Selection Guide for CNC Rotary Tables ...

Bluetooth®

pl

emco

10/2018 | EN

... for E- and MMV-series

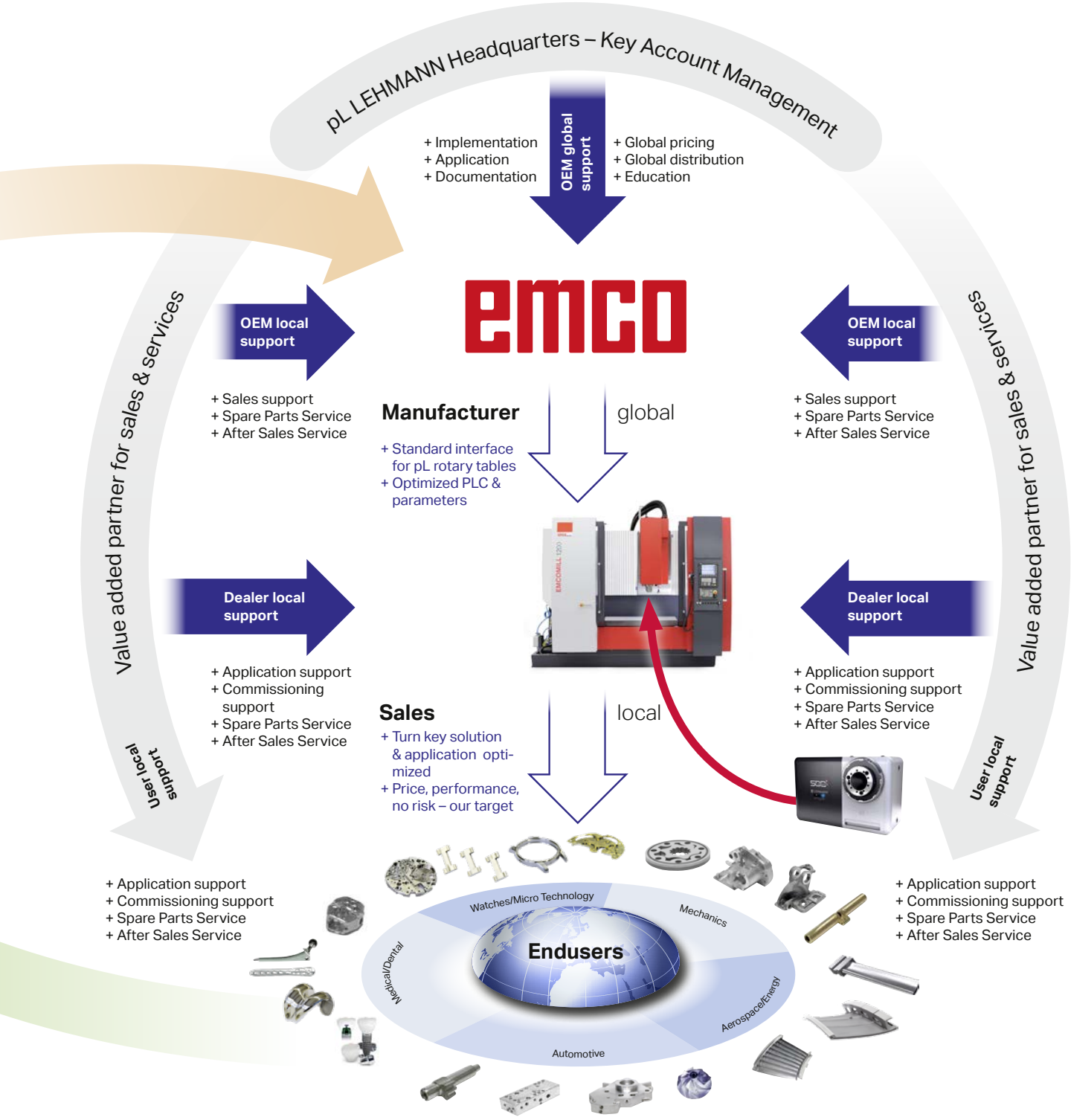
pl LEHMANN®

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: EMCO 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

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

EMCO MILL 750

EMCO MILL 1200

MMV 2000

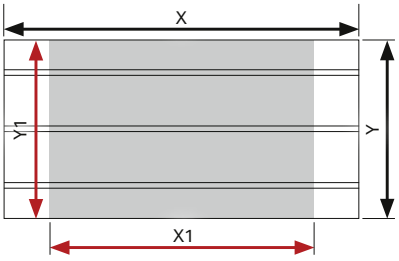
A word from EMCO:

«Mission: precision

Perfect engineering for all requirements: EMCO Innovative Machine Tools. The EMCO Group develops and produces innovative. high-tech machine tools for the metal-cutting industry. The product range is unique in Europe. From conventional turning and milling machines, through cyclecontrolled machines, universal CNC turning machines, CNC milling and turning centers to high-speed milling and drilling machining centers for economic complete machining: The EMCO Group provides the industry with custom-made, highly efficient solutions for all requirements.»

