

Selection Guide for CNC Rotary Tables ...

**Smart
Solution**

We will
support you

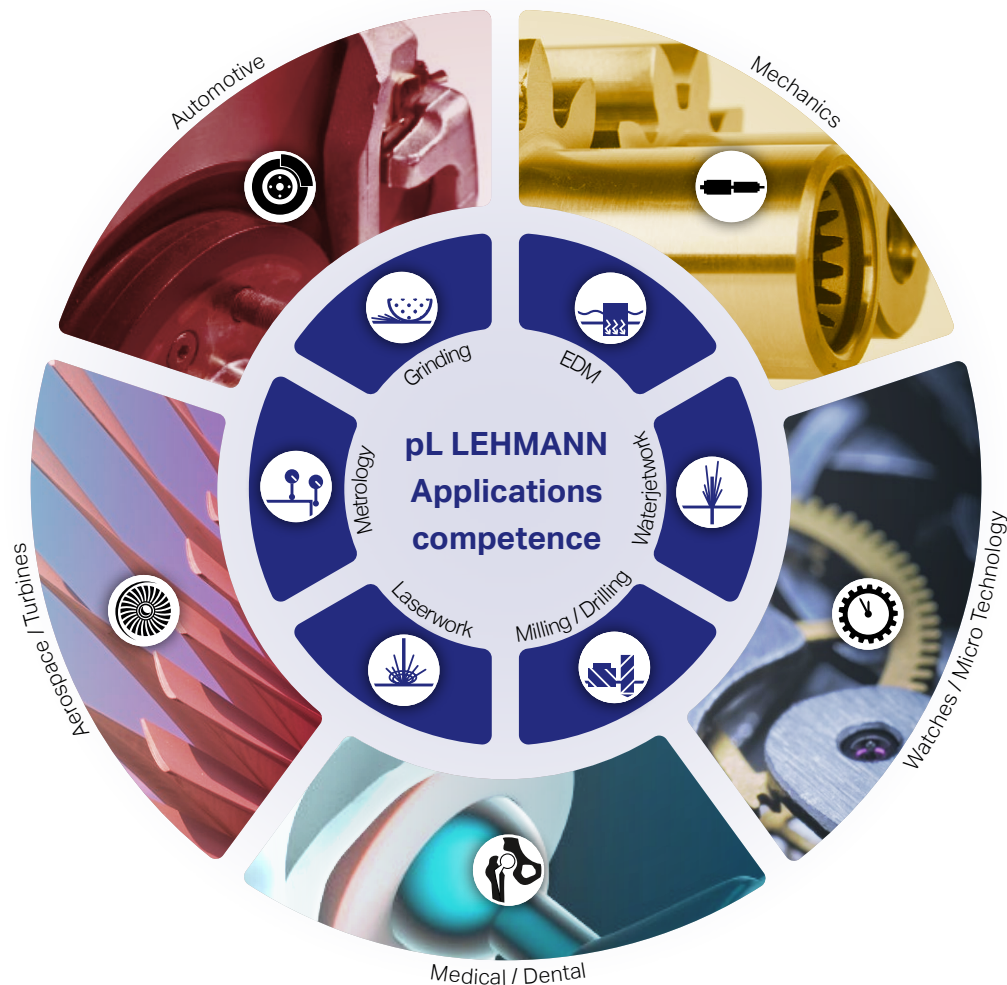
2023



01/2023 | EN

... for vertical machining centers

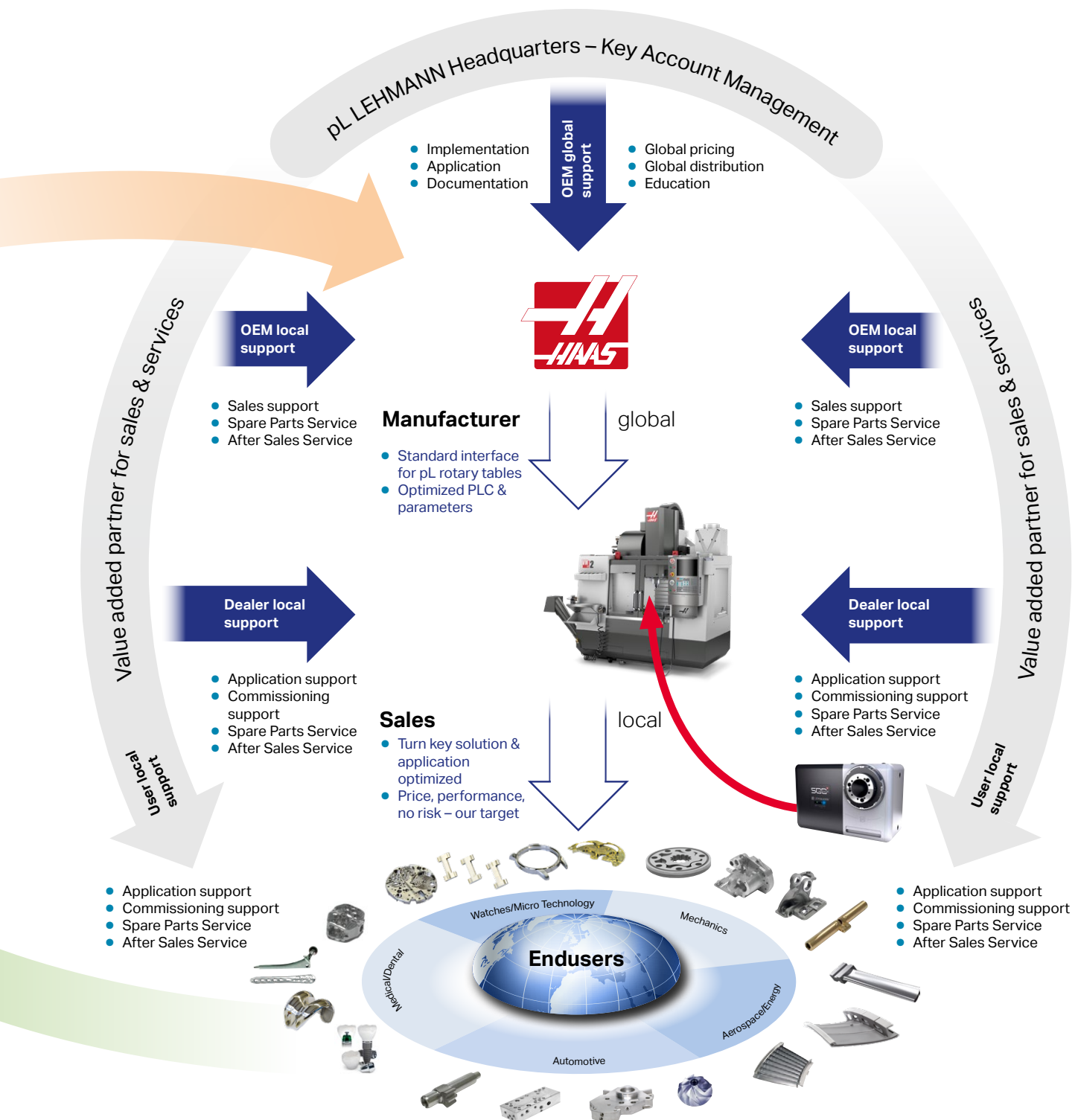
CNC rotary tables for economical manufacturing:
pL LEHMANN has suitable and rational solutions for
nearly every industry



pL rotary tables in use: on over **40** different machine brands
and over **160** different machine models.

pL competence: Integration in **all known** CNC control systems
(Fanuc, Siemens, Heidenhain ...), for new machines as well as
for retrofits

Professional products from professional partners:
HAAS and pL LEHMANN provide
first-class service to common customers



