Selection Guide for CNC Rotary Tables ...

Bluetooth®

pl

BFW

4/2018 | EN

... for BMV-, Chandra-, Surya-, Dhruva-, HSTC- and Krypton-series

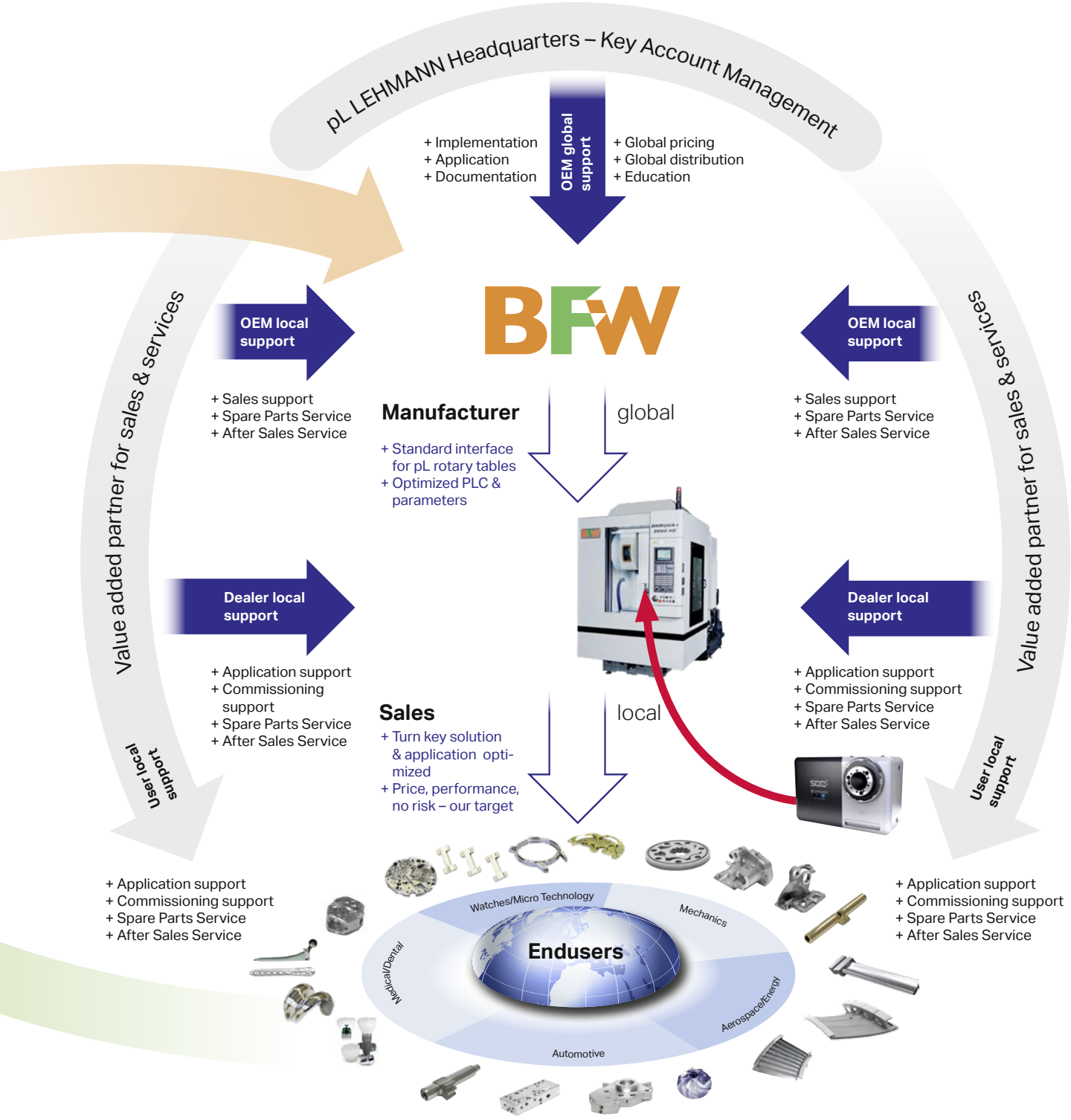
pl LEHMANN®

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, Haas, Winmax, Mitsubishi, Brother, Mazatrol, Okuma ...), for new machines as well as for retrofits

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



NEW up to +30 %

Up to 210 rpm
up to 0.21 sec / 90°

High speed

Extended travel in
Z- and X-direction

More space

High spindle load,
heavy-duty bearing

Heavy duty

E-Series

Rotary tables suitable for simultaneous operation!

Save energy

PGD

DD

Benefits of PGD by pL LEHMANN as compared to Direct Drive: small servo, low power draw, no cooling system, and a significantly reduced energy consumption when machining with unclamped rotary table.

Energy label at the left
An intuitive rating as consumption greatly depends on usage, and without any liability assumed, following the directives on energy labelling

See main catalog for more features

NEW up to +30 %

High torque

Feed torque up to
850 Nm (provisional)

Adaptability

Multifunctional
spindle HSK

Precision

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

pL LEHMANN®

NEW up to +150 %

Pneum. clamping
up to 7,000 Nm

High clamp

Large parts
up to ø 500

Big size

PGD backlash-free
long-life gear unit

No backlash

T-Series

All base plates made of steel NEW

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

M-Series

NEW

Connectivity

Wireless monitoring,
for operation & service

No adjust

Load change without
parameter adjustment

Less cost

No cooling system,
no hydraulics

BMV 35+

BMV 50

Chandra+

A word from BFW:

«We exist to enable progress

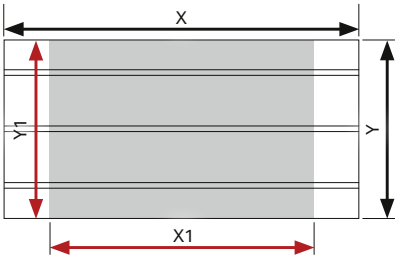
We are a progress-first establishment. We do whatever it takes to enable progress by acquiring new technology to serve customers better and investing in an R&D Center to create next-gen technology. At BFW, we ensure progress at every step, with every innovation.»

