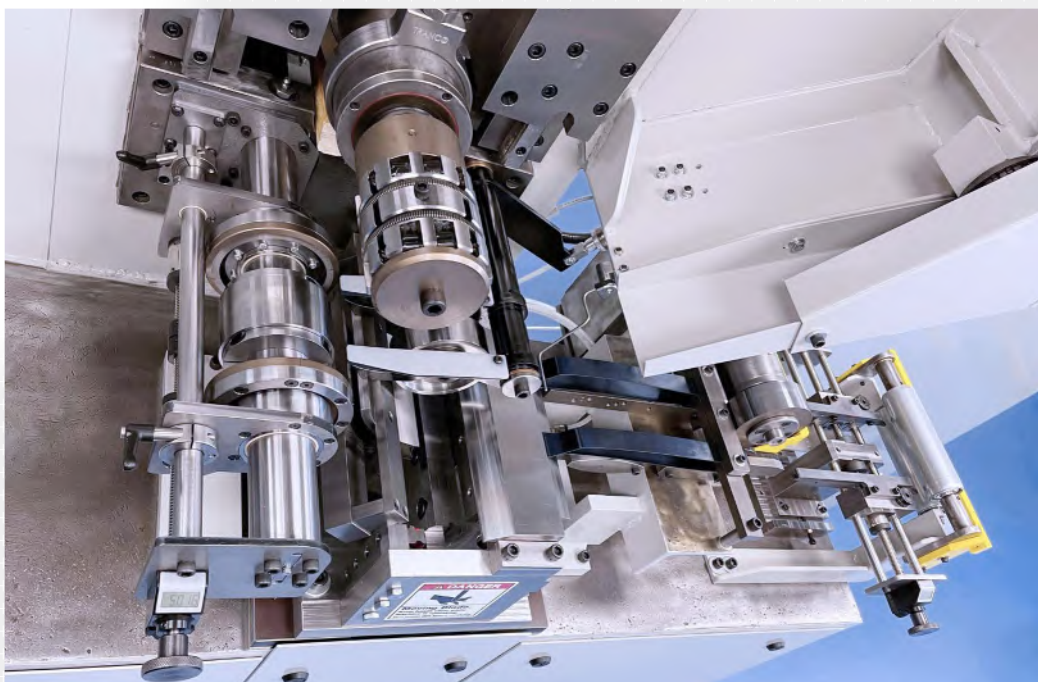


TRANCO CORE

STILL THE BEST
SOLUTION AFTER
ALMOST
50 YEARS!

TRANCO BUILDS FAST, RELIABLE CORE WINDING PRODUCTION MACHINES

Wound magnetic cores are commonly used in the manufacturing process of distribution and instrument transformers around the world. Thanks to automation and continuous feeding, the wound core process offers greater production capacity and efficiency than the cut & stack option. The core winding process needs to be very accurate and consistent for the end product to be performing as expected. The machines used in the winding process need to be highly reliable and flexible so that a variety of gap patterns (Distributed, Flare, Zig-ZAG, Concentric) are available with ease of set up.





Key to profitability is also the possibility to operate the core winding machines without the need of a lot of manpower and space. High degree of automation and small footprint design are therefore important factors to consider during the selection and procurement process of a core winding machine. Of course, the up time and speed of process execution are also key in order to maximize the production rate and meet the highest possible output required to keep production costs down. Safety considerations which apply to equipment with moving parts and sharp tools also need to be included in the design and operation procedures in order to protect the physical integrity of the operators and maintenance crew.

CUSTOMERS TELL US THAT THEY HAVE BEEN USING EXCLUSIVELY TRANCO CORE WINDING MACHINES IN DISTRIBUTED GAP (DG) CORE PRODUCTION FOR MANY YEARS AND WOULD NOT CONSIDER ANY OTHER MANUFACTURING METHOD FOR HIGH VOLUME DG CORE PRODUCTION. - Grattan Schutte – Tranco President

THE TRANCO CORE TECHNOLOGY

Transformer core manufacturing is normally done either in-house by the transformer manufacturer or is outsourced to specialized manufacturers which have in-depth expertise and dedicated processes. This second type of arrangement is widely popular for smaller, mostly distribution type, transformers as it allows economies of scale. Historically, transformer core production has been a manual and labor-intensive operation but things changed in the mid 1970's when the Original Automatic Core Winding machine was invented by Alfred S. Cooper who went on to establish **TRANCO Production Machines** Ltd, a company based in Canada and from where they have been designing, producing and supplying their high quality core winding machines to the transformer industry around the world for almost 50 years. TRANCO Machines have been sold in over 20 countries and the count keeps growing. Tranco has grown to be so recognized in the industry that **Tranco core** has become synonymous for the wound core technology in general.

The TRANCO Production Machines work from a continuous feed of magnetic steel that enables the most efficient process. Thanks to their adjustable settings, Tranco machines allow for the production of a wide variety of core diameters with consistent gap patterns featuring exact specifications.