MMV 3200

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



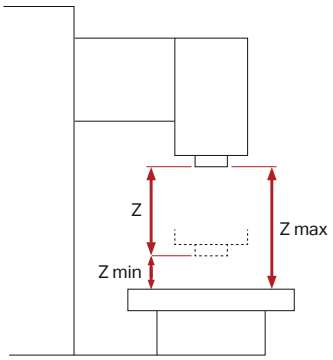


	Table diameter [mm]		Permissible overhang *	Traverse stroke [mm]					Table load **
	X	Y		X1	Y1	Z	Zmin	Zmax	max [kg]
E 350	500	300	10%	350	250	300	120	420	100
E 750	900	650	10%	750	610	500	175	675	800
E1200	1'340	650	10%	1'200	610	500	175	675	1'500
MMV 2000	2'400	950	10%	2'000	800	750		750	2'200
MMV 3200	3'500	1'050	10%	3'200	1'000	950		950	5'000

* 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

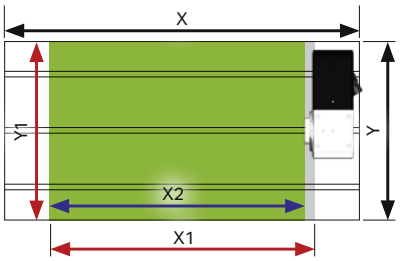
	EA-507 X2	EA-510 X2	EA-520 X2	EA-530 X2
E 350	258			

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

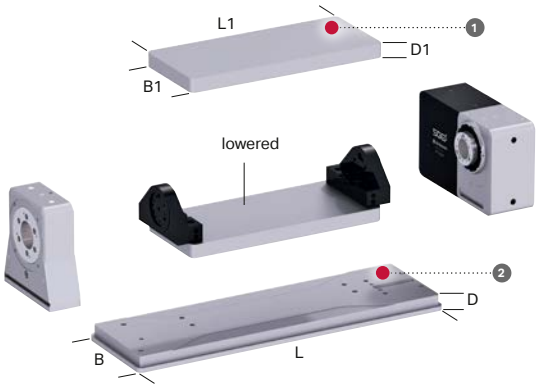
EA-510 EA-520 EA-530

	EA-507 X2	EA-510 X2	EA-520 X2	EA-530 X2
E 350	258			
E 750		642	616	587
E1200		1'087	1'061	1'032
MMV 2000				1'962
MMV 3200				3'112



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

Clamping yokes for EA-type rotary tables



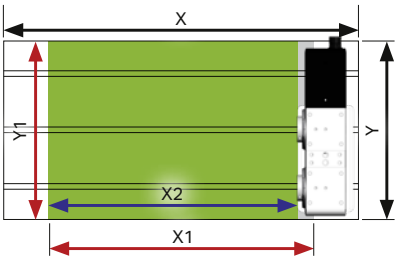
			EA-507	EA-510	EA-520			EA-530	
	Sph	[mm]			210			218	
1 **Clamping yokes**	Length L1	[mm]			600	700	800	800	1000
	Width B1	[mm]			270			270	
	Thickness D1	[mm]			40			40	
2 **Base plates**	Length L	[mm]			916	1016	1116	1172	1372
	Width B	[mm]			301			368	
	Thickness D	[mm]			30			38	
Weights / moments of inertia (without rotary table, without counter bearing)	Weight (Al)	[kg]			40	45	52	on request	
	Weight (steel)	[kg]			117	130	152		
	Mom. inert. (Al)	[kgm²]			0.16	0.17	0.21		
	Mom. inert. (steel)	[kgm²]			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			
E 350				
E 750	599	589	599	589
E1200	1'044	1'034	1'044	1'034
MMV 2000		1'964	1'974	1'964
MMV 3200			3'124	3'114

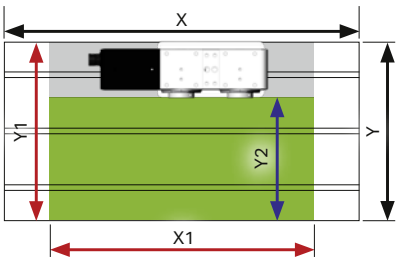
Y-mounting



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

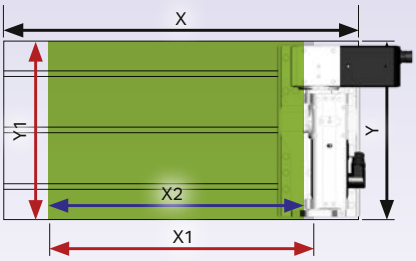
	M2-507	M2-510	M3-507	M3-510
	Y2			
E 350	49			
E 750				
E1200				
MMV 2000				
MMV 3200				

