

DiamondFAB

FABRICATION SOFTWARE SOLUTIONS

DiamondFAB

MC Machinery Systems Software Solutions



MC MACHINERY
SYSTEMS, INC.

a subsidiary of  Mitsubishi Corporation

DiamondFAB One

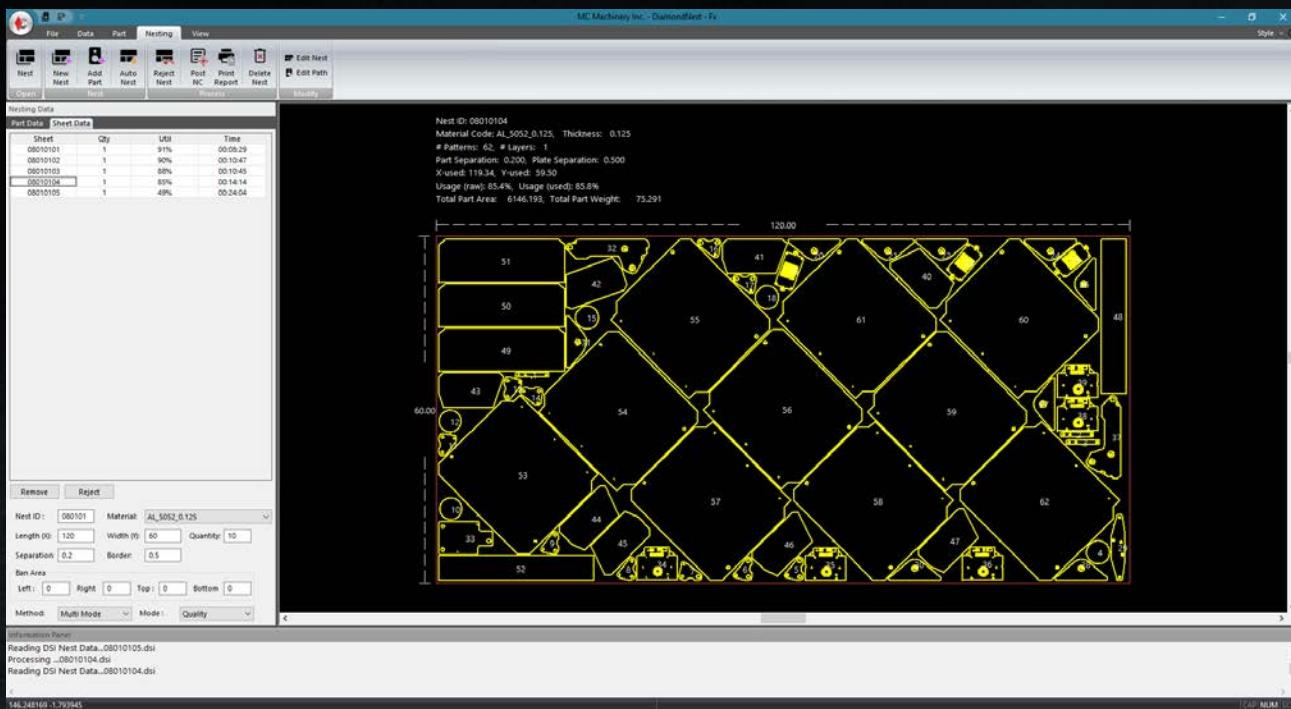
Start Smart, Nest Efficiently.
Essential nesting for Mitsubishi lasers.

Overview:

Maximize your Mitsubishi laser productivity with DiamondFAB One from MC Machinery. Powered by an industry leading nesting system guaranteed to improve material utilization and optimize laser processing. DiamondFAB One is easy to learn, simple to use, and utilizes the best Mitsubishi Cutting Technology. When time matters, trust Mitsubishi and DiamondFAB One to give you the results you need.

Key Features:

- Smart part nesting with advanced algorithms
- Drag and drop DXF import
- Automatic lead-ins, tabs, slug destruct, and reliefs
- Skeleton destruct and sheet cropping
- Optimized tool paths with automatic burn path control



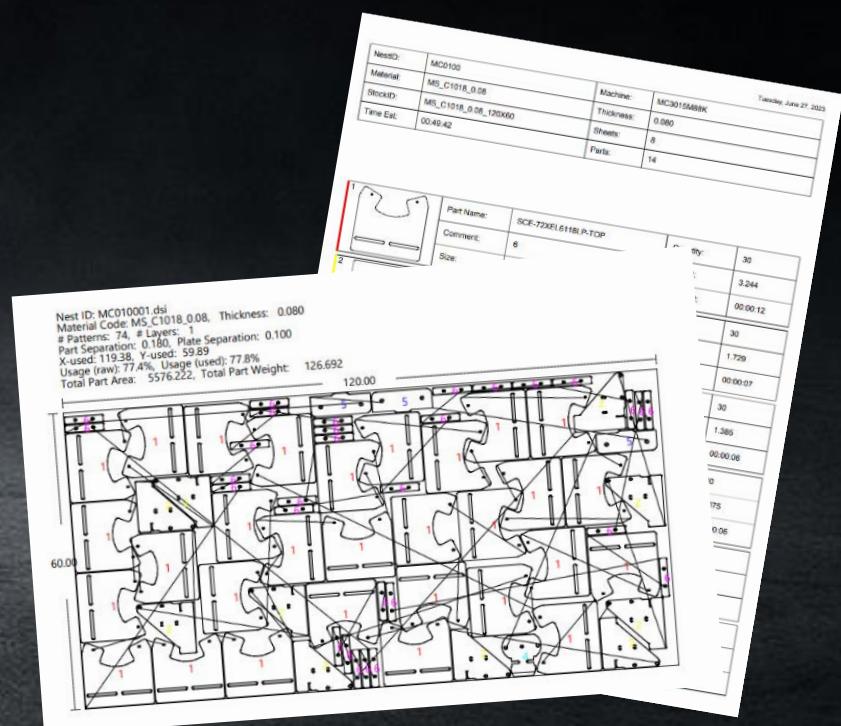
What's Included:

- Automatically Apply Proven Mitsubishi Laser Tooling
- Automatic Nesting and Laser Path Generation
- Multiple Nesting and Laser Path Strategies
- Paired Part Cutting
- Intuitive Heads-Down Cutting
- Advanced Reports and Detailed Setup Information
- Part and Back-Fill Prioritizing
- Optimized Cut Path for Mitsubishi
- Powerful Pierce Location Logic
- Intelligent Nesting Modes for Unattended Operation
- High Speed Fiber Cutting
- Automatic Part and Heat Marking
- Automatic Common Line
- Network License Included
- Web Training Included



Automate every step of your nesting process with intelligent features like skeleton destruct, sheet cropping, and nest ID marking. Customizable tooling parameters generate efficient cut paths tailored to material thickness or user defined profiles, ensuring seamless transitions between features and optimized machine performance.

Generate customizable nest reports that display key data like nest IDs, sheet IDs, part counts, estimated cut times, and material weight. Get the critical insights you need to manage production more effectively at a glance.



DiamondFAB Core

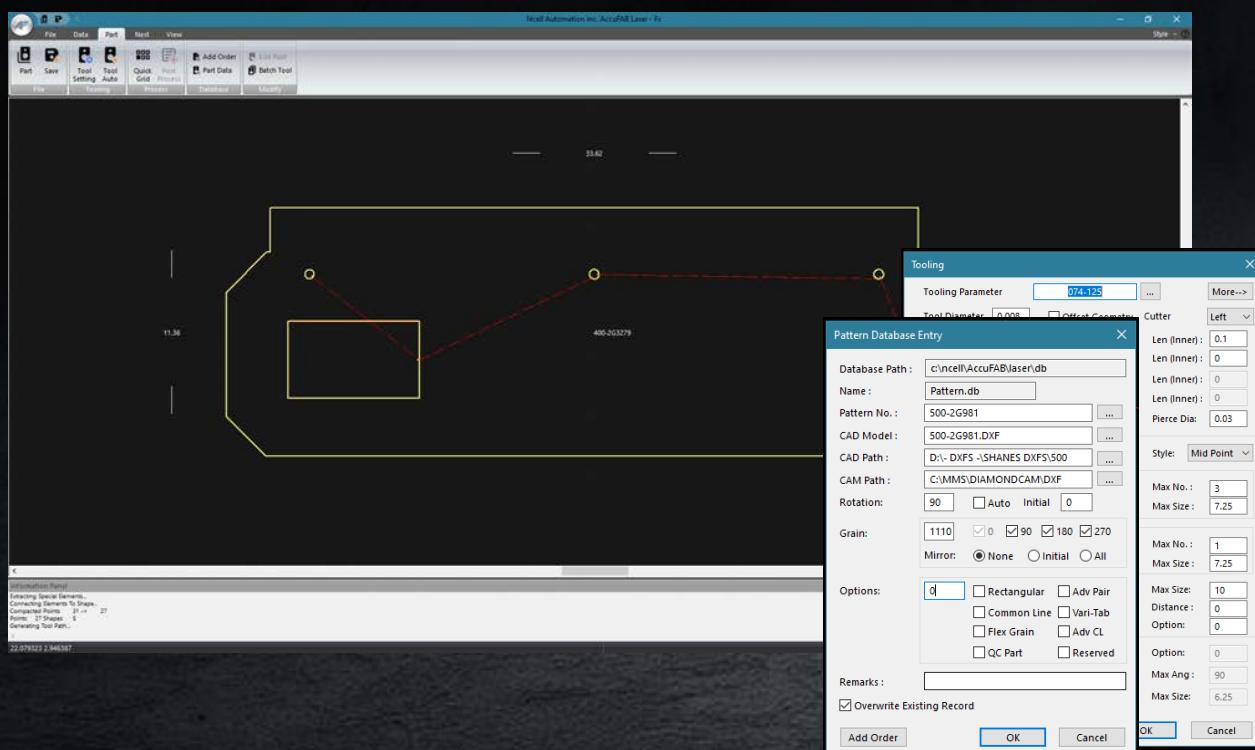
Smarter Cutting.
Batch orders and smart nesting tools.

Overview:

DiamondFAB Core, powered by AccuFAB technology from Ncell and optimized for MC Machinery laser machines, offers a robust core nesting solution designed to maximize your sheet metal utilization. Similar to DiamondFAB Pro, it incorporates intelligent algorithms and smart part technology to deliver excellent material yields while maintaining part quality. This system streamlines your nesting process and enhances your laser cutting performance with proven optimization tools.

Key Features:

- Work order batch processing and database import
- Intelligent nesting algorithms for optimal yields
- Automatic tooling parameters by material type
- High-speed cutting with F-Cut optimization



What's Included:

- AccuFAB - Work order system, ERP work order import
- Pattern database, Material control, and Batch nesting
- Automatic Burnpath Creation
- Mitsubishi Post Processor
- Dynamic Nesting (Part, Pair, Group modes)
- AccuFix Geometry repair and modification
- Advanced Nesting Features
- Skeleton Destruct, Remnant Cutting, Marking
- nGEN Nesting Engine
- High Speed with Zip Cut
- Common Sense Common Line Cutting
- Web Training Included



Customizable Part and Nest Reports

Generate precise, customizable reports that include part size, weight, and estimated cut times based on real material data. Color-coded nests make breakout fast and efficient, helping operators quickly identify and sort parts.

Work order and Pattern Database

Manage laser production with ease using a centralized work order database that tracks quantity, material, due dates, and priorities. CSV import/export ensures seamless ERP integration, while the pattern database retains part history and auto-updates tooling when CAD files change.

