

Rotary Indexing Tables

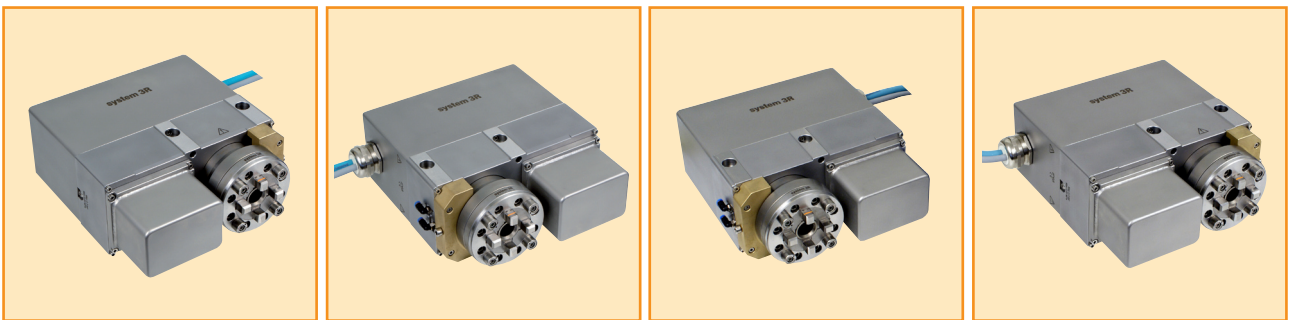


HIGH-END ROTARY INDEXING TABLE

With a rotary indexing table in your machine, you literally add a dimension to your workshop. System 3R's rotary indexing tables come in two flavours, a machine-adapted version that supports simultaneous turn-while-burn machining with many advanced EDM and WireEDM machines, and a brand-new stand-alone version that can be used with almost any machine on the market.

- For EDM and WireEDM use
- Pneumatic Macro chuck with 2-micron repeatability

- Separate air for opening and turbo/cleaning
- Mounts directly onto machine table with 2xM8 c-c 100 mm (3.94 in)
- Low profile, just 52 mm (2.05 in) from table to chuck center
- Precision-ground mounting surfaces on both sides
- Cover can be rotated for flexible positioning on machine table*

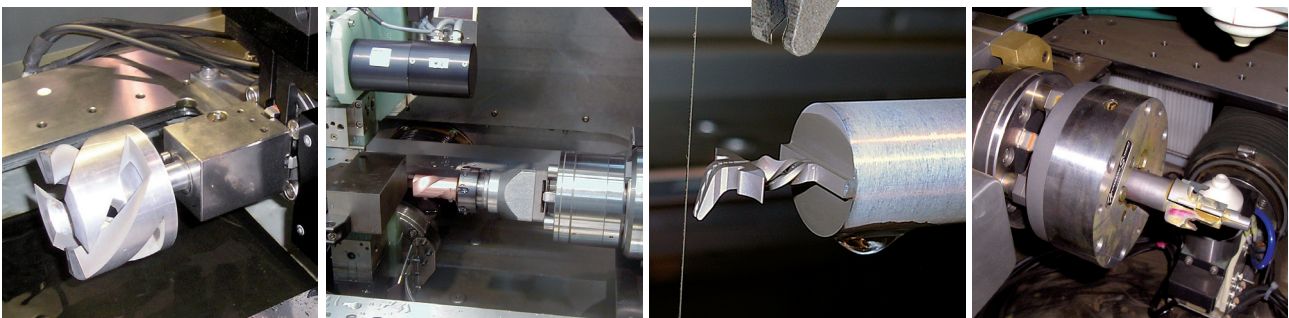
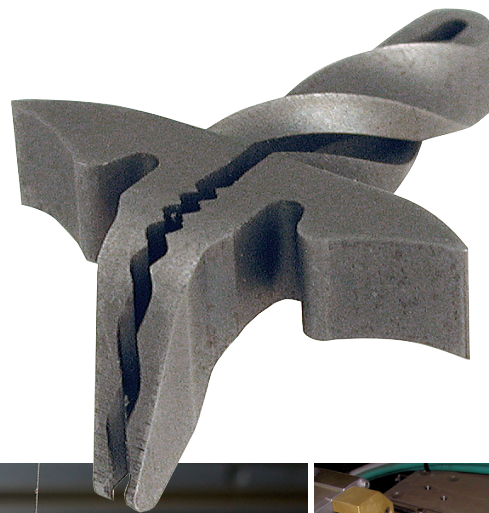


* Not applicable for MA2, MA3)

MACHINE-ADAPTED ROTARY INDEXING TABLES 3R-60.360X

The 3R-60.360X is a true turn-while-burn rotary indexing table capable of simultaneous rotation and machining, allowing you to produce high-precision parts with shapes that are only limited by your imagination.

