

Why should you choose a machine equipped with a **TACHYON + FAGOR** control ?

This question is often asked, because most machines are offered with a single controller.

Example:

- **FANUC**
 - > Mainly use with “G” code programming for equipments dedicated to mass production. A conversational programming mode is offered via the optional MANUAL GUIDE feature, but few people really use it due to its complexity and limitations.
- **MAZATROL**
 - > *Specialized in conversational programming for machine tools which are usually designed for mass production.*
- **FAGOR**
 - > *Specialized in conversational programming for machine tools which are usually designed for the production of small series or for single complex parts.*
- **MITSUBISHI**
 - > Mostly use in code “G” for machine tools which are usually dedicated to mass production. However, conversational programming is possible via the NAVI-MILL and NAVI-TURN modules which is always included with all Mitsubishi controllers.
- **WEILER**
 - > A proprietary interface to the WEILER brand which is quite easy to use and designed to facilitate the manufacturing of single parts. This control is installed only on WEILER brand equipment and it as no compatibility with ISO G code.
- **PROTOTRAK**
 - > *Fairly easy to use machine interface designed to facilitate the production of unique pieces. This control is a generic control mainly used to convert conventional equipment (new or used) in conventional equipment with small canned cycles.*
- etc.

In order to provide a versatile equipment that can be used for the single parts machining as well as for the production of small series, we have designed an interface dedicated to the making of unit production called TACHYON and then we grafted this interface to a FAGOR controller for when required to take care of small series manufacturing.

Xena lathe or milling machines are therefore conventional machines also having numerically controlled machining capacities. For this reason, we say of a Xena machine tools that they are a conventional assisted control machine tools.

Xena's mission is to facilitate, accelerate and secure conventional machining operations while also allowing the realization of complex geometry or the production of small series.

Many efforts are therefore made so that the use of the machine in its manual mode is the simplest possible and the most intuitive FOR A CONVENTIONAL MACHINIST.

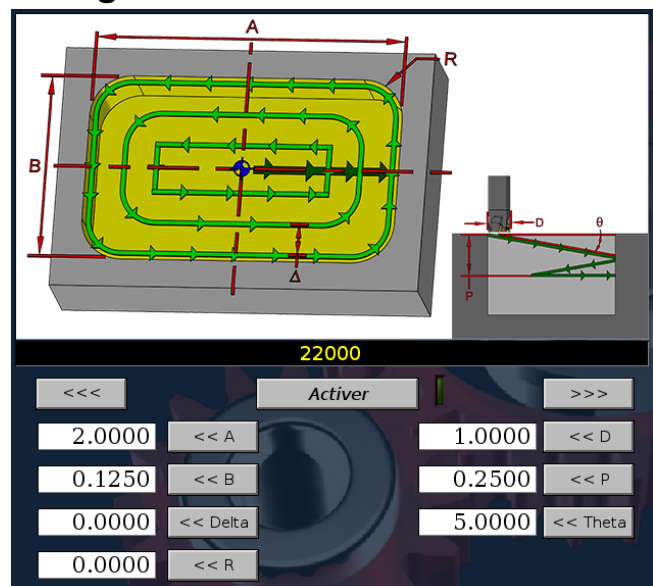
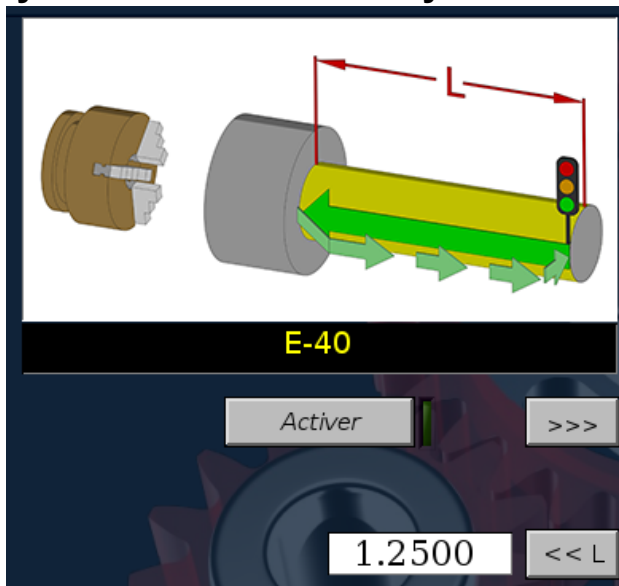
To use a Xena machine in conventional mode, a 4-hours training will be sufficient to allow a conventional machine operator to achieve the same type geometries he normally performed on a completely manual machine.

