Tube Honing - Selection Guide

APPENDIX A: Troubleshooting Chart

Witnessed Conditions	Corrective Action (In Usual Order of Importance)
Abrasive Glazing	Decrease spindle RPM Increase reciprocation Increase feed rate Use softer abrasives Decrease run-out time Use coarser grit stones Check coolant for hydraulic oil contamination
Abrasive Loading	Decrease spindle RPM Increase reciprocation Use softer abrasives Increase coolant's base content Use finer grit stones Use less porous stone Check coolant for hydraulic oil contamination
Abrasive Galling	Decrease spindle RPM Increase reciprocation Increase coolant's base content Use softer abrasives Check filtration of coolant Use finer grit stones Use less porous stone Use more coolant Check coolant for hydraulic oil contamination
Abrasive Stalling	Use light feed pressure at start of hone cycle Decrease feed rate Check tool slots, pins, cone, for wear Trial other abrasives
Finish Too Rough	Increase spindle RPM Decrease reciprocation Decrease feed rate Use finer grit stones Use harder abrasives Increase coolant's base content Increase run-out time
Finish too smooth	Decrease spindle RPM Increase reciprocation Increase feed rate Use coarser grit stones Use softer abrasives Decrease coolant's base content Decrease run-out time
Excessive Abrasive Usage	Increase spindle RPM Decrease reciprocation Decrease feed rate Use harder abrasives Increase coolant's base content
Tapered Stone Wear	Check spindle to part alignment Check tool slots, pins, cone, for wear Check that abrasives are on grade Use harder abrasives
Eccentric Stone Wear	Check spindle to part alignment Check tool slots, pins, cone, for wear Check that abrasives are on grade Use harder abrasives
Slow Stock Removal	Increase feed rate Increase reciprocation Decrease spindle RPM Decrease coolant's base content Check coolant for hydraulic oil contamination Use softer abrasives Use coarser grit stones
Excessive Heat Generation	Check refrigeration of coolant Decrease feed rate Decrease coolant's base content Check coolant for hydraulic oil contamination Use more coolant Use softer abrasives Use more porous stone
Part Out-of-Round	Decrease feed rate Decrease spindle RPM Increase reciprocation Increase run-out time Check spindle to part alignment Use softer abrasives Check to see that fixture is not distorting part
Part Bell-Mouthed / Tapered	Adjust over-run of stroke Increase run-out time Check spindle to part alignment Check to see that fixture is not distorting part
Part Not Axially Straight	Use longer abrasives Check spindle to part alignment Check to see that fixture is not distorting part Check part accuracy prior to honing
Part Being Honed Eccentric to OD	Check spindle to part alignment Tram part face to determine that it is square to spindle Rotate part occasionally while honing
Swipe Marks in Bore	Use guides
Bore Not Square to Face	Tram part face to determine that it is square to spindle Check spindle to part alignment Check part accuracy prior to honing
Washout Around Keyways, Ports	Decrease feed rate Use finer grit stones Use fiber clad abrasives