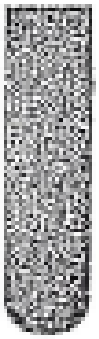
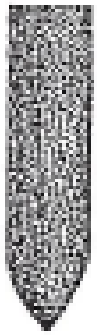
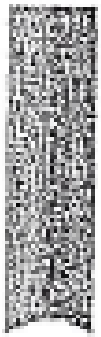
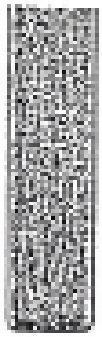
Select the Right Wheel

Normal	Abnormal
The right Abrasive cut-off wheel, properly applied, produces edges like these:	The wrong wheel, or improper application, produces edges like these:
	
Rounded edge is a sign of the right wheel properly applied to the cutting of solids up to 12” square.	Pointed edge means wheel is too hard. Tapering effect can cause binding and wheel breakage and burned cuts.
	
Square edge is retained on wheel well suited to cutting both solids and structural or tubing of medium wall thickness.	Chisel edge is caused by improper application of coolant in wet cutting. Results: crooked cuts and shorter wheel life.
	
Concave edge is sign you’re using the right wheel to cut light tubing or other thin-wall sections.	Glazed edge occurs, and cutting efficiency is lost when abrasive grain on wheel edge wears smooth without being torn out. Cause: cutting too slowly, or improper wheel.

ABRASIVE CUT OFF WHEEL TROUBLESHOOTING SUGGESTIONS

The finest abrasive cutting wheels may give unsatisfactory performance abused, improperly applied or poorly maintained machines. These trouble shooting suggestions will help you obtain optimum performance from your abrasive cutting wheels.

SYMPTOM 1: Wheels break as soon as the machine started, or immediately upon beginning the first cut.

a. Wheels have been cracked as a result of rough handling by the delivering carrier.
b. Wheels have been cracked in the user's plant.
c. Machine wheel spindle speed is too high.

SUGGESTED ACTION:

a. Flex wheels and look and listen for cracks. If cracked, check the shipping containers for damage. Call the delivering carrier to inspect the cracked wheels and containers, and send the inspection report to the Division so a claim can be filed. A credit adjustment will be made when the claim is paid by the carrier.
b. Use the proper methods of storing and handling wheels.
c. Reduce the spindle speed. Never operate a cut-off wheel at a speed in excess of the maximum operating speed marked on wheel.

SYMPTOM 2: Wheels bind or break just before a cut is complete.

Possible Cause:

a. Binding or pinching due to misalignment of the feed table with the work holder, or due to worn work holder surfaces.

Suggested Action:

a. Align the feed table with the work holder, and repair or replace worn work holder surfaces.

SYMPTOM 3: Wheel stalls or breaks in the widest part of cut.

Possible Cause:

a. Work clamp does not hold the material securely, allowing it to shift while the cut is in progress.
b. Wheel is too hard and its edge has become glazed.
c. Wheel flanges are worn.

Suggested Action:

a. Re-adjust, repair or replace the work holder.
b. Use a softer wheel grade.
c. Replace or repair the flanges.

SYMPTOM 4: Wheels cut crooked and/or break.

Possible Cause:

a. Wheel spindle bearings are bad.
b. Wheels are “dished” or warped.

Suggested Action:

a. Replace the bearings.
b. If wheel appears to be warped or “dished”, notify the local distributor or factory representative. If wheels have been properly stored, and he finds that they are not within normal flatness tolerance, he will request a Return Goods Order (RGO) from the Division.

SYMPTOM 5: Cut surface is burned.

Possible Cause:

a. Wheel grade is too hard.
b. Cutting rate is too slow.
c. Misalignment of feed table with work holder, or worn work holder surface, is causing binding.
d. Wheel spindle speed is too high.

Suggested Action:

a. Use a softer wheel grade.
b. Cut faster.
c. Re-align the feed table with the work holder, and repair or replace worn work holder surfaces.
d. Reduce the spindle speed. Never operate a cut-off wheel at a speed in excess of the maximum operating speed marked on the wheel.

SYMPTOM 6: Low wheel life.

Possible Cause:

a. Wheel grade is too soft.
b. Rate of cut is too fast.
c. Machine wheel spindle speed is too low.
d. Wheel is much too hard and/or too fine in abrasive size. (Wheel edge looks charred and cracked. It “sloughes-off” around periphery.)

Suggested Action:

a. Use a harder wheel grade, unless wheel edge appears charred, cracked or is chipped out.
b. Cut at a slower rate.
c. Increase spindle speed, but do not exceed the maximum speed marked on the wheel.
d. If wheel edge appears charred, cracked, or is chipped out, use a softer wheel grade and/ or coarser abrasive.

SYMPTOM 7: Excessive Burr

Possible Cause:

a. Abrasive grain in the wheel is too coarse.
b. Material is clamped on one side of cut only, permitting the cut-off piece to move away as the cut is completed.

Suggested Action:

a. Use a wheel with finer abrasive.
b. Provide secure clamping of the material on both sides of the cut.

SYMPTOM 8: Wheel stalls in the cut and motor stalls.

Possible Cause:

a. Wheel grade is too hard.
b. Rate of cut is too fast.
c. Full voltage is not reaching the motor.
d. Worn or misaligned feed table and/or work holder is causing the wheel to bind in cut.

Suggested Action:

a. Use a softer wheel grade.
b. Reduce the rate of cut.
c. Provide full voltage at motor by use of larger wires, and/or independent power source.
d. Align and/or repair the feed table and work holder.