germany

Developed and produced in Germany

Follow us on

Contact persons from LiCON sales team:

Thomas Brust
+49 (0)7392 962-258
thomas.brust@licon.com

Marc Jakob
+49 (0)7392 962-181
marc.jakob@licon.com

LiCON MT GmbH & Co. KG Im Risstal 1 | 88471 Laupheim | Germany
+49 (0)7392 962-0 | info@licon.com | www.licon.com

LiCON MT
modular machining centers