DAVI

iRoll PERFORMANCE

iRoll EXTREME

iRoll P : included iRoll X : included

DEDICATED CUSTOMER SUPPORT

Establishing a long-term partnership with DAVI

Upon entering the DAVI World, a large team of dedicated after sales personnel will support you during production throughout the whole machine lifetime

- **Remote Service Management:** all machine PLC parameters are accessible via network at any time; data are safely stored locally and accessible remotely only by authorized personnel
- **Production Support:** consulting the operators on the most appropriate machine utilization methods for any specific job
- **Maintenance Routine Analysis:** tailoring optimized predictive and regular maintenance packages
- **Rolling Line Troubleshooting: TALK & WATCH with SMART GLASSES (optional only with iRoll X)** modifying and adjusting relevant machine parameters to immediately resume production

iRoll P : included iRoll X : included

ERGONOMIC CONTROL CONSOLE

Operator oriented design

Human factors at the center of the console design

The operator's actions have a direct impact on up-time, production output, quality, and safety. DAVI's unique, appealing and futuristic-looking console is designed and optimized for 24/7 operations:

- **promoting alertness** extracting the very best from every operator, in both normal and critical situations
- large, high-resolution industrial panel with **advanced touch screen** for an **intuitive smartphone-like** experience
- structure designed to guarantee **functionality and durability in heavy duty workshops**
- **PLC and graphic engine independent from screen:** in case of damage on the monitor, the system can be mirrored and operated on devices such as smartphones and tablets

iRoll P : included iRoll X : included

HIGH-RESOLUTION INTERFACE

For improved ease of use

Human-Machine Interface (HMI) designed to provide seamless, smartphone-like, navigation between different control environments

- modern **dark interface** minimizing operator's **eye strain** while reducing the **panel energy consumption**
- immediate user-friendly feeling to **shorten the operators' learning curve**
- combining **latest ergonomic requirements** and familiar interface with the **efficiency** required by **the most demanding shop floor** operations

iRoll P : included iRoll X : included

FULL INTERFACE CUSTOMIZATION

Everything under control at all times

Working environments can be tailored using high-definition widgets

- allow the operator to keep data and **parameters of interest under control at all times**
- fully customizable **widgets side bar** always on screen
- **smartphone-like drag & drop menus** for the **most intuitive and immediate User experience** on the Market
- **Live 3D view and zoom in & out functionality** for an improved components visualization and easy selection of the desired axis **(only with iRoll X)**

ZOOM OUT

For a general view of the machine and accessories, keeping the desired machine parameters always under control

ZOOM IN

For the selection of the desired axis and fast switch between the visualization of the machine and the accessories

iRoll P : included iRoll X : included

EASY PROGRAMMING

Always the best results thanks to DAVI exclusive Artificial Intelligence (AI)

Programming environment extracts the very best from both the most and the least experienced Operators

- **Self-Adjusting AI** to generate **fine-tuned programs** based on historical parameters **collected during the fabrication of similar parts**
- Program is divided in **workflow phases** (i.e. loading, pre-bending, etc.) for **intuitive checking** and **editing** of the generated machine sequence
- CAM program generated including CNC utilization of **all handling and feeding systems of the Rolling Line**
- Control system designed to **minimize production cycle-time** actuating all active accessories **simultaneously**

iRoll P : not available iRoll X : included

REAL-TIME CORRECTION FOR MULTI-RADIUS

Radius Correction System for Multi-Radius: an aid to mass production of custom and complex multi-radius workpieces

Easy and intuitive correction tool adjusting the workpieces program based on:

- **SUPPLIER and BATCH:** material elastic modulus can vary significantly from one supplier to another and, sometimes, even from batch to batch
- **OPERATORS' MEASURED PARAMETERS:** actual part thickness and forming radius

CUSTOM SHAPE PROGRAMMING

Generating a program for multi-radius parts has never been easier: draw extremely complex shapes by inputting each segment arc and inside radius

