



Electric Shear Wrench



Remolift



Dnatype CNC Drilling Machine



Magnetic Drilling Machine



Drill Grinder



Pipe Notcher



DNCtype CNC plate Drilling Machine



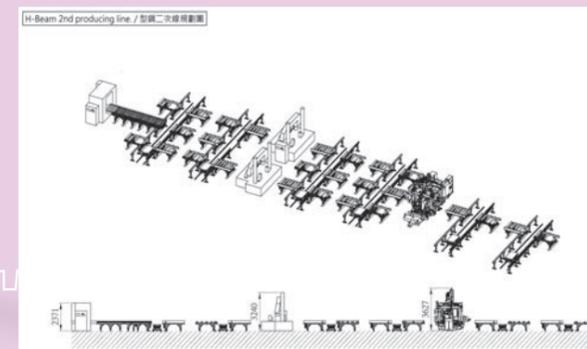
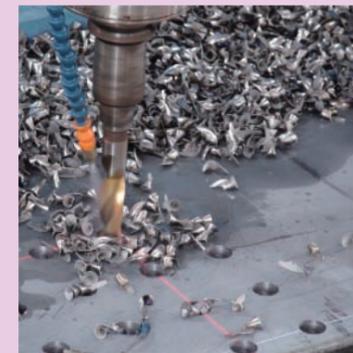
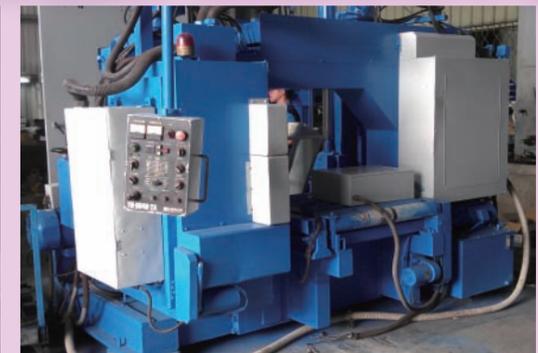
BK-30 plate Bevelling Machine



AGP type CNC plate Drilling Machine



BEAM PROCESSING LINE



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Our products have many patents in domestic and foreign

2017



SIGA



Our company was established in 1990. We focus on technology of bolt connection on steel structure and related equipment research, development, and sales over 20 years. We are here have spirit "Honor, Trust, and Service" to grow together with domestic and foreign steel structure industry. Thanks to Trinkle's customers so many years of support and care, let Trinkle become to the most authoritative supplier in technology of bolt connecting and related equipments in steel structure industry in Taiwan.

We are now have " Steel hardware", "steel structure Processing machines " and "used machine" three business.

(1)Steel hardware

Own Brand: tfi magnetic drilling machine, Remoleft, Drill bit re-sharpening machine, Pipe Notcher, core drill, SIGA power shear wrench.

Agent Brand: BDS, Germany - magnetic drilling machine, and core drill
Jancy, USA - magnetic drilling machine, and core drill
MIYANAGA, Japan - core drill
Riken, Japan - drill bit
Su's, Taiwan - drill bit
PROMOTECH, Poland - portable beveling machine

(2)Steel structure Processing machines

Own brand : CNC H-Beam drilling machine
Plate drilling machine
Steel bridge drilling machine
Plate beveling machine
Drill bit re-sharpening machine
Pipe Notcher

(3)Used machines

Import many kinds of used steel structure processing equipments, after dismantling all details, refurbish, and re-assembly. If required or customer request, we re-new all control system to be a Chinese language control system. It can solve the operator language barriers, but also solve old machine circuit aging, flaws or original parts expensive problem.

Beam processing line

**All new B-Beam drilling machine
made in Taiwan**

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**Processing management
software BeamCAM**

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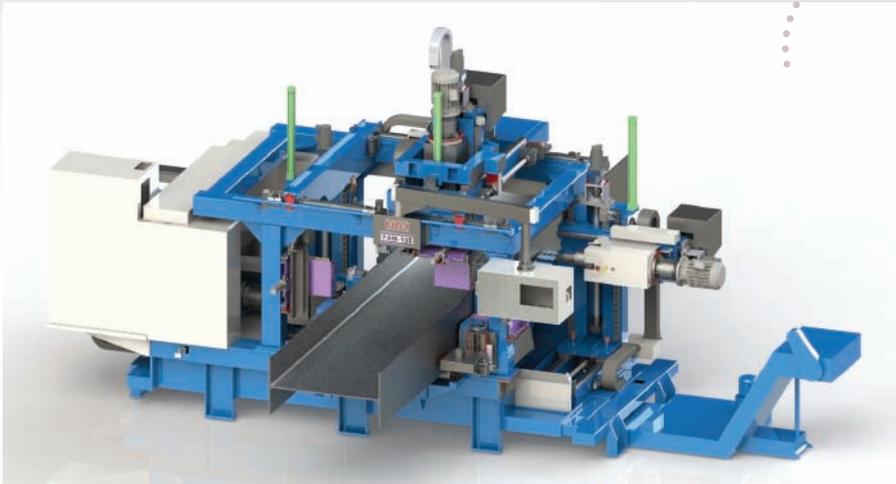
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specification**

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Beam line planning

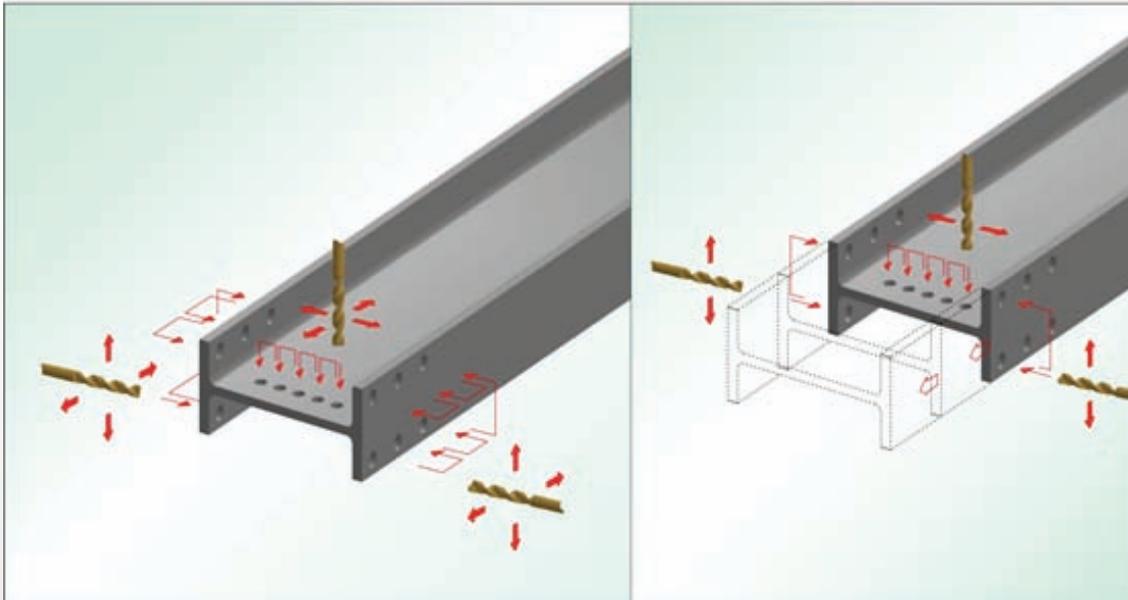
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FAM-105



All linear guideway of this machine all use HIWIN roller type linear guideway

- The material feeding device of FAM-105 have two sets of power roller system at front and rear end.
- Material length measuring device use two sets of measuring disc at front and rear side. two discs measure material length in the same time. And the adjusting parameter are independent. When two disc get different data, machine will have alarm to warn operator to check and find the reason of getting different data. It can get more accuracy of hole position.
- The another advantage of using power roller + measuring disc is material can be free moved horizontally at two side of roller conveyor because of no robot arm at load-in side.

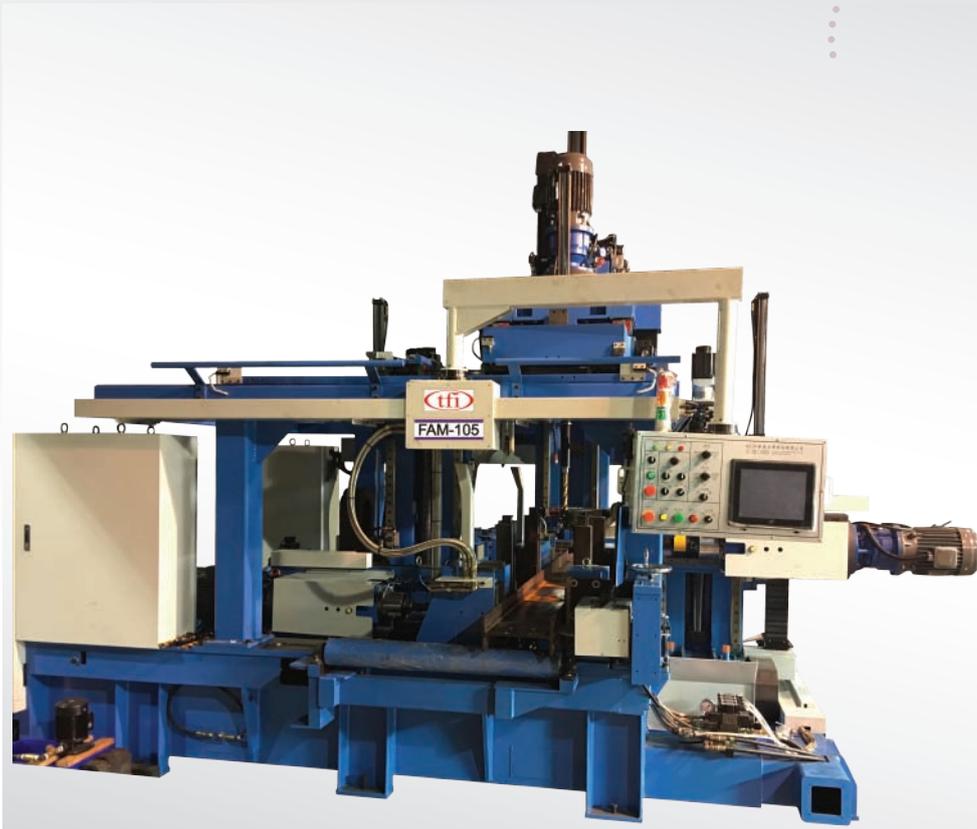


Trinkle brand "tfi", FAM H-Beam drilling machine processing method

- Material send to positioning
- Within 550mm range, the material no need to move, and three spindles are independently positioning, each drilling, no need to waiting.

Japanese brand AMADA, TAKEDA H-Beam drilling machine processing method

- Material send to positioning
- Required spindle go to drill holes. others are waiting.
- Move material to next hole position
- Required spindle go to drill holes. others are waiting, until the working spindle finished their work, then move again.

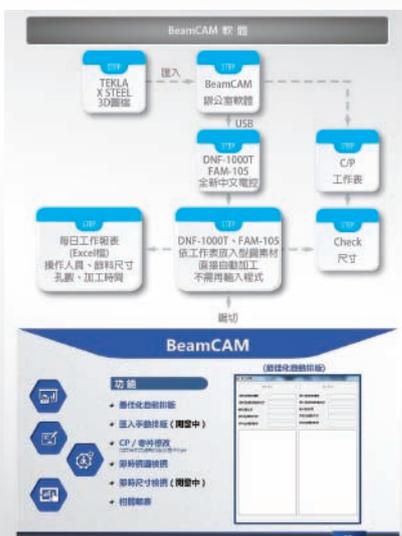


FAM-105

This machine design are base on the Max. processing efficiency. Let machine reach three points in the same time: the least waiting time of spindle, targets shortest time of machine stop, and after start machine can get the shortest time to beginning work. Proficient operator can operate multiple machines in the same time to get the goal of the lowest cost and the most efficiency.

