President's Letter

Apologies to Bob Malone, Roger, Chris, Shawn And Too Many Others.
A couple years ago I was diagnosed with one of those rare, genetic diseases. In my case it is Myasthenia Gravis which is a progressive, degenerative neuromuscular disease. It leaves me extremely tired to the point where it is a good day when I can work past noon.

I never made much of this because I figured I could do it. In truth the business is doing all right and getting better. However, with the fatigue, pain, drugs and side effects from the drugs, my ability to concentrate deteriorated to the point where quality and customer service slipped for a while.

What is worse, much worse, is that my attitude slipped to where I was focusing too much on my needs and not nearly enough on taking care of the customers.

Emily Saves the Day
What finally made this clear was working with my daughter. Emily is a genuinely nice person who really believes in helping people. Her attitude towards customer service is definitely putting the customer first. She is well organized and understands the importance of keeping in touch with customers.

One of the things I always loved was quality. However you have made it clear you need lower prices so Emily has some new programs to help. Call Emily at 800 346-8274 for details.

Silver Solder Sale
$5.00 / oz. Selected sizes

Carbide Processors, Inc.

Northwest Research Institute, Inc.
Newsletter April 2005
3847 S. Union Ave. Tacoma, WA. 98409 (800) 346-8274
sales@carbideprocessors.com www.carbideprocessors.com

Use Us For Pretinning, Please?
There is confusion in the industry with new computer systems and other things. About twice a month we hear from someone who thought we were doing their pretinning and found out we were not. Just specify us for pretinning where you order carbide, please?

Tips with hidden problems – We caught these. These tips looked good but they didn't stay on well. We took the tips sent to us and soaked them in acid to remove some of the braze alloy. What we found was that the braze alloy was sticking some places but that there were also big gaps under the braze alloy shell where it didn't stick to the carbide.

Pretinning .035 ea. We can pretin tips for as little as $0.035 per tip plus solder costs (maybe $0.045 for a WD tip) if you send us a minimum of 10,000 of the same parts

Free shipping Have your tips shipped to us from wherever you buy them and we'll pretin them and ship them back to you free. Minimum1,000 tips.

Only Good Quality
Last month we had a customer specify that we do all his ordering. He felt he had out and out proof that his current supplier was lying to him about quality and delivery. He knew he could trust us because our parts work and because we always told him the truth.

We tend to be too trusting and I hate to think anyone actually lies but I know it does happen and this is a very bright customer.

Comet Grade Tips

They are a little more expensive and there is a wait to get them but, boy, are they selling.

Grade X for extended wear in man made materials – up to 5 times the life.
Grade M - an impact grade for nail cutting, frozen wood and similar.
Grade A – a metal alloy material - extremely good in aluminum, red oak and similar.

Do what everyone else does. Buy 500 to try, test them and then buy 5,000 to use.

Let Us Quote Your Silver Solder, Please?

We just saved a customer over $1.00 an ounce on 1,000 tr. oz deliveries or about $2,000.00 a month.

Customer #1 Plymetal, Trimetal or sandwich ribbon 1,000 tr.oz.

Our Price	$ 5.05
Supplier B	$ 8.38
Supplier C	$ 5.77

Customer # 2 - 25 feet of 0.020" trimetal 5.8" wide

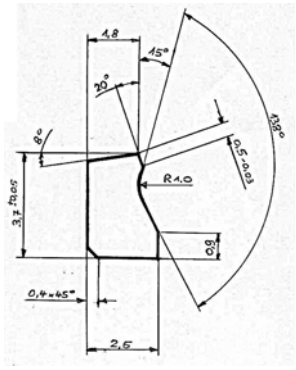
Our Price	$ 9.76
Supplier B	$27.08
Supplier C	$14.71

Ceramic Tipped Tools
We have licensed this technology.
We have licensed our technology for making cermet and ceramic tipped tools to Andrews Tool Works.

Andrews Tool Works builds and sells tools to major retailers such as Sears, Home Depot, etc. In addition they handle licensing of innovative tool technology to companies such as Black & Decker, Milwaukee, and similar.

They also have an extensive international network of tool builders and sellers.

Steel Cutting Saw Tips



You Deserve Honest Tip Counts

Carbide saw tips vary slightly in size and weight. This makes it impossible to accurately weigh count them. We tried for years and bought the very best scales we could find. All that this taught us was that you cannot weigh count saw tips 100%.

We spent over $40,000 on R&D to develop a counter that counts tips one at a time. A vibrating bowl separates the tips and passes them in front of an electric eye. This gives exact counts.

This is our current machine. It sells for $12,000 which is a little more than it costs us. There is lots of stainless steel and a huge amount of sophisticated electronics. This has a bigger computer than the moon lander did.

We developed it to give you better accuracy. It also saves us a lot of time. We can do an inventory in one –third the time it used to take and we get 100% accuracy and 100% repeatability.

