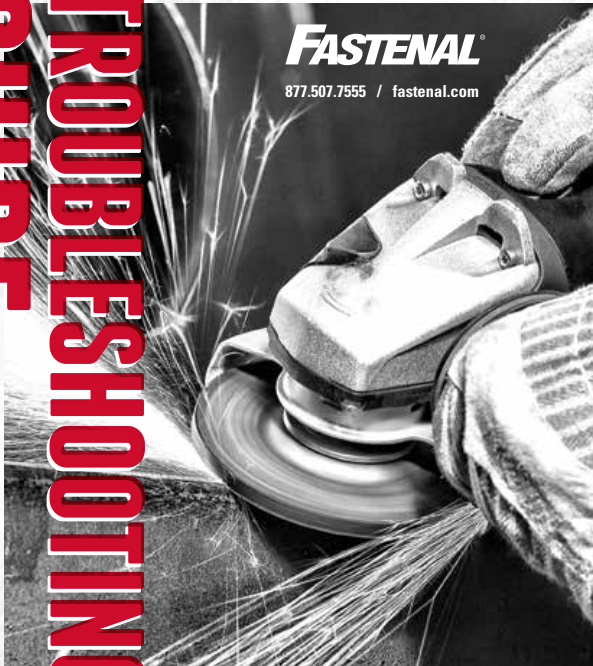


GUIDE TROUBLESHOOTING

FASTENAL®

877.507.7555 / fastenal.com



SOLUTIONS

For cutting wheels, grinding wheels, and flap discs



The following is a guide for identifying and solving the problems which most commonly occur when using cutting wheels, grinding wheels, and flap discs.

This guide can help you to identify problems, define the causes, and recommend solutions.

Before operation of the tool, carefully read the instructions for safe work, which are enclosed in the packaging and printed on the product label.



Read The Instructions



Safety Goggles / Face Shield



RPM

Speed



Tool Guard



Safety Gloves



Protective Clothing



Hearing Protection



Respiratory Protection



CUTTING WHEELS



CUTTING: SHORT LIFE



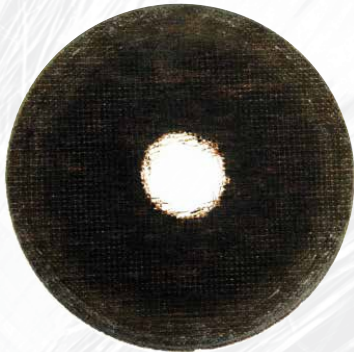
Normal Life

Short Life



CAUSE	SOLUTION
Excessive pressure	Cut with less downward pressure and incorporate motion through the cut
Underpowered tool	Consider using a higher-powered tool (9 amp or higher) and ensure appropriate gauge power cord (10-12 gauge)
Recommended shelf life	Replace with wheel <3 years manufacturing date
Inappropriate storage	Wheels should be stored in a clean, dry location
Tool RPM drop / operator overpowering tool	1) Consider higher powered tool - 10 amp motor or higher 2) Reduce pressure 3) Maintain 90° angle to the workpiece
Product (bond) too soft	Use a harder product

CUTTING: **FLANGE/ARBOR HOLE DAMAGE**



CAUSE	SOLUTION
Excessive pressure	Use a thicker wheel
Excessive side load	Use product with 2 layers of fiberglass. Maintain 90° angle to the workpiece
Workpiece not properly clamped	Properly clamp the workpiece
Product binding / vibration	Use movement while cutting. Never start a wheel while it is in the cut line
Adapting nuts with different diameter on top and bottom	Use adapting nuts with the same diameter

CUTTING: **DAMAGED EDGES**



CAUSE

Workpiece not properly clamped / excessive vibration or chatter

Cutting far from clamping area / excessive vibration or chatter

Grinding with cutting wheel

Excessive lateral load

SOLUTION

Ensure the workpiece is properly clamped

Cut line should be as close to clamping / mounting point as possible, while allowing appropriate clearance for hands, tool, and guard

Use grinding wheel for grinding. Ensure appropriate cutting angle (90°) to the workpiece

Ensure appropriate cutting angle (90°) to the workpiece

CUTTING: **EDGE GLAZING**



CAUSE	SOLUTION
Product too hard	Use a softer product
Not enough motion through cut	Use consistent movement, use effective pressure
Inexperienced operator / insufficient pressure	Training opportunity: use effective motion and pressure through cut

CUTTING: **PRODUCT DAMAGE/FAILURE**



CAUSE	SOLUTION
Excessive side pressure	Ensure the appropriate cutting angle (90°) to the workpiece
Cutting wheel used for grinding	<ol style="list-style-type: none">1) Use product with 2 layers of fiberglass2) Ensure appropriate cutting angle (90°) to the workpiece
Workpiece not properly clamped	Properly clamp the workpiece
Product binding in the workpiece	Use consistent motion through the cut