Dhruva 3050 HE

HSTC 4050

Krypton 5

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



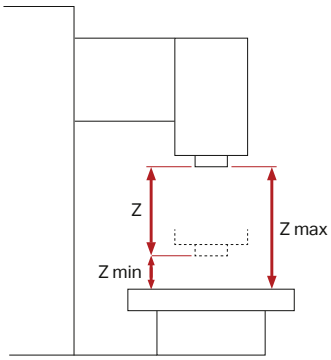


	Table diameter [mm]		Permissible overhang *	Traverse stroke [mm]					Table load **
	X	Y		X1	Y1	Z	Zmin	Zmax	max [kg]
BMV 35+ (Gaurav+)	600	350	40%	450	350	350	150	500	350
BMV 45+ (Agni+)	900	450	10%	600	450	500	100	600	500
BMV 45++ (Agni++)	1'000	450	10%	800	450	500	100	600	600
BMV 50	1'000	510	10%	800	510	510	100	610	600
BMV 51 (Vayu)	1'000	510	10%	800	510	510	150	660	800
BMV 60+ (Chakra+)	1'250	600	10%	1'050	610	610	150	760	1'200
BMV 60++ (Chakra++)	1'450	600	10%	1'250	610	610	150	760	1'200
BMV 65	1'500	650	10%	1'280	700	650	150	800	1'200
BMV 70 (Astra)	1'700	710	10%	1'600	910	810	150	960	2'000
Chandra+ / Surya+	1'060	315	10%	800	350	380	75	455	300
Dhruva 3050 HE	650	400	10%	500	400	350	150	500	300
Dhruva 3070 HE	850	410	10%	500	400	350	150	500	300
Dhruva 4050 HE	650	400	10%	500	400	310	150	460	300
Dhruva 4070 HE	850	410	10%	700	400	310	150	460	300
HSTC 3035	630	350	40%	350	300	350	150	500	200
HSTC 3050	650	400	40%	500	400	350	150	500	250
HSTC 3070	850	410	40%	700	400	350	150	500	250
HSTC 4050	650	400	40%	500	400	310	150	460	250
HSTC 4070	850	410	40%	700	400	310	150	460	250
Krypton 5	850	500	10%	650	510	500	120	620	850
Krypton 6	1'200	600	10%	1'000	610	500	120	620	1'100

* 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

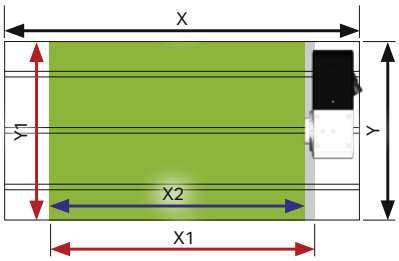
	EA-507 X2	EA-510 X2	EA-520 X2	EA-530 X2
BMV 35+ (Gaurav+)	358	342	316	

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

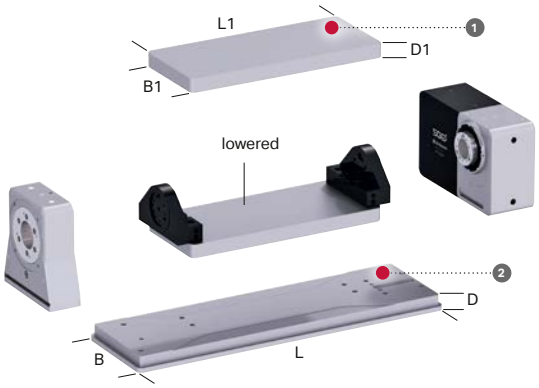
EA-510 EA-520 EA-530

	EA-507 X2	EA-510 X2	EA-520 X2	EA-530 X2
BMV 35+ (Gaurav+)	358	342	316	
BMV 45+ (Agni+)	583	567	541	
BMV 45++ (Agni++)	733	717	691	
BMV 50	733	717	691	662
BMV 51 (Vayu)	733	717	691	662
BMV 60+ (Chakra+)			941	912
BMV 60++ (Chakra++)			1'141	1'112
BMV 65			1'181	1'152
BMV 70 (Astra)				1'412
Chandra+ / Surya+	763	747		
Dhruva 3050 HE	408	392	366	
Dhruva 3070 HE	508	492	466	
Dhruva 4050 HE	408	392	366	
Dhruva 4070 HE	608	592	566	
HSTC 3035	323	307	281	
HSTC 3050	408	392	366	
HSTC 3070	608	592	566	
HSTC 4050	408	392	366	
HSTC 4070	608	592	566	
Krypton 5	583	567	541	512
Krypton 6			891	862



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

Clamping yokes for EA-type rotary tables



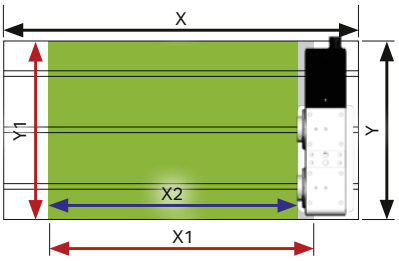
			EA-507		EA-510		EA-520			EA-530	
	Sph	[mm]	190		180		210			218	
1 **Clamping yokes**	Length L1	[mm]	350	450	500	600	600	700	800	800	1000
	Width B1	[mm]	165		215		270			270	
	Thickness D1	[mm]	20		35		40			40	
2 **Base plates**	Length L	[mm]	622	722	785	885	916	1016	1116	1172	1372
	Width B	[mm]	168		248		301			368	
	Thickness D	[mm]	30		30		30			38	
Weights / moments of inertia (without rotary table, without counter bearing)	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)	[kgm²]	0.02	0.02	0.06	0.07	0.16	0.17	0.21		
	Mom. inert. (steel)	[kgm²]	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			
BMV 35+ (Gaurav+)	299			
BMV 45+ (Agni+)	524			
BMV 45++ (Agni++)	674			
BMV 50	674	664		
BMV 51 (Vayu)	674	664		
BMV 60+ (Chakra+)	924	914	924	
BMV 60++ (Chakra++)	1'124	1'114	1'124	
BMV 65	1'164	1'154	1'164	1'154
BMV 70 (Astra)	1'424	1'414	1'424	1'414
Chandra+ / Surya+				
Dhruva 3050 HE				
Dhruva 3070 HE	449			
Dhruva 4050 HE				
Dhruva 4070 HE	549			
HSTC 3035	264			
HSTC 3050	349	339		
HSTC 3070	549	539		
HSTC 4050	349	339		
HSTC 4070	549	539		
Krypton 5	524	514		
Krypton 6	874	864	874	

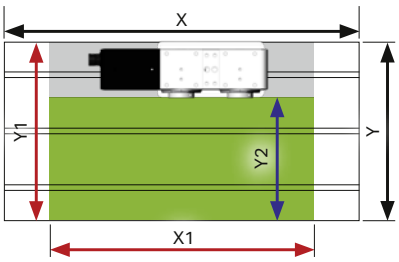
Y-mounting



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

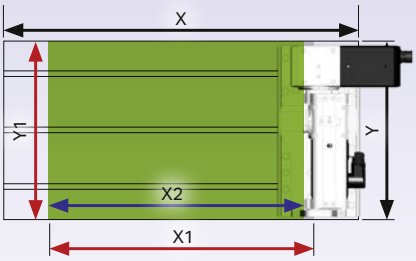
	M2-507	M2-510	M3-507	M3-510
	Y2			
BMV 35+ (Gaurav+)		114	124	
BMV 45+ (Agni+)				214
BMV 45++ (Agni++)				
BMV 50				
BMV 51 (Vayu)				
BMV 60+ (Chakra+)				
BMV 60++ (Chakra++)				
BMV 65				
BMV 70 (Astra)				
Chandra+ / Surya+				
Dhruva 3050 HE		164	174	164
Dhruva 3070 HE				169
Dhruva 4050 HE		164	174	164
Dhruva 4070 HE				169
HSTC 3035		89	99	
HSTC 3050			174	164
HSTC 3070				169
HSTC 4050			174	164
HSTC 4070				169
Krypton 5				269
Krypton 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

