



715 West Colton Avenue  
Redlands, CA 92374  
Toll Free: (877) 793-6636 US Only  
Phone: (909) 793-6636  
FAX: (909) 793-7641  
Email: sales@covington-engineering

## COMBINATION SLAB & TRIM SAW INSTRUCTIONS 12", 14", & 16" MODELS

### DESCRIPTION

Covington's Combination Trim & Slab Saws are similar in design with different blade and pulley sizes. Sawing operations remain the same.

These ruggedly built, fully enclosed units are constructed of heavy gauge welded steel and feature an inspection window in the hood. Separately welded inner frame eliminates warp. One-piece vise carriage, mounted on  $\frac{3}{4}$ " steel rod and L way guide, provides the rigidity necessary for fast cuts with heavy loads. Vise carriage moves silently on way guide. A quick return split clip allows the carriage to be manually returned to any position.

Weight feed action for slabbing utilizes a scale, cord, and weights fastened to vise. Deluxe power feed models with overrunning clutch and cut-off switch are available.

The cross feed permits 4" of material to be slabbed without reclamping. One turn of the spin knob moves the vise crosswise  $\frac{1}{16}$ " and can produce 10-12 uniform slabs. The precision  $\frac{5}{8}$ " arbor ball bearings are heavy duty, double neoprene sealed, and greased for life.

Accessories include operating instructions, motor mount, drop-in trim table, plastic window, slab-catcher, weight feed scale, and cord.

### INSTALLATION

**Safety:** Before plugging saw unit into an electrical supply read the *Covington Safety Demands sheet*.

**Saw Level:** Place the portable saw on a sturdy platform or table and make sure the saw is level. The optional leg stand features a leveling bolt on one leg; adjust the bolt to level saw.

**Blade Mounting:** The flange must fit snugly and evenly against the blade. Make sure there is no dirt between the flanges and the blade as this may cause misalignment and warping. *Note: New blades may need to be dressed prior to cutting.*



## INSTALLATION CONTINUED

**Blade Alignment:** Measure the distance between the leading edge of the blade and the edge of the saw table (at 90 degree angle). Mark the measure spot on the blade. Rotate the blade 180 degrees. Again measure the back part (measured spot) of the blade with the opposite edge of the saw table (at 90 degree angle); the distance should be the same.

**Koolerant Mixture:** NEVER run diamond saw blade dry. Always use with a koolerant to prevent heat build-up, keep diamond intact, and wash out fine rock cuttings. Water alone, or with detergent, is not a good koolerant as water in any form eventually causes rust on steel parts.

This unit features the “immersion” method wherein the diamond blade runs in a reservoir of cooling fluid. Fill the reservoir until koolerant mix stands ¼” to ⅜” on the bottom of the blade when standing still. Blade guard and front shield control excess spray. An optional clear plastic hood is available to cover the entire trim saw table.

For cutting rocks with a Mohs scale hardness of 5 or less, use Covington Koolerant #1 (add 9 parts water). Mix well before pouring into the saw reservoir. For cutting rocks with a Mohs scale hardness of 6 or more, use Rock Hound Oil.

## MAINTENANCE

**Lubrication:** Parts such as threaded rod, shafts and steel guide inside the saw should be greased to prevent rust. Do not grease the saw arbor bearings or the motor. The bearings are sealed and greased for life.

**Blade:** Sharpen the blade occasionally to prevent glazing over. Make several cuts into a 220g silicon carbide dressing block or a soft, porous, red brick. Reverse blade periodically. Stopping and restarting unit during a cut almost always leaves a blade mark.

## PREPARATION

**Load Vise:** Move vise away from blade and clamp rock between vise jaws tightly. Secure the rock with wood wedges if necessary.

**#2 Rigid Grip Vise:** The vise jaws are built for nonbinding free application. To open, lift the tightening knob upward and free the spade from the ratchet slot and pull the vise jaw towards you. Place the rock in the vise and push the vise jaw against the rock. Set the spade in the nearest ratchet slot and tighten the vise by turning the vise knob counterclockwise.

**Weight Feed System:** The system is designed to feed the rock to the saw blade by use of a weight. To assemble the weight feed system, fasten the nylon cord to the vise carriage (rear underside), thread cord through the snubbing ring in the back wall of the tank and tie the other end to a small scale. Suspend an empty bucket from the scale.

## PREPARATION CONTINUED

**Weight Rule:** For each inch of blade contact, add approximately four pounds of weight to the suspended container. Do not exceed a total of sixteen pounds.

