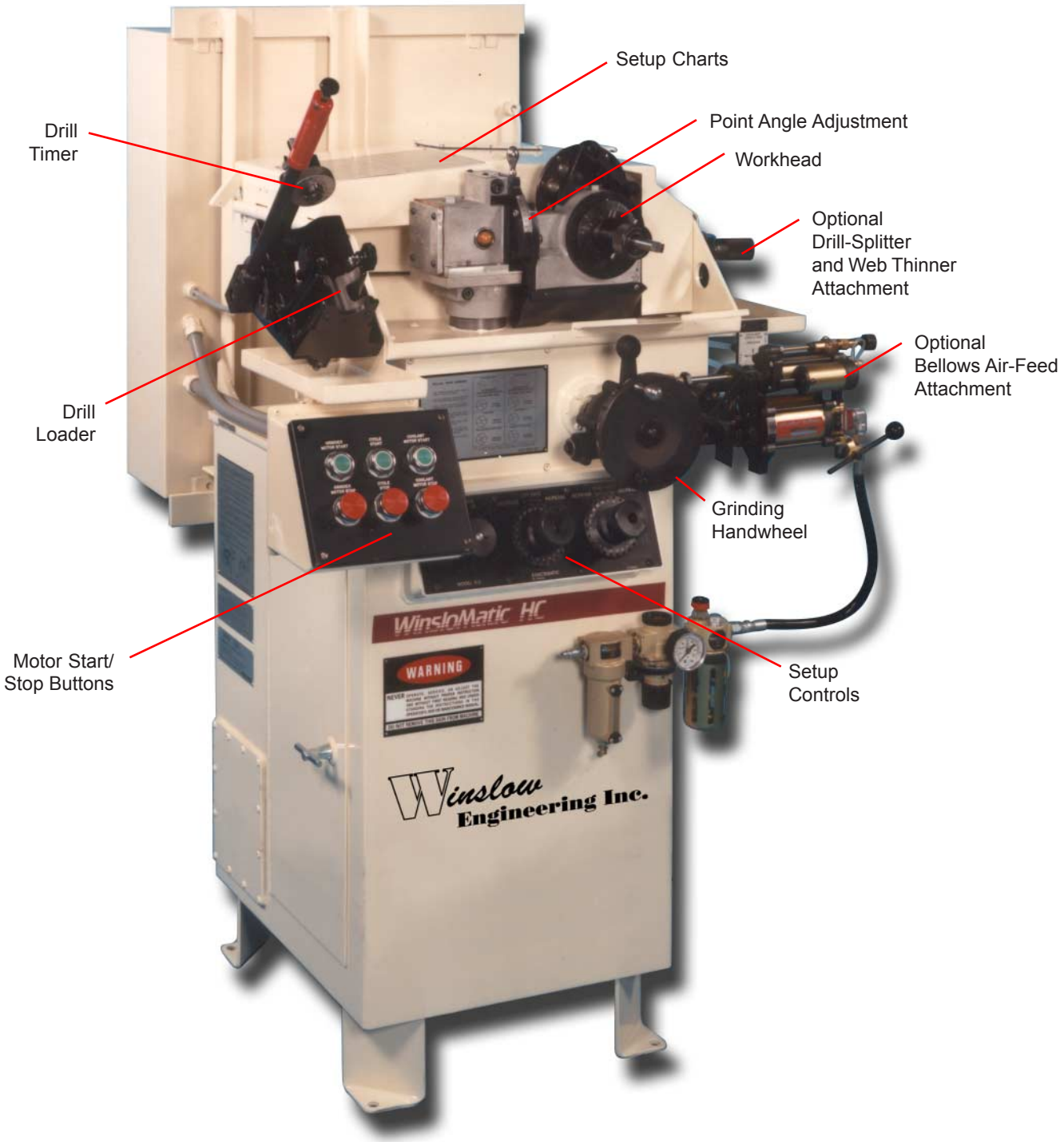
Winslow HC

Quality Grinding For Optimum Performance

Winslow Engineering Inc.

