

2 5 B e s s e y
H a l l

W o o d S h o p
S a f e t y M a n u a l

2 0 1 9 - 2 0 2 0

Iowa State University

Department of Natural Resource Ecology & Management

NREM Main Office Phone: 515-294-7991

Required Online Training

EH&S now requires all ISU shop users to complete the online *Shop Safety Fundamentals – Basic Procedures and Policies* course. The method for completing the course varies, depending on student or ISU employee status:

1. Student users-including student employees-must complete the training from the NREM 25 Bessey Shop Canvas site. Ask Dr. Doug Stokke (dstokke@iastate.edu) to add you to the participant list if you do not see this course option from your personal Canvas page.
2. Permanent ISU employees (non-student users) may use the training available via the LEARN@ISU resource: <https://training.ehs.iastate.edu/IowaSU/site/>

This requirement is now expected of all users of the NREM shop in 25 Bessey Hall as the first step in safety training and signoff.

Following completion of the required online training and PRIOR TO STARTING ANY WORK IN THE SHOP, you must be checked off/documentated as an approved user of specific pieces of power equipment. You will also need to sign off on the "Information for Dust Mask Respirator Users" pertaining to voluntary use of dust masks and their storage and disposal guidelines.

See Troy Heeren or Doug Stokke to complete this required documentation.

SAFETY RULES

Location Bessey/Rm #25

Complete Training & Authorization Before Working

PPE Required

- Safety glasses, closed toed/heeled shoes are required at all times.
- Hearing protection is required when using power equipment.

Personal Attire & Behavior

- No loose clothing or jewelry
- Keep long hair securely tied back
- No food or drink in work area
- Avoid distractions (mp3, cell phones, etc.)
- No horseplay

Work Area

- Avoid working alone
- Get approval before using tools
- Secure guards and shields on equipment
- Return tools to proper locations
- Report damaged equipment to monitor or coordinator
- Clean work area after use

Emergencies

- Know emergency procedures
- Clear aisles, exits, access to emergency equipment
- Report injuries to monitor or coordinator

Additional Requirements

- NO ONE MAY OPERATE EQUIPMENT WITHOUT DOCUMENTED TRAINING
- SIGN IN AND OUT ON ACTIVITY SHEET-REQUIRED FOR EACH DATE OF USE

Principal Investigator Dr. Doug Stokke

Phone 294-2115 cell 515-290-9585

Coordinator Mr. Troy Hereen

Phone 294-1458

Supervision Required Yes No cell 319-540-2204

Hours 8-5 M-F

Emergency 911

Campus Police
515-294-4428

Emergency Action Plan
Bessey Hall Room 0025
Effective September 7, 2018

Contacts:	Name	Office Phone	Cell / Pager	Home Phone
Professor/Supervisor	Doug Stokke	515-294-2115	515-290-9585	515-733-6028
Emergency Contact	Troy Heeren	515-294-1458	319-540-2204	
1 st Alternate	Joe Morris	515-294-4622	NCRAC office: 515-294-5280	
2 nd Alternate				
3 rd Alternate				

The following procedures should be used in the event of an emergency.



Fire

1. Pull nearest fire alarm; notify building occupants.
2. Call 911.
3. Assist injured personnel.
4. Evacuate the building. Activate emergency shutoffs.
5. Attempt to use a fire extinguisher only if you have been trained.
6. Meet **north of Bessey Hall**.



Medical Emergency

1. Identify the medical emergency.
2. Send someone to call 911.
3. Administer first aid, if properly trained.
4. Contact the injured person's supervisor.



Intruder

1. If an intruder is encountered call 911. Do not try to detain.
2. Note description of the intruder.
3. Conduct a quick inventory.
4. Make departmental contacts.



Vandalism/Theft

1. Call 911.
2. Do not enter lab; treat the lab as a crime scene.
3. Beware of possible booby traps or remaining perpetrators.



Severe Weather

1. When you hear outdoor sirens or weather radio warning, **seek shelter as required**
2. Proceed to the storm shelter in **Bessey Basement Hallways**.
3. Stay away from exterior doors and windows.
4. Stay in shelter until danger has passed.



Utility Outages

1. Identify in advance any critical research materials or processes that may be affected by utility outages.
2. Identify backup systems or alternate resources to employ.
3. Have backups in remote locations for data stored on computers.
4. Notify lab contacts.



Chemical Spill – Small Spills

1. Notify other personnel in the immediate area.
2. Assist with injured persons.
3. Confine and/or limit the spill.
4. Clean up the spill as seen fit.

Chemical Spill – Large Spills

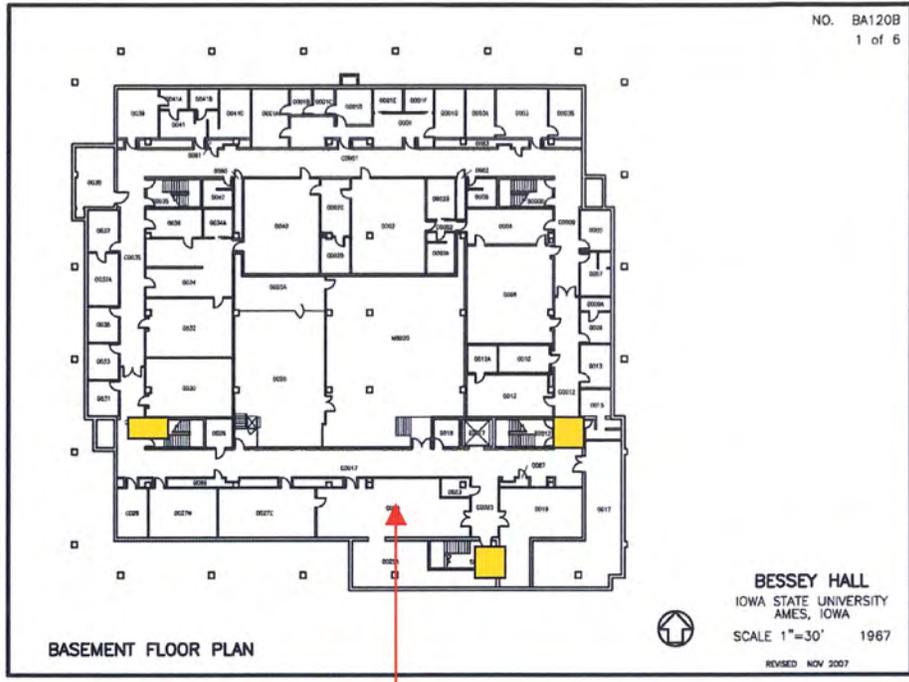
1. Dial 911.
2. Pull the fire alarm.
3. Evacuate the area and secure the entrances.



Environmental Chemical Spill

1. Dial 911.
2. Pull the fire alarm.
3. Evacuate the area and secure the entrances.
4. Contact EH&S at 294-5359; after hours DPS.
5. EH&S will contact the appropriate regulatory agencies.

Emergency Evacuation Routes-Bessey 0025



Key

- Exits 
- Exit Direction 
- Fire Alarm Pull Station 
- Fire Extinguisher 
- AED/Defibrillator 
- Emergency Gas Shutoff 
- Eye Wash 
- Safety Shower 
- Tornado Shelter 

You are here

Iowa State University Shop/Tool Use Safety Agreement

All shop users must complete and sign this form. Shop Supervisors are to keep this form on file. See reverse for records of tool authorizations and course completions.

User Name (print)		ISU #	Date
Email Address			
Faculty/Shop Supervisor (Print)		Department	
<input type="checkbox"/> Undergraduate	Class	College	Major
<input type="checkbox"/> Graduate Student	Year entered ISU Graduate School	<input type="checkbox"/> Postdoc <input type="checkbox"/> Faculty or Staff Member	

I have read the shop safety rules and understand them as they apply to my work in the Shop/Lab areas. Specifically:

1. I agree to abide by the published and posted safety rules and accept personal responsibility for my work in shops and laboratories. I will abide by any and all additional local shop rules. I understand that my failure to do so can result in my loss of privileges in the shop/lab areas.
2. I understand the shop access rules, monitor/supervision requirements, and shop hours and understand that shop may be subject to video monitoring.
3. I will wear safety glasses at all times while in the shop, unless otherwise designated.
4. I understand what attire is required to work in the shop and will not enter the shop unless so attired.
5. After use, I will clean and maintain all equipment, floors and benches I use.
6. I will not attempt to use any machine, tool or equipment that I do not have written permission to use. I will ask for instruction and/or training before using any machine, tool or equipment with which I am not familiar.
7. I will check in with the supervisor or monitor upon entering or leaving the shop, and prior to operating any machinery.
8. Any equipment or tooling I find in need of repair or that I damage, I will promptly notify the monitor or supervisor and I will leave the prominent cautionary tag on the machine listing my name, research group or class, and a phone number or email address where I can be reached.

Certification: I understand that it is a privilege and learning opportunity to use the shop/lab areas and agree to abide by all University regulations and stipulations placed upon me as conditions for working in these areas.

User Signature	Date
Shop Supervisor Signature & Initials	Date

Tool Authorizations and Course Completions

Unless explicitly stated otherwise in writing, your authorization for a particular tool is a “learner’s permit,” not a “driver’s license.” You must still check in with the monitor or supervisor and s/he may still require you to have direct supervision while using particular tools.

Tool Table Saw	Restriction(s)	
Shop Supervisor Initials		Date
Tool Planer	Restriction(s)	
Shop Supervisor Initials		Date
Tool Jointer	Restriction(s)	
Shop Supervisor Initials		Date
Tool Sander(s)	Restriction(s)	
Shop Supervisor Initials		Date
Tool Radial Arm Saw	Restriction(s)	
Shop Supervisor Initials		Date
Tool Chop Saw	Restriction(s)	
Shop Supervisor Initials		Date
Tool Router/Router Table	Restriction(s)	
Shop Supervisor Initials		Date
Tool Band Saw	Restriction(s)	
Shop Supervisor Initials		Date
Tool Dust System	Restriction(s)	
Shop Supervisor Initials		Date

DUST MASKS

- Voluntary use of dust masks is recommended when sanding or doing other shop jobs that generate dust.
- Each user must have their own mask.
- Masks are NEVER to be left in the open when not in use.
- When not in use, put your mask in a clean zip-lock plastic bag that is labeled clearly with your name. Store the bagged mask in the safety cabinet.
- When the mask is no longer usable, destroy the mask by cutting the filter and/or elastic band. Dispose in the trash.

Information for Dust Mask Respirator Users

The information on this sheet is intended for employees using respirators and meets requirements outlined in Appendix D of OSHA's Respiratory Protection Standard [29 CFR 1910.134](#). Each employee using a dust mask respirator must be given access to this instruction sheet.

Dust Mask Respirator Use

Dust mask respirators are designed to filter dust particles of non-toxic airborne contaminants at levels below permissible limits. Dust mask respirators that are part of a job requirement, are considered mandatory and employees must complete a medical review, annual training and annual fit test to be certified to wear a respirator at Iowa State University. *Certification is not required when employees choose to wear dust mask respirators voluntarily. Regardless of the reason for use, all dust mask respirator users must read and follow these use, storage and disposal guidelines.*

1. Read and follow all instructions provided by the respirator manufacturer on use, maintenance, cleaning, care, and warnings regarding respirator limitations.
2. Ensure a good face to facepiece seal is achieved before each use. Respirator users must be clean-shaven in areas where the respirator contacts the face.
3. Choose respirators certified by NIOSH (National Institute for Occupational Safety and Health). A label or statement of certification should appear on the respirator or respirator packaging. All respirators available at ISU Central Stores meet this requirement.
4. Wear dust mask respirators only for atmospheric contaminants for which they are designed. DO NOT use them for lead, asbestos, cadmium, gases, vapors, or very small solid particles of fumes or smoke.
5. Do not share dust mask respirators with other users.
6. Protect respirators from moisture, dust or other contaminants by storing them in plastic zip-lock bags or containers that can be sealed.
7. Ensure that no objects are resting against stored respirators. This could damage the facepiece and result in improper fit when worn.
8. Destroy dust masks when discarded. Break straps or tear the respirators to make them unusable for anyone else.

I have read and understand these use, storage, and disposal guidelines, and will abide by them when working in the NREM shop, room 25 Bessey Hall. Dust mask usage in 25 Bessey is on a voluntary basis.

Name (please print): _____

Signed: _____

Date: _____

Source:

<http://www.ehs.iastate.edu/occupational/respirators/dust-mask>

Verified 6 October 2015

Equipment Data Sheets (EDS)

for

Fixed Power Equipment

NREM 25 Bessey Shop

Craftsman Bench Grinder

Description	Bench Grinder- Model 3979400
Size / Horse Power	0.25 HP
Power source	115 volts through plugged power source
Uses	Shaping wood and metal parts

Safety Precautions

Hazards

- Abrasion
- Flying debris (potential eye and face damage)
- Electric shock
- Grinding wheel failure
- Entanglement of hair, jewelry or clothing
- Sparks from metal grinding
- Fire risk if used near flammable or combustible materials

Training

- Shop Safety Fundamentals
- Site Specific Training

Protective Equipment

- Safety Glass and/or Face Shield
- Hearing protection



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Ensure all guards are present and function properly
4. Make necessary adjustments for safe operation
5. Inspect tool for damage or obstructions to operation
6. Turn on grinder using power switch located in center front of tool
7. Begin work
8. Slowly press work piece into grinder, avoid feeding material too quickly
9. Keep hands clear of spinning wheels

Shutdown

1. Remove work piece
2. Turn off tool using power switch
3. Allow grinder to stop on its own



Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none">• Grinder must be unplugged when changing wheels. These changes must be performed by shop mentors or supervisor only• Only use grinding wheels rate for the speed of the grinder• Use a dressing tool or block to clean and/or reshape grinding wheels
Accessories	Dressing tool or block

Craftsman Jointer

Description	Jointer- Model 113.206931 ISU Property No. 349231
Size / Horse Power	0.5 HP
Power source	115 Volts from hard-wired power source
Uses	Producing straight/flat edges on wood

Safety Precautions

Hazards
Flying debris (potential eye damage)
Electrical shock
Amputation
Entanglement of hair or clothing
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Make necessary adjustments for safe operation
4. Inspect the tool for damage or obstructions to operation
5. Turn on the jointer by pulling the paddle switch out
6. Begin work
7. Slowly feed work piece towards the blade, avoid feeding material too quickly
8. Keep hands clear of blade, use push sticks when needed

Shutdown

1. Turn off the jointer by pushing the paddle switch in
2. Allow the blade to come to a complete stop on its own
3. Remove work piece for table top

Note: The yellow key is a safety device, when it is removed, the switch locks in the OFF position

Blade Depth Adjustment

1. Maximum cut depth should be limited to 1/8" when edge jointing and 1/32" when surface planing
2. Place a straight edge across the outfeed table
3. Use a ruler to measure the gap between the straightedge and the infeed table
4. Use the Blade Depth Adjustment Knob to adjust blade to desired height

Surface Planing

1. Set the cutting depth to 1/32"
2. Make sure the fence is set 90°
3. If workpiece is cupped (warped), place on concave side face down
4. Start the jointer
5. Feed the material over cutterhead, repeat until the surface is flat

Edge Jointing

1. Set the cutting depth between 1/16" and 1/8" (Use a more shallow depth for hardwoods and wide surfaces)
2. Make sure the fence is set to 90°
3. If workpiece is cupped (warped), square the stock first before edge jointing
4. Start the jointer
5. Feed the material over cutterhead, repeat until the edge is flat

Bevel Cutting

1. Set the cutting depth between 1/16" and 1/8" (Use a more shallow depth for hardwoods and wide surfaces)
2. Make sure your fence is set to the angle desired and securely locked
3. Start the jointer
4. Feed the material over cutterhead, repeat until the desired cut is met

Maintenance

Storage	Bessey- Room 25
Care	<p>Clean off jointer after you are done using. Always use a sharp blade.</p> <ul style="list-style-type: none"> • Vacuum excess wood chips and saw dust • Wipe table clean • Apply metal protectant to the table periodically

Accessories	<ul style="list-style-type: none">• Joints/Planner Knife Hone• Replacement Joints Knives• Precision Straitedge
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Delta Rockwell Bandsaw

Description	Vertical Bandsaw- Model 28-350
Size / Horse Power	1.5 HP
Power source	208 volts
Uses	Cutting wood, metal, and other material of this type

Safety Precautions

Hazards
Flying debris (potential eye damage)
Electrical shock
Amputation
Entanglement of hair or clothing
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Ensure that the top guide is within 1/8" of the work piece
4. Make necessary adjustments for safe operation
5. Inspect the saw for damage or obstructions to operation
6. Turn "ON" the saw by pushing the green start button (A)
7. Begin work
8. Slowly feed work piece towards the saw blade, avoid feeding material too quickly
9. material too quickly
10. Keep hands clear of saw blade, use push sticks when needed

Shutdown

1. Turn "OFF" the saw by pushing the red stop button (B)
2. Allow the blade to come to a complete stop on its own
3. Remove work piece from table top



Table Tilt

1. Table can be tilted 45^o to the right and 10^o to the left
2. To tilt the table to the right, loosen the two locking knobs (A), tilt the table to the desired angle as shown on the scale (B)
3. To tilt the table to the left, loosen the two locking knobs (A) and tilt the table to the right until you have access to the table stop (C). Remove the table stop and tilt the table to the left to the desired angle as shown on the scale (B) 4
4. Tighten the two locking knobs

Changing Blades – Performed By Authorized Personnel ONLY

1. **Disconnect machine from the power source**
2. Remove the table pin (A)
3. Open the two wheel guard doors (B) and the blade guard door (C)
4. Confirm that the quick tension lever (D) is position to the left of the machine
5. Remove old/broken blade
6. Install the new blade with the teeth pointing down, toward the table. The saw requires a 93 1/2" blade
7. Slide the band saw blade, through the slot (E) in the table
8. Place the blade around the two wheel assemblies (F)
9. Replace the table pin
10. Close the two wheel guard doors and the blade guard door
11. Move the quick tension lever to the right
12. Check the Blade Tension and Blade Tracking before operating the saw

Blade Tension – Performed By Authorized Personnel ONLY

1. **See Instruction Manual**

Blade Tracking – Performed By Authorized Personnel ONLY

1. **See Instruction Manual**

Maintenance

Storage	Bessey- Room 25
Care	Clean off saw after you are done using. Always use a sharp blade. <ul style="list-style-type: none"> • Keep the miter slot and guide bearings clean • Check drive belt periodically for wear or damage • Remove all deposits from band wheels • Clean out dust from inside cabinet
Accessories	<ul style="list-style-type: none"> • Miter gauge

Delta Rockwell Drill Press

Description	Drill Press
Size / Horse Power	0.5 HP
Power source	208-220/440 volts through power cord
Uses	Drilling/Boring holes into various material (metal, wood, plexiglass, plastic)

Safety Precautions

Hazards

Flying debris (potential eye damage)

Electrical shock

Abrasions

Entanglement of hair or clothing

Training

Shop Safety Fundamentals

Site Specific Training

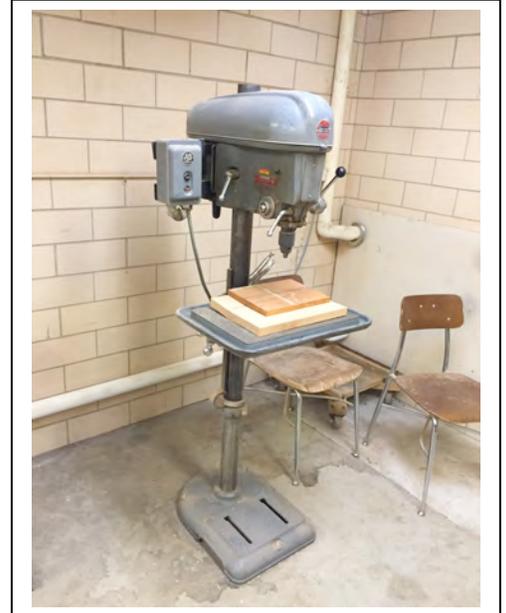
Protective Equipment

Safety glasses

Hearing protection

Avoid loose fitting clothing

Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Make necessary adjustments for safe operation
4. Inspect the tool for damage or obstructions to operation
5. Place material so that it is resting against the left side of the column to prevent material from spinning or securely fasten material to the table
6. Make sure the drill chuck is tightened down on the drill bit and the chuck key has been removed
7. Turn on the drill press by flipping the toggle switch located on the motor
8. Begin work
9. Slowly feed drill bit towards material, avoid feeding material too quickly or too slowly
10. Keep hands clear of drill bits

Shutdown

1. Turn off the drill press by flipping the toggle switch located on the motor
2. Allow the chuck to come to a complete stop on its own
3. Remove work piece for table top

