BARDONS & OLIVER

Rotating Head Cut-Off Machine RH-700HP



Maximum Cutting Capacity For Unmatched Productivity

The Bardons & Oliver RH-700HP Rotating Head Cut-Off Machine

A UNIQUE TUBE AND BAR PROCESSING SYSTEM LIKE NO OTHER

MORE CUTTING CAPACITY

Experience a dramatic increase in cutting productivity!

The key to success in high volume cutting is square inches per minute, hour after hour, day in and day out – and that is where the RH-700HP excels.

- Achieve 45-50 sq.in./min. or more on high production heavy-wall tube processing
- Uses up to four cutting tools simultaneously
- Controls process times by providing constant feed rate with load monitoring
- Minimizes non-cut time by tailoring material handling equipment to the process
 - Optional Mist Coolant System significantly increases tool life, improves surface finish on finished workpiece faces, and increases potential cutting tool feed rates

PRECISION CUT BLANKS - LATHE TOLERANCES FROM A ROTATING HEAD CUT-OFF

The RH-700HP is capable of producing finished workpieces in a strict Cpk environment requiring a length tolerance down to \pm 0.005". The raw material loss of a sawed blank when compared to a precision blank from the

RH-700HP can amount to thousands of dollars per year. Length tolerance control and parallelism of the RH-700HP blank means less material lost on downstream finishing operations.



WHY A ROTATING HEAD?

Unlike conventional cut-off lathes, Bardons & Oliver Rotating Head Cut-Off Machines **hold the material stationary while the cutting tools rotate.** This brings the unique advantage of lathe style cut-off to a broader range of applications than was previously possible. Now difficult-to-process material such as irregular tubes and bars can be processed more efficiently than with saws with Bardons & Oliver Rotating Head Cut-Off Machines.

Bardons & Oliver Rotating Head Cut-Off Machines:

- Allow processing of hot rolled material or irregular tubes that are normally very difficult to rotate in conventional lathes
- Eliminate any marking on the OD surface of the material being processed
- Eliminate whipping or bouncing of small diameter materials
- Create a much quieter environment
- Reduce ongoing maintenance of material handling equipment



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ENHANCED MACHINE CAPABILITIES PROMOTE MANUFACTURING EFFICIENCIES

FEWER SET-UPS REQUIRED

The RH-700HP gives the machine operator the flexibility to efficiently meet varied production requirements and maximize raw material usage. Standard long stroke collet chuck, unload vise, and cutting slides allow the RH-700HP to cover a wider range of jobs between set-ups.

10 STANDARD HMI SCREENS

Ten standard interface screens give the operator complete process control through the machine HMI

Main Screen (*Figure A*) controls all basic function required during automatic operation.

Machine Screen and Barfeed Screen

(*Figure B*) allows manual control of virtually every machine function plus the input of key machine variables.

Tool Set-up Screen guides the operator through the job set-up sequence and automatically generates tool offsets.

Job Set-up Screen (*Figure C*) allows the operator to enter information for up to six parts that can be run simultaneously from the same material.

Set-up Parameter Screen guides the operator or process engineer through the setting of key machine operating parameters.

Part Editing Screen and **Master Database Screen** allows for the creation, editing, and storing of data for up to 200 part numbers.

Maintenance Screen and **Fault Screen** allows the monitoring of machine and handling table inputs and faults. **Fault History** screen keeps a record of recent faults and cannot be deleted.

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MACHINE CONTROL



How It Works



For straight cutting jobs without O.D. chamfers, mount cut-off tools at all four slide positions.



For cutting smaller tubing or solid bar, mount two cut-off tools on opposing slides.



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To cut workpieces complete with O.D. chamfers on both ends of the part, mount cut-off tools on all four slides including the Bardons & Oliver combination cut-off/chamfer tool in one position.

ROTATING HEAD CUT-OFF

SERVO LOADER

- Controls incoming material from initial cropping operation to final remnant ejection
- Automatically loads new tubes as required
- Stages incoming tube for faster, more efficient material processing

PUSHER HEAD

- Grips material on O.D. or I.D. as required
- Adjustable jaws grip complete range of material sizes



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BUCK LOADERS (optional)

- Efficiently handle large bundles of incoming material
- Add tubes to inlet skids as required manually or automatically

INLET SKIDS

• Provide 30" of staging area for incoming material

FROM START TO FINISH, THE BARDONS & OLIVER RH-700HP (



PARALLEL CLOSING COLLET CHUCK

- Firmly holds incoming tube during cutting and chamfering operation
- Hydraulically actuated

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- Extended stroke collet 1" travel (diameter)
- 6 collet pad sets cover entire machine range



TOOL LIFE MONITORING

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- Measures tool condition by monitoring torque load values on feed servo
- Alerts operator when insert change is needed

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- Firmly holds workpiece in position during cutting and chamfering operation
- Extended 1" jaw stroke (diameter)



CUT-OFF MACHINE IS A MODEL OF PRODUCTIVITY AND EFFICIENCY

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KEY FEATURES OF THE RH-700HP

ROTATING HEAD

- Four precision-built hardened tool steel cut-off slides and gibs with 8620 alloy steel bases mounted on the rotating head
- Long travel accommodates a wide range of material sizes without resetting tools
- Tools may be added to cut O.D. chamfers
- Front spindle bearing triplex angular contact ball bearing; Rear spindle bearing single radial ball bearing
- Dedicated mist lubrication for spindle bearings with confirmation sensor

QUICK SET-UP TUBE LOADER



TUBE LOADER KICK OUTS

• Loading table kick out arms load one tube at a time onto feed rolls



- Adjustable tube stops allow full range of tube O.D.'s to be loaded
- All stops adjusted and locked into position in seconds from one location





