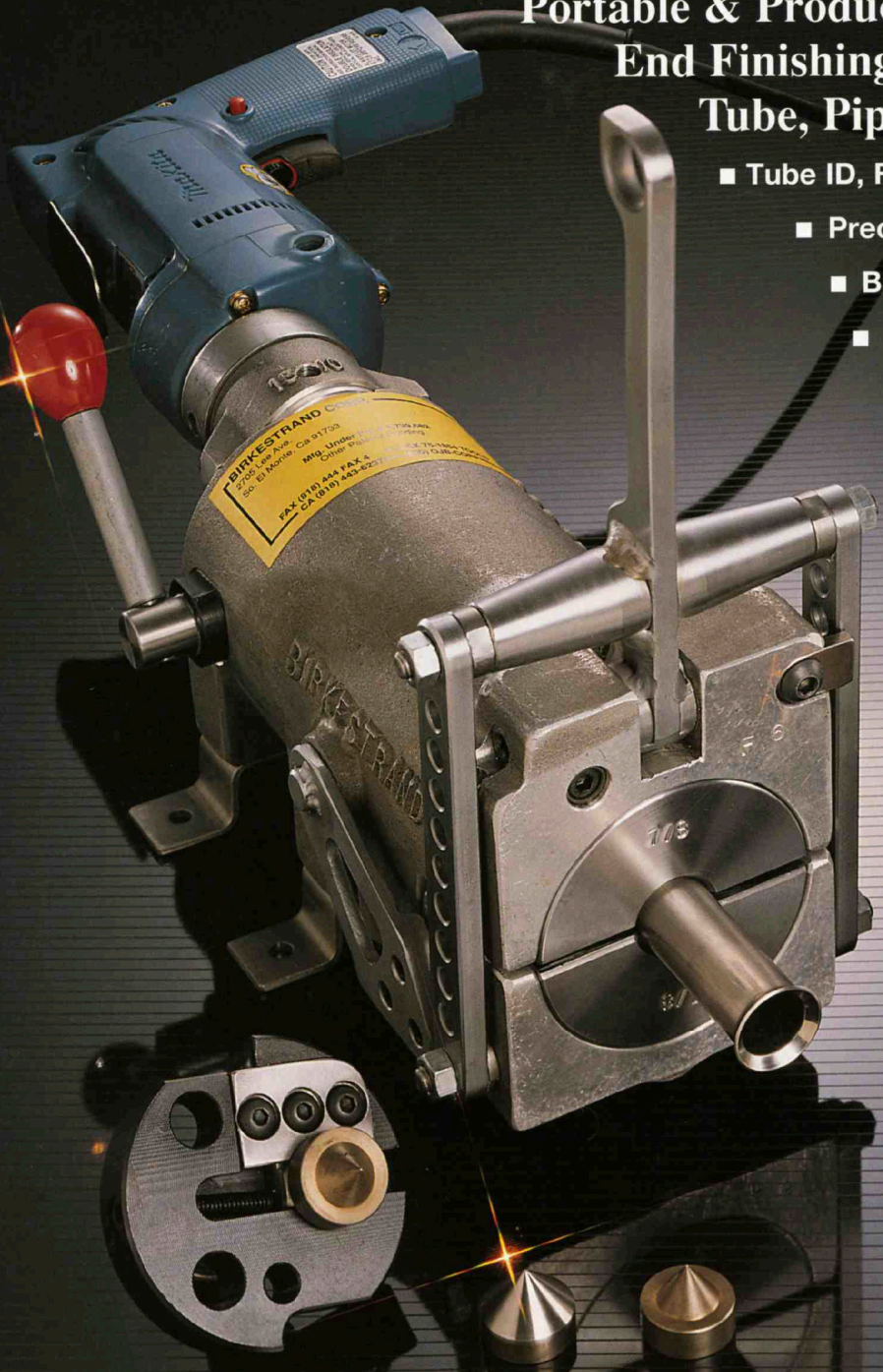


X+SQ & PC Series

Portable & Production Precision
End Finishing Machines for
Tube, Pipe & Bar Stock

- Tube ID, Face & OD Deburring
- Precision Tube Squaring
- Bar Stock Chamfering
- Heavy Pipe Beveling
- Rotary Flaring
- 1/8" to 7" Dia.