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

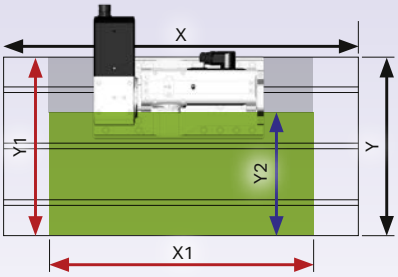
TAP1

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
E 350										
E 750	695	651	631	655	635	601	655	635		655
E1200	1'140	1'096	1'076	1'100	1'080	1'046	1'100	1'080		1'100
MMV 2000		2'026	2'006	2'030	2'010	1'976	2'030	2'010	1'976	2'030
MMV 3200		3'176	3'156		3'160	3'126	3'180	3'160	3'126	3'180

	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
E 350											
E 750	635		655			655					
E1200	1'080		1'100			1'100					
MMV 2000	2'010	1'976	2'030	2'010		2'030	2'010		2'030	2'010	
MMV 3200	3'160	3'126	3'180	3'160	3'126	3'180	3'160		3'180	3'160	

X-mounting



Rotary table installation using hole pattern in base plate

TIP1

TAP1

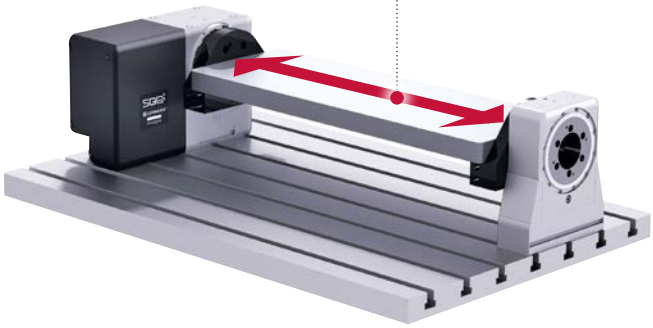
TOP1.2

	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**
E 350	145									
E 750									406	
E1200									406	
MMV 2000										
MMV 3200										

	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**
E 350											
E 750		406		440			440		460	440	
E1200		406		440	406		440	406	460	440	406
MMV 2000								651			651
MMV 3200											

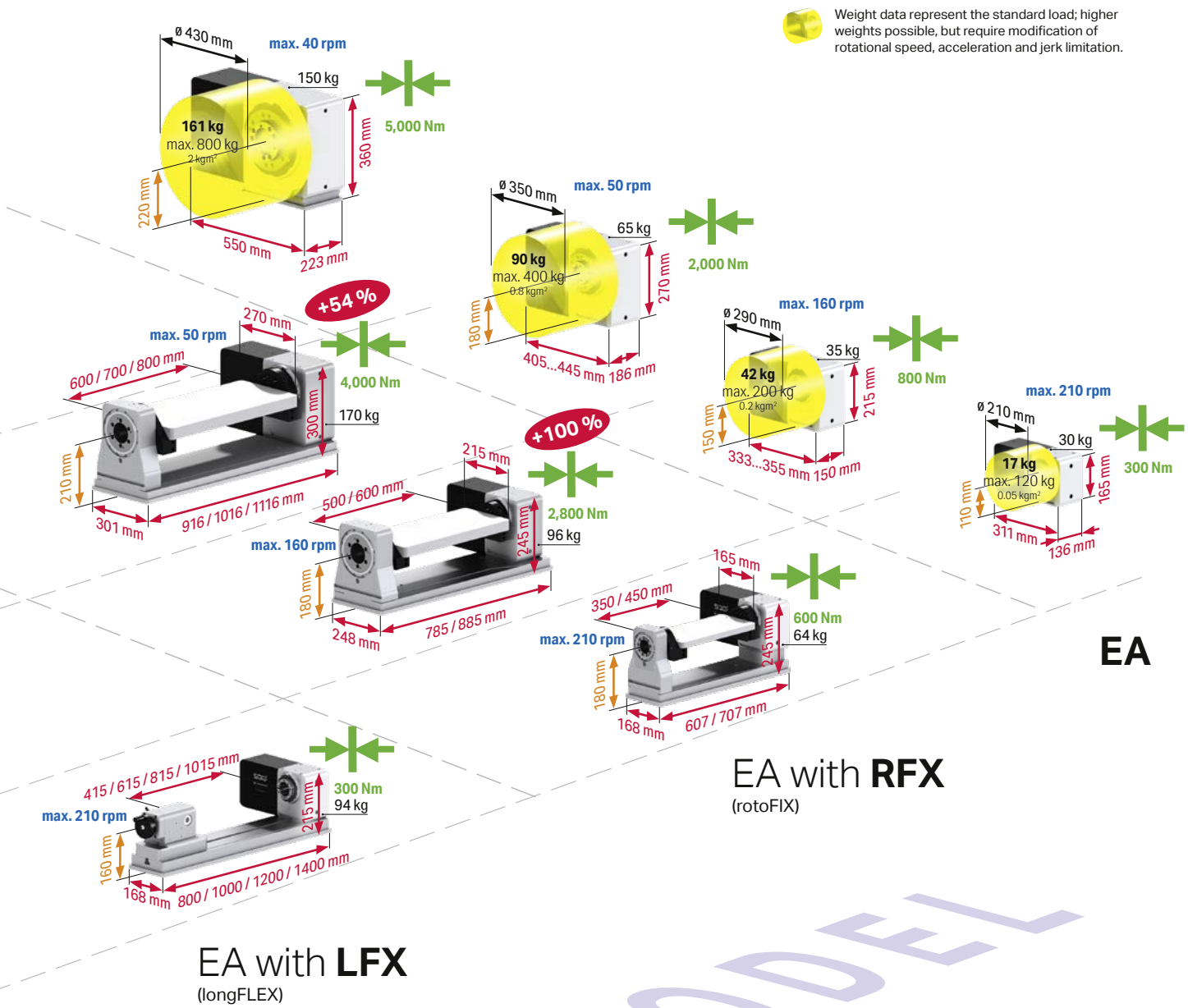
Very good accessibility,
even with short tools

