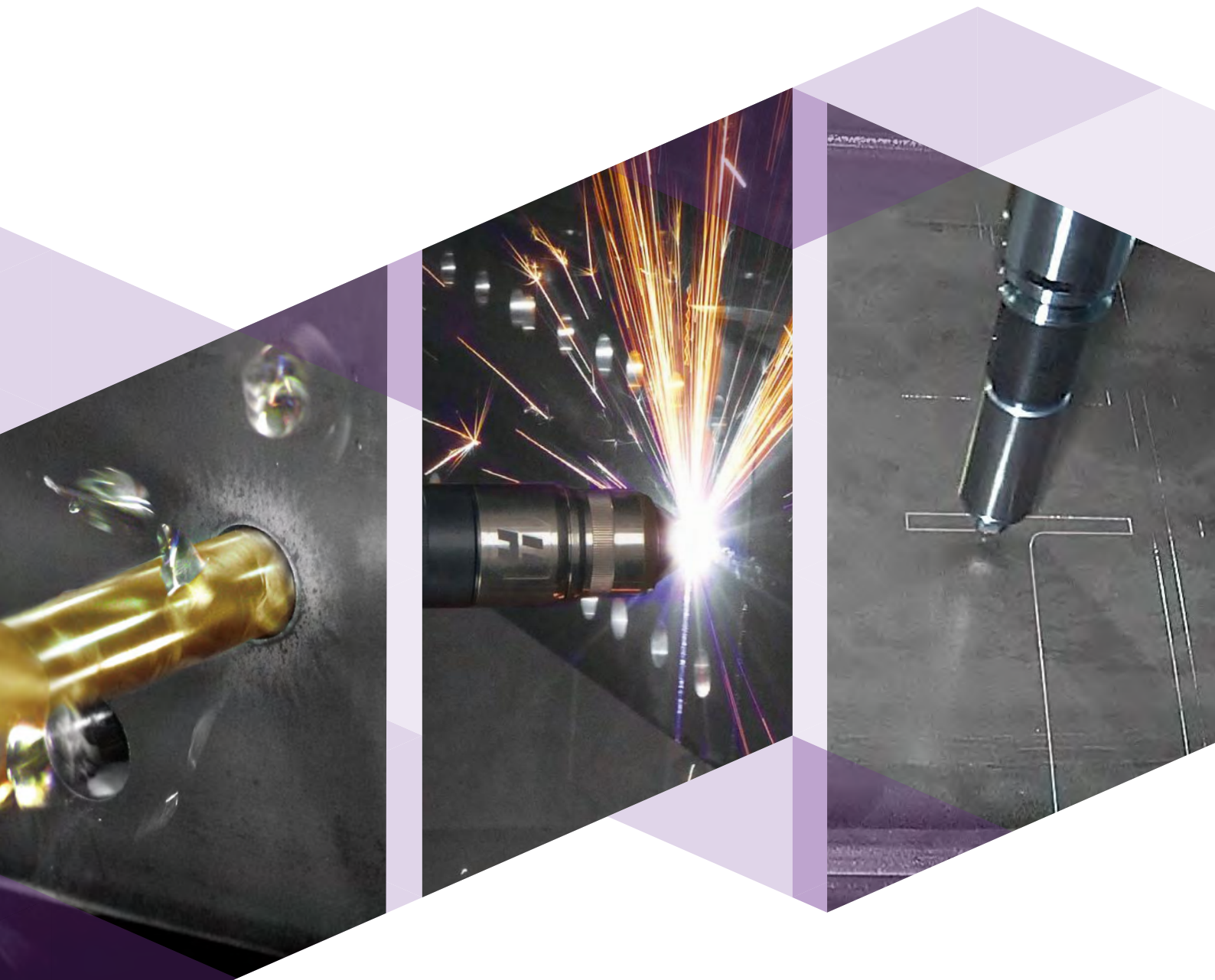


DRILLING COPING MACHINE

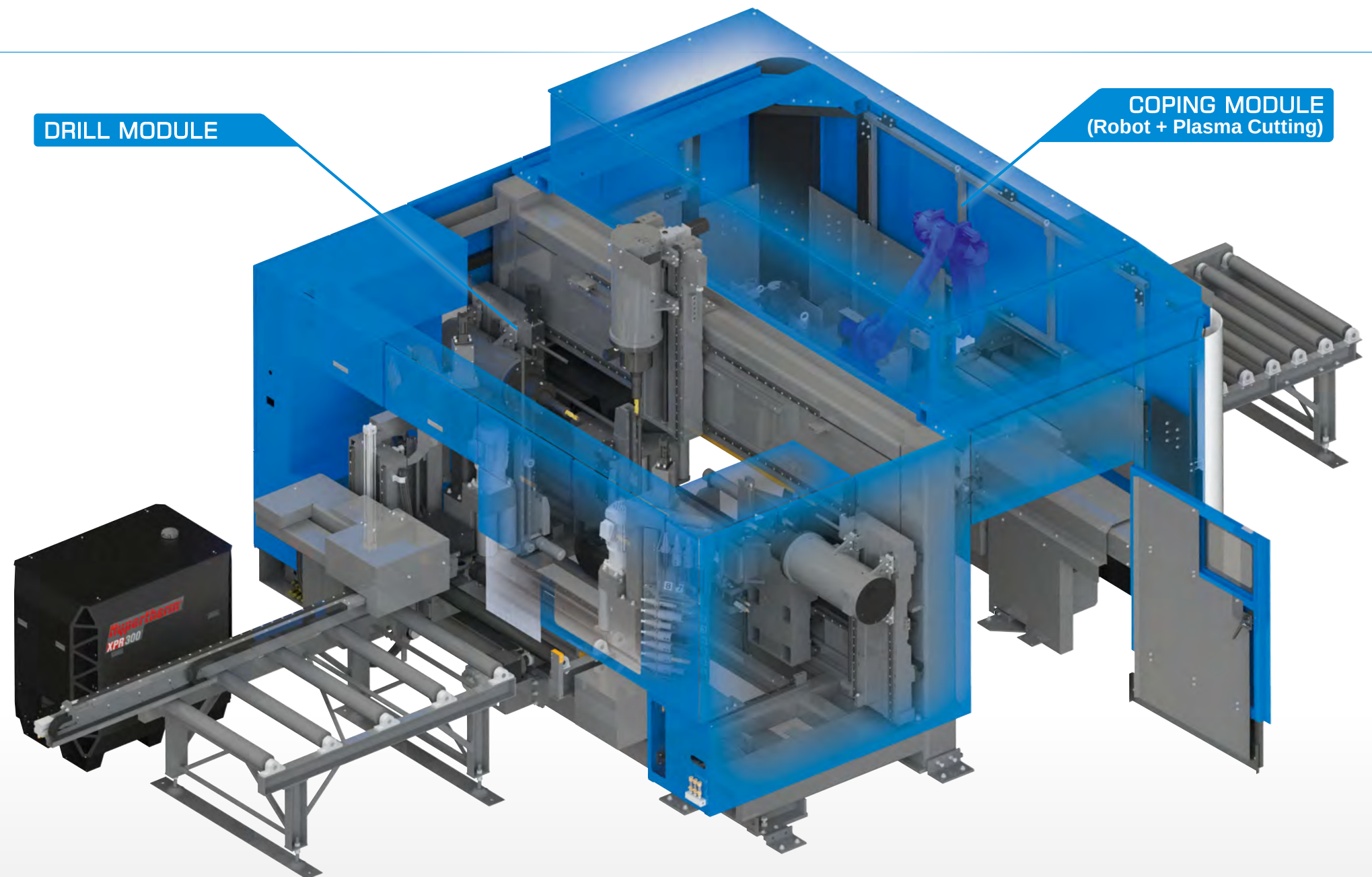
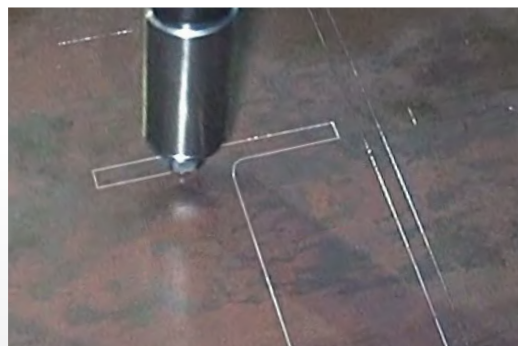
DCM1000



mm



DCM1000



Drilling Coping Marking
"MULTI-TASKING"

DCM1000
Promotion Video



DAITO's Drilling Coping machine DCM1000 is a multi-tasking machine combining a CNC Drill (with 3 spindles), a CNC Robotic Coper for standard or complicated plasma cuts, and a marking machine for part number marking and welding / layout marking. Each drill has an automatic tool changer to cover tapping, milling and countersinking with optional tools. With optional fixture and table, even a plate is applicable. The wide range of functions make the DCM the most versatile machine for non-repetitive structural steel processing. DAITO DCM, the machine of the future.

Variety of Processing



DCM1000 is available with variety of processes on structural workpiece combining drill / coping modules in a single machine.

DRILL MODULE

Auto Tool Changer (ATC) for each drill. The magazine stores Max. 8 tools for the top spindle; Max. 7 tools for left / right spindles and will hold a variety of tapping, milling, layout marking (scratching / scribing) and countersinking.

* Tools except drills are all optional.

COPING MODULE

The 6-axis-multi-joint robot can access wider range of workpiece and cope freely together with a horizontally moving base.

Together with optional fixture and table, even drilling and coping are available on a steel plate to make a special-shape part.

