

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



**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

**TOOL
CHANGE**
1.1
SEC



LiFLEX I
Single-Spindle
Machining Centers



LiFLEX II
Twin-Spindle
Machining Centers



LiFLEX IV
Four-Spindle
Machining Centers



 LiCON^{MT}



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

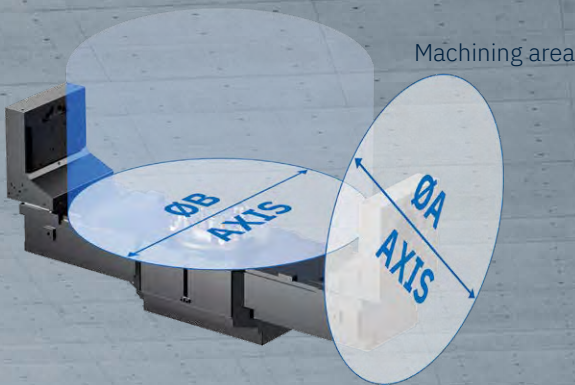
Highest positioning accuracy
through compensation of temperature influences

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



LiFLEX I

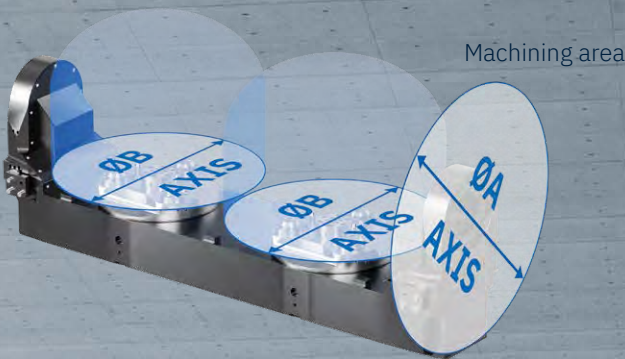
Single-Spindle Machines



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

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	 / 		 / 					
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