More space for
workpieces and fixtures

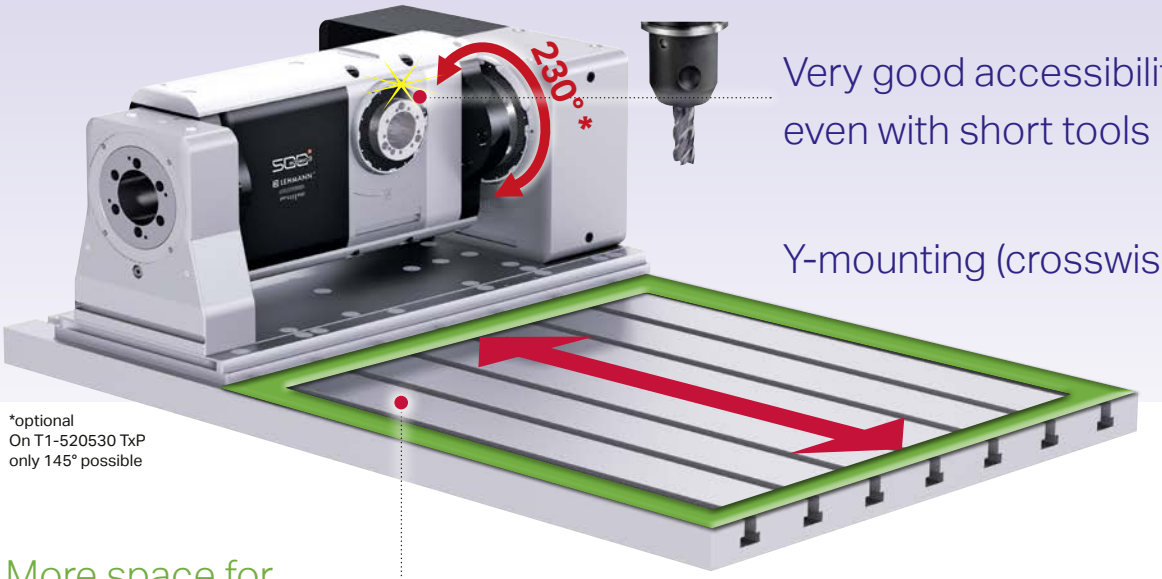


News in brief

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.



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

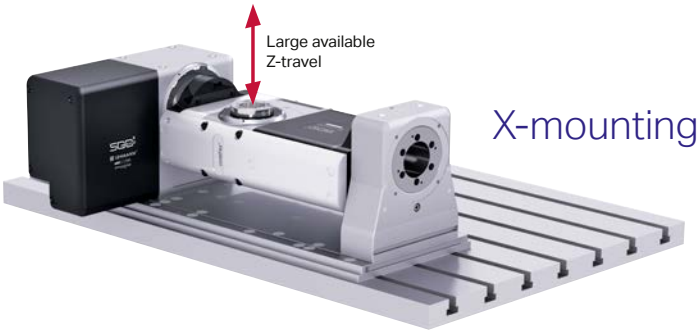


Very good accessibility, even with short tools

Y-mounting (crosswise)