Office software : BeamCAM (option)

Advanced DSTV program conversion software in office. It can read NC1 file, 3D parts graphics from TEKLA program directly, and convert to a processing program for drilling machine ,no need to key-in any size of data. It is not only to ensure the correctness size in processing and increase processing efficiency, but also can produce management report after processing. It can reach centralized management, data management objective. Operator in workshop doesn't need writing program ability, just according to working list item to pick up the material and load it into machine.



Dual-language operating

Our operating software has two languages switching function, customer can choose their language when they needed. Except Chinese, operator can choice their language: English, Chinese Simple, Myanmar, Vietnam, Malaysia, Thailand,..etc. It is easy for local operator working.

Roller type linear guideway / Block

Three sets of positioning and feeding linear guideway of spindles are all use advanced roller type of linear guideway and bloke. They can improve the machine stability and component life.

Tool change friendly design

H1 and H3 side of spindles are all designed by fixed position. It is easy for operator to change tools no need to go inside machine. let tool change action are more safety, it also save time and energy.

H-Beam size re-check

It Has H-Beam size re-checking function. When recheck size are different with inputing data, machine will stop and warn operator to re-check material size again. It can avoid operator to pick up the wrong material.

Three dimension H-Beam drilling machine



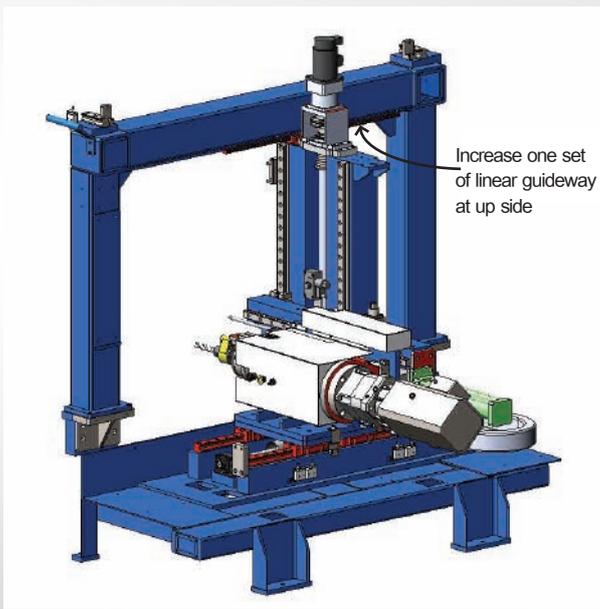
Strong software function

Strong software function, suitable to produce less style with big quantity, or multi-style with small quantity.



Three linear guideway design

Spindle for drilling two flanges are designed with three linear guideway at up and down side, So that can increase the stability of spindle, and also increase the life of linear guideway.



Graphic-Pattern-Dialogue input

Program produce by Graphic-Pattern-Dialogue input. Easy to understand.



3 Independent tool-storage for Auto-tool-change (Option)

Commissioning ATC with independent tool-storage for three spindle. When different type of tool, different size of tool, or tool wear, machine can auto change tools to continue working, no need to stop machine. Tool-storage have 3 tools.(A type only)

Advanced hydraulic feeding

Feeding axis is controlled by hydraulic feeding + drill tip position feedback. Do not have to spend time to adjust the limit switch, do not use the tool nose collision workpiece, do not have to adjust the knife length, to be a complete feeding management.

Oil drill bit used

Type FAM-105 plus and FAM-105A plus can use HSS drill bit, DDTG drill bit, they also can use GOH drill bit to rise working quantity double. But when hole diameter are not popular, you can use HSS drill bit or TTDG. If you do not rush work, use HSS or TTDG drill bit also can save a lot of tool cost.

High speed drilling

High-rigid machine with high efficiency drilling system. 0.35 mm/rev & 2.0 mm/sec, $\phi 28$, when use TTDG drill bit for drilling.

Fast-marking

Fast-marking to locate holes

Auto measuring drill length

Automatic detect the position of drill tip to save time and reduce mistake of setting program

Push-button tool change

Three spindles are all BT-40 spindles. When manually tool-change operating, just push button, you can use one hand easy and safe to change tool.

Process pause

Can pause processing for operator to checking hole size, position, or tool wear degree, or operator mark something on workpiece.

Measuring disc auto calibration

Measuring disc can calibrate automatically. Simple and effective calibrate measuring disc to avoid mistake come from disc wore.

Semi-Auto drilling

It can do auto drilling by manually feeding, It also can do semi-auto drilling by manually feeding.

Specification

specification/model		FAM-105	FAM-105 PLUS	FAM-105A PLUS	
Spindle	Spindle qty	Three independent positioning spindles	Three independent positioning spindles	Three independent positioning spindles	
	Shank type	BT40	BT40	BT40	
	RPM control	Variable (Variable Frequency controlled)	Variable (Variable Frequency controlled)	Variable (Variable Frequency controlled)	
	Capacity 1	HSS drill bit : Ø14 ~ 40 mm	HSS drill bit : Ø14 ~ 40 mm	HSS drill bit : Ø14 ~ 40 mm	
	Capacity 2		HSS GOH : Ø16 ~ 32 mm	HSS GOH : Ø16 ~ 32 mm	
	Revolution Speed	150 ~ 600 rpm, Automatic adjustment + manual fine-tuning	150 ~ 600 rpm, Automatic adjustment + manual fine-tuning	150 ~ 600 rpm, Automatic adjustment + manual fine-tuning	
	Feeding speed	0.10 ~ 5 mm / rev, manual fine-tuning	0.10 ~ 5 mm / rev, manual fine-tuning	0.10 ~ 5 mm / rev, manual fine-tuning	
	Feeding control	Auto feeding control, no need adjust limited switch after tool changed	Auto feeding control, no need adjust limited switch after tool changed	Auto feeding control, no need adjust limited switch after tool changed	
	Tool length	50 ~ 470mm	50 ~ 470mm	50 ~ 470mm	
ACT	R spindle, H1			3-tools storage	
	U spindle, H2			3-tools storage	
	L spindle, H3			3-tools storage	
Drive & Positioning	Upper X axis	Stroke	580m,	580m,	580m,
		Move speed	7m/min	7m/min	7m/min
		Drive	AC Servo motor + ball screw	AC Servo motor + ball screw	AC Servo motor + ball screw
	Upper Y Axis	Stroke	1000mm	1000mm	1000mm
		Move speed	7m/min	7m/min	7m/min
		Drive	AC Servo motor + ball screw	AC Servo motor + ball screw	AC Servo motor + ball screw
	Right, Left X Axis	Stroke	580mm	580mm	580mm
		Move speed	7m/min	7m/min	7m/min
		Drive	AC Servo motor + ball screw	AC Servo motor + ball screw	AC Servo motor + ball screw
	Right, Left Y axis	Stroke	500mm	500mm	500mm
		Move speed	7min	7min	7min
		Drive	AC Servo motor + ball screw	AC Servo motor + ball screw	AC Servo motor + ball screw
	Upper feeding	Stroke	600mm	600mm	600mm
		Move speed	5m/min	5m/min	5m/min
		Drive	Independent Hydraulic + Encoder	Independent Hydraulic + Encoder	Independent Hydraulic + Encoder
	Right & Left feeding	Stroke	400mm	400mm	400mm
		Move speed	5m/min	5m/min	5m/min
		Drive	Independent Hydraulic + Encoder	Independent Hydraulic + Encoder	Independent Hydraulic + Encoder
	Length measuring	Feeding roller + measuring disc	Feeding roller + measuring disc	Feeding roller + measuring disc	
Material moving speed	20m/min	20m/min	20m/min		
Weight	9000 kg	9300 kg	9800 kg		
Hydraulic	Pump	5.5 KW x 80L, Dual-pump, with cooler	5.5 KW x 80L, Dual-pump, with cooler	5.5 KW x 80L, Dual-pump, with cooler	
	Pressure	45kg/cm ²	45kg/cm ²	45kg/cm ²	

Our drilling machine have three type: FAM-105, FAM-105 plus, and FAM-105A plus

Remark:

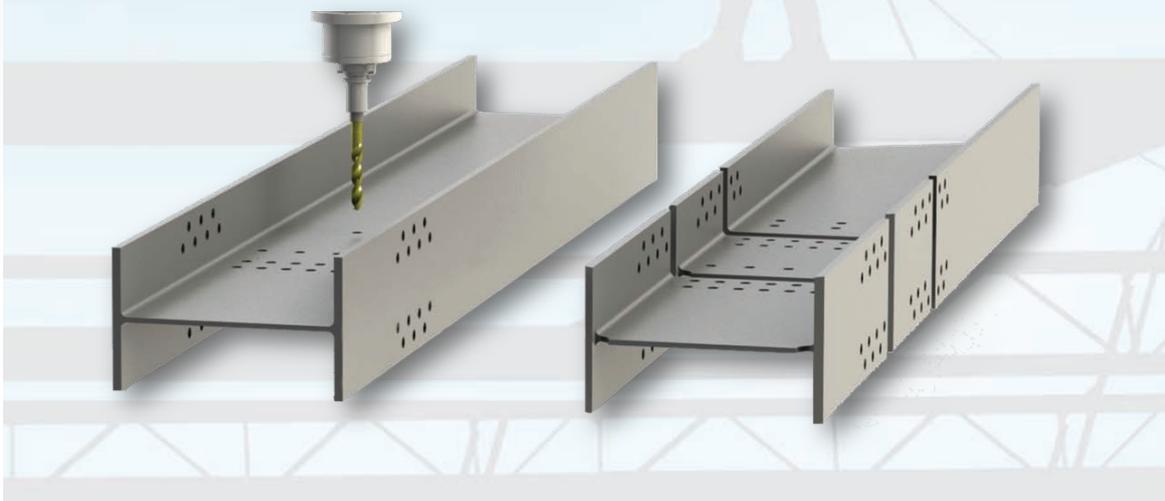
1.plus type can use oil hole drill bit (GOH)

2.A type is auto-tool-change type

BeamCAM Software

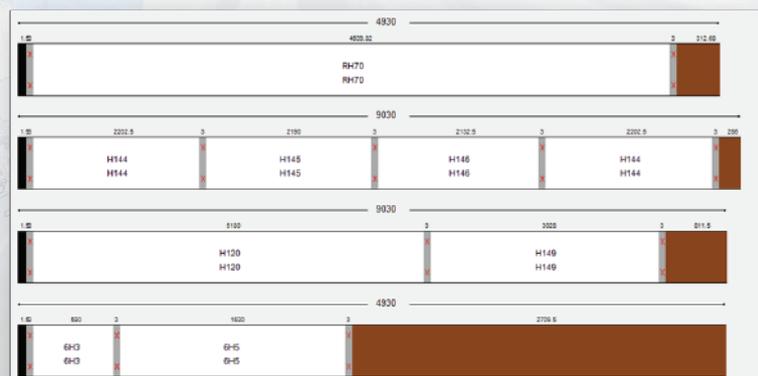
BeamCAM

Beam line processing management software



Cutting Plan

- The production of steel structure industry is order production mode. Their material are high cost and low use rate. How to rise the material use rate to match order needed is a major challenge in steel structure industry.
- "Cutting Plan" is before producing by the known size of material and parts to get the best cutting plan that base on the minimum loss and minimum cost.