DRILL MODULE



Top / Left / Right Drill Spindles
+
Auto Tool Changer (ATC)
for each drill



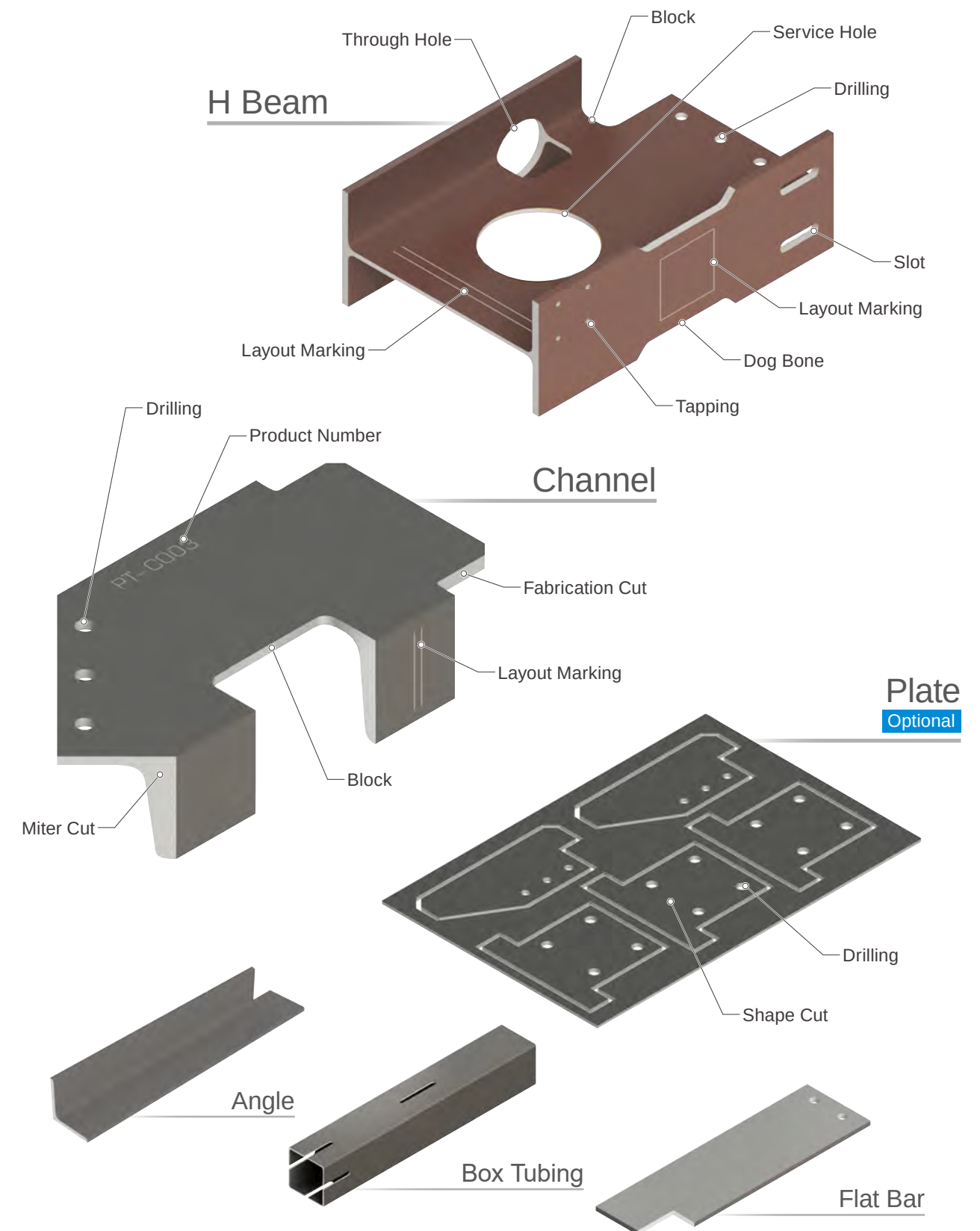
COPING MODULE



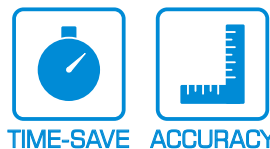
Robot + Plasma Cutting



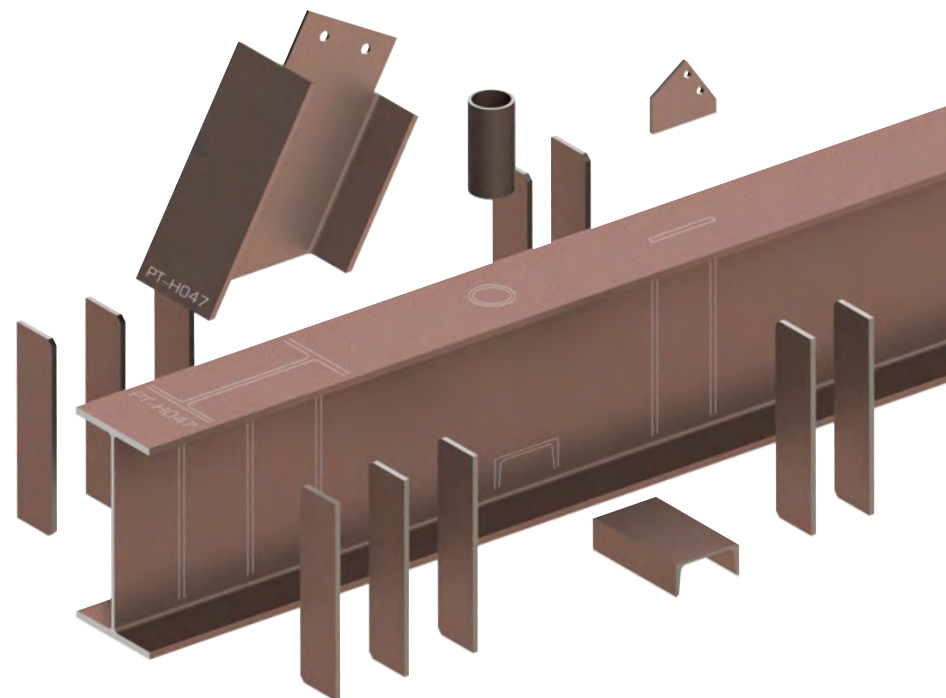
* Tools except drills are all optional.



Complete Part Processing - All in One Machine



Conventional structural steel processing automation includes substantial human manual operations especially marking for welding or work codes in spite of automated drilling. These human / manual operations are now automated by DCM1000 and already completely scribed / marked. All that's left to do is weld!



For the layout marking, either scratching or scribing or plasma marking is available.
* Each tool is optional.



SCRATCHING
Shallow engraving for small letters and thin lines. The fastest marking available, perfect for layout / welding lines.

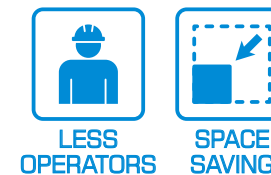


SCRIBING
Letters and lines are marked by a rotating tool.