Depth Stop Adjustment

1. Mark a reference to the depth the bit will drill into the material
2. Move the quill (D) to the "DOWN" position
3. With the drill bit in the chuck, lower downfeed handle to advance bit to your mark
4. Advance the lower stop nut (A) on the stop rod until it is set against the lug (C)
5. Return the chuck to the "UP" position
6. Return the quill (D) to the "UP" position and tighten the upper stop nut against the lower stop nut
7. The drill bit will now only advance to this depth

Changing Spindle Speeds – Performed By Authorized Personnel ONLY

1. Use the pulley/belt arrangement chart listed below when changing speeds
2. Unplug the drill press from the power source
3. Loosen the two hexagon head cap screws (F)
4. Slide the motor bracket in to release tension on the belt
5. Position the belt in the correct position according to the chart
6. Slide the motor bracket out to increase tension on the belt. Correct tension is obtained when the belt can be flexed about 1" out of line midway between the pulleys using finger pressure
7. Tighten the two head cap screws (F)

Maintenance

Storage	Bessey- Room 25
Care	Clean off drill press after your are done using.
Accessories	

Hitachi 10" Chop Saw

Description	Chop Saw- Model C10FCH
Size / Horse Power	10"
Power source	120 volts through plugged power cord
Uses	Cutting metal of various sizes at various angles

Safety Precautions

Hazards
Amputation/Abrasions
Electrical shock
Entanglement of hair, jewelry, or clothing
Fire risk if used near flammable or combustible materials
Flying debris (potential eye damage)
Sparks from cutting metal
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety Glasses AND Safety Shield
Hearing Protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Inspect the tool for damage or obstructions to operation
3. Ensure work area is clean and free of obstacles
4. Secure material to work surface using the fence and vise
5. Make necessary adjustments for safe operations
6. Turn on the saw using the trigger switch located within the handle
7. Allow the blade to reach full speed before beginning cut
8. Slowly feed blade into material, avoid putting excessive force on the blade
9. Keep hands clear of saw blade

Shutdown

1. Turn off saw by releasing the trigger switch located within the handle
2. Allow the blade to come to a complete stop on its own
3. Remove work piece from table top

Changing Blade- Performed by Authorized Personnel Only

1. Disconnect tool from power saw
2. Push in wheel lock lever and rotate wheel by hand until wheel lock lever engages slot in inside flange to lock wheel
3. Loosen the bolt counterclockwise in the center of the wheel with the *mm hex wrench. Bolt has right hand thread
4. Remove the bolt, washer, outside flange, and old wheel
5. Install the new abrasive wheel
6. Re-assemble parts in reverse order (Steps 4,3,2)
7. Tighten bolt in a clockwise direction, do not over tighten
8. Release wheel lock to ensure that wheel rotates freely
9. Before using a new cut0off blade for a cut, position body to the side of the tool and run the saw for **at least 3 minutes** to confirm that the blade is in good condition and installed correctly

Maintenance

Storage	Bessey- Room 25
Care	Clean off saw after you are done using. Always use a sharp blade. Gears should be relubricated every 60 to 90 days by an experiences power tool repair person
Accessories	8mm Hex Wrench

Powermatic Sander

Description	Sander, Model No. 30 Serial No. 67-7709-3 ISU Property No. 213762
Size / Horse Power	0.75 HP
Power source	220-440/ 208 volts from hard-wired power source
Uses	Sanding of wood and metal

Safety Precautions

Hazards
Abrasions
Flying debris (potential eye and face damage)
Entanglement of hair, jewelry, or clothing
Fire risk
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Tie back long hair
Avoid loose fitting clothing
Remove rings, watches, bracelets and other such jewelry



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Ensure all tables are present and function properly (1/16" from belt/disc)
4. Make necessary adjustments for safe operation
5. Inspect machine for damage or obstructions to operation
6. Turn on sander by inserting key into switch and pulling out on the end of the switch
7. Begin work
8. Slowly press work piece against belt/disc, avoid feeding material too quickly
9. Keep hands clear of sanding surfaces

Shutdown

1. Remove work piece
2. Turn off sander by pushing in on the switch and removing key to lock-out machine
3. Allow sander to stop on its own, do not leave the sander until it has come to a complete stop

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none"> • Wipe the machine down after each use • Keep exposed metal surfaces clean and rust free • Make periodic inspection of the operation of the machine
Accessories	Miter Gauge

Rockwell Planer

Description	Planer
Size / Horse Power	Serial No. 115-7206 ISU Property No. 115535
Power source	Plugged power source
Uses	Producing flat edges on wood and reducing material thickness

Safety Precautions

Hazards
Flying debris (potential eye damage)
Electrical shock
Amputation
Entanglement of hair or clothing
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Ensure work area is clean and free of obstacles
3. Make necessary adjustments for safe operation
4. Inspect the tool for damage or obstructions to operation
5. Adjust the table to desired depth for cut
6. Turn on the planer by moving the switch to the “Up” position
7. Begin work
8. Slowly feed work piece towards the blades, avoid feeding material too quickly
9. Keep hands clear of blades

Shutdown

1. Turn off the planer by moving the switch to the “Off” position
2. Allow the blades to come to a complete stop on their own
3. Remove work piece from table top

Blade Depth Adjustment

1. Maximum cut depth is determined by the type and size of work piece
2. Use the raising and lowering handle to adjust head assembly to desired height, one revolution is approximately 5/64"
3. Use the scale on the side of the planer to see height setting

Replacing and Resetting Knives **Performed By Authorized Personnel ONLY**

- 1. DISCONNECT THE TOOL FROM THE POWER SOURCE**
2. Lower the head assembly by turning handle
3. Remove chip deflector (A)
4. Carefully place knife setting gage, on the cutter head so the rounded sections are directly over the knife (B)
5. Loosen the knife locking bar by turning the seven knife locking screws (C), **CLOCKWISE** and carefully remove knife locking bar, knife, and springs which are located under the knife
6. Remove the remaining knife in the same manner
7. Thoroughly clean the knife slots, knife locking bars and screws. Check the screws, if the threads appear worn or stripped or if the heads are damaged, replace them
8. Carefully replace the springs, knives, and knife locking bars, into both slots of the cutter head
9. Replace chip deflector

Maintenance

Storage	Bessey- Room 25
Care	Clean off planer after you are done using. Always use a sharp blade. <ul style="list-style-type: none"> • Vacuum excess wood chips and saw dust • Wipe table clean Apply metal protectant to the table periodically
Accessories	<ul style="list-style-type: none"> • Knife Setting Gage • 8mm and 10mm Wrench • Precision Straightedge

Sawstop 10” Industrial Cabinet Saw

Description	Table Saw Model ICS53230 Serial No. I184602719
Size / Horse Power	5 HP
Power source	Hard-wired, 3 phase power source
Uses	Precision cut wood, plywood, plastic panels to size.

Safety Precautions

Hazards
Severe cuts, potential for amputation
Flying debris (potential eye and face damage)
Electric shock
Entanglement of hair, jewelry or clothing
Material kickback
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Push stick for narrow cuts



Operation-See full Sawstop Manual, appended to this Safety Manual, for complete information.

Startup

1. Put on PPE listed above
2. Inspect tool for damage or obstructions to operation
3. Ensure work area is clean and free of obstacles
4. Ensure all guards are present and function properly
5. **DO NOT cut wet or preservative-treated lumber** without first consulting Troy Heeren (special procedure required to safeguard Sawstop mechanism).
6. Make necessary adjustments for safe operation – blade height and angle, fence or miter gauge settings
7. Turn on table saw using power switch located at the lower right corner of the front panel.
8. Ensure that Sawstop Safety system is energized: LEDs will display the “**R_E_A_D_Y_**” _status display (green LED on solid, red LED off).
9. Begin work

Shutdown

1. Turn off tool using power switch on lower left corner of front panel
2. Allow table saw to stop on its own
3. Remove cut pieces after blade has stopped

Blade adjustment

1. Height
 - a. Crank hand wheel counter clockwise to raise blade and clockwise to lower blade
 - b. Tighten the bevel lock handle to maintain the desired height
2. Angle
 - a. Crank hand wheel counter clockwise to increase blade angle. Use red pointer on front panel to set desired angle.
 - b. Tighten the bevel lock handle to maintain the desired angle

Cross-cut (across the grain of wood)

1. Only use miter gauge when performing cuts across the grain.
2. Do not use the rip fence with the miter gauge
3. Use the table groove that does not cause interference of your hand or miter gauge with the saw blade guard

Rip cuts (cutting with the grain of wood)

1. Use the rip fence to position and guide the work piece through the saw blade
2. Do not stand in the line of the saw cut when ripping
3. Do not touch the cut off piece until the saw blade is stopped
4. When ripping boards longer than three feet, use out-feed supports at rear of saw table
5. Use a push stick when ripping work less than 4 inches wide
6. Use an auxiliary wood facing on rip fence when ripping work 2 inches or narrower

Blade Change – Performed by Authorized Personnel Only

See Sawstop Operation Manual-Appendix to this document.

Dado Cuts-**Performed ONLY with 8 inch dado set with Sawstop dado cartridge.**

See Sawstop Operation Manual-Appendix to this document.

Maintenance

Storage	Bessey Hall- Room 25
Care	<ul style="list-style-type: none"> • Miter Gauge • Rip Fence • Push Stick • Blade Guard • Blade Change Wrenches
Accessories	<ul style="list-style-type: none"> • Saw must have the power switch toggle locked out when changing blades. These changes must be performed by authorized personnel only. • Use only 10” diameter saw blade • Install blade with teeth pointing toward operator (rotating toward table top) • Sawstop Safety System replacement cartridge.

Technical Specs

Item	Cabinet Table Saw	Cutting Capacity Rip Right	36-1/2"
Blade Dia.	10"	Table Surface w/Extension	67-3/4" x 30"
Arbor Size	5/8"	Table Front of Blade	11"
Motor HP	5	Overall Height	34"
Amps	13.0	Overall Width	69-1/4"
No Load RPM	4000	Overall Depth	36-1/2"
Blade Tilt	Left	Voltage	240VAC
Depth of Cut @ 90 Deg.	3-1/8"	Phase	3
Depth of Cut @ 45 Deg.	2-1/4"	Hz	60
Cutting Capacity Rip Left	12-1/2"	Exhaust Port Size	4"
Corded/Cordless	Corded	Includes	Bare Tool

Skil Router Table

Description	Router Table- Model RAS900
Size / Horse Power	
Power source	125 volts from plug in power source
Uses	Cut wood only!

Safety Precautions

Hazards
Potential eye damage
Potential hand/finger damage
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses



Operation

Startup

1. Turn on
2. Feed wood from appropriate direction of work
3. Keep wood moving
4. Hold wood firmly against table and fence
5. Keep fingers away from knots

Shutdown

1. Turn off when finished and unplug.

Maintenance

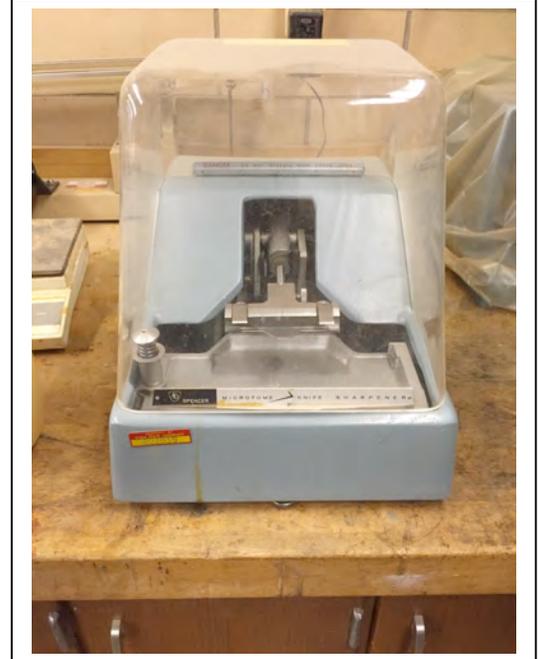
Storage	Bessey- Room 25
Care	<ul style="list-style-type: none"> • Keep table clear • Clear off dust periodically
Accessories	

Spencer Microtome Knife Sharpener

Description	Knife Sharpener Model 935
Size / Horse Power	
Power source	
Uses	

Safety Precautions

Hazards
Potential hand/finger damage
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Cut resistant/nitrile gloves
Safety glasses



Operation

Removal of blades

1. Always set rotary handle in locked position when changing blades
2. Remove disposable blades with forceps
3. Place old blades in a specified container
4. Place new blade in blade holder and clamp it before releasing rotary wheel lock

Cleaning Microtome

1. Lock rotary wheel and remove blade
2. Use caution as other parts may be sharp

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none"> • Regularly schedule breaks when using
Accessories	

Equipment Data Sheets (EDS)

for

Power Hand Tools

NREM 25 Bessey Shop

Craftsman 3 Speed Saber Saw

Description	Saber Saw- Model 315.27722
Size / Horse Power	0.25 HP
Power source	110-120 volts through plug in
Uses	Cutting wood, metal, plastics and foam of various sizes at various angles

Safety Precautions

Hazards
Amputation/Abrasions
Electrical shock
Entanglement of hair, jewelry, or clothing
Flying debris (potential eye damage)
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety Glasses
Hearing protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Inspect the tool for damage or obstructions to operation
3. Ensure work area is clean and free of obstacles
4. Make necessary adjustments for safe operation
5. Turn "ON" the saw by squeezing the trigger switch
6. Slowly feed blade into material, avoid putting excessive force on the blade
7. Keep hands clear of saw blade

Note: For continuous operation, squeeze the trigger switch and then depress the lock button. Once the lock button is depressed, release the trigger switch. To disengage from continuous operation, squeeze the trigger and the lock will disengage

Shutdown

1. Turn "OFF" the saw by releasing the trigger switch
2. Allow the blade to come to a complete stop on its own
3. Remove saw from workpiece

Speed Control

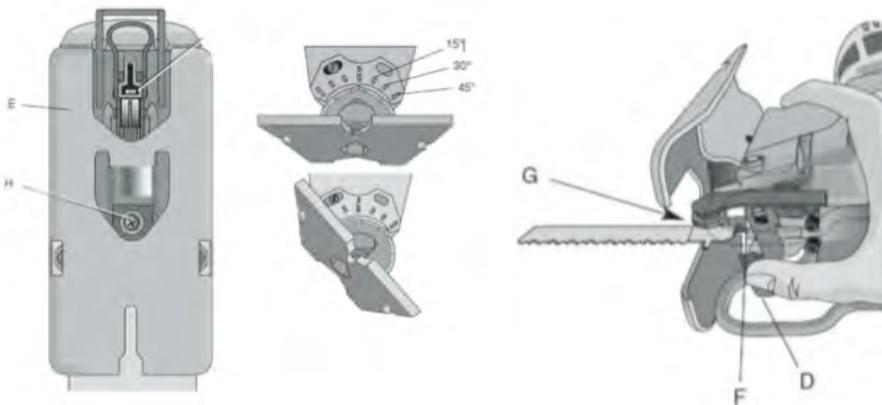
1. Speed can be controlled in two ways: speed control dial and the trigger
2. Rotate the speed control dial to increase or decrease the maximum speed or strokes-per-minute (SPM) at which the blade will cut. Speed range is 500 SPM on speed setting 1 to 3,100 SPM on speed setting 6
3. As the trigger switch is pressed in, the strokes-per-minute continue to increase, but do not exceed the setting that the speed control dial is set at. As the trigger is released, the blade strokes-per-minute reduce

Changing Blade

1. Disconnect tool from power supply
2. To remove a blade, lift the keyless blade lever (D), with a slight shake the blade will drop out
3. To install a blade, lift the keyless blade lever (D)
4. Insert the blade into the clamp mechanism (F) while guiding the back of the blade into the groove of the guide rollers (G)
5. The shank should be completely inside the clamp mechanism
6. Release the keyless blade lever

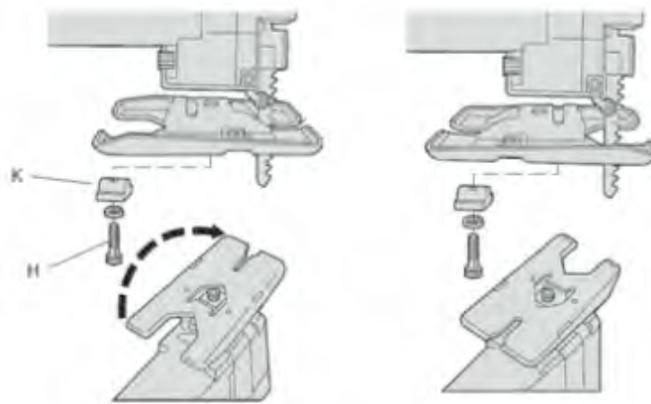
Bevel Cutting Adjustment

1. Bevel cuts may be made at any angle between 0° and 45° in both directions
2. Adjust the shoe (E) by loosening screw (H) on the bottom of the saw
3. Rotate the shoe to the desired angle
4. Tighten the screw firmly before using the saw



Reversing Shoe Position

1. Disconnect tool from power supply
2. Remove screw (H) from the bottom of the saw
3. Remove the shoe from the jig saw; be careful to note the position of the clamp (K). The clamp must be re-installed in the same way or the shoe will not fit properly
4. Rotate the shoe 180° and re-install noting carefully that, when the slot is forward, the screw (H) goes through the hole in the shoe and when the wide opening is forward, the screw passes through the slot in the shoe



Maintenance

Storage	Bessey- Room 25
Care	Clean off saw after you are done using. Always use a sharp blade.
Accessories	

Craftsman Belt Sander

Description	Belt Sander- Model 315.117921
Size / Horse Power	4"x21"
Power source	110/120 volts through plugged power source
Uses	Sand down objects

Safety Precautions

Hazards
Potential hand damage
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection



Operation

Startup

1. Make sure sander is switched OFF before connecting to power supply
2. Inspect sanding belts before starting
3. Plug in sander and start
4. Use two hands to operate- one hand on trigger switch and second hand on front handle knob

Shutdown

1. Turn sander to OFF position before unplugging

Inspecting Sander

1. Install sanding belts that are same widths as pulley drum
2. Adjust sanding belt tension to keep belt running true and at the same speed as the pulley drum
3. Secure sanding belt on direction shown on belt and machine

Maintenance

Storage	Bessey- Room 25
Care	• Clean dust from motor and vents at regular intervals
Accessories	

*- Information taken from Canadian Center for Occupational Health and Safety

Craftsman 5/8" Saber Saw

Description	Saber Saw- Model 315.17240
Size / Horse Power	5/8"/ 0.25 HP
Power source	110-120 Volts through plug in cable
Uses	Cutting wood, metal, plastics and foam of various sizes at various angles

Safety Precautions

Hazards
Amputation/Abrasions
Electrical shock
Entanglement of hair, jewelry, or clothing
Flying debris (potential eye damage)
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection
Avoid loose fitting clothing
Tie back long hair



Operation

Startup

1. Put on PPE listed above
2. Inspect the tool for damage or obstructions to operation
3. Ensure work area is clean and free of obstacles
4. Make necessary adjustments for safe operation
5. Turn "ON" the saw by squeezing the trigger switch
6. Slowly feed blade into material, avoid putting excessive force on the blade
7. Keep hands clear of saw blade

Note: For continuous operation, squeeze the trigger switch and then depress the lock button. Once the lock button is depressed, release the trigger switch. To disengage from continuous operation, squeeze the trigger and the lock will disengage

Shutdown

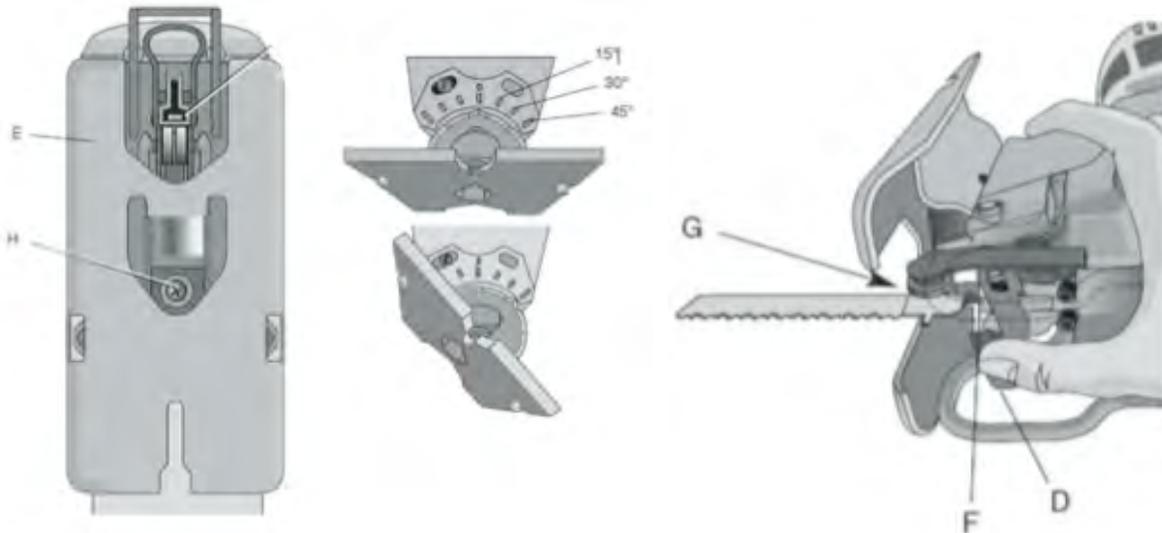
1. Turn "OFF" the saw by releasing the trigger switch
2. Allow the blade to come to a complete stop on its own
3. Remove saw from workpiece