Round Tips - Yes or No?
How much edge radius is acceptable?
P.S. You folks are really good

See next issue

A sawfiler sets things straight
Bill Solomon
Universal Saw & Tool Tacoma

We are working on setting standards for saw tips.

I was talking to Norm Brown of Simonds Industries about measuring chips in saw tips and what was acceptable. Norm told me that one carbide supplier had suggested that any chip you could see at three feet away was too big. Any chip you couldn't see at three feet was alright.

Norm and I were trying to figure out what this meant when Bill Solomon stopped by. Bill and his sister, Maureen Scherz, and Bill's wife, Laurie, own Universal Saw & Tool. Bill worked for Brian Wallinger of West Coast Saw and John Gammelgard of Weyerhaeuser and you just don't find two better filers.

Anyway we asked bill what he thought about the three foot rule. Bills' first reaction was to tell us that he didn't know about inspecting tips at three feet but that's sure not the way he inspects finished saw blades. One little comment put the whole thing in perspective.

Saw Grinder Parts & Repair

Burl Swigar
LWO Corp
3841 N Columbia Blvd
Portland, OR 97217
(503)286-5372
(503)693-3173 home fax
Repairing saw geinders with particular expertise in Cascade Southern Saw grinders

Nielsen Industries has been formed to Service Saw Shops. Nielsen Industries provides Factory Parts, Accessories, Supplies & Service for Cutting Tool Sharpening Equipment.

They manufacture and sell grinder parts for Systimatic, Nielsen Corporation, United Tool and Nielsen Manufacturing, Bell Industries, Acme, Burr Mfg. & Bemaco.

Nielsen Industries is owned by Ryan Nielsen. Service & training is provided by Ryan's Father Stan Leo Nielsen.

Woodezine on line
The March issue of Woodezine has just been uploaded and is available at http://www.woodezine.com. Just click on "Current Issue" to view it.

Temperature and brazing
Dan Foster - Pro American Sharpening Grand Rapids, Michigan.
Watch the weather and set the furnace higher overnight if you need to.

Two New Books
We have two new books. You can download off the Internet or buy them from Emily. As always, if you are a customer, we will be glad to help you anyway we can including sending relevant chapters free.

Building Superior Brazed Tools and Failure Analysis In Brazed Tools

New, Free Literature
Besides our quarterly newsletter we also have information on Basic Saw Tip Ordering which describes sizes, shapes and grades.

A classy guy
Saw Technology Colville, WA
Marvin Heater

When we started our T-shirt promotion we called him to offer him a free T-shirt because he is a good customer. We told him he was important so he got a free T-shirt. He immediately asked, very politely, if he could get shirts for the guys in the shop. From his question it was obvious that he knew that a good shop is good because everyone in it really cares about what they do.

We have many customers in Canada and are very good at servicing them. Beside we like visiting Canada.

A Really Good Filer Gets A Really Bad Saw Blade

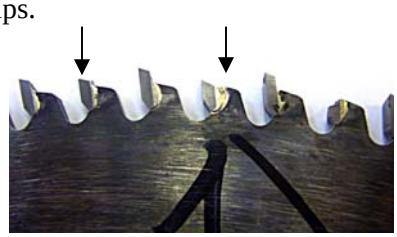
Executive analysis

I see maybe ten kinds of problems here depending on how you sort them out.

1. Two kinds of tips - Most of them too long
2. Uneven side clearance
3. Not all tips were side ground
4. Dirty plate (Huge voids between the tips and the plate)
5. Dirty and /or bad surface treatment on the tips
6. Breakage – Both heat stress
7. Breakage – Impact – (There are certainly better grades)
8. Brazing – One side too hot and one side way too cold
9. Overheated braze alloy
10. Probably wrong flux

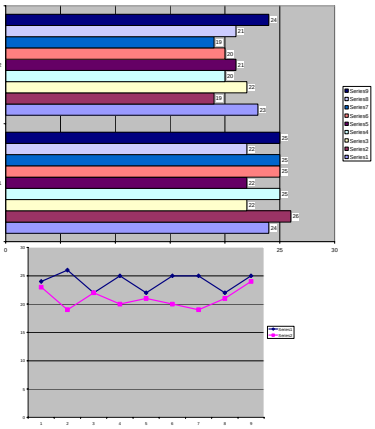
Two sizes of tips

Some tips are obviously shorter than others even allowing for the ATB grind. The short tips also seem to be about 0.010" thicker. Arrows point to short tips.



Grinding

There is a difference in side clearance from one side to the other and grinding within a side varies as well. Some of these measurements are open to interpretation due to rounding. We like to see the side clearance the same on each side and variance at least within .001" and preferably closer to 0.0005".



Ground & Unground Tips – At least some of the short tips are not side ground.