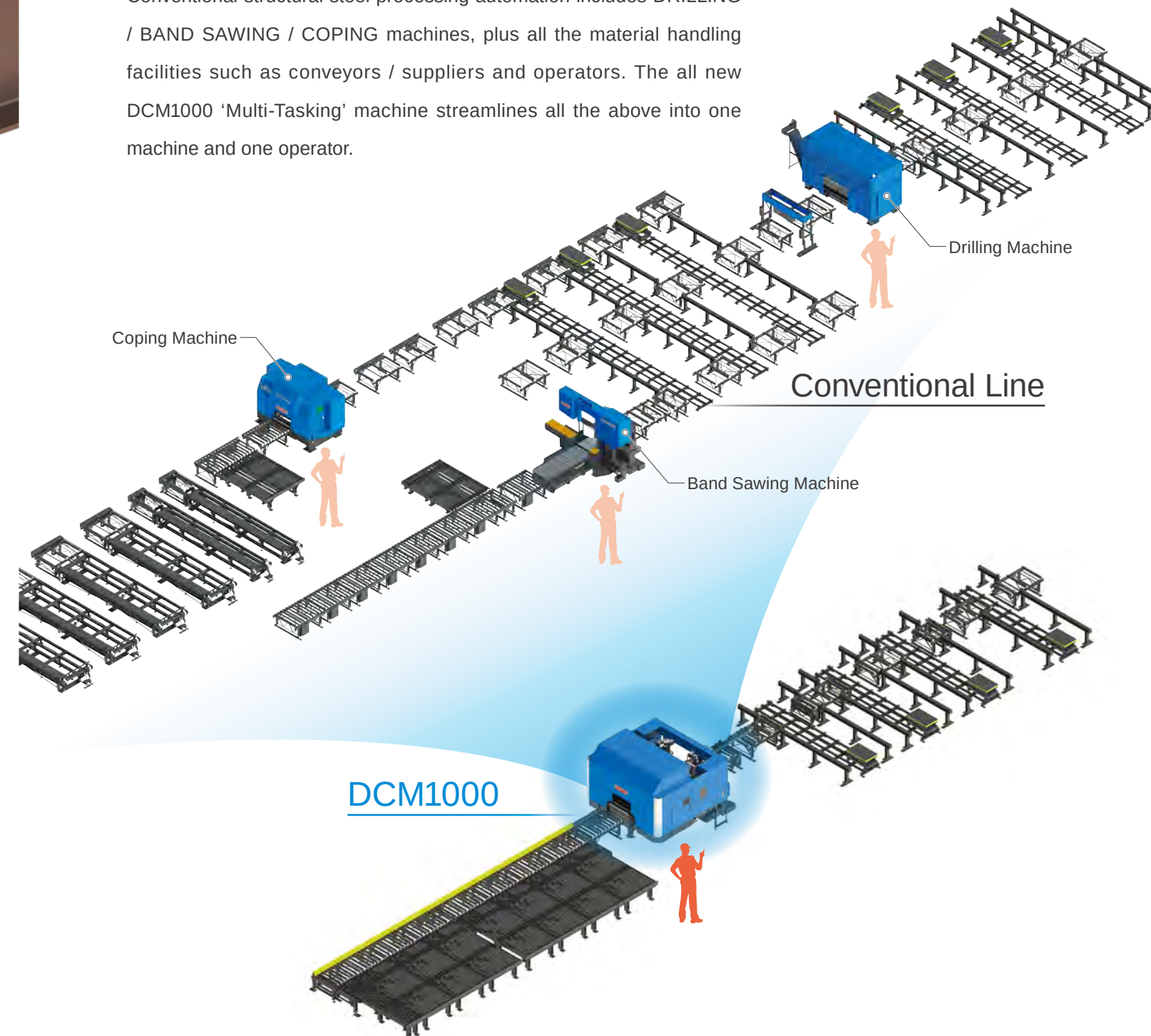


PLASMA MARKING
Letters and lines regulated automatically through the CNC and plasma system.

