

downtime of obtaining a replacement braking cartridge and installing it on the unit. Consider a construction crew that is out in the field using a table saw when a false trip occurs—if a replacement cartridge is not immediately available, considerable time and resources will have to be expended to travel to purchase the new cartridge and install it. It may be necessary to keep an extra replacement cartridge on hand in the event the cartridge in the saw is tripped.

Another safety concern is the damage to the blade that may occur in the event of a false trip. With the combination of an aluminum pawl and a carbide tooth blade, our members believe that the carbide teeth could either be knocked off or loosened. If knocked off during the braking operation, the teeth could be propelled up through the opening in the table. In the event teeth are loosened, an operator would not be aware and a restart of the saw could result in carbide teeth being propelled directly from the blade at the operator at an extremely high velocity, which is an obvious safety hazard. For this reason, manufacturers would have to recommend replacement of the blade in the event of a brake cartridge trip – false trip or not. This could add a significant additional cost to the consumer. Blades can cost as much as \$100.00.

Thus, the various costs to consumers and manufacturers associated with implementing the SawStop technology are enormous in light of the unquantifiable benefits. Furthermore, the large increase in production costs could force companies to move production from the United States to overseas. Finally, although no definitive marketing study has been undertaken, it is highly questionable in a marketplace with very competitive pricing whether consumers would even be willing to pay even a 25% premium for a table saw equipped with a device that will not prevent or even lessen a large percentage of table saw injuries.

V. **The Commission Should Deny the Petition and Defer Any Action to the Appropriate Voluntary Standards Organization.**

Table saws of the type proposed to be regulated by the Petition are the subject of a voluntary standard promulgated by UL: UL 987. UL 987 was first promulgated in January 1971. Products manufactured and sold by members of the PTI universally comply with the provisions of UL 987, and PTI believes that there is virtually universal compliance with its provisions in the marketplace.

UL 987 includes provisions for warnings and instructions for proper saw use and for guarding saw blades from user contact. The Commission staff has actively participated in and contributed to those activities, and continues to do so. As the Commission's NEISS data shows, these continuing efforts have contributed to the reduction of in the rate of table saw injuries.

Since it was first issued, UL 987 has had an active and on-going revision process and it is currently in its sixth edition. Currently, UL has established the Standards Technical Panel ("STP") for Electric Tools, which reviews UL 987. STP's consist of a group representing a variety of interests that discuss and review standards. STP's, through their members, review and comment on proposed changes to standards, including UL 987. Although Petitioners claim that the STP for Electric Tools "is comprised mainly of representatives from saw manufacturers" that is not true. The rules governing STPs require a balance among various groups. Commission staff; users; and general interest parties, including Stephen Gass, are all members of, or participants in, the STP for Electric Tools. Each member has equal rights to submit proposals, participate in meetings and vote. While, under Commission policy, the Commission staff does not formally vote on proposals, it provides data and expert commentary on those proposals to assist the STP.

Mr. Gass has made a proposal based on the SawStop technology to the STP for Electric Tools, but the Petition mischaracterizes the action of the STP on the proposal. The Petition

states at page 9 that, the “SawStop technology has been discussed by the UL panel responsible for safety standards concerning stationary and fixed electric tools and that panel has decided not to take any action because it says it does not have the ability to independently review the technology.” To the contrary, the STP engaged in considerable debate over the proposal and, as a result, raised numerous concerns, including reliability, the impact of high braking forces on small table saws, and other economic considerations. Further, the STP concluded that significant research is necessary before the STP can begin to consider requiring such a system for table saws. The STP informed Mr. Gass that the proposal would have to be resubmitted in the correct format and include criteria for acceptance before it could be considered for submittal to the STP for voting. Mr. Gass did not resubmit his proposal.²²

The Consumer Product Safety Act demonstrates a Congressional intent that the Commission cooperate with, and defer where appropriate, to the voluntary standards process. While Section 9 of the Act permits the Commission to either adopt as a mandatory standard an existing voluntary standard, or rely on a voluntary standard, in this instance neither option is necessary or appropriate. Instead, in light of the limited resources available to the Commission, and in light of the vibrant and ongoing review of UL 987, the Commission should instead deny the Petition and let the voluntary standard process continue its successful efforts to reduce injuries as a result of table saws.²³

²² In the “Index of Petitioners Petition to Initiate Rulemaking for Table Saws” attached to the Petition, presumably prepared by Petitioners, seven of the individuals are noted to be from “U.L. Int’l Ltd.” with the clear implication that UL International is in favor of the Petition. To the contrary, those individual signators have sent a letter to SawStop LLC dated July 24, 2003 advising that there was no intention for the signatures to indicate the approval of UL International. In fact, the letter, signed by all seven individuals, states that they were shocked to learn that their statements were interpreted as representing the view of UL International. The seven individuals demanded immediate and unconditional removal of their names from the Petition. A copy of the July 24, 2003 letter, as well as Mr. Fanning’s July 28, 2003 letter forwarding the July 24, 2003 letter to the Commission are attached as Exhibit E.

²³ Indeed, as discussed in Section VI below, the STP for Electric Tools is considering additional changes to UL 987 designed to further reduce kickback injuries.

VI. There are Better Alternatives to Granting the Petition.

Rather than imposing the unproven and speculative technology on the industry, the Commission should deny the Petition and allow Petitioners to pursue marketing a saw with the SawStop technology. In this fashion, the Commission will allow the free market to decide if the technology is valid, effective, and accepted by consumers. Consumers will have the benefit of being able to choose whether they wish to have the technology at the added cost (assuming it can ever be effectively implemented on a mass produced product), without the entire industry, and in turn, the consumers, having to incur the cost of implementing the unproven technology on all table saws.

As indicated above, table saws are a relatively safe product, and the accident rate has continued to decline due to improved design and better education of the consumer. Despite the decline in table saw injuries, the Power Tool Institute and its members continue to work on several levels to address and attempt to reduce table saw injuries further. Several of these efforts were in progress long before the introduction of SawStop, and the Commission should allow these efforts to continue. Examples of these efforts are:

- PTI, in cooperation with UL and CPSC, produced a video on Table Saw Safety. This video can be viewed in its entirety on PTI's Web site (www.powertoolinstitute.com). It is also provided to users and consumers free of charge and widely distributed to schools with vocational and technical programs;
- PTI has a working committee currently in place whose objective is to continue to improve mechanical guarding systems. A major goal is to make the guarding system less likely to be removed. CPSC and industry data show that, in approximately 73% - 85% of the table saw hand/arm accidents, the guard was not in place;

- As discussed above, PTI and several of its member companies are members of UL's STP for Electric Tools. The STP is currently considering a proposal to include a riving knife on table saws to help reduce kickback and accidents caused by the hand being pulled into the blade due to kickback. This draft proposal is attached as Exhibit F. Moving forward with the riving knife proposal was approved by a straw vote at a prior STP meeting. Mr. Gass was in attendance and voted affirmatively;
- Members of the Power Tool Institute have entered into a joint venture agreement to share their knowledge, technology and resources to conduct research into the development of technology for a blade contact injury avoidance system for table saws. This multi-million dollar project is anticipated to be completed within eighteen (18) months. The goals of the project are to develop an enhanced safety system that is practical, feasible, and cost effective and that can be integrated into a table saw the market accepts.

Thus, there are a number of alternatives to granting the Petition that are already in place and that are directed to improving table saw safety. The continuation of these alternatives would be placed in great jeopardy by granting the Petition, due to the tremendous impact on the industry as a whole. In light of the inherent problems and unanswered questions concerning the proposed technology, the Commission should allow the existing efforts to proceed.

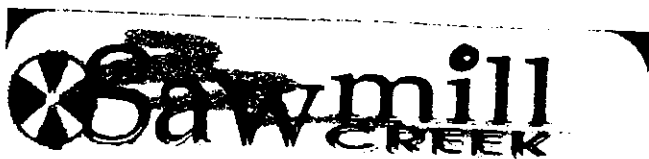
CONCLUSION

As discussed above, the Petitioners' patent applications are extremely broad and far-reaching in the area of the technology proposed in the Petition. Indeed, the Petitioners' patent applications cover many aspect of the proposed standard. There can be little question that the underlying goal of the Petitioners is to set the stage for an economic windfall to the Petitioners

by forcing manufacturers to enter into licensing agreements with the Petitioners in the event a mandatory standard is enacted. The Petitioners cite the number of projected injuries, the tremendous toll in suffering and the significant economic costs of the injuries as reasons for the need for more effective safety standards for table saws. However, based on the number of table saws produced annually, the Petitioners stand to receive annual royalties estimated at \$15.8 million a year without any risk of liability expenses that may be attributable to their patented designs.

Significantly, unless market forces allow additional research and technology development to occur, manufacturers may be forced to obtain a license and pay royalties to SawStop, thus impeding further technological developments. This is important because any new technology that performs up to standards and is more economically feasible for the end-user, or that is superior, may not be able to be developed.

PTI believes this petition is ill timed, the technology is flawed and that several other options are in progress, all working towards the goal of further reducing table saw injuries. Petitioners have not demonstrated that consumer safety will be increased by this proposed mandatory rulemaking. Certainly, Petitioners have not demonstrated that the enormous costs they seek to impose on consumers and manufacturers with their Petition is outweighed by the unsubstantiated benefits. For these reasons, we respectfully request that the Commission deny the request for rulemaking.



WOODWORKERS FORUMS

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Power Tool Forum Previous Thread | Next Thread

Linear Hybrid Threaded

Update on saw stop

07-14-2003, 7:45 PM

Pages (2): [1] 2

Lee Schierer Member

Post #1



Joined: Feb 2003 Location: McKean, PA

Update on saw stop

I didn't want this to get buried in the previous post, but I think that rumors are bad and their seemed to be more than the usual amount of traffic on a post. So I went right to the horse in this case and asked (Note: I asked them via e-mail this morning and received this response the same afternoon.). The following is their lengthy response to my e-mail.

"Dear Mr. Schierer,

Thanks for your email and interest in our technology. Yes, there are a lot of rumors floating around on the various woodworking forums regarding our technology. When we begin shipping our saws later this year and around the beginning of next year, hopefully a lot of those rumors will be put to rest.

Let me try to respond to your comments and answer your questions in the order presented. First, I agree that in the past people have tended to disconnect safety devices because they interfere with what they were doing, but I believe SawStop will be different. Our technology does not interfere with how the saw is used, so there will be no motivation to disconnect the device. Also, our saws will have a self-test system that detects whether key components are installed and functioning properly. If not, then the saw will not run.

If you have an accident and our system is triggered, the user will have to replace a brake cartridge (\$59) and probably the saw blade. The process is simple and takes about as much time as changing the blade. Hopefully, most users will not have an accident and will not need to replace the brake cartridge, but if they do, we do not think the cost of the cartridge and a new blade will be a significant impediment when compared to the increased safety of the saw.

Yes, we and around 350 other individuals jointly filed a petition with the U.S. Consumer Product Safety Commission to look at adopting new performance

based safety standards for table saws. You can see a copy of the petition at <http://www.cpsc.gov/library/foia/fo...Bladesawpt1.pdf>.

We filed the petition because we think it will help make saws safer. Every year in the U.S. there are over 30,000 serious injuries involving table saws. About 10% of these are amputations, and about 1.5% are to teenagers and young adults. These injuries come at a tremendous cost to society in medical expenses, disability, worker's comp, and rehabilitation, not to mention pain and suffering. These injuries can now be minimized, and we believe they should be.

We recognize there is only a very small chance the petition will be granted, mainly because our saws are not yet out in the field. Nevertheless, we believe the petition is worthwhile because it will allow the CPSC to analyze both the technology and the cost to society of table saw injuries. Society will then have more information to decide whether to adopt new safety standards after our technology has been in the field for a period of time.

We also hope that filing the petition will motivate other manufacturers to adopt something like our technology sooner than they otherwise would. We have spent the last two years talking with all of the major saw manufacturers about our technology, but no manufacturer has adopted the technology. They all agree the technology is great, but they would have to redesign their saws and retool their manufacturing to adopt it, and none of them want to incur that cost if they can avoid it. The result is that people are being injured unnecessarily.

We recognize that requiring table saws to be manufactured with something like SawStop will limit how manufacturers can make saws, and will limit what saws people can buy, but when we weigh that against the benefit of minimizing tens of thousands of severe injuries every year - many to students and employees who do not choose what saw they work on - we come down on the side of minimizing the injuries. It is the same rationale that is behind the regulations that currently require blade guards on saws, and seat belts in cars - the benefits outweigh the costs.

Thanks again for your email. Let us know if you have any other questions.

David Fanning

SawStop, LLC
22409 SW Newland Road 503-638-6201
Wilsonville, OR 97070 503-638-8601 fax
fanning@sawstop.com <http://www.sawstop.com>

Lee Schierer - McKean, PA
[Report Post](#) | IP: [Logged](#)

Posts: 325

07-14-2003, 8:08 PM

Sounds Like

Post #2

<http://www.sawmillcreek.org/showthread.php?threadid=2896>

7/25/2003



SawStop, LLC
22409 S.W. Newland Road
Wilsonville, Oregon 97070
Phone (503) 638-6201
Fax (503) 638-8601
www.SawStop.com

August 2003

Thanks for having placed a pre-order for a SawStop contractor or cabinet saw. We had hoped to begin shipping our saws this summer; at least to those who pre-ordered a saw before mid-November, 2002. Unfortunately, it now looks like we will not be able to ship our first saws until the beginning of 2004.

The delay is the result of a couple of factors. First, we have developed several significant improvements to the braking system and the mechanical structure of our saws. Specifically, we modified the design so that you can easily update the control system if there are changes to that system in the future. We also designed a bigger, better switch, and we modified the cabinet saw so that you can switch between a European-style riving knife and a blade guard more easily and quickly. Rather than proceed to manufacture our original designs and save the improvements for later models, we decided to implement the improvements in our first saws so that you who have pre-ordered our saws would receive the very best designs we have. These improvements result in much better saws, but they have delayed our manufacturing. It has also taken quite a bit more time than we expected to finalize all of the various manufacturing details.

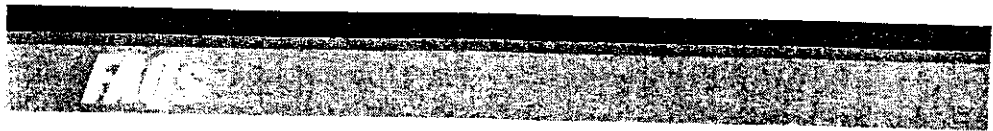
Anyway, we are now well into manufacturing, and have begun to receive parts. We will soon begin our production, and we plan to ship our first cabinet saws around the beginning of the year. We plan to ship our first contractor saws shortly thereafter. The factory we are working with is one of the most highly regarded factories for making saws and other woodworking equipment. They are located in Taiwan, and they have a long history of making woodworking equipment for numerous well-know brands.

We appreciate your patience as we work to bring out our new technology. When you see our saws we are confident that you will consider them worth the wait. As always, please feel free to call or send us an email if you have any questions or comments.

Thanks again,

Stephen Gass, President
Email: sgass@sawstop.com

Exhibit C



Home

Video Demo

How it Works

Features

FAQs

Ordering

Licensing

About SawStop, LLC

Contact Us

Contact Manufac.

Trade Shows

- How much will a saw with the SawStop system cost?
- Will static, such as often builds up on laminates, cause the SawStop system to misfire?
- Does the user have to wear any special clothing or stand on a special mat?
- Does the voltage of the saw or size of the motor affect the operation of the SawStop system?
- Is the motor or arbor of the saw damaged when the SawStop system is triggered?
- Will the SawStop system work with wet wood?
- Can the SawStop system be used with other types of woodworking equipment?

How much will a saw with the SawStop system cost?

We estimate that the retail price of a contractors saw will increase by approximately \$50-100 after a manufacturer retools to add the SawStop system as original equipment.

Will static, such as often builds up on laminates, cause the SawStop system to misfire?

No.

Does the user have to wear any special clothing or stand on a special mat?

No.

Does the voltage of the saw or size of the motor affect the operation of the SawStop system?

No.

Is the motor or arbor of the saw damaged when the SawStop system is triggered?

No. The SawStop system cuts power to the motor when the system is triggered. When the SawStop system is triggered and the brake strikes the moving saw blade, the saw's arbor assembly disconnects from the worm gear upon which it rides and is caught by a pad inside the saw's housing. The arbor assembly snaps back into place after being lifted from the pad.

Will the SawStop system work with wet wood?

Yes. Neither wet nor green wood will trigger the SawStop system.

Can the SawStop system be used with other types of woodworking equipment?

The SawStop system can be used with practically any type of woodworking equipment, such as miter saws, chop saws, radial arm saws, circular saws, sliding table saws, jointers, band saws, shapers and the like. The electronics, detection and firing systems are the same, with the brake mechanism tending to vary between different types of woodworking equipment.