Short – Unground good tip - ground

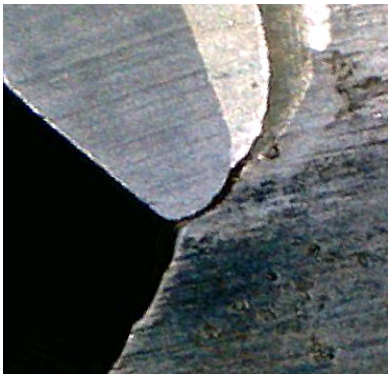
Brazing

Hot side and cold side.

These are pictures of two sides of the same. One side got much more heat during brazing than the other side. I think there is also a cleanliness issue.

Voids in the Braze Joints

On the cold side of many of these tips there are holes between the plate and the tips where there should be braze alloy.



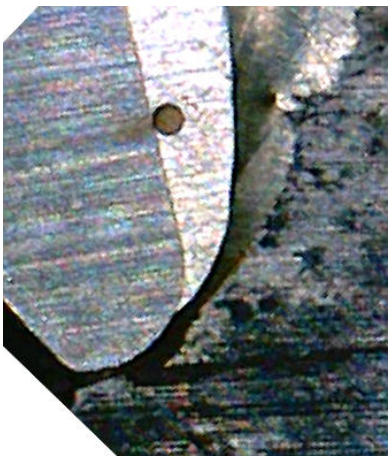


Plate Cleanliness

Here there as a big, obvious notch where the plate was dirty.

Breakage – 2 kinds - Heat Stress & Impact

The smooth curves of these look a lot like the standard heat stress curves.

These look like impact damage.

This looks like impact & heat stress.

A Great New Tool

Why You Need It

This analysis was done with our new Proscope.

The Man and Organization That Are Changing The Brazed Tool Industry

Hear him in Las Vegas

Darrel Wong of Forintek is determining where the brazed tool industry is going to go for the next couple decades.

The brazed tool industry uses a lot of carbide, a little Stellite® and a little diamond. Stellite® Technology is about 100 years old and carbide technology is about sixty years old. They both came into the brazed tool industry from the mechanically held sector. First they were clamped for sue in mills and lathes for metal then they were brazed for use in saws and wood cutting.

Over sixty per cent of all mechanically held cutting applications have switched from plain carbide to some form of cermet or ceramic. The brazed tool industry does not use any of the new technologies, cermets and ceramics, developed in the last fifty years.

There have been several reasons for this. First, they couldn't be brazed. We solved that. Second, brazed saw tips take more abuse than mechanically held parts in a lathe or mill. Kennametal solved that. Third, cermets and ceramics run and cut differently than carbide. Darrell Wong is doing optimization tests to determine how to use which grade of material.

Too much tool design is still by guess. What Darrel is doing is taking the guess out of tool design and tool running.

You can run tools faster, maybe 2x faster and still get longer life, maybe 4x life. Some of the early results from his projects are incredible. It looks like metal is different than wood is different than man made materials and so on. But it also looks like tool tip materials that cut faster and cleaner in metal and last longer can do the same thing in other materials.

Conferences - The new Trend

Good people working hard

Conferences got a bad name because there was nothing new and all too often it was seen as an excuse to go party on company money.

I have spoken at several Wood Machining Institute Conferences and to several different saw filer conferences. In all cases there were large turnouts and the attendees were there to learn. It is common to have members of the audience challenge a speaker, they do it politely and professionally, but they want to know.

As a speaker I can tell you that more and more there is a pressure on speakers to deliver new information, information that will make a difference immediately and deliver a lot of information.

The Real Pros and New Filers.
The real pros go most years. It is common to see the really good filers there repeatedly

One of the things that the Wood Machining Institute does very well is provide a lot of time for discussion among attendees.

I remember one year when a new filer came up to me with a big problem he was having. He was excited and it was very important to him to solve this problem for himself and his mill. He came up to me because I had just spoken. Unfortunately the question was outside my area of expertise so I only vaguely understood the problem. Fortunately Al Bouchard was handy and I could introduce them. As I walked away Al was explaining the situation and the solution clearly, simply and completely.

Armstrong manufacturing does a nice job keeping track of meetings on their web site at:
http://www.armstrongblue.com/
also http://www.vnuexpo.com/
http://www.iska.org/

Recommendations

- Primary wood – go to your filers' group
- Secondary = AWFS Las Vegas
- All – Wood Machining conference in Las Vegas

Wood Industry Forum "A Wood Technology Conference Event"
Seattle, Washington April 11 – 13,
Wood Industry Forum Registration
c/o AR Systems International
60 Industrial Parkway PMB #650
Cheektowaga, NY 14227

Attendee Registration Options*:
Exhibit Hall Only: FREE ($20 after March 22, 2005) - includes exhibit hall admission for both show days.
Conference: $250 - includes full conference admission for all show days.