X+SQ300FL

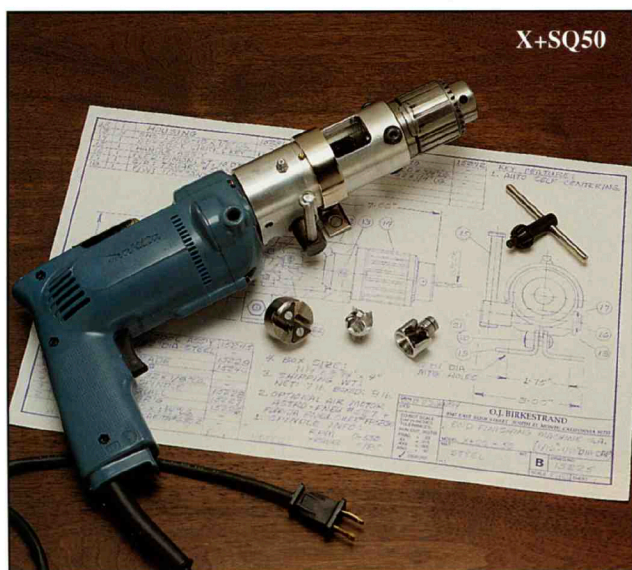
Sentry Industries manufactures the most advanced chipless cutters and end finishing machines for tube, pipe and bar stock in the world. O.J. Birkestrand invented Sentry patented products and has been designing and manufacturing precision, quality machines since 1974. Sentry Ind. has perfected two series of state-of-the-art machines for beveling, squaring, flaring, deburring and chamfering: **X+SQ Series** portable machines for field use and **PC Series** machines for high-production, industrial jobs.

X+SQ Series

Sentry Ind. X+SQ Series is a designer line of precision end finishing machines for tube, pipe and bar stock. The major difference between models, besides being heavier to accommodate bigger stock, is that the X+SQ50 and 100 have direct drive while the larger X+SQ300, 450 and 600 have a built-in gear reduction ratio and a center line spindle feed mechanism. All models have replaceable parts, including bearings.

X+SQ50 points bars and faces tubes. X+SQ100, 300, 450 and 600 can hold and face extremely short lengths of straight tube or pipe, and they are designed to ID/OD chamfer tube and pipe, as well as chamfer bar stock from 1/8" to 7" diameter.

Model	Diameter	Operations
X+SQ50	1/8" - 1/2"	<i>The Machinist's Pencil Sharpener</i> Points bars; faces and radiuses tubes; direct drive; 3-jaw chuck
X+SQ100	1/8" - 1 1/8"	Precision tube squaring & deburring; direct drive, dies; standard 120-220 VAC
X+SQ100RT X+SQ100BAT		Standard with right angle mount Battery, charger, carrying case
X+SQ300	1/4" - 3"	Same Operations as X+SQ100 plus Built-in gear reduction drive; center
X+SQ450	3/8" - 4 1/2"	line spindle feed; quick-change dies;
X+SQ600	1/2" - 7"	adjustable size cutters
PC300-3JC	1/4" - 3"	OD 3-jaw chuck grip
PC500	3/16" - 5"	OD Grip
PC600IDX	1 1/2" - 6"	Self-centering ID grip



Portable and Powerful

No other portable machine will match X+SQ models for value or performance. Typical applications for the X+SQ Series are field deburring, squaring the ends of stainless steel tubes for orbital welding, beveling pipe for weld preparation, and in-plant chamfering bar stock for CNC lathe bar feeders. X+SQ models are lightweight enough to be lifted into high, inaccessible areas or bolted to a bench with an electric foot pedal to increase production.

X+SQ Series machines are rugged and powerful, but lightweight and compact.



X+SQ100BAT
Battery Powered

Precision Action Clamp

The heart of the X+SQ Series design is an exclusive, patented over-center *dead stop* or *clam shell die* system that prevents stock movement during clamping or unclamping. This allows better cutting control and reduces waste.