Exhibit D



SawStop, LLC
 22409 S.W. Newland Rd.
 Wilsonville, OR 97070 USA
 Phone: 503-638-6201
 Fax: 503-638-8601
 Email: info@sawstop.com

Price List and Pre-Order Form

Name: _____

Ship to: _____

Address: _____

Date: _____

Email: _____

Item	Price	Quantity	Total
10" Cabinet Saw, including: 3 hp, 1 phase, 230 V, 60 Hz., TEFC motor Heavy-duty arbor & arbor bearing Contact detection & braking system European-style riving knife to minimize kickback Cast-iron table & extension wings Cast iron, widely spaced trunnions Miter gauge T-slots Zero clearance insert Blade guard Blade shroud dust collection	\$2,199.00		
Options:			
3hp, 3 ph. motor, specify 230 or 460 V	N/C		
5hp, 3 ph. motor, specify 230 or 460 V	\$100		
5hp, 1 ph. motor, specify 230 or 460 V	\$200		
30" T-square fence with table	\$200		
50" T-square fence with table	\$300		
Accessories:			
Extra Brake Cartridge for 10" blade	\$59		
Brake Cartridge for 7" dado	\$69		
Brake Cartridge for 8" dado	\$69		
TOTAL			

Do you prefer a left or right tilt saw? Left _____ Right _____

This pre-order is not binding on either party until confirmed and a deposit is requested and received. Efforts will be made to fill pre-orders in the order received. Taxes and shipping are extra. Specifications subject to change. The contact detection and braking system works to minimize injury. The severity of an injury will depend on the speed at which you contact the blade. You may incur a serious injury on a SawStop saw.



SawStop, LLC
 22409 S.W. Newland Road
 Wilsonville, OR 97070 USA
 Phone: 503-638-6201
 Fax: 503-638-8601
 Email: info@sawstop.com

10" Cabinet Saw Comparison

Features	SawStop	Powermatic 66	Delta Unisaw	Jet Xacta
Cast Iron Table and Extension Wings	✓	✓	✓	✓
Miter Gauge T-slots	✓	✓	✓	✓
Blade Guard	✓	✓	✓	✓
Widely spaced trunnions	✓	✓	✓	✓
Contact Detection and Braking System	✓			
European-Style Riving Knife	✓			
Blade Shroud Dust Collection	✓			
Specifications				
Blade - 10"	✓	✓	✓	✓
Arbor - 5/8"	✓	✓	✓	✓
Motor - 3 HP, 1 Phase, 230V, 60 Hz. TEFC	✓	✓	✓	✓
Max. depth of cut - 3 1/8"	✓	✓	✓	✓
Max. depth of cut at 45° - 2 1/8"	✓	✓	✓	✓
Max. rip to left of blade - 12"	✓	✓	✓	✓
Table in front of blade at max. cut - at least 12"	✓	✓	✓	✓
Max. width of dado - 13/16"	✓	✓	✓	✓
Max. diameter of dado - 8"	✓	✓	✓	✓
Table height - 34"	✓	✓	✓	✓
Table size w/ extension wings - at least 27" x 36"	✓	✓	✓	✓
Arbor Speed - approx. 4000 rpm	✓	✓	✓	✓
Zero clearance insert	✓			
Main arbor bearing size in mm	62	47	40	40
Arbor diameter between bearings in mm	23	20	17	17

Comparison based on the design specifications of the SawStop cabinet saw, on published specifications, and on actual measurements. The contact detection and braking system in the SawStop saw works to minimize injury. The severity of an injury will depend on the speed at which you contact the blade. You may incur a serious injury on a SawStop saw.



SawStop, LLC
 22409 S.W. Newland Road
 Wilsonville, OR 97070 USA
 Phone: 503-638-6201
 Fax: 503-638-8601
 Email: info@sawstop.com

10" Contractor Saw Comparison

Features	SawStop	Powermatic	Delta	Jet
Cast Iron Table	✓	✓	✓	✓
Miter Gauge T-slots	✓	✓	✓	✓
Blade Guard	✓	✓	✓	✓
Contact Detection and Braking System	✓			
Blade Shroud Dust Collection	✓			
Specifications				
Blade - 10"	✓	✓	✓	✓
Arbor - 5/8"	✓	✓	✓	✓
Motor - 1½ HP, 1 Phase, 115/230V, 60 Hz. TEFC	✓	✓	✓	✓
Max. depth of cut - 3 1/8"	✓	✓	✓	✓
Max. depth of cut at 45° - 2 1/8"	✓	✓	✓	✓
Max. rip to left of blade - at least 12"	✓	✓	✓	✓
Table in front of blade at max. cut - at least 11"	✓	✓	✓	✓
Max. width of dado - at least 13/16"	✓	✓	✓	✓
Max. diameter of dado - approx. 8"	✓	✓	✓	✓
Table height - 34"	✓	✓	✓	✓
Table size w/ extension wings - at least 27" x 40"	✓	✓	✓	✓
Arbor Speed - approx. 4000 rpm	✓	✓	✓	✓
Zero clearance insert	✓			
Main arbor bearing size in mm	62	40	40	40
Arbor diameter between bearings in mm	23	17	17	17

Comparison based on the design specifications of the SawStop contractor saw, on published specifications, and on actual measurements. The contact detection and braking system in the SawStop saw works to minimize injury. The severity of an injury will depend on the speed at which you contact the blade. You may incur a serious injury on a SawStop saw.

Exhibit E

July 24, 2003

SawStop, LLC
22409 SW Newland Road
Wilsonville, OR 97070

Attention: Mr. Renee Knight

Fax: 503-638-6201 Total Pages: 1

Dear Sir,

After reviewing Petition CP 03-2, Requesting Performance Standards for a System to Reduce or Prevent Injuries from Contact with the Blade of a Table Saw - Parts 1 and 2 (0841) currently available on the U.S. Customer Product Safety Commission website:

<http://www.cpsc.gov/library/foia/foia03/petition/peti.html>, we, the undersigned, were shocked to learn that our personal points of view was misinterpreted as that of our company, UL International Limited.

We, the undersigned, are hereby expressing our great disappointment and objection to your unauthorized act to associate our names with the company name that we work for.

As a result, we demand for an immediate and unconditional removal of our names, our company name and addresses tabulated below from the petition that we have submitted in April, 2003 and any public statements regarding SawStop.

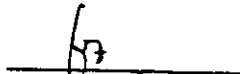
Should you have any questions, please feel free to contact the undersigned at

(Phone) +852 9301 9103, or
(Email) 03427105g@polyu.edu.hk

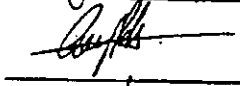
Address as shown in Index of Petitioners for Petition to Initiate Rulemaking for Table Saws:
18th Floor, Delta House, 3 On Yiu Street, Shatin, NT, Hong Kong

Names as shown in Index of Petitioners for Petition to Initiate Rulemaking for Table Saws:

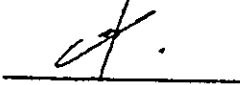
CHOI, Edward



SINK, Pak Hiu




CHOI, Ivan



CHAN, Keith



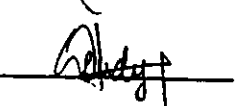
TONG, Marco



LAU Shirley



MAN, Fung Wing



July 28, 2003

David A. Fanning
22409 S.W. Newland Road
Wilsonville, OR 97070
(360) 944-7204

Todd A. Stevenson, Secretary
Consumer Product Safety Commission
Washington, D.C. 20207

Re: Petition CP 03-2

Dear Mr. Stevenson:

Enclosed is a letter dated July 24, 2003 from seven individuals who had joined in the above-identified petition. Those individuals now demand that their names, addresses and company name be withdrawn from the petition.

Please let me know if you have any questions.

Sincerely,



David A. Fanning

C: Edward Choi, Pak Hiu Sink, Ivan Choi, Keith Chan, Marco Tong, Shirley Lau,
FungWing Man

40 Table Saws

- 40.1 These requirements cover table saws with blade diameter of up to 315 mm.
- 40.2 A saw blade shall be furnished with a table saw. The design of a table saw shall be such as to limit the size of a blade that may be installed on the arbor to one not larger than that tested on the assembly.
- 40.3 The arbor shall:
- Be accessible from the top of the table to permit changing cutting tools such that tightening of the arbor nut is relatively easy.
 - Have a nominal diameter not less than 12.7 mm for a blade having a diameter less than 205 mm and not less than 15.9 mm for a blade having a diameter of 205 mm or more.
 - Have a normal rotation that is clockwise when viewed from the left of the position normally assumed by the operator.
 - Threaded such that the blade-retaining nut is tightened by the normal rotation of the arbor.
- 40.4 The blade supporting flange outer diameter of the contact surface shall not be less than 1/6 of the maximum recommended blade diameter for the table saw. At least one of the flanges shall be keyed to the output spindle. The radial overlap of the blade bearing surfaces of the inner and outer flange shall be at least 1/10 of the flange diameter.
- 40.5 The table insert shall be sufficiently large to make changing of the cutting tool and tightening of the arbor nut relatively easy. The table insert shall:
- Be of a color contrasting to that of wood and to that of the saw table.
 - Have a slot for protruding saw blade, the width of the slot not to exceed 12 mm plus the width of the blade throughout the bevel range. A zero clearance table insert, where the slot is cut by the cutting tool is permitted. The width of the slot in the table inserts for cutting tools other than saw blade, i.e. dado, shall not to exceed 12 mm plus the width of the cutting tool.
 - Be securely held in place, so as to prevent unintentional or non-purposeful removal while the saw is in operation.
 - Be designed such that, when properly installed, no portion of the insert shall be above or more than 0.76 mm below the plane of the surface of the table.
- 40.6 A blade guard meeting the requirements of 40.6.1 – 40.6.4 shall be provided with a table saw. The guard may be attached to a spreader, riving knife/spreader combination unit or other equivalently effective mounting means. The guard shall:
- Be made of material that is soft enough so that it will be unlikely to cause tooth breakage in the event of contact with blade.
 - Automatically adjust to the thickness of the workpiece and remain in contact with workpiece for all depth of cut and bevel position of the blade.
 - Completely enclose the top and the sides of the saw blade above the table but for the openings needed for or generated by the beveling function.
 - Rest on the table with either one or both sides, when the blade is set at 90° position. If one side rests on the table with the blade set at its 90° position, the other side shall rest on the table when the blade is tilted to its 45° position.
 - Allow the cutting edge of the blade to be visible from the operator's normal position when the guard is in the rest position on the table.
- 40.6.1 The guard may have an opening for the ejection or collection of sawdust.
- 40.6.2 Openings in the top or sides of the guard provided for blade visibility or ejection/collection of the saw dust shall be designed to assure that the discharge is directed away from the operator and

shall not hinder the vision of the user when the user is in the normal operating position and in addition shall not allow a 12.7 mm diameter probe to contact the blade when inserted 63.5 mm into the opening.

- 40.6.3 A guard and mounting means shall not offer any considerable resistance to the initial entrance of the workpiece to the saw blade or to the passage of material being sawed.
- When common lumber size (1x or 2x) is advanced at recommended rate towards the blade at 45°, right or left miter angle, the guard shall not be displaced sideways to a point where the blade could touch any part of the guard surface.
 - During the test the spreader or the riving knife/spreader combination unit shall not be misaligned to a point to prevent unobstructed feeding of the tested lumber.
 - The tests are performed at 90° and 45° bevel positions.
- 40.6.4 A guard is not required for attachments, such as a dado set, a molding head and the like that are not intended to cut through the workpiece and operations such as plunge cuts and cove cuts.
- 40.7 Table saw shall be provided with a riving knife or riving knife/spreader combination unit.
- 40.8 If a table saw is equipped with the riving knife, it shall meet the requirements of 40.8.1 – 40.8.4.
- 40.8.1 The riving knife for a table saw shall:
- Have a body thickness thicker than the body of the recommended saw blade but thinner than the kerf of the recommended saw blade.
 - Be located behind the saw blade and pass freely through the cutting groove.
 - Not contact the blade, be rigidly fixed and in alignment with the plane of the blade and as a result of any operation maintain the alignment with the blade.
 - Have its tip rounded, with a radius of not less than 2 mm, and its edges shall not be sharp. The faces of the riving knife shall be plane, smooth, parallel and shall be slightly chamfered on the edge facing the blade.
 - Have a width, measured at the table top level and at the maximum cutting depth of the saw, at least equal to 1/6 of the largest recommended blade diameter.
 - Be made of steel with a hardness of between 38 HRC and 48 HRC and a resistance to rupture at least equal to 800 Mpa or other equivalent material.
 - The thickness of the riving knife and the range of saw blade diameters for which it is intended shall be permanently marked on the riving knife, for example by engraving, stamping or etching.
- 40.8.2 The riving knife and its holder shall be so designed that for all recommended blade diameters and for any cutting depth adjustment with the blade is set perpendicularly to the table, the riving knife shall comply with the following specifications:
- Above the table, the radial distance between the riving knife and the edge of the blade at its closest point to the saw blade shall be at least 3 mm and at no point shall the gap between the saw blade and the riving knife exceed 8 mm, as illustrated in figures 40.1.
 - The highest point of the riving knife shall be at least 1mm but not more than 5 mm below the highest point of the saw blade, as illustrated in figure 40.2.
- 40.8.3 The riving knife and its holder shall have the rigidity to comply with the following specifications:
- For these test, the blade is set to maximum depth of cut at 90°. The fastening screws provided for the mounting of the riving knife are tightened in accordance with manufacturers instructions or in absence of recommendations, in accordance with the torque values from the table 40.1.
 - Within the construction limits of the riving knife and its holder, the riving knife is adjusted to the minimum distances near the top of the blade as specified in 40.8.2. At the center of the riving

knife tip, for 1 min a force of 500 N is applied in the cutting direction and parallel to the table as shown in figure 40.3. The riving knife shall not deflect or displace to contact the saw blade tips. In addition, after the test, the radial spacing between the tips of the saw blade and the riving knife shall not be less than 2 mm.

- c) The riving knife is adjusted to the minimum distance in accordance with 40.8.2.b). At the center of the riving knife tip, for 1 minute a force of 30 N is applied perpendicular to the cutting direction and parallel to the table, as shown in figure 40.4. The test is made in both directions. The tip of the riving knife shall not deflect in the direction of the force by more than 3% of the maximum recommended saw blade diameter.

40.8.4 The riving knife shall be fastened in such a manner that a tool is required for its installation or removal.

40.9 If a table saw is equipped with the riving knife/spreader combination unit, it shall meet the requirements of 40.9.1 – 40.9.6.

- a) The riving knife/spreader combination unit is a device that is adjustable to function as a spreader as well as a riving knife and it shall be designed such that it can accommodate the attachment of a removable guard and/or antikickback device.
- b) The riving knife/spreader combination unit is considered in the "spreader position" when the attachment mechanism for the guard and/or antikickback device allow for the passage of a workpiece thickness equal to the blade height above the table top at any depth of cut setting.
- c) The riving knife/spreader combination unit is considered in the "riving knife position" when all attachments such as the guard or the antikickback device are removed from the combination unit and at any depth of cut setting the combination unit is below the blade height above the table top.

40.9.1 The riving knife/spreader combination unit of the table saw shall:

- a) Have a body thickness thicker than the body of the recommended saw blade but thinner than the kerf of the recommended saw blade.
- b) Be located behind the saw blade and pass freely through the cutting groove.
- c) Not contact the blade, be rigidly fixed and in alignment with the plane of the blade and as a result of any operation maintain the alignment with the blade.
- d) Have the faces of the riving knife/spreader combination unit plane, smooth, parallel, the edges shall not be sharp and shall be slightly chamfered on the edge facing the blade.
- e) Have a width, measured at the table top level and at the maximum cutting depth of the saw, at least equal to 1/5 of the largest recommended blade diameter.
- f) Be made of steel with a hardness of between 38 HRC and 48 HRC and a resistance to rupture at least equal to 800 Mpa or other equivalent material.
- g) The thickness of the riving knife/spreader combination unit and the range of saw blade diameters for which it is intended shall be permanently marked on the riving knife, for example by engraving, stamping or etching.

40.9.2 The riving knife/spreader combination unit and its holder shall be so designed that for all recommended blade diameters and for any cutting depth adjustment with the blade is set perpendicularly to the table the riving knife/spreader combination unit shall comply with the following specifications:

- a) When the riving knife/spreader combination unit is adjusted for the "spreader position", above the table, the radial distance between the riving knife/spreader combination unit and the edge of the blade at its closest point to the saw blade shall be at least 3 mm and at no point shall the gap between the saw blade and the riving knife/spreader combination unit exceed 8 mm, as illustrated in figure 40.1.

