

CHEVALIER®

Grinding / Turning / Milling

We shape your ideas.™



SMART iControl

Outline

1) **SMART *i*Control**

2) **SMART *i*Control** graphic interface

3) **SMART *i*Control** intelligent features

4) iMachine Communications System

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SMART *i*Control

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SMART iControl Key Features

All new SMART iControl control

1. Now, our **exclusive next generation SMART iControl** delivers a bounty of benefits. Users no longer need to write complicated programs and memorize detailed variables. Instead, they can complete huge, complex processing programs and perform intricate grinding. The powerful computing ability enhances the HMI for better grinding accuracy and with data analysis from network connectivity allows managers to **improve** the **production process** and increase output.

2. Our grinding machines are designed to be user friendly. Now, our exclusive next generation SMART iControl incorporates production efficiency, which **simplifies operation procedures** and greatly enhances the performance of Chevalier CNC grinders. Combined with TaskLink, it allows operators to create their own programs for **generating complex grinding tasks in a single cycle—without an engineering degree**.

3. The iMachine Communications System™ collects and integrates data from different machine controllers* and monitors the tasks and processes remotely.

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SMART iControl Key Features

All new SMART iControl control

1. High **computing capabilities** of **2,000 single blocks** per second produce high-precision smoothness, high-precision contour control, machining path smoothing, multi-group working conditions and quick parameter setting to significantly **improv**e the grinding machine's **accuracy** and **flatness**.

2. Up to **eight CNC axes can be controlled** for multi- function machining requirements. **A single axis group can connect up to four axes or four/five axes** for complex forming machining.

3. The SRI interface external communication IO module adds **extra IO points** (optional) and **connects other automation equipment** to meet **future automation** needs.

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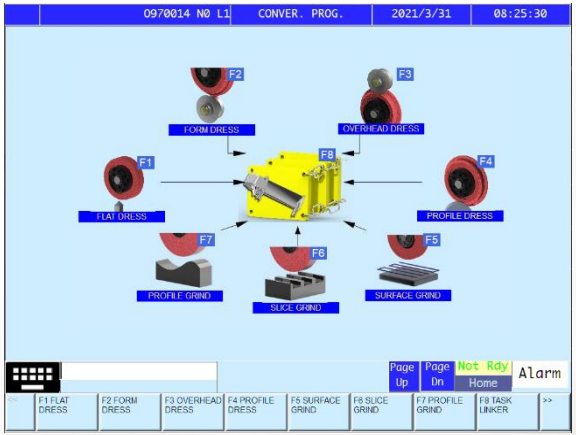
SMART *i*Control graphic interface

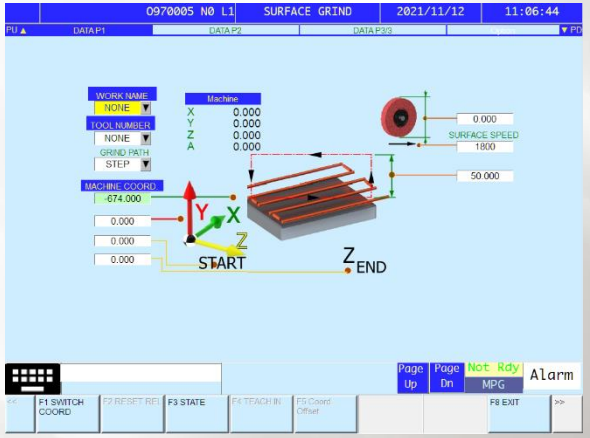
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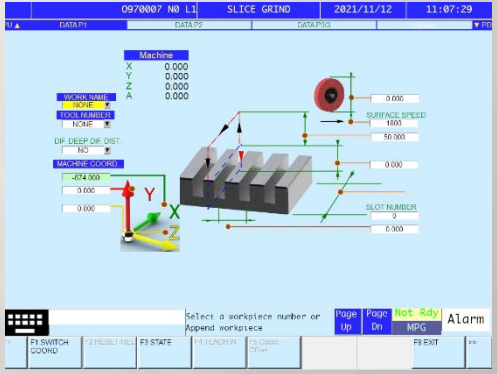
SMART *i*Control graphic interface

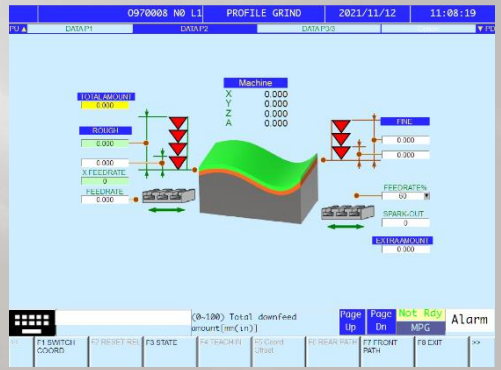
HMI Panel control interface

The SMART iControl comes standard with a 10.4” LCD high color monitor with HMI . The **three-dimensional graphic image display** minimizes text descriptions and looks very similar to the actual workpieces.