Speed Control

1. Speed can be controlled in two ways: speed control dial and the trigger
2. Rotate the speed control dial to increase or decrease the maximum speed or strokes-per-minute (SPM) at which the blade will cut. Speed range is 500 SPM on speed setting 1 to 3,100 SPM on speed setting 6
3. As the trigger switch is pressed in, the strokes-per-minute continue to increase, but do not exceed the setting that the speed control dial is set at. As the trigger is released, the blade strokes-per-minute reduce

Changing Blade

1. **Disconnect tool from power supply**
2. To remove a blade, lift the keyless blade lever (D), with a slight shake the blade will drop out
3. To install a blade, lift the keyless blade lever (D)
4. Insert the blade into the clamp mechanism (F) while guiding the back of the blade into the groove of the guide rollers (G)
5. The shank should be completely inside the clamp mechanism
6. Release the keyless blade lever



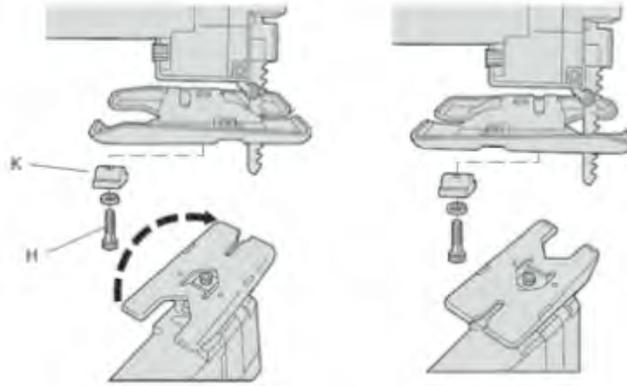
Bevel Cutting Adjustment

1. Bevel cuts may be made at any angle between 0° and 45° in both directions
2. Adjust the shoe (E) by loosening screw (H) on the bottom of the saw
3. Rotate the shoe to the desired angle
4. Tighten the screw firmly before using the saw

Reversing Shoe Position

1. **Disconnect tool from power supply**

2. Remove screw (H) from the bottom of the saw
3. Remove the shoe from the jig saw; be careful to note the position of the clamp (K). The clamp must be re-installed in the same way or the shoe will not fit properly
4. Rotate the shoe 180° and re-install noting carefully that, when the slot is forward, the screw (H) goes through the hole in the shoe and when the wide opening is forward, the screw passes through the slot in the shoe



Maintenance

Storage	Bessey- Room 25
Care	Clean off saw after you are done using. Always use a sharp blade.
Accessories	

DeWalt 3/8" Cordless Power Drill

Description	Cordless Power Drill- Model DW954
Size / Horse Power	3/8"
Power source	14.4 volts
Uses	Drilling

Safety Precautions

Hazards
Potential eye damage
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Face shield with safety glasses or goggles



Operation

Startup

1. Make sure battery is charged
2. Place proper drill bit in drill

Shutdown

1. Remove drill bit
2. Charge battery if necessary
3. Stop if need to adjust drill bit

Avoid the following

- Do not use a bent drill bit.
- Do not exceed the manufacturer's recommended maximum drilling capacities.
- Do not use a hole saw cutter without the pilot drill.
- Do not use high speed steel (HSS) bits without cooling or using lubrication.
- Do not attempt to free a jammed bit by starting and stopping the drill. Unplug the drill and then remove the bit from the workpiece.
- Do not reach under or around stock being drilled.
- Do not overreach. Always keep proper footing and balance.
- Do not raise or lower the drill by its power cord.
- Do not use in wet or muddy locations. Use a nonpowered drill instead.
- Do not use excessive force to drill into hard material. Reduce drill speed if possible.

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none">• Keep air vents clear to allow for adequate ventilation• Keep drill bits sharp
Accessories	

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none">• Keep air vents clear to allow for adequate ventilation• Keep drill bits sharp
Accessories	

Skil Saw Circular Saw

Description	Circular Saw- Mosel 5155
Size / Horse Power	7.75"
Power source	120 volts from plugged power source
Uses	Cut wood

Safety Precautions

Hazards
Amputation
Flying debris
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses
Hearing protection



Operation

Startup

1. Plug in saw to power source.
2. Allow the saw to reach full power before starting to cut
3. Use two hands to operate saw- one hand on trigger switch and other hand on front knob handle

Shutdown

1. Check that the retracting lower blade guard has returned to its starting position before lying down

Avoid the following*

- Do not hold or force the retracting lower guard in the open position.
- Do not place hand under the shoe or guard of the saw.
- Do not over tighten the blade-locking nut.
- Do not twist the saw to change, cut or check alignment.
- Do not use a saw that vibrates or appears unsafe in any way.
- Do not force the saw during cutting.
- Do not cut materials without first checking for obstructions or other objects such as nails and screws.
- Do not carry the saw with a finger on the trigger switch.

- Do not overreach. Keep proper footing and balance.
- Do not rip stock without using a wedge or guide clamped or nailed to the stock.

***Taken from the Canadian Centre for Occupational Health and Safety**

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none"> • Keep upper and retracting lower blade guard clean and free of saw dust • Keep motor free from accumulation of dust and chips
Accessories	

Task Force Electric Nailer

Description	Electric Nailer Model EYT3212N
Size / Horse Power	
Power source	120 Volts from plug in power source
Uses	Nail pieces together

Safety Precautions

Hazards
Potential eye damage
Potential hand damage
Training
Shop Safety Fundamentals
Site Specific Training
Protective Equipment
Safety glasses or face shield
Hearing protection



Operation

Startup

1. Check for correct air supply and pressure before connecting tool
2. Tighten all screws and cylinder caps

Shutdown

1. Disconnect before all adjustments

Avoid

- Do not point the tool toward yourself or anyone else whether it contains fasteners or not.
- Do not operate at a pressure above the manufacturers' rating.
- Do not depress the trigger unless the nose piece of tool is directed onto a safe work surface.
- Do not carry a tool with the trigger depressed.
- Do not load a tool with fasteners while the trigger is depressed.
- Do not overreach. Keep proper footing and balance.

Maintenance

Storage	Bessey- Room 25
Care	<ul style="list-style-type: none"> • Do not use compressed air to blow debris or to clean dirt from clothes.
Accessories	

Appendix

Complete Sawstop Manual

SawStop®

OWNER'S MANUAL 10" INDUSTRIAL CABINET SAW

Models ICS31230, ICS31240-50, ICS51230, ICS53230, ICS53415-50,
ICS53480, ICS53600, ICS73230, ICS73480, ICS73600

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4th printing, January 2010

Interim Revision V4.2 (March 2010)

Updates of this manual may be available at www.sawstop.com

The saw shown on the front cover includes
the optional 36 inch fence and extension table. Your saw may look different.

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To Our Customers

Thank you for purchasing a SawStop cabinet saw! It is the safest, most advanced table saw ever made. As you will soon discover, the features of the SawStop cabinet saw establish new standards in the table saw industry.

Your saw includes our revolutionary, award-winning technology that can tell the difference between cutting wood and cutting a person. If you ever accidentally contact the moving blade, the technology will detect that contact and stop the blade in milliseconds to minimize any injury.

This manual tells you more about your saw and how to operate and maintain it. Please read the manual carefully. The manual also includes our warranty and important safety information.

Again, thanks for purchasing a SawStop saw. We are confident you will be pleased with its performance. If you ever have any questions or comments, feel free to contact us at the address below.

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SawStop 10" Industrial Cabinet Saw

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Warranty

SawStop warrants to the original retail purchaser of a new industrial cabinet saw from an authorized SawStop distributor that the saw will be free from defects in material and workmanship for TWO YEARS from the date of purchase, and that the electric motor supplied with the saw will be free from defects in material and workmanship for FIVE YEARS from the date of purchase. SawStop warrants to the original retail purchaser of a refurbished, demonstration or floor model industrial cabinet saw from an authorized SawStop distributor that the saw will be free from defects in material and workmanship for ONE YEAR from the date of purchase, and that the electric motor supplied with the saw will be free from defects in material and workmanship for THREE YEARS from the date of purchase.

This warranty does not apply to defects arising from misuse, abuse, negligence, accidents, normal wear-and-tear, unauthorized repair or alteration, or lack of maintenance. This warranty is void if the saw or any portion of the saw is modified without the prior written permission of SawStop, LLC, or if the saw is located or has been operated outside of the country where the authorized SawStop distributor from whom the saw was purchased resides.

Please contact SawStop to take advantage of this warranty. If SawStop determines the saw is defective in material or workmanship, and not due to misuse, abuse, negligence, accidents, normal wear-and-tear, unauthorized repair or alteration, or lack of maintenance, then SawStop will, at its expense, and upon proof of purchase, send replacement parts to the original retail purchaser necessary to cure the defect. Alternatively, SawStop will repair the saw provided it is returned to SawStop, shipping prepaid, with proof of purchase and within the warranty period.

SawStop disclaims any and all other express or implied warranties, including merchantability and fitness for a particular purpose. SawStop shall not be liable for death, injuries to persons or property, or incidental, consequential, contingent or special damages arising from the use of the saw.

This warranty gives you specific legal rights. You may have other rights which vary from state to state.

No Warranty of Safety

It is important to understand that the braking technology in SawStop table saws **does not prevent contact with the blade—it minimizes the effect of the contact**. If you do contact the blade, the braking technology will stop the blade, and in most cases there will be no injury or only a small nick. However, you may incur a serious injury on a SawStop saw depending on factors such as the speed and direction your hand is moving when it contacts the blade and the type of blade you are using. Also, if you decide to use the saw in Bypass mode, the safety system will be disabled and will not activate in the event you contact the spinning blade.

If You Have an Accident

We at SawStop hope you never have an accident with your saw, and strongly encourage you to always follow safe practices and to use all the safety equipment provided with this saw. However, if you ever accidentally contact the spinning blade, the safety system will detect that contact and stop the blade within milliseconds to minimize any

injury. If this happens, please contact us with information regarding the accident because it is very important to our on-going research and development. The more we know about what happens during an accident, the better we are able to ensure that the safety system will react as quickly as possible in all accident situations. In addition, the brake cartridges store the electronic data measured during an accident. If you return the activated cartridge to SawStop, we can retrieve that data to learn how the electronics and software performed. If we confirm that your cartridge activated due to skin contact, we will send you a free replacement cartridge in exchange. Thanks for your help. SawStop 10" Industrial Cabinet Saw

Safety

A table saw is a dangerous tool and there are hazards inherent with using this saw. Some of these hazards are discussed below. Use common sense when operating the saw and use the saw only as instructed. **You are responsible for your own safety!**

WARNINGS

1. Read and understand the instruction manual and all safety warnings before operating this saw. Failure to follow instructions or heed warnings may result in electric shock, fire, serious personal injury or property damage. Save these instructions and refer to them whenever necessary.
2. Some types of dust created by sawing, power sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive toxicity or harm. Some examples of these chemicals are lead from lead-based paints, crystalline silica from bricks, cement, and other masonry products, and arsenic and chromium from chemically treated lumber. In addition, wood dust has been listed as a known human carcinogen by the U.S. government. The risk from exposure to these chemicals and to dust varies depending on how often you do this type of work. To reduce your exposure, work in a well ventilated area and work with approved safety equipment including dust masks or respirators designed to filter out such dust and chemicals.
3. THIS SAW MUST BE CONNECTED TO A GROUNDED WIRING SYSTEM or to a system having an equipment-grounding conductor. In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. Improper connection of the equipment-grounding conductor can result in a risk of electric shock and/or malfunction. Check with a qualified electrician or service personnel if the grounding instructions are not completely understood or if in doubt as to whether the tool is properly grounded.
4. Pay particular attention to instructions on reducing the risk of kickback. Kickback occurs when a work piece contacts the downstream edge of the blade as it is being cut and is propelled back towards the user at a high velocity.
5. Keep guards in place and in working order. Use a blade guard and spreader for every operation for which it can be used, including all through-sawing. Use a push-stick when required.
6. Remove adjusting keys and wrenches from the saw before turning it on.
7. Keep the top of the saw clean and free from clutter. Cluttered areas invite accidents.
8. Do not use the saw in dangerous environments. For example, do not use the saw in damp or wet locations or expose it to rain; and keep the work area well lighted.
9. KEEP CHILDREN AWAY from the saw. All visitors should be kept at a safe distance from the work area. Make the workshop kid-proof with padlocks, master switches, or by removing starter keys.
10. Do not try to force the saw to do something it was not designed to do. For example, do not try to cut wood faster than the motor can handle, and use the right blade for the job. Use the right blade for the job. SawStop 10" Industrial Cabinet Saw

WARNINGS

11. Wear proper apparel when using the saw. Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Non-slip footwear is recommended. Wear a protective hair covering to contain long hair.
12. Always wear safety glasses when using the saw. Also use a face or dust mask if the cutting operation is dusty. Everyday eyeglasses are not safety glasses.
13. Keep hands out of the line of the saw blade. Never reach around or over the saw blade. Keep proper footing and balance at all times.
14. Maintain the saw as specified in this manual. Use only identical replacement parts when servicing the saw.
15. Turn the power disconnect switch to OFF before servicing the saw and when changing components or accessories such as blades, brake cartridges, and the like.
16. Use only recommended accessories with the saw. Consult this manual for recommended accessories. The use of improper accessories may cause risk of injury to persons.
17. Never stand on the saw. Serious injury could occur if the saw is tipped or if the cutting tool is unintentionally contacted.
18. Check to make sure the saw is in proper working order before using the saw. For example, check the alignment of moving parts, look to see whether moving parts are binding or rubbing, check to see whether parts are broken, make sure accessories are properly mounted in the saw, and check any other conditions that may affect the operation of the saw. A guard or other part that is damaged should be properly repaired or replaced.
19. Feed work into the blade or cutter against the direction of rotation of the blade or cutter only. Feeding the work in the direction of rotation may cause the work to be thrown by the blade and could result in serious personal injury.
20. Never leave the saw running unattended. Wait until the blade comes to a complete stop, and then turn both the Main Power switch and the Disconnect switch to OFF when

you are finished using the saw.

21. You must install a rip fence before using this saw. Attempting to use the saw without a rip fence could result in a serious personal injury.
22. Always maintain firm control over the material being cut. Never cut any material freehand.
23. Never operate the saw with the access doors open. Do not attempt to bypass or defeat the access door interlock switches.
24. Secure your work. Use clamps or a vise to hold work when practical. It's safer than using your hand and it frees both hands to operate the saw.
25. Do not perform any operation freehand. Freehand means not using a fence (for rip cuts) or a miter gauge (for cross-cuts) to guide the work piece as it is being cut. Always maintain firm control over the material being cut. SawStop 10" Industrial Cabinet Saw

Warning Labels

Warning labels are mounted on the front, rear and side of the saw, on the table insert, and on the blade guard for your reference. Some of the warnings on those labels may be additional to the warnings listed above. Be sure to read the warning labels before using the saw. Copies of the English text of the warning labels are reproduced below: Thank you for purchasing this **SawStop®** table saw. This saw is equipped with the **SawStop®** safety system, designed to reduce the potential for a serious injury in the event of accidental contact with the saw blade. This saw operates differently than ordinary table saws. Each operator must read and understand the Owner's Manual before operating this saw.

WARNING

For your own safety, read the instruction manual before operating this saw.

1. Wear eye protection.
2. Use the blade guard and spreader for every operation for which it can be used, including all through sawing.
3. Keep hands out of the line of the saw blade.
4. Use a push-stick when required.
5. Know how to reduce the risk of kickback.
6. Do not perform any operation freehand.
7. Never reach around or over the saw blade.
8. Never try to test fire the brake system.
9. Never adjust the position of the brake cartridge while the blade is spinning.
10. Do not try to disable the brake system.
11. Unplug the saw before changing the blade, changing the brake cartridge or servicing.
12. Do not connect the motor directly to a power supply.
13. Use the bypass switch only when necessary.

14. Do not expose to rain or use in damp locations. SawStop 10" Industrial Cabinet Saw **!WARNING**

WARNING!

(On saws with 230V, single phase motors.)

(On saws with 230V, three phase motors.)

!WARNING

!WARNING

(On saws with 480V, three phase motors.)

(On saws with 600V, three phase motors.)

!WARNING

!WARNING 10 SawStop 10" Industrial Cabinet Saw

The SawStop Safety System

This table saw is equipped with the **SawStop®** safety system. This revolutionary technology was developed to reduce the potential for a serious injury in the event of accidental contact with the saw blade. **SawStop®** table saws are the first saws ever built to be smart enough to know the difference between you and the wood you are cutting.

The **SawStop®** safety system includes two components, an electronic detection unit and a fast-acting brake. The electronic detection unit detects when a person contacts the blade. A small electrical signal is induced onto the blade by electrodes placed around the arbor. Although this low voltage, high frequency signal is too small to feel, it can be measured by the detection system. When human skin comes into contact with the blade (or arbor), a portion of the signal is absorbed by the body due to the inherent electrical capacitance of the human body. As a result, the signal on the blade gets smaller and the detection unit recognizes this as contact.

Wood and other non-conductive materials such as plastic, foam, cardboard, Corian®, melamine, etc., do not cause a drop in the signal because those materials do not absorb the signal on the blade. Conductive materials such as aluminum and other metals, carbon fiber materials, mirrored acrylic, carbon-filled materials, etc., will typically cause the brake to activate. If you need to cut these conductive materials, the safety system can be placed in "Bypass" mode to temporarily disable the brake. (See page 33 for instructions on how to use the saw in Bypass mode.)

The fast-acting brake includes a small fuse that holds a strong spring in compression. If the electronic detection unit detects contact while the blade is spinning (including during coast down), the fuse is burned by a surge of electric current. The spring then pushes an aluminum brake into the teeth of the spinning blade. The teeth cut into the brake, stopping the blade. The total time between the detection of contact and stopping the blade is just a few milliseconds. If the brake is activated while the blade is at or near full speed, the blade will also quickly retract below the table. The system will not activate the brake when the blade is stopped—even if you spin the blade by hand. This allows you to touch or change the blade when the motor is off just as with ordinary table saws. However, for safety, always switch the Main Power and Disconnect switches to OFF when changing the blade.

The SawStop® safety system is active whenever the Main Power is on. The safety system continuously performs many different self-checks to ensure that the components of the system are operating properly. If any problems are detected, the safety system will disable the motor and display a *system status code* to identify the problem (see page 30 for a description of the system status codes and the corrective action). If the problem is detected while the motor is spinning, the motor will be shut off. The safety system will not allow the motor to be started, even in Bypass mode, as long as a problem is detected.

The electronic detection unit and fast-acting brake are contained in the “brake cartridge,” which is positioned under the table and just behind the blade (see Fig. 1). The brake cartridge must be correctly installed before the motor can be started (see page 41 for instructions on removing/installing the brake cartridge). In the event that the brake is activated, a new brake cartridge must be installed before the saw can be used again.

Brake Cartridge

Fig. 1 SawStop 10" Industrial Cabinet Saw 11

The SawStop Safety System

The SawStop® safety system does not interfere with your use of the table saw in any way. You can still make all the cuts that you can with ordinary saws including 0° to 45° bevels, non-through cuts, and dado cuts (with the optional dado brake cartridge—sold separately). Furthermore, no special blades or other accessories are required. Any standard 10 inch saw blade or 8 inch dado set is compatible with your SawStop® saw.

Although your SawStop® saw operates similar to ordinary table saws, there are a few important points to keep in mind as you use the saw.

1. Do not rely on the SawStop® safety system to protect against unsafe operation. Although the system is designed to react and stop the blade very quickly in the event of accidental contact, it cannot react until contact is detected. This means that you may receive at least a minor injury even with the SawStop® safety system. Therefore, always use safe operating practices, and use the blade guard, push stick and other safety devices whenever possible. The SawStop® safety system, like the airbag in a car, should be considered as a last measure to minimize injury when all other safety practices and devices have failed to prevent an accident.

2. Do not operate the saw in Bypass mode unless you are cutting electrically conductive material. When Bypass mode is engaged, the SawStop® safety system will not activate the brake if contact is detected and a serious injury could result if you contact the blade.

3. Do not use non-conductive blades, including abrasive blades, blades with plastic hubs, or blades that have non-conductive teeth. The safety system cannot induce the electrical signal onto a non-conductive blade, and blades with non-conductive teeth may prevent the system from detecting contact. Only standard steel blades with either steel or carbide teeth should be used.