- b) When the riving knife/spreader combination unit is adjusted for the "riving knife position" and the radial distance to the blade is in accordance with the 40.9.2a) the highest point of the riving knife/spreader combination unit shall be at least 1 mm but not more than 5 mm below the highest point of the saw blade, as illustrated in figure 40.2.
- 40.9.3 The riving knife/spreader combination unit and its holder, adjusted to the riving knife position, shall have the rigidity to comply with the following specifications.
- a) For these test, the blade is set to maximum depth of cut at 90°. The fastening screws provided for the mounting of the combination unit are tightened in accordance with manufacturers instructions or in absence of recommendations, in accordance with the torque values from the table 40.1.
 - b) Within the construction limits of the riving knife/spreader combination unit and its holder, the combination unit is adjusted to minimum distances near the top of the blade, in accordance with 40.9.2. At the center of the riving knife/spreader combination unit tip, for 1 minute a force of 500 N is applied in the cutting direction and parallel to the table as shown in figure 40.3. The riving knife/spreader combination unit shall not deflect or displace to contact the saw blade tips. In addition, after the test, the radial spacing between the tips of the saw blade and the riving knife/spreader combination unit shall not be less than 2 mm.
 - c) The riving knife/spreader combination unit is adjusted is adjusted to the minimum distance in accordance with 40.9.2.b) At the center of the riving knife/spreader combination unit tip, for 1 minute a force of 30 N is applied perpendicular to the cutting direction and parallel to the table, as shown in figure 40.4. The test is made in both directions. The tip of the riving knife/spreader combination unit shall not deflect in the direction of the force by more than 3% of the maximum recommended saw blade diameter.
- 40.9.4 The riving knife/spreader combination unit shall be fastened in such a manner that a tool is required for its installation or removal.
- 40.9.5 The guard and/or the antikickback device attached to the riving knife/spreader combination unit shall be so designed, as not to create any new mechanical hazards if a sawing operation of a material thicker than the blade height above the table is attempted.
- 40.9.6 The adjustment of the riving knife/spreader combination unit between the "riving knife" and the "spreader" positions shall be accomplished without the aid of a tool in less than one minute.
- Exception: A tool can be used for the adjustment of the riving knife/spreader combination unit, if such tool is permanently attached to the saw.
- 40.10 Table saw may be equipped with a spreader for mounting the guard and/or the antikickback device. The spreader shall:
- a) Have attachment points for the guard and/or antikickback device that allow for passage of a workpiece thickness equal to the maximum blade height above the table top.
 - b) Be thinner than the kerf of the thinnest recommended saw blade.
 - c) Have faces that are smooth, parallel and have a chamfered leading edge.
 - d) Not interfere with table saw operations and will remain in true alignment with the blade and the riving knife throughout the entire bevel and depth of cut setting range.
 - e) The spreader shall be made of steel with a hardness of between 38 HRC and 48 HRC and a resistance to rupture at least equal to 800 Mpa or other equivalent material.
 - f) Be designed so that it can be removed and replaced without the use of tools with no need for readjustment or realignment.

40.11 An antikickback device(s) shall be provided with a table saw. The antikickback device(s) shall:

40.11.1 Provide holding power sufficient to prevent removal of soft pine lumber having a thickness within the capacity range of the table saw.

40.11.2 Be so designed as to oppose the thrust of a thrown workpiece by the blade. This requirement is verified by conducting the following test.

- a) The blade is set to a maximum depth of cut at 90°. The riving knife/spreader combination unit in the spreader position is adjusted to the minimum distance near the top of the blade in accordance with the 40.9.2a.
- b) Smoothly planed 19mm thick wooden test block, strong enough to withstand the applied forces, is partially split along its long axis with a kerf and long enough to reach from the front of the blade is positioned under the antikickback device(s).
- c) The antikickback device(s) is engaged against the test block.
- d) For 1 minute a force of 500N is applied to the test block in the direction of the blade rotation, in the plane of the saw blade and parallel with the table top, as shown in figure 40.5.
- e) During the test the antikickback device(s) shall remain attached to its support and engaged with the test workpiece. In addition the antikickback device(s) and its supporting member shall not contact the saw blade. If the antikickback device(s) are attached to spreader or other equivalent support, they shall not cause the riving knife to contact the blade.

40.12 If the guard, spreader or antikickback device are required to be removed for non-through cutting operations, the saw shall be designed so that these items can be easily removed and replaced without the use of tools. All of the items required to be removed for non through cutting operations shall be removable within a total of 20 seconds. In addition all of the items required to be removed for non through cutting operations shall be replaceable within a total of 20 seconds, with no need for readjustment or realignment.

Exception: A tool can be used to remove and replace the guard, spreader or the antikickback device if such tool is permanently attached to the saw.

40.13 Guarding beneath the table shall be provided so as to enclose the saw blade from unintentional contact and to reduce the likelihood of contact with moving parts of the drive mechanism. The saw frame, motor including a motor shipped detached from the saw, exhaust hood, and other enclosures under the table may be considered as a portion of the guarding.

40.13.1 If an open-bottomed enclosure is used to comply with the requirements in 40.13, the depth of the enclosure shall be such that the plane of the bottom is 25.4 mm or more below the bottom of the saw blade with the blade in its lowest position.

40.14 A rip fence shall be provided with a table saw and constructed so that it can be firmly secured to the table and so that it will not tend to loosen under normal operating conditions. The rip fence shall have a minimum height of 50 mm.

40.15 A saw shall incorporate automatic or manual devices to hold the cutting tool in a preset position, bevel or elevation. Adjusting mechanisms and positioning devices shall be constructed so that they will maintain their setting accurately during full-load operation for 10 minutes, including 12 intentional stalls of the saw blade, for each of cross-cut, cutoff-bevel, and rip positions. Positive adjusting means shall be provided at all necessary points to permit the saw to be adjusted for intended operation initially and to compensate for wear that may affect the initial adjustment.

40.16 A push stick shall be provided for use on all table saws. Provision shall be made for storing the push stick on the machine. Push sticks shall be made from a non-metallic material. The push stick shall have the strength to feed 150 mm wide 50 mm thick and 1800 mm long heavy hardwood lumber. The

minimum length for push sticks shall be 400 mm. An example of a push stick profile and of a suitable mouth design is shown in figure 40.6.

Table 40.1

Nominal diameter of screw Inches (mm)	Tightening torque In/lbs. (Nm)
Over 0.142 (3.6) to and including 0.161 (4,1)	20 (2.2)
Over 0.161(4.1) to and including 0.185 (4.7)	29 (3.2)
Over 0.185 (4.7) to and including 0.209 (5.3)	38 (4.3)
Over 0.209 (5.3) to and including 0.248 (6.3)	66 (7.4)
Over 0.248 (6.3) to and including 0.288 (7.3)	106 (12.0)
Over 0.288 (7.3) to and including 0.327 (8.3)	160 (18.0)
Over 0.327 (8,3) to and including 0.394 (10.0)	319 (36.0)

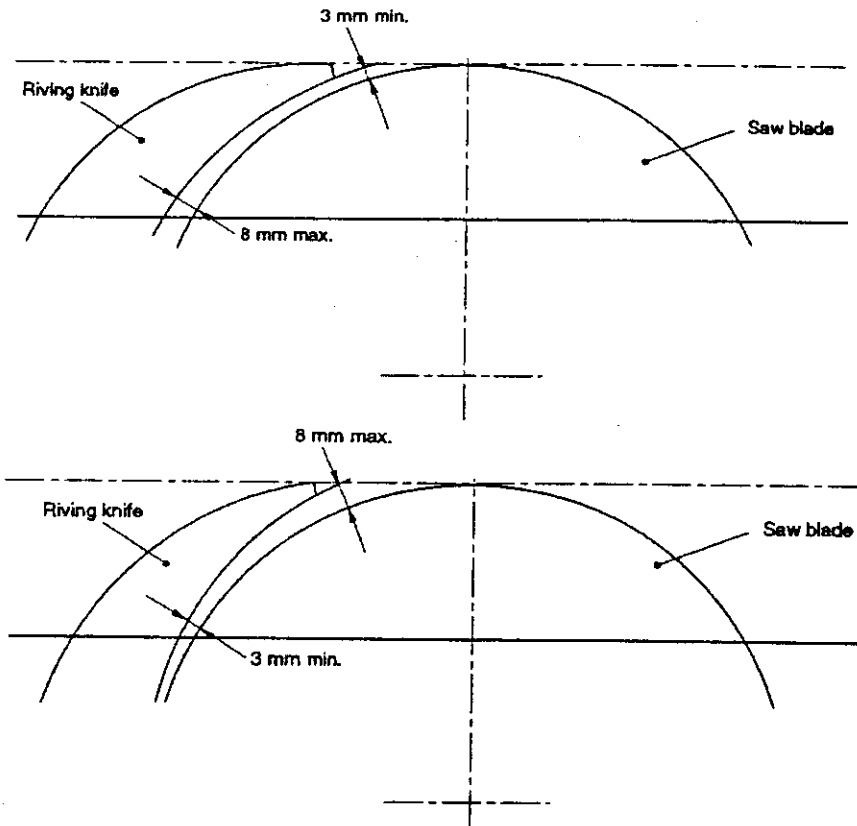


Figure 40.1

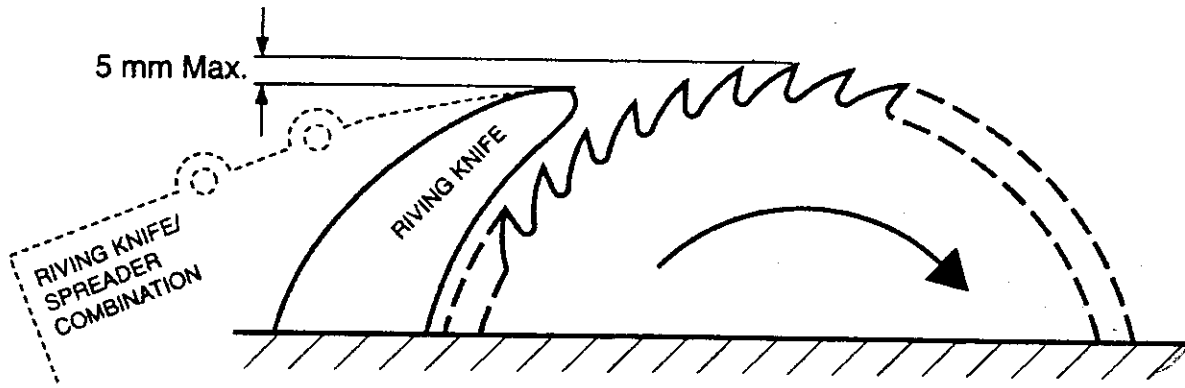


Figure 40.2

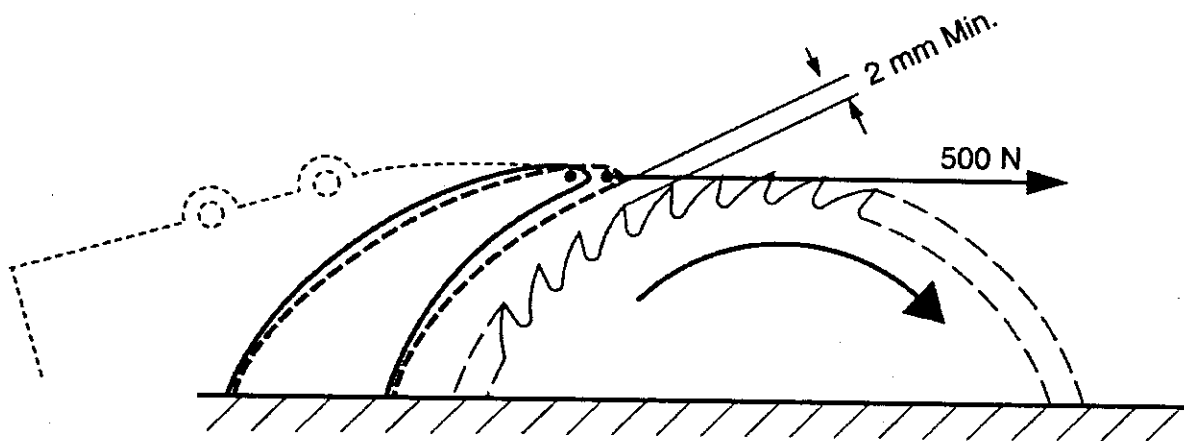


Figure 40.3

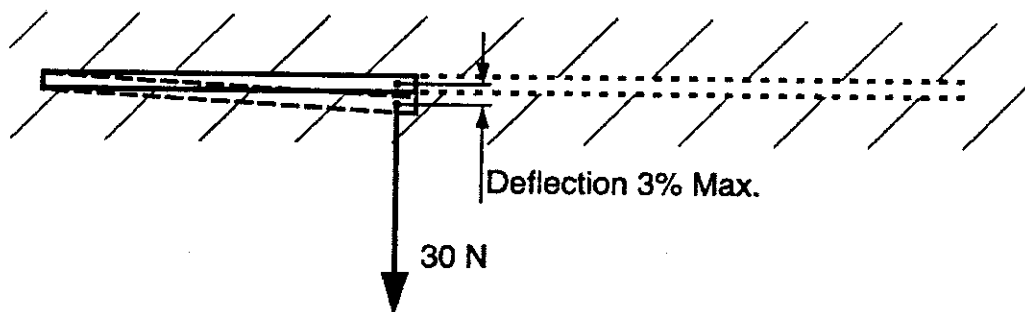


Figure 40.4

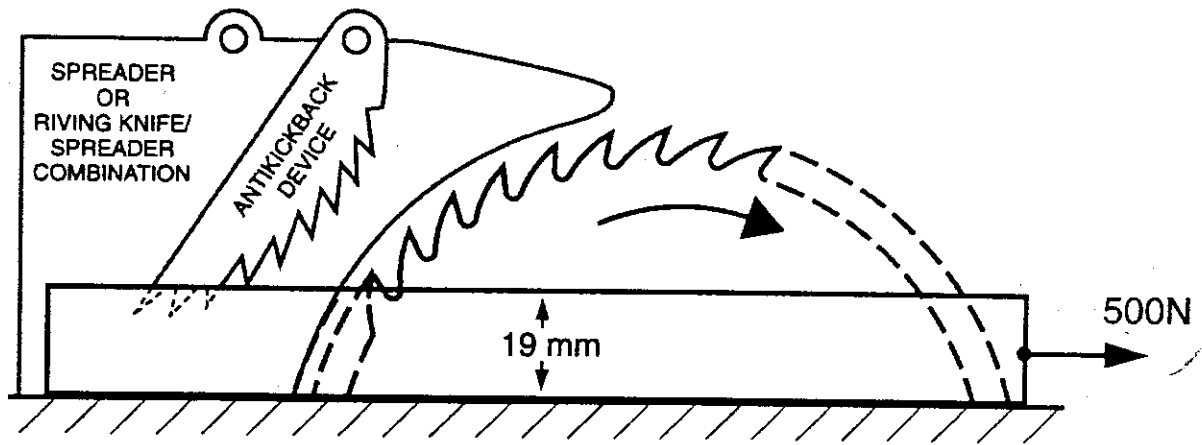


Figure 40.5

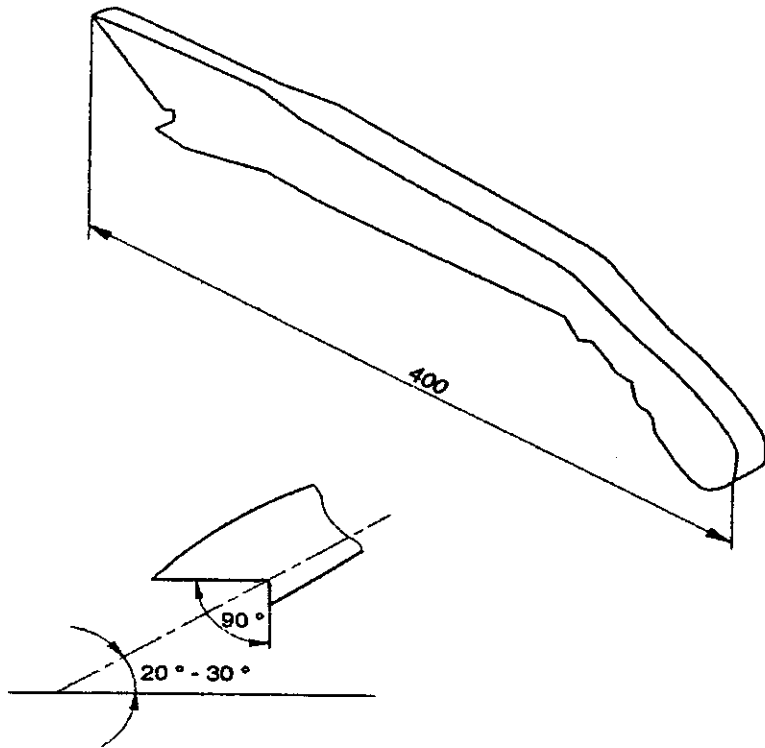


Figure 40.6



**Manufacturers
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Office of the Secretary
Consumer Product Safety Commission
Washington, DC 20207

Members of the Commission:

**SUBJECT: Petition CP 03-2, Petition for Performance
Standards for Table Saws**

This letter sets forth the comments of the Manufacturers Alliance/MAPI Inc., on petition CP 03-2, Petition Requesting Performance Standards for a System To Reduce or Prevent Injuries From Contact With the Blade of a Table Saw. The instant petition requests that the Consumer Product Safety Commission (CPSC or the Commission) issue a rule prescribing "performance standards" for a system intended to reduce or prevent injuries from contact with the blade of a table saw. The petition also sets forth specific details regarding a detection/reaction system that is proposed by the petitioners to be required by the applicable standard covering table saws. This detection/reaction system is commonly known as "SawStop," which was invented by the three primary petitioners in this proceeding (i.e., Messrs. Gass, Fanning, and Fulmer). Collectively, these petitioners either hold, or have applied for, in excess of 30 patents relating to power tool brakes.

The Alliance opposes this petition for the reasons stated below, which the Commission may wish to consider in its deliberations on this matter.