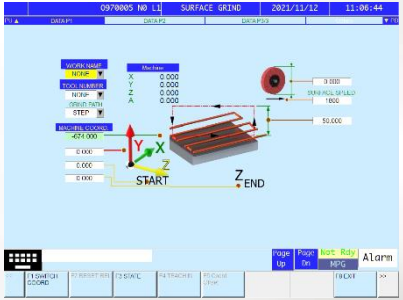
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SMART iControl graphic interface

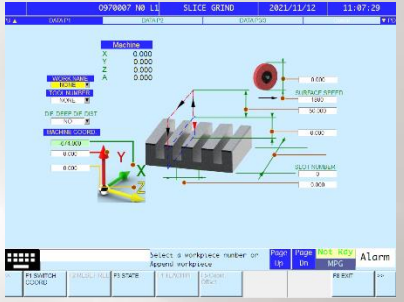
Auto Grinding Modes

The SMART iControl has **four types** of graphic conversational **grinding modes**.

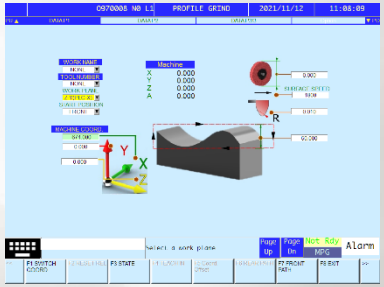
Additionally, our new **TaskLink mode** enables operators to **complete complex grinding tasks in one cycle**.



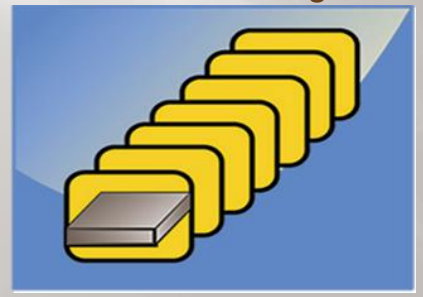
Surface Grinding



Slice Grinding



Profile Grinding



Tasklink

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SMART iControl graphic interface

Auto Dressing Modes

The SMART iControl has **four types** of graphic conversational **dressing modes**. Conversational graphic automatic wheel dressing modes **can be linked with any**—or all—**grinding modes**.

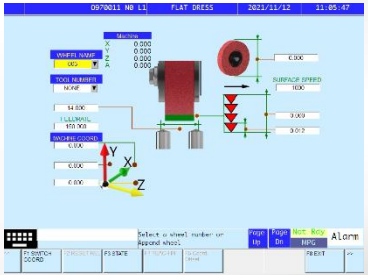


Table Type Single Tip Dresser

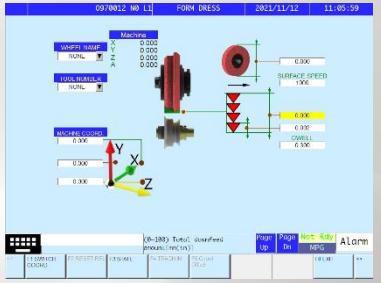
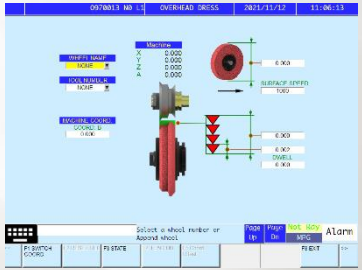
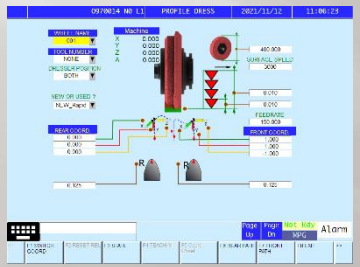