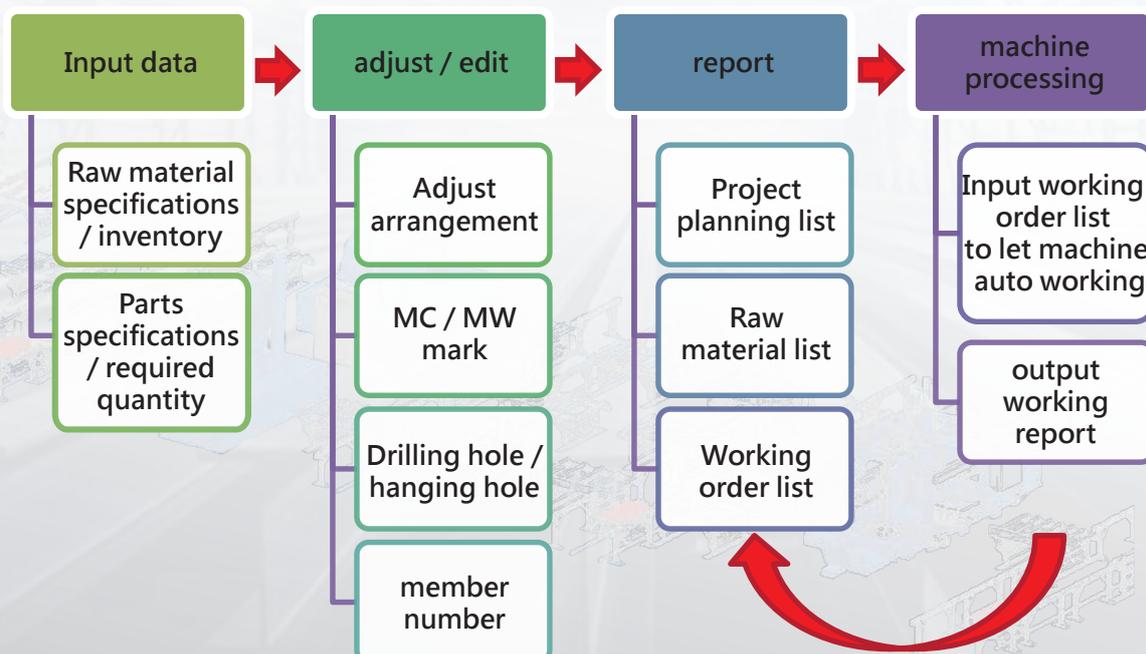


BeamCAM Software

BeamCAM

- suitable Machine type
 - DNF-1000
 - FAM-105
 - Suitable material
 - H-Beam(RH、BH)
 - I-Beam
 - Channel
 - Square pipe
 - Edit function
 - Adjust arrangement
 - MC / MW mark
 - Drilling hole / hanging hole
 - member number
 - Report
 - Project planning list
 - Raw material list
 - Working order list
- ※I-Beam, Channel and square pipe are developing

BeamCAM Process



BeamCAM Software

BeamCAM function

- 1. Project management
- 2. CP view / edit
- 3. Parts view / edit



BeamCAM report

- 1. Project planning list
- 2. Raw material list
- 3. Working list

The reports are as follows:

- 1. Project planning list:** A table showing project details such as part number, material, and dimensions.
- 2. Raw material list:** A table titled '素材需求表-提案' (Material Requirement Table - Proposal) with columns for material type, quantity, and price. It lists materials like RH1 AS6 and RH1 S140008.
- 3. Working list:** A detailed table titled '作業單一書材' (Job Sheet - Single Material) showing the sequence of operations, including cutting, drilling, and grinding, with associated parameters and tool numbers.

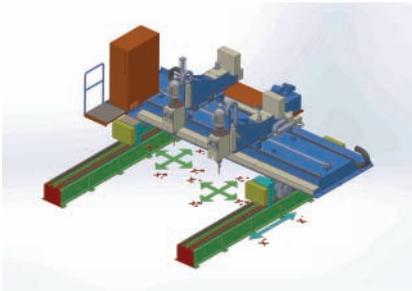
TACO-458HH

Multiple purpose function

- Rail type
- Hang type
- table type
- Plate drilling
- H-Beam drilling
- All area servo positioning
- Drilling before H-Beam assembling



DB-3505 semi-auto type drilling



All area servo positioning (optional)



Hang type, H-Beam drilling



Rail type, BH drilling



Rail type, huge plate drilling + mini-table



Rail type, H-Beam drilling



Rail type, H-Beam drilling



Rail type machine

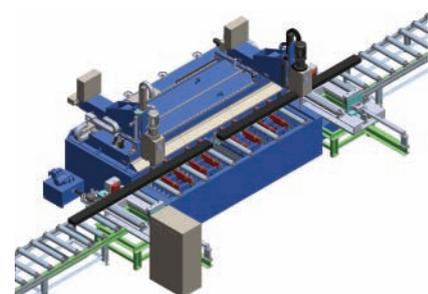


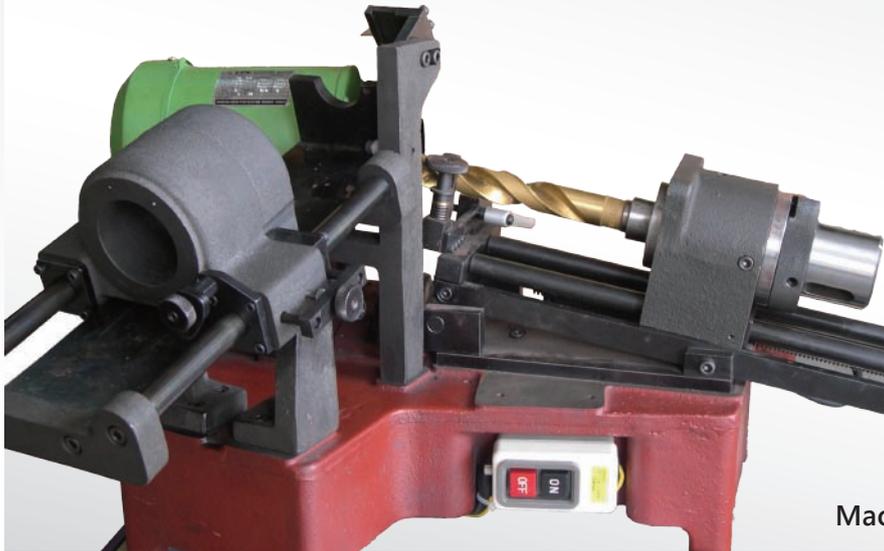
Table type machine (can drill H-Beam and plate)

TK-33

- Use CBN form wheel, no need amend angle, the cutting angle is always correct
- Angle fixed, finished by two steps.
- CBN wheel is long life, less wear, and high grinding accuracy.



Drilling effect



Tool size | $\varnothing 14$ - $\varnothing 32$

Tool type | 160° drill bit + center point
special for steel structure

Shank type | MT4

Speed | 3300 rpm

Wheel type | CBN wheel

Motor | 0.2KW 2P AC110V

Machine dimension | 95 x 90 x 80 cm

Step 1.



To grind tool cutting angle into 160 ,
leave its center point.



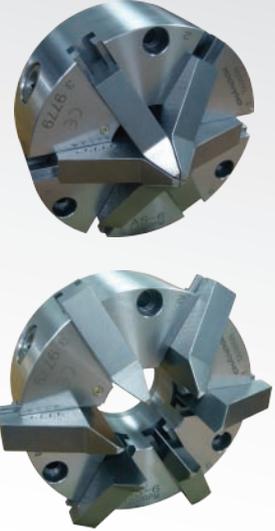
- Use form wheel,100% to get the best angle.
- Cutting angle, escape angle, center tip angle, and center point,.. all angles are fixed in machine, no need to reset again, and don't worry about the angle are not allowed..
- Easy step to grind center tip angle, let the center point get the minimum resistance, and suit for high accuracy CNC machine use, and get the highest efficiency drilling.

Step 2.

To grind center tip angle. So that center point of drill bit will get the minimum resistance and maximum accuracy.

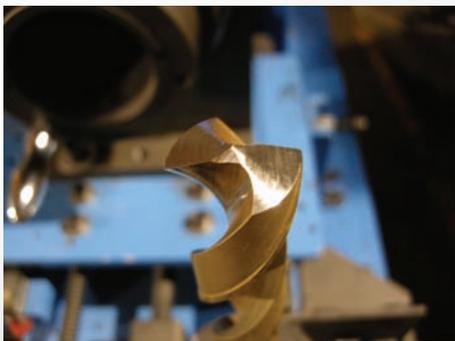


TK-60M



- Tool size | $\varnothing 14$ - $\varnothing 60$ mm
- Tool type | 160° drill bit + center point
special for steel structure
- Shank type | MT4 (24, 25, 32 mm straight
shank have optional)
- Motor | 0.37KW
| AC 220V / AC 380V
- Speed | 2810 rpm / 3370rpm
- Wheel type | CBN wheel x 2
- Machine dimension | 95 x 90 x 80 cm

Drilling bit after re-sharpening



$\varnothing 24$ mm drill bit
(after re-sharpening)



$\varnothing 40$ mm drill bit
(after re-sharpening)

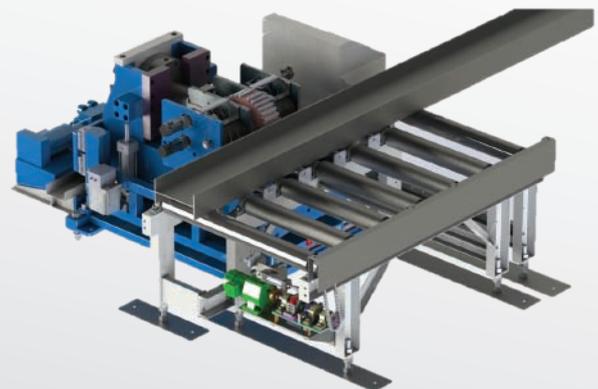
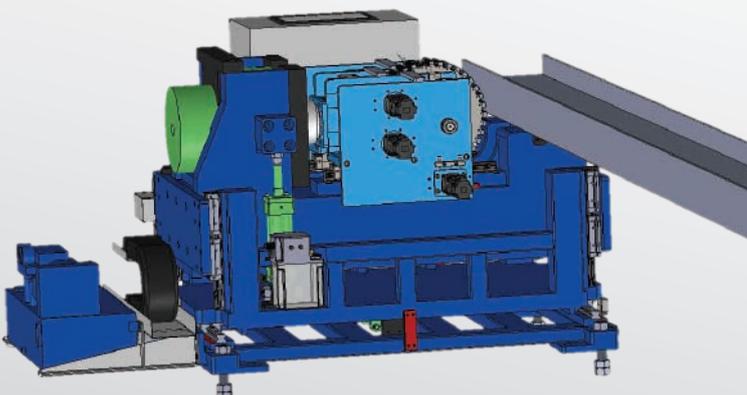
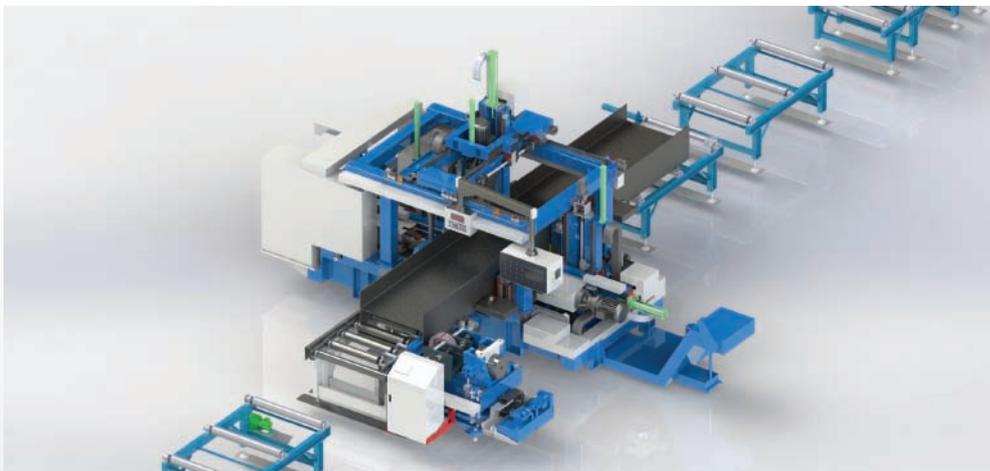


$\varnothing 50$ mm drill bit
(after re-sharpening)

CNC 6-word stamper



- Total have 37 words, include 26 letters and 0-9 Arabic numerals, and space.
- Word high are 16mm, and width are 12mm.
- Standard word deep are 1.2mm, deep can be adjusted.
- Words arrangement are CNC controlled. It also can stamp serial number.
- Stamper drive by hydraulic cylinder. 6 words for one time stamp.
- It can arrange to stamp two rows total 12 words. It also can arrange two rows and two columns total 24 words.
- It can be commissioned at load out side of drilling machine in tfi beam line, it can automatic stamp on beam with parts number, project number and member direction mark.





