SERVICE PROCEDURE

CB to ICS SawStop Saw Conversion

Applicable Model(s)

This procedure only applies to Industrial (CB) model saws.

Tools Needed

- 19mm combination wrench
- 17mm combination or socket wrench
- 13mm combination or socket wrench
- 8mm hex wrench
- 7mm hex wrench
- 5mm hex wrench
- 5mm short arm hex wrench
- 4mm hex wrench
- 3mm hex wrench
- 2.5mm hex wrench
- #1 Phillips screwdriver
- #2 Phillips screwdriver
- #2 stubby Phillips screwdriver
- #3 Phillips screwdriver
- Diagonal cutting pliers
- Self-tapping sheet metal screws
- Soft-faced hammer or mallet to drive out double pulley shaft.
- 4 or 5 small plastic cable ties
- SawStop blade wrench or short pry bar

SERVICE PROCEDURE

Required Parts

- Contact SawStop Technical Support by calling (503)-582-9934 or emailing service@sawstop.com with the saw serial number so that the proper parts for conversion can be supplied.

Optional Parts

- ICS Motor Belt CB104 192
- ICS Double Pulley Assembly CB10 WA003

Related Links

- Industrial Cabinet Saw Owner's Manual (With Dust Collection Upgrades) Manual For Industrial Cabinet Saws (ICS)
- SawStop Service Tip: Align the Table for Your Industrial Cabinet Saw
- Replace Switch Box, Cast Iron Saws
- Replace Belts for the Industrial Cabinet Saw
- Clean and lubricate your Industrial Cabinet Saw

PROCEDURE SUMMARY

This procedure is for converting a CB model saw to an ICS model. This includes the removal and installation of the arbor block, switchbox, contactor box, belts, and main table. Performing this procedure will give you unparalleled access to perform additional maintenance and lubrication.

Other wear items that could be replaced at this time are the double pulley assembly (CB10 WA003) and motor belt (CB104 192).

SAFETY

WARNING: Disconnect the plug from the power source from the tool before making any adjustments, changing accessories, or storing power tools. Such preventive safety measures reduce the risk of starting the power tool accidentally.

WARNING: Wear gloves when handling the saw blade.

WARNING: When servicing your tool, use only identical replacement parts from SawStop.

WARNING: Keep handles and grasping surfaces dry, clean and free from oil and grease. Slippery handles and grasping surfaces do not allow for safe handling and control of the tool in unexpected situations.

WARNING: Read and understand the instruction manual and all safety warnings that came with your tool before attempting to maintain or operate the tool. 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.

SERVICE PROCEDURE

Main Table Removal:

1. It is recommended to engage another person for assistance with removing the main table. If working alone, the installer must be experienced with large cast metal objects and safe lifting practices. You will need to disconnect the saw from any added outfeed tables. Once the table bolts and extension table legs have been removed the weight of the rails may cause the saw to tip to the right. If working alone is necessary, it is advisable to disassemble the rails, extension wings and extension table and remove them individually before performing this procedure. If working with an assistant, the main table, wings, and extension table can be removed as one assembly with the instructions below.

2. Verify the saw has been disconnected from power. With cutting pliers, cut both wires leading into the switch box. At the rear of the switchbox, use a 5mm hex key to remove the four screws that secure the switchbox to the saw. Unmount switch box from its mounting bracket. (Image 1)

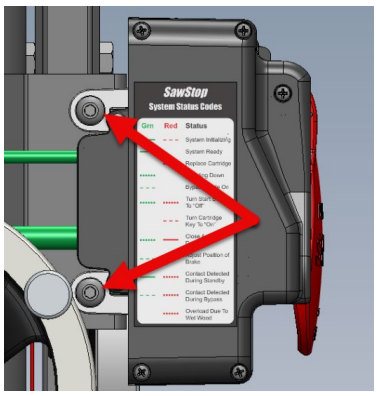


Image 1

3. On each side, towards the rear of the main table, there is an alignment set screw. Use a 5mm Hex key to remove both set screws. The alignment set screws can be accessed through holes nearest the rear bolts securing the wings to the main table. (Image 2)

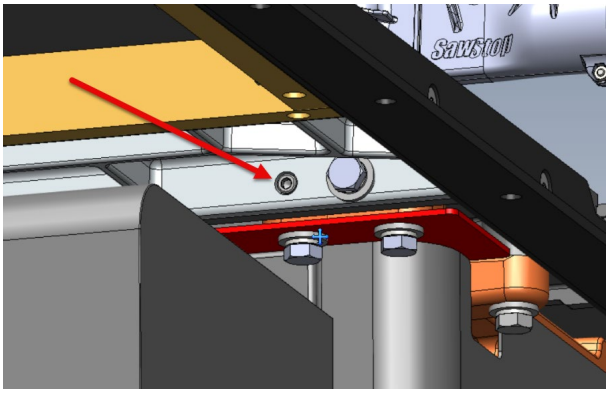


Image 2

4. Remove the 4 table mounting bolts using a 17mm combination or socket wrench indicated by the green arrows below. Do not loosen the trunnion bracket bolts indicated with a red X below. (Images 3 and 4)

