Niagara Cutter

Manufacturing Cost Analysis - End Mill Cost Comparison

(YELLOW FIELDS REQUIRE DATA TO PERFORM CALCUALTIONS)

Company	Test	City / State	Pittsburgh, PA
Contact	Jim Smith	Phone #	(555) 555-5555
Part Name	Valve	Part #	12345
Material	SS304	Hardness	28
Machine Brand Name	Mazak	Model # and HP	FJV 20 / 20 hp
Vertical / Horizontal	Vertical	Spindle Type and Size	CAT40
Operation	Roughing	Date	7/15/04

TOOLING DATA	Test#1	Test#2	Test#3	Test#4
End Mill Manufacturer	Niagara Cutter	Niagara Cutter	Niagara Cutter	Niagara Cutter
End Mill Nomenclature	Stabilizer	C430	S335	SR420
Coating Description (if applicable)	TiaIn	TiaIn	TiaIn	TiaIn
Wet / Dry	Wet	Wet	Wet	Wet
Coolant Application Type (if applicable)	Flood	Flood	Flood	Flood
Coolant Description (and percentage if known)	Semi 7%	Semi 7%	Semi 7%	Semi 7%
Toolholding	ER Collet	ER Collet	ER Collet	ER Collet
Gage Length	2.500	2.500	2.500	2.500
Helix Angle	40	30	35	20
L.O.C.	1.000	1.000	1.250	1.250
Corner Radius	n/a	n/a	n/a	n/a
End Mill Diameter	0.500	0.500	0.500	0.500
Number of Flutes	4	4	3	4
SFM	400	200	250	350
Chip Load per Tooth	0.0020	0.0010	0.0015	0.0015
ADOC	0.500	0.500	0.500	0.500
RDOC	0.400	0.400	0.400	0.400
RPM	3,056	1,528	1,910	2,674
IPM	24.45	6.11	8.60	16.04
Effective Chip Thickness *(chip thinning)*	0.0016	0.0008	0.0012	0.0012
Metal Removal Rate (cubic inches per minute)	4.89	1.22	1.72	3.21
End Mill Cost Each	$53.10	$35.30	$48.30	$71.30
Parts Per End Mill	120	60	90	120
Burden Rate Per Hour	$60	$60	$60	$60
Cycle Time Per Part (*in minutes*)	1.00	4.00	2.84	1.52
End Mill Cost Per Part	$0.44	$0.59	$0.54	$0.59
Time Per Part (Dollars)	$1.00	$4.00	$2.84	$1.52
Total Cost Per Part	$1.44	$4.59	$3.38	$2.11
Number of Parts in this lot	20	20	20	20
TOTAL COST	$28.85	$91.77	$67.53	$42.28