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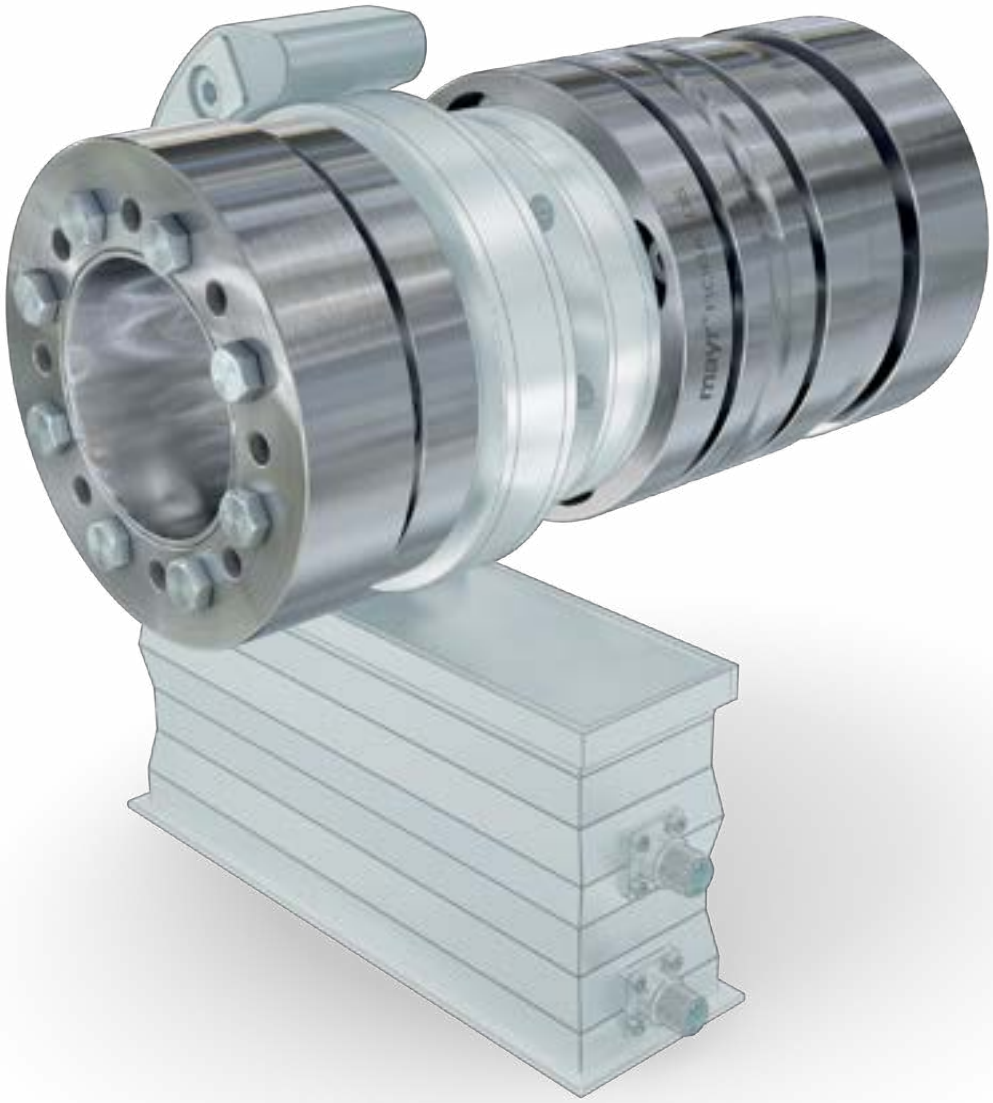