Up to 210 rpm
up to 0.21 sec / 90°

High speed GD

Extended travel in
Z- and X-direction

More space

High spindle load,
heavy-duty bearing

Heavy duty

E-Series



EA-50x light only 12 kg



EA-510

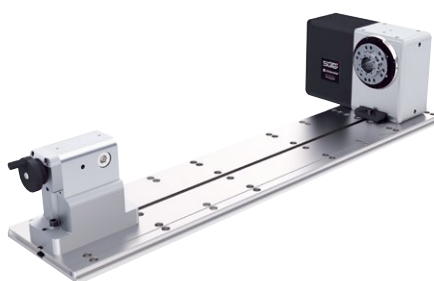


EA-520



EA-530

rotoFIX & longFlex



High torque

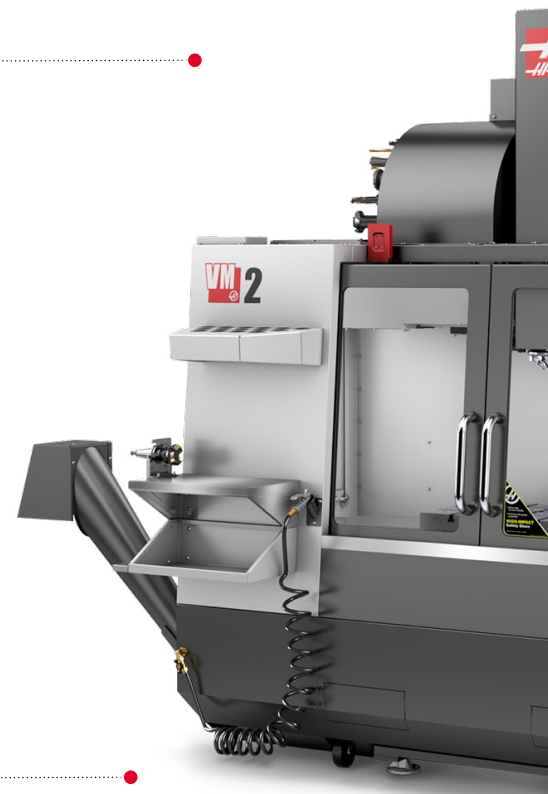
Feed torque up to
850 Nm (provisional)

Adaptability

Multifunctional
spindle HSK

Precision

On the workpiece, as
precise as 2 µm / 100 mm



Pneum. clamping
up to 7,000 Nm

High clamp

Large parts
up to $\varnothing$ 500

Big size

PGD backlash-free
long-life gear unit

No backlash

T-Series



**All base plates
made of steel**

with integrated hole pattern for
slot spacing of 100 and 125 mm,
integrated alignment system
lineFIX for lengthwise or cross-
wise clamping.

M-Series



Connectivity

Monitoring for
operation & service

No adjust

Load change without
parameter adjustment

Less cost

No cooling system,
no hydraulics



CM-1



DT-2



MINIMILL

A word from HAAS:

«Haas Automation is the largest machine tool builder in the western world

Haas Automation produce top-quality products at affordable prices. By relying on volume sales rather than per-unit profits to build the company, Haas Automation delivers more standard features, high-tech innovations, and rock-solid engineering than perhaps any other CNC manufacturer in the world – and at better prices!»



TM-1



VF-2



VM-2

The right machine/rotary table combination
for economical production: this Selection
Guide helps you make the right selection

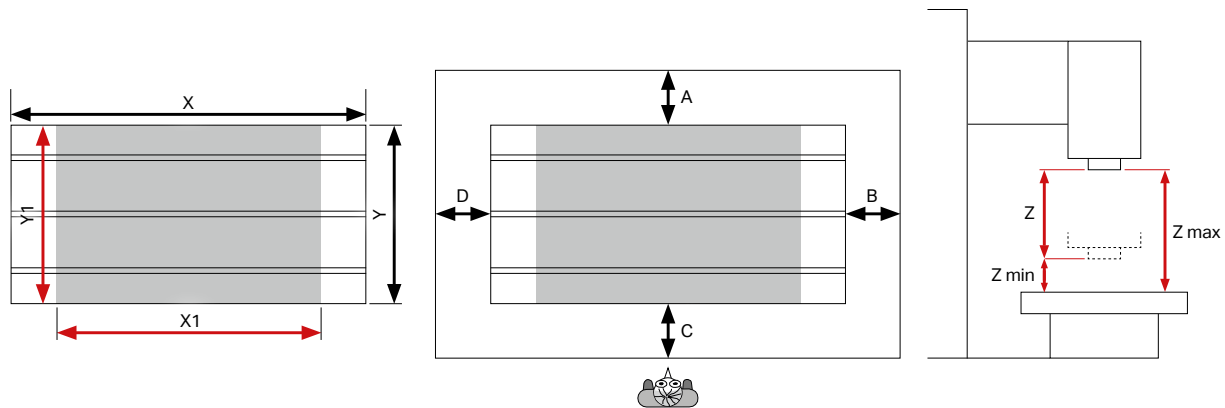


	Table diameter [mm]		Permissible overhang *	Traverse stroke [mm]					Minimum distance [mm]				Table load ** max [kg]
	X	Y		X1	Y1	Z	Zmin	Zmax	A	B	C	D	
(S)MINIMILL (EDU)	914	305	10%	406	305	254	102	356					227
(S)MINIMILL 2	1'016	356	10%	508	406	356	102	458					227
CM-1	572	254	40%	305	254	356	122	478					68
DM(DT)-1	660	381	10%	508	406	394	152	546					113
DM(DT)-2	864	381	10%	711	406	394	152	546					113
TM-0(P)	975	775	10%	508	305	406	102	508					159
TM-1(P)	1'213	267	10%	762	406	406	102	508					159
TM-2(P)	1'467	267	10%	1'016	406	406	102	508					159
TM-3(P)	1'470	370	10%	1'016	508	406	102	508					454
VF-1	660	356	10%	508	406	508	102	610					1'361
VF-1YT	660	460	10%	508	508	508	102	610					1'361
VF-2(SS)	914	356	10%	762	406	508	102	610					680
VF-2(SS)YT	914	457	10%	762	508	508	102	610					680
VF-3(SS)	1'219	457	10%	1'016	508	635	107	742					794
VF-3(SS)YT	1'372	610	10%	1'016	660	635	107	742					794
VF-4(SS)	1'321	495	10%	1'270	508	635	107	742					794
VF-5/(SS)(40)	1'372	610	10%	1'270	660	635	107	742					794
VF-5/50	1'372	610	10%	1'270	660	635	201	836					1'814
VF-5/40XT	1'575	584	10%	1'524	660	635	107	742					1'814
VF-5/50XT	1'575	584	10%	1'524	660	635	201	836					1'814
VF-6/(SS)(40)	1'626	711	10%	1'626	813	762	102	864					907
VF-6/50	1'626	711	10%	1'626	813	762	127	889					1'814
VM-2	914	457	10%	762	508	508	102	610					1'361
VM-3	1'372	610	10%	1'016	660	635	107	742					1'814
VM-6	1'626	711	10%	1'626	813	762	102	864					1'814

* The recommended rotary tables can overhang the machine table by so many % (e.g. 10 % means: the rotary table length can be greater than dimension Y or X by max. 10 % of the machine width Y with Y-clamping or 10 % of the table length X with X-clamping.)

** The recommended rotary tables do not exceed 50 % of the allowed table load.

Table explanation for pp. 8–11

	EA-507	EA-510	EA-520	EA-530
	X2			
CM-1	272	256		

Wherever values are listed, the combination is recommended. Empty cells mean that a combination is not possible, because the rotary table is too large, or is not recommended, because the rotary table is disproportionately small or heavier than 50% of the table load.