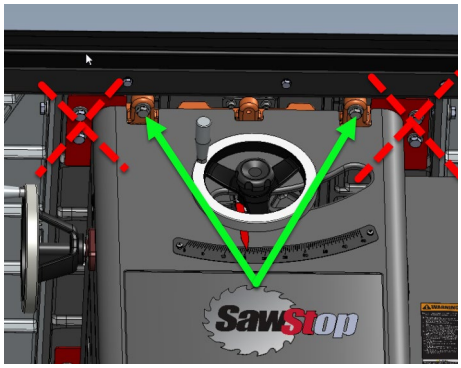


Image 3

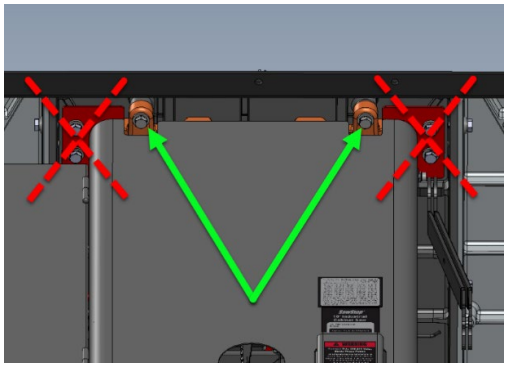


Image 4

5. Saws with serial # beginning with 0529 and below skip to the next step. If your serial # starts with 0529 and above, use a 5mm hex wrench to remove the two socket head cap screws securing the pivot pin bracket. Leave the bracket in position. (Image 5)

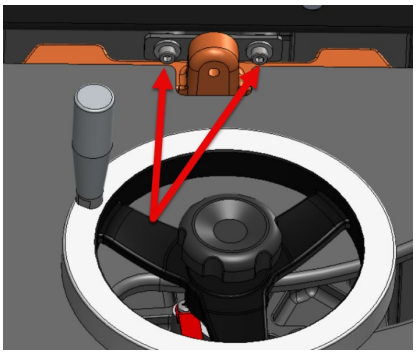


Image 5

6. Early and late saws have different methods of mounting the legs to the extension table. Using two 17mm wrenches for early style, or one 13mm wrench and one 5mm short arm hex key for late style, unbolt and remove the two bolts that fasten each extension table support leg. Be prepared to support the weight of the extension table as the extension table legs are removed. With the help of an assistant, lift the entire table assembly including the main table, wings, rails and extension table off in one piece and place on sawhorses or other suitable supports. (Image 6)

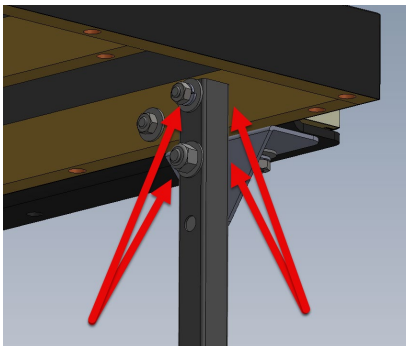


Image 6

Contactor Box Removal/ Replacement:

7. Early saws with serial numbers that start with 0528 and below used a different contactor box. Please contact the SawStop service department at 503-582-9934 for further instruction before proceeding.
8. Contactor box placement varied through early production years. Your replacement contactor box must be installed on the floor of the cabinet at the center front. This may differ from the position of your old contactor. If relocation is necessary, pre-drill and secure with sheet-metal screws (not provided).
9. Use a #3 Phillips screwdriver to remove four screws at the corners of the contactor assembly mounting plate. The wires coming from the contactor are secured to the floor of the saw cabinet by plastic clips and zip ties. Cut the zip-ties to free the wires, being sure to only snip the zip ties. Do not cut the clips as they will be used to resecure the cables upon reassembly. (Image 7)

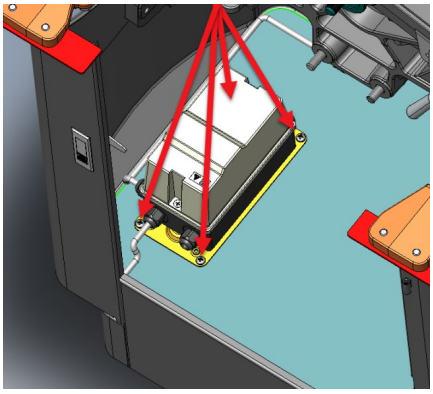


Image 7

10. On the rear of the saw cabinet body at the bottom right-hand corner there is a junction box. Using a #2 Phillips screwdriver and 7mm wrench remove the junction box cover and disconnect the wires from the top row of terminals and green ground wire which lead in to the disconnect switch inside cabinet. Pull the wires into the saw cabinet. It would be helpful to take a photo of the wire configuration for later reference during reassembly. Note that the number of terminals used will depend on the saw model. (Image 8)

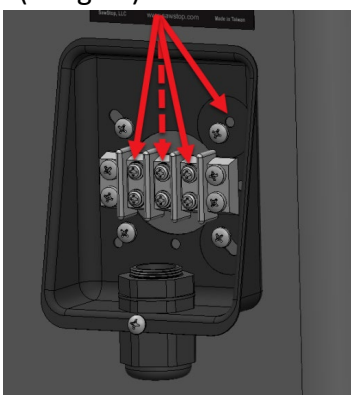


Image 8

11. To remove the disconnect switch from the left side of the cabinet body, the center red indicator knob must be removed to expose the mounting screws. The method to remove the knob can vary. On early models the yellow bezel must be pried off, freeing the knob, and exposing the fasteners. On later models or replacement units, the red knob is secured with a small screw through its center.
    a. Early style, pry up the bezel to pop cover and knob off. Remove the label card, exposing the screws. Dismount the disconnect using a #2 Phillips screwdriver. (Images 9, 10, and 11)

