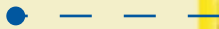
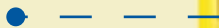
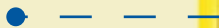
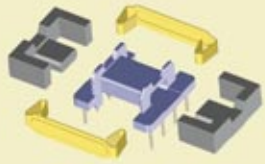
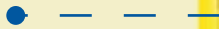
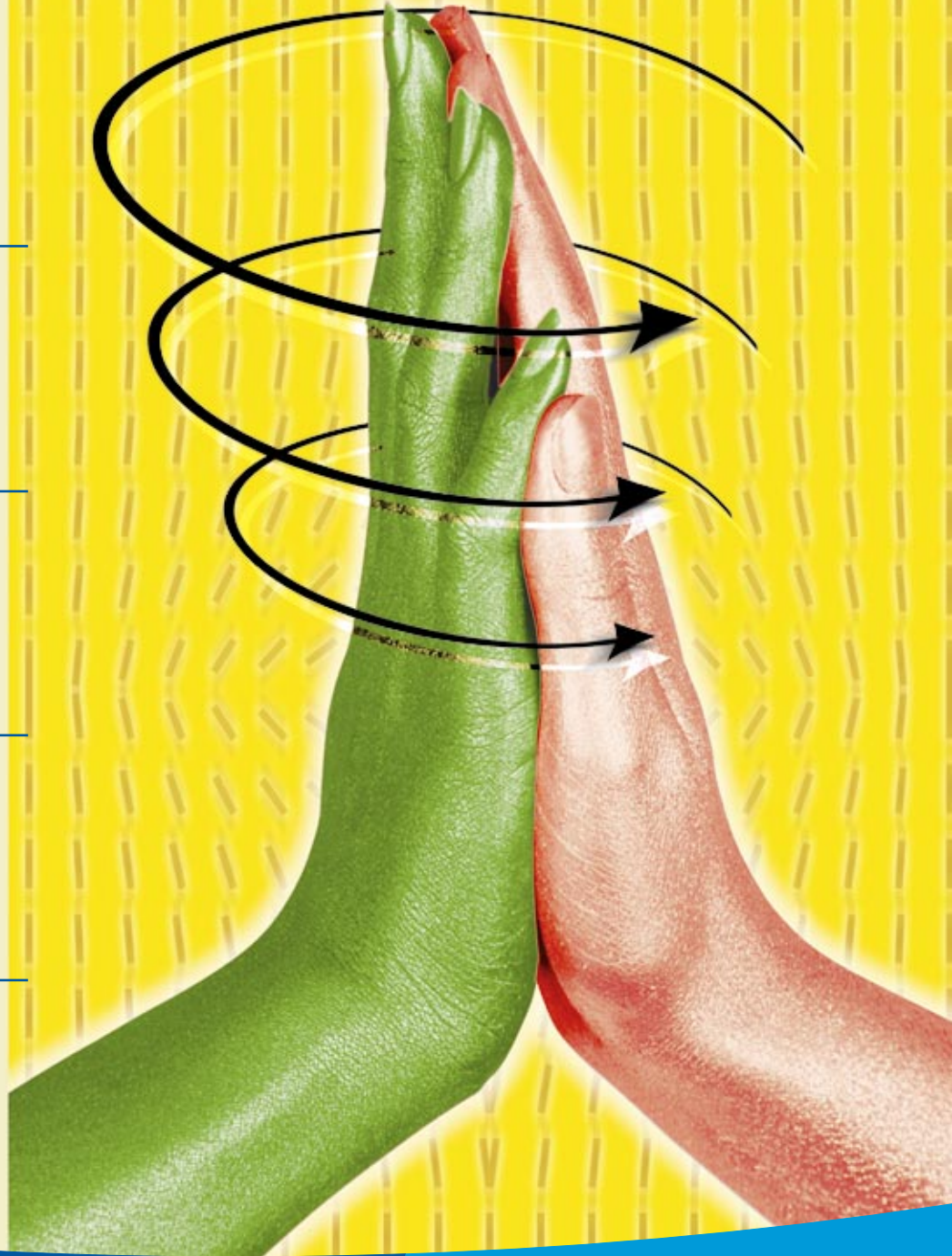


**Bobbins
& Accessories**



**Winding
and assembling
your perfect
component**



PHILIPS

Let's make things better.



Our bobbins...