Extreme Versatility



HC Improves Hole Quality

Accurate holes are produced by *precision* ground drill points. The HC clamps the drill in a collet, guides it in a bushing and rotates it about the axis during the grind cycle. Result: Concentric, precision drill point geometries with uniform fine finish.

HC Extends Drill Life

Each cutting lip is ground with precise, cam -generated rotary motion. This assures equal lip height, point angle and concentricity about the drill's axis. Chip loads are balanced during drilling operations. Result: Longer drill life with faster feedrates.

HC Increases Drilling Productivity

Advanced manufacturing methods *demand* high performance drill points to complement increased speeds and feedrates. The HC sharpens a variety of efficient drill geometries to fit your machining needs. Result: Higher quality parts, faster part production, greater return on investment.

HC Eliminates Secondary Operations

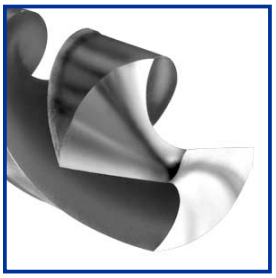
Self-centering drills cut upon part contact and cut straight to full depth. Center drilling and reaming often can be eliminated. Radiused drill points minimize breakthrough burrs -a measurable advantage on intersecting holes or hard-to-reach cavities. Deburring often can be eliminated.

HC Sharpens 1/16" (1.55mm) to 1-1/2" (38.0mm) Drill Diameters

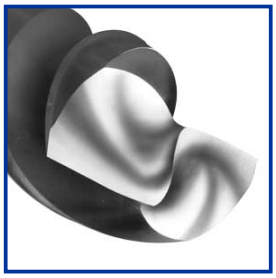
This versatile machine handles a wide size range of standard drill styles. Drill holders are available to accommodate short multi-diameter drills as well as large taper shank drills. Produces point angles from 60 to 160 degrees.

HC Features Simplified Setup and High Output

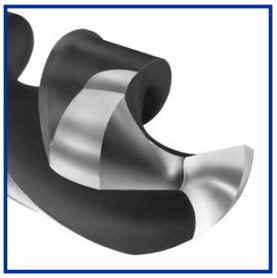
Setup charts and calibrated dials speed machine setup. Bushing plates and drill holders minimize tooling items. Typical setup is accomplished within three minutes. When equipped with the optional air feed attachment, output rates of 100 drills per hour can easily be achieved when grinding 3/8" (10.0mm) diameter drills.



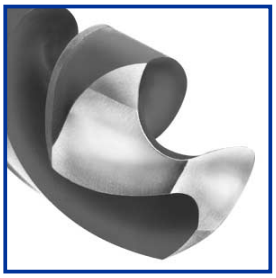
Helical - Exclusive Winslow®-Helical Grind features S-shaped crown chisel. Excellent self-centering. Reduces thrust, increases feed-rates, extends drill life, improves hole quality.



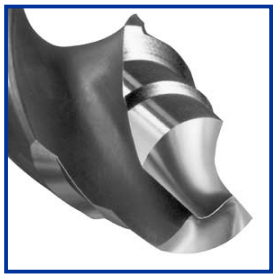
Wide-Web Helical - Grinds helical points on wide-web drills for improved drilling. All the benefits of helical point plus eliminates need for splitting or web-thinning.



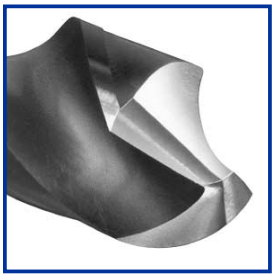
Bickford - Exclusive Winslow-Bickford Point® is self-centering, greatley increases drill life, minimizes burrs at breakthrough, produces excellent hole quality.



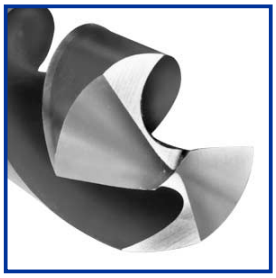
Racon - Exclusive Winslow®-Racon Point features full radiused cutting lip. Greatly extends drill life... minimizes burrs at breakthrough.