Image 9

Image 10

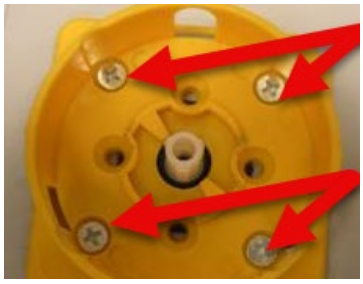


Image 11

    b. Later style, using a #1 Phillips screwdriver, loosen the small screw in the center of the red knob and remove the knob, exposing the fasteners securing the disconnect. Dismount the disconnect using a #2 Phillips screwdriver. (Images 12 and 13)

Image 12

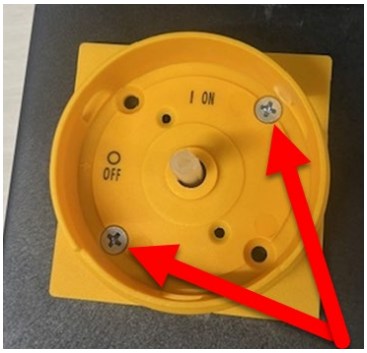


Image 13

12. Using a #2 Phillips screwdriver and 7mm socket or wrench, remove the belt door interlock switch from the bracket inside of the belt access door. Take note of how cables are routed and secured. Duplicate this routing when installing the replacements parts. (Image 14)

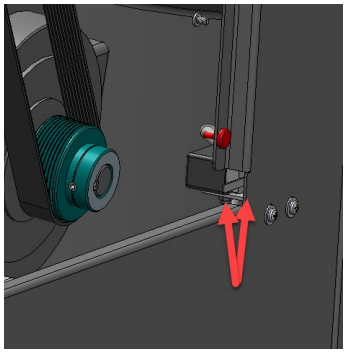


Image 14

13. If the saw is equipped with a motor door interlock switch, unmount the interlock switch using a #2 Phillips screwdriver and 7mm wrench. Take note how cables are routed and secured. Duplicate this when installing the replacement parts. (Image 15)

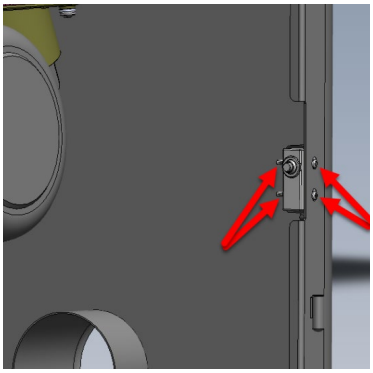


Image 15

14. Using the handwheels, fully lower and tilt the arbor to 45° to gain access to the motor junction box. Using a #2 Phillips screwdriver remove the motor junction box cover. Undo the wire nuts, unscrew the green ground lead and loosen plastic grommet/strain relief so the motor cable can be pulled free from the motor. Remove the now disconnected contactor box assembly. (Images 16 and 17)

Image 16

Image 17

15. Using a #3 Phillips screwdriver and the screws previously removed, mount the replacement contactor to the saw bottom. If the two mounting plates don't have the same hole pattern, it may be necessary to use sheet metal screws, drill bit, and a cordless drill to pre-drill and secure the contactor to the saw bottom. (Image 18)

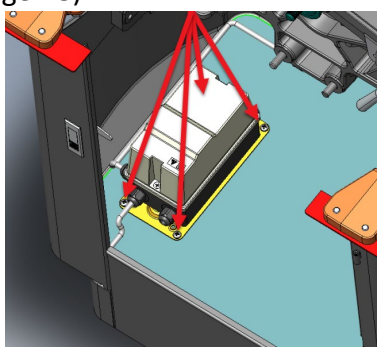


Image 18

16. Using a #2 Phillips screwdriver and the supplied screws, mount the new disconnect switch to the side of the cabinet body. Place the red knob onto the switch and with a #1 Phillips screwdriver tighten the screw in the center of the knob. This screw takes a considerable amount of turns to tighten. (Images 19 and 20)

Image 19

Image 20

17. Inside the cabinet, route the disconnect to the junction box and feed its cable out. Outside the saw, at the junction box, connect the wires in the same manner as when they were removed previously removed. (Image 21)

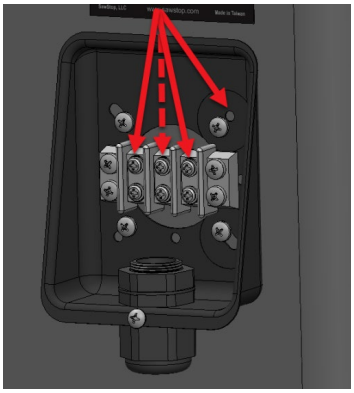


Image 21

18. Using a #2 Phillips screwdriver and 7mm wrench, install the belt door interlock switch onto the bracket inside of the belt access door. Duplicate the cable routing from the old switch. The switch should click as door is near closure. (Image 22)

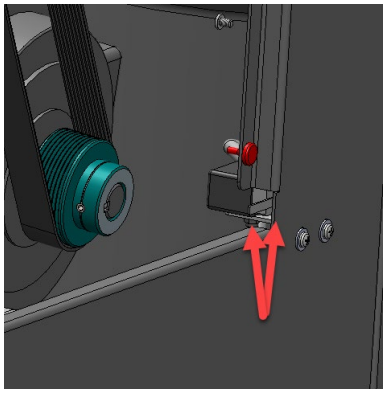


Image 22

19. If your saw was equipped with a motor door interlock switch, mount the new interlock switch using a #2 Phillips screwdriver and 7mm wrench. Duplicate the cable routing noted earlier. (Image 23)