LiFLEX IV

Four-Spindle Machines



LiFLEX IV

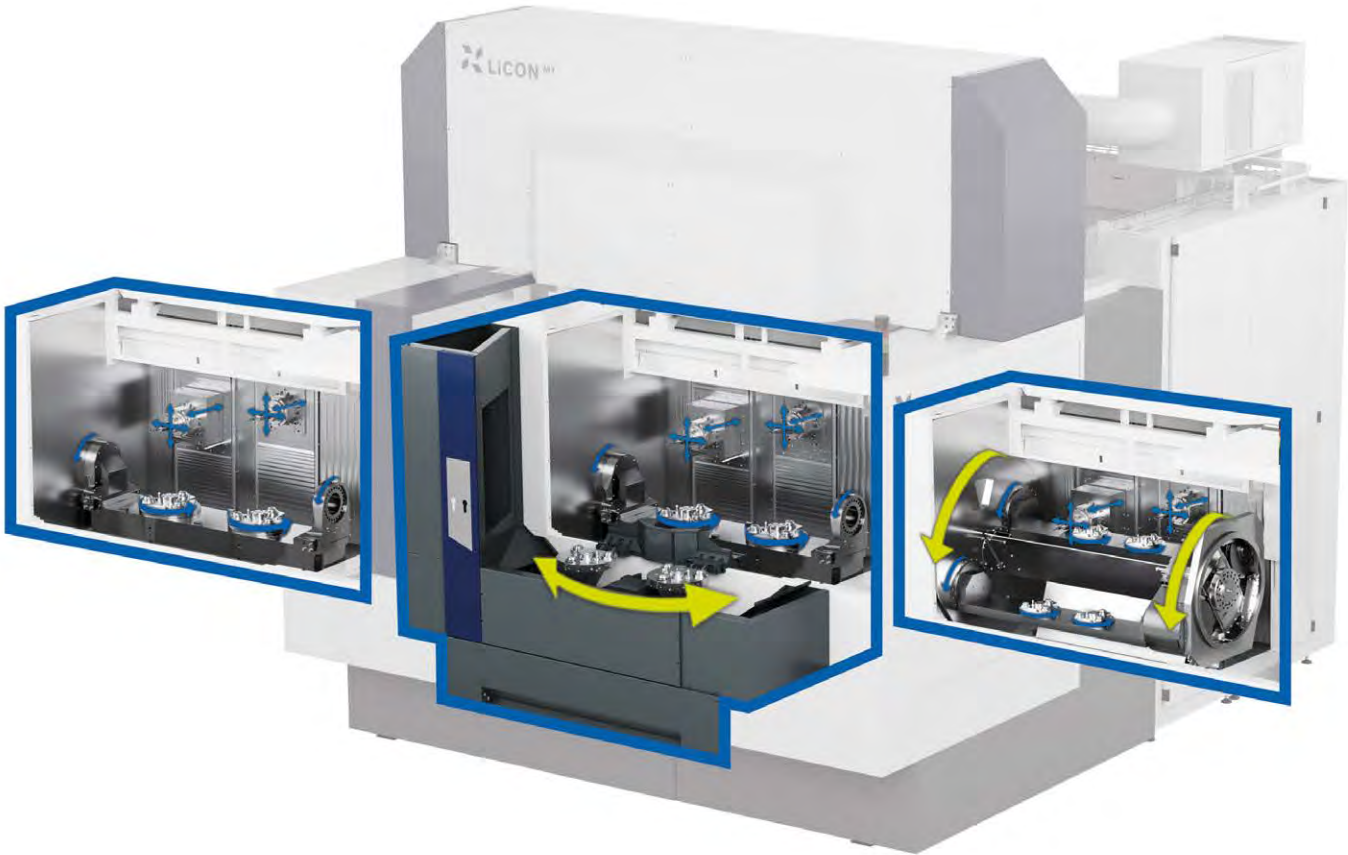
244

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

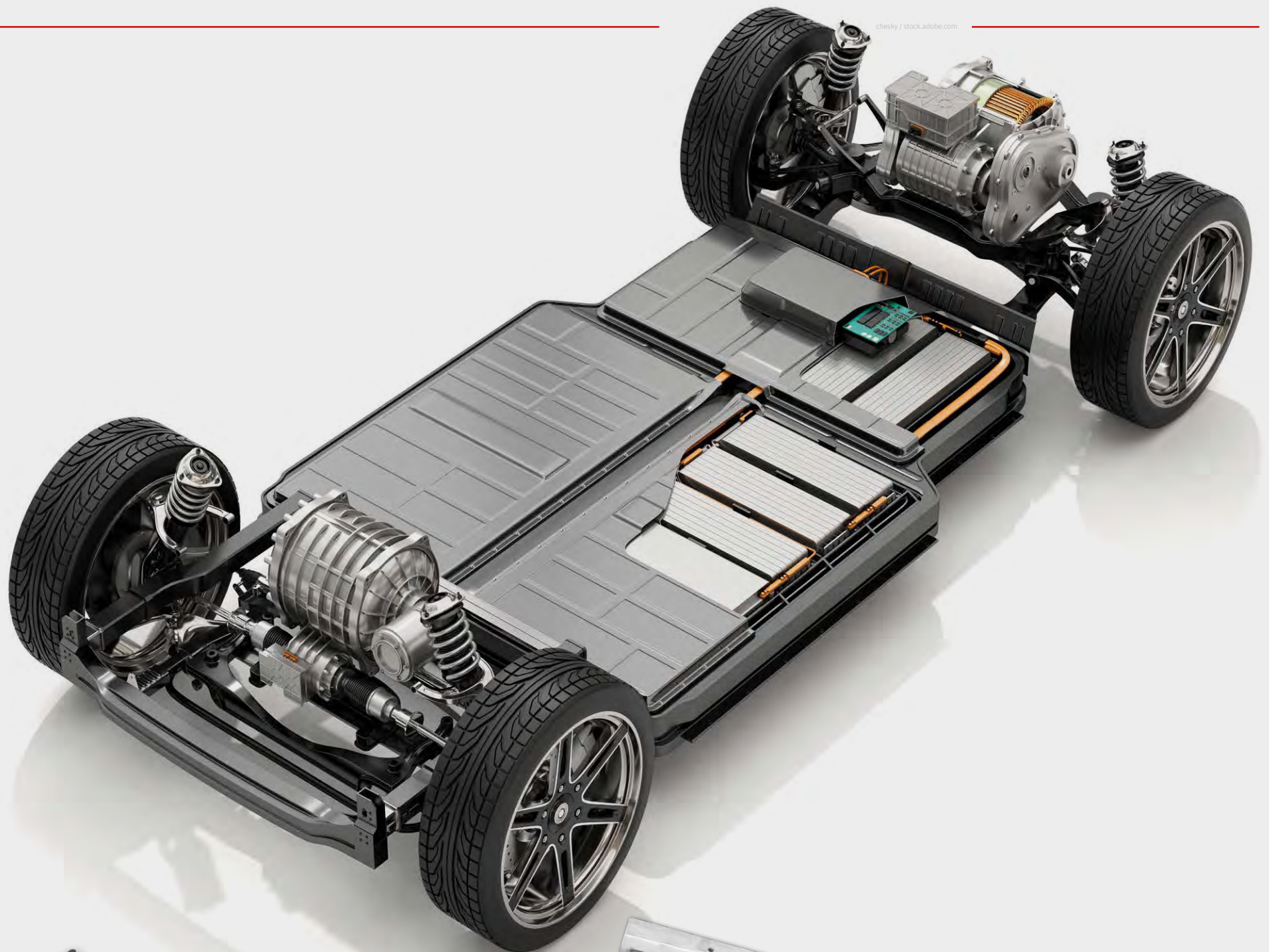
Double trunnion
DT



Loading options
Matching the process

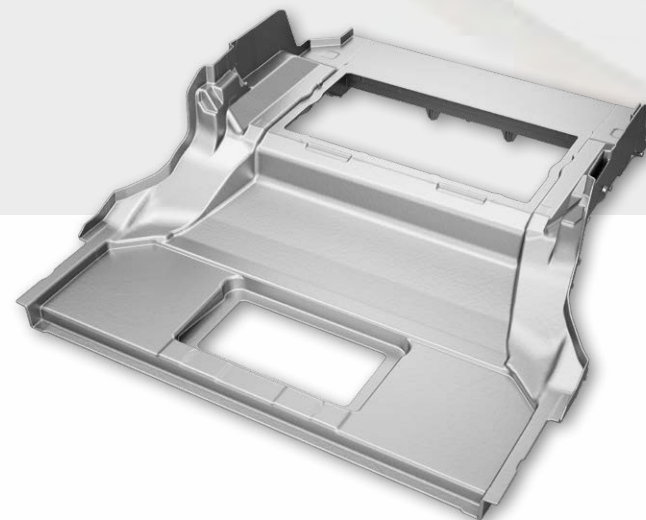
E-Mobility

