

BURNY

# SmartHC

Torch Height Control  
for Phantom Series



# BURNY SmartHC

The New Highly Integrated SmartHC Plasma Torch Height Control by Burny is here with features and benefits designed to increase both productivity and cut quality. One control box with up to five powerful 400 Watt AC Brushless drive amplifiers; two or three for machine motion and one or two reserved for torch height control. Packaging is a Burny specialty where all of our components are power matched and compatible for the most accurate control system on mid-sized to small gantry cutting machines. Whether you are retrofitting or looking for a new shape cutting machine, the new Phantom SmartHC control system is the smartest and most logical way to integrate all of the motion features of your machine into a one-source, single-company solution.

## Easier programming.

The touchscreen based screen layout is easier to program and more versatile than a pendant. You can even take it a step further and program all SmartHC functions using Advanced Command Messaging (ACM).

## Maintains set arc voltage better.

SmartHC uses a software digital signal processing servo loop, so you maintain the selected arc voltage with the highest degree of accuracy; +/- 0.4 volts! Precise arc voltage control affects dross formation, cut face appearance and the dimensional consistency of the part. Achieve a more exact cut with SmartHC stable platform, precision ball screw and guide rails and preloaded guide bearings.

## Finer resolution.

SmartHC gives you a torch height position control with a resolution of 0.001 inch and an arc voltage control with a set point resolution of 0.1 volt. These precise settings give you unparalleled control over your cut, with the smallest cut angle, kerf width and face variation.



## Advanced Plasma Process Control

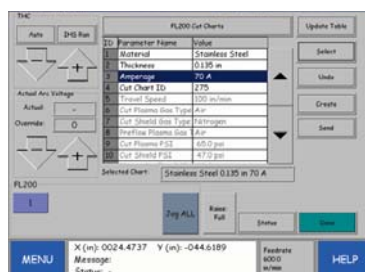
The Plasma Process Wizard integrates automatic gas consoles and secondary height control remotes into a streamlined, state-of-the-art software package. Simply choose your material, thickness, and amperage right at the Burny. By sending the cut chart data to the plasma power supply from our embedded material database, the appropriate amperage, voltage, gas pressures and feedrates are adjusted to the perfect setting for that type of material making you an instant expert in plasma cutting.

## True Multitasking Environment

Increase operator productivity by performing many different tasks within the Windows® XP Embedded environment. Load a new part program, create or edit a part program, choose a new part program from the shape library, create or edit a program nest, check production messages, fill out productivity sheets, monitor consumables life all while the machine is cutting!

## Advanced Command Messaging (ACM)

Superior hole capability and fully automatic plasma control is the result of Burny's Advanced Command Messaging. ACM is a series of messages that are embedded into a part program to create on-the-fly plasma, torch height control and job setting changes. These changes can mean the difference between a good hole or bad hole and long or short consumable life.



Plasma Process Wizard



Consumables



## Easy to program.

A PC-BASED CONTROL PROVIDES MORE PROGRAMMABLE FUNCTIONS:

- arc voltage from 50 to 250 volts in .1 volt increments
- manual travel speed (up to 600 IPM)
- plate sense speed during initial height setting (IHS)
- adjustable plate touch force during IHS
  - > Ohmic Sense
  - > Touch Force
  - > Following Error Sense (Position Error)
- pierce height
- cutting height (torch moves to the cutting height after the pierce ramp is complete but before the AVC mode is activated)
- arc transfer (ignition) height
- pierce time (time before torch moves to the cutting height)
- partial raise height (retract distance from the last cutting height)
- torch retract delay (minimum start delay)
- corner height disable (prevents torch diving during corners)
- high to low speed crossover point during IHS
- kerf crossing and plate edge detection
- adjustable gain
- IHS test/run (test the initial arc transfer height without starting the plasma torch)
- auto/manual mode

**SMARTHC ALSO OFFERS THE FOLLOWING FEATURES**

- up to 2 torch stations
- collision protection system with auto height correction
- maximum retraction speed—600 ipm
- software servo control loop

## SMARTHC POSITIONER

Positioning speed	600 ipm.	15.2 m/min.
Height	27.5 in.	699 mm.
Width	4.4 in.	112 mm.
Weight	15 lbs.	6.8 kg.
Maximum stroke	9.2 in.	234 mm.
Lifting capacity—HD model	50 lbs.	23 kg.