ROBA® DS Type 9120

The Lightweight Coupling for Torque Transducers

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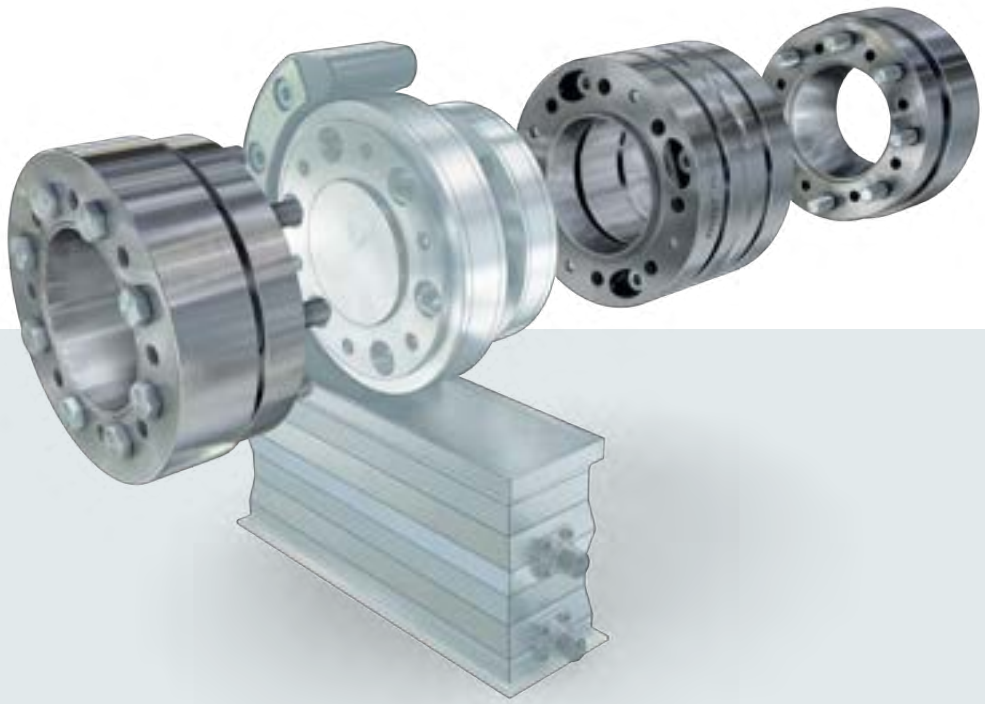
ROBA® DS Type 9120

The Lightweight Coupling for Torque Transducers

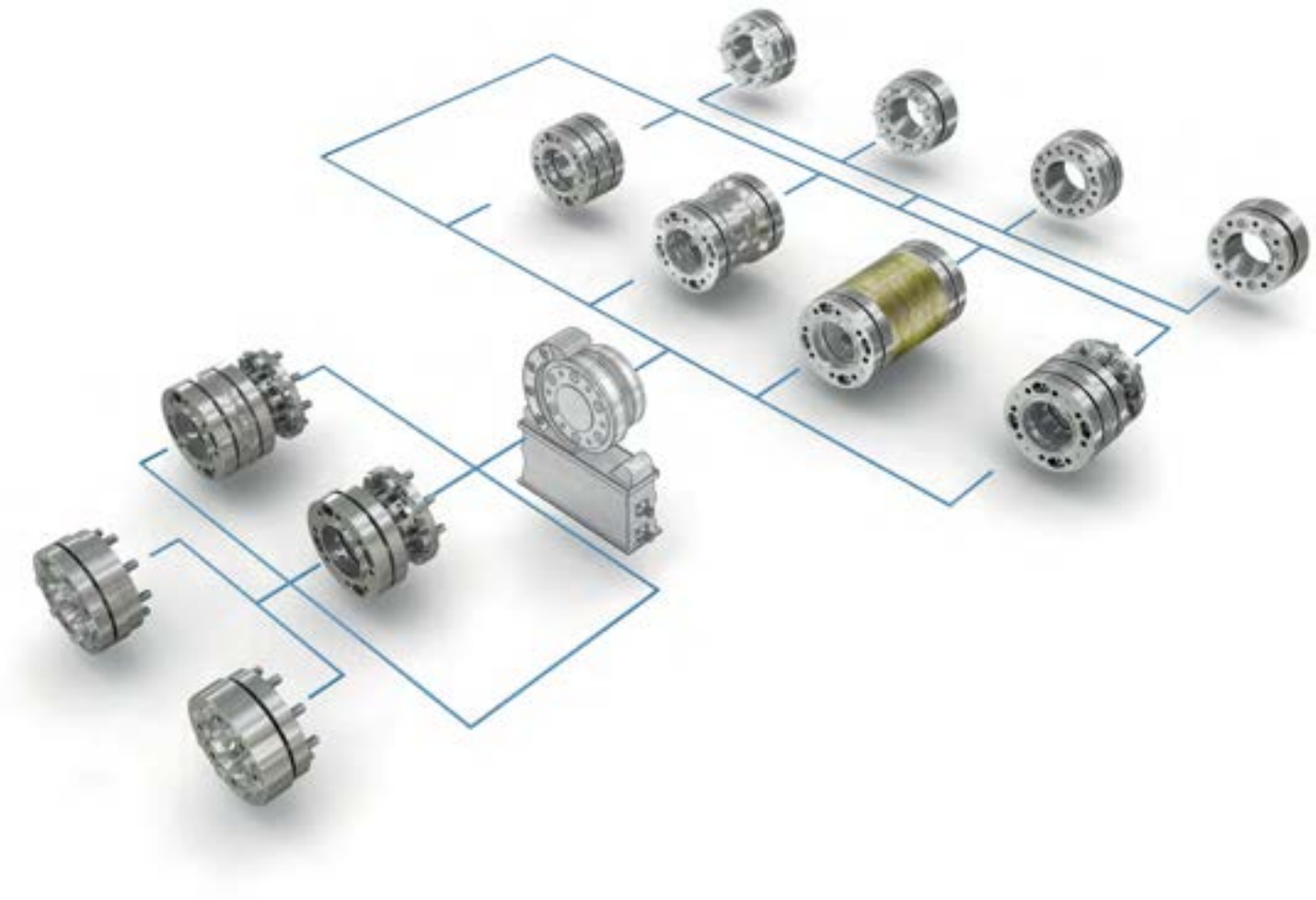
Based on the proven backlash-free ROBA® DS steel disk pack coupling, mayr® power transmission developed a weight-optimized lightweight aluminum version. Compared to the steel version, the outer diameter of this new design has been reduced by up to 10 mm; the mass and mass inertia range from 40% to 60% of the steel version, depending on the design and size. The performance density, however, remains unchanged. The lightweight coupling is perfectly tailored to test stand applications with high demands on precision and partly high speeds.



