



# ITT

## BURNY 2.8 Plus

**BURNY 2.8 Plus combines shape cutting, direct computer download, and multi-axis drive control for plasma cutting in one package**



### Performance Benefits

The BURNY 2.8 Plus Integrated Drive System provides companies with a complete electronics package in one cabinet, combining shape-cutting, direct computer download, and a built-in drive amplifier package in one enclosure. It is available from the Burny Division of Cleveland Motion Controls, internationally recognized as leaders in the development of controllers for the shape-cutting industry, improving productivity and reducing costs.

The BURNY 2.8 Plus offers users single-source control system responsibility and single-source reliability. It is easy to operate and offers a variety of design features to increase shape-cutting quality and accuracy, increasing productivity and reducing production costs.

The BURNY 2.8 Plus Integrated Drive System is available for use with new machinery or to retrofit older shape-cutting machines.

### Design Features

The BURNY 2.8 Plus Integrated Drive System includes a fully-integrated new BURNY 2.5 Plus Shape-Cutting Control, and a fully-integrated ServoPak® pulse-width-modulated Drive System.

The BURNY 2.8 Plus integrates the BURNY 2.5 Plus Control, with a processor that is over 300% faster than its predecessor. It has 512K of part program storage. In addition, the new BURNY Plus Control uses FLASH memory instead of EPROMS, enabling users to easily connect a laptop computer and download new software or new part programs.

The BURNY 2.8 Plus Integrated Drive System is recommended for almost any shape-cutting machine with plasma cutting processes.

- Reduces costs and increases shape-cutting productivity
- Provides single-source control & drive system responsibility
- Integrates a full-featured BURNY® Plus Control that is over 300% faster; including faster processing, downloading and kerf calculation
- Incorporates a fully-integrated 2-axis drive amplifier system
- Available with an optional fully-integrated 3-axis drive amplifier system
- User-friendly

**Combines shape-cutting, direct computer download, and multi-axis drive control for plasma cutting in one package**



## Full Function Shape-Cutting Control

The BURNY 2.8 Plus Integrated Drive System includes a fully integrated new BURNY 2.5 Plus Control, one of the easiest, fastest and most cost-efficient shape-cutting controls available today.

Numerous standard features include RS 232/422 communications and 512K of non-volatile memory, chain cutting, automatic plate alignment, a built-in library of 53 pre-programmed shapes, and an independent Jog Keypad. With the BURNY 2.5 Plus, users can create and modify their own programs and send and receive part programs from an off-line center.

## Complete Electronics Package

The BURNY 2.8 Integrated Drive System includes a CNC, drive amplifiers, motors and gear reduction assemblies, cables, feedback assemblies and cabinet. The TENV enclosure also includes a full functioning operators station for tool control.

### CNC STANDARD DESIGN & CONSTRUCTION FEATURES

1. Includes a microprocessor-based BURNY 2.5 Plus Shape-Cutting Control with Jog Keypad. (See the BURNY 2.5 Plus data sheet for a complete listing of specifications.)
2. Membrane front panel with ISO 7287 international standard symbols.
3. Two-axis contouring control.
4. Executive stored in Flash memory.
5. State-of-the-art displays:
  - a) Full ASCII vacuum fluorescent display.
  - b) High intensity LED indications.
6. State-of-the-art IC's, LSI and VLSI
7. 50/60 Hz 115V/230V power requirement.
8. TENV cabinet.
9. 110 degree F ambient (45 degree C).
10. Sealed digital feedback encoders (optional).
11. Non-volatile part storage:
  - a) No part storage loss if power fails.
  - b) Battery backup.
12. Self check on power-up.
13. Audio indication for key pushed.

### CNC STANDARD OPERATIONAL FEATURES

1. Prompting:
  - a) User-friendly in English language with other languages optional.
  - b) 16 character readout displays prompts.
2. Built-in standard straight cut mode.
3. Metric/English capability — selectable
4. Linear and circular interpolation, single block full (360°)
5. Part storage capacity: 512K non-volatile RAM
6. Choice of automatic, manual & test run with manual entry:
  - a) Selectable preheat time with override capability.
  - b) Purge delay for plasma systems.
  - c) Selection of number of parts to be cut.
7. Displays:
  - a) Absolute dimensions
  - b) Machine status
  - c) Program status
  - d) Cutting status
  - e) Digital cutting speed
  - f) Preheat/purge time delay
  - g) Memory status
  - h) Memory remaining

- i) Program length
8. Automatic accel/decel
9. Corner slowdown:
  - a) Selectable angle.
  - b) Output available to freeze plasma height.
10. Return to start position (home) and two pierce points.
11. Automatic cut row count.
12. Full backup along cut path.
13. Manual "lead-in" capability.
14. Automatic jog return to cutting path.
15. Dynamic repositioning (move over) during test or single mode.
16. XY jog control control — momentary or latching with accel/decel.
17. Single step mode — for verification of program path.
18. Selectable cutter compensation.
19. MDI (Create/Edit).
20. Tool output control (four)
21. RS-232C serial communication interface.
22. Selectable baud rate.
23. Serial communication software: Enhanced "part call-down" capability.
24. Two machine home positions.