Before listing our main concerns about this petition, however, I should note that the Alliance, established in 1933, is a not-for-profit corporation incorporated under the laws of the State of Delaware and exempt from taxation under Section 501(c)(6) of the Internal Revenue Code relating to business leagues. We engage in policy research, continuing professional education, and allied activities. Our corporate membership of some 350 companies includes U.S.-based and international entities engaged in manufacturing and related business services in such industries as electronics, aerospace, automotive, telecommunications, computers, precision instruments, chemicals, energy, factory automation, power and machine tools, and others. Alliance research and executive seminars primarily relate to management, economics and law, productivity and efficiency, innovation, economic growth, competitiveness, free trade, and sustainable development.

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Our principal concerns over this petition are several. First, although couched in terms of a performance standard, this petition is a thinly-veiled attempt to have the Commission adopt a mandatory design standard in contravention of Section 7 of its enabling statute (15 U.S.C. §2056). While the petition casually suggests that it is seeking a performance standard that might be met by various technologies, the length at which it goes to extol the virtues of the SawStop technology clearly indicates that it is seeking mandated use of that specific technology. Indeed, the petitioners' expanding patent portfolio would seem to leave little, if any, room for possible competing technologies. Petitioners recognize that, were this petition to be granted, they would hold a virtual monopoly position. Such recognition is evinced when they magnanimously offer to license their technology for 8 percent of the wholesale price of each new table saw sold in this country. In such circumstances, the petitioners are clearly seeking a *de facto* design standard by asking the CPSC to promulgate a rule that would require all table saws manufactured for use in the United States to incorporate their patented device. For this reason alone, the petition should be rejected.

Second, the SawStop technology is virtually untested and unproven. (Even if it had been exhaustively tested and proven reliable, however, our first concern over a governmentally mandated design standard affording a monopoly position to a patent holder would not be satisfied.) The fact remains that no table saws employing the SawStop technology have been commercially produced, much less tested in a real-world environment. The absence of test data as to the reliability and durability of the SawStop device makes its mandatory incorporation on all table saws sold in this country patently inappropriate. Should petitioners develop a commercially viable table saw equipped with their safety device, consumers will be able to decide its efficacy and value by comparison with existing safety devices with proven track records.

Third, by seeking to have the Commission impose a mandatory standard, the petitioner is circumventing the well-established voluntary standard process—a process which has served the public particularly well in the case of table saws as well as for many other products. Table saws are the subject of a voluntary standard promulgated by Underwriters Laboratories, Inc. (UL), a not-for-profit organization dedicated to public safety. UL publishes UL Standards for Safety, many of which are recognized as American National Standards, developed through an American National Standards Institute (ANSI) accredited standards development process. UL publishes ANSI/UL 987—Standard for Stationary and Fixed Electric Tools, which encompasses table saws. This standard is maintained by the Standards Technical Panel (STP) of UL for Electrical Tools. The STP is a balanced, consensus body of members divided into three groups; that is, general interest (e.g., inventors and, as you know, CPSC staff that the Commission has decided to have participate in a non-voting capacity), producers, and users. Since the introduction of UL 987, the STP has overseen the evolution of this standard which is currently in its sixth edition. The best evidence indicates that there is 100 percent compliance with this voluntary standard with regard to table saws sold in the United States. Indeed, the dynamic STP process has been largely responsible for a dramatic decrease in the injury rate on table saws witnessed in the last decade.

Always receptive to new ideas for safety improvements, the STP for Electrical Tools recently entertained a proposal to examine the SawStop technology that was submitted by one of the instant petitioners. That proposal could not be reviewed because it lacked information as to criteria for testing and acceptance of the involved technology. Rather than attempting to remedy this filing deficiency, that particular individual chose to ignore the well-established voluntary standards process and file this petition. In recognition of the exemplary work of the STP for Electrical Tools to date, the Commission should deny this petition and allow the voluntary standards process to continue to promote proven table saw safety technology while carefully evaluating any new technology purporting to improve the safety performance of those products.

Additionally, an evaluation of the basic cost/benefit ratio of mandating the use of the SawStop technology on all table saws sold in the United States dictates rejection of this petition. Obviously, the costs associated with the testing and development of this unproven technology are significant. Should it prove viable, the design modification of existing saws to accommodate the new technology will be staggering. Added to these costs is the licensing fee for the proprietary technology which is said to be in the range of 8 percent of the saw's wholesale cost. We are talking about total extra costs incurred by manufacturers in the millions, or tens of millions, of dollars that will be passed on to consumers.


Moreover, it must be remembered that the SawStop device is a "one shot" mechanism. Each time it is activated, a new replacement activation cartridge will have to be installed by the user. These replacement cartridges can cost as much as \$69.00. Also, activation is likely to destroy the saw's blade, requiring a replacement which will normally cost more than the replacement SawStop braking cartridge. One needs to also include in this consumer-cost equation the factor that the SawStop device has a propensity to false trip in certain scenarios (e.g., in instances when wet wood is being cut). Clearly, this product's use could prove to be commercially prohibitive from a cost perspective for many woodworkers.

What are the offsetting public benefits of this technology? Suffice it to say that given the untested and unproven nature of SawStop, it is impossible to realistically quantify any such benefits. General statistics as to the costs associated with table saw injuries are not relevant to any cost/benefit analysis, since there is no way to accurately gauge whether the instant technology will reduce those costs.

Finally, all of the above comments are directed specifically toward the SawStop technology which is the subject of the instant petition. The petition, however, raises an overriding public policy concern much broader than its particulars. Specifically, as we alluded to previously, the Alliance is concerned about this attempt by the owners of proprietary technology to circumvent the well-established voluntary standards process by having the Commission mandate use of their product/technology. While we recognize that, in certain circumstances, the CPSC is authorized to issue and enforce mandatory standards, we believe that such power should be exercised with great discretion. Whenever practicable, we advocate reliance on the voluntary standards-setting process which has served the public so well to date. The development and evolution of ANSI/UL 987, maintained by the STP for Electrical Tools, is a perfect example of the voluntary standards process working as it is intended; that is, to ensure that the safest, most reliable products are introduced into the marketplace. We believe that this sophisticated voluntary process has earned the right to be afforded every deference in the standards-setting hierarchy.

Thank you for consideration of these comments. We appreciate the opportunity to participate in this proceeding.

Sincerely,



Thomas J. Duesterberg
President and Chief Executive Officer

**Response to Comments in Opposition
to Petition CP 03-2 Requesting Performance
Standards for Table Saws**

“[T]he accident rate is negligible.”

- Power Tool Institute, Inc.

Every year in the United States there are at least 46,000 serious injuries involving table saws - about one every 12 minutes.¹ Over 3,000 of these injuries are amputations. Nevertheless, the Power Tool Institute, an organization made up of eleven large corporations, seven of which make nearly all the table saws sold in the United States,² says “table saws are a relatively safe product” and “[t]he accident rate is negligible.” Comment of Power Tool Institute, Inc., 32, 39 (Nov. 5, 2003) [hereinafter PTI Comment]. These statements reflect an appalling indifference on the part of those companies toward table saw injuries and the life-long consequences to the victims of the injuries.

The Power Tool Institute made those statements in an attempt to persuade the Consumer Product Safety Commission to deny a petition to adopt a new safety standard for table saws. The proposed new standard would require existing saw manufacturers to adopt new technology at a one-time cost of two to ten million dollars per company, and they do not want to incur those costs. PTI Comment, 34. The benefits of adopting the new standard, however, far outweigh the costs of doing so.

There are, as stated, there are at least 46,000 serious injuries each year in the United States involving table saws. According to the National Electronic

¹ U.S. Consumer Product Safety Commission, National Electronic Injury Surveillance System. See appendix 1 for a calculation of the number of injuries. The injury data is available online at www.cpsc.gov.

² The seven corporations are: Black & Decker (Black & Decker and DeWalt brands), Hitachi (Hitachi brand), Makita (Makita brand), Pentair Tool Group (Delta and Porter-Cable brands), Robert Bosch Tool Corp. (Skil and Bosch brands), Ryobi Technologies (Craftsman, Ridgid and Ryobi brands), and WMH Tool Group (Jet, Powermatic and Wilton brands),

Injury Surveillance System (NEISS), about 30,905 of those injuries are lacerations and about 3,273 are amputations, for a total of 34,178 lacerations and amputations. Thus, at least 74% of the total number of injuries each year almost certainly involves accidental contact between a person and the blade of the saw. It is precisely these types of injuries - lacerations and amputations - that the proposed new standard addresses.

Petitioners believe the average cost of a table saw laceration or amputation could easily exceed \$5,000 to \$10,000, especially if one includes the cost of acute medical treatment, post-operative care and rehabilitation, lost wages and productivity, pain and suffering, and increased insurance and workers' compensation costs. This estimate is based on anecdotal reports of people who have suffered lacerations and amputations from table saws and anecdotal comments from hand surgeons on the medical costs of those injuries.³ The Power Tool Institute, on the other hand, says the average cost of a table saw injury is "\$1,000 to \$2,500," and it bases that estimate on what it refers to as "our data," but the Power Tool Institute does not disclose that data. PTI Comment, 32.

The annual cost to society of lacerations and amputations from table saws can be calculated by multiplying the yearly number of those injuries (34,178) times the average cost of each injury. The following table sets forth the total annual cost to society for different average injury costs:

Average Cost per Injury	Annual Cost to Society
\$1,000	\$34,178,000
\$2,500	\$85,445,000
\$5,000	\$170,890,000
\$10,000	\$341,780,000

Adopting the proposed new standard will minimize the severity of injuries involving table saws and thereby significantly reduce the annual cost of those injuries. Petitioners believe that in most accidents where a hand or finger

³ Anecdotal reports concerning the costs of lacerations and amputations from table saws are set forth in Appendix 2.

contacts the moving blade of a table saw, the hand is moving approximately 1 foot per second or less. The new standard requires table saws to include a reaction system so that a person will be cut no deeper than 1/8th of an inch when contacting the blade at that velocity.⁴ Thus, accidents involving table saws complying with the new standard would typically result in a nick rather than a serious injury. In contrast, a saw without any such reaction system would cut approximately 1.8 to 2.4 inches into the hand before the person could react, which is far enough to sever three fingers, assuming a typical human reaction time of 150 to 200 milliseconds. Petitioners believe that within a short period of time the new standard would effectively eliminate the annual cost to society of lacerations and amputations from table saws.

In order to determine whether the new standard should be adopted, these benefits must be weighed against the costs of adopting the new standard. If the new standard is adopted, the seven existing saw manufacturers will have to modify their saws at a one-time cost of two to ten million dollars per company, or \$14 to \$70 million. PTI Comment, 34. Saws meeting the new standard will cost approximately 25% more, and assuming a total annual market of \$200 million in retail sales, then saws meeting the new standard will cost consumers an additional \$50 million annually. A brake cartridge costing approximately \$70 and a saw blade costing on average about \$20 will need to be replaced after each accident, resulting in an annual cost to consumers of about \$3 million (34,178 injuries x (\$70 cartridge + \$20 blade)). In total, adopting the proposed standard would require a one-time cost of \$14 to \$70 million, and annual costs of approximately \$53 million.

Weighing the benefits against the costs shows that the new standard should be adopted if the average cost per injury is at least \$2,000. With that average cost per injury, the benefits would total around \$68 million annually while

⁴ The new technology stops the blade of a table saw in 3 to 5 milliseconds, which results in a cut about 1/16th of an inch deep when a hand contacts the blade at 1 foot per second. The proposed standard, however, says the reaction system must result in a cut no deeper than 1/8th of an inch. The wording of the proposed standard is more lenient in order to make it easier for manufacturers to meet the standard with various designs. Nevertheless, the standard could be modified to require a reaction system that results in a cut no deeper than 1/16th of an inch.

the costs would be only \$53 million annually plus an amount to amortize the one-time cost of \$14 to \$70 million. The new standard would provide even greater benefits if the average cost per injury is \$5,000 to \$10,000. At \$5,000 per injury the benefits total approximately \$170 million annually, and at \$10,000 per injury they total approximately \$340 million annually, both of which far exceed the costs. These are primarily economic benefits; the true benefit of improving lives by preventing serious lacerations and amputations is difficult to quantify.

Existing saw manufacturers, however, belittle the number of table saw injuries in order to argue that the benefits of the new standard would be minimal. For example, the saw manufacturers, through the Power Tool Institute, say “the accident rate throughout the life of the table saw is one half of one percent,” and they characterize that rate as acceptable. PTI Comment, p. 32. But that is still a tremendous number of injuries. Assuming 6 million table saws and 34,000 lacerations and amputations involving table saws each year, then one out of every 175 table saws will be involved in a serious laceration or amputation every year, and one out of every 18 table saws will be involved in a serious accident over the next ten years. There are few other tools with such a high rate of serious accidents.

The Power Tool Institute has also put forth several criticisms of the technology in an attempt to raise doubts about its viability. For example, they say the brake systems in early prototype saws would sometimes trigger inadvertently when cutting wet or green wood. PTI Comment, 19-23. They also say that the brake system may trigger inadvertently because of unshielded cables or static discharge. Id. at 23-24. They also question the robustness of components used in the prototype saws. Id. at 27.

These and the other criticisms raised by the Power Tool Institute concern the prototype saws that the manufacturers tested. The prototype saws did not address these issues because they were designed to demonstrate the basic technology; they were not engineered to be consumer saws. It was hoped that the manufacturers would address these issues when they designed new saws to implement the technology. However, not one company has even attempted to do

so. Instead, the companies raise these issues in an effort to avoid having to adopt the technology.

A company called SawStop, LLC, is beginning to market a cabinet saw implementing the new technology and addressing these issues. That saw is intended for the consumer and industrial markets and will be mass produced. The undersigned are willing to provide a sample of that saw to the CPSC for testing as soon as it is available, which is expected to be around the end of March 2004.

It is also important to understand that the criticisms mentioned by the Power Tool Institute are primarily implementation issues; they are not criticisms of the underlying technology itself. Specifically, there is no question that contact between a person and a blade can be detected. The only complexity that has arisen is distinguishing extremely wet or green wood, primarily when cutting with a coarse-tooth blade. But this criticism must be viewed in context. The vast majority of all wood cut on table saws is easily distinguishable from a person, even by the detection system on the prototype saws. In other words, only a tiny fraction of wood cut on table saws is sufficiently wet or green to cause even the prototype saws to misfire. For example, wood that has been in the rain or soaked underwater for an hour or two is not sufficiently wet to cause a false trip. In order to cause a false trip on the prototype saws, the wood had to have a high moisture content throughout, such as may be found with freshly milled lumber that is still very green or with wood that has been soaked under water for one or two days. An engineer at Black & Decker reported that they had to dig into the center of a stack of fresh lumber to find a piece sufficiently green to cause a false trip, and even then they had to perform the test within about one hour or the wood would dry out too much to cause a false trip. In any event, the technology has now been refined to distinguish even extremely wet or green wood, as will be shown by the new saw that the undersigned are willing to provide for testing. That distinction is possible because wet wood is much less conductive than a person.

There is also no question that a reaction system can be designed to minimize any resulting injury. Granted, whatever reaction system a saw

manufacturer employs will have to be designed and engineered so that its components are robust and reliable, but that is no different than with any other mechanical or electrical device; it is simply a matter of engineering.

The Power Tool Institute also argues that the technology “will not prevent serious injury in a kickback accident scenario.” PTI Comment, 30. That statement reveals a misunderstanding of the technology. The technology does not prevent injury; it works to minimize injury. The technology minimizes injury by stopping the blade within 3 to 5 milliseconds after contact with a person. The faster a person’s hand is moving into the blade, the further the hand will travel during the 3 to 5 milliseconds and the deeper the cut will be. However, the injury will always be less severe than if the saw did not employ the technology. Thus, while the new technology will not prevent kickback, the resulting injury typically will be far less severe than it otherwise would be.

These arguments from the Power Tool Institute show that existing saw manufacturers are not interested in objectively considering the technology because if they did, then they would risk proving that the issues they now raise could be addressed. If those issues could be addressed, then they would have no excuse for failing to adopt the technology, so they would have to invest what they consider to be a substantial expense to modify their existing saws, and they do not want to incur that expense. Instead, they would rather accept the current number of injuries and continue making saws as they do now. In other words, existing saw manufacturers are putting their heads in the sand to remain ignorant concerning the technology in the hope that they will never have to adopt it. This is precisely the type of situation that warrants CPSC intervention.

The need for CPSC intervention is further illustrated by the fact that Underwriters Laboratories (UL) has decided not to investigate the technology to determine whether new voluntary safety standards are appropriate. On December 31, 2002, Dr. Stephen Gass, the principal inventor of the SawStop technology, submitted to UL a written proposal to modify UL’s safety standards in light of the new technology. UL referred that proposal to its Standards Technical Panel (STP), which is the body tasked with modifying the safety standards. The

STP met and discussed the proposal on February 11, 2003, and concluded it could not revise the safety standards without researching the technology. Dr. Gass offered to provide a saw for testing by the STP, but the STP did not accept that offer because it could not decide who would pay for the testing and UL was unwilling to perform the testing independently.⁵ Accordingly, no revisions were made to the safety standards and no plans were made to investigate the technology further.⁶

It is important to know that many of the members of the STP have access to the very information the STP says it needs to decide whether to modify the safety standards, but they have not shared that information with the STP or with UL. Specifically, Black & Decker, Emerson, Makita, Robert Bosch Tool Corp., Ryobi, and WMH Tool Group all have representatives on the STP and had all tested prototype saws or prototype components implementing the technology well prior to the STP meeting. Thus, the very companies who said the STP needs more information are the same companies that had previously investigated the technology and have the information. Nevertheless, none of those companies offered to provide the information to the STP and UL did not ask them to provide it. The inevitable conclusion is that those companies are not interested in objectively considering the technology.