REAL-TIME CORRECTION SET

Applying corrections while forming whenever necessary by selecting the relevant segment and entering the actual measured radius

iRoll P : not available iRoll X : included

ENHANCED ROLLING FEATURES

Complex tasks made easy

Powerful and intuitive programming tools convert complex tasks into simple routine

- **ADVANCED PROGRAMMING:** checks part feasibility and generates **single-pass CAM program** (**multi-radius or custom shapes**)
- **MULTI-PASS PROGRAMMING:** if single-pass rolling can't be achieved, automatically generates a **multi-pass CAM program**
- **"APPLE-SHAPE" CALCULATOR (ASME TOLERANCES COMPLIANCE SYSTEM) FOR RE-ROLLING:** according to machine capacity, generates a CAM program for the "**apple-shape**" geometry required to achieve the desired **roundness after re-rolling**

iRoll P : not available iRoll X : included

ASSISTED MANUAL MODES

Make the most of your operators' experience

Effective assisted modes to the Operators, whenever they decide to go manual (data acquisition is granted also in manual mode)

- **MANUFACTURING PHASES AID:** generates automated sequence for **selected rolling phases**; for example, the Operator could let the system manage plate positioning, feeding, squaring and unloading while **keeping manual control over the rolling process**
- **MULTI-PASS AID:** generates automated sequence for selected number of passes; for example, the Operator could let the system manage the first 3 rolling passes while **executing the closing phase**
- **RE-ROLLING AID:** suggesting to the Operator the **most-appropriate "apple-shape"** geometry based on **required target roundness after re-rolling**

iRoll P : not available iRoll X : included

INTERACTIVE PRE-PRODUCTION SIMULATION

Real-time fabrication fine-tuning

High resolution 3D simulation of workpiece being manufactured by the rolling line

- **Decreased reliance on Operator skills**, with dramatic increase productivity **right from the first workpiece**
- **PROGRAM MODE:** assessing and **pre-empting possible manufacturing issues**, with significant time and material savings
- **MANUAL EDITING MODE:** reviewing Rolling Line actuation sequence, **pre-empting potential issues** (collision between accessories and workpiece, accessories operating range, etc.)

iRoll P : optional iRoll X : included

FAILURE FREE MACHINE (FFM)

Reduced downtimes

Dedicated troubleshooting and Maintenance Environment

- **easy monitoring** of the **maintenance status** and **expected components lifespan** at all times
- alarm and warning messages **automatically prompted on screen**, for both preventive maintenance purposes and components malfunctions troubleshooting
- significant reduction of **unplanned outages** for **improved machine availability**

iRoll P : optional iRoll X : optional

REAL-TIME PERFORMANCE MANAGEMENT (RTPM)

Embracing Industry 4.0 innovations

Dedicated reporting environment and full integration with plant network

- Corporation Production Management can easily access data and information to generate **high-value maintenance and efficient production strategies**
- **Full integration of different processes** within the Production Line (cutting, rolling, welding, etc.) through **OPC connectivity technology**
- CAM programs recalled and loaded into the machine for execution through **QR or bar-code readers**

iRoll P : optional iRoll X : optional

PERFORMANCE TEST SOFTWARE

For a quick check of parts feasibility

Powerful and intuitive tool designed to quickly assess rolling/pre-bending and cone bending performances of your machine and material spring-back

Starting from main workpiece characteristics,

the Performance Test displays:

- **Required percentage of overall machine capacity** for rolling, pre-bending, continuous cone bending
- **Alarms and remarks** for potentially challenging fabrications (narrow and thick plates, interferences, etc.)
- Expected **Flat End** length
- **Minimum** achievable **workpiece diameter** due to material spring-back and installed top roll dimensions

iRoll P : not available iRoll X : optional

DXF IMPORT SOFTWARE

From the CAD to your machine

Automatically generates the **required geometry program** based on imported DXF drawing