*optional
On T1-520530 TxP only 145° possible

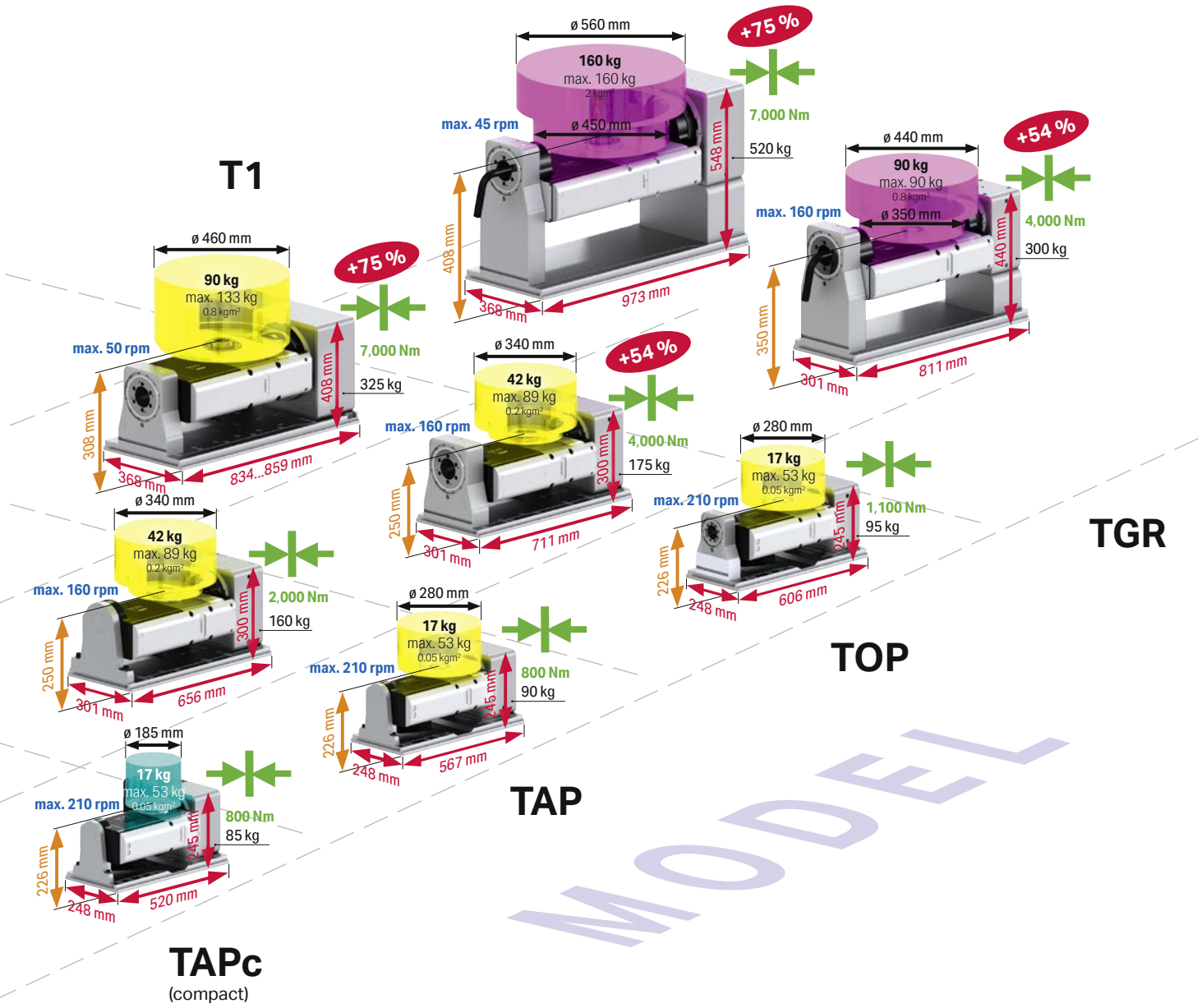
More space for workpiece and fixtures



X-mounting (lengthwise)