Special Requirements - Special Solutions from the LiFLEX Modular System



E-motor housing

Tight tolerances



Structural components

Large dimensions

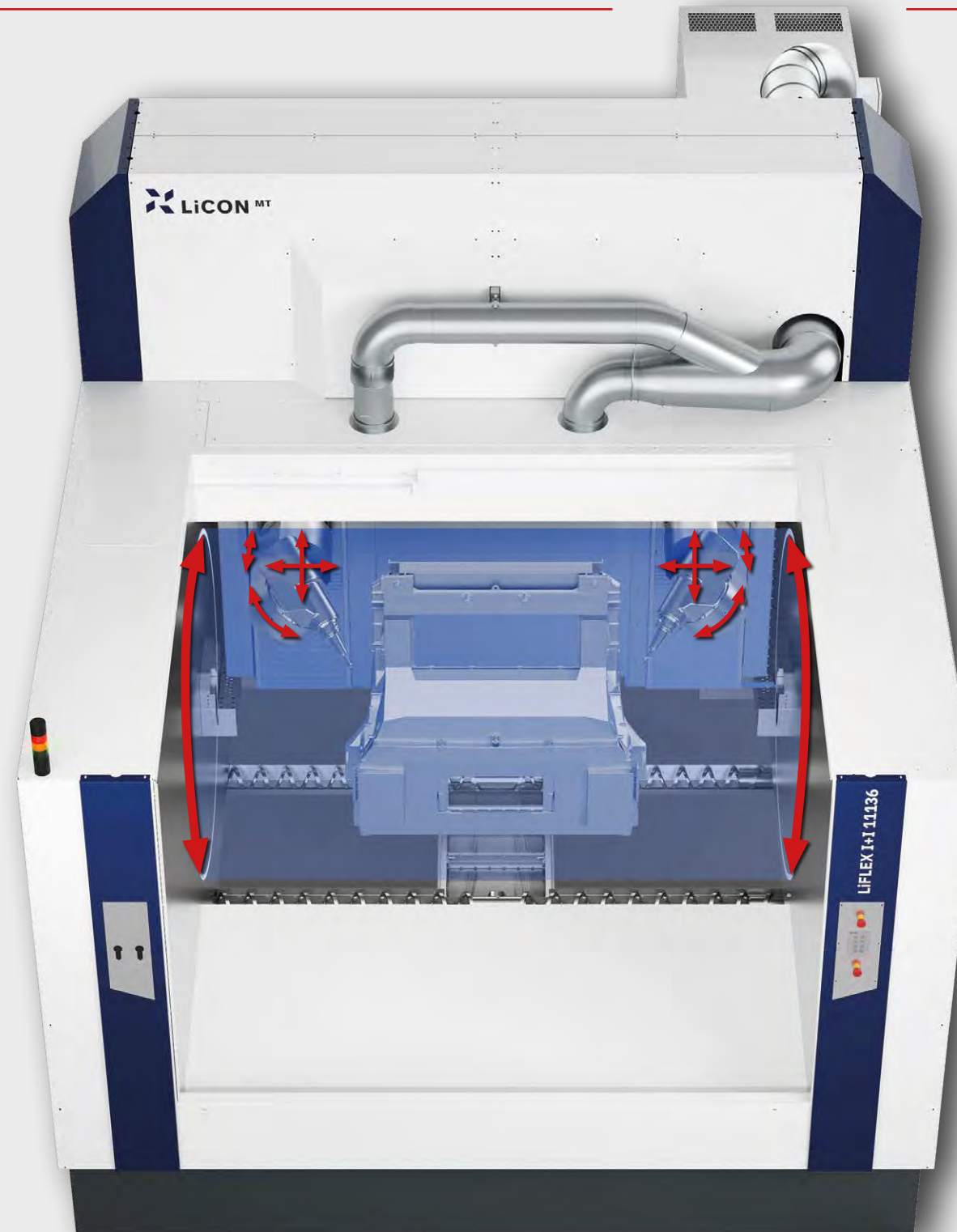


Battery components

Short cycle time

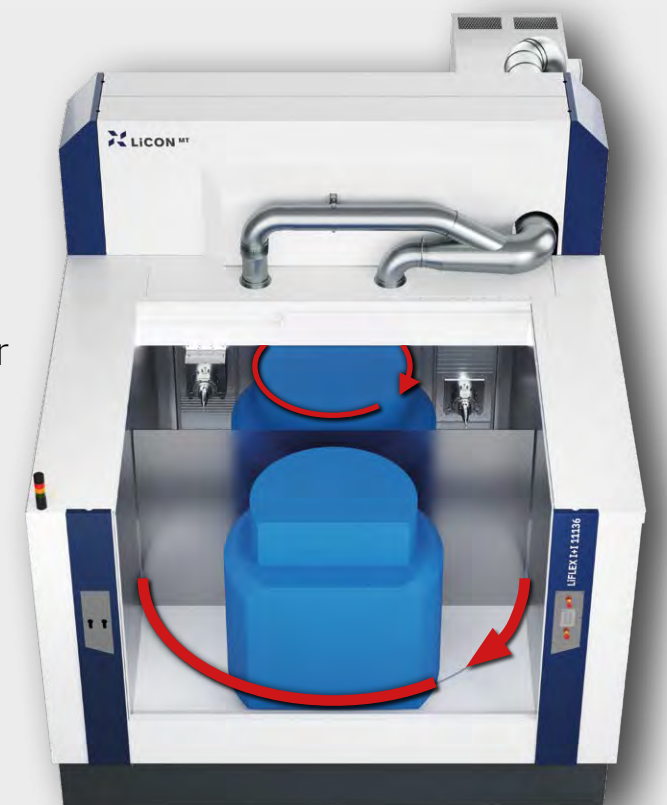
LiFLEX GigaLine

Machining of Large and Complex Workpieces



