THE NEXT STEP IN
THE RIGHT DIRECTION

The PCS SR-II
(Stepped Rail)

The PCS SR-II was designed to be an efficient, high quality and cost effective CNC cutting machine.

Placing flame (oxy) torches or a high definition plasma system onto an inexpensive machine frame to produce short term quality cutting is no major challenge. Manufacturing one to operate in an industrial environment with virtually no mechanical backlash for years to come is.

THINGS TO LOOK OUT FOR

Good quality, Durable Rack, Rail and Pinions?
Many cheaper machines utilize smaller or less durable components which work great at first, however these machines are destined to suffer premature wear. Any mechanical backlash or abnormality will guarantee poor quality cutting minute. Furthermore premature wear will result in excessive stress on other components such as motors, belts and drive amplifiers. Many managers have found the initial CapEx advantage of a cheap machine is quickly eroded by the loss of clients seeking better quality cutting and excessive maintenance callouts. Acknowledged managers that consider Arc On Efficiency when determining ROI will always purchase a PCS machine.

Dealing with High-Frequency Electrical Interference?
The plasma cutting process produces extreme levels of high-frequency electrical interference. PCS’s extensive two decades of plasma experience and close relationships with component manufacturers has resulted in premeditated methods to screen, protect and select electrical components. Even the slightest penetration of high-frequency electrical interference can lead too difficult to detect intermittent errors which reduce the cutting quality and productivity.

Installation Charges?
PCS provides installation included with any PCS SR-II quotation. Installation costs can equate to thousands of dollars. Many machine dealers require installation by a third party where by any abnormality in the installation process will ultimately be charged to the end user.

Engineering and Test Capability?
PCS employ only the very best personnel. In particular staffs within the mechanical and electrical engineering departments are required to have exceptional qualifications while utilizing cutting edge computer engineering packages. In the design stage, all of the PCS machine models are rigorously tested and calculated through advanced computer modeling. This stage permits both major and fine mechanical adjustments that result in increased longevity achieved by very few manufacturers. Once an unparalleled result is achieved a prototype is produced and put through the harshest of tests, and amendments are made. The final result is a benchmarked machine model that can operate exactly as stated in our quotations with no hidden surprises.

Local Support?
When buying from PCS you are dealing directly with the manufacturer. PCS stocks an immense array of spare parts and consumables to ensure that machine downtime is kept to a minimum should a breakdown or natural disaster occur. Equally important, PCS directly provides exceptional knowledge and advice. What down time can you expect for any breakdowns and how will this affect your corporate image? Can you trust the machine manufacturer to provide spare parts for years to come?

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The PCS SR-II was designed to be an efficient, high quality and cost effective CNC cutting machine. But don’t be mistaken, the PCS SR-II cutting machine will make light work of even the heaviest steel plate.

The machine carriage is an all welded construction with a transverse box beam section and heavy duty modular side supports which run on a stepped rail design for maximum precision and stability. This design also makes for easy and efficient loading and unloading of material. The main longitudinal drive mechanisms are mounted on precision machined side rail. With state of the art AC dual drive system, the PCS SR-II will perform to even the strictest of tolerances for years to come.

### Machine Dimensions

- **Effective cutting width**: Upto 18’ (5.5m)
- **Effective cutting length**: Infinite
- **Overall machine height**: 5’4” (1.6m)

### Drive System and Controller

- **Controller**: Burny® Phantom PC based controller
- **Drive Amplifiers**: Independent 3-Axis AC drive amplifiers
- **Motors**: 3x Custom wound 1.34HP (1kW), 4.75FT/LB (6.4NM) peak torque AC servos
- **Gearbox**: Steel housing 20mm output shaft precision German planetary gearbox combined with constant torque rack loading
- **Max axial load**: 2800N
- **Backlash**: < 12 arcmin

### Standard Gas Cutting Operation

- **Number of torches**: Up to 6
- **Cutting capacity**: Up to 10’ (250mm)

### Recommended Plasma Cutting Operation

- **Power Source**: Kaliburn Spirit II or Hypertherm HPRXD Plasma System(s)
- **Output Current**: 100 - 400 amp
- **Plasma Torch Lifter System**: INOVA Torch Height Control System
- **Cutting Capacity**: 0.36”- 2” (9 - 50mm) - Max capacity 3/4” (75mm)

### Standard Safety Features

- **Machine Protection**: Heat shields
- **E-Stop**: Independent Emergency-Stop circuit
- **End Limits**: Software controlled with redundant mechanical limit switches

### Machine Travel

- **Traverse speed**: 720 ipm (18 m/min) - Safety Limited
- **Profiling speed**: Up to 18 m/min
- **Max acceleration**: 2.4/s/s (0.7 m/s/s)
- **Machine accuracy on axis**: 0.006”/3’ (0.15mm/m)
- **Machine repeatability on axis**: 0.004” (0.1mm)

### Rack - All Axis

- **Helical CPS Precision ground. Rack has an accuracy of 0.006”/3’ (0.01mm/m)
- **Material**: S45C (C45) Steel. 1 1/4” (30mm) wide.

### Pinions - All Axis

- **Helical CPS Custom Precision ground Material**: S45C (C45) Steel

### Pinion Thrust Bearings

- **As standard

### Cable carrier

- **Cable carrier standard. Floor mounted.

### Bearings

- **1” (25mm) Linear rail & bearings on transverse axis. High quality, readily available bearings used throughout.

### Customizations

- **Customized cutting width**
- **Multiple gantries on common rail**
- **Infinite length**
- **Plasma cutting**
- **PCS Zero Offset Plasma bevel**
- **Up to 6 flame (Oxy) torches**
- **Independent torch station select**
- **Auto igniters**
- **Hi-flow gas manifold**
- **Hi-speed pre-heat**
- **PCS Fast Pierce with auto retract.**
  - Advanced piercing control for flame (Oxy) cutting
- **Water cooling rings**
- **Steel Grate Plasma cutting**
  - **Light duty single-spindle drill**
  - **Inkjet marking**
  - **PCS TurboGas - Automatic gas control for flame (Oxy) cutting**
  - **PCS IntuitiveGas - Automatic height control for flame (Oxy) cutting**
  - **On Table plate stock database**
  - **Job reporting interface for managers**
  - **Advanced maintenance logger**
  - **Travelling dross bin**
  - **Extra safety devices**
  - **PCS designed & manufactured wet or dry cutting tables**

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