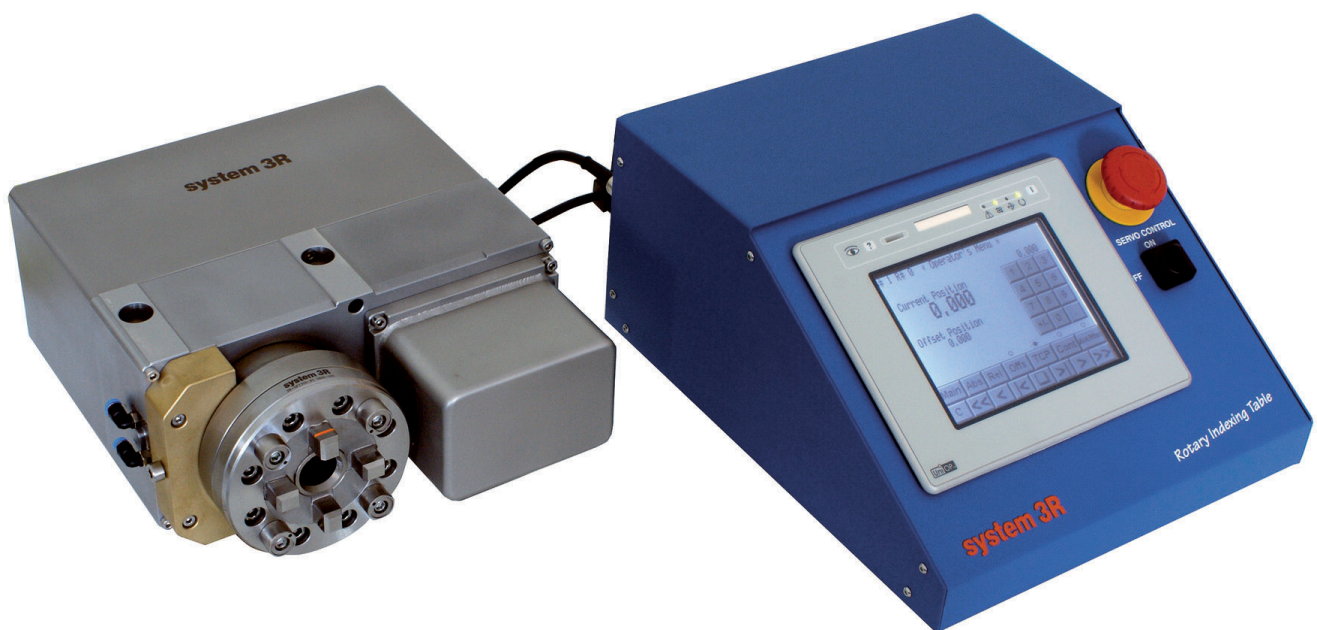
All machine-adapted rotary indexing tables are ordered through the machine maker. Please refer to the specification sheet for available models.





STAND-ALONE ROTARY INDEXING TABLE

Based on the proven 3R-60.360X family of Rotary Indexing Tables, System 3R now releases a stand-alone version - the ideal choice for users who want to retro-fit existing machines or need the flexibility of an extra axis that can be moved between machines as the need arises. Controlled from the machine through serial or I/O interface, or manually operated from the control unit, it is capable of sequential turning and burning with the same positioning accuracy as the machine adapted models.



Useful functions

Offset function:

If there is a rotational offset between the chuck and the workpiece, this value can be taught and stored so that any absolute positions will be with regards to the workpiece's reference surface rather than the chuck's.

Tool changing position verification:

In automated applications, it is crucial to prevent accidental change of tools unless the chuck is in the tool changing position (TCP). With a TCP verification command preceding the tool change command, code execution will continue only if the chuck is in the tool changing position, effectively precluding costly collisions.

Serial communication

The RS232 serial interface offers the most flexible means of communication between the EDM machine and the stand-alone rotary indexing table.

The following commands can be sent directly from the machine's NC code, resulting in functionality not far behind that of a machine-adapted rotary indexing table.

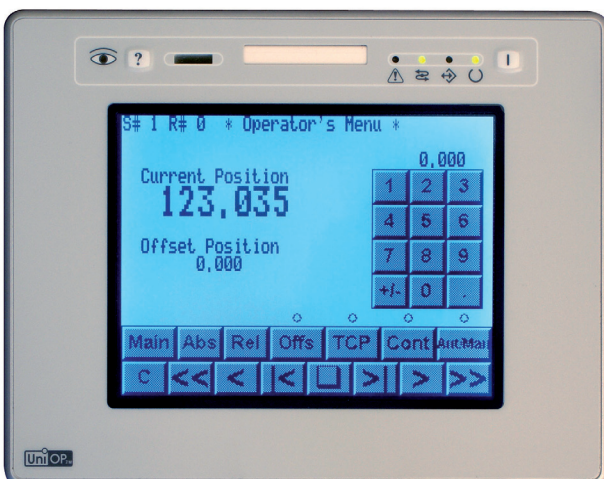
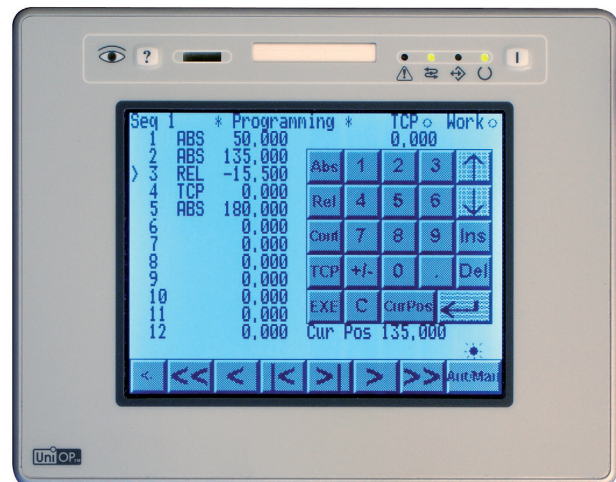
- Set target position
- Start/Stop
- Set speed
- Switch between Auto/Manual mode
- Check status