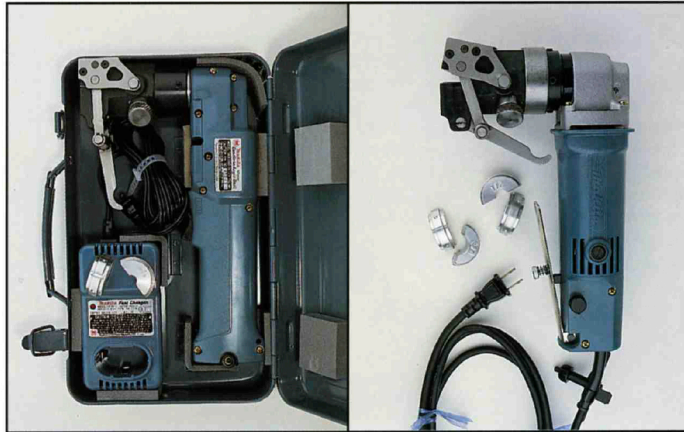
Sentry Ind. machines the X+SQ housing as a one-piece aluminum casting structurally designed so that the machines will remain rigid and provide chatterless cuts even under the most extreme loads.

All the critical internal bores, die dovetails and shoulders are precision machined in one set up on the latest CNC equipment. After machining, the front third of the casting is precision saw cut from the main body. This section forms the lower half of the stock clamping mechanism, which insures accuracy, because all the separated parts are kept as a matched set.

X+SQ50 *The Machinist's Pencil Sharpener*

The X+SQ50 points bars and electrodes as well as faces and radiuses tube ends. No dies are required to grip the stock, which is self-centered and gripped in the stationary inverted 3-jaw drill chuck. Interchangeable rotating tools are mounted on a quill-type spindle and advanced into the stationary workpiece by the manual left rear lever. Diameter capacity: 1/8"-1/2".

PORTABLE & PRODUCTION



X+SQ100BAT
Battery Powered with
Charger & Carrying Case

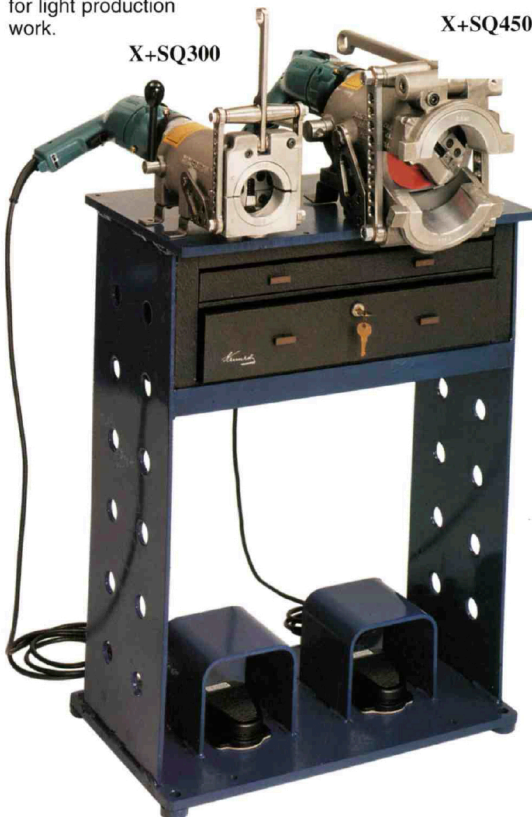
X+SQ100RT
Standard
Right Angle



X+SQ100
Standard
Diameter Capacity
1/8" - 1 1/8"

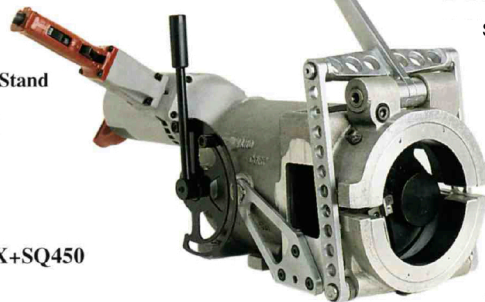
Sentry Industries Machine Floor Stand

The Sentry Ind. Hutch is an exclusive bolt-on, heavy-duty machine floor stand with professional two-drawer lockable tool box. The Hutch is equipped with an electric foot pedal and cord assembly that makes the simple X+SQ Series machines suitable for light production work.



X+SQ300

X+SQ450



X+SQ600

Durable, Precision Engineered

Sentry's X+SQ Series are more rational, portable end finishing machines and accessories that are built to last.