4. Do not use saw blades or dado sets that have a lacquer or other coating on the teeth. These coatings are non-conductive and therefore can reduce the speed at which the system detects contact. In other words, a coated tooth must cut slightly deeper into the skin for contact to be detected, resulting in a somewhat more serious injury. Used blades that originally had a lacquer coating are OK to use since the coating is worn away within a few uses. However, SawStop recommends that you examine each tooth on such blades to confirm that no lacquer remains. If you decide to use a new blade that has lacquer on the teeth, be especially carefully during the first several uses.

5. In the event of contact, the blade will be stopped in about 3–5 milliseconds (coarse toothed blades stop more quickly than fine-toothed blades such as plywood blades). Therefore, the seriousness of the injury incurred will depend on the speed at which a person's hand or other body part is moving in toward the blade. For example, if a person's hand is moving toward the blade at 1 ft./sec., then the depth of the cut will be approximately 1/16 inch (1 ft./sec. * 0.005 sec. = 0.005 ft. or 1/16 inch). At faster speeds, the cut will be proportionally deeper. Therefore, it is possible to be very seriously injured even with the SawStop® safety system.

6. Never use a blade with damaged or missing teeth as this can result in a more serious injury or a false activation of the brake. Blades with variable spacing between teeth are compatible with the SawStop® safety system, however you must ensure the brake is positioned correctly by rotating the blade at least one full revolution to be certain that none of the teeth touch the brake (see page 18 for more information on setting the brake position).

7. Never attempt to use a blade other than a single 10 inch blade with the standard SawStop® brake cartridge. Never attempt to use a dado set or blade other than an 8 inch dado set with the SawStop® dado cartridge. The use of smaller diameter blades with a brake cartridge designed for larger blades could result in a serious injury because the brake cannot be positioned correctly to stop the smaller blades.

8. Do not use molding heads. The use of molding heads could result in a serious injury because neither the standard brake cartridge nor the dado brake cartridge is designed to stop a molding head. 12 SawStop 10" Industrial Cabinet Saw

The SawStop Safety System

9. Never install the blade backwards. The brake might not stop a blade that is installed backwards, therefore you may receive a serious injury.

10. Blades with depth-limiting shoulders may take longer to stop in the event of an accident than standard blades, and you could receive a more serious injury. Therefore, SawStop recommends using blades without depth-limiting shoulders.

11. Never install two or more 10 inch blades together. The safety system is not designed to stop multiple stacked 10 inch blades and a serious injury may result.

12. Never stack dado blades thicker than 13/16 inch. The 8 inch dado brake cartridge is not designed to stop dado stacks thicker than 13/16 inch and a serious injury may result.

13. The motor cannot be started without a blade installed. Since the safety system disables the motor if the blade is spaced too far from the brake, a missing blade will be detected as a blade-to-brake spacing error and the motor will be disabled.

14. Do not use table inserts, guards, fences or other devices which have metal parts that may come into contact with the blade. Any metal part that contacts the blade may cause the brake to activate. All SawStop® accessories are specifically designed to prevent metal contact with the blade.

15. Do not disconnect or turn off electrical power to the saw before the blade has stopped spinning. If electrical power is interrupted while the blade is moving, the safety system will not be active and therefore the brake will not activate in the event of accidental contact. You may receive a serious injury if you contact the spinning blade while the electrical power is interrupted.

16. Do not replace the arbor belt with a non-SawStop® belt. The SawStop® arbor belt is designed to dissipate static electricity that may build up on the spinning blade which could cause a false activation of the brake.

17. Never reach under the blade while it is spinning. In the event the brake is activated, the retraction of the blade may cause a very serious injury if you contact the bottom of the blade.

18. Never touch the arbor, arbor pulley, arbor nut or arbor washer when the blade is spinning because you may receive a serious injury. These parts are all electrically coupled to the blade and the brake will activate if contact with these parts is detected.

19. Never attempt to disable the SawStop® safety system or modify the electrical wiring of the saw in any way. Any change or modification or disablement of the safety system or other wiring could result in a serious injury and will void all warranties.

20. Never attempt to repair, adjust, modify or otherwise service a brake cartridge. There are no user-servicable parts inside the brake cartridge. The brake cartridge is permanently sealed against dust and other contaminants—destruction, removal, or alteration of this seal voids all warranties.

21. Wet, pressure-treated wood may cause the brake to activate. The chemicals used to pressure treat wood often contain large amounts of copper, which is conductive. When pressure-treated wood is wet, the combination of copper and water substantially increase the conductivity of the wood. Therefore, allow wet pressure-treated wood to fully dry before cutting. Typically, the wood will be sufficiently dry if left unstacked in a dry location for 24 hours. If you must cut wet pressure-treated wood, you can make several cuts in the wettest piece(s) using Bypass Mode to test whether the wood is too wet. See pages 32 and 33 for instructions on testing the conductivity of a material using Bypass Mode. If the test indicates the brake will activate if the system is not in Bypass Mode, you must either allow the wood to dry or make the remaining cuts in Bypass Mode. SawStop 10" Industrial Cabinet Saw 13

Unpacking Your Saw

Use care when unpacking your saw to prevent damage to any of the saw components or accessories. Remove all packing materials and accessories before removing the saw from the shipping pallet. If the saw or the accessories have been damaged during shipping, report the damage to your shipper before proceeding with unpacking. Read and understand this manual fully before assembling and operating your saw.

The package for your saw includes the following items:

1. One table saw with motor.
2. Two extension wings (the right extension wing is pre-installed).
3. One blade guard and spreader with anti-kickback pawls.
4. One riving knife (pre-installed).
5. One 10 inch saw blade.
6. One zero-clearance table insert (pre-installed).
7. One brake cartridge for a 10 inch blade (pre-installed).
8. One brake cartridge key (pre-installed).
9. One miter gauge.
10. One push stick
11. Two blade wrenches.
12. Three hex key wrenches.
13. One plastic bag containing assembly hardware.
14. Two bypass switch keys.
15. This Owner's Manual.
16. One Handle for the tilt hand wheel (the handle on the elevation hand wheel is pre-installed).

Optional accessories such as a fence and rails, an extension table, extra brake cartridges, etc., are packaged separately. 14 SawStop 10" Industrial Cabinet Saw

Get to Know Your Saw

The major components of your saw are identified below. Make sure you can identify these components in order to follow the instructions in this manual.

	1
	4
	2
16	2

External Components

1. Table Top
2. Extension Wings
3. Blade Guard
4. Standard Table Insert
5. Switch Box
6. Elevation Hand Wheel
7. Tilt Hand Wheel
8. Motor Cover
9. Terminal Box
10. Dust Port
11. Miter Gauge
12. Blade Wrenches (2)
13. Belt Access Door
14. Bypass Key
15. Spreader / Riving Knife Storage Pin
16. Miter Gauge Slots
17. Tilt Angle Indicator (red)
18. Tilt Angle Scale
19. Disconnect Switch

14	5
17	
	8
	6
18	
Fig. 2	3
11	
15	
12	
10	
	7
13	
19	9

Fig. 3 SawStop 10" Industrial Cabinet Saw 15

Get to Know Your Saw

- 40
- 33
- 28
- 21
- 27
- 39
- 22
- 20

Internal Components

20. Front Trunnion Bracket
21. Front Trunnion
22. Rear Trunnion Bracket
23. Rear Trunnion
24. Elevation Plate
25. Motor
26. Arbor Block
27. Arbor Nut
28. Arbor Washer
29. Arbor Belt
30. Motor Belt
31. Dust Shroud Door
32. Upper Elevation Limit Bolt
33. Lower Elevation Limit Bolt
34. 0° Tilt Limit Bolt
35. 45° Tilt Limit Bolt

- 36. Brake Positioning Bolt
- 37. Brake Cartridge
- 38. Cartridge Key
- 39. Spreader / Riving Knife Clamping Handle
- 40. Riving Knife
- 41. Elevation Threaded Rod
- 42. Dust Blast Shield

37
41

32
31
38
Fig. 4
36
35
26
34
29
23
24
30
25

Fig. 5 16 SawStop 10" Industrial Cabinet Saw

Setting Up Your Saw

1. Saw Placement:

Position the saw on a level surface away from sources of moisture and electrical noise. Make sure there is sufficient room to allow free access to all sides of the saw.

If you plan to relocate the saw occasionally, mount the saw in the optional SawStop Industrial Mobile Base (see Fig. 6). This mobile base has been specifically engineered to fit the Industrial Cabinet Saw and to support the weight of the saw including the optional T-Glide Fence, Rails and Extension table. See the Owner's Manual included with the Industrial Mobile Base for instructions on mounting the saw in the base and operating the base.

2. Extension Wing Assembly:

The saw is shipped with the right extension wing pre-installed. Position the left extension wing next to the table, making sure the small beveled edge on the surface of the extension wing is facing forward. Insert the three M10x1.5x30 bolts (with washers and lock washers) through the holes in the side of the wing and into the threaded holes in the side of the table (see Fig. 7). Align the top of the extension wing with the table using a straight edge and then fully tighten the bolts using a 17 mm wrench. You may want someone to help hold the extension wing in place while you fasten the bolts.

3. Table and Extension Wing Cleaning:

The table and extension wings are shipped with a coating of oil on the top surfaces to prevent the cast iron from rusting. Carefully wipe the top surfaces with a soft, clean cloth to remove the oil. To prevent the top surfaces from rusting during use, you can coat the surfaces with rust-preventative materials such as TopCote® or TopSaver™, available in many woodworking stores. If the saw will not be used for an extended time, the table and wing surfaces can also be protected by applying a light coating of oil and then covering with wax paper.

4. Rip Fence Installation:

This saw ships without a rip fence. You must install a rip fence prior to using the saw. Refer to the manual that accompanied your rip fence for instructions on installing the fence on the saw.

Fig. 6
Fig. 7 SawStop 10" Industrial Cabinet Saw 17

5. Tilt Hand Wheel Handle Installation:

Install the handle on the tilt hand wheel by screwing the threaded portion of the handle into the matching hole on the hand wheel (see Fig. 8). Use a wrench to tighten the handle securely to the hand wheel.

6. Blade or Dado Installation:

Note: if your saw uses three phase power, do not install the blade until the power supply has been connected and you have verified that the motor spins in the correct direction. See page 24 for instructions on connecting your saw to a power supply.

The blade that is included with the saw is coated in oil to prevent rust during shipment. Clean this blade thoroughly before installation. If you wish to install a different blade, use a high quality blade that does not have anti-rust coatings on the teeth (e.g., lacquer, wax, etc.) Such coatings can interfere with (or potentially defeat) the ability of the system to detect contact. SawStop also recommends using blades without depth-limiting shoulders, since blades with depth-limiting shoulders may take longer to stop in the event of an accident.

Setting Up Your Saw

handle
tilt hand wheel

Fig. 8

WARNING! Only install one standard 10 inch blade or one 8 inch dado set (with optional dado cartridge). Do not install other size blades or dado sets. Do not install molding

heads or other non-standard cutters. Use of these non-standard blades or cutters may cause serious injury.

WARNING! Do not attempt to use saw blades made of materials that are electrically non-conductive (e.g., abrasive blades, blades with plastic hubs, etc.). The SawStop® safety system will not allow the saw to operate if these blades are installed. 18 SawStop 10" Industrial Cabinet Saw

To install the blade, use the open end of one of the blade wrenches included with the saw to hold the arbor behind the arbor flange, and use the closed end of the other blade wrench to loosen the arbor nut. The arbor nut is right-hand threaded so turn the nut counter-clockwise to loosen it and clockwise to tighten it. After removing the arbor nut and arbor washer, install the blade and reinstall the arbor washer and arbor nut. Use the blade wrenches to tighten the arbor nut securely (see Fig. 9).

Install dado sets just like you install a blade. For dado widths larger than about $\frac{3}{8}$ inch, remove the arbor washer and tighten the arbor nut against the dado set. (Remember to remove the standard 10 inch brake cartridge and install the optional 8 inch dado brake cartridge before installing your dado set.)

7. Brake Position Adjustment:

It is important to make sure that the brake cartridge is close to, but not touching, the edge of the blade to minimize the time it takes the safety system to stop the blade in the event of an accident. The spacing between the brake cartridge and the blade should be checked whenever the blade or brake cartridge is changed. If the spacing is too small, the blade may touch the brake and cause the brake to activate.

The spacing between the brake cartridge and the blade is adjusted by the yellow brake positioning bolt mounted in the top of the arbor block (see Fig. 10). To access the brake positioning bolt, set the tilt angle to 0° and adjust the blade elevation to approximately $1\frac{1}{2}$ inches above the table top. The bolt will be accessible through the opening in the table top.

Setting Up Your Saw

Fig. 9

WARNING! Never install the blade backwards. The brake might not stop a blade that is installed backwards, therefore you may receive a serious injury.

brake positioning
bolt

Fig. 10 SawStop 10" Industrial Cabinet Saw 19

Using the 8 mm hex L-wrench included with the saw, turn the spacing adjustment bolt clockwise to decrease the spacing between the brake cartridge and the edge of the blade, and counter-clockwise to increase the spacing. Adjust the brake position as needed to set the spacing between the teeth of the blade and the closest point on the brake cartridge to between $\frac{1}{16}$ inch and $\frac{1}{8}$ inch (see Figs. 11 and 12).

One simple method to adjust the spacing is to place a U.S. nickel between the closest points on the blade and brake cartridge to give a spacing of about 0.070 inch. Then adjust the spacing adjustment bolt until the teeth of the blade just skim the nickel when the blade is rotated by hand.

Note that the point on the brake pawl that is closest to the blade may be at the end of the brake pawl rather than the middle if the diameter of the blade is slightly less than 10 inches.

The exact distance is not critical, but it is important to make sure the blade teeth do not touch the brake pawl.

Since blades are often slightly eccentric, the spacing between the blade and brake pawl may change slightly as the blade rotates. Therefore, you should rotate the blade by hand at least one full revolution *with the nickel in place* after setting the spacing. This will verify that no part of the blade will hit the brake when the motor is started.

Setting Up Your Saw

A close-up of the area inside the circle is shown in Fig. 12, below.

Fig. 11
spacing

Fig. 12

CAUTION! Always spin the blade by hand *with the nickel in place* after changing the blade or the brake cartridge, or after adjusting the spacing between the brake cartridge and the blade! This ensures that no part of the blade will touch the brake cartridge once the motor is started. 20 SawStop 10" Industrial Cabinet Saw

Note: some users may find it easier to adjust the brake position by opening the motor cover and removing the dust shroud door to see the blade and brake cartridge more clearly. To remove the dust shroud door, loosen the thumb screw and lift the door upward until the pivot pin in the door clears the pivot hole in the cast iron trunnion brace (see Fig. 13).

8. Blade Guard / Riving Knife Installation:

Your SawStop® saw includes a unique, quick-release blade guard mounting system. This mounting system was developed to allow you to quickly remove and install the blade guard and riving knife without the use of tools and without the need for realignment. The mounting system is factory-aligned to the arbor flange and should not require adjustment. If you wish to change the alignment, see page 63 for instructions.

The saw is shipped with the riving knife installed. The riving knife is an extremely important tool for reducing the potential for kickback when the blade guard cannot be used. The riving knife should always be used whenever you need to make rabbet or other non-through cuts (where the blade does not cut through the top of the wood), narrow cuts where the guard would interfere with the rip fence, and any other situations where the guard would interfere with the cut.

For the majority of cuts, the blade guard should be used. Remove the riving knife by lifting the clamping handle fully upward until the clamping plate moves away from the riving knife (see Fig. 14). Then move the riving knife slightly toward the right to clear the positioning pins, and lift it out of the clamp.

Setting Up Your Saw

dust shroud door
thumb screw

Fig. 13

pull handle upward to release clamp

Fig. 14

Dado Sets: when using a dado set, neither the blade guard nor the riving knife may be used. Instead, use other protective devices such as push sticks and featherboards.

SawStop 10" Industrial Cabinet Saw 21

To install the blade guard, first pivot the large anti-kickback pawls upwards and guide them into the catches on either side of the guard to hold them out of the way (see Fig. 15). Next, position the spreader in the clamp and flat against the base plate. The positioning pins will automatically align the spreader in the correct position.

Lower the clamping handle completely to lock the spreader in place (see Fig. 16). After you have installed the table insert as described on page 22, lower the large anti-kickback pawls back down until they touch the table insert.

If the clamping handle is difficult to lower, make sure the spreader is positioned flat against the base plate.

To remove the guard, use the same procedure as removing the riving knife. Similarly, to install the riving knife, use the same procedure as installing the guard.

The clamping force used to hold the spreader and riving knife in place can be increased if the spreader and riving knife are not held securely, or decreased if too much force is required to lower the clamping handle. See page 66 for instructions on adjusting the clamping force.

For instructions on the operation and use of the blade guard and the riving knife, please see page 34.

Note: both the spreader and the riving knife are 2.3 mm (0.090 in.) thick. Do not use a saw blade with a kerf less than 2.3 mm with these tools. (The kerf of a saw blade is the width of the cut produced by the blade.)

Setting Up Your Saw

large
anti-kickback
pawl
catch
small
anti-kickback
pawl

Fig. 15

spreader
push handle downward to engage clamp

Fig. 16

WARNING! Use the blade guard and spreader for every operation for which it can be used, including all through-sawing. 22 SawStop 10" Industrial Cabinet Saw

9. Table Insert Installation:

Your saw is shipped with a high-quality, zero-clearance table insert. The insert is factory-adjusted to fit securely in the table opening and below the table surface. If you wish to perform additional adjustment on the insert, see page 61 for instructions.

The rear of the insert is held in place by two lock-down screws in the bottom rear of the insert and two lock-down screws at the rear of the table opening. The front of the insert is held down by latches formed on the rotating lock-down lever. The lock-down lever allows you to easily remove the insert without the use of tools.

To install the table insert, hold it at a slight angle, with the lock-down lever rotated upward and the rear of the insert lower than the front. Slide the rear of the insert around the spreader or riving knife and against the back of the table opening so that the heads of the rear lock-down screws in the bottom of the insert slide under the heads of the lock-down screws in the table opening (see Figs. 17 and 18)

Then lower the front end of the insert into the table opening until the insert lies flat. Finally, rotate the lock-down lever all the way down until it rests fully below the table.

Note: when the blade guard is installed, it may be necessary to raise the elevation of the blade to allow the anti-kick pawls to clear the opening in the table and rest against the wear plates.

Setting Up Your Saw

lock-down lever
rear lock-down screws
hold insert at a slight angle to table when installing or removing

Fig. 17

rear lock down screw in insert
rear lock down screw in table opening

Fig. 18

WARNING! Never operate the saw without the table insert in place.

CAUTION! Do not use table inserts made of metal or other electrically-conductive materials. This can cause the brake to be activated unnecessarily. SawStop 10" Industrial Cabinet Saw 23

10. Connection of Dust Collection:

All table saws generate a substantial amount of dust, which can be a serious physical hazard. Your SawStop® saw is designed to provide superior dust collection both above and below the table.

A dust shroud below the table is engineered to capture the airflow generated by the spinning blade and divert the dust out of the cabinet through a 4 inch diameter port at the rear of the cabinet (see Fig. 19). The dust-collecting blade guard also works by redirecting the airflow and channeling the above-table dust out through a port at the back of the guard (see Fig. 20).

To ensure maximum dust collection performance for your saw, it is important to connect a suitable dust collector to both dust ports that provides at least 400 CFM of airflow. To connect your saw to the dust collector, SawStop recommends the optional SawStop Over-Arm Dust Collector (p/n TSA-ODC), available from your dealer or

from SawStop directly. Alternatively, you can connect both dust ports to the dust collector using standard parts (pvc pipes and fittings, vacuum hose and adaptors, etc) available from hardware stores and/or woodworking stores.

Setting Up Your Saw

1.5 inch
outer diameter
1.25 inch
inner diameter
4" dust collection port

Fig. 20

Fig. 19

WARNING! Some types of dust created by sawing, power sanding, grinding, drilling, and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive toxicity or harm. Some examples of these chemicals are lead from lead-based paints, crystalline silica from bricks, cement, and other masonry products, and arsenic and chromium from chemically treated lumber.

In addition, wood dust has been listed as a known human carcinogen by the U.S. government.

The risk from exposure to these chemicals and to dust varies depending on how often you do this type of work. To reduce your exposure, work in a well ventilated area and work with approved safety equipment including dust masks or respirators designed to filter out such dust and chemicals. 24 SawStop 10" Industrial Cabinet Saw

11. Electrical Power Connection:

Your saw is shipped without a cord. The saw must be permanently connected to the building electrical system in accordance with the National Electrical Code and any other applicable state and local codes. Extension cords should not be used with this saw. Consult a licensed electrician if you are unsure how to properly connect the saw to the building electrical system.