...your basis for perfect windings



The components you use can affect the quality of your products. Every individual part of an assembly may influence the reliability or performance, so choosing the best is not just important, it's essential – particularly with critical wound components. The cores, bobbin and windings depend on the integrity of each other to operate as an effective functional component.

clean and easy way of assembling the individual parts to a functional component. The materials and surface treatments used in our clips are carefully selected and ensure an even clamping force over the lifetime of the component. As well as providing industry-standard clipping solutions, we have a range of specific clips, where the function of a multiple part clip has been replaced by a single clip. So, providing you with the best assembly-friendly and cost-effective solution where possible.

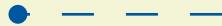


Philips Components makes ferrite cores to meet exacting requirements. And to ensure a perfect winding every time, the Bobbins & Accessories Group manufactures and supplies precision bobbins and support products. The bobbins are designed for perfect windings and zero-defect mounting on and in printed circuit boards. The materials and surface treatments we use withstand the insertion forces and high temperatures of assembly and soldering. We have a full range of multifunctional bobbins and accessories for surface-mount and through-hole wound components.

Our design expertise...

...your key to a total solution

Our standard product ranges cover most applications, but we can also design a part to meet your specific requirements. Our engineers have unparalleled experience in designing and engineering products in record time, drawing on the extensive production technology and materials engineering expertise available within Philips. Utilizing the latest full 3D CAD system we are ensuring the shortest possible time to market.













Our clips...

...your basis for easy assembly

In addition to our bobbins, we have an extensive range of mounting clips. Our clips, both for through-hole and surface-mount wound components, provide a



E (EF)	EFD	ETD	EP	E
<p>Pin Through-Hole (PTH) 13, 16, 20, 30, 32, 42, 55, 65 Clips and Clasps available for most products</p> 	<p>PTH 15, 20, 25, 30 15 and 20 L-pin, low build-up height</p> 	<p>PTH 29, 34, 39, 44, 49, 54, 59 Complete range, in-moulded pins. Clips available</p> 	<p>PTH 7, 10, 13, 17, 20 All phenolic parts, both single Clips and Clasps/Springs available</p> 	
<p>Surface-Mount Device (SMD) 5.3, 6.3, 8.8, 13, 16 Multi-section, Caps and Clips available</p> 	<p>SMD 10, 12, 15, 20 One piece pick and place metal Covers/Clamps, C-pin design</p> 		<p>SMD 7, 10, 13 Single Clips, C-pins phenolic version</p> 	<p>SMD 9.5, 11, 14.5 Gullwing pins in high performance thermoplast available</p> 
<p>Coaxial 16, 20 High insulation two pieces male/female bobbins</p> 		<p>Coaxial 34 Two pieces male/female high insulation factor in-moulded pins</p> 		

Our technological competence...

...your access to quality products

We have developed and refined different production processes to enable us to make bobbins with their own specific characteristics and properties. There are two printed circuit board mounting technologies (through-hole and surface-mount), and for each we have two separate production techniques.

Pin through-hole technology (mounted in the PCB)

- > *In-moulded pins* – specially shaped pins are inserted in the mould prior to injection, so that when the material flows around them, 100 per cent fixation is guaranteed. This in turn, ensures excellent positioning and fixation in the PCB. The pins have a square-shaped base to prevent the wire slipping during wrapping.
- > *Post-inserted pins* – a two-step production process involving the insertion of the pins after the plastic part has been moulded. Depending on the applica-



tion, round- or square-section wires are used for the pins. This is the more cost-effective through-hole bobbin manufacturing technique.

Surface-Mount Device technology (mounted on the PCB)

- > *Gullwing-shaped pins* – another 'in-moulding' process similar to that described above but employing a leadframe. Once the moulding has taken place, the redundant leadframe metal is cut off, leaving the gullwing pins protruding from the bobbin.
- > *C-shaped pins* – a 'C-shaped' pin makes the bobbin easier to wind, so our SMD bobbins are usually made this way. C-pins are also thicker and wider than most gullwing pins, and therefore stronger.





