

 **Rota-Rack™**

**OFF-THE-SHELF AUTOMATION INCREASES
THROUGHPUT AND PROFITS**

WHAT IS A ROTA-RACK®?



The patented Royal Rota-Rack® is an automatic accumulator that can be used with any bar-fed CNC lathe to safely collect finished parts, providing **hours of highly profitable, unmanned production.**

Do you know....

- There are 168 production hours in a week.
- You are probably only using 40 of them.
- Your machines are worth \$100 per hour.
- You could be **making an extra \$12,800 per week** on each machine with a Rota-Rack®.
- You already invested in the bar feeder – how can you not complete the automation package?
- **A one-week payback – Incredible!**
- What are you waiting for?

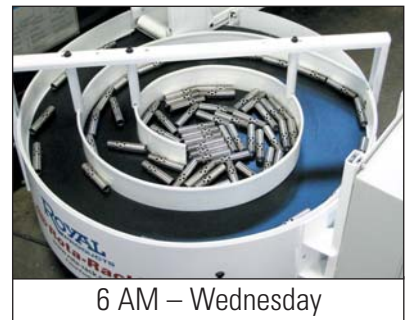
Overnight Production = Pure Profit



5 PM – Tuesday



11 PM – Tuesday



6 AM – Wednesday

HOW DOES THE ROTA-RACK® WORK?

The Royal Rota-Rack® is very simple to setup and operate. Here's how it works:

1



User enters the part cycle time and degree of turntable rotation via a simple PLC controller. A counter can also be set to shut the Rota-Rack® down after a specified number of parts have been collected.

2



As a finished part comes out of the lathe, it drops onto the conveyor and is moved towards the Rota-Rack's® rotating turntable.

3



Each time a part comes out of the machine, the Rota-Rack® indexes to the next position. The degree of turntable rotation is easily adjusted according to part length.

4



As the turntable indexes, the parts are gently guided towards the center via the spiral.

5



After several hours of unmanned production, finished parts are manually removed from the center of the Rota-Rack®.

Note: For even greater simplicity, a basic "always-on" control is also available. See page 49.



Check out the Royal Rota-Rack® Video at www.rotarack.com

WHAT WILL ROTA-RACK® DO FOR YOU?

Big Benefit #1 Increases Capacity, Throughput, and Profits

Adding a Royal Rota-Rack® to a bar-fed CNC lathe greatly increases machine utilization and throughput.

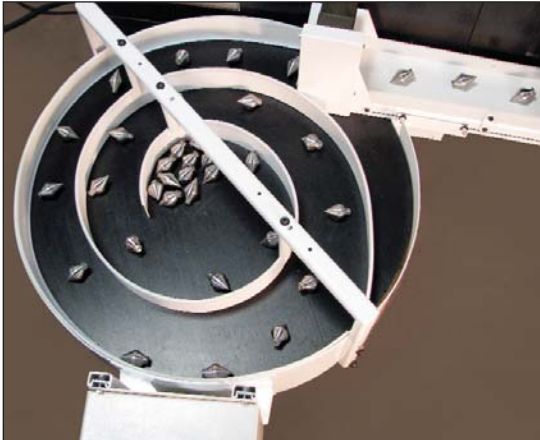
- ❑ Run existing machines extra hours: nights, weekends, lunch breaks, etc.
- ❑ Faster cycle times – no waiting for an operator to unload parts / empty collection boxes.
- ❑ Higher efficiency – **produce more parts per shift.**
- ❑ Better employee utilization – why have a person do a job that can be handled with simple automation?
- ❑ Increased profitability.



Note: Collection box removed for clarity.

Big Benefit #2 Eliminates Part Damage

The Royal Rota-Rack® has been designed to provide maximum part protection, a feature that is important for all parts but one that is especially useful for parts with delicate external features like threads, edges, and corners.



- ❑ Each time the Rota-Rack® collects a finished part, the turntable smoothly rotates to the next position to ensure that the following part will not forcefully collide with any of the previously-collected parts.
- ❑ All contact surfaces of the Royal Rota-Rack® and conveyor are covered with a high-lubricity UHMW plastic material to minimize friction and protect surface finishes.
- ❑ **Reducing scrap and rework costs directly improves profitability.**
- ❑ The Rota-Rack's® unique spiral helps keep finished parts in sequential order, aiding in quality control/inspection.

Big Benefit #3 Provides Complete Reliability

The Royal Rota-Rack® won't show up late, doesn't get sick, and **keeps working long after your last employee leaves for the night or weekend.**

First day of hunting season? Big snow storm? Cousin Joe's wedding? The Rota-Rack® doesn't care. How many of your competitors will be turning out parts on Super Bowl Sunday?

Case Study – Royal Rota-Rack® Increased Profits at a Small Job Shop by Over \$50,000!