Features:

- Hubs and modules made of aluminum
- Low weight
- Low mass moment of inertia
- Very high max. speed
- Nickel-plated surface for better corrosion protection
- Low restoring forces
- Balance quality G 2.5 at n = 5000 rpm
- Production tolerance IT6
- Designed for HBM-/HBK torque transducers

Modular System:



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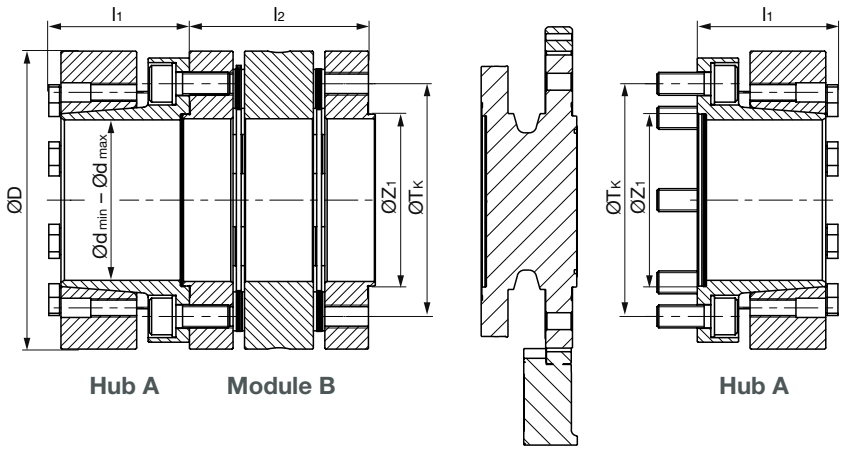
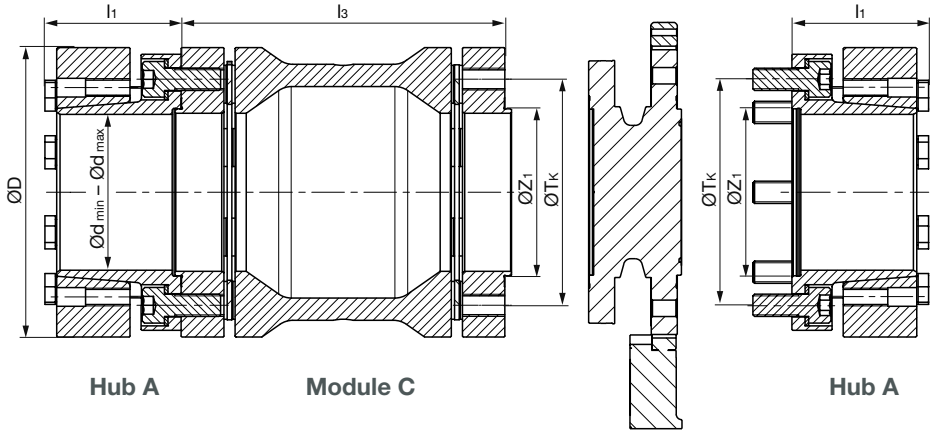
Variants:

Type 9120.AB0A0



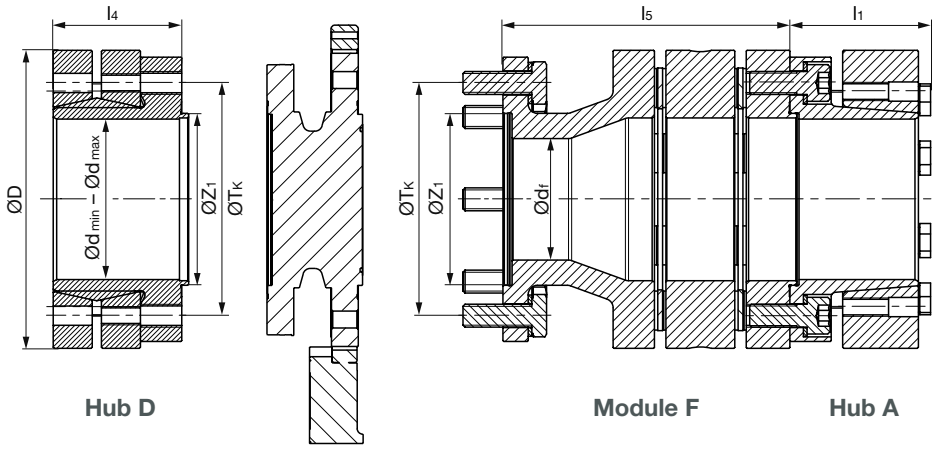
The AB0A0 variant is the most compact configuration and the preferred variant of the Type 9120. It fits most applications. Module B with connection plate and two disk packs allows for compensation of axial, radial and angular misalignment while keeping its size as compact as possible. The coupling is secured on the shaft ends by two shrink disk hubs that can be mounted on the outside.

Type 9120.AC0A0



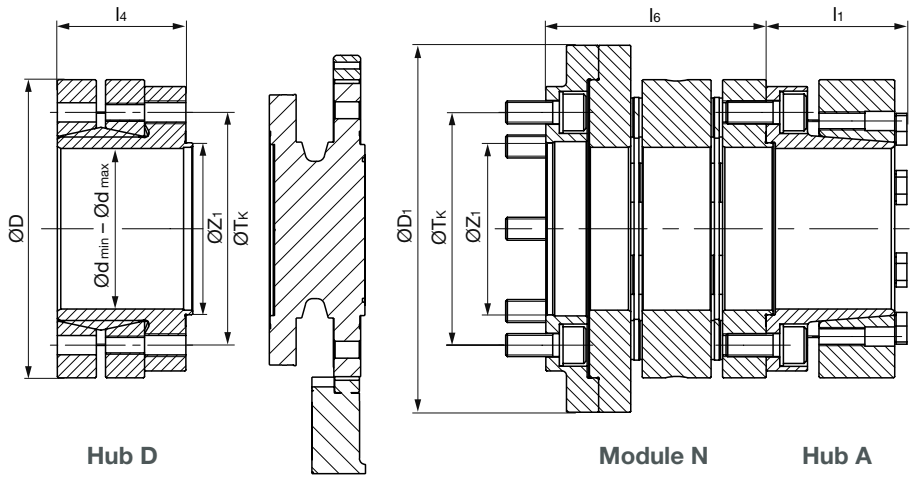
The AC0A0 variant is an extended version of the AB0A0 variant. In this version, the connection plate has been replaced by a sleeve to bridge larger shaft distances. At the same time, the length of the sleeve can compensate for greater radial misalignment.