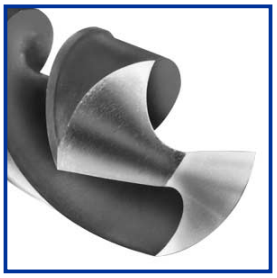
Step Drills - Grind pilot diameter and countersink angle in one operation. Round or relieved pilots.



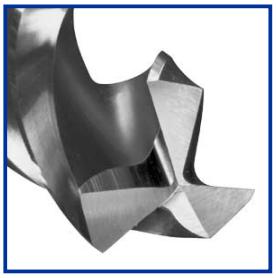
Pyrcon (4-Facet) - Cam-relieved Pyrcon point is stronger than flat facet grinds. Helps drill centering, provides greater clearance for coolant and chip flow.



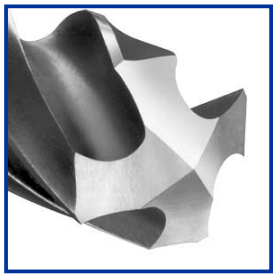
Split/Notched - Creates secondary cutting edge in chisel. Helps drill centering, chip and coolant flow. Advantageous where drill feed cannot be controlled.



Conventional - Primary grind for the production of split points.



3-Fluted Tools - Regrind point and gash web. Good centering with increased feedrates. Also grind core drills without gashing web.

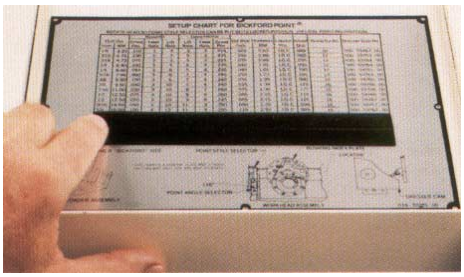


4-Fluted Tools - Regrind point on core drills. Used to enlarge existing unched or cored holes.

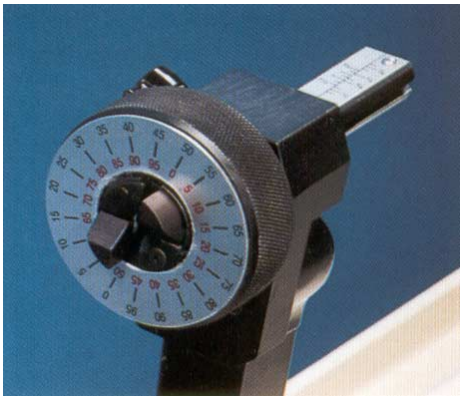
Ease Of Operation

Heavy-Duty Machine Sets Up Quickly... Simple to Operate... Sharpens Accurately.

After the operator has pre-selected the right size bushing plate and drill holder for the respective drill diameter, the drill sharpening procedure is ready to begin.



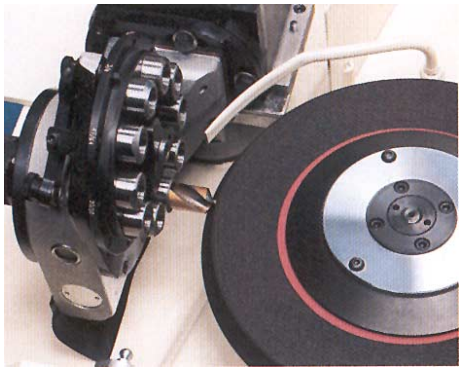
1. Determine the correct settings from the chart on top of the machine.



2. Measure the drill web thickness. Set the timer to this measurement. The timer controls axial and radial timing of the drill.