For further details about the rotary tables, see p. 12 and higher or refer to the main catalog

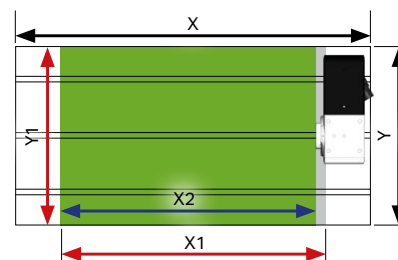


EA-510

EA-520

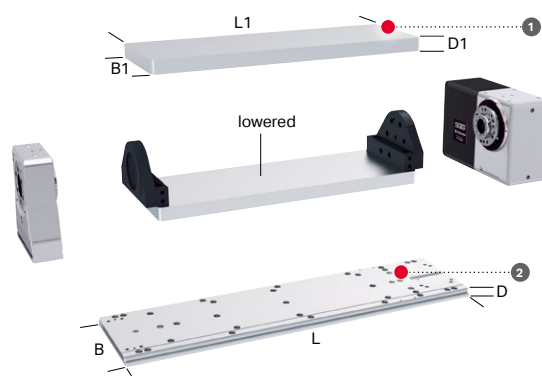
EA-530

	EA-507	EA-510	EA-520	EA-530
	X2			
(S)MINIMILL (EDU)	493	477		
(S)MINIMILL 2	595	579		
CM-1	272	256		
DM(DT)-1	417	401	375	
DM(DT)-2	621	605	579	
TM-0(P)			533	
TM-1(P)				
TM-2(P)				
TM-3(P)	1'076	1'060	1'034	
VF-1	417	401		
VF-1YT	417	401	375	
VF-2(SS)	671	655		
VF-2(SS)YT	671	655	629	
VF-3(SS)	951	935	909	
VF-3(SS)YT	1'027	1'011	985	956
VF-4(SS)	1'129	1'113	1'087	
VF-5/(SS)(40)	1'154	1'138	1'112	1'083
VF-5/50	1'154	1'138	1'112	1'083
VF-5/40XT	1'383	1'367	1'341	1'312
VF-5/50XT	1'383	1'367	1'341	1'312
VF-6/(SS)(40)			1'417	1'388
VF-6/50			1'417	1'388
VM-2	671	655	629	
VM-3	1'027	1'011	985	956
VM-6			1'417	1'388



Rotary table installation with pL clamping claws in accordance with the operating manual

Clamping yokes for EA-type rotary tables



			EA-507		EA-510		EA-520			EA-530	
1 Clamping yokes	Sph	[mm]	190		180		210			218	
	Length L1	[mm]	350	450	500	600	600	700	800	800	1000
	Width B1	[mm]	165		215		270			270	
2 Base plates	Thickness D1	[mm]	20		35		40			40	
	Length L	[mm]	622	722	785	885	916	1016	1116	1172	1372
	Width B	[mm]	168		248		301			368	
Weights / moments of inertia (without rotary table, without counter bearing)	Thickness D	[mm]	30		30		30			38	
	Weight (Al)	[kg]	10	12	23	28	40	45	52	on request	
	Weight (steel)	[kg]	29	34	66	80	117	130	152		
	Mom. inert. (Al)	[kgm ²]	0.02	0.02	0.06	0.07	0.16	0.17	0.21		
	Mom. inert. (steel)	[kgm ²]	0.04	0.05	0.17	0.21	0.46	0.50	0.60		

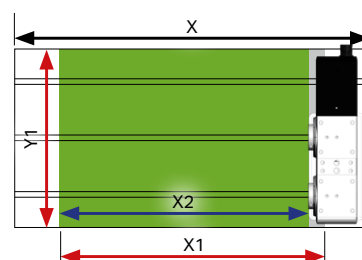
Explanations for pp. 8 to 11

The recommendations are for information purposes only. We recommend that you verify the effective dimensions prior to ordering. Modifications on the machine can lead to collisions and affect the dimensions X2 and Y2.



	M2-507	M2-510	M3-507	M3-510
	X2			
(S)MINIMILL (EDU)				
(S)MINIMILL2				
CM-1				
DM(DT)-1				
DM(DT)-2				
TM-0(P)	516	506	516	506
TM-1(P)				
TM-2(P)				
TM-3(P)				
VF-1				
VF-1YT	358			
VF-2(SS)				
VF-2(SS)YT	612			
VF-3(SS)	892			
VF-3(SS)YT	968	958	968	
VF-4(SS)	1'070	1'060		
VF-5/(SS)(40)	1'095	1'085	1'095	
VF-5/50	1'095	1'085	1'095	
VF-5/40XT	1'324	1'314	1'324	
VF-5/50XT	1'324	1'314	1'324	
VF-6/(SS)(40)	1'400	1'390	1'400	1'390
VF-6/50	1'400	1'390	1'400	1'390
VM-2	612			
VM-3	968	958	968	
VM-6	1'400	1'390	1'400	1'390

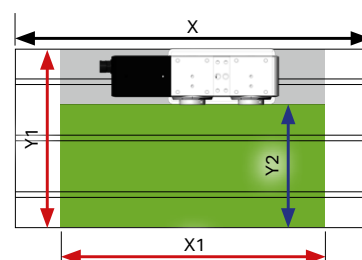
Y-mounting



Rotary table installation with pL clamping claws in accordance with the operating manual

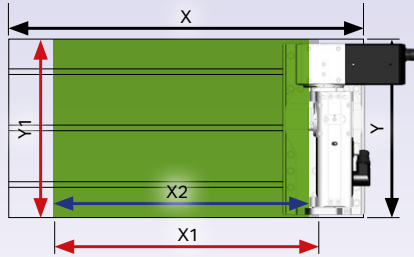
	M2-507	M2-510	M3-507	M3-510
	Y2			
(S)MINIMILL (EDU)		69	79	69
(S)MINIMILL2		145	155	145
CM-1	28			
DM(DT)-1	168	158	168	
DM(DT)-2	168	158	168	
TM-0(P)				
TM-1(P)				101
TM-2(P)				
TM-3(P)				
VF-1	155	145	155	145
VF-1YT		248	258	248
VF-2(SS)		145	155	145
VF-2(SS)YT		247	257	247
VF-3(SS)				247
VF-3(SS)YT				399
VF-4(SS)				266
VF-5/(SS)(40)				399
VF-5/50				399
VF-5/40XT				
VF-5/50XT				
VF-6/(SS)(40)				
VF-6/50				
VM-2		247	257	247
VM-3				399
VM-6				

X-mounting



Rotary table installation with pL clamping claws in accordance with the operating manual

Y-mounting



Rotary table installation using hole pattern in base plate



TIP1



TAP1



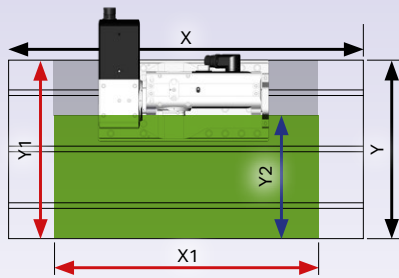
TOP1.2

Important remark: The tilting range of 180° (order no. SWB.5xx-180) can be used under usual reserve only, because the limit switches are also used as reference switches.

	TIP1c TF-507510	TIP2c TF-510520	TIP3c TF-520530	TAP1c T1-507510	TAP2c T1-510520	TAP3c T1-520530	TAP1 T1-507510	TAP2 T1-510520	TAP3 T1-520530	TOP1 T1-507510
	X2									
(S)MINIMILL (EDU)										
(S)MINIMILL2										
CM-1										
DM(DT)-1										
DM(DT)-2										
TM-0(P)	612	568		572			572			572
TM-1(P)										
TM-2(P)										
TM-3(P)										
VF-1										
VF-1YT	454									
VF-2(SS)										
VF-2(SS)YT	708									
VF-3(SS)	988									
VF-3(SS)YT	1'064	1'020	1'000	1'024	1'004		1'024	1'004		1'024
VF-4(SS)	1'166	1'122		1'126						
VF-5/(SS)(40)	1'191	1'147	1'127	1'151	1'131		1'151	1'131		1'151
VF-5/50	1'191	1'147	1'127	1'151	1'131		1'151	1'131		1'151
VF-5/40XT	1'420	1'376	1'356	1'380	1'360		1'380			1'380
VF-5/50XT	1'420	1'376	1'356	1'380	1'360		1'380			1'380
VF-6/(SS)(40)	1'496	1'452	1'432	1'456	1'436	1'402	1'456	1'436	1'402	1'456
VF-6/50	1'496	1'452	1'432	1'456	1'436	1'402	1'456	1'436	1'402	1'456
VM-2	708									
VM-3	1'064	1'020	1'000	1'024	1'004		1'024	1'004		1'024
VM-6	1'496	1'452	1'432	1'456	1'436	1'402	1'456	1'436	1'402	1'456