The mechanisms are simple, durable and tolerant of normal field abuse.

Sentry Ind. perform with minimum maintenance and trouble-free operation for hundreds of hours even when using the X+SQ Series to finish stainless steel or titanium tubes for welding. To ensure longevity and provide corrosion resistance, the hardware parts are manufactured of stainless steel or are chrome plated. The housing is alloy aluminum, the gears are heat-treated tool steel, and the bearings are sticky grease lubricated.

Adjusts for Odd-Size Stock

X+SQ Models 100, 300, 450 and 600 have an adjustable eccentric pivot pin that adjusts for slightly over-and under-sized stock as well as machine wear. Because these X+SQ models have a centerline spindle drive actuation to minimize side thrusts and friction, concentricity and squareness between the spindle and workpiece is assured.

Manual Operation/Power Spindle

X+SQ Series operation is manual, except for the spindle rotation, which is powered by an electric motor, and on some models, battery or pneumatic power.

The X+SQ Series may be used with various brands of power drive motors including in-line, right-angle pneumatic and electric motors. Sentry Ind. supplies the Milwaukee low-speed (550 rpm) for X+SQ Models 300 and 450 and the Milwaukee high-speed (1800 rpm) for the X+SQ100.

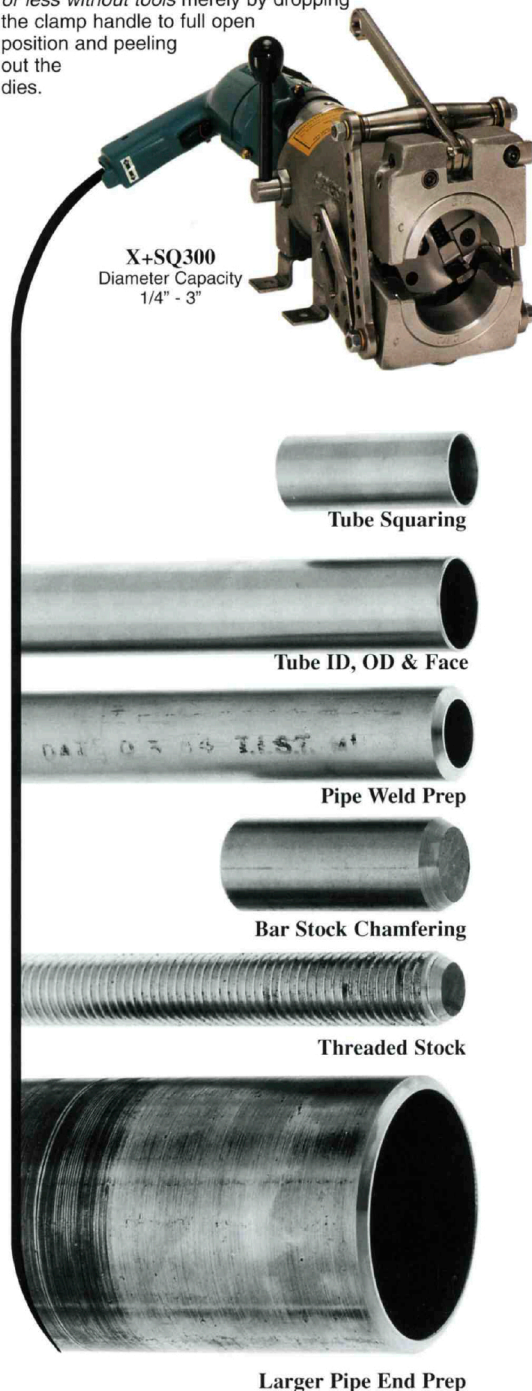
The drive motor mounting bracket and motor coupling for the X+SQ Series are universal and can be conveniently exchanged to mount the type of drive motor desired.