The Power Tool Institute, UL and others also argue that the petition would require manufacturers to adopt a specific design. That is incorrect. The proposed new standard is clearly worded as a performance standard and many designs

⁵ UL has filed comments to the petition saying they are ready to investigate the technology but that a device employing the technology has not been submitted for evaluation. Those statements are incomplete and misleading. Dr. Gass has repeatedly offered to provide a prototype saw to UL for testing, but those offers have been rejected because UL apparently has no mechanism to independently review new technology. Dr. Gass specifically asked whether UL was proposing to independently investigate the technology to educate the STP so that the STP could determine whether to adopt new standards, and UL said it was not.

⁶ The Compressed Air and Gas Institute has opposed the petition on the ground that "it would be wrong simply to bypass the voluntary standard writing process of the power saw industry by imposing a mandatory Commission standard as requested by the Petition." Letter to CPSC, Oct. 24, 2003. The National Association of Manufacturers also "is concerned that granting this petition would encourage others to bypass this voluntary standards process." Letter to CPSC, Nov. 5, 2003. However, the process for implementing voluntary standards was not bypassed. To the contrary, it was employed, as explained, but without success.

may be implemented to meet the standard. For example, the reaction system may stop a blade from spinning, may retract a blade, or may cover a blade, all of which may achieve the same result but all of which are very different designs.

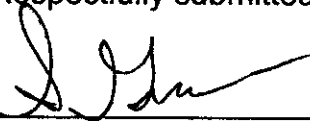
The real objection to the new standard is that it would likely require manufacturers to use proprietary technology for whatever design they adopt, and the manufacturers do not want to pay for that technology. Petitioners agree that the cost of adopting the technology will be higher than it otherwise would be because the technology is the subject of pending patent applications, but that is not a reason to deny the petition. The petition should still be judged by weighing the benefits of the proposed new standard against the costs of adopting it. If the benefits outweigh the costs, then the standard should be adopted regardless of whether proprietary technology is necessary to comply with the standard and regardless of whether the owners of the proprietary technology will benefit, as long as the technology is equally available to all. In this case, the proprietary technology is equally available to all and the owner of the technology will make it available for non-exclusive licensing at a rate no greater than 8% of the wholesale cost of a saw if the proposed new standard is adopted. Thus, the proprietary technology at issue affects only the cost vs. benefit analysis; it does not constitute a justification for denying the petition. Moreover, from a policy standpoint, the owners and inventors of the technology have invested millions of dollars to develop the technology, and it is not unreasonable that they earn a return on that investment.

The Power Tool Institute also argues there are other alternatives to granting the petition, such as improving guarding systems and requiring riving knives to minimize kickback. These alternatives, however, do not provide the type of protection the proposed new standard would provide. Blade guards are commonly removed from table saws because they interfere with the function of the saw, and manufacturers have made no effort to improve the guards despite the fact that everyone agrees better guards are needed. Riving knives will help prevent kickback, but they will have no effect on the thousands of instances

where people accidentally contact the blade for some reason other than kickback.

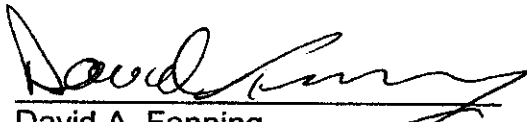
Finally, the Power Tool Institute says the petition should be denied because the existing saw manufacturers "have entered into a joint venture agreement to share their knowledge, technology and resources to conduct research into the development of technology for a blade contact injury avoidance system for table saws." PTI Comment, 40. No specific details are disclosed concerning this "joint venture," but the Power Tool Institute does say that "[t]he goals of the project are to develop an enhanced safety system that is practical, feasible, and cost effective and that can be integrated into a table saw the market accepts." Id. These statements imply that saw manufacturers in fact do recognize a need for a new safety standard such as proposed by petitioners, which is contrary to their arguments that table saws are safe and the accident rate is negligible. In any event, technology such as they describe is available now and ready for implementation; there is no reason to wait for the results of an unspecified "joint venture."

Respectfully submitted,



Stephen F. Gass
22409 S.W. Newland Road
Wilsonville, Oregon 97070

Date: November 24, 2003



David A. Fanning
4020 N.E. 171st Avenue
Vancouver, Washington 98682



James David Fulmer
19930 S.W. 59th Terrace
Tualatin, Oregon 97062

Appendix 1
Calculation of the Number of Injuries
Each Year in the U.S. Involving Bench or Table Saws

The U.S. Consumer Product Safety Commission, National Electronic Injury Surveillance System (NEISS), estimates that bench or table saws and other unspecified saws have been involved in the following number of serious injuries during the last ten years (these statistics are available online at www.cpsc.gov):

Year	Bench or Table Saws, NEISS Product Code 841			Saws, Not Specified, NEISS Product Code 845			Power Saws, Not Specified, NEISS Product Code 872		
	Estimated Total Number of Injuries	Lacerations	Amputations	Estimated Total Number of Injuries	Lacerations	Amputations	Estimated Total Number of Injuries	Lacerations	Amputations
1993	28,147	18,303	2,406	17,512	11,127	475	9,305	5,934	456
1994	27,641	18,241	2,843	16,926	11,610	447	8,869	5,902	464
1995	26,676	17,673	2,294	14,403	10,315	278	7,332	4,750	567
1996	25,975	17,374	2,823	18,027	11,441	284	8,469	5,662	476
1997	23,853	16,636	2,240	20,138	13,585	n/a	8,714	5,691	n/a
1998	33,590	22,848	2,851	24,108	15,847	n/a	9,278	6,095	n/a
1999	32,685	22,585	2,864	25,127	16,358	n/a	8,838	5,946	n/a
2000	32,353	22,253	2,819	25,268	17,286	n/a	8,477	5,767	n/a
2001	31,884	20,415	3,277	24,555	16,258	n/a	9,988	7,469	n/a
2002	33,114	22,105	3,503	23,715	15,998	n/a	7,660	4,910	n/a
Total	295,918	198,433	27,920	209,779	139,825	1,484	86,930	58,126	1,963
Avg.	29,592	19,843	2,792	20,978	13,983	371	8,693	5,813	491

n/a = no data available because in 1997 NEISS stopped providing estimates less than 1,200.

Many of the injuries listed above under Product Codes 845 and 872 undoubtedly involve bench or table saws because bench or table saws are involved in more accidents than any other type of saw. The NEISS data shown in the following table shows that 55.88% of all saw injuries during 2002 involve bench or table saws:

NEISS Product Codes for Saws (excluding chain saws)	Estimated Total Number of Injuries During 2002
830 – Hand Saws	5,378
832 – Portable Circular Power Saws	11,050
841 – Bench or Table Saws	33,114
842 – Band Saws	3,397
843 – Radial Arm Saws	n/a
844 – Power Hack Saws	n/a
863 – Other Power Saws	6,315
864 – Sabre Saws	n/a
875 – Jigsaws	n/a
Total	59,254
Bench or Table Saw Injuries / Total	55.88%

Adding the average number of injuries under Product Code 841 with 55.88% of the average number of injuries under Product Codes 845 and 872 results in the total average number of injuries attributable to bench or table saws each year. The results are set forth below:

Total Average Number of Injuries Involving Bench or Table Saws Each Year	Lacerations	Amputations
46,173	30,905	3,273

The total average number of lacerations and amputations involving bench or table saws each year is 34,178. Thus, at least 74% of the total average number of injuries involving bench or table saws almost certainly involves contact with the blade.

It should be noted that the NEISS statistics represent a minimum estimate of the number of injuries, not a maximum. In particular, the statistics do not include accidents treated in doctor offices, industrial medical facilities, surgical centers, or other non-emergency room settings. In addition, the statistics do not account for the many injuries that do not receive skilled medical treatment, such as injuries treated at home.

Appendix 2
Anecdotal Reports Concerning the Costs of
Lacerations and Amputations from Table Saws

1. "I am the Production Manager for Idaho Correctional Industries. ...The last serious injury in my operation cost an inmate worker a finger and cost the company \$30,000 in claim settlement." Individual Comments of Terry S. Knapp Submitted with the Original Petition, March 3, 2003.
2. "As a hand therapist I have treated numerous table saw injuries. Many people are left with significant dysfunction. The repair and rehab is not only lengthy & painful but at times more than 1 surgery is needed & the cost is very high." Individual Comments of Anita L. Kwak Submitted with the Original Petition, April 2, 2003.
3. "On 31 July 2002 while performing a cutting operation on a 10" table saw, the board kicked back causing my right hand to make contact with the saw blade. My right pinky finger and 40% of the palm of my hand was amputated. ...I suffered 2 months out of work and a total medical cost in excess of \$50,000." Comment of Benjamin O. Powell, July 21, 2003.
4. "I am 56 years old and have been a woodworker for many years. My hand came in contact with a powered table saw blade November 28, 2003 [sic], and I am now a partial amputee. ...My medical bills were just over \$9,000, but my insurance allowed only approximately \$3200 and paid \$2000. ... Every day I am reminded that the true cost is not in dollars, but in my comfort, convenience, and ability to do things I never thought about before." Comment of Stan Thieling, July 22, 2003.
5. "My son, Matthew Gough, injured his left hand while operating a Skil Table Saw. ... The medical bills incurred as a result are...\$78,002.75." Comment of Kerry M. Gough, Aug. 5, 2003.
6. "On August 12, 2002, after working all day building my own house, I went to use my table saw to do some more cutting. As I was cutting my hand slipped causing the index finger tip on my right hand to be cut off. I spent the next four hours in the Emergency Room of the hospital getting it pieced together at a cost of around \$850.00 not to mention my wife freaking out at the site [sic] of my bloody hand. I also watched this happen to my flight instructor as he was using his table saw. It has taken me several months to regain partial use of my finger and the feeling in it." Comment of Tom Hewitt, Sept. 1, 2003.

7. "As a board-certified orthopaedic surgeon and hand surgery specialist, I have a unique perspective on table saw safety. ... The financial and emotional consequences of hand injuries can be absolutely devastating. Beyond just the loss of employment during the initial recuperation period, many of the deep cuts and amputations cause severe permanent impairment. A skilled craftsman may even be reduced to the point of virtual unemployability." Comment of Dr. John Miyano, Sept. 8, 2003.

8. "I first learned about the performance standards that are the basis of the Saw Stop technology soon after suffering a serious injury to my left (dominant) hand in a typical table saw 'kick-back' accident September 15, 2002. ... My initial surgery alone was \$12,000. Direct medical costs of 2 surgeries plus months of therapy bring my accident cost to \$30,000. Adding lost income brings the accident cost to \$75,000." Comment of Michael Davis, Sept. 9, 2003.

Hammond, Rocky

From: Robert Morris [robertm348@comcast.net]
Sent: Tuesday, November 25, 2003 11:57 AM
To: Hammond, Rocky
Subject: Performance Standards for a System To Reduce or Prevent Injuries From Contact With the Blade of a Table Saw (Petition No. CP 03-2)

Although apparently your period for comments on this subject is past, I feel very strongly that this standard should **not** be adopted for numerous reasons:

1. The inventors are seeking to impose this standard not for the safety of woodworkers, but for the profits they would stand to gain at the expense of all woodworkers forced to purchase their invention. Although I am very much in favor of capitalism, this is clearly a case of an inventor trying to ram his invention down the consumer's throats after he found out that it was not going to be bought on the open market!
2. This product is not needed. I have been a woodworker for over thirty years, and have used many different styles of table and radial arm saws, and the worst problem that has ever happened to me is a kickback that occurred when doing something I should not have been doing. Otherwise, I have never, and do not anticipate ever having a problem that this invention would solve. Of all the thousands of woodworkers I have met and known, I have never met one that has had a problem that this invention would prevent!
3. As I understand the product, should someone actually touch the spinning blade to actuate the invention, they will then have to pay a hefty price to replace the actuation cartridge before resuming work. Of course, the replacement cartridge would only be available from the inventors, and it would be severely overpriced. This is totally unsatisfactory, and should not be tolerated by the CPSC, manufacturers of saws or consumers.
4. By far, the most serious potential for injury while using a table saw is a kickback, which this invention cannot and will not prevent. We woodworkers do not want the added cost of this device, do not want the added cost of replacing the actuation cartridge, and do not want the added complexity of this device.

Thank you very much for allowing me to voice my opinion.

Robert Morris
12504 Colby Dr.
Woodbridge, VA 22192-2107
Tel. 703-494-8790

*Saw
Comment* 66**Stevenson, Todd A.**

From: Rick Baker [rbaker13@att.net]
Sent: Tuesday, December 02, 2003 10:46 AM
To: Stevenson, Todd A.
Subject: SawStop support

I just wanted to express my support for the technology developed by SawStop and encourage you to support their efforts in making table saws safer. The intransigence of the tool industry executives reminds me of the automotive industry's refusal to include seatbelts in their cars back in the 40s & 50s because they believed it would cause the public to view cars as dangerous. The tool industry executives believe that safety doesn't sell, but I believe they are wrong. After seeing their online demonstrations, I for one have decided that I will never buy a table saw without this technology.

Thank you,

Rick Baker
1721 SW 30th St.
Topeka, KS 66611-1912

12/3/2003

*Severt
late comment* 67

Stevenson, Todd A.

From: Information Center
Sent: Friday, March 05, 2004 4:29 PM
To: 'ers@charter.net'
Subject: FW: Petition CP 03-2,

Hello,

We have forwarded your concerns to the appropriate office and they will contact you if necessary.

mjl

-----Original Message-----

From: Eddie Severt [mailto:ers@charter.net]
Sent: Friday, March 05, 2004 9:14 AM
To: Information Center
Subject: Petition CP 03-2,

Sirs,

Regarding the above petition, I am of the opinion that this is an attempt to force mandatory regulation of a specific safety device solely for the profit of the only company that makes such a device. The mandatory added cost of approximately \$400.00 per saw would effectively block me from purchasing a new saw that incorporated this safety device, even if I would want it. If you study the individual cases of injury caused by table saws, it becomes apparent that "kickback" of the material being cut is the greatest cause of injury. I would like to see this product as an option on new saws, but I must strongly protest it being made a mandatory modification to all products in this area. Also, as proposed, this would not enhance workplace safety as most production shops use saws larger than the 12" suggested in the petition as the maximum size. I thank you for your careful consideration of this matter.

Sincerely,
Edward Severt
Box 275
Bolt, WV 25817

*Saw
lets comment* 68

Stevenson, Todd A.

From: Information Center
Sent: Friday, March 05, 2004 4:50 PM
To: 'bmcdonau@yahoo.com'
Subject: CP 03-2

Hello,

We have forwarded your comments to our Office of the Secretary (OS). If additional information is needed, a representative from this office will respond to you directly.

Please be advised that you may obtain CPSC publications, recalls and general safety related information via our web site at www.cpsc.gov. Click on the "Search" icon and type in your topic. You may also file an incident report via the web site mentioned above. If you have additional inquiries, you may call our toll-free hotline at 1-800-638-2772, Monday - Friday, 8:30am to 5:00pm, Eastern Standard Time. Press 1 to begin and then press 3 to speak with a representative.

tm

-----Original Message-----

From: dennis mcdonough [mailto:bmcdonau@yahoo.com]
Sent: Friday, March 05, 2004 10:16 AM
To: Information Center
Subject: CP 03-2

Dear Sir:

To put it bluntly, I think this is a stupid idea. Yes, table saws are inherently dangerous. However, a good splitter and blade guard assembly will keep operators safe in most situations. In those cases where the procedure requires removal of either the blade guard or splitter, there are other safety devices, such as push sticks and crosscut sleds that can be used to mitigate the danger involved in the operation. I believe, and am sure you have the statistics to back it up, that nearly all the accidents caused by table saws involve improper use of available safety equipment.

I see this as nothing more than an end round around the market place. Saw Stop has been trying to convince manufacturers and consumers to buy their technology for several years now and has failed miserably. Now they are attempting to create a market through legislation.

Sincerely,

Dennis McDonaugh
434 Elmhurst Avenue
San Antonio, TX 78209

Do you Yahoo!?

Yahoo! Search - Find what you're looking for faster.

*Saws
late comment***Stevenson, Todd A.**

From: Information Center
Sent: Friday, March 05, 2004 4:52 PM
To: 'Bkarow@banknorth.com'
Subject: Comment on petition CP 03-2

Hello,

We have forwarded your comments to our Office of the Secretary (OS). If additional information is needed, a representative from this office will respond to you directly.