All electrical connections must be made to the terminal box on the rear exterior of the cabinet (see Fig. 21). The specification label located just above the terminal box indicates the type of power supply (i.e., voltage, amperage and phase) required. Attempting to operate the saw on a power supply different than specified on the specification label will void all warranties and may result in serious injury as well as damage to, or a malfunction of, the saw or safety system.

Connect electrical power to the terminal box as illustrated in the electrical schematics on pages 81–85. Do not make any connections to the disconnect switch box or the magnetic contactor box mounted inside the cabinet. The magnetic contactor box is sealed against tampering. The destruction, removal or alteration of the seal will void all warranties.

Motor Rotation Test for Saws using Three Phase Power

When connecting this saw to a three phase power supply, you must test the motor to verify it spins in the correct direction before installing a blade. However, the safety system normally prevents the motor from spinning without a blade installed. To safely test the direction of motor spin, first make sure that no blade is installed and then turn on the Main Power. Wait for approximately 5-10 seconds until the Red LED is on solid and the Green LED blinks slowly (indicating the system cannot detect the blade). Next, insert the Bypass key in the Bypass switch, turn the key clockwise and hold for at least one second. While holding the Bypass key turned, pull out the Start/Stop paddle. The system will briefly pulse the power to the motor so that the direction of motor spin can be determined. The arbor should spin counter-clockwise when viewed from the right side of the saw.

Setting Up Your Saw

WARNING! Do not connect the saw to electrical power until the saw is completely assembled and you have read and understood this entire manual.

terminal box

Fig. 21

WARNING! Do not install a blade on saws using three phase power until the motor has been verified to spin in the correct direction. If the motor spins backward with a blade installed, the arbor nut may spin off the arbor, which could allow the blade to spin off the arbor and cause a serious injury.

WARNING! This saw must be connected to a grounded metal permanent wiring system, or to a system having an equipment-grounding conductor. Failure to connect this saw to an adequate electrical ground may cause the safety system to malfunction and could result in a serious injury or electric shock. SawStop 10" Industrial Cabinet Saw 25

12. Disconnect Switch:

The saw is equipped with an electrical disconnect switch mounted on the left side of the cabinet. When the disconnect switch is switched to OFF (see Fig. 22), electrical power is physically disconnected from the entire saw, including the SawStop safety system. The disconnect switch should be switched to OFF whenever performing any adjustments, maintenance or repairs to the saw, including changing blades, installing or removing the blade guard and riving knife, etc.

In addition, the disconnect switch can be locked in the OFF position with a padlock or similar device as shown in Fig. 23. The disconnect switch should be locked in the OFF position whenever there is a possibility of someone accidentally applying power to the saw while adjustments, maintenance or repairs are being made.

When the saw has been completely installed and is ready for use, turn the disconnect switch to ON as shown in Fig. 24.

Setting Up Your Saw

Fig. 22

Fig. 23

Fig. 24 26 SawStop 10" Industrial Cabinet Saw

13. Access Door Interlock Switches:

As an additional safety feature, this saw is equipped with interlock switches on the belt access door and the motor cover that prevent the motor from starting when either door is open. In the event that one of the doors is opened while the motor is on, the corresponding interlock switch will cause the motor to shut down.

If either the access door or motor cover is open when you attempt to start the motor (or if a door opens when the motor is already on), a System Status error will be displayed where the red LED is on solid and the green LED flashes rapidly. If this occurs, you must close and latch the open door and then cycle the Main Power switch on the Switch Box. (See page 28.)

The interlock switches are pre-positioned to be “closed” when the belt access door and motor cover are fully closed. In the event one of the switches becomes misaligned, you can reposition the switch(es) as described below to ensure all switches are closed when the access door and motor cover are closed.

Belt Access Door Interlock Switch: The interlock switch on the belt access door is located inside the lower front edge of the access door opening as shown in Fig. 25. The switch has a lever-type actuator and is mounted on a bracket that is attached to the inside of the cabinet by two screws.

If necessary, you can reposition the switch by loosening the screws and moving the switch so that it is actuated when the belt access door is fully closed. Re-tighten the screws to ensure the switch remains in the correct position.

Motor Cover Interlock Switch: The interlock switch on the motor cover is located near the lower rear edge of the motor cover opening as shown in Fig. 26. This switch has a push-button type actuator and is mounted to the inside of the cabinet by two screws. An adjustable socket-head screw is threaded through a bracket on the motor cover. This socket-head screw presses the switch closed when the motor cover is closed.

If necessary you can reposition the switch by loosening the screws and moving the switch. You can also adjust the position of the socket-head screw by loosening the locking nut and turning the screw. Re-tighten all hardware to ensure the switch continues to operate correctly.

Setting Up Your Saw

WARNING! The door interlock switches are connected to 208-240 VAC. Attempting to disable or modify the interlock switches or wiring could result in a severe injury or electric shock. Turn the Disconnect Switch to OFF before adjusting the interlock switches.

Fig. 25
Fig. 26 SawStop 10” Industrial Cabinet Saw 27

Using Your Saw

1. Adjusting the Blade Height:

The height of the blade can be adjusted from 1/8 inch below the table top to 3/8 inch above the table top. To adjust the height of the blade, loosen the elevation locking knob and turn the elevation hand wheel until the blade is at the desired height (see Fig. 27). Turn the hand wheel clockwise to raise the blade, and counter-clockwise to lower the blade. Lock the blade height by tightening the elevation locking knob.

For through-cuts (i.e., cuts where the wood is cut through its entire thickness), the blade height should be adjusted so that the top of the blade is no more than 1/8 inch to 1/4 inch above the workpiece.

The saw includes limit stops to prevent the height of the blade from being adjusted past the maximum and minimum setpoints. These limit stops are pre-set at the factory and should not need adjustment. If you decide to adjust the blade elevation limit stops, see page 57 for instructions.

2. Adjusting the Blade Tilt Angle:

The tilt (bevel) angle of the blade can be adjusted between 0° and 45°. To adjust the tilt angle of the blade, loosen the tilt locking knob and turn the tilt hand wheel until the blade is at the desired angle. The tilt angle of the blade is indicated by the position of the tilt angle indicator on the tilt angle scale (see Fig. 28). Turn the tilt hand wheel clockwise to increase the tilt angle, and counter-clockwise to decrease the tilt angle. Lock the tilt angle by tightening the tilt locking knob.

The saw includes limit stops to prevent the tilt angle of the blade from being adjusted past the 0° and 45° setpoints. These limit stops are pre-set at the factory and should not need adjustment. If you decide to adjust the blade tilt limit stops, see page 59 for instructions.

elevation
lock knob
elevation
hand wheel

Fig. 27

CAUTION! When adjusting the height or tilt angle of the blade, reverse the hand wheel slightly to release tension after reaching the limit stops. This prevents any slight twisting of the cast iron assembly that might affect blade parallelism and table alignment.

tilt hand wheel
tilt lock knob
tilt angle scale

Fig. 28 28 SawStop 10” Industrial Cabinet Saw

3. Turning on Main Power and Starting the Motor:

Your SawStop® saw is equipped with an Electrical Disconnect Switch to supply power to the saw, a Main Power Switch to supply power to the SawStop® safety system, and a Start/Stop paddle to turn the motor on and off. Both the Main Power Switch and the Start/Stop paddle are mounted on the Switch Box, which is located just below the front edge of the table and to the left of the elevation hand wheel (see Fig. 29). The Switch Box also includes red and green LEDs that display the current status of the safety system and saw. A label describing the System Status LED displays is positioned on the side of the Switch Box. In addition, the displays are described in more detail below.

After ensuring that the Start/Stop paddle is in the “OFF” position (i.e., pushed in), turn the Main Power Switch to the “ON” position by flipping the toggle upward. This will turn on power to the SawStop® safety system, which will run through a brief initialization routine to test whether the system is operating properly. During this initialization period (approximately 5–10 seconds), the LEDs will blink in different patterns as the safety system steps through various self-check steps. Once the safety system completes the initialization routine, the LEDs will display the “READY” status display (green LED on solid, red LED off). The saw is now ready for use.

If the READY status is not displayed after 15 seconds, the safety system has detected an error that must be corrected before the saw can be used. See page 30 for a key to the LED status codes and an explanation of the error detected for each code.

To start the motor, pull the Start/Stop paddle out. To stop the motor, push the Start/Stop paddle in. The paddle is designed so that it can be pushed in by the operator’s upper leg or knee in an emergency.

Using Your Saw

WARNING! Never start the saw when the blade is in contact with the workpiece or any other object.

main power switch
Disconnect
switch

Fig. 29

Start/Stop paddle
switch box

WARNING! disconnect or turn off electrical power to the saw before the blade has stopped spinning. If electrical power is interrupted while the blade is moving, the safety system will not be active and therefore the brake will not activate in the event of accidental contact. You may receive a serious injury if you contact the spinning blade while the electrical power is interrupted. SawStop 10" Industrial Cabinet Saw 29

It is not necessary to turn off the Main Power switch after pushing in the Start/Stop paddle to turn off the motor. If you plan to make several cuts with the saw, you can leave the Main Power Switch in the **ON** position between cuts to eliminate the delay due to the initialization routine. Once you have finished using the saw turn the Main Power Switch to **OFF** to reduce the likelihood of inadvertent start-up.

In addition, the Main Power Switch has a lockout key that you can remove to prevent children or other non-authorized users from turning the saw on. To remove the key, pull it out, away from the switch. To replace the key, press it back into the socket until it snaps into place (see Fig. 30). When the key is removed, the Main Power Switch can be turned **OFF**, but it cannot be turned **ON**.

Using Your Saw

main power switch lockout key

Fig. 30 30 SawStop 10" Industrial Cabinet Saw

4. System Status Codes:

The LED lights on the front of the switch box display the current status of the safety system. Each light may be off, or may be on, and if it is on, it may be blinking slowly, blinking quickly, or not blinking at all, which we call "on solid." Together, the red and green lights display a code, referred to as the System Status Code, which tells you if the saw is operating normally or if there is a problem. When you first turn the Main Power switch on, the safety system will complete an initialization routine to verify the safety system is operating normally. After the initialization routine is completed, you should not see the red light unless there is a problem. If this happens, find the System Status code below (see Fig. 31) to determine how to correct the problem.

Using Your Saw

StatusRedGrn System InitializingSystem ReadyReplace CartridgeCoasting DownBypass Mode

OnPush Start/Stop Paddle To OFFTurn Cartridge Key To ONNo Blade Rotation See Manual Adjust Position of Brake CartridgeContact Detected During StandbyContact Detected During BypassOverload Due To Wet Wood

Symbol Key:

- Green LED blinks fast
- Green LED blinks slowly
- Green LED is on solid
- Red LED blinks fast
- Red LED blinks slowly
- Red LED is on solid

Fig. 31

WARNING! Always switch both the Disconnect Switch and the Main Power Switch to **OFF** before performing adjustments or maintenance to the saw. SawStop 10" Industrial Cabinet Saw 31

System Initializing— this code indicates that the system is performing self-checks and energizing the brake system to activate in the case of an accident. This condition should clear within 15 seconds after the Main Power Switch is turned on.

If the ambient temperature is very low (below about 0° F), this code may take longer to clear. The safety system detects such low temperatures within the brake cartridge. If necessary, the system turns on a heater inside the cartridge to raise the temperature of the electronics. This code will continue until the temperature inside the brake cartridge is within the normal operating range.

System Ready— this code indicates that all self-checks have been completed, the safety system is operating properly, and the saw is in Standby mode ready to run.

Replace the Brake Cartridge— this code indicates that the cartridge has already been fired or there is some other permanent defect that cannot be corrected. If the cartridge has not been fired, turn off the Main Power and turn it back on. If the error continues, install a new cartridge.

Blade is Coasting Down— this code indicates that the blade is coasting down and that the safety system is ready to activate the brake if contact is detected. The safety system detects the rotation of the motor to determine when the blade is coasting down. If you touch the blade while this code is flashing, the brake will activate.

ALWAYS MAKE SURE THE BLADE HAS COME TO A COMPLETE STOP AND THE COAST DOWN STATUS CODE HAS CLEARED BEFORE TOUCHING THE BLADE!

Bypass Mode is ON— this code indicates that the saw is running in Bypass Mode and will not activate the brake in the event of accidental contact with the blade. Bypass Mode allows you to cut electrically conductive materials such as aluminum without activating the brake. When the saw is in Bypass Mode, the safety system disables the brake. See page 33 for instructions on how to use the saw in Bypass Mode.

Push the Start/Stop Paddle to OFF— this code indicates that the Start/Stop paddle was left in the **ON** position (i.e., pulled out). Push the paddle in to the **OFF** position to clear this error. This is a safety feature to prevent the saw from restarting after a power loss or after the safety system has turned the saw off due to an error detected during use.

Turn the Cartridge Key to ON— this code indicates that the cartridge locking key is not turned to *ON*. To clear this error make sure the cartridge locking key is correctly installed and turned to *ON*. See page 45 for instructions on how to install and turn on the cartridge key.

No Blade Rotation— this code indicates that the motor is not able to spin the blade as expected when the Start/Stop Paddle was pulled out. The most common cause of this error is an open access door. Check to make sure both the Belt Access Door and the Motor Cover are fully closed and that the corresponding interlock switches are actuated. See page 26 for instructions on adjusting the position of the interlock switches.

Adjust Position of the Brake Cartridge— this code indicates that the blade is too far from the aluminum brake pawl. To clear this error, adjust the position of the brake cartridge as described on page 18. This error code will also be displayed if there is no blade installed, if a blade smaller than 10 inch is installed, or if a non-conductive blade (e.g. abrasive blade) is installed.

Using Your Saw³² SawStop 10" Industrial Cabinet Saw

Contact was Detected During Standby— this code indicates that the safety system detected contact with the blade (or a portion of the arbor) when the blade was not spinning. This code will be displayed if you come into contact with the blade or arbor while the system is in Standby mode. The brake will not be activated and the code will automatically clear within 5 seconds after contact is ended. The system will not allow the motor to start while this code is displayed.

Contact was Detected During Bypass— this code indicates that contact was detected while the saw was running in Bypass Mode. As described above, the brake will not be activated during Bypass but the safety system will continue to monitor for contact. If this code is displayed, then it indicates that the brake would have activated if the system had not been in Bypass Mode. This error will automatically clear once the blade has finished coasting down.

Material Conductivity Test

The "Contact Detected During Bypass" code allows you to "test" a particular material to see if it is too conductive to cut during normal operation. For example, if you have a new material you need to cut and are not sure if it is conductive, you can make several cuts in Bypass Mode. If this error code is displayed, then it means the material is too conductive and must be cut in Bypass Mode to prevent false trips of the brake. If the error code is not displayed after several trial runs, then it is likely that the material is not conductive and you can make future cuts in normal mode. (See page 33 for instructions on how to operate the saw in Bypass Mode.)

Overload Due to Wet Wood— this code indicates that the wood being cut is too wet or too green. Very wet or green wood can interfere with the safety system's ability to detect contact. The system monitors for wet and green wood and, if the wood is too wet or too green, the system will shut off the motor and display this error code. **To clear this error, turn the Start/Stop paddle to OFF and turn the Main Power to OFF and then back to ON.**

In addition, wet pressure-treated wood may cause an overload error or even cause the brake to activate. The chemicals used to pressure treat wood often contain large amounts of copper, which is conductive. When pressure-treated wood is wet, the combination of copper and water substantially increase the conductivity of the wood. Therefore, allow wet pressure-treated wood to fully dry before cutting. Typically, the wood will be sufficiently dry if left unstacked in a dry location for 24 hours.

If you must cut wet pressure-treated wood, you can perform the Material Conductivity Test described above to test whether the wood is too wet. If the test indicates the brake will activate if the system is not in Bypass Mode, you must either allow the wood to dry or make the remaining cuts in Bypass Mode.

Note: if the saw shuts down due to an overload error, do not attempt to finish cutting that piece of wood until it has dried. The overload error indicates that the system was close to firing the brake before it went into overload. Therefore, repeatedly attempting to cut a wet piece of wood could result in an incorrect activation of the brake.

Using Your Saw^{SawStop 10" Industrial Cabinet Saw 33}

5. Using the Saw in Bypass Mode:

If you need to cut electrically conductive materials such as aluminum with this saw, you must operate the saw in Bypass Mode to prevent the brake from activating. In order to operate the saw in Bypass Mode, the safety system requires you to follow the procedure below to ensure that the saw is never placed in Bypass Mode accidentally. If you are unsure whether a particular material is conductive, you can use the Material Conductivity Test described on page 32.

Note: the saw will not start in Bypass Mode unless the brake cartridge is properly installed and all error codes are cleared. It is not possible to "override" an error by starting the saw in Bypass Mode.

To Operate the Saw in Bypass Mode

- Make sure the Start/Stop paddle is in the OFF position and then switch the Main Power switch to ON. Wait until the safety system completes the initialization routine and the system status code indicates the saw is ready for operation.
- Turn the Bypass Key clockwise and hold it for at least 1 second (see Fig. 32). The green LED will begin blinking slowly and the red LED will flash once to let you know when the 1 second has elapsed.

Note: to prevent unauthorized use of the saw in Bypass Mode, remove the Bypass Key from the saw when not in use.

- While still holding the Bypass Key turned, pull the Start/Stop paddle out to the *ON* position. The blade will start to spin.
- Continue to hold the Bypass Key turned for at least 1 second after the motor starts—the red LED will flash once again to let you know when the 1 second elapses. If you release the Bypass key before 1 second has elapsed, the motor will stop and the "Push Start/Stop Paddle to OFF" error code will be displayed. If this happens, switch the Start/Stop paddle to *OFF* and repeat this procedure from the beginning.
- When you have completed your cut, push the Start/Stop paddle in to turn off the motor. The safety system will remain in Bypass Mode until the blade comes to a complete stop. Once the blade has stopped, the safety system returns to normal Standby Mode. The next time you start the motor, the safety system will be active unless you follow the procedure described above to start the motor in Bypass Mode.

Using Your Saw

Fig. 32

WARNING! Never run the saw in Bypass Mode unless necessary to cut conductive materials. The brake system will not activate when the saw is in Bypass Mode and a serious injury could result.

CAUTION! Always check the saw blade after cutting conductive materials. Sometimes a shard of aluminum or other conductive material will become embedded on the end of a saw blade tooth. If that occurs and the saw is started, then the shard could contact the aluminum brake pawl and cause the brake to activate. 34 SawStop 10" Industrial Cabinet Saw

6. Using the Blade Guard:

Using the blade guard is one of the most important steps you can take to prevent injury when using your saw. Most table saw injuries occur when the blade guard is either not being used or not being used properly. Except for the a few specific situations where the blade guard cannot be used (e.g., dado cuts, rabbet cuts, and extremely narrow cuts), always use the blade guard as described below.

Each of the components of the blade guard assembly is designed to improve the safety of the operator (see Figs. 33 and 34).

The spreader, which supports all the other components of the assembly, helps minimize kickback by preventing a workpiece from pinching or shifting into the back of the blade.

Large and small anti-kickback pawls on each side of the spreader help to further minimize kickback. The large anti-kickback pawls can be disabled or held out of the way by rotating them upwards and guiding them into the catches on either side of the blade guard (see Fig. 34). The small anti-kickback pawls can be disabled by raising the blade slightly so that they do not contact the wood.

Using Your Saw

WARNING! Use the blade guard and spreader for every operation for which it can be used, including all through-sawing.

dust
port
limit rod
spreader
blade guard shell

Fig. 33

large
anti-kickback
pawl
catch
small
anti-kickback
pawl

Fig. 34 SawStop 10" Industrial Cabinet Saw 35

The limit rod blocks material that is taller than the blade to prevent the material from getting pinched between the table and the spreader. The limit rod can be pivoted upward to a balance point above the guard to provide unimpeded access to the table opening when changing the blade, etc. When lowering the limit rod, make sure to push it down until it snaps into its locked position (see Fig. 35).

The blade guard shell is constructed of a strong clear polycarbonate to provide a physical barrier between you and the blade without obstructing your view of the workpiece. The guard shell is designed to capture the air flow generated by the spinning blade and direct it through a channel above the blade. As a result, virtually all of the above-table dust created during cutting is collected by the blade guard shell and exhausted through the port at the back of the blade guard assembly (see Fig. 36).

The blade guard shell is mounted to the spreader so that it can pivot freely to automatically adjust to the height of the workpiece (up to 3 1/8 inches high). Like the limit rod, the guard shell can be pivoted upward to a balance point where it will stay without further support. This allows you to adjust or change the blade without removing the guard.

Install the blade guard as described on page 20.

To use the guard, set the blade elevation and tilt angle to the desired settings. If necessary, swing the guard shell down to rest on the table or insert, and lower the limit rod until it snaps in its locked position. Cut the workpiece as described beginning on page 38. The guard will "float" on the top of the workpiece as it passes under the guard. After making the cut, the cut-off portion of the workpiece may be held beneath one of the anti-kickback pawls. In this case, turn off the motor and wait until the blade completes coast-down before pushing the cut-off portion past the anti-kickback pawls.

