

# HandyPlasma: manual plasma cutting made easy

Keith Saunders of ESAB Southern Africa introduces the new HandyPlasma manual plasma cutting package, which offers a lighter, faster and more portable option for cutting carbon steel, stainless steel and aluminium sheet, and thin plate materials.

After two long years of development, the HandyPlasma has finally arrived – a light and portable hand-held plasma cutting machine weighing 13.5 kg, including the torch, with a 220/230 V 50/60 Hz single phase power supply.

The interface not only incorporates the latest technology in a colour LCD panel, but also simplifies every cutting setup. With a single knob, the operator can select each function to meet any need.

“HandyPlasma is a manual plasma cutter that is powerful enough to handle tough cutting jobs without dealing with complicated set-up and operation. It can cut through mild steel, stainless steel or aluminium grates and plates with ease, and it is available in two versions to meet a range of thickness requirements,” Saunders tells African Fusion.

“These plasma cutters use compressed air and an electric arc to create a high speed jet of plasma gas, which heats and melts through the metal cut while immediately blasting it away to create a clean kerf line.

That high speed plasma is called the ‘plasma jet’, because it travels at a very high speed, over 6 000 m/s, at temperatures of around 20 000 °C. This makes plasma cutting a very fast process,” he explains.

Compared to oxy-acetylene cutting, Saunders notes that the acetylene flame is hot enough to melt the metal, while the stream of oxygen is used to ‘burn’ the metal and blow it clear of the cut line. “Oxy-acetylene or flame cutting is great for cutting carbon steel and really comes into its own for thicker section – 25 mm and thicker – carbon steel material.

“But because flame relies on oxidising the material, it cannot produce a high quality cut on stainless steel or aluminium, for example. Flame cutting on materials that do not oxidise easily produces low quality cut lines, because the oxygen is actually blowing away molten metal instead of ‘burning’ the cut line and

blowing the gases away,” he explains.

Generally speaking, he says the new HandyPlasma solution is ideal for use on any metallic materials that conduct electricity and these cutting machines will produce a higher quality cut at a much faster speed. “The new HandyPlasma 45i for example, has a



The HandyPlasma comes ready to use, with a 60 A torch and a five metre lead.



HandyPlasma 35i and 45i manual plasma cutting systems offer light and portable hand-held plasma cutting from a 220/230 V single-phase power supply.

maximum recommended cutting thickness of 24 mm, but it will deliver an excellent cut on 16 mm carbon steel sheet, 12 mm stainless steel and 10 mm thick aluminium,” he says.

The units also incorporate a mode purpose designed for cutting through expanded metal sheet or grating. “On ESAB’s HandyPlasma machines, this is known as ‘grate mode’. The feature keeps a pilot arc lit to reignite the plasma arc after it jumps across the gaps in the cut line of the metal sheet,” Saunders explains.

Some of the modern features of HandyPlasma machines include:

- An intuitive LCD display: The HandyPlasma panel is totally user-friendly with a 2.8” colour LCD screen that clearly displays all settings needed at a glance: cutting mode, input voltage and input air pressure.
  - One knob control: Complete with the functions necessary for any cutting job, the HandyPlasma cutting machine is simple and quick to set up with just one knob using a three step process. First, the operator selects the desired mode for torch control, 2T – On/Off or 4T – Lock-on. Second, the ‘grate’ or ‘plate’ mode is selected, depending on the material being cut. Third, cutting can start.
- Built-in air regulator: The HandyPlasma comes with an automatic internal regulator that manages the air passing through the torch. It is not necessary to adjust the gas – the machine automatically detects the inlet and outlet pressure. It also comes with an external air filter with a purge valve for removing excess oil in the compressed air.
- A complete line of consumables has been specially developed to take advantage of the full potential of the HandyPlasma and to ensure it is always ready for work.
- The HandyPlasma comes ready to use, with a 60 A torch and a five metre lead. This ergonomic torch features a trigger lock for greater safety and a choice of 2T/4T function on the machine panel.
- The automatic system has a gas purging period to cool the torch after cutting, extending the life of the consumables.
- The system package consists of the HandyPlasma 35i or 45i plasma power source along with a HandyTorch 60A Plasma Torch.

These systems are ideal for jobbing shops doing light to medium fabrication that in-



These systems are particularly useful when having to work with a wide variety of sheet materials, including carbon steel, stainless steel and aluminium.



The HandyPlasma 35i and 45i units also incorporate a mode for cutting through expanded metal sheet or grating.

volves having to cut sheet metal plates or expanded metal quickly. They are particularly useful for having to work with a wide variety of materials where the key focus is on the shapes being cut.

Typical industries include agriculture; food and processing; mining; civil construction; transportation; repair and maintenance; and general manufacturing

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SPECIFICATIONS	HandyPlasma 35i	HandyPlasma 45i
Mild Steel Severance (max)	12 mm	16 mm
Mild Steel Clean Cut	12 mm	16 mm
Stainless Clean Cut	10 mm	12 mm
Aluminium Clean Cut	8 mm	10 mm
Piercing Capacity	6 mm	10 mm
Input power	220/230 V, 15 A single phase	220/230 V, 15 A single phase
Duty Cycle	35 A @ 35%	45 A @ 35%
Input Air Required	7.3 Bar, 110 ℓ/min	7.3 Bar, 110 ℓ/min
Generator Required	8 kVA	9 kVA
Dimensions (ℓ×w×h)	415×176×324 mm	415×176×324 mm
Weight	11.8 kg (13.5 w/torch)	11.8 kg (13.5 w/torch)