In addition, at the end of this 4-hours training, the operator will also be able to execute several small pre-programmed cycles such as :

FOR LATHE > Parallel turning with defined length, radius, angle, straight & conical thread, etc .

FOR MILLING MACHINE > Circular, rectangular and octagonal pocket and emboss, drilling patterns, internal or external thread cutting with thread mills, etc.

If you can understand the two following images, it means:
you will be able to use your lathe or milling machine in TACHYON mode.



Additional training may be required to use the machine with FAGOR control in full numerical control mode. The time required for this additional training will therefore be according to the machinist's experience and his knowledge of numerical control machining concepts.



**A conventional assisted control machine tool
is not the same as what some calls HYBRID, TEACH-IN or other similar names.**

For many people, the name HYBRID machine tool implies that equipment which is a HYBRID can sometimes be used manually and sometimes numerically controlled.

Unfortunately, it is not the case. The term HYBRID rather means that the method to machine will be a method between manual and numerical control machining. Using a FAGOR controller, you can effectively move your axes manually with the help of pulsed handwheel and have a reading of the position on a digital display. However, it is not possible to hope to manually machine parts, because the use of the machine is thought having in mind that the operators of the equipment have knowledge for numerical control machining and the method as much as the operator interface will not be suitable for an easy production of a single part.

In this case, the HYBRID term comes from the fact that we can program the machining of the parts without having to know programming in G code but rather using a HYBRID method that is actually a conversational programming language.

Since the conversational programming method is actually a program that is achieved by filling out forms, some have made a link with a programming method based on learning, resulting in a method named "TEACH-IN" .

Since a single controller cannot be as efficient for manual use then for a numerical control use, it is necessary to have two controllers on one single machine.

This is the reason why our Xena lathes and milling machines are always equipped with TWO controllers, a TACHYON controller and a FAGOR controller.

The TACHYON controller will be used for conventional type machining such as for the repair of existing parts, the production of single parts or the production of very small series which are geometrically simple. Also, since this mode is similar to traditional manual machining methods, it will be particularly popular with maintenance technicians who must quickly manufacture one part while having less experience than a machinist who would work full time on the equipment.

When the capacities offered by the TACHYON controller are no more sufficient for the need, the machinist can then use the same machine in FAGOR mode. This mode will be preferred for small productions or for the realization of more complex geometry.



The FAGOR controller offers all the advantages of a traditional numerical controller. The movements required for the manufacturing can therefore be programmed in ISO G code and this programming can be done directly on the screen of the controller or via CAM software such as MASTERCAM, FEATURECAM, or other similar products.

FAGOR controller also has the advantage to offer a conversational programming mode which is particularly efficient for programming on intuitive human-machine interface. Learning conversational programming based on icons is much easier than learning programming in "G" code since it is visual, intuitive and allows you to quickly optimize the machining with a minimum of information. The time that will be required for the programming of a part to be machine will therefore be reduced compared to programming in G code. However, the execution time may be slightly longer. This means that for the programming of a small series, the conversational language will be more advantageous than for the production of very large series.

Moreover, in conversational programming mode, it is possible to program directly by using a DXF geometry imported via the USB port. Programming by DXF profile will be particularly effective to program the machining of complex geometry parts.

With Xena, new markets are now available to you without the need for complex training for numerical control machining. Xena machine tools will optimize your human resources, your workstations and your floor space.

Taking into account the shortage of skilled labour in addition to the costs generated by an inadequate security system, the acquisition of a Xena lathe or milling machine is probably the best investment you can make to make your workshop profitable conventional machining.

For more information, do not hesitate to contact us.

email info@xenacanada.ca
WEB www.xenacanada.ca