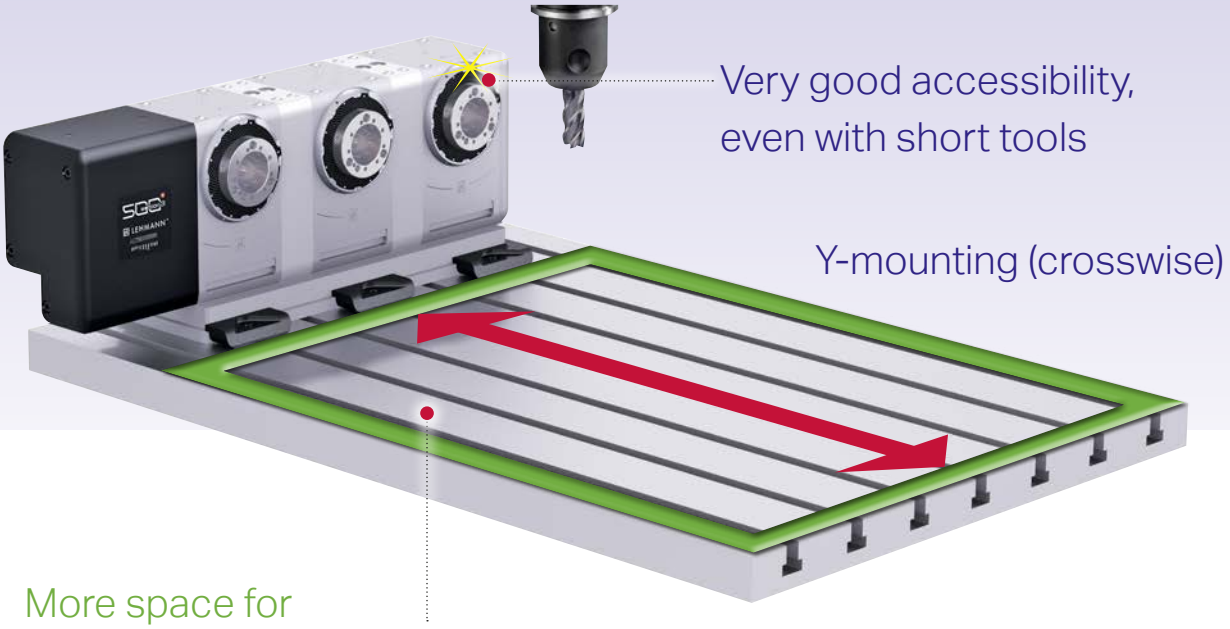
News in brief

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.

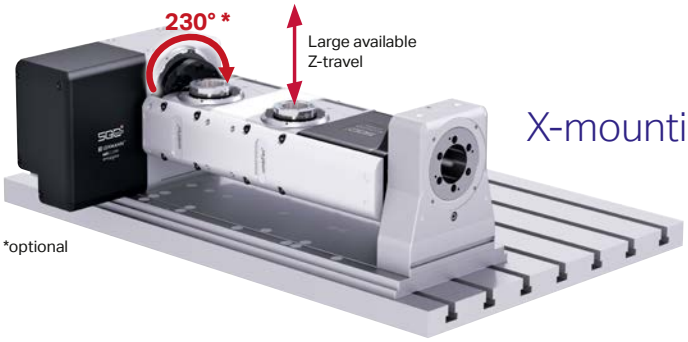
50x510	508510 (standard) or 508510 (high speed)
51x520	510520 (standard) or 511520 (high speed)
TIPc	Two-axis rotary table, no counter bearing, compact
TAPc	Two-axis rotary table, with supporting bearing, compact
TAP	Two-axis rotary table, with supporting bearing
TOP	Two-axis rotary table, with clamped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



Very good accessibility,
even with short tools

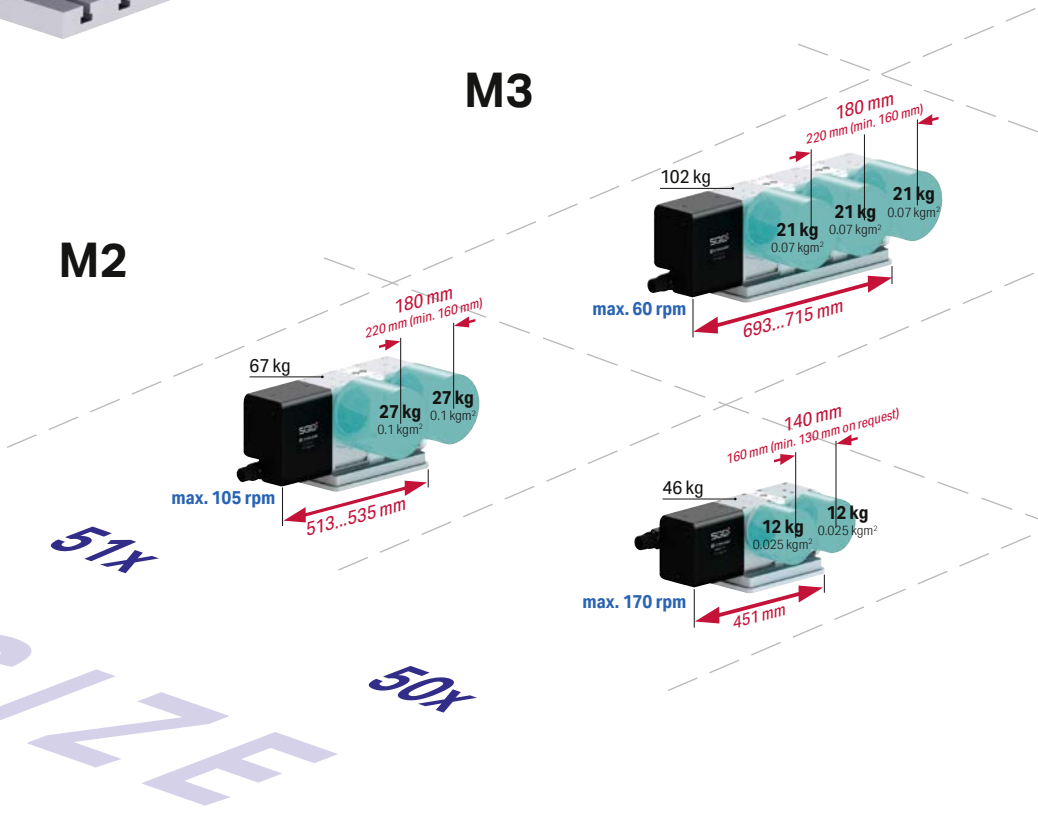
Y-mounting (crosswise)