FAM-105



FAM-105



6BH-1200T



CNC Channel Puncher machine



CNC Channel Puncher machine

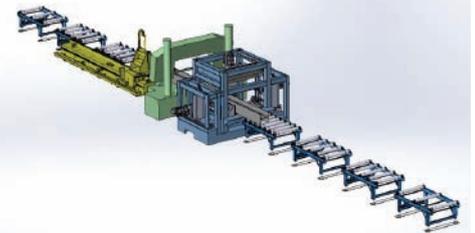


End milling machine

Our drilling and cutting complex machine are combined DAITO H-beam drilling machine DNF-1000 and band saw machine, become to an automatic drilling and cutting machine. It can combine two working lines into one line. It can save more space in factory.



DNF+GT Drilling and cutting complex machine



Drilling and cutting complex machine



CT-35W



CT-35G

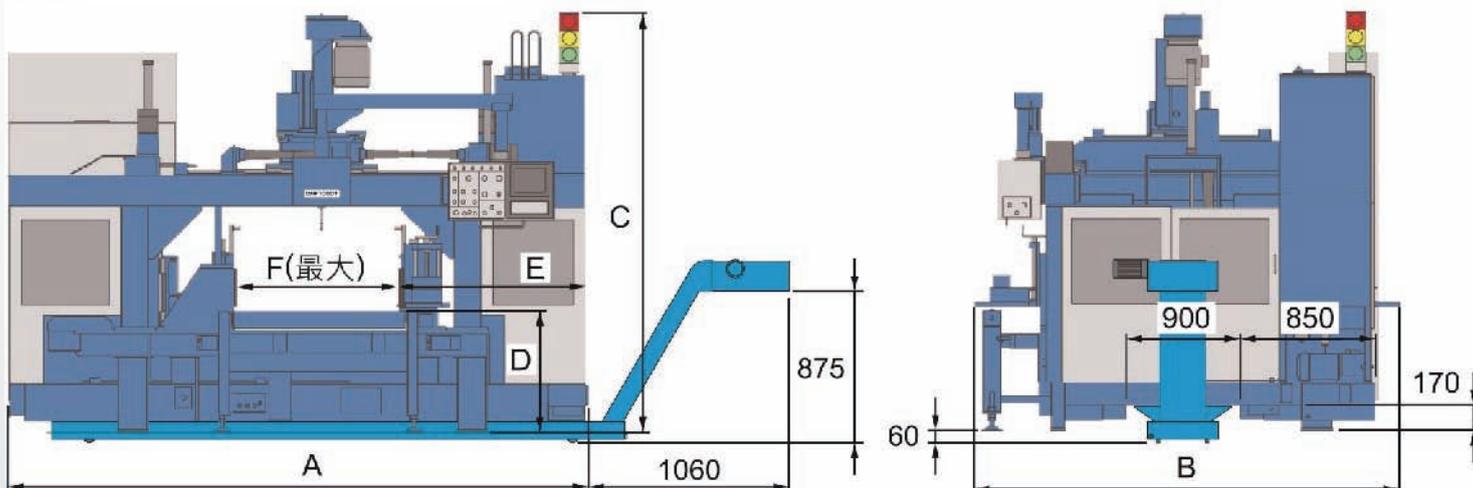


Connecting node for space frame

DRILLING MACHINE for STRUCTURAL STEEL

MODEL		DNK700	DNK900	DNF1000	DNFC1000	DNFC1300	DNFC1500	DNFC1500H
Drilling Capacity mm (in)	Web	φ12.5~33.5 (φ $\frac{1}{2}$ ~1 $\frac{3}{8}$ ")			φ9~50 (φ $\frac{3}{8}$ ~2")			
	Flange	φ12.5~33.5 (φ $\frac{1}{2}$ ~1 $\frac{3}{8}$ ")						
Drill Spindle	Drill Revolution	Each 1 of 3-way 0~500 rpm			Each 1 of 3-way 65~650 rpm			
	Spindle taper	R.L (MT #3) U (MT #4)			R.L (MT #3) U (MT #4)			
	Max. Stroke mm (in)	165 (6 $\frac{1}{2}$ ")			R.L = 165 (6 $\frac{1}{2}$ ") U = 325 (12 $\frac{3}{4}$ ")			U = 425 (16 $\frac{3}{4}$ ")
	Max. Travel	R.L unit	X	360 (14 $\frac{1}{4}$ ")	540 (21 $\frac{1}{4}$ ")	550 (21 $\frac{3}{4}$ ")	550 (21 $\frac{3}{4}$ ")	550 (21 $\frac{3}{4}$ ")
Range mm (in)	U unit	X	375 (14 $\frac{3}{4}$ ")	420 (16 $\frac{1}{2}$ ")	535 (21")	635 (25")		
		Z	360 (14 $\frac{1}{4}$ ")	360 (14 $\frac{1}{4}$ ")	540 (21 $\frac{1}{4}$ ")	550 (21 $\frac{3}{4}$ ")	550 (21 $\frac{3}{4}$ ")	
ATC (U.unit)					4 drills		7 drills	
Work Feeding mm (in)	Feed system	AC motor-drive shuttle			AC motor-drive pinch roller		AC motor-drive pinch roller	
	Max. feed length	500 (19 $\frac{5}{8}$ ")			99,999 (3,937")		99,999 (3,937")	
	Feed speed	12mmin (39ft/min)			12mmin (39ft/min)		16.6m/min (54.5ft/min)	
	Measuring system	---			Measuring disk.		Measuring disk.	
Motor output	---			Feeding roller 2.2kw x1		Feeding roller 3kw x1		
Max. load kg (lb)	4,000 (8,800)			5,000 (11,000)		10,000 (22,000)		
Motor kw (hp)	Drill	3.7 (5) x 3			3.7 (5) x 3		3.7 (5) x 3	
	Left-unit travel	0.4 (1/2) x 1			0.4 (1/2) x 1		0.4 (1/2) x 1	
	Hydraulic	1.5 (2) x 1			1.5 (2) x 1		3.5 (5) x 1	
	Coolant	0.06 (1/2) x 1			0.06 (1/2) x 1		0.06 (1/2) x 1	
	Lubricant	0.01 (1/2) x 1			0.01 (1/2) x 1		0.004 (1/200) x 1	
	Work Feeding	2.2 (3) x 1			2.2 (3) x 1		3.0 (4) x 1	
	L. unit X	---			0.35 (1/2) x 1		0.4 (1/2) x 1	
	L. unit Y	---			0.4 (1/2) x 1		0.4 (1/2) x 1	
	R. unit X	---			0.35 (1/2) x 1		0.4 (1/2) x 1	
R. unit Y	---			0.4 (1/2) x 1		0.4 (1/2) x 1		
U. unit X	---			0.4 (1/2) x 1		0.4 (1/2) x 1		
U. unit Y	---			0.35 (1/2) x 1		0.4 (1/2) x 1		
Coolant System	Spray-mist type			Spray-mist type		Spray-mist type		
Coolant Reservoir \varnothing (gal)	41 (11)			40 (10.4)		43.2 (11.3)		
Hydraulic Reservoir \varnothing (gal)	34 (8.8)			37 (9.6)		53.6 (14)		
Standard Accessories	Drill (9) Sleeve (4) Socket (1) Tools					Drill (9) Sleeve (4) Socket (1) Tools SRC-mate		

Machine size (mm)



	A	B	C	D	E	F	
DNF-1000T	3345	2730	2700	800	1028	1050	7000
DNK-700	3300	2440	2220	800	1120	730	3900

Product specifications from DAITO for reference only



In refurbish process, machine at our factory: 31st Rd, Industrial Park, Taichung.

Used machines in our warehouse: Taichung Harbor Related Industrial Park, Taichung Port.



Used machine purchase guide

Study machine brand and model first

Intended to buy used machine, First we must refer to peer evaluation of same industry, and then according to their own production and funding budget to decide one or several brand models, and then to find the machine and supplier.

To see machine situation

In this low profit era, the out of machine in used machine market were all had problem that difficult to repair, or machine situation was very bad. Unless a good experienced person, you can not see the problem from the photo (especially the photo come from machine supplier, they avoid to photographed where the problem.). So it is very important to find an experienced person to look at machine together.

Multiple machines in stock for choice will be better.

After decided a brand of equipment, if their are more than one machine for your choice is the best. It shows that supplier that you find are relatively large and professional.

Attention refurbish content will be more important. do not look at surface only

Most of supplier is only finishing the appearance beautiful, or buy a new cover board to replace old one. they didn't repair or renew the internal wear parts. If you buy this machine, it's means that you spend money to buy the headache of a previous user. The real professional refurbishment is to completely dismantle machine, check all parts, renew the wear parts and re-assemble machine. It can ensure all mechanical parts can be normal and long-term working.

The seller maintenance capacity is important

After service is the most important when you buy machine. especially when you buy an used machine, after service will be more times compare with you buy a new machine. If after service of your supplier in service speed or service quality are not good, or service charge are too high, it's means you bought an useless machine.

To consider capacity of spare parts offering after 5 or 10 years

Although you purchase an used machine, but doesn't use it only two or three years. Normally machine factory offer their parts within 7 years when they discontinued one model of machine. Currently in Taiwan, most of used machines are all over 10 years, the original parts has not provided. If you want look for one parts, you need look for it form used machine supplier. especially to look for old control board and servo motor, you are difficult to find it in Japan market. Even you have money you can't buy it. In used machine parts market one servo motor need spend ten or twenty thousand to buy it. So before buying one used machine, you need choose one supplier that they have many parts stock.

To consider installment or loan terms

Steel structure industry ia a capital-intensive industry. When price of steel material fluctuation, the buyer who have enough cash can earn more money. So if the equipment can be loan or installment is an important condition when you buy machines.

CUT-OFF MACHINE ST SERIES

This series is designed specifically for structural steel fabricators. The blade is set at a constant 6 degree angle to maximize cutting efficiency. A massive twin pillar design, a unique mitering device and an amplifying valve provide rigidity, accuracy and efficiency to satisfy the most demanding applications.



**ST6090
ST8010
ST8013**

ST8015



**ST4565
ST5070**



Product specifications from DAITO for reference only

Japanese brand of H-Beam drilling machine introduction

As early as 1980, Japanese H-Beam drilling machine are already popular. AMADA already had machine model 3DH-700, 3DH-900 and 8BH-900, became to the number one in steel structure field in Japan at that time. But after 1980 DAITO machine DNF-1000 better than AMADA machine and shear most of Japan market. Because DNF-1000 develop with the hole group drilling, material no need move, so their drilling speed and drilling efficiency are better than AMADA machine. Even DNF-1000 price were higher than AMADA, but in high laborer cost as Japan people accept this machine. DNF-1000 became Japan number one in a short time. After 1990, DAITO developed super model, SDNF-1000, AMADA also had new model 6BH-1000. These two manufacturer all improve their control system, feeding speed and drilling speed, became to the generation of H-Beam drilling machine main models. After 20 years of evolution, now DAITO have new model CSDIII, AMADA have 6BH-1000III, they are all the third generation of new model of machine.

