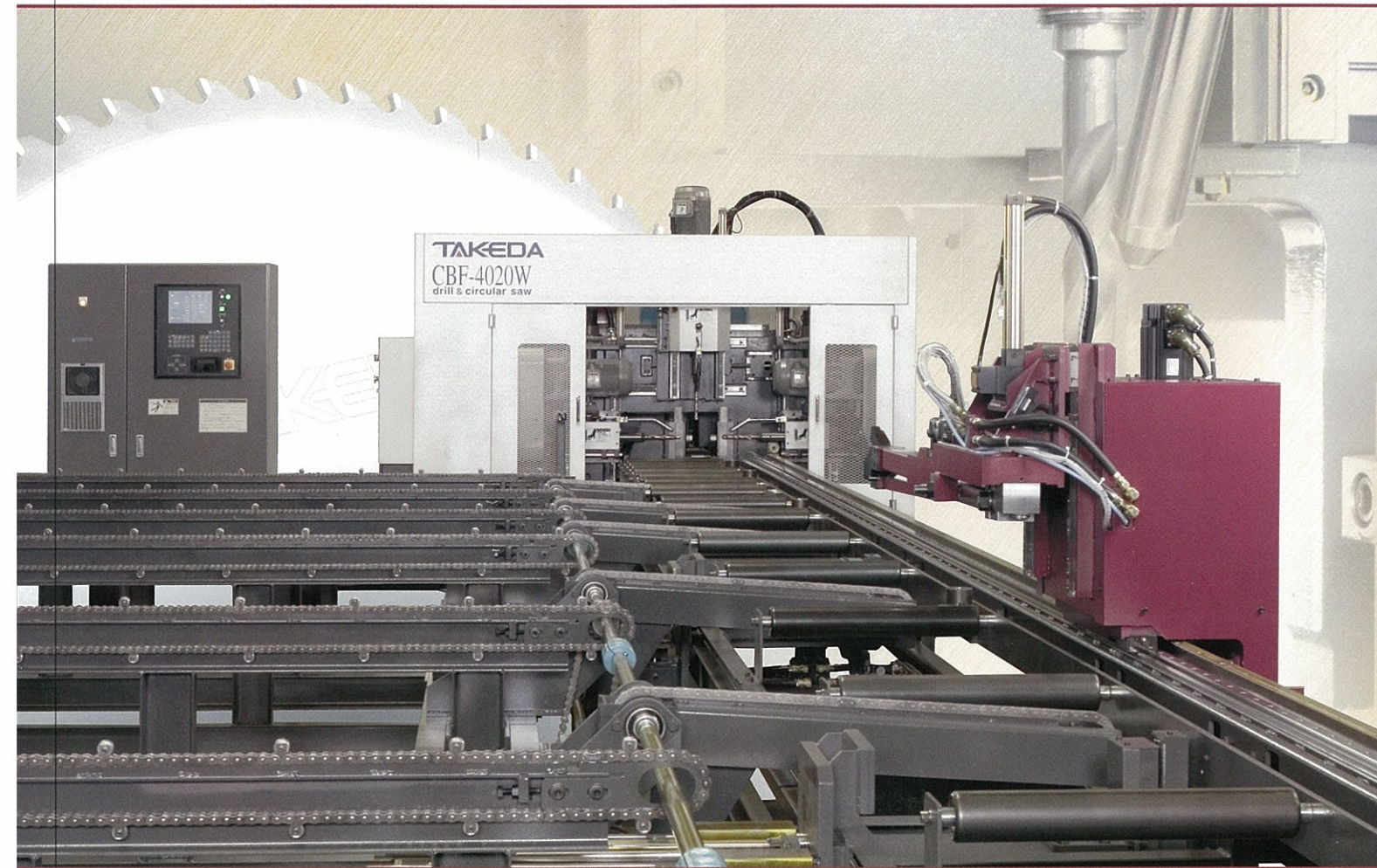


CBF-4020W

Combination Drilling and Circular Sawing Machine

Long workpieces measuring up to 400 mm wide × 200 mm high × 12 m long are automatically fed, drilled, and cut at high speed and with high precision.