More space for
workpiece and fixtures



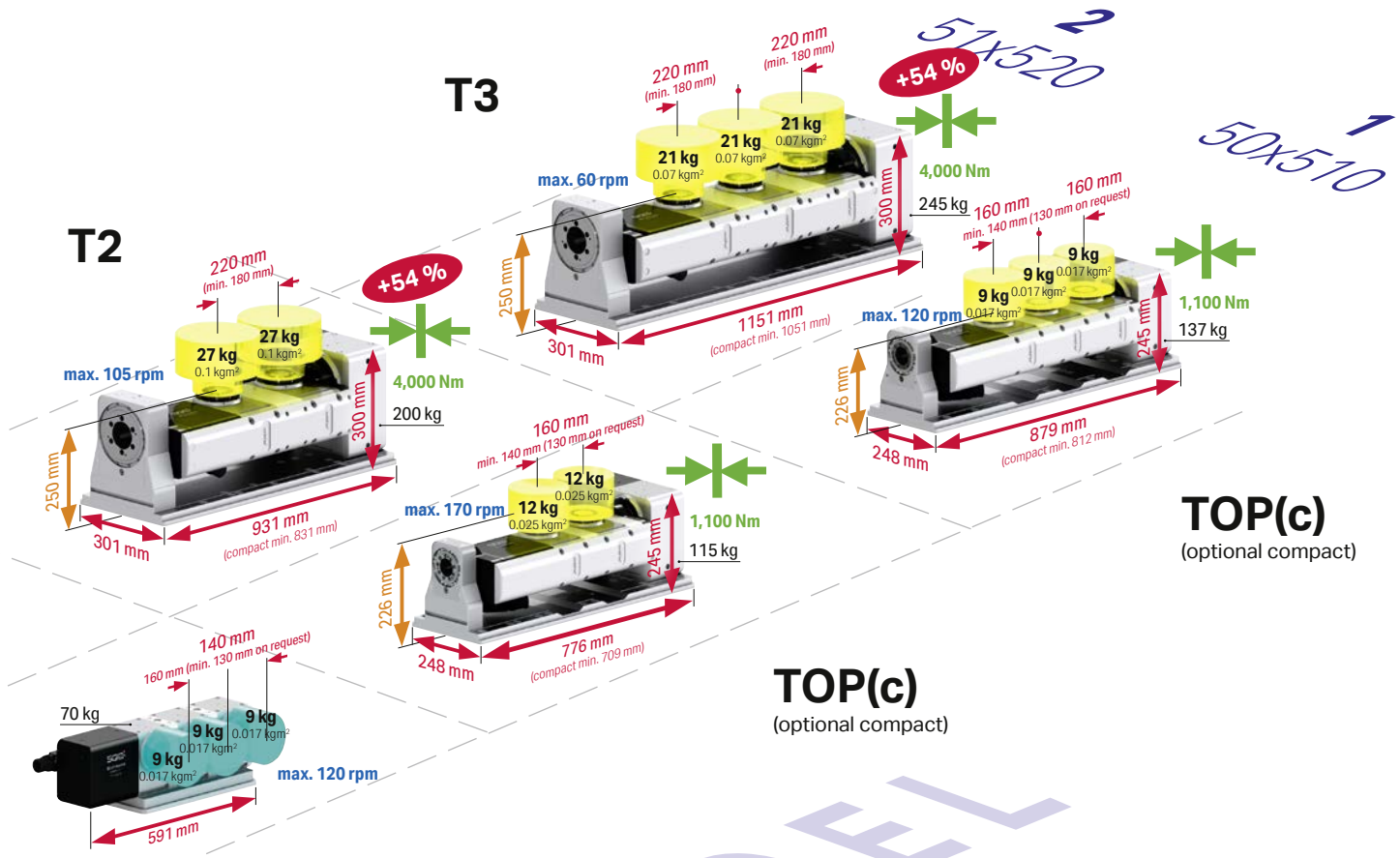
*optional

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

amf
EROWA
ftool INTERNATIONAL
GRESSEL Spanntechnik
HAINBUCH
LANG TECHNIK.de
NIEDERHAUSER SPANNTECHNIK UND SYSTEME
PAROTEC spanntechnik · robotik · engineering
ripas
ROEMHELD HILMA ▪ STARK
SCHUNK
SwissChuck Precision Workholding
system 3R
ITG COLIN
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