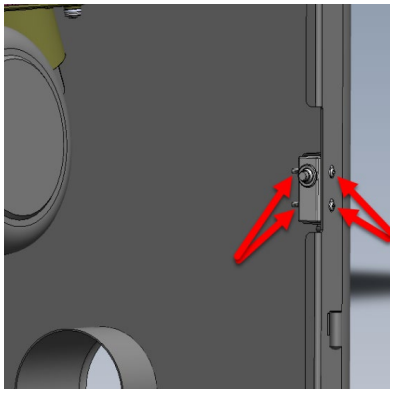


Image 23

20. Route switchbox power cable through side cabinet grommet and leave there for the time being. (Image 24)

Image 24

21. Route the new motor cable up to the motor. Transfer the strain relief compression fitting from the old cable onto the new cable. Route the cable into the motor junction box and tighten the nut on the strain relief, securing the motor cable. (Image 25)
22. Connect motor leads and ground, making sure all the connections are tight. Using a #2 Phillips screwdriver, resecure the cover back on the motor junction box. (Images 25 and 26)

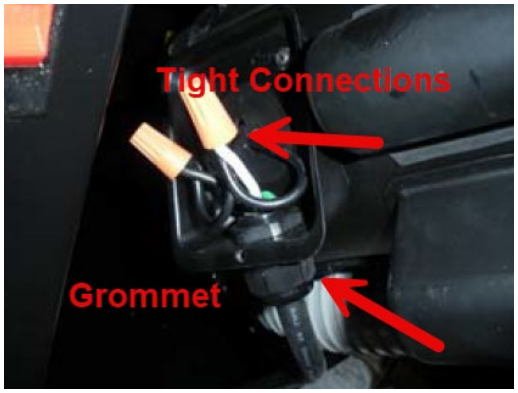


Image 25

Image 26

Removing both Motor and Arbor Belts

23. Working through the motor cover door, use a 19mm combination wrench loosen the motor mount adjustment bolt. This should release enough slack to remove motor belt from motor pulley and double pulley. (Image 27)

Image 27

24. To remove the arbor belt, turn both double pulley and arbor pulley clockwise simultaneously pushing the belt towards the center of the saw. Work the belt one rib at a time off both pulleys till it comes to rest on the pulley shafts. Once clear of both pulleys, slip the belt off and out of the saw. (Image 28)

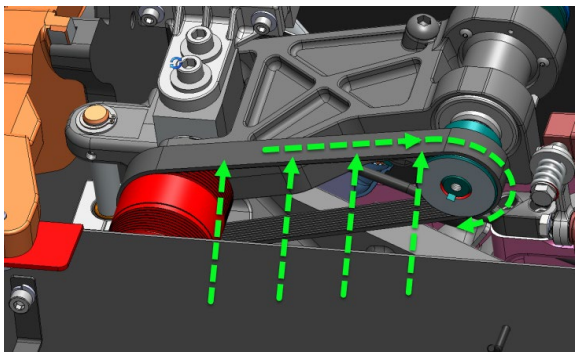


Image 28

Removal of original Arbor Block and installation of replacement Arbor Block

25. Remove the riving knife clamp assembly using an 8mm hex wrench. Remove both socket head bolts securing the clamp assembly. (Image 29)

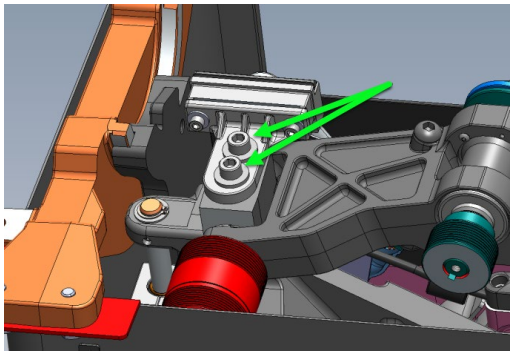


Image 29

26. Using a 5mm hex wrench, Loosen the two set screws for the arbor block pivot shaft located underneath the riving knife mount. (Image 30)

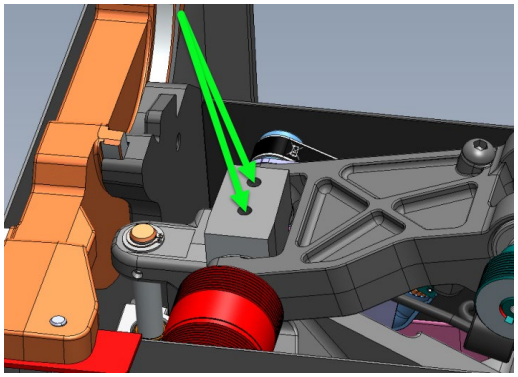


Image 30

27. Raise the blade elevation to highest position then push down sharply on the front of the arbor block. This will cause the front of the arbor block to drop out of the retraction bracket and pivot downward. (Image 31)

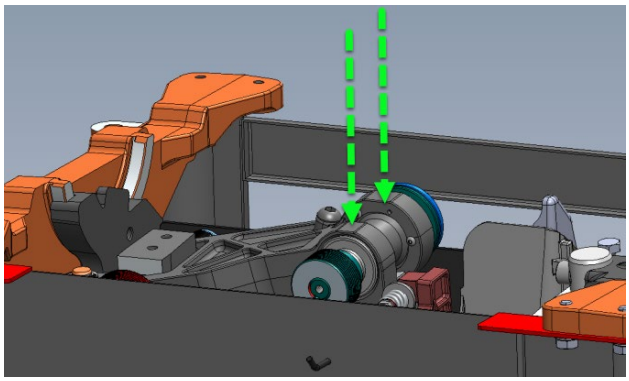


Image 31

28. Using a #2 Phillips screwdriver, remove the three cable clamps securing the cable to the elevation plate and saw cabinet. (Image 32)

