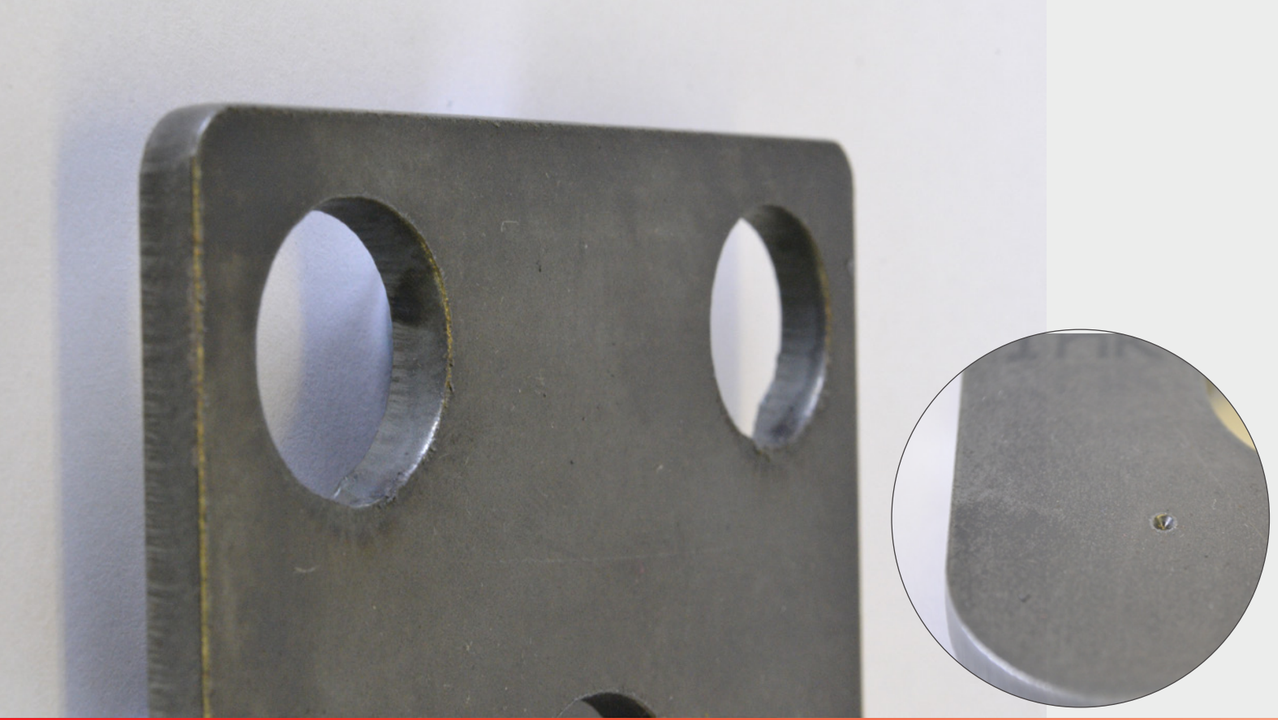
PNC-12 Extreme

CNC controlled plasma/oxyfuel machine
1500x3000 or 1000x1500 effective cutting area

- Minimum footprint and maintenance
- Rugged, flexible and reliable design
- The most economical all-in one cutting solution
- Over 2,500 units sold globally

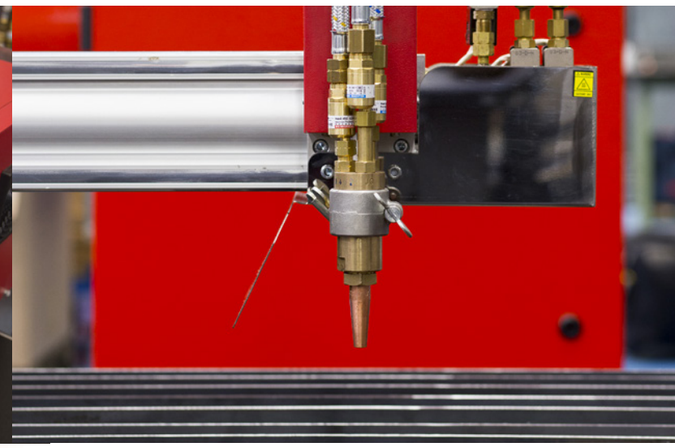
KOIKE

Your cutting needs – achieved.