3. Set the three control dials on the front of the machine for lift rate, feed rate and grind position.

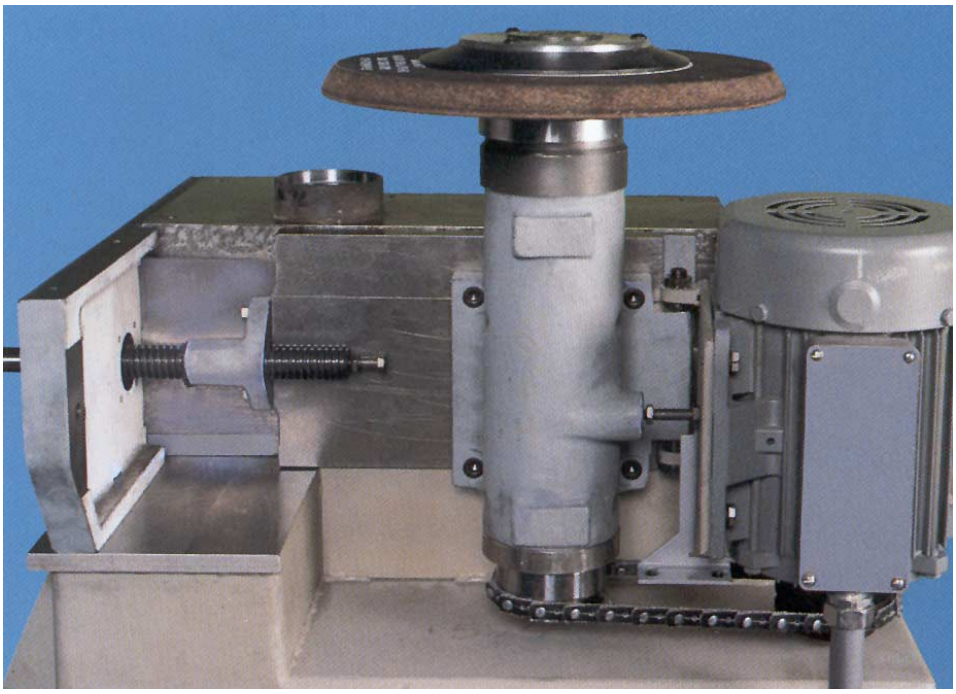
4. Load and time the drill. The operator inserts the drill into the holder (on the loader), pushes the handle and establishes the correct drill timing against two positive stops.



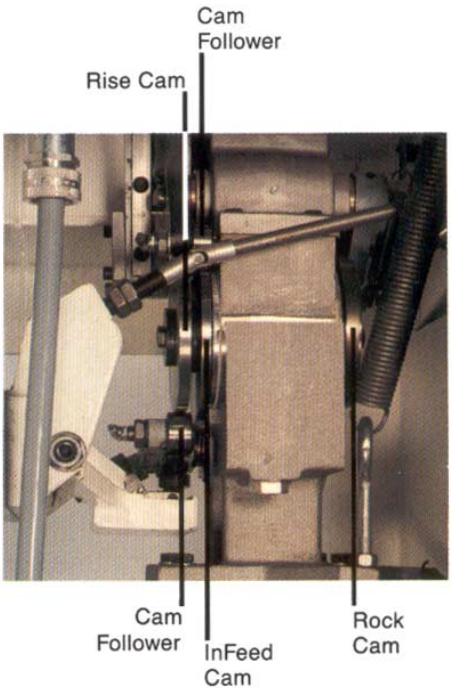
5. Insert the drill into the workhead through the bushing plate. Turn on power to the spindle, coolant and grinding action.

6. Advance the grinding wheel using the front handwheel until the drill point has been sharpened.

Design Features

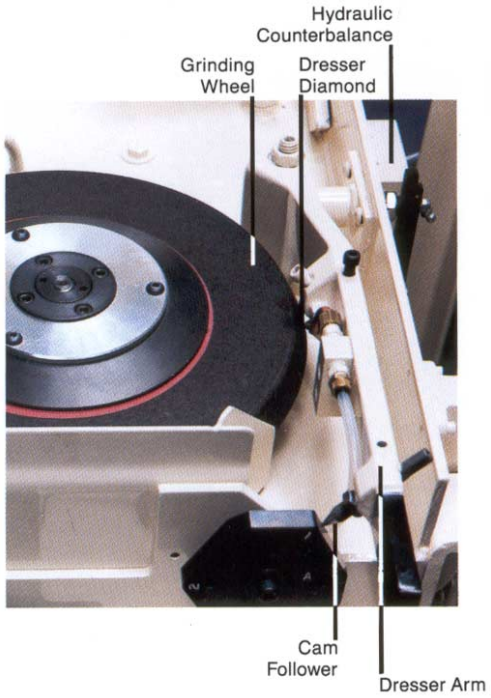


Dresser arm follows a cam to accurately duplicate the desired contour onto the wheel. Both plain and geometric curves can be transferred.