- Using Manufacturing Intelligence to Drive Efficiency Gains
- Safety Excellence: How to Create and Sustain a Positive Culture at Your Plant
- Making Quality Control and Improvement Work at the Kiln
- Energy Efficiency Gains Throughout the Plant
- Suppliers' Showcase - Grader Automation: One Year Later
- The Use of Information Technology for Better Decision-Making
- After a Million Dollar Investment in New Optimizing Technology, What Happened to the Expected Increase in Recovery?
- The Challenges of 'Permitting' a Plant Construction Project in the Current Environment
- Wood Products Life Cycle Analysis: New Research Shows Wood-Frame Houses Are Better for the Environment
- Leadership Training for Managers: Problem-Solving Down The Line
- Sawmill Business Metrics
- The Possibilities of Engineered Lumber and other Value-Added Opportunities
- Industry's Work Force of the Future
- Beyond Preventive Maintenance: Once the Foundation Has Been Built
- There Must Be Something Wrong With The Chips: A Problem Solving Workshop
- Executing Your Optimization Philosophy
- Real Time Lumber Size Control
- Guest Keynote Session: Dave Dravecky – Baseball player who

dealt with personal and career tragedy
- Using Manufacturing Intelligence to Drive Efficiency Gains
- Execution On The Front Line: Effective Execution at the Supervisory Level
- Automating the Ergonomic Process
- Enterprise Optimization, Rod Parry, President, Factory-IQ

The 20th Annual WMI Workshop on Design, Operation and Maintenance of Circular and Band Saws
The Holiday Inn, SeaTac Airport, Seattle, Washington. April 13-15, 2005
Ryszard (Richard) Szymani, Director
Wood Machining Institute
Tel: 1-925-943-5240; Fax: 1-925-945-0947
szymani@woodmachining.com
Website: www.woodmachining.com
WORKSHOP FEE: $575.00

Workshop Focus
The goal of the Wood Machining Institute's Workshop on Saws is to help increase profits in the wood industry by maximizing sawing accuracy and the rate of sawing, and by reducing kerf losses, downtime and saw maintenance costs. Issues to be explored include: new developments in saw blade materials and design, e.g., stainless steel variable thickness design; latest developments in saw tipping materials including new Stellite, titanium carbide and ceramic grades; automatic saw tipping and grinding; saw tooth geometries including side clearance in guided circular saws; circular saw vibration and saw stability; computer software for saw design and maintenance; advances in circular saw tensioning and tension evaluation; band saw leveling and tensioning, cutting behavior, washboarding, bandmill alignment and bandsaw monitoring and tracking systems; developments in saw guiding systems; mismatch and wedging in circular sawing; improved analysis of lumber size data as well as machine guarding and worker safety.

- Economics of Sawing Variation and Potential Gains in Lumber Recovery Using Thin Kerf Accurate Sawing
- Wood Characteristics and Properties Which are of Concern When Sawing
- Circular Saw Vibration, Saw Stability Criteria, and Advances in Saw Tensioning and Tension Evaluation
- How to Decide What Application is Cost Effective for Thinner Saw Blades
- Advanced Saw Tipping Materials and Related Technologies
- Video on Rupture Patterns in Cutting Wood.
- Cutting Costs and Eliminating Problems Using Written Specifications and Multi-source Purchasing for Saw Tips and Tipping Rods.
- New Design Developments for Circular Saw Arbors and Saw Centering Devices for Saw Grinding Machines
- An Update on Bandmills and Bandsaws
- Bandsaw Tracking: The Effect of Saw Tensioning, Back Crown and Strain
- Increasing Circular Saw Stiffness – Combining the Benefits of Stainless Steel and Variable Thickness Designs
- Latest Developments in Saw Maintenance Equipment: Band Saws and Circular Saws
- Circular Saw Machine Developments
- Effect of Side Clearance on Guided Saw Cutting Accuracy
- Understanding Mismatch and Wedging in Circular Sawing and How Statistical Analysis Gets in the Way
- Computer Software for Saw Design, Operation and Maintenance
- Update on Machine Safeguarding and Worker Safety

Southern Sawfilers Educational Association
April 15-16, 2005
Website: Www.Ssea.Org
B.C. Saw Filer's Educational Association
April 21 - 23, 2005
Website: Www.Bcsawfilers.Com
ScanTech 2005:
The Eleventh International Conference on Scanning Technology and Process Optimization for the Wood Industry
Las Vegas, Nevada. July 25-26, 2005.
SawTech 2005:
The Ninth International Conference on Sawing Technology
Las Vegas, Nevada. July 27-28, 2005.
AWFS
Wed July 27 – Sat July 30
Las Vegas convention center
July 27 –July 30,
http://www.awfsfair.org/
Southeastern Saw Filer's Educational Association May 6 -7, 2005
Website: Www.Sesfea.Com
Northeast Saw Filer's Educational Association May 6 - 7, 2005
Website: Www.Northeastsawfilers.Com
The California-Western Saw Filers' Association June 18 -19
Western Saw Filers' Educational Association September 16 - 17, 2005
Lake Erie & Ontario Sawyers & Filers September 16 - 17, 2005
Lake States Saw Filers Educational Association September 16 - 17, 2005
South African Saw Doctor's
September Tba, 2005
New Zealand Sawdoctors
October 1 - 2, 2004

Conferences - What do you want to know?

