NORWE®

Components for
PC Potcores

This catalogue contains information on all our products for PC Potcores

Components for the PC-series are used in power conversion and in high quality oscillators with high stability. As the wound coilformer is completely enclosed there is low magnetic leakage and resistance. We supply coilformers made in high quality thermoplastics, connecting boards with terminals and plastic caps, matching your production requirements.

Wherever high-temperature soldering processes are used in connection with PC Potcores, we recommend radiation cross-linked plastics. This ensures that the mechanical properties – in particular those of gfr-polyamides – are maintained and breakages are reduced. For this reason NORWE offers all plastic components of the PC Potcores in irradiated cross-linked materials. Basically a cross-link enhancer is added to the thermoplast. The thermoplastic components are then exposed to Beta and/or Gamma radiation and cross-linking takes place.

Through cross-linking the material loses its thermoplastic characteristics. It is, however, not a thermoset material. In the short term, the cross-linked materials can be exposed to very high temperatures. Apart from improved aspects in production there may be interesting cost advantages.

Fully tagged or pinned coilformers are – in small quantities – usually available from stock. We can also quote for coilformers with pins or tags fitted to your requirements. All lead-times are relatively short. Our extensive range of modular tooling allows almost unlimited constructional changes to meet customers specification, often by simple changes of tool inserts. In addition the modular tooling system allows extremely short tooling times and can be very cost effective.

All dimensions in mm/inch. The permissible deviations according to DIN 16901 apply as tolerances. Should you need further assistance, be it technical or to assist when planning your order, we look forward to hearing from you.

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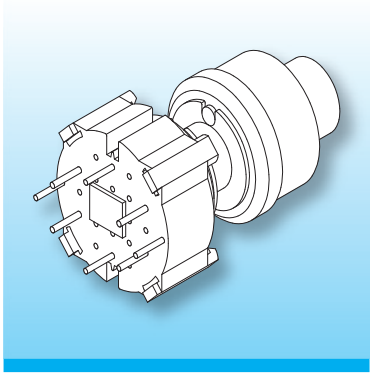
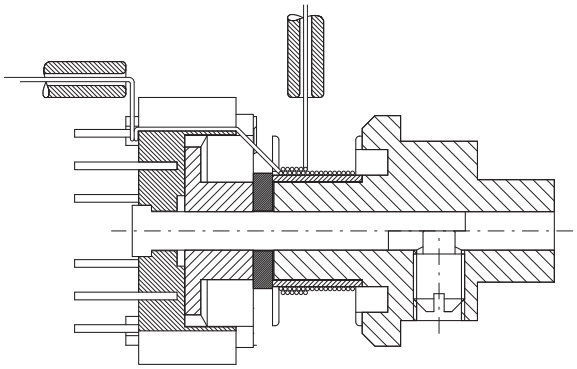
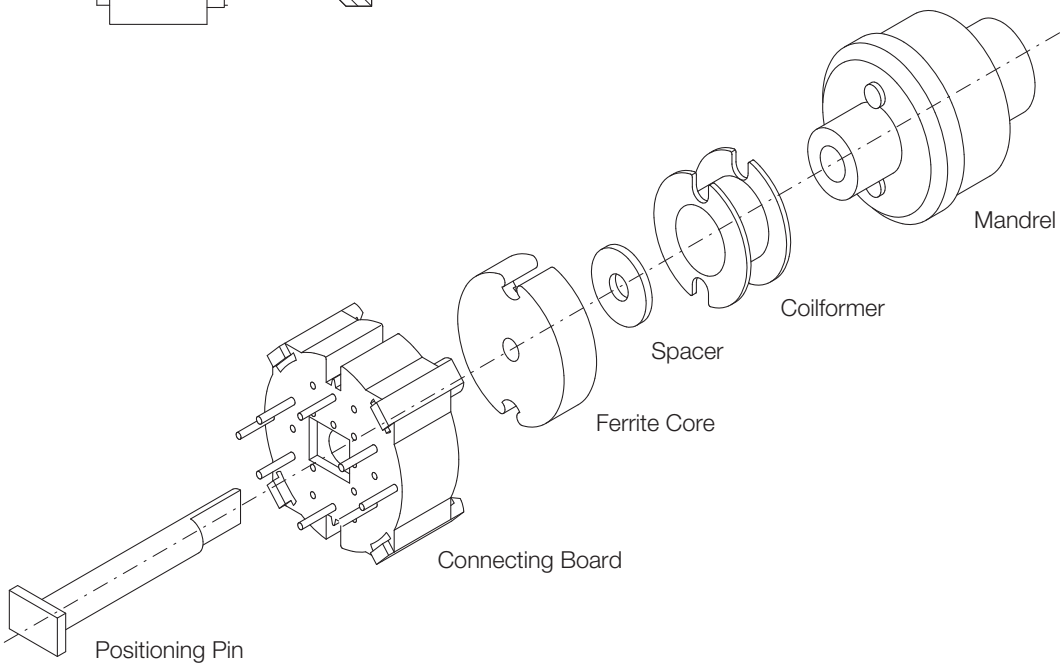
The NORWE PC Mandrel Assembly
was designed to allow winding on NC machines. The binding-on and termination of the wires is axially. The correct positioning of the coilformers onto the mandrel utilize the U-slots in the flanges. Now a connecting board, PC pot-core half and spacer are assembled on the positioning pin and pushed onto the mandrel.