- ❑ The owner of a small job shop installed a Royal Rota-Rack® with the intention of running one of his CNC lathes for a few extra hours in the evenings after his employees left for the day.
- ❑ For costing purposes, he continued to base all of his overheads on the first shift, figuring that any extra production hours achieved with the Rota-Rack® would be virtually all profit.
- ❑ The shop rate on his CNC Lathe = \$70 per hour
- ❑ The owner started out conservatively, using Rota-Rack® to deliver just three hours of extra production per night.
- ❑ 3 hours x 5 days = 15 hours per week of extra production
- ❑ 15 x \$70 = \$1,050 in extra profits per week
- ❑ \$1050 x 52 weeks = \$54,600!

In this real-life example, the lathe only ran an average of three extra hours per night, and still **generated more than \$50,000 in extra profit in the first year** alone. In reality, many shops use the Royal Rota-Rack® to run an extra six to eight hours per night, plus weekends.



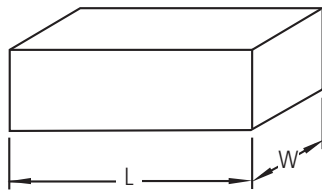
Utilized to its fullest extent, it is entirely possible to generate an additional profit of \$150,000 – \$200,000 per lathe, per year, with the Royal Rota-Rack®.

Calculate Your Own Extra Production Potential

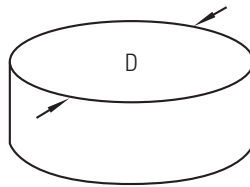
Use this handy worksheet to calculate how many extra hours you could run your CNC lathes completely unattended with the Royal Rota-Rack®

A. _____ Largest surface area of your part (multiply the two largest dimensions in inches)

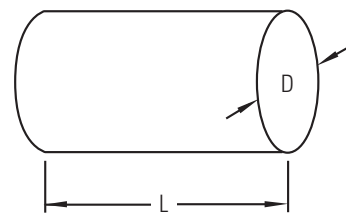
Examples:



Rectangle
(Length x Width)



Disk
(Diameter x Diameter)



Cylinder
(Length x Diameter)

B. _____ Number of parts that can fit on the Rota-Rack® = $(850 / A) \times 0.8$

Note – The 850 represents the usable surface area of the turntable in square inches, and the 0.8 assumes that when the parts are accumulated, 20% of the Rota-Rack's® surface area will remain vacant.

C. _____ Cycle time of part in minutes

D. _____ Number of parts that can be made in one hour $(60 / C)$

E. _____ Number of hours that machine can be run unattended (B / D)

F. _____ Shop rate of machine in dollars

G. _____ Additional profit per shift $(E \times F)$

H. _____ Number of shifts per week

I. _____ Extra yearly profit $(G \times H \times 52)$

With such a large potential return, you can't afford not to equip every bar-fed CNC lathe in your shop with a Royal Rota-Rack®!



**Check out the Royal Rota-Rack®
Video at www.rotarack.com**

SMART DESIGN – BUILT TO LAST

Large Capacity

With over 850 square inches of surface area, the Royal Rota-Rack® can hold **hundreds of parts*** and provide hours of unmanned operation.

Unique Rotary Spiral

Gently guides finished parts to the center as the turntable rotates.

Coolant Management

Integral drip tray with drain collects excess coolant.

Totally Self-Contained – No Machine Tool Contact

The Royal Rota-Rack® is a complete stand-alone unit – there are no electrical or physical connections of any type with the machine tool. This provides hassle-free installation and ensures that all machine warranties remain intact.



Very Heavy-Duty Construction

Weighing in at 450 lbs., the Royal Rota-Rack® is a serious piece of equipment that is **built to withstand years of abuse** in the harshest production environments. A heavy gage welded steel frame provides outstanding rigidity, enabling the Rota-Rack® to easily support up to 700 lbs. of finished parts.

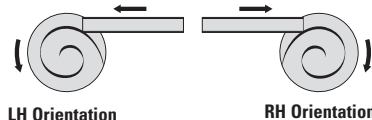
Excellent Part Protection

Low-friction UHMW coating on all contact surfaces protects finished parts from scuffs and dents. This durable plastic is the same material used in the manufacture of motorcycle chain guides.