**Weight Feed Slab Operation:** After loading vise, adjust cross feed to align cut and move carriage so that the blade does not quite touch the rock. Start the motor by pulling the switch rod.

Feed the first half-inch by hand to ensure a good groove is established. Close the hood. Cut the last half-inch by hand also. This may not be necessary if the gemstone material is compact and uniform in shape.

Following the weight rule, add weight to the bucket and proceed to cut. The container should seat itself before the last part of the cut is made. The rock will be cut automatically by the weight feed system; view through the inspection window.

**Power Feed System:** The system is designed to feed the rock to the saw blade automatically.

*Cut-Off Switch:* The main cut-off switch is activated by a steel rod running from a convenient pull knob on the right of the tank to the main switch box on the rear of the tank. The rod runs parallel to the right side of the vise table. Pull the rod knob to start the saw and push it in to stop.

*Automatic Cut-Off Feature:* Position the vise carriage to that point of travel where the unit is to be turned off. It must not be past the blade flange. A steel collar and a thumb screw, located on the rear portion of the cut-off switch rod is then slipped forward until it is in position against the rod guide which is located on the vise carriage immediately below the cross feed turn handle. Tighten the thumbscrew and return the carriage to a starting position for cutting.

**Power Feed Slab Operation:** After loading the vise, adjust the cross feed to align cut and move the carriage so that the blade does not quite touch the rock. Clamp the split clip on the threaded rod in front of the carriage. Move the shaft collar on the switch rod and lock it where it will automatically shut off the machine at the point you want. Close the hood.

Start motor by pulling the knob out on the switch rod. The rock will be cut automatically. View operation through inspection window.

Stop cutting after a depth of ¼" has been reached. Back the carriage away and restart the cut relieving the cut of misalignment caused by a rough exterior surface. This may not be necessary if the material is smooth and uniform.

## TRIM OPERATION

Clamp trim table square in the slab vise with height adjusting screw down. Adjust screw to level table if necessary. Adjust cross feed so that the blade runs in the center of the table slot.

## **CAUTION: DO NOT USE WEIGHT FEED FOR TRIMMING**

Avoid letting the blade strike a glancing blow on an uneven rock or slanting surface. This can cause the blade to make a slanting cut and dish the blade.

**Rough Material:** Trim small pieces of rough gem material by placing a reasonably flat side on the trim saw table. Grip both sides of the material firmly and gently push the material into the revolving blade. Saw only in straight lines. Avoid letting the blade strike an uneven rock or slanting surface. This can cause the blade to make a slanting cut and dish the blade. It is safer to use a sawing jig or small vise to hold the gemstone material.

**Slabs:** Slabs are much easier to trim than rough material. First, make the design you wish to cut on the bottom side of the gem slab. Mark straight lines around the design; cut along the lines with firm but gentle pressure. If you must make an angling cut, cut a slight notch at the edge of the slab, then turn the slab to the angle desired and continue cutting.

## **MAINTENANCE**

**Lubrication:** Parts such as threaded rod, shafts and steel guide inside the saw should be greased to prevent rust.

Do not grease the saw arbor bearings or the motor. The bearings are sealed and greased for life.

**Blade:** Sharpen the blade occasionally to prevent glazing over. Make several cuts into a 220g silicon carbide dressing block or a soft, porous, red brick. Reverse blade periodically. Stopping and restarting unit during a cut almost always leaves a blade mark.

## **HELPFUL HINTS & HARMFUL ERRORS**

If cutting a rock in half, clamp it in the vise so the cut is close to the vise jaws. If cutting several slabs, clamp the rock in a position to get as many cuts as possible without reclamping the rock.

One of the most common mistakes is to force the blade into the material faster than the diamond rim cuts through the material. Generally, the harder or thicker the material is the slower the feed rate should be. This mistake can result in dished and bent blades.

Preventative measures can be taken but there is no substitute for judgment. Check the blade for alignment and the arbor for loose bearings. Ascertain that the coolant solution permits the blade to “flush” itself. Dress the blade regularly. Run a fingertip around the rim of the stopped blade. You should be able to feel the exposed diamond. No amount of skill can make a blade with too little diamond cut properly.

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**POWERFEED**

**Automatic Clutch:** The clutch will overrun or slip if the power feed is too fast for a large or hard rock. This clutch action is designed to prolong the life of the saw blade.

To adjust the clutch, hold the lead screw with pliers and adjust the lock nut with a wrench so that the clutch will overrun if too much backpressure is applied on the vise while cutting. NOTE: Swing the wrench toward the blade to loosen the clutch and away to tighten.