	TOP2 T1-510520	TOP3 T1-520530	TAP1c.2 T1-507510	TAP2c.2 T1-510520	TAP3c.2 T1-520530	TAP1.2 T1-507510	TAP2.2 T1-510520	TAP3.2 T1-520530	TOP1.2 T2-507510	TOP2.2 T2-510520	TOP3.2 T2-520530
	X2										
(S)MINIMILL (EDU)											
(S)MINIMILL2											
CM-1											
DM(DT)-1											
DM(DT)-2											
TM-0(P)			572			572			572		
TM-1(P)											
TM-2(P)											
TM-3(P)											
VF-1											
VF-1YT											
VF-2(SS)											
VF-2(SS)YT											
VF-3(SS)											
VF-3(SS)YT			1'024								
VF-4(SS)											
VF-5/(SS)(40)			1'151								
VF-5/50			1'151								
VF-5/40XT											
VF-5/50XT											
VF-6/(SS)(40)	1'436		1'456			1'456			1'456		
VF-6/50	1'436		1'456			1'456			1'456		
VM-2											
VM-3			1'024								
VM-6	1'436		1'456			1'456			1'456		

X-mounting



Rotary table installation using hole pattern in base plate



TIP1



TAP1

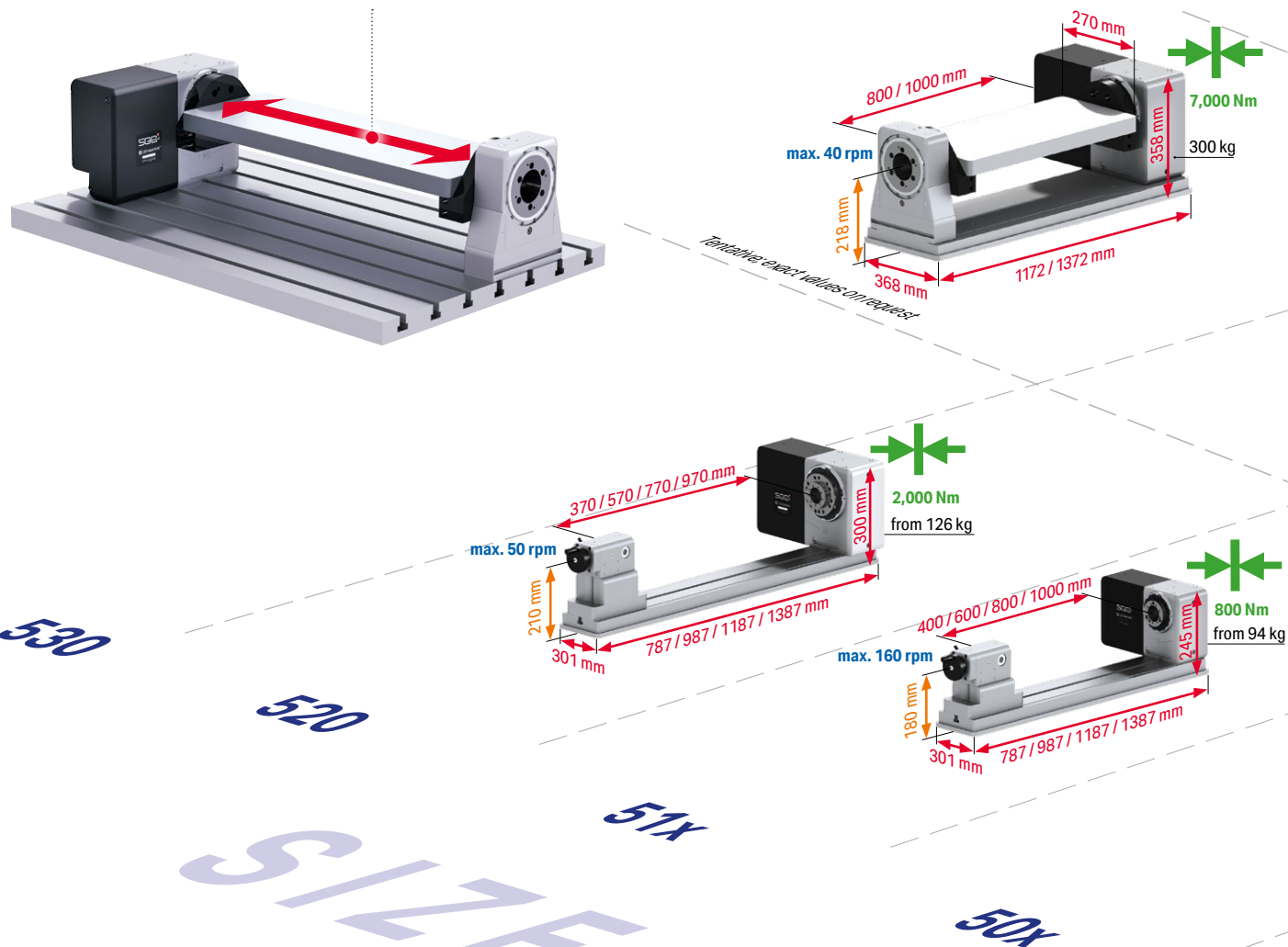
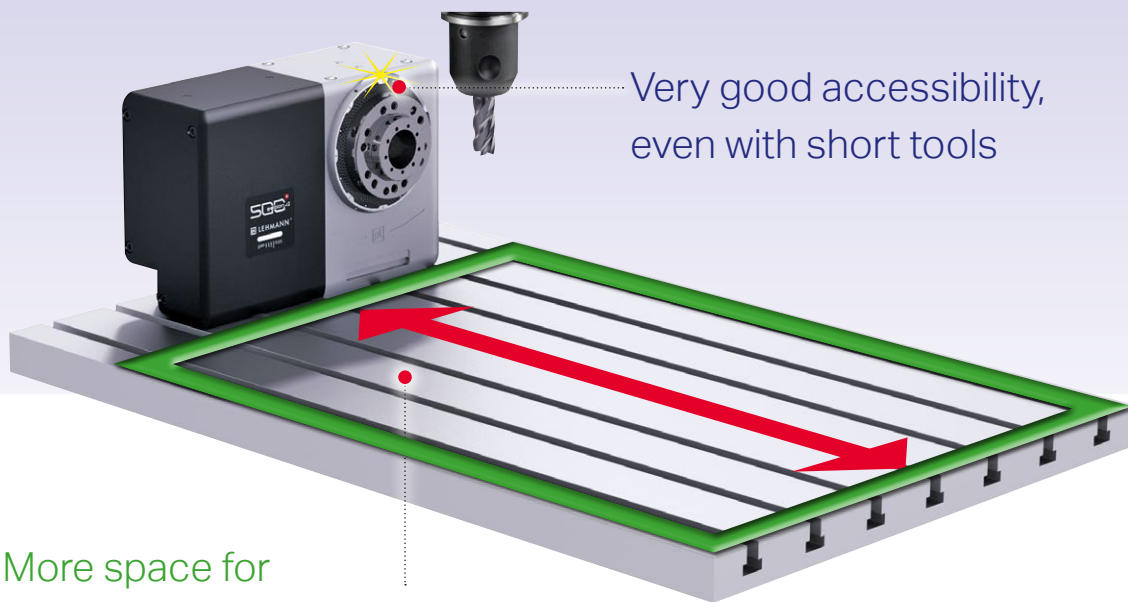


TOP1.2

Important remark: The tilting range of 180° (order no. SWB.5xx-180) can be used under usual reserve only, because the limit switches are also used as reference switches.