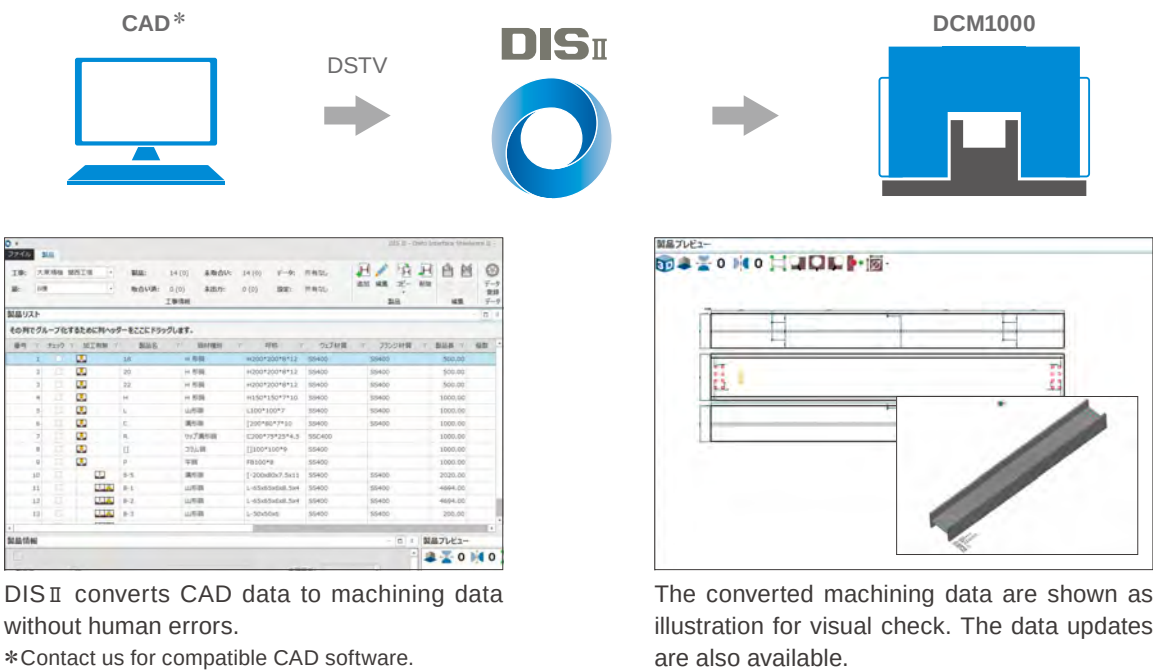
Reclaim Your Workshop



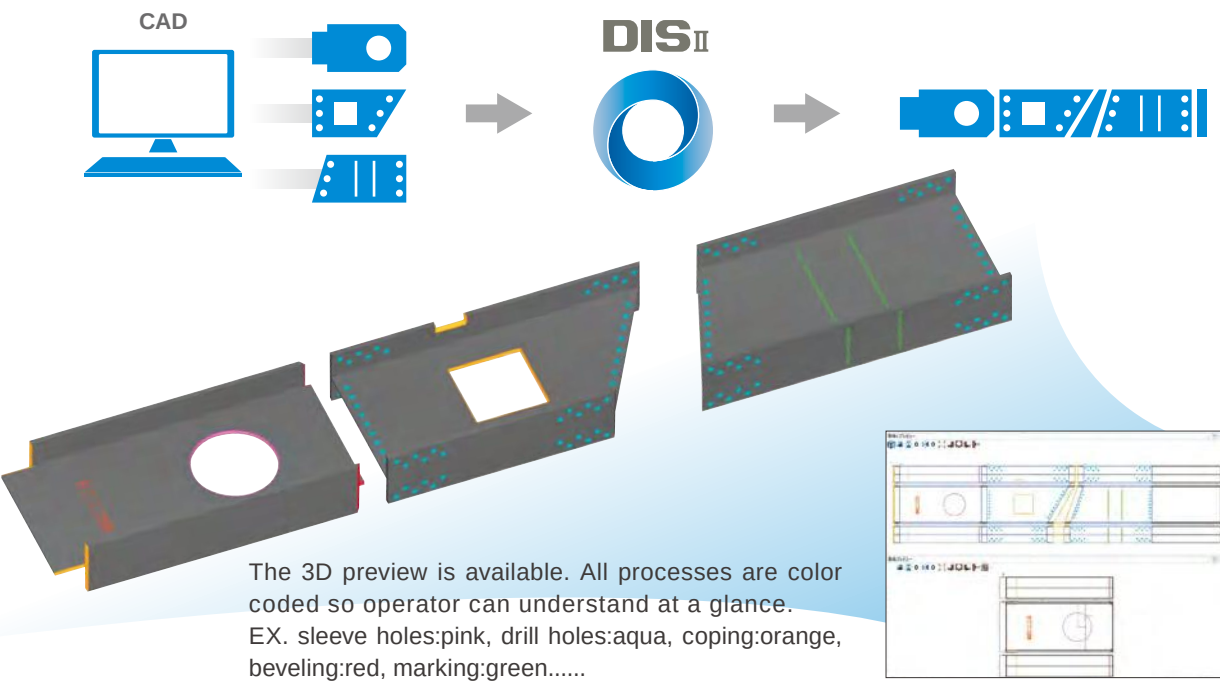
Conventional structural steel processing automation includes DRILLING / BAND SAWING / COPING machines, plus all the material handling facilities such as conveyors / suppliers and operators. The all new DCM1000 'Multi-Tasking' machine streamlines all the above into one machine and one operator.