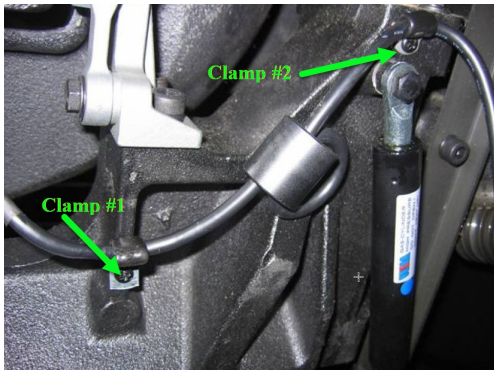


Image 32

29. Lift off the dust shroud door and remove the cartridge key and brake cartridge.
30. Tilt the arbor to 45 degrees and lower the elevation fully.
31. Remove the double pulley and shaft by sliding both toward the left of the saw from saw operator position. Use a mallet or dead blow hammer to drive the shaft out if the shaft has rusted or stuck.

It is best to use a soft-faced hammer or a block of wood to avoid damaging the end of the shaft which also serves as the cartridge mounting pin. (Image 33)

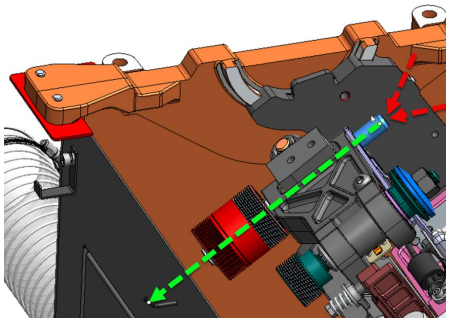


Image 33

32. Use a 2.5mm Hex wrench to loosen both 2.5mm set screws near left side of the arbor block relieving pressure on the thrust washer. Remove the thrust washer. (Image 34)

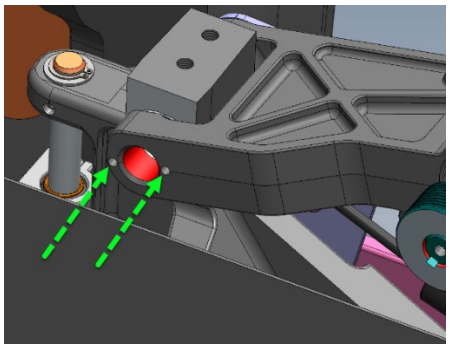


Image 34

33. Remove the old arbor block from the elevation plate.
34. Position the new arbor block on the elevation plate with the brass washer in place.
35. Reinstall the shaft and double pulley. Leave enough room for an L-shaped Hex wrench to access the set screws securing the brass washer. (Images 35 and 36)
36. Tighten the 2.5mm set screws using a 2.5mm Hex wrench to set friction on arbor block. The set screws should be tightened so that the front of the arbor block will just barely drop down when lifted and released. (Image 35)

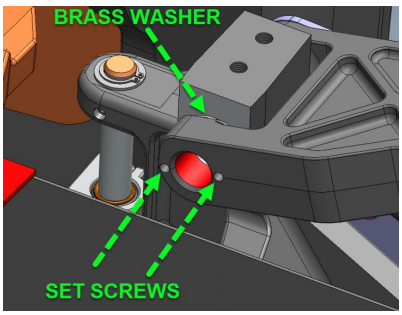


Image 35

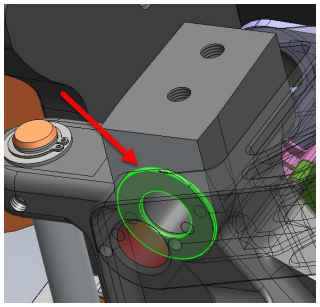


Image 36

37. Push shaft and pulley against the arbor block until the shaft protrudes out from cartridge bracket plate just far enough not to expose any of bright machined surface. (Image 37)