Type 9120.D0FA0



In the D0FA0 variant, the compensating coupling consists of a connection plate and two disk packs. In contrast to the AB0A0 variant, it is mounted on the opposite side of the measurement flange. The cranked flange allows for a smaller diameter and thereby a smaller mass moment of inertia compared to a split flange, but has a slightly longer build. The external shrink disk hub D can be mounted on the shaft from the inside first and only then be bolted together with the measurement flange.

Type 9120.D0NA0



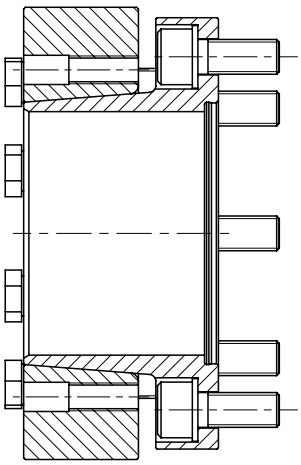
In the D0NA0 variant, the compensating coupling also consists of a connection plate and two compensation elements, but with a split flange. In contrast to the AB0A0 variant, it is mounted on the opposite side of the measurement flange. The split flange has a shorter build than the cranked flange but has a bigger mass moment of inertia. The external shrink disk hub D can be mounted on the shaft from the inside first and only then be bolted together with the measurement flange. The D0FA0 variant is favored over this variant, because the D0NA0 variant has a longer delivery time.

Technical Data:

Size:			25	64	300	500	850
Nominal torque	T_{KN}	[Nm]	290	1,300	3,900	6,500	13,000
Peak torque	T_{KS}	[Nm]	435	1,950	5,850	9,750	19,500
Maximum speed 1.) 2.)	n_{max}	[min^{-1}]	32,000	25,000	20,000	16,000	13,000
Max. permitted angular misalignment	Δ_{Kw}	[mm]	0.8	0.5	0.5	0.5	0.5
Axial displacement (per disk pack)	Δ_{Ka}	[mm]	±0.5	±0.55	±0.6	±0.7	±0.8
Max. perm. radial misalignment with connection plate	Δ_{KT}	[mm]	0.3	0.3	0.4	0.5	0.6
With sleeve	Δ_{KT}	[mm]	0.8	0.8	1.2	1.3	1.7
With sleeve GFK	Δ_{KT}	[mm]	1.7	1.4	1.9	2.3	2.7
Weight (variant AB0A0)	m	[kg]	2.18	5.18	13.11	21.70	37.45
Outer diameter	D	[mm]	100	130	175	205	245
Minimum hub bore	d_{min}	[mm]	25	30	50	60	70
Maximum hub bore	d_{max}	[mm]	52	70	85	105	130
Length of hub A	l_1	[mm]	44	61.3	78.4	92.5	113
Length of hub D	l_4	[mm]	40	56	72	85	105
Length of module B	l_2	[mm]	57	78	109	144	176
Length of module C	l_3	[mm]	92	145	206	236	302
Length of module F	l_5	[mm]	91	125	171	302	364
Min. bore diameter of module F	d_f	[mm]	45	30	50	60	70
Length of module N	l_6	[mm]	69.5	96	133	173.5	208.5
Outer diameter of module N	D_1	[mm]	122	160	215	255	300
Pitch circle diameter	T_K	[mm]	84	101.5	130	155.5	196
Centering diameter	Z_1	[mm]	57 g6/H6	75 g6/H6	90 g6/H6	110 g6/H6	140 g6/H6

1.) At speeds above 5,000 rpm, displacement must be limited to a maximum of 30%.
2.) At speeds above 80% of the maximum speed, the start-up frequency must be limited to 500,000.

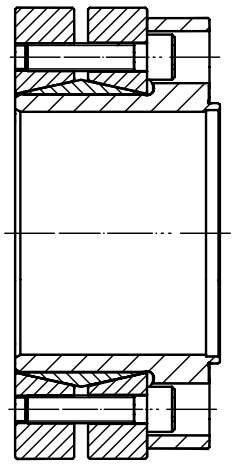
Overview of hub selection:



Shrink disk hub A

Shrink disk hub A is mounted from the outside and is the preferred standard hub with the simplest design.

It is the first choice whenever an internally centered hub is required for connection. The shrink disk is tensioned against the flange of the hub, which causes the centering to expand slightly. This does, however, not cause problems for internal centering.



External shrink disk hub D

The external shrink disk hub D is mounted from the inside and is the right choice whenever an externally centered hub is required for connection.