Keep the guard shell clean and free of dust to allow unobstructed viewing of the blade and workpiece. For successful operation, the spreader must remain flat, and the guard shell and anti-kickback pawls must pivot freely. If any portion of the guard ceases to function properly, replace or repair it before continuing to use the saw. When not in use, the blade guard can be stored on the guard / riving knife storage pin on the left side of the cabinet (see Fig. 3 on page 14).

Using Your Saw

push limit rod down until it snaps in place

Fig. 35

Fig. 36 36 SawStop 10" Industrial Cabinet Saw

7. Using the Riving Knife:

The riving knife should be used whenever the blade guard cannot be used. The only operation where neither the guard nor the riving knife can be used is making dado cuts. To use the riving knife, remove the blade guard and install the riving knife as described on page 20. When the blade guard / riving knife clamping bracket is properly aligned, the riving knife will be positioned below the top of the blade and inside the kerf of the blade (see Fig. 37). As a result, the riving knife can be used even for rabbet cuts and other non-through cuts.

For successful operation, the riving knife must remain flat so that the full height of the riving knife is positioned inside the kerf of the blade. In the event the riving knife becomes bent, replace it or have it straightened before continuing to use it. When not in use, the riving knife can be stored on the guard / riving knife storage pin on the left side of the cabinet (see Fig. 3 on page 14).

8. Using the Miter Gauge:

The miter gauge included with your saw allows you to easily make miter cuts and perform cross-cuts (cuts across the grain of the wood). When not in use, the miter gauge can be stored in the brackets formed on the front of the motor cover (see Fig. 38).

The main bar of the miter gauge fits in the slots in the table which are located on either side of the blade. The miter gauge can be used in either slot; however, do not use the miter gauge in the slot on the left of the blade when making bevel cuts. Positioning the miter gauge in the left slot when making bevel cuts causes the blade to be tilted toward the miter gauge and the operator's hand which could result in a serious injury.

Using Your Saw

iving knife

Fig. 37

WARNING! Use the riving knife for every operation where the blade guard cannot be used. Neither the blade guard nor the riving knife can be used when making dado cuts.

miter gauge in storage location

Fig. 38 SawStop 10" Industrial Cabinet Saw 37

A guide plate is mounted on the end of the main bar (see Fig. 39) and fits in the bottom of the slots to hold the front of the miter gauge in place when the miter gauge head is positioned in front of the forward edge of the table. Three spring bearings are mounted in the side of the main bar to ensure the bar slides smoothly in the slots without excessive play. These spring bearings are preset at the factory to allow smooth operation of the miter gauge, and should not require further adjustment. If you wish to adjust the spring bearings, see page 68 for instructions.

The face of the miter gauge can be adjusted between -60° and $+60^\circ$ relative to the blade. To adjust the miter angle, turn the handle counter-clockwise approximately $1/2$ turn to unlock the miter gauge head. Pull the indexing pin backwards until it stops, and then rotate the head until the indicator is positioned over the desired angle on the miter gauge scale. Use an angle gauge to set the angle between the miter gauge head and the blade if precise alignment is needed. Once the angle is correct, turn the handle clockwise to lock the miter gauge head.

Adjustable index stops at -45° , 0° , and $+45^\circ$ are provided to allow quick and precise alignment at those angles. To use the index stops, rotate the miter gauge head until the angle indicator reads approximately 5° higher (more positive) than the desired angle, and then push the indexing pin forward until it stops. Next, rotate the miter gauge head counter-clockwise until the index stop hits the indexing pin, and then tighten the handle to lock the gauge at the desired angle. The index stops are preset at the factory to be within $\pm 0.5^\circ$ of the true angle, so further adjustment should not be necessary. If you wish to adjust the index stops, see page 68 for instructions.

For added safety, an optional wood face can be mounted to the miter gauge face to provide additional support when cutting large or small workpieces. To mount the face, use wood screws with shanks sized to fit through the slots in the miter gauge head. The wood face should be at least 1 inch higher than the maximum depth of cut, and should extend beyond the edges of the miter gauge head.

When using the miter gauge, start with the workpiece and miter gauge well in front of the blade. Place your hand closest to the blade on the miter gauge handle, and your other hand on the workpiece opposite the blade (see Figs. 40 and 41 on page 38). Make sure the workpiece is held squarely and firmly against the miter gauge face and the table. Move the miter gauge and workpiece slowly and smoothly past the blade. For through-cuts, shift the workpiece slightly away from the blade before pulling the miter gauge and workpiece back toward the front of the saw. Do not touch the portion of the workpiece that was cut off until the blade has completed coast-down.

Using Your Saw

guide plate
main bar
turn locking
handle to unlock
miter gauge head
spring
bearings
miter gauge
head

Fig. 39

indexing
pin

WARNING! Never make free-hand cuts. Never hold or touch an unsupported piece of wood while the blade is spinning. 38 SawStop 10" Industrial Cabinet Saw

9. Cross-Cutting:

Cross-cutting or cutting perpendicular to the grain of the workpiece, is performed using the miter gauge. To lessen the risk of kickback, the rip fence should be removed or positioned so that it does not contact the workpiece during cross-cutting.

To begin, make sure the motor is off and the blade is completely stopped. Tilt the blade to the desired tilt angle and adjust the blade elevation to about $1/8$ inch above the workpiece. Place the miter gauge in the right miter slot for bevel cuts, or in either the right or left miter slots for making non-bevel cuts. Adjust the miter gauge to the desired miter angle (see page 37).

Position the workpiece against the miter gauge head and slowly push the miter gauge toward the non-spinning blade until the workpiece is almost touching the blade. Next, slide the workpiece to the left or right until the blade is aligned with the point on the workpiece to be cut. Pull the miter gauge and workpiece back away from the blade before starting the motor. Holding the miter gauge and workpiece firmly, move the miter gauge and workpiece slowly and smoothly past the blade. See page 36 for additional instructions on the use of the miter gauge.

Using Your Saw

Fig. 40

Fig. 41

WARNING! To reduce the potential for kickback and a serious injury, move the rip fence out of contact with the workpiece when cross-cutting to prevent the workpiece from

10. Rip Cutting:

Rip cutting or cutting with the grain of the workpiece must be performed with a rip fence to support and guide the workpiece. The miter gauge should not be used when making rip cuts. The blade guard should be used for all through cuts.

To begin, make sure the motor is off and the blade is completely stopped. Tilt the blade to the desired tilt angle and adjust the blade elevation to about 1/8 inch above the workpiece. Position the rip fence for the desired rip width and lock the fence in place. Refer to the owner's manual that accompanied your rip fence for instructions on using your fence.

Position the workpiece flat on the table and flush against the side of the rip fence. Turn on the motor. Use both hands to push the workpiece smoothly toward the blade, as shown in Figs. 42 and 43. It is important to always maintain at least 6 inches between your hands and the blade. If your hand farthest from the fence comes within 6 inches of the blade, remove that hand from the workpiece and continue the cut using the other hand or with both hands near the fence. If your hand closest to the fence also comes within 6 inches of the blade, remove that hand and use the included push stick to finish the cut. (See page 77 for instructions on making additional push sticks.)

If your cut requires the fence to be positioned too close to the blade to use a push stick, use an auxiliary fence and push block to make the cut. (See pages 79 and 78 for instructions on making an auxiliary fence and push block.) In this case, clamp the auxiliary fence to the rip fence and slide the workpiece along the auxiliary fence. When your hand comes within 6 inches of the blade, remove your hand from the workpiece and finish the cut using the push block.

Using Your Saw

Fig. 42

WARNING! A rip fence must always be used when making rip cuts. Never perform a ripping operation freehand or a serious injury may result.

WARNING! To reduce the chance of a serious injury, always use a push stick or push block when your hand comes within 6 inches of the blade. 40 SawStop 10" Industrial Cabinet Saw

Continue pushing the workpiece toward the back of the saw until it clears the anti-kickback pawls on the spreader. Turn off the motor. Do not attempt to remove the cut-off portion until the blade has come to a complete stop.

When ripping pieces longer than approximately 4 feet, use rollers, an out-feed table or a similar support to prevent the workpiece from dropping off the back of the table.

When making non-through cuts, the blade guard and spreader must be removed. For these cuts, install the riving knife (except when making dado cuts) and use one or more featherboards to hold down the workpiece and help prevent kickback. (See page 80 for instructions on making a featherboard.) The featherboard should be clamped to the rip fence. Alternatively, the featherboard can be clamped to an extender board that is clamped or screwed to the rip fence as shown in Fig. 44. Although not shown in the illustration, a second featherboard can be clamped to the top of the table and against the left side of the workpiece to hold the workpiece against the rip fence.

Using Your Saw

Fig. 43

Fig. 44 SawStop 10" Industrial Cabinet Saw 41

11. Changing the Brake Cartridge:

The SawStop standard brake cartridge (shown in Fig. 45) includes a sealed housing containing the SawStop system electronics, and an aluminum block called a brake pawl. The sealed housing also includes a high-speed actuator that pushes the brake pawl into the teeth of the saw blade in the event accidental contact is detected.

Like any electronic component, brake cartridges should be handled with care. Store brake cartridges in a safe, dry place when not in use. Do not drop, hit or otherwise subject brake cartridges to abuse as this may damage the cartridge. In addition, the high speed actuator could be unexpectedly triggered due to damage, thereby causing the brake pawl to be pushed away from the housing at very high speed and with a large amount of force.

Although the brake cartridge housing is sealed to inhibit the entry of dust and other debris, you should periodically check the cartridge visually for the presence of dust inside the housing as this might indicate that the seal has been damaged. The operation of the cartridge will not be affected by a small amount of dust, but you should replace the cartridge if a substantial amount of dust has begun to accumulate in the housing.

The brake cartridge must be changed in the event the brake is activated. The brake cartridge must also be changed whenever swapping between 10 inch standard blades and dado sets. For dado cuts, the optional dado brake cartridge must be installed (see Fig. 46). The SawStop dado cartridge is identical to the standard brake cartridge with the exception of the brake pawl. The dado brake pawl is larger than the standard brake pawl to accommodate the width and diameter of 8 inch dado sets. Other size dado sets, molding heads or standard 10 inch blades are not compatible with the 8 inch dado cartridge.

Using Your Saw

Brake Pawl
Cartridge Key

Standard 10"
Cartridge

Sealed Housing
Fig. 45

Dado Brake Pawl
8" Dado
Cartridge

Fig. 46 42 SawStop 10" Industrial Cabinet Saw

Changing the brake cartridge is both simple and foolproof. The safety system will not allow the motor to start unless the brake cartridge is correctly installed. Before changing the brake cartridge, make sure the Start/Stop paddle is pushed in to the *OFF* position, the Main Power Switch is toggled down to the *OFF* position, and the Disconnect Switch is switched to the *OFF* position.

The brake cartridge is mounted beneath the table and behind the blade (see Fig. 47). To change the cartridge, begin by setting the tilt angle to about 0° and raising the blade elevation to close to the maximum height. This allows the easiest access to the brake cartridge.

Next, remove the table insert from the table (see page 22), and swing the rear of the dust shroud door to the right, away from the brake cartridge. Rotate the spreader/riving knife clamping handle fully upward to provide clearance for removing the brake cartridge.

Using Your Saw

WARNING! Never drop or otherwise subject a brake cartridge to misuse as this may damage the brake cartridge and potentially cause the brake pawl to be released unexpectedly and result in a serious injury.

brake cartridge

Fig. 47

WARNING! Always make sure both the Disconnect Switch and the Main Power Switch are in the *OFF* position before removing or installing the brake cartridge. SawStop 10" Industrial Cabinet Saw 43

You can change the brake cartridge either from the top of the saw through the table opening, or from the right side of the saw through the opening behind the motor cover. To change the cartridge from the right side, first open the motor cover. Next, remove the dust shroud door by loosening the thumb screw at the front of the door and lifting the door upward until the pivot pin clears the mounting shaft. See Fig. 13 on page 20.

The brake cartridge is mounted on a large pivot pin and a smaller positioning pin as shown in Fig. 48. Both the pivot pin and positioning pin extend outward from a cartridge mounting bracket that sets the position of the cartridge. The cartridge mounting bracket also holds a computer cable that self-aligns to the computer connector in the side of the cartridge. A cartridge key is used to lock the brake cartridge in place against the cartridge mounting bracket.

Removing a Brake Cartridge: to remove the cartridge, first remove the cartridge key by turning it 90° clockwise and then pulling it away from the cartridge (see Fig. 49). Set the cartridge key aside for use with the new cartridge.

It may take a small amount of force to turn the key and pull it out. Make sure you turn the key a full 90°, as the key cannot be pulled out unless it has been fully rotated.

Using Your Saw

pivot pin
cartridge key
positioning pin

Fig. 48

Fig. 4944 SawStop 10" Industrial Cabinet Saw

If the brake cartridge has not been activated, slide the brake cartridge to the right until it clears both pins as shown in Fig. 50. If the cartridge has been activated, the brake pawl typically will be locked onto the blade or dado set. As a result, it is usually easiest to remove the blade and the brake cartridge together as described below.

You can remove the blade and brake cartridge simultaneously by alternately moving the blade and then the cartridge to the right to "walk" them off the arbor and pins. Often you can "walk" them to the right by hand, but if not, you can use a blade wrench as a lever. To do this, place one end of the wrench between the blade and the side of the arbor block as close to the arbor as possible. Then push the blade a short distance away from the arbor flange (see Fig. 51). Next, place the end of the wrench between the brake pawl and the cartridge mounting bracket to pry the cartridge away from the arbor block a short distance (see Fig. 52). Only move the blade and cartridge a short distance each step, for example, a distance equal to one or two threads on the arbor. Otherwise, the blade and cartridge may bind on the arbor and pivot pin. Repeat these steps to walk the blade and cartridge off. A significant force may be needed to pry the cartridge off the mounting pin if the brake pawl deformed and pinched the pivot pin when it stopped the blade.

Using Your Saw

Fig. 50

Fig. 51

Fig. 52SawStop 10" Industrial Cabinet Saw 45

Installing a Brake Cartridge: To install a brake cartridge, the above process is reversed. Align the mounting holes in the cartridge with the pivot pin and positioning pin in the saw. Push the cartridge onto the pins until it rests against the cartridge mounting bracket. The cartridge will automatically align with the computer cable mounted in the saw.

Next, align the cartridge key with the hole in the cartridge housing. See Fig. 49. The key shaft has a ridge that must be aligned with a recess in the key hole in the housing. As a result, the key can only be inserted into the hole when the red handle is pointing toward the brake pawl. Press the cartridge key fully into the cartridge and rotate the key 90° counter-clockwise to lock the cartridge in place. The key will not rotate unless it is fully seated against the side of the cartridge housing and the cartridge housing is pressed against the cartridge mounting bracket.

Once the key is rotated to its locked position, it cannot be removed and the cartridge will be locked in place. Rotating the key to the locked position also actuates a switch inside the cartridge that signals to the safety system that the cartridge is correctly installed and locked in place. The system will not allow the saw to be started if the switch is not actuated. If you attempt to turn on the saw when the key is not in the locked position, the LED lights on the Switch Box will flash a status code as described on page 30. Turning the key to the locked position is sometimes referred to as turning the key to "ON".

To complete the installation, the brake cartridge must be correctly positioned relative to the blade or dado set. Once the brake cartridge is installed, fully rotate the spreader/riving knife clamping handle counter-clockwise to lock the spreader or riving knife in place. Next, install the blade or dado set as described on page 17, and adjust the brake position as described on page 18. Rotate the blade by hand at least 1 complete revolution to ensure that the blade does not contact the brake.

If you changed the brake cartridge from the side of the saw reinstall the dust shroud door and close the motor cover. If you changed the brake cartridge through the table opening, make sure the dust shroud door is closed. Finally, reinstall the table insert as described on page 22.

Using Your Saw

WARNING! Always check, and if necessary, adjust the position of the brake after changing the brake cartridge or the blade. An improperly positioned brake could increase the time required to stop the blade in the event of accidental contact, or cause the brake to actuate unexpectedly if the blade comes into contact with the brake. 46 SawStop 10"

Industrial Cabinet Saw

What to do if the SawStop Safety System Activates

When the SawStop Safety System is activated, the brake pawl will be pushed into the blade to stop its rotation. If the blade is spinning at a significant speed, the arbor block will retract to lower the blade below the table. Both of these actions will occur within just a few milliseconds. In addition, the safety system will turn off the motor, and display the "Replace Cartridge" system status code on the LED lights on the switch box (see page 30).

Once the safety brake is activated, you will need to carry out the 3 steps described below to reset the safety system and the saw before continuing to use the saw:

1. **Reset the Retraction of the Arbor Block:** during normal use, the front of the arbor block is held in place by a spring-loaded support mechanism called the retraction bracket. When the brake is activated, the angular momentum of the spinning blade is transferred to the arbor block, causing it to drop out of the retraction bracket.

To reset the arbor block into the retraction bracket, turn the elevation hand wheel counter-clockwise until the lower elevation limit stop is reached. The arbor block will automatically engage the retraction bracket. Now turn the elevation hand wheel clockwise to raise the arbor block and blade. You can also reset the arbor block manually by pulling the arbor bolt sharply upward until you feel the arbor block engage the retraction bracket.

2. **Replace the Brake Cartridge:** the SawStop brake cartridge must be replaced in the event the brake is activated. The brake pawl and components inside the sealed housing are expended when the brake is activated. Therefore, the brake cartridge cannot be reused after the brake is activated and it may be discarded. Once the activated cartridge has been removed, obtain another brake cartridge that has not been activated and follow the instructions on page 41 to install it.

If the brake activated due to accidental contact between the blade and an operator, please return the cartridge to SawStop. During use the cartridge is constantly measuring data about the operation of the saw and the signal received from the blade. When the brake is activated, the most recent data is stored into memory and SawStop can download the data from the activated cartridge. This data is very important to our continuing research and development program. Therefore, contact SawStop to receive a free return shipping label. If SawStop's engineers verify the activation was due to contact with skin, you will receive a free replacement cartridge.

If you are unsure why the cartridge activated, you can also return the cartridge for analysis by SawStop's service engineers. When the cartridge data is downloaded, it is usually possible to determine what specifically caused the brake to activate so that unintended activations can be prevented.

3. **Replace the Blade:** when the brake is activated the aluminum brake pawl will pivot into the teeth of the saw blade with a large amount of force and speed. This usually causes the brake pawl to lock up on the blade. If you remove the brake pawl from the blade, one or more of the carbide teeth on the blade will usually be pulled off. Therefore, it is almost always necessary to replace the blade after the safety system has been activated.

Once the retraction of the arbor block has been reset and the brake cartridge and blade have been replaced, the saw is ready for operation.

WARNING! Always make sure that both the Disconnect Switch and the Main Power Switch are in the OFF position before replacing the brake cartridge on your saw. SawStop 10" Industrial Cabinet Saw 47

Making Adjustments to Your Saw

1. **Aligning the Table:**

For accurate cuts with the miter gauge, the miter slots in the table should be parallel to the blade. This is also important for rip cuts since the rip fence should be aligned to the miter slots. Two procedures for aligning the table are described below. The preferred procedure is described first and provides an accuracy of about ± 0.002 inch. An alternative procedure is also described which provides an accuracy of about ± 0.010 inch.

Preferred Table Alignment Procedure

To align the table precisely, you will need a dial test indicator with a resolution and accuracy of at least 0.0005 inches, and a mount for the indicator that will slide smoothly in the miter slots. The mount should slide on the table on either smooth plastic glide plates or on ball bearing rollers. The mount should also include a lower rail or similar structure that fits relatively tightly in the miter slot, but not so tight as to prevent the mount from sliding. A sample mount is shown in Fig. 53.

Begin by removing the insert as described on page 22, and installing a clean, high-quality blade or precision blank onto the arbor as described on page 17. The blade should be flat and parallel to within 0.001 inch or less, and should not be coated with paint or similar materials that may affect the measurement. Attempting to align the table using a blade that is not very flat will cause similar inaccuracy in the alignment.

Your SawStop saw has been factory adjusted to rigid specifications to provide the highest quality performance and results. Additional adjustment or alignment should not be necessary. Nevertheless, your SawStop cabinet saw has been designed to allow a wide range of adjustments and alignments to achieve the ultimate in precision. Before changing the alignment of any portion of the saw, make sure you read and understand the entire alignment procedure.

WARNING! Always make sure that both the Disconnect Switch and the Main Power Switch are in the OFF position before making any adjustments to your saw.

dial test indicator
magnetic base
steel plate

plastic mount

Fig. 53 48 SawStop 10" Industrial Cabinet Saw

Next, set the tilt angle to 0°. When setting the tilt angle and blade elevation, be sure to back the hand wheels off slightly after reaching the limit stops. As with all table saws, pulling the hand wheels tight against the limit stops can cause a slight twisting of the trunnion assembly and lead to inaccurate alignment measurements.