The winding cycle can start. After completion, the positioning pin is removed, and the spacer drops out. The wound coilformer is pushed into the connecting board/pot core half, and as the spacer is no longer in position, provides tension relief. To complete the assembly, the top pot core half and snap-in insulating cap are fitted.

Further information on request.





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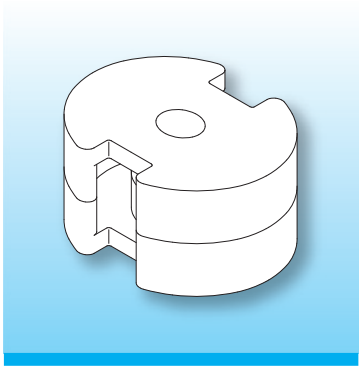
PC Potcores
The tables below show the dimensions of the ferrite cores for the coilformers shown in this catalogue. The data can be used as an orientation in the design of application specific converters.

Specific details on the ferrite cores and materials should be available from the catalogues of the ferrite manufacturers.



Type - magnetic characteristics/ per set

l_e - effective length

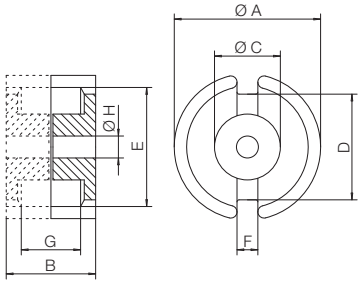
A_e - effective area

I/A - magnetic core factor

V_e - effective volume

Dimensions in mm/inch.

Type:	I/A mm^{-1} / inch^{-1}	l_e mm / inch	A_e mm^2 / inch^2	V_e mm^3 / inch^3
4.6 x 3.1	2.09 0.082	7.16 0.282	3.43 0.005	24.6 0.002
5.8 x 3.3	1.68 0.066	7.9 0.311	4.7 0.007	37 0.002
7 x 4	1.43 0.056	10.0 0.394	7.0 0.011	70 0.004
9 x 5	1.25 0.049	12.2 0.480	9.8 0.015	120 0.007
11 x 7	1.00 0.039	15.9 0.626	15.9 0.025	252 0.015
14 x 8	0.80 0.031	20.0 0.787	25.0 0.039	500 0.031
18 x 11	0.60 0.024	25.9 1.020	43.0 0.067	1120 0.068
22 x 13	0.50 0.020	31.6 1.244	63.0 0.098	2000 0.122
26 x 16	0.40 0.016	37.2 1.465	93.0 0.144	3460 0.211
30 x 19	0.33 0.013	45.0 1.772	136.0 0.211	6100 0.372
36 x 22	0.26 0.010	52.0 2.047	202.0 0.313	10600 0.647