Graphical Programming Interface

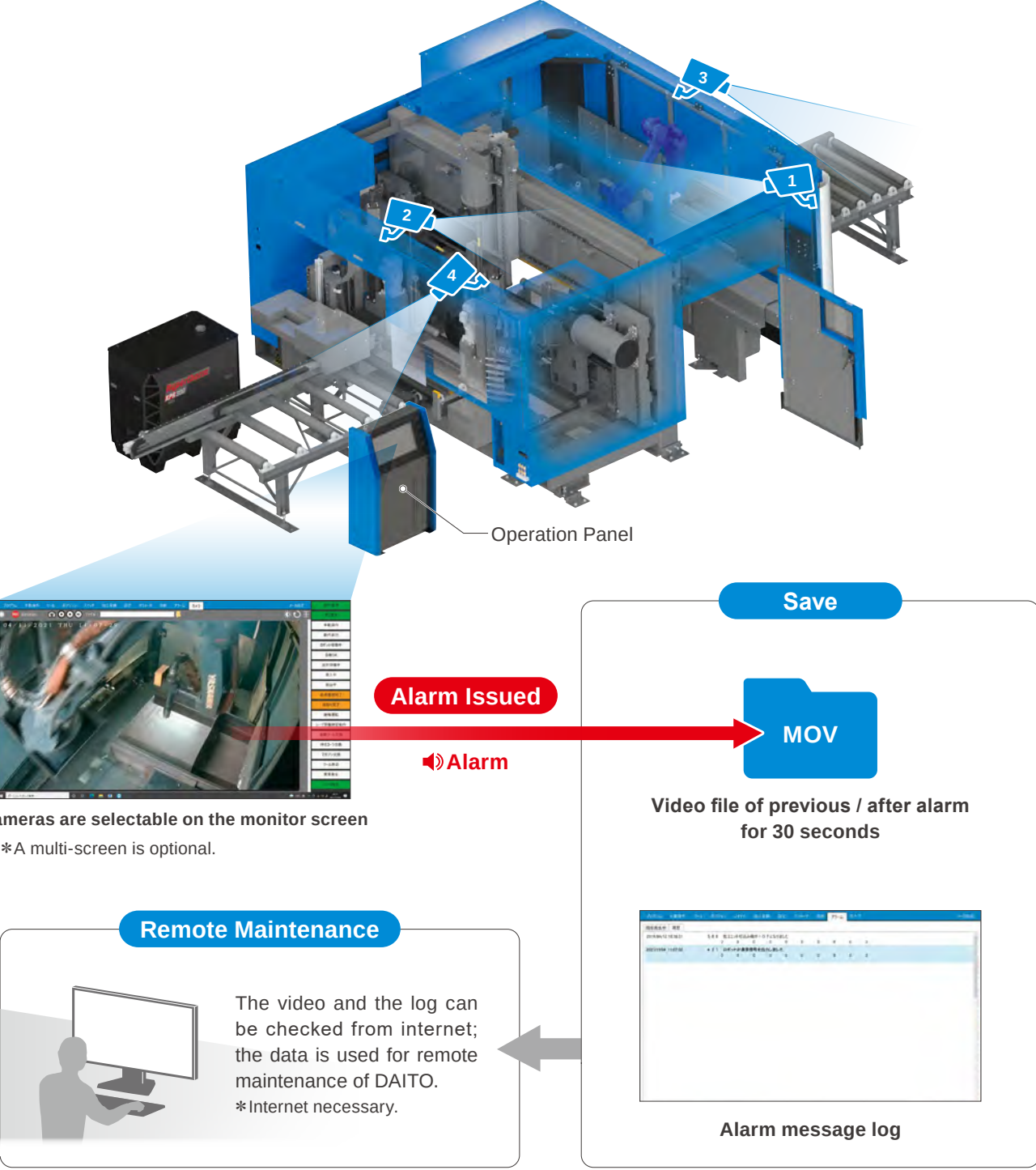


Automatic Nesting and Optimising



Remote Monitoring

Monitor cameras are installed both in drill and coping modules. The monitoring is available on operation panel screen. The monitor videos are saved continuously to play back previous / after alarm for 30 seconds.