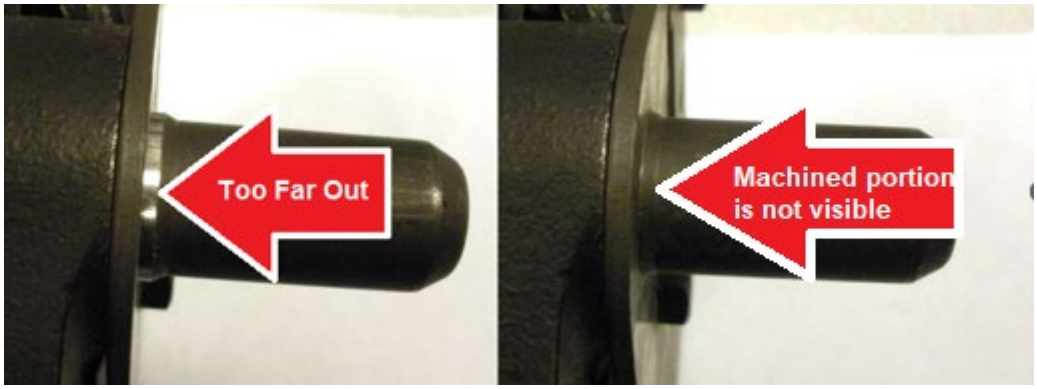


Image 37

38. Use a 5mm Hex wrench to lock the double pulley shaft in place by tightening the set screws. (Image 38)

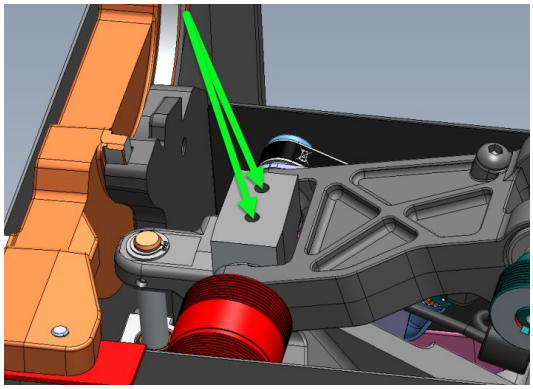


Image 38

39. Place the cable clamps on the cable. Using a #2 Phillips screwdriver, screw the cable clamps to the elevation plate and saw cabinet but not fully tight. Guide the cable out the grommet hole towards the switch box. (Images 39-42)

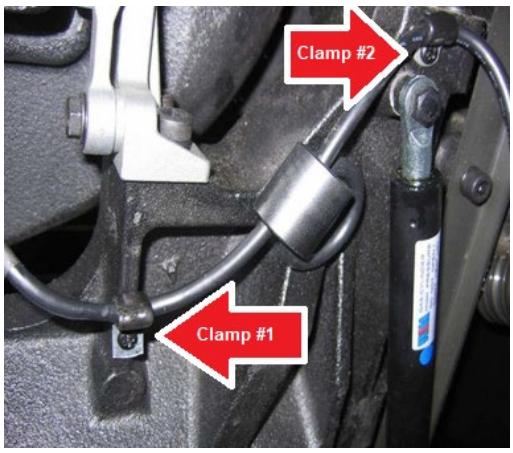


Image 39

Image 40

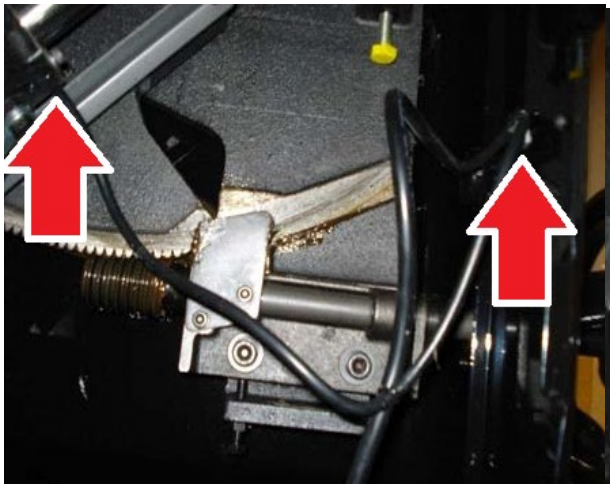


Image 41

Image 42

40. Release and retract the arbor by either pushing hard with a gloved hand or using a mallet and block of wood to tap downward on the top of the arbor block. Push down ensuring it has dropped fully and is resting on the rubber bumper. (Imaged 43 and 44)
41. Raise the elevation to highest position while observing the amount of cable slack. If necessary, push down on arbor to make sure it is bottomed out against rubber bumper. (Image 44)

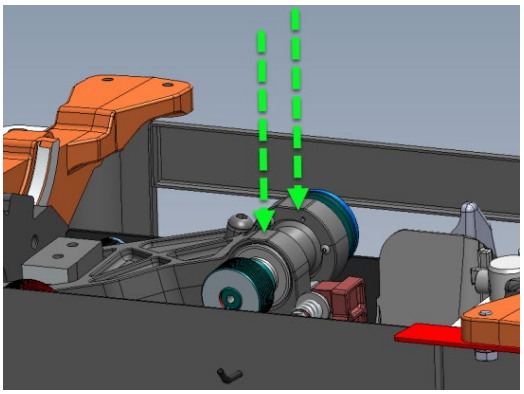


Image 43

Image 44

42. Position cable in clamps 1 and 2 to provide sufficient slack so that the cable is not tight between the cartridge bracket and the cable clamp 1. Wait to fully secure clamps. (Image 45)
43. Before making further readjustment make sure enough slack is there for the cable between trunnion assembly cabinet by lowering the saw all the way down and tilting it to 45°. This is the configuration that requires the most cable between the trunnion assembly and the cabinet. (Image 46)

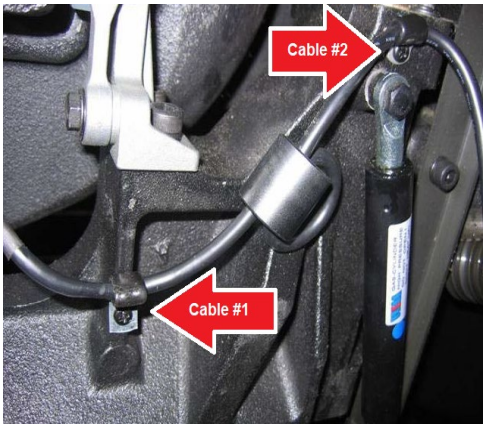


Image 45

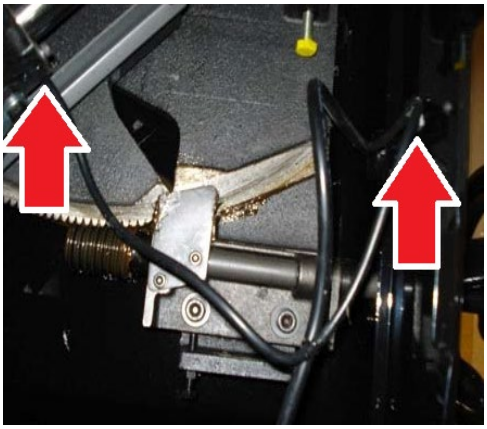


Image 46

44. Return saw to 0° tilt, and lower arbor to bottom of elevation range to re-engage arbor with the retraction bracket. Make any final adjustments to cable clamps and tighten all clamps.