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

4 LiFLEX I+I
4-axis
Pallet changer



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



100%
MADE BY
LiCON



**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

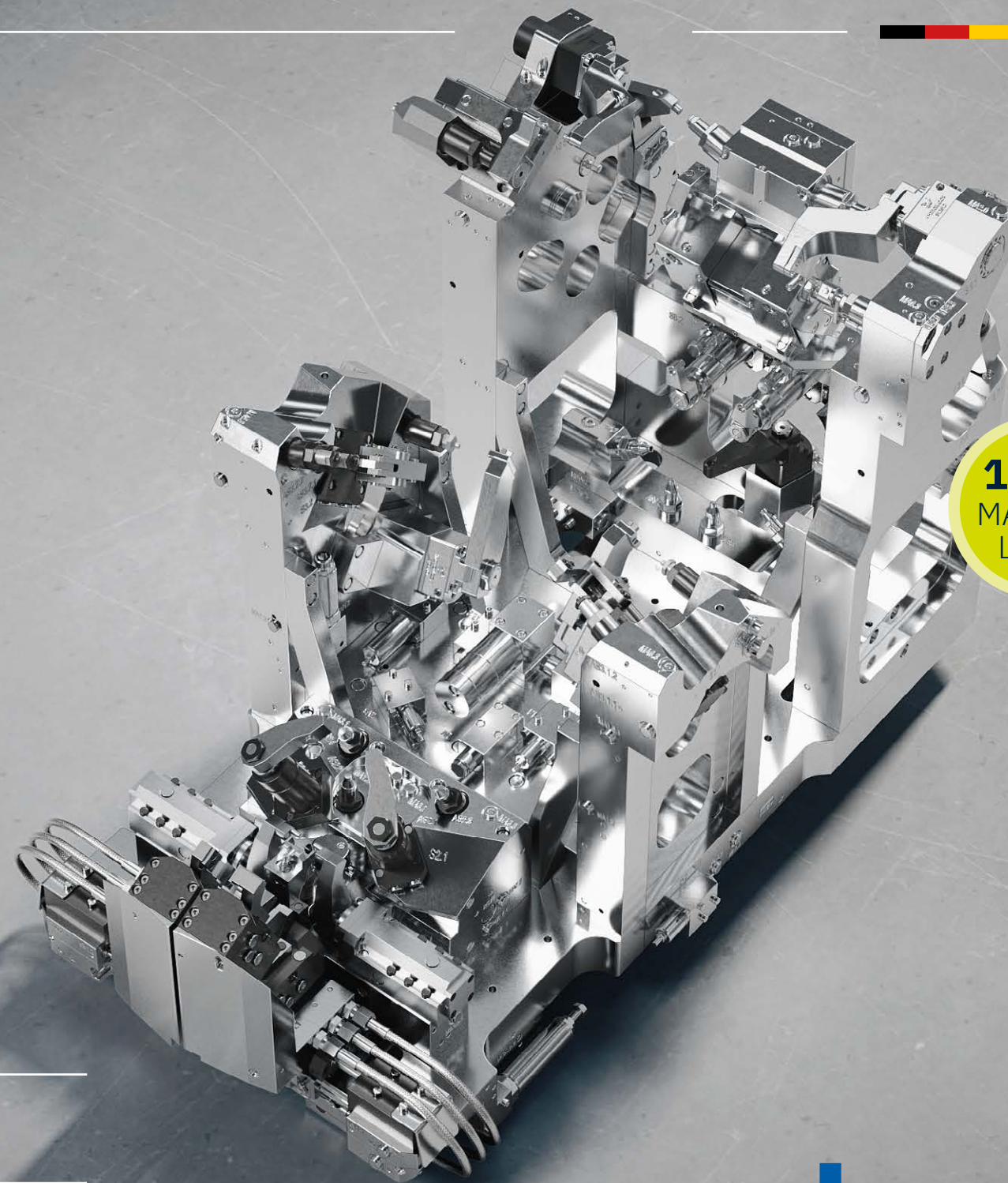
2 axes milling head