Variety of Functions with Built-in Motors

DRILL MODULE



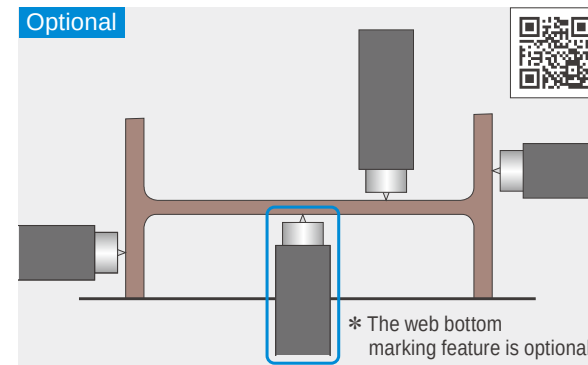
DIRECT DRIVE SPINDLES

3 spindles with direct drive built-in motor enables a quiet, accurate, powerful and stable drilling / milling condition.



6 VERTICAL CLAMPS ROLLERS

Six hydraulic vertical clamps securely hold down the workpiece to straighten slightly bowed beams and avoid upward deviation of the workpiece.



FOUR SIDES LAYOUT MARKING

With marking tools, the layout markings of product codes and welding positions are available including bottom web.



4 WORK FEED ROLLERS

Four work feed rollers are linked together so heavy workpieces can feed smoothly and accurately.



FLANGE HEIGHT GAUGE / SUPPORT

If a distorted workpiece causes overhangs in spite of being clamped vertically, the support measures the overhangs to compensate hole positions.



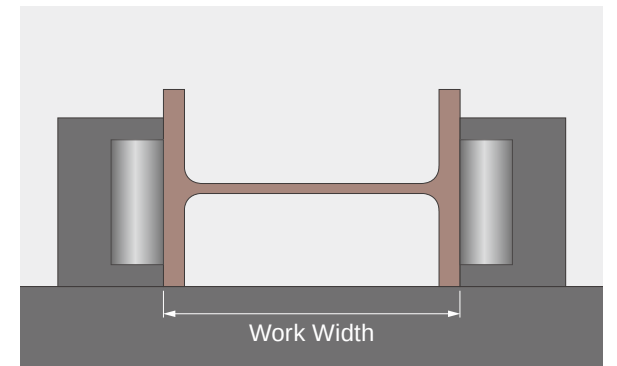
WEB HEIGHT GAUGE

The web height gauge check actual web height to allow automatic compensation for possible irregularities.



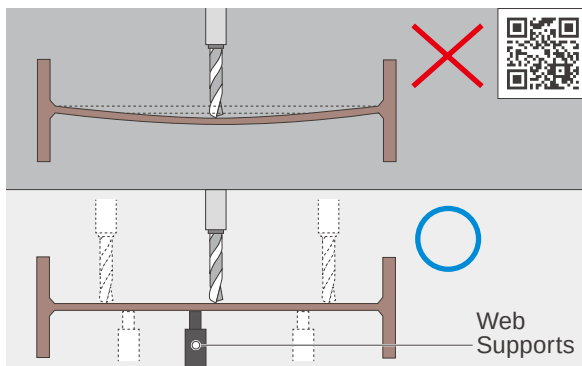
SLIDING SADDLE

The pinch rollers loaded saddle slides back and forth to follow up the work feed enabling very accurate positioning.



WORK WIDTH MEASUREMENT

The actual work width is measured and compared with the program data. If there is any mismatch the machine will stop and alert the operator.



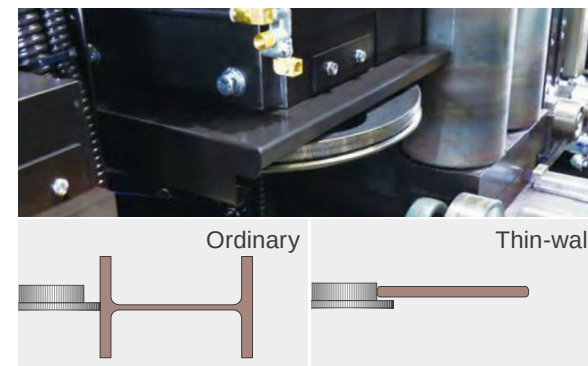
WEB SUPPORTS

Web supports prevent thinner webs from bending under the pressure of drilling. This feature reduces drill bit failure and improves hole quality.



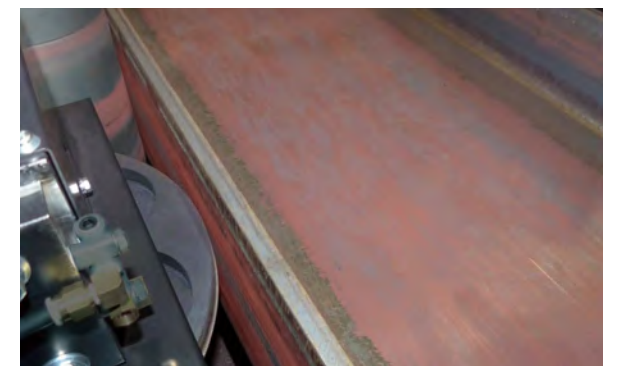
SUPPORT ROLLER FOR ANGLES / TEES

For angles and tees, the roller supports workpiece to make accurate hole position and longer tool life available.



MEASURING DISK

The work feed measurement is optimized by two types of disk contacts: one for ordinary work; the other for thin-wall work.