Universal Design

The Royal Rota-Rack® **adapts to any CNC lathe** that is equipped with a part catcher:

- Turntable can rotate either clockwise or counter-clockwise, and can be positioned to either the left side or right side of the lathe



- Height range 10.5 – 53 inches. Other height requirements can be accommodated upon special request
- Rota-Rack® is completely free standing – no bolting to the machine or floor is required
- Control box can be positioned anywhere on circumference for optimal clearance
- Easily adapts to machines with existing conveyors

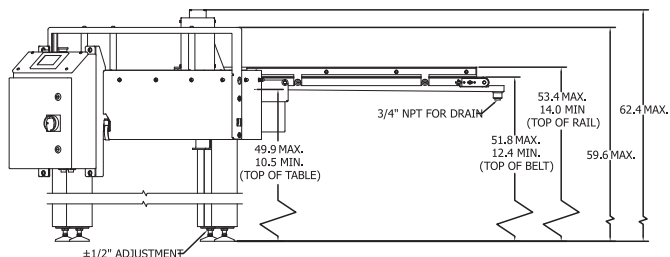
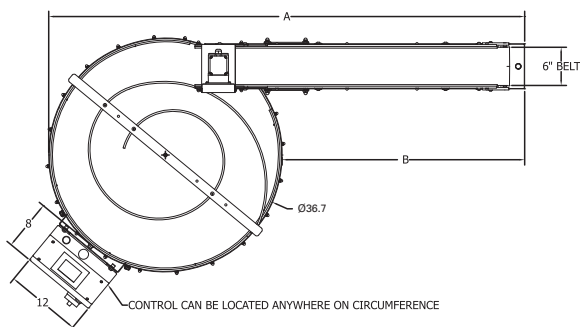
The Royal Rota-Rack® is reliable, doesn't take sick days, and **pays for itself within a few months of use. Order yours today and get a jump on your competition!**

*Actual number of parts depends upon individual part size.

HEAVY-DUTY ROTA-RACK® SPECIFICATIONS

Large Enough to Hold Lots of Parts, Small Enough to Fit Almost Anywhere

The diameter of the Rota-Rack's turntable is 36", making it large enough to hold a significant number of parts, yet small enough to fit into tight spaces. The Econo-Rack™, our light-duty parts collector, is even more space-efficient at 28". When considering space utilization, it is very important to note that the Rota-Rack® can **double or triple capacity**, yet its footprint is only about 10% that of a new lathe and bar feeder.



General Specifications

Usable Surface Area	850 in² / 5480 cm²
Max. Part Length*	10" / 25 cm
Min. Part Diameter	0.25" / 0.6 cm
Max. Part Diameter*	3" / 8 cm
Payload Capacity	700 lbs. / 318 kg
Height Range	See drawing
Power Supply	110V/60Hz
Unit Weight	450 lbs. / 205kg (including conveyor)

*It is sometimes possible to exceed these parameters.
Contact Royal for info.

Conveyor Dimensions

DESCRIPTION	A	B
Short	53"	16"
Standard	75"	38"
Long	94"	57"

Notes – unit shown is configured for left-hand positioning. Changing to right-hand configuration simply requires flipping the spiral and conveyor bracket

Easy Installation

We often refer to the Rota-Rack® as "Off the Shelf Automation" because it is such a breeze to install. In fact, most users report having it up and running within an hour of unpacking it from its shipping crate.

Each Rota-Rack® normally ships with its height and orientation preconfigured according to customer specifications. And because **the unit does not need to connect to the lathe either physically or electrically**, installation is simply a matter of attaching the legs, sliding it into place in front of the machine, and plugging it into a standard 110v outlet.

The one additional step that may be required for some installations is the modification of the lathe's part collection box, usually located on the door of the machine. In order for parts to reach the Rota-Rack® or its conveyor, the bottom and side of the box may have to be opened up as shown in the photo.



The Heavy-Duty Royal Rota-Rack® is Available with Two Control Options and Three Conveyor Options:

Deluxe Control

- ❑ The deluxe control enables the Rota-Rack's® operation to be matched to the machining cycle time.
- ❑ Three inputs are entered by the user: part cycle time, amount of rotation, and auto-shutoff quantity.
- ❑ With this control, each time a part drops out of the machine, the Rota-Rack® will energize and index.
- ❑ The deluxe control is useful for applications where accurate spacing is required to **prevent delicate parts from coming into contact with each other.**

Basic Control

- ❑ The basic control eliminates operator input of the timing/rotation functions.
- ❑ With the basic control, the conveyor and turntable maintain a continuous low-rpm motion.
- ❑ No auto shut-off feature is available with the basic control.

Conveyors

- ❑ There are three conveyor options to handle all clearance needs.
- ❑ The conveyor bolts to the Rota-Rack and plugs directly into the control.
- ❑ Long conveyor includes a support leg.



Royal Heavy-Duty Rota-Rack®

DESCRIPTION	PART NUMBER
Heavy-Duty Rota-Rack® with Deluxe Control	51002*
Heavy-Duty Rota-Rack® with Basic Control	51003*

*Order conveyor separately.

Conveyor Options

DESCRIPTION*	PART NUMBER
Short	51021
Standard	51022
Long	51023

*See dimensions on previous page.

Call 1-800-645-4174 for Current Pricing

ROTA-RACK® INSTALLATIONS

ROYAL
PRODUCTS
Optimize everything.



Check out the Royal Rota-Rack®
Video at www.rotarack.com