DiamondFAB Pro

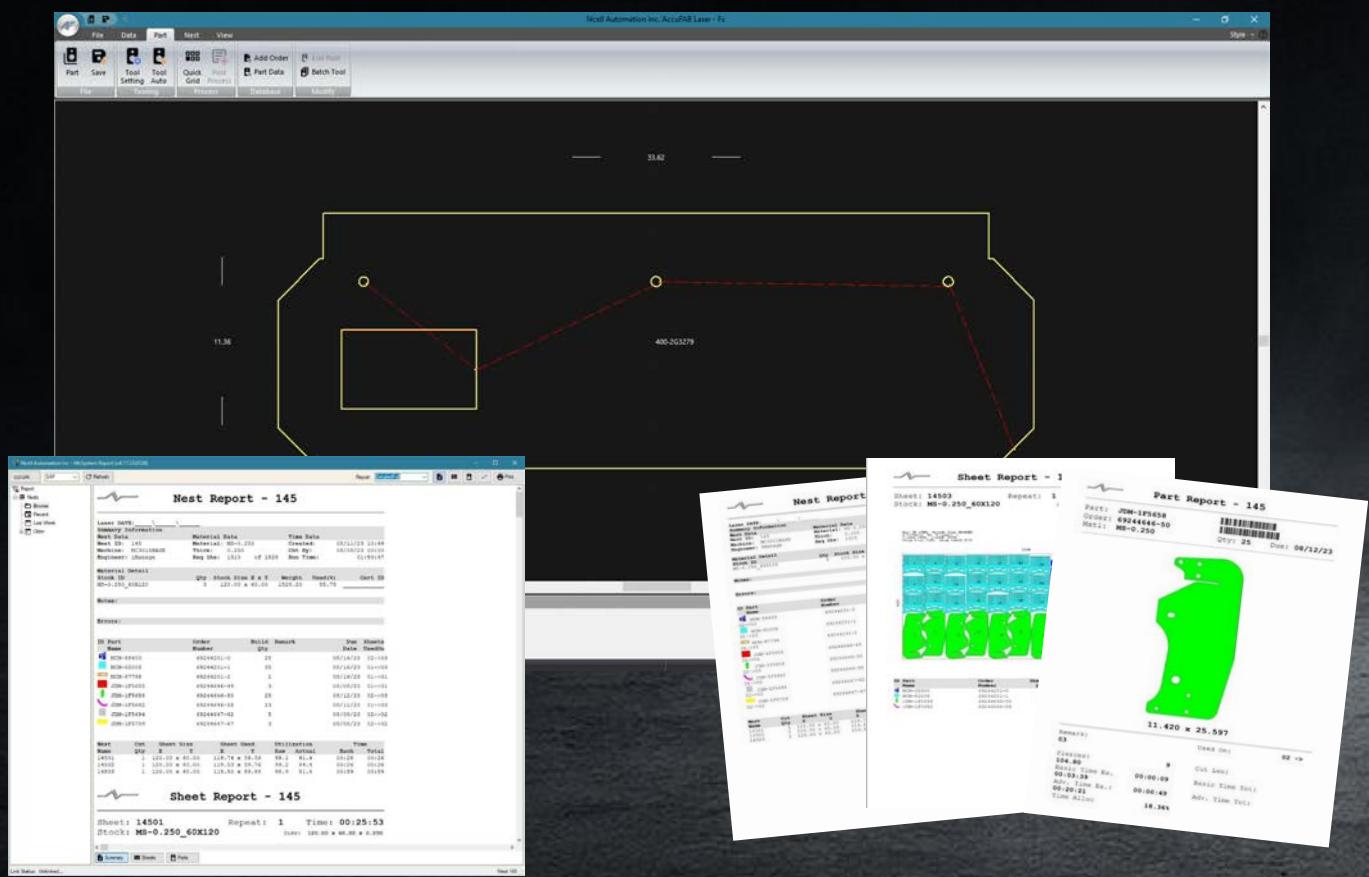
Automated Power to Boost Productivity. Advanced nesting, Automation Control and Reporting.

Overview:

DiamondFAB Pro enhances productivity with intelligent batch processing, customizable tooling, and advanced reporting capabilities. It reduces programming time while delivering exceptional material utilization.

Key Features:

- Automated batch nesting and work order processing
- Advanced smart part technology and tooling strategies
- MXReport for comprehensive shop floor reporting
- Common line cutting for efficient part layouts
- Seamless integration with Mitsubishi lasers

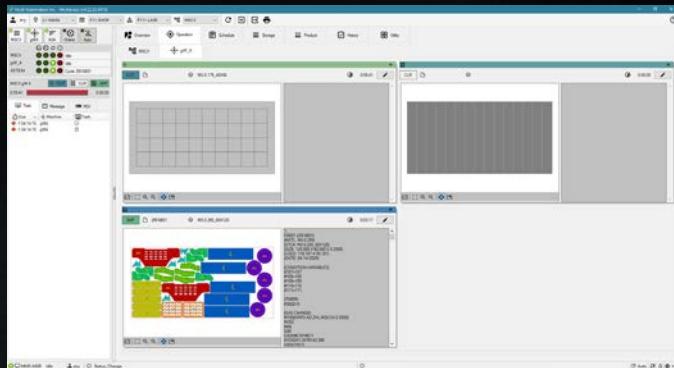


What's Included:

- AccuFab - Work order system, ERP work order import
- Pattern database, Material control, and Batch nesting
- Automatic Burnpath Creation
- Mitsubishi Post Processor
- Dynamic Nesting (Part, Pair, Group modes)
- AccuFix - Geometry repair and modification
- Advanced Nesting Features
- Skeleton Destruct, Remnant Cutting, Marking
- nGEN Nesting Engine
- High Speed with Zip Cut
- Common Sense Common Line Cutting (Pro, Elite, Ti, Sort)
- Advanced Report - MxReport
- Network License - Single user
- Online and Onsite Training Included