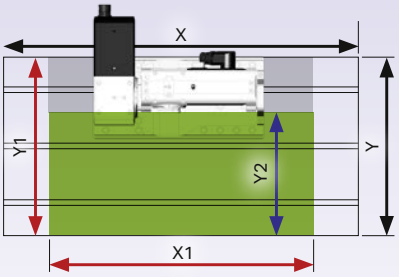
TAP1

TOP1.2

	TIP1c TF-507510 X2	TIP2c TF-510520 X2	TIP3c TF-520530 X2	TAP1c T1-507510 X2	TAP2c T1-510520 X2	TAP3c T1-520530 X2	TAP1 T1-507510 X2	TAP2 T1-510520 X2	TAP3 T1-520530 X2	TOP1 T1-507510 X2
BMV 35+ (Gaurav+)	395									
BMV 45+ (Agni+)	620									
BMV 45++ (Agni++)	770									
BMV 50	770	726		730						
BMV 51 (Vayu)	770	726		730						
BMV 60+ (Chakra+)	1'020	976	956	980	960		980	960		980
BMV 60++ (Chakra++)	1'220	1'176	1'156	1'180	1'160		1'180	1'160		1'180
BMV 65	1'260	1'216	1'196	1'220	1'200	1'166	1'220	1'200		1'220
BMV 70 (Astra)	1'520	1'476	1'456	1'480	1'460	1'426	1'480	1'460	1'426	1'480
Chandra+ / Surya+										
Dhruva 3050 HE										
Dhruva 3070 HE										
Dhruva 4050 HE										
Dhruva 4070 HE										
HSTC 3035	360									
HSTC 3050	445	401		405						
HSTC 3070	645	601		605			605			
HSTC 4050	445	401		405						
HSTC 4070	645	601		605			605			
Krypton 5	620	576		580						
Krypton 6	970	926	906	930	910		930	910		930

	TOP2 T1-510520 X2	TOP3 T1-520530 X2	TAP1c.2 T1-507510 X2	TAP2c.2 T1-510520 X2	TAP3c.2 T1-520530 X2	TAP1.2 T1-507510 X2	TAP2.2 T1-510520 X2	TAP3.2 T1-520530 X2	TOP1.2 T2-507510 X2	TOP2.2 T2-510520 X2	TOP3.2 T2-520530 X2
BMV 35+ (Gaurav+)											
BMV 45+ (Agni+)											
BMV 45++ (Agni++)											
BMV 50											
BMV 51 (Vayu)											
BMV 60+ (Chakra+)			980								
BMV 60++ (Chakra++)			1'180								
BMV 65	1'200		1'220			1'220					
BMV 70 (Astra)	1'460		1'480			1'480			1'480		
Chandra+ / Surya+											
Dhruva 3050 HE											
Dhruva 3070 HE											
Dhruva 4050 HE											
Dhruva 4070 HE											
HSTC 3035											
HSTC 3050											
HSTC 3070											
HSTC 4050											
HSTC 4070											
Krypton 5											
Krypton 6			930								