Please be advised that you may obtain CPSC publications, recalls and general safety related information via our web site at www.cpsc.gov. Click on the "Search" icon and type in your topic. You may also file an incident report via the web site mentioned above. If you have additional inquiries, you may call our toll-free hotline at 1-800-638-2772, Monday - Friday, 8:30am to 5:00pm, Eastern Standard Time. Press 1 to begin and then press 3 to speak with a representative.

tm

-----Original Message-----

From: Karow, Bill [mailto:Bkarow@banknorth.com]
Sent: Friday, March 05, 2004 12:04 PM
To: Information Center
Subject: Comment on petition CP 03-2

In reference to the above petition, I oppose its adoption. Table saw safety is an area of concern for all woodworkers, as is safety when using any power or hand tools. But the Sawstop petition is an attempt to force adoption of an unproven solution, and to the distinct financial benefit of the company who produces it.

An even greater area of concern is kickback. Mandating incorporation of European-style riving knives (essentially splitters that wrap around the back of the blade) is a much lower cost safety improvement that addresses the larger number of injuries caused by kickback. I would support adoption of regulations that improve the design of currently produced splitters or preferably to replace them with riving knives.

As proposed, the Sawstop petition would do little or nothing to enhance workplace safety, since most cabinet shops use saws larger than the 12" size mentioned in the petition. I oppose its introduction via legislative means, and instead would encourage Sawstop to seek sufficient funding to bring their own saws to market incorporating their own proprietary technology. Let the marketplace decide if this technology is reliable enough for use, and worth the significant additional cost.

Please do not use your CPSC authority to force adoption of unproven technology at significant added expense to purchasers of any saws, a technology that Sawstop was unable to sell on their own.

Thank you.

3/8/2004

Bill Karow
30 Cornerbrook Circle
Windham, ME 04062

Saw
late
comment 70

Stevenson, Todd A.

From: Ernest Kuhn [erkuhn@charter.net]
Sent: Monday, March 08, 2004 1:36 AM
To: Stevenson, Todd A.
Subject: PETITION CP-03-2 COMMENTS

tstevenson@cpsc.gov
 Mr. Todd A. Stevenson
 Secretary to the Commission
 U.S. Consumer Product Safety Commission
 Washington, DC

Dear Mr. Stevenson,

I include comments to the subject petition that I have sent to the Commission. Could you please provide its current status? Thank you so much.

Respectfully submitted,

Ernest Kuhn
 P.O. Box 1366
 Richland, WA 99352
 (509) 627-2522

U.S. Consumer Product Safety Commission
 info@cpsc.gov

Petition CP-03-2, Requesting Performance Standards for Table Saws - Part 1 (0841) and Part 2 (0841).

Sirs,

Regarding the above petition, I am of the opinion that this is a blatant attempt to force a federally imposed regulation for the mandatory incorporation of a specific safety device solely for the profit of the only company that holds a patent for said device. There being no other patented design of a similar nature, this would constitute a federally sanctioned commercial monopoly. I believe monopolies are illegal, most particularly if resulting from federal rule-making activity?

Page 8 of the petition states in part, **"...SD3 will make the SawStop technology available for license at a rate of not more than 8% of the wholesale cost of a saw if this standard is adopted..."** If this petition were approved, the commission must consider that it would federally mandate different license costs for different saw manufacturers since each of their products has a different wholesale cost to their retailers.

In fact, this could constitute federally mandated **PRICE FIXING/CONTROL** wherein one manufacturer's license fee per unit would be different than some other manufacture's license fee, creating an unfair commercial advantage/disadvantage for the license of the same product. Of an even more disparate nature would be the case of a manufacturer with more than one model of table saw wherein the license fee would be different for each model of saw, given any differences in wholesale cost!

There is the additional risk of potential litigation brought against the US Consumer Product Safety

3/8/2004

Commission by those personnel using the mandated safety device equipped table saws when/if they are subsequently injured. The common public expectation regarding a federally mandated "saw stop" type of safety device would reasonably be, "No Injury". However, the petitioners themselves state on page 6, 2nd paragraph, "At that speed, the typical resulting injury would be a relatively minor nick. In contrast, the same accident without SawStop could easily result in the loss of several fingers⁴." Footnote 4 reads in part, "It is important to understand that SawStop will not prevent all serious injuries or even all amputations from table saws.....The severity of an injury will depend on the speed at which a person contacts the blade. Additionally, like any mechanical or electrical system, SawStop may have some failures..."

It appears that the footnote statement ratifies the concept of "user responsibility" and an abrogation of their responsibility regarding the safety of their designed safety product e.g., "may have some failures..."

You are urged to deny the petition on the following basis:

Petitioner failed to provide supporting documentation to substantiate the Estimated Cost of Injuries on Page 4 e.g. a credibility issue regarding claimed costs.

The Commission cannot find preliminarily that:

Table saws without their product, SafetyStop, present an unreasonable risk of injury¹

A mandatory performance standard is reasonably necessary to eliminate or reduce the risk in question²

Failure to begin rulemaking would unreasonably expose consumers to the risk of injury in question³

- 1 16 CFR 1051.9(a)(1).
- 2 16 CFR 1051.9(a)(2).
- 3 16 CFR 1051.9(a)(3).

Respectfully submitted,

Ernest Kuhn
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June 12, 2006

Harold D. Stratton
Chairman
U.S. Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

RE: Petition CP03-2 Public Meeting Held May 30, 2006

Dear Mr. Stratton:

On behalf of the Power Tool Institute ("PTI"), I attended the May 30, 2006 public meeting requested by Mr. Stephen Gass and others concerning the above-referenced Petition. You, and several members of your staff, also attended the meeting. I serve as Legal Counsel to the Power Tool Institute and am writing on behalf of PTI to address several statements and representations Mr. Gass made during that meeting.

The first matter PTI wants to clarify concerns the reasons the table saw industry has not licensed Mr. Gass's technology. Mr. Gass suggested the reason industry has not licensed his SawStop technology is because the table saw manufacturers somehow have colluded to avoid licensing the technology and to drive Mr. Gass and his SawStop company out of business. In fact, nothing could be further from the truth. Mr. Gass's statements in this regard are nothing more than baseless rhetoric designed to further Mr. Gass's attempt at monetary gain. The fact is that each manufacturer evaluated and assessed the technology, some more extensively than others, and each independently concluded that licensing the technology was not appropriate, particularly under the terms demanded by Mr. Gass. All of the table saw manufacturers identified significant problems associated with the technology, including such things as a propensity to inadvertently activate when cutting high moisture content wood.¹ Additionally, at the time of each company's evaluations, the technology was completely unproven and untested; only a prototype had been produced, and it had not been subject to any real world testing over time as would be necessary before any table saw manufacturer would introduce new technology such as this. The table saw manufacturers realized that, in order to determine if the SawStop technology could feasibly be incorporated into table saws and function reliably in a real world environment, significant additional evaluation, research, and development would be required. Although the concept of an electronic guard was interesting to industry members, the precise methodology offered by SawStop was inconsistent with industry's safety strategy of preventing contact with the blade. Despite this, and despite the other obvious shortcomings of the technology, industry recognized that the SawStop technology may, if developed further, assist in the engineering of an electronic guard that prevents contact with the blade. With this in mind,

¹ Many of the same problems identified by the table saw manufacturers were also identified by the German BIA and French INRS in their reports attached to Mr. Gass's initial Petition.

several manufacturers independently attempted to enter into negotiations with Mr. Gass for a license agreement so further development could be pursued. The end result was that not one manufacturer could come to terms with Mr. Gass.

A significant reason no manufacturer entered into a license agreement with Mr. Gass relates to Mr. Gass's unprecedented and exorbitantly high royalty demand of 8% of the wholesale price of each saw. This royalty rate was extremely high under any circumstances and was particularly egregious in light of the fact that his technology had inherent design problems that had to be overcome, and the technology was, and still is, unproven in time and use.

In addition to the unreasonable royalty rate demanded by Mr. Gass, Mr. Gass would not stand behind his technology and refused to indemnify manufacturers in the event the design did not work as promised. Mr. Gass also insisted upon retaining the intellectual property rights to any improvements to the operation, functionality, or design, which would have to be undertaken by the table saw manufacturers if there was to be any chance of incorporating the technology on mass produced table saws. In other words, Mr. Gass wanted the fruits of the manufacturers' labor in developing the technology. These issues, together with Mr. Gass's unreasonable demand for an 8% royalty for his undeveloped technology, insured that no table saw manufacturer could license the technology. Despite Mr. Gass's assertion that industry has teamed up against him, the true reason that no table saw manufacturer has licensed his technology is directly attributable to Mr. Gass's unreasonable motivation for monetary gain coupled with the inherent problems with his technology. It is ludicrous to suggest that, if Mr. Gass's technology is the panacea he claims, table saw manufacturers would forego the technology and, instead, join forces to drive Mr. Gass out of business.

Absent any basis whatsoever, Mr. Gass also espoused that industry "stuck its head in the sand" concerning improvements to table saw safety. Far from "sticking its head in the sand", the entire table saw industry has pooled both monetary and engineering resources over the last several years in a focused effort that has resulted in significant advances in table saw safety, including the new UL 987 requirement that a rise and fall riving knife be included on all table saws and the anticipated acceptance by UL of new and improved guarding criteria that will greatly increase the incidence of guard usage. As referenced in previous correspondence, the injury rate on table saws has continued to decline over the last several years, and industry anticipates a continued decline with the new UL 987 requirements relating to the riving knife and improved guarding systems. Industry has also devoted significant engineering and monetary resources to investigate alternative hazard avoidance systems. Due to the inherent problems in getting this technology to function consistently and reliably in a real world environment, as well as Mr. Gass's extensive patent web, industry efforts in this regard have not yet proven successful. Nevertheless, the fact is that industry has aggressively pursued improvements to table saw safety and will continue to do so in the future. In the end, Mr. Gass's assertion that industry has "stuck its head in the sand" is not only baseless, but is belied by the facts.

On a related topic, Mr. Gass suggested at the meeting that he has made significant improvements in his product since it was initially presented to the various power tool manufacturers for evaluation. In this regard, he implicitly acknowledged that the device he submitted for evaluation did, in fact, have shortcomings. In an effort to discern whether Mr. Gass has, in fact, made improvements to the SawStop technology over what was previously evaluated, various table saw manufacturers have recently attempted to purchase an "off the line" SawStop table saw for in house testing and evaluation, which is a usual and customary practice

among all manufacturers. Mr. Gass has expressly refused to sell a SawStop table saw to any table saw manufacturer.² In one instance, Mr. Gass actually canceled an order individually placed by a table saw manufacturer employee once Mr. Gass learned that the individual was employed with a table saw manufacturer. Thus, although Mr. Gass claims to have made numerous improvements to his technology, it is not known if those improvements have cured the inherent problems initially identified by various table saw manufacturers. Mr. Gass's cabinet table saw³, which is the only saw he sells, is not a consumer model and sells for over \$4,000.00 fully equipped. It has only been in the market for a little over a year. The reliability and effectiveness of the technology remains unproven. Will it work in 3, 5, or 10 years under real life conditions? We do know, however, that Mr. Gass made certain concessions at the May 30, 2006 public meeting that leads one to believe that his technology still has significant problems with inadvertent activation.

During the above-referenced meeting, the CPSC staff pointedly asked Mr. Gass about the rate of inadvertent activation or false trips. Mr. Gass refused to answer the question directly and, instead, attempted to define false trips as an instance where the unit activated when nothing touched upon the blade. Mr. Gass refused to provide any information as to the frequency of false trips where users were actually cutting wood and the wood caused the braking mechanism to activate. Although Mr. Gass refused to give any specific information about the frequency of false trips, he acknowledged that even his current production models must be placed in the "bypass mode" when one is cutting pressure-treated lumber that is "wet". Putting aside the fact that an operator can merely bypass the safety technology whenever he or she desires, the inherent problem with this scenario is that the user is left to determine when the wood is sufficiently "wet" in order to justify placing the SawStop technology in the bypass mode. There is little doubt that an operator is going to err on the side of placing the unit in the bypass mode anytime there is a chance that the unit could false trip. In those instances where the operator experiences a false trip, the operator will be forced to purchase a replacement braking cartridge costing \$69.00 to \$89.00 as well as a new blade costing up to \$150.00. In a work place setting, significant down time with associated additional costs also will be incurred until the saw can be put back into operation. As such, it appears as though the phenomenon of inadvertent activation or false trips continues to be a significant problem with the SawStop technology. This is a critical problem for table saw manufacturers because marketing research shows that consumers will be extremely intolerable of even a minimal number of false trips. It is also important to note that, to date, Mr. Gass has only introduced an industrial cabinet saw model, which, as noted above, sells for in excess of \$4,000.00 fully equipped. This large industrial cabinet saw is customarily used in a relatively controlled environment. Specifically, this saw is a large heavy unit that remains in place once it is set up. In contrast, the contractor model demonstrated by Mr. Gass at the May 30 meeting, which is not yet for sale, is a much more portable unit. Often, the unit is transported from job site to job site by contractors. A contractor saw will typically be used in more varied and harsher environmental conditions than the cabinet saw. There is absolutely no data on the reliability of the technology under these circumstances. Furthermore, a contractor saw is much more likely to be used to cut wet and pressure-treated lumber than would

² Instead, Mr. Gass has offered to allow table saw manufacturers to test one of his units, providing that the testing take place in Mr. Gass's laboratories under Mr. Gass's supervision and observation. This would not allow any table saw manufacturer to do a complete and independent evaluation, and would force the manufacturers to educate Mr. Gass as to their protocol, evaluative approach, and problems identified.

³ Parenthetically, Mr. Gass affirmatively stated to the Commission at the public hearing held on May 30, 2006 that his cabinet saw had been "CSA certified". PTI believes this statement to be false. PTI has been advised by the Canadian Standards Association that it has no record of a SawStop certification.

be the case with a cabinet saw due to their regular use for decks, patios, and outdoor furnishings and construction. There can be little doubt that the frequency of false trips as well as the frequency of use of the bypass mode, will escalate exponentially with the use of the more portable contractor saw.

PTI would next like to address Mr. Gass's statements regarding table saw injury data and the costs associated with implementation of the SawStop technology. In statements made by Mr. Gass together with a handout prepared by Mr. Gass and disseminated to the CPSC at the public meeting (a copy of which is attached as Exhibit A), Mr. Gass cited to a figure of 65,000 table saw injuries per year and an annual societal cost of \$2,000,000,000 for these injuries. The figures cited by Mr. Gass appear to have come from the June 2003 CPSC Hazard Screening Report Power Tools & Workshop Equipment. As I am sure you are aware, the actual number of emergency room visits for table saw injuries as predicted by the NEISS database system was 31,884 for the year 2001, which is the year referenced in that report. In the June 2003 CPSC report, the CPSC, using the Injury Cost Model Database, further projected that there was a total of 64,651 "medically treated" injuries relating to table saws in the year 2001. This appears to be the basis for Mr. Gass's statement that there are 65,000 injuries on table saws per year.

Putting aside the fact that the CPSC's projection of approximately 65,000 "medically treated" injuries relating to table saws is not intended as an accurate estimate of actual injuries, the number bears no relation to the types of injuries that potentially could be prevented or lessened with the SawStop technology. If one accepts as true the NEISS data projection of 31,884 emergency room treated injuries from table saws in 2001, one must conclude that the other non-emergency room visit injuries that comprise the balance of the approximately 65,000 "medically treated" injuries are not significant blade contact injuries. Stated simply, if a user sustains a blade contact injury with the blade turning – the only type of injury SawStop has a potential for preventing – that individual most certainly would go to the emergency room. Mr. Gass's attempt to use the June 2003 CPSC estimate of 64,651 "medically treated" injuries in assessing the impact of the SawStop technology is therefore misleading. Likewise, Mr. Gass's reference to the CPSC estimate of nearly \$2,000,000,000 in societal costs from table saw injuries is equally misleading and perhaps disingenuous. In the June 2003 report, the CPSC utilized the projection of 64,651 "medically treated" table saw injuries and applied the Injury Cost Model ("ICM") computer database to arrive at a figure of \$1,966,863,160 in medically attended injury costs for table saw injuries. Mr. Gass cites this figure as an actual estimate of societal cost relating to table saw injuries. In reviewing the June 2003 report, this is clearly not what is intended or even expressed by the CPSC. In particular, the CPSC states in footnote 5 of the report that:

"These estimates are indices, **not actual estimates** of expected injury cost reduction...The figures in the table do not represent any actual estimate of the cost associated with any of the product groups for a specific year. They were developed, using the data available, to provide indices for the purpose of comparison."

After misrepresenting that the \$2,000,000,000 figure is the annual society cost from table saw injuries, Mr. Gass goes on to state that the first year benefit from adopting a standard requiring SawStop technology would be \$400,000,000. Mr. Gass's estimate in this regard is fundamentally flawed in numerous respects and is completely unsupported. As a threshold matter, he assumes that, in the event that his Petition is granted and all saws are required to

incorporate the SawStop technology, 20% of all table saw injuries will involve a SawStop saw (see Exhibit A). This apparently is based on data contained on Page 13 of the June 2003 CPSC report which states that of **all** saw injuries (not limited to table saws) that were evaluated, one out of every five saws (20%) involved were one year old or newer. Mr. Gass fails to recognize that percentage is a subset of the **42% that were ten years old or less**. Thus, the actual figure for saws that were one year old or newer derived from the data in the June 2003 CPSC report is not 20%, but is slightly less than 8 ½ %. We must also keep in mind that these statistics were **based on only 225 actual reports of all⁴** saw injuries occurring over only a **three-month period in 2001**. In arriving at his figure of \$400,000,000 on Exhibit A, which Mr. Gass represents as the first-year benefit from adopting the SawStop technology, Mr. Gass erroneously applies the 20% figure to the \$2,000,000,000 societal cost projection contained in the June 2003 CPSC report. In the final analysis, Mr. Gass's statement that there will be a first-year benefit of \$400,000,000 by adopting the new standard is completely baseless and unsupported. Not only is the 20% figure wrong, but his reliance on the figure of \$2,000,000,000 as an actual estimate of injury costs is misplaced.