CUTTING EDGE TECHNOLOGY

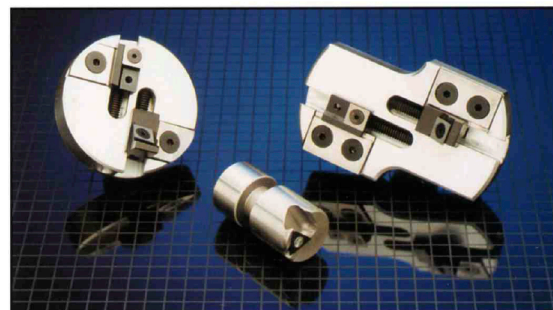
Easy-to-Use

Sentry Ind. X+SQ Series machines are fast and easy-to-operate. Set ups take only a couple of minutes and can be done easily by unskilled, inexperienced personnel. The dovetail dies can be changed in 30 seconds or less without tools merely by dropping the clamp handle to full open position and peeling out the dies.



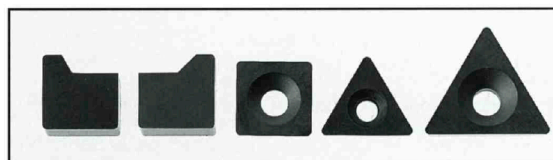
Quick Change Dovetail Dies

A different dovetail die set is required for each stock size. Clamp dies mount in a dovetail slot and are held in place by a detent ball, which is preset at Sentry. Because the dies are split in two, they can be conveniently pocketed to accommodate tees, valve bodies and elbows without straight sections. Die halves are totally interchangeable and can be switched top to bottom and reversed front to back. All sizes and types of dies are available: round, hex, square and irregular. Dies are normally made from heat-treated alloy aluminum, so they will not mar the stock OD. Dies of stainless steel and other material are also available.



Tool Cutter Cartridges

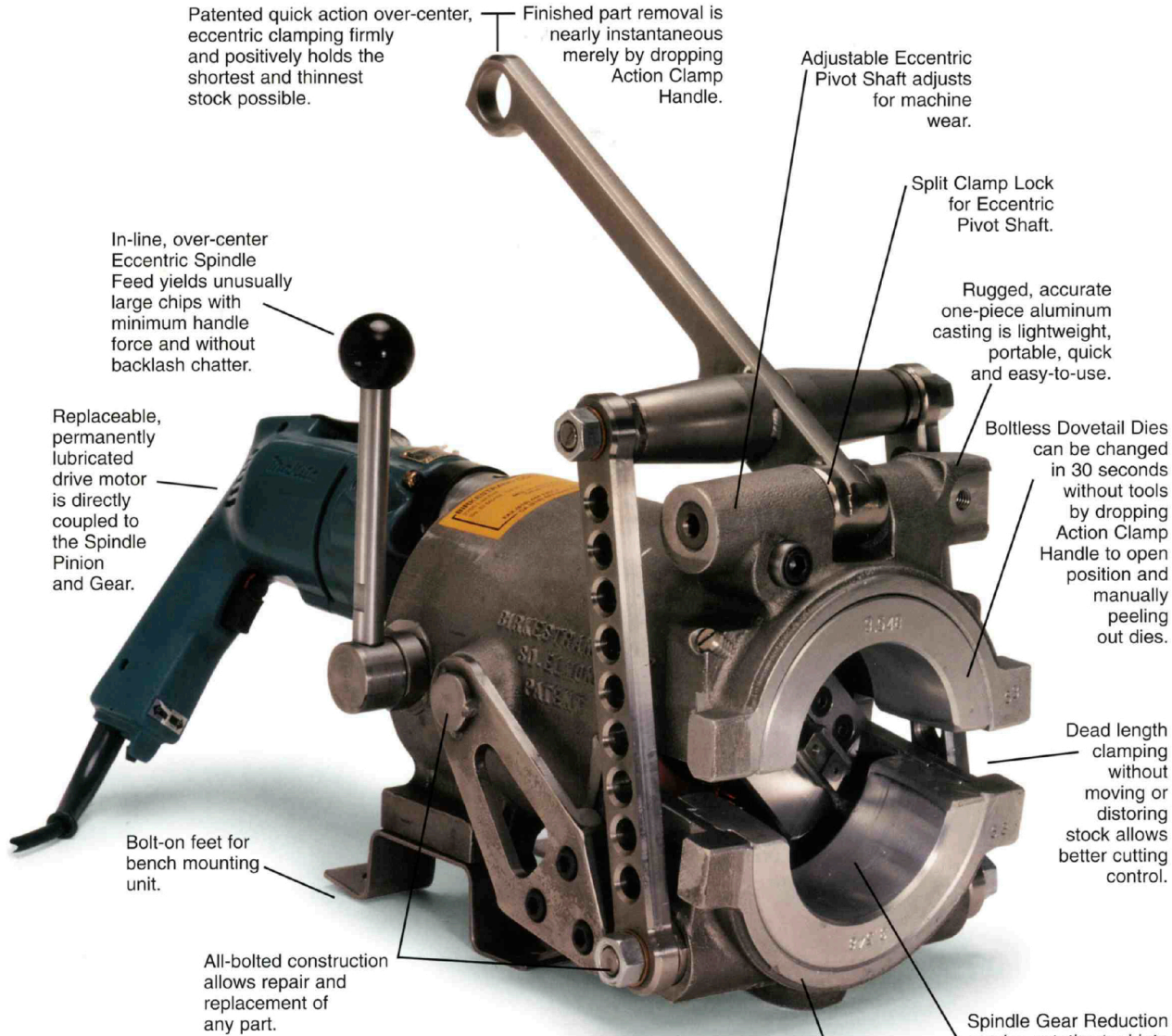
Designed to use Carbide Indexable Bits, cutter angles are built into the individual Cutter Cartridge blocks. In turn, these blocks can be clamped and precision adjusted over most of the tool's range. Sentry Ind. offers most popular angles including 15, 30, 37.5, 45 and 60 degrees.