X-mounting



Rotary table installation using hole pattern in base plate

TIP1

TAP1

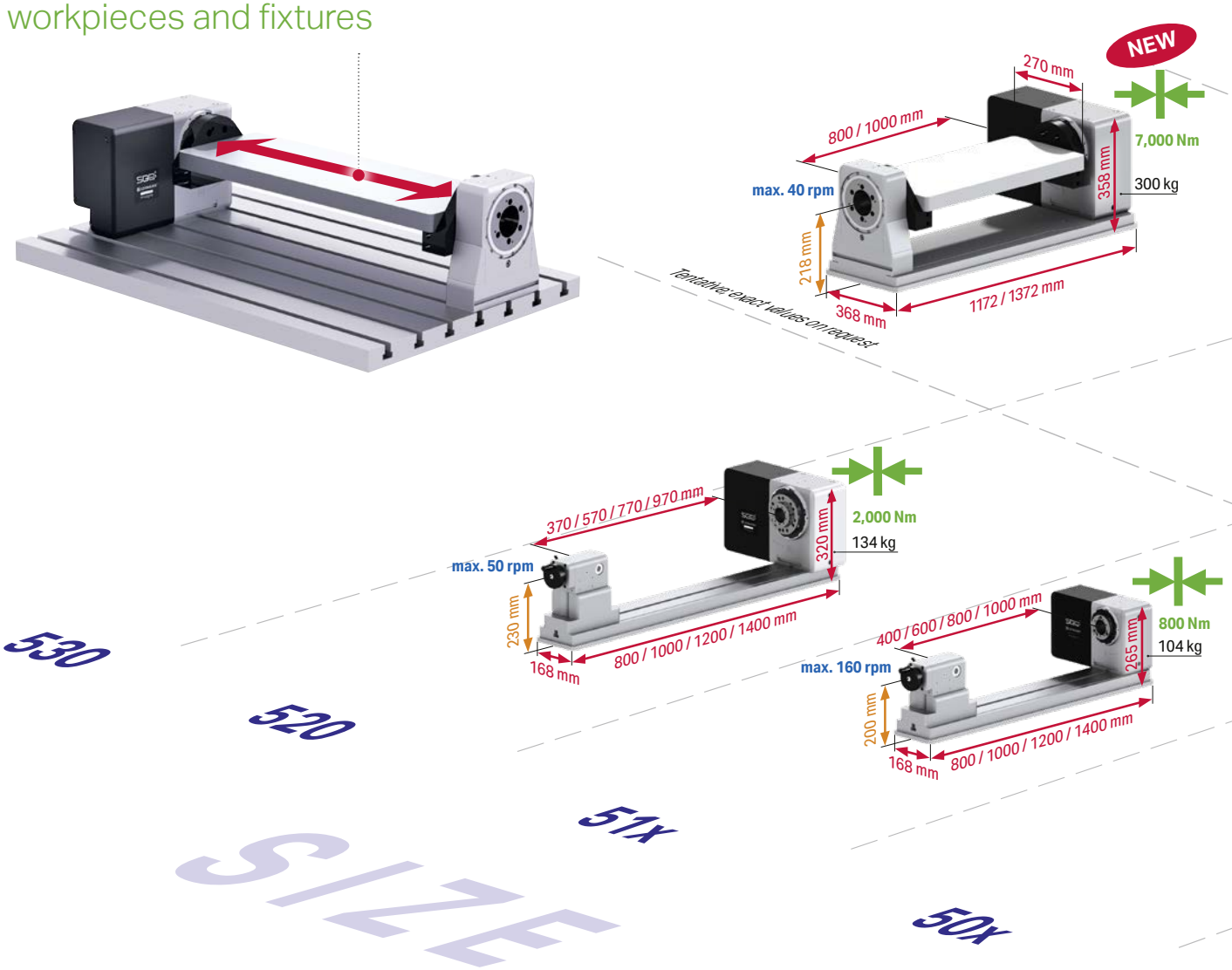
TOP1.2

	TIP1c TF-507510 Y2	TIP2c TF-510520 Y2	TIP3c TF-520530 Y2	TAP1c T1-507510 Y2	TAP2c T1-510520 Y2	TAP3c T1-520530 Y2	TAP1 T1-507510 Y2	TAP2 T1-510520 Y2	TAP3 T1-520530 Y2	TOP1 T1-507510 Y2
BMV 35+ (Gaurav+)		176		180	160		180	160		180
BMV 45+ (Agni+)			256					260		
BMV 45++ (Agni++)									226	
BMV 50									286	
BMV 51 (Vayu)									286	
BMV 60+ (Chakra+)										
BMV 60++ (Chakra++)										
BMV 65										
BMV 70 (Astra)										
Chandra+ / Surya+										
Dhruva 3050 HE	270	226		230	210		230			230
Dhruva 3070 HE					215					235
Dhruva 4050 HE	270	226		230	210		230			230
Dhruva 4070 HE					215					235
HSTC 3035		151		155			155			155
HSTC 3050							230			230
HSTC 3070										235
HSTC 4050							230			230
HSTC 4070										235
Krypton 5			311		315	281		315	281	335
Krypton 6										

	TOP2 T1-510520 Y2	TOP3 T1-520530 Y2	TAP1c.2 T1-507510 Y2	TAP2c.2 T1-510520 Y2	TAP3c.2 T1-520530 Y2	TAP1.2 T1-507510 Y2	TAP2.2 T1-510520 Y2	TAP3.2 T1-520530 Y2	TOP1.2 T2-507510 Y2	TOP2.2 T2-510520 Y2	TOP3.2 T2-520530 Y2
BMV 35+ (Gaurav+)			180								
BMV 45+ (Agni+)	260		280	260		280	260		280	260	
BMV 45++ (Agni++)	260			260		280	260		280	260	
BMV 50	320			320		340	320		340	320	
BMV 51 (Vayu)	320	286		320		340	320		340	320	
BMV 60+ (Chakra+)					381		415	381		415	381
BMV 60++ (Chakra++)					381			381			381
BMV 65					451			451			451
BMV 70 (Astra)								586			586
Chandra+ / Surya+				142.5					162.5		
Dhruva 3050 HE			230			230					
Dhruva 3070 HE			235	215		235			235		
Dhruva 4050 HE			230			230					
Dhruva 4070 HE			235	215		235			235		
HSTC 3035			155								
HSTC 3050			230			230					
HSTC 3070			235			235			235		
HSTC 4050			230			230					
HSTC 4070			235			235			235		
Krypton 5	315	281	335	315		335	315		335	315	
Krypton 6					381		415	381		415	381

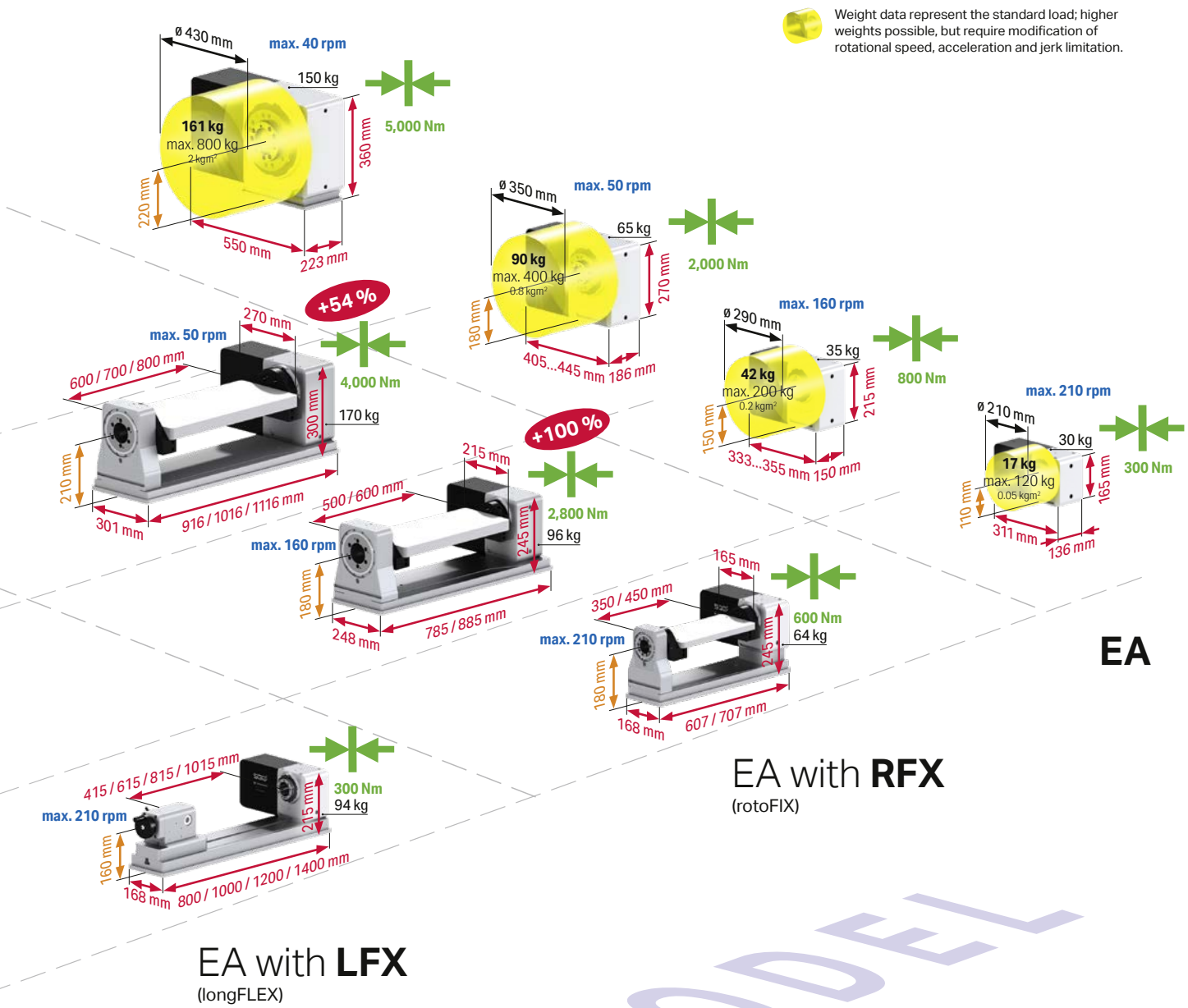
Very good accessibility,
even with short tools