### DIAGNOSTICS & CALIBRATION

1. Memory test — verifies executive operating program and part memory.
2. Variable display of internal values for diagnostics purposes.
3. Self-calibrating of servo speed.
4. Servo loop adjustments for electro/mechanical compensation.

### SERVO DRIVE FEATURES & SPECIFICATIONS

1. For low operation, (20% of maximum speed), the industry standard H-bridge mode is used, providing high torque and high gain to meet the demands of low speed contouring.
2. At high speed operation, the drive switches to "Uni-switching," resulting in lower switching losses, lower ripple current, higher gain/bandwidth, lower electromagnetic interference (EMI), less power dissipation, less motor heating, and better system response.
3. Optional feedback packages includes two encoders, two mounting brackets, two gears, and two cables.

## Fully-Integrated Two-Axis Drive System

The BURNY 2.8 Plus Integrated Drive System also includes a fully-integrated two-axis ServoPak® pulse-width-modulated drive system. With fast response, low power consumption, and a wide dynamic speed range, this servo drive provides reliable performance and improved cut quality. The drive amplifiers are mounted to the rear with the heat sinks external.

## Available With A Fully-Integrated Optional Three-Axis Drive System

For larger gantry shape-cutting machines, the BURNY 2.8 Plus is also available with a fully-integrated and synchronized three-axis ServoPak Drive System.

4. Two-Axis Drive Specifications:
  - a) One complete drive included in same enclosure as CNC:
    - (2) 5 amp continuous /10 am peak PWM PC cards, including output transistors, heat sinks, and all adjustment hardware.
    - (2) (Armature and tach) cable connectors mounted on axis card.
    - (1) 30 amp power supply card.
    - (1) Unfiltered DC power supply.
    - (1) Main control relay for machine power.
    - (1) Complete wiring harness.
  - b) Two sets of cables and amp to motor/tach, including connector at amp end (maximum 20 foot standard).
  - c) Two drive assemblies consisting of:
    - (1 ea) 70 inch ounce motors with tach.
    - (1 ea) Set of reducing pulleys and belts.
    - (1 ea) 33.9:1 gearboxes (standard ratio).
    - (1 ea) Motor to gearbox mounting brackets.
  - d) Maintenance and instruction manual.
5. Optional Three-Axis Drive Specifications:
  - a) One complete drive included in same enclosure as CNC:
    - (3) 5 amp continuous /10 am peak PWM PC cards, including output transistors, heat sinks, and all adjustment hardware.
    - (3) (Armature and tach) cable connectors mounted on axis card.
    - (1) 30 amp power supply card.
    - (1) Unfiltered DC power supply.
    - (1) Main control relay for machine power.
    - (1) Complete wiring harness.
  - b) Three sets of cables and amp to motor/tach, including connector at amp end (maximum 20 foot standard).
  - c) Three drive assemblies consisting of:
    - (1 ea) 70 inch ounce motors with tach.
    - (1 ea) Set of reducing pulleys and belts.
    - (1 ea) 33.9:1 gearboxes (standard ratio).
    - (1 ea) Motor to gearbox mounting brackets.
  - d) Sine/cosine synchronization and out-of-synch detection with relay output.
  - e) Size 11 resolvers to be mounted by OEM.
  - f) Maintenance and instruction manual.

**Cleveland Motion Controls, Inc.**  
 7550 Hub Parkway  
 Cleveland, OH 44125  
 tel: 216.524.8800 or 800.321.8072  
 burnysales@itt.com

**KALIBURN, Inc.**  
 4130 Carolina Commerce Parkway  
 Ladson, SC 29456  
 tel: 843.795.4286 or  
 800.252.2850  
 kaliburn.sales@itt.com  
 www.burny.com

**ITT Control Technologies GmbH**  
 Werkstrasse 5  
 D-64732 Bad Koenig, Germany  
 tel: +49 6063 9314 0  
 burny.de@itt.com