Raise the blade elevation to about 3 inches above the table. Position the dial test indicator so that the measurement arm rests against the right side of the blade and about 1/4 inch above the center of the arbor flange. Slide the mount forward until the measurement arm is about 1/2 inch inside the front edge of the blade. See Fig. 54.

Set the dial indicator to zero. Slide the dial test indicator mount smoothly toward the back of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Note the reading of the dial indicator as the mount moves across the blade.

If the dial indicator moves positive and then negative (or vice versa) a substantial amount, or if there is a sudden change in the reading rather than a gradual change, this indicates a non-flat area of the blade. If this happens, try rotating the blade 1/4 turn and retesting. Repeat this process until you get a reading that is not significantly affected by blade flatness. If you cannot get a good reading, try a different blade.

If there is a gradual and continuous change in the dial reading of over 0.002 inch in either the positive or negative direction, rotate the blade 1/2 turn. Slide the dial indicator mount back toward the front of the blade and reset the indicator to zero. Now slide the mount toward the back of the saw again while noting the dial reading. If there is similar change but in the opposite direction, this indicates that the left and right surfaces of the blade are not parallel. Rotate the blade 1/4 turn and repeat the process from the beginning. If you cannot get consistent readings, try a different blade.

If the dial indicator reads a relatively consistent difference between the front and rear of the blade, take the average of the readings. A measurement of 0.002 inch or less indicates that the table is aligned within the margin of error for this measurement and no further alignment is necessary. For measurements larger than 0.002 inch, you can adjust the position of the table to increase the parallelism between the blade and the miter slot.

Making Adjustments to Your Saw

Fig. 54 SawStop 10" Industrial Cabinet Saw 49

To adjust the alignment, begin by loosening the 4 mounting bolts (see Fig. 55) that attach the table to the front and rear trunnion brackets using a 17 mm wrench or an adjustable wrench. Slide the dial indicator to the front of the blade and set the readout to zero. Slide the dial indicator mount to the rear of the blade. The dial indicator should now be reading close to the average measurement you made previously.

The table alignment is set by a pivot pin at the front of the table, and positioning screws near the rear of the table on both the left and right sides (see Figs. 56 and 57). If the measurement is positive, loosen the left positioning screw and tighten the right positioning screw. If the measurement is negative, loosen the right positioning screw and tighten the left positioning screw.

You should see the readout on the dial indicator change as you adjust the positioning screws. Adjust the screws until the readout is the same, but in the reverse direction. For example, if the initial reading was +0.006 inch, adjust the positioning screw until the reading is -0.006 inch.

Now slide the dial indicator mount back to the front of the blade and re-zero the readout. Slide the indicator mount smoothly forward until the indicator measurement arm is about 1/2 inch inside the rear edge of the blade. The new measurement should be much closer to 0.000 inch.

If the new measurement is still too high, repeat the above process until the parallelism between the blade and the miter slot is satisfactory. Finally, tighten the four table mounting bolts to secure the table to the front and rear trunnion brackets. For best results, sequentially tighten each bolt a little at a time until all are tight. Watch the dial indicator while tightening, and if one bolt causes a significant change, tighten the other bolts first.

Making Adjustments to Your Saw

The bolts that attach the table to the front trunnion bracket are shown below. The bolts that attach the table to the rear trunnion bracket (not shown) are at the back of the saw.
Fig. 55

The pivot pin is
pressed into this boss
positioning screw

Fig. 56

Fig. 57 50 SawStop 10" Industrial Cabinet Saw

Alternate Table Alignment Procedure

For this procedure you will need a set of calipers or a combination square. Begin by removing the table insert and installing a blade or reference plate as described in the Preferred Table Alignment Procedure. Set the tilt angle to 0° and raise the blade elevation to approximately 3 inches above the table.

Select a point on the edge of the blade that is between two consecutive teeth and place a mark near that point. Rotate the blade until that mark is just above the table and toward the front of the saw. If you are using calipers, measure the distance between the left edge of the right-hand miter slot and the left side of the blade. (*Make sure to measure to the flat plate of the blade rather than the tooth.*) If you are using a combination square, set the end of the ruler flat against the right side of the blade, and position the base to be flush against the left side of the right-hand miter slot. See Fig. 58. Write the measurement down.

Now rotate the blade until the point you marked is just above the table but toward the back of the saw. Repeat the measurements above (see Fig. 59). If necessary, loosen the table mounting bolts and adjust the position of the table as described in the Preferred Table Alignment Procedure. Repeat the above measurements and table alignment until you are satisfied with the parallelism between the blade and the miter slot. Finally, tighten the table mounting bolts.

Making Adjustments to Your Saw

Fig. 58

combination square

Fig. 59 SawStop 10" Industrial Cabinet Saw 51

2. Aligning the Blade Elevation Assembly:

The blade elevation assembly controls the motion of the blade as it is raised and lowered. Aligning the blade elevation assembly ensures that there is minimal lateral movement of the blade as it is raised and lowered. Although all table saws suffer from some lateral blade movement due to tolerance stack-ups in machining, no other major cabinet saw allows you any adjustment to minimize this problem.

The SawStop cabinet saw uses a vertical slide elevation design for ultra smooth operation and rigidity. As shown in Fig. 60, the blade and arbor block are mounted on a large cast iron base called the elevation plate. The elevation plate slides up and down on two shafts that are connected to the front and rear trunnions. This blade elevation assembly is aligned by adjusting the angle of the rear shaft so that it is parallel with the front shaft. When the front and rear shafts are parallel, the blade will have minimum lateral movement as it is raised and lowered.

To align the blade elevation assembly, you will need a dial test indicator and a mount for the indicator as described above. Begin by removing the insert and installing a clean, high-quality blade or precision blank onto the arbor as described on page 17. The blade should be flat and parallel to within 0.001 inch or less, and should not be coated with paint or similar materials that may affect the measurement. Attempting to align the blade elevation assembly using a blade that is not very flat will cause similar inaccuracy in the alignment.

Making Adjustments to Your Saw

front trunnion
rear trunnion
rear shaft
front shaft
elevation plate

Fig. 60 SawStop 10" Industrial Cabinet Saw

This procedure requires two measurements. For the first measurement, set the tilt angle to 0° and lower the blade below the table. Make sure to back the hand wheels off slightly to release the pressure between the trunnion assembly and limit stops. Next, position the dial test indicator near the right side of the blade. The indicator measurement arm should rest against the blade approximately ½ inch inside the front edge of the blade and about ½ inch higher than the top of the arbor washer (see Fig. 61). Depending on the geometry of your dial test indicator, it may be necessary to position the indicator below the table.

Now measure the parallelism of the blade relative to the miter slots in the table as described above in the section named "Aligning the Table," see page 47. If necessary, adjust the alignment of the table so that the blade is parallel to the miter slots when the blade is below the table.

For the second measurement, raise the blade to the maximum height above the table, making sure to back the elevation hand wheel off slightly to release the pressure between the trunnion assembly and the upper elevation limit stop. Reposition the dial test indicator so that the measurement arm is resting against the blade approximately ½ inch inside the front edge of the blade and about ½ inch higher than the top of the arbor washer (see Fig. 54). Measure the parallelism of the blade relative to the miter slots in the table as described above.

If the second measurement is 0.002 inch or less, then the blade elevation assembly is aligned within the margin of error for this measurement and, therefore, no further alignment is needed. If the second measurement is greater than 0.002 inch, you can adjust the angle of the rear shaft relative to the front shaft to reduce the error.

The angle of the rear shaft is set by the eccentric bushing at the bottom of the shaft (see Fig. 62). The eccentric bushing is locked in place by a set screw in the elevation plate, and a smaller set screw in the side of the bushing.

To adjust the shaft angle, make sure the blade is still about 3 inches above the table and the dial indicator is still reading the second measurement (if not, repeat the second measurement as described above). Next, loosen the set screw in the elevation plate using a 4 mm allen wrench and the smaller set screw in the eccentric bushing using a 2.5 mm allen wrench. You can access the set screws by opening the belt access door on the left side of the cabinet.

Making Adjustments to Your Saw

Fig. 61

set screw
small set screw
eccentric bushing

Fig. 62 SawStop 10" Industrial Cabinet Saw 53

Once the set screws are loosened, the eccentric bushing should be free to turn. Using a 22 mm open-end wrench or an adjustable wrench, turn the bushing in either direction while watching the dial test indicator reading. Turn the bushing as necessary until the reading is the same as the second measurement *but in the opposite direction*. For example, if the second measurement was +0.005 inch, then turn the eccentric bushing until the dial indicator reads -0.005 inch. Retighten the set screws.

Now measure and, if necessary, adjust the parallelism of the table to the blade while the blade is in the fully raised position. To confirm that the blade elevation assembly has been aligned, lower the blade to the fully lowered position and recheck the parallelism of the table to the blade. Occasionally the blade elevation alignment procedure will make a small change to the first measurement. If necessary, repeat the procedure until the difference between the first and second measurements is within 0.002 inch.

3. Aligning the Blade to the Tilt Axis:

When making bevel cuts, the blade is tilted on an axis that runs along the surface of the table between the front and rear trunnion brackets. See Fig. 63. If the blade is not parallel to this axis, the blade will move out of parallel with the miter slots when it is tilted away from 0° (this assumes the table has been aligned to be parallel to the blade at 0° tilt angle). The SawStop cabinet saw is the only major cabinet saw that allows you to fine tune the parallelism of the blade to the tilt axis.

Making Adjustments to Your Saw

tilt axis

Fig. 63

NOTICE! This alignment procedure is not intuitive. Make sure you read this entire procedure before beginning and follow each step precisely. Any deviation from this procedure may create a substantial misalignment in your saw. 54 SawStop 10" Industrial Cabinet Saw

The geometry involved in this alignment procedure is tricky. That is because there is no way to easily measure the parallelism between the blade and the tilt axis. Instead, you must measure the alignment between the blade and the table at both 0° tilt and 45° tilt. The difference in those measurements is proportional to the non-parallelism

between the blade and the tilt axis. To ensure accurate alignment, follow the procedure described below exactly.

To align the blade to the tilt axis, you will need a dial test indicator with a resolution and accuracy of at least 0.0005 inches, and a mount for the indicator that will slide smoothly in the miter slots. An example of a suitable mount is shown in Fig. 53. You will also need a 6 mm hex L-wrench (a “stubby” hex L-wrench works best).

First, align the table as described on page 47, using the precision alignment procedure. Make sure the non-parallelism between the miter slot and the blade is as close to zero as possible. If the final parallelism is not zero, write down the misalignment, including whether it is positive or negative. This is the first measurement for this procedure.

Next, move the dial indicator measurement arm off the blade and tilt the blade to approximately 45°. Make sure not to tighten the tilt hand wheel against the 45° limit stop. Now reposition the dial indicator measurement arm against the right side of the blade and about 1/4 inch directly above the arbor flange. Slide the dial indicator mount toward the front of the saw until the measurement arm is about 1/2 inch inside the front edge of the blade. See Fig. 64. Set the dial indicator readout to zero.

Slide the dial test indicator mount smoothly toward the back of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Note the reading of the dial indicator as the mount moves across the blade. Write down the final number, including whether it is positive or negative. This is the second measurement for this procedure.

Now take the difference between the first measurement and the second measurement. If one measurement is positive and the other negative, make sure to take the full difference. For example, if the first measurement is +0.002 inch and the second measurement is -0.004 inch, then the difference is 0.006 inch. Write down the difference between the two measurements. This number is proportional to the non-parallelism between the blade and the tilt axis.

If the difference is 0.002 inch or less, then the blade is parallel to the tilt axis within the margin of error for this procedure and no further alignment is necessary. For differences larger than 0.002 inch, you can adjust the angle of the blade to improve the parallelism between the blade and the tilt axis. The adjustment must be made at a 0° tilt angle.

Making Adjustments to Your Saw

Fig. 64 SawStop 10" Industrial Cabinet Saw 55

To do this, set the tilt angle back to 0° and reposition the dial test indicator as described above. When you slide the dial indicator mount across the blade, you should see little or no change in the indicator readout since the table was previously aligned. Now, slide the dial indicator toward the rear of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Set the readout to zero.

The angle of the blade relative to the tilt axis is controlled by a v-bracket that connects the rear elevation shaft to the rear trunnion (see Fig. 65). The v-bracket is connected to the rear trunnion by two bolts that extend through oversized holes in the v-bracket. The oversized holes allow the position of the v-bracket to be adjusted relative to the rear trunnion.

Using the 6 mm hex L-wrench, loosen the bolts just enough to allow the v-bracket to move when force is applied. You can access the bolts by opening the motor cover.

To align the blade to the tilt axis, you need to adjust the position of the v-bracket until the misalignment between the blade and the miter slot at a 0° tilt angle is 2.5 times the difference between the first and second measurements, *but in the opposite direction*.

Making Adjustments to Your Saw

bolts
v-bracket

Fig. 65

For example:

if the difference between the first and second measurements was +0.006 inch,

then the misalignment at 0° should be adjusted to $(-2.5) \times (0.006) = -0.015$ inch 56 SawStop 10" Industrial Cabinet Saw

To create a positive misalignment, use a block of wood and a mallet to tap the left side of the elevation plate (see Fig. 66). To create a negative misalignment, use a block of wood and a mallet to tap the edges of the v-bracket (see Fig. 67).

Reposition the dial test indicator toward the front of the saw with the measurement arm about 1/2 inch inside the front edge of the blade. Set the dial readout to zero. Slide the dial indicator mount toward the back of the saw until the measurement arm is about 1/2 inch inside the rear edge of the blade. Note the readout.

If the readout is -2.5 times the first and second measurements, the v-bracket should be correctly positioned. Otherwise, repeat the above process of adjusting the position of the v-bracket until the dial indicator at 0° reads -2.5 times the difference between the first and second measurements.

Once the v-bracket is positioned correctly, tighten the bolts that attach the v-bracket to the rear trunnion. The blade should now be parallel to the tilt axis.

Since the alignment of the blade has been changed, the table must now be realigned. Align the table as described on page 47, using the precision alignment procedure. Once the table has been realigned, you can check the parallelism of the blade to the tilt axis by tilting the blade to about 45° and measuring the alignment between the blade and the miter slot. If the misalignment of the blade and the miter slot is less than 0.002 inch at both 0° and 45°, then the blade is parallel to the tilt axis. If necessary, you can fine tune the alignment by repeating the above procedure.

Making Adjustments to Your Saw

tap here
tap here

Fig. 66

Fig. 67 SawStop 10" Industrial Cabinet Saw 57

4. Adjusting the Elevation Limit Stops:

The upper elevation limit stop prevents the arbor block and belts from hitting the underside of the table. The lower elevation limit stop prevents the arbor block or blade from hitting the lower trunnion assembly. The elevation limit stops must be adjusted correctly to ensure proper operation of the saw.

Upper Elevation Limit Stop

To check the position of the upper elevation limit stop, install a 10 inch saw blade on the arbor (see page 17), and turn the elevation hand wheel clockwise until the limit stop is reached. Using a combination square or similar tool, measure the distance from the top of the table to the tip of the highest tooth on the blade. The maximum height of the blade above the table should be $3 \frac{1}{8}$ inches. If the blade is $3 \frac{3}{16}$ inches or higher above the table, the upper elevation limit stop should be adjusted downward. If the blade is less than $3 \frac{1}{8}$ inches above the table, you can adjust the limit stop upward to $3 \frac{1}{8}$ inches. Alternatively, you can adjust the limit stop so that the maximum blade height is lower than $3 \frac{1}{8}$ inches.

The upper elevation limit stop is set by the bolt mounted in the lower front portion of the elevation plate (see Fig. 68). You can access the upper limit bolt by opening the motor cover. The head of the bolt is painted yellow for easy identification. To adjust the position of the upper limit bolt, first loosen the locking nut and back it off several turns. If you plan to adjust the limit stop upward, turn the bolt counter-clockwise several turns.

Next, set the blade elevation to the correct maximum height. Turn the upper limit bolt clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The upper elevation limit stop has now been set.

Making Adjustments to Your Saw

Fig. 68
lower elevation limit stop
upper elevation limit stop 58 SawStop 10" Industrial Cabinet Saw

Lower Elevation Limit Stop

To check the position of the lower elevation limit stop, remove the blade from the arbor, open the motor cover, and remove the dust shroud door as described on page 20. While watching the arbor block through the motor cover opening, turn the elevation hand wheel counter-clockwise until the bottom of the arbor block just touches the rubber bumper mounted on the trunnion brace (see Fig. 69).

The purpose of the bumper is to absorb the energy of the arbor block when the arbor block retracts below the table upon activation of the safety system. As shown in Fig. 69, the lower elevation limit stop should be adjusted so that the arbor block compresses the bumper about $\frac{1}{4}$ inch at the lowest elevation. This should also ensure that a 10 inch blade is at least $\frac{1}{8}$ inch below the top of the table.

Lower the blade elevation until the lower limit stop is engaged. If the bumper is compressed about $\frac{1}{4}$ inch, no further adjustment is necessary.

The lower elevation limit stop is set by the bolt mounted in the upper front portion of the elevation plate (see Fig. 68). The head of the bolt is painted yellow for easy identification. To adjust the position of the lower limit bolt, first loosen the locking nut and back it off several turns. If you plan to adjust the limit stop downward, turn the bolt counterclockwise several turns.

Next, set the blade elevation to the correct minimum height. Turn the lower limit bolt clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The lower elevation limit stop has now been set.

Making Adjustments to Your Saw

Fig. 69
arbor block
rubber bumper SawStop 10" Industrial Cabinet Saw 59

5. Adjusting the Tilt Limit Stops and Tilt Angle Indicator:

The tilt limit stops allow you to easily and quickly set the bevel angle to 0° and 45°. However, when making precision cuts, it is always best to check the angle of the blade with a combination square or similar tool.

0° Tilt Limit Stop

To check the position of the 0° limit stop, install a 10 inch saw blade on the arbor (see page 17). Raise the blade to its full elevation, and turn the tilt hand wheel counter-clockwise until the limit stop is reached. Using a square, check to see that the blade is at a 90° angle to the table (see Fig. 70).

The 0° tilt limit stop is set by the bolt mounted in the upper left portion of the front trunnion bracket (see Fig. 71). You can access the bolt by opening the belt access door on the left side of the cabinet. The head of the bolt is painted yellow for easy identification. To adjust the position of the 0° limit bolt, first loosen the locking nut and back it off several turns. If you plan to adjust the limit stop backward, turn the bolt clockwise several turns.

Next, adjust the tilt angle until the blade is at 90° to the table. Turn the 0° limit bolt counter-clockwise until it is tight. Finally, turn the locking nut clockwise until it is tight. The 0° limit stop has now been set.

Making Adjustments to Your Saw

Fig. 70
0° tilt limit stop

Fig. 71 60 SawStop 10" Industrial Cabinet Saw
Tilt Angle Indicator

The tilt angle indicator is located at the front of the cabinet, just behind the elevation hand wheel (see Fig. 72). The indicator shows the current angle of the blade relative to vertical (i.e., perpendicular to the table top).

Once the 0° limit stop is correctly set, turn the tilt hand wheel counter-clockwise until the limit stop is reached. Check the reading of the tilt angle indicator. If necessary adjust the

indicator by loosening the locking screw and rotating the indicator until it reads 0°. Finally, lock the indicator in place by tightening the locking screw.

45° Tilt Limit Stop

To check the position of the 45° limit stop, install a 10 inch saw blade on the arbor (see page 17). Raise the blade to its full elevation, and turn the tilt hand wheel clockwise until the limit stop is reached. Using a square, check to see that the blade is at a 45° angle to the table (see Fig. 73). If you need to adjust the position of the 45° limit stop follow the instructions below.

The 45° tilt limit stop is set by the bolt mounted in the upper right portion of the front trunnion bracket (see Fig. 74 on page 61). You can access the bolt by opening the motor cover. It will also be necessary to decrease the tilt angle to about 30° to access the 45° limit bolt.

Making Adjustments to Your Saw

locking screw
tilt angle indicator

Fig. 72

Fig. 73 SawStop 10" Industrial Cabinet Saw 61

The head of the bolt is painted yellow for easy identification. To adjust the position of the 45° limit bolt, first loosen the locking nut and back it off several turns. Next, turn the 45° limit bolt clockwise to increase the angle of the limit stop, or counter-clockwise to decrease the angle of the limit stop.

Now turn the tilt hand wheel clockwise until the limit stop is reached. Recheck the angle of the blade relative to the table. If further adjustment is needed, decrease the tilt angle to about 30° and readjust the 45° limit bolt. Repeat this process until the blade is at 45° to the table when the limit stop is engaged.

Once the 45° limit bolt is properly adjusted, turn the locking nut clockwise until it is tight. The 45° limit stop has now been set.