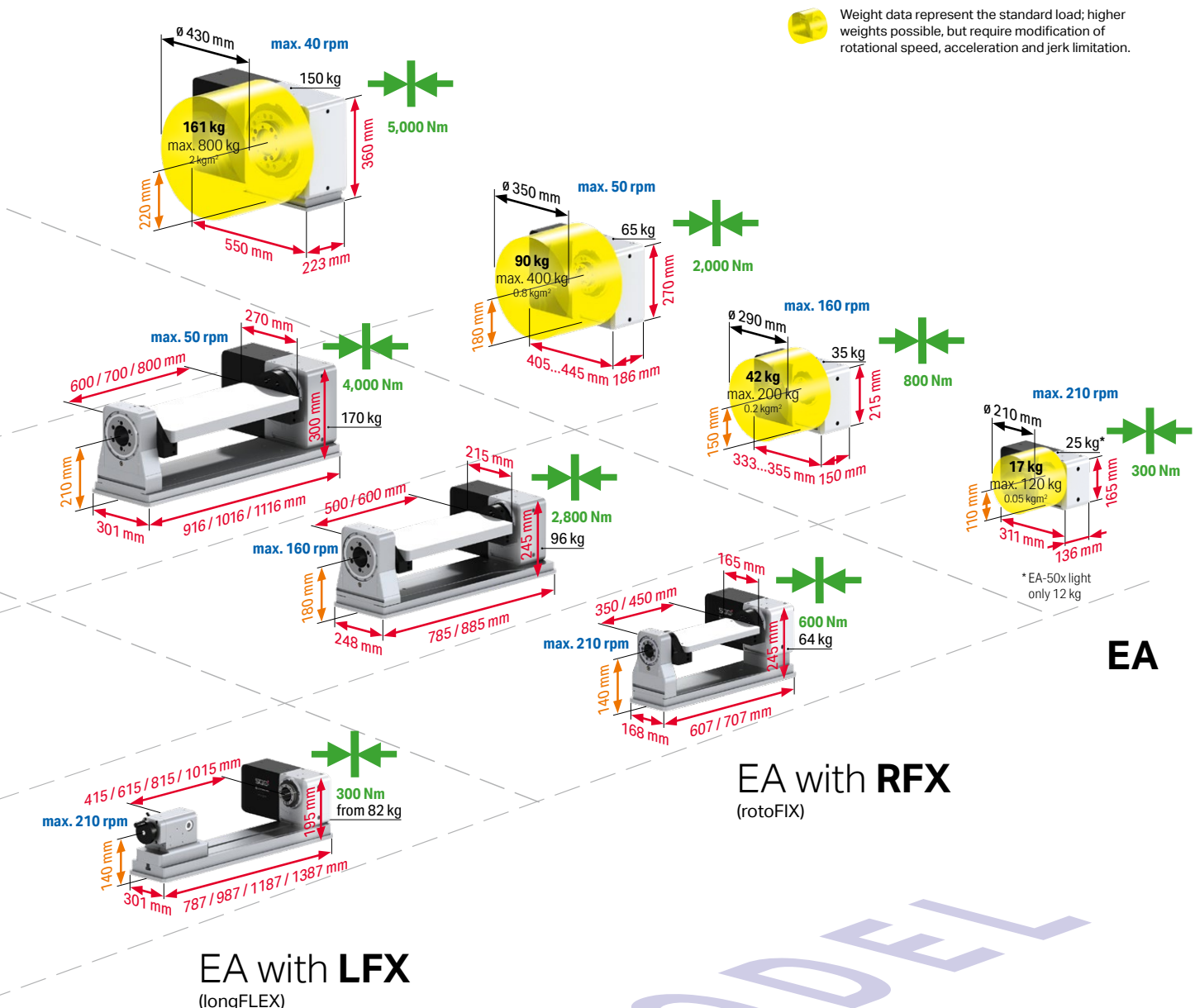
	TIP1c TF-507510	TIP2c TF-510520	TIP3c TF-520530	TAP1c T1-507510	TAP2c T1-510520	TAP3c T1-520530	TAP1 T1-507510	TAP2 T1-510520	TAP3 T1-520530	TOP1 T1-507510
	Y2									
(S)MINIMILL (EDU)	175	131		135	115		135			135
(S)MINIMILL2		207		211	191		211			211
CM-1										
DM(DT)-1	264									
DM(DT)-2	264									
TM-0(P)										
TM-1(P)										
TM-2(P)										
TM-3(P)									215	
VF-1	251	207	187	211	191	157	211	191		211
VF-1YT		310	290	314	294	260	314	294		314
VF-2(SS)	251	207	187	211	191	157	211	191	157	211
VF-2(SS)YT		309	289	313	293	259	313	293	259	313
VF-3(SS)			289			259		293	259	
VF-3(SS)YT						411			411	
VF-4(SS)						278			278	
VF-5/(SS)(40)						411			411	
VF-5/50						411			411	
VF-5/40XT										
VF-5/50XT										
VF-6/(SS)(40)										
VF-6/50										
VM-2		309	289	313	293	259	313	293	259	313
VM-3						411			411	
VM-6										

	TOP2 T1-510520	TOP3 T1-520530	TAP1c.2 T1-507510	TAP2c.2 T1-510520	TAP3c.2 T1-520530	TAP1.2 T1-507510	TAP2.2 T1-510520	TAP3.2 T1-520530	TOP1.2 T2-507510	TOP2.2 T2-510520	TOP3.2 T2-520530
	Y2										
(S)MINIMILL (EDU)			135	115		135			135		
(S)MINIMILL2			211	191		211			211		
CM-1											
DM(DT)-1											
DM(DT)-2											
TM-0(P)											
TM-1(P)			167			167			167		
TM-2(P)									167		
TM-3(P)				249	215		249	215	269	249	
VF-1	191		211			211					
VF-1YT	294		314			314					
VF-2(SS)	191	157	211	191		211	191		211	191	
VF-2(SS)YT	293	259	313	293		313	293		313	293	
VF-3(SS)	293	259	313	293	259	313	293	259	313	293	259
VF-3(SS)YT	445	411		445	411	465	445	411	465	445	411
VF-4(SS)	312	278		312	278	332	312	278	332	312	278
VF-5/(SS)(40)	445	411		445	411	465	445	411	465	445	411
VF-5/50	445	411		445	411	465	445	411	465	445	411
VF-5/40XT		398		432	398		432	398		432	398
VF-5/50XT		398		432	398		432	398		432	398
VF-6/(SS)(40)		538		572	538		572	538		572	538
VF-6/50		538		572	538		572	538		572	538
VM-2	293	259	313	293		313	293		313	293	
VM-3	445	411		445	411	465	445	411	465	445	411
VM-6		538		572	538		572	538		572	538

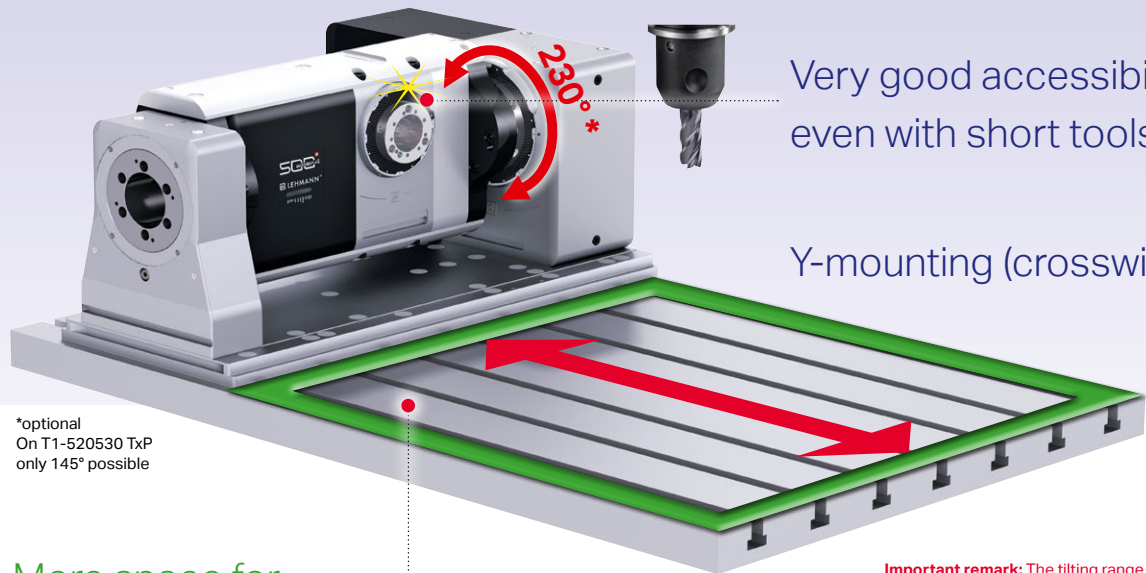


Facts

- High speed up to 210 rpm
- Steel base plates with hole pattern (suitable for slot spacing of 100 and 125 mm)
- Cycle time 90° as fast as 0.21 sec.



