

# SERVO CONTROL BOX



DESIGNED AND  
MANUFACTURED IN THE USA



## SINGLE-AXIS PROGRAMMABLE CONTROLLER

Don't need true 4th-axis? Just need point-to-point indexing? A cost-efficient solution for any CNC machine that is not 4th-axis-ready. This single-axis, programmable control box will add semi-4th-axis 3+1 capability to any machine. It can be easily interfaced using a spare M-code from your CNC machine. Indexing position moves to practically any angle are programmed directly through the front panel of the control box and are triggered by an M-code, or utilize the control box's DNC function to run a complete machine program file from a USB key.

## DUAL-AXIS PROGRAMMABLE CONTROLLER

Don't need true 5th-axis? Our all-in-one control box is a cost-efficient solution for machining parts not needing true 5-axis, simultaneous motion. Our dual-axis controller with our 5th axis head, turns your 3 axis machine into 3+2. This allows you to machine 5 sides of a part, thus reducing the number of machining operations and dramatically increasing efficiency and accuracy.

## FEATURES

- Easily interfaces to any CNC machine and control including Fanuc, Mitsubishi, Fadal, Haas, Hurco and many others. No expensive 4th/5th axis drive needed.
- 4 Modes of Operation:
  - Full DNC to CNC
    - Complete CNC operation by DNC feed
    - All XYZAB moves and CNC code from the indexer control
    - Run very large programs directly from your USB
    - Standard G-code functionality
  - Print from CNC
    - Standard macro DPRNT type commands from CNC.
    - The CNC feeds the indexer control box each AB move
  - M-function Cycle
    - Internal control box programming
    - The CNC starts each cycle
  - Manual Cycle
    - Internal control box programming with start button activation
- External USB for storage and DNC, compatible with 4GB and above.
- Fast indexing to any angle.
- Portable. Easily move from machine to machine.
- Operates on 110 VAC power.
- Includes CNC Interface and RS-232 cables for M-function and serial input commands. No other hardware or electronics needed.



21720 Marilla Street  
Chatsworth, CA 91311

**818-280-8120**

Sales@IndexDesignsCNC.com

[www.IndexDesignsCNC.com](http://www.IndexDesignsCNC.com)

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## MODES OF OPERATION

### DNC from CNC

**CNC CONTROL**


X 1.0  
Y 1.0  
Z 1.0  
DPRNT [A90. B45. G90 F100]  
M21  
PCLOS  
X 2.0  
Y 2.0  
Z 2.0

RS-232 Data ①

A90. B45. G90 F100

M-function Start ②

M-function Finish ③



1. CNC pauses and sends position data over the RS-232 cable when needed.
2. Indexer uses an M code to start the indexer motion.
3. Indexer returns a finish signal to the M-function relay when completed.
4. CNC continues running the program until the next DPRNT.

### DNC to CNC

**CNC CONTROL**


X 1.0  
Y 1.0  
Z 1.0  
M21  
X 2.0  
Y 2.0  
Z 2.0  
X 3.0  
Y 3.0  
Z 3.0

RS-232 Data ①

M21 → A90. B45. G90 F100 ②

M-function Start ③

M-function Finish ④



1. Indexer drip feeds all CNC G code over the RS-232 cable from USB.
2. Indexer keeps all AB data and replaces with an M code.
3. CNC pauses and uses the M code to start the indexer motion.
4. Indexer returns a finish signal to the M-function relay when completed.
5. CNC continues running the program by DNC from the indexer.


### M-function Cycle

**CNC CONTROL**

X 1.0  
Y 1.0  
Z 1.0  
M21  
X 2.0  
Y 2.0  
Z 2.0  
X 3.0  
Y 3.0  
Z 3.0

M-function Start ②

M-function Finish ③



1. Indexer has a separate internal program that has all the AB position data.
2. CNC pauses and uses the M code to start the indexer motion.
3. Indexer returns a finish signal to the M-function relay when completed.
4. CNC continues running the program and the indexer gets its next program line ready.


### Manual Cycle

**CNC CONTROL**

X 1.0  
Y 1.0  
Z 1.0  
M0  
X 2.0  
Y 2.0  
Z 2.0  
X 3.0  
Y 3.0  
Z 3.0

M-function Start ②

M-function Finish ③



1. Indexer has a separate internal program that has all the AB position data.
2. CNC uses a dwell code to pause.
3. Indexer start button is pressed to run the current indexer program line and the indexer gets its next program line ready.
4. CNC start button is pressed to continue running the program.