Cutter Bit Options

Cutter Bits are commonly mounted to the tool blocks by a screw. Normally, Cutter Bits are 3- or 4-sided indexable carbide. In some cases, high-speed steel is available. The Triangular Bit, in conjunction with the Sentry Ind. Skew Face Block, produces a continuous chip that curls away from—and cannot enter—the workpiece ID. This is especially important when working on electro-polished stock.

X+SQ SERIES



Patented quick action over-center, eccentric clamping firmly and positively holds the shortest and thinnest stock possible.

Finished part removal is nearly instantaneous merely by dropping Action Clamp Handle.

Adjustable Eccentric Pivot Shaft adjusts for machine wear.

Split Clamp Lock for Eccentric Pivot Shaft.

In-line, over-center Eccentric Spindle Feed yields unusually large chips with minimum handle force and without backlash chatter.

Rugged, accurate one-piece aluminum casting is lightweight, portable, quick and easy-to-use.

Replaceable, permanently lubricated drive motor is directly coupled to the Spindle Pinion and Gear.

Boltless Dovetail Dies can be changed in 30 seconds without tools by dropping Action Clamp Handle to open position and manually peeling out dies.

Bolt-on feet for bench mounting unit.

Dead length clamping without moving or distorting stock allows better cutting control.

All-bolted construction allows repair and replacement of any part.

Spindle Gear Reduction carries *rotating* tool into *stationary* workpiece. Precision Input Pinion and Drive Gear are heat-treated steel mounted in replaceable, self-lubricated bearings.

Options

- Standard or Mini Grip Die Lengths for Finishing Elbows, Tees and Fittings
- Precision Work Length and Spindle Travel Stops
- Standard or Heavy-duty Air Motor Drives
- 120 or 220 Volt AC Electrics
- Right-angle Drives to Minimize Overall Length
- Custom Die Shapes

X+SQ450

Patented top lever, over-center eccentric Action Clamp grips stock in Quick Change Dies. Left rear lever advances Gear Reduced Driven Spindle that carries *rotating* tools into *stationary* workpiece.

Cycle times: 3 to 15 seconds.
Diameter capacity: 3/8" to 4 1/2".

Die-spindle alignment is automatically assured, because housings are cast and machined as one piece, then cut apart for assembly.



THE WORLD CLASS STANDARD

Sentry Ind. PC Series models are heavy-duty, 8-speed production chamfering machines with interchangeable tooling mounted on an integral, ball bearing, quill-type spindle and advanced into stationary stock. Automatic and Semi-automatic Models are available. A push button on the Automatic Model instantly changes from manual for quick set ups and one offs to auto mode for production. The spindle feed lever controls the Semi-automatic Model cycle. The main difference between PC Series

models is how they grip stock: **PC300-3JC** has an OD 3-jaw chuck grip, the **PC500** also has an OD grip, and the **PC600IDX** has a self-centering ID grip.

