

# A STEP IN THE RIGHT DIRECTION



The PCS SR  
(Stepped Rail)

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

Placing gas 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 while cornering at several meters per minute. Furthermore premature wear will result in excessive stress on other components such as motors, belts and drive amplifiers. In many cases the price difference between a cheap and quality machine is quickly eroded by the loss of clients seeking better quality cutting; and excessive maintenance callouts.

### 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 quotation. Installation costs can equate to thousands of dollars. Many imported machines 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 who cannot hide from Australian laws behind international barriers. 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 occurs. Equally important, PCS directly provides exceptional knowledge and advice. How much confidence regarding application and technical knowledge can be placed with a cheap machine importer? 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?

Partners



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# PCS SR (Stepped Rail)

## Technical Details

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

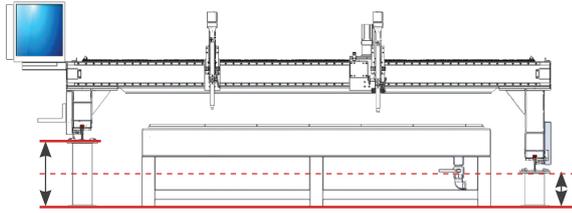


Fig. 1 - Stepped Rail Design

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 will perform to even the strictest of tolerances for years to come.

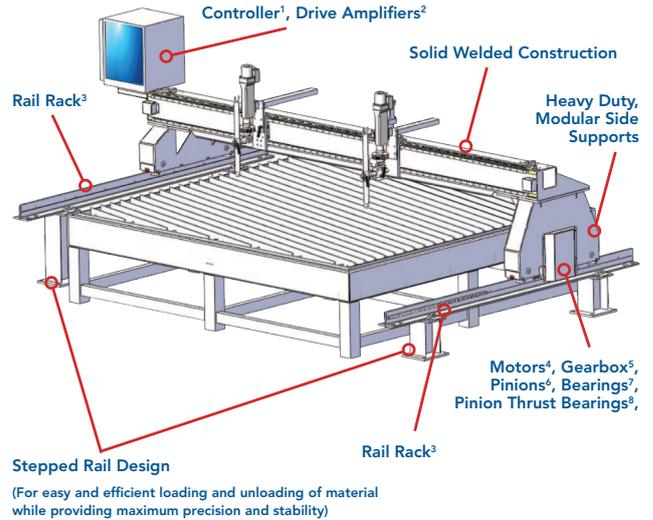


Fig. 2 - PCS SR Diagram (Parts Breakdown)

### Machine Dimensions

Effective cutting width	1.0 - 5.5m
Effective cutting length	Infinite
Overall machine height	1.6m

### Drive System and Controller

Controller¹	Burny® Phantom PC based controller 10.4" touch screen, Windows embedded, USB, Network ready
Drive Amplifiers²	Independent 3-Axis AC drive amplifiers
Motors⁴	Custom wound 1kW AC, 6.4NM peak torque on all 3 axis
Gearbox⁵	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 250mm (10")

### Recommended Plasma Cutting Operation

Power Source	Kaliburn ProLine or Spirit Plasma System(s)
Output Current	100 - 400 amp
Plasma Torch Lifter System	INOVA Torch Height Control System
Cutting Capacity	1 - 50 mm (Max capacity 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	Limited 25 m/min
Profiling speed	Up to 25 m/min
Max acceleration	0.7 m/s/s
Machine accuracy on axis	0.05 millimeters
Machine repeatability on axis	0.05 millimeters
Rail Rack³	CP Rack Pitch 5mm Rack has an accuracy of 0.01mm in 12m of length Material: S45C Steel
Pinions⁶	CP5 teeth grinding spur gears Pitch: 5mm Material: S45C Steel
Pinion Thrust Bearings⁸	As standard
Cable carrier	Cable carrier standard. Floor mounted.
Bearings⁷	Linear Bearings on cross axis High quality, readily available bearings used throughout

### Options

- Up to 5.5 meter effective cutting width
- Infinite length
- Up to 6 gas torches
- Independent torch station select
- Automatic torch height control
- Hi-speed pre-heat
- Fast pierce with auto retract
- Auto igniters
- Water cooling rings
- Hi-flow gas manifold
- Plasma cutting
- Plasma bevel
- Light duty single-spindle drill
- Inkjet marking
- PCS Turbogas
- Extra safety devices
- PCS designed & manufactured cutting tables