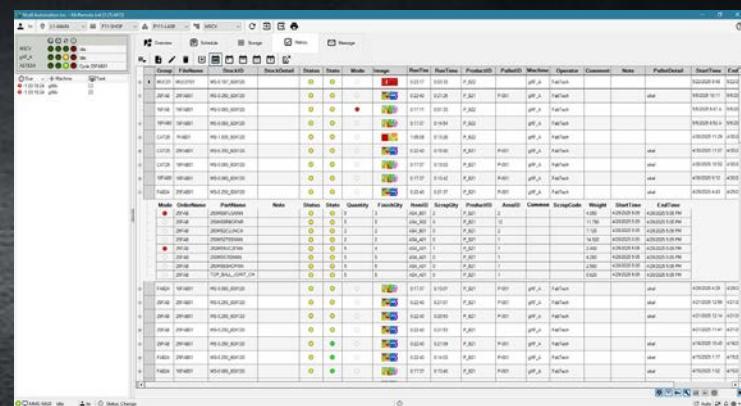
Remote scheduler and standalone Line Control included:

- Remote Scheduler - Automation and schedule control
- Line Control - Automation and Tower Control



Optimize the management of your automated laser cutting cell and material handling with Line Control software for Mitsubishi Lasers. This powerful system provides control over the scheduling of your Mitsubishi laser, allowing you to efficiently manage nest schedules and material inventory.

Remote Scheduler is a powerful tool that directly interfaces with your Line Control automation system and your Mitsubishi laser, allowing you to effortlessly schedule and manage your nested sheets.



DiamondFAB Elite

Enterprise Control for Total Shop Connectivity.
ERP-integrated manufacturing management.

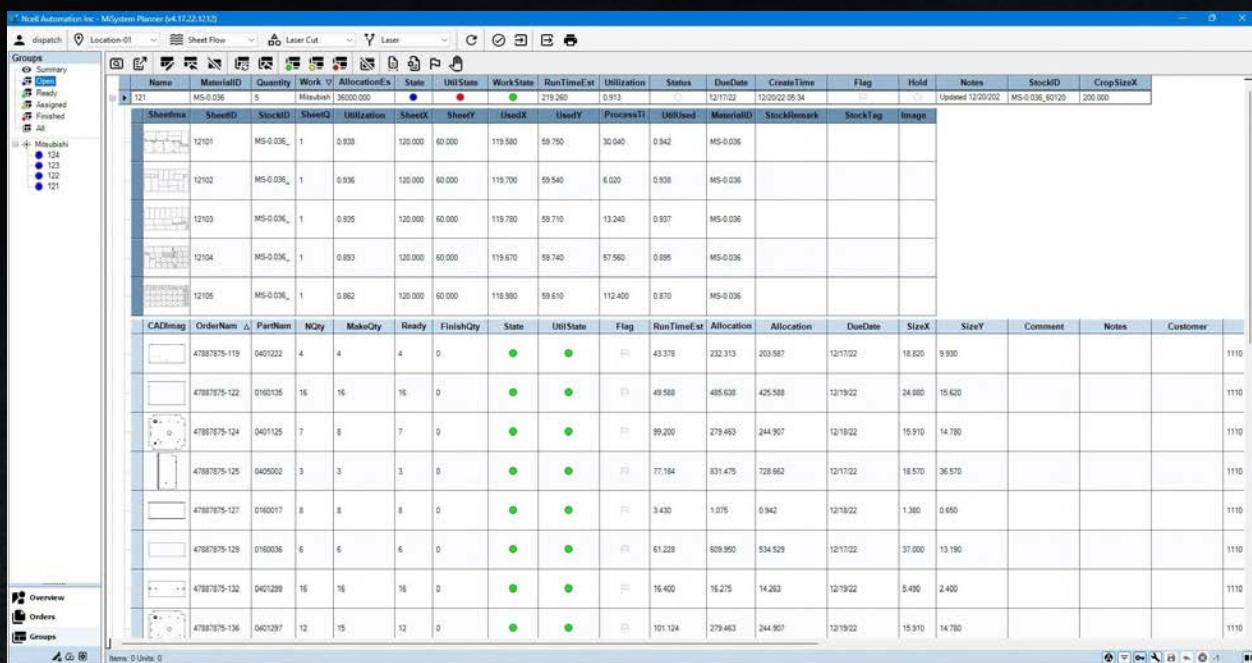
Overview:

Elevate your operational efficiency with DiamondFAB Elite, an enterprise-level order management system designed to connect your entire manufacturing operation seamlessly. This powerful solution integrates directly with your existing ERP/MRP system, providing real-time synchronization of critical data such as quantities, due dates, and revision updates.

Key Features:

- MiPlanner for work order management and scheduling
- Real-time ERP/MRP synchronization
- Multi-user access for order processing
- Optional Dynamic hot order management and CAD unfolding
- Advanced reporting for nest and part-level data

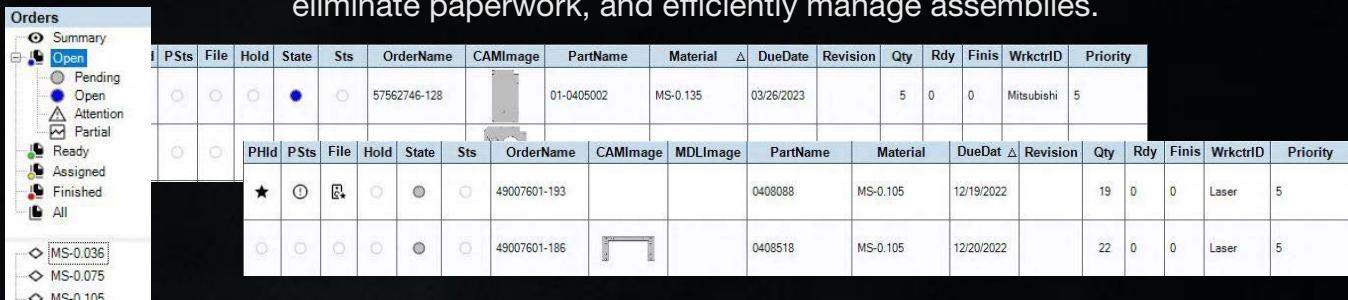
MiPlanner Interface is built on top of the Robust AccuFAB nesting engine. This multi user system enables your programmer to have more visibility over multiple processes. This easy to use software ties all of the individual pieces together in a comprehensive interface.



