Portable CNC Cutting Machine

**PNC-12 EXTREME**

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Koike Sanso Kogyo CO., LTD
“Portable CNC Cutting Machine”, with integrated CNC controller.
- Travels on a special steel-made robust rail on longitudinal axis.
- Transverse movements are done with an extra-wide cross bar penetrating the machine body.
- For oxy-fuel type machine, gas hoses are connected at the end of the cross bar.
- Installation can be at ease. Cutting may be started within a half-day of setting up.

Koike Sanso Kogyo Co., Ltd.

- Cross bar is located next to the machine body.
- Gas hoses are connected at the end of cross bar (quick-connection couplings are optional)
Although PNC-12 EXTREME is a CNC controlled machine, Koike achieved to supply the high performance machine at a lower cost.

With the flexible CNC, various shapes can be cut with nesting. It is a machine that can cover jobs of Koike’s classic portable machines, such as IK-54D, IK-70, IK-82, and of tracing machines.

Top left: IK-54D
Top center: IK-70
Top right: IK-82 L-900
Left: Tracing machine, IK-1500G
D420 New Controller

- Equipped with a 7-inch color LCD, which displays easy-to-understand graphical user interface.
- Simple control with integrated panel keyboard.
- **48 pre-set patterns** make it possible to cut most of basic patterns without use of special CAD/CAM softwares.
- Despite the low price, D420 is equipped with **top-of-the-line functionalities**. Few of examples are mirror, plate rotation, material rotation, dry run, return, program search, piercing point selection,
USB Support

- D420 Controller comes standard with a USB port.
- USB is used to import/export NC data, or to run CNC update program and new language file installation.
- Cutting and nesting data can be made with CAD/CAM software, “PNC-CAM-2A”, which comes standard with PNC-12 Extreme packages from Koike.
- With “PNC-CAM-2A”, virtually every shape can be created and import to PNC-12 Extreme for cutting.
- Other Koike’s nesting software can be used with PNC-12 Extreme.

USB port is located on the left side.

By importing NC data from USB, virtually every shape can be cut with PNC-12 Extreme.
Rack and Pinion drive system

- Rack and Pinion drive system is implemented for both transverse and longitudinal axis for high-precise movements.
- Specially designed longitudinal rail has two (2) linear guides and a rack. Rail length is 3540mm. (effective cutting length: 3000mm)
- Cross bar has a rack on the bottom side. Cross bar length is 2000mm. (effective cutting w

Note: KSK recommended specification is effective area: 1500mm x 3000mm. But also other selection is available. Transverse bar is selectable from 1,900mm, 2,150mm, and 2,400mm. Longitudinal rail is selectable from 2,000mm, 3,000mm, and 3,540mm.
Metal-guided Cross bar

- **Metal made**, extra wide and robust guiding system.
- **Extra thick aluminum extrude cross bar** to minimize vibration and eliminate torch “sink”.
- Gas lines are integrated in the cross bar.
- Drive system is placed in a separated compartment from Machine body, **avoiding dusts to invade into the Control box**. Contributes to long life time of the cutting system.

Precision and durability – matters for Koike.
Plasma Compatibility

- PNC-12 EXTREME is fully compatible with plasma cutting.
- Compatible with various types of plasma power supplies with machine torch (35mm diameter).

Koike recommends Hypertherm® Powermax series.

Initial Height Controller & Arc Voltage Control unit, and torch collision protection system come standard with every Plasma package of Koike.

Picture shows fully equipped plasma type PNC-12 Extreme Plasma system (torch, lead, power source) is optional, and not included.

Torch break-away system that protects the torch and machine in case of collision.
Optimized plasma capabilities

- Plasma type PNC-12 Extreme comes with an IHC&AVC unit, which enables to cut with contact-detection initial height controller, arc voltage height controller, and torch break-away system.

- IHC & AVC unit is integrated on the top cover of PNC-12 Extreme, and can be operated at ease.