iRoll P : optional iRoll X : not available

iRoll PERFORMANCE

OFFLINE LICENSE AND SOFTWARE

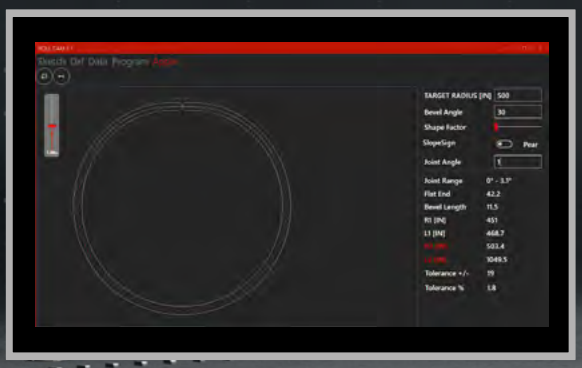
Upgrading your iRoll Performance with selected offline features

3D SIMULATION

Run an **accurate simulation** of the workpieces being manufactured by the rolling line; helps **preventing potential manufacturing issues** (such as collisions, overlapping, etc.)

ADVANCED SINGLE RADIUS PROGRAMMING

Generate and upload to the machine offline programs for parts requiring **single or multiple passes**. Additionally, according to machine capacity, calculate the **“apple-shape” geometry** required to achieve the desired roundness after re-rolling



iRoll P : not available iRoll X : optional

iRoll eXTREME

OFFLINE LICENSE (SOFTWARE INCLUDED)

Upgrading your iRoll eXtreme with selected offline features

3D SIMULATION

Replicate offline the 3D simulation available on the console to guide Operators and prevent potential manufacturing issues (such as collisions, overlapping, etc.)

ADVANCED MULTI-RADIUS PROGRAMMING

Generate and upload to the machine **offline programs for complex multi-radius custom parts** requiring single or multiple passes. Additionally, according to machine capacity, generate programs for the **“apple-shape” geometry** required to achieve the desired roundness after re-rolling

iRoll PERFORMANCE

SPECIFICATIONS

Practicality, efficiency and flexibility

MAIN FEATURES

- Touch Screen 18.5”
- Windows 10
- Customized Widgets
- High-Resolution Smartphone-Like Graphic Interface
- 3D Machine Interface

PROGRAM MODE

- Programmable (Unlimited Programs)
- Phase Programming
- Single-Radius Shapes Templates Aided Program
- Radius Correction System for Single Radius

OPERATING MODE

- Manual
- MDI
- Programmable

ALL AXIS PROGRAMMABLE

DIAGNOSTIC

- Maintenance Alarms
- Standard Diagnostic
- TeamViewer Access (Remote)

iRoll EXTREME

SPECIFICATIONS

Control system for maximum productivity

MAIN FEATURES

- **Touch Screen 21.5”**
- Windows 10
- **Intentional Joystick On/Off (S)**
- **Variable Speed (S)**
- Customized Widgets
- High-Resolution Smartphone-Like Graphic Interface
- **LIVE! 3D Machine Interface**
- **3D Template Simulation**
- **Talk & Watch with Smart Glasses (optional)**
- **Automatic Mode Production Report**
- **Failure Free Machine (FFM) Basic App**
- **Clamping Stress Graph Bars**

PROGRAM MODE

- Programmable (Unlimited Programs)
- Phase Programming
- Single and **Multi-Radius Shapes Templates Aided Program**
- **Cone Templates Aided Program**
- **Custom Shapes Templates Aided Program**
- **Multi-Pass Aided Program**
- **ASME Tolerances Compliance System (“Apple-Shape” Calculator)**
- Radius Correction System for Single **and Multi-Radius**
- **Radius Correction System Wi-Fi (DG Gauge not included)**
- **Material Properties Self-Learning System**

OPERATING MODE

- Manual
- MDI
- Programmable

ALL AXIS PROGRAMMABLE

DIAGNOSTIC

- Maintenance Alarms
- **Advanced Diagnostic**
- TeamViewer Access (Remote)