50x	507 (standard) or 508 (high speed)
51x	510 (standard) or 511 (high speed)
EA	single-axis, single-spindle CNC rotary table
rotoFIX	modular clamping yoke system
longFLEX	modular shaft clamping system



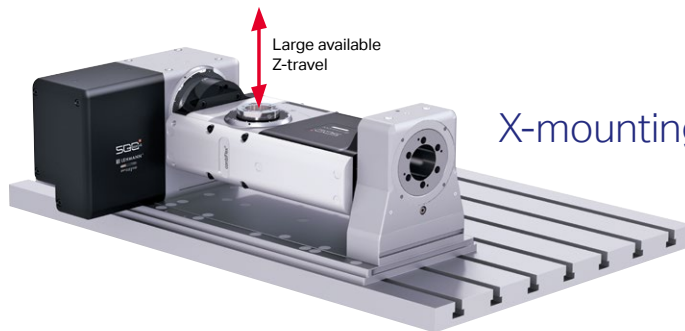
Very good accessibility,
even with short tools

Y-mounting (crosswise)

*optional
On T1-520530 TxP
only 145° possible

More space for
workpiece and fixtures

Important remark: The tilting range of 180°
(order no. SWB.5xx-180) can be used under
usual reserve only, because the limit switches
are also used as reference switches.



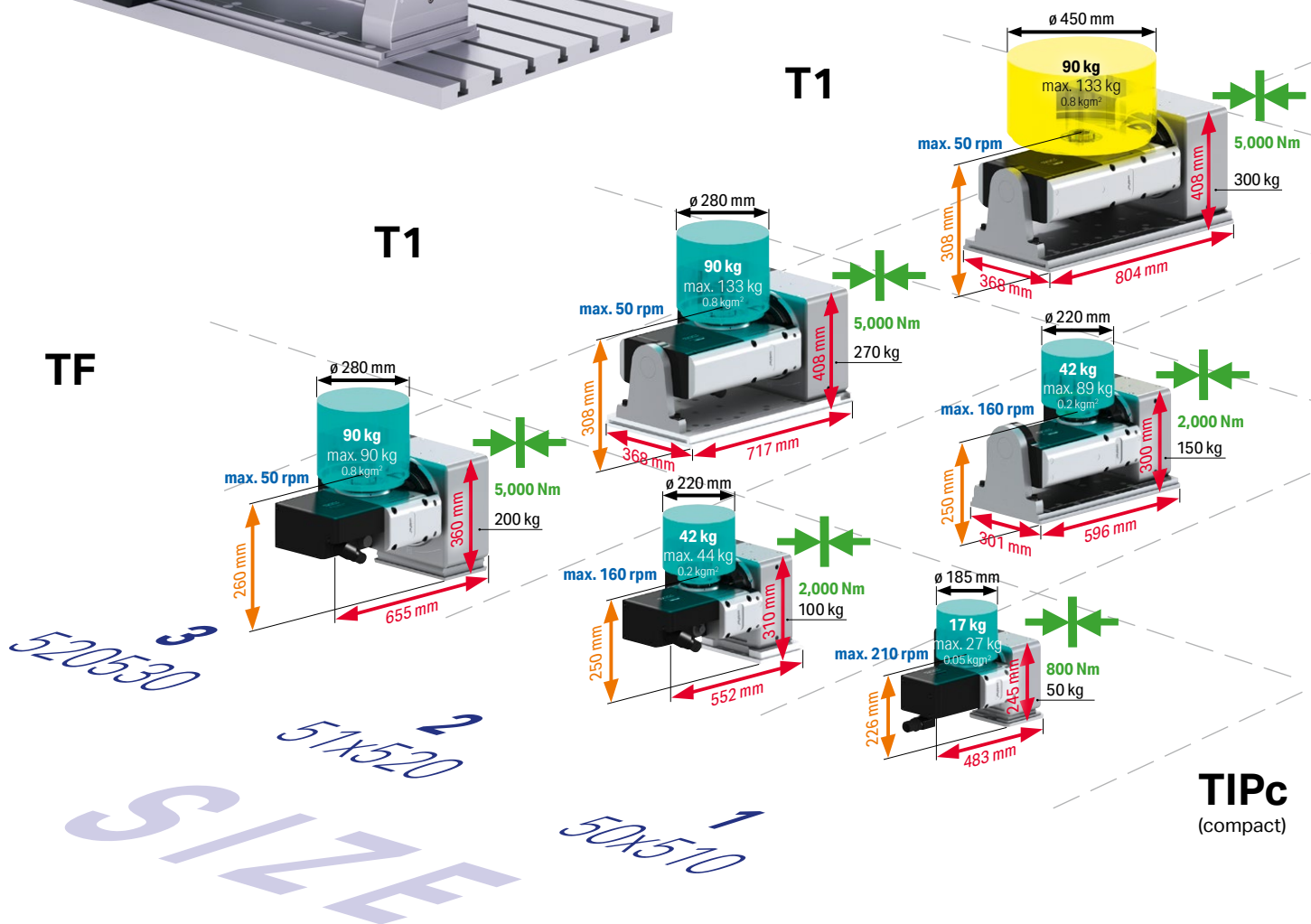
X-mounting (lengthwise)