Sequence Programming

The 24-volt I/O interface is a simple yet powerful alternative to serial communication. Ten different sequences, each with up to 12 movements, can be programmed and stored in the control unit. A sequence can consist of any combination of absolute positions and relative movements. Programming is intuitive and hassle-free, allowing you to move freely between lines and insert or remove rows as desired to build even complex sequences with minimum effort. With the whole sequence on a single page, you always have immediate access to all parts of the program.

Execute the selected sequence row by row, either with M-codes from the EDM machine, or manually from the control unit.

- Programmable control unit with touch-panel display
- Holds 10 sequences with up to 12 movements each
- Absolute and relative positioning
- Teach function with quick entry of the current position
- Tool changing position confirmation



Operator's Menu

Manual operation of a rotary indexing table has never been easier. Enter an angle and the type of movement (absolute or relative) and the chuck instantly moves into position. Or move continuously in either direction, quickly or slowly. You can return to the tool changing position with a push of a single button, and an indicator confirms that you are there.

- Intuitive graphical user interface
- Absolute and relative positioning
- Continuous movement in two speeds, cw and ccw
- Stepwise movements in 0.001-degree increments
- Offset function
- Tool Changing Position verification
- Display of currently selected Sequence and Row

Technical Specifications

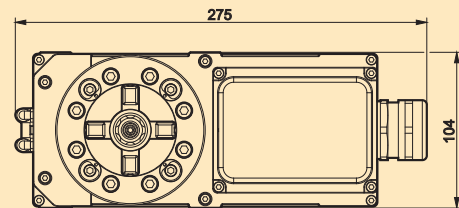
Rotary indexing table specification

Motor	Mitsubishi HC-KFS13 (M, M1, M3, MA, MA2, MA3) APM-SA010A-CN (A) Fanuc A06B-0115-B075 (F) Fanuc A06B-0115-B103 (F2, F3) Ostergrens 57ZX03-B (SA)
Encoder	Heidenhain RON 275 (M, M1, M3, MA, MA2, MA3, SA) Heidenhain ECN223F (F2) Heidenhain RCN223F (F, F3)
Clamping system	Macro Pneumatic Repetition accuracy 2 microns
Spindle rpm	Max. 15 rpm
Minimum index increment	0.001 degree
Indexing accuracy	±0.003 degree
Repetition accuracy	±0.002 degree (7.2 arcsec)
Spindle runout	0.005mm/chuckfront, 0.010 mm/100 mm (0.0002 in/chuck front, 0.0004 in/4 in)
Size (indexing table)	Width: 230 mm (9.1 in) * Depth: 261 mm (10.3 in)** Height: 104 mm (4.1 in)
Weight (indexing table)	Approx. 18kg (40 lbs)
Max workpiece load	8 Nm
Protection class	IP 68

* 275 mm (10.8 in) with connector, cable minimum bend radius 100 mm (4 in)

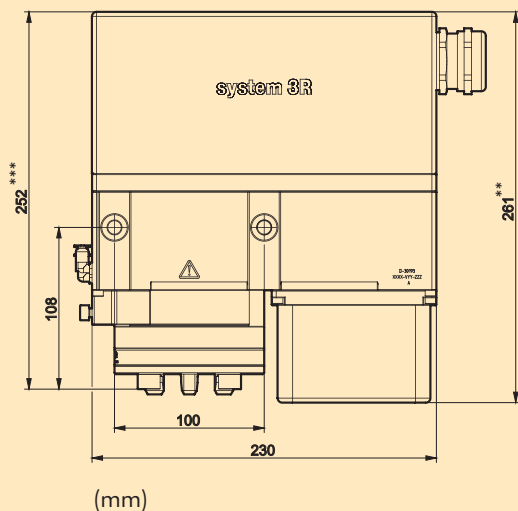
** 287 mm (11.3 in) for M1, MA2; MA3

*** 278 mm (10.9 in)



Control unit specification 3R-60.360SA

Display size	5 inch
Size (Control unit)	Width: 267 mm (10.5 in) Depth: 303 mm (11.9 in) Height: 144 mm 85.7 in)
Weight (control unit)	Approx. 5 kg (11 lbs)
Connectors	Motor cable Encoder cable Serial (RS232) I/O interface (IN: Start/Next, OUT: In position, OUT: In tool changing position (TCP)) Power supply (DC24V)
Switches	Emergency Off (EMO) Servo power



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