What's included:

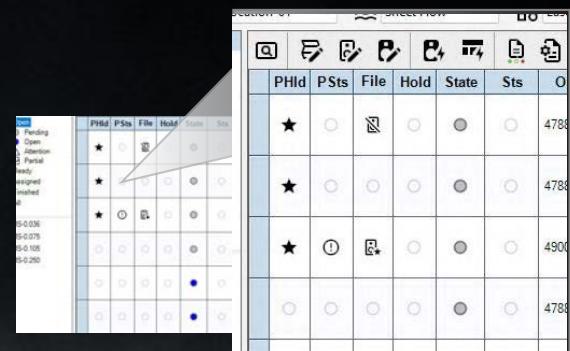
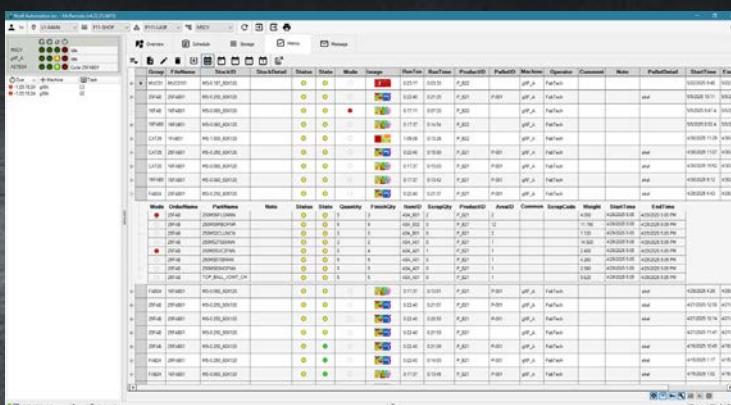
- MiPlanner Scheduler, Automatic ERP import and nesting manager
- Remote Management Tools
- Query Tools
- AccuFAB Nesting Engine
- Automatic Burnpath Creation
- Advanced Dynamic Nesting
- nGEN Nesting Algorithm
- ERP/MRP Work-order Importing
- High speed and zip cut
- CommonSense / SortSense
- McRemote-Five User License
- Network License
- Web Based and Onsite Training included

Streamlined Work Orders: Sort, search, and group jobs for optimized production. Benefit from due date color coding, eliminate paperwork, and efficiently manage assemblies.



PSts	File	Hold	State	Sts	OrderName	CAMImage	PartName	Material	DueDate	Revision	Qty	Rdy	Finis	WrkctrID	Priority		
PHid	PSts	File	Hold	State	Sts	OrderName	CAMImage	MDLImage	PartName	Material	DueDat	Revision	Qty	Rdy	Finis	WrkctrID	Priority
					57562746-128		01-0405002	MS-0.135	03/26/2023		5	0	0	Mitsubishi	5		
					49007601-193				0408088	MS-0.105	12/19/2022		19	0	0	Laser	5
					49007601-186				0408518	MS-0.105	12/20/2022		22	0	0	Laser	5

Integrated CAD Capabilities: Ensure model synchronization, manage revisions effectively, receive automatic tooling generation, and get notifications for NoCAD and new CAD files.



Seamless control over your laser cutting production with Remote Scheduler. This powerful tool directly interfaces with your Line Control automation system and your Mitsubishi laser, allowing you to effortlessly schedule and manage your nested sheets.

DiamondFAB Titanium

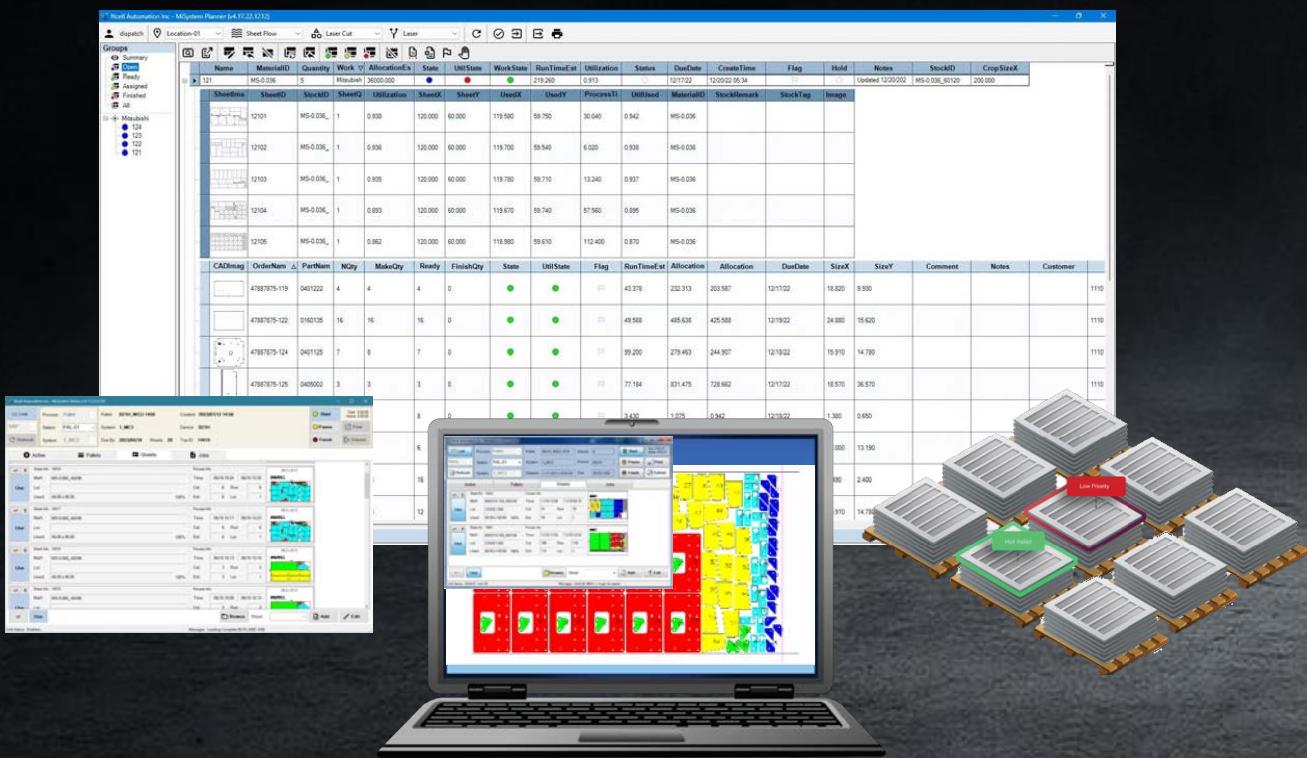
The Ultimate Integrated Smart Factory Solution.
Enterprise software with advanced shop floor control.