These super quick machines have normal cycle times of only 1-10 seconds.

Set ups can require less than 5 minutes. Their slender compact design fits almost anywhere and easily inserts into a transfer line or tube mill off-line station.

Base design is coolant-compatible.

PC Series

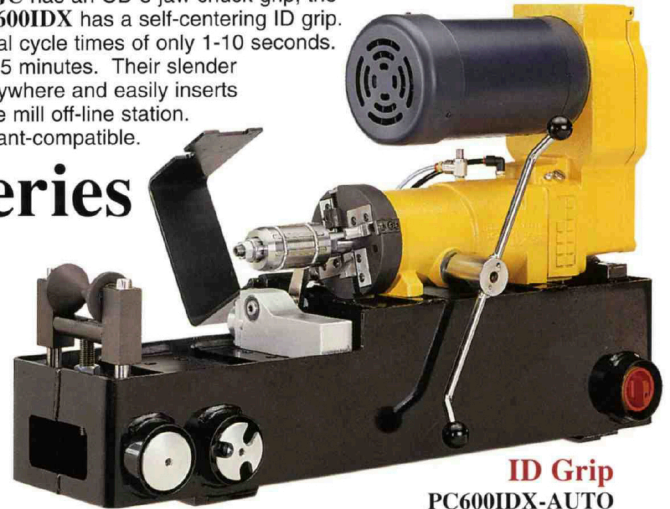


OD Grip

PC500AUTO

Production Chamfering Machine

Auto Model with dual manual & auto modes



ID Grip

PC600IDX-AUTO

Production Chamfering Machine

Semi-automatic or Auto Models

X+SQ & PC Series Machine Specifications

Models No.	X+SQ100	X+SQ300	X+SQ450	X+SQ600	PC500	PC600IDX
Capacity:						
Tube	1/8" - 1 1/8"	1/4" - 3"	3/8" - 4 1/2"	1/2" - 7"	3/16" - 5"	1 1/2" - 6"
Pipe	1/8" - 3/4"	1/8" - 2 1/2"	1/8" - 4"	1/4" - 6"	1/8" - 4"	1 1/2" - 5"
Bar						
Round	1/8" - 7/8"	1/4" - 3"	3/8" - 4 1/2"	1/2" - 7"	3/16" - 5"	N/A
Square	1/8" - 3/4"	1/4" - 2"	3/8" - 3"	1/2" - 4"	3/16" - 3"	N/A
Hex	1/8" - 3/4"	1/4" - 2"	3/8" - 3"	1/2" - 5"	3/16" - 3"	N/A
Grip Strength						
Standard	3/4"	1 7/8"	2 1/2"	3 1/2"	2"	2"
Mini	5/16"	5/8"	1 1/4"	1 3/4"	1/4"	1/2"
Standard Motor	1/4 HP, 110V	1/3 HP, 100V	1/3 HP, 110V	3/4 HP, 110V	1 1/2 HP x 1 PH, 110/220V	3 HP x 3 PH, 220/480V
Gear Ratio	1:1	6:1	9.3:1	10.5:1	8 Speeds	
Spindle Speed (Standard)	0-1800 rpm	0-92 rpm	0-59 rpm	33rpm	Optional 3 Speed Ranges 120-2600 rpm	
Clamping		Manual Lever Actuated			Optional Semi-automatic or Automatic Cycle	
Spindle Feed		Manual Lever Actuated				
Cutter Bits		Indexable Inserts Carbide or HSS			Indexable Inserts-Carbide Optional Custom Forms	
Dimensions	10"L x 8 1/4"H 2 3/4"W	17 1/2"L x 7"H 9 3/8"W	18 1/2"L x 10 1/2"H 9 3/4"W	25 1/2"L x 15 1/4"H 12 1/2"W	40"L x 30"H 18"W	
Weight	6 lbs	18 lbs	40 lbs	110 lbs	550 lbs	

One-Year Warranty

All Sentry Tools are designed to provide trouble-free operation. Should the need arise, all parts are engineered for easy replacement. Interchangeable replacement parts are normally available off the shelf or you can send your Sentry Ind. machine to the factory for rebuilding. X+SQ Series products have a one-year warranty on parts only.