## FEATURES

### ARC VOLTAGE CONTROL

- AC Brushless servo system is the most advanced voltage control available
- Responds at speeds up to 600 ipm
- Rapid response means arc voltage control available for high, intermediate or low-speed plasma arc cutting
- Set point resolution of 0.1 arc volt
- Advanced Command Messaging Support
- Front panel lifter switch(es)

### INITIAL HEIGHT POSITIONING

- Soft-touch ohmic contact plate sensing works on all plate thicknesses
- Manual positioning if automatic initial height positioning is not desired

### PROGRAMMABLE PARTIAL RAISE

- Allows retraction distance to be set between 0" and full raise
- Improves cycle time and output

### ARC VOLTAGE CONTROL LIMITER

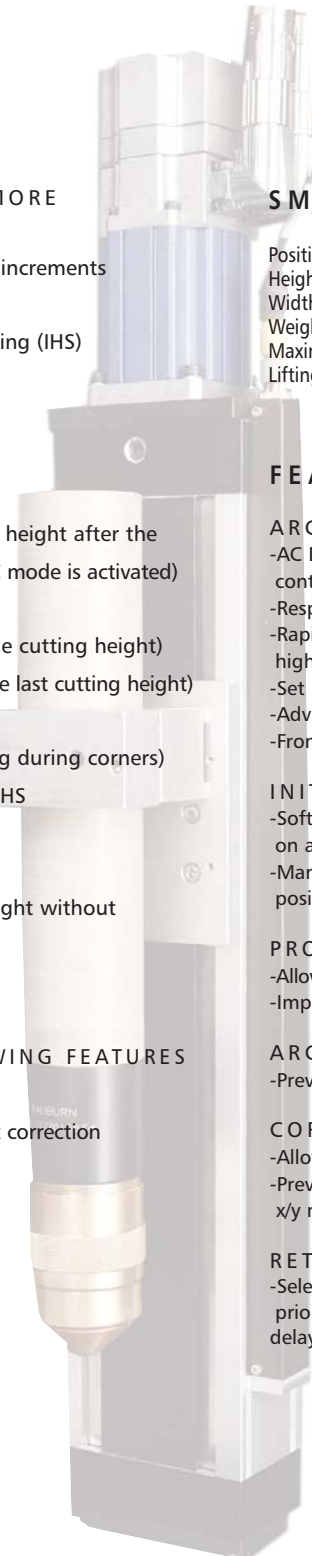
- Prevents torch damage during kerf crossing and edge detection

### CORNER

- Allows the arc voltage control to be disabled while cutting
- Prevents the torch from diving into the workpiece during corners or x/y machine slow-down

### RETRACTION DELAY

- Selectable delay time allows current slope-down to occur prior to retracting torch, extending electrode life (minimum of time) delay



## OTHER ADVANCED FEATURES

- Networking via Wireless or Fiber
- Remote Diagnostics
- Automatic DWG/DXF CAD file conversion
- 10-minute Quick System Recovery
- Job Interrupt and Power Loss Cut Recovery
- 50 Standard Shapes
- Programmable Laser Offset for Fast Plate Alignment
- Load other 3rd party program/application software

## TRUE SHAPE NESTING (optional)

True shape embedded nesting increases flexibility and productivity in the PHANTOM or PHANTOM<sup>ST</sup> control.

## PRODUCTIVITY TRACKING (optional)

An embedded productivity tracking utility allows companies to monitor the actual productivity of the machine by a network connection. This feature can help identify bottlenecks on the shop floor.

## HARDWARE PLATFORM

- Interface: 10.4" (264mm) TFT with USB Touch Screen
- Processor: 1.5 GHz Intel Mobile (or faster)
- Memory: 1 GB DDR RAM
- Operating System: Windows® XP Embedded
- Connectivity Options: USB, 3.5" Floppy Disk Drive, Network Ready (Optional)
- Physical Controls: 8 Direction Keypad, Start, Stop, Go To, Reverse, and Feedrate Potentiometer
- Operators Console Functions for Phantom:
  - 6 oxy-fuel
  - Marker
  - Water spray
  - Provisions for Automatic Oxy-Fuel Ignition
  - Provisions for Oxy-Fuel Height Control
  - Provisions for 2 Plasma Voltage Height Controls
  - 2 plasma
  - High/low preheat
  - Auxiliary functions
- Drive System (Standard):
  - 400W AC Drives
  - Industrial 10" torch positioner
  - Drive system cables
  - 1 or 2 SmartHC AC Drives
- Power Required: 115/230VAC Auto Switching @ 50/60 Hz
- Operating Environment: 32 to 122°F (0 to 50°C) 95% Humidity (Non-Condensing)
- Partial List of Operating Languages: Swedish, French, Russian, Spanish, Chinese, Italian, Norwegian, and German.
- CE Compliant

## OTHER WINDOWS ® XP EMBEDDED FEATURES

The Burny PHANTOM and PHANTOM<sup>ST</sup> utilize Windows ® XP Embedded, which provides the ability to take advantage of several productivity tools including remote desktop and USB (Universal Serial Bus) devices. Remote desktop provides the ability to access and operate a remote computer from the PHANTOM while USB memory devices provide easy program transfer at the fastest download speeds available.

## EASY TO PROGRAM (on the fly)

- Arc Volts 50 - 280 in 0.1 volt increments
- Travel speed range 0 - 600 IPM
- Adjustable plate touch force
  - Backup: Ohmic sense and following error sense
- Arc transfer height (ignition)
- Pierce height
- Cut height
- Partial raise height positions
  - Cross-over height
  - Full retract
  - Preset 1
  - Preset 2
- Kerf crossing detection
- Plate edge detection
- Adjustable gain control
- Initial height sense (IHS) test/run (test the initial arc transfer height without starting the plasma torch)
- Automatic and manual cutting modes

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