

The background of the image is a close-up, high-contrast photograph of a PCB routing process. A metal drill bit is shown in the center, positioned just above a printed circuit board. A bright, glowing orange-yellow light emanates from the point where the drill bit meets the board, indicating the heat and sparks generated during the routing operation. The PCB itself is dark and populated with numerous small, silver-colored electronic components and traces. The overall lighting is dramatic, with the bright light from the routing process illuminating the surrounding area and creating a sense of industrial precision and technology.

SYCOTEC MEETS PCB-ROUTING

PRECISION IN PERFECTION

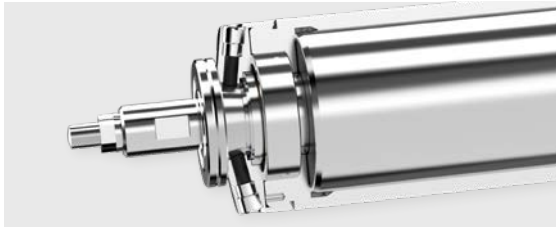
There is hardly any other area where precision is so important as in PCB routing. This is why high-precision drive solutions for the machining of printed circuit boards have long been part of SycoTec's DNA. Today, our products are used worldwide in PCB manufacturing. Our competence and a densely spanned service network make us one of the leading manufacturers of high-frequency motor spindles - also for your PCB application.

SIGNIFICANT ADVANTAGES

With SycoTec you benefit from the most modern technology and highest safety.



ESD protection with monitoring



Our electrostatic neutral shaft offers you the most reliable ESD protection in the industry: The typical Contact resistance between shaft and PE is stable below 1kOhm. And this can be proven on request: Because it can be permanently monitored by ESD brush wear monitoring system, even under speed.



Uncooled running

Highly efficient synchronous and asynchronous motors allow uncooled spindle operation for almost all applications.



Your competent system supplier

SycoTec stands for cost-effectiveness, flexibility and know-how:

- Own motor development and production
- Single source from the motor spindle to collet-chuck and inverter
- High in-house production depth



Electrical tool change and spindle sealing without compressed air



Make yourself independent: Spindle technology from SycoTec allows tool changes fully automatically and completely without compressed air at 24 VDC / 2 A. The effect:

- No spindle failure due to poor or unstable compressed air quality
- No stuck tools due to low tool change air pressure

Also the spindle sealing with IP5X works completely free of compressed air.



High runout accuracy

With a runout accuracy of better than 1 µm in the shaft taper and 15 µm - 30 mm before collet chuck SycoTec motor spindles ensure highly precise results.



Long service life and durability

Quality pays off. Spindle solutions from SycoTec extend your maintenance intervals effectively and economically through

- Hybrid ball bearings with electrically non-conductive ceramic balls
- Stainless steel housing
- Hardened shafts and clamping systems

SPINDLE SERIES 4033

The modular design makes the 4033 spindle series a flexible all-rounder for every application. Whether a robust asynchronous motor or a highly efficient synchronous motor, pneumatic or electric tool change, sealing with air and taper cleaning or sealing without compressed air: Here you can configure the perfect drive solution for you in no time at all.

4033 AC

The worker

Top quality at an attractive price



Size	Ø 33 mm / Ø 48 mm
Motor	asynchronous
Power	S1: 420 W max. 500 W
Torque	S1: 8,4 Ncm max. 8,4 Ncm
Speed	100 000 min ⁻¹
Bearings	2x Hybrid, lifetime lubricated
Clamping range	up to Ø 4 mm
Tool change	pneumatically 4 bar
Protection	IP55 with sealing air
ESD	yes
Taper cleaning	automatically

4033 ETC

Independent and strong

Independent of external compressed air supply



Size	Ø 33 mm / Ø 52 mm
Motor	asynchronous
Power	S1: 420 W max. 500 W
Torque	S1: 8,4 Ncm max. 8,4 Ncm
Speed	100 000 min ⁻¹
Bearings	2x Hybrid, lifetime lubricated
Clamping range	up to Ø 4 mm
Tool change	electrically 24 V _{DC} / 2A
Protection	IP5X without sealing air
ESD	yes
Taper cleaning	no