Potcore	A	B	C	D	E	F	G	H
4.6 x 3.1	4.6 –0.2 0.181 –0.008	3.1 –0.1 0.122 –0.004	2.0 –0.1 0.079 –0.004	–	3.50 +0.15 0.138 +0.006	1.1 +0.6 0.043 +0.024	2.1 +0.2 0.082 +0.008	–
5.8 x 3.3	5.8 –0.35 0.228 –0.014	3.3 –0.1 0.130 –0.004	2.5 –0.1 0.098 –0.004	–	4.5 +0.15 0.177 +0.006	1.4 +0.3 0.055 +0.012	2.2 +0.2 0.087 +0.008	0.95 +0.1 0.037 +0.004
7 x 4	7.35 –0.25 0.289 –0.010	4.2 –0.1 0.165 –0.004	3.0 –0.1 0.118 –0.004	5.45 –0.4 0.215 –0.016	5.8 +0.2 0.228 +0.008	1.7 +0.2 0.067 +0.008	2.8 +0.2 0.110 +0.008	1.4 +0.05 0.055 +0.002
9 x 5	9.3 –0.3 0.366 –0.012	5.4 –0.2 0.213 –0.008	3.9 –0.2 0.154 –0.008	5.8 –0.3 0.228 –0.012	7.5 +0.25 0.295 +0.010	2.1 +0.3 0.083 +0.012	3.6 +0.3 0.142 +0.012	2.0 +0.1 0.079 +0.004
11 x 7	11.3 –0.4 0.445 –0.016	6.6 –0.2 0.260 –0.008	4.7 –0.2 0.185 –0.008	6.95 –0.45 0.274 –0.018	9.0 +0.4 0.354 +0.016	2.3 +0.4 0.091 +0.016	4.4 +0.3 0.173 +0.012	2.0 +0.1 0.079 +0.004
14 x 8	14.3 –0.5 0.563 –0.020	8.5 –0.3 0.335 –0.012	6.0 –0.2 0.236 –0.008	9.2 –0.5 0.362 –0.020	11.6 +0.4 0.457 +0.016	3.6 +0.5 0.142 +0.020	5.6 +0.4 0.220 +0.016	3.0 +0.1 0.118 +0.004
18 x 11	18.4 –0.8 0.724 –0.031	10.7 –0.2 0.421 –0.008	7.6 –0.3 0.299 –0.012	11.8 –0.5 0.465 –0.020	14.9 +0.5 0.587 +0.020	3.9 +0.5 0.154 +0.020	7.3 +0.6 0.287 +0.024	3.0 +0.1 0.118 +0.004
22 x 13	22.0 –0.8 0.866 –0.031	13.6 –0.4 0.535 –0.016	9.4 –0.3 0.370 –0.012	13.9 –0.6 0.547 –0.024	17.9 +0.6 0.705 +0.024	3.9 +0.6 0.154 +0.024	9.2 +0.4 0.362 +0.016	4.4 +0.2 0.173 +0.008
26 x 16	26.0 –1.0 1.024 –0.039	16.3 –0.4 0.642 –0.016	11.5 –0.4 0.453 –0.016	17.7 –0.7 0.697 –0.028	21.2 +0.8 0.835 +0.031	3.9 +0.6 0.154 +0.024	11.0 +0.4 0.433 +0.016	5.4 +0.2 0.213 +0.008
30 x 19	30.5 –1.0 1.201 –0.039	19.0 –0.4 0.748 –0.016	13.5 –0.4 0.531 –0.016	20.9 –0.9 0.823 –0.035	25.0 +0.8 0.984 +0.031	4.7 +0.6 0.185 +0.024	13.0 +0.4 0.512 +0.016	5.4 +0.2 0.213 +0.008
36 x 22	36.0 –1.0 1.417 –0.039	22.0 –0.6 0.866 –0.024	16.2 –0.4 0.638 –0.016	26.0 –1.0 1.024 –0.039	29.9 +0.8 1.177 +0.031	4.5 +0.2 0.177 +0.008	14.6 +0.4 0.575 +0.016	5.4 +0.3 0.213 +0.012