The clamping element is not tensioned against the flange of the hub and therefore does not cause the centering to expand.

This makes the installation of the externally centered hub easier.

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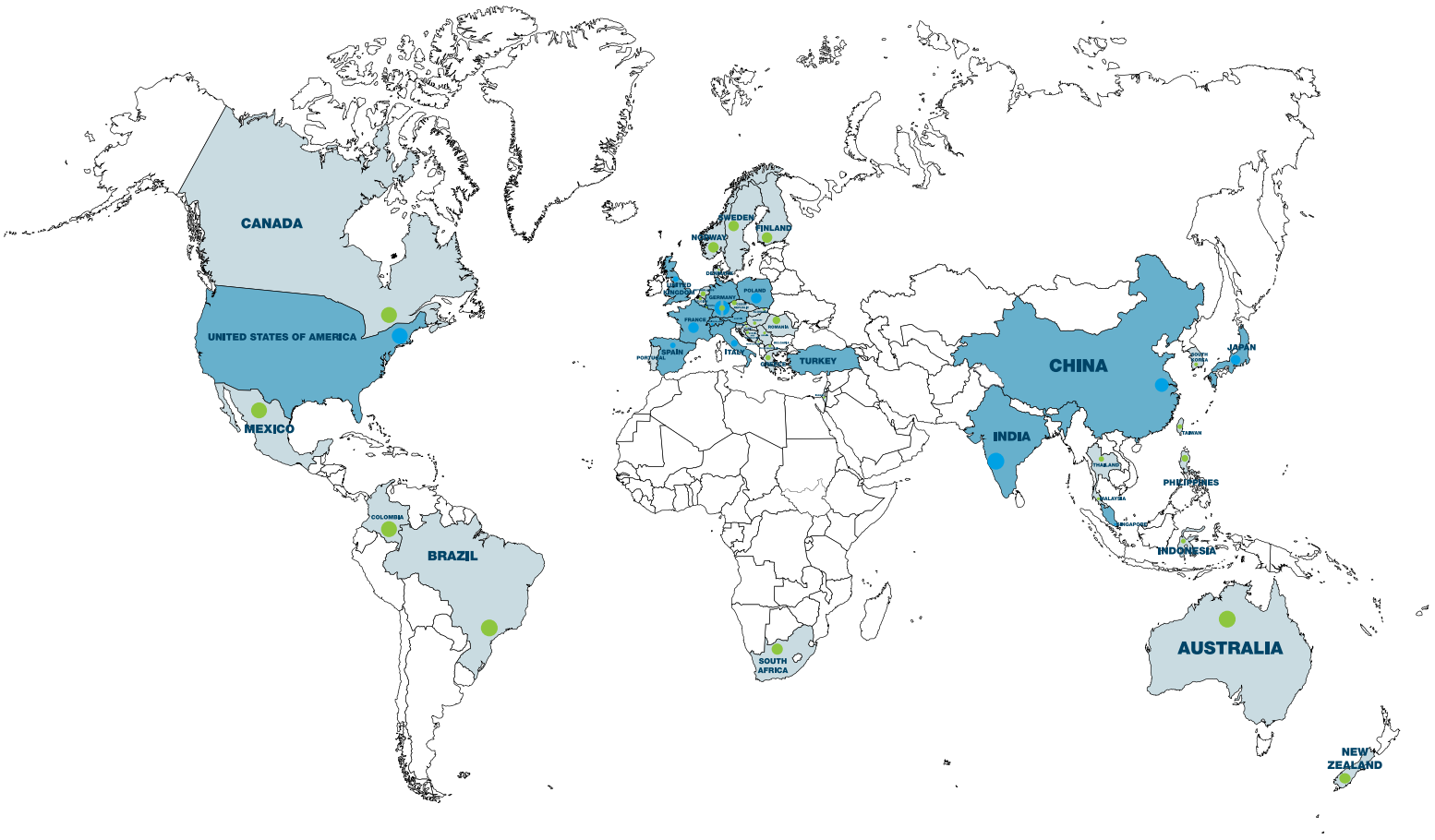

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LEARN MORE

Everything you need to know about the ROBA® DS 9120, including downloads and configuration options—just scan the QR code!

T9120.V01_EN 08/07 EF/HAU/LI