SLIP DETECTION

The sliding saddle work feed is measured by contacts of the measuring disk. If work slip is detected, a little slip is compensated by calculation; a large slip stops automated run with an alarm.

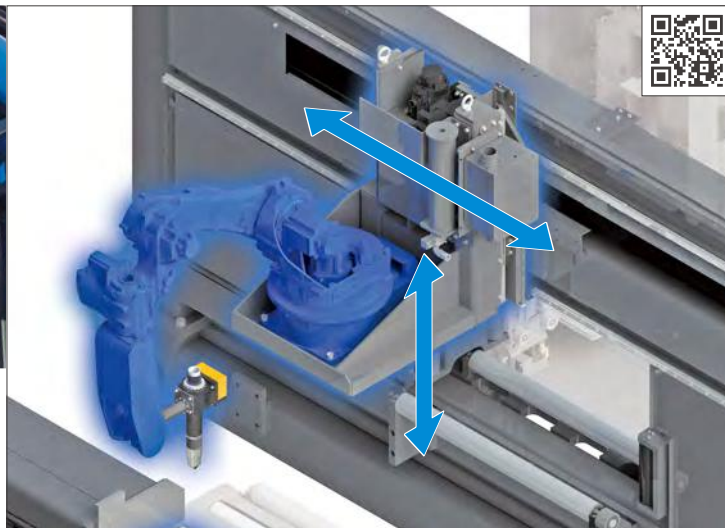
Variety Cuts by Coping Robot

COPING MODULE



8 AXES ROBOT CELL (6+2)

The latest 6 axes MOTOMAN robot, plus the 2 axes MOVING ROBOT BASE expands the plasma torch reach. This improves accuracy of the positioning by avoiding full stretch of robot arms.



LAST CUT FUNCTION

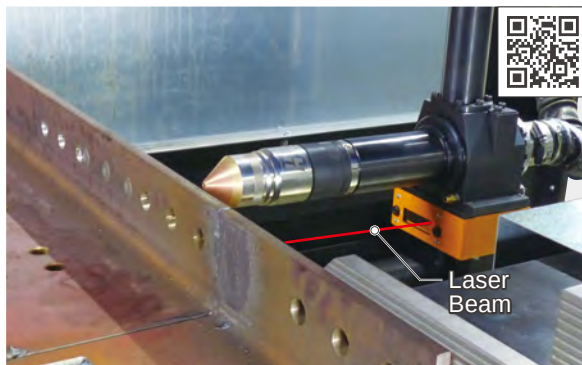
Ensures the workpiece can be accurately fed through the machine and the entire length can be processed with out waste.



UNDERSIDE CUTTING / MARKING

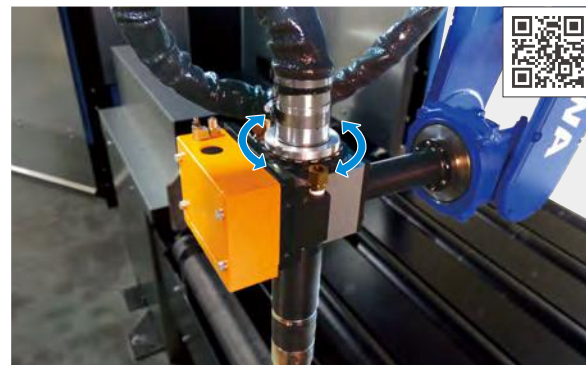
The robot torch can fully cut / mark all four sides, including the underside of a workpiece. Plus when cutting box tubing we only have 2 pierces, which saves tool life.

* The web bottom access range depends on the width of workpiece.



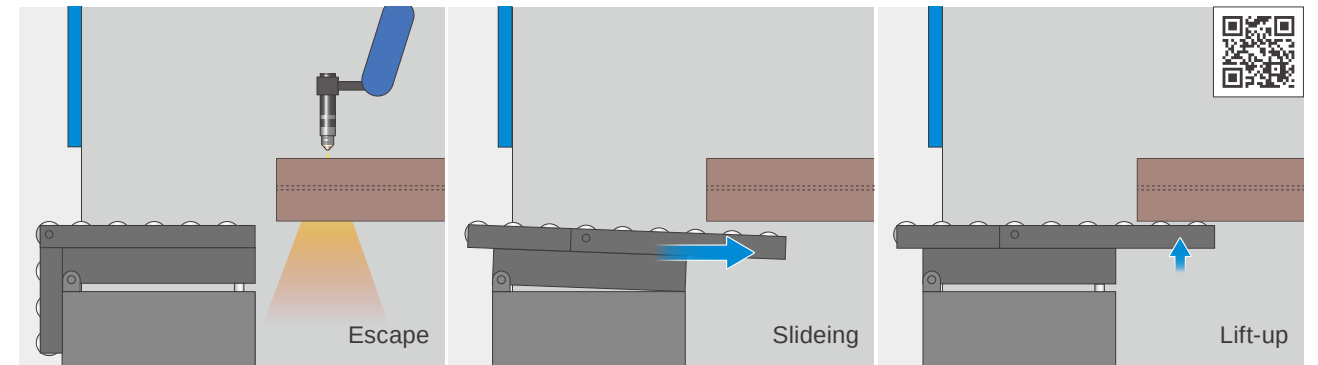
LASER MEASUREMENT

The work position is quickly detected by a laser sensor without contacting workpiece.



ROTATING TORCH

With wear resisting bearings, the DAITO rotating torch base solved the problem of cable twists and damage against the robot arm.



SLIDING / LIFT-UP ROLLER TABLE

The powered roller table goes out of machine escaping dross for cutting; comes back inside to lift up even deformed workpiece for work feeding.



TWO POINTS AIR PURGE

The air from the torch base blows off drill chips, debris and dusts to avoid possible measurement errors.



OPEN-CLOSE SENSOR GUARD

The sensor of work size measurement is covered by an open-close guard. When closed, compressed air is inside to avoid dust from sensors when opened.