■ Machinable range

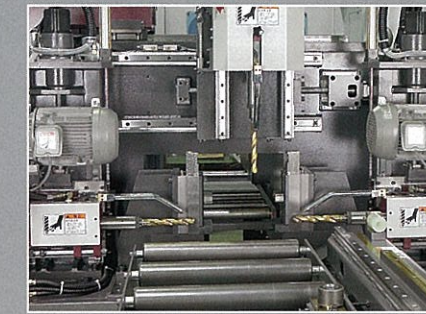
Angular pipe	Angle bar	Channel steel	H-shaped steel
□50~200	L50×50 ~200×200	C75×40 ~380×100	H100×50 ~400×200

Upper lateral-slide and down-cut mechanism



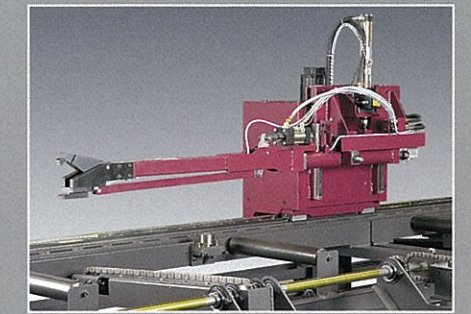
The upper lateral-slide and down-cut mechanism is best suited for cutting 400 mm-wide H-shaped steel. Capable of handling 50-mm-square angular pipe to 400-mm-wide H-shaped sections, this unique cutting system meets the need for a wider range of machining applications for a variety of materials.

Simultaneous 3-axis drilling (with marking function)



You can use a machining program to operate two or three drills simultaneously on the three available drill axes. This approach can be used to drill holes in the shortest possible time. When used on workpieces of angular pipe, it can drill vertical holes in two opposing faces. This machine is also capable of marking.

High-precision auto-sizing device



The auto-sizing device measures the length of a workpiece and feeds and positions the workpiece in the correct machining position. The automatic hydraulic gripper grips the trailing end of the workpiece, measures the length, verifies the measurement, and feeds the workpiece with higher precision. The auto-sizing device also incorporates a unique feature: it can accommodate a warped workpiece.

USB Flash Memory

USB Flash Memory is available for the data backup.



Replenishment of clean mist

The conveniently located refill port makes it easy to replenish clean mist — simply remove the cap and fill with Takeda's genuine clean misting liquid.



Features

Reduction in total machining time

The automatic sizing device helps reduce processing time by accurately positioning the material. At the same time, the gripper used for feeding the material is retracted automatically. These innovations have improved the way in which the workpieces are loaded, machined, and unloaded in continuous machining operations. The result is a dramatic reduction in total machining time.

High-speed, high-precision cutting

The cutting section adopts a lateral-slide (from the upper side-face) and down-cut mechanism. With this arrangement, the high-speed circular saw can cut H-shaped steel with higher precision while eliminating large bowed cuts or skewed cuts.

Takeda's unique carbide-tipped circular saw

High-speed and high-precision cutting operations require a tough saw blade. We have developed a unique carbide-tipped circular saw that cuts cleanly and produces almost no burrs. What's more, this saw blade can be changed quickly and easily.

Accommodates a wide range of shaped-steel materials.

The machine is capable of drilling and cutting various shaped-steel materials including H-shaped steel, angle bar, channel, and thick-walled angular pipe. Because this machine can handle workpieces of many sizes and types, it helps to conserve space in a production plant.

Significantly reduces wetting of workpieces during machining.

This machine's semi-dry cutting system generates eco-friendly clean mist that minimizes wetting of the workpiece. As a result, a time needed for drying the workpiece is minimized and the workpiece can be transferred to the downstream process with little delay.

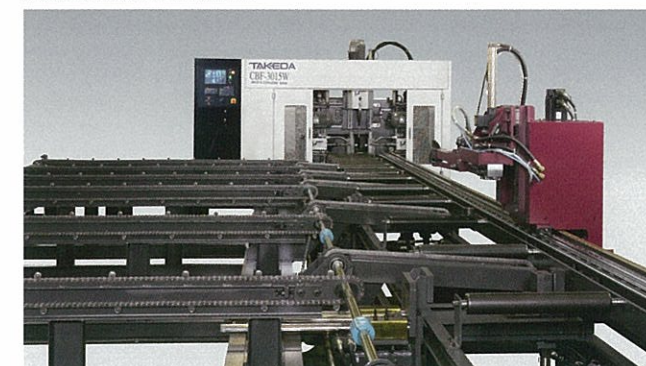
Extending the service life of the circular saw

The adoption of a lateral-slide (from the upper side-face) and down-cut mechanism — as well as a cemented carbide pad to dampen cutting vibrations — help reduce saw blade wear. These innovations reduce operating costs by greatly extending the service life of the circular saw.