Punch marking with plasma

D420 Controller



Oxyfuel cutting head

The PNC-12 Extreme

PNC-12 Extreme is an affordable CNC controlled plasma and/or oxyfuel machine with modest dimensions but yet offers a full 1500x3000 or 1000x1500 effective cutting area. The standard package also contains a comprehensive CAD/CAM software license. The system can be expanded with many options like your favorite plasma system, a sectional cutting table, an exhaust filter and many more.

The machine can be used as a plasma or oxyfuel only machine, but it can also be equipped with both options resulting in a very versatile and flexible cutting tool that can fulfill all your operational needs.

Typical customers / applications

Construction companies	HEB stiffeners, footplates, gusset plates and punch marking
Shipyards	small hull repair parts, lifting lugs
Technical schools	to introduce part design, nesting and CNC cutting to students
Boiler manufacturing	for heat exchangers and flanges
Agriculture	for machine repairs and manufacturing

Features and Benefits

D420 Controller

Controlling the PNC safely requires minimal effort and training for the operator if one of the 47 customizable standard shapes are used. Most settings are pre-set and need hardly any adjustments.

- For users that are more demanding, endless shapes and complete nests can be prepared with the off-line Koike PNC CAM software that is a part of the standard delivery.
- The D420 and the torch height control (plasma only) will face the operator making any adjustments or controlling the machine convenient.
- The moisture resistant membrane keyboard can also be operated with gloves.
- Available languages: English, German, Spanish, Portuguese, French, Dutch, Russian and Italian.
- CE certification.

Plasma cutting

The PNC supports the most up to date air plasma models like Powermax 45, 65, 85, 105 and 125 but also the Kjellberg CutFire 100i that can besides cutting, also mark to create welding and bending lines.

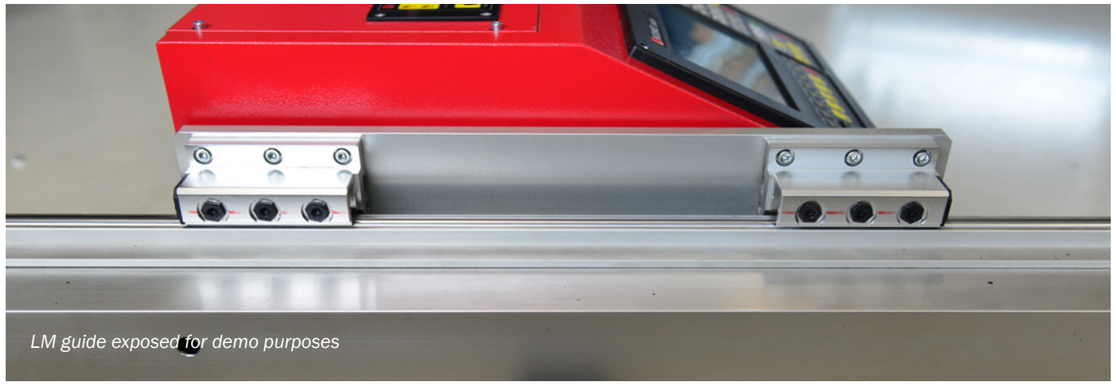
- With the standard table, cuts up to 50mm are supported.
- One of the neat features of the PNC is the ability to punch-mark with the plasma to leave a dent on a pre-set position on the plate for later processing with for example a drill. This accurate way of processing delivers optimal accuracy compared to manual tape measuring.
- Please contact us to inform if your existing plasma is suitable for the PNC-12.

Oxyfuel cutting

The PNC-12 supports oxyfuel cuts up till 50mm with propane, LPG, acetylene, MAPP and other gases on the standard cutting table.

- The gases for preheat and cutting are switched on/off with the integrated solenoid valves on the PNC that are controlled by the D420.
- The preheat time can be manually pre-set to the time appropriate to the thickness or manually overruled if this turns out to be necessary.
- In the torch, your standard KOIKE cutting nozzles can be fitted for propane, acetylene, MAPP and natural gas.
- A set of 5 Koike high-speed nozzles is supplied with the machine.
- Cuts up to 50mm are supported in combination with the supplied table.