Table Type Diamond Dresser



Over the Head Diamond Roller



Profile Dressing

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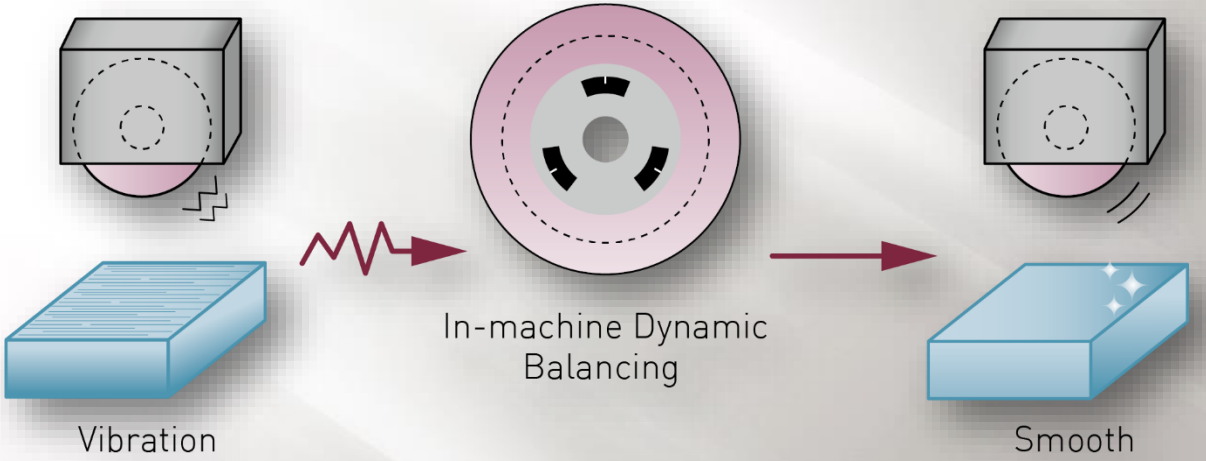
SMART *i*Control intelligent features

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SMART *i*Control intelligent features

In-machine dynamic balancing

The control‘s data helps to set adjustments for the in-machine dynamic balancing in order to **reduce grinding wheel vibration** and **eliminate the workpiece surface ripple** to **improve grinding quality**.

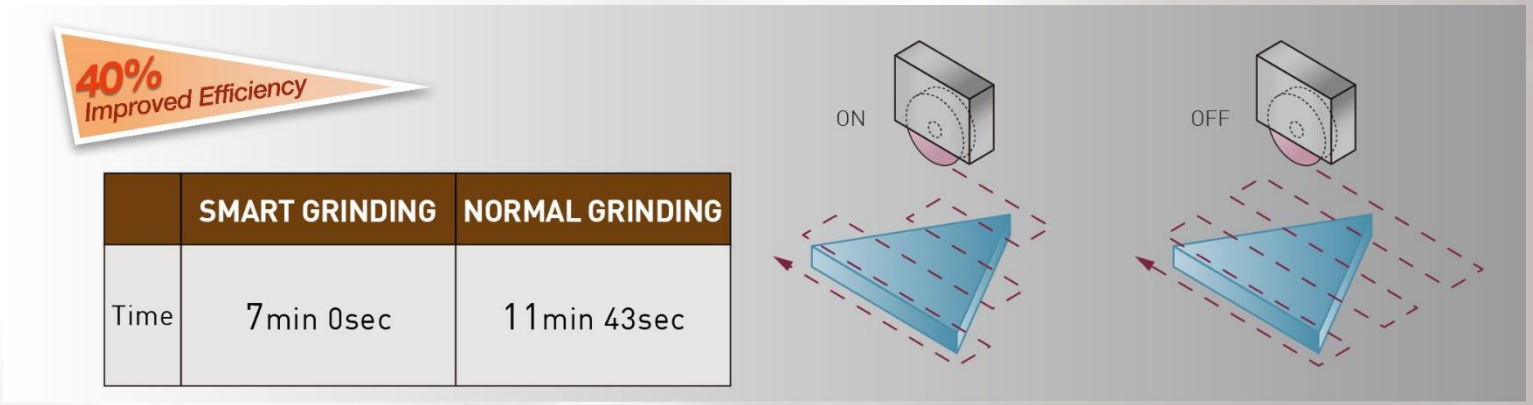


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SMART iControl intelligent features

Smart grinding path

By leveraging Chevalier's extensive experience in technological innovation, we have greatly enhanced the iSurface control's intelligent grinding path. This smart grinding path will **automatically minimize air cutting strokes during grinding** of such irregular shapes as I, L, Z or triangular. It will also automatically remove invalid cutting strokes and **improve overall processing efficiency**.