Optional equipment

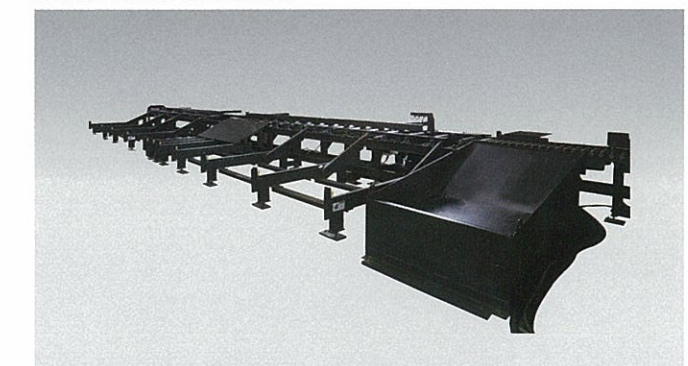
Shown with optional automatic loader

Automatic loader

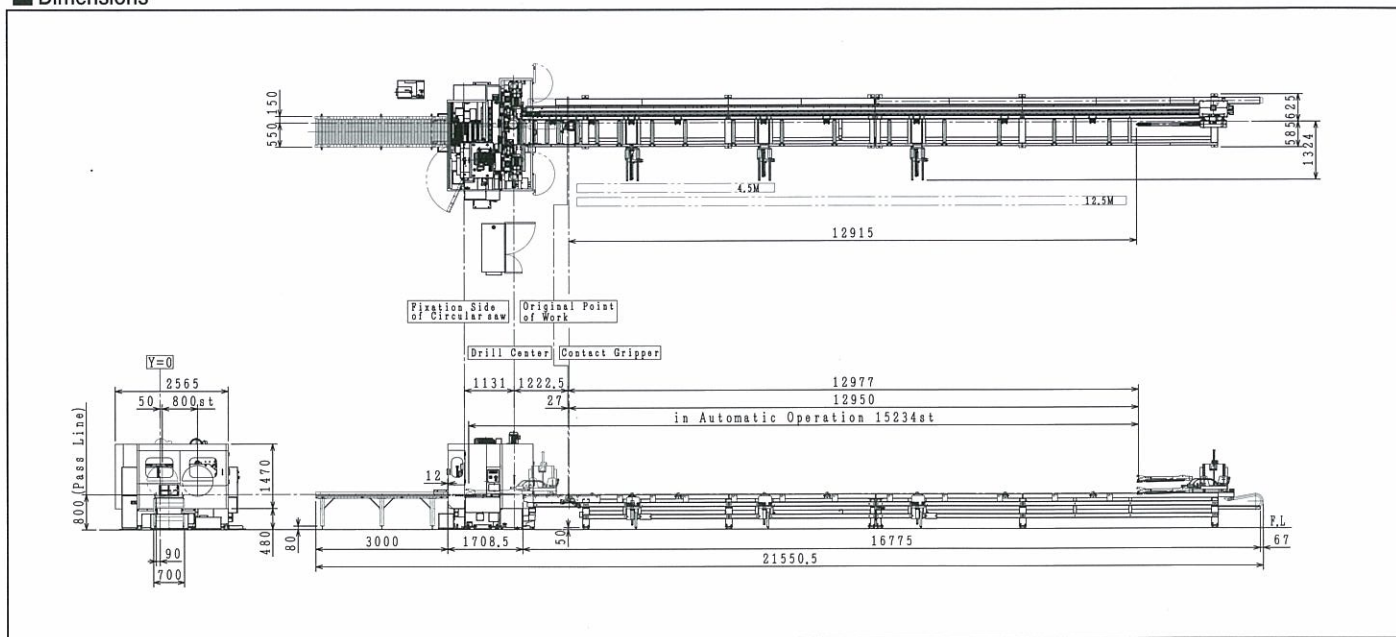


When placed on the chain conveyor, a very long workpiece (12 m long, for example) is automatically positioned on the sizing device. We offer two standard types of automatic loaders. We can also provide a custom-built automatic loader upon request.

Automatic unloader



Workpieces are delivered automatically, grouped by length, according to the machining program. Workpieces are delivered in three groups — short workpieces up to 1 m, medium-length workpieces from 1 to 6 m, and long workpieces from 6 to 12 m. This arrangement improves the efficiency of the downstream process.



■ Mechanical Specifications

Item		Specifications		
Work	Automatic Cutting Area	Square Pipe	□ 50 ~ □ 200	
		Angle Bar	└ 50x50 ~ └ 200x200	
		Channel Steel	┌ 75x40 ~ ┌ 380x100	
		H-Beam	H 100x50 ~ H 400x200	
Maximum Mass		900kg		
Maximum Length		12,500mm		
Minimum Length		4,500mm		
Steel Type		Equivalent to Steel for General Structure		
Sizing Gripper	Drive System		Rack&Pinion	
	Driving Motor Capacity		1.5kW AC Servomotor	
	Speed Reduction Ratio		Reduction 1/20	
	Valid Stroke		15,234mm	
	Feed Speed for Positioning		30m/min	
	Minimum Positioning Increment		0.1mm	
Drilling	Number of axes		Three axes	
	Spindle Nose		Adjustable Adapter (MT#3)	
	Drill Diameter		9 ~ 28mm	
	Speed Switch-over	Thickness 4mm and above	Less than φ 14	Deceleration before stopper by inputting the drill length
			φ 14 and above	Select of automatic deceleration by pressure switch or deceleration before stopper by inputting the drill length
		Thickness less than 4mm	Deceleration before stopper by inputting the drill length	
	Drill Motor Capacity		2.2kW Each(Speed Reduction 1/5)	
	Y-axis(Horizontal axis) Motor Capacity		0.4kW AC Servomotor	
	Z-axis(Vertical axis) Motor Capacity		0.4kW AC Servomotor Each	
	Stroke	Y-axis Left&Right	20 ~ 380mm	
		Z-axis Up&Down	10 ~ 190mm	
	Vise Force	Vertical Vise	2kN(200kgf) *Decompression depending on work	
Vise Clamp		*It's necessary to adjust the position of the vise clamp depending on the height of work. Note1).		
Horizontal Vise		10kN(1,000kgf) *Decompression depending on work		
Drilling Conditions	Drill Circumferential Velocity		20m/min	
	Feed		0~0.4mm/rev *Manual Stepless Regulation by Flow Control Valve	
	Running Speed		200 ~ 650rpm *No Steps Controlled by Inverter	
Coolant		Clean Mist(3L)		
Cutting	Circular Saw		Carbide Tipped *Max. Diameter φ700	
	Cutting Conditions	Running speed	50 ~ 250rpm *No Steps Controlled by Inverter	
		Circumferential velocity	100 ~ 510m/min	
		Feed	5 ~ 20mm/sec *Manual Stepless Regulation by Flow Control Valve	
	Motor Capacity for Circular Saw		15kW	
	Vise Force	Vertical Vise	4.4kN(440kgf) *Decompression depending on work	
		Horizontal Vise	4.4kN(440kgf) *Decompression depending on work	
	Valid Stroke of Moving Axis for Circular Saw		650mm	
Coolant		Clean Mist(3 Liter)		
Others	Air Pressure		Over and equal to 0.6MPa(6kgf/cm ²)	

Note1) 0<H<75 Lower Position, 75 ≤ H<145 Center Position, 145 ≤ H<200 Upper Position

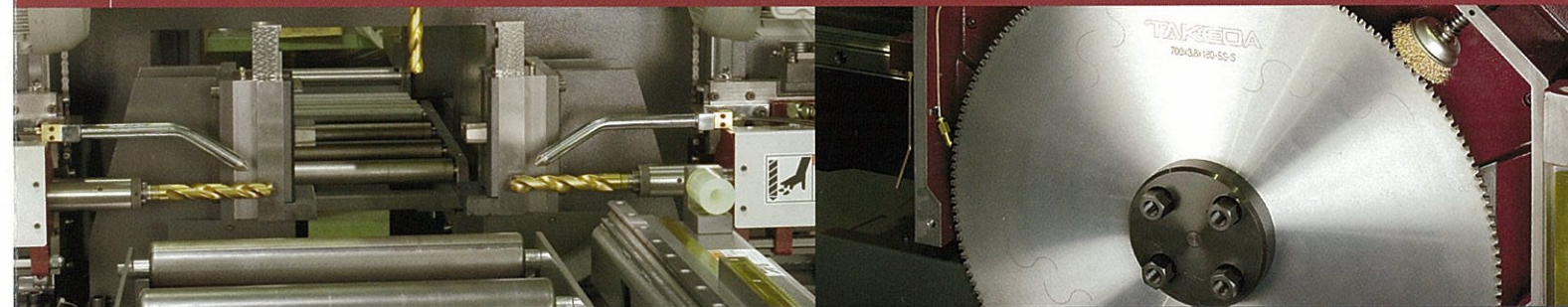
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Photos of the machine in this catalog can be partly different from the delivered machine itself. Ions are subject to change without any notice.

Combination Drilling and Cutting Machines



CBF-4020W Combination Drilling and Circular Sawing Machine