Features and Benefits



LM guide exposed for demo purposes

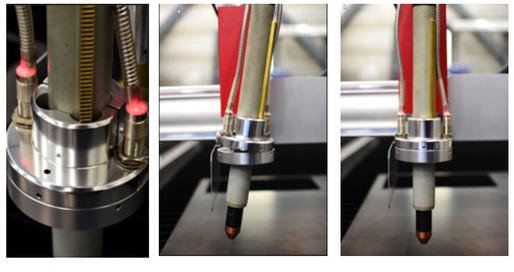
Mechanical stability, durability and protection
In the design phase of the PNC, the engineers integrated precision parts that ensure durability, stability and repeatability of the X and Y axis. This is particularly noticeable in the machines crossbar that is significantly larger compared to similar machines, but also the base rail that is made of a welded steel construction. Inside the crossbar the plasma torch lead, the oxyfuel hoses and electrical cables are securely protected depending on the machine you choose.
All the vital mechanical guidings of the X and Y axis are shielded from splatter and dust resulting in a minimum maintenance down-time and less operating costs.

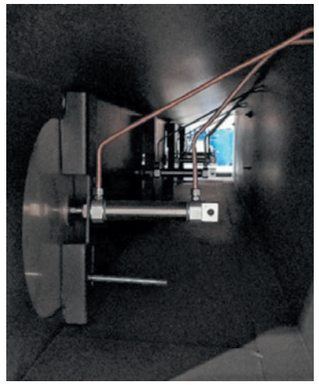
X and Y Axis Drive systems
Both the X and Y axis are rack and pinion driven by stepper motors with smooth electronic stepper motor drivers.

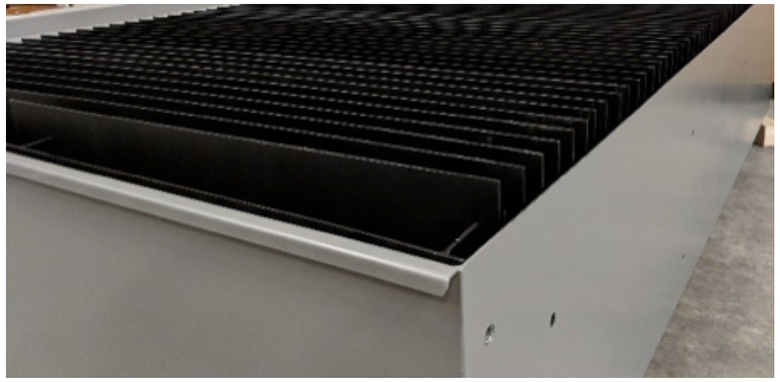
Torch Z axis
The Z axis is DC driven with a ball screw to ensure enough resolution for an accurate torch position above the plate which is especially beneficial during plasma cutting.

Plasma Torch Height Control (THC)
During plasma cutting, the feedback from the plasma Torch Height Control system to the lifter will ensure an optimized height of the torch above the plate throughout the cut.
Settings like: ARC voltage, initial height and piercing delay, ARC test and the torch up/down can be set.

Plasma torch breakaway system
The plasma version of the PNC is equipped with an electronic system that protects your valuable torch in case a part tilts during cutting. This standard option will decrease your operational costs and keep your production up.
By looking at the two LED indicators, the operator can instantly see if the torch is properly seated in the magnetic holder or not.







Dry cutting table
Available is a downdraft dry cutting table in two dimensions (1500x3000 & 1000x1500) with pneumatically operated sections to effectively extract fumes from the plasma cutting process. During travelling, the PNC will automatically open or close the valve in section where the machine is positioned. The advantage of sections are two ways.

- A filter with less capacity can be used which saves workshop space, noise and power consumption.
- The table does not have to be fully covered during cutting.

Every cutting table needs necessary occasional cleaning where off-cuts and slag will have to be removed. The time to do this job is decreased because the top deck of the table is bolted onto the base chassis making the dross bins easily accessible for cleaning.

Herr 880200 Exhaust system
A filter system with two ePTFE cartridges is offered optionally to safely remove dust from the plasma cutting process resulting in a reduction of dust gathering underneath the plate and cut parts and above all, a cleaner working environment.
The bin inside the exhaust gathers the dust, can easily be removed and needs to be emptied periodically.
To connect the table and the filter together, a kit is available with tubes, bends and tape suitable for most installations.
This filter is for inside operation and is not suitable for light alloys like aluminum.