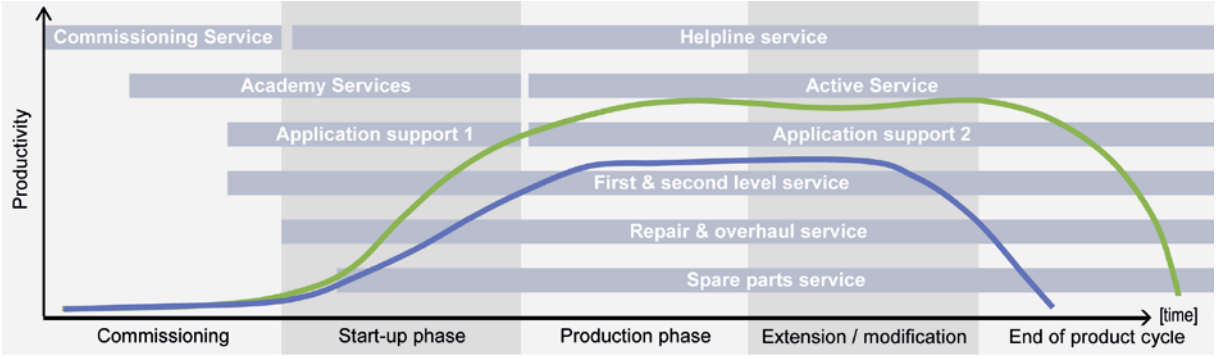
Sales & Post Sales
- + Specified offers for each machine
- + Wide range of workpiece clamping systems
- + Standardized interfaces

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

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

Increase productivity – Extend lifecycle

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®

ROTARY TABLES · PRECISION TECHNOLOGY · SOFTWARE

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– South Korea
– Taiwan
– Thailand
– Vietnam

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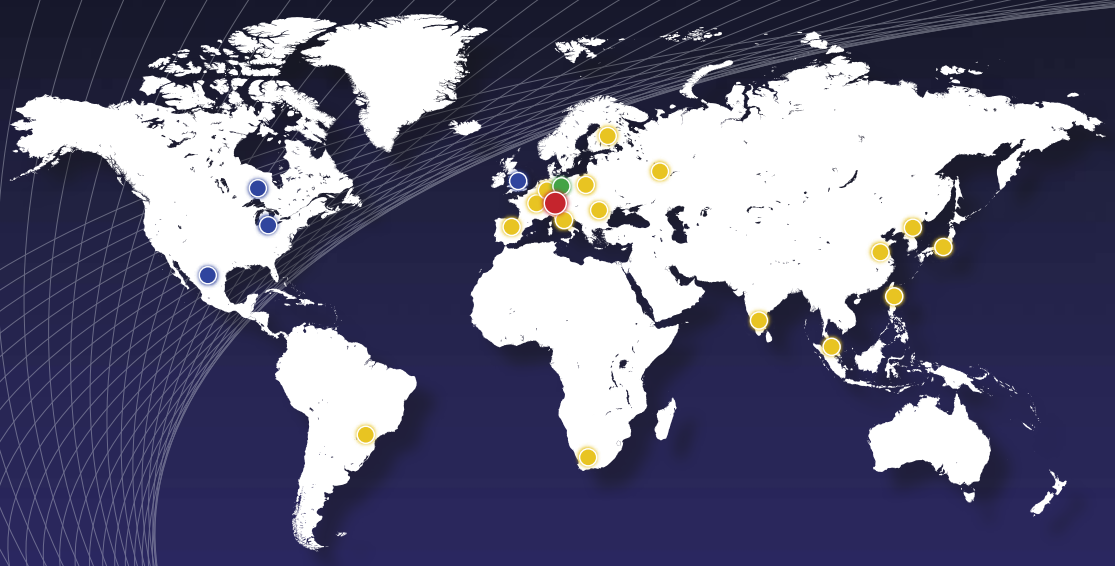
– South Africa



● Headquarters ● direct sales partner ○ pL Solutions® partner ● value added reseller & partner

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Subject to change / Edition: 10/2018