4033 DC-T

The Power Package

With outstanding power density



Size	Ø 33 mm / Ø 48 mm
Motor	synchronous
Power	S1: 800 W max. 850 W
Torque	S1: 16,8 Ncm max. 27 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 4 mm
Tool change	pneumatically 4 bar
Protection	IP55 with sealing air
ESD	yes
Taper cleaning	automatically

THE COMPLETE PACKAGE:

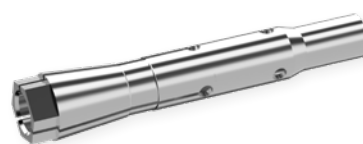
Single Source from SycoTec



Inverter



Cable



Collet-Chuck

SPINDLE SERIES 5045 / 4041

Flexible? For sure. This is what the SycoTec spindle series with 45 mm diameter stands for. Depending on requirements, the different motor variants can be consistently aligned for economy or performance with the appropriate converter technology. You decide what is required - including the permanent ESD monitoring function, which is particularly necessary for process monitoring of PCBs with safety-relevant functions.

5045 AC

The economical solution

Strong performance for cool calculators



Size	Ø 45 mm / Ø 72 mm
Motor	asynchronous
Power	S1: 650 W max. 1280 W
Torque	S1: 11,5 Ncm max. 19,5 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	pneumatically 4 bar
Protection	IP55 with sealing air
ESD	yes
ESD-Monitoring	optional
Taper cleaning	automatically

4041 ESD-BW

Safety First

Thanks to permanently verifiable ESD function



Size	Ø 45 mm / Ø 72 mm
Motor	asynchronous
Power	S1: 180 W max. 500 W
Torque	S1: 7 Ncm max. 27 Ncm
Speed	50 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	pneumatically 6 bar
Protection	IP54 with sealing air
ESD	yes
ESD-Monitoring	yes
Taper cleaning	no

5045 DC

The high performance drive

Extremely strong and efficient



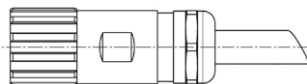
Size	Ø 45 mm / Ø 72 mm
Motor	synchronous
Power	S1: 2000 W max. 3700 W
Torque	S1: 38 Ncm max. 59 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	pneumatically 6 bar
Protection	IP55 with sealing air
ESD	yes
ESD-Monitoring	optional
Taper cleaning	automatically

THE COMPLETE PACKAGE:

Single Source from SycoTec



Inverter



Cable



Collet-Chuck

SPINDLE SERIES 5060 / 4061

You want more motor power? Then discover our spindle series with 60 mm diameter. Asynchronous and synchronous motors with exceptionally high power density provide sufficient torque in all applications. Like all SycoTec series, these variants are also based on a modular design and can be adapted to your individual application.

5060 AC

The Eco version

In an optimal price-performance ratio



Size	Ø 60 mm / Ø 72 mm
Motor	asynchronous
Power	S1: 3000 W max. 3580 W
Torque	S.1: 55 Ncm max. 120 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	pneumatically 4 bar
Protection	IP55 with sealing air
ESD	yes
ESD-Monitoring	optional
Taper cleaning	automatically

4061 DC

The efficiency wonder

Minimal power loss due to synchronous technology



Size	Ø 60 mm / Ø 72 mm
Motor	synchronous
Power	S1: 1300 W max. 3000 W
Torque	S1: 40 Ncm max. 65 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	pneumatically 6 bar
Protection	IP55 with sealing air
ESD	yes
ESD-Monitoring	optional
Taper cleaning	automatically

5060 ETC

The all-rounder

With electrical tool change and permanently verifiable ESD function



coming soon

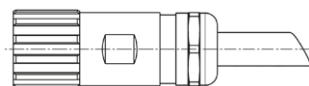
Size	Ø 62 mm / Ø 72 mm
Motor	asynchronous
Power	S1: 3000 W max. 3580 W
Torque	S.1: 55 Ncm max. 120 Ncm
Speed	60 000 min ⁻¹
Bearings	3x Hybrid, lifetime lubricated
Clamping range	up to Ø 6,35 mm
Tool change	electrically 24 V _{DC} / 2A
Protection	IP55 with sealing air
ESD	yes
ESD-Monitoring	yes
Taper cleaning	automatically