The folks who put on conferences are truly anxious to talk about whatever you want to know.

Speakers at filer's forums and the Wood Machining Institute conference s do not get paid for speaking. They pay their own expenses. Of course there is some publicity value but that is not the same as getting back the dollars you laid out for transportation and lodging.

It takes me about 30 to 40 hours to prepare a presentation so it is really important to me that it be something people want to hear. The problem is that it is very hard to find out what you folks want to hear at these conferences.

If you have any request let me know or let the conference organizers know.

Northwest Research Institute, Inc. / Carbide Processors, Inc.
3847 S. Union Ave. Tacoma, WA. 98409 800 346-8274
Sales @carbideprocessors.com www.carbideprocessors.com

What We Sell

Filing Room Supplies that make the filer's job easier and make more money for the mill

Since 1981 we have been developing tools and technology for the filing room. The goal has always been more money for the mill and less work for the filers. Below are some of the technologies we have developed. Many of these we developed for one customer and then we never really tried to sell them anywhere else. If you would like any information on any of this or anything similar please contact us. **800 346-8274 Sales@carbideprocessors.com**

Carbide Tips
Comet grade reinforced carbide
Nicut
TiCN true cermets
Extended wear grades
Metal alloy saw tips
Cast saw tips
Bits and shanks
Nail cutting grades
Metalworking saw tips
Frozen lumber
Pallet cutting
Stump grinding
Aluminum cutting
STB Tool Rectangular Strips
Strob blanks & strips
European style tips
Canadian style tips
Square back american tips
Hollow Face
Hollow top
I.T.C.O. tips
Right & left handed tips
Alternate top angles
Cutoff saw tips
Edger tips
Slasher Saw Teeth Left & Right
Slasher saw teeth rail back
Slasher saw teeth v-back
Special grinds
Bits and shanks
Trim saw tips
Band Saw Tips
Blanks
Special carbide shapes

Uses & Industries
Router bits
Saw blades
Drill bits
Special tools
Woodworking carbide
Router tips
Drill Tips
Tile scraping and nippers
Agricultural applications
Wear and cutting edges
Form tools and miscellaneous

Pretinning
Wire, shim and paste
22 different alloys available
Regular and cold process pretinning
As much as you want at no extra charge
Cadmium free alloys
Cadmium alloys
Hi impact pretinning with manganese
High strength high silver alloys
Trimetal shims any thickness
Patented surface treatments
Really pretty tips

Filter Units
3 month filter life
Extra clean filtering
Polishing units for use with centrifuges

Coolant And Additives
Coolant
Coolant test instruments
Coolant testing
Refractometers
Metal concentration meters
pH meters and papers
Cobalt test papers.
Coolant testing

Flux
Adhesive flux
White flux
Black flux
Purified black flux
Adhesive black flux

Metal Alloys For Tipping And Knives
Talonite knife blanks

Special Services
Failure analysis
Braze consulting
Contract brazing
Training

Information - 3 books
Building Superior Brazed Tools
Failure Analysis In Brazed Tools
Managing Coolants From Machining And Grinding Operations

Braze Alloy / Silver Solder
Wire
Brazing paste
Shim
Hot process
Cold process
Silver solder
All sizes, thicknesses and widths

Grinding Wheels

Tipping Rod
Round rod
Better quality, service & prices

Proscope Digital Microscope

Special Carbide Services
Pretinning
Braze treating
Custom back angles
Custom grades
Custom grinding
Custom lengths
Custom shapes
Presharp
Pre-sizing
Cryogenic treatment
High shiny surface
Slick surfaces for easy feeding
Rough surface for easy handling
Custom boxing
Custom labels
Exact counts
Really pretty tips

Saw Plate
Special cuts
Really fast delivery available

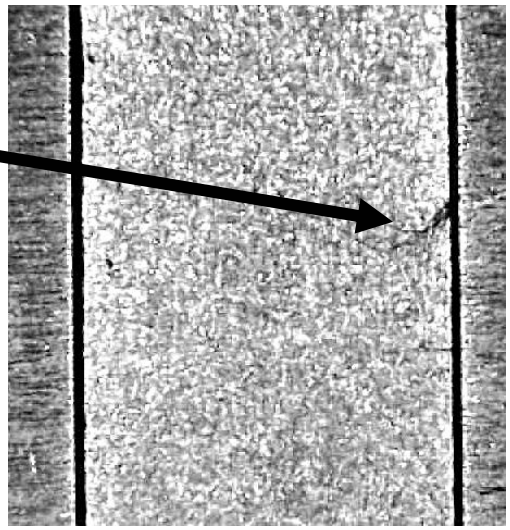
Saw Tip Analysis

WFC 7170

These are good tips except for being a bit undersize.
Count is 250 which is what it is labeled. 251 – 252 is preferred but 250 is acceptable.