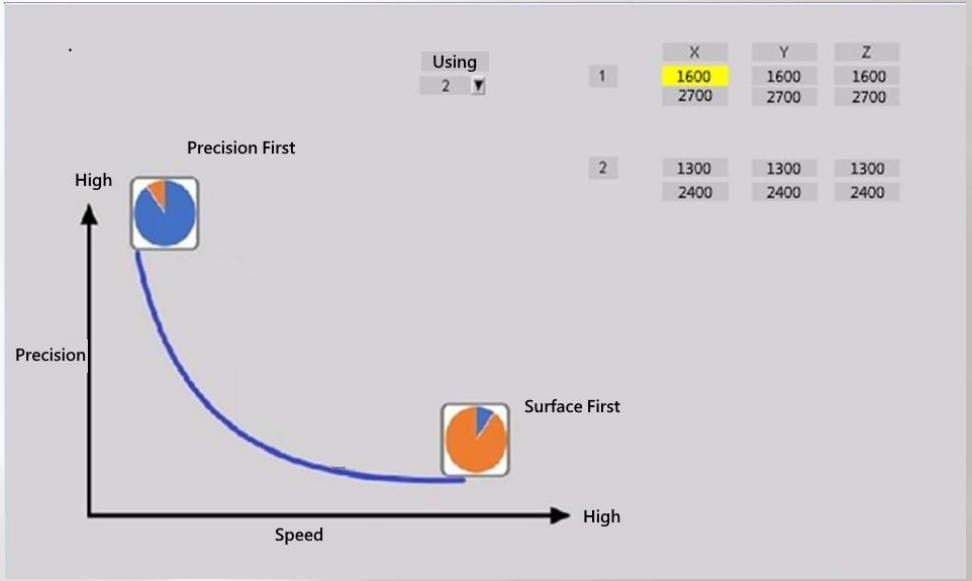
	SMART GRINDING	NORMAL GRINDING
Time	7min 0sec	11min 43sec

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SMART iControl intelligent features

Intelligent grinding assistant system

Sets parameters **based on prioritizing the machining process** for precision or speed in order to **improve** application **efficiency**.



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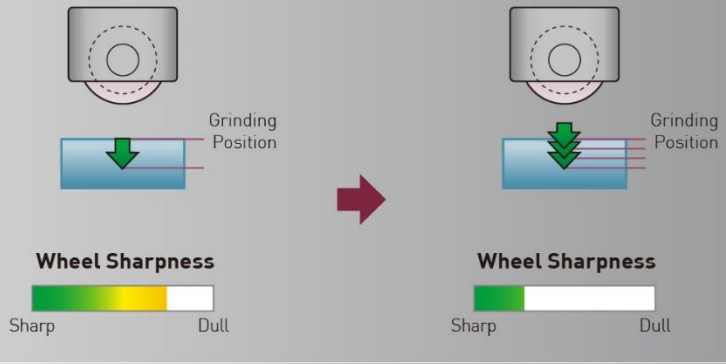
SMART iControl intelligent features

Intelligent auto wheel dressing

This function detects when the wheel needs to reach optimal cutting efficiency **regardless of operator experience to avoid poor grinding quality**.

17% Improved Efficiency

	SMART DRESS	NORMAL DRESS
Time	11min 26sec	13min 44sec



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SMART *i*Control intelligent features

Worktable smoothing function

Reduces reciprocating vibrations caused by the X-axis ballscrew to **enhance the surface furnish of a workpiece**.

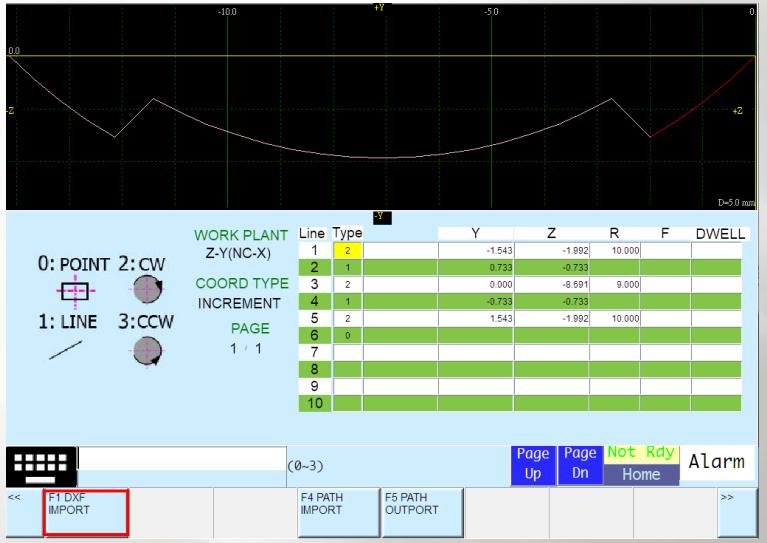


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SMART iControl intelligent features

GRIND CAM built-in function

With **allows users to import CAD files for wheel and part profiles**, and convert file data to processing paths. This function allows for greater operator efficiency and eliminates the need to purchase additional software.