Brand	Model	Feature	Advantages and disadvantages
DAITO	DNK-700	Spindle positioning is by hydraulic feeding, material feeding is by clamping arm pushing.	Material movement is slow, but machine cost is low.
	DNF-1000	Material movement drive by power roller inside machine. three spindles are independent movement in their each area.	High drilling efficiency. This type is the object of China manufacturer to copy still now.
	DNF-1050	servo motor change to AC power, Their capacity are H1000x500.	
	SDNF-1000	Increase material feeding speed	High feeding speed, high move speed.
	CSDII	Suit for GOH drill bit	High drilling speed
	CSDIII	Suit for carbide drill bit	more high drilling speed, but high tool cost
AMADA	3DH-700	Pushing clamp back and forth action.	Low cost
	3DH-900	Pushing clamp back and forth action.	Low cost
	8BH-900	Multi-spindle drilling, Manually adjustment, material move by pushing clamp back and forth action.	Low price
	6BH-1000	Robot arm feeding, 6 holes for one time drilling	Low tool cost
	6BH-1000II	Use GOH drill bits, 6 holes for one time drilling.	High drilling speed
	6BH-1000III	Use GOH drill bits, 6 holes for one time drilling.	High drilling speed
TAKEDA	3BA-700D	material feeding by pushing clamp back and forth action.	Low speed of material movement, low move speed, low marketing shear.
	3BA-900D		
	3BF-1000D		
KOMATSU	K3D-900	material feeding by pushing clamp back and forth acting	Low speed of material movement, low move speed, low marketing shear.
	K3D-1000A		

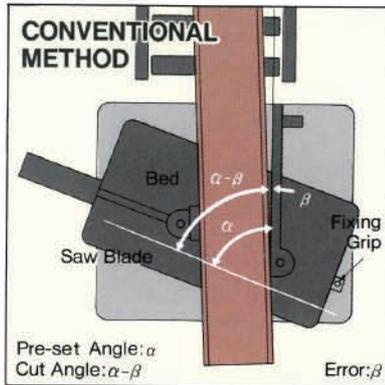
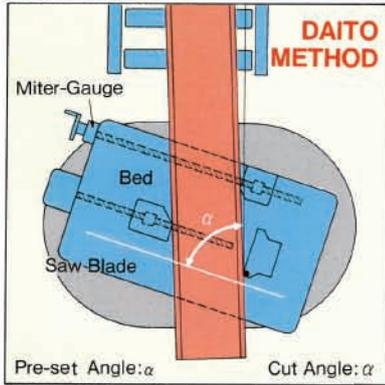
Used machine DNF-1000T refurbish content

1. All new control components inside of control box, and all new servo motor. Chinese/English two languages system. It have optional software BeamCAM system and optional tfi CNC steel stamper, connecting with machine control system. It can stamp words after drilling.
2. Use IPC+PLC control system, Japan original PLC
3. 6 servo motor and servo controller are original Japan FUJI motor servo system.
4. Measuring device are the same as DAITO: measuring disc + encoder
5. Add encoder to 3 spindles for tool length measuring
6. Clamping roller in load-in side increase one set of encoder for measuring width of H-Beam
7. Hydraulic system are original DAITO hydraulic system.
8. Operating procedure are similar to DAITO procedure. But our procedure can save more time on preparing and checking.
Our procedure are as following:
 - (1)Hole pattern program input
 - (2) Processing planning
(If option our BeamCAM system, no need step 1 and step 2, direct to choose processing item.)
 - (3) Load-in drill bits
 - (4) Load-in material
 - (5) Fast hole checking (spindle stop on hole position around 1~2 seconds, no feeding action to save more time)
 - (6) Auto drilling and marking
 - (7) finish drilling work
9. Drilling time are the same as DAITO new type - "Super" when it use HSS drill bits.
10. All electric control system have one year warranty
11. Positioning device (bolt screw ,hard track block) for each spindle will open them for overhaul, and maintain. If needed it will replace new steel balls.
12. Take off load-in and load-out clamping roller to refurbishment to avoid the old machine clamping roller rise material up when it clamp.
13. Hydraulic system will be overhaul, and replace new oil.
14. Take off feeding mechanism for overhaul. (Feeding mechanism and transmission device of DNF-1000 are located in middle of machine. If they can not get good maintenance, they are easy to get feeding or can't feeding smoothly.)

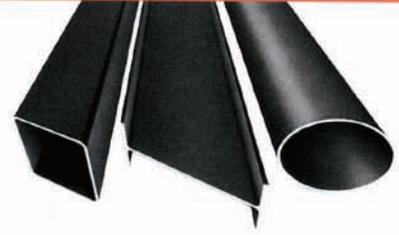
Different between Japan original system and renewed control system

Function	DNF-1000	DNF-1000 renew control system
Feeding	Need to adjust L/S first	Fully automatic
H3 side positioning	Manual adjustment	Fully automatic
Front and rear side of clamp operating	Manual operating	Fully automatic
H-Beam width checking	No such function	Beam width auto detection, if it over than default value will remind you to check it.

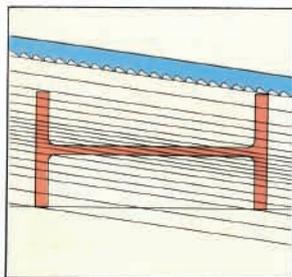
FEATURES



UNIQUE MITERING DEVICE



DAITO'S mitering device allows the entire machine to swivel on a turntable to meet the material surface, even if the material is not fed in parallel. Conventional systems cannot be compliant with long material in similar circumstances.



The feed rate of saw blade changes to adapt to the varying cross section of material due to the cutting pressure valve.

ST3540



MAIN SPECIFICATION

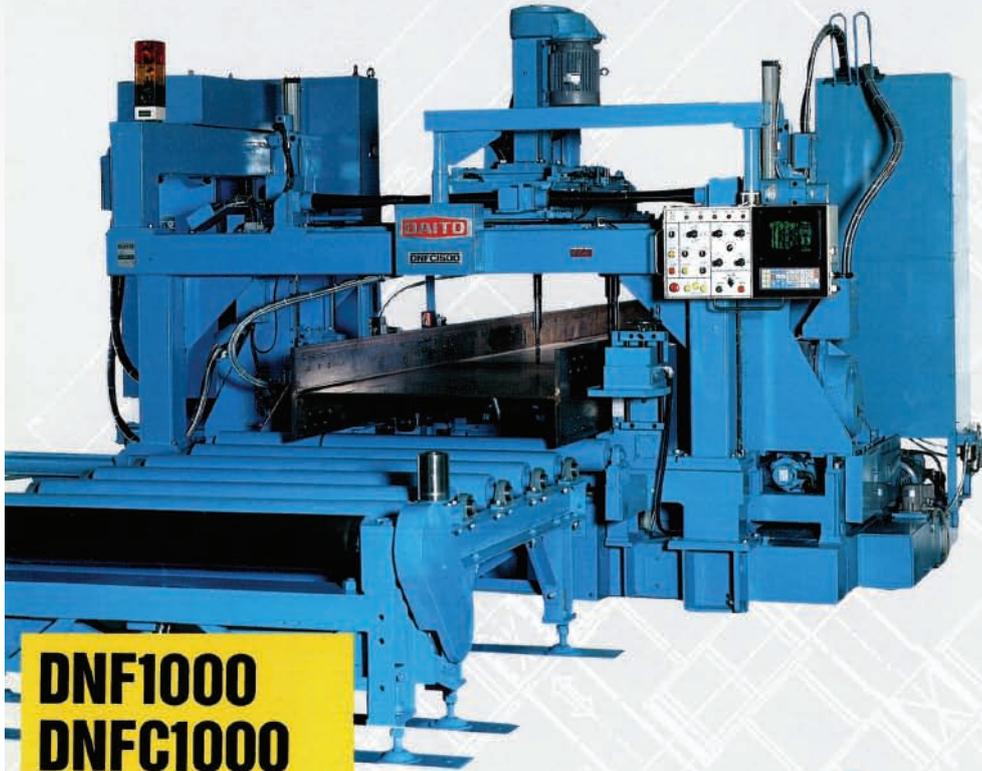
MODEL		ST3540	ST4565	ST5070	ST6090	ST8010	ST8013	ST8015	
Capacity mm (in)	90°	○	360 (14")	450 (18")	500 (20")	700 (28")	800 (32")	830 (32 5/8")	850 (33 1/2")
		□	300 (12")	410 (16")	500 (20")	650 (25")	750 (30")	800 (32")	800 (32")
		▭	400 × 260 (16" × 10")	650 × 350 (26" × 14")	750 × 350 (30" × 14")	1,000 × 500 (40" × 20")	1,000 × 600 (40" × 24")	1,300 × 650 (51 1/8" × 26")	1,500 × 700 (59" × 28")
Capacity mm (in)	45°	○	200 (8")	320 (13")	410 (16")	500 (20")	500 (20")	700 (28")	850 (33 1/2")
		□	200 (8")	320 (13")	410 (16")	500 (20")	500 (20")	700 (28")	750 (30")
		▭	200 × 320 (8" × 13")	320 × 410 (12 1/2" × 16")	410 × 500 (16 1/8" × 20")	500 × 650 (20" × 25")	500 × 720 (20" × 28 3/8")	700 × 720 (28" × 28 3/8")	900 × 750 (36" × 30")
Weight kg (lb)		1,500 (3,300)	2,200 (4,850)	2,600 (5,700)	5,000 (11,000)	5,300 (11,690)	6,300 (13,860)	11,500 (25,300)	



Product specifications from DAITO for reference only

DRILLING MACHINE for STRUCTURAL STEEL

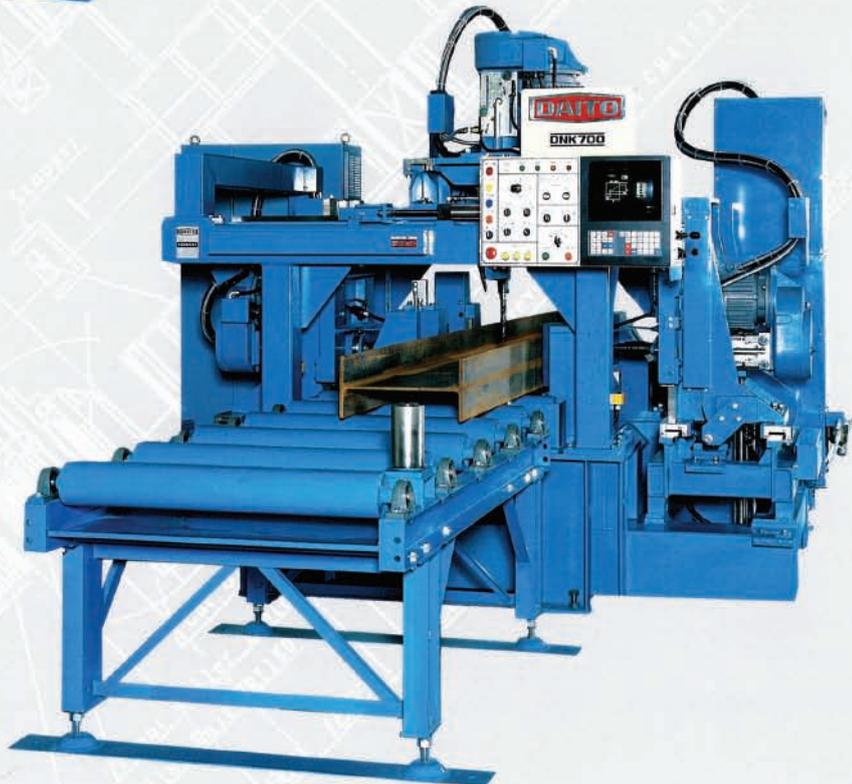
Fully automatic NC drilling machines for structural steel with a unique "fixed workpiece and traveling drills" method. This method realizes efficient positioning and eliminates inertial error of heavy material feeding.