More space for
workpieces and fixtures



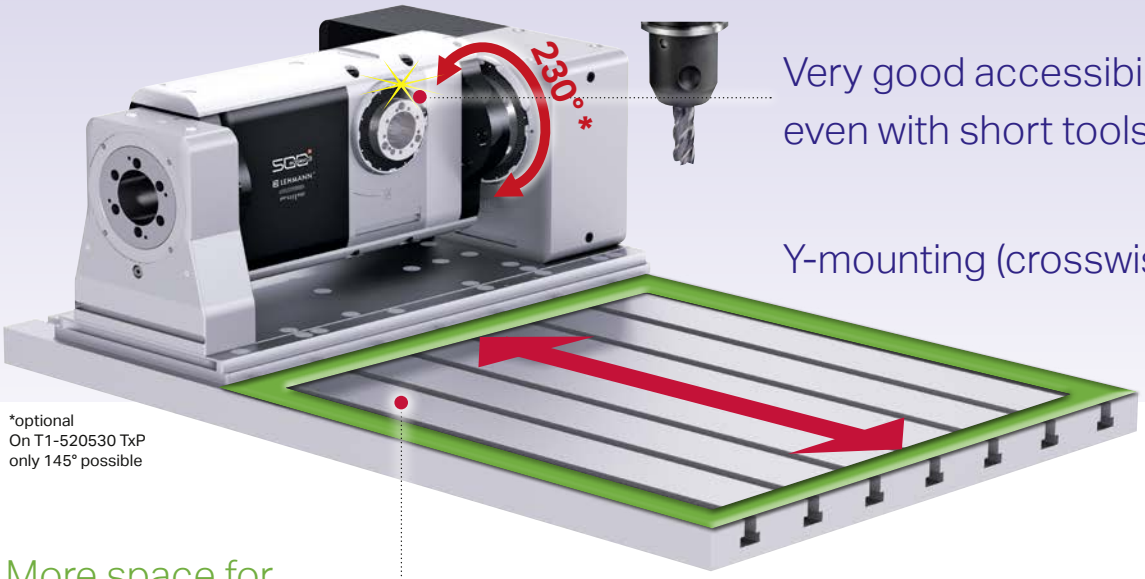
News in brief

1. High speed up to 210 rpm
2. Feed torque up to 850 Nm (tentative)
3. Steel base plates with hole pattern (suitable for slot spacing of 100 and 125 mm)
4. Cycle time 90° as fast as 0.21 sec.



MODEL

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

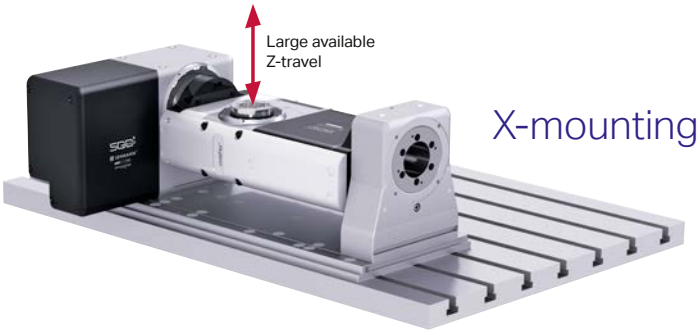


Very good accessibility, even with short tools

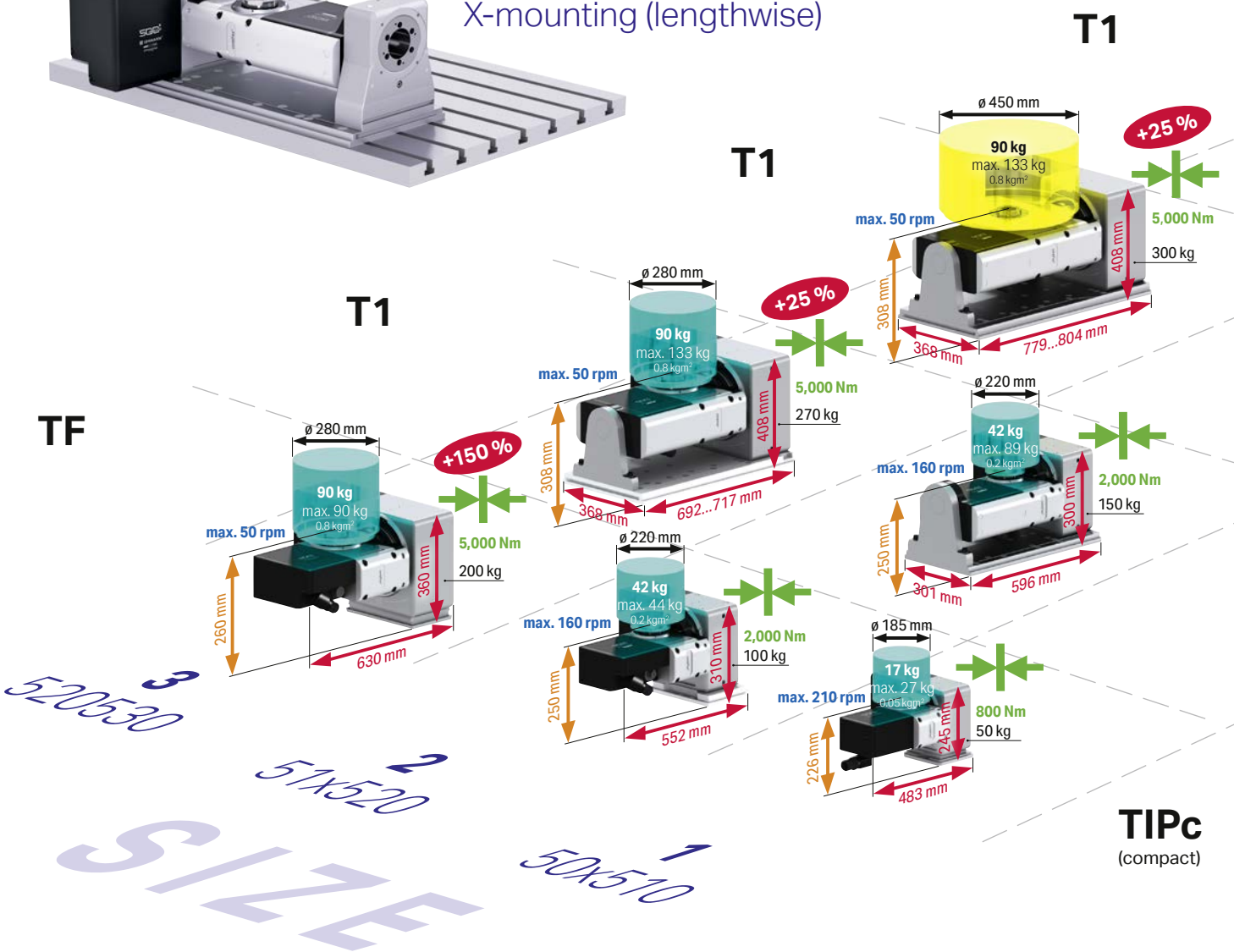
Y-mounting (crosswise)