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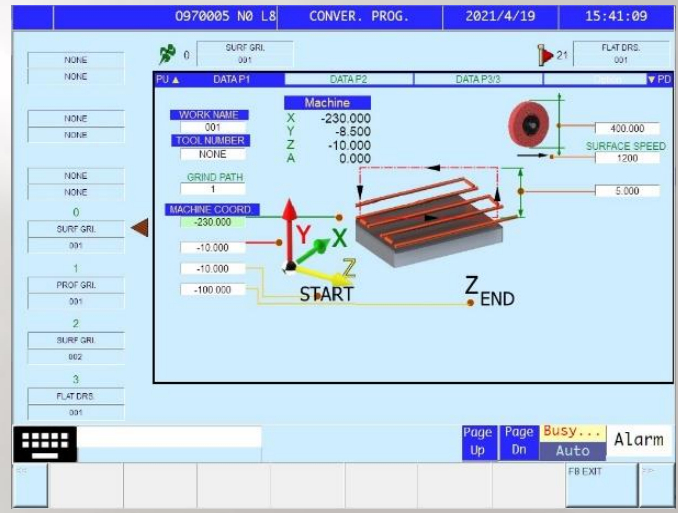
SMART iControl intelligent features

TaskLink monitoring screen+

The operator can use TaskLink+ to quickly see each program name and its corresponding grinding parameters. This mode **enables operators to complete and visualize grinding tasks in one program**.



old



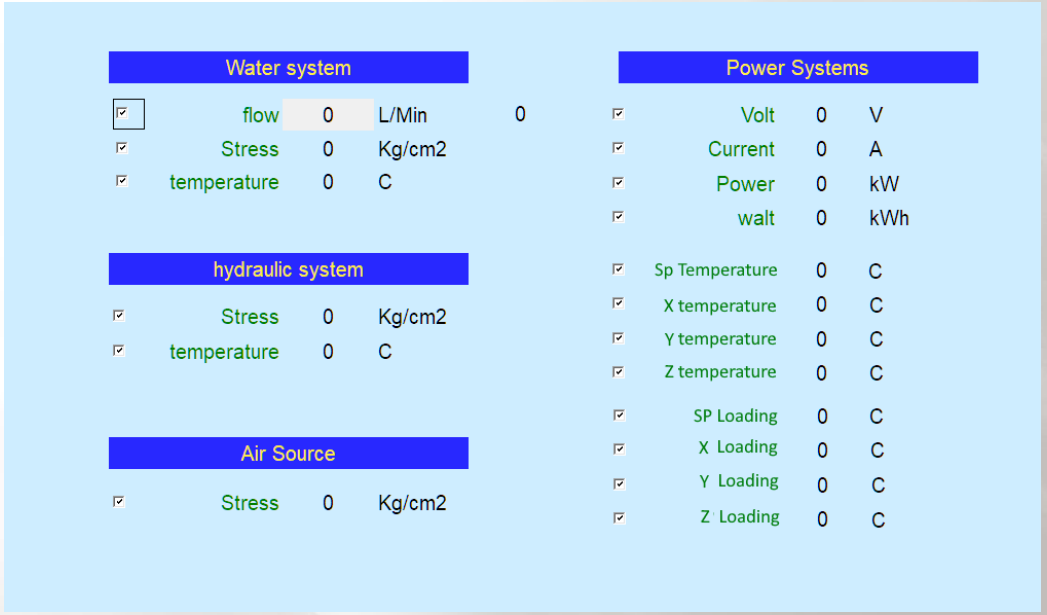
new

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SMART iControl intelligent features

IoT Smart management interface

With intelligent sensing and monitoring screen, **enhance the intelligence** of the machine.



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SMART iControl intelligent features

IoT Smart management interface

It can be used with flexible manufacturing system to monitor the screen, **making production management smarter**.