WFC 7170	Thick	length
0.171	nominal .125	nominal .500
0.169	0.130	0.510
0.169	0.130	0.508
0.170	0.130	0.509
0.170	0.130	0.508
0.169	0.130	0.509
0.169		
0.171		
0.169		
0.170		

This is about the only thing suspicious and is probably best characterized as a surface blemish rather than a crack.



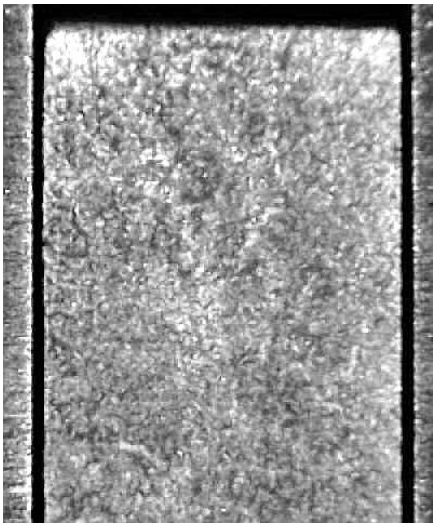
Chips, edge radius and parallelism

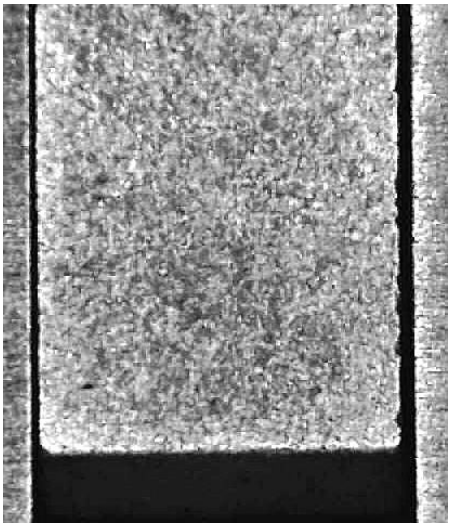
These all looked good to naked eye inspection.

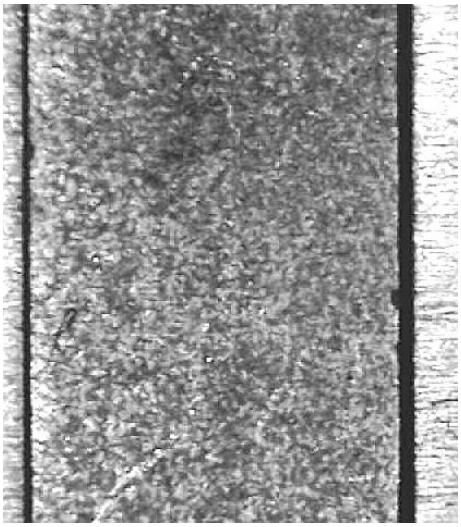
We used 30x magnification for inspection with standard light and black and white high contrast. These are picture of 5 separate tips fixtured between the jaws of dial calipers

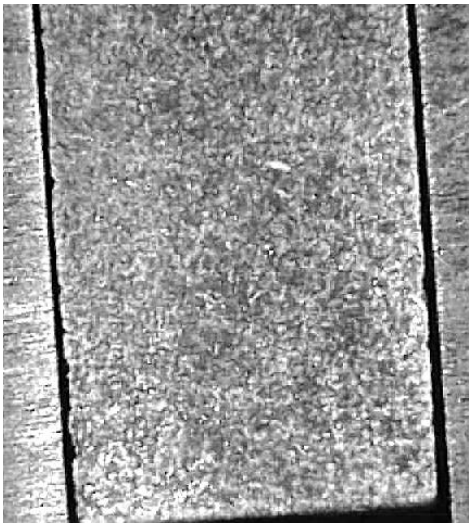
The gap on the right side of this tip is about 0.005" with the largest chip about 0.002". On the left side the gap is about 0.002"

The gap is a comibnation of the flatness of the side, the parallelism of the sides and the radius of the edeges.









Analysis done with our Proscope

Carbide Breakage in Frozen Lumber
Unsuitable carbide

There are about 5,000 grades of carbide in the world. The sawmill industry still uses primarily C-2 grade which is a WW II metal cutting grade. It has been considerably improved over the last sixty years but there are definitely better grades.

I just bought a little black and white TV for $19.95. It is probably the best, cheapest B&W TV I have ever purchased. I still like the bigger, color sets in the living room and den much better. The little B&W set is for use in the shop where I am listening more than watching and where I don't care much if it gets broken.

You can buy cheap, throw away carbide or, for a little bit more, high performance carbide. Buy whichever you want but make sure that what you get does what you want it to.