**BLADE AND POWER FEED SPEED**

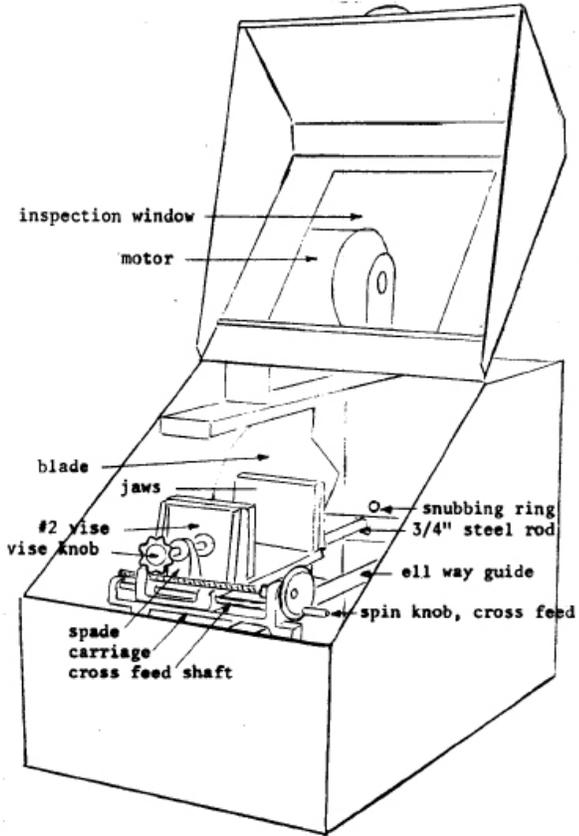
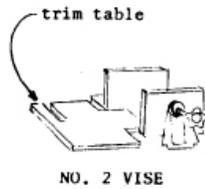
| Estimated Power Feed Speed Per Hour | Saw with 1725rpm Motor |              |              |           |            |
|-------------------------------------|------------------------|--------------|--------------|-----------|------------|
|                                     | Blade Size             | Motor Pulley | Blade Pulley | Blade rpm | Blade SFPM |
| 12"                                 | 12"                    | 2"           | 3"           | 1100      | 3456       |
| 12"                                 | 14"                    | 2"           | 3"           | 1100      | 4032       |
| 12"                                 | 16"                    | 2"           | 4"           | 805       | 3372       |

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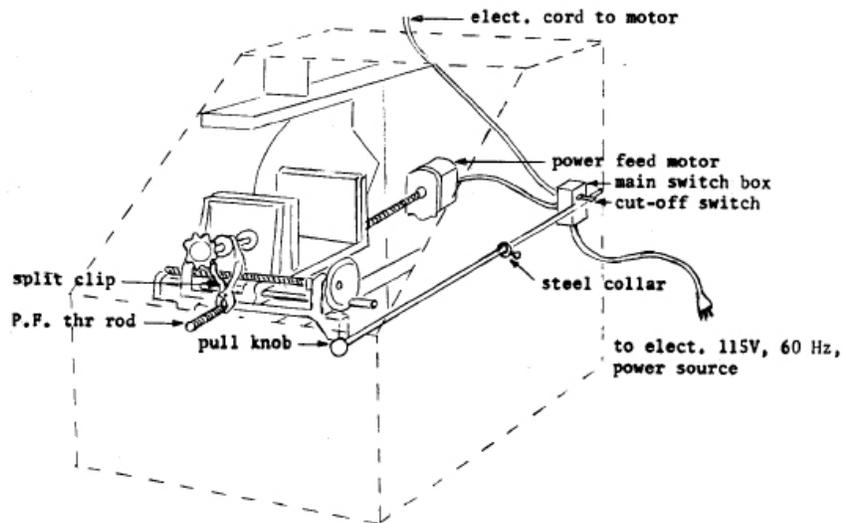
**PORTABLE COMBO SLAB & TRIM SAW**

- ✓ Light enough to be easily moved.
- ✓ Easily converts from slab to trim saw with drop-in trim table.
- ✓ Sawmill type carriage glides on steel ways.
- ✓ Rigid Grip Vise: Steel jaw tongue contacts full length of vise, holding jaw square so it can't bind.
- ✓ 4" crossfeed adjusts 1/16" per turn for uniform slabbing.
- ✓ Weight feed action for slabbing utilizes scales, cord and weight fastened to vise table.

**OPTIONS:** Deluxe Power Feed with over-running clutch and cut-off switch.



COMBINATION SLAB AND TRIM SAW - USING WEIGHT FEED SYSTEM



COMBINATION SLAB AND TRIM SAW - USING POWER FEED SYSTEM