Reassemble the Saw

45. Install the arbor belt. Start by hanging the belt past the pulleys on the two shafts. (the double pulley and the arbor pulley). (Image 47)
46. Working from the left side of the saw, pull the arbor belt toward the installer. Get one or two ribs onto arbor pulley. Use the double pulley to turn the belt back and forth and pull one or two ribs of the belt onto the double pulley. Work the arbor belt onto the pulleys one rib at a time until belt is fully installed and evenly covering all ribs on both pulleys.

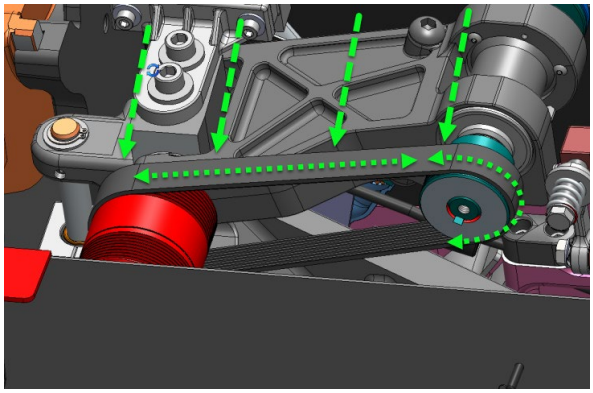


Image 47

47. Reinstall the motor belt onto the pulleys, making sure the belt is lined up properly on the pulley grooves. (Image 48)
48. The motor adjustment bolt fits into a curved slot preventing the bolt from moving while adjustments are made to the nut for proper belt tension. (Image 49)
49. Insert a pry bar between the motor body and the bracket on the elevation mechanism, on the left side of the motor. Push down on the pry bar to increase belt tension.

50. The belt is properly tensioned if squeezing both sides between thumb and fore fingers produces no more than ½" belt deflection, and when plucked, the belt produces a note instead of a "thud" noise. (Image 50)
51. When satisfied with belt tension, tighten both nuts and remove wrench/pry bar from the motor bracket. (Image 51)

Image 48

Image 49

Image 50

Image 51

Mount the Switchbox

52. Mount the replacement switchbox to the mounting bracket at the front of the saw. Use a 5mm hex key to install four mounting screws at the rear of the switch box. (Image 52)
53. Route both the cartridge cable and switchbox power cable from the grommet hole through the strain relief bar and plug them into the switch box circuit board. (Images 53 and 54)

54. Use a #2 Phillips screwdriver to secure the cable strain relief bar taking care not to crush either cable. (Image 55)

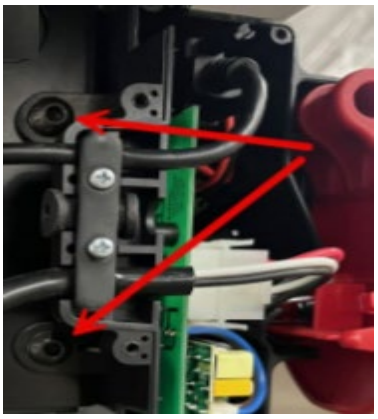


Image 52

Image 53

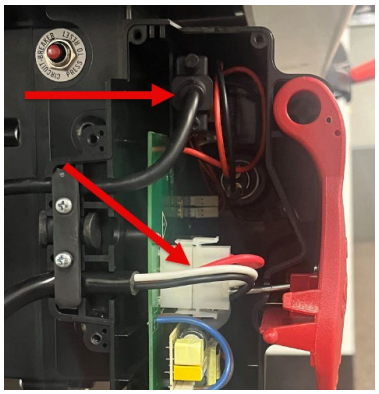


Image 54

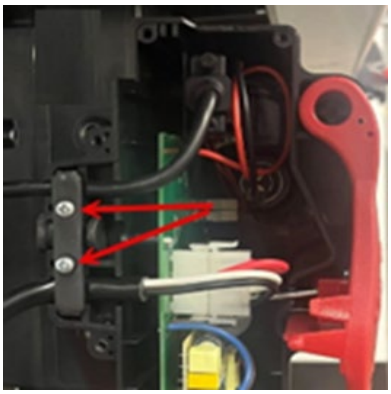


Image 55

55. Place left side cover onto the switch box. Use a #2 Phillips screwdriver to secure the seven screws previously removed from the left side of the switch box. (Image 56)

Image 56

56. Check cable routing inside cabinet. Zip-tie any loose cables to one another to secure and prevent contact with rotating assemblies during operation.