Likewise, Mr. Gass's calculations in his handout relating to the industry cost to implement the technology is equally flawed. First, he provides a figure of \$200,000,000 as the "estimated total annual U.S. market for table saws". There is no authority cited for this figure. Next, Mr. Gass cites to Page 34 of the Power Tool Institute Comment to Petition CP03-2 for the proposition that the one-time cost to saw manufacturers to redesign saws to accommodate the new technology will be \$70,000,000. In fact, a review of the Petition at Page 34 and elsewhere does not reveal support for that figure. The true cost for manufacturers to implement the design is not completely known at this time. It could easily far exceed \$70,000,000 if you include research and development, as well as other costs relating to replacement of current production equipment. The end result is that, again, the figures contained in Mr. Gass's handout are inaccurate, misleading and unsupported.

PTI also wants to correct Mr. Gass's statements at the hearing regarding the potential of the SawStop technology to prevent injury from kickback. According to Mr. Gass, he believes that a kickback accident scenario does not present a different accident scenario than any other blade contact injury. Mr. Gass says that the SawStop technology will prevent severe injury during kickback in the same manner as in his hot dog demonstration. This is not only contrary to what Mr. Gass has stated previously, but is also contrary to common sense and the laws of physics. Attached as Exhibit B is a response by Mr. Gass to a letter to the editor in the January, 2004 Woodshop News. The writer, an engineer from California, had taken the position that SawStop would not prevent most blade contact injuries that occur as a result of kickback. Mr. Gass responded by acknowledging that, "certainly, if the user pushes hard toward the blade and the wood is suddenly displaced, the hand would slip forward into the blade at a speed sufficient to cause more than a 1/16th inch nick – perhaps even amputation – **even with SawStop**" (emphasis supplied). Mr. Gass has also acknowledged in other forums, including in his Petition to the CPSC, that "SawStop will not prevent all serious injuries or even all amputations from table saws" (see p6 fn4 of Petition).⁵

In response to questioning at the public hearing, Mr. Gass attempted to minimize the injury potential from kickback by analogizing the accident scenario to pulling a tablecloth out from

⁴ Only 73% of the injuries involved table saws.

⁵ The Owner's Manual for the SawStop cabinet saw also states, "[i]t is possible to be very seriously injured even with the SawStop system." (see SawStop Owner's Manual at Page 11).

under silverware on a table. Essentially, he argued that the hand remains in place while the wood is propelled out from under the hand during kickback. Again, this is completely contrary to what Mr. Gass has stated in writing. On Page 4 of Mr. Gass's Petition, he acknowledges that during kickback, the blade "propels the work piece back toward the user at a high velocity. When this happens, the user's hand may be carried into the blade because of the sudden and unexpected movement of the work piece." According to Mr. Gass in his original Petition, the SawStop technology only results in minimal injury as depicted in the hot dog demonstration at a feed rate of approximately 12 inches per second. During kickback, the approach to the blade can be as high as 200 inches per second, in which case a severe injury, including an amputation, can occur with the SawStop technology. Significantly, Mr. Gass acknowledged at the public meeting that up to 40% of all table saw accidents are from kickback.⁶ Mr. Gass also does not dispute that the SawStop technology does nothing to prevent kickback. In contrast, the likelihood of kickback and any resulting injury is extremely unlikely if the saw is equipped with the rise and fall riving knife and barrier guard assembly as required by UL 987. We must not lose sight of the fact that the barrier guard, when in use, remains the single most effective mechanism to prevent injury on a table saw. Although, admittedly, there are no statistics currently available, common sense dictates that the user of a SawStop equipped table saw is less likely to utilize the barrier guard, falsely believing that, if an accident happens, the worst injury he will get is a nick in his finger.⁷ This certainly is not the case when there is a rapid approach to the blade such as can occur with kickback. In that case, the barrier guard will protect the operator.

The final issue PTI wants to address concerns Mr. Gass's statements regarding his motivation for pursuing the Petition. When questioned as to why he would want the CPSC to regulate him out of a competitive advantage, Mr. Gass essentially suggested that he is not in this for the money, but rather is motivated by the "ethical issue" of having the technology available to all consumers. In the course of these discussions, Mr. Gass also suggested to the Commission that his technology is only one way to meet the standard and that manufacturers would be free to develop their own technology. Mr. Gass's statements in this regard are false and made to mislead his audience. As referenced above, Mr. Gass has insisted from the beginning on an 8% royalty based on the wholesale price of the product. Even with technology that has been proven feasible over time, this royalty rate is usurious and unprecedented. There can be little question that

⁶ This figure is consistent with data referenced in the May 2003 CPSC report entitled "Injury Associated with Stationary Power Saws". In that report, which sampled all saw injuries over a three-month period in 2001, 28% of injuries occurred during kickback and an additional 11% occurred when the saw blade caught or jammed on the work piece. Interestingly, data from the May 2003 CPSC report also show that only 13% of the injuries resulted when the operator was reaching for something and contacted the blade and an additional 41% resulted from inadvertent contact with the blade during the cutting operation.

⁷ The unusually high accident rate on Mr. Gass's SawStop table saws suggests that users of his saws are not using the barrier guard supplied with the saw. Mr. Gass's has represented that he has sold 2,000 cabinet saws in approximately the last year and a half and that the users of these table saws have been involved in 50 blade contact accidents of which Mr. Gass is aware. This is an accident rate of approximately one accident for every 40 SawStop table saws in the market. In contrast, PTI estimates that there are nearly 10,000,000 traditional table saws in use in the market place today. Even if one assumes the accuracy of the NEISS data, there were approximately 39,000 emergency room visits from table saw injuries in the year 2004. Certainly, not all of these were blade contact injuries. In reviewing the data on the 692 actual accidents reported through the NEISS system in 2002, only 70% involved blade contact injuries. Even if one assumes that there are 30,000 blade contact table saw injuries per year, which is a reduction of only 25% of the approximately 40,000 reported in 2004, that yields an accident rate of one for every 333 table saws in use. As any study of the accident data shows, when the barrier guard is in use, the likelihood of a blade contact injury is very low. As such, it appears as though users of the SawStop cabinet saw are using the supplied barrier guard at a significantly decreased rate when compared to use of the barrier guard on more traditional table saws.

Mr. Gass and the SawStop corporation are motivated by monetary gain, not ethics. This is why Mr. Gass and his company have filed broad and far reaching patent applications that exceed the scope of the SawStop technology. Despite Mr. Gass's representations to the Commission at the May 30, 2006 meeting that his technology is only one way to meet his proposed standard, Mr. Gass has been quoted as stating, "[w]e believe that it will be difficult to come up with anything that was outside the scope of our patents." (The Oregonian, December 23, 2004, attached as Exhibit C). Mr. Gass's announcement to the Commission that he is primarily motivated by ethical and societal concerns is not only belied by his prior statements and unreasonable contract terms, but also by his actions in constructing a broad and intricate patent web to preclude anyone from complying with the proposed standard without agreeing to his exorbitant 8% royalty rate. Mr. Gass has also stated on numerous occasions that the SawStop technology was easily developed in his garage and that industry should have developed the technology on its own many years ago. If this were true and if Mr. Gass's true motivation was ethical and societal concerns, and not monetary gain, then why does Mr. Gass continue to insist on an unreasonably high royalty rate of 8% to license his technology? The answer is obvious.

In sum, any further action by the CPSC on Mr. Gass's Petition would result not only in the granting of an impermissible design patent, but also would grant Mr. Gass a virtual monopoly in terms of compliance with the standard. Who knows what Mr. Gass may demand in terms of a royalty if that were to occur. Alternatively, Mr. Gass would not have to license the technology to anyone and, instead, theoretically could choose to market and sell the only saw that would comply with the new standard. This certainly is not the intent of the Consumer Product Safety Act. As the Commission is aware, there is a valued and longstanding voluntary standard procedure currently in place. UL 987 has been recently revised to require new safety features for table saws and, in short order, will undergo further revisions enhancing the safety requirements for table saws. PTI is confident that the new and improved guarding requirements to be included in UL 987, as well as the requirement for a riving knife, will have a far greater impact on table saw safety than would mandating SawStop technology. As stated by David Thiel, a professional woodworker with many years experience, in an October 2005 article on SawStop in *Popular Woodworking*, "[i]n fact, we all agree that this one feature (referring to the riving knife) is probably a more important safety feature than the SawStop mechanism (a copy is attached as Exhibit D)."

In the end, the CPSC should allow consumers to determine whether they are willing to pay the extra costs associated with the SawStop technology. Mr. Gass's SawStop saws are on the market, and, according to Mr. Gass, he will soon be offering a consumer oriented contractor saw that will be available to the public, albeit at a \$200 to \$400 price premium. If the technology is as good as Mr. Gass claims, consumers can decide whether they are willing to pay a \$200 - \$400 premium to have the SawStop technology on their saw. The Government should not impose that on every consumer, thereby bypassing the existing voluntary standards environment in which the table saw manufacturers have, and continue, to operate. It would be inappropriate for the government to impose a single technology, in an industry that already devotes substantial resources to the development of voluntary standards and the safety of the consumer. Furthermore, the Commission should not facilitate Mr. Gass's clear plan to use it to his monetary advantage. Finally, Mr. Gass has represented that his desire is to incorporate the SawStop technology on all power tools, including routers, band saws, circular saws, and miter saws, as well as on other consumer products such as sewing machines. There is little question that if the Commission allows Mr. Gass to proceed any further on his request to have the Commission mandate his

Harold D. Stratton
June 12, 2006
Page 8 of 8

technology, he will be back to the Commission year after year seeking an ever increasing monopoly.

The power tool industry has a history of dedication to responsible development of its products, and an ongoing dedication to provide not merely the appearance of safety using unproven gismos, but the most appropriate design for the real needs of the consumer, as evidenced by our current cooperative ventures undertaken with the assistance of the Power Tool Institute.

In closing PTI again respectfully requests that the CPSC deny the Petition CP03-2.

Sincerely,



Art Herold
Webster, Chamberlain & Bean

SMY/cl
enclosure
cc: Patsy Semple
PTI Board of Directors
PTI Joint Venture – Mechanical Guarding
PTI Joint Venture Committee

11

**Handout for the CPSC Open Meeting re Petition CP 03-2
May 30, 2006**

**Actual Costs of Additional Components Necessary to Implement the
Technology in a Contractor Saw**

Printed circuit board for the brake cartridge, including a digital signal processor and all other electrical components	\$19.00
Power module printed circuit board	\$12.00
Mechanical components and assembly of the brake cartridge	\$8.00
Modifications to switch box	\$5.00
Modifications to arbor assembly	\$5.00
Cable between switch box and brake cartridge	\$4.00
Mounting bracket for brake cartridge	\$1.00
Total	\$54.00

Benefit and Cost Analysis for the First Year

Benefit Calculation:

Annual societal costs from table saw injuries (CPSC report dated 6/03)	\$2,000,000,000
% of table saws that are 1 year old or newer involved in accidents (CPSC report dated 5/03)	20%
First year benefit from new standard (\$2,000M x 20%)	\$400,000,000

Cost Calculation:

Estimated total annual US market for table saws	\$200,000,000
Assumed % retail price increase due to new technology, including any additional cost of spare brakes and blades due to non-finger actuations of the brake (this percentage is drastically overstated to show that the benefit exceeds the cost under any conceivable price increase)	100%
Maximum one-time cost to saw manufacturers to redesign saws to accommodate the new technology (Comment of PTI to Petition, p. 34 11/03)	\$70,000,000
First year cost of the new standard (\$200M x 100% + \$70M)	\$270,000,000
Total first year net benefit	\$130,000,000

LETTERS

Math doesn't add up

Re: Letter to the editor, "A three-finger difference," by Stephen F. Gass in the Nov. 2003 issue.

Mr. Gass is either dishonest, or has never operated a table saw or experienced a kickback. His figures are without reason.

No one feeds a hand directly into the saw blade at 1 ft./second. They place their hands out of the path of the blade.

Hand injuries occur as a result of kick-out or kickback: The hand was pushing the work piece when kickback occurs; the hand pressure was no longer resisted by cutting of blade; hand moves uncontrollably and quickly into saw blade.

There is no deceleration time. The "4 millisecond" time is the reaction-time

of the SawStop sensor and action of the stop device. Without a blade guard and anti-kickback fingers, woodworkers will suffer an injury significantly worse than 1/16" cut.

Please, let's stop the B.S. and funny math. Ask Mr. Gass for test data relating to potential injuries during kickback.

Again, I ask that focus be placed on using a blade guard and appropriate safety measures, and not on devices which add new danger to table saws.

Thomas S. Pilchowski
Riverside, Calif.

Gass, president of SawStop, responds:

I have used table saws for over 30 years and have experienced kickback on more than one occasion. I have also personally seen the shortened fingers resulting from accidents where users have simply pushed their hand through the blade at a foot per second or less. My own father had such an accident, although thankfully it did not involve amputations. A doctor I know wasn't so lucky — he lost the ends of three fingers to just this type of accident.

What happens to a hand during kickback depends on where it's placed when the kickback occurs, how much pressure is being applied in what direction, and a host of other factors. Due to obvious potential danger presented by trying to recreate these types of accidents, it's impossible to collect much hard data on exactly what happens to a hand during a kickback accident.

Nonetheless, we can consider the potential forces and likely effects to get an idea of what can happen. Certainly, if the user pushes hard toward the blade and the wood is suddenly displaced, the hand could slip forward into the blade at a speed sufficient to cause more than a 1/16" nick — perhaps even amputation — even with SawStop. However, even under those circumstances the injury will be far less than would occur without something like SawStop. I met one woodworker whose hand was split from the tip of the index finger all the way to the wrist when his hand slipped forward suddenly while cutting a slick-surfaced piece of material. No doubt this would still have been a serious injury even with SawStop. However,

it likely would have been a cut about 1/4" deep at the tip of one finger rather than the horrifying 6" long kerf up to the wrist that actually occurred.

I agree that the use of blade guards and kickback protection devices should be encouraged as primary protection against accidents. This is one of the reasons SawStop includes European-style riving knives in our saws. SawStop has also spent a great deal of effort developing a substantially better blade guard than typically found on table saws in the United States. The SawStop system itself is secondary protection to minimize injury in the event of an accident — it does not prevent an accident. Of course, as many others have said, the most important safety device is carried around between your ears. However, SawStop is critical for those instances where all the other accident prevention devices have failed for one reason or another — as happens around 100 times a day to woodworkers using table saws in the United States, seven days a week, 52 weeks a year, year in and year out.

Four letters are welcome
For publication, letters should be
sent to the address and
e-mail address listed below.
Editor, SawStop, 1000
Woodmen New York Building
Road, Essex, CT 06026. E-mail:
letters@sawstop.com

JDS AIR-TECH and Dust-Force

January 2004 Woodshop News.

The Oregonian

Safety hits a block

Thursday, December 23, 2004

TED SICKINGER

The Oregonian

The table saw, many woodworkers say, is the most dangerous tool they own. Every year, thousands of Americans -- from weekend hobbyists to professional cabinetmakers -- mutilate themselves using one.

U.S. hospitals treated an estimated 37,000 injuries resulting from table saw use in 2003 alone. More than three-quarters of injuries resulted from contact with the blade, including 4,100 amputations, according to the Consumer Product Safety Commission. The agency estimated the cost of table saw injuries in 2001 at nearly \$2 billion.

What if you could prevent many of those injuries, or turn them into nothing more serious than a paper cut?

Stephen Gass, a Wilsonville patent attorney, physics doctorate holder and inventor, claims it's already possible. But after four years trying to license a technology he calls SawStop to major power tool companies, he's convinced they aren't interested in adopting it -- at any price.

The companies say the product isn't proven. Gass drew a different conclusion: "They couldn't figure out how to make more money doing it."

So Gass and two fellow attorneys quit their day jobs at a downtown Portland law firm and started their own saw company, taking on the industry behemoths from a barn in Wilsonville. Their four-year odyssey -- which has drawn opposition from some woodworkers -- shows how difficult it can be for entrepreneurs to break into a market dominated by large companies, even if they're offering what looks like an innovative technology.

In early December 04, SawStop shipped its first saws to paying customers. Despite criticism from some quarters, the inventors' gizmo, as well as the saw they designed, is winning influential converts.

"It's better than any saw we have on the American market," said Kelly Mehler, a cabinetmaker, educator and author of *The Table Saw Book*, widely considered the reference book on the tool.

Gary Rogowski, another well-known cabinetmaker, writer and owner of the Northwest Woodworking Studio in Portland, has been testing a pre-production SawStop since April and thinks it ought to be standard issue in high school shops.

"It's such cheap insurance," Rogowski said. "You see people at woodworking shows, and they proudly hold up their symbol of stupidity, which is a missing digit."