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



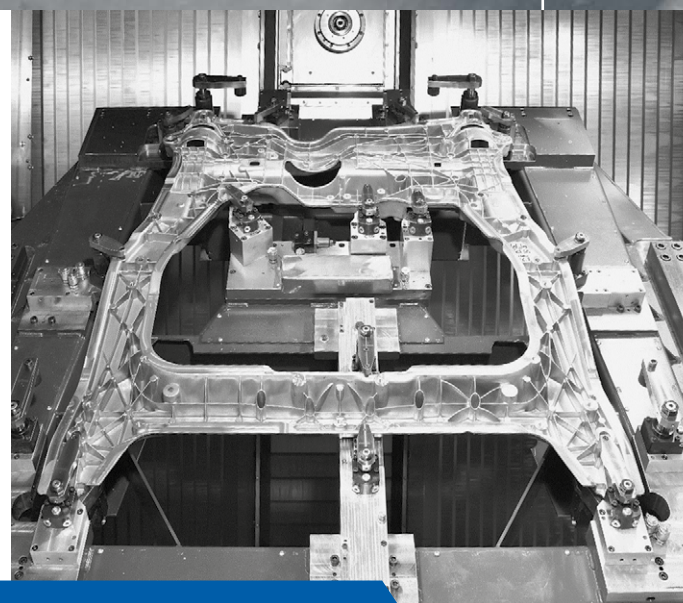
**Own development
and production**
Clamping fixtures

For 4- and 5-axis complete machining

Maximum process reliability

LiCON Clamping fixture concepts

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



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