*optional
On T1-520530 TxP only 145° possible

More space for workpiece and fixtures

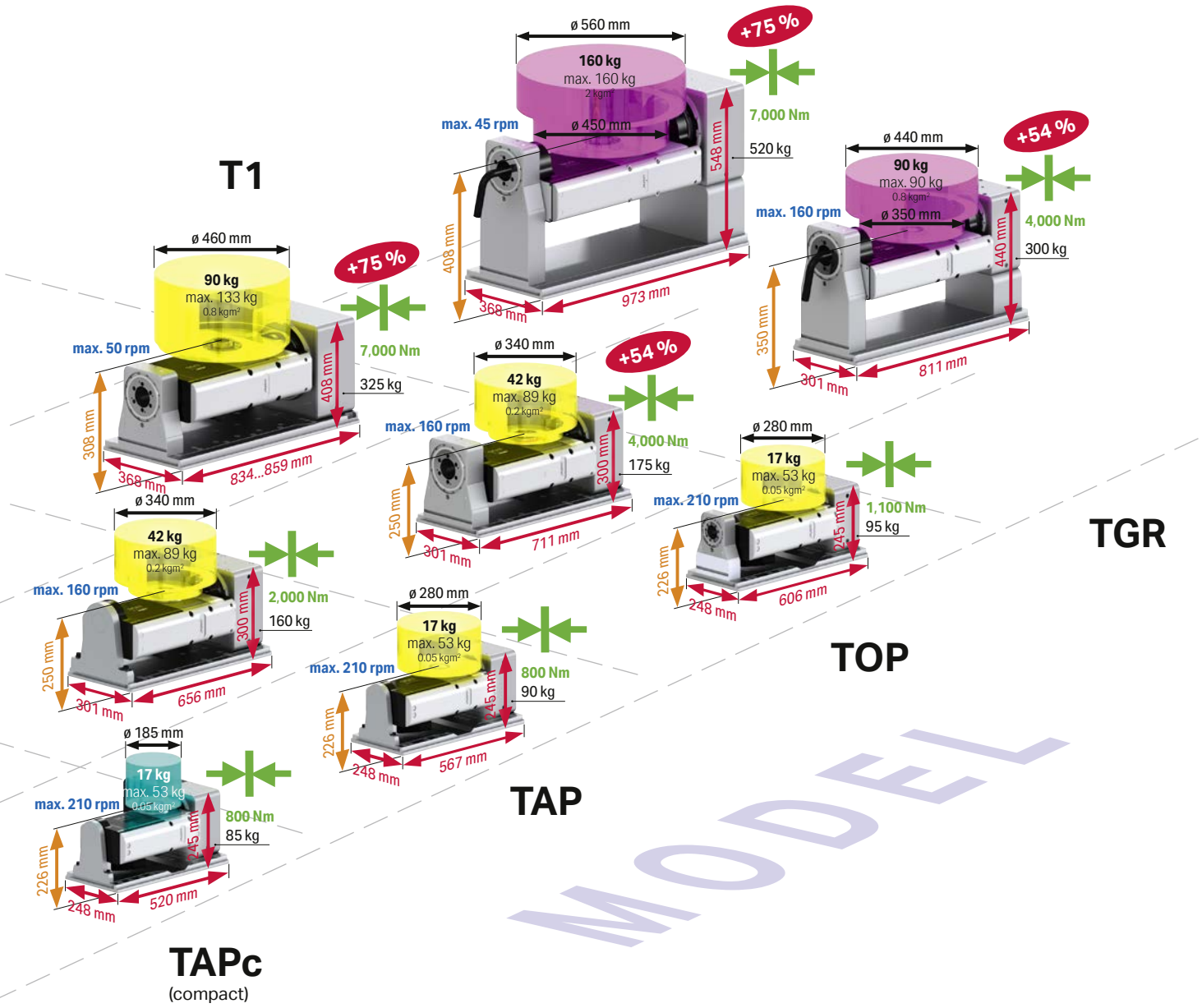


X-mounting (lengthwise)



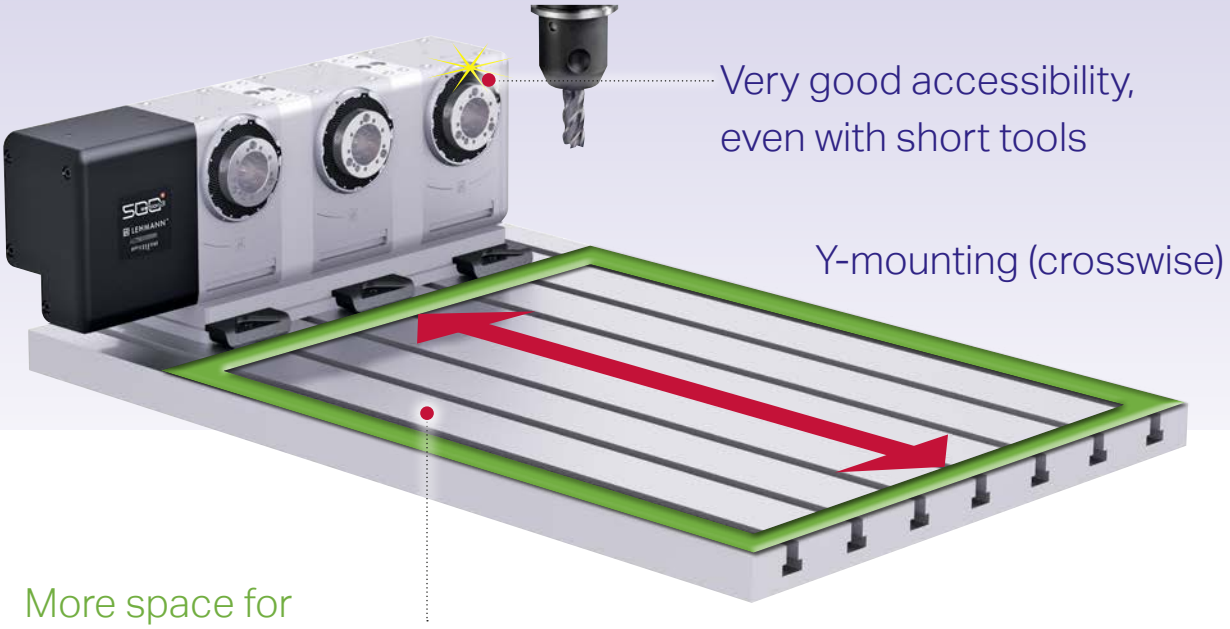
News in brief

1. Up to 150 % higher clamping torque in tilting axis
2. Fewer variant – more solution
3. Larger workpiece ø possible
4. Spatially optimized arrangement of the dividing axis



Weight data represent the standard load; higher weights possible, but require modification of rotational speed, acceleration and jerk limitation.

