

More than cutting!



New Control System

Revolutionary PIERCE control system is based on more than 25 years of experience in the field of flame cutting and on the latest technologies from the fields of electronics and software. Owing to the concept it can be used much more than only for cutting. The system enables to control the complete cutting station including controlling other processes and technologies and, at the same time, it informs operators of the machine about regular maintenance and current condition of the device. The touch screen together with software interface make the system not only very simple and practical in its operation, but simultaneously very attractive. The openness of the program makes possible to add new upgrades very easily and apply your experience and ideas as well.



Logging in the system

Every operator logs in the system separately, which prevents an unauthorized use of the machine by different people and enables registration of each operator's work.

Information about the condition and regular maintenance

The system periodically informs the operator about specified maintenance of each part of the machine and so their damage or reduction of their service life can be prevented.

Process control

Software solution of the control panel automatically adapts the screen to a selected technological process, which makes the system very simple and transparent for the operation. All the parameters for controlling all the technologies are entered via the screen or an input database. That method eliminates operators' mistakes, makes the process preparation quicker and constantly provides the highest quality of the cut.

Multi-task processing

The control system makes possible to process more requirements at the same time. For example the operator can, while cutting, prepare and modify the following program. So, idle machine time is reduced to minimum.

Technological information monitoring

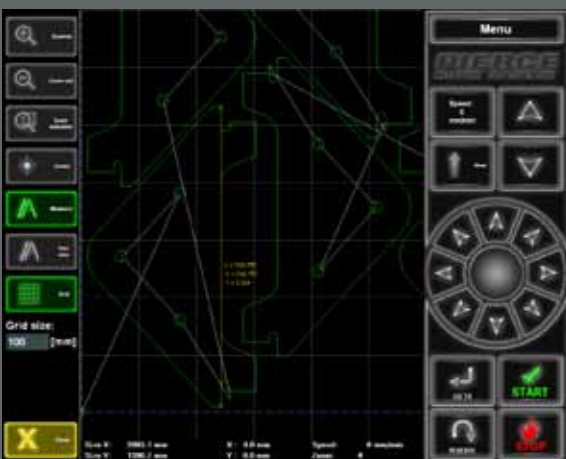
The control system monitors and keeps basic information of the cutting process such as cutting time, length, numbers of material piercing for each technology, etc. The information can help the operator to optimize the use of the machine and protect expendables and the burner against damage.

Graphic screen

The graphic part of the screen shows the operator clearly and in detail the flame cutting plan and each detail can be quickly seen. The operator can have a perfect view and control over the current cutting process owing to different types of zooming, graphic reticle, automatic adaptive view and information about the dimensions of both the whole and separate entities. Movement of the torch or the tool is shown at the real time and position. The operator thus can be sure that the machine moves according to the specified plan.

Economic solution

The new concept of the control system, its design, operation and functions have the only objective, i. e. the best economy of the cutting process and of the operation of the whole station. Its new functions were developed, above all, on the basis of your experience, ideas and most of them answer the question "how to save time and money".





Industrial version

The base of the control system is a very durable industrial computer which need not be cooled under routine working conditions. Computer data are stored into Compact Flash Disc. That design completely eliminates faults due to fatigue or damage of moving parts.

Colour touch display

Ten-year's experience with touch screens has shown that such communication between the control system and operator is now the fastest and the most comfortable solution. The industrial version guarantees its long endurance and high reliability even under extremely dusty environmental and climatic conditions. The basic prerequisite for comfortable operation is a suitable software interface with large enough controls and clear screen. That was the most important factor in development of this control system. A great benefit from the viewpoint of the service life and maintenance is absence of mechanical push-buttons and controls.

Communication interface

The communication interface helps the operator in an intelligible and intuitive way in preparation of cutting and during the process. Each screen of the machine can be adapted to the particular specification of the machine and to the currently used technology. This fact together with logical succession of separate steps of the control process makes the system very simple for training operators. Large controls make the operative control even easier using a touch display. That system can be used all over the world thanks to unambiguous images of the controls together with different language versions of legends and reports.