T1

T1

T1

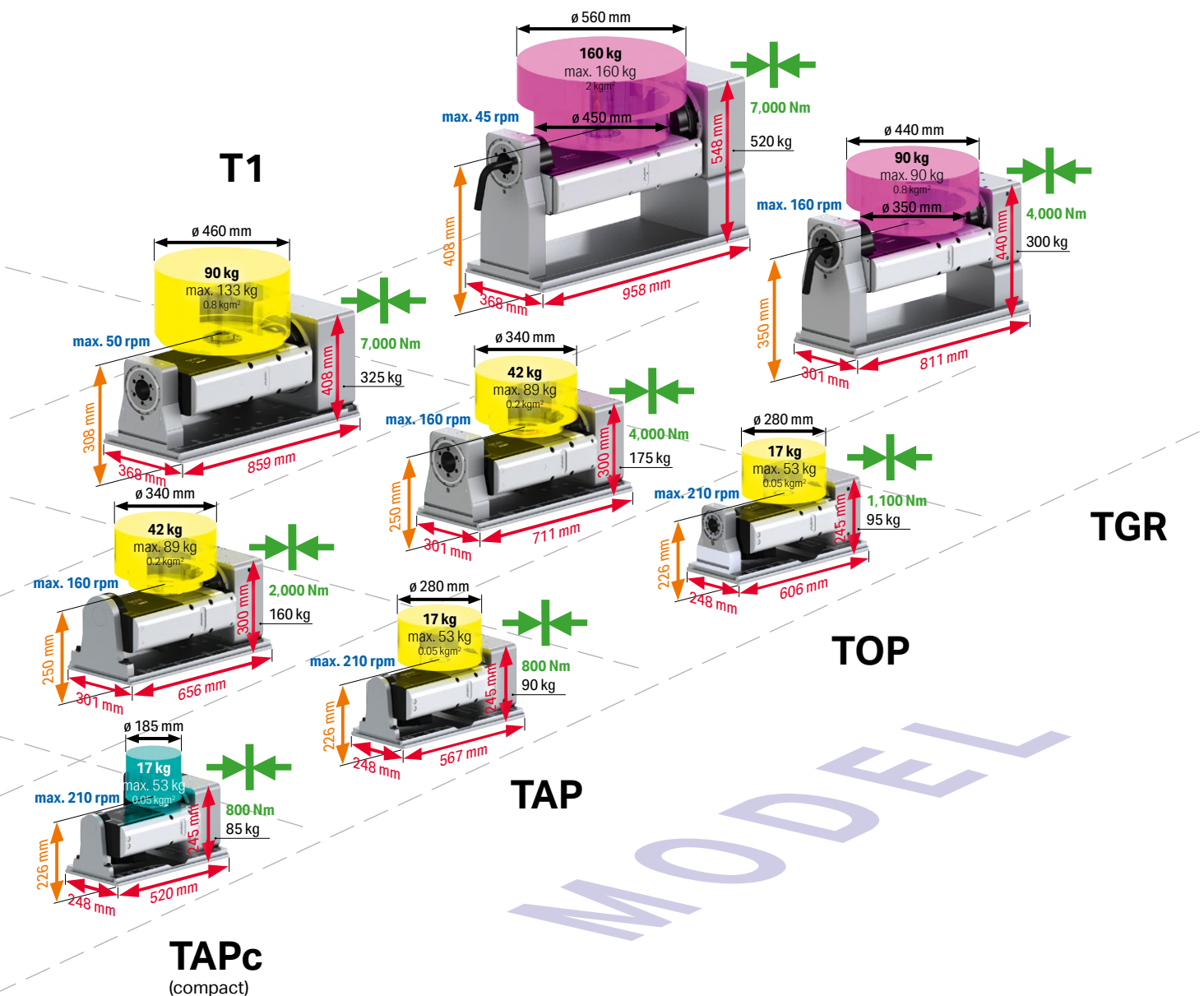
TF



TIPc
(compact)

Facts

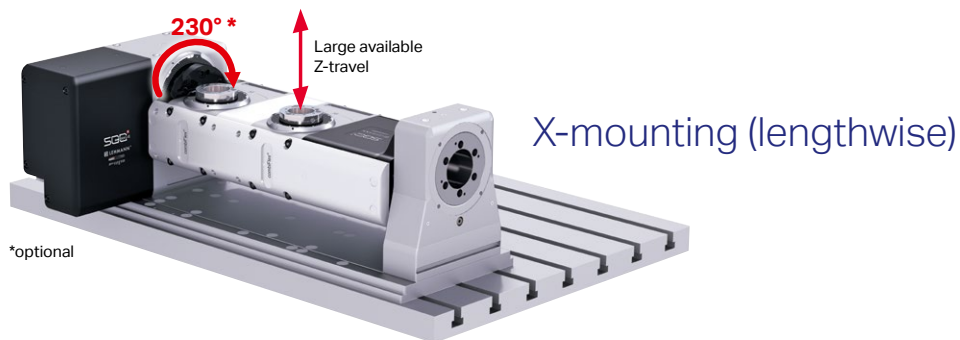
- Up to 150 % higher clamping torque in tilting axis
- Fewer variant – more solution
- Larger workpiece $\varnothing$ possible
- Spatially optimized arrangement of the dividing axis



50x510	508510 (standard) or 508510 (high speed)
51x520	510520 (standard) or 511520 (high speed)
TIPc	Two-axis rotary table, no counter bearing, compact
TAPc	Two-axis rotary table, with supporting bearing, compact
TAP	Two-axis rotary table, with supporting bearing
TOP	Two-axis rotary table, with clamped counter bearing
TGR	Two-axis rotary table, with clamped counter bearing, specifically for grinding applications



More space for workpiece and fixtures



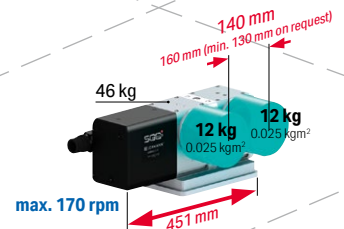
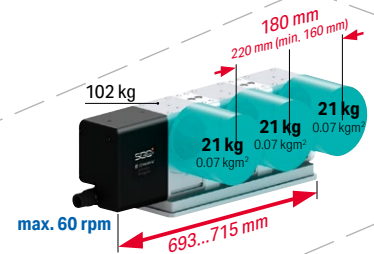
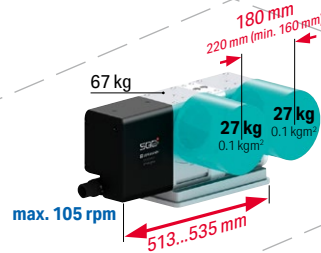
M2

M3

SIZE

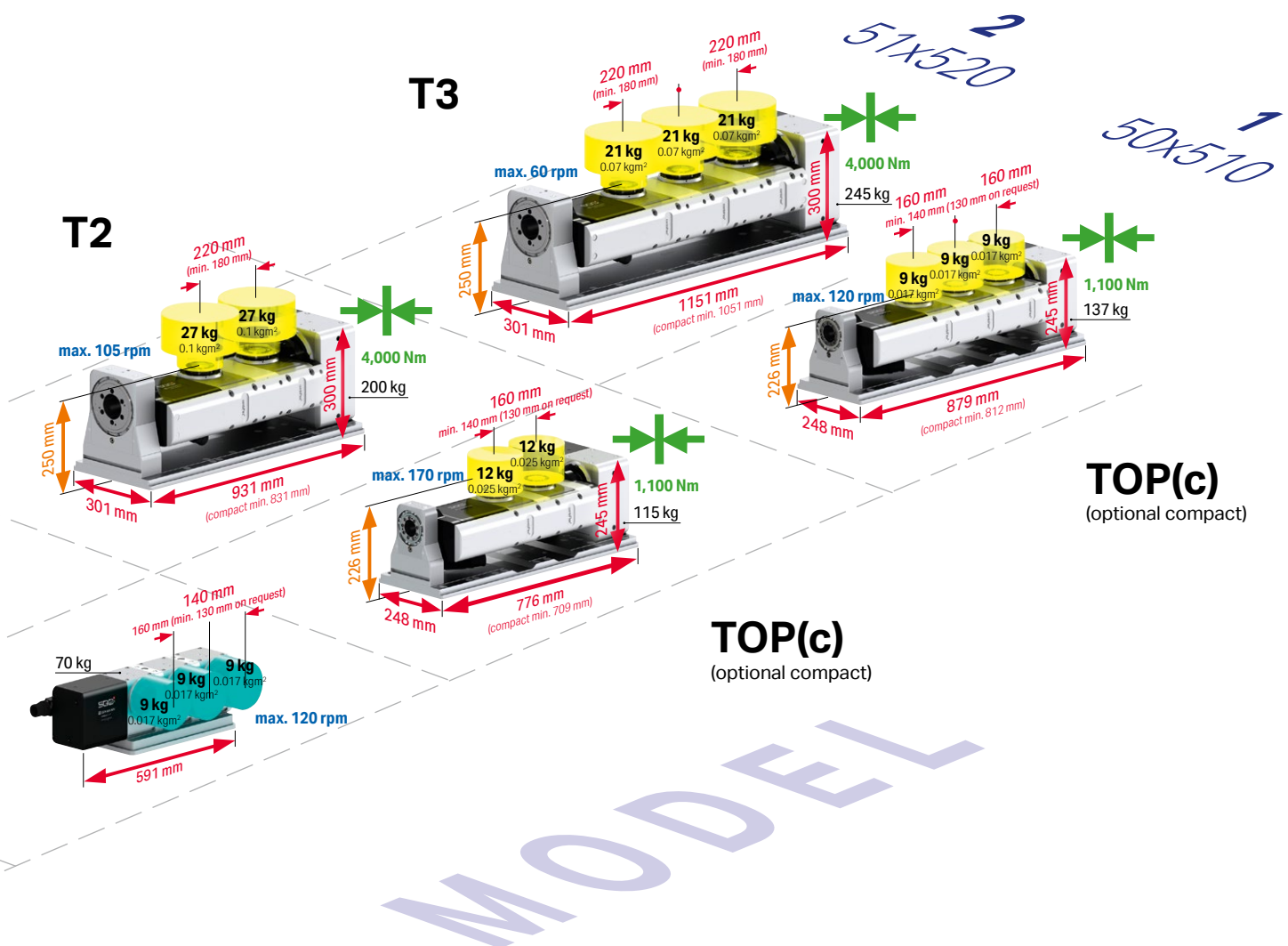
51x

50x



Facts

- Up to 54 % higher clamping torque in tilting axis
- Fewer variant – more solution
- Spindle distance min. 130 mm
- Spatially optimized arrangement of the dividing axis