REPLACEABLE PROTECTION

The design engineers have made it simple remove and replace without needing experience.

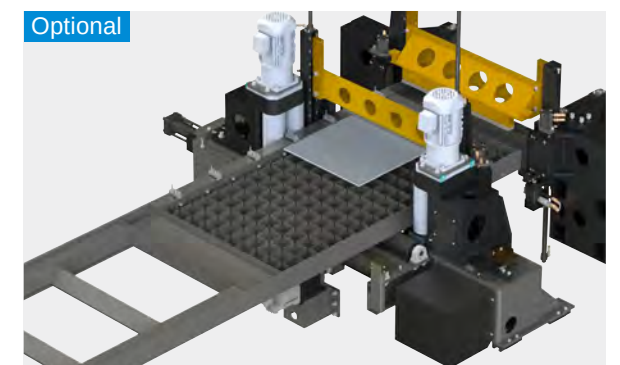


PLATE PROCESSING

Using Optional fixture and table, a plate can be drilled and cut freely.

* For details, contact DAITO.

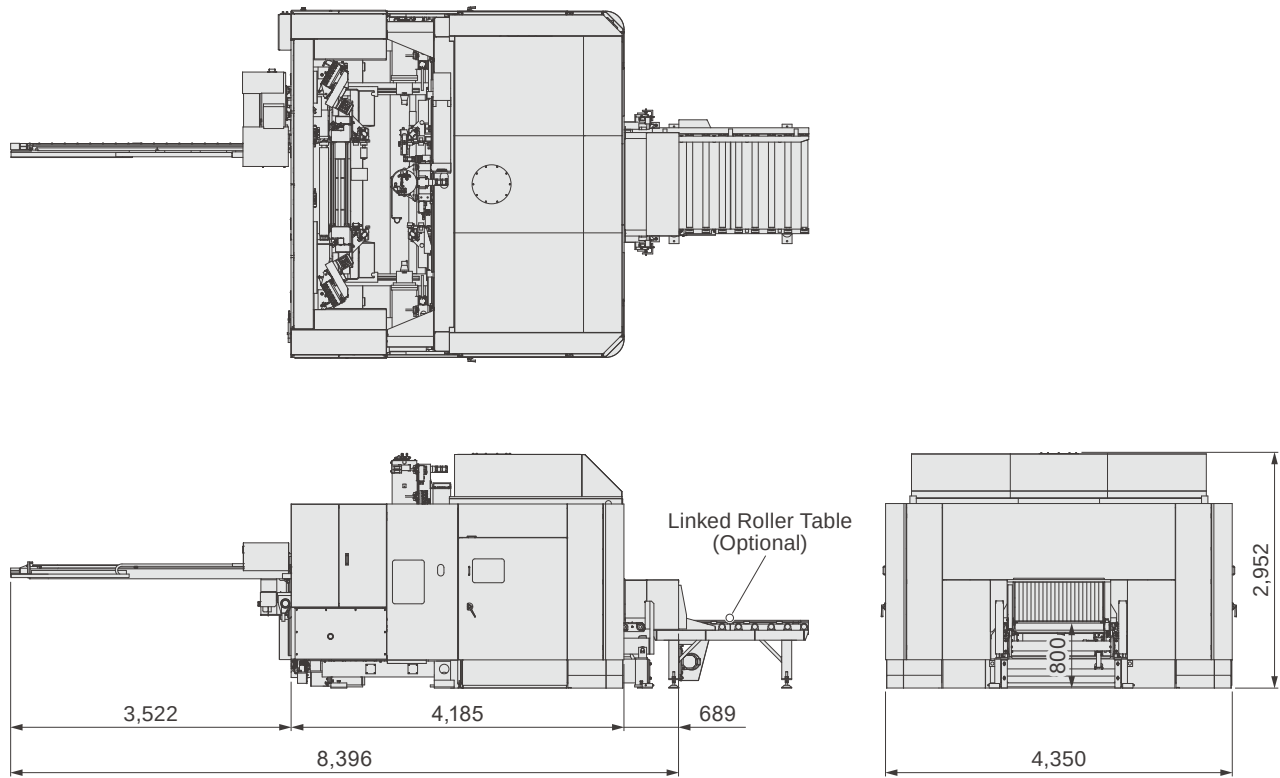
Optional

■ Specifications

		DCM1000	
Work *1 (mm)	Capacity		Min. 100 × 50 Max. 1,025 × 500
			Min. 75 × 75 Max. 600 × 190
			Min. 75 × 50 Max. 250 × 250
			Min. 75 × 40 Max. 380 × 100
			Min. 75 × 50 Max. 250 × 400
			Min. 75 × 45 Max. 500 × 350
			Min. 75 Max. 400
	Thickness	3.2 - 50 (Box Tubing : 2.3, Flat Bar : 9.0)	
Drill Spindle	Axis	3 Axes Top / Left / Right	
	Spindle rpm	3,000rpm (Eco-drive) / Max. 5,000rpm	
No. of Drills in ATC (Each Unit)		Top 8 / Left, Right 7	
Min. Work Length	Auto Cycle	2,050mm (1,000mm Without Coping)	
Main Work Feeder	Feeding System	Pinch Roller	
	Feeding Speed	Max. 50m/min	
	Max. Indexible Weight	8,000kg	
	Measure	Measuring Disk	
Motor Output	Spindle	8.5kW × 3 (Direct Drive Spindle)	
	Plasma	70.0kW	
	Robot	2.0kW	
	Spindle Temperature Regulator	4.3kW	
	Hydraulic	5.5kW	
	Others	16.5kW	
	Total	123.8kW	
Power Consumption		250A (AC200V)	
Machine Weight		14,000kg	

* 1 For the details of specific workpiece application, contact DAITO.
* The dust collector is not included.

■ Overall Dimensions (mm)



Specifications/outlook are subject to change without notice.



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DAITO SEIKI Web Site



YouTube channel "DAITOSEIKI-en"

Contains various product movies
and company profiles. Please check.