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Thermoplastic Materials

The following survey contains supplementary information on the different thermoplastic-qualities.
The material quality orientates to the conventional use of the components. For technical reasons alternative materials cannot be used for all articles.
Consult our qualified specialists regarding your individual material requests – we will be pleased to check whether your material requirements can be realized.
Further information on the materials can also be obtained from our homepage (e.g. to call up the UL cards).

NORWE Mat.-Code	NORWE Mat.-Description	Chemical Symbol	Tradename Manufacturer	UL-File-No.	Flammability Rating acc. UL	RTI Elec acc. UL
009	p6g nat.	PA66 Polyamide 66	AKV30H nature Durethan Lanxess AG	E 245249	HB (0.75)	+125°C
039	A3X2G5 sv.	PA66 Polyamide 66	A3X2G5 cross-linked Ultramid BASF AG	–	–	(+120°C)
065	pk3	PC Polycarbonate	141R 111 Lexan SABIC INNOVATIVE PLASTICS B V	E 45329	HB (0.70)	+115°C
087	rtg nat.	PET Polyethylene Terephthalate	FR 530 L Rynite DuPont	E 41938	V-0 (0.35)	+155°C
132	torA504	PPS Polyphenylen-sulfid	A504X90 natur Torelina Toray Industries Inc	E41797	V-0 (0.28)	+130°C
243	Zen.6130L, black	LCP Liquid Crystal Polymer	6130L black Zenite TICONA	E 344082	V-0 (0.38)	+240°C

Explanations on the above survey of materials:

NORWE Mat.-Code . . . . . designates the number NORWE fixed for the material

NORWE Mat.-Description . . . . . names the NORWE-abbreviation for the material

Chemical Symbol . . . . . classifies the chemical product group of the material

Tradename . . . . . designates the product name or trade name fixed by the manufacturer

Manufacturer . . . . . name of manufacturer

UL-File-No. . . . . material quality tested and certified with respect to safety and flammability. The manufacturers of certified and approved products receive a so-called recognition card (yellow card) in which the product qualities are listed in detail. You find all relevant yellow cards – also called UL cards – for different material qualities on our homepage or you can obtain them from us.

Flammability Rating acc. UL . . . determines the flammability of thermoplastic materials based on burning tests in accordance with UL 94 considering the wall thickness of the material.

RTI Elec acc. UL . . . . . Relative Temperature Index according to UL 746 B. The specified temperatures are valid for long-range electrical load (Elec).

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Irradiation Cross-Linking of PC Coilformers and PC Accessories

NORWE cannot only look back on more than 40 years of experience in the development and production of coilformers but has in the meantime also gained almost 10 years of experience in irradiation cross-linking.

All components of the PC-series can on request be supplied in cross-linked material. A cross-linking enhancing material is added to the thermoplast granulates. After moulding the components are irradiated with Beta- or Gamma rays – depending on the penetration required.
The material loses its thermoplast characteristics (but it is not a thermoset) and withstands very high temperature peeks for short periods without any problems.

- Depending on the degree of cross-linking the coilformers and accessories withstand solder temperatures of 450–480° C for about 1–3 seconds. Irradiated cross-linked components easily tolerate the higher solder temperatures required due to the contact elements being changed to be leadfree.

- Unlike high temperature polymers – also cost-effective granulates are suitable for irradiation cross-linking. The characteristic features of the coilformers and accessories do not change due to the cross-linking.

- In contrast to high temperature polymers lower temperatures of material and mould during the production process are required and thus the tool elements are less stressed resulting in longevity.
The lower temperature profiles during the moulding process provide a lower wear and tear of the tool elements as well as a perceptible saving of energy costs.

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All informations, product specifications, latest news and as well our extensive service offering you find on out up-to-date websites.

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- EN ISO 9001:2008
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