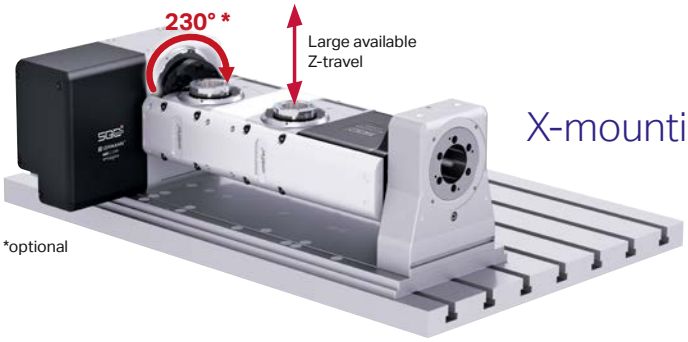
50x510	508510 (standard) or 508510 (high speed)
51x520	510520 (standard) or 511520 (high speed)
TIPc	Two-axis rotary table, no counter bearing, compact
TAPc	Two-axis rotary table, with supporting bearing, compact
TAP	Two-axis rotary table, with supporting bearing
TOP	Two-axis rotary table, with clamped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



Very good accessibility,
even with short tools

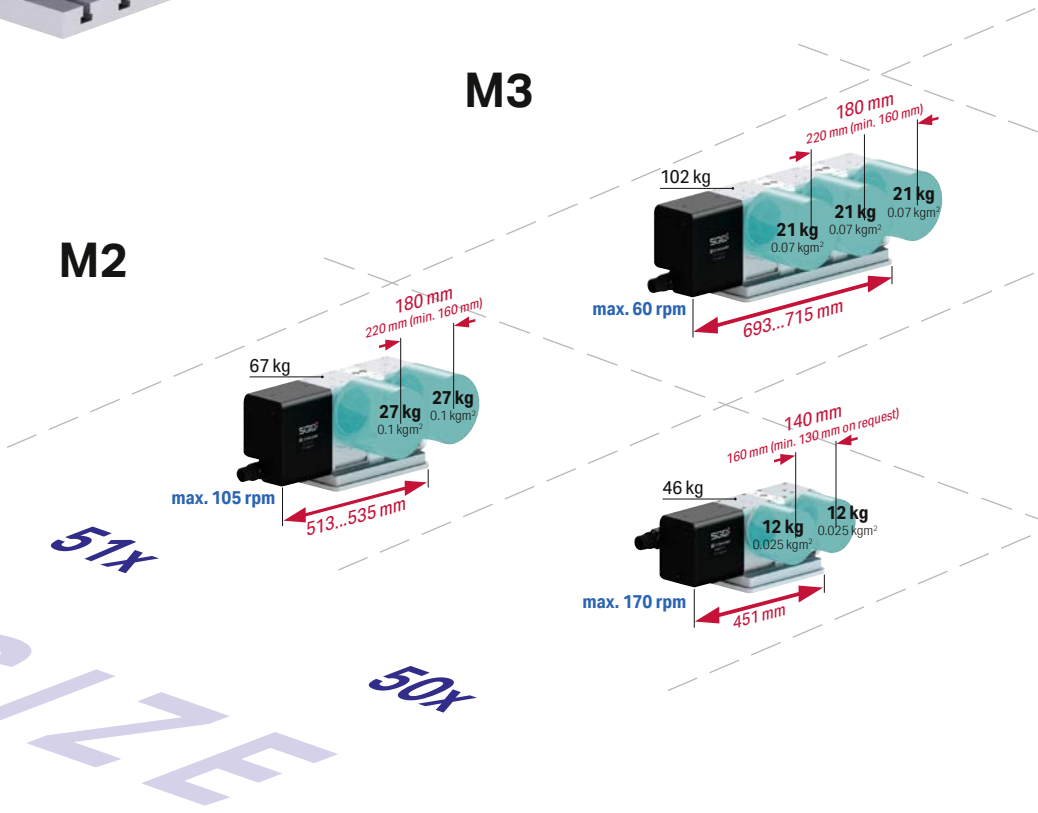
Y-mounting (crosswise)