Executive analysis: Unsuitable carbide This carbide shows stress fractures, not impact fractures. Try different kinds of carbide until you find one tough enough.

Two kinds of stress.
Heat stress – the "J" hook fractures indicate heat stress. However in a pure heat stress situation the curves would be practically identical and these curves are very different. I think a little less heat during brazing might help but not much because of the quality of the carbide.

Fracture planes in the carbide.

Carbide will fracture if you hit it hard enough. You can tell a lot about the carbide by how it fractures.

The surface left when something fractures is called a fracture plane. It is a smooth even surface.

Good carbide should be hard to rip apart or break.

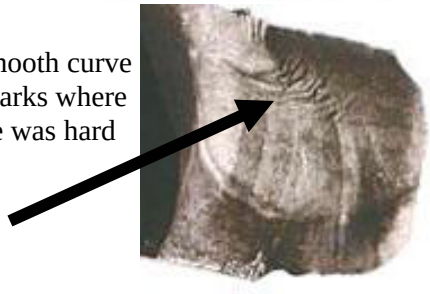
This carbide did not really break as much as it split. There are very large fracture planes where the carbide was hit and split apart just like window glass or obsidian (volcanic glass).

Three tips showing nice smooth fracture planes. The middle one is the worst. It just ripped part in one clean rip. The left one is a little better since it took a lot of little rips to separate the material. The rough lines in the top of the right one show some tearing where the carbide did resist fracturing a little bit. None of these are good.

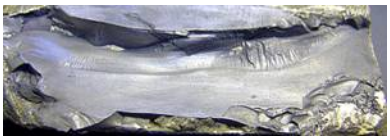
One smooth curve

Several varied curves

One smooth curve with marks where carbide was hard to rip

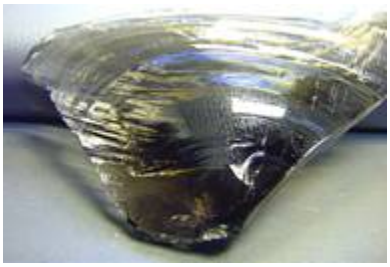


Beat Up Carbide



This piece of carbide has a couple smooth fracture planes in the middle but look at the edges. This carbide took a huge amount beating before it broke.

Volcanic glass and window glass
Nice, smooth curves



Mike Halterman's V backs

Mike Halterman of Simonds is in a territory where one of his competitors is selling V Back tips that aren't very good. We are working with him to set standards for good and bad tips.

Here are V back tips from two different suppliers. We used the same braze paste from the same tube and ran them the same way. The top tips have a smooth, even flow while the bottom tips are very rough and uneven. The right tip in the top photo even has little balls of silver solder hanging on it. This rough surface means something was wrong with the carbide surface.

Save your life for $100

We haven't run this in a few years because we thought everybody knew it. We just found out that wasn't true. We don't make any money off this. It just seems like a shame that people are suffering and dying when the solution is cheap and easy.

Besides wheels last longer and equipment lasts longer in clean filing rooms so clean air actually saves a filing room money long term.

Dirty air can hurt you. The hard sharp particles of carbide and diamond in filing rooms can really tear up your lungs. The fumes in the air can also hurt you.

There are some really simple solutions. What follows is list of suppliers of air handling equipment. $100 will get you a fan and some duct work that can make a huge difference in the air you breathe. Many of these offer excellent advice on doing the work yourself and many sell parts and whole systems.

Consultants

Most states provide free consulting. If you are in British Columbia then you can contact the Workers' Compensation Board at (604) 276-3209.

Three Excellent Articles

1. John Ashe of AAF (American Air Filter) International in Louisville, KY. (305) 443-9353. His article is Controlling Welding Fumes in the July, 1997 issue of The Fabricator. Reprints of the article are available by calling (800) 477-1214 and asking for reprint # APC-4-905.

2. Another good article was in the December 1996 issue of the same magazine. It was written by Joe Topmiller who is Director of Technical support for United Air Specialists at (800) 551-5401 in Cincinnati, Ohio. The article is Addressing Air Quality Issues in the Workplace.

3. The third article is on new respiratory standards by Jay G. Mears in Modern Woodworking. (248) 244-6439. It was called: Intelligence Report: Getting Ready for 42 CFR part 84 call MSA and is available at (888) 867-0602.

Equipment Suppliers:

You can start as I did with a simple fan and a metal stovepipe. This is very easy and cheap to install. There are much better solutions now for not much more money.