Spindle Drive Built For Durability

The heavy-duty spindle drive assembly has a steel weldment frame to maintain positioning accuracies. The grinding wheel mounts on a ball-bearing spindle which is driven by a 1 H.P. motor. Grinding wheel is protected by a 1/4 (6.0mm) thick steel cover. Hand-scraped ways and a ground lead screw permit precise positioning of the wheel. A 12.0” (300.0mm) diameter wheel operates at 1800 RPM and creates a finish of 16RMS or better. Diamond grinding wheels are available for sharpening carbide drills.



Precision Cams Produce Accurate Points

Accurate point geometry is generated automatically. The precision cam action has all three axes of motion working simultaneously and in exact synchronization. Cam action is set by the three control dials at the operator’s control console.

Wheel Dressing Is A Simple Manual Function

The HC has built-in wheel dresser for dressing the grinding wheel.

Bushings Support The Drill For Accuracy And Concentricity

Rubber-Flex Collet Holders.

Drill diameters 1/16” (1.55mm) to 3/4” (19.0mm). Nine drill holders cover the above range and are supplied with the base machine.

Holder With Pair of Collets.

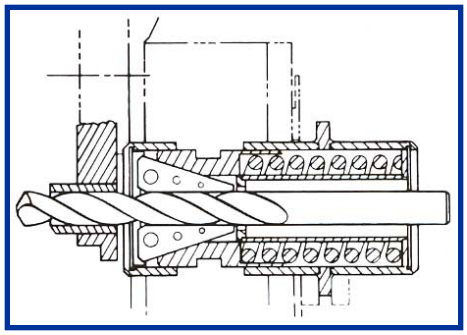
Drill diameters 3/4” (19.0mm) to 1” (25.4mm). Holder grips the drill with two expandable collets. A hand- tightened collar actuates collet. Adapters available for #2 and #3 Morse taper drills.

Holder With Single Expandable Collet.

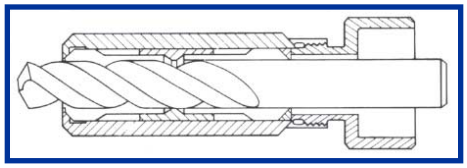
Drill diameters 1” (25.4mm) to 1-1/2” (38.0mm). Holder grips the drill with an expandable collet and supports the drill in a bushing. A hand -tightened collar actuates the collet. Includes adapters for short-length #3 and #4 Morse taper drills.

Six Quick-Change Inch Bushing Plates Assure Drillpoint Concentricity.

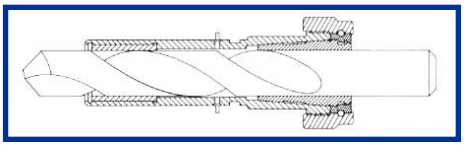
Precision guide bushings offer positive support for the drill at the very end. All letter, numbered or fractional-size drills are handled within the 1/16” to 3/4” range. No index plate is required for drill diameters from 3/4” (19.0mm) to 1-1/2” (38.0mm).
Index plates can be easily and quickly changed by rotating the locking knob one-third turn, sliding the plate off its mounting taper, mounting the new plate and securing the locking knob.