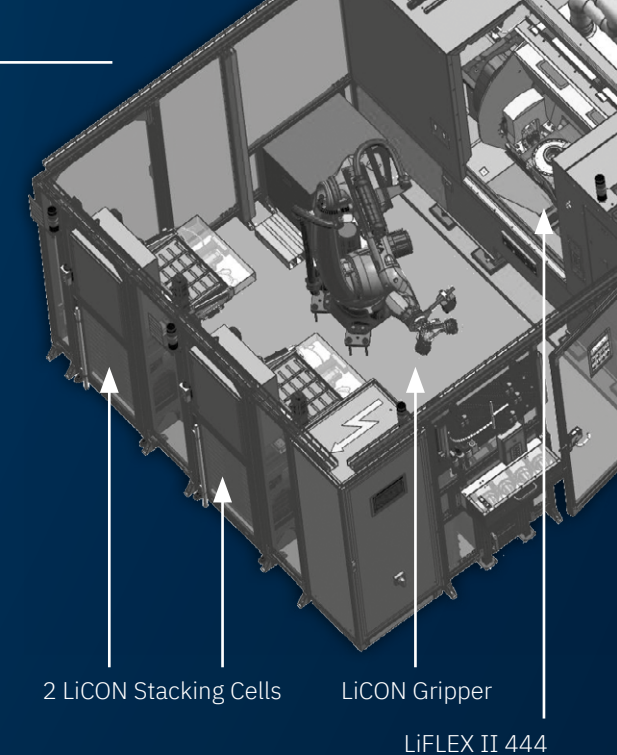
Compact workpiece storage

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 m ²
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.





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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