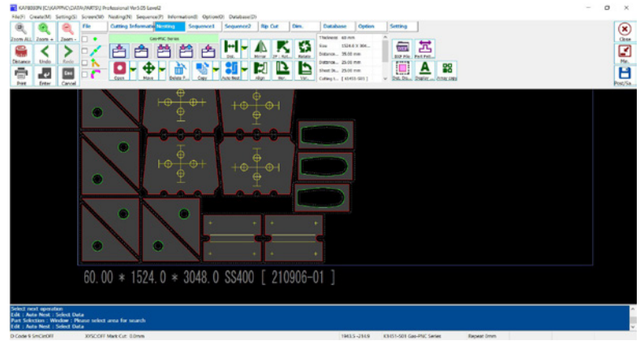
Service and Aftersales

Installation and training of the PNC's controller and the PNC-CAM is a part of our services but it does not end after that. Our service engineers will be available to remotely assist you in case of questions. In case of plasma or oxyfuel consumable and replacement parts, most are available from stock in Zaandam (Netherlands).

Programming

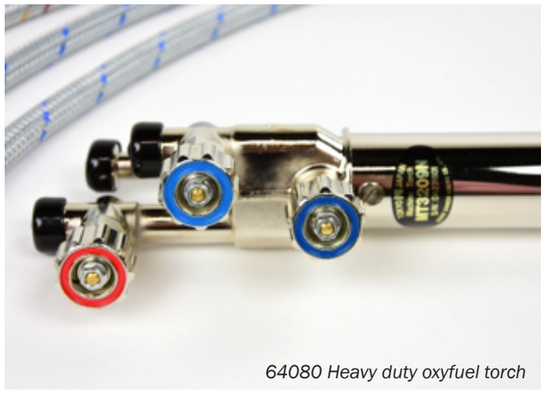
PNC-CAM Expert

One license on a USB thumb drive is provided for the Koike PNC-CAM Expert software with which parts can be designed, nested and posted for the use on the D420 controller. This package offers design flexibility on a professional level but also it can create a report that contains the data of the cut part or nesting.



Main features:

- Create/design parts
- DXF and DWG import
- Auto nesting up to 12 parts



64080 Heavy duty oxyfuel torch

Heavy duty oxyfuel torch

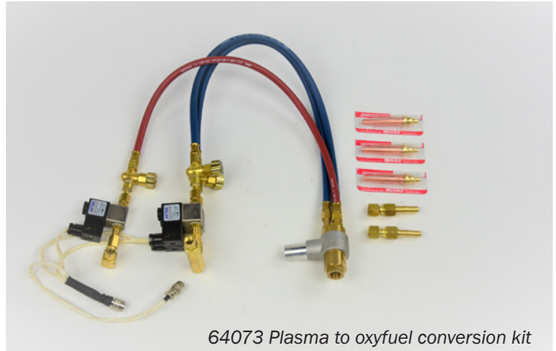
For prolonged oxyfuel cuts or thicker cuts, an optional heavy duty torch is available with a longer shaft length (230mm) and shielded gas hoses that will provide additional durability and protection.

Optional conversion kits

For customers that initially purchased an oxyfuel or a plasma capable PNC, so not a combined model, a conversion-kit is available to add the extra cutting process to their machine. If plasma as well as oxyfuel is fitted, an extra holder is available to safely place the unused torch.

If both cut processes are fitted on the PNC, an optional bracket is available to park the torch that is on active.