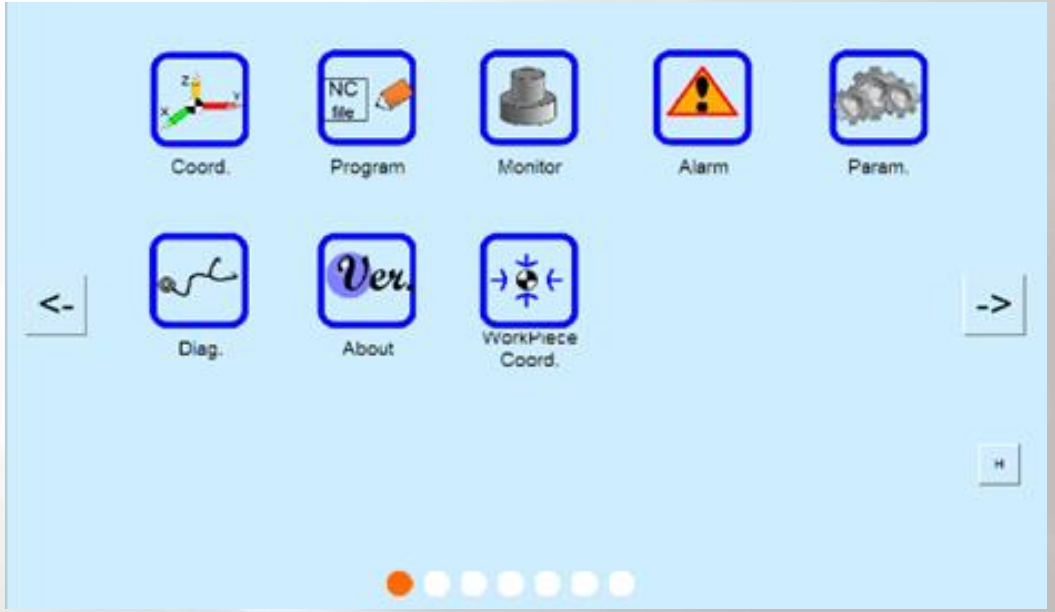
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SMART *i*Control intelligent features

SMART Desktop

The operator can place common functions on the desktop, **making the operation more convenient**.





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SMART iControl intelligent features

Graphical dialogue supports multi-wheel interface

With a graphical dialogue interface, it can intelligently calculate and memorize the information related to grinding wheel dressing, and **meet the future expansion** of the automatic demand for **automatic grinding wheel change**.

	NAME	OD	WIDTH	OD Min	MAC : X	MAC : Y	MAC : Z	MAC : B
1	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
2	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
3	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
4	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
5	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
6	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
7	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
8	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
9	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
10	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
11	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
12	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
13	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
14	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
15	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
16	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
17	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
18	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
19	0	0.000	0.000	110.000	0.000	0.000	0.000	0.000
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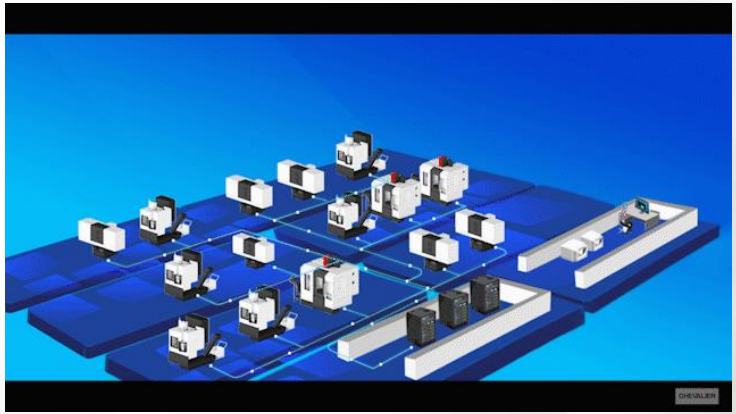
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iMachine Communications System™ Solution

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iMachine Communications System™ Solution

iMCS is a comprehensive remote monitoring software that integrates with IoT functions on Chevalier's CNC machines to perform **24/7 data collection**, **utilization monitoring**, **data analysis**, **alarm history**, **maintenance** and **overall equipment effectiveness (OEE),** all which help to avoid downtime and increases productivity. Additional PC and software are required.





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iMachine Communications System™ Solution

iMCS Features and Benefits

Machine status: Monitoring of machine condition and real-time machine data

Utilization: Statistical analysis of all machine conditions

Program transfer: Transfer of files seamlessly between CNC controls and management

Center diagnosis: Assessment of machine system and components through on-line system diagnostics

Maintenance: Preprogrammed service and maintenance recommendations

Production: Real-time production management with data collection statistics



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