CUTTING: **HEAT DISCOLORATION (WORKPIECE)**



CAUSE	SOLUTION
Product too hard or too thick	Use a softer or thinner product
Excessive pressure / no motion through cut	Training opportunity: Use effective motion and pressure through cut
Inadequate tool power / RPM	<ul style="list-style-type: none">1) Consider higher powered tool - 10 amp motor or higher2) Reduce pressure3) Reduce grinding angle

CUTTING: **UNEVEN CUT**

CAUSE	SOLUTION
Product too thin for application	Consider a thicker product
Excessive pressure	Reduce pressure while cutting
Improperly clamped workpiece	1) The workpiece must be properly clamped 2) Cut line should be as close to clamping/mounting point as possible while allowing appropriate clearance for hands, tool and guard

PRODUCT DOES NOT CUT EFFECTIVELY

CAUSE	SOLUTION
Product (bond) too hard	Consider using a softer product
Product too thick	Consider using a thinner product

GRINDING WHEELS



GRINDING: UNEVEN WEAR



CAUSE

SOLUTION

**Incorrect clamping
/ mounting**

- 1) Check adapting nuts
- 2) Ensure wheel is properly tightened
- 3) Check for imbalance of wheel or improper mounting between adapting nuts

Out of balance

- 1) Test wheel on a different tool /grinder
- 2) Replace the wheel or tool if necessary

**Adapting nuts (top, bottom)
with different diameter**

Use adapting nuts with the same diameter

GRINDING: UNEVEN EDGE WEAR



CAUSE

Excessive pressure

Grinding at low angle

SOLUTION

Reduce pressure while grinding

Consider increased (steeper) grinding angle, i.e. 25–35°

GRINDING: CRACKS



CAUSE

Product too hard

Grinding at low angle

**Product dropped / damaged
prior to use**

SOLUTION

Consider using a softer product

Consider increased (steeper)
grinding angle, i.e. 25–35°

Replace product immediately

GRINDING: SHORT LIFE



CAUSE

Wheel bond too soft

Excessive pressure

Under powered tool

SOLUTION

Consider using a harder product

Reduce pressure

Consider a higher-powered tool
- 10 amp motor or higher

GRINDING: LOADING



CAUSE

Inappropriate wheel choice

SOLUTION

Consider using a product designed for grinding non-ferrous material and alloys (**Tiger Aluminum**)

GRINDING: **WHEEL DOES NOT GRIND**

CAUSE	SOLUTION
Product bond too hard	Consider using a softer product
Inadequate pressure	Consider using increased pressure
Underpowered tool	Consider higher-powered tool - 10 amp motor or higher

WHEEL CHATTER

CAUSE	SOLUTION
Adapting nuts dirty or worn	Clean or replace adapting nuts
Worn-out bearings	Replace bearings or machine
Improperly mounted product	Ensure product is properly mounted
Ineffective grinding angle - grinding shallow on hard material alloy	Consider grinding at a steeper angle

FLAP DISCS



FLAP DISC: **EDGE BREAKAGE/TEARING**



CAUSE	SOLUTION
Grinding on edge of flap disc	Reduce grinding angle and pressure. Consider changing profile type to ensure use of full width of flap
Inappropriate product selection for application	Consider product with poly-cotton or full polyester cloth for increased durability in aggressive grinding applications

FLAP DISC: EXCESS EDGE WEAR



CAUSE

Uneven wear of the disc

SOLUTION

Consider product with poly-cotton or full polyester cloth for increased durability in aggressive grinding applications

FLAP DISC: GLAZING



CAUSE

**Inappropriate
production selection
for application**

SOLUTION

- 1) Consider a product with more coarse grain
- 2) Consider product with poly-cotton or cotton cloth for increased aggression in lighter pressure grinding and blending applications
- 3) Consider using increased pressure, allowing depleted grain to be expelled and fresh, sharp grain to be exposed

FLAP DISC: LOADING



CAUSE

Inappropriate product selection for application - Material build-up between grains, disc loses the ability to cut

SOLUTION

- 1) Consider a product with more coarse grain
- 2) Consider product with poly-cotton or cotton cloth for increased aggression in lighter pressure grinding and blending applications
- 3) Consider using increased pressure, allowing depleted grain to be expelled and fresh, sharp grain to be exposed

FLAP DISC: **CORRECT USAGE**



RESULT

Even, consistent edge wear

No sign of glazing

Optimal grinding angle - using full width of flap

Fully depleted flaps - (blue) epoxy visible through flaps

Maximum life span of disc

