If you don’t own a new Winslow drill grinding machine with exclusive Tri-Ax motion, are you already paying for it?

(look inside to learn the answer)

Winslow
Engineering Inc.

Ways to Justify A Winslow Drill Grinding Machine

Note: The examples presented here are uniquely independent. When testing your sample ground drills, each drill situation will present different machining conditions. Therefore, any or all of the following examples could apply.

Workpiece has eight holes, each 7/8" dia., 1-5/16" deep.
Current part cycle time: 24 seconds, using an 8-spindle head for drilling.
Lot size: 25,000 parts. Number of lots this size processed/year: 3.
Machine burden rate: $120/hour.

A. Reduced Center Drilling

A conventionally pointed drill will "walk" upon part contact. A *Winslow*-Helical or Bickfor Point will *center itself* upon contact. Typical savings include the elimination of separate center drilling operations.

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Center drilled holes/part	8	0		
x Minutes to center drill (5 sec)	x 0.08	x 0.08		
Minutes of center drilling part	0.64	0		
x Total parts/lot	x 25,000	x 25,000		
Center drilling minutes/lot	16,000	0		
Center drilling minutes saved/lot	*0*	*16,000*		

B. Increased Feedrates

Refer to recommeded feedrate charts. Helical or Bickford Points often permit faster feedrates. Typical savings include increased productivity (more parts per hour); faster payback/higher return on capital investment (maximum use of machine tool capabilities).

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Feedrate (IPR)	.016	.022		
x Spindle speed (RPM)	x 350	x 350		
Feedrate (IPM)	5.6	7.7		
Total depth drilled/part (inches)	1.31	1.31		
÷ Feedrate IPM	÷ 5.6	÷ 7.7		
Minutes of drilling/part	0.23	0.17		
x Total parts/lot	x 25,000	x 25,000		
Drilling minutes/lot	5,750	4,250		
Drilling minutes saved/lot	*0*	*1,500*		

C. Reduced Reaming

Conventionally pointed drills typically will cut .005" to .008" oversize. *Winslow*-Helical or Bickford Points typically will cut within .002" of drill diameter. Typical savings include elimination of reaming opeartions.

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Reamed holes/part	5	0		
x Minutes to ream (8 sec)	x 0.13	x 0.13		
Minutes of reaming/part	0.65	0		
x Total parts/lot	x 25,000	x 25,000		
Reaming minutes/lot	16,250	0		
Reaming minutes saved/lot	*0*	*16,250*		

D. Reducing Deburring

A properly ground drill will create less burr. A Bicford Point on most materials will shear off exit burrs within assembly tolerances. Typical savings are found when drilling internal through-holes, interecting holes and difficult-to-deburr holes (separate deburring operations can be eliminated).

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Deburred holes/part	8	0		
x Minutes to deburr by hand (3 sec)	x 0.05	x 0.05		
Minutes of deburring/part	0.40	0		
x Total parts/lot	x 25,000	x 25,000		
Deburring minutes/lot	10,000	0		
Deburring minutes saved/lot	*0*	*10,000*		

E. Reduced Tool Changes

Longer tool life results in fewer tool changes on any machine. Beyond that, multiple-spindle applications and transfer machines require longer tool change time due to presetting. Typical savings are found in dedicated-machine applications.

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Tool change time/drill (minutes)	3	3		
x Number of spindles	x 8	x 8		
Total tool change (minutes)	24	24		
x Number of drill changes/lot	x 25	x 2		
Total tool change minutes/lot	600	48		
Total change minutes saved/lot	*0*	*552*		

F. Reduced Regrinding

Regrinding time can be saved in two ways: The first is through less grinding because of longer tool life. The second is the reduced amount of stock that has to be ground off of a Helical- or Bickford-pointed drill to recondition the point, as compared to a split or notched point. Savings include lower drill inventory as well as less actual regrinding time.

	Typical Example	Typical Helical Point	**YOUR** Current Application	**YOUR** Tested Results
Number of parts in lot	25,000	25,000		
÷ Number of holes/drill change	÷ 1,000	÷ 12,500		
Number of drill changes/lot	25	2		
x Number of drills/drill change	x 8	x 8		
Number of drills used/lot	200	16		
x Regrind minutes/drill	x 3	x 3		
Typical regrind minutes/lot	600	48		
Regrind minutes saved/lot	*0*	*552*		

(SEE NEXT PAGE TO COMPUTE TOTAL SAVINGS PER YEAR)

G. Total Minutes Saved Per Lot of Parts

		Typical Helical Point	**YOUR** Tested Results
A+B+C+D+F (minutes)		44,854	_____
x Burden rate ($/minute @ $120/hour)	x $	2	_____
Total $ savings/lot	$	89,708	_____
x Number of lots this size processed/year	x	3	_____
Total $ Savings/Year	***$***	***269,124***	_____

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