*bold features are added or improved compared to iRoll Performance

SUMMARY

MAIN FEATURES	iRoll PERFORMANCE On Board	iRoll PERFORMANCE Offline License and Software	iRoll EXTREME On Board	iRoll EXTREME Offline License (Software Included)
Touch Screen	18.5"	X	21.5"	X
Windows 10	√	X	√	X
Intentional Joystick On/Off (S)	Optional (included from segment I)	X	√	X
Variable Speed (S)	Optional (included from segment I)	X	√	X
Intentional Joystick (On/Off) (other axis)	Optional	X	Optional	X
Variable Speed (other axis)	Optional	X	Optional	X
Customized Widgets	√	X	√	X
High-Resolution Smartphone-Like Graphic Interface	√	X	√	X
3D Machine Interface	X	X	√	X
LIVE! 3D Machine Interface	X	√ (single radius)	√	√
3D Template Simulation	X	√ (single radius)	√	√
Onboard User Manual	√	X	√	X
TALK & WATCH with Smart Glasses	X	X	Optional	X
Automatic Mode Production Report	Optional	X	√	X
Failure Free Machine (FFM) Basic App	Optional	X	√	X
Clamping Stress Graph Bars	Optional (included from segment E)	X	Optional (included from segment E)	X
PROGRAM MODE				
Programmable (Unlimited Programs)	√	√	√	√
Editor	√	√	√	√
Teach-In	√	√	√	√
Phase Programming	√	√	√	√
Single-Radius Shapes Templates Aided Program	√	√	√	√
Multi-Radius Shapes Templates Aided Program	X	X	√	√
Cone Templates Aided Program	X	X	√	√
Custom Shapes Templates Aided Program	X	X	√	√
Multi-Pass Aided Program	X	√	√	√
ASME Tolerances Compliance System ("Apple-Shape" Calculator)	X	√	√	√
Radius Correction System for Single Radius	√	X	√	X
Radius Correction System for Multi-Radius	X	X	√	X
Radius Correction System Wi-Fi (DG Gauge not included)	X	X	√	X
Material Properties Manual Input System	√	√	√	√
Material Properties Self-Learning System	X	X	√	X

√: included X: not available

	iRoll PERFORMANCE		iRoll eXTREME	
OPERATING MODE	On Board	Offline License and Software	On Board	Offline License (Software Included)
Manual	√	X	√	X
MDI	√	X	√	X
Programmable	√	X	√	X
PROGRAMMABLE AXIS				
Roll (X, Y, W)	√	√	√	√
Tilting for Cones (KX, KY, KW)	√	√	√	√
Top Roll Rotation (S)	√	√	√	√
Pinching Pressure (P)	√	√	√	√
Machine Opening (O)	√	√	√	√
Overhead Support (V)	√	√	√	√
Additional Axis	√	X	√	X
ADDITIONAL SOFTWARES				
Performance Test Software	Optional	Optional	Optional	Optional
Performance Test for Cones Software	Optional	Optional	Optional	Optional
Spring-Back Software	Optional	Optional	Optional	Optional
DXF Import Software	X	X	X	Optional
DIAGNOSTIC				
Maintenance Alarms	√	X	√	X
Standard Diagnostic	√	X	√	X
Advanced Diagnostic	X	X	√	X
TeamViewer Access (Remote)	√	X	√	X
INDUSTRY 4.0				
Plugin OPC-UA + FTP (MES Integration not included)	Optional	X	Optional	X

√: included X: not available

Graphic elements are different between iRoll Performance and iRoll eXtreme. All the graphics present in this document refer to the iRoll eXtreme version. The graphics may be samples and refer to other machine models.

On plate rolls, all the controls are supplied to manage and position the controlled axes of the machine within Manufacturer's specific tolerances; but it is unknown how the material reacts to them. In fact, there are many variables including yield and tensile strength, material thickness, grain direction, cut dimensions, material handling and stocking practice and operator ability that affect the results of the finished product. These factors may require that fine tuning must be made by the operator to meet required rolling tolerances, although the machine positions and sequences are consistently an accurately performed by the control. It is suggested to roll in one pass automatic process, at a reduced capacity (multiple passes parts can be eventually programmed in Editor mode).

LET'S
ROLL YOUR WORLD
TOGETHER

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