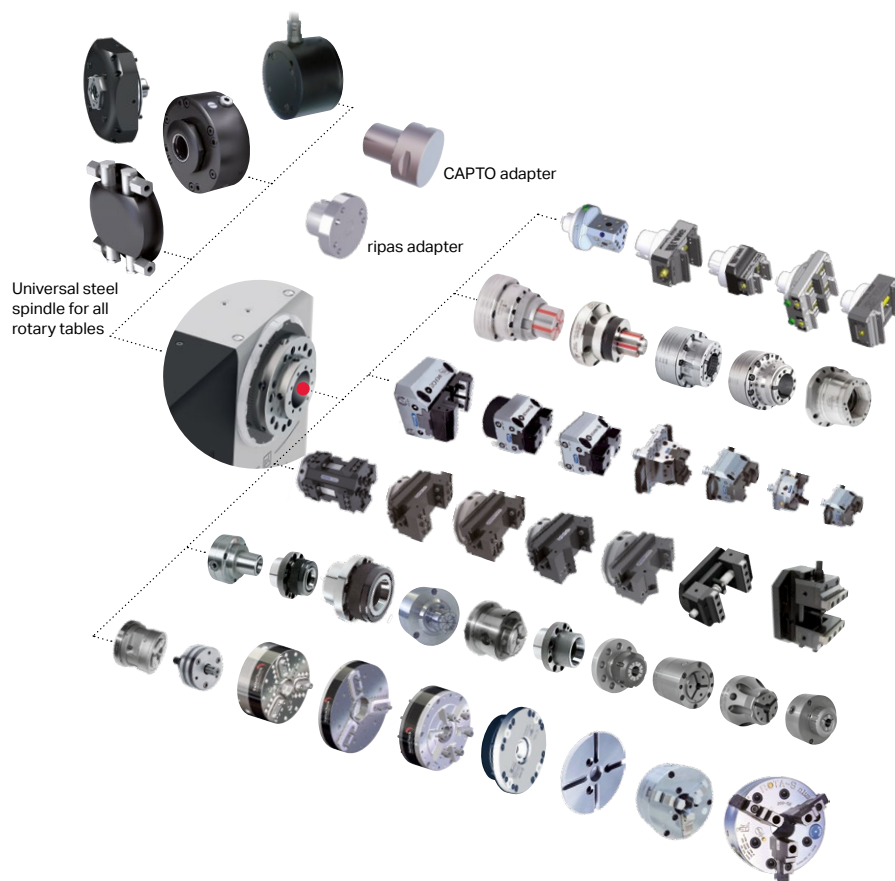


- 50x 507 (standard) or 508 (high speed)
- 51x 510 (standard) or 511 (high speed)
- M2 Single-axis, multi-spindle rotary table, 2-position
- M3 Single-axis, multi-spindle rotary table, 3-position
- T2 Two-axis multi-spindle rotary table, 2-position
- T3 Two-axis multi-spindle rotary table, 3-position

Extremely wide assortment for workpiece clamping.
Standardized interface in front and rear: maximum universality

Spindle accessories, rear

- Rotary unions **up to 250 bar**
- Hydraulic clamping cylinder **23 kN at 120 bar**
- Pneumatic clamping cylinder **11 kN at 10 bar**
- Angular position measuring systems **as precise as ± 1 arcsec**



Spindle accessories in front



Tailstock and counter bearing



ripas zero point clamping system



EA-507 with ripas auto and ripas adapter

CAPTO clamping



EA-507 with CAPTO retrofit kit

Present in over 20 countries: from sales consultation to the final service



Get an offer

Please send us your request with the following information:

1. Do you need a 4th or 4th/5th axis?
2. On which machine should the rotary table get installed?
(Name and exact type; e.g. DMG MORI 850V)
3. Which controller is on the machine?
(Name and exact type; e.g. Heidenhain TNC 640)
4. What do you want to process on your machine?
 - Workpiece size
 - Weight
 - Material
 - Size of the series (number of pieces/year)
 - Loading and unloading (automatic or manual)
5. Is the machine completely prepared for the 4th or 4th/5th axis
(PLC, software activation, hardware interface)?

Services from A to Z

Pre Sales

- First class literature
- Application drawings 2D
- 3D models
- Example of applications

Sales & Post Sales

- Specified offers for each machine
- Wide range of work piece clamping systems
- Standardized interfaces

Commissioning

- Parameter lists
- Machine specified commissioning instructions
- User manual
- Partner Kit
- On-site support

After Sales

- Service points in 25 countries PTSE
- Spare parts worldwide by eShop
- In-field support by flying doctors





ROTARY TABLES · PRECISION TECHNOLOGY · SOFTWARE

Headquarters

PETER LEHMANN AG
Bäraustrasse 43
CH-3552 Bärau
Phone +41 (0)34 409 66 66
Fax +41 (0)34 409 66 00
sales@plehmann.com
www.lehmann-rotary-tables.com

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- Croatia
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Hungary
- Iceland
- Ireland
- Italy
- Kosovo

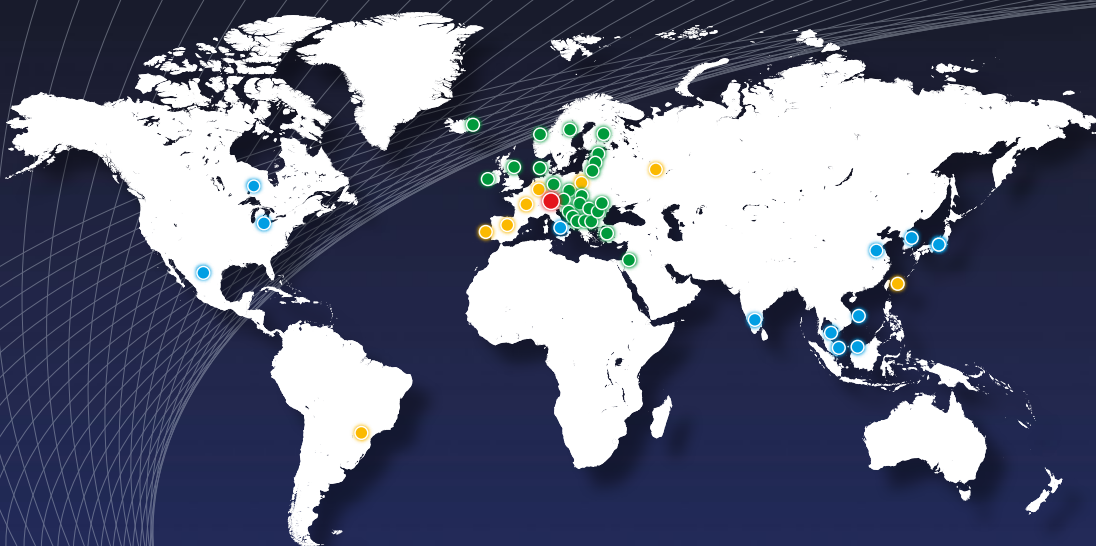
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- Serbia
- Slovakia
- Slovenia
- Spain
- Sweden
- Turkey
- UK

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● Headquarters

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● pL SOLUTIONS® partner

● value added reseller & partner

More information (address, telephone number...) at www.lehmann-rotary-tables.com