Clear graphic interface

The system screen is clearly divided into four parts:

- 1 **Status bar** - it shows the current position of the machine in X and Y axes, current date and time and report on the machine condition. Different conditions of the machine are highlighted by changed colour of the window for better orientation of the operator.
- 2 **Main window** - it changes depending on the work which is being done and current state of the control system. It is used for entering parameters and setting the whole system.
- 3 **Tool panel** - it is used for operating tools, above all, cutting heads. The appearance of the panel changes during work depending on the selected technology.
- 4 **Control panel** - it is used for automatic and manual control of the machine. The appearance of the window does not change during work so that the most important controls of the system could be accessed immediately.

Two sizes of the screen - 15" and 19"

15" - economical version suitable for smaller machines and applications. It just has small dimensions, but not lower performance and worse software.

19" - explicit and large display provides very transparent and comfortable operation with a detailed view of the graphic part of the screen.

Standard shapes

Macros are prepared for fast and easy cutting and their databases are continuously extended on the basis of your requirements.

Program can be adapted to the metal position

The function of “automatic plate alignment” is used for easy adaptation of your program to the metal sheet position. Owing to that function it is not necessary to handle big and heavy metal plates on the cutting table in a complicated way.

“Go to the position” function

Monitoring of the cutting process and its movement at the real time enables the return of the machine or movement to any place of the program especially in unexpected situation such as cutting interruption or cut loss at accidental outage. The system makes possible to search the following position:

- back to the cut
- program beginning
- program end
- selected point of the pierce
- the following point of the pierce
- the foregoing point of the pierce
- connection to the contour (trajectory)

“Reverse motion” function

It makes possible the reverse movement of the machine along the shape contour to return to the site of interruption or loss of the cut.

Automatic gas console for oxy-fuel cutting

That function provides an automatic process of setting pressure values and gas flow for oxy-fuel cutting. You can just enter thickness of the cut material and the system automatically sets cutting process control. Preset values can be modified depending on specific conditions and they can be stored for later applications.

Control of automatic plasma gas console

As the control system is associated with the automatic console of the plasma source the process of adjustment of pressure values and gas flow can be controlled on the basis of the given quality and thickness of the cut material. The control system informs operators about the set of expendables and shows reports on the plasma unit states and on the ongoing process.

Technological functions

- kerf compensation - different values of the inside and outside cuts can be entered
- lines and columns nesting including the priority definition
- number of pieces can be specified
- scale factor
- mirror cutting
- rotation
- change of the starting point





Windows XP Embedded Platform

The use of that platform provides a lot of benefits and compatibility with other extensions based on such a platform or on incorporation into your company network.

Write protect: The basic operating system is protected against overwriting. That function prevents unwanted changes and writes into the system which could damage it.

Hibernation mode: this function enables a fast start of the system when it is switched on.

OPERATING ENVIRONMENT

- standard range of operating temperature of 0 - 50 °C
- 95% humidity (non-condensing)

PIERCE control system can be used under difficult working conditions. It can also be equipped with heating for the environment outside the range of the given operating values - for work in unheated halls in the cold climate or, on the other way, with cooling for areas with high summer temperatures.

EtherCAT communication interface

Up-to-date communication digital interface EtherCAT makes possible to communicate at the real time with up to 40 servo-units working simultaneously on the basis. That function provides other opportunities how to furnish the machine with other technologies or for special applications on demand.

HARDWARE SPECIFICATION

- monitor (resistive touch screen):
 - 15" display TFT (resolution 1024 x 768)
 - 19" display TFT (resolution 1280 x 1024)
- processor - Intel Atom 1600MHz
- RAM - DDR2 1024MB
- HDD - Compact Flash 8GB
- ports - 1x RS232, 3x USB 2.0 (2 back side, 1 side), 1x Ethernet 100Mbit/s, 1x EtherCAT 10Mbit/s
- Windows XP Embedded operating system
- power supply - 24VDC / max. 2.5A
- dimensions:
 - 15" display - W x H x D - 390 x 315 x 60 mm
 - 19" display - W x H x D - 490 x 388 x 60 mm

- CE certificate

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