THE COMPLETE PACKAGE:

Single Source from SycoTec



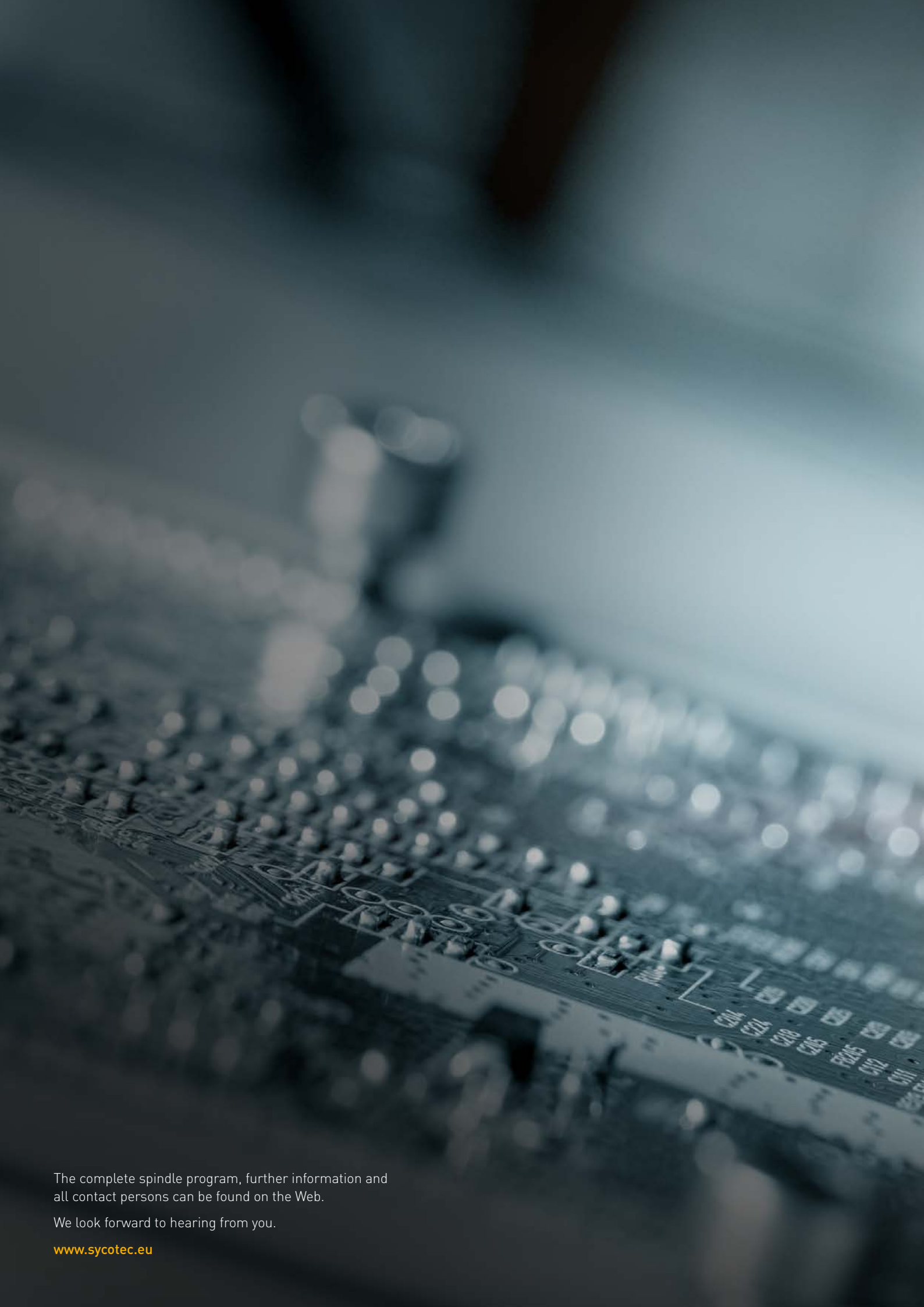
Inverter



Cable



Collet-Chuck



The complete spindle program, further information and
all contact persons can be found on the Web.

We look forward to hearing from you.

www.sycotec.eu