Overview:

Building upon the comprehensive enterprise-level order management capabilities of DiamondFAB Elite, DiamondFAB Titanium takes your entire operation to the next level by integrating the advanced MxSystem modules. This powerful package is designed to solve the challenges of increased cutting speed, ensuring that the efficiency gained at the laser is not lost in downstream sorting, breakout, and organization.

Key Features:

- MiPlanner Nesting manager and control
- MxPallet for pallet tracking and ID management
- MxStation for optimized breakout operations
- MxMRP for automated shop floor data collection
- Realtime visibility of part counts, cut times, and inventory
- Fully integrated with ERP/MRP and downstream processes



What's Included:

MiPlanner - Scheduler, automatic ERP import and nesting manager

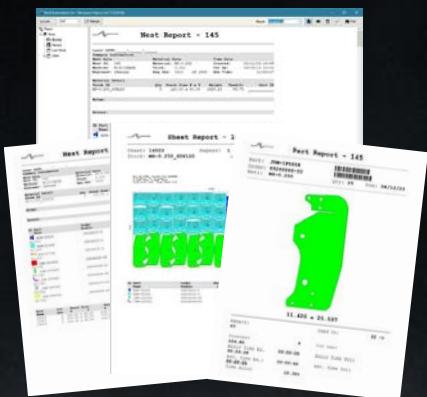
- ERP/MRP Work Order Importing
- Query Tools
- Remote Management Tools

MxSystem - Shop floor management, ERP import and export, automated workflow

- MxManager
- MxStation
- MxPallet
- MxMrp
- MxReport

AccuFAB Nesting Engine

- Automatic Burnpath Creation
- Advanced Dynamic Nesting
- nGEN Nesting Algorithm
- High speed and zip cut
- CommonSense / SortSense
- Network License
- McRemote-Five User License
- Web Based and Onsite Training included



Easily generate custom reports tailored to your shop's needs—automatically saved or printed with each job. Include critical data like part count, weight, cut time, material usage, and more to keep your team informed and operations running smoothly.

MxMRP automates shop floor data collection and delivers real-time updates to your ERP/MRP system. It enables accurate part-level job costing, tracks critical material details like heat treat and lot info, and supports ERP-driven BOMs to group kits and optimize sheet usage with non-production filler parts.



DiamondBEND

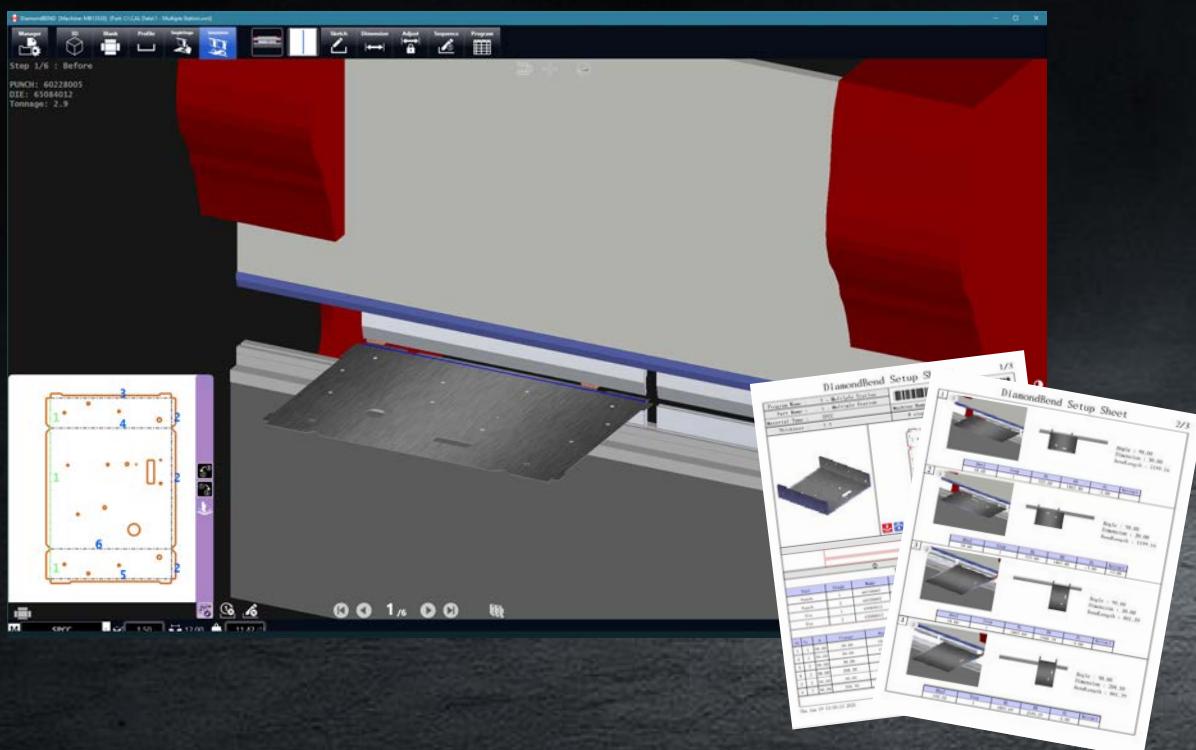
Offline Precision for Faster, Smarter Bending.
Comprehensive offline CAM for Murata press brakes.