![IHC & AVC unit integrated on top cover](image1)

![IHC & AVC unit in operation](image2)

![AVC function test in an extreme condition. Smooth height control is achieved on 4-degree angled plate.](image3)
Optional Modification Kit
(from Plasma ready model to Oxy-fuel model)

- 3 set of standard solenoid valves and a motorized torch lifter are included in oxy-fuel setup as standard option.
- Smooth **automatic piercing sequence**, together with Preheat timer on D420 and synchronized solenoid valves and motorized torch lifter.

Motorized torch lifter

3 set of solenoid valves

Automatic piercing sequence, just like a higher-class CNC machines.
Plasma to Oxy-fuel conversion

- Similarly, PNC-12 Extreme can be converted from Plasma to Oxy-fuel setup at any time with optional Conversion Kit (from Plasma ready model to Oxy-fuel model)
- A useful choice in case when there is needs for cutting of thick mild steel plates.

![Plasma to Oxy-fuel conversion process](image)

2. Oxy-fuel Conversion Kit
3. Mount oxy-fuel torch unit and signal cable. Plasma torch and signal cables need to be dismounted completely.
PNC-CAM-2A (New version)

- “PNC-CAM-2A” is a CAD/CAM software specially designed for Koike PNC series.
- Simple and easy operation.
- Increased productivity and efficiency by lead in/out adjustment and nesting.
- Virtually every shapes can be programmed for cutting.
- Additional pattern shapes for easy shape creation.
- New version of PNC-CAM is available for “Auto nesting” and “Auto sequence” function.
# PNC-12 EXTREME Specifications

## Machine body
- **Transverse bar length**: 2,400mm
- **Effective cutting width**: 1,500mm
- **Longitudinal rail length**: 3,540mm
- **Effec. cutting length**: 3,000mm
- **Rapid speed**: 4,000mm/min
- **Cutting speed**: 100mm/min - 3,000mm/min
- **Supply voltage**: Single phase, 110V or 220/230V selectable by internal switch
- **Heat shield plate**: Provided at side of the machine and the torch motor

## CNC
- **Model of CNC**: KOIKE D420
- **Operation panel**: 7 inch color LCD graphic display and key pad
- **Language**: English, Japanese, Chinese, French, Spanish, Portuguese, Russian, Korean, Dutch
- **Program input**: Manual MDI or by USB stick (up to 16GB)
- **Control axis**: X / Y 2 axes control
- **Coordinate range**: Max. +/- 99,999,999mm
- **Program format**: EIA format
- **Shape library**: 48 patterns
- **Operation function**: Dry run, Reverse, Plate alignment, Mirror, and much more

## Plasma cutting
- **Torch holder**: 1 set with motorized torch riser and torch break away mechanism / Diameter 35mm
- **Suitable plasma system**: Non high frequency arc start type plasma system (Customer’s Scope of supply)
- **Plasma cable holder**: Transverse bar hold type
- **Torch height control**: Initial height sensing / Arc voltage torch height control

## Optional specification
- **Oxy-fuel cutting**: 1 set with motorized torch riser
- **Oxy-fuel cutting tip**: 3 seats KOIKE 100 series tip
- **Cutting thickness**: Max. cutting thickness is subject to cutting tip size.

## CAD/CAM
- **Model**: PNC-CAM 2A

Contact to Koike for more details.
PNC-12 Extreme Type-1530 Plasma

- Type-1530 Plasma (Effective cutting width 1500mm, length 3000mm)
- Plasma system (torch, torch lead, and power source) is additional option, and not included.
Conclusion

- PNC-12 Extreme is a compact CNC machine that can boost up customer’s productivity at low cost.
- Together with the included PNC-CAM-2A software, high level of flexibility and work efficiency can be achieved.
- Excellent local, sales, warehouse, and service support from the KOIKE.

PNC-12 Extreme is Your Choice!