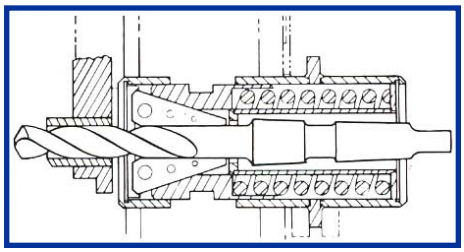
Drills with different diameters from 1/16” to 3/4”



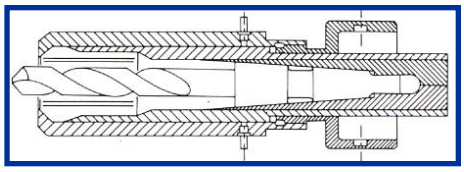
Drills with different diameters from 3/4” to 1”



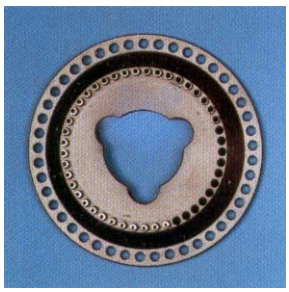
Drills with different diameters from 1” to 1-1/2”



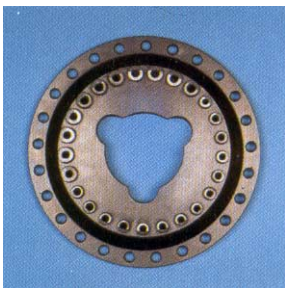
Drills with Morse Taper shanks, from 1/16” to 3/4”



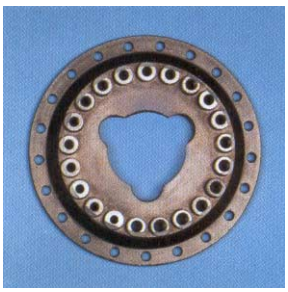
Drills with #2 and #3 Morse Taper up to 1” (Morse Taper holder and closure sleeves are optional)



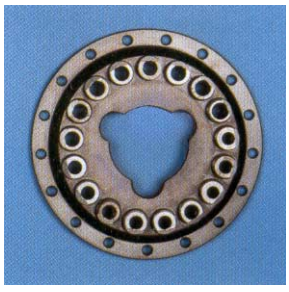
1/16” - #25 Bushing Plate



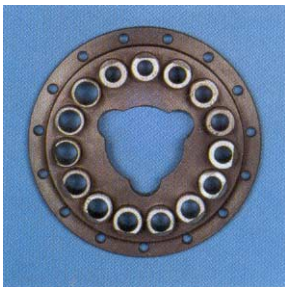
#24 - #4 Bushing Plate



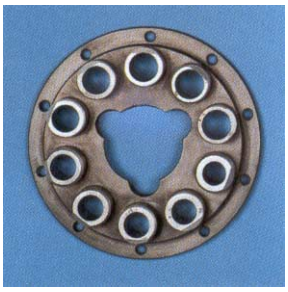
#3 - 19/64” Bushing Plate



N - X Bushing Plate



Y - 19/32” Bushing Plate



19/64” - 3/4” Bushing Plate

Note:

Seven metric plates are available for the range of 1.55mm through 19.0mm. Sizes as follows:

- 1.55mm-2.50mm in .05mm increments
- 2.60mm-9.90mm in .10mm and .25mm increments
- 10.0mm-19.0mm in .5mm increments

Special sizes available upon request.

Options

Mist Collection Unit With Hose And Adapter

Removes oil mist/fog from the grinding area. Recommended to eliminate coolant film on machine surroundings. Can be set on a stand or hung from the ceiling.

Air Feed Attachment

Offers semi-automatic operation and increases output when using two drill holders. Mounts to front of machine for convenient actuation.

Drill Splitter/Web Thinning Attachment

Used to grind the secondary cutting edge on split point drills. Also permits web thinning (notching) of thick webs. Down feed and infeed stops are micrometer adjustable. Splits drills from 1/16" through 1/2" (1.55mm-12.5mm). Web thins drills from 5/16" through 1" (8.0mm-25.5mm).

Drill Loader Automation

Electronic joystick operation reduces operator manual motions when loading and timing drills. Replaces manual drill loader shown on page 4.