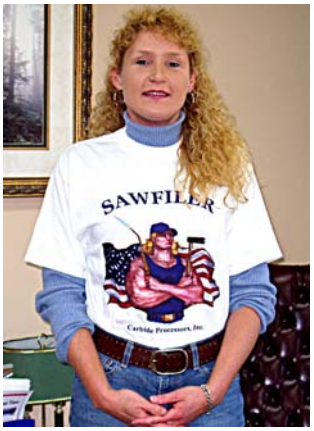
1. AAF International (American Air Filters) –(305) 443-9353 – small line but appropriate for most shop applications – great technical support – (see articles section above). Excellent technical advice.
2. Abicor Binzel (301) 846-4196 Frederick, MD - They only supply fume extraction guns for welding. Great product if you need it.
3. Airflow Systems (214) 503-8008 Dallas, TX – wide variety of units, overhead units, downdraft tables, and portable units – "Dust and fume Exhaust" pamphlet has good technical information. Recommended for literature.
4. Coppus (508) 756-8391 Millbury, MA – unique, portable dust collection systems – also employee coolers for hot areas. Unique products.
5. Dust Vent, Inc. (630) 543-9007 Addison, IL. – Wide range of equipment and good literature. Recommended for literature.
6. Eurovac (905) 850-9828 in Ontario. –Central vacuum cleaner systems and other dust collection equipment.
7. Farr Pollution Control Products (800) 479-6801 Los Angeles, CA. – Overhead cleaning with or without arms.
8. Gardner Environmental Products (414) 485-4303 Horicon, WI –Ceiling mounted and portable units.
9. Industrial Ventilation Group (800) 610-6010 Harbor Springs, MI –Central and portable units, downdraft tables. Recommended for literature.
10. Lincoln Electric (216) 481-8100 – Offers a central collection system and portable units –just one mention in their catalog.
11. MAC Equipment, Inc. (800) 821-2476 – Huge, complete catalog. Excellent information, great source to build your own system. Recommended for literature.
12. Nederman (313) 729-3344 Westland, MI –Nice literature –looks like nice overhead arm extraction equipment –good information on Do It Yourself. Recommended for literature.
13. Plymovent (732) 417-0808 New Jersey –good equipment –great free booklet "My Pocketguide to Clean Fresh Air". Recommended for literature.
14. Sly, Inc. (216) 891-3200 Cleveland, OH –Shop size central collection systems to huge industrial systems. Recommended for literature.
15. Trion (800) 421-3956 Greensboro, NC –Overhead units –they advertise a free clean air guide.
16. United Air Specialists (800) 551-5401 Cincinnati, Ohio –Invented the original smoke eaters for bars, etc. – Good equipment –good literature and great technical help. Recommended for literature.

Cobalt test strips

These we sell. There can be very serious allergic reactions and lung scarring from cobalt in grinding coolant. These strips are an easy, accurate way to test coolant. Use them like pH paper. Dip them in the coolant and then compare the color.
Boeing feels that 10 or under is good. This picture is pretty good. At 10 or under you can just possibly see a very faint blue color. Hold by the arrows when you dip.

The individual strips are about $0.75 each. ($75 plus shipping for a tube of 100. However once a month is usually more than often enough.)

Walked 5 miles for The Heart Association



Sabrina Sullivan - Bruce Hardwood Floors division of Armstrong

The Man And Organization That Are Changing The Brazed Tool Industry
Hear Him in Las Vegas P. 4

Let us supply your carbide
Tip prices vary widely and we can get you the best prices and delivery.
Call 800 346-8270 for carbide.

Carbide Saw Tip Prices
5,000 CWF 7180 C-2

Supplier A	0.143
Supplier B	0.156
Supplier C	0.184
Supplier D	0.175
Supplier E	0.19

Silver solder - $4. 00 per tr. oz.
Top quality stuff just an alloy and size we don't use. I got a deal on it and I was wrong. I can't use it, I can't eat it and I am tired of looking at it.

- A56T (AWS BAg-7) 56% silver with tin
- 3/32" dia. Wire quantity 5 @ 5 oz. Each.
- A 50N (AWS BAg-22) 50% silver cad free 1/32" dia. Quantity 1 @ 25 tr. Oz.
- Easy Flo 3 (AWS Bag-3) 50% with Cadmium .062" dia. Wre Quantity 3 @ 25 oz.

Please Specify Us For pretinning

If you have a carbide supplier you really like and do not want us to get competitive quotes then we would still very much like to do your pretinning.

Filter System Rebuilds
Convert your old system to new for as little as $600 or sell you any parts you need

We Buy Carbide Scrap and Grinding Swarf
The market varies but you can figure at least $1.00 per pound. Mary says that shipping can be expensive. She's right so we'll make you a deal. If you have a fair amount and are in the Northwest Emily and I will come pick it up in exchange for a short tour.

Want More Information?
You can have more information free on anything in here. Just call Emily at 800 346-8274

New Proscope

Proscope starts at $368

Saw Tip Material Sourcing
A new service. We source carbide and braze alloy from over fifty sources. This seems to be especially popular with hard to find sizes and with buyers seeking low cost or fast delivery. The customer emails, faxes or otherwise contacts us, and we plug the request into our international market database then get back with the answers.

Carbide Processors, Inc.
Northwest Research Institute, Inc.
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Tacoma, WA. 98409