Automatic Tool Changer (DNFC Series)

DNF1000
DNFC1000
DNFC1300
DNFC1500
DNFC1500H

DNK700
DNK900

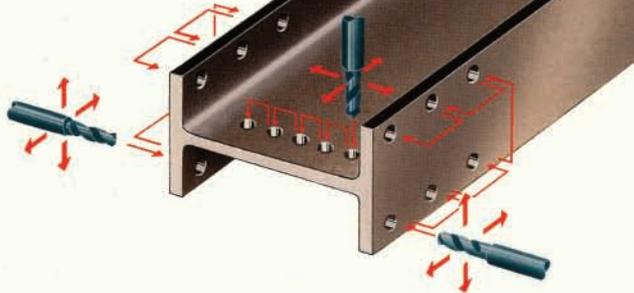


Product specifications from DAITO for reference only

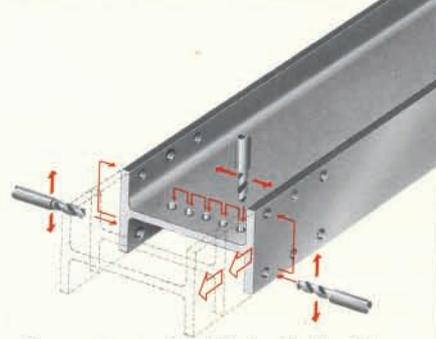
FEATURES

DAITO METHOD

Each drill positioning can independently be programmed on both the flanges and the web. All holes are drilled without advancing the material. You are assured the highest productivity and accuracy.



CONVENTIONAL METHOD



Because each drill is limited to only two axis movement, the drills on each flange must remain idle until the web drilling is completed. Furthermore, due to the frequent feeding and vise reclamping, efficiency and accuracy are sacrificed.

MAIN SPECIFICATION

MODEL		DNK700	DNK900	DNF1000	DNFC1000	DNFC1300	DNFC1500	DNFC1500H
Capacity mm (in)	Max.	700 × 400 (28" × 16")	900 × 400 (36" × 16")	1,000 × 400 (40" × 16")	1,000 × 400 (40" × 16")	1,300 × 500 (51 1/4" × 20")	1,500 × 500 (59" × 20")	1,500 × 700 (59" × 28")
	Min.	150 × 75 (6" × 3")	150 × 75 (6" × 3")	150 × 75 (6" × 3")	150 × 75 (6" × 3")	200 × 100 (7 7/8" × 4")	200 × 100 (7 7/8" × 4")	200 × 100 (7 7/8" × 4")
Weight kg (lb)		3,900 (8,580)	4,000 (8,800)	7,000 (15,400)	7,100 (15,600)	7,900 (17,400)	8,000 (17,600)	8,100 (17,820)



DAITO Drilling and Cut-Off Line Systems have a high reliability proved by its many years of experience and record of development and delivery.

DRILLING & CUT-OFF LINE SYSTEM

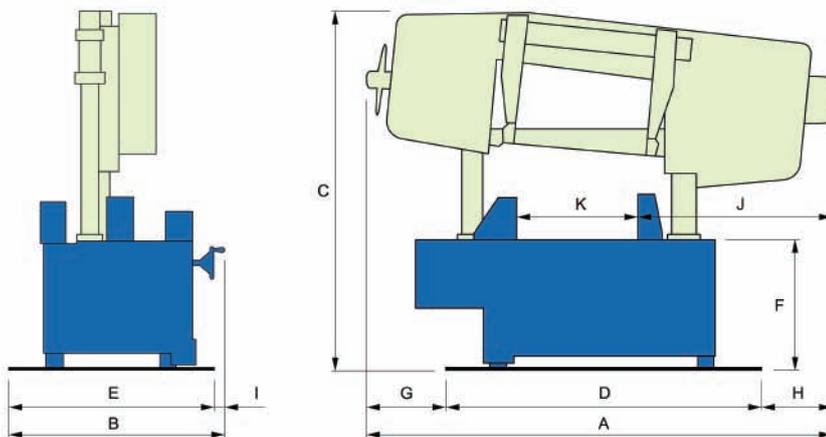
Product specifications from DAITO for reference only

SPECIFICATIONS

CUT-OFF MACHINE ST SERIES

MODEL		ST3540	ST4565	ST5070	ST6090	ST8010	ST8013	ST8015
Blade mm (in)	Thickness	1.06 (0.042")	1.27 (0.05")	1.27 (0.05")	1.27~1.6 (0.05~0.063")	1.27~1.6 (0.05~0.063")	1.6 (0.063")	1.6 (0.063")
	Width	32 (1¼")	38 (1½")	38 (1½")	50 (2")	50 (2")	67 (2⅝")	67 (2⅝")
	Length	4,120 (13'6")	5,030 (16'6")	5,450 (17'10½")	7,600 (24'11")	8,300 (27'3")	9,350 (30'8")	10,670 (35")
Motor kw (hp)	Blade	3.7 (5)	3.7 (5)	3.7 (5)	7.5 (10)	7.5 (10)	7.5 (10)	7.5 (10)
	Hydraulic	0.4 (½)	0.75 (1)	0.75 (1)	1.5 (2)	1.5 (2)	2.2 (3)	3.7 (5)
	Coolant	0.2 (¼)	0.06 (⅛)	0.06 (⅛)	0.06 (⅛)	0.06 (⅛)	0.06 (⅛)	0.12 (⅙)
	Main vise	0.4 (½)	0.4 (½)	0.4 (½)	0.75 (1)	0.75 (1)	0.75 (1)	—
	Front vise	—	0.4 (½)	0.4 (½)	0.75 (1)	0.75 (1)	0.75 (1)	—
	Turntable Lubricant	—	—	—	0.04 (⅛)	0.04 (⅛)	0.09 (⅒)	0.09 (⅒)
Blade Speed m/min (ft/min)	50Hz	23, 28, 35, 43, 54, 67 (75, 92, 115, 141, 177, 220)			16~125 (52~410)			10~100 (32~320) Inverter
	60Hz	27, 34, 42, 52, 64, 80 (89, 112, 138, 171, 210, 262)			19~150 (62~500)			
Saw Wheel Diameter mm (in)		450 (17¾")	480 (18⅞")	520 (20½")	670 (26⅜")	810 (31⅞")		915 (35⅞")
Hydraulic Reservoir Q (gal)		5.5 (1.5)	8.5 (2.2)	8.5 (2.2)	39 (10.3)	39 (10.3)		40 (10.5)
Coolant Reservoir Q (gal)		29 (7.7)	41 (11)	41 (11)	47 (12.4)	47 (12.4)		200 (52)
Dimension mm (in)	Width	2,190 (86¼")	2,660 (104¾")	2,850 (112¼")	3,975 (156½")	4,325 (170¼")	4,810 (189⅜")	5,455 (214⅝")
	Depth	1,330 (52⅜")	1,320 (52")	1,325 (52⅛")	1,895 (74⅝")	1,895 (74⅝")	2,425 (95½")	2,250 (88½")
	Height	1,340 (52¾")	2,075 (81¾")	2,226 (87⅝")	2,580 (101⅝")	3,030 (119¼")	3,150 (124")	3,830 (150⅝")
	Bed height	690 (27⅛")	800 (31½")	800 (31½")	800 (31½")	800 (31½")	800 (31½")	1,100 (43⅜")

Machine size



	ST4565	ST5070	ST6090	ST8010
A	2670	2840	4000	4260
B	1300	1300	1855	1855
C	2140	2280	2810	3040
D	1720	1860	2220	2220
E	1220	1230	1660	1660
F	800	800	800	800
G	545	515	745	905
H	405	465	1035	1135
I	80	70	195	195
J	1115	1175	1850	1950
K	665	770	1050	1060

Product specifications from DAITO for reference only

建築技術の進歩に即応するNCCカットオフマシン

形鋼シリーズ



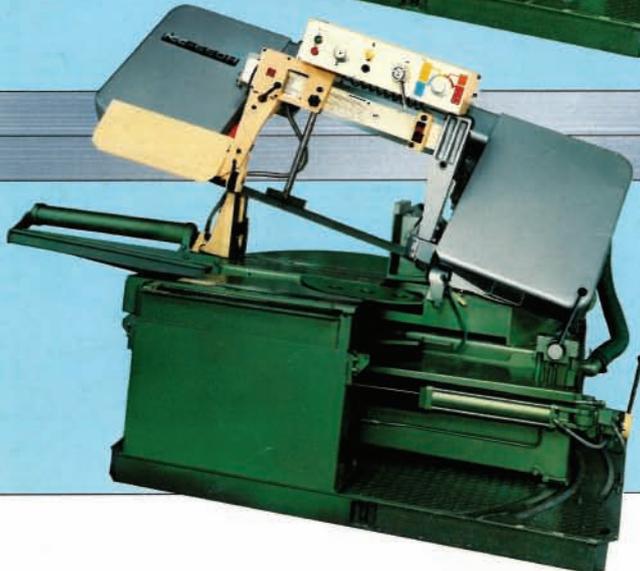
大型材を容易に切断する
最高級メカニズムの結晶

750HD



ずば抜けた精度と汎用性を
発揮するマルチカットオフ

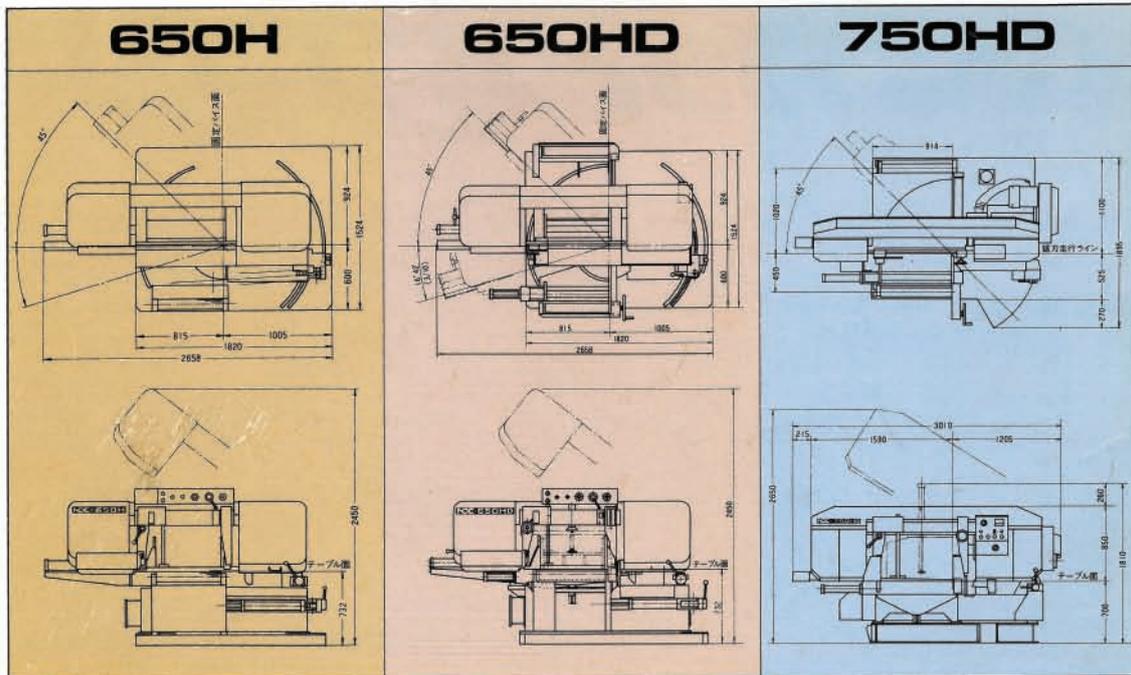
650HD



切断性能の追求から生まれた
実力派・エコノミックマシン

650H

Product specifications from NCC for reference only.
(The NCC product specifications are the same as AMADA's)