Specifications		Metrics
Drill Capacity		
Helical Point	1/16" through 1-1/2" dia.	1.55mm through 38.0mm
Bickford Point*	1/8" through 1" dia.	3.2mm through 25.4mm
Racon Point	1/8" through 1" dia.	3.2mm through 25.4mm
Step Drills	3/32" through 1/2" dia.	2.4mm through 12.5mm
Pyrcon Point	1/16" through 1" dia.	1.55mm through 25.4mm
Split/Notch Point*	1/16" through 1" dia.	1.55mm through 25.4mm
Conventional Point	1/16" through 1-1/2" dia.	1.55mm through 38.0mm
3- and 4-Fluted Drills	1/16" through 1-1/2" dia.	1.55mm through 38.0mm
Grinding Wheel Size	12" x 3/4" x 5" horizontally mounted for 12" x 1" x 5"	305mm x 19mm x 127mm 305mm x 25.4mm x 127mm
Motor Data		
Spindle	1-HP; 1800 RPM; all standard voltages, 50 or 60-Hz; 3-phase; TEFC, frame 143T	.75 kW
Workhead	1/3-HP; 1800 RPM; all standard voltages, 50 or 60-Hz; 3-phase; TEFC, frame 56C	.25 kW
Coolant	1/4-HP; 3450 RPM; all standard voltages, 50 or 60-Hz; 3-phase; TEFC, frame H426	.20 kW
Electrical Data: All electrics to NFPA-79 standards		
Weight: 1,000 pounds approximate		450 kg
General Information		
Handles all types of 2-fluted, right-hand drills (left-hand optional)		
Drillpoint included angles from 90 to 140 degrees (60 to 160 optional)		
Point angle varied by angular adjustment of workhead		
Lip clearance angle adjusted from control console		
Built-in wheel dresser		
Floor space 38" x 50"		985mm x 1270mm

**Requires (2) grinding operations to achieve geometry.*

Other Options

- Racon and Pyrcon point geometries
- Three- and four-fluted drills
- Pilot diameters and countersink angle on step drills
- Expanded capacity to 1-1/2" (38.0mm)
- Expanded point angles
- Metric (inch) bushing plates
- Drill holders
- Diamond and CBN grinding wheels
- Left handed drills

Winslow Engineering... for Every Drill Grinding Need

Model HR
Drill Point Grinder

Automatic cycle sharpens drills from 1/16” (1.55 mm) to 1-1/2” (38.0 mm) at a rate up to 120 per hour. Handles right-hand and left-hand drills, point angles from 60º to 160º. Generates conventional, Winslow-Helical, Racon®, Bickford Point® and split points.

Model 520
Drill Point Splitter

Automatic wheel dressing and infeed cycle permits accurate splitting at a rate up to 350 per hour. Splits drills from 3/32” (2.4 mm) to 1/2” (12.5 mm); web thins drills from 5/16” (8.0 mm) to 3/4” (19.0 mm). Meets or exceeds all NAS 907 specifications.

Model 525
Drill Point Splitter

Automatic chucking and indexing of the drill permits precision splitting at up to a rate up to 400 per hour. Splits drills from 1/16” (1.55 mm) to 1” (25.5 mm); web thins drills from 1/8” (3.2 mm) to 1” (25.5 mm). Meets or exceeds all NAS 907 specifications.

Model 100C & 1000CC
Drill Point Grinder

High production machines for grinding with high accuracy, including fully automatic cycle and wheel dresser. The 100C grinds drills from 1/16” (1.55 mm) to 1-1/2” (38.0 mm), point angles from 90º to 140º up to 500 units per hour. Point styles include conventional, Winslow-Helical, Racon®, Bickford Point®, core drills, step drills, taps and reamers. The hopper-feed 1000CC grinds jobber drills from 3/32” (2.4 mm) to 1/2” (13.0 mm), up to 600 units per hour. Point styles include conventional, Winslow-Helical and wide-web helical points. For drill manufacturers only.

Model FR200
Form Relief Grinder

High versatility for precision form relief grinding, OD and ID grinding and surface grinding of most cutting tools. Tool types include step drills, subland drills, taps, form tools, trepanning tools, reamers, center drills, boring tools, multi-flute cutters, punch inserts, porting tools and countersinks. Accommodates tools with 1 through 18 flutes.

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