Overview:

DiamondBEND, provides comprehensive offline Press Brake CAM capabilities, allowing you to program and fully simulate the bending process before parts are even laser cut and formed. This powerful software accurately tools, sequences, and manages your formed parts, significantly reducing scrap and improving throughput by enabling you to create the correct part the first time. Let DiamondBEND do the heavy lifting, ensuring your process maintains the highest manufacturing velocity.

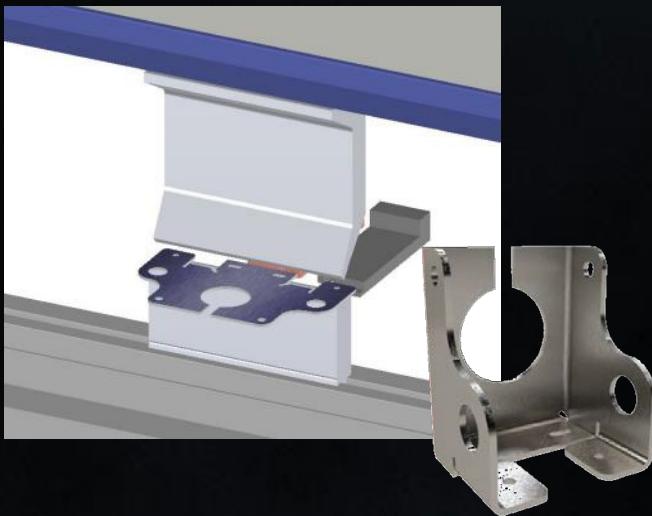
Key Features:

- 3D CAM programming with full bend simulation
- Automated unfolding of complex 3D parts
- Batch processing for multiple part files
- Collision and tonnage checking before production
- Tool libraries and custom tooling support with setup sheets



What's Included:

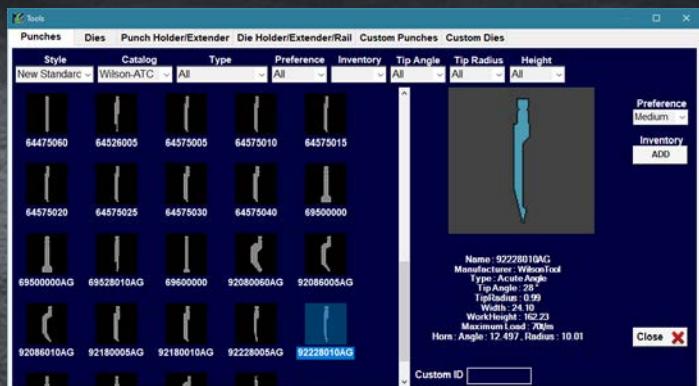
- 3D CAM Import
- Batch 3D Part Unfolding
- Bend Table and Tooling Libraries
- Auto and Manual Tooling Selection and Bend Sequence
- Custom Tooling and Bend Tables
- Full Collision and Tonnage Checking
- Interactive 3D Display
- Output 3D Interactive models and setup sheets
- Web Training included



Automatic Tool Selection and bend order sequencing based upon Tonnage, maximum angles, part requirements such as return flanges (requiring a Gooseneck). Attempt to find tooling by using catalog tools.

DiamondBEND automatically applies bend deduction corrections using built-in or custom bend tables. A guided sampling tool helps users gather precise data to improve part accuracy with ease.

Material Type		V Width												
SPCC		Show	Setup	BD Edit	Import BD	Add	Add BD							
Angle	90.0													
Thickness	0.157	0.236	0.276	0.315	0.394	0.472	0.551	0.63	0.709	0.787	0.865			
Gauge	4mm	6	7	8	10	12	14	16	18	20	22			
20	0.036	0.063	0.069	0.072	0.075	0.081	0.087	0.093	0.099	0.105	0.111			
18	0.048	0.079	0.082	0.085	0.091	0.097	0.103	0.109	0.115	0.121	0.127			
16	0.06	0.093	0.096	0.098	0.105	0.110	0.117	0.122	0.128	0.134	0.140			
14	0.075				0.124	0.130	0.135	0.141	0.147	0.153	0.159			
13	0.09				0.138	0.143	0.150	0.155	0.162	0.167	0.173			
12	0.105					0.157	0.168	0.174	0.180	0.186	0.192			
11	0.12						0.187	0.192	0.198	0.204	0.210			
10	0.135													
9	0.150													
7	0.179													



DiamondBEND comes preloaded with extensive tool catalogs, including; European, New Standard, and American Precision styles. Adding custom tools is simple with the import utility; just provide a DXF profile and tool data.