Main Table Installation:

57. With an assistant, place the main table back on top of cabinet. Align the 4 table mounting bolts holes and screw the 4 main table bolts just snug. (Images 57 and 58)

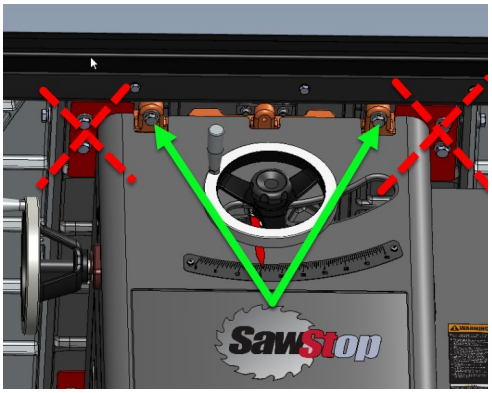


Image 57

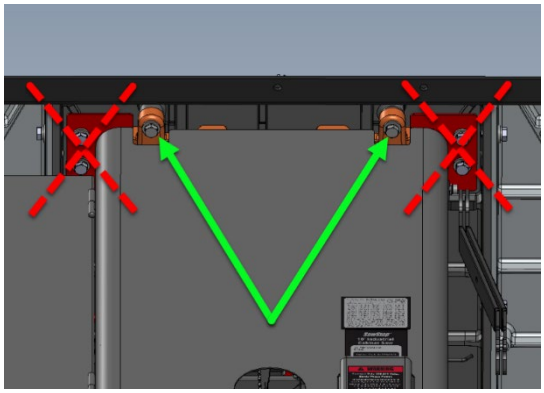


Image 58

58. Make sure the guide pin fits into the boss under the table. If previously removed, use a 5mm hex wrench to install the two socket head cap screws finger tight. (Image 59)

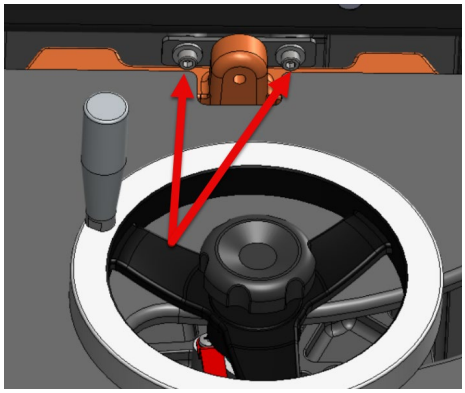


Image 59

59. Install the new brake cartridge and new cartridge key.
60. Install the saw blade. Check that blade to brake spacing is correct and adjust accordingly.
61. Install the original table insert. Raise the blade fully, and, using the insert and the blade as a guide, move the table close to its original position.
62. If equipped with a guide pin plate, tighten the two socket head cap screws that secure the guide pin plate using a 5mm hex wrench. (Image 59)

63. Install the adjustment screws using a 5mm Hex wrench located on both sides of table on the back ends. (Image 60)

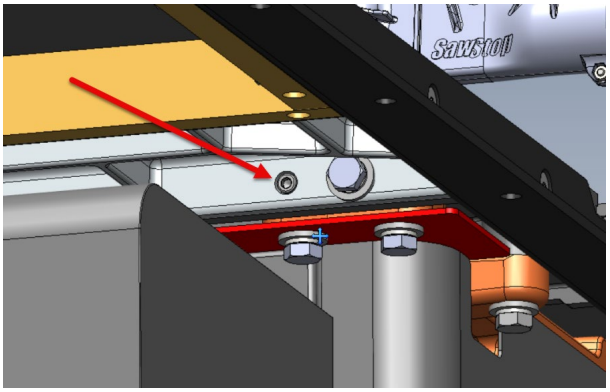
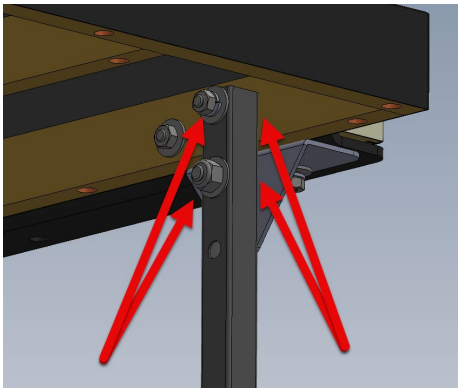


Image 60

64. Use the table alignment procedure beginning on pg. 47 in the ICS saw Owner's Manual or video to check and adjust the table alignment. Both links are available on the first page of the procedure under "Related Links" heading.

Final Adjustments:

65. Using two 17mm wrenches for early style, or one 13mm wrench and one 5mm short arm hex key for late style, install and secure the two bolts that fasten both legs supporting the extension table. (Image 61)



(Image 61)

66. Make sure the blade is below the table and clear of any obstruction.
67. Remove the table insert so the blade is visible.
68. Reconnect the saw to power.
69. Set the on / off switch to on and verify that after system initialization, the green LED light is illuminated solid indicating "System Ready".
70. On 3 phase saws it is necessary to check blade rotation direction before placing the saw back in operation. To do so, pull the start/stop paddle and immediately push it back in. Note the direction of blade rotation. If the blade rotates the correct direction you have completed this procedure and can return the saw to normal use. If the blade rotates opposite of the intended direction you will need to make an adjustment at the wiring junction box on the rear of the saw.

71. Disconnect the saw from power. Open the junction box at the rear of the saw and reverse the outer two contactor wire connections. (Image 62)

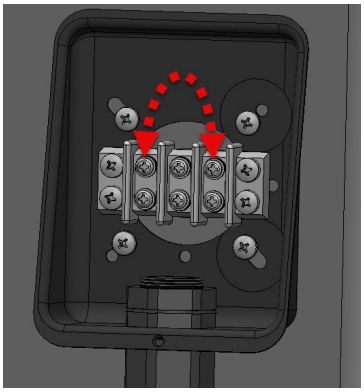


Image 62

72. Replace junction box cover, restore power to saw, and repeat rotation direction test. If the blade turns the correct direction, you have completed this procedure and may return the saw to normal use.