The invention Steve Gass' workshop is hardly average. At 4,000 square feet, it's more than twice the size of his neighboring house. Its impressive collection of woodworking machinery is laid out next to an array of electronics fit for a high-tech company.

Workbenches are littered with soldering irons and circuit boards. Networking cables from oscilloscopes and computers trail into the bowels of table saws. Gass and his partners have been down the invention road before, developing a bread slicer, a garbage disposal and a music kiosk. But their SawStop quest stemmed from Gass' personal passion for collecting tools. He acquired the habit from his dad while growing up on a farm in Hermiston.

The eureka moment, Gass says, came one day when he was standing in his shop next to a 40-year-old table saw, and wondered how quickly a saw blade would have to stop to prevent a serious injury.

Figuring that a blade turns at about 4,000 rpm, and that woodworkers typically feed wood into the blade at the rate of 1 foot a second, he calculated that the blade would have to stop less than 1/8 inch from the point it contacted flesh, in about 1/100th second.

Using his physics knowledge, he figured it would take about 1,000 pounds of force to decelerate a blade of standard weight in 10 milliseconds or less -- about 1/30th the blink of an eye. "That struck me as very doable," Gass said.

The key difference

Next he had to figure out how the saw would know the difference between a piece of wood and a finger.

What he came up with is an electrical system that operates like a touch lamp. By inducing a small charge on an electrically isolated saw blade, he could detect when an operator touched the blade because the body would absorb some of the signal.

A system monitoring the signal, in turn, could detect a voltage drop characteristic of a human body, then trigger an industrial-strength spring to plunge a saw brake into the spinning blade.

Gass built a prototype and started to experiment, feeding a hot dog sitting on a piece of wood into a saw's moving blade and videotaping the results.

Crude as the experiment sounds, it worked. Hot dogs were spared serious injury.

Gass quickly contacted Delta Machinery, one of the largest table saw manufacturers. He sent them video. He made repeated calls. Four months later, he said he received an answer: The marketing guys didn't want to do it.

Delta's new parent company, Black & Decker Corp., declined to comment for this article. But Gass says the message to him was simple: "Safety doesn't sell."

Trying to break in upon buying a new saw, many woodworkers remove the blade guard and another device, called a splitter, designed to keep wood from being thrown back at the operator. They assume the devices wouldn't prevent an accident anyway.

Gass was convinced he had a better system, one woodworkers would embrace. So he persuaded three of his closest friends at work to come in with him, sinking

significant time into patenting his invention, and about \$160,000 of their own money to build a decent-looking prototype of their saw.

Over the next year and a half, they won a prestigious award at an industry trade show, performed countless hot dog demos and continued to refine their technology. They also met with most of the biggest American power tool companies and sent each a prototype saw for testing.

At first, they expected to license their technology, for 8 percent of the wholesale cost of a table saw. Two companies expressed serious interest in a deal.

In the end, however, they got no takers.

So in April 2003, Gass, David Fanning and David Fulmer filed a petition with Consumer Product Safety Commission to make the SawStop technology a mandatory performance standard on all table saws.

At that point, Gass says, the tool companies circled their wagons.

Industry response Gass claims saw makers are colluding to suppress his technology. On one hand, they don't want to retrofit production lines. More important, he says, they want to avoid the product liability claims that could result because they failed to adopt a technology that could have prevented hand injuries. The industry doesn't buy it.

Robert Romano, general counsel of WMH Tool Group Inc., owner of Jet Equipment, said SawStop is an interesting idea but ultimately an unproven technology. Moreover, he said SawStop's inventors are unwilling to assume responsibility for design and performance if it were implemented as a licensed technology.

Robert Bosch Tool Corp. said it is still evaluating the technology. Black & Decker declined to comment, as did Emerson Electric Co., owner of Home Depot's Ridgid brand of tools.

A trade group called the Power Tool Institute did respond to the petition that SawStop filed with the Consumer Product Safety Commission in April 2003. Calling it speculative and untested technology, the institute claimed in a November 2003 filing that the costs to consumers and manufacturers would far outweigh any benefit realized, and that the patent protection was so broad that granting the petition would create a monopoly for SawStop's inventors. Furthermore, the trade group said that independent testing of a SawStop prototype by the group's members concluded that there was an unacceptably high level of false trips on equipped saws.

Trade members venture

A month earlier, however, the Power Tool Institute filed notice with the Department of Justice's antitrust division that its members had formed a joint venture and were sharing confidential information to develop "technology for power saw blade contact injury avoidance, including skin sensing systems, blade braking systems, and/or blade guarding systems."

The institute says that 18-month project is ongoing.

Gass figures the effort is designed to squelch his technology or get around his patents.

That may not be easy. He and his partners have more than 50 patents on the technology, covering not only table saws but also similar systems for band saws, circular saws and other power tools.

"We believe it would be difficult to come up with anything that was outside the scope of all our patents," Gass said.

Going it alone Having failed to license the technology to saw companies, Gass and his partners raised about \$3 million from investors and started their own company.

"It's kind of a strange thing," said Fanning, a former patent lawyer, non-woodworker and now vice president of SawStop. "We're three guys sitting out here in a barn in Oregon, going up against multibillion-dollar companies."

Instead of trying to compete with the big boys on price, SawStop has tried to design the Rolls Royce of American table saws, building a heavier-duty saw that has features typically found only on European models that sell for \$10,000 and more.

The first pre-production shipment arrived in April, and in early December 04 SawStop started shipping saws to consumers.

"It's a beautiful saw," said Grant Garner, facilities manager at Classic Manufacturing Northwest, a maker of wooden heating vents that has been testing two saws since April. "We have two now and three or four more on order."

It also sells for a premium price, nearly \$2,900 all in. That's roughly double the price of a Delta Unisaw and 25 percent more than a Powermatic 66, widely considered the workhorses of the woodworking industry.

Gass says SawStop has a backlog of 850 orders, which it hopes to fill by spring.

The company is developing cheaper saws and other tools with the technology.

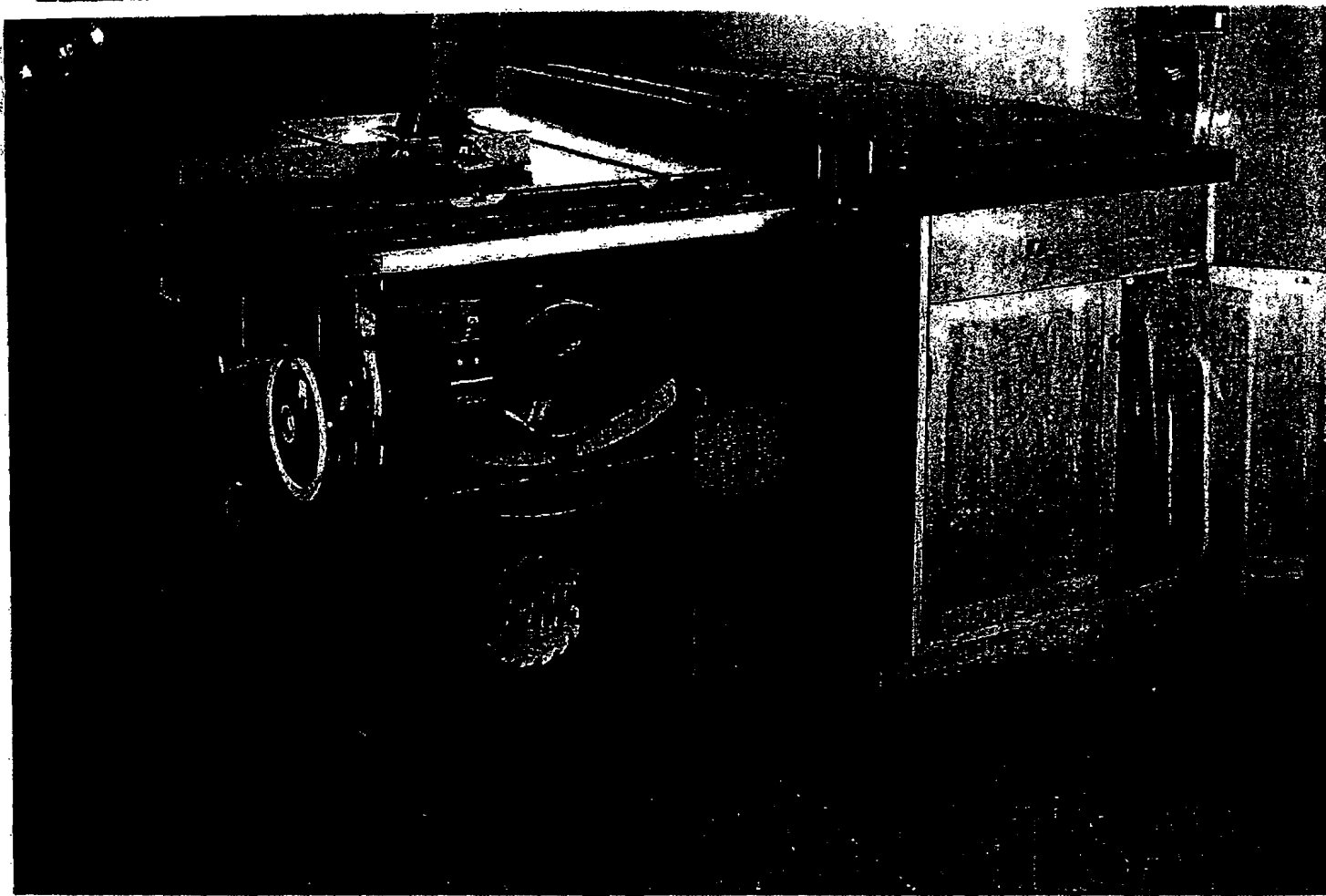
Gass says he has been approached by lawyers looking to launch product liability suits that ultimately could force companies to license his technology.

That threat, along with the company's efforts to get its technology mandated, is one reason that SawStop has been pilloried as a get-rich-quick scheme by many woodworkers. Many think the government has no more business mandating saw safety standards than it does forcing auto companies to put seat belts and air bags in cars.

Gass doesn't deny he's out to make money -- potentially a lot. But he also thinks he's doing the right thing.

"When some kid comes up to me in five years holding out his hand and saying, 'Look what I did on my table saw,' I want to be able to say I did everything I could," he said.

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What we like (and dislike) about this revolutionary machine.

A safe table saw – that's the holy grail of woodworking machinery, and that's how many woodworkers view the SawStop cabinet saw. We've spent the last three months using the SawStop cabinet saw in our shop daily. We're impressed, but we also have some improvements to suggest.

But first, let's look at the con-

cept behind the SawStop safety system. An electrical signal is passed through the blade and this signal is monitored for changes in conductivity. Wood and humans have significantly different electrical conductivity signals, and the SawStop system is able to recognize this difference.

The system doesn't react when wood touches the blade. However, when a person contacts the blade, the system reacts dramatically.

The brake (a block of aluminum called a brake pawl) is

launched by a spring into the saw blade's teeth. The blade's teeth cut into the pawl and bind, stopping the blade in about 1/200th of a second. At the same time the motor stops and the blade drops below the table. No other saw on the market has this safety feature.

First Impressions

The saw came into our shop in good shape; so setting it up went quickly. The saw was well aligned and didn't need much adjustment before our first use.

There were a couple features that we were fond of right out of the crate. The blade-height adjustment was smooth and free of backlash, which made it easy to make small height adjustments.

The riving knife is a feature that our entire staff thinks was overdue on an American table saw. In fact, we all agreed that this one feature is probably a more important safety feature than the SawStop mechanism.

The oversized paddle switch is convenient, but the staff had mixed experiences with its location. Some liked being able to turn off the saw by pushing their leg forward. Others found that it was located so close to the table's edge that it was accidentally turned off during a cut too frequently.

SPECIFICATIONS

SawStop Cabinet Saw
Street price: \$2,995 (as tested)
Motor: 3 hp, 230V, 1 ph.
(tested) (5 hp opt.)
Weight: 640 lbs.
Performance: ●●●●○
Price range: \$\$\$\$\$
SawStop: 866-SAWSTOP
or sawstop.com

by the Popular Woodworking staff

Comments or questions? Contact David Thiel at 513-531-2690 ext. 1255
or david.thiel@fwpubs.com.

Looking a Little Deeper

After a couple of weeks of use we noticed some things on the saw that were slightly disappointing in a saw costing nearly \$3,000.

The rip fence is offered as an option and is priced about the same as a Biesemeyer fence. But it fell short of the Biesemeyer fence's high quality. Our initial fence had some sloppiness and a bow in the face. The manufacturer admitted some manufacturing difficulties and replaced the fence with a better version.

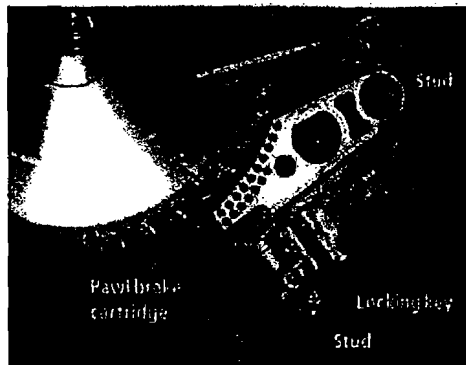
When setting the fence, we found the cursor nearly unreach-able, and we pulled the cursor off our Powermatic 66 to replace it about a half an hour after the saw was put in service. The scale on the fence rail was also hard to read, with all of the fractional lines the same length. We also replaced this. Again, after speaking with the manufacturer, we were told that the scale was already being replaced for future shipments.

The saw has a two-wrench system for holding the arbor to change blades and that's a good idea. But the wrench openings were slightly oversized, chewing up the nut after a short period.

The opening in the tabletop to reach the blade has plenty of room to the left of the blade (where you never put your hand) and not enough on the right.

That space is also the main access to change out the SawStop's cartridge. It's necessary to switch cartridges every time you switch between a dado set and a regular blade, and we found that changing the cartridge didn't take too long after a couple swaps. We did find that one of the two posts that the cartridge mounts on isn't visible from above. To get the cartridge started you have to do it by feel, or crawl under the outfeed table.

We tested a 3-horsepower model of the SawStop cabinet



The pawl brake cartridge is shown here in place in the saw. The mechanism mounts over two studs and is held in place with a locking key. Changing out the cartridge (a wider pawl brake is required when using a dado set) is easier than we anticipated.

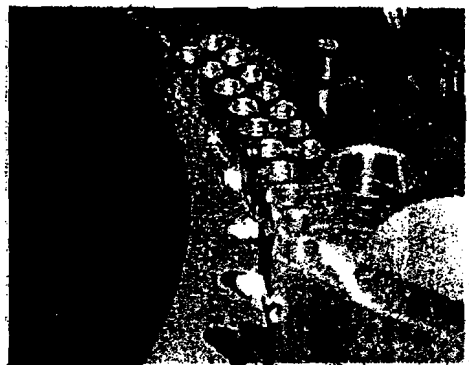
saw (5 hp also is available), and were at first disappointed because the motor felt underpowered. Another chat with the manufacturer identified a problem with the belt. Once replaced, the saw performed like a 3 hp Unisaw.

The blade is shrouded to improve dust collection (which it does). A door is mounted on the right side of the shroud to allow access to the SawStop cartridge from below the table. We found that this door can be stuck open against the saw frame. If this happens, tilting the arbor can snap the door off (as we did).

Along with the riving knife, a standard blade guard is included. While the guard was an improvement over most stock blade guards, it couldn't be used when making very thin rips (when you would want to use it) and the anti-kick-back pawls interfered with pushing work past the blade.

The Mechanism

Of course you want to know how the safety mechanism itself functions. We have good and not-so-good news about that. The by-now well-known hot dog test provided dramatic and perfect results, stopping the blade immediately with little damage to the hot dog.



Here you can see the results of a standard test of the saw. A hot dog (used to simulate a digit) was laid flat on a board and pushed quickly into the spinning blade. The pawl break cartridge functioned perfectly here, stopping the blade very quickly, and only nicking the hot dog.

But we also had an accidental firing of the brake mechanism. After changing the blade cartridge over to our dado set the cartridge fired as the saw was turned back on, damaging one of the cutters on our expensive dado set. SawStop shipped a replacement cartridge overnight, but if you were operating a business, you'd be out \$60 to \$70 for a new cartridge as well as the price of a new dado set.

Representatives of the company told us that the computer chip information from the fired cartridge indicated that the space calibration between the blade and the pawl was at fault, though we'd successfully used the same dado set and cartridge on the saw a number of times before the misfire.

The Bottom Line

It seems like we're beating up on SawStop here, but overall we think the saw is a success. We're more than willing to chalk up some of our disappointments to a first-time saw manufacturer. We feel confident SawStop is currently addressing many of these concerns in a proactive manner. As these improvements continue, the steep price of the saw will be more reasonable in light of providing a safer saw alternative. PW



A riving knife serves as a splitter behind the blade, keeping material from binding after being cut. More importantly, it moves up and down with the blade and can be used when making grooves and dados, while a standard splitter can't.

PROS:

- + Beefy trunnions
- + Riving knife
- + SawStop system for safety
- + Dust-collection shroud
- + Oversized on/off switch
- + Generally well-made saw

CONS:

- Cartridge misfire with dado
- Poor fence scale
- Overvalued fence
- On/off switch too easy to hit
- Expensive
- Caution is required with dust shroud's door