		650H	650HD	750HD
切断能力	0° (直角)	幅650×高さ400(mm)、400 ¹⁾		幅750×高さ450、幅700×高さ500、506 ²⁾
	11° 19' (2%)	幅600×高さ300、幅500×高さ400		幅700×高さ500、幅730×高さ450
	16° 42' (3%)	幅600×高さ300、幅450×高さ400		幅700×高さ500
	45°	幅300×高さ300		幅426×高さ426
鋸 刃	サイズ	厚さ1.4×幅38×長さ5040、H-Bi-Metal		厚さ1.4×幅38×長さ5790、H-Bi-Metal
	鋸 速	27, 40, 50, 60, 70m/min.		20~90m/min.無段変速
	テンション	油圧自動		油圧自動
電 動 機	鋸 刃	3.7kW×6P		5.5kW×4P
	油 圧	0.75kW×4P		1.5kW×4P
	切 削 油	—		180W×2P
電 源		3相 200V×50/60Hz		3相 200V×50/60Hz
機 械 総 重 量		2200kg	2500kg	2800kg
付 属 品	鋸刃用ワイヤブラシ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	鋸刃振動防止装置	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	安全カバー	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	ライトビーム	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	リフトローラー	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	前パイプ	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	上部押え	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	鋸刃・ワーク狭窄防止装置	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	リフトコンベヤー	オプション	オプション	オプション
フリーコンベヤー	オプション	オプション	オプション	

○印は標準付属品です。

NCC 日本コネチカットソー株式会社

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Product specifications from NCC for reference only.
(The NCC product specifications are the same as AMADA's)

H形鋼 開先加工機 (ノンスカラップ対応型)

HT(B)-Series H-Shaped steel beveling machine



- ノンスカラップ加工対応のエコノミーマシン。
- このクラス最大のフランジ板厚に対応。
- 追込、スカラップ、開先加工を同時加工。
- 簡単、手頃で省スペース。
- 大型切粉カバーの採用で切粉飛散が無く安全作業。

型式	HT-32NS	HTB-50NS	
加工基準	フランジ内面基準	フランジ外面基準	
適用寸法 (mm)	H	150~無制限	
	B	100~400	
	K	100~550	
	R1	110以下	
	T	6~32	6~50
加工能力 (mm)	C	Max 26(32)	Max 50
	R2	R35×R10	
	N	Max 40 *1	
機械寸法 (mm)	1,892×1,250×1,000(1,505)	2,260×1,400×1,100(1,605)	
機械重量 (kg)	1,200	1,500	

*1 Max寸法の切削は諸条件により複数回の切削になる場合があります。

H形鋼 開先加工機 (ノンスカラップ対応型)

HS-Series H-Shaped steel beveling machine



- 独自のNC制御で高精度と抜群の操作性を実現。
- ノンスカラップ加工対応の最新鋭マシン。
- マイクロコンピュータ、インバーターの採用で各カッターに最適した自動速度選定。
- 勾配加工が工程で可能。

型式	HS-38NS	HS-38NL	HS-38NW	
適用寸法 (mm)	H	200~1000		
	A	170~953		
	B	100~600	100~500	
	K	□250~□600	— *2	
	R1	110以下	— *2	
加工能力 (mm)	T	6~38		
	C	Max 26(38)		
	S	-30~300		
	R2	R35×R10		
	N	Max 40 *1		
機械寸法 (mm)	1,775×2,600×2,238	2,100×2,600×2,238	4,240×2,600×2,238	
機械重量 (kg)	4,500	5,000	10,000	

*1 Max寸法の切削は諸条件により複数回の切削になる場合があります。
*2 NL, NWについて角コラム外径加工は対象外としております。

H形鋼 開先加工機 (ノンスカラップ対応型)

HQ(B)-Series H-Shaped steel beveling machine



- ノンスカラップ加工対応型として新登場。
- 新型ディスプレイと最新の電子機器の搭載で機能性と操作性を充実。
- 切削方向を上から下として切粉飛散を防止。
- 伸縮コンベアーの採用で短材送りが可能。

型式	HO-1040N *	HQB-1255N *	
適用寸法 (mm)	H	200~1000	200~1200
	A	182~990	182~1190
	B	100~500	
	K	□250~□500 *2	
	R1	110以下 *2	
加工能力 (mm)	T	6~40	6~55
	C	Max 40	Max 55
	S	-30~300	
	R2	R35×R10	
	N	Max 50 *1	
機械寸法 (mm)	2,250×2,806×2,710(NL)	2,250×3,280×2,710(NL)	
機械重量 (kg)	8,000(NL)	9,500(NL)	

*印部/S標準型 Lライン型 (片側加工連続自動運転) Wライン型 (片側・両側加工連続自動運転)
*1 Max寸法の切削は諸条件により複数回の切削になる場合があります。
*2 NL, NWについて角コラム外径加工は対象外としております。

H形鋼 開先加工機 (ノンスカラップ対応型)

HG(B)-Series H-Shaped steel beveling machine



- ノンスカラップ加工対応の最上位機種。
- 最新の電子機器を搭載して機能性と操作性を充実。
- 切削方向を上から下にして切粉飛散を防止。
- 伸縮コンベアーの採用で短材送りが可能。
- スベリ摺動面(ギブ方式)と大径カッターの使用で重切削に対応。

型式	HG-1355N *	HGB-1575N *	
適用寸法 (mm)	H	200~1300	200~1500
	A	182~1288	182~1488
	B	100~500	100~700
	K	□250~□500 *2	□250~□700 *2
	R1	110以下 *2	
加工能力 (mm)	T	6~55	6~75
	C	Max 55	Max 75
	S	-30~300	
	R2	R35×R10	
	N	Max 50 *1	
機械寸法 (mm)	2,315×3,760×2,825(NL)	2,315×3,960×3,025(NL)	
機械重量 (kg)	13,500(NL)	16,000(NL)	

*印部/S標準型 Lライン型 (片側加工連続自動運転) Wライン型 (片側・両側加工連続自動運転)
*1 Max寸法の切削は諸条件により複数回の切削になる場合があります。
*2 NL, NWについて角コラム外径加工は対象外としております。

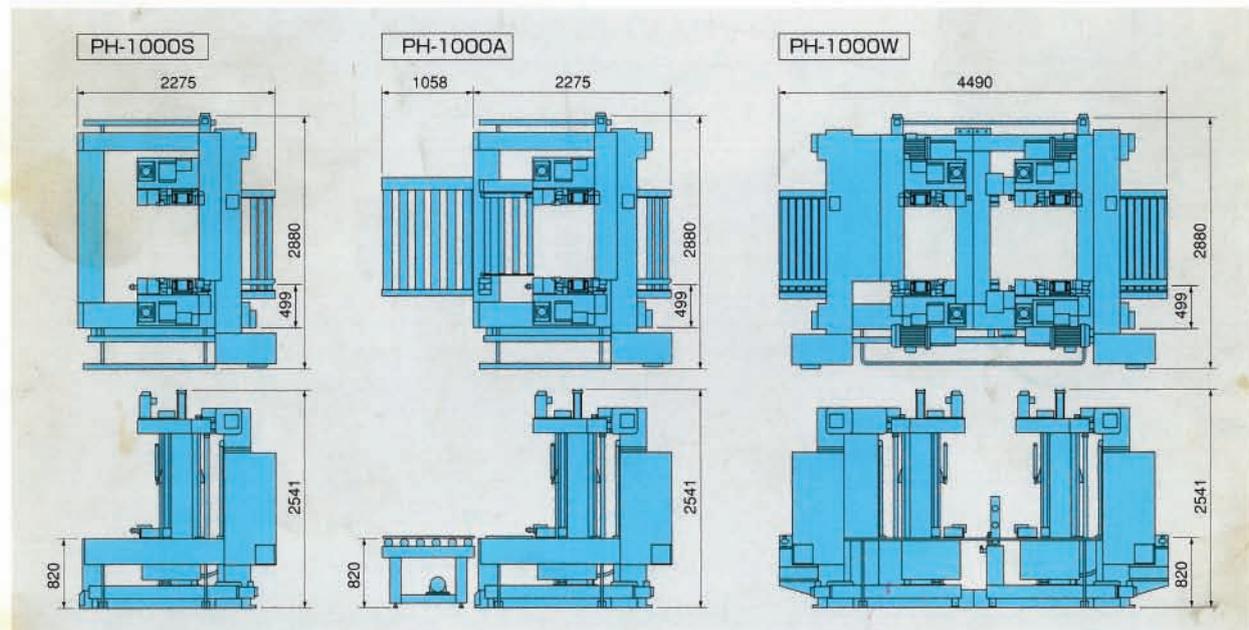
WELD JOINT BEVELLER PH-1000S/ PH-1000A/ PH-1000W



標準仕様

仕 様	PH-1000S	PH-1000A	PH-1000W	
加工材寸法	H 形 鋼 コ ラ ム 材 200×100mm~1,000×600mm			
加工能力	追 込 量	250×600mm		
	ス カ ラ ッ プ	40mm		
	開 先 量	35R		
	勾 配 量	35° Max40mm		
	加工材通過時最短長さ	0~400mm (※原則として材幅に対して1:2.5)		
標 準 カ ッ タ ー	開先カッター35°(40t用) 追込カッター スカラップカッター (左右各1ヶ)		同左×2 (A機・B機用)	
オ プ シ ョ ン カ ッ タ ー	開先カッター45°(40t用) K開先用60°(17t用) 45Rスカラップ用 ノンスカラップ用特殊カッター			
加 工 基 準 方 式	油圧クランプ方式による内面基準方式			
使用電動機	主 軸 用	7.5kW×2台		
	油圧ユニット用	2.2kW×1台		
	移 動 側 用	0.8kW×1台 (サーボモータ)	7.5kW×4台	
	勾 配 側 用	0.8kW×1台 (サーボモータ)	2.2kW×2台	
	主 軸 昇 降 用	0.8kW×2台 (サーボモータ)	0.8kW×2台 (サーボモータ)	
	コ ン ベ ア 用	0.1kW×2台	0.1kW×2台	0.8kW×4台 (サーボモータ)
機 械 重 量	5,200kg	5,500kg	11,000kg	

外形機械寸法



このマークが表示されている機種につきましてはメカトロ減税に該当する設備として、取得価格の7%税額控除と一般償却が認められます。詳しくは、販売店または当社テクニカルセンターまでお問い合わせください。



正しく安全にお使いいただくために、ご使用前に必ず取扱説明書をよくお読み下さい。

■このカタログに掲載された仕様・外観は、予告なく変更する場合があります。
■写真は印刷のため製品の色と多少異なる場合があります。
■製品写真の大きさは同比率ではありません。

SHINX

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- | | | |
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Product specifications from SHINX for reference only.



