

AEM UNICORE[®] MACHINERY

Transformer Cores and Machines

Voltage Transformers Unicore[®] Advantages



A voltage transformer (VT) must produce signals (voltages) which very precisely reflect the (usually high) input voltages. Thus the voltage ratio(s) must be precisely known (and substantially invariant with voltage at least over a range) and the phase errors (output vs corresponding input) must be small, known and again reasonably constant. Further, the output voltage must change little with load (burden, as with current transformers).

Errors in VT's are attributable to the usual (low frequency) transformer imperfections, namely finite primary and secondary winding resistances and leakage reactances and the finite magnetising current and core loss.

Unicore technology offers considerable advantages over that of C-cores and stacked laminations. The very small effective air gap, achieved by the distributed 'gap' of the Unicore, reduces very significantly (almost an order of magnitude) the quadrature component of magnetising current, which in turn is largely responsible for the phase errors in a voltage transformer. Thus, barring any variations to external factors, the use of a Unicore should result in a substantial reduction in phase errors.



**Unicore[®] Technology has been proven and accepted in
over 40 countries worldwide.**

www.aemcores.com.au

AEM is the holder of multiple worldwide patents protecting its products and Intellectual Property.



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Distributed Gap Unicores[®]

The Low Loss, Accurate, Tooling Free Unicore for Voltage Transformers

DG Unicore Types

End-Overlap DG, Diverging DG and DEE Unicore. The position and specification of the DG face can be easily and accurately specified to suit your application.

Material

Any grade of Grain Orientated Electrical Steel, thickness 0.2 to 0.35 mm.
Also 0.35 mm thick Non Orientated Electrical Steel.

Unicore Selection and Performance

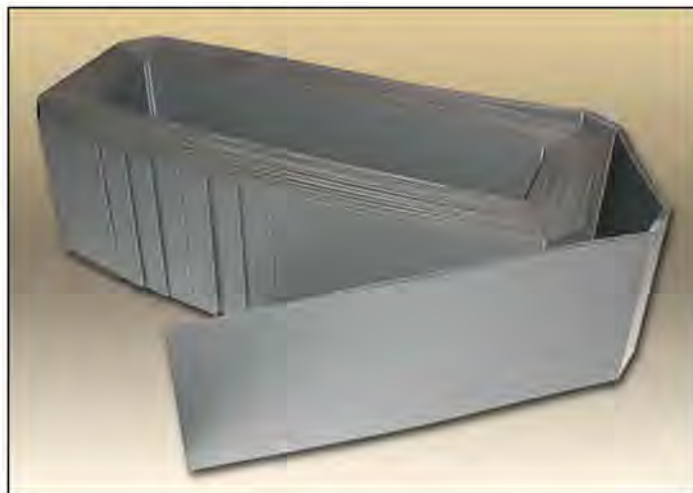
Unicores may be annealed to improve core performance. Testing of sample Unicores is recommended to determine the best Unicore to suit the customer's specification.

Special Features

Highly accurate manufacture results in consistent core performance.
Short runs and specials are easily and economically manufactured.

Alternative Unicore Types

Duo cores and Step Butt Unicores may also be used for voltage transformers.
Please discuss these alternatives with your Unicore machine agent.



Unicore Sizes

Dimension	Minimum (mm)	Maximum (mm)
Window Length (WL)	60	Unlimited*
Window Width (WW)	40	Unlimited*
Strip Width (SW)	20 (with 2 strips)	300/425 (with 1 strip)
Core Build Up (BU)	10	Unlimited*

*Not limited by the Unicore Machine. Limited only by practical transformer manufacturing considerations.

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