ER	RM	P + PQ	Toroid	Special Products
	<p>PTH 4, 5, 6, 7, 8, 10, 12, 14 Clips available, both in-moulded and post-inserted pin versions</p> 	<p>PTH 11, 14, 18, 22, 26, 30, 36, 42 Multi-section, complete range of products, such as: Bobbins, Tag-plates, Springs, Containers. High stability version as assembled product</p> 		<p>Triple Insulated Wire (TIW) E16, 20 High insulating and coupling factor Robust design in phenolic material</p> 
<p>types ormance ic. Clamps</p> 	<p>SMD 4, 5, 6 Both phenolic and thermoplastic types, multi-section, low profile Clips available</p> 		<p>SMD 9 Cover and Tagplate, C-pin version</p> 	<p>SMD FRM9, 11.5 C-pin version in high performance thermoplastic material</p> 
	<p>Dual In Line (DIL) 4, 5, 6, 8, 10, 14 In-moulded L-pin version for easy winding</p> 	<p>DIL PQ20,26,32,35 L-pin post-inserted versions in high-performance thermoplastic material</p> 		<p>Planar E14, 18, 22 Range of Clamps available</p> 

Design innovation

Metal pick-and-place caps for SMD bobbins, for example, combine both the fixing and pick-and-place functions in a single clamp. This reduces the total number of parts from three to one. The C-shaped pin construction has mechanical advantages too, as it separates the wire termination function from electrical connection, and so ensuring excellent coplanarity.

Our choice of materials...

...your assurance of conformity

When selecting materials for our products, the design, production process, electrical- and mechanical requirements are important factors. But above all, we aim for optimum performance at an acceptable price. Many materials are used, ranging from industry-standard polyamide (PA) to the more exotic liquid crystal polymers (LCP) and thermosetting phenolic materials (PF).

Meeting today's standards

- > Underwriter Laboratories (UL) compliance – all polymeric materials used in our bobbins and accessories are tested and in full compliance with UL;
- > Environmental acceptance – as part of our ISO 14001 certification, all materials are screened and shown to be free from banned substances according to agreed Philips standards.

Matching materials to special requirements

- > Smaller surface-mount bobbins – are made from high-performance thermoplastic LCP;
- > Larger bobbins – are made from thermosetting materials because thick winding wires require extra mechanical stability at high soldering temperatures;
- > Square section pins – help reduce the number of wrappings needed to secure copper wires to the pins.



PHILIPS





Our worldwide support...

...your reassurance of efficient stock management

We are part of a global organisation, with sales offices and distributors in most countries. Our highly trained personnel provide you with technical and logistics support, backed up with on-line order processing to guarantee the shortest possible lead times (less than four weeks). The stock is centrally managed in Eindhoven (The Netherlands), at the heart of our proven logistics network.

Our production capacity...

...your guarantee of a successful partnership

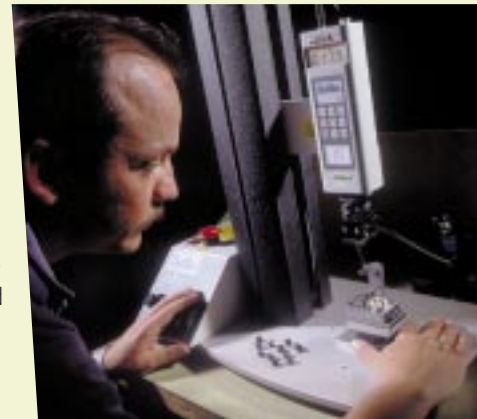
It is necessary to maintain close links between design and production, so most of our products are made in Philips factories not far from the headquarters. High-end products are made in Europe, while more cost-sensitive types are produced in the Asia Pacific region. Some manufacturing is sub-contracted to trusted 'partners' who satisfy our tough quality criteria.



Our commitment to quality...

...your path to customer satisfaction

Our quality philosophy is reflected in everything that we do, from creating new products to delivering them to you on time. Naturally, our processes are certified ISO 9001. Our structural approach to project management involves all parties in the quality chain, from raw material suppliers to you, our end customers. The results are defect-free products and services, and the lowest possible integral costs.





Philips Components
Bobbins & Accessories
Building RK-III
P.O. Box 218
5600 MD Eindhoven
The Netherlands

For all information contact your local sales-office or distributor.

© Philips Electronics N.V. 1998

All rights are reserved. Reproduction in whole or in part is prohibited without the prior consent of the copyright owner.

The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.

No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights.

Printed in The Netherlands

Document order number 9398 238 9001 I

Date of release: September 1998



PHILIPS

Let's make things better.