TUBE LOADER FEED ROLLS

- Maintain incoming material on spindle centerline
- Electrically actuated adjustable height allows tube O.D. size changeovers in seconds



MIST COOLANT SYSTEM (optional)

- Extends tool life
- Allows increased cutting rate
- Improves surface finish
- Requires less maintenance than flood coolant system



CENTRAL LUBRICATION SYSTEM

• Delivers positive lubrication to critical machine elements



BARDONS & OLIVER RH-700HP CUT-OFF MACHINE SPECIFICATIONS				
	RH-700HP	RH-700HP (7.625)		
MATERIAL TO BE PROCESSED				
Maximum Outside Diameter	7.00 in / 178 mm	7.62 in / 193 mm		
Minimum Outside Diameter	1.00 in / 25.4 mm 1.25 in / 31.7 mm			
Maximum Wall Thickness	1.25 in / 31.8 mm			
Minimum Wall Thickness	0.06 in / 1.52 mm			
FINISHED PART				
Minimum Part Length	0.62 in / 15.8 mm			
Maximum Part Length	Unloader Dependent			
	to customer Specification			
MACHINE FEATURES				
Cut-Off Slides (Std)	4 Slides Synchronized			
Slide Travel - Per Slide	I.88 II / EANUC Pote 12/2000	47.6 MM		
Slide Control	Lever with Counter Balance			
	Actuated via Servo Driven Ball Screw			
	PIC G	F RX3i		
Machine Control	HMI GE Quick Panel			
	Main • Machine • Barfeed			
	• Tool Set-up • Job Set-up			
HMI Operator Interface Screens (Std)	Maintenance • Set-up Parameter			
	Master Part Database Part Editing			
	Fault Fault History			
Air Conditioner - Electrical Enclosure	4000 BTU			
Spindle Drive System	Siemens 1PH7163-2ND33-0BA0 AC			
Spindle Horsepower	30 hp / 22 kw Continuous (60 min Rating)			
Spindle Speed Range Mist Coolant - Cutting Tool Lubrication System				
Mist Coolant - Cutting Tool Lubrication System	AWCOL W	lodel 6000 Surofiro"		
Central Lubrication System	• Dijul o • Sarva Laadar Ways	• Sarva Loador Pinion		
	• Unload Vis	e Ball Screw		
	5 hp. 10 gpr	n @ 700 nsi		
Hvdraulic Svstem	30 Gal C	apacity		
	Mobil DTE 24 F	Recommended		
MACHINE WORKHOLDING				
	Parallel Closi	ng Collet Chuck		
Incoming Side	• Hydraulic	Actuation		
	• 1 in Diameter Rang	je per Collet Pad Set		
	• Heavy I	Juty Vise		
	Hydraulically Actuated Jaws The Diamater Banga and Viao Jaw Set			
	1 In Diameter Range per Vise Jaw Set			
	• FANUC Beta 8/3000	HVis AC Digital Servo		
	Controls Tube Movement and Finished Part Length			
	Pneumatically Operated Gripper 0.88 in Travel (diameter)			
Servo Pusher Tube Feeder • Servo Driven Carrie		via Rack and Pinion Drive		
	• FANUC Beta 8/3000	HVis AC Digital Servo		
TUBE LOADING SYSTEM - STD 24 ft				
Incoming Material Maximum Length	26 ft /	7.9 m		
Incoming Material Minimum Length	11 ft/3.4 m			
Maximum Material Weight per Length	60 lb/ft / 89.4 kg/m			
Inlet Skid Width	30 in / 762 mm			
Tube Support	6 V-rolls, electrically actuated height adjustment			
ELECTRICAL POWER & CAPACITIES				
Electrical Power	460 vac, 3 phas	e, 60 hz, 80 kva		
Main Breaker	100 amp			
Pneumatic Requirements	16 scfm @ 80 psi			
Hydraulic Power Unit Capacity	30 Gal / 114 L			
Hydraulic Capacity Including Machine Base	80 Gal / 303 L			
Ivist Coolant System Capacity	0.7 Gal / 2.7 L			
Central Lubrication System Capacity	0.5 Gal	/ 1.3 L		
SIZE & WEIGHT, 24 ft LOADER, 12 in UNLOADER		101		
Viachine Height	82.5 in / 2.1 m			
FIOUL Space Requirements (Width X Length)	541 x 149 in / 13.7 x 3.8 m			
(Base Cut-Off Machine)	82.5 x 73 in / 2.1 x 1.85 m			
I Machine Weight				

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AUTOMATION THROUGH INTEGRATION

Let the Bardons & Oliver factory automation specialists turn your Rotating Head Cut-Off Machine into a manufacturing system by integrating any of these material handling enhancements:



UNLOADER CONFIGURATIONS FOR EVERY REQUIREMENT

 Ring style short part pick-off unloader for high production blanking operations





- Long part unloader length per customer specifications
- May be combined with short part pick-off
- Finished part discharge toward operator or towards back of machine
- Separate remnant and crop disposal



System shown is Model RH-700HP Rotating Head Cut-Off Machine with standard 24' loader, short part unloader, optional chip conveyor and optional loading bucks. Numerous configurations and options available to meet specific customer requirements.





BUCK STYLE UNLOADER

- Provides efficient means for collecting finished tubes
- Allows for tubes to be lowered into customer's pallet
- Available end justification and 60-degree forms for banding
- Unloader includes part staging area to allow continued cutting while collected parts are removed from bucks







ROBOT

- Relieves machine operator of heavy lifting and/or tedious material handling operations
- System can include part justification for proper lifting
- Robot control seamlessly interfaces to machine control

Please visit our website to learn more about Bardons & Oliver Tube & Bar Processing Machines, CNC Turning Machines, System Automation, and Robotics Integration.You'll find videos, downloadable literature, technical information and more.

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