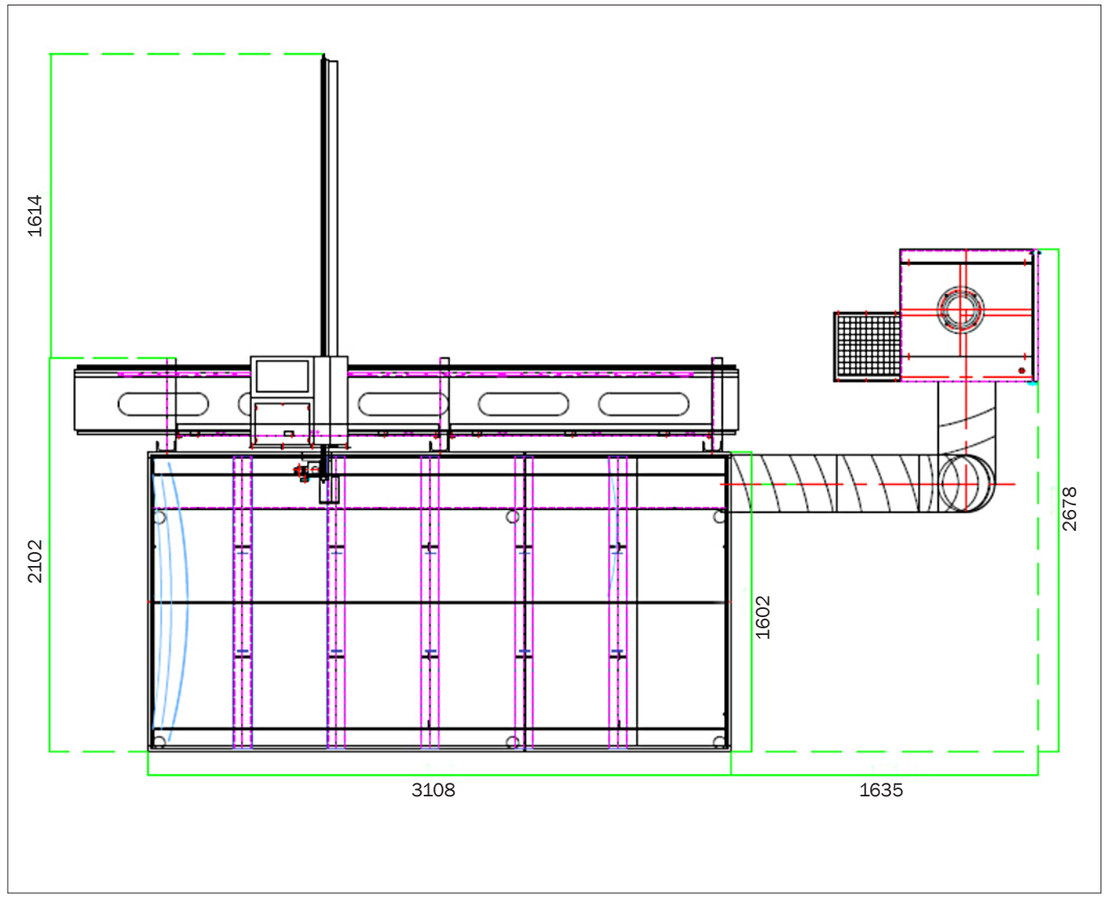
64072 Oxyfuel to plasma conversion kit



64073 Plasma to oxyfuel conversion kit

Footprint

An example of a typical setup of a 1500x3000 PNC with table and filter system.



Specifications

		PNC-12 Extreme	
Type		**1015**	**1530**
Effective cutting area		1000 x 1500 mm	1500 x 3000 mm
Rapid travel speed		4000 mm/min	
Maximum cutting speed		3000 mm/min	
Longitudinal rail		Welded steel construction	
Cross bar		Aluminium extrude with integrated gas piping	
Motor: x-axis and y-axis		Stepping motor	
Motor: torch lifter		DC motor	
Driving method		Rack and pinion	
Rail system x-axis and y-axis		Linear guiding	
Input voltage		Single phase 200-240VAC, 50/60 Hz	
CNC: Main features	Model	KOIKE D420	
	Display	7 Inch color	
	Language	EN / DE / FR / IT / NL / NL / RU / ES and other	
	Program input	Manual MDI or by USB	
	Pre-installed cutting patterns	47 Shapes (editable)	
	Program format	EIA format	
	Functions	Rotation, mirror, nesting, cutting recovery, piercing point selection and more	
Bundled software: Main features	Version	KOIKE PNC-CAM Expert V2E	
	CAD drawing	2D CAD with many functions, optimizing cutting parts creation	
	CAD data import	DXF, DWG	
	CAD data saving	DXF, PT (Koike part registration format)	
	Auto nesting function	Yes	
	Auto sequence function	Yes	
	# Of shape types on 1 plan	12	
	Nesting data export	Direct saving to USB, with PNC-12 readable format	
Oxyfuel model features	Maximum cutting thickness	50 mm(*)	
	Number of solenoid valves	Total 3 pcs, 1 for each gas line	
	Piercing sequence	Customizable torch movement and timing	
	Cutting nozzle	5 x Koike high-speed nozzles included	
Plasma model features	Plasma system	Optional	
	Maximum cutting thickness	Amperage depending	
	Torch holder diameter	For ø35 mm plasma torch (ø44 mm optional)	
	Initial torch height control	Yes	
	Torch collision protection	Yes	
	Arc Voltage torch height control	Yes	
	Compatible Arc Voltage division ratio	1:1 (raw Arc Voltage) or 50:1	

** With standard setup. Contact Koike for requirements for thicker material cutting using PNC-12 Extreme*

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