More space for
workpiece and fixtures



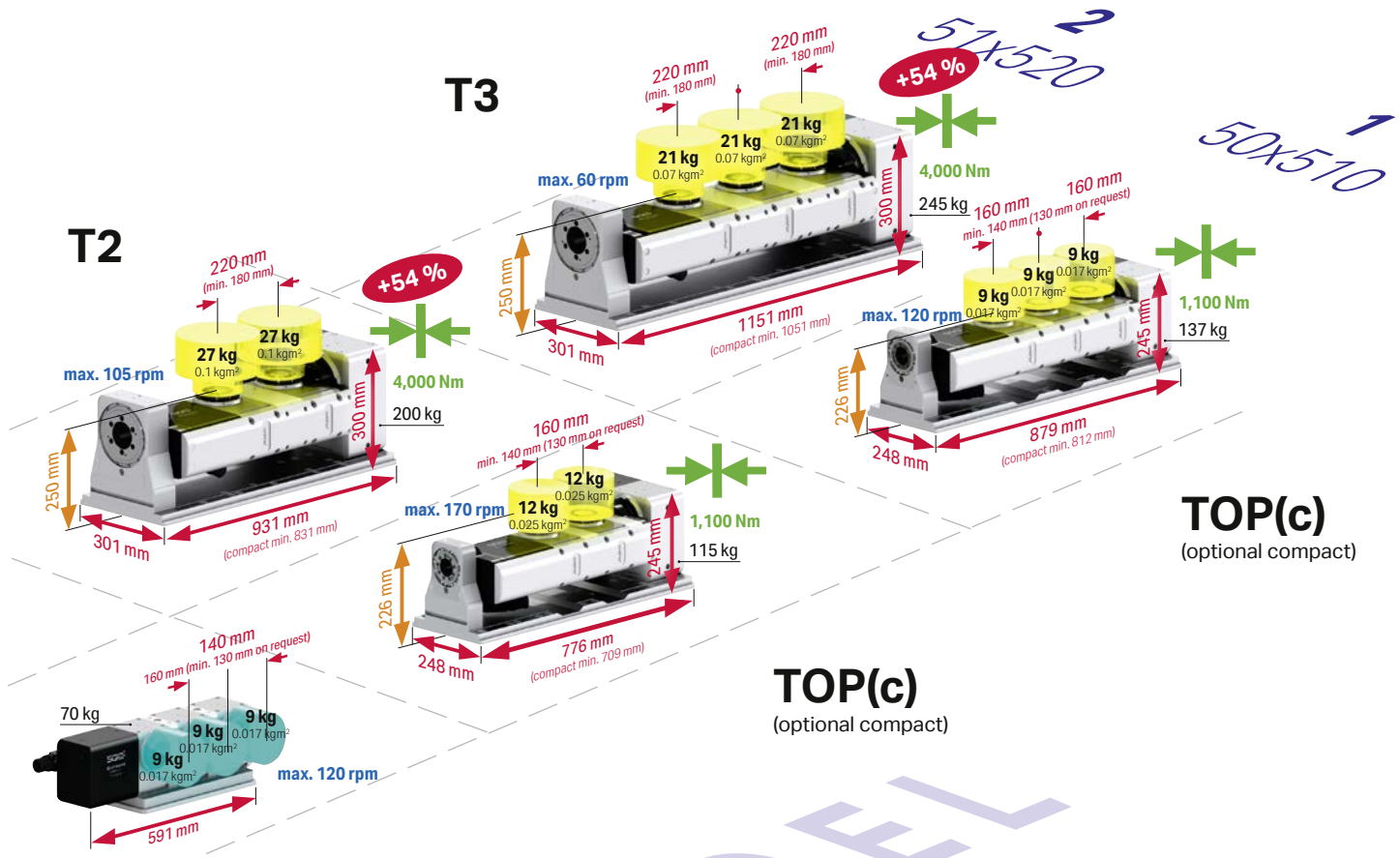
*optional

X-mounting (lengthwise)



News in brief

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



Weight data represent the standard load; higher weights possible, but require modification of rotational speed, acceleration and jerk limitation.

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 in rear

+ Rotary unions **up to 250 bar**
+ Clamping cylinder **23 kN at 120 bar**
+ Angular position measuring systems **as precise as ± 1 arcsec**

Spindle accessories in front

unique

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EROWA
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Vischer & Bolli
vb
YERLY

Tailstock and counter bearing

ripas zero point clamping system

EA-507 with ripas auto and ripas adapter

CAPTO clamping (on request)

EA-507 with CAPTO retrofit kit

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

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 workpiece clamping systems
+ Standardized interfaces

Commissioning
+ Parameter lists
+ Machine-specific commissioning instructions
+ User manual
+ Partner kit
+ On-site support

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+ Service points in 25 countries PTSE
+ Spare parts worldwide by eShop
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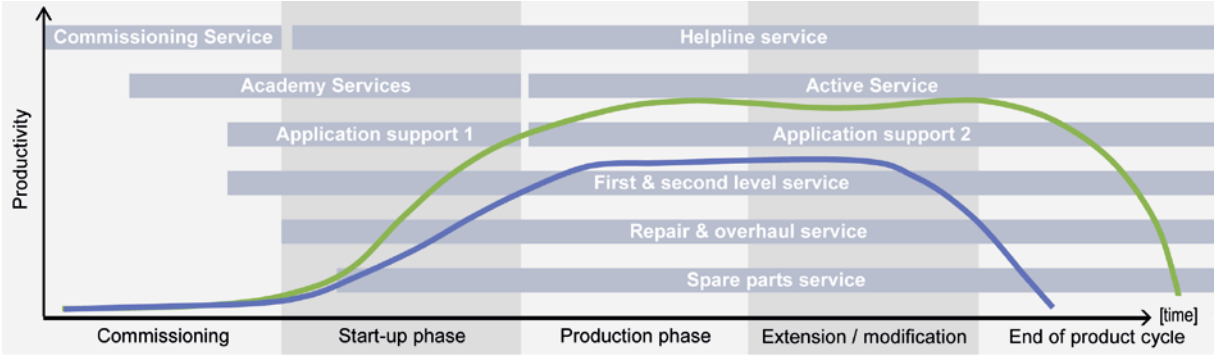
Comprehensive and professional services throughout the product life cycle – maximum availability with consistent quality and high productivity.



Productivity with LifeCycle service products from pL LEHMANN
Productivity without service support

For more information please see www.lehmann-rotary-tables.com.

LEHMANN®

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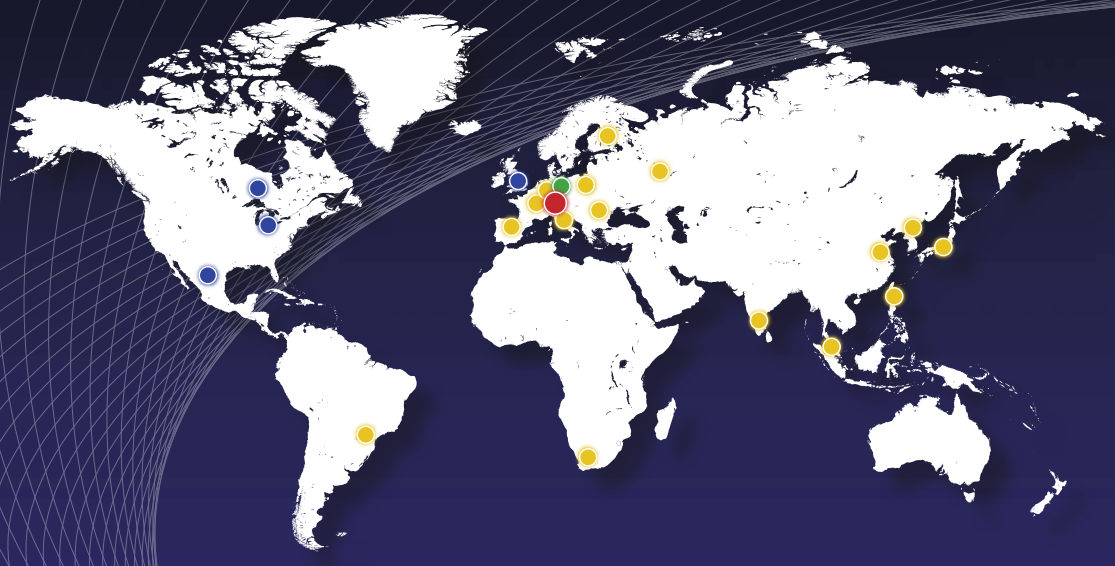

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Subject to change / Edition: 4/2018