DiamondBEND Advanced Batch

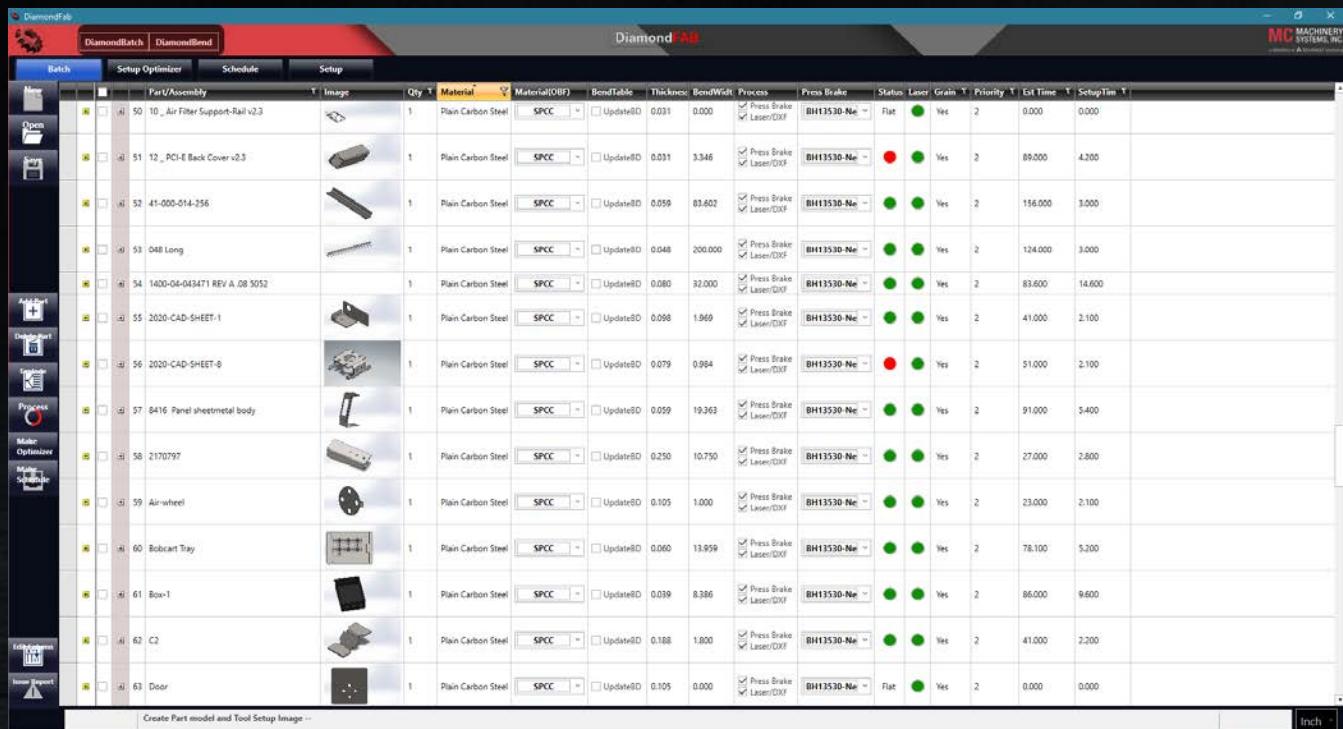
Faster, Smarter Bending.
3D CAM Programming and Batch Optimization
for Diamond Press Brakes

Overview:

DiamondBEND Advanced Batch delivers full offline CAM programming and simulation for press brake operations. Build bend sequences, simulate tooling, and detect issues, all before your parts reach the shop floor. Advanced Batch Processor is now a standard feature.

Key Features:

- Batch unfolding and processing of multiple 3D parts
- Full collision and tonnage checking with visual simulation
- Tool libraries with support for standard and custom tools
- Auto-scheduling and file export to Murata controllers
- Workflow optimization with batch sorting and job sequencing
- Advanced error flagging and auto-unfold for laser-ready files



Benefits of Advanced Batch:

Quickly process multiple 3D part files at once. Automate sequencing and save time on high-volume jobs with similar tooling setups.

Automated Unfolding

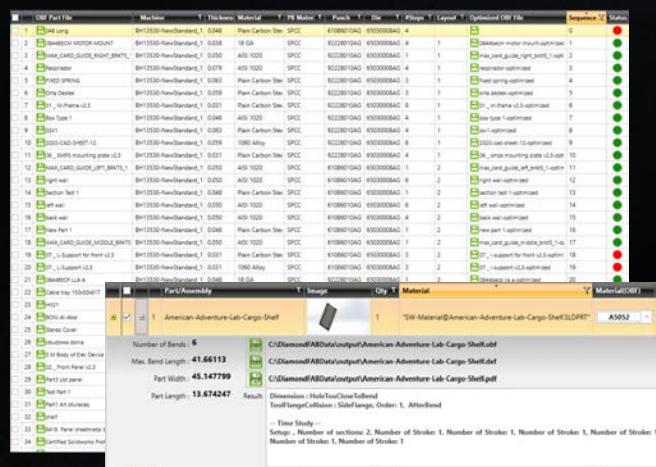
Unfolds complex 3D parts into flat patterns for laser cutting and bending—using SolidWorks or imported STEP files in the background.

Faster Workflows

Minimize manual steps and prep time. Boost throughput with efficient, hands-off part processing.

Seamless Integration

Runs as an extension of DiamondBEND with its own interface for smooth and independent batch operations.



Tool Optimizer

Accelerate production with automated tooling setups, job order optimization, and feature validation. Parts are automatically flattened for laser cutting, with a PDF setup sheet generated to ensure a smooth workflow from programming to production.

Scheduling

Automatically generates files for Murata controllers to set job schedules and load CAM data. Setup sheets are also created for offline machines and paperbased reference, keeping operators informed and production aligned.



DiamondFAB Advantage

A Complete CAM & ERP Integrated Software Suite For MC Machinery's Mitsubishi Lasers and Diamond Series Press Brakes

DiamondFAB is a scalable, integrated software ecosystem designed to grow with your business. From entry-level nesting to enterprise-wide production management and automation, DiamondFAB maximizes material utilization, reduces programming time, and streamlines every stage of fabrication.

Why DiamondFAB?

- **Seamless Integration -**
Built for Mitsubishi lasers and Murata press brakes.
- **Scalable Growth -**
Upgrade from basic nesting to ERP integrated enterprise solutions.
- **Efficiency at Every Level -**
Intelligent nesting algorithms and automated tooling.
- **Enterprise Connectivity -**
Realtime synchronization with ERP/MRP systems.
- **Automation Ready -**
Robotic sorting and offline press brake programming.