TECHNOLOGICAL ADVANCEMENTS

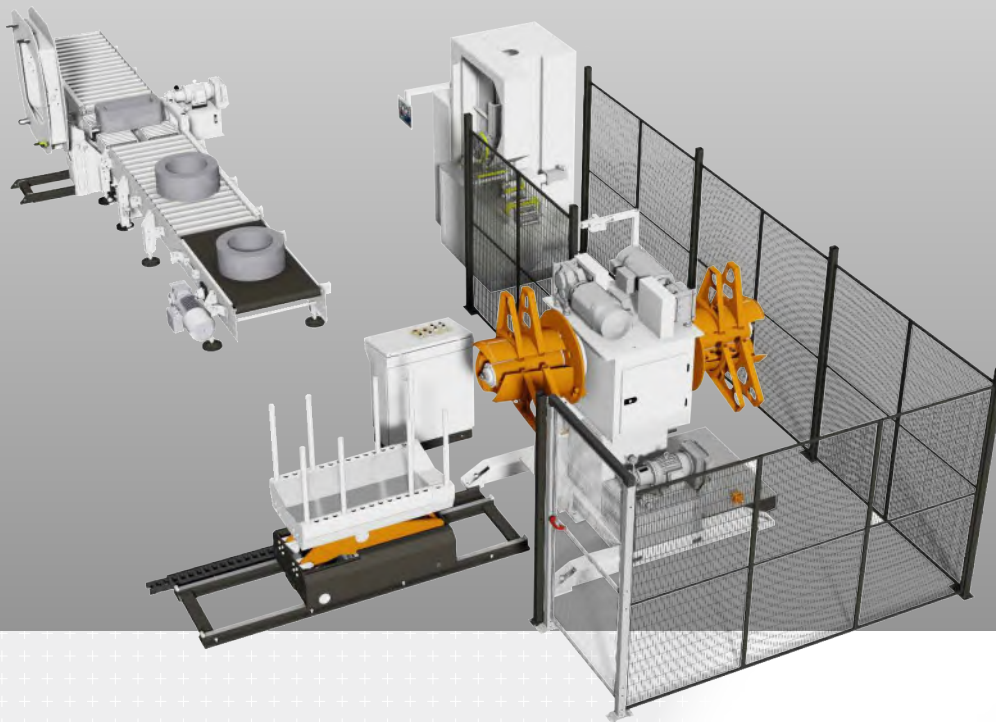
In order to meet the high expectations of our customers, TRANCO has been, since inception, developing and implementing innovations on a continuous basis. We also support our customers with the training and after sales service that they expect. Over the years, continuous improvement has been integrated to the TRANCO machines, including electronically-controlled patterns, improved set-up speed and broader versatility, all of which allows the customers to address a wide range of transformer types while lowering total core production cost.

Automation has been a significant part of the innovations integrated in the TRANCO machine in recent years. The machines are now controlled by their integrated PLC (Programmable Logic Controller) and have a very user-friendly HMI (Human Machine Interface) digital display with which the operator can easily control all operations. They can also easily be integrated with the user's in-house SCADA (Supervisory Control and Data Acquisition) system for remote input of production specification and adjustments as well as production performance monitoring. Utilizing the newest versions of PLC and proprietary computer programming, TRANCO can configure the equipment to operate under many different computer languages. TRANCO Machines are able to have scan times in the sub second range which is imperative for cut accuracy at high speeds.

TRANCO MACHINES ARE RELATIVELY SIMPLE AND EASY TO MAINTAIN, AND THEY OFFER PLENTY OF FLEXIBILITY IN THE RANGE OF CORE SIZES, FROM THE SMALLEST OF CORES ONLY A FEW INCHES IN DIAMETER TO VERY LARGE CORES OF A FEW FEET IN DIAMETER.

TRANCO also has integrated numerous additional improvements. The newest and most critical innovation is the Tranco servo driven shear which now enables run speed of 400 ft/min (122 m/min) with improved cut gap accuracy and much quicker cut engagement (50% faster).

The revised design of the linear rails of the Tranco Machine improves the square of the mandrel relative to the machine to maintain alignment, improves gap cut consistency, extends the life span of the bearings and therefore reduce maintenance time and cost. Upgraded electronic pneumatics controlled by the PLC have allowed improvements in the pressure accuracy and consistency. They have also been relocated, as did the PLC console, to reduce any interference which may be associated with vibration. Other recent improvements deserving a mention include the adjustable winding cheeks and horizontal guide. The new design reduces the down time for change overs and eliminates the need to replace or carry the spacers. This improvement facilitates the work when the operator wants to align the steel into the machine. This system always keeps the steel centered and can be adjusted in 0,000 increments.



TRANCO DOES NOT GET OUT OF STYLE

Some older TRANCO machines which have been in service for many years can benefit from the latest technology improvements that have been introduced. In such cases, TRANCO offers its retrofitting process of which the extend can vary depending on the age of the existing machine, and how heavily it has been used. But the end result is always a machine that looks and operates like a brand new one. This means that companies whose budget might not accommodate a new machine purchase can still enjoy the recognized high quality of a TRANCO core winding machine and all its associated benefits. Typical turn around time for refurbishing can be as quick as three months compared to completely new models which take around 5 months to produce.

TRANCO machines are customized to meet each customer's specific requirements. They come in right or left handed design, require only a small footprint installation, and do not require any special services to operate. TRANCO production experts collaborate with each end user to clearly establish their unique production parameters and ensure that their TRANCO core winding machine is equipped and programmed to meet the specific targeted production requirements and objectives. TRANCO Machines are able to have scan times in the sub second range which is imperative for cut accuracy at high speeds.

TRANCO MACHINES ALLOW MANUFACTURING STRIP WOUND DISTRIBUTED GAP CORES AND THEY READILY ACCEPT ALL COMMON THICKNESS RANGES FOR THIN GAUGE, GRAIN ORIENTED AND NON-ORIENTED STEELS WITHOUT HAVING TO CHANGE ANYTHING.



For more information on **TRANCO** core winding machines, visit our web site at www.tranco.ca and contact us at sales@tranco.ca or by phone at +1 905 669-4840.