

Trouble Shooting Carbide Drills

Problem	Cause	Solution
Heavy Wear at Outer Edge	<ul style="list-style-type: none"> • Insufficient coolant • Incorrect speed & feed 	<ul style="list-style-type: none"> • 5, 6 • 1, 2, 8
Chipping at Outer Cutting Edge	<ul style="list-style-type: none"> • Loose tool, tool movement • Workpiece movement • Poor coolant conditions • Incorrect speed & feed 	<ul style="list-style-type: none"> • 8, 10, 11, 12, 14, 16, 17, 21 • 8, 12, 13, 21 • 5, 6 • 1, 2, 3, 4
Drill Point Chipping	<ul style="list-style-type: none"> • Loose tool, tool movement • Incorrect speed & feed • Drill centering 	<ul style="list-style-type: none"> • 10, 11, 12, 14 • 1, 2, 3, 4 • 8, 10, 11, 12, 21
Margin Wear	<ul style="list-style-type: none"> • Drill margin rubbing wall • Poor chip evacuation • Poor coolant conditions • Workpiece movement 	<ul style="list-style-type: none"> • 5, 6, 8, 20 • 5, 6 • 8, 13, 21
Tool Breakage	<ul style="list-style-type: none"> • Loose tool, tool movement • Workpiece movement • Wrong drill type • Poor coolant conditions • Incorrect speed & feed 	<ul style="list-style-type: none"> • 8, 10, 11, 12, 14, 16, 17, 21 • 8, 12, 13, 21 • 9, 15, 16, 18, 19, 20 • 5, 6 • 1, 2, 3, 4
Poor Tool Life	<ul style="list-style-type: none"> • Incorrect speed & feed • Poor coolant conditions • Wrong drill point 	<ul style="list-style-type: none"> • 1, 2, 3, 4 • 5, 6 • 8, 21
Drill Walk	<ul style="list-style-type: none"> • Incorrect speed & feed • Tool wear • Wrong drill point • Material condition 	<ul style="list-style-type: none"> • 1, 2 • 7, 8, 21 • 8, 10, 11, 21 • 11, 12, 15, 16, 17
Chip Welding	<ul style="list-style-type: none"> • Poor coolant conditions • Wrong drill type 	<ul style="list-style-type: none"> • 5, 6 • 19, 20
Hole Size Inaccuracy	<ul style="list-style-type: none"> • Incorrect speed & feed • Poor coolant conditions • Loose tool • Wrong drill type 	<ul style="list-style-type: none"> • 1, 2, 3, 4 • 5, 6 • 14 • 9, 18
Non-Cylindrical Hole	<ul style="list-style-type: none"> • Loose tool, tool movement • Workpiece movement • Incorrect speed & feed • Wrong drill type 	<ul style="list-style-type: none"> • 8, 10, 11, 12, 14, 16, 17 • 13 • 1, 2 • 18, 21
Heavy Burr	<ul style="list-style-type: none"> • Incorrect speed & feed • Incorrect drill point 	<ul style="list-style-type: none"> • 1, 2 • 8, 21
Blue Chips	<ul style="list-style-type: none"> • Poor coolant conditions • Tool wear 	<ul style="list-style-type: none"> • 5, 6 • 7, 8
Long Chips	<ul style="list-style-type: none"> • Poor point grind • Incorrect speed & feed 	<ul style="list-style-type: none"> • 8 • 1, 2
Solutions Key	1) Reduce RPM 8) Repoint drill 15) Use straight flute 2) Increase feed 9) Correct drill type/size 16) Use stub length 3) Increase RPM 10) Use self-centering drill 17) Place further up holder 4) Reduce feed 11) Spot/center drill 18) Use three-flute 5) Increase coolant 12) Clean surface 19) Use slower helix 6) Increase mixture 13) Improve rigidity/clamp 20) Use parabolic design 7) Add negative hone 14) Tighten holder 21) Change point style	