6. Adjusting the Table Insert:

The SawStop zero clearance insert has been designed to fit securely within the table opening and just below the table top. The insert is pre-cut at the factory with a 10 inch blade after all alignments to the saw have been completed.

As shown in Fig. 75, the insert includes front and rear leveling screws to set the height of the insert. In addition, positioning screws at the rear and right side of the insert prevent it from rattling in the table opening. Finally, a lock-down lever at the front of the insert prevents the insert from rising up unexpectedly.

The insert should slide easily into and out of the table opening, but should not be loose in the opening. If the insert is too loose, use the 3 mm hex L-wrench to turn the side and/or front positioning screw(s) counter-clockwise as needed to reduce the clearance between the insert and the table opening. If the insert is too tight, turn the side and/or front positioning screw(s) clockwise as needed to increase the clearance between the insert and the table opening.

Making Adjustments to Your Saw

45° tilt limit stop

Fig. 74

front leveling screws
rear leveling screws
lock-down
lever
positioning screws

Fig. 75 62 SawStop 10" Industrial Cabinet Saw

To set the height of the insert, use the included 3 mm hex L-wrench to adjust the front and rear leveling screws until the insert is just below the surface of the table. The lower end of each front leveling screw should rest on the corresponding support ledge on the table (see Fig. 76). When the lock-down lever is in the down and locked position, latching arms extend under each of the support ledges to prevent the insert from rising up.

Adjusting the Rear Lock-Down Screws

The rear of the table insert is held down by a pair of lock-down screws mounted in the table at the rear of the table opening. As shown in Fig. 77, the lock-down screw heads overlap the heads of the rear leveling screws extending down from the insert. The overlapping screw heads prevent the rear of the insert from rising up.

The height of the lock-down screws should be adjusted to fit close above the leveling screws, while allowing enough clearance to install and remove the table insert without difficulty. The height of the lock-down screws can be adjusted using the included 3 mm hex L-wrench.

Making Adjustments to Your Saw

front leveling screws
latching arm
latching arm
support ledge
support ledge

Fig. 76

rear leveling screw
table lockdown screws
rear leveling screw

Fig. 77 SawStop 10" Industrial Cabinet Saw 63

7. Adjusting the Riving Knife and Blade Guard:

For safe operation, the spreader and riving knife should be aligned parallel to the blade, and positioned inside the kerf of the blade. The spreader, or alternatively, the riving knife, is held in position by a quick-release clamp mounted under the table and behind the blade (see Fig. 78). Once the clamp is properly adjusted, the spreader and riving knife will automatically align to the blade when installed in the clamp.

To adjust the clamp, set the tilt angle to 0° and remove the table insert. Remove the blade and set it aside for a moment. Make sure the spreader is installed, and lower the blade elevation to zero.

Next, loosen the horizontal positioning bolts using an 8 mm hex L-wrench. Loosen the bolts just enough to allow the clamp mounting bracket to slide along its mounting surface. Reinstall the blade and raise the blade to the fully elevated position.

Place a straight edge along the right side of the blade, making sure the straight edge runs between the teeth of the blade. Now adjust the position of the clamp until the right side of the

spreader is flush and flat against the straight edge. If necessary, pivot the right anti-kickback pawl up out of the way while performing this step.

Note: if you are using a thin-kerf blade (i.e., kerf is 0.080 to 0.094 in.), you may need to place one or more shims between the straight edge and the side of the blade to ensure the spreader is centered with the blade.

Once the spreader is positioned parallel to the blade, check the distance between the curved, front edge of the spreader and the edge of the blade. There should be a gap of approximately 5-7 mm between the center-point of the arc on the front of the spreader and the rear edge of the blade (see Fig. 79). If necessary, slide the clamp forward or backward until the spacing between the blade and the spreader is approximately correct.

Remove the blade and set it aside for a moment. Tighten the horizontal positioning bolts fully.

Making Adjustments to Your Saw



Fig. 78

Fig. 79

WARNING! Make sure there is at least 3 mm spacing between the riving knife and blade at all points. Contact between the blade and either the riving knife or spreader during operation will cause the brake system to be activated. 64 SawStop 10" Industrial Cabinet Saw

Next, remove the spreader and install the riving knife. Loosen the vertical positioning bolts using the included 5 mm hex L-wrench. Loosen the bolts just enough to allow the clamp to slide up and down on the clamp mounting bracket. Reinstall the blade.

The top of the riving knife should be approximately 1 mm below the top of the blade (see Fig. 80). This allows the riving knife to be used on rabbet cuts and other non-through cuts. In addition, the arc on the front of the riving knife should be approximately concentric with the blade.

To check the height of the riving knife relative to the blade, lower the blade elevation until the lower limit stop is engaged. Place a ruler or another straight edge on the table so that it lies across the width of the table insert and directly above the tip of the riving knife. Raise the blade elevation until the tip of the riving knife just comes in contact with the straight edge or ruler (see Fig. 81). Now measure the distance from the top of the table to the top of the blade. If the height of the riving knife is set correctly, the saw blade should be approximately 1 mm above the table. If the distance is approximately 1 mm, no further adjustments are necessary.

Adjusting the Height of the Riving Knife

If the height of the riving knife is not correct, use the elevation handwheel to set the top of the blade to approximately 1 mm above the top of the table. Next, remove the table insert and loosen the two vertical positioning bolts shown in Fig. 78 using the included 5 mm hex key. Loosen the bolts just enough so that you can move the clamp up and down on the clamp mounting bracket.

Next, adjust the position of the clamp up or down to set the height of the riving knife. You can also rotate the clamp forward or backward so that the arc on the front edge of the riving knife is concentric with the blade. When the riving knife is correctly positioned, tighten the two vertical positioning bolts just enough to hold the clamp in position and reinstall the table insert. Check to make sure the tip of the riving knife is level with the table. Repeat the adjustment if necessary. Once the vertical alignment of the riving knife is correct, fully tighten the two vertical positioning bolts on the clamp.

In some cases, adjusting the vertical alignment may cause the spacing between the front edge of the riving knife and the teeth of the blade to be incorrect. If this happens, repeat the steps explained above to adjust the gap between the front edge of the spreader and the teeth of the blade so that it is 4-7 mm.

Once the clamp has been properly positioned, further adjustment should not be necessary. Both the spreader and riving knife will now automatically align when installed in the clamp.

Making Adjustments to Your Saw



Fig. 80

Fig. 81 SawStop 10" Industrial Cabinet Saw 65

Adjusting the Height of the Limit Rod

When set correctly, the wood stop at the end of the limit rod will prevent a work piece that is taller than the top of the blade from entering the blade guard and engaging the blade. The height of the wood stop should be adjusted whenever the clamp is adjusted.

To check the height of the limit rod wood stop, first install the blade guard in the saw. Next, lower the blade until the top of the blade is flush with the table. Now, measure the distance between the bottom of the wood stop and the table. The bottom of the wood stop should be 7-10 mm above the table when the top of the blade is flush with the table (see Fig. 82). If the wood stop is too far above the table or too low, you will need to adjust the height of the wood stop.

To adjust the height of the wood stop, loosen the two bolts that attach the blade guard dust port to the spreader (see Fig. 83). To better access the bolts, pivot the left large anti-kickback pawl up and guide it into the catch on the side of the dust port as shown in Fig. 34. Use a 4 mm hex key to loosen the bolts.

Rotate the blade guard dust port until the wood stop is 7-10 mm above the table (see Fig. 84). Once set, tighten the two bolts on the blade guard dust port, but do not overtighten.

Making Adjustments to Your Saw



Fig. 82

Fig. 83

loosen these
two bolts

rotate the back of dust port until the
wood stop is 7-10 mm above the table

Fig. 84 66 SawStop 10" Industrial Cabinet Saw

8. Adjusting the Quick-Release Clamp:

The clamping pressure of the spreader / riving knife quick-release clamp is factory adjusted to hold the spreader and riving knife securely when the handle is fully down. When correctly adjusted it will require approximately 10–20 lbs. of force to push the handle to the fully down position. This is a moderate amount of force to apply with one hand. If excessive force is required to move the handle down, or if you are unable to move the handle down by hand, then the clamp should be adjusted to reduce the clamping pressure. Alternatively, if the handle moves down with only light pressure, then the clamping force should be increased. When evaluating the clamping force, make sure the riving knife or spreader is properly seated in the clamp.

To adjust the clamp, begin by removing the riving knife or spreader. Raise the handle so that it faces upward, and push the handle toward the clamp. The clamp assembly includes an internal spring designed to push the clamp open when the handle is raised. Therefore you will have to push the handle toward the clamp against the force of the spring.

When the handle is fully pressed against the clamp, an adjustment bolt will be exposed as shown in Fig. 85. Turn the adjustment bolt clockwise a slight amount to increase the clamping pressure, or counter-clockwise a slight amount to decrease the clamping pressure. Release the handle and allow the spring to push it away from the clamp and re-engage the adjustment bolt. Now reinstall the spreader or riving knife and test the clamping pressure. Repeat the adjustment as necessary until the correct clamping pressure is achieved.

Making Adjustments to Your Saw

push handle
toward clamp
adjustment
bolt

Fig. 85

WARNING! It is important to maintain the correct clamping pressure on the riving knife and spreader. If the pressure is too low these important safety devices may not function properly and a serious injury could result. In addition, the spreader or riving knife may come into contact with the blade and cause an unintended activation of the safety system. SawStop 10" Industrial Cabinet Saw 67

9. Adjusting the Tilt Gearing:

The tilt hand wheel changes the tilt angle of the blade by rotating a worm gear that engages a sector gear on the front trunnion. The worm gear should be fully engaged in the sector gear to eliminate any play in the tilt control mechanism. If the tilt angle does not begin changing as soon as the tilt hand wheel is turned, then it may be necessary to adjust the position of the worm gear. Alternatively, it may be necessary to adjust the position of the worm gear if the tilt hand wheel binds up during rotation.

The worm gear is mounted on the tilt control shaft and supported by the tilt shaft bracket (see Fig. 86). The tilt shaft bracket is mounted on the back of the front trunnion bracket by a pair of socket-head mounting bolts. A hex head support bolt extends from the bottom of the front trunnion bracket to push against the bottom of the tilt shaft bracket. The support bolt prevents the tilt shaft bracket from dropping out of position.

To adjust the position of the worm gear, loosen the two mounting bolts using a 8 mm hex L-wrench. Next, loosen the lock nut on the support bolt. Turn the support bolt clockwise to raise the worm gear and eliminate any play in the tilt mechanism. Alternatively, turn the support bolt counter-clockwise to lower the worm gear and prevent binding. Tighten the lock nut and the mounting bolts. Finally, test the tilt mechanism to confirm that it is properly adjusted.

Making Adjustments to Your Saw

sector gear
tilt control shaft
worm gear
tilt shaft bracket
mounting
bolts
lock nut

Fig. 86

support bolt 68 SawStop 10" Industrial Cabinet Saw

10. Adjusting the Miter Gauge:

The miter gauge bar includes three spring bearings which ensure a close fit between the miter gauge bar and the miter gauge slots in the table. The bearings can be adjusted to protrude further outward from the side of the bar to tighten the fit between the bar and the miter slots. Alternatively, the bearings can be adjusted inward to loosen the fit. To adjust the position of the spring bearings, insert a 2.5 mm hex wrench into the back of the bearing as shown in Fig. 87. Turn the wrench clockwise to tighten the fit, or counter-clockwise to loosen the fit.

The miter gauge also includes indexing stops to allow you to quickly set the gauge to -45°, 0°, and +45°. If necessary, you can adjust these indexing stops to increase the precision of your miter cuts.

To begin, loosen the miter gauge head by turning the locking handle counter-clockwise about 1/2 turn (see Fig. 87).

Next, for the indexing stop you want to adjust, loosen the corresponding locking nut and turn the set screw counter-clockwise several turns (see Fig. 88). Place the miter gauge in either the left or right miter slot, and set a combination square to the desired angle (e.g., -45°, 0°, or +45°). Position one leg of the square flush against the blade and rotate the miter gauge head until it is flush against the other leg of the square.

Next, turn the handle clockwise until it is tight to lock the miter gauge head at the correct angle. Make sure the indexing pin is pressed in toward the miter gauge bar, then turn the set screw clockwise until it hits against the indexing pin. Finally, tighten the locking nut to prevent the set screw from moving.

Repeat the above process for the other indexing stops if desired.

Making Adjustments to Your Saw

turn locking
handle to unlock
miter gauge head
insert hex wrench to adjust spring bearings

Fig. 87

locking nut
set screw
indexing pin

Fig. 88 SawStop 10" Industrial Cabinet Saw 69

Overall saw dimensions: 44" w x 34" d x 34" h

69 1/4" w x 36 1/2" d x 34" h (w/ optional fence & 36" rails)

85 1/4" w x 36 1/2" d x 34" h (w/ optional fence & 52" rails)

Cabinet footprint: 20" w x 25" d

Cast iron table: 24" w x 30" d, 44" w x 30" d (w/ extension wings)

Extension wing: 10" w x 30" d

Extension table (optional): 24" w x 30" d (36" rails), 40" w x 30" d (52" rails)

Weights (may vary with motor): 530 lbs (table saw only)

635 lbs (w/ optional fence, 36" rails & table)

685 lbs (w/ optional fence, 52" rails & table)

Shipping weight (approx.): 675 lbs (table saw only)

Blade: 60-tooth, professional grade, 5/8" arbor

Blade diameter: 10"

Blade tilt: Left

Blade kerf: 3 mm

Blade plate thickness: 2 mm

Max. depth of cut, blade at 0°: 3 1/8"

Max. depth of cut, blade at 45°: 2 1/4"

Max. rip, right of blade: 52 1/2" (w/ optional 52" rails)

36 1/2" (w/ optional 36" rails)

Max. rip, left of blade: 12 1/2"

Dado diameter: 8" (requires a separate brake cartridge)

Dado max. width: 13/16"

Arbor diameter at blade: 5/8"

Main bearing size: 62 mm OD x 30 mm ID

Second bearing size: 52 mm OD x 25 mm ID

Table in front of blade (max. elevation): 11"

Table behind blade (max. elevation): 9 3/4"

Arbor Runout: 0.001" Maximum Allowable Runout

Blade Lateral Movement Over Full Elevation Range: 0.006" Maximum

Table Flatness Measured Diagonally: 0.010" Maximum Gap

Overall Table and Extension Wing Flatness: 0.025" Maximum Gap

Blade Alignment with Miter Slot: 0.010" Maximum displacement

Deviation of Miter Gauge Indexing Stops

from actual angle: ±0.25°

Alignment between Spreader and Blade: 0.010" Maximum difference

Miter slots: T-shaped, 3/4" at top, 1" at bottom, 3/8" deep

Dust collection port diameter: 4"

Riving knife / spreader thickness: 2.3 mm

Blade guard: polycarbonate, with dust collection

Standard Insert: zero clearance, tooless lock-down

Dado Insert: zero-clearance, tooless lock-down

Belts: 2 V-ribbed belts— arbor belt is static dissipative

Hand Wheels: 8" diameter, cast iron with chrome handle

Motor Options:

3 hp, 1 phase, 230V, 13A, 60 Hz, TEFC 5 hp, 3 phase, 600V, 4.8A, 60 Hz TEFC (Canada)

5 hp, 1 phase, 230V, 19.7A, 60 Hz, TEFC 7.5 hp, 3 phase, 600V, 6.9A, 60 Hz TEFC (Canada)

5 hp, 3 phase, 230V, 12A, 60 Hz, TEFC 3 hp, 1 phase, 240V, 14A, 50 Hz TEFC (Australia)

5 hp, 3 phase, 480V, 5.8A, 60 Hz, TEFC 5 hp, 3 phase, 415V, 7A, 50 Hz TEFC (Australia)

7.5 hp, 3 phase, 230V, 17.8A, 60 Hz, TEFC 5 hp, 3 phase, 380V, 7A, 60Hz TEFC (Korea)

7.5 hp, 3 phase, 480V, 9A, 60 Hz, TEFC 5 hp, 3 phase, 200V, 14A, 50/60 Hz TEFC (Japan)

Cabinet Saw Specifications 70 SawStop 10" Industrial Cabinet Saw

Maintenance

1. SawStop Safety System:

The safety system in general requires little maintenance. The system performs continuous self-checks both before and during saw operation. If a problem is detected, the appropriate status code will be displayed on the LEDs on the switch box.

Brake Cartridge:

Although the brake cartridge requires no maintenance, the condition of the cartridge should be checked after approximately every 50 hours of saw use. The cartridge is sealed to prevent the entry of dust or other contaminants into the housing. While a small amount of dust within the housing will not effect its operation, you should replace the cartridge if a significant amount of dust is visible inside the clear plastic housing. This would indicate that the cartridge housing seal has been damaged.

2. Cabinet:

The interior of the cabinet should be kept free of accumulated saw dust, wood chips and other debris. Periodically check the dust inside the bottom of the cabinet and trunnion assembly. Vacuum out the cabinet and trunnion assembly if needed. The 4 inch flexible hose that extends between the bottom of the trunnion assembly and the dust port on the back of the cabinet can be detached from the trunnion assembly and used to vacuum out the cabinet using the dust collection system connected to the saw.

3. Elevation and Tilt Mechanisms:

The elevation and tilt gearing should be kept clean and well lubricated. Periodically check the condition of the elevation miter gears and threaded shaft, and the tilt worm gear and sector gear. If necessary, clean off any dust, dirt, pitch or other debris using a wire brush, and then reapply a good quality, non-hardening grease.

4. Table and Extension Wings:

The surface of the table and extension wings should be kept clean and free of any rust. If rust develops on the surface, you can remove it by spraying the surface with a light coat of WD-40® and scrubbing with a fine abrasive pad such as ScotchBrite® 7448 hand pads. After wiping the surface clean, coat it with a rust-inhibitive, surface protectant such as TopCote® or TopSaver™.

5. Belts:

The arbor belt and motor belt should be checked periodically for wear or damage. You can access both belts by opening the belt access door. Replace any worn or damaged belts. In addition, check the tension of the motor belt. If light finger pressure on one side of the belt causes more than about 1/2 inch deflection, the belt should be tightened. The arbor belt cannot be tightened, and therefore must be replaced if it does not have sufficient tension to prevent slipping under load.

WARNING! Never use a brake cartridge if more than a small amount of dust can be seen inside the clear housing. If sawdust becomes packed inside the housing, the brake make fail to activate or may activate more slowly, thereby resulting in a serious personal injury. SawStop 10" Industrial Cabinet Saw 71

Troubleshooting

Problem	Possible Cause(s)	Solution
The motor will not start and both LEDs on the switch box are off.	<ol style="list-style-type: none"> 1. There is no power to the saw. 2. The disconnect switch is turned to OFF. 3. There is no brake cartridge installed in the saw. 4. The brake cartridge is defective. 5. For 415V, 480V and 600V saws, the fuse in the side of the contactor box has blown. 	<ol style="list-style-type: none"> 1. Ensure that the electrical supply to the saw is on and that the correct voltage is being supplied. 2. Turn the disconnect switch to ON. 3. Install the brake cartridge. 4. Replace the brake cartridge with a new cartridge. 5. Check the fuse in the side of the contactor box (only on a 415V, 480V or 600V saw).
The motor will not start and at least one LED on the switch box is on.	<ol style="list-style-type: none"> 1. The safety system has detected a system error and is displaying an error code on the LEDs. 2. The cartridge is defective. 3. The motor has overheated and tripped the thermal overload switch. 	<ol style="list-style-type: none"> 1. Consult the list of System Status Codes to determine the cause of the error and the corrective action. 2. Try a different brake cartridge. 3. Wait 10 minutes and try again.
The motor stopped unexpectedly during use but the brake did not activate.	<ol style="list-style-type: none"> 1. The Start/Stop paddle was bumped. 2. The material being cut is overloading the safety detection system (e.g., green or wet wood). 3. The safety system has detected a system error and is displaying an error code on the LEDs. 4. Electrical power to the system was lost at least temporarily. 5. A door interlock switch was released. 6. The cartridge is defective. 	<ol style="list-style-type: none"> 1. Ensure the Start/Stop paddle is in the OFF position and restart the saw. 2. Use different wood or cut in Bypass mode. 3. Consult the list of System Status Codes to determine the cause of the error and the corrective action. 4. Ensure that the electrical supply to the saw is on and that the correct voltage is being supplied. 5. Ensure the belt access door and motor cover are closed and the interlock switches are actuated. 6. Try a different brake cartridge.
The brake activated even though there was no accidental contact.	<ol style="list-style-type: none"> 1. Some electrically conductive material contacted the blade, arbor or arbor pulley. 2. The spreader or riving knife came into contact with the blade. 	<ol style="list-style-type: none"> 1. Make sure no metal or other conductive material is touching the blade, arbor or pulley. If you are trying to cut a conductive material, use Bypass mode. 2. Ensure that the spreader or riving knife is accurately aligned and securely clamped in place. There should be a gap of at least 5-7mm between the blade and the spreader or riving knife