DNF-1000T

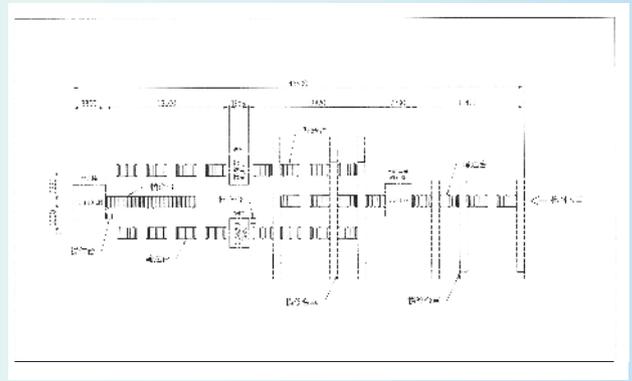
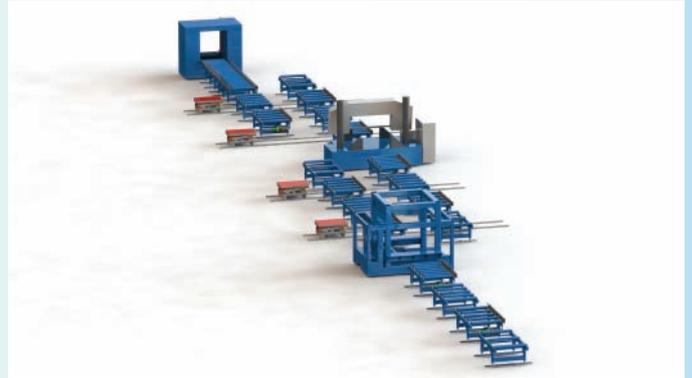
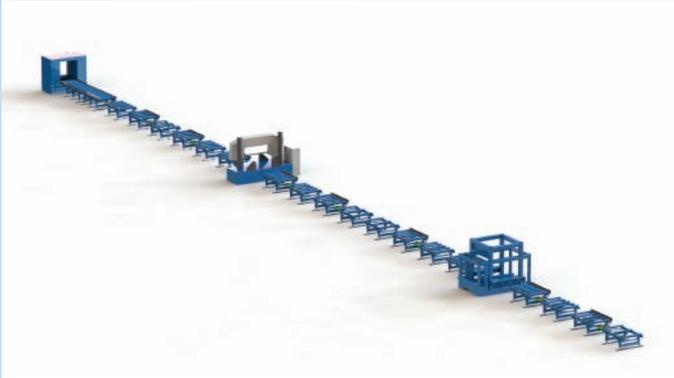


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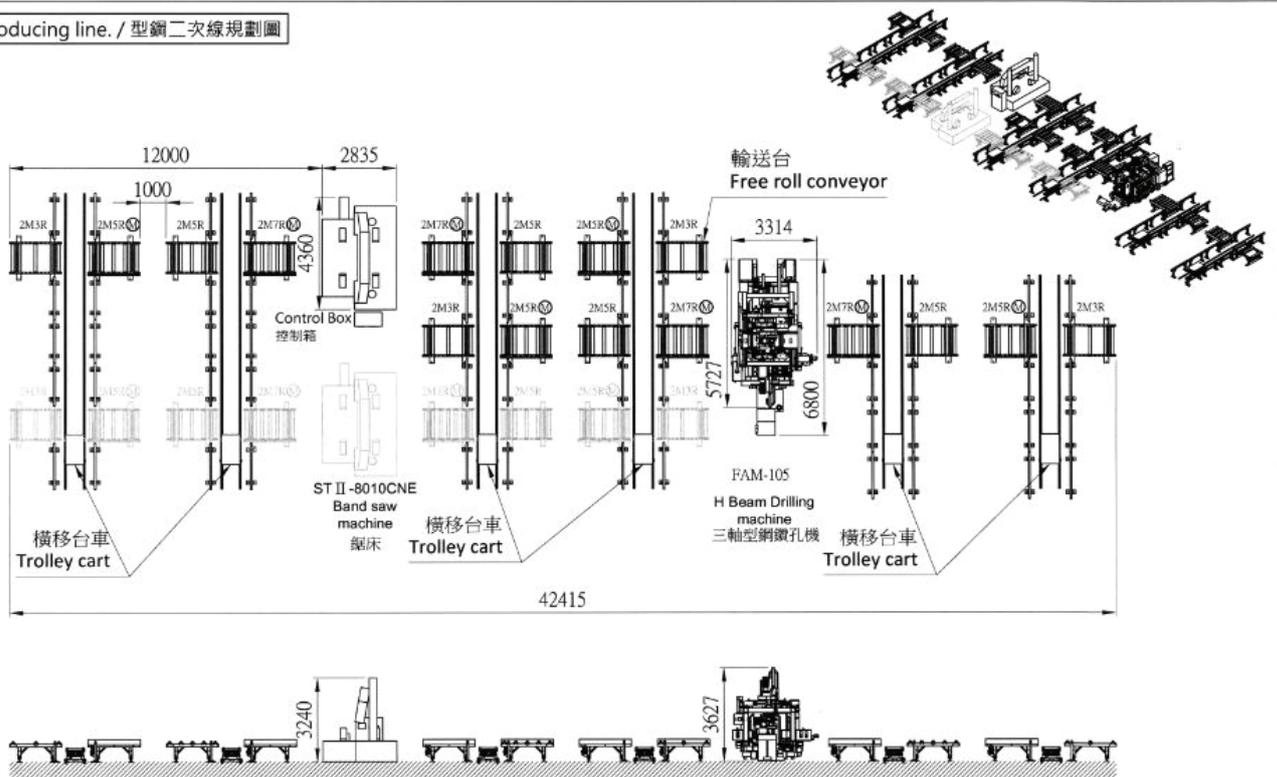


Export packing





H-Beam 2nd producing line. / 型鋼二次線規劃圖

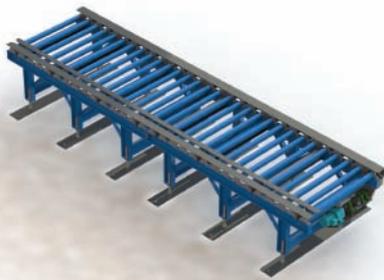




2M-5R(M) conveyor



2M-5R conveyor



5M-30R(M) conveyor



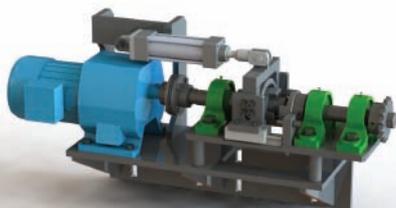
HLB-1040NL roller conveyor



Rise roller



Side aligning pusher



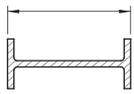
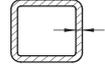
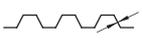
conveyor power unit

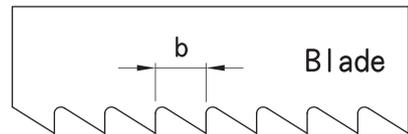


Sliding trolley

Cutting condition list (for H-beam)

Cutting condition list

Material spec. (mm)	Blade size	Blade speed	Feeding speed
	Under 400	4 / 6	4.5 ~ 3.5
	400 ~ 500	3 / 4	
	500 ~ 900	2 / 3	3.5 ~ 3.0
 	Under 9	4 / 6	4.5 ~ 3.5
	9 ~ 16	3 / 4	4.0 ~ 3.5
	Upon 16	2 / 3	4.0 ~ 3.0
 	under 1.6	6 / 10	3.5 ~ 3.0
	2.3	5 / 8	
	upon 3.2	4 / 6	
 	75 ~ 150	3 / 4	4.0 ~ 2.5
	upon 150	2 / 3	3.5 ~ 2.0



Material

$B > b$

Teeth distance (b) need less than thickness of material (B)

Remark

- 1) above list, the cutting condition is for material SS41. If you cut material SM, please reduce 20% on cutting speed and feeding rate.
- 2) Feeding speed need adjustment depend on weather temperature. If temperature high, please reduce the feeding rate.
- 3) When you change feeding rate, please turn to 1, then turn to your needed data.
- 4) If you want to cut a bundle of material, the high of bundle material are under half of capacity, and use push down clamp, you can get the biggest cutting efficiency.
- 5) Our machine use Lenox saw blade will get the best cutting effect. And please follow the suitable tension indicate.
- 6) If material have stress inside, it is easy to catch saw blade. please Lenox EHS blade, bigger teeth distance, it is easy to cut it off.

Three points of cutting skill

1. Run-in period

For getting a long life of saw blade, when you replace new blade, please use Run-in cutting mode. Saw blade cut area within for easy-cutting material in 600cm, or hard-cutting material in 300cm, we call run-in period. In this period feeding rate is half of normal condition, and cutting speed is as normal. After run-in period all condition can use as normal condition.

2. steel brush adjustment

steel brush need adjust to the position that it can arrive at the bottom of teeth. It can avoid the uneven cutting surface.

3. Kind and consistence of cutting fluid

Good cutting fluid will get a good cutting effect and get long blade life. Depend on material, different kind of DAITO cutting fluid are as following

material		cutting fluid	consistence
easy cut material	SS,SM,SC...	HG,GS	fluid 1 : water 20
a little hard material	SCM,AL ...	GL	fluid 1 : water 15
more hard material	SKD,SUS ...	GT	fluid 1 : water 5

To avoid cutting fluid frozen, please add 20% of antifreeze - DAITO Dynamic Flow.



Carbide drill

Tungsten drill

GOH

TTDG

Twist drill

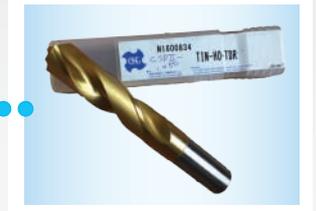
Drill bits comparison

Model		Carbide drill	Tungsten drill	GOH	TTDG	Twist Drill
Cutting speed (Data from maker)		180m/min	90 m/min	30 m/min	30 m/min	20 m/min
Feeding		0.12mm/ rev	0.25mm/ rev	0.4 mm/ rev	0.35mm/ rev	0.2mm/ rev
RPM (24 Ø)		2388rpm	1200rpm	400rpm	400rpm	265rpm
Feeding speed (24 Ø)		4.7mm/sec	4.9 mm/sec	2.66 mm/sec	2.3 mm/sec	0.88 mm/sec
Hole capacity (m/m)		12-150	14-40	8-40	14-32	1-80
Qty. / day(8 hours) (24Ø · 25t)		4800 holes/spindle	4800 holes/spindle	2100 holes/spindle	1800 holes/spindle	700 holes/spindle
Time	24Ø · T:25mm (stroke:33mm)	7sec	6.7sec	37.5sec	14.3sec	12.4sec
	24Ø · T:100mm (stroke:108mm)	23sec	22sec	123sec	47sec	41sec
Tool cost	Ø:24mm T : 50mm NTD	4.00/hole	4.00/hole	Under 0.10/hole	Under 0.10/hole	2.00/hole (1.00/hole is the best)
Suggestion	Suitable condition	Upon 40 Ø Need done faster	Under 40 Ø Need done faster	Upon 40 Ø	Under 40 Ø	Under 40 Ø T:upon 32mm need done faster
	Advantage	High speed	High speed	Low cost	Lost cost	High speed
	Disadvantage	High cost · high rigidity M/C require · can' t drill thin plate	High cost · under 40 Ø suitable · can' t drill thin plate	Low speed	Low speed · under 40 Ø suitable	High cost · can' t drill thin plate

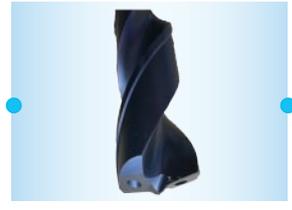
TTDG
(Taper drill bit for steel structure)



GOH
(Oil hole drill bit for DAITO machine)



GOH
(Oil hole drill bit for DAITO machine)



The size of chips for Japanese brand of Beveling machine are as right side list. Have some items made in Taiwan and some items made in China for your choice.

開先加工機用チップ								
形式	形状	寸法	メーカー	形式	形状	寸法	メーカー	
NSR-A		内径φ14×6.35	那波精工	OST-111		φ20×4.76	シンクス(株)	
NSR-C		φ20×6.35		M102(SPCH53TR-R)		□15.875×4.76		
NSS		□12.7×4.76		M-111		φ20×6.35		
GOT		□14×6.35	(株)宏栄 (日本構造(株))	M-108		φ12×4.76		
GET		φ16×4.76		F17		□12.7×5.5		
OT		□13.5×6.35	(株)ハタリー 精密	HT-115		□12.7×4.76 (ノーズR3)		
SHD		内径φ14×6.35		MK21		□12.7×4.76 (ノーズR0.8)		マック(株)
SHO		φ12×6.35		10Rチップ		φ20×4.76		
KNR-10		□13.5×R10		SOT		□13×6.35		ミタチ
ST		12.7×26.4×4.76	三商(株)	HB-15		□12.7×3.18 (ノーズR0.8)		日東工器
HTL(菱形)		内径φ12.7×6.35		BNR3		□12.7×4.76	宮川	
HTR(菱形)		内径φ12.7×6.35						
SAS-X		